Tektronix®

5 Series MSO
MSO54, MSO56, MSO58, MSO58LP
Programmer Manual

077-1305-02

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- Worldwide, visit www.tek.com to find contacts in your area.

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Preface

This programmer guide provides you with the information required to use Programmable Interface commands to remotely control your instrument.

The programmer manual is divided into the following major topics:

- **Getting started.** This topic introduces you to the programming information and provides basic information about setting up your instrument for remote control.
- **Command syntax.** This topic provides an overview of the command syntax that you use to communicate with the instrument and other general information about commands, such as how commands and queries are constructed, how to enter commands, constructed mnemonics, and argument types.
- **Command groups.** This topic contains all the commands listed in functional groups. Each group consists of an overview of the commands in that group and a table that lists all the commands and queries for that group. You can click a command in the listing to display a detailed description of the command.
- **Commands listed in alphabetical order.** This topic contains all commands listed in alphabetical order. Command details, syntax, and examples are provided.
- **Status and events.** This topic discusses the status and event reporting system for the programming interfaces. This system informs you of certain significant events that occur within the instrument. Topics that are discussed include registers, queues, event handling sequences, synchronization methods, and messages that the instrument might return, including error messages.
- **Appendices.** These topics contain miscellaneous information, such as a list of reserved words, a table of the factory initialization (default) settings, and interface specifications that can be helpful when using commands to remotely control the instrument.

Getting Started

This manual explains the use of commands to remotely control your oscilloscope. With this information, you can write computer programs to perform functions, such as setting the front-panel controls, taking measurements, performing statistical calculations, and exporting data for use in other programs.

Familiarity with the User Manual for your oscilloscope is assumed. You can download the User Manual from the Tektronix website at www.tek.com.

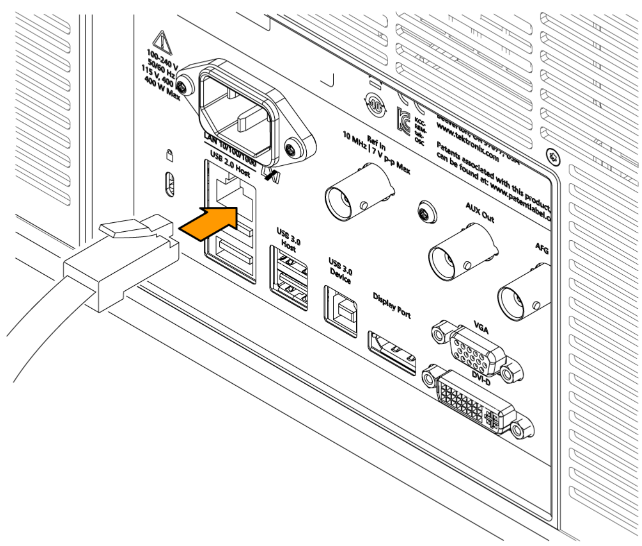
NOTE. *Most examples in this document assume that both HEADer and VERBose are set to ON.*

Setting Up Remote Communications Hardware

You can remotely control communications between your oscilloscope and a PC via Ethernet or USB cables.

Ethernet

If you are using Ethernet, start by connecting an appropriate Ethernet cable to the Ethernet port (RJ-45 connector) on the rear panel of your oscilloscope. This connects the oscilloscope to a 10BASE-T/100BASE-TX/1000BASE-T local area network.

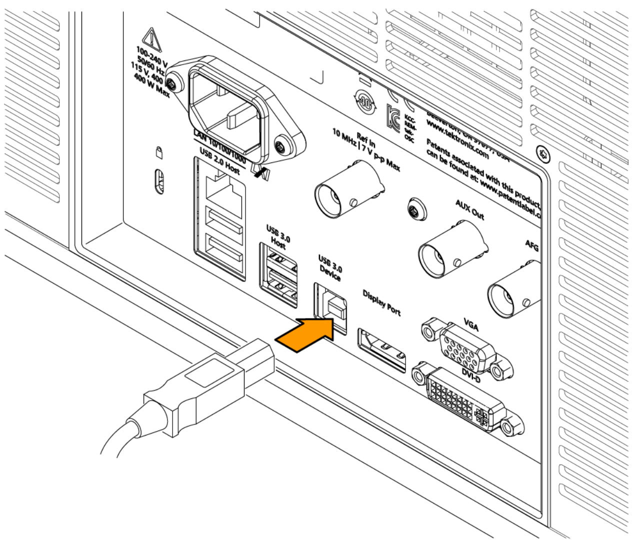


To change the Ethernet settings on your oscilloscope, do the following:

1. Select the **Utility** drop-down menu.
2. Select the **I/O** menu.
3. Select the **LAN** panel.
4. In the menu, if you are on a DHCP Ethernet network that supplies the IP address automatically by a DHCP, tap **Auto**.
5. In the menu, if you want to supply your own network settings, tap **Manual** to set a hard coded TCP/IP address.

USB

If you are using USB, start by connecting the appropriate USB cable to the USB 3.0 super-speed (SS) Device port on the rear panel of your oscilloscope. This port requires that the cable connected from the port to the host computer meets the USB 3.0 specification for super speed connections. Typically, such cables should be 3 feet or shorter in length, but this is determined by the quality of the cable and, with higher quality cables, this length can be extended. (It is also dependent upon the drive capability of the host USB port to which the instrument is connected.) The use of high quality short cables is recommended to avoid USB connection problems.



With USB, the system automatically configures itself. To verify that the USB is enabled:

1. Select the **Utility** drop-down menu.
2. Select the **I/O** menu.
3. Touch **USB Device Port** to open the USB Device Port configuration menu.
4. If USB is disabled, tap **USB Device Port** to enable the USB Device port.

After connection, the host, with appropriate software, can list the oscilloscope as a USB device with the following parameters: (See Table 1-1.)

Table 1-1: USB Device Parameters

Parameter	Value
Manufacturer ID	0x0699 (decimal 1689)
Product ID	0x0522 (You can send the USBTMC:PRODUCTID:HEXadecimal? query to read the value)
Serial number	Serial number
Manufacturer description	"Tektronix"
Interface description	"USBTMC-USB488"

Setting Up Remote Communications Software

Connect your oscilloscope directly to a computer to let the PC analyze your data, collect screen images, or to control the oscilloscope using a program of your own creation. Three ways to connect your oscilloscope to a computer are through the VISA drivers, the e*Scope Web-enabled tools, or via a socket server.

Using VISA

VISA lets you use your MS-Windows computer to acquire data from your oscilloscope for use in an analysis package that runs on your PC, such as Microsoft Excel, National Instruments LabVIEW, Tektronix OpenChoice Desktop software, or your own custom software. You can use a common communications connection, such as USB or Ethernet, to connect the computer to the oscilloscope.

To set up VISA communications between your oscilloscope and a computer:

1. Load the VISA drivers on your computer. Also, load your application, such as OpenChoice Desktop. You will find the drivers and OpenChoice Desktop software on the appropriate CD that comes with your oscilloscope or at the Tektronix software finder Web page (www.tektronix.com\downloads).
2. Connect the oscilloscope to your computer with the appropriate USB or Ethernet cable. Cycle the power on the oscilloscope.
3. Select the **Utility** drop-down menu
4. Select **I/O** menu.
5. If you are using USB, the system sets itself up automatically for you, if USB is enabled. Check **USB DEVICE PORT** panel to be sure that USB is enabled. If it is not enabled, toggle the On/Off button to On.
6. To use Ethernet, select the **LAN** panel. Use the controls to adjust your network settings, as needed. For more information, see the e*Scope setup information below.
7. If you want to change socket server parameters, select the **Socket Server** panel and enter new values through the resulting panel controls.
8. Run your application software on your computer.

Quick Tips

- The USB 3.0 super-speed (SS) device port is the correct USB port for computer connectivity. Use the rear- and front-panel USB 2.0 or 3.0 host ports to connect your oscilloscope to USB flash drives, hard drives, keyboards or mice. Use the USB Device port to connect your oscilloscope to a PC.

  There are both USB 2.0 and 3.0 host ports on the instrument. The device port is USB 3.0. Printers are not supported on host ports. PictBridge printers are not supported on the device port.

Using the LXI Web Page and e*Scope

With e*Scope, you can access your Internet-connected instrument from a web browser. To set up e*Scope communications between your oscilloscope and a web browser running on a remote computer:

1. Connect the oscilloscope to your computer network with an appropriate Ethernet cable.
2. Select the **Utility** drop-down menu.
3. Select the **I/O** menu.
4. Select the **LAN** panel.
5. At the top left of the panel, there is an indicator light which turns red if the device detects a fault.
6. Read the network parameters configured on your oscilloscope.
7. Tap **LAN Reset** to restore the LAN defaults to your oscilloscope.
8. Tap **Test Connection** to check if your oscilloscope can find an attached network.
9. Double tap **Host Name**, **Domain Name**, or **Service Name** to change the name of the oscilloscope, the domain name, or the service name using the pop-up keyboard.
10. Start your browser on your remote computer. In the browser address line, enter the host name, a dot, and the domain name together. Alternatively, just enter the IP address of the instrument. Either way, you should then see the LXI Welcome page on your Web browser on your computer screen.
11. Click “Network Configuration” to view and edit the network configuration settings.
12. For e*Scope, click the Instrument Control (e*Scope) link on the left side of the LXI Welcome page. You should then see a new tab (or window) open in your browser with e*Scope running.

Using a Socket Server

A socket server provides two-way communication over an Internet Protocol-based computer network. You can use your oscilloscope’s socket server feature to let your oscilloscope talk to a remote-terminal device or computer.

To set up and use a socket server between your oscilloscope and a remote terminal or computer:

1. Connect the oscilloscope to your computer network with an appropriate Ethernet cable.
2. Select the **Utility** drop-down menu.
3. Select the **I/O** menu.
4. Tap **Socket Server**.
5. On the resulting Socket Server panel, tap the top entry to toggle the Socket Server On..

6. Choose whether the protocol should be **None** or **Terminal**. A communication session run by a human at a keyboard typically uses a terminal protocol. An automated session might handle its own communications without using such a protocol.
7. If required, change the port number by rotating multipurpose knob **a.**
8. If required, press **OK** to set the new port number.
9. After setting up the socket server parameters, you can now have the computer "talk" to the oscilloscope. If you are running an MS Windows PC, you could run its default client with its command-like interface. One way to do this is by typing " `Telnet` " in the Run window. The Telnet window will open on the PC.

NOTE. *On MS Windows 7, you must first enable Telnet in order for it to work.*

10. Start a terminal session between your computer and your oscilloscope by typing in an open command with the oscilloscope LAN address and port #. You can obtain the LAN address by pushing the **LAN** panel to view the resulting LAN setting panel. You can obtain the port # by tapping the **Socket Server** panel and viewing the **Port** item.

    For example, if the oscilloscope IP address was `123.45.67.89` and the port # was the default of `4000`, you could open a session by writing into the MS Windows Telnet screen:

    ```
    open 123.45.67.89 4000
    ```

    The oscilloscope will send a help screen to the computer when it is done connecting.

11. You can now type in a standard query, as found in the programmer manual, such as `*idn?`

    The Telnet session window will respond by displaying a character string describing your instrument. You can type in more queries and view more results on this Telnet session window. You can find the syntax for relevant queries and related status codes in other sections of this manual.

NOTE. *Do not use the computer's backspace key during an MS Windows' Telnet session with the oscilloscope.*

Socket Server Terminal Protocol Mode Commands. Following are Tektronix Instrument Control Terminal Session Control commands:

!t <timeout> : set the response timeout in milliseconds.

!d : send device clear to the instrument.

!r : read response from instrument.

!h : print this usage info.

***NOTE.** Commands containing a ? are treated as queries, and the responses are read automatically.*

Documentation Documentation for your instrument is available for download at *www.tek.com*.

Dynamic programmatic interface

This programmatic interface is dynamic. This means the instrument will not recognize certain commands until the objects referenced by those commands actually exist. For example, commands related to measurements are not recognized until measurements are added. Therefore, the response to a *LRN? query will not normally include the instrument's complete command set.

The following command groups are not available when the instrument is in its default state:

- Measurement
- Math
- Bus
- Search and Mark
- Plot

Adding an instance of one of those components will cause all commands related to that component to be recognized. For example, sending the MEASUrement:ADDNew command adds a measurement at which point the measurement commands will be recognized. Conversely, once all instances of a component have been deleted, the commands related to that component will no longer be recognized.

Implicit activation

When you send a command or query related to a dynamic object (such as Math1, Bus3, or Meas2) to the instrument and that instance does not yet exist, the instrument:

- creates a default instance with the name you specified
- adds all relevant commands and queries to the set of recognized commands
- responds to the command or query

Example 1 *RST followed by a *LRN? will not return any MATH<x> commands because in the default state, the instrument does not have any math waveforms. However querying :MATH:MATH1:DEFinition? will add MATH1 with the default math expression Ch1 - Ch2. Then the query will return the expected result. Note that if Ch1 or Ch2 is not active, they will be activated as part of this action. A *LRN issued after this will return MATH commands in addition to other available commands.

Example 2 *RST followed by :MEASUrement:MEAS3:TYPE? creates a measurement named MEAS3 and return it's type. Since the default type is Period, you will get Period as the response. A *LRN issued after this will return all MEASUrement:MEAS3 commands in addition to other available commands.

Not all commands in these groups start implicit activation. ADDNew, DELete, and LIST commands do not result in implicit activation.

Creating, deleting, and listing dynamic instances

You can create a new default instance of a dynamic feature by using the ADDNew command. For example, :MEASUrement:ADDNew "Meas1" will create a new measurement named Meas1. Meas1 will be a Period measurement since the default type for measurements is Period. Note that you can change Meas1 type to any other supported type using :MEASUrement:MEAS1:TYPE command. The DELete command deletes the named dynamic instance. For example :BUS:DELete “B2” will delete a bus named B2 if it exists. You can delete only one instance at a time. The LIST command returns a list of all dynamic instances currently in existence. For example, if you have added three measurements named Meas1, Meas2 and Meas3, :MEASUrement:LIST? returns MEAS1, MEAS2, MEAS3.

Command Syntax

You can control the operations and functions of the oscilloscope through the Ethernet port or the USB 3.0 super speed (SS) device port using commands and queries. The related topics listed below describe the syntax of these commands and queries. The topics also describe the conventions that the oscilloscope uses to process them. See the *Command Groups* topic in the table of contents for a listing of the commands by command group, or use the index to locate a specific command.

Backus-Naur Form Notation

This documentation describes the commands and queries using Backus-Naur Form (BNF) notation. Refer to the following table for the symbols that are used.

Table 2-1: Symbols for Backus-Naur Form

Symbol	Meaning
< >	Defined element
=	Is defined as
|	Exclusive OR
{ }	Group; one element is required
[ ]	Optional; can be omitted
. . .	Previous element(s) may be repeated

Command and Query Structure

Commands consist of set commands and query commands (usually called commands and queries). Commands modify oscilloscope settings or tell the oscilloscope to perform a specific action. Queries cause the oscilloscope to return data and status information.

Most commands have both a set form and a query form. The query form of the command differs from the set form by its question mark at the end. For example, the set command `ACQuire:MODe` has a query form `ACQuire:MODe?`. Not all commands have both a set and a query form. Some commands have set only and some have query only.

Messages

A command message is a command or query name followed by any information the oscilloscope needs to execute the command or query. Command messages may contain five element types, defined in the following table.

Table 2-2: Command Message Elements

Symbol	Meaning
<Header>	This is the basic command name. If the header ends with a question mark, the command is a query. The header may begin with a colon (:) character. If the command is concatenated with other commands, the beginning colon is required. Never use the beginning colon with command headers beginning with a star (*).
<Mnemonic>	This is a header subfunction. Some command headers have only one mnemonic. If a command header has multiple mnemonics, a colon (:) character always separates them from each other.
<Argument>	This is a quantity, quality, restriction, or limit associated with the header. Some commands have no arguments while others have multiple arguments. A <space> separates arguments from the header. A <comma> separates arguments from each other.
<Comma>	A single comma is used between arguments of multiple-argument commands. Optionally, there may be white space characters before and after the comma.
<Space>	A white space character is used between a command header and the related argument. Optionally, a white space may consist of multiple white space characters.

Commands

Commands cause the oscilloscope to perform a specific function or change one of the settings. Commands have the structure:

```
[:]<Header>[<Space><Argument>[<Comma> <Argument>]...]
```

A command header consists of one or more mnemonics arranged in a hierarchical or tree structure. The first mnemonic is the base or root of the tree and each subsequent mnemonic is a level or branch off the previous one. Commands at a higher level in the tree may affect those at a lower level. The leading colon (:) always returns you to the base of the command tree.

Queries

Queries cause the oscilloscope to return status or setting information. Queries have the structure:

- [:]<Header>
- [:]<Header>[<Space><Argument> [<Comma><Argument>]...]

You can specify a query command at any level within the command tree unless otherwise noted. These branch queries return information about all the mnemonics below the specified branch or level.

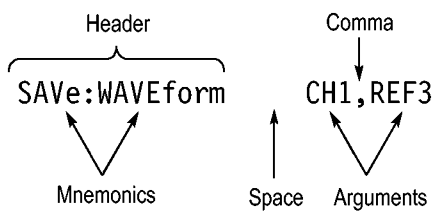
Headers

Use the HEADer command to control whether the oscilloscope returns headers as part of the query response. If header is on, the query response returns command headers, then formats itself as a valid set command. When header is off, the response includes only the values. This may make it easier to parse and extract the information from the response. The table below shows the difference in responses.

Table 2-3: Comparison of Header Off and Header On Responses

Query	Header Off	Header On
TIME?	"14:30:00"	:TIME “14:30:00”
ACQuire:NUMAVg?	100	:ACQUIRE:NUMAVG 100

Command Parts



Clearing the oscilloscope

You can clear the Output Queue and reset the oscilloscope to accept a new command or query by using the selected Device Clear (DCL) function.

Command Entry

The following rules apply when entering commands:

- You can enter commands in upper or lower case.
- You can precede any command with white space characters. White space characters include any combination of the ASCII control characters 00 through 09 and 0B through 20 hexadecimal (0 through 9 and 11 through 32 decimal).
- The oscilloscope ignores commands consisting of any combination of white space characters and line feeds.

Abbreviating

You can abbreviate many oscilloscope commands. Each command in this documentation shows the minimum acceptable abbreviations in capitals. For example, you can enter the command `ACQuire:NUMAvg` simply as ACQ:NUMA or acq:numa.

Abbreviation rules may change over time as new oscilloscope models are introduced. Thus, for the most robust code, use the full spelling.

If you use the `HEADer` command to have command headers included as part of query responses, you can further control whether the returned headers are abbreviated or are full-length with the `VERBose` command.

Concatenating

You can concatenate any combination of set commands and queries using a semicolon (;). The oscilloscope executes concatenated commands in the order received.

When concatenating commands and queries, you must follow these rules:

1. Separate completely different headers by a semicolon and by the beginning colon on all commands except the first one. For example, the commands `TRIGger:MODe NORMal` and `ACQuire:NUMAVg 8`, can be concatenated into the following single command:

   `TRIGger:MODe NORMal;:ACQuire:NUMAVg 8`

2. If concatenated commands have headers that differ by only the last mnemonic, you can abbreviate the second command and eliminate the beginning colon. For example, you can concatenate the commands `ACQuire:MODe ENVelope` and `ACQuire:NUMAVg 8` into a single command:

   `ACQuire:MODe ENVelope; NUMAVg 8`

   The longer version works equally well:

   `ACQuire:MODe ENVelope;:ACQuire:NUMAVg 8`

3. Never precede a star (*) command with a colon:

   `ACQuire:STATE 1;*OPC`

   Any commands that follow will be processed as if the star command was not there so the commands, `ACQuire:MODe ENVelope;*OPC;NUMAVg 8` will set the acquisition mode to envelope and set the number of acquisitions for averaging to 8.

4. When you concatenate queries, the responses to all the queries are concatenated into a single response message. For example, if the display graticule is set to Full and the display style is set to dotsonly, the concatenated query `DISplay:GRAticule?;STYle?` will return the following.

If the header is on:

`DISPLAY:GRATICULE FULL;:DISPLAY:STYLE DOTSONLY`

If the header is off:

`FULL;DOTSONLY`

1. Set commands and queries may be concatenated in the same message. For example,

   `ACQuire:MODe SAMple;NUMAVg?;STATE?`

   is a valid message that sets the acquisition mode to sample. The message then queries the number of acquisitions for averaging and the acquisition state. Concatenated commands and queries are executed in the order received.

   Here are some invalid concatenations:

   `DISPlay:STYle DOTsonly OFF;ACQuire:NUMAVg 8` (no colon before `ACQuire`)

   `DISPlay:GRAticule FULL;:STYle DOTSONLY OFF` (extra colon before `STYle`.

   `DISPlay:GRAticule FULL;:*TRG` (colon before a star (*) command)

   `ACQUIRE:FASTACQ:PALETTE TEMPerature;FASTAcq:STATE ON` (levels of the mnemonics are different; either remove the second use of `FASTACQ:` or place `:ACQUIRE` in front of `FASTAcq:STATE`)

Terminating

This documentation uses `<EOM>` (End of Message) to represent a message terminator.

Table 2-4: End of Message Terminator

Symbol	Meaning
<EOM>	Message terminator

The end-of-message terminator must be the END message (EOI asserted concurrently with the last data byte). The last data byte may be an ASCII line feed (LF) character.

This oscilloscope does not support ASCII LF only message termination. The oscilloscope always terminates outgoing messages with LF and EOI.

Constructed Mnemonics

Some header mnemonics specify one of a range of mnemonics. For example, a channel mnemonic can be CH1, CH2, CH3, CH4, CH5, CH6, CH7, or CH8 depending on the number of FlexChannels in your instrument. You use these mnemonics in the command just as you do any other mnemonic. For example, there is a `CH1:POSition` command, and there is also a `CH2:POSition` command. In the command descriptions, this list of choices is abbreviated as CH<x>.

Bus Mnemonics

Commands specify the bus to use as a mnemonic in the header.

Table 2-5: Bus Mnemonics

Symbol	Meaning
B<x>	A bus specifier; <x> is ≥1.

Channel Mnemonics

Commands specify the channel to use as a mnemonic in the header.

Table 2-6: Channel Mnemonics

Symbol	Meaning
CH<x>	A channel specifier; <x> is 1 through 8 and is limited by the number of FlexChannels in your instrument.
CH<x>_D<x>	A digital channel specifier; <x> in CH<x> is 1 through 8 and is limited by the number of FlexChannels in your instrument. <x> in D<x> is 0 through 7. Together they define a FlexChannel digital input.

Cursor Position Mnemonics

When cursors are displayed, commands may specify which cursor of the pair to use.

Table 2-7: Cursor Mnemonics

Symbol	Meaning
CURSOR<x>	A cursor selector; <x> is must be 1 or 2.

Math Specifier Mnemonics

Commands can specify the mathematical waveform to use as a mnemonic in the header.

Table 2-8: Math Specifier Mnemonics

Symbol	Meaning
MATH<x>	A math waveform specifier; <x> is ≥1.

Measurement Specifier Mnemonics

Commands can specify which measurement to set or query as a mnemonic in the header.

Table 2-9: Measurement Specifier Mnemonics

Symbol	Meaning
MEAS<x>	A measurement specifier; <x> is ≥1.

Reference Waveform Mnemonics

Commands can specify the reference waveform to use as a mnemonic in the header.

Table 2-10: Reference Waveform Mnemonics

Symbol	Meaning
REF<x>	A reference waveform specifier; <x> is ≥1.
REF<x>_D<x>	A digital reference waveform specifier; <x> is ≥1.

View Mnemonics

Commands can specify the view to use as a mnemonic in the header.

Table 2-11: Waveview Mnemonics

Symbol	Meaning
WAVEView<x>	A waveview specifier; <x> must be equal to 1.
PLOTView<x>	A plotview specifier; <x> must be equal to 1.
MATHFFTView<x>	A mathfftview specifier; <x> must be equal to 1.

Search Mnemonics

Commands can specify a search to use as a mnemonic in the header.

Table 2-12: Search Mnemonics

Symbol	Meaning
SEARCH<x>	A Search specifier; <x> is ≥1.

Zoom Mnemonics

Commands can specify a zoom to use as a mnemonic in the header.

Table 2-13: Zoom Mnemonics

Symbol	Meaning
ZOOM<x>	A zoom specifier; <x> must be equal to 1.

Argument Types

Commands use arguments such as enumeration, numeric, quoted string and block. Each of these arguments are listed in detail below.

Enumeration

Enter these arguments as unquoted text words. Like key words, enumeration arguments follow the same convention where the portion indicated in uppercase is required and that in lowercase is optional.

For example: `ACQuire:MODe SAMple`

Numeric

Many oscilloscope commands require numeric arguments. The syntax shows the format that the oscilloscope returns in response to a query. This is also the preferred format when sending the command to the oscilloscope, though any of the formats will be accepted. This documentation represents these arguments as described below.

Table 2-14: Numeric Arguments

Symbol	Meaning
<NR1>	Signed integer value
<NR2>	Floating point value without an exponent
<NR3>	Floating point value with an exponent
<bin>	Signed or unsigned integer in binary format

Most numeric arguments will be automatically forced to a valid setting, by either rounding or truncating, when an invalid number is input, unless otherwise noted in the command description.

Quoted String

Some commands accept or return data in the form of a quoted string, which is simply a group of ASCII characters enclosed by a single quote (') or double quote ("). The following is an example of a quoted string: `"This is a quoted string"`. This documentation represents these arguments as follows:

Table 2-15: Quoted String Argument

Symbol	Meaning
<QString>	Quoted string of ASCII text

A quoted string can include any character defined in the 7-bit ASCII character set. Follow these rules when you use quoted strings:

1. Use the same type of quote character to open and close the string. For example: `"this is a valid string"`.
2. You can mix quotation marks within a string as long as you follow the previous rule. For example: `"this is an 'acceptable' string"`.
3. You can include a quote character within a string by repeating the quote. For example: `"here is a "" mark"`.
4. Strings can have upper or lower case characters.
5. A carriage return or line feed embedded in a quoted string does not terminate the string. The return is treated as another character in the string.
6. The maximum length of a quoted string returned from a query is 1000 characters.

Here are some invalid strings:

- `"Invalid string argument'` (quotes are not of the same type)
- `"test<EOI>"` (termination character is embedded in the string)

Block

Several oscilloscope commands use a block argument form, as defined in the table below.

Table 2-16: Block Argument

Symbol	Meaning
<NZDig>	A nonzero digit character in the range of 1–9
<Dig>	A digit character, in the range of 0–9
<DChar>	A character with the hexadecimal equivalent of 00 through FF (0 through 255 decimal)
<Block>	A block of data bytes defined as: <Block> ::= {#<NZDig><Dig>[<Dig>...][<DChar>...]|#0[<DChar>...]<terminator>}

<NZDig> specifies the number of <Dig> elements that follow. Taken together, the <NZDig> and <Dig> elements form a decimal integer that specifies how many <DChar> elements follow.

Command groups

The programmable interface conforms to Tektronix standard codes and formats except where noted. The interface also conforms to IEEE Std 488.2-1987 except where noted.

Acquisition command group

Acquisition commands set up the modes and functions that control how the instrument acquires signals and processes them into waveforms. Using these commands for acquiring waveforms, you can do the following:

- Start and stop acquisitions.
- Control whether each waveform is simply acquired, averaged, or enveloped over successive acquisitions of that waveform.
- Set the controls or conditions that start and stop acquisitions.
- Control acquisition of acquired channel waveforms.
- Set acquisition parameters.

Table 2-17: Acquisition commands

Command	Description
ACQuire?	Queries the current acquisition state.
ACQuire:FASTAcq:PALEtte	Sets or queries the waveform grading for fast acquisition mode.
ACQuire:FASTAcq:STATE	Sets or queries the state of fast acquisition mode.
ACQuire:MAXSamplerate?	Returns the maximum real-time sample rate.
ACQuire:MODe	Sets or queries the acquisition mode.
ACQuire:NUMACq?	Returns the number of waveform acquisitions that have occurred since starting acquisition with the `ACQuire:STATE RUN` command.
ACQuire:NUMAVg	Sets or queries number of acquisitions for an averaged waveform.
ACQuire:SEQuence:CURrent?	In single sequence acquisition mode, this query returns the number of acquisitions or measurements in the sequence completed so far.
ACQuire:SEQuence:MODe	In single sequence acquisition, the single sequence stop after count is based on number of acquisitions or measurements. Number of acquisitions is the only mode supported for this product.
ACQuire:SEQuence:NUMSEQuence	In single sequence acquisition mode, specify the number of acquisitions or measurements that comprise the sequence.
ACQuire:STATE	Starts, stops, or returns acquisition state.
ACQuire:STOPAfter	Sets or queries whether the acquisition is continuous or single sequence.

AFG Command Group

Use the AFG commands for Arbitrary Function Generator functionality. Requires option AFG.

Table 2-18: AFG commands

Command	Description
AFG:AMPLitude	Sets (or queries) the AFG amplitude in volts, peak to peak.
AFG:ARBitrary:SOUrce	Sets or queries the source name for the Arbitrary Waveform.
AFG:FREQuency	Sets (or queries) the AFG frequency, in Hz.
AFG:FUNCtion	Sets (or queries) which AFG function to execute.
AFG:HIGHLevel	Sets (or queries) the high level value of the output waveform, in volts.
AFG:LOWLevel	Sets (or queries) the low level value of the output waveform, in volts.
AFG:NOISEAdd:PERCent	Sets (or queries) the AFG additive noise level as a percentage.
AFG:NOISEAdd:STATE	Sets (or queries) the AFG additive noise state.
AFG:OFFSet	Sets (or queries) the AFG offset value, in volts.
AFG:OUTPut:LOAd:IMPEDance	Sets (or queries) the AFG output load impedance.
AFG:OUTPut:STATE	Sets (or queries) the AFG output state.
AFG:PERIod	Sets (or queries) the period of the AFG waveform, in seconds.
AFG:PULse:WIDth	Sets (or queries) the AFG pulse width, in seconds.
AFG:RAMP:SYMmetry	Sets (or queries) the AFG ramp symmetry as a percentage.
AFG:SQUare:DUty	Sets (or queries) the AFG duty cycle, as a percentage.

Alias command group

Alias commands allow you to define new commands as a sequence of standard commands. You might find this useful when repeatedly using the same commands to perform certain tasks like setting up measurements.

Aliases are similar to macros but do not include the capability to substitute parameters into alias bodies. The alias mechanism obeys the following rules:

- The alias name must consist of a valid IEEE 488.2 message unit, which may not appear in a message preceded by a colon, comma, or a command or query program header.
- The alias name may not appear in a message followed by program date, a colon, comma, or question mark.
- An alias name must be distinct from any keyword or keyword short form.
- An alias name cannot be redefined without first being deleted using one of the alias deletion functions.
- Alias names do not appear in response messages.
- The Alias commands are defined in Tektronix Standard Codes and Formats. Deviations between that standard and what is specified here will be considered errors unless specifically noted in the command description in this document.

Table 2-19: Alias commands

Command	Description
ALIas	Sets or queries the alias state.
ALIas:CATalog?	Returns a list of the currently defined alias labels.
ALIas:DEFine	Assigns a sequence of program messages to an alias label.
ALIas:DELEte	Removes a specified alias.
ALIas:DELEte:ALL	Deletes all existing aliases.
ALIas:DELEte:NAMe	Removes a specified alias.
ALIas:STATE	Sets or queries the alias state.

Bus command group

Use the commands in the Bus Command Group to configure a bus. These commands let you:

- Specify the bus type.
- Specify the signals to be used in the bus.
- Specify its display style.

NOTE. *Bus commands are present once a bus has been added.*

Bus Mnemonics

Commands specify the bus to use as a mnemonic in the header.

Table 2-20: Bus mnemonics

Symbol	Meaning
B<x>	A bus specifier; <x> is ≥1.

Table 2-21: Bus commands

Command	Description
BUS:ADDNew	Adds the specified bus.
BUS:B<x>:ARINC429A:SOUrce	Sets or queries the source for the specified ARINC429 bus.
BUS:B<x>:ARINC429A:THRESHold	Sets or queries the ARINC429 upper threshold for the specified bus.
BUS:B<x>:ARINC429A:POLARITY	Sets or queries the source polarity for the specified ARINC429 bus.
BUS:B<x>:ARINC429A:DATAFORmat	Sets or queries the format of the DATA field for the specified ARINC429 bus.
BUS:B<x>:ARINC429A:BITRate	Sets of queries the ARINC429 bit rate for the specified bus.
BUS:B<x>:ARINC429A:BITRate:CUSTom	Sets or queries the ARINC429 custom bit rate for the specified bus.
BUS:B<x>:AUDio:BITDelay	Sets or queries the number of delay bits for the specified AUDIO bus.
BUS:B<x>:AUDio:BITOrder	Specifies the bit order for the specified AUDIO bus.
BUS:B<x>:AUDio:CLOCk:POLarity	Sets or queries the clock polarity for the specified AUDIO bus.
BUS:B<x>:AUDio:CLOCk:SOUrce	Sets or queries the clock source waveform for the specified AUDIO bus.
BUS:B<x>:AUDio:CLOCk:THReshold	Sets or queries the Audio Clock source threshold for the specified bus.
BUS:B<x>:AUDio:DATa:POLarity	Specifies the data polarity for the specified AUDIO bus.
BUS:B<x>:AUDio:DATa:SIZe	Specifies the number of bits per word for the specified AUDIO bus.
BUS:B<x>:AUDio:DATa:SOUrce	Specifies the audio data source waveform for the specified AUDIO bus.
BUS:B<x>:AUDio:DATa:THReshold	Sets or queries the Audio Data source threshold for the specified bus.
BUS:B<x>:AUDio:DATa:WORDSize	Sets or queries the Audio bits per word for the specified bus.
BUS:B<x>:AUDio:FRAME:CLOCKBITSPERCHANNEL	Sets or queries the Audio bits of sync width for the specified bus.
BUS:B<x>:AUDio:FRAME:SIZe	Specifies the number of channels in each frame for the specified AUDIO bus.
BUS:B<x>:AUDio:TYPe	Specifies the audio format (type) for the specified AUDIO bus.

Table 2-21: Bus commands (cont.)

Command	Description
BUS:B<x>:AUDio:WORDSel:POLarity	Sets or queries the word select polarity for the specified AUDIO bus.
BUS:B<x>:AUDio:WORDSel:SOUrce	Specifies the word select source waveform for the AUDIO bus.
BUS:B<x>:AUDio:WORDSel:THReshold	Sets or queries the Audio Word Select source threshold for the specified bus.
BUS:B<x>:CAN:BITRate	Sets or queries the CAN bit rate.
BUS:B<x>:CAN:BITRate:VALue	Sets or queries CAN bit rate.
BUS:B<x>:CAN:FD:BITRate	Sets or queries the increased data phase bit rate used by CAN FD packets on the specified CAN bus.
BUS:B<x>:CAN:FD:BITRate:CUSTom	Sets or queries the custom bit rate for the increased data phase of CAN FD packets on the specified CAN bus.
BUS:B<x>:CAN:SAMPLEpoint	Sets or queries the sample point for the specified CAN bus.
BUS:B<x>:CAN:SIGNal	Sets or queries the signal type for the specified CAN bus.
BUS:B<x>:CAN:SOUrce	Sets or queries the CAN source channel.
BUS:B<x>:CAN:STANDard	Sets or queries which CAN standard specification to analyze the specified CAN bus with.
BUS:B<x>:CAN:THReshold	Sets or queries the source channel threshold for the specified CAN bus.
BUS:B<x>:DISplay:FORMat	Sets or queries how the data is represented in the busform for the specified bus.
BUS:B<x>:DISplay:LAYout	This command sets or queries the format a bus layer should use.
BUS:B<x>:ETHERnet:DATAMINUSTHRESHold	Sets or queries the Ethernet DATA Minus source threshold for the specified bus.
BUS:B<x>:ETHERnet:DATAPLUSTHRESHold	Sets or queries the Ethernet DATA Plus source threshold for the specified bus.
BUS:B<x>:ETHERnet:IPVFOUR	Sets or queries whether IPV4 packets are available for triggering on Ethernet.
BUS:B<x>:ETHERnet:LOWTHRESHold	Sets or queries the Ethernet DATA source Low threshold for the specified bus.
BUS:B<x>:ETHERnet:QTAGGING	Sets or queries whether Q-Tagging packets are available for triggering on Ethernet.
BUS:B<x>:ETHERnet:SIGNALTYpe	Sets or queries the Ethernet signal type for the specified bus.
BUS:B<x>:ETHERnet:SOUrce	Specifies the Ethernet data source for differential input.
BUS:B<x>:ETHERNET:SOUrce:DMINus	Sets or queries the Ethernet DMINus source.
BUS:B<x>:ETHERNET:SOUrce:DPLUs	Sets or queries the Ethernet DPLUs source.
BUS:B<x>:ETHERnet:THRESHold	Sets or queries the Ethernet DATA source High threshold for the specified bus.
BUS:B<x>:ETHERnet:TYPe	Specifies the Ethernet standard type: 10Base-T or 100Base-T.
BUS:B<x>:FLEXray:BITRate	Sets or queries the FlexRay bus bit rate.
BUS:B<x>:FLEXray:BITRate:CUSTom	Sets or queries the FlexRay custom bit rate for the specified bus.
BUS:B<x>:FLEXray:CHannel	Sets or queries the FlexRay bus channel.
BUS:B<x>:FLEXray:LOWTHRESHold	Sets or queries the FlexRay data source low threshold for the specified bus.
BUS:B<x>:FLEXray:SIGnal	Sets or queries the FlexRay probe.
BUS:B<x>:FLEXray:SOUrce	Sets or queries the FlexRay bus source.
BUS:B<x>:FLEXray:SOUrce:TXRX	Sets or queries the FlexRay TxRx data source for the specified bus.
BUS:B<x>:FLEXray:THRESHold	Sets or queries the FlexRay data source threshold for the specified bus.
BUS:B<x>:FLEXray:TXRXTHRESHold	Sets or queries the FlexRay data source TxRx threshold for the specified bus.

Table 2-21: Bus commands (cont.)

Command	Description
BUS:B<x>:I2C:CLOCk:SOUrce	Sets or queries the I2C clock (SCLK) source for the specified bus.
BUS:B<x>:I2C:CLOCk:THReshold	Sets or queries the I2C Clock (SCLK) source threshold for the specified bus.
BUS:B<x>:I2C:DATa:SOUrce	Sets or queries the I2C data (SDA) source for the specified bus.
BUS:B<x>:I2C:DATa:THReshold	Sets or queries the I2C Data (SDA) source threshold for the specified bus.
BUS:B<x>:I2C:RWINADDR	Determines whether decoded I2C slave addresses are pure seven-bit values, or have the R/W* combined with them.
BUS:B<x>:LABel:COLor	Sets or queries the color of the specified bus label.
BUS:B<x>:LABel:FONT:BOLD	Sets or queries the bold state of the specified bus label.
BUS:B<x>:LABel:FONT:ITALic	Sets or queries the italic state of the specified bus label.
BUS:B<x>:LABel:FONT:SIZE	Sets or queries the font size of the specified bus label.
BUS:B<x>:LABel:FONT:TYPE	Sets or queries the font type of the specified bus label, such as Arial or Times New Roman.
BUS:B<x>:LABel:FONT:UNDERline	Sets or queries the underline state of the specified bus label.
BUS:B<x>:LABel:name	Sets or queries the waveform label for the specified bus.
BUS:B<x>:LABel:XPOS	Sets or queries the x-position of the specified bus' label.
BUS:B<x>:LABel:YPOS	Sets or queries the y-position of the specified bus' label.
BUS:B<x>:LIN:BITRate	Sets or queries the LIN bus bit rate.
BUS:B<x>:LIN:IDFORmat	Sets or queries LIN bus id format.
BUS:B<x>:LIN:POLarity	Sets or queries the LIN bus polarity.
BUS:B<x>:LIN:SAMPLEpoint	Specifies the point to sample during each bit period, as a percent, for the specified LIN bus.
BUS:B<x>:LIN:SOUrce	Sets or queries sets the LIN bus source.
BUS:B<x>:LIN:SOUrce:THReshold	Sets or queries the LIN source threshold for the specified bus.
BUS:B<x>:LIN:STANDard	Sets or queries the LIN bus standard.
BUS:B<x>:LIN:BITRate:CUSTom	Sets or queries LIN custom bit rate for the specified bus.
BUS:B<x>:MIL1553B:SOUrce	Sets or queries the source for the specified MIL-STD-1553 bus.
BUS:B<x>:MIL1553B:THRESHold	Sets or queries the MIL-STD-1553 upper threshold for the specified bus.
BUS:B<x>:MIL1553B:LOWTHRESHold	Sets or queries the MIL-STD-1553 lower threshold for the specified bus.
BUS:B<x>:MIL1553B:POLarity	Sets or queries the source polarity for the specified MIL-STD-1553 bus.
BUS:B<x>:MIL1553B:RESPonsetime:MINimum	Sets or queries the minimum response time to a valid command issued for the specified MIL-STD-1553 bus.
BUS:B<x>:MIL1553B:RESPonsetime:MAXimum	Sets or queries the maximum response time to a valid command issued for the specified MIL-STD-1553 bus.
BUS:B<x>:PARallel:ALLTHResholds	Sets or queries the threshold for all sources for the parallel bus.
BUS:B<x>:PARallel:ALLTHResholds:APPly	Sets all of the data source thresholds to the value of the allMRefs parameter for the parallel bus.
BUS:B<x>:PARallel:BIT<n>SOUrce	Sets or queries the specified bit source for specified parallel bus.
BUS:B<x>:PARallel:BIT<n>SOUrce:THReshold	Sets or queries the specified bit source threshold for the specified parallel bus.

Table 2-21: Bus commands (cont.)

Command	Description
BUS:B<x>:PARallel:CLOCk:EDGE	Determines which edges of its clock signal cause a clocked parallel bus to sample new states.
BUS:B<x>:PARallel:CLOCk:ISCLOCKED	Determines whether the bus operates in a clocked or asynchronous fashion.
BUS:B<x>:PARallel:CLOCkSOUrce	Sets or queries the Parallel clock source for the specified bus.
BUS:B<x>:PARallel:CLOCKSOUrce:THReshold	Sets or queries the bit source threshold for the parallel bus.
BUS:B<x>:RS232C:BITRate	Sets or queries the RS-232 bit rate for the specified bus.
BUS:B<x>:RS232C:BITRate:CUSTom	Sets or queries the RS232 custom bit rate for the specified bus.
BUS:B<x>:RS232C:DATABits	Sets or queries the number of RS-232 data bits for the specified bus.
BUS:B<x>:RS232C:DELIMiter	Sets or queries the RS-232 delimiting value for a packet on the specified bus.
BUS:B<x>:RS232C:DISplaymode	Sets or queries the display mode for the specified bus.
BUS:B<x>:RS232C:PARity	Sets or queries the RS-232 parity for the specified bus.
BUS:B<x>:RS232C:POLarity	Sets or queries the RS-232 polarity for the specified bus.
BUS:B<x>:RS232C:SOUrce	Sets or queries the RS-232 polarity for the specified bus.
BUS:B<x>:RS232C:SOUrce:THReshold	Sets or queries the RS232 source threshold for the specified bus.
BUS:B<x>:SPI:BITOrder	Sets or queries the shift direction used to de-serialize data for the SPI mode of the bus.
BUS:B<x>:SPI:CLOCk:POLarity	Sets or queries the SPI clock (SCLK) polarity for the specified bus.
BUS:B<x>:SPI:CLOCk:SOUrce	Sets or queries the SPI clock (SCLK) source for the specified bus.
BUS:B<x>:SPI:CLOCk:THReshold	Sets or queries the SPI Clock (SCLK) source threshold for the specified bus.
BUS:B<x>:SPI:DATa:POLarity	Sets or queries the SPI data (DATA) polarity for the specified bus.
BUS:B<x>:SPI:DATa:SIZe	Sets or queries the number of bits per word for the specified bus.
BUS:B<x>:SPI:DATa:SOUrce	Sets or queries the SPI data (DATA) source for the specified bus.
BUS:B<x>:SPI:DATa:THReshold	Sets or queries the SPI Data (SDA) source threshold for the specified bus.
BUS:B<x>:SPI:FRAMING	Sets or queries the SPI bus framing.
BUS:B<x>:SPI:IDLETime	Sets or queries the SPI bus idle time.
BUS:B<x>:SPI:SELect:POLarity	Sets or queries the SPI Slave Select (SS) polarity for the specified bus.
BUS:B<x>:SPI:SELect:SOUrce	Sets or queries the SPI Slave Select (SS) source for the specified bus.
BUS:B<x>:SPI:SELect:THReshold	Sets or queries the SPI Select (SS) source threshold for the specified bus.
BUS:B<x>:TYPe	Sets or queries the bus type specified.
BUS:B<x>:USB:BITRate	Sets or queries the USB bit rate for the specified bus.
BUS:B<x>:USB:SOUrce	Sets or queries the USB Data Source for the specified bus.
BUS:B<x>:USB:SOUrce:DMINus	Sets or queries the USB Data Source for D- input for the specified bus.
BUS:B<x>:USB:SOUrce:DPLUs	Sets or queries the USB Data Source for D+ input for the specified bus.
BUS:B<x>:USB:DATAMINUSTHRESHold	Sets or queries the USB DATA Minus source threshold for the specified bus.
BUS:B<x>:USB:DATAPLUSTHRESHold	Sets or queries the USB DATA Plus source threshold for the specified bus.
BUS:B<x>:USB:LOWTHRESHold	Sets or queries the USB DATA source Low threshold for the specified bus.
BUS:B<x>:USB:SIGNALTYpe	Sets or queries the USB signal type for the specified bus.

Table 2-21: Bus commands (cont.)

Command	Description
BUS:B<x>:USB:THRESHold	Sets or queries the USB DATA source High threshold for the specified bus.
BUS:DELete	Deletes the specified bus.
BUS:LIST?	Lists all currently defined bus.
BUSTABle:ADDNew	Adds the specified bus table.
BUSTABle:DELete	Deletes the specified bus table.
BUSTABle:LIST?	Lists all currently defined bus tables.
DISplay:WAVEView<x>:BUS:B<x>:STATE	Sets or queries the state of the specified bus in the specified waveview.
DISplay:WAVEView<x>:BUS:B<x>:VERTical:POSition	Sets or queries the vertical position of the specified bus in the specified waveview.

Calibration command group

The Calibration commands provide information about the current state of instrument calibration and allow you to initiate signal path calibration (SPC).

NOTE. *When running SPC through the remote interface, calibration status cannot be obtained until after the SPC completes, which can take several minutes. Any remote command that performs an action on the oscilloscope is also disabled until the SPC is complete.*

Table 2-22: Calibration commands

Command	Description
*CAL?	Instructs the instrument to perform signal path calibration and returns the calibration status when complete. Takes several minutes to run.
CALibrate?	Returns the calibration status.
CALibrate:INTERNal	Starts the signal path calibration. Takes several minutes to run.
CALibrate:INTERNal:STARt	Starts the signal path calibration.
CALibrate:INTERNal:STATus?	Returns the status of the signal path calibration.
CALibrate:PWRUpstatus?	Returns the current status of the power-up calibration.
TOUCHSCReen:CALibrate	Launches the touchscreen calibration.
TOUCHSCReen:STATe	Sets or queries the enabled state of the touch screen.

Cursor command group

Use the commands in the Cursor Command Group to control the cursor display and readout. You can use these commands to control the setups for each cursor, such as waveform source, and cursor position.

You can also use the commands to select one of the following cursor functions:

- **Off.** Shuts off the display of all cursors.
- **Vertical bars.** Displays vertical bar cursors, which provide traditional horizontal unit readouts for Cursor 1 (bar1), Cursor 2 (bar2), the delta between them, and 1/delta (results in frequency when the horizontal unit is time). Vertical bars are another name for vertical screen cursors.
- **Horizontal bars.** Displays horizontal bar cursors, which provide traditional vertical unit readouts for Cursor 1 (bar1), Cursor 2 (bar2), and the delta between them. Horizontal bars are another name for horizontal screen cursors.
- **Waveform cursors.** Consists of two cursors you can independently assign to a waveform. Waveform cursors enable you to conveniently measure waveform amplitude and time at specific points on the waveform. In XY or XYZ format, waveform cursors indicate the amplitude position of an XY pair (Ch1 vs Ch2 voltage, where Ch1 is the X axis and Ch2 is the Y axis) relative to the trigger.
- **Screen cursors.** Consist of two pairs of horizontal and vertical bar cursors. You can use these cursors to indicate an arbitrary position within the waveform display area. Screen cursors are basically just turning on horizontal bars and vertical bars at the same time. These cursors have no association with any waveform, except that they inherit the color of the waveform they are assigned to.

NOTE. *Cursor commands are available once a view has been added.*

Table 2-23: Cursor commands

Command	Description
DISplay:MATHFFTView<x>:CURSor:ASOUrce?	Queries the cursor source for plot cursor A.
DISplay:MATHFFTView<x>:CURSor:BSOUrce?	Queries the cursor source for plot cursor B.
DISplay:MATHFFTView<x>:CURSor:DDT?	Queries the delta V over delta T cursor readout value of the specified cursor in the specified view.
DISplay:MATHFFTView<x>:CURSor:FUNCtion	Sets or queries the cursor type of the specified cursor in the specified view.
DISplay:MATHFFTView<x>:CURSor:HBArs:APOSition	Sets or returns the vertical cursor A position of the specified cursor in the specified view.

Table 2-23: Cursor commands (cont.)

Command	Description
DISplay:MATHFFTView<x>:CURSor:HBArs:AUNIts?	Queries cursor A vertical units of the specified cursor in the specified view.
DISplay:MATHFFTView<x>:CURSor:HBArs:BPOSition	Sets or returns the vertical cursor B position of the specified cursor in the specified view.
DISplay:MATHFFTView<x>:CURSor:HBArs:BUNIts?	Queries the cursor B vertical units of the specified cursor in the specified view.
DISplay:MATHFFTView<x>:CURSor:HBArs:DELTa?	Queries the delta V cursor readout value of the specified cursor in the specified view.
DISplay:MATHFFTView<x>:CURSor:MODe	Sets or returns the cursor tracking mode of the specified cursor in the specified view.
DISplay:MATHFFTView<x>:CURSor:ONEOVERDELTATVALUE?	Queries the one over delta T cursor readout value of the specified cursor in the specified view.
DISplay:MATHFFTView<x>:CURSor:SCREEN:AXPOSition	Sets or returns the horizontal cursor A position of the specified cursor in the specified view.
DISplay:MATHFFTView<x>:CURSor:SCREEN:AYPOSition	Sets or returns the vertical cursor A position of the specified cursor in the specified view.
DISplay:MATHFFTView<x>:CURSor:SCREEN:BXPOSition	Sets or returns the horizontal cursor B position of the specified cursor in the specified view.
DISplay:MATHFFTView<x>:CURSor:SCREEN:BYPOSition	Sets or returns the vertical cursor B position of the specified cursor in the specified view.
DISplay:MATHFFTView<x>:CURSor:STATE	Sets or queries the visible state of the specified cursor in the specified view.
DISplay:MATHFFTView<x>:CURSor:VBArs:APOSition	Sets or queries the horizontal cursor A position of the specified cursor in the specified view.
DISplay:MATHFFTView<x>:CURSor:VBArs:BPOSition	Sets or queries the horizontal cursor B position of the specified cursor in the specified view.
DISplay:MATHFFTView<x>:CURSor:VBArs:DELTa?	Queries the delta T cursor readout value of the specified cursor in the specified view.
DISplay:MATHFFTView<x>:CURSor:VBArs:UNIts?	Queries the cursor A vertical units of the specified cursor in the specified view.
DISplay:MATHFFTView<x>:CURSor:WAVEform:APOSition	Sets or queries the waveform cursor A position in the specified plot view.
DISplay:MATHFFTView<x>:CURSor:WAVEform:BPOSition	Sets or queries the waveform cursor B position in the specified plot view.
DISplay:PLOTView<x>:CURSor:ASOUrce?	Queries the cursor source for plot cursor A.
DISplay:PLOTView<x>:CURSor:BSOUrce?	Queries the cursor source for plot cursor B.
DISplay:PLOTView<x>:CURSor:DDT?	Queries the delta V over delta T cursor readout value of the specified cursor in the specified view.
DISplay:PLOTView<x>:CURSor:FUNCtion	Sets or queries the cursor mode of the specified cursor in the specified view.
DISplay:PLOTView<x>:CURSor:HBArs:APOSition	Sets or queries the vertical cursor A position of the specified cursor in the specified view.
DISplay:PLOTView<x>:CURSor:HBArs:AUNIts?	Sets or queries the cursor A vertical units of the specified cursor in the specified view.

Table 2-23: Cursor commands (cont.)

Command	Description
DISplay:PLOTView<x>:CURSor:HBArs:BPOSition	Sets or queries the vertical cursor B position of the specified cursor in the specified view.
DISplay:PLOTView<x>:CURSor:HBArs:BUNIts?	Sets or queries the cursor B vertical units of the specified cursor in the specified view.
DISplay:PLOTView<x>:CURSor:HBArs:DELTa?	Sets or queries the delta V cursor readout value of the specified cursor in the specified view.
DISplay:PLOTView<x>:CURSor:MODe	Sets or queries the cursor tracking mode of the specified cursor in the specified view.
DISplay:PLOTView<x>:CURSor:ONEOVERDELTATVALUE?	Sets or queries the one over delta T cursor readout value of the specified cursor in the specified view.
DISplay:PLOTView<x>:CURSor:SCREEN:AXPOSition	Sets or queries the horizontal cursor A position of the specified cursor in the specified view.
DISplay:PLOTView<x>:CURSor:SCREEN:AYPOSition	Sets or queries the vertical cursor A position of the specified cursor in the specified view.
DISplay:PLOTView<x>:CURSor:SCREEN:BXPOSition	Sets or queries the horizontal cursor B position of the specified cursor in the specified view.
DISplay:PLOTView<x>:CURSor:SCREEN:BYPOSition	Sets or queries the vertical cursor B position of the specified cursor in the specified view.
DISplay:PLOTView<x>:CURSor:SPLITMODE	Sets or queries the cursor source mode in the specified view.
DISplay:PLOTView<x>:CURSor:STATE	Sets or queries the visible state of the cursor of the specified cursor in the specified view.
DISplay:PLOTView<x>:CURSor:VBArs:APOSition	Sets or queries the horizontal cursor A position of the specified cursor in the specified view.
DISplay:PLOTView<x>:CURSor:VBArs:BPOSition	Sets or queries the horizontal cursor B position of the specified cursor in the specified view.
DISplay:PLOTView<x>:CURSor:VBArs:DELTa?	Queries the delta T cursor readout value of the specified cursor in the specified view.
DISplay:PLOTView<x>:CURSor:VBArs:UNIts?	Queries the VBArs cursor readout units of the specified cursor in the specified view.
DISplay:PLOTView<x>:CURSor:WAVEform:APOSition	Sets or queries the horizontal cursor A position of the specified cursor in the specified view.
DISplay:PLOTView<x>:CURSor:WAVEform:BPOSition	Sets or queries the horizontal cursor B position of the specified cursor in the specified view.
DISplay:REFFFTView<x>:CURSor:ASOUrce?	Queries the cursor source for plot cursor A
DISplay:REFFFTView<x>:CURSor:BSOUrce?	Queries the cursor source for plot cursor B.
DISplay:REFFFTView<x>:CURSor:DDT?	Queries the delta V over delta T cursor readout value of the specified cursor in the specified view.
DISplay:REFFFTView<x>:CURSor:FUNCtion	Sets or queries the cursor type of the specified cursor in the specified view.
DISplay:REFFFTView<x>:CURSor:HBArs:APOSition	Sets or queries the vertical cursor A position of the specified cursor in the specified view.

Table 2-23: Cursor commands (cont.)

Command	Description
DISplay:REFFFTView<x>:CURSor:HBArs:AUNIts?	Queries cursor A vertical units of the specified cursor in the specified view.
DISplay:REFFFTView<x>:CURSor:HBArs:BPOSition	Sets or queries the vertical cursor B position of the specified cursor in the specified view.
DISplay:REFFFTView<x>:CURSor:HBArs:BUNIts?	Queries the cursor B vertical units of the specified cursor in the specified view.
DISplay:REFFFTView<x>:CURSor:HBArs:DELTa?	Queries the delta V cursor readout value of the specified cursor in the specified view.
DISplay:REFFFTView<x>:CURSor:MODe	Sets or queries the cursor tracking mode of the specified cursor in the specified view.
DISplay:REFFFTView<x>:CURSor:ONEOVERDELTATVALUE?	Queries the one over delta T cursor readout value of the specified cursor in the specified view.
DISplay:REFFFTView<x>:CURSor:SCREEN:AXPOSition	Sets or queries the horizontal cursor A position of the specified cursor in the specified view.
DISplay:REFFFTView<x>:CURSor:SCREEN:AYPOSition	Sets or queries the vertical cursor A position of the specified cursor in the specified view.
DISplay:REFFFTView<x>:CURSor:SCREEN:BXPOSition	Sets or queries the horizontal cursor B position of the specified cursor in the specified view.
DISplay:REFFFTView<x>:CURSor:SCREEN:BYPOSition	Sets or queries the vertical cursor B position of the specified cursor in the specified view.
DISplay:REFFFTView<x>:CURSor:SPLITMODE	Sets or queries whether both cursors have same or different source.
DISplay:REFFFTView<x>:CURSor:STATE	Sets or queries the visible state of the cursor of the specified cursor n the specified view.
DISplay:REFFFTView<x>:CURSor:VBArs:APOSition	Sets or queries the horizontal cursor A position of the specified cursor in the specified view.
DISplay:REFFFTView<x>:CURSor:VBArs:BPOSition	Sets or queries the horizontal cursor B position of the specified cursor in the specified view.
DISplay:REFFFTView<x>:CURSor:VBArs:DELTa?	Queries the delta T cursor readout value of the specified cursor in the specified view.
DISplay:REFFFTView<x>:CURSor:VBArs:UNIts?	Queries cursor A vertical units of the specified cursor in the specified view.
DISplay:REFFFTView<x>:CURSor:WAVEform:AHPOSition?	Queries the value of the cursor A horizontal position.
DISplay:REFFFTView<x>:CURSor:WAVEform:APOSition	Sets or returns the waveform cursor A position in the specified plot view.
DISplay:REFFFTView<x>:CURSor:WAVEform:AVPOSition?	Queries the value of the cursor A vertical position.
DISplay:REFFFTView<x>:CURSor:WAVEform:BHPOSition?	Queries the value of the cursor B horizontal position.
DISplay:REFFFTView<x>:CURSor:WAVEform:BPOSition	Sets or returns the waveform cursor B position in the specified plot view.

Table 2-23: Cursor commands (cont.)

Command	Description
DISplay:REFFFTView<x>:CURSor:WAVEform:BVPOSition?	Queries the value of the cursor B vertical position.
DISplay:WAVEView<x>:CURSor?	Queries the cursor parameters for the specified waveview.
DISplay:WAVEView<x>:CURSor:CURSOR<x>?	Queries the cursor parameters for the specified cursor in the specified waveview.
DISplay:WAVEView<x>:CURSor:CURSOR<x>:ASOUrce	Sets or queries the cursor A source of the specified cursor in the specified waveview.
DISplay:WAVEView<x>:CURSor:CURSOR<x>:BSOUrce	Sets or queries the cursor B source of the specified cursor in the specified waveview.
DISplay:WAVEView<x>:CURSor:CURSOR<x>:DDT?	Returns the delta V over delta T cursor readout value of the specified cursor in the specified waveview.
DISplay:WAVEView<x>:CURSor:CURSOR<x>:FUNCtion	Sets or queries the cursor mode (SCREEN or DATA) of the specified cursor in the specified waveview.
DISplay:WAVEView<x>:CURSor:CURSOR<x>:HBArs:APOSition	Sets or queries the vertical cursor A position of the specified cursor in the specified waveview.
DISplay:WAVEView<x>:CURSor:CURSOR<x>:HBArs:AUNIts?	Queries the cursor A vertical units of the specified cursor in the specified waveview.
DISplay:WAVEView<x>:CURSor:CURSOR<x>:HBArs:BPOSition	Sets or queries the vertical cursor B position of the specified cursor in the specified waveview.
DISplay:WAVEView<x>:CURSor:CURSOR<x>:HBArs:BUNIts?	Queries the cursor B vertical units of the specified cursor in the specified waveview.
DISplay:WAVEView<x>:CURSor:CURSOR<x>:HBArs:DELTa?	Sets or queries the delta V cursor readout value over the history period.
DISplay:WAVEView<x>:CURSor:CURSOR<x>:MODe	Sets or queries the cursor tracking mode of the specified cursor in the specified waveview.
DISplay:WAVEView<x>:CURSor:CURSOR<x>:ONEOVERDELTATVALUE?	Sets or queries the one over delta T cursor readout value of the specified cursor in the specified waveview.
DISplay:WAVEView<x>:CURSor:CURSOR<x>:SCREEN:AXPOSition	Sets or queries the horizontal cursor A position of the specified cursor in the specified waveview.
DISplay:WAVEView<x>:CURSor:CURSOR<x>:SCREEN:AYPOSition	Sets or queries the vertical cursor A position of the specified cursor in the specified waveview.
DISplay:WAVEView<x>:CURSor:CURSOR<x>:SCREEN:BXPOSition	Sets or queries the horizontal cursor B position of the specified cursor in the specified waveview.
DISplay:WAVEView<x>:CURSor:CURSOR<x>:SCREEN:BYPOSition	Sets or queries the vertical cursor B position of the specified cursor in the specified waveview.
DISplay:WAVEView<x>:CURSor:CURSOR<x>:SPLITMODE	Sets or queries the cursor source mode in the specified view.
DISplay:WAVEView<x>:CURSor:CURSOR<x>:STATE	Sets or queries the visible state of the cursor of the specified cursor in the specified waveview.
DISplay:WAVEView<x>:CURSor:CURSOR<x>:VBArs:APOSition	Sets or queries the horizontal cursor A position of the specified cursor in the specified waveview.

Table 2-23: Cursor commands (cont.)

Command	Description
DISplay:WAVEView<x>:CURSor:CURSOR<x>:VBArs:BPOSition	Sets or queries the horizontal cursor B position of the specified cursor in the specified waveview.
DISplay:WAVEView<x>:CURSor:CURSOR<x>:VBArs:DELTa?	Sets or queries the delta T cursor readout value of the specified cursor in the specified waveview.
DISplay:WAVEView<x>:CURSor:CURSOR<x>:VBArs:UNIts?	Queries cursor A vertical units of the specified cursor in the specified waveview.
DISplay:WAVEView<x>:CURSor:CURSOR<x>:WAVEform:APOSition	Sets or queries the horizontal cursor A position of the specified cursor in the specified waveview.
DISplay:WAVEView<x>:CURSor:CURSOR<x>:WAVEform:BPOSition	Sets or queries the horizontal cursor B position of the specified cursor in the specified waveview.

Digital command group

Use the commands in the Digital Command Group to acquire up to 64 digital signals and analyze them. Digital channels are only available when a digital probe is attached to the super channel.

Table 2-24: Digital commands

Command	Description
CH<x>_DALL:LABel:COLor	Sets or queries the color of the specified digital group label.
CH<x>_DALL:LABel:FONT:BOLD	Sets or queries the bold state of the specified digital group.
CH<x>_DALL:LABel:FONT:ITALic	Sets or queries the italic state of the specified digital group.
CH<x>_DALL:LABel:FONT:SIZE	Sets or queries the font size of the specified digital group.
CH<x>_DALL:LABel:FONT:TYPE	Sets or queries the font type of the specified digital group, such as Arial or Times New Roman.
CH<x>_DALL:LABel:FONT:UNDERline	Sets or queries the underline state of the specified digital group.
CH<x>_DALL:LABel:NAMe	Sets or queries the label of the specified digital group.
CH<x>_D<x>:LABel:COLor	Sets or queries the color of the label of the specified digital bit.
CH<x>_D<x>:LABel:FONT:BOLD	Sets or queries the bold state of the label of the specified digital bit.
CH<x>_D<x>:LABel:FONT:ITALic	Sets or queries the italic state of the label of the specified digital bit.
CH<x>_D<x>:LABel:FONT:SIZE	Sets or queries the font size of the label of the specified digital bit
CH<x>_D<x>:LABel:FONT:TYPE	Sets or queries the font type of the label of the specified digital bit,
CH<x>_D<x>:LABel:FONT:UNDERline	Dets or queries the underline state of the label of the specified digital bit.
CH<x>_D<x>:LABel:NAMe	Sets or queries the label of the specified digital bit.
REF<x>_DALL:LABel:COLor	Sets or queries the color of the specified digital group.
REF<x>_DALL:LABel:FONT:BOLD	Sets or queries the bold state of the specified digital group.
REF<x>_DALL:LABel:FONT:ITALic	Sets or queries the italic state of the specified digital group.
REF<x>_DALL:LABel:FONT:SIZE	Sets or queries the font size of the specified digital group.
REF<x>_DALL:LABel:FONT:TYPE	Sets or queries the font type of the specified digital group.
REF<x>_DALL:LABel:FONT:UNDERline	Sets or queries the underline state of the specified digital group.
REF<x>_DALL:LABel:NAMe	Sets or queries the label of the specified digital group.
REF<x>_DALL:LABel:XPOS	Sets or queries the x-position of the label of the specified digital group.
REF<x>_DALL:LABel:YPOS	Sets or queries the y-position of the label of the specified digital group.
REF<x>_D<x>:LABel:COLor	Sets or queries the color of the label of the specified digital channel.
REF<x>_D<x>:LABel:FONT:BOLD	Sets or queries the bold state of the label of the specified digital bit.
REF<x>_D<x>:LABel:FONT:ITALic	Sets or queries the italic state of the label of the specified digital bit.
REF<x>_D<x>:LABel:FONT:SIZE	Sets or queries the font size of the label of the specified digital bit.
REF<x>_D<x>:LABel:FONT:TYPE	Sets or queries the font type of the label of the specified digital bit.
REF<x>_D<x>:LABel:FONT:UNDERline	Sets or queries the underline state of the label of the specified digital bit.
REF<x>_D<x>:LABel:NAMe	Sets or queries the label of the specified digital bit.
REF<x>_D<x>:LABel:XPOS	Sets or queries the x-position of the label of the specified digital bit.

Table 2-24: Digital commands (cont.)

Command	Description
REF<x>_D<x>:LABel:YPOS	Sets or queries the y-position of the label of the specified digital channel.
DIGGRP<x>:D<x>:THReshold	Sets or queries the threshold level in volts for specified digital channel.
DIGGRP<x>:THReshold	Sets the digital threshold of all bits on specified digital channel group.

Display control command group

Display commands can be found in this section as well as the sections of related components. These commands control general oscilloscope settings, such as the intensity of the graticule, stacked or overlay display mode, and the fastacq color palette. Display commands also control how and where waveforms are shown, their position on screen, and zoom settings applied to the view. For example, display commands can turn on or off the display of channels or set the selected source.

Some actions can create a new view which can have its own settings. For example, adding a histogram will create a new view where the Histogram plot is displayed. Each view acts as a separate window within the oscilloscope application and can be rearranged or annotated as desired.

A WaveView is the primary view used for viewing inputs and time-domain signals. Buses, non-FFT maths, refs, analog and digital channels, and time-trends are displayed in the WaveView.

A PlotView is used for viewing measurement results and other plotted data. Histograms, eye diagrams, XY/XYZ plots, FFTs, and other plots are shown in individual PlotViews.

Each of these views can have separate settings, zoom, cursors, and annotations. Display commands which are view specific have a view parameter in the programmable interface, such as DISPLAY:WAVEView<x>: ... or DISPLAY:PLOTView<x>: ... Selected source can also be specified on a per-view basis. The overall selected source is determined by the selected view and the selected source within that view.

PlotViews and WaveViews have some differences in command syntax due to differences in view functionality. For example, WaveViews and PlotViews have a different zoom model. The commands for specifying the zoom reflects these differences, and different command syntax is available depending on the view.

Table 2-25: Display control commands

Command	Description
DISplay?	Returns current display settings.
DISplay:COLors	Sets or queries the color mode for the graticule and waveform display.
DISplay:GLObal:B<x>:STATE	Sets or queries the display mode (on or off) of the specified bus.
DISplay:GLObal:CH<x>:STATE	Sets or queries the display mode (on or off) of the specified channel (both analog and digital).
DISplay:GLObal:MATH<x>:STATE	Sets or queries the display mode (on or off) of the specified math.
DISplay:GLObal:PLOT<x>:STATE	Sets or queries the display mode (on or off) of the specified time trend plot.
DISplay:GLObal:REF<x>:STATE	Sets or queries the display mode (on or off) of the specified reference.
DISplay:INTENSITy?	Returns the waveform and graticule saturation levels.
DISplay:INTENSITy:BACKLight	Sets or queries the waveform backlight intensity settings.

Table 2-25: Display control commands (cont.)

Command	Description
DISplay:INTENSITy:BACKLight:AUTODim:ENAble	Sets or queries the state of the display auto-dim feature.
DISplay:INTENSITy:BACKLight:AUTODim:TIMe	Sets or queries the amount of time, in minutes, to wait for no user interface activity before automatically dimming the display.
DISplay:MATHFFTView<x>:AUTOScale	Sets or returns the enabled state of autoscale for plots.
DISplay:MATHFFTView<x>:GRIDlines	Sets or queries the grid lines setting of the plot.
DISplay:MATHFFTView<x>:MATH:MATH<x>:STATE	Sets or queries the state of the specified math waveform in the specified waveview.
DISplay:MATHFFTView<x>:XAXIS:SCALE	Sets or queries the x-axis scale setting for FFT Math waveforms.
DISplay:MATHFFTView<x>:YAXIS:SCALE	Sets or queries the vertical scale setting for FFT Maths.
DISplay:PERSistence	Sets or queries display persistence setting.
DISplay:PERSistence:RESET	Clears the persistence data.
DISplay:PLOTView<x>:AUTOScale	Sets or queries the enabled state of autoscale for plots.
DISplay:PLOTView<x>:GRIDlines	Sets or queries the Grid lines setting of the specified plot.
DISPLAY:PLOTVIEW<x>:XAXIS:SCALE	Sets or queries the horizontal scale setting for applicable plot.
DISPLAY:PLOTVIEW<x>:YAXIS:SCALE	Sets or queries the vertical scale setting for applicable plots.
DISplay:REFFFTView<x>:AUTOScale	Sets or queries the enabled state of auto-scale for plots.
DISplay:REFFFTView<x>:GRIDlines	Sets or returns the grid lines setting of the plot.
DISplay:REFFFTView<x>:REF:REF<x>:STATE	Sets or queries the state of the specified reference waveform in the specified waveview.
DISplay:REFFFTView<x>:XAXIS:SCALE	Sets or queries the x-axis scale setting for REFFFT.
DISplay:SELect:BUS	Sets or queries the overall selected bus.
DISplay:SELect:MATH	Sets or queries the overall selected math.
DISplay:SELect:REFerence	Sets or queries the overall selected reference waveform.
DISplay:SELect:SOUrce	Sets or queries the overall selected source.
DISplay:SELect:VIEW	Sets or queries the selected view.
DISplay:SELect:WAVEView<x>:SOUrce	Sets or queries the selected source in the given waveview.
DISplay:VARpersist	Sets or queries the persistence decay time.
DISplay:WAVEView<x>:BUS:B<x>:STATE	Sets or queries the state of the specified bus in the specified waveview.
DISplay:WAVEView<x>:BUS:B<x>:VERTical:POSition	Sets or queries the vertical position of the specified bus in the specified waveview.
DISplay:WAVEView<x>:CH<x>:STATE	Sets or queries the state of the specified channel in the specified waveview.
DISplay:WAVEView<x>:CH<x>:VERTical:POSition	Sets or queries the vertical position f the specified channel in the specified waveview in divisions.
DISplay:WAVEView<x>:CH<x>:VERTical:SCAle	Sets or queries the vertical scale of the specified channel in volts per division within the specified waveview.
DISplay:WAVEView<x>:CH<x>_DALL:STATE	Sets or queries the display state of the specified digital channels in the specified waveview.

Table 2-25: Display control commands (cont.)

Command	Description
DISplay:WAVEView<x>:CH<x>_DALL:VERTical:POSition	Sets or queries the vertical position of the specified digital channel in the specified waveview in divisions.
DISplay:WAVEView<x>:CH<x>_D<x>:STATE	Sets or queries the display state of the specified digital channel in the specified waveview.
DISplay:WAVEView<x>:FILTer	Sets or queries the type of interpolation filter for the display.
DISplay:WAVEView<x>:GRAticule	Selects or queries the type of graticule that is displayed.
DISplay:WAVEView<x>:INTENSITy:GRATicule	Sets or queries the graticule saturation level.
DISplay:WAVEView<x>:INTENSITy:WAVEform	Sets or queries the waveform saturation level.
DISplay:WAVEView<x>:MATH:MATH<x>:AUTOScale	Sets or queries whether the specified math gets auto-scaled when the math equation changes within the specified waveview.
DISplay:WAVEView<x>:MATH:MATH<x>:STATE	Sets or queries the state of the specified math waveform in the specified waveview.
DISplay:WAVEView<x>:MATH:MATH<x>:VERTical:POSition	Sets or queries the vertical position in divisions of the specified math waveform.
DISplay:WAVEView<x>:MATH:MATH<x>:VERTical:SCAle	Sets or queries the vertical scale of the specified math waveform.
DISplay:WAVEView<x>:PLOT:PLOT<x>:AUTOScale	Sets or queries whether the specified math gets auto-scaled when the math equation changes within the specified waveview.
DISplay:WAVEView<x>:PLOT:PLOT<x>:STATE	Sets or queries the state of the specified trend waveform in the specified waveview.
DISplay:WAVEView<x>:PLOT:PLOT<x>:VERTical:POSition	Sets or queries the vertical position of the specified time trend in the specified waveview in divisions.
DISplay:WAVEView<x>:PLOT:PLOT<x>:VERTical:SCAle	Sets or queries the vertical scale of the specified time trend in volts per division in the specified waveview.
DISplay:WAVEView<y>:REF<x>_DALL:FRAMe	Sets or returns the selected frame of the specified digital ref.
DISplay:WAVEView<y>:REF:REF<x>:FRAMe	sets or returns the selected frame of the specified analog ref.
DISplay:WAVEView<x>:REF:REF<x>:STATE	Sets or queries the state of the specified reference waveform in the specified waveview.
DISplay:WAVEView<x>:REF:REF<x>:VERTical:POSition	Sets or queries the vertical position in divisions of the specified reference waveform.
DISplay:WAVEView<x>:REF:REF<x>:VERTical:SCAle	Sets or queries the vertical scale of the specified reference waveform.
DISplay:WAVEView<x>:STYle	Sets or queries the waveforms are displayed for analysis mode.
DISplay:WAVEView<x>:VIEWStyle	Sets or queries the waveform layout style used by the display.
DISPLAY:PLOTVIEW<x>:XAXIS:SCALE	Sets or queries the horizontal scale setting for applicable plots, either Linear or Log.
DISPLAY:PLOTVIEW<x>:YAXIS:SCALE	Sets or queries the vertical scale setting for applicable plots, either Linear or Log.

DVM Command Group

Use the commands in the DVM command group for Digital Voltmeter functionality. Requires DVM option (free with product registration).

Table 2-26: DVM Command Group

Command	Description
DVM	Resets the Digital Voltmeter measurements and history.
DVM:AUTORange	Sets or queries the autorange state for the Digital Voltmeter.
DVM:MEASUrement:FREQuency?	Returns the current frequency value for the Digital Voltmeter.
DVM:MEASUrement:HIStory:AVErage?	Returns the average readout value for the Digital Voltmeter function over the history period.
DVM:MEASUrement:HIStory:MAXimum?	Returns the maximum readout value for the DVM function over the history period.
DVM:MEASUrement:HIStory:MINImum?	Returns the minimum readout value for the DVM function over the history period.
DVM:MEASUrement:INFMAXimum?	Returns the maximum DVM readout value over the entire time that the DVM has been on since the last change using the DVM:MODe or DVM:SOUrce commands or `DVM RESET`.
DVM:MEASUrement:INFMINimum?	Returns the minimum readout value of the DVM function over the entire time that the DVM has been on since the last change using the DVM:MODe or DVM:SOUrce commands or `DVM RESET`.
DVM:MEASUrement:VALue?	Returns the DVM readout value.
DVM:MODe	Specifies or queries the mode to use for the Digital Voltmeter.
DVM:SOUrce	Sets or queries the source for the Digital Voltmeter.
DVM:TRIGger:FREQuency:COUNTer	Sets or queries the state of the trigger frequency counter.

Ethernet Command Group

Use the commands in the Ethernet Command Group to set up the 10BASE-T, 100BASE-TX, 1000BASE-TX or 100BASE-T Ethernet remote interface.

Table 2-27: Ethernet Commands

Command	Description
ETHERnet:DHCPbootp	Specifies the network initialization search for a DHCP/BOOTP server.
ETHERnet:DNS:IPADDress	Specifies the network Domain Name Server (DNS) IP address.
ETHERnet:DOMAINname	Specifies the network domain name.
ETHERnet:ENET:ADDress?	Returns the Ethernet address (MAC address) value assigned to the oscilloscope.
ETHERnet:GATEWay:IPADDress	Specifies the network gateway IP address.
ETHERnet:IPADDress	Specifies the IP address assigned to the oscilloscope.
ETHERnet:LXI:LAN:RESET	Resets the LXI local area network.
ETHERnet:LXI:LAN:SERVICENAMe	Specifies the mDNS service name used for the LXI interface.
ETHERnet:LXI:LAN:STATus?	Returns the LXI network status.

Table 2-27: Ethernet Commands (cont.)

Command	Description
ETHERnet:NAME	Sets or queries the instrument Ethernet hostname assigned to the oscilloscope.
ETHERnet:NETWORKCONFig	Specifies the Ethernet network configuration setting.
ETHERnet:PING	Causes the oscilloscope to ping the gateway IP address.
ETHERnet:PING:STATus?	Returns the results from sending the ETHERnet:PING command to ping the gateway IP address.
ETHERnet:SUBNETMask	Specifies the network subnet mask value.

File system command group

Use the commands in the File System Command Group to help you use the built-in hard disk drive. You can use the commands to do the following:

- List the contents of the current directory
- Create and delete directories
- Create, copy, read, rename, or delete a file

When using these commands, keep the following points in mind:

- File arguments are always enclosed within double quotes: "C:\MYDIR\TEK00001.SET"
- File names follow the MS-DOS format: [DRIVE:][\PATH\]filename
- Path separators can be either forward slashes (/) or back slashes (\)

NOTE. *Using a back slash as a path separator can produce some unexpected results, depending on how your controller application treats escaped characters. Many applications recognize the sequence of a back slash followed by an alphabetic character as an escaped character, and, as such, interpret that alphabetic character as a control character. For example, the sequence "\n" might be interpreted as a newline character; "\t" might be interpreted as a tab character. To ensure that this interpretation does not occur, you can use double back slashes. For example, "C:\\testfile.txt".*

- Some FILESystem commands can fail because a file has read-only attributes. You will not be able to delete or replace such files until this attribute is removed. Refer to the operating system help on file properties for further information.

Table 2-28: File system commands

Command	Description
FILESystem?	Returns the file system state.
FILESystem:COPy	Copies one or more files to a new file.
FILESystem:CWD	Sets or queries the current working directory for FILESystem commands.
FILESystem:DELEte	Deletes a named file or directory.
FILESystem:DIR?	Returns a list of directory contents.
FILESystem:HOMEDir?	Returns the current user's home directory.
FILESystem:LDIR?	Returns a list of directory contents.
FILESystem:MKDir	Makes a new directory.
FILESystem:READFile	Copies the named file to the interface.
FILESystem:REName	Assigns a new name to an existing file.

Table 2-28: File system commands (cont.)

Command	Description
FILESystem:RMDir	Deletes the named directory.
FILESystem:UNMOUNT:DRIve	Unmount the USB drive.
FILESystem:WRITEFile	Copies the block data to a named file.

Horizontal command group

Horizontal commands control the time base of the instrument. You can set the time per division (or time per point) of the main time base. You can use the Horizontal commands to do the following:

- Set the scale, horizontal position and reference, and units of the time base
- Get the screen resolution, time of first point and time of last point, or get all the horizontal settings
- Enable or disable the display of the time base

Table 2-29: Horizontal commands

Command	Description
ACQuire:NUMFRAMESACQuired?	Returns the number of FastFrame frames which have been acquired.
CH<x>:SCALERATio	Sets or returns the scale ration for the specified analog channel.
HORizontal?	Queries the current horizontal settings.
HORizontal:ACQDURATION?	Returns the time base duration.
HORizontal:DELay:MODe	Sets or queries the horizontal delay mode.
HORizontal:DELay:TIMe	Sets or queries the horizontal delay time (position) that is used when delay is on.
HORizontal:DIVisions?	Returns the number of graticule divisions over which the waveform is displayed.
HORizontal:FASTframe?	Returns all information under horizontal:fastframe.
HORizontal:FASTframe:COUNt	Sets or returns the number of frames.
HORizontal:FASTframe:MAXFRames?	Returns the maximum number of frames.
HORizontal:FASTframe:MULtipleframes:MODe	Sets or returns the overlay display type.
HORizontal:FASTframe:REF:FRAme	Sets or returns the reference frame number.
HORizontal:FASTframe:REF:INCLUde	Sets or returns whether the reference frame delta information is shown in the display.
HORizontal:FASTframe:SELECTED	Sets or returns the selected frame number for acquired frames.
HORizontal:FASTframe:STATE	Sets or returns the state of FastFrame.
HORizontal:FASTframe:SUMFrame?	Sets or returns the summary frame type.
HORizontal:FASTframe:SUMFrame:STATE	Sets or returns the state of FastFrame summary frame.
HORizontal:FASTframe:TIMEStamp:REFerence?	Returns the time-stamp of the FastFrame Reference frame.
HORizontal:FASTframe:TIMEStamp:SELECTED?	Returns the time-stamp of the FastFrame Selected acquired frame.
HORizontal:FASTframe:TIMEStamp:DELTa?	Returns the time difference between the Selected and Reference time-stamps.
HORizontal:FASTframe:TIMEStamp:ALL?	Returns the time stamp of all frames.
HORizontal:FASTframe:XZEro:ALL?	Returns the sub-sample time between the trigger sample (designated by PT_OFF) and the occurrence of the actual trigger for the waveform specified by the DATa:SOUrce command for all frames.

Table 2-29: Horizontal commands (cont.)

Command	Description
HORizontal:FASTframe:XZEro:REF?	Returns the sub-sample time between the trigger sample (designated by PT_OFF) and the occurrence of the actual trigger for the waveform specified by the DATa:SOUrce command for the reference frame.
HORizontal:FASTframe:XZEro:SELECTED?	Returns the sub-sample time between the trigger sample (designated by PT_OFF) and the occurrence of the actual trigger for the waveform specified by the DATa:SOUrce command for the selected frame.
HORizontal:MAIn:INTERPRatio?	Returns the main horizontal time base interpolation ratio.
HORizontal:MODE	Sets or queries the horizontal mode.
HORizontal:MODe:AUTOmatic:FASTAcq:RECOrdlength:MAXimum:VALue	Sets or queries the horizontal FastAcq maximum record length.
HORizontal:MODe:AUTOmatic:FASTAcq:RECOrdlength:MAXimum:ZOOMOVERride	Sets or queries the flag which allows override of the horizontal FastAcq maximum record length.
HORizontal:MODe:MANual:CONFIGure	Sets or queries which horizontal control (scale or record length) will also change when the sample rate is adjusted.
HORizontal:MODE:RECOrdlength	Sets or queries the record length.
HORizontal:MODE:SAMPLERate	Sets or queries the sample rate.
HORizontal:MODE:SCAle	Sets or queries the horizontal scale.
HORizontal:POSition	Sets or queries the waveform horizontal position, in percent, that is used when delay is off.
HORizontal:PREViewstate?	Returns the display system preview state.
HORizontal:RECOrdlength	Sets or queries the horizontal record length.
HORizontal:ROLL?	Queries the horizontal roll mode status.
HORizontal:SAMPLERate	Sets or queries the horizontal sample rate.
HORizontal:SAMPLERate:ANALYZemode:MINimum:OVERRide	Sets or queries the flag which allows override of the horizontal analyze minimum sample rate.
HORizontal:SAMPLERate:ANALYZemode:MINimum:VALue	Sets or queries the minimum sample rate used by Analysis Automatic horizontal mode.
HORizontal:SCAle	Sets or queries the horizontal scale.

Math command group

Use the commands in the Math Command Group to create and define math waveforms. Use the available math functions to define your math waveform.

The math waveform you create depends on sources listed in the math expression. If you change these sources, the math waveforms you previously defined will be affected.

Math expressions can be simple, containing no mathematical computation, such as CH1, which specifies that a waveform shows the signal source of channel 1. Math expressions can also be complex, consisting of 100 plus characters and comprising many sources, functions, and operands.

The acquisition of a live waveform can stop for several reasons: You can turn off the channel, stop the waveform (via Run/Stop from the Horiz/Acq menu), or stop the trigger (via Run/Stop from the Trig menu). When you turn off the channel, math continues and data is acquired but is not displayed. When you stop either the waveform or the trigger, the math calculation stops, and the last math calculation performed is displayed.

When a live waveform updates or a reference waveform is altered, math waveforms containing those waveforms as sources are also updated to reflect the changes. Also, sources must exist but do not need to be displayed to be used in and to update math waveforms.

NOTE. *Math commands are present once a math has been added.*

Table 2-30: Math commands

Command	Description
DISplay:GLObal:MATH<x>:STATE	Sets or queries the global state of the specified math.
DISplay:SELect:MATH	Sets or queries the overall selected math.
DISplay:WAVEView<x>:MATH:MATH<x>:STATE	Sets or queries the state of the specified math waveform in the specified waveview.
DISplay:WAVEView<x>:MATH:MATH<x>:VERTical:POSition	Sets or queries the vertical position in divisions of the specified math waveform.
DISplay:WAVEView<x>:MATH:MATH<x>:VERTical:SCAle	Sets or queries the vertical scale of the specified math waveform.
MATH:ADDNew	Adds the specified math.
MATHArbflt<x>:FILepath	Sets the file path for a file of filter coefficients and reads the file.
MATH:DELete	Deletes the specified math.
MATH:LIST?	Lists all currently defined math waveforms.
MATH:MATH<x>:AVG:MODE	Sets or queries the math average mode flag.
MATH:MATH<x>:AVG:WEIGht	Sets or queries the number of acquisitions at which the averaging algorithm will begin exponential averaging.

Table 2-30: Math commands (cont.)

Command	Description
MATH:MATH<x>:FUNCtion	Sets or queries the basic math arithmetic function.
MATH:MATH<x>:LABel:COLor	Sets or queries color of the specified math's label.
MATH:MATH<x>:LABel:FONT:BOLD	Sets or queries bold state of the specified math label.
MATH:MATH<x>:LABel:FONT:ITALic	Sets or queries italic state of the specified math label.
MATH:MATH<x>:LABel:FONT:SIZE	Sets or queries font size of the specified math label.
MATH:MATH<x>:LABel:FONT:TYPE	Sets or queries font type of the specified math label.
MATH:MATH<x>:LABel:FONT:UNDERline	Sets or queries the underline state of the specified math label.
MATH:MATH<x>:LABel:XPOS	Sets or queries the X screen offset where the math waveform label is displayed.
MATH:MATH<x>:LABel:YPOS	Sets or queries the Y screen offset where the math waveform label is displayed.
MATH:MATH<x>:DEFine	Defines new waveforms using mathematical expressions.
MATH:MATH<x>:GATing	Specifies or returns the gating setting.
MATH:MATH<x>:LABel:NAMe	Sets or queries the label string.
MATH:MATH<x>:SOUrce<x>	Sets or queries the specified math source.
MATH:MATH<x>:SPECTral:HORZ	Sets or queries the horizontal display scale of the spectral math waveform.
MATH:MATH<x>:SPECTral:MAG	Sets or queries the units of the SpectralMag function in the specified math definition string.
MATH:MATH<x>:SPECTral:PHASE	Sets or queries the units of a SpectralPhase function in the specified math definition string.
MATH:MATH<x>:SPECTral:SOUrce	Sets or queries the specified spectral math source.
MATH:MATH<x>:SPECTral:SUPPress	Sets or queries whether suppression threshold for the specified math waveform is enabled.
MATH:MATH<x>:SPECTral:SUPPress:VALue	Sets or queries in volts the value of suppression threshold of the specified math waveform.
MATH:MATH<x>:SPECTral:TYPE	Sets or queries the FFT type selected for spectral analysis.
MATH:MATH<x>:SPECTral:UNWRap	Sets or queries whether phase unwrap of the spectral analyzer output data is enabled.
MATH:MATH<x>:SPECTral:UNWRap:DEGrees	Sets or queries in degrees the value of unwrap phase.
MATH:MATH<x>:SPECTral:WINdow	Sets or queries the window function used to multiply the spectral analyzer input data for the specified math waveform.
MATH:MATH<x>:TYPe	Sets or queries the math type.
MATH:MATH<x>:VUNIT	Sets or queries the math custom vertical units.

Measurement command group

Use the commands in the Measurement Command Group to control the automated measurement system.

Measurement commands can set and query measurement parameters. You can assign parameters, such as waveform sources and reference levels, differently for each measurement.

Clock recovery, edge, filter, gating, population and range measurement commands can be either global or per-measurement.
Global clock recovery commands are of the form `:MEASUrement:CLOCKRecovery:XXXX`
Global edge commands are of the form `:MEASUrement:XXXX`
Global filter commands are of the form `:MEASUrement:FILTers:XXXX`
Global gating commands are of the form `:MEASUrement:GATing:XXXX`
Global population commands are of the form `:MEASUrement:POPUlation:XXXX`
Global range commands are of the form `:MEASUrement:MEASRange:XXXX`

Reference levels for measurements can be global, per-measurement or per-source. The default is global. Per-measurement settings are used when local reference levels are enabled for the measurement with the command `:MEASUrement:MEAS?:GLOBalref 0`. Per-source settings are used when per-source settings are enabled with the command `:MEASUrement:REFLevels:TYPE PerSource` and per-source settings are selected for the measurement with the command `:MEASUrement:MEAS?:GLOBalref 0`.

Global reference level commands are of the form `:MEASUrement:REFLevels:XXXX`

Per-source reference level commands are of the form
`:MEASUrement:CH1:REFLevels:XXXX`
`:MEASUrement:MATH1:REFLevels:XXXX`

Table 2-31: Measurement commands

Command	Description
MEASUrement?	This command returns all measurement parameters.
MEASUrement:ADDMEAS	This command adds a measurement.
MEASUrement:ADDNew	Adds the specified measurement.
MEASUrement:ANNOTate	This command sets or queries the annotation state for measurements.
MEASUrement:AUTOset	Performs an analysis jitter autoset.
MEASUrement:CH<x>:REFLevels:ABSolute:FALLHigh	This command sets or queries the value used as the high reference level of the falling edge when the source ref level method is set to absolute.
MEASUrement:CH<x>:REFLevels:ABSolute:FALLLow	This command sets or queries the value used as the low reference level of the falling edge when the source ref level method is set to absolute.

Table 2-31: Measurement commands (cont.)

Command	Description
MEASUrement:CH<x>:REFLevels:ABSolute:FALLMid	This command sets or queries the value used as the mid reference level of the falling edge when the source ref level method is set to absolute.
MEASUrement:CH<x>:REFLevels:ABSolute:HYSTeresis	This command sets or queries the value of the hysteresis of the reference level when the source ref level method is set to absolute.
MEASUrement:CH<x>:REFLevels:ABSolute:RISEHigh	This command sets or queries the value used as the high reference level of the rising edge when the source ref level method is set to absolute.
MEASUrement:CH<x>:REFLevels:ABSolute:RISELow	This command sets or queries the value used as the low reference level of the rising edge when the source ref level method is set to absolute.
MEASUrement:CH<x>:REFLevels:ABSolute:RISEMid	This command sets or queries the value used as the mid reference level of the rising edge when the source ref level method is set to absolute.
MEASUrement:CH<x>:REFLevels:ABSolute:TYPE	This command sets or queries the reference level type for the source.
MEASUrement:CH<x>:REFLevels:BASETop	This command sets or queries the method used to calculate the TOP and BASE, used to calculate reference levels for the measurement.
MEASUrement:CH<x>:REFLevels:METHod	This command sets or queries the method used to calculate reference levels for the source.
MEASUrement:CH<x>:REFLevels:PERCent:FALLHigh	This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the high reference level of the falling edge when the source ref level method is set to percent.
MEASUrement:CH<x>:REFLevels:PERCent:FALLLow	This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the mid reference level of the falling edge when the source ref level method is set to percent.
MEASUrement:CH<x>:REFLevels:PERCent:FALLMid	This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the mid reference level of the falling edge when the source ref level method is set to percent.
MEASUrement:CH<x>:REFLevels:PERCent:HYSTeresis	This command sets or queries the percentage (where 100% is equal to MAX and 0% is equal to MIN) used to calculate the hysteresis of the reference level when the source ref level method is set to percent.
MEASUrement:CH<x>:REFLevels:PERCent:RISEHigh	This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the high reference level of the rising edge when the source ref level method is set to percent.
MEASUrement:CH<x>:REFLevels:PERCent:RISELow	This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the low reference level of the rising edge when the source ref level method is set to percent.
MEASUrement:CH<x>:REFLevels:PERCent:RISEMid	This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the mid reference level of the rising edge when the source ref level method is set to percent.
MEASUrement:CH<x>:REFLevels:PERCent:TYPE	This command specifies or queries the reference level percent type for the source.

Table 2-31: Measurement commands (cont.)

Command	Description
MEASUrement:CLOCKRecovery:ADVanced:METHod	This command sets or queries the global advanced clock recovery method.
MEASUrement:CLOCKRecovery:CLOCKFrequency	This command sets or queries the global clock frequency used for fixed constant clock recovery.
MEASUrement:CLOCKRecovery:CLOCKMultiplier	This command sets or queries the global clock multiplier used for explicit clock recovery.
MEASUrement:CLOCKRecovery:CONSTCLOCKMODe	This command sets or queries the global constant clock mode used for constant clock recovery.
MEASUrement:CLOCKRecovery:DAMPing	This command sets or queries the global damping value used for PLL clock recovery.
MEASUrement:CLOCKRecovery:DATAPath	This command sets or queries the global file containing the data pattern used for known data pattern clock recovery.
MEASUrement:CLOCKRecovery:DATARate	This command sets or queries the global nominal data bit rate used for nominal data rate clock recovery.
MEASUrement:CLOCKRecovery:EXPLICITCLOCKMODe	This command sets or queries the global explicit clock mode used for explicit clock recovery.
MEASUrement:CLOCKRecovery:JTFBandwidth	This command sets or queries the global JTF bandwidth used for PLL clock recovery.
MEASUrement:CLOCKRecovery:LOOPBandwidth	This command sets or queries the global loop bandwidth used for PLL clock recovery.
MEASUrement:CLOCKRecovery:MEANAUTOCalculate	This command sets or queries how often the clock is calculated for constant clock recovery.
MEASUrement:CLOCKRecovery:METHod	This command sets or queries the global clock recovery method.
MEASUrement:CLOCKRecovery:MODel	This command sets or queries the global PLL clock recovery model used for PLL clock recovery.
MEASUrement:CLOCKRecovery:NOMINALOFFset	This command sets or queries the global offset value used for explicit clock recovery.
MEASUrement:CLOCKRecovery:NOMINALOFFset:SELECTIONtype	This command sets or queries the global offset type used for explicit clock recovery.
MEASUrement:CLOCKRecovery:STAndard	This command sets or queries the global communications standard used for PLL clock recovery.
MEASUrement:DELete	The command deletes the specified measurement.
MEASUrement:DIRacmodel	This command sets or queries the dirac model used to separate random from deterministic jitter for jitter measurements.
MEASUrement:DISPLAYUnits	This command sets or queries the display units used for jitter summary measurements.
MEASUrement:EDGE<x>	Sets or queries the type of the edge for the measurement.
MEASUrement:EYERENDER	This command sets or queries the state of high-performance eye rendering for an eye diagram.
MEASUrement:FILTers:BLANKingtime	This command sets or queries the global filter blanking time.

Table 2-31: Measurement commands (cont.)

Command	Description
MEASUrement:FILTers:HIGHPass:FREQ	This command sets or queries the global high pass filter frequency.
MEASUrement:FILTers:HIGHPass:SPEC	This command sets or queries the global high pass filter order.
MEASUrement:FILTers:LOWPass:FREQ	This command sets or queries the global low pass filter cutoff frequency.
MEASUrement:FILTers:LOWPass:SPEC	This command sets or queries the global low pass filter order.
MEASUrement:FILTers:RAMPtime	This command sets or queries the global filter ramp time.
MEASUrement:GATing	This command sets or queries the global gating type.
MEASUrement:GATing:ACTive	This command sets or queries the global gating active level used for logic gating.
MEASUrement:GATing:HYSTeresis	This command sets or queries the global gating hysteresis value used for logic gating.
MEASUrement:GATing:LOGICSource	This command sets or queries the gating data source used for logic gating.
MEASUrement:GATing:MIDRef	This command sets or queries the global gating mid ref value used for logic gating.
MEASUrement:GATing:SEARCHSource	This command sets or queries the global gating search source used for logic gating.
MEASUrement:INTERp	This command sets or queries the interpolation mode used to locate edge crossings.
MEASUrement:JITTermodel	This command sets or queries the model used to separate random from deterministic jitter for jitter measurements.
MEASUrement:LIST?	Lists all currently defined measurements.
MEASUrement:LOCKRJ	Sets or queries the state of RJ locking.
MEASUrement:LOCKRJValue	Sets or queries the RJ lock value.
MEASUrement:MATH<x>:REFLevels:ABSolute:FALLHigh	This command sets or queries the value used as the high reference level of the falling edge when the source ref level method is set to absolute.
MEASUrement:MATH<x>:REFLevels:ABSolute:FALLLow	This command sets or queries the value used as the low reference level of the falling edge when the source ref level method is set to absolute.
MEASUrement:MATH<x>:REFLevels:ABSolute:FALLMid	This command sets or queries the value used as the mid reference level of the falling edge when the source ref level method is set to absolute.
MEASUrement:MATH<x>:REFLevels:ABSolute:HYSTeresis	This command sets or queries the value of the hysteresis of the reference level when the source ref level method is set to absolute.
MEASUrement:MATH<x>:REFLevels:ABSolute:RISEHigh	This command sets or queries the value used as the high reference level of the rising edge when the source ref level method is set to absolute.
MEASUrement:MATH<x>:REFLevels:ABSolute:RISELow	This command sets or queries the value used as the low reference level of the rising edge when the source ref level method is set to absolute.
MEASUrement:MATH<x>:REFLevels:ABSolute:RISEMid	This command sets or queries the value used as the mid reference level of the rising edge when the source ref level method is set to absolute.
MEASUrement:MATH<x>:REFLevels:ABSolute:TYPE	This command sets or queries the reference level type for the source.
MEASUrement:MATH<x>:REFLevels:BASETop	This command sets or queries the method used to calculate the TOP and BASE used to calculate reference levels for the source.

Table 2-31: Measurement commands (cont.)

Command	Description
MEASUrement:MATH<x>:REFLevels:METHod	This command sets or queries the method used to calculate reference levels for the source.
MEASUrement:MATH<x>:REFLevels:PERCent:FALLHigh	This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the high reference level of the falling edge when the source ref level method is set to percent.
MEASUrement:MATH<x>:REFLevels:PERCent:FALLLow	This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the mid reference level of the falling edge when the source ref level method is set to percent.
MEASUrement:MATH<x>:REFLevels:PERCent:FALLMid	This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the mid reference level of the falling edge when the source ref level method is set to percent.
MEASUrement:MATH<x>:REFLevels:PERCent:HYSTeresis	This command sets or queries the percentage (where 100% is equal to MAX and 0% is equal to MIN) used to calculate the hysteresis of the reference level when the source ref level method is set to percent.
MEASUrement:MATH<x>:REFLevels:PERCent:RISEHigh	This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the high reference level of the rising edge when the source ref level method is set to percent.
MEASUrement:MATH<x>:REFLevels:PERCent:RISELow	This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the low reference level of the rising edge when the source ref level method is set to percent.
MEASUrement:MATH<x>:REFLevels:PERCent:RISEMid	This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the mid reference level of the rising edge when the source ref level method is set to percent.
MEASUrement:MATH<x>:REFLevels:PERCent:TYPE	This command specifies or queries the reference level percent type for the source.
MEASUrement:MEAS<x>:BER	This command sets or queries the BER value for the measurement.
MEASUrement:MEAS<x>:BER:TARGETBER	This command sets or queries the target BER value for the measurement.
MEASUrement:MEAS<x>:BIN	This command sets or queries the bin count for the measurement.
MEASUrement:MEAS<x>:BITCfgmode	This command sets or queries whether the measurement returns the mean or mode statistic result when the measurement type is bit amplitude/high/low.
MEASUrement:MEAS<x>:BITEnd	This command sets or queries the bit end as a percentage of the unit interval.
MEASUrement:MEAS<x>:BITPcnt	This command sets or queries the bit center as a percentage of the unit interval.
MEASUrement:MEAS<x>:BITSTart	This command sets or queries the bit start as a percentage of the unit interval.
MEASUrement:MEAS<x>:BITType	This command sets or queries the bit type for the measurement.
MEASUrement:MEAS<x>:BURSTEDGTYPe	This command sets or queries the burst edge type for the measurement.
MEASUrement:MEAS<x>:CCRESUlts:ALLAcqs:MAXimum?	This query-only command returns the maximum cycle-cycle value for the specified measurement for all acquisitions.
MEASUrement:MEAS<x>:CCRESUlts:ALLAcqs:MEAN?	This query-only command returns the mean cycle-cycle value for the specified measurement for all acquisitions.

Table 2-31: Measurement commands (cont.)

Command	Description
MEASUrement:MEAS<x>:CCRESUlts: ALLAcqs:MINimum?	This query-only command returns the minimum cycle-cycle value for the specified measurement for all acquisitions.
MEASUrement:MEAS<x>:CCRESUlts: ALLAcqs:PK2PK?	This query-only command returns the peak to peak cycle-cycle statistic for the specified measurement for all acquisitions.
MEASUrement:MEAS<x>:CCRESUlts: ALLAcqs:POPUlation?	This query-only command returns the population of all cycle-cycle statistics for the specified measurement for all acquisitions accumulated since statistics were last reset.
MEASUrement:MEAS<x>:CCRESUlts: ALLAcqs:STDDev?	This query-only command returns the standard deviation cycle-cycle for the specified measurement for all acquisitions.
MEASUrement:MEAS<x>:CCRESUlts: CURRentacq:MAXimum?	This query-only command returns the maximum cycle-cycle value for the specified measurement for the current acquisition.
MEASUrement:MEAS<x>:CCRESUlts: CURRentacq:MEAN?	This query-only command returns the mean cycle-cycle value for the specified measurement for the current acquisition.
MEASUrement:MEAS<x>:CCRESUlts: CURRentacq:MINimum?	This query-only command returns the minimum cycle-cycle value for the specified measurement for the current acquisition.
MEASUrement:MEAS<x>:CCRESUlts: CURRentacq:PK2PK?	This query-only command returns the peak to peak cycle-cycle statistic for the specified measurement for the current acquisition.
MEASUrement:MEAS<x>:CCRESUlts: CURRentacq:POPUlation?	This query-only command returns the population of the cycle-cycle statistics for the specified measurement for the current acquisition.
MEASUrement:MEAS<x>:CCRESUlts: CURRentacq:STDDev?	This query-only command returns the standard deviation cycle-cycle for the specified measurement for the current acquisition.
MEASUrement:MEAS<x>:CLOCKRecovery: ADVanced:METHod	This command sets or queries the advanced clock recovery method when advanced clock recovery is used for the measurement.
MEASUrement:MEAS<x>:CLOCKRecovery: CLOCKFrequency	This command sets or queries the clock frequency used when fixed constant clock recovery is used for the measurement.
MEASUrement:MEAS<x>:CLOCKRecovery: CLOCKMultiplier	This command sets or queries the clock multiplier used when explicit clock recovery is used for the measurement.
MEASUrement:MEAS<x>:CLOCKRecovery: CONSTCLOCKMODe	This command sets or queries the constant clock mode used when constant clock recovery is used for the measurement.
MEASUrement:MEAS<x>:CLOCKRecovery: DAMPing	This command sets or queries the damping value used when PLL clock recovery is used for the measurement.
MEASUrement:MEAS<x>:CLOCKRecovery: DATAPath	This command sets or queries the file containing the data pattern used when known data pattern clock recovery is used for the measurement.
MEASUrement:MEAS<x>:CLOCKRecovery: DATARate	This command sets or queries the nominal data bit rate when nominal data rate clock recovery is used for the measurement.
MEASUrement:MEAS<x>:CLOCKRecovery: EXPLICITCLOCKMODe	This command sets or queries the explicit clock mode used when explicit clock recovery is used for the measurement.
MEASUrement:MEAS<x>:CLOCKRecovery: GLOBal	This command sets or queries the clock recovery settings global flag for the measurement.

Table 2-31: Measurement commands (cont.)

Command	Description
MEASUrement:MEAS<x>:CLOCKRecovery: JTFBandwidth	This command sets or queries the JTF bandwidth used when PLL clock recovery is used for the measurement.
MEASUrement:MEAS<x>:CLOCKRecovery: LOOPBandwidth	This command sets or queries the loop bandwidth used when PLL clock recovery is used for the measurement.
MEASUrement:MEAS<x>:CLOCKRecovery: MEANAUTOCalculate	This command sets or queries how often the clock is calculated when constant clock recovery is used for the measurement.
MEASUrement:MEAS<x>:CLOCKRecovery: METHod	This command sets or queries the clock recovery method for the measurement.
MEASUrement:MEAS<x>:CLOCKRecovery: MODel	This command sets or queries the PLL clock recovery model used when PLL clock recovery is used for the measurement.
MEASUrement:MEAS<x>:CLOCKRecovery: NOMINALOFFset	This command sets or queries the offset value used when explicit clock recovery is used for the measurement.
MEASUrement:MEAS<x>:CLOCKRecovery: NOMINALOFFset:SELECTIONtype	This command sets or queries the offset type used when explicit clock recovery is used for the measurement.
MEASUrement:MEAS<x>:CLOCKRecovery: STAndard	This command sets or queries the communications standard when PLL clock recovery is used for the measurement.
MEASUrement:MEAS<x>:COMMONMode: FILTers:STATE	This command sets or queries whether a filter is used for the measurement when the measurement type is AC common mode.
MEASUrement:MEAS<x>:COMMONMode: SOURCEs	This command sets or queries the number of sources for the measurement when the measurement type is AC common mode.
MEASUrement:MEAS<x>:CYCLemode	This command sets or queries the cycle mode for the measurement.
MEASUrement:MEAS<x>:DELay:EDGE<x>	This command sets or queries the 'to edge' type when EDGE? is EDGE1 and the 'from edge' type when EDGE? is EDG2, for the measurement when the measurement type is DELAY.
MEASUrement:MEAS<x>:DISPlaystat:ENABle	Turns on and off the display of statistics in measurement badges.
MEASUrement:MEAS<x>:EDGE<x>	This command sets or queries the type of the specified edge, rise or fall, for the measurement.
MEASUrement:MEAS<x>:EDGEIncre	This command sets or queries the edge increment value for the measurement.
MEASUrement:MEAS<x>:EDGES:FROMLevel	This command sets or queries the 'from level' edge for the measurement.
MEASUrement:MEAS<x>:EDGES:LEVel	This sets or queries the level type for the 'time outside level' measurement.
MEASUrement:MEAS<x>:EDGES: LOWERFREQuency	This command sets or queries the lower frequency for the measurement when the measurement type is phase noise. Lower frequencies are ignored.
MEASUrement:MEAS<x>:EDGES:N	The command sets or queries the number of accumulation cycles for the measurement when the measurement type is nperiod.
MEASUrement:MEAS<x>:EDGES: SLEWRATEMethod	This command sets or queries the slew rate method for the measurement.
MEASUrement:MEAS<x>:EDGES:TOLevel	This command sets or queries the 'to level' edge for the measurement.

Table 2-31: Measurement commands (cont.)

Command	Description
MEASUrement:MEAS<x>:EDGES:UPPERFREQuency	This command sets or queries the upper frequency for the measurement when the measurement type is phase noise. Higher frequencies are ignored.
MEASUrement:MEAS<x>:FILTers:BLANKingtime	This command sets or queries the filter blanking time for the measurement.
MEASUrement:MEAS<x>:FILTers:GLOBal	This command sets or queries the global flag for filter settings for the measurement.
MEASUrement:MEAS<x>:FILTers:HIGHPass:FREQ	This command sets or queries the high pass filter frequency for the measurement.
MEASUrement:MEAS<x>:FILTers:HIGHPass:SPEC	This command sets or queries the high pass filter order for the measurement.
MEASUrement:MEAS<x>:FILTers:LOWPass:FREQ	This command sets or queries the low pass filter cutoff frequency for the measurement.
MEASUrement:MEAS<x>:FILTers:LOWPass:SPEC	This command sets or queries the low pass filter order for the measurement.
MEASUrement:MEAS<x>:FILTers:RAMPtime	This command sets or queries the filter ramp time for the measurement.
MEASUrement:MEAS<x>:FROMedge	This command sets or queries the 'from edge' type for the measurement.
MEASUrement:MEAS<x>:FROMEDGESEARCHDIRect	This command sets or queries the 'from edge' search direction for the measurement.
MEASUrement:MEAS<x>:GATing	This command sets or queries the gating type for the measurement.
MEASUrement:MEAS<x>:GATing:ACTive	This command sets or queries the gating active level when the gating type is logic.
MEASUrement:MEAS<x>:GATing:GLOBal	This command sets or queries the gating settings global flag.
MEASUrement:MEAS<x>:GATing:HYSTeresis	This command sets or queries the gating hysteresis value when the gating type is logic.
MEASUrement:MEAS<x>:GATing:LOGICSource	This command sets or queries the gating data source when the gating type is logic.
MEASUrement:MEAS<x>:GATing:MIDRef	This command sets or queries the gating mid ref value when the gating type is logic.
MEASUrement:MEAS<x>:GATing:SEARCHSource	This command sets or queries the gating search source when the gating type is search.
MEASUrement:MEAS<x>:GLOBalref	This command sets or queries the reference levels global flag for the measurement.
MEASUrement:MEAS<x>:HIGHREFVoltage	This command sets or queries the high reference voltage value for the 'time outside level' measurement.
MEASUrement:MEAS<x>:IDLETime	This command sets or queries the idle time for the measurement when the measurement type is burst width.
MEASUrement:MEAS<x>:JITTERSummary:DCD	This command sets or queries whether DCD is included in the jitter summary for the measurement.
MEASUrement:MEAS<x>:JITTERSummary:DDJ	This command sets or queries whether DDJ is included in the jitter summary for the measurement.

Table 2-31: Measurement commands (cont.)

Command	Description
MEASUrement:MEAS<x>:JITTERSummary:DJDD	This command sets or queries whether DJ-dd is included in the jitter summary for the measurement.
MEASUrement:MEAS<x>:JITTERSummary:EYEWIDTHBER	This command sets or queries whether EyeWidth@BER is included in the jitter summary for the measurement.
MEASUrement:MEAS<x>:JITTERSummary:NPJ	This command sets or queries whether NPJ is included in the jitter summary for the measurement.
MEASUrement:MEAS<x>:JITTERSummary:PJ	This command sets or queries whether PJ is included in the jitter summary for the measurement.
MEASUrement:MEAS<x>:JITTERSummary:RJDD	This command sets or queries whether RJ-dd is included in the jitter summary for the measurement.
MEASUrement:MEAS<x>:JITTERSummary:TIE	This command sets or queries whether TIE is included in the jitter summary for the measurement.
MEASUrement:MEAS<x>:JITTERSummary:TJBER	This command sets or queries whether TJ@BER is included in the jitter summary for the measurement.
MEASUrement:MEAS<x>:LABel	This command sets or queries the label for the measurement.
MEASUrement:MEAS<x>:LOWREFVoltage	This command sets or queries the low reference voltage value for the 'time outside level' measurement.
MEASUrement:MEAS<x>:MEASRange:GLOBal	This command sets or queries the range settings global flag for the measurement.
MEASUrement:MEAS<x>:MEASRange:MAX	This command sets or queries the range maximum value for the measurement.
MEASUrement:MEAS<x>:MEASRange:MIN	This command sets or queries the range minimum value for the measurement.
MEASUrement:MEAS<x>:MEASRange:STATE	This command sets or queries the range state for the measurement.
MEASUrement:MEAS<x>:PATTERNDETECTION	This command sets or queries the pattern detection type for the measurement.
MEASUrement:MEAS<x>:PATTERNLENgth	This command sets or queries the pattern length for the measurement.
MEASUrement:MEAS<x>:PATTERNTYPe	This command sets or queries the pattern type for the measurement.
MEASUrement:MEAS<x>:PERFREQ:EDGE	This command sets or queries the edge type of a Period/Frequency measurement.
MEASUrement:MEAS<x>:POLarity	This command sets or queries the polarity for the measurement when the measurement type is burst width.
MEASUrement:MEAS<x>:POPUlation:GLOBal	This command sets or queries the population settings global flag.
MEASUrement:MEAS<x>:POPUlation:LIMIT:STATE	This command sets or queries the population limit state for the measurement.
MEASUrement:MEAS<x>:POPUlation:LIMIT:VALue	This command sets or queries the population limit value for the measurement.
MEASUrement:MEAS<x>:REFLevels:ABSolute:FALLHigh	This command sets or queries the value used as the high reference level of the falling edge when the measurement's ref level method is set to absolute.

Table 2-31: Measurement commands (cont.)

Command	Description
MEASUrement:MEAS<x>:REFLevels<x>:ABSolute:FALLLow	This command sets or queries the value used as the low reference level of the falling edge when the measurement's ref level method is set to absolute.
MEASUrement:MEAS<x>:REFLevels<x>:ABSolute:FALLMid	This command sets or queries the value used as the mid reference level of the falling edge when the measurement's ref level method is set to absolute.
MEASUrement:MEAS<x>:REFLevels<x>:ABSolute:HYSTeresis	This command sets or queries the value of the hysteresis of the reference level when the measurement's ref level method is set to absolute.
MEASUrement:MEAS<x>:REFLevels<x>:ABSolute:RISEHigh	This command sets or queries the value used as the high reference level of the rising edge when the measurement's ref level method is set to absolute.
MEASUrement:MEAS<x>:REFLevels<x>:ABSolute:RISELow	This command sets or queries the value used as the low reference level of the rising edge when the measurement's ref level method is set to absolute.
MEASUrement:MEAS<x>:REFLevels<x>:ABSolute:RISEMid	This command sets or queries the value used as the mid reference level of the rising edge when the measurement's ref level method is set to absolute.
MEASUrement:MEAS<x>:REFLevels<x>:ABSolute:TYPE	This command sets or queries the reference level type for the measurement.
MEASUrement:MEAS<x>:REFLevels<x>:BASETop	This command sets or queries the method used to calculate the TOP and BASE used to calculate reference levels for the measurement.
MEASUrement:MEAS<x>:REFLevels<x>:METHod	This command sets or queries the method used to calculate reference levels for the measurement.
MEASUrement:MEAS<x>:REFLevels<x>:PERCent:FALLHigh	This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the high reference level of the falling edge when the measurement's ref level method is set to percent.
MEASUrement:MEAS<x>:REFLevels<x>:PERCent:FALLLow	This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the low reference level of the falling edge when the measurement's ref level method is set to percent.
MEASUrement:MEAS<x>:REFLevels<x>:PERCent:FALLMid	This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the mid reference level of the falling edge when the measurement's ref level method is set to percent.
MEASUrement:MEAS<x>:REFLevels<x>:PERCent:HYSTeresis	This command sets or queries the percentage (where 100% is equal to MAX and 0% is equal to MIN) used to calculate the hysteresis of the reference level when the measurement's ref level method is set to percent.
MEASUrement:MEAS<x>:REFLevels<x>:PERCent:RISEHigh	This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the high reference level of the rising edge when the measurement's ref level method is set to percent.
MEASUrement:MEAS<x>:REFLevels<x>:PERCent:RISELow	This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the low reference level of the rising edge when the measurement's ref level method is set to percent.
MEASUrement:MEAS<x>:REFLevels<x>:PERCent:RISEMid	This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the mid reference level of the rising edge when the measurement's ref level method is set to percent.

Table 2-31: Measurement commands (cont.)

Command	Description
MEASUrement:MEAS<x>:REFLevels<x>:PERCent:TYPE	This command specifies or queries the reference level percent type for the measurement.
MEASUrement:MEAS<x>:REFMode	This command sets or queries the reference level mode for the measurement.
MEASUrement:MEAS<x>:REFVoltage	This command sets or queries the reference voltage value for the measurement.
MEASUrement:MEAS<x>:RESUlts:ALLAcqs:MAXimum?	This command is identical to that described in the DPOJet programmer manual.
MEASUrement:MEAS<x>:RESUlts:ALLAcqs:MEAN?	This command is identical to that described in the DPOJet programmer manual.
MEASUrement:MEAS<x>:RESUlts:ALLAcqs:MINimum?	This command is identical to that described in the DPOJet programmer manual.
MEASUrement:MEAS<x>:RESUlts:ALLAcqs:PK2PK?	This command is identical to that described in the DPOJet programmer manual.
MEASUrement:MEAS<x>:RESUlts:ALLAcqs:POPUlation?	This command is identical to that described in the DPOJet programmer manual.
MEASUrement:MEAS<x>:RESUlts:ALLAcqs:STDDev?	This command is identical to that described in the DPOJet programmer manual.
MEASUrement:MEAS<x>:RESUlts:CURRentacq:MAXimum?	This query-only command returns the maximum value found for the specified measurement since the last statistical reset.
MEASUrement:MEAS<x>:RESUlts:CURRentacq:MEAN?	This query-only command returns the mean value for the measurement for the current acquisition.
MEASUrement:MEAS<x>:RESUlts:CURRentacq:MINimum?	This query-only command returns the minimum value found for the specified measurement since the last statistical reset.
MEASUrement:MEAS<x>:RESUlts:CURRentacq:PK2PK?	This query-only command returns the peak-to-peak value for the specified measurement for the current acquisition.
MEASUrement:MEAS<x>:RESUlts:CURRentacq:POPUlation?	This query-only command returns the population for the specified measurement for the current acquisition.
MEASUrement:MEAS<x>:RESUlts:CURRentacq:STDDev?	This query-only command returns the standard deviation for the specified measurement for all acquisitions accumulated since statistics were last reset.
MEASUrement:MEAS<x>:SIGNALType	This command sets or queries the signal type of source 1 for the measurement.
MEASUrement:MEAS<x>:SOUrce<x>	Sets or queries the measurement source.
MEASUrement:MEAS<x>:SSC:NOMinalfreq	This command sets or queries the user-defined frequency for the measurement when the measurement type is SSC.
MEASUrement:MEAS<x>:SSC:NOMinalfreq:SELECTIONtype	This command sets or queries the frequency detection type for the measurement when the measurement type is SSC.
MEASUrement:MEAS<x>:TOEdge	This command sets or queries the 'to edge' type for the measurement.
MEASUrement:MEAS<x>:TOEDGESEARCHDIRect	This command sets or queries the 'to edge' search direction for the measurement.
MEASUrement:MEAS<x>:TRANSition	This command sets or queries the transition edges flag for the measurement.

Table 2-31: Measurement commands (cont.)

Command	Description
MEASUrement:MEAS<x>:TYPe	This command sets or queries the measurement type.
MEASUrement:MEAS<x>:WINDOWLENgth	This command sets or queries the window length for the measurement.
MEASUrement:MEASRange:MAX	This command sets or queries the global range maximum value.
MEASUrement:MEASRange:MIN	This command sets or queries the global range minimum value.
MEASUrement:MEASRange:STATE	Sets or queries the global range state.
MEASUrement:MINUI	This command sets or queries the minimum number of unit intervals required for BUJ analysis.
MEASUrement:POPUlation:LIMIT:STATE	This command sets or queries the global population limit state.
MEASUrement:POPUlation:LIMIT:VALue	This command sets or queries the global population limit value.
MEASUrement:REFLevels:ABSolute:FALLHigh	Sets or queries the value used as the high reference level of the falling edge.
MEASUrement:REFLevels:ABSolute:FALLLow	Sets or queries the value used as the low reference level of the falling edge.
MEASUrement:REFLevels:ABSolute:FALLMid	Sets or queries the value used as the mid reference level of the falling edge.
MEASUrement:REFLevels:ABSolute:HYSTeresis	Sets or queries the value of the hysteresis of the reference level.
MEASUrement:REFLevels:ABSolute:RISEHigh	Sets or queries the value used as the high reference level of the rising edge.
MEASUrement:REFLevels:ABSolute:RISELow	Sets or queries the value used as the low reference level of the rising edge.
MEASUrement:REFLevels:ABSolute:RISEMid	Sets or queries the value used as the mid reference level of the rising edge.
MEASUrement:REFLevels:ABSolute:TYPE	Sets or queries the reference level type.
MEASUrement:REFLevels:BASETop	Sets or queries the method used to calculate the TOP and BASE, used to calculate reference levels.
MEASUrement:REFLevels:JITTERMODE	Sets or queries how often reference levels are calculated on Jitter measurements.
MEASUrement:REFLevels:METHod	Sets or queries the method used to calculate reference levels.
MEASUrement:REFLevels:MODE	This command sets or queries how often reference levels are calculated.
MEASUrement:REFLevels:PERCent:FALLHigh	Sets or queries the percentage used to calculate the high reference level of the falling edge.
MEASUrement:REFLevels:PERCent:FALLLow	Sets or queries the percentage used to calculate the mid reference level of the falling edge.
MEASUrement:REFLevels:PERCent:FALLMid	Sets or queries the percentage used to calculate the mid reference level of the falling edge.
MEASUrement:REFLevels:PERCent:HYSTeresis	Sets or queries the percentage used to calculate the hysteresis of the reference level.
MEASUrement:REFLevels:PERCent:RISEHigh	Sets or queries the percentage used to calculate the high reference level of the rising edge.
MEASUrement:REFLevels:PERCent:RISELow	Sets or queries the percentage used to calculate the low reference level of the rising edge.

Table 2-31: Measurement commands (cont.)

Command	Description
MEASUrement:REFLevels:PERCent:RISEMid	Sets or queries the percentage used to calculate the mid reference level of the rising edge.
MEASUrement:REFLevels:PERCent:TYPE	Sets or queries the reference level percent type.
MEASUrement:REFLevels:TYPE	This command sets or queries the shared reference level method used for sources of measurement calculations.
MEASUrement:REF<x>:REFLevels:ABSolute:FALLHigh	Sets or queries the value used as the high reference level of the falling edge.
MEASUrement:REF<x>:REFLevels:ABSolute:FALLLow	Sets or queries the value used as the low reference level of the falling edge.
MEASUrement:REF<x>:REFLevels:ABSolute:FALLMid	Sets or queries the value used as the mid reference level of the falling edge.
MEASUrement:REF<x>:REFLevels:ABSolute:HYSTeresis	Sets or queries the value of the hysteresis of the reference level.
MEASUrement:REF<x>:REFLevels:ABSolute:RISEHigh	Sets or queries the value used as the high reference level of the rising edge.
MEASUrement:REF<x>:REFLevels:ABSolute:RISELow	Sets or queries the value used as the low reference level of the rising edge.
MEASUrement:REF<x>:REFLevels:ABSolute:RISEMid	Sets or queries the value used as the mid reference level of the rising edge.
MEASUrement:REF<x>:REFLevels:ABSolute:TYPE	Sets or queries the reference level type.
MEASUrement:REF<x>:REFLevels:BASETop	Sets or queries the method used to calculate the TOP and BASE, used to calculate reference levels.
MEASUrement:REF<x>:REFLevels:METHod	Sets or queries the method used to calculate reference levels.
MEASUrement:REF<x>:REFLevels:PERCent:FALLHigh	Sets or queries the percentage used to calculate the high reference level of the falling edge.
MEASUrement:REF<x>:REFLevels:PERCent:FALLLow	Sets or queries the percentage used to calculate the low reference level of the falling edge.
MEASUrement:REF<x>:REFLevels:PERCent:FALLMid	Sets or queries the percentage used to calculate the mid reference level of the falling edge.
MEASUrement:REF<x>:REFLevels:PERCent:HYSTeresis	Sets or queries the percentage used to calculate the hysteresis of the reference level.
MEASUrement:REF<x>:REFLevels:PERCent:RISEHigh	Sets or queries the percentage used to calculate the high reference level of the rising edge.
MEASUrement:REF<x>:REFLevels:PERCent:RISELow	Sets or queries the percentage used to calculate the low reference level of the rising edge.
MEASUrement:REF<x>:REFLevels:PERCent:RISEMid	Sets or queries the percentage used to calculate the mid reference level of the rising edge.

Table 2-31: Measurement commands (cont.)

Command	Description
MEASUrement:REF<x>:REFLevels:PERCent:TYPE	Sets or queries the reference level percent type.
MEASUrement:STATIstics:CYCLEMode	This command sets or queries whether cycle-cycle statistics are calculated for all measurements.

Miscellaneous command group

Miscellaneous commands do not fit into other categories.

Several commands and queries are common to all devices. The 488.2-1987 standard defines these commands. The common commands begin with an asterisk (*) character.

Table 2-32: Miscellaneous commands

Command	Description
AUTOSAVEPITIMEOUT	Sets or queries the idle time from the programmable interface before auto-save occurs.
AUTOSAVEUITIMEOUT	Sets or queries the idle time from the user interface before auto-save occurs.
AUTOset	Sets the vertical, horizontal, and trigger controls of the instrument to automatically acquire and display the selected waveform.
AUXout:EDGE	Sets or queries the direction in which the trigger output signal will transition when a trigger occurs.
AUXout:SOUrce	Sets or queries the trigger source at the BNC connection.
CLEAR	Clears acquisitions, measurements, and waveforms.
DATE?	Queries the date that the instrument displays.
*DDT	Sets or queries the commands that will be executed by the group execute trigger.
FPAnel:PRESS	Turns off the displayed menu.
FPAnel:TURN	Emulates a knob turn.
HEADer	Sets or queries the Response Header Enable State.
ID?	Returns identifying information about the instrument and its firmware.
*IDN?	Returns the instrument identification code.
LICense?	Queries all license parameters.
LICENSE:APPID?	Returns a comma-separated list of the active application IDs.
LICense:COUNt?	Returns a count of the number of active licenses installed.
LICense:GMT?	Returns the GMT time in ISO 8601 format, the local date, 24 hour time and time-zone offset.
LICense:HID?	Returns the instrument HostID unique identifier.
LICense:INSTall	Accepts a <block data> license and installs it on the instrument.
LICense:ITEM?	Returns the details pertaining to a specific license.
LICense:LIST?	Returns the active license nomenclatures as a comma-separated list of strings.
LICense:VALidate?	Accepts a license nomenclature as an argument and returns the status of the license.
LIC:UNINSTALL?	Returns the exit license information for the user to return to their TekAMS account.
LOCk	Sets or queries the front panel lock state.
*LRN?	Returns a listing of instrument settings.
NEWpass	Changes the password for user protected data.
PASSWord	Provides access for changing user protected data.

Table 2-32: Miscellaneous commands (cont.)

Command	Description
PAUSe	Causes the interface to pause the specified number of seconds before processing any other commands.
REM	Specifies a comment which is ignored by the instrument.
ROSc:SOUrce	Selects or queries the selected source for the time base reference oscillator.
ROSc:STATE?	Returns whether the time base reference oscillator is locked.
SET?	Returns a listing of instrument settings.
SOCKETServer:ENAble	Enables or disables the socket server which supports a telnet or other TCPIP socket connection to send commands and queries to the instrument.
SOCKETServer:PORT	Sets the TCPIP port for the socket server connection.
SOCKETServer:PROTOCol	Sets or queries the protocol for the socket server.
TEKSecure	Initializes both waveform and setup memories.
TIMe?	Queries the time displayed by the instrument.
TIMe:ZONe	Sets the time zone to the one specified.
TIMe:ZONe:UTCDELTa	Sets or queries the time zone using the difference between the desired time zone and UTC.
TOTaluptime?	Returns the total number of hours the oscilloscope has been turned on since the NV memory was last programmed.
TOUCHSCReen:STATe	Sets or queries the enabled state of the touch screen.
*TRG	Performs the group execute trigger (GET).
*TST?	Tests the interface and returns status.
UNDO	Reverts the scope settings to a state before the previous command or user interface action.
UNLock	Unlocks front panel.
USBDevice:CONFigure	Used to configure the rear USB port to be off or enabled as a USBTMC device.
VERBose	Sets or queries the verbose state.

Plot command group

Plot commands let you select the type and control the appearance of your plots.

Table 2-33: Plot commands

Command	Description
PLOT:ADDNew	Adds the specified plot.
PLOT:DELete	Deletes the specified plot.
PLOT:LIST?	Lists all currently defined plots.
PLOT:PLOT<x>:BATHtub:BER	Sets or queries the bathtub BER value.
PLOT:PLOT<x>:BATHtub:XAXISUnits	Sets or queries the X-Axis unit, either unit intervals or seconds.
PLOT:PLOT<x>:LABel:COLor	Sets or queries the color of the specified trend label.
PLOT:PLOT<x>:LABel:FONT:BOLD	Sets or queries the bold state of the specified trend label.
PLOT:PLOT<x>:LABel:FONT:ITALic	Sets or queries the italic state of the specified trend label.
PLOT:PLOT<x>:LABel:FONT:SIZE	Sets or queries the font size of the specified trend label.
PLOT:PLOT<x>:LABel:FONT:TYPE	Sets or queries the font type of the specified trend label.
PLOT:PLOT<x>:LABel:FONT:UNDERline	Sets or queries the underline state of the specified trend label.
PLOT:PLOT<x>:LABel:NAMe	Sets or queries the specified trend's label.
PLOT:PLOT<x>:LABel:XPOS	Sets or queries the x-position of the specified trend label.
PLOT:PLOT<x>:LABel:YPOS	Sets or queries the y-position of the specified trend label.
PLOT:PLOT<x>:NUMBins	Sets or queries the current histogram resolution.
PLOT:PLOT<x>:SOUrce<x>	Sets or queries the measurement source.
PLOT:PLOT<x>:SPECtrum:BASE	Sets or queries the spectrum base. Undefined for non-spectrum plots.
PLOT:PLOT<x>:SPECtrum:DYNRange	Sets or queries the dynamic range value.
PLOT:PLOT<x>:TYPe	Sets or queries the current plot type for the selected plot.

Power command group

Table 2-34: Power commands

Command	Description
POWer:ADDNew	Adds the specified power measurement badge.
POWer:DELete	Deletes the specified power measurement badge.
POWer:POWer<x>:AUTOSet	Executes power autoset for the specified power measurement badge.
POWer:POWer<x>:CYCLEAmp:INPUTSOurce	Sets or queries the input source for cycle amplitude measurement in the specified power measurement badge.
POWer:POWer<x>:CYCLEBase:INPUTSOurce	Sets or queries the input source for cycle base measurement in the specified power measurement badge.
POWer:POWer<x>:CYCLEMAX:INPUTSOurce	Sets or queries the input source for cycle maximum measurement in the specified power measurement badge.

Table 2-34: Power commands (cont.)

Command	Description
POWer:POWer<x>:CYCLEMin:INPUTSOurce	Sets or queries the input source for cycle minimum measurement in the specified power measurement badge.
POWer:POWer<x>:CYCLEPKPK:INPUTSOurce	Sets or queries the input source for cycle peak-to-peak measurement in the specified power measurement badge.
POWer:POWer<x>:CYCLETop:INPUTSOurce	Sets or queries the input source for cycle top measurement in the specified power measurement badge.
POWer:POWer<x>:DIDT:INPUTSOurce	Sets or queries the input source for di/dt measurement in the specified power measurement badge.
POWer:POWer<x>:DIDT:SOURCEEDGEType	Sets or queries the edge type for di/dt measurement in the specified power measurement badge.
POWer:POWer<x>:DVDT:INPUTSOurce	Sets or queries the input source for dv/dt measurement in the specified power measurement badge.
POWer:POWer<x>:DVDT:SOURCEEDGEType	Sets or queries the edge type for dv/dt measurement in the specified power measurement badge.
POWer:POWer<x>:FREQUENCY:EDGe	Sets or queries the edge type for frequency measurement in the specified power measurement badge.
POWer:POWer<x>:FREQUENCY:INPUTSOurce	Sets or queries the input source for frequency measurement in the specified power measurement badge.
POWer:POWer<x>:GATing	Sets or queries the gating type for the specified power measurement badge.
POWer:POWer<x>:GATing:GLOBal	Sets or queries the gating settings for the specified power measurement badge.
POWer:POWer<x>:HARMONICS:CLASs	Sets or queries the class type for the harmonics measurement in the specified power measurement badge.
POWer:POWer<x>:HARMONICS:CMEThod	Sets or queries the fundamental current method for the harmonics measurement in the specified power measurement badge.
POWer:POWer<x>:HARMONICS:FUNDCURRent	Sets or queries the fundamental current value for the harmonics measurement in the specified power measurement badge.
POWer:POWer<x>:HARMONICS:HORDer	Sets or queries the order value for the harmonics measurement in the specified power measurement badge.
POWer:POWer<x>:HARMONICS:HSOURce	Sets or queries the source type for the harmonics measurement in the specified power measurement badge.
POWer:POWer<x>:HARMONICS:IPOWer	Sets or queries the input power value for the harmonics measurement in the specified power measurement badge.
POWer:POWer<x>:HARMONICS:ISOURce	Sets or queries the current source for SOA measurement in the specified power measurement badge.
POWer:POWer<x>:HARMONICS:ODDEVen	Sets or queries the harmonics value analysis format in the specified power measurement badge.
POWer:POWer<x>:HARMONICS:PFACtor	Sets or queries the value of power factor for the harmonics measurement in the specified power measurement badge.
POWer:POWer<x>:HARMONICS:POWERRating	Sets or queries the power level for the harmonics measurement in the specified power measurement badge.

Table 2-34: Power commands (cont.)

Command	Description
POWer:POWer<x>:HARMONICS:RCURRent	Sets or queries the rated current for the harmonics measurement in the specified power measurement badge.
POWer:POWer<x>:HARMONICS:STANDard	Sets or queries the test mode for harmonics measurement in the specified power measurement badge.
POWer:POWer<x>:HARMONICS:UNITs	Sets or queries the harmonics results units in the specified power measurement badge.
POWer:POWer<x>:HARMONICS:VSOURce	Sets or queries the voltage source for SOA measurement in the specified power measurement badge.
POWer:POWer<x>:LABel	Sets or queries the custom name for the specified power measurement badge.
POWer:POWer<x>:LINERIPPLE:INPUTSOurce	Sets or queries the input source for line ripple measurement in the specified power measurement badge.
POWer:POWer<x>:LINERIPPLE:LFREQuency	sSets or queries the frequency present for line ripple measurement in the specified power measurement badge.
POWer:POWer<x>:NDUTYCYCLE:EDGEType	Sets or queries the clock edge type for negative duty cycle measurement in the specified power measurement badge.
POWer:POWer<x>:NDUTYCYCLE:INPUTSOurce	Sets or queries the input source for negative duty cycle measurement in the specified power measurement badge.
POWer:POWer<x>:NPULSEWIDTH:INPUTSOurce	Sets or queries the input source for negative pulse width measurement in the specified power measurement badge.
POWer:POWer<x>:PDUTYCYCLE:EDGEType	Sets or queries the clock edge type for positive duty cycle measurement in the specified power measurement badge.
POWer:POWer<x>:PDUTYCYCLE:INPUTSOurce	Sets or queries the input source for positive duty cycle measurement in the specified power measurement badge.
POWer:POWer<x>:PERIOD:EDGe	Sets or queries the edge type for period measurement in the specified power measurement badge.
POWer:POWer<x>:PERIOD:INPUTSOurce	Sets or queries the input source for period measurement in the specified power measurement badge.
POWer:POWer<x>:POWERQUALITY:CCYCles	Sets or queries the calculate cycles over full cycles settings for the specified power quality measurement badge.
POWer:POWer<x>:POWERQUALITY:FREFerence	Sets or queries the frequency reference type for power quality measurement in the specified power measurement badge.
POWer:POWer<x>:POWERQUALITY:ISOURce	Sets or queries the current source for power quality measurement in the specified power measurement badge.
POWer:POWer<x>:POWERQUALITY:VSOURce	Sets or queries the voltage source for power quality measurement in the specified power measurement badge.
POWer:POWer<x>:PPULSEWIDTH:INPUTSOurce	Sets or queries the input source for positive pulse width measurement in the specified power measurement badge.
POWer:POWer<x>:REFLevels:ABSolute:FALLHigh	Sets or queries the falling edge for high reference level in absolute units for the specified power measurement badge.
POWer:POWer<x>:REFLevels:ABSolute:FALLLow	Sets or queries the falling edge for low reference level in absolute units for the specified power measurement badge.

Table 2-34: Power commands (cont.)

Command	Description
POWer:POWer<x>:REFLevels:ABSolute:FALLMid	Sets or queries the falling edge for mid reference level in absolute units for the specified power measurement badge.
POWer:POWer<x>:REFLevels:ABSolute:HYSTeresis	Sets or queries the absolute hysteresis value for the specified power measurement badge.
POWer:POWer<x>:REFLevels:ABSolute:RISEHigh	Sets or queries the rising edge for high reference level in absolute units for the specified power measurement badge.
POWer:POWer<x>:REFLevels:ABSolute:RISELow	Sets or queries the rising edge for low reference level in absolute units for the specified power measurement badge.
POWer:POWer<x>:REFLevels:ABSolute:RISEMid	Sets or queries the rising edge for mid reference level in absolute units for the specified power measurement badge.
POWer:POWer<x>:REFLevels:ABSolute:TYPE	Sets or queries the type of measurement levels when reference level is set to absolute for the specified power measurement badge.
POWer:POWer<x>:REFLevels:BASETop	Sets or queries the reference level base top method for the specified power measurement badge.
POWer:POWer<x>:REFLevels:METHod	Sets or queries the method to configure reference level values for the specified power measurement badge.
POWer:POWer<x>:REFLevels:PERCent:FALLHigh	Sets or queries the falling edge for high reference level in percentage for the specified power measurement badge.
POWer:POWer<x>:REFLevels:PERCent:FALLLow	Sets or queries the falling edge for low reference level in percentage for the specified power measurement badge.
POWer:POWer<x>:REFLevels:PERCent:FALLMid	Sets or queries the falling edge for mid reference level in percentage for the specified power measurement badge.
POWer:POWer<x>:REFLevels:PERCent:HYSTeresis	Sets or queries the hysteresis in percentage for the specified power measurement badge.
POWer:POWer<x>:REFLevels:PERCent:RISEHigh	Sets or queries the rising edge for high reference level in percentage for the specified power measurement badge.
POWer:POWer<x>:REFLevels:PERCent:RISELow	Sets or queries the rising edge for low reference level in percentage for the specified power measurement badge.
POWer:POWer<x>:REFLevels:PERCent:RISEMid	Sets or queries the rising edge for mid reference level in percentage for the specified power measurement badge.
POWer:POWer<x>:REFLevels:PERCent:TYPE	Sets or queries the reference levels for the specified power measurement badge.
POWer:POWer<x>:RESUlts:ALLAcqs:MAXimum?	Queries the maximum value of all acquisitions for the measurement parameter in the specified power measurement badge.
POWer:POWer<x>:RESUlts:ALLAcqs:MEAN?	Queries the mean value of all acquisitions for the measurement parameter in the specified power measurement badge.
POWer:POWer<x>:RESUlts:ALLAcqs:MINimum?	Queries the minimum value of all acquisitions for the measurement parameter in the specified power measurement badge.
POWer:POWer<x>:RESUlts:ALLAcqs:PK2PK?	Queries the peak-to-peak value of all acquisitions for the measurement parameter in the specified power measurement badge.
POWer:POWer<x>:RESUlts:ALLAcqs:POPUlation?	Queries the population (number of complete cycles) of all acquisitions for the measurement parameter in the specified power measurement badge.

Table 2-34: Power commands (cont.)

Command	Description
POWer:POWer<x>:RESUlts:ALLAcqs:STDDev?	Queries the standard deviation value of all acquisitions for the measurement parameter in the specified power measurement badge.
POWer:POWer<x>:RESUlts:CURRentacq:F1MAG?	Queries the first harmonics magnitude value for the specified power measurement badge.
POWer:POWer<x>:RESUlts:CURRentacq:F3MAG?	Queries the third harmonics magnitude value for the specified power measurement badge.
POWer:POWer<x>:RESUlts:CURRentacq:FREQUENCY?	Queries the fundamental frequency for the specified power measurement badge.
POWer:POWer<x>:RESUlts:CURRentacq:IRMS?	Queries the RMS current value for the specified power measurement badge.
POWer:POWer<x>:RESUlts:CURRentacq:MAXimum?	Queries the maximum value of the current acquisition for the measurement parameter in the specified power measurement badge.
POWer:POWer<x>:RESUlts:CURRentacq:MEAN?	Queries the mean value of the current acquisition for the measurement parameter in the specified power measurement badge.
POWer:POWer<x>:RESUlts:CURRentacq:MINimum?	Queries the minimum value of the current acquisition for the measurement parameter in the specified power measurement badge.
POWer:POWer<x>:RESUlts:CURRentacq:PK2PK?	Queries the peak-to-peak value of the current acquisition for the measurement parameter in the specified power measurement badge.
POWer:POWer<x>:RESUlts:CURRentacq:POHCL?	Queries the limit of partial odd harmonic current for the specified power measurement badge.
POWer:POWer<x>:RESUlts:CURRentacq:POHCM?	Queries the measured value of partial odd harmonic current for the specified power measurement badge.
POWer:POWer<x>:RESUlts:CURRentacq:POHCS?	Queries the status of partial odd harmonic current for the specified power measurement badge.
POWer:POWer<x>:RESUlts:CURRentacq:POPUlation?	Queries the population (number of complete cycles) of the current acquisition for the measurement parameter in the specified power measurement badge.
POWer:POWer<x>:RESUlts:CURRentacq:RMS?	Queries the RMS value of the source selected for the specified power measurement badge.
POWer:POWer<x>:RESUlts:CURRentacq:STATUS?	Queries the status of the measurement for the specified power measurement badge.
POWer:POWer<x>:RESUlts:CURRentacq:STDDev?	Queries the standard deviation value of the current acquisition for the measurement parameter in the specified power measurement badge.
POWer:POWer<x>:RESUlts:CURRentacq:THDF?	Queries the total harmonic distortion (fundamental) value for the specified power measurement badge.
POWer:POWer<x>:RESUlts:CURRentacq:THDR?	Queries the total harmonic distortion (RMS) value for the specified power measurement badge.
POWer:POWer<x>:RESUlts:CURRentacq:TRPWR?	Queries the true power value for the specified power measurement badge.
POWer:POWer<x>:RESUlts:CURRentacq:VRMS?	Queries the RMS voltage value for the specified power measurement badge.
POWer:POWer<x>:SOA:ISOURce	Sets or queries the current source for SOA measurement in the specified power measurement badge.

Table 2-34: Power commands (cont.)

Command	Description
POWer:POWer<x>:SOA:POINT	Sets or queries the Y co-ordinate value for SOA mask.
POWer:POWer<x>:SOA:POINT	Sets or queries the X co-ordinate value for SOA mask.
POWer:POWer<x>:SOA: RECAllmask	Recalls or queries the recall mask file name in the specified power measurement badge.
POWer:POWer<x>:SOA: RECAllmask:FILEName	Sets or queries the file name for saving SOA mask file name in the specified power measurement badge.
POWer:POWer<x>:SOA: SAVemask	Saves the mask file as per the name configured and at the configured path or queries the mask file name, path, and file type for the SOA measurement in the specified power measurement badge.
POWer:POWer<x>:SOA: SAVemask:AUTOINCrement	Sets or queries the state of auto-increment for saved SOA mask file names in the specified power measurement badge.
POWer:POWer<x>:SOA: SAVemask:FILEName	Sets or queries the mask file name for SOA measurement in the specified power measurement badge.
POWer:POWer<x>:SOA: SAVemask:FOLDer	Sets or queries the mask file folder path for SOA measurement in the specified power measurement badge.
POWer:POWer<x>:SOA: VSOURce	Sets or queries the voltage source for SOA measurement in the specified power measurement badge.
POWer:POWer<x>: SWITCHINGLOSS:DEVICEType	Sets or queries the conduction calculation method for switching loss measurement in the specified power measurement badge.
POWer:POWer<x>: SWITCHINGLOSS:GATESOurce	Sets or queries the gate voltage (V_g) for the switching loss measurement in the specified power measurement badge.
POWer:POWer<x>: SWITCHINGLOSS:ILEVELAbs	Sets or queries the current level (Ton-Start & Stop) in absolute units for switching loss measurement in the specified power measurement badge.
POWer:POWer<x>: SWITCHINGLOSS:ILEVELPct	Sets or queries the current level (Ton-Start & Stop) in percentage for switching loss measurement in the specified power measurement badge.
POWer:POWer<x>: SWITCHINGLOSS:ISOURce	Sets or queries the current source for the switching loss measurement in the specified power measurement badge.
POWer:POWer<x>: SWITCHINGLOSS:LEVELUNIts	Sets or queries the level units for switching loss measurement in the specified power measurement badge.
POWer:POWer<x>: SWITCHINGLOSS:RDSOn	Sets or queries the RDS(on) value for switching loss measurement in the specified power measurement badge.
POWer:POWer<x>: SWITCHINGLOSS: SWLCONFIGType	Sets or queries the configuration type for the switching loss measurement in the specified power measurement badge.
POWer:POWer<x>: SWITCHINGLOSS:VCESat	Sets or queries the value for the VCE(sat) value for switching loss measurement in the specified power measurement badge.
POWer:POWer<x>: SWITCHINGLOSS:VGLevel	Sets or queries the gate voltage value (V_g Level Ton-Start) for the switching loss measurement in the specified power measurement badge.
POWer:POWer<x>: SWITCHINGLOSS:VLEVELAbs	Sets or queries the voltage level (Ton-Start & Stop) in absolute units for switching loss measurement in the specified power measurement badge.
POWer:POWer<x>: SWITCHINGLOSS:VLEVELPct	Sets or queries the voltage level (Ton-Start & Stop) in percentage for switching loss measurement in the specified power measurement badge.

Table 2-34: Power commands (cont.)

Command	Description
POWer:POWer<x>:SWITCHINGLOSS:VSOURce	Sets or queries the voltage source for the switching loss measurement in the specified power measurement badge.
POWer:POWer<x>:SWITCHINGRIPPLE:INPUTSOurce	Sets or queries the input source for switching ripple measurement in the specified power measurement badge.
POWer:POWer<x>:SWITCHINGRIPPLE:LFREQuency	Sets or queries the switching frequency for switching ripple measurement in the specified power measurement badge.
POWer:POWer<x>:TYPe	Sets or queries the measurement type for the specified power measurement badge.
POWERTABle:ADDNew	Adds the power harmonics table.
POWERTABle:DELete	Deletes the power harmonics table.
POWERTABle:LIST?	Lsts all defined power harmonics table.

Save and Recall command group

Use the commands in the Save and Recall Command Group to store and retrieve internal waveforms and settings. When you save a setup, you save all the settings of the instrument. When you recall a setup, the instrument restores itself to the state that it was in when you originally saved that setting.

Table 2-35: Save and Recall commands

Command	Description
FACtory	Resets the instrument to factory default settings.
RECAll:SESsion	Restores the state of the instrument from a saved session file.
RECAll:SETUp	Recalls saved instrument settings.
RECAll:WAVEform	Recalls a stored waveform to a reference memory location.
SAVe:EVENTtable:BUS	Saves bus results table to the specified file.
SAVe:EVENTtable:MEASUrement	Saves data (measurement) results to the specified file.
SAVe:IMAGe	Saves a capture of the screen contents to the specified image file.
SAVe:REPOrt	Saves a report to the specified file or, if no argument is specified, uses the folder and file name specified by the related commands.
SAVe:REPOrt:COMMents	Sets or queries the comments to be included in saved report files.
SAVe:SESsion	Saves the state of the instrument, including reference waveforms, to a saved session file.
SAVe:SETUp	Saves the current instrument state to the specified file.
SAVe:SETUp:INCLUDEREFs	Sets or queries whether displayed reference waveforms are to be included in saved setups.
SAVe:WAVEform	Saves the specified waveform(s) to the specified destination file(s).
SAVe:WAVEform:SOURCEList?	Returns a list of the available waveforms that can be specified as the source for the SAVe:WAVEform command.

Save On command Group

Use this group of commands to program the oscilloscope to save images, measurements, waveforms, or the instrument setup, on triggers that you select.

Table 2-36: Save On commands

Command	Description
SAVEON:FILE:DEST	Sets or queries the location where files are saved.
SAVEON:FILE:NAME	Sets or queries the file name to use when SAVEON:TRIGer is ON.
SAVEON:IMAGe:FILEFormat	Sets or queries the file format to be used for saved image files.
SAVEON:IMAGe	Sets or queries whether to save a screen capture when a trigger occurs.
SAVEON:TRIGger	Sets or queries whether to save a file when a trigger occurs.
SAVEON:WAVEform	Sets or queries whether to save a waveform when a limit test failure, mask failure, or trigger occurs.
SAVEON:WAVEform:FILEFormat	Sets or queries the file format for saving waveform.
SAVEON:WAVEform:SOURce	Sets or queries the sources for saving waveforms.

Search and Mark command group

Use search and mark commands to seek out and identify information in waveform records that warrant further investigation.

Table 2-37: Search and Mark commands

Command	Description
SEARCH:ADDNew	Adds the specified search.
SEARCH:DELete	Deletes the specified search.
SEARCH:LIST?	Lists all currently defined searches.
SEARCH:SEARCH<x>:COPy	Copies the search criteria to or from the trigger.
SEARCH:SEARCH<x>:NAVigate	Sets the navigation action for search marks.
SEARCH:SEARCH<x>:TOTAL?	Queries the total number of found search marks for this search.
SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:CONDition	Specifies a field or condition for an ARINC429 bus to search on.
SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:ERRTYPe	Sets or queries the error type when searching on an ARINC429 bus signal.
SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:LABel:QUALifier	Sets or queries the qualifier to be used when searching on label data for an ARINC429 bus signal.
SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:LABel:VALue	Sets or queries the low value when searching on an ARINC429 label field.
SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:LABel:HIVALue	Sets or queries the high value when searching on an ARINC429 label field.
SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:SDI:VALue	Sets or queries the when searching on an ARINC429 SDI field.
SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:SSM:VALue	Sets or queries the when searching on an ARINC429 SSM field.
SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:DATa:QUALifier	Sets or queries the qualifier to be used when searching on data in the DATA field for an ARINC429 bus signal.
SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:DATa:VALue	Sets or queries the low value when searching on an ARINC429 data field.
SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:DATa:HIVALue	Sets or queries the high value when searching on an ARINC429 data field.
SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:CONDition	Sets or queries the condition (word select / frame sync, or matching data) to be used when searching on an audio bus signal.
SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:DATa:HITDMVALue	Sets or queries the binary data string for the high data word to be used when searching on an TDM audio bus signal.
SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:DATa:HIVALue	Sets or queries the binary data string for the high data word to be used when searching on an audio bus signal.
SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:DATa:OFFSet	Sets or queries the data offset value (TDM channel) to be used when searching on a TDM type audio bus signal.
SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:DATa:QUALifier	Sets or queries the qualifier to be used when searching on an audio bus signal.

Table 2-37: Search and Mark commands (cont.)

Command	Description
SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:DATa:TDMVALue	Sets or queries the binary data string for the single or low data word to be used when searching on an TDM audio bus signal
SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:DATa:VALue	Sets or queries the binary data string for the single or low data word to be used when searching on an audio bus signal.
SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:DATa:WORD	Sets or queries the alignment of the data (left, right or either) to be used when searching on a non-TDM type audio bus signal.
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:CONDition	Sets or queries the CAN bus trigger condition.
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:DATa:DIRection	Sets the CAN search type.
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:DATa:OFFSet	Sets or queries the data offset value, in bytes, to use when searching on the CAN data field.
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:DATa:QUALifier	Sets or queries the CAN bus trigger data qualifier.
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:DATa:SIZe	Sets or queries the CAN bus trigger data size.
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:DATa:VALue	Sets or queries the binary data value to be used when searching on a CAN bus signal.
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:ERRType	Sets or queries the type of error condition for a CAN bus to search on.
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:FD:BRSBit	Sets or queries the value of the bit rate switch bit (BRS bit) for a CAN bus to search on.
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:FD:ESIBit	Sets or queries the value of the error state indicator bit (ESI bit) for a CAN bus to search on.
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:FRAMEtype	Sets or queries CAN bus trigger frame type.
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:IDentifier:MODe	Sets or queries the CAN bus trigger identifier mode.
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:IDentifier:VALue	Sets or queries CAN bus trigger identifier value.
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:CONDition	Specifies a field or condition within an Ethernet frame to search on.
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:DATa:HIVALue	Sets or queries the binary data value to be used when searching on an Ethernet bus signal.
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:DATa:OFFSet	Specifies the data offset value, in bytes, to use when searching on the Ethernet data field.
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:DATa:QUALifier	Sets the qualifier to be used when searching on an Ethernet bus signal.
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:DATa:SIZe	Specifies the number of contiguous TCP/IPv4/MAC client bytes to use when searching on the Ethernet data field.
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:DATa:VALue	Specifies the binary value to use when searching on the Ethernet data field.

Table 2-37: Search and Mark commands (cont.)

Command	Description
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:IPHeader:DESTinationaddr:VALue	Specifies the 32-bit value to use when searching on the Ethernet IPv4 header address destination field.
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:IPHeader:PROTOcol:VALue	Specifies the 8-bit value to use when searching on the Ethernet IPv4 header protocol field.
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:IPHeader:SOUrceaddr:VALue	Specifies the 32-bit value to use when searching on the Ethernet IPv4 header address source field.
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:MAC:ADDRess:DESTination:VALue	Specifies the 48-bit value to use when searching on the Ethernet MAC address destination field.
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:MAC:ADDRess:SOUrce:VALue	Specifies the 48-bit value to use when searching on the Ethernet MAC address source field.
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:MAC:LENgth:HIVALue	Specifies the 16-bit high value to use when searching on the Ethernet MAC length/type.
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:MAC:LENgth:VALue	Specifies the 16-bit value to use when searching on the Ethernet MAC length/type.
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:QTAG:VALue	Specifies the 32-bit value to use when searching on the Ethernet Q-Tag field.
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:TCPHeader:ACKnum:VALue	Specifies the 32-bit value to use when searching on the Ethernet TCP header acknowledgement number.
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:TCPHeader:DESTinationport:VALue	Specifies the 16-bit value to use when searching on the Ethernet TCP header destination port number.
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:TCPHeader:SEQnum:VALue	Specifies the 32-bit value to use when searching on the Ethernet TCP header sequence number.
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:TCPHeader:SOUrceport:VALue	Specifies the 16-bit value to use when searching on the Ethernet TCP header source port number.
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:CONDition	Sets or queries FlexRay bus search trigger condition.
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:CYCLEcount:VALue	Sets or queries the FlexRay bus search cycle count value.
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:DATa:VALue	Sets or queries the FlexRay bus search cycle count value.
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:CYCLEcount:HIVALue	Sets or queries the FlexRay bus search cycle count value.
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:CYCLEcount:QUALifier	Sets or queries the FlexRay bus search trigger cycle count qualifier.
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:DATa:HIVALue	Sets or queries the FlexRay bus search trigger data value.
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:DATa:OFFSet	Sets or queries the FlexRay bus search trigger data offset.

Table 2-37: Search and Mark commands (cont.)

Command	Description
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:DATa:QUALifier	Sets or queries the FlexRay bus search trigger data qualifier.
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:DATa:SIZe	Sets or queries the FlexRay bus search trigger data size.
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:EOFTYPE	Sets or queries the FlexRay bus search trigger end of file type.
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:ERRTYPE	Sets or queries the FlexRay bus search trigger error type.
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXray:FRAMEID:HIVALue	Sets or queries the high value when searching on a FlexRay bus frame id field.
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXray:FRAMEID:QUALifier	Sets the qualifier to be used when searching on a FlexRay bus signal.
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXray:FRAMEID:VALue	Sets the low value when searching on a FlexRay bus id field.
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXray:FRAMEType	Sets or queries the FlexRay bus search trigger frame type.
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:HEADER:CRC	Sets or queries the FlexRay bus search trigger header CRC.
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:HEADER:CYCLECount	Sets or queries the FlexRay bus search trigger header cycle count.
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:HEADER:FRAMEID	Sets or queries the FlexRay bus search trigger header frame id.
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:HEADER:INDBits	Sets or queries the FlexRay bus search header Indicator Bits.
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:HEADER:PAYLENgth	Sets or queries the FlexRay bus search trigger header payload length.
SEARCH:SEARCH<x>:TRIGger:A:BUS:I2C:ADDRess:MODe	Sets or queries the address mode for the specified I2C bus trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:BUS:I2C:ADDRess:VALue	Sets or queries the address string when the search condition for the specified search is Address or AddressData, to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:BUS:I2C:CONDition	Sets or queries the trigger condition for the specified I2C bus trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:BUS:I2C:DATa:DIRection	Sets or queries the direction of the data for the I2C bus trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:BUS:I2C:DATa:SIZe	Sets or queries the length of the data string in bytes used for the specified I2C bus trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:BUS:I2C:DATa:VALue	Sets or queries the data value of the data token for the specified I2C bus trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:BUS:LIN:DATa:HIVALue	Specifies the high data value to be used in a LIN search.
SEARCH:SEARCH<x>:TRIGger:A:BUS:LIN:DATa:QUALifier	Sets or queries the LIN bus search trigger data qualifier.

Table 2-37: Search and Mark commands (cont.)

Command	Description
SEARCH:SEARCH<x>:TRIGger:A:BUS:LIN:DATa:SIZe	Sets or queries the LIN bus search trigger data size.
SEARCH:SEARCH<x>:TRIGger:A:BUS:LIN:DATa:VALue	Sets or queries the LIN bus search trigger data value.
SEARCH:SEARCH<x>:TRIGger:A:BUS:LIN:ERRTYPE	Sets or queries the LIN bus search trigger error type.
SEARCH:SEARCH<x>:TRIGger:A:BUS:LIN:IDentifier:VALue	Sets or queries the LIN bus search trigger identifier value.
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:CONDition	Sets or queries the field or condition for a MIL-STD-1553 bus to search on.
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:ERRTYPe	Sets or queries the type of error condition for a MIL-STD-1553 bus to search on.
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:COMMAND:TRBit	Sets or queries the value of the command word Transmit / Receive bit for a MIL-STD-1553 bus to search on.
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:COMMAND:PARity	Sets or queries the value of the command word parity bit for a MIL-STD-1553 bus to search on.
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:COMMAND:COUNt	Sets or queries the value of the command word "word count" field for a MIL-STD-1553 bus to search on.
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:COMMAND:SUBADdress	Sets or queries the value of the command word subaddress field for a MIL-STD-1553 bus to search on.
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:COMMAND:ADDRess:QUALifier	Sets or queries the qualifier to be used when searching on command word addresses for a MIL-STD-1553 bus.
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:COMMAND:ADDRess:VALue	Sets or queries the low value when searching on command word addresses for a MIL-STD-1553 bus.
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:COMMAND:ADDRess:HIVALue	Sets or queries the high value when searching on command word addresses for a MIL-STD-1553 bus.
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:DATa:PARity	Sets or queries the value of the command word parity bit for a MIL-STD-1553 bus to search on.
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:DATa:VALue	Sets or queries the value when searching on data words for a MIL-STD-1553 bus.
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:PARity	Sets or queries the value of the status word parity bit for a MIL-STD-1553 bus to search on.
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:ADDRess:QUALifier	Sets or queries the qualifier to be used when searching on status word addresses for a MIL-STD-1553 bus.
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:ADDRess:VALue	Sets or queries the low value when searching on status word addresses for a MIL-STD-1553 bus.
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:ADDRess:HIVALue	Sets or queries the high value when searching on status word addresses for a MIL-STD-1553 bus.
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:BIT:ME	Sets or queries the value of the message error bit (ME bit, bit 9) in a status word for a MIL-STD-1553 bus to search on.
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:BIT:INSTR	Sets or queries the value of the instrumentation bit (INSTR bit, bit 10) in a status word for a MIL-STD-1553 bus to search on.

Table 2-37: Search and Mark commands (cont.)

Command	Description
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:BIT:SRQ	Sets or queries the value of the status word service request bit (SRQ bit, bit 11) in a status word for a MIL-STD-1553 bus to search on.
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:BIT:BCR	Sets or queries the value of the broadcast command received bit (BCR bit, bit 15) in a status word for a MIL-STD-1553 bus to search on.
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:BIT:BUSY	Sets or queries the value of the busy bit (BUSY bit, bit 16) in a status word for a MIL-STD-1553 bus to search on.
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:BIT:SUBSF	Ssets or queries the value of the subsystem flag bit (SUBSF bit, bit 17) in a status word for a MIL-STD-1553 bus to search on.
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:BIT:DBCA	Sets or queries the value of the dynamic bus control acceptance bit (DBCA bit, bit 18) in a status word for a MIL-STD-1553 bus to search on.
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:BIT:TF	Sets or queries the value of the terminal flag bit (TF bit, bit 19) in a status word for a MIL-STD-1553 bus to search on.
SEARCH:SEARCH<x>:TRIGger:A:BUS:PARallel:DATa:VALue	Sets or queries the data value for a parallel bus trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:BUS:RS232C:DATa:VALue	Sets or queries the data string value for the specified RS232c bus trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:BUS:RS232C:CONDition	Sets or queries the condition for an RS232C bus search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:BUS:RS232C:DATa:SIZe	Sets or queries the length of the data string in bytes to be used for an RS232 bus search to determine where to place a mark when the search condition is Data.
SEARCH:SEARCH<x>:TRIGger:A:BUS:SOUrce	Sets or queries the bus source for the specified bus trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:BUS:SPI:CONDition	Sets or queries the trigger condition for the specified SPI bus trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:BUS:SPI:DATa:SIZe	Sets or queries the length of the data string in bytes used for the specified SPI bus trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:BUS:SPI:DATa:VALue	Sets or queries the data value of the data token for the specified SPI bus trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:ADDress:HIVALue	Sets or queries the address value for normal token to be used with In Range and Out of Range qualifiers for the specified USB bus trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:ADDress:VALue	Sets or queries the address value for normal token for the specified USB bus trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:CONDition	Sets or queries the search condition for the specified USB bus trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:DATa:HIVALue	Sets or queries the data value for data token used with In Range and Out of Range qualifiers for the specified USB bus trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:DATa:OFFSet	Sets or queries data offset for the specified USB bus trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:DATa:SIZe	Sets or queries the length of the data string in bytes for the specified USB bus trigger search to determine where to place a mark.

Table 2-37: Search and Mark commands (cont.)

Command	Description
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:DATa:TYPe	Sets or queries the data packet type for the specified USB bus trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:DATa:VALue	Sets or queries the data value for data token for the specified bus trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:ENDPoint:VALue	Sets or queries the endpoint value for normal token for the specified USB bus trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:ERRTYPE	Sets or queries the error type for the specified USB bus trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:HANDSHAKEType	Sets or queries the handshake type for the specified USB bus trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:SOFFRAMENUMber	Sets or queries the frame number string to use for the Start of Frame for the specified USB bus trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:SPECIALType	Sets or queries the PID value for the USB bus trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:SPLIT:ET:VALue	Sets or queries the Endpoint Type value for the specified USB bus trigger split token field search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:SPLIT:HUB:VALue	Sets or queries the hub address of the specified USB bus trigger on split token field search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:SPLIT:PORT:VALue	Sets or queries the port address for the specified USB bus trigger on split token field search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:SPLIT:SC:VALue	Sets or queries the Start/Complete value for the specified USB bus trigger on split token field search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:SPLIT:SE:VALue	Sets or queries the Start/End value for the specified USB bus trigger on split token field search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:TOKENType	Sets or queries the token type when the specified USB bus trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:EDGE:SLOpe	Sets or queries the slope for an edge trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:EDGE:SOUrce	Sets or queries the source waveform for an edge trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:FUNCtion	Sets or queries the logic operator for a pattern or state trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:USEClockedge	Sets whether or not Logic search uses a clock source.
SEARCH:SEARCH<x>:TRIGger:A:RUNT:WHEn	Sets or queries the condition setting for a runt trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:RUNT:WIDth	Sets or queries the width setting for a runt trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:SETHold:CLOCk:EDGE	Sets or queries the clock slope setting for a setup/hold trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:SETHold:CLOCk:SOUrce	Sets or queries the clock source setting for a setup/hold trigger search to determine where to place a mark.

Table 2-37: Search and Mark commands (cont.)

Command	Description
SEARCH:SEARCH<x>:TRIGger:A:SETHold:HOLDTime	Sets or queries the hold time setting for a setup/hold trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:SETHold:SETTime	Sets or queries the setup time setting for a setup/hold trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:TIMEOut:TIMe	Sets or queries the time setting for a timeout trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:TRANsition:DELTATime	Sets or queries the transition time setting for a transition trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:TRANsition:WHEn	Sets or queries the condition setting for a transition trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:TYPe	Sets or queries the trigger type setting for a search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:WINdow:WIDth	Sets or queries the width setting for a window search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:BUS:LIN:CONDition	Sets or queries the LIN bus search trigger condition.
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:DATa:QUALifier	Sets or queries the qualifier to be used when searching on a USB bus signal.
SEARCH:SEARCH<x>:TRIGger:A:EDGE:THReshold	Sets or queries the source threshold level for an edge trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:CLOCk:THReshold	Sets or queries the logic clock threshold for a logic trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:DELTatime	Specifies the Logic search delta time value.
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:INPUT:CLOCK:SOUrce	Sets or queries the channel to use as the clock source for logic trigger.
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:LEVel:CH<x>	Sets or queries the voltage level to use for logic trigger search.
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:LEVel:MATH<x>	Sets the voltage level to use for logic trigger search.
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:LEVel:REF<x>	Sets the voltage level to use for logic trigger search.
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:LOGICPattern:CH<x>	Sets or queries the conditions used for generating an A logic pattern.
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:LOGICPattern:CH<x>_D<x>	Sets or queries the conditions used for generating an A logic pattern.
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:LOGICPattern:MATH<x>	Sets or queries the conditions used for generating an A logic pattern.
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:LOGICPattern:REF<x>	Sets or queries the conditions used for generating an A logic pattern.
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:POLarity	Sets or queries the polarity for the clock channel when Use Clock Edge is set to Yes for Logic search type.

Table 2-37: Search and Mark commands (cont.)

Command	Description
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:WHEn	Sets or queries the condition for generating an A or B logic search with respect to the defined input pattern.
SEARCH:SEARCH<x>:TRIGger:A:PULSEWidth:HIGHLimit	Specifies the upper limit to use, in seconds, when searching for a pulse whose duration is inside or outside a range of two values.
SEARCH:SEARCH<x>:TRIGger:A:PULSEWidth:LOGICQUALification	Specifies whether or not to use logic qualification for a pulse width search.
SEARCH:SEARCH<x>:TRIGger:A:PULSEWidth:LOWLimit	Specifies the lower limit to use, in seconds, when searching for a pulse whose duration is inside or outside a range of two values.
SEARCH:SEARCH<x>:TRIGger:A:PULSEWidth:POLarity	Specifies the polarity for a pulse width search.
SEARCH:SEARCH<x>:TRIGger:A:PULSEWidth:SOUrce	Sets and queries the source for the pulsewidth search input.
SEARCH:SEARCH<x>:TRIGger:A:PULSEWidth:THReshold	Sets or queries the source threshold level for a pulse width trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:PULSEWidth:WHEn	Specifies to search for a pulse with a specified width.
SEARCH:SEARCH<x>:TRIGger:A:RUNT:LOGICQUALification	Specifies whether or not to use logic qualification for a runt search.
SEARCH:SEARCH<x>:TRIGger:A:RUNT:POLarity	Specifies the polarity for the runt search.
SEARCH:SEARCH<x>:TRIGger:A:RUNT:SOUrce	Sets and queries the source for the Runt search input.
SEARCH:SEARCH<x>:TRIGger:A:RUNT:THReshold:HIGH	Sets or queries the source threshold HIGH level for a runt trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:RUNT:THReshold:LOW	Sets or queries the source threshold LOW level for a runt trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:SETHold:CLOCk:THReshold	Sets or queries the clock threshold setting for a setup/hold trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:SETHold:LEVel:CH<x>	Sets or queries the voltage level to use for setup & hold trigger search.
SEARCH:SEARCH<x>:TRIGger:A:SETHold:LEVel:MATH<x>	Sets or queries the voltage level to use for setup & hold trigger search.
SEARCH:SEARCH<x>:TRIGger:A:SETHold:LEVel:REF<x>	Sets or queries the voltage level to use for setup & hold trigger search.
SEARCH:SEARCH<x>:TRIGger:A:SETHold:LOGICPattern:CH<x>	Sets or queries the conditions used for generating an A logic pattern.
SEARCH:SEARCH<x>:TRIGger:A:SETHold:LOGICPattern:CH<x>_D<x>	Sets or queries the conditions used for generating an A logic pattern.
SEARCH:SEARCH<x>:TRIGger:A:SETHold:LOGICPattern:MATH<x>	Sets or queries the conditions used for generating an A logic pattern.
SEARCH:SEARCH<x>:TRIGger:A:SETHold:LOGICPattern:REF<x>	Sets and returns the conditions used for generating an A logic pattern.

Table 2-37: Search and Mark commands (cont.)

Command	Description
SEARCH:SEARCH<x>:TRIGger:A:STATE	Sets or queries the enabled state of the search.
SEARCH:SEARCH<x>:TRIGger:A:STOPAcq	Sets or queries whether acquisitions are stopped when a search hit is found.
SEARCH:SEARCH<x>:TRIGger:A:TIMEOut: LOGICQUALification	Sets whether or not to use logic qualification for a timeout search.
SEARCH:SEARCH<x>:TRIGger:A:TIMEOut: POLarity	Sets or queries the polarity to be used for a Timeout search.
SEARCH:SEARCH<x>:TRIGger:A:TIMEOut: SOUrce	Sets and queries the source for timeout search input.
SEARCH:SEARCH<x>:TRIGger:A:TIMEOut: THReshold	Sets or queries the source threshold level for a timeout trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A: TRANsition:LOGICQUALification	Specifies whether or not to use logic qualification for a transition search.
SEARCH:SEARCH<x>:TRIGger:A: TRANsition:POLarity	Specifies the polarity for the transition search.
SEARCH:SEARCH<x>:TRIGger:A: TRANsition:SOUrce	Sets and queries the source for the transition search input.
SEARCH:SEARCH<x>:TRIGger:A: TRANsition:THReshold:HIGH	Sets or queries the source threshold HIGH level for a transition trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A: TRANsition:THReshold:LOW	Sets or queries the source threshold LOW level for a transition trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:WINdow: CROSSIng	Sets or queries the window trigger threshold crossing of the selected trigger Source.
SEARCH:SEARCH<x>:TRIGger:A:WINdow: LOGICQUALification	Specifies or queries whether or not to use logic qualification for a window search.
SEARCH:SEARCH<x>:TRIGger:A:WINdow: POLarity	Sets or queries the window trigger threshold crossing of the selected trigger Source.
SEARCH:SEARCH<x>:TRIGger:A:WINdow: SOUrce	Sets and queries the source for the window search input.
SEARCH:SEARCH<x>:TRIGger:A:WINdow: THReshold:HIGH	Sets or queries the source threshold HIGH level for a transition trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:WINdow: THReshold:LOW	Sets or queries the source threshold LOW level for a transition trigger search to determine where to place a mark.
SEARCH:SEARCH<x>:TRIGger:A:WINdow: WHEn	Sets or queries the window search event.
SEARCH:SELected	Sets or queries the selected search.

Self Test command group

The Self Test commands control the selection and execution of diagnostic tests.

Table 2-38: Self Test commands

Command	Description
DIAg:LOOP:OPTion	Sets or queries the type of looping desired.
DIAg:LOOP:OPTion:NTIMes	Sets or queries how many loops to run.
DIAg:LOOP:STOP	Stops diagnostics looping.
DIAg:MODe	Sets or queries the diagnostics mode.
DIAg:RESUlt?	Returns the diagnostics results.
DIAg:RESUlt:FLAg?	Returns the status of the diagnostics (single area).
DIAg:RESUlt:LOG?	Returns the status of the diagnostic area.
DIAg:SELect	Selects or queries an available diagnostic area.
DIAg:STATE	Sets the instrument operating state.
TOUCHSCReen:CALibrate	Starts the touchscreen calibration procedure.

Status and Error command group

Use the commands in the Status and Error command Group to determine the status of the instrument and control events.

Several commands and queries used with the instrument are common to all devices. The IEEE Std 488.2-1987 defines these commands and queries. The common commands begin with an asterisk (*) character.

Table 2-39: Status and Error commands

Command	Description
ALLEv?	Returns all events and their messages.
BUSY?	Returns instrument status.
*CLS	Clears status.
DESE	Sets or queries the bits in the Device Event Status Enable Register.
*ESE	Sets or queries the bits in the Event Status Enable Register.
*ESR?	Returns the contents of the Standard Event Status Register.
EVENT?	Returns event code from the event queue.
EVMsg?	Returns event code, message from the event queue.
EVQty?	Returns number of events that are enabled in the queue.
*OPC	Generates the operation complete message in the standard event status register when all pending operations are finished Or returns “1” when all current operations are finished.
*OPT?	Returns a comma separated list of installed options as an arbitrary ASCII string (no quotes).
*PSC	Sets or queries the power on status flag.
*PUD	Sets or queries a string of protected user data.
*RST	Resets the instrument to factory default settings.
*SRE	Sets or queries the bits in the Service Request Enable Register.
*STB?	Returns the contents of the Status Byte Register.
*WAI	Prevents the instrument from executing further commands until all pending operations finish.

Trigger command group

Use the commands in the Trigger Command Group to control all aspects of triggering for the instrument.

There are two triggers: A and B. Where appropriate, the command set has parallel constructions for each trigger.

You can set the A or B triggers to edge mode. Edge triggering lets you display a waveform at or near the point where the signal passes through a voltage level of your choosing.

You can also set A or B triggers to pulse or logic modes. With pulse triggering, the instrument triggers whenever it detects a pulse of a certain width or height. Logic triggering lets you logically combine the signals on one or more channels. The instrument then triggers when it detects a certain combination of signal levels. The trigger types of Pulse Width, Timeout, Runt, Window, and Rise/Fall Time can be further qualified by a logic pattern. This is referred to as logic qualification.

Table 2-40: Trigger commands

Command	Description
TRIGger	Forces a trigger event to occur or returns current trigger parameters for the instrument.
TRIGger:{A|B}:BUS:B<x>:ARINC429A:CONDition	Specifies a field or condition for an ARINC429 bus to trigger on.
TRIGger:{A|B}:BUS:B<x>:ARINC429A:ERRTYPe	Sets or queries the error type when triggering on an ARINC429 bus signal.
TRIGger:{A|B}:BUS:B<x>:ARINC429A:LABel:QUALifier	Sets or queries the qualifier to be used when triggering on label data for an ARINC429 bus signal.
TRIGger:{A|B}:BUS:B<x>:ARINC429A:LABel:VALue	Sets or queries the low value when triggering on an ARINC429 label field.
TRIGger:{A|B}:BUS:B<x>:ARINC429A:LABel:HIVALue	Sets or queries the high value when triggering on an ARINC429 label field.
TRIGger:{A|B}:BUS:B<x>:ARINC429A:SDI:VALue	sSets or queries the when triggering on an ARINC429 SDI field.
TRIGger:{A|B}:BUS:B<x>:ARINC429A:SSM:VALue	Sets or queries the when triggering on an ARINC429 SSM field.
TRIGger:{A|B}:BUS:B<x>:ARINC429A:DATa:QUALifier	Sets or queries the qualifier to be used when triggering on data in the DATA field for an ARINC429 bus signal.
TRIGger:{A|B}:BUS:B<x>:ARINC429A:DATa:VALue	Sets or queries the low value when triggering on an ARINC429 data field.
TRIGger:{A|B}:BUS:B<x>:ARINC429A:DATa:HIVALue	Sets or queries the high value when trigger on an ARINC429 data field.
TRIGger:{A|B}:BUS:B<x>:AUDio:CONDition	Sets the condition (word select, start of frame, or matching data) to be used when triggering on an audio bus signal.
TRIGger:{A|B}:BUS:B<x>:AUDio:DATa:HIVALue	Sets the upper word value to be used when triggering on an audio bus signal.

Table 2-40: Trigger commands (cont.)

Command	Description
TRIGger:{A|B}:BUS:B<x>:AUDio:DATa:HITDMVALue	Sets or queries the binary data string for the high data word to be used when triggering on an TDM audio bus signal.
TRIGger:{A|B}:BUS:B<x>:AUDio:DATa:OFFSet	Sets the data offset value to be used when triggering on an audio bus signal.
TRIGger:{A|B}:BUS:B<x>:AUDio:DATa:QUALifier	Sets the qualifier (<, >, =, <=, >=, not =, in range, out of range) to be used when triggering on an audio bus signal.
TRIGger:{A|B}:BUS:B<x>:AUDio:DATa:TDMVALue	Sets or queries the binary data string for the single or low data word to be used when triggering on an TDM audio bus signal.
TRIGger:{A|B}:BUS:B<x>:AUDio:DATa:VALue	Sets the lower word value to be used when triggering on an audio bus signal.
TRIGger:{A|B}:BUS:B<x>:AUDio:DATa:WORD	Sets the alignment of the data (left, right or either) to be used to trigger on an audio bus signal.
TRIGger:{A|B}:BUS:B<x>:CAN:CONDition	Sets the condition (start of frame, frame type, identifier, matching data, EOF, missing ACK field, bit-stuffing error) to be used when triggering on a CAN bus signal.
TRIGger:{A|B}:BUS:B<x>:CAN:DATa:DIRection	Sets the data direction (read, write or “nocare”) to be used to search on a CAN bus signal.
TRIGger:{A|B}:BUS:B<x>:CAN:DATa:OFFSet	Sets or queries the data offset value, in bytes, to use when triggering on the CAN data field.
TRIGger:{A|B}:BUS:B<x>:CAN:DATa:QUALifier	Sets the qualifier (<, >, =, not =, <=, >=) to be used when triggering on a CAN bus signal.
TRIGger:{A|B}:BUS:B<x>:CAN:DATa:SIZe	Sets the length of the data string, in bytes, to be used when triggering on a CAN bus signal.
TRIGger:{A|B}:BUS:B<x>:CAN:DATa:VALue	Sets the binary data value to be used when triggering on a CAN bus signal.
TRIGger:{A|B}:BUS:B<x>:CAN:ERRType	Sets or queries the type of error condition for a CAN bus to triggering on.
TRIGger:{A|B}:BUS:B<x>:CAN:FD:BRSBit	Sets or queries the value of the bit rate switch bit (BRS bit) for a CAN bus to triggering on.
TRIGger:{A|B}:BUS:B<x>:CAN:FD:ESIBit	Sets or queries the value of the error state indicator bit (ESI bit) for a CAN bus to triggering on.
TRIGger:{A|B}:BUS:B<x>:CAN:FRAMEtype	Sets the frame type (data, remote, error or overload) to be used when triggering on a CAN bus signal.
TRIGger:{A|B}:BUS:B<x>:CAN:IDentifier:MODe	Sets the addressing mode (standard or extended format) to be used when triggering on a CAN bus signal.
TRIGger:{A|B}:BUS:B<x>:CAN:IDentifier:VALue	Sets the binary address value to be used when triggering on a CAN bus signal.
TRIGger:{A|B}:BUS:B<x>:ETHERnet:CONDition	Specifies a field or condition within an Ethernet frame to trigger on.
TRIGger:{A|B}:BUS:B<x>:ETHERnet:DATa:HIVALue	When the Ethernet trigger condition is set to `DATa`, and the qualifier is set to either `INrange` or`OUTrange`, this command specifies the upper data value of the range.
TRIGger:{A|B}:BUS:B<x>:ETHERnet:DATa:OFFSet	When the Ethernet trigger condition is set to `DATa`, this command specifies where in the data field to look for the data trigger value.
TRIGger:{A|B}:BUS:B<x>:ETHERnet:DATa:QUALifier	Sets or queries the qualifier to be used when triggering on an Ethernet bus signal.

Table 2-40: Trigger commands (cont.)

Command	Description
TRIGger:{A|B}:BUS:B<x>:ETHERnet:DATa:SIZe	When the Ethernet trigger condition is set to `DATa`, this command specifies the number of contiguous TCP/IPv4/MAC client data bytes to trigger on.
TRIGger:{A|B}:BUS:B<x>:ETHERnet:DATa:VALue	When the Ethernet trigger condition is set to `DATa`, and the qualifier is set to `LESSthan, MOREthan, EQual, UNEQual, LESSEQual` or `MOREEQual`, this command specifies the value to trigger on.
TRIGger:{A|B}:BUS:B<x>:ETHERnet:IPHeader:DESTinationaddr:VALue	When the Ethernet trigger condition is set to `IPHeader`, this command specifies the value of the 32–bit destination address that is to be used in the trigger.
TRIGger:{A|B}:BUS:B<x>:ETHERnet:IPHeader:PROTOcol:VALue	When the Ethernet trigger condition is set to `IPHeader`, this command specifies the value of the 8–bit protocol field that is to be used in the trigger.
TRIGger:{A|B}:BUS:B<x>:ETHERnet:IPHeader:SOUrceaddr:VALue	When the Ethernet trigger condition is set to `IPHeader`, this command specifies the value of the 32-bit source address that is to be used in the trigger.
TRIGger:{A|B}:BUS:B<x>:ETHERnet:MAC:ADDRess:DESTination:VALue	When the Ethernet trigger condition is set to `MACADDress`, this command specifies the 48–bit MAC destination address that is to be used in the trigger.
TRIGger:{A|B}:BUS:B<x>:ETHERnet:MAC:ADDRess:SOUrce:VALue	When the Ethernet trigger condition is set to `MACADDress`, this command specifies the 48–bit MAC source address value that is to be used in the trigger.
TRIGger:{A|B}:BUS:B<x>:ETHERnet:MAC:LENgth:HIVALue	When the Ethernet trigger condition is set to `MACLENgth`, and the qualifier is set to `INrange` or `OUTrange`, this command specifies the upper data value of the range.
TRIGger:{A|B}:BUS:B<x>:ETHERnet:MAC:LENgth:VALue	When the Ethernet trigger condition is set to `MACLENgth`, and the qualifier is set to `LESSthan, MOREthan, EQual, UNEQual, LESSEQual` or `MOREEQual`, this command specifies the 16–bit value to trigger on.
TRIGger:{A|B}:BUS:B<x>:ETHERnet:QTAG:VALue	When the Ethernet trigger condition is set to `QTAG`, this command specifies the 32-bit Q-Tag value to trigger on.
TRIGger:{A|B}:BUS:B<x>:ETHERnet:TCPHeader:ACKnum:VALue	When the Ethernet trigger condition is set to `TCPHeader`, this command specifies the 32–bit acknowledgement number that is to be used in the trigger.
TRIGger:{A|B}:BUS:B<x>:ETHERnet:TCPHeader:DESTinationport:VALue	When the Ethernet trigger condition is set `TCPHeader`, this command specifies the 16–bit destination port address value that is to be used in the trigger.
TRIGger:{A|B}:BUS:B<x>:ETHERnet:TCPHeader:SEQnum:VALue	When the Ethernet trigger condition is set to `TCPHeader`, this command specifies the 32–bit sequence number that is to be used in the trigger.
TRIGger:{A|B}:BUS:B<x>:ETHERnet:TCPHeader:SOUrceport:VALue	When the Ethernet trigger condition is set to `TCPHeader`, this command specifies the 16–bit source port address that is to be used in the trigger.
TRIGger:{A|B}:BUS:B<x>:FLEXray:CONDition	Specifies the condition to use when triggering on a FlexRay bus signal (start of frame, frame type, ID, cycle count, header, data, ID and data, EOF, error).
TRIGger:{A|B}:BUS:B<x>:FLEXray:CYCLEcount:HIVALue	Specifies the high value when triggering on a FlexRay bus cycle count field.
TRIGger:{A|B}:BUS:B<x>:FLEXray:CYCLEcount:QUALifier	Specifies the qualifier (<, >, =, <=, >=, ≠, in range, out of range) to use when triggering on the FlexRay bus cycle count field.
TRIGger:{A|B}:BUS:B<x>:FLEXray:CYCLEcount:VALue	Specifies the low value when triggering on the FlexRay bus cycle count field.
TRIGger:{A|B}:BUS:B<x>:FLEXray:DATa:HIVALue	Specifies the high value when triggering on the FlexRay bus data field.
TRIGger:{A|B}:BUS:B<x>:FLEXray:DATa:OFFSet	Specifies the offset of the data string, in bytes, when triggering on the FlexRay bus data field.

Table 2-40: Trigger commands (cont.)

Command	Description
TRIGger:{A|B}:BUS:B<x>:FLEXray:DATa:QUALifier	Specifies the qualifier (<, >, =, <=, >=, ≠, in range, out of range) to use when triggering on the FlexRay bus data field.
TRIGger:{A|B}:BUS:B<x>:FLEXray:DATa:SIZe	Specifies the length of the data string, in bytes, when triggering on the FlexRay bus data field.
TRIGger:{A|B}:BUS:B<x>:FLEXray:DATa:VALue	Specifies the low value when triggering on the FlexRay bus data field.
TRIGger:{A|B}:BUS:B<x>:FLEXray:EOFTYPE	Specifies the end of file type (static, dynamic or any) when triggering on the FlexRay bus EOF field.
TRIGger:{A|B}:BUS:B<x>:FLEXray:ERRTYPE	Specifies the error type when triggering on the FlexRay bus signal.
TRIGger:{A|B}:BUS:B<x>:FLEXray:FRAMEID:HIVALue	Specifies the high value when triggering on the FlexRay bus frame ID field.
TRIGger:{A|B}:BUS:B<x>:FLEXray:FRAMEID:QUALifier	Specifies the qualifier to use when triggering on the FlexRay bus frame ID field.
TRIGger:{A|B}:BUS:B<x>:FLEXray:FRAMEID:VALue	Specifies the low value when triggering on the FlexRay bus frame ID field.
TRIGger:{A|B}:BUS:B<x>:FLEXray:FRAMEType	Specifies the frame type (normal, payload, null, sync or startup) when triggering on the FlexRay bus signal.
TRIGger:{A|B}:BUS:B<x>:FLEXray:HEADER:CRC	Specifies the CRC portion of the binary header string when triggering on the FlexRay bus signal.
TRIGger:{A|B}:BUS:B<x>:FLEXray:HEADER:CYCLEcount	Specifies the cycle count portion of the binary header string when triggering on the FlexRay bus header.
TRIGger:{A|B}:BUS:B<x>:FLEXray:HEADER:FRAMEID	Specifies the frame ID portion of the binary header string when triggering on the FlexRay bus header.
TRIGger:{A|B}:BUS:B<x>:FLEXray:HEADER:INDBits	Specifies the indicator bits portion of the binary header string when triggering on the FlexRay bus header.
TRIGger:{A|B}:BUS:B<x>:FLEXray:HEADER:PAYLength	Specifies the payload length portion of the binary header string when triggering on the FlexRay bus header.
TRIGger:{A|B}:BUS:B<x>:I2C:ADDRess:MODe	Specifies the I^2C address mode to 7 or 10-bit.
TRIGger:{A|B}:BUS:B<x>:I2C:ADDRess:VALue	Specifies the binary address string used for the I^2C trigger if the trigger condition is ADDRESS or ADDRANDDATA.
TRIGger:{A|B}:BUS:B<x>:I2C:CONDition	Specifies the trigger condition for an I^2C trigger.
TRIGger:{A|B}:BUS:B<x>:I2C:DATa:DIRection	Specifies the I^2C trigger type to be valid on a Read, Write, or No Care condition.
TRIGger:{A|B}:BUS:B<x>:I2C:DATa:SIZe	Specifies the length of the data string in bytes to be used for an I2C trigger if the trigger condition is DATA or ADDRANDDATA.
TRIGger:{A|B}:BUS:B<x>:I2C:DATa:VALue	Specifies the binary data string used for I2C triggering if the trigger condition is DATA or ADDRANDDATA.
TRIGger:{A|B}:BUS:B<x>:LIN:CONDition	Specifies the trigger condition for LIN.
TRIGger:{A|B}:BUS:B<x>:LIN:DATa:HIVALue	Specifies the high data value string used for a LIN bus trigger when the trigger condition is DATA or IDANDDATA and the data qualifier is INRANGE or OUTRANGE.

Table 2-40: Trigger commands (cont.)

Command	Description
TRIGger:{A|B}:BUS:B<x>:LIN:DATa:QUALifier	Specifies the LIN data qualifier. This only applies if the trigger condition is IDANDDATA or DATA.
TRIGger:{A|B}:BUS:B<x>:LIN:DATa:SIZe	Specifies the length of the data string in bytes to be used for LIN trigger.
TRIGger:{A|B}:BUS:B<x>:LIN:DATa:VALue	Specifies the binary data string to be used for LIN trigger condition if trigger condition is ID or IDANDDATA.
TRIGger:{A|B}:BUS:B<x>:LIN:ERRTYPE	Specifies the error type be used for LIN trigger.
TRIGger:{A|B}:BUS:B<x>:LIN:IDentifier:VALue	Specifies the binary address string used for LIN trigger if the trigger condition is ID or IDANDDATA.
TRIGger:{A|B}:BUS:B<x>:MIL1553B:CONDition	Sets or queries the field or condition for a MIL-STD-1553 bus to trigger on.
TRIGger:{A|B}:BUS:B<x>:MIL1553B:ERRTYPe	Sets or queries the type of error condition for a MIL-STD-1553 bus to trigger on.
TRIGger:{A|B}:BUS:B<x>:MIL1553B:COMMAND:TRBit	Sets or queries the value of the command word Transmit / Receive bit for a MIL-STD-1553 bus to trigger on.
TRIGger:{A|B}:BUS:B<x>:MIL1553B:COMMAND:PARity	Sets or queries the value of the command word parity bit for a MIL-STD-1553 bus to triggering on.
TRIGger:{A|B}:BUS:B<x>:MIL1553B:COMMAND:COUNt	Sets or queries the value of the command word "word count" field for a MIL-STD-1553 bus to triggering on.
TRIGger:{A|B}:BUS:B<x>:MIL1553B:COMMAND:SUBADdress	Sets or queries the value of the command word "subaddress" field for a MIL-STD-1553 bus to triggering on.
TRIGger:{A|B}:BUS:B<x>:MIL1553B:COMMAND:ADDRess:QUALifier	Sets or queries the qualifier to be used when triggering on command word addresses for a MIL-STD-1553 bus.
TRIGger:{A|B}:BUS:B<x>:MIL1553B:COMMAND:ADDRess:VALue	Sets or queries the low value when triggering on command word addresses for a MIL-STD-1553 bus.
TRIGger:{A|B}:BUS:B<x>:MIL1553B:COMMAND:ADDRess:HIVALue	Sets or queries the high value when triggering on command word addresses for a MIL-STD-1553 bus.
TRIGger:{A|B}:BUS:B<x>:MIL1553B:DATa:PARity	Sets or queries the value of the command word parity bit for a MIL-STD-1553 bus to triggering on.
TRIGger:{A|B}:BUS:B<x>:MIL1553B:DATa:VALue	Sets or queries the value when triggering on data words for a MIL-STD-1553 bus.
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:PARity	Sets or queries the value of the status word parity bit for a MIL-STD-1553 bus to triggering on.
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:ADDRess:QUALifier	Sets or queries the qualifier to be used when triggering on status word addresses for a MIL-STD-1553 bus.
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:ADDRess:QUALifier	Sets or queries the qualifier to be used when triggering on status word addresses for a MIL-STD-1553 bus.
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:ADDRess:VALue	Sets or queries the low value when triggering on status word addresses for a MIL-STD-1553 bus.
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:ADDRess:HIVALue	Sets or queries the high value when triggering on status word addresses for a MIL-STD-1553 bus.
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:BIT:ME	Sets or queries the value of the message error bit (ME bit, bit 9) in a status word for a MIL-STD-1553 bus to triggering on.

Table 2-40: Trigger commands (cont.)

Command	Description
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:BIT:INSTR	Sets or queries the value of the instrumentation bit (INSTR bit, bit 10) in a status word for a MIL-STD-1553 bus to triggering on.
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:BIT:SRQ	Sets or queries the value of the status word service request bit (SRQ bit, bit 11) in a status word for a MIL-STD-1553 bus to triggering on.
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:BIT:BCR	Sets or queries the value of the broadcast command received bit (BCR bit, bit 15) in a status word for a MIL-STD-1553 bus to triggering on.
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:BIT:BUSY	Sets or queries the value of the busy bit (BUSY bit, bit 16) in a status word for a MIL-STD-1553 bus to triggering on.
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:BIT:SUBSF	Sets or queries the value of the subsystem flag bit (SUBSF bit, bit 17) in a status word for a MIL-STD-1553 bus to triggering on.
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:BIT:DBCA	Sets or queries the value of the dynamic bus control acceptance bit (DBCA bit, bit 18) in a status word for a MIL-STD-1553 bus to triggering on.
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:BIT:TF	Sets or queries the value of the terminal flag bit (TF bit, bit 19) in a status word for a MIL-STD-1553 bus to triggering on.
TRIGger:{A|B}:BUS:B<x>:MIL1553B:TIMe:QUALifier	Sets or queries the qualifier to be used when triggering on response time / inter message gap time for a MIL-STD-1553 bus.
TRIGger:{A|B}:BUS:B<x>:MIL1553B:TIMe:LESSLimit	Sets or queries the lower limit to be used when triggering on response time / inter message gap time for a MIL-STD-1553 bus.
TRIGger:{A|B}:BUS:B<x>:MIL1553B:TIMe:MORELimit	Sets or queries the upper limit to be used when triggering on response time / inter message gap time for a MIL-STD-1553 bus.
TRIGger:{A|B}:BUS:B<x>:PARallel:DATa:VALue	Specifies the binary data string used for a Parallel Bus trigger.
TRIGger:{A|B}:BUS:B<x>:RS232C:CONDition	Specifies the condition for an RS-232C trigger.
TRIGger:{A|B}:BUS:B<x>:RS232C:DATa:SIZe	Sets or queries the length of the data string in bytes to be used for an RS232 trigger.
TRIGger:{A|B}:BUS:B<x>:RS232C:DATa:VALue	Sets or queries the data value of the data token for an RS232 trigger.
TRIGger:{A|B}:BUS:B<x>:SPI:CONDition	Specifies the trigger condition for a SPI trigger.
TRIGger:{A|B}:BUS:B<x>:SPI:DATa:SIZe	Specifies the length of the data string to be used for a SPI trigger if the trigger condition is DATa.
TRIGger:{A|B}:BUS:B<x>:SPI:DATa:VALue	Specifies the binary data string used for SPI triggering if the trigger condition is DATA.
TRIGger:{A|B}:BUS:B<x>:USB:ADDRess:HIVALue	Specifies the binary address string for the upper limit for inside-of-range and outside-of-range qualifiers for the USB trigger.
TRIGger:{A|B}:BUS:B<x>:USB:ADDRess:VALue	Specifies the binary address string to be used for USB trigger.
TRIGger:{A|B}:BUS:B<x>:USB:CONDition	Specifies the trigger condition for the USB trigger.
TRIGger:{A|B}:BUS:B<x>:USB:DATa:HIVALue	Specifies the binary data string for the upper limit for inside-of-range and outside-of-range qualifiers for the USB trigger when the trigger condition is DATAPacket.
TRIGger:{A|B}:BUS:B<x>:USB:DATa:OFFSet	Specifies the data offset in bytes to trigger on.

Table 2-40: Trigger commands (cont.)

Command	Description
TRIGger:{A|B}:BUS:B<x>:USB:DATa:QUALifier	Sets the qualifier to be used when triggering on a USB bus signal.
TRIGger:{A|B}:BUS:B<x>:USB:DATa:SIZe	Specifies the number of contiguous data bytes to trigger on.
TRIGger:{A|B}:BUS:B<x>:USB:DATa:TYPe	Specifies the data type for when the trigger condition is set to DATAPacket.
TRIGger:{A|B}:BUS:B<x>:USB:DATa:VALue	Specifies the binary data string to be used for the USB trigger when the trigger condition is DATAPacket.
TRIGger:{A|B}:BUS:B<x>:USB:ENDPoint:VALue	Specifies the binary endpoint string to be used for the USB trigger.
TRIGger:{A|B}:BUS:B<x>:USB:ERRType	Specifies the error type to be used when the trigger condition is set to ERRor.
TRIGger:{A|B}:BUS:B<x>:USB:HANDSHAKEType	Specifies the handshake type for the USB trigger.
TRIGger:{A|B}:BUS:B<x>:USB:SOFFRAMENUMber	Specifies the binary data string to be used for start of frame number, when the trigger condition is Token Packet and the token type is Start of Frame.
TRIGger:{A|B}:BUS:B<x>:USB:SPECIALType	Specifies the packet ID (PID) for the special packet.
TRIGger:{A|B}:BUS:B<x>:USB:SPLit:ET:VALue	When triggering on a high-speed USB split transaction, this command specifies the split transaction endpoint type value to trigger on.
TRIGger:{A|B}:BUS:B<x>:USB:SPLit:HUB:VALue	When triggering on a high-speed USB split transaction, this command specifies the split transaction hub address value to trigger on.
TRIGger:{A|B}:BUS:B<x>:USB:SPLit:PORT:VALue	When triggering on a high-speed USB split transaction, this command specifies the split transaction port address value to trigger on.
TRIGger:{A|B}:BUS:B<x>:USB:SPLit:SC:VALue	When triggering on a high-speed USB split transaction, this command specifies whether to trigger on the start or complete phase of the split transaction, based on the Start/Complete bit field value.
TRIGger:{A|B}:BUS:B<x>:USB:SPLit:SE:VALue	When triggering on a high-speed USB split transaction, this command specifies the split transaction start/end bit value to trigger on.
TRIGger:{A|B}:BUS:B<x>:USB:TOKENType	Specifies the token type for the USB trigger.
TRIGger:{A|B}:BUS:SOUrce	Sets or queries the source for a bus trigger.
TRIGger:{A|B}:EDGE:COUPling	Sets or queries the type of coupling for the edge trigger.
TRIGger:{A|B}:EDGE:SLOpe	Sets or queries the slope for the edge trigger.
TRIGger:{A|B}:EDGE:SOUrce	Sets or queries the source for the edge trigger.
TRIGger:{A|B}:LEVel:CH<x>	Sets or queries the level for the trigger for the channel.
TRIGger:{A|B}:LOGIc:DELTatime	Specifies or queries the Logic trigger delta time value.
TRIGger:{A|B}:LOGIc:FUNCtion	Sets or queries the logical combination of the input channels for the logic trigger.
TRIGger:{A|B}:LOGIc:INPut:CLOCk:SOUrce	Specifies the channel to use as the clock source.
TRIGger:{A|B}:LOGIc:POLarity	Sets or queries the polarity for the clock channel when Use Clock Edge is set to Yes for Logic trigger type.
TRIGger:{A|B}:LOGIc:USEClockedge	Sets whether or not Logic trigger type uses clock source.
TRIGger:{A|B}:LOGIc:WHEn	Sets or queries the condition for generating a logic trigger with respect to the defined input pattern.

Table 2-40: Trigger commands (cont.)

Command	Description
TRIGger:{A|B}:LOGICPattern:{CH<x>|CH<x>_D<x>}	Sets or queries the Logic Pattern that is used along with the Define Logic choice to determine when the logic trigger occurs.
TRIGger:{A|B}:LOWerthreshold:CH<x>	Sets or queries CH<x> lower trigger level.
TRIGger:{A|B}:PULSEWidth:LOGICQUALification	Sets whether or not to use logic qualification for a pulse width trigger.
TRIGger:{A|B}:PULSEWidth:HIGHLimit	Specifies the upper limit to use, in seconds, when triggering on detection of a pulse whose duration is inside or outside a range of two values.
TRIGger:{A|B}:PULSEWidth:LOWLimit	Specifies the lower limit to use, in seconds, when triggering on detection of a pulse whose duration is inside or outside a range of two values.
TRIGger:{A|B}:PULSEWidth:POLarity	Specifies the polarity for a pulse width trigger.
TRIGger:{A|B}:PULSEWidth:SOUrce	Specifies the source waveform for a pulse width trigger.
TRIGger:{A|B}:PULSEWidth:WHEn	Specifies to trigger when a pulse is detected with a width (duration) that is less than, greater than, equal to, or unequal to a specified value.
TRIGger:{A|B}:RUNT:LOGICQUALification	Specifies whether or not to use logic qualification for a runt trigger.
TRIGger:{A|B}:RUNT:POLarity	Specifies the polarity for the runt trigger.
TRIGger:{A|B}:RUNT:SOUrce	Specifies the source waveform for the runt trigger.
TRIGger:{A|B}:RUNT:WHEn	Specifies the type of pulse width the trigger checks for when it detects a runt.
TRIGger:{A|B}:RUNT:WIDth	Specifies the width, in seconds, for a runt trigger.
TRIGger:{A|B}:SETHold:CLOCk:EDGE	Specifies the clock edge polarity for setup and hold triggering.
TRIGger:{A|B}:SETHold:CLOCk:SOUrce	Specifies the clock source for the setup and hold triggering.
TRIGger:{A|B}:SETHold:HOLDTime	Specifies the hold time for setup and hold violation triggering.
TRIGger:{A|B}:SETHold:SETTime	Specifies the setup time for setup and hold violation triggering.
TRIGger:{A|B}:SETHOLDLogicval:{CH<x>|CH<x>_D<x>}	Sets or queries whether the specified channel is included (INCLude) or not included (DONTInclude) in the Setup & Hold trigger input configuration.
TRIGger:{A|B}:TIMEOut:LOGICQUALification	Specifies whether or not to use logic qualification for a timeout trigger.
TRIGger:{A|B}:TIMEOut:POLarity	When triggering using the `TIMEOut` trigger type, this commands specifies the polarity to be used.
TRIGger:{A|B}:TIMEOut:SOUrce	When triggering using the `TIMEOut` trigger type, this command specifies the source.
TRIGger:{A|B}:TIMEOut:TIMe	When triggering using the `TIMEOut` trigger type, this command specifies the timeout time, in seconds.
TRIGger:{A|B}:TRANsition:DELTatime	Specifies the delta time used in calculating the transition value for the transition trigger.
TRIGger:{A|B}:TRANsition:POLarity	Specifies the polarity for the transition trigger.
TRIGger:{A|B}:TRANsition:SOUrce	Specifies the source for a transition trigger.
TRIGger:{A|B}:TRANsition:WHEn	Specifies whether to check for a transitioning signal that is faster or slower than the specified delta time.
TRIGger:{A|B}:TRANsition:LOGICQUALification	Specifies whether or not to use logic qualification for a transition trigger.
TRIGger:{A|B}:TYPe	Sets or queries the type of A or B trigger.

Table 2-40: Trigger commands (cont.)

<table>
<tr><th>Command</th><th>Description</th></tr>
<tr><td>TRIGger:{A|B}:UPPerthreshold:CH<x></td><td>Sets or queries the CH<x> upper trigger level.</td></tr>
<tr><td>TRIGger:{A|B}:WINdow:CROSSIng</td><td>Sets or queries the window trigger threshold crossing of the selected trigger Source.</td></tr>
<tr><td>TRIGger:{A|B}:WINdow:LOGICQUALification</td><td>Specifies whether or not to use logic qualification for a window trigger.</td></tr>
<tr><td>TRIGger:{A|B}:WINdow:SOUrce</td><td>Sets or queries the source for a window trigger.</td></tr>
<tr><td>TRIGger:{A|B}:WINdow:WHEn</td><td>Sets or queries the window trigger event.</td></tr>
<tr><td>TRIGger:{A|B}:WINdow:WIDth</td><td>Sets or queries the minimum width for a window violation.</td></tr>
<tr><td>TRIGger:{A|B|B:RESET}</td><td>Sets the A, B, or B Reset trigger level automatically to 50% of the range of the minimum and maximum values of the trigger input signal.</td></tr>
<tr><td>TRIGger:A:HOLDoff:BY</td><td>Sets or queries the type of holdoff for the A trigger.</td></tr>
<tr><td>TRIGger:A:HOLDoff:TIMe</td><td>Sets or queries the A trigger holdoff time.</td></tr>
<tr><td>TRIGger:A:LOGICQUALification</td><td>Sets or queries the type of logic qualification to perform.</td></tr>
<tr><td>TRIGger:A:MODe</td><td>Sets or queries the A trigger mode.</td></tr>
<tr><td>TRIGger:AUXLevel</td><td>Sets or queries the Auxiliary Input voltage level to use for an edge trigger.</td></tr>
<tr><td>TRIGger:B:BY</td><td>Sets or queries B trigger time or event qualifiers.</td></tr>
<tr><td>TRIGger:B:EVENTS:COUNt</td><td>Sets or queries the number of events that must occur before the B trigger occurs.</td></tr>
<tr><td>TRIGger:B:RESET</td><td>Sets the B reset trigger level to 50%.</td></tr>
<tr><td>TRIGger:B:RESET:EDGE:COUPling</td><td>Sets or queries the trigger coupling for a sequential edge trigger reset when the Source is set to an analog channel.</td></tr>
<tr><td>TRIGger:B:RESET:EDGE:LEVel</td><td>Sets the voltage level to use for an Edge Reset trigger when triggering on an analog channel waveform.</td></tr>
<tr><td>TRIGger:B:RESET:EDGE:SLOpe</td><td>Sets or queries the trigger slope for a sequential edge trigger reset.</td></tr>
<tr><td>TRIGger:B:RESET:EDGE:SOUrce</td><td>Sets or queries the trigger source for the A→B sequential edge trigger reset feature.</td></tr>
<tr><td>TRIGger:B:RESET:TIMEOut:TIMe</td><td>Sets or queries the reset timer for a sequential timeout trigger reset.</td></tr>
<tr><td>TRIGger:B:RESET:TYPe</td><td>Sets or queries the type of A→B sequential trigger reset.</td></tr>
<tr><td>TRIGger:B:STATE</td><td>Returns the current state of the triggering system.</td></tr>
<tr><td>TRIGger:B:TIMe</td><td>Sets or queries the B trigger delay time.</td></tr>
<tr><td>TRIGger:STATE?</td><td>Returns the current state of the triggering system.</td></tr>
</table>

Vertical command group

Use the commands in the Vertical Command Group to control the vertical setup of all live (channel) waveforms for acquisition and to control the display of channel, reference, and math waveforms. Analog channels are available when analog probes are attached to FlexChannel inputs.

You can replace VOLts with SCAle in the vertical commands. This provides program compatibility with earlier models of Tektronix instruments.

Table 2-41: Vertical commands

Command	Description
CH<x>?	Returns vertical parameters for the specified channel.
CH<x>:BANdwidth	Sets or queries the bandwidth of the specified channel.
CH<x>:COUPling	Sets or queries the coupling setting for the specified channel.
CH<x>:DESKew	Sets or queries the deskew time for the specified channel.
CH<x>:LABel:COLor	Sets or queries the color of the specified channel label.
CH<x>:LABel:FONT:BOLD	Sets or queries the bold state of the specified channel label.
CH<x>:LABel:FONT:ITALic	Sets or queries the italic state of the specified channel label.
CH<x>:LABel:FONT:SIZE	Sets or queries the font size of the specified channel label.
CH<x>:LABel:FONT:TYPE	Sets or queries the font type of the specified channel label.
CH<x>:LABel:FONT:UNDERline	Sets or queries the underline state of the specified channel label.
CH<x>:LABel:NAMe	Defines or queries the label for the channel waveform.
CH<x>:LABel:XPOS	Sets or queries the X display coordinate for the channel waveform label.
CH<x>:LABel:YPOS	Sets or queries the Y display coordinate for the channel waveform label.
CH<x>:OFFSet	Sets or queries the channel offset.
CH<x>:POSition	Sets or queries the vertical position for the specified analog channel.
CH<x>:PRObe?	Returns all information concerning the probe that is attached to the specified channel.
CH<x>:PRObe:AUTOZero	Autozeros the probe attached to the specified channel.
CH<x>:PRObe:DEGAUSS	Starts a degauss cycle of the probe attached to the specified channel.
CH<x>:PRObe:DEGAUSS:STATE?	Queries whether the probe attached to the specified channel requires a degauss operation.
CH<x>:PRObe:FORCEDRange	Sets the attached probe to its default range, or it queries the default range of the probe.
CH<x>:PRObe:GAIN?	Returns the gain of the probe that is attached to the specified channel.
CH<x>:PRObe:ID?	Returns the type and serial number of the probe that is attached to the specified channel.
CH<x>:PRObe:ID:SERnumber?	Returns the serial number of the probe that is attached to the specified channel.
CH<x>:PRObe:ID:TYPe?	Returns the type of probe that is attached to the specified channel.
CH<x>:PRObe:RESistance?	Queries the resistance of the probe that is attached to the specified channel.

Table 2-41: Vertical commands (cont.)

Command	Description
CH<x>:PRObe:SET	Sets or queries aspects of probe accessory user interfaces, for example probe attenuation factors.
CH<x>:PRObe:UNIts?	Returns the units of the probe that is attached to the specified channel.
CH<x>:PROBECal?	Returns the probe calibration status.
CH<x>:PROBEControl	Sets or queries the probe range.
CH<x>:PROBEFunc:EXTAtten	Sets the attenuation value for the specified channel to the specified scale factor. Or queries the user-specified attenuation.
CH<x>:PROBEFunc:EXTDBatten	Sets the attenuation value for the specified channel to the specified value in decibels. Or queries the user-specified attenuation in decibels.
CH<x>:PROBEFunc:EXTUnits	Sets or queries the alternate unit for the external attenuator of the specified channel.
CH<x>:PROBEFunc:EXTUnits:STATE	Sets or queries the custom units enable state for the specified channel.
CH<x>:SCAle	Sets or returns the vertical scale for the specified analog channel.
CH<x>:TERmination	Sets channel input termination.
CONFIGuration:ANALOg:BANDWidth?	Queries the maximum licensed bandwidth of the instrument.
REF:ADDNew	Adds the specified reference. Argument is of the form "REF<NR1> ", where NR1 ≥ 1.
REF:DELete	Deletes the specified reference.
REF:REF<x>:DESKew	Sets or queries the deskew time for the specified reference.
REF:REF<x>:LABel:COLor	Sets or queries the color of the specified ref label.
REF:REF<x>:LABel:FONT:BOLD	Sets or queries the bold state of the specified reference label.
REF:REF<x>:LABel:FONT:ITALic	Sets or queries the italic state of the specified reference label.
REF:REF<x>:LABel:FONT:SIZE	Sets or queries the font size of the specified reference label.
REF:REF<x>:LABel:FONT:TYPE	Sets or queries the font type of the specified reference label.
REF:REF<x>:LABel:FONT:UNDERline	Sets or queries the underline state of the specified reference label.
REF:REF<x>:LABel:NAMe	Sets or queries the label of the designated waveform.
REF:REF<x>:LABel:XPOS	Sets or queries the position of the reference waveform label on the X axis.
REF:REF<x>:LABel:YPOS	Sets or queries the position of the reference waveform label on the Y axis.
REF:LIST?	Lists all currently defined references.
REF:REF<x>:SOUrce	Sets or queries the filename used by the given reference.
VERTical:DESKew:FROM: CUSTOMPROPAgation	Sets or queries a target (FROM) delay that you can specify when the propagation delay of the target (FROM) probe used for deskew cannot be detected automatically.
VERTical:DESKEW:STATIC	Sets or queries the target channel for performing channel-to-channel deskew adjustment.
VERTical:DESKew:TO:CUSTOMPROPAgation	Sets or queries a target (TO) delay that can be specified by the user when the propagation delay of the target (TO) probe used for deskew cannot be detected automatically.

Table 2-41: Vertical commands (cont.)

Command	Description
VERTical:DESKEW:FROM:SOUrce	Sets or queries the source channel for performing channel-to-channel deskew adjustment.
VERTical:DESKEW:TO:SOUrce	Sets or queries the target channel for performing channel-to-channel deskew adjustment.

Waveform Transfer command group

Use the commands in the Waveform Transfer Command Group to transfer waveform data points from the instrument. Waveform data points are a collection of values that define a waveform. One data value usually represents one data point in the waveform record. When working with envelope waveforms, each data value is either the minimum or maximum of a min/max pair.

Before you transfer waveform data, you must specify the data format, record length, and waveform source.

Data formats. Acquired waveform data uses eight or more bits to represent each data point. The number of bits used depends on the acquisition mode specified when you acquired the data. Data acquired in SAMple or ENVelope mode uses eight bits per waveform data point. Data acquired in AVERage mode uses up to 14 bits per point.

The instrument can transfer waveform data in either ASCII or binary format. You specify the format with the DATa:ENCdg command. The instrument uses signed, 4 byte integers and floating point values; it does not support unsigned floating point values.

ASCII data is represented by signed integer or floating point values. An example ASCII waveform data string can look like this:

CURVE<space>-110,-109,-110,-110,-109,-107,
-109,-107,-106,-105,-103,-100,-97,-90,-84,-80

Use ASCII to obtain more readable and easier to format output than binary. However, ASCII can require more bytes to send the same values than it does with binary. This can reduce transmission speeds.

Binary data can be represented by signed integer or floating point values. The range of the values depends on the byte width specified. When the byte width is one, signed integer data ranges from -128 to 127, and positive integer values range from 0 to 255. When the byte width is two, the values range from -32768 to 32767. When a MATH (or REF that came from a MATH) is used, 32-bit floating point values are used that are four bytes in width.

The defined binary formats specify the order in which the bytes are transferred. The following are the four binary formats:

- RIBinary specifies signed integer data-point representation with the most significant byte transferred first.
- SRIBinary is the same as RIBinary except that the byte order is swapped, meaning that the least significant byte is transferred first. This format is useful when transferring data to PCs.
- RFBinary specifies floating point data-point representation with the most significant byte transferred first.
- SRFBinary is the same as RFBinary except that the byte order is swapped, meaning that the least significant byte is transferred first. This format is useful when transferring data to PCs.

Waveform data and record lengths. You can transfer multiple points for each waveform record. You can transfer a portion of the waveform or you can transfer the entire record. You can use the `DATa:STARt` and `DATa:STOP` commands to specify the first and last data points of the waveform record.

When transferring data from the instrument, you must specify the first and last data points in the waveform record. Setting `DATa:STARt` to 1 and `DATa:STOP` to the record length will always return the entire waveform.

Waveform data locations and memory allocation. The DATa:SOUrce command specifies the waveform source when transferring a waveform from the instrument.

Waveform preamble. Each waveform that you transfer has an associated waveform preamble that contains information such as the horizontal scale, the vertical scale, and other settings in effect when the waveform was created. Refer to the individual WFMOutpre? commands for more information.

Scaling waveform data. Once you transfer the waveform data to the controller, you can convert the data points into voltage values for analysis using information from the waveform preamble.

Transferring waveform data from the instrument.

You can transfer waveforms from the instrument to an external controller using the following sequence:

1. Select the waveform source(s) using `DATa:SOUrce`.
2. Specify the waveform data format using `DATa:ENCdg`.
3. Specify the number of bytes per data point using `WFMOutpre:BYT_Nr`.

NOTE. *MATH waveforms (and REF waveforms that came from a MATH) are always set to four bytes.*

4. Specify the portion of the waveform that you want to transfer using `DATa:STARt` and `DATa:STOP`.
5. Transfer waveform preamble information using `WFMOutpre`.
6. Transfer waveform data from the instrument using `CURVe?`.

Table 2-42: Waveform Transfer commands

Command	Description
CURVe	The query format transfers waveform data from instrument specified by the `DATa:SOUrce` command.
DATa	Sets the format and location of the waveform data that is transferred with the `CURVe` Command. Or queries the format and location of the waveform data that is transferred with the `CURVe?` command.
DATa:ENCdg	Sets or queries the format of outgoing waveform data.
DATa:SOUrce	Sets or queries the location of waveform data transferred from the instrument.
DATa:SOUrce:AVAILable?	Returns a list of enumerations representing the source waveforms that are currently available for :CURVe? queries.
DATa:STARt	Sets or queries the starting point in waveform transfer.
DATa:STOP	Sets or queries the ending data point in waveform transfer.
DATa:WIDth	Specifies the width, in bytes per point, for waveform data transferred from the oscilloscope via the CURVe? query.
WAVFrm?	Returns `WFMOutpre?` and `CURVe?` data for the waveform as specified by the `DATA:SOUrce` command.
WFMOutpre?	Returns the waveform formatting data for the waveform specified by the DATA:SOURCE command.
WFMOutpre:ASC_Fmt?	Returns the format for ASCII data transferred from the instrument.
WFMOutpre:BIT_Nr	Sets or queries the number of bits per waveform point that outgoing waveforms contain.
WFMOutpre:BN_Fmt	Sets or queries the format of binary data for the waveform.

Table 2-42: Waveform Transfer commands (cont.)

Command	Description
WFMOutpre:BYT_Nr	Sets or queries the data width for the waveform.
WFMOutpre:BYT_Or	Sets or queries the byte order of waveform points.
WFMOutpre:DOMain?	Returns the domain of the outgoing waveform.
WFMOutpre:ENCdg	Sets or queries the type of encoding for outgoing waveforms.
WFMOutpre:NR_Pt?	Returns the number of points for the waveform transmitted in response to a CURVe? query.
WFMOutpre:PT_Fmt?	Returns the point format for the waveform.
WFMOutpre:PT_Off?	Returns the trigger point relative to DATA:START for the waveform.
WFMOutpre:WFId?	Returns a string describing the acquisition parameters for the waveform.
WFMOutpre:XINcr?	Returns the horizontal sampling interval.
WFMOutpre:XUNit?	Returns the horizontal units for the waveform.
WFMOutpre:XZEro?	Returns the (sub-sample) time between the trigger sample and the occurrence of the actual waveform trigger.
WFMOutpre:YMUlt?	Returns the vertical scale factor per digitizing level for the waveform.
WFMOutpre:YOFf?	Returns the vertical offset in digitizing levels for the waveform.
WFMOutpre:YUNit?	Returns the vertical units for the waveform.
WFMOutpre:YZEro?	Returns the vertical offset for the waveform.

Zoom command group

Zoom commands let you expand and position the waveform display horizontally and vertically, without changing the time base or vertical settings.

NOTE. *Zoom commands are available once a view has been added.*

Table 2-43: Zoom commands

Command	Description
DISplay:MATHFFTView<x>:ZOOM:XAXIS:FROM	Sets or queries the start of the zoom x axis in the specified plot view.
DISplay:MATHFFTView<x>:ZOOM:XAXIS:TO	Sets or queries the end of the zoom x axis in the specified plot view.
DISplay:MATHFFTView<x>:ZOOM:YAXIS:FROM	Sets or queries the start of the zoom y axis in the specified plot view.
DISplay:MATHFFTView<x>:ZOOM:YAXIS:TO	Sets or queries the end of the zoom y axis in the specified plot view.
DISplay:PLOTView<x>:ZOOM:XAXIS:FROM	Sets or queries the start of the zoom x-axis in the specified plot view.
DISplay:PLOTView<x>:ZOOM:XAXIS:TO	Sets or queries the end of the zoom x-axis in the specified plot view.
DISplay:PLOTView<x>:ZOOM:YAXIS:FROM	Sets or queries the start of the zoom y-axis in the specified plot view.
DISplay:PLOTView<x>:ZOOM:YAXIS:TO	Sets or queries the end of the zoom y-axis in the specified plot view.
DISplay:REFFFTView<x>:ZOOM:XAXIS:FROM	Sets or returns the left edge of the zoom x-axis in the specified plot view.
DISplay:REFFFTView<x>:ZOOM:XAXIS:TO	Sets or queries the right edge of the zoom x-axis in the specified plot view.
DISplay:REFFFTView<x>:ZOOM:YAXIS:FROM	Sets or queries the bottom value of the zoom y-axis in the specified plot view.
DISplay:REFFFTView<x>:ZOOM:YAXIS:TO	Sets or queries the top value of the zoom y-axis in the specified plot view.
DISplay:WAVEView<x>:ZOOM:ZOOM<x>:HORizontal:POSition	Sets or queries the horizontal zoom position (of the specified zoom in the specified waveview) of the zoomed waveform or zoom waveform in the display, around which the zoom waveform displays.
DISplay:WAVEView<x>:ZOOM:ZOOM<x>:HORizontal:SCALe	Sets or queries the zoom horizontal scale factor, of the specified zoom in the specified waveview, in which the zoom waveform is displayed.
DISplay:WAVEView<x>:ZOOM:ZOOM<x>:HORizontal:WINSCALe	Sets or queries the zoom window horizontal scale in the specified waveview.
DISplay:WAVEView<x>:ZOOM:ZOOM<x>:STATe	Sets or queries the specified zoom in the specified waveview on or off.
DISplay:WAVEView<x>:ZOOM:ZOOM<x>:VERTical:POSition	Sets or queries the vertical position of the specified zoom in the specified waveview, in which the zoom waveform is displayed.
DISplay:WAVEView<x>:ZOOM:ZOOM<x>:VERTical:SCALe	Sets or queries the zoom vertical scale factor of the specified waveform for the specified zoom in the specified waveview.
DISplay:WAVEView<x>:Zoom?	Queries the zoom parameters of the specified waveview.
DISplay:WAVEView<x>:ZOOM:ZOOM<x>?	Queries the zoom parameters of the specified zoom in the specified waveview.

Commands listed in alphabetical order

***NOTE.** Some of the following commands may not be available on your instrument model. Also, some of the following commands are only available if your instrument has the associated option installed.*

ACQuire? (Query Only)

Queries the current acquisition state.

Group

Acquisition

Syntax

```
ACQuire?
```

Examples

`ACQUIRE?` might return `:ACQUIRE:STATE 1;NUMENV INFINITE;STOPAFTER RUNSTOP;SEQUENCE:MODE NUMACQS;NUMSEQUENCE 1;:ACQUIRE:NUMAVG 16;FASTACQ:STATE 0;PALETTE TEMPERATURE;:ACQUIRE:MODE SAMPLE;SAMPLINGMODE IT`.

ACQuire:FASTAcq:PALEtte

Sets or queries the waveform grading for fast acquisition mode.

Group

Acquisition

Syntax

```
ACQuire:FASTAcq:PALEtte
{NORMal|TEMPerature|SPECtral|INVErted}
ACQuire:FASTAcq:PALEtte?
```

Arguments

`NORMal` colors traces according to their channel.

`TEMPerature` colors all traces using a multicolored palette, where “intensity” is represented by hue; blue for least frequently hit, red for most frequently hit. All traces share this palette. This is the default color palette.

`SPECtral` colors all traces using a multicolored palette, where “intensity” is represented by hue; red for least frequently hit, blue for most frequently hit. All traces share this palette.

`INVErted` Inverts the normal display hues and lightness levels based on sample intensity. The areas of lowest sample density appear the brightest, while the areas with the highest sample density appear the darkest.

Examples `ACQUIRE:FASTACQ:PALETTE TEMPerature` sets the acquisition fast acquisition palette to Temperature.

`ACQUIRE:FASTACQ:PALETTE?` might return `:ACQUIRE:FASTACQ:PALETTE TEMPERATURE`.

ACQuire:FASTAcq:STATE

Sets or queries the state of fast acquisition mode.

Group Acquisition

Syntax

```
ACQuire:FASTAcq:STATE {<NR1>|OFF|ON}
ACQuire:FASTAcq:STATE?
```

Arguments `<NR1>` = 0 disables FASTAcq; any other value turns this feature on.

`OFF` disables the FASTAcq feature.

`ON` enables the FASTAcq feature.

Examples `ACQUIRE:FASTACQ:STATE ON` turns on fast acquisition mode.

`ACQUIRE:FASTACQ:STATE?` might return `:ACQUIRE:FASTACQ:STATE 0` indicating that fast acquisition mode is off.

ACQuire:MAXSamplerate? (Query Only)

This query returns the maximum real-time sample rate.

Group Acquisition

Syntax

```
ACQuire:MAXSamplerate?
```

Examples `ACQUIRE:MAXSAMPLERATE?` might return `:ACQUIRE:MAXSAMPLERATE 6.25E9`.

ACQuire:MODe

This command sets or queries the selected acquisition mode of the instrument.

Group Acquisition

Syntax

```
ACQuire:MODe {SAMple|PEAKdetect|HIRes|AVErage|ENVelope}
ACQuire:MODe?
```

Related Commands ACQuire:NUMAVg, CURVe

Arguments `SAMple` specifies that the displayed data point value is the first sampled value that is taken during the acquisition interval. In sample mode, all waveform data has 8 bits of precision. You can request 16 bit data with a CURVe query but the lower-order 8 bits of data will be zero. `SAMple` is the default mode.

`PEAKdetect` specifies the display of high-low range of the samples taken from a single waveform acquisition. The high-low range is displayed as a vertical column that extends from the highest to the lowest value sampled during the acquisition interval. `PEAKdetect` mode can reveal the presence of aliasing or narrow spikes.

`HIRes` specifies Hi Res mode where the displayed data point value is the average of all the samples taken during the acquisition interval. This is a form of averaging, where the average comes from a single waveform acquisition. The number of samples taken during the acquisition interval determines the number of data values that compose the average.

`AVErage` specifies averaging mode, in which the resulting waveform shows an average of `SAMple` data points from several separate waveform acquisitions. The instrument processes the number of waveforms you specify into the acquired waveform, creating a running exponential average of the input signal. The number of waveform acquisitions that go into making up the average waveform is set or queried using the ACQuire:NUMAVg command.

`ENVelope` specifies envelope mode, where the resulting waveform shows the `PEAKdetect` range of data points from several separate waveform acquisitions. The number of waveform acquisitions that go into making up the envelope waveform is set or queried using the ACQuire:NUMAVg command.

The instrument acquires data after each trigger event using Sample mode; it then determines the pix map location of each sample point and accumulates it with stored data from previous acquisitions.

A Pix map is a two dimensional array. The value at each point in the array is a counter that reflects the hit intensity. Infinite and noninfinite persist display modes affect how pix maps are accumulated. Zoom, Math, FastAcq, FastFrame, XY, Roll, and Interpolated Time (IT) Sampling Mode are conflicting features to WFMDB acqMode. Turning on one of them generally turns the other one off. Selection of some standard masks (for example, eye masks, which require option MTM) changes the acquisition mode to WFMDB.

Examples `ACQUIRE:MODE ENVELOPE` sets the acquisition mode to display a waveform that is an envelope of many individual waveform acquisitions.

`ACQUIRE:MODE?` might return `:ACQuire:MODe AVERAGE`, indicating that the displayed waveform is the average of the specified number of waveform acquisitions.

ACQuire:NUMACq? (Query Only)

This query-only command returns the number of waveform acquisitions that have occurred since the last time acquisitions were stopped.

Group Acquisition

Syntax `ACQuire:NUMACq?`

Related Commands ACQuire:STATE

Examples `ACQUIRE:NUMACQ?` might return `:ACQUIRE:NUMACQ 350`, indicating that 350 acquisitions have occurred since executing an ACQuire:STATE RUN command.

ACQuire:NUMAVg

This command sets or queries the number of waveform acquisitions that make up an averaged waveform. Ranges from 2 to 10240.

Group Acquisition

Syntax

```
ACQuire:NUMAVg <NR1>
ACQuire:NUMAVg?
```

Related Commands ACQuire:MODe

Arguments `<NR1>` is the number of waveform acquisitions to average.

Examples `ACQUIRE:NUMAVG 10` specifies that 10 waveform averages will be performed before exponential averaging starts.

`ACQUIRE:NUMAVG?` might return `:ACQUIRE:NUMAVG 75`, indicating that there are 75 acquisitions specified for averaging.

ACQuire:NUMFRAMESACQuired? (Query Only)

This query returns the number of FastFrame frames which have been acquired.

Group Horizontal

Syntax `ACQuire:NUMFRAMESACQuired?`

Examples `ACQUIRE:NUMFRAMESACQUIRED?` might return `:ACQUIRE:NUMFRAMESACQUIRED 4` indicating 4 frames have been acquired.

ACQuire:SEQuence:CURrent? (Query Only)

In single sequence acquisition mode, this query returns the number of acquisitions or measurements in the sequence completed so far.

Group Acquisition

Syntax `ACQuire:SEQuence:CURrent?`

Examples `ACQUIRE:SEQUENCE:CURRENT?` might return `:ACQUIRE:SEQUENCE:CURRENT 5`.

ACQuire:SEQuence:MODe

In single sequence acquisition, the single sequence stop after count is based on the number of acquisitions.

Group Acquisition

Syntax `ACQuire:SEQuence:MODe NUMACQs`

Arguments `NUMACQs` is the number of acquisitions.

Examples `ACQUIRE:SEQUENCE:MODE?` might return `:ACQUIRE:SEQUENCE:MODE NUMACQS` indicating the acquisition sequence mode is set to `NUMACQS`.

ACQuire:SEQuence:NUMSEQuence

In single sequence acquisition mode, specify the number of acquisitions or measurements that comprise the sequence. The default is 1.

Group

Acquisition

Syntax

```
ACQuire:SEQuence:NUMSEQuence <NR1>
ACQuire:SEQuence:NUMSEQuence?
```

Arguments

`<NR1>` is the number of acquisitions or measurements that comprise the sequence.

Examples

`ACQUIRE:SEQUENCE:NUMSEQUENCE 2` sets the number of acquisition in a sequence is set to 2.

`ACQUIRE:SEQUENCE:NUMSEQUENCE?` might return :ACQUIRE:SEQUENCE:NUMSEQUENCE 1 indicating that the number of acquisition in a sequence is set to 1.

ACQuire:STATE

This command starts or stops acquisitions. When state is set to ON or RUN, a new acquisition will be started. If the last acquisition was a single acquisition sequence, a new single sequence acquisition will be started. If the last acquisition was continuous, a new continuous acquisition will be started.

If RUN is issued in the middle of completing a single sequence acquisition (for example, averaging or enveloping), the acquisition sequence is restarted, and any accumulated data is discarded. Also, the instrument resets the number of acquisitions. If the RUN argument is issued while in continuous mode, a reset occurs and acquired data continues to acquire.

If acquire:stopafter is SEQUENCE, this command leaves the instrument in single sequence, unlike the run/stop button which takes the instrument out of single sequence.

Group

Acquisition

Syntax

```
ACQuire:STATE {<NR1>|OFF|ON|RUN|STOP}
ACQuire:STATE?
```

Related Commands

ACQuire:STOPAfter

Arguments

`<NR1>` = 0 stops acquisitions; any other value starts acquisitions.

`OFF` stops acquisitions.

`ON` starts acquisitions.

`RUN` starts acquisitions.

`STOP` stops acquisitions.

Examples

`ACQUIRE:STATE RUN` starts the acquisition of waveform data and resets the count of the number of acquisitions.

`ACQUIRE:STATE?` might return `:ACQUIRE:STATE 0`, indicating that the acquisition is stopped.

ACQuire:STOPAfter

This command sets or queries whether the instrument continually acquires acquisitions or acquires a single sequence. Pressing SINGLE on the front panel button is equivalent to sending these commands: `ACQUIRE:STOPAFTER SEQUENCE` and `ACQUIRE:STATE 1`.

Group

Acquisition

Syntax

```
ACQuire:STOPAfter {RUNSTop|SEQuence}
ACQuire:STOPAfter?
```

Related Commands

ACQuire:STATE

Arguments

`RUNSTop` specifies that the instrument will continually acquire data, if `ACQuire:STATE` is turned on.

`SEQuence` specifies that the next acquisition will be a single-sequence acquisition.

Examples

`ACQUIRE:STOPAFTER RUNSTOP` sets the instrument to continually acquire data.

`ACQUIRE:STOPAFTER?` might return `:ACQUIRE:STOPAFTER SEQUENCE`, indicating that the next acquisition the instrument makes will be of the single-sequence type.

AFG:AMPLitude

Sets (or queries) the AFG amplitude in volts, peak to peak.

Conditions Requires option AFG.

Group AFG

Syntax
```
AFG:AMPLitude <NR3>
AFG:AMPLitude?
```

Arguments Floating point number that represents the AFG amplitude, peak to peak, in volts.

Examples `AFG:AMPLITUDE 1.0` sets the AFG amplitude to 1.0 volts, peak to peak.

`AFG:AMPLITUDE?` might return `:AFG:AMPLITUDE 3.0000` indicating the amplitude is set to 3.0 Volts.

AFG:ARBitrary:SOUrce

This command sets or queries the source name for the Arbitrary Waveform. Currently supported sources are either waveform file (.wfm) or text file (.csv).

Conditions Requires option AFG.

Group AFG

Syntax
```
AFG:ARBitrary:SOUrce <QString>
AFG:ARBitrary:SOUrce?
```

Arguments `<QString>` is the source name.

Examples `AFG:ARBITRARY:SOURCE` "E:/Waveforms/Square.wfm" sets the source waveform to E:/Waveforms/Square.wfm.

`AFG:ARBITRARY:SOURCE?` might return "E:/Waveforms/Square.wfm" indicating the source is set to E:/Waveforms/Square.wfm.

AFG:FREQuency

Sets (or queries) the AFG frequency, in Hz.

Conditions Requires option AFG.

Group AFG

Syntax

```
AFG:FREQuency <NR3>
AFG:FREQuency?
```

Arguments `NR3` is the floating point number that represents the AFG frequency, in Hz.

Examples `AFG:FREQUENCY 100.0E3` sets the AFG frequency to 100 kHz.

`AFG:FREQUENCY?` might return `:AFG:FREQUENCY 312.5000E+3` indicating the frequency is set to 312.5 kHz.

AFG:FUNCtion

Sets (or queries) which AFG function to execute.

Conditions Requires option AFG.

Group AFG

Syntax

```
AFG:FUNCtion
{SINE|SQUare|PULSe|RAMP|NOISe|DC|SINC|GAUSsian|LORENtz
|ERISe|EDECAy|HAVERSINe|CARDIac|ARBitrary}
AFG:FUNCtion?
```

Arguments

SINE
SQUare
PULSe
RAMP
NOISe
DC – The DC level is controlled by AFG:OFFSet.
SINC (Sin(x)/x)
GAUSsian
LORENtz
ERISe
EDECAy

HAVERSINe
CARDIac
ARBitrary

Examples

`AFG:FUNC LOREN` specifies to generate the Lorentz function.

`AFG:FUNCTION`? might return `:AFG:FUNCTION SINE` indicating the AFG function is set to sine.

AFG:HIGHLevel

This command sets (or queries) the high level value of the output waveform, in volts, when using the arbitrary function generator feature.

Conditions

Requires option AFG.

Group

AFG

Syntax

```
AFG:HIGHLevel <NR3>
AFG:HIGHLevel?
```

Arguments

Floating point number that represents the AFG high level value, in volts.

Examples

`AFG:HIGHLEVEL 1.0` sets the AFG high level value to 1.0 volts.

`AFG:HIGHLEVEL`? might return `:AFG:HIGHLEVEL 1.5000` indicating the high level is set to 1.5 Volts.

AFG:LOWLevel

This command sets (or queries) the low level value of the output waveform, in volts, when using the arbitrary function generator feature.

Conditions

Requires option AFG.

Group

AFG

Syntax

```
AFG:LOWLevel <NR3>
AFG:LOWLevel?
```

Arguments

`NR3` is the floating point number that represents the AFG low level value, in volts.

Examples

`AFG:LOWLEVEL 1.0` sets the AFG low level value to 1.00 volts.

`AFG:LOWLEVEL?` might return `:AFG:LOWLEVEL -1.5000` indicating the low level is set to —1.5 Volts.

AFG:NOISEAdd:PERCent

Sets (or queries) the AFG additive noise level as a percentage. Minimum is 0.0%, maximum is 100.0% and increment is 1.0%.

Conditions

Requires option AFG.

Group

AFG

Syntax

```
AFG:NOISEAdd:PERCent <NR3>
AFG:NOISEAdd:PERCent?
```

Arguments

Floating point number that represents the AFG additive noise level, as a percentage.

Examples

`AFG:NOISEADD:PERCENT 50` sets the AFG additive noise level to 50 percent.

`AFG:NOISEADD:PERCENT?` might return `:AFG:NOISEADD:PERCENT 0` indicating that no noise is added.

AFG:NOISEAdd:STATE

Sets (or queries) the AFG additive noise state.

Conditions

Requires option AFG.

Group

AFG

Syntax

```
AFG:NOISEAdd:STATE {0|1|OFF|ON}
AFG:NOISEAdd:STATE?
```

Arguments

`1` or `ON` turns on the AFG additive noise state.

`0` or `OFF` turns it off.

Examples

`AFG:NOISEADD:STATE ON` turns on the additive noise state.

`AFG:NOISEADD:STATE?` might return `:AFG:NOISEADD:STATE 0` indicating the noise additive state is off.

AFG:OFFSet

Sets (or queries) the AFG offset value, in volts.

Conditions

Requires option AFG.

Group

AFG

Syntax

```
AFG:OFFSet <NR3>
AFG:OFFSet?
```

Arguments

Floating point number that represents the AFG offset, in volts.

Examples

`AFG:OFFSET 1.0` sets the AFG offset to 1.0 volts.

`AFG:OFFSET?` might return `:AFG:OFFSET 0.0E+0` indicating there is no offset.

AFG:OUTPut:LOAd:IMPEDance

Sets (or queries) the AFG output load impedance.

Conditions

Requires option AFG.

Group

AFG

Syntax

```
AFG:OUTPut:LOAd:IMPEDance {FIFty|HIGHZ}
AFG:OUTPut:LOAd:IMPEDance?
```

Arguments

`FIFty` sets the output load impedance to 50 Ohms.

`HIGHZ` sets the output load impedance to the high-impedance state.

Examples

`AFG:OUTP:LOA:IMPED FIF` sets the AFG output load impedance to 50 Ohms.

`AFG:OUTPUT:LOAD:IMPEDANCE?` might return `:AFG:OUTPUT:LOAD:IMPEDANCE HIGHZ` indicating the load impedance is set to the high impedance state.

AFG:OUTPut:STATE

Sets (or queries) the AFG output state.

Conditions

Requires option AFG.

Group

AFG

Syntax

```
AFG:OUTPut:STATE {0|1|OFF|ON}
AFG:OUTPut:STATE?
```

Arguments

`1` or `ON` turns on the AFG output state.

`0` or `OFF` turns it off.

Examples

`AFG:OUTPUT:STATE ON` turns on the AFG output state.

`AFG:OUTPUT:STATE?` might return `:AFG:OUTPUT:STATE 1` indicating the AFG output is on.

AFG:PERIod

Sets (or queries) the period of the AFG waveform, in seconds.

Conditions

Requires option AFG.

Group

AFG

Syntax

```
AFG:PERIod <NR3>
AFG:PERIod?
```

Arguments

`NR3` is the floating point number that represents the AFG period value, in seconds.

Returns The query response is returned in high precision NR3 format (up to 12 digits with more than 4 trailing 0 digits after the decimal point is omitted).

Examples `AFG:PERIOD 1` sets the AFG period value to 1 second.

`AFG:PERIOD`? might return :AFG:PERIOD 3.2000E-6 indicating the AFG period is set to 3.2 µs.

AFG:PULse:WIDth

Sets (or queries) the AFG pulse width, in seconds.

Conditions Requires option AFG.

Group AFG

Syntax
```
AFG:PULse:WIDth <NR3>
AFG:PULse:WIDth?
```

Arguments `NR3` is the floating point number that represents the pulse width, in seconds.

Examples `AFG:PULSE:WIDTH 100.0E-6` sets the AFG pulse width to 100 microseconds.

`AFG:PULSE:WIDTH`? might return `:AFG:PULSE:WIDTH 1.0000E-6` indicating the pulse width is set to 1 µs.

AFG:RAMP:SYMmetry

Sets (or queries) the AFG ramp symmetry in percent. Minimum is 0.0%, maximum is 100.0% and increment is 0.10%.

Conditions Requires option AFG.

Group AFG

Syntax
```
AFG:RAMP:SYMmetry <NR3>
AFG:RAMP:SYMmetry?
```

Arguments Floating point number that represents the AFG ramp symmetry, as a percentage.

Examples `AFG:RAMP:SYMMETRY 50.0` sets the AFG ramp symmetry to 50 percent.

`AFG:RAMP:SYMMETRY`? might return `:AFG:RAMP:SYMMETRY 50.0000` indicating the symmetry is set to 50%.

AFG:SQUare:DUty

Sets (or queries) the AFG duty cycle in percent. The minimum is 10.0%, maximum is 90.0% and increment is 0.10%.

Conditions Requires option AFG.

Group AFG

Syntax

```
AFG:SQUare:DUty <NR3>
AFG:SQUare:DUty?
```

Arguments Floating point number that represents the AFG duty cycle, as a percentage.

Examples `AFG:SQUARE:DUTY 50.0` sets the AFG duty cycle to 50 percent.

`AFG:SQUARE:DUTY`? might return `:AFG:SQUARE:DUTY 50.0000` indicating the duty cycle is set to 50%.

ALIas

This command sets or queries the state of alias functionality, and it is identical to the ALIAS:STATE command.

Group Alias

Syntax

```
ALIas {OFF|ON|<NR1>}
ALIas?
```

Related Commands ALIas:STATE

Arguments `OFF` turns Alias expansion off.

`ON` turns Alias expansion on. When a defined alias is received, the specified command sequence is substituted for the alias and executed.

`<NR1>` = 0 disables Alias mode; any other value enables Alias mode.

Examples

`ALIAS ON` turns the alias feature on. When a defined alias is received, the specified command sequence is substituted for the alias and executed.

`ALIAS?` might return `:ALIAS:STATE 1`, indicating that the alias feature is on.

ALIas:CATalog? (Query Only)

This query-only command returns a list of the currently defined alias labels, separated by commas. If no aliases are defined, the query returns the string “”.

Group

Alias

Syntax

```
ALIas:CATalog?
```

Examples

`ALIAS:CATALOG?` might return the string `:ALIAS:CATALOG "SETUP1","TESTMENU1","DEFAULT"` showing that there are three aliases named SETUP1, TESTMENU1, and DEFAULT.

ALIas:DEFine

This command assigns a sequence of program messages to an alias label. These messages are then substituted for the alias whenever it is received as a command or query, provided that `ALIas:STATE` is turned on. The query form of this command returns the definitions of a selected alias.

NOTE. *Attempting to give two aliases the same name causes an error. To give a new alias the name of an existing alias, the existing alias must first be deleted.*

Group

Alias

Syntax

```
ALIas:DEFine <QString><,>{<QString>|<Block>}
ALIas:DEFine?
```

Related Commands

ALIas:STATE

Arguments

The first `<QString>` is the alias label.

This label cannot be a command name. Labels must start with a letter and can contain only letters, numbers, and underscores; other characters are not allowed. The label must be less than or equal to 12 characters.

The second `<QString>` or `<Block>` is a complete sequence of program messages.

The messages can contain only valid commands that must be separated by semicolons and must follow all rules for concatenating commands. The sequence must be less than or equal to 256 characters.

Examples

`ALIAS:DEFINE "ST1",":RECALL:SETUP 'C:/mySetup.set';:AUTOSET EXECUTE"` defines an alias named "ST1" that recalls a previously saved setup and performs an autoset..

`ALIAS:DEFINE? "ST1"` returns `:ALIAS:DEFINE "ST1",#247 :RECALL:SETUP 'C:/mySetup.set';:AUTOSET EXECUTE`.

ALIas:DELEte (No Query Form)

This command removes a specified alias and is identical to `ALIas:DELEte:NAMe`. An error message is generated if the named alias does not exist.

Group

Alias

Syntax

`ALIas:DELEte <QString>`

Related Commands

*ESR?, ALIas:DELEte:ALL

Arguments

`<QString>` is the name of the alias to be removed. Using `ALIas:DELEte` without specifying an alias causes an execution error. `<QString>` must be a previously defined value.

Examples

`ALIAS:DELETE "SETUP1"` deletes the alias named SETUP1.

ALIas:DELEte:ALL (No Query Form)

This command deletes all existing aliases.

Group

Alias

Syntax `ALIas:DELEte:ALL`

Related Commands ALIas:DELEte, ALIas:DELEte:NAMe

Examples `ALIAS:DELETE:ALL` deletes all existing aliases.

ALIas:DELEte:NAMe (No Query Form)

This command removes a specified alias. An error message is generated if the named alias does not exist. This command is identical to `ALIas:DELEte`.

Group Alias

Syntax `ALIas:DELEte:NAMe <QString>`

Arguments `<QString>` is the name of the alias to remove. Using `ALIas:DELEte:NAMe` without specifying an alias causes an exception error.`<QString>` must be a previously defined alias.

Examples `ALIAS:DELETE:NAME "STARTUP"` deletes the alias named STARTUP.

ALIas:STATE

This command turns aliases on or off and is identical to the ALIas command. The query form of this command returns the state of the aliases.

Group Alias

Syntax

```
ALIas:STATE {<NR1>|OFF|ON}
ALIas:STATE?
```

Arguments `<NR1>` = 0 turns off aliases; any other value turns on aliases.

`OFF` turns alias expansion off.

`ON` turns alias expansion on. When a defined alias is received, the specified command sequence is substituted for the alias and executed.

Examples

`ALIAS:STATE OFF` turns off the alias feature.

`ALIAS:STATE?` might return `:ALIAS:STATE ON`, indicating that alias expansion is currently turned on.

ALLEv? (Query Only)

This query-only command prompts the instrument to return all events and their messages (delimited by commas), and removes the returned events from the Event Queue. Use the *ESR? query to enable the events to be returned. This command is similar to repeatedly sending *EVMsg? queries to the instrument.

Group

Status and Error

Syntax

```
ALLEv?
```

Related Commands

*ESR?, EVMsg?

Examples

`ALLEV?` might return `:ALLEV 2225,"Measurement error, No waveform to measure; "420,"Query UNTERMINATED;"`.

AUTOSAVEPITIMEOUT

This command sets or queries the idle time from the programmable interface before auto-save occurs.

Group

Miscellaneous

Syntax

```
AUTOSAVEPITIMEOUT <NR1>
AUTOSAVEPITIMEOUT?
```

Arguments

`<NR1>`

Examples

`AUTOSAVEPITIMEOUT 100000` sets the timeout to 100 seconds.

`AUTOSAVEPITIMEOUT?` might return `:AUTOSAVEPITIMEOUT 180000` indicating the time out value is 180 seconds.

AUTOSAVEUITIMEOUT

This command sets or queries the idle time from the user interface before auto-save occurs.

Group

Miscellaneous

Syntax

```
AUTOSAVEUITIMEOUT <NR1>
AUTOSAVEUITIMEOUT?
```

Arguments

<NR1>

Examples

`AUTOSAVEUITIMEOUT 4000` sets the timeout to 4 seconds.

`AUTOSAVEUITIMEOUT?` might return `:AUTOSAVEUITIMEOUT 3000` indicating the time out value is 3 seconds.

AUTOset (No Query Form)

This command (no query format) sets the vertical, horizontal, and trigger controls of the instrument to automatically acquire and display the selected waveform.

Group

Miscellaneous

Syntax

```
AUTOset EXECute
```

Arguments

`EXECute` autosets the displayed waveform; this is equivalent to pressing the front panel AUTOSET button.

Examples

`AUTOSET EXECute` autosets the displayed waveform.

AUXout:EDGE

This command sets or queries the direction in which the Auxiliary Output signal will transition when a trigger occurs.

Group

Miscellaneous

Syntax
```
AUXout:EDGE {RISing|FALling}
AUXout:EDGE?
```

Arguments `RISing` sets the polarity to the rising edge.

`FALling` sets the polarity to the falling edge.

Examples `AUXOUT:EDGE RISING` sets the polarity to rising edge.

`AUXOUT:EDGE?` might return `:AUXOUT:EDGE FALLING`, indicating that the polarity is set to falling edge.

AUXout:SOUrce

This command sets or queries the source at the Auxiliary Output BNC connection.

Group Miscellaneous

Syntax
```
AUXout:SOUrce {ATRIGger|REFOUT|AFG}
AUXout:SOUrce?
```

Arguments `ATRIGger` sets the source at the BNC connector to the main trigger.

`REFOUT` sets the source at the BNC connector to the reference output.

`AFG` sets the source at the BNC connector to the AFG output.

Examples `AUXOUT:SOURCE?` might return `:AUXOUT:SOURCE ATRIGGER`, indicating that the source at the BNC connector is set to the A trigger.

BUS:ADDNew (No Query Form)

This command adds the specified bus. This command creates/adds the bus but does not display it (turn it on). In order to enable bus decoding and see the bus display on screen, send the DISplay:WAVEView<x>:BUS:B<x>:STATE `ON` command.

Group Bus

Syntax
```
BUS:ADDNew <QString>
```

Related Commands BUS:B<x>:TYPe, DISplay:WAVEView<x>:BUS:B<x>:STATE

Arguments `<QString>` is a quoted string of the form "B<NR1>" where NR1 is ≥1.

Examples `BUS:ADDNEW "B5";:display:waveview1:bus:b5:state on` creates bus 3 with the default type of Parallel, and then turns it on.

BUS:B<x>:ARINC429A:BITRate

This command sets of queries the ARINC429 bit rate for the specified bus. The bus number is specified by x. If you select Custom, use `BUS:B<x>:ARINC429A:BITRate:CUSTom` to set the bit rate.

Conditions Requires option SR-AERO.

Group Bus

Syntax
```
BUS:B<x>:ARINC429A:BITRate {LOW|HI|CUSTom}
BUS:B<x>:ARINC429A:BITRate?
```

Related Commands BUS:B<x>:ARINC429A:BITRate:CUSTom

Arguments Arguments specify the bit rate.

Examples `BUS:B1:ARINC429A:BITRATE LOW` sets the bit rate to handle low speed signals.

`BUS:B1:ARINC429A:BITRATE?` might return `:BUS:B1:ARINC429A:BITRATE HI`, indicating the bit rate is set to handle high speed signals.

BUS:B<x>:ARINC429A:BITRate:CUSTom

This command sets or queries the ARINC429 custom bit rate for the specified bus. The bus is specified by x.

Conditions Requires option SR-AERO.

Group Bus

Syntax

```
BUS:B<x>:ARINC429A:BITRate:CUSTom <NR1>
BUS:B<x>:ARINC429A:BITRate:CUSTom?
```

Related Commands

BUS:B<x>:ARINC429A:BITRate

Arguments

`<NR1>` is the ARINC429 custom bit rate for the specified bus.

Examples

`BUS:B1:ARINC429A:BITRATE:CUSTOM 12500` sets the bit rate to 12,500.

`BUS:B1:ARINC429A:BITRATE:CUSTOM?` might return `:BUS:B1:ARINC429A:BITRATE:CUSTOM 100000`, indicating the bit rate is set to 100,000.

BUS:B<x>:ARINC429A:DATAFORmat

This command sets or queries the format of the DATA field for the specified ARINC429 bus. The bus is specified by x.

Conditions

Requires option SR-AERO.

Group

Bus

Syntax

```
BUS:B<x>:ARINC429A:DATAFORmat {DATA|SDIDATA|SDIDATASSM}
BUS:B<x>:ARINC429A:DATAFORmat?
```

Arguments

`DATA` specifies a DATA field width of 19 bits (covering bits 11 through 29 of the 32 bit packet)

`SDIDATA` specifies a DATA field width of 21 bits (covering bits 9 through 29 of the 32 bit packet)

`SDIDATASSM` specifies a DATA field width of 23 bits (covering bits 9 through 31 of the 32 bit packet)

Examples

`BUS:B1:ARINC429A:DATAFORMAT SDIDATASSM` sets Bus 1 ARINC429 DATA field width to 23 bits.

`BUS:B1:ARINC429A:DATAFORMAT?` might return `:BUS:B1:ARINC429A:DATAFORMAT DATA`, indicating a DATA field width of 19 bits.

BUS:B<x>:ARINC429A:POLARITY

This command sets or queries the source polarity for the specified ARINC429 bus. The bus is specified by x.

Conditions Requires option SR-AERO.

Group Bus

Syntax

```
BUS:B<x>:ARINC429A:POLARITY {NORMal|INVERTed}
BUS:B<x>:ARINC429A:POLARITY?
```

Arguments

`NORMal` specifies normal polarity.

`INVERTed` specifies inverted polarity.

Examples

`BUS:B3:ARINC429A:POLARITY INVERTED` sets Bus 3 ARINC429 polarity to inverted.

`BUS:B2:ARINC429A:POLARITY?` might return `:BUS:B2:ARINC429A:POLARITY NORMAL`, indicating that the Bus 2 ARINC429 polarity is set to normal.

BUS:B<x>:ARINC429A:SOUrce

This command sets or queries the source for the specified ARINC429 bus. The bus is specified by x.

Conditions Requires option SR-AERO.

Group Bus

Syntax

```
BUS:B<x>:ARINC429A:SOUrce {CH<x>|Math<x>|REF<x>}
BUS:B<x>:ARINC429A:SOUrce?
```

Arguments

`CH<x>` specifies an analog channel as the source waveform for the ARINC429 bus.

`Math<x>` specifies a math waveform as the source waveform for the ARINC429 bus.

`REF<x>` specifies a reference waveform as the source waveform for the ARINC429 bus.

Examples BUS:B1:ARINC429A:SOURCE CH1 sets channel 1 as the source for the ARINC429 bus.

BUS:B1:ARINC429A:SOURCE? might return :BUS:B1:ARINC429A:SOURCE MATH2 indicating that the source is set to MATH2.

BUS:B<x>:ARINC429A:THRESHold

This command sets or queries the ARINC429 upper threshold for the specified bus. The bus is specified by x.

Conditions Requires option SR-AERO.

Group Bus

Syntax

```
BUS:B<x>:ARINC429A:THRESHold <NR3>
BUS:B<x>:ARINC429A:THRESHold?
```

Related Commands BUS:B<x>:ARINC429A:SOUrce

Arguments <NR3> is the ARINC429 lower threshold for the specified bus.

Examples BUS:B3:ARINC429A:THRESHOLD -200e-3 sets the Bus 3 ARINC429 upper threshold to -200 mV.

BUS:B2:ARINC429A:THRESHOLD? might return :BUS:B2:ARINC429A:THRESHOLD -500.0000E-3 indicating the Bus 2 ARINC429 upper threshold is set to -500 mV.

BUS:B<x>:AUDio:BITDelay

This command sets or queries the number of delay bits for the specified AUDIO bus. The bus is specified by x.

NOTE. *This command only applies to the TDM Audio type.*

Conditions Requires option SR-AUDIO.

Group Bus

Syntax

```
BUS:B<x>:AUDio:BITDelay <NR1>
BUS:B<x>:AUDio:BITDelay?
```

Arguments

`<NR1>` specifies the number of delay bits.

Examples

`BUS:B1:AUDIO:BITDELAY 2` sets the bit delay to 2.

`BUS:B1:AUDIO:BITDELAY?` might return `:BUS:B1:AUDIO:BITDELAY 1` indicating that the number of delay bits is 1.

BUS:B<x>:AUDio:BITOrder

Specifies the bit order for the specified AUDIO bus. The bus is specified by x.

Conditions

Requires option SR-AUDIO.

Group

Bus

Syntax

```
BUS:B<x>:AUDio:BITOrder {MSB|LSB}
BUS:B<x>:AUDio:BITOrder?
```

Arguments

`MSB` specifies that the most significant bit will be expected first in the order.

`LSB` specifies that the least significant bit will be expected first in the order.

Examples

`BUS:B1:AUDIO:BITORDER LSB` sets the bit order to LSB.

`BUS:B1:AUDIO:BITORDER?` might return `:BUS:B1:AUDIO:BITORDER MSB` indicating that the MSB is first in the bit order.

BUS:B<x>:AUDio:CLOCk:POLarity

This command sets or queries the clock source polarity for the specified AUDIO bus. The bus is specified by x.

Conditions

Requires option SR-AUDIO.

Group

Bus

Syntax

```
BUS:B<x>:AUDio:CLOCk:POLarity {FALL|RISE}
BUS:B<x>:AUDio:CLOCk:POLarity?
```

Arguments

`FALL` sets falling edge as the clock polarity.

`RISE` sets rising edge as the clock polarity.

Examples

`BUS:B1:AUDIO:CLOCK:POLARITY FALL` sets the clock polarity to Fall.

`BUS:B1:AUDIO:CLOCK:POLARITY?` might return `:BUS:B1:AUDIO:CLOCK:POLARITY RISE` indicating that the clock polarity is set to Rise.

BUS:B<x>:AUDio:CLOCk:SOUrce

This command sets or queries the clock source waveform for the specified AUDIO bus. The bus is specified by x.

Conditions

Requires option SR-AUDIO.

Group

Bus

Syntax

```
BUS:B<x>:AUDio:CLOCk:SOUrce
{CH<x>|CH<x>_D<x>|Math<x>|REF<x>|REF<x>_D<x>}
BUS:B<x>:AUDio:CLOCk:SOUrce?
```

Arguments

`CH<x>` specifies an analog channel as the clock source waveform for the audio bus.

`CH<x>_D<x>` specifies a digital channel as the clock source waveform for the specified audio bus.

`Math<x>` specifies a math waveform as the clock source waveform for the audio bus.

`REF<x>` specifies a reference waveform as the clock source waveform for the audio bus.

`REF<x>_D<x>` specifies a digital reference waveform as the clock source waveform for the specified audio bus.

Examples

`BUS:B1:AUDIO:CLOCK:SOURCE CH1_D1` sets D1 of channel 1 as the clock source for the audio bus.

`BUS:B1:AUDIO:CLOCK:SOURCE?` might return `:BUS:B1:AUDIO:CLOCK:SOURCE CH1` indicating that the clock source is set to channel 1.

BUS:B<x>:AUDio:CLOCk:THReshold

This command sets or queries the audio clock source threshold for the specified bus. The bus is specified by x.

Conditions Requires option SR-AUDIO.

Group Bus

Syntax

```
BUS:B<x>:AUDio:CLOCk:THReshold <NR3>
BUS:B<x>:AUDio:CLOCk:THReshold?
```

Related Commands BUS:B<x>:AUDio:CLOCk:SOUrce

Arguments `<NR3>` is the audio clock source threshold for the specified bus.

Examples `BUS:B3:AUDIO:CLOCK:THRESHOLD` 500.0E-3 sets the Bus 3 audio Cclock source threshold to 500.0 mV.

`BUS:B2:AUDIO:CLOCK:THRESHOLD?` might return `:BUS:B2:AUDIO:CLOCK:THRESHOLD` 1.0 indicates the Bus 2 audio clock source threshold is set to 1.0 V.

BUS:B<x>:AUDio:DATa:POLarity

This command sets or queries the audio data source polarity for the specified audio bus. The bus is specified by x.

Conditions Requires option SR-AUDIO.

Group Bus

Syntax

```
BUS:B<x>:AUDio:DATa:POLarity {HIGH|LOW}
BUS:B<x>:AUDio:DATa:POLarity?
```

Arguments

`HIGH` specifies positive data polarity for the audio bus.

`LOW` specifies negative data polarity for the audio bus.

Examples

`BUS:B1:AUDIO:DATA:POLARITY LOW` sets the data polarity to LOW.

`BUS:B1:AUDIO:DATA:POLARITY?` might return `:BUS:B1:AUDIO:DATA:POLARITY HIGH` indicating that the data polarity is set to HIGH.

BUS:B<x>:AUDio:DATa:SIZe

This command sets or queries the number of bits per channel for the specified audio bus. The bus is specified by x.

NOTE. *This command only applies to the TDM Audio type.*

Conditions

Requires option SR-AUDIO.

Group

Bus

Syntax

```
BUS:B<x>:AUDio:DATa:SIZe <NR1>
BUS:B<x>:AUDio:DATa:SIZe?
```

Arguments

`NR1` specifies the number of bits per word.

Examples

`BUS:B1:AUDIO:DATA:SIZE 8` sets the number of bits per word to 8.

`BUS:B1:AUDIO:DATA:SIZE?` might return `:BUS:B1:AUDIO:DATA:SIZE 24` indicating that the number of bits per word is set to 24.

BUS:B<x>:AUDio:DATa:SOUrce

This command sets or queries the audio data source for the specified audio bus. The bus is specified by x.

Conditions

Requires option SR-AUDIO.

Group

Bus

Syntax

```
BUS:B<x>:AUDio:DATa:SOUrce
{CH<x>|CH<x>_D<x>|MATH<x>|REF<x>|REF<x>_D<x>}
BUS:B<x>:AUDio:DATa:SOUrce?
```

Arguments

`CH<x>` specifies an analog channel as the data source waveform for the audio bus.

`CH<x>_D<x>` specifies a digital channel as the data source waveform for the audio bus.

`MATH<x>` specifies an math waveform as the data source waveform for the audio bus.

`REF<x>` specifies an reference waveform as the data source waveform for the audio bus.

`REF<x>_D<x>` specifies a digital reference waveform as the data source waveform for the specified audio bus.

Examples

`BUS:B1:AUDIO:DATA:SOURCE CH1_D1` sets the data source to D1 of FlexChannel 1.

`BUS:B1:AUDIO:DATA:SOURCE?` might return `:BUS:B1:AUDIO:DATA:SOURCE CH3` indicating that the data source is set to CH3.

BUS:B<x>:AUDio:DATa:THReshold

This command sets or queries the audio data source threshold for the specified bus. The bus is specified by x.

Conditions

Requires option SR-AUDIO.

Group

Bus

Syntax

```
BUS:B<x>:AUDio:DATa:THReshold <NR3>
BUS:B<x>:AUDio:DATa:THReshold?
```

Related Commands

BUS:B<x>:AUDio:DATa:SOUrce

Arguments

`<NR3>` is the audio data source threshold for the specified bus.

Examples

`BUS:B3:AUDIO:DATA:THRESHOLD` 1.5 sets the Bus 3 audio clock source threshold to 500.0 mV.

`BUS:B2:AUDIO:DATA:THRESHOLD?` might return `:BUS:B2:AUDIO:DATA:THRESHOLD` 500.0000E-3 indicates the Bus 2 audio data source threshold is set to 500 mV.

BUS:B<x>:AUDio:DATa:WORDSize

This command sets or queries the audio bits per word for the specified bus. The bus is specified by x.

Group

Bus

Syntax

```
BUS:B<x>:AUDio:DATa:WORDSize <NR1>
BUS:B<x>:AUDio:DATa:WORDSize?
```

Arguments

`<NR1>` is the audio bits per word for the specified bus.

Examples

`BUS:B1:AUDio:DATa:WORDSize 24` sets the audio bits per word to 24 bits.

`BUS:B1:AUDio:DATa:WORDSize?` might return `:BUS:B1:AUDIO:DATA:WORDSIZE 24` indicating the bits per word is 24.

BUS:B<x>:AUDio:FRAME:CLOCKBITSPERCHANNEL

This command sets or queries the audio bits of sync width for the specified bus. The bus is specified by x.

NOTE. *This command only applies to the TDM Audio type.*

Conditions

Requires option SR-AUDIO.

Group

Bus

Syntax

```
BUS:B<x>:AUDio:FRAME:CLOCKBITSPERCHANNEL <NR1>
BUS:B<x>:AUDio:FRAME:CLOCKBITSPERCHANNEL?
```

Arguments

`<NR1>` is the audio bits of sync width for the specified bus.

Examples

`BUS:B1:AUDio:FRAME:CLOCKBITSPERCHANNEL 32` sets the number of bits to 32.

`BUS:B1:AUDio:FRAME:CLOCKBITSPERCHANNEL?` might return `:BUS:B1:AUDIO:FRAME:CLOCKBITSPERCHANNEL 24` indicating there are 24 bits of sync width for the bus.

BUS:B<x>:AUDio:FRAME:SIZe

This command sets or queries the number of audio channels in each frame for the specified AUDIO bus. The bus is specified by x.

NOTE. *This command only applies to the TDM Audio type.*

Conditions

Requires option SR-AUDIO.

Group

Bus

Syntax

```
BUS:B<x>:AUDio:FRAME:SIZe <NR1>
BUS:B<x>:AUDio:FRAME:SIZe?
```

Arguments

`<NR1>` specifies the number of channels in each frame.

Examples

`BUS:B1:AUDIO:FRAME:SIZE 2` sets the frame size to 2.

`BUS:B1:AUDIO:FRAME:SIZE?` might return `:BUS:B1:AUDIO:FRAME:SIZE 8` indicating that the number of channels in each frame is set to 8.

BUS:B<x>:AUDio:TYPe

This command sets or queries the audio format (type) for the specified audio bus. The bus is specified by x.

Conditions

Requires option SR-AUDIO.

Group

Bus

Syntax

```
BUS:B<x>:AUDio:TYPe {I2S|LJ|RJ|TDM}
BUS:B<x>:AUDio:TYPe?
```

Arguments

`I2S` specifies the I²S audio format.

`LJ` specifies the left-justified audio format.

`RJ` specifies the right-justified audio format.

`TDM` specifies the time-division multiplexing audio format.

Examples

`BUS:B1:AUDIO:TYPE RJ` sets right-justified as the audio format.

`BUS:B1:AUDIO:TYPE?` might return `:BUS:B1:AUDIO:TYPE I2S` indicating that the audio format is set to I²S.

BUS:B<x>:AUDio:WORDSel:POLarity

This command sets or queries the word select source polarity for the specified audio bus. The bus is specified by x.

Conditions

Requires option SR-AUDIO.

Group

Bus

Syntax

```
BUS:B<x>:AUDio:WORDSel:POLarity {NORMal|INVERTed}
BUS:B<x>:AUDio:WORDSel:POLarity?
```

Arguments

`NORMal` specifies positive polarity.

`INVERTed` specifies negative polarity.

Examples

`BUS:B1:AUDIO:WORDSEL:POLARITY NORMal` sets normal as the word select polarity.

`BUS:B1:AUDIO:WORDSEl:POLARITY?` might return `:BUS:B1:AUDIO:WORDSEL:POLARITY NORMAL` indicating that the word select polarity is set to normal.

BUS:B<x>:AUDio:WORDSel:SOUrce

This command sets or queries the audio word select source waveform for the specified audio bus. The bus is specified by x.

Conditions

Requires option SR-AUDIO.

Group

Bus

Syntax

```
BUS:B<x>:AUDio:WORDSel:SOUrce
{CH<x>|CH<x>_D<x>|MATH<x>|REF<x>|REF<x>_D<x>}
BUS:B<x>:AUDio:WORDSel:SOUrce?
```

Arguments

CH<x> specifies an analog channel as the word select source waveform .

CH<x>_D<x> specifies a digital channel as the word select source waveform.

MATH<x> specifies an math waveform as the word select source waveform .

REF<x> specifies an reference waveform as the word select source waveform .

REF<x>_D<x> specifies a digital reference waveform as the word select source waveform for the specified audio bus.

Examples

BUS:B1:AUDIO:WORDSEL:SOURCE CH1 sets CH1 as the word select source.

BUS:B1:AUDIO:WORDSEL:SOURCE CH2_D3 sets D3 of FlexChannel 2 as the word select source.

BUS:B1:AUDIO:WORDSEL:SOURCE? might return :BUS:B1:AUDIO:WORDSEL:SOURCE CH2 indicating that the word select source is set to CH2.

BUS:B<x>:AUDio:WORDSel:THReshold

This command sets or queries the audio word select source threshold for the specified bus. The bus is specified by x.

Conditions

Requires option SR-AUDIO.

Group

Bus

Syntax

```
BUS:B<x>:AUDio:WORDSel:THReshold <NR3>
BUS:B<x>:AUDio:WORDSel:THReshold?
```

Arguments

<NR3> is the audio word select source threshold for the specified bus.

Examples

BUS:B4:AUDIO:WORDSEL:THRESHOLD 300.0E-3 sets the Bus 4 audio word select source threshold to 300 mV.

`BUS:B1:AUDIO:WORDSEL:THRESHOLD?` might return `:BUS:B1:AUDIO:WORDSEL:THRESHOLD 1.25` indicates the Bus 1 audio word select source threshold is set to 1.25 V.

BUS:B<x>:CAN:BITRate

This command sets or queries the CAN bit rate. The bus number is specified by x. If you select Custom, use BUS:B<x>:CAN:BITRate:VALue to set the bit rate.

Conditions Requires option SR-AUTO.

Group Bus

Syntax

```
BUS:B<x>:CAN:BITRate {RATE10K|RATE100K|RATE1M|RATE125K|
RATE153K|RATE20K|RATE25K|RATE250K|RATE31K|RATE33K|
RATE400K|RATE50K|RATE500K|RATE62K| RATE68K|RATE800K|
RATE83K|RATE92K|CUSTom}
BUS:B<x>:CAN:BITRate?
```

Related Commands BUS:B<x>:CAN:BITRate:VALue

Arguments Arguments specify the bit rate.

Examples `BUS:B1:CAN:BITRate RATE1M` sets the CAN bit rate to 1 Mb.

`BUS:B1:CAN:BITRate?` might return `:BUS:B1:CAN:BITRATE RATE500K`, indicating the CAN bit rate is set to 500 k.

BUS:B<x>:CAN:BITRate:VALue

This command sets or queries CAN bit rate when Custom is selected by BUS:B<x>:CAN:BITRate. The bus number is specified by x.

Conditions Requires option SR-AUTO.

Group Bus

Syntax

```
BUS:B<x>:CAN:BITRate:VALue <NR3>
BUS:B<x>:CAN:BITRate:VALue?
```

Related Commands BUS:B<x>:CAN:BITRate

Arguments <NR3> specifies the CAN bit rate.

Returns <NR1> is the bit rate.

Examples `BUS:B1:CAN:BITRate:VALue 400.0E+3` sets the bit rate to 400 k.

`BUS:B1:CAN:BITRate:VALue?` might return `:BUS:B1:CAN:BITRATE:VALUE 500000`, indicating that the bit rate is set to 500,000.

BUS:B<x>:CAN:FD:BITRate

This command sets or queries the increased data phase bit rate used by CAN FD packets on the specified CAN bus. The bus is specified by x. If you select Custom, use `BUS:B<x>:CAN:FD:BITRate:CUSTom` to set the bit rate.

Conditions Requires option SR-AUTO.

Group Bus

Syntax

```
BUS:B<x>:CAN:FD:BITRate {RATE1M|RATE2M|RATE3M|RATE4M|RATE5M
|RATE6M|RATE7M|RATE8M|RATE9M|RATE10M|RATE11M|RATE12M|RATE13M
|RATE14M|RATE15M|RATE16M|CUSTom}
BUS:B<x>:CAN:FD:BITRate?
```

Related Commands BUS:B<x>:CAN:FD:BITRate:CUSTom

Arguments Arguments specify the bit rate.

Examples `BUS:B1:CAN:BITRATE RATE1M` sets the CAN FD bit rate to 1 Mbps.

`BUS:B1:CAN:BITRATE?` might return `:BUS:B1:CAN:BITRATE RATE4M`, indicating that the CAN FD bit rate is 4 Mbps.

BUS:B<x>:CAN:FD:BITRate:CUSTom

This command sets or queries the custom bit rate for the increased data phase of CAN FD packets on the specified CAN bus. The bus is specified by x.

Conditions

Requires option SR-AUTO.

Group

Bus

Syntax

```
BUS:B<x>:CAN:FD:BITRate:CUSTom <NR1>
BUS:B<x>:CAN:FD:BITRate:CUSTom?
```

Related Commands

BUS:B<x>:CAN:BITRate

Arguments

`<NR1>` is the custom FD bit rate for the specified bus.

Examples

`BUS:B1:CAN:FD:BITRATE:CUSTOM 1000000` sets the bit rate to 1,000,000.

`BUS:B1:CAN:FD:BITRATE:CUSTOM?` might return `:BUS:B1:CAN:FD:BITRATE:CUSTOM 4000000`, indicating the bit rate is set to 4,000,000.

BUS:B<x>:CAN:SAMPLEpoint

This command sets or queries the sample point for the specified CAN bus. The bus is specified by x.

Conditions

Requires option SR-AUTO.

Group

Bus

Syntax

```
BUS:B<x>:CAN:SAMPLEpoint <NR1>
BUS:B<x>:CAN:SAMPLEpoint?
```

Arguments

`<NR1>` is the sample point, in percent, for the specified CAN bus.

Examples

`BUS:B1:CAN:SAMPLEpoint 40` sets the sample point to 40%.

`BUS:B1:CAN:SAMPLEpoint?` might return `:BUS:B1:CAN:SAMPLEPOINT 50` indicating the sample point is at 50%.

BUS:B<x>:CAN:SIGNal

This command sets or queries the signal type for the specified CAN bus. The bus is specified by x.

Conditions Requires option SR-AUTO.

Group Bus

Syntax

```
BUS:B<x>:CAN:SIGNal {DIFFerential|CANH|CANL|RX|TX}
BUS:B<x>:CAN:SIGNal?
```

Arguments Arguments are the CAN bus signal types.

Examples `BUS:B1:CAN:SINal CANL` sets the signal type to CANL.

`BUS:B1:CAN:SINal?` might return `:BUS:B1:CAN:SIGNAL CANH` indicating the signal type is CANH.

BUS:B<x>:CAN:SOUrce

This command sets or queries the CAN source channel for the specified CAN bus. The bus number is specified by x.

Conditions Requires option SR-AUTO.

Group Bus

Syntax

```
BUS:B<x>:CAN:SOUrce
{CH<x>|CH<x>_D<x>|MATH<x>|REF<x>|REF<x>_D<x>}
BUS:B<x>:CAN:SOUrce?
```

Arguments Arguments specify a channel.

Examples `BUS:B1:CAN:SOUrce MATH6` sets the source channel to MATH6.

`BUS:B1:CAN:SOUrce?` might return `:BUS:B1:CAN:SOURCE CH1`, indicating that the CAN source channel is CH1.

BUS:B<x>:CAN:STANDard

This command sets or queries which CAN standard specification to analyze the specified CAN bus with. The bus is specified by x.

Conditions Requires option SR-AERO.

Group Bus

Syntax

```
BUS:B<x>:CAN:STANDard {CAN2X|FDISO|FDNONISO}
BUS:B<x>:CAN:STANDard?
```

Arguments `CAN2X` sets the CAN bus standard to CAN 2.0.

`FDISO` sets the CAN bus standard to ISO CAN FD (11898-1:2015).

`FDNONISO` sets the CAN bus standard to non-ISO CAN FD (Bosch:2012).

Examples `BUS:B1:CAN:STANDARD FDISO` sets the CAN standard to ISO CAN FD.

`BUS:B1:CAN:STANDARD?` might return `:BUS:B1:CAN:STANDARD CAN2X`, indicating that the CAN standard is CAN 2.0.

BUS:B<x>:CAN:THReshold

This command sets or queries the source channel threshold for the specified CAN bus. The bus is specified by x.

Conditions Requires option SR-AUTO.

Group Bus

Syntax

```
BUS:B<x>:CAN:THReshold <NR3>
BUS:B<x>:CAN:THReshold?
```

Arguments `<NR3>` is the source channel threshold for the specified CAN bus.

Examples

`BUS:B1:CAN:THReshold 5` sets the threshold to 5 V.

`BUS:B1:CAN:THReshold?` might return `:BUS:B1:CAN:THRESHOLD 0.0E+0` indicating the threshold is set to 0.0 V.

BUS:B<x>:DISplay:FORMat

This command sets or queries how the data is represented in the bus form for the specified bus. The bus is specified by x.

Group

Bus

Syntax

```
BUS:B<x>:DISplay:FORMat {HEX|BINARY|MIXEDASCII|MIXEDHEX|
ASCII|DECIMAL|MIXED}
BUS:B<x>:DISplay:FORMat?
```

NOTE. *Different bus types support only a subset of these arguments.*

Arguments

`HEX` specifies hexadecimal format.

`BINARY` specifies binary format.

`MIXEDASCII` specifies mixed ASCII format.

`MIXEDHEX` specifies mixed hexadecimal format.

`ASCII` specifies ASCII format.

`DECIMAL` specifies decimal format.

`MIXED` specifies mixed format.

Examples

`BUS:B1:DISplay:FORMat BINARY` sets the format to binary.

`BUS:B1:DISplay:FORMat?` might return `:BUS:B1:DISPLAY:FORMAT HEX` indicating the format is set to hexadecimal.

BUS:B<x>:DISplay:LAYout

This command sets or queries what to display for the specified bus. The bus is specified by x.

Group

Bus

Syntax

```
BUS:B<x>:DISplay:LAYout {BUS|BUSANDWAVEFORM}
BUS:B<x>:DISplay:LAYout?
```

Arguments

`BUS` specifies displaying the bus form only.

`BUSANDWAVEFORM` specifies displaying the bus form and the constituent source waveform(s). This argument is not available for some bus types and some bus configurations

Examples

`BUS:B1:DISplay:LAYout BUS` specifies displaying the bus form only.

`BUS:B1:DISplay:LAYout?` might return `:BUS:B1:DISPLAY:LAYOUT BUS` indicating the bus will be displayed without displaying its constituent source waveform(s).

BUS:B<x>:ETHERnet:DATAMINUSTHRESHold

This command sets or queries the Ethernet D- source threshold for the specified bus. This threshold only applies when the Ethernet signal type is single ended. The bus is specified by x.

Conditions

Requires option SR-ENET.

Group

Bus

Syntax

```
BUS:B<x>:ETHERnet:DATAMINUSTHRESHold <NR3>
BUS:B<x>:ETHERnet:DATAMINUSTHRESHold?
```

Related Commands

BUS:B<x>:ETHERNET:SOUrce:DMINus, BUS:B<x>:ETHERNET:SOUrce:DPLUs, BUS:B<x>:ETHERnet:SIGNALTYpe

Arguments

`<NR3>` is the Ethernet D- source threshold for the specified bus.

Examples

`BUS:B3:ETHERNET:DATAMINUSTHRESHOLD` 250.0E-3 sets the Bus 3 Ethernet DATA Minus source threshold to 250.0000 mV.

`BUS:B2:ETHERNET:DATAMINUSTHRESHOLD?` might return `BUS:B2:ETHERNET:DATAMINUSTHRESHOLD` 1.0 indicates the Bus 2 Ethernet D- source threshold is set to 1.0 V.

BUS:B<x>:ETHERnet:DATAPLUSTHRESHold

This command sets or queries the Ethernet D+ source threshold for the specified bus. This threshold only applies when the Ethernet signal type is single ended. The bus is specified by x.

Conditions Requires option SR-ENET.

Group Bus

Syntax

```
BUS:B<x>:ETHERnet:DATAPLUSTHRESHold <NR3>
BUS:B<x>:ETHERnet:DATAPLUSTHRESHold?
```

Related Commands BUS:B<x>:ETHERNET:SOUrce:DMINus, BUS:B<x>:ETHERNET:SOUrce:DPLUs, BUS:B<x>:ETHERnet:SIGNALTYpe

Arguments `<NR3>` is the Ethernet D+ source threshold for the specified bus.

Examples `BUS:B3:ETHERNET:DATAPLUSTHRESHOLD 250.0E-3` sets the Bus 3 Ethernet D+ source threshold to 250.0000 mV.

`BUS:B2:ETHERNET:DATAMINUSTHRESHOLD?` might return `:BUS:B2:ETHERNET:DATAPLUSTHRESHOLD 1.0` indicating the Bus 2 Ethernet D+ source threshold is set to 1.0 V.

BUS:B<x>:ETHERnet:IPVFOUR

This command sets or queries whether IPV4 packets are available for triggering on Ethernet. The bus is specified by x.

Conditions Requires option SR-ENET.

Group Bus

Syntax

```
BUS:B<x>:ETHERnet:IPVFOUR {YES|NO}
BUS:B<x>:ETHERnet:IPVFOUR?
```

Arguments `YES` specifies that IPV4 packets are available.

`NO` specifies that IPV4 packets are not available.

Examples

`BUS:B1:ETHERNET:IPVFOUR NO` will specify that Bus 1 does not have IPV4 packets available.

`BUS:B3:ETHERNET:IPVFOUR?` might return `:BUS:B3:ETHERNET:IPVFOUR YES` indicating that Bus 3 has IPV4 packets available.

BUS:B<x>:ETHERnet:LOWTHRESHold

This command sets or queries the Ethernet source Low threshold for the specified bus. This threshold only applies when the Ethernet signal type is differential. The bus is specified by x.

Conditions

Requires option SR-ENET.

Group

Bus

Syntax

```
BUS:B<x>:ETHERnet:LOWTHRESHold <NR3>
BUS:B<x>:ETHERnet:LOWTHRESHold?
```

Related Commands

BUS:B<x>:ETHERnet:SIGNALTYpe

Arguments

`<NR3>` is the Ethernet source Low threshold for the specified bus.

Examples

`BUS:B1:ETHERnet:LOWTHRESHold -200e-3` sets the threshold to -200 mV.

`BUS:B1:ETHERnet:LOWTHRESHold?` might return `:BUS:B1:ETHERNET:LOWTHRESHOLD -500.0000E-3` indicating the threshold is set to -500 mV.

BUS:B<x>:ETHERnet:QTAGGING

This command sets or queries whether Q-Tagging packets are available for triggering on Ethernet. The bus is specified by x.

Conditions

Requires option SR-ENET.

Group

Bus

Syntax

```
BUS:B<x>:ETHERnet:QTAGGING {YES|NO}
BUS:B<x>:ETHERnet:QTAGGING?
```

Arguments

`YES` specifies that Q-Tagging packets are available.

`NO` specifies that Q-Tagging packets are not available.

Examples

`BUS:B1:ETHERnet:QTAGGING YES` turns on Q-Tagging.

`BUS:B1:ETHERnet:QTAGGING?` might return `:BUS:B1:ETHERNET:QTAGGING YES` indicating that Q-tagging packets are available.

BUS:B<x>:ETHERnet:SIGNALTYpe

This command sets or queries the Ethernet signal type for the specified bus. The bus is specified by x.

Conditions

Requires option SR-ENET.

Group

Bus

Syntax

```
BUS:B<x>:ETHERnet:SIGNALTYpe {SINGLE|DIFF}
BUS:B<x>:ETHERnet:SIGNALTYpe?
```

Arguments

`SINGLE` specifies single-ended signals.

`DIFF` specifies differential signals.

Examples

`BUS:B1:ETHERnet:SIGNALTYpe SINGLE` specifies single-ended signals.

`BUS:B1:ETHERnet:SIGNALTYpe?` might return `:BUS:B1:ETHERNET:SIGNALTYPE DIFF` indicating differential signals are specified.

BUS:B<x>:ETHERnet:SOUrce

This command sets or queries the Ethernet data (SDATA) source for the specified bus. This command controls the source channel when the signal type is differential. The bus number is specified by <x>.

Conditions

Requires option SR-ENET.

Group

Bus

Syntax

BUS:B<x>:ETHERnet:SOUrce {CH<x>|MATH<x>|REF<x>}

BUS:B<x>:ETHERnet:SOUrce?

Related Commands

BUS:B<x>:ETHERnet:THRESHold

Arguments

CH<x> specifies to use one of the analog channels as the Ethernet data source for differential input.

MATH<x> specifies to use a math waveform as the source for Ethernet data differential input

REF<x> specifies to use one of the reference waveforms as the Ethernet data source for differential input.

Examples

BUS:B1:ETHERNET:SOURCE CH4 specifies to use the channel 4 waveform as the source for Ethernet data.

BUS:B1:ETHERNET:SOURCE? might return CH2, indicating that channel 2 is the currently specified source for Ethernet data.

BUS:B<x>:ETHERNET:SOUrce:DMINus

This command sets or queries the Ethernet D- source for the specified bus. this command specifies the source channel to use when the signal type is single ended. The bus is specified by x.

Group

Bus

Syntax

BUS:B<x>:ETHERNET:SOUrce:DMINus {CH<x>|MATH<x>|REF<x>}
BUS:B<x>:ETHERNET:SOUrce:DMINus?

Arguments

Argument is the D- source.

Examples

BUS:B1:ETHERNET:SOUrce:DMINus CH1 sets the D- source to channel 1.

BUS:B1:ETHERNET:SOUrce:DMINus? might return :BUS:B1:ETHERNET:SOURCE:DMINUS CH2 indicating the D- source is set to channel 2.

BUS:B<x>:ETHERNET:SOUrce:DPLUs

This command sets or queries the Ethernet D+ source for the specified bus. this command specifies the source channel to use when the signal type is single ended. The bus is specified by x.

Group Bus

Syntax
```
BUS:B<x>:ETHERNET:SOUrce:DPLUS {CH<x>|MATH<x>|REF<x>}
BUS:B<x>:ETHERNET:SOUrce:DPLUs?
```

Arguments Argument is the D+ source.

Examples `BUS:B1:ETHERNET:SOUrce:DPLUs Ch5` sets the `D+` source to channel 5.

`BUS:B1:ETHERNET:SOUrce:DPLUs?` might return `:BUS:B1:ETHERNET:SOURCE:DPLUS CH5` indicating the `D+` source is set to channel 5.

BUS:B<x>:ETHERnet:THRESHold

This command sets or queries the Ethernet DATA source High threshold for the specified bus. The bus is specified by x.

Conditions Requires option SR-ENET.

Group Bus

Syntax
```
BUS:B<x>:ETHERnet:THRESHold <NR3>
BUS:B<x>:ETHERnet:THRESHold?
```

Related Commands BUS:B<x>:ETHERnet:SOUrce

Arguments `<NR3>` is the Ethernet DATA source High threshold for the specified bus.

Examples `BUS:B4:ETHERNET:THRESHOLD` 1.0 sets the Bus 4 Ethernet DATA source High threshold to 1.0 V.

`BUS:B3:ETHERNET:THRESHOLD?` might return `BUS:B3:ETHERNET:THRESHOLD` 225.00000E-3 indicates the Bus 3 Ethernet DATA source High threshold is set to 225.0 mV.

BUS:B<x>:ETHERnet:TYPe

This command specifies the Ethernet standard speed. The bus number is specified by <x>.

Conditions Requires option SR-ENET.

Group Bus

Syntax

```
BUS:B<x>:ETHERnet:TYPe {TENBASET|HUNDREDBASETX}
BUS:B<x>:ETHERnet:TYPe?
```

Arguments `TENBASET` specifies the Ethernet speed as 10Base-T.

`HUNDREDBASETX` specifies the Ethernet speed as 100Base-T.

Examples `BUS:B1:ETHERNET:TYPE HUNDREDBASETX` specifies the Ethernet speed as 100Base-T.

`BUS:B1:ETHERNET:TYPE?` might return `TENBASET`, indicating that 10Base-T is the currently specified Ethernet speed.

BUS:B<x>:FLEXray:BITRate

This command sets or queries the FlexRay bus bit rate. The bus is specified by x. If you select Custom, use BUS:B<x>:FLEXray:BITRate:CUSTom to set the bit rate.

Conditions Requires option SR-AUTO.

Group Bus

Syntax

```
BUS:B<x>:FLEXray:BITRate {CUSTOM|RATE2M|RATE5M|RATE10M}
BUS:B<x>:FLEXray:BITRate?
```

Arguments Arguments specify the bit rate.

Examples

`BUS:B1:FLEXRAY:BITRate RATE2M` sets the bit rate to 2 Mb.

`BUS:B1:FLEXRAY:BITRate?` might return `:BUS:B1:FLEXRAY:BITRATE RATE10M`, indicating the bit rate is 10 Mb.

BUS:B<x>:FLEXray:BITRate:CUSTom

This command sets or queries the FlexRay custom bit rate for the specified bus. The bus is specified by x.

Conditions

Requires option SR-AUTO.

Group

Bus

Syntax

```
BUS:B<x>:FLEXray:BITRate:CUSTom <NR1>
BUS:B<x>:FLEXray:BITRate:CUSTom?
```

Arguments

`<NR1>` is the FlexRay custom bit rate for the specified bus.

Examples

`BUS:B1:FLEXray:BITRate:CUSTom 10000000` sets the bit rate to 10,000,000.

`BUS:B1:FLEXray:BITRate:CUSTom?` might return `:BUS:B1:FLEXRAY:BITRATE:CUSTOM 10000000` indicating the bit rate is set to 10,000,000.

BUS:B<x>:FLEXray:CHannel

This command sets or queries the FlexRay channel type for the specified bus. The bus number is specified by x.

Conditions

Requires option SR-AUTO.

Group

Bus

Syntax

```
BUS:B<x>:FLEXray:CHannel {A|B}
BUS:B<x>:FLEXray:CHannel?
```

Arguments

`A` specifies the A channel.

`B` specifies the B channel.

Examples `BUS:B1:FLEXRAY:CHANNEL B` sets the FlexRay channel to B.

`BUS:B1:FLEXRAY:CHANNEL?` might return `:BUS:B1:FLEXRAY:CHANNEL A`, indicating the channel is set to A.

BUS:B<x>:FLEXray:LOWTHRESHold

This command sets or queries the FlexRay data source low threshold for the specified bus. The bus is specified by x.

Conditions Requires option SR-AUTO.

Group Bus

Syntax

```
BUS:B<x>:FLEXray:LOWTHRESHold <NR3>
BUS:B<x>:FLEXray:LOWTHRESHold?
```

Arguments `<NR3>` is the FlexRay data source low threshold for the specified bus.

Examples `BUS:B1:FLEXray:LOWTHRESHold 50.0e-3` sets the threshold to 50 mV.

`BUS:B1:FLEXray:LOWTHRESHold?` might `:BUS:B1:FLEXray:LOWTHRESHOLD 0.0E+0` indicating the threshold is set to 0.0 V.

BUS:B<x>:FLEXray:SIGnal

This command sets or queries the FlexRay signal type for the specified bus. The bus number is specified by x.

Conditions Requires option SR-AUTO.

Group Bus

Syntax

```
BUS:B<x>:FLEXray:SIGnal {BDIFFBP|BM|TXRX}
BUS:B<x>:FLEXray:SIGnal?
```

Arguments `BDIFFBP` sets the FlexRay signal type to BDIFFBP.

`BM` sets the FlexRay signal type to BM.

TXRX sets the FlexRay signal type to TXRX.

Examples

BUS:B1:FLEXRAY:SIGNAL BM sets the FlexRay channel type to BM.

BUS:B1:FLEXRAY:SIGNAL? might return :BUS:B1:FLEXRAY:SIGNAL BDIFFBP, indicating the FlexRay channel type is set to BDIFFBP.

BUS:B<x>:FLEXray:SOUrce

This command sets or queries the Flexray bus data source for the specified bus when the signal type is BDIFFBP or BM. The bus number is specified by x.

Conditions

Requires option SR-AUTO.

Group

Bus

Syntax

```
BUS:B<x>:FLEXray:SOUrce {CH<x>|MATH<x>|REF<x>}
BUS:B<x>:FLEXray:SOUrce?
```

Arguments

Arguments are the available FlexRay sources.

Examples

BUS:B1:FLEXRAY:SOUrce MATH4 sets the FlexRay source to Math 4.

BUS:B1:FLEXRAY:SOUrce? might return :BUS:B1:FLEXRAY:SOURCE CH1, indicating the source is channel 1.

BUS:B<x>:FLEXray:SOUrce:TXRX

This command sets or queries the FlexRay TxRx data source for the specified bus when the signal type is TXRX. The bus is specified by x.

Conditions

Requires option SR-AUTO.

Group

Bus

Syntax

```
BUS:B<x>:FLEXray:SOUrce:TXRX
{CH<x>|CH<x>_D<x>|MATH<x>|REF<x>|REF<x>_D<x>}
```

Arguments

Arguments are the available sources.

Examples

`BUS:B1:FLEXray:SOUrce:TXRX CH1` sets the TXRX source the channel 1.

`BUS:B1:FLEXray:SOUrce:TXRX?` might return `:BUS:B1:FLEXRAY:SOURCE:TXRX CH1_D0` indicating the TXRX source is set to CH1_D0.

BUS:B<x>:FLEXray:THRESHold

This command sets or queries the FlexRay data source high threshold for the specified bus. The bus is specified by x.

Conditions

Requires option SR-AUTO.

Group

Bus

Syntax

```
BUS:B<x>:FLEXray:THRESHold <NR3>
BUS:B<x>:FLEXray:THRESHold?
```

Arguments

`<NR3>` is the FlexRay data source high threshold for the specified bus.

Examples

`BUS:B1:FLEXray:THRESHold 50.0-3` sets the high threshold to 50 mV.

`BUS:B1:FLEXray:THRESHold?` might return `:BUS:B1:FLEXRAY:THRESHOLD 0.0E+0` indicating the high threshold is set to 0.0 V.

BUS:B<x>:FLEXray:TXRXTHRESHold

This command sets or queries the FlexRay data source TxRx threshold for the specified bus. The bus is specified by x.

Conditions

Requires option SR-EMBD.

Group

Bus

Syntax

```
BUS:B<x>:FLEXray:TXRXTHRESHold <NR3>
BUS:B<x>:FLEXray:TXRXTHRESHold?
```

Arguments

`<NR3>` is the TxRx threshold.

Examples

`BUS:B1:FLEXray:TXRXTHRESHold 50.0e-3` sets the threshold to 50 mV.

`BUS:B1:FLEXray:TXRXTHRESHold?` might return `:BUS:B1:FLEXRAY:TXRXTHRESHOLD 0.0E+0` indicating the threshold is set to 0.0 V.

BUS:B<x>:I2C:CLOCk:SOUrce

This command sets or queries the I2C clock (SCLK) source for the specified bus. The bus is specified by x.

Conditions

Requires option SR-EMBD.

Group

Bus

Syntax

```
BUS:B<x>:I2C:CLOCk:SOUrce
{CH<x>|CH<x>_D<x>|MATH<x>|REF<x>|REF<x>_D<x>}
BUS:B<x>:I2C:CLOCk:SOUrce?
```

Related Commands

BUS:B<x>:I2C:DATa:SOUrce, BUS:B<x>:I2C:RWINADDR

Arguments

`CH<x>` specifies an analog channel to use as the I2C SCLK source.

`CH<x>_D<x>` specifies a digital channel to use as the I2C SCLK source.

`MATH<x>` specifies a math waveform to use as the I2C SCLK source.

`REF<x>` specifies a reference waveform to use as the I2C SCLK source.

`REF<x>_D<x>` specifies a digital reference waveform as the clock source waveform for the specified I2C bus.

Examples

`BUS:B1:I2C:CLOCK:SOURCE CH1` sets the I2C SCLK source to CH1.

`BUS:B1:I2C:CLOCK:SOURCE?` might return `:BUS:B1:I2C:CLOCK:SOURCE CH4_D5`, indicating that the I2C SCLK source is set to D5 of FlexChannel 4.

BUS:B<x>:I2C:CLOCk:THReshold

This command sets or queries the I2C Clock (SCLK) source threshold for the specified bus. The bus is specified by x.

Conditions

Requires option SR-EMBD.

Group

Bus

Syntax

```
BUS:B<x>:I2C:CLOCk:THReshold <NR3>
BUS:B<x>:I2C:CLOCk:THReshold?
```

Arguments

`<NR3>` is the I2C Clock (SCLK) source threshold for the specified bus.

Examples

`BUS:B1:I2C:CLOCk:THReshold 50.0e-3 sets the threshold to 50 mV.`

`BUS:B1:I2C:CLOCk:THReshold?` might return `:BUS:B1:I2C:CLOCK:THRESHOLD 0.0E+0` indicating the threshold is set to 0 V.

BUS:B<x>:I2C:DATa:SOUrce

This command sets or queries the I2C data (SDA) source for the specified I2C bus. The bus is specified by x.

Conditions

Requires option SR-EMBD.

Group

Bus

Syntax

```
BUS:B<x>:I2C:DATa:SOUrce
{CH<x>|CH<x>_D<x>|MATH<x>|REF<x>|REF<x>_D<x>}
BUS:B<x>:I2C:DATa:SOUrce?
```

Related Commands

BUS:B<x>:I2C:CLOCk:SOUrce, BUS:B<x>:I2C:RWINADDR

Arguments

`CH<x>` specifies an analog channel to use as the I2C SDA source.

`CH<x>_D<x>` specifies a digital channel to use as the I2C SDA source.

`MATH<x>` specifies a math waveform to use as the I2C SDA source.

`REF<x>` specifies a reference waveform to use as the I2C SDA source.

`REF<x>_D<x>` specifies a digital reference waveform as the data source waveform for the specified I2C bus.

Examples

`BUS:B1:I2C:DATA:SOURCE CH1_D5` sets the I2C SDA source to CH1_D5.

`BUS:B1:I2C:DATA:SOURCE?` might return `:BUS:B1:I2C:DATA:SOURCE MATH1`, indicating that the I2C SDA source is set to MATH1.

BUS:B<x>:I2C:DATa:THReshold

This command sets or queries the I2C Data (SDA) source threshold for the specified bus. The bus is specified by x.

Conditions

Requires option SR-EMBD.

Group

Bus

Syntax

```
BUS:B<x>:I2C:DATa:THReshold <NR3>
BUS:B<x>:I2C:DATa:THReshold?
```

Arguments

`<NR3>` is the I2C Data (SDA) source threshold for the specified bus.

Examples

`BUS:B1:I2C:DATa:THReshold 50.0e-3` sets the threshold to 50 mV.

`BUS:B1:I2C:DATa:THReshold?` might return `:BUS:B1:I2C:DATA:THRESHOLD 0.0E+0` indicating the threshold is set to 0 V.

BUS:B<x>:I2C:RWINADDR

This command sets or queries the manner in which seven-bit I2C addresses are represented in the busform display of the specified bus. The bus is specified by x.

Conditions

Requires option SR-EMBD.

Group

Bus

Syntax

```
BUS:B<x>:I2C:RWINADDR {0|1}
BUS:B<x>:I2C:RWINADDR?
```

Related Commands

BUS:B<x>:I2C:CLOCk:SOUrce, BUS:B<x>:I2C:DATa:SOUrce

Arguments

`0` displays seven-bit slave addresses as integers in the range of 0 to 127, with the state of the R/W* bit from the LSB of the slave address byte. For example, the slave address byte of 0b10100101 is displayed as the value 0x52 R.

`1` displays the entire slave address byte as a number, with the R/W* signal as its LSB (bit 0) and the slave address in bits 7..1. For example, the slave address byte of 0b10100101 is displayed as the value 0xA5 R.

Examples

`BUS:B1:I2C:RWINADDR 0` displays seven-bit slave addresses as integers in the range of 0 to 127.

`BUS:B1:I2C:RWINADDR?` might return `:BUS:B1:I2C:RWINADDR 1`, indicating that the entire slave address byte is displayed as a number, with the R/W* signal as its LSB (bit 0) and the slave address in bits 7..1.

BUS:B<x>:LABel:COLor

This command sets or queries the color of the specified bus label. The bus is specified by x.

Group

Bus

Syntax

```
BUS:B<x>:LABel:COLor <QString>
BUS:B<x>:LABel:COLor?
```

Arguments

`<QString>` is the bus label color. To return the color to the default color, send an empty string as in this example: `:BUS:B1:LABEL:COLOR ""`.

Examples

`BUS:B1:LABel:COLor "#FF0000"` sets the label color to red.

`BUS:B1:LABel:COLor?` might return `:BUS:B1:LABEL:COLOR "#FF0000"` indicating the color is red.

BUS:B<x>:LABel:FONT:BOLD

This command sets or queries the bold state of the specified bus label. The bus is specified by x.

Group

Bus

Syntax

```
BUS:B<x>:LABel:FONT:BOLD {ON|OFF|1|0}
BUS:B<x>:LABel:FONT:BOLD?
```

Arguments

`ON` displays the label in bold font.

`OFF` does not display the label in bold font.

`1` displays the label in bold font.

`0` does not display the label in bold font.

Examples

`BUS:B1:LABel:FONT:BOLD OFF` turns off bold font.

`BUS:B1:LABel:FONT:BOLD?` might return `:BUS:B1:LABEL:FONT:BOLD 1` indicating a bold font.

BUS:B<x>:LABel:FONT:ITALic

This command sets or queries the italic state of the specified bus label. The bus is specified by x.

Group

Bus

Syntax

```
BUS:B<x>:LABel:FONT:ITALic {ON|OFF|1|0}
BUS:B<x>:LABel:FONT:ITALic?
```

Arguments

`ON` displays the label in italic font.

`OFF` does not display the label in italic font.

`1` displays the label in italic font.

`0` does not display the label in italic font.

Examples

`BUS:B1LABel:FONT:ITALic OFF` turns off italic font.

`BUS:B1LABel:FONT:ITALic?` might return `:BUS:B1:LABEL:FONT:ITALIC 1` indicating the font is italic.

BUS:B<x>:LABel:FONT:SIZE

This command sets or queries the font size of the specified bus label. The bus is specified by x.

Group

Bus

Syntax
```
BUS:B<x>:LABel:FONT:SIZE <NR1>
BUS:B<x>:LABel:FONT:SIZE?
```

Arguments `<NR1>` is the font size.

Examples `BUS:B1:LABel:FONT:SIZE 10` sets the font size to 10 points.

`BUS:B1:LABel:FONT:SIZE?` might return `:BUS:B1:LABEL:FONT:SIZE 20` indicating the font size is 20 points.

BUS:B<x>:LABel:FONT:TYPE

This command sets or queries the font type of the specified bus label, such as Arial or Times New Roman. The bus is specified by x.

Group Bus

Syntax
```
BUS:B<x>:LABel:FONT:TYPE <QString>
BUS:B<x>:LABel:FONT:TYPE?
```

Arguments `<QString>` is the specified font type. Available fonts include: DejaVu Sans, DejaVu Sans Mono, DejaVu Serif, Frutiger LT Std, Monospace, Sans Serif, Serif, Ubuntu, Ubuntu Condensed, and Ubuntu Mono.

Examples `BUS:B1:LABel:FONT:TYPE Monospace` selects a monospace font.

`BUS:B1:LABel:FONT:TYPE?` might return `:BUS:B1:LABEL:FONT:TYPE "Frutiger LT Std 55 Roman"` indicating the font type is Frutiger LT Stdn.

BUS:B<x>:LABel:FONT:UNDERline

This command sets or queries the underline state of the specified bus label. The bus is specified by x.

Group Bus

Syntax
```
BUS:B<x>:LABel:FONT:UNDERline {ON|OFF|1|0}
BUS:B<x>:LABel:FONT:UNDERline?
```

Arguments

`ON` displays the label in underlined font.

`OFF` does not display the label in underlined font.

`1` displays the label in underlined font.

`0` does not display the label in underlined font.

Examples

`BUS:B:LABel:FONT:UNDERline ON` turns on underline font.

`BUS:B:LABel:FONT:UNDERline?` might return `:BUS:B1:LABEL:FONT:UNDERLINE 0` indicating underline is off.

BUS:B<x>:LABel:name

This command sets or queries the label for the specified bus. The bus is specified by x.

Group

Bus

Syntax

```
BUS:B<x>:LABel:name <QString>
BUS:B<x>:LABel:name?
```

Related Commands

BUS:B<x>:TYPe

Arguments

`<QString>` is an alphanumeric string of text enclosed in quotes. The text string is limited to 30 characters. It contains the text label information for the bus.

Examples

`BUS:B1:LABEL:NAME “TEST”` sets the waveform label for the bus B1 to Test.

`BUS:B1:LABEL:NAME?` might return `:BUS:B1:LABEL:NAME “BUS 1”`, indicating that the waveform label for the bus B1 is set to “Bus 1”.

BUS:B<x>:LABel:XPOS

This command sets or queries the x-position of the specified bus label. The bus is specified by x.

Group

Bus

Syntax

```
BUS:B<x>:LABel:XPOS <NR3>
BUS:B<x>:LABel:XPOS?
```

Arguments

`<NR3>` is the x-position, in pixels relative to the left edge of the screen,, of the specified bus label.

Examples

`BUS:B1:LABel:XPOS 90` set the x position to 90.

`BUS:B1:LABel:XPOS?` might return `:BUS:B1:LABEL:XPOS 45.0000` indicating the x position is 45.0 pixels to the right of the left edge of the display.

BUS:B<x>:LABel:YPOS

This command sets or queries the y-position of the specified bus label. The bus is specified by x.

Group

Bus

Syntax

```
BUS:B<x>:LABel:YPOS <NR3>
BUS:B<x>:LABel:YPOS?
```

Arguments

`<NR3>` is the y-position, in pixels relative to the baseline of the waveform, of the specified bus label.

Examples

`BUS:B1:LABel:YPOS 1.0e1` set the y position to 10.0.

`BUS:B1:LABel:YPOS?` might return `:BUS:B1:LABEL:YPOS 0.0E+0` indicating the y position is 0.0 pixels from the baseline of the waveform.

BUS:B<x>:LIN:BITRate

This command sets or queries the LIN bus bit rate. The bus number is specified by x. If you select Custom, use BUS:B<x>:LIN:BITRate:CUSTom to set the bit rate.

Conditions

Requires option SR-AUTO.

Group

Bus

Syntax

```
BUS:B<x>:LIN:BITRate
{RATE10K|RATE1K|RATE19K|RATE2K|RATE4K|RATE9K|CUSTom}
```

```
BUS:B<x>:LIN:BITRate?
```

Related Commands BUS:B<x>:LIN:BITRate:CUSTom

Arguments Arguments are the available bit rates.

Examples `BUS:B1:LIN:BITRate Rate4k` sets the bit rate to 4 kb.

`BUS:B1:LIN:BITRate?` might return `:BUS:B1:LIN:BITRATE RATE19K`, indicating that the bit rate is set to 19 kb.

BUS:B<x>:LIN:BITRate:CUSTom

This command sets or queries LIN custom bit rate for the specified bus. The bus is specified by x.

Conditions Requires option SR-AUTO.

Group Bus

Syntax

```
BUS:B<x>:LIN:BITRate:CUSTom <NR1>
BUS:B<x>:LIN:BITRate:CUSTom?
```

Related Commands BUS:B<x>:LIN:BITRate

Arguments `<NR1>` is the LIN custom bit rate for the specified bus.

Examples `BUS:B1:LIN:BITRate:CUSTom 9000` sets the bit rate to 9,000.

`BUS:B1:LIN:BITRate:CUSTom?` might return `:BUS:B1:LIN:BITRate:CUSTom 10000` indicating the bit rate is set to 10,000.

BUS:B<x>:LIN:IDFORmat

This command sets or queries LIN bus identifier format for the specified bus. The bus number is specified by x.

Conditions Requires option SR-AUTO.

Group

Bus

Syntax

```
BUS:B<x>:LIN:IDFORmat {NOPARity|PARity}
BUS:B<x>:LIN:IDFORmat?
```

Arguments

`NOPARity` specifies an id format that includes parity.

`PARity` specifies an id format that separates parity.

Examples

`BUS:B1:LIN:IDFORmat PARITY` set the id format to parity.

`BUS:B1:LIN:IDFORmat?` might return `:BUS:B1:LIN:IDFORMAT NOPARITY`, indicating the id format is set to no parity.

BUS:B<x>:LIN:POLarity

This command sets or queries the LIN source polarity for the specified bus. The bus number is specified by x.

Conditions

Requires option SR-AUTO.

Group

Bus

Syntax

```
BUS:B<x>:LIN:POLarity {INVerted|NORmal}
BUS:B<x>:LIN:POLarity?
```

Arguments

INVerted specifies inverted polarity.

NORmal specifies normal polarity.

Examples

`BUS:B1:LIN:POLarity Inverted` sets the polarity to inverted.

`BUS:B1:LIN:POLarity?` might return `:BUS:B1:LIN:POLARITY NORMAL`, indicating the bus polarity is set to normal.

BUS:B<x>:LIN:SAMPLEpoint

Specifies the LIN sample point, for the specified LIN bus. The bus is specified by x.

Conditions

Requires option SR-AUTO.

Group

Bus

Syntax

```
BUS:B<x>:LIN:SAMPLEpoint <NR1>
BUS:B<x>:LIN:SAMPLEpoint?
```

Arguments

`<NR1>` is a percentage that represents the point at which to sample during each bit period.

Examples

`BUS:B1:LIN:SAMPLEPOINT 10` sets the sample point to 10% of the bit period

`BUS:B1:LIN:SAMPLEPOINT?` might return `BUS:B1:LIN:SAMPLEPOINT 50` indicating that the sample point is set to 50% of the bit period

BUS:B<x>:LIN:SOUrce

This command sets or queries the LIN data source for the specified bus. The bus number is specified by x.

Conditions

Requires option SR-AUTO.

Group

Bus

Syntax

```
BUS:B<x>:LIN:SOUrce
{CH<x>|CH<x>_D<x>|MATH<x>|REF<x>|REF<x>_D<x>}
BUS:B<x>:LIN:SOUrce?
```

Arguments

Arguments specify the available sources.

Examples

`BUS:B1:LIN:SOUrce MATH4` sets the source to MATH 4

`BUS:B1:LIN:SOUrce?` might return `:BUS:B1:LIN:SOURCE CH1`, indicating the source is set to channel 1.

BUS:B<x>:LIN:SOUrce:THReshold

This command sets or queries the LIN source threshold for the specified bus. The bus is specified by x.

Conditions

Requires option SR-AUTO.

Group Bus

Syntax

```
BUS:B<x>:LIN:SOUrce:THReshold <NR3>
BUS:B<x>:LIN:SOUrce:THReshold?
```

Arguments `<NR3>` the LIN source threshold for the specified bus.

Examples `BUS:B1:LIN:SOUrce:THReshold 50.0e-3` sets the threshold to 50 mV.

`BUS:B1:LIN:SOUrce:THReshold?` might return `:BUS:B1:LIN:SOURCE:THRESHOLD 0.0E+0` indicating the threshold is 0.0 V.

BUS:B<x>:LIN:STANDard

This command sets or queries the LIN bus standard for the specified bus. The bus number is specified by x.

Conditions Requires option SR-AUTO.

Group Bus

Syntax

```
BUS:B<x>:LIN:STANDard {MIXed|V1X|V2X}
BUS:B<x>:LIN:STANDard?
```

Arguments `MIXed` specifies both versions 1.x and 2.x of the LIN standard.

`V1X` specifies the version 1.x of the LIN standard.

`V2X` specifies the version 2.x of the LIN standard.

Examples `BUS:B1:LIN:STANDard V1X` sets the standard to version 1.x.

`BUS:B1:LIN:STANDard?` might return `:BUS:B1:LIN:STANDARD V2X`, indicating the standard is set to version 2.x.

BUS:B<x>:MIL1553B:LOWTHRESHold

This command sets or queries the MIL-STD-1553 lower threshold for the specified bus. The bus is specified by x.

Conditions Requires option SR-AERO.

Group Bus

Syntax `BUS:B<x>:MIL1553B:LOWTHRESHold <NR3>`

Related Commands BUS:B<x>:MIL1553B:SOUrce

Arguments `<NR3>` is the MIL-STD-1553 lower threshold for the specified bus.

Examples `BUS:B3:MIL1553B:LOWTHRESHOLD -200e-3` sets the Bus 3 MIL-STD-1553 lower threshold to -200 mV.

`BUS:B2:MIL1553B:LOWTHRESHOLD?` might return `:BUS:B2:MIL1553B:LOWTHRESHOLD -500.0000E-3` indicating the Bus 2 MIL-STD-1553 lower threshold is set to -500 mV.

BUS:B<x>:MIL1553B:POLarity

This command sets or queries the source polarity for the specified MIL-STD-1553 bus. The bus is specified by x.

Conditions Requires option SR-AERO.

Group Bus

Syntax

```
BUS:B<x>:MIL1553B:POLarity {NORMal|INVERTed}
BUS:B<x>:MIL1553B:POLarity?
```

Arguments `NORMal` specifies normal polarity.

`INVERTed` specifies inverted polarity.

Examples `BUS:B3:MIL1553B:POLARITY INVERTED` sets Bus 3 MIL-STD-1553 polarity to inverted.

`BUS:B2:MIL1553B:POLARITY?` might return `:BUS:B2:MIL1553B:POLARITY NORMAL`, indicating that the Bus 2 MIL-STD-1553 polarity is set to normal.

BUS:B<x>:MIL1553B:RESPonsetime:MAXimum

This command sets or queries the maximum response time to a valid command issued for the specified MIL-STD-1553 bus. The bus is specified by x.

Conditions Requires option SR-AERO.

Group Bus

Syntax

```
BUS:B<x>:MIL1553B:RESPonsetime:MAXimum <NR3>
BUS:B<x>:MIL1553B:RESPonsetime:MAXimum?
```

Related Commands BUS:B<x>:MIL1553B:RESPonsetime:MINimum

Arguments `<NR3>` is a floating point number that specifies the maximum response time, in seconds.

Examples `BUS:B1:MIL1553B:RESPONSETIME:MAXIMUM 15.0E-6` specifies the maximum response time to a valid command received to be 15.0 microseconds.

`BUS:B1:MIL1553B:RESPONSETIME:MAXIMUM?` might return `:BUS:B1:MIL1553B:RESPONSETIME:MAXIMUM 12.000E-6`, indicating a maximum response time of 12 microseconds.

BUS:B<x>:MIL1553B:RESPonsetime:MINimum

This command sets or queries the minimum response time to a valid command issued for the specified MIL-STD-1553 bus. The bus is specified by x.

Conditions Requires option SR-AERO.

Group Bus

Syntax

```
BUS:B<x>:MIL1553B:RESPonsetime:MINimum <NR3>
BUS:B<x>:MIL1553B:RESPonsetime:MINimum?
```

Related Commands BUS:B<x>:MIL1553B:RESPonsetime:MAXimum

Arguments

<NR3> is a floating point number that specifies the minimum response time, in seconds.

Examples

`BUS:B1:MIL1553B:RESPONSETIME:MINIMUM 5.0E-6` specifies the minimum response time to a valid command received to be 5.0 microseconds.

`BUS:B1:MIL1553B:RESPONSETIME:MINIMUM?` might return `:BUS:B1:MIL1553B:RESPONSETIME:MINIMUM 4.000E-6`, indicating a minimum response time of 4 microseconds.

BUS:B<x>:MIL1553B:SOUrce

This command sets or queries the source for the specified MIL-STD-1553 bus. The bus is specified by x.

Conditions

Requires option SR-AERO.

Group

Bus

Syntax

```
BUS:B<x>:MIL1553B:SOUrce {CH<x>|Math<x>|REF<x>}
BUS:B<x>:MIL1553B:SOUrce?
```

Arguments

`CH<x>` specifies an analog channel as the source waveform for the MIL-STD-1553 bus.

`Math<x>` specifies a math waveform as the source waveform for the MIL-STD-1553 bus.

`REF<x>` specifies a reference waveform as the source waveform for the MIL-STD-1553 bus.

Examples

`BUS:B1:MIL1553B:SOURCE CH1` sets channel 1 as the source for the MIL-STD-1553 bus.

`BUS:B1:MIL1553B:SOURCE?` might return `:BUS:B1:MIL1553B:SOURCE MATH2` indicating that the source is set to MATH2.

BUS:B<x>:MIL1553B:THRESHold

This command sets or queries the MIL-STD-1553 upper threshold for the specified bus. The bus is specified by x.

Conditions Requires option SR-AERO.

Group Bus

Syntax
```
BUS:B<x>:MIL1553B:THRESHold <NR3>
BUS:B<x>:MIL1553B:THRESHold
```

Related Commands BUS:B<x>:MIL1553B:SOUrce

Arguments `<NR3>` is the MIL-STD-1553 upper threshold for the specified bus.

Examples `BUS:B3:MIL1553B:THRESHOLD 2.5` sets the Bus 3 MIL-STD-1553 upper threshold to 2.5 V.

`BUS:B2:MIL1553B:THRESHOLD?` might return `:BUS:B2:MIL1553B:THRESHOLD 500.0000E-3` indicating the Bus 2 MIL-STD-1553 upper threshold is set to 500 mV.

BUS:B<x>:PARallel:ALLTHResholds

This command sets or queries a threshold value for sources for the parallel bus. Use the BUS:B<x>:PARallel:ALLTHResholds:APPly command to set the thresholds to this value. The bus is specified by x.

Group Bus

Syntax
```
BUS:B<x>:PARallel:ALLTHResholds <NR3>
```

Related Commands BUS:B<x>:PARallel:ALLTHResholds:APPly

Arguments `<NR3>` is the source threshold.

Examples `BUS:B4:PARALLEL:ALLTHRESHOLDS` 1.0 sets the threshold of all the sources in parallel Bus 4 to 1.0 V.

`BUS:B3:PARALLEL:ALLTHRESHOLDS?` might return `BUS:B3:PARALLEL:ALLTHRESHOLDS` 500.00000E-3 indicates the threshold for all sources in parallel Bus 3 is currently set to 500.0 mV.

BUS:B<x>:PARallel:ALLTHResholds:APPly (No Query Form)

This command sets all of the data source thresholds to the value set by BUS:B<x>:PARallel:ALLTHResholds for the parallel bus. The bus is specified by x.

Group Bus

Syntax `BUS:B<x>:PARallel:ALLTHResholds:APPly`

Related Commands BUS:B<x>:PARallel:ALLTHResholds

Examples `BUS:B1:PARallel:ALLTHResholds:APPly` sets all data source thresholds to the value set by BUS:B<x>:PARallel:ALLTHResholds.

BUS:B<x>:PARallel:BIT<n>SOUrce

This command sets or queries the specified bit source for specified parallel bus. The bus is specified by x. The bit is specified by n and is an integer in the range of 1 to 64.

Group Bus

Syntax

```
BUS:B<x>:PARallel:BIT<n>SOUrce
{CH<x>|CH<x>_D<x>|MATH<x>|REF<x>|REF<x>_D<x>|NONE}
```

Related Commands BUS:B<x>:PARallel:BIT<n>SOUrce:THReshold

Arguments `CH<x>` is the specified bit source.

`CH<x>_D<x>` is the specified bit source.

`MATH<x>` is the specified bit source.

`REF<x>` is the specified bit source.

`REF<x>_D<x>` specifies a digital reference waveform as the bit<x> source waveform for the specified parallel bus.

`NONE` disables the bit source.

Examples

`BUS:B1:PARallel:BIT1SOUrce CH1` sets the bit 1 source to channel 1.

`BUS:B1:PARallel:BIT1SOUrce?` might return `:BUS:B1:PARALLEL:BIT1SOURCE CH1_D0` indicating the bit1 source is `CH1_D0`.

BUS:B<x>:PARallel:BIT<n>SOUrce:THReshold

This command sets or queries the specified bit source threshold for the specified parallel bus. The bus is specified by x. The bit is specified by n and is an integer in the range of 1 to 64.

Group

Bus

Syntax

```
BUS:B<x>:PARallel:BIT<n>SOUrce:THReshold <NR3>
```

Related Commands

BUS:B<x>:PARallel:BIT<n>SOUrce

Arguments

`<NR3>` is the specified bit source threshold for the specified parallel bus.

Examples

`BUS:B3:PARALLEL:BIT2SOURCE:THRESHOLD` 1.0 sets the threshold of bit source 2 of parallel Bus 3 to 1.0 V.

`BUS:B1:PARALLEL:BIT4SOURCE:THRESHOLD?` might return `:BUS:B1:PARALLEL:BIT4SOURCE:THRESHOLD` 250.00000E-3 indicates the threshold of bit source 4 of parallel Bus 1 is currently set to 250.0 mV.

BUS:B<x>:PARallel:CLOCk:EDGE

This command sets or queries the clock edge for the parallel bus. The bus is specified by x.

Group

Bus

Syntax

```
BUS:B<x>:PARallel:CLOCk:EDGE {FALLING|RISING|EITHER}
BUS:B<x>:PARallel:CLOCk:EDGE?
```

Related Commands

BUS:B<x>:PARallel:CLOCkSOUrce,

Arguments

FALLING decodes on the falling edge of the clocked parallel bus signal.

RISING decodes on the rising edge of the clocked parallel bus signal.

EITHER decodes on the rising or falling edge of the clocked parallel bus signal.

Examples

BUS:B1:PARALLEL:CLOCK:EDGE FALLING sets the decoding to happen on the falling edge of its clocked parallel bus B1.

BUS:B1:PARALLEL:CLOCK:EDGE? might return :BUS:B1:PARALLEL:CLOCK:EDGE RISING, indicating that when bus B1 operates in Clocked Parallel mode, it samples new data values on the rising edge of its clock source signal.

BUS:B<x>:PARallel:CLOCk:ISCLOCKED

This command determines whether the bus operates in a clocked or asynchronous fashion. The bus is specified by x.

Group

Bus

Syntax

```
BUS:B<x>:PARallel:CLOCk:ISCLOCKED {OFF|ON|NR1>
BUS:B<x>:PARallel:CLOCk:ISCLOCKED?
```

Arguments

OFF argument specifies an asynchronous bus.

ON argument specifies a clocked bus.

<NR1> = 0 specifies an asynchronous bus; any other value specifies a clocked bus.

Examples

BUS:B1:PARallel:CLOCk:ISCLOCKED 0 sets the bus to operate asynchronously.

BUS:B1:PARallel:CLOCk:ISCLOCKED? might return :BUS:B1:PARALLEL:CLOCK:ISCLOCKED 1 indicating the bus is clocked.

BUS:B<x>:PARallel:CLOCkSOUrce

This command sets or queries the Parallel clock bit source for the specified bus. The bus is specified by x.

Group

Bus

Syntax

```
BUS:B<x>:PARallel:CLOCkSOUrce
{CH<x>|CH<x>_D<x>|MATH<x>|REF<x>|REF<x>_D<x>|NONE}
BUS:B<x>:PARallel:CLOCkSOUrce?
```

Related Commands

BUS:B<x>:PARallel:CLOCk:ISCLOCKED,

Arguments

`CH<x>` specifies an analog FlexChannel to use as the bus clock source.

`CH<x>_D<x>` specifies a digital channel on a specified FlexChannel to use as the bus clock source.

`MATH<x>` specifies the math channel to use as the bus clock source.

`REF<x>` specifies the reference channel to use as the bus clock source.

`REF<x>_D<x>` specifies a digital reference waveform as the clock source waveform for the specified parallel bus.

`NONE` specifies the reference channel to use as the bus clock source.

Examples

`BUS:B1:PARALLEL:CLOCK:SOURCE CH3_D6` sets the Parallel clock source for the bus B1 to D6 of FlexChannel 3.

`BUS:B1:PARALLEL:CLOCK:SOURCE?` might return `:BUS:B1:PARALLEL:CLOCK:SOURCE CH8_D9`, indicating that the Parallel clock source for the bus B1 is set to D9 of FlexChannel 8.

BUS:B<x>:PARallel:CLOCKSOUrce:THReshold

This command sets or queries the clock source threshold for the parallel bus. The bus is specified by x.

Group

Bus

Syntax

```
BUS:B<x>:PARallel:CLOCKSOUrce:THReshold <NR3>
BUS:B<x>:PARallel:CLOCKSOUrce:THReshold?
```

Related Commands

BUS:B<x>:PARallel:CLOCk:ISCLOCKED,

Arguments

`<NR3>` is the clock bit source threshold for the parallel bus.

Examples

`BUS:B4:PARALLEL:CLOCKSOUrce:THRESHOLD 1.5` sets the threshold of the clock source of parallel Bus 4 to 1.5 V.

`BUS:B3:PARALLEL:CLOCKSOUrce:THRESHOLD?` might return `:BUS:B3:PARALLEL:CLOCKSOUrce:THRESHOLD` 750.00000E-3 indicates the threshold of the clock source of parallel Bus 3 is currently set to 750.0 mV.

BUS:B<x>:RS232C:BITRate

This command sets or queries the RS-232C bit rate for bus<x>, where the bus number is specified by <x>. If you select Custom, use BUS:B<x>:RS232C:BITRate:CUSTom to set the bit rate.

Conditions Requires option SR-COMP.

Group Bus

Syntax

```
BUS:B<x>:RS232C:BITRate {CUSTOM|RATE300|RATE1K|RATE2K|
RATE9K|RATE19K|RATE38K|RATE115K|RATE921K}
BUS:B<x>:RS232C:BITRate?
```

Arguments Arguments are the available bit rates.

Examples `BUS:B1:RS232C:BITRATE RATE9K` sets the bit rate for the RS-232C bus B1 to 9000 bits-per-second.

`BUS:B1:RS232C:BITRATE?` might return `:BUS:B1:RS232C:BITRATE 9000`, indicating that the bit rate for the RS-232C bus B1 is set to 9000 bits-per-second.

BUS:B<x>:RS232C:BITRate:CUSTom

This command sets or queries the RS-232C custom bit rate for the specified bus. The bus is specified by x.

Conditions Requires option SR-COMP.

Group Bus

Syntax

```
BUS:B<x>:RS232C:BITRate:CUSTom <NR1>
BUS:B<x>:RS232C:BITRate:CUSTom?
```

Related Commands BUS:B<x>:RS232C:BITRate

Arguments

<NR1> is the custom bit rate.

Examples

BUS:B1:RS232C:BITRATE:CUSTOM 9500 sets the bit rate for the RS-232C bus B1 to 9500 bits-per-second.

BUS:B1:RS232C:BITRATE:CUSTOM? might return :BUS:B1:RS232C:BITRATE:CUSTOM 9500, indicating that the bit rate for the RS-232C bus B1 is set to 9500 bits-per-second.

BUS:B<x>:RS232C:DATABits

This command sets or queries the RS-232C data width for bus<x>, where the bus number is specified by <x>.

Conditions

Requires option SR-COMP.

Group

Bus

Syntax

```
BUS:B<x>:RS232C:DATABits {7,8,9}
BUS:B<x>:RS232C:DATABits?
```

Arguments

<NR1> specifies the number of bits in the RS-232C data frame.

Examples

BUS:B1:RS232C:DATABITS 8 sets the data bits to 8 for the RS-232C bus B1.

BUS:B1:RS232C:DATABITS? might return :BUS:B1:RS232C:DATABITS 8, indicating that the data bits is set to 8 for the RS-232C bus B1.

BUS:B<x>:RS232C:DELIMiter

This command sets or queries the RS-232C string delimiter on bus <x>, where the bus number is specified by <x>. This command only applies when Packet view is turned On.

Conditions

Requires option SR-COMP.

Group

Bus

Syntax

```
BUS:B<x>:RS232C:DELIMiter {NULl|CR|LF|SPace|XFF}
BUS:B<x>:RS232C:DELIMiter?
```

Related Commands BUS:B<x>:RS232C:DISplaymode

Arguments

`NULl` specifies NULL (0x00) delimiting value for a packet.

`CR` specifies CR (0x0D) delimiting value for a packet.

`LF` specifies LF (0x0A) delimiting value for a packet.

`XFF` specifies XFF (0xFF) delimiting value for a packet.

`SPace` specifies SPace delimiting value for a packet.

Examples

`BUS:B1:RS232C:DELIMITER LF` sets the delimiter to 0x0A for the RS-232C bus B1.

`BUS:B1:RS232C:DELIMITER?` might return `:BUS:B1:RS232C:DELIMITER NULL`, indicating that the delimiter to 0x00 for the RS-232C bus B1.

BUS:B<x>:RS232C:DISplaymode

This command sets or queries the RS-232C display mode for the specified bus. The bus is specified by x.

Conditions Requires option SR-COMP.

Group Bus

Syntax

```
BUS:B<x>:RS232C:DISplaymode {FRame|PACKET}
BUS:B<x>:RS232C:DISplaymode?
```

Related Commands BUS:B<x>:RS232C:DELIMiter

Arguments

`FRame` displays each frame as a single entity.

`PACKET` displays a group of frames terminated with a single frame defined by the `BUS:B<x>:RS232C:DELImiter` command.

Examples

`BUS:B1:RS232C:DISPLAYMODE FRAME` sets the display mode for the RS-232C bus B1 to Frame.

`BUS:B1:RS232C:DISPLAYMODE?` might return `:BUS:B1:RS232C:DISPLAYMODE PACKET`, indicating that the display mode for the RS-232C bus B1 is set to Packet.

BUS:B<x>:RS232C:PARity

This command sets or queries the RS-232C parity for bus <x>, where the bus number is specified by <x>.

Conditions Requires option SR-COMP.

Group Bus

Syntax

```
BUS:B<x>:RS232C:PARity {NONe|EVEN|ODD}
BUS:B<x>:RS232C:PARity?
```

Arguments

`NONe` specifies no parity.

`EVEN` specifies even parity.

`ODD` specifies odd parity.

Examples

`BUS:B1:RS232C:PARITY ODD` sets the parity for the RS-232C bus B1 to odd.

`BUS:B1:RS232C:PARITY?` might return `:BUS:B1:RS232C:PARITY NONE`, indicating that the display mode for the RS-232C bus B1 is set to none.

BUS:B<x>:RS232C:POLarity

This command sets or queries the RS-232C source polarity for bus <x>, where the bus number is specified by <x>.

Conditions Requires option SR-COMP.

Group Bus

Syntax

```
BUS:B<x>:RS232C:POLarity {NORmal|INVERTed}
BUS:B<x>:RS232C:POLarity?
```

Arguments

`NORmal` sets the RS-232C bus polarity to positive.

`INVERTed` sets the RS-232C bus polarity to negative.

Examples

`BUS:B1:RS232C:POLARITY INVERTed` sets the polarity for the RS-232C bus B1 to Inverted.

`BUS:B1:RS232C:POLARITY?` might return `:BUS:B1:RS232C:POLARITY NORMAL`, indicating that the polarity for the RS-232C bus B1 is set to Normal.

BUS:B<x>:RS232C:SOUrce

This command sets or queries the RS-232C source for bus <x>, where the bus number is specified by <x>.

Conditions

Requires option SR-COMP.

Group

Bus

Syntax

```
BUS:B<x>:RS232C:SOUrce
{CH<x>|CH<x>_D<x>|REF<x>|MATH<x>|REF<x>_D<x>}
BUS:B<x>:RS232C:SOUrce?
```

Arguments

`CH<x>` specifies an analog channel to use as the RS-232C source.

`CH<x>_D<x>` specifies a digital channel of a specified FlexChannel to use for the RS-232C source.

`MATH<x>` specifies a math channel to use for the RS-232C source.

`REF<x>` specifies a reference channel to use for the RS-232C source.

`REF<x>_D<x>` specifies a digital reference waveform as the source waveform for the specified RS-232C bus.

Examples

`BUS:B1:RS232C:SOURCE CH1_D0` sets the source for the RS-232C bus B1 to D0 of FlexChannel 1.

`BUS:B1:RS232C:SOURCE?` might return `:BUS:B1:RS232C:SOURCE CH1`, indicating that the source for the RS-232C bus B1 is CH1.

BUS:B<x>:RS232C:SOUrce:THReshold

This command sets or queries the RS-232C source threshold for the specified bus. The bus is specified by x.

Conditions Requires option SR-COMP.

Group Bus

Syntax
```
BUS:B<x>:RS232C:SOUrce:THReshold <NR3>
BUS:B<x>:RS232C:SOUrce:THReshold?
```

Arguments `<NR3>` is the RS-232C source threshold for the specified bus.

Examples `BUS:B1:RS232C:SOURCE:THRESHOLD 50.0e-3` sets the threshold to 50 mV.

`BUS:B1:RS232C:SOURCE:THRESHOLD?` might return `:BUS:B1:RS232C:SOURCE:THRESHOLD 0.0E+0` indicating the threshold is set to 0.0 V.

BUS:B<x>:SPI:BITOrder

This command sets or queries the SPI bit order for the specified bus. The bus is specified by x.

Conditions Requires option SR-EMBD.

Group Bus

Syntax
```
BUS:B<x>:SPI:BITOrder {LSB|MSB}
BUS:B<x>:SPI:BITOrder?
```

Related Commands BUS:B<x>:SPI:DATa:SIZe

Arguments `LSB` specifies that each bit becomes the recovered value's new LSB, after shifting previously recovered bits one place to the left. The decoding happens right to left.

`MSB` specifies that each successive bit from the bus's data line becomes the new MSB of the recovered value, shifting any previously recovered bits one place to the right. The decoding happens left to right.

Examples `BUS:B1:SPI:BITORDER LSB` sets each bit order for the SPI bus B1 to LSB.

`BUS:B1:SPI:BITORDER?` might return `:BUS:B1:SPI:BITORDER MSB`, indicating that the bit order for the SPI bus B1 is set to MSB.

BUS:B<x>:SPI:CLOCk:POLarity

This command sets or queries the SPI clock (SCLK) source polarity for the specified bus. The bus is specified by x.

Conditions Requires option SR-EMBD.

Group Bus

Syntax

```
BUS:B<x>:SPI:CLOCk:POLarity {FALL|RISE}
BUS:B<x>:SPI:CLOCk:POLarity?
```

Related Commands BUS:B<x>:SPI:CLOCk:SOUrce

Arguments `FALL` sets the clock to the falling edge of the signal.

`RISE` sets the clock to the rising edge of the signal.

Examples `BUS:B1:SPI:CLOCK:POLARITY FALL` sets the SPI clock polarity to the falling edge for the bus B1.

`BUS:B1:SPI:CLOCK:POLARITY?` might return `:BUS:B1:SPI:CLOCK:POLARITY RISE`, indicating that the SPI clock polarity for the bus B1 is set to the rising edge.

BUS:B<x>:SPI:CLOCk:SOUrce

This command sets or queries the SPI clock (SCLK) source for the specified bus. The bus is specified by x.

Conditions Requires option SR-EMBD.

Group Bus

Syntax

```
BUS:B<x>:SPI:CLOCk:SOUrce
{CH<x>|CH<x>_D<x>|MATH<x>|REF<x>|REF<x>_D<x>}
BUS:B<x>:SPI:CLOCk:SOUrce?
```

Related Commands BUS:B<x>:SPI:CLOCk:POLarity

Arguments

CH<x> designates an analog channel as the bus SPI clock source.

CH<x>_D<x> designates an digital channel as the bus SPI clock source.

MATH<x> designates a math waveform as the clock source.

REF<x> designates a reference waveform as the clock source.

REF<x>_D<x> specifies a digital reference waveform as the clock source waveform for the specified SPI bus.

Examples

`BUS:B1:SPI:CLOCK:SOURCE CH5` sets the SPI clock source for the bus B1 to CH5.

`BUS:B1:SPI:CLOCK:SOURCE?` might return `:BUS:B1:SPI:CLOCK:SOURCE MATH1`, indicating that the SPI clock source for the bus B1 is set to MATH1.

BUS:B<x>:SPI:CLOCk:THReshold

This command sets or queries the SPI Clock (SCLK) source threshold for the specified bus. The bus is specified by x.

Conditions

Requires option SR-EMBD.

Group

Bus

Syntax

```
BUS:B<x>:SPI:CLOCk:THReshold <NR3>
BUS:B<x>:SPI:CLOCk:THReshold?
```

Arguments

<NR3> is the SPI Clock (SCLK) source threshold for the specified bus.

Examples

`BUS:B1:SPI:CLOCk:THReshold 50.0e-3` sets the threshold to 50.0 mV.

`BUS:B1:SPI:CLOCk:THReshold?` might return `:BUS:B1:SPI:CLOCK:THRESHOLD 0.0E+0` indicating the threshold is set to 0.0 V.

BUS:B<x>:SPI:DATa:POLarity

This command sets or queries the SPI data (SDA) source polarity for the bus number specified by x.

Conditions

Requires option SR-EMBD.

Group Bus

Syntax

```
BUS:B<x>:SPI:DATa:POLarity {HIGH|LOW}
BUS:B<x>:SPI:DATa:POLarity?
```

Arguments `HIGH` sets the SPI data polarity to active high.

`LOW` sets the SPI data polarity to active low.

Examples `BUS:B1:SPI:DATA:POLARITY HIGH` sets the SPI data polarity for the bus B1 to active high.

`BUS:B1:SPI:DATA:POLARITY?` might return `:BUS:B1:SPI:DATA:POLARITY LOW`, indicating that the SPI SDA polarity for the bus B1 is set to active low.

BUS:B<x>:SPI:DATa:SIZe

This command sets or queries the number of bits per word for the specified SPI bus. The bus is specified by x.

Conditions Requires option SR-EMBD.

Group Bus

Syntax

```
BUS:B<x>:SPI:DATa:SIZe <NR1>
BUS:B<x>:SPI:DATa:SIZe?
```

Arguments `<NR1>` is the data size for the specified bus. The minimum value is 2 and maximum is 32.

Examples `BUS:B1:SPI:DATA:SIZE 7` sets the data size for SPI bus B1 to seven bits per word.

`BUS:B1:SPI:DATA:SIZE?` might return `:BUS:B1:SPI:DATA:SIZE 8`, indicating that the data size for SPI bus B1 is set to eight bits per word.

BUS:B<x>:SPI:DATa:SOUrce

This command sets or queries the SPI data (SDA) source for the bus number specified by x.

Conditions Requires option SR-EMBD.

Group Bus

Syntax

```
BUS:B<x>:SPI:DATa:SOUrce
{CH<x>|CH<x>_D<x>|MATH<x>|REF<x>|REF<x>_D<x>}
BUS:B<x>:SPI:DATa:SOUrce?
```

Arguments

CH<x> designates an analog channel as the data source for the specified SPI bus.

CH<x>_D<x> designates an digital channel as the bus SPI clock source.

MATH<x> designates a math waveform as the data source.

REF<x> designates a reference waveform as the data source.

REF<x> _D<x> specifies a digital reference waveform as the data source waveform for the specified SPI bus.

Examples

BUS:B1:SPI:DATA:SOURCE CH2 sets the SPI data source for the bus B1 to CH2.

BUS:B1:SPI:DATA:SOURCE? might return :BUS:B1:SPI:DATA:SOURCE CH3, indicating that the SPI data source for the bus B1 is set to CH3.

BUS:B<x>:SPI:DATa:THReshold

This command sets or queries the SPI Data (SDA) source threshold for the specified bus. The bus is specified by x.

Conditions Requires option SR-EMBD.

Group Bus

Syntax

```
BUS:B<x>:SPI:DATa:THReshold <NR3>
BUS:B<x>:SPI:DATa:THReshold?
```

Arguments

<NR3> is the SPI Data (SDA) source threshold for the specified bus.

Examples `BUS:B1:SPI:DATa:THReshold 50.0e-3` sets the threshold to 50.0 mV.

`BUS:B1:SPI:DATa:THReshold?` might return `:BUS:B1:SPI:DATA:THRESHOLD 0.0E+0` indicating the threshold is set to 0.0 V.

BUS:B<x>:SPI:FRAMING

This command sets or queries the SPI framing setting for the specified bus. The bus number is specified by x.

Conditions Requires option SR-EMBD.

Group Bus

Syntax

```
BUS:B<x>:SPI:FRAMING {IDLE|SS}
BUS:B<x>:SPI:FRAMING?
```

Arguments `IDLE` specifies IDLE SPI framing.

`SS` specifies SS SPI framing.

Examples `BUS:B1:SPI:FRAMING IDLE` sets the SPI framing to IDLE.

`BUS:B1:SPI:FRAMING?` might return `:BUS:B1:SPI:FRAMING SS`, indicating that the SPI framing is set to SS.

BUS:B<x>:SPI:IDLETime

This command sets or queries the SPI idle time for the specified bus. The bus is specified by x.

Conditions Requires option SR-EMBD.

Group Bus

Syntax

```
BUS:B<x>:SPI:IDLETime <NR3>
BUS:B<x>:SPI:IDLETime?
```

Arguments `<NR3>` specifies the SPI idle time.

Examples

`BUS:B1:SPI:IDLETime 0.000004` sets the idle time to 4 µs.

`BUS:B1:SPI:IDLETime?` might return `:BUS:B1:SPI:IDLETIME 5.0000E-6`, indicating that the idle time is set to 5 µs.

BUS:B<x>:SPI:SELect:POLarity

This command sets or queries the SPI Slave Select (SS) polarity for the specified bus. The bus is specified by x.

Conditions

Requires option SR-EMBD.

Group

Bus

Syntax

```
BUS:B<x>:SPI:SELect:POLarity {LOW|HIGH}
BUS:B<x>:SPI:SELect:POLarity?
```

Related Commands

BUS:B<x>:SPI:SELect:SOUrce

Arguments

`LOW` sets an active low polarity.

`HIGH` sets an active high polarity.

Examples

`BUS:B1:SPI:SELECT:POLARITY HIGH` sets the SPI Slave Select polarity for the bus B1 to active high.

`BUS:B1:SPI:SELECT:POLARITY?` might return `:BUS:B1:SPI:SELECT:POLARITY HIGH`, indicating that the SPI Slave Select polarity for the bus B1 is set to active high.

BUS:B<x>:SPI:SELect:SOUrce

This command sets or queries the SPI Slave Select (SS) source for the specified bus. The bus is specified by x.

Conditions

Requires option SR-EMBD.

Group

Bus

Syntax

```
BUS:B<x>:SPI:SELect:SOUrce
{CH<x>|CH<x>_D<x>|MATH<x>|REF<x>|REF<x> _D<x>}
BUS:B<x>:SPI:SELect:SOUrce?
```

Related Commands

BUS:B<x>:SPI:SELect:POLarity

Arguments

`CH<x>` designates an analog channel as the buses' SPI Slave Select source.

`CH<x>_D<x>` designates a digital channel as the buses' SPI Slave Select source.

`MATH<x>` designates a math waveform as the Slave Select source.

`REF<x>` designates a reference waveform as the Slave Select source.

`REF<x> _D<x>` specifies a digital reference waveform as the clock source waveform for the specified SPI bus.

Examples

`BUS:B1:SPI:SELECT:SOURCE MATH3` sets the SPI Slave Select source for the bus B1 to MATH3.

`BUS:B1:SPI:SELECT:SOURCE?` might return `:BUS:B1:SPI:SELECT:SOURCE CH3`, indicating that the SPI Slave Select source for the bus B1 is set to CH3.

BUS:B<x>:SPI:SELect:THReshold

This command sets or queries the SPI Select (SS) source threshold for the specified bus. The bus is specified by x.

Conditions

Requires option SR-EMBD.

Group

Bus

Syntax

```
BUS:B<x>:SPI:SELect:THReshold <NR3>
BUS:B<x>:SPI:SELect:THReshold?
```

Arguments

`<NR3>` is the SPI Select (SS) source threshold for the specified bus.

Examples

BUS:B1:SPI:SELect:THReshold 50.0e-3 sets the threshold to 50.0 mV.

BUS:B1:SPI:SELect:THReshold? might return :BUS:B1:SPI:SELECT:THRESHOLD 0.0E+0 indicating the threshold is set to 0.0 V.

BUS:B<x>:TYPe

This command sets or queries the bus type or standard for the specified bus. The bus is specified by x.

Group

Bus

Syntax

```
BUS:B<x>:TYPe {PARallel|CAN|SPI|FLEXRAY|LIN|I2C|
USB|RS232C|ETHernet|AUDio}
BUS:B<x>:TYPe?
```

Arguments

`PARallel` specifies a parallel bus.

`I2C` specifies the Inter-IC bus.

`SPI` specifies the Serial Peripheral Interface bus.

`RS232C` specifies the RS-232 Serial bus.

`CAN` specifies a Controller Area Network bus.

`LIN` specifies a Local Interconnect Network bus.

`FLEXRAY` specifies a FlexRay bus.

`USB` specifies the Universal Serial Bus.

`ETHernet` specifies the Ethernet bus.

`AUDio` specifies an audio bus.

Examples

`BUS:B1:TYPE I2C` sets the bus B1 type to I2C.

`BUS:B1:TYPE?` might return `:BUS:B1:TYPE SPI`, indicating that the bus B1 type is set to SPI and that the bus behavior is governed by the `:BUS:B1:SPI:xxxx` commands.

BUS:B<x>:USB:BITRate

This command sets or queries the USB data rate for bus <x>, where the bus number is specified by <x>.

Conditions

Requires option SR-USB2.

Group

Bus

Syntax

```
BUS:B<x>:USB:BITRate {FULL|HIGH|LOW}
BUS:B<x>:USB:BITRate?
```

Arguments

`FULL` indicates the bit rate is 12 Mbps.

`HIGH` indicates the bit rate is 480 Mbps.

`LOW` indicates the bit rate is 1.5 Mbps.

Examples

`BUS:B1:USB:BITRATE FULL` sets the bit rate to 12 Mbps.

`BUS:B1:USB:BITRATE?` might return `:BUS:B1:USB:BITRATE LOW`, indicating that the bit rate is 1.5 Mbps.

BUS:B<x>:USB:DATAMINUSTHRESHold

This command sets or queries the USB D- source threshold for the specified bus. The bus is specified by x.

Conditions

Requires option SR-USB2.

Group

Bus

Syntax

```
BUS:B<x>:USB:DATAMINUSTHRESHold <NR3>
BUS:B<x>:USB:DATAMINUSTHRESHold?
```

Arguments

`<NR3>` is the Minus threshold.

Examples

`BUS:B1:USB:DATAMINUSTHRESHold 50.0e-3` sets the threshold to 50.0 mV.

`BUS:B1:USB:DATAMINUSTHRESHold?` might return `:BUS:B1:USB:DATAMINUSTHRESHOLD 0.0E+0` indicating the threshold is set to 0.0 V.

BUS:B<x>:USB:DATAPLUSTHRESHold

This command sets or queries the USB D+ source threshold for the specified bus. The bus is specified by x.

Conditions

Requires option SR-USB2.

Group

Bus

Syntax

```
BUS:B<x>:USB:DATAPLUSTHRESHold <NR3>
BUS:B<x>:USB:DATAPLUSTHRESHold?
```

Arguments

`<NR3>` is the Plus threshold.

Examples

`BUS:B1:USB:DATAPLUSTHRESHold 50.0e-3` sets the threshold to 50.0 mV.

`BUS:B1:USB:DATAPLUSTHRESHold?` might return `:BUS:B1:USB:DATAPLUSTHRESHOLD 0.0E+0` indicating the threshold is set to 0.0 V.

BUS:B<x>:USB:LOWTHRESHold

This command sets or queries the USB data source threshold for the specified bus when the signal type is differential. The bus is specified by x.

Conditions

Requires option SR-USB2.

Group

Bus

Syntax

```
BUS:B<x>:USB:LOWTHRESHold <NR3>
BUS:B<x>:USB:LOWTHRESHold?
```

Arguments

`<NR3>` is the Low threshold.

Examples

`BUS:B1:USB:LOWTHRESHold 50.0e-3` sets the threshold to 50.0 mV.

`BUS:B1:USB:LOWTHRESHold?` might return `:BUS:B1:USB:LOWTHRESHOLD 0.0E+0` indicating the threshold is set to 0.0 V.

BUS:B<x>:USB:SIGNALTYpe

This command sets or queries the USB signal type for the specified bus. The bus is specified by x.

Conditions

Requires option SR-USB2.

Group

Bus

Syntax

```
BUS:B<x>:USB:SIGNALTYpe {SINGLE|DIFF}
BUS:B<x>:USB:SIGNALTYpe?
```

Arguments

`SINGLE` specifies single-ended signals.

`DIFF` specifies differential signals.

Examples

`BUS:B1:USB:SIGNALTYpe SINGLE` specifies single-ended signals.

`BUS:B1:USB:SIGNALTYpe?` might return `:BUS:B1:USB:SIGNALTYPE DIFF` indicating the signal type is differential.

BUS:B<x>:USB:SOUrce

This command sets or queries the USB data source when the signal type is differential for bus <x>. The bus number is specified by <x>.

Conditions

Requires option SR-USB2.

Group

Bus

Syntax

```
BUS:B<x>:USB:SOUrce {CH<x>|MATH<x>|REF<x>}
BUS:B<x>:USB:SOUrce?
```

Related Commands

BUS:B<x>:USB:SOUrce:DMINus, BUS:B<x>:USB:SOUrce:DPLUs

Arguments

`CH<x>` specifies an analog channel as the data source for the specified USB bus.

`MATH<x>` specifies a math channel as the data source for the specified USB bus.

`REF<x>` specifies a reference waveform as the data source.

Examples

`BUS:B1:USB:SOURCE D2` sets the USB data source for bus B1 to D2.

`BUS:B1:USB:SOURCE?` might return `:BUS:B1:USB:SOURCE D3`, indicating that the USB data source for bus B1 is D3.

BUS:B<x>:USB:SOUrce:DMINus

This command sets or queries the USB D- (SDATAMINUS) source for bus <x> when the signal type is single ended. The bus number is specified by <x>.

Conditions Requires option SR-USB2.

Group Bus

Syntax

```
BUS:B<x>:USB:SOUrce:DMINus
{CH<x>|CH<x>_D<x>|MATH<x>|REF<x>|REF<x>_D<x>}
BUS:B<x>:USB:SOUrce:DMINus?
```

Related Commands BUS:B<x>:USB:SOUrce, BUS:B<x>:USB:SOUrce:DPLUs, BUS:B<x>:USB:SIGNALTYpe

Arguments

`CH<x>` specifies an analog channel as the D- source for the specified USB bus.

`CH<x>_D<x>` specifies a digital channel as the D- source for the specified USB bus.

`MATH<x>` specifies a math channel as the D- source for the specified USB bus.

`REF<x>` specifies a reference waveform as the source

`REF<x>_D<x>` specifies a digital reference waveform as the clock source waveform for the specified USB bus.

Examples

`BUS:B1:USB:SOURCE:DMINUS CH2` sets the USB Data Source for D- input to CH2.

`BUS:B1:USB:SOURCE:DMINUS?` might return `:BUS:B1:USB:SOURCE:DMINUS CH4`, indicating that CH4 is set to be the D- input for USB data.

BUS:B<x>:USB:SOUrce:DPLUs

This command sets or queries the USB dataPlus (SDATAPLUS) source for the specified bus when the signal type is single ended. The bus is specified by x.

Conditions Requires option SR-USB2.

Group Bus

Syntax

```
BUS:B<x>:USB:SOUrce:DPLUs
{CH<x>|CH<x>_D<x>|MATH<x>|REF<x>|REF<x>_D<x>}
BUS:B<x>:USB:SOUrce:DPLUs?
```

Related Commands

BUS:B<x>:USB:SOUrce, BUS:B<x>:USB:SOUrce:DMINus, BUS:B<x>:USB:SIGNALTYpe

Arguments

CH<x> specifies an analog channel as the D+ source for the specified USB bus

CH<x>_D<x> specifies a digital channel as the D+ source for the specified USB bus

MATH<x> specifies a math channel as the D+ source for the specified USB bus.

REF<x> specifies a reference waveform as the source.

REF<x>_D<x> specifies a digital reference waveform as the clock source waveform for the specified USB bus.

Examples

BUS:B1:USB:SOURCE:DPLUS CH2 sets the USB Data Source for D+ input to CH2.

BUS:B1:USB:SOURCE:DPLUS? might return :BUS:B1:USB:SOURCE:DPLUS CH3, indicating that CH3 is set to be the D+ input for USB data.

BUS:B<x>:USB:THRESHold

This command sets or queries the USB DATA source High threshold for the specified bus when the signal source is differential. The bus is specified by x.

Conditions

Requires option SR-USB2.

Group

Bus

Syntax

```
BUS:B<x>:USB:THRESHold <NR3>
BUS:B<x>:USB:THRESHold?
```

Arguments

<NR3> is the USB DATA source High threshold for the specified bus.

Examples

BUS:B1:USB:THRESHold 50.0e-3 sets the threshold to 50.0 mV.

BUS:B1:USB:THRESHold? might return :BUS:B1:USB:THRESHOLD 0.0E+0 indicating the threshold is set to 0.0 V.

BUS:DELete (No Query Form)

This command deletes the specified bus.

Group Bus

Syntax `BUS:DELete <QString>`

Arguments `<QString>` specifies the bus to delete and is of the form "B<NR1>", where <NR1> is ≥1.

Examples `BUS:DELETE B1` deletes bus B1.

BUS:LIST? (Query Only)

This query returns a comma separated list of all currently defined buses.

Group Bus

Syntax `BUS:LIST?`

Returns Returns all currently defined buses.

Examples `BUS:LIST?` might return `:BUS:LIST B1,B4` indicating the bus 1 and bus 4 are defined.

BUSTABle:ADDNew (No Query Form)

Adds the specified bus table. Argument is of the form `"TABLE<NR1>"`, where `<NR1>` is ≥1).

Group Bus

Syntax `BUSTABle:ADDNew <QString>`

Arguments `<QString>` is a quoted string that is the name of the new bus table.

Examples `BUSTABLE:ADDNEW "Table1"` adds bus table Table1.

BUSTABle:DELete (No Query Form)

Deletes the specified bus table. Argument is of the form `"TABLE<NR1>"`, where `<NR1>` is ≥1).

Group Bus

Syntax `BUSTABle:DELete <QString>`

Arguments `<QString>` is a quoted string that is the name of the bus table to delete.

Examples `BUSTABLE:DELETE "Table1"` deletes bus table Table1.

BUSTABle:LIST? (Query Only)

This query lists all currently defined bus tables.

Group Bus

Syntax `BUSTABle:LIST?`

Returns Returns a list of all currently defined bus tables.

Examples `BUSTABLE:LIST?` might return `:BUSTABLE:LIST TABLE1` indicating TABLE1 is currently the only defined bus table.

BUSY? (Query Only)

This query-only command returns the status of the instrument. This command allows you to synchronize the operation of the instrument with your application program.

Group Status and Error

Syntax BUSY?

Related Commands *OPC, *WAI

Returns <NR1> = 0 means that the instrument is not busy processing a command whose execution time is extensive.

<NR1> = 1 means that the instrument is busy processing Commands that Generate an OPC Message (See Table 2-45.).

Examples BUSY? might return :BUSY 1, indicating that the instrument is currently busy.

*CAL? (Query Only)

This query-only command starts signal path calibration (SPC) and returns the status upon completion.

***NOTE.** When running SPC through the remote interface, calibration status cannot be obtained until after the SPC completes. SPC takes approximately 5 minutes per channel which means a total of 40 minutes on an 8-channel model. Any remote command that performs an action on the oscilloscope is also disabled until the SPC is complete.*

Group Calibration

Syntax *CAL?

Returns 0 indicates SPC passed.

-1 indicates SPC failed or did not complete.

Examples *CAL? starts the signal path calibration and returns the status upon completion.

CALibrate? (Query Only)

This query returns the status of signal path calibration.

***NOTE.** When running SPC through the remote interface, calibration status cannot be obtained until after the SPC completes, which can take several minutes.*

Group Calibration

Syntax `CALibrate?`

Examples `CALIBRATE?` might return `:CALIBRATE:INTERNAL:STATUS PASS`, indicating the calibration status.

CALibrate:INTERNal (No Query Form)

This command (no query form) starts the signal path calibration (SPC) of the instrument. You can use the CALibrate:INTERNal:STATus? query to return the current status of the signal path calibration of the instrument.

***NOTE.** When running SPC through the remote interface, calibration status cannot be obtained until after the SPC completes. SPC takes approximately 5 minutes per channel which means a total of 40 minutes on an 8-channel model. Any remote command that performs an action on the oscilloscope is also disabled until the SPC is complete.*

Group Calibration

Syntax `CALibrate:INTERNal`

Related Commands CALibrate:INTERNal:STATus?

Examples `CALIBRATE:INTERNAL` starts the signal path calibration of the instrument.

CALibrate:INTERNal:STARt (No Query Form)

This command (no query form) starts the signal path calibration (SPC) of the analog channels. This command is the same as the CALibrate:INTERNal command. You can use the CALibrate:INTERNal:STATus? query to return the current status of the signal path calibration of the instrument.

***NOTE.** When running SPC through the remote interface, calibration status cannot be obtained until after the SPC completes. SPC takes approximately 5 minutes per channel which means a total of 40 minutes on an 8-channel model. Any remote command that performs an action on the oscilloscope is also disabled until the SPC is complete.*

Group Calibration

Syntax `CALibrate:INTERNal:STARt`

Related Commands CALibrate:INTERNal:STATus?

Examples `CALIBRATE:INTERNAL:START` starts the signal path calibration.

CALibrate:INTERNal:STATus? (Query Only)

This query-only command returns the current status of the signal path calibration.

NOTE. *When running SPC through the remote interface, calibration status cannot be obtained until after the SPC completes. SPC takes approximately 5 minutes per channel which means a total of 40 minutes on an 8-channel model. Any remote command that performs an action on the oscilloscope is also disabled until the SPC is complete.*

Group Calibration

Syntax `CALibrate:INTERNal:STATus?`

Related Commands *CAL?

Returns This query will return one of the following:

- `INIT` indicates the instrument has not had signal path calibration run. The instrument may need to be readjusted at the Tektronix service center.
- `PASS` indicates that the signal path calibration completed successfully.
- `FAIL` indicates that the signal path calibration did not complete successfully.

Examples `CALIBRATE:INTERNAL:STATUS?` might return `PASS`, indicating that the current status of the signal path calibration is that the signal path calibration completed successfully.

CALibrate:PWRUpstatus? (Query Only)

This query-only command returns the current status of the power-up calibration.

Group Calibration

Syntax `CALibrate:PWRUpstatus?`

Returns This query will return one of the following:

- 0 Indicating the power-up calibration failed.
- 1 Indicating the power-up calibration passed.

Examples `CALIBRATE:PWRUPSTATUS?` might return `0`, indicating that the power-up calibration failed.

CH<x>? (Query Only)

This query-only command returns the vertical parameters for the specified channel. The channel is specified by x.

Group Vertical

Syntax `CH<x>?`

Examples `CH1?` might return the following vertical parameters for channel 1: `:CH1:BANDWIDTH 1.0000E+09;COUPLING DC;DESKEW0.0000E+00;OFFSET 0.0000E+00;POSITION 0.0000E+00;SCALE 5.0000E-01;PROBCAL INIT;PROBE:GAIN 1.0000E+00;RESISTANCE 1.0000E+06;UNITS "V";ID:TYPE "1X";SERNUMBER "N/A";:CH1:PROBEFUNC:EXTATTEN 1.0000E+00;EXTUNITS "None";:CH1:LABEL:NAME "";XPOS 5;YPOS 5`.

CH<x>:BANdwidth

This command sets or queries the selectable low-pass bandwidth limit filter of the specified channel. The channel is specified by x.

The query form of this command always returns the approximate realized bandwidth of the channel.

Available arguments depend upon the instrument and the attached accessories.

Group Vertical

Syntax

```
CH<x>:BANdwidth {<NR3>|FULl}
CH<x>:BANdwidth?
```

Arguments

`<NR3>` is the desired bandwidth. The instrument rounds this value to an available bandwidth using geometric rounding and then uses this value to set the upper bandwidth.

`FULl` disables any optional bandwidth limiting. The specified channel operates at its maximum bandwidth.

Examples

`CH1:BANDWIDTH 20` sets the bandwidth of Channel 1 to 20 MHz.

`CH2:BANDWIDTH?`, might return `:CH2:BANDWIDTH 500.0000E+06`, indicating that there is bandwidth limiting on Channel 2.

CH<x>:COUPling

This command sets or queries the input coupling setting for the specified analog channel. The channel is specified by x.

NOTE. *The available arguments depend on the attached accessories.*

Group

Vertical

Syntax

```
CH<x>:COUPling {AC|DC|DCREJ}
CH<x>:COUPling?
```

Arguments

`AC` sets the specified channel to AC coupling.

`DC` sets the specified channel to DC coupling.

`DCREJect` sets DC Reject coupling when probes are attached that support that feature.

Examples

`CH2:COUPLING AC` sets Channel 2 coupling to AC.

`CH3:COUPLING?` might return `:CH3:COUPLING DC`, indicating that Channel 3 is set to DC coupling.

CH<x>:DESKew

This command sets or queries the horizontal deskew time for the specified channel. The channel is specified by x.

Group Vertical

Syntax

```
CH<x>:DESKew <NR3>
CH<x>:DESKew?
```

Arguments `<NR3>` is the deskew time for this channel, ranging from -125 ns to +125 ns with a resolution of 40 ps. Out-of-range values are clipped.

Examples `CH4:DESKEW 5.0E-9` sets the deskew time for Channel 4 to 5 ns.

`CH2:DESKEW?` might return `:CH2:DESKEW 2.0000E-09`, indicating that the deskew time for Channel 2 is set to 2 ns.

CH<x>:LABel:COLor

This command sets or queries the color of the specified channel label. The channel is specified by x.

Group Vertical

Syntax

```
CH<x>:LABel:COLor <QString>
```

Arguments `<QString>` is the label color. To return the color to the default color, send an empty string as in this example: `:CH5:LABEL:COLOR ""`.

Examples `CH2:LABel:COLor "#FFFF00"` sets the label color to yellow.

`CH2:LABel:COLor?` might return `:CH2:LABEL:COLOR "#FF0000"` indicating the color is red.

CH<x>:LABel:FONT:BOLD

This command sets or queries the bold state of the specified channel label. The channel is specified by x.

Group Vertical

Syntax `CH<x>:LABel:FONT:BOLD {ON|OFF|<NR1>}`

Arguments `OFF` argument turns off bold font.

`ON` argument turns on bold font.

`<NR1>` = 0 turns off bold font; any other value turns on bold font.

Examples `CH2:LABel:FONT:BOLD OFF` turns off the bold font.

`CH2:LABel:FONT:BOLD?` might return `:CH2:LABEL:FONT:BOLD 1` indicating a bold font.

CH<x>:LABel:FONT:ITALic

This command sets or queries the italic state of the specified channel label. The channel is specified by x.

Group Vertical

Syntax `CH<x>:LABel:FONT:ITALic {ON|OFF|<NR1>}`

Arguments `OFF` argument turns off italic font.

`ON` argument turns on italic font.

`<NR1>` = 0 turns off italic font; any other value turns on italic font.

Examples `CH2:LABel:FONT:ITALic ON` set the font to italic.

`CH2:LABel:FONT:ITALic?` might return `:CH2:LABEL:FONT:ITALIC 0` indicating the font is not italic.

CH<x>:LABel:FONT:SIZE

This command sets or queries the font size of the specified channel label. The channel is specified by x.

Group Vertical

Syntax `CH<x>:LABel:FONT:SIZE <NR1>`

Arguments `<NR1>` is the font size.

Examples `CH2:LABel:FONT:SIZE 16` sets the font size to 16 point size.

`CH2:LABel:FONT:SIZE?` might return `:CH2:LABEL:FONT:SIZE 20` indicating a 20 point font size.

CH<x>:LABel:FONT:TYPE

This command sets or queries the font type of the specified channel label, such as Arial or Times New Roman. The channel is specified by x.

Group Vertical

Syntax `CH<x>:LABel:FONT:TYPE <QString>`

Arguments `<QString>` is the specified font type.

Examples `CH2:LABel:FONT:TYPE` "Monospace" sets the font to a mono space font.

`CH2:LABel:FONT:TYPE?` might return `:CH2:LABEL:FONT:TYPE "Frutiger LT Std 55 Roman"`.

CH<x>:LABel:FONT:UNDERline

This command sets or queries the underline state of the specified channel label. The channel is specified by x.

Group Vertical

Syntax `CH<x>:LABel:FONT:UNDERline {ON|OFF|<NR1>}`

Arguments `OFF` argument turns off underlined font.

`ON` argument turns on underlined font.

`<NR1>` = 0 turns off underlined font; any other value turns on underlined font.

Examples `CH2:LABel:FONT:UNDERline ON` sets the font to underlined.

`CH2:LABel:FONT:UNDERline?` might return `:CH2:LABEL:FONT:UNDERLINE 0` indicating the font is not underlined.

CH<x>:LABel:NAMe

This command sets or queries the label attached to the displayed waveform for the specified channel. The channel is specified by x.

Group Vertical

Syntax

```
CH<x>:LABel:NAMe <QString>
CH<x>:LABel:NAMe?
```

Arguments `<QString>` is an alphanumeric character string, ranging from 1 through 32 characters in length.

Examples `CH2:LABEL:NAME "Pressure"` changes the waveform label for the Channel 2 waveform to “Pressure”.

`CH3:LABEL:NAME?` might return `:CH3:LABEL:NAME "Force"`, indicating that the waveform label for the Channel 3 waveform is “Force”.

CH<x>:LABel:XPOS

This command sets or queries the X-position of the specified channel label. The channel is specified by x.

Group Vertical

Syntax

```
CH<x>:LABel:XPOS <NR3>
CH<x>:LABel:XPOS?
```

Arguments `<NR3>` is the location (in pixels) where the waveform label for the selected channel is displayed, relative to the left edge of the screen.

Examples `CH3:LABEL:XPOS 5` moves the waveform label for Channel 3 so that it begins 5 pixels to the right of the left edge of the screen.

`CH2:LABEL:XPOS?` might return `:CH2:LABEL:XPOS 5`, indicating that the waveform label for the Channel 2 currently 5 pixels to the right of the left edge of the screen.

CH<x>:LABel:YPOS

This command sets or queries the Y-position of the specified channel label. The channel is specified by x.

Group Vertical

Syntax

```
CH<x>:LABel:YPOS <NR3>
CH<x>:LABel:YPOS?
```

Arguments `<NR3>` is the location (in pixels) where the waveform label for the selected channel is displayed, relative to the baseline of the waveform. Positive values are above the baseline and negative values are below.

Examples `CH3:LABEl:YPOS -20` moves the waveform label for the Channel 3 20 pixels below the baseline of the waveform.

`CH2:LABEl:YPOS?` might return `:CH2:LABEL:YPOS 0`, indicating that the waveform label for the Channel 2 is currently located at the baseline of the waveform.

CH<x>:OFFSet

This command sets or queries the vertical offset for the specified analog channel. The channel is specified by x.

Group Vertical

Syntax

```
CH<x>:OFFSet <NR3>
CH<x>:OFFSet?
```

Arguments `<NR3>` is the offset value for the specified channel.

Examples `CH3:OFFSET 2.0E-3` sets the offset for Channel 3 to 2 mV.

`CH4:OFFSET?` might return `:CH4:OFFSET 1.0000E-03`, indicating that the offset for Channel 4 is set to 1 mV.

CH<x>:POSition

This command sets or queries the vertical position for the specified analog channel.

Group Vertical

Syntax `CH<x>:POSition <NR1>`

Arguments `<NR1>` is the vertical position for the specified analog channel.

Examples `CH2:POSition -2.0` sets the position to -2 divisions.

`CH2:POSition?` might return `:CH2:POSITION -2.2400` indicating the position is -2.24 divisions.

CH<x>:PRObe? (Query Only)

This query-only command returns all information concerning the probe that is attached to the specified channel. The channel is specified by x.

Group Vertical

Syntax `CH<x>:PRObe?`

Related Commands CH<x>:PROBECal?

Examples `CH2:PROBE?` might return `:CH2:PROBE:GAIN 1.0000E-01; RESISTANCE 1.0000E+07;UNITS "V";ID:TYPE "10X"'SERNUMBER "N/A"` for a 10X probe, indicating that (among other parameters) the attenuation factor for the probe attached to Channel 2 is 100.0 mV (assuming that probe units are set to volts).

CH<x>:PRObe:AUTOZero (No Query Form)

This command executes the attached probe's Auto Zero function, for probes that support this feature. See your probe documentation for more details. The channel is specified by x.

Group Vertical

Syntax `CH<x>:PRObe:AUTOZero EXECute`

Arguments `EXECute` sets the probe attached to the specified channel to autozero.

Examples `CH1:PROBE:AUTOZERO EXECUTE` sets the probe attached to the Channel 1 to autozero.

CH<x>:PRObe:DEGAUSS (No Query Form)

This command starts a degauss cycle of the TekVPI probe attached to the specified channel. The channel is specified by x.

Group Vertical

Syntax `CH<x>:PRObe:DEGAUSS EXECute`

Arguments `EXECute` starts the degauss cycle.

Examples `CH1:PROBE:DEGAUSS EXECUTE` causes the probe attached to Channel 1 to degauss.

CH<x>:PRObe:DEGAUSS:STATE? (Query Only)

This command queries whether the probe attached to the specified channel requires a degauss operation. The channel is specified by x.

Group Vertical

Syntax `CH<x>:PRObe:DEGAUSS:STATE?`

Returns

`Required` indicates the probe should be degaussed before taking measurements.

`Recommended` indicates the measurement accuracy might be improved by degaussing the probe.

`Passed` indicates the probe is degaussed.

`Failed` indicates the degauss operation failed.

`Inprocess` indicates the probe degauss operation is currently in progress.

Examples

`CH2:PROBE:DEGAUSS:STATE?` might return `:CH2:PROBE:DEGAUSS:STATE PASSED`, indicating that the probe attached to the Channel 2 is degaussed.

CH<x>:PRObe:FORCEDRange

This command sets the attached TekVPI probe to the specified range, or it queries the range of the probe attached to the specified channel. The channel is specified by x.

Group

Vertical

Syntax

```
CH<x>:PRObe:FORCEDRange <dynamicRangeNR3>
CH<x>:PRObe:FORCEDRange?
```

Arguments

`<dynamicRangeNR3>` specifies the probe range.

Examples

If a TCP0030 current probe is attached to the Channel 1 input, `CH1:PROBE:FORCEDRANGE 5.0` sets the attached probe to its 5 Ampere range.

`CH1:PROBE:FORCEDRANGE?` might return `:CH1:PROBE:FORCEDRANGE 30.0000`, indicating that the range of the probe attached to the Channel 1 is set to 30 Amperes.

CH<x>:PRObe:GAIN? (Query Only)

This query-only command returns the gain factor of the probe that is attached to the specified channel. The channel is specified by x. The gain of a probe is the output divided by the input transfer ratio. For example, a common 10x probe has a gain of 0.1.

Group

Vertical

Syntax `CH<x>:PRObe:GAIN?`

Examples `CH2:PROBE:GAIN?` might return `:CH2:PROBE:GAIN 100.0000E-3`, indicating that the attached 10X probe delivers 0.1 V to the Channel 2 BNC for every 1.0 V applied to the probe input.

CH<x>:PRObe:ID? (Query Only)

This query-only command returns the type and serial number of the probe that is attached to the specified channel. The channel is specified by x.

Group Vertical

Syntax `CH<x>:PRObe:ID?`

Examples `CH2:PROBE:ID?` might return `:CH2:PROBE:ID:TYPE "10X";SERNUMBER "N/A"`, indicating that a passive 10X probe of unknown serial number is attached to Channel 2.

CH<x>:PRObe:ID:SERnumber? (Query Only)

This query-only command returns the serial number of the probe that is attached to the specified channel. The channel is specified by x.

***NOTE.** For Level 0 and 1 probes, the serial number will be "N/A".*

Group Vertical

Syntax `CH<x>:PRObe:ID:SERnumber?`

Examples `CH1:PROBE:ID:SERNUMBER?` might return `:CH1:PROBE:ID:SERNUMBER "B010289"`, indicating that the serial number of the probe attached to Channel 1 is B010289.

CH<x>:PRObe:ID:TYPe? (Query Only)

This query-only command returns the type of probe that is attached to the specified channel. The channel is specified by x.

Group Vertical

Syntax `CH<x>:PROBe:ID:TYPe?`

Examples `CH1:PROBE:ID:TYPE?` might return `:CH1:PROBE:ID:TYPE "TCP0030"`, indicating that a TCP0030 current probe is attached to Channel 1.

CH<x>:PRObe:RESistance? (Query Only)

This query-only command returns the resistance of the probe that is attached to the specified channel. The channel is specified by x.

Group Vertical

Syntax `CH<x>:PRObe:RESistance?`

Examples `CH2:PROBE:RESISTANCE?` might return `:CH2:PROBE:RESISTANCE 1.0000E+06`, indicating that the input resistance of the probe attached to Channel 2 is 1 MΩ.

CH<x>:PRObe:SET

This command sets or queries aspects of probe accessory user interfaces, for example probe attenuation factors or probe audible over range. The available arguments for this command will vary depending on the accessory you attach to the instrument. The channel is specified by x.

Group Vertical

Syntax

```
CH<x>:PRObe:SET <QString>
CH<x>:PRObe:SET?
```

Arguments `<QString>` is a quoted string representing a settable aspect of the attached accessory.

Examples `CH6:PRObe:SET "ATTENUATION 5X"` setting the probe to 25X attenuation.

`CH6:PRObe:SET?` might return `:CH6:PROBE:SET "ATTENUATION 25X"`indicating that the probe is set to the selection for 25X attenuation.

CH<x>:PRObe:UNIts? (Query Only)

This query-only command returns a string describing the units of measure for the probe attached to the specified channel. The channel is specified by x.

Group

Vertical

Syntax

`CH<x>:PRObe:UNIts?`

Related Commands

CH<x>:PROBEFunc:EXTUnits

Examples

`CH4:PROBE:UNITS?` might return `:CH4:PROBE:UNITS "V"`, indicating that the units of measure for the probe attached to Channel 4 are volts.

CH<x>:PROBECal? (Query Only)

This query-only command returns the probe calibration state for the specified channel. The channel is specified by x.

Group

Vertical

Syntax

`CH<x>:PROBECal?`

Returns

This query will return one of the following:

- `Failed` signifies that the probe calibration has failed for the selected channel.
- `Default` signifies that the probe calibration has not yet been run for the selected channel.
- `Passed` signifies the probe calibration has passed for the selected channel.
- `Running` signifies the probe calibration is running.

Examples

`CH2:PROBECAL?` might return `:CH2:PROBECAL PASSED` indicating that the probe calibration has passed for Channel 2.

CH<x>:PROBECOntrol

This command sets or queries multirange probe range-control policy preference of the probe that is attached to CH<x>. The channel number is specified by <x>.

Group

Vertical

Syntax

```
CH<x>:PROBECOntrol {AUTO|MANual}
CH<x>:PROBECOntrol?
```

Arguments

`AUTO` sets the values. The probe range is automatically calculated.

`MANual` allows you to select various valid values for the probe connected to a particular channel.

Examples

`CH2:PROBECONTROL AUTO` sets the values and the probe range is automatically calculated.

`CH2:PROBECONTROL?` might return `:CH2:PROBECONTROL MANUAL` indicating that you can select various valid values for the probe connected to channel 2.

CH<x>:PROBEFunc:EXTAtten

This command is used to specify the attenuation value as a multiplier to the given scale factor on the specified channel. The channel is specified by x.

The query form of this command returns the user-specified attenuation.

Group

Vertical

Syntax

```
CH<x>:PROBEFunc:EXTAtten <NR3>
CH<x>:PROBEFunc:EXTAtten?
```

Related Commands

CH<x>:PROBEFunc:EXTDBatten

Arguments

`<NR3>` is the attenuation value, which is specified as a multiplier in the range from 1.00E-10 to 1.00E+10.

Examples

`CH1:PROBEFUNC:EXTATTEN 167.00E-3` specifies an external attenuation, which is connected between the your input signal and the input of the probe attached to Channel 1.

`CH2:PROBEFUNC:EXTATTEN?` might return `:CH2:PROBEFUNC:EXTATTEN 1.0000E+00`, indicating that the probe attached to Channel 2 is connected directly to the user's signal.

CH<x>:PROBEFunc:EXTDBatten

This command sets or queries the input-output ratio (expressed in decibel units) of external attenuation or gain between the signal and the instrument input channels. The channel is specified by x.

The query form of this command returns the user-specified attenuation in decibels.

Group

Vertical

Syntax

```
CH<x>:PROBEFunc:EXTDBatten <NR3>
CH<x>:PROBEFunc:EXTDBatten?
```

Related Commands

CH<x>:PROBEFunc:EXTAtten

Arguments

`<NR3>` is the attenuation value, which is specified in the range from -200.00 dB to 200.00 dB.

Examples

`CH3:PROBEFUNC:EXTDBATTEN 2.5` specifies an external 2.5 dB attenuator on Channel 3.

`CH1:PROBEFUNC:EXTDBATTEN?` might return `:CH1:PROBEFUNC:EXTDBATTEEN 2.5000E+00`, indicating that the attenuation for Channel 1 is 2.5 dB.

CH<x>:PROBEFunc:EXTUnits

This command sets the unit of measurement for the external attenuator of the specified channel. The channel is specified by x. The alternate units are used if they are enabled. Use the CH<x>:PROBEFunc:EXTUnits:STATE command to enable or disable the alternate units.

Group

Vertical

Syntax

```
CH<x>:PROBEFunc:EXTUnits <QString>
CH<x>:PROBEFunc:EXTUnits?
```

Related Commands

CH<x>:PRObe:UNIts?

Arguments

`<QString>` indicates the attenuation unit of measurement for the specified channel.

Examples `CH4:PROBEFUNC:EXTUNITS "Pascals"` sets the unit of measurement for the Channel 4 external attenuator.

`CH2:PROBEFUNC:EXTUNITS?` might return `:CH2:PROBEFUNC:EXTUNITS "Pascals"`, indicating that the Channel 2 external attenuator units of measurement are Pascals.

CH<x>:PROBEFunc:EXTUnits:STATE

This command sets or queries the custom units enable state for the specified channel. The channel is specified by x.

Group Vertical

Syntax

```
CH<x>:PROBEFunc:EXTUnits:STATE {ON|OFF|<NR1>}
```

Arguments `OFF` argument turns off external units.

`ON` argument turns on external units.

`<NR1>` = 0 turns off external units; any other value turns on external units.

Examples `CH2:PROBEFunc:EXTUnits:STATE ON` turns on external units.

`CH2:PROBEFunc:EXTUnits:STATE?` might return `:CH2:PROBEFUNC:EXTUNITS:STATE 0` indicating that external units are off for the specified channel.

CH<x>:SCAle

This command sets or returns the vertical scale for the specified analog channel. The channel is specified by x.

Group Vertical

Syntax

```
CH<x>:SCAle <NR3>
```

Arguments `<NR3>` is the vertical scale for the specified analog channel.

Examples `CH2:SCAle 200E-3` sets the scale to 200 mV per division.

`CH2:SCAle?` might return `:CH2:SCALE 500.0000E-3` indicating the vertical scale for the specified channel is 500 mV per division.

CH<x>:SCALERATio

This command sets or returns the scale ration for the specified analog channel.

Group Horizontal

Syntax

```
CH<x>:SCALERATio <NR2>
CH<x>:SCALERATio?
```

Arguments `<NR2>` is the scale ration for the specified analog channel.

Examples `CH2:SCALERATio 2.0` sets the scale ratio to 2.0.

`CH2:SCALERATio?` might return `:CH2:SCALERATIO 1.0000` indicating the scale ratio is 1.0.

CH<x>:TERmination

This command sets or queries the vertical termination for the specified analog channel. The channel is specified by x.

NOTE. *The available arguments depend on the instrument model and the attached accessories.*

Group Vertical

Syntax

```
CH<x>:TERmination <NR3>
CH<x>:TERmination?
```

Arguments `<NR3>` specifies the channel input resistance, which can be specified as 50 Ω or 1,000,000 Ω.

Examples `CH4:TERMINATION 50.0E+0` establishes 50 Ω impedance on Channel 1.

`CH2:TERMINATION?` might return `:CH2:TERMINATION 50.0E+0`, indicating that Channel 2 is set to 50 Ω impedance.

CH<x>_DALL:LABel:COLor

This command sets or queries the color of the specified digital group label. The channel is specified by x.

Group Digital

Syntax `CH<x>_DALL:LABel:COLor <QString>`

Arguments `<QString>` is the color of the digital group label. To return the color to the default color, send an empty string as in this example: `:CH5_DALL:LABEL:COLOR ""`.

Examples `CH1_DALL:LABel:COLor "#FF0000"` sets the font color to red.

`CH1_DALL:LABel:COLor?` might return `:CH1_DALL:LABEL:COLOR "#FFFF00"` indicating the font color is yellow.

CH<x>_DALL:LABel:FONT:BOLD

This command sets or queries the bold state of the specified digital group. The channel is specified by x.

Group Digital

Syntax `CH<x>_DALL:LABel:FONT:BOLD {ON|OFF|<NR1>}`

Arguments `OFF` argument turns off bold font.

`ON` argument turns on bold font.

`<NR1>` = 0 turns off bold font; any other value turns on bold font.

Examples `CH1_DALL:LABel:FONT:BOLD ON` sets the font to bold.

`CH1_DALL:LABel:FONT:BOLD?` might return `:CH1_DALL:LABEL:FONT:BOLD 0` indicating the font is not bold.

CH<x>_DALL:LABel:FONT:ITALic

This command sets or queries the italic state of the specified digital group. The channel is specified by x.

Group Digital

Syntax `CH<x>_DALL:LABel:FONT:ITALic {ON|OFF|<NR1>}`

Arguments `OFF` argument turns off italic font.

`ON` argument turns on italic font.

`<NR1>` = 0 turns off italic font; any other value turns on italic font.

Examples `CH1_DALL:LABel:FONT:ITALic 1` turns on italic font.

`CH1_DALL:LABel:FONT:ITALic?` might return `:CH1_DALL:LABEL:FONT:ITALIC 0` indicating the font is not italic.

CH<x>_DALL:LABel:FONT:SIZE

This command sets or queries the font size of the specified digital group. The channel is specified by x.

Group Digital

Syntax `CH<x>_DALL:LABel:FONT:SIZE <NR1>`

Arguments `<NR1>` is the font size.

Examples `CH1_DALL:LABel:FONT:SIZE 16` sets the font size to 16 points.

`CH1_DALL:LABel:FONT:SIZE?` might return `:CH1_DALL:LABEL:FONT:SIZE 20` indicating the font size is 20 points.

CH<x>_DALL:LABel:FONT:TYPE

This command sets or queries the font type of the specified digital group, such as Arial or Times New Roman. The channel is specified by x.

Group Digital

Syntax `CH<x>_DALL:LABel:FONT:TYPE <QString>`

Arguments `<QString>` is the font type.

Examples `CH1_DALL:LABel:FONT:TYPE "Monosapce"` sets the font to a monospace font.

`CH1_DALL:LABel:FONT:TYPE?` might return `:CH1_DALL:LABEL:FONT:TYPE "Frutiger LT Std 55 Roman"`.

CH<x>_DALL:LABel:FONT:UNDERline

This command sets or queries the underline state of the specified digital group. The channel is specified by x.

Group Digital

Syntax `CH<x>_DALL:LABel:FONT:UNDERline {ON|OFF|<NR1>}`

Arguments `OFF` argument turns off underline font.

`ON` argument turns on underline font.

`<NR1>` = 0 turns off underline font; any other value turns on underline font.

Examples `CH1_DALL:LABel:FONT:UNDERline ON` specifies an underlined font.

`CH1_DALL:LABel:FONT:UNDERline?` might return `:CH1_DALL:LABEL:FONT:UNDERLINE 0` indicating underline is off.

CH<x>_DALL:LABel:NAMe

This command sets or queries the label of the specified digital group. The channel is specified by x.

Group Digital

Syntax `CH<x>_DALL:LABel:NAMe <QString>`

Arguments

`<QString>` is the name of the group.

Examples

`CH1_DALL:LABel:NAMe “Clock Out”` sets the label name to Clock Out.

`CH1_DALL:LABel:NAMe?` might return `:CH1_DALL:LABEL:NAME "This is the digital name"`.

CH<x>_D<x>:LABel:COLor

This command sets or queries the color of the label of the specified digital bit. The channel is specified by x.

Group

Digital

Syntax

```
CH<x>_D<x>:LABel:COLor <QString>
```

Arguments

`<QString>` is the label color. To return the color to the default color, send an empty string as in this example: `:CH5_D1:LABEL:COLOR ""`.

Examples

`CH1_D1:LABel:COLor "#FF0000"` sets the color to red.

`CH1_D1:LABel:COLor?` might return `:CH1_D1:LABEL:COLOR "#FFFF00"` indicating the color is yellow.

CH<x>_D<x>:LABel:FONT:BOLD

This command sets or queries the bold state of the label of the specified digital bit. The channel is specified by x.

Group

Digital

Syntax

```
CH<x>_D<x>:LABel:FONT:BOLD {ON|OFF|<NR1>}
```

Arguments

`OFF` argument turns off bold font.

`ON` argument turns on bold font.

`<NR1>` = 0 turns off bold font; any other value turns on bold font.

Examples

`CH1_D1:LABel:FONT:BOLD ON` sets the font to bold.

`CH1_D1:LABel:FONT:BOLD?` might return `:CH1_D1:LABEL:FONT:BOLD 0` indicating the font is not bold.

CH<x>_D<x>:LABel:FONT:ITALic

This command sets or queries the italic state of the label of the specified digital bit. The channel is specified by x.

Group

Digital

Syntax

```
CH<x>_D<x>:LABel:FONT:ITALic {ON|OFF|<NR1>}
```

Arguments

`OFF` argument turns off italic font.

`ON` argument turns on italic font.

`<NR1>` = 0 turns off italic font; any other value turns on italic font.

Examples

`CH1_D1:LABel:FONT:ITALic OFF` turns off italic font.

`CH1_D1:LABel:FONT:ITALic?` might return `:CH1_D1:LABEL:FONT:ITALIC 1` indicating the font is italic.

CH<x>_D<x>:LABel:FONT:SIZE

This command sets or queries the font size of the label of the specified digital bit. The channel is specified by x.

Group

Digital

Syntax

```
CH<x>_D<x>:LABel:FONT:SIZE <NR1>
```

Arguments

`<NR1>` is the font size.

Examples

`CH1_D1:LABel:FONT:SIZE 16` sets the font size to 16 points.

`CH1_D1:LABel:FONT:SIZE?` might return `:CH1_D1:LABEL:FONT:SIZE 20` indicating the font size is 20 points.

CH<x>_D<x>:LABel:FONT:TYPE

This command sets or queries the font type of the label of the specified digital bit, such as Arial or Times New Roman. The channel is specified by x.

Group

Digital

Syntax

`CH<x>_D<x>:LABel:FONT:TYPE <QString>`

Arguments

`<QString>` is the font type of the label.

Examples

`CH1_D1:LABel:FONT:TYPE "Monospace"` sets the font to Monospace.

`CH1_D1:LABel:FONT:TYPE?` might return `:CH1_D1:LABEL:FONT:TYPE "Frutiger LT Std 55 Roman"`.

CH<x>_D<x>:LABel:FONT:UNDERline

This command sets or queries the underline state of the label of the specified digital bit. The channel is specified by x.

Group

Digital

Syntax

`CH<x>_D<x>:LABel:FONT:UNDERline {ON|OFF|<NR1>}`

Arguments

`OFF` argument turns off underline font.

`ON` argument turns on underline font.

`<NR1>` = 0 turns off underline font; any other value turns on underline font.

Examples

`CH1_D1:LABel:FONT:UNDERline ON` turns on underline font.

`CH1_D1:LABel:FONT:UNDERline?` might return `:CH1_D1:LABEL:FONT:UNDERLINE 0` indicating the underline font is off.

CH<x>_D<x>:LABel:NAMe

Sets or queries the label of the specified digital bit. The channel is specified by x.

Group Digital

Syntax `CH<x>_D<x>:LABel:NAMe <QString>`

Arguments `<QString>` is the label.

Examples `CH1_D1:LABel:NAMe "Clock in"` sets the name to Clock in.

`CH1_D1:LABel:NAMe?` might return `:CH1_D1:LABEL:NAME "Digital 1"`.

CLEAR (No Query Form)

This command clears acquisitions, measurements, and waveforms.

Group Miscellaneous

Syntax `CLEAR`

Examples `CLEAR` clears all acquisitions, measurements, and waveforms.

*CLS (No Query Form)

This command (no query form) clears the following:

- Event Queue
- Standard Event Status Register
- Status Byte Register (except the MAV bit)

If the *CLS command immediately follows an <EOI>, the Output Queue and MAV bit (Status Byte Register bit 4) are also cleared. MAV indicates that information is in the output queue. The device clear (DCL) control message will clear the output queue and thus MAV. *CLS does not clear the output queue or MAV.

*CLS can suppress a Service Request that is to be generated by an *OPC. This will happen if a single sequence acquisition operation is still being processed when the *CLS command is executed.

Group Status and Error

Syntax
*CLS

Related Commands
DESE, *ESE, *ESR?, EVENT?, EVMsg?, *SRE, *STB?

Examples
*CLS clears the instrument status data structures.

CONFIGuration:ANALOg:BANDWidth? (Query Only)

This command queries the maximum licensed bandwidth of the instrument.

Group
Vertical

Syntax
CONFIGuration:ANALOg:BANDWidth?

Returns
The maximum licensed bandwidth of the instrument is returned.

Examples
CONFIGuration:ANALOg:BANDWidth? might return :CONFIGURATION:ANALOG:BANDWIDTH 2.0000E+9 indicating the bandwidth is 2.0 GHz.

CURVe

This command transfers waveform data to and from the instrument. Each waveform that is transferred has an associated waveform preamble that contains information such as data format and scale.

The CURVe? query transfers data from the instrument. The data source is specified by the DATa:SOUrce command. The first and last data points are specified by the DATa:STARt and DATa:STOP commands.

The CURVe command transfers waveform data to the instrument. The data is stored in the reference memory location specified by , starting with the data point specified by DATa:STARt. Only one waveform can be transferred at a time. The waveform will only be displayed if the reference is displayed.

For digital sources, CH<x>_D<n> or CH<x> _DALL, when the :DATa:WIDth is 1, the returned data is state only. When the :DATa:WIDth is 2, the returned data is transition data with 2 bits per digital channel representing the transition information as follows:

- 0 0 low
- 0 1 high
- 1 1 multiple transitions in interval ending with high
- 1 0 multiple transitions in interval ending with low

For individual digital channels (such as CH<x>_D<n>), :DATa:WIDth 2 provides the 2-bit transition data with the upper 14 bits zero. :DATa:WIDth 1 provides only the state in the LSB with the upper 7 bits all zero.

For CH<x>_DAll sources, :DATa:WIDth 2 provides the 2-bit transition data for each of the 8 constituent channels with the D7 bit represented in the 2 most significant bits, D6 in the next 2, and so on. :DATa:WIDth 1 provides the states of each of the 8 constituent channels with D7 represented in the most significant bit and D0 in the least significant bit.

Depending on the sample rate, multi-transition data may not be available and :CURVe? queries for digital channels with :DATa:WIDth 2 may result in a warning event "Execution warning: Multi-transition data not available". In this case, the transition data returned will be 0 0 or 0 1.

For MATH sources, only 8-byte double precision floating point data is returned in :CURVe? queries.

Group

Waveform Transfer

Syntax

```
CURVe
CURVe {<Block>|<asc curve>}
CURVe?
```

Related Commands

, DATa:SOUrce, DATa:STARt, DATa:STOP, SAVe:WAVEform, , , , WFMOutpre?

Arguments

`<Block>` is the waveform data in binary format. The waveform is formatted as: #<x><yyy><data><newline>, where:

<x> is the number of y bytes. For example, if <yyy>=500, then <x>=3)

NOTE. *<x> is hexadecimal format. The letters A-F denote several y bytes between 10 and 15 digits.*

<yyy> is the number of bytes to transfer. If width is 1, then all bytes on the bus are single data points. If width is 2, then all bytes on the bus are 2-byte pairs. If width is 4, then all bytes on the bus are 4-byte pairs. Use the command to set the width.

<data> is the curve data.

<newline> is a single byte new line character at the end of the data.

`<asc curve>` is the waveform data in ASCII format. The format for ASCII data is <NR1>[,<NR1>...], where each <NR1> represents a data point.

Examples

`CURVE <Block>` sets the format of the waveform data, transferred to and from the instrument, to binary format.

`CURVE`? with ASCII encoding, start and stop of 1 and 10 respectively, and a width set to 1 might return `:CURVE 61,62,61,60,60,-59,-59,-58,-58,-59`

NOTE. *Curve data is transferred from the instrument asynchronously and, depending upon the length of the curve record, such transfers can require several seconds to complete. During this time, the instrument will not respond to user controls. You can interrupt these asynchronous data transfers by sending a device clear message to the instrument or by interrupting the query with another command or query. Verify that curve data is completely transferred.*

*It is recommended that you follow such queries with an *ESR? query and verify that the error bit returned and, if set, check the event queue to ascertain the reason for the error. If the error was caused by an interrupted query, then the asynchronous data transfer had not completed when the *ESR? query was sent. In this case, you might need increase your program's time-out value to ensure that all data is transferred and read.*

DATa

This command sets or queries the format and location of the waveform data that is transferred with the CURVe command.

Group

Waveform Transfer

Syntax

```
DATa {INIT|SNAp}
DATa?
```

Related Commands

CURVe, DATa:STARt, DATa:STOP, DATa:ENCdg, , , WFMOutpre:NR_Pt?

Arguments

`INIT` initializes the waveform data parameters to their factory defaults except for DATa:STOP, which isset to the current acquisition record length.

`SNAp` Sets DATa:STARt and DATa:STOP to match the current waveform cursor positions of WAVEVIEW1 CURSOR1 if these waveform cursors are currently on. If these waveform cursors are not on when the DATa SNAp command is sent, it is silently ignored and DATa:STARt and :STOP remain unchanged.

If either of the cursors is outside the record, DATa:STARt and :STOP are set to nearest values within the record. This will cause DATa:STARt and/or :STOP to snap to the beginning or end of the record whichever is nearest, and the following event is set: 500, "Execution warning", "One or both cursors outside of waveform record".

If there is no acquired waveform for the cursor source, then DATa:STARt and :STOP remain unchanged and the following event is set: 500, "Execution warning", "No acquired waveform record".

If DATa:STARt is greater than :STOP, the values of DATa:STARt and STOp are swapped and the following event is set: 530, "Data start > stop, Values swapped internally".

Examples

`DATA INIT` initializes the waveform data parameters to their factory defaults.

`DATA?` might return `:DATA:DESTINATION REF1;ENCDG RIBINARY;SOURCE CH1;START 1;STOP 1000;FRAMESTART 1;FRAMESTOP 1000`.

DATa:ENCdg

This command sets or queries the format of outgoing waveform data. This command is equivalent to setting WFMOutpre:ENCdg, WFMOutpre:BN_Fmt, and WFMOutpre:BYT_Or. Setting the DATa:ENGdg value causes the corresponding WFMOutpre values to be updated and vice versa.

NOTE. *Values are constrained (for outbound data) to the format of the data specified by DATa:SOUrce.*

Group

Waveform Transfer

Syntax

```
DATa:ENCdg
{ASCIi|RIBinary|RPBinary|FPBinary|SRIbinary|SRPbinary|SFPbinary}
DATa:ENCdg?
```

Related Commands

WFMOutpre:ENCdg, WFMOutpre:BN_Fmt, WFMOutpre:BYT_Or

Arguments

- `ASCIi` specifies the ASCII representation of signed INT, FLOAT. If ASCII is the value, then :BN_Fmt and :BYT_Or are ignored.
- `RIBinary` specifies signed integer data point representation with the most significant byte transferred first.

  When :BYT_Nr is 1, the range is from -128 through 127. When :BYT_Nr is 2, the range is from -32,768 through 32,767. When :BYT_Nr is 8, then the waveform being queried is set to Fast Acquisition mode. Center screen is 0 (zero). The upper limit is the top of the screen and the lower limit is the bottom of the screen. This is the default argument.
- `RPBinary` specifies the positive integer data-point representation, with the most significant byte transferred first.

  When :BYT_Nr is 1, the range from 0 through 255. When :BYT_Nr is 2, the range is from 0 to 65,535. When :BYT_Nr is 8, then the waveform being queried is set to Fast Acquisition mode. The center of the screen is 127. The upper limit is the top of the screen and the lower limit is the bottom of the screen.
- `FPBinary` specifies the floating point (width = 4) data.

  The range is from -3.4×10^{38} to 3.4×10^{38}. The center of the screen is 0. The upper limit is the top of the screen and the lower limit is the bottom of the screen.

  The `FPBinary` argument is only applicable to math waveforms or ref waveforms saved from math waveforms.
- `SRIbinary` is the same as `RIBinary` except that the byte order is swapped, meaning that the least significant byte is transferred first. This format is useful when transferring data to IBM compatible PCs.
- `SRPbinary` is the same as `RPBinary` except that the byte order is swapped, meaning that the least significant byte is transferred first. This format is useful when transferring data to PCs.
- `SFPbinary` specifies floating point data in IBM PC format. The SFPbinary argument only works on math waveforms or ref waveforms saved from math waveforms.

Table 2-44: DATa and WFMOutpre Parameter Settings

	WFMOutpre Settings			
DATa:ENCdg Setting	**:ENCdg**	**:BN_Fmt**	**:BYT_Or**	**:BYT_NR**
ASCii	ASC	N/A	N/A	1,2,4,8
RIBinary	BIN	RI	MSB	1,2,8
RPBinary	BIN	RP	MSB	1,2,8
FPBinary	BIN	FP	MSB	4
SRIbinary	BIN	RI	LSB	1,2,8

Table 2-44: DATa and WFMOutpre Parameter Settings (cont.)

	WFMOutpre Settings			
DATa:ENCdg Setting	:ENCdg	:BN_Fmt	:BYT_Or	:BYT_NR
SRPbinary	BIN	RP	LSB	1,2,8
SFPbinary	BIN	FP	LSB	4

Examples

DATA:ENCDG RPBinary sets the data encoding format to be a positive integer where the most significant byte is transferred first.

DATA:ENCDG? might return :DATa:ENCDG SRPBINARY for the format of the outgoing waveform data.

DATa:SOUrce

This command sets or queries the location of waveform data that is transferred from the instrument by the CURVe? Query.

Group

Waveform Transfer

Syntax

```
DATa:SOUrce <wfm>[<,><wfm>]
DATa:SOUrce?
```

Related Commands

CURVe, DATa

Arguments

<wfm> is the location of the waveform data that will be transferred from the instrument to the controller. It can consist of CH<x>, MATH<x>, REF<x>, DIGITALALL. Note that digital data is transferred as 16-bit data, with the least-significant bit representing D0, and the most-significant bit representing D15.

<wfm> can consist of the following:

CH<x> selects the specified analog channel as the source.

MATH<x> selects the specified reference waveform as the source. The reference number is specified by x, which ranges from 1 through 4.

REF<x> selects the specified reference waveform as the source. The reference number is specified by x, which ranges from 1 through 8.

CH<x>_D<x> selects the specified digital channel.

CH<x>_DAll selects the specified supper channel group of digital channels.

DIGITALALL selects digital waveforms as the source. The Digital data is transferred as 16-bit data, with the least-significant bit representing D0, and the most-significant bit representing D15. The LSB always contains D0-D7 and MSB always contains D8-D15 data.

Examples

`DATA:SOURCE CH1` specifies that the CH1 waveforms will be transferred in the next CURVe? query.

`DATA:SOURCE?` might return `:DATA:SOURCE REF3`, indicating that the source for the waveform data which is transferred using a CURVe? query is reference 3.

DATa:SOUrce:AVAILable? (Query Only)

This query returns a list of enumerations representing the source waveforms that are currently available for :CURVe? queries. This means that the waveforms have been acquired. If there are none, NONE is returned.

Group

Waveform Transfer

Syntax

```
DATa:SOUrce:AVAILable?
```

Related Commands

CURVe

Returns

Returns a list of source waveforms that are currently available for :CURVe? queries.

Examples

`DATA:SOURCE:AVAILABLE?` might return `:DATA:SOURCE:AVAILABLE CH2,CH3,CH6,CH7,MATH1,REF1` indicating that CH2, CH3, CH6, CH7, MATH1, and REF1 are available.

DATa:STARt

This command sets or queries the starting data point for waveform transfer. This command allows for the transfer of partial waveforms to and from the instrument.

Group

Waveform Transfer

Syntax

```
DATa:STARt <NR1>
DATa:STARt?
```

Related Commands

CURVe, DATa, DATa:STOP, , WFMOutpre:NR_Pt?

Arguments

`<NR1>` is the first data point that will be transferred, which ranges from 1 to the record length. Data will be transferred from `<NR1>` to `DATa:STOP` or the record length, whichever is less. If `<NR1>` is greater than the record length, the last data point in the record is transferred.

`DATa:STARt` and `DATa:STOP` are order independent. When `DATa:STOP` is greater than `DATa:STARt`, the values will be swapped internally for the CURVE? query.

Examples

`DATA:START 10` specifies that the waveform transfer will begin with data point 10.

`DATA:START?` might return `:DATA:START 214`, indicating that data point 214 is the first waveform data point that will be transferred.

DATa:STOP

This command sets or queries the last data point that will be transferred when using the CURVe? query. This command allows for the transfer of partial waveforms to the controller.

Changes to the record length value are not automatically reflected in the data:stop value. As record length is varied, the `DATa:STOP` value must be explicitly changed to ensure the entire record is transmitted. In other words, curve results will not automatically and correctly reflect increases in record length if the distance from `DATa:STARt` to `DATa:STOP` stays smaller than the increased record length.

NOTE. *When using the CURVe command, `DATa:STOP` is ignored and is used.*

Group

Waveform Transfer

Syntax

```
DATa:STOP <NR1>
DATa:STOP?
```

Related Commands

CURVe, DATa, DATa:STARt, , WFMOutpre:NR_Pt?

Arguments

`<NR1>` is the last data point that will be transferred, which ranges from 1 to the record length. If `<NR1>` is greater than the record length, then data will be transferred up to the record length. If both DATa:STARt and DATa:STOP are greater than the record length, the last data point in the record is returned.

DATa:STARt and DATa:STOP are order independent. When DATa:STOP is less than DATa:STARt, the values will be swapped internally for the CURVE? query.

If you always want to transfer complete waveforms, set DATa:STARt to 1 and DATa:STOP to the maximum record length, or larger.

Examples

`DATA:STOP 15000` specifies that the waveform transfer will stop at data point 15000.

`DATA:STOP?` might return `:DATA:STOP 14900`, indicating that 14900 is the last waveform data point that will be transferred.

DATa:WIDth

This command specifies the width, in bytes per point, for waveform data transferred from the oscilloscope via the CURVe? query. (This command is synonymous with WFMOutpre:BYT_Nr .)

Group

Waveform Transfer

Syntax

```
DATa:WIDth <NR1>
DATa:WIDth?
```

Related Commands

WFMOutpre:BYT_Nr

Arguments

`<NR1>` is an integer that indicates the number of bytes per point for the outgoing waveform data when queried using the CURVe? command. For analog channels the values can be 1 or 2. For digital channels, the values can be 1 or 2. For the digital collection, the values can be 4 or 8.

Examples

`DATA:WIDTH` 1 sets the data width to 1 byte.

`DATA:WIDTH?` might return `:DATA:WIDTH 1` indicating the width, in bytes per point, for waveform data transferred bya the `CURVE?` query is 1 byte.

DATE? (Query Only)

This command queries the date that the instrument displays.

Group

Miscellaneous

Syntax

```
DATE?
```

Related Commands TIMe?

Returns `<QString>` is a date in the form "yyyy-mm-dd" where yyyy refers to a four-digit year number, mm refers to a two-digit month number from 01 to 12, and dd refers to a two-digit day number in the month.

Examples `DATE?` might return `:DATE 2000-01-24`, indicating the current date is set to January 24, 2000.

*DDT

This command allows you to specify a command or a list of commands that are executed when the instrument receives a *TRG command. Define Device Trigger (`*DDT`) is a special alias that the `*TRG` command uses.

Group Miscellaneous

Syntax

```
*DDT {<Block>|<QString>}
*DDT?
```

Related Commands ALIas, *TRG

Arguments `<Block>` is a complete sequence of program messages. The messages can contain only valid commands that must be separated by semicolons and must follow all rules for concatenating commands. The sequence must be less than or equal to 80 characters. The format of this argument is always returned as a query.

`<QString>` is a complete sequence of program messages. The messages can contain only valid commands that must be separated by semicolons and must follow all rules for concatenating commands. The sequence must be less than or equal to 80 characters.

Examples `*DDT #217ACQUIRE:STATE RUN` specifies that the acquisition system will be started each time a `*TRG` command is sent.

DESE

This command sets and queries the bits in the Device Event Status Enable Register (DESER). The DESER is the mask that determines whether events are reported to the Standard Event Status Register (SESR), and entered into the Event Queue. For a more detailed discussion of the use of these registers, see Registers.

Group Status and Error

Syntax

```
DESE <NR1>
DESE?
```

Related Commands *CLS, *ESE, *ESR?, EVENT?, EVMsg?, *SRE, *STB?

Arguments `<NR1>` The binary bits of the DESER are set according to this value, which ranges from 1 through 255. For example, DESE 209 sets the DESER to the binary value 11010001 (that is, the most significant bit in the register is set to 1, the next most significant bit to 1, the next bit to 0, etc.).

The power-on default for DESER is all bits set if *PSC is 1. If *PSC is 0, the DESER maintains the previous power cycle value through the current power cycle.

***NOTE.** Setting the DESER and ESER to the same value allows only those codes to be entered into the Event Queue and summarized on the ESB bit (bit 5) of the Status Byte Register. Use the *ESE command to set the ESER.*

Examples `DESE 209` sets the DESER to binary 11010001, which enables the PON, URQ, EXE and OPC bits.

`DESE?` might return `:DESE 186`, showing that the DESER contains the binary value 10111010.

DIAg:LOOP:OPTion

This command sets or queries the type of looping desired.

Group Self Test

Syntax

```
DIAg:LOOP:OPTion {FAIL|ONCE|ALWAYS|ONFAIL|NTIMES}
DIAg:LOOP:OPTion?
```

Arguments `Fail` - run until a failure is found, then halt.

`Once` - run through one loop.

`Always` - run forever.

`Onfail` - run until a failure is found, then loop on it.

`Ntimes` - run n number of loops.

Examples DIAG:LOOP:OPTION ALWAYS sets loop option to ALWAYS.

DIAG:LOOP:OPTION? returns current looping option value.

DIAg:LOOP:OPTion:NTIMes

This command sets or queries how many loops to run, if N-times is being used.

Group Self Test

Syntax
```
DIAg:LOOP:OPTion:NTIMes <NR1>
DIAg:LOOP:OPTion:NTIMes?
```

Arguments <NR1> is how many loops to run.

Examples DIAG:LOOP:OPTION:NTIMES 2 sets diagnostics to loop 2 times.

DIAG:LOOP:OPTION:NTIMES? might return :DIAG:LOOP:OPTION:NTIMES 1 indicating diagnostics will run once.

DIAg:LOOP:STOP (No Query Form)

Request that diagnostics stop looping.

Group Self Test

Syntax
```
DIAg:LOOP:STOP
```

Examples DIAG:LOOP:STOP stops diagnostics looping.

DIAg:MODe

This command sets or queries the diagnostics mode.

Group Self Test

Syntax
```
DIAg:MODe {POST|EXTENDED|SERVICE}
DIAg:MODe?
```

Arguments `POST` specifies the power on self test diagnostics.

`EXTENDED` specifies the extended diagnostics.

`SERVICE` specifies the service diagnostics.

Examples `DIAG:MODE POST` specifies the power on self test diagnostics.

DIAg:RESUlt? (Query Only)

This query returns both the overall diagnostics test results and the results of each individual test area.

Group Self Test

Syntax `DIAg:RESUlt?`

Returns The diagnostics results.

Examples `DIAG:RESULT?` might return `:DIAG:RESULT:FLAG "NOT RUN";LOG "PASS--IO,PASS--ANALOG,PASS--SYSTEM,PASS--ASIC,PASS--ACQ,PASS--SIGNAL,PASS--MEMORY"` indicating the diagnostics results.

DIAg:RESUlt:FLAg? (Query Only)

This query returns the status of the diagnostic test area that has been selected.

Group Self Test

Syntax `DIAg:RESUlt:FLAg?`

Related Commands DIAg:RESUlt:FLAg?

Returns The status of the diagnostics (single area).

Examples `DIAG:RESULT:FLAG?` might return `:DIAG:RESULT:FLAG "NOT RUN"` indicating the diagnostics have not been run.

DIAg:RESUlt:LOG? (Query Only)

This query returns the test Pass/Fail status of each diagnostic area. It does not return the overall status.

Group Self Test

Syntax `DIAg:RESUlt:LOG?`

Returns The status of the diagnostic area.

Examples `DIAG:RESULT:LOG?` might return `:DIAG:RESULT:LOG "PASS--IO,PASS--ANALOG,PASS--SYSTEM,PASS--ASIC,PASS--ACQ, PASS--SIGNAL,PASS--MEMORY"` indicating the diagnostics result stored in the log.

DIAg:SELect (No Query Form)

This command selects or queries an available diagnostic area.

Group Self Test

Syntax

```
DIAg:SELect {ALL|IO|ANALOG|SYSTEM|ASIC| ACQ|SIGNAL|MEMORY}
DIAg:SELect?
```

Arguments The argument is the desired diagnostic area.

Examples `DIAG:SELECT IO` will select the `IO` group.

DIAg:STATE (No Query Form)

This command starts or aborts Self Test. Abort happens after group under test completes.

Group Self Test

Syntax `DIAg:STATE {EXECute|ABOrt}`

Arguments

`EXECUTE` starts execution of the diagnostics.

`ABOrt` disables diagnostics capabilities and returns the instrument to a normal operating state.

Examples

`DIAG:STATE ABORT` turns off diagnostics capabilities and returns the instrument to a normal operating state.

`DIAG:STATE?` might return `:DIAG:STATE ABORT`, indicating that diagnostics are disabled.

DIGGRP<x>:D<x>:THReshold

Sets or queries the threshold level in volts for the specified digital channel. If the source channel doesn't exist, a hardware missing error event is set.

Group

Digital

Syntax

```
DIGGRP<x>:D<x>:THReshold <NR3>
DIGGRP<x>:D<x>:THReshold?
```

Arguments

`<NR3>` is the threshold level in volts for the specified digital channel.

Examples

`DIGGRP1:D1:THReshold 30.0E-3` sets the threshold to 30 mV.

`DIGGRP1:D1:THReshold?` might return `:DIGGRP1:D1:THRESHOLD 0.0E+0` indicating the threshold is 0.0 V.

DIGGRP<x>:THReshold

This command sets or queries the digital threshold of all bits on the specified digital channel group. The digital channel group is specified by <x>.

Group

Digital

Syntax

```
DIGGRP<x>:THReshold <NR3>
DIGGRP<x>:THReshold?
```

Arguments

`<NR3>` is the digital threshold of all bits on DCH<x>.

Examples

`DIGGRP1>:THReshold 5.0e-3` sets the threshold to 5 mV.

`DIGGRP1>:THReshold?` might return `:DIGGRP1:THRESHOLD 0.0E+0` indicating the threshold is set to 0.0 V.

DISplay? (Query Only)

This query-only command returns the current Display settings.

Group

Display Control

Syntax

`DISplay?`

Examples

`DISPLAY?` might return `:DISPLAY:CLOCK 1;COLOR:PALETTE:IMAGEVIEW MONOGREEN; RECORDVIEW TEMPERATURE;USER:GRATICULE 165,50,15;CH1 180,50,100; CH2 300,50,100;CH3 60,50,100;CH4 240,50,100;REF1 0,90,0; REF2 0,90,100;REF3 60,90,100;REF4 240,90,100;MATH1 160,50,100; MATH2 40,60,100;MATH3 120,60,100;MATH4 195,50,100; HISTOGRAM 320,50,100;CARET 150,50,100;MASK 0,25,75;MASKHIGHLIGHT 140,50,100;:DISPLAY:COLOR:MATHCOLOR DEFAULT;REFCOLOR DEFAULT; :DISPLAY:FILTER SINX;FORMAT YT;GRATICULE IRE;INTENSITY :WAVEFORM:IMAGEVIEW 81.0000;RECORDVIEW 81.0000;:DISPLAY :INTENSITY:AUTOBRIGHT 0; :DISPLAY:PERSISTENCE OFF;STYLE DOTS;TRIGBAR OFF;TRIGT 1; CURSORTICK LONG;VARPERSIST 2.6000;SCREENTEXT:STATE 1; LABEL1:NAME "";XPOS 100;YPOS 5;:DISPLAY:SCREENTEXT :LABEL2:NAME "THIS IS SCREEN TEXT";XPOS 100;YPOS 20; :DISPLAY:SCREENTEXT:LABEL3:NAME "";XPOS 100;YPOS 35; :DISPLAY:SCREENTEXT:LABEL4:NAME "";XPOS 100;YPOS 50; :DISPLAY:SCREENTEXT:LABEL5:NAME "";XPOS 100;YPOS 343; :DISPLAY:SCREENTEXT:LABEL6:NAME "";XPOS 100;YPOS 80; :DISPLAY:SCREENTEXT:LABEL7:NAME "";XPOS 100;YPOS 95; :DISPLAY:SCREENTEXT:LABEL8:NAME "";XPOS 100;YPOS 110; :DISPLAY:WAVEFORM 1`.

DISplay:COLors

Sets or queries the color mode for the graticule and waveform display.

Group

Display Control

Syntax
```
DISplay:COLors {NORMal|INVERTed}
DISplay:COLors?
```

Arguments `NORMal` specifies normal color mode.

`INVERTed` specifies inverted color mode.

Examples `DISPLAY:COLORS NORMAL` sets the display colors to normal.

`DISPLAY:COLORS?` might return `:DISPLAY:COLORS INVERTED` indicating the display colors are inverted.

DISplay:GLObal:B<x>:STATE

This command sets or queries the global state (display mode On or Off) of the specified bus. Setting this value true (On or NR1 ≠ 0) turns on the source in the waveform view. Setting this value false (Off or NR1 = 0) turns off the source in the waveform view. This command only works if the specified bus is added already.

Group Display Control

Syntax
```
DISplay:GLObal:B<x>:STATE {<NR1>|OFF|ON}
```

Arguments `<NR1>` = 0 disables the display of the specified bus; any other value enables display of the bus.

`ON` enables display of the specified bus.

`OFF` disables display of the specified bus.

Examples `DISplay:GLObal:B1:STATE OFF` turns off the display of bus 1.

`DISplay:GLObal:B1:STATE?` might return `:DISPLAY:GLOBAL:B1:STATE 1` indicating the bus is displayed.

DISplay:GLObal:CH<x>:STATE

This command sets or queries the global state (display mode On or Off) of the specified channel (both analog and digital). Setting this value true (On or NR1 ≠ 0) turns on the source in the waveform view. Setting this value false (Off or NR1 = 0) turns off the source in the waveform view. This command only works if the specified channel is added already.

Group Display Control

Syntax `DISplay:GLObal:CH<x>:STATE {<NR1>|OFF|ON}`

Arguments `<NR1>` = 0 disables the display of the specified channel; any other value enables display of the channel.

`ON` enables display of the specified channel.

`OFF` disables display of the specified channel.

Examples `DISplay:GLObal:CH1:STATE OFF` turns off the display of channel 1.

`DISplay:GLObal:CH1:STATE?` might return `:DISPLAY:GLOBAL:CH1:STATE 0` indicating that channel 1 is not displayed.

DISplay:GLObal:MATH<x>:STATE

This command sets or queries the global state (display mode On or Off) of the specified math. Setting this value true (On or NR1 $\neq 0$) turns on the source in the waveform view. Setting this value false (Off or NR1 $= 0$) turns off the source in the waveform view. This command only works if the specified math waveform is added already.

Group Display Control

Syntax `DISplay:GLObal:MATH<x>:STATE {<NR1>|OFF|ON}`

Arguments `<NR1>` = 0 disables the display of the specified math; any other value enables display of the math.

`ON` enables display of the specified math.

`OFF` disables display of the specified math.

Examples `DISplay:GLObal:MATH1:STATE 1` displays math 1.

`DISplay:GLObal:MATH1:STATE?` might return `:DISPLAY:GLOBAL:MATH1:STATE 1` indicating that math1 is displayed.

DISplay:GLObal:PLOT<x>:STATE

This command sets or queries the global state (display mode On or Off) of the specified time trend plot. Setting this value true (On or NR1 ≠ 0) turns on the source in the waveform view. Setting this value false (Off or NR1 = 0) turns off the source in the waveform view. This command only works if the specified plot is added already.

Group Display Control

Syntax `DISplay:GLObal:PLOT<x>:STATE {<NR1>|OFF|ON}`

Arguments `<NR1>` = 0 disables the display of the specified plot; any other value enables display of the plot.

`ON` enables display of the specified plot.

`OFF` disables display of the specified plot.

Examples `DISplay:GLObal:PLOT1:STATE ON` displays plot 1.

`DISplay:GLObal:PLOT1:STATE?` might return `:DISPLAY:GLOBAL:PLOT1:STATE 1` indicating plot 1 is displayed.

DISplay:GLObal:REF<x>:STATE

this command sets or queries the global state (display mode On or Off) of the specified reference waveform. Setting this value true (On or NR1 ≠ 0) turns on the source in the waveform view. Setting this value false (Off or NR1 = 0) turns off the source in the waveform view. This command only works if the specified reference waveform is added already.

Group Display Control

Syntax `DISplay:GLObal:REF<x>:STATE {<NR1>|OFF|ON}`

Arguments `<NR1>` = 0 disables the display of the specified reference; any other value enables display of the reference.

`ON` enables display of the specified reference.

`OFF` disables display of the specified reference.

Examples `DISplay:GLObal:REF1:STATE 1` displays reference 1.

`DISplay:GLObal:REF1:STATE?` might return `:DISPLAY:GLOBAL:REF1:STATE 1` indicating that reference 1 is displayed.

DISplay:INTENSITy? (Query Only)

This query-only command returns the waveform saturation level and screen saver settings.

Group Display Control

Syntax `DISplay:INTENSITy?`

Related Commands

Arguments None

Examples `DISPLAY:INTENSITY?` might return `:DISPLAY:INTENSITY:BACKLIGHT 1` indicating the intensity is set to 1..

DISplay:INTENSITy:BACKLight

This command sets or queries the display backlight intensity setting.

Group Display Control

Syntax

```
DISplay:INTENSITy:BACKLight {LOW|MEDium|HIGH}
DISplay:INTENSITy:BACKLight?
```

Arguments `LOW` selects a low brightness level.

`MEDium` selects a moderate brightness level.

`HIGH` selects a full brightness level.

Examples `DISPLAY:INTENSITY:BACKLIGHT LOW` sets the display backlight to low brightness level.

`DISPLAY:INTENSITY:BACKLIGHT?` might return `:DISPLAY:INTENSITY:BACKLIGHT HIGH`, indicating that the display backlight is set to full brightness level.

DISplay:INTENSITy:BACKLight:AUTODim:ENAble

Sets or queries the state of the display auto-dim feature. The default is enabled. Once the backlight has dimmed, any button push, knob turn or mouse movement returns the backlight value to the value set by :DISplay:INTENSITy:BACKLight.

Group Display Control

Syntax

```
DISplay:INTENSITy:BACKLight:AUTODim:ENAble {ON|OFF}
DISplay:INTENSITy:BACKLight:AUTODim:ENAble?
```

Related Commands DISplay:INTENSITy:BACKLight

Arguments `ON` enables the display auto-dim feature.

`OFF` disables the display auto-dim feature.

Examples `DISPLAY:INTENSITY:BACKLIGHT:AUTODIM:ENABLE` ON enables auto-dimming of the backlight.

`DISPLAY:INTENSITY:BACKLIGHT:AUTODIM:ENABLE`? might return `:DISPLAY:INTENSITY:BACKLIGHT:AUTODIM:ENABLE ON` indicating that auto-dimming of the backlight is enabled.

DISplay:INTENSITy:BACKLight:AUTODim:TIMe

Sets or queries the amount of time, in minutes, to wait for no user interface activity before automatically dimming the display. The time can range from a minimum of 10 minutes to a maximum of 1440 minutes (24 hours). The default is 10 minutes.

Group Display Control

Syntax

```
DISplay:INTENSITy:BACKLight:AUTODim:TIMe <NR1>
DISplay:INTENSITy:BACKLight:AUTODim:TIMe?
```

Arguments `<NR1>` is the amount of time, in minutes, to wait for no user interface activity before automatically dimming the display.

Examples `DISPLAY:INTENSITY:BACKLIGHT:AUTODIM:TIME 30` sets the backlight to autodim in 30 minutes.

`DISPLAY:INTENSITY:BACKLIGHT:AUTODIM:TIME?` might return `:DISPLAY:INTENSITY:BACKLIGHT:AUTODIM:TIME 60` indicating the backlight will auto-dim in 60 minutes.

DISplay:MATHFFTView<x>:AUTOScale

This command sets or returns the enabled state of autoscale for plots.

Group Display Control

Syntax

```
DISplay:MATHFFTView<x>:AUTOScale {OFF|ON|<NR1>
DISplay:MATHFFTView<x>:AUTOScale?
```

Arguments `OFF` disables the autoscale feature.

`ON` enables the autoscale feature.

`<NR1>` = 0 disables the autoscale feature; any other value enables the autoscale feature.

Examples `DISplay:MATHFFTView1:AUTOScale OFF` disables the autoscale feature.

`DISplay:MATHFFTView1:AUTOScale?` might return `:DISPLAY:MATHFFTVIEW1:AUTOSCALE 1` indicating autoscale is on.

DISplay:MATHFFTView<x>:CURSor:ASOUrce? (Query Only)

This command queries the cursor source for plot cursor A.

Group Cursor

Syntax

```
DISplay:MATHFFTView<x>:CURSor:ASOUrce?
```

Examples `DISplay:MATHFFTView1:CURSor:ASOUrce?` might return `:DISPLAY:MATHFFTVIEW1:CURSOR:ASOURCE MATH1` indicating the source is MATH 1.

DISplay:MATHFFTView<x>:CURSor:BSOUrce? (Query Only)

This command queries the cursor source for plot cursor B.

Group Cursor

Syntax

```
DISplay:MATHFFTView<x>:CURSor:BSOUrce?
```

Examples `DISplay:MATHFFTView1:CURSor:BSOUrce?` might return `:DISPLAY:MATHFFTVIEW1:CURSOR:BSOURCE MATH1` indicating the source is MATH 1.

DISplay:MATHFFTView<x>:CURSor:DDT? (Query Only)

This command queries the delta Y over delta X cursor readout value of the specified cursor in the specified view.

Group Cursor

Syntax

```
DISplay:MATHFFTView<x>:CURSor:DDT?
```

Examples `DISplay:MATHFFTView<x>:CURSor:DDT?` might return `:DISPLAY:MATHFFTVIEW1:CURSOR:DDT 9.91E+37` indicating the delta Y over delta X cursor readout value is 9.91E+37.

DISplay:MATHFFTView<x>:CURSor:FUNCtion

This command sets or queries the cursor type of the specified cursor in the specified view.

Group Cursor

Syntax

```
DISplay:MATHFFTView<x>:CURSor:FUNCtion
{WAVEform|VBArs|HBArs|SCREEN}
DISplay:MATHFFTView<x>:CURSor:FUNCtion?
```

Arguments `WAVEFORM` specifies to display the paired cursors in YT display format for measuring waveform amplitude and time. Waveform cursors are attached to the waveform.

`VBArs` specifies vertical bar cursors, which measure in horizontal units.

`HBArs` specifies horizontal bar cursors, which measure in vertical units.

`SCREEN` specifies to display both horizontal and vertical bar cursors, which measure the selected waveform in horizontal and vertical units. Use these cursors to measure anywhere in the waveform display area.

Examples

`DISplay:MATHFFTView1:CURSor:FUNCtion HBARS` specifies horizontal bar cursors, which measure in vertical units.

`DISplay:MATHFFTView1:CURSor:FUNCtion?` might return specifies horizontal bar cursors, which measure in vertical units. indicating the display the paired cursors in YT display format for measuring waveform amplitude and time.

DISplay:MATHFFTView<x>:CURSor:HBArs:APOSition

This command sets or returns the vertical cursor A position of the specified cursor in the specified view.

Group

Cursor

Syntax

```
DISplay:MATHFFTView<x>:CURSor:HBArs:APOSition <NR3>
DISplay:MATHFFTView<x>:CURSor:HBArs:APOSition?
```

Arguments

`<NR3>` is the cursor position of the specified cursor in the specified view.

Examples

`DISplay:MATHFFTView1:CURSor:HBArs:APOSition 50.0e-3` sets the position to 50 mV.

`DISplay:MATHFFTView1:CURSor:HBArs:APOSition?` might return `:DISPLAY:MATHFFTVIEW1:CURSOR:HBARS:APOSITION 9.91E+37` indicating the position is 9.91E+37.

DISplay:MATHFFTView<x>:CURSor:HBArs:AUNIts? (Query Only)

This command queries cursor A vertical units of the specified cursor in the specified view.

Group

Cursor

Syntax

```
DISplay:MATHFFTView<x>:CURSor:HBArs:AUNIts?
```

Examples `DISplay:MATHFFTView1:CURSor:HBArs:AUNIts?` might return `:DISPLAY:MATHFFTVIEW1:CURSOR:HBARS:AUNITS "dBm"` indicating the units are dBm.

DISplay:MATHFFTView<x>:CURSor:HBArs:BPOSition

This command sets or returns the vertical cursor B position of the specified cursor in the specified view.

Group Cursor

Syntax

```
DISplay:MATHFFTView<x>:CURSor:HBArs:BPOSition <NR3>
DISplay:MATHFFTView<x>:CURSor:HBArs:BPOSition?
```

Arguments `<NR3>` is the vertical cursor B position of the specified cursor in the specified view.

Examples `DISplay:MATHFFTView1:CURSor:HBArs:BPOSition 50.e-3` sets the position to 50.0 mV.

`DISplay:MATHFFTView1:CURSor:HBArs:BPOSition?` might return `:DISPLAY:MATHFFTVIEW1:CURSOR:HBARS:BPOSITION 9.91E+37` indicating the position is 9.91E+37.

DISplay:MATHFFTView<x>:CURSor:HBArs:BUNIts? (Query Only)

This command queries the cursor B vertical units of the specified cursor in the specified view.

Group Cursor

Syntax

```
DISplay:MATHFFTView<x>:CURSor:HBArs:BUNIts?
```

Examples `DISplay:MATHFFTView1:CURSor:HBArs:BUNIts?` might return `:DISPLAY:MATHFFTVIEW1:CURSOR:HBARS:BUNITS "dBm"` indicating the cursor units are dBm.

DISplay:MATHFFTView<x>:CURSor:HBArs:DELTa? (Query Only)

This command queries the delta cursor readout value of the specified cursor in the specified view.

Group

Cursor

Syntax

`DISplay:MATHFFTView<x>:CURSor:HBArs:DELTa?`

Examples

`DISplay:MATHFFTView1:CURSor:HBArs:DELTa?` might return `:DISPLAY:MATHFFTVIEW1:CURSOR:HBARS:DELTA 9.91E+37` indicating the cursor readout is 9.91E+37.

DISplay:MATHFFTView<x>:CURSor:MODe

This command sets or queries the cursor tracking mode of the specified cursor in the specified view.

Group

Cursor

Syntax

`DISplay:MATHFFTView<x>:CURSor:MODe {INDEPENDENT|TRACK}`

Arguments

`INDEPENDENT` allows independent adjustment of the two cursors.

`TRACK` ties the navigational functionality of the two cursors together. For cursor 1 adjustments, this ties the movement of the two cursors together; however, cursor 2 continues to move independently of cursor 1.

Examples

`DISplay:MATHFFTView1:CURSor:MODe INDEPENDENT` allows independent adjustment of the two cursors.

`DISplay:MATHFFTView1:CURSor:MODe?` might return `:DISPLAY:MATHFFTVIEW1:CURSOR:MODE INDEPENDENT` indicating the mode is set to independent.

DISplay:MATHFFTView<x>:CURSor:ONEOVERDELTATVALUE? (Query Only)

This command queries the one over delta f cursor readout value of the specified cursor in the specified view.

Group

Cursor

Syntax

`DISplay:MATHFFTView<x>:CURSor:ONEOVERDELTATVALUE?`

Examples `DISplay:MATHFFTView1:CURSor:ONEOVERDELTATVALUE?` might return `:DISPLAY:MATHFFTVIEW1:CURSOR:ONEOVERDELTATVALUE 533.3333333333334E-12` indicating the one over delta time value is 533.3333333333334E-12.

DISplay:MATHFFTView<x>:CURSor:SCREEN:AXPOSition

This command sets or returns the horizontal cursor A position of the specified cursor in the specified view.

Group Cursor

Syntax

```
DISplay:MATHFFTView<x>:CURSor:SCREEN:AXPOSition <NR3>
DISplay:MATHFFTView<x>:CURSor:SCREEN:AXPOSition?
```

Arguments `<NR3>` is the cursor position in MHz.

Examples `:DISPLAY:MATHFFTVIEW1:CURSOR:SCREEN:AXPOSITION 700.000E+6` sets the cursor position to 700 MHz.

`:DISPLAY:MATHFFTVIEW1:CURSOR:SCREEN:AXPOSITION 625.000E+6` might return `:DISPLAY:MATHFFTVIEW1:CURSOR:SCREEN:AXPOSITION 625.000E+6` indicating the cursor position is 625 MHz.

DISplay:MATHFFTView<x>:CURSor:SCREEN:AYPOSition

This command sets or returns the vertical cursor A position of the specified cursor in the specified view.

Group Cursor

Syntax

```
DISplay:MATHFFTView<x>:CURSor:SCREEN:AYPOSition <NR3>
DISplay:MATHFFTView<x>:CURSor:SCREEN:AYPOSition?
```

Arguments `<NR3>` is the cursor A position of the specified cursor in the specified view.

Examples `DISplay:MATHFFTView1:CURSor:SCREEN:AYPOSition 1.0e0` sets the cursor position to 1.0 dBm.

`DISplay:MATHFFTView1:CURSor:SCREEN:AYPOSition?` might return `:DISPLAY:MATHFFTVIEW1:CURSOR:SCREEN:AYPOSITION 1.1741714106633` indicating the cursor position is 1.174 dBm.

DISplay:MATHFFTView<x>:CURSor:SCREEN:BXPOSition

This command sets or returns the horizontal cursor B position of the specified cursor in the specified view.

Group

Cursor

Syntax

```
DISplay:MATHFFTView<x>:CURSor:SCREEN:BXPOSition <NR3>
DISplay:MATHFFTView<x>:CURSor:SCREEN:BXPOSition?
```

Arguments

`<NR3>` is the horizontal cursor B position of the specified cursor in the specified view.

Examples

`DISplay:MATHFFTView1:CURSor:SCREEN:BXPOSition 3.5e9` sets the cursor position to 3.5 GHz.

`DISplay:MATHFFTView1:CURSor:SCREEN:BXPOSition?` might return `:DISPLAY:MATHFFTVIEW1:CURSOR:SCREEN:BXPOSITION 2.50E+9` indicating the cursor position is 2.5 GHz.

DISplay:MATHFFTView<x>:CURSor:SCREEN:BYPOSition

This command sets or returns the vertical cursor B position of the specified cursor in the specified view.

Group

Cursor

Syntax

```
DISplay:MATHFFTView<x>:CURSor:SCREEN:BYPOSition <NR3>
DISplay:MATHFFTView<x>:CURSor:SCREEN:BYPOSition?
```

Arguments

`<NR3>` is the vertical cursor B position of the specified cursor in the specified view.

Examples

`DISplay:MATHFFTView1:CURSor:SCREEN:BYPOSition -50.0e0` sets the cursor position to -50.0.

`DISplay:MATHFFTView1:CURSor:SCREEN:BYPOSition?` might return `:DISPLAY:MATHFFTVIEW1:CURSOR:SCREEN:BYPOSITION -59.0460929065173` indicating the cursor position is at -59.0 dBm.

DISplay:MATHFFTView<x>:CURSor:STATE

This command sets or queries the visible state of the specified cursor in the specified view.

Group Cursor

Syntax

```
DISplay:MATHFFTView<x>:CURSor:STATE
DISplay:MATHFFTView<x>:CURSor:STATE?
```

Arguments `OFF` turns off the cursor.

`ON` displays the cursor.

`<NR1>` = 0 turns off the cursor; any other value displalys the cursor.

Examples `DISplay:MATHFFTView1:CURSor:STATE OFF` turns off the cursor.

`DISplay:MATHFFTView1:CURSor:STATE?` might return `:DISPLAY:MATHFFTVIEW1:CURSOR:STATE 1` indicating the cursor is displayed.

DISplay:MATHFFTView<x>:CURSor:VBArs:APOSition

This command sets or queries the horizontal cursor A position of the specified cursor in the specified view.

Group Cursor

Syntax

```
DISplay:MATHFFTView<x>:CURSor:VBArs:APOSition <NR3>
DISplay:MATHFFTView<x>:CURSor:VBArs:APOSition?
```

Arguments <NR3> is the horizontal cursor A position of the specified cursor in the specified view.

Examples `DISplay:MATHFFTView1:CURSor:VBArs:APOSition 500.0e6` sets the cursor position to 500 MHz.

`DISplay:MATHFFTView1:CURSor:VBArs:APOSition?` might return `:DISPLAY:MATHFFTVIEW1:CURSOR:VBARS:APOSITION 585.533869115958E+6` indicating cursor position is 585.5 MHz.

DISplay:MATHFFTView<x>:CURSor:VBArs:BPOSition

This command sets or queries the horizontal cursor B position of the specified cursor in the specified view.

Group Cursor

Syntax

```
DISplay:MATHFFTView<x>:CURSor:VBArs:BPOSition <NR3>
DISplay:MATHFFTView<x>:CURSor:VBArs:BPOSition?
```

Arguments `<NR3>` is the horizontal cursor B position of the specified cursor in the specified view.

Examples `DISplay:MATHFFTView1:CURSor:VBArs:BPOSition 2.0e9` sets the cursor position to 2.0 GHz.

`DISplay:MATHFFTView1:CURSor:VBArs:BPOSition?` might return `:DISPLAY:MATHFFTVIEW1:CURSOR:VBARS:BPOSITION 2.50E+9` indicating the cursor position is at 2.5 GHz.

DISplay:MATHFFTView<x>:CURSor:VBArs:DELTa? (Query Only)

This command queries the delta T cursor readout value of the specified cursor in the specified view.

Group Cursor

Syntax

```
DISplay:MATHFFTView<x>:CURSor:VBArs:DELTa?
```

Examples `DISplay:MATHFFTView1:CURSor:VBArs:DELTa?` might return `:DISPLAY:MATHFFTVIEW1:CURSOR:VBARS:DELTA 1.9144661308840E+9` indicating the delta T cursor value is 1.9 GHz.

DISplay:MATHFFTView<x>:CURSor:VBArs:UNIts? (Query Only)

This command queries the cursor A vertical units of the specified cursor in the specified view.

Group

Cursor

Syntax

```
DISplay:MATHFFTView<x>:CURSor:VBArs:UNIts?
```

Examples

`DISplay:MATHFFTView1:CURSor:VBArs:UNIts?` might return `:DISPLAY:MATHFFTVIEW1:CURSOR:VBARS:UNITS "Hz"` indicating the cursor units are Hz.

DISplay:MATHFFTView<x>:CURSor:WAVEform:APOSition

This command sets or queries the waveform cursor A position in the specified plot view.

NOTE. *In the case of an XY plot, this command has no effect when used to set the value. In the case of a bathtub plot, this command sets or returns the cursor A vertical position. For all other plots, this command sets or returns the cursor A horizontal position.*

Group

Cursor

Syntax

```
DISplay:MATHFFTView<x>:CURSor:WAVEform:APOSition <NR3>
DISplay:MATHFFTView<x>:CURSor:WAVEform:APOSition?
```

Arguments

`<NR3>` is the waveform cursor A position in the specified plot view.

Examples

`DISplay:MATHFFTView1:CURSor:WAVEform:APOSition 600.0e6` sets the position to 600 MHz.

`DISplay:MATHFFTView1:CURSor:WAVEform:APOSition?` might return `:DISPLAY:MATHFFTVIEW1:CURSOR:WAVEFORM:APOSITION 625.000E+6` indicating the cursor position is 625 MHz.

DISplay:MATHFFTView<x>:CURSor:WAVEform:BPOSition

This command sets or queries the waveform cursor B position in the specified plot view.

NOTE. *In the case of an XY plot, this command has no effect when used to set the value. In the case of a bathtub plot, this command has no effect, and the query return invalid values. For all other plots, this command sets or returns the cursor B horizontal position.*

Group

Cursor

Syntax

```
DISplay:MATHFFTView<x>:CURSor:WAVEform:BPOSition <NR3>
DISplay:MATHFFTView<x>:CURSor:WAVEform:BPOSition?
```

Arguments

`<NR3>` is the waveform cursor B position in the specified plot view.

Examples

`DISplay:MATHFFTView1:CURSor:WAVEform:BPOSition 2.0e9` sets the cursor position to 2.0 GHz.

`DISplay:MATHFFTView1:CURSor:WAVEform:BPOSition?` might return `:DISPLAY:MATHFFTVIEW1:CURSOR:WAVEFORM:BPOSITION 2.50E+9` indicating the cursor position is 2.5 GHz.

DISplay:MATHFFTView<x>:GRIDlines

This command sets or queries the grid lines setting of the plot.

Group

Display Control

Syntax

```
DISplay:MATHFFTView<x>:GRIDlines {HORizontal|VERTical|BOTH}
DISplay:MATHFFTView<x>:GRIDlines?
```

Arguments

`HORizontal` specifies horizontal grid lines.

`VERTical` specifies vertical grid lines.

`BOTH` specifies both vertical and horizontal grid lines.

Examples `DISplay:MATHFFTView1:GRIDlines VERTICAL` specifies vertical grid lines.

`DISplay:MATHFFTView1:GRIDlines?` might return `:DISPLAY:MATHFFTVIEW1:GRIDLINES BOTH` indicating both horizontal and vertical grid lines are displayed.

DISplay:MATHFFTView<x>:MATH:MATH<x>:STATE

This command sets or queries the state of the specified math waveform in the specified waveview.

Group Display Control

Syntax

```
DISplay:MATHFFTView<x>:MATH:MATH<x>:STATE {OFF|ON|<NR1>}
```

Arguments `OFF` disables the specified math.

`ON` enables the specified math.

`<NR1>` = 0 disables the specified math; any other value enables the specified math.

Examples `DISplay:MATHFFTView1:MATH:MATH1:STATE ON` enables the specified math.

`DISplay:MATHFFTView1:MATH:MATH1:STATE?` might return `:DISPLAY:MATHFFTVIEW1:MATH:MATH1:STATE 1` indicating the specified math waveform in the specified waveview is displayed.

DISplay:MATHFFTView<x>:XAXIS:SCALE

This command sets or queries the x-axis scale setting for FFT Math waveforms, either Linear or Log.

Group Display Control

Syntax

```
DISplay:MATHFFTView<x>:XAXIS:SCALE {LINEAr|LOG}
DISplay:MATHFFTView<x>:XAXIS:SCALE?
```

Arguments `LINEAr` specifies a linear scale.

`LOG` specifies a logarithmic scale.

Examples `DISplay:MATHFFTView1:XAXIS:SCALE LOG` specifies a logarithmic scale.

`DISplay:MATHFFTView1:XAXIS:SCALE?` might return `:DISPLAY:MATHFFTVIEW1:XAXIS:SCALE LINEAR` indicates the scale setting is linear.

DISplay:MATHFFTView<x>:YAXIS:SCALE

This command sets or queries the vertical scale setting for FFT Maths, either Linear or dBm.

Group Display Control

Syntax
```
DISplay:MATHFFTView<x>:YAXIS:SCALE {LINEAr|DBM}
DISplay:MATHFFTView<x>:YAXIS:SCALE?
```

Arguments `LINEAr` specifies a linear scale.

`DBM` specifies a dBm scale.

Examples `DISplay:MATHFFTView1:YAXIS:SCALE LINEAR` specifies a linear scale.

`DISplay:MATHFFTView1:YAXIS:SCALE?` might return `:DISPLAY:MATHFFTVIEW1:YAXIS:SCALE DBM` incicating the scale is dBm.

DISplay:MATHFFTView<x>:ZOOM:XAXIS:FROM

This command sets or queries the value of the left edge of the specified plot view.

Group Zoom

Syntax
```
DISplay:MATHFFTView<x>:ZOOM:XAXIS:FROM <NR3>
DISplay:MATHFFTView<x>:ZOOM:XAXIS:FROM?
```

Arguments `<NR3>` is the value of the left edge of the zoom x axis in the specified plot view.

Examples `DISplay:MATHFFTView1:ZOOM:XAXIS:FROM 800.e6` sets the x axis value of the left edge of the plot view to 800 MHz.

`DISplay:MATHFFTView1:ZOOM:XAXIS:FROM?` might return `:DISPLAY:MATHFFTVIEW1:ZOOM:XAXIS:FROM 781.0E+6` indicating the x axis value of the left edge of the plot view is at 781 MHz.

DISplay:MATHFFTView<x>:ZOOM:XAXIS:TO

This command sets or queries the value of the right edge of the specified plot view.

Group

Zoom

Syntax

```
DISplay:MATHFFTView<x>:ZOOM:XAXIS:TO <NR3>
```

Arguments

`<NR3>` is the value of the right edge of the zoom x axis in the specified plot view.

Examples

`DISplay:MATHFFTView1:ZOOM:XAXIS:TO 2.3e9` sets the value of the right edge of the x axis to 2.3 GHz.

`DISplay:MATHFFTView1:ZOOM:XAXIS:TO?` might return `:DISPLAY:MATHFFTVIEW1:ZOOM:XAXIS:TO 2.343750E+9` indicating the valule of the right edge of the zoom x axis is 2.34 GHz.

DISplay:MATHFFTView<x>:ZOOM:YAXIS:FROM

This command sets or queries the bottom value of the specified plot view.

Group

Zoom

Syntax

```
DISplay:MATHFFTView<x>:ZOOM:YAXIS:FROM <NR3>
DISplay:MATHFFTView<x>:ZOOM:YAXIS:FROM?
```

Arguments

`<NR3>` is the bottom value of the zoom y axis in the specified plot view.

Examples

`DISplay:MATHFFTView1:ZOOM:YAXIS:FROM -75.0e0` sets the bottom value of the y axis to -75 dBm.

`DISplay:MATHFFTView1:ZOOM:YAXIS:FROM?` might return `:DISPLAY:MATHFFTVIEW1:ZOOM:YAXIS:FROM -78.8258285893367` indicating the bottom value of the y axis is -78.8 dBm.

DISplay:MATHFFTView<x>:ZOOM:YAXIS:TO

This command sets or queries the top value of the zoom y axis in the specified plot view.

Group

Zoom

Syntax

```
DISplay:MATHFFTView<x>:ZOOM:YAXIS:TO <NR3>
DISplay:MATHFFTView<x>:ZOOM:YAXIS:TO?
```

Arguments

`<NR3>` is the top value of the zoom y axis in the specified plot view.

Examples

`DISplay:MATHFFTView1:ZOOM:YAXIS:TO 21.0e0` sets the top value of the zoom y axis in the specified plot view to 21 dBm.

`DISplay:MATHFFTView1:ZOOM:YAXIS:TO?` might return `:DISPLAY:MATHFFTVIEW1:ZOOM:YAXIS:TO 21.1741714106633` indicating the top value of the zoom y axis in the specified plot view is 21.17 dBm.

DISplay:PERSistence

This command sets or queries the display persistence for analog waveforms. Persistence is valid for wave views only.

Group

Display Control

Syntax

```
DISplay:PERSistence
{OFF|AUTO|INFPersist|INFInite|VARpersist|CLEAR}
DISplay:PERSistence?
```

Related Commands

DISplay:VARpersist

Arguments

`OFF` disables the persistence aspect of the display.

`AUTO` automatically set the persistence.

`INFPersist` sets a display mode where any pixels, once touched by samples, remain set until cleared by a mode change.

`INFInite` sets a display mode where any pixels, once touched by samples, remain set until cleared by a mode change.

`VARPersist` sets a display mode where set pixels are gradually dimmed.

CLEAR resets the persist time count down and clears the display of acquired points.

Examples DISPLAY:PERSISTENCE VARPERSIST sets the persistence aspect of the display to fade set pixels according to the time set in the DISplay:VARpersist command.

DISPLAY:PERSISTENCE? might return :DISPLAY:PERSISTENCE OFF, indicating that the persistence aspect of the display is disabled.

DISplay:PERSistence:RESET (No Query Form)

This command controls the clearing of persistence data that has been built up over time. Persistence is valid for wave views only.

Group Display Control

Syntax

```
DISplay:PERSistence:RESET
```

Related Commands DISplay:PERSistence, DISplay:VARpersist

Examples DISPLAY:PERSISTENCE:RESET clears the display of persistence data.

DISplay:PLOTView<x>:AUTOScale

This command sets or queries the enabled state of autoscale for plots.

Group Display Control

Syntax

```
DISplay:PLOTView<x>:AUTOScale {OFF|ON|<NR1>}
DISplay:PLOTView<x>:AUTOScale?
```

Arguments OFF disables the autoscale feature.

ON enables the autoscale feature.

<NR1> = 0 disables the autoscale feature; any other value enables the autoscale feature.

Examples `DISplay:PLOTView1:AUTOScale OFF` turns off plot autoscale.

`DISplay:PLOTView1:AUTOScale?` might return `:DISPLAY:PLOTVIEW1:AUTOSCALE 0` indicating the plot autoscale is off.

DISplay:PLOTView<x>:CURSor:ASOUrce? (Query Only)

This command queries the cursor source for plot cursor A.

Group Cursor

Syntax `DISplay:PLOTView<x>:CURSor:ASOUrce?`

Examples `DISplay:PLOTView1:CURSor:ASOUrce?` might return `:DISPLAY:PLOTVIEW1:CURSOR:ASOURCE PLOT1` indicating the source of the cursor is plot 1.

DISplay:PLOTView<x>:CURSor:BSOUrce? (Query Only)

This command queries the cursor source for plot cursor B.

Group Cursor

Syntax `DISplay:PLOTView<x>:CURSor:BSOUrce?`

Examples `DISplay:PLOTView1:CURSor:BSOUrce?` might return `:DISPLAY:PLOTVIEW1:CURSOR:BSOURCE PLOT1` indicating the B cursor source is plot 1.

DISplay:PLOTView<x>:CURSor:DDT? (Query Only)

This command returns the delta V over delta T cursor readout value of the specified cursor in the specified view.

Group Cursor

Syntax `DISplay:PLOTView<x>:CURSor:DDT?`

Examples

`DISplay:PLOTView1:CURSor:DDT?` might return `:DISPLAY:PLOTVIEW1:CURSOR:DDT 131.0470E+6` indicating the cursor readout value is 131.0470E+6.

DISplay:PLOTView<x>:CURSor:FUNCtion

This command sets or queries the cursor mode of the specified cursor in the specified view.

Group

Cursor

Syntax

```
DISplay:PLOTView<x>:CURSor:FUNCtion
{WAVEFORM|VBArs|HBArs|SCREEN}
DISplay:PLOTView<x>:CURSor:FUNCtion?
```

Arguments

`WAVEFORM` specifies to display the paired cursors in YT display format for measuring waveform amplitude and time.

`VBArs` specifies vertical bar cursors, which measure in horizontal units.

`HBArs` specifies horizontal bar cursors, which measure in vertical units.

`SCREEN` specifies to display both horizontal and vertical bar cursors, which measure the selected waveform in horizontal and vertical units. Use these cursors to measure anywhere in the waveform display area.

Examples

`DISplay:PLOTView1:CURSor:FUNCtion VBARS` displays vertical bar cursors.

`DISplay:PLOTView1:CURSor:FUNCtion?` might return `:DISPLAY:PLOTVIEW1:CURSOR:FUNCTION SCREEN` indicating that both horizontal and vertical bar cursors are displayed.

DISplay:PLOTView<x>:CURSor:HBArs:APOSition

This command sets or queries the vertical cursor A position of the specified cursor in the specified view.

Group

Cursor

Syntax

```
DISplay:PLOTView<x>:CURSor:HBArs:APOSition <NR3>
DISplay:PLOTView<x>:CURSor:HBArs:APOSition?
```

Arguments `<NR3>` is the cursor position.

Examples `DISplay:PLOTView<x>:CURSor:HBArs:APOSition 2.0` sets the cursor to 2 Volts.

`DISplay:PLOTView<x>:CURSor:HBArs:APOSition?` might return `:DISPLAY:PLOTVIEW1:CURSOR:HBARS:APOSITION 2.2186` indicating the HBArs cursors are at 2.2186 Volts.

DISplay:PLOTView<x>:CURSor:HBArs:AUNIts? (Query Only)

This command queries the cursor A vertical units of the specified cursor in the specified view.

Group Cursor

Syntax
```
DISplay:PLOTView<x>:CURSor:HBArs:AUNIts?
```

Returns A `<QString>` that is the cursor horizontal units.

Examples `DISplay:PLOTView1:CURSor:HBArs:AUNIts?` might return `:DISPLAY:PLOTVIEW1:CURSOR:HBARS:AUNITS "V"` indicating the A units are Volts.

DISplay:PLOTView<x>:CURSor:HBArs:BPOSition

This command sets or queries the vertical cursor B position of the specified cursor in the specified view.

Group Cursor

Syntax
```
DISplay:PLOTView<x>:CURSor:HBArs:BPOSition <NR3>
DISplay:PLOTView<x>:CURSor:HBArs:BPOSition?
```

Arguments `<NR3>` is the HBArs vertical position.

Examples `DISplay:PLOTView<x>:CURSor:HBArs:BPOSition 2.0` sets the cursor to 2 Volts.

`DISplay:PLOTView<x>:CURSor:HBArs:BPOSition?` might return `:DISPLAY:PLOTVIEW1:CURSOR:HBARS:BPOSITION 2.2186` indicating the HBArs cursors are at 2.2186 Volts.

DISplay:PLOTView<x>:CURSor:HBArs:BUNIts? (Query Only)

This command queries the cursor B vertical units of the specified cursor in the specified view.

Group

Cursor

Syntax

```
DISplay:PLOTView<x>:CURSor:HBArs:BUNIts?  <QString>
DISplay:PLOTView<x>:CURSor:HBArs:BUNIts??
```

Arguments

`<QString>` is the cursor vertical units.

Examples

`DISplay:PLOTView1:CURSor:HBArs:BUNIts?` might return `:DISPLAY:PLOTVIEW1:CURSOR:HBARS:BUNITS "V"` indicating the units are Volts.

DISplay:PLOTView<x>:CURSor:HBArs:DELTa? (Query Only)

This command queries the delta V cursor readout value of the specified cursor in the specified view.

Group

Cursor

Syntax

```
DISplay:PLOTView<x>:CURSor:HBArs:DELTa??
```

Returns

Returns an `<NR3>` that is the delta V cursor value.

Examples

`DISplay:PLOTView1:CURSor:HBArs:DELTa?` might return `:DISPLAY:PLOTVIEW1:CURSOR:HBARS:DELTA 1.2543` indicating the delta value is 1.2543 V.

DISplay:PLOTView<x>:CURSor:MODe

This command sets or queries the cursor tracking mode of the specified cursor in the specified view.

Group

Cursor

Syntax

```
DISplay:PLOTView<x>:CURSor:MODe {INDEPENDENT|TRACK}
DISplay:PLOTView<x>:CURSor:MODe?
```

Arguments

`INDEPENDENT` allows independent adjustment of the two cursors.

`TRACK` ties the navigational functionality of the two cursors together. For cursor 1 adjustments, this ties the movement of the two cursors together; however, cursor 2 continues to move independently of cursor 1.

Examples

`DISplay:PLOTView1:CURSor:MODe TRACK` sets the cursor to track together.

`DISplay:PLOTView1:CURSor:MODe?` might return `:DISPLAY:PLOTVIEW1:CURSOR:MODE INDEPENDENT` indicating independent adjustment of the cursors is allowed.

DISplay:PLOTView<x>:CURSor:ONEOVERDELTATVALUE? (Query Only)

This command sets or queries the one over delta T cursor readout value of the specified cursor in the specified view.

Group

Cursor

Syntax

```
DISplay:PLOTView<x>:CURSor:ONEOVERDELTATVALUE?
```

Returns

Return an `<NR3>` that is the one over delta T cursor readout value (it may not be delta T, depending on the plot units).

Examples

`DISplay:PLOTView<x>:CURSor:ONEOVERDELTATVALUE?` might return `:DISPLAY:PLOTVIEW1:CURSOR:ONEOVERDELTATVALUE 88.2295E+6` indicating the 1 over delta time value is 88.2295 MHz.

DISplay:PLOTView<x>:CURSor:SCREEN:AXPOSition

This command sets or queries the horizontal cursor A position of the specified cursor in the specified view.

Group

Cursor

Syntax

```
DISplay:PLOTView<x>:CURSor:SCREEN:AXPOSition <NR3>
DISplay:PLOTView<x>:CURSor:SCREEN:AXPOSition?
```

Arguments

`<NR3>` is the horizontal cursor A position.

Examples

`DISplay:PLOTView1:CURSor:SCREEN:AXPOSition -5.0` sets the A X cursor position to —5.0 ns.

`DISplay:PLOTView1:CURSor:SCREEN:AXPOSition?` might return `:DISPLAY:PLOTVIEW1:CURSOR:SCREEN:AXPOSITION -5.5460E-9` indication the cursor A X position is -5.546 ns.

DISplay:PLOTView<x>:CURSor:SCREEN:AYPOSition

This command sets or queries the vertical cursor A position of the specified cursor in the specified view.

Group

Cursor

Syntax

```
DISplay:PLOTView<x>:CURSor:SCREEN:AYPOSition <NR3>
DISplay:PLOTView<x>:CURSor:SCREEN:AYPOSition?
```

Arguments

`<NR3>` is the vertical cursor A position.

Examples

`DISplay:PLOTView1:CURSor:SCREEN:AYPOSition 2.0` set the A cursor Y position to 2.0 Volts.

`DISplay:PLOTView1:CURSor:SCREEN:AYPOSition?` might return `:DISPLAY:PLOTVIEW1:CURSOR:SCREEN:AYPOSITION 1.9035` indicating the A cursor Y position is 1.9035 V.

DISplay:PLOTView<x>:CURSor:SCREEN:BXPOSition

This command sets or queries the horizontal cursor B position of the specified cursor in the specified view.

Group

Cursor

Syntax

```
DISplay:PLOTView<x>:CURSor:SCREEN:BXPOSition <NR3>
DISplay:PLOTView<x>:CURSor:SCREEN:BXPOSition?
```

Arguments

`<NR3>` is the horizontal cursor B position.

Examples

`DISplay:PLOTView1:CURSor:SCREEN:BXPOSition 59.0E-9` sets the B cursor X position to 59.0 ns.

`DISplay:PLOTView1:CURSor:SCREEN:BXPOSition?` might return `:DISPLAY:PLOTVIEW1:CURSOR:SCREEN:BXPOSITION 59.6802E-9` indicating the B cursor X position is 59.6802 ns.

DISplay:PLOTView<x>:CURSor:SCREEN:BYPOSition

This command sets or queries the vertical cursor B position of the specified cursor in the specified view.

Group

Cursor

Syntax

```
DISplay:PLOTView<x>:CURSor:SCREEN:BYPOSition <NR3>
DISplay:PLOTView<x>:CURSor:SCREEN:BYPOSition?
```

Arguments

`<NR3>` is the vertical cursor B position.

Examples

`DISplay:PLOTView1:CURSor:SCREEN:BYPOSition 0.589` sets the B cursor Y position to 589 mV.

`DISplay:PLOTView1:CURSor:SCREEN:BYPOSition?` might return `:DISPLAY:PLOTVIEW1:CURSOR:SCREEN:BYPOSITION 589.0696E-3` indicating the B cursor Y position is 589.0696 mV.

DISplay:PLOTView<x>:CURSor:SPLITMODE

This command sets or queries the cursor source mode in the specified view.

Group Cursor

Syntax
```
DISplay:PLOTView<x>:CURSor:SPLITMODE {SAME SPLIT}
DISplay:PLOTView<x>:CURSor:SPLITMODE?
```

Arguments `SAME` specifies that both cursors are on the same waveform.

`SPLIT` specifies that the cursors can be on different waveforms.

Examples `DISplay:PLOTView1:CURSor:SPLITMODE SAME` sets the cursors to be on the same waveform.

`DISplay:PLOTView1:CURSor:SPLITMODE?` might return `:DISPLAY:PLOTVIEW1:CURSOR:SPLITMODE SAME` indicating both cursors are on the same waveform.

DISplay:PLOTView<x>:CURSor:STATE

This command sets or queries the visible state of the cursor of the specified cursor in the specified view.

Group Cursor

Syntax
```
DISplay:PLOTView<x>:CURSor:STATE {OFF|ON|<NR1>}
DISplay:PLOTView<x>:CURSor:STATE?
```

Arguments `OFF` disables the specified cursor.

`ON` enables the specified cursor.

`<NR1>` = 0 disables the specified cursor; any other value enables the specified cursor.

Examples `DISplay:PLOTView1:CURSor:STATE OFF` disables the specified cursor.

`DISplay:PLOTView5:CURSor:STATE?` might return `:DISPLAY:PLOTVIEW5:CURSOR:STATE 1` indicating cursors are on.

DISplay:PLOTView<x>:CURSor:VBArs:APOSition

This command sets or queries the vertical cursor A position of the specified cursor in the specified view.

Group Cursor

Syntax
```
DISplay:PLOTView<x>:CURSor:VBArs:APOSition <NR3>
DISplay:PLOTView<x>:CURSor:VBArs:APOSition?
```

Arguments `<NR3>` is the vertical cursor A position.

Examples `DISplay:PLOTView1:CURSor:VBArs:APOSition 50.0E-9` sets the `VBARS APOSITION` to 50 ns.

`DISplay:PLOTView1:CURSor:VBArs:APOSition?` might return `:DISPLAY:PLOTVIEW1:CURSOR:VBARS:APOSITION -60.0796E-9` indicating the `VBARS APOSITION` is set to -60.08 ns.

DISplay:PLOTView<x>:CURSor:VBArs:BPOSition

This command sets or queries the vertical cursor B position of the specified cursor in the specified view.

Group Cursor

Syntax
```
DISplay:PLOTView<x>:CURSor:VBArs:BPOSition <NR3>
DISplay:PLOTView<x>:CURSor:VBArs:BPOSition?
```

Arguments `<NR3>` is the vertical cursor B position.

Examples `:DISPLAY:PLOTVIEW1:CURSOR:VBARS:BPOSITION 50.0E-9` sets the `VBARS BPOSITION` to 50 ns.

`:DISPLAY:PLOTVIEW1:CURSOR:VBARS:BPOSITION?` might return `:DISPLAY:PLOTVIEW1:CURSOR:VBARS:BPOSITION -60.0796E-9` indicating the `VBARS BPOSITION` is set to 60.08 ns.

DISplay:PLOTView<x>:CURSor:VBArs:DELTa? (Query Only)

This command queries the delta T cursor readout value of the specified cursor in the specified view.

Group Cursor

Syntax
```
DISplay:PLOTView<x>:CURSor:VBArs:DELTa?
```

Returns The delta T cursor readout value is returned.

Examples `DISplay:PLOTView1:CURSor:VBArs:DELTa?` might return `:DISPLAY:PLOTVIEW1:CURSOR:VBARS:DELTA 119.7593E-9` indicating the `VBARS DELTA` is set to 119.76 ns.

DISplay:PLOTView<x>:CURSor:VBArs:UNIts? (Query Only)

This command queries the VBArs cursor readout units of the specified cursor in the specified view.

Group Cursor

Syntax
```
DISplay:PLOTView<x>:CURSor:VBArs:UNIts?
```

Returns The VBArs cursor readout units are returned.

Examples `DISplay:PLOTView<x>:CURSor:VBArs:UNIts?` might return `:DISPLAY:PLOTVIEW5:CURSOR:VBARS:UNITS "V"` indicating the units are Volts.

DISplay:PLOTView<x>:CURSor:WAVEform:APOSition

This command sets or queries the waveform cursor A horizontal position of the specified cursor in the specified view.

NOTE. *In case of XY plot, this command has no effect when used to set the value. In case of bathtub plot, this command sets or returns the cursor A vertical position. For all other plots, this command sets or returns the cursor A horizontal position.*

Group Cursor

Syntax
```
DISplay:PLOTView<x>:CURSor:WAVEform:APOSition <NR3>
DISplay:PLOTView<x>:CURSor:WAVEform:APOSition?
```

Arguments `<NR3>` is the horizontal cursor A position.

Examples `DISplay:PLOTView1:CURSor:WAVEform:APOSition -50.0E-9` sets the waveform `APOSITION` to -50.0 ns.

`DISplay:PLOTView1:CURSor:WAVEform:APOSition?` might return `:DISPLAY:PLOTVIEW1:CURSOR:WAVEFORM:APOSITION -60.0796E-9` indicating the waveform `APOSITION` is set to -60.08 ns.

DISplay:PLOTView<x>:CURSor:WAVEform:BPOSition

This command sets or queries the waveform cursor B horizontal position of the specified cursor in the specified view.

NOTE. *In case of XY plot, this command has no effect when used to set the value. In case of bathtub plot, this command has no effect. Query returns invalid values. For all other plots, this command sets or returns the cursor B horizontal position.*

Group Cursor

Syntax

```
DISplay:PLOTView<x>:CURSor:WAVEform:BPOSition <NR3>
DISplay:PLOTView<x>:CURSor:WAVEform:BPOSition?
```

Arguments `<NR3>` is the horizontal cursor B position.

Examples `DISplay:PLOTView1:CURSor:WAVEform:BPOSition 3.0` sets the position to 3.0 V.

`DISplay:PLOTView5:CURSor:WAVEform:BPOSition?` might return `:DISPLAY:PLOTVIEW5:CURSOR:WAVEFORM:BPOSITION 2.600517840` indicating the position is 2.5 V.

DISplay:PLOTView<x>:GRIDlines

This command sets or queries the Grid lines setting of the specified plot.

Group Display Control

Syntax

```
DISplay:PLOTView<x>:GRIDlines {HORizontal|VERTical|BOTH}
DISplay:PLOTView<x>:GRIDlines?
```

Arguments

`HORizontal` specifies horizontal grid lines.

`VERTical` specifies vertical grid lines.

`BOTH` specifies both vertical and horizontal grid lines.

Examples

`DISplay:PLOTView1:GRIDlines Vertical` sets the vertical grid lines to display.

`DISplay:PLOTView1:GRIDlines?` might return `:DISPLAY:PLOTVIEW1:GRIDLINES BOTH` indicating that both vertical and horizontal grid lines are displayed.

DISPLAY:PLOTVIEW<x>:XAXIS:SCALE

This command sets or queries the horizontal scale setting for applicable plots, either Linear or Log.

Group

Display

Syntax

```
DISPLAY:PLOTVIEW<x>:XAXIS:SCALE {LINEAR|LOG}
```

Arguments

`LINEAR` creates a plot with linear scales.

`LOG` creates a plot with logarithmic scales.

Examples

`DISPLAY:PLOTVIEW1:XAXIS:SCALE LOG` creates a plot with a logarithmic horizontal scale.

`DISPLAY:PLOTVIEW1:XAXIS:SCALE?` might return `:DISPLAY:PLOTVIEW1:XAXIS:SCALE LINEAR` indicating plots will have linear scales.

DISPLAY:PLOTVIEW<x>:YAXIS:SCALE

This command sets or queries the vertical scale setting for applicable plots, either Linear or Log.

Group

Display

Syntax

```
DISPLAY:PLOTVIEW<x>:YAXIS:SCALE {LINEAR|LOG}
```

Arguments

LINEAR specifies a linear vertical scale.

LOG specifies a logarithmic vertical scale.

Examples

DISPLAY:PLOTVIEW1:YAXIS:SCALE LINEAR sets the plot to use a linear vertical scale.

DISPLAY:PLOTVIEW1:YAXIS:SCALE? might return :DISPLAY:PLOTVIEW1:YAXIS:SCALE LOG indicating a logarithmic vertical scale is used.

DISplay:PLOTView<x>:ZOOM:XAXIS:FROM

This command sets or queries the value of the left edge of the specified plot.

Group

Zoom

Syntax

```
DISplay:PLOTView<x>:ZOOM:XAXIS:FROM <NR3>
DISplay:PLOTView<x>:ZOOM:XAXIS:FROM?
```

Arguments

<NR3> is start of the zoom x-axis.

Examples

DISplay:PLOTView1:ZOOM:XAXIS:FROM 2.0 sets the start of the zoom x-axis to 2.0 V.

DISplay:PLOTView3:ZOOM:XAXIS:FROM? might return :DISPLAY:PLOTVIEW3:ZOOM:XAXIS:FROM 1.9844803459459 indicating the start of the zoom x-axis is 1.9845 V.

DISplay:PLOTView<x>:ZOOM:XAXIS:TO

This command sets or queries the value of the right edge of the specified plot.

Group

Zoom

Syntax

```
DISplay:PLOTView<x>:ZOOM:XAXIS:TO <NR3>
DISplay:PLOTView<x>:ZOOM:XAXIS:TO?
```

Arguments

<NR3> is the end of the zoom x-axis.

Examples

`DISplay:PLOTView1:ZOOM:XAXIS:TO 2.5` sets the end of the zoom x-axis to 2.5 V.

`DISplay:PLOTView3:ZOOM:XAXIS:TO?` might return `:DISPLAY:PLOTVIEW3:ZOOM:XAXIS:TO 2.2144883507508` indicating the end of the zoom x-axis is 2.21 V.

DISplay:PLOTView<x>:ZOOM:YAXIS:FROM

This command sets or queries the bottom value of the zoom y-axis in the specified plot view.

Group

Zoom

Syntax

```
DISplay:PLOTView<x>:ZOOM:YAXIS:FROM <NR3>
DISplay:PLOTView<x>:ZOOM:YAXIS:FROM?
```

Arguments

`<NR3>` is the bottom value of the zoom y-axis.

Examples

`DISplay:PLOTView1:ZOOM:YAXIS:FROM -1.0E+20` sets the bottom value of the zoom y-axis to -1E+20.

`DISplay:PLOTView1:ZOOM:YAXIS:FROM?` might return `:DISPLAY:PLOTVIEW1:ZOOM:YAXIS:FROM -1.0E+21` indicating the bottom value of the zoom y-axis is -1E+21.

DISplay:PLOTView<x>:ZOOM:YAXIS:TO

This command sets or queries the top value of the zoom y-axis in the specified plot view.

Group

Zoom

Syntax

```
DISplay:PLOTView<x>:ZOOM:YAXIS:TO <NR3>
DISplay:PLOTView<x>:ZOOM:YAXIS:TO?
```

Arguments

`<NR3>` is the top value of the zoom y-axis.

Examples

`DISplay:PLOTView1:ZOOM:YAXIS:TO 100` sets the top value of the zoom y-axis to 100.

`DISplay:PLOTView1:ZOOM:YAXIS:TO?` might return `:DISPLAY:PLOTVIEW3:ZOOM:YAXIS:FROM 0.0E+0` indicating the top value of the zoom y-axis is 0.0 hits (for a histogram plot, or it could be Volts for an XY plot).

DISplay:REFFFTView<x>:AUTOScale

This command sets or queries the enabled state of auto-scale for plots.

Group

Display Control

Syntax

```
DISplay:REFFFTView<x>:AUTOScale {OFF|ON|0|1}
DISplay:REFFFTView<x>:AUTOScale?
```

Arguments

`<NR1>` = 0 disables auto-scale on the specified reffftview; any other value turns this feature on.

`OFF` disables auto-scale on the specified reffftview.

`ON` enables the specified channel on the specified waveview.

Examples

`DISplay:REFFFTView1:AUTOScale 1` enables auto-scale on the specified view.

`DISplay:REFFFTView5:AUTOScale?` might return `:DISPLAY:REFFFTVIEW5:AUTOSCALE 1` indicating auto-scale is on.

DISplay:REFFFTView<x>:CURSor:ASOUrce? (Query Only)

This command returns the cursor source for plot cursor A

Group

Cursor

Syntax

```
DISplay:REFFFTView<x>:CURSor:ASOUrce?
```

Returns

Returns the cursor source for plot cursor A.

Examples

`DISplay:REFFFTView5:CURSor:ASOUrce?` might return `:DISPLAY:REFFFTVIEW5:CURSOR:ASOURCE REF5` indicating the A cursor source is reference 5.

DISplay:REFFFTView<x>:CURSor:BSOUrce? (Query Only)

This command returns the cursor source for plot cursor B.

Group Cursor

Syntax `DISplay:REFFFTView<x>:CURSor:BSOUrce?`

Returns Returns the cursor source for plot cursor B.

Examples `DISplay:REFFFTView5:CURSor:BSOUrce?` might return `:DISPLAY:REFFFTVIEW5:CURSOR:BSOURCE REF5` indicating the source of the B cursor is reference 5.

DISplay:REFFFTView<x>:CURSor:DDT? (Query Only)

This command returns the delta V over delta T cursor readout value of the specified cursor in the specified view.

Group Cursor

Syntax `DISplay:REFFFTView<x>:CURSor:DDT?`

Returns Returns the delta V over delta T cursor readout value

Examples `DISplay:REFFFTView5:CURSor:DDT?` might return `:DISPLAY:REFFFTVIEW5:CURSOR:DDT 9.91E+37` indicating the delta V over delta T cursor readout value is 9.91E+37.

DISplay:REFFFTView<x>:CURSor:FUNCtion

This command sets or queries the cursor type of the specified cursor in the specified view.

Group Cursor

Syntax
```
DISplay:REFFFTView<x>:CURSor:FUNCtion
{WAVEform|VBArs|HBArs|SCREEN}
```

```
DISplay:REFFFTView<x>:CURSor:FUNCtion?
```

Arguments

`HBArs` specifies horizontal bar cursors, which measure in vertical units.

`VBArs` specifies vertical bar cursors, which measure in horizontal units.

`SCREEN` specifies both horizontal and vertical bar cursors, which measure in horizontal and vertical units specified by the cursor sources. Use these cursors to measure anywhere in the waveform display area.

`WAVEform` specifies paired or split cursors in YT display format for measuring waveform amplitude and time. In XY and XYZ format, these cursors indicate the amplitude positions of an XY pair (Ch1 vs Ch2 voltage, where Ch1 is the X axis and Ch2 is the Y axis) relative to the trigger.

Examples

`DISplay:REFFFTView5:CURSor:FUNCtion screen` sets the cursor function to screen.

`DISplay:REFFFTView5:CURSor:FUNCtion?` might return `:DISPLAY:REFFFTVIEW5:CURSOR:FUNCTION WAVEFORM` indicating the cursor function is set to waveform.

DISplay:REFFFTView<x>:CURSor:HBArs:APOSition

This command sets or queries the vertical cursor A position of the specified cursor in the specified view.

Group

Cursor

Syntax

```
DISplay:REFFFTView<x>:CURSor:HBArs:APOSition <NR3>
DISplay:REFFFTView<x>:CURSor:HBArs:APOSition?
```

Arguments

`<NR3>` is the vertical cursor A position of the specified cursor in the specified view.

Examples

`DISplay:REFFFTView5:CURSor:HBArs:APOSition -20` sets the A cursor position to -20.

`DISplay:REFFFTView5:CURSor:HBArs:APOSition?` might return `:DISPLAY:REFFFTVIEW5:CURSOR:HBARS:APOSITION -14.4762489421361` indicating the A cursor position is -14.48 dBm.

DISplay:REFFFTView<x>:CURSor:HBArs:AUNIts? (Query Only)

This command returns cursor A vertical units of the specified cursor in the specified view.

Group

Cursor

Syntax

```
DISplay:REFFFTView<x>:CURSor:HBArs:AUNIts?
```

Returns

Returns the cursor A vertical units of the specified cursor in the specified view.

Examples

`DISplay:REFFFTView5:CURSor:HBArs:AUNIts?` might return `:DISPLAY:REFFFTVIEW5:CURSOR:HBARS:AUNITS "dBm"` indicating the A cursor units are dBm.

DISplay:REFFFTView<x>:CURSor:HBArs:BPOSition

This command sets or queries the vertical cursor B position of the specified cursor in the specified view.

Group

Cursor

Syntax

```
DISplay:REFFFTView<x>:CURSor:HBArs:BPOSition <NR3>
DISplay:REFFFTView<x>:CURSor:HBArs:BPOSition?
```

Arguments

`<NR3>` is the vertical cursor B position of the specified cursor in the specified view.

Examples

`DISplay:REFFFTView5:CURSor:HBArs:BPOSition -90` sets the B cursor position to -90.

`DISplay:REFFFTView5:CURSor:HBArs:BPOSition?` might return `:DISPLAY:REFFFTVIEW5:CURSOR:HBARS:BPOSITION -100.6262359333038` indicating the B cursor position is -100.6.

DISplay:REFFFTView<x>:CURSor:HBArs:BUNIts? (Query Only)

This command returns the cursor B vertical units of the specified cursor in the specified view.

Group Cursor

Syntax `DISplay:REFFFTView<x>:CURSor:HBArs:BUNIts?`

Returns Returns the cursor B vertical units of the specified cursor in the specified view.

Examples `DISplay:REFFFTView5:CURSor:HBArs:BUNIts?` might return `:DISPLAY:REFFFTVIEW5:CURSOR:HBARS:BUNITS "dBm"` indicating the units are dBm.

DISplay:REFFFTView<x>:CURSor:HBArs:DELTa? (Query Only)

This command returns the delta V cursor readout value of the specified cursor in the specified view.

Group Cursor

Syntax `DISplay:REFFFTView<x>:CURSor:HBArs:DELTa?`

Returns Returns the delta V cursor readout value of the specified cursor in the specified view.

Examples `DISplay:REFFFTView5:CURSor:HBArs:DELTa?` might return `:DISPLAY:REFFFTVIEW5:CURSOR:HBARS:DELTA 59.9867396737569` indicating the delta V cursor readout value is 59.99.

DISplay:REFFFTView<x>:CURSor:MODe

This command sets or queries the cursor tracking mode of the specified cursor in the specified view.

Group Cursor

Syntax
```
DISplay:REFFFTView<x>:CURSor:MODe {INDEPENDENT|TRACK}
DISplay:REFFFTView<x>:CURSor:MODe?
```

Arguments

TRACK ties the navigational functionality of the two cursors together. For cursor A adjustments, this ties the movement of the two cursors together; however, cursor B continues to move independently of cursor A.

INDEPENDENT allows independent adjustment of the two cursors.

Examples

DISplay:REFFFTView5:CURSor:MODe TRACK sets the cursors to track together.

DISplay:REFFFTView5:CURSor:MODe? might return :DISPLAY:REFFFTVIEW5:CURSOR:MODE INDEPENDENT indicating the cursors move independently.

DISplay:REFFFTView<x>:CURSor:ONEOVERDELTATVALUE? (Query Only)

This command returns the one over delta T cursor readout value of the specified cursor in the specified view.

Group

Cursor

Syntax

```
DISplay:REFFFTView<x>:CURSor:ONEOVERDELTATVALUE?
```

Examples

DISplay:REFFFTView5:CURSor:ONEOVERDELTATVALUE? might return :DISPLAY:REFFFTVIEW5:CURSOR:ONEOVERDELTATVALUE 2.540935140340E-9 indicating the one over delta T cursor readout value is 2.54 ns.

DISplay:REFFFTView<x>:CURSor:SCREEN:AXPOSition

This command sets or queries the horizontal cursor A position of the specified cursor in the specified view.

Group

Cursor

Syntax

```
DISplay:REFFFTView<x>:CURSor:SCREEN:AXPOSition <NR3>
DISplay:REFFFTView<x>:CURSor:SCREEN:AXPOSition?
```

Arguments

<NR3> is the horizontal cursor A position of the specified cursor in the specified view.

Examples `DISplay:REFFFTView5:CURSor:SCREEN:AXPOSition 1.0E+6` sets the cursor position to 1.0 MHz.

`DISplay:REFFFTView5:CURSor:SCREEN:AXPOSition?` might return `:DISPLAY:REFFFTVIEW5:CURSOR:SCREEN:AXPOSITION 792.4465962305570E+3` indicating the A cursor horizontal position is 792.447 kHz.

DISplay:REFFFTView<x>:CURSor:SCREEN:AYPOSition

This command sets or queries the vertical cursor A position of the specified cursor in the specified view.

Group Cursor

Syntax

```
DISplay:REFFFTView<x>:CURSor:SCREEN:AYPOSition <NR3>
DISplay:REFFFTView<x>:CURSor:SCREEN:AYPOSition?
```

Arguments `<NR3>` is the vertical cursor A position of the specified cursor in the specified view.

Examples `DISplay:REFFFTView5:CURSor:SCREEN:AYPOSition -20.9` sets the position to -20 dBm.

`DISplay:REFFFTView5:CURSor:SCREEN:AYPOSition?` might return `:DISPLAY:REFFFTVIEW5:CURSOR:SCREEN:AYPOSITION -30.0132603262431` indicating the A cursor vertical position is -30.01 dBm.

DISplay:REFFFTView<x>:CURSor:SCREEN:BXPOSition

This command sets or queries the horizontal cursor B position of the specified cursor in the specified view.

Group Cursor

Syntax

```
DISplay:REFFFTView<x>:CURSor:SCREEN:BXPOSition <NR3>
DISplay:REFFFTView<x>:CURSor:SCREEN:BXPOSition?
```

Arguments `<NR3>` is the horizontal cursor B position of the specified cursor in the specified view.

Examples

`DISplay:REFFFTView5:CURSor:SCREEN:BXPOSition 300` sets the position to 300 MHz.

`DISplay:REFFFTView5:CURSor:SCREEN:BXPOSition?` might return `:DISPLAY:REFFFTVIEW5:CURSOR:SCREEN:BXPOSITION 394.3483403001212E+6` indicating the B cursor horizontal position is 394.348 MHz.

DISplay:REFFFTView<x>:CURSor:SCREEN:BYPOSition

This command sets or queries the vertical cursor B position of the specified cursor in the specified view.

Group

Cursor

Syntax

```
DISplay:REFFFTView<x>:CURSor:SCREEN:BYPOSition <NR3>
DISplay:REFFFTView<x>:CURSor:SCREEN:BYPOSition?
```

Arguments

`<NR3>` is the vertical cursor B position of the specified cursor in the specified view.

Examples

`DISplay:REFFFTView5:CURSor:SCREEN:BYPOSition -80` sets the cursor position to -90 dBm.

`DISplay:REFFFTView5:CURSor:SCREEN:BYPOSition?` might return `:DISPLAY:REFFFTVIEW5:CURSOR:SCREEN:BYPOSITION -90.0` indicating the B cursor vertical position is -90 dBm.

DISplay:REFFFTView<x>:CURSor:SPLITMODE

This command sets or queries whether both cursors have same or different source.

Group

Cursor

Syntax

```
DISplay:REFFFTView<x>:CURSor:SPLITMODE {SAME|SPLIT}
DISplay:REFFFTView<x>:CURSor:SPLITMODE?
```

Arguments

`SAME` specifies both cursors have the same sources.

`SPLIT` specifies both cursors have different sources.

Examples

`DISplay:REFFFTView5:CURSor:SPLITMODE SPLIT` specified that the cursors have different sources.

`DISplay:REFFFTView5:CURSor:SPLITMODE?` might return `:DISPLAY:REFFFTVIEW5:CURSOR:SPLITMODE SAME` indicating both cursors have the same source.

DISplay:REFFFTView<x>:CURSor:STATE

This command sets or queries the visible state of the cursor of the specified cursor n the specified view.

Group

Cursor

Syntax

```
DISplay:REFFFTView<x>:CURSor:STATE {OFF|ON|0|1}
DISplay:REFFFTView<x>:CURSor:STATE?
```

Arguments

`<NR1>` = 0 specifies the cursor is not visible; any other value displays the cursor.

`OFF` specifies the cursor is not visible.

`ON` displays the cursor.

Examples

`DISplay:REFFFTView5:CURSor:STATE ON` specifies the cursor is visible.

`DISplay:REFFFTView5:CURSor:STATE?` might return `:DISPLAY:REFFFTVIEW5:CURSOR:STATE 1` indicating the cursor is visible.

DISplay:REFFFTView<x>:CURSor:VBArs:APOSition

This command sets or queries the horizontal cursor A position of the specified cursor in the specified view.

Group

Cursor

Syntax

```
DISplay:REFFFTView<x>:CURSor:VBArs:APOSition <NR3>
DISplay:REFFFTView<x>:CURSor:VBArs:APOSition?
```

Arguments

`<NR3>` is the horizontal cursor A position of the specified cursor in the specified view.

Examples

`DISplay:REFFFTView5:CURSor:VBArs:APOSition 1.0E+6` sets the cursor to 1 MHz.

`DISplay:REFFFTView5:CURSor:VBArs:APOSition?` might return `:DISPLAY:REFFFTVIEW5:CURSOR:VBARS:APOSITION 792.4465962305570E+3` indicating the cursor position is 792.447 kHz.

DISplay:REFFFTView<x>:CURSor:VBArs:BPOSition

This command sets or queries the horizontal cursor B position of the specified cursor in the specified view.

Group

Cursor

Syntax

```
DISplay:REFFFTView<x>:CURSor:VBArs:BPOSition <NR3>
DISplay:REFFFTView<x>:CURSor:VBArs:BPOSition?
```

Arguments

`<NR3>` is the horizontal cursor B position of the specified cursor in the specified view.

Examples

`DISplay:REFFFTView5:CURSor:VBArs:BPOSition 300.0E+6` sets the cursor position to 300 MHz.

`DISplay:REFFFTView5:CURSor:VBArs:BPOSition?` might return `:DISPLAY:REFFFTVIEW5:CURSOR:VBARS:BPOSITION 394.3483403001212E+6` indicating the B cursor horizontal position is 394.348 MHz.

DISplay:REFFFTView<x>:CURSor:VBArs:DELTa? (Query Only)

This command returns the delta T cursor readout value of the specified cursor in the specified view.

Group

Cursor

Syntax

```
DISplay:REFFFTView<x>:CURSor:VBArs:DELTa?
```

Returns

Returns the delta T cursor readout value of the specified cursor in the specified view.

Examples `DISplay:REFFFTView5:CURSor:VBArs:DELTa?` might return `:DISPLAY:REFFFTVIEW5:CURSOR:VBARS:DELTA 393.5558937038906E+6` indicating the delta T cursor readout value is 393.556 MHz.

DISplay:REFFFTView<x>:CURSor:VBArs:UNIts? (Query Only)

This command returns cursor A vertical units of the specified cursor in the specified view.

Group Cursor

Syntax `DISplay:REFFFTView<x>:CURSor:VBArs:UNIts?`

Returns Returns cursor A vertical units of the specified cursor in the specified view.

Examples `DISplay:REFFFTView5:CURSor:VBArs:UNIts?` might return `:DISPLAY:REFFFTVIEW5:CURSOR:VBARS:UNITS "Hz"` indicating the A cursor vertical units are Hz.

DISplay:REFFFTView<x>:CURSor:WAVEform:AHPOSition? (Query Only)

This query-only command returns the value of the cursor A horizontal position.

Group Cursor

Syntax `DISplay:REFFFTView<x>:CURSor:WAVEform:AHPOSition?`

Examples `DISplay:REFFFTView1:CURSor:WAVEform:AHPOSition?` might return `:DISPLAY:REFFFTVIEW1:CURSOR:WAVEFORM:AHPOSITION 9.91E+37`.

DISplay:REFFFTView<x>:CURSor:WAVEform:APOSition

Sets or returns the waveform cursor A position in the specified plot view.

NOTE. *In case of an XY plot, this command has no effect when used to set the value. In the case of a bathtub plot, this command sets or queries the cursor A vertical position. For all other plots, this command sets or queries the cursor A horizontal position.*

Group Cursor

Syntax
```
DISplay:REFFFTView<x>:CURSor:WAVEform:APOSition <NR3>
DISplay:REFFFTView<x>:CURSor:WAVEform:APOSition?
```

Arguments `<NR3>` is the waveform cursor A position in the specified plot view.

Examples `DISplay:REFFFTView5:CURSor:WAVEform:APOSition 7E+5` sets the position to 700 kHz.

`DISplay:REFFFTView5:CURSor:WAVEform:APOSition?` might return `:DISPLAY:REFFFTVIEW5:CURSOR:WAVEFORM:APOSITION 792.4465962305570E+3` indicating the A cursor waveform position is 792.4 kHz.

DISplay:REFFFTView<x>:CURSor:WAVEform:AVPOSition? (Query Only)

This query-only command returns the value of the cursor A vertical position.

Group Cursor

Syntax
```
DISplay:REFFFTView<x>:CURSor:WAVEform:AVPOSition?
```

Examples `DISplay:REFFFTView<x>:CURSor:WAVEform:AVPOSition?` might return `:DISplay:REFFFTView1:CURSor:WAVEform:AVPOSition 1.605E+0` indicating the cursor vertical position is 1.6 dBm.

DISplay:REFFFTView<x>:CURSor:WAVEform:BHPOSition? (Query Only)

This query-only command returns the value of the cursor B horizontal position.

Group Cursor

Syntax
```
DISplay:REFFFTView<x>:CURSor:WAVEform:BHPOSition?
```

Examples `DISplay:REFFFTView<x>:CURSor:WAVEform:BHPOSition?` might return `:DISPLAY:REFFFTVIEW1:CURSOR:WAVEFORM:BHPOSITION 9.91E+37`.

DISplay:REFFFTView<x>:CURSor:WAVEform:BPOSition

Sets or returns the waveform cursor B position in the specified plot view.

NOTE. *In case of an XY plot, this command has no effect when used to set the value. In the case of a bathtub plot, this command has no effect. Queries return invalid values. For all other plots, this command sets or queries the cursor B horizontal position.*

Group

Cursor

Syntax

```
DISplay:REFFFTView<x>:CURSor:WAVEform:BPOSition <NR3>
DISplay:REFFFTView<x>:CURSor:WAVEform:BPOSition?
```

Arguments

`<NR3>` is the waveform cursor B position in the specified plot view.

Examples

`DISplay:REFFFTView5:CURSor:WAVEform:BPOSition 4E+8` sets the cursor position to 400 MHz.

`DISplay:REFFFTView5:CURSor:WAVEform:BPOSition?` might return `:DISPLAY:REFFFTVIEW5:CURSOR:WAVEFORM:BPOSITION 394.3483403001212E+6` indicating the B waveform curosr position is 394.35 MHz.

DISplay:REFFFTView<x>:CURSor:WAVEform:BVPOSition? (Query Only)

This query-only command returns the value of the cursor B vertical position.

Group

Cursor

Syntax

```
DISplay:REFFFTView<x>:CURSor:WAVEform:BVPOSition?
```

Examples

`DISplay:REFFFTView1:CURSor:WAVEform:BVPOSition?` might return `:DISplay:REFFFTView<x>:CURSor:WAVEform:BVPOSition -119.866E+0` indicating the cursor vertical position is -119.9 dBm..

DISplay:REFFFTView<x>:GRIDlines

This command sets or returns the grid lines setting of the plot.

Group Display Control

Syntax

```
DISplay:REFFFTView<x>:GRIDlines {HORizontal|VERTical|BOTH}
DISplay:REFFFTView<x>:GRIDlines?
```

Arguments HORizontal specifies horizontal grid lines.

VERTical specifies vertical grid lines.

BOTH specifies both horizontal and vertical grid lines.

Examples `DISplay:REFFFTView5:GRIDlines hhorizontal` specifies horizontal gird lines.

`DISplay:REFFFTView5:GRIDlines?` might return `:DISPLAY:REFFFTVIEW5:GRIDLINES BOTH` indicating that both vertical and horizontal grid lines are diplayed

DISplay:REFFFTView<x>:REF:REF<x>:STATE

This command sets or queries the state of the specified reference waveform in the specified waveview.

Group Display Control

Syntax

```
DISplay:REFFFTView<x>:REF:REF<x>:STATE boolean
DISplay:REFFFTView<x>:REF:REF<x>:STATE?
```

Arguments `<NR1>` = 0 disables the specified reference; any other value turns this feature on.

`OFF` disables the display the specified reference.

`ON` enables the specified reference.

Examples `DISplay:REFFFTView5:REF:REF5:STATE 0` turns display of the reference off.

`DISplay:REFFFTView5:REF:REF5:STATE?` might return `:DISPLAY:REFFFTVIEW5:REF:REF5:STATE 1` indicating the reference is displayed.

DISplay:REFFFTView<x>:XAXIS:SCALE

This command sets or queries the x-axis scale setting for Ref FFT.

Group Display Control

Syntax

```
DISplay:REFFFTView<x>:XAXIS:SCALE {LINEAr|LOG}
DISplay:REFFFTView<x>:XAXIS:SCALE?
```

Arguments `LINEAr` specifies a linear scale.

`LOG` specifies a logarithmic scale.

Examples `DISplay:REFFFTView5:XAXIS:SCALE linear` sets the x-axis scale to linear.

`DISplay:REFFFTView5:XAXIS:SCALE?` might return `:DISPLAY:REFFFTVIEW5:XAXIS:SCALE LOG` indicating x-axis scale for the specified reference view is logarithmic.

DISplay:REFFFTView<x>:ZOOM:XAXIS:FROM

This command sets or returns the left edge of the zoom x-axis in the specified plot view.

Group Zoom

Syntax

```
DISplay:REFFFTView<x>:ZOOM:XAXIS:FROM <NR3>
DISplay:REFFFTView<x>:ZOOM:XAXIS:FROM?
```

Arguments `<NR3>` is the left edge of the zoom x-axis in the specified plot view.

Examples `DISplay:REFFFTView5:ZOOM:XAXIS:FROM 2.0E+6` sets the left edge of the specified view to 2.0 MHz.

`DISplay:REFFFTView5:ZOOM:XAXIS:FROM?` might return `:DISPLAY:REFFFTVIEW5:ZOOM:XAXIS:FROM 1.3295739742362E+6` indicating the left edge of the specified view is 1.33 MHz.

DISplay:REFFFTView<x>:ZOOM:XAXIS:TO

This command sets or queries the right edge of the zoom x-axis in the specified plot view.

Group Zoom

Syntax
```
DISplay:REFFFTView<x>:ZOOM:XAXIS:TO <NR3>
DISplay:REFFFTView<x>:ZOOM:XAXIS:TO?
```

Arguments `<NR3>` is the right edge of the zoom x-axis in the specified plot view.

Examples `DISplay:REFFFTView5:ZOOM:XAXIS:TO 2.0E+8` sets the right edge of the zoom x-axis to 200 MHz.

`DISplay:REFFFTView5:ZOOM:XAXIS:TO?` might return `:DISPLAY:REFFFTVIEW5:ZOOM:XAXIS:TO 235.0376933178995E+6` indicating the right edge of the zoom x-axis is 235.0 MHz.

DISplay:REFFFTView<x>:ZOOM:YAXIS:FROM

This command sets or queries the bottom value of the zoom y-axis in the specified plot view.

Group Zoom

Syntax
```
DISplay:REFFFTView<x>:ZOOM:YAXIS:FROM <NR3>
DISplay:REFFFTView<x>:ZOOM:YAXIS:FROM?
```

Arguments `<NR3>` is the bottom value of the zoom y-axis in the specified plot view.

Examples `DISplay:REFFFTView5:ZOOM:YAXIS:FROM -120.0` sets the bottom value of the zoom y-axis to -120.0 dBm.

`DISplay:REFFFTView5:ZOOM:YAXIS:FROM?` might return `:DISPLAY:REFFFTVIEW5:ZOOM:YAXIS:FROM -129.7533120632172` indicating the bottom value of the zoom y-axis is -129.8 dBm.

DISplay:REFFFTView<x>:ZOOM:YAXIS:TO

This command sets or queries the top value of the zoom y-axis in the specified plot view.

Group Zoom

Syntax
```
DISplay:REFFFTView<x>:ZOOM:YAXIS:TO <NR3>
DISplay:REFFFTView<x>:ZOOM:YAXIS:TO?
```

Arguments `<NR3>` is the top value of the zoom y-axis in the specified plot view.

Examples `DISplay:REFFFTView5:ZOOM:YAXIS:TO 0.0` sets the top value of the zoom y-axis to 0.0 dBm.

`DISplay:REFFFTView5:ZOOM:YAXIS:TO?` might return `:DISPLAY:REFFFTVIEW5:ZOOM:YAXIS:TO 15.8820685863495` indicating the top value of the zoom y-axis is 15.9 dBm.

DISplay:SELect:BUS

This command sets or queries the overall selected bus. Sets are applied to all views that contain the source and the selected view is changed. When multiple buses are open, querying the command gives the correct result, but the bus cannot set.

Group Display Control

Syntax

```
DISplay:SELect:BUS BUS<x>
DISplay:SELect:BUS?
```

Arguments `BUS<x>` is the selected bus.

Examples `DISplay:SELect:BUS Bus2` selects Bus 2 as the selected bus.

`DISplay:SELect:BUS?` might return `:DISPLAY:SELECT:BUS BUS1` indicating Bus 1 is the selected bus.

DISplay:SELect:MATH

This command sets or queries the overall selected math. Sets are applied to all views that contain the source and the selected view is changed. When multiple Math are open, querying the command gives the correct result, but the required Math cannot be set.

Group Display Control

Syntax

```
DISplay:SELect:MATH MATH<x>
DISplay:SELect:MATH?
```

Arguments `MATH<x>` is the selected math.

Examples

`DISplay:SELect:MATH MATH1` selects Math 1.

`DISplay:SELect:MATH?` might display `:DISPLAY:SELECT:MATH MATH2` indicating Math 2 is selected.

DISplay:SELect:REFerence

This command sets or queries the overall selected reference waveform. Sets are applied to all views that contain the source and the selected view is changed.

Group

Display Control

Syntax

```
DISplay:SELect:REFerence {NONE|REF<x>}
```

Arguments

Arguments are the selected reference.

Examples

`DISplay:SELect:REFerence REF2` selects reference 2.

`DISplay:SELect:REFERENCE?` might return `DISPLAY:SELECT:REFERENCE NONE` indicating no reference is selected.

DISplay:SELect:SOUrce

This command sets or queries the overall selected source. Sets are applied to all views that contain the source and the selected view is changed.

Group

Display Control

Syntax

```
DISplay:SELect:SOUrce
{NONE|CH<x>|BUS<x>|MATH<x>|PLOT<x>|REF<x>}
```

Arguments

Arguments are the selected source.

Examples

`DISplay:SELect:SOUrce Bus1` selects Bus1 as the selected source.

`DISplay:SELect:SOUrce?` might return `:DISPLAY:SELECT:SOURCE MATH1` indicating Math 1 is the selected source.

DISplay:SELect:VIEW

This command sets or queries the selected view.

Group Display Control

Syntax

```
DISplay:SELect:VIEW
{WAVEVIEW1|MATHFFT<x>|PLOTVIEW<x>|REFFFT<x>}
```

Arguments Arguments are the selected view.

Examples `DISplay:SELect:VIEW PLOTVIEW1` selects `PLOTVIEW1` as the selected view.

`DISplay:SELect:VIEW?` might return `:DISPLAY:SELECT:VIEW MATHFFT1` indicating `MATHFFT1` is the selected view.

DISplay:SELect:WAVEView<x>:SOUrce

This command sets or queries the selected source in the given waveview.

Group Display Control

Syntax

```
DISplay:SELect:WAVEView<x>:SOUrce
{CH<x>|MATH<x>|BUS<x>|REF<x>|PLOT<x>}
```

Arguments Arguments are the selected source.

Examples `DISplay:SELect:WAVEView1:SOUrce MATH1` sets `MATH1` as the selected source.

`DISplay:SELect:WAVEView1:SOUrce?` might return `:DISPLAY:SELECT:WAVEVIEW1:SOURCE CH2` indicating `CH2` is the selected source.

DISplay:VARpersist

This command sets or queries display persistence decay time, which is the approximate decay time for a freshly struck persistence sample.

Group Display Control

Syntax
```
DISplay:VARpersist <NR3>
DISplay:VARpersist?
```

Related Commands DISplay:PERSistence

Arguments `<NR3>` indicates the persistence decay time and ranges from 0.5 to 100.

Examples `DISPLAY:VARPERSIST 5` sets the persistence decay time to 5.

`DISPLAY:VARPERSIST?` might return `:DISPLAY:VARPERSIST 3.0000E-01`, indicating that persistence decay time is currently set to 0.300.

DISplay:WAVEView<x>:BUS:B<x>:STATE

Sets or queries the state of the specified bus in the specified waveview.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`.*

Group Display Control

Syntax
```
DISplay:WAVEView<x>:BUS:B<x>:STATE {OFF|ON|0|1}
DISplay:WAVEView<x>:BUS:B<x>:STATE?
```

Arguments `0` turns specified bus off.

`1` turns the specified bus on.

`ON` turns the specified bus on.

`OFF` turns specified bus off.

Examples `DISplay:WAVEView1:BUS:B1:STATE OFF` turns specified bus off.

`DISplay:WAVEView1:BUS:B1:STATE?` might return `:DISPLAY:WAVEVIEW1:BUS:B1:STATE 1` indicating the specified bus is on.

DISplay:WAVEView<x>:BUS:B<x>:VERTical:POSition

Sets or queries the vertical position of the specified bus in the specified waveview.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`.*

Group Display Control

Syntax
```
DISplay:WAVEView<x>:BUS:B<x>:VERTical:POSition <NR3>
DISplay:WAVEView<x>:BUS:B<x>:VERTical:POSition?
```

Arguments `<NR3>` is the vertical position of the specified bus.

Examples `DISplay:WAVEView1:BUS:B1:VERTical:POSition 1.0e0` sets the position to 1 division.

`DISplay:WAVEView1:BUS:B1:VERTical:POSition?` might return `:DISPLAY:WAVEVIEW1:BUS:B1:VERTICAL:POSITION 0.0E+0` indicating the position is 0.0 divisions.

DISplay:WAVEView<x>:CH<x>:STATE

Sets or queries the state of the specified channel in the specified waveview.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`.*

Group Display Control

Syntax
```
DISplay:WAVEView<x>:CH<x>:STATE {<NR1>|OFF|ON}
DISplay:WAVEView<x>:CH<x>:STATE?
```

Arguments `<NR1>` = 0 disables the specified channel on the specified waveview; any other value turns this feature on.

`OFF` disables the display the specified channel on the specified waveview.

`ON` enables the specified channel on the specified waveview.

Examples `DISplay:WAVEView1:CH1:STATE ON` turns on channel 1.

`DISplay:WAVEView1:CH1:STATE?` might return `:DISPLAY:WAVEVIEW1:CH1:STATE 0` indicating channel 1 is off.

DISplay:WAVEView<x>:CH<x>:VERTical:POSition

Sets or queries the vertical position of the specified channel in the specified waveview in divisions. 0.0 divisions is center, 5.0 top of the window, and -5.0 the bottom of the window.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`.*

Group Display Control

Syntax

```
DISplay:WAVEView<x>:CH<x>:VERTical:POSition <NR3>
DISplay:WAVEView<x>:CH<x>:VERTical:POSition?
```

Arguments `<NR3>` is the vertical position in divisions. 0.0 divisions is center, 5.0 top of the window, and -5.0 the bottom of the window.

Examples `DISplay:WAVEView1:CH1:VERTical:POSition 1.0e0` sets the position to 1 division.

`DISplay:WAVEView1:CH1:VERTical:POSition?` might return `:DISPLAY:WAVEVIEW1:CH1:VERTICAL:POSITION -3.4400` indicating the channel 1 vertical position is -3.44 divisions.

DISplay:WAVEView<x>:CH<x>:VERTical:SCAle

Sets or queries the vertical scale of the specified channel in volts per division within the specified waveview.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`.*

Group Display Control

Syntax

```
DISplay:WAVEView<x>:CH<x>:VERTical:SCAle <NR3>
DISplay:WAVEView<x>:CH<x>:VERTical:SCAle?
```

Arguments `<NR3>` is the vertical scale of the specified channel.

Examples `DISplay:WAVEView1:CH1:VERTical:SCAle 2.0e2` sets the vertical scale to 200 mV per division.

`DISplay:WAVEView1:CH1:VERTical:SCAle?` might return `:DISPLAY:WAVEVIEW1:CH1:VERTICAL:SCALE 200.0000E-3` indicating the scale is 200 mV per division.

DISplay:WAVEView<x>:CH<x>_DALL:STATE

This command sets or queries the display state of the specified digital channel in the specified waveview.

Group Display Control

Syntax

```
DISplay:WAVEView<x>:CH<x>_DALL:STATE {<NR1>|OFF|ON}
DISplay:WAVEView<x>:CH<x>_DALL:STATE?
```

Arguments `<NR1>` = 0 disables the display of the specified channels on the specified waveview; any other value turns this feature on.

`OFF` disables the display of the specified channels on the specified waveview.

`ON` enables the display of the specified channels on the specified waveview.

Examples `DISplay:WAVEView1:CH1_DALL:STATE ON` enables the display of the specified channels on the specified waveview.

`DISplay:WAVEView1:CH1_DALL:STATE?` might return `:DISPLAY:WAVEVIEW1:CH1_DALL:STATE 0` indicating specified digital channels in the specified waveview are off.

DISplay:WAVEView<x>:CH<x>_DALL:VERTical:POSition

This command sets or queries the vertical position of the specified digital channel in the specified waveview in divisions. The position ranges from 5.0 to -5.0 divisions.

Group Display Control

Syntax

```
DISplay:WAVEView<x>:CH<x>_DALL:VERTical:POSition <NR3>
DISplay:WAVEView<x>:CH<x>_DALL:VERTical:POSition?
```

Arguments `<NR3>` is the vertical position of the specified digital channel in the specified waveview in divisions.

Examples

`DISplay:WAVEView1:CH1_DALL:VERTical:POSition 1.0e0` sets the vertical position to 1.0 divisions.

`DISplay:WAVEView1:CH1_DALL:VERTical:POSition?` might return `:DISPLAY:WAVEVIEW1:CH1_DALL:VERTICAL:POSITION 0.0E+0` indicating the vertical position is 0.0 divisions.

DISplay:WAVEView<x>:CH<x>_D<x>:STATE

This command sets or queries the display state of the specified digital channel in the specified waveview.

Group

Display Control

Syntax

```
DISplay:WAVEView<x>:CH<x>_D<x>:STATE {<NR1>|OFF|ON}
DISplay:WAVEView<x>:CH<x>_D<x>:STATE?
```

Arguments

`<NR1>` = 0 disables the display of the specified channel on the specified waveview; any other value turns this feature on.

`OFF` disables the display of the specified channel on the specified waveview.

`ON` enables the display of the specified channel on the specified waveview.

Examples

`DISplay:WAVEView1:CH1_D1:STATE OFF` turns off the specified digital channel.

`DISplay:WAVEView1:CH1_D1:STATE?` might return `:DISPLAY:WAVEVIEW1:CH1_D1:STATE 1` indicating the specified digital channel is on.

DISplay:WAVEView<x>:CURSor? (Query Only)

This query returns the cursor parameters for the specified waveview.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`.*

Group

Cursor

Syntax

```
DISplay:WAVEView<x>:CURSor?
```

Returns Returns the cursor parameters for the specified waveview.

Examples DISplay:WAVEView1:CURSor? might return :DISPLAY:WAVEVIEW1:CURSOR:CURSOR:WAVEFORM:BPOSITION 5.0E-6;APOSITION -5.0E-6;:DISPLAY:WAVEVIEW1:CURSOR:CURSOR:BSOURCE AU TO;HBARS:BPOSITION 9.91E+37;BUNITS "V";AUNITS "V";APOSITION 9.91E+37;DELTA 9.91E+37;:DISPLAY:WAVEVIEW1:CURSOR:CURSOR:VBA RS:BPOSITION 5.0E-6;APOSITION -5.0E-6;UNITS "s";DELTA 10.0E-6;ALTERNATEB "???? ????";ALTERNATEA "???? ????";:DISPLAY:WAV EVIEW1:CURSOR:CURSOR:STATE 1;FUNCTION WAVEFORM;SCREEN:AYPOSITION -2.0E-3;BXPOSITION -5.0E-6;BYPOSITION -2.0E-3;AXPOSITIO N -5.0E-6;:DISPLAY:WAVEVIEW1:CURSOR:CURSOR:MODE INDEPENDENT;ASOURCE AUTO;DDT 9.91E+37;ONEOVERDELTATVALUE 100.0E+3;SPLITM ODE SAME;LINESTYLE SOLID.

DISplay:WAVEView<x>:CURSor:CURSOR<x>? (Query Only)

This query returns the cursor parameters for the specified cursor in the specified waveview.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`. `Cursor<x>` is the specified cursor and must be `CURSOR1`.*

Group Cursor

Syntax `DISplay:WAVEView<x>:CURSor:CURSOR<x>?`

Returns Returns the cursor parameters for the specified cursor in the specified waveview.

Examples DISplay:WAVEView1:CURSor:CURSOR1? might return :DISPLAY:WAVEVIEW1:CURSOR:CURSOR:WAVEFORM:BPOSITION 5.0E-6;APOSITION -5.0E-6;:DISPLAY:WAVEVIEW1:CURSOR:CURSOR:BSOURCE AU TO;HBARS:BPOSITION 9.91E+37;BUNITS "V";AUNITS "V";APOSITION 9.91E+37;DELTA 9.91E+37;:DISPLAY:WAVEVIEW1:CURSOR:CURSOR:VBA RS:BPOSITION 5.0E-6;APOSITION -5.0E-6;UNITS "s";DELTA 10.0E-6;ALTERNATEB "???? ????";ALTERNATEA

"???? ????";:DISPLAY:WAVEVIEW1:CURSOR:CURSOR:STATE 1;FUNCTION WAVEFORM;SCREEN:AYPOSITION -2.0E-3;BXPOSITION -5.0E-6;BYPOSITION -2.0E-3;AXPOSITIO N -5.0E-6;:DISPLAY:WAVEVIEW1:CURSOR:CURSOR:MODE INDEPENDENT;ASOURCE AUTO;DDT 9.91E+37;ONEOVERDELTATVALUE 100.0E+3;SPLITM ODE SAME;LINESTYLE SOLID.

DISplay:WAVEView<x>:CURSor:CURSOR<x>:ASOUrce

This command sets or queries the cursor A source of the specified cursor in the specified waveview.

***NOTE.** `WAVEView<x>` is the specified waveview and must be `WAVEView1`. `Cursor<x>` is the specified cursor and must be `CURSOR1`.*

Group Cursor

Syntax

```
DISplay:WAVEView<x>:CURSor:CURSOR<x>:ASOUrce
{AUTO|CH<x>|BUS<x>|MATH<x>| REF<x>|PLOT<x>}
DISplay:WAVEView<x>:CURSor:CURSOR<x>:ASOUrce?
```

Arguments Arguments are the specified source waveform.

Examples `DISplay:WAVEView1:CURSor:CURSOR1:ASOUrce CH1` sets the cursor 1 source to channel 1.

`DISplay:WAVEView1:CURSor:CURSOR1:ASOUrce?` might return `:DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:ASOURCE REF1` indicating the cursor A source is reference 1.

DISplay:WAVEView<x>:CURSor:CURSOR<x>:BSOUrce

This command sets or queries the cursor B source of the specified cursor in the specified waveview.

***NOTE.** `WAVEView<x>` is the specified waveview and must be `WAVEView1`. `Cursor<x>` is the specified cursor and must be `CURSOR1`.*

Group Cursor

Syntax
```
DISplay:WAVEView<x>:CURSor:CURSOR<x>:BSOUrce
{CH<x>|BUS<x>|MATH<x>| REF<x>|PLOT<x>}
DISplay:WAVEView<x>:CURSor:CURSOR<x>:BSOUrce?
```

Arguments Arguments are the specified source waveform.

Examples `DISplay:WAVEView1:CURSor:CURSOR1:BSOUrce CH1` sets the cursor B source to channel 1.

`DISplay:WAVEView1:CURSor:CURSOR1:BSOUrce?` might return `:DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:BSOURCE REF1` indicating the cursor b source is reference 1.

DISplay:WAVEView<x>:CURSor:CURSOR<x>:DDT? (Query Only)

This query returns the delta V over delta T cursor readout value of the specified cursor in the specified waveview.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`. `Cursor<x>` is the specified cursor and must be `CURSOR1`.*

Group Cursor

Syntax
```
DISplay:WAVEView<x>:CURSor:CURSOR<x>:DDT?
```

Returns The delta V over delta T cursor readout value of the specified cursor in the specified waveview.

Examples `DISplay:WAVEView1:CURSor:CURSOR1:DDT?` might return `:DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:DDT 9.91E+37` indicating the delta V over delta T cursor readout value of the specified cursor is 9.91E+37.

DISplay:WAVEView<x>:CURSor:CURSOR<x>:FUNCtion

This command sets or queries the cursor type of the specified cursor in the specified waveview.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`. `Cursor<x>` is the specified cursor and must be `CURSOR1`.*

Group Cursor

Syntax

```
DISplay:WAVEView<x>:CURSor:CURSOR<x>:FUNCtion
{SCREEN|WAVEFORM| VBArs|HBArs}
DISplay:WAVEView<x>:CURSor:CURSOR<x>:FUNCtion?
```

Arguments HBArs specifies horizontal bar cursors, which measure in vertical units.

VBArs specifies vertical bar cursors, which measure in horizontal units.

SCREEN specifies both horizontal and vertical bar cursors, which measure in horizontal and vertical units specified by the Cursor 1 and Cursor 2 Sources. Use these cursors to measure anywhere in the waveform display area.

WAVEform specifies paired or split cursors in YT display format for measuring waveform amplitude and time. In XY and XYZ format, these cursors indicate the amplitude positions of an XY pair (Ch1 vs Ch2 voltage, where Ch1 is the X axis and Ch2 is the Y axis) relative to the trigger.

Examples `DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:FUNCTION VBArs` selects the vertical bar cursor type for the specified waveview and cursor.

`DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:FUNCTION?` might return `:DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:FUNCTION HBArs` indicating that the specified cursor is set to HBArs.

DISplay:WAVEView<x>:CURSor:CURSOR<x>:HBArs:APOSition

Sets or queries the HBARs vertical A position of the specified cursor in the specified waveview.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`. `Cursor<x>` is the specified cursor and must be `CURSOR1`.*

Group Cursor

Syntax

```
DISplay:WAVEView<x>:CURSor:CURSOR<x>:HBArs:APOSition <NR3>
DISplay:WAVEView<x>:CURSor:CURSOR<x>:HBArs:APOSition?
```

Arguments `<NR3>` is the vertical cursor A position of the specified cursor in the specified waveview. 0.0 divisions is center, 5.0 top of the waveview, and -5.0 the bottom of the waveview.

Examples

`DISplay:WAVEView1:CURSor:CURSOR1:HBArs:APOSition 3.0e0` sets the cursor position to 3 V.

`DISplay:WAVEView1:CURSor:CURSOR1:HBArs:APOSition?` might return `:DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:HBARS:APOSITION 2.9303448275862` indicating the cursor position is 2.93 V.

DISplay:WAVEView<x>:CURSor:CURSOR<x>:HBArs:AUNIts? (Query Only)

This command queries the cursor A vertical units of the specified cursor in the specified waveview.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`. `Cursor<x>` is the specified cursor and must be `CURSOR1`.*

Group

Cursor

Syntax

```
DISplay:WAVEView<x>:CURSor:CURSOR<x>:HBArs:AUNIts?
```

Arguments

`<QString>` is the cursor A vertical units of the specified cursor in the specified waveview.

Examples

`DISplay:WAVEView1:CURSor:CURSOR1:HBArs:AUNIts?` might return `:DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:HBARS:AUNITS "V"` indicating the `AUNITS` are set to Volts.

DISplay:WAVEView<x>:CURSor:CURSOR<x>:HBArs:BPOSition

Queries the HBARs vertical B position of the specified cursor in the specified waveview.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`. `Cursor<x>` is the specified cursor and must be `CURSOR1`.*

Group

Cursor

Syntax

```
DISplay:WAVEView<x>:CURSor:CURSOR<x>:HBArs:BPOSition <NR3>
DISplay:WAVEView<x>:CURSor:CURSOR<x>:HBArs:BPOSition?
```

Arguments `<NR3>` is the vertical cursor B position of the specified cursor in the specified waveview.

Examples `DISplay:WAVEView1:CURSor:CURSOR1:HBArs:BPOSition 4.0e-1` sets the position to 400 mV.

`DISplay:WAVEView1:CURSor:CURSOR1:HBArs:BPOSition?` might return `:DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:HBARS:BPOSITION 387.9148706896567E-3` indicating the B cursor position is 387.9 mV.

DISplay:WAVEView<x>:CURSor:CURSOR<x>:HBArs:BUNIts? (Query Only)

This command queries the cursor B vertical units of the specified cursor in the specified waveview.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`. `Cursor<x>` is the specified cursor and must be `CURSOR1`.*

Group Cursor

Syntax `DISplay:WAVEView<x>:CURSor:CURSOR<x>:HBArs:BUNIts?`

Returns `<QString>` is the cursor B vertical units of the specified cursor in the specified waveview.

Examples `DISplay:WAVEView1:CURSor:CURSOR1:HBArs:BUNIts?` might return `:DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:HBARS:BUNITS "V"` indicating the `BUNITS` are set to Volts.

DISplay:WAVEView<x>:CURSor:CURSOR<x>:HBArs:DELTa? (Query Only)

This command queries the delta V cursor readout value of the specified cursor in the specified waveview.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`. `Cursor<x>` is the specified cursor and must be `CURSOR1`.*

Group Cursor

Syntax `DISplay:WAVEView<x>:CURSor:CURSOR<x>:HBArs:DELTa?`

Returns The delta V cursor readout value of the specified cursor in the specified waveview.

Examples `DISplay:WAVEView1:CURSor:CURSOR1:HBArs:DELTa?` might return `:DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:HBARS:DELTA 2.612085129310` indicating the delta between the cursors is 2.61 V.

DISplay:WAVEView<x>:CURSor:CURSOR<x>:MODe

Sets or queries the cursor tracking mode of the specified cursor in the specified waveview.

NOTE. `WAVEView<x>` is the specified waveview and must be `WAVEView1`. `Cursor<x>` is the specified cursor and must be `CURSOR1`.

Group Cursor

Syntax `DISplay:WAVEView<x>:CURSor:CURSOR<x>:MODe {INDEPENDENT|TRACK}`

Arguments `TRACK` ties the navigational functionality of the two cursors together. For cursor 1 adjustments, this ties the movement of the two cursors together; however, cursor 2 continues to move independently of cursor 1.

`INDEPENDENT` allows independent adjustment of the two cursors.

Examples `DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:MODE TRACK` specifies that the cursor positions move in unison.

`DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:MODE?` might return `:DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:MODE TRACK`, indicating that the two cursors move in unison.

DISplay:WAVEView<x>:CURSor:CURSOR<x>:ONEOVERDELTATVALUE? (Query Only)

This query returns the one over delta T cursor readout value of the specified cursor in the specified waveview.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`. `Cursor<x>` is the specified cursor and must be `CURSOR1`.*

Group Cursor

Syntax `DISplay:WAVEView<x>:CURSor:CURSOR<x>:ONEOVERDELTATVALUE?`

Returns The one over delta T cursor readout value of the specified cursor in the specified waveview.

Examples `DISplay:WAVEView1:CURSor:CURSOR1:ONEOVERDELTATVALUE?` might return `:DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:ONEOVERDELTATVALUE 179.3188E+3` indicating the one over delta time value is 179.3 kHz.

DISplay:WAVEView<x>:CURSor:CURSOR<x>:SCREEN:AXPOSition

Sets or queries the horizontal cursor A position of the specified cursor in the specified waveview.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`. `Cursor<x>` is the specified cursor and must be `CURSOR1`.*

Group Cursor

Syntax
```
DISplay:WAVEView<x>:CURSor:CURSOR<x>:SCREEN:AXPOSition <NR3>
DISplay:WAVEView<x>:CURSor:CURSOR<x>:SCREEN:AXPOSition?
```

Arguments `<NR3>` is the horizontal cursor A position of the specified cursor in the specified waveview.

Examples `DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:SCREEN:AXPOSITION 15.0E-3` sets the x position of screen cursor1 in waveview1 to 15 mV.

`DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:SCREEN:AXPOSITION?` might return :`DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:SCREEN:AXPOSITION` -64.0000E-03 indicating that x position of the specified screen cursor in the specified waveview is set to -64 mV.

DISplay:WAVEView<x>:CURSor:CURSOR<x>:SCREEN:AYPOSition

This command sets or queries the vertical cursor A position of the specified cursor in the specified waveview.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`. `Cursor<x>` is the specified cursor and must be `CURSOR1`.*

Group

Cursor

Syntax

```
DISplay:WAVEView<x>:CURSor:CURSOR<x>:SCREEN:AYPOSition <NR3>
DISplay:WAVEView<x>:CURSor:CURSOR<x>:SCREEN:AYPOSition?
```

Arguments

`<NR3>` the vertical cursor A position of the specified cursor in the specified waveview.

Examples

`DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:SCREEN:AYPOSITION 25.0E-3` sets the y position of the specified screen cursor of the specified waveview to 25 mV.

`DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:SCREEN:AYPOSITION?` might return `:DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:SCREEN:AYPOSITION -53.0000E-03` indicating that y position of the specified screen cursor of the specified waveview is set to -53 mV.

DISplay:WAVEView<x>:CURSor:CURSOR<x>:SCREEN:BXPOSition

Sets or queries the horizontal cursor B position of the specified cursor in the specified waveview.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`. `Cursor<x>` is the specified cursor and must be `CURSOR1`.*

Group

Cursor

Syntax

```
DISplay:WAVEView<x>:CURSor:CURSOR<x>:SCREEN:BXPOSition <NR3>
DISplay:WAVEView<x>:CURSor:CURSOR<x>:SCREEN:BXPOSition?
```

Arguments

`<NR3>` is the horizontal cursor B position of the specified cursor in the specified waveview.

Examples

`DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:SCREEN:AXPOSITION 15.0E-3` sets the x position of the specified screen cursor in the specified waveview to 15 mV.

`DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:SCREEN:AXPOSITION?` might return :`DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:SCREEN:AXPOSITION` -64.0000E-03 indicating that x position of the specified screen cursor in the specified waveview is set to -64 mV.

DISplay:WAVEView<x>:CURSor:CURSOR<x>:SCREEN:BYPOSition

This command sets or queries the vertical cursor B position of the specified cursor in the specified waveview.

***NOTE.** `WAVEView<x>` is the specified waveview and must be `WAVEView1`. `Cursor<x>` is the specified cursor and must be `CURSOR1`.*

Group

Cursor

Syntax

```
DISplay:WAVEView<x>:CURSor:CURSOR<x>:SCREEN:BYPOSition <NR3>
DISplay:WAVEView<x>:CURSor:CURSOR<x>:SCREEN:BYPOSition?
```

Arguments

`<NR3>` the vertical cursor B position of the specified cursor in the specified waveview.

Examples

`DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:SCREEN:BYPOSITION 25.0E-3` sets the y position of the screen cursor of waveview1 to 25 mV.

`DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:SCREEN:BYPOSITION?` might return `:DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:SCREEN:BYPOSITION -53.0000E-03` indicating that y position of the specified screen cursor of the specified waveview is set to -53 mV.

DISplay:WAVEView<x>:CURSor:CURSOR<x>:SPLITMODE

This command sets or queries whether both cursors have the same or different sources.

***NOTE.** `WAVEView<x>` is the specified waveview and must be `WAVEView1`. `Cursor<x>` is the specified cursor and must be `CURSOR1`.*

Group Cursor

Syntax

```
DISplay:WAVEView<x>:CURSor:CURSOR<x>:SPLITMODE {SAME|SPLIT}
DISplay:WAVEView<x>:CURSor:CURSOR<x>:SPLITMODE?
```

Arguments `SAME` specifies both cursors have the same source.

`SPLIT` specifies the cursors have different sources.

Examples `DISplay:WAVEView1:CURSor:CURSOR1:SPLITMODE SPLIT` specifies the cursors have different sources.

`DISplay:WAVEView1:CURSor:CURSOR1:SPLITMODE?` might return `:DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:SPLITMODE SAME` indicating the cursors have the same source.

DISplay:WAVEView<x>:CURSor:CURSOR<x>:STATE

This command sets or queries the visible state of the specified cursor in the specified waveview.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`. `Cursor<x>` is the specified cursor and must be `CURSOR1`.*

Group Cursor

Syntax

```
DISplay:WAVEView<x>:CURSor:CURSOR<x>:STATE {<NR1>|OFF|ON}
DISplay:WAVEView<x>:CURSor:CURSOR<x>:STATE?
```

Arguments `<NR1>` = 0 disables the specified cursor in the specified waveview; any other value turns this feature on.

`OFF` disables the specified cursor in the specified waveview.

`ON` enables the specified cursor in the specified waveview.

Examples `DISplay:WAVEView1:CURSor:CURSOR1:STATE OFF` turns the specified cursor off.

`DISplay:WAVEView1:CURSor:CURSOR1:STATE?` might return `:DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:STATE 1` indicating the specified cursor in the specified waveview is on.

DISplay:WAVEView<x>:CURSor:CURSOR<x>:VBArs:APOSition

This command sets or queries the cursor A horizontal position of the specified cursor in the specified waveview.

***NOTE.** `WAVEView<x>` is the specified waveview and must be `WAVEView1`. `Cursor<x>` is the specified cursor and must be `CURSOR1`.*

Group

Cursor

Syntax

```
DISplay:WAVEView<x>:CURSor:CURSOR<x>:VBArs:APOSition <NR3>
DISplay:WAVEView<x>:CURSor:CURSOR<x>:VBArs:APOSition?
```

Arguments

`<NR3>` is the horizontal cursor A position of the specified cursor in the specified waveview.

Examples

`DISplay:WAVEView1:CURSor:CURSOR1:VBArs:APOSition -4.0e-6` set the cursor position to 4.0 µs.

`DISplay:WAVEView1:CURSor:CURSOR1:VBArs:APOSition?` might return `:DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:VBARS:APOSITION -5.0E-6` indicating the cursor A position is -5.0 µs.

DISplay:WAVEView<x>:CURSor:CURSOR<x>:VBArs:BPOSition

This command sets or queries the cursor B horizontal position of the specified cursor in the specified waveview.

***NOTE.** `WAVEView<x>` is the specified waveview and must be `WAVEView1`. `Cursor<x>` is the specified cursor and must be `CURSOR1`.*

Group

Cursor

Syntax

```
DISplay:WAVEView<x>:CURSor:CURSOR<x>:VBArs:BPOSition <NR3>
DISplay:WAVEView<x>:CURSor:CURSOR<x>:VBArs:BPOSition?
```

Arguments

`<NR3>` is the horizontal cursor B position of the specified cursor in the specified waveview.

Examples

`DISplay:WAVEView1:CURSor:CURSOR1:VBArs:BPOSition 4.0e-6` sets the cursor position to 4.0 µs.

`DISplay:WAVEView1:CURSor:CURSOR1:VBArs:BPOSition?` might return `:DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:VBARS:BPOSITION 3.2736951319481E-6` indicating the B cursor position is 3.27 µs.

DISplay:WAVEView<x>:CURSor:CURSOR<x>:VBArs:DELTa? (Query Only)

This query sets or returns the delta T cursor readout value of the specified cursor in the specified waveview.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`. `Cursor<x>` is the specified cursor and must be `CURSOR1`.*

Group

Cursor

Syntax

```
DISplay:WAVEView<x>:CURSor:CURSOR<x>:VBArs:DELTa?
```

Returns

The delta T cursor readout value of the specified cursor in the specified waveview.

Examples

`DISplay:WAVEView1:CURSor:CURSOR1:VBArs:DELTa?` might return `:DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:VBARS:DELTA 6.7926388747725E-6` indicating the delta T cursor readout value is 6.79 µs.

DISplay:WAVEView<x>:CURSor:CURSOR<x>:VBArs:UNIts? (Query Only)

This query returns cursor A vertical units of the specified cursor in the specified waveview.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`. `Cursor<x>` is the specified cursor and must be `CURSOR1`.*

Group

Cursor

Syntax

```
DISplay:WAVEView<x>:CURSor:CURSOR<x>:VBArs:UNIts?
```

Returns

The cursor A vertical units of the specified cursor in the specified waveview.

Examples `DISplay:WAVEView1:CURSor:CURSOR1:VBArs:UNIts?` might return `:DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:VBARS:UNITS "s"` indicating the cursor units are seconds.

DISplay:WAVEView<x>:CURSor:CURSOR<x>:WAVEform:APOSition

This command sets or queries the horizontal cursor A position of the specified cursor in the specified waveview.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`. `Cursor<x>` is the specified cursor and must be `CURSOR1`.*

Group Cursor

Syntax

```
DISplay:WAVEView<x>:CURSor:CURSOR<x>:WAVEform:APOSition
<NR3>
DISplay:WAVEView<x>:CURSor:CURSOR<x>:WAVEform:APOSition?
```

Arguments `<NR3>` is the horizontal cursor A position of the specified cursor in the specified waveview.

Examples `DISplay:WAVEView1:CURSor:CURSOR1:WAVEform:APOSition 1.5e-6` sets the position to 1.5 µs.

`DISplay:WAVEView1:CURSor:CURSOR1:WAVEform:APOSition?` might return `:DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:WAVEFORM:APOSITION -1.2667480236557E-6` indicating the position is 1.27 µs.

DISplay:WAVEView<x>:CURSor:CURSOR<x>:WAVEform:BPOSition

This command sets or queries the horizontal cursor B position of the specified cursor in the specified waveview.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`. `Cursor<x>` is the specified cursor and must be `CURSOR1`.*

Group Cursor

Syntax

```
DISplay:WAVEView<x>:CURSor:CURSOR<x>:WAVEform:BPOSition
<NR3>
```

`DISplay:WAVEView<x>:CURSor:CURSOR<x>:WAVEform:BPOSition?`

Arguments

<NR3> is the horizontal cursor B position of the specified cursor in the specified waveview.

Examples

`DISplay:WAVEView1:CURSor:CURSOR1:WAVEform:BPOSition 8.0e-9` sets the position to 8.0 ns.

`DISplay:WAVEView1:CURSor:CURSOR1:WAVEform:BPOSition?` might return `:DISPLAY:WAVEVIEW1:CURSOR:CURSOR1:WAVEFORM:BPOSITION 711.6310718892624E-9` indicating the cursor position is 711.6 ns.

DISplay:WAVEView<x>:FILTer

This command sets or queries the type of interpolation filter for the display.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`.*

Group

Display Control

Syntax

`DISplay:WAVEView<x>:FILTer {SINX|LINear}`

Arguments

`LINEAr` specifies linear interpolation, where acquired points are connected with straight lines.

`SINX` specifies sin(x)/x interpolation, where acquired points are fit to a curve.

Examples

`DISplay:WAVEView1:FILTer SINX` specifies sine-curve interpolation, when magnifying waveforms.

`DISplay:WAVEView1:FILTer?` might return `:DISplay:WAVEView1:FILTer LINEAR`, indicating that straight-line interpolation is specified for magnifying waveforms.

DISplay:WAVEView<x>:GRAticule

This command selects or queries the type of graticule that is displayed.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`.*

Group Display Control

Syntax
```
DISplay:WAVEView<x>:GRAticule {GRId|TIMe|FULl|NONe}
DISplay:WAVEView<x>:GRAticule?
```

Arguments GRId specifies a frame and grid only.

TIMe specifies a time graticule only.

FULl specifies a frame, a grid and cross hairs.

NONe specified no graticule.

Examples DISplay:WAVEView1:GRAticule TIME specifies a time graticule.

DISplay:WAVEView1:GRAticule? might return :DISPLAY:WAVEVIEW1:GRATICULE GRID indicating the graticule is a grid.

DISplay:WAVEView<x>:INTENSITy:GRATicule

This command sets or queries the graticule saturation level.

***NOTE.** WAVEView<x> is the specified waveview and must be WAVEView1.*

Group Display Control

Syntax
```
DISplay:WAVEView<x>:INTENSITy:GRATicule <NR2>
DISplay:WAVEView<x>:INTENSITy:GRATicule?
```

Arguments <NR2> is the graticule saturation level.

Examples DISplay:WAVEView1:INTENSITy:GRATicule 75 sets the saturation level to 75%.

DISplay:WAVEView1:INTENSITy:GRATicule? might return :DISPLAY:WAVEVIEW1:INTENSITY:GRATICULE 66.0000 indicating the saturation level is at 66%.

DISplay:WAVEView<x>:INTENSITy:WAVEform

This command sets or queries the waveform saturation level.

NOTE. *WAVEView<x> is the specified waveview and must be WAVEView1.*

Group

Display Control

Syntax

```
DISplay:WAVEView<x>:INTENSITy:WAVEform <NR2>
DISplay:WAVEView<x>:INTENSITy:WAVEform?
```

Arguments

<NR2> is the waveform saturation level.

Examples

DISplay:WAVEView1:INTENSITy:WAVEform 75 sets the saturation level to 75%.

DISplay:WAVEView1:INTENSITy:WAVEform? might return :DISPLAY:WAVEVIEW1:INTENSITY:WAVEFORM 62.0000 indicating the saturation level is 62%.

DISplay:WAVEView<x>:MATH:MATH<x>:AUTOScale

This command sets or queries whether the specified math gets auto-scaled when the math equation changes within the specified waveview.

Group

Display Control

Syntax

```
DISplay:WAVEView<x>:MATH:MATH<x>:AUTOScale {<NR1>|OFF|ON}
DISplay:WAVEView<x>:MATH:MATH<x>:AUTOScale?
```

Arguments

<NR1> = 0 disables the autoscaling the math in the specified waveview; any other value turns this feature on.

OFF disables the autoscaling the math in the specified waveview.

ON enables the autoscaling the math in the specified waveview.

Examples

DISplay:WAVEView1:MATH:MATH3:AUTOScale 1 enables the autoscaling the math in the specified waveview.

DISplay:WAVEView1:MATH:MATH3:AUTOScale? might return :DISPLAY:WAVEVIEW1:MATH:MATH3:AUTOSCALE 0 indicating that Math 3 will not auto-scale.

DISplay:WAVEView<x>:MATH:MATH<x>:STATE

This command sets or queries the state of the specified math waveform in the specified waveview.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`.*

Group

Display Control

Syntax

```
DISplay:WAVEView<x>:MATH:MATH<x>:STATE {<NR1>|OFF|ON}
DISplay:WAVEView<x>:MATH:MATH<x>:STATE?
```

Arguments

`<NR1>` = 0 disables the specified math in the specified waveview; any other value turns this feature on.

`OFF` disables the specified math in the specified waveview.

`ON` enables the specified math in the specified waveview.

Examples

`DISplay:WAVEView1:MATH:MATH1:STATE OFF` disables the specified math in the specified waveview.

`DISplay:WAVEView1:MATH:MATH2:STATE?` might return `:DISPLAY:WAVEVIEW1:MATH:MATH2:STATE 1` indicating the math is displayed.

DISplay:WAVEView<x>:MATH:MATH<x>:VERTical:POSition

This command sets or queries the vertical position in divisions of the specified math waveform in the specified waveview.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`.*

Group

Display Control

Syntax

```
DISplay:WAVEView<x>:MATH:MATH<x>:VERTical:POSition <NR3>
DISplay:WAVEView<x>:MATH:MATH<x>:VERTical:POSition?
```

Arguments

`<NR3>` is the vertical position in divisions of the specified math waveform.

Examples `DISplay:WAVEView1:MATH:MATH1:VERTical:POSition 0` sets the position to 0 divisions.

`DISplay:WAVEView1:MATH:MATH1:VERTical:POSition?` might return `:DISPLAY:WAVEVIEW1:MATH:MATH1:VERTICAL:POSITION -2.2800` indicating the position is at -2.28 divisions.

DISplay:WAVEView<x>:MATH:MATH<x>:VERTical:SCAle

Sets or queries the vertical scale of the specified math in volts per division within the specified waveview.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`.*

Group Display Control

Syntax
```
DISplay:WAVEView<x>:MATH:MATH<x>:VERTical:SCAle <NR3>
DISplay:WAVEView<x>:MATH:MATH<x>:VERTical:SCAle?
```

Arguments `<NR3>` is the vertical scale of the specified math waveform.

Examples `DISplay:WAVEView1:MATH:MATH1:VERTical:SCAle 400e-3` sets the scale to 400 mV per division.

`DISplay:WAVEView1:MATH:MATH1:VERTical:SCAle?` might return `:DISPLAY:WAVEVIEW1:MATH:MATH1:VERTICAL:SCALE 395.0000E-3` indicating the scale is 395 mV.

DISplay:WAVEView<x>:PLOT:PLOT<x>:AUTOScale

This command sets or queries whether the specified trend gets auto-scaled when the new data is available within the specified waveview.

Group Display Control

Syntax
```
DISplay:WAVEView<x>:PLOT:PLOT<x>:AUTOScale {<NR1>|OFF|ON}
DISplay:WAVEView<x>:PLOT:PLOT<x>:AUTOScale?
```

Arguments `<NR1>` = 0 disables auto-scaling the specified plot in the specified waveview; any other value turns this feature on.

OFF disables auto-scaling the specified plot in the specified waveview.

ON enables auto-scaling the specified plot in the specified waveview.

Examples

DISplay:WAVEView1:PLOT:PLOT1:AUTOScale 1 enables auto-scaling the specified plot in the specified waveview.

DISplay:WAVEView1:PLOT:PLOT1:AUTOScale? might return :DISPLAY:WAVEVIEW1:PLOT:PLOT1:AUTOSCALE 0 indicating that auto-scaling for plot 1 is off.

DISplay:WAVEView<x>:PLOT:PLOT<x>:STATE

This command sets or queries the state of the specified time trend plot waveform in the specified waveview.

Group

Display Control

Syntax

```
DISplay:WAVEView<x>:PLOT:PLOT<x>:STATE {<NR1>|OFF|ON}
DISplay:WAVEView<x>:PLOT:PLOT<x>:STATE?
```

Arguments

<NR1> = 0 disables the specified plot in the specified waveview; any other value turns this feature on.

OFF disables the specified plot in the specified waveview.

ON enables the specified plot in the specified waveview.

Examples

DISplay:WAVEView1:PLOT:PLOT1:STATE OFF disables the specified plot in the specified waveview.

DISplay:WAVEView1:PLOT:PLOT1:STATE? might return :DISPLAY:WAVEVIEW1:PLOT:PLOT1:STATE 1 indicating the specified plot in the specified waveview is on.

DISplay:WAVEView<x>:PLOT:PLOT<x>:VERTical:POSition

This command sets or queries the vertical position of the specified time trend in the specified waveview in absolute units.

Group

Display Control

Syntax
```
DISplay:WAVEView<x>:PLOT:PLOT<x>:VERTical:POSition <NR3>
DISplay:WAVEView<x>:PLOT:PLOT<x>:VERTical:POSition?
```

Arguments `<NR3>` is the vertical position.

Examples `DISplay:WAVEView1:PLOT:PLOT1:VERTical:POSition 2.0e0` sets the position to 2.0 units.

`DISplay:WAVEView1:PLOT:PLOT1:VERTical:POSition?` might return `:DISPLAY:WAVEVIEW1:PLOT:PLOT1:VERTICAL:POSITION 1.9918` indicating the position is 1.99 units.

DISplay:WAVEView<x>:PLOT:PLOT<x>:VERTical:SCAle

This command sets or queries the vertical scale of the specified time trend in units per division in the specified waveview.

Group Display Control

Syntax
```
DISplay:WAVEView<x>:PLOT:PLOT<x>:VERTical:SCAle <NR3>
DISplay:WAVEView<x>:PLOT:PLOT<x>:VERTical:SCAle?
```

Arguments `<NR3>` is the vertical scale.

Examples `DISplay:WAVEView1:PLOT:PLOT1:VERTical:SCAle 725.0e-3` sets the scale to 725 mUnits.

`DISplay:WAVEView1:PLOT:PLOT1:VERTical:SCAle?` might return `:DISPLAY:WAVEVIEW1:PLOT:PLOT1:VERTICAL:SCALE 730.0000E-3` indicating the scale is 730.0 mUnits.

DISplay:WAVEView<x>:REF:REF<x>:STATE

This command sets or queries the state of the specified reference waveform in the specified waveview.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`.*

Group Display Control

Syntax

```
DISplay:WAVEView<x>:REF:REF<x>:STATE {<NR1>|OFF|ON}
DISplay:WAVEView<x>:REF:REF<x>:STATE?
```

Arguments

`<NR1>` = 0 disables the specified reference in the specified waveview; any other value turns this feature on.

`OFF` disables the specified reference in the specified waveview.

`ON` enables the specified reference in the specified waveview.

Examples

`DISplay:WAVEView1:REF:REF1:STATE OFF` disables the specified reference in the specified waveview.

`DISplay:WAVEView1:REF:REF1:STATE?` might return `:DISPLAY:WAVEVIEW1:REF:REF1:STATE 1` indicating the specified reference in the specified waveview is on.

DISplay:WAVEView<x>:REF:REF<x>:VERTical:POSition

This command sets or queries the vertical position in divisions of the specified reference in the specified waveview.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`.*

Group

Display Control

Syntax

```
DISplay:WAVEView<x>:REF:REF<x>:VERTical:POSition <NR3>
DISplay:WAVEView<x>:REF:REF<x>:VERTical:POSition?
```

Arguments

`<NR3>` is the vertical position in divisions.

Examples

`DISplay:WAVEView1:REF:REF1:VERTical:POSition -2.5e0` sets the position to -2.5 divisions.

`DISplay:WAVEView1:REF:REF1:VERTical:POSition?` might return `:DISPLAY:WAVEVIEW1:REF:REF1:VERTICAL:POSITION -2.6400` indicating the position is set to -2.64 divisions.

DISplay:WAVEView<x>:REF:REF<x>:VERTical:SCAle

This command sets or queries the vertical scale of the specified reference in volts per div within the specified waveview.

NOTE. `WAVEView<x>` is the specified waveview and must be `WAVEView1`.

Group Display Control

Syntax

```
DISplay:WAVEView<x>:REF:REF<x>:VERTical:SCAle <NR3>
DISplay:WAVEView<x>:REF:REF<x>:VERTical:SCAle?
```

Arguments `<NR3>` is the vertical scale of the specified reference waveform.

Examples `DISplay:WAVEView1:REF:REF1:VERTical:SCAle 400e-3` sets the scale to 400 mV per division.

`DISplay:WAVEView1:REF:REF1:VERTical:SCAle?` might return `:DISPLAY:WAVEVIEW1:REF:REF1:VERTICAL:SCALE 378.0000E-3` indicating the scale is 378 mV per division.

DISplay:WAVEView<x>:STYle

This command sets or queries how the waveforms are displayed for analysis mode.

NOTE. `WAVEView<x>` is the specified waveview and must be `WAVEView1`.

Group Display Control

Syntax

```
DISplay:WAVEView<x>:STYle {VECtors|DOTsonly}
DISplay:WAVEView<x>:STYle?
```

Arguments `DOTs` displays individual data points. New points immediately replace old ones.

`VECtors` connects adjacent data points. New points immediately replace old ones.

Examples `DISplay:WAVEView1:STYle VECTORS` sets the display to connect adjacent data points.

`DISplay:WAVEView1:STYle?` might return `:DISplay:WAVEView1:STYle DOTs`, indicating that data points are not connected.

DISplay:WAVEView<x>:VIEWStyle

The command sets or queries the waveform layout style used by the display.

NOTE. WAVEView<x> is the specified waveview and must be WAVEView1.

Group

Display Control

Syntax

```
DISplay:WAVEView<x>:VIEWStyle {OVErlay|STAcked}
DISplay:WAVEView<x>:VIEWStyle?
```

Arguments

`OVErlay` specifies that the display view style used by the specified waveview is overlay.

`STAcked` specifies that the display view style used by the specified waveview is stacked.

Examples

`DISplay:WAVEView1:VIEWStyle OVERLAY` sets the view style to overlay.

`DISplay:WAVEView1:VIEWStyle?` might return `:DISPLAY:WAVEVIEW1:VIEWSTYLE STACKED` indicating the view style is stacked.

DISplay:WAVEView<x>:Zoom? (Query Only)

This query returns the zoom parameters of the specified waveview.

NOTE. WAVEView<x> is the specified waveview and must be WAVEView1.

Group

Zoom

Syntax

```
DISplay:WAVEView<x>:Zoom?
```

Returns

Returns the zoom parameters of the specified waveview.

Examples

`DISplay:WAVEView1:Zoom?` might return `:DISPLAY:WAVEVIEW1:ZOOM:ZOOM1:HORIZONTAL:SCALE 2.5000;POSITION 70.0000;WINSCALE 400.0000E-9;:DISPLAY:WAVEVIEW1:ZOOM:ZOOM 1:VERTICAL:SCALE 3.8000;POSITION 2.5951;:DISPLAY:WAVEVIEW1:ZOOM:ZOOM1:STATE 0`.

DISplay:WAVEView<x>:ZOOM:ZOOM<x>? (Query Only)

This query returns the zoom parameters of the specified zoom in the specified waveview. <x> must be 1.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`. `ZOOM<x>` is the specified zoom and must be `ZOOM1`.*

Group Zoom

Syntax

```
DISplay:WAVEView<x>:ZOOM:ZOOM<x>?
```

Returns Returns the zoom parameters of the specified zoom in the specified waveview.

Examples

`DISplay:WAVEView1:ZOOM:ZOOM1?` might return `:DISPLAY:WAVEVIEW1:ZOOM:ZOOM1:HORIZONTAL:SCALE 2.5000;POSITION 70.0000;WINSCALE 400.0000E-9;:DISPLAY:WAVEVIEW1:ZOOM:ZOOM 1:VERTICAL:SCALE 3.8000;POSITION 2.5951;:DISPLAY:WAVEVIEW1:ZOOM:ZOOM1:STATE 0`.

DISplay:WAVEView<x>:ZOOM:ZOOM<x>:HORizontal:POSition

Sets or queries the horizontal zoom position (of the specified zoom in the specified waveview) of the zoomed waveform or zoom waveform in the display, around which the zoom waveform displays. It is freely movable around the acquisition settings (horizontal span). An acquired waveform or reference could extend off screen. The valid zoom area does not care about the waveform itself, only the user setting for acquisition.

For example, if horizontal scale is set to 1 second, position to 50, then the acquisition area will go from -5 s to +5 s. Zoom window 0 will focus on -5 s and zoom area 100 will focus on +5 s. If the instrument is stopped and the scale changed to 0.5 s, there will be data off the ends of the display. However, 0% zoom will put the user focus on -2.5 s, the lower bound of the acquisition span.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`. `ZOOM<x>` is the specified zoom and must be `ZOOM1`.*

Group Zoom

Syntax
```
DISplay:WAVEView<x>:ZOOM:ZOOM<x>:HORizontal:POSition <NR3>
DISplay:WAVEView<x>:ZOOM:ZOOM<x>:HORizontal:POSition?
```

Arguments `<NR3>` is a value from 0 to 100.00 and is the percent of the waveform that is to the left of screen center, when the zoom factor is 2× or greater.

Examples `DISPLAY:WAVEVIEW1:ZOOM:ZOOM1:HORIZONTAL:POSITION 50` sets the horizontal position of the zoom box of waveview1 to 50 so that it is centered horizontally on the screen.

`DISPLAY:WAVEVIEW1:ZOOM:ZOOM1:HORIZONTAL:POSITION?` might return `:DISPLAY:WAVEVIEW1:ZOOM:ZOOM1:HORIZONTAL:POSITION 10.0000`, indicating that the horizontal position of the zoom box of waveview 1 is centered over the first major graticule division.

DISplay:WAVEView<x>:ZOOM:ZOOM<x>:HORizontal:SCALe

This command sets or queries the horizontal zoom factor of the specified zoom in the specified waveview.

NOTE. `WAVEView<x>` is the specified waveview and must be `WAVEView1`. `ZOOM<x>` is the specified zoom and must be `ZOOM1`.

Group Zoom

Syntax
```
DISplay:WAVEView<x>:ZOOM:ZOOM<x>:HORizontal:SCALe <NR3>
DISplay:WAVEView<x>:ZOOM:ZOOM<x>:HORizontal:SCALe?
```

Arguments `<NR3>` is the amount of expansion in the horizontal direction in 1-2-4 increments of the specified zoom in the specified waveview.

Examples `DISplay:WAVEView1:ZOOM:ZOOM1:HORizontal:SCALe 5` sets the horizontal zoom factor of zoom1 in waveview1 to 5x.

`DISplay:WAVEView1:ZOOM:ZOOM1:HORizontal:SCALe?` might return `:DISplay:WAVEView1:ZOOM:ZOOM1:HORizontal:SCALe 10`, indicating that the zoom factor of waveview1 is set to 10x.

DISplay:WAVEView<x>:ZOOM:ZOOM<x>:HORizontal:WINSCALe

This command sets or queries the overview window horizontal scale in the specified waveview.

***NOTE.** `WAVEView<x>` is the specified waveview and must be `WAVEView1`. `ZOOM<x>` is the specified zoom and must be `ZOOM1`.*

Group

Zoom

Syntax

```
DISplay:WAVEView<x>:ZOOM:ZOOM<x>:HORizontal:WINSCALe <NR3>
DISplay:WAVEView<x>:ZOOM:ZOOM<x>:HORizontal:WINSCALe?
```

Arguments

`<NR3>` is the horizontal scale of the zoom window.

Examples

`DISplay:WAVEView1:ZOOM:ZOOM1HORizontal:WINSCALe?` might return `:DISPLAY:WAVEVIEW1:ZOOM:ZOOM1:HORIZONTAL:WINSCALE 80.0000E-9` indicating that the horizontal scale of the overview window is 80 ns per division.

DISplay:WAVEView<x>:ZOOM:ZOOM<x>:STATe

This command sets or queries the zoom display state of the specified zoom in the specified waveview. This command is equivalent to pushing the zoom button on the front panel.

***NOTE.** `WAVEView<x>` is the specified waveview and must be `WAVEView1`. `ZOOM<x>` is the specified zoom and must be `ZOOM1`.*

Group

Zoom

Syntax

```
DISplay:WAVEView<x>:ZOOM:ZOOM<x>:STATe {ON|OFF|<NR1>}
DISplay:WAVEView<x>:ZOOM:ZOOM<x>:STATe?
```

Arguments

`ON` turns the specified zoom on.

`OFF` turns specified zoom off.

`<NR1>` = 0 disables the specified zoom; any other value enables the specified zoom.

Examples

`DISplay:WAVEView1:ZOOM:ZOOM1:STATe ON` turns the specified zoom on.

`DISplay:WAVEView1:ZOOM:ZOOM1:STATe?` might return `:DISplay:WAVEView1:ZOOM:ZOOM1:STATe 1`, indicating that specified zoom is on.

DISplay:WAVEView<x>:ZOOM:ZOOM<x>:VERTical:POSition

This command sets or queries the vertical position of the specified zoom in the specified waveview. It is freely movable within the confines of the acquired waveform. It is measured from the top to bottom of the acquisition window. The top of the zoom window is -5 * vertical zoom factor. The bottom of the zoom window is +5 * the vertical zoom factor. For a zoom of 5x, the position ranges from -25 to 25.

NOTE. *`WAVEView<x>` is the specified waveview and must be `WAVEView1`. `ZOOM<x>` is the specified zoom and must be `ZOOM1`.*

Group

Zoom

Syntax

```
DISplay:WAVEView<x>:ZOOM:ZOOM<x>:VERTical:POSition <NR3>
DISplay:WAVEView<x>:ZOOM:ZOOM<x>:VERTical:POSition?
```

Arguments

`NR3` is the vertical position of the specified zoom in the specified waveview. It is freely movable within the confines of the acquired waveform. The top of the zoom window is -5 * vertical zoom factor. The bottom of the zoom window is +5 * the vertical zoom factor. For a vertical zoom of 5x, the position ranges from -25 to 25.

Examples

`DISplay:WAVEView1:ZOOM:ZOOM1:VERTical:POSition 50` sets the vertical position of the specified zoom in the specified waveview to 50, where the vertical zoom factor is 10x, top of screen is -50 and bottom if +50, and 0 is the vertical center.

`DISplay:WAVEView1:ZOOM:ZOOM1:VERTical:POSition?` might return `:DISplay:WAVEView1:ZOOM:ZOOM1:VERTical:POSition 23.90000`, indicating that the vertical position of the specified zoom in the specified waveview is set to 23.9, where the vertical zoom factor is 10x, top of screen is -50 and bottom if +50, and 0 is the vertical center.

DISplay:WAVEView<x>:ZOOM:ZOOM<x>:VERTical:SCALe

This command sets or queries the vertical zoom factor of the specified zoom in the specified waveview.

NOTE. `WAVEView<x>` is the specified waveview and must be `WAVEView1`. `ZOOM<x>` is the specified zoom and must be `ZOOM1`.

Group Zoom

Syntax

```
DISplay:WAVEView<x>:ZOOM:ZOOM<x>:VERTical:SCALe <NR3>
DISplay:WAVEView<x>:ZOOM:ZOOM<x>:VERTical:SCALe?
```

Arguments `<NR3>` is the amount of vertical expansion or compression. Based on the value that you entered, this command uses the nearest scale factor. Setting the vertical scale to 1 indicates unity (no zoom).

Examples `DISplay:WAVEView1:ZOOM:ZOOM2:VERTical:SCALe 5` sets the vertical scale of zoom1 of waveview1 to 5×.

`DISplay:WAVEView1:ZOOM:ZOOM2:VERTical:SCALe?` might return `:DISplay:WAVEView1:ZOOM:ZOOM2:VERTical:SCALe 2.0000`, indicating that the vertical scale of zoom1 of waveview1 is 2×.

DISplay:WAVEView<y>:REF:REF<x>:FRAMe

This command sets or returns the selected frame of the specified analog ref. Each ref has a unique selected frame.

Group Display Control

Syntax

```
DISplay:WAVEView<y>:REF:REF<x>:FRAMe <NR1>
DISplay:WAVEView<y>:REF:REF<x>:FRAMe?
```

Arguments `<NR1>` is the selected frame of the specified analog ref.

Examples `DISplay:WAVEView1:REF:REF2:FRAMe?` might return `:DISPLAY:WAVEVIEW1:REF:REF2:FRAME 1`, indicating the selected frame is 1.

DISplay:WAVEView<y>:REF<x>_DALL:FRAMe

This command sets or returns the selected frame of the specified digital ref. Each ref has a unique selected frame.

Group Display Control

Syntax
```
DISplay:WAVEView<y>:REF<x>_DALL:FRAMe <NR1>
DISplay:WAVEView<y>:REF<x>_DALL:FRAMe?
```

Arguments `<NR1>` is the selected frame of the specified digital ref.

Examples `DISplay:WAVEView<y>:REF<x>_DALL:FRAMe?` might return `:DISPLAY:WAVEVIEW1:REF1_DALL:FRAME 1`, indicating the selected frame is 1.

DVM (No Query Form)

Resets the Digital Voltmeter measurements and history.

Conditions Requires DVM option.

Group DVM

Syntax
```
DVM RESET
```

Arguments `RESET` specifies resetting DVM measurements and history.

Examples `DVM RESET` resets the DVM measurement and history.

DVM:AUTORange

Sets (or queries) the autorange state for the Digital Voltmeter.

NOTE. *the DVM will not autorange as long as the DVM source is the same channel as the trigger source.*

Group DVM

Syntax
```
DVM:AUTORange {0|1|OFF|ON}
DVM:AUTORange?
```

Arguments

`1` or `ON` turns on autorange for the Digital Voltmeter.

`0` or `OFF` turns autorange off.

Examples

`DVM:AUTOR ON` turns on autorange for the Digital Voltmeter.

DVM:MEASUrement:FREQuency? (Query Only)

This command returns the current frequency value for the DVM.

Conditions

Requires DVM option.

Group

DVM

Syntax

```
DVM:MEASUrement:FREQuency?
```

Related Commands

DVM:TRIGger:FREQuency:COUNTer

Examples

`DVM:MEASU:FREQ?` might return `100.0000E+3`, which represents 100 kHz as the current frequency value for the DVM.

DVM:MEASUrement:HIStory:AVErage? (Query Only)

Returns the average DVM readout value over the history period. The history period is a constant period of 5 seconds.

Conditions

Requires DVM option.

Group

DVM

Syntax

```
DVM:MEASUrement:HIStory:AVErage?
```

Examples

`DVM:MEASU:HIS:AVE?` might return `:DVM:MEASUREMENT:HISTORY:AVERAGE 429.3000E-3` which represents the average DVM readout value over the history period in volts.

DVM:MEASUrement:HIStory:MAXimum? (Query Only)

Returns the maximum readout value for the DVM function over the history period. The history period is a constant period of 5 seconds.

Conditions Requires DVM option.

Group DVM

Syntax

```
DVM:MEASUrement:HIStory:MAXimum?
```

Examples `DVM:MEASU:HIS:MAX?` might return `:DVM:MEASUREMENT:HISTORY:MAXIMUM 431.9000E-3`, which represents the maximum readout value for the DVM function over the history period in volts.

DVM:MEASUrement:HIStory:MINImum? (Query Only)

Returns the minimum readout value for the DVM over the history period. The history period is a constant period of 5 seconds.

Conditions Requires DVM option.

Group DVM

Syntax

```
DVM:MEASUrement:HIStory:MINImum?
```

Examples `DVM:MEASU:HIS:MINI?` might return `:DVM:MEASUREMENT:HISTORY:MINIMUM 430.9000E-3`, which represents the minimum readout value for the DVM function over the history period in volts.

DVM:MEASUrement:INFMAXimum? (Query Only)

Returns the maximum DVM readout value over the entire time that the DVM has been on since the last change using the DVM:MODe or DVM:SOUrce commands or DVM `RESET`.

Conditions Requires DVM option.

Group
DVM

Syntax
DVM:MEASUrement:INFMAXimum?

Examples
DVM:MEASU:INFMAX? might return :DVM:MEASUREMENT:INFMAXIMUM 432.9000E-3, which represents the maximum readout value (in volts)of the DVM function over the entire time that the DVM has been on since the last change using the DVM:MODe or DVM:SOUrce commands or DVM RESET.

DVM:MEASUrement:INFMINimum? (Query Only)

Returns the minimum readout value of the DVM over the entire time that the DVM has been on since the last change using the DVM:MODe or DVM:SOUrce commands or DVM RESET.

Conditions
Requires DVM option.

Group
DVM

Syntax
DVM:MEASUrement:INFMINimum?

Examples
DVM:MEASU:INMIN? might return :DVM:MEASUREMENT:INFMINIMUM 427.3000E-3, which represents the minimum readout value of the DVM function (in volts) over the entire time that the DVM has been on since the last change using the DVM:MODe or DVM:SOUrce commands or DVM RESET.

DVM:MEASUrement:VALue? (Query Only)

Returns the DVM readout value (the largest displayed value at the top of the DVM screen).

Conditions
Requires DVM option.

Group
DVM

Syntax
DVM:MEASUrement:VALue?

Examples `DVM:MEASU:VAL?` might return `:DVM:MEASUREMENT:VALUE 430.7000E-3`, which represents the DVM value.

DVM:MODe

This command specifies (or queries) the mode to use for the Digital Voltmeter.

Conditions Requires DVM option.

Group DVM

Syntax
```
DVM:MODe {ACRMS|ACDCRMS|DC|OFF}
DVM:MODe?
```

Arguments `ACRMS` – displays the root-mean-square value of the acquired data, with the DC component removed.

`ACDCRMS` – displays the RMS value of the acquired data.

`DC` – displays the DC value of the acquired data.

`OFF`

Examples `DVM:MODE DC` sets the mode for the DVM to DC, which displays the DC value of the acquired data.

`DVM:MOD?` might return ACRMS, which indicates the mode is currently set to ACRMS.

DVM:SOUrce

This command sets (or queries) the source for the DVM.

Conditions Requires DVM option.

Group DVM

Syntax
```
DVM:SOUrce {CH<x>}
DVM:SOUrce?
```

Arguments `CH<x>` specify which channel to use as the source for the DVM.

Examples `DVM:SOURCE CH4` sets the DVM source to Channel 4.

DVM:TRIGger:FREQuency:COUNTer

This command sets or queries the state of the trigger frequency counter readout in the trigger badge. This command requires the DVM option (free with product registration).

Group DVM

Syntax

```
DVM:TRIGger:FREQuency:COUNTer {0|1|OFF|ON}
DVM:TRIGger:FREQuency:COUNTer?
```

Arguments `1` or `ON` turns on the trigger frequency counter for the Digital Voltmeter.

`0` or `OFF` turns it off.

Examples `DVM:TRIGGER:FREQUENCY:COUNTER 0` turns off the counter.

`DVM:TRIGGER:FREQUENCY:COUNTER?` might return `:DVM:TRIGGER:FREQUENCY:COUNTER 1` indicating the counter is on.

*ESE

This command sets and queries the bits in the Event Status Enable Register (ESER). The ESER prevents events from being reported to the Status Byte Register (STB). For a more detailed discussion of the use of these registers, see Registers.

Group Status and Error

Syntax

```
*ESE <NR1>
*ESE?
```

Related Commands *CLS, DESE, *ESR?, EVENT?, EVMsg?, *SRE, *STB?

Arguments `<NR1>` specifies the binary bits of the ESER according to this value, which ranges from 0 through 255.

The power-on default for the ESER is 0 if *PSC is 1. If *PSC is 0, the ESER maintains the previous power cycle value through the current power cycle.

NOTE. Setting the DESER and the ESER to the same values allows only those codes to be entered into the Event Queue and summarized on the ESB bit (bit 5) of the Status Byte Register. Use the DESE command to set the DESER.

Examples

`*ESE 209` sets the ESER to binary 11010001, which enables the PON, URQ, EXE, and OPC bits.

`*ESE?` might return 186, showing that the ESER contains DESE the binary value 10111010.

*ESR? (Query Only)

This query-only command returns the contents of the Standard Event Status Register (SESR). *ESR? also clears the SESR (since reading the SESR clears it). For a more detailed discussion of the use of these registers, see Registers.

Group

Status and Error

Syntax

```
*ESR?
```

Related Commands

ALLEv?, *CLS, DESE, *ESE, EVENT?, EVMsg?, *SRE, *STB?

Examples

`*ESR?` might return `*ESR 213`, showing that the SESR contains the binary value 11010101.

ETHERnet:DHCPbootp

This command sets the network configuration method to DHCP (that is ON) or static IP address (that is OFF).

Group

Ethernet

Syntax

```
ETHERnet:DHCPbootp {ON|OFF}
ETHERnet:DHCPbootp?
```

Arguments

`ON` enables the oscilloscope to search the network for a DHCP server in order to automatically assign a dynamic IP address to the oscilloscope.

NOTE. Do not use DHCP searching if your oscilloscope has been assigned a static address on a network. If you set this command to ON, the DHCP search will delete or change your static IP address information.

`OFF` disables the oscilloscope to search the network for a DHCP server.

Examples `ETHERNET:DHCPBOOTP ON` sets the oscilloscope to search for a DHCP server and assign a dynamic IP address to the oscilloscope.

ETHERnet:DNS:IPADDress

This command specifies the network Domain Name Server (DNS) IP address.

Group Ethernet

Syntax

```
ETHERnet:DNS:IPADDress <QString>
ETHERnet:DNS:IPADDress?
```

Arguments `<QString>` is a standard IP address value, enclosed in quotes.

Examples `ETHERNET:DNS:IPADDRESS "128.196.13.252"` sets the DNS IP address that the oscilloscope uses to communicate with the network.

ETHERnet:DOMAINname

This command specifies the network domain name.

Group Ethernet

Syntax

```
ETHERnet:DOMAINname <QString>
ETHERnet:DOMAINname?
```

Arguments `<QString>` is the network domain name, enclosed in quotes.

Examples `ETHERNET:DOMAINNAME "Alpha1.Mycorp.com"` sets the domain name that the oscilloscope uses to communicate with the network.

ETHERnet:ENET:ADDress? (Query Only)

Returns the Ethernet address (MAC address) value assigned to the oscilloscope. This is assigned at the factory and can not be changed.

Group Ethernet

Syntax

```
ETHERnet:ENET:ADDress?
```

Examples `ETHERNET:ENET:ADDRESS?` returns an Ethernet address such as `08:00:11:01:02:03`

ETHERnet:GATEWay:IPADDress

This command specifies the network gateway IP address.

Group Ethernet

Syntax

```
ETHERnet:GATEWay:IPADDress <QString>
ETHERnet:GATEWay:IPADDress?
```

Related Commands ETHERnet:NETWORKCONFig, ETHERnet:IPADDress, ETHERnet:SUBNETMask

Arguments `<QString>` is a standard IP address value, enclosed in quotes.

Examples `ETHERNET:GATEWAY:IPADDRESS "128.143.16.1"` sets the gateway IP address.

ETHERnet:IPADDress

This command sets the IP address assigned to the oscilloscope.

Group Ethernet

Syntax

```
ETHERnet:IPADDress <QString>
ETHERnet:IPADDress?
```

Related Commands ETHERnet:NETWORKCONFig,

ETHERnet:SUBNETMask,

ETHERnet:GATEWay:IPADDress

Arguments `<QString>` is a standard IP address value, enclosed in quotes.

Examples `ETHERNET:IPADDRESS` "123.121.13.214" sets the oscilloscope's IP address.

ETHERnet:LXI:LAN:RESET (No Query Form)

This command resets the LXI local area network.

Group Ethernet

Syntax

```
ETHERnet:LXI:LAN:RESET
```

Examples `ETHERnet:LXI:LAN:RESET` resets the LXI local area network.

ETHERnet:LXI:LAN:SERVICENAMe

This command sets or queries the service name used for the LXI interface.

Group Ethernet

Syntax

```
ETHERnet:LXI:LAN:SERVICENAMe QString
ETHERnet:LXI:LAN:SERVICENAMe?
```

Arguments QString is a quoted string of up to 64 characters that specifies the mDNS service name used for the LXI interface.

Examples `ETHERnet:LXI:LAN:SERVICENAMe?` might return "Tektronix Oscilloscope MSO5 053CVV"

ETHERnet:LXI:LAN:STATus? (Query Only)

This query returns the LXI network status: one of OK, FAULT, or IDENTIFY. IDENTIFY indicates that the device identify mode is enabled.

Group

Ethernet

Syntax

```
ETHERnet:LXI:LAN:STATus?
```

Related Commands

ETHERnet:PING,

ETHERnet:PING:STATus?

Returns

`OK` — indicates the network is running and the oscilloscope can “see” the network.

`FAULT` — indicates the network is not visible, or the network settings are incorrect.

`IDENTIFY` indicates that a message is being displayed on the oscilloscope’s front panel indicating which scope the user is currently accessing.

Examples

`ETHER:LXI:LAN:STAT?` might return FAULT, indicating the network is not visible, or the network settings are incorrect.

ETHERnet:NAME

This command sets or queries the instrument Ethernet hostname assigned to the oscilloscope.

Group

Ethernet

Syntax

```
ETHERnet:NAME <QString>
ETHERnet:NAME?
```

Arguments

`<QString>` is the network name assigned to the oscilloscope, enclosed in quotes.

Examples

`ETHERNET:NAME` "labscope1" sets the oscilloscope's network name.

ETHERnet:NETWORKCONFig

This command specifies the Ethernet network configuration setting.

Group Ethernet

Syntax

```
ETHERnet:NETWORKCONFig {AUTOmatic|MANual}
ETHERnet:NETWORKCONFig?
```

Related Commands ETHERnet:NAME,

ETHERnet:IPADDress,

ETHERnet:SUBNETMask,

ETHERnet:GATEWay:IPADDress,

ETHERnet:DHCPbootp

Arguments `AUTOmatic` specifies that the oscilloscope's IP address, subnet mask and gateway settings will be received from a DHCP server on the local network.

`MANual` specifies that the Ethernet settings will be configured manually, using ETHERnet:IPADDress, ETHERnet:SUBNETMask, and ETHERnet:GATEWay:IPADDress.

Examples `ETHERnet:NETWORKCONFig MANual` specifies to configure the Ethernet settings manually.

`ETHERnet:NETWORKCONFig?` might return AUTOMATIC, indicating the settings are being configured automatically.

ETHERnet:PING (No Query Form)

Sends a ping packet to the instrument gateway and sets the status accordingly.

Group Ethernet

Syntax

```
ETHERnet:PING EXECute
```

Examples `ETHERNET:PING` EXECute causes the oscilloscope to ping the gateway IP address.

ETHERnet:PING:STATus? (Query Only)

Returns the results of sending the ETHERnet:PING command to ping the gateway IP address.

Group Ethernet

Syntax `ETHERnet:PING:STATus?`

Returns `OK` is returned if the computer at the gateway IP address answers.

`NORESPOnsE` is returned if the computer at the gateway IP address does not answer.

`TRYING` is returned if the ping operation is still executing.

`NEVER` is returned if `ETHERnet:PING EXECute` has not been previously sent, indicating that no ping response has ever been received in response to an `ETHERnet:PING EXECute` command since the instrument was powered on.

ETHERnet:SUBNETMask

This command sets or queries the instrument subnet mask value.

Group Ethernet

Syntax
```
ETHERnet:SUBNETMask <QString>
ETHERnet:SUBNETMask?
```

Related Commands ETHERnet:NETWORKCONFig,

ETHERnet:IPADDress,

ETHERnet:GATEWay:IPADDress

Arguments `<QString>` is the subnet mask value, enclosed in quotes.

Examples `ETHERNET:SUBNETMASK "255.255.255.0"` sets the subnet mask value using standard IP address notation format.

EVENT? (Query Only)

This query-only command returns an event code from the Event Queue that provides information about the results of the last *ESR? read. `EVENT?` also removes the returned value from the Event Queue.

Group Status and Error

Syntax `EVENT?`

Related Commands ALLEv?, *CLS, DESE, *ESE, *ESR?, EVMsg?, *SRE, *STB?

Examples `EVENT?` might return `:EVENT 110`, showing that there was an error in a command header.

EVMsg? (Query Only)

This query-only command removes a single event code from the Event Queue that is associated with the results of the last *ESR? read and returns the event code with an explanatory message. For more information, see Event Handling.

Group Status and Error

Syntax `EVMsg?`

Related Commands ALLEv?

*CLS, DESE, *ESE, *ESR?, EVENT?, *SRE, *STB?

Returns The event code and message in the following format:

<Event Code><Comma><QString>[<Event Code><Comma><QString>...]<QString>::= <Message>;[<Command>]

where <Command> is the command that caused the error and may be returned when a command error is detected by the instrument. As much of the command will be returned as possible without exceeding the 60 character limit of the <Message> and <Command> string combined. The command string is right-justified.

Examples `EVMSG?` might return `:EVMSG 110,"Command header error"`.

EVQty? (Query Only)

This query-only command returns the number of events that are enabled in the queue. This is useful when using the ALLEv? query, since it lets you know exactly how many events will be returned.

Group Status and Error

Syntax `EVQty?`

Related Commands ALLEv?, EVENT?, EVMsg?

Examples `EVQTY?` might return `:EVQTY 3`, indicating the number of event codes in the Event Queue.

FACtory (No Query Form)

This command (no query form) resets the instrument to its factory default settings. This command is equivalent to pressing the DEFAULT SETUP button located on the instrument front panel or selecting Default Setup from the File menu.

This command Performs the following in addition to what is done for the *RST command:

- Clears any pending OPC operations.
- Resets the following IEEE488.2 registers:
  - *ESE 0 (Event Status Enable Register)
  - *SRE 0 (Service Request Enable Register)
  - DESE 255 (Device Event Status Enable Register)
  - *PSC 1 (Power-on Status Clear Flag)
- Deletes all defined aliases.
- Enables command headers (:HEADer 1).

Group Save and Recall

Syntax `FACtory`

Related Commands *PSC, RECAll:SETUp, *RST

Arguments None

Examples `FACTORY` resets the instrument to its factory default settings.

FILESystem? (Query Only)

This query-only command returns the directory listing of the current working directory. This query is the same as the `FILESystem:DIR?` query.

Group File System

Syntax `FILESystem?`

Related Commands FILESystem:COPy, FILESystem:CWD, FILESystem:DELEte, FILESystem:DIR?, FILESystem:READFile, FILESystem:REName, FILESystem:WRITEFile

Arguments None.

Examples `FILESYSTEM?` might return `:FILESYSTEM:DIR "myFile.txt","myWaveform.wfm"`.

FILESystem:COPy (No Query Form)

This command (no query form) copies a named file to a new file. The new file might be in a totally separate directory than the old file. You can only copy one file at a time using this command. Wild card characters are not allowed.

Group File System

Syntax `FILESystem:COPy {<source file path>,<destination file path>}`

Related Commands FILESystem:CWD, FILESystem:DELEte

Arguments `<source file path>` is a quoted string that defines the file name and path or directory. If the file path is within the current working directory, you need only specify the file name.

`<destination file path>` is a quoted string that defines the file name and path. If the file path is within the current working directory, you need only specify the file name.

Examples `FILESYSTEM:COPY "E:/setup1.set","E:/SETUPS/setup1.set"` copies the file named setup1.set, on the E drive to a file named setup1.set in the SETUPS directory on the E drive.

:FILESystem:CWD "E:/SETUPS"

:FILESystem:COPy ".","I:/Archive/SETUPS"

:FILESystem:COPy "../ch1.isf","I:/SavedWfms/ch1_new.isf"

FILESystem:CWD

This command sets or queries the current working directory. CWD is short for Current Working Directory. It changes the directory (folder) that the other FILESystem commands operate on.

NOTE. *There are three host ports on the front , E:, F:, and G: and two on the back H: and I:*

Group File System

Syntax

```
FILESystem:CWD {<new working directory path>}
FILESystem:CWD?
```

Arguments `<new working directory path>` is a quoted string that defines the current working; a directory name can be up to 128 characters.

Examples `FILESYSTEM:CWD "E:/waveforms/"` changes the current working directory to a folder named "waveforms" on the USB flash drive installed in the "E:" USB Host port.

`FILESYSTEM:CWD?` might return `:FILESYSTEM:CWD "E:/"` Indicates the current working directory is the root folder of the E: USB flash drive port.

FILESystem:DELEte (No Query Form)

This command (no query form) deletes a named file or directory from a mass storage device. Once removed, the data in that file or directory can no longer be accessed. If the specified file is a directory, it must be empty before it can be deleted.

Group File System

Syntax `FILESystem:DELEte <file path>`

Related Commands FILESystem:COPy, FILESystem:CWD, FILESystem:RMDir

Arguments `<file path>` is a quoted string that defines the file name and path. If the file path is within the current working directory, you need only specify the file name.

Examples `FILESYSTEM:DELETE "NOT_MINE.SET"` deletes the file named NOT_MINE.SET from the folder referred to by the FILESYSTEM:CWDFILESystem:CWD command.

FILESystem:DIR? (Query Only)

This query-only command returns a comma separated list of quoted strings. Each string contains the name of a file or directory in the folder referred to by the FILESYSTEM:CWDFILESystem:CWD command.

Group File System

Syntax `FILESystem:DIR?`

Related Commands FILESystem:CWD, FILESystem:MKDir

Arguments None

Examples `FILESYSTEM:DIR?` might return :FILESYSTEM:DIR "161012_132039_000.wfm","161012_132039_001.wfm","161220_191452.png" ,"161220_191554.csv","170320_132925_0 00.wfm","170320_132929_000.set", "Ch2-Ch3_000.set","E:","F:","G:","H:","I:","J:","RGJtest_000.set", "RgjSetupRuntTrig4chnl s_000.set","RgjSetup_000.set","ScrnShot1jeh2_000.wfm","ScrnShot1jeh_000.wfm", "ScrnShot_000.png","ScrnShot_000.wfm","Scrn _000.set","Scrn_001.set","Scrn_002.set","Scrn_003.set","Scrn_004.set", "Wfm_000.wfm","Wfm_001.wfm","Wfm_002.wfm","Wfm_003 .wfm","Wfm_004.wfm","Wfm_005.wfm","Wfm_006.wfm","digChans_000.wfm".

FILESystem:HOMEDir? (Query Only)

This query returns the current user's home directory.

Group File System

Syntax `FILESystem:HOMEDir?`

Returns The current user's home directory as a quoted string.

Examples `FILESYSTEM:HOMEDIR?` might return: `"C:"`.

FILESystem:LDIR? (Query Only)

Returns a comma separated list of every file, file size, type, modification date and time, and directory in the folder referred to by the FILESYSTEM:CWDFILESystem:CWD command. This is different than the :DIR query in that it provides a long output format with the file size, type, and modification date/time. Each entry is a semicolon separated list: < file name>;<type>;<size in bytes>;<date>;<time>

Group File System

Syntax `FILESystem:LDIR?`

Returns A comma separated list of every file, file size, type, modification date and time, and directory in the folder referred to by the FILESystem:CWDcommand.

Examples `FILESYSTEM:LDIR?` might return "tek0000CH1.isf;FILE;20342;2009-05-21;13:58:24", "TEMP;DIR;4096;2009-09-15;06:20:44".

FILESystem:MKDir (No Query Form)

This command (no query form) creates a new directory.

Group File System

Syntax `FILESystem:MKDir <directory path>`

Related Commands FILESystem:CWD, FILESystem:DIR?

Arguments
`<directory path>` is a quoted string that specifies the directory to create.

Examples
`FILESYSTEM:MKDIR "E:\NewDirectory"` creates the directory named *NewDirectory* at the root of the E drive.

These two commands create the directory MyNewSubDirectory within the existing directory MyDirectory at the root of the E drive:

```
FILESYSTEM:CWD "E:/MyDirectory"; FILESYSTEM:MKDIR
"MyNewSubDirectory"
```

FILESystem:READFile (No Query Form)

This command writes the contents of the specified file to the current interface. If the specified file does not exist or is not readable, an appropriate error event is posted.

Group
File System

Syntax
`FILESystem:READFile <QString>`

Related Commands
FILESystem:CWD

Arguments
`<QString>` is a quoted string that defines the file name and path. If the file path is within the current working directory, you need only specify the file name.

Examples
`FILESYSTEM:READFILE “E:/test_data/tek00016CH1.csv”` reads the content of the specified file, if the file exists and is readable, and sends the content of the file to the current interface.

FILESystem:REName (No Query Form)

This command (no query form) assigns a new name to an existing file or folder.

Group
File System

Syntax
`FILESystem:REName <old file path>,<new file path>`

Related Commands
FILESystem:CWD

Arguments

`<old file path>` is a quoted string that defines the file or folder name and path. If the path is within the current working directory, you need only specify the file or folder name.

`<new file path>` is a quoted string that defines the file or folder name and path. If the path is within the current working directory, you need only specify the file or folder name.

Examples

`FILESYSTEM:RENAME "E:/TEK00000.SET","E:/MYSETTING.SET"` gives the file named TEK00000.SET the new name of MYSETTING.SET. The file remains in the root directory on the E drive.

`FILESYSTEM:RENAME "e:/mySettings/tek00000.set","e:/setup1.set"`. This example illustrates how to move a file from one folder to another.

FILESystem:RMDir (No Query Form)

This command (no query form) deletes a named directory. The directory must be empty.

Group

File System

Syntax

```
FILESystem:RMDir <directory path>
```

Related Commands

FILESystem:CWD

Arguments

`<directory path>` is a quoted string that defines the folder name and path. If the folder path is within the current working directory, you need only specify the folder name.

Examples

`FILESYSTEM:RMDIR "E:/OldDirectory"` removes the directory named OldDirectory from the root of the E drive.

FILESystem:UNMOUNT:DRIve (No Query Form)

This command unmounts the USB drive specified by the quoted string argument.

Group

File System

Syntax `FILESystem:UNMOUNT:DRIve <QString>`

Related Commands

Arguments `<QString>` is a quoted string that specifies which USB drive to unmount. String is a case insensitive single letter followed by a colon.

Examples `FILESYSTEM:UNMOUNT:DRIVE "G:"` specifies to unmount the flash drive installed in the right-most USB slot on the front of the instrument.

FILESystem:WRITEFile (No Query Form)

This command (no query form) writes the specified block data to the specified file on the instruments file system. If the destination file cannot be written, an error event is posted.

Group File System

Syntax `FILESystem:WRITEFile <file path>,<data>`

Related Commands FILESystem:CWD

Arguments `<file path>` is a quoted string that defines the file name and path. If the file path is within the current working directory, you need only specify the file name.

`<data>` is the specified block data to be written.

FPAnel:PRESS (No Query Form)

This command is used to emulate a button press. When used with knob enumerations, this command pushes the knob. Use the FPAnel:TURN command to emulate knob turns.

Group Miscellaneous

Syntax

```
FPAnel:PRESS {AUTOset|BUS|CH1<x>|CLEAR|CURsor|DEFaultsetup|
FASTAcq|FORCetrig|GPKNOB1|GPKNOB2|HIGHRES|HORZPOS|HORZScale|
MATh|NEXt|PREv|REF |RUNSTop|SETTO50|SINGleseq|TOUCHSCReen|
TRIGMode|TRIGSlope|USER|VERTPOS|VERTSCALE|ZOOM}
```

Arguments Arguments are instrument buttons.

Examples `FPANEL:PRESS FORCETRIG` emulates pressing the Force trigger button.

FPAnel:TURN

This command is used to emulate a knob turn. The optional NR1 specifies the number of clicks where negative values indicate counter clockwise. If not specified, the default of 1 click is used indicating the knob is turned clockwise 1 click.

Group Miscellaneous

Syntax

```
FPAnel:TURN {GPKNOB1|GPKNOB2|HORZPOS|HORZScale|
PANKNOB|TRIGLevel|VERTPOS|VERTSCALE|ZOOM} [,<NR1>]
```

Arguments Arguments are knobs that turn obtained during startup.

`<NR1>` is the number of clicks to turn the knob.

Examples `FPANEL:TURN TRIGLEVEL ,3` emulates turning the trigger Level knob 3 clicks in the clockwise direction..

HEADer

This command sets or queries the Response Header Enable State that causes the instrument to either include or omit headers on query responses.

NOTE. *This command does not affect IEEE Std 488.2-1987 Common Commands (those starting with an asterisk); these commands never return headers. .*

Whether the long or short form of header keywords and enumerations are returned is dependent upon the state of :VERBose.

Group Miscellaneous

Syntax

```
HEADer {<NR1>|OFF|ON}
HEADer?
```

Related Commands VERBose

Arguments <NR1> = 0 sets the Response Header Enable State to false; any other value sets this state to true.

OFF sets the Response Header Enable State to false. This causes the instrument to omit headers on query responses, so that only the argument is returned.

ON sets the Response Header Enable State to true. This causes the instrument to include headers on applicable query responses. You can then use the query response as a command.

Examples HEADER OFF specifies that the instrument omits headers on query responses, so that only the argument is returned.

HEADER? might return :HEADER 1, indicating that the instrument is including headers on applicable query responses.

With :VERBose ON and :HEADer ON, the :ACQuire:MODe? query might return: :ACQUIRE:MODE SAMPLE.

With :VERBose OFF and :HEADer ON, the :ACQuire:MODe? query might return: :ACQ:MOD SAM

With :VERBose ON and :HEADer OFF, the :ACQuire:MODe? query might return: SAMPLE

With :VERBose OFF and :HEADer OFF, the :ACQuire:MODe? query might return: SAM

HORizontal? (Query Only)

Queries the current horizontal settings.

Group Horizontal

Syntax HORizontal?

Examples HORIZONTAL? might return :HORIZONTAL:SAMPLERATE 6.2500E+9;SAMPLERATE:ANALYZEMODE:MINIMUM:VALUE AUTOMATIC;OVERRIDE 1;:HORIZONTAL:MODE AUTO;MODE:AUTOMATIC:FASTACQ:RECORDLENGTH:MAXIMUM:ZOOMOVERRIDE 1;VALUE 1250;:HORIZONTAL:MODE:MANUAL:CONFIGURE HORIZONTALSCALE;:HORIZONTAL:MAIN:UNITS S;:HORIZONTAL:DIVISIONS 10;RECORDLENGTH 62500;DELAY:TIME

`0.0E+0;MODE 1;:HORIZONTAL:POSITION 50.0000;SCALE 1.0000E-6;ACQDURATION 10.0000E-6`.

HORizontal:ACQDURATION? (Query Only)

This query returns the timebase duration.

Group

Horizontal

Syntax

```
HORizontal:ACQDURATION?
```

Returns

`<NR3>` returns the duration of the acquisition.

Examples

`HORIZONTAL:ACQDURATION?` might return `:HORIZONTAL:ACQDURATION 5.0E-9`, indicating the acquisition duration is 5.0 us.

HORizontal:DELay:MODe

This command sets or queries the horizontal delay mode.

Group

Horizontal

Syntax

```
HORizontal:DELay:MODe {OFF|ON|<NR1>}
HORizontal:DELay:MODe?
```

Related Commands

HORizontal:POSition

Arguments

`OFF` sets the Horizontal Delay Mode to off. This causes the HORizontal:POSition command to operate like the HORIZONTAL POSITION knob on the front panel.

`ON` sets the Horizontal Delay Mode to on. This causes the `HORizontal:DELay:TIMe` command to operate like the HORIZONTAL POSITION knob on the front panel.

`<NR1>` = 0 sets the Horizontal Delay Mode to off; any other value sets this mode to on.

Examples

`HORIZONTAL:DELAY:MODE OFF` sets the Horizontal Delay Mode to off, allowing the horizontal position command to operate like the HORIZONTAL POSITION knob on the front panel.

`HORIZONTAL:DELAY:MODE`? might return `HORIZONTAL:DELAY:MODE OFF` indicating that the Horizontal Delay Mode is off and that the horizontal position command operates like the HORIZONTAL POSITION knob on the front panel.

HORizontal:DELay:TIMe

This command sets or queries the horizontal delay time that is used when delay mode is on.

Group Horizontal

Syntax

```
HORizontal:DELay:TIMe <NR3>
HORizontal:DELay:TIMe?
```

Related Commands HORizontal:POSition

Arguments `NR3` is the delay in seconds.

Examples `HORizontal:DELay:TIME 0.3` sets the delay of acquisition data so that the resulting waveform is centered 300 ms after the trigger occurs.

HORizontal:DIVisions? (Query Only)

This query-only command returns the number of graticule divisions.

Group Horizontal

Syntax

```
HORizontal:DIVisions?
```

Examples `HORIZONTAL:DIVISIONS?` might return `:HORIZONTAL:DIVISIONS 10.0000`, indicating that the waveform is displayed across ten divisions.

HORizontal:FASTframe? (Query Only)

This query returns all information under horizontal:fastframe.

Group Horizontal

Syntax
`HORizontal:FASTframe?`

Examples
`HORIZONTAL:FASTFRAME?` might return `:HORIZONTAL:FASTFRAME:SELECTED 1;SUMFRAME:STATE 0;:HORIZONTAL:FASTFRAME:COUNT 2;MULTIPLEFRAMES:MODE OFF;:HORIZONTAL:FASTFRAME:STATE 0;REF:INCLUDE 0;FRAME 1`, the current FastFrame settings.

HORizontal:FASTframe:COUNt

This command sets or returns the number of frames.

Group
Horizontal

Syntax
```
HORizontal:FASTframe:COUNt <NR1>
HORizontal:FASTframe:COUNt?
```

Arguments
`<NR1>` is the number of frames.

Examples
`:HORizontal:FASTframe:COUNt 10` sets the number of frames to be acquired to 10. If this is beyond the maximum number of frames, the value will be constrained. For example, if 8 is the current maximum (based on record length) 8 will be set instead of 10.

HORizontal:FASTframe:MAXFRames? (Query Only)

This query returns the maximum number of frames.

Group
Horizontal

Syntax
`HORizontal:FASTframe:MAXFRames?`

Examples
`HORIZONTAL:FASTFRAME:MAXFRAMES?` might return `:HORIZONTAL:FASTFRAME:MAXFRAMES 2`, indicating the maximum number of frames is 2.

HORizontal:FASTframe:MULtipleframes:MODe

This command sets or returns the overlay display type.

Group Horizontal

Syntax

```
HORizontal:FASTframe:MULtipleframes:MODe {OFF|OVERlay}
HORizontal:FASTframe:MULtipleframes:MODe?
```

Arguments OFF specifies only displaying the selected frame.

OVERlay specifies overlaying all frames with the temperature palette. The summary frame is not included in the overlay. The selected frame is drawn in blue on top of all other frames.

Examples :HORizontal:FASTframe:MULtipleframes:MODE OVERlay will cause the entire acquired set of frames to be rendered in a single image, similar to how FastAcq appears. The currently selected frame is drawn on top in blue.

HORizontal:FASTframe:REF:FRAme

This command sets or returns the reference frame number.

Group Horizontal

Syntax

```
HORizontal:FASTframe:REF:FRAme <NR1>
HORizontal:FASTframe:REF:FRAme?
```

Arguments <NR1> is the reference frame number.

Examples HORIZONTAL:FASTFRAME:REF:FRAME? might return :HORIZONTAL:FASTFRAME:REF:FRAME 1, indicating the reference frame number is 1.

HORizontal:FASTframe:REF:INCLUde

This command sets or returns whether the reference frame delta information is shown in the display.

Group Horizontal

Syntax

```
HORizontal:FASTframe:REF:INCLUde {<NR1>|OFF|ON}
HORizontal:FASTframe:REF:INCLUde?
```

Arguments `ON` displays the delta information.

`OFF` does not display the delta information.

`<NR1>` a 0 indicates the delta information is off; any other value displays the delta information.

HORizontal:FASTframe:SELECTED

This command sets or returns the selected frame number for acquired frames. Refs have their own selected frames.

Group Horizontal

Syntax

```
HORizontal:FASTframe:SELECTED <NR1>
HORizontal:FASTframe:SELECTED?
```

Arguments `<NR1>` is the selected frame number for acquired frames.

Examples `HORIZONTAL:FASTFRAME:SELECTED?` might return `:HORIZONTAL:FASTFRAME:SELECTED 1`, indicating the selected frame number is 1.

HORizontal:FASTframe:STATE

This command sets or returns the state of FastFrame. Acquisition modes Envelope and Average are not compatible with FastFrame. If FastFrame is on, an attempted set to those acquisition modes will fail and revert to Sample mode. If FastFrame is turned on while in one of those acquisition modes, the acquisition mode is changed to Sample.

Group Horizontal

Syntax

```
HORizontal:FASTframe:STATE {<NR1>|OFF|ON}
HORizontal:FASTframe:STATE?
```

Arguments

`ON` indicates FastFrame is active.

`OFF` indicates that FastFrame is off.

`<NR1>` A 0 turns off FastFrame; any other value activates FastFrame.

Examples

`HORIZONTAL:FASTFRAME:STATE?` might return `:HORIZONTAL:FASTFRAME:STATE 0`, indicating FastFrame is off.

HORizontal:FASTframe:SUMFrame? (Query Only)

This command sets or returns the summary frame type. Turning on Summary Frame does not adjust the numberFrames value as long as there is room for an additional frame. If there is not enough room then numberFrames will be reduced by 1. The numberFrames value is always the number of frames to acquire.

Group

Horizontal

Syntax

```
HORizontal:FASTframe:SUMFrame?  {NONe|AVErage|ENVelope}
HORizontal:FASTframe:SUMFrame??
```

Arguments

`NONe` sets the Summary frame to off.

`AVErage` sets the Summary frame to average of all acquired frames.

`ENVelope` sets the Summary frame to envelope of all acquired frames.

Examples

`HORIZONTAL:FASTFRAME:SUMFRAME?` might return `:HORIZONTAL:FASTFRAME:SUMFRAME NONE`, indicating the summary frame is off.

HORizontal:FASTframe:SUMFrame:STATE

This command sets or returns the state of FastFrame summary frame. Summary frame mode is set automatically based on the acquisition mode. When in Sample mode, the summary frame type is set to Average. When in Peak Detect mode, the summary frame type is set to Envelope. When in High Res mode, the summary frame type is set to Average.

Group

Horizontal

Syntax
```
HORizontal:FASTframe:SUMFrame:STATE {<NR1>|OFF|ON}
HORizontal:FASTframe:SUMFrame:STATE?
```

Arguments

ON indicates summary frame is active.

OFF indicates that summary frame is off.

<NR1> a 0 turns off summary frame; any other value activates the summary frame.

Examples

HORIZONTAL:FASTFRAME:SUMFRAME:STATE? might return :HORIZONTAL:FASTFRAME:SUMFRAME:STATE 0, indicating the summary frame is off.

HORizontal:FASTframe:TIMEStamp:ALL? (Query Only)

This query-only command returns the time stamp of all frames. The format is (Frame #: TimeStamp, Frame #: TimeStamp, and so on). Each time-stamp string is of the form DD.MM.YYYY.HH:MM::SS.xxxxxxxxxxxx.

Group

Horizontal

Syntax
```
HORizontal:FASTframe:TIMEStamp:ALL?
```

Returns

Returns all of the timestamps.

Examples

HORIZONTAL:FASTFRAME:TIMESTAMP:ALL? might return :HORIZONTAL:FASTFRAME:TIMESTAMP:ALL "1: 31.12.1969.16:00:00.000000000000", indicating the only time

HORizontal:FASTframe:TIMEStamp:DELTa? (Query Only)

This query returns the time difference between the Selected and Reference time-stamps.

Group

Horizontal

Syntax
```
HORizontal:FASTframe:TIMEStamp:DELTa?
```

Returns

Return value is in seconds and fraction of a second.

Examples

`HORIZONTAL:FASTFRAME:TIMESTAMP:DELTA?` might return `:HORIZONTAL:FASTFRAME:TIMESTAMP:DELTA "0.000000000000"` indicating the time difference is 0.0 seconds.

HORizontal:FASTframe:TIMEStamp:REFerence? (Query Only)

This query returns the time-stamp of the FastFrame Reference frame.

Group

Horizontal

Syntax

`HORizontal:FASTframe:TIMEStamp:REFerence?`

Examples

`HORIZONTAL:FASTFRAME:TIMESTAMP:REFERENCE?` might return `:HORIZONTAL:FASTFRAME:TIMESTAMP:REFERENCE "31.12.1969.17:00:00.000000000000"` indicating the reference timestamp is 31.12.1969.17:00:00.000000000000.

HORizontal:FASTframe:TIMEStamp:SELECTED? (Query Only)

This query returns the time-stamp of the FastFrame Selected acquired frame.

Group

Horizontal

Syntax

`HORizontal:FASTframe:TIMEStamp:SELECTED?`

Examples

`HORIZONTAL:FASTFRAME:TIMESTAMP:SELECTED?` might return `:HORIZONTAL:FASTFRAME:TIMESTAMP:SELECTED "31.12.1969.17:00:00.000000000000"` indicating the timestamp of the selected frame is 31.12.1969.17:00:00.000000000000.

HORizontal:FASTframe:XZEro:ALL? (Query Only)

This query-only command returns the sub-sample time between the trigger sample (designated by PT_OFF) and the occurrence of the actual trigger for the waveform specified by the DATa:SOUrce command for all frames. This value is in units of WFMOutpre:XUNit. The format is a string of the form (frame #:zxero, frame #:xzero, and so on).

Group

Horizontal

Syntax `HORizontal:FASTframe:XZEro:ALL?`

Returns This returns the XZERO values for all of the frames.

Examples `HORIZONTAL:FASTFRAME:XZERO:ALL?` might return `:HORIZONTAL:FASTFRAME:XZERO:ALL "1:  1.6000E-10"`, indicating the time between the trigger sample and the actual trigger.

HORizontal:FASTframe:XZEro:REF? (Query Only)

This query-only command returns the sub-sample time between the trigger sample (designated by PT_OFF) and the occurrence of the actual trigger for the waveform specified by the DATa:SOUrce command for the reference frame. This value is in units of WFMOutpre:XUNit.

Group Horizontal

Syntax `HORizontal:FASTframe:XZEro:REF?`

Examples `HORIZONTAL:FASTFRAME:XZERO:REF?` might return `:HORIZONTAL:FASTFRAME:XZERO:REF 1.0` indicating the sub-sample time is 1.0.

HORizontal:FASTframe:XZEro:SELECTED? (Query Only)

This query-only command returns the sub-sample time between the trigger sample (designated by PT_OFF) and the occurrence of the actual trigger for the waveform specified by the DATa:SOUrce command for the selected frame. This value is in units of WFMOutpre:XUNit.

Group Horizontal

Syntax `HORizontal:FASTframe:XZEro:SELECTED?`

Examples `HORIZONTAL:FASTFRAME:XZERO:SELECTED?` might return `:HORIZONTAL:FASTFRAME:XZERO:SELECTED 1.0` indicating the sub-sample time is 1.0.

HORizontal:MAIn:INTERPRatio? (Query Only)

This query-only command returns the Horizontal interpolation ratio.

Group

Horizontal

Syntax

```
HORizontal:MAIn:INTERPRatio?
```

Examples

`HORIZONTAL:MAIN:INTERPRATIO?` might return `:HORIZONTAL:MAIN:INTERPRATIO 10.0`.

HORizontal:MODE

This command set or queries the horizontal operating mode.

Group

Horizontal

Syntax

```
HORizontal:MODE {AUTO|MANual}
HORizontal:MODE?
```

Related Commands

HORizontal:MODE:RECOrdlength, HORizontal:MODE:SAMPLERate, HORizontal:MODE:SCAle

Arguments

`AUTO` selects the automatic horizontal model. Auto mode automatically adjusts the sample rate and record length to provide a high acquisition rate in Fast Acq or signal fidelity in analysis. Record length is read only.

`MANUAL` selects the manual horizontal model. Manual mode lets you change the sample rate, horizontal scale, and record length. These values interact. For example, when you change record length then the horizontal scale also changes.

Examples

`HORIZONTAL:MODE AUTO` sets the horizontal mode to auto.

`HORIZONTAL:MODE?` might return `:HORIZONTAL:MODE MANUAL`, indicating that the horizontal mode is manual.

HORizontal:MODe:AUTOmatic:FASTAcq:RECOrdlength:MAXimum:VALue

Sets or queries the horizontal FastAcq maximum record length.

Group Horizontal

Syntax
```
HORizontal:MODe:AUTOmatic:FASTAcq:RECOrdlength:MAXimum:VALue
<NR1>
HORizontal:MODe:AUTOmatic:FASTAcq:RECOrdlength:MAXimum:
VALue?
```

Arguments `<NR1>` is the horizontal FastAcq maximum record length.

Examples `HORIZONTAL:MODE:AUTOMATIC:FASTACQ:RECORDLENGTH:MAXIMUM:VALUE 6250` sets the maximum value to 6.25 k.

HORizontal:MODe:AUTOmatic:FASTAcq:RECOrdlength:MAXimum:ZOOMOVERride

Sets or queries the flag which allows override of the horizontal FastAcq maximum record length.

Group Horizontal

Syntax
```
HORizontal:MODe:AUTOmatic:FASTAcq:RECOrdlength:MAXimum:
ZOOMOVERride {OFF|ON|0| 1}
HORizontal:MODe:AUTOmatic:FASTAcq:RECOrdlength:MAXimum:
ZOOMOVERride?
```

Arguments `OFF` does not allow override of the horizontal FastAcq maximum record length.

`ON` allows override of the horizontal FastAcq maximum record length.

`0` does not allow override of the horizontal FastAcq maximum record length.

`1` allows override of the horizontal FastAcq maximum record length.

Examples `HORIZONTAL:MODE:AUTOMATIC:FASTACQ:RECORDLENGTH:MAXIMUM:ZOOMOVERRIDE 0` does not allow override of the horizontal FastAcq maximum record length.

`HORIZONTAL:MODE:AUTOMATIC:FASTACQ:RECORDLENGTH:MAXIMUM:ZOOMOVERRIDE?` might return `:HORIZONTAL:MODE:AUTOMATIC:FASTACQ:RECORDLENGTH:MAXIMUM:ZOOMOVERRIDE 1` indicating that override of the horizontal FastAcq maximum record length is allowed.

HORizontal:MODe:MANual:CONFIGure

Sets or queries which horizontal control (scale or record length) will primarily change when the sample rate is changed in Manual mode. If the selected control (scale or record length) reaches a limit then the unselected control (record length or scale) may also change.

Group

Horizontal

Syntax

```
HORizontal:MODe:MANual:CONFIGure {HORIZontalscale|
RECORDLength}
HORizontal:MODe:MANual:CONFIGure?
```

Arguments

`HORIZontalscale` will change when sample rate is adjusted.

`RECORDLength` will change when sample rate is adjusted.

Examples

`HORIZONTAL:MODE:MANUAL:CONFIGURE RECORDLength` allows the record length be adjusted when sample rate is changed in Manual mode.

HORizontal:MODE:RECOrdlength

This command sets or queries the record length.

Group

Horizontal

Syntax

```
HORizontal:MODE:RECOrdlength <NR1>
HORizontal:MODE:RECOrdlength?
```

Arguments

`<NR1>` is the record length in samples. Manual mode lets you change the record length, while the record length is read only for Automatic mode.

Examples

`HORIZONTAL:MODE:RECORDLENGTH 1000` sets the record length to 1000 samples.

`HORIZONTAL:MODE:RECORDLENGTH?` might return `:HORIZONTAL:MODE:RECORDLENGTH 1000000`, indicating that the record length is set to 1,000,000 samples

HORizontal:MODE:SAMPLERate

This command sets or queries the sample rate.

Group Horizontal

Syntax

```
HORizontal:MODE:SAMPLERate <NR1>
HORizontal:MODE:SAMPLERate?
```

Arguments `<NR1>` is the sample rate in samples per second.

Examples `HORIZONTAL:MODE:SAMPLERATE 1e6` sets the sample rate to 1 million samples per second.

`HORIZONTAL:MODE:SAMPLERATE?` might return `:HORIZONTAL:MODE:SAMPLERATE 5.0000E+6`, indicating that the sample rate is set to 5 million samples per second.

HORizontal:MODE:SCAle

This command sets or queries the horizontal scale.

Group Horizontal

Syntax

```
HORizontal:MODE:SCAle <NR1>
HORizontal:MODE:SCAle?
```

Arguments `<NR1>` is the horizontal scale in seconds per division.

Examples `HORIZONTAL:MODE:SCALE 2e-9` sets the horizontal scale to 2 ns per division.

`HORIZONTAL:MODE:SCALE?` might return `:HORIZONTAL:MODE:SCALE 20.0000E-6`, indicating that the horizontal scale is set to 10 µs per division.

HORizontal:POSition

This command sets or queries the horizontal position as a percent of screen width. When Horizontal Delay Mode is turned off, this command is equivalent to adjusting the HORIZONTAL POSITION knob on the front panel. When Horizontal Delay Mode is turned on, the horizontal position is forced to 50%.

Group Horizontal

Syntax
```
HORizontal:POSition <NR3>
HORizontal:POSition?
```

Arguments `<NR3>` is from 0 to ≈100 and is the position of the trigger point on the screen (0 = left edge, 100 = right edge).

Examples `HORIZONTAL:POSITION 10` sets the trigger position of the waveform such that 10% of the display is to the left of the trigger position.

`HORIZONTAL:POSITION?` might return `:HORIZONTAL:POSITION 5.0000E+01` indicates the trigger point displayed on the screen.

HORizontal:PREViewstate? (Query Only)

This query returns the display system preview state.

Group Horizontal

Syntax
```
HORizontal:PREViewstate?
```

Returns `<NR1> = 1` if the system is in the preview state.

`<NR1> = 0` if the system is not in the preview state.

Examples `HORIZONTAL:PREVIEWSTATE?` might return `:HORIZONTAL:PREVIEWSTATE 0` indicating the system is not in the preview state.

HORizontal:RECOrdlength

This command sets or queries the horizontal record length. To change the record length the Horizontal Mode must be set to Manual.

Group Horizontal

Syntax
```
HORizontal:RECOrdlength <NR1>
HORizontal:RECOrdlength?
```

Arguments

<NR1> is the horizontal record length.

Examples

HORIZONTAL:RECORDLENGTH 1000 sets the record length to 1000 samples.

HORIZONTAL:RECORDLENGTH? might return :HORIZONTAL:RECORDLENGTH 1000000, indicating that the record length is set to 1,000,000 samples

HORizontal:ROLL? (Query Only)

Queries the horizontal roll mode status.

Group

Horizontal

Syntax

```
HORizontal:ROLL?
```

Returns

ON indicates roll mode is active.

OFF indicates that summary frame is off.

<NR1> a 0 indicates roll mode is off; any other value activates roll mode.

Examples

HORIZONTAL:ROLL? might return :HORIZONTAL:ROLL 0 indicating roll mode is off.

HORizontal:SAMPLERate

This command sets or queries the horizontal sample rate.

Group

Horizontal

Syntax

```
HORizontal:SAMPLERate <NR3>
HORizontal:SAMPLERate?
```

Arguments

<NR3> is the horizontal sample rate in samples per second.

Examples

HORIZONTAL:SAMPLERATE 1e6 sets the sample rate to 1 million samples per second.

HORIZONTAL:SAMPLERATE? might return :HORIZONTAL:SAMPLERATE 5.0000E+6, indicating that the sample rate is set to 5 million samples per second.

HORizontal:SAMPLERate:ANALYZemode:MINimum:OVERRide

Sets or queries the flag which allows override of the horizontal analyze minimum sample rate.

Group

Horizontal

Syntax

```
HORizontal:SAMPLERate:ANALYZemode:MINimum:OVERRide
{OFF|ON|0|1}
HORizontal:SAMPLERate:ANALYZemode:MINimum:OVERRide?
```

Arguments

0 does not allow override of the horizontal analyze minimum sample rate.

1 allows override of the horizontal analyze minimum sample rate.

OFF does not allow override of the horizontal analyze minimum sample rate.

ON allows override of the horizontal analyze minimum sample rate.

Examples

HORIZONTAL:SAMPLERATE:ANALYZEMODE:MINIMUM:OVERRIDE OFF does not allow override of the horizontal analyze minimum sample rate.

HORIZONTAL:SAMPLERATE:ANALYZEMODE:MINIMUM:OVERRIDE? might return :HORIZONTAL:SAMPLERATE:ANALYZEMODE:MINIMUM:OVERRIDE 1 indicating that override of the horizontal analyze minimum sample rate is allowed.

HORizontal:SAMPLERate:ANALYZemode:MINimum:VALue

Sets or queries the minimum sample rate used by Analysis Automatic horizontal mode.

Group

Horizontal

Syntax

```
HORizontal:SAMPLERate:ANALYZemode:MINimum:VALue
{AUTOmatic|<NR3>}
HORizontal:SAMPLERate:ANALYZemode:MINimum:VALue?
```

Related Commands

Arguments

AUTOmatic allows the oscilloscope to set the minimum value.

<NR3> is the minimum sample rate.

Examples

`HORizontal:SAMPLERate:ANALYZemode:MINimum:VALue AUTOMATIC` allows the oscilloscope to set the minimum value.

`HORizontal:SAMPLERate:ANALYZemode:MINimum:VALue?` might return `:HORIZONTAL:SAMPLERATE:ANALYZEMODE:MINIMUM:VALUE AUTOMATIC` indicating the oscilloscope automatically sets the minimum value.

HORizontal:SCAle

This command sets or queries the horizontal scale.

Group

Horizontal

Syntax

```
HORizontal:SCAle <NR3>
HORizontal:SCAle?
```

Arguments

`<NR3>` is the horizontal scale in time per division..

Returns

The current horizontal scale is returned.

Examples

`HORIZONTAL:SCALE 20e-9` sets the horizontal scale to 20 ns/division.

`HORIZONTAL:SCALE`? might return `:HORIAONTAL:SCALE 20e-9` indicating the horizontal scale is set to 20 ns/division.

ID? (Query Only)

This query-only command returns identifying information about the instrument and related firmware similar to that returned by the *IDN? IEEE488.2 common query but does not include the instrument serial number.

Group

Miscellaneous

Syntax

```
ID?
```

Related Commands

*IDN?

Examples `ID?` might return `ID TEK/MSO54,CF:91.1CT,FV:1.2.0.2886`, indicating that the instrument model number is set to MSO54, codes and formats is CF:91.1CT, and firmware version is FV:1.2.0.

*IDN? (Query Only)

This query-only command returns the instrument identification code.

Group Miscellaneous

Syntax `*IDN?`

Related Commands ID?

Examples `*IDN?` might return `TEKTRONIX,MSO54,C100123,CF:91.1CT FV:1.2.0.2886`, indicating the instrument model number, serial number, codes and formats number, and firmware version number.

LIC:UNINSTALL? (Query Only)

Returns the exit license indicated for the user to return to their TekAMS account. Active licenses can be specified by their nomenclature. TransactionIDs can be used to specify an active license or a previously uninstalled license. In either case, the exit-license is returned as block-data.

Group Miscellaneous

Syntax `LIC:UNINSTALL? <QString>`

Arguments `<QString>` is the nomenclature of an active license or a TransactionIDs to specify an active license or a previously uninstalled license.

Returns The exit-license is returned as block-data.

Examples `LIC:UNINSTALL? “LIC5-SRAERO”` uninstalls the given license and returns the license block data.

`LIC:UNINSTALL? “569765772”` uninstalls the license with the given transaction ID and returns the license block data.

LICense? (Query Only)

This query-only command returns all license parameters.

Group Miscellaneous

Syntax `LICense?`

Examples `LICENSE?` might return `:LICENSE:GMT "2016-05-23T17:05:10-07:00";HID "TMS-AAA9CS4US5SGJN6X";LIST "5-BW-1000";COUNT 1`.

LICENSE:APPID? (Query Only)

This query returns a comma-separated list of the active application IDs. If a string argument is provided, a “0” or “1” is returned, according to whether the string matches an active application ID.

Group Miscellaneous

Syntax `LICENSE:APPID? {<QString>}`

Returns This query returns a comma-separated list of the active application IDs. If a string argument is provided, a “0” or “1” is returned, according to whether the string matches an active application ID.

Examples `LIC:APPID?` might return “`BW5-2000, AFG, DVM, DJA`”, which is a complete list of the active applications.

`LIC:APPID? “AFG”` would return “1” because the app is active

LICense:COUNt? (Query Only)

This query returns a count of the number of active licenses installed.

Group Miscellaneous

Syntax `LICense:COUNt?`

Returns A count of the number of active licenses installed.

Examples `LICENSE:COUNT?` might return `:LICENSE:COUNT 2` indicating that 2 active licenses are installed

LICense:GMT? (Query Only)

This query returns the GMT time in ISO 8601 format, the local date, 24 hour time and time-zone offset.

Group Miscellaneous

Syntax `LICense:GMT?`

Returns The GMT time in ISO 8601 format, the local date, 24 hour time and time-zone offset.

Examples `LICENSE:GMT?` might return `:LICENSE:GMT "2016-05-23T17:05:10-07:00"` indicating the local GMT time.

LICense:HID? (Query Only)

This query returns the instrument HostID unique identifier.

Group Miscellaneous

Syntax `LICense:HID?`

Returns The instrument HostID unique identifier.

Examples `LICENSE:HID?` might return `:LICENSE:HID "TMS-9CS4US5SGJN6X"`

LICense:INSTall (No Query Form)

This command accepts a <block data> license and installs it on the instrument. Restarting the instrument may be necessary to fully activate the additional capabilities.

Group Miscellaneous

Syntax `LICense:INSTall <block data>`

Arguments `<block data>` is the license in block data format.

Examples `LICENSE:INSTALL` <block data>

LICense:ITEM? (Query Only)

This query returns the details pertaining to a specific license. The NR1 argument is zero-indexed. If no argument is provided, zero is assumed.

Group Miscellaneous

Syntax `LICense:ITEM? <NR1>`

Arguments <NR1> is the zero-indexed argument specifying a specific license.

Returns The details pertaining to a specific license.

Examples `LICENSE:ITEM? 0` might return `"5-BW-1000,Fixed,2116-06-15T14:55:54-07:00,11870047,BW5-1000,1 GHz bandwidth on 5 series oscilloscopes"`

LICense:LIST? (Query Only)

This query returns the active license nomenclatures as a comma-separated list of strings. Duplicate nomenclatures, that is, the same license but with different expiration dates, are included.

Group Miscellaneous

Syntax `LICense:LIST?`

Returns The active license nomenclatures as a comma-separated list of strings.

Examples `LICENSE:LIST?` might return `:LICENSE:LIST "5-BW-1000","SUP5-RL125M"`.

LICense:VALidate? (Query Only)

This query accepts a license nomenclature as an argument and returns True (1) if that nomenclature is active and any required hardware is installed, or False (0) if either the nomenclature is not active or required hardware is not installed.

Group Miscellaneous

Syntax `LICense:VALidate? <QString>`

Arguments `<QString>` is the license nomenclature.

Returns `True (1)` if that nomenclature is active and any required hardware is installed.

`False (0)` if either the nomenclature is not active or required hardware is not installed.

Examples `LICENSE:VALIDATE?` "AFG" might return :LICENSE:VALIDATE "AFG",0 indicating the license is not active.

LOCk

This command enables or disables all front panel buttons and knobs. There is no front panel equivalent.

To completely disable front panel operation, combine two commands as follows: `LOCK ALL;:TOUCHSCREEN:STATE OFF`. To re-enable the front panel, send these two commands: `LOCK NONE;:TOUCHSCREEN:STATE ON`. The commands must be sent in that order.

When the front panel is locked, the front panel commands will not work and will not generate error events. You can work around a locked front panel, by using the appropriate programmatic interface commands, instead of the front-panel commands. For example, to set the trigger level to 50%, you could use `TRIGger:A SETLevel`. To force a trigger, you could use `TRIGger FORCe`.

Group Miscellaneous

Syntax
```
LOCk {ALL|NONe}
LOCk?
```

Related Commands UNLock, TOUCHSCReen:STATe

Arguments `ALL` disables all front panel controls.

`NONe` enables all front panel controls. This is equivalent to the UNLock `ALL` command.

If the instrument is in the Remote With Lockout State (RWLS), the LOCk `NONe` command has no effect. For more information, see the ANSI/IEEE Std 488.1-1987 Standard Digital Interface for Programmable Instrumentation, section 2.8.3 on RL State Descriptions.

Examples `LOCK ALL` locks the front panel controls.

`LOCK?` might return `:LOCK NONE`, indicating that the front panel controls are enabled.

*LRN? (Query Only)

This query-only command returns the commands that list the instrument settings, allowing you to record or "learn" the current instrument settings. You can use these commands to return the instrument to the state it was in when you made the *LRN? query. This command is identical to the SET? command.

Group Miscellaneous

Syntax
```
*LRN?
```

Related Commands SET?

Examples `*LRN?` might return the following response: `*RST;:PARAMBATCHING 0;:HEADER 1;:VERBOSE 1;:ALIAS:STATE 0;:ACQUIRE:STATE 1;:ACQUIRE:NUMENV INFINITE;:FASTACQ:STATE 0;:FASTACQ:PALETTE TEMPERATURE;:HORIZONTAL:SAMPLERATE:ANALYZEMODE:MINIMUM:VALUE AUTOMATIC;:SELECT:CH1 1;:SELECT:CH2 0;:SELECT:CH3 0;:SELECT:CH4 0;:SELECT:CH5 0;:SELECT:CH6 0;:SELECT:CH7 0;:SELECT:CH8 0;:CH1:BANDWIDTH 250.0000E+6;:CH2:BANDWIDTH 500.0000E+6;:CH3:BANDWIDTH 500.0000E+6;:CH4:BANDWIDTH 500.0000E+6;:CH5:BANDWIDTH 500.0000E+6;:CH6:BANDWIDTH 500.0000E+6;:CH7:BANDWIDTH 120.0000E+6;:CH8:BANDWIDTH`

```
500.0000E+6;:CH1:BANDWIDTH:ENHANCED
0;:CH2:BANDWIDTH:ENHANCED 0;:CH3:BANDWIDTH:ENHANCED
0;:CH4:BANDWIDTH:ENHANCED 0;:CH5:BANDWIDTH:ENHANCED
0;:CH6:BANDWIDTH:ENHANCED 0;:CH7:BANDWIDTH:ENHANCED
0;:CH8:BANDWIDTH:ENHANCED 0;:DATA:DESTINATION
REF1;:DATA:ENCDG ASCII;:DATA:SOURCE CH1;:DATA:START
1;:DATA:STOP 1000000;:CH1:PROBETYPE
ANALOG;:CH2:PROBETYPE ANALOG;:CH3:PROBETYPE
ANALOG;:CH4:PROBETYPE ANALOG;:CH5:PROBETYPE
DIGITAL;:CH6:PROBETYPE ANALOG;:CH7:PROBETYPE
ANALOG;:CH8:PROBETYPE ANALOG;:HORIZONTAL:MODE
AUTO;:HORIZONTAL:SAMPLERATE:ANALYZEMODE:MINIMUM:OVERRIDE
1;:HORIZONTAL:MODE:AUTOMATIC:FASTACQ:RECORDLENGTH:MAXIMUM:
ZOOMOVERRIDE
1;:HORIZONTAL:MODE:AUTOMATIC:FASTACQ:RECORDLENGTH:
MAXIMUM:VALUE 1250;:HORIZONTAL:MODE:MANUAL:CONFIGURE
HORIZONTALSCALE;:HORIZONTAL:SAMPLERATE
6.2500E+9;:DISPLAY:WAVEVIEW1:ZOOM:ZOOM1:VERTICAL:SCALE
1.0000;:TRIGGER:B:TYPE EDGE;:TRIGGER:A:TYPE
EDGE;:ACQUIRE:SEQUENCE:NUMSEQUENCE
1;:ACQUIRE:SEQUENCE:MODE NUMACQS;:ACQUIRE:MODE
SAMPLE;:ACQUIRE:STOPAFTER RUNSTOP;:ACQUIRE:FASTACQ:PALETTE
TEMPERATURE;:ACQUIRE:FASTACQ:STATE 0;:ACQUIRE:NUMAVG 16T.
```

MATH:ADDNew (No Query Form)

This command adds the specified math.

Group Math

Syntax `MATH:ADDNew <QString>`

Related Commands MATH:LIST?, MATH:DELete

Arguments `<QString>` is the quoted string specifying the math waveform to add. The argument is of the form "`MATH<NR1>`", where `<NR1>` is ≥1.

Examples `MATH:ADDNEW "MATH2"` adds MATH2.

MATH:DELete (No Query Form)

This command deletes the specified math.

Group Math

Syntax `MATH:DELete <QString>`

Related Commands MATH:ADDNew, MATH:LIST?

Arguments `<QString>` is a quoted string specifying the math waveform to delete. The quoted string is of the form "MATH<NR1>", where <NR1> is ≥1.

Examples `MATH:DELETE "MATH1"`, which deletes the MATH1 waveform.

MATH:LIST? (Query Only)

This query returns a comma separated list of all currently defined math waveforms.

Group Math

Syntax `MATH:LIST?`

Related Commands MATH:ADDNew, MATH:DELete

Returns All currently defined math waveforms.

Examples `MATH:LIST?` Might return `:MATH:LIST MATH1,MATH4`, indicating MATH1 and MATH4 are the currently defined math waveforms.

MATH:MATH<x>:AVG:MODE

This command sets or queries the math average mode flag. If the flag is set to 1, math averaging is turned on. The math waveform is specified by x.

Group Math

Syntax `MATH:MATH<x>:AVG:MODE {<NR1>|OFF|ON}`

Related Commands MATH:MATH<x>:AVG:WEIGht

Arguments

<NR1> = 0 turns off average mode, and any other integer turns on average mode.

OFF turns off average mode.

ON turns on average mode.

Examples

MATH:MATH2:AVG:MODE ON sets the average mode on.
MATH:MATH1:AVG:MODE? might return :MATH:MATH1:AVG:MODE 0, indicating average mode is off.

MATH:MATH<x>:AVG:WEIGht

This command sets or queries the number of acquisitions at which the averaging algorithm will begin exponential averaging. The math waveform is specified by x.

Group

Math

Syntax

```
MATH:MATH<x>:AVG:WEIGht <NR1>
```

Related Commands

MATH:MATH<x>:AVG:MODE

Arguments

<NR1> is the number of acquisitions at which the averaging algorithm will begin exponential averaging.

Examples

MATH:MATH2:AVG:WEIGHT 143 sets the number of acquisitions needed to begin averaging to 20 MATH:MATH3:AVG:WEIGHT? might return :MATH:MATH3:AVG:WEIGHT 20 indicating the number of acquisitions needed to begin averaging is 8.

MATH:MATH<x>:DEFine

This command allows you to define new waveforms using mathematical expressions. The query form of this command returns the math definition for the specified math waveform. The math waveform is specified by x.

You can specify a math expression from waveforms, measurements and scalar sources, functions, operands, and numerical constants.

Math expressions can be simple, such as Ch1, which specifies that a waveform should show the signal source of Channel 1 with no mathematical computation. Math expressions can also be complex, consisting of 100 plus characters and comprising many sources (including other math waveforms), functions, and operands. As an example, you can enter the expression Log(Ch1+Ch2), which specifies that the signals from channels 1 and 2 are to be algebraically added, and the base 10 log of the sum is to be shown as the final math waveform.

Group Math

Syntax

```
MATH:MATH<x>:DEFine <QString>
MATH:MATH<x>:DEFine?
```

Arguments `<QString>` quoted string argument is the mathematical expression that defines the waveform. `MATH:MATH<x>:DEFINE?` is for use when the `MATH:MATH<x>:TYPE` is `ADVANCED`.

Examples `MATH:MATH2:DEFine "CH1+CH2"` adds the Channel 1 and Channel 2, defines the Math2 waveform to be Channel1 and Channel2 added together.

`MATH:MATH1:DEFine?` might return

`:MATH:MATH1:DEFine "CH2*REF2"` as the expression that defines Math 1 waveform.

MATH:MATH<x>:FUNCtion

This command sets or queries the basic math arithmetic function. The math waveform is specified by x.

NOTE. *This command does not affect the same Math equation in Advanced math (also accessed via the command `MATH:MATH<x>:DEFINE`).*

Group Math

Syntax

```
MATH:MATH<x>:FUNCtion {ADD|SUBtract|MULTiply|DIVide}
```

Arguments ADD sets the basic math function to add.

SUBtract sets the basic math function to subtract.

MULTiply sets the basic math function to multiply.

DIVide sets the basic math function to divide.

Examples `MATH:MATH2:FUNCTION MULTIPLY` sets the basic math function to multiply.
`MATH:MATH1:FUNCTION?` might return `:MATH:MATH1:FUNCTION ADD` indicating the current basic math function is addition.

MATH:MATH<x>:GATing

This command specifies or returns the gating setting. It only applies to Math FFT plots. The math waveform is specified by x.

Group Math

Syntax
```
MATH:MATH<x>:GATing {NONE|SCREEN|CURSor}
MATH:MATH<x>:GATing?
```

Related Commands MATH:MATH<x>:TYPe

Arguments `NONE` turns off math gating.

`SCREEN` turns on gating, using the left and right edges of the screen.

`CURSor` limits math to the portion of the waveform between the vertical bar cursors, even if they are off screen.

Examples `MATH:MATH3:GATING CURSOR` sets the spectral math plot to be gated by the cursors.

`MATH:MATH2:GATING?` might return `:MATH:MATH:2:GATING SCREEN` which indicates the spectral math plot is gated by the screen.

MATH:MATH<x>:LABel:COLor

This command sets or queries color of the specified math's label. The math waveform is specified by x.

Group Math

Syntax
```
MATH:MATH<x>:LABel:COLor <QString>
```

Arguments `<QString>` is the color of the label. To return the color to the default color, send an empty string as in this example: `:MATH:MATH1:LABEL:COLOR ""`.

Examples

`MATH:MATH3:LABEL:COLOR "GREEN"` sets the Math 3 label color to green.
`MATH:MATH1:LABEL:COLOR?` might return `:MATH:MATH1:LABEL:COLOR "BLUE"` indicating the color of the Math1 label is blue.

MATH:MATH<x>:LABel:FONT:BOLD

This command sets or queries the bold state of the specified math label. The math waveform is specified by x.

Group

Math

Syntax

`MATH:MATH<x>:LABel:FONT:BOLD {<NR1>|OFF|ON}`

Arguments

`<NR1>` = 0 turns off bold, and any other integer turns on bold.

`OFF` turns off bold.

`ON` turns on bold.

Examples

`MATH:MATH3:FONT:BOLD ON` set the math 3 label to bold.

`MATH:MATH2:FONT:BOLD?` might return `:MATH:MATH2:FONT:BOLD` 0 indicating the math 2 label is not currently bold.

MATH:MATH<x>:LABel:FONT:ITALic

This command sets or queries italic state of the specified math label. The math waveform is specified by x.

Group

Math

Syntax

`MATH:MATH<x>:LABel:FONT:ITALic {<NR1>|OFF|ON}`

Arguments

`<NR1>` = 0 turns off italic, and any other integer turns on italic.

`OFF` turns off italic.

`ON` turns on italic.

Examples `MATH:MATH4:FONT:ITALIC ON` set the math 4 label to be italic.

`MATH:MATH1:FONT:ITALIC?` might return `:MATH:MATH1:FONT:ITALIC` 0 indicating the math 1 label is not currently italic.

`<NR1>` is the font size of the label.

MATH:MATH<x>:LABel:FONT:SIZE

This command sets or queries font size of the specified math label. The math waveform is specified by x.

Group Math

Syntax `MATH:MATH<x>:LABel:FONT:SIZE <NR1>`

Arguments

Examples `MATH:MATH4:LABEL:FONT:SIZE` 32 sets the math 4 label size to 32.

`MATH:MATH2:LABEL:FONT:SIZE?` might return `:MATH:MATH2:LABEL:FONT:SIZE` 14 indicating the math 2 label size is currently 14.

MATH:MATH<x>:LABel:FONT:TYPE

This command sets or queries font type of the specified math label, such as Arial or Times New Roman. The math waveform is specified by x.

Group Math

Syntax `MATH:MATH<x>:LABel:FONT:TYPE <QString>`

Arguments `<QString>` is the name of the font type.

Examples `MATH:MATH2:LABEL:FONT:TYPE` "Serif" sets the math 2 label font type to Serif.

`MATH:MATH3:LABEL:FONT:TYPE?` might return `:MATH:MATH3:LABEL:FONT:TYPE` "Monospace" indicating the math 3 font type is currently Monospace.

MATH:MATH<x>:LABel:FONT:UNDERline

This command sets or queries the underline state of the specified math label. The math waveform is specified by x.

Group

Math

Syntax

```
MATH:MATH<x>:LABel:FONT:UNDERline {<NR1>|OFF|ON}
```

Arguments

`<NR1>` = 0 turns off underline, and any other integer turns on underline.

`OFF` turns off underline.

`ON` turns on underline.

Examples

`MATH:MATH3:FONT:UNDERLINE` ON sets the math 3 label to be underlined.

`MATH:MATH2:FONT:UNDERLINE?` might return `:MATH:MATH2:FONT:UNDERLINE` 0 indicating the math 2 label is currently not underlined.

MATH:MATH<x>:LABel:NAMe

This command sets or queries the label string, which is used for annotating the math waveform on the screen. The math waveform to which the label is attached is specified by x.

Group

Math

Syntax

```
MATH:MATH<x>:LABel:NAMe <QString>
MATH:MATH<x>:LABel:NAMe?
```

Arguments

`<QString>` specifies the label to annotate the math waveform.

Examples

`MATH:MATH2:LABel:NAMe "PROBE POINT7"` assigns "Probe point7" Math 2 waveform.

`MATH:MATH2:LABel:NAMe?` might return `:MATH:MATH2:LABel:NAMe "Probe point7"`, indicating that Probe point 7 is the label for the Math 2 waveform.

MATH:MATH<x>:LABel:XPOS

This command sets or queries the X position of the specified math label. Maths are specified by x.

Group

Math

Syntax

```
MATH:MATH<x>:LABel:XPOS <NR1>
MATH:MATH<x>:LABel:XPOS?
```

Related Commands

MATH:MATH<x>:LABel:YPOS

Arguments

`<NR1>` is the location (in pixels) where the label for the selected math waveform is displayed, relative to the left edge of the display.

Examples

`MATH:MATH2:LABEL:XPOS 5` moves the waveform label for the Math 2 waveform so that it begins 5 pixels to the right of the left edge of the screen.

`MATH:MATH2:LABEL:XPOS?` might return `:MATH:MATH2:LABEL:XPOS 2.5`, indicating that the waveform label for the Math 2 waveform is currently 2.5 pixels to the right of the left edge of the display.

MATH:MATH<x>:LABel:YPOS

This command sets or queries the y-position of the specified math label. The Math waveform is specified by x.

Group

Math

Syntax

```
MATH:MATH<x>:LABel:YPOS <NR1>
MATH:MATH<x>:LABel:YPOS?
```

Related Commands

MATH:MATH<x>:LABel:XPOS

Arguments

`<NR1>` is the location (in pixels) where the label for the selected math waveform is displayed, relative to the baseline of the waveform.

Examples

`MATH:MATH2:LABEL:YPOS -2.5` moves the waveform label for the Math 2 waveform to 2.5 pixels below the baseline of the waveform.

MATH:MATH2:LABEL:YPOS? might return :MATH:MATH2:LABEL:YPOS 0, indicating that the waveform label for the Math 2 waveform is currently located at the baseline of the waveform.

MATH:MATH<x>:SOUrce<x>

This command sets or queries the specified math source. The source in the command can be either 1 or 2. This command sets the Basic Math components in the user interface, with two sources and a function. You would also need to set the math type to Basic to see the change in the user interface but this will not effect the programmable interface. The math waveform and source are specified by x.

Group Math

Syntax MATH:MATH<x>:SOUrce<x> {CH<x>|MATH<x>|REF<x>}

Related Commands MATH:MATH<x>:TYPe, MATH:MATH<x>:FUNCtion

Arguments Arguments are possible math sources. SOURCE1 and SOURCE2 are for use when the MATH:MATH<x>:TYPE is BASIC.

Examples MATH:MATH2:SOURCE1 CH1 sets the first source of math 2 to Channel 1.

MATH:MATH3:SOURCE2? might return :MATH:MATH3:SOURCE2 REF3 indicating the second source of Math 3 is Ref 3.

MATH:MATH<x>:SPECTral:HORZ

This command sets or queries the horizontal display scale of the spectral math waveform. The math waveform is specified by x.

Group Math

Syntax MATH:MATH<x>:SPECTral:HORZ {LOG|LINEAr}

Arguments LINEAr sets the SpectralMag units to linear.

LOG sets the SpectralMag units to log.

Examples

`MATH:MATH2:SPECTRAL:HORZ LOG` sets the horizontal display scale of the spectral math waveform to log.

`MATH:MATH3:SPECTRAL:HORZ?` might return `:MATH:MATH3:SPECTRAL:HORZ LINEAR` indicating the horizontal display scale of the Math 3 spectral math waveform is currently set to linear.

MATH:MATH<x>:SPECTral:MAG

This command sets or queries the units of the SpectralMag function in the specified math definition string. The Math waveform is specified by x.

Group

Math

Syntax

```
MATH:MATH<x>:SPECTral:MAG {LINEAr|DBM}
MATH:MATH<x>:SPECTral:MAG?
```

Arguments

`LINEAR` sets the SpectralMag units to linear.

`DBM` sets the SpectralMag units to decibels. It also sets the Ref Level Offset to a value that is the equivalent of 1 mW into 50 Ω.

Examples

`MATH:MATH2:SPECTral:MAG DBM` sets the SpectralMag units for Math 2 waveform to decibels.

`MATH:MATH2:SPECTral:MAG?` might return `:MATH:MATH2:SPECTral:MAG DBM`, indicating that the SpectralMag units for Math 2 waveform are set to decibels.

MATH:MATH<x>:SPECTral:PHASE

This command sets or queries the units of a SpectralPhase function in the specified math definition string. The Math waveform is specified by x.

Group

Math

Syntax

```
MATH:MATH<x>:SPECTral:PHASE {DEGrees|RADians|GROUPDelay}
MATH:MATH<x>:SPECTral:PHASE?
```

Arguments

`DEGREES` sets the SpectralPhase units to degrees.

`RADIANS` sets the SpectralPhase units to radians.

`GROUPDELAY` sets the SpectralPhase units to groupdelay, which computes the derivative of unwrapped phase spectrum. Units are expressed in seconds.

Examples

`MATH:MATH2:SPECTral:PHASE DEGREES` sets the SpectralPhase units for Math 2 waveform to degrees.

`MATH:MATH2:SPECTral:PHASE?` might return `:MATH:MATH2:SPECTral:PHASE RADIANS`, indicating that the SpectralPhase units for Math 2 waveform are set to radians.

MATH:MATH<x>:SPECTral:SOUrce

This command sets or queries the specified spectral math source. This only works with a math of type FFT. The math waveform is specified by x.

Group

Math

Syntax

```
MATH:MATH<x>:SPECTral:SOUrce {CH<x>|MATH<x>|REF<x>}
MATH:MATH<x>:SPECTral:SOUrce?
```

Related Commands

MATH:MATH<x>:TYPe

Arguments

Arguments are math sources. `MATH:MATH<x>:SPECTRAL:SOURCE` is for use when the `MATH:MATH<x>:TYPE` is `FFT`.

Examples

`MATH:MATH3:SPECTRAL:SOURCE REF3` sets the source of the Spectral Math waveform to Ref 3.

`MATH:MATH2:SPECTRAL:SOURCE?` might return `:MATH:MATH2:SPECTRAL:SOURCE CH4` indicating the Math 2 spectral source is Channel 4.

MATH:MATH<x>:SPECTral:SUPPress

This command sets or queries whether suppression threshold for the specified math waveform is enabled. This is only applied when Spectral Plot type is Phase. The math waveform is specified by x.

Group

Math

Syntax

```
MATH:MATH<x>:SPECTral:SUPPress {OFF|ON|0|1}
MATH:MATH<x>:SPECTral:SUPPress?
```

Related Commands MATH:MATH<x>:SPECTral:TYPE

Arguments

`0` disables suppression threshold for the specified math waveform.

`1` enables suppression threshold for the specified math waveform.

`ON` enables suppression threshold for the specified math waveform.

`OFF` disables suppression threshold for the specified math waveform.

Examples

`MATH:MATH3:SPECTRAL:SUPPRESS` ON enables the suppression threshold on the Math 3 spectral waveform.

`MATH:MATH2:SPECTRAL:SUPPRESS?` might return `:MATH:MATH2:SPECTRAL:SUPPRESS` 0 indicating the suppression threshold is disabled on the Math 2 spectral waveform.

MATH:MATH<x>:SPECTral:SUPPress:VALue

This command sets or queries in volts the value of suppression threshold of the specified math waveform. This requires the Spectral type to be Phase and the Suppression to be enabled for this PI command to have any affect. The math waveform is specified by x.

Group Math

Syntax

```
MATH:MATH<x>:SPECTral:SUPPress:VALue <NR3>
MATH:MATH<x>:SPECTral:SUPPress:VALue?
```

Related Commands MATH:MATH<x>:SPECTral:TYPE, MATH:MATH<x>:SPECTral:SUPPress

Arguments

`<NR3>` is the value of suppression threshold of the specified math waveform in volts.

Examples

`MATH:MATH3:SPECTRAL:SUPPRESS:VALUE` 100.0E-3 sets the suppression threshold of Math 3 to 100 mV.

`MATH:MATH1:SPECTRAL:SUPPRESS:VALUE?` might return `MATH:MATH1:SPECTRAL:SUPPRESS:VALUE` 10.0000E+3 indicating the suppression threshold of Math 1 is currently set to 10 kV.

MATH:MATH<x>:SPECTral:TYPE

This command sets or queries the FFT type selected for spectral analysis. The math waveform is specified by x.

Group

Math

Syntax

```
MATH:MATH<x>:SPECTral:TYPE {MAGNitude|PHASe|REAL|IMAGinary}
MATH:MATH<x>:SPECTral:TYPE?
```

Arguments

`MAGNitude` specifies the magnitude spectral function.

`PHASe` specifies the phase spectral function.

`REAL` specifies the real spectral function.

`IMAGinary` specifies the imaginary spectral function.

Examples

`MATH:MATH1:SPECTral:TYPE REAL` specifies the real spectral function.

`MATH:MATH1:SPECTral:TYPE?` might return `:MATH:MATH1:SPECTRAL:TYPE MAGNITUDE` indicating the math is the magnitude spectral function.

MATH:MATH<x>:SPECTral:UNWRap

This command sets or queries whether phase unwrap of the spectral analyzer output data is enabled. The Math waveform is specified by x.

Group

Math

Syntax

```
MATH:MATH<x>:SPECTral:UNWRap {OFF|ON|0|1}
MATH:MATH<x>:SPECTral:UNWRap?
```

Arguments

`0` disables phase unwrap for the specified math waveform.

`1` enables phase unwrap for the specified math waveform.

`ON` enables phase unwrap for the specified math waveform.

`OFF` disables phase unwrap for the specified math waveform.

Examples

`MATH1:SPECTRAL:UNWRAP ON` enables phase unwrap of the spectral analyzer output data.

`MATH1:SPECTRAL:UNWRAP?` might return `:MATH1:SPECTRAL:UNWRAP 0`, indicating that the phase unwrap of the spectral analyzer output data is disabled.

MATH:MATH<x>:SPECTral:UNWRap:DEGrees

This command sets or queries how many degrees adjacent phase values can jump before being unwrapped. This requires the Spectral type to be Phase and the `UNWRAP` to be enabled for this PI command to have any affect. The math waveform is specified by x.

Group Math

Syntax

```
MATH:MATH<x>:SPECTral:UNWRap:DEGrees <NR3>
MATH:MATH<x>:SPECTral:UNWRap:DEGrees?
```

Related Commands MATH:MATH<x>:SPECTral:TYPE, MATH:MATH<x>:SPECTral:UNWRap

Arguments `<NR3>` is the value of unwrap phase in degrees.

Examples `MATH:MATH2:SPECTRAL:UNWRAP:DEGREES` 90 sets the unwrap phase of the spectral Math 2 to 90 degrees.

`MATH:MATH2:SPECTRAL:UNWRAP:DEGREES?` might return `:MATH:MATH2:SPECTRAL:UNWRAP:DEGREES` 180 indicating unwrap phase of the spectral math 3 waveform is 180 degrees.

MATH:MATH<x>:SPECTral:WINdow

This command sets or queries the window function used to multiply the spectral analyzer input data for the specified math waveform. The Math waveform is specified by x. A spectral window determines what the filter shape of the spectral analyzer will be in the frequency domain. It can be described by a mathematical function that is multiplied point-by-point times the input data to the spectral analyzer.

Following is a list of arguments that specify the window function used to multiply the spectral analyzer input data. The windows are listed in the order of their ability to resolve frequencies (resolution bandwidth).

Group Math

Syntax

```
MATH:MATH<x>:SPECTral:WINdow
{RECTANGular|HAMMing|HANNing|BLACKMANHarris}
MATH:MATH<x>:SPECTral:WINdow?
```

Related Commands

MATH:MATH<x>:TYPe

Arguments

`RECTANGular` window function is equivalent to multiplying all gate data by one.

`HAMMing` window function is based on a cosine series.

`HANNing` window function is based on a cosine series.

`BLACKMANHarris` window function is based on a cosine series.

Examples

`MATH2:SPECTRAL:WINDOW HANNING` applies a Hanning window to the spectral analyzer input data.

`MATH2:SPECTRAL:WINDOW?` might return `:MATH2:SPECTRAL:WINDOW BLACKMANHarris`, indicating that the window function used to multiply the spectral analyzer input data is the BLACKMANHarris function.

MATH:MATH<x>:TYPe

This command sets or queries the math type. The math waveform is specified by x.

Group

Math

Syntax

```
MATH:MATH<x>:TYPe {BASic|FFT|ADVanced}
```

Arguments

`BASic` set the type to basic math.

`FFT` sets the type to FFT math, which can use any live analog or reference waveform in the time domain. NOTE. You can also use FFT as part of a math expression by declaring the type

ADVanced. See examples for the command MATH:MATH<x>:DEFine.

`ADVanced` sets the type to advanced math.

Examples

`MATH:MATH2:TYPE BASIC` sets the type of Math 2 to basic.

`MATH:MATH2:TYPE?` might return `:MATH:MATH2:TYPE FFT` indicating the type of Math 4 is currently FFT.

MATH:MATH<x>:VUNIT

This command specifies or returns the math custom vertical units. The math waveform is specified by x.

Group

Math

Syntax

```
MATH:MATH<x>:VUNIT <QString>
```

Arguments

`<QString>` is the custom vertical units.

Examples

`MATH:MATH2:VUNIT` "Small"

`MATH:MATH2:VUNIT?` might return `:MATH:MATH2:VUNIT` "Large" indicating the Math 2 vertical unit is set to "Large".

MATHArbflt<x>:FILepath

This command or query sets the file path for a file of filter coefficients for the specified arbitrary filter. Setting a path will read that file and load the filter for ARBFLT<x>. Access these filters using a Math with an expression of the form "ARBFlt<x>()".

Group

Math

Syntax

```
MATHArbflt<x>:FILepath <QString>
MATHArbflt<x>:FILepath?
```

Arguments

`<QString>` specifies the path to the file of filter coefficients.

Examples

`MATHARBFLT8:FILEPATH "c:/myfilters/20mhz.flt"` reads filter coefficients from the file and loads the filter for ARBFLT8.

`MATHARBFLT1:FILEPATH?` might return `:MATHARBFLT1:FILEPATH "C:\Users\Public\Tektronix\TekScope\Math Arbitrary Filters\LowPass-Norm\lowpass_0.bw.flt"`, indicating that the path to the file of filter coefficients is set to "C:\Users\Public\Tektronix\TekScope\Math Arbitrary Filters\LowPass-Norm\lowpass_0.bw.flt".

MEASUrement? (Query Only)

This query-only command returns all measurement parameters.

Group Measurement

Syntax `MEASUrement?`

Examples `MEASUREMENT?` might return `:MEASUREMENT:GATING OFF;IMMED:TYPE UNDEFINED;UNITS "V";SOURCE1 CH1;SOURCE2 CH1;SOURCE1:SIGTYPE PULSE;:MEASUREMENT:IMMED:SOURCE2:SIGTYPE PULSE;:MEASUREMENT:IMMED:DELAY:EDGE1 RISE;EDGE2 RISE;DIRECTION FORWARDS;:MEASUREMENT:IMMED:REFLEVEL:METHOD PERCENT;ABSOLUTE:HIGH 0.0000;LOW 0.0000;MID1 0.0000;MID2 0.0000;:MEASUREMENT:IMMED:REFLEVEL:PERCENT:HIGH 90.0000;LOW 10.0000;MID1 50.0000;MID2 50.0000;:MEASUREMENT:IMMED:METHOD HISTOGRAM;NOISE HIGH;:MEASUREMENT:MEAS1:STATE 0;TYPE UNDEFINED;UNITS "V";SOURCE1 CH1;SOURCE2 CH1;SOURCE1:SIGTYPE PULSE;:MEASUREMENT:MEAS1:SOURCE2:SIGTYPE PULSE;:MEASUREMENT:MEAS1:DELAY:EDGE1 RISE;EDGE2 RISE;DIRECTION FORWARDS;:MEASUREMENT:MEAS1:REFLEVEL:METHOD PERCENT;ABSOLUTE:HIGH 0.0000;LOW 0.0000;MID1 0.0000;MID2 0.0000;:MEASUREMENT:MEAS1:REFLEVEL:PERCENT:HIGH 90.0000;LOW 10.0000;MID1 50.0000;MID2 50.0000;:MEASUREMENT:MEAS1:METHOD HISTOGRAM;NOISE HIGH;:MEASUREMENT:MEAS2:STATE 0;TYPE UNDEFINED;UNITS "V";SOURCE1 CH1;SOURCE2 CH1;SOURCE1:SIGTYPE PULSE;:MEASUREMENT:MEAS2:SOURCE2:SIGTYPE PULSE;:MEASUREMENT:MEAS2:DELAY:EDGE1 RISE;EDGE2 RISE;DIRECTION`.

MEASUrement:ADDMEAS (No Query Form)

This command adds a measurement.

Group Measurement

Syntax

```
MEASUrement:ADDMEAS
{ACCOMMONMODE|ACRMS|AMPlITUDE|AREA|BASE|BITAMPLITUDE|
BITHIGH|BITLOW|BURSTWIDTH|COMMONMODE|DATARATE|DCD|DDJ|DELAY|
DJ|DJDIRAC|EYEHIGH|EYELOW|FALLSLEWRATE|FALLTIME|FREQUENCY|
F2|F4|F8|HEIGHT|HEIGHTBER|HIGH|HIGHTIME|HOLD|JITTERSUMMARY|
J2|J9|LOW|LOWTIME|MAXIMUM|MEAN|MINIMUM|NDUty|
NOVERSHOOT|NPERIOD|NPJ|NWIDTTH|PDUTY|
```

PERIOD|PHASE|PHASENOISE|PJ|PK2Pk| POVERSHOOT|PWIDTH|QFACTOR|
RISESLEWRATE|RISETIME|RJ|RJDIRAC|RMS|
SETUP|SKEW|SRJ|SSCFREQDEV|SSCMODRATE|TIE|TIMEOUTSIDELEVEL|
TJBER|TNTRATIO|TOP|UNITINTERVAL|VDIFFXOVR|WIDTH|WIDTHBER}

Arguments Arguments are available measurements.

Examples `MEASUREMENT:ADDMEAS FREQUENCY` adds a frequency measurement.

MEASUrement:ADDNew (No Query Form)

This command adds the specified measurement.

Group Measurement

Syntax `MEASUrement:ADDNew "QString"`

Arguments `"QString"` is the measurement to add. The argument is of the form "MEAS<NR1>" where NR1 ≥ 1.

Examples `MEASUrement:ADDNew "MEAS11"` adds measurement 11.

MEASUrement:ANNOTate

This command sets or queries the annotation state for measurements.

Group Measurement

Syntax
```
MEASUrement:ANNOTate {OFF|AUTO}
MEASUrement:ANNOTate?
```

Arguments `OFF` turns off measurement annotations.

`AUTO` turns on visible measurement annotations.

Examples `MEASUREMENT:ANNOTATE OFF` turns off measurement annotations.

`MEASUREMENT:ANNOTATE?` might return `:MEASUREMENT:ANNOTATION:STATE OFF`, indicating that no measurement annotations are active.

MEASUrement:AUTOset (No Query Form)

This command performs an analysis jitter autoset.

Group Measurement

Syntax

```
MEASUrement:AUTOset EXECute
```

Examples `MEASUREMENT:AUTOSET EXECute` performs an analysis jitter autoset.

MEASUrement:CH<x>:REFLevels:ABSolute:FALLHigh

This command sets or queries the value used as the high reference level of the falling edge when the source ref level method is set to absolute. The channel number is specified by x.

Group Measurement

Syntax

```
MEASUrement:CH<x>:REFLevels:ABSolute:FALLHigh <NR3>
MEASUrement:CH<x>:REFLevels:ABSolute:FALLHigh?
```

Arguments `<NR3>` is the high reference level, and is the zero percent level when MEASUrement:IMMed:REFLevel:METHod is set to Absolute.

Examples `MEASUREMENT:CH2:REFLEVELS:ABSOLUTE:FALLHIGH 1.5` sets the high reference level of the falling edge to 1.5 V.

`MEASUREMENT:CH2:REFLEVELS:ABSOLUTE:FALLHIGH?` might return `:MEASUREMENT:CH2:REFLEVELS:ABSOLUTE:FALLHIGH 1.0000` indicating that the high reference level of the falling edge is 1.0 V.

MEASUrement:CH<x>:REFLevels:ABSolute:FALLLow

This command sets or queries the value used as the low reference level of the falling edge when the source ref level method is set to absolute. The channel number is specified by x.

Group Measurement

Syntax

```
MEASUrement:CH<x>:REFLevels:ABSolute:FALLLow <NR3>
MEASUrement:CH<x>:REFLevels:ABSolute:FALLLow?
```

Arguments

`<NR3>` is the high reference level, and is the zero percent level when MEASUrement:IMMed:REFLevel:METHod is set to Absolute.

Examples

`MEASUREMENT:CH2:REFLEVELS:ABSOLUTE:FALLLOW 1.5` sets the low reference level of the falling edge to 1.5 V.

`MEASUREMENT:CH2:REFLEVELS:ABSOLUTE:FALLLOW?` might return `:MEASUREMENT:CH2:REFLEVELS:ABSOLUTE:FALLLOW 1.5000` indicating that the low reference level of the falling edge is 1.5 V.

MEASUrement:CH<x>:REFLevels:ABSolute:FALLMid

This command sets or queries the value used as the mid reference level of the falling edge when the source ref level method is set to absolute. The channel number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:CH<x>:REFLevels:ABSolute:FALLMid <NR3>
MEASUrement:CH<x>:REFLevels:ABSolute:FALLMid?
```

Arguments

`<NR3>` is the mid reference level used to calculate the mid reference level when the measurement's Ref level method is set to Absolute.

Examples

`MEASUREMENT:CH2:REFLEVELS:ABSOLUTE:FALLMID 0` sets the mid reference level of the falling edge to 0.0 V.

`MEASUREMENT:CH2:REFLEVELS:ABSOLUTE:FALLMID?` might return `:MEASUREMENT:CH2:REFLEVELS:ABSOLUTE:FALLMID 0.0E+0` indicating that the mid reference level of the falling edge is 0.0 V.

MEASUrement:CH<x>:REFLevels:ABSolute:HYSTeresis

This command sets or queries the value of the hysteresis of the reference level when the source ref level method is set to absolute. The channel number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:CH<x>:REFLevels:ABSolute:HYSTeresis <NR3>
MEASUrement:CH<x>:REFLevels:ABSolute:HYSTeresis?
```

Arguments

`<NR3>` is the hysteresis value used for autoset.

Examples

`MEASUREMENT:CH2:REFLEVELS:ABSOLUTE:HYSTERESIS 30.0000E-3` sets the reference hysteresis level to 30 mV.

`:MEASUREMENT:CH2:REFLEVELS:ABSOLUTE:HYSTERESIS?` might return `:MEASUREMENT:CH2:REFLEVELS:ABSOLUTE:HYSTERESIS 30.0000E-3` indicating that reference hysteresis level is set to 30 mV.

MEASUrement:CH<x>:REFLevels:ABSolute:RISEHigh

This command sets or queries the value used as the high reference level of the rising edge when the source ref level method is set to absolute. The channel number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:CH<x>:REFLevels:ABSolute:RISEHigh <NR3>
MEASUrement:CH<x>:REFLevels:ABSolute:RISEHigh?
```

Arguments

`<NR3>` is the high reference level of the rising edge when the source ref level method is set to absolute.

Examples

`MEASUREMENT:CH2:REFLEVELS:ABSOLUTE:RISEHIGH 1.5` sets the high reference level of the rising edge to 1.5 V.

`MEASUREMENT:CH2:REFLEVELS:ABSOLUTE:RISEHIGH?` might return `:MEASUREMENT:CH2:REFLEVELS:ABSOLUTE:RISEHIGH 1.0000` indicating that the high reference level of the rising edge is 1.0 V.

MEASUrement:CH<x>:REFLevels:ABSolute:RISELow

This command sets or queries the value used as the low reference level of the rising edge when the source ref level method is set to absolute. The channel number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:CH<x>:REFLevels:ABSolute:RISELow <NR3>
MEASUrement:CH<x>:REFLevels:ABSolute:RISELow?
```

Arguments

<NR3> is the low reference level of the rising edge when the source ref level method is set to absolute.

Examples

`MEASUREMENT:CH2:REFLEVELS:ABSOLUTE:RISELOW 1.5` sets the low reference level of the rising edge to 1.5 V.

`MEASUREMENT:CH2:REFLEVELS:ABSOLUTE:RISELOW?` might return `:MEASUREMENT:CH2:REFLEVELS:ABSOLUTE:RISELOW 1.0000` indicating that the low reference level of the rising edge is 1.0 V.

MEASUrement:CH<x>:REFLevels:ABSolute:RISEMid

This command sets or queries the value used as the mid reference level of the rising edge when the source ref level method is set to absolute. The channel number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:CH<x>:REFLevels:ABSolute:RISEMid <NR3>
MEASUrement:CH<x>:REFLevels:ABSolute:RISEMid?
```

Arguments

<NR3> is the mid reference level of the rising edge when the source ref level method is set to absolute.

Examples

`MEASUREMENT:CH2:REFLEVELS:ABSOLUTE:RISEMID 0` sets the mid reference level of the rising edge to 0.0 V.

`MEASUREMENT:CH2:REFLEVELS:ABSOLUTE:RISEMID?` might return `:MEASUREMENT:CH2:REFLEVELS:ABSOLUTE:RISEMID 0.0E+0` indicating that the mid reference level of the rising edge is 0.0 V.

MEASUrement:CH<x>:REFLevels:ABSolute:TYPE

This command sets or queries the reference level type for the source. The channel number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:CH<x>:REFLevels:ABSolute:TYPE {SAME|UNIQue}
MEASUrement:CH<x>:REFLevels:ABSolute:TYPE?
```

Arguments

`SAME` specifies that the absolute reference levels for the specified measurement channel are the same.

`UNIQue` specifies that the absolute reference levels for the specified measurement channel are not the same.

Examples

`MEASUREMENT:CH2:REFLEVELS:ABSOLUTE:TYPE SAME` set the reference levels to be the same.

`MEASUREMENT:CH2:REFLEVELS:ABSOLUTE:TYPE?` might return `:MEASUREMENT:CH2:REFLEVELS:ABSOLUTE:TYPE SAME` indicating that the reference levels for absolute measurements are the same.

MEASUrement:CH<x>:REFLevels:BASETop

This command sets or queries the method used to calculate the TOP and BASE, used to calculate reference levels for the measurement. The channel number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:CH<x>:REFLevels:BASETop
{AUTO|MINMax|MEANhistogram| MODEhistogram|EYEhistogram}
MEASUrement:CH<x>:REFLevels:BASETop?
```

Arguments

`AUTO` automatically chooses a reference level method.

`MINMax` specifies that reference levels are relative to the measurement MIN and MAX.

`MEANhistogram` specifies that reference levels are relative to the histogram mean BASE and TOP.

`MODEhistogram` specifies that reference levels are relative to the histogram mode BASE and TOP.

`EYEhistogram` specifies that reverence levels are relative to the eye histogram BASE and TOP.

Examples

`MEASUREMENT:CH2:REFLEVELS:BASETOP MINMAX` specifies that reference levels are relative to the measurement MIN and MAX.

`MEASUREMENT:CH2:REFLEVELS:BASETOP?` might return `:MEASUREMENT:CH2:REFLEVELS:BASETOP AUTO` indicating the reference levels are chosen automatically.

MEASUrement:CH<x>:REFLevels:METHod

This command sets or queries the method used to calculate reference levels for the measurement. The channel number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:CH<x>:REFLevels:METHod {PERCent|ABSolute}
MEASUrement:CH<x>:REFLevels:METHod?
```

Arguments

`PERCent` specifies percent reference level units.

`ABSolute` specifies absolute reference level units.

Examples

`MEASUREMENT:CH2:REFLEVELS:METHOD PERCENT` sets reference levels to be calculated in percent.

`MEASUREMENT:CH2:REFLEVELS:METHOD?` might return `:MEASUREMENT:CH2:REFLEVELS:METHOD PERCENT` indicating the reference levels are calculated in percent.

MEASUrement:CH<x>:REFLevels:PERCent:FALLHigh

This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the high reference level of the falling edge when the source ref level method is set to percent. The channel number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:CH<x>:REFLevels:PERCent:FALLHigh <NR3>
MEASUrement:CH<x>:REFLevels:PERCent:FALLHigh?
```

Arguments

`<NR3>` is the percentage (where 100% is equal to TOP) used to calculate the high reference level when the measurement's Ref level method is set to Percent.

Examples

`MEASUREMENT:CH2:REFLEVELS:PERCENT:FALLHIGH 90.0000` sets the high reference level for the falling edge to 90%.

`MEASUREMENT:CH2:REFLEVELS:PERCENT:FALLHIGH?` might return `:MEASUREMENT:CH2:REFLEVELS:PERCENT:FALLHIGH 90.0000` indicating the high reference level for the falling edge is set to 90%.

MEASUrement:CH<x>:REFLevels:PERCent:FALLLow

This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the low reference level of the falling edge when the source ref level method is set to percent. The channel number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:CH<x>:REFLevels:PERCent:FALLLow <NR3>
MEASUrement:CH<x>:REFLevels:PERCent:FALLLow?
```

Arguments

`<NR3>` is the percentage (where 100% is equal to TOP) used to calculate the low reference level when the measurement Ref level method is set to Percent.

Examples

`MEASUREMENT:CH2:REFLEVELS:PERCENT:FALLLOW 10.0000` sets the reference levels for the falling edge to 10%.

`MEASUREMENT:CH2:REFLEVELS:PERCENT:FALLLOW?` might return `:MEASUREMENT:CH2:REFLEVELS:PERCENT:FALLLOW 10.0000` indicating the reference levels for the falling edge is set to 10%.

MEASUrement:CH<x>:REFLevels:PERCent:FALLMid

This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the mid reference level of the falling edge when the source ref level method is set to percent. The channel number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:CH<x>:REFLevels:PERCent:FALLMid <NR3>
MEASUrement:CH<x>:REFLevels:PERCent:FALLMid?
```

Arguments

<NR3> is the percentage (where 50% is equal to MID) used to calculate the mid reference level when the measurement's Ref level method is set to Percent.

Examples

`MEASUREMENT:CH2:REFLEVELS:PERCENT:FALLMiD 50.0000` sets the MID reference level for the falling edge to 50%.

`MEASUREMENT:CH2:REFLEVELS:PERCENT:FALLMID?` might return `:MEASUREMENT:CH2:REFLEVELS:PERCENT:FALLMID 50.0000` indicating the MID reference level for the falling edge is set to 50%.

MEASUrement:CH<x>:REFLevels:PERCent:HYSTeresis

This command sets or queries the percentage (where 100% is equal to MAX and 0% is equal to MIN) used to calculate the hysteresis of the reference level when the measurement ref level method is set to percent. The channel number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:CH<x>:REFLevels:PERCent:HYSTeresis <NR3>
MEASUrement:CH<x>:REFLevels:PERCent:HYSTeresis?
```

Arguments

<NR3> is the hysteresis value used for the autoset.

Examples

`MEASUREMENT:CH2:REFLEVELS:PERCENT:HYSTERESIS 5.0000` sets the reference level hysteresis to 5.0 mV.

`MEASUREMENT:CH2:REFLEVELS:PERCENT:HYSTERESIS?` might return `:MEASUREMENT:CH2:REFLEVELS:PERCENT:HYSTERESIS 5.0000` indicating the reference level hysteresis is set to 5.0 mV.

MEASUrement:CH<x>:REFLevels:PERCent:RISEHigh

This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the high reference level of the rising edge when the measurement ref level method is set to percent. The channel number is specified by x.

Group

Measurement

Syntax
MEASUrement:CH<x>:REFLevels:PERCent:RISEHigh <NR3>
MEASUrement:CH<x>:REFLevels:PERCent:RISEHigh?

Arguments
<NR3> is the percentage (where 100% is equal to TOP) used to calculate the high reference level when the measurement's Ref level method is set to Percent.

Examples
MEASUREMENT:CH2:REFLEVELS:PERCENT:RISEHIGH 90.0000 sets the high reference level for the rising edge to 90%.

MEASUREMENT:CH2:REFLEVELS:PERCENT:RISEHIGH? might return :MEASUREMENT:CH2:REFLEVELS:PERCENT:RISEHIGH 90.0000 indicating the high reference level for the rising edge is set to 90%.

MEASUrement:CH<x>:REFLevels:PERCent:RISELow

This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the low reference level of the rising edge when the measurement ref level method is set to percent. The channel number is specified by x.

Group
Measurement

Syntax
MEASUrement:CH<x>:REFLevels:PERCent:RISELow <NR3>
MEASUrement:CH<x>:REFLevels:PERCent:RISELow?

Arguments
<NR3> is the percentage (where 100% is equal to TOP) used to calculate the mid reference level when the measurement's Ref level method is set to Percent.

Examples
MEASUREMENT:CH2:REFLEVELS:PERCENT:RISELOW 10.0000 sets the reference levels for the rising edge to 10%.

MEASUREMENT:CH2:REFLEVELS:PERCENT:RISELOW? might return :MEASUREMENT:CH2:REFLEVELS:PERCENT:RISELOW 10.0000 indicating the reference levels for the rising edge is set to 10%.

MEASUrement:CH<x>:REFLevels:PERCent:RISEMid

This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the mid reference level of the rising edge when the measurement ref level method is set to percent. The channel number is specified by x.

Group Measurement

Syntax

```
MEASUrement:CH<x>:REFLevels:PERCent:RISEMid <NR3>
MEASUrement:CH<x>:REFLevels:PERCent:RISEMid?
```

Arguments `<NR3>` is the percentage (where 50% is equal to MID) used to calculate the mid reference level when the measurement's Ref level method is set to Percent.

Examples `MEASUREMENT:CH2:REFLEVELS:PERCENT:RISEMiD 50.0000` sets the MID reference level for the rising edge to 50%.

`MEASUREMENT:CH2:REFLEVELS:PERCENT:RISEMID?` might return `:MEASUREMENT:CH2:REFLEVELS:PERCENT:RISEMID 50.0000` indicating the MID reference level for the rising edge is set to 50%.

MEASUrement:CH<x>:REFLevels:PERCent:TYPE

This command specifies or queries the reference level percent type for the measurement. The channel number is specified by x.

Group Measurement

Syntax

```
MEASUrement:CH<x>:REFLevels:PERCent:TYPE
{TENNinety|TWENtyeighty|CUSTom}
MEASUrement:CH<x>:REFLevels:PERCent:TYPE?
```

Arguments `TENNinety` specifies reference levels at the 10 and 90% levels.

`TWENtyeighty` specifies reference levels at the 20 and 80% levels.

`CUSTom` specifies custom reference levels.

Examples `MEASUREMENT:CH2:REFLEVELS:PERCENT:TYPE TENNINETY` sets the reference levels to the 10 and 90% levels.

`MEASUREMENT:CH2:REFLEVELS:PERCENT:TYPE?` might return `:MEASUREMENT:CH2:REFLEVELS:PERCENT:TYPE TWENTYEIGHTY` indicating the reference levels are set to the 20 and 80% levels.

MEASUrement:CLOCKRecovery:ADVanced:METHod

This command sets or queries the global advanced clock recovery method. This will affect measurements whose :MEASUrement:MEAS<x>:CLOCKRecovery:GLOBal flag is set to 1.

Group

Measurement

Syntax

```
MEASUrement:CLOCKRecovery:ADVanced:METHod
{NONE|NOMinal|PATTern}
MEASUrement:CLOCKRecovery:ADVanced:METHod?
```

Arguments

`NONE` sets to use no advanced CRD method.

`NOMinal` sets the advanced CRD method to Nominal Data Rate.

`PATTern` sets the advanced CDR method to use a Known Data Pattern.

Examples

`MEASUREMENT:CLOCKRECOVERY:ADVANCED:METHOD NOMINAL` sets the CDR method to use a Known Data Pattern.

`MEASUREMENT:CLOCKRECOVERY:ADVANCED:METHOD?` might return `:MEASUREMENT:CLOCKRECOVERY:ADVANCED:METHOD NONE` indicating that no advanced CRD method will be used.

MEASUrement:CLOCKRecovery:CLOCKFrequency

This command sets or queries the global clock frequency used when fixed constant clock recovery is used for the measurement. This will affect measurements whose :MEASUrement:MEAS<x>:CLOCKRecovery:GLOBal flag is set to 1.

Group

Measurement

Syntax

```
MEASUrement:CLOCKRecovery:CLOCKFrequency <NR3>
MEASUrement:CLOCKRecovery:CLOCKFrequency?
```

Arguments

`<NR3>` is the global clock frequency used with Constant Clock - Fixed clock recovery method.

Examples

`MEASUREMENT:CLOCKRECOVERY:CLOCKFREQUENCY 2.0E+9` sets the clock frequency to 2.0 GHz.

`:MEASUREMENT:CLOCKRECOVERY:CLOCKFREQUENCY?` might return `:MEASUREMENT:CLOCKRECOVERY:CLOCKFREQUENCY 2.5000E+9` indicating the clock frequency is set to 2.5 GHz.

MEASUrement:CLOCKRecovery:CLOCKMultiplier

This command sets or queries the global clock multiplier used when explicit clock recovery is used for the measurement. This will affect measurements whose :MEASUrement:MEAS<x>:CLOCKRecovery:GLOBal flag is set to 1.

Group

Measurement

Syntax

```
MEASUrement:CLOCKRecovery:CLOCKMultiplier <NR3>
MEASUrement:CLOCKRecovery:CLOCKMultiplier?
```

Arguments

`<NR3>` is the global clock multiplier.

Examples

`MEASUREMENT:CLOCKRECOVERY:CLOCKMULTIPLIER 1.000` sets the clock multiplier to 1.000.

`MEASUREMENT:CLOCKRECOVERY:CLOCKMULTIPLIER?` might return `:MEASUREMENT:CLOCKRECOVERY:CLOCKMULTIPLIER 1.0000` indicating the clock multiplier is set to 1.0000.

MEASUrement:CLOCKRecovery:CONSTCLOCKMODe

This command sets or queries the global constant clock mode used when constant clock recovery is used for the measurement. This will affect measurements whose :MEASUrement:MEAS<x>:CLOCKRecovery:GLOBal flag is set to 1.

Group

Measurement

Syntax

```
MEASUrement:CLOCKRecovery:CONSTCLOCKMODe {MEAN|MEDian|FIXed}
MEASUrement:CLOCKRecovery:CONSTCLOCKMODe?
```

Arguments

`MEAN` sets the constant clock mode to MEAN.

`MEDian` sets the constant clock mode to MEDian.

`FIXed` sets the constant clock mode to FIXed.

Examples `MEASUREMENT:CLOCKRECOVERY:CONSTCLOCKMODE MEAN` sets the constant clock mode to MEAN.

`MEASUREMENT:CLOCKRECOVERY:CONSTCLOCKMODE?` might return `:MEASUREMENT:CLOCKRECOVERY:CONSTCLOCKMODE MEAN` indicating the constant clock mode is set to MEAN.

MEASUrement:CLOCKRecovery:DAMPing

This command sets or queries the global damping value used when PLL clock recovery is used for the measurement. This will affect measurements whose :MEASUrement:MEAS<x>:CLOCKRecovery:GLOBal flag is set to 1.

Group Measurement

Syntax

```
MEASUrement:CLOCKRecovery:DAMPing <NR3>
MEASUrement:CLOCKRecovery:DAMPing?
```

Arguments `<NR3>` is the global clock recovery damping value.

Examples `MEASUREMENT:CLOCKRECOVERY:DAMPING`

`:MEASUREMENT:CLOCKRECOVERY:DAMPING?` might return `:MEASUREMENT:CLOCKRECOVERY:DAMPING 700.0000E-3` indicating the damping value is set to

MEASUrement:CLOCKRecovery:DATAPath

This command sets or queries the global file containing the data pattern used when known data pattern clock recovery is used for the measurement. This will affect measurements whose :MEASUrement:MEAS<x>:CLOCKRecovery:GLOBal flag is set to 1.

Group Measurement

Syntax

```
MEASUrement:CLOCKRecovery:DATAPath <QString>
MEASUrement:CLOCKRecovery:DATAPath?
```

Arguments `<QString>` is the path and filename, in quotes, of the file containing the data pattern.

Examples `MEASUREMENT:CLOCKRECOVERY:DATAPATH` "C:/E:" sets the data path to C:/E:.

`MEASUREMENT:CLOCKRECOVERY:DATAPATH?` might return `:MEASUREMENT:CLOCKRECOVERY:DATAPATH "C:/E"`.

MEASUrement:CLOCKRecovery:DATARate

This command sets or queries the global nominal data bit rate used when nominal data rate clock recovery is used for the measurement. This will affect measurements whose :MEASUrement:MEAS<x>:CLOCKRecovery:GLOBal flag is set to 1.

Group Measurement

Syntax

```
MEASUrement:CLOCKRecovery:DATARate <NR3>
MEASUrement:CLOCKRecovery:DATARate?
```

Arguments `<NR3>` is the global value for the Nominal data rate.

Examples `MEASUREMENT:CLOCKRECOVERY:DATARATE 2.0e+9` sets the data rate for clock recovery to 2.0 GHz.

`MEASUREMENT:CLOCKRECOVERY:DATARATE?` might return `:MEASUREMENT:CLOCKRECOVERY:DATARATE 2.5000E+9` indicating the data rate is 2.5 GHz.

MEASUrement:CLOCKRecovery:EXPLICITCLOCKMODe

This command sets or queries the global explicit clock mode used when explicit clock recovery is used for the measurement. This will affect measurements whose :MEASUrement:MEAS<x>:CLOCKRecovery:GLOBal flag is set to 1.

Group Measurement

Syntax

```
MEASUrement:CLOCKRecovery:EXPLICITCLOCKMODe {EDGE|PLL}
MEASUrement:CLOCKRecovery:EXPLICITCLOCKMODe?
```

Arguments `EDGE` sets the clock mode to clock edge.

`PLL` sets the clock mode to phase locked loop.

Examples MEASUREMENT:CLOCKRECOVERY:EXPLICITCLOCKMODE EDGE sets the clock mode to edge.

MEASUREMENT:CLOCKRECOVERY:EXPLICITCLOCKMODE? might return :MEASUREMENT:CLOCKRECOVERY:EXPLICITCLOCKMODE EDGE indicating the clock mode is edge.

MEASUrement:CLOCKRecovery:JTFBandwidth

This command sets or queries the global JTF bandwidth used when PLL clock recovery is used for the measurement. This will affect measurements whose :MEASUrement:MEAS<x>:CLOCKRecovery:GLOBal flag is set to 1.

Group Measurement

Syntax

```
MEASUrement:CLOCKRecovery:JTFBandwidth <NR3>
MEASUrement:CLOCKRecovery:JTFBandwidth?
```

Arguments <NR3> is the global clock recovery JTF bandwidth.

Examples MEASUREMENT:CLOCKRECOVERY:JTFBANDWIDTH 2.0e6 sets the bandwidth to 2.0 MHz.

MEASUREMENT:CLOCKRECOVERY:JTFBANDWIDTH? might return :MEASUREMENT:CLOCKRECOVERY:JTFBANDWIDTH 1.0000E+6 indicating the bandwidth is 1.0 MHz.

MEASUrement:CLOCKRecovery:LOOPBandwidth

This command sets or queries the global loop bandwidth used when PLL clock recovery is used for the measurement. This will affect measurements whose :MEASUrement:MEAS<x>:CLOCKRecovery:GLOBal flag is set to 1.

Group Measurement

Syntax

```
MEASUrement:CLOCKRecovery:LOOPBandwidth <NR3>
MEASUrement:CLOCKRecovery:LOOPBandwidth?
```

Arguments <NR3> is the global loop bandwidth.

Examples

MEASUREMENT:CLOCKRECOVERY:LOOPBANDWIDTH 2.0e6 sets the loop bandwidth to 2.0 MHz.

MEASUREMENT:CLOCKRECOVERY:LOOPBANDWIDTH? might return :MEASUREMENT:CLOCKRECOVERY:LOOPBANDWIDTH 1.0000E+6 indicating the loop bandwidth is 1.0 MHz.

MEASUrement:CLOCKRecovery:MEANAUTOCalculate

This command sets or queries how often the clock is calculated when constant clock recovery is used for the measurement. This will affect measurements whose :MEASUrement:MEAS<x>:CLOCKRecovery:GLOBal flag is set to 1.

Group

Measurement

Syntax

```
MEASUrement:CLOCKRecovery:MEANAUTOCalculate {FIRST|EVERY}
MEASUrement:CLOCKRecovery:MEANAUTOCalculate?
```

Arguments

FIRST calculates the clock on the first acquisition.

EVERY calculates the clock on every acquisition.

Examples

MEASUREMENT:CLOCKRECOVERY:MEANAUTOCALCULATE EVERY calculates the clock on every acquisition.

MEASUREMENT:CLOCKRECOVERY:MEANAUTOCALCULATE? might return :MEASUREMENT:CLOCKRECOVERY:MEANAUTOCALCULATE FIRST indicating the clock is calculated on the first acquisition.

MEASUrement:CLOCKRecovery:METHod

This command sets or queries the global clock recovery method for the measurement. This will affect measurements whose :MEASUrement:MEAS<x>:CLOCKRecovery:GLOBal flag is set to 1.

Group

Measurement

Syntax

```
MEASUrement:CLOCKRecovery:METHod
{PLL|CONSTANTCLOCK|EXPLICITCLOCK}
MEASUrement:CLOCKRecovery:METHod?
```

Arguments

`PLL` specifies using the phase locked loop.

`CONSTANTCLOCK` specifies using a constant clock.

`EXPLICITCLOCK` specifies using an explicit clock.

Examples

`MEASUREMENT:CLOCKRECOVERY:METHOD EXPLICITCLOCK` specifies using an explicit clock.

`MEASUREMENT:CLOCKRECOVERY:METHOD?` might return `:MEASUREMENT:CLOCKRECOVERY:METHOD PLL` indicating the method is set to PLL.

MEASUrement:CLOCKRecovery:MODel

This command sets or queries the global phase locked loop (PLL) clock recovery model used when PLL clock recovery is used for the measurement. This will affect measurements whose :MEASUrement:MEAS<x>:CLOCKRecovery:GLOBal flag is set to 1.

Group

Measurement

Syntax

```
MEASUrement:CLOCKRecovery:MODel {TYPE1|TYPE2}
MEASUrement:CLOCKRecovery:MODel?
```

Arguments

`TYPE1` PLL clock recovery uses PLL model type I.

`TYPE2` PLL clock recovery uses PLL model type II.

Examples

`MEASUREMENT:CLOCKRECOVERY:MODEL TYPE2` sets the model to type 2.

`MEASUREMENT:CLOCKRECOVERY:MODEL?` might return `:MEASUREMENT:CLOCKRECOVERY:MODEL TYPE1` indicating the recovery model is type 1.

MEASUrement:CLOCKRecovery:NOMINALOFFset

This command sets or queries the global offset value used when explicit clock recovery is used for the measurement. This will affect measurements whose :MEASUrement:MEAS<x>:CLOCKRecovery:GLOBal flag is set to 1.

Group

Measurement

Syntax

```
MEASUrement:CLOCKRecovery:NOMINALOFFset <NR3>
MEASUrement:CLOCKRecovery:NOMINALOFFset?
```

Arguments

`<NR3>` is the global clock offset.

Examples

`MEASUREMENT:CLOCKRECOVERY:NOMINALOFFSET 1.0` sets the offset to 1.0.

`MEASUREMENT:CLOCKRECOVERY:NOMINALOFFSET?` might return `:MEASUREMENT:CLOCKRECOVERY:NOMINALOFFSET 0.0E+0` indicating the offset is set to 0.0.

MEASUrement:CLOCKRecovery:NOMINALOFFset:SELECTIONtype

This command sets or queries the global offset type used when explicit clock recovery is used for the measurement. This will affect measurements whose :MEASUrement:MEAS<x>:CLOCKRecovery:GLOBal flag is set to 1.

Group

Measurement

Syntax

```
MEASUrement:CLOCKRecovery:NOMINALOFFset:SELECTIONtype
{AUTO|MANUAL}
MEASUrement:CLOCKRecovery:NOMINALOFFset:SELECTIONtype?
```

Arguments

`AUTO` sets the selection type to AUTO.

`MANUAL` sets the selection type to MANUAL.

Examples

`MEASUREMENT:CLOCKRECOVERY:NOMINALOFFSET:SELECTIONTYPE AUTO` sets the selection type to auto.

`MEASUREMENT:CLOCKRECOVERY:NOMINALOFFSET:SELECTIONTYPE?` might return `:MEASUREMENT:CLOCKRECOVERY:NOMINALOFFSET:SELECTIONTYPE MANUAL` indicating the selection type is manual.

MEASUrement:CLOCKRecovery:STAndard

This command sets or queries the global communications standard used when PLL clock recovery is used for the measurement. This will affect measurements whose :MEASUrement:MEAS<x>:CLOCKRecovery:GLOBal flag is set to 1.

Group

Measurement

Syntax

```
MEASUrement:CLOCKRecovery:STAndard {CUSTom|ENET100|
FW1394BS400B|FW1394BS800B|FW1394BS1600B|FBD1|FBD2|
FBD3|FC133|FC266|FC531|FC1063|FC2125|FC4250|
FC8500|ENET1000|IBA2500|IBA_GEN2|OC1|OC3|OC12|OC48|
PCIE_GEN1|PCIE_GEN2|PCIE_GEN3|RIO125|RIO250|RIO3125|
SAS15_NOSSC|SAS3_NOSSC|SAS6_NOSSC|SAS12_NOSSC|SAS15_SSC|
SAS3_SSC|SAS6_SSC|SAS12_SSC|SATA_GEN1|SATA_GEN2|
SATA_GEN3|USB3|XAUI|XAUI_GEN2}
MEASUrement:CLOCKRecovery:STAndard?
```

Arguments

Arguments are the global clock recovery standards.

Examples

MEASUREMENT:CLOCKRECOVERY:STANDARD PCIE_GEN3 sets the standard to PCIE_GEN3.

MEASUREMENT:CLOCKRECOVERY:STANDARD? might return :MEASUREMENT:CLOCKRECOVERY:STANDARD PCIE_GEN1 indicating the standard is set to PCIE_GEN1.

MEASUrement:DELete (No Query Form)

The command deletes the specified measurement.

Group

Measurement

Syntax

```
MEASUrement:DELete <QString>
```

Arguments

<QString> is the measurement to delete. Argument is of the form "MEAS<NR1>" where <NR1> is ≥1.

Examples

MEASUREMENT:DELETE "MEAS4" deletes measurement 4.

MEASUrement:DIRacmodel

This command sets or queries the dirac model used to separate random from deterministic jitter for jitter measurements.

Group

Measurement

Syntax

```
MEASUrement:DIRacmodel {PCIExpress|FIBREchannel}
MEASUrement:DIRacmodel?
```

Arguments

PCIExpress specifies the PCIExpress dirac model.

FIBREchannel specifies the FIBREchannel dirac model.

Examples

MEASUREMENT:DIRACMODEL FIBRECHANNEL sets the dirac model to FIBRECHANNEL.

MEASUREMENT:DIRACMODEL? might return :MEASUREMENT:DIRACMODEL PCIEXPRESS indicating the dirac model is set to PCIECPRESS.

MEASUrement:DISPLAYUnits

This command sets or queries the display units used for jitter summary measurements.

Group

Measurement

Syntax

```
MEASUrement:DISPLAYUnits {SEConds|UNITINtervals}
```

Arguments

SEConds set the display units to seconds.

UNITINtervals set the display units to unit intervals.

Examples

MEASUREMENT:DISPLAYUNITS UNITINTERVALS sets the display units to unit intervals.

MEASUREMENT:DISPLAYUNITS? might return :MEASUREMENT:DISPLAYUNITS SECONDS indicating the display units are seconds.

MEASUrement:EDGE<x>

This command sets or queries the type of the edge for the measurement.

Group

Measurement

Syntax

```
MEASUrement:EDGE<x> {RISE|FALL|BOTH}
```

Arguments

FALL specifies the falling edge of the waveform.

RISE specifies the rising edge of the waveform.

BOTH specifies both a rising and falling edge of the waveform.

Examples

MEASUrement:EDGE2

MEASUrement:EDGE2? might return :MEASUREMENT:EDGE2 BOTH indicating

MEASUrement:EYERENDER

This command sets or queries the state of high-performance eye rendering for an eye diagram.

Group

Measurement

Syntax

```
MEASUrement:EYERENDER {<NR1>|OFF|ON}
MEASUrement:EYERENDER?
```

Arguments

`<NR1>` = 0 disables high-performance eye rendering for an eye diagram; any other value turns this feature on.

`OFF` disables high-performance eye rendering for an eye diagram.

`ON` enables high-performance eye rendering for an eye diagram.

Examples

`MEASUREMENT:EYERENDER`

`MEASUREMENT:EYERENDER`? might return `:MEASUREMENT:EYERENDER 1` indicating high-performance eye rendering is on.

MEASUrement:FILTers:BLANKingtime

This command sets or queries the global filter blanking time.

Group

Measurement

Syntax

```
MEASUrement:FILTers:BLANKingtime <NR3>
MEASUrement:FILTers:BLANKingtime?
```

Arguments

`<NR3>` is the current filter blanking time.

Examples

`MEASUREMENT:FILTERS:BLANKINGTIME 3.0` sets the blanking time to 3.0.

`MEASUREMENT:FILTERS:BLANKINGTIME?` might return `:MEASUREMENT:FILTERS:BLANKINGTIME 4.0000` indicating the blanking time is 4.0.

MEASUrement:FILTers:HIGHPass:FREQ

This command sets or queries the global high pass filter frequency for the measurement.

Group

Measurement

Syntax

```
MEASUrement:FILTers:HIGHPass:FREQ <NR3>
MEASUrement:FILTers:HIGHPass:FREQ?
```

Arguments

`<NR3>` is the current high pass filter frequency.

Examples

`MEASUREMENT:FILTERS:HIGHPASS:FREQ 20.0e6` sets the frequency to 20 MHz.

`MEASUREMENT:FILTERS:HIGHPASS:FREQ?` might return `:MEASUREMENT:FILTERS:HIGHPASS:FREQ 10.0000E+6` indicating the filter frequency is set to 10.0 MHz.

MEASUrement:FILTers:HIGHPass:SPEC

This command sets or queries the global high pass filter order for the measurement.

Group

Measurement

Syntax

```
MEASUrement:FILTers:HIGHPass:SPEC {NONE|FIRST|SECOND|THIRD}
MEASUrement:FILTers:HIGHPass:SPEC?
```

Arguments

`NONE` specifies no high pass filter.

`FIRST` specifies a first order high pass filter.

`SECOND` specifies a second order high pass filter.

`THIRD` specifies a third order high pass filter.

Examples

MEASUREMENT:FILTERS:HIGHPASS:SPEC NONE specifies no high pass filter.

MEASUREMENT:FILTERS:HIGHPASS:SPEC? might return :MEASUREMENT:FILTERS:HIGHPASS:SPEC SECOND indicating a second order high pass filter.

MEASUrement:FILTers:LOWPass:FREQ

This command sets or queries the global low pass filter cutoff frequency for the measurement.

Group

Measurement

Syntax

```
MEASUrement:FILTers:LOWPass:FREQ <NR3>
MEASUrement:FILTers:LOWPass:FREQ?
```

Arguments

<NR3> is the current low pass filter frequency.

Examples

MEASUREMENT:FILTERS:LOWPASS:FREQ 20.0e6 sets the low pass frequency to 20 MHz.

MEASUREMENT:FILTERS:LOWPASS:FREQ? might return :MEASUREMENT:FILTERS:LOWPASS:FREQ 10.0000E+6 indicating the low pass frequency is 10.0 MHz.

MEASUrement:FILTers:LOWPass:SPEC

This command sets or queries the global low pass filter order for the measurement.

Group

Measurement

Syntax

```
MEASUrement:FILTers:LOWPass:SPEC {NONE|FIRST|SECOND|THIRD}
MEASUrement:FILTers:LOWPass:SPEC?
```

Arguments

NONE specifies no low pass filter.

FIRST specifies a first order low pass filter.

SECOND specifies a second order low pass filter.

THIRD specifies a third order low pass filter.

Examples MEASUREMENT:FILTERS:LOWPASS:SPEC SECOND specifies a second order low pass filter.

MEASUREMENT:FILTERS:LOWPASS:SPEC? might return :MEASUREMENT:FILTERS:LOWPASS:SPEC NONE indicating no low pass filter.

MEASUrement:FILTers:RAMPtime

This command sets or queries the global filter ramp time for the measurement.

Group Measurement

Syntax

```
MEASUrement:FILTers:RAMPtime <NR3>
MEASUrement:FILTers:RAMPtime?
```

Arguments <NR3> is the current filter ramp time.

Examples MEASUREMENT:FILTERS:RAMPTIME 3.0 sets the ramp time to 3.0.

MEASUREMENT:FILTERS:RAMPTIME? might return :MEASUREMENT:FILTERS:RAMPTIME 2.0000 indicating the ramp time is 2.0.

MEASUrement:GATing

This command sets or queries the global gating type for the measurement.

Group Measurement

Syntax

```
MEASUrement:GATing {NONE|SCREEN|CURSor|LOGic|SEARCh}
MEASUrement:GATing?
```

Arguments NONE turns off measurement gating.

SCREen turns on gating, using the left and right edges of the screen.

CURSor limits measurements to the portion of the waveform between the vertical bar cursors, even if they are off screen.

LOGic specifies that measurements are taken only on the portion of the waveform where the logic source is in the active state.

SEARCH specifies that measurements are taken based on search criteria.

Examples

`MEASUREMENT:GATING SCREEN` turns on measurement gating, using the left and right edges of the screen.

`MEASUREMENT:GATING?` might return `:MEASUREMENT:GATING CURSOR`, indicating that measurements are limited to the portion of the waveform between the vertical bar cursors.

MEASUrement:GATing:ACTive

This command sets or queries the global gating active level used for logic gating.

Group

Measurement

Syntax

```
MEASUrement:GATing:ACTive {HIGH|LOW}
MEASUrement:GATing:ACTive?
```

Arguments

`HIGH` specifies the gate is HIGH.

`LOW` specifies the gate is LOW.

Examples

`MEASUREMENT:GATING:ACTIVE LOW` specifies a low gate.

`MEASUREMENT:GATING:ACTIVE?` might return `:MEASUREMENT:GATING:ACTIVE HIGH` indicating the gate is high.

MEASUrement:GATing:HYSTeresis

This command sets or queries the global gating hysteresis value used for logic gating.

Group

Measurement

Syntax

```
MEASUrement:GATing:HYSTeresis <NR3>
MEASUrement:GATing:HYSTeresis?
```

Arguments

`<NR3>` is the gating hysteresis.

Examples

`MEASUREMENT:GATING:HYSTERESIS 40.0e-3` sets the hysteresis to 40 mV.

`MEASUREMENT:GATING:HYSTERESIS?` might return `:MEASUREMENT:GATING:HYSTERESIS 30.0000E-3` indicating the hysteresis is 30 mV.

MEASUrement:GATing:LOGICSource

This command sets or queries the gating data source used for logic gating.

Group

Measurement

Syntax

```
MEASUrement:GATing:LOGICSource {CH<x>|MATH<x>|REF<x>}
MEASUrement:GATing:LOGICSource?
```

Arguments

Arguments are the logic gating source.

Examples

`MEASUREMENT:GATING:LOGICSOURCE MATH1` sets the logic source to MATH 1.

`MEASUREMENT:GATING:LOGICSOURCE?` might return `:MEASUREMENT:GATING:LOGICSOURCE CH6` indicating the logic source is channel 6.

MEASUrement:GATing:MIDRef

This command sets or queries the global gating mid ref value used for logic gating.

Group

Measurement

Syntax

```
MEASUrement:GATing:MIDRef <NR3>
MEASUrement:GATing:MIDRef?
```

Arguments

`<NR3>` is the mid ref value for gating.

Examples

`MEASUREMENT:GATING:MIDREF 2.0` set the gating mid ref to 2.0 V.

`MEASUREMENT:GATING:MIDREF?` might return `:MEASUREMENT:GATING:MIDREF 1.5000` indicating the gating mid ref is 1.5 V.

MEASUrement:GATing:SEARCHSource

This command sets or queries the global gating search source when the gating type is search.

Group

Measurement

Syntax

```
MEASUrement:GATing:SEARCHSource SEARCH1
MEASUrement:GATing:SEARCHSource?
```

Arguments

Argument is the search source.

Examples

`MEASUREMENT:GATING:SEARCHSOURCE SEARCH1` set the search source to search 1.

`MEASUREMENT:GATING:SEARCHSOURCE?` might return `:MEASUREMENT:GATING:SEARCHSOURCE UNDEFINED` indicating the search source is not defined.

MEASUrement:INTERp

This command sets or queries the interpolation mode used to locate edge crossings.

Group

Measurement

Syntax

```
MEASUrement:INTERp {AUTO|SINX|LINear}
MEASUrement:INTERp?
```

Arguments

`AUTO` automatically selects the interpolation mode.

`SINX` specifies sin(x)/x interpolation, where acquired points are fit to a curve.

`LINear` specifies linear interpolation, where acquired points are connected with straight lines.

Examples

`MEASUREMENT:INTERP SINX` set the interpolation mode to sin(x)/x.

`MEASUREMENT:INTERP?` might return `:MEASUREMENT:INTERP AUTO` indicating the interpolation mode is auto.

MEASUrement:JITTermodel

This command sets or queries the model used to separate random from deterministic jitter for jitter measurements.

Group Measurement

Syntax
```
MEASUrement:JITTermodel {SPECTRAL|SPECTRALBUJ}
MEASUrement:JITTermodel?
```

Arguments `SPECTRAL` sets the jitter separation model to spectral only.

`SPECTRALBUJ` sets the jitter separation model to spectral plus BUJ.

Examples `MEASUREMENT:JITTERMODEL SPECTRAL` set the jitter model to spectral.

`MEASUREMENT:JITTERMODEL?` might return `:MEASUREMENT:JITTERMODEL SPECTRAL` indicating the jitter model is set to spectral.

MEASUrement:LIST? (Query Only)

This query returns a comma separated list of all currently defined measurements.

Group Measurement

Syntax
```
MEASUrement:LIST?
```

Returns Returns a list of all currently defined measurements.

Examples `MEASUREMENT:LIST?` might return `:MEASUREMENT:LIST MEAS1,MEAS2,MEAS3,MEAS4,MEAS5,MEAS6` indicating 6 measurements are defined.

MEASUrement:LOCKRJ

This command sets or queries the state of RJ locking.

Group Measurement

Syntax

```
MEASUrement:LOCKRJ {<NR1>|OFF|ON}
MEASUrement:LOCKRJ?
```

Arguments

ON indicates that RJ locking is active.

OFF indicates that RJ locking is off.

<NR1> a 0 turns off RJ locking; any other value activates RJ locking.

Examples

MEASUREMENT:LOCKRJ ON activates RJ locking

MEASUrement:LOCKRJValue

This command sets or queries the RJ lock value.

Group

Measurement

Syntax

```
MEASUrement:LOCKRJValue <NR3>
MEASUrement:LOCKRJValue?
```

Arguments

<NR3> default value = 1e-12; minimum value = 1e-15; maximum value = 1.

Examples

MEASUREMENT:LOCKRJVALUE 1 sets the lock value to the maximum value of 1.

MEASUREMENT:LOCKRJVALUE? might return :MEASUREMENT:LOCKRJVALUE 1.0000E-12, indicating the lock value is set to the default value of 1e-12.

MEASUrement:MATH<x>:REFLevels:ABSolute:FALLHigh

This command sets or queries the value used as the high reference level of the falling edge when the measurement ref level method is set to absolute. The math number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MATH<x>:REFLevels:ABSolute:FALLHigh <NR3>
MEASUrement:MATH<x>:REFLevels:ABSolute:FALLHigh?
```

Arguments

<NR3> is the high reference level, and is the zero percent level when MEASUrement:IMMed:REFLevel:METHod is set to Absolute.

Examples

`MEASUrement:MATH1:REFLevels:ABSolute:FALLHigh 1.5` sets the reference level to 1.5 V.

`MEASUrement:MATH2:REFLevels:ABSolute:FALLHigh?` might return `:MEASUREMENT:MATH2:REFLEVELS:ABSOLUTE:FALLHIGH 1.0000` indicating the reference level is 1.0 V.

MEASUrement:MATH<x>:REFLevels:ABSolute:FALLLow

This command sets or queries the value used as the low reference level of the falling edge when the measuement ref level method is set to absolute. The math number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MATH<x>:REFLevels:ABSolute:FALLLow <NR3>
MEASUrement:MATH<x>:REFLevels:ABSolute:FALLLow?
```

Arguments

`<NR3>` is the high reference level, and is the zero percent level when `MEASUrement:IMMed:REFLevel:METHod` is set to Absolute.

Examples

`MEASUrement:MATH2:REFLevels:ABSolute:FALLLow -1.5` sets the reference level to -1.5 V.

`MEASUrement:MATH2:REFLevels:ABSolute:FALLLow?` might return `:MEASUREMENT:MATH2:REFLEVELS:ABSOLUTE:FALLLOW -1.0000` indicating the reference level is -1.0 V.

MEASUrement:MATH<x>:REFLevels:ABSolute:FALLMid

This command sets or queries the value used as the mid reference level of the falling edge when the measurement ref level method is set to absolute. The math number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MATH<x>:REFLevels:ABSolute:FALLMid <NR3>
MEASUrement:MATH<x>:REFLevels:ABSolute:FALLMid?
```

Arguments

`<NR3>` is the mid reference level (where 50% is equal to MID) used to calculate the mid reference level when the measurement's Ref level method is set to Absolute.

Examples `MEASUrement:MATH2:REFLevels:ABSolute:FALLMid 0.0` sets the reference level to 0.0 V.

`MEASUrement:MATH2:REFLevels:ABSolute:FALLMid?` might return `:MEASUREMENT:MATH2:REFLEVELS:ABSOLUTE:FALLMID 0.0E+0` indicating the reference level is 0.0 V.

MEASUrement:MATH<x>:REFLevels:ABSolute:HYSTeresis

This command sets or queries the value of the hysteresis of the reference level when the measurement ref level method is set to absolute. The math number is specified by x.

Group Measurement

Syntax

```
MEASUrement:MATH<x>:REFLevels:ABSolute:HYSTeresis <NR3>
MEASUrement:MATH<x>:REFLevels:ABSolute:HYSTeresis?
```

Arguments `<NR3>` is the hysteresis value used for the autoset.

Examples `MEASUrement:MATH2:REFLevels:ABSolute:HYSTeresis 20.0E-3` sets the hysteresis to 20.0 mV.

`MEASUrement:MATH2:REFLevels:ABSolute:HYSTeresis?` might return `:MEASUREMENT:MATH2:REFLEVELS:ABSOLUTE:HYSTERESIS 30.0000E-3` indicating the hysteresis value is 30.0 mV.

MEASUrement:MATH<x>:REFLevels:ABSolute:RISEHigh

This command sets or queries the value used as the high reference level of the rising edge when the measurement ref level method is set to absolute. The math number is specified by x.

Group Measurement

Syntax

```
MEASUrement:MATH<x>:REFLevels:ABSolute:RISEHigh <NR3>
MEASUrement:MATH<x>:REFLevels:ABSolute:RISEHigh?
```

Arguments `<NR3>` is the high reference level, and is the zero percent level when `MEASUrement:IMMed:REFLevel:METHod` is set to Absolute.

Examples `MEASUrement:MATH2:REFLevels:ABSolute:RISEHigh 1.5` sets the reference level to 1.5 V.

`MEASUrement:MATH2:REFLevels:ABSolute:RISEHigh?` might return `:MEASUREMENT:MATH2:REFLEVELS:ABSOLUTE:RISEHIGH 1.0000` indicating the reference level is 1.0 V.

MEASUrement:MATH<x>:REFLevels:ABSolute:RISELow

This command sets or queries the value used as the low reference level of the rising edge when the measurement ref level method is set to absolute. The math number is specified by x.

Group Measurement

Syntax

```
MEASUrement:MATH<x>:REFLevels:ABSolute:RISELow <NR3>
MEASUrement:MATH<x>:REFLevels:ABSolute:RISELow?
```

Arguments `<NR3>` is the high reference level, and is the zero percent level when `MEASUrement:IMMed:REFLevel:METHod` is set to Absolute.

Examples `MEASUrement:MATH2:REFLevels:ABSolute:RISELow -1.5` sets the reference level to -1.5 V.

`MEASUrement:MATH2:REFLevels:ABSolute:RISELow?` might return `:MEASUREMENT:MATH2:REFLEVELS:ABSOLUTE:RISELOW -1.0000` indicating the reference level is -1.0 V.

MEASUrement:MATH<x>:REFLevels:ABSolute:RISEMid

This command sets or queries the value used as the mid reference level of the rising edge when the measurement ref level method is set to absolute. The math number is specified by x.

Group Measurement

Syntax

```
MEASUrement:MATH<x>:REFLevels:ABSolute:RISEMid <NR3>
MEASUrement:MATH<x>:REFLevels:ABSolute:RISEMid?
```

Arguments `<NR3>` is the mid reference level (where 50% is equal to MID) used to calculate the mid reference level when the measurement Ref level method is set to Absolute.

Examples

`MEASUrement:MATH2:REFLevels:ABSolute:RISEMid 30.0E-3` sets the reference level to 30 mV.

`MEASUrement:MATH2:REFLevels:ABSolute:RISEMid?` might return `:MEASUREMENT:MATH2:REFLEVELS:ABSOLUTE:RISEMID 0.0E+0` indicating the reference level is 0.0 V.

MEASUrement:MATH<x>:REFLevels:ABSolute:TYPE

This command sets or queries the reference level type for the measurement. The math number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MATH<x>:REFLevels:ABSolute:TYPE {SAME|UNIQue}
MEASUrement:MATH<x>:REFLevels:ABSolute:TYPE?
```

Arguments

`SAME` specifies that the absolute levels are set the same.

`UNIQue` specifies that the absolute levels can be set independently.

Examples

`MEASUrement:MATH2:REFLevels:ABSolute:TYPE UNIQUE` specifies that the absolute levels can be set independently.

`MEASUrement:MATH2:REFLevels:ABSolute:TYPE?` might return `:MEASUREMENT:MATH2:REFLEVELS:ABSOLUTE:TYPE SAME` indicating that the absolute levels are set the same.

MEASUrement:MATH<x>:REFLevels:BASETop

This command sets or queries the method used to calculate the TOP and BASE used to calculate reference levels for the measurement. The math number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MATH<x>:REFLevels:BASETop
{AUTO|MINMax|MEANhistogram| MODEhistogram|EYEhistogram}
MEASUrement:MATH<x>:REFLevels:BASETop?
```

Arguments

`AUTO` automatically chooses a reference level method.

`MINMax` specifies that reference levels are relative to the measurement MIN and MAX.

`MEANhistogram` specifies that reference levels are relative to the histogram mean BASE and TOP.

`MODEhistogram` specifies that reference levels are relative to the histogram mode BASE and TOP.

`EYEhistogram` specifies that reverence levels are relative to the eye histogram BASE and TOP.

Examples

`MEASUrement:MATH1:REFLevels:BASETop MINMax` specifies that reference levels are relative to the measurement MIN and MAX.

`MEASUrement:MATH1:REFLevels:BASETop?` might return `:MEASUREMENT:MATH2:REFLEVELS:BASETOP AUTO` indicating the instrument automatically chooses a reference level method.

MEASUrement:MATH<x>:REFLevels:METHod

This command sets or queries the method used to calculate reference levels for the measurement. The math number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MATH<x>:REFLevels:METHod {PERCent|ABSolute}
MEASUrement:MATH<x>:REFLevels:METHod?
```

Arguments

`PERCent` specifies that the reference levels are calculated as a percent relative to HIGH and LOW. The percentages are defined using the `MEASUrement:MATH<x>:REFLevel:PERCent` commands.

`ABSolute` specifies that the reference levels are set explicitly using the `MEASUrement:MATH<x>:REFLevel:ABSolute` commands. This method is useful when precise values are required.

Examples

`MEASUrement:MATH2:REFLevels:METHod ABSOLUTE` specifies that the reference levels are set explicitly

`MEASUrement:MATH2:REFLevels:METHod?` might return `:MEASUREMENT:MATH2:REFLEVELS:METHOD PERCENT` indicating reference levels are in percent relative to HIGH and LOW.

MEASUrement:MATH<x>:REFLevels:PERCent:FALLHigh

This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the high reference level of the falling edge when the measurement ref level method is set to percent. The math number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MATH<x>:REFLevels:PERCent:FALLHigh <NR3>
MEASUrement:MATH<x>:REFLevels:PERCent:FALLHigh?
```

Arguments

`<NR3>` is the percentage (where 100% is equal to HIGH) used to calculate the high reference level when the measurement Ref level method is set to Percent.

Examples

`MEASUrement:MATH2:REFLevels:PERCent:FALLHigh 95` sets the reference level to 95% of TOP.

`MEASUrement:MATH2:REFLevels:PERCent:FALLHigh?` might return `:MEASUREMENT:MATH2:REFLEVELS:PERCENT:FALLHIGH 90.0000` indicating the reference level is set to 90% of TOP.

MEASUrement:MATH<x>:REFLevels:PERCent:FALLLow

This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the low reference level of the falling edge when the measurement ref level method is set to percent. The math number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MATH<x>:REFLevels:PERCent:FALLLow <NR3>
MEASUrement:MATH<x>:REFLevels:PERCent:FALLLow?
```

Arguments

`<NR3>` is the percentage (where 100% is equal to HIGH) used to calculate the mid reference level when the measurement's Ref level method is set to Percent.

Examples

`MEASUrement:MATH2:REFLevels:PERCent:FALLLow 5` sets the reference level to 5% of TOP.

`MEASUrement:MATH2:REFLevels:PERCent:FALLLow?` might return `:MEASUREMENT:MATH2:REFLEVELS:PERCENT:FALLLOW 10.0000` indicating the reference level is set to 10% of TOP.

MEASUrement:MATH<x>:REFLevels:PERCent:FALLMid

This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the mid reference level of the falling edge when the measurement ref level method is set to percent. The math number is specified by x.

Group Measurement

Syntax

```
MEASUrement:MATH<x>:REFLevels:PERCent:FALLMid <NR3>
MEASUrement:MATH<x>:REFLevels:PERCent:FALLMid?
```

Arguments `<NR3>` is the percentage (where 50% is equal to MID) used to calculate the mid reference level when the measurement Ref level method is set to Percent.

Examples `MEASUrement:MATH2:REFLevels:PERCent:FALLMid 50` sets the reference level to 50% of TOP.

`MEASUrement:MATH2:REFLevels:PERCent:FALLMid?` might return `:MEASUREMENT:MATH2:REFLEVELS:PERCENT:FALLMID 50.0000` indicating the reference level is set to 50% of TOP.

MEASUrement:MATH<x>:REFLevels:PERCent:HYSTeresis

This command sets or queries the percentage (where 100% is equal to MAX and 0% is equal to MIN) used to calculate the hysteresis of the reference level when the measurement ref level method is set to percent. The math number is specified by x.

Group Measurement

Syntax

```
MEASUrement:MATH<x>:REFLevels:PERCent:HYSTeresis <NR3>
MEASUrement:MATH<x>:REFLevels:PERCent:HYSTeresis?
```

Arguments `<NR3>` is the hysteresis value used for the autoset.

Examples

`MEASUrement:MATH2:REFLevels:PERCent:HYSTeresis 2.5` sets the hysteresis to 2.5% of MAX

`MEASUrement:MATH2:REFLevels:PERCent:HYSTeresis?` might return `:MEASUREMENT:MATH2:REFLEVELS:PERCENT:HYSTERESIS 5.0000` indicating the hysteresis is set to 5% of MAX.

MEASUrement:MATH<x>:REFLevels:PERCent:RISEHigh

This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the high reference level of the rising edge when the measurement ref level method is set to percent. The math number is specified by x. The measurement number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MATH<x>:REFLevels:PERCent:RISEHigh <NR3>
MEASUrement:MATH<x>:REFLevels:PERCent:RISEHigh?
```

Arguments

`<NR3>` is the percentage (where 100% is equal to TOP) used to calculate the high reference level when the measurement's Ref level method is set to Percent.

Examples

`MEASUrement:MATH2:REFLevels:PERCent:RISEHigh 95` sets the reference level to 95% of TOP.

`MEASUrement:MATH2:REFLevels:PERCent:RISEHigh?` might return `:MEASUREMENT:MATH2:REFLEVELS:PERCENT:RISEHIGH 90.0000` indicating the reference level is set to 90% of TOP.

MEASUrement:MATH<x>:REFLevels:PERCent:RISELow

This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the low reference level of the rising edge when the measurement ref level method is set to percent. The math number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MATH<x>:REFLevels:PERCent:RISELow <NR3>
MEASUrement:MATH<x>:REFLevels:PERCent:RISELow?
```

Arguments

<NR3> is the percentage (where 100% is equal to TOP) used to calculate the mid reference level when the measurement Ref level method is set to Percent.

Examples

`MEASUrement:MATH2REFLevels:PERCent:RISELow 5` sets the reference level to 5% of TOP.

`MEASUrement:MATH2REFLevels:PERCent:RISELow?` might return `:MEASUREMENT:MATH2:REFLEVELS:PERCENT:RISELOW 10.0000` indicating the reference level is set to 10% of TOP.

MEASUrement:MATH<x>:REFLevels:PERCent:RISEMid

This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the mid reference level of the rising edge when the measurement ref level method is set to percent. The math number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MATH<x>:REFLevels:PERCent:RISEMid <NR3>
MEASUrement:MATH<x>:REFLevels:PERCent:RISEMid?
```

Arguments

<NR3> is the percentage (where 50% is equal to MID) used to calculate the mid reference level when the measurement Ref level method is set to Percent.

Examples

`MEASUrement:MATH2:REFLevels:PERCent:RISEMid 50` sets the reference level to 50% of TOP.

`MEASUrement:MATH2:REFLevels:PERCent:RISEMid?` might return `:MEASUREMENT:MATH2:REFLEVELS:PERCENT:RISEMID 50.0000` indicating the reference level is set to 50% of TOP.

MEASUrement:MATH<x>:REFLevels:PERCent:TYPE

This command specifies or queries the reference level percent type for the measurement. The math number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MATH<x>:REFLevels:PERCent:TYPE
{TENNinety|TWENtyeighty|CUSTom}
```

MEASUrement:MATH<x>:REFLevels:PERCent:TYPE?

Arguments

TENNinety sets the values for Low, Mid and High Ref to 10%, 50% and 90% respectively.

TWENtyeighty sets the values for Low, Mid and High Ref are set to 20%, 50% and 80% respectively.

CUSTom allows setting other reference level percents.

Examples

MEASUrement:MATH2:REFLevels:PERCent:TYPE TWENTYEIGHTY sets the values for Low, Mid and High Ref are set to 20%, 50% and 80% respectively.

MEASUrement:MATH2:REFLevels:PERCent:TYPE? might return :MEASUREMENT:MATH2:REFLEVELS:PERCENT:TYPE TENNINETY indicating the reference levels are set to 10%, 50% and 90%.

MEASUrement:MEASRange:MAX

This command sets or queries the global range maximum value.

Group

Measurement

Syntax

```
MEASUrement:MEASRange:MAX <NR3>
MEASUrement:MEASRange:MAX?
```

Arguments

<NR3> is the maximum measurement range limit value.

Examples

MEASUREMENT:MEASRANGE:MAX 1.5 sets the maximum range limit to 1.5 V.

MEASUREMENT:MEASRANGE:MAX? might return :MEASUREMENT:MEASRANGE:MAX 1.0000 indicating the maximum range limit is 1.0 V.

MEASUrement:MEASRange:MIN

This command sets or queries the global range minimum value.

Group

Measurement

Syntax

```
MEASUrement:MEASRange:MIN <NR3>
MEASUrement:MEASRange:MIN?
```

Arguments

<NR3> is the minimum measurement range limit value.

Examples

MEASUREMENT:MEASRANGE:MIN 30.0E-3 sets the minimum measurement range limit to 30.0 mV.

MEASUREMENT:MEASRANGE:MIN? might return :MEASUREMENT:MEASRANGE:MIN 0.0E+0 indicating minimum range limit is 0.0 V.

MEASUrement:MEASRange:STATE

This command sets or queries the global range state.

Group

Measurement

Syntax

```
MEASUrement:MEASRange:STATE {OFF|ON|0|1}
MEASUrement:MEASRange:STATE?
```

Arguments

OFF specifies that the measurement results are not limited.

ON specifies that the measurement results are limited to results with values between the range minimum and maximum.

0 specifies that the measurement results are not limited.

1 specifies that the measurement results are limited to results with values between the range minimum and maximum.

Examples

MEASUREMENT:MEASRANGE:STATE 1 specifies that the measurement results are limited to results with values between the range minimum and maximum.

MEASUREMENT:MEASRANGE:STATE? might return :MEASUREMENT:MEASRANGE:STATE 0 indicating that the measurement results are not limited.

MEASUrement:MEAS<x>:BER

This command sets or queries BER value for the measurement. Measurements are specified by x.

Group

Measurement

Syntax
```
MEASUrement:MEAS<x>:BER <NR3>
MEASUrement:MEAS<x>:BER?
```

Arguments `<NR3>` is BER value for the measurement.

Examples `MEASUrement:MEAS2:BER 10.0` sets the BER for the measurement to 10.0.

`MEASUrement:MEAS2:BER?` might return `:MEASUREMENT:MEAS2:BER 12.0000` indicating the measurement BER is 12.0.

MEASUrement:MEAS<x>:BER:TARGETBER

This command sets or queries the target BER value for the measurement. Measurements are specified by x.

Group Measurement

Syntax
```
MEASUrement:MEAS<x>:BER:TARGETBER <NR3>
MEASUrement:MEAS<x>:BER:TARGETBER?
```

Arguments `<NR3>` is the target BER value.

Examples `MEASUrement:MEAS1:BER:TARGETBER 14.0` sets the target BER to 14.0.

`MEASUrement:MEAS1:BER:TARGETBER?` might return `:MEASUREMENT:MEAS1:BER:TARGETBER 12.0000` indicating the target BER is 12.0.

MEASUrement:MEAS<x>:BIN

This command sets or queries the bin count for the measurement. Measurements are specified by x.

Group Measurement

Syntax
```
MEASUrement:MEAS<x>:BIN <NR3>
MEASUrement:MEAS<x>:BIN?
```

Arguments `<NR3>` is the bin count.

Examples

`MEASUrement:MEAS1:BIN 2` sets the bin count to 2.

`MEASUrement:MEAS1:BIN?` might return `:MEASUREMENT:MEAS1:BIN 1` indicating the bin count is 1.

MEASUrement:MEAS<x>:BITCfgmode

This command sets or queries whether the measurement returns the mean or mode statistic result when the measurement type is bit amplitude/high/low. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:BITCfgmode {MEAN|MODE}
MEASUrement:MEAS<x>:BITCfgmode?
```

Arguments

`MEAN` specifies that the measurement returns results for each bit.

`MODE` specifies that the measurement returns the mode of its results.

Examples

`MEASUrement:MEAS1:BITCfgmode MODE` specifies that the measurement returns the mode of its results.

`MEASUrement:MEAS1:BITCfgmode?` might return `:MEASUREMENT:MEAS1:BITCFGMODE MEAN` indicating the configuration mode is set to MEAN.

MEASUrement:MEAS<x>:BITEnd

This command sets or queries the bit end as a percentage of the unit interval. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:BITEnd <NR3>
MEASUrement:MEAS<x>:BITEnd?
```

Arguments

`<NR3>` is the bit end.

Examples `MEASUrement:MEAS2:BITEnd 60` sets the bit end to 60% of the unit interval.

`MEASUrement:MEAS2:BITEnd?` might return `:MEASUREMENT:MEAS2:BITEND 50.0000` indicating the bit end is 50%.

MEASUrement:MEAS<x>:BITPcnt

This command sets or queries the bit center as a percentage of the unit interval. Measurements are specified by x.

Group Measurement

Syntax

```
MEASUrement:MEAS<x>:BITPcnt <NR3>
MEASUrement:MEAS<x>:BITPcnt?
```

Arguments `<NR3>` is the bit center percentage value to be measured for the bit type selected.

Examples `MEASUrement:MEAS2:BITPcnt 55` sets the bit center to 55% of the unit interval.

`MEASUrement:MEAS2:BITPcnt?` might return `:MEASUREMENT:MEAS2:BITPCNT 50.0000` indicating bit center is 50% of the unit interval.

MEASUrement:MEAS<x>:BITSTart

This command sets or queries the bit start as a percentage of the unit interval. Measurements are specified by x.

Group Measurement

Syntax

```
MEASUrement:MEAS<x>:BITSTart <NR3>
MEASUrement:MEAS<x>:BITSTart?
```

Arguments `<NR3>` is the bit start.

Examples `MEASUrement:MEAS2:BITSTart 45` sets the bit start to 45% of the unit interval.

`MEASUrement:MEAS2:BITSTart?` might return `:MEASUREMENT:MEAS2:BITSTART 50.0000` indicating the bit start is 50% of the unit interval.

MEASUrement:MEAS<x>:BITType

This command sets or queries the bit type for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:BITType
{ALLBits|TRANSition|NONTRANSition}
MEASUrement:MEAS<x>:BITType?
```

Arguments

`ALLBits` specifies that the measurement returns results for all bits.

`TRANSition` specifies that the measurement returns results for transitions bit only.

`NONTRANSition` specifies that the measurement returns results for non-transition bits only.

Examples

`MEASUrement:MEAS1:BITType TRANSITION` specifies that the measurement returns results for transition bits only.

`MEASUrement:MEAS1:BITType?` might return `:MEASUREMENT:MEAS1:BITTYPE ALLBITS` indicating that measurements return results for all bits.

MEASUrement:MEAS<x>:BURSTEDGTYPe

This command sets or queries the burst edge type for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:BURSTEDGTYPe {RISE|FALL}
MEASUrement:MEAS<x>:BURSTEDGTYPe?
```

Arguments

`RISE` specifies a burst with a rising edge.

`FALL` specifies a burst with a falling edge.

Examples

`MEASUrement:MEAS2:BURSTEDGTYPe FALL` specifies a burst with a falling edge.

`MEASUrement:MEAS2:BURSTEDGTYPe?` might return `:MEASUREMENT:MEAS2:BURSTEDGTYPE RISE` indicating a burst with a rising edge.

MEASUrement:MEAS<x>:CCRESUlts:ALLAcqs:MAXimum? (Query Only)

This query-only command returns the maximum cycle-cycle value for the specified measurement for all acquisitions. Measurements are specified by x.

Group Measurement

Syntax `MEASUrement:MEAS<x>:CCRESUlts:ALLAcqs:MAXimum?`

Returns The maximum cycle-cycle statistic value for the specified measurement for all acquisitions.

Examples `MEASUrement:MEAS2:CCRESUlts:ALLAcqs:MAXimum?` might return `:MEASUREMENT:MEAS2:CCRESULTS:ALLACQS:MAXIMUM 9.91E+37`.

MEASUrement:MEAS<x>:CCRESUlts:ALLAcqs:MEAN? (Query Only)

This query-only command returns the mean cycle-cycle value for the specified measurement for all acquisitions. Measurements are specified by x.

Group Measurement

Syntax `MEASUrement:MEAS<x>:CCRESUlts:ALLAcqs:MEAN?`

Returns The mean cycle-cycle statistic value for the specified measurement for all acquisitions.

Examples `MEASUrement:MEAS2CCRESUlts:ALLAcqs:MEAN?` might return `:MEASUREMENT:MEAS2:CCRESULTS:ALLACQS:MEAN 9.91E+37`.

MEASUrement:MEAS<x>:CCRESUlts:ALLAcqs:MINimum? (Query Only)

This query-only command returns the minimum cycle-cycle value for the specified measurement for all acquisitions. Measurements are specified by x.

Group Measurement

Syntax `MEASUrement:MEAS<x>:CCRESUlts:ALLAcqs:MINimum?`

Returns The minimum cycle-cycle statistic value for the specified measurement for all acquisitions.

Examples `MEASUrement:MEAS2:CCRESUlts:ALLAcqs:MINimum?` might return `:MEASUREMENT:MEAS2:CCRESULTS:ALLACQS:MINIMUM 9.91E+37`.

MEASUrement:MEAS<x>:CCRESUlts:ALLAcqs:PK2PK? (Query Only)

This query-only command returns the peak to peak cycle-cycle statistic for the specified measurement for all acquisitions. Measurements are specified by x.

Group Measurement

Syntax `MEASUrement:MEAS<x>:CCRESUlts:ALLAcqs:PK2PK?`

Returns The peak to peak cycle-cycle statistic value for the specified measurement all acquisitions.

Examples `MEASUrement:MEAS2:CCRESUlts:ALLAcqs:PK2PK?` might return `:MEASUREMENT:MEAS2:CCRESULTS:ALLACQS:PK2PK 9.91E+37`.

MEASUrement:MEAS<x>:CCRESUlts:ALLAcqs:POPUlation? (Query Only)

This query-only command returns the population of all cycle-cycle statistics for the specified measurement for all acquisitions accumulated since statistics were last reset. Measurements are specified by x.

Group Measurement

Syntax `MEASUrement:MEAS<x>:CCRESUlts:ALLAcqs:POPUlation?`

Returns The population of all cycle-cycle statistics for the specified measurement accumulated over all acquisitions since statistics were last reset.

Examples `MEASUrement:MEAS2:CCRESUlts:ALLAcqs:POPUlation?` might return `:MEASUREMENT:MEAS2:CCRESULTS:ALLACQS:POPULATION 0` indicating no statistics for the measurement.

MEASUrement:MEAS<x>:CCRESUlts:ALLAcqs:STDDev? (Query Only)

This query-only command returns the standard deviation cycle-cycle for the specified measurement for all acquisitions. Measurements are specified by x.

Group Measurement

Syntax `MEASUrement:MEAS<x>:CCRESUlts:ALLAcqs:STDDev?`

Returns The standard deviation cycle-cycle statistic value for the specified measurement all acquisitions.

Examples `MEASUrement:MEAS2:CCRESUlts:ALLAcqs:STDDev?` might return `:MEASUREMENT:MEAS2:CCRESULTS:ALLACQS:STDDEV 9.91E+37`.

MEASUrement:MEAS<x>:CCRESUlts:CURRentacq:MAXimum? (Query Only)

This query-only command returns the maximum cycle-cycle value for the specified measurement for the current acquisition. Measurements are specified by x.

Group Measurement

Syntax `MEASUrement:MEAS<x>:CCRESUlts:CURRentacq:MAXimum?`

Returns The maximum cycle-cycle statistic value for the specified measurement for the current acquisition.

Examples `MEASUrement:MEAS2:CCRESUlts:CURRentacq:MAXimum?` might return `:MEASUREMENT:MEAS1:CCRESULTS:CURRENTACQ:MAXIMUM 9.91E+37`.

MEASUrement:MEAS<x>:CCRESUlts:CURRentacq:MEAN? (Query Only)

This query-only command returns the mean cycle-cycle value for the specified measurement for the current acquisition. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:CCRESUlts:CURRentacq:MEAN?
```

Returns

The mean cycle-cycle statistic value for the specified measurement for the current acquisition.

Examples

`MEASUrement:MEAS1:CCRESUlts:CURRentacq:MEAN?` might return `:MEASUREMENT:MEAS1:CCRESULTS:CURRENTACQ:MEAN 9.91E+37`.

MEASUrement:MEAS<x>:CCRESUlts:CURRentacq:MINimum? (Query Only)

This query-only command returns the minimum cycle-cycle value for the specified measurement for the current acquisition. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:CCRESUlts:CURRentacq:MINimum?
```

Returns

The minimum cycle-cycle statistic value for the specified measurement for the current acquisition.

Examples

`MEASUrement:MEAS2:CCRESUlts:CURRentacq:MINimum?` might return `:MEASUREMENT:MEAS1:CCRESULTS:CURRENTACQ:MINIMUM 9.91E+37`.

MEASUrement:MEAS<x>:CCRESUlts:CURRentacq:PK2PK? (Query Only)

This query-only command returns the peak to peak cycle-cycle statistic for the specified measurement for the current acquisition. Measurements are specified by x.

Group

Measurement

Syntax `MEASUrement:MEAS<x>:CCRESUlts:CURRentacq:PK2PK?`

Returns The peak to peak cycle-cycle statistic value for the specified measurement for the current acquisition.

Examples `MEASUrement:MEAS1:CCRESUlts:CURRentacq:PK2PK?` might return `:MEASUREMENT:MEAS1:CCRESULTS:CURRENTACQ:PK2PK 9.91E+37`.

MEASUrement:MEAS<x>:CCRESUlts:CURRentacq:POPUlation? (Query Only)

This query-only command returns the population of the cycle-cycle statistics for the specified measurement for the current acquisition. Measurements are specified by x.

Group Measurement

Syntax `MEASUrement:MEAS<x>:CCRESUlts:CURRentacq:POPUlation?`

Returns The population of the cycle-cycle statistics for the specified measurement for the current acquisition.

Examples `MEASUrement:MEAS1:CCRESUlts:CURRentacq:POPUlation?` might return `:MEASUREMENT:MEAS1:CCRESULTS:CURRENTACQ:POPULATION 0` indicating the population is 0.

MEASUrement:MEAS<x>:CCRESUlts:CURRentacq:STDDev? (Query Only)

This query-only command returns the standard deviation cycle-cycle for the specified measurement for the current acquisition. Measurements are specified by x.

Group Measurement

Syntax `MEASUrement:MEAS<x>:CCRESUlts:CURRentacq:STDDev?`

Returns The standard deviation cycle-cycle statistic value for the specified measurement for the current acquisition.

Examples `MEASUrement:MEAS1:CCRESUlts:CURRentacq:STDDev?` might return `:MEASUREMENT:MEAS1:CCRESULTS:CURRENTACQ:STDDEV 9.91E+37`.

MEASUrement:MEAS<x>:CLOCKRecovery:ADVanced:METHod

This command sets or queries the advanced clock recovery method when advanced clock recovery is used for the measurement. Measurements are specified by x.

Group Measurement

Syntax

```
MEASUrement:MEAS<x>:CLOCKRecovery:ADVanced:METHod
{NONE|NOMinal|PATTern}
MEASUrement:MEAS<x>:CLOCKRecovery:ADVanced:METHod?
```

Arguments `NOMinal` sets the advanced CRD method to Nominal Data Rate.

`PATTern` sets the advanced CDR method to use a Known Data Pattern.

`NONE` sets no advanced CRD method.

Examples `MEASUrement:MEAS1:CLOCKRecovery:ADVanced:METHod PATTERN` sets the advanced CDR method to use a Known Data Pattern.

`MEASUrement:MEAS1:CLOCKRecovery:ADVanced:METHod?` might return `:MEASUREMENT:MEAS1:CLOCKRECOVERY:ADVANCED:METHOD NONE` indicating no advanced CRD method.

MEASUrement:MEAS<x>:CLOCKRecovery:CLOCKFrequency

This command sets or queries the clock frequency used when fixed constant clock recovery is used for the measurement. Measurements are specified by x.

Group Measurement

Syntax

```
MEASUrement:MEAS<x>:CLOCKRecovery:CLOCKFrequency <NR3>
MEASUrement:MEAS<x>:CLOCKRecovery:CLOCKFrequency?
```

Arguments `<NR3>` is the clock frequency.

Examples `MEASUrement:MEAS1:CLOCKRecovery:CLOCKFrequency 2.0E+9` sets the frequency to 2.0 GHz.

`MEASUrement:MEAS1:CLOCKRecovery:CLOCKFrequency?` might return `:MEASUREMENT:MEAS1:CLOCKRECOVERY:CLOCKFREQUENCY 2.5000E+9` indicating the frequency is 2.5 GHz.

MEASUrement:MEAS<x>:CLOCKRecovery:CLOCKMultiplier

This command sets or queries the clock multiplier used when explicit clock recovery is used for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:CLOCKRecovery:CLOCKMultiplier <NR3>
MEASUrement:MEAS<x>:CLOCKRecovery:CLOCKMultiplier?
```

Arguments

`<NR3>` is the clock multiplier.

Examples

`MEASUrement:MEAS1:CLOCKRecovery:CLOCKMultiplier 1.5` sets the clock multiplier to 1.5.

`MEASUrement:MEAS1:CLOCKRecovery:CLOCKMultiplier?` might return `:MEASUREMENT:MEAS1:CLOCKRECOVERY:CLOCKMULTIPLIER 1.0000` indicating the clock multiplier is 1.0.

MEASUrement:MEAS<x>:CLOCKRecovery:CONSTCLOCKMODe

This command sets or queries the constant clock mode used when constant clock recovery is used for the measurement. The measurement number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:CLOCKRecovery:CONSTCLOCKMODe
{MEAN|MEDian|FIXed}
```

Arguments

`MEAN` specifies that clock recovery uses the mean of the clock signal as the clock frequency.

`MEDian` specifies that clock recovery uses the mode of the clock signal as the clock frequency.

`FIXed` specifies that clock recovery uses the value set by the user as the clock frequency.

Examples

`MEASUrement:MEAS1:CLOCKRecovery:CONSTCLOCKMODe FIXED` specifies that clock recovery uses the value set by the user as the clock frequency.

`MEASUrement:MEAS1:CLOCKRecovery:CONSTCLOCKMODe?` might return `:MEASUREMENT:MEAS1:CLOCKRECOVERY:CONSTCLOCKMODE MEAN` indicating that clock recovery uses the mean of the clock signal as the clock frequency.

MEASUrement:MEAS<x>:CLOCKRecovery:DAMPing

This command sets or queries the damping value used when PLL clock recovery is used for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:CLOCKRecovery:DAMPing <NR3>
MEASUrement:MEAS<x>:CLOCKRecovery:DAMPing?
```

Arguments

`<NR3>` is the clock recovery damping value.

Examples

`MEASUrement:MEAS1:CLOCKRecovery:DAMPing 700.0E-3` sets the damping value to 0.70.

`MEASUrement:MEAS1:CLOCKRecovery:DAMPing?` might return `:MEASUREMENT:MEAS1:CLOCKRECOVERY:DAMPING 700.0000E-3` indicating the damping value is 0.70.

MEASUrement:MEAS<x>:CLOCKRecovery:DATAPath

This command sets or queries the file containing the data pattern used when known data pattern clock recovery is used for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:CLOCKRecovery:DATAPath <QString>
MEASUrement:MEAS<x>:CLOCKRecovery:DATAPath?
```

Arguments

`<QString>` is the file containing the data pattern to be used for known data pattern clock recovery.

Examples

`MEASUrement:MEAS1:CLOCKRecovery:DATAPath "TEST125.txt` specifies the file containing the data pattern is TEST125.txt.

`MEASUrement:MEAS1:CLOCKRecovery:DATAPath?` might return `:MEASUREMENT:MEAS1:CLOCKRECOVERY:DATAPATH "PRBS127.txt"` indicating the file containing the data pattern is PRBS127.txt.

MEASUrement:MEAS<x>:CLOCKRecovery:DATARate

This command sets or queries the nominal data bit rate when nominal data rate clock recovery is used for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:CLOCKRecovery:DATARate <NR3>
MEASUrement:MEAS<x>:CLOCKRecovery:DATARate?
```

Arguments

`<NR3>` is the value for the Nominal data rate.

Examples

MEASUrement:MEAS1:CLOCKRecovery:DATARate 2.0000E+9 sets the data rate to 2.0 Gb/s.

MEASUrement:MEAS1:CLOCKRecovery:DATARate? might return :MEASUREMENT:MEAS1:CLOCKRECOVERY:DATARATE 2.5000E+9 indicating the data rate is 2.5 Gb/s.

MEASUrement:MEAS<x>:CLOCKRecovery:EXPLICITCLOCKMODe

This command sets or queries the explicit clock mode used when explicit clock recovery is used for the measurement. The measurement number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:CLOCKRecovery:EXPLICITCLOCKMODe
{EDGE|PLL}
MEASUrement:MEAS<x>:CLOCKRecovery:EXPLICITCLOCKMODe?
```

Arguments

`EDGE` specifies the clock edge.

`PLL` specifies the phase locked loop.

Examples

`MEASUrement:MEAS1:CLOCKRecovery:EXPLICITCLOCKMODe EDGE` sets the clock mode to edge.

`MEASUrement:MEAS1:CLOCKRecovery:EXPLICITCLOCKMODe?` might return `:MEASUREMENT:MEAS1:CLOCKRECOVERY:EXPLICITCLOCKMODE EDGE` indicating the explicit clock mode is edge.

MEASUrement:MEAS<x>:CLOCKRecovery:GLOBal

This command sets or queries the clock recovery settings global flag for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:CLOCKRecovery:GLOBal {OFF|ON|0|1}
MEASUrement:MEAS<x>:CLOCKRecovery:GLOBal?
```

Arguments

`OFF` clock recovery settings are changed independently for each individual measurement.

`ON` applies global clock recovery settings to all the measurements' clock recovery settings.

`0` clock recovery settings are changed independently for each individual measurement.

`1` applies global clock recovery settings to all the measurements' clock recovery settings.

Examples

`MEASUrement:MEAS1:CLOCKRecovery:GLOBal 1` applies global clock recovery settings to all the measurements' clock recovery settings.

`MEASUrement:MEAS1:CLOCKRecovery:GLOBal?` might return `:MEASUREMENT:MEAS1:CLOCKRECOVERY:GLOBAL 0` indicating clock recovery settings are changed independently for each individual measurement.

MEASUrement:MEAS<x>:CLOCKRecovery:JTFBandwidth

This command sets or queries the JTF bandwidth used when PLL clock recovery is used for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:CLOCKRecovery:JTFBandwidth <NR3>
MEASUrement:MEAS<x>:CLOCKRecovery:JTFBandwidth?
```

Arguments

`<NR3>` is the clock recovery JTF bandwidth.

Examples

`MEASUrement:MEAS1:CLOCKRecovery:JTFBandwidth 1.10E+6` sets the bandwidth to 1.1 MHz.

`MEASUrement:MEAS1:CLOCKRecovery:JTFBandwidth?` might return `:MEASUREMENT:MEAS1:CLOCKRECOVERY:JTFBANDWIDTH 1.0000E+6` indicating the bandwidth is 1.0 MHz.

MEASUrement:MEAS<x>:CLOCKRecovery:LOOPBandwidth

This command sets or queries the loop bandwidth used when PLL clock recovery is used for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:CLOCKRecovery:LOOPBandwidth <NR3>
MEASUrement:MEAS<x>:CLOCKRecovery:LOOPBandwidth?
```

Arguments

`<NR3>` is the clock recovery loop bandwidth.

Examples

`MEASUrement:MEAS1:CLOCKRecovery:LOOPBandwidth 1.10E+6` sets the bandwidth to 1.1 Mhz.

`MEASUrement:MEAS1:CLOCKRecovery:LOOPBandwidth?` might return `:MEASUREMENT:MEAS1:CLOCKRECOVERY:LOOPBANDWIDTH 1.0000E+6` indicating the bandwidth is 1.0 MHz.

MEASUrement:MEAS<x>:CLOCKRecovery:MEANAUTOCalculate

This command sets or queries how often the clock is calculated when constant clock recovery is used for the measurement. The measurement number is specified by x.

Group

Measurement

Syntax
```
MEASUrement:MEAS<x>:CLOCKRecovery:MEANAUTOCalculate
{FIRST|EVERY}
MEASUrement:MEAS<x>:CLOCKRecovery:MEANAUTOCalculate?
```

Arguments

`FIRST` calculates the clock on the first acquisition.

`EVERY` calculates the clock on every acquisition.

Examples

`MEASUrement:MEAS1:CLOCKRecovery:MEANAUTOCalculate EVERY` causes the clock to be calculated on every acquisition.

`MEASUrement:MEAS1:CLOCKRecovery:MEANAUTOCalculate?` might return `:MEASUREMENT:MEAS1:CLOCKRECOVERY:MEANAUTOCALCULATE FIRST` indicating the clock is calculated on the first acquisition.

MEASUrement:MEAS<x>:CLOCKRecovery:METHod

This command sets or queries the clock recovery method for the measurement. Measurements are specified by x.

Group

Measurement

Syntax
```
MEASUrement:MEAS<x>:CLOCKRecovery:METHod
{PLL|CONSTANTCLOCK|EXPLICITCLOCK}
MEASUrement:MEAS<x>:CLOCKRecovery:METHod?
```

Arguments

`PLL` specifies a phase locked loop clock recovery method.

`CONSTANTCLOCK` specifies using a constant clock.

`EXPLICITCLOCK` specifies using an explicit clock.

Examples

`MEASUrement:MEAS1:CLOCKRecovery:METHod PLL` specifies a phase locked loop clock recovery method.

`MEASUrement:MEAS1:CLOCKRecovery:METHod?` might return `:MEASUREMENT:MEAS1:CLOCKRECOVERY:METHOD CONSTANTCLOCK` indicating a constant clock is in use.

MEASUrement:MEAS<x>:CLOCKRecovery:MODel

This command sets or queries the PLL clock recovery model used when PLL clock recovery is used for the measurement. Measurements are specified by x.

Group Measurement

Syntax

```
MEASUrement:MEAS<x>:CLOCKRecovery:MODel {TYPE1|TYPE2}
MEASUrement:MEAS<x>:CLOCKRecovery:MODel?
```

Arguments Argumenst are the clock recovery model type.

Examples `MEASUrement:MEAS1:CLOCKRecovery:MODel TYPE1` set the clock recovery model lto type 1.

`MEASUrement:MEAS1:CLOCKRecovery:MODel?` might return `:MEASUREMENT:MEAS1:CLOCKRECOVERY:MODEL TYPE1` indicating the clock recovery model is type 1.

MEASUrement:MEAS<x>:CLOCKRecovery:NOMINALOFFset

This command sets or queries the offset value used when explicit clock recovery is used for the measurement. Measurements are specified by x.

Group Measurement

Syntax

```
MEASUrement:MEAS<x>:CLOCKRecovery:NOMINALOFFset <NR3>
MEASUrement:MEAS<x>:CLOCKRecovery:NOMINALOFFset?
```

Arguments `<NR3>` is the clock offset.

Examples MEASUrement:MEAS1:CLOCKRecovery:NOMINALOFFset 1.0e-9 sets the clock offset to 1 ns.

MEASUrement:MEAS1:CLOCKRecovery:NOMINALOFFset? might return :MEASUREMENT:MEAS1:CLOCKRECOVERY:NOMINALOFFSET 0.0E+0 indicating the offset is 0.0 ns.

MEASUrement:MEAS<x>:CLOCKRecovery:NOMINALOFFset:SELECTIONtype

This command sets or queries the offset type used when explicit clock recovery is used for the measurement. The measurement number is specified by x.

Group Measurement

Syntax

```
MEASUrement:MEAS<x>:CLOCKRecovery:NOMINALOFFset:
SELECTIONtype {AUTO|MANUAL}
MEASUrement:MEAS<x>:CLOCKRecovery:NOMINALOFFset:
SELECTIONtype?
```

Arguments

`AUTO` automatically calculates the offset.

`MANUAL` allows the user to set the offset.

Examples

`MEASUrement:MEAS1:CLOCKRecovery:NOMINALOFFset:SELECTIONtype AUTO` sets the offset selection type to auto.

`MEASUrement:MEAS1:CLOCKRecovery:NOMINALOFFset:SELECTIONtype?` might return `:MEASUREMENT:MEAS1:CLOCKRECOVERY:NOMINALOFFSET:SELECTIONTYPE MANUAL` indicating the selection type is manual.

MEASUrement:MEAS<x>:CLOCKRecovery:STAndard

This command sets or queries the communications standard when PLL clock recovery is used for the measurement. The measurement number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:CLOCKRecovery:STAndard {CUSTom|
ENET100|FW1394BS400B|FW1394BS800B|FW1394BS1600B|FBD1|
FBD2|FBD3|FC133|FC266|FC531|FC1063|FC2125|FC4250|
FC8500|ENET1000|IBA2500|IBA_GEN2|OC1|OC3|OC12|OC48|
PCIE_GEN1|PCIE_GEN2|PCIE_GEN3|RIO125|RIO250|RIO3125|
SAS15_NOSSC|SAS3_NOSSC|SAS6_NOSSC|SAS12_NOSSC|SAS15_SSC|
SAS3_SSC|SAS6_SSC|SAS12_SSC|SATA_GEN1|SATA_GEN2|
SATA_GEN3|USB3|XAUI|XAUI_GEN2}
```

Arguments

Arguments are the clock recovery standards.

Examples

`MEASUrement:MEAS1:CLOCKRecovery:STAndard PCIE_GEN2` sets the standard to `PCIE_GEN2`.

`MEASUrement:MEAS1:CLOCKRecovery:STAndard?` might return `:MEASUREMENT:MEAS1:CLOCKRECOVERY:STANDARD PCIE_GEN1` indicating the standard is `PCIE_GEN1`.

MEASUrement:MEAS<x>:COMMONMode:FILTers:STATE

This command sets or queries whether a filter is used for the measurement when the measurement type is AC common mode. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:COMMONMode:FILTers:STATE {OFF|ON|0|1}
MEASUrement:MEAS<x>:COMMONMode:FILTers:STATE?
```

Arguments

`OFF` turns the filter off.

`ON` turns the filter on.

`0` turns the filter off.

`1` turns the filter on.

Examples

`MEASUrement:MEAS1:COMMONMode:FILTers:STATE ON` sets the filter to on.

`MEASUrement:MEAS1:COMMONMode:FILTers:STATE?` might return `:MEASUREMENT:MEAS1:COMMONMODE:FILTERS:STATE 0` indicating the filter is off.

MEASUrement:MEAS<x>:COMMONMode:SOURCEs

This command sets or queries the number of sources for the measurement when the measurement type is AC common mode. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:COMMONMode:SOURCEs {SINGLE|DOUBLE}
MEASUrement:MEAS<x>:COMMONMode:SOURCEs?
```

Arguments

`SINGLE` specifies a single source.

`DOUBLE` specifies double sources.

Examples

`MEASUrement:MEAS1:COMMONMode:SOURCEs SINGLE` specifies a single source.

`MEASUrement:MEAS1:COMMONMode:SOURCEs?` might return `:MEASUREMENT:MEAS1:COMMONMODE:SOURCES DOUBLE` indicating sources are set to double.

MEASUrement:MEAS<x>:CYCLemode

This command sets or queries the cycle mode for the measurement. Measurements are specified by x.

Group Measurement

Syntax

```
MEASUrement:MEAS<x>:CYCLemode {RECORD|CYCLE}
MEASUrement:MEAS<x>:CYCLemode?
```

Arguments

`RECORD` specifies that the measurement is taken over the whole record.

`CYCLE` specifies that measurements are taken on each cycle of the source.

Examples

`MEASUrement:MEAS1:CYCLemode CYCLE` sets the measurement to be taken over each cycle of the source.

`MEASUrement:MEAS1:CYCLemode?` might return `:MEASUREMENT:MEAS1:CYCLEMODE RECORD` indicating the measurement is taken over the whole record.

MEASUrement:MEAS<x>:DELay:EDGE<x>

This command sets or queries the 'to edge' type when EDGE<x> is EDGE1 and the 'from edge' type when EDGE<x> is EDG2, for the measurement when the measurement type is DELAY. Measurements are specified by x.

Group Measurement

Syntax

```
MEASUrement:MEAS<x>:DELay:EDGE<x>
{FALL|RISe|BOTH|SAMEas|OPPositeas}
MEASUrement:MEAS<x>:DELay:EDGE<x>?
```

Related Commands MEASUrement:MEAS<x>:TOEdge

Arguments

FALL specifies the falling edge of the waveform.

RISE specifies the rising edge of the waveform.

BOTH specifies both a rising and falling edge of the waveform.

SAMEas specifies that both edges of the waveform are the same.

OPPositeas specifies that the edges of the waveform are not the same.

Examples

MEASUREMENT:MEAS3:DELAY:EDGE2 RISE specifies that the rising edge of the waveform be used for measurement 3.

MEASUREMENT:MEAS1:DELAY:EDGE2? might return :MEASUREMENT:MEAS1:DELAY:EDGE2 FALL, indicating that the falling edge of the waveform is being used for measurement 1.

MEASUrement:MEAS<x>:DISPlaystat:ENABle

This command turns on and off display of statistics in measurement badges in the user interface. This command affects only the display of statistics, basic-statistics are computed regardless of the state of this command. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:DISPlaystat:ENABle {OFF|ON|<NR1>}
MEASUrement:MEAS<x>:DISPlaystat:ENABle?
```

Arguments

OFF turns off the display of statistics in measurement badges.

ON turns on the display of statistics in measurement badges.

<NR1> = 0 turns off the display of statistics in the measurement badge, any other value turns on the display of statistics.

Examples

MEASUrement:MEAS<x>:DISPlaystat:ENABle 0 turns off the display of statistics in the measurement badge.

MEASUrement:MEAS<x>:DISPlaystat:ENABle? might return :MEASUREMENT:MEAS1:DISPLAYSTAT:ENABLE 1 indicating that the display of statistics in the measurement badge is on.

MEASUrement:MEAS<x>:EDGEIncre

This command sets or queries the edge increment value for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:EDGEIncre <NR3>
MEASUrement:MEAS<x>:EDGEIncre?
```

Arguments

`<NR3>` is the measurements edge increment value.

Examples

`:MEASUREMENT:MEAS2:EDGEINCRE?` might return `:MEASUREMENT:MEAS2:EDGEINCRE 1.0000` indicating the edge increment value is set to 1.0000.

MEASUrement:MEAS<x>:EDGES:FROMLevel

This command sets or queries the 'from level' edge for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:EDGES:FROMLevel {MID|LOW|HIGH}
MEASUrement:MEAS<x>:EDGES:FROMLevel?
```

Arguments

`MID` specifies the MID level.

`HIGH` specifies the HIGH level.

`LOW` specifies the LOW level.

Examples

`MEASUrement:MEAS1:EDGES:FROMLevel HIGH` set the from level to the high level

`MEASUrement:MEAS1:EDGES:FROMLevel?` might return `:MEASUREMENT:MEAS1:EDGES:FROMLEVEL LOW` indicating the from level is the low level.

MEASUrement:MEAS<x>:EDGES:LEVel

This sets or queries the level type for the 'time outside level' measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:EDGES:LEVel {HIGH|LOW|BOTH}
MEASUrement:MEAS<x>:EDGES:LEVel?
```

Arguments

`HIGH` specifies the HIGH level.

`LOW` specifies the LOW level.

`BOTH` specifies both the HIGH and LOW level.

Examples

`MEASUrement:MEAS1:EDGES:LEVel LOW` sets the level to the low level.

`MEASUrement:MEAS1:EDGES:LEVel?` might return `:MEASUREMENT:MEAS1:EDGES:LEVEL HIGH` indicating the level is set to the high level.

MEASUrement:MEAS<x>:EDGES:LOWERFREQuency

This command sets or queries the lower frequency for the measurement when the measurement type is phase noise. Lower frequencies are ignored. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:EDGES:LOWERFREQuency <NR3>
MEASUrement:MEAS<x>:EDGES:LOWERFREQuency?
```

Arguments

`<NR3>` is the lower frequency of the edge.

Examples

`MEASUrement:MEAS1:EDGES:LOWERFREQuency 1.0e3` sets the lower frequency to 1 kHz.

`MEASUrement:MEAS1:EDGES:LOWERFREQuency?` might return `:MEASUREMENT:MEAS1:EDGES:LOWERFREQUENCY 0.0E+0` indicating the lower frequency is set to 0.0 Hertz.

MEASUrement:MEAS<x>:EDGES:N

The command sets or queries the number of accumulation cycles for the measurement when the measurement type is nperiod. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:EDGES:N <NR3>
MEASUrement:MEAS<x>:EDGES:N?
```

Arguments

`<NR3>` is the maximum number of edges used by the measurement.

Examples

`measurement:meas1:edges:n 2` sets the number of edges to 2.

`measurement:meas1:edges:n?` might return `:MEASUREMENT:MEAS1:EDGES:N 6.0000`.

MEASUrement:MEAS<x>:EDGES:SLEWRATEMethod

This command sets or queries the slew rate method for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:EDGES:SLEWRATEMethod {NOMinal|DDR}
MEASUrement:MEAS<x>:EDGES:SLEWRATEMethod?
```

Arguments

`NOMinal` specifies the nominal slew rate method.

`DDR` specifies the DDR slew rate method.

Examples

`measurement:meas1:edges:slewratemethod NOMINAL` specifies the nominal slew rate method.

`measurement:meas1:edges:slewratemethod?` might return `:MEASUREMENT:MEAS1:EDGES:SLEWRATEMETHOD NOMINAL` indicating the slew rate method is set to NOMINAL.

MEASUrement:MEAS<x>:EDGES:TOLevel

This command sets or queries the 'to level' edge for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:EDGES:TOLevel {HIGH|MID|LOW}
MEASUrement:MEAS<x>:EDGES:TOLevel?
```

Arguments

`HIGH` specifies the HIGH level.

`MID` specifies the MID level.

`LOW` specifies the LOW level.

Examples

`MEASUrement:MEAS1:EDGES:TOLevel HIGH` specifies the High to level.

`MEASUrement:MEAS1:EDGES:TOLevel?` might return `:MEASUREMENT:MEAS1:EDGES:TOLEVEL LOW` indicating the to level edge is set to the Low level.

MEASUrement:MEAS<x>:EDGES:UPPERFREQuency

This command sets or queries the upper frequency for the measurement when the measurement type is phase noise. Higher frequencies are ignored. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:EDGES:UPPERFREQuency <NR3>
MEASUrement:MEAS<x>:EDGES:UPPERFREQuency?
```

Arguments

`<NR3>` is the upper frequency of the edge.

Examples

`MEASUrement:MEAS1:EDGES:UPPERFREQuency 1.5` sets the upper frequency to 1.5 MHz.

`MEASUrement:MEAS1:EDGES:UPPERFREQuency?` might return `:MEASUREMENT:MEAS1:EDGES:UPPERFREQUENCY 1.0000E+6` indicating the upper frequency is 1.0 MHz.

MEASUrement:MEAS<x>:EDGE<x>

This command sets or queries the type of the specified edge, rise or fall, for the measurement. The measurement number is specified by x.

Group Measurement

Syntax

```
MEASUrement:MEAS<x>:EDGE<x> {RISE|FALL|BOTH}
```

Arguments

`RISE` specifies the rising edge.

`FALL` specifies the falling edge.

`BOTH` specifies either the rising or falling edge.

Examples

`MEASUREMENT:MEAS2:EDGE1?` might return `:MEASUREMENT:MEAS2:EDGE1 RISE` indicating that edge 1 of measurement 2 is the rising edge.

MEASUrement:MEAS<x>:FILTers:BLANKingtime

This command sets or queries the filter blanking time for the measurement. Measurements are specified by x.

Group Measurement

Syntax

```
MEASUrement:MEAS<x>:FILTers:BLANKingtime <NR3>
MEASUrement:MEAS<x>:FILTers:BLANKingtime?
```

Arguments

`<NR3>` is the current filter blanking time.

Examples

`MEASUrement:MEAS1:FILTers:BLANKingtime 3.5` sets the blanking time to 3.5.

`MEASUrement:MEAS1:FILTers:BLANKingtime?` might return `:MEASUREMENT:MEAS1:FILTERS:BLANKINGTIME 4.0000` indicating the filter blanking time is 4.0.

MEASUrement:MEAS<x>:FILTers:GLOBal

This command sets or queries the global flag for filter settings for the measurement. Measurements are specified by x.

Group Measurement

Syntax

```
MEASUrement:MEAS<x>:FILTers:GLOBal {OFF|ON|0|1}
MEASUrement:MEAS<x>:FILTers:GLOBal?
```

Arguments OFF causes filter settings to be changed independently for each individual measurement.

ON applies global filter settings to all the measurements' filter settings.

0 causes filter settings to be changed independently for each individual measurement.

1 applies global filter settings to all the measurements' filter settings.

Examples MEASUrement:MEAS<x>:FILTers:GLOBal OFF causes filter settings to be changed independently for each individual measurement.

MEASUrement:MEAS<x>:FILTers:GLOBal? might return :MEASUREMENT:MEAS1:FILTERS:GLOBAL 1 indicating filter settings are for all measurements.

MEASUrement:MEAS<x>:FILTers:HIGHPass:FREQ

This command sets or queries the high pass filter frequency for the measurement. Measurements are specified by x.

Group Measurement

Syntax

```
MEASUrement:MEAS<x>:FILTers:HIGHPass:FREQ <NR3>
MEASUrement:MEAS<x>:FILTers:HIGHPass:FREQ?
```

Arguments <NR3> is the current high pass filter frequency.

Examples MEASUrement:MEAS1:FILTers:HIGHPass:FREQ 15.0E+6 sets the high pass frequency to 15.0 MHz.

MEASUrement:MEAS1:FILTers:HIGHPass:FREQ? might return :MEASUREMENT:MEAS1:FILTERS:HIGHPASS:FREQ 10.0000E+6 indicating the high pass frequency is set to 10.0 MHz.

MEASUrement:MEAS<x>:FILTers:HIGHPass:SPEC

This command sets or queries the high pass filter order for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:FILTers:HIGHPass:SPEC
{NONE|FIRST|SECOND|THIRD}
MEASUrement:MEAS<x>:FILTers:HIGHPass:SPEC?
```

Arguments

`NONE` specifies no filter.

`FIRST` specifies a first-order filter.

`SECOND` specifies a second-order filter.

`THIRD` specifies a third-order filter.

Examples

`MEASUrement:MEAS1:FILTers:HIGHPass:SPEC FIRST` specifies a first-order filter.

`MEASUrement:MEAS1:FILTers:HIGHPass:SPEC?` might return `:MEASUREMENT:MEAS1:FILTERS:HIGHPASS:SPEC NONE` indicating no high pass filter is used.

MEASUrement:MEAS<x>:FILTers:LOWPass:FREQ

This command sets or queries the low pass filter cutoff frequency for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:FILTers:LOWPass:FREQ <NR3>
MEASUrement:MEAS<x>:FILTers:LOWPass:FREQ?
```

Arguments

`<NR3>` is the current low pass filter frequency.

Examples

`MEASUrement:MEAS1:FILTers:LOWPass:FREQ 5.0E+6` sets the low pass frequency to 5.0 MHz.

MEASUrement:MEAS1:FILTers:LOWPass:FREQ? might return :MEASUREMENT:MEAS1:FILTERS:LOWPASS:FREQ 10.0000E+6 indicating the low pass frequency is 10.0 MHz.

MEASUrement:MEAS<x>:FILTers:LOWPass:SPEC

This command sets or queries the low pass filter order for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:FILTers:LOWPass:SPEC
{NONE|FIRST|SECOND|THIRD}
MEASUrement:MEAS<x>:FILTers:LOWPass:SPEC?
```

Arguments

NONE specifies no filter.

FIRST specifies a first-order filter.

SECOND specifies a second-order filter.

THIRD specifies a third-order filter.

Examples

MEASUrement:MEAS1:FILTers:LOWPass:SPEC FIRST specifies a first-order filter.

MEASUrement:MEAS1:FILTers:LOWPass:SPEC? might return :MEASUREMENT:MEAS1:FILTERS:LOWPASS:SPEC NONE indicating no low pass filter is used.

MEASUrement:MEAS<x>:FILTers:RAMPtime

This command sets or queries the filter ramp time for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:FILTers:RAMPtime <NR3>
MEASUrement:MEAS<x>:FILTers:RAMPtime?
```

Arguments

<NR3> is the current filter ramp time.

Examples

MEASUrement:MEAS1:FILTers:RAMPtime 1.5 sets the ramp time to 1.5.

MEASUrement:MEAS1:FILTers:RAMPtime? might return :MEASUREMENT:MEAS1:FILTERS:RAMPTIME 2.0000 indicating the ramp time is 2.0.

MEASUrement:MEAS<x>:FROMedge

This command sets or queries the from edge type for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:FROMedge {RISe|FALL|BOTH}
MEASUrement:MEAS<x>:FROMedge?
```

Arguments

FALL specifies the falling edge of the waveform.

RISE specifies the rising edge of the waveform.

BOTH specifies both the rising and falling edges of the waveform.

Examples

MEASUrement:MEAS1:FROMedge RISE specifies the rising edge of the waveform.

MEASUrement:MEAS1:FROMedge? might return :MEASUREMENT:MEAS1:FROMEDGE BOTH indicating both the rising and falling edges of the waveform.

MEASUrement:MEAS<x>:FROMEDGESEARCHDIRect

This command sets or queries the from edge search direction for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:FROMEDGESEARCHDIRect {FORWard|BACKWard}
MEASUrement:MEAS<x>:FROMEDGESEARCHDIRect?
```

Arguments

FORWard specifies a forward search from the edge.

BACKWard specifies a backward search from the edge.

Examples

`MEASUrement:MEAS1:FROMEDGESEARCHDIRect BACKWard` specifies a backward search from the edge.

`MEASUrement:MEAS1:FROMEDGESEARCHDIRect?` might return `:MEASUREMENT:MEAS1:FROMEDGESEARCHDIRECT FORWARD` indicating a forward search from the edge.

MEASUrement:MEAS<x>:GATing

This command sets or queries the gating type for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:GATing {NONE|SCREEN|CURSor|LOGic|SEARch}
MEASUrement:MEAS<x>:GATing?
```

Arguments

`NONE` specifies measurements are taken across the entire record.

`SCREEN` turns on gating, using the left and right edges of the screen.

`CURSor` limits measurements to the portion of the waveform between the vertical bar cursors, even if they are off screen.

`LOGic` specifies that measurements are taken only when the logical state of other waveforms is true.

`SEARch` specifies that measurements are taken only where the results of a user specified search are found.

Examples

`MEASUrement:MEAS1:GATing CURSOR` limits measurements to the portion of the waveform between the vertical bar cursor.

`MEASUrement:MEAS1:GATing?` might return `:MEASUREMENT:MEAS1:GATING NONE` indicating measurements are taken across the entire record.

MEASUrement:MEAS<x>:GATing:ACTive

This command sets or queries the gating active level when the gating type is logic . Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:GATing:ACTive {HIGH|LOW}
MEASUrement:MEAS<x>:GATing:ACTive?
```

Arguments

`HIGH` takes a measurement when logic gating is High.

`LOW` takes a measurement when logic gating Low.

Examples

`MEASUrement:MEAS1:GATing:ACTive LOW` specifies taking measurements when logic gating is Low.

`MEASUrement:MEAS1:GATing:ACTive?` might return `:MEASUREMENT:MEAS1:GATING:ACTIVE HIGH` indicating measurements are taken when logic gating is High.

MEASUrement:MEAS<x>:GATing:GLOBal

This command sets or queries the gating settings global flag. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:GATing:GLOBal {OFF|ON|0|1}
MEASUrement:MEAS<x>:GATing:GLOBal?
```

Arguments

`OFF` specifies gate settings can be changed independently for each individual measurement.

`ON` applies global gate settings to all the measurements' gate settings.

`0` specifies gate settings can be changed independently for each individual measurement.

`1` applies global gate settings to all the measurements' gate settings.

Examples

`MEASUrement:MEAS1:GATing:GLOBal OFF` specifies gate settings can be changed independently for each individual measurement.

`MEASUrement:MEAS1:GATing:GLOBal?` might return `:MEASUREMENT:MEAS1:GATING:GLOBAL 1` indicating that gating settings apply to all measurements.

MEASUrement:MEAS<x>:GATing:HYSTeresis

This command sets or queries the gating hysteresis value when the gating type is logic. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:GATing:HYSTeresis <NR3>
MEASUrement:MEAS<x>:GATing:HYSTeresis?
```

Arguments

`<NR3>` is the gating hysteresis.

Examples

`MEASUrement:MEAS1:GATing:HYSTeresis 25.0E-3` sets the hysteresis to 25 mV.

`MEASUrement:MEAS1:GATing:HYSTeresis?` might return `:MEASUREMENT:MEAS1:GATING:HYSTERESIS 30.0000E-3` indicating the hysteresis is set to 30.0 mV.

MEASUrement:MEAS<x>:GATing:LOGICSource

This command sets or queries the gating data source when the gating type is logic. The measurement number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:GATing:LOGICSource
{CH<x>|MATH<x>|REF<x>}
```

Arguments

Arguments are the sources for logic gating.

Examples

`MEASUrement:MEAS1:GATing:LOGICSource CH3` sets the gating logic source to channel 3.

`MEASUrement:MEAS1:GATing:LOGICSource?` might return `:MEASUREMENT:MEAS1:GATING:LOGICSOURCE CH2` indicating the gating logic source is channel 2.

MEASUrement:MEAS<x>:GATing:MIDRef

This command sets or queries the gating mid ref value when the gating type is logic. Measurements are specified by x.

Group Measurement

Syntax

```
MEASUrement:MEAS<x>:GATing:MIDRef <NR3>
MEASUrement:MEAS<x>:GATing:MIDRef?
```

Arguments `<NR3>` is the mid ref value for gating.

Examples `MEASUrement:MEAS1:GATing:MIDRef 1.0E+0` sets the gating midref to 1.0.

`MEASUrement:MEAS1:GATing:MIDRef?` might return `:MEASUREMENT:MEAS1:GATING:MIDREF 0.0E+0` indicating the midref value is set to 0.0.

MEASUrement:MEAS<x>:GATing:SEARCHSource

This command sets or queries the gating search source when the gating type is search. The measurement number is specified by x.

Group Measurement

Syntax

```
MEASUrement:MEAS<x>:GATing:SEARCHSource SEARCH1
```

Arguments `SEARCH1` is the gating source for search gating.

Examples `MEASUrement:MEAS1:GATing:SEARCHSource SEARCH1` sets the gating search source to SEARCH1.

`MEASUrement:MEAS1:GATing:SEARCHSource?` might return `:MEASUREMENT:MEAS1:GATING:SEARCHSOURCE SEARCH1` indicating the gating search source is SEARCH1.

MEASUrement:MEAS<x>:GLOBalref

This command sets or queries the reference levels global flag for the measurement. Measurements are specified by x.

Group Measurement

Syntax

```
MEASUrement:MEAS<x>:GLOBalref {OFF|ON|0|1}
MEASUrement:MEAS<x>:GLOBalref?
```

Arguments `OFF` allows ref levels to be set separately for each measurement.

`ON` applies the same ref levels to all measurements.

`0` allows ref levels to be set separately for each measurement.

`1` applies the same ref levels to all measurements.

Examples `MEASUrement:MEAS1:GLOBalref 0` allows ref levels to be set separately for each measurement.

`MEASUrement:MEAS1:GLOBalref?` might return `:MEASUREMENT:MEAS1:GLOBALREF 1` indicating the same ref levels apply to all measurements.

MEASUrement:MEAS<x>:HIGHREFVoltage

This command sets or queries the high reference voltage value for the 'time outside level' measurement. Measurements are specified by x.

Group Measurement

Syntax

```
MEASUrement:MEAS<x>:HIGHREFVoltage <NR3>
MEASUrement:MEAS<x>:HIGHREFVoltage?
```

Arguments `<NR3>` is the high reference voltage value for the selected configuration.

Examples `MEASUrement:MEAS1:HIGHREFVoltage 1.5` sets the high reference voltage to 1.5 V.

`MEASUrement:MEAS1:HIGHREFVoltage?` might return `:MEASUREMENT:MEAS1:HIGHREFVOLTAGE 1.0000` indicating the high reference voltage is set to 1.0 V.

MEASUrement:MEAS<x>:IDLETime

This command sets or queries the idle time for the measurement when the measurement type is burst width. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:IDLETime <NR3>
MEASUrement:MEAS<x>:IDLETime?
```

Arguments

`<NR3>` is the idle time.

Examples

`MEASUrement:MEAS1:IDLETime 40.0E-6` sets the idle time to 40.0 µs.

`MEASUrement:MEAS1:IDLETime?` might return `:MEASUREMENT:MEAS1:IDLETIME 50.0000E-6` indicating the idle time is 50.0 µs.

MEASUrement:MEAS<x>:JITTERSummary:DCD

This command sets or queries whether DCD is included in the jitter summary for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:JITTERSummary:DCD {0|1}
MEASUrement:MEAS<x>:JITTERSummary:DCD?
```

Arguments

`1` add the DCD measurement as part of jitter summary.

`0` do not add the DCD measurement as part of jitter summary.

Examples

`MEASUrement:MEAS1:JITTERSummary:DCD 0` specifies that the DCD measurement is not part of the jitter summary.

`MEASUrement:MEAS1:JITTERSummary:DCD?` might return `:MEASUREMENT:MEAS4:JITTERSUMMARY:DCD 1` indicating the DCD measurement is part of the jitter summary.

MEASUrement:MEAS<x>:JITTERSummary:DDJ

This command sets or queries whether DDJ is included in the jitter summary for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:JITTERSummary:DDJ {0|1}
MEASUrement:MEAS<x>:JITTERSummary:DDJ?
```

Arguments

`1` add the DDJ measurement as part of jitter summary.

`0` do not add the DDJ measurement as part of jitter summary.

Examples

`MEASUrement:MEAS4:JITTERSummary:DDJ 0` specifies that the DDJ measurement is not part of the jitter summary.

`MEASUrement:MEAS4:JITTERSummary:DDJ?` might return `:MEASUREMENT:MEAS4:JITTERSUMMARY:DDJ 1` indicating the DDJ measurement is part of the jitter summary.

MEASUrement:MEAS<x>:JITTERSummary:DJDD

This command sets or queries whether DJ-dd is included in the jitter summary for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:JITTERSummary:DJDD {0|1}
MEASUrement:MEAS<x>:JITTERSummary:DJDD?
```

Arguments

`1` add the DJDD measurement as part of jitter summary.

`0` do not add the DJDD measurement as part of jitter summary.

Examples

`MEASUrement:MEAS4:JITTERSummary:DJDD 0` specifies the DJDD measurement is not part of the jitter summary.

`MEASUrement:MEAS4:JITTERSummary:DJDD?` might return `:MEASUREMENT:MEAS4:JITTERSUMMARY:DJDD 1` indicating the DJDD measurement is part of the jitter summary.

MEASUrement:MEAS<x>:JITTERSummary:EYEWIDTHBER

This command sets or queries whether EyeWidth@BER is included in the jitter summary for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:JITTERSummary:EYEWIDTHBER {0|1}
MEASUrement:MEAS<x>:JITTERSummary:EYEWIDTHBER?
```

Arguments

`1` add the EyeWidth@BER measurement as part of jitter summary.

`0` do not add the EyeWidth@BER measurement as part of jitter summary.

Examples

`MEASUrement:MEAS4:JITTERSummary:EYEWIDTHBER 0` specifies that the EyeWidth@BER measurement is not part of the jitter summary.

`MEASUrement:MEAS4:JITTERSummary:EYEWIDTHBER?` might return `:MEASUREMENT:MEAS4:JITTERSUMMARY:EYEWIDTHBER 1` indicating EyeWidth@BER is part of the jitter summary

MEASUrement:MEAS<x>:JITTERSummary:NPJ

This command sets or queries whether NPJ is included in the jitter summary for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:JITTERSummary:NPJ {0|1}
MEASUrement:MEAS<x>:JITTERSummary:NPJ?
```

Arguments

`1` add the NPJ measurement as part of jitter summary.

`0` do not add the NPJ measurement as part of jitter summary.

Examples

`MEASUrement:MEAS4:JITTERSummary:NPJ 0` specifies that the NPJ measurement is not part of jitter summary.

`MEASUrement:MEAS4:JITTERSummary:NPJ?` might return `:MEASUREMENT:MEAS4:JITTERSUMMARY:NPJ 1` indicating the NPJ measurement is part of the jitter summary.

MEASUrement:MEAS<x>:JITTERSummary:PJ

This command sets or queries whether PJ is included in the jitter summary for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:JITTERSummary:PJ {0|1}
MEASUrement:MEAS<x>:JITTERSummary:PJ?
```

Arguments

`1` add the PJ measurement as part of jitter summary.

`0` do not add the PJ measurement as part of jitter summary.

Examples

`MEASUrement:MEAS4:JITTERSummary:PJ 0` specifies the PJ measurement is not part of jitter summary.

`MEASUrement:MEAS4:JITTERSummary:PJ?` might return `:MEASUREMENT:MEAS4:JITTERSUMMARY:PJ 1` indicating the PJ measurement is part of jitter summary.

MEASUrement:MEAS<x>:JITTERSummary:RJDD

This command sets or queries whether RJ-dd is included in the jitter summary for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:JITTERSummary:RJDD {0|1}
MEASUrement:MEAS<x>:JITTERSummary:RJDD?
```

Arguments

`1` add the RJ-dd measurement as part of jitter summary.

`0` do not add the RJ-dd measurement as part of jitter summary.

Examples

`MEASUrement:MEAS4:JITTERSummary:RJDD 0` specifies the RJ-dd measurement is not part of the jitter summary.

`MEASUrement:MEAS4:JITTERSummary:RJDD?` might return `:MEASUREMENT:MEAS4:JITTERSUMMARY:RJDD 1` indicating the RJ-dd measurement is part of the jitter summary.

MEASUrement:MEAS<x>:JITTERSummary:TIE

This command sets or queries whether TIE is included in the jitter summary for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:JITTERSummary:TIE {0|1}
MEASUrement:MEAS<x>:JITTERSummary:TIE?
```

Arguments

`1` add the TIE measurement as part of jitter summary.

`0` do not add the TIE measurement as part of jitter summary.

Examples

`MEASUrement:MEAS4:JITTERSummary:TIE 0` specifies the TIE measurement is not part of jitter summary.

`MEASUrement:MEAS4:JITTERSummary:TIE?` might return `:MEASUREMENT:MEAS4:JITTERSUMMARY:TIE 1` indicating the TIE measurement is part of jitter summary.

MEASUrement:MEAS<x>:JITTERSummary:TJBER

This command sets or queries whether TJ@BER is included in the jitter summary for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:JITTERSummary:TJBER {0|1}
MEASUrement:MEAS<x>:JITTERSummary:TJBER?
```

Arguments

`1` add the TJ@BER measurement as part of jitter summary.

`0` do not add the TJ@BER measurement as part of jitter summary.

Examples

`MEASUrement:MEAS4:JITTERSummary:TJBER 0` specifies that the TJ@BER measurement is not part of jitter summary.

`MEASUrement:MEAS4:JITTERSummary:TJBER?` might return `:MEASUREMENT:MEAS4:JITTERSUMMARY:TJBER 1` indicating the TJ@BER measurement is part of jitter summary.

MEASUrement:MEAS<x>:LABel

This command sets or queries the label for the measurement. As the label can contain non 7-bit ASCII text, it is stored in Percent Encoding format. The measurement number is specified by x.

Group Measurement

Syntax `MEASUrement:MEAS<x>:LABel <QString>`

Arguments `<QString>` is the measurement label.

Examples `MEASUrement:MEAS1:LABel “Delay”` sets the label to Delay.

`MEASUrement:MEAS1:LABel?` might return `:MEASUREMENT:MEAS1:LABEL "Peak-to-Peak"` indicating that the measurement 1 label is Peak-to-peak.

MEASUrement:MEAS<x>:LOWREFVoltage

This command sets or queries the low reference voltage value for the 'time outside level' measurement. Measurements are specified by x.

Group Measurement

Syntax

```
MEASUrement:MEAS<x>:LOWREFVoltage <NR3>
MEASUrement:MEAS<x>:LOWREFVoltage?
```

Arguments `<NR3>` is the low reference voltage value for the selected configuration.

Examples `MEASUrement:MEAS1:LOWREFVoltage -1.30` sets the low reference voltage to -1.3 V.

`MEASUrement:MEAS1:LOWREFVoltage?` might return `:MEASUREMENT:MEAS1:LOWREFVOLTAGE -1.0000` indicating the low ref voltage is -1.0 V.

MEASUrement:MEAS<x>:MEASRange:GLOBal

This command sets or queries the range settings global flag for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:MEASRange:GLOBal {OFF|ON|0|1}
MEASUrement:MEAS<x>:MEASRange:GLOBal?
```

Arguments

`OFF` specifies that range settings can be set independently for each individual measurement.

`ON` applies global measurement range settings to all the measurements' range settings.

`0` specifies that range settings can be set independently for each individual measurement.

`1` applies global measurement range settings to all the measurements' range settings.

Examples

`MEASUrement:MEAS1:MEASRange:GLOBal 1` applies global measurement range settings to all the measurements' range settings.

`MEASUrement:MEAS1:MEASRange:GLOBal?` might return `:MEASUREMENT:MEAS1:MEASRANGE:GLOBAL 0` indicating that range settings can be set independently for each individual measurement.

MEASUrement:MEAS<x>:MEASRange:MAX

This command sets or queries the range maximum value for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:MEASRange:MAX <NR3>
MEASUrement:MEAS<x>:MEASRange:MAX?
```

Arguments

`<NR3>` is the maximum measurement range limit value.

Examples

`MEASUrement:MEAS1:MEASRange:MAX 2.50` sets the maximum range to 2.5 V.

`MEASUrement:MEAS1:MEASRange:MAX?` might return `:MEASUREMENT:MEAS1:MEASRANGE:MAX 1.0000` indicating the maximum range is 1.0 V.

MEASUrement:MEAS<x>:MEASRange:MIN

This command sets or queries the range minimum value for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:MEASRange:MIN <NR3>
MEASUrement:MEAS<x>:MEASRange:MIN?
```

Arguments

`<NR3>` is the minimum measurement range limit value.

Examples

`MEASUrement:MEAS1:MEASRange:MIN -1.0` sets the minimum measurement range to -1.0 V.

`MEASUrement:MEAS1:MEASRange:MIN?` might return `:MEASUREMENT:MEAS1:MEASRANGE:MIN 0.0E+0` indicating the minimum range is 0.0 V.

MEASUrement:MEAS<x>:MEASRange:STATE

This command sets or queries the range state for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:MEASRange:STATE {OFF|ON|0|1}
MEASUrement:MEAS<x>:MEASRange:STATE?
```

Arguments

`OFF` turns off the measurement range limits.

`ON` turns on the measurement range limits.

`0` turns off the measurement range limits.

`1` turns on the measurement range limits.

Examples

`MEASUrement:MEAS1:MEASRange:STATE 0` turns off the measurement range limits.

`MEASUrement:MEAS1:MEASRange:STATE?` might return `:MEASUREMENT:MEAS1:MEASRANGE:STATE 1` indicating the measurement range limits are on.

MEASUrement:MEAS<x>:PATTERNDETECTION

This command sets or queries the pattern detection type for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:PATTERNDETECTION {AUTO|MANUAL}
MEASUrement:MEAS<x>:PATTERNDETECTION?
```

Arguments

`AUTO` automatically detects the pattern.

`MANUAL` requires manually detecting the pattern.

Examples

`MEASUrement:MEAS1:PATTERNDETECTION MANUAL` specifies manually detecting the pattern.

`MEASUrement:MEAS1:PATTERNDETECTION?` might return `:MEASUREMENT:MEAS1:PATTERNDETECTION AUTO` indicating patterns are automatically detected.

MEASUrement:MEAS<x>:PATTERNLENgth

This command sets or queries the pattern length for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:PATTERNLENgth <NR3>
MEASUrement:MEAS<x>:PATTERNLENgth?
```

Arguments

`<NR3>` is the pattern length.

Examples

`MEASUrement:MEAS1:PATTERNLENgth 3.0` sets the pattern length to 3.0.

`MEASUrement:MEAS1:PATTERNLENgth?` might return `:MEASUREMENT:MEAS1:PATTERNLENGTH 2.0000` indicating the patternlength is 2.0.

MEASUrement:MEAS<x>:PATTERNTYPe

This command sets or queries the pattern type for the measurement. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:PATTERNTYPe {REPeating|ARBitrary}
MEASUrement:MEAS<x>:PATTERNTYPe?
```

Arguments

`REPeating` specifies a repeating pattern.

`ARBitrary` specifies an arbitrary pattern.

Examples

`MEASUrement:MEAS1:PATTERNTYPe ARBITRARY` specifies an arbitrary pattern.

`MEASUrement:MEAS1:PATTERNTYPe?` might return `:MEASUREMENT:MEAS1:PATTERNTYPE REPEATING` indicating a repeating pattern.

MEASUrement:MEAS<x>:PERFREQ:EDGE

This command sets or queries the edge type of a Period/Frequency measurement. The measurement number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:PERFREQ:EDGE {FIRST|RISE|FALL}
```

Arguments

`FIRST` computes the measurement between Rising edges if the first edge is Rising. Computes the measurement between Falling edges if the first edge is Falling.

`RISE` computes the measurement between Rising edges.

`FALL` computes the measurement between Falling edges.

Examples

`MEASUrement:MEAS1:PERFREQ:EDGE RISE` specifies computing the measurement between Rising edges.

`measurement:meas1:perfreq:edge?` might return `:MEASUREMENT:MEAS1:PERFREQ:EDGE FIRST` if the measurement is computed between edges of the first type edge found.

MEASUrement:MEAS<x>:POLarity

This command sets or queries the polarity for the measurement when the measurement type is burst width. Measurements are specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:POLarity {NORMal|INVerted}
MEASUrement:MEAS<x>:POLarity?
```

Arguments

`NORMal` specifies normal polarity.

`INVerted` specifies inverted polarity.

Examples

`MEASUrement:MEAS1:POLarity INVERTED` specifies inverted polarity.

`MEASUrement:MEAS1:POLarity?` might return `:MEASUREMENT:MEAS1:POLARITY NORMAL` indicating normal polarity.

MEASUrement:MEAS<x>:POPUlation:GLOBal

This command sets or queries the population settings global flag. The measurement number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:POPUlation:GLOBal {OFF|ON|0|1}
MEASUrement:MEAS<x>:POPUlation:GLOBal?
```

Arguments

`OFF` specifies that population settings can be changed independently for each individual measurement.

`ON` applies the global population settings to all the measurements' population settings.

`0` specifies that population settings can be changed independently for each individual measurement.

`1` applies the global population settings to all the measurements' population settings.

Examples

`MEASUrement:MEAS1:POPUlation:GLOBal 1` applies the global population settings to all the measurements' population settings.

`MEASUrement:MEAS1:POPUlation:GLOBal?` might return `:MEASUREMENT:MEAS1:POPULATION:GLOBAL 0` indicating that population settings can be changed independently for each individual measurement.

MEASUrement:MEAS<x>:POPUlation:LIMIT:STATE

This command sets or queries the population limit state for the measurement. The measurement number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:POPUlation:LIMIT:STATE {OFF|ON|0|1}
MEASUrement:MEAS<x>:POPUlation:LIMIT:STATE?
```

Arguments

`OFF` turns off the population limit.

`ON` turns on the population limit.

`0` turns off the population limit.

`1` turns on the population limit.

Examples

`MEASUrement:MEAS1:POPUlation:LIMIT:STATE 0` turns off the population limit.

`MEASUrement:MEAS1:POPUlation:LIMIT:STATE?` might return `:MEASUREMENT:MEAS1:POPULATION:LIMIT:STATE 1` indicating the population limit is on.

MEASUrement:MEAS<x>:POPUlation:LIMIT:VALue

This command sets or queries the population limit value for the measurement. The measurement number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:POPUlation:LIMIT:VALue <NR3>
MEASUrement:MEAS<x>:POPUlation:LIMIT:VALue?
```

Arguments

`<NR3>` the current limit value.

Examples `MEASUrement:MEAS1:POPUlation:LIMIT:VALue 2000` sets the population limit to 2000.

`MEASUrement:MEAS1:POPUlation:LIMIT:VALue?` might return `:MEASUREMENT:MEAS1:POPULATION:LIMIT:VALUE 1000` indicating the limit is set to 1000.

MEASUrement:MEAS<x>:REFLevels:ABSolute:FALLHigh

This command sets or queries the value used as the high reference level of the falling edge when the measurement's ref level method is set to absolute. Measurements are specified by x.

NOTE. *This command affects the results of rise and fall measurements*

Group Measurement

Syntax

```
MEASUrement:MEAS<x>:REFLevels:ABSolute:FALLHigh <NR3>
MEASUrement:MEAS<x>:REFLevels:ABSolute:FALLHigh?
```

Arguments `<NR3>` is the high reference level in volts. The default is 0.0 V.

Examples `MEASUREMENT:MEAS1:REFLEVELS:ABSOLUTE:FALLHIGH 1.71` sets the high reference level to 1.71 V.

`MEASUREMENT:MEAS1:REFLEVELS:ABSOLUTE:FALLHIGH?` might return `:MEASUREMENT:MEAS1:REFLEVELS:ABSOLUTE:FALLHIGH 1.7100E+00`, indicating that the absolute high reference level is set to 1.71 V.

MEASUrement:MEAS<x>:REFLevels<x>:ABSolute:FALLLow

This command sets or queries the value used as the low reference level of the falling edge when the measurement's ref level method is set to absolute. Measurements are specified by x.

NOTE. *This command affects the results of rise and fall measurements.*

Group Measurement

Syntax

```
MEASUrement:MEAS<x>:REFLevels<x>:ABSolute:FALLLow <NR3>
MEASUrement:MEAS<x>:REFLevels<x>:ABSolute:FALLLow?
```

Arguments

`<NR3>` is the low reference level in volts. The default is 0.0 V.

Examples

`MEASUREMENT:MEAS1:REFLEVELS1:ABSOLUTE:FALLLOW 0.0 V` sets the low reference level to 0.0 V.

`MEASUREMENT:MEAS1:REFLEVELS1:ABSOLUTE:FALLLOW?` might return `:MEASUREMENT:MEAS1:REFLEVELS1:ABSOLUTE:FALLLOW 0.0000E+00`, indicating that the absolute low reference level is set to 0.0 V.

MEASUrement:MEAS<x>:REFLevels<x>:ABSolute:FALLMid

This command sets or queries the value used as the mid reference level of the falling edge when the measurement's ref level method is set to absolute. Measurements are specified by x.

NOTE. *This command affects the results of period, frequency, delay, and all cyclic measurements.*

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:REFLevels<x>:ABSolute:FALLMid <NR3>
MEASUrement:MEAS<x>:REFLevels<x>:ABSolute:FALLMid?
```

Arguments

`<NR3>` is the mid reference level in volts. The default is 0.0 V.

Examples

`MEASUREMENT:MEAS1:REFLEVELS1:ABSOLUTE:FALLMID 0.5` sets the mid reference level for the delay waveform to 0.5 V.

`MEASUREMENT:MEAS1:REFLEVELS1:ABSOLUTE:FALLMID?` might return `:MEASUREMENT:MEAS1:REFLEVELS1:ABSOLUTE:FALLMID 0.5000E+00`, indicating that the absolute mid reference level is set to 0.5 V.

MEASUrement:MEAS<x>:REFLevels<x>:ABSolute:HYSTeresis

This command sets or queries the value of the hysteresis of the reference level when the measurement's ref level method is set to absolute. The measurement number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:REFLevels<x>:ABSolute:HYSTeresis <NR3>
MEASUrement:MEAS<x>:REFLevels<x>:ABSolute:HYSTeresis?
```

Arguments

`<NR3>` is the hysteresis value used for autoset.

Examples

`MEASUrement:MEAS1:REFLevels1:ABSolute:HYSTeresis 25.0E-3` sets the hysteresis to 25 mV.

`MEASUrement:MEAS1:REFLevels1:ABSolute:HYSTeresis?` might return `:MEASUREMENT:MEAS1:REFLEVELS1:ABSOLUTE:HYSTERESIS 30.0000E-3` indicating the hysteresis is set to 30 mV.

MEASUrement:MEAS<x>:REFLevels<x>:ABSolute:RISEHigh

This command sets or queries the value used as the high reference level of the rising edge when the measurement's ref level method is set to absolute. The measurement number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:REFLevels<x>:ABSolute:RISEHigh <NR3>
MEASUrement:MEAS<x>:REFLevels<x>:ABSolute:RISEHigh?
```

Arguments

`<NR3>` is the high reference level, and is the zero percent level when the measurement's Ref level method is set to Absolute.

Examples

`MEASUrement:MEAS1:REFLevels1:ABSolute:RISEHigh 1.50` sets the high reference level to 1.5 V.

`MEASUrement:MEAS1:REFLevels1:ABSolute:RISEHigh?` might return `:MEASUREMENT:MEAS1:REFLEVELS1:ABSOLUTE:RISEHIGH 1.0000` indicating the high reference level is set to 1.0 V.

MEASUrement:MEAS<x>:REFLevels<x>:ABSolute:RISELow

This command sets or queries the value used as the low reference level of the rising edge when the measurement's ref level method is set to absolute. The measurement number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:REFLevels<x>:ABSolute:RISELow <NR3>
MEASUrement:MEAS<x>:REFLevels<x>:ABSolute:RISELow?
```

Arguments

<NR3> is the low reference level, and is the zero percent level when the measurement's Ref level method is set to Absolute.

Examples

`MEASUrement:MEAS1:REFLevels1:ABSolute:RISELow -1.50` sets the low reference level to -1.5 V.

`MEASUrement:MEAS1:REFLevels1:ABSolute:RISELow?` might return `:MEASUREMENT:MEAS1:REFLEVELS1:ABSOLUTE:RISELOW -1.0000` indicating the low reference level is -1.0 V.

MEASUrement:MEAS<x>:REFLevels<x>:ABSolute:RISEMid

This command sets or queries the value used as the mid reference level of the rising edge when the measurement's ref level method is set to absolute. The measurement number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:REFLevels<x>:ABSolute:RISEMid <NR3>
MEASUrement:MEAS<x>:REFLevels<x>:ABSolute:RISEMid?
```

Arguments

<NR3> is the mid reference level (where 50% is equal to MID) used to calculate the mid reference level when the measurement's Ref level method is set to Absolute.

Examples

`MEASUrement:MEAS1:REFLevels1:ABSolute:RISEMid 30.0E-3` sets the mid reference level to 30 mV.

`MEASUrement:MEAS1:REFLevels1:ABSolute:RISEMid?` might return `:MEASUREMENT:MEAS1:REFLEVELS1:ABSOLUTE:RISEMID 0.0E+0` indicating the mid reference level is 0.0 V.

MEASUrement:MEAS<x>:REFLevels<x>:ABSolute:TYPE

This command sets or queries the reference level type for the measurement. The measurement number is specified by x.

Group Measurement

Syntax

```
MEASUrement:MEAS<x>:REFLevels<x>:ABSolute:TYPE {SAME|UNIQue}
MEASUrement:MEAS<x>:REFLevels<x>:ABSolute:TYPE?
```

Arguments

`SAME` specifies that the absolute levels are set the same.

`UNIQue` specifies that the absolute levels can be set independently.

Examples

`MEASUrement:MEAS1:REFLevels1:ABSolute:TYPE UNIQUE` specifies that the absolute levels can be set independently.

`MEASUrement:MEAS1:REFLevels1:ABSolute:TYPE?` might return `:MEASUREMENT:MEAS1:REFLEVELS1:ABSOLUTE:TYPE SAME` indicating the absolute levels are set the same.

MEASUrement:MEAS<x>:REFLevels<x>:BASETop

This command sets or queries the method used to calculate the TOP and BASE used to calculate reference levels for the measurement. The measurement number is specified by x.

Group Measurement

Syntax

```
MEASUrement:MEAS<x>:REFLevels<x>:BASETop
{AUTO|MINMax|MEANhistogram| MODEhistogram|EYEhistogram}
MEASUrement:MEAS<x>:REFLevels<x>:BASETop?
```

Arguments

`AUTO` automatically chooses a reference level method.

`MINMax` specifies that reference levels are relative to the measurement MIN and MAX.

`MEANhistogram` specifies that reference levels are relative to the histogram mean BASE and TOP.

`MODEhistogram` specifies that reference levels are relative to the histogram mode BASE and TOP.

`EYEhistogram` specifies that reverence levels are relative to the eye histogram BASE and TOP.

Examples

`MEASUrement:MEAS1:REFLevels1:BASETop MINMAX` specifies that reference levels are relative to the measurement MIN and MAX.

`MEASUrement:MEAS1:REFLevels1:BASETop?` might return `:MEASUREMENT:MEAS1:REFLEVELS1:BASETOP AUTO` indicating the instrument automatically chooses a reference level method.

MEASUrement:MEAS<x>:REFLevels<x>:METHod

This command sets or queries the method used to calculate reference levels for the measurement. The measurement number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:REFLevels<x>:METHod {PERCent|ABSolute}
MEASUrement:MEAS<x>:REFLevels<x>:METHod?
```

Arguments

`PERCent` specifies that the reference levels are calculated as a percent relative to HIGH and LOW. The percentages are defined using the `MEASUrement:MEAS<x>:REFLevel:PERCent` commands.

`ABSolute` specifies that the reference levels are set explicitly using the `MEASUrement:MEAS<x>:REFLevel:ABSolute` commands. This method is useful when precise values are required.

Examples

`MEASUREMENT:MEAS1:REFLEVELS1:METHOD ABSOLUTE` specifies that explicit user-defined values are used for the reference levels.

`MEASUREMENT:MEAS1:REFLEVELS1:METHOD?` might return `:MEASUREMENT:MEAS1:REFLEVELS1:METHOD PERCENT`, indicating that the reference level units used are calculated as a percent relative to HIGH and LOW.

MEASUrement:MEAS<x>:REFLevels<x>:PERCent:FALLHigh

This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the high reference level of the falling edge when the measurement's ref level method is set to percent. The measurement number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:REFLevels<x>:PERCent:FALLHigh <NR3>
MEASUrement:MEAS<x>:REFLevels<x>:PERCent:FALLHigh?
```

Arguments

`<NR3>` is the percentage (where 100% is equal to HIGH) used to calculate the high reference level.

Examples

`MEASUrement:MEAS1:REFLevels1:PERCent:FALLHigh 95.0` sets the high reference level of the falling edge to 95%.

`MEASUrement:MEAS1:REFLevels1:PERCent:FALLHigh?` might return `:MEASUREMENT:MEAS1:REFLEVELS1:PERCENT:FALLHIGH 90.0000` indicating the high reference level is set to 90%.

MEASUrement:MEAS<x>:REFLevels<x>:PERCent:FALLLow

This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the low reference level of the falling edge when the measurement's ref level method is set to percent. The measurement number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:REFLevels<x>:PERCent:FALLLow <NR3>
MEASUrement:MEAS<x>:REFLevels<x>:PERCent:FALLLow?
```

Arguments

`<NR3>` is the percentage (where 100% is equal to HIGH) used to calculate the mid reference level.

Examples

`MEASUrement:MEAS1:REFLevels1:PERCent:FALLLow 5.0` sets the low reference level of the falling edge is 5%.

`MEASUrement:MEAS1:REFLevels1:PERCent:FALLLow?` might return `:MEASUREMENT:MEAS1:REFLEVELS1:PERCENT:FALLLOW 10.0000` indicating the low reference level of the falling edge is 10%.

MEASUrement:MEAS<x>:REFLevels<x>:PERCent:FALLMid

This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the mid reference level of the falling edge when the measurement's ref level method is set to percent. The measurement number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:REFLevels<x>:PERCent:FALLMid <NR3>
MEASUrement:MEAS<x>:REFLevels<x>:PERCent:FALLMid?
```

Arguments

`<NR3>` is the percentage (where 50% is equal to MID) used to calculate the mid reference level.

Examples

`MEASUrement:MEAS1:REFLevels1:PERCent:FALLMid 50.0` sets the mid reference level of the falling edge to 50%.

`MEASUrement:MEAS1:REFLevels1:PERCent:FALLMid?` might return `:MEASUREMENT:MEAS1:REFLEVELS1:PERCENT:FALLMID 50.0000` indicating the mid reference level of the falling edge is set to 50%.

MEASUrement:MEAS<x>:REFLevels<x>:PERCent:HYSTeresis

This command sets or queries the percentage (where 100% is equal to MAX and 0% is equal to MIN) used to calculate the hysteresis of the reference level when the measurement's ref level method is set to percent. The measurement number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:REFLevels<x>:PERCent:HYSTeresis <NR3>
MEASUrement:MEAS<x>:REFLevels<x>:PERCent:HYSTeresis?
```

Arguments

`<NR3>` is the hysteresis value used for the autoset.

Examples

`MEASUrement:MEAS1:REFLevels1:PERCent:HYSTeresis 5.0` sets the hysteresis level to 5%.

`MEASUrement:MEAS1:REFLevels1:PERCent:HYSTeresis?` might return `:MEASUREMENT:MEAS1:REFLEVELS1:PERCENT:HYSTERESIS 5.0000` indicating the hysteresis is 5.0%.

MEASUrement:MEAS<x>:REFLevels<x>:PERCent:RISEHigh

This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the high reference level of the rising edge when the measurement's ref level method is set to percent. The measurement number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:REFLevels<x>:PERCent:RISEHigh <NR3>
MEASUrement:MEAS<x>:REFLevels<x>:PERCent:RISEHigh?
```

Arguments

<NR3> is the percentage (where 100% is equal to TOP) used to calculate the high reference level when the measurement's Ref level method is set to Percent.

Examples

`MEASUrement:MEAS1:REFLevels1:PERCent:RISEHigh 95.0` sets the high reference level of the rising edge is set to 95%.

`MEASUrement:MEAS1:REFLevels1:PERCent:RISEHigh?` might return `:MEASUREMENT:MEAS1:REFLEVELS1:PERCENT:RISEHIGH 90.0000` indicating the high reference level of the rising edge is set to 90%.

MEASUrement:MEAS<x>:REFLevels<x>:PERCent:RISELow

This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the low reference level of the rising edge when the measurement's ref level method is set to percent. The measurement number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:REFLevels<x>:PERCent:RISELow <NR3>
MEASUrement:MEAS<x>:REFLevels<x>:PERCent:RISELow?
```

Arguments

<NR3> is the percentage (where 100% is equal to TOP) used to calculate the mid reference level when the measurement's Ref level method is set to Percent.

Examples

`MEASUrement:MEAS1:REFLevels1:PERCent:RISELow 5.0` sets the low reference level is set to 5.0%.

`MEASUrement:MEAS1:REFLevels1:PERCent:RISELow?` might return `:MEASUREMENT:MEAS1:REFLEVELS1:PERCENT:RISELOW 10.0000` indicating the low reference level is set to 10.0%.

MEASUrement:MEAS<x>:REFLevels<x>:PERCent:RISEMid

This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the mid reference level of the rising edge when the measurement's ref level method is set to percent. The measurement number is specified by x.

Group Measurement

Syntax

```
MEASUrement:MEAS<x>:REFLevels<x>:PERCent:RISEMid <NR3>
MEASUrement:MEAS<x>:REFLevels<x>:PERCent:RISEMid?
```

Arguments `<NR3>` the percentage (where 50% is equal to MID) used to calculate the mid reference level when the measurement Ref level method is set to Percent.

Examples `MEASUrement:MEAS1:REFLevels1:PERCent:RISEMid 50.0000` sets the mid reference level of the rising edge is set to 50.0%.

`MEASUrement:MEAS1:REFLevels1:PERCent:RISEMid?` might return `:MEASUREMENT:MEAS1:REFLEVELS1:PERCENT:RISEMID 50.0000` indicating the mid reference level of the rising edge is set to 50.0%.

MEASUrement:MEAS<x>:REFLevels<x>:PERCent:TYPE

This command specifies or queries the reference level percent type for the measurement. The measurement number is specified by x.

Group Measurement

Syntax

```
MEASUrement:MEAS<x>:REFLevels<x>:PERCent:TYPE {TENNinety|
TWENtyeighty| CUSTom}
MEASUrement:MEAS<x>:REFLevels<x>:PERCent:TYPE?
```

Arguments `TENNinety` sets the values for Low, Mid and High Ref to 10%, 50% and 90% respectively.

`TWENtyeighty` sets the values for Low, Mid and High Ref are set to 20%, 50% and 80% respectively.

`CUSTom` allows setting other reference level percents.

Examples `MEASUrement:MEAS1:REFLevels1:PERCent:TYPE TWENtyeighty` sets the reference levels percent to 20%, 50% and 80%.

`MEASUrement:MEAS1:REFLevels1:PERCent:TYPE?` might return `:MEASUREMENT:MEAS1:REFLEVELS1:PERCENT:TYPE TENNINETY` indicating the reference levels percent type is 10%, 50% and 90% respectively

MEASUrement:MEAS<x>:REFMode

This command sets or queries the reference level mode for the measurement. The measurement number is specified by x.

Group Measurement

Syntax

```
MEASUrement:MEAS<x>:REFMode {AUTO|MANual}
MEASUrement:MEAS<x>:REFMode?
```

Arguments

`AUTO` sets the reference level for the measurement automatically.

`MANual` allows the user to set the reference level for the measurement.

Examples

`MEASUrement:MEAS1:REFMode Manual` allows the user to set the reference level for the measurement.

`MEASUrement:MEAS1:REFMode?` might return `:MEASUREMENT:MEAS1:REFMODE AUTO` indicating the reference levels for the measurement are set automatically.

MEASUrement:MEAS<x>:REFVoltage

This command sets or queries the reference voltage value for the measurement. The measurement number is specified by x.

Group Measurement

Syntax

```
MEASUrement:MEAS<x>:REFVoltage <NR3>
MEASUrement:MEAS<x>:REFVoltage?
```

Arguments

`<NR3>` is the reference voltage value for the selected configuration.

Examples

`MEASUrement:MEAS1:REFVoltage 30.E-3` sets the reference voltage value for the measurement to 30 mV.

`MEASUrement:MEAS1:REFVoltage?` might return `:MEASUREMENT:MEAS1:REFVOLTAGE 0.0E+0` indicating the reference voltage value for the measurement is 0.0 V.

MEASUrement:MEAS<x>:RESUlts:ALLAcqs:MAXimum? (Query Only)

This query-only command returns the maximum value for all accumulated measurement acquisitions of the specified measurement. The measurement number is specified by x.

Group

Measurement

Syntax

`MEASUrement:MEAS<x>:RESUlts:ALLAcqs:MAXimum?`

Returns

The maximum value for all accumulated measurement acquisitions of the specified measurement.

Examples

`MEASUrement:MEAS1:RESUlts:ALLAcqs:MAXimum?` might return `:MEASUREMENT:MEAS1:RESULTS:ALLACQS:MAXIMUM 2.420` indicating the maximum measurement value is 2.420 V.

MEASUrement:MEAS<x>:RESUlts:ALLAcqs:MEAN? (Query Only)

This query-only command returns the mean value for all accumulated measurement acquisitions for measurement <x>.

Group

Measurement

Syntax

`MEASUrement:MEAS<x>:RESUlts:ALLAcqs:MEAN?`

Returns

The mean value for all accumulated measurement acquisitions for measurement <x>.

Examples

`MEASUrement:MEAS1:RESUlts:ALLAcqs:MEAN?` might return `:MEASUREMENT:MEAS1:RESULTS:ALLACQS:MEAN 2.2807617754647` indicating the measurement mean is 2.28 V.

MEASUrement:MEAS<x>:RESUlts:ALLAcqs:MINimum? (Query Only)

This query-only command returns the minimum value for all accumulated measurement acquisitions for measurement <x>.

Group Measurement

Syntax `MEASUrement:MEAS<x>:RESUlts:ALLAcqs:MINimum?`

Returns The minimum value for all accumulated measurement acquisitions for measurement <x>.

Examples `MEASUrement:MEAS1:RESUlts:ALLAcqs:MINimum?` might return `:MEASUREMENT:MEAS1:RESULTS:ALLACQS:MINIMUM 2.220` indicating the measurement minimum value is 2.220 V.

MEASUrement:MEAS<x>:RESUlts:ALLAcqs:PK2PK? (Query Only)

This query-only command returns the peak-to-peak value for all accumulated measurement acquisitions for measurement <x>.

Group Measurement

Syntax `MEASUrement:MEAS<x>:RESUlts:ALLAcqs:PK2PK?`

Returns The peak-to-peak value for all accumulated measurement acquisitions for measurement <x>.

Examples `MEASUrement:MEAS1:RESUlts:ALLAcqs:PK2PK?` might return `:MEASUREMENT:MEAS1:RESULTS:ALLACQS:PK2PK 200.0E-3` indicating the measurement peak-to-peak value is 200 mV.

MEASUrement:MEAS<x>:RESUlts:ALLAcqs:POPUlation? (Query Only)

This query-only command returns the population measurement value for measurement <x>.

Group Measurement

Syntax `MEASUrement:MEAS<x>:RESUlts:ALLAcqs:POPUlation?`

Returns The population measurement value for measurement <x>.

Examples `MEASUrement:MEAS1:RESUlts:ALLAcqs:POPUlation?` might return `:MEASUREMENT:MEAS1:RESULTS:ALLACQS:POPULATION 29825` indicating the measurement population is 29825 measurements.

MEASUrement:MEAS<x>:RESUlts:ALLAcqs:STDDev? (Query Only)

This query-only command returns the standard deviation for all accumulated measurement acquisitions for measurement <x>.

Group Measurement

Syntax `MEASUrement:MEAS<x>:RESUlts:ALLAcqs:STDDev?`

Returns The standard deviation for all accumulated measurement acquisitions for measurement <x>.

Examples `MEASUrement:MEAS1:RESUlts:ALLAcqs:STDDev?` might return `:MEASUREMENT:MEAS1:RESULTS:ALLACQS:STDDEV 23.5741246494459E-3` indicating the measurement standard deviation is 23.57 mV.

MEASUrement:MEAS<x>:RESUlts:CURRentacq:MAXimum? (Query Only)

This query-only command returns the maximum value found for the specified measurement since the last statistical reset. The measurement number is specified by x.

Group Measurement

Syntax `MEASUrement:MEAS<x>:RESUlts:CURRentacq:MAXimum?`

Returns The maximum value found for the specified measurement since the last statistical reset.

Examples `MEASUrement:MEAS1:RESUlts:CURRentacq:MAXimum?` might return `:MEASUREMENT:MEAS1:RESULTS:CURRENTACQ:MAXIMUM 2.280` indicating the current measurement maximum value is 2.28 V.

MEASUrement:MEAS<x>:RESUlts:CURRentacq:MEAN? (Query Only)

This query-only command returns the mean value for the measurement for the current acquisition. The measurement number is specified by x.

Group Measurement

Syntax `MEASUrement:MEAS<x>:RESUlts:CURRentacq:MEAN?`

Returns The mean value accumulated for the specified measurement since the last statistical reset.

Examples `MEASUrement:MEAS1:RESUlts:CURRentacq:MEAN?` might return `:MEASUREMENT:MEAS1:RESULTS:CURRENTACQ:MEAN 2.30` indicating the mean of the measurement in the current acquisition is 2.3 V.

MEASUrement:MEAS<x>:RESUlts:CURRentacq:MINimum? (Query Only)

This query-only command returns the minimum value found for the specified measurement since the last statistical reset. The measurement number is specified by x.

Group Measurement

Syntax `MEASUrement:MEAS<x>:RESUlts:CURRentacq:MINimum?`

Returns The minimum value found for the specified measurement since the last statistical reset.

Examples `MEASUrement:MEAS1:RESUlts:CURRentacq:MINimum?` might return `:MEASUREMENT:MEAS1:RESULTS:CURRENTACQ:MINIMUM 2.260` indicating the minimum value of the measurement in the current acquisition is 2.26 V.

MEASUrement:MEAS<x>:RESUlts:CURRentacq:PK2PK? (Query Only)

This query-only command returns the peak-to-peak value for the specified measurement for the current acquisition. The measurement number is specified by x.

Group Measurement

Syntax `MEASUrement:MEAS<x>:RESUlts:CURRentacq:PK2PK?`

Returns The peak-to-peak value for the specified measurement.

Examples `MEASUrement:MEAS1:RESUlts:CURRentacq:PK2PK?` might return `:MEASUREMENT:MEAS1:RESULTS:CURRENTACQ:PK2PK 0.0E+0` indicating the peak-to-peak value for the specified measurement for the current acquisition is 0.0 V.

MEASUrement:MEAS<x>:RESUlts:CURRentacq:POPUlation? (Query Only)

This query-only command returns the population for the specified measurement for the current acquisition. The measurement number is specified by x.

Group Measurement

Syntax `MEASUrement:MEAS<x>:RESUlts:CURRentacq:POPUlation?`

Returns The population measurement value for the specified measurement.

Examples `MEASUrement:MEAS<x>:RESUlts:CURRentacq:POPUlation?` might return `:MEASUREMENT:MEAS1:RESULTS:CURRENTACQ:POPULATION 1` indicating the population for the current measurement is 1 measurement.

MEASUrement:MEAS<x>:RESUlts:CURRentacq:STDDev? (Query Only)

This query-only command returns the standard deviation for the specified measurement for all acquisitions accumulated since statistics were last reset. The measurement number is specified by x.

Group Measurement

Syntax
`MEASUrement:MEAS<x>:RESUlts:CURRentacq:STDDev?`

Returns
The standard deviation of values accumulated for the specified measurement since the last statistical reset.

Examples
`MEASUrement:MEAS<x>:RESUlts:CURRentacq:STDDev?` might return `:MEASUREMENT:MEAS1:RESULTS:CURRENTACQ:STDDEV 0.0E+0` indicating the standard deviation for the measurement is 0.0 V.

MEASUrement:MEAS<x>:SIGNALType

This command sets or queries the signal type of source 1 for the measurement. The measurement number is specified by x.

Group
Measurement

Syntax
```
MEASUrement:MEAS<x>:SIGNALType {CLOCK|DATA|AUTO}
MEASUrement:MEAS<x>:SIGNALType?
```

Arguments
`CLOCK` specifies a clock signal type.

`DATA` specifies a data signal type.

`AUTO` automatically selects the signal type.

Examples
`MEASUrement:MEAS1:SIGNALType CLOCK` specifies a clock signal type.

`MEASUrement:MEAS1:SIGNALType?` might return `:MEASUREMENT:MEAS1:SIGNALTYPE AUTO` indicating the instrument automatically selects the signal type.

MEASUrement:MEAS<x>:SOUrce<x>

This command sets or queries the measurement source. The measurement number and source are specified by x.

Group
Measurement

Syntax
`MEASUrement:MEAS<x>:SOUrce<x>`

Arguments

Examples

MEASUrement:MEAS<x>:SSC:NOMinalfreq

This command sets or queries the user-defined frequency for the measurement when the measurement type is SSC. The measurement number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:SSC:NOMinalfreq <NR3>
MEASUrement:MEAS<x>:SSC:NOMinalfreq?
```

Arguments

`<NR3>` is the user-defined nominal frequency type for SSC configurations.

Examples

`MEASUrement:MEAS1:SSC:NOMinalfreq 2.0E+9` sets the frequency to 2.0 GHz.

`MEASUrement:MEAS1:SSC:NOMinalfreq?` might return `:MEASUREMENT:MEAS1:SSC:NOMINALFREQ 2.5000E+9` indicating the frequency is 2.5 GH.

MEASUrement:MEAS<x>:SSC:NOMinalfreq:SELECTIONtype

This command sets or queries the frequency detection type for the measurement when the measurement type is SSC. The measurement number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:SSC:NOMinalfreq:SELECTIONtype
{AUTO|MANual}
MEASUrement:MEAS<x>:SSC:NOMinalfreq:SELECTIONtype?
```

Arguments

`AUTO` automatically sets the detection type.

`MANual` specifies the manual detection type.

Examples

`MEASUrement:MEAS1:SSC:NOMinalfreq:SELECTIONtype AUTO` specifies the auto-detection type.

MEASUrement:MEAS1:SSC:NOMinalfreq:SELECTIONtype? might return :MEASUREMENT:MEAS1:SSC:NOMINALFREQ:SELECTIONTYPE AUTO indicating the auto-detection type is selected.

MEASUrement:MEAS<x>:TOEdge

This command sets or queries the 'to edge' type for the measurement. The measurement number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:TOEdge
{SAMEas|OPPositeas|RISe|FALL|BOTH}
MEASUrement:MEAS<x>:TOEdge?
```

Arguments

FALL specifies the falling edge of the waveform.

RISE specifies the rising edge of the waveform.

BOTH specifies both a rising and falling edge of the waveform.

SAMEas specifies that both edges of the waveform are the same.

OPPositeas specifies that the edges of the waveform are not the same.

Examples

MEASUrement:MEAS1:TOEdge FALL specifies the to edge is the falling edge of the waveform.

MEASUrement:MEAS1:TOEdge? might return :MEASUREMENT:MEAS1:TOEDGE SAMEAS indicating that both edges of the waveform are the same.

MEASUrement:MEAS<x>:TOEDGESEARCHDIRect

This command sets or queries the to edge search direction for the measurement. The measurement number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:TOEDGESEARCHDIRect {FORWard|BACKWard}
MEASUrement:MEAS<x>:TOEDGESEARCHDIRect?
```

Arguments

FORWard specifies a forward search to the edge.

BACKWard specifies a backward search to the edge.

Examples

MEASUrement:MEAS1:TOEDGESEARCHDIRect FORWARD specifies a forward search to the edge.

MEASUrement:MEAS1:TOEDGESEARCHDIRect? might return :MEASUREMENT:MEAS1:TOEDGESEARCHDIRECT FORWARD indicating the instrument will search in the forward direction for the to edge.

MEASUrement:MEAS<x>:TRANSition

This command sets or queries the transition edges flag for the measurement. The measurement number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:TRANSition {<NR1>|OFF|ON}
```

Arguments

<NR1> = 1, the measurement is computed on rising (if measurement type is rise time) or falling edges (if measurement type is fall time) following a double transition only. If it is set to 0, the measurement is computed on all rising (if measurement type is rise time) or falling (if measurement type is fall time) edges.

OFF computes the measurement on all rising (if measurement type is rise time) or falling (if measurement type is fall time) edges.

ON computes the measurement on rising (if measurement type is rise time) or falling edges (if measurement type is fall time) following a double transition only.

Examples

MEASUrement:MEAS1:TRANSition 1 specifyingthe measurement is computed on rising (if measurement type is rise time) or falling edges (if measurement type is fall time) following a double transition only.

MEASUrement:MEAS1:TRANSition? might return :MEASUREMENT:MEAS1:TRANSITION 0 indicating the measurement is computed on all rising (if measurement type is rise time) or falling (if measurement type is fall time) edges.

MEASUrement:MEAS<x>:TYPe

This command sets or queries the measurement type. The measurement number is specified by x.

Group Measurement

Syntax

```
MEASUrement:MEAS<x>:TYPe
{ACCOMMONMODE|ACRMS|AMPlITUDE|AREA|BASE|BITAMPLITUDE|BITHIGH|
BITLOW|BURSTWIDTH|COMMONMODE|DATARATE|DCD|DDJ|DELAY|
DJ|DJDIRAC|EYEHIGH|EYELOW|FALLSLEWRATE|FALLTIME|FREQUENCY|
F2|F4|F8|HIGH|HEIGHT|HEIGHTBER|HIGHTIME|HOLD|JITTERSUMMARY|
J2|J9|LOW|LOWTIME|MAXIMUM|MEAN|MINIMUM|NDUtY|NPERIOD|NPJ|
NOVERSHOOT|NWIDTH|PDUTTY|PERIOD|PHASE|PHASENOISE|PJ|PK2Pk|
POVERSHOOT|PWIDTH|QFACTOR|RISESLEWRATE|RISETIME|RJ|RJDIRAC|
RMS|SRJ|SSCFREQDEV|SSCMODRATE|SETUP|
SKEW|TIE|TIMEOUTSIDELEVEL|TJBER|TNTRATIO|TOP|UNITINTERVAL|
VDIFFXOVR|WIDTH|WIDTHBER}
MEASUrement:MEAS<x>:TYPe?
```

Arguments

ACCOMMONMODE AC Common Mode (Pk-Pk) is the peak-to-peak of the common mode voltage of two sources. This measurement is made across the entire record.

ACRMS (AC RMS) is the true Root Mean Square of the data points, about the Mean. This measurement can be made across the entire record, or on each cycle in the record.

AMPLITUDE is the difference between the Top value and the Base value. This measurement can be made across the entire record, or on each cycle in the record.

Amplitude = High - Low

AREA is the area under the curve, calculated by integrating the data points. The area measured above ground is positive. The area measured below ground is negative. This measurement can be made across the entire record, or on each cycle in the record.

BASE is the most common data value below the midpoint of the waveform. This measurement can be made across the entire record, or on each cycle in the record.

BITAMPLITUDE (Bit Amplitude) is the difference between the amplitudes of the 1 bit and the 0 bit surrounding a transition. The amplitude is measured over a user specified portion at the center of the recovered unit interval. This measurement is made on each transition bit in the record (Mean) or across the entire record (Mode).

BITHIGH (Bit High) is the amplitude of a 1 bit. The amplitude is measured over a user specified portion at the center of the recovered unit interval. This measurement is made on each high bit in the record (Mean) or across the entire record (Mode).

BITLOW (Bit Low) is the amplitude of a 0 bit. The amplitude is measured over a user specified portion at the center of the recovered unit interval. This measurement is made on each high bit in the record (Mean) or across the entire record (Mode).

`BURSTWIDTH` (Burst Width) is the duration of a series of adjacent crossings of the Mid reference level (RM). Bursts are separated by a user-defined idle time (tI). This measurement is made on each burst in the record.

`COMMONMODE` (DC Common Mode) is the arithmetic mean of the common mode voltage of two sources. This measurement is made across the entire record.

`DATARATE` (Data Rate) is the reciprocal of Unit Interval. This measurement is made on each bit in the record.

`DCD` (duty cycle distortion) is the peak-to-peak amplitude of the component of the deterministic jitter correlated with the signal polarity. This measurement is made across the entire record.

`DDJ` (data dependent jitter) is the peak-to-peak amplitude of the component of the deterministic jitter correlated with the data pattern in the waveform. This measurement is made across the entire record.

`DELay` is the time between the specified Mid reference level (RM) crossing on one source to a specified Mid reference level (RM) crossing on a second source. This measurement is made on the first occurrence in the record.

`DJ` (deterministic jitter) is the peak-to-peak amplitude of all timing errors that exhibit deterministic behavior. This measurement is made across the entire record.

`DJDIRAC` (dual-dirac deterministic jitter) is deterministic jitter based on a simplifying assumption that the histogram of all deterministic jitter can be modeled as a pair of equal-magnitude Dirac functions. This measurement is made across the entire record.

`EYEHIGH` (Eye High) is the amplitude of a high (1) bit measured at a user specified location within the recovered unit interval. This measurement is made on each high bit in the record.

`EYELOW` (Eye Low) is the amplitude of a low (0) bit measured at a user specified location within the recovered unit interval. This measurement is made on each low bit in the record.

`FALLSLEWRATE` (Falling Slew Rate) is the rate of change in voltage as an edge transitions from the Top reference level (RT) to the Bottom reference level (RB). This measurement is made on each cycle in the record.

`FALLTIME` (Fall Time) is the time required for an edge to fall from the Top reference level (RT) to the Base reference level (RB). This measurement is made on each cycle in the record.

`FREQuency` is the reciprocal of Period. This measurement is made on each cycle in the record.

`F2` is the peak-to-peak amplitude of the periodic jitter occurring at a rate of Fb (data rate) divided by 2. This measurement is made across the entire record.

`F4` is the peak-to-peak amplitude of the periodic jitter occurring at a rate of Fb (data rate) divided by 4. This measurement is made across the entire record.

F8 is the peak-to-peak amplitude of the periodic jitter occurring at a rate of Fb (data rate) divided by 8. This measurement is made across the entire record.

HIGH (Eye High) is the amplitude of a high (1) bit measured at a user specified location within the recovered unit interval. This measurement is made on each high bit in the record.

HEIGHT (Eye Height) is the minimum vertical eye opening at the center of the recovered unit interval. This measurement is made across the entire record.

HEIGHTBER (Eye Height@BER) is the predicted vertical eye opening that will be violated with a probability equal to the bit error rate. This measurement is made across the entire record.

HIGH

HIGHTIME (High Time) is the time the signal remains above the Top reference level (RT). This measurement is made on each cycle in the record.

HOLD (Hold Time) is the time between the specified Mid reference level crossing (RM) on the Clock source to the closest specified Mid reference level (RM) crossing on the Data source. This measurement is made on each specified Clock edge in the record.

JITTERSUMMARY (Jitter Summary) is a group consisting of the following measurements: TIE, TJ@BER, Eye Width@BER, Eye Height@BER, RJ-δδ, DJ-δδ, PJ, DDJ, DcD, F/2, F/4, F/8.

J2 is the total jitter at a bit error rate of 2.5e-3 (TJ@2.5e-3). This measurement is made across the entire record.

J9 is the total jitter at a bit error rate of 2.5e-10 (TJ@2.5e-10). This measurement is made across the entire record.

LOW (Eye Low) is the amplitude of a low (0) bit measured at a user specified location within the recovered unit interval. This measurement is made on each low bit in the record.

LOWTIME (Low Time) is the time the signal remains below the Base reference level (RB). This measurement is made on each cycle in the record.

MAXimum is the maximum data point. This measurement can be made across the entire record, or on each cycle in the record.

MEAN is the arithmetic mean of the data points. This measurement can be made across the entire record, or on each cycle in the record.

MINImum is the minimum data point. This measurement can be made across the entire record, or on each cycle in the record.

NDUty (Negative Duty Cycle) is the ratio of the Negative Pulse Width to the Period. This measurement is made on each cycle in the record.

Negative Duty Cycle = (Negative Width) / Period × 100%

`NPERIOD` (Duration N-Periods) is the time required to complete N cycles. A cycle is the time between two adjacent (same direction) crossings of the Mid reference level (RM). This measurement is made on each cycle in the record.

`NPJ` (non-periodic jitter) is the portion of the BUJ (bounded uncorrelated jitter) that is random. BUJ excludes DDJ, DCD and RJ. This measurement is made across the entire record.

`NOVershoot` (Negative Overshoot) is the difference between Minimum and Base, divided by the Amplitude. This measurement can be made across the entire record, or on each cycle in the record.

Negative Overshoot = (Base - Minimum) / Amplitude × 100%)

`NWIdth` (Negative Pulse Width) is the time the signal remains below the Mid reference level (RM). This measurement is made on each cycle in the record.

`PDUTY` (Positive Duty Cycle) is the ratio of the Positive Pulse Width to the Period. This measurement is made on each cycle in the record.

Positive Duty Cycle = (Positive Width)/Period × 100%

`PERIOD` is the time required to complete a cycle. A cycle is the time between two adjacent (same direction) crossings of the Mid reference level (RM). This measurement is made on each cycle in the record.

`PHASE` is the ratio of the Skew between two sources to the Period of the first source. This measurement is made on each cycle in the record.

`PHASENOISE` (Phase Noise) is the RMS magnitude of all integrated jitter falling within a user specified offset range of the fundamental clock frequency. This measurement is made across the entire record.

`PJ` (periodic jitter) is the peak-to-peak amplitude of the uncorrelated sinusoidal components of the deterministic jitter. This measurement is made across the entire record.

`PK2Pk` (Peak-to-peak) is the difference between Maximum and Minimum. This measurement can be made across the entire record, or on each cycle in the record.

`POVERSHOOT` (Positive Overshoot) is the difference between Maximum and Top, divided by the Amplitude. This measurement can be made across the entire record, or on each cycle in the record.

Positive Overshoot = (Maximum - Top) / Amplitude ×100%

`PWIDTH` (Positive Pulse Width) is the time the signal remains above the Mid reference level (RM). This measurement is made on each cycle in the record.

`QFACTOR` (Q-Factor) is the ratio of the vertical eye opening to RMS vertical noise measured at a user specified location within the recovered unit interval. This measurement is made across the entire record.

RISESLEWRATE (Rising Slew Rate) is the rate of change in voltage as an edge transitions from the Base reference level (RB) to the Top reference level (RT). This measurement is made on each cycle in the record.

RISETIME Rise Time is the time required for an edge to rise from the Base reference level (RB) to the Top reference level (RT). This measurement is made on each cycle in the record.

RJ (random jitter) is the RMS magnitude of all random timing errors following a Gaussian distribution. This measurement is made across the entire record.

RJDIRAC (dual-dirac random jitter) is random jitter based on a simplifying assumption that the histogram of all deterministic jitter can be modeled as a pair of equal-magnitude Dirac functions. This measurement is made across the entire record.

RMS is the true Root Mean Square of the data points. This measurement can be made across the entire record, or on each cycle in the record.

SRJ (sub-rate jitter) is the composite jitter due to periodic components at 1/2, 1/4 and 1/8 of the data rate. This measurement is made across the entire record.

SSCFREQDEV (SSC Frequency Deviation) is the spread spectrum clock frequency deviation. This measurement enables a time trend plot of the spread spectrum clock modulation profile. This measurement is made on each cycle in the record.

SSCMODRATE (SSC Modulation Rate) is the modulating frequency of a spread spectrum clock. This measurement is made on each cycle in the record.

SETUP (Setup Time) is the time between the specified Mid reference level (RM) crossing on the Data source to the closest specified Mid reference level (RM) crossing on the Clock source. This measurement is made on each specified Clock edge in the record.

SKEW Skew is the time between the specified Mid reference level (RM) crossing on one source to the following specified Mid reference level (RM) crossing on a second source. This measurement is made on each cycle in the record.

TIE (time interval error) is the difference, in time, between an edge in the source waveform and the corresponding edge in a recovered reference clock. This measurement is made on each edge in the waveform.

TIMEOUTSIDELEVEL Time Outside Level is the time the signal remains above the Top reference level (RT) and/or below the Base reference level (RB). This measurement is made on each occurrence in the record.

TJBER (total jitter at a specified bit error rate) is the predicted peak-to-peak amplitude of jitter that will only be exceeded with a probability equal to the bit error rate. This measurement is made across the entire record.

TNTRATIO T/nT Ratio is the ratio of a non-transition bit voltage (2nd and subsequent bit voltage after a transition) to its nearest preceding transition bit voltage (1st bit voltage after the transition). Bit voltages are measured at the interpolated midpoint of the recovered unit interval. This measurement is made on each non-transition bit in the record.

TOP is the most common data value above the midpoint of the waveform. This measurement can be made across the entire record, or on each cycle in the record.

UNITINTERVAL (Unit Interval) is the time difference between two successive bits. This measurement is made on each bit in the record.

VDIFFXOVR (Differential Crossover) is the voltage level of a differential signal pair at the crossover points. This measurement is made at each crossover point in the record.

WIDTH (Eye Width) is the minimum horizontal eye opening at the user specified reference level. This measurement is made across the entire record.

WIDTHBER (Eye Width@BER) is the predicted horizontal eye opening that will be violated with a probability equal to the bit error rate. This measurement is made across the entire record.

Examples

MEASUREMENT:MEAS2:TYPE FREQUENCY defines measurement 2 as a measurement of the frequency of a waveform.

MEASUREMENT:MEAS1:TYPE? might return :MEASUREMENT:MEAS1:TYPE RMS, indicating that measurement 1 is defined to measure the RMS value of a waveform.

MEASUrement:MEAS<x>:WINDOWLENgth

This command sets or queries the window length for the measurement. The measurement number is specified by x.

Group

Measurement

Syntax

```
MEASUrement:MEAS<x>:WINDOWLENgth <NR3>
MEASUrement:MEAS<x>:WINDOWLENgth?
```

Arguments

<NR3> is the value for the window length.

Examples

MEASUrement:MEAS1:WINDOWLENgth 10 sets the window length to 10.

MEASUrement:MEAS1:WINDOWLENgth? might return :MEASUREMENT:MEAS1:WINDOWLENGTH 10.0000 indicating the window length is 10.

MEASUrement:MINUI

This command sets or queries the minimum number of unit intervals required for BUJ analysis.

Group

Measurement

Syntax

```
MEASUrement:MINUI <NR3>
MEASUrement:MINUI?
```

Arguments

`<NR3>` is the minimum number of unit intervals required for BUJ analysis.

Examples

`MEASUREMENT:MINUI 1.0000E+6` sets the minimum number of unit intervals required for BUJ analysis to 1,000,000.

`MEASUREMENT:MINUI?` might return `:MEASUREMENT:MINUI 1.0000E+6` indicating the minimum number of unit intervals required for BUJ analysis is 1,000,000.

MEASUrement:POPUlation:LIMIT:STATE

This command sets or queries the global population limit state for the measurement.

Group

Measurement

Syntax

```
MEASUrement:POPUlation:LIMIT:STATE {OFF|ON|0|1 }
MEASUrement:POPUlation:LIMIT:STATE?
```

Arguments

`OFF` turns off the population limit.

`ON` turns on the population limit.

`0` turns off the population limit.

`1` turns on the population limit.

Examples

`MEASUREMENT:POPULATION:LIMIT:STATE 1` turns on the population limit.

`MEASUREMENT:POPULATION:LIMIT:STATE?` might return `:MEASUREMENT:POPULATION:LIMIT:STATE 0` indicating the population limit is off.

MEASUrement:POPUlation:LIMIT:VALue

This command sets or queries the global population limit value for the measurement.

Group

Measurement

Syntax

```
MEASUrement:POPUlation:LIMIT:VALue <NR1>
MEASUrement:POPUlation:LIMIT:VALue?
```

Arguments

<NR1> is the current limit value.

Examples

MEASUREMENT:POPULATION:LIMIT:VALUE 2000 sets the population limit to 2000.

MEASUREMENT:POPULATION:LIMIT:VALUE? might return :MEASUREMENT:POPULATION:LIMIT:VALUE 1000 indicating the population limit value is 1000.

MEASUrement:REFLevels:ABSolute:FALLHigh

This command sets or queries the value used as the high reference level of the falling edge when the measurement's ref level method is set to absolute.

Group

Measurement

Syntax

```
MEASUrement:REFLevels:ABSolute:FALLHigh <NR3>
MEASUrement:REFLevels:ABSolute:FALLHigh?
```

Arguments

<NR3> is the value used as the high reference level of the falling edge when the measurement's ref level method is set to absolute.

Examples

MEASUrement:REFLevels:ABSolute:FALLHigh 1.5 sets the high reference level to 1.5 V.

MEASUrement:REFLevels:ABSolute:FALLHigh? might return :MEASUREMENT:REFLEVELS:ABSOLUTE:FALLHIGH 1.0000 indicating the high reference level is 1.0 V.

MEASUrement:REFLevels:ABSolute:FALLLow

This command sets or queries the value used as the low reference level of the falling edge when the measurement's ref level method is set to absolute.

Group

Measurement

Syntax

```
MEASUrement:REFLevels:ABSolute:FALLLow <NR3>
MEASUrement:REFLevels:ABSolute:FALLLow?
```

Arguments

`<NR3>` is the value used as the low reference level of the falling edge.

Examples

`MEASUrement:REFLevels:ABSolute:FALLLow -1.5` sets the low reference level to -1.5 V.

`MEASUrement:REFLevels:ABSolute:FALLLow?` might return `:MEASUREMENT:REFLEVELS:ABSOLUTE:FALLLOW -1.0000` indicating the low reference level is -1.0 V.

MEASUrement:REFLevels:ABSolute:FALLMid

This command sets or queries the value used as the mid reference level of the falling edge when the measurement's ref level method is set to absolute.

Group

Measurement

Syntax

```
MEASUrement:REFLevels:ABSolute:FALLMid <NR3>
MEASUrement:REFLevels:ABSolute:FALLMid?
```

Arguments

`<NR3>` is the value used as the mid reference level of the falling edge.

Examples

`MEASUrement:REFLevels:ABSolute:FALLMid 10.0E-3` sets the mid reference level to 10.0 mV.

`MEASUrement:REFLevels:ABSolute:FALLMid?` might return `:MEASUREMENT:REFLEVELS:ABSOLUTE:FALLMID 0.0E+0` indicating the mid reference level is 0.0 V.

MEASUrement:REFLevels:ABSolute:HYSTeresis

This command sets or queries the value of the hysteresis of the reference level when the measurement's ref level method is set to absolute.

Group

Measurement

Syntax

```
MEASUrement:REFLevels:ABSolute:HYSTeresis <NR3>
MEASUrement:REFLevels:ABSolute:HYSTeresis?
```

Arguments

`<NR3>` is the value of the hysteresis of the reference level.

Examples

`MEASUrement:REFLevels:ABSolute:HYSTeresis 20.0E-3` sets the hysteresis to 20.0 mV.

`MEASUrement:REFLevels:ABSolute:HYSTeresis?` might return `:MEASUREMENT:REFLEVELS:ABSOLUTE:HYSTERESIS 30.0000E-3` indicating the hysteresis is set to 30.0 mV.

MEASUrement:REFLevels:ABSolute:RISEHigh

This command sets or queries the value used as the high reference level of the rising edge when the measurement's ref level method is set to absolute.

Group

Measurement

Syntax

```
MEASUrement:REFLevels:ABSolute:RISEHigh <NR3>
MEASUrement:REFLevels:ABSolute:RISEHigh?
```

Arguments

`<NR3>` is the value used as the high reference level of the rising edge.

Examples

`MEASUrement:REFLevels:ABSolute:RISEHigh 1.5` sets the high reference to 1.5 V.

`MEASUrement:REFLevels:ABSolute:RISEHigh?` might return `:MEASUREMENT:REFLEVELS:ABSOLUTE:RISEHIGH 1.0000` indicating the high reference is 1.0 V.

MEASUrement:REFLevels:ABSolute:RISELow

This command sets or queries the value used as the low reference level of the rising edge when the measurement's ref level method is set to absolute.

Group

Measurement

Syntax

```
MEASUrement:REFLevels:ABSolute:RISELow <NR3>
MEASUrement:REFLevels:ABSolute:RISELow?
```

Arguments

`<NR3>` is the value used as the the low reference level of the rising edge

Examples

`MEASUrement:REFLevels:ABSolute:RISELow -1.5` sets the low reference level to -1.5 V.

`MEASUrement:REFLevels:ABSolute:RISELow?` might return `:MEASUREMENT:REFLEVELS:ABSOLUTE:RISELOW -1.0000` indicating the low reference level is -1.0 V.

MEASUrement:REFLevels:ABSolute:RISEMid

This command sets or queries the value used as the mid reference level of the rising edge when the measurement's ref level method is set to absolute.

Group

Measurement

Syntax

```
MEASUrement:REFLevels:ABSolute:RISEMid <NR3>
MEASUrement:REFLevels:ABSolute:RISEMid?
```

Arguments

`<NR3>` is the mid reference level of the rising edge.

Examples

`MEASUrement:REFLevels:ABSolute:RISEMid 10.0E-3` sets the mid reference to 10.0 mV.

`MEASUrement:REFLevels:ABSolute:RISEMid?` might return `:MEASUREMENT:REFLEVELS:ABSOLUTE:RISEMID 0.0E+0` indicating the mid reference is 0.0 V.

MEASUrement:REFLevels:ABSolute:TYPE

This command sets or queries the reference level type for the measurement.

Group Measurement

Syntax
```
MEASUrement:REFLevels:ABSolute:TYPE {SAME|UNIQue}
MEASUrement:REFLevels:ABSolute:TYPE?
```

Arguments `SAME` specifies that the absolute levels are set the same.

`UNIQue` specifies that the absolute levels can be set independently.

Examples `MEASUrement:REFLevels:ABSolute:TYPE UNIQUE` specifies that the absolute levels can be set independently.

`MEASUrement:REFLevels:ABSolute:TYPE?` might return `:MEASUREMENT:REFLEVELS:ABSOLUTE:TYPE SAME` indicating the absolute levels are set the same.

MEASUrement:REFLevels:BASETop

This command sets or queries the method used to calculate the TOP and BASE, used to calculate reference levels for the measurement.

Group Measurement

Syntax
```
MEASUrement:REFLevels:BASETop
{AUTO|MINMax|MEANhistogram|MODEhistogram|EYEhistogram
MEASUrement:REFLevels:BASETop?
```

Arguments Arguments are the base top methods.

Examples `MEASUREMENT:REFLEVELS:BASETOP MINMAX` selects the MINMAX base top method.

`MEASUREMENT:REFLEVELS:BASETOP?` might return `:MEASUREMENT:REFLEVELS:BASETOP MINMAX` indicating the base top method is MINMAX.

MEASUrement:REFLevels:JITTERMODE

This command sets or queries how often reference levels are calculated on Jitter measurements. If the mode is set to Latch, ref levels are calculated only on the first acquisition after a statistics reset. If it is set to Continuous, reference levels are calculated on every acquisition.

Group Measurement

Syntax

```
MEASUrement:REFLevels:JITTERMODE {CONTinuous|LATCh}
MEASUrement:REFLevels:JITTERMODE?
```

Arguments `CONTinuous` specifies that reference levels are calculated on every acquisition.

`LATCh` specifies that reference levels are calculated only on the first acquisition after a statistics reset.

Examples `MEASUREMENT:REFLEVELS:JITTERMODE CONTINUOUS` specifies that reference levels are calculated on every acquisition.

`MEASUREMENT:REFLEVELS:JITTERMODE`? might return LATCH indicating that reference levels are calculated only on the first acquisition after a statistics reset.

MEASUrement:REFLevels:METHod

This command sets or queries the method used to calculate reference levels for the measurement.

Group Measurement

Syntax

```
MEASUrement:REFLevels:METHod {PERCent|ABSolute}
MEASUrement:REFLevels:METHod?
```

Arguments `PERCent` specifies that the reference levels are calculated as a percent relative to HIGH and LOW. The percentages are defined using the `MEASUrement:REFLevels:REFLevel:PERCent` commands.

`ABSolute` specifies that the reference levels are set explicitly using the `MEASUrement:REFLevels:REFLevel:ABSolute` commands. This method is useful when precise values are required.

Examples `MEASUrement:REFLevels:METHod ABSOLUTE` specifies that the reference levels are set explicitly.

`MEASUrement:REFLevels:METHod?` might return `:MEASUREMENT:REFLEVELS:METHOD PERCENT` indicating the reference levels are calculated as a percent relative to HIGH and LOW.

MEASUrement:REFLevels:MODE

This command sets or queries how often reference levels are calculated.

Group

Measurement

Syntax

```
MEASUrement:REFLevels:MODE {LATCh|CONTinuous}
MEASUrement:REFLevels:MODE?
```

Arguments

`LATCh` calculates reference levels only on the first acquisition after a statistics reset.

`CONTinuous` calculates reference levels on every acquisition.

Examples

`MEASUREMENT:REFLEVELS:MODE CONTINUOUS` calculates reference levels on every acquisition.

`MEASUREMENT:REFLEVELS:MODE?` might return `:MEASUREMENT:REFLEVELS:MODE LATCH` indicating reference levels are calculated only on the first acquisition after a statistics reset.

MEASUrement:REFLevels:PERCent:FALLHigh

This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the high reference level of the falling edge when the measurement's ref level method is set to percent.

Group

Measurement

Syntax

```
MEASUrement:REFLevels:PERCent:FALLHigh <NR3>
MEASUrement:REFLevels:PERCent:FALLHigh?
```

Arguments

`<NR3>` is the percentage used to calculate the high reference level of the falling edge

Examples

`MEASUrement:REFLevels:PERCent:FALLHigh 90` sets the high reference level to 90%.

`MEASUrement:REFLevels:PERCent:FALLHigh?` might return `:MEASUREMENT:REFLEVELS:PERCENT:FALLHIGH 80.0000` indicating the high reference level is 80%.

MEASUrement:REFLevels:PERCent:FALLLow

This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the mid reference level of the falling edge when the measurement's ref level method is set to percent.

Group Measurement

Syntax

```
MEASUrement:REFLevels:PERCent:FALLLow <NR3>
MEASUrement:REFLevels:PERCent:FALLLow?
```

Arguments `<NR3>` is the percentage used to calculate the mid reference level of the falling edge.

Examples `MEASUrement:REFLevels:PERCent:FALLLow 10` sets the low reference level to 10%.

`MEASUrement:REFLevels:PERCent:FALLLow?` might return `:MEASUREMENT:REFLEVELS:PERCENT:FALLLOW 20.0000` indicating the low reference level is 20%.

MEASUrement:REFLevels:PERCent:FALLMid

This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the mid reference level of the falling edge when the measurement's ref level method is set to percent.

Group Measurement

Syntax

```
MEASUrement:REFLevels:PERCent:FALLMid <NR3>
MEASUrement:REFLevels:PERCent:FALLMid?
```

Arguments `<NR3>` is the percentage used to calculate the mid reference level of the falling edge

Examples `MEASUrement:REFLevels:PERCent:FALLMid 55` sets the mid reference level to 55%.

`MEASUrement:REFLevels:PERCent:FALLMid?` might return `:MEASUREMENT:REFLEVELS:PERCENT:FALLMID 50.0000` indicating the mid reference level is 50%.

MEASUrement:REFLevels:PERCent:HYSTeresis

This command sets or queries the percentage (where 100% is equal to MAX and 0% is equal to MIN) used to calculate the hysteresis of the reference level when the measurement's ref level method is set to percent.

Group Measurement

Syntax

```
MEASUrement:REFLevels:PERCent:HYSTeresis <NR3>
MEASUrement:REFLevels:PERCent:HYSTeresis?
```

Arguments `<NR3>` is the percentage used to calculate the hysteresis of the reference level.

Examples `MEASUrement:REFLevels:PERCent:HYSTeresis 3` sets the hysteresis to 3%.

`MEASUrement:REFLevels:PERCent:HYSTeresis?` might return `:MEASUREMENT:REFLEVELS:PERCENT:HYSTERESIS 5.0000` indicating the hysteresis is set to 5%.

MEASUrement:REFLevels:PERCent:RISEHigh

This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the high reference level of the rising edge when the measurement's ref level method is set to percent.

Group Measurement

Syntax

```
MEASUrement:REFLevels:PERCent:RISEHigh <NR3>
MEASUrement:REFLevels:PERCent:RISEHigh?
```

Arguments `<NR3>` is the percentage used to calculate the high reference level of the rising edge.

Examples `MEASUrement:REFLevels:PERCent:RISEHigh 90` sets the high reference level to 90%.

`MEASUrement:REFLevels:PERCent:RISEHigh?` might return `:MEASUREMENT:REFLEVELS:PERCENT:RISEHIGH 80.0000` indicating the high ref level is 80%.

MEASUrement:REFLevels:PERCent:RISELow

This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the low reference level of the rising edge when the measurement's ref level method is set to percent.

Group

Measurement

Syntax

```
MEASUrement:REFLevels:PERCent:RISELow <NR3>
MEASUrement:REFLevels:PERCent:RISELow?
```

Arguments

`<NR3>` is the percentage used to calculate the low reference level of the rising edge.

Examples

`MEASUrement:REFLevels:PERCent:RISELow` 10 sets the low reference level to 10%.

`MEASUrement:REFLevels:PERCent:RISELow?` might return `:MEASUREMENT:REFLEVELS:PERCENT:RISELOW 20.0000` indicating the low reference level is 20%.

MEASUrement:REFLevels:PERCent:RISEMid

This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the mid reference level of the rising edge when the measurement's ref level method is set to percent.

Group

Measurement

Syntax

```
MEASUrement:REFLevels:PERCent:RISEMid <NR3>
MEASUrement:REFLevels:PERCent:RISEMid?
```

Arguments

`<NR3>` is the percentage used to calculate the mid reference level of the rising edge.

Examples

`MEASUrement:REFLevels:PERCent:RISEMid 55` sets the mid reference level to 55%.

`MEASUrement:REFLevels:PERCent:RISEMid?` might return `:MEASUREMENT:REFLEVELS:PERCENT:RISEMID 50.0000` indicating the mid reference level is 50%.

MEASUrement:REFLevels:PERCent:TYPE

This command sets or queries the reference level percent type for the measurement.

Group

Measurement

Syntax

```
MEASUrement:REFLevels:PERCent:TYPE
{TENNinety|TWENtyeighty|CUSTom}
MEASUrement:REFLevels:PERCent:TYPE?
```

Arguments

`TENNinety` sets the values for Low, Mid and High Ref to 10%, 50% and 90% respectively.

`TWENtyeighty` sets the values for Low, Mid and High Ref are set to 20%, 50% and 80% respectively.

`CUSTom` allows setting other reference level percents.

Examples

`MEASUrement:REFLevels:PERCent:TYPE TENNINETY` sets the values for Low, Mid and High Ref to 10%, 50% and 90% respectively.

`MEASUrement:REFLevels:PERCent:TYPE?` might return `:MEASUREMENT:REFLEVELS:PERCENT:TYPE CUSTOM` indicating that custom reference levels can be set.

MEASUrement:REFLevels:TYPE

This command sets or queries the shared reference level method used for sources of measurement calculations.

Group

Measurement

Syntax

```
MEASUrement:REFLevels:TYPE {GLOBal|PERSource}
MEASUrement:REFLevels:TYPE?
```

Arguments

`GLOBal` shares reference levels across measurements.

`PERSource` causes reference levels to be used on individual measurements.

Examples

`MEASUREMENT:REFLEVELS:TYPE PERSource` causes reference levels to be used on individual measurements.

MEASUREMENT:REFLEVELS:TYPE? might return :MEASUREMENT:REFLEVELS:TYPE GLOBAL indicating reference levels are shared across measurements.

MEASUrement:REF<x>:REFLevels:ABSolute:FALLHigh

This command sets or queries the value used as the high reference level of the falling edge when the measurement's ref level method is set to absolute.

Group

Measurement

Syntax

```
MEASUrement:REF<x>:REFLevels:ABSolute:FALLHigh <NR3>
MEASUrement:REF<x>:REFLevels:ABSolute:FALLHigh?
```

Arguments

<NR3> is the value used as the high reference level of the falling edge when the measurement's ref level method is set to absolute.

Examples

MEASUrement:REF1:REFLevels:ABSolute:FALLHigh 1.5 sets the reference level to 1.5 V.

MEASUrement:REF1:REFLevels:ABSolute:FALLHigh? might return :MEASUREMENT:REF1:REFLEVELS:ABSOLUTE:FALLHIGH 1.0000 indicating the reference level is 1.0 V.

MEASUrement:REF<x>:REFLevels:ABSolute:FALLLow

This command sets or queries the value used as the low reference level of the falling edge when the measurement's ref level method is set to absolute.

Group

Measurement

Syntax

```
MEASUrement:REF<x>:REFLevels:ABSolute:FALLLow <NR3>
MEASUrement:REF<x>:REFLevels:ABSolute:FALLLow?
```

Arguments

<NR3> is the value used as the low reference level of the falling edge when the measurement's ref level method is set to absolute.

Examples

MEASUrement:REF1:REFLevels:ABSolute:FALLLow -1.5 sets the low reference level to -1.5 V.

`MEASUrement:REF1:REFLevels:ABSolute:FALLLow?` might return `:MEASUREMENT:REF1:REFLEVELS:ABSOLUTE:FALLLOW -1.0000` indicating the low reference level is -1.0 V.

MEASUrement:REF<x>:REFLevels:ABSolute:FALLMid

This command sets or queries the value used as the mid reference level of the falling edge when the measurement's ref level method is set to absolute.

Group

Measurement

Syntax

```
MEASUrement:REF<x>:REFLevels:ABSolute:FALLMid <NR3>
MEASUrement:REF<x>:REFLevels:ABSolute:FALLMid?
```

Arguments

`<NR3>` is the value used as the mid reference level of the falling edge when the measurement's ref level method is set to absolute.

Examples

`MEASUrement:REF1:REFLevels:ABSolute:FALLMid 50.0E-3` sets the mid reference level to 50.0 mV.

`MEASUrement:REF1:REFLevels:ABSolute:FALLMid?` might return `:MEASUREMENT:REF1:REFLEVELS:ABSOLUTE:FALLMID 0.0E+0` indicating the reference level is 0.0 V.

MEASUrement:REF<x>:REFLevels:ABSolute:HYSTeresis

This command sets or queries the value of the hysteresis of the reference level when the measurement's ref level method is set to absolute.

Group

Measurement

Syntax

```
MEASUrement:REF<x>:REFLevels:ABSolute:HYSTeresis <NR3>
MEASUrement:REF<x>:REFLevels:ABSolute:HYSTeresis?
```

Arguments

`<NR3>` is the value of the hysteresis of the reference level when the measurement's ref level method is set to absolute.

Examples

`MEASUrement:REF1:REFLevels:ABSolute:HYSTeresis 20.0E-3` sets the hysteresis to 20.0 mV.

`MEASUrement:REF1:REFLevels:ABSolute:HYSTeresis?` might return `:MEASUREMENT:REF1:REFLEVELS:ABSOLUTE:HYSTERESIS 30.0000E-3` indicating the hysteresis is 30.0 mV.

MEASUrement:REF<x>:REFLevels:ABSolute:RISEHigh

This command sets or queries the value used as the high reference level of the rising edge when the measurement's ref level method is set to absolute.

Group

Measurement

Syntax

```
MEASUrement:REF<x>:REFLevels:ABSolute:RISEHigh <NR3>
MEASUrement:REF<x>:REFLevels:ABSolute:RISEHigh?
```

Arguments

`<NR3>` is the value used as the high reference level of the rising edge when the measurement's ref level method is set to absolute.

Examples

`MEASUrement:REF1:REFLevels:ABSolute:RISEHigh 1.5` sets the reference level to 1.5 V.

`MEASUrement:REF1:REFLevels:ABSolute:RISEHigh?` might return `:MEASUREMENT:REF1:REFLEVELS:ABSOLUTE:RISEHIGH 1.0000` indicating the reference level is 1.0 V.

MEASUrement:REF<x>:REFLevels:ABSolute:RISELow

This command sets or queries the value used as the low reference level of the rising edge when the measurement's ref level method is set to absolute.

Group

Measurement

Syntax

```
MEASUrement:REF<x>:REFLevels:ABSolute:RISELow <NR3>
MEASUrement:REF<x>:REFLevels:ABSolute:RISELow?
```

Arguments

`<NR3>` is the value used as the low reference level of the rising edge when the measurement's ref level method is set to absolute.

Examples

`MEASUrement:REF1:REFLevels:ABSolute:RISELow -1.5` sets the reference level to -1.5 V.

`MEASUrement:REF1:REFLevels:ABSolute:RISELow?` might return `:MEASUREMENT:REF1:REFLEVELS:ABSOLUTE:RISELOW -1.0000` indicating the reference level is -1.0 V.

MEASUrement:REF<x>:REFLevels:ABSolute:RISEMid

This command sets or queries the value used as the mid reference level of the rising edge when the measurement's ref level method is set to absolute.

Group

Measurement

Syntax

```
MEASUrement:REF<x>:REFLevels:ABSolute:RISEMid <NR3>
MEASUrement:REF<x>:REFLevels:ABSolute:RISEMid?
```

Arguments

`<NR3>` is the value used as the mid reference level of the rising edge when the measurement's ref level method is set to absolute.

Examples

`MEASUrement:REF1:REFLevels:ABSolute:RISEMid 10.0E-3` sets the reference level to 10.0 mV.

`MEASUrement:REF1:REFLevels:ABSolute:RISEMid?` might return `:MEASUREMENT:REF1:REFLEVELS:ABSOLUTE:RISEMID 0.0E+0` indicating the mid reference level is 0.0 V.

MEASUrement:REF<x>:REFLevels:ABSolute:TYPE

This command sets or queries the reference level type for the measurement.

Group

Measurement

Syntax

```
MEASUrement:REF<x>:REFLevels:ABSolute:TYPE {SAME|UNIQue}
MEASUrement:REF<x>:REFLevels:ABSolute:TYPE?
```

Arguments

`SAME` specifies that the absolute levels are set the same.

`UNIQue` specifies that the absolute levels can be set independently.

Examples

`MEASUrement:REF1:REFLevels:ABSolute:TYPE UNIQUE` specifies that the absolute levels can be set independently.

`MEASUrement:REF1:REFLevels:ABSolute:TYPE?` might return `:MEASUREMENT:REF1:REFLEVELS:ABSOLUTE:TYPE SAME` indicating that the absolute levels are set the same.

MEASUrement:REF<x>:REFLevels:BASETop

This command sets or queries the method used to calculate the TOP and BASE, used to calculate reference levels for the measurement.

Group

Measurement

Syntax

```
MEASUrement:REF<x>:REFLevels:BASETop
```

Arguments

`AUTO` automatically chooses a reference level method.

`MINMax` specifies that reference levels are relative to the measurement MIN and MAX.

`MEANhistogram` specifies that reference levels are relative to the histogram mean BASE and TOP.

`MODEhistogram` specifies that reference levels are relative to the histogram mode BASE and TOP.

`EYEhistogram` specifies that reverence levels are relative to the eye histogram BASE and TOP.

Examples

`MEASUrement:REF1:REFLevels:BASETop MINMAX` specifies that reference levels are relative to the measurement MIN and MAX.

`MEASUrement:REF1:REFLevels:BASETop?` might return `:MEASUREMENT:REF1:REFLEVELS:BASETOP AUTO` indicating the instrument automatically chooses a reference level method.

MEASUrement:REF<x>:REFLevels:METHod

This command sets or queries the method used to calculate reference levels for the measurement.

Group

Measurement

Syntax

```
MEASUrement:REF<x>:REFLevels:METHod {PERCent|ABSolute}
MEASUrement:REF<x>:REFLevels:METHod?
```

Arguments

`PERCent` specifies that the reference levels are calculated as a percent relative to HIGH and LOW. The percentages are defined using the `MEASUrement:REF<x>:REFLevel:PERCent` commands.

`ABSolute` specifies that the reference levels are set explicitly using the `MEASUrement:REF<x>:REFLevel:ABSolute` commands. This method is useful when precise values are required.

Examples

`MEASUrement:REF1:REFLevels:METHod ABSOLUTE` specifies that the reference levels are set explicitly.

`MEASUrement:REF1:REFLevels:METHod?` might return `:MEASUREMENT:REF1:REFLEVELS:METHOD PERCENT` indicating the reference levels are calculated as a percent relative to HIGH and LOW.

MEASUrement:REF<x>:REFLevels:PERCent:FALLHigh

This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the high reference level of the falling edge when the measurement's ref level method is set to percent.

Group

Measurement

Syntax

```
MEASUrement:REF<x>:REFLevels:PERCent:FALLHigh <NR3>
MEASUrement:REF<x>:REFLevels:PERCent:FALLHigh?
```

Arguments

`<NR3>` is the percentage used to calculate the high reference level of the falling edge

Examples

`MEASUrement:REF1:REFLevels:PERCent:FALLHigh 95` sets the reference level to 95%.

`MEASUrement:REF1:REFLevels:PERCent:FALLHigh?` might return `:MEASUREMENT:REF1:REFLEVELS:PERCENT:FALLHIGH 90.0000` indicating the reference level is 90%.

MEASUrement:REF<x>:REFLevels:PERCent:FALLLow

This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the low reference level of the falling edge when the measurement's ref level method is set to percent.

Group Measurement

Syntax

```
MEASUrement:REF<x>:REFLevels:PERCent:FALLLow <NR3>
MEASUrement:REF<x>:REFLevels:PERCent:FALLLow?
```

Arguments `<NR3>` is the percentage used to calculate the low reference level

Examples `MEASUrement:REF1:REFLevels:PERCent:FALLLow 5` sets the low reference level to 5%.

`MEASUrement:REF1:REFLevels:PERCent:FALLLow?` might return `:MEASUREMENT:REF1:REFLEVELS:PERCENT:FALLLOW 10.0000` indicating the low reference level is 10%.

MEASUrement:REF<x>:REFLevels:PERCent:FALLMid

This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the mid reference level of the falling edge when the measurement's ref level method is set to percent.

Group Measurement

Syntax

```
MEASUrement:REF<x>:REFLevels:PERCent:FALLMid <NR3>
MEASUrement:REF<x>:REFLevels:PERCent:FALLMid?
```

Arguments `<NR3>` is the percentage used to calculate the mid reference level of the falling edge.

Examples `MEASUrement:REF1:REFLevels:PERCent:FALLMid 55` sets the reference level to 50%.

`MEASUrement:REF1:REFLevels:PERCent:FALLMid?` might return `:MEASUREMENT:REF1:REFLEVELS:PERCENT:FALLMID 50.0000` indicating the mid reference level is 50%.

MEASUrement:REF<x>:REFLevels:PERCent:HYSTeresis

This command sets or queries the percentage (where 100% is equal to MAX and 0% is equal to MIN) used to calculate the hysteresis of the reference level when the measurement's ref level method is set to percent.

Group Measurement

Syntax

```
MEASUrement:REF<x>:REFLevels:PERCent:HYSTeresis <NR3>
MEASUrement:REF<x>:REFLevels:PERCent:HYSTeresis?
```

Arguments `<NR3>` is the percentage used to calculate the hysteresis of the reference level.

Examples `MEASUrement:REF1:REFLevels:PERCent:HYSTeresis 2` sets the hysteresis to 2%.

`MEASUrement:REF1:REFLevels:PERCent:HYSTeresis?` might return `:MEASUREMENT:REF1:REFLEVELS:PERCENT:HYSTERESIS 5.0000` indicating the hysteresis is 5%.

MEASUrement:REF<x>:REFLevels:PERCent:RISEHigh

This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the high reference level of the rising edge when the measurement's ref level method is set to percent.

Group Measurement

Syntax

```
MEASUrement:REF<x>:REFLevels:PERCent:RISEHigh <NR3>
MEASUrement:REF<x>:REFLevels:PERCent:RISEHigh?
```

Arguments `<NR3>` is the percentage used to calculate the high reference level of the rising edge

Examples `MEASUrement:REF1:REFLevels:PERCent:RISEHigh 95` sets the reference level to 95%.

`MEASUrement:REF1:REFLevels:PERCent:RISEHigh?` might return `:MEASUREMENT:REF1:REFLEVELS:PERCENT:RISEHIGH 90.0000` indicating the reference level is 90%.

MEASUrement:REF<x>:REFLevels:PERCent:RISELow

This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the low reference level of the rising edge when the measurement's ref level method is set to percent.

Group Measurement

Syntax
```
MEASUrement:REF<x>:REFLevels:PERCent:RISELow <NR3>
MEASUrement:REF<x>:REFLevels:PERCent:RISELow?
```

Arguments `<NR3>` is the percentage used to calculate the low reference level of the rising edge.

Examples `MEASUrement:REF1:REFLevels:PERCent:RISELow 5` sets the low reference level to 5%.

`MEASUrement:REF1:REFLevels:PERCent:RISELow?` might return `:MEASUREMENT:REF1:REFLEVELS:PERCENT:RISELOW 10.0000` indicating the reference level is 10%.

MEASUrement:REF<x>:REFLevels:PERCent:RISEMid

This command sets or queries the percentage (where 100% is equal to TOP and 0% is equal to BASE) used to calculate the mid reference level of the rising edge when the measurement's ref level method is set to percent.

Group Measurement

Syntax
```
MEASUrement:REF<x>:REFLevels:PERCent:RISEMid <NR3>
MEASUrement:REF<x>:REFLevels:PERCent:RISEMid?
```

Arguments `<NR3>` is the percentage used to calculate the mid reference level of the rising edge.

Examples `MEASUrement:REF1:REFLevels:PERCent:RISEMid 55` sets the mid reference level to 55%.

`MEASUrement:REF1:REFLevels:PERCent:RISEMid?` might return `:MEASUREMENT:REF1:REFLEVELS:PERCENT:RISEMID 50.0000` indicating the mid reference level is 50%.

MEASUrement:REF<x>:REFLevels:PERCent:TYPE

This command sets or queries the reference level percent type for the measurement.

Group Measurement

Syntax

```
MEASUrement:REF<x>:REFLevels:PERCent:TYPE
{TENNinety|TWENtyeighty|CUSTom}
MEASUrement:REF<x>:REFLevels:PERCent:TYPE?
```

Arguments

`TENNinety` sets the values for Low, Mid and High Ref to 10%, 50% and 90% respectively.

`TWENtyeighty` sets the values for Low, Mid and High Ref are set to 20%, 50% and 80% respectively.

`CUSTom` allows setting other reference level percents.

Examples

`MEASUrement:REF1:REFLevels:PERCent:TYPE TWENTYEIGHTY` sets the values for Low, Mid and High Ref are set to 20%, 50% and 80% respectively.

`MEASUrement:REF1:REFLevels:PERCent:TYPE?` might return `:MEASUREMENT:REF1:REFLEVELS:PERCENT:TYPE TENNINETY` indicating the values for Low, Mid and High Ref to 10%, 50% and 90% respectively.

MEASUrement:STATIstics:CYCLEMode

This command turns on and off cycle to cycle measurement statistics tracking and affects computation and display of cycle-cycle statistics in the Measurement Result table. It affects measurement statistics after being enabled and after new data is acquired and measured.

Group

Measurement

Syntax

```
MEASUrement:STATIstics:CYCLEMode {OFF|ON|0|1}
MEASUrement:STATIstics:CYCLEMode?
```

Arguments

`OFF` turns off statistics for all measurements. This is the default value.

`ON` turns on statistics and displays all statistics for each measurement.

`0` turns off statistics for all measurements.

`1` turns on statistics and displays all statistics for each measurement.

Examples

`MEASUREMENT:STATISTICS:CYCLEMODE OFF` turns off statistics for all measurements.

`MEASUREMENT:STATISTICS:CYCLEMODE?` might return `:MEASUREMENT:STATISTICS:CYCLEMODE 1` indicating that statistics are displayed for each measurement.

NEWpass (No Query Form)

This command (no query form) changes the password that enables access to password protected data. The PASSWord command must be successfully executed before using this command or an execution error will be generated.

Group

Miscellaneous

Syntax

```
NEWpass <QString>
```

Related Commands

PASSWord, *PUD

Arguments

`<QString>` is the new password, which can contain up to 10 characters.

Examples

`NEWPASS"mypassword"` creates a new password (mypassword) for accessing your protected data.

*OPC

This command generates the operation complete message in the Standard Event Status Register (SESR) when all pending commands that generate an OPC message are complete. The *OPC? query places the ASCII character "1" into the output queue when all such OPC commands are complete. The *OPC? response is not available to read until all pending operations finish. For a complete discussion of the use of these registers and the output queue, see Registers and Queues.

The *OPC command allows you to synchronize the operation of the instrument with your application program. For more information, see Synchronization Methods.

Table 2-45: Commands that Generate an OPC Message

Command
ACQuire:STATE ON or ACQuire:STATE RUN or ACQuire:STATE 1 (when ACQuire:STOPAfter is set to SEQuence)
AUTOset, CALibrate:INTERNal, CALibrate:INTERNal:STARt Refer to the Service Manual.
DIAg:STATE, SAVe:IMAGe, SAVe:WAVEform, CH<x>:PRObe:AUTOZero, CH<x>:PRObe:DEGAUSS
FACtory, RECAll:SETUp, *RST, TEKSecure

Group Status and Error

Syntax
```
*OPC
*OPC?
```

Related Commands BUSY?, *WAI

Examples `*OPC` generates the operation complete message in the SESR at the completion of all pending OPC operations.

`*OPC?` might return 1 to indicate that all pending OPC operations are finished.

*OPT? (Query Only)

This query-only command returns a comma separated list of installed options as an arbitrary ASCII string (no quotes) of the form:

<optionCode>:<optionDescription>,<optionCode>:<optionDescription>...

The last section of each entry (the text following the last hyphen) indicates the license type.

If no options are found, NONE is returned.

Group Status and Error

Syntax
```
*OPT?
```

Examples `*OPT?` response (with each option listed on a separate line for clarity):

`5-BW-1000` – `1 GHz` ,

`5-DJA` – Advanced Jitter and Eye Analysis– `NODE` .

PASSWord (No Query Form)

This command (no query form) enables the *PUD and NEWpass set commands. Sending PASSWord without any arguments disables these same commands. Once the password is successfully entered, the *PUD and NEWpass commands are enabled until the instrument is powered off, or until the FACtory command, the PASSWord command with no arguments, or the *RST command is issued.

To change the password, you must first enter the valid password with the PASSWord command and then change to your new password with the NEWpass command. Remember that the password is case sensitive.

Group Miscellaneous

Syntax

```
PASSWord <QString>
```

Related Commands NEWpass, *PUD

Arguments `<QString>` is the password, which can contain up to 10 characters. The factory default password is “XYZZY” and is always valid.

Examples `PASSWORD "XYZZY"` enables the *PUD and NEWPass set commands.

`PASSWORD` disables the `*PUD` and `NEWPass` set commands. You can still use the query version of *PUD.

PAUSe (No Query Form)

This command causes the interface to pause the specified number of seconds before processing any other commands.

Group Miscellaneous

Syntax

```
PAUSe <NR3>
```

Arguments `<NR3>` is the specified number of seconds the interface is to pause before processing any other commands. The pause time is specified as a floating point value in seconds and must be > 0.0 and ≥1800.0.

Examples `PAUSE 10.0e0;:ACQUIRE:NUMACQ` causes the interface to pause 10 seconds before returning the number of acquisitions.

PLOT:ADDNew (No Query Form)

This command adds the specified plot.

Group Plot

Syntax `PLOT:ADDNew <QString>`

Arguments `<QString>` is the specified plot. The argument is of the form "`PLOT<NR1>`", where `<NR1>` ≥ 1.

Examples `PLOT:ADDNEW "PLOT1"` adds PLOT1.

PLOT:DELete (No Query Form)

This command deletes the specified plot.

Group Plot

Syntax `PLOT:DELete <QString>`

Arguments `<QString>` is the specified plot. Argument is of the form "`PLOT<NR1>`, where `<NR1>` is ≥ 1).

Examples `PLOT:DELETE` "PLOT1" deletes PLOT1.

PLOT:LIST? (Query Only)

This command lists all currently defined plots.

Group Plot

Syntax `PLOT:LIST?`

Returns A list of all currently defined plots is returned.

Examples `PLOT:LIST?` might return `:PLOT:LIST PLOT1,PLOT3,PLOT4,PLOT5,PLOT6,PLOT7` listing all currently defined plots.

PLOT:PLOT<x>:BATHtub:BER

This command sets or queries the bathtub BER value.

Group Plot

Syntax

```
PLOT:PLOT<x>:BATHtub:BER <NR1>
PLOT:PLOT<x>:BATHtub:BER?
```

Arguments `<NR1>` is the bathtub BER value.

Examples `PLOT:PLOT1:BATHtub:BER 16` sets the BER value to 16.

`PLOT:PLOT1:BATHtub:BER?` might return `:PLOT:PLOT1:BATHTUB:BER 14` indicating the BER value is 14.

PLOT:PLOT<x>:BATHtub:XAXISUnits

This command sets or queries the X-Axis unit, either unit intervals or seconds.

Group Plot

Syntax

```
PLOT:PLOT<x>:BATHtub:XAXISUnits {UNITIntervals|SECOnds}
PLOT:PLOT<x>:BATHtub:XAXISUnits?
```

Arguments `UNITIntervals` specifies units as unit intervals.

`SECOnds` specifies units as seconds.

Examples `PLOT:PLOT1:BATHtub:XAXISUnits SECONDS` sets the units to seconds.

`PLOT:PLOT1:BATHtub:XAXISUnits?` might return SECONDS.

PLOT:PLOT<x>:LABel:COLor

This command sets or queries the color of the specified trend label. This command/query only applies to Time Trend plots.

Group Plot

Syntax `PLOT:PLOT<x>:LABel:COLor <QString>`

Arguments `<QString>` is the label color. The default color is specified by a quoted empty string, and is the only available color.

Examples `PLOT:PLOT2:LABel:COLor "`"` sets the plot color to the default color.

`PLOT:PLOT2:LABel:COLor?` might return `:PLOT:PLOT2:LABEL:COLOR ""` indicating the plot color is the default color.

PLOT:PLOT<x>:LABel:FONT:BOLD

This command sets or queries the bold state of the specified trend label. This command/query only applies to Time Trend plots.

Group Plot

Syntax `PLOT:PLOT<x>:LABel:FONT:BOLD {<NR1>|OFF|ON}`

Arguments `<NR1>` = 0 disables bold font; any other value turns this feature on.

`OFF` disables bold font.

`ON` enables bold font.

Examples `PLOT:PLOT1:LABEL:FONT:BOLD 1` sets the label to a bold font.

`PLOT:PLOT1:LABEL:FONT:BOLD?` might return `:PLOT:PLOT1:LABEL:FONT:BOLD 1` indicating the label is bold.

PLOT:PLOT<x>:LABel:FONT:ITALic

This command sets or queries the italic state of the specified trend label. This command/query only applies to Time Trend plots.

Group Plot

Syntax `PLOT:PLOT<x>:LABel:FONT:ITALic {<NR1>|OFF|ON}`

Arguments

`<NR1>` = 0 disables italic font; any other value turns this feature on.

`OFF` disables italic font.

`ON` enables italic font.

Examples

`PLOT:PLOT1:LABel:FONT:ITALic 1` sets the font to italic.

`PLOT:PLOT1:LABel:FONT:ITALic?` might return `:PLOT:PLOT1:LABEL:FONT:ITALIC 0` indicating the font in not italic.

PLOT:PLOT<x>:LABel:FONT:SIZE

This command sets or queries the font size of the specified trend label. This command/query only applies to Time Trend plots.

Group

Plot

Syntax

`PLOT:PLOT<x>:LABel:FONT:SIZE <NR1>`

Arguments

`<NR1>` is the font size.

Examples

`PLOT:PLOT1:LABel:FONT:SIZE 12` sets the font size to 12 points.

`PLOT:PLOT1:LABel:FONT:SIZE?` might return `:PLOT:PLOT1:LABEL:FONT:SIZE 72` indicating the font size is 72 points.

PLOT:PLOT<x>:LABel:FONT:TYPE

This command sets or queries the font type of the specified trend label, such as Arial or Times New Roman. This command/query only applies to Time Trend plots.

Group

Plot

Syntax

`PLOT:PLOT<x>:LABel:FONT:TYPE <QString>`

Arguments

`<QString>` is the font type: Times New Roman, Arial, Frutiger LT Std 55 Roman, DejaVu Sans, DejaVu Sans Mono, Frutiger LT Std, Monospace, Sans Serif, Serif, Ubuntu, Ubuntu Condensed, and Ubuntu Mono.

Examples

PLOT:PLOT1:LABel:FONT:TYPE Arial sets the font type to Arial.

PLOT:PLOT1:LABel:FONT:TYPE? might return :PLOT:PLOT1:LABEL:FONT:TYPE "Frutiger LT Std 55 Roman" indicating the font type is Frutiger LT Std 55 Roman.

PLOT:PLOT<x>:LABel:FONT:UNDERline

This command sets or queries the underline state of the specified trend label. This command/query only applies to Time Trend plots.

Group

Plot

Syntax

```
PLOT:PLOT<x>:LABel:FONT:UNDERline {<NR1>|OFF|ON}
```

Arguments

`<NR1>` = 0 disables underline font; any other value turns this feature on.

`OFF` disables underline font.

`ON` enables underline font.

Examples

`PLOT:PLOT1:LABel:FONT:UNDERline 1` set the font to underlined.

`PLOT:PLOT1:LABel:FONT:UNDERline?`
`:PLOT:PLOT1:LABEL:FONT:UNDERLINE 0` indicating the font is underlined.

PLOT:PLOT<x>:LABel:NAMe

This command sets or queries the specified trend's label. This command/query only applies to Time Trend plots.

Group

Plot

Syntax

```
PLOT:PLOT<x>:LABel:NAMe <QString>
```

Arguments

`<QString>` is the label.

Examples

`PLOT:PLOT1:LABel:NAMe "Time Trend number 1"` sets the plot name to Time Trend number 1.

`PLOT:PLOT1:LABel:NAMe?` might return `:PLOT:PLOT1:LABEL:NAME "This is a label test plot"` indicating the label name is This is a label test plot.

PLOT:PLOT<x>:LABel:XPOS

This command sets or queries the x-position of the specified trend label. This command/query only applies to Time Trend plots.

Group

Plot

Syntax

`PLOT:PLOT<x>:LABel:XPOS <NR3>`

Arguments

`<NR3>` is the y-position, in pixels relative to the left edge of the display, of the label.

Examples

`PLOT:PLOT1:LABel:XPOS 200` sets the X position to 200.

`PLOT:PLOT1:LABel:XPOS?` might return `:PLOT:PLOT1:LABEL:XPOS 45.0000` indicating the X position is 45.0 pixels to the right of the left edge of the display.

PLOT:PLOT<x>:LABel:YPOS

This command sets or queries the y-position of the specified trend label. This command/query only applies to Time Trend plots.

Group

Plot

Syntax

`PLOT:PLOT<x>:LABel:YPOS <NR3>`

Arguments

`<NR3>` is the x-position, in pixels relative to the baseline of the waveform, of the label.

Examples

`PLOT:PLOT1:LABel:YPOS 100` sets the Y position to 100.

`PLOT:PLOT1:LABel:YPOS?` might return `:PLOT:PLOT1:LABEL:YPOS 0.0E+0` indicating the Y position of the label is at the baseline of the waveform.

PLOT:PLOT<x>:NUMBins

This command sets or queries the current histogram resolution.

Group Plot

Syntax

```
PLOT:PLOT<x>:NUMBins {TWENtyfive|FIFTY|HUNdred|TWOFifty|
FIVEHundred|TWOThousand|MAXimum}
```

Arguments Arguments are the number of bins.

Examples `PLOT:PLOT4:NUMBins TWENTYFIVE` sets the number of bins to 25.

`PLOT:PLOT4:NUMBins?` might return `:PLOT:PLOT4:NUMBINS TWOFIFTY` indicating the histogram resolution is 250 bins.

PLOT:PLOT<x>:SOUrce<x>

This command sets or queries the plot source.

Group Plot

Syntax

```
PLOT:PLOT<x>:SOUrce<x> MEAS<x>
PLOT:PLOT<x>:SOUrce<x>?
```

Arguments `MEAS<x>` is the specified measurement source for the specified plot.

Examples `PLOT:PLOT1:SOUrce1 MEAS2` sets source 1 of plot 1 to measurement 2.

`PLOT:PLOT1:SOUrce1?` might return `:PLOT:PLOT1:SOURCE1 MEAS1` indicating the specified source of the specified plot is measurement 1.

PLOT:PLOT<x>:SPECtrum:BASE

This command sets or queries the spectrum base. Undefined for non-spectrum plots.

Group Plot

Syntax
```
PLOT:PLOT<x>:SPECtrum:BASE <NR1>
PLOT:PLOT<x>:SPECtrum:BASE?
```

Arguments `<NR1>` is the spectrum base.

Examples `PLOT:PLOT3:SPECtrum:BASE -10` sets the base to -10.

`PLOT:PLOT3:SPECtrum:BASE?` might return `:PLOT:PLOT3:SPECTRUM:BASE -15` indicating the base is -15.

PLOT:PLOT<x>:SPECtrum:DYNRange

This command sets or queries the dynamic range value.

Group Plot

Syntax
```
PLOT:PLOT<x>:SPECtrum:DYNRange <NR3>
PLOT:PLOT<x>:SPECtrum:DYNRange?
```

Arguments `<NR3>` is the dynamic range value.

Examples `PLOT:PLOT3:SPECtrum:DYNRange 150` sets the dynamic range to 150 dB.

`PLOT:PLOT3:SPECtrum:DYNRange?` might return `:PLOT:PLOT3:SPECTRUM:DYNRANGE 100` indicating the dynamic range is 100 dB.

PLOT:PLOT<x>:TYPe

This command returns the current plot type for the selected plot.

Group Plot

Syntax
```
PLOT:PLOT<x>:TYPe {NONE|BATHTUB|EYEDIAGRAM|HISTOGRAM|
PHASENOISE|SPECTRUM|SSCPROFILE|TIEHISTOGRAM|TIETIMETREND|
TIESPECTRUM|TIMETREND|XY|XYZ}
```

Arguments `NONE` does not create a plot.

`BATHTUB` creates a bathtub plot.

EYEDIAGRAM creates an eye diagram.

HISTOGRAM creates a histogram plot.

PHASENOISE creates a phase noise plot.

SPECTRUM creates a spectrum plot.

SSCPROFILE creates a SSC profile plot.

TIEHISTOGRAM creates a TIE histogram plot.

TIESPECTRUM creates a TIE spectrum plot.

TIETIMETREND creates a TIE time trend plot.

TIMETREND creates a time trend plot.

XY creates a XY plot.

XYZ creates a XYZ plot.

Examples

PLOT:PLOT2:TYPe BATHTUB creates a bathtub plot.

PLOT:PLOT2:TYPe? might return :PLOT:PLOT2:TYPE EYEDIAGRAM indicating the plot is an eye diagram.

POWer:ADDNew (No Query Form)

This command adds the specified power measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax

```
POWer:ADDNew “POWER<x>”
```

Examples

POWER:ADDNEW “POWER1” adds POWER1 measurement badge and selects Switching Loss measurement by default.

POWer:DELete (No Query Form)

This command deletes the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax `POWer:DELete "POWER<x>"`

Examples `POWER:DELETE "POWER1"` deletes the POWER1 measurement badge.

POWer:POWer<x>:AUTOSet (No Query Form)

This command executes power autoset for the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax `POWer:POWer<x>:AUTOSet EXECute`

Examples `POWer:POWer1:AUTOSet EXECute` executes the power autoset for the power measurement badge Power 1.

POWer:POWer<x>:CYCLEAmp:INPUTSOurce

This command sets or queries the input source for cycle amplitude measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:CYCLEAmp:INPUTSOurce {CH<x> | MATH<x> | REF<x>}
POWer:POWer<x>:CYCLEAmp:INPUTSOurce?
```

Arguments `CH<x>` = A channel specifier; <x> is 1 through 8 and is limited by the number of FlexChannels in your instrument.

`MATH<x>` = A math waveform specifier; <x> is ≥1.

`REF<x>` = A reference waveform specifier; <x> is ≥1.

Examples `POWer:POWer1:CYCAmp:INPUTSOurce CH1` sets the input source for cycle amplitude measurement as CH1 for the power measurement badge Power 1.

POWer:POWer<x>:CYCLEBase:INPUTSOurce

This command sets or queries the input source for cycle base measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:CYCLEBase:INPUTSOurce {CH<x> | MATH<x> | REF<x>}
POWer:POWer<x>:CYCLEBase:INPUTSOurce?
```

Arguments `CH<x>` = A channel specifier; <x> is 1 through 8 and is limited by the number of FlexChannels in your instrument.

`MATH<x>` = A math waveform specifier; <x> is ≥1.

`REF<x>` = A reference waveform specifier; <x> is ≥1.

Examples `POWer:POWer1:CYCLEBase:INPUTSOurce CH2` sets the input source for cycle base measurement as CH2 for the power measurement badge Power 1.

POWer:POWer<x>:CYCLEMAX:INPUTSOurce

This command sets or queries the input source for cycle maximum measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:CYCLEMAX:INPUTSOurce {CH<x> | MATH<x> | REF<x>}
POWer:POWer<x>:CYCLEMAX:INPUTSOurce?
```

Arguments

`CH<x>` = A channel specifier; <x> is 1 through 8 and is limited by the number of FlexChannels in your instrument.

`MATH<x>` = A math waveform specifier; <x> is ≥1.

`REF<x>` = A reference waveform specifier; <x> is ≥1.

Examples

`POWer:POWer1:CYCMAX:INPUTSOurce CH2` sets the input source for cycle maximum measurement as CH2 for the power measurement badge Power 1.

POWer:POWer<x>:CYCLEMin:INPUTSOurce

This command sets or queries the input source for cycle minimum measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax

```
POWer:POWer<x>:CYCLEMin:INPUTSOurce {CH<x> | MATH<x> | REF<x>}
POWer:POWer<x>:CYCLEMin:INPUTSOurce?
```

Arguments

`CH<x>` = A channel specifier; <x> is 1 through 8 and is limited by the number of FlexChannels in your instrument.

`MATH<x>` = A math waveform specifier; <x> is ≥1.

`REF<x>` = A reference waveform specifier; <x> is ≥1.

Examples

`POWer:POWer1:CYCMin:INPUTSOurce CH2` sets the input source for cycle minimum measurement as CH2 for the power measurement badge Power 1.

POWer:POWer<x>:CYCLEPKPK:INPUTSOurce

This command sets or queries the input source for cycle peak-to-peak measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:CYCLEPKPK:INPUTSOurce {CH<x> | MATH<x> | REF<x>}
POWer:POWer<x>:CYCLEPKPK:INPUTSOurce?
```

Arguments `CH<x>` = A channel specifier; <x> is 1 through 8 and is limited by the number of FlexChannels in your instrument.

`MATH<x>` = A math waveform specifier; <x> is ≥1.

`REF<x>` = A reference waveform specifier; <x> is ≥1.

Examples `POWer:POWer1:CYCPKPK:INPUTSOurce REF1` sets the input source for cycle peak-to-peak measurement as REF1 for the power measurement badge Power 1.

POWer:POWer<x>:CYCLETop:INPUTSOurce

This command sets or queries the input source for cycle top measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:CYCLETop:INPUTSOurce {CH<x> | MATH<x> | REF<x>}
POWer:POWer<x>:CYCLETop:INPUTSOurce?
```

Arguments `CH<x>` = A channel specifier; <x> is 1 through 8 and is limited by the number of FlexChannels in your instrument.

`MATH<x>` = A math waveform specifier; <x> is ≥1.

`REF<x>` = A reference waveform specifier; <x> is ≥1.

Examples `POWer:POWer1:CYCTop:INPUTSOurce REF3` sets the input source for cycle top measurement as REF3 for the power measurement badge Power 1.

POWer:POWer<x>:DIDT:INPUTSOurce

This command sets or queries the input source for di/dt measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:DIDT:INPUTSOurce {CH<x> | MATH<x> | REF<x>}
POWer:POWer<x>:DIDT:INPUTSOurce?
```

Arguments `CH<x>` = A channel specifier; <x> is 1 through 8 and is limited by the number of FlexChannels in your instrument.

`MATH<x>` = A math waveform specifier; <x> is ≥1.

`REF<x>` = A reference waveform specifier; <x> is ≥1.

Examples `POWer:POWer1:DIDT:INPUTSOurce CH6` sets the input source for di/dt measurement as channel 2.

POWer:POWer<x>:DIDT:SOURCEEDGEType

This command sets or queries the edge type for di/dt measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:DIDT:SOURCEEDGEType {RISE | FALL}
POWer:POWer<x>:DIDT:SOURCEEDGEType?
```

Examples `POWer:POWer1:DIDT:SOURCEEDGEType RISE` sets the edge type as rise for the di/dt measurement.

POWer:POWer<x>:DVDT:INPUTSOurce

This command sets or queries the input source for dv/dt measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:DVDT:INPUTSOurce {CH<x> | MATH<x> | REF<x>}
POWer:POWer<x>:DVDT:INPUTSOurce?
```

Arguments

`CH<x>` = A channel specifier; <x> is 1 through 8 and is limited by the number of FlexChannels in your instrument.

`MATH<x>` = A math waveform specifier; <x> is ≥1.

`REF<x>` = A reference waveform specifier; <x> is ≥1.

Examples `POWer:POWer1:DVDT:INPUTSOurce CH1` sets the input source for dv/dt measurement as channel 1.

POWer:POWer<x>:DVDT:SOURCEEDGEType

This command sets or queries the edge type for dv/dt measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:DVDT:SOURCEEDGEType {RISE | FALL}
POWer:POWer<x>:DVDT:SOURCEEDGEType?
```

Examples `POWer:POWer1:DVDT:SOURCEEDGEType RISE` sets the edge type as rise for the dv/dt measurement.

POWer:POWer<x>:FREQUENCY:EDGe

This command sets or queries the edge type for frequency measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:FREQUENCY:EDGe {RISE | FALL}
POWer:POWer<x>:FREQUENCY:EDGe?
```

Examples `POWer:POWer1:FREQUENCY:EDGe FALL` sets the edge type as fall for the frequency measurement.

POWer:POWer<x>:FREQUENCY:INPUTSOurce

This command sets or queries the input source for frequency measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:FREQUENCY:INPUTSOurce {CH<x> | MATH<x> | REF<x>}
POWer:POWer<x>:FREQUENCY:INPUTSOurce?
```

Arguments `CH<x>` = A channel specifier; <x> is 1 through 8 and is limited by the number of FlexChannels in your instrument.

`MATH<x>` = A math waveform specifier; <x> is ≥1.

`REF<x>` = A reference waveform specifier; <x> is ≥1.

Examples `POWer:POWer1:FREQUENCY:INPUTSOurce REF1` sets the input source for frequency measurement as REF1.

POWer:POWer<x>:GATing

This command sets or queries the gating type for the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:GATing {NONE | CURSOR | SCREEN | LOGIC}
POWer:POWer<x>:GATing?
```

Arguments

NONE makes measurement across the entire waveform record.

CURSOR makes measurements on that portion of the waveform between the cursors. Selecting Cursors opens cursors on the measurement source. Set the cursors so that the waveform area of interest is in between the cursors.

SCREEN takes measurements on that portion of the waveform shown in the display. When Zoom is on, the display is the zoom window.

LOGIC takes measurements only when the logical state of a specified waveform is true.

Examples

POWer:POWer1:GATing CURSOR sets the gating type for the power measurement badge 1 as Cursor.

POWer:POWer2:GATing? might return SCREEN indicating the configured gating type for the power measurement badge 2.

POWer:POWer<x>:GATing:GLOBal

This command sets or queries the gating settings for the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:GATing:GLOBal {ON | OFF 1 | 0}
POWer:POWer<x>:GATing:GLOBal?
```

Arguments `1 | ON` selects the gating settings as Global.

`0 | OFF` selects the gating settings as Local.

Examples `POWer:POWer1:GATing:GLOBal 1` selects the gating settings as Global for the power measurement badge 1.

POWer:POWer<x>:HARMONICS:CLASs

This command sets or queries the class type for the harmonics measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:HARMONICS:CLASS {CLASSA | CLASSB | CLASSC |
CLASSD}
POWer:POWer<x>:HARMONICS:CLASs?
```

Related Commands POWer:POWer<x>:HARMONICS:STANDard

Examples `POWer:POWer1:HARMONICS:CLASs CLASSB` sets the class type for harmonics measurement as CLASSB.

POWer:POWer<x>:HARMONICS:CMEThod

This command sets or queries the fundamental current method for the harmonics measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:HARMONICS:CMEThod {RATed | MEASured}
POWer:POWer<x>:HARMONICS:CMEThod?
```

Related Commands POWer:POWer<x>:HARMONICS:STANDard

Arguments `RATed`: select to use the standard input current values in the measurement.

`MEASured`: select to use the measured the input current values in the measurement.

Examples `POWer:POWer1:HARMONICS:CMEThod RATed` sets the current method for harmonics measurement as rated.

POWer:POWer<x>:HARMONICS:FUNDCURRent

This command sets or queries the fundamental current value for the harmonics measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax
```
POWer:POWer<x>:HARMONICS:FUNDCURRent <NR1>
POWer:POWer<x>:HARMONICS:FUNDCURRent?
```

Related Commands POWer:POWer<x>:HARMONICS:CLASs

Arguments `<NR1>` ranges from 0 to 16.

Examples `POWer:POWer<x>:HARMONICS:FUNDCURRent 1.5` sets the fundamental current for the harmonics measurement as 1.5.

POWer:POWer<x>:HARMONICS:HORDer

This command sets or queries the order value for the harmonics measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:HARMONICS:HORDer <NR1>
POWer:POWer<x>:HARMONICS:HORDer?
```

Arguments

`<NR1>` ranges from 40 to 100.

Examples

`POWer:POWer1:HARMONICS:HORDer 70` sets the order value for the harmonics measurement as 70.

POWer:POWer<x>:HARMONICS:HSOURce

This command sets or queries the source type for the harmonics measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax

```
POWer:POWer<x>:HARMONICS:HSOURce {CURRent | VOLTage}
POWer:POWer<x>:HARMONICS:HSOURce?
```

Related Commands

POWer:POWer<x>:HARMONICS:STANDard

Examples

`POWer:POWer1:HARMONICS:HSOURce CURRent` sets the source as current for the harmonics measurement.

POWer:POWer<x>:HARMONICS:IPOWer

This command sets or queries the input power value for the harmonics measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax

```
POWer:POWer<x>:HARMONICS:IPOWer <NR1>
POWer:POWer<x>:HARMONICS:IPOWer?
```

Related Commands POWer:POWer<x>:HARMONICS:CLASs

Arguments `<NR1>` ranges from 0 to 600.

Examples `POWer:POWer<x>:HARMONICS:IPOWer 150` sets the input power for the harmonics measurement as 150.

POWer:POWer<x>:HARMONICS:ISOURce

This command sets or queries the current source for SOA measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:HARMONICS:ISOURce {CH<x> | MATH<x> | REF<x>}
POWer:POWer<x>:HARMONICS:ISOURce?
```

Arguments `CH<x>` = A channel specifier; <x> is 1 through 8 and is limited by the number of FlexChannels in your instrument.

`MATH<x>` = A math waveform specifier; <x> is ≥1.

`REF<x>` = A reference waveform specifier; <x> is ≥1.

Examples `POWer:POWer1:HARMONICS:ISOURce CH2` sets the current source for harmonics measurement as channel 2.

POWer:POWer<x>:HARMONICS:ODDEVen

This command sets or queries the harmonics value analysis format in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:HARMONICS:ODDEVen {ALL | ODD | EVEN}
POWer:POWer<x>:HARMONICS:ODDEVen?
```

Arguments

`ALL` to display all harmonics values

`ODD` to display only the odd values of harmonics

`EVEN` to display only the even values of harmonics

Examples

`POWer:POWer1:HARMONICS:ODDEVen ALL` sets the harmonics value analysis format as to display all result values.

POWer:POWer<x>:HARMONICS:PFACtor

This command sets or queries the value of power factor for the harmonics measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax

```
POWer:POWer<x>:HARMONICS:PFACtor <NR1>
POWer:POWer<x>:HARMONICS:PFACtor?
```

Related Commands

POWer:POWer<x>:HARMONICS:CLASs

Arguments

`<NR1>` ranges from 0 to 1.

Examples

`POWer:POWer<x>:HARMONICS:PFACtor 0.7` sets the power factor for the harmonics measurement as 0.7.

POWer:POWer<x>:HARMONICS:POWERRating

This command sets or queries the power level for the harmonics measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax
```
POWer:POWer<x>:HARMONICS:POWERRating {HIGH | LOW}
POWer:POWer<x>:HARMONICS:POWERRating?
```

Related Commands POWer:POWer<x>:HARMONICS:STANDard

Examples `POWer:POWer1:HARMONICS:POWERRating HIGH` sets the power level for the harmonics measurement as high.

POWer:POWer<x>:HARMONICS:RCURRent

This command sets or queries the rated current for the harmonics measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax
```
POWer:POWer<x>:HARMONICS:RCURRent <NR1>
POWer:POWer<x>:HARMONICS:RCURRent?
```

Related Commands POWer:POWer<x>:HARMONICS:CMEThod

Arguments `<NR1>` ranges from 0 to 100

Examples `POWer:POWer1:HARMONICS:RCURRent 1.5` sets the rated current for the harmonics measurement as 1.5.

POWer:POWer<x>:HARMONICS:STANDard

This command sets or queries the test mode for harmonics measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax

```
POWer:POWer<x>:HARMONICS:STANDard {NONe | IEC | MIL | AM14}
POWer:POWer<x>:HARMONICS:STANDard?
```

Arguments

`NONe` = No standard

`IEC` = IEC 61000-3-2 standard

`MIL` = MIL-STD-1399 standard

`AM14` = AM14 standard

Examples

`POWer:POWer1:HARMONICS:STANDard AM14` sets the test mode for harmonics measurement as AM14.

POWer:POWer<x>:HARMONICS:UNITs

This command sets or queries the harmonics results units in the specified power measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax

```
POWer:POWer<x>:HARMONICS:UNITs {LOG | LINear}
POWer:POWer<x>:HARMONICS:UNITs?
```

Examples

`POWer:POWer1:HARMONICS:UNITs LOG` sets the harmonics results units as logarithmic.

POWer:POWer<x>:HARMONICS:VSOURce

This command sets or queries the voltage source for SOA measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax

```
POWer:POWer<x>:HARMONICS:VSOURce {CH<x> | MATH<x> | REF<x>}
POWer:POWer<x>:HARMONICS:VSOURce?
```

Arguments

`CH<x>` = A channel specifier; <x> is 1 through 8 and is limited by the number of FlexChannels in your instrument.

`MATH<x>` = A math waveform specifier; <x> is ≥1.

`REF<x>` = A reference waveform specifier; <x> is ≥1.

Examples

`POWer:POWer1:HARMONICS:VSOURce CH1` sets the voltage source for harmonics measurement as channel 1.

POWer:POWer<x>:LABel

This command sets or queries the label for the specified power measurement. As the label can contain non 7-bit ASCII text, it is stored in Percent Encoding format. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax

```
POWer:POWer<x>:LABel <QString>
POWer:POWer<x>:LABel?
```

Examples

`POWer:POWer1:LABel "NewMeasurement"` sets the custom measurement name for the measurement in Power 1 badge as New Measurement.

POWer:POWer<x>:LINERIPPLE:INPUTSOurce

This command sets or queries the input source for line ripple measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax

```
POWer:POWer<x>:LINERIPPLE:INPUTSOurce {CH<x> | MATH<x> |
REF<x>}
POWer:POWer<x>:LINERIPPLE:INPUTSOurce?
```

Arguments

CH<x> = A channel specifier; <x> is 1 through 8 and is limited by the number of FlexChannels in your instrument.

MATH<x> = A math waveform specifier; <x> is ≥1.

REF<x> = A reference waveform specifier; <x> is ≥1.

Examples

`POWer:POWer1:LINERIPPLE:INPUTSOurce CH1` sets channel 1 as the input source for line ripple measurement of power measurement badge Power 1.

POWer:POWer<x>:LINERIPPLE:LFREQuency

This command sets or queries the frequency present for line ripple measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax

```
POWer:POWer<x>:LINERIPPLE:LFREQuency {FIFty | SIXty |
FOURHundred}
POWer:POWer<x>:LINERIPPLE:LFREQuency?
```

Examples

`POWer:POWer1:LINERIPPLE:LFREQuency FIFTY` sets the frequency present for line ripple measurement as 50 Hz.

POWer:POWer<x>:NDUTYCYCLE:EDGEType

This command sets or queries the clock edge type for negative duty cycle measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax

```
POWer:POWer<x>:NDUTYCYCLE:EDGEType {RISE | FALL | BOTH}
POWer:POWer<x>:NDUTYCYCLE:EDGEType?
```

Examples

`POWer:POWer1:NDUTYCYCLE:EDGEType RISE` sets the clock edge type as rise for the negative duty cycle measurement.

POWer:POWer<x>:NDUTYCYCLE:INPUTSOurce

This command sets or queries the input source for negative duty cycle measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax

```
POWer:POWer<x>:NDUTYCYCLE:INPUTSOurce {CH<x> | MATH<x> |
REF<x>}
POWer:POWer<x>:NDUTYCYCLE:INPUTSOurce?
```

Arguments

`CH<x>` = A channel specifier; <x> is 1 through 8 and is limited by the number of FlexChannels in your instrument.

`MATH<x>` = A math waveform specifier; <x> is ≥1.

`REF<x>` = A reference waveform specifier; <x> is ≥1.

Examples

`POWer:POWer1:NDUTYCYCLE:INPUTSOurce CH3` sets the input source for negative duty cycle measurement as CH3 for the power measurement badge Power 1.

POWer:POWer<x>:NPULSEWIDTH:INPUTSOurce

This command sets or queries the input source for negative pulse width measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax

```
POWer:POWer<x>:NPULSEWIDTH:INPUTSOurce {CH<x> | MATH<x> |
REF<x>}
POWer:POWer<x>:NPULSEWIDTH:INPUTSOurce?
```

Arguments

`CH<x>` = A channel specifier; <x> is 1 through 8 and is limited by the number of FlexChannels in your instrument.

`MATH<x>` = A math waveform specifier; <x> is ≥1.

`REF<x>` = A reference waveform specifier; <x> is ≥1.

Examples

`POWer:POWer1:NPULSEWIDTH:INPUTSOurce CH1` sets the input source for negative pulse width measurement as channel 1.

POWer:POWer<x>:PDUTYCYCLE:EDGEType

This command sets or queries the clock edge type for positive duty cycle measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax

```
POWer:POWer<x>:PDUTYCYCLE:EDGEType {RISE | FALL | BOTH}
POWer:POWer<x>:PDUTYCYCLE:EDGEType?
```

Examples

`POWer:POWer1:PDUTYCYCLE:EDGEType BOTH` sets the clock edge type as both (rise and fall) for the positive duty cycle measurement.

POWer:POWer<x>:PDUTYCYCLE:INPUTSOurce

This command sets or queries the input source for positive duty cycle measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax
```
POWer:POWer<x>:PDUTYCYCLE:INPUTSOurce {CH<x> | MATH<x> |
REF<x>}
POWer:POWer<x>:PDUTYCYCLE:INPUTSOurce?
```

Arguments
`CH<x>` = A channel specifier; <x> is 1 through 8 and is limited by the number of FlexChannels in your instrument.

`MATH<x>` = A math waveform specifier; <x> is ≥1.

`REF<x>` = A reference waveform specifier; <x> is ≥1.

Examples
`POWer:POWer1:PDUTYCYCLE:INPUTSOurce CH4` sets the input source for positive duty cycle measurement as channel 4.

POWer:POWer<x>:PERIOD:EDGe

This command sets or queries the edge type for period measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions
Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group
Power

Syntax
```
POWer:POWer<x>:PERIOD:EDGe {RISE | FALL}
POWer:POWer<x>:PERIOD:EDGe?
```

Examples
`POWer:POWer1:PERIOD:EDGe RISE` sets the edge type as rise for the period measurement.

POWer:POWer<x>:PERIOD:INPUTSOurce

This command sets or queries the input source for period measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions
Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group
Power

Syntax

```
POWer:POWer<x>:PERIOD:INPUTSOurce {CH<x> | MATH<x> | REF<x>}
POWer:POWer<x>:PERIOD:INPUTSOurce?
```

Arguments

CH<x> = A channel specifier; <x> is 1 through 8 and is limited by the number of FlexChannels in your instrument.

MATH<x> = A math waveform specifier; <x> is ≥1.

REF<x> = A reference waveform specifier; <x> is ≥1.

Examples

`POWer:POWer1:PERIOD:INPUTSOurce CH6` sets the input source for period measurement as channel 6.

POWer:POWer<x>:POWERQUALITY:CCYCles

This command sets or queries the calculate cycles over full cycles settings for the specified power quality measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax

```
POWer:POWer<x>:POWERQUALITY:CCYCles {ON | OFF 1 | 0}
POWer:POWer<x>:POWERQUALITY:CCYCles?
```

Arguments

`1 | ON` selects the calculate cycles over full cycles.

`0 | OFF` unselects the calculate cycles over full cycles.

Examples

`POWer:POWer1:POWERQUALITY:CCYCles 1` selects the calculate cycles over full cycles for the power measurement badge 1.

POWer:POWer<x>:POWERQUALITY:FREFerence

This command sets or queries the frequency reference type for power quality measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:POWERQUALITY:FREFerence {VOLTage | CURRent}
POWer:POWer<x>:POWERQUALITY:FREFerence?
```

Examples `POWer:POWer1:POWERQUALITY:FREFerence CURRent` sets the frequency reference type for power quality measurement as current.

POWer:POWer<x>:POWERQUALITY:ISOURce

This command sets or queries the current source for power quality measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:POWERQUALITY:ISOURce {CH<x> | MATH<x> | REF<x>}
POWer:POWer<x>:POWERQUALITY:ISOURce?
```

Arguments `CH<x>` = A channel specifier; <x> is 1 through 8 and is limited by the number of FlexChannels in your instrument.

`MATH<x>` = A math waveform specifier; <x> is ≥1.

`REF<x>` = A reference waveform specifier; <x> is ≥1.

Examples `POWer:POWer1:POWERQUALITY:VSOURce CH2` sets the current source for power quality measurement as channel 2.

POWer:POWer<x>:POWERQUALITY:VSOURce

This command sets or queries the voltage source for power quality measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:POWERQUALITY:VSOURce {CH<x> | MATH<x> | REF<x>}
POWer:POWer<x>:POWERQUALITY:VSOURce?
```

Arguments

`CH<x>` = A channel specifier; <x> is 1 through 8 and is limited by the number of FlexChannels in your instrument.

`MATH<x>` = A math waveform specifier; <x> is ≥1.

`REF<x>` = A reference waveform specifier; <x> is ≥1.

Examples

`POWer:POWer1:POWERQUALITY:VSOURce CH1` sets the voltage source for power quality measurement as channel 1.

POWer:POWer<x>:PPULSEWIDTH:INPUTSOurce

This command sets or queries the input source for positive pulse width measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax

```
POWer:POWer<x>:PPULSEWIDTH:INPUTSOurce {CH<x> | MATH<x> |
REF<x>}
POWer:POWer<x>:PPULSEWIDTH:INPUTSOurce?
```

Arguments

`CH<x>` = A channel specifier; <x> is 1 through 8 and is limited by the number of FlexChannels in your instrument.

`MATH<x>` = A math waveform specifier; <x> is ≥1.

`REF<x>` = A reference waveform specifier; <x> is ≥1.

Examples

`POWer:POWer1:PPULSEWIDTH:INPUTSOurce CH5` sets channel 5 as the input source for the positive pulse width measurement.

POWer:POWer<x>:REFLevels:ABSolute:FALLHigh

This command sets or queries the falling edge for high reference level in absolute units for the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:REFLevels:ABSolute:FALLHigh <NR1>
POWer:POWer<x>:REFLevels:ABSolute:FALLHigh?
```

Related Commands POWer:POWer<x>:REFLevels:METHod, POWer:POWer<x>:REFLevels:ABSolute:TYPE

Arguments `<NR1>` ranges from –40000 to 40000

Examples `POWer:POWer1:REFLevels:ABSolute:FALLHigh 1` sets the high reference level for falling edge as 1 volt.

POWer:POWer<x>:REFLevels:ABSolute:FALLLow

This command sets or queries the falling edge for low reference level in absolute units for the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:REFLevels:ABSolute:FALLLow <NR1>
POWer:POWer<x>:REFLevels:ABSolute:FALLLow?
```

Related Commands POWer:POWer<x>:REFLevels:METHod, POWer:POWer<x>:REFLevels:ABSolute:TYPE

Arguments `<NR1>` ranges from –40000 to 40000

Examples `POWer:POWer1:REFLevels:ABSolute:FALLLow -1` sets the low reference level for falling edge as –1 volt.

POWer:POWer<x>:REFLevels:ABSolute:FALLMid

This command sets or queries the falling edge for mid reference level in absolute units for the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:REFLevels:ABSolute:FALLMid <NR1>
POWer:POWer<x>:REFLevels:ABSolute:FALLMid?
```

Related Commands POWer:POWer<x>:REFLevels:METHod, POWer:POWer<x>:REFLevels:ABSolute:TYPE

Arguments `<NR1>` ranges from -40000 to 40000

Examples `POWer:POWer1:REFLevels:ABSolute:FALLMid 0` sets the mid reference level for falling edge as 0 volt.

POWer:POWer<x>:REFLevels:ABSolute:HYSTeresis

This command sets or queries the absolute hysteresis value for the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:REFLevels:ABSolute:HYSTeresis <NR1>
POWer:POWer<x>:REFLevels:ABSolute:HYSTeresis?
```

Related Commands POWer:POWer<x>:REFLevels:METHod

Arguments `<NR1>` ranges from 0.0000005 to 10

Examples `POWer:POWer1:REFLevels:ABSolute:HYSTeresis 10` sets the reference level hysteresis value in absolute to 10.

POWer:POWer<x>:REFLevels:ABSolute:RISEHigh

This command sets or queries the rising edge for high reference level in absolute units for the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:REFLevels:ABSolute:RISEHigh <NR1>
POWer:POWer<x>:REFLevels:ABSolute:RISEHigh?
```

Related Commands POWer:POWer<x>:REFLevels:METHod, POWer:POWer<x>:REFLevels:ABSolute:TYPE

Arguments `<NR1>` ranges from –40000 to 40000

Examples `POWer:POWer1:REFLevels:ABSolute:RISEHigh 1` sets the high reference level for rising edge as 1 volt.

POWer:POWer<x>:REFLevels:ABSolute:RISELow

This command sets or queries the rising edge for low reference level in absolute units for the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:REFLevels:ABSolute:RISELow <NR1>
POWer:POWer<x>:REFLevels:ABSolute:RISELow?
```

Related Commands POWer:POWer<x>:REFLevels:METHod, POWer:POWer<x>:REFLevels:ABSolute:TYPE

Arguments <NR1> ranges from –40000 to 40000

Examples `POWer:POWer1:REFLevels:ABSolute:RISELow -1` sets the low reference level for rising edge as –1 volt.

POWer:POWer<x>:REFLevels:ABSolute:RISEMid

This command sets or queries the rising edge for mid reference level in absolute units for the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:REFLevels:ABSolute:RISEMid <NR1>
POWer:POWer<x>:REFLevels:ABSolute:RISEMid?
```

Related Commands POWer:POWer<x>:REFLevels:METHod, POWer:POWer<x>:REFLevels:ABSolute:TYPE

Arguments <NR1> ranges from –40000 to 40000

Examples `POWer:POWer1:REFLevels:ABSolute:RISEMid 0` sets the mid reference level for rising edge as 0 volt.

POWer:POWer<x>:REFLevels:ABSolute:TYPE

This command sets or queries the type of measurement levels when reference level is set to absolute for the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax
```
POWer:POWer<x>:REFLevels:ABSolute:TYPE {SAME | UNIQue}
POWer:POWer<x>:REFLevels:ABSolute:TYPE?
```

Related Commands POWer:POWer<x>:REFLevels:METHod

Arguments `SAME`: select when the rising edge and falling edge reference levels are same.

`UNIQue`: select when the rising edge and falling edge reference levels are different.

Examples `POWer:POWer1:REFLevels:ABSolute:TYPE UNIQue` sets the type of measurement levels as unique for the specified power measurement badge.

POWer:POWer<x>:REFLevels:BASETop

This command sets or queries the reference level base top method for the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax
```
POWer:POWer<x>:REFLevels:BASETop {AUTO | MINMax | MEANhistogram
| MODEhistogram | EYEhistogram}
POWer:POWer<x>:REFLevels:BASETop?
```

Related Commands POWer:POWer<x>:REFLevels:METHod

Examples `POWer:POWer1:REFLevels:BASETop AUTO` sets the reference level base top method as auto for the power measurement badge 1.

POWer:POWer<x>:REFLevels:METHod

This command sets or queries the method to configure reference level values for the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax
```
POWer:POWer<x>:REFLevels:METHod {PERCent | ABSolute}
POWer:POWer<x>:REFLevels:METHod?
```

Examples
`POWer:POWer1:REFLevels:METHod PERCent` sets the method to configure reference level values as percentage for the power measurement badge 1.

POWer:POWer<x>:REFLevels:PERCent:FALLHigh

This command sets or queries the falling edge for high reference level in percentage for the specified power measurement badge. The power measurement badge is specified by x.

Conditions
Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group
Power

Syntax
```
POWer:POWer<x>:REFLevels:PERCent:FALLHigh <NR1>
POWer:POWer<x>:REFLevels:PERCent:FALLHigh?
```

Related Commands
POWer:POWer<x>:REFLevels:METHod, POWer:POWer<x>:REFLevels:PERCent:TYPE

Arguments
`<NR1>` ranges from 1 to 99.

Examples
`POWer:POWer1:REFLevels:PERCent:FALLHigh 1` sets the high reference level for falling edge as 1 percentage.

POWer:POWer<x>:REFLevels:PERCent:FALLLow

This command sets or queries the falling edge for low reference level in percentage for the specified power measurement badge. The power measurement badge is specified by x.

Conditions
Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group
Power

Syntax
```
POWer:POWer<x>:REFLevels:PERCent:FALLLow <NR1>
POWer:POWer<x>:REFLevels:PERCent:FALLLow?
```

Related Commands POWer:POWer<x>:REFLevels:METHod, POWer:POWer<x>:REFLevels:PERCent:TYPE

Arguments `<NR1>` ranges from 1 to 99.

Examples `POWer:POWer1:REFLevels:PERCent:FALLLow 0` sets the low reference level for falling edge as 0 percentage.

POWer:POWer<x>:REFLevels:PERCent:FALLMid

This command sets or queries the falling edge for mid reference level in percentage for the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax
```
POWer:POWer<x>:REFLevels:PERCent:FALLMid <NR1>
POWer:POWer<x>:REFLevels:PERCent:FALLMid?
```

Related Commands POWer:POWer<x>:REFLevels:METHod, POWer:POWer<x>:REFLevels:PERCent:TYPE

Arguments `<NR1>` ranges from 1 to 99.

Examples `POWer:POWer1:REFLevels:PERCent:FALLMid 50` sets the mid reference level for falling edge as 50 percentage.

POWer:POWer<x>:REFLevels:PERCent:HYSTeresis

This command sets or queries the hysteresis in percentage for the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:REFLevels:PERCent:HYSTeresis <NR1>
POWer:POWer<x>:REFLevels:PERCent:HYSTeresis?
```

Related Commands POWer:POWer<x>:REFLevels:METHod

Arguments `<NR1>` ranges from 1 to 99.

Examples `POWer:POWer1:REFLevels:PERCent:HYSTeresis 25` sets the hysteresis as 25 percentage.

POWer:POWer<x>:REFLevels:PERCent:RISEHigh

This command sets or queries the rising edge for high reference level in percentage for the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:REFLevels:PERCent:RISEHigh <NR1>
POWer:POWer<x>:REFLevels:PERCent:RISEHigh?
```

Related Commands POWer:POWer<x>:REFLevels:METHod, POWer:POWer<x>:REFLevels:PERCent:TYPE

Arguments `<NR1>` ranges from 1 to 99.

Examples `POWer:POWer1:REFLevels:PERCent:RISEHigh 85` sets the high reference level for rising edge as 85 percentage.

POWer:POWer<x>:REFLevels:PERCent:RISELow

This command sets or queries the rising edge for low reference level in percentage for the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax
```
POWer:POWer<x>:REFLevels:PERCent:RISELow <NR1>
POWer:POWer<x>:REFLevels:PERCent:RISELow?
```

Related Commands POWer:POWer<x>:REFLevels:METHod, POWer:POWer<x>:REFLevels:PERCent:TYPE

Arguments `<NR1>` ranges from 1 to 99.

Examples `POWer:POWer1:REFLevels:PERCent:RISELow 10` sets the low reference level for rising edge as 10 percentage.

POWer:POWer<x>:REFLevels:PERCent:RISEMid

This command sets or queries the rising edge for mid reference level in percentage for the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax
```
POWer:POWer<x>:REFLevels:PERCent:RISEMid <NR1>
POWer:POWer<x>:REFLevels:PERCent:RISEMid?
```

Related Commands POWer:POWer<x>:REFLevels:METHod,

POWer:POWer<x>:REFLevels:PERCent:TYPE

Arguments `<NR1>` ranges from 1 to 99.

Examples `POWer:POWer1:REFLevels:PERCent:RISEMid 55` sets the mid reference level for rising edge as 55 percentage.

POWer:POWer<x>:REFLevels:PERCent:TYPE

This command sets or queries the reference levels for the specified power measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax

```
POWer:POWer<x>:REFLevels:PERCent:TYPE {TENNinety | TWENtyeighty
| CUSTom}
POWer:POWer<x>:REFLevels:PERCent:TYPE?
```

Related Commands

POWer:POWer<x>:REFLevels:METHod, POWer:POWer<x>:REFLevels:PERCent:FALLHigh, POWer:POWer<x>:REFLevels:PERCent:FALLLow, POWer:POWer<x>:REFLevels:PERCent:FALLMid, POWer:POWer<x>:REFLevels:PERCent:RISEHigh, POWer:POWer<x>:REFLevels:PERCent:RISELow, POWer:POWer<x>:REFLevels:PERCent:RISEMid,

Arguments

`TENNinety` to set the low reference levels as 10% and high reference levels as 90%

`TWENtyeighty` to set the low reference levels as 20% and high reference levels as 80%

`CUSTom` to set the custom low, high, and mid reference levels for rising and falling edges

Examples

`POWer:POWer1:REFLevels:PERCent:TYPE TENNinety` sets the low reference levels as 10% and high reference levels as 90% for the power measurement badge 1.

POWer:POWer<x>:RESUlts:ALLAcqs:MAXimum? (Query Only)

This command queries the maximum value of all acquisitions for the measurement parameter in the specified power measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax

```
POWer:POWer<x>:RESUlts:ALLAcqs:MAXimum? <QString>
```

Arguments

`<QString>` = parameters of the measurements. The details of the parameters for the Power measurements are listed below:

For Power Quality measurement, the parameters are "TRUEPWR" | "APPPWR" | "REPWR" | "PWRFACTOR" | "PHASE" | "PWRFREQ" | "ICFACTOR" | "VCFACTOR" | "IRMS" | "VRMS".

For Switching Loss measurement, the parameters are "TONENRG" | "TONLOSS" | "TOFFENRG" | "TOFFLOSS" | "CONDENRG" | "CONDLOSS" | "TTLLOSS" | "TTLENRG".

For dV by dt measurement, the parameter is “DVBYDT”.

For dI by dt measurement, the parameter is “DIBYDT”.

For SOA measurement, the parameter is “SOAHITSCNT”.

For Line Ripple measurement, the parameters are “LRIPRMS” | “LRIPPKPK”.

For Switching Ripple measurement, the parameters are “SWRIPRMS” | “SWRIPPKPK”.

For Cycle Period measurement, the parameters is “PRIOD”.

For Cycle Frequency measurement, the parameters is “FREQ”.

For Positive Duty Cycle measurement, the parameters is “PDUTY”.

For Negative Duty Cycle measurement, the parameters is “NDUTY”.

For Positive Pulse Width measurement, the parameters is “PPULSE”.

For Negative Pulse Width measurement, the parameters is “NPULSE”.

For Cycle Amplitude measurement, the parameters is “AMPL”.

For Cycle Peak–Peak measurement, the parameters is “PKPK”.

For Cycle Top measurement, the parameters is “HIGH”.

For Cycle Base measurement, the parameters is “LOW”.

For Cycle Max measurement, the parameters is “MAX”.

For Cycle Min measurement, the parameters is “MIN”.

Examples

`POWer:POWer1:RESUlts:CURRentacq:MAXimum? "TONEnrg"` might return 9.91E+37, indicating the maximum value of Ton Energy for all acquisitions.

POWer:POWer<x>:RESUlts:ALLAcqs:MEAN? (Query Only)

This command queries the mean value of all acquisitions for the measurement parameter in the specified power measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax

```
POWer:POWer<x>:RESUlts:ALLAcqs:MEAN? <QString>
```

Arguments

`<QString>` = parameters of the measurements. The details of the parameters for the Power measurements are listed below:

For Power Quality measurement, the parameters are "TRUEPWR" | "APPPWR" | "REPWR" | "PWRFACTOR" | "PHASE" | "PWRFREQ" | "ICFACTOR" | "VCFACTOR" | "IRMS" | "VRMS".

For Switching Loss measurement, the parameters are "TONENRG" | "TONLOSS" | "TOFFENRG" | "TOFFLOSS" | "CONDENRG" | "CONDLOSS" | "TTLLOSS" | "TTLENRG".

For dV by dt measurement, the parameter is “DVBYDT”.

For dI by dt measurement, the parameter is “DIBYDT”.

For SOA measurement, the parameter is “SOAHITSCNT”.

For Line Ripple measurement, the parameters are “LRIPRMS” | “LRIPPKPK”.

For Switching Ripple measurement, the parameters are “SWRIPRMS” | “SWRIPPKPK”.

For Cycle Period measurement, the parameters is “PRIOD”.

For Cycle Frequency measurement, the parameters is “FREQ”.

For Positive Duty Cycle measurement, the parameters is “PDUTY”.

For Negative Duty Cycle measurement, the parameters is “NDUTY”.

For Positive Pulse Width measurement, the parameters is “PPULSE”.

For Negative Pulse Width measurement, the parameters is “NPULSE”.

For Cycle Amplitude measurement, the parameters is “AMPL”.

For Cycle Peak–Peak measurement, the parameters is “PKPK”.

For Cycle Top measurement, the parameters is “HIGH”.

For Cycle Base measurement, the parameters is “LOW”.

For Cycle Max measurement, the parameters is “MAX”.

For Cycle Min measurement, the parameters is “MIN”.

Examples `POWer:POWer1:RESUlts:ALLAcqs:MEAN? "TruePwr"` might return 38.7856097255943E–9, indicating the mean value of true power for all acquisitions.

POWer:POWer<x>:RESUlts:ALLAcqs:MINimum? (Query Only)

This command queries the minimum value of all acquisitions for the measurement parameter in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax `POWer:POWer<x>:RESUlts:ALLAcqs:MINimum? <QString>`

Arguments `<QString>` = parameters of the measurements. The details of the parameters for the Power measurements are listed below:

For Power Quality measurement, the parameters are "TRUEPWR" | "APPPWR" | "REPWR" | "PWRFACTOR" | "PHASE" | "PWRFREQ" | "ICFACTOR" | "VCFACTOR" | "IRMS" | "VRMS".

For Switching Loss measurement, the parameters are "TONENRG" | "TONLOSS" | "TOFFENRG" | "TOFFLOSS" | "CONDENRG" | "CONDLOSS" | "TTLLOSS" | "TTLENRG".

For dV by dt measurement, the parameter is “DVBYDT”.

For dI by dt measurement, the parameter is “DIBYDT”.

For SOA measurement, the parameter is “SOAHITSCNT”.

For Line Ripple measurement, the parameters are “LRIPRMS” | “LRIPPKPK”.

For Switching Ripple measurement, the parameters are “SWRIPRMS” | “SWRIPPKPK”.

For Cycle Period measurement, the parameters is “PRIOD”.

For Cycle Frequency measurement, the parameters is “FREQ”.

For Positive Duty Cycle measurement, the parameters is “PDUTY”.

For Negative Duty Cycle measurement, the parameters is “NDUTY”.

For Positive Pulse Width measurement, the parameters is “PPULSE”.

For Negative Pulse Width measurement, the parameters is “NPULSE”.

For Cycle Amplitude measurement, the parameters is “AMPL”.

For Cycle Peak–Peak measurement, the parameters is “PKPK”.

For Cycle Top measurement, the parameters is “HIGH”.

For Cycle Base measurement, the parameters is “LOW”.

For Cycle Max measurement, the parameters is “MAX”.

For Cycle Min measurement, the parameters is “MIN”.

Examples

`POWer:POWer1:RESUlts:CURRentacq:MINimum? "TruePwr"` might return 5.1307829019093E–9, indicating the minimum value of true power for all acquisitions.

POWer:POWer<x>:RESUlts:ALLAcqs:PK2PK? (Query Only)

This command queries the peak-to-peak value of all acquisitions for the measurement parameter in the specified power measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax

`POWer:POWer<x>:RESUlts:ALLAcqs:PK2PK? <QString>`

Arguments

`<QString>` = parameters of the measurements. The details of the parameters for the Power measurements are listed below:

For Power Quality measurement, the parameters are "TRUEPWR" | "APPPWR" | "REPWR" | "PWRFACTOR" | "PHASE" | "PWRFREQ" | "ICFACTOR" | "VCFACTOR" | "IRMS" | "VRMS".

For Switching Loss measurement, the parameters are "TONENRG" | "TONLOSS" | "TOFFENRG" | "TOFFLOSS" | "CONDENRG" | "CONDLOSS" | "TTLLOSS" | "TTLENRG".

For dV by dt measurement, the parameter is “DVBYDT”.

For dI by dt measurement, the parameter is “DIBYDT”.

For SOA measurement, the parameter is “SOAHITSCNT”.

For Line Ripple measurement, the parameters are “LRIPRMS” | “LRIPPKPK”.

For Switching Ripple measurement, the parameters are “SWRIPRMS” | “SWRIPPKPK”.

For Cycle Period measurement, the parameters is “PRIOD”.

For Cycle Frequency measurement, the parameters is “FREQ”.

For Positive Duty Cycle measurement, the parameters is “PDUTY”.

For Negative Duty Cycle measurement, the parameters is “NDUTY”.

For Positive Pulse Width measurement, the parameters is “PPULSE”.

For Negative Pulse Width measurement, the parameters is “NPULSE”.

For Cycle Amplitude measurement, the parameters is “AMPL”.

For Cycle Peak–Peak measurement, the parameters is “PKPK”.

For Cycle Top measurement, the parameters is “HIGH”.

For Cycle Base measurement, the parameters is “LOW”.

For Cycle Max measurement, the parameters is “MAX”.

For Cycle Min measurement, the parameters is “MIN”.

Examples

`POWer:POWer1:RESUlts:CURRentacq:PK2PK? “TONLoss”` might return 9.91E+37, indicating the peak-to-peak value of Ton Energy for all acquisitions.

POWer:POWer<x>:RESUlts:ALLAcqs:POPUlation? (Query Only)

This command queries the population (number of complete cycles) of all acquisitions for the measurement parameter in the specified power measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax

```
POWer:POWer<x>:RESUlts:ALLAcqs:POPUlation? <QString>
```

Arguments

`<QString>` = parameters of the measurements. The details of the parameters for the Power measurements are listed below:

For Power Quality measurement, the parameters are "TRUEPWR" | "APPPWR" | "REPWR" | "PWRFACTOR" | "PHASE" | "PWRFREQ" | "ICFACTOR" | "VCFACTOR" | "IRMS" | "VRMS".

For Switching Loss measurement, the parameters are "TONENRG" | "TONLOSS" | "TOFFENRG" | "TOFFLOSS" | "CONDENRG" | "CONDLOSS" | "TTLLOSS" | "TTLENRG".

For dV by dt measurement, the parameter is “DVBYDT”.

For dI by dt measurement, the parameter is “DIBYDT”.

For SOA measurement, the parameter is “SOAHITSCNT”.

For Line Ripple measurement, the parameters are “LRIPRMS” | “LRIPPKPK”.

For Switching Ripple measurement, the parameters are “SWRIPRMS” | “SWRIPPKPK”.

For Cycle Period measurement, the parameters is “PRIOD”.

For Cycle Frequency measurement, the parameters is “FREQ”.

For Positive Duty Cycle measurement, the parameters is “PDUTY”.

For Negative Duty Cycle measurement, the parameters is “NDUTY”.

For Positive Pulse Width measurement, the parameters is “PPULSE”.

For Negative Pulse Width measurement, the parameters is “NPULSE”.

For Cycle Amplitude measurement, the parameters is “AMPL”.

For Cycle Peak–Peak measurement, the parameters is “PKPK”.

For Cycle Top measurement, the parameters is “HIGH”.

For Cycle Base measurement, the parameters is “LOW”.

For Cycle Max measurement, the parameters is “MAX”.

For Cycle Min measurement, the parameters is “MIN”.

Examples

`POWer:POWer1:RESUlts:CURRentacq:POPUlation? “CondEnrg”` might return 9.91E+37, indicating the population (number of complete cycles) of conduction energy for all acquisitions.

POWer:POWer<x>:RESUlts:ALLAcqs:STDDev? (Query Only)

This command queries the standard deviation value of all acquisitions for the measurement parameter in the specified power measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax

```
POWer:POWer<x>:RESUlts:ALLAcqs:STDDev? <QString>
```

Arguments

`<QString>` = parameters of the measurements. The details of the parameters for the Power measurements are listed below:

For Power Quality measurement, the parameters are "TRUEPWR" | "APPPWR" | "REPWR" | "PWRFACTOR" | "PHASE" | "PWRFREQ" | "ICFACTOR" | "VCFACTOR" | "IRMS" | "VRMS".

For Switching Loss measurement, the parameters are "TONENRG" | "TONLOSS" | "TOFFENRG" | "TOFFLOSS" | "CONDENRG" | "CONDLOSS" | "TTLLOSS" | "TTLENRG".

For dV by dt measurement, the parameter is “DVBYDT”.

For dI by dt measurement, the parameter is “DIBYDT”.

For SOA measurement, the parameter is “SOAHITSCNT”.

For Line Ripple measurement, the parameters are “LRIPRMS” | “LRIPPKPK”.

For Switching Ripple measurement, the parameters are “SWRIPRMS” | “SWRIPPKPK”.

For Cycle Period measurement, the parameters is “PRIOD”.

For Cycle Frequency measurement, the parameters is “FREQ”.

For Positive Duty Cycle measurement, the parameters is “PDUTY”.

For Negative Duty Cycle measurement, the parameters is “NDUTY”.

For Positive Pulse Width measurement, the parameters is “PPULSE”.

For Negative Pulse Width measurement, the parameters is “NPULSE”.

For Cycle Amplitude measurement, the parameters is “AMPL”.

For Cycle Peak–Peak measurement, the parameters is “PKPK”.

For Cycle Top measurement, the parameters is “HIGH”.

For Cycle Base measurement, the parameters is “LOW”.

For Cycle Max measurement, the parameters is “MAX”.

For Cycle Min measurement, the parameters is “MIN”.

Examples `POWer:POWer1:RESUlts:CURRentacq:STDDev? “TONLoss”` might return 9.91E+37, indicating the standard deviation value of Ton Energy for all acquisitions.

POWer:POWer<x>:RESUlts:CURRentacq:F1MAG? (Query Only)

This command queries the first harmonics magnitude value for the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:RESUlts:CURRentacq:F1MAG? "harmonics"
```

Examples `POWer:POWer1:RESUlts:CURRentacq:F1MAG? "harmonics"` might return 1.4151834770090, indicating the value of the first harmonics magnitude for the power measurement badge 1.

POWer:POWer<x>:RESUlts:CURRentacq:F3MAG? (Query Only)

This command queries the third harmonics magnitude value for the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:RESUlts:CURRentacq:F3MAG? "harmonics"
```

Examples `POWer:POWer1:RESUlts:CURRentacq:f3MAG? "harmonics"` might return 234.0187140104806E-6, indicating the value of third harmonics magnitude for the power measurement badge 1.

POWer:POWer<x>:RESUlts:CURRentacq:FREQUENCY? (Query Only)

This command queries the fundamental frequency for the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax `POWer:POWer<x>:RESUlts:CURRentacq:FREQUENCY? "harmonics"`

Examples `POWer:POWer1:RESUlts:CURRentacq:FREQUENCY? "harmonics"` might return 100.0067656931537E+3, indicating the fundamental frequency for the power measurement badge 1.

POWer:POWer<x>:RESUlts:CURRentacq:IRMS? (Query Only)

This command queries the RMS current value for the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax `POWer:POWer<x>:RESUlts:CURRentacq:IRMS? "harmonics"`

Examples `POWer:POWer1:RESUlts:CURRentacq:IRMS? "harmonics"` might return 1.4149980733491, indicating the RMS current value for the power measurement badge 1.

POWer:POWer<x>:RESUlts:CURRentacq:MAXimum? (Query Only)

This command queries the maximum value of the current acquisition for the measurement parameter in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax

`POWer:POWer<x>:RESUlts:CURRentacq:MAXimum? <QString>`

Arguments

`<QString>` = parameters of the measurements. The details of the parameters for the Power measurements are listed below:

For Power Quality measurement, the parameters are "TRUEPWR" | "APPPWR" | "REPWR" | "PWRFACTOR" | "PHASE" | "PWRFREQ" | "ICFACTOR" | "VCFACTOR" | "IRMS" | "VRMS".

For Switching Loss measurement, the parameters are "TONENRG" | "TONLOSS" | "TOFFENRG" | "TOFFLOSS" | "CONDENRG" | "CONDLOSS" | "TTLLOSS" | "TTLENRG".

For dV by dt measurement, the parameter is “DVBYDT”.

For dI by dt measurement, the parameter is “DIBYDT”.

For SOA measurement, the parameter is “SOAHITSCNT”.

For Line Ripple measurement, the parameters are “LRIPRMS” | “LRIPPKPK”.

For Switching Ripple measurement, the parameters are “SWRIPRMS” | “SWRIPPKPK”.

For Cycle Period measurement, the parameters is “PRIOD”.

For Cycle Frequency measurement, the parameters is “FREQ”.

For Positive Duty Cycle measurement, the parameters is “PDUTY”.

For Negative Duty Cycle measurement, the parameters is “NDUTY”.

For Positive Pulse Width measurement, the parameters is “PPULSE”.

For Negative Pulse Width measurement, the parameters is “NPULSE”.

For Cycle Amplitude measurement, the parameters is “AMPL”.

For Cycle Peak–Peak measurement, the parameters is “PKPK”.

For Cycle Top measurement, the parameters is “HIGH”.

For Cycle Base measurement, the parameters is “LOW”.

For Cycle Max measurement, the parameters is “MAX”.

For Cycle Min measurement, the parameters is “MIN”.

Examples

`POWer:POWer1:RESUlts:CURRentacq:MAXimum? "TONEnrg"` might return 9.91E+37, indicating the maximum value of Ton Energy for the current acquisition.

POWer:POWer<x>:RESUlts:CURRentacq:MEAN? (Query Only)

This command queries the mean value of the current acquisition for the measurement parameter in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:RESUlts:CURRentacq:MEAN? <QString>
```

Arguments `<QString>` = parameters of the measurements. The details of the parameters for the Power measurements are listed below:

For Power Quality measurement, the parameters are "TRUEPWR" | "APPPWR" | "REPWR" | "PWRFACTOR" | "PHASE" | "PWRFREQ" | "ICFACTOR" | "VCFACTOR" | "IRMS" | "VRMS".

For Switching Loss measurement, the parameters are "TONENRG" | "TONLOSS" | "TOFFENRG" | "TOFFLOSS" | "CONDENRG" | "CONDLOSS" | "TTLLOSS" | "TTLENRG".

For dV by dt measurement, the parameter is “DVBYDT”.

For dI by dt measurement, the parameter is “DIBYDT”.

For SOA measurement, the parameter is “SOAHITSCNT”.

For Line Ripple measurement, the parameters are “LRIPRMS” | “LRIPPKPK”.

For Switching Ripple measurement, the parameters are “SWRIPRMS” | “SWRIPPKPK”.

For Cycle Period measurement, the parameters is “PRIOD”.

For Cycle Frequency measurement, the parameters is “FREQ”.

For Positive Duty Cycle measurement, the parameters is “PDUTY”.

For Negative Duty Cycle measurement, the parameters is “NDUTY”.

For Positive Pulse Width measurement, the parameters is “PPULSE”.

For Negative Pulse Width measurement, the parameters is “NPULSE”.

For Cycle Amplitude measurement, the parameters is “AMPL”.

For Cycle Peak–Peak measurement, the parameters is “PKPK”.

For Cycle Top measurement, the parameters is “HIGH”.

For Cycle Base measurement, the parameters is “LOW”.

For Cycle Max measurement, the parameters is “MAX”.

For Cycle Min measurement, the parameters is “MIN”.

Examples `POWer:POWer1:RESUlts:CURRentacq:MEAN? "TruePwr"` might return 38.7856097255943E–9, indicating the mean value of true power for the current acquisition.

POWer:POWer<x>:RESUlts:CURRentacq:MINimum? (Query Only)

This command queries the minimum value of the current acquisition for the measurement parameter in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:RESUlts:CURRentacq:MINimum?  <QString>
```

Arguments `<QString>` = parameters of the measurements. The details of the parameters for the Power measurements are listed below:

For Power Quality measurement, the parameters are "TRUEPWR" | "APPPWR" | "REPWR" | "PWRFACTOR" | "PHASE" | "PWRFREQ" | "ICFACTOR" | "VCFACTOR" | "IRMS" | "VRMS".

For Switching Loss measurement, the parameters are "TONENRG" | "TONLOSS" | "TOFFENRG" | "TOFFLOSS" | "CONDENRG" | "CONDLOSS" | "TTLLOSS" | "TTLENRG".

For dV by dt measurement, the parameter is “DVBYDT”.

For dI by dt measurement, the parameter is “DIBYDT”.

For SOA measurement, the parameter is “SOAHITSCNT”.

For Line Ripple measurement, the parameters are “LRIPRMS” | “LRIPPKPK”.

For Switching Ripple measurement, the parameters are “SWRIPRMS” | “SWRIPPKPK”.

For Cycle Period measurement, the parameters is “PRIOD”.

For Cycle Frequency measurement, the parameters is “FREQ”.

For Positive Duty Cycle measurement, the parameters is “PDUTY”.

For Negative Duty Cycle measurement, the parameters is “NDUTY”.

For Positive Pulse Width measurement, the parameters is “PPULSE”.

For Negative Pulse Width measurement, the parameters is “NPULSE”.

For Cycle Amplitude measurement, the parameters is “AMPL”.

For Cycle Peak–Peak measurement, the parameters is “PKPK”.

For Cycle Top measurement, the parameters is “HIGH”.

For Cycle Base measurement, the parameters is “LOW”.

For Cycle Max measurement, the parameters is “MAX”.

For Cycle Min measurement, the parameters is “MIN”.

Examples

`POWer:POWer1:RESUlts:CURRentacq:MINimum? "TruePwr"` might return 5.1307829019093E–9, indicating the minimum value of true power for the current acquisition.

POWer:POWer<x>:RESUlts:CURRentacq:PK2PK? (Query Only)

This command queries the peak-to-peak value of the current acquisition for the measurement parameter in the specified power measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax

```
POWer:POWer<x>:RESUlts:CURRentacq:PK2PK? <QString>
```

Arguments

`<QString>` = parameters of the measurements. The details of the parameters for the Power measurements are listed below:

For Power Quality measurement, the parameters are "TRUEPWR" | "APPPWR" | "REPWR" | "PWRFACTOR" | "PHASE" | "PWRFREQ" | "ICFACTOR" | "VCFACTOR" | "IRMS" | "VRMS".

For Switching Loss measurement, the parameters are "TONENRG" | "TONLOSS" | "TOFFENRG" | "TOFFLOSS" | "CONDENRG" | "CONDLOSS" | "TTLLOSS" | "TTLENRG".

For dV by dt measurement, the parameter is “DVBYDT”.

For dI by dt measurement, the parameter is “DIBYDT”.

For SOA measurement, the parameter is “SOAHITSCNT”.

For Line Ripple measurement, the parameters are “LRIPRMS” | “LRIPPKPK”.

For Switching Ripple measurement, the parameters are “SWRIPRMS” | “SWRIPPKPK”.

For Cycle Period measurement, the parameters is “PRIOD”.

For Cycle Frequency measurement, the parameters is “FREQ”.

For Positive Duty Cycle measurement, the parameters is “PDUTY”.

For Negative Duty Cycle measurement, the parameters is “NDUTY”.

For Positive Pulse Width measurement, the parameters is “PPULSE”.

For Negative Pulse Width measurement, the parameters is “NPULSE”.

For Cycle Amplitude measurement, the parameters is “AMPL”.

For Cycle Peak–Peak measurement, the parameters is “PKPK”.

For Cycle Top measurement, the parameters is “HIGH”.

For Cycle Base measurement, the parameters is “LOW”.

For Cycle Max measurement, the parameters is “MAX”.

For Cycle Min measurement, the parameters is “MIN”.

Examples

`POWer:POWer1:RESUlts:CURRentacq:PK2PK? “TONLoss”` might return 9.91E+37, indicating the peak-to-peak value of Ton Energy for the current acquisition.

POWer:POWer<x>:RESUlts:CURRentacq:POHCL? (Query Only)

This command queries the limit of partial odd harmonic current for the specified power measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax

```
POWer:POWer<x>:RESUlts:CURRentacq:POHCL? "harmonics"
```

Examples `POWer:POWer1:RESUlts:CURRentacq:POHCL? "harmonics"` might return 251.3529788962128E-3, indicating the limit of partial odd harmonic current for the power measurement badge 1.

POWer:POWer<x>:RESUlts:CURRentacq:POHCM? (Query Only)

This command queries the measured value of partial odd harmonic current for the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:RESUlts:CURRentacq:POHCM? "harmonics"
```

Examples `POWer:POWer1:RESUlts:CURRentacq:POHCM? "harmonics"` might return 515.422617782020E-6, indicating the measured value of partial odd harmonic current for the power measurement badge 1.

POWer:POWer<x>:RESUlts:CURRentacq:POHCS? (Query Only)

This command queries the status of partial odd harmonic current for the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:RESUlts:CURRentacq:POHCS? "harmonics"
```

Examples `POWer:POWer1:RESUlts:CURRentacq:POHCS? "harmonics"` might return “Pass”, indicating the status of partial odd harmonic current for the power measurement badge 1.

POWer:POWer<x>:RESUlts:CURRentacq:POPUlation? (Query Only)

This command queries the population (number of complete cycles) of the current acquisition for the measurement parameter in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:RESUlts:CURRentacq:POPUlation? <QString>
```

Arguments `<QString>` = parameters of the measurements. The details of the parameters for the Power measurements are listed below:

For Power Quality measurement, the parameters are "TRUEPWR" | "APPPWR" | "REPWR" | "PWRFACTOR" | "PHASE" | "PWRFREQ" | "ICFACTOR" | "VCFACTOR" | "IRMS" | "VRMS".

For Switching Loss measurement, the parameters are "TONENRG" | "TONLOSS" | "TOFFENRG" | "TOFFLOSS" | "CONDENRG" | "CONDLOSS" | "TTLLOSS" | "TTLENRG".

For dV by dt measurement, the parameter is “DVBYDT”.

For dI by dt measurement, the parameter is “DIBYDT”.

For SOA measurement, the parameter is “SOAHITSCNT”.

For Line Ripple measurement, the parameters are “LRIPRMS” | “LRIPPKPK”.

For Switching Ripple measurement, the parameters are “SWRIPRMS” | “SWRIPPKPK”.

For Cycle Period measurement, the parameters is “PRIOD”.

For Cycle Frequency measurement, the parameters is “FREQ”.

For Positive Duty Cycle measurement, the parameters is “PDUTY”.

For Negative Duty Cycle measurement, the parameters is “NDUTY”.

For Positive Pulse Width measurement, the parameters is “PPULSE”.

For Negative Pulse Width measurement, the parameters is “NPULSE”.

For Cycle Amplitude measurement, the parameters is “AMPL”.

For Cycle Peak–Peak measurement, the parameters is “PKPK”.

For Cycle Top measurement, the parameters is “HIGH”.

For Cycle Base measurement, the parameters is “LOW”.

For Cycle Max measurement, the parameters is “MAX”.

For Cycle Min measurement, the parameters is “MIN”.

Examples `POWer:POWer1:RESUlts:CURRentacq:POPUlation? “CondEnrg”` might return 9.91E+37, indicating the population (number of complete cycles) of conduction energy for the current acquisition.

POWer:POWer<x>:RESUlts:CURRentacq:RMS? (Query Only)

This command queries the RMS value of the source selected for the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax `POWer:POWer<x>:RESUlts:CURRentacq:RMS? "harmonics"`

Examples `POWer:POWer1:RESUlts:CURRentacq:RMS? "harmonics"` might return 1.4143420437461, indicating the RMS value of the source selected for the power measurement badge 1.

POWer:POWer<x>:RESUlts:CURRentacq:STATUS? (Query Only)

This command queries the status of the measurement for the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax `POWer:POWer<x>:RESUlts:CURRentacq:STATUS? "harmonics"`

Examples `POWer:POWer1:RESUlts:CURRentacq:STATUS? "harmonics"` might return “Pass”, indicating that the measurement has passed according to the standard for the power measurement badge 1.

POWer:POWer<x>:RESUlts:CURRentacq:STDDev? (Query Only)

This command queries the standard deviation value of the current acquisition for the measurement parameter in the specified power measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax

```
POWer:POWer<x>:RESUlts:CURRentacq:STDDev?<QString>
```

Arguments

`<QString>` = parameters of the measurements. The details of the parameters for the Power measurements are listed below:

For Power Quality measurement, the parameters are "TRUEPWR" | "APPPWR" | "REPWR" | "PWRFACTOR" | "PHASE" | "PWRFREQ" | "ICFACTOR" | "VCFACTOR" | "IRMS" | "VRMS".

For Switching Loss measurement, the parameters are "TONENRG" | "TONLOSS" | "TOFFENRG" | "TOFFLOSS" | "CONDENRG" | "CONDLOSS" | "TTLLOSS" | "TTLENRG".

For dV by dt measurement, the parameter is “DVBYDT”.

For dI by dt measurement, the parameter is “DIBYDT”.

For SOA measurement, the parameter is “SOAHITSCNT”.

For Line Ripple measurement, the parameters are “LRIPRMS” | “LRIPPKPK”.

For Switching Ripple measurement, the parameters are “SWRIPRMS” | “SWRIPPKPK”.

For Cycle Period measurement, the parameters is “PRIOD”.

For Cycle Frequency measurement, the parameters is “FREQ”.

For Positive Duty Cycle measurement, the parameters is “PDUTY”.

For Negative Duty Cycle measurement, the parameters is “NDUTY”.

For Positive Pulse Width measurement, the parameters is “PPULSE”.

For Negative Pulse Width measurement, the parameters is “NPULSE”.

For Cycle Amplitude measurement, the parameters is “AMPL”.

For Cycle Peak–Peak measurement, the parameters is “PKPK”.

For Cycle Top measurement, the parameters is “HIGH”.

For Cycle Base measurement, the parameters is “LOW”.

For Cycle Max measurement, the parameters is “MAX”.

For Cycle Min measurement, the parameters is “MIN”.

Examples `POWer:POWer1:RESUlts:CURRentacq:STDDev? “TONLoss”` might return 9.91E+37, indicating the standard deviation value of Ton Energy for the current acquisition.

POWer:POWer<x>:RESUlts:CURRentacq:THDF? (Query Only)

This command queries the total harmonic distortion (fundamental) value for the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax `POWer:POWer<x>:RESUlts:CURRentacq:THDF? "harmonics"`

Examples `POWer:POWer1:RESUlts:CURRentacq:THDF? "harmonics"` might return 96.9846996670887E-3, indicating the value of total harmonic distortion (fundamental) for the power measurement badge 1.

POWer:POWer<x>:RESUlts:CURRentacq:THDR? (Query Only)

This command queries the total harmonic distortion (RMS) value for the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax `POWer:POWer<x>:RESUlts:CURRentacq:THDR? "harmonics"`

Examples `POWer:POWer1:RESUlts:CURRentacq:THDR? "harmonics"` might return 107.1384597967292E-3, indicating the value of total harmonic distortion (fundamental) for the power measurement badge 1.

POWer:POWer<x>:RESUlts:CURRentacq:TRPWR? (Query Only)

This command queries the true power value for the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:RESUlts:CURRentacq:TRPWR? "harmonics"
```

Examples `POWer:POWer1:RESUlts:CURRentacq:TRPWR? "harmonics"` might return 2.0002612633993, indicating the true power value for the power measurement badge 1.

POWer:POWer<x>:RESUlts:CURRentacq:VRMS? (Query Only)

This command queries the RMS voltage value for the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:RESUlts:CURRentacq:VRMS? "harmonics"
```

Examples `POWer:POWer1:RESUlts:CURRentacq:VRMS? "harmonics"` might return 1.4117680233354, indicating the RMS voltage value for the power measurement badge 1.

POWer:POWer<x>:SOA:ISOURce

This command sets or queries the current source for SOA measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:SOA:ISOURce {CH<x> | MATH<x> | REF<x>}
POWer:POWer<x>:SOA:ISOURce?
```

Arguments `CH<x>` = A channel specifier; <x> is 1 through 8 and is limited by the number of FlexChannels in your instrument.

`MATH<x>` = A math waveform specifier; <x> is ≥1.

`REF<x>` = A reference waveform specifier; <x> is ≥1.

Examples `POWer:POWer1:SOA:ISOURce CH2` sets the current source for SOA measurement as channel 2.

POWer:POWer<x>:SOA:POINT

This command sets or queries the Y co-ordinate value for SOA mask.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:SOA:POINT <QString> <NR1>
POWer:POWer<x>:SOA:POINT <QString>?
```

Arguments `<QString>` = 1Y | 2Y | 3Y | 4Y | 5Y | 6Y | 7Y | 8Y | 9Y | 10Y | 11Y | 12Y | 13Y | 14Y | 15Y | 16Y | 17Y | 18Y | 19Y | 20Y | 21Y | 22Y | 23Y | 24Y | 25Y | 26Y | 27Y | 28Y | 29Y | 30Y | 31Y | 32Y

`<NR1>` ranges from –5000 to 5000

Examples `POWer:POWer1:SOA:POINT6Y 12` sets the 12Y co-ordinate value for SOA mask as 4.

POWer:POWer<x>:SOA:POINT

This command sets or queries the X co-ordinate value for SOA mask.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:SOA:POINT <QString> <NR1>
POWer:POWer<x>:SOA:POINT <QSstring>?
```

Arguments `<QString>` = 1X | 2X | 3X | 4X | 5X | 6X | 7X | 8X | 9X | 10X | 11X | 12X | 13X | 14X | 15X | 16X | 17X | 18X | 19X | 20X | 21X | 22X | 23X | 24X | 25X | 26X | 27X | 28X | 29X | 30X | 31X | 32X

`<NR1>` ranges from –40000 to 40000

Examples `POWer:POWer1:SOA:POINT13X 4` sets the 13X co-ordinate value for SOA mask as 4.

POWer:POWer<x>:SOA:RECAllmask

This command recalls or queries the recall mask file name in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:SOA:RECAllmask
POWer:POWer<x>:SOA:RECAllmask?
```

Examples `POWer:POWer1:SOA:RECAllmask?` might return Tek000.msk, indicating the file name of the mask that will be recalled.

POWer:POWer<x>:SOA:RECAllmask:FILEName

This command sets or queries the file name for saving SOA mask file name in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:SOA:RECAllmask:FILEName
POWer:POWer<x>:SOA:RECAllmask:FILEName?
```

Examples

```
POWer:POWer1:SOA:RECAllmask:FILEName
```

POWer:POWer<x>:SOA:SAVemask

This command saves the mask file as per the name configured and at the configured path or queries the mask file name, path, and file type for the SOA measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:SOA:SAVemask
POWer:POWer<x>:SOA:SAVemask?
```

Related Commands POWer:POWer<x>:SOA:SAVemask:FILEName

Examples `POWer:POWer1:SOA:SAVemask` saves the mask file of SOA measurement as the configured file name at the configured path.

POWer:POWer<x>:SOA:SAVemask:AUTOINCrement

This command sets or queries the state of auto-increment for saved SOA mask file names in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax
```
POWer:POWer<x>:SOA:SAVemask:AUTOINCrement
POWer:POWer<x>:SOA:SAVemask:AUTOINCrement?
```

POWer:POWer<x>:SOA:SAVemask:FILEName

This command sets or queries the mask file name for SOA measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax
```
POWer:POWer<x>:SOA:SAVemask:FILEName
POWer:POWer<x>:SOA:SAVemask:FILEName?
```

Examples `POWer:POWer1:SOA:SAVemask:FILEName “Tek001.msk”` sets the mask file name for SOA measurement as Tek001.msk.

POWer:POWer<x>:SOA:SAVemask:FOLDer

This command sets or queries the mask file folder path for SOA measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax
```
POWer:POWer<x>:SOA:SAVemask:FOLDer
POWer:POWer<x>:SOA:SAVemask:FOLDer?
```

Examples `POWer:POWer1:SOA:SAVemask:FOLDer “C:”` sets the mask file folder path for SOA measurement as C drive.

POWer:POWer<x>:SOA:VSOURce

This command sets or queries the voltage source for SOA measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:SOA:VSOURce {CH<x> | MATH<x> | REF<x>}
POWer:POWer<x>:SOA:VSOURce?
```

Arguments `CH<x>` = A channel specifier; <x> is 1 through 8 and is limited by the number of FlexChannels in your instrument.

`MATH<x>` = A math waveform specifier; <x> is ≥1.

`REF<x>` = A reference waveform specifier; <x> is ≥1.

Examples `POWer:POWer1:SOA:VSOURce CH1` sets the voltage source for SOA measurement as channel 1.

POWer:POWer<x>:SWITCHINGLOSS:DEVICEType

This command sets or queries the conduction calculation method for switching loss measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:SWITCHINGLOSS:DEVICEType {MOSFET | BJT}
POWer:POWer<x>:SWITCHINGLOSS:DEVICEType?
```

Examples `POWer:POWer1:SWITCHINGLOSS:DEVICEType MOSFET` sets the conduction calculation method as mosfet for switching loss measurement of the power measurement badge Power 1.

POWer:POWer<x>:SWITCHINGLOSS:GATESOurce

This command sets or queries the gate voltage (V_g) for the switching loss measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax

```
POWer:POWer<x>:SWITCHINGLOSS:GATESOurce {CH<x> | MATH<x> |
REF<x>}
POWer:POWer<x>:SWITCHINGLOSS:GATESOurce?
```

Arguments

CH<x> = A channel specifier; <x> is 1 through 8 and is limited by the number of FlexChannels in your instrument.

MATH<x> = A math waveform specifier; <x> is ≥1.

REF<x> = A reference waveform specifier; <x> is ≥1.

Examples

`POWer:POWer1:SWITCHINGLOSS:GATESOurce MATH1` sets the gate voltage (Vg) for switching loss measurement of the specified power measurement source as MATH1.

`POWer:POWer2:SWITCHINGLOSS:VSOURce?` might return MATH3 indicating the gate voltage (Vg) for switching loss measurement of Power 2 power measurement badge.

POWer:POWer<x>:SWITCHINGLOSS:ILEVELAbs

This command sets or queries the current level (Ton-Start & Stop) in absolute units for switching loss measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax

```
POWer:POWer<x>:SWITCHINGLOSS:ILEVELAbs <NR1>
POWer:POWer<x>:SWITCHINGLOSS:ILEVELAbs?
```

Related Commands POWer:POWer<x>:SWITCHINGLOSS:LEVELUNIts

Arguments `<NR1>` ranges from –100 to 100

Examples `POWer:POWer1:SWITCHINGLOSS:ILEVELAbs 1.2` sets the current level (Ton-Start & Stop) value as 1.2 for the switching loss measurement in the power measurement badge 1.

POWer:POWer<x>:SWITCHINGLOSS:ILEVELPct

This command sets or queries the current level (Ton-Start & Stop) in percentage for switching loss measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:SWITCHINGLOSS:ILEVELPct <NR1>
POWer:POWer<x>:SWITCHINGLOSS:ILEVELPct?
```

Related Commands POWer:POWer<x>:SWITCHINGLOSS:LEVELUNIts

Arguments `<NR1>` ranges from 0.0001 to 90

Examples `POWer:POWer1:SWITCHINGLOSS:ILEVELPct 6` sets the current level (Ton-Start & Stop) value as 6 percentage for the switching loss measurement in the power measurement badge 1.

POWer:POWer<x>:SWITCHINGLOSS:ISOURce

This command sets or queries the current source for the switching loss measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax
```
POWer:POWer<x>:SWITCHINGLOSS:ISOURce {CH<x> | MATH<x> | REF<x>}
POWer:POWer<x>:SWITCHINGLOSS:ISOURce?
```

Arguments

`CH<x>` = A channel specifier; <x> is 1 through 8 and is limited by the number of FlexChannels in your instrument.

`MATH<x>` = A math waveform specifier; <x> is ≥1.

`REF<x>` = A reference waveform specifier; <x> is ≥1.

Examples

`POWer:POWer1:SWITCHINGLOSS:ISOURce CH2` sets the current source for the switching loss measurement in the specified power measurement badge as CH2.

`POWer:POWer2:SWITCHINGLOSS:ISOURce?` might return CH1 indicating the current source for switching loss measurement of Power 2 power measurement badge.

POWer:POWer<x>:SWITCHINGLOSS:LEVELUNIts

This command sets or queries the level units for switching loss measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax
```
POWer:POWer<x>:SWITCHINGLOSS:LEVELUNIts {PERCent | ABSolute}
POWer:POWer<x>:SWITCHINGLOSS:LEVELUNIts?
```

Arguments

`PERCent` to set the High, Mid, and Low reference levels in percentage.

`ABSolute` to set the High, Mid, and Low reference levels to specific signal levels.

Examples

`POWer:POWer1:SWITCHINGLOSS:LEVELUNIts ABSolute` sets the level units as Absolute for switching loss measurement of the power measurement badge Power 1.

POWer:POWer<x>:SWITCHINGLOSS:RDSOn

This command sets or queries the RDS(on) value for switching loss measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:SWITCHINGLOSS:RDSOn <NR1>
POWer:POWer<x>:SWITCHINGLOSS:RDSOn?
```

Related Commands POWer:POWer<x>:SWITCHINGLOSS:DEVICEType

Arguments `<NR1>` ranges from 0 to 100

Examples `POWer:POWer1:SWITCHINGLOSS:RDSOn 2` sets the switching loss RDSOn value as 2 for switching loss measurement of the power measurement badge Power 1.

POWer:POWer<x>:SWITCHINGLOSS:SWLCONFIGType

This command sets or queries the configuration type for the switching loss measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:SWITCHINGLOSS:SWLCONFIGType {SMPS | PFC |
FLYBACK}
POWer:POWer<x>:SWITCHINGLOSS:SWLCONFIGType?
```

Arguments `SMPS`: Select this option in case of signals without noise and ringing. The V_g source is not required. Select V_g souce (Source 3), in case of noisy signal.

`PFC`: Select this option when input DUT signals are from Power Factor Correction Circuit. For this case, V_g source is mandatory.

`FLYBACK`: Select this option when input signals are ringing. This option does not require a V_g source.

Examples `POWer:POWer1:SWITCHINGLOSS:SWLCONFIGType PFC` sets the configuration type as PFC for the switching loss measurement of the power measurement badge Power 1.

POWer:POWer<x>:SWITCHINGLOSS:VCESat

This command sets or queries the value for the VCE(sat) value for switching loss measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:SWITCHINGLOSS:VCESat <NR1>
POWer:POWer<x>:SWITCHINGLOSS:VCESat?
```

Related Commands POWer:POWer<x>:SWITCHINGLOSS:DEVICEType

Arguments `<NR1>` ranges from 0.001 to 100

Examples `POWer:POWer1:SWITCHINGLOSS:VCESat 6` sets VCE(sat) value as 6 for switching loss measurement of the power measurement badge Power 1.

POWer:POWer<x>:SWITCHINGLOSS:VGLevel

This command sets or queries the gate voltage value (V_g Level Ton-Start) for the switching loss measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:SWITCHINGLOSS:VGLevel <NR1>
POWer:POWer<x>:SWITCHINGLOSS:VGLevel?
```

Arguments

`<NR1>` ranges from –100 to 100

Examples

`POWer:POWer1:SWITCHINGLOSS:VGLevel 1.2` sets the gate voltage value (V_g Level Ton-Start) for the switching loss measurement of the power measurement badge Power 1.

POWer:POWer<x>:SWITCHINGLOSS:VLEVELAbs

This command sets or queries the voltage level (Ton-Start & Stop) in absolute units for switching loss measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax

```
POWer:POWer<x>:SWITCHINGLOSS:VLEVELAbs <NR1>
POWer:POWer<x>:SWITCHINGLOSS:VLEVELAbs?
```

Arguments

`<NR1>` ranges from –100 to 100

Examples

`POWer:POWer1:SWITCHINGLOSS:VLEVELAbs 2` sets the voltage level (Ton-Start & Stop) value as 2 for the switching loss measurement in the power measurement badge 1.

POWer:POWer<x>:SWITCHINGLOSS:VLEVELPct

This command sets or queries the voltage level (Ton-Start & Stop) in percentage for switching loss measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax

```
POWer:POWer<x>:SWITCHINGLOSS:VLEVELPct <NR1>
POWer:POWer<x>:SWITCHINGLOSS:VLEVELPct?
```

Related Commands

POWer:POWer<x>:SWITCHINGLOSS:LEVELUNIts

Arguments

`<NR1>` ranges from 0.0001 to 90

Examples

`POWer:POWer1:SWITCHINGLOSS:VLEVELPct 7` sets the voltage level (Ton-Start & Stop) value as 7 percentage for the switching loss measurement in the power measurement badge 1.

POWer:POWer<x>:SWITCHINGLOSS:VSOURce

This command sets or queries the voltage source for the switching loss measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions

Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group

Power

Syntax

```
POWer:POWer<x>:SWITCHINGLOSS:VSOURce {CH<x> | MATH<x> | REF<x>}
POWer:POWer<x>:SWITCHINGLOSS:VSOURce?
```

Arguments

`CH<x>` = A channel specifier; <x> is 1 through 8 and is limited by the number of FlexChannels in your instrument.

`MATH<x>` = A math waveform specifier; <x> is ≥1.

`REF<x>` = A reference waveform specifier; <x> is ≥1.

Examples

`POWer:POWer1:SWITCHINGLOSS:VSOURce REF1` sets the voltage source for the switching loss measurement in the specified power measurement badge as REF1.

`POWer:POWer2:SWITCHINGLOSS:VSOURce?` might return REF3 indicating the voltage source for switching loss measurement of Power 2 power measurement badge.

POWer:POWer<x>:SWITCHINGRIPPLE:INPUTSOurce

This command sets or queries the input source for switching ripple measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:SWITCHINGRIPPLE:INPUTSOurce {CH<x> | MATH<x> |
REF<x>}
POWer:POWer<x>:SWITCHINGRIPPLE:INPUTSOurce?
```

Arguments

`CH<x>` = A channel specifier; <x> is 1 through 8 and is limited by the number of FlexChannels in your instrument.

`MATH<x>` = A math waveform specifier; <x> is ≥1.

`REF<x>` = A reference waveform specifier; <x> is ≥1.

Examples

`POWer:POWer1:SWITCHINGRIPPLE:INPUTSOurce CH5` sets the input source for switching ripple measurement as CH5 for the power measurement badge Power 1.

POWer:POWer<x>:SWITCHINGRIPPLE:LFREQuency

This command sets or queries the switching frequency for switching ripple measurement in the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax

```
POWer:POWer<x>:SWITCHINGRIPPLE:LFREQuency <NR1>
POWer:POWer<x>:SWITCHINGRIPPLE:LFREQuency?
```

Arguments

`<NR1>` ranges from 50 to 1000000

Examples `POWer:POWer1:SWITCHINGRIPPLE:SFREQuency 60000` sets the frequency present for line ripple measurement as 60000 Hz.

POWer:POWer<x>:TYPe

This command sets or queries the measurement type for the specified power measurement badge. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax
```
POWer:POWer<x>:TYPe <Measurement Type>
POWer:POWer<x>:TYPe?
```

Arguments `<Measurement Type>` = SOA | SWITCHINGLOss | CYCLEAmp | CYCLEMAx | CYCLEMIn | CYCLEPKpk | SWITCHINGRIpple | LINERIpple | NDUTYCycle | NPULSEWidth | PDUTYCycle | PPULSEWidth | DIDT | DVDT | FREQuency | HARMonics | CYCLETop | CYCLEBase | PERIod | POWERQUALity

Examples `POWer:POWer1:TYPe POWERQUALITY` adds Power1 measurement badge and selects the Power Quality measurement.

POWERTABle:ADDNew (No Query Form)

This command adds the power harmonics table. The power measurement badge is specified by x.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax
```
POWERTABle:ADDNew TABLE<x>
```

Arguments `<x>` must be greater than or equal to one.

Examples `POWTABle:ADDNew "TABLE1"` adds power harmonics table.

POWERTABle:DELete (No Query Form)

This command deletes the power harmonics table.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax `POWERTABle:DELete TABLE<x>`

Arguments `<x>` must be greater than or equal to one.

Examples `POWTABle:DELete "TABLE1"` deletes TABLE1 power harmonics table.

POWERTABle:LIST? (Query Only)

This command lists all defined power harmonics table.

Conditions Requires option 5-PWR, SUP5-PWR, or 5-PS2.

Group Power

Syntax `POWERTABle:LIST?`

Examples `POWERTABle:LIST?` might return TABLE1 indicating the defined power harmonics table.

*PSC

This command sets and queries the power-on status flag that controls the automatic power-on handling of the DESER, SRER, and ESER registers. When *PSC is true, the DESER register is set to 255 and the SRER and ESER registers are set to 0 at power-on. When *PSC is false, the current values in the DESER, SRER, and ESER registers are preserved in nonvolatile memory when power is shut off and are restored at power-on.

Group Status and Error

Syntax
```
*PSC {<NR1>|OFF|ON}
*PSC?
```

Related Commands DESE, *ESE, FACtory, *RST, *SRE

Arguments `<NR1>` = 0 sets the power-on status clear flag to false, disables the power-on clear and allows the instrument to possibly assert SRQ after power-on; any other value sets the power-on status clear flag to true, enabling the power-on status clear and prevents any SRQ assertion after power on.

`OFF` sets the power-on status clear flag to false, disables the power-on clear and allows the instrument to possibly assert SRQ after power-on.

`ON` sets the power-on status clear flag to true, enabling the power-on status clear and prevents any SRQ assertion after power on.

Examples `*PSC 0` sets the power-on status clear flag to false.

`*PSC?` might return 1 to indicate that the power-on status clear flag is set to true.

*PUD

This command sets or queries a string of Protected User Data. This data is protected by the PASSWord command. You can modify it only by first entering the correct password. This password is not necessary to query the data.

Group Status and Error

Syntax
```
*PUD {<Block>|<QString>}
*PUD?
```

Related Commands PASSWord

Arguments `<Block>` is a block containing up to 100 characters.

`<QString>` is a string containing up to 100 characters.

Examples `*PUD #229This instrument belongs to me` stores the string "This instrument belongs to me" in the user protected data area.

`*PUD?` might return `#221PROPERTY OF COMPANY X`.

RECAll:SESsion (No Query Form)

Restores the state of the instrument, including reference waveforms, from a saved session file.

Group Save and Recall

Syntax `RECAll:SESsion <file path>`

Arguments `<file path>` is the file path that specifies the location of the specified instrument session file.

If a file name or path is specified, the file is expected to be located in a directory relative to the current working directory (specified by FILESystem:CWD) unless a complete path is specified:

- Complete path specification. If the file argument begins with a drive designator (such as C), then the file name is interpreted as a full path.
- Relative path specification. If the file argument begins with "." or ".." or has a file path separator appearing anywhere other than the first character position, then the file name is treated as a path that is relative to the current working directory.

Returns Recalls the instrument session from the specified session file.

Examples `RECALL:SESSION "TEK00000.TSS"` recalls the setup from the file TEK00000.TSS in the current working directory.

RECAll:SETUp (No Query Form)

This command (no query form) returns stored or factory settings to the instrument from a copy of the settings stored in memory. This command performs the same function as selecting Recall from the File menu, and then choosing the Setup button.

Group Save and Recall

Syntax `RECAll:SETUp {FACtory|<file path>}`

Related Commands FACtory, *RST

Arguments

`FACtory` restores the factory setup. Performs the same operation as the :FACtory command.

`<file path>` specifies a location for an instrument setup file. <file path> is a quoted string that defines the file name and path. If a file name or path is specified, the file is expected to be located in a directory relative to the current working directory (specified by FILESystem:CWD) unless a complete path is specified:

- Complete path specification. If the file argument begins with drive designator (such as C:), then the file name is interpreted as a full path.
- Relative path specification. If the file argument begins with "." or ".." or has a file path separator appearing anywhere other than the first character position, then the file name is treated as a path that is relative to the current working directory.

Examples

`RECALL:SETUP FACTORY` recalls (and makes current) the instrument setup to its factory defaults.

`RECALL:SETUP "TEK00000.SET"` recalls the setup from the file TEK00000.SET in the default directory for setups.

RECAll:WAVEform (No Query Form)

This command recalls a stored waveform to a reference memory location.

Group

Save and Recall

Syntax

```
RECAll:WAVEform <source file>,<destination>
```

Arguments

`<source file>` is the source file. The file is expected to be located in a directory relative to the current working directory (specified by FILESystem:CWD) unless a complete path is specified:

- Complete path specification. If the file argument begins with drive designator (such as C:), then the file name is interpreted as a full path.
- Relative path specification. If the file argument begins with "." or ".." or has a file path separator appearing anywhere other than the first character position, then the file name is treated as a path that is relative to the current working directory.

`<destination>` is REF<x> which specifies a reference to create from the recalled waveform data file.

Examples `RECALL:WAVEFORM "TEK00000.ISF",REF1` recalls the waveform stored in the file named TEK00000.ISF from the current directory to reference 1.

REF:ADDNew (No Query Form)

This command adds the specified reference. Argument is of the form "REF<NR1> ", where NR1 ≥ 1.

Group Vertical

Syntax `REF:ADDNew <QString>`

Arguments `<QString>` is the specified reference. Argument is of the form "REF<NR1> ", where NR1 ≥ 1.

Examples `REF:ADDNEW` "REF2" adds reference 2 to the display.

REF:DELete (No Query Form)

Deletes the specified reference. Argument is of the form `"REF<NR1>"`, where NR1 ≥ 1.

Conditions Vertical

Group Vertical

Syntax `REF:DELete <QString>`

Arguments `<QString>` is the specified reference. Argument is of the form `"REF<NR1>"`, where NR1 ≥ 1.

Examples `REF:DELETE` "REF2" deletes reference 2 from the display.

REF:LIST? (Query Only)

This command returns a comma separated list of all currently defined references.

Group Vertical

Syntax `REF:LIST?`

Returns All currently defined references.

Examples `REF:LIST?` might return `:REF:LIST REF1,REF2` indicating references 1 and 2 are defined.

REF:REF<x>:DESKew

This command sets or queries the deskew value used for the specified reference.

Group Vertical

Syntax `REF:REF<x>:DESKew <NR3>`

Arguments `<NR3>` is the deskew value used for the specified reference.

Examples `REF:REF1:DESKew -1.5e-9` sets the deskew value to -1.5 ns.

`REF:REF1:DESKew?` might return `:REF:REF1:DESKEW 1.5200E-9` indicating the deskew value is 1.52 ns.

REF:REF<x>:LABel:COLor

This command sets or queries the color of the specified ref label.

Group Vertical

Syntax `REF:REF<x>:LABel:COLor <QString>`

Arguments `<QString>` is the label. To return the color to the default color, send an empty string as in this example: `:REF:REF1:LABEL:COLOR ""`.

Examples `REF:REF1:LABel:COLor "#FFFF00"` sets the font color to yellow.

`REF:REF1:LABel:COLor?` might return `:REF:REF1:LABEL:COLOR "#FF0000"` indicating the font color is red.

REF:REF<x>:LABel:FONT:BOLD

This command sets or queries the bold state of the specified reference label.

Group Vertical

Syntax `REF:REF<x>:LABel:FONT:BOLD {<NR1>|OFF|ON}`

Arguments `<NR1>` = 0 disables bold font; any other value turns this feature on.

`OFF` disables bold font.

`ON` enables bold font.

Examples `REF:REF1:LABel:FONT:BOLD ON` turns on the bold font.

`REF:REF1:LABel:FONT:BOLD?` might return `:REF:REF1:LABEL:FONT:BOLD 0` indicating the bold font is off.

REF:REF<x>:LABel:FONT:ITALic

This command sets or queries the italic state of the specified reference label.

Group Vertical

Syntax `REF:REF<x>:LABel:FONT:ITALic {<NR1>|OFF|ON}`

Arguments `<NR1>` = 0 disables italic font; any other value turns this feature on.

`OFF` disables italic font.

`ON` enables italic font.

Examples `REF:REF1:LABel:FONT:ITALic ON` turns on the italic font.

`REF:REF1:LABel:FONT:ITALic?` might return `:REF:REF1:LABEL:FONT:ITALIC 0` indicating the italic font is off.

REF:REF<x>:LABel:FONT:SIZE

This command sets or queries the font size of the specified reference label.

Group Vertical

Syntax `REF:REF<x>:LABel:FONT:SIZE <NR1>`

Arguments `<NR1>` is the font size of the label.

Examples `REF:REF1:LABel:FONT:SIZE 20` sets the font size to 20 points.

`REF:REF1:LABel:FONT:SIZE?` might return `:REF:REF1:LABEL:FONT:SIZE 14` indicating that the font size is 14 points.

REF:REF<x>:LABel:FONT:TYPE

This command sets or queries the font type of the specified reference label, such as Arial or Times New Roman.

Group Vertical

Syntax `REF:REF<x>:LABel:FONT:TYPE <QString>`

Arguments `<QString>` is the font type.

Examples `REF:REF1:LABel:FONT:TYPE "Monospace"` specifies a mono spaced font.

`REF:REF1:LABel:FONT:TYPE?` might return `:REF:REF1:LABEL:FONT:TYPE "Frutiger LT Std 55 Roman"`.

REF:REF<x>:LABel:FONT:UNDERline

This command sets or queries the underline state of the specified reference label.

Group Vertical

Syntax `REF:REF<x>:LABel:FONT:UNDERline {<NR1>|OFF|ON}`

Arguments

<NR1> = 0 disables underline font; any other value turns this feature on.

OFF disables underline font.

ON enables underline font.

Examples

REF:REF1:LABel:FONT:UNDERline ON turns on the underline font.

REF:REF1:LABel:FONT:UNDERline? might return :REF:REF1:LABEL:FONT:UNDERLINE 0 indicating that underline is off.

REF:REF<x>:LABel:NAMe

This command sets or queries the label of the specified reference. The reference waveform is specified by x.

Group

Vertical

Syntax

```
REF:REF<x>:LABel:NAMe <QString>
REF:REF<x>:LABel:NAMe?
```

Arguments

<QString> is the character string that will be used for the reference waveform label name.

Examples

REF:REF4:LABEL:NAME "My Reference" sets the label name of Reference 4 waveform to "My Reference".

REF:REF3:LABEL:NAME? might return :REF:REF3:LABEL:NAME "Signal2", indicating that the label name for Reference 3 waveform is currently set to "Signal2".

REF:REF<x>:LABel:XPOS

This command sets or queries the X-position at which the label (attached to the displayed waveform of the specified reference) is displayed, relative to the left edge of the waveview. The reference waveform is specified by x.

Group

Vertical

Syntax

```
REF:REF<x>:LABel:XPOS <NR1>
REF:REF<x>:LABel:XPOS?
```

Arguments

`<NR1>` is the location (control in divisions) where the waveform label for the selected reference is displayed, relative to the left edge of the screen.

Examples

`REF:REF4:LABEL:XPOS 10` moves the waveform label for the Reference 3 waveform, so that it begins 10 divisions to the right of the left edge of the screen.

`REF:REF2:LABEL:XPOS?` might return `:REF:REF2:LABEL:XPOS 1.5`, indicating that the x-axis for the Reference 2 waveform is currently 1.5 divisions to the right of the left edge of the screen.

REF:REF<x>:LABel:YPOS

This command sets or queries the Y-position of the label (attached to the displayed waveform of the specified reference), relative to the baseline of the waveform. The reference waveform is specified by x.

Group

Vertical

Syntax

```
REF:REF<x>:LABel:YPOS <NR1>
REF:REF<x>:LABel:YPOS?
```

Arguments

`<NR1>` is the location where the waveform label for the selected reference is displayed, relative to the baseline of the waveform.

Examples

`REF:REF3:LABEL:YPOS -10` moves the waveform label for the Reference 3 waveform 10 vertical units below the baseline of the waveform.

`REF:REF2:LABEL:YPOS?` might return `:REF:REF2:LABEL:YPOS 0`, indicating that the waveform label for the Reference 2 waveform is currently located at the baseline of the waveform.

REF:REF<x>:SOUrce

This command sets or queries the filename used by the given reference.

Group

Vertical

Syntax

```
REF:REF<x>:SOUrce <QString>
```

Arguments

`<QString>` is the reference file name.

Examples

`REF:REF1:SOUrce "/home/guest/.local/share/Tektronix/TekScope/FirstRecalledSession/161012_132000_000.wfm"` sets the source of the reference.

`REF:REF1:SOUrce?` might return `:REF:REF1:SOURCE "/home/guest/.local/share/Tektronix/TekScope/LastRecalledSession/161012_132039_000.wfm"`.

REF<x>_DALL:LABel:COLor

This command sets or queries the color of the specified digital group. The reference is specified by x.

Group

Digital

Syntax

```
REF<x>_DALL:LABel:COLor <QString>
```

Arguments

`<QString>` is the color of the digital group label. To return the color to the default color, send an empty string as in this example: `:REF5_DALL:LABEL:COLOR ""`.

Examples

`REF1_DALL:LABel:COLor "#FF0000"` sets the font color to red.

`REF1_DALL:LABel:COLor?` might return `:REF1_DALL:LABEL:COLOR "#FFFF00"` indicating the font color is yellow.

REF<x>_DALL:LABel:FONT:BOLD

This command sets or queries the bold state of the specified digital group. The reference is specified by x.

Group

Digital

Syntax

```
REF<x>_DALL:LABel:FONT:BOLD {ON|OFF|<NR1>}
```

Arguments

`OFF` argument turns off bold font.

`ON` argument turns on bold font.

`<NR1>` = 0 turns off bold font; any other value turns on bold font.

Examples `REF1_DALL:LABel:FONT:BOLD ON` sets the font to bold.

`REF1_DALL:LABel:FONT:BOLD?` might return `:REF1_DALL:LABEL:FONT:BOLD 0` indicating the font is not bold.

REF<x>_DALL:LABel:FONT:ITALic

This command sets or queries the italic state of the specified digital group. The reference is specified by x.

Group Digital

Syntax `REF<x>_DALL:LABel:FONT:ITALic {ON|OFF|<NR1>}`

Arguments `OFF` argument turns off italic font.

`ON` argument turns on italic font.

`<NR1>` = 0 turns off italic font; any other value turns on italic font.

Examples `REF1_DALL:LABel:FONT:ITALic 1` turns on italic font.

`REF1_DALL:LABel:FONT:ITALic?` might return `:REF1_DALL:LABEL:FONT:ITALIC 0` indicating the font is not italic.

REF<x>_DALL:LABel:FONT:SIZE

This command sets or queries the font size of the specified digital group. The reference is specified by x.

Group Digital

Syntax `REF<x>_DALL:LABel:FONT:SIZE <NR1>`

Arguments `<NR1>` is the font size.

Examples `REF1_DALL:LABel:FONT:SIZE 16` sets the font size to 16 points.

`REF1_DALL:LABel:FONT:SIZE?` might return `:REF1_DALL:LABEL:FONT:SIZE 20` indicating the font size is 20 points.

REF<x>_DALL:LABel:FONT:TYPE

This command sets or queries the font type of the specified digital group, such as Arial or Times New Roman. The reference is specified by x.

Group Digital

Syntax `REF<x>_DALL:LABel:FONT:TYPE <QString>`

Arguments `<QString>` is the font type.

Examples `REF1_DALL:LABel:FONT:TYPE "Monosapce"` sets the font to a monospace font.

`REF1_DALL:LABel:FONT:TYPE?` might return `:REF1_DALL:LABEL:FONT:TYPE "Frutiger LT Std 55 Roman"`.

REF<x>_DALL:LABel:FONT:UNDERline

This command sets or queries the underline state of the specified digital group. The reference is specified by x.

Group Digital

Syntax `REF<x>_DALL:LABel:FONT:UNDERline {ON|OFF|<NR1>}`

Arguments `OFF` argument turns off underline font.

`ON` argument turns on underline font.

`<NR1>` = 0 turns off underline font; any other value turns on underline font.

Examples `REF1_DALL:LABel:FONT:UNDERline ON` specifies an underlined font.

`REF1_DALL:LABel:FONT:UNDERline?` might return `:REF1_DALL:LABEL:FONT:UNDERLINE 0` indicating underline is off.

REF<x>_DALL:LABel:NAMe

This command sets or queries the label of the specified digital group. The reference is specified by x.

Group Digital

Syntax `REF<x>_DALL:LABel:NAMe <QString>`

Arguments `<QString>` is the name of the group.

Examples `REF1_DALL:LABel:NAMe “Clock Out”` sets the label name to Clock Out.

`REF1_DALL:LABel:NAMe?` might return `:REF1_DALL:LABEL:NAME "This is the digital name"`.

REF<x>_DALL:LABel:XPOS

This command sets or queries the x-position of the label of the specified digital group. The reference is specified by x.

Group Digital

Syntax `REF<x>_DALL:LABel:XPOS <NR3>`

Arguments `<NR3>` is the x-position, in pixels relative to the left edge of the display, of the group.

Examples `REF1_DALL:LABel:XPOS 90.0e0` sets the x position of the label to 90.

`REF1_DALL:LABel:XPOS?` might return `:REF1_DALL:LABEL:XPOS 45.0000` indicating the x position of the label is at 45 pixels to the right of the left edge of the display.

REF<x>_DALL:LABel:YPOS

This command sets or queries the y-position of the label of the specified digital group. The reference is specified by x.

Group Digital

Syntax `REF<x>_DALL:LABel:YPOS <NR3>`

Arguments `<NR3>` is the y-position, in pixels relative to the baseline of the waveform, of the group.

Examples `REF1_DALL:LABel:YPOS 50` sets the y position to 50.

`REF1_DALL:LABel:YPOS?` might return `:REF1_DALL:LABEL:YPOS 0.0E+0` indicating the y position of the label is at the baseline of the waveform.

REF<x>_D<x>:LABel:COLor

This command sets or queries the color of the label of the specified digital bit. The reference is specified by x.

Group Digital

Syntax `REF<x>_D<x>:LABel:COLor <QString>`

Arguments `<QString>` is the label color. To return the color to the default color, send an empty string as in this example: `:REF5_D1:LABEL:COLOR ""`.

Examples `REF1_D1:LABel:COLor "#FF0000"` sets the color to red.

`REF1_D1:LABel:COLor?` might return `:REF1_D1:LABEL:COLOR "#FFFF00"` indicating the color is yellow.

REF<x>_D<x>:LABel:FONT:BOLD

This command sets or queries the bold state of the label of the specified digital bit. The reference is specified by x.

Group Digital

Syntax `REF<x>_D<x>:LABel:FONT:BOLD {ON|OFF|<NR1>}`

Arguments

OFF argument turns off bold font.

ON argument turns on bold font.

<NR1> = 0 turns off bold font; any other value turns on bold font.

Examples

REF1_D1:LABel:FONT:BOLD ON sets the font to bold.

REF1_D1:LABel:FONT:BOLD? might return :REF1_D1:LABEL:FONT:BOLD 0 indicating the font is not bold.

REF<x>_D<x>:LABel:FONT:ITALic

This command sets or queries the italic state of the label of the specified digital bit. The reference is specified by x.

Group

Digital

Syntax

```
REF<x>_D<x>:LABel:FONT:ITALic {ON|OFF|<NR1>}
```

Arguments

OFF argument turns off italic font.

ON argument turns on italic font.

<NR1> = 0 turns off italic font; any other value turns on italic font.

Examples

REF1_D1:LABel:FONT:ITALic OFF turns off italic font.

REF1_D1:LABel:FONT:ITALic? might return :REF1_D1:LABEL:FONT:ITALIC 1 indicating the font is italic.

REF<x>_D<x>:LABel:FONT:SIZE

This command sets or queries the font size of the label of the specified digital bit. The reference is specified by x.

Group

Digital

Syntax

```
REF<x>_D<x>:LABel:FONT:SIZE <NR1>
```

Arguments

<NR1> is the font size.

Examples

`REF1_D1:LABel:FONT:SIZE 16` sets the font size to 16 points.

`REF1_D1:LABel:FONT:SIZE?` might return `:REF1_D1:LABEL:FONT:SIZE 20` indicating the font size is 20 points.

REF<x>_D<x>:LABel:FONT:TYPE

This command sets or queries the font type of the label of the specified digital bit, such as Arial or Times New Roman. The reference is specified by x.

Group

Digital

Syntax

`REF<x>_D<x>:LABel:FONT:TYPE <QString>`

Arguments

`<QString>` is the font type of the label.

Examples

`REF1_D1:LABel:FONT:TYPE "Monospace"` sets the font to Monospace.

`CHREF1_D1:LABel:FONT:TYPE?` might return `:REF1_D1:LABEL:FONT:TYPE "Frutiger LT Std 55 Roman"`.

REF<x>_D<x>:LABel:FONT:UNDERline

This command sets or queries the underline state of the label of the specified digital bit. The reference is specified by x.

Group

Digital

Syntax

`REF<x>_D<x>:LABel:FONT:UNDERline {ON|OFF|<NR1>}`

Arguments

`OFF` argument turns off underline font.

`ON` argument turns on underline font.

`<NR1>` = 0 turns off underline font; any other value turns on underline font.

Examples

`REF1_D1:LABel:FONT:UNDERline ON` turns on underline font.

`REF1_D1:LABel:FONT:UNDERline?` might return `:REF1_D1:LABEL:FONT:UNDERLINE 0` indicating the underline font is off.

REF<x>_D<x>:LABel:NAMe

Sets or queries the label of the specified digital bit. The channel is specified by x.

Group Digital

Syntax `REF<x>_D<x>:LABel:NAMe <QString>`

Arguments `<QString>` is the label.

Examples `REF1_D1:LABel:NAMe "Clock in"` sets the name to Clock in.

`REF1_D1:LABel:NAMe?` might return `:REF1_D1:LABEL:NAME "Digital 1"`.

REF<x>_D<x>:LABel:XPOS

This command sets or queries the x-position of the label of the specified digital bit. The reference is specified by x.

Group Digital

Syntax `REF<x>_D<x>:LABel:XPOS <NR3>`

Arguments `<NR3>` is the x-position, in pixels relative to the left edge of the display, of the label.

Examples `REF1_D1:LABel:XPOS 90` sets the x position to 90.

`REF1_D1:LABel:XPOS?` might return `:REF1_D1:LABEL:XPOS 45.0000` indicating the position is 45 pixels to the right of the left edge of the waveform.

REF<x>_D<x>:LABel:YPOS

This command sets or queries the y-position of the label of the specified digital bit. The channel is specified by x.

Group Digital

Syntax `REF<x>_D<x>:LABel:YPOS <NR3>`

Arguments `<NR3>` is the y-position, in pixels relative to the baseline of the waveform, of the label.

Examples `REF1_D1:LABel:YPOS 10` sets the y position to 10.

`REF1_D1:LABel:YPOS?` might return `:REF1_D1:LABEL:YPOS 0.0E+0` indicating the y position of the label is at the baseline of the waveform.

REM (No Query Form)

This command (no query form) embeds a comment within programs as a means of internally documenting the programs. This is how to embed comments in a .set file. The instrument ignores these embedded comment lines.

Group Miscellaneous

Syntax `REM <QString>`

Arguments `<QString>` is a string that can contain a maximum of 80 characters.

Examples `REM "This is a comment"` is a comment string that the instrument will ignore.

ROSc:SOUrce

This command sets or queries the selected source for the time base reference oscillator. The reference oscillator locks to this source. Depending on the command argument that you specify, you can use an external reference or use the internal crystal oscillator as the time base reference.

Group Miscellaneous

Syntax
```
ROSc:SOUrce {INTERnal|EXTernal}
ROSc:SOUrce?
```

Related Commands ROSc:STATE?

Arguments

INTERnal specifies the internal 10 MHz crystal oscillator as the time base reference.

EXTernal specifies the user-supplied external signal as the time base reference.

Examples

ROSC:SOURCE INTERNAL specifies the internal 10 MHz crystal oscillator as the time base reference.

ROSC:SOURCE? might return :ROSC:SOURCE INTERNAL, indicating that the 10 MHz crystal oscillator is being used as the time base reference.

ROSc:STATE? (Query Only)

This query-only command returns whether the time base reference oscillator is locked. This command will return either LOCKED or UNLOCKED.

Group

Miscellaneous

Syntax

```
ROSc:STATE?
```

Returns

LOCKED indicates the reference oscillator is locked.

UNLOCKED indicates the reference oscillator is not locked.

Examples

ROSC:STATE? might return :ROSC:STATE LOCKED, indicating that the time base reference is locked.

*RST (No Query Form)

This command (no query form) resets the instrument to the factory default settings.

This command does the following:

- Recalls the default instrument setup.
- Clears the current *DDT command.
- Disables aliases (:ALIAS:STATE 0).
- Disables the user password (for the *PUD command).

The *RST command does not change the following:

- The current working directory (`:FILESystem:CWD` command).
- The state of command headers (`:HEADer` command).
- The state of keyword and enumeration verbosity (`:VERBose` command).
- The Power-on Status Clear Flag (`*PSC` command).
- The Event Status Enable Register (`*ESE` command).
- The Service Request Enable Register (`*SRE` command).
- The Device Event Status Enable Register (`DESE` command).
- The user password for protected user data (`:PASSWord` command).
- The content of protected user data (`*PUD` command).
- The enabled state of the socket server (`:SOCKETServer:ENAble` command).
- The socket server port number (`:SOCKETServer:PORT` command).
- The socket server protocol (`:SOCKETServer:PROTOCol` command).
- The USBTMC port configuration (`:USBDevice:CONFigure` command).
- The destination reference waveform or file path for the `:CURVe` command (`:DATa:DESTination` command).
- The source waveform for the `:CURVe?` or `:WAVFrm?` queries (`:DATa:SOUrce` command).
- The waveform data encoding for the `:CURVe` command or query or the `:WAVFrm?` query (`:DATa:ENCdg` command).
- The starting point for `:CURVe?` queries (`:DATa:STARt` command).
- The ending point for `:CURVe?` queries (`:DATa:STOP` command).
- All settings associated the `:WFMInpre` commands.
- All user settable settings associated with the `:WFMOutpre` commands.

*RST only resets the programmable interface settings, it does not change the user interface settings.

Group Status and Error

Syntax `*RST`

Related Commands FACtory, RECAll:SETUp

Arguments None

Examples `*RST` resets the instrument settings to factory defaults.

SAVe:EVENTtable:BUS (No Query Form)

This command saves bus results table to the specified file.

Group Save and Recall

Syntax `SAVe:EVENTtable:BUS <QString>`

Arguments <QString> is the specified file. If a file name or path is specified, the file is expected to be located in a directory relative to the current working directory (specified by FILESystem:CWD) unless a complete path is specified.

- Complete path specification. If the file argument begins with drive designator (such as C:), then the file name is interpreted as a full path.
- Relative path specification. If the file argument begins with "." or ".." or has a file path separator appearing anywhere other than the first character position, then the file name is treated as a path that is relative to the current working directory.

Examples `SAVe:EVENTtable:BUS "TEK000.CSV"` saves the bus decode event table in the file named TEK000.CSV.

SAVe:EVENTtable:MEASUrement (No Query Form)

This command saves data (measurement) results to the specified file.

Group Save and Recall

Syntax `SAVe:EVENTtable:MEASUrement <QString>`

Arguments <QString> is the specified file. If a file name or path is specified, the file is expected to be located in a directory relative to the current working directory (specified by FILESystem:CWD) unless a complete path is specified:

- Complete path specification. If the file argument begins with drive designator (such as C:), then the file name is interpreted as a full path.
- Relative path specification. If the file argument begins with "." or ".." or has a file path separator appearing anywhere other than the first character position, then the file name is treated as a path that is relative to the current working directory.

Examples `SAVe:EVENTtable:MEASUrement "TEK000.CSV"` saves the measurement in the file named TEK000.CSV.

SAVe:IMAGe (No Query Form)

Saves a capture of the screen contents to the specified image file. Supported image formats are PNG, Windows Bitmap, and JPEG.

Group Save and Recall

Syntax `SAVe:IMAGe <QString>`

Arguments `<QString>` is the file name and location used to store the image file.

When specifying the file name with this command, use the correct file extension (".png" for PNG format, ".bmp" for BMP format, or ".jpg" for JPEG format). If a file name or path is specified, the file is expected to be located in a directory relative to the current working directory (specified by :FILESystem:CWDFILESystem:CWD) unless a complete path is specified:

- Complete path specification. If the file argument begins with drive designator (such as C:), then the file name is interpreted as a full path.
- Relative path specification. If the file argument begins with "." or ".." or has a file path separator appearing anywhere other than the first character position, then the file name is treated as a path that is relative to the current working directory.

Examples `SAVE:IMAGE` “c:/rose_was_here.png” saves the image at the location specified.

SAVe:REPOrt (No Query Form)

This command saves a report to the specified file. Supported report formats are PDF and MHT (web page archive file).

Group Save and Recall

Syntax `SAVe:REPOrt <QString>`

Related Commands SAVe:REPOrt:COMMents

Arguments `<QString>` is the complete path specification. When specifying the file name with this command, use the correct file extension (.pdf for PDF format, or .mht for MHT format).

If a file name or path is specified, the file is expected to be located in a directory relative to the current working directory (specified by FILESystem:CWD) unless a complete path is specified:

- Complete path specification. If the file argument begins with a file path separator (forward slash character) or a Windows drive designator such as C:), then the file name is interpreted as a full path.
- Relative path specification. If the file argument begins with "." or ".." or has a file path separator appearing anywhere other than the first character position, then the file name is treated as a path that is relative to the current working directory.

Examples `SAVE:REPORT` "report.pdf" creates a report in PDF format, in the location specified.

SAVe:REPOrt:COMMents

This command sets or queries the comments to be included in saved report files.

Group Save and Recall

Syntax
```
SAVe:REPOrt:COMMents <QString>
SAVe:REPOrt:COMMents?
```

Arguments `<QString>` is the comments to be included in saved report files.

Examples `SAVE:REPORT:COMMENTS` "Test 3" adds comments to the report.

`SAVE:REPORT:COMMENTS`? might return `:SAVE:REPORT:COMMENTS "High Temp Test 1"`.

SAVe:SESsion (No Query Form)

Saves the state of the instrument, including reference waveforms, to a saved session file.

Group

Save and Recall

Syntax

```
SAVe:SESsion <QString>
```

Arguments

`<QString>` is the file path that specifies the location to save the specified instrument session file. If a file name or path is specified, the file is expected to be located in a directory relative to the current working directory (specified by :FILESystem:CWDFILESystem:CWD) unless a complete path is specified:

- Complete path specification. If the file argument begins with a file path separator (forward slash character) or a Windows drive designator such as C:), then the file name is interpreted as a full path.
- Relative path specification. If the file argument begins with "." or ".." or has a file path separator appearing anywhere other than the first character position, then the file name is treated as a path that is relative to the current working directory.

Examples

`SAVE:SESSION` “c:/rose_was_here.tss” saves the instrument state in the specified file.

SAVe:SETUp (No Query Form)

Saves the current instrument state to the specified file.

Group

Save and Recall

Syntax

```
SAVe:SETUp <QString>
```

Related Commands

SAVe:SETUp:INCLUDEREFs

Arguments

`<QString>` is a quoted string that is the complete path specification. If a file name or path is specified, the file is expected to be located in a directory relative to the current working directory (specified by FILESystem:CWD) unless a complete path is specified:

- Complete path specification. If the file argument begins with a file path separator (forward slash character) or a Windows drive designator such as C:), then the file name is interpreted as a full path.
- Relative path specification. If the file argument begins with "." or ".." or has a file path separator appearing anywhere other than the first character position, then the file name is treated as a path that is relative to the current working directory.

Examples `SAVE:SETUP` “`c:/rose_was_here.set`” saves the instrument setup in the specified file.

SAVe:SETUp:INCLUDEREFs

This command sets or queries whether displayed reference waveforms are to be included in saved setups.

Group Save and Recall

Syntax

```
SAVe:SETUp:INCLUDEREFs {OFF|ON|0|1}
SAVe:SETUp:INCLUDEREFs?
```

Arguments `OFF` specifies not including displayed reference waveforms in saved setups.

`ON` specifies including displayed reference waveforms in saved setups.

`0` specifies not including displayed reference waveforms in saved setups.

`1` specifies including displayed reference waveforms in saved setups.

Examples `SAVE:SETUP:INCLUDEREFS 0` sets reference waveforms not to be included in saved setups.

`SAVE:SETUP:INCLUDEREFS?` might return `:SAVE:SETUP:INCLUDEREFS 1` indicating that reference waveforms are to be included in saved setups.

SAVe:WAVEform (No Query Form)

This command saves the specified waveform(s) to the specified destination file. The waveform source or sources must be active (turned on) to save data to a file.

Group Save and Recall

Syntax

```
SAVe:WAVEform {CH<x>[_DALL]|MATH<x>|REF<x>|ALL},<QString>
```

Related Commands

FILESystem:CWD

SAVe:WAVEform:SOURCELIst?

Arguments

<x> is the number of the analog channel, math, or reference waveform source used to save the waveform data.

_DALL saves the digital channel waveform data of the specified channel. This argument is required if the channel specified is a digital channel.

ALL saves all displayed analog, math, and reference waveforms to individual files. Each file name created includes the name of the source (ch1, math3, and so on) used to create that file.

<Qstring> is a quoted string that defines the path and file name to use to save the specified file, in the format '[<path>]<filename.ext>'. Specifying a path is optional. If no path is entered, the file is saved to the current working directory as set in FILESystem:CWD.

<path> uses the form '<drive>/<dir>.../'. You can specify a relative path or a complete path:

- Relative path specification. If the file argument begins with "." or ".." or has a file path separator appearing anywhere other than the first character position, then the file name is treated as a path that is relative to the current working directory.
- Complete path specification. If the file argument begins with a file path separator (forward slash character) or a drive designator (such as C:), then the file name is interpreted as a full path from the specified drive.

<filename> sets the file name to use to create the file. A file can have up to 125 characters. When using the ALL agument to save multiple files, each filename has the filename appended with the source used to create that file. For example, a filename of `QualTest` can create `QualTest_ch1.xxx`, `QualTest_ref1.xxx`, and so on.

<.ext> sets the file format to which to save the data:

- Use the .wfm extension to save waveform data to a Tektronix Internal format.
- Use the .csv extension to save waveform data to a comma separated values spreadsheet format.

Examples

`SAVE:WAVEFORM MATH1,"TEK0000.WFM"` saves the Math1 waveform to the file TEK00000.WFM in the current working directory.

SAVe:WAVEform:SOURCELIst? (Query Only)

This query returns a list of the available waveforms that can be specified as the source for the SAVe:WAVEform command. Source waveforms must have their display mode set to On to appear in this list and to be saved.

Group

Save and Recall

Syntax

`SAVe:WAVEform:SOURCELIst?`

Examples

`SAVE:WAVEFORM:SOURCELIST?` might return `ALL,CH1_DALL,CH2,CH3,CH8,MATH1,MATH2,REF2,REF4`.

SAVEON:FILE:DEST

This command sets or queries the location where files are saved when SAVEON:TRIGGER is ON and SAVEON:WAVEFORM is ON. You can save the files to a local drive or network path by entering the desired location in <QString>. You can also select to save the files to a USB drive.

Group

Save On

Syntax

```
SAVEON:FILE:DEST <QString>
SAVEON:FILE:DEST?
```

Related Commands

SAVEON:FILE:NAME

Arguments

<QString> specifies the location to store files.

Examples

`SAVEON:FILE:DEST "C:\users\username\Tektronix\TekScope\SaveOnTrigger"` sets this as the location to save files (named by the `SAVEON:FILE:NAME` command), when there is a trigger.

`SAVEON:FILE:DEST?` might return `:SAVEON:FILE:DEST "C:\users\username\Tektronix\TekScope\SaveOnEvent"`, indicating the drive location where files will be saved when there is a trigger.

SAVEON:FILE:NAME

Sets or queries the file name to use when SAVEON:TRIGer is ON.

Group

Save On

Syntax

```
SAVEON:FILE:NAME <QString>
SAVEON:FILE:NAME?
```

Related Commands

SAVEON:FILE:DEST

Arguments

<QString> is the file name you want to use.

Examples

SAVEON:FILE:NAME "MaskFailure" sets the name of the file to MaskFailure.

SAVEON:FILE:NAME? might return ":SAVEON:FILE:NAME MaskFailure5", indicating the name you set for the oscilloscope to use, with the autoincrement number (5) appended.

SAVEON:IMAGe

This command sets or queries whether to save a screen capture when a trigger occurs and SAVEON:TRIGer is ON and SAVEON:IMAGE is ON..

Group

Save On

Syntax

```
SAVEON:IMAGe {<NR1>|OFF|ON}
SAVEON:IMAGe?
```

Related Commands

SAVEON:FILE:DEST, SAVEON:FILE:NAME, SAVEON:TRIGger, SAVEON:IMAGe

Arguments

<NR1> = 0 disables Save On Image; any other value turns this feature on.

OFF disables Save On Image.

ON enables Save On Image.

Examples

SAVEON:IMAGE ON sets the oscilloscope to save a screen capture on a specified trigger.

`SAVEON:IMAGE?` might return `:SAVEON:IMAGE 1`, indicating that the oscilloscope will save a screen capture when the specified trigger occurs.

SAVEON:IMAGe:FILEFormat

This command sets or queries the file format to be used for saved image files when :SAVEON:IMAGe is set to 1.

Group

Save On

Syntax

```
SAVEON:IMAGe:FILEFormat {PNG|BMP|JPG}
SAVEON:IMAGe:FILEFormat?
```

Arguments

`PNG` specifies using PNG format for saved image files.

`BMP` specifies using BMP format for saved image files.

`JPG` specifies using JPEG format for saved image files.

When specifying the file name with this command, use the correct file extension (".png" for PNG format, ".bmp" for BMP format, or ".jpg" for JPEG format). If a file name or path is specified, the file is expected to be located in a directory relative to the current working directory (specified by FILESystem:CWD) unless a complete path is specified:

- Complete path specification. If the file argument begins with drive designator (such as C:), then the file name is interpreted as a full path.
- Relative path specification. If the file argument begins with "." or ".." or has a file path separator appearing anywhere other than the first character position, then the file name is treated as a path that is relative to the current working directory.

Examples

`SAVEON:IMAGE:FILEFORMAT JPG` sets the image file format to JPEG.

`SAVEON:IMAGE:FILEFORMAT?` might return `:SAVEON:IMAGE:FILEFORMAT PNG` indicating that the file format is set to PNG.

SAVEON:TRIGger

Sets or queries whether to save a file when a trigger occurs. You can define the trigger using Trigger commands or the oscilloscope user interface.

The trigger will cause the instrument to save an image or a waveform to a file, depending on what you specified. For example, if you have set SAVEON:IMAGe to On, and a trigger event occurs, the instrument will save a screen capture.

You can set options for file storage (such as file name, file destination, and auto increment), using the SAVEON:FILE commands.

Use the oscilloscope interface to select whether to save one or more analog channels, digital channels, or math waveforms

Analog and math waveforms are saved using one file per waveform. Digital waveforms are all saved to a single file.

Group Save On

Syntax

```
SAVEON:TRIGger {<NR1>|ON|OFF}
SAVEON:TRIGger?
```

Related Commands SAVEON:IMAGe, SAVEON:WAVEform, SAVEON:FILE:DEST, SAVEON:FILE:NAME

Arguments `<NR1>` = 0 disables Save On Trigger; any other value turns this feature on.

`OFF` disables Save On Trigger.

`ON` enables Save On Trigger.

Examples `SAVEON:TRIGGER ON` sets the oscilloscope to save an image, measurement, and/or waveform when a trigger occurs.

`SAVEON:TRIGGER?` might return `:SAVEON:TRIGGER ON`, indicating that a file will be saved on triggering.

SAVEON:WAVEform

Sets or queries whether to save a waveform when a trigger occurs when SAVEON:TRIGger is ON..

The waveform will be saved to the file you selected with SAVEON:FILE:NAME, in the location that you selected using SAVEON:FILE:DEST. You can set options for file storage (such as file name, file destination, and autoincrement), using the `SAVEON:FILE` commands.

Group Save On

Syntax

```
SAVEON:WAVEform {<NR1>|ON|OFF}
SAVEON:WAVEform?
```

Related Commands SAVEON:FILE:DEST, SAVEON:FILE:NAME, SAVEON:TRIGger

Arguments <NR1> = 0 disables Save On Waveform; any other value turns this feature on.

OFF disables Save On Waveform.

ON enables Save On Waveform.

Examples SAVEON:WAVEFORM ON turns on the Save On Waveform feature, so that a waveform will be saved when a selected trigger occurs.

SAVEON:WAVEFORM? might return :SAVEON:WAVEFORM ON, indicating that a waveform will be saved when a selected trigger occurs.

SAVEON:WAVEform:FILEFormat

This command sets or queries the file format for saving waveforms when :SAVEON:WAVEform is set to 1.

Group Save On

Syntax

```
SAVEON:WAVEform:FILEFormat {INTERNal|SPREADSheet}
SAVEON:WAVEform:FILEFormat?
```

Arguments INTERNal specifies saving the waveform in the oscilloscope internal format.

SPREADSheet specifies saving the waveform in comma separated values format.

Examples SAVEON:WAVEFORM:FILEFORMAT SPREADSheet sets the file format to spreadsheet.

SAVEON:WAVEFORM:FILEFORMAT? might return :SAVEON:WAVEFORM:FILEFORMAT INTERNAL indicating the file format is set to INTERNAL.

SAVEON:WAVEform:SOURce

This command sets or queries the sources for saving waveforms when SAVEON:TRIGger is ON.

Group Save On

Syntax
```
SAVEON:WAVEform:SOURce {CH<x>|MATH<x>|REF<x>|ALL}
SAVEON:WAVEform:SOURce?
```

Arguments Arguments are the available sources.

Examples `SAVEON:WAVEform:SOURce MATH1` specifies MATH 1 as the save on source.

`SAVEON:WAVEform:SOURce?` might return `:SAVEON:WAVEFORM:SOURCE REF1` indicating the save on source is REF1.

SEARCH:ADDNew (No Query Form)

This command adds the specified search.

Group Search and Mark

Syntax
```
SEARCH:ADDNew <QString>
```

Arguments `<QString>` is the specified search. The argument is of the form "`SEARCH<NR1>`", where `<NR1>` is ≥ 1.

Examples `SEARCH:ADDNEW` “`SEARCH2`” adds a new search named SEARCH 2.

SEARCH:DELete (No Query Form)

This command deletes the specified search.

Group Search and Mark

Syntax
```
SEARCH:DELete <QString>
```

Arguments `<QString>` is the specified search. The argument is of the form "`SEARCH<NR1>`", where `<NR1>` is ≥ 1).

Examples `SEARCH:DELETE` “`SEARCH3`” deletes SEARCH 3.

SEARCH:LIST? (Query Only)

This command returns a comma separated list of all currently defined searches.

Group Search and Mark

Syntax `SEARCH:LIST?`

Returns All currently defined searches.

Examples `SEARCH:LIST?` might return `:SEARCH:LIST SEARCH1,SEARCH2` indicating that Search 1 and Search 2 are defined.

SEARCH:SEARCH<x>:COPy (No Query Form)

This command (no query form) copies the search criteria to or from the trigger. The search number is specified by <x>.

Group Search and Mark

Syntax `SEARCH:SEARCH<x>:COPy {SEARCHtotrigger|TRIGgertosearch}`

Arguments `SEARCHtotrigger` copies the search criteria to the trigger.

`TRIGgertosearch` copies the trigger criteria to the search.

Examples `SEARCH:SEARCH1:COPY TRIGGERTOSEARCH` copies the trigger criteria to the search 1 criteria.

`SEARCH:SEARCH1:COPY SEARCHTOTRIGGER` copies the search criteria to the trigger.

SEARCH:SEARCH<x>:NAVigate (No Query Form)

This command sets the navigation action for search marks. The `NONE` action is the default setting when no action is being taken. The search number is specified by <x>.

Group Search and Mark

Syntax `SEARCH:SEARCH<x>:NAVigate {NEXT|PREVious|MIN|NONE|MAX}`

Arguments `NEXT` goes to the next search mark.

`PREVious` goes to the previous search mark.

`MIN` goes to the first search mark.

`NONE` is the default setting when no action is being taken.

`MAX` goes to the last search mark.

Examples `SEARCH:SEARCH1:NAVigate NEXT` goes to the next search mark.

SEARCH:SEARCH<x>:TOTAL? (Query Only)

This query-only command returns the total number of found search marks for this search. The search number is specified by <x>.

Group Search and Mark

Syntax `SEARCH:SEARCH<x>:TOTAL?`

Examples `SEARCH:SEARCH1:TOTAL?` might return `:SEARCH:SEARCH1:TOTAL 7`, indicating that there are 7 matches for search 1.

SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:CONDition

This command specifies a field or condition for an ARINC429 bus to search on. The search number is specified by x.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:CONDition
{SOW|LABel|DATa|LABELANDDATA|EOW|ERRor}
SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:CONDition?
```

Arguments

`SOW` specifies a search for the first bit of a word.

`LABel` specifies a search for a matching label.

`DATa` specifies a search for matching packet data fields.

`LABELANDDATA` specifies a search for a matching label and matching packet data field(s).

`EOW` specifies a search for the 32nd bit of a word.

`ERRor` specifies a search for a specified error condition.

NOTE. *The type of error searched for is specified by* *`SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:ERRTYPe`.*

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:ARINC429A:CONDITION DATA` specifies finding packets that contain matching data field(s).

`SEARCH:SEARCH1:TRIGGER:A:BUS:ARINC429A:CONDITION?` might return SOW, indicating that the bus is being searched for the first bit of each word in the packet.

SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:DATa:HIVALue

This command sets or queries the high value when searching on an ARINC429 data field. The search number is specified by x. The search condition must be set to DATa or LABELANDDATA, and the data qualifier must be INrange or OUTrange.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:DATa:HIVALue
<QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:DATa:HIVALue?
```

Arguments

`<QString>` is the label value.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:ARINC429A:DATA:HIVALUE "XXXXXXXXXXXXXXX1000"` sets the value to XXXXXXXXXXXXXXX1000.

`SEARCH:SEARCH1:TRIGGER:A:BUS:ARINC429A:DATA:HIVALUE?` might return "XXXXXXXXXXXXXXXXXXX", indicating that the value is XXXXXXXXXXXXXXXXXXX.

SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:DATa:QUALifier

This command sets or queries the qualifier to be used when searching on data in the DATA field for an ARINC429 bus signal. The search number is specified by x. The search condition must be set to DATa or LABELANDDATA.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:
DATa:QUALifier {EQual|UNEQual|LESSthan|MOREthan
|LESSEQual|MOREEQual|INrange|OUTrange}
SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:DATa:QUALifier?
```

Arguments Arguments are the available data qualifiers.

NOTE. *The search qualifier only applies to the bits defined as the data field via the bus data field format specifier (using `BUS:B<x>:ARINC429A:DATAFORmat`).*

Examples `SEARCH:SEARCH1:TRIGGER:A:BUS:ARINC429A:DATA:QUALIFIER LESSTHAN` sets the data qualifier to less than.

`SEARCH:SEARCH1:TRIGGER:A:BUS:ARINC429A:DATA:QUALIFIER?` might return EQUAL, indicating that the data qualifier is set to equal.

SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:DATa:VALue

This command sets or queries the low value when searching on an ARINC429 data field. The search number is specified by x. The search condition must be set to DATa or LABELANDDATA.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:DATa:VALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:DATa:VALue?
```

Arguments

`<QString>` is the label value.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:ARINC429A:DATA:VALUE "XXXXXXXXXXXXXXX1000"` sets the value to XXXXXXXXXXXXXXX1000.

`SEARCH:SEARCH1:TRIGGER:A:BUS:ARINC429A:DATA:VALUE?` might return "XXXXXXXXXXXXXXXXXXX", indicating that the value is XXXXXXXXXXXXXXXXXXX.

SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:ERRTYPe

This command sets or queries the error type when searching on an ARINC429 bus signal. The search number is specified by x. The search condition must be set to ERRor.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:ERRTYPe
{ANY|PARity|WORD|GAP}
SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:ERRTYPe?
```

Arguments

`ANY` sets the error type to match any of the other available error types.

`PARity` sets the error type to match on parity errors (parity value results in even parity count for a word).

`WORD` sets the error type to match on word errors (any unframed or unknown decode data).

`GAP` sets the error type to match on gap violations (less than 4 bits idle time between two packets on the bus).

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:ARINC429A:ERRTYPE PARITY` sets the error type to match on parity errors.

`SEARCH:SEARCH1:TRIGGER:A:BUS:ARINC429A:ERRTYPE?` might return ANY, indicating that any error condition will produce a match.

SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:LABel:HIVALue

This command sets or queries the high value when searching on an ARINC429 label field. The search number is specified by x. The search condition must be set to LABel, and the label qualifier must be INrange or OUTrange.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:LABel:HIVALue
<QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:LABel:HIVALue?
```

Arguments `<QString>` is the label value.

Examples `SEARCH:SEARCH1:TRIGGER:A:BUS:ARINC429A:LABEL:HIVALUE "XXXX1010"` sets the value to XXXX1010.

`SEARCH:SEARCH1:TRIGGER:A:BUS:ARINC429A:LABEL:HIVALUE?` might return "XXXXXXXX", indicating that the value is XXXXXXXX.

SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:LABel:QUALifier

This command sets or queries the qualifier to be used when searching on label data for an ARINC429 bus signal. The search number is specified by x. The search condition must be set to LABel or LABELANDDATA.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:
LABel:QUALifier {EQual|UNEQual|LESSthan|MOREthan
|LESSEQual|MOREEQual|INrange|OUTrange}
SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:LABel:QUALifier?
```

Arguments Arguments are the available data qualifiers.

NOTE. If the search condition is set to `LABELANDDATA`, the label qualifier will be locked to Equal until the search condition is changed again.

Examples `SEARCH:SEARCH1:TRIGGER:A:BUS:ARINC429A:LABEL:QUALIFIER LESSTHAN` sets the label qualifier to less than.

`SEARCH:SEARCH1:TRIGGER:A:BUS:ARINC429A:LABEL:QUALIFIER?` might return `EQUAL`, indicating that the label qualifier is set to equal.

SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:LABel:VALue

This command sets or queries the low value when searching on an ARINC429 label field. The search number is specified by x. The search condition must be set to LABel or LABELANDDATA.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:LABel:VALue
<QString>
```

Arguments `<QString>` is the label value.

Examples `SEARCH:SEARCH1:TRIGGER:A:BUS:ARINC429A:LABEL:VALUE "XXXX1010"` sets the value to XXXX1010.

`SEARCH:SEARCH1:TRIGGER:A:BUS:ARINC429A:LABEL:VALUE?` might return `"XXXXXXXX"`, indicating that the value is `XXXXXXXX`.

SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:SDI:VALue

This command sets or queries the label when searching on an ARINC429 SDI field. The search number is specified by x. The search condition must be set to DATa or LABELANDDATA, and the data format must be set to DATA.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:SDI:VALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:SDI:VALue?
```

Arguments

`<QString>` is the label value.

NOTE. *The SDI field is only present when the selected data field format is DATA (using `BUS:B<x>:ARINC429A:DATAFORmat`). Also, the stored QString is reset to its default value whenever the data field format is changed.*

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:ARINC429A:SDI:VALUE "X0"` sets the value to X0.

`SEARCH:SEARCH1:TRIGGER:A:BUS:ARINC429A:SDI:VALUE?` might return "XX", indicating that the value is XX.

SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:SSM:VALue

This command sets or queries the label when searching on an ARINC429 SSM field. The search number is specified by x. The search condition must be set to DATa or LABELANDDATA, and the data format must be set to DATA or SDIDATA.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:SSM:VALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:ARINC429A:SSM:VALue?
```

Arguments

`<QString>` is the label value.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:ARINC429A:SSM:VALUE "X0"` sets the value to X0.

`SEARCH:SEARCH1:TRIGGER:A:BUS:ARINC429A:SSM:VALUE?` might return "XX", indicating that the value is XX.

SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:CONDition

This command sets or queries the condition (word select / frame sync, or matching data) to be used when searching on an audio bus signal. The search number is specified by <x>.

Conditions Requires the SR-AUDIO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:CONDition {SOF|DATa}
SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:CONDition?
```

Arguments `SOF` specifies to search on a word select or start of frame (depending on Audio Type).

`DATA` specifies to search on matching data.

Examples `SEARCH:SEARCH1:TRIGger:A:BUS:AUDio:CONDition SOF` sets conditions to search on start of frame.

`SEARCH:SEARCH1:TRIGger:A:BUS:AUDio:CONDition?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:AUDIO:CONDITION DATA` indicating settings for a search on DATA.

SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:DATa:HITDMVALue

This command sets or queries the binary data string for the high data word to be used when searching on an TDM audio bus signal. The search condition must be set to DATa using `SEARCH:SEARCH{x}:TRIGger:A:BUS:AUDio:CONDition`.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:DATa:HITDMVALue
<QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:DATa:HITDMVALue?
```

Arguments `<QString>` is the binary data string for the high data word to be used when searching on an TDM audio bus signal.

Examples

`SEARCH:SEARCH1:TRIGger:A:BUS:AUDio:DATa:HITDMVALue "XXXXXXXXXXXXXXXXXXXX1100"` sets the high value to 1100.

`SEARCH:SEARCH1:TRIGger:A:BUS:AUDio:DATa:HITDMVALue?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:AUDIO:DATA:HITDMVALUE "XXXXXXXXXXXXXXXXXXXX1010"` indicating the high value is set to 1010.

SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:DATa:HIVALue

This command sets or queries the binary data string for the high data word to be used when searching on an audio bus signal. The search condition must be set to DATa using `:SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:CONDition`. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:DATa:HIVALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:DATa:HIVALue?
```

Arguments

<QString> specifies the upper word value.

Examples

`SEARCH:SEARCH1:TRIGger:A:BUS:AUDio:DATa:HIVALue "XXXX"` sets the `HIVALUE` to `XXXX`.

`SEARCH:SEARCH1:TRIGger:A:BUS:AUDio:DATa:HIVALue?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:AUDIO:DATA:HIVALUE "TEST_001101"` indicating the `HIVALUE` is set to `TEST_001101`.

SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:DATa:OFFSet

This command sets or queries the data offset value (TDM channel) to be used when searching on a TDM type audio bus signal. The search condition must be set to DATa using `SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:TDM:CONDition`. The search number is specified by <x>.

Conditions

Requires the SR-AUDIO Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:DATa:OFFSet <NR1>
SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:DATa:OFFSet?
```

Arguments

<NR1> is the data offset value.

Examples

SEARCH:SEARCH1:TRIGger:A:BUS:AUDio:DATa:OFFSet 2 sets the data offset value to 2.

SEARCH:SEARCH1:TRIGger:A:BUS:AUDio:DATa:OFFSet? might return :SEARCH:SEARCH1:TRIGGER:A:BUS:AUDIO:DATA:OFFSET 1 indicating data offset value is set to TDM channel 1.

SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:DATa:QUALifier

This command sets or queries the qualifier to be used when searching on an audio bus signal. The search condition must be set to DATa using SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:{NONTdm|TDM}:CONDition. The search number is specified by <x>.

Conditions

Requires the SR-AUDIO Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:
AUDio:DATa:QUALifier {EQual|UNEQual|
LESSthan|MOREthan|LESSEQual|MOREEQual|INrange|OUTrange}
SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:DATa:QUALifier?
```

Arguments

LESSthan sets the qualifier to less than.

MOREthan sets the qualifier to greater than.

EQual sets the qualifier to equal.

UNEQual sets the qualifier to not equal.

LESSEQual sets the qualifier to less than or equal.

MOREEQual sets the qualifier to greater than or equal.

INrange sets the qualifier to in range.

OUTrange sets the qualifier to out of range.

Examples

SEARCH:SEARCH1:TRIGger:A:BUS:AUDio:DATa:QUALifier LESSthan sets the qualifier to LESSthan.

`SEARCH:SEARCH1:TRIGger:A:BUS:AUDio:DATa:QUALifier?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:AUDIO:DATA:QUALIFIER EQUAL` indicating the qualifier is set to `EQUAL`.

SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:DATa:TDMVALue

This command sets or queries the binary data string for the single or low data word to be used when searching on an TDM audio bus signal. The search condition must be set to DATA using `SEARCH:SEARCH{x}:TRIGger:A:BUS:AUDio:CONDition`.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:DATa:TDMVALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:DATa:TDMVALue?
```

Arguments

`<QString>` is the binary data string for the single or low data word to be used when searching on an TDM audio bus signal.

Examples

`SEARCH:SEARCH1:TRIGger:A:BUS:AUDio:DATa:TDMVALue "1100" sets the TDMVALUE to 1100.`

`SEARCH:SEARCH1:TRIGger:A:BUS:AUDio:DATa:TDMVALue?` might return :SEARCH:SEARCH1:TRIGGER:A:BUS:AUDIO:DATA:TDMVALUE "XXXXXXXXXXXXXXXXXXXX1010" indicating the TDM value is 1010.

SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:DATa:VALue

This command sets or queries the binary data string for the single or low data word to be used when searching on an audio bus signal. The search condition must be set to DATA using `SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:{NONTdm|TDM}:CONDition`. The search number is specified by <x>.

Conditions

Requires the SR-AUDIO Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:DATa:VALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:DATa:VALue?
```

Arguments

`<QString>` is the lower word value.

Examples

`SEARCH:SEARCH1:TRIGger:A:BUS:AUDio:DATa:VALue “X0X011”` sets the data value to `X0X011`.

`SEARCH:SEARCH1:TRIGger:A:BUS:AUDio:DATa:VALue?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:AUDIO:DATA:VALUE "XXXXXXXXXXXXXXXXXXXXXXXX"` indicating the data value is set to `XXXXXXXXXXXXXXXXXXXXXXXX`.

SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:DATa:WORD

This command sets or queries the alignment of the data (left, right or either) to be used when searching on a non-TDM type audio bus signal. The search condition must be set to DATA using `SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:NONTdm:CONDition`. The search number is specified by <x>.

Conditions

Requires the SR-AUDIO Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:DATa:WORD
{EITher|LEFt|RIGht}
SEARCH:SEARCH<x>:TRIGger:A:BUS:AUDio:DATa:WORD?
```

Arguments

`EITher` aligns the data to either left or right.

`LEFt` aligns the data to the left.

`RIGht` aligns the data to the right.

Examples

`SEARCH:SEARCH1:TRIGger:A:BUS:AUDio:DATa:WORD LEFT` aligns the data to the left.

`SEARCH:SEARCH1:TRIGger:A:BUS:AUDio:DATa:WORD?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:AUDIO:DATA:WORD EITHER` indicating the data is aligned either to the left or right.

SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:CONDition

This command sets or queries the search condition for a CAN bus. The search number is specified by <x>.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Search and Mark

Syntax
```
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:CONDition
{SOF|FRAMEtype|IDentifier|DATa|IDANDDATA|EOF|ERRor|FDBITS}
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:CONDition?
```

Arguments Arguments specify the CAN bus trigger condition.

Examples `SEARCH:SEARCH1:TRIGger:A:BUS:CAN:CONDition EOF` sets the CAN bus trigger condition to end of frame.

`SEARCH:SEARCH1:TRIGger:A:BUS:CAN:CONDition?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:CAN:CONDITION SOF`, indicating the CAN bus trigger condition is set to start of frame.

SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:DATa:DIRection

This command specifies the CAN search type to be valid on a Read, Write, or Either condition. The search number is specified by <x>.

Group Search and Mark

Syntax
```
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:DATa:DIRection
{READ|WRITE|NOCARE}
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:DATa:DIRection?
```

Arguments `READ` specifies the read direction.

`WRITE` specifies the write direction.

`NOCARE` specifies either data direction.

Examples `SEARCH:SEARCH1:TRIGger:A:BUS:CAN:DATa:DIRection READ` sets the data direction to `READ`.

`SEARCH:SEARCH1:TRIGger:A:BUS:CAN:DATa:DIRection?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:CAN:DATA:DIRECTION NOCARE` indicating the data direction is set to either data direction.

SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:DATa:OFFSet

This command sets or queries the data offset value, in bytes, to use when searching on the CAN data field. The search number is specified by x. The search condition must be set to DATA or IDANDDATA.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:DATa:OFFSet <NR1>
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:DATa:OFFSet?
```

Related Commands

BUS:B<x>:CAN:STANDard

SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:DATa:SIZe

SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:DATa:VALue

Arguments `<NR1>` is an integer whose minimum and default values are -1 (don't care) and maximum is up to 7 (for CAN 2.0) or up to 63 (for ISO CAN FD and Non-ISO CAN FD). The maximum is dependent on the number of bytes being matched and the CAN standard selected. Its value is calculated as [Absolute Maximum] - [Data Match Size]. For CAN 2.0, the absolute maximum is 8 bytes. For ISO CAN FD and Non-ISO CAN FD, the absolute maximum is 64 bytes. The minimum data match size is 1 byte, which produces the ranges listed above. Increasing the data match size above 1 byte will adjust the range of valid data offset values accordingly.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:CAN:DATA:OFFSET 5`sets the CAN data offset to 5 bytes.

`SEARCH:SEARCH1:TRIGGER:A:BUS:CAN:DATA:OFFSET?` might return 7, indicating the CAN data offset is 7 bytes. If the CAN standard is set for CAN 2.0 and the search data size is set to 3, the maximum value for the data offset will be 5 (8 - 3 = 5). If the CAN standard is set for ISO CAN FD or Non-ISO CAN FD and the search data size is set to 8, the maximum value for the data offset will be 56 (64 - 8 = 56).

SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:DATa:QUALifier

This command sets or queries the CAN bus trigger data qualifier to be used when searching on a CAN bus signal. The search number is specified by <x>.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:DATa:QUALifier
{EQUal|LESSEQual|MOREEQua|UNEQual|LESSthan|MOREthan}
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:DATa:QUALifier?
```

Arguments Arguments are the data qualifier types.

Examples `SEARCH:SEARCH1:TRIGger:A:BUS:CAN:DATa:QUALifier UNEQual` sets the data qualifier to unequal.

`SEARCH:SEARCH1:TRIGger:A:BUS:CAN:DATa:QUALifier?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:CAN:DATA:QUALIFIER EQUAL`, indicating that the data qualifier is set to equal.

SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:DATa:SIZe

This command sets or queries the length of the data string, in bytes, to be used when searching on a CAN bus signal. The search condition must be set to IDANDDATA or DATA. The search number is specified by <x>.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:DATa:SIZe <NR1>
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:DATa:SIZe?
```

Arguments `<NR1>` specifies the data size.

Examples `SEARCH:SEARCH1:TRIGger:A:BUS:CAN:DATa:SIZe 1` sets the data size to 1.

`SEARCH:SEARCH1:TRIGger:A:BUS:CAN:DATa:SIZe?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:CAN:DATA:SIZE 1`, indicating the data size is set to 1.

SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:DATa:VALue

This command sets or queries the binary data value to be used when searching on a CAN bus signal. The search condition must be set to IDANDDATA OR DATA.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:DATa:VALue <QString>
```

Arguments `<QString>`

Examples

`SEARCH:SEARCH1:TRIGger:A:BUS:CAN:DATa:VALue "1111"` sets the data value to 1111.

`SEARCH:SEARCH1:TRIGger:A:BUS:CAN:DATa:VALue?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:CAN:DATA:VALUE "1010"` indicating the data value is 1010.

SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:ERRType

This command sets or queries the type of error condition for a CAN bus to search on. The search number is specified by x. The search condition must be set to ERRor.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:ERRType
{ACKMISS|BITSTUFFing|FORMERRor |ANYERRor}
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:ERRType?
```

Arguments

`ACKMISS` specifies a search based on a missing ACK field.

`BITSTUFFing` specifies a search based on a bit stuffing error.

`FORMERRor` specifies a search based on a CAN FD form error. To use this option, the CAN standard must be set to FDISO or FDNONISO.

`ANYERRor` specifies a search based on any error type.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:CAN:ERRTYPE ACKMISS` specifies searching for any missing ACK fields.

`SEARCH:SEARCH1:TRIGGER:A:BUS:CAN:ERRTYPE?` might return ANYERROR, indicating that the bus is being searched for all error types.

SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:FD:BRSBit

This command sets or queries the value of the bit rate switch bit (BRS bit) for a CAN bus to search on. The search number is specified by x. The search condition must be set to FDBITS, and the CAN standard must be FDISO or FDNONISO.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:FD:BRSBit {ONE|ZERo|NOCARE}
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:FD:BRSBit?
```

Arguments

`ONE` filters CAN FD packets to only match those where the BRS bit has a value of 1 (fast data enabled).

`ZERo` filters CAN FD packets to only match those where the BRS bit has a value of 0 (fast data disabled).

`NOCARE` disables filtering of CAN FD packets on the BRS bit.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:CAN:FD:BRSBit ONE` specifies filtering CAN FD packets for those where the BRS bit has a value of 1.

`SEARCH:SEARCH1:TRIGGER:A:BUS:CAN:FD:BRSBIT?` might return NOCARE, indicating that CAN FD packets are not being filtered based on the BRS bit value.

SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:FD:ESIBit

This command sets or queries the value of the error state indicator bit (ESI bit) for a CAN bus to search on. The search number is specified by x. The search condition must be set to FDBITS, and the CAN standard must be FDISO or FDNONISO.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:FD:ESIBit {ONE|ZERo|NOCARE}
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:FD:ESIBit?
```

Arguments

ONE filters CAN FD packets to only match those where the ESI bit has a value of 1 (recessive).

ZERo filters CAN FD packets to only match those where the ESI bit has a value of 0 (dominant).

NOCARE disables filtering of CAN FD packets on the ESI bit.

Examples

SEARCH:SEARCH1:TRIGGER:A:BUS:CAN:FD:ESIBit ONE specifies filtering CAN FD packets for those where the ESI bit has a value of 1.

SEARCH:SEARCH1:TRIGGER:A:BUS:CAN:FD:ESIBIT? might return NOCARE, indicating that CAN FD packets are not being filtered based on the ESI bit value.

SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:FRAMEtype

This command sets or queries CAN bus trigger frame type to be used when searching on a CAN bus signal. The search condition must be set to FRAMEtype. The search number is specified by <x>.

Conditions

Requires the SR-AUTO Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:FRAMEtype
{DATa|ERRor|OVERLoad|REMote}
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:FRAMEtype?
```

Arguments

Arguments are the available frame types.

Examples

SEARCH:SEARCH1:TRIGger:A:BUS:CAN:FRAMEtype ERROR sets the frame type to error.

SEARCH:SEARCH1:TRIGger:A:BUS:CAN:FRAMEtype? might return :SEARCH:SEARCH1:TRIGGER:A:BUS:CAN:FRAMETYPE DATA, indicates the frame type is set to data.

SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:IDentifier:MODe

This command sets or queries the CAN bus trigger identifier (address) mode to be used when searching on a CAN bus signal. The search number is specified by <x>. The search condition must be set to IDANDDATA or DATA.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:IDentifier:MODe
{EXTENDed|STandard}
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:IDentifier:MODe?
```

Arguments

`EXTENDed` specifies the extended identifier mode.

`STandard` specifies the standard identifier mode.

Examples

`SEARCH:SEARCH1:TRIGger:A:BUS:CAN:IDentifier:MODe EXTEND` sets the identifier mode to extended.

`SEARCH:SEARCH1:TRIGger:A:BUS:CAN:IDentifier:MODe?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:CAN:IDENTIFIER:MODE STANDARD`, indicating the identifier mode is set to standard.

SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:IDentifier:VALue

This command sets or queries CAN bus trigger identifier (address) value to be used when searching on a CAN bus signal. The search number is specified by <x>. The search condition must be set to IDANDDATA or DATA.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:IDentifier:VALue
<QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:CAN:IDentifier:VALue?
```

Arguments

`<QString>` is the identifier value.

Examples

`SEARCH:SEARCH1:TRIGger:A:BUS:CAN:IDentifier:VALue "1010"` sets the identifier value to 1010.

`SEARCH:SEARCH1:TRIGger:A:BUS:CAN:IDentifier:VALue?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:CAN:IDENTIFIER:VALUE "101011"`, indicating the identifier value is 101011.

SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:CONDition

This command specifies a field or condition for an Ethernet bus to search on. The search number is specified by <x>.

Conditions

Requires the SR-ENET Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:CONDition
{SFD|MACADDRess|MACLENgth|IPHeader|TCPHeader|DATa|EOP|
IDLe|FCSError|QTAG}
```

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:CONDition?
```

Related Commands

Most of the other `TRIGger:A:BUS:B<x>:ETHERnet` commands are impacted by the setting of this command.

Arguments

`SFD` – Start of frame delimiter.

`MACADDRess` – MAC addresses field.

`MACLENgth` – MAC length/type field.

`IPHeader` – IP header field. .

`TCPHeader` – TCP header field.

`DATa` – TCP/IPv4 or MAC protocol client data field.

`EOP` – End of Packet field.

`IDLe` – Idle field.

`FCSError` – Frame Check Sequence Error (CRC) field.

`QTAG` – IEEE 802.1Q (VLAN) control information field.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:CONDITION MACADDRESS` specifies `MACADDRess` as the field within an Ethernet frame to search on.

SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:CONDITION? might return DATA, indicating that DATA is the currently specified field within an Ethernet frame to search on.

SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:DATa:HIVALue

This command sets or queries the binary data value to be used when searching on an Ethernet bus signal. The search condition must be set to DATA and the data qualifier to inside or outside range. The search number is specified by <x>.

Conditions Requires the SR-ENET Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:DATa:HIVALue
<QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:DATa:HIVALue?
```

Arguments <QString> is the binary data value to be used when searching on an Ethernet bus signal.

Examples SEARCH:SEARCH1:TRIGger:A:BUS:ETHERnet:DATa:HIVALue “101011” sets the data HIVALue to 101011.

SEARCH:SEARCH1:TRIGger:A:BUS:ETHERnet:DATa:HIVALue? might return :SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:DATA:HIVALUE "10101".

SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:DATa:OFFSet

This command specifies the data offset value, in bytes, to use when searching on the Ethernet data field. The search condition needs to be set to DATa. The search number is specified by <x>.

Conditions Requires the SR-ENET Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:DATa:OFFSet <NR1>
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:DATa:OFFSet?
```

Related Commands

SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:CONDition

SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:DATa:VALue

SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:DATa:SIZe

Arguments

`<NR1>` is an integer whose minimum and default values are -1 (don't care) and maximum is 1,499.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:DATA:OFFSEt 36` sets the data offset to 36 bytes.

`SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:DATA:OFFSET?` might return -1, indicating that the data offset value is the default value, -1, meaning "don’t care".

SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:DATa:QUALifier

This command specifies the qualifier to be used when searching on an Ethernet bus signal. The search condition must be set to `DATa`. The search number is specified by <x>.

Conditions

Requires the SR-ENET Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:DATa:QUALifier
{LESSthan|MOREthan|EQual|UNEQual|LESSEQual|MOREEQual|
INrange|OUTrange}
```

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:DATa:QUALifier?
```

Related Commands

SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:CONDition

Arguments

`LESSthan` sets the qualifier to less than.

`MOREthan` sets the qualifier to greater than.

`EQual` sets the qualifier to equal.

`UNEQual` sets the qualifier to not equal.

`LESSEQual` sets the qualifier to less than or equal.

`MOREEQual` sets the qualifier to greater than or equal.

`INrange` sets the qualifier to in range.

`OUTrange` sets the qualifier to out of range.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:DATA:QUALIFIER LESSTHAN` sets the qualifier to "less than".

`SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:DATA:QUALIFIER?` might return `SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:DATA:QUALIFIER EQUAL` indicating that the qualifier is set to `EQUAL`.

SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:DATa:SIZe

This command specifies the length of the data string, in bytes, to use when searching on the Ethernet bus signal. The search condition needs to be set to `DATa`. The search number is specified by <x>.

Conditions

Requires the SR-ENET Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:DATa:SIZe <NR1>
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:DATa:SIZe?
```

Related Commands

SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:CONDition

Arguments

The minimum and default values are 1, and the maximum value is 16.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:DATA:SIZE 4` specifies 4 as the number of contiguous TCP/IPv4/MAC client bytes to use when searching on the Ethernet data field.

`SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:DATA:SIZE?` might return 6, indicating that 6 is the currently specified number of contiguous TCP/IPv4/MAC client bytes to use when searching on the Ethernet data field.

SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:DATa:VALue

This command specifies the binary value to use when searching on the Ethernet bus signal. The search condition needs to be set to `DATa`. The search number is specified by <x>.

Conditions Requires the SR-ENET Triggering and Analysis application.

Group Search and Mark

Syntax
```
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:DATa:VALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:DATa:VALue?
```

Related Commands SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:CONDition

SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:DATa:OFFSet

SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:DATa:SIZe

Arguments `<QString>` is a quoted string where the allowable characters are 0, 1, and X. The allowable number of characters depends on the setting for size (using SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:DATa:SIZe). The bits specified in the quoted string replace the least significant bits, leaving any unspecified upper bits unchanged.

Examples `SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:DATA:VALUE "00001000"` specifies 00001000 as the value to use when triggering on the Ethernet binary data field, assuming that `TRIGGER:A:BUS:ETHERNET:DATA:SIZe` is set to 1 byte.

`SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:DATA:VALUE?` might return `"00001000"`, indicating 0000100 is the currently specified value used when searching on the Ethernet binary data field.

SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:IPHeader:DESTinationaddr:VALue

This command specifies the binary destination address value to use when searching on an Ethernet bus signal. The search condition needs to be set to `IPHeader`. The search number is specified by <x>.

Conditions Requires the SR-ENET Triggering and Analysis application.

Group Search and Mark

Syntax
```
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:IPHeader:
DESTinationaddr:VALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:IPHeader:
DESTinationaddr:VALue?
```

Related Commands SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:CONDition

Arguments `<QString>` is a quoted string of up to 32 characters where the allowable characters are 0, 1, and X. The bits specified in the quoted string replace the least significant bits, leaving any unspecified upper bits unchanged.

Examples `SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:IPHEADER:DESTINATIONADDR:VALUE "11000000101010000000000000000001"` specifies 192.168.0.1 as the value to use when searching on the Ethernet IPv4 header address destination field.

`SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:IPHEADER:DESTINATIONADDR:VALUE?` might return `"11000000101010000000000000000001"`, indicating that 192.168.0.1 is the currently specified value used when searching on the Ethernet IPv4 header address destination field.

SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:IPHeader:PROTOcol:VALue

This command specifies the binary protocol value to use when searching on the Ethernet bus signal. The search condition needs to be set to `IPHeader`. The search number is specified by <x>.

***NOTE.** Commonly used protocol values are 1 (ICMP), 2 (IGMP), 6 (TCP) and 17 (UDP).*

Conditions Requires the SR-ENET Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:IPHeader:PROTOcol:
VALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:IPHeader:PROTOcol:
VALue?
```

Related Commands SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:CONDition

Arguments `<QString>` is a quoted string of up to 8 characters where the allowable characters are 0, 1, and X. The bits specified in the quoted string replace the least significant bits, leaving any unspecified upper bits unchanged.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:IPHEADER:PROTOCOL:VALUE "01010010"` specifies 01010010 as the value to use when searching on the Ethernet IP header protocol field.

`SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:IPHEADER:PROTOCOL:VALUE?` might return `"XXXXXXXX"`, indicating that the trigger value has been set to "don't care".

SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:IPHeader:SOUrceaddr:VALue

This command specifies the binary source address value to use when searching on an Ethernet bus signal. The search condition needs to be set to `IPHeader`. The search number is specified by <x>.

Conditions

Requires the SR-ENET Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:IPHeader:SOUrceaddr:
VALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:IPHeader:SOUrceaddr:
VALue?
```

Related Commands

SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:CONDition

Arguments

QString is a quoted string of up to 32 characters where the allowable characters are 0, 1, and X. The bits specified in the quoted string replace the least significant bits, leaving any unspecified upper bits unchanged.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:IPHEADER:SOURCEADDR:VALUE "11000000101010000000000000000001"` specifies to use the value of 192.168.0.1 when searching on the Ethernet IP header address source field.

`SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:IPHEADER:SOURCEADDR:VALUE` might return `"11000000101010000000000000000001"`, indicating that the search value has been set to 192.168.0.1.

SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:MAC:ADDRess:DESTination:VALue

This command specifies the binary MAC address destination value to use when searching on an Ethernet bus signal. The search condition needs to be set to `MACADDRess`. The search number is specified by <x>.

NOTE. MAC Addresses are 48-bit values such as 08:00:11:1E:C9:AE hex.

Conditions Requires the SR-ENET Triggering and Analysis application.

Group Search and Mark

Syntax
```
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:MAC:ADDRess:
DESTination:VALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:MAC:ADDRess:
DESTination:VALue?
```

Related Commands SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:CONDition

Arguments `<QString>` is a quoted string of up to 48 characters where the allowable characters are 0, 1, and X. The bits specified in the quoted string replace the least significant bits, leaving any unspecified upper bits unchanged.

Examples `SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:MAC:ADDRESS:DESTINATION:VALUE "XXXXXXXX001101011111110000000111101010101011001000"` specifies to use the value of XX:35:FC:07:AA:C8 hex when searching on the Ethernet MAC address destination field.

`SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:MAC:ADDRESS:DESTINATION:VALUE?` might return `”XXXXXXXX001101011111110000000111101010101011001000”`, indicating a MAC address destination field value of XX:35:FC:07:AA:C8 hex.

SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:MAC:ADDRess:SOUrce:VALue

This command specifies the binary MAC address source value to use when searching on an Ethernet bus signal. The search condition needs to be set to `MACADDRess`. The search number is specified by <x>.

NOTE. MAC Addresses are 48-bit values such as 08:00:11:1E:C9:AE hex.

Conditions Requires the SR-ENET Triggering and Analysis application.

Group Search and Mark

Syntax
```
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:MAC:ADDRess:SOUrce:
VALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:MAC:ADDRess:SOUrce:
VALue?
```

Related Commands
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:CONDition

Arguments
<QString> is a quoted string of up to 48 characters where the allowable characters are 0, 1, and X. The bits specified in the quoted string replace the least significant bits, leaving any unspecified upper bits unchanged.

Examples
SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:MAC:ADDRESS:SOURCE:VALUE "XXXXXXXX001101011111110000000111101010101011001000" specifies to use the value of XX:35:FC:07:AA:C8 hex when searching on the Ethernet MAC address source field.

SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:MAC:ADDRESS:SOURCE:VALUE? might return "XXXXXXXX001101011111110000000111101010101011001000", indicating a MAC address source field value of XX:35:FC:07:AA:C8 hex.

SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:MAC:LENgth:HIVALue

This command specifies the binary MAC length high value to use when searching on an Ethernet bus signal. The search condition needs to be set to MACADDRess. The search number is specified by <x>.

Conditions
Requires the SR-ENET Triggering and Analysis application.

Group
Search and Mark

Syntax
```
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:MAC:LENgth:HIVALue
<QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:MAC:LENgth:HIVALue?
```

Related Commands
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:CONDition

Arguments
<QString> is a quoted string of up to 16 characters where the allowable characters are 0, 1, and X. The bits specified in the quoted string replace the least significant bits, leaving any unspecified upper bits unchanged.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:MAC:LENGTH:HIVALUE "XXXXXXXX00001000"` specifies to use the hexadecimal value XX08 when searching on the Ethernet MAC length.

`SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:MAC:LENGTH:HIVALUE?` might return `"XXXXXXXX00001000"`, indicating an Ethernet MAC length value of XX08 hex.

SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:MAC:LENgth:VALue

This command specifies the MAC length value to use when searching on an Ethernet bus signal. The search condition needs to be set to `MACADDRess`. The search number is specified by <x>.

Conditions

Requires the SR-ENET Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:MAC:LENgth:VALue
<QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:MAC:LENgth:VALue?
```

Related Commands

SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:CONDition

Arguments

QString is a quoted string of up to 16 characters where the allowable characters are 0, 1, and X. The bits specified in the quoted string replace the least significant bits, leaving any unspecified upper bits unchanged.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:MAC:LENGTH:HIVALUE "XXXXXXXX00001000"` specifies to use the hexadecimal value XX08 when searching on the Ethernet MAC length.

`SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:MAC:LENGTH:HIVALUE?` might return `"XXXXXXXX00001000"`, indicating an Ethernet MAC length value of XX08 hex.

SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:QTAG:VALue

This command specifies the binary Q-tag information to use when searching on an Ethernet bus signal. The search condition needs to be set to `QTAG`. The search number is specified by <x>.

Conditions Requires the SR-ENET Triggering and Analysis application.

Group Search and Mark

Syntax
```
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:QTAG:VALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:QTAG:VALue?
```

Related Commands SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:CONDition

Arguments `<QString>` is a quoted string of up to 32 characters where the allowable characters are 0, 1, and X. The bits specified in the quoted string replace the least significant bits, leaving any unspecified upper bits unchanged.

Examples `SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:QTAG:VALUE "XXXXXXXXXXXXXXXXXXXX010010001010"` specifies to use the value of hexadecimal XXXXX48A when searching on the Ethernet Q-Tag field.

`SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:QTAG:VALUE?` might return "XXXXXXXXXXXXXXXXXXXX010010001010", indicating that hexadecimal XXXXX48A has been set as the Ethernet Q-Tag field search value.

SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:TCPHeader:ACKnum:VALue

This command specifies the binary ack number value to use when searching on an Ethernet bus signal. The default is all X's (don't care). The search condition needs to be set to `TCPHeader`. The search number is specified by <x>.

Conditions Requires the SR-ENET Triggering and Analysis application.

Group Search and Mark

Syntax
```
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:TCPHeader:ACKnum:
VALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:TCPHeader:ACKnum:
VALue?
```

Related Commands SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:CONDition

Arguments

QString is a quoted string of up to 32 characters where the allowable characters are 0, 1, and X. The bits specified in the quoted string replace the least significant bits, leaving any unspecified upper bits unchanged.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:TCPHEADER:ACKNUM:VALUE "XXXXXXXXXXXXXXXXXXXXXXXX00001000"` specifies hexadecimal XXXXXX08 as the value to use when searching on the Ethernet TCP header acknowledgement number.

`TRIGGER:A:BUS:ETHERNET:TCPHEADER:ACKNUM:VALUE?` might return `"XXXXXXXXXXXXXXXXXXXXXXXX00001000"`, indicating that hexadecimal XXXXXX08 has been specified as the value to use when searching on the Ethernet TCP header acknowledgement number.

SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:TCPHeader:DESTinationport:VALue

This command specifies the binary destination port value to use when searching on the Ethernet TCP header destination port number. The search condition needs to be set to `TCPHeader`. The search number is specified by <x>.

Conditions

Requires the SR-ENET Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:TCPHeader:
DESTinationport:VALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:TCPHeader:
DESTinationport:VALue?
```

Related Commands

SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:CONDition

Arguments

`<QString>` is a quoted string of up to 16 characters where the allowable characters are 0, 1, and X. The bits specified in the quoted string replace the least significant bits, leaving any unspecified upper bits unchanged.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:TCPHEADER: DESTINATIONPORT:VALUE "XXXXXXXX00100010"` specifies to use the value of hexadecimal XX22 when searching on the Ethernet TCP header destination port number.

`SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:TCPHEADER: DESTINATIONPORT:VALUE?` might return "XXXXXXXXXXXXXXXX", indicating that hexadecimal XX22 has been set as the value to use when searching on the Ethernet TCP header destination port number.

SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:TCPHeader:SEQnum:VALue

This command specifies the binary sequence number value to use when searching on an Ethernet bus signal. The default is all X's (don't care). The search condition needs to be set to `TCPHeader`. The search number is specified by <x>.

Conditions Requires the SR-ENET Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:TCPHeader:SEQnum:
VALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:TCPHeader:SEQnum:
VALue?
```

Related Commands SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:CONDition

Arguments QString is a quoted string of up to 32 characters where the allowable characters are 0, 1, and X. The bits specified in the quoted string replace the least significant bits, leaving any unspecified upper bits unchanged.

Examples `SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:TCPHEADER:SEQNUM:VALUE "XXXXXXXXXXXXXXXXXXXX000100010001"` specifies to use the value of hexadecimal XXXXX111 when searching on the Ethernet TCP header sequence number.

`SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:TCPHEADER:SEQNUM:VALUE?` might return "XXXXXXXXXXXXXXXXXXXXXX0010010100" , indicating that hexadecimal XXXXX111 has been specified as the value to use when searching on the Ethernet TCP header sequence number. .

SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:TCPHeader:SOUrceport:VALue

This command specifies the binary source port value to use when searching on an Ethernet bus signal. The search condition needs to be set to `TCPHeader`. The search number is specified by <x>.

Conditions Requires the SR-ENET Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:TCPHeader:
SOUrceport:VALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:TCPHeader:
SOUrceport:VALue?
```

Related Commands SEARCH:SEARCH<x>:TRIGger:A:BUS:ETHERnet:CONDition

Arguments `<QString>` is a quoted string of up to 16 characters where the allowable characters are 0, 1, and X. The bits specified in the quoted string replace the least significant bits, leaving any unspecified upper bits unchanged.

Examples `SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:TCPHEADER:SOURCEPORT:VALUE "XXXX000010100110"` specifies to use the value of hexadecimal X0A6 when searching on the Ethernet TCP header source port number.

`SEARCH:SEARCH1:TRIGGER:A:BUS:ETHERNET:TCPHEADER:SOURCEPORT:VALUE?` might return "XXXXX01001010110", indicating that hexadecimal X0A6 has been specified as the value to use when searching on the Ethernet TCP header source port number.

SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:CONDition

This command sets or queries the FlexRay bus search condition. The search number is specified by <x>.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:
FLEXRAY:CONDition {SOF|FRAMEType|
IDentifier|CYCLEcount|HEADer|DATA|IDANDDATA|EOF|ERRor}
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:CONDition?
```

Arguments Arguments are the available trigger conditions.

Examples `SEARCH:SEARCH1:TRIGger:A:BUS:FLEXRAY:CONDition SOF` sets the trigger condition to start of frame.

`SEARCH:SEARCH1:TRIGger:A:BUS:FLEXRAY:CONDition?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:FLEXRAY:CONDITION SOF`, indicating the FlexRay trigger condition is start of frame.

SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:CYCLEcount:HIVALue

This command sets or queries the heigh value when searching on a FlexRay bus cycle count field. The search number is specified by <x>. The search condition must be set to CYCLEcount.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:CYCLEcount:HIVALue
<QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:CYCLEcount:HIVALue?
```

Arguments `<QString>` specifies the cycle count value.

Examples `SEARCH:SEARCH1:TRIGger:A:BUS:FLEXRAY:CYCLEcount:HIVALue "1010"` sets the cycle count value to XX1010.

`SEARCH:SEARCH1:TRIGger:A:BUS:FLEXRAY:CYCLEcount:HIVALue?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:FLEXRAY:CYCLECOUNT:HIVALUE "XXXXXX"`, indicating the cycle count value is don't care, and it will trigger on any cycle count.

SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:CYCLEcount:QUALifier

This command sets or queries the qualifier to be used when searching on a FlexRay bus search cycle count field. The search number is specified by <x>. The search condition must be set to CYCLEcount.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Search and Mark

Syntax
```
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:CYCLEcount:QUALifier
{EQUal|LESSEQual|MOREEQual|UNEQual|LESSthan|MOREthan|
INrange|OUTrange}
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:CYCLEcount:QUALifier?
```

Arguments
Arguments are the available cycle count qualifiers.

Examples
`SEARCH:SEARCH1:TRIGger:A:BUS:FLEXRAY:CYCLEcount:QUALifier LESSthan` sets the cycle count qualifier to less than.

`SEARCH:SEARCH1:TRIGger:A:BUS:FLEXRAY:CYCLEcount:QUALifier?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:FLEXRAY:CYCLECOUNT:QUALIFIER EQUAL`, indicating the cycle count qualifier is set to equal.

SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:CYCLEcount:VALue

This command sets or queries the low value when searching on a FlexRay bus cycle count field. The search number is specified by <x>. The search condition must be set to CYCLEcount.

Conditions
Requires the SR-AUTO Triggering and Analysis application.

Group
Search and Mark

Syntax
```
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:CYCLEcount:VALue
<QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:CYCLEcount:VALue?
```

Arguments
`<QString>` specifies the cycle count value.

Examples
`SEARCH:SEARCH1:TRIGger:A:BUS:FLEXRAY:CYCLEcount:VALue "1010"` sets the cycle count value to XX1010.

`SEARCH:SEARCH1:TRIGger:A:BUS:FLEXRAY:CYCLEcount:VALue?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:FLEXRAY:CYCLECOUNT:VALUE "XXXXXX"`, indicating the cycle count value is don’t care, and it will trigger on any cycle count.

SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:DATa:HIVALue

This command sets or queries the high value when searching on a FlexRay bus data field. The search number is specified by <x>. The search condition must be set to IDANDDATA OR DATA.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:DATa:HIVALue
<QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:DATa:HIVALue?
```

Arguments `<QString>` specifies the data value.

Examples `SEARCH:SEARCH1:TRIGger:A:BUS:FLEXRAY:DATa:HIVALue "1010"` sets the data value to XXXXXX1010.

`SEARCH:SEARCH1:TRIGger:A:BUS:FLEXRAY:DATa:HIVALue?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:FLEXRAY:DATA:HIVALUE "XXXXXXXXXX"`, indicating the data value is a don't care.

SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:DATa:OFFSet

This command sets or queries the offset of the data string, in bytes, when searching on a FlexRay bus data field. The search number is specified by <x>. The search condition must be set to IDANDDATA OR DATA.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:DATa:OFFSet <NR3>
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:DATa:OFFSet?
```

Arguments `<NR3>` specifies the data offset in bytes. A setting of X/Don't care is accomplished by setting the offset to –1.

Examples

`SEARCH:SEARCH1:TRIGger:A:BUS:FLEXRAY:DATa:OFFSet 2` sets the data offset to 2 bytes.

`SEARCH:SEARCH1:TRIGger:A:BUS:FLEXRAY:DATa:OFFSet?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:FLEXRAY:DATA:OFFSET -1`, indicating the data offset is don't care.

SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:DATa:QUALifier

This command sets or queries the qualifier to be used when searching on a FlexRay bus signal. The search number is specified by <x>.

Conditions

Requires the SR-AUTO Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:DATa:QUALifier
{EQUal|LESSEQual|MOREEQual|UNEQual|LESSthan|MOREthan|
INrange|OUTrange}
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:DATa:QUALifier?
```

Arguments

Arguments are the available data qualifiers.

Examples

`SEARCH:SEARCH1:TRIGger:A:BUS:FLEXRAY:DATa:QUALifier LESSTHAN` sets the data qualifier to less than.

`SEARCH:SEARCH1:TRIGger:A:BUS:FLEXRAY:DATa:QUALifier?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:FLEXRAY:DATA:QUALIFIER EQUAL`, indicating the data qualifier is equal.

SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:DATa:SIZe

This command sets or queries the length of the data string, in bytes, to be used when searching on a FlexRay bus data field. The search number is specified by <x>. The search condition must be set to IDANDDATA OR DATA.

Conditions

Requires the SR-AUTO Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:DATa:SIZe <NR1>
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:DATa:SIZe?
```

Arguments

`<NR1>` specifies the data size in bytes. A data size of –1 is don't care.

Examples

`SEARCH:SEARCH1:TRIGger:A:BUS:FLEXRAY:DATa:SIZe 2` sets the data size to 2.

`SEARCH:SEARCH1:TRIGger:A:BUS:FLEXRAY:DATa:SIZe?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:FLEXRAY:DATA:SIZE 1`, indicating the data size is 1 byte.

SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:DATa:VALue

This command sets or queries the low value to be used when searching on a FlexRay bus data field. The search number is specified by <x>. The search condition must be set to IDANDDATA or DATA.

Conditions

Requires the SR-AUTO Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:DATa:VALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:DATa:VALue?
```

Arguments

`<QString>` specifies the data value.

Examples

`SEARCH:SEARCH1:TRIGger:A:BUS:FLEXRAY:DATa:VALue "1010"` sets the data value to XXXXXX1010.

`SEARCH:SEARCH1:TRIGger:A:BUS:FLEXRAY:DATa:VALue?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:FLEXRAY:DATA:VALUE "XXXXXXXXXX"`, indicating the data value is a don't care.

SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:EOFTYPE

This command sets or queries the end of frame type when searching on a FlexRay bus signal. The search number is specified by <x>. The search condition must be set to EOF.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:EOFTYPE
{ANY|STATIC|DYNAMIC}
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:EOFTYPE?
```

Arguments `ALL` specifies either end of file type.

`STATIC` specifies the static end of file type.

`DYNAMIC` specifies the static end of file type.

Examples `SEARCH:SEARCH1:TRIGger:A:BUS:FLEXRAY:EOFTYPE STATIC` sets the end of file type to static.

`SEARCH:SEARCH1:TRIGger:A:BUS:FLEXRAY:EOFTYPE?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:FLEXRAY:EOFTYPE ANY`, indicating either end of file type will cause a trigger.

SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:ERRTYPE

This command sets or queries the error type when searching on a FlexRay bus signal. The search number is specified by <x>. The search condition must be set to ERROR.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:ERRTYPE
{CRCHeader|CRCTrailer|NULLFRStatic|NULLFRDynamic|
SYNCFrame|STARTupnosync}
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:ERRTYPE?
```

Arguments Arguments are the available error types.

Examples `SEARCH:SEARCH1:TRIGger:A:BUS:FLEXRAY:ERRTYPE SYNCFRAME` sets the error type to SYNCFRAME.

`SEARCH:SEARCH1:TRIGger:A:BUS:FLEXRAY:ERRTYPE?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:FLEXRAY:ERRTYPE CRCHEADER`, indicating the error type is CRCHEADER.

SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXray:FRAMEID:HIVALue

This command sets or queries the high value when searching on a FlexRay bus frame id field. The search condition must be set to IDentifier. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXray:FRAMEID:HIVALue
<QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXray:FRAMEID:HIVALue?
```

Arguments

`<QString>` is the frame id high value.

Examples

`SEARCH:SEARCH1:TRIGger:A:BUS:FLEXray:FRAMEID:HIVALue "XXXXXXX1010"` sets the HIVALUE to XXXXXXX1010.

`SEARCH:SEARCH1:TRIGger:A:BUS:FLEXray:FRAMEID:HIVALue?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:FLEXRAY:FRAMEID:HIVALUE "XXXXXXXXXXX"` indicating the HIVALUE is XXXXXXXXXXX.

SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXray:FRAMEID:QUALifier

This command sets the qualifier to be used when searching on a FlexRay bus signal. The search condition must be set to Identifier. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXray:FRAMEID:
QUALifier {EQual|UNEQual LESSthan|MOREthan|LESSEQual|
MOREEQual|INrange|OUTrange}
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXray:FRAMEID:QUALifier?
```

Arguments

Arguments are the available data qualifiers.

Examples

`SEARCH:SEARCH1:TRIGger:A:BUS:FLEXray:FRAMEID:QUALifier UNEQUAL` sets the qualifier to unequal.

`SEARCH:SEARCH1:TRIGger:A:BUS:FLEXray:FRAMEID:QUALifier?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:FLEXRAY:FRAMEID:QUALIFIER EQUAL` indicating the qualifier is set to equal.

SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXray:FRAMEID:VALue

This command sets the low value when searching on a FlexRay bus id field. The search condition must be set to IDentifier. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXray:FRAMEID:VALue
<QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXray:FRAMEID:VALue?
```

Arguments

`<QString>` is the frame id value.

Examples

`SEARCH:SEARCH1:TRIGger:A:BUS:FLEXray:FRAMEID:VALue "XXXXXXX1010"` sets the value to XXXXXXX1010.

`SEARCH:SEARCH1:TRIGger:A:BUS:FLEXray:FRAMEID:VALue?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:FLEXRAY:FRAMEID:VALUE "XXXXXXXXXXX"` indicating the value is XXXXXXXXXXX.

SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXray:FRAMEType

This command sets or queries the FlexRay bus search frame type. The search number is specified by <x>.

Conditions

Requires the SR-AUTO Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXray:FRAMEType
{NORMal|PAYload|NULL|SYNC|STARTup}
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXray:FRAMEType?
```

Arguments

Arguments are the available frame types.

Examples

SEARCH:SEARCH1:TRIGger:A:BUS:FLEXRAY:FRAMEType startup sets the frame type to startup.

SEARCH:SEARCH1:TRIGger:A:BUS:FLEXRAY:FRAMEType? might return :SEARCH:SEARCH1:TRIGGER:A:BUS:FLEXRAY:FRAMETYPE NORMAL, indicating the frame type is normal.

SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:HEADER:CRC

This command sets or queries the CRC portion of the binary header string whensearching on a FlexRay bus header. The search number is specified by <x>.

Conditions

Requires the SR-AUTO Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:HEADER:CRC <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:HEADER:CRC?
```

Arguments

<QString> specifies the CRC.

Examples

SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:HEADER:CRC "1010" sets the header CRC to XXXXXX101.

SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:HEADER:CRC? might return :SEARCH:SEARCH1:TRIGGER:A:BUS:FLEXRAY:HEADER:CRC "XXXXXXXXXXX", indicating the header CRC is a don’t care.

SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:HEADER:CYCLECount

This command sets or queries the cycle count portion of the binary header string when searching on a FlexRay bus header. The search number is specified by <x>. The search condition must be set to HEADer.

Conditions

Requires the SR-AUTO Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:HEADER:CYCLECount
<QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:HEADER:CYCLECount?
```

Arguments

`<QString>` specifies the header cycle count.

Examples

`SEARCH:SEARCH1:TRIGger:A:BUS:FLEXRAY:HEADER:CYCLECount "1010"` sets the header cycle count to XX1010.

`SEARCH:SEARCH1:TRIGger:A:BUS:FLEXRAY:HEADER:CYCLECount?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:FLEXRAY:HEADER:CYCLECOUNT "XXXXXX"` indicating the cycle count has not been set.

SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:HEADER:FRAMEID

This command sets or queries the frame id portion of the binary header string when searching on a FlexRay bus header. The search number is specified by <x>. The search condition must be set to HEADer or IDANDDATA.

Conditions

Requires the SR-AUTO Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:HEADER:FRAMEID
<QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:HEADER:FRAMEID?
```

Arguments

`<QString>` specifies the frame ID.

Examples

`SEARCH:SEARCH1:TRIGger:A:BUS:FLEXRAY:HEADER:FRAMEID "1010"` sets the header frame ID to XXXXXXX1010.

`SEARCH:SEARCH1:TRIGger:A:BUS:FLEXRAY:HEADER:FRAMEID?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:FLEXRAY:HEADER:FRAMEID "XXXXXXXXXXX"`, indicating the frame ID is a don’t care.

SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:HEADER:INDBits

This command sets or queries the Indicator bits portion of the binary header string when searching on a FlexRay bus header . The search number is specified by <x>. The search condition must be set to HEADer.

Conditions

Requires the SR-AUTO Triggering and Analysis application.

Group Search and Mark

Syntax
```
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:HEADER:INDBits
<QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:HEADER:INDBits?
```

Arguments `<QString>` specifies the header Indicator Bits.

Examples `SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:HEADER:INDBits "1010"` sets the header Indicator Bits to X1010.

`SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:HEADER:INDBits?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:FLEXRAY:HEADER:INDBITS "XXXXX"`, indicating the Indicator Bits have not been set.

SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:HEADER:PAYLENgth

This command sets or queries the payload length portion of the binary header string when searching on a FlexRay bus search trigger header. The search number is specified by <x>. The search condition must be set to HEADer.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Search and Mark

Syntax
```
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:HEADER:PAYLENgth
<QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:FLEXRAY:HEADER:PAYLENgth?
```

Arguments `<QString>` specifies the header Payload Length.

Examples `SEARCH:SEARCH1:TRIGger:A:BUS:FLEXRAY:HEADER:PAYLENgth "1010"` sets the Payload Length to 1010.

`SEARCH:SEARCH1:TRIGger:A:BUS:FLEXRAY:HEADER:PAYLENgth?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:FLEXRAY:HEADER:PAYLENGTH "XXXXXXX"`, indicating the Payload Length has not been set.

SEARCH:SEARCH<x>:TRIGger:A:BUS:I2C:ADDRess:MODe

This command sets or queries the I2C address mode for the specified bus search to determine where to place a mark. The search number is specified by <x>.

Conditions

Requires the SR-EMBD Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:I2C:ADDRess:MODe
{ADDR10|ADDR7}
SEARCH:SEARCH<x>:TRIGger:A:BUS:I2C:ADDRess:MODe?
```

Arguments

`ADDR10` specifies the address mode as ADDR10.

`ADDR7` specifies the address mode as ADDR7.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:I2C:ADDRESS:MODE ADDR10` sets the address mode for I2C bus trigger search 1 to ADDR10.

`SEARCH:SEARCH2:TRIGGER:A:BUS:I2C:ADDRESS:MODE?` might return `:SEARCH:SEARCH2:TRIGGER:A:BUS:I2C:ADDRESS:MODE ADDR7`, indicating that the address mode for I2C bus trigger search 2 is set to ADDR7.

SEARCH:SEARCH<x>:TRIGger:A:BUS:I2C:ADDRess:VALue

This command sets or queries the binary address string used for the I2C search the specified search condition is Address or AddressData. The search number is specified by <x>.

Conditions

Requires the SR-EMBD Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:I2C:ADDRess:VALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:I2C:ADDRess:VALue?
```

Related Commands

SEARCH:SEARCH<x>:TRIGger:A:BUS:I2C:ADDRess:MODe

Arguments

`<QString>` specifies the address value. This is either a 7-bit or 10-bit value depending on the address mode. The valid characters are 0-9, A-F, and X for addresses in hexadecimal format; and 0, 1, and X otherwise.

Examples

`SEARCH:SEARCH2:TRIGGER:A:BUS:I2C:ADDRESS:VALUE "01XXXXX"` sets the address value to "01XXXXX" when the mode is ADDR7 and the format is binary.

`SEARCH:SEARCH1:TRIGGER:A:BUS:I2C:ADDRESS:VALUE?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:I2C:ADDRESS:VALUE "XX"`, indicating that the address value is "XX" when the address mode is set to ADDR7 and the address format is hexadecimal.

SEARCH:SEARCH<x>:TRIGger:A:BUS:I2C:CONDition

This command sets or queries the search condition for an I2C bus. The search number is specified by <x>.

Conditions

Requires the SR-EMBD Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:I2C:CONDition
{ADDRess|ADDRANDDATA|DATa|ACKMISS|REPEATstart|STARt|STOP}
SEARCH:SEARCH<x>:TRIGger:A:BUS:I2C:CONDition?
```

Arguments

`ADDress` specifies the trigger condition as Address.

`ADDRANDDATA` specifies the trigger condition as Address and Data.

`DATa` specifies the trigger condition as Data.

`ACKMISS` specifies the trigger condition as Missing of Acknowledgement.

`REPEATstart` specifies the trigger condition as Repeat of Start.

`STARt` specifies the trigger condition as Start.

`STOP` specifies the trigger condition as Stop.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:I2C:CONDITION ADDRESS` sets the trigger condition for I2C bus trigger search 1 to Address.

`SEARCH:SEARCH1:TRIGGER:A:BUS:I2C:CONDITION?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:I2C:CONDITION ADDRANDDATA`, indicating that the trigger condition for I2C bus trigger search 1 is set to Address and Data.

SEARCH:SEARCH<x>:TRIGger:A:BUS:I2C:DATa:DIRection

This command sets or queries the direction of the data for the I2C bus search to determine where to place a mark. The search number is specified by <x>. Read or write is indicated by the R/W bit in the I2C protocol.

Conditions Requires the SR-EMBD Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:I2C:DATa:DIRection
{NOCARE|READ|WRITE}
SEARCH:SEARCH<x>:TRIGger:A:BUS:I2C:DATa:DIRection?
```

Arguments `NOCARE` specifies the direction of data as Don't Care.

`READ` specifies the direction of data as Read.

`WRITE` specifies the direction of data as Write.

Examples `SEARCH:SEARCH1:TRIGGER:A:BUS:I2C:DATA:DIRECTION READ` sets the data direction for I2C bus trigger search 1 to READ.

`SEARCH:SEARCH2:TRIGGER:A:BUS:I2C:DATA:DIRECTION?` might return `:SEARCH:SEARCH2:TRIGGER:A:BUS:I2C:DATA:DIRECTION DONTCARE`, indicating that the data direction of the I2C bus trigger search 2 is DONTCare.

SEARCH:SEARCH<x>:TRIGger:A:BUS:I2C:DATa:SIZe

This command sets or queries the length of the data string in bytes used for an I2C bus search to determine where to place a mark. The search number is specified by <x>. The search condition must be DATA or ADDRANDDATA.

Conditions Requires the SR-EMBD Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:I2C:DATa:SIZe <NR1>
SEARCH:SEARCH<x>:TRIGger:A:BUS:I2C:DATa:SIZe?
```

Arguments

`<NR1>` specifies the data size in bytes.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:I2C:DATA:SIZE 1` sets the length of the data string for I2C bus trigger search 1 to 1 byte.

`SEARCH:SEARCH1:TRIGGER:A:BUS:I2C:DATA:SIZE?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:I2C:DATA:SIZE 3`, indicating that the length of the data string for I2C bus trigger search 1 is 3 bytes.

SEARCH:SEARCH<x>:TRIGger:A:BUS:I2C:DATa:VALue

This command sets or queries the binary data string used for I2C bus search to determine where to place a mark. The search number is specified by <x>. The search condition must be DATA or ADDRANDDATA.

Conditions

Requires the SR-EMBD Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:I2C:DATa:VALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:I2C:DATa:VALue?
```

Arguments

`<QString>` specifies the data value. The valid characters are 0, 1, or X for binary format; and A-F, 0-9, and X for hexadecimal format.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:I2C:DATA:VALUE "1001"` sets the data value for I2C bus trigger search 1 to "1001".

`SEARCH:SEARCH2:TRIGGER:A:BUS:I2C:DATA:VALUE?` might return `:SEARCH:SEARCH2:TRIGGER:A:BUS:I2C:DATA:VALUE "XX"`, indicating that the data value for I2C bus trigger search is "XX" in hexadecimal format.

SEARCH:SEARCH<x>:TRIGger:A:BUS:LIN:CONDition

This command sets or queries the condition for a LIN bus search. The search number is specified by <x>.

Conditions

Requires the SR-AUTO Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:LIN:CONDition
{DATA|IDANDDATA|ERRor|IDentifier|SLEEP|SYNCfield|WAKEup}
SEARCH:SEARCH<x>:TRIGger:A:BUS:LIN:CONDition?
```

Arguments

Arguments are the available trigger conditions.

Examples

`SEARCH:SEARCH1:TRIGger:A:BUS:LIN:CONDition DATA` sets the trigger condition to data.

`SEARCH:SEARCH1:TRIGger:A:BUS:LIN:CONDition?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:LIN:CONDITION SYNC`, indicating the trigger condition is sync.

SEARCH:SEARCH<x>:TRIGger:A:BUS:LIN:DATa:HIVALue

This command sets or queries the high data value string used in a LIN bus search. The search number is specified by <x>. The search condition must be DATA or IDANDDATA and the data qualifier must be INRANGE or OUTRANGE.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:LIN:DATa:HIVALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:LIN:DATa:HIVALue?
```

Arguments

`<QString>` is a quoted string of 1s, 0s, or Xs representing the binary data string to be used in a LIN search if the search condition is `IDentifier` or `IDANDDATA` (identifier and data).

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:LIN:DATA:HIVALUE?` might return `SEARCH:SEARCH1:TRIGGER:A:BUS:LIN:DATA:HIVALUE "XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXX"` indicating the high value is "don't care".

SEARCH:SEARCH<x>:TRIGger:A:BUS:LIN:DATa:QUALifier

This command sets or queries the data qualifier used in a LIN bus search. The search number is specified by <x>.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Search and Mark

Syntax
```
SEARCH:SEARCH<x>:TRIGger:A:BUS:LIN:DATa:QUALifier
{EQual|LESSEQual|MOREEQual|UNEQual|LESSthan|MOREthan|
INrange|OUTrange}
SEARCH:SEARCH<x>:TRIGger:A:BUS:LIN:DATa:QUALifier?
```

Arguments Arguments are the available data qualifiers.

Examples `SEARCH:SEARCH2:TRIGger:A:BUS:LIN:DATa:QUALifier LESS` sets the data qualifier to less than.

`SEARCH:SEARCH1:TRIGger:A:BUS:LIN:DATa:QUALifier?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:LIN:DATA:QUALIFIER EQUAL`, indicating the data qualifier is equal.

SEARCH:SEARCH<x>:TRIGger:A:BUS:LIN:DATa:SIZe

This command sets or queries the length of the stat string in bytes used for a LIN bus search. The search number is specified by <x>.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Search and Mark

Syntax
```
SEARCH:SEARCH<x>:TRIGger:A:BUS:LIN:DATa:SIZe <NR1>
SEARCH:SEARCH<x>:TRIGger:A:BUS:LIN:DATa:SIZe?
```

Arguments `<NR1>` specifies the data size.

Examples `SEARCH:SEARCH1:TRIGger:A:BUS:LIN:DATa:SIZe 1.0` sets the data size to 1.

`SEARCH:SEARCH1:TRIGger:A:BUS:LIN:DATa:SIZe?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:LIN:DATA:SIZE 1`, indicating the data size is 1.

SEARCH:SEARCH<x>:TRIGger:A:BUS:LIN:DATa:VALue

This command sets or queries the data string used for a LIN bus search. The search number is specified by <x>. The search condition must be DATA or IDANDDATA.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:LIN:DATa:VALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:LIN:DATa:VALue?
```

Arguments `<QString>` specifies the data value.

Examples `SEARCH:SEARCH2:TRIGger:A:BUS:LIN:DATa:VALue 1010` sets the data value to XXXXXX1010.

`SEARCH:SEARCH1:TRIGger:A:BUS:LIN:DATa:VALue?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:LIN:DATA:VALUE "XXXXXXXXXX"`, indicating that the data value is a don't care.

SEARCH:SEARCH<x>:TRIGger:A:BUS:LIN:ERRTYPE

This command sets or queries the error type for a LIN bus search. The search number is specified by <x>. The search condition must be set to ERROR.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:LIN:ERRTYPE
{CHecksum|PARity|SYNC}
SEARCH:SEARCH<x>:TRIGger:A:BUS:LIN:ERRTYPE?
```

Arguments `CHecksum` specifies the error type is checksum.

`PARity` specifies the error type is parity.

`SYNC` specifies the error type is sync.

Examples

`SEARCH:SEARCH2:TRIGger:A:BUS:LIN:ERRTYPE Parity` sets the error type to parity.

`SEARCH:SEARCH2:TRIGger:A:BUS:LIN:ERRTYPE?` might return `:SEARCH:SEARCH2:TRIGGER:A:BUS:LIN:ERRTYPE SYNC`, indicating that the error type is sync.

SEARCH:SEARCH<x>:TRIGger:A:BUS:LIN:IDentifier:VALue

This command sets or queries the string used for a LIN bus identifier value. The search number is specified by <x>. The search condition must be IDENTIFIER or IDANDDATA.

Conditions

Requires the SR-AUTO Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:LIN:IDentifier:VALue
<QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:LIN:IDentifier:VALue?
```

Arguments

`<QString>` specifies the identifier value.

Examples

`SEARCH:SEARCH1:TRIGger:A:BUS:LIN:IDentifier:VALue 1010` sets the identifier value to XX1010.

`SEARCH:SEARCH1:TRIGger:A:BUS:LIN:IDentifier:VALue?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:LIN:IDENTIFIER:VALUE "XXXXXX"`, indicates the identifier value is don't care.

SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:COMMAND:ADDRess:HIVALue

This command sets or queries the high value when searching on command word addresses for a MIL-STD-1553 bus. The search number is specified by x. The search condition must be set to COMMAND, and the address qualifier must be INrange or OUTrange.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:COMMAND:ADDRess:
HIVALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:COMMAND:ADDRess:
HIVALue?
```

Arguments

`<QString>` is the address value.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:COMMAND:ADDRESS:HIVALUE "X1000"` sets the value to X1000.

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:COMMAND:ADDRESS:HIVALUE?` might return "XXXXX", indicating that the value is XXXXX.

SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:COMMAND:ADDRess:QUALifier

This command sets or queries the qualifier to be used when searching on command word addresses for a MIL-STD-1553 bus. The search number is specified by x. The search condition must be set to COMMAND.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:
COMMAND:ADDRess:QUALifier {EQual|UNEQual|LESSthan
|MOREthan|LESSEQual|MOREEQual|INrange|OUTrange}
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:COMMAND:ADDRess:
QUALifier?
```

Arguments

Arguments are the available address qualifiers.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:COMMAND:ADDRESS:QUALIFIER LESSTHAN` sets the address qualifier to less than.

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:COMMAND:ADDRESS:QUALIFIER?` might return EQUAL, indicating that the address qualifier is set to equal.

SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:COMMAND:ADDRess:VALue

This command sets or queries the low value when searching on command word addresses for a MIL-STD-1553 bus. The search number is specified by x. The search condition must be set to COMMAND.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Search and Mark

Syntax
```
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:COMMAND:ADDRess:
VALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:COMMAND:ADDRess:
VALue?
```

Arguments `<QString>` is the address value.

Examples `SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:COMMAND:ADDRESS:VALUE "X1000"` sets the value to X1000.

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:COMMAND:ADDRESS:VALUE?` might return "XXXXX", indicating that the value is XXXXX.

SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:COMMAND:COUNt

This command sets or queries the value of the command word "word count" field for a MIL-STD-1553 bus to search on. The search number is specified by x. The search condition must be set to COMMAND.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Search and Mark

Syntax
```
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:COMMAND:COUNt
<QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:COMMAND:COUNt?
```

Arguments `<QString>` is the word count value.

Examples `SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:COMMAND:COUNT "X1000"` sets the value to X1000.

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:COMMAND:COUNT?` might return "XXXXX", indicating that the value is XXXXX.

SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:COMMAND:PARity

This command sets or queries the value of the command word parity bit for a MIL-STD-1553 bus to search on. The search number is specified by x. The search condition must be set to COMMAND.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:COMMAND:PARity
{ONE|ZERo|NOCARE}
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:COMMAND:PARity?
```

Arguments

`ONE` filters command words to only match those where the parity bit has a value of 1.

`ZERo` filters command words to only match those where the parity bit has a value of 0.

`NOCARE` disables filtering of command words on the parity bit.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:COMMAND:PARITY ONE` specifies filtering command words for those where the parity bit has a value of 1.

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:COMMAND:PARITY?` might return NOCARE, indicating that command words are not being filtered based on the parity bit value.

SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:COMMAND:SUBADdress

This command sets or queries the value of the command word subaddress field for a MIL-STD-1553 bus to search on. The search number is specified by x. The search condition must be set to COMMAND.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:COMMAND:SUBADdress
<QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:COMMAND:SUBADdress?
```

Arguments

`<QString>` is the word count value.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:COMMAND:SUBADDRESS "x1000"` sets the value to X1000.

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:COMMAND:SUBADDRESS?` might return "XXXXX", indicating that the value is XXXXX.

SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:COMMAND:TRBit

This command sets or queries the value of the command word Transmit / Receive bit for a MIL-STD-1553 bus to search on. The search number is specified by x. The search condition must be set to COMMAND.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:COMMAND:TRBit
{RX|TX|X}
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:COMMAND:TRBit?
```

Arguments

`RX` filters command words to only match those that are receive packets.

`TX` filters command words to only match those that are transmit packets.

`X` disables filtering of command words on the R/T bit.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:COMMAND:TRBIT TX` specifies filtering command words for only transmit messages.

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:COMMAND:TRBIT?` might return X, indicating that command words are not being filtered based on the R/T bit value.

SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:CONDition

This command sets or queries the field or condition for a MIL-STD-1553 bus to search on. The search number is specified by x.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:CONDition
{SYNC|COMMAND|STATus|DATA|ERRor}
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:CONDition?
```

Arguments

`SYNC` specifies a search for the sync pulse of any word.

`COMMAND` specifies a search for a matching command word.

`STATus` specifies a search for a matching status word.

`DATA` specifies a search for a matching data word.

`ERRor` specifies a search for a specified error condition.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:CONDITION DATA` specifies finding matching data word(s).

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:CONDITION?` might return SYNC, indicating that the bus is being searched for sync pulses found in any word.

SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:DATa:PARity

This command sets or queries the value of the command word parity bit for a MIL-STD-1553 bus to search on. The search number is specified by x. The search condition must be set to DATA.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:DATa:PARity
{ONE|ZERo|NOCARE}
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:DATa:PARity?
```

Arguments

`ONE` filters data words to only match those where the parity bit has a value of 1.

`ZERo` filters data words to only match those where the parity bit has a value of 0.

`NOCARE` disables filtering of data words on the parity bit.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:DATA:PARITY ONE` specifies filtering data words for those where the parity bit has a value of 1.

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:DATA:PARITY?` might return NOCARE, indicating that data words are not being filtered based on the parity bit value.

SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:DATa:VALue

This command sets or queries the value when searching on data words for a MIL-STD-1553 bus. The search number is specified by x. The search condition must be set to DATA.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:DATa:VALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:DATa:VALue?
```

Arguments `<QString>` is the data value.

Examples `SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:DATA:VALUE "XXXXXXXXXXXX1000"` sets the value to XXXXXXXXXXXX1000.

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:DATA:VALUE?` might return "XXXXXXXXXXXXXXXX", indicating that the value is XXXXXXXXXXXXXXXX.

SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:ERRTYPe

This command sets or queries the type of error condition for a MIL-STD-1553 bus to search on. The search number is specified by x. The search condition must be set to ERRor.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:ERRTYPe
{PARity|SYNC|DATA}
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:ERRTYPe?
```

Arguments

`PARity` specifies searching for an incorrectly calculated parity bit in any word.

`SYNC` specifies searching for any sync pulse that does not transition in the middle of the pulse as required.

`DATA` specifies searching for any non-contiguous data words.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:ERRTYPE DATA` specifies searching for non-contiguous data words.

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:ERRTYPE?` might return PARITY, indicating that the bus is being searched for parity errors in any word.

SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:ADDRess:HIVALue

This command sets or queries the high value when searching on status word addresses for a MIL-STD-1553 bus. The search number is specified by x. The search condition must be set to STATus and the address qualifier must be INrange or OUTrange.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:ADDRess:
HIVALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:ADDRess:
HIVALue?
```

Arguments

`<QString>` is the address value.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:STATUS:ADDRESS:HIVALUE "X1000"` sets the value to X1000.

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:STATUS:ADDRESS:HIVALUE?` might return "XXXXX", indicating that the value is XXXXX.

SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:ADDRess:QUALifier

This command sets or queries the qualifier used when searching on status word addresses for a MIL-STD-1553 bus. The search number is specified by x. The search condition must be set to STATus.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:
ADDRess:QUALifier {EQual|UNEQual|LESSthan|MOREthan
|LESSEQual|MOREEQual|INrange|OUTrange}
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:ADDRess:
QUALifier?
```

Arguments Arguments are the available address qualifiers.

Examples `SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:STATUS:ADDRESS:QUALIFIER LESSTHAN` sets the address qualifier to less than.

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:STATUS:ADDRESS:QUALIFIER?` might return EQUAL, indicating that the address qualifier is set to equal.

SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:ADDRess:VALue

This command sets or queries the low value when searching on status word addresses for a MIL-STD-1553 bus. The search number is specified by x. The search condition must be set to STATus.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:ADDRess:VALue
<QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:ADDRess:
VALue?
```

Arguments `<QString>` is the address value.

Examples `SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:STATUS:ADDRESS:VALUE "X1000"` sets the value to X1000.

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:STATUS:ADDRESS:VALUE?` might return "XXXXX", indicating that the value is XXXXX.

SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:BIT:BCR

This command sets or queries the value of the broadcast command received bit (BCR bit, bit 15) in a status word for a MIL-STD-1553 bus to search on. The search number is specified by x. The search condition must be set to STATus.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:BIT:BCR
{ONE|ZERo|NOCARE}
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:BIT:BCR?
```

Arguments

ONE filters status words to only match those where the BCR bit has a value of 1.

ZERo filters status words to only match those where the BCR bit has a value of 0.

NOCARE disables filtering of status words on the BCR bit.

Examples

SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:STATUS:BIT:BCR ONE specifies filtering status words for those where the BCR bit has a value of 1.

SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:STATUS:BIT:BCR? might return NOCARE, indicating that status words are not being filtered based on the BCR bit value.

SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:BIT:BUSY

This command sets or queries the value of the busy bit (BUSY bit, bit 16) in a status word for a MIL-STD-1553 bus to search on. The search number is specified by x. The search condition must be set to STATus.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:BIT:BUSY {ONE
ZERo NOCARE}
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:BIT:BUSY?
```

Arguments

`ONE` filters status words to only match those where the BUSY bit has a value of 1.

`ZERo` filters status words to only match those where the BUSY bit has a value of 0.

`NOCARE` disables filtering of status words on the BUSY bit.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:STATUS:BIT:BUSY ONE` specifies filtering status words for those where the BUSY bit has a value of 1.

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:STATUS:BIT:BUSY?` might return NOCARE, indicating that status words are not being filtered based on the BUSY bit value.

SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:BIT:DBCA

This command sets or queries the value of the dynamic bus control acceptance bit (DBCA bit, bit 18) in a status word for a MIL-STD-1553 bus to search on. The search number is specified by x. The search condition must be set to STATus.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:BIT:DBCA {ONE
ZERo NOCARE}
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:BIT:DBCA?
```

Arguments

`ONE` filters status words to only match those where the DBCA bit has a value of 1.

`ZERo` filters status words to only match those where the DBCA bit has a value of 0.

`NOCARE` disables filtering of status words on the DBCA bit.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:STATUS:BIT:DBCA ONE` specifies filtering status words for those where the DBCA bit has a value of 1.

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:STATUS:BIT:DBCA?` might return NOCARE, indicating that status words are not being filtered based on the DBCA bit value.

SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:BIT:INSTR

This command sets or queries the value of the instrumentation bit (INSTR bit, bit 10) in a status word for a MIL-STD-1553 bus to search on. The search number is specified by x. The search condition must be set to STATus.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:BIT:INSTR
{ONE|ZERo|NOCARE}
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:BIT:INSTR?
```

Arguments

`ONE` filters status words to only match those where the INSTR bit has a value of 1.

`ZERo` filters status words to only match those where the INSTR bit has a value of 0.

`NOCARE` disables filtering of status words on the INSTR bit.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:STATUS:BIT:INSTR ONE` specifies filtering status words for those where the INSTR bit has a value of 1.

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:STATUS:BIT:INSTR?` might return NOCARE, indicating that status words are not being filtered based on the INSTR bit value.

SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:BIT:ME

This command sets or queries the value of the message error bit (ME bit, bit 9) in a status word for a MIL-STD-1553 bus to search on. The search number is specified by x. The search condition must be set to STATus.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:BIT:ME
{ONE|ZERo|NOCARE}
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:BIT:ME?
```

Arguments

ONE filters status words to only match those where the ME bit has a value of 1.

ZERo filters status words to only match those where the ME bit has a value of 0.

NOCARE disables filtering of status words on the ME bit.

Examples

SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:STATUS:BIT:ME ONE specifies filtering status words for those where the ME bit has a value of 1.

SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:STATUS:BIT:ME? might return NOCARE, indicating that status words are not being filtered based on the ME bit value.

SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:BIT:SRQ

This command sets or queries the value of the status word service request bit (SRQ bit, bit 11) in a status word for a MIL-STD-1553 bus to search on. The search number is specified by x. The search condition must be set to STATus.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:BIT:SRQ {ONE
ZERo NOCARE}
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:BIT:SRQ?
```

Arguments

ONE filters status words to only match those where the SRQ bit has a value of 1.

ZERo filters status words to only match those where the SRQ bit has a value of 0.

NOCARE disables filtering of status words on the SRQ bit.

Examples

SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:STATUS:BIT:SRQ ONE specifies filtering status words to those where the SRQ bit has a value of 1.

SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:STATUS:BIT:SRQ? might return NOCARE, indicating that status words are not being filtered based on the SRQ bit value.

SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:BIT:SUBSF

This command sets or queries the value of the subsystem flag bit (SUBSF bit, bit 17) in a status word for a MIL-STD-1553 bus to search on. The search number is specified by x>. The search condition must be set to STATus.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:BIT:SUBSF
{ONE|ZERo|NOCARE}
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:BIT:SUBSF?
```

Arguments

`ONE` filters status words to only match those where the SUBSF bit has a value of 1.

`ZERo` filters status words to only match those where the SUBSF bit has a value of 0.

`NOCARE` disables filtering of status words on the SUBSF bit.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:STATUS:BIT:SUBSF ONE` specifies filtering status words for those where the SUBSF bit has a value of 1.

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:STATUS:BIT:SUBSF?` might return NOCARE, indicating that status words are not being filtered based on the SUBSF bit value.

SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:BIT:TF

This command sets or queries the value of the terminal flag bit (TF bit, bit 19) in a status word for a MIL-STD-1553 bus to search on. The search number is specified by x. The search condition must be set to STATus.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:BIT:TF
{ONE|ZERo|NOCARE}
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:BIT:TF?
```

Arguments

`ONE` filters status words to only match those where the TF bit has a value of 1.

`ZERo` filters status words to only match those where the TF bit has a value of 0.

`NOCARE` disables filtering of status words on the TF bit.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:STATUS:BIT:TF ONE` specifies filtering status words for those where the TF bit has a value of 1.

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:STATUS:BIT:TF?` might return NOCARE, indicating that status words are not being filtered based on the TF bit value.

SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:PARity

This command sets or queries the value of the status word parity bit for a MIL-STD-1553 bus to search on. The search number is specified by x. The search condition must be set to STATus.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:PARity
{ONE|ZERo|NOCARE}
SEARCH:SEARCH<x>:TRIGger:A:BUS:MIL1553B:STATus:PARity?
```

Arguments

`ONE` filters status words to only match those where the parity bit has a value of 1.

`ZERo` filters status words to only match those where the parity bit has a value of 0.

`NOCARE` disables filtering of status words on the parity bit.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:STATUS:PARITY ONE` specifies filtering status words for those where the parity bit has a value of 1.

`SEARCH:SEARCH1:TRIGGER:A:BUS:MIL1553B:STATUS:PARITY?` might return NOCARE, indicating that status words are not being filtered based on the parity bit value.

SEARCH:SEARCH<x>:TRIGger:A:BUS:PARallel:DATa:VALue

This command sets or queries the binary data string used for a parallel bus search to determine where to place a mark. The search number is specified by <x>.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:PARallel:DATa:VALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:PARallel:DATa:VALue?
```

Arguments `<QString>` specifies the data value in a valid format. Valid characters are 0-9,

Examples `SEARCH:SEARCH2:TRIGGER:A:BUS:PARALLEL:DATA:VALUE "XXXXXXXX"` sets the string data value to "XXXXXXXX" in binary format.

`SEARCH:SEARCH1:TRIGGER:A:BUS:PARALLEL:DATA:VALUE?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:PARALLEL:DATA:VALUE "XXXXXXXXXXXXXXX10010"`, indicating that the data value string is set to "XXXXXXXXXXXXXXX10010" in binary format.

SEARCH:SEARCH<x>:TRIGger:A:BUS:RS232C:CONDition

This command sets or queries the condition for an RS232C bus search to determine where to place a mark. The search number is specified by <x>.

Conditions Requires the SR-COMP Serial Triggering and Analysis Application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:RS232C:CONDition
{DATa|EOp|PARItyerror|STARt}
SEARCH:SEARCH<x>:TRIGger:A:BUS:RS232C:CONDition?
```

Arguments `DATa` specifies the search condition as Data.

`EOp` specifies the search condition as End of Packet.

`PARItyerror` specifies the search condition as Parity Error.

`STARt` specifies the search condition as Start.

Examples `SEARCH:SEARCH1:TRIGGER:A:BUS:RS232C:CONDITION DATA` sets the search condition for RS232C bus trigger search 1 to Data.

`SEARCH:SEARCH2:TRIGGER:A:BUS:RS232C:CONDITION?` might return `:SEARCH:SEARCH2:TRIGGER:A:BUS:RS232C:CONDITION EOP`, indicating that the search condition for RS232C bus trigger search 2 is set to End of Packet.

SEARCH:SEARCH<x>:TRIGger:A:BUS:RS232C:DATa:SIZe

This command sets or queries the length of the data string in bytes to be used for an RS232 bus search to determine where to place a mark when the search condition is Data. The search number is specified by <x>.

Conditions Requires the SR-COMP Serial Triggering and Analysis Application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:RS232C:DATa:SIZe <NR3>
SEARCH:SEARCH<x>:TRIGger:A:BUS:RS232C:DATa:SIZe?
```

Arguments `<NR3>` is the number of bits per word in the data string, from 1 to 8.

Examples `SEARCH:SEARCH1:TRIGGER:A:BUS:RS232C:DATA:SIZE 1` sets the number of bits per word in RS232C bus trigger search 1 data string to 1.

`SEARCH:SEARCH2:TRIGGER:A:BUS:RS232C:DATA:SIZE?` might return `:SEARCH:SEARCH2:TRIGGER:A:BUS:RS232C:DATA:SIZE 8`, indicating that the bits per word for RS232C bus trigger search 2 is set to 8.

SEARCH:SEARCH<x>:TRIGger:A:BUS:RS232C:DATa:VALue

This command sets or queries the data string used for the specified RS232C bus trigger search to determine where to place a mark. The search condition must be Data. The search number is specified by <x>.

Conditions Requires the SR-COMP Serial Triggering and Analysis Application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:RS232C:DATa:VALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:RS232C:DATa:VALue?
```

Arguments `<QString>` specifies the value of the data string. The valid characters are 0, 1, and X for values in binary format; and A-F, 0-9, and X for values in hexadecimal format.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:RS232C:DATA:VALUE "01"` sets the value of the data string for RS232C bus trigger search 1 to "01" when the format is hexadecimal.

`:SEARCH:SEARCH1:TRIGGER:A:BUS:RS232C:DATA:VALUE?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:RS232C:DATA:VALUE "XXXXXXX1"`, indicating that the data string value for RS232C bus trigger search 1 is set to "XXXXXXX1" when the format is binary.

SEARCH:SEARCH<x>:TRIGger:A:BUS:SOUrce

This command sets or queries the bus source for the bus search to determine where to place a mark. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:SOUrce
{B0|B1|B2|B3|B4|B5|B6|B7|B8|B9|B10| B11|B12|B13|B14|B15|B16}
SEARCH:SEARCH<x>:TRIGger:A:BUS:SOUrce?
```

Arguments

`B0–B16` specifies the bus source as a bus number from B01 to B16.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:SOURCE B1` sets the bus source for bus trigger search 1 to B1.

`SEARCH:SEARCH1:TRIGGER:A:BUS:SOURCE?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:SOURCE B15`, indicating that the bus source for bus trigger search 1 is B15.

SEARCH:SEARCH<x>:TRIGger:A:BUS:SPI:CONDition

This command sets or queries the search condition for an SPI bus search to determine where to place a mark. The search number is specified by <x>.

Conditions

Requires the SR-COMP Serial Triggering and Analysis Application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:SPI:CONDition
{DATA|SS|STARToframe}
SEARCH:SEARCH<x>:TRIGger:A:BUS:SPI:CONDition?
```

Arguments

DATA specifies the trigger condition as Data.

SS specifies the trigger condition as Slave Selection.

STARToframe specifies the trigger condition as start of frame.

Examples

SEARCH:SEARCH1:TRIGGER:A:BUS:SPI:CONDITION SS sets the trigger condition for SPI bus trigger search 1 to SS.

SEARCH:SEARCH1:TRIGGER:A:BUS:SPI:CONDITION? might return :SEARCH:SEARCH1:TRIGGER:A:BUS:SPI:CONDITION DATA, indicating that the trigger condition for SPI bus trigger search 1 is set to Data.

SEARCH:SEARCH<x>:TRIGger:A:BUS:SPI:DATa:SIZe

This command sets or queries the length of the data string in bytes used for the specified SPI bus trigger search to determine where to place a mark. The search condition must be DATA. The search number is specified by <x>.

Conditions

Requires the SR-COMP Serial Triggering and Analysis Application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:SPI:DATa:SIZe <NR1>
SEARCH:SEARCH<x>:TRIGger:A:BUS:SPI:DATa:SIZe?
```

Arguments

<NR1> specifies the number of contiguous data bytes.

Examples

SEARCH:SEARCH1:TRIGGER:A:BUS:SPI:DATA:SIZE 1 sets the length of the data string for SPI bus trigger search 1 to 1 byte.

SEARCH:SEARCH2:TRIGGER:A:BUS:SPI:DATA:SIZE? might return :SEARCH:SEARCH2:TRIGGER:A:BUS:SPI:DATA:SIZE 4, indicating that the length of the data string for SPI bus trigger search 2 is 4 bytes.

SEARCH:SEARCH<x>:TRIGger:A:BUS:SPI:DATa:VALue

The command sets or queries the binary data string used for an SPI bus search to determine where to place a mark. The search number is specified by <x>. The search condition must be DATA.

Conditions

Requires the SR-COMP Serial Triggering and Analysis Application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:SPI:DATa:VALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:SPI:DATa:VALue?
```

Arguments

`<QString>` specifies the data value in the specified valid format. The valid characters are 0, 1, and X for binary format; and A-F, 0-9, and X for hexadecimal format.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:SPI:DATA:VALUE "00001111"` sets the data value for SPI bus trigger search 1 to "00001111" in binary format.

`SEARCH:SEARCH1:TRIGGER:A:BUS:SPI:DATA:VALUE?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:SPI:DATA:VALUE "11"`, indicating that the data value for SPI bus trigger search 1 is set to "11" in hexadecimal format.

SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:ADDress:HIVALue

This command sets or queries the high binary address value used when searching on a USB bus signal to determine where to place a mark. The search number is specified by <x>. The search condition must be set to TOKEN.

The VALue and HIVALue set a range that the INrange and OUTrange qualifiers use to decide when to trigger. For example, if the QUALIFER is set to INrange, and the address is within the range set by VALue and HIVALue, then a trigger can be generated.

Conditions

Requires the SR-USB2 Serial Triggering and Analysis Application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:ADDress:HIVALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:ADDress:HIVALue?
```

Related Commands

SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:ADDress:VALue

Arguments

`<QString>` specifies the data value in the specified valid format. The valid characters are 0, 1, and X for binary; for hexadecimal; and symbolic).

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:USB:ADDRESS:HIVALUE`

`SEARCH:SEARCH1:TRIGGER:A:BUS:USB:ADDRESS:HIVALUE?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:USB:ADDRESS:HIVALUE "XX"`, indicating that the address value for normal token for USB bus trigger search 1 is set to "XX," in hexadecimal format.

SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:ADDress:VALue

This command sets or queries the binary address value used for a USB bus search to determine where to place a mark. The search number is specified by <x>. The search condition must be set to TOKEN.

Conditions

Requires the SR-USB2 Serial Triggering and Analysis Application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:ADDress:VALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:ADDress:VALue?
```

Related Commands

SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:ADDress:HIVALue

Arguments

`<QString>` specifies the data value in the specified valid format. Valid characters are 0, 1, and X for binary; A-F, 0-9 and X for hexadecimal; and for symbolic.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:USB:ADDRESS:VALUE "1110000"` sets the address value for the normal token for USB bus trigger search 1 to "1110000" in binary format.

`SEARCH:SEARCH1:TRIGGER:A:BUS:USB:ADDRESS:VALUE?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:USB:ADDRESS:VALUE "11"`, indicating that the address value for normal token for USB bus trigger search 1 is set to "11" hexadecimal format.

SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:CONDition

This command sets or queries the search condition for a USB bus search to determine where to place a mark. The search number is specified by <x>.

Conditions

Requires the SR-USB2 Serial Triggering and Analysis Application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:CONDition
{DATAPacket|EOP|ERRor|HANDSHAKEPacket|RESET|RESUME|
SPECIALPacket|SUSPEND|SYNC|TOKENPacket}
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:CONDition?
```

Arguments

`DATAPacket` specifies the search condition as Data Packet.

`EOP` specifies the search condition as End of Packet.

`ERROR` specifies the search condition as Error.

`HANDSHAKEPacket` specifies the search condition as Handshake Packet.

`RESET` specifies the search condition as Reset.

`RESUME` specifies the search condition as Resume.

`SPECIALPacket` specifies the search condition as Special Packet.

`SUSPEND` specifies the search condition as Suspend.

`SYNC` specifies the search condition as Sync.

`TOKENPacket` specifies the search condition as Token (Address) Packet.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:USB:CONDITION EOP` sets the search condition for USB bus trigger search 1 to End of Packet.

`SEARCH:SEARCH1:TRIGGER:A:BUS:USB:CONDITION?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:USB:CONDITION SYNC`, indicating that the search condition for USB bus trigger search 1 is set to Sync.

SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:DATa:HIVALue

This command sets or queries the high binary data value used with In Range and Out of Range qualifiers for a USB bus search to determine where to place a mark. The search number is specified by <x>. The search condition must be set to DATA.

Conditions

Requires the SR-USB2 Serial Triggering and Analysis Application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:DATa:HIVALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:DATa:HIVALue?
```

Arguments

`<QString>` specifies the data value in the specified valid format (binary, hexadecimal, or symbolic). The valid characters for binary are 0, 1, and X;

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:USB:DATA:HIVALUE "XXXXX111"` sets the data value for USB bus trigger search 1 to "XXXXX111" in binary format.

`SEARCH:SEARCH1:TRIGGER:A:BUS:USB:DATA:HIVALUE?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:USB:DATA:HIVALUE "11"`, indicating that the data value for USB bus trigger search 1 is set to "11" in hexadecimal format.

SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:DATa:OFFSet

This command sets the byte offset to look for a data pattern at, in bytes, to be used when searching on a USB bus signal. The search number is specified by <x>. The search condition must be set to DATA.

Conditions

Requires the SR-USB2 Serial Triggering and Analysis Application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:DATa:OFFSet <NR1>
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:DATa:OFFSet?
```

Arguments

`<NR1>` specifies the data offset in bytes.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:USB:DATA:OFFSET 5` sets the data offset for USB bus trigger search 1 to 5 bytes.

`SEARCH:SEARCH1:TRIGGER:A:BUS:USB:DATA:OFFSET?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:USB:DATA:OFFSET DONTCARE`, indicating that the data offset for USB bus trigger search 1 is set to DONTCare.

SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:DATa:QUALifier

This command sets or queries the qualifier to be used when searching on a USB bus signal. The search condition must be set to IDANDDATA OR DATA. The search number is specified by <x>.

Conditions

Requires the SR-USB2 Serial Triggering and Analysis Application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:
USB:DATa:QUALifier {EQual|UNEQual|
LESSthan|MOREthan|LESSEQual|MOREEQual|INrange|OUTrange}
```

Arguments

`EQUal` specifies the qualifier as Equal.

`INrange` specifies the qualifier as Inside Range.

`LESSEQual` specifies the qualifier as Less Than or Equal to.

`MOREEQual` specifies the qualifier as More Than or Equal to.

`OUTrange` specifies the qualifier as Out of Range.

`UNEQual` specifies the qualifier as Unequal.

`LESSThan` specifies the qualifier as Less Than.

`MOREThan` specifies the qualifier as More Than.

Examples

`SEARCH:SEARCH1:TRIGger:A:BUS:USB:DATa:QUALifier INRANGE` sets the qualifier to INRANGE.

`SEARCH:SEARCH1:TRIGger:A:BUS:USB:DATa:QUALifier?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:USB:DATA:QUALIFIER EQUAL` indicating the qualifier is set to equal.

SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:DATa:SIZe

This command sets or queries the length of the data string, in bytes, used for a USB bus search to determine where to place a mark. The search number is specified by <x>. The search condition must be set to DATA.

Conditions

Requires the SR-USB2 Serial Triggering and Analysis Application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:DATa:SIZe <NR1>
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:DATa:SIZe?
```

Arguments

`<NR1>` specifies the data size in bytes.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:USB:DATA:SIZE 1` sets the size of the data string for USB bus trigger search 1 to 1 byte.

`SEARCH:SEARCH1:TRIGGER:A:BUS:USB:DATA:SIZE?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:USB:DATA:SIZE 3`, indicating that the size of the data string for USB bus trigger search 1 is set to 3 bytes.

SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:DATa:TYPe

This command sets or queries the USB bus search type. The search number is specified by <x>.

Conditions

Requires the SR-USB2 Serial Triggering and Analysis Application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:DATa:TYPe
{ANY|DATA0|DATA1|DATA2|MDATA}
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:DATa:TYPe?
```

Arguments

`ANY` specifies the data packet type as Any.

`DATA0` specifies the data packet type as DATA0.

`DATA1` specifies the data packet type as DATA1.

`DATA2` specifies the data packet type as DATA2.

`MDATA` specifies the data packet type as MDATA.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:USB:DATA:TYPE ANY` sets the data packet type for USB bus trigger search 1 to ANY.

`SEARCH:SEARCH2:TRIGGER:A:BUS:USB:DATA:TYPE?` might return `:SEARCH:SEARCH2:TRIGGER:A:BUS:USB:DATA:TYPE MDADA`, indicating that the packet type for USB bus trigger search 2 is set to MDATA.

SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:DATa:VALue

This command sets or queries the binary data value used for a USB bus search to determine where to place a mark. The search number is specified by <x>. The search condition must be set to DATA.

Conditions

Requires the SR-USB2 Serial Triggering and Analysis Application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:DATa:VALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:DATa:VALue?
```

Arguments `<QString>` specifies the data value. The valid characters are 0, 1, and X for binary format; and A-F, 0-9, and X for hexadecimal format.

Examples `SEARCH:SEARCH1:TRIGGER:A:BUS:USB:DATA:VALUE "AB"` sets the data value for data token for USB bus trigger search 1 to "AB" in hexadecimal format.

`SEARCH:SEARCH1:TRIGGER:A:BUS:USB:DATA:VALUE?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:USB:DATA:VALUE "XXXXXXXX"`, indicating that the data value for data token for USB bus trigger search 1 is set to "XXXXXXXX" in binary format.

SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:ENDPoint:VALue

This command sets or queries the endpoint binary value used for a USB bus search to determine where to place a mark. The search number is specified by <x>. The search condition must be set to TOKEN.

Conditions Requires the SR-USB2 Serial Triggering and Analysis Application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:ENDPoint:VALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:ENDPoint:VALue?
```

Arguments `<QString>` specifies the data value in the specified valid format. The valid characters are 0, 1, and X for binary format; A-F, 0-9 and X for hexadecimal format.

Examples `SEARCH:SEARCH1:TRIGGER:A:BUS:USB:ENDPOINT:VALUE "1111"` sets the endpoint value for normal token for USB bus trigger search 1 to "1111" in binary format.

`SEARCH:SEARCH1:TRIGGER:A:BUS:USB:ENDPOINT:VALUE?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:USB:ENDPOINT:VALUE "1"`, indicating that the endpoint value for normal token for USB bus trigger search 1 is set to "1" in hexadecimal format.

SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:ERRTYPE

This command sets or queries the error type for a USB bus search to determine where to place a mark. The search number is specified by <x>.

Conditions Requires the SR-USB2 Serial Triggering and Analysis Application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:ERRTYPE
{BITSTUFFing|CRC5|CRC16|PID}
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:ERRTYPE?
```

Arguments

`BITSTUFFing` specifies the error type as Bit Stuffing.

`CRC5` specifies the error type as Token CRC5 (Cyclic Redundancy Check 5).

`CRC16` specifies the error type as Data CRC16 (Cyclic Redundancy Check 16).

`PID` specifies the error type as PID Check Bits.

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:USB:ERRTYPE CRC5` sets the error type for USB bus trigger search 1 to Token CRC5.

`SEARCH:SEARCH1:TRIGGER:A:BUS:USB:ERRTYPE?` might return `SEARCH:SEARCH1:TRIGGER:A:BUS:USB:ERRTYPE PID`, indicating that the error type for USB bus trigger search 1 is set to PID Check Bits.

SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:HANDSHAKEType

This command sets or queries the handshake type for the specified USB bus trigger search to determine where to place a mark. The search number is specified by <x>.

Conditions Requires the SR-USB2 Serial Triggering and Analysis Application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:HANDSHAKEType
{ACK|ANY|NAK|NYET|STALL}
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:HANDSHAKEType?
```

Arguments

ACK specifies the handshake type as Acknowledgement (positive) (XX10).

ANY specifies the handshake type as Any (0010).

NAK specifies the handshake type as Negative Acknowledgment (1010).

NYET specifies the handshake type as No response Yet (0110).

STALL specifies the handshake type as Stall (endpoint is halted or control pipe request not supported) (1110).

Examples

SEARCH:SEARCH1:TRIGGER:A:BUS:USB:HANDSHAKETYPE NAK sets the handshake type for USB bus trigger search 1 to NAK.

SEARCH:SEARCH2:TRIGGER:A:BUS:USB:HANDSHAKETYPE? might return :SEARCH:SEARCH2:TRIGGER:A:BUS:USB:HANDSHAKETYPE NYET, indicating that the handshake type for USB bus trigger search 2 is set to NYET.

SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:SOFFRAMENUMber

This command sets or queries the frame number string to use for the Start of Frame for the specified USB bus trigger search to determine where to place a mark. The search number is specified by <x>. The search condition must be set to TOKEN.

Conditions

Requires the SR-USB2 Serial Triggering and Analysis Application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:SOFFRAMENUMber <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:SOFFRAMENUMber?
```

Arguments

<QString> specifies the frame number string for the Start of Frame in a valid format (binary, hexadecimal, or symbolic).

Examples

SEARCH:SEARCH1:TRIGGER:A:BUS:USB:SOFFRAMENUMBER "1001" sets the frame number string for the SOF for USB bus trigger search 1 to "1001" in symbolic format.

SEARCH:SEARCH1:TRIGGER:A:BUS:USB:SOFFRAMENUMBER? might return :SEARCH:SEARCH1:TRIGGER:A:BUS:USB:SOFFRAMENUMBER "xxxxxxx1001", indicating that the frame number string for the SOF for USB bus trigger search 1 is set to "XXXXXXX1001" in binary format.

SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:SPECIALType

This command sets or queries the USB search type for the specified USB bus trigger search to determine where to place a mark. The search number is specified by <x>.

Conditions Requires the SR-USB2 Serial Triggering and Analysis Application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:SPECIALType
{ANY|ERROr|PING|PREamble|RESERVed|SPLit}
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:SPECIALType?
```

Arguments

`ANY` specifies the PID value as Any (XX00).

`ERROr` specifies the PID value as ERR (1100).

`PING` specifies the PID value as PING (0100).

`PREamble` specifies the PID value as PRE (1100).

`RESERVed` specifies the PID value as Reserved (0000).

`SPLit` specifies the PID value as Split (1000).

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:USB:SPECIALTYPE ERROR` sets the PID value for USB bus trigger search 1 to ERROR.

`SEARCH:SEARCH1:TRIGGER:A:BUS:USB:SPECIALTYPE?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:USB:SPECIALTYPE SPLIT`, indicating that the PID value for USB bus trigger search 1 is set to SPLIT.

SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:SPLIT:ET:VALue

This command sets or queries the Endpoint Type value for the specified USB bus trigger search on split token field to determine where to place a mark. The search number is specified by <x>.

Conditions Requires the SR-USB2 Serial Triggering and Analysis Application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:SPLIT:ET:VALue
{BULK|CONTROL|NOCARE|INTERRUPT|ISOchronous}
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:SPLIT:ET:VALue?
```

Arguments

BULK specifies the Endpoint Type value as Bulk (10).

CONTROL specifies the Endpoint Type value as Control (00).

NOCARE specifies the Endpoint Type value as Don’t Care.

INTERRUPT specifies the Endpoint Type value as Interrupt (11).

ISOchronous specifies the Endpoint Type value as Isochronous (01).

Examples

SEARCH:SEARCH1:TRIGGER:A:BUS:USB:SPLIT:ET:VALUE BULK sets the Endpoint Type value for USB bus trigger search 1 to Bulk.

SEARCH:SEARCH1:TRIGGER:A:BUS:USB:SPLIT:ET:VALUE? might return :SEARCH:SEARCH1:TRIGGER:A:BUS:USB:SPLIT:ET:VALUE DONTCARE, indicating that the Endpoint Type value for USB bus trigger search 1 is set to DONTCare.

SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:SPLIT:HUB:VALue

This command sets or queries the binary hub address value to be used when searching on a USB bus signal. The search number is specified by <x>. The search condition must be set to Special with packet type SPLIT.

Conditions

Requires the SR-USB2 Serial Triggering and Analysis Application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:SPLIT:HUB:VALue <QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:SPLIT:HUB:VALue?
```

Arguments

<QString> specifies the hub address. The valid characters are .

Examples

SEARCH:SEARCH1:TRIGGER:A:BUS:USB:SPLIT:HUB:VALUE "1001" sets the hub address to "XXX1001".

SEARCH:SEARCH1:TRIGGER:A:BUS:USB:SPLIT:HUB:VALUE? might return :SEARCH:SEARCH1:TRIGGER:A:BUS:USB:SPLIT:HUB:VALUE "XX" (for binary format), indicating that the hub address for the USB bus trigger search on split token field is "XX".

SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:SPLIT:PORT:VALue

This command sets or queries the binary port address used when searching on a USB bus signal. The search number is specified by <x>. The search condition must be set to Special with a packet type SPLIT.

Conditions Requires the SR-USB2 Serial Triggering and Analysis Application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:SPLIT:PORT:VALue
<QString>
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:SPLIT:PORT:VALue?
```

Arguments `<QString>` specifies the port address in the valid format. The valid characters are

Examples `SEARCH:SEARCH1:TRIGGER:A:BUS:USB:SPLIT:PORT:VALUE "1111"` sets the port address for USB bus trigger search 1 to "XXX1111" for binary format.

`SEARCH:SEARCH1:TRIGGER:A:BUS:USB:SPLIT:PORT:VALUE?` might return `SEARCH:SEARCH1:TRIGGER:A:BUS:USB:SPLIT:PORT:VALUE "XX"`, indicating that the port address for USB hub trigger search 1 is set to "XX" in hexadecimal format.

SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:SPLIT:SC:VALue

This command sets or queries the Start/Complete value for the specified USB bus trigger on split token field search to determine where to place a mark. The search number is specified by <x>.

Conditions Requires the SR-USB2 Serial Triggering and Analysis Application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:SPLIT:SC:VALue
{CSPLIT|NOCARE|SSPLIT}
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:SPLIT:SC:VALue?
```

Arguments `CSPLIT` specifies Complete (CSPLIT)(1) Start/Complete value.

`NOCARE` specifies the Start/Complete value as Don’t Care (X).

SSPLIT specifies Start (SSPLIT) (0) Start/Complete value.

Examples

SEARCH:SEARCH1:TRIGGER:A:BUS:USB:SPLIT:SC:VALUE DONTCARE sets the Start/Complete value for USB bus trigger search 1 to DONTCare.

SEARCH:SEARCH2:TRIGGER:A:BUS:USB:SPLIT:SC:VALUE? might return :SEARCH:SEARCH2:TRIGGER:A:BUS:USB:SPLIT:SC:VALUE SSPLIT, indicating that the Start/Complete value for USB bus trigger search 2 is set to SSPLIT.

SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:SPLIT:SE:VALue

This command sets or queries the Start/End value for the specified USB bus trigger on split token field search to determine where to place a mark. The search number is specified by <x>.

Conditions

Requires the SR-USB2 Serial Triggering and Analysis Application.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:SPLIT:SE:VALue
{NOCARE|FULLSPEED|ISOALL|ISOEND|ISOMID|ISOSTART|LOWSPEED}
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:SPLIT:SE:VALue?
```

Arguments

NOCARE specifies Don’t Care (X) Start/End bit value.

FULLSPEED specifies Control/Bulk/Interrupt Full Speed device (0X) Start/End bit value.

ISOALL specifies Isochronous Data is All (11) Start/End bit value.

ISOEND specifies Isochronous Data is End (01) Start/End bit value.

ISOMID specifies Isochronous Data is Middle (00) Start/End bit value.

ISOSTART specifies Isochronous Data is Start (10) Start/End bit value.

LOWSPEED specifies Control/Bulk/Interrupt Low Speed device (1X) Start/End bit value.

Examples

SEARCH:SEARCH1:TRIGGER:A:BUS:USB:SPLIT:SE:VALUE ISOSTART sets the Start/End value for USB bus trigger on split token field search 1 to ISOSTART.

SEARCH:SEARCH1:TRIGGER:A:BUS:USB:SPLIT:SE:VALUE? might return :SEARCH:SEARCH1:TRIGGER:A:BUS:USB:SPLIT:SE:VALUE DONTCARE, indicating that the Start/End value for USB bus trigger on split token field search 1 is set to DONTCare.

SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:TOKENType

This command sets or queries the token type used to search a USB bus signal. The search number is specified by <x>.

Conditions Requires the SR-USB2 Serial Triggering and Analysis Application.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:TOKENType
{ANY|IN|OUT|SETUP|SOF}
SEARCH:SEARCH<x>:TRIGger:A:BUS:USB:TOKENType?
```

Arguments

`ANY` specifies the token type as Any (XX01).

`IN` specifies the token type as IN (1001).

`OUT` specifies the token type as OUT (0001).

`SETUP` specifies the token type as SETUP (1101).

`SOF` specifies the token type as Start Of Frame (0101).

Examples

`SEARCH:SEARCH1:TRIGGER:A:BUS:USB:TOKENTYPE IN` sets the token type for USB bus trigger search 1 to IN.

`SEARCH:SEARCH1:TRIGGER:A:BUS:USB:TOKENTYPE?` might return `:SEARCH:SEARCH1:TRIGGER:A:BUS:USB:TOKENTYPE SOF`, indicating that the token type for USB bus trigger search 1 is set to Start Of Frame.

SEARCH:SEARCH<x>:TRIGger:A:EDGE:SLOpe

This command sets or queries the slope for an edge trigger search to determine where to place a mark. The search number is specified by <x>.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:EDGE:SLOpe {RISe|FALL|EIther}
SEARCH:SEARCH<x>:TRIGger:A:EDGE:SLOpe?
```

Arguments

RISe specifies a rising edge.

FALL specifies a falling edge.

EITher specifies either rising or falling edge.

Examples

SEARCH:SEARCH1:TRIGGER:A:EDGE:SLOPE RISE sets the slope for search 1 to rise.

SEARCH:SEARCH1:TRIGGER:A:EDGE:SLOPE? might return :SEARCH:SEARCH1:TRIGGER:A:EDGE:SLOPE RISE, indicating that the slope for the trigger for search 1 is rise.

SEARCH:SEARCH<x>:TRIGger:A:EDGE:SOUrce

This command sets or queries the source waveform for an edge trigger search to determine where to place a mark. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:EDGE:SOUrce
{CH<x>|CH<x>_D<x>|MATH<x>|REF<x>|REF<x>_D<x>}
SEARCH:SEARCH<x>:TRIGger:A:EDGE:SOUrce?
```

Arguments

CH<x> specifies one input channel as the edge source, where the channel number is specified by <x>.

CH<x>_D<x> specifies a digital reference waveform as the source waveform for the specified search.

MATH<x> specifies the math waveform as the search source, where the math number is specified by <x>.

REF<x> specifies the reference waveform as the search source, where the reference number is specified by <x>.

REF<x>_D<x> specifies a digital reference waveform as the source waveform for the specified search.

Examples

SEARCH:SEARCH1:TRIGGER:A:EDGE:SOURCE CH2 sets the source waveform for the A trigger to Channel 2.

SEARCH:SEARCH1:TRIGGER:A:EDGE:SOURCE? might return :SEARCH:SEARCH1:TRIGGER:A:EDGE:SOURCE CH2, indicating that the Channel 2 edge trigger is the source for search 1.

SEARCH:SEARCH<x>:TRIGger:A:EDGE:THReshold

This command sets or queries the source threshold level for an edge trigger search to determine where to place a mark. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:EDGE:THReshold <NR3>
SEARCH:SEARCH<x>:TRIGger:A:EDGE:THReshold?
```

Arguments

`<NR3>` is the source threshold level for an edge trigger search.

Examples

`SEARCH:SEARCH1:TRIGger:A:EDGE:THReshold 50.0e-3` sets the threshold to 50 mV.

`SEARCH:SEARCH1:TRIGger:A:EDGE:THReshold?` might return `:SEARCH:SEARCH1:TRIGGER:A:EDGE:THRESHOLD 0.0E+0` indicating the threshold is 0.0 V.

SEARCH:SEARCH<x>:TRIGger:A:LOGIc:CLOCk:THReshold

This command sets or queries the logic clock threshold for a logic trigger search to determine where to place a mark. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:CLOCk:THReshold <NR3>
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:CLOCk:THReshold?
```

Arguments

`<NR3>` is the logic clock threshold.

Examples

`SEARCH:SEARCH1:TRIGger:A:LOGIc:CLOCk:THReshold 50.0e-3` sets the threshold to 50 mV.

`SEARCH:SEARCH1:TRIGger:A:LOGIc:CLOCk:THReshold?` might return `:SEARCH:SEARCH1:TRIGGER:A:LOGIC:CLOCK:THRESHOLD 0.0E+0` indicating the threshold is set to 0.0 V.

SEARCH:SEARCH<x>:TRIGger:A:LOGIc:DELTatime

This command specifies the Logic search delta time value. The time value is used as part of the Logic search condition to determine if the duration of a logic pattern meets the specified time constraints. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:DELTatime <NR3>
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:DELTatime?
```

Arguments

`<NR3>` is delta time value.

Examples

`SEARCH:SEARCH1:TRIGger:A:LOGIc:DELTatime 1.5e-9` sets the delta time to 1.5 ns.

`SEARCH:SEARCH1:TRIGger:A:LOGIc:DELTatime?` might return `:SEARCH:SEARCH1:TRIGGER:A:LOGIC:DELTATIME 1.0000E-9` indicating the delta time is 1.0 ns.

SEARCH:SEARCH<x>:TRIGger:A:LOGIc:FUNCtion

This command sets or queries the logic operator for a pattern or state trigger search to determine where to place a mark. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:FUNCtion {AND|NANd|NOR|OR}
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:FUNCtion?
```

Arguments

`AND` places a mark if all conditions are true.

`NANd` places a mark if any of the conditions are false.

`NOR` places a mark if all conditions are false.

`OR` places a mark if any of the conditions are true.

Examples

`SEARCH:SEARCH1:TRIGGER:A:LOGIC:FUNCTION AND` sets the trigger a logic function for search 1 to AND.

`SEARCH:SEARCH1:TRIGGER:A:LOGIC:FUNCTION?` might return `:SEARCH:SEARCH1:TRIGGER:A:LOGIC:FUNCTION NOR`, indicating that the logic function for search 1 is set to NOR.

SEARCH:SEARCH<x>:TRIGger:A:LOGIc:INPUT:CLOCK:SOUrce

This command specifies or queries the channel to use as the clock source for logic trigger. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:INPUT:CLOCK:SOUrce
{CH<x>|Ch<x>_D<x>|REF<x>_D<x>}
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:INPUT:CLOCK:SOUrce?
```

Arguments

Arguments are the possible input channels.

Examples

`SEARCH:SEARCH1:TRIGger:A:LOGIc:INPUT:CLOCK:SOUrce CH2` sets the clock source to channel 2.

`SEARCH:SEARCH1:TRIGger:A:LOGIc:INPUT:CLOCK:SOUrce?` might return `:SEARCH:SEARCH1:TRIGGER:A:LOGIC:INPUT:CLOCK:SOURCE UNDEFINED` indicating the clock source is not defined.

SEARCH:SEARCH<x>:TRIGger:A:LOGIc:LEVel:CH<x>

This command sets or queries the voltage level to use for logic trigger search. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:LEVel:CH<x> <NR3>
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:LEVel:CH<x>?
```

Arguments

`<NR3>` is the voltage level to use for logic trigger search.

Examples

`SEARCH:SEARCH1:TRIGger:A:LOGIc:LEVel:CH2 50.0e-3` sets the level to 50 mV.

`SEARCH:SEARCH1:TRIGger:A:LOGIc:LEVel:CH2?` might return `:SEARCH:SEARCH1:TRIGGER:A:LOGIC:LEVEL:CH2 0.0E+0` indicating the level is set to 0.0 V.

SEARCH:SEARCH<x>:TRIGger:A:LOGIc:LEVel:MATH<x>

This command sets the voltage level to use for logic trigger search. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:LEVel:MATH<x> <NR3>
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:LEVel:MATH<x>?
```

Arguments

`<NR3>` is the voltage level to use for logic trigger search.

Examples

`SEARCH:SEARCH1:TRIGger:A:LOGIc:LEVel:MATH1 50.0e-3` sets the level to 50.0 mV.

`SEARCH:SEARCH1:TRIGger:A:LOGIc:LEVel:MATH1?` might return `:SEARCH:SEARCH1:TRIGGER:A:LOGIC:LEVEL:MATH1 0.0E+0` indicating the level is set to 0.0 V.

SEARCH:SEARCH<x>:TRIGger:A:LOGIc:LEVel:REF<x>

This command sets the voltage level to use for logic trigger search. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:LEVel:REF<x> <NR3>
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:LEVel:REF<x>?
```

Arguments

`<NR3>` is the voltage level to use for logic trigger search.

Examples

`SEARCH:SEARCH1:TRIGger:A:LOGIc:LEVel:REF1 50.0e-3` sets the level to 50.0 mV.

`SEARCH:SEARCH1:TRIGger:A:LOGIc:LEVel:REF1?` might return `:SEARCH:SEARCH1:TRIGGER:A:LOGIC:LEVEL:REF1 0.0E+0` indicating the level is set to 0.0 V.

SEARCH:SEARCH<x>:TRIGger:A:LOGIc:LOGICPattern:CH<x>

This command sets or queries the conditions used for generating an A logic pattern, with respect to the defined input pattern, and identifies the time that the selected pattern may be true and still generate the trigger. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:LOGICPattern:CH<x> {H|L|X}
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:LOGICPattern:CH<x>?
```

Arguments

`H` specifies triggering when the pattern is high.

`L` specifies triggering when the pattern is low.

`X` specifies triggering when the pattern is high or low.

Examples

`SEARCH:SEARCH1:TRIGger:A:LOGIc:LOGICPattern:CH2 H` sets the channel 2 pattern to a high.

`SEARCH:SEARCH1:TRIGger:A:LOGIc:LOGICPattern:CH2?` might return `:SEARCH:SEARCH1:TRIGGER:A:LOGIC:LOGICPATTERN:CH2 X` indicating channel 2 is a don't care.

SEARCH:SEARCH<x>:TRIGger:A:LOGIc:LOGICPattern:CH<x>_D<x>

This command sets or queries the conditions used for generating an A logic pattern, with respect to the defined input pattern, and identifies the time that the selected pattern may be true and still generate the trigger. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:LOGICPattern:CH<x>_D<x>
{H|L|X}
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:LOGICPattern:CH<x>_D<x>?
```

Arguments

H specifies triggering when the pattern is high.

L specifies triggering when the pattern is low.

X specifies triggering when the pattern is high or low.

Examples

SEARCH:SEARCH1:TRIGger:A:LOGIc:LOGICPattern:CH1_D1 H sets the channel patter to a high.

SEARCH:SEARCH1:TRIGger:A:LOGIc:LOGICPattern:CH1_D1? might return :SEARCH:SEARCH1:TRIGGER:A:LOGIC:LOGICPATTERN:CH1_D1 X indicating the channel patter is a don't care.

SEARCH:SEARCH<x>:TRIGger:A:LOGIc:LOGICPattern:MATH<x>

This command sets or queries the conditions used for generating an A logic pattern, with respect to the defined input pattern, and identifies the time that the selected pattern may be true and still generate the trigger. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:LOGICPattern:MATH<x>
{H|L|X}
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:LOGICPattern:MATH<x>?
```

Arguments

H specifies triggering when the pattern is high.

L specifies triggering when the pattern is low.

X specifies triggering when the pattern is high or low.

Examples

SEARCH:SEARCH1:TRIGger:A:LOGIc:LOGICPattern:MATH1 H sets the pattern to a high.

SEARCH:SEARCH1:TRIGger:A:LOGIc:LOGICPattern:MATH1? might return :SEARCH:SEARCH1:TRIGGER:A:LOGIC:LOGICPATTERN:MATH1 X indicating the pattern is a don't care.

SEARCH:SEARCH<x>:TRIGger:A:LOGIc:LOGICPattern:REF<x>

This command sets or queries the conditions used for generating an A logic pattern, with respect to the defined input pattern, and identifies the time that the selected pattern may be true and still generate the trigger. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:LOGICPattern:REF<x> {H|L|X}
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:LOGICPattern:REF<x>?
```

Arguments

`H` specifies triggering when the pattern is high.

`L` specifies triggering when the pattern is low.

`X` specifies triggering when the pattern is high or low.

Examples

`SEARCH:SEARCH1:TRIGger:A:LOGIc:LOGICPattern:REF1 H` sets the pattern to a high.

`SEARCH:SEARCH1:TRIGger:A:LOGIc:LOGICPattern:REF1?` might return `:SEARCH:SEARCH1:TRIGGER:A:LOGIC:LOGICPATTERN:REF1 X` indicating the pattern is a don’t care.

SEARCH:SEARCH<x>:TRIGger:A:LOGIc:POLarity

This command sets or queries the polarity for the clock channel when Use Clock Edge is set to Yes for Logic search type. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:POLarity
{POSitive|NEGative|EITher}
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:POLarity?
```

Arguments

`POSitive` specifies using the positive clock edge.

`NEGative` specifies using negative clock edge.

`EITher` specifies using either the positive or negative clock edge.

Examples

`SEARCH:SEARCH1:TRIGger:A:LOGIc:POLarity NEGATIVE` sets the polarity to negative.

`SEARCH:SEARCH1:TRIGger:A:LOGIc:POLarity?` might return `:SEARCH:SEARCH1:TRIGGER:A:LOGIC:POLARITY POSITIVE` indicating the polarity is set to positive.

SEARCH:SEARCH<x>:TRIGger:A:LOGIc:USEClockedge

This command specifies whether or not Logic search uses a clock source. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:USEClockedge {OFF|ON|0|1}
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:USEClockedge?
```

Arguments

`OFF` specifies not to use the clock source.

`ON` specifies to use the clock source.

`0` specifies not to use the clock source.

`1` specifies to use the clock source.

Examples

`SEARCH:SEARCH1:TRIGger:A:LOGIc:USEClockedge ON` specifies to use the clock source.

`SEARCH:SEARCH1:TRIGger:A:LOGIc:USEClockedge?` might return `:SEARCH:SEARCH1:TRIGGER:A:LOGIC:USECLOCKEDGE 0` indicating not to use the clock source.

SEARCH:SEARCH<x>:TRIGger:A:LOGIc:WHEn

This command sets or queries the condition for generating an A or B logic search with respect to the defined input pattern.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:WHEn
{TRUe|FALSe|MOREThan|LESSThan|EQual|UNEQual}
SEARCH:SEARCH<x>:TRIGger:A:LOGIc:WHEn?
```

Arguments

`TRUe` searches on an input value that is true.

`FALSe` searches on an input value that is false.

`MOREthan` searches on an input value that is greater than a set value.

`LESSthan` searches on an input value that is less than a set value.

`EQual` searches on an input value that is equal to a set value.

`UNEQual` searches on an input value that is not equal to a set value.

Examples

`SEARCH:SEARCH1:TRIGger:A:LOGIc:WHEn FALSE` specifies a search on an input value that is false.

`SEARCH:SEARCH1:TRIGger:A:LOGIc:WHEn?` might return `:SEARCH:SEARCH1:TRIGGER:A:LOGIC:WHEN TRUE`indicating a search on an input value that is true.

SEARCH:SEARCH<x>:TRIGger:A:PULSEWidth:HIGHLimit

This command specifies the upper limit to use, in seconds, when searching for a pulse whose duration is inside or outside a range of two values. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:PULSEWidth:HIGHLimit <NR3>
SEARCH:SEARCH<x>:TRIGger:A:PULSEWidth:HIGHLimit?
```

Arguments

`<NR3>` is the upper limit to use, in seconds, when searching for a pulse.

Examples

`SEARCH:SEARCH1:TRIGger:A:PULSEWidth:HIGHLimit 2.5e-9` sets the high limit to 2.5 ns.

`SEARCH:SEARCH1:TRIGger:A:PULSEWidth:HIGHLimit?` might return `:SEARCH:SEARCH1:TRIGGER:A:PULSEWIDTH:HIGHLIMIT 2.0000E-9` indicating the pulse width high limit is 2.0 ns.

SEARCH:SEARCH<x>:TRIGger:A:PULSEWidth:LOGICQUALification

This command specifies whether or not to use logic qualification for a pulse width search. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:PULSEWidth:LOGICQUALification
{ON|OFF}
SEARCH:SEARCH<x>:TRIGger:A:PULSEWidth:LOGICQUALification?
```

Arguments

ON specifies to use logic qualification.

OFF specifies not to use logic qualification.

Examples

SEARCH:SEARCH1:TRIGger:A:PULSEWidth:LOGICQUALification ON turns on logic qualification.

SEARCH:SEARCH1:TRIGger:A:PULSEWidth:LOGICQUALification? might return :SEARCH:SEARCH1:TRIGGER:A:PULSEWIDTH:LOGICQUALIFICATION OFF indicating logic qualification is off.

SEARCH:SEARCH<x>:TRIGger:A:PULSEWidth:LOWLimit

This command specifies the lower limit to use, in seconds, when searching for a pulse whose duration is inside or outside a range of two values. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:PULSEWidth:LOWLimit <NR3>
SEARCH:SEARCH<x>:TRIGger:A:PULSEWidth:LOWLimit?
```

Arguments

<NR3> is the lower limit to use, in seconds, when searching for a pulse.

Examples

SEARCH:SEARCH1:TRIGger:A:PULSEWidth:LOWLimit 0.5e-9 sets the low limit to 0.5 ns.

SEARCH:SEARCH1:TRIGger:A:PULSEWidth:LOWLimit? might return :SEARCH:SEARCH1:TRIGGER:A:PULSEWIDTH:LOWLIMIT 1.0000E-9 indicating the low limit is 2.0 ns.

SEARCH:SEARCH<x>:TRIGger:A:PULSEWidth:POLarity

This command specifies the polarity for a pulse width search. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:PULSEWidth:POLarity
{POSitive|NEGative}
SEARCH:SEARCH<x>:TRIGger:A:PULSEWidth:POLarity?
```

Arguments

POSitive specifies positive polarity for a pulse width search.

NEGative specifies negative polarity for a pulse width search.

Examples

SEARCH:SEARCH1:TRIGger:A:PULSEWidth:POLarity NEGATIVE sets the polarity to negative.

SEARCH:SEARCH1:TRIGger:A:PULSEWidth:POLarity? might return :SEARCH:SEARCH1:TRIGGER:A:PULSEWIDTH:POLARITY POSITIVE indicating the polarity is positive.

SEARCH:SEARCH<x>:TRIGger:A:PULSEWidth:SOUrce

This command sets and queries the source for the pulse width search input. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:PULSEWidth:SOUrce
{CH<x>|CH<x>_D<x>|REF<x>|REF<x>_D<x>}
SEARCH:SEARCH<x>:TRIGger:A:PULSEWidth:SOUrce?
```

Arguments

Arguments are possible sources.

Examples

SEARCH:SEARCH1:TRIGger:A:PULSEWidth:SOUrce CH1 sets the source to channel 1.

SEARCH:SEARCH1:TRIGger:A:PULSEWidth:SOUrce? might return :SEARCH:SEARCH1:TRIGGER:A:PULSEWIDTH:SOURCE CH2 indicating channel 2 is the source.

SEARCH:SEARCH<x>:TRIGger:A:PULSEWidth:THReshold

Sets or queries the source threshold level for a pulse width trigger search to determine where to place a mark. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:PULSEWidth:THReshold <NR3>
SEARCH:SEARCH<x>:TRIGger:A:PULSEWidth:THReshold?
```

Arguments

<NR3> is the source threshold level for a pulse width trigger search.

Examples

`SEARCH:SEARCH1:TRIGger:A:PULSEWidth:THReshold 1.0e-9` sets to 1.0 ns.

`SEARCH:SEARCH1:TRIGger:A:PULSEWidth:THReshold?` might return `:SEARCH:SEARCH1:TRIGGER:A:PULSEWIDTH:THRESHOLD 0.0E+0` indicating the threshold is 0.0 s.

SEARCH:SEARCH<x>:TRIGger:A:PULSEWidth:WHEn

This command specifies to search for a pulse with a width (duration) that is less than, greater than, equal to, or unequal to a specified value (set using `SEARch:A:PULSEWidth:WIDth`), OR whose `SEARch:A:PULSEWidth:LOWLimit` and `SEARch:A:PULSEWidth:HIGHLimit`). The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:PULSEWidth:WHEn
{LESSthan|MOREthan| EQual|UNEQual|WIThin|OUTside}
SEARCH:SEARCH<x>:TRIGger:A:PULSEWidth:WHEn?
```

Arguments

`LESSthan` causes a search when a pulse is detected with a width less than the time set by the SEARch:A:PULSEWidth:WIDth command.

`MOREthan` causes a search when a pulse is detected with a width greater than the time set by the SEARch:A:PULSEWidth:WIDth command.

`EQual` causes a search when a pulse is detected with a width equal to the time period specified in SEARch:A:PULSEWidth:WIDth within a ±5% tolerance.

`UNEQual` causes a search when a pulse is detected with a width greater than or less than (but not equal) the time period specified in SEARch:A:PULSEWidth:WIDth within a ±5% tolerance.

`WIThin` causes a search when a pulse is detected that is within a range set by two values.

`OUTside` causes a search when a pulse is detected that is outside of a range set by two values.

Examples

`SEARCH:SEARCH1:TRIGger:A:PULSEWidth:WHEn Outside` causes a search when a pulse is detected that is outside the set range.

`SEARCH:SEARCH1:TRIGger:A:PULSEWidth:WHEn?` might return `:SEARCH:SEARCH1:TRIGGER:A:PULSEWIDTH:WHEN WITHIN` indicating that a search will occur when a pulse is detected that is within a set range.

SEARCH:SEARCH<x>:TRIGger:A:RUNT:LOGICQUALification

This command specifies whether or not to use logic qualification for a runt search. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:RUNT:LOGICQUALification {ON|OFF}
SEARCH:SEARCH<x>:TRIGger:A:RUNT:LOGICQUALification?
```

Arguments

`ON` specifies to use logic qualification for a runt search.

`OFF` specifies not to use logic qualification for a runt search.

Examples

`SEARCH:SEARCH1:TRIGger:A:RUNT:LOGICQUALification ON` turns on logic qualification.

`SEARCH:SEARCH1:TRIGger:A:RUNT:LOGICQUALification?` might return :SEARCH:SEARCH1:TRIGGER:A:RUNT:LOGICQUALIFICATION OFF indicating logic qualification is off.

SEARCH:SEARCH<x>:TRIGger:A:RUNT:POLarity

This command specifies the polarity for the runt search. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:RUNT:POLarity
{POSitive|NEGative|EIThe r}
SEARCH:SEARCH<x>:TRIGger:A:RUNT:POLarity?
```

Arguments

`POSitive` specifies using positive polarity for the runt search.

`NEGative` specifies using negative polarity for the runt search.

`EIThe r` specifies using either positive or negative polarity for the runt search.

Examples `SEARCH:SEARCH1:TRIGger:A:RUNT:POLarity NEGATIVE` specifies using negative polarity for the runt search.

`SEARCH:SEARCH1:TRIGger:A:RUNT:POLarity?` might return `:SEARCH:SEARCH1:TRIGGER:A:RUNT:POLARITY POSITIVE` indicating the polarity is set to positive.

SEARCH:SEARCH<x>:TRIGger:A:RUNT:SOUrce

This command sets and queries the source for the Runt search input. The search number is specified by <x>.

Group Search and Mark

Syntax `SEARCH:SEARCH<x>:TRIGger:A:RUNT:SOUrce {CH<x>|REF<x>}`

Arguments Arguments are the available sources.

Examples `SEARCH:SEARCH1:TRIGger:A:RUNT:SOUrce CH1` sets the source to channel 1.

`SEARCH:SEARCH1:TRIGger:A:RUNT:SOUrce?` might return `:SEARCH:SEARCH1:TRIGGER:A:RUNT:SOURCE CH2` indicating the source is set to channel 2.

SEARCH:SEARCH<x>:TRIGger:A:RUNT:THReshold:HIGH

This command sets or queries the source threshold HIGH level for a runt trigger search to determine where to place a mark.

Group Search and Mark

Syntax
```
SEARCH:SEARCH<x>:TRIGger:A:RUNT:THReshold:HIGH <NR3>
SEARCH:SEARCH<x>:TRIGger:A:RUNT:THReshold:HIGH?
```

Arguments `<NR3>` is the source threshold HIGH level for a runt trigger search.

Examples `SEARCH:SEARCH1:TRIGger:A:RUNT:THReshold:HIGH 50.0E-3` sets the high threshold to 50 mV.

`SEARCH:SEARCH1:TRIGger:A:RUNT:THReshold:HIGH?` might return `:SEARCH:SEARCH1:TRIGGER:A:RUNT:THRESHOLD:HIGH 0.0E+0` indicating the high threshold is 0.0 V.

SEARCH:SEARCH<x>:TRIGger:A:RUNT:THReshold:LOW

Sets or queries the source threshold LOW level for a runt trigger search to determine where to place a mark. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:RUNT:THReshold:LOW <NR3>
SEARCH:SEARCH<x>:TRIGger:A:RUNT:THReshold:LOW?
```

Arguments

`<NR3>` is the source threshold LOW level for a runt trigger search.

Examples

`SEARCH:SEARCH1:TRIGger:A:RUNT:THReshold:LOW 50.0e-3` sets the thresholdo to 50 mV.

`SEARCH:SEARCH1:TRIGger:A:RUNT:THReshold:LOW?` might return `:SEARCH:SEARCH1:TRIGGER:A:RUNT:THRESHOLD:LOW 0.0E+0` indicating the threshold is 0.0 V.

SEARCH:SEARCH<x>:TRIGger:A:RUNT:WHEn

This command sets or queries the condition setting for a runt trigger search to determine where to place a mark. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:RUNT:WHEn
{OCCURS|LESSthan|MOREthan|EQual}NOTEQual}
SEARCH:SEARCH<x>:TRIGger:A:RUNT:WHEn?
```

Arguments

`LESSthan` argument sets the oscilloscope to search if the a runt pulse is detected with width less than the time set by the `SEARCH:SEARCH<x>:TRIGger:A:RUNT:WIDth` command.

`MOREthan` argument sets the oscilloscope to search if the a runt pulse is detected with width more than the time set by the `SEARCH:SEARCH<x>:TRIGger:A:RUNT:WIDth` command.

EQual argument sets the oscilloscope to search when the pattern is true for a time period equal to the time period specified in SEARCH:SEARCH<x>:TRIGger:A:RUNT:WIDth within a ±5% tolerance.

NOTEQual argument sets the oscilloscope to search when the pattern is true for atime period greater than or less than (but not equal) the time period specified in SEARCH:SEARCH<x>:TRIGger:A:RUNT:WIDth within a ±5% tolerance.

OCCURS argument specifies a search event if a runt of any detectable width occurs.

Examples

SEARCH:SEARCH1:TRIGGER:A:RUNT:WHEN MORETHAN sets the oscilloscope to trigger when a runt pulse is detected with width wider than the time set by the SEARCH:SEARCH<x>:TRIGger:A:RUNT:WIDth command.

SEARCH:SEARCH1:TRIGGER:A:RUNT:WHEN? might return :SEARCH:SEARCH1:TRIGGER:A:RUNT:WHEN OCCURS, indicating that a mark is placed if a runt trigger event occurs.

SEARCH:SEARCH<x>:TRIGger:A:RUNT:WIDth

This command sets or queries the width setting for a runt trigger search to determine where to place a mark. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:RUNT:WIDth <NR3>
SEARCH:SEARCH<x>:TRIGger:A:RUNT:WIDth?
```

Arguments

<NR3> specifies the minimum width in seconds.

Examples

SEARCH:SEARCH1:TRIGGER:A:RUNT:WIDTH 400E-12 sets the runt trigger minimum width for search 1 to 0.4 nanoseconds.

SEARCH:SEARCH1:TRIGGER:A:RUNT:WIDTH? might return :SEARCH:SEARCH1:TRIGGER:A:RUNT:WIDTH 500.0000E-12, indicating that the runt trigger minimum width for search 1 is set to 0.5 nanoseconds.

SEARCH:SEARCH<x>:TRIGger:A:SETHold:CLOCk:EDGE

This command sets or queries the clock slope setting for a setup/hold trigger search to determine where to place a mark. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:SETHold:CLOCk:EDGE {FALL|RISe}
SEARCH:SEARCH<x>:TRIGger:A:SETHold:CLOCk:EDGE?
```

Arguments

`FALL` specifies the polarity as the clock falling edge.

`RISe` specifies the polarity as the clock rising edge.

Examples

`SEARCH:SEARCH1:TRIGGER:A:SETHOLD:CLOCK:EDGE FALL` sets the setup/hold trigger clock slope polarity for search 1 to falling edge.

`SEARCH:SEARCH1:TRIGGER:A:SETHOLD:CLOCK:EDGE?` might return `:SEARCH:SEARCH1:TRIGGER:A:SETHOLD:CLOCK:EDGE RISE`, indicating that the setup/hold trigger clock slope polarity for search 1 is set to rising edge.

SEARCH:SEARCH<x>:TRIGger:A:SETHold:CLOCk:SOUrce

This command sets or queries the clock source setting for a setup/hold trigger search to determine where to place a mark. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:SETHold:CLOCk:SOUrce
{CH<x>|CH<x>_D<x>|MATH<x>|REF<x>|REF<x>_D<x>}
SEARCH:SEARCH<x>:TRIGger:A:SETHold:CLOCk:SOUrce
SEARCH:SEARCH<x>:TRIGger:A:SETHold:CLOCk:SOUrce?
```

Arguments

`CH<x>` specifies an input channel as the edge source, where <x> = 1, 2, 3, 4, 5, 6, 7, or 8, depending on the number of channels in your instrument.

`CH<x>_D<x>` specifies a digital waveform as the setup and hold clock source waveform for the specified search.

`MATH<x>` specifies the math waveform as the search source, where <x> = ≥1.

`REF<x>` specifies the reference waveform as the search source, where <x> = ≥1.

`REF<x>_D<x>` specifies a digital reference waveform as the setup and hold clock source waveform for the specified search.

Examples

`SEARCH:SEARCH1:TRIGGER:A:SETHOLD:CLOCK:SOURCE MATH1` sets the setup/hold trigger clock source setting for search 1 to MATH1.

`SEARCH:SEARCH1:TRIGGER:A:SETHOLD:CLOCK:SOURCE?` might return `:SEARCH:SEARCH1:TRIGGER:A:SETHOLD:CLOCK:SOURCE CH1`, indicating that the setup/hold trigger clock source setting for search 1 is set to CH1.

SEARCH:SEARCH<x>:TRIGger:A:SETHold:CLOCk:THReshold

This command sets or queries the clock threshold setting for a setup/hold trigger search to determine where to place a mark. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:SETHold:CLOCk:THReshold <NR3>
SEARCH:SEARCH<x>:TRIGger:A:SETHold:CLOCk:THReshold?
```

Arguments

`<NR3>` the clock threshold setting for a setup/hold trigger search.

Examples

`SEARCH:SEARCH1:TRIGGER:A:SETHOLD:CLOCK:THRESHOLD -1.3` sets the setup/hold trigger clock threshold setting for search 1 to -1.3 volts.
`SEARCH:SEARCH1:TRIGGER:A:SETHOLD:CLOCK:THRESHOLD?` might return `:SEARCH:SEARCH1:TRIGGER:A:SETHOLD:CLOCK:THRESHOLD −1.3000`, indicating that the setup/hold trigger clock threshold setting for search 1 is set to -1.3 volts.

`** CANNOT USE LocalCmd HERE BECAUSE OF VARIABLES **`

SEARCH:SEARCH<x>:TRIGger:A:SETHold:HOLDTime

This command sets or queries the hold time setting for a setup/hold trigger search to determine where to place a mark. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:SETHold:HOLDTime <NR3>
SEARCH:SEARCH<x>:TRIGger:A:SETHold:HOLDTime?
```

Arguments

`<NR3>` specifies the hold time setting in seconds. Positive values for hold time occur after the clock edge. Negative values occur before the clock edge.

Examples

`SEARCH:SEARCH1:TRIGGER:A:SETHOLD:HOLDTIME 400E-12` sets the setup/hold trigger hold time setting for search 1 to 400 ps.

`SEARCH:SEARCH1:TRIGGER:A:SETHOLD:HOLDTIME?` might return `:SEARCH:SEARCH1:TRIGGER:A:SETHOLD:HOLDTIME 500.0000E−12`, indicating that the setup/hold trigger hold time setting for search 1 is set to 0.5 ns.

SEARCH:SEARCH<x>:TRIGger:A:SETHold:LEVel:CH<x>

This command sets or queries the voltage level to use for setup & hold trigger search. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:SETHold:LEVel:CH<x> <NR3>
SEARCH:SEARCH<x>:TRIGger:A:SETHold:LEVel:CH<x>?
```

Arguments

`<NR3>` the voltage level to use for setup & hold trigger search.

Examples

`SEARCH:SEARCH1:TRIGger:A:SETHold:LEVel:CH1 50.0e-3` sets the level to 50.0 mV.

`SEARCH:SEARCH1:TRIGger:A:SETHold:LEVel:CH1?` might return `:SEARCH:SEARCH1:TRIGGER:A:SETHOLD:LEVEL:CH1 0.0E+0` indicating the level is 0.0 V.

SEARCH:SEARCH<x>:TRIGger:A:SETHold:LEVel:MATH<x>

This command sets or queries the voltage level to use for setup & hold trigger search. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:SETHold:LEVel:MATH<x> <NR3>
SEARCH:SEARCH<x>:TRIGger:A:SETHold:LEVel:MATH<x>?
```

Arguments

`<NR3>` isi the voltage level to use for setup & hold trigger search.

Examples

`SEARCH:SEARCH1:TRIGger:A:SETHold:LEVel:MATH1 50.0e-3` sets the level to 50.0 mV.

`SEARCH:SEARCH1:TRIGger:A:SETHold:LEVel:MATH1?` might return `:SEARCH:SEARCH1:TRIGGER:A:SETHOLD:LEVEL:MATH1 0.0E+0` indicating the level is 0.0 V.

SEARCH:SEARCH<x>:TRIGger:A:SETHold:LEVel:REF<x>

This command sets or queries the voltage level to use for setup & hold trigger search. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:SETHold:LEVel:REF<x> <NR3>
SEARCH:SEARCH<x>:TRIGger:A:SETHold:LEVel:REF<x>?
```

Arguments

`<NR3>` is the voltage level to use for setup & hold trigger search.

Examples

`SEARCH:SEARCH1:TRIGger:A:SETHold:LEVel:REF1 50.0e-3` sets the level to 50.0 mV.

`SEARCH:SEARCH1:TRIGger:A:SETHold:LEVel:REF1?` might return `:SEARCH:SEARCH1:TRIGGER:A:SETHOLD:LEVEL:REF1 0.0E+0` indicating the level is 0.0 V.

SEARCH:SEARCH<x>:TRIGger:A:SETHold:LOGICPattern:CH<x>

This command sets or queries the conditions used for generating an A logic pattern, with respect to the defined input pattern, and identifies the time that the selected pattern may be true and still generate the trigger. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:SETHold:LOGICPattern:CH<x>
{INCLude|DONTInclude}
SEARCH:SEARCH<x>:TRIGger:A:SETHold:LOGICPattern:CH<x>?
```

Arguments

`INCLude` specifies including the specified channel SETHOLD inputs in the specified search.

`DONTInclude` specifies not including the specified channel SETHOLD inputs in the specified search.

Examples

`SEARCH:SEARCH1:TRIGger:A:SETHold:LOGICPattern:CH1 INCLUDE` specifies including the specified channel SETHOLD inputs in the specified search.

`SEARCH:SEARCH1:TRIGger:A:SETHold:LOGICPattern:CH1?` might return `:SEARCH:SEARCH1:TRIGGER:A:SETHOLD:LOGICPATTERN:CH1 DONTINCLUDE` indicating the specified channel SETHOLD inputs will not be included in the specified search.

SEARCH:SEARCH<x>:TRIGger:A:SETHold:LOGICPattern:CH<x>_D<x>

This command sets or queries the conditions used for generating an A logic pattern, with respect to the defined input pattern, and identifies the time that the selected pattern may be true and still generate the trigger. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:SETHold:LOGICPattern:CH<x>_D<x>
{INCLude|DONTInclude}
SEARCH:SEARCH<x>:TRIGger:A:SETHold:LOGICPattern:CH<x>_D<x>?
```

Arguments

`INCLude` specifies including the specified digital channel SETHOLD inputs in the specified search.

`DONTInclude` specifies not including the specified digital channel SETHOLD inputs in the specified search.

Examples

`SEARCH:SEARCH1:TRIGger:A:SETHold:LOGICPattern:CH1_D0 INCLUDE` specifies including the specified digital channel SETHOLD inputs in the specified search.

`SEARCH:SEARCH1:TRIGger:A:SETHold:LOGICPattern:CH1_D0?` might return `:SEARCH:SEARCH1:TRIGGER:A:SETHOLD:LOGICPATTERN:CH1_D0 DONTINCLUDE` indicating the specified digital channel SETHOLD inputs will not be included in the specified search.

SEARCH:SEARCH<x>:TRIGger:A:SETHold:LOGICPattern:MATH<x>

This command sets or queries the conditions used for generating an A logic pattern, with respect to the defined input pattern, and identifies the time that the selected pattern may be true and still generate the trigger. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:SETHold:LOGICPattern:MATH<x>
{INCLude|DONTInclude}
SEARCH:SEARCH<x>:TRIGger:A:SETHold:LOGICPattern:MATH<x>?
```

Arguments

`INCLude` specifies including the specified math SETHOLD inputs in the specified search.

`DONTInclude` specifies not including the specified math SETHOLD inputs in the specified search.

Examples

`SEARCH:SEARCH1:TRIGger:A:SETHold:LOGICPattern:MATH1 INCLUDE` specifies including the specified math SETHOLD inputs in the specified search.

`SEARCH:SEARCH1:TRIGger:A:SETHold:LOGICPattern:MATH1?` might return `:SEARCH:SEARCH1:TRIGGER:A:SETHOLD:LOGICPATTERN:MATH1 DONTINCLUDE` indicating the specified math SETHOLD inputs will not be included in the specified search.

SEARCH:SEARCH<x>:TRIGger:A:SETHold:LOGICPattern:REF<x>

This command sets and returns the conditions used for generating an A logic pattern, with respect to the defined input pattern, and identifies the time that the selected pattern may be true and still generate the trigger. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:SETHold:LOGICPattern:REF<x>
{INCLude|DONTInclude}
SEARCH:SEARCH<x>:TRIGger:A:SETHold:LOGICPattern:REF<x>?
```

Arguments

`INCLude` specifies including the specified reference SETHOLD inputs in the specified search.

`DONTInclude` specifies not including the specified reference SETHOLD inputs in the specified search.

Examples

`SEARCH:SEARCH1:TRIGger:A:SETHold:LOGICPattern:REF1 INCLUDE` specifies including the specified reference SETHOLD inputs in the specified search.

`SEARCH:SEARCH1:TRIGger:A:SETHold:LOGICPattern:REF1?` might return `:SEARCH:SEARCH1:TRIGGER:A:SETHOLD:LOGICPATTERN:REF1`

`DONTINCLUDE` indicating the specified reference SETHOLD inputs will not be included in the specified search.

SEARCH:SEARCH<x>:TRIGger:A:SETHold:SETTime

This command sets or queries the setup time setting for a setup/hold trigger search to determine where to place a mark. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:SETHold:SETTime <NR3>
SEARCH:SEARCH<x>:TRIGger:A:SETHold:SETTime?
```

Arguments

`<NR3>` specifies the setup time for setup and hold violation triggering.

Examples

`SEARCH:SEARCH1:TRIGGER:A:SETHOLD:SETTIME 2E-9` sets the setup/hold trigger setup time setting for search 1 to 2 ns.

`SEARCH:SEARCH1:TRIGGER:A:SETHOLD:SETTIME?` might return `:SEARCH:SEARCH1:TRIGGER:A:SETHOLD:SETTIME 1.0000E-9`, indicating that the setup/hold trigger setup time setting for search 1 is set to 1.0 ns.

SEARCH:SEARCH<x>:TRIGger:A:STATE

This command sets or queries the enabled state of the search. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:STATE {<NR1>|OFF|ON}
```

Arguments

`<NR1>` = 1 enables the search. Any other character disables the search.

`ON` enables the search.

`OFF` disables the search.

Examples

`SEARCH:SEARCH1:TRIGger:A:STATE OFF` disables the search.

`SEARCH:SEARCH1:TRIGger:A:STATE?` might return `:SEARCH:SEARCH1:TRIGGER:A:STATE 1` indicating search 1 is enabled.

SEARCH:SEARCH<x>:TRIGger:A:STOPAcq

This command sets or queries whether acquisitions are stopped when a search hit is found. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:STOPAcq {<NR1>|OFF|ON}
```

Arguments

`<NR1>` = 1 enables stopping when a search hit is found. Any other character disables the feature.

`ON` enables stopping when a search hit is found.

`OFF` disables stopping on a search hit.

Examples

`SEARCH:SEARCH1:TRIGger:A:STOPAcq ON` enables stopping when a search hit is found.

`SEARCH:SEARCH1:TRIGger:A:STOPAcq?` might return `:SEARCH:SEARCH1:TRIGGER:A:STOPACQ 0` indicating acquisitions are stopped when a search hit is found.

SEARCH:SEARCH<x>:TRIGger:A:TIMEOut:LOGICQUALification

This command specifies whether or not to use logic qualification for a timeout search. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:TIMEOut:LOGICQUALification
{ON|OFF}
SEARCH:SEARCH<x>:TRIGger:A:TIMEOut:LOGICQUALification?
```

Arguments

`ON` specifies to use logic qualification.

`OFF` specifies not to use logic qualification.

Examples

`SEARCH:SEARCH1:TRIGger:A:TIMEOut:LOGICQUALification ON` specifies to use logic qualification.

SEARCH:SEARCH1:TRIGger:A:TIMEOut:LOGICQUALification? might return :SEARCH:SEARCH1:TRIGGER:A:TIMEOUT:LOGICQUALIFICATION OFF indicating logic qualification is off.

SEARCH:SEARCH<x>:TRIGger:A:TIMEOut:POLarity

The polarity to be used for a Timeout search. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:TIMEOut:POLarity
{STAYSHigh|STAYSLow|EITher}
SEARCH:SEARCH<x>:TRIGger:A:TIMEOut:POLarity?
```

Arguments

STAYSHigh specifies the polarity stays HIGH.

STAYSLow specifies the polarity stays LOW.

EITher specifies the polarity stays HIGH or stays LOW.

Examples

SEARCH:SEARCH1:TRIGger:A:TIMEOut:POLarity STAYSLOW specifies the polarity stays LOW.

SEARCH:SEARCH1:TRIGger:A:TIMEOut:POLarity? might return :SEARCH:SEARCH1:TRIGGER:A:TIMEOUT:POLARITY STAYSHIGH indicating the polarity stays HIGH.

SEARCH:SEARCH<x>:TRIGger:A:TIMEOut:SOUrce

This command sets and queries the source for timeout search input. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:TIMEOut:SOUrce
{CH<x>|CH<x>_D<x>|MATH<x>REF<x>|REF<x>_D<x>]
SEARCH:SEARCH<x>:TRIGger:A:TIMEOut:SOUrce?
```

Arguments

Arguments are the available sources.

Examples

`SEARCH:SEARCH1:TRIGger:A:TIMEOut:SOUrce`

`SEARCH:SEARCH1:TRIGger:A:TIMEOut:SOUrce?` might return `:SEARCH:SEARCH1:TRIGGER:A:TIMEOUT:SOURCE CH1_D0` indicating CH1_D0 is the source.

SEARCH:SEARCH<x>:TRIGger:A:TIMEOut:THReshold

Sets or queries the source threshold level for a timeout trigger search to determine where to place a mark. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:TIMEOut:THReshold <NR3>
SEARCH:SEARCH<x>:TRIGger:A:TIMEOut:THReshold?
```

Arguments

`<NR3>` is the source threshold level for a timeout trigger search.

Examples

`SEARCH:SEARCH1:TRIGger:A:TIMEOut:THReshold 50.0e-3` sets the threshold to 50.0 mV.

`SEARCH:SEARCH1:TRIGger:A:TIMEOut:THReshold?` might return `:SEARCH:SEARCH1:TRIGGER:A:TIMEOUT:THRESHOLD 0.0E+0` indicating the threshold is 0.0 V.

SEARCH:SEARCH<x>:TRIGger:A:TIMEOut:TIMe

This command sets or queries the time setting for a timeout trigger search to determine where to place a mark. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:TIMEOut:TIMe <NR3>
SEARCH:SEARCH<x>:TRIGger:A:TIMEOut:TIMe?
```

Arguments

`<NR3>` is the time in seconds.

Examples

`SEARCH:SEARCH1:TRIGGER:A:TIMEOUT:TIME 400E-9` sets the timeout trigger time setting for search 1 to 400 ns.

`SEARCH:SEARCH1:TRIGGER:A:TIMEOUT:TIME?` might return `:SEARCH:SEARCH1:TRIGGER:A:TIMEOUT:TIME 500.0000E-12`, indicating that the timeout trigger time setting for search 1 is set to 500 ns.

SEARCH:SEARCH<x>:TRIGger:A:TRANsition:DELTATime

This command sets or queries the transition time setting for a transition trigger search to determine where to place a mark. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:TRANsition:DELTATime <NR3>
SEARCH:SEARCH<x>:TRIGger:A:TRANsition:DELTATime?
```

Arguments

`<NR3>` specifies the transition time in seconds.

Examples

`SEARCH:SEARCH1:TRIGGER:A:TIMEOUT:TIME 400E-9` sets the transition trigger time setting for search 1 to 400 ns.

`SEARCH:SEARCH1:TRIGGER:A:TRANSITION:DELTATIME?` might return `:SEARCH:SEARCH1:TRIGGER:A:TRANSITION:DELTATIME 500.0000E-12`, indicating that the transition trigger time setting for search 1 is set to 500 ps.

SEARCH:SEARCH<x>:TRIGger:A:TRANsition:LOGICQUALification

This command specifies whether or not to use logic qualification for a transition search. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:TRANsition:LOGICQUALification
{ON|OFF}
SEARCH:SEARCH<x>:TRIGger:A:TRANsition:LOGICQUALification?
```

Arguments

`ON` specifies to use logic qualification for a transition search.

`OFF` specifies not to use logic qualification for a transition search.

Examples

`SEARCH:SEARCH1:TRIGger:A:TRANsition:LOGICQUALification ON` specifies to use logic qualification for a transition search.

SEARCH:SEARCH1:TRIGger:A:TRANsition:LOGICQUALification? might return :SEARCH:SEARCH1:TRIGGER:A:TRANSITION:LOGICQUALIFICATION OFF indicating logic qualification is off.

SEARCH:SEARCH<x>:TRIGger:A:TRANsition:POLarity

This command specifies the polarity for the transition search. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:TRANsition:POLarity
{POSitive|NEGative|EIThер}
SEARCH:SEARCH<x>:TRIGger:A:TRANsition:POLarity?
```

Arguments

EITher places a mark on a transition of either polarity.

NEGative places a mark on a transition of negative polarity.

POSitive places a mark on a transition of positive polarity.

Examples

SEARCH:SEARCH1:TRIGger:A:TRANsition:POLarity NEGATIVE places a mark on a transition of negative polarity.

SEARCH:SEARCH1:TRIGger:A:TRANsition:POLarity? might return :SEARCH:SEARCH1:TRIGGER:A:TRANSITION:POLARITY POSITIVE indicating the polaity is positive.

SEARCH:SEARCH<x>:TRIGger:A:TRANsition:SOUrce

This command sets and queries the source for the transition search input. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:TRANsition:SOUrce
{CH<x>|MATH<x>|REF<x>}
SEARCH:SEARCH<x>:TRIGger:A:TRANsition:SOUrce?
```

Arguments

Arguments are the available sources.

Examples `SEARCH:SEARCH1:TRIGger:A:TRANsition:SOUrce CH1` sets the source to channel 1.

`SEARCH:SEARCH1:TRIGger:A:TRANsition:SOUrce?` might return `:SEARCH:SEARCH1:TRIGGER:A:TRANSITION:SOURCE CH2` indicating channel 2 is the source.

SEARCH:SEARCH<x>:TRIGger:A:TRANsition:THReshold:HIGH

Sets or queries the source threshold HIGH level for a transition trigger search to determine where to place a mark. The search number is specified by <x>.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:TRANsition:THReshold:HIGH <NR3>
SEARCH:SEARCH<x>:TRIGger:A:TRANsition:THReshold:HIGH?
```

Arguments `<NR3>` the source threshold HIGH level for a transition trigger search.

Examples `SEARCH:SEARCH1:TRIGger:A:TRANsition:THReshold:HIGH 50.0e-3` sets the high threshold to 50.0 mV.

`SEARCH:SEARCH1:TRIGger:A:TRANsition:THReshold:HIGH?` might return `:SEARCH:SEARCH1:TRIGGER:A:TRANSITION:THRESHOLD:HIGH 0.0E+0` indicating the high threshold is 0.0 V.

SEARCH:SEARCH<x>:TRIGger:A:TRANsition:THReshold:LOW

Sets or queries the source threshold LOW level for a transition trigger search to determine where to place a mark. The search number is specified by <x>. .

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:TRANsition:THReshold:LOW <NR3>
SEARCH:SEARCH<x>:TRIGger:A:TRANsition:THReshold:LOW?
```

Arguments `<NR3>` is the source threshold LOW level for a transition trigger searchk.

Examples `SEARCH:SEARCH1:TRIGger:A:TRANsition:THReshold:LOW -50.0e-3` sets the LOW threshold to -50.0 mV.

`SEARCH:SEARCH1:TRIGger:A:TRANsition:THReshold:LOW?` might return `:SEARCH:SEARCH1:TRIGGER:A:TRANSITION:THRESHOLD:LOW 0.0E+0` indicating the LOW threshold is 0.0 V.

SEARCH:SEARCH<x>:TRIGger:A:TRANsition:WHEn

This command sets or queries the condition setting for a transition trigger search to determine where to place a mark. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:TRANsition:WHEn
{FASTERthan|SLOWERthan|EQual|UNEQual}
SEARCH:SEARCH<x>:TRIGger:A:TRANsition:WHEn?
```

Arguments

`FASTERthan` sets the trigger to occur when the transitioning signal is faster than the set volts/second rate.

`SLOWERthan` sets the trigger to occur when the transitioning signal is slower than the set volts/second rate.

`EQual` sets the trigger to occur when the transitioning signal is equal to the set volts/second rate.

`UNEQual` sets the trigger to occur when the transitioning signal is not equal to the set volts/second rate.

Examples

`SEARCH:SEARCH1:TRIGGER:A:TRANSITION:WHEN SLOWERTHAN` sets the transition trigger condition setting for search 1 to SLOWERTHAN.

`SEARCH:SEARCH1:TRIGGER:A:TRANSITION:WHEN?` might return `:SEARCH:SEARCH1:TRIGGER:A:TRANSITION:WHEN FASTERTHAN`, indicating that the transition trigger condition setting for search 1 is set to FASTERTHAN.

SEARCH:SEARCH<x>:TRIGger:A:TYPe

This command sets or queries the trigger type setting for a search to determine where to place a mark. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:TYPe
{EDGE|RUNT|TRANsition|PULSEWidth|TIMEOut|LOGIc|SETHold|
WINdow|Bus}
SEARCH:SEARCH<x>:TRIGger:A:TYPe?
```

Arguments

`EDGE` triggers when the source input signal amplitude crosses the specified level in the direction given by the slope.

NOTE. *Some trigger types are optional.*

`RUNT` triggers when a pulse crosses the first preset voltage threshold but does not cross the second preset threshold before recrossing the first. The thresholds are set with the SEARCH:SEARCH<x>:TRIGger:A:RUNt:HIGH and SEARCH:SEARCH<x>:TRIGger:A:RUNt:LOW THRESHOLD commands.

`TRANsition` triggers when a pulse crosses both thresholds in the same direction as the specified polarity and the transition time between the two threshold crossings is greater or less than the specified time delta.

`PULSEWidth` triggers on input signal source pulses that are inside or outside of the given time range specified by SEARCH:SEARCH<x>:TRIGger:A:LOGIc:PATtern:WHEn:LESSLimit and SEARCH:SEARCH<x>:TRIGger:A:LOGIc:PATtern:WHEn:MORELimit. The polarity is selected using the SEARCH:SEARCH<x>:TRIGger:A:RUNT:POLarity command.

`TIMEOut` triggers on an input signal source that stays above, stays below, or stays either above or beow the trigger level for a given time.

`LOGIc` specifies that a search occurs when specified conditions are met, and is controlled by the SEARCH:A:LOGIc commands.

`SETHold` triggers on a functional pattern combination of one to three data sources at the time of the clock transition.

`WINdow` triggers on an input signal source that enters or exits the horizontal band defined by the two trigger levels.

`Bus` specifies that a search occurs when a communications signal is found.

Examples

`SEARCH:SEARCH1:TRIGGER:A:TYPE RUNT` sets the trigger type setting for search 1 to RUNT.

`SEARCH:SEARCH1:TRIGGER:A:TYPE?` might return `:SEARCH:SEARCH1:TRIGGER:A:TYPE EDGE`, indicating that the trigger type setting for search 1 is set to EDGE.

SEARCH:SEARCH<x>:TRIGger:A:WINdow:CROSSIng

This command sets or queries the window trigger threshold crossing of the selected trigger Source. The threshold crossing selection is only effective when :TRIGger:A:WINdow:WHEn is INSIDEGreater or OUTSIDEGreater. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:WINdow:CROSSIng
{UPPer|LOWer|EITher|NONe}
```

Arguments

`UPPer` if `:TRIGger:A:WINdow:WHEn` is `INSIDEGreater`, the instrument triggers when the signal remains between the upper and lower thresholds for longer than the time limit (`:TRIGger:A:WINdow:WIDTH`) and then exits through the upper threshold. If `:TRIGger:A:WINdow:WHEn` is `OUTSIDEGreater`, the instrument triggers when the signal remains above the upper threshold for longer than the time limit (`:TRIGger:A:WINdow:WIDTH`) and then crosses downward through the upper threshold.

`LOWer` if `:TRIGger:A:WINdow:WHEn` is `INSIDEGreater`, the instrument triggers when the signal remains between the upper and lower thresholds for longer than the time limit (`:TRIGger:A:WINdow:WIDTH`) and then exits through the lower threshold. If `:TRIGger:A:WINdow:WHEn` is `OUTSIDEGreater`, the instrument triggers when the signal remains below the lower threshold for longer than the time limit (`:TRIGger:A:WINdow:WIDTH`) and then crosses upwards through the lower threshold.

`EITher` if `:TRIGger:A:WINdow:WHEn` is `INSIDEGreater`, the instrument triggers when the signal remains between the upper and lower thresholds for longer than the time limit (`:TRIGger:A:WINdow:WIDTH`) and then exits through either the upper or lower threshold. If `:TRIGger:A:WINdow:WHEn` is `OUTSIDEGreater`, the instrument triggers when the signal remains either above the upper threshold or below the lower threshold for longer than the time limit (`:TRIGger:A:WINdow:WIDTH`) and then crosses a threshold.

`NONe` if `:TRIGger:A:WINdow:WHEn` is `INSIDEGreater`, the instrument triggers when the signal remains between the upper and lower thresholds for longer than the time limit (`:TRIGger:A:WINdow:WIDTH`) without crossing through either the upper or lower threshold. If `:TRIGger:A:WINdow:WHEn` is `OUTSIDEGreater`, the instrument triggers when the signal remains outside the upper and lower thresholds for longer than the time limit (`:TRIGger:A:WINdow:WIDTH`) without crossing through either the upper or lower threshold.

Examples

`SEARCH:SEARCH1:TRIGger:A:WINdow:CROSSIng LOWER` sets the CROSSING to LOWER.

`SEARCH:SEARCH1:TRIGger:A:WINdow:CROSSIng?` might return `:SEARCH:SEARCH1:TRIGGER:A:WINDOW:CROSSING UPPER` indicating that CROSSING is set to UPPER.

SEARCH:SEARCH<x>:TRIGger:A:WINdow:LOGICQUALification

This command specifies or queries whether or not to use logic qualification for a window search. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:WINdow:LOGICQUALification
{ON|OFF}
SEARCH:SEARCH<x>:TRIGger:A:WINdow:LOGICQUALification?
```

Arguments

`ON` specifies to use logic qualification for a window search.

`OFF` specifies not to us logic qualification for a window search.

Examples

`SEARCH:SEARCH1:TRIGger:A:WINdow:LOGICQUALification ON` turns ON logic qualification for a window search.

`SEARCH:SEARCH1:TRIGger:A:WINdow:LOGICQUALification?` might return `:SEARCH:SEARCH1:TRIGGER:A:WINDOW:LOGICQUALIFICATION OFF` indicating logic qualification is off.

SEARCH:SEARCH<x>:TRIGger:A:WINdow:POLarity

This command sets or queries the window trigger threshold crossing of the selected trigger Source. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:WINdow:POLarity
{UPPer|LOWer|EITher|NONe}
SEARCH:SEARCH<x>:TRIGger:A:WINdow:POLarity?
```

Arguments

`UPPer` specifies that the instrument triggers when the signal remains above the upper threshold for longer than the time limit and then crosses downward through the upper threshold.

`LOWer` specifies that the instrument triggers when the signal remains below the lower threshold for longer than the time limit and then crosses upwards through the lower threshold.

`EITher` specifies that the instrument triggers when the signal remains either above the upper threshold or below the lower threshold for longer than the time limit and then crosses a threshold.

`NONe` specifies that the instrument triggers when the signal remains outside the upper and lower thresholds for longer than the time limit without crossing through either the upper or lower threshold.

Examples

`SEARCH:SEARCH1:TRIGger:A:WINdow:POLarity LOWER` sets the polarity to lower.

`SEARCH:SEARCH1:TRIGger:A:WINdow:POLarity?` might return `:SEARCH:SEARCH1:TRIGGER:A:WINDOW:POLARITY UPPER` indicating the polarity is set to upper.

SEARCH:SEARCH<x>:TRIGger:A:WINdow:SOUrce

This command sets and queries the source for the window search input. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:WINdow:SOUrce
{CH<x>|MATH<x>|REF<x>}
SEARCH:SEARCH<x>:TRIGger:A:WINdow:SOUrce?
```

Arguments

Arguments are the available sources.

Examples

`SEARCH:SEARCH1:TRIGger:A:WINdow:SOUrce CH2` sets the source to channel 2.

`SEARCH:SEARCH1:TRIGger:A:WINdow:SOUrce?` might return `:SEARCH:SEARCH1:TRIGGER:A:WINDOW:SOURCE CH3` indicating the source is channel 3.

SEARCH:SEARCH<x>:TRIGger:A:WINdow:THReshold:HIGH

This command sets or queries the source threshold HIGH level for a transition trigger search to determine where to place a mark. The search number is specified by <x>.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:WINdow:THReshold:HIGH <NR3>
SEARCH:SEARCH<x>:TRIGger:A:WINdow:THReshold:HIGH?
```

Arguments `<NR3>` is the source threshold HIGH level for a transition trigger search.

Examples `SEARCH:SEARCH1:TRIGger:A:WINdow:THReshold:HIGH 50.0e-3` sets the high threshold to 50.0 mV.

`SEARCH:SEARCH1:TRIGger:A:WINdow:THReshold:HIGH?` might return `:SEARCH:SEARCH1:TRIGGER:A:WINDOW:THRESHOLD:HIGH 0.0E+0` indicating the high threshold is 0.0 V.

SEARCH:SEARCH<x>:TRIGger:A:WINdow:THReshold:LOW

This command sets or queries the source threshold LOW level for a transition trigger search to determine where to place a mark. The search number is specified by <x>.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:WINdow:THReshold:LOW <NR3>
SEARCH:SEARCH<x>:TRIGger:A:WINdow:THReshold:LOW?
```

Arguments `<NR3>` the source threshold LOW level for a transition trigger search

Examples `SEARCH:SEARCH1:TRIGger:A:WINdow:THReshold:LOW -50.0e-3` sets the low threshold to -50.0 mV.

`SEARCH:SEARCH1:TRIGger:A:WINdow:THReshold:LOW?` might return `:SEARCH:SEARCH1:TRIGGER:A:WINDOW:THRESHOLD:LOW 0.0E+0` indicating the low threshold is 0.0 V.

SEARCH:SEARCH<x>:TRIGger:A:WINdow:WHEn

This command sets or queries the window search event. The search number is specified by <x>.

Group Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:WINdow:WHEn
{ENTERSWindow|EXITSWindow| INSIDEGreater|OUTSIDEGreater}
SEARCH:SEARCH<x>:TRIGger:A:WINdow:WHEn?
```

Arguments

`ENTERSWindow` specifies a window search when the signal enters the window.

`EXITSWindow` specifies a window search when the signal exits the window.

`OUTSIDEGreater` specifies a search when the signal leaves the window defined by the threshold levels for the time specified by Width.

`INSIDEGreater` specifies a search when the signal enters the window defined by the threshold levels for the time specified by Width.

Examples

`SEARCH:SEARCH1:TRIGger:A:WINdow:WHEn EXITSWINDOW` specifies a window search when the signal exits the window.

`SEARCH:SEARCH1:TRIGger:A:WINdow:WHEn?` might return `:SEARCH:SEARCH1:TRIGGER:A:WINDOW:WHEN ENTERSWINDOW` indicating a window search when the signal enters the window.

SEARCH:SEARCH<x>:TRIGger:A:WINdow:WIDth

This command sets or queries the width setting for a window trigger search to determine where to place a mark. The search number is specified by <x>.

Group

Search and Mark

Syntax

```
SEARCH:SEARCH<x>:TRIGger:A:WINdow:WIDth <NR3>
SEARCH:SEARCH<x>:TRIGger:A:WINdow:WIDth?
```

Arguments

`<NR3>` specifies the minimum width in seconds.

ECL specifies a preset high level of -1.3 V and TTL specifies a preset high level of +1.4V.

Examples

`SEARCH:SEARCH1:TRIGGER:A:WINDOW:WIDTH 400E-12` sets the window trigger width setting for search 1 to 0.4 ns.

`SEARCH:SEARCH1:TRIGGER:A:WINDOW:WIDTH?` might return `:SEARCH:SEARCH1:TRIGGER:A:WINDOW:WIDTH 500.0000E-12`, indicating that the window trigger width setting for search 1 is set to 0.5 ns.

SEARCH:SELected

This command sets or queries the selected search, for example SEARCH1. The search number is specified by <x>.

Group

Search and Mark

Syntax

`SEARCH:SELected SEARCH1`

Arguments

`SEARCH1` is the specified search.

Examples

`SEARCH:SELected SEARCH1` specifies a search 1 search.

`SEARCH:SELected?` might return `:SEARCH:SELECTED SEARCH1` indicating search 1 is selected.

SET? (Query Only)

This query-only command returns the commands that list the instrument settings, except for configuration information for the calibration values. You can use these commands to return the instrument to the state it was in when you made the SET? query. The SET? query always returns command headers, regardless of the setting of the HEADer command. This is because the returned commands are intended to be sent back to the instrument as a command string. The VERBose command can still be used to specify whether the returned headers should be abbreviated or full-length.

This command is identical to the *LRN? command.

Group

Miscellaneous

Syntax

`SET?`

Related Commands

HEADer, *LRN?, VERBose

Examples

`SET?` might return the following response: `:ACQUIRE:STOPAFTER RUNSTOP;STATE 1;MODE SAMPLE;NUMENV 10;NUMAVG 16;REPET 1;:FASTACQ:STATE 0;:APPLICATION:GPKNOB1:ACTIVE 0;:APPLICATION:GPKNOB2:ACTIVE 0;:APPLICATION:WINDOW:HEIGHT 236;WIDTH 640;:APPLICATION:SCOPEAPP:STATE RUNNING;WINDOW FULLSCREEN;:APPLICATION:EXTAPP:STATE`

```
NOTRUNNING;:AUXOUT:SOURCE ATRIGGER;EDGE FALLING;:CMDBATCH
1;:HEADER 1;:LOCK NONE;:ROSC:SOURCE INTERNAL;:VERBOSE
1;:ALIAS:STATE 0;:DISPLAY:CLOCK 1;COLOR:PALETTE
NORMAL;MATHCOLOR DEFAULT;REFCOLOR DEFAULT;:DISPLAY:FILTER
SINX;FORMAT YT;GRATICULE FULL;INTENSITY:WAVEFORM
75.0000;AUTOBRIGHT 1;:DISPLAY:PERSISTENCE
OFF;STYLE VECTORS;TRIGBAR SHORT;TRIGT 1;VARPERSIST
500.0000E-3;PORT FILE;:DIAG:LEVEL SUBSYS;:TRIGGER:A:MODE
AUTO;TYPE EDGE;LEVEL 0.0000;HOLDOFF:BY DEFAULT;TIME
1.5000E-6;:TRIGGER:A:EDGE:SOURCE CH1;COUPLING DC;SLOPE RISE;.
```

SOCKETServer:ENAble

This command enables or disables the socket server which supports a telnet or other TCPIP socket connection to send commands and queries to the instrument. The default state is enabled.

Group Miscellaneous

Syntax

```
SOCKETServer:ENAble {0|1|OFF|ON}
SOCKETServer:ENAble?
```

Arguments `1` enables the socket server. If the state is 0 (disabled) and this command is sent to enable the socket server when the port is in use by another service, then the error event code 221 (Settings conflict) is posted to the event queue and the socket server remains disabled. In this case, select a different port number and attempt to enable the socket server again.

`0` disables the socket server.

`ON` enables the socket server.

`OFF` disables the socket server.

Examples `SOCKETSERVER:ENABLE` On enables the socket server.

`SOCKETSERVER:ENABLE`? might return `:SOCKETSERVER:ENABLE 1` indicating the socket server is enabled.

SOCKETServer:PORT

This command sets the TCPIP port for the socket server connection.

Group Miscellaneous

Syntax

```
SOCKETServer:PORT <NR1>
SOCKETServer:PORT?
```

Arguments

`<NR1>` is the TCPIP port for the socket server connection.

If the socket server is enabled and the port specified is in use by another service, then the error event code 221 (Settings conflict) is posted to the event queue and the socket server remains in its current state (i.e. enabled/disabled and port address remain unchanged).

Similarly, if any sessions are active when the port is changed, this same error event may be posted to the event queue and the port will remain unchanged. In this case, exit all current sessions and send the :SOCKETServer:PORT command again.

Examples

`SOCKETSERVER:PORT` 4000 sets the socket server port number to 4000.

`SOCKETSERVER:PORT`? might return `:SOCKETSERVER:PORT 4000` indicating that the port number is 4000.

SOCKETServer:PROTOCol

This command sets or queries the protocol for the socket server.

Group

Miscellaneous

Syntax

```
SOCKETServer:PROTOCol {TERMinal|NONe}
SOCKETServer:PROTOCol?
```

Arguments

`TERMinal` specifies terminal protocol for the socket server. When set to TERMinal, a session startup message is sent to the socket and a command prompt is provided.

`NONe` disables the terminal features, allowing the server to be used for raw socket transactions, such as with a VISA socket server. The default setting is NONe.

Examples

`SOCKETSERVER:PROTOCOL NONE` sets the protocol to none.

`SOCKETSERVER:PROTOCOL?` might return `:SOCKETSERVER:PROTOCOL TERMINAL` indicating the protocol is set to terminal.

*SRE

The *SRE (Service Request Enable) command sets and queries the bits in the Service Request Enable Register. For more information, refer to Registers.

Group

Status and Error

Syntax

```
*SRE <NR1>
*SRE?
```

Related Commands

*CLS, DESE, *ESE, *ESR?, EVENT?, EVMsg?, FACtory, *STB?

Arguments

`<NR1>` is a value in the range from 0 through 255. The binary bits of the SRER are set according to this value. Using an out-of-range value causes an execution error. The power-on default for SRER is 0 if *PSC is 1. If *PSC is 0, the SRER maintains the previous power cycle value through the current power cycle.

Examples

`*SRE 48` sets the bits in the SRER to binary 00110000.

`*SRE?` might return 32, showing that the bits in the SRER have the binary value of 00100000.

*STB? (Query Only)

The *STB? (Read Status Byte) query returns the contents of the Status Byte Register (SBR) using the Master Summary Status (MSS) bit. For more information, refer to Registers.

Group

Status and Error

Syntax

```
*STB?
```

Related Commands

*CLS, DESE, *ESE, *ESR?, EVENT?, EVMsg?, FACtory, *SRE

Returns

<NR1>

Examples

`*STB?` might return 96, showing that the SBR contains the binary value 01100000.

TEKSecure (No Query Form)

This command initializes, for the current user, both waveform and setup memories, overwriting any previously stored data.

Equivalent to invoking Teksecure from the Utility menu. This is a time-consuming operation (3 to 5 minutes) and the instrument is inoperable until the TekSecure operation is complete.

Group

Miscellaneous

Syntax

`TEKSecure`

Examples

`TEKSECURE` initializes both waveform and setup memories.

TIMe? (Query Only)

This command queries the time that the instrument displays.

Group

Miscellaneous

Syntax

`TIMe?`

Related Commands

DATE?

Returns

`<QString>` is a time in the form “hh:mm:ss” where hh refers to a two-digit hour number, mm refers to a two-digit minute number from 01 to 60, and ss refers to a two-digit second number from 01 to 60.

Examples

`TIME??` might return `:TIME "14:05:17"`, indicating the current time is set to 2:05 p.m. and 17 seconds.

TIMe:ZONe

This command sets the time zone to the one specified.

Group

Miscellaneous

Syntax

```
TIMe:ZONe <QString>
TIMe:ZONe?
```

Arguments <QString> is a quoted string representing the desired time zone.

Examples `TIME:ZONE "America/Yellowknife"` sets the time zone to UTC delta -7.

`TIME:ZONE?` might return `:TIME:ZONE "America/Los_Angeles"`.

TIMe:ZONe:UTCDELTa

This command sets or queries the time zone using the difference between the desired time zone and UTC.

Group Miscellaneous

Syntax

```
TIMe:ZONe:UTCDELTa <NR3>
TIMe:ZONe:UTCDELTa?
```

Arguments `<NR3>` is the specified number of hours difference between the desired time zone and UTC which is equivalent to GMT. The deltas supported are: -12.00, -11.00, -10.00, -9.30, -9.00, -8.30, -8.00, -7.00, -6.00, -5.00, -4.00, -3.30, -3.00, -2.00, -1.00, 0.0, 1.00, 2.00, 3.00, 3.30, 4.00, 4.30, 5.00, 5.30, 6.00, 6.30, 7.00, 8.00, 9.00, 9.30, 10.00, 10.30, 11.00, 11.30, 12.00

Examples `TIME:ZONE:UTCDELTA -7.0e0` sets the time zone to America/Yellowknife.

`TIME:ZONE:UTCDELTA?` might return `:TIME:ZONE:UTCDELTA -8.0000`.

TOTaluptime? (Query Only)

Total number of hours the oscilloscope has been turned on since the NV memory was last programmed, usually during the initial manufacturing process.

Group Miscellaneous

Syntax

```
TOTaluptime?
```

Returns The total number of hours the instrument has been turned on since the NV memory was last programmed.

Examples `TOTALUPTIME?` might return :TOTALUPTIME 756 indicating the up time is 756 minutes.

TOUCHSCReen:CALibrate (No Query Form)

This command launches the touchscreen calibration procedure. This command is equivalent to tapping the Calibrate Touchscreen control in the Utility->Self Test menu.

Group Self Test

Syntax `TOUCHSCReen:CALibrate STARt`

Arguments `STARt` launches the touchscreen calibration procedure.

Examples `TOUCHSCREEN:CALIBRATE START` launches the touchscreen calibration procedure.

TOUCHSCReen:STATe

This sets or queries the enabled state of the touch screen. This command is equivalent to pushing the Touch Off button on the front panel.

To completely disable front panel operation, use the following two commands: `LOCK ALL;:TOUCHSCREEN:STATE OFF`. To re-enable the front panel, send these two commands: `LOCK NONE;:TOUCHSCREEN:STATE ON`. The commands must be sent in that order.

Group Miscellaneous

Syntax
```
TOUCHSCReen:STATe {0|1|OFF|ON}
TOUCHSCReen:STATe?
```

Related Commands LOCk

Arguments

0 disables the touch screen.

ON enables the touch screen.

OFF disables the touch screen.

Examples

TOUCHSCReen:STATe OFF disables the touch screen.

TOUCHSCReen:STATe? might return :TOUCHSCREEN:STATE 1 indicating the touch screen is enabled.

*TRG (No Query Form)

Performs a group execute trigger on commands defined by *DDT.

Group

Miscellaneous

Syntax

```
*TRG
```

Related Commands

*DDT

Examples

*TRG immediately executes all commands that have been defined by *DDT.

TRIGger

This command forces a trigger event to occur. The query returns the current trigger parameters for the instrument.

Group

Trigger

Syntax

```
TRIGger FORCe
TRIGger?
```

Arguments

FORCe creates a trigger event. If TRIGger:STATE is set to READy, the acquisition will complete. Otherwise, this command will be ignored. This is equivalent to pressing the Force button on the front panel.

Examples

TRIGGER FORCE forces a trigger event to occur.

TRIGGER? returns the current trigger parameters for the instrument.

TRIGger:{A|B|B:RESET}

This command sets the A, B, or B Reset trigger level automatically to 50% of the range of the minimum and maximum values of the trigger input signal. The query returns current trigger parameters. The trigger level is the voltage threshold through which the trigger source signal must pass to generate a trigger event. This command is equivalent to pushing the LEVEL knob on the front panel.

Group

Trigger

Syntax

```
TRIGger:{A|B|B:RESET} SETLevel
TRIGger:{A|B|B:RESET}?
```

Arguments

`SETLevel` sets the trigger level to 50% of the range of the minimum and maximum values of the trigger input signal.

Examples

TRIGger:A `SETLEVEL` sets the trigger level to 50% of the range of the minimum and maximum values of the trigger input signal.

TRIGger:A? returns current trigger parameters.

TRIGger:{A|B}:BUS:B<x>:ARINC429A:CONDition

This command specifies a field or condition for an ARINC429 bus to trigger on. The bus number is specified by x.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:ARINC429A:CONDition
{SOW|LABel|DATa|LABELANDDATA |EOW|ERRor}
TRIGger:{A|B}:BUS:B<x>:ARINC429A:CONDition?
```

Arguments

`SOW` specifies triggering on the first bit of a word.

`LABel` specifies triggering on a matching label.

`DATa` specifies triggering on matching packet data field(s).

`LABELANDDATA` specifies triggering on a matching label and matching packet data field(s).

EOW specifies triggering on the 32nd bit of a word.

ERRor specifies triggering on a specified error condition.

NOTE. *The type of error triggered on is specified by TRIGger:{A|B}:BUS:B<x>:ARINC429A:ERRTYPe.*

Examples

TRIGGER:A:BUS:B1:ARINC429A:CONDITION DATA specifies triggering on packets that contain matching data field(s).

TRIGGER:A:BUS:B1:ARINC429A:CONDITION? might return SOW, indicating that the bus is triggering on the first bit of each word in the pacekt.

TRIGger:{A|B}:BUS:B<x>:ARINC429A:DATa:HIVALue

This command sets or queries the high value when trigger on an ARINC429 data field. The bus number is specified by x. The trigger condition must be set to DATa or LABELANDDATA, and the data qualifier must be INrange or OUTrange.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:ARINC429A:DATa:HIVALue <QString>
TRIGger:{A|B}:BUS:B<x>:ARINC429A:DATa:HIVALue?
```

Arguments

<QString> is the label value.

NOTE. *The size of the QString is dependent on the data field format selected using BUS:Bx:ARINC429A:DATAFORmat. Also, the stored QString is reset to its default value whenever the data field format is changed.*

Examples

TRIGGER:A:BUS:B1:ARINC429A:DATA:HIVALUE "XXXXXXXXXXXXXXX1000" sets the value to XXXXXXXXXXXXXXX1000.

TRIGGER:A:BUS:B1:ARINC429A:DATA:HIVALUE? might return "XXXXXXXXXXXXXXXXXXX", indicating that the value is XXXXXXXXXXXXXXXXXXX.

TRIGger:{A|B}:BUS:B<x>:ARINC429A:DATa:QUALifier

This command sets or queries the qualifier to be used when triggering on data in the DATA field for an ARINC429 bus signal. The bus number is specified by x. The trigger condition must be set to DATa or LABELANDDATA.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:ARINC429A:DATa:
QUALifier {EQual|UNEQual|LESSthan|MOREthan
|LESSEQual|MOREEQual|INrange|OUTrange}
TRIGger:{A|B}:BUS:B<x>:ARINC429A:DATa:QUALifier?
```

Arguments Arguments are the available data qualifiers.

NOTE. *The trigger qualifier only applies to the bits defined as the data field via the bus data field format specifier (using `BUS:B<x>:ARINC429A:DATAFORmat`)*

Examples `TRIGGER:A:BUS:B1:ARINC429A:DATA:QUALIFIER LESSTHAN` sets the data qualifier to less than.

`TRIGGER:A:BUS:B1:ARINC429A:DATA:QUALIFIER?` might return EQUAL, indicating that the data qualifier is set to equal.

TRIGger:{A|B}:BUS:B<x>:ARINC429A:DATa:VALue

This command sets or queries the low value when triggering on an ARINC429 data field. The bus number is specified by x. The trigger condition must be set to DATa or LABELANDDATA.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:ARINC429A:DATa:VALue <QString>
TRIGger:{A|B}:BUS:B<x>:ARINC429A:DATa:VALue?
```

Arguments

`<QString>` is the label value.

***NOTE.** The size of the QString is dependent on the data field format selected using `BUS:B<x>:ARINC429A:DATAFORmat`. Also, the stored QString is reset to its default value whenever the data field format is changed.*

Examples

`TRIGGER:A:BUS:B1:ARINC429A:DATA:VALUE "XXXXXXXXXXXXXXX1000"` sets the value to XXXXXXXXXXXXXXX1000.

`TRIGGER:A:BUS:B1:ARINC429A:DATA:VALUE?` might return "XXXXXXXXXXXXXXXXXXX", indicating that the value is XXXXXXXXXXXXXXXXXXX.

TRIGger:{A|B}:BUS:B<x>:ARINC429A:ERRTYPe

This command sets or queries the error type when triggering on an ARINC429 bus signal. The bus number is specified by x. The trigger condition must be set to ERRor.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:ARINC429A:ERRTYPe {ANY|PARity|WORD|GAP}
TRIGger:{A|B}:BUS:B<x>:ARINC429A:ERRTYPe?
```

Arguments

`ANY` sets the error type to match any of the other available error types.

PARity sets the error type to match on parity errors (parity value results in even parity count for a word).

`WORD` sets the error type to match on word errors (any unframed or unknown decode data).

`GAP` sets the error type to match on gap violations (less than 4 bits idle time between two packets on the bus).

Examples

`TRIGGER:A:BUS:B1:ARINC429A:ERRTYPE PARITY` sets the error type to match on parity errors.

`TRIGGER:A:BUS:B1:ARINC429A:ERRTYPE?` might return ANY, indicating that any error condition will produce a match.

TRIGger:{A|B}:BUS:B<x>:ARINC429A:LABel:HIVALue

This command sets or queries the high value when triggering on an ARINC429 label field. The bus number is specified by x. The trigger condition must be set to LABel, and the label qualifier must be INrange or OUTrange.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:ARINC429A:LABel:HIVALue <QString>
TRIGger:{A|B}:BUS:B<x>:ARINC429A:LABel:HIVALue?
```

Arguments `<QString>` is the label value.

Examples `TRIGGER:A:BUS:B1:ARINC429A:LABEL:HIVALUE "XXXX1010"` sets the value to XXXX1010.

`TRIGGER:A:BUS:B1:ARINC429A:LABEL:HIVALUE?` might return "XXXXXXXX", indicating that the value is XXXXXXXX.

TRIGger:{A|B}:BUS:B<x>:ARINC429A:LABel:QUALifier

This command sets or queries the qualifier to be used when triggering on label data for an ARINC429 bus signal. The bus number is specified by x. The trigger condition must be set to LABel or LABELANDDATA.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:ARINC429A:LABel:
QUALifier {EQual|UNEQual|LESSthan|MOREthan
|LESSEQual|MOREEQual|INrange|OUTrange}
TRIGger:{A|B}:BUS:B<x>:ARINC429A:LABel:QUALifier?
```

Arguments Arguments are the available data qualifiers.

NOTE. *If the trigger condition is set to LABELANDDATA, the label qualifier will be locked to Equal until the trigger condition is changed again.*

Examples

`TRIGGER:A:BUS:B1:ARINC429A:LABEL:QUALIFIER LESSTHAN` sets the label qualifier to less than.

`TRIGGER:A:BUS:B1:ARINC429A:LABEL:QUALIFIER?` might return EQUAL, indicating that the label qualifier is set to equal.

TRIGger:{A|B}:BUS:B<x>:ARINC429A:LABel:VALue

This command sets or queries the low value when triggering on an ARINC429 label field. The bus number is specified by x. The trigger condition must be set to LABel or LABELANDDATA.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:ARINC429A:LABel:VALue <QString>
TRIGger:{A|B}:BUS:B<x>:ARINC429A:LABel:VALue?
```

Arguments

`<QString>` is the label value.

Examples

`TRIGGER:A:BUS:B1:ARINC429A:LABEL:VALUE "XXXX1010"` sets the value to XXXX1010.

`TRIGGER:A:BUS:B1:ARINC429A:LABEL:VALUE?` might return "XXXXXXXX", indicating that the value is XXXXXXXX.

TRIGger:{A|B}:BUS:B<x>:ARINC429A:SDI:VALue

This command sets or queries the label when triggering on an ARINC429 SDI field. The bus number is specified by x. The trigger condition must be set to DATa or LABELANDDATA, and the data format must be set to DATA.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:ARINC429A:SDI:VALue <QString>
TRIGger:{A|B}:BUS:B<x>:ARINC429A:SDI:VALue?
```

Arguments

<QString> is the label value.

Examples

`TRIGGER:A:BUS:B1:ARINC429A:SDI:VALUE "X0"` sets the value to X0.

`TRIGGER:A:BUS:B1:ARINC429A:SDI:VALUE?` might return "XX", indicating that the value is XX.

TRIGger:{A|B}:BUS:B<x>:ARINC429A:SSM:VALue

This command sets or queries the label value when triggering on an ARINC429 SSM field. The bus number is specified by x. The trigger condition must be set to DATa or LABELANDDATA, and the data format must be set to DATA or SDIDATA.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:ARINC429A:SSM:VALue <QString>
TRIGger:{A|B}:BUS:B<x>:ARINC429A:SSM:VALue?
```

Arguments

<QString> is the label value.

NOTE. *The SSM field is only present when the selected data field format is DATA or SDIDATA (using `BUS:B<x>:ARINC429A:DATAFORmat`). Also, the stored QString is reset to its default value whenever the data field format is changed.*

Examples

`TRIGGER:A:BUS:B1:ARINC429A:SSM:VALUE "X0"` sets the value to X0.

`TRIGGER:A:BUS:B1:ARINC429A:SSM:VALUE?` might return "XX", indicating that the value is XX.

TRIGger:{A|B}:BUS:B<x>:AUDio:CONDition

This command sets the condition (word select, start of frame, or matching data) to be used when triggering on an audio bus signal. The bus number is specified by <x>.

Conditions

Requires the SR-AUDIO Triggering and Analysis application.

Group Trigger

Syntax
```
TRIGger:{A|B}:BUS:B<x>:AUDio:CONDition {SOF|DATa}
TRIGger:{A|B}:BUS:B<x>:AUDio:CONDition?
```

Arguments `SOF` enables triggering on a word select or start of frame (depending on Audio Type).

`DATa` enables triggering on matching data.

Examples `TRIGger:A:BUS:B1:AUDio:CONDition SOF` sets the condition to start of frame.

`TRIGger:A:BUS:B1:AUDio:CONDition?` might return `:TRIGGER:A:BUS:B1:AUDIO:CONDITION DATA` indicating the condition is data.

TRIGger:{A|B}:BUS:B<x>:AUDio:DATa:HITDMVALue

This command sets or queries the binary data string for the high data word to be used when triggering on an TDM audio bus signal. The trigger condition must be set to DATa using `TRIGger:{A|B}:BUS:B<x>:AUDio:CONDition`.

Group Trigger

Syntax
```
TRIGger:{A|B}:BUS:B<x>:AUDio:DATa:HITDMVALue <QString>
TRIGger:{A|B}:BUS:B<x>:AUDio:DATa:HITDMVALue?
```

Arguments `<QString>` is the binary data string for the high data word to be used when triggering on an TDM audio bus signal.

Examples `TRIGger:A:BUS:B1:AUDio:DATa:HITDMVALue "1100"` sets the high value to 1100.

`TRIGger:A:BUS:B1:AUDio:DATa:HITDMVALue?` might return :TRIGGER:A:BUS:B1:AUDIO:DATA:HITDMVALUE `"XXXXXXXXXXXXXXXXXXXX1010"` indicating the high value is 1010.

TRIGger:{A|B}:BUS:B<x>:AUDio:DATa:HIVALue

This command sets the upper word value to be used when triggering on an audio bus signal. The trigger condition must be set to DATA using TRIGger:{A|B}:BUS:B<x>:AUDio:CONDition.

The bus number is specified by <x>.

Conditions Requires the SR-AUDIO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:AUDio:DATa:HIVALue <QString>
TRIGger:{A|B}:BUS:B<x>:AUDio:DATa:HIVALue?
```

Arguments `<QString>` is the upper word value to be used when triggering on an audio bus signal.

Examples `TRIGger:A:BUS:B1:AUDio:DATa:HIVALue "11001101"` sets the hi value to XXXXXXXXXXXXXXXX11001101.

TRIGger:A:BUS:B1:AUDio:DATa:HIVALue? might return :TRIGGER:A:BUS:B1:AUDIO:DATA:HIVALUE "XXXXXXXXXXXXXXXXXXXXXXXX" indicating the hi value is set to XXXXXXXXXXXXXXXXXXXXXXXX.

TRIGger:{A|B}:BUS:B<x>:AUDio:DATa:OFFSet

This command sets the data offset value to be used when triggering on an audio bus signal. The trigger condition must be set to DATa using TRIGger:{A|B}:BUS:B<x>:AUDio:CONDition.

The bus number is specified by <x>.

Conditions Requires the SR-AUDIO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:AUDio:DATa:OFFSet <NR1>
TRIGger:{A|B}:BUS:B<x>:AUDio:DATa:OFFSet?
```

Arguments

`<NR1>` is the data offset value.

Examples

`TRIGger:A:BUS:B1:AUDio:DATa:OFFSet 2` sets the data offset to 2.

`TRIGger:A:BUS:B1:AUDio:DATa:OFFSet?` might return `:TRIGGER:A:BUS:B1:AUDIO:DATA:OFFSET 1` indicating the data offset value is 1.

TRIGger:{A|B}:BUS:B<x>:AUDio:DATa:QUALifier

This command sets the qualifier (<, >, =, <=, >=, ≠, in range, out of range) to be used when triggering on an audio bus signal. The trigger condition must be set to DATa using TRIGger:{A|B}:BUS:B<x>:AUDio:CONDition.

The bus number is specified by <x>.

Conditions

Requires the SR-AUDIO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:AUDio:DATa:QUALifier
{LESSthan|MOREthan|EQual|UNEQual|LESSEQual|MOREEQual|
INrange|OUTrange}
TRIGger:{A|B}:BUS:B<x>:AUDio:DATa:QUALifier?
```

Arguments

`LESSthan` sets the qualifier to less than.

`MOREthan` sets the qualifier to greater than.

`EQual` sets the qualifier to equal.

`UNEQual` sets the qualifier to not equal.

`LESSEQual` sets the qualifier to less than or equal.

`MOREEQual` sets the qualifier to greater than or equal.

`INrange` sets the qualifier to in range.

`OUTrange` sets the qualifier to out of range.

Examples

`TRIGger:A:BUS:B1:AUDio:DATa:QUALifier LESSTHAN` sets the qualifier to less than.

`TRIGger:A:BUS:B1:AUDio:DATa:QUALifier?` might return `:TRIGGER:A:BUS:B1:AUDIO:DATA:QUALIFIER EQUAL` indicating the qualifies is set to equal.

TRIGger:{A|B}:BUS:B<x>:AUDio:DATa:TDMVALue

This command sets or queries the binary data string for the single or low data word to be used when triggering on an TDM audio bus signal. The trigger condition must be set to DATa using `TRIGger:{A|B}:BUS:B{x}:AUDio:CONDition`.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:AUDio:DATa:TDMVALue <QString>
TRIGger:{A|B}:BUS:B<x>:AUDio:DATa:TDMVALue?
```

Arguments

`<QString>` is the binary data string for the single or low data word to be used when triggering on an TDM audio bus signal.

Examples

`TRIGger:A:BUS:B1:AUDio:DATa:TDMVALue "1100"` sets the TDMVALUE to 1100.

`TRIGger:A:BUS:B1:AUDio:DATa:TDMVALue?` might return `:TRIGGER:A:BUS:B1:AUDIO:DATA:TDMVALUE "XXXXXXXXXXXXXXXXXXXX1010"` indicating the TDM value is 1010.

TRIGger:{A|B}:BUS:B<x>:AUDio:DATa:VALue

This command sets the lower word value to be used when triggering on an audio bus signal. The trigger condition must be set to DATa using TRIGger:{A|B}:BUS:B<x>:AUDio:CONDition.

The bus number is specified by <x>.

Conditions

Requires the SR-AUDIO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:AUDio:DATa:VALue <QString>
TRIGger:{A|B}:BUS:B<x>:AUDio:DATa:VALue?
```

Arguments

`<QString>` specifies the trigger data lower word.

Examples

`TRIGger:A:BUS:B1:AUDio:DATa:VALue "11001100101"` sets the data value to XXXXXXXXXXXXX11001100101.

`TRIGger:A:BUS:B1:AUDio:DATa:VALue?` might return `:TRIGGER:A:BUS:B1:AUDIO:DATA:VALUE "XXXXXXXXXXXXXXXXXXXXXXXX"` indicating the data value is XXXXXXXXXXXXXXXXXXXXXXXX.

TRIGger:{A|B}:BUS:B<x>:AUDio:DATa:WORD

This command sets the alignment of the data (left, right or either) to be used to trigger on an audio bus signal. The trigger condition must be set to DATa using TRIGger:{A|B}:BUS:B<x>:AUDio:CONDition.

The bus number is specified by <x>.

Conditions Requires the SR-AUDIO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:AUDio:DATa:WORD {EIther|LEFt|RIGht}
TRIGger:{A|B}:BUS:B<x>:AUDio:DATa:WORD?
```

Arguments

`EIther` aligns the trigger data to either left or right.

`LEFt` aligns the trigger data to the left.

`RIGht` aligns the trigger data to the right.

Examples

`TRIGger:A:BUS:B1:AUDio:DATa:WORD LEFt` sets the word alignment to the left.

`TRIGger:A:BUS:B1:AUDio:DATa:WORD?` might return `:TRIGGER:A:BUS:B1:AUDIO:DATA:WORD EITHER` indicating the trigger data is aligned to either left or right.

TRIGger:{A|B}:BUS:B<x>:CAN:CONDition

This command sets the condition (start of frame, frame type, identifier, matching data, EOF, missing ACK field, bit-stuffing error) to be used when triggering on a CAN bus signal. The bus number is specified by <x>.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:CAN:CONDition
{SOF|FRAMEtype|IDentifier|DATa|IDANDDATA|EOF|ERRor|FDBITS}
TRIGger:{A|B}:BUS:B<x>:CAN:CONDition?
```

Arguments

`SOF` enables triggering on the start of frame.

`FDBITS` enables triggering on the values of the BRS and ESI bits in an FD packet.

`FRAMEtype` enables triggering on the type of frame.

`IDentifier` enables triggering on a matching identifier.

`DATa` enables triggering on matching data.

`IDANDDATA` enables triggering on a matching identifier and matching data.

`EOF` enables triggering on the end of frame.

`ERRor` enables triggering on a specified error condition.

Examples

`TRIGGER:A:BUS:B1:CAN:CONDITION?` might return :TRIGGER:A:BUS:B1:CAN:CONDITION EOF indicating an end of file condition.

`TRIGGER:A:BUS:B1:CAN:CONDITION DATA` enables triggering on matching CAN data.

TRIGger:{A|B}:BUS:B<x>:CAN:DATa:DIRection

This command sets the data direction (read, write or "nocare") to be used to search on a CAN bus signal. The trigger condition must be set to IDentifier (using TRIGger:{A|B}:BUS:B<x>:CAN:CONDition). The bus number is specified by <x>.

Conditions

Requires the SR-AUTO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:CAN:DATa:DIRection
{READ|WRITE|NOCARE}
TRIGger:{A|B}:BUS:B<x>:CAN:DATa:DIRection?
```

Arguments

`READ` sets the CAN data direction to READ.

`WRITE` sets the CAN data direction to WRITE.

`NOCARE` sets the CAN data direction to either.

Examples

`TRIGGER:A:BUS:B1:CAN:DATA:DIRECTION WRITE` sets the CAN data direction to Write.

`TRIGGER:A:BUS:B1:CAN:DATA:DIRECTION?` might return `:TRIGGER:A:BUS:B1:CAN:DATA:DIRECTION NOCARE` indicating the data direction can be either read or write.

TRIGger:{A|B}:BUS:B<x>:CAN:DATa:OFFSet

This command sets or queries the data offset value, in bytes, to use when triggering on the CAN data field. The bus number is specified by x. The trigger condition must be set to DATA or IDANDDATA.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:CAN:DATa:OFFSet <NR1>
TRIGger:{A|B}:BUS:B<x>:CAN:DATa:OFFSet?
```

Related Commands

BUS:B<x>:CAN:STANDard

TRIGger:{A|B}:BUS:B<x>:CAN:DATa:SIZe

TRIGger:{A|B}:BUS:B<x>:CAN:DATa:VALue

Arguments

`<NR1>` is an integer whose minimum and default values are -1 (don't care), and the maximum is up to 7 (for CAN 2.0) or up to 63 (for ISO CAN FD and Non-ISO CAN FD).

The maximum is dependent on the number of bytes being matched and the CAN standard selected. Its value is calculated as [Absolute Maximum] - [Data Match Size]. For CAN 2.0, the absolute maximum is 8 bytes. For ISO CAN FD and Non-ISO CAN FD, the absolute maximum is 64 bytes. The minimum data match size is 1 byte, which produces the ranges listed above. Increasing the data match size above 1 byte will adjust the range of valid data offset values accordingly.

Examples

`TRIGGER:A:BUS:B1:CAN:DATA:OFFSET 5` sets the CAN data offset to 5 bytes.

`TRIGGER:A:BUS:B1:CAN:DATA:OFFSET?` might return 7, indicating the CAN data offset is 7 bytes.

If the CAN standard is set for CAN 2.0, and the trigger data size is set to 3, the maximum value for the data offset will be 5 (8 - 3 = 5).

If the CAN standard is set for ISO CAN FD or Non-ISO CAN FD, and the trigger data size is set to 8, the maximum value for the data offset will be 56 (64 - 8 = 56).

TRIGger:{A|B}:BUS:B<x>:CAN:DATa:QUALifier

This command sets the qualifier (<, >, =, ≠, ≤, ≥) to be used when triggering on a CAN bus signal. The trigger condition must be set to IDANDDATA or DATa (using TRIGger:{A|B}:BUS:B<x>:CAN:CONDition). The bus number is specified by <x>.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:CAN:DATa:QUALifier
{LESSthan|MOREthan|EQual|UNEQual|LESSEQual|MOREEQual}
TRIGger:{A|B}:BUS:B<x>:CAN:DATa:QUALifier?
```

Arguments

`LESSthan` sets the oscilloscope to trigger when the data is less than the qualifier value.

`MOREthan` sets the oscilloscope to trigger when the data is greater than the qualifier value.

`EQual` sets the oscilloscope to trigger when the data is equal to the qualifier value.

`UNEQual` sets the oscilloscope to trigger when the data is not equal to the qualifier value.

`LESSEQual` sets the oscilloscope to trigger when the data is less than or equal to the qualifier value.

`MOREEQual` sets the oscilloscope to trigger when the data is greater than or equal to the qualifier value.

Examples

`TRIGGER:A:BUS:B1:CAN:DATA:QUALIFIER LESSTHAN` sets the oscilloscope to trigger when the data is less than the qualifier value.

`TRIGGER:A:BUS:B1:CAN:DATA:QUALIFIER?` might return `:TRIGGER:A:BUS:B1:CAN:DATA:QUALIFIER LESSTHAN`, indicating that the oscilloscope is set to trigger when the data is less than the qualifier value.

TRIGger:{A|B}:BUS:B<x>:CAN:DATa:SIZe

This command sets the length of the data string, in bytes, to be used when triggering on a CAN bus signal. The trigger condition must be set to IDANDDATA or DATa (using TRIGger:{A|B}:BUS:B<x>:CAN:CONDition). The bus number is specified by <x>.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:CAN:DATa:SIZe <NR1>
TRIGger:{A|B}:BUS:B<x>:CAN:DATa:SIZe?
```

Arguments `<NR1>` is the length of the data string in bytes.

Examples `TRIGger:A:BUS:B1:CAN:DATa:SIZe 2` sets the data size to 2 bytes.

`TRIGger:A:BUS:B1:CAN:DATa:SIZe?` might return `:TRIGGER:A:BUS:B1:CAN:DATA:SIZE 1` indicating the data size is set to 1 byte.

TRIGger:{A|B}:BUS:B<x>:CAN:DATa:VALue

This command sets the binary data value to be used when triggering on a CAN bus signal. The trigger condition must be set to IDANDDATA or DATa (using TRIGger:{A|B}:BUS:B<x>:CAN:CONDition). The bus number is specified by <x>.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:CAN:DATa:VALue <QString>
TRIGger:{A|B}:BUS:B<x>:CAN:DATa:VALue?
```

Arguments `<QString>` is the data value in binary format. The only allowed characters in the `QString` are 0, 1, and X.

Examples

`TRIGGER:A:BUS:B1:CAN:DATA:VALUE "1011"` sets the CAN data value to 1011.

`TRIGGER:A:BUS:B1:CAN:DATA:VALUE?` might return `:TRIGGER:A:BUS:B1:CAN:DATA:VALUE "XXXXXXXX"` indicating the data value is set to XXXXXXXX.

TRIGger:{A|B}:BUS:B<x>:CAN:ERRType

This command sets or queries the type of error condition for a CAN bus to triggering on. The bus number is specified by x. The trigger condition must be set to ERRor.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:CAN:ERRType
{ACKMISS|BITSTUFFing|FORMERRor|ANYERRor}
TRIGger:{A|B}:BUS:B<x>:CAN:ERRType?
```

Arguments

`ACKMISS` specifies triggering on a missing ACK field.

`BITSTUFFing` specifies triggering on a bit stuffing error.

`FORMERRor` specifies triggering on a CAN FD form error. To use this option, the CAN standard must be set to FDISO or FDNONISO.

`ANYERRor` specifies triggering on any error type.

Examples

`TRIGGER:A:BUS:B1:CAN:ERRTYPE ACKMISS` specifies triggering on any missing ACK fields.

`TRIGGER:A:BUS:B1:CAN:ERRTYPE?` might return ANYERROR, indicating that the bus is triggering on all error types.

TRIGger:{A|B}:BUS:B<x>:CAN:FD:BRSBit

This command sets or queries the value of the bit rate switch bit (BRS bit) for a CAN bus to triggering on. The bus number is specified by x. The trigger condition must be set to FDBITS, and the CAN standard must be FDISO or FDNONISO.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:CAN:FD:BRSBit {ONE|ZERo|NOCARE}
TRIGger:{A|B}:BUS:B<x>:CAN:FD:BRSBit?
```

Arguments

`ONE` filters CAN FD packets to only match those where the BRS bit has a value of 1 (fast data enabled).

`ZERo` filters CAN FD packets to only match those where the BRS bit has a value of 0 (fast data disabled).

`NOCARE` disables filtering of CAN FD packets on the BRS bit.

Examples

`TRIGGER:A:BUS:B1:CAN:FD:BRSBit ONE` specifies filtering CAN FD packets for those where the BRS bit has a value of 1.

`TRIGGER:A:BUS:B1:CAN:FD:BRSBIT?` might return NOCARE, indicating that CAN FD packets are not being filtered based on the BRS bit value.

TRIGger:{A|B}:BUS:B<x>:CAN:FD:ESIBit

This command sets or queries the value of the error state indicator bit (ESI bit) for a CAN bus to triggering on. The bus number is specified by x. The trigger condition must be set to FDBITS, and the CAN standard must be FDISO or FDNONISO.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:CAN:FD:ESIBit {ONE|ZERo|NOCARE}
TRIGger:{A|B}:BUS:B<x>:CAN:FD:ESIBit?
```

Arguments

`ONE` filters CAN FD packets to only match those where the ESI bit has a value of 1 (recessive).

`ZERo` filters CAN FD packets to only match those where the ESI bit has a value of 0 (dominant).

`NOCARE` disables filtering of CAN FD packets on the ESI bit.

Examples

`TRIGGER:A:BUS:B1:CAN:FD:ESIBit ONE` specifies filtering CAN FD packets for those where the ESI bit has a value of 1.

`TRIGGER:A:BUS:B1:CAN:FD:ESIBIT?` might return NOCARE, indicating that CAN FD packets are not being filtered based on the ESI bit value.

TRIGger:{A|B}:BUS:B<x>:CAN:FRAMEtype

This command sets the frame type (data, remote, error or overload) to be used when triggering on a CAN bus signal. The trigger condition must be set to FRAMEtype (using TRIGger:{A|B}:BUS:B<x>:CAN:CONDition). `B<x>` is the bus number.The bus number is specified by <x>.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:CAN:FRAMEtype
{DATa|REMote|ERRor|OVERLoad}
TRIGger:{A|B}:BUS:B<x>:CAN:FRAMEtype?
```

Arguments

`DATa` specifies a data frame type.

`REMote` specifies a remote frame type.

`ERRor` specifies an error frame type.

`OVERLoad` specifies an overload frame type.

Examples

`TRIGGER:A:BUS:B1:CAN:FRAMETYPE DATA` sets the CAN trigger frame type to DATA.

`TRIGGER:A:BUS:B1:CAN:FRAMETYPE?` might return `:TRIGGER:A:BUS:B1:CAN:FRAMETYPE DATA` indicating the frame type is data.

TRIGger:{A|B}:BUS:B<x>:CAN:IDentifier:MODe

This command sets the addressing mode (standard or extended format) to be used when triggering on a CAN bus signal. The trigger condition must be set to IDANDDATA or DATa (using TRIGger:{A|B}:BUS:B<x>:CAN:CONDition). The bus number is specified by <x>.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:CAN:IDentifier:MODe
{STandard|EXTended}
TRIGger:{A|B}:BUS:B<x>:CAN:IDentifier:MODe?
```

Arguments

`STandard` specifies the standard addressing mode.

`EXTended` specifies the extended addressing mode.

Examples

`TRIGger:A:BUS:B1:CAN:IDentifier:MODe EXTENDED` sets the addressing mode to extended.

`TRIGger:A:BUS:B1:CAN:IDentifier:MODe?` might return `:TRIGGER:A:BUS:B1:CAN:IDENTIFIER:MODE STANDARD` indicating the address mode is standard.

TRIGger:{A|B}:BUS:B<x>:CAN:IDentifier:VALue

This command sets the binary address value to be used when triggering on a CAN bus signal. The trigger condition must be set to IDANDDATA or DATa (using TRIGger:{A|B}:BUS:B<x>:CAN:CONDition). The bus number is specified by <x>.

Conditions

Requires the SR-AUTO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:CAN:IDentifier:VALue <QString>
TRIGger:{A|B}:BUS:B<x>:CAN:IDentifier:VALue?
```

Arguments

`<QString>` is up to 29 bits specifying the binary identifier value. The only allowed characters in the `QString` are 0, 1, and X.

Examples

`TRIGGER:A:BUS:B1:CAN:IDENTIFIER:VALUE "1011"` sets the identifier value to 1011.

`TRIGGER:A:BUS:B1:CAN:IDENTIFIER:VALUE?` might return `:TRIGGER:A:BUS:B1:CAN:IDENTIFIER:VALUE "XXXXXXXXXXX"` indicating the identifier values is XXXXXXXXXXX.

TRIGger:{A|B}:BUS:B<x>:ETHERnet:CONDition

This command specifies a field or condition within an Ethernet frame to trigger on. The bus number is specified by <x>.

Conditions Requires the SR-ENET Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:ETHERnet:CONDition
{SFD|MACADDRess|MACLENgth|IPHeader|TCPHeader|DATa|EOP|
IDLe|FCSError|QTAG}
```

```
TRIGger:{A|B}:BUS:B<x>:ETHERnet:CONDition?
```

Related Commands Most of the other `TRIGger:A:BUS:B<x>:ETHERnet` commands are impacted by the setting of this command.

Arguments

`SFD` — Start of frame delimiter.

`MACADDRess` — MAC addresses field.

`MACLENgth` — MAC length/type field.

`IPHeader` — IP header field. This argument is only available when `PROTOCOL` is set to IPv4.

`TCPHeader` — TCP header field. This argument is only available when `PROTOCOL` is set to IPv4.

`DATa` — TCP/IPv4 or MAC protocol client data field. If the protocol is set to `OTHER,` then `DATa` refers to the MAC client data.

`EOP` — End of Packet field.

`IDLe` — Idle field.

`FCSError` — Frame Check Sequence Error (CRC) field.

`QTAG` — IEEE 802.1Q (VLAN) control information field. In order to use `QTAG` as a trigger condition, the frame type must be set to QTAG).

Examples

`TRIGger:A:BUS:B1:ETHERnet:CONDition MACADDRess` sets the trigger field to `MACADDRess`.

`TRIGger:A:BUS:B1:ETHERnet:CONDition?` might return DATA.

TRIGger:{A|B}:BUS:B<x>:ETHERnet:DATa:HIVALue

When the Ethernet trigger condition is set to DATa, and the qualifier is set to either INrange or OUTrange, this command specifies the upper data value of the range. (Use the command TRIGger:{A|B}:BUS:B<x>:ETHERnet:DATa:VALue to specify the lower limit of the range.) The default is all X's (don't care). The bus number is specified by <x>.

Conditions Requires the SR-ENET Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:ETHERnet:DATa:HIVALue <QString>
TRIGger:{A|B}:BUS:B<x>:ETHERnet:DATa:HIVALue?
```

Related Commands

TRIGger:{A|B}:BUS:B<x>:ETHERnet:DATa:VALue

TRIGger:{A|B}:BUS:B<x>:ETHERnet:DATa:SIZe

TRIGger:{A|B}:BUS:B<x>:ETHERnet:CONDition

Arguments <QString> is a quoted string whose length varies depending on the size setting, up to 32 bits. (Use the command TRIGger:{A|B}:BUS:B<x>:ETHERnet:DATa:SIZe to specify the size.) The allowable characters are 0, 1, and X. The bits specified in the quoted string replace the least significant bits, leaving any unspecified upper bits unchanged.

Examples

TRIGger:A:BUS:B1:ETHERnet:DATa:HIVALue "XXXXXXXXXXXXXXXXXXXXXXXX00001000" sets the upper limit of the range to XXXXXXXXXXXXXXXXXXXXXXXX00001000(when the trigger condition is set to DATa, and the qualifier is set to INrange or OUTrange).

TRIGger:A:BUS:B1:ETHERnet:DATa:HIVALue? might return "XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX"

TRIGger:{A|B}:BUS:B<x>:ETHERnet:DATa:OFFSet

When the Ethernet trigger condition is set to DATa, this command specifies where in the data field to look for the data trigger value. It specifies the offset into the data field, in bytes, where the value will be matched. The default is -1 (don't care). The bus number is specified by <x>.

Conditions Requires the SR-ENET Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:ETHERnet:DATa:OFFSet <NR1>
TRIGger:{A|B}:BUS:B<x>:ETHERnet:DATa:OFFSet?
```

Related Commands

TRIGger:{A|B}:BUS:B<x>:ETHERnet:CONDition

TRIGger:{A|B}:BUS:B<x>:ETHERnet:DATa:VALue

Arguments

`<NR1>` is an integer whose minimum and default values are -1 (don't care) and maximum is 1,499.

Examples

`TRIGger:A:BUS:B1:ETHERnet:DATa:OFFSet 36` sets the data offset to 36 bytes.

`TRIGger:A:BUS:B1:ETHERnet:DATa:OFFSet?` might return –1, indicating that the data offset value is the default value, -1, meaning "don’t care".

TRIGger:{A|B}:BUS:B<x>:ETHERnet:DATa:QUALifier

This command sets or queries the qualifier to be used when triggering on an Ethernet bus signal. The trigger condition must be set to DATa. The bus number is specified by <x>.

Conditions

Requires the SR-ENET Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:ETHERnet:DATa:QUALifier {EQual|
UNEQual|LESSthan|MOREthan|LESSEQual|MOREEQual|INrange|OUTrange}
TRIGger:{A|B}:BUS:B<x>:ETHERnet:DATa:QUALifier?
```

Arguments

`LESSthan` sets the qualifier to less than.

`MOREthan` sets the qualifier to greater than.

`EQual` sets the qualifier to equal.

`UNEQual` sets the qualifier to not equal.

`LESSEQual` sets the qualifier to less than or equal.

`MOREEQual` sets the qualifier to greater than or equal.

`INrange` sets the qualifier to in range.

`OUTrange` sets the qualifier to out of range.

Examples

`TRIGger:A:BUS:B1:ETHERnet:DATa:QUALifier LESSTHAN` sets the qualifier to less than.

`TRIGger:A:BUS:B1:ETHERnet:DATa:QUALifier?` might return `:TRIGGER:A:BUS:B1:ETHERNET:DATA:QUALIFIER EQUAL` indicating the qualifier is set to equal.

TRIGger:{A|B}:BUS:B<x>:ETHERnet:DATa:SIZe

When the Ethernet trigger condition is set to `DATa`, this command specifies the number of contiguous TCP/IPv4/MAC client data bytes to trigger on. The bus number is specified by <x>.

Conditions

Requires the SR-ENET Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:ETHERnet:DATa:SIZe <NR1>
TRIGger:{A|B}:BUS:B<x>:ETHERnet:DATa:SIZe?
```

Related Commands

TRIGger:{A|B}:BUS:B<x>:ETHERnet:CONDition

Arguments

The minimum and default values are 1 and maximum is 16, except when the qualifier is set to Inside Range or Outside Range. In these cases, the maximum size is 4.

Examples

`TRIGger:A:BUS:B1:ETHERnet:DATa:SIZe 4` sets the oscilloscope to trigger on 4 contiguous data bytes.

`TRIGger:A:BUS:B1:ETHERnet:DATa:SIZe?` might return 6, indicating that the oscilloscope is set to trigger on 6 contiguous data bytes.

TRIGger:{A|B}:BUS:B<x>:ETHERnet:DATa:VALue

When the Ethernet trigger condition is set to `DATa`, and the qualifier is set to `LESSthan, MOREthan, EQual, UNEQual, LESSEQual` or `MOREEQual`, this command specifies the value to trigger on. When the Ethernet trigger condition is set to `DATa`, and the qualifier is set to `INrange` or `OUTrange,` this command specifies the lower limit of the range. (Use the command TRIGger:{A|B}:BUS:B<x>:ETHERnet:DATa:HIVALue to set the upper limit of the range.) The default is all X's (don't care). The bus number is specified by <x>.

Conditions Requires the SR-ENET Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:ETHERnet:DATa:VALue <QString>
TRIGger:{A|B}:BUS:B<x>:ETHERnet:DATa:VALue?
```

Related Commands

TRIGger:{A|B}:BUS:B<x>:ETHERnet:CONDition

TRIGger:{A|B}:BUS:B<x>:ETHERnet:DATa:OFFSet

TRIGger:{A|B}:BUS:B<x>:ETHERnet:DATa:SIZe

TRIGger:{A|B}:BUS:B<x>:ETHERnet:DATa:HIVALue

Arguments QString is a quoted string where the allowable characters are 0, 1, and X. The allowable number of characters depends on the setting for size (using TRIGger:A:BUS:B<x>:ETHERnet:DATa:SIZe). The bits specified in the quoted string replace the least significant bits, leaving any unspecified upper bits unchanged.

Examples

`TRIGger:A:BUS:B1:ETHERnet:DATa:VALue "00001000"` sets the binary data to trigger on to 00001000, assuming the qualifier is set to `LESSthan, MOREthan, EQual, UNEQual, LESSEQual` or `MOREEQual`, and `DATa:SIZe` is set to 1 byte.

`TRIGger:A:BUS:B1:ETHERnet:DATa:VALue "00001000"` sets the lower limit of the range to 00001000, assuming the qualifier is set to `INrange` or `OUTrange`, and`DATa:SIZe` is set to 1 byte.

TRIGger:{A|B}:BUS:B<x>:ETHERnet:IPHeader:DESTinationaddr:VALue

When the Ethernet trigger condition is set to `IPHeader`, this command specifies the value of the 32–bit destination address that is to be used in the trigger (along with the source address and protocol value). The IP destination address is a standard IP address such as 192.168.0.1. The default is all X's (don't care). The bus number is specified by <x>.

Conditions Requires the SR-ENET Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:ETHERnet:IPHeader:DESTinationaddr:
VALue <QString>
TRIGger:{A|B}:BUS:B<x>:ETHERnet:IPHeader:DESTinationaddr:
VALue?
```

Related Commands

TRIGger:{A|B}:BUS:B<x>:ETHERnet:CONDition

TRIGger:{A|B}:BUS:B<x>:ETHERnet:IPHeader:SOUrceaddr:VALue

TRIGger:{A|B}:BUS:B<x>:ETHERnet:IPHeader:PROTOcol:VALue

Arguments

`<QString>` is a quoted string of up to 32 characters where the allowable characters are 0, 1, and X. The bits specified in the quoted string replace the least significant bits, leaving any unspecified upper bits unchanged.

Examples

`TRIGger:A:BUS:B1:ETHERnet:IPHeader:DESTinationaddr:VALue "00011001001000010110100000000001"` sets the IP destination address to trigger on to 192.168.0.1.

`TRIGger:A:BUS:B1:ETHERnet:IPHeader:DESTinationaddr:VALue` might return "XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX01".

TRIGger:{A|B}:BUS:B<x>:ETHERnet:IPHeader:PROTOcol:VALue

When the Ethernet trigger condition is set to `IPHeader`, this command specifies the value of the 8–bit protocol field that is to be used in the trigger (along with the source and destination addresses). The default is all X's (don't care). The bus number is specified by <x>.

NOTE. *Commonly used protocol values are 1 (ICMP), 2 (IGMP), 6 (TCP) and 17 (UDP).*

Conditions Requires the SR-ENET Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:ETHERnet:IPHeader:PROTOcol:VALue
<QString>
TRIGger:{A|B}:BUS:B<x>:ETHERnet:IPHeader:PROTOcol:VALue?
```

Related Commands

TRIGger:{A|B}:BUS:B<x>:ETHERnet:CONDition

TRIGger:{A|B}:BUS:B<x>:ETHERnet:IPHeader:SOUrceaddr:VALue

TRIGger:{A|B}:BUS:B<x>:ETHERnet:IPHeader:DESTinationaddr:VALue

Arguments

`<QString>` is a quoted string of up to 8 characters where the allowable characters are 0, 1, and X. The bits specified in the quoted string replace the least significant bits, leaving any unspecified upper bits unchanged.

Examples

`TRIGGER:A:BUS:B1:ETHERNET:IPHEADER:PROTOCOL:VALUE` "01010010" would set the value to be used in the trigger to 01010010.

`TRIGger:A:BUS:B1:ETHERnet:IPHeader:PROTOcol:VALue?` might return "XXXXXXXX".

TRIGger:{A|B}:BUS:B<x>:ETHERnet:IPHeader:SOUrceaddr:VALue

When the Ethernet trigger condition is set to `IPHeader`, this command specifies the value of the 32-bit source address that is to be used in the trigger (along with the destination address and protocol value). The IP source address is a standard IP address such as 192.168.0.1. The default is all X's (don't care). The bus number is specified by <x>.

Conditions

Requires the SR-ENET Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:ETHERnet:IPHeader:SOUrceaddr:VALue
<QString>
TRIGger:{A|B}:BUS:B<x>:ETHERnet:IPHeader:SOUrceaddr:VALue?
```

Related Commands

TRIGger:{A|B}:BUS:B<x>:ETHERnet:CONDition

TRIGger:{A|B}:BUS:B<x>:ETHERnet:IPHeader:DESTinationaddr:VALue

TRIGger:{A|B}:BUS:B<x>:ETHERnet:IPHeader:PROTOcol:VALue

Arguments

`<QString>` is a quoted string of up to 32 characters where the allowable characters are 0, 1, and X. The bits specified in the quoted string replace the least significant bits, leaving any unspecified upper bits unchanged.

Examples

`TRIGger:A:BUS:B1:ETHERnet:IPHeader:SOUrceaddr:VALue "00011001001000010110100000000001"` sets the IP source address to trigger on to 192.168.0.1.

`TRIGger:A:BUS:B1:ETHERnet:IPHeader:SOUrceaddr:VALue` might return "XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX01".

TRIGger:{A|B}:BUS:B<x>:ETHERnet:MAC:ADDRess:DESTination:VALue

When the Ethernet trigger condition is set to `MACADDress`, this command specifies the 48–bit MAC destination address that is to be used in the trigger (along with the source address value). The default is all X's (don't care). The bus number is specified by <x>.

NOTE. *MAC Addresses are 48–bit values such as 08:00:11:1E:C9:AE hex.*

Conditions

Requires the SR-ENET Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:ETHERnet:MAC:ADDRess:DESTination:
VALue <QString>
TRIGger:{A|B}:BUS:B<x>:ETHERnet:MAC:ADDRess:DESTination:
VALue?
```

Related Commands

TRIGger:{A|B}:BUS:B<x>:ETHERnet:CONDition

TRIGger:{A|B}:BUS:B<x>:ETHERnet:MAC:ADDRess:SOUrce:VALue

Arguments

`<QString>` is a quoted string of up to 48 characters where the allowable characters are 0, 1, and X. The bits specified in the quoted string replace the least significant bits, leaving any unspecified upper bits unchanged.

Examples

`TRIGger:A:BUS:B1:ETHERnet:MAC:ADDRess:DESTination:VALue ”XXXXXXXXXX01010111111100000001111010101010101000”` would set the MAC destination address to trigger on to XX:35:FC:07:AA:C8 hex.

`TRIGger:A:BUS:B1:ETHERnet:MAC:ADDRess:DESTination:VALue?` might return `”XXXXXXXXXX01010111111100000001111010101010101000”`.

TRIGger:{A|B}:BUS:B<x>:ETHERnet:MAC:ADDRess:SOUrce:VALue

When the Ethernet trigger condition is set to `MACADDress`, this command specifies the 48–bit MAC source address value that is to be used in the trigger (along with the destination address value). The default is all X's (don't care). The bus number is specified by <x>.

NOTE. *MAC Addresses are 48–bit values such as 08:00:11:1E:C9:AE hex.*

Conditions

Requires the SR-ENET Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:ETHERnet:MAC:ADDRess:SOUrce:VALue
<QString>
TRIGger:{A|B}:BUS:B<x>:ETHERnet:MAC:ADDRess:SOUrce:VALue?
```

Related Commands

TRIGger:{A|B}:BUS:B<x>:ETHERnet:CONDition

TRIGger:{A|B}:BUS:B<x>:ETHERnet:MAC:ADDRess:DESTination:VALue

Arguments

`<QString>` is a quoted string of up to 48 characters where the allowable characters are 0, 1, and X. The bits specified in the quoted string replace the least significant bits, leaving any unspecified upper bits unchanged.

Examples

`TRIGger:A:BUS:B1:ETHERnet:MAC:ADDRess:SOUrce:VALue ”XXXXXXXXXX010101111111000000011110101010101000”` would set the MAC destination address to trigger on to XX:35:FC:07:AA:C8 hex.

`TRIGger:A:BUS:B1:ETHERnet:MAC:ADDRess:SOUrce:VALue?` might return `”XXXXXXXXXX010101111111000000011110101010101000”`.

TRIGger:{A|B}:BUS:B<x>:ETHERnet:MAC:LENgth:HIVALue

When the Ethernet trigger condition is set to `MACLENgth`, and the qualifier is set to `INrange` or `OUTrange`, this command specifies the upper data value of the range. (Use the command TRIGger:{A|B}:BUS:B<x>:ETHERnet:MAC:LENgth:VALue to specify the lower limit of the range.) The default is all X's (don't care). The bus number is specified by <x>.

Conditions

Requires the SR-ENET Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:ETHERnet:MAC:LENgth:HIVALue <QString>
TRIGger:{A|B}:BUS:B<x>:ETHERnet:MAC:LENgth:HIVALue?
```

Related Commands

TRIGger:{A|B}:BUS:B<x>:ETHERnet:CONDition

TRIGger:{A|B}:BUS:B<x>:ETHERnet:MAC:LENgth:VALue

Arguments

`<QString>` is a quoted string of up toe 16 characters where the allowable characters are 0, 1, and X. The bits specified in the quoted string replace the least significant bits, leaving any unspecified upper bits unchanged.

Examples

`TRIGger:A:BUS:B1:ETHERnet:MAC:LENgth:HIVALue "XXXXXXXX00001000"` sets the upper limit of the range to the hexadecimal value XX08 (when the trigger condition is set to `MACLENgth`, and the qualifier is set to `INrange` or `OUTrange).`

`TRIGGER:A:BUS:B1:ETHERNET:MAC:LENGTH:HIVALUE?` might return `"XXXXXXXX00001000"`.

TRIGger:{A|B}:BUS:B<x>:ETHERnet:MAC:LENgth:VALue

When the Ethernet trigger condition is set to `MACLENgth`, and the qualifier is set to `LESSthan, MOREthan, EQual, UNEQual, LESSEQual` or `MOREEQual,` this command specifies the 16–bit value to trigger on. When the qualifier is set to `INrange` or `OUTrange`, this command specifies the lower limit of the range. (Use the command TRIGger:{A|B}:BUS:B<x>:ETHERnet:MAC:LENgth:HIVALue to set the upper limit of the range.) The default is all X's (don't care). The bus number is specified by <x>.

Conditions

Requires the SR-ENET Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:ETHERnet:MAC:LENgth:VALue <QString>
TRIGger:{A|B}:BUS:B<x>:ETHERnet:MAC:LENgth:VALue?
```

Related Commands

TRIGger:{A|B}:BUS:B<x>:ETHERnet:CONDition

TRIGger:{A|B}:BUS:B<x>:ETHERnet:MAC:LENgth:HIVALue

Arguments

`<QString>` is a quoted string of up to 16 characters where the allowable characters are 0, 1, and X. The bits specified in the quoted string replace the least significant bits, leaving any unspecified upper bits unchanged.

Examples

`TRIGger:A:BUS:B1:ETHERnet:MAC:LENgth:VALue "XXXXXXXX00001000"` sets the MAC length/type value to trigger on the hexadecimal value XX08, assuming the qualifier is set to `LESSthan, MOREthan, EQual, UNEQual, LESSEQual` or `MOREEQual.`

`TRIGger:A:BUS:B1:ETHERnet:MAC:LENgth:VALue "XXXXXXXX00001000"` sets the lower limit of the range to the hexadecimal value XX08, assuming the qualifier is set to `INrange` or `OUTrange.`

TRIGger:{A|B}:BUS:B<x>:ETHERnet:QTAG:VALue

When the Ethernet trigger condition is set to `QTAG`, this command specifies the 32-bit Q-Tag value to trigger on. The default is all X's (don't care). The bus number is specified by <x>.

Conditions

Requires the SR-ENET Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:ETHERnet:QTAG:VALue <QString>
TRIGger:{A|B}:BUS:B<x>:ETHERnet:QTAG:VALue?
```

Related Commands

TRIGger:{A|B}:BUS:B<x>:ETHERnet:CONDition

Arguments

`<QString>` is a quoted string of up to 32 characters where the allowable characters are 0, 1, and X. The bits specified in the quoted string replace the least significant bits, leaving any unspecified upper bits unchanged.

Examples

`TRIGGER:A:BUS:B1:ETHERNET:QTAG:VALUE "XXXXXXXXXXXXXXXXXXXX010010001010"` would specify to trigger on the Q-Tag value of hexadecimal XXXXX48A.

`TRIGGER:A:BUS:B1:ETHERNET:QTAG:VALUE?` might return `"XXXXXXXXXXXXXXXXXXXX010010001010"`.

TRIGger:{A|B}:BUS:B<x>:ETHERnet:TCPHeader:ACKnum:VALue

When the Ethernet trigger condition is set to `TCPHeader`, this command specifies the 32-bit acknowledgement number that is to be used in the trigger (along with the destination and source port addresses and the sequence number). The default is all X's (don't care). The bus number is specified by <x>.

Conditions

Requires the SR-ENET Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:ETHERnet:TCPHeader:ACKnum:VALue
<QString>
TRIGger:{A|B}:BUS:B<x>:ETHERnet:TCPHeader:ACKnum:VALue?
```

Related Commands

TRIGger:{A|B}:BUS:B<x>:ETHERnet:CONDition

TRIGger:{A|B}:BUS:B<x>:ETHERnet:TCPHeader:DESTinationport:VALue

TRIGger:{A|B}:BUS:B<x>:ETHERnet:TCPHeader:SOUrceport:VALue

TRIGger:{A|B}:BUS:B<x>:ETHERnet:TCPHeader:SEQnum:VALue

Arguments

`<QString>` is a quoted string of up to 32 characters where the allowable characters are 0, 1, and X. The bits specified in the quoted string replace the least significant bits, leaving any unspecified upper bits unchanged.

Examples

`TRIGger:A:BUS:B1:ETHERnet:TCPHeader:ACKnum:VALue "XXXXXXXXXXXXXXXXXXXX00001000"` sets the acknowledgement number to be used in the trigger to hexadecimal `XXXXXX08`.

`TRIGger:A:BUS:B1:ETHERnet:TCPHeader:ACKnum:VALue?` might return `:TRIGGER:A:BUS:B1:ETHERNET:TCPHEADER:ACKNUM:VALUE "XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX"` indicating the value is set to XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.

TRIGger:{A|B}:BUS:B<x>:ETHERnet:TCPHeader:DESTinationport:VALue

When the Ethernet trigger condition is set `TCPHeader`, this command specifies the 16–bit destination port address value that is to be used in the trigger (along with the acknowledgement value, source port address and the sequence number). The default is all X's (don't care). The bus number is specified by <x>.

Conditions Requires the SR-ENET Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:ETHERnet:TCPHeader:DESTinationport:
VALue <QString>
TRIGger:{A|B}:BUS:B<x>:ETHERnet:TCPHeader:DESTinationport:
VALue?
```

Related Commands TRIGger:{A|B}:BUS:B<x>:ETHERnet:CONDition

TRIGger:{A|B}:BUS:B<x>:ETHERnet:TCPHeader:ACKnum:VALue

TRIGger:{A|B}:BUS:B<x>:ETHERnet:TCPHeader:SOUrceport:VALue

TRIGger:{A|B}:BUS:B<x>:ETHERnet:TCPHeader:SEQnum:VALue

Arguments `<QString>` is a quoted string of up to 16 characters where the allowable characters are 0, 1, and X. The bits specified in the quoted string replace the least significant bits, leaving any unspecified upper bits unchanged.

Examples `TRIGger:A:BUS:B1:ETHERnet:TCPHeader:DESTinationport:VALue "XXXXXXXX00100010"` would set the destination port address value that is to be used in the trigger to hexadecimal `XX22`.

`TRIGger:A:BUS:B1:ETHERnet:TCPHeader:DESTinationport:VALue?` might return `"XXXXXXXXXXXXXXXX"`.

TRIGger:{A|B}:BUS:B<x>:ETHERnet:TCPHeader:SEQnum:VALue

When the Ethernet trigger condition is set to `TCPHeader`, this command specifies the 32–bit sequence number that is to be used in the trigger (along with the destination and source port addresses and the acknowledgement value). The default is all X's (don't care). The bus number is specified by <x>.

Conditions Requires the SR-ENET Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:ETHERnet:TCPHeader:SEQnum:VALue
<QString>
TRIGger:{A|B}:BUS:B<x>:ETHERnet:TCPHeader:SEQnum:VALue?
```

Related Commands

TRIGger:{A|B}:BUS:B<x>:ETHERnet:CONDition

TRIGger:{A|B}:BUS:B<x>:ETHERnet:TCPHeader:ACKnum:VALue

TRIGger:{A|B}:BUS:B<x>:ETHERnet:TCPHeader:SOUrceport:VALue

TRIGger:{A|B}:BUS:B<x>:ETHERnet:TCPHeader:DESTinationport:VALue

Arguments

`<QString>` is a quoted string of up to 32 characters where the allowable characters are 0, 1, and X. The bits specified in the quoted string replace the least significant bits, leaving any unspecified upper bits unchanged.

Examples

`TRIGger:A:BUS:B1:ETHERnet:TCPHeader:SEQnum:VALue "XXXXXXXXXXXXXXXXXXXX000100010001"` would set the sequence number that is to be used in the trigger to hexadecimal `XXXXX111`.

`TRIGger:A:BUS:B1:ETHERnet:TCPHeader:SEQnum:VALue?` might return `"XXXXXXXXXXXXXXXXXXXXXX0010010100"` .

TRIGger:{A|B}:BUS:B<x>:ETHERnet:TCPHeader:SOUrceport:VALue

When the Ethernet trigger condition is set to `TCPHeader`, this command specifies the 16–bit source port address that is to be used in the trigger (along with the destination port address, the sequence number and the acknowledgement number). The default is all X's (don't care). The bus number is specified by <x>.

Conditions

Requires the SR-ENET Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:ETHERnet:TCPHeader:SOUrceport:VALue
<QString>
TRIGger:{A|B}:BUS:B<x>:ETHERnet:TCPHeader:SOUrceport:VALue?
```

Related Commands

TRIGger:{A|B}:BUS:B<x>:ETHERnet:CONDition

TRIGger:{A|B}:BUS:B<x>:ETHERnet:TCPHeader:ACKnum:VALue

TRIGger:{A|B}:BUS:B<x>:ETHERnet:TCPHeader:SEQnum:VALue

TRIGger:{A|B}:BUS:B<x>:ETHERnet:TCPHeader:DESTinationport:VALue

Arguments

`<QString>` is a quoted string of up to 16 characters where the allowable characters are 0, 1, and X. The bits specified in the quoted string replace the least significant bits, leaving any unspecified upper bits unchanged.

Examples

`TRIGger:A:BUS:B1:ETHERnet:TCPHeader:SOUrceport:VALue "XXXX000010100110"` would set the source port address that is to be used in the trigger to hexadecimal X0A6.

`TRIGger:A:BUS:B1:ETHERnet:TCPHeader:SOUrceport:VALue?` might return `"XXXXX01001010110"`.

TRIGger:{A|B}:BUS:B<x>:FLEXray:CONDition

This command specifies the condition to use when triggering on a FlexRay bus signal (start of frame, frame type, ID, cycle count, header, data, ID and data, EOF, error). The bus number is specified by <x>.

Conditions

Requires the SR-AUTO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:FLEXray:CONDition
{SOF|FRAMEType|IDentifier|CYCLEcount|HEADer|DATa
|IDANDDATA|EOF|ERRor}
```

```
TRIGger:{A|B}:BUS:B<x>:FLEXray:CONDition?
```

Arguments

`SOF` sets the trigger condition to start of frame.

`FRAMEType` sets the trigger condition to frame type.

`IDentifier` sets the trigger condition to identifier.

`CYCLEcount` sets the trigger condition to cycle count.

`HEADer` sets the trigger condition to header.

`DATa` sets the trigger condition to data.

`IDANDDATA` sets the trigger condition to id and data.

`EOF` sets the trigger condition to end of frame.

`ERRor` sets the trigger condition to error.

Examples

`TRIGGER:A:BUS:B1:FLEXRAY:CONDITION FRAMETYPE` sets the FlexRay condition to frame type.

`TRIGGER:A:BUS:B1:FLEXRAY:CONDITION?` might return `TRIGGER:A:BUS:B1:FLEXRAY:CONDITION SOF` indicating the FlexRay condition is start of frame.

TRIGger:{A|B}:BUS:B<x>:FLEXray:CYCLEcount:HIVALue

This command specifies the high value when triggering on a FlexRay bus cycle count field. (Use TRIGger:{A|B}:BUS:B<x>:FLEXray:CYCLEcount:VALue to set the low value.) The trigger condition must be set to CYCLEcount (using TRIGger:{A|B}:BUS:B<x>:FLEXray:CONDition). The bus number is specified by <x>.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:FLEXray:CYCLEcount:HIVALue <QString>
TRIGger:{A|B}:BUS:B<x>:FLEXray:CYCLEcount:HIVALue?
```

Arguments `<QString>` is a quoted string that is the cycle count high value.

Examples `TRIGGER:A:BUS:B1:FLEXRAY:CYCLECOUNT:HIVALUE "110010"` sets the cycle count high value to 110010.

`TRIGGER:A:BUS:B1:FLEXRAY:CYCLECOUNT:HIVALUE?` might return `TRIGGER:A:BUS:B1:FLEXRAY:CYCLECOUNT:HIVALUE "XXXXXX"` indicating the cycle count high value is don't care.

TRIGger:{A|B}:BUS:B<x>:FLEXray:CYCLEcount:QUALifier

This command specifies the qualifier (<, >, =, <=, >=, not =, in range, out of range) to use when triggering on the FlexRay bus cycle count field. The trigger condition must be set to CYCLEcount (using TRIGger:{A|B}:BUS:B<x>:FLEXray:CONDition).The bus number is specified by <x>.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:FLEXray:CYCLEcount:QUALifier
{LESSthan|MOREthan|EQual|UNEQual|LESSEQual|MOREEQual|
INrange|OUTrange}

TRIGger:{A|B}:BUS:B<x>:FLEXray:CYCLEcount:QUALifier?
```

Arguments

`LESSthan` sets the cycle count qualifier to less than.

`MOREthan` sets the cycle count qualifier to more than.

`EQual` sets the cycle count qualifier to equal.

`UNEQual` sets the cycle count qualifier to not equal.

`LESSEQual` sets the cycle count qualifier to less than or equal.

`MOREEQual` sets the cycle count qualifier to greater than or equal.

`INrange` sets the cycle count qualifier to in range.

`OUTrange` sets the cycle count qualifier to out of range.

Examples

`TRIGGER:A:BUS:B1:FLEXRAY:CYCLECOUNT:QUALIFIER LESSTHAN` sets the cycle count qualifier to LESSTHAN.

`TRIGGER:A:BUS:B1:FLEXRAY:CYCLECOUNT:QUALIFIER?` might return `TRIGGER:A:BUS:B1:FLEXRAY:CYCLECOUNT:QUALIFIER EQUAL` indicating that the cycle count qualifier is set to EQUAL.

TRIGger:{A|B}:BUS:B<x>:FLEXray:CYCLEcount:VALue

This command specifies the low value when triggering on the FlexRay bus cycle count field. (Use TRIGger:{A|B}:BUS:B<x>:FLEXray:CYCLEcount:HIVALue to set the upper value.) The trigger condition must be set to CYCLEcount (using TRIGger:{A|B}:BUS:B<x>:FLEXray:CONDition).The bus number is specified by <x>.

Conditions

Requires the SR-AUTO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:FLEXray:CYCLEcount:VALue <QString>
TRIGger:{A|B}:BUS:B<x>:FLEXray:CYCLEcount:VALue?
```

Arguments

`<QString>` is a quoted binary data string that represents the cycle count low value.

Examples

`TRIGGER:A:BUS:B1:FLEXRAY:CYCLECOUNT:VALUE "11001101"` sets the cycle count value to 11001101.

`TRIGGER:A:BUS:B1:FLEXRAY:CYCLECOUNT:VALUE?` might return `TRIGGER:A:BUS:B1:FLEXRAY:CYCLECOUNT:VALUE "XXXXXX"` indicating the cycle count value is don't care.

TRIGger:{A|B}:BUS:B<x>:FLEXray:DATa:HIVALue

This command specifies the high value when triggering on the FlexRay bus data field. (Use TRIGger:{A|B}:BUS:B<x>:FLEXray:DATa:VALue to set the lower value.) The trigger condition needs to be set to ID or IDANDDATA (using TRIGger:{A|B}:BUS:B<x>:FLEXray:CONDition).The bus number is specified by <x>.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:FLEXray:DATa:HIVALue <QString>
TRIGger:{A|B}:BUS:B<x>:FLEXray:DATa:HIVALue?
```

Arguments `<QString>` is a quoted string that is the binary data high value.

Examples `TRIGGER:A:BUS:B1:FLEXRAY:DATA:HIVALUE "11001101xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx1"` sets the binary data string high value to `"11001101xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx1"`.

`TRIGGER:A:BUS:B1:FLEXRAY:DATA:HIVALUE?` might return `TRIGGER:A:BUS:B1:FLEXRAY:DATA:HIVALUE "xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx"` indicating the binary data string high value is don't care.

TRIGger:{A|B}:BUS:B<x>:FLEXray:DATa:OFFSet

This command specifies the offset of the data string, in bytes, when triggering on the FlexRay bus data field. The trigger condition needs to be set to ID or IDANDDATA (using TRIGger:{A|B}:BUS:B<x>:FLEXray:CONDition). The bus number is specified by <x>.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:FLEXray:DATa:OFFSet <NR1>
TRIGger:{A|B}:BUS:B<x>:FLEXray:DATa:OFFSet?
```

Arguments `<NR1>` is the offset of the data string in bytes. A byte offset of -1 signifies “don't care”, and no byte offset is used. The instrument will trigger on or match any byte value that fits.

Examples `TRIGGER:A:BUS:B1:FLEXRAY:DATA:OFFSET 1` sets the offset to 1.

`TRIGGER:A:BUS:B1:FLEXRAY:DATA:OFFSET?` might return `TRIGGER:A:BUS:B1:FLEXRAY:DATA:OFFSET 0` indicating that a data offset of 0.

TRIGger:{A|B}:BUS:B<x>:FLEXray:DATa:QUALifier

This command specifies the qualifier (<, >, =, <=, >=, not =, in range, out of range) to use when triggering on the FlexRay bus data field. The trigger condition needs to be set to ID or IDANDDATA (using TRIGger:{A|B}:BUS:B<x>:FLEXray:CONDition). The bus number is specified by <x>.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:FLEXray:DATa:QUALifier
{LESSthan|MOREthan|EQual|UNEQual|LESSEQual|MOREEQual|
INrange|OUTrange}

TRIGger:{A|B}:BUS:B<x>:FLEXray:DATa:QUALifier?
```

Arguments `LESSthan` sets the data qualifier to less than.

`MOREthan` sets the data qualifier to greater than.

`EQual` sets the data qualifier to eqaual.

`UNEQual` sets the data qualifier to not equal.

`LESSEQual` sets the data qualifier to less than or equal.

`MOREEQual` sets the data qualifier to greater than or equal.

`INrange` sets the data qualifier to in range.

`OUTrange` sets the data qualifier to out of range.

Examples

`TRIGGER:A:BUS:B1:FLEXRAY:DATA:QUALIFIER LESSTHAN` sets the data qualifier to LESSTHAN.

`TRIGGER:A:BUS:B1:FLEXRAY:DATA:QUALIFIER?` might return `TRIGGER:A:BUS:B1:FLEXRAY:DATA:QUALIFIER EQUAL` indicating the data qualifier is EQUAL.

TRIGger:{A|B}:BUS:B<x>:FLEXray:DATa:SIZe

This command specifies the length of the data string, in bytes, when triggering on the FlexRay bus data field. The trigger condition needs to be set to ID or IDANDDATA (using TRIGger:{A|B}:BUS:B<x>:FLEXray:CONDition). The bus number is specified by <x>.

Conditions

Requires the SR-AUTO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:FLEXray:DATa:SIZe <NR1>
TRIGger:{A|B}:BUS:B<x>:FLEXray:DATa:SIZe?
```

Arguments

`<NR1>` is the FlexRay data string length, in bytes.

Examples

`TRIGGER:A:BUS:B1:FLEXRAY:DATA:SIZE 8` sets the data string size to 8 bytes.

`TRIGGER:A:BUS:B1:FLEXRAY:DATA:SIZE?` might return `TRIGGER:A:BUS:B1:FLEXRAY:DATA:SIZE 1` indicating the data size is 1 byte.

TRIGger:{A|B}:BUS:B<x>:FLEXray:DATa:VALue

This command specifies the low value when triggering on the FlexRay bus data field. (Use TRIGger:{A|B}:BUS:B<x>:FLEXray:DATa:HIVALue to set the upper value.) The trigger condition needs to be set to ID or IDANDDATA (using TRIGger:{A|B}:BUS:B<x>:FLEXray:CONDition). The bus number is specified by <x>.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Trigger

Syntax
```
TRIGger:{A|B}:BUS:B<x>:FLEXray:DATa:VALue <QString>
TRIGger:{A|B}:BUS:B<x>:FLEXray:DATa:VALue?
```

Arguments `<QString>` is a quoted string.

Examples `TRIGGER:A:BUS:B1:FLEXRAY:DATA:VALUE "11001101"` sets the FlexRay data value for triggering to 11001101.

`TRIGGER:A:BUS:B1:FLEXRAY:DATA:VALUE?` might return `TRIGGER:A:BUS:B1:FLEXRAY:DATA:VALUE "XXXXXXXX"` indicating the FlexRay data value is don't care.

TRIGger:{A|B}:BUS:B<x>:FLEXray:EOFTYPE

This command specifies the end of file type (static, dynamic or any) when triggering on the FlexRay bus EOF field. The trigger condition needs to be set to EOF (using TRIGger:{A|B}:BUS:B<x>:FLEXray:CONDition). The bus number is specified by <x>.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Trigger

Syntax
```
TRIGger:{A|B}:BUS:B<x>:FLEXray:EOFTYPE {STATic|DYNAMic|ANY}
TRIGger:{A|B}:BUS:B<x>:FLEXray:EOFTYPE?
```

Arguments `STATic` specifies triggering on the STATIC end of file type.

`DYNAMic` specifies triggering on the DYNAMIC end of file type.

`ANY` specifies triggering on a STATIC or DYNAMIC end of file type.

Examples `TRIGGER:A:BUS:B1:FLEXRAY:EOFTYPE ANY` sets the FlexRay end of file type to ANY.

`TRIGGER:A:BUS:B1:FLEXRAY:EOFTYPE?` might return `TRIGGER:A:BUS:B1:FLEXRAY:EOFTYPE STATIC` indicating the FlexRay end of file type is STATIC

TRIGger:{A|B}:BUS:B<x>:FLEXray:ERRTYPE

This command specifies the error type when triggering on the FlexRay bus signal. The trigger condition needs to be set to ERROR (using TRIGger:{A|B}:BUS:B<x>:FLEXray:CONDition). The bus number is specified by <x>.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:FLEXray:ERRTYPE
{CRCHeader|CRCTrailer|SYNCFrame|STARTupnosync|NULLFRStatic|
NULLFRDynamic}
TRIGger:{A|B}:BUS:B<x>:FLEXray:ERRTYPE?
```

Arguments

`CRCHeader` sets the error type to CRCHeader.

`CRCTrailer` sets the error type to CRCTrailer.

`SYNCFrame` sets the error type to SYNCFrame.

`STARTupnosync` sets the error type to STARTupnosync.

`NULLFRStatic` sets the error type to NULLFRStatic.

`NULLFRDynamic` sets the error type to NULLFRDynamic.

Examples

`TRIGGER:A:BUS:B1:FLEXRAY:ERRTYPE SYNCFRAME` sets the trigger type is SYNCFRAME.

`TRIGGER:A:BUS:B1:FLEXRAY:ERRTYPE?` might return `TRIGGER:A:BUS:B1:FLEXRAY:ERRTYPE CRCHEADER` indicating the FlexRay trigger type is CRCHeader.

TRIGger:{A|B}:BUS:B<x>:FLEXray:FRAMEID:HIVALue

This command specifies the high value when triggering on the FlexRay bus frame ID field. (Use TRIGger:{A|B}:BUS:B<x>:FLEXray:FRAMEID:VALue to set the low value.) The trigger condition needs to be set to IDentifier (using TRIGger:{A|B}:BUS:B<x>:FLEXray:CONDition). The bus number is specified by <x>.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:FLEXray:FRAMEID:HIVALue <QString>
TRIGger:{A|B}:BUS:B<x>:FLEXray:FRAMEID:HIVALue?
```

Arguments

<QString> is a quoted string that is the binary frame ID high value.

Examples

TRIGGER:A:BUS:B1:FLEXRAY:FRAMEID:HIVALUE "11001100101" sets the frame ID high value to 11001100101.

TRIGGER:A:BUS:B1:FLEXRAY:FRAMEID:HIVALUE? might return TRIGGER:A:BUS:B1:FLEXRAY:FRAMEID:HIVALUE "XXXXXXXXXXX" indicating the frame ID high value is "don't care".

TRIGger:{A|B}:BUS:B<x>:FLEXray:FRAMEID:QUALifier

This command specifies the qualifier to use when triggering on the FlexRay bus frame ID field. The trigger condition needs to be set to IDentifier (using TRIGger:{A|B}:BUS:B<x>:FLEXray:CONDition). The bus number is specified by <x>.

Conditions

Requires the SR-AUTO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:FLEXray:FRAMEID:QUALifier {LESSthan|
MOREthan|EQual|UNEQual|LESSEQual|MOREEQual|INrange|OUTrange}
TRIGger:{A|B}:BUS:B<x>:FLEXray:FRAMEID:QUALifier?
```

Arguments

LESSthan sets the frame ID qualifier to less than.

MOREthan sets the frame ID qualifier to greater than.

EQual sets the frame ID qualifier to equal.

UNEQual sets the frame ID qualifier to not equal.

LESSEQual sets the frame ID qualifier to less than or equal.

MOREEQual sets the frame ID qualifier to greater than or equal.

INrange sets the frame ID qualifier to in range.

OUTrange sets the frame ID qualifier to out of range.

Examples

`TRIGGER:A:BUS:B1:FLEXRAY:FRAMEID:QUALIFIER LESSTHAN` sets the frame ID qualifier to less than.

`TRIGGER:A:BUS:B1:FLEXRAY:FRAMEID:QUALIFIER?` might return `TRIGGER:A:BUS:B1:FLEXRAY:FRAMEID:QUALIFIER EQUAL` indicating the frame ID qualifier is set to equal.

TRIGger:{A|B}:BUS:B<x>:FLEXray:FRAMEID:VALue

This command specifies the low value when triggering on the FlexRay bus frame ID field. (Use TRIGger:{A|B}:BUS:B<x>:FLEXray:FRAMEID:HIVALue to set the high value.) The trigger condition needs to be set to IDentifier (using TRIGger:{A|B}:BUS:B<x>:FLEXray:CONDition). The bus number is specified by <x>.

Conditions

Requires the SR-AUTO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:FLEXray:FRAMEID:VALue <QString>
TRIGger:{A|B}:BUS:B<x>:FLEXray:FRAMEID:VALue?
```

Arguments

`<QString>` is a quoted string that is the FlexRay frame ID low value.

Examples

`TRIGGER:A:BUS:B1:FLEXRAY:FRAMEID:VALUE "11001100101"` sets the frame ID value to 11001100101.

`TRIGGER:A:BUS:B1:FLEXRAY:FRAMEID:VALUE?` might return `TRIGGER:A:BUS:B1:FLEXRAY:FRAMEID:VALUE "XXXXXXXXXXX"` indicating the frame ID value is don't care.

TRIGger:{A|B}:BUS:B<x>:FLEXray:FRAMEType

This command specifies the frame type (normal, payload, null, sync or startup) when triggering on the FlexRay bus signal. The trigger condition needs to be set to FRAMEType (using TRIGger:{A|B}:BUS:B<x>:FLEXray:CONDition). The bus number is specified by <x>.

Conditions

Requires the SR-AUTO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:FLEXray:FRAMEType
{NORMal|PAYLoad|NULL|SYNC|STARTup}

TRIGger:{A|B}:BUS:B<x>:FLEXray:FRAMEType?
```

Arguments

`NORMal` specifies the normal frame type.

`PAYLoad` specifies the payload frame type.

`NULL` specifies the null frame type.

`SYNC` specifies the sync frame type.

`STARTup` specifies the startup frame type.

Examples

`TRIGGER:A:BUS:B1:FLEXRAY:FRAMETYPE PAYLOAD` sets the frame type to payload.

`TRIGGER:A:BUS:B1:FLEXRAY:FRAMETYPE?` might return `TRIGGER:A:BUS:B1:FLEXRAY:FRAMETYPE NORMAL` indicating the frame type is set to normal.

TRIGger:{A|B}:BUS:B<x>:FLEXray:HEADER:CRC

This command specifies the CRC portion of the binary header string when triggering on the FlexRay bus signal. The trigger condition needs to be set to HEADer (using TRIGger:{A|B}:BUS:B<x>:FLEXray:CONDition). The bus number is specified by <x>.

Conditions

Requires the SR-AUTO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:FLEXray:HEADER:CRC <QString>
TRIGger:{A|B}:BUS:B<x>:FLEXray:HEADER:CRC?
```

Arguments

`<QString>` is a quoted string that is the CRC portion of the binary header string.

Examples

`TRIGGER:A:BUS:B1:FLEXRAY:HEADER:CRC "11001100101"` sets the CRC portion of the binary header string to 11001100101.

`TRIGGER:A:BUS:B1:FLEXRAY:HEADER:CRC?` might return `TRIGGER:A:BUS:B1:FLEXRAY:HEADER:CRC "XXXXXXXXXXX"` indicating the CRC portion of the binary header string is don't care.

TRIGger:{A|B}:BUS:B<x>:FLEXray:HEADER:CYCLEcount

This command specifies the cycle count portion of the binary header string when triggering on the FlexRay bus header. The trigger condition needs to be set to HEADer (using TRIGger:{A|B}:BUS:B<x>:FLEXray:CONDition). The bus number is specified by <x>.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:FLEXray:HEADER:CYCLEcount <QString>
TRIGger:{A|B}:BUS:B<x>:FLEXray:HEADER:CYCLEcount?
```

Arguments `<QString>` is a quoted string that is the cycle count portion of the binary header string.

Examples `TRIGGER:A:BUS:B1:FLEXRAY:HEADER:CYCLECOUNT "110010"` sets the cycle count to 110010.

`TRIGGER:A:BUS:B1:FLEXRAY:HEADER:CYCLECOUNT?` might return `TRIGGER:A:BUS:B1:FLEXRAY:HEADER:CYCLECOUNT "XXXXXX"` indicating the cycle count is don't care.

TRIGger:{A|B}:BUS:B<x>:FLEXray:HEADER:FRAMEID

This command specifies the frame ID portion of the binary header string when triggering on the FlexRay bus header. The trigger condition needs to be set to HEADer (using TRIGger:{A|B}:BUS:B<x>:FLEXray:CONDition). The bus number is specified by <x>.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:FLEXray:HEADER:FRAMEID <QString>
TRIGger:{A|B}:BUS:B<x>:FLEXray:HEADER:FRAMEID?
```

Arguments `<QString>` is a quoted string that represents the frame ID portion of the binary header string.

Examples

`TRIGGER:A:BUS:B1:FLEXRAY:HEADER:FRAMEID "11001100101"` sets the frame ID portion of the binary header string to 11001100101.

`TRIGGER:A:BUS:B1:FLEXRAY:HEADER:FRAMEID?` might return `TRIGGER:A:BUS:B1:FLEXRAY:HEADER:FRAMEID "XXXXXXXXXXX"` indicating the frame ID portion of the binary header string is "don't care".

TRIGger:{A|B}:BUS:B<x>:FLEXray:HEADER:INDBits

This command specifies the indicator bits portion of the binary header string when triggering on the FlexRay bus header. The trigger condition needs to be set to HEADer (using TRIGger:{A|B}:BUS:B<x>:FLEXray:CONDition). The bus number is specified by <x>.

Conditions

Requires the SR-AUTO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:FLEXray:HEADER:INDBits <QString>
TRIGger:{A|B}:BUS:B<x>:FLEXray:HEADER:INDBits?
```

Arguments

`<QString>` is a quoted string that is the indicator bits portion of the binary header string.

Examples

`TRIGGER:A:BUS:B1:FLEXRAY:HEADER:INDBITS "11001"` sets the indicator bits portion of the header string to 11001.

`TRIGGER:A:BUS:B1:FLEXRAY:HEADER:INDBITS?` might return `TRIGGER:A:BUS:B1:FLEXRAY:HEADER:INDBITS "XXXXX"` indicating that the indicator bits portion of the header string are "don't cares".

TRIGger:{A|B}:BUS:B<x>:FLEXray:HEADER:PAYLength

This command specifies the payload length portion of the binary header string when triggering on the FlexRay bus header. The trigger condition needs to be set to HEADer (using TRIGger:{A|B}:BUS:B<x>:FLEXray:CONDition).The bus number is specified by <x>.

Conditions

Requires the SR-AUTO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:FLEXray:HEADER:PAYLength <QString>
TRIGger:{A|B}:BUS:B<x>:FLEXray:HEADER:PAYLength?
```

Arguments

`<QString>` is the length of the payload portion of the Binary header string.

Examples

`TRIGGER:A:BUS:B1:FLEXRAY:HEADER:PAYLENGTH "1100101"` sets the FlexRay header paylength to 1100101.

`TRIGGER:A:BUS:B1:FLEXRAY:HEADER:PAYLENGTH?` might return `TRIGGER:A:BUS:B1:FLEXRAY:HEADER:PAYLENGTH "XXXXXXX"` indicating the FlexRay header paylength is don't care.

TRIGger:{A|B}:BUS:B<x>:I2C:ADDRess:MODe

This command specifies the I^{2}C address mode to 7 or 10-bit. The bus number is specified by <x>.

Conditions

Requires the SR-EMBD Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:I2C:ADDRess:MODe {ADDR7|ADDR10}
TRIGger:{A|B}:BUS:B<x>:I2C:ADDRess:MODe?
```

Arguments

`ADDR7` specifies the 7-bit I^{2}C address mode.

`ADDR10` specifies the 10-bit I^{2}C address mode.

Examples

`TRIGGER:A:BUS:B1:I2C:ADDRESS:MODE ADDR10` sets the I2C address mode to 10-bit.

`TRIGGER:A:BUS:B1:I2C:ADDRESS:MODE?` might return `:TRIGGER:A:BUS:B1:I2C:ADDRESS:MODE ADDR7` indicating the address mode is set to the 7-bit mode.

TRIGger:{A|B}:BUS:B<x>:I2C:ADDRess:VALue

This command specifies the binary address string used for the I^{2}C trigger if the trigger condition is ADDRESS or ADDRANDDATA. The bus number is specified by <x>.

Conditions Requires the SR-EMBD Triggering and Analysis application.

Group Trigger

Syntax
```
TRIGger:{A|B}:BUS:B<x>:I2C:ADDRess:VALue <QString>
TRIGger:{A|B}:BUS:B<x>:I2C:ADDRess:VALue?
```

Arguments `<QString>` is up to 7 or 10-bits depending on the address mode that specifies the address. The only allowed characters in the `QString` are 0, 1, and X.

Examples `TRIGGER:A:BUS:B1:I2C:ADDRESS:VALUE "1011"` sets the I2C address value to XXX1011.

`TRIGGER:A:BUS:B1:I2C:ADDRESS:VALUE?` might return `:TRIGGER:A:BUS:B1:I2C:ADDRESS:VALUE "XXXXXXX"` indicating the address value is set to XXXXXXX.

TRIGger:{A|B}:BUS:B<x>:I2C:CONDition

This command specifies the trigger condition for an I2C trigger. The bus number is specified by <x>.

Conditions Requires the SR-EMBD Triggering and Analysis application.

Group Trigger

Syntax
```
TRIGger:{A|B}:BUS:B<x>:I2C:CONDition
{STARt|STOP|REPEATstart|ACKMISS|ADDRess|DATa|ADDRANDDATA}

TRIGger:{A|B}:BUS:B<x>:I2C:CONDition?
```

Arguments `STARt` specifies a search based on start condition.

`STOP` specifies a search based on stop condition.

`REPEATstart` specifies a search based on repeat of start condition.

`ACKMISS` specifies a search based on missing acknowledgement condition.

`ADDRess` specifies a search based on address.

`DATa` specifies a search based on data.

`ADDRANDDATA` specifies a search based on address and data.

Examples

`TRIGGER:A:BUS:B1:I2C:CONDITION START` specifies start as the I²C trigger condition.

`TRIGGER:A:BUS:B1:I2C:CONDITION?` might return `:TRIGGER:A:BUS:B1:I2C:CONDITION START` indicating the condition is set to the start condition.

TRIGger:{A|B}:BUS:B<x>:I2C:DATa:DIRection

This command specifies the I²C trigger type to be valid on a Read, Write, or Either condition. Read or write is indicated by the R/W bit in the I²C protocol. The bus number is specified by <x>.

Conditions

Requires the SR-EMBD Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:I2C:DATa:DIRection
{READ|WRITE|NOCARE}
TRIGger:{A|B}:BUS:B<x>:I2C:DATa:DIRection?
```

Arguments

`READ` specifies read as the data direction.

`WRITE` specifies write as the data direction.

`NOCARE` specifies either as the data direction.

Examples

`TRIGGER:A:BUS:B1:I2C:DATA:DIRECTION WRITE` specifies write as the I²C data direction.

`TRIGGER:A:BUS:B1:I2C:DATA:DIRECTION?` might return `:TRIGGER:A:BUS:B1:I2C:DATA:DIRECTION NOCARE` indicating the data direction is either read or write.

TRIGger:{A|B}:BUS:B<x>:I2C:DATa:SIZe

This command specifies the length of the data string in bytes to be used for an I2C trigger if the trigger condition is DATA or ADDRANDDATA. Applies to bus <x>, where the bus number is specified by <x>.

Conditions

Requires the SR-EMBD Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:I2C:DATa:SIZe <NR1>
TRIGger:{A|B}:BUS:B<x>:I2C:DATa:SIZe?
```

Arguments `<NR1>` is the length of the data string in bytes.

Examples `TRIGger:A:BUS:B1:I2C:DATa:SIZe 1` sets the data size to 1 byte.

`TRIGger:A:BUS:B1:I2C:DATa:SIZe?` might return `:TRIGGER:A:BUS:B1:I2C:DATA:SIZE 1` indicating the size is set to 1 byte.

TRIGger:{A|B}:BUS:B<x>:I2C:DATa:VALue

This command specifies the binary data string used for I2C triggering if the trigger condition is DATA or ADDRANDDATA. The bus number is specified by <x>.

Conditions Requires the SR-EMBD Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:I2C:DATa:VALue <QString>
TRIGger:{A|B}:BUS:B<x>:I2C:DATa:VALue?
```

Arguments `<QString>` is the binary data string, where the number of bits is 8 times the number of bytes specified. The only allowed characters in the string are 0, 1, and X.

Examples TRIGger:A:BUS:B1:I2C:DATa:VALue "11001101" sets the data value to 1100101.

TRIGger:A:BUS:B1:I2C:DATa:VALue? might return :TRIGGER:A:BUS:B1:I2C:DATA:VALUE "XXXXXXXX" indicating the data value is XXXXXXXX.

TRIGger:{A|B}:BUS:B<x>:LIN:CONDition

This command specifies the trigger condition for LIN. The bus number is specified by <x>.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Trigger

Syntax
```
TRIGger:{A|B}:BUS:B<x>:LIN:CONDition
{SYNCfield|IDentifier|DATa|IDANDDATA|WAKEup|SLEEP|ERRor}
```
```
TRIGger:{A|B}:BUS:B<x>:LIN:CONDition?
```

Arguments

`SYNCfield` sets the LIN trigger condition to sync field.

`IDentifier` sets the LIN trigger condition to identifier.

`DATa` sets the LIN trigger condition to data.

`IDANDDATA` sets the LIN trigger condition to id and data.

`WAKEup` sets the LIN trigger condition to wake up.

`SLEEP` sets the LIN trigger condition to sleep.

`ERRor` sets the LIN trigger condition to error.

Examples

`TRIGGER:A:BUS:B1:LIN:CONDITION ERROR` sets the LIN trigger condition to error.

`TRIGGER:A:BUS:B1:LIN:CONDITION?` might return `TRIGGER:A:BUS:B1:LIN:CONDITION SYNCFIELD` indicating the LIN trigger condition is sync field.

TRIGger:{A|B}:BUS:B<x>:LIN:DATa:HIVALue

This command specifies the high data value string used for a LIN bus trigger when the trigger condition is DATA or IDANDDATA and the data qualifier is INRANGE or OUTRANGE. The bus number is specified by <x>.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Trigger

Syntax
```
TRIGger:{A|B}:BUS:B<x>:LIN:DATa:HIVALue <QString>
TRIGger:{A|B}:BUS:B<x>:LIN:DATa:HIVALue?
```

Arguments

<QString> is a quoted string that is the binary data string used for LIN trigger if the trigger condition is ID or IDANDDATA.

Examples

`TRIGGER:A:BUS:B1:LIN:DATA:HIVALUE "11001010"` sets the high value to 11001010.

`TRIGGER:A:BUS:B1:LIN:DATA:HIVALUE?` might return `TRIGGER:A:BUS:B1:LIN:DATA:HIVALUE "XXXXXXXX"`indicating the high value is don't care.

TRIGger:{A|B}:BUS:B<x>:LIN:DATa:QUALifier

This command specifies the LIN data qualifier. This only applies if the trigger condition is IDANDDATA or DATA. The bus number is specified by <x>.

Conditions

Requires the SR-AUTO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:LIN:DATa:QUALifier
{LESSthan|MOREthan|EQual|UNEQual|LESSEQual|MOREEQual|
INrange|OUTrange}
```

```
TRIGger:{A|B}:BUS:B<x>:LIN:DATa:QUALifier?
```

Arguments

`LESSthan` sets the LIN data qualifier to less than.

`MOREthan` sets the LIN data qualifier to greater than.

`EQual` sets the LIN data qualifier to equal.

`UNEQual` sets the LIN data qualifier to not equal.

`LESSEQual` sets the LIN data qualifier to less than or equal.

`MOREEQual` sets the LIN data qualifier to greater than or equal.

`INrange` sets the LIN data qualifier to in range.

`OUTrange` sets the LIN data qualifier to out of range.

Examples

`TRIGGER:A:BUS:B1:LIN:DATA:QUALIFIER OUTRANGE` sets the data qualifier to out of range.

`TRIGGER:A:BUS:B1:LIN:DATA:QUALIFIER?` might return `TRIGGER:A:BUS:B1:LIN:DATA:QUALIFIER EQUAL` indicating the data qualifier is set to equal.

TRIGger:{A|B}:BUS:B<x>:LIN:DATa:SIZe

This command specifies the length of the data string in bytes to be used for LIN trigger. The bus number is specified by <x>.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:LIN:DATa:SIZe <NR1>
TRIGger:{A|B}:BUS:B<x>:LIN:DATa:SIZe?
```

Arguments `<NR1>` is the size of the data string in bytes.

Examples `TRIGGER:A:BUS:B1:LIN:DATA:SIZE 8` sets the data size to 8 bytes.

`TRIGGER:A:BUS:B1:LIN:DATA:SIZE?` might return `TRIGGER:A:BUS:B1:LIN:DATA:SIZE 1` indicating the data size is 1 byte.

TRIGger:{A|B}:BUS:B<x>:LIN:DATa:VALue

This command specifies the binary data string to be used for LIN trigger condition if trigger condition is ID or IDANDDATA. The bus number is specified by <x>.

Conditions Requires the SR-AUTO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:LIN:DATa:VALue <QString>
TRIGger:{A|B}:BUS:B<x>:LIN:DATa:VALue?
```

Arguments `<QString>` is a quoted string that is the LIN trigger data value.

Examples

`TRIGGER:A:BUS:B1:LIN:DATA:VALUE "11001101"`sets the data value to 11001101.

`TRIGGER:A:BUS:B1:LIN:DATA:VALUE?` might return `TRIGGER:A:BUS:B1:LIN:DATA:VALUE "XXXXXXXX"` indicating the data value is don't care.

TRIGger:{A|B}:BUS:B<x>:LIN:ERRTYPE

This command specifies the error type be used for LIN trigger. The bus number is specified by <x>.

Conditions

Requires the SR-AUTO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:LIN:ERRTYPE {SYNC|PARity|CHecksum}
TRIGger:{A|B}:BUS:B<x>:LIN:ERRTYPE?
```

Arguments

`SYNC` sets the LIN error type to SYNC.

`PARity` sets the LIN error type to parity.

`CHecksum` sets the LIN error type to checksum.

Examples

`TRIGGER:A:BUS:B1:LIN:ERRTYPE CHECKSUM` sets the LIN error type to checksum.

`TRIGGER:A:BUS:B1:LIN:ERRTYPE?` might return `TRIGGER:A:BUS:B1:LIN:ERRTYPE SYNC` indicating the LIN error type is SYNC.

TRIGger:{A|B}:BUS:B<x>:LIN:IDentifier:VALue

This command specifies the binary address string used for LIN bus trigger if the trigger condition is ID or IDANDDATA. The bus number is specified by <x>.

Conditions

Requires the SR-AUTO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:LIN:IDentifier:VALue <QString>
TRIGger:{A|B}:BUS:B<x>:LIN:IDentifier:VALue?
```

Arguments

`<QString>` is the binary address string used for LIN trigger if the trigger condition is ID or IDANDDATA.

Examples

`TRIGGER:A:BUS:B1:LIN:IDENTIFIER:VALUE "110010"` sets the identifier value to 110010.

`TRIGGER:A:BUS:B1:LIN:IDENTIFIER:VALUE?` might return `TRIGGER:A:BUS:B1:LIN:IDENTIFIER:VALUE "XXXXXX"` indicating the identifier value is XXXXXX.

TRIGger:{A|B}:BUS:B<x>:MIL1553B:COMMAND:ADDRess:HIVALue

This command sets or queries the high value when triggering on command word addresses for a MIL-STD-1553 bus. The bus number is specified by x. The trigger condition must be set to COMMAND, and the address qualifier must be INrange or OUTrange.

Conditions

Requires the SR-AERO Triggering and Analysis application

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:MIL1553B:COMMAND:ADDRess:HIVALue
<QString>
TRIGger:{A|B}:BUS:B<x>:MIL1553B:COMMAND:ADDRess:HIVALue?
```

Arguments

`<QString>` is the address value.

Examples

`TRIGGER:A:BUS:B1:MIL1553B:COMMAND:ADDRESS:HIVALUE "X1000"` sets the value to X1000.

`TRIGGER:A:BUS:B1:MIL1553B:COMMAND:ADDRESS:HIVALUE?` might return "XXXXX", indicating that the value is XXXXX.

TRIGger:{A|B}:BUS:B<x>:MIL1553B:COMMAND:ADDRess:QUALifier

This command sets or queries the qualifier to be used when triggering on command word addresses for a MIL-STD-1553 bus. The bus number is specified by x. The trigger condition must be set to COMMAND.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:MIL1553B:COMMAND:
ADDRess:QUALifier {EQual|UNEQual|LESSthan|MOREthan
|LESSEQual|MOREEQual|INrange|OUTrange}
TRIGger:{A|B}:BUS:B<x>:MIL1553B:COMMAND:ADDRess:QUALifier?
```

Arguments Arguments are the available address qualifiers.

Examples `TRIGGER:A:BUS:B1:MIL1553B:COMMAND:ADDRESS:QUALIFIER LESSTHAN` sets the address qualifier to less than.

`TRIGGER:A:BUS:B1:MIL1553B:COMMAND:ADDRESS:QUALIFIER?` might return EQUAL, indicating that the address qualifier is set to equal.

TRIGger:{A|B}:BUS:B<x>:MIL1553B:COMMAND:ADDRess:VALue

This command sets or queries the low value when triggering on command word addresses for a MIL-STD-1553 bus. The bus number is specified by x. The trigger condition must be set to COMMAND

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:MIL1553B:COMMAND:ADDRess:VALue
<QString>
TRIGger:{A|B}:BUS:B<x>:MIL1553B:COMMAND:ADDRess:VALue?
```

Arguments `<QString>` is the address value.

Examples `TRIGGER:A:BUS:B1:MIL1553B:COMMAND:ADDRESS:VALUE "X1000"` sets the value to X1000.

`TRIGGER:A:BUS:B1:MIL1553B:COMMAND:ADDRESS:VALUE?` might return "XXXXX", indicating that the value is XXXXX.

TRIGger:{A|B}:BUS:B<x>:MIL1553B:COMMAND:COUNt

This command sets or queries the value of the command word "word count" field for a MIL-STD-1553 bus to triggering on. The bus number is specified by x. The trigger condition must be set to COMMAND.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:MIL1553B:COMMAND:COUNt <QString>
TRIGger:{A|B}:BUS:B<x>:MIL1553B:COMMAND:COUNt?
```

Arguments `<QString>` is the word count value.

Examples `TRIGGER:A:BUS:B1:MIL1553B:COMMAND:COUNT "X1000"` sets the value to X1000.

`TRIGGER:A:BUS:B1:MIL1553B:COMMAND:COUNT?` might return "XXXXX", indicating that the value is XXXXX.

TRIGger:{A|B}:BUS:B<x>:MIL1553B:COMMAND:PARity

This command sets or queries the value of the command word parity bit for a MIL-STD-1553 bus to triggering on. The bus number is specified by x. The trigger condition must be set to COMMAND.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:MIL1553B:COMMAND:PARity
{ONE|ZERo|NOCARE}
TRIGger:{A|B}:BUS:B<x>:MIL1553B:COMMAND:PARity?
```

Arguments `ONE` filters command words to only match those where the parity bit has a value of 1.

`ZERo` filters command words to only match those where the parity bit has a value of 0.

NOCARE disables filtering of command words on the parity bit.

Examples

TRIGGER:A:BUS:B1:MIL1553B:COMMAND:PARITY ONE specifies filtering command words for those where the parity bit has a value of 1.

TRIGGER:A:BUS:B1:MIL1553B:COMMAND:PARITY? might return NOCARE, indicating that command words are not being filtered based on the parity bit value.

TRIGger:{A|B}:BUS:B<x>:MIL1553B:COMMAND:SUBADdress

This command sets or queries the value of the command word subaddress field for a MIL-STD-1553 bus to triggering on. The bus number is specified by x. The trigger condition must be set to COMMAND.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:MIL1553B:COMMAND:SUBADdress <QString>
TRIGger:{A|B}:BUS:B<x>:MIL1553B:COMMAND:SUBADdress?
```

Arguments

<QString> is the subaddress value.

Examples

TRIGGER:A:BUS:B1:MIL1553B:COMMAND:SUBADDRESS "X1000" sets the value to X1000.

TRIGGER:A:BUS:B1:MIL1553B:COMMAND:SUBADDRESS? might return "XXXXX", indicating that the value is XXXXX.

TRIGger:{A|B}:BUS:B<x>:MIL1553B:COMMAND:TRBit

This command sets or queries the value of the command word Transmit / Receive bit for a MIL-STD-1553 bus to trigger on. The bus number is specified by x. The trigger condition must be set to COMMAND.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:MIL1553B:COMMAND:TRBit {RX|TX|X}
TRIGger:{A|B}:BUS:B<x>:MIL1553B:COMMAND:TRBit?
```

Arguments

RX filters command words to only match those that are receive packets.

TX filters command words to only match those that are transmit packets.

X disables filtering of command words on the R/T bit.

Examples

TRIGGER:A:BUS:B1:MIL1553B:COMMAND:TRBIT TX specifies filtering command words for only transmit messages.

TRIGGER:A:BUS:B1:MIL1553B:COMMAND:TRBIT? might return X, indicating that command words are not being filtered based on the R/T bit value.

TRIGger:{A|B}:BUS:B<x>:MIL1553B:CONDition

This command sets or queries the field or condition for a MIL-STD-1553 bus to trigger on. The bus number is specified by x.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:MIL1553B:CONDition
{SYNC|COMMAND|STATus|DATA |TIMe|ERRor}
TRIGger:{A|B}:BUS:B<x>:MIL1553B:CONDition?
```

Arguments

SYNC specifies triggering on the sync pulse of any word.

COMMAND specifies triggering on a matching command word.

STATus specifies triggering on a matching status word.

DATA specifies triggering on a matching data word.

TIMe specifies triggering on the response time or intermessage gap between words.

ERRor specifies triggering on a specified error condition.

Examples

TRIGGER:A:BUS:B1:MIL1553B:CONDITION DATA specifies finding matching data word(s).

TRIGGER:A:BUS:B1:MIL1553B:CONDITION? might return SYNC, indicating that the bus is triggering on sync pulses found in any word.

TRIGger:{A|B}:BUS:B<x>:MIL1553B:DATa:PARity

This command sets or queries the value of the command word parity bit for a MIL-STD-1553 bus to triggering on. The bus number is specified by x. The trigger condition must be set to DATA.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:MIL1553B:DATa:PARity {ONE|ZERo|NOCARE}
TRIGger:{A|B}:BUS:B<x>:MIL1553B:DATa:PARity?
```

Arguments

`ONE` filters data words to only match those where the parity bit has a value of 1.

`ZERo` filters data words to only match those where the parity bit has a value of 0.

`NOCARE` disables filtering of data words on the parity bit.

Examples

`TRIGGER:A:BUS:B1:MIL1553B:DATA:PARITY ONE` specifies filtering data words for those where the parity bit has the value 1.

`TRIGGER:A:BUS:B1:MIL1553B:DATA:PARITY?` might return NOCARE, indicating that data words are not being filtered based on the parity bit value.

TRIGger:{A|B}:BUS:B<x>:MIL1553B:DATa:VALue

This command sets or queries the value when triggering on data words for a MIL-STD-1553 bus. The bus number is specified by x. The trigger condition must be set to DATA.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:MIL1553B:DATa:VALue <QString>
TRIGger:{A|B}:BUS:B<x>:MIL1553B:DATa:VALue?
```

Arguments

`<QString>` is the data value.

Examples

`TRIGGER:A:BUS:B1:MIL1553B:DATA:VALUE "XXXXXXXXXXXX1000"` sets the value to XXXXXXXXXXXX1000.

`TRIGGER:A:BUS:B1:MIL1553B:DATA:VALUE?` might return "XXXXXXXXXXXXXXXX", indicating that the value is XXXXXXXXXXXXXXXX.

TRIGger:{A|B}:BUS:B<x>:MIL1553B:ERRTYPe

This command sets or queries the type of error condition for a MIL-STD-1553 bus to trigger on. The bus number is specified by x. The trigger condition must be set to ERRor.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:MIL1553B:ERRTYPe {PARity|SYNC|DATA}
TRIGger:{A|B}:BUS:B<x>:MIL1553B:ERRTYPe?
```

Arguments

`PARity` specifies triggering on an incorrectly calculated parity bit in any word.

`SYNC` specifies triggering on any sync pulse that does not transition in the middle of the pulse as required.

`DATA` specifies triggering on any non-contiguous data words.

Examples

`TRIGGER:A:BUS:B1:MIL1553B:ERRTYPE DATA` specifies triggering on non-contiguous data words.

`TRIGGER:A:BUS:B1:MIL1553B:ERRTYPE?` might return PARITY, indicating that the bus is triggering on parity errors in any word.

TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:ADDRess:HIVALue

This command sets or queries the high value when triggering on status word addresses for a MIL-STD-1553 bus. The bus number is specified by x. The trigger condition must be set to STATus and the address qualifier must be INrange or OUTrange.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:ADDRess:HIVALue
<QString>
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:ADDRess:HIVALue?
```

Arguments `<QString>` is the address value.

Examples `TRIGGER:A:BUS:B1:MIL1553B:STATUS:ADDRESS:HIVALUE "X1000"` sets the value to X1000.

`TRIGGER:A:BUS:B1:MIL1553B:STATUS:ADDRESS:HIVALUE?` might return "XXXXX", indicating that the value is XXXXX.

TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:ADDRess:QUALifier

This command sets or queries the qualifier to be used when triggering on status word addresses for a MIL-STD-1553 bus. The bus number is specified by x. The trigger condition must be set to STATus.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:
ADDRess:QUALifier {EQual|UNEQual|LESSthan
|MOREthan|LESSEQual|MOREEQual|INrange|OUTrange}
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:ADDRess:QUALifier?
```

Arguments Arguments are the available address qualifiers.

Examples `TRIGGER:A:BUS:B1:MIL1553B:STATUS:ADDRESS:QUALIFIER LESSTHAN` sets the address qualifier to less than.

`TRIGGER:A:BUS:B1:MIL1553B:STATUS:ADDRESS:QUALIFIER?` might return EQUAL, indicating that the address qualifier is set to equal.

TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:ADDRess:QUALifier

This command sets or queries the qualifier to be used when triggering on status word addresses for a MIL-STD-1553 bus. The bus number is specified by x. The trigger condition must be set to STATus.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:
ADDRess:QUALifier {EQual|UNEQual|LESSthan|MOREthan
|LESSEQual|MOREEQual|INrange|OUTrange}
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:ADDRess:QUALifier?
```

Arguments Arguments are the available address qualifiers.

Examples `TRIGGER:A:BUS:B1:MIL1553B:STATUS:ADDRESS:QUALIFIER LESSTHAN` sets the address qualifier to less than.

`TRIGGER:A:BUS:B1:MIL1553B:STATUS:ADDRESS:QUALIFIER?` might return EQUAL, indicating that the address qualifier is set to equal.

TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:ADDRess:VALue

This command sets or queries the low value when triggering on status word addresses for a MIL-STD-1553 bus. The bus number is specified by x. The trigger condition must be set to STATus.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:ADDRess:VALue
<QString>
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:ADDRess:VALue?
```

Arguments `<QString>` is the address value.

Examples

`TRIGGER:A:BUS:B1:MIL1553B:STATUS:ADDRESS:VALUE "X1000"` sets the value to X1000.

`TRIGGER:A:BUS:B1:MIL1553B:STATUS:ADDRESS:VALUE?` might return "XXXXX", indicating that the value is XXXXX.

TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:BIT:BCR

This command sets or queries the value of the broadcast command received bit (BCR bit, bit 15) in a status word for a MIL-STD-1553 bus to triggering on. The bus number is specified by x. The trigger condition must be set to STATus.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:BIT:BCR
{ONE|ZERo|NOCARE}
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:BIT:BCR?
```

Arguments

`ONE` filters status words to only match those where the BCR bit has a value of 1.

`ZERo` filters status words to only match those where the BCR bit has a value of 0.

`NOCARE` disables filtering of status words on the BCR bit.

Examples

`TRIGGER:A:BUS:B1:MIL1553B:STATUS:BIT:BCR ONE` specifies filtering status words for those where the BCR bit has a value of 1.

`TRIGGER:A:BUS:B1:MIL1553B:STATUS:BIT:BCR?` might return NOCARE, indicating that status words are not being filtered based on the BCR bit value.

TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:BIT:BUSY

This command sets or queries the value of the busy bit (BUSY bit, bit 16) in a status word for a MIL-STD-1553 bus to triggering on. The bus number is specified by x. The trigger condition must be set to STATus.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:BIT:BUSY
{ONE|ZERo|NOCARE}
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:BIT:BUSY?
```

Arguments

`ONE` filters status words to only match those where the BUSY bit has a value of 1.

`ZERo` filters status words to only match those where the BUSY bit has a value of 0.

`NOCARE` disables filtering of status words on the BUSY bit.

Examples

`TRIGGER:A:BUS:B1:MIL1553B:STATUS:BIT:BUSY ONE` specifies filtering status words for those where the BUSY bit has a value of 1.

`TRIGGER:A:BUS:B1:MIL1553B:STATUS:BIT:BUSY?` might return NOCARE, indicating that status words are not being filtered based on the BUSY bit value.

TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:BIT:DBCA

This command sets or queries the value of the dynamic bus control acceptance bit (DBCA bit, bit 18) in a status word for a MIL-STD-1553 bus to triggering on. The bus number is specified by x. The trigger condition must be set to STATus.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:BIT:DBCA
{ONE|ZERo|NOCARE}
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:BIT:DBCA?
```

Arguments

`ONE` filters status words to only match those where the DBCA bit has a value of 1.

`ZERo` filters status words to only match those where the DBCA bit has a value of 0.

`NOCARE` disables filtering of status words on the DBCA bit.

Examples

`TRIGGER:A:BUS:B1:MIL1553B:STATUS:BIT:DBCA ONE` specifies filtering status words for those where the DBCA bit has a value of 1.

`TRIGGER:A:BUS:B1:MIL1553B:STATUS:BIT:DBCA?` might return NOCARE, indicating that status words are not being filtered based on the DBCA bit value.

TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:BIT:INSTR

This command sets or queries the value of the instrumentation bit (INSTR bit, bit 10) in a status word for a MIL-STD-1553 bus to triggering on. The bus number is specified by x. The trigger condition must be set to STATus.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:BIT:INSTR
{ONE|ZERo|NOCARE}
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:BIT:INSTR?
```

Arguments

`ONE` filters status words to only match those where the INSTR bit has a value of 1.

`ZERo` filters status words to only match those where the INSTR bit has a value of 0.

`NOCARE` disables filtering of status words on the INSTR bit.

Examples

`TRIGGER:A:BUS:B1:MIL1553B:STATUS:BIT:INSTR ONE` specifies filtering status words for those where the INSTR bit has a value of 1.

`TRIGGER:A:BUS:B1:MIL1553B:STATUS:BIT:INSTR?` might return NOCARE, indicating that status words are not being filtered based on the INSTR bit value.

TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:BIT:ME

This command sets or queries the value of the message error bit (ME bit, bit 9) in a status word for a MIL-STD-1553 bus to triggering on. The bus number is specified by x. The trigger condition must be set to STATus.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:BIT:ME
{ONE|ZERo|NOCARE}
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:BIT:ME?
```

Arguments

`ONE` filters status words to only match those where the ME bit has a value of 1.

`ZERo` filters status words to only match those where the ME bit has a value of 0.

`NOCARE` disables filtering of status words on the ME bit.

Examples

`TRIGGER:A:BUS:B1:MIL1553B:STATUS:BIT:ME ONE` specifies filtering status words for those where the ME bit has a value of 1.

`TRIGGER:A:BUS:B1:MIL1553B:STATUS:BIT:ME?` might return NOCARE, indicating that status words are not being filtered based on the ME bit value.

TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:BIT:SRQ

This command sets or queries the value of the status word service request bit (SRQ bit, bit 11) in a status word for a MIL-STD-1553 bus to triggering on. The bus number is specified by x. The trigger condition must be set to STATus.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:BIT:SRQ
{ONE|ZERo|NOCARE}
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:BIT:SRQ?
```

Arguments

`ONE` filters status words to only match those where the SRQ bit has a value of 1.

`ZERo` filters status words to only match those where the SRQ bit has a value of 0.

`NOCARE` disables filtering of status words on the SRQ bit.

Examples

`TRIGGER:A:BUS:B1:MIL1553B:STATUS:BIT:SRQ ONE` specifies filtering status words for those where the SRQ bit has a value of 1.

`TRIGGER:A:BUS:B1:MIL1553B:STATUS:BIT:SRQ?` might return NOCARE, indicating that status words are not being filtered based on the SRQ bit value.

TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:BIT:SUBSF

This command sets or queries the value of the subsystem flag bit (SUBSF bit, bit 17) in a status word for a MIL-STD-1553 bus to triggering on. The bus number is specified by x. The trigger condition must be set to STATus.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:BIT:SUBSF
{ONE|ZERo|NOCARE}
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:BIT:SUBSF?
```

Arguments `ONE` filters status words to only match those where the SUBSF bit has a value of 1.

`ZERo` filters status words to only match those where the SUBSF bit has a value of 0.

`NOCARE` disables filtering of status words on the SUBSF bit.

Examples `TRIGGER:A:BUS:B1:MIL1553B:STATUS:BIT:SUBSF ONE` specifies filtering status words for those where the SUBSF bit has a value of 1.

`TRIGGER:A:BUS:B1:MIL1553B:STATUS:BIT:SUBSF?` might return NOCARE, indicating that status words are not being filtered based on the SUBSF bit value.

TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:BIT:TF

This command sets or queries the value of the terminal flag bit (TF bit, bit 19) in a status word for a MIL-STD-1553 bus to triggering on. The bus number is specified by x. The trigger condition must be set to STATus.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:BIT:TF
{ONE|ZERo|NOCARE}
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:BIT:TF?
```

Arguments `ONE` filters status words to only match those where the TF bit has a value of 1.

`ZERo` filters status words to only match those where the TF bit has a value of 0.

`NOCARE` disables filtering of status words on the TF bit.

Examples

`TRIGGER:A:BUS:B1:MIL1553B:STATUS:BIT:TF ONE` specifies filtering status words for those where the TF bit has a value of 1.

`TRIGGER:A:BUS:B1:MIL1553B:STATUS:BIT:TF?` might return NOCARE, indicating that status words are not being filtered based on the TF bit value.

TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:PARity

This command sets or queries the value of the status word parity bit for a MIL-STD-1553 bus to triggering on. The bus number is specified by x. The trigger condition must be set to STATus.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:PARity
{ONE|ZERo|NOCARE}
TRIGger:{A|B}:BUS:B<x>:MIL1553B:STATus:PARity?
```

Arguments

`ONE` filters status words to only match those where the parity bit has a value of 1.

`ZERo` filters status words to only match those where the parity bit has a value of 0.

`NOCARE` disables filtering of status words on the parity bit.

Examples

`TRIGGER:A:BUS:B1:MIL1553B:STATUS:PARITY ONE` specifies filtering status words for those where the parity bit has a value of 1.

`TRIGGER:A:BUS:B1:MIL1553B:STATUS:PARITY?` might return NOCARE, indicating that status words are not being filtered based on the parity bit value.

TRIGger:{A|B}:BUS:B<x>:MIL1553B:TIMe:LESSLimit

This command sets or queries the lower limit to be used when triggering on response time / inter message gap time for a MIL-STD-1553 bus. The bus number is specified by x. The trigger condition must be set to TIMe.

Conditions

Requires the SR-AERO Triggering and Analysis application.

Group

Trigger

Syntax
```
TRIGger:{A|B}:BUS:B<x>:MIL1553B:TIMe:LESSLimit <NR3>
TRIGger:{A|B}:BUS:B<x>:MIL1553B:TIMe:LESSLimit?
```

Related Commands TRIGger:{A|B}:BUS:B<x>:MIL1553B:TIMe:QUALifier

Arguments `<NR3>` is a floating point number that specifies the lower bound for measuring remote terminal response time (RT) or the inter-message gap (IMG) in seconds.

Examples `TRIGGER:A:BUS:B1:MIL1553B:TIME:LESSLIMIT 2.0000e-6` sets the lower bound for comparison to 2 microseconds.

`TRIGGER:A:BUS:B1:MIL1553B:TIME:LESSLIMIT?` might return 4.0000E-6, indicating that the lower bound for comparison is set to 4 microseconds.

TRIGger:{A|B}:BUS:B<x>:MIL1553B:TIMe:MORELimit

This command sets or queries the upper limit to be used when triggering on response time / inter message gap time for a MIL-STD-1553 bus. The bus number is specified by x. The trigger condition must be set to TIMe.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Trigger

Syntax
```
TRIGger:{A|B}:BUS:B<x>:MIL1553B:TIMe:MORELimit <NR3>
TRIGger:{A|B}:BUS:B<x>:MIL1553B:TIMe:MORELimit?
```

Related Commands TRIGger:{A|B}:BUS:B<x>:MIL1553B:TIMe:QUALifier

Arguments `<NR3>` is a floating point number that specifies the upper bound for measuring remote terminal response time (RT) or the inter-message gap (IMG) in seconds.

Examples `TRIGGER:A:BUS:B1:MIL1553B:TIME:MORELIMIT 15.0000e-6` sets the upper bound for comparison to 15 microseconds.

`TRIGGER:A:BUS:B1:MIL1553B:TIME:MORELIMIT?` might return 12.0000E-6, indicating that the upper bound for comparison is set to 12 microseconds.

TRIGger:{A|B}:BUS:B<x>:MIL1553B:TIMe:QUALifier

This command sets or queries the qualifier to be used when triggering on response time / inter message gap time for a MIL-STD-1553 bus. The bus number is specified by x. The trigger condition must be set to TIMe.

Conditions Requires the SR-AERO Triggering and Analysis application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:MIL1553B:TIMe:QUALifier
{LESSthan|MOREthan|INrange|OUTrange}
TRIGger:{A|B}:BUS:B<x>:MIL1553B:TIMe:QUALifier?
```

Related Commands TRIGger:{A|B}:BUS:B<x>:MIL1553B:TIMe:LESSLimit, TRIGger:{A|B}:BUS:B<x>:MIL1553B:TIMe:MORELimit

Arguments Arguments are the available comparison qualifiers.

Examples `TRIGGER:A:BUS:B1:MIL1553B:TIME:QUALIFIER LESSTHAN` sets the time comparison qualifier to less than.

`TRIGGER:A:BUS:B1:MIL1553B:TIME:QUALIFIER?` might return OUTRANGE, indicating that the qualifier is set to out-of-range comparison.

TRIGger:{A|B}:BUS:B<x>:PARallel:DATa:VALue

This command specifies the binary data string used for a Parallel Bus trigger. The bus number is specified by <x>.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:PARallel:DATa:VALue <QString>
TRIGger:{A|B}:BUS:B<x>:PARallel:DATa:VALue?
```

Arguments `<QString>` is the binary data string used for a Parallel Bus trigger.

Examples `TRIGger:A:BUS:B1:PARallel:DATa:VALue "11001101"` sets the data value to 11001101.

`TRIGger:A:BUS:B1:PARallel:DATa:VALue?` might return `:TRIGGER:A:BUS:B1:PARALLEL:DATA:VALUE "X"` indicating the data value is X.

TRIGger:{A|B}:BUS:B<x>:RS232C:CONDition

This command specifies the condition for an RS-232C trigger, where the bus number is specified by< >x.

Conditions Requires the SR-COMP Serial Triggering and Analysis Application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:RS232C:CONDition
{STARt|EOp|DATa|PARItyerror}
TRIGger:{A|B}:BUS:B<x>:RS232C:CONDition?
```

Arguments

`STARt` sets the Trigger on condition to Start.

`EOp` sets the Trigger on condition to End of Packet.

`DATa` sets the Trigger on condition to Data.

`PARItyerror` sets the Trigger on condition to Parity Error.

Examples

`TRIGger:A:BUS:B1:RS232C:CONDition DATA` sets the trigger on condition to data.

`TRIGger:A:BUS:B1:RS232C:CONDition?` might return `:TRIGGER:A:BUS:B1:RS232C:CONDITION START` indicating start is the trigger condition.

TRIGger:{A|B}:BUS:B<x>:RS232C:DATa:SIZe

This command sets or queries the length of the data string in bytes to be used for an RS-232C trigger when the trigger condition is Data. The bus number is specified by <x>.

Conditions Requires the SR-COMP Serial Triggering and Analysis Application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:RS232C:DATa:SIZe <NR3>
TRIGger:{A|B}:BUS:B<x>:RS232C:DATa:SIZe?
```

Arguments

`<NR3>` specifies the data size in bytes.

Examples

`TRIGGER:A:BUS:B1:RS232C:DATA:SIZE 3` sets three bytes data size for the RS-232C bus B1 trigger.

`TRIGGER:A:BUS:B1:RS232C:DATA:SIZE?` might return `:TRIGGER:A:BUS:B1:RS232C:DATA:SIZE 2`, indicating that the data size for the RS-232C bus B1 trigger is set to two bytes.

TRIGger:{A|B}:BUS:B<x>:RS232C:DATa:VALue

This command sets or queries the data address string used for the RS-232 bus trigger when the trigger condition is set to Data. The bus number is specified by <x>.

Conditions

Requires the SR-COMP Serial Triggering and Analysis Application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:RS232C:DATa:VALue <QString>
TRIGger:{A|B}:BUS:B<x>:RS232C:DATa:VALue?
```

Arguments

`<QString>` specifies the address value. The argument is a string of 0, 1, or X representing a binary number.

Examples

`TRIGGER:A:BUS:B1:RS232C:DATA:VALUE "011XX11"` sets the data address string used for the RS-232 bus trigger to 011XX11.

`TRIGGER:A:BUS:B1:RS232C:DATA:VALUE?` might return `:TRIGGER:A:BUS:RS232C:DATA:VALUE "XXXXXX01"`, indicating that the data address string used for the RS-232 bus trigger is set to "XXXXXX01"

TRIGger:{A|B}:BUS:B<x>:SPI:CONDition

This command specifies the trigger condition for a SPI trigger. The bus number is specified by <x>.

Conditions

Requires the SR-COMP Serial Triggering and Analysis Application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:SPI:CONDition {SS|STARToframe|DATa}
TRIGger:{A|B}:BUS:B<x>:SPI:CONDition?
```

Related Commands BUS:B<x>:SPI:IDLETime,

BUS:B<x>:SPI:FRAMING

Arguments SS specifies the Slave Selection condition.

STARToframe is applicable when BUS:B<x>:SPI:FRAMING is set to IDLEtime. When the trigger condition is set to STARToframe, the instrument triggers on the first SPI clock after an idle time when there are no clocks.

DATa sets the trigger condition to Master-In Slave-Out and Master-Out Slave-In.

TRIGger:{A|B}:BUS:B<x>:SPI:DATa:SIZe

This command specifies the length of the data string to be used for a SPI trigger if the trigger condition is DATa. The bus number is specified by <x>.

Conditions Requires the SR-COMP Serial Triggering and Analysis Application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:SPI:DATa:SIZe <NR1>
TRIGger:{A|B}:BUS:B<x>:SPI:DATa:SIZe?
```

Arguments <NR1> is the length of the data string in bytes.

Examples TRIGger:A:BUS:B1:SPI:DATa:SIZe 1 sets the data size to 1 byte.

TRIGger:A:BUS:B1:SPI:DATa:SIZe? might return :TRIGGER:A:BUS:B1:SPI:DATA:SIZE 1 indicating the data size is 1 byte.

TRIGger:{A|B}:BUS:B<x>:SPI:DATa:VALue

This command specifies the binary data string used for SPI triggering if the trigger condition is DATA. The bus number is specified by <x>.

Conditions Requires the SR-COMP Serial Triggering and Analysis Application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:SPI:DATa:VALue <QString>
TRIGger:{A|B}:BUS:B<x>:SPI:DATa:VALue?
```

Arguments `<QString>` specifies the data value in the specified valid format. The valid characters are 0, 1, and X for binary format.

Examples `TRIGger:A:BUS:B1:SPI:DATa:VALue "11011010"` sets the data value to 11011010.

`TRIGger:A:BUS:B1:SPI:DATa:VALue?` might return `:TRIGGER:A:BUS:B1:SPI:DATA:VALUE "XXXXXXXX"` indicating the data value is XXXXXXXX.

TRIGger:{A|B}:BUS:B<x>:USB:ADDRess:HIVALue

This command specifies the binary address string for the upper limit for inside-of-range and outside-of-range qualifiers for the USB trigger. Use the command TRIGger:{A|B}:BUS:B<x>:USB:ADDRess:VALue to set the lower limit. The bus number is specified by <x>.

Conditions Requires the SR-USB2 Serial Triggering and Analysis Application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:USB:ADDRess:HIVALue <QString>
TRIGger:{A|B}:BUS:B<x>:USB:ADDRess:HIVALue?
```

Related Commands TRIGger:{A|B}:BUS:B<x>:USB:CONDition,

TRIGger:{A|B}:BUS:B<x>:USB:ADDRess:VALue

Arguments

<QString> within the range 0000000 to 1111111 (00 hex to 7F hex).

Examples

`TRIGGER:A:BUS:B1:USB:ADDRESS:HIVALUE "0001000"` sets the upper limit to binary 0001000 (08 hex).

`TRIGGER:A:BUS:B1:USB:ADDRESS:HIVALUE?` might return `:TRIGGER:A:BUS:B1:USB:ADDRESS:HIVALUE "1111111"`, which indicates that the upper limit is 1111111 (7F hex).

TRIGger:{A|B}:BUS:B<x>:USB:ADDRess:VALue

This command specifies the binary address string to be used for USB trigger.

The trigger condition must be set to TOKEN. The bus number is specified by <x>.

Conditions

Requires the SR-USB2 Serial Triggering and Analysis Application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:USB:ADDRess:VALue <QString>
TRIGger:{A|B}:BUS:B<x>:USB:ADDRess:VALue?
```

Related Commands

TRIGger:{A|B}:BUS:B<x>:USB:CONDition

Arguments

<QString> within the range 0000000 to 1111111 (00 hex to 7F hex).

Examples

`TRIGGER:A:BUS:B1:USB:ADDRESS:VALUE "0001000"` sets the binary address to 0001000 (08 hex).

`TRIGGER:A:BUS:B1:USB:ADDRESS:VALUE?` might return `:TRIGGER:A:BUS:B1:USB:ADDRESS:VALUE "1000000"`, which indicates that the binary address is 100000 (40 hex).

TRIGger:{A|B}:BUS:B<x>:USB:CONDition

This command specifies the trigger condition for the USB trigger. The bus number is specified by <x>.

Conditions

Requires the SR-USB2 Serial Triggering and Analysis Application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:USB:CONDition
{SYNC|RESET|SUSPEND|RESUME|EOP|TOKENPacket|DATAPacket|
HANDSHAKEPacket|SPECIALPacket|ERRor}
```

```
TRIGger:{A|B}:BUS:B<x>:USB:CONDition?
```

Arguments

SYNC indicates triggering on a Sync field of a packet.

RESET sets triggering on a reset condition.

SUSPEND sets triggering on a suspend condition.

RESUME sets triggering on a resume condition.

EOP indicates triggering on an end-of-packet signal.

TOKENPacket indicates triggering on a token packet.

DATAPacket indicates triggering on a data packet

HANDSHAKEPacket indicates triggering on a handshake packet.

SPECIALPacket indicates triggering on a special status packet.

ERRor indicates triggering on an error condition.

Examples

TRIGGER:A:BUS:B1:USB:CONDITION TOKENPACKET sets the trigger condition to be a token packet.

TRIGGER:A:BUS:B1:USB:CONDITION? might return :TRIGGER:A:BUS:B1:USB:CONDITION SYNC, which indicates that the trigger condition is a sync field.

TRIGger:{A|B}:BUS:B<x>:USB:DATa:HIVALue

This command specifies the binary data string for the upper limit for inside-of-range and outside-of-range qualifiers for the USB trigger when the trigger condition is DATA. Use the command TRIGger:{A|B}:BUS:B<x>:USB:DATa:VALue to set the lower limit. The bus number is specified by <x>.

Conditions Requires the SR-USB2 Serial Triggering and Analysis Application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:USB:DATa:HIVALue <QString>
TRIGger:{A|B}:BUS:B<x>:USB:DATa:HIVALue?
```

Related Commands

TRIGger:{A|B}:BUS:B<x>:USB:CONDition,

TRIGger:{A|B}:BUS:B<x>:USB:DATa:VALue

Arguments

`<QString>` within the range 00000000 to 11111111 (00 hex to FF hex).

Examples

`TRIGGER:A:BUS:B1:USB:DATA:HIVALUE "00001000"` sets the upper limit to binary 00001000 (08 hex).

`TRIGGER:A:BUS:B1:USB:DATA:HIVALUE?` might return `:TRIGGER:A:BUS:B1:USB:DATA:HIVALUE "01111111"`, which indicates that the upper limit is 01111111 (7F hex).

TRIGger:{A|B}:BUS:B<x>:USB:DATa:OFFSet

This command specifies the data offset in bytes to trigger on. The bus number is specified by <x>.

Conditions

Requires the SR-USB2 Serial Triggering and Analysis Application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:USB:DATa:OFFSet <NR1>
TRIGger:{A|B}:BUS:B<x>:USB:DATa:OFFSet?
```

Related Commands

TRIGger:{A|B}:BUS:B<x>:USB:CONDition

Arguments

<NR1> is number in the range 0 to 1024.

Examples

`TRIGGER:A:BUS:B1:USB:DATA:OFFSET 36` sets the data offset to 36.

`TRIGGER:A:BUS:B1:USB:DATA:OFFSET?` might return `:TRIGGER:A:BUS:B1:USB:DATA:OFFSET 0`, indicating that the data offset is the default value, 0.

TRIGger:{A|B}:BUS:B<x>:USB:DATa:QUALifier

This command sets the qualifier to be used when triggering on a USB bus signal. The trigger condition must be set to DATAPACKET. The bus number is specified by <x>.

Conditions

Requires the SR-USB2 Serial Triggering and Analysis Application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:USB:DATa:QUALifier {EQual|UNEQual|
LESSthan|MOREthan|LESSEQual|MOREEQual|INrange|OUTrange}
TRIGger:{A|B}:BUS:B<x>:USB:DATa:QUALifier?
```

Arguments

`EQUal` specifies the qualifier as Equal.

`INrange` specifies the qualifier as Inside Range.

`LESSEQual` specifies the qualifier as Less Than or Equal to.

`MOREEQual` specifies the qualifier as More Than or Equal to.

`OUTrange` specifies the qualifier as Out of Range.

`UNEQual` specifies the qualifier as Not Equal to.

`LESSthan` specifies the qualifier as Less Than.

`MOREthan` specifies the qualifier as More Than.

Examples

`TRIGger:A:BUS:B1:USB:DATa:QUALifier LESSTHAN` sets the qualifier to less than.

`TRIGger:A:BUS:B1:USB:DATa:QUALifier?` might return `:TRIGGER:A:BUS:B1:USB:DATA:QUALIFIER EQUAL` indicating the qualifier is set to equal.

TRIGger:{A|B}:BUS:B<x>:USB:DATa:SIZe

This command specifies the number of contiguous data bytes to trigger on. The bus number is specified by <x>.

Conditions

Requires the SR-USB2 Serial Triggering and Analysis Application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:USB:DATa:SIZe <NR1>
TRIGger:{A|B}:BUS:B<x>:USB:DATa:SIZe?
```

Arguments

`<NR1>` is number in the range 1 to 16.

Examples

`TRIGGER:A:BUS:B1:USB:DATA:SIZE 4` sets the oscilloscope to trigger on four contiguous data bytes.

`TRIGGER:A:BUS:B1:USB:DATA:SIZE?` might return `:TRIGGER:A:BUS:B1:USB:DATA:SIZE 6` indicating that the oscilloscope will trigger on 6 contiguous data bytes.

TRIGger:{A|B}:BUS:B<x>:USB:DATa:TYPe

This command specifies the data type for a USB trigger. The bus number is specified by <x>.

Conditions

Requires the SR-USB2 Serial Triggering and Analysis Application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:USB:DATa:TYPe
{ANY|DATA0|DATA1|DATA2|MDATA}
TRIGger:{A|B}:BUS:B<x>:USB:DATa:TYPe?
```

Related Commands

TRIGger:{A|B}:BUS:B<x>:USB:CONDition

Arguments

`ANY` indicates either a DATA0 or DATA1 data packet type.

`DATA0` indicates a DATA0 data packet type.

`DATA1` indicates a DATA1 data packet type.

`DATA2` indicates a DATA2 data packet type when on HIGH speed.

`MDATA` indicates a MDATA data packet type when on HIGH speed.

Examples

`TRIGGER:A:BUS:B1:USB:DATA:TYPE DATA0` sets the oscilloscope to trigger on a DATA0 data packet type.

`TRIGGER:A:BUS:B1:USB:DATA:TYPE?` might return `:TRIGGER:A:BUS:B1:USB:DATA:TYPE DATA1`, indicating that the data packet type is set to DATA1.

TRIGger:{A|B}:BUS:B<x>:USB:DATa:VALue

This command specifies the binary data string to be used when triggering on a USB trigger.

Conditions Requires the SR-USB2 Serial Triggering and Analysis Application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:USB:DATa:VALue <QString>
TRIGger:{A|B}:BUS:B<x>:USB:DATa:VALue?
```

Related Commands TRIGger:{A|B}:BUS:B<x>:USB:CONDition

Arguments `<QString>` within the range 00000000 to 11111111 (00 hex to FF hex).

Examples `TRIGGER:A:BUS:B1:USB:DATA:VALUE "00001000"` sets the binary address to 00001000 (08 hex).

`TRIGGER:A:BUS:B1:USB:DATA:VALUE?` might return `:TRIGGER:A:BUS:B1:USB:DATA:VALUE "01000000"`, which indicates that the binary address is 0100000 (40 hex).

TRIGger:{A|B}:BUS:B<x>:USB:ENDPoint:VALue

This command specifies the binary endpoint string to be used for the USB trigger. The bus number is specified by <x>.

Conditions Requires the SR-USB2 Serial Triggering and Analysis Application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:USB:ENDPoint:VALue <QString>
TRIGger:{A|B}:BUS:B<x>:USB:ENDPoint:VALue?
```

Related Commands TRIGger:{A|B}:BUS:B<x>:USB:CONDition

Arguments `<QString>` within the range 0000 to 1111 (00 hex to 0F hex).

Examples

`TRIGGER:A:BUS:B1:USB:ENDPOINT:VALUE "1000"` sets the binary address to 1000 (08 hex).

`TRIGGER:A:BUS:B1:USB:ENDPOINT:VALUE?` might return `:TRIGGER:A:BUS:B1:USB:ENDPOINT:VALUE "1001"`, which indicates that the binary address is 1001 (09 hex).

TRIGger:{A|B}:BUS:B<x>:USB:ERRType

This command specifies the error type to be used when the trigger condition is set to ERRor. The bus number is specified by <x>.

Conditions

Requires the SR-USB2 Serial Triggering and Analysis Application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:USB:ERRType
{PID|CRC5|CRC16|BITSTUFFing}
TRIGger:{A|B}:BUS:B<x>:USB:ERRType?
```

Related Commands

TRIGger:{A|B}:BUS:B<x>:USB:CONDition

Arguments

`PID` indicates the error type is set to packet ID.

`CRC5` indicates the error type is set to 5-bit CRC.

`CRC16` indicates the error type is set to 16-bit CRC.

`BITSTUFFing` indicates the error type is set to bit stuffing.

Examples

`TRIGGER:A:BUS:B1:USB:ERRTYPE PID` sets the error trigger condition to packet ID.

`TRIGGER:A:BUS:B1:USB:ERRTYPE?` might return `:TRIGGER:A:BUS:B1:USB:TYPE PID`, indicating the error trigger condition is packet ID.

TRIGger:{A|B}:BUS:B<x>:USB:HANDSHAKEType

This command specifies the handshake type for the USB trigger. The bus number is specified by <x>.

Conditions

Requires the SR-USB2 Serial Triggering and Analysis Application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:USB:HANDSHAKEType
{ANY|NAK|ACK|STALL|NYET}
TRIGger:{A|B}:BUS:B<x>:USB:HANDSHAKEType?
```

Related Commands

TRIGger:{A|B}:BUS:B<x>:USB:CONDition

Arguments

ANY indicates the oscilloscope will trigger on any handshake type.

NAK indicates the oscilloscope will trigger when a device cannot send or receive data.

ACK indicates the oscilloscope will trigger when a packet is successfully received.

STALL indicates the oscilloscope will trigger when a device requires intervention from the host.

NYET specifies the handshake type as No response Yet (0110).

Examples

TRIGGER:A:BUS:B1:USB:HANDSHAKETYPE ACK sets the handshake type to acknowledgement.

TRIGGER:A:BUS:B1:USB:HANDSHAKETYPE? might return :TRIGGER:A:BUS:B1:USB:HANDSHAKETYPE STALL, indicating that the handshake type is set to stall.

TRIGger:{A|B}:BUS:B<x>:USB:SOFFRAMENUMber

This command specifies the binary data string to be used for start of frame number, when the trigger condition is Token Packet and the token type is Start of Frame. The bus number is specified by <x>.

Conditions

Requires the SR-USB2 Serial Triggering and Analysis Application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:USB:SOFFRAMENUMber <QString>
TRIGger:{A|B}:BUS:B<x>:USB:SOFFRAMENUMber?
```

Related Commands

TRIGger:{A|B}:BUS:B<x>:USB:CONDition

Arguments

`<QString>` within the range 000 0000 0000 to 111 1111 1111 (000 hex to 7FF hex).

Examples

`TRIGGER:A:BUS:B1:USB:SOFFRAMENUMBER "00000001000"` sets the start of frame number to 00000001000 (008 hex).

`TRIGGER:A:BUS:B1:USB:SOFFRAMENUMBER?` might return `:TRIGGER:A:BUS:B1:USB:SOFFRAMENUMBER "00000001001"`, which indicates that the start of frame number is 00000001001 (009 hex).

TRIGger:{A|B}:BUS:B<x>:USB:SPECIALType

This command specifies the packet ID (PID) for the special packet. The bus number is specified by <x>.

Conditions

Requires the SR-USB2 Serial Triggering and Analysis Application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:USB:SPECIALType
{ANY|ERROr|PING|PREamble|RESERVed|SPLit}
TRIGger:{A|B}:BUS:B<x>:USB:SPECIALType?
```

Related Commands

TRIGger:{A|B}:BUS:B<x>:USB:CONDition

Arguments

`ANY` specifies the PID value as Any (XX00).

`ERROr` specifies the PID value as ERR (1100).

`PING` specifies the PID value as PING (0100).

`PREamble` specifies the PID value as PRE (1100).

`RESERVed` specifies the PID value as Reserved (0000).

`SPLit` specifies the PID value as Split (1000).

Examples

`TRIGGER:A:BUS1:USB:SPECIALTYPE PREAMBLE` sets the special packet type to preamble.

`TRIGGER:A:BUS1:USB:SPECIALTYPE?` might return `:TRIGGER:A:BUS1:USB:SPECIALTYPE PREAMBLE`, indicating that the special type is set to preamble.

TRIGger:{A|B}:BUS:B<x>:USB:SPLit:ET:VALue

When triggering on a high-speed USB split transaction, this command specifies the split transaction endpoint type value to trigger on. The bus number is specified by <x>.

Conditions Requires the SR-USB2 Serial Triggering and Analysis Application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:USB:SPLit:ET:VALue
{NOCARE|CONTRol|ISOchronous|BULK|INTERRUPT}
TRIGger:{A|B}:BUS:B<x>:USB:SPLit:ET:VALue?
```

Related Commands TRIGger:{A|B}:BUS:B<x>:USB:SPECIALType

Arguments

`NOCARE` — any endpoint type.

`CONTRol` — control endpoint type.

`ISOchronous` — isochronous endpoint type.

`BULK` — bulk endpoint type (BULK-IN or BULK-OUT).

`INTERRUPT` — interrupt endpoint type (Interrupt-IN).

Examples

`TRIGger:A:BUS:B1:USB:SPLit:ET:VALue iso` sets the endpoint type to trigger on to isochronous.

`TRIGger:A:BUS:B1:USB:SPLit:ET:VALue?` might return BULK, indicating that the bulk endpoint type has been specified to trigger on.

TRIGger:{A|B}:BUS:B<x>:USB:SPLit:HUB:VALue

When triggering on a high-speed USB split transaction, this command specifies the split transaction hub address value to trigger on. The trigger condition must be set to Special with packet type SPLIT. The value can be up to 7 characters long. The default is all X's (don't care). The bus number is specified by <x>.

Conditions Requires the SR-USB2 Serial Triggering and Analysis Application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:USB:SPLit:HUB:VALue <QString>
TRIGger:{A|B}:BUS:B<x>:USB:SPLit:HUB:VALue?
```

Related Commands

TRIGger:{A|B}:BUS:B<x>:USB:SPECIALType

Arguments

`QString` is a quoted string of up to 7 characters. The valid characters are 0 and 1.

Examples

`TRIGger:A:BUS:B1:USB:SPLit:HUB:VALue` "001010" sets the split transaction hub address to trigger on to 001010.

`TRIGger:A:BUS:B1:USB:SPLit:HUB:VALue?` might return XXXXXXX, indicating that the hub address value to trigger on doesn't matter.

TRIGger:{A|B}:BUS:B<x>:USB:SPLit:PORT:VALue

When triggering on a high-speed USB split transaction, this command specifies the split transaction port address value to trigger on. The trigger condition must be set to Special with a packet type SPLIT. The value can be up to 7 characters long. The default is all X's (don't care). The bus number is specified by <x>.

Conditions

Requires the SR-USB2 Serial Triggering and Analysis Application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:USB:SPLit:PORT:VALue <QString>
TRIGger:{A|B}:BUS:B<x>:USB:SPLit:PORT:VALue?
```

Related Commands

TRIGger:{A|B}:BUS:B<x>:USB:SPECIALType

Arguments

`QString` is a quoted string of up to 7 characters. The valid characters are 0 and 1.

Examples

`TRIGger:A:BUS:B1:USB:SPLit:PORT:VALue` "001010" sets the split transaction hub address to trigger on to 001010.

`TRIGger:A:BUS:B1:USB:SPLit:PORT:VALue?` might return XXXXXXX, indicating that the hub address value to trigger on doesn't matter.

TRIGger:{A|B}:BUS:B<x>:USB:SPLit:SC:VALue

When triggering on a high-speed USB split transaction, this command specifies whether to trigger on the start or complete phase of the split transaction, based on the Start/Complete bit field value. (0 = Start, 1 = Complete). The default is NOCARE. The bus number is specified by <x>.

Conditions Requires the SR-USB2 Serial Triggering and Analysis Application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:USB:SPLit:SC:VALue
{NOCARE|SSPLIT|CSPLIT}
TRIGger:{A|B}:BUS:B<x>:USB:SPLit:SC:VALue?
```

Related Commands TRIGger:{A|B}:BUS:B<x>:USB:SPECIALType

Arguments

`NOCARE` — trigger on either the start or complete phase of the split transaction.

`SSPLIT` — trigger on the start phase of the split transaction.

`CSPLIT` — trigger on the complete phase of the split transaction.

Examples

`TRIGger:A:BUS:B1:USB:SPLit:SC:VALue SSPLIT` specifies to trigger on the start phase of the split transaction.

`TRIGger:A:BUS:B1:USB:SPLit:SC:VALue?` might indicate NOCARE, specifying that it doesn’t matter whether to trigger on the start or complete phase of the split transaction.

TRIGger:{A|B}:BUS:B<x>:USB:SPLit:SE:VALue

When triggering on a high-speed USB split transaction, this command specifies the split transaction start/end bit value to trigger on. The bus number is specified by <x>.

NOTE. *The start and end bits are interpreted based on the type of split transaction:*

For Interrupt and control transactions, the S bit means Speed: 0 = Full Speed, 1 = Low Speed.

For bulk IN/OUT and isochronous IN start-split transactions, the S field must be 0.

For bulk/control IN/OUT, interrupt IN/OUT, and isochronous IN start-split transactions, the E field must be 0.

For full-speed isochronous OUT start-split transactions, the S (Start) and E (End) fields specify how the high-speed data payload corresponds to data for a full-speed data packet as shown below:

S E High-speed to Full-speed Data Relation

0 0 High-speed data is the middle of the full-speed data payload.

0 1 High-speed data is the end of the full-speed data payload.

1 0 High-speed data is the beginning of the full-speed data payload.

1 1 High-speed data is all of the full speed data payload.

Conditions Requires the SR-USB2 Serial Triggering and Analysis Application.

Group Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:USB:SPLit:SE:VALue
{NOCARE|FULLSPEED|LOWSPEED|ISOSTART|ISOMID|ISOEND|ISOALL}
```

```
TRIGger:{A|B}:BUS:B<x>:USB:SPLit:SE:VALue?
```

Related Commands TRIGger:{A|B}:BUS:B<x>:USB:SPECIALType

Arguments

`NOCARE` — any combination of S and E bits.

`FULLSPEED` — S bit = 0, E bit = 0.

`LOWSPEED` — S bit = 1, E bit = 0.

`ISOSTART` — S bit = 1, E bit = 0.

`ISOMID` — see note above.

`ISOEND` — see note above.

`ISOALL` — see note above.

Examples

`TRIGger:A:BUS:B1:USB:SPLit:SE:VALue ISOEND` specifies to trigger on the ISOEND split transaction value.

`TRIGger:A:BUS:B1:USB:SPLit:SE:VALue?` might return FULLSPEED.

TRIGger:{A|B}:BUS:B<x>:USB:TOKENType

This command specifies the token type for the USB trigger. The bus number is specified by <x>.

Conditions

Requires the SR-USB2 Serial Triggering and Analysis Application.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:B<x>:USB:TOKENType {ANY|SOF|OUT|IN|SETUP}
TRIGger:{A|B}:BUS:B<x>:USB:TOKENType?
```

Related Commands

TRIGger:{A|B}:BUS:B<x>:USB:CONDition

Arguments

`ANY` indicates any of the token types.

`SOF` indicates a SOF (start-of-frame) token type

`OUT` indicates an OUT token type.

`IN` indicates an IN token type.

`SETUP` indicates a SETUP token type.

Examples

`TRIGGER:A:BUS:B1:USB:TOKENTYPE SETUP` sets the token type to SETUP.

`TRIGGER:A:BUS:B1:USB:TOKENTYPE?` might return `:TRIGGER:A:BUS:B1:USB:TOKENTYPE SOF` if the token type is SOF.

TRIGger:{A|B}:BUS:SOUrce

This command sets or queries the source bus for a bus trigger.

Group

Trigger

Syntax

```
TRIGger:{A|B}:BUS:SOUrce B<x>
TRIGger:{A|B}:BUS:SOUrce?
```

Arguments

B<x> sets the selected source to the bus.

Examples

TRIGGER:A:BUS:SOURCE B2 sets the selected source for the bus trigger to Bus 2.

TRIGGER:A:BUS:SOURCE? might return TRIGGER:A:BUS:SOURCE B1, indicating that the selected source for the bus trigger is set to Bus 1.

TRIGger:{A|B}:EDGE:COUPling

This command sets or queries the type of coupling for the edge trigger. This command is equivalent to selecting Edge from the Trigger Type drop-down in the Trigger setup context menu, and choosing from the Coupling drop-down list.

Group

Trigger

Syntax

```
TRIGger:{A|B}:EDGE:COUPling {DC|HFRej|LFRej|NOISErej}
TRIGger:{A|B}:EDGE:COUPling?
```

Related Commands

TRIGger:{A|B}:EDGE:SOUrce, TRIGger:{A|B}:EDGE:SLOpe

Arguments

DC selects DC trigger coupling, which passes all input signals to the trigger circuitry.

HFRej coupling attenuates signals above 50 kHz before passing the signals to the trigger circuitry.

LFRej coupling attenuates signals below 80 kHz before passing the signals to the trigger circuitry.

NOISErej coupling provides stable triggering by increasing the trigger hysteresis. Increased hysteresis reduces the trigger sensitivity to noise but can require greater trigger signal amplitude.

Examples

TRIGGER:A:EDGE:COUPLING DC sets the A edge trigger coupling to DC.

TRIGGER:A:EDGE:COUPLING? might return :TRIGGER:A:EDGE:COUPLING DC, indicating that the A edge trigger coupling is set to DC.

TRIGger:{A|B}:EDGE:SLOpe

This command sets or queries the slope for the edge trigger. This command is equivalent to selecting Edge from the Trigger Type drop-down in the Trigger setup context menu, and then choosing the desired Slope. This command is also equivalent to pressing the front-panel Slope button.

Group Trigger

Syntax

```
TRIGger:{A|B}:EDGE:SLOpe {RISe|FALL|EITher}
TRIGger:{A|B}:EDGE:SLOpe?
```

Related Commands TRIGger:{A|B}:EDGE:SOUrce, TRIGger:{A|B}:EDGE:COUPling, TRIGger:B:STATE

Arguments `RISe` specifies to trigger on the rising or positive edge of a signal.

`FALL` specifies to trigger on the falling or negative edge of a signal.

`EITHER` specifies to trigger on either the rising or falling edge of a signal.

Examples `TRIGGER:A:EDGE:SLOPE RISE` sets the A edge trigger slope to positive, which triggers on the rising edge of the signal.

`TRIGGER:A:EDGE:SLOPE?` might return `:TRIGGER:A:EDGE:SLOPE FALL`, indicating that the A edge trigger slope is negative.

TRIGger:{A|B}:EDGE:SOUrce

This command sets or queries the source for the edge trigger. For instruments that have an Auxiliary Input (such as the MSO58LP), AUXiliary can be selected as trigger source.

Group Trigger

Syntax

```
TRIGger:{A|B}:EDGE:SOUrce {CH<x>|CH<x>_D<y>|LINE|AUXiliary}
TRIGger:{A|B}:EDGE:SOUrce?
```

Related Commands TRIGger:{A|B}:EDGE:SLOpe, TRIGger:{A|B}:EDGE:COUPling, TRIGger:B:STATE

Arguments `CH<x>` specifies an analog channel as the edge trigger source.

`CH<x>_D<y>` specifies a digital channel as the edge trigger source.

`LINE` specifies AC line voltage, and is a valid source when B trigger is inactive.

`AUXiliary` specifies the Auxiliary Input.

Examples

`TRIGGER:A:EDGE:SOURCE CH2` sets the A edge trigger source to input channel 2.

`TRIGGER:A:EDGE:SOURCE?` might return `:TRIGGER:A:EDGE:SOURCE CH1`, indicating that the A edge trigger source is set to input channel 1.

TRIGger:{A|B}:LEVel:CH<x>

This command sets or queries the CH<x> trigger level for an Edge, Pulse Width, Runt or Rise/Fall (Transition and Slew Rate) trigger when triggering on an analog channel waveform. Each channel can have an independent trigger level. The <x> is the channel number.

Group

Trigger

Syntax

```
TRIGger:{A|B}:LEVel:CH<x> <NR3>
TRIGger:{A|B}:LEVel:CH<x>?
```

Arguments

`<NR3>` specifies the trigger level in user units (usually volts).

Examples

`TRIGGER:A:LEVEL:CH1 1.5` sets the A trigger level for Channel 1 to 1.5 V.

`TRIGGER:A:LEVEL:CH2?` might return `:TRIGGER:A:LEVEL:CH2 1.3000E+00`, indicating that the A trigger level for Channel 2 is set to 1.3 V.

TRIGger:{A|B}:LOGIc:DELTatime

This command specifies or queries the Logic trigger delta time value. The time value is used as part of the Logic trigger condition to determine if the duration of a logic pattern meets the specified time constraints.

Group

Trigger

Syntax

```
TRIGger:{A|B}:LOGIc:DELTatime <NR3>
TRIGger:{A|B}:LOGIc:DELTatime?
```

Arguments

<NR3> the Logic trigger delta time value.

Examples `TRIGger:A:LOGIc:DELTatime 4.5e-9` sets the delta time to 4.5 ns.

`TRIGger:A:LOGIc:DELTatime?` might return `:TRIGGER:A:LOGIC:DELTATIME 4.0E-9` indicating the delta time is set to 4 ns.

TRIGger:{A|B}:LOGIc:FUNCtion

This command sets or queries the logical combination of the input channels for logic triggers. This command is equivalent to selecting Logic for the Trigger Type, and setting or viewing the Define Logic.

Group Trigger

Syntax

```
TRIGger:{A|B}:LOGIc:FUNCtion {AND|NANd|NOR|OR}
TRIGger:{A|B}:LOGIc:FUNCtion?
```

Arguments `AND` specifies to trigger if all conditions are true.

`NANd` specifies to trigger if any of the conditions are false.

`NOR` specifies to trigger if all conditions are false.

`OR` specifies to trigger if any of the conditions are true.

Examples `TRIGGER:A:LOGIC:FUNCTION AND` sets the logical combination of channels to be true when all conditions are true.

`TRIGGER:A:LOGIC:FUNCTION?` might return `:TRIGGER:A:LOGIC:FUNCTION NAND`, indicating that the instrument will trigger if the AND logic conditions are false.

TRIGger:{A|B}:LOGIc:INPut:CLOCk:SOUrce

This command specifies the channel to use as the clock source for logic trigger.

Group Trigger

Syntax

```
TRIGger:{A|B}:LOGIc:INPut:CLOCk:SOUrce {CH<x>|CH<x>_D<y>}

TRIGger:{A|B}:LOGIc:INPut:CLOCk:SOUrce?
```

Arguments

CH<x> specifies an analog channel as the clock source. Number of channels depends on instrument configuration.

CH<x>_D<y> specifies a digital channel as the clock source. Number of channels depends on instrument configuration.

Examples

`TRIGger:A:LOGIc:INPut:CLOCk:SOUrce CH3` sets the clock source to channel 3.

`TRIGger:A:LOGIc:INPut:CLOCk:SOUrce?` might return `:TRIGGER:A:LOGIC:INPUT:CLOCK:SOURCE CH3` indicating the clock source is set to channel 3.

TRIGger:{A|B}:LOGIc:POLarity

This command sets or queries the polarity for the clock channel when Use Clock Edge is set to Yes for Logic trigger type.

Group

Trigger

Syntax

```
TRIGger:{A|B}:LOGIc:POLarity {POSitive|NEGative|EIThe r}
TRIGger:{A|B}:LOGIc:POLarity?
```

Arguments

`NEGative` specifies negative polarity.

`POSITIVe` specifies positive polarity.

`EIThe r` specifies either polarity.

Examples

`TRIGger:A:LOGIc:POLarity EITHER` sets the polarity to either positive or negative.

`TRIGger:A:LOGIc:POLarity?` might return `:TRIGGER:A:LOGIC:POLARITY POSITIVE` indicating the polarity is set to positive.

TRIGger:{A|B}:LOGIc:USEClockedge

This command specifies whether or not Logic trigger type uses clock source.

Group

Trigger

Syntax

```
TRIGger:{A|B}:LOGIc:USEClockedge {OFF|ON|0|1}
TRIGger:{A|B}:LOGIc:USEClockedge?
```

Arguments

`ON` specifies that logic trigger type uses clock source.

`OFF` specifies that logic trigger type does not use clock source.

`<NR1>` = 0 specifies that logic trigger type does not use clock source; any other value uses clock source.

Examples

`TRIGger:A:LOGIc:USECLockedge OFF` specifies that the clock edge will not be used.

`TRIGger:A:LOGIc:USECLockedge?` might return `:TRIGGER:A:LOGIC:USECLOCKEDGE 1` indicating that the clock edge will be used.

TRIGger:{A|B}:LOGIc:WHEn

This command sets or queries the condition for generating an A or B logic trigger with respect to the defined input pattern. This command is equivalent to selecting Logic for Trigger Type, Use Clock Edge to No, and choosing a trigger condition from the Logic Pattern drop-down list.

Group

Trigger

Syntax

```
TRIGger:{A|B}:LOGIc:WHEn
{TRUe|FALSe|MOREThan|LESSThan|EQual| UNEQual}
TRIGger:{A|B}:LOGIc:WHEn?
```

Arguments

`TRUe` triggers on an input pattern that is true.

`FALSe` triggers on an input pattern that is false.

`MOREthan` triggers on an input pattern that is true for a time period greater than a user defined Time Limit (DELTatime) value.

`LESSthan` triggers on an input pattern that is true for a time period less than a user defined Time Limit (DELTatime) value.

`EQual` triggers on an input pattern that is true for a time period equal to a user defined Time Limit (DELTatime) value.

`UNEQual` triggers on an input pattern that is true for a time period not equal to a user defined Time Limit (DELTatime) value.

Examples

`TRIGger:A:LOGIc:WHEn EQual` specifies triggering when the input pattern is true for a time period equal to a user defined Time Limit value.

`TRIGger:A:LOGIc:WHEn?` might return `:TRIGGER:A:LOGIC:WHEN TRUE` indicating a trigger when the logic is true.

TRIGger:{A|B}:LOGICPattern:{CH<x>|CH<x>_D<x>}

This command sets or queries the Logic Pattern that is used along with the Define Logic choice (LOGIc:FUNCtion) to determine when the logic trigger occurs.

Group

Trigger

Syntax

```
TRIGger:{A|B}:LOGICPattern:{CH<x>|CH<x>_D<x>} {HIGH|LOW|X}
TRIGger:{A|B}:LOGICPattern:{CH<x>|CH<x>_D<x>}?
```

Arguments

`HIGH` specifies the logic high.

`LOW` specifies the logic low.

`X` specifies a don't care state.

Examples

`TRIGger:A:LOGICPattern:CH1 HIGH` specifies triggering on a logic high.

`TRIGger:A:LOGICPattern:CH1?` might return `:TRIGGER:A:LOGICPATTERN:CH1 X` indicating a don’t care state for channel 1.

`TRIGger:A:LOGICPattern:CH1_D0 HIGH` specifies a logic high.

`TRIGger:A:LOGICPattern:CH1_D0?` might return `:TRIGGER:A:LOGICPATTERN:CH1_D0 X` indicating a don’t care.

TRIGger:{A|B}:LOWerthreshold:CH<x>

This command sets or queries the A or B lower trigger level threshold for the channel, specified by x.

Group

Trigger

Syntax

```
TRIGger:{A|B}:LOWerthreshold:CH<x> <NR3>
TRIGger:{A|B}:LOWerthreshold:CH<x>?
```

Related Commands

TRIGger:{A|B}:UPPerthreshold:CH<x>

Arguments

`<NR3>` specifies the threshold voltage in user units.

Examples

`TRIGGER:A:LOWERTHRESHOLD:CH2 1.3` sets the A trigger threshold voltage for Channel 2 to 1.3 V.

`TRIGGER:A:LOWERTHRESHOLD:CH3?` might return `:TRIGGER:A:LOWERTHRESHOLD:CH3 1.2000E+00`, indicating that the A trigger threshold voltage for Channel 3 is 1.2 V.

TRIGger:{A|B}:PULSEWidth:HIGHLimit

This command specifies the upper limit to use, in seconds, when triggering on detection of a pulse whose duration is inside or outside a range of two values. (Use TRIGger:{A|B}:PULSEWidth:LOWLimit to specify the lower value of the range.)

Group

Trigger

Syntax

```
TRIGger:{A|B}:PULSEWidth:HIGHLimit <NR3>
TRIGger:{A|B}:PULSEWidth:HIGHLimit?
```

Related Commands

TRIGger:{A|B}:PULSEWidth:WHEn, TRIGger:{A|B}:PULSEWidth:LOWLimit

Arguments

`<NR3>` is a floating point number that represents the higher value of the range.

Examples

`TRIGger:A:PULSEWidth:HIGHLimit 110.0E-9` sets the high limit to 110.0 ns.

`TRIGger:A:PULSEWidth:HIGHLimit?` might return `:TRIGGER:A:PULSEWIDTH:HIGHLIMIT 178.88000E-9` indicates the high limit is set to 178.88 ns.

TRIGger:{A|B}:PULSEWidth:LOGICQUALification

This command specifies whether or not to use logic qualification for a pulse width trigger.

Group

Trigger

Syntax

```
TRIGger:{A|B}:PULSEWidth:LOGICQUALification {ON|OFF}
TRIGger:{A|B}:PULSEWidth:LOGICQUALification?
```

Arguments

`ON` specifies that the pulse width trigger type uses logic qualification.

`OFF` specifies that the pulse width trigger type does not use logic qualification.

Examples

`TRIGger:A:PULSEWidth:LOGICQUALification ON` turns on logic qualification.

`TRIGger:A:PULSEWidth:LOGICQUALification?` might return `:TRIGGER:A:PULSEWIDTH:LOGICQUALIFICATION OFF` indicating logic qualification is off.

TRIGger:{A|B}:PULSEWidth:LOWLimit

This command specifies the lower limit to use, in seconds, when triggering on detection of a pulse whose duration is inside or outside a range of two values. (Use TRIGger:{A|B}:PULSEWidth:HIGHLimit to specify the upper limit of the range.)

This command also specifies the single limit to use, in seconds, when triggering on detection of a pulse whose duration is less than, greater than, equal to, or not equal to this time limit.

Group

Trigger

Syntax

```
TRIGger:{A|B}:PULSEWidth:LOWLimit <NR3>
TRIGger:{A|B}:PULSEWidth:LOWLimit?
```

Related Commands

TRIGger:{A|B}:PULSEWidth:WHEn, TRIGger:{A|B}:PULSEWidth:HIGHLimit

Arguments

`<NR3>` is a floating point number that represents the lower value of the range.

Examples

`TRIGger:A:PULSEWidth:LOWLimit 100.0E-9` sets the low limit to 100.0 ns.

`TRIGger:A:PULSEWidth:HIGHLimit?` might return :TRIGGER:A:PULSEWIDTH:LOWLIMIT 77.7600E-9 indicating the low limit is set to 77.76 ns.

TRIGger:{A|B}:PULSEWidth:POLarity

This command specifies the polarity for a pulse width trigger.

Group

Trigger

Syntax

```
TRIGger:{A|B}:PULSEWidth:POLarity {NEGative|POSitive}
TRIGger:{A|B}:PULSEWidth:POLarity?
```

Arguments

`NEGative` specifies a negative pulse.

`POSitive` specifies a positive pulse.

Examples

`TRIGger:A:PULSEWidth:POLarity NEGATIVE` sets the pulse polarity to negative.

`TRIGger:A:PULSEWidth:POLarity?` might return `:TRIGGER:A:WIDTH:POLARITY POSITIVE` indicating a positive pulse.

TRIGger:{A|B}:PULSEWidth:SOUrce

This command specifies the source waveform for a pulse width trigger.

Group

Trigger

Syntax

```
TRIGger:{A|B}:PULSEWidth:SOUrce {CH<x>|CH<x>_D<y>}
TRIGger:{A|B}:PULSEWidth:SOUrce?
```

Arguments

`CH<x>` specifies an analog input channel as the pulse-width trigger source.

`CH<x>_D,y>` specifies an digital input channel as the pulse-width trigger source.

Examples

`TRIGGER:A:PULSEWIDTH:SOURCE CH1` sets channel 1 as the pulse width source.

`TRIGGER:A:PULSEWIDTH:SOURCE?` might return `:TRIGGER:A:PULSEWIDTH:SOURCE CH1` indicating that channel 1 is the pulse width trigger source.

TRIGger:{A|B}:PULSEWidth:WHEn

This command specifies to trigger when a pulse is detected with a width (duration) that is less than, greater than, equal to, or unequal to a specified value (set using TRIGger:{A|B}:PULSEWidth:LOWLimit), OR whose width falls outside of or within a specified range of two values (set using TRIGger:{A|B}:PULSEWidth:LOWLimit and TRIGger:{A|B}:PULSEWidth:HIGHLimit).

Group

Trigger

Syntax

```
TRIGger:{A|B}:PULSEWidth:WHEn
{LESSthan|MOREthan|EQual|UNEQual|WIThin|OUTside}
TRIGger:{A|B}:PULSEWidth:WHEn?
```

Related Commands

TRIGger:{A|B}:PULSEWidth:LOWLimit

TRIGger:{A|B}:PULSEWidth:HIGHLimit

TRIGger:{A|B}:PULSEWidth:SOUrce

Arguments

`LESSthan` causes a trigger when a pulse is detected with a width less than the time set by the TRIGger:{A|B}:PULSEWidth:LOWLimit command.

`MOREthan` causes a trigger when a pulse is detected with a width greater than the time set by the TRIGger:{A|B}:PULSEWidth:LOWLimit command.

`EQual` causes a trigger when a pulse is detected with a width equal to the time period specified in TRIGger:{A|B}:PULSEWidth:LOWLimit within a ±5% tolerance.

`UNEQual` causes a trigger when a pulse is detected with a width greater than or less than (but not equal) the time period specified in TRIGger:{A|B}:PULSEWidth:LOWLimit within a ±5% tolerance.

`WIThin` causes a trigger when a pulse is detected that is within a range set by two values.

`OUTside` causes a trigger when a pulse is detected that is outside of a range set by two values.

Examples

`:TRIGger:B:PULSEWidth:WHEn LESSthan` causes the oscilloscope to trigger when a pulse is detected that is shorter than the time specified by TRIGger:{A|B}:PULSEWidth:LOWLimit.

TRIGger:A:PULSEWidth:WIDth? might return `:TRIGGER:A:PULSEWIDTH:WHEN GREATER THAN 2.0000E-9` indicating that a trigger is generated when a pulse is detected greater than 2 ns.

`:TRIGger:B:PULSEWidth:WHEn?` might return `:TRIGger:B:PULSEWidth:WHEn MOREthan` indicating that a trigger is generated when a pulse is detected that is greater than the time specified by TRIGger:{A|B}:PULSEWidth:LOWLimit.

TRIGger:{A|B}:RUNT:LOGICQUALification

This command specifies whether or not to use logic qualification for a runt trigger.

Group Trigger

Syntax

```
TRIGger:{A|B}:RUNT:LOGICQUALification {ON|OFF}
TRIGger:{A|B}:RUNT:LOGICQUALification?
```

Arguments `ON` specifies that the runt trigger type uses logic qualification.

`OFF` specifies that the runt trigger type does not use logic qualification.

Examples `TRIGger:A:RUNT:LOGICQUALification ON` turns on logic qualification.

`TRIGger:A:RUNT:LOGICQUALification?` might return `:TRIGGER:A:RUNT:LOGICQUALIFICATION OFF` indicating logic qualification is off.

TRIGger:{A|B}:RUNT:POLarity

This command specifies the polarity for the runt trigger.

Group Trigger

Syntax

```
TRIGger:{A|B}:RUNT:POLarity {EITher|NEGative|POSitive}
TRIGger:{A|B}:RUNT:POLarity?
```

Arguments `POSitive` indicates that the rising edge crosses the low threshold and the falling edge recrosses the low threshold without either edge ever crossing the high threshold.

`NEGative` indicates that the falling edge crosses the high threshold and the rising edge recrosses the high threshold without either edge ever crossing the low threshold.

`EITher` triggers on a runt of either polarity.

Examples `TRIGger:A:RUNT:POLarity NEGATIVE` specifies that the polarity of the A pulse runt trigger is negative.

`TRIGger:A:RUNT:POLarity?` might return `:TRIGGER:A:RUNT:POLARITY POSITIVE` indicating that the polarity of the A pulse runt trigger is positive.

TRIGger:{A|B}:RUNT:SOUrce

This command specifies the source waveform for the runt trigger.

***NOTE.** Digital channels are not supported as runt trigger sources.*

Group

Trigger

Syntax

```
TRIGger:{A|B}:RUNT:SOUrce {CH<x>}
TRIGger:{A|B}:RUNT:SOUrce?
```

Arguments

`CH<x>` specifies the analog channel number to use as the source waveform for the runt trigger. To specify the threshold levels when using CH<x> as the source, use TRIGger:{A|B}:LOWerthreshold:CH<x> and TRIGger:{A|B}:UPPerthreshold:CH<x>.

Examples

`TRIGger:A:RUNT:SOUrce CH4` sets channel 4 as the trigger source.

`TRIGger:A:RUNT:SOUrce?` might return `:TRIGGER:A:RUNT:SOURCE CH2` indicating that channel 2 is the trigger source.

TRIGger:{A|B}:RUNT:WHEn

This command specifies the type of pulse width the trigger checks for when it detects a runt.

Group

Trigger

Syntax

```
TRIGger:{A|B}:RUNT:WHEn
{LESSthan|MOREthan|EQual|UNEQual|OCCURS}
TRIGger:{A|B}:RUNT:WHEn?
```

Related Commands

TRIGger:{A|B}:RUNT:WIDth

Arguments

`OCCURS` argument specifies a trigger event if a runt of any detectable width occurs.

`LESSthan` argument sets the oscilloscope to trigger if the a runt pulse is detected with width less than the time set by the TRIGger:{A|B}:RUNT:WIDth command.

`MOREthan` argument sets the oscilloscope to trigger if the a runt pulse is detected with width greater than the time set by the TRIGger:{A|B}:RUNT:WIDth command.

`EQual` argument sets the oscilloscope to trigger if a runt pulse is detected with width equal to the time period specified in TRIGger:{A|B}:RUNT:WIDth within a ±5% tolerance.

`NOTEQual` argument sets the oscilloscope to trigger if a runt pulse is detected with width greater than or less than (but not equal to) the time period specified in TRIGger:{A|B}:RUNT:WIDth within a ±5% tolerance.

Examples

`TRIGger:A:RUNT:WHEn MORETHAN` sets the runt trigger to occur when the oscilloscope detects a runt in a pulse wider than the specified width.

`TRIGger:A:RUNT:WHEn?` might return `:TRIGGER:A:PULSE:RUNT:WHEN OCCURS` indicating that a runt trigger will occur if the oscilloscope detects a runt of any detectable width.

TRIGger:{A|B}:RUNT:WIDth

This command specifies the width, in seconds, for a runt trigger.

Group

Trigger

Syntax

```
TRIGger:{A|B}:RUNT:WIDth <NR3>
TRIGger:{A|B}:RUNT:WIDth?
```

Related Commands

TRIGger:{A|B}:RUNT:WHEn

Arguments

`<NR3>` is a floating point number that specifies the minimum width, in seconds.

Examples

`TRIGger:A:RUNT:WIDth 15E-6` sets the minimum width of the pulse runt trigger to 15 µs.

`TRIGger:A:RUNT:WIDth?` might return `:TRIGGER:A:PULSE:RUNT:WIDTH 2.0000E-09` indicating that the minimum width of a pulse runt trigger is 2 ns.

TRIGger:{A|B}:SETHold:CLOCk:EDGE

This command specifies the clock edge polarity for setup and hold triggering.

Group

Trigger

Syntax

```
TRIGger:{A|B}:SETHold:CLOCk:EDGE {FALL|RISe}
TRIGger:{A|B}:SETHold:CLOCk:EDGE?
```

Arguments

`FALL` specifies polarity as the clock falling edge.

`RISe` specifies polarity as the clock rising edge.

Examples

`TRIGger:A:SETHold:CLOCk:EDGE RISE` specifies the polarity as the clock rising edge.

`TRIGger:A:SETHold:CLOCk:EDGE?` might return `:TRIGGER:A:SETHOLD:CLOCK:EDGE RISE` indicating that polarity is specified as the clock rising edge.

TRIGger:{A|B}:SETHold:CLOCk:SOUrce

This command specifies the clock source for the setup and hold triggering. You cannot specify the same source for both clock and data.

Group

Trigger

Syntax

```
TRIGger:{A|B}:SETHold:CLOCk:SOUrce {CH<x>|CH<x>_D<y>}
TRIGger:{A|B}:SETHold:CLOCk:SOUrce?
```

Arguments

`CH<x>` specifies the analog channel to use as the clock source waveform.

`CH<x>_D<y>` specifies the digital channel to use as the clock source waveform.

Examples

`TRIGger:A:SETHold:CLOCk:SOUrce CH1` specifies channel 1 as the clock source for a setup and hold trigger operation.

`TRIGger:A:SETHold:CLOCk:SOUrce?` might return `:TRIGGER:A:SETHOLD:CLOCK:SOURCE CH4` indicating that channel 4 is the clock source for a setup and hold trigger operation.

TRIGger:{A|B}:SETHold:HOLDTime

This command specifies the hold time for setup and hold violation triggering. This command is equivalent to selecting Setup/Hold Setup from the Trig menu and then setting the desired Hold Time.

Group

Trigger

Syntax

```
TRIGger:{A|B}:SETHold:HOLDTime <NR3>
TRIGger:{A|B}:SETHold:HOLDTime?
```

Arguments

`<NR3>` is a floating point number that specifies the hold time setting, in seconds. Positive values for hold time occur after the clock edge. Negative values occur before the clock edge.

Examples

`TRIGger:A:SETHold:HOLDTime 3.0E-3` sets the hold time for the setup and hold trigger to 3 ms.

`TRIGger:A:SETHold:HOLDTime?` might return `:TRIGGER:A:SETHOLD:HOLDTIME 2.0000E-09` indicating that the current hold time for the setup and hold trigger is 2 ns.

TRIGger:{A|B}:SETHold:SETTime

This command specifies the setup time for setup and hold violation triggering. This command is equivalent to selecting Setup/Hold Setup from the Trig menu and then setting the desired Setup Time.

Group

Trigger

Syntax

```
TRIGger:{A|B}:SETHold:SETTime <NR3>
TRIGger:{A|B}:SETHold:SETTime?
```

Arguments

`<NR3>` is a floating point number that specifies the setup time for setup and hold violation triggering.

Examples

`TRIGger:A:SETHold:SETTime 3.0E-6` specifies that the current setup time for setup and hold trigger is 3 µs.

`TRIGger:A:SETHold:SETTime?` might return `:TRIGGER:A:LOGIC:SETHOLD:SETTIME 2.0000E-09` indicating that the current setup time for setup and hold trigger is 2 ns.

TRIGger:{A|B}:SETHOLDLogicval:{CH<x>|CH<x>_D<x>}

This command sets or queries whether the specified channel is included (INCLude) or not included (DONTInclude) in the Setup & Hold trigger input configuration. The channel number is specified by <x>.

Group Trigger

Syntax

```
TRIGger:{A|B}:SETHOLDLogicval:{CH<x>|CH<x>_D<x>}
{INCLude|DONTInclude}
TRIGger:{A|B}:SETHOLDLogicval:{CH<x>|CH<x>_D<x>}?
```

Arguments

`INCLude` specifies including the specified channel in the Setup & Hold trigger input configuration.

`DONTInclude` specifies not including the specified channel in the Setup & Hold trigger input configuration.

Examples

`TRIGger:A:SETHOLDLogicval:CH1 INCLUDE` specifies including the specified channel in the Setup & Hold trigger input configuration.

`TRIGger:A:SETHOLDLogicval:CH1?` might include `:TRIGGER:A:SETHOLDLOGICVAL:CH1 DONTINCLUDE` indicating not to include the channel in the configuration.

`TRIGger:A:SETHOLDLogicval:CH1_D0` include specifies including the specified channel in the setup and hold trigger input configuration.

`TRIGger:A:SETHOLDLogicval:CH1_D0?` might return `:TRIGGER:A:SETHOLDLOGICVAL:CH1_D0 DONTINCLUDE` indicating the channel will not be included in the configuration.

TRIGger:{A|B}:TIMEOut:LOGICQUALification

This command specifies whether or not to use logic qualification for a timeout trigger.

Group Trigger

Syntax

```
TRIGger:{A|B}:TIMEOut:LOGICQUALification {ON|OFF}
TRIGger:{A|B}:TIMEOut:LOGICQUALification?
```

Arguments

`ON` specifies that the timeout trigger type uses logic qualification.

`OFF` specifies that the timeout trigger type does not use logic qualification.

Examples

`TRIGger:A:TIMEOut:LOGICQUALification ON` specifies using logic qualification.

`TRIGger:A:TIMEOut:LOGICQUALification?` might include `:TRIGGER:A:TIMEOUT:LOGICQUALIFICATION OFF` indicating that logic qualification is off.

TRIGger:{A|B}:TIMEOut:POLarity

When triggering using the `TIMEOut` trigger type, this commands specifies the polarity to be used.

Group Trigger

Syntax

```
TRIGger:{A|B}:TIMEOut:POLarity {STAYSHigh|STAYSLow|EIther}
TRIGger:{A|B}:TIMEOut:POLarity?
```

Related Commands TRIGger:{A|B}:TIMEOut:SOUrce

TRIGger:{A|B}:TIMEOut:TIMe

Arguments STAYSHigh — Trigger when the signal stays high during the timeout time specified by the command TRIGger:{A|B}:TIMEOut:TIMe.

STAYSLow — Trigger when the signal stays low during the timeout time specified by the command TRIGger:{A|B}:TIMEOut:TIMe.

EIther — Trigger when the signal is either high or low during the timeout time specified by the command TRIGger:{A|B}:TIMEOut:TIMe.

Examples `TRIGger:A:TIMEOut:POLarity STAYSHigh` specifies to trigger when the signal stays high during the timeout time when triggering using the TIMEOut trigger type.

`TRIGger:A:TIMEOut:POLarity?` might return EITHER, indicating that the signal stays either high or low during the timeout time.

TRIGger:{A|B}:TIMEOut:SOUrce

When triggering using the `TIMEOut` trigger type, this command specifies the source. The available sources are live channels and digital channels. The default is channel 1. The timeout trigger type is selected using TRIGger:{A|B}:TYPe TIMEOut.

Group Trigger

Syntax
```
TRIGger:{A|B}:TIMEOut:SOUrce {CH<x>|CH<x>_D<y>}
TRIGger:{A|B}:TIMEOut:SOUrce?
```

Related Commands

SEARCH:SEARCH<x>:TRIGger:A:TIMEOut:SOUrce

TRIGger:{A|B}:TIMEOut:TIMe

TRIGger:{A|B}:TIMEOut:POLarity

Arguments

`CH<x>` specifies an analog channel as the timeout trigger source.

`CH<x>_D<y>` specifies a digital channel as the timeout trigger source.

Examples

`TRIGger:A:TIMEOut:SOUrce CH4` specifies to use channel 4 as the source for the timeout trigger.

`TRIGger:A:TIMEOut:SOUrce?` might return CH1, indicating that channel 1 has been set as the source for the timeout trigger.

TRIGger:{A|B}:TIMEOut:TIMe

When triggering using the `TIMEOut` trigger type, this command specifies the timeout time, in seconds. This command is equivalent to selecting Timeout from the Trig menu and setting a value for Time Limit. The timeout trigger type is selected using TRIGger:{A|B}:TYPe TIMEOut

Group

Trigger

Syntax
```
TRIGger:{A|B}:TIMEOut:TIMe <NR3>
TRIGger:{A|B}:TIMEOut:TIMe?
```

Related Commands

TRIGger:{A|B}:TIMEOut:POLarity

TRIGger:{A|B}:TIMEOut:SOUrce

Arguments

`<NR3>` is a floating point number that specifies the timeout time, in seconds.

Examples

`:TRIGger:A:TIMEOut:TIMe 4.0E-9` specifies the timeout time of 4.0 nsec.

`:TRIGger:A:TIMEOut:TIMe?` might return 8.0000E-9.

TRIGger:{A|B}:TRANsition:DELTatime

This command specifies the delta time (that is Time Limit) used in calculating the transition value for the transition (that is Rise or Fall Time) trigger.

Group Trigger

Syntax

```
TRIGger:{A|B}:TRANsition:DELTatime <NR3>
TRIGger:{A|B}:TRANsition:DELTatime?
```

Arguments `<NR3>` is a floating point number that specifies the delta time, in seconds.

Examples `TRIGGER:A:TRANSITION:DELTATIME 15E-6` sets the delta time of the transition trigger to 15 µs.

`TRIGGER:A:TRANSITION:DELTATIME?` might return `:TRIGGER:A:TRANSITION:DELTATIME 2.0000E-09` indicating that the delta time of the transition trigger is set to 2 ns.

TRIGger:{A|B}:TRANsition:LOGICQUALification

This command specifies whether or not to use logic qualification for a transition trigger.

Group Trigger

Syntax

```
TRIGger:{A|B}:TRANsition:LOGICQUALification {ON|OFF}
TRIGger:{A|B}:TRANsition:LOGICQUALification?
```

Arguments `ON` specifies that the transition trigger type uses logic qualification.

`OFF` specifies that the transition trigger type does not use logic qualification.

Examples `TRIGger:A:TRANsition:LOGICQUALification ON` specifies using logic qualification.

`TRIGger:A:TRANsition:LOGICQUALification?` might return `:TRIGGER:A:TRANSITION:LOGICQUALIFICATION OFF` indicating logic qualification is off.

TRIGger:{A|B}:TRANsition:POLarity

This command specifies the polarity for the transition trigger.

Group

Trigger

Syntax

```
TRIGger:{A|B}:TRANsition:POLarity {EITher|NEGative|POSitive}
```

```
TRIGger:{A|B}:TRANsition:POLarity?
```

Arguments

`POSitive` indicates that a pulse edge must traverse from the lower (most negative) to higher (most positive) level for transition triggering to occur.

`NEGative` indicates that a pulse edge must traverse from the upper (most positive) to lower (most negative) level for transition triggering to occur.

`EITher` indicates either positive or negative polarity.

Examples

`TRIGGER:A:TRANSITION:POLARITY NEGATIVE` sets the transition polarity to negative.

`TRIGGER:A:TRANSITION:POLARITY?` might return `:TRIGGER:A:TRANSITION:POLARITY EITHER` indicating that the polarity can be either positive or negative.

TRIGger:{A|B}:TRANsition:SOUrce

This command specifies the source waveform for a transition trigger.

NOTE. *Digital channels are not supported as transition trigger sources.*

Group

Trigger

Syntax

```
TRIGger:{A|B}:TRANsition:SOUrce {CH<x>}
TRIGger:{A|B}:TRANsition:SOUrce?
```

Arguments

`CH<x>` specifies one of the analog channels to be used as the source for a transition trigger.

Examples

`TRIGGER:A:TRANSITION:SOURCE CH4` sets channel 4 as the source for the transition trigger.

`TRIGGER:A:TRANSITION:SOURCE?` might return `:TRIGGER:A:TRANSITION:SOURCE CH2` indicating that channel 2 is the source for the transition trigger.

TRIGger:{A|B}:TRANsition:WHEn

This command specifies whether to check for a transitioning signal that is faster or slower than the specified delta time.

Group

Trigger

Syntax

```
TRIGger:{A|B}:TRANsition:WHEn {SLOWer|FASTer|EQual|UNEQual}
```

```
TRIGger:{A|B}:TRANsition:WHEn?
```

Arguments

`FASTer` sets the trigger to occur when the signal transition time is faster than the time set by `TRIGger:A:TRANsition:DELTatime`.

`SLOWer` sets the trigger to occur when the signal transition time is slower than the time set by.`TRIGger:A:TRANsition:DELTatime`.

`EQual` sets the trigger to occur when the signal transition time is equal to the time set by `TRIGger:A:TRANsition:DELTatime`.

`UNEQual` sets the trigger to occur when the signal transition time is not equal to the time set by `TRIGger:A:TRANsition:DELTatime`.

Examples

`TRIGGER:A:TRANSITION:WHEN SLOWER` sets the trigger to occur when the signal transition time is slower than the time set by the `TRIGger:A:TRANsition:DELTatime` command.

`TRIGGER:A:TRANSITION:WHEN?` might return `:TRIGGER:A:TRANSITION:WHEN FASTER`

TRIGger:{A|B}:TYPe

This command sets or queries the type of A or B trigger.

Group

Trigger

Syntax

```
TRIGger:{A|B}:TYPe {EDGE|WIDth|TIMEOut|RUNt|WINdow|LOGIc|
SETHold|TRANsition|BUS}
TRIGger:{A|B}:TYPe?
```

Arguments

EDGE is a normal trigger. A trigger event occurs when a signal passes through a specified voltage level in a specified direction and is controlled by the TRIGger:A:EDGE commands.

WIDth specifies that the trigger occurs when a pulse with a specified with is found.

TIMEOut specifies that a trigger occurs when a pulse with the specified timeout is found.

RUNt specifies that a trigger occurs when a pulse with the specified parameters is found.

WINdow specifies that a trigger occurs when a signal with the specified window parameters is found.

LOGIc specifies that a trigger occurs when specified conditions are met and is controlled by the TRIGger:{A|B}:LOGIc commands.

SETHold specifies that a trigger occurs when a signal is found that meets the setup and hold parameters.

Transition specifies that a trigger occurs when a specified pulse is found that meets the transition trigger parameters.

BUS specifies that a trigger occurs when a signal is found that meets the specified bus setup parameters.

Examples

TRIGGER:A:TYPE EDGE sets the A trigger type to EDGE.

TRIGGER:A:TYPE? might return :TRIGGER:A:TYPE RUNT indicating that the A trigger type is a runt trigger.

TRIGger:{A|B}:UPPerthreshold:CH<x>

This command sets or queries the specified channel upper trigger level. The CH<x> range is 1 to 8 and depends on the number of analog channels on your instrument.

Group

Trigger

Syntax

```
TRIGger:{A|B}:UPPerthreshold:CH<x> <NR3>
TRIGger:{A|B}:UPPerthreshold:CH<x>?
```

Related Commands

TRIGger:{A|B}:LOWerthreshold:CH<x>

Arguments

<NR3> specifies the trigger level in user units (usually volts).

Examples

`TRIGGER:A:UPPERTHRESHOLD:CH1 1.3` This command sets the A trigger level for Channel 1 to 1.3 V level.

`TRIGGER:A:UPPERTHRESHOLD:CH2?` might return `:TRIGGER:A:UPPERTHRESHOLD:CH2 1.3000E+00`, indicating that the A trigger level for Channel 2 is set to 1.3 V.

TRIGger:{A|B}:WINdow:CROSSIng

This command sets or queries the window trigger threshold crossing of the selected trigger source. The threshold crossing selection is only effective when :TRIGger:{A|B}:WINdow:WHEn is INSIDEGreater or OUTSIDEGreater.

Group

Trigger

Syntax

`TRIGger:{A|B}:WINdow:CROSSIng {UPPer|LOWer|EITher|NONe}`

Arguments

`UPPer` if `:TRIGger:{A|B}:WINdow:WHEn` is `INSIDEGreater`, the instrument triggers when the signal remains between the upper and lower thresholds for longer than the time limit (`:TRIGger:{A|B}:WINdow:WIDTH`) and then exits through the upper threshold. If `:TRIGger:{A|B}:WINdow:WHEn` is `OUTSIDEGreater`, the instrument triggers when the signal remains above the upper threshold for longer than the time limit (`:TRIGger:{A|B}:WINdow:WIDTH`) and then crosses downward through the upper threshold.

`LOWer` if `:TRIGger:{A|B}:WINdow:WHEn` is `INSIDEGreater`, the instrument triggers when the signal remains between the upper and lower thresholds for longer than the time limit (`:TRIGger:{A|B}:WINdow:WIDTH`) and then exits through the lower threshold. If `:TRIGger:{A|B}:WINdow:WHEn` is `OUTSIDEGreater`, the instrument triggers when the signal remains below the lower threshold for longer than the time limit (`:TRIGger:{A|B}:WINdow:WIDTH`) and then crosses upwards through the lower threshold.

`EITher` if `:TRIGger:{A|B}:WINdow:WHEn` is `INSIDEGreater`, the instrument triggers when the signal remains between the upper and lower thresholds for longer than the time limit (`:TRIGger:{A|B}:WINdow:WIDTH`) and then exits through either the upper or lower threshold. If `:TRIGger:{A|B}:WINdow:WHEn` is `OUTSIDEGreater`, the instrument triggers when the signal remains either above the upper threshold or below the lower threshold for longer than the time limit (`:TRIGger:{A|B}:WINdow:WIDTH`) and then crosses a threshold.

`NONe` if `:TRIGger:{A|B}:WINdow:WHEn` is `INSIDEGreater`, the instrument triggers when the signal remains between the upper and lower thresholds for longer than the time limit (`:TRIGger:{A|B}:WINdow:WIDTH`) without crossing through either the upper or lower threshold. If `:TRIGger:{A|B}:WINdow:WHEn` is `OUTSIDEGreater`, the instrument triggers when the signal remains outside the upper and lower thresholds for longer than the time limit (`:TRIGger:{A|B}:WINdow:WIDTH`) without crossing through either the upper or lower threshold.

Examples

`TRIGger:A:WINdow:CROSSIng LOWER` sets crossing to lower.

`TRIGger:A:WINdow:CROSSIng?` might return `:TRIGGER:A:WINDOW:CROSSING UPPER` indicating the crossing is set to upper.

TRIGger:{A|B}:WINdow:LOGICQUALification

This command specifies whether or not to use logic qualification for a window trigger.

Group

Trigger

Syntax

```
TRIGger:{A|B}:WINdow:LOGICQUALification {ON|OFF}
TRIGger:{A|B}:WINdow:LOGICQUALification?
```

Arguments

`ON` specifies that the window trigger type uses logic qualification.

`OFF` specifies that the window trigger type does not use logic qualification.

Examples

`TRIGger:A:WINdow:LOGICQUALification ON` turns on logic qualification.

`TRIGger:A:WINdow:LOGICQUALification?` might return `:TRIGGER:A:WINDOW:LOGICQUALIFICATION OFF` indicating logic qualification is off.?

TRIGger:{A|B}:WINdow:SOUrce

This command sets or queries the source for a window trigger.

NOTE. *Digital channels are not supported as window trigger sources.*

Group

Trigger

Syntax

```
TRIGger:{A|B}:WINdow:SOUrce {CH<x>}
TRIGger:{A|B}:WINdow:SOUrce?
```

Arguments The window trigger source channel.

Examples `TRIGger:A:WINdow:SOUrce CH2` sets the source to channel 2.

`TRIGger:A:WINdow:SOUrce?` might return `:TRIGGER:A:WINDOW:SOURCE CH3` indicating the source is channel 3.

TRIGger:{A|B}:WINdow:WHEn

This command sets or queries the window trigger event. This command is equivalent to selecting Window Setup from the Trig menu and selecting from the Window Trigger When box.

Group Trigger

Syntax

```
TRIGger:{A|B}:WINdow:WHEn {ENTERSWindow|EXITSWindow|
INSIDEGreater|OUTSIDEGreater}
TRIGger:{A|B}:WINdow:WHEn?
```

Arguments `OUTSIDEGreater` specifies a trigger event when the signal leaves the window defined by the threshold levels for the time specified by Width.

`INSIDEGreater` specifies a trigger event when the signal enters the window defined by the threshold levels for the time specified by Width.

`ENTERSWindow` specifies a trigger event when the signal enters the window defined by the threshold levels.

`EXITSWindow` specifies a trigger event when the signal leaves the window defined by the threshold levels.

Examples `TRIGger:A:WINdow:WHEn EXITSWINDOW` specifies a trigger event when the signal leaves the window defined by the threshold levels.

`TRIGger:A:WINdow:WHEn?` might return `:TRIGGER:A:WINDOW:WHEN ENTERSWINDOW` indicating a trigger when the signal enters the window.

TRIGger:{A|B}:WINdow:WIDth

This command sets or queries the minimum width for a window violation. This command is equivalent to selecting Window Setup from the Trig menu, selecting Inside > Limit or Outside > Limit in the Trigger When box, and setting the Time Limit.

Group Trigger

Syntax `TRIGger:{A|B}:WINdow:WIDth <NR3>`

Arguments `<NR3>` is the minimum width for a window violation.

Examples `TRIGger:A:WINdow:WIDTH 4.5e-9` sets the minimum width for a window violation to 4.5 ns.

`TRIGger:A:WINdow:WIDTH?` might return `:TRIGGER:A:WINDOW:WIDTH 4.0E-9` indicating that 4.0 ns is the minimum width for a window violation.

TRIGger:A:HOLDoff:BY

This command sets or queries the type of holdoff for the A trigger. Holdoff types are expressed as either user-specified time (TIMe) or by an internally calculated random time value (RANDom). This command is equivalent to selecting Mode & Holdoff from the Trig menu and then setting the Holdoff type.

Group Trigger

Syntax
```
TRIGger:A:HOLDoff:BY {TIMe|RANDom}
TRIGger:A:HOLDoff:BY?
```

Related Commands TRIGger:A:HOLDoff:TIMe

Arguments `TIMe` enables you to set the holdoff time via the TRIGger:A:HOLDoff:TIMe command.

`RANDom` specifies a random time value.

Examples `TRIGGER:A:HOLDOFF:BY TIME` sets the holdoff to the "by time" setting. This enables you to set the holdoff time.

`TRIGGER:A:HOLDOFF:BY?` might return `:TRIGGER:A:HOLDOFF:BY TIME`, indicating that you will set the holdoff time.

TRIGger:A:HOLDoff:TIMe

This command sets or queries the A trigger holdoff time. This command is equivalent to selecting Mode & Holdoff from the Trig menu, selecting Time, and then setting the desired Holdoff Time.

Group

Trigger

Syntax

```
TRIGger:A:HOLDoff:TIMe <NR3>
TRIGger:A:HOLDoff:TIMe?
```

Related Commands

TRIGger:A:HOLDoff:BY

Arguments

`<NR3>` specifies the holdoff time in seconds. The range is from 0 seconds through 10 seconds.

Examples

`TRIGGER:A:HOLDOFF:TIME 10` sets the A trigger holdoff time to 10 s.

`TRIGGER:A:HOLDOFF:TIME?` might return `:TRIGGER:A:HOLDOFFTIME 1.2000E-06`, indicating that the A trigger holdoff time is set to 1.2 µs.

TRIGger:A:LOGICQUALification

This command sets or queries the type of logic qualification to perform.

Group

Trigger

Syntax

```
TRIGger:A:LOGICQUALification {AND|OR|NAND|NOR}
TRIGger:A:LOGICQUALification?
```

Arguments

`AND` specifies to trigger if all conditions are true.

`NANd` specifies to trigger if any of the conditions are false.

`NOR` specifies to trigger if all conditions are false.

`OR` specifies to trigger if any of the conditions are true.

Examples

`TRIGGER:A:LOGICQUALIFICATION` OR specifies to trigger if any of the conditions are true.

`TRIGGER:A:LOGICQUALIFICATION?` might return `:TRIGGER:A:LOGICQUALIFICATION AND` indicating the instrument will trigger if all conditions are true.

TRIGger:A:MODe

This command sets or queries the A trigger mode. This command is equivalent to pushing the Mode button on the front panel.

Group Trigger

Syntax

```
TRIGger:A:MODe {AUTO|NORMal}
TRIGger:A:MODe?
```

Arguments `AUTO` generates a trigger if one is not detected within a specified time period.

`NORMal` waits for a valid trigger event.

Examples `TRIGGER:A:MODE NORMAL` sets the trigger mode to normal.

`TRIGGER:A:MODE?` might return `:TRIGGER:A:MODE AUTO`, indicating that the trigger mode is auto.

TRIGger:AUXLevel

For those instruments that have an Auxiliary Input (such as an MSO58LP), this command sets or queries the Auxiliary Input voltage level to use for an edge trigger.

Group Trigger

Syntax

```
TRIGger:AUXLevel {<NR3>|ECL|TTL}
TRIGger:AUXLevel?
```

Arguments `<NR3>` is trigger level in Volts.

`ECL` sets trigger level to -1.3 Volts.

`TTL` sets trigger level to 1.4 Volts.

Returns `<NR3>` is trigger level in Volts.

Examples `:TRIGger:AUXLevel 1.2` sets trigger level for the Auxiliary Input to 1.2 Volts.

TRIGger:B:BY

This command selects or returns whether the B trigger occurs after a specified number of events or a specified period of time after the A trigger.

Group Trigger

Syntax

```
TRIGger:B:BY {EVENTS|TIMe}
TRIGger:B:BY?
```

Related Commands TRIGger:B:EVENTS:COUNt, TRIGger:B:TIMe, TRIGger:B:STATE

Arguments `EVENTS` sets the B trigger to take place following a set number of trigger events after the A trigger occurs. The number of events is specified by `TRIGger:B:EVENTS:COUNt`.

`TIMe` sets the B trigger to occur a set time after the A trigger event. The time period is specified by `TRIGger:B:TIMe`.

Examples `TRIGGER:B:BY TIME` sets the B trigger to occur at a set time after the A trigger event.

`TRIGGER:B:BY?` might return `:TRIGGER:B:BY EVENTS`, indicating that the B trigger takes place following a set number of trigger events after the A trigger occurs.

TRIGger:B:EVENTS:COUNt

This command sets or queries the number of events that must occur before the B trigger. The B trigger event count applies only if TRIGger:B:BY is set to EVENTS.

Group Trigger

Syntax

```
TRIGger:B:EVENTS:COUNt <NR1>
TRIGger:B:EVENTS:COUNt?
```

Related Commands TRIGger:B:STATE

Arguments <NR1> is the number of B trigger events, which can range from 1 to 65,471.

Examples `TRIGGER:B:EVENTS:COUNT 4` sets the number of B trigger events to four.

`TRIGGER:B:EVENTS:COUNT?` might return `:TRIGGER:B:EVENTS:COUNT 2`, indicating that two events must occur after the A trigger before the B trigger can occur.

TRIGger:B:RESET (No Query Form)

This command sets the B reset trigger level to 50%.

Group Trigger

Syntax

```
TRIGger:B:RESET SETLevel
```

Arguments `SETLevel` sets the B reset trigger level to 50%.

Examples `TRIGger:B:RESET SETLevel` sets the B reset trigger level to 50%.

TRIGger:B:RESET:EDGE:COUPling

Sets or queries the trigger coupling for a sequential edge trigger reset when the Source is set to an analog channel.

Group Trigger

Syntax

```
TRIGger:B:RESET:EDGE:COUPling {DC|HFRej|LFRej|NOISErej}
TRIGger:B:RESET:EDGE:COUPling?
```

Related Commands

Arguments `DC` selects `DC` trigger coupling.

`HFRej` selects high frequency low sensitivity.

`LFRej` selects low frequency low sensitivity.

`NOISErej` selects `DC` low sensitivity.

Examples `TRIGGER:B:RESET:EDGE:COUPLING` HFREJ sets high frequency low sensitivity.

`TRIGGER:B:RESET:EDGE:COUPLING?` might return :TRIGGER:B:RESET:EDGE:COUPLING DC indicating DC trigger coupling is selected.

TRIGger:B:RESET:EDGE:LEVel

This command sets the voltage level to use for an Edge Reset trigger when triggering on an analog channel waveform.

Group Trigger

Syntax

```
TRIGger:B:RESET:EDGE:LEVel <NR3>
```

Arguments `<NR3>` is the voltage level to use for an Edge Reset trigger when triggering on an analog channel waveform.

Examples `TRIGGER:B:RESET:EDGE:LEVEL` 50.0e-3 sets the level to 50.0 mV.

`TRIGGER:B:RESET:EDGE:LEVEL?` might return :TRIGGER:B:RESET:EDGE:LEVEL 0.0E+0 indicating the level is set to 0.0 V.

TRIGger:B:RESET:EDGE:SLOpe

This command sets or queries the trigger slope for a sequential edge trigger reset.

Group Trigger

Syntax

```
TRIGger:B:RESET:EDGE:SLOpe {RISe|FALL|EITher}
TRIGger:B:RESET:EDGE:SLOpe?
```

Arguments `RISe` specifies to reset the trigger on the rising or positive edge of a signal.

`FALL` specifies to reset the trigger on the falling or negative edge of a signal.

`EITHER` specified to reset the trigger on either the rising or falling edge of a signal.

Examples `TRIGGER:B:RESET:EDGE:SLOPE` FALL specifies to reset the trigger on the falling or negative edge of a signal.

TRIGGER:B:RESET:EDGE:SLOPE? might return :TRIGGER:B:RESET:EDGE:SLOPE RISE indicating the instrument is set to reset the trigger on the rising or positive edge of a signal.

TRIGger:B:RESET:EDGE:SOUrce

This command sets or queries the trigger source for the A→B sequential edge trigger reset feature.

Group Trigger

Syntax

```
TRIGger:B:RESET:EDGE:SOUrce {CH<x>|CH<x>_D<y>}
TRIGger:B:RESET:EDGE:SOUrce?
```

Arguments The source channel for the trigger reset.

Examples TRIGGER:B:RESET:EDGE:SOURCE CH4 sets Channel 4 as the input source for the trigger reset.

TRIGGER:B:RESET:EDGE:SOURCE? might return :TRIGGER:B:RESET:EDGE:SOURCE CH1, indicating that the current input source for the trigger reset is Channel 1.

TRIGger:B:RESET:TIMEOut:TIMe

This command sets or queries the reset timer for a sequential timeout trigger reset.

Group Trigger

Syntax

```
TRIGger:B:RESET:TIMEOut:TIMe <NR3>
TRIGger:B:RESET:TIMEOut:TIMe?
```

Arguments <NR3> is the reset timer for a sequential timeout trigger reset.

Examples TRIGGER:B:RESET:TIMEOUT:TIME 100e-9 sets the time to 100 ns.

TRIGGER:B:RESET:TIMEOUT:TIME? might return :TRIGGER:B:RESET:TIMEOUT:TIME 20.0E-9 indicating the timeout time is set to 20 ns.

TRIGger:B:RESET:TYPe

This command sets or queries the type of A→B sequential trigger reset. If the B trigger reset is active, the reset criteria are part of the B triggering sequence. If the reset conditions defined by the reset type are met, the instrument must start over searching for a new occurrence of the A event.

You must identify a trigger Source and Threshold for each reset type, except for the Timeout trigger type.

NOTE. *If a reset condition occurs, the reset criteria itself is reset and must start over.*

Group

Trigger

Syntax

```
TRIGger:B:RESET:TYPe {NONe|TIMEOut|EDGE}
TRIGger:B:RESET:TYPe?
```

Arguments

`NONe` defeats the trigger reset feature.

`TIMEOut` initiates a reset if the timeout conditions specified by TRIGger:B:RESET:TIMEOut are met.

`EDGE` initiates a reset if the edge trigger conditions are met.

Examples

`TRIGGER:B:RESET:TYPE NONE` deactivates the sequential trigger reset.

`TRIGGER:B:RESET:TYPE?` This query might return `:TRIGGER:B:RESET:TYPe TIMEOUT`, indicating that the sequential trigger reset is active following a timeout.

TRIGger:B:STATE

This command sets or queries the state of B trigger activity. If the B trigger state is on, the B trigger is part of the triggering sequence. If the B trigger state is off, then only the A trigger causes the trigger event.

Group

Trigger

Syntax

```
TRIGger:B:STATE {ON|OFF|<NR1>}
TRIGger:B:STATE?
```

Related Commands

TRIGger:A:MODe

Arguments

ON indicates that the B trigger is active and causes trigger events with the A trigger.

OFF indicates that only the A trigger causes trigger events.

<NR1>

A 0 turns off the B trigger; any other value activates the B trigger.

Examples

TRIGGER:B:STATE ON sets the B trigger to active, making it capable of causing trigger events.

TRIGGER:B:STATE? might return :TRIGGER:B:STATE 0, indicating that the B trigger is inactive and that only the A trigger causes trigger events.

TRIGger:B:TIMe

This command sets or queries B trigger delay time, in seconds. The B Trigger time applies only if TRIGger:B:BY is set to TIMe.

Group

Trigger

Syntax

```
TRIGger:B:TIMe <NR3>
TRIGger:B:TIMe?
```

Related Commands

TRIGger:B:BY, TRIGger:B:EVENTS:COUNt TRIGger:B:STATE

Arguments

<NR3> is the B trigger delay time in seconds.

Examples

TRIGGER:B:TIME 4E-6 sets the B trigger delay time to 4 µs.

TRIGGER:B:TIME? might return :TRIGGER:B:TIME 16.0000E-9, indicating that the B trigger time is set to 16 ns.

TRIGger:STATE? (Query Only)

This query-only command returns the current state of the triggering system.

Group

Trigger

Syntax

```
TRIGger:STATE?
```

Related Commands TRIGger:A:MODe

Returns ARMED indicates that the instrument is acquiring pretrigger information.

AUTO indicates that the instrument is in the automatic mode and acquires data even in the absence of a trigger.

READY indicates that all pretrigger information is acquired and that the instrument is ready to accept a trigger.

SAVE indicates that the instrument is in save mode and is not acquiring data.

TRIGGER indicates that the instrument triggered and is acquiring the post trigger information.

Examples TRIGGER:STATE? might return :TRIGGER:STATE ARMED, indicating that the pretrigger data is being acquired.

*TST? (Query Only)

Tests (self-test) the interface and returns a 0.

Group Miscellaneous

Syntax *TST?

Examples *TST? always returns 0.

UNDO (No Query Form)

Reverts the instrument settings to a state before the previous command or user interface action.

Group Miscellaneous

Syntax UNDO

Examples UNDO reverts the instrument settings to a state before the previous command or user interface action.

UNLock (No Query Form)

This command (no query form) unlocks the front panel. The command is equivalent to LOCk NONe.

NOTE. *If the instrument is in the Remote With Lockout State (RWLS), the UNLock command has no effect. For more information, see the ANSI-IEEE Std 488.1-1987 Standard Digital Interface for Programmable Instrumentation, section 2.8.3 on RL State Descriptions.*

Group Miscellaneous

Syntax

```
UNLock ALL
```

Related Commands LOCk

Arguments `ALL` specifies that all front panel buttons and knobs are unlocked.

Examples `UNLOCK ALL` unlocks all front panel buttons and knobs.

USBDevice:CONFigure

This command may be used to configure the rear USB port to be off or enabled as a USBTMC device. Users should be cautious using this command via the USBTMC interface as a change to the configuration of this interface from a USBTMC device will cause USBTMC communication to cease. It is intended to be used via the Ethernet interface to control the USB device interface.

Group Miscellaneous

Syntax

```
USBDevice:CONFigure {DISabled|USBTmc}
USBDevice:CONFigure?
```

Arguments `DISabled` will disable the rear USB port.

`USBTmc` enables the rear USB port.

Examples

`USBDEVICE:CONFIGURE DISABLED` will disable the rear USB port.

`USBDEVICE:CONFIGURE?` might return `:USBDEVICE:CONFIGURE USBTMC` indicating the USB port is enabled.

VERBose

This command sets or queries the Verbose state that controls the length of keywords on query responses. Keywords can be both headers and arguments.

NOTE. *This command does not affect IEEE Std 488.2-1987 Common Commands (those starting with an asterisk).*

Group

Miscellaneous

Syntax

`VERBose {<NR1>|OFF|ON}`

Related Commands

HEADer, *LRN?, SET?

Arguments

`<NR1>` = 0 disables Verbose, any other value enables Verbose.

`OFF` sets the Verbose state to false, which returns minimum-length keywords for applicable setting queries.

`ON` sets the Verbose state to true, which returns full-length keywords for applicable setting queries.

A 0 returns minimum-length keywords for applicable setting queries; any other value returns full-length keywords.

Examples

`VERBOSE ON` sets the Verbose state to true and return the full length keyword for the applicable setting queries.

`VERBOSE?` might return `:VERBOSE OFF`, indicating that the Verbose state is set to false and return the minimum-length keywords for the applicable setting queries.

With `:HEADer ON` and `:VERBose ON`, the `:ACQuire:MODe?` query might return: `:ACQUIRE:MODE SAMPLE`

With `:HEADer ON` and `:VERBose OFF`, the `:ACQuire:MODe?` query might return: `:ACQ:MOD SAM`

With `:HEADer OFF` and `:VERBose ON`, the `:ACQuire:MODe?` query might return: `SAMPLE`

With `:HEADer OFF` and `:VERBose OFF`, the `:ACQuire:MODe?` query might return: `SAM`

VERTical:DESKew:FROM:CUSTOMPROPAgation

This command sets or queries a target (FROM) delay that you can specify when the propagation delay of the target (FROM) probe used for deskew cannot be detected automatically.

Group

Vertical

Syntax

```
VERTical:DESKew:FROM:CUSTOMPROPAgation <NR3>
VERTical:DESKew:FROM:CUSTOMPROPAgation?
```

Arguments

`<NR3>` is a target (FROM) delay that you can specify when the propagation delay of the target (FROM) probe used for deskew cannot be detected automatically.

Examples

`VERTICAL:DESKEW:FROM:CUSTOMPROPAGATION 0.25e-9` sets the custom delay to 250 ps.

`VERTICAL:DESKEW:FROM:CUSTOMPROPAGATION?` might return `:VERTICAL:DESKEW:FROM:CUSTOMPROPAGATION 0.0E+0` indicating the custom delay is 0.0 s.

VERTical:DESKEW:FROM:SOUrce

This command sets or queries the source channel for performing channel-to-channel deskew adjustment. Sources can be any of the analog channels.

Group

Vertical

Syntax

```
VERTical:DESKEW:FROM:SOUrce CH<x>
VERTical:DESKEW:FROM:SOUrce?
```

Arguments

The vertical deskew source.

Examples

`VERTICAL:DESKEW:FROM:SOURCE CH1` sets channel 1 as the from source.

`VERTICAL:DESKEW:FROM:SOURCE?` might return `:VERTICAL:DESKEW:FROM:SOURCE CH2` indicating channel 2 is the from source.

VERTical:DESKEW:STATIC (No Query Form)

This command executes static deskew using the deskew settings.

Group

Vertical

Syntax

`VERTical:DESKEW:STATIC EXECute`

Arguments

`EXECute` will execute static deskew using the deskew settings.

Examples

`VERTICAL:DESKEW:STATIC EXECUTE` will execute static deskew using the deskew settings.

VERTical:DESKew:TO:CUSTOMPROPAgation

This command sets or queries a target (TO) delay that can be specified by the user when the propagation delay of the target (TO) probe used for deskew cannot be detected automatically.

Group

Vertical

Syntax

`VERTical:DESKew:TO:CUSTOMPROPAgation <NR3>`

Arguments

`<NR3>` is a target (TO) delay that can be specified by the user when the propagation delay of the target (TO) probe used for deskew cannot be detected automatically.

Examples

`VERTICAL:DESKEW:TO:CUSTOMPROPAGATION 0.25e-9` sets the custom propagation to 250 ps.

`VERTICAL:DESKEW:TO:CUSTOMPROPAGATION?` might return `:VERTICAL:DESKEW:TO:CUSTOMPROPAGATION 0.0E+0` indicating the custom propagation is set to 0.0 ns.

VERTical:DESKEW:TO:SOUrce

This command sets or queries the target channel for performing channel-to-channel deskew adjustment. Target sources can be any of the live analog channels.

Group

Vertical

Syntax

```
VERTical:DESKEW:TO:SOUrce CH<x>
VERTical:DESKEW:TO:SOUrce?
```

Arguments

Arguments are the live analog channels.

Examples

`VERTICAL:DESKEW:TO:SOURCE CH4` sets the deskew to source is channel 4.

`VERTICAL:DESKEW:TO:SOURCE?` might return `:VERTICAL:DESKEW:TO:SOURCE CH2` indicating the deskew to source is channel 2.

*WAI (No Query Form)

The *WAI (Wait) command (no query form) prevents the instrument from executing further commands or queries until all pending commands that generate an OPC message are complete. This command allows you to synchronize the operation of the instrument with your application program. For more information, refer to Synchronization Methods.

Group

Status and Error

Syntax

```
*WAI
```

Related Commands

BUSY?, *OPC

Examples

`*WAI` prevents the instrument from executing any further commands or queries until all pending commands that generate an OPC message are complete.

WAVFrm? (Query Only)

This query-only command provides the Tektronix standard waveform query which returns the waveform preamble followed by the waveform data for the source specified by :DATa:SOUrce using the :DATa settings for encoding, width, and so forth.

Group Waveform Transfer

Syntax `WAVFrm?`

Related Commands CURVe, DATa:SOUrce, WFMOutpre?

Examples `WAVFRM?` might return the waveform data as: `:WFMOUTPRE:BIT_NR 8;BN_FMT RI;BYT_NR 1; BYT_OR MSB;ENCDG ASC;NR_PT 500;PT_FMT Y; PT_ORDER LINEAR;PT_OFF 0;XINCR 400.0000E-12; XZERO 0.0000;XUNIT "s";YMULT 4.0000E-3; YOFF 0.0000;YZERO 0.0000;YUNIT "V"; WFID "Ch1,DC coupling, 100.0mV/div, 200.0ns/div, 5000 points,Sampl mode"`.

WFMOutpre? (Query Only)

This query-only command queries the waveform formatting data for the waveform specified by the DATa:SOUrce command. The preamble components are considered to be of two types; formatting and interpretation. The formatting components are: ENCdg, BN_Fmt, BYT_Or, BYT_Nr, BIT_Nr. The interpretation components are derived from the `DATa:SOUrce` specified waveform.

Group Waveform Transfer

Syntax `WFMOutpre?`

Examples `WFMOUTPRE?` might return the waveform formatting data as: `:WFMOUTPRE:BYT_NR 2;BIT_NR 16;ENCDG BINARY;BN_FMT RI;BYT_OR MSB;WFID "Ch1, DC coupling, 200.0mV/div, 10.00us/div, 1250 points, Sample mode";NR_PT 1000;PT_FMT Y;XUNIT "s";XINCR 80.0000E-9;XZERO 0.0000;PT_OFF 625;YUNIT "V";YMULT 31.2500E-6;YOFF 0.0000;YZERO 0.0000;NR_FR 3`.

WFMOutpre:ASC_Fmt? (Query Only)

This query returns the format for ASCII data transferred from the instrument. No command form is provided as the format is determined by the data source type. Some waveforms are normalized vector data where the data points are 8-byte doubles in floating point format whereas other formats are 1-byte or 2-byte integers.

Group Waveform Transfer

Syntax `WFMOutpre:ASC_Fmt?`

Related Commands DATa:SOUrce, WFMOutpre:BN_Fmt, WFMOutpre:ENCdg

Returns `FP` represents floating point ASCII data. The waveforms are normalized vector data where the data points are 8-byte doubles in floating point format.

`INTEGER` represents signed integer ASCII data. The waveform data are 1-byte or 2-byte integers.

Examples `WFMOutpre:ASC_Fmt?` might return `:WFMOUTPRE:ASC_FMT INTEGER` indicating the ASCII format is integer.

WFMOutpre:BIT_Nr

This command sets and queries the number of bits per waveform point that outgoing waveforms contain, as specified by the DATa:SOUrce command. Note that values will be constrained according to the underlying waveform data. This specification is only meaningful when WFMOutpre:ENCdg is set to BIN and WFMOutpre:BN_Fmt is set to either RI or RP.

Group Waveform Transfer

Syntax

```
WFMOutpre:BIT_Nr <NR1>
WFMOutpre:BIT_Nr?
```

Related Commands DATa:SOUrce, WFMOutpre:BN_Fmt, WFMOutpre:ENCdg

Arguments `<NR1>` number of bits per data point can be 8 or 16.

Examples `WFMOUTPRE:BIT_NR 16` sets the number of bits per waveform point to 16 for incoming RI and RP binary format data.

`WFMOUTPRE:BIT_NR?` might return `:WFMOUTPRE:BIT_NR 8`, indicating that outgoing RI or RP binary format data uses 8 bits per waveform point.

WFMOutpre:BN_Fmt

This command sets or queries the format of binary data for outgoing waveforms specified by the DATa:SOUrce command.

Group

Waveform Transfer

Syntax

```
WFMOutpre:BN_Fmt {RI|RP|FP}
WFMOutpre:BN_Fmt?
```

Related Commands

DATa:SOUrce

Arguments

`RI` specifies signed integer data point representation.

`RP` specifies positive integer data point representation.

`FP` specifies floating point representation.

Examples

`WFMOUTPRE:BN_FMT FP` specifies that outgoing waveform data will be in single-precision binary floating point format.

`WFMOUTPRE:BN_FMT?` might return `:WFMOUTPRE:BN_FMT RI`, indicating that the outgoing waveform data is currently in signed integer format.

WFMOutpre:BYT_Nr

This command sets or queries the binary field data width (bytes per point) for the waveform specified by the DATa:SOUrce command. Note that values will be constrained according to the underlying waveform data. This specification is only meaningful when WFMOutpre:ENCdg is set to BIN, and WFMOutpre:BN_Fmt is set to either RI or RP.

Group

Waveform Transfer

Syntax

```
WFMOutpre:BYT_Nr <NR1>
WFMOutpre:BYT_Nr?
```

Related Commands

DATa:SOUrce, WFMOutpre:BN_Fmt, WFMOutpre:ENCdg

Arguments <NR1> is the number of bytes per data point and can be 1, 2 or 8. A value of 1 or 2 bytes per waveform point indicates channel data; 8 bytes per waveform point indicate pixel map (fast acquisition) data.

Examples WFMOUTPRE:BYT_NR 1 sets the number of bytes per outgoing waveform data point to 1, which is the default setting.

WFMOUTPRE:BYT_NR? might return :WFMOUTPRE:BYT_NR 2, indicating that there are 2 bytes per outgoing waveform data point.

WFMOutpre:BYT_Or

This command sets or queries which byte of binary waveform data is transmitted first, during a waveform data transfer, when data points require more than one byte. This specification only has meaning when WFMOutpre:ENCdg is set to BIN.

Group Waveform Transfer

Syntax

```
WFMOutpre:BYT_Or {LSB|MSB}
WFMOutpre:BYT_Or?
```

Related Commands WFMOutpre:ENCdg

Arguments LSB specifies that the least significant byte will be transmitted first.

MSB specifies that the most significant byte will be transmitted first.

Examples WFMOUTPRE:BYT_OR MSB sets the most significant outgoing byte of waveform data to be transmitted first.

WFMOUTPRE:BYT_OR? might return :WFMOUTPRE:BYT_OR LSB, indicating that the least significant data byte will be transmitted first.

WFMOutpre:DOMain? (Query Only)

This query eturns the domain of the outgoing waveform.

Group Waveform Transfer

Syntax

```
WFMOutpre:DOMain?
```

Related Commands DATa:SOUrce, WFMOutpre:BN_Fmt, WFMOutpre:ENCdg

Returns Returns the domain of the outgoing waveform.

Examples `WFMOUTPRE:DOMAIN?` might return `:WFMOUTPRE:DOMAIN TIME`, indicating that the outgoing waveform is time domain trace.

WFMOutpre:ENCdg

This command sets and queries the type of encoding for outgoing waveforms.

Group Waveform Transfer

Syntax

```
WFMOutpre:ENCdg {ASCii|BINary}
WFMOutpre:ENCdg?
```

Related Commands DATa:ENCdg, WFMOutpre:BYT_Nr, WFMOutpre:BYT_Or, WFMOutpre:BIT_Nr, WFMOutpre:BN_Fmt

Arguments `ASCii` specifies that the outgoing data is to be in `ASCII` format. Waveforms internally stored as integers will be sent as <NR1> numbers, while those stored as floating point will be sent as <NR3> numbers.

`BINary` specifies that outgoing data is to be in a binary format whose further specification is determined by WFMOutpre:BYT_Nr, WFMOutpre:BIT_Nr, WFMOutpre:BN_Fmt and WFMOutpre:BYT_Or.

Examples `WFMOUTPRE:ENCDG ASCii` specifies that the outgoing waveform data will be sent in ASCII format.

`WFMOUTPRE:ENCDG?` might return `:WFMOUTPRE:ENCDG BINary`, indicating that outgoing waveform data will be sent in binary format.

WFMOutpre:NR_Pt? (Query Only)

This query-only command returns the number of points for the DATa:SOUrce waveform that will be transmitted in response to a CURVe? query.

Group Waveform Transfer

Syntax `WFMOutpre:NR_Pt?`

Related Commands CURVe, DATa, DATa:STARt, DATa:STOP, SAVe:WAVEform, ,

Examples `WFMOUTPRE:NR_PT?` might return `:WFMOUTPRE:NR_PT 5000`, indicating that there are 5000 data points to be sent.

WFMOutpre:PT_Fmt? (Query Only)

This query-only command returns the point format for the waveform specified by the DATa:SOUrce command. The format specifies a set of equations describing how the scale factors in the preamble are used to give meaning to the CURVe data points.

An error is reported if the DATa:SOUrce waveform does not exist.

Group Waveform Transfer

Syntax `WFMOutpre:PT_Fmt?`

Related Commands CURVe, DATa:SOUrce

Examples `WFMOUTPRE:PT_FMT?` might return `:WFMOutpre:PT_Fmt ENV`, indicating that the waveform data is a series of min-max pairs.

WFMOutpre:PT_Off? (Query Only)

This query-only command returns the trigger point relative to DATa:STARt for the waveform specified by the DATa:SOUrce command.

***NOTE.** This returned value is the point immediately following the actual trigger.*

Group Waveform Transfer

Syntax `WFMOutpre:PT_Off?`

Related Commands DATa:SOUrce, DATa:STARt, WFMOutpre:XZEro?

Examples `WFMOUTPRE:PT_OFF?` might return `:WFMOUTPRE:PT_OFF 251` specifying that the trigger actually occurred between points 250 and 251.

WFMOutpre:WFId? (Query Only)

This query-only command returns a string describing several aspects of the acquisition parameters for the waveform specified by the DATa:SOUrce command.

An error is reported if the DATa:SOUrce waveform does not exist.

Group Waveform Transfer

Syntax `WFMOutpre:WFId?`

Related Commands DATa:SOUrce

Returns `<QString>` contains the following comma-separated fields documented in the following tables:

Table 2-46: Waveform Suffixes

Field	Description	Examples
Source	The source identification string as it appears in the front panel scale factor readouts.	"CH1–8" "Math<x> "Ref<x>"
Coupling	A string describing the vertical coupling of the waveform (the Source1 waveform in the case of Dual Waveform Math).	"AC coupling" "DC coupling" "GND coupling"
Vert Scale	A string containing the vertical scale factor of the unzoomed waveform. The numeric portion will always be four digits. The examples cover all known internal units.	"100.0 mV/div" "20.00 dB/div" "45.00 deg/div" "785.4 mrad/div" "500.0 μVs/div" "10.00 kV/s/div" "200.0 mV/div" "50.00 unk/div"
Horiz Scale	A string containing the horizontal scale factor of the unzoomed waveform. The numeric portion will always be four digits. The examples cover all known internal units.	"100 ms/div" "10.00 kHz/div" "50.00 c/div"

Table 2-46: Waveform Suffixes (cont.)

Field	Description	Examples
Record Length	A string containing the number of waveform points available in the entire record. The numeric portion is given as an integer.	"500 points" "500000 points"
Acquisition Mode	A string describing the mode used to acquire the waveform.	"Sample mode" "Pk Detect mode" "Hi Res mode" "Envelope mode" "Average mode"

Examples

`WFMOUTPRE:WFID?` might return `:WFMOUTPRE:WFID "Ch1, DC coupling,100.0mVolts/div,500.0µs/div,500 points, Hi Res mode"`.

WFMOutpre:XINcr? (Query Only)

This query-only command returns the horizontal point spacing in units of WFMOutpre:XUNit for the waveform specified by the DATa:SOUrce command. This value corresponds to the sampling interval.

An error is reported if the DATa:SOUrce waveform does not exist.

Group

Waveform Transfer

Syntax

```
WFMOutpre:XINcr?
```

Related Commands

DATa:SOUrce, WFMOutpre:XUNit?

Examples

`WFMOUTPRE:XINCR?` might return `:WFMOUTPRE:XINCR 10.0000E-6`, indicating that the horizontal sampling interval is 10 µs/point (500 µs/div).

WFMOutpre:XUNit? (Query Only)

This query-only command returns the horizontal units for the waveform specified by the DATa:SOUrce command.

An error is reported if the DATa:SOUrce waveform does not exist.

Group

Waveform Transfer

Syntax `WFMOutpre:XUNit?`

Related Commands DATa:SOUrce

Examples `WFMOUTPRE:XUNIT?` might return `:WFMOUTPRE:XUNIT "HZ"`, indicating that the horizontal units for the waveform are in Hertz.

WFMOutpre:XZEro? (Query Only)

This query-only command returns the sub-sample time between the trigger sample (designated by PT_OFF) and the occurrence of the actual trigger for the waveform specified by the DATa:SOUrce command. This value is in units of WFMOutpre:XUNit.

An error is reported if the DATa:SOUrce waveform does not exist.

NOTE. *During steady state operation, when all control changes have settled and triggers are arriving on a regular basis, this is the only part of the preamble that changes on each acquisition.*

Group Waveform Transfer

Syntax `WFMOutpre:XZEro?`

Related Commands DATa:SOUrce, WFMOutpre:XUNit?

Examples `WFMOUTPRE:XZERO?` might return `:WFMOUTPRE:XZERO 5.6300E-9`, indicating that the trigger actually occurred 5.63 ns before the trigger sample.

WFMOutpre:YMUlt? (Query Only)

This query-only command returns the vertical scale factor per digitizing level in units specified by WFMOutpre:YUNit for the waveform specified by the DATa:SOUrce command. For those formats in which WFMOutpre:BYT_Nr is important (all non-floating point formats), WFMOutpre:YMUlt? must take the location of the binary point implied by BYT_NR into consideration.

An error is reported if the DATa:SOUrce waveform does not exist.

Group Waveform Transfer

Syntax `WFMOutpre:YMUlt?`

Related Commands DATa:SOUrce

Examples `WFMOUTPRE:YMULT?` might return `:WFMOUTPRE:YMULT 4.0000E-3`, indicating that the vertical scale for the corresponding waveform is 100 mV/div.

WFMOutpre:YOFf? (Query Only)

This query-only command returns the vertical offset of the source specified by DATa:SOUrce. For this instrument family, the value returned is always 0.0 as the offset is combined with the :YZEro value.

An error is reported if the DATa:SOUrce waveform does not exist.

Group Waveform Transfer

Syntax `WFMOutpre:YOFf?`

Related Commands DATa:SOUrce, WFMOutpre:BYT_Nr

Examples `WFMOUTPRE:YOFF?` might return `:WFMOUTPRE:YOFF -50.0000E+0`, indicating that the position indicator for the waveform was 50 digitizing levels (2 divisions) below center screen.

WFMOutpre:YUNit? (Query Only)

This query-only command returns the vertical units for the waveform specified by the DATa:SOUrce command.

An error is reported if the DATa:SOUrce waveform does not exist.

Group Waveform Transfer

Syntax `WFMOutpre:YUNit?`

Related Commands DATa:SOUrce

Examples `WFMOUTPRE:YUNIT?` might return `:WFMOUTPRE:YUNIT "dB"`, indicating that the vertical units for the waveform are measured in decibels.

WFMOutpre:YZEro? (Query Only)

This query-only command returns the combined vertical position and offset for the source waveform specified by DATa:SOUrce. This represents a departure from previous instruments where the :VZEro value represented the vertical position in vertical units and the :VOFf value represented the vertical offset in digitizing levels. For this instrument family, the value of :YOFf is always 0.0.

An error is reported if the DATa:SOUrce waveform does not exist.

Group Waveform Transfer

Syntax `WFMOutpre:YZEro?`

Related Commands DATa:SOUrce, WFMOutpre:YUNit?

Examples `WFMOUTPRE:YZERO?` might return `:WFMOUTPRE:YZERO -100.0000E-3`, indicating that vertical offset is set to -100 mV.

Status and Events

The oscilloscope provides a status and event reporting system for the Ethernet and USB interfaces. This system informs you of certain significant events that occur within the oscilloscope.

The oscilloscope status handling system consists of five 8-bit registers and two queues for each interface. The remaining Status subtopics describe these registers and components. They also explain how the event handling system operates.

Registers

Overview

The registers in the event handling system fall into two functional groups:

- Status Registers contain information about the status of the oscilloscope. They include the Standard Event Status Register (SESR).
- Enable Registers determine whether selected types of events are reported to the Status Registers and the Event Queue. They include the Device Event Status Enable Register (DESER), the Event Status Enable Register (ESER), and the Service Request Enable Register (SRER).

Status Registers

The Standard Event Status Register (SESR) and the Status Byte Register (SBR) record certain types of events that may occur while the oscilloscope is in use. IEEE Std 488.2-1987 defines these registers.

Each bit in a Status Register records a particular type of event, such as an execution error or message available. When an event of a given type occurs, the oscilloscope sets the bit that represents that type of event to a value of one. (You can disable bits so that they ignore events and remain at zero. See Enable Registers). Reading the status registers tells you what types of events have occurred.

The Standard Event Status Register (SESR). The SESR records eight types of events that can occur within the oscilloscope. Use the *ESR? query to read the SESR register. Reading the register clears the bits of the register so that the register can accumulate information about new events.

NOTE. *TekVISA applications use SESR bit 6 to respond to any of several events, including some front panel actions.*

7	6	5	4	3	2	1	0
PON	URQ	CME	EXE	DDE	QYE	RQC	OPC

Figure 3-1: The Standard Event Status Register (SESR)

Table 3-1: SESR Bit Functions

Bit	Function	
7 (MSB)	PON	`Power On.` Shows that the oscilloscope was powered on. On completion, the diagnostic self tests also set this bit.
6	URQ	`User Request.` Indicates that an application event has occurred. *See note.
5	CME	`Command Error.` Shows that an error occurred while the oscilloscope was parsing a command or query.
4	EXE	`Execution Error.` Shows that an error executing a command or query.
3	DDE	`Device Error.` Shows that a device error occurred.
2	QYE	`Query Error.` Either an attempt was made to read the Output Queue when no data was present or pending, or that data in the Output Queue was lost.
1	RQC	`Request Control.` This is not used.
0 (LSB)	OPC	`Operation Complete.` Shows that the operation is complete. This bit is set when all pending operations complete following an *OPC command.

The Status Byte Register (SBR). Records whether output is available in the Output Queue, whether the oscilloscope requests service, and whether the SESR has recorded any events.

Use a Serial Poll or the *STB? query to read the contents of the SBR. The bits in the SBR are set and cleared depending on the contents of the SESR, the Event Status Enable Register (ESER), and the Output Queue. When you use a Serial Poll to obtain the SBR, bit 6 is the RQS bit. When you use the *STB? query to obtain the SBR, bit 6 is the MSS bit. Reading the SBR does not clear the bits.

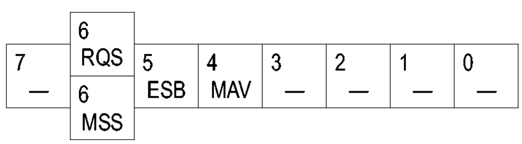


Figure 3-2: The Status Byte Register (SBR)

Table 3-2: SBR Bit Functions

Bit	Function	
7 (MSB)	———	Not used.
6	RQS	`Request Service.` Obtained from a serial poll. Shows that the oscilloscope requests service from the controller.
6	MSS	`Master Status Summary.` Obtained from *STB? query. Summarizes the ESB and MAV bits in the SBR.
5	ESB	`Event Status Bit.` Shows that status is enabled and present in the SESR.

Table 3-2: SBR Bit Functions (cont.)

Bit	Function	
4	MAV	`Message Available.` Shows that output is available in the Output Queue.
3	———	Not used.
2	———	Not used.
1–0	———	Not used.

Enable Registers

DESER, ESER, and SRER allow you to select which events are reported to the Status Registers and the Event Queue. Each Enable Register acts as a filter to a Status Register (the DESER also acts as a filter to the Event Queue) and can prevent information from being recorded in the register or queue.

Each bit in an Enable Register corresponds to a bit in the Status Register it controls. In order for an event to be reported to a bit in the Status Register, the corresponding bit in the Enable Register must be set to one. If the bit in the Enable Register is set to zero, the event is not recorded.

Various commands set the bits in the Enable Registers. The Enable Registers and the commands used to set them are described below.

The Device Event Status Enable Register (DESER). This register controls which types of events are reported to the SESR and the Event Queue. The bits in the DESER correspond to those in the SESR.

Use the DESE command to enable and disable the bits in the DESER. Use the DESE? query to read the DESER.

7	6	5	4	3	2	1	0
PON	URQ	CME	EXE	DDE	QYE	RQC	OPC

Figure 3-3: The Device Event Status Enable Register (DESER)

The Event Status Enable Register (ESER). This register controls which types of events are summarized by the Event Status Bit (ESB) in the SBR. Use the *ESE command to set the bits in the ESER. Use the *ESE? query to read it.

7	6	5	4	3	2	1	0
PON	URQ	CME	EXE	DDE	QYE	RQC	OPC

Figure 3-4: The Event Status Enable Register (ESER)

The Service Request Enable Register (SRER). This register controls which bits in the SBR generate a Service Request and are summarized by the Master Status Summary (MSS) bit.

Use the *SRE command to set the SRER. Use the *SRE? query to read the register. The RQS bit remains set to one until either the Status Byte Register is read with a Serial Poll or the MSS bit changes back to a zero.

7	6	5	4	3	2	1	0
—	—	ESB	MAV	—	—	—	—

Figure 3-5: The Service Request Enable Register (SRER)

*PSC Command

The *PSC command controls the Enable Registers contents at power-on. Sending *PSC 1 sets the Enable Registers at power on as follows:

- DESER 255 (equivalent to a DESe 255 command)
- ESER 0 (equivalent to an *ESE 0 command)
- SRER 0 (equivalent to an *SRE 0 command)

Sending *PSC 0 lets the Enable Registers maintain their values in nonvolatile memory through a power cycle.

NOTE. *To enable the PON (Power On) event to generate a Service Request, send *PSC 0, use the DESe and *ESE commands to enable PON in the DESER and ESER, and use the *SRE command to enable bit 5 in the SRER. Subsequent power-on cycles will generate a Service Request.*

Queues

The *PSC command controls the Enable Registers contents at power-on. Sending *PSC 1 sets the Enable Registers at power on as follows:

Output Queue

The oscilloscope stores query responses in the Output Queue and empties this queue each time it receives a new command or query message after an <EOM>. The controller must read a query response before it sends the next command (or query) or it will lose responses to earlier queries.

⚠ ***CAUTION.*** *When a controller sends a query, an <EOM>, and a second query, the oscilloscope normally clears the first response and outputs the second while reporting a Query Error (QYE bit in the ESER) to indicate the lost response. A fast controller, however, may receive a part or all of the first response as well. To avoid this situation, the controller should always read the response immediately after sending any terminated query message or send a DCL (Device Clear) before sending the second query.*

Event Queue

The Event Queue stores detailed information on up to 33 events. If than 32 events stack up in the Event Queue, the 32nd event is replaced by event code 350, "Queue Overflow."

Read the Event Queue with the EVENT? query (which returns only the event number), with the EVMSG? query (which returns the event number and a text description of the event), or with the ALLEV? query (which returns all the event numbers along with a description of the event). Reading an event removes it from the queue.

Before reading an event from the Event Queue, you must use the *ESR? query to read the summary of the event from the SESR. This makes the events summarized by the *ESR? read available to the EVENT? and EVMSG? queries, and empties the SESR.

Reading the SESR erases any events that were summarized by previous *ESR? reads but not read from the Event Queue. Events that follow an *ESR? read are put in the Event Queue but are not available until *ESR? is used again.

Event Handling Sequence

The following figure shows how to use the status and event handling system. In the explanation that follows, numbers in parentheses refer to numbers in the figure.

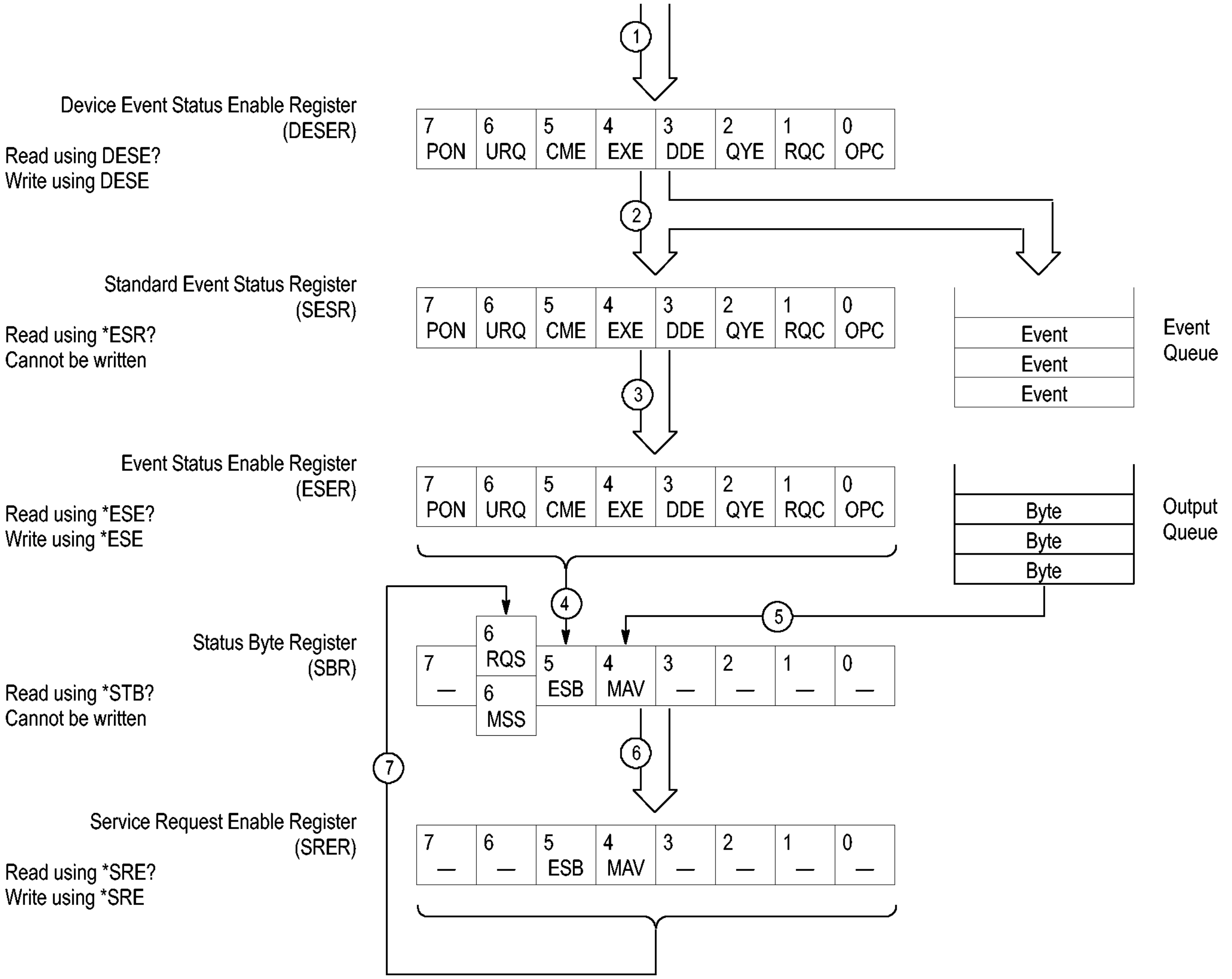


Figure 3-6: Status and Event Handling Process

When an event occurs, a signal is sent to the DESER (1). If that type of event is enabled in the DESER (that is, if the bit for that event type is set to 1), the appropriate bit in the SESR is set to one, and the event is recorded in the Event Queue (2). If the corresponding bit in the ESER is also enabled (3), then the ESB bit in the SBR is set to one (4).

When output is sent to the Output Queue, the MAV bit in the SBR is set to one (5).

When a bit in the SBR is set to one and the corresponding bit in the SRER is enabled (6), the MSS bit in the SBR is set to one and a service request is generated (7).

Synchronization Methods

Overview

Although most commands are completed almost immediately after being received by the oscilloscope, some commands start a process that requires time. For example, once a single sequence acquisition command is executed, depending upon the applied signals and trigger settings, it may take an extended period of time before the acquisition is complete. Rather than remain idle while the operation is in process, the oscilloscope will continue processing other commands. This means that some operations will not be completed in the order that they were sent. Furthermore, sometimes the result of an operation depends upon the result of an earlier operation. A first operation must complete before the next one is processed.

In order to handle these situations, the oscilloscope status and event reporting system allows you to synchronize the operation of the oscilloscope with your application program, using the Operation Complete function. Note, however, that only some operations are able to take advantage of this function; a table is provided below of commands that support this.

The following commands are used to synchronize the oscilloscope functions using Operation Complete. See examples of how to use these commands later on in this section:

*OPC — sending the *OPC command will set bit 0 of the SESR (Standard Events Status Register). The bit will only be set high when all pending operations that generate an OPC message have finished execution. (The SESR is queried using *ESR?) The `*OPC?` query form returns 1 only when all operations have completed, or a device clear is received.

*WAI — prevents the oscilloscope from executing further commands or queries until all pending commands that generate an OPC message are complete.

BUSY? — returns the status of operations: 1 means there are pending operations, 0 means that all pending operations are complete.

NOTE. *Some OPC operations may require an extended period of time to complete or may never complete. For example, a single sequence acquisition may never complete when no trigger event occurs. You should be aware of these conditions and tailor your program accordingly by:*

— setting the timeout sufficiently for the anticipated maximum time for the operation and

*— handle a timeout appropriately by querying the SESR (*ESR?) and event queue (EVMsg? or ALLEv?).*

NOTE. *The *OPC command form can also be used to cause an SRQ to be generated upon completion of all pending operations. This requires that the ESB (Event Status Bit, bit 5) of the SRER (Service Request Enable Regiser) is set, and the OPC bit (bit 0) of the DESR (Device Event Status Enable Register) and the ESER (Event Status Enable Register) are set. (The SRER is set/queried using *SRE. The DESR is set/queried using DESE. The ESER is set/queried using *ESE.)*

Only a subset of oscilloscope operations support the Operation Complete function (OPC):

Table 3-3: Oscilloscope operations that can generate OPC

Command	Conditions
ACQuire:STATE <non-zero NR1>| ON|RUN	Only when in single sequence acquisition mode
:AUTOset < EXECute >	
CALibrate:INTERNal	
CALibrate:INTERNal:STARt	
CALibrate:FACtory STARt	
CALibrate:FACtory CONTinue	
CALibrate:FACtory PREVious	
CH<x>:PRObe:AUTOZero EXECute	
CH<x>:PRObe:DEGAUss EXECute	
DIAg:STATE EXECute	
FACtory	
MEASUrement:MEAS<x> :RESUlts	When used in single sequence acquisition mode or during waveform recall.
RECAll:SETUp (<file as quoted string>|FACtory)	
RECAll:WAVEform <.ISF or .CSV file >,< REF<x> >	
:RF:REFLevel AUTO	
*RST	
SAVe:IMAGe <file as quoted string>	
SAVe:SETUp <file as quoted string>	
SAVe:WAVEform < source wfm >, (< REF<x> >|< file >)	
TEKSecure	
:TRIGger:A SETLevel	

Example of Acquiring and Measuring a Single-Sequence Waveform

For example, a typical application might involve acquiring a single-sequence waveform and then taking a measurement on the acquired waveform. You could use the following command sequence to do this:

```
/** Set up conditional acquisition **/
ACQUIRE:STATE OFF
DISPLAY:WAVEVIEW1:CH1:STATE 1
HORIZONTAL:RECORDLENGTH 1000
ACQUIRE:MODE SAMPLE
ACQUIRE:STOPAFTER SEQUENCE
/** Acquire waveform data **/
ACQUIRE:STATE ON
/** Set up the measurement parameters **/
MEASUREMENT:MEAS1:TYPE AMPLITUDE
MEASUREMENT:MEAS1:SOURCE CH1
/** Take amplitude measurement **/
MEASUREMENT:MEAS1:RESUlts:CURRentacq:MEAN?
```

The acquisition of the waveform requires extended processing time. It may not finish before the oscilloscope takes an amplitude measurement (see the following figure). This can result in an incorrect amplitude value.

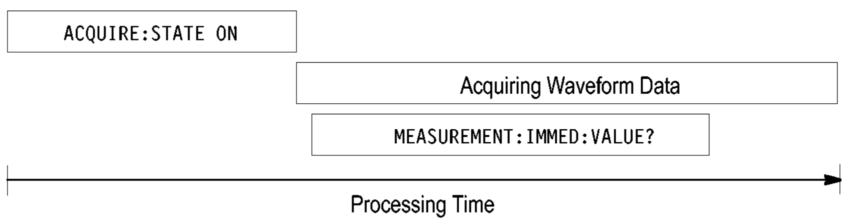


Figure 3-7: Command Processing Without Using Synchronization

To ensure the oscilloscope completes waveform acquisition before taking the measurement on the acquired data, you can synchronize the program using *WAI, BUSY, *OPC, and *OPC?.

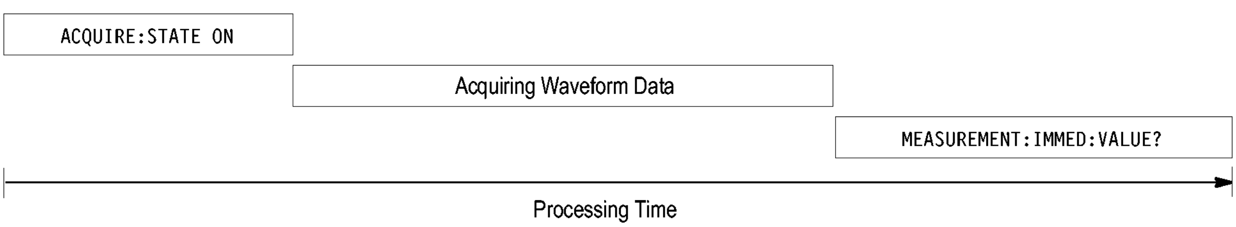


Figure 3-8: Processing Sequence With Synchronization

Example of Using the *OPC Command

If the corresponding status registers are enabled, the *OPC command sets the OPC bit in the Standard Event Status Register (SESR) when an operation is complete. You achieve synchronization by using this command with either a serial poll or service request handler.

Serial Poll Method: Enable the OPC bit in the Device Event Status Enable Register (DESER) and the Event Status Enable Register (ESER) using the DESE and *ESE commands.

When the operation is complete, the OPC bit in the Standard Event Status Register (SESR) will be enabled and the Event Status Bit (ESB) in the Status Byte Register will be enabled.

The same command sequence using the *OPC command for synchronization with serial polling looks like this:

```
/* Set up conditional acquisition */
ACQUIRE:STATE OFF
DISPLAY:WAVEVIEW1:CH1:STATE 1
HORIZONTAL:RECORDLENGTH 1000
ACQUIRE:MODE SAMPLE
ACQUIRE:STOPAFTER SEQUENCE
/* Enable the status registers */
DESE 1
*ESE 1
*SRE 0
/* Acquire waveform data */
ACQUIRE:STATE ON
/* Set up the measurement parameters on the channel we're
about to sequence */
MEASUREMENT:MEAS1:TYPE AMPLITUDE
MEASUREMENT:MEAS1:SOURCE CH1
/* Wait until the acquisition is complete before taking the
measurement.  */
*OPC
While serial poll = 0, keep looping
/* Take amplitude measurement */
MEASUREMENT:MEAS1:RESUlts:CURRentacq:MEAN?
```

This technique requires less bus traffic than did looping on BUSY.

Service Request Method: Enable the OPC bit in the Device Event Status Enable Register (DESER) and the Event Status Enable Register (ESER) using the DESE and *ESE commands.

You can also enable service requests by setting the ESB bit in the Service Request Enable Register (SRER) using the *SRE command. When the operation is complete, the oscilloscope will generate a Service Request.

The same command sequence using the *OPC command for synchronization looks like this

```
/* Set up conditional acquisition */
ACQUIRE:STATE OFF
DISPLAY:WAVEVIEW1:CH1:STATE 1
HORIZONTAL:RECORDLENGTH 1000
```

```
ACQUIRE:MODE SAMPLE
ACQUIRE:STOPAFTER SEQUENCE
/* Enable the status registers */
DESE 1
*ESE 1
*SRE 32
```

```
/* Set up the measurement parameters on the channel we're
about to sequence */ :MEASUrement:MEAS1:TYPE AMPLITUDE
:MEASUrement:MEAS1:SOURCE CH1
/* Acquire waveform data */
ACQUIRE:STATE ON
/* Wait until the acquisition is complete before taking the
measurement*/
*OPC
```

The program can now do different tasks such as talk to other devices. The SRQ, when it comes, interrupts those tasks and returns control to this task.

```
/* Take amplitude measurement */
MEASUREMENT:MEAS1:RESUlts:CURRentacq:MEAN?
```

Example of Using the *OPC? Query

The *OPC? query places a 1 in the Output Queue once an operation that generates an OPC message is complete. The *OPC? query does not return until all pending OPC operations have completed. Therefore, your time-out must be set to a time at least as long as the longest expected time for the operations to complete.

The same command sequence using the *OPC? query for synchronization looks like this:

```
/* Set up single sequence acquisition */
ACQUIRE:STATE OFF
DISPLAY:WAVEVIEW1:CH1:STATE 1
HORIZONTAL:RECORDLENGTH 1000
ACQUIRE:MODE SAMPLE
ACQUIRE:STOPAFTER SEQUENCE
/* Set up the measurement parameters on the channel we're
about to sequence */
MEASUREMENT:MEAS1:TYPE AMPLITUDE
MEASUREMENT:MEAS1:SOURCE CH1
/* Acquire waveform data */
ACQUIRE:STATE ON
/* Wait until the acquisition is complete before taking the
measurement*/
*OPC?
```

Wait for read from Output Queue.

```
/* Take amplitude measurement */
MEASUREMENT:MEAS1:RESUlts:CURRentacq:MEAN?
```

This is the simplest approach. It requires no status handling or loops. However, you must set the controller time-out for longer than the acquisition operation.

Example of Using the *WAI Command

The *WAI command forces completion of previous commands that generate an OPC message. No commands after the *WAI are processed before the OPC message(s) are generated

The same command sequence using the *WAI command for synchronization looks like this:

```
/* Set up conditional acquisition */
ACQUIRE:STATE OFF
DISPLAY:WAVEVIEW1:CH1:STATE 1
HORIZONTAL:RECORDLENGTH 1000
ACQUIRE:MODE SAMPLE
ACQUIRE:STOPAFTER SEQUENCE
/* Set up the measurement parameters on the channel we're
about to sequence */
MEASUREMENT:MEAS1:TYPE AMPLITUDE
MEASUREMENT:MEAS1:SOURCE CH1
/* Acquire waveform data */
ACQUIRE:STATE ON
/* Wait until the acquisition is complete before taking
the measurement*/
*/
*WAI
/* Take amplitude measurement */
MEASUREMENT:MEAS1:RESUlts:CURRentacq:MEAN?
```

The controller can continue to write commands to the input buffer of the oscilloscope, but the commands will not be processed by the oscilloscope until all in-process OPC operations are complete. If the input buffer becomes full, the controller will be unable to write commands to the buffer. This can cause a time-out.

Example of Using the BUSY Query

The BUSY? query allows you to find out whether the oscilloscope is busy processing a command that has an extended processing time such as single-sequence acquisition.

The same command sequence, using the BUSY? query for synchronization, looks like this:

```
/* Set up conditional acquisition */
ACQUIRE:STATE OFF
DISPLAY:WAVEVIEW1:CH1:STATE 1
HORIZONTAL:RECORDLENGTH 1000
ACQUIRE:MODE SAMPLE
ACQUIRE:STOPAFTER SEQUENCE
```

```
/* Acquire waveform data */
ACQUIRE:STATE ON
/* Set up the measurement parameters */
MEASUREMENT:IMMED:TYPE AMPLITUDE
MEASUREMENT:IMMED:SOURCE CH1
/* Wait until the acquisition is complete before taking
the measurement */
While BUSY? keep looping
/* Take amplitude measurement */
MEASUREMENT:IMMED:VALUE?
```

This sequence lets you create your own wait loop rather than using the *WAI command. The BUSY? query helps you avoid time-outs caused by writing too many commands to the input buffer. The controller is still tied up though, and the repeated BUSY? query will result in bus traffic.

Reference waveforms

Measurements on references also support OPC when used in conjunction with a :RECALL:WAVEFORM command.

```
/* Add a reference slot on which to measure */

:REF:ADDNEW "REF1"

/* Set up the measurement parameters on the reference */

:MEASUrement:MEAS1:TYPE AMPLITUDE

:MEASUrement:MEAS1:SOURCE REF1

/* Load the new waveform file */

:RECALL:WAVEFORM "E:\waveform.wfm”,REF1

*OPC?

/* Wait for read from Output Queue.  */

/* Take amplitude measurement */

:MEASUrement:MEAS1:RESUlts:CURRentacq:MEAN?
```

Messages

The information contained in the topics above covers all the programming interface messages the oscilloscope generates in response to commands and queries.

For most messages, a secondary message from the oscilloscope gives detail about the cause of the error or the meaning of the message. This message is part of the message string and is separated from the main message by a semicolon.

Each message is the result of an event. Each type of event sets a specific bit in the SESR and is controlled by the equivalent bit in the DESER. Thus, each message is associated with a specific SESR bit. In the message tables, the associated SESR bit is specified in the table title, with exceptions noted with the error message text.

No Event

The following table shows the messages when the system has no events or status to report. These have no associated SESR bit.

Table 3-4: No Event Messages

Code	Message
0	No events to report; queue empty
1	No events to report; new events pending *ESR?

Command Error

The following table shows the command error messages generated by improper syntax. Check that the command is properly formed and that it follows the rules in the section on command Syntax.

Table 3-5: Command Error Messages (CME Bit 5)

Code	Message
100	Command error
101	Invalid character
102	Syntax error
103	Invalid separator
104	Data type error
105	GET not allowed
108	Parameter not allowed
109	Missing parameter
110	Command header error
112	Program mnemonic too long
113	Undefined header
120	Numeric data error
121	Invalid character in numeric
123	Exponent too large
124	Too many digits
130	Suffix error
131	Invalid suffix
134	Suffix too long
140	Character data error
141	Invalid character data
144	Character data too long
150	String data error

Table 3-5: Command Error Messages (CME Bit 5) (cont.)

Code	Message
151	Invalid string data
152	String data too long
160	Block data error
161	Invalid block data
170	Command expression error
171	Invalid expression

Execution Error

The following table lists the execution errors that are detected during execution of a command.

Table 3-6: Execution Error Messages (EXE Bit 4)

Code	Message
200	Execution error
221	Settings conflict
222	Data out of range
224	Illegal parameter value
241	Hardware missing
250	Mass storage error
251	Missing mass storage
252	Missing media
253	Corrupt media
254	Media full
255	Directory full
256	File name not found
257	File name error
258	Media protected
259	File name too long
280	Program error
282	Insufficient network printer information
283	Network printer not responding
284	Network printer server not responding
286	Program runtime error
287	
2200	Measurement error, Measurement system error
2201	Measurement error, Zero period
2202	Measurement error, No period, second waveform

Table 3-6: Execution Error Messages (EXE Bit 4) (cont.)

Code	Message
2203	Measurement error, No period, second waveform
2204	Measurement error, Low amplitude, second waveform
2205	Measurement error, Low amplitude, second waveform
2206	Measurement error, Invalid gate
2207	Measurement error, Measurement overflow
2208	Measurement error, No backwards Mid Ref crossing
2209	Measurement error, No second Mid Ref crossing
2210	Measurement error, No Mid Ref crossing, second waveform
2211	Measurement error, No backwards Mid Ref crossing
2212	Measurement error, No negative crossing
2213	Measurement error, No positive crossing
2214	Measurement error, No crossing, target waveform
2215	Measurement error, No crossing, second waveform
2216	Measurement error, No crossing, target waveform
2217	Measurement error, Constant waveform
2219	Measurement error, No valid edge - No arm sample
2220	Measurement error, No valid edge - No arm cross
2221	Measurement error, No valid edge - No trigger cross
2222	Measurement error, No valid edge - No second cross
2223	Measurement error, Waveform mismatch
2224	Measurement error, WAIT calculating
2225	Measurement error, No waveform to measure
2226	Measurement error, Null Waveform
2227	Measurement error, Positive and Negative Clipping
2228	Measurement error, Positive Clipping
2229	Measurement error, Negative Clipping
2230	Measurement error, High Ref < Low Ref
2231	Measurement error, No statistics available
2233	Requested waveform is temporarily unavailable
2235	Math error, invalid math description
2240	Invalid password
2241	Waveform requested is invalid
2244	Source waveform is not active
2245	Saveref error, selected channel is turned off
2250	Reference error, the reference waveform file is invalid
2253	Reference error, too many points received
2254	Reference error, too few points received

Table 3-6: Execution Error Messages (EXE Bit 4) (cont.)

Code	Message
2259	File too big
2270	Alias error
2271	Alias syntax error
2273	Illegal alias label
2276	Alias expansion error
2277	Alias redefinition not allowed
2278	Alias header not found
2285	TekSecure(R) Pass
2286	TekSecure(R) Fail
2500	Setup error, file does not look like a setup file
2501	Setup warning, could not recall all values from external setup
2620	
2760	Mark limit reached
2761	No mark present
2762	Search copy failed

Device Error

The following table lists the device errors that can occur during oscilloscope operation. These errors may indicate that the oscilloscope needs repair.

Table 3-7: Device Error Messages (DDE Bit 3)

Code	Message
310	System error
311	Memory error
312	PUD memory lost
314	Save/recall memory lost

System Event

The following table lists the system event messages. These messages are generated whenever certain system conditions occur.

Table 3-8: System Event Messages

Code	Message
400	Query event
401	Power on (PON bit 7 set)
402	Operation complete (OPC bit 0 set)
403	User request (URQ bit 6 set)
404	Power fail (DDE bit 3 set)

Table 3-8: System Event Messages (cont.)

Code	Message
405	Request control
410	Query INTERRUPTED (QYE bit 2 set)
420	Query UNTERMINATED (QYE bit 2 set)
430	Query DEADLOCKED (QYE bit 2 set)
440	Query UNTERMINATED after indefinite response (QYE bit 2 set)
468	Knob/Keypad value changed
472	Application variable changed

Execution Warning

The following table lists warning messages that do not interrupt the flow of command execution. They also notify you of possible unexpected results.

Table 3-9: Execution Warning Messages (EXE Bit 4)

Code	Message
528	Parameter out of range
532	Curve data too long, Curve truncated
533	Curve error, Preamble values are inconsistent
540	Measurement warning, Uncertain edge
541	Measurement warning, Low signal amplitude
542	Measurement warning, Unstable histogram
543	Measurement warning, Low resolution
544	Measurement warning, Uncertain edge
545	Measurement warning, Invalid in minmax
546	Measurement warning, Need 3 edges
547	Measurement warning, Clipping positive/negative
548	Measurement warning, Clipping positive
549	Measurement warning, Clipping negative

Table 3-10: Execution Warning Messages (EXE Bit 4)

Code	Message
540	Measurement warning
541	Measurement warning, Low signal amplitude
542	Measurement warning, Unstable histogram
543	Measurement warning, Low resolution
544	Measurement warning, Uncertain edge
545	Measurement warning, Invalid min max
546	Measurement warning, Need 3 edges

Table 3-10: Execution Warning Messages (EXE Bit 4) (cont.)

Code	Message
547	Measurement warning, Clipping positive/negative
548	Measurement warning, Clipping positive
549	Measurement warning, Clipping negative

Internal Warning

The following table shows internal errors that indicate an internal fault in the oscilloscope.

Table 3-11: Internal Warning Messages

Code	Message
630	Internal warning, 50Ω overload

Appendix A: Character Set

B7 B6 B5 BITS B4 B3 B2 B1	0 0 0	0 0 1	0 1 0	0 1 1	1 0 0	1 0 1	1 1 0	1 1 1
	CONTROL		NUMBERS SYMBOLS		UPPER CASE		LOWER CASE	
0 0 0 0	0 NUL 0 0	20 DLE 10 16	40 LA0 SP 20 32	60 LA16 0 30 48	100 TA0 @ 40 64	120 TA16 P 50 80	140 SA0 ` 60 96	160 SA16 p 70 112
0 0 0 1	1 GTL SOH 1 1	21 LLO DC1 11 17	41 LA1 ! 21 33	61 LA17 1 31 49	101 TA1 A 41 65	121 TA17 Q 51 81	141 SA1 a 61 97	161 SA17 q 71 113
0 0 1 0	2 STX 2 2	22 DC2 12 18	42 LA2 " 22 34	62 LA18 2 32 50	102 TA2 B 42 66	122 TA18 R 52 82	142 SA2 b 62 98	162 SA18 r 72 114
0 0 1 1	3 ETX 3 3	23 DC3 13 19	43 LA3 # 23 35	63 LA19 3 33 51	103 TA3 C 43 67	123 TA19 S 53 83	143 SA3 c 63 99	163 SA19 s 73 115
0 1 0 0	4 SDC EOT 4 4	24 DCL DC4 14 20	44 LA4 $ 24 36	64 LA20 4 34 52	104 TA4 D 44 68	124 TA20 T 54 84	144 SA4 d 64 100	164 SA20 t 74 116
0 1 0 1	5 PPC ENQ 5 5	25 PPU NAK 15 21	45 LA5 % 25 37	65 LA21 5 35 53	105 TA5 E 45 69	125 TA21 U 55 85	145 SA5 e 65 101	165 SA21 u 75 117
0 1 1 0	6 ACK 6 6	26 SYN 16 22	46 LA6 & 26 38	66 LA22 6 36 54	106 TA6 F 46 70	126 TA22 V 56 86	146 SA6 f 66 102	166 SA22 v 76 118
0 1 1 1	7 BEL 7 7	27 ETB 17 23	47 LA7 ' 27 39	67 LA23 7 37 55	107 TA7 G 47 71	127 TA23 W 57 87	147 SA7 g 67 103	167 SA23 w 77 119
1 0 0 0	10 GET BS 8 8	30 SPE CAN 18 24	50 LA8 (28 40	70 LA24 8 38 56	110 TA8 H 48 72	130 TA24 X 58 88	150 SA8 h 68 104	170 SA24 x 78 120
1 0 0 1	11 TCT HT 9 9	31 SPD EM 19 25	51 LA9) 29 41	71 LA25 9 39 57	111 TA9 I 49 73	131 TA25 Y 59 89	151 SA9 i 69 105	171 SA25 y 79 121
1 0 1 0	12 LF A 10	32 SUB 1A 26	52 LA10 * 2A 42	72 LA26 : 3A 58	112 TA10 J 4A 74	132 TA26 Z 5A 90	152 SA10 j 6A 106	172 SA26 z 7A 122
1 0 1 1	13 VT B 11	33 ESC 1B 27	53 LA11 + 2B 43	73 LA27 ; 3B 59	113 TA11 K 4B 75	133 TA27 [5B 91	153 SA11 k 6B 107	173 SA27 { 7B 123
1 1 0 0	14 FF C 12	34 FS 1C 28	54 LA12 , 2C 44	74 LA28 < 3C 60	114 TA12 L 4C 76	134 TA28 \ 5C 92	154 SA12 l 6C 108	174 SA28 ¦ 7C 124
1 1 0 1	15 CR D 13	35 GS 1D 29	55 LA13 – 2D 45	75 LA29 = 3D 61	115 TA13 M 4D 77	135 TA29] 5D 93	155 SA13 m 6D 109	175 SA29 } 7D 125
1 1 1 0	16 SO E 14	36 RS 1E 30	56 LA14 . 2E 46	76 LA30 > 3E 62	116 TA14 N 4E 78	136 TA30 ^ 5E 94	156 SA14 n 6E 110	176 SA30 ~ 7E 126
1 1 1 1	17 SI F 15	37 US 1F 31	57 LA15 / 2F 47	77 UNL ? 3F 63	117 TA15 O 4F 79	137 UNT _ 5F 95	157 SA15 o 6F 111	177 RUBOUT (DEL) 7F 127
	ADDRESSED COMMANDS	UNIVERSAL COMMANDS	LISTEN ADDRESSES		TALK ADDRESSES		SECONDARY ADDRESSES OR COMMANDS	

KEY

octal → 5	PPC ←	GPIB code (with ATN asserted)
	ENQ ←	ASCII character
hex → 5	5 ←	decimal

Tektronix
REF: ANSI STD X3.4-1977
IEEE STD 488.1-1987
ISO STD 646-2973

Appendix B: Reserved Words

This is a list of reserved words for your instrument. Capital letters identify the required minimum spelling.

*CAL	ALL	AYPOSition	BITSTart
*CLS	ALLAcqs	B	BITType
*DDT	ALLBits	B0	BIT_Nr
*ESE	ALLEv	B1	BLACKMANHarris
*ESR	ALLTHResholds	B10	BLANKingtime
*IDN	ALTERNATEA	B11	BM
*LRN	ALTERNATEB	B12	BMP
*OPC	ALWAYS	B13	BN_Fmt
*OPT	AMPLitude	B14	BOLD
*PSC	ANALOG	B15	BOTH
*PUD	ANALYZemode	B16	BPOSition
*RST	AND	B2	BRSBit
*SRE	ANNOTate	B3	BSOUrce
*STB	ANY	B4	BULK
*TRG	APOSition	B5	BUNIts
*TST	APPID	B6	BURSTEDGTYPe
*WAI	APPly	B7	BURSTWIDTH
0	ARBitrary	B8	BUS
1	AREA	B9	BUSANDWAVEFORM
789	ARINC429A	BACKLight	BUSTABle
A	ASCII	BACKWard	BUSY
ABOrt	ASC_Fmt	BANDWidth	BUSx
ABSolute	ASIC	BASE	BVPOSition
AC	ASIS	BASETop	BXPOSition
ACCOMMONMODE	ASOUrce	BASEline	BY
ACDCRMS	ATRIGger	BASic	BYPOSition
ACK	AUDio	BATHTUB	BYT_Nr
ACKMISS	AUNIts	BCR	BYT_Or
ACKnum	AUTO	BDIFFBP	Block
ACQ	AUTODim	BEGIN	Bus
ACQDURATION	AUTOINCrement	BELl	CALibrate
ACQuire	AUTORange	BER	CAN
ACRMS	AUTOSAVEPITIMEOUT	BHPOSition	CANH
ACTive	AUTOSAVEUITIMEOUT	BIN	CANL
ACTivesourcecount	AUTOScale	BINARY	CARDIac
ADD	AUTOSet	BIT	CATalog
ADDMEAS	AUTOZero	BITAMPLITUDE	CCRESUlts
ADDNew	AUTOmatic	BITCfgmode	CCYCles
ADDR10	AUXLevel	BITDelay	CENTERFREQuency
ADDR7	AUXiliary	BITEnd	CH
ADDRANDDATA	AUXout	BITHIGH	CH1x
ADDRess	AVAILable	BITLOW	CHannel
ADVanced	AVERage	BITOrder	CHecksum
AFG	AVG	BITPcnt	CHX
AHPOSition	AVPOSition	BITRate	CHx_Dx
ALIas	AXPOSition	BITSTUFFing	CHx_Dy

CLASs
CLEAR
CLOCK
CLOCKBITSPERCHANNEL
CLOCKFrequency
CLOCKMultiplier
CLOCKRecovery
CLOCKSOUrce
CLOCk
CMEThod
COLor
COLors
COMMAND
COMMONMODE
COMMents
COMPosition
CONDition
CONFIGuration
CONFIGure
CONSTANTCLOCK
CONSTCLOCKMODe
CONTROL
CONTinuous
COPy
COUNTer
COUNt
COUPling
CR
CRC
CRC16
CRC5
CRCHeader
CRCTrailer
CROSSIng
CSPLIT
CURRentacq
CURSor
CURVe
CURrent
CUSTOM
CUSTOMPROPAgation
CWD
CYCLE
CYCLEAmp
CYCLEBase
CYCLECount
CYCLEMAX
CYCLEMin
CYCLEMode
CYCLEPKPK
CYCLETop
Chx_Dx
DAMPing
DASHED
DASHSOLID
DATA
DATA0
DATA1
DATA2
DATABits
DATAFORmat
DATAMINUSTHRESHold
DATAPLUSTHRESHold
DATAPacket
DATAPath
DATARATE
DATAREsults
DATE
DAll
DBCA
DBM
DC
DCD
DCREJ
DDJ
DDR
DDT
DECIMAL
DEFaultsetup
DEFine
DEGAUSS
DEGrees
DELAY
DELEte
DELIMiter
DELTATime
DELTa
DELay
DELete
DESE
DESKEW
DEST
DESTination
DESTinationaddr
DESTinationport
DETECTPLEN
DEVICEType
DHCPbootp
DIAg
DIDT
DIFF
DIFFerential
DIR
DIRacmodel
DIRection
DISPLAYUnits
DISabled
DISplay
DISplaymode
DIVide
DIVisions
DJ
DJDD
DJDIRAC
DMINus
DNS
DOMAINname
DOMain
DONTInclude
DOTsonly
DOUBLE
DPLUs
DRIve
DUty
DVDT
DVM
DYNAMIC
DYNRange
EDECAy
EDGE
EDGEIncre
EDGES
EDGEType
EITHER
ENABle
ENCdg
END
ENDPoint
ENET
ENET100
ENET1000
ENGineering
ENHanced
ENTERSWindow
ENV
ENVelope
EOF
EOFTYPE
EOP
EOp
EQUal
EQualNOTEQual
ERISe
ERROr
ERRTYPE
ERRor
ESCOPEENABle
ESIBit
ET
ETHERNET
EVEN
EVENT
EVENTS
EVENTtable
EVERY
EVMsg
EVQty
EXECute
EXITSWindow
EXPLICITCLOCK
EXPLICITCLOCKMODe
EXTAtten
EXTDBatten
EXTENDED
EXTUnits
EXTernal
EYE
EYEDIAGRAM
EYEHIGH
EYELOW
EYERENDER
EYEWIDTHBER
EYEhistogram
F1MAG
F2
F3MAG
F4
F8
FACtory
FAIL
FALL
FALLHigh
FALLING
FALLLow
FALLMid
FALLSLEWRATE
FALLTIME
FALSe
FALl
FASTAcq
FASTERthan
FASTer
FASTframe
FBD1
FBD2
FBD3
FC1063
FC133
FC2125
FC266
FC4250
FC531

FC8500
FCSError
FD
FDBITS
FFT
FIBREchannel
FIFTY
FILE
FILEFormat
FILEName
FILESystem
FILTer
FILTers
FILepath
FIRST
FIVEHundred
FIXed
FLAg
FLEXRAY
FOCUS
FOLDER
FONT
FORCEDRange
FORCe
FORCetrig
FORMat
FORWard
FP
FPAnel
FPBinary
FRAME
FRAMEID
FRAMEType
FRAMING
FRAMe
FREFerence
FREQ
FREQUENCY
FROM
FROMEDGESEARCHDIRect
FROMLevel
FROMSearch
FROMedge
FULL
FULLColor
FULLSPEED
FULLScreen
FUNCtion
FUNDCURRent
FW1394BS1600B
FW1394BS400B
FW1394BS800B
GAIN
GATESOurce
GATEWay
GATing
GAUSsian
GLOBal
GLOBalref
GMT
GPKNOB1
GPKNOB2
GRATicule
GRIDlines
GRId
GROUPDelay
H
HAMMing
HANDSHAKEPacket
HANDSHAKEType
HANNing
HARMONICS
HAVERSINe
HBArs
HDR
HEADER
HEIGHT
HEIGHTBER
HEX
HFRej
HID
HIGH
HIGHLevel
HIGHLimit
HIGHPass
HIGHREFVoltage
HIGHRES
HIGHTIME
HIGHZ
HIRes
HISTOGRAM
HIStory
HITDMVALue
HIVALue
HOLD
HOLDTime
HOLDoff
HOMEDir
HORDer
HORIZontalscale
HORZ
HORZPOS
HORZScale
HORizontal
HSOURce
HTTPPort
HUB
HUNDREDBASETX
HUNdred
HYSTEREsis
I2C
I2S
IBA2500
IBA_GEN2
ID
IDANDDATA
IDFORmat
IDLE
IDLETime
IDentifier
ILEVELAbs
ILEVELPct
IMAGe
IMAGinary
IMPEDance
IN
INCLUDEREFs
INCLUde
INDBits
INDEPENDENT
INFInite
INFMAXimum
INFMINimum
INFPersist
INIT
INPUT
INPUTSOurce
INPut
INSIDEGreater
INSTR
INSTall
INTEGER
INTENSITy
INTERNal
INTERPRatio
INTERRUPT
INTERp
INVERTed
INrange
IO
IPADDress
IPHeader
IPOWer
IPVFOUR
IRMS
ISCLOCKED
ISOALL
ISOEND
ISOMID
ISOSTART
ISOURce
ISOchronous
ITALic
ITEM
J2
J9
JITTERMODE
JITTERSUMMARY
JITTermodel
JPG
JTFBandwidth
L
LABel
LAN
LATCh
LAYout
LDIR
LEFt
LENgth
LESSEQual
LESSLimit
LESSThan
LEVELUNIts
LEVel
LF
LFREQuency
LFRej
LIC
LICENSE
LIMIT
LIN
LINE
LINEAR
LINERIPPLE
LINESTyle
LIST
LIVE
LJ
LOAd
LOCKRJ
LOCKRJValue
LOCk
LOG
LOGICPattern
LOGICQUALification
LOGICSource
LOGIc
LOOP
LOOPBandwidth
LORENtz
LOW
LOWERFREQuency

LOWLevel
LOWLimit
LOWPass
LOWREFVoltage
LOWSPEED
LOWTHRESHold
LOWTIME
LOWer
LOWerthreshold
LSB
LXI
MAC
MACADDRess
MACLENgth
MAG
MAGNitude
MAIn
MANUAL
MATH
MATHFFTx
MATHx
MATHxREFx
MATh
MAX
MAXFRames
MAXIMUM
MAXSamplerate
MAXimum
MDATA
ME
MEAN
MEANAUTOCalculate
MEANhistogram
MEASNAMe
MEASRange
MEASUrement
MEASx
MEDian
MEDium
MEMORY
METHod
MHT
MID
MIDRef
MIL1553B
MIN
MINIMUM
MINMax
MINUI
MINimum
MIXED
MIXEDASCII
MIXEDHEX
MIXed
MKDir
MODE
MODEhistogram
MODel
MOREEQua
MOREEQual
MORELimit
MOREThan
MSB
MULTiply
MULtipleframes
Mathx
N
NAK
NAME
NAND
NAVigate
NDUTYCYCLE
NDUtY
NEGAtive
NEGative
NETWORKCONFig
NEWpass
NEXT
NO
NOCARE
NOISEAdd
NOISErej
NOISe
NOMINALOFFset
NOMinal
NOMinalfreq
NONE
NONTRANsition
NOPARity
NOR
NORMal
NOTE
NOVERSHOOT
NPERIOD
NPJ
NPULSEWIDTH
NR1
NR2
NR3
NR_Pt
NTIMES
NULL
NULLFRDynamic
NULLFRStatic
NUMACQs
NUMACq
NUMAVg
NUMBins
NUMFRAMESACQuired
NUMSEQuence
NUMber
NWIDTH
NWIDTTH
NYET
OC1
OC12
OC3
OC48
OCCURS
ODD
ODDEVen
OFF
OFFSet
ON
ONCE
ONE
ONEOVERDELTATVALUE
ONFAIL
OPPositeas
OPTion
OR
OUT
OUTPut
OUTSIDEGreater
OUTrange
OUTside
OVERLoad
OVERRide
OVErlay
PACKET
PALEtte
PANKNOB
PARItyerror
PARallel
PARity
PASSWord
PATLen
PATTERNDETECTION
PATTERNLENgth
PATTERNTYPe
PATTern
PAUSe
PAYLENgth
PAYLength
PAYLoad
PCIE_GEN1
PCIE_GEN2
PCIE_GEN3
PCIExpress
PDF
PDUTTY
PDUTY
PDUTYCYCLE
PEAKHold
PEAKdetect
PERCent
PERFREQ
PERIOD
PERSistence
PERSource
PFACtor
PHASE
PHASENOISE
PID
PING
PJ
PK2PK
PLL
PLOT
PLOTData
PLOTIMAGe
PLOTVIEWx
PLOTx
PNG
POHCL
POHCM
POHCS
POINT
POLARITY
POPUlation
PORT
POSITIVe
POST
POSition
POVERSHOOT
POWERQUALITY
POWERRating
POWERTABle
POWer
PPULSEWIDTH
PRESS
PREViewstate
PREVious
PREamble
PREv
PROBECOntrol
PROBECal
PROBEFunc
PROTOCol
PROTOcol
PRObe
PT_Fmt

PT_ORder
PT_Off
PULSEWidth
PULSe
PWIDTH
PWRUpstatus
QFACTOR
QString
QStringQString
QTAG
QTAGGING
QUALifier
RADians
RAMP
RAMPtime
RANDom
RATE100K
RATE10K
RATE10M
RATE115K
RATE125K
RATE153K
RATE19K
RATE1K
RATE1M
RATE20K
RATE250K
RATE25K
RATE2K
RATE2M
RATE300
RATE31K
RATE33K
RATE38K
RATE400K
RATE4K
RATE500K
RATE50K
RATE5M
RATE62K
RATE68K
RATE800K
RATE83K
RATE921K
RATE92K
RATE9K
RCURRent
RDSOn
READ
READFile
REAL
RECAll
RECAllmask

RECORD
RECORDLength
RECTANGular
REDO
REF
REFFFTx
REFLEvel
REFLevels
REFMode
REFOUT
REFVoltage
REFerence
REFx
REFx_Dx
REM
REMote
REName
REPEATstart
REPOrt
REPeating
RESERVed
RESET
RESPonsetime
RESUME
RESUlt
RESUlts
RESistance
RESolution
RI
RIBinary
RIGht
RIO125
RIO250
RIO3125
RISE
RISEFall
RISEHigh
RISELow
RISEMid
RISESLEWRATE
RISETIME
RISING
RISe
RISing
RJ
RJDD
RJDIRAC
RJDJ
RMDir
RMS
ROLL
ROSc
RP

RPBinary
RS232C
RUN
RUNSTop
RUNT
RUNt
RWINADDR
RX
SAME
SAMESPLIT
SAMEas
SAMPLERate
SAMPLEpoint
SAMple
SAS12_NOSSC
SAS12_SSC
SAS15_NOSSC
SAS15_SSC
SAS3_NOSSC
SAS3_SSC
SAS6_NOSSC
SAS6_SSC
SATA_GEN1
SATA_GEN2
SATA_GEN3
SAVEON
SAVe
SAVemask
SC
SCALE
SCALERATio
SCALe
SCIentific
SCREEN
SDI
SE
SEARCH
SEARCH1
SEARCHSource
SEARCHtotrigger
SEARCHx
SEARch
SECOND
SEConds
SELECTED
SELECTIONtype
SELect
SELected
SEQnum
SEQuence
SERVICE
SERVICENAMe
SERnumber

SESsion
SET
SETHOLDLogicval
SETHold
SETLevel
SETTO50
SETTime
SETUP
SFD
SFPbinary
SIGNAL
SIGNALTYpe
SIGNal
SINC
SINE
SINGLE
SINGleseq
SINX
SIZE
SKEW
SLEEP
SLEWRATEMethod
SLOWERthan
SLOWer
SLOpe
SNAp
SOA
SOCKETServer
SOF
SOFFRAMENUMber
SOLID
SORTBY
SOURCEEDGEType
SOURCELIst
SOURCEMODEA
SOURCEMODEB
SOURCEs
SOURce
SOUrceaddr
SOUrceport
SPAN
SPEC
SPECIALPacket
SPECIALType
SPECTRAL
SPECTRALBUJ
SPECTRUM
SPI
SPLIT
SPLITMODE
SPREADSHEET
SPace
SQUare

SRIbinary
SRJ
SRPbinary
SRQ
SS
SSC
SSCFREQDEV
SSCMODRATE
SSCPROFILE
SSM
SSPLIT
STALL
STANDard
STARTofframe
STARTup
STARTupnosync
STARt
STATE
STATIC
STATIstics
STATUS
STAYSHigh
STAYSLow
STAcked
STAndard
STDDev
STOP
STOPAcq
STOPAfter
STYle
SUBADdress
SUBNETMask
SUBSF
SUBtract
SUMFrame
SUPPress
SUSPEND
SWITCHINGLOSS
SWITCHINGRIPPLE
SWLCONFIGType
SYMmetry
SYNC
SYNCFrame
SYNCfield
SYSTEM
TARGETBER
TCPHeader
TDM
TDMVALue
TEKSecure
TEMPerature
TENBASET
TENNinety
TERMinal
TERmination
TF
THDF
THDR
THIRD
THRESHold
TIE
TIEHISTOGRAM
TIESPECTRUM
TIETIMETREND
TIMEOUTSIDELEVEL
TIMEOut
TIMEStamp
TIMETREND
TIMe
TJBER
TNTRATIO
TO
TOEDGESEARCHDIRect
TOEdge
TOKENPacket
TOKENType
TOLevel
TOP
TOTAL
TOTaluptime
TOUCHSCReen
TRACK
TRANSition
TRANsition
TRBit
TREND
TRIGLevel
TRIGMode
TRIGSlope
TRIGger
TRPWR
TRUe
TURN
TWENtyeighty
TWENtyfive
TWOFifty
TWOThousand
TX
TXRX
TXRXTHRESHold
TYPE
TYPE1
TYPE2
UNDERline
UNDO
UNEQual
UNEQualLESSthan
UNINSTALL
UNIQue
UNITINTERVAL
UNITINtervals
UNITs
UNLock
UNMOUNT
UNWRap
UPPERFREQuency
UPPer
UPPerthreshold
USB
USB3
USBDevice
USBTmc
USECLockedge
USER
UTCDELTa
V1X
V2X
VALidate
VALue
VARpersist
VBArs
VCESat
VDIFFXOVR
VECtors
VERBose
VERTPOS
VERTSCALE
VERTical
VGLevel
VIEW
VIEWStyle
VIEWTYpe
VLEVELAbs
VLEVELPct
VRMS
VSOURce
VUNIT
WAKEup
WAVEFORM
WAVEVIEW1
WAVEform
WAVFrm
WEIGht
WFId
WFMInpre
WFMOutpre
WFMPre
WFMTYPe
WHEn
WIDTH
WIDTHBER
WIDth
WINDOWLENgth
WINSCALe
WINdow
WIThin
WORD
WORDSel
WORDSize
WRITE
WRITEFile
X
XAUI
XAUI_GEN2
XAXIS
XAXISUnits
XFF
XINcr
XPOS
XUNit
XY
XYZ
XZEro
Y
YAXIS
YES
YMUlt
YOFf
YPOS
YUNit
YZEro
ZERo
ZONe
ZOOM
ZOOMNR1
ZOOMOVERride
blockdata
boolean
directorypath
dynamicRangeNR3
filepath
filepathdata
name
newworkingdirectorypath
oldfilepathnewfilepath
sourcedestination
sourcefiledestination
sourcefilepathdestinationfi
wfmwfm

Appendix C: Factory Defaults

Default Setup

The following table lists the default values for each command.

NOTE. *Find the most up-to-date default values for your instrument and software by performing a TekSecure command, saving the instrument setup and looking at the instrument or setup file.*

Table C-1: Default Values

Item	Description
ACQUIRE:FASTACQ:PALETTE	TEMPERATURE
ACQUIRE:FASTACQ:STATE	0
ACQUIRE:MAGNIVU	0
ACQUIRE:MODE	SAMPLE
ACQUIRE:NUMAVG	16
ACQUIRE:NUMENV	INFINITE
ACQUIRE:STATE	1
ACQUIRE:STOPAFTER	RUNSTOP
ACTONEVENT:ACTION:AUXOUT:STATE	0
ACTONEVENT:ACTION:EMAIL:SETUP:TOADDRESS	"TestString"
ACTONEVENT:ACTION:EMAIL:STATE	0
ACTONEVENT:ACTION:PRINT:STATE	0
ACTONEVENT:ACTION:SAVEIMAGE:STATE	0
ACTONEVENT:ACTION:SAVEWFM:STATE	0
ACTONEVENT:ACTION:SRQ:STATE	0
ACTONEVENT:ACTION:STOPACQ:STATE	1
ACTONEVENT:ACTION:VISUAL:STATE	0
ACTONEVENT:EVENTTYPE	NONE
ACTONEVENT:NUMACQS	1
ACTONEVENT:REPEATCOUNT	1.0000
AFG:AMPLITUDE	500.0000E-3
AFG:ARBITRARY:EMEM:POINTS:ENCDG	ASCII
AFG:FREQUENCY	100.0E+3
AFG:FUNCTION	SINE
AFG:HIGHLEVEL	250.0000E-3
AFG:LEVELPRESET	USER
AFG:LOWLEVEL	-250.0000E-3

Table C-1: Default Values (cont.)

Item	Description
AFG:NOISEADD:PERCENT	0.0E+0
AFG:NOISEADD:STATE	0
AFG:OFFSET	0.0E+0
AFG:OUTPUT:LOAD:IMPEDANCE	HIGHZ
AFG:PERIOD	9.9999999999916E-6
AFG:PHASE	0.0E+0
AFG:PULSE:WIDTH	1.0E-6
AFG:RAMP:SYMMETRY	50.0000
AFG:SQUARE:DUTY	50.0000
ALIAS:STATE	0
APPLICATION:TYPE	POWER
AUXOUT:EDGE	RISING
AUXOUT:SOURCE	ATRIGGER
BUS:B1:AUDIO:BITDELAY	1
BUS:B1:AUDIO:BITORDER	MSB
BUS:B1:AUDIO:CHANNEL:SIZE	24
BUS:B1:AUDIO:CLOCK:POLARITY	RISE
BUS:B1:AUDIO:CLOCK:SOURCE	CH1
BUS:B1:AUDIO:DATA:POLARITY	NORMAL
BUS:B1:AUDIO:DATA:SIZE	24
BUS:B1:AUDIO:DISPLAY:FORMAT	SIGNEDDECIMAL
BUS:B1:AUDIO:FRAME:SIZE	8
BUS:B1:AUDIO:FRAMESYNC:POLARITY	RISE
BUS:B1:AUDIO:FRAMESYNC:SOURCE	CH2
BUS:B1:AUDIO:TYPE	I2S
BUS:B1:AUDIO:WORDSEL:POLARITY	NORMAL
BUS:B1:AUDIO:WORDSEL:SOURCE	CH2
BUS:B1:CAN:BITRATE	500000
BUS:B1:CAN:FD:BITRATE	4000000
BUS:B1:CAN:FD:STANDARD	ISO
BUS:B1:CAN:PROBE	CANH
BUS:B1:CAN:SAMPLEPOINT	50
BUS:B1:CAN:SOURCE	CH1
BUS:B1:CAN:STANDARD	CAN2X
BUS:B1:DISPLAY:FORMAT	HEXADECIMAL
BUS:B1:DISPLAY:TYPE	BUS
BUS:B1:FLEXRAY:BITRATE	10000000

Table C-1: Default Values (cont.)

Item	Description
BUS:B1:FLEXRAY:CHANNEL	A
BUS:B1:FLEXRAY:SIGNAL	BDIFFBP
BUS:B1:FLEXRAY:SOURCE	CH1
BUS:B1:I2C:ADDRESS:RWINCLUDE	0
BUS:B1:I2C:CLOCK:SOURCE	CH1
BUS:B1:I2C:DATA:SOURCE	CH2
BUS:B1:LABEL	"Parallel"
BUS:B1:LIN:BITRATE	19200
BUS:B1:LIN:IDFORMAT	NOPARITY
BUS:B1:LIN:POLARITY	NORMAL
BUS:B1:LIN:SAMPLEPOINT	50
BUS:B1:LIN:SOURCE	CH1
BUS:B1:LIN:STANDARD	V2X
BUS:B1:MIL1553B:POLARITY	NORMAL
BUS:B1:MIL1553B:RESPONSETIME:MAXIMUM	12.0000E-6
BUS:B1:MIL1553B:RESPONSETIME:MINIMUM	4.0000E-6
BUS:B1:MIL1553B:SOURCE	CH1
BUS:B1:PARALLEL:BIT0:SOURCE	D0
BUS:B1:PARALLEL:BIT10:SOURCE	D10
BUS:B1:PARALLEL:BIT11:SOURCE	D11
BUS:B1:PARALLEL:BIT12:SOURCE	D12
BUS:B1:PARALLEL:BIT13:SOURCE	D13
BUS:B1:PARALLEL:BIT14:SOURCE	D14
BUS:B1:PARALLEL:BIT15:SOURCE	D15
BUS:B1:PARALLEL:BIT16:SOURCE	CH1
BUS:B1:PARALLEL:BIT17:SOURCE	CH2
BUS:B1:PARALLEL:BIT18:SOURCE	CH3
BUS:B1:PARALLEL:BIT19:SOURCE	CH4
BUS:B1:PARALLEL:BIT1:SOURCE	D1
BUS:B1:PARALLEL:BIT2:SOURCE	D2
BUS:B1:PARALLEL:BIT3:SOURCE	D3
BUS:B1:PARALLEL:BIT4:SOURCE	D4
BUS:B1:PARALLEL:BIT5:SOURCE	D5
BUS:B1:PARALLEL:BIT6:SOURCE	D6
BUS:B1:PARALLEL:BIT7:SOURCE	D7
BUS:B1:PARALLEL:BIT8:SOURCE	D8
BUS:B1:PARALLEL:BIT9:SOURCE	D9

Table C-1: Default Values (cont.)

Item	Description
BUS:B1:PARALLEL:CLOCK:EDGE	RISING
BUS:B1:PARALLEL:CLOCK:ISCLOCKED	NO
BUS:B1:PARALLEL:CLOCK:SOURCE	CH1
BUS:B1:PARALLEL:WIDTH	16
BUS:B1:POSITION	0.0E+0
BUS:B1:RS232C:BITRATE	9600
BUS:B1:RS232C:DATABITS	8
BUS:B1:RS232C:DELIMITER	LF
BUS:B1:RS232C:DISPLAYMODE	FRAME
BUS:B1:RS232C:PARITY	NONE
BUS:B1:RS232C:POLARITY	NORMAL
BUS:B1:RS232C:RX:SOURCE	OFF
BUS:B1:RS232C:TX:SOURCE	CH1
BUS:B1:SPI:BITORDER	MSB
BUS:B1:SPI:CLOCK:POLARITY	RISE
BUS:B1:SPI:CLOCK:SOURCE	CH1
BUS:B1:SPI:DATA:IN:POLARITY	HIGH
BUS:B1:SPI:DATA:IN:SOURCE	OFF
BUS:B1:SPI:DATA:OUT:POLARITY	HIGH
BUS:B1:SPI:DATA:OUT:SOURCE	CH3
BUS:B1:SPI:DATA:SIZE	8
BUS:B1:SPI:FRAMING	SS
BUS:B1:SPI:IDLETIME	5.0000E-6
BUS:B1:SPI:SELECT:POLARITY	LOW
BUS:B1:SPI:SELECT:SOURCE	CH2
BUS:B1:STATE	0
BUS:B1:TYPE	PARALLEL
BUS:B1:USB:BITRATE	FULL
BUS:B1:USB:PROBE	DIFFERENTIAL
BUS:B1:USB:SOURCE:DIFFERENTIAL	CH1
BUS:B1:USB:SOURCE:DMINUS	CH2
BUS:B1:USB:SOURCE:DPLUS	CH1
BUS:B2:AUDIO:BITDELAY	1
BUS:B2:AUDIO:BITORDER	MSB
BUS:B2:AUDIO:CHANNEL:SIZE	24
BUS:B2:AUDIO:CLOCK:POLARITY	RISE
BUS:B2:AUDIO:CLOCK:SOURCE	CH1

Table C-1: Default Values (cont.)

Item	Description
BUS:B2:AUDIO:DATA:POLARITY	NORMAL
BUS:B2:AUDIO:DATA:SIZE	24
BUS:B2:AUDIO:DISPLAY:FORMAT	SIGNEDDECIMAL
BUS:B2:AUDIO:FRAME:SIZE	8
BUS:B2:AUDIO:FRAMESYNC:POLARITY	RISE
BUS:B2:AUDIO:FRAMESYNC:SOURCE	CH2
BUS:B2:AUDIO:TYPE	I2S
BUS:B2:AUDIO:WORDSEL:POLARITY	NORMAL
BUS:B2:AUDIO:WORDSEL:SOURCE	CH2
BUS:B2:CAN:BITRATE	500000
BUS:B2:CAN:FD:BITRATE	4000000
BUS:B2:CAN:FD:STANDARD	ISO
BUS:B2:CAN:PROBE	CANH
BUS:B2:CAN:SAMPLEPOINT	50
BUS:B2:CAN:SOURCE	CH1
BUS:B2:CAN:STANDARD	CAN2X
BUS:B2:DISPLAY:FORMAT	HEXADECIMAL
BUS:B2:DISPLAY:TYPE	BUS
BUS:B2:FLEXRAY:BITRATE	10000000
BUS:B2:FLEXRAY:CHANNEL	A
BUS:B2:FLEXRAY:SIGNAL	BDIFFBP
BUS:B2:FLEXRAY:SOURCE	CH1
BUS:B2:I2C:ADDRESS:RWINCLUDE	0
BUS:B2:I2C:CLOCK:SOURCE	CH1
BUS:B2:I2C:DATA:SOURCE	CH2
BUS:B2:LABEL	"Parallel"
BUS:B2:LIN:BITRATE	19200
BUS:B2:LIN:IDFORMAT	NOPARITY
BUS:B2:LIN:POLARITY	NORMAL
BUS:B2:LIN:SAMPLEPOINT	50
BUS:B2:LIN:SOURCE	CH1
BUS:B2:LIN:STANDARD	V2X
BUS:B2:MIL1553B:POLARITY	NORMAL
BUS:B2:MIL1553B:RESPONSETIME:MAXIMUM	12.0000E-6
BUS:B2:MIL1553B:RESPONSETIME:MINIMUM	4.0000E-6
BUS:B2:MIL1553B:SOURCE	CH1
BUS:B2:PARALLEL:BIT0:SOURCE	D0

Table C-1: Default Values (cont.)

Item	Description
BUS:B2:PARALLEL:BIT10:SOURCE	D10
BUS:B2:PARALLEL:BIT11:SOURCE	D11
BUS:B2:PARALLEL:BIT12:SOURCE	D12
BUS:B2:PARALLEL:BIT13:SOURCE	D13
BUS:B2:PARALLEL:BIT14:SOURCE	D14
BUS:B2:PARALLEL:BIT15:SOURCE	D15
BUS:B2:PARALLEL:BIT16:SOURCE	CH1
BUS:B2:PARALLEL:BIT17:SOURCE	CH2
BUS:B2:PARALLEL:BIT18:SOURCE	CH3
BUS:B2:PARALLEL:BIT19:SOURCE	CH4
BUS:B2:PARALLEL:BIT1:SOURCE	D1
BUS:B2:PARALLEL:BIT2:SOURCE	D2
BUS:B2:PARALLEL:BIT3:SOURCE	D3
BUS:B2:PARALLEL:BIT4:SOURCE	D4
BUS:B2:PARALLEL:BIT5:SOURCE	D5
BUS:B2:PARALLEL:BIT6:SOURCE	D6
BUS:B2:PARALLEL:BIT7:SOURCE	D7
BUS:B2:PARALLEL:BIT8:SOURCE	D8
BUS:B2:PARALLEL:BIT9:SOURCE	D9
BUS:B2:PARALLEL:CLOCK:EDGE	RISING
BUS:B2:PARALLEL:CLOCK:ISCLOCKED	NO
BUS:B2:PARALLEL:CLOCK:SOURCE	CH1
BUS:B2:PARALLEL:WIDTH	16
BUS:B2:POSITION	0.0E+0
BUS:B2:RS232C:BITRATE	9600
BUS:B2:RS232C:DATABITS	8
BUS:B2:RS232C:DELIMITER	LF
BUS:B2:RS232C:DISPLAYMODE	FRAME
BUS:B2:RS232C:PARITY	NONE
BUS:B2:RS232C:POLARITY	NORMAL
BUS:B2:RS232C:RX:SOURCE	OFF
BUS:B2:RS232C:TX:SOURCE	CH1
BUS:B2:SPI:BITORDER	MSB
BUS:B2:SPI:CLOCK:POLARITY	RISE
BUS:B2:SPI:CLOCK:SOURCE	CH1
BUS:B2:SPI:DATA:IN:POLARITY	HIGH
BUS:B2:SPI:DATA:IN:SOURCE	OFF

Table C-1: Default Values (cont.)

Item	Description
BUS:B2:SPI:DATA:OUT:POLARITY	HIGH
BUS:B2:SPI:DATA:OUT:SOURCE	CH3
BUS:B2:SPI:DATA:SIZE	8
BUS:B2:SPI:FRAMING	SS
BUS:B2:SPI:IDLETIME	5.0000E-6
BUS:B2:SPI:SELECT:POLARITY	LOW
BUS:B2:SPI:SELECT:SOURCE	CH2
BUS:B2:STATE	0
BUS:B2:TYPE	PARALLEL
BUS:B2:USB:BITRATE	FULL
BUS:B2:USB:PROBE	DIFFERENTIAL
BUS:B2:USB:SOURCE:DIFFERENTIAL	CH1
BUS:B2:USB:SOURCE:DMINUS	CH2
BUS:B2:USB:SOURCE:DPLUS	CH1
BUS:LOWERTHRESHOLD:CH1	0.0E+0
BUS:LOWERTHRESHOLD:CH2	0.0E+0
BUS:LOWERTHRESHOLD:CH3	0.0E+0
BUS:LOWERTHRESHOLD:CH4	0.0E+0
BUS:LOWERTHRESHOLD:MATH	0.0E+0
BUS:LOWERTHRESHOLD:REF1	0.0E+0
BUS:LOWERTHRESHOLD:REF2	0.0E+0
BUS:LOWERTHRESHOLD:REF3	0.0E+0
BUS:LOWERTHRESHOLD:REF4	0.0E+0
BUS:UPPERTHRESHOLD:CH1	800.0000E-3
BUS:UPPERTHRESHOLD:CH2	800.0000E-3
BUS:UPPERTHRESHOLD:CH3	800.0000E-3
BUS:UPPERTHRESHOLD:CH4	800.0000E-3
BUS:UPPERTHRESHOLD:MATH	0.0E+0
BUS:UPPERTHRESHOLD:REF1	0.0E+0
BUS:UPPERTHRESHOLD:REF2	0.0E+0
BUS:UPPERTHRESHOLD:REF3	0.0E+0
BUS:UPPERTHRESHOLD:REF4	0.0E+0
CH1:AMPSVIAVOLTS:ENABLE	0
CH1:AMPSVIAVOLTS:FACTOR	10.0000
CH1:BANDWIDTH	1.0000E+9
CH1:COUPLING	DC
CH1:DESKEW	0.0E+0

Table C-1: Default Values (cont.)

Item	Description
CH1:INVERT	0
CH1:LABEL	""
CH1:OFFSET	0.0E+0
CH1:POSITION	0.0E+0
CH1:PROBE:FORCEDRANGE	0.0E+0
CH1:PROBE:GAIN	1.0000
CH1:PROBE:PROPDELAY	0.0E+0
CH1:SCALE	100.0000E-3
CH1:TERMINATION	1.0000E+6
CH1:YUNITS	"V"
CH2:AMPSVIAVOLTS:ENABLE	0
CH2:AMPSVIAVOLTS:FACTOR	10.0000
CH2:BANDWIDTH	1.0000E+9
CH2:COUPLING	DC
CH2:DESKEW	0.0E+0
CH2:INVERT	0
CH2:LABEL	""
CH2:OFFSET	0.0E+0
CH2:POSITION	0.0E+0
CH2:PROBE:FORCEDRANGE	0.0E+0
CH2:PROBE:GAIN	1.0000
CH2:PROBE:PROPDELAY	0.0E+0
CH2:SCALE	100.0000E-3
CH2:TERMINATION	1.0000E+6
CH2:YUNITS	"V"
CH3:AMPSVIAVOLTS:ENABLE	0
CH3:AMPSVIAVOLTS:FACTOR	10.0000
CH3:BANDWIDTH	1.0000E+9
CH3:COUPLING	DC
CH3:DESKEW	0.0E+0
CH3:INVERT	0
CH3:LABEL	""
CH3:OFFSET	0.0E+0
CH3:POSITION	0.0E+0
CH3:PROBE:FORCEDRANGE	0.0E+0
CH3:PROBE:GAIN	1.0000
CH3:PROBE:PROPDELAY	0.0E+0

Table C-1: Default Values (cont.)

Item	Description
CH3:SCALE	100.0000E-3
CH3:TERMINATION	1.0000E+6
CH3:YUNITS	"V"
CH4:AMPSVIAVOLTS:ENABLE	0
CH4:AMPSVIAVOLTS:FACTOR	10.0000
CH4:BANDWIDTH	1.0000E+9
CH4:COUPLING	DC
CH4:DESKEW	0.0E+0
CH4:INVERT	0
CH4:LABEL	""
CH4:OFFSET	0.0E+0
CH4:POSITION	0.0E+0
CH4:PROBE:FORCEDRANGE	0.0E+0
CH4:PROBE:GAIN	1.0000
CH4:PROBE:PROPDELAY	0.0E+0
CH4:SCALE	100.0000E-3
CH4:TERMINATION	1.0000E+6
CH4:YUNITS	"V"
CURSOR:FUNCTION	OFF
CURSOR:HBARS:POSITION1	0.0E+0
CURSOR:HBARS:POSITION2	0.0E+0
CURSOR:HBARS:UNITS	BASE
CURSOR:MODE	INDEPENDENT
CURSOR:SOURCE	AUTO
CURSOR:VBARS:POSITION1	-12.00E-6
CURSOR:VBARS:POSITION2	12.00E-6
CURSOR:VBARS:UNITS	SECONDS
CURSOR:XY:READOUT	RECTANGULAR
CURSOR:XY:RECTANGULAR:X:POSITION1	0.0E+0
CURSOR:XY:RECTANGULAR:X:POSITION2	0.0E+0
CURSOR:XY:RECTANGULAR:Y:POSITION1	0.0E+0
CURSOR:XY:RECTANGULAR:Y:POSITION2	0.0E+0
D0:LABEL	""
D0:POSITION	80.0000E-3
D0:THRESHOLD	1.4000
D10:LABEL	""
D10:POSITION	80.0000E-3

Table C-1: Default Values (cont.)

Item	Description
D10:THRESHOLD	1.4000
D11:LABEL	""
D11:POSITION	80.0000E-3
D11:THRESHOLD	1.4000
D12:LABEL	""
D12:POSITION	80.0000E-3
D12:THRESHOLD	1.4000
D13:LABEL	""
D13:POSITION	80.0000E-3
D13:THRESHOLD	1.4000
D14:LABEL	""
D14:POSITION	80.0000E-3
D14:THRESHOLD	1.4000
D15:LABEL	""
D15:POSITION	80.0000E-3
D15:THRESHOLD	1.4000
D1:LABEL	""
D1:POSITION	80.0000E-3
D1:THRESHOLD	1.4000
D2:LABEL	""
D2:POSITION	80.0000E-3
D2:THRESHOLD	1.4000
D3:LABEL	""
D3:POSITION	80.0000E-3
D3:THRESHOLD	1.4000
D4:LABEL	""
D4:POSITION	80.0000E-3
D4:THRESHOLD	1.4000
D5:LABEL	""
D5:POSITION	80.0000E-3
D5:THRESHOLD	1.4000
D6:LABEL	""
D6:POSITION	80.0000E-3
D6:THRESHOLD	1.4000
D7:LABEL	""
D7:POSITION	80.0000E-3
D7:THRESHOLD	1.4000

Table C-1: Default Values (cont.)

Item	Description
D8:LABEL	""
D8:POSITION	80.0000E-3
D8:THRESHOLD	1.4000
D9:LABEL	""
D9:POSITION	80.0000E-3
D9:THRESHOLD	1.4000
DATA:DESTINATION	REF1
DATA:ENCDG	RIBINARY
DATA:SOURCE	CH1
DATA:START	1
DATA:STOP	10000
DESKEW:DISPLAY	1
DISPLAY:CLOCK	1
DISPLAY:DIGITAL:ACTIVITY	0
DISPLAY:DIGITAL:HEIGHT	MEDIUM
DISPLAY:GRATICULE	FULL
DISPLAY:INTENSITY:BACKLIGHT	HIGH
DISPLAY:INTENSITY:BACKLIGHT:AUTODIM:ENABLE	1
DISPLAY:INTENSITY:BACKLIGHT:AUTODIM:TIME	60
DISPLAY:INTENSITY:GRATICULE	75
DISPLAY:INTENSITY:WAVEFORM	35
DISPLAY:PERSISTENCE	0.0E+0
DISPLAY:STYLE:DOTSONLY	0
DISPLAY:TRIGFREQUENCY	0
DISPLAY:XY	OFF
DISPLAY:XY:WITHYT	0
DVM:AUTORANGE	0
DVM:DISPLAYSTYLE	FULL
DVM:MODE	OFF
DVM:SOURCE	CH1
EMAIL:SETUP:FROMADDRESS	"TestString"
EMAIL:SETUP:HOSTALIASNAME	"TestString"
EMAIL:SETUP:SMTPLOGIN	"TestString"
EMAIL:SETUP:SMTPPORT	25
EMAIL:SETUP:SMTPSERVER	"TestString"
FASTACQ:STATE	0
HEADER	0

Table C-1: Default Values (cont.)

Item	Description
HISTOGRAM:BOXPCNT	20.0000,20.0000,80.0000,80.0000
HISTOGRAM:DISPLAY	LINEAR
HISTOGRAM:MODE	OFF
HISTOGRAM:SOURCE	CH1
HORIZONTAL:DELAY:MODE	1
HORIZONTAL:DELAY:TIME	0.0E+0
HORIZONTAL:POSITION	50.0000
HORIZONTAL:RECORDLENGTH	10000
	4.0000E-6
LOCK	NONE
MARKER:M1:FREQUENCY:ABSOLUTE	0.0E+0
MARKER:M2:FREQUENCY:ABSOLUTE	0.0E+0
MARKER:MANUAL	0
MARKER:PEAK:EXCURSION	30.0000
MARKER:PEAK:MAXIMUM	5
MARKER:PEAK:STATE	1
MARKER:PEAK:THRESHOLD	-50.0000
MARKER:TYPE	ABSOLUTE
MASK:TEST:SAVEWFM	0
MASK:TEST:SRQ:COMPLETION	0
MASK:TEST:SRQ:FAILURE	0
MASK:TEST:STATE	0
MASK:TEST:STOP:FAILURE	0
MASK:TEST:THRESHOLD	1
MASK:TEST:TIME	INFINITE
MASK:TEST:WAVEFORM	INFINITE
MASK:USER:AMPLITUDE	1.0000
MASK:USER:HSCALE	400.0000E-6
MASK:USER:HTRIGPOS	500.0000E-3
MATH:AUTOSCALE	1
MATH:DEFINE	"CH1+CH2"
MATH:HORIZONTAL:POSITION	50.0000
MATH:	4.0000E-6
MATH:HORIZONTAL:UNITS	"s"
MATH:LABEL	""
MATH:SPECTRAL:MAG	DB
MATH:SPECTRAL:WINDOW	HANNING

Table C-1: Default Values (cont.)

Item	Description
MATH:TYPE	DUAL
MATH:VERTICAL:POSITION	0.0E+0
MATH:VERTICAL:SCALE	100.0000E-3
MATH:VERTICAL:UNITS	"V"
MATHVAR:VAR1	0.0E+0
MATHVAR:VAR2	0.0E+0
MEASUREMENT:GATING	SCREEN
MEASUREMENT:IMMED:DELAY:DIRECTION	FORWARDS
MEASUREMENT:IMMED:DELAY:EDGE1	RISE
MEASUREMENT:IMMED:DELAY:EDGE2	RISE
MEASUREMENT:IMMED:SOURCE1	CH1
MEASUREMENT:IMMED:SOURCE2	CH2
MEASUREMENT:IMMED:TYPE	PERIOD
MEASUREMENT:INDICATORS:STATE	OFF
MEASUREMENT:MEAS1:DELAY:DIRECTION	FORWARDS
MEASUREMENT:MEAS1:DELAY:EDGE1	RISE
MEASUREMENT:MEAS1:DELAY:EDGE2	RISE
MEASUREMENT:MEAS1:SOURCE1	CH1
MEASUREMENT:MEAS1:SOURCE2	CH2
MEASUREMENT:MEAS1:STATE	0
MEASUREMENT:MEAS1:TYPE	PERIOD
MEASUREMENT:MEAS2:DELAY:DIRECTION	FORWARDS
MEASUREMENT:MEAS2:DELAY:EDGE1	RISE
MEASUREMENT:MEAS2:DELAY:EDGE2	RISE
MEASUREMENT:MEAS2:SOURCE1	CH1
MEASUREMENT:MEAS2:SOURCE2	CH2
MEASUREMENT:MEAS2:STATE	0
MEASUREMENT:MEAS2:TYPE	PERIOD
MEASUREMENT:MEAS3:DELAY:DIRECTION	FORWARDS
MEASUREMENT:MEAS3:DELAY:EDGE1	RISE
MEASUREMENT:MEAS3:DELAY:EDGE2	RISE
MEASUREMENT:MEAS3:SOURCE1	CH1
MEASUREMENT:MEAS3:SOURCE2	CH2
MEASUREMENT:MEAS3:STATE	0
MEASUREMENT:MEAS3:TYPE	PERIOD
MEASUREMENT:MEAS4:DELAY:DIRECTION	FORWARDS
MEASUREMENT:MEAS4:DELAY:EDGE1	RISE

Table C-1: Default Values (cont.)

Item	Description
MEASUREMENT:MEAS4:DELAY:EDGE2	RISE
MEASUREMENT:MEAS4:SOURCE1	CH1
MEASUREMENT:MEAS4:SOURCE2	CH2
MEASUREMENT:MEAS4:STATE	0
MEASUREMENT:MEAS4:TYPE	PERIOD
MEASUREMENT:METHOD	AUTO
MEASUREMENT:REFLEVEL:ABSOLUTE:HIGH	0.0E+0
MEASUREMENT:REFLEVEL:ABSOLUTE:LOW	0.0E+0
MEASUREMENT:REFLEVEL:ABSOLUTE:MID1	0.0E+0
MEASUREMENT:REFLEVEL:ABSOLUTE:MID2	0.0E+0
MEASUREMENT:REFLEVEL:METHOD	PERCENT
MEASUREMENT:REFLEVEL:PERCENT:HIGH	90.0000
MEASUREMENT:REFLEVEL:PERCENT:LOW	10.0000
MEASUREMENT:REFLEVEL:PERCENT:MID1	50.0000
MEASUREMENT:REFLEVEL:PERCENT:MID2	50.0000
MEASUREMENT:STATISTICS:MODE	ALL
MEASUREMENT:STATISTICS:WEIGHTING	32
MESSAGE:BOX	167,67,167,83
MESSAGE:SHOW	""
MESSAGE:STATE	0
PICTBRIDGE:DATEPRINT	DEFLT
PICTBRIDGE:IDPRINT	OFF
PICTBRIDGE:IMAGESIZE	DEFLT
PICTBRIDGE:PAPERSIZE	DEFLT
PICTBRIDGE:PAPERTYPE	DEFLT
PICTBRIDGE:PRINTQUAL	DEFLT
REF1:HORIZONTAL:DELAY:TIME	16.0000E-6
REF1:	4.0000E-6
REF1:VERTICAL:POSITION	0.0E+0
REF1:VERTICAL:SCALE	100.0000E-3
REF2:HORIZONTAL:DELAY:TIME	16.0000E-6
REF2:	4.0000E-6
REF2:VERTICAL:POSITION	0.0E+0
REF2:VERTICAL:SCALE	100.0000E-3
REF3:HORIZONTAL:DELAY:TIME	16.0000E-6
REF3:	4.0000E-6
REF3:VERTICAL:POSITION	0.0E+0

Table C-1: Default Values (cont.)

Item	Description
REF3:VERTICAL:SCALE	100.0000E-3
REF4:HORIZONTAL:DELAY:TIME	16.0000E-6
REF4:	4.0000E-6
REF4:VERTICAL:POSITION	0.0E+0
REF4:VERTICAL:SCALE	100.0000E-3
ROSC:SOURCE	INTERNAL
SAVE:ASSIGN:TYPE	WAVEFORM
SAVE:IMAGE:FILEFORMAT	PNG
SAVE:IMAGE:INKSAVER	1
SAVE:IMAGE:LAYOUT	PORTRAIT
SAVE:WAVEFORM	WFM
SAVE:WAVEFORM:GATING	NONE
SEARCH:SEARCH1:STATE	0
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:AUDIO:CONDITION	SOF
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:AUDIO:DATA:HIVALUE	"XXXXXXXXXXXXXXXXXXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:AUDIO:DATA:OFFSET	0
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:AUDIO:DATA:QUALIFIER	EQUAL
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:AUDIO:DATA:VALUE	"XXXXXXXXXXXXXXXXXXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:AUDIO:DATA:WORD	EITHER
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:CAN:CONDITION	SOF
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:CAN:DATA:DIRECTION	NOCARE
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:CAN:DATA:OFFSET	0
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:CAN:DATA:QUALIFIER	EQUAL
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:CAN:DATA:SIZE	1
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:CAN:DATA:VALUE	"XXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:CAN:FD:BRSBIT	X
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:CAN:FD:ESIBIT	X
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:CAN:FRAMETYPE	DATA
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:CAN:IDENTIFIER:MODE	STANDARD
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:CAN:IDENTIFIER:VALUE	"XXXXXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:FLEXRAY:CONDITION	SOF
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:FLEXRAY:CYCLECOUNT:HIVALUE	"XXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:FLEXRAY:CYCLECOUNT:QUALIFIER	EQUAL
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:FLEXRAY:CYCLECOUNT:VALUE	"XXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:FLEXRAY:DATA:HIVALUE	"XXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:FLEXRAY:DATA:OFFSET	-1
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:FLEXRAY:DATA:QUALIFIER	EQUAL

Table C-1: Default Values (cont.)

Item	Description
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:FLEXRAY:DATA:SIZE	1
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:FLEXRAY:DATA:VALUE	"XXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:FLEXRAY:EOFTYPE	STATIC
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:FLEXRAY:ERRTYPE	CRCHEADER
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:FLEXRAY:FRAMEID:HIVALUE	"XXXXXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:FLEXRAY:FRAMEID:QUALIFIER	EQUAL
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:FLEXRAY:FRAMEID:VALUE	"XXXXXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:FLEXRAY:FRAMETYPE	NORMAL
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:FLEXRAY:HEADER:CRC	"XXXXXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:FLEXRAY:HEADER:CYCLECOUNT	"XXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:FLEXRAY:HEADER:FRAMEID	"XXXXXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:FLEXRAY:HEADER:INDBITS	"XXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:FLEXRAY:HEADER:PAYLENGTH	"XXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:I2C:ADDRESS:MODE	ADDR7
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:I2C:ADDRESS:TYPE	USER
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:I2C:ADDRESS:VALUE	"XXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:I2C:CONDITION	START
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:I2C:DATA:DIRECTION	NOCARE
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:I2C:DATA:SIZE	1
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:I2C:DATA:VALUE	"XXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:LIN:CONDITION	SYNCFIELD
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:LIN:DATA:HIVALUE	"XXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:LIN:DATA:QUALIFIER	EQUAL
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:LIN:DATA:SIZE	1
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:LIN:DATA:VALUE	"XXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:LIN:ERRTYPE	SYNC
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:LIN:IDENTIFIER:VALUE	"XXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:MIL1553B:COMMAND:ADDRESS:HIVALUE	"XXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:MIL1553B:COMMAND:ADDRESS:QUALIFIER	EQUAL
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:MIL1553B:COMMAND:ADDRESS:VALUE	"XXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:MIL1553B:COMMAND:COUNT	"XXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:MIL1553B:COMMAND:PARITY	X
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:MIL1553B:COMMAND:SUBADDRESS	"XXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:MIL1553B:COMMAND:TRBIT	X
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:MIL1553B:CONDITION	SYNC
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:MIL1553B:DATA:PARITY	X
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:MIL1553B:DATA:VALUE	"XXXXXXXXXXXXXXXX"

Table C-1: Default Values (cont.)

Item	Description
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:MIL1553B:ERRTYPE	PARITY
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:MIL1553B:STATUS:ADDRESS:HIVALUE	"XXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:MIL1553B:STATUS:ADDRESS:QUALIFIER	EQUAL
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:MIL1553B:STATUS:ADDRESS:VALUE	"XXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:MIL1553B:STATUS:BIT:BCR	X
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:MIL1553B:STATUS:BIT:BUSY	X
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:MIL1553B:STATUS:BIT:DBCA	X
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:MIL1553B:STATUS:BIT:INSTR	X
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:MIL1553B:STATUS:BIT:ME	X
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:MIL1553B:STATUS:BIT:SRQ	X
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:MIL1553B:STATUS:BIT:SUBSF	X
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:MIL1553B:STATUS:BIT:TF	X
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:MIL1553B:STATUS:PARITY	X
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:MIL1553B:TIME:LESSLIMIT	4.0000E-6
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:MIL1553B:TIME:MORELIMIT	12.0000E-6
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:MIL1553B:TIME:QUALIFIER	MORETHAN
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:PARALLEL:VALUE	"XXXXXXXXXXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:RS232C:CONDITION	TXSTART
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:RS232C:RX:DATA:SIZE	1
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:RS232C:RX:DATA:VALUE	"XXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:RS232C:TX:DATA:SIZE	1
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:RS232C:TX:DATA:VALUE	"XXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:SPI:CONDITION	SS
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:SPI:DATA:MISO:VALUE	"XXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:SPI:DATA:MOSI:VALUE	"XXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:SPI:DATA:SIZE	1
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:USB:ADDRESS:HIVALUE	"XXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:USB:ADDRESS:VALUE	"XXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:USB:CONDITION	SYNC
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:USB:DATA:HIVALUE	"XXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:USB:DATA:OFFSET	-1
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:USB:DATA:SIZE	1
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:USB:DATA:TYPE	ANY
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:USB:DATA:VALUE	"XXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:USB:ENDPOINT:VALUE	"XXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:USB:ERRTYPE	PID
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:USB:HANDSHAKETYPE	ANY

Table C-1: Default Values (cont.)

Item	Description
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:USB:QUALIFIER	EQUAL
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:USB:SOFFRAMENUMBER	"XXXXXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:USB:SPECIALTYPE	ANY
SEARCH:SEARCH1:TRIGGER:A:BUS:B1:USB:TOKENTYPE	ANY
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:AUDIO:CONDITION	SOF
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:AUDIO:DATA:HIVALUE	"XXXXXXXXXXXXXXXXXXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:AUDIO:DATA:OFFSET	0
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:AUDIO:DATA:QUALIFIER	EQUAL
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:AUDIO:DATA:VALUE	"XXXXXXXXXXXXXXXXXXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:AUDIO:DATA:WORD	EITHER
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:CAN:CONDITION	SOF
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:CAN:DATA:DIRECTION	NOCARE
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:CAN:DATA:OFFSET	0
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:CAN:DATA:QUALIFIER	EQUAL
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:CAN:DATA:SIZE	1
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:CAN:DATA:VALUE	"XXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:CAN:FD:BRSBIT	X
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:CAN:FD:ESIBIT	X
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:CAN:FRAMETYPE	DATA
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:CAN:IDENTIFIER:MODE	STANDARD
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:CAN:IDENTIFIER:VALUE	"XXXXXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:FLEXRAY:CONDITION	SOF
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:FLEXRAY:CYCLECOUNT:HIVALUE	"XXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:FLEXRAY:CYCLECOUNT:QUALIFIER	EQUAL
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:FLEXRAY:CYCLECOUNT:VALUE	"XXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:FLEXRAY:DATA:HIVALUE	"XXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:FLEXRAY:DATA:OFFSET	-1
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:FLEXRAY:DATA:QUALIFIER	EQUAL
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:FLEXRAY:DATA:SIZE	1
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:FLEXRAY:DATA:VALUE	"XXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:FLEXRAY:EOFTYPE	STATIC
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:FLEXRAY:ERRTYPE	CRCHEADER
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:FLEXRAY:FRAMEID:HIVALUE	"XXXXXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:FLEXRAY:FRAMEID:QUALIFIER	EQUAL
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:FLEXRAY:FRAMEID:VALUE	"XXXXXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:FLEXRAY:FRAMETYPE	NORMAL
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:FLEXRAY:HEADER:CRC	"XXXXXXXXXXX"

Table C-1: Default Values (cont.)

Item	Description
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:FLEXRAY:HEADER:CYCLECOUNT	"XXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:FLEXRAY:HEADER:FRAMEID	"XXXXXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:FLEXRAY:HEADER:INDBITS	"XXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:FLEXRAY:HEADER:PAYLENGTH	"XXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:I2C:ADDRESS:MODE	ADDR7
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:I2C:ADDRESS:TYPE	USER
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:I2C:ADDRESS:VALUE	"XXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:I2C:CONDITION	START
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:I2C:DATA:DIRECTION	NOCARE
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:I2C:DATA:SIZE	1
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:I2C:DATA:VALUE	"XXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:LIN:CONDITION	SYNCFIELD
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:LIN:DATA:HIVALUE	"XXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:LIN:DATA:QUALIFIER	EQUAL
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:LIN:DATA:SIZE	1
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:LIN:DATA:VALUE	"XXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:LIN:ERRTYPE	SYNC
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:LIN:IDENTIFIER:VALUE	"XXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:MIL1553B:COMMAND:ADDRESS:HIVALUE	"XXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:MIL1553B:COMMAND:ADDRESS:QUALIFIER	EQUAL
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:MIL1553B:COMMAND:ADDRESS:VALUE	"XXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:MIL1553B:COMMAND:COUNT	"XXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:MIL1553B:COMMAND:PARITY	X
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:MIL1553B:COMMAND:SUBADDRESS	"XXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:MIL1553B:COMMAND:TRBIT	X
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:MIL1553B:CONDITION	SYNC
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:MIL1553B:DATA:PARITY	X
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:MIL1553B:DATA:VALUE	"XXXXXXXXXXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:MIL1553B:ERRTYPE	PARITY
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:MIL1553B:STATUS:ADDRESS:HIVALUE	"XXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:MIL1553B:STATUS:ADDRESS:QUALIFIER	EQUAL
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:MIL1553B:STATUS:ADDRESS:VALUE	"XXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:MIL1553B:STATUS:BIT:BCR	X
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:MIL1553B:STATUS:BIT:BUSY	X
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:MIL1553B:STATUS:BIT:DBCA	X
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:MIL1553B:STATUS:BIT:INSTR	X
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:MIL1553B:STATUS:BIT:ME	X

Table C-1: Default Values (cont.)

Item	Description
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:MIL1553B:STATUS:BIT:SRQ	X
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:MIL1553B:STATUS:BIT:SUBSF	X
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:MIL1553B:STATUS:BIT:TF	X
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:MIL1553B:STATUS:PARITY	X
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:MIL1553B:TIME:LESSLIMIT	4.0000E-6
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:MIL1553B:TIME:MORELIMIT	12.0000E-6
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:MIL1553B:TIME:QUALIFIER	MORETHAN
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:PARALLEL:VALUE	"XXXXXXXXXXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:RS232C:CONDITION	TXSTART
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:RS232C:RX:DATA:SIZE	1
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:RS232C:RX:DATA:VALUE	"XXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:RS232C:TX:DATA:SIZE	1
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:RS232C:TX:DATA:VALUE	"XXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:SPI:CONDITION	SS
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:SPI:DATA:MISO:VALUE	"XXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:SPI:DATA:MOSI:VALUE	"XXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:SPI:DATA:SIZE	1
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:USB:ADDRESS:HIVALUE	"XXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:USB:ADDRESS:VALUE	"XXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:USB:CONDITION	SYNC
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:USB:DATA:HIVALUE	"XXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:USB:DATA:OFFSET	-1
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:USB:DATA:SIZE	1
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:USB:DATA:TYPE	ANY
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:USB:DATA:VALUE	"XXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:USB:ENDPOINT:VALUE	"XXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:USB:ERRTYPE	PID
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:USB:HANDSHAKETYPE	ANY
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:USB:QUALIFIER	EQUAL
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:USB:SOFFRAMENUMBER	"XXXXXXXXXXX"
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:USB:SPECIALTYPE	ANY
SEARCH:SEARCH1:TRIGGER:A:BUS:B2:USB:TOKENTYPE	ANY
SEARCH:SEARCH1:TRIGGER:A:BUS:SOURCE	B1
SEARCH:SEARCH1:TRIGGER:A:EDGE:SLOPE	RISE
SEARCH:SEARCH1:TRIGGER:A:EDGE:SOURCE	CH1
SEARCH:SEARCH1:TRIGGER:A:LEVEL	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:LEVEL:CH1	0.0E+0

Table C-1: Default Values (cont.)

Item	Description
SEARCH:SEARCH1:TRIGGER:A:LEVEL:CH2	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:LEVEL:CH3	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:LEVEL:CH4	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:LEVEL:MATH	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:LEVEL:REF1	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:LEVEL:REF2	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:LEVEL:REF3	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:LEVEL:REF4	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:LOGIC:FUNCTION	AND
SEARCH:SEARCH1:TRIGGER:A:LOGIC:INPUT:CH1	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:INPUT:CH2	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:INPUT:CH3	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:INPUT:CH4	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:INPUT:CLOCK:EDGE	RISE
SEARCH:SEARCH1:TRIGGER:A:LOGIC:INPUT:CLOCK:SOURCE	NONE
SEARCH:SEARCH1:TRIGGER:A:LOGIC:INPUT:D0	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:INPUT:D1	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:INPUT:D10	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:INPUT:D11	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:INPUT:D12	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:INPUT:D13	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:INPUT:D14	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:INPUT:D15	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:INPUT:D2	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:INPUT:D3	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:INPUT:D4	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:INPUT:D5	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:INPUT:D6	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:INPUT:D7	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:INPUT:D8	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:INPUT:D9	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:INPUT:MATH	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:INPUT:REF1	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:INPUT:REF2	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:INPUT:REF3	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:INPUT:REF4	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:PATTERN:INPUT:D0	X

Table C-1: Default Values (cont.)

Item	Description
SEARCH:SEARCH1:TRIGGER:A:LOGIC:PATTERN:INPUT:D1	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:PATTERN:INPUT:D10	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:PATTERN:INPUT:D11	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:PATTERN:INPUT:D12	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:PATTERN:INPUT:D13	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:PATTERN:INPUT:D14	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:PATTERN:INPUT:D15	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:PATTERN:INPUT:D2	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:PATTERN:INPUT:D3	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:PATTERN:INPUT:D4	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:PATTERN:INPUT:D5	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:PATTERN:INPUT:D6	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:PATTERN:INPUT:D7	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:PATTERN:INPUT:D8	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:PATTERN:INPUT:D9	X
SEARCH:SEARCH1:TRIGGER:A:LOGIC:PATTERN:WHEN	TRUE
SEARCH:SEARCH1:TRIGGER:A:LOGIC:PATTERN:WHEN:LESSLIMIT	8.0000E-9
SEARCH:SEARCH1:TRIGGER:A:LOGIC:PATTERN:WHEN:MORELIMIT	8.0000E-9
SEARCH:SEARCH1:TRIGGER:A:LOGIC:THRESHOLD:CH1	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:LOGIC:THRESHOLD:CH2	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:LOGIC:THRESHOLD:CH3	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:LOGIC:THRESHOLD:CH4	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:LOGIC:THRESHOLD:MATH	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:LOGIC:THRESHOLD:REF1	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:LOGIC:THRESHOLD:REF2	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:LOGIC:THRESHOLD:REF3	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:LOGIC:THRESHOLD:REF4	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:LOWERTHRESHOLD:CH1	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:LOWERTHRESHOLD:CH2	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:LOWERTHRESHOLD:CH3	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:LOWERTHRESHOLD:CH4	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:LOWERTHRESHOLD:MATH	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:LOWERTHRESHOLD:REF1	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:LOWERTHRESHOLD:REF2	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:LOWERTHRESHOLD:REF3	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:LOWERTHRESHOLD:REF4	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:PULSEWIDTH:HIGHLIMIT	12.0000E-9

Table C-1: Default Values (cont.)

Item	Description
SEARCH:SEARCH1:TRIGGER:A:PULSEWIDTH:LOWLIMIT	8.0000E-9
SEARCH:SEARCH1:TRIGGER:A:PULSEWIDTH:POLARITY	POSITIVE
SEARCH:SEARCH1:TRIGGER:A:PULSEWIDTH:WHEN	LESSTHAN
SEARCH:SEARCH1:TRIGGER:A:PULSEWIDTH:WIDTH	8.0000E-9
SEARCH:SEARCH1:TRIGGER:A:RUNT:POLARITY	POSITIVE
SEARCH:SEARCH1:TRIGGER:A:RUNT:WHEN	OCCURS
SEARCH:SEARCH1:TRIGGER:A:RUNT:WIDTH	8.0000E-9
SEARCH:SEARCH1:TRIGGER:A:SETHOLD:CLOCK:EDGE	RISE
SEARCH:SEARCH1:TRIGGER:A:SETHOLD:CLOCK:SOURCE	CH1
SEARCH:SEARCH1:TRIGGER:A:SETHOLD:CLOCK:THRESHOLD	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:SETHOLD:DATA:SOURCE	NONE
SEARCH:SEARCH1:TRIGGER:A:SETHOLD:DATA:THRESHOLD	9.91E+37
SEARCH:SEARCH1:TRIGGER:A:SETHOLD:HOLDTIME	8.0000E-9
SEARCH:SEARCH1:TRIGGER:A:SETHOLD:SETTIME	8.0000E-9
SEARCH:SEARCH1:TRIGGER:A:SETHOLD:THRESHOLD:CH1	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:SETHOLD:THRESHOLD:CH2	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:SETHOLD:THRESHOLD:CH3	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:SETHOLD:THRESHOLD:CH4	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:SETHOLD:THRESHOLD:MATH	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:SETHOLD:THRESHOLD:REF1	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:SETHOLD:THRESHOLD:REF2	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:SETHOLD:THRESHOLD:REF3	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:SETHOLD:THRESHOLD:REF4	0.0E+0
SEARCH:SEARCH1:TRIGGER:A:TIMEOUT:POLARITY	STAYSHIGH
SEARCH:SEARCH1:TRIGGER:A:TIMEOUT:TIME	8.0000E-9
SEARCH:SEARCH1:TRIGGER:A:TRANSITION:DELTATIME	8.0000E-9
SEARCH:SEARCH1:TRIGGER:A:TRANSITION:POLARITY	POSITIVE
SEARCH:SEARCH1:TRIGGER:A:TRANSITION:WHEN	SLOWER
SEARCH:SEARCH1:TRIGGER:A:TYPE	EDGE
SEARCH:SEARCH1:TRIGGER:A:UPPERTHRESHOLD:CH1	800.0000E-3
SEARCH:SEARCH1:TRIGGER:A:UPPERTHRESHOLD:CH2	800.0000E-3
SEARCH:SEARCH1:TRIGGER:A:UPPERTHRESHOLD:CH3	800.0000E-3
SEARCH:SEARCH1:TRIGGER:A:UPPERTHRESHOLD:CH4	800.0000E-3
SEARCH:SEARCH1:TRIGGER:A:UPPERTHRESHOLD:MATH	800.0000E-3
SEARCH:SEARCH1:TRIGGER:A:UPPERTHRESHOLD:REF1	800.0000E-3
SEARCH:SEARCH1:TRIGGER:A:UPPERTHRESHOLD:REF2	800.0000E-3
SEARCH:SEARCH1:TRIGGER:A:UPPERTHRESHOLD:REF3	800.0000E-3

Table C-1: Default Values (cont.)

Item	Description
SEARCH:SEARCH1:TRIGGER:A:UPPERTHRESHOLD:REF4	800.0000E-3
SEARCH:SEARCH<x>:TRIGGER:A:BUS:B<x>:CAN:DATa:OFFSet	0
SEARCH:SEARCH<x>:TRIGGER:A:BUS:B<x>:CAN:FD:BRSBIT	X
SEARCH:SEARCH<x>:TRIGGER:A:BUS:B<x>:CAN:FD:ESIBIT	X
SELECT:BUS1	0
SELECT:BUS2	0
SELECT:CH1	1
SELECT:CH2	0
SELECT:CH3	0
SELECT:CH4	0
SELECT:CONTROL	CH1
SELECT:D0	0
SELECT:D1	0
SELECT:D10	0
SELECT:D11	0
SELECT:D12	0
SELECT:D13	0
SELECT:D14	0
SELECT:D15	0
SELECT:D2	0
SELECT:D3	0
SELECT:D4	0
SELECT:D5	0
SELECT:D6	0
SELECT:D7	0
SELECT:D8	0
SELECT:D9	0
SELECT:DALL	0
SELECT:MATH	0
SELECT:REF1	0
SELECT:REF2	0
SELECT:REF3	0
SELECT:REF4	0
TRIGGER:A:BUS:B1:AUDIO:CONDITION	SOF
TRIGGER:A:BUS:B1:AUDIO:DATA:HIVALUE	"XXXXXXXXXXXXXXXXXXXXXXXX"
TRIGGER:A:BUS:B1:AUDIO:DATA:OFFSET	0
TRIGGER:A:BUS:B1:AUDIO:DATA:QUALIFIER	EQUAL

Table C-1: Default Values (cont.)

Item	Description
TRIGGER:A:BUS:B1:AUDIO:DATA:VALUE	"XXXXXXXXXXXXXXXXXXXXXXXX"
TRIGGER:A:BUS:B1:AUDIO:DATA:WORD	EITHER
TRIGGER:A:BUS:B1:CAN:CONDITION	SOF
TRIGGER:A:BUS:B1:CAN:DATA:DIRECTION	NOCARE
TRIGGER:A:BUS:B1:CAN:DATA:OFFSET	0
TRIGGER:A:BUS:B1:CAN:DATA:QUALIFIER	EQUAL
TRIGGER:A:BUS:B1:CAN:DATA:SIZE	1
TRIGGER:A:BUS:B1:CAN:DATA:START	0.0E+0
TRIGGER:A:BUS:B1:CAN:FD:BRSBIT	X
TRIGGER:A:BUS:B1:CAN:FD:ESIBIT	X
TRIGGER:A:BUS:B1:CAN:DATA:VALUE	"XXXXXXXX"
TRIGGER:A:BUS:B1:CAN:FRAMETYPE	DATA
TRIGGER:A:BUS:B1:CAN:IDENTIFIER:MODE	STANDARD
TRIGGER:A:BUS:B1:CAN:IDENTIFIER:VALUE	"XXXXXXXXXXX"
TRIGGER:A:BUS:B1:FLEXRAY:CONDITION	SOF
TRIGGER:A:BUS:B1:FLEXRAY:CYCLECOUNT:HIVALUE	"XXXXXX"
TRIGGER:A:BUS:B1:FLEXRAY:CYCLECOUNT:QUALIFIER	EQUAL
TRIGGER:A:BUS:B1:FLEXRAY:CYCLECOUNT:VALUE	"XXXXXX"
TRIGGER:A:BUS:B1:FLEXRAY:DATA:HIVALUE	"XXXXXXXX"
TRIGGER:A:BUS:B1:FLEXRAY:DATA:OFFSET	-1
TRIGGER:A:BUS:B1:FLEXRAY:DATA:QUALIFIER	EQUAL
TRIGGER:A:BUS:B1:FLEXRAY:DATA:SIZE	1
TRIGGER:A:BUS:B1:FLEXRAY:DATA:VALUE	"XXXXXXXX"
TRIGGER:A:BUS:B1:FLEXRAY:EOFTYPE	STATIC
TRIGGER:A:BUS:B1:FLEXRAY:ERRTYPE	CRCHEADER
TRIGGER:A:BUS:B1:FLEXRAY:FRAMEID:HIVALUE	"XXXXXXXXXXX"
TRIGGER:A:BUS:B1:FLEXRAY:FRAMEID:QUALIFIER	EQUAL
TRIGGER:A:BUS:B1:FLEXRAY:FRAMEID:VALUE	"XXXXXXXXXXX"
TRIGGER:A:BUS:B1:FLEXRAY:FRAMETYPE	NORMAL
TRIGGER:A:BUS:B1:FLEXRAY:HEADER:CRC	"XXXXXXXXXXX"
TRIGGER:A:BUS:B1:FLEXRAY:HEADER:CYCLECOUNT	"XXXXXX"
TRIGGER:A:BUS:B1:FLEXRAY:HEADER:FRAMEID	"XXXXXXXXXXX"
TRIGGER:A:BUS:B1:FLEXRAY:HEADER:INDBITS	"XXXXX"
TRIGGER:A:BUS:B1:FLEXRAY:HEADER:PAYLENGTH	"XXXXXXX"
TRIGGER:A:BUS:B1:I2C:ADDRESS:MODE	ADDR7
TRIGGER:A:BUS:B1:I2C:ADDRESS:TYPE	USER
TRIGGER:A:BUS:B1:I2C:ADDRESS:VALUE	"XXXXXXX"

Table C-1: Default Values (cont.)

Item	Description
TRIGGER:A:BUS:B1:I2C:CONDITION	START
TRIGGER:A:BUS:B1:I2C:DATA:DIRECTION	NOCARE
TRIGGER:A:BUS:B1:I2C:DATA:SIZE	1
TRIGGER:A:BUS:B1:I2C:DATA:START	0.0E+0
TRIGGER:A:BUS:B1:I2C:DATA:VALUE	"XXXXXXXX"
TRIGGER:A:BUS:B1:LIN:CONDITION	SYNCFIELD
TRIGGER:A:BUS:B1:LIN:DATA:HIVALUE	"XXXXXXXX"
TRIGGER:A:BUS:B1:LIN:DATA:QUALIFIER	EQUAL
TRIGGER:A:BUS:B1:LIN:DATA:SIZE	1
TRIGGER:A:BUS:B1:LIN:DATA:VALUE	"XXXXXXXX"
TRIGGER:A:BUS:B1:LIN:ERRTYPE	SYNC
TRIGGER:A:BUS:B1:LIN:IDENTIFIER:VALUE	"XXXXXX"
TRIGGER:A:BUS:B1:PARALLEL:VALUE	"XXXXXXXXXXXXXXXX"
TRIGGER:A:BUS:B1:RS232C:CONDITION	TXSTART
TRIGGER:A:BUS:B1:RS232C:RX:DATA:SIZE	1
TRIGGER:A:BUS:B1:RS232C:RX:DATA:VALUE	"XXXXXXXX"
TRIGGER:A:BUS:B1:RS232C:TX:DATA:SIZE	1
TRIGGER:A:BUS:B1:RS232C:TX:DATA:VALUE	"XXXXXXXX"
TRIGGER:A:BUS:B1:SPI:CONDITION	SS
TRIGGER:A:BUS:B1:SPI:DATA:IN:VALUE	"XXXXXXXX"
TRIGGER:A:BUS:B1:SPI:DATA:OUT:VALUE	"XXXXXXXX"
TRIGGER:A:BUS:B1:SPI:DATA:SIZE	1
TRIGGER:A:BUS:B1:SPI:DATA:START	0.0E+0
TRIGGER:A:BUS:B1:USB:ADDRESS:HIVALUE	"XXXXXXX"
TRIGGER:A:BUS:B1:USB:ADDRESS:VALUE	"XXXXXXX"
TRIGGER:A:BUS:B1:USB:CONDITION	SYNC
TRIGGER:A:BUS:B1:USB:DATA:HIVALUE	"XXXXXXXX"
TRIGGER:A:BUS:B1:USB:DATA:OFFSET	-1
TRIGGER:A:BUS:B1:USB:DATA:SIZE	1
TRIGGER:A:BUS:B1:USB:DATA:TYPE	ANY
TRIGGER:A:BUS:B1:USB:DATA:VALUE	"XXXXXXXX"
TRIGGER:A:BUS:B1:USB:ENDPOINT:VALUE	"XXXX"
TRIGGER:A:BUS:B1:USB:ERRTYPE	PID
TRIGGER:A:BUS:B1:USB:HANDSHAKETYPE	ANY
TRIGGER:A:BUS:B1:USB:QUALIFIER	EQUAL
TRIGGER:A:BUS:B1:USB:SOFFRAMENUMBER	"XXXXXXXXXXX"
TRIGGER:A:BUS:B1:USB:SPECIALTYPE	ANY

Table C-1: Default Values (cont.)

Item	Description
TRIGGER:A:BUS:B1:USB:TOKENTYPE	ANY
TRIGGER:A:BUS:B2:AUDIO:CONDITION	SOF
TRIGGER:A:BUS:B2:AUDIO:DATA:HIVALUE	"XXXXXXXXXXXXXXXXXXXXXXXX"
TRIGGER:A:BUS:B2:AUDIO:DATA:OFFSET	0
TRIGGER:A:BUS:B2:AUDIO:DATA:QUALIFIER	EQUAL
TRIGGER:A:BUS:B2:AUDIO:DATA:VALUE	"XXXXXXXXXXXXXXXXXXXXXXXX"
TRIGGER:A:BUS:B2:AUDIO:DATA:WORD	EITHER
TRIGGER:A:BUS:B2:CAN:CONDITION	SOF
TRIGGER:A:BUS:B2:CAN:DATA:DIRECTION	NOCARE
TRIGGER:A:BUS:B2:CAN:DATA:OFFSET	0
TRIGGER:A:BUS:B2:CAN:DATA:QUALIFIER	EQUAL
TRIGGER:A:BUS:B2:CAN:DATA:SIZE	1
TRIGGER:A:BUS:B2:CAN:DATA:START	0.0E+0
TRIGGER:A:BUS:B2:CAN:DATA:VALUE	"XXXXXXXX"
TRIGGER:A:BUS:B2:CAN:FD:BRSBUT	X
TRIGGER:A:BUS:B2:CAN:FD:ESIBIT	X
TRIGGER:A:BUS:B2:CAN:FRAMETYPE	DATA
TRIGGER:A:BUS:B2:CAN:IDENTIFIER:MODE	STANDARD
TRIGGER:A:BUS:B2:CAN:IDENTIFIER:VALUE	"XXXXXXXXXXX"
TRIGGER:A:BUS:B2:FLEXRAY:CONDITION	SOF
TRIGGER:A:BUS:B2:FLEXRAY:CYCLECOUNT:HIVALUE	"XXXXXX"
TRIGGER:A:BUS:B2:FLEXRAY:CYCLECOUNT:QUALIFIER	EQUAL
TRIGGER:A:BUS:B2:FLEXRAY:CYCLECOUNT:VALUE	"XXXXXX"
TRIGGER:A:BUS:B2:FLEXRAY:DATA:HIVALUE	"XXXXXXXX"
TRIGGER:A:BUS:B2:FLEXRAY:DATA:OFFSET	-1
TRIGGER:A:BUS:B2:FLEXRAY:DATA:QUALIFIER	EQUAL
TRIGGER:A:BUS:B2:FLEXRAY:DATA:SIZE	1
TRIGGER:A:BUS:B2:FLEXRAY:DATA:VALUE	"XXXXXXXX"
TRIGGER:A:BUS:B2:FLEXRAY:EOFTYPE	STATIC
TRIGGER:A:BUS:B2:FLEXRAY:ERRTYPE	CRCHEADER
TRIGGER:A:BUS:B2:FLEXRAY:FRAMEID:HIVALUE	"XXXXXXXXXXX"
TRIGGER:A:BUS:B2:FLEXRAY:FRAMEID:QUALIFIER	EQUAL
TRIGGER:A:BUS:B2:FLEXRAY:FRAMEID:VALUE	"XXXXXXXXXXX"
TRIGGER:A:BUS:B2:FLEXRAY:FRAMETYPE	NORMAL
TRIGGER:A:BUS:B2:FLEXRAY:HEADER:CRC	"XXXXXXXXXXX"
TRIGGER:A:BUS:B2:FLEXRAY:HEADER:CYCLECOUNT	"XXXXXX"
TRIGGER:A:BUS:B2:FLEXRAY:HEADER:FRAMEID	"XXXXXXXXXXX"

Table C-1: Default Values (cont.)

Item	Description
TRIGGER:A:BUS:B2:FLEXRAY:HEADER:INDBITS	"XXXXX"
TRIGGER:A:BUS:B2:FLEXRAY:HEADER:PAYLENGTH	"XXXXXXX"
TRIGGER:A:BUS:B2:I2C:ADDRESS:MODE	ADDR7
TRIGGER:A:BUS:B2:I2C:ADDRESS:TYPE	USER
TRIGGER:A:BUS:B2:I2C:ADDRESS:VALUE	"XXXXXXX"
TRIGGER:A:BUS:B2:I2C:CONDITION	START
TRIGGER:A:BUS:B2:I2C:DATA:DIRECTION	NOCARE
TRIGGER:A:BUS:B2:I2C:DATA:SIZE	1
TRIGGER:A:BUS:B2:I2C:DATA:START	0.0E+0
TRIGGER:A:BUS:B2:I2C:DATA:VALUE	"XXXXXXXX"
TRIGGER:A:BUS:B2:LIN:CONDITION	SYNCFIELD
TRIGGER:A:BUS:B2:LIN:DATA:HIVALUE	"XXXXXXXX"
TRIGGER:A:BUS:B2:LIN:DATA:QUALIFIER	EQUAL
TRIGGER:A:BUS:B2:LIN:DATA:SIZE	1
TRIGGER:A:BUS:B2:LIN:DATA:VALUE	"XXXXXXXX"
TRIGGER:A:BUS:B2:LIN:ERRTYPE	SYNC
TRIGGER:A:BUS:B2:LIN:IDENTIFIER:VALUE	"XXXXXX"
TRIGGER:A:BUS:B2:PARALLEL:VALUE	"XXXXXXXXXXXXXXXX"
TRIGGER:A:BUS:B2:RS232C:CONDITION	TXSTART
TRIGGER:A:BUS:B2:RS232C:RX:DATA:SIZE	1
TRIGGER:A:BUS:B2:RS232C:RX:DATA:VALUE	"XXXXXXXX"
TRIGGER:A:BUS:B2:RS232C:TX:DATA:SIZE	1
TRIGGER:A:BUS:B2:RS232C:TX:DATA:VALUE	"XXXXXXXX"
TRIGGER:A:BUS:B2:SPI:CONDITION	SS
TRIGGER:A:BUS:B2:SPI:DATA:IN:VALUE	"XXXXXXXX"
TRIGGER:A:BUS:B2:SPI:DATA:OUT:VALUE	"XXXXXXXX"
TRIGGER:A:BUS:B2:SPI:DATA:SIZE	1
TRIGGER:A:BUS:B2:SPI:DATA:START	0.0E+0
TRIGGER:A:BUS:B2:USB:ADDRESS:HIVALUE	"XXXXXXX"
TRIGGER:A:BUS:B2:USB:ADDRESS:VALUE	"XXXXXXX"
TRIGGER:A:BUS:B2:USB:CONDITION	SYNC
TRIGGER:A:BUS:B2:USB:DATA:HIVALUE	"XXXXXXXX"
TRIGGER:A:BUS:B2:USB:DATA:OFFSET	-1
TRIGGER:A:BUS:B2:USB:DATA:SIZE	1
TRIGGER:A:BUS:B2:USB:DATA:TYPE	ANY
TRIGGER:A:BUS:B2:USB:DATA:VALUE	"XXXXXXXX"
TRIGGER:A:BUS:B2:USB:ENDPOINT:VALUE	"XXXX"

Table C-1: Default Values (cont.)

Item	Description
TRIGGER:A:BUS:B2:USB:ERRTYPE	PID
TRIGGER:A:BUS:B2:USB:HANDSHAKETYPE	ANY
TRIGGER:A:BUS:B2:USB:QUALIFIER	EQUAL
TRIGGER:A:BUS:B2:USB:SOFFRAMENUMBER	"XXXXXXXXXXX"
TRIGGER:A:BUS:B2:USB:SPECIALTYPE	ANY
TRIGGER:A:BUS:B2:USB:TOKENTYPE	ANY
TRIGGER:A:BUS:B<x>:CAN:DATa:OFFSet	0
TRIGGER:A:BUS:B<x>:CAN:FD:BRSBIT	X
TRIGGER:A:BUS:B<x>:CAN:FD:ESIBIT	X
TRIGGER:A:BUS:SOURCE	B1
TRIGGER:A:EDGE:COUPLING	DC
TRIGGER:A:EDGE:SLOPE	RISE
TRIGGER:A:EDGE:SOURCE	CH1
TRIGGER:A:HOLDOFF:TIME	20.0000E-9
TRIGGER:A:LEVEL	0.0E+0
TRIGGER:A:LEVEL:CH1	0.0E+0
TRIGGER:A:LEVEL:CH2	0.0E+0
TRIGGER:A:LEVEL:CH3	0.0E+0
TRIGGER:A:LEVEL:CH4	0.0E+0
TRIGGER:A:LEVEL:D0	1.4000
TRIGGER:A:LEVEL:D1	1.4000
TRIGGER:A:LEVEL:D10	1.4000
TRIGGER:A:LEVEL:D11	1.4000
TRIGGER:A:LEVEL:D12	1.4000
TRIGGER:A:LEVEL:D13	1.4000
TRIGGER:A:LEVEL:D14	1.4000
TRIGGER:A:LEVEL:D15	1.4000
TRIGGER:A:LEVEL:D2	1.4000
TRIGGER:A:LEVEL:D3	1.4000
TRIGGER:A:LEVEL:D4	1.4000
TRIGGER:A:LEVEL:D5	1.4000
TRIGGER:A:LEVEL:D6	1.4000
TRIGGER:A:LEVEL:D7	1.4000
TRIGGER:A:LEVEL:D8	1.4000
TRIGGER:A:LEVEL:D9	1.4000
TRIGGER:A:LOGIC:CLASS	LOGIC
TRIGGER:A:LOGIC:FUNCTION	AND

Table C-1: Default Values (cont.)

Item	Description
TRIGGER:A:LOGIC:INPUT:CH1	X
TRIGGER:A:LOGIC:INPUT:CH2	X
TRIGGER:A:LOGIC:INPUT:CH3	X
TRIGGER:A:LOGIC:INPUT:CH4	X
TRIGGER:A:LOGIC:INPUT:CLOCK:EDGE	RISE
TRIGGER:A:LOGIC:INPUT:CLOCK:SOURCE	NONE
TRIGGER:A:LOGIC:INPUT:D0	X
TRIGGER:A:LOGIC:INPUT:D1	X
TRIGGER:A:LOGIC:INPUT:D10	X
TRIGGER:A:LOGIC:INPUT:D11	X
TRIGGER:A:LOGIC:INPUT:D12	X
TRIGGER:A:LOGIC:INPUT:D13	X
TRIGGER:A:LOGIC:INPUT:D14	X
TRIGGER:A:LOGIC:INPUT:D15	X
TRIGGER:A:LOGIC:INPUT:D2	X
TRIGGER:A:LOGIC:INPUT:D3	X
TRIGGER:A:LOGIC:INPUT:D4	X
TRIGGER:A:LOGIC:INPUT:D5	X
TRIGGER:A:LOGIC:INPUT:D6	X
TRIGGER:A:LOGIC:INPUT:D7	X
TRIGGER:A:LOGIC:INPUT:D8	X
TRIGGER:A:LOGIC:INPUT:D9	X
TRIGGER:A:LOGIC:PATTERN:DELTATIME	8.0000E-9
TRIGGER:A:LOGIC:PATTERN:WHEN	TRUE
TRIGGER:A:LOGIC:PATTERN:WHEN:LESSLIMIT	8.0000E-9
TRIGGER:A:LOGIC:PATTERN:WHEN:MORELIMIT	8.0000E-9
TRIGGER:A:LOGIC:THRESHOLD:CH1	0.0E+0
TRIGGER:A:LOGIC:THRESHOLD:CH2	0.0E+0
TRIGGER:A:LOGIC:THRESHOLD:CH3	0.0E+0
TRIGGER:A:LOGIC:THRESHOLD:CH4	0.0E+0
TRIGGER:A:LOGIC:THRESHOLD:D0	1.4000
TRIGGER:A:LOGIC:THRESHOLD:D1	1.4000
TRIGGER:A:LOGIC:THRESHOLD:D10	1.4000
TRIGGER:A:LOGIC:THRESHOLD:D11	1.4000
TRIGGER:A:LOGIC:THRESHOLD:D12	1.4000
TRIGGER:A:LOGIC:THRESHOLD:D13	1.4000
TRIGGER:A:LOGIC:THRESHOLD:D14	1.4000

Table C-1: Default Values (cont.)

Item	Description
TRIGGER:A:LOGIC:THRESHOLD:D15	1.4000
TRIGGER:A:LOGIC:THRESHOLD:D2	1.4000
TRIGGER:A:LOGIC:THRESHOLD:D3	1.4000
TRIGGER:A:LOGIC:THRESHOLD:D4	1.4000
TRIGGER:A:LOGIC:THRESHOLD:D5	1.4000
TRIGGER:A:LOGIC:THRESHOLD:D6	1.4000
TRIGGER:A:LOGIC:THRESHOLD:D7	1.4000
TRIGGER:A:LOGIC:THRESHOLD:D8	1.4000
TRIGGER:A:LOGIC:THRESHOLD:D9	1.4000
TRIGGER:A:LOWERTHRESHOLD:CH1	0.0E+0
TRIGGER:A:LOWERTHRESHOLD:CH2	0.0E+0
TRIGGER:A:LOWERTHRESHOLD:CH3	0.0E+0
TRIGGER:A:LOWERTHRESHOLD:CH4	0.0E+0
TRIGGER:A:LOWERTHRESHOLD:D0	1.4000
TRIGGER:A:LOWERTHRESHOLD:D1	1.4000
TRIGGER:A:LOWERTHRESHOLD:D10	1.4000
TRIGGER:A:LOWERTHRESHOLD:D11	1.4000
TRIGGER:A:LOWERTHRESHOLD:D12	1.4000
TRIGGER:A:LOWERTHRESHOLD:D13	1.4000
TRIGGER:A:LOWERTHRESHOLD:D14	1.4000
TRIGGER:A:LOWERTHRESHOLD:D15	1.4000
TRIGGER:A:LOWERTHRESHOLD:D2	1.4000
TRIGGER:A:LOWERTHRESHOLD:D3	1.4000
TRIGGER:A:LOWERTHRESHOLD:D4	1.4000
TRIGGER:A:LOWERTHRESHOLD:D5	1.4000
TRIGGER:A:LOWERTHRESHOLD:D6	1.4000
TRIGGER:A:LOWERTHRESHOLD:D7	1.4000
TRIGGER:A:LOWERTHRESHOLD:D8	1.4000
TRIGGER:A:LOWERTHRESHOLD:D9	1.4000
TRIGGER:A:MODE	AUTO
TRIGGER:A:PULSE:CLASS	WIDTH
TRIGGER:A:PULSEWIDTH:HIGHLIMIT	12.0000E-9
TRIGGER:A:PULSEWIDTH:LOWLIMIT	8.0000E-9
TRIGGER:A:PULSEWIDTH:POLARITY	POSITIVE
TRIGGER:A:PULSEWIDTH:WHEN	LESSTHAN
TRIGGER:A:PULSEWIDTH:WIDTH	8.0000E-9
TRIGGER:A:RUNT:POLARITY	POSITIVE

Table C-1: Default Values (cont.)

Item	Description
TRIGGER:A:RUNT:WHEN	OCCURS
TRIGGER:A:RUNT:WIDTH	8.0000E-9
TRIGGER:A:SETHOLD:CLOCK:EDGE	RISE
TRIGGER:A:SETHOLD:CLOCK:SOURCE	CH1
TRIGGER:A:SETHOLD:CLOCK:THRESHOLD	0.0E+0
TRIGGER:A:SETHOLD:DATA:SOURCE	NONE
TRIGGER:A:SETHOLD:DATA:THRESHOLD	9.91E+37
TRIGGER:A:SETHOLD:HOLDTIME	8.0000E-9
TRIGGER:A:SETHOLD:SETTIME	8.0000E-9
TRIGGER:A:SETHOLD:THRESHOLD:CH1	0.0E+0
TRIGGER:A:SETHOLD:THRESHOLD:CH2	0.0E+0
TRIGGER:A:SETHOLD:THRESHOLD:CH3	0.0E+0
TRIGGER:A:SETHOLD:THRESHOLD:CH4	0.0E+0
TRIGGER:A:SETHOLD:THRESHOLD:D0	1.4000
TRIGGER:A:SETHOLD:THRESHOLD:D1	1.4000
TRIGGER:A:SETHOLD:THRESHOLD:D10	1.4000
TRIGGER:A:SETHOLD:THRESHOLD:D11	1.4000
TRIGGER:A:SETHOLD:THRESHOLD:D12	1.4000
TRIGGER:A:SETHOLD:THRESHOLD:D13	1.4000
TRIGGER:A:SETHOLD:THRESHOLD:D14	1.4000
TRIGGER:A:SETHOLD:THRESHOLD:D15	1.4000
TRIGGER:A:SETHOLD:THRESHOLD:D2	1.4000
TRIGGER:A:SETHOLD:THRESHOLD:D3	1.4000
TRIGGER:A:SETHOLD:THRESHOLD:D4	1.4000
TRIGGER:A:SETHOLD:THRESHOLD:D5	1.4000
TRIGGER:A:SETHOLD:THRESHOLD:D6	1.4000
TRIGGER:A:SETHOLD:THRESHOLD:D7	1.4000
TRIGGER:A:SETHOLD:THRESHOLD:D8	1.4000
TRIGGER:A:SETHOLD:THRESHOLD:D9	1.4000
TRIGGER:A:TIMEOUT:POLARITY	STAYSHIGH
TRIGGER:A:TIMEOUT:TIME	8.0000E-9
TRIGGER:A:TRANSITION:DELTATIME	8.0000E-9
TRIGGER:A:TRANSITION:POLARITY	POSITIVE
TRIGGER:A:TRANSITION:WHEN	SLOWER
TRIGGER:A:TYPE	EDGE
TRIGGER:A:UPPERTHRESHOLD:CH1	800.0000E-3
TRIGGER:A:UPPERTHRESHOLD:CH2	800.0000E-3

Table C-1: Default Values (cont.)

Item	Description
TRIGGER:A:UPPERTHRESHOLD:CH3	800.0000E-3
TRIGGER:A:UPPERTHRESHOLD:CH4	800.0000E-3
TRIGGER:B:BY	TIME
TRIGGER:B:EDGE:COUPLING	DC
TRIGGER:B:EDGE:SLOPE	RISE
TRIGGER:B:EDGE:SOURCE	CH1
TRIGGER:B:EVENTS:COUNT	1
TRIGGER:B:LEVEL	0.0E+0
TRIGGER:B:LEVEL:CH1	0.0E+0
TRIGGER:B:LEVEL:CH2	0.0E+0
TRIGGER:B:LEVEL:CH3	0.0E+0
TRIGGER:B:LEVEL:CH4	0.0E+0
TRIGGER:B:LEVEL:D0	1.4000
TRIGGER:B:LEVEL:D1	1.4000
TRIGGER:B:LEVEL:D10	1.4000
TRIGGER:B:LEVEL:D11	1.4000
TRIGGER:B:LEVEL:D12	1.4000
TRIGGER:B:LEVEL:D13	1.4000
TRIGGER:B:LEVEL:D14	1.4000
TRIGGER:B:LEVEL:D15	1.4000
TRIGGER:B:LEVEL:D2	1.4000
TRIGGER:B:LEVEL:D3	1.4000
TRIGGER:B:LEVEL:D4	1.4000
TRIGGER:B:LEVEL:D5	1.4000
TRIGGER:B:LEVEL:D6	1.4000
TRIGGER:B:LEVEL:D7	1.4000
TRIGGER:B:LEVEL:D8	1.4000
TRIGGER:B:LEVEL:D9	1.4000
TRIGGER:B:LOWERTHRESHOLD:CH1	0.0E+0
TRIGGER:B:LOWERTHRESHOLD:CH2	0.0E+0
TRIGGER:B:LOWERTHRESHOLD:CH3	0.0E+0
TRIGGER:B:LOWERTHRESHOLD:CH4	0.0E+0
TRIGGER:B:LOWERTHRESHOLD:D0	1.4000
TRIGGER:B:LOWERTHRESHOLD:D1	1.4000
TRIGGER:B:LOWERTHRESHOLD:D10	1.4000
TRIGGER:B:LOWERTHRESHOLD:D11	1.4000
TRIGGER:B:LOWERTHRESHOLD:D12	1.4000

Table C-1: Default Values (cont.)

Item	Description
TRIGGER:B:LOWERTHRESHOLD:D13	1.4000
TRIGGER:B:LOWERTHRESHOLD:D14	1.4000
TRIGGER:B:LOWERTHRESHOLD:D15	1.4000
TRIGGER:B:LOWERTHRESHOLD:D2	1.4000
TRIGGER:B:LOWERTHRESHOLD:D3	1.4000
TRIGGER:B:LOWERTHRESHOLD:D4	1.4000
TRIGGER:B:LOWERTHRESHOLD:D5	1.4000
TRIGGER:B:LOWERTHRESHOLD:D6	1.4000
TRIGGER:B:LOWERTHRESHOLD:D7	1.4000
TRIGGER:B:LOWERTHRESHOLD:D8	1.4000
TRIGGER:B:LOWERTHRESHOLD:D9	1.4000
TRIGGER:B:STATE	0
TRIGGER:B:TIME	8.0000E-9
TRIGGER:B:TYPE	EDGE
VERBOSE	1
VIDPIC:AUTOCONTRAST	1
VIDPIC:AUTOCONTRAST:UPDATERATE	20
ZOOM:MODE	0
ZOOM:ZOOM1:POSITION	50.0000
ZOOM:ZOOM1:SCALE	4.0000E-6
ZOOM:ZOOM1:STATE	0

Appendix D: Waveform Transfer (WFMOutpre and CURVe Query) Examples

Here are several examples of command sequences using the `WFMOutpre?` and `CURVe?` queries to transfer data from the oscilloscope to a PC, with different data sources, including Analog, Digital waveforms. Each command sequence example is followed by an explanation of the returned `WFMOutpre?` results. The `WFMOutpre?` values act as settings that apply to the `CURVe` query data being transferred.

Here are several examples of command sequences using the `WFMOutpre?` and `CURVe?` queries to transfer data from the oscilloscope to a PC, with different data sources, including Analog,Digital , and RF frequency domain waveforms. Each command sequence example is followed by an explanation of the returned `WFMOutpre?` results. The `WFMOutpre?` values act as settings that apply to the `CURVe` query data being transferred.

***NOTE.** In order to guarantee that the waveform data returned from `CURVE?` queries of multiple waveforms are correlated to the same acquisition, you should use single sequence acquisition mode to acquire the waveform data from a single acquisition. Single sequence acquisition mode is enabled using ACQuire:STOPAfter `SEQuence`.*

Example 1: Analog Waveform (Channels 1–4)

Goal: Transfer 10,000 points of analog channel waveform data from the oscilloscope to a PC.

Command	Comment
:DATa:SOUrce CH1	
:DATa:START 1	
:DATa:STOP 10000	
:WFMOutpre:ENCdg BINARY	
:WFMOutpre:BYT_Nr 1	
:HEADer 1	

Command	Comment
`:WFMOutpre?`	Returns the following values. Each value represents the current settings that a `CURVe?` query will use to format the data that will be transferred from the oscilloscope to a PC or other device (see next table for explanations): `:WFMOUTPRE:BYT_NR 1;BIT_NR 8;ENCDG BINARY;BN_FMT RI;BYT_OR MSB;WFID "Ch1, DC coupling, 100.0mV/div, 4.000us/div, 10000 points, Sample mode";NR_PT 10000;PT_FMT Y;PT_ORDER LINEAR;XUNIT "s";XINCR 4.0000E-9;XZERO -20.0000E-6;PT_OFF 0;YUNIT "V";YMULT 4.0000E-3;YOFF 0.0E+0;YZERO 0.0E+0`
`:CURVE?`	Returns 10,000 data points: :CURVe #510000<10,000 binary bytes of waveform data.>

NOTE. *You can also use the `WAVFrm?` query, which concatenates the `WFMOutpre?` and `CURVe?` queries.*

WFMOutpre? Query results	Explanation
`BYT_NR 1`	This value specifies the number of bytes per data point in the waveform data. To change this value automatically, use the WFMOutpre:BYT_Nr command. Note that changing this value automatically changes the `BIT_NR` value accordingly. (This value can also be set using the DATa:WIDth command.)
`BIT_NR 8`	This value specifies the number of bits per data point in the waveform data. To change this value, use the WFMOutpre:BIT_Nr command. Note that changing this value automatically changes the `BYT_NR` value accordingly.
`ENCDG BINARY`	This value specifies the encoding of the waveform data. To change this value (the other possibility is ASCii), use the WFMOutpre:ENCdg command. (This value can also be set using the DATa:ENCdg command, which provides the ability to set the `WFMOutpre:ENCdg`, `WFMOutpre:BN_Fmt`,: and `WFMOutpre:BYT_Or` values using a single command.)
`BN_FMT RI`	This value specifies the binary format, which in this case is RI (signed integer). To change this value (the other possibility is RP or positive integer), use the WFMOutpre:BN_Fmt command. Note: this field is not applicable for ASCii encoding.
`BYT_OR MSB`	This value specifies the byte order for the BINARY encoding, which in this case is MSB (most significant byte first). To change this value to LSB, use the WFMOutpre:BYT_Or command. Note: this field is not applicable for ASCii encoding.
`WFID "Ch1, DC coupling, 100.0mV/div, 4.000us/div, 10000 points, Sample mode"`	This quoted string represents information about the source waveform that would be returned by a. `WFMOutpre:WFId?` query.
`NR_PT 10000`	This value indicates the number of data points in the waveform record to be transferred using the CURVE? query. (If you would like to determine only this value, use the WFMOutpre:NR_Pt? query.) Note: this value is typically equal to the full record length, but you also have the option to transfer only a portion of the record length by using the DATa:STARt and DATa:STOP commands.

WFMOutpre? Query results	Explanation
PT_FMT Y	This value indicates the format of the data points in the waveform record. In this case, the value represents YT format. This is query only – the returned values can be Y for YT format or ENV for envelope format (min/max pairs). (If you would like to determine only this value, use the WFMOutpre:PT_Fmt? query.)
PT_ORDER LINEAR	This value is always LINear.
XUNIT "s"	This value indicates the units of the x-axis of the waveform record. This is determined by the horizontal settings for the waveform source. Typically, this value is "s", representing seconds. When using the math waveform as a source, the value can be "s" or "Hz". This is query only. (If you would like to determine only this value, use the WFMOutpre:XUNit? query.)
XINCR 4.0000E-9	This value indicates the time, in seconds, or frequency, in hertz, between data points in the waveform record. This is query only. (If you would like to determine only this value, use the WFMOutpre:XINcr? query.)
XZERO -20.0000E-6	This value indicates the time, in seconds, or frequency, in hertz, of the first data point in the waveform record. This time or frequency is relative to the time of the trigger, which is always 0. So, this XZEro time or frequency can be negative. This is query only. (If you would like to determine only this value, use the WFMOutpre:XZEro? query.)
PT_OFF 0	This is a query provided only for compatibility with performance oscilloscopes. The returned value is always 0. (If you would like to determine only this value, use the WFMOutpre:PT_Off? query.)
YUNIT "V"	This value indicates the vertical units of data points in the waveform record. This can be any of several string values, depending upon the vertical units of the source waveform – in this case, volts. This is query only. (If you would like to determine only this value, use the WFMOutpre:YUNit? query.)
YMULT 4.0000E-3	This value indicates the multiplying factor to convert the data point values from digitizing levels to the units specified by the WFMOUTpre:YUNit command. This is query only. (If you would like to determine only this value, use the WFMOutpre:YMUlt? query.)
YOFF 0.0E+0	This value indicates the vertical position of the source waveform in digitizing levels. There are 25 digitizing levels per vertical division. This is query only. (If you would like to determine only this value, use the WFMOutpre:YOFf? query.)
YZERO 0.0E+0	This value indicates the vertical offset of the source waveform in units specified by the WFMOUTpre:YUNit command. This is query only. (If you would like to determine only this value, use the WFMOutpre:YZEro? query.)

Example 2: Digital Waveform

Goal: Transfer 25 points of digital channel waveform data from the oscilloscope to a PC.

Command	Comment
:DATa:SOUrce CH1_D5	
:DATa:START 1	
:DATa:STOP 25	
:WFMOutpre:ENCdg ASCii	
:WFMOutpre:BYT_Nr 1	

Command	Comment
:HEADer 1	
:VERBose 1	
:WFMOutpre?	Returns the following values. Each value represents the current settings that a CURVe? query will use to format the data that will be transferred from the oscilloscope to a PC or other device (see next table for explanations): :WFMOUTPRE:BYT_NR 1;BIT_NR 8;ENCDG ASCII;BN_FMT RI;BYT_OR MSB;WFID "D5, unknown coupling, 100.0us/div, 10000 points, Digitalmode";NR_PT 25;PT_FMT Y;PT_ORDER LINEAR;XUNIT "s";XINCR 100.0000E-9;XZERO -500.0000E-6;PT_OFF 0;YUNIT "State";YMULT 1.0000;YOFF 0.0E+0;YZERO 0.0E+0
:CURVe?	Returns the following values. Each value represents a data point: :CURVe 0,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,0,0,0,0,0,0,0,0

NOTE. *You can also use the WAVFrm? query, which concatenates the WFMOutpre? and CURVe? queries.*

WFMOutpre? Query results	Explanation
WFMOUTPRE:BYT_NR 1	This value specifies the number of bytes per data point in the waveform data. To change this value automatically, use the WFMOutpre:BYT_Nr command. Note that changing this value automatically changes the BIT_NR value accordingly. (This value can also be set using the DATa:WIDth command.)
BIT_NR 8	This value specifies the number of bits per data point in the waveform data. To change this value, use the WFMOutpre:BIT_Nr command. Note that changing this value automatically changes the BYT_NR value accordingly.
ENCDG ASCII	This value specifies the encoding of the waveform data. To change this value (the other possibility is BINARY), use the WFMOutpre:ENCdg command. (This value can also be set using the DATa:ENCdg command, which provides the ability to set the WFMOutpre:ENCdg, WFMOutpre:BN_Fmt,: and WFMOutpre:BYT_Or values using a single command.)
BN_FMT RI	This value specifies the binary format, which in this case is RI (signed integer). To change this value (the other possibility is RP or positive integer), use the WFMOutpre:BN_Fmt command. Note: this field is not applicable for ASCii encoding.
BYT_OR MSB	This value specifies the byte order for the BINARY encoding, which in this case is MSB (most significant byte first, also known as IBM format). To change this value to LSB, use the WFMOutpre:BYT_Or command. Note: this field is not applicable for ASCii encoding.
WFID "D5, unknown coupling, 100.0us/div, 10000 points, Digital mode"	This quoted string represents information about the source waveform that would be returned by a. WFMOutpre:WFId? query. It cannot be changed.

WFMOutpre? Query results	Explanation
`NR_PT 25`	This value indicates the number of data points in the waveform record to be transferred using the CURVE? query. (If you would like to determine only this value, use the WFMOutpre:NR_Pt? query.) Note: this value is typically equal to the full record length, but you also have the option to transfer only a portion of the record length by using the DATa:STARt and DATa:STOP commands.
`PT_FMT Y`	This value indicates the format of the data points in the waveform record. In this case, the value represents YT format. This is query only. (If you would like to determine only this value, use the WFMOutpre:PT_Fmt? query.)
`PT_ORDER LINEAR`	This value is always `LINear`.
`XUNIT "s"`	This value indicates the units of the x-axis of the waveform record. This is determined by the horizontal settings for the waveform source. Typically, this value is "s", representing seconds. When using the math waveform as a source, the value can be "s" or "Hz". This is query only. (If you would like to determine only this value, use the WFMOutpre:XUNit? query.)
`XINCR 100.0000E-9`	This value indicates the time, in seconds, or frequency, in hertz, between data points in the waveform record. This is query only. (If you would like to determine only this value, use the WFMOutpre:XINcr? query.)
`XZERO -500.0000E-6`	This value indicates the time, in seconds, or frequency, in hertz, of the first data point in the waveform record. This time or frequency is relative to the time of the trigger, which is always 0. So, this XZEro time or frequency can be negative. This is query only. (If you would like to determine only this value, use the WFMOutpre:XZEro? query.)
`PT_OFF 0`	This is a query provided only for compatibility with other Tektronix oscilloscopes. The returned value is always 0. (If you would like to determine only this value, use the WFMOutpre:PT_Off? query.)
`YUNIT "State"`	This value indicates the vertical units of data points in the waveform record. This can be any of several string values, depending upon the vertical units of the source waveform – in this case, State. This is query only. (If you would like to determine only this value, use the WFMOutpre:YUNit? query.)
`YMULT 1.0000`	This value indicates the multiplying factor to convert the data point values from digitizing levels to the units specified by the `WFMOUTpre:YUNit` command. This is query only. (If you would like to determine only this value, use the WFMOutpre:YMUlt? query.)
`YOFF 0.0E+0`	This value indicates the vertical position of the source waveform in digitizing levels. There are 25 digitizing levels per vertical division. This is query only. (If you would like to determine only this value, use the WFMOutpre:YOFf? query.)
`YZERO 0.0E+0`	This value indicates the vertical offset of the source waveform in units specified by the `WFMOUTpre:YUNit` command. This is query only. (If you would like to determine only this value, use the WFMOutpre:YZEro? query.)

Example 3: Digital with 4 Bytes Per Point and Zoom Off

Goal: Transfer 25 points of Digital data from the oscilloscope to a PC using 4 bytes per point and Zoom off.

Command	Comment
:DATa:SOUrce CH1_D1	
:ACQuire:MAGnivu 0	
:DATa:START 1	
:DATa:STOP 25	
:WFMOutpre:ENCdg ASCii	
:WFMOutpre:BYT_Nr 4	
:HEADer 1	
:VERBose 1	
:WFMOutpre?	Returns the following values. Each value represents the current settings that a CURVe? query will use to format the data that will be transferred from the oscilloscope to a PC or other device (see next table for explanations): :WFMOUTPRE:BYT_NR 4;BIT_NR 32;ENCDG ASCII;BN_FMT RI;BYT_OR MSB;WFID "Digital, unknown coupling, 100.0us/div, 10000 points, Digital mode";NR_PT 25;PT_FMT Y;PT_ORDER LINEAR;XUNIT "s";XINCR 100.0000E-9;XZERO -500.0000E-6;PT_OFF 0;YUNIT "State";YMULT 1.0000;YOFF 0.0E+0;YZERO 0.0E+0
:CURVe?	Returns the following values. Each value represents a data point: :CURVe FB386,FB366,FB3E6,FB366,FB3E6,FB32E,FB3A2,FB32E,FB3AA,FB366, FB3EA,FB366,FB3E2,FB36,FB3E6,FB366,FB3E6,FB346,FB3C6,FB346,FB3C6, FB34E,FB3C2,FB34E,FB3CA

NOTE. *The returned hexadecimal data values are formatted without leading zeroes. For example, a 4-byte digital value of FB386 should be interpreted as 000FB386.*

NOTE. *You can also use the `WAVFrm?` query, which concatenates the `WFMOutpre?` and `CURVe?` queries.*

WFMOutpre? Query results	Explanation
WFMOUTPRE:BYT_NR 4	This value specifies the number of bytes per data point in the waveform data. To change this value automatically, use the WFMOutpre:BYT_Nr command. Note that changing this value automatically changes the BIT_NR value accordingly. (This value can also be set using the DATa:WIDth command.)
BIT_NR 32	This value specifies the number of bits per data point in the waveform data. To change this value, use the WFMOutpre:BIT_Nr command. Note that changing this value automatically changes the BYT_NR value accordingly.

WFMOutpre? Query results	Explanation
`ENCDG ASCII`	This value specifies the encoding of the waveform data. To change this value (the other possibility is BINARY), use the WFMOutpre:ENCdg command. (This value can also be set using the DATa:ENCdg command, which provides the ability to set the `WFMOutpre:ENCdg, WFMOutpre:BN_Fmt,`: and `WFMOutpre:BYT_Or` values using a single command.)
`BN_FMT RI`	This value specifies the binary format, which in this case is RI (signed integer). To change this value (the other possibility is RP or positive integer), use the WFMOutpre:BN_Fmt command. Note: this field is not applicable for ASCii encoding.
`BYT_OR MSB`	This value specifies the byte order for the BINARY encoding, which in this case is MSB (most significant byte first, also known as IBM format). To change this value to LSB, use the WFMOutpre:BYT_Or command. Note: this field is not applicable for ASCii encoding.
`WFID "Digital, unknown coupling, 100.0us/div, 10000 points, Digital mode"`	This quoted string represents information about the source waveform that would be returned by a. `WFMOutpre:WFId?` query. It cannot be changed.
`NR_PT 25`	This value indicates the number of data points in the waveform record to be transferred using the CURVE? query. (If you would like to determine only this value, use the WFMOutpre:NR_Pt? query.) Note: this value is typically equal to the full record length, but you also have the option to transfer only a portion of the record length by using the DATa:STARt and DATa:STOP commands.
`PT_FMT Y`	This value indicates the format of the data points in the waveform record. In this case, the value represents YT format. This is query only – the returned values can be Y for YT format or ENV for envelope format (min/max pairs). (If you would like to determine only this value, use the WFMOutpre:PT_Fmt? query.)
`PT_ORDER LINEAR`	This value is always `LINear`.
`XUNIT "s"`	This value indicates the units of the x-axis of the waveform record. This is determined by the horizontal settings for the waveform source. For live channels, this value is “s”, representing seconds. When using the math waveform as a source, the value can be “s” or “Hz”. This is query only. (If you would like to determine only this value, use the WFMOutpre:XUNit? query.)
`XINCR 100.0000E-9`	This value indicates the time, in seconds, or frequency, in hertz, between data points in the waveform record. This is query only. (If you would like to determine only this value, use the WFMOutpre:XINcr? query.)
`XZERO -500.0000E-6`	This value indicates the time, in seconds, or frequency, in hertz, of the first data point in the waveform record. This time or frequency is relative to the time of the trigger, which is always 0. So, this XZEro time or frequency can be negative. This is query only. (If you would like to determine only this value, use the WFMOutpre:XZEro? query.)
`PT_OFF 0`	This is a query provided only for compatibility with performance oscilloscopes. The returned value is always 0. (If you would like to determine only this value, use the WFMOutpre:PT_Off? query.)
`YUNIT "State"`	This value indicates the vertical units of data points in the waveform record. This can be any of several string values, depending upon the vertical units of the source waveform – in this case, State. This is query only. (If you would like to determine only this value, use the WFMOutpre:YUNit? query.)

WFMOutpre? Query results	Explanation
`YMULT 1.0000`	This value indicates the multiplying factor to convert the data point values from digitizing levels to the units specified by the `WFMOUTpre:YUNit` command. This is query only. (If you would like to determine only this value, use the WFMOutpre:YMUlt? query.)
`YOFF 0.0E+0`	This value indicates the vertical position of the source waveform in digitizing levels. There are 25 digitizing levels per vertical division. This is query only. (If you would like to determine only this value, use the WFMOutpre:YOFf? query.)
`YZERO 0.0E+0`	This value indicates the vertical offset of the source waveform in units specified by the `WFMOUTpre:YUNit` command. This is query only. (If you would like to determine only this value, use the WFMOutpre:YZEro? query.)

Example 4: Digital with 8 Bytes Per Point and Zoom Off

Goal: Transfer 25 points of Digital data from the oscilloscope to a PC using 8 bytes per point and Zoom off.

Command	Comment
`:DATa:SOUrce CH1_D1`	
`:ACQuire:MAGnivu 0`	
`:DATa:START 1`	
`:DATa:STOP 25`	
`:WFMOutpre:ENCdg ASCii`	
`:WFMOutpre:BYT_Nr 8`	
`:HEADer 1`	
`:VERBose 1`	
`:WFMOutpre?`	Returns the following values. Each value represents the current settings that a `CURVe?` query will use to format the data that will be transferred from the oscilloscope to a PC or other device (see next table for explanations): `:WFMOUTPRE:BYT_NR 8;BIT_NR 64;ENCDG ASCII;BN_FMT RI;BYT_OR MSB;WFID "Digital, unknown coupling, 100.0us/div, 10000 points, Digital mode";NR_PT 25;PT_FMT Y;PT_ORDER LINEAR;XUNIT "s";XINCR 100.0000E-9;XZERO -500.0000E-6;PT_OFF 0;YUNIT "State";YMULT 1.0000;YOFF 0.0E+0;YZERO 0.0E+0`
`:CURVe?`	Returns the following values. Each value represents a data point: `:CURVe 80000FB386,E0000FB386,80000FB3E6,80000FB3E6,80000FB3E6, C8000FB3A6,8C000FB3A6, 8C000FB3A6,84000FB3AE,CC000FB3A6, 8C000FB3E6,8C000FB3E6,84000FB3E6,80000FB3E6,80000FB3E6, 80000FB3E6,80000FB3E6,A0000FB3C6,80000FB3C6,80000FB3C6, 80000FB3C6,88000FB3C6,8C000FB3C6, 8C000FB3C6,84000FB3CE`

NOTE. *The returned hexadecimal data values are formatted without leading zeroes.*

NOTE. You can also use the `WAVFrm?` query, which concatenates the `WFMOutpre?` and `CURVe?` queries.

WFMOutpre? Query results	Explanation
`WFMOUTPRE:BYT_NR 8`	This value specifies the number of bytes per data point in the waveform data. To change this value automatically, use the WFMOutpre:BYT_Nr command. Note that changing this value automatically changes the `BIT_NR` value accordingly. (This value can also be set using the DATa:WIDth command.)
`BIT_NR 64`	This value specifies the number of bits per data point in the waveform data. To change this value, use the WFMOutpre:BIT_Nr command. Note that changing this value automatically changes the `BYT_NR` value accordingly.
`ENCDG ASCII`	This value specifies the encoding of the waveform data. To change this value (the other possibility is BINARY), use the WFMOutpre:ENCdg command. (This value can also be set using the DATa:ENCdg command, which provides the ability to set the `WFMOutpre:ENCdg, WFMOutpre:BN_Fmt,`: and `WFMOutpre:BYT_Or` values using a single command.)
`BN_FMT RI`	This value specifies the binary format, which in this case is RI (signed integer). To change this value (the other possibility is RP or positive integer), use the WFMOutpre:BN_Fmt command. Note: this field is not applicable for ASCii encoding.
`BYT_OR MSB`	This value specifies the byte order for the BINARY encoding, which in this case is MSB (most significant byte first, also known as IBM format). To change this value to LSB, use the WFMOutpre:BYT_Or command. Note: this field is not applicable for ASCii encoding.
`WFID "Digital, unknown coupling, 100.0us/div, 10000 points, Digital mode"`	This quoted string represents information about the source waveform that would be returned by a. `WFMOutpre:WFId?` query. It cannot be changed.
`NR_PT 25`	This value indicates the number of data points in the waveform record to be transferred using the CURVE? query. (If you would like to determine only this value, use the WFMOutpre:NR_Pt? query.) Note: this value is typically equal to the full record length, but you also have the option to transfer only a portion of the record length by using the DATa:STARt and DATa:STOP commands.
`PT_FMT Y`	This value indicates the format of the data points in the waveform record. In this case, the value represents YT format. This is query only – the returned values can be Y for YT format or ENV for envelope format (min/max pairs). (If you would like to determine only this value, use the WFMOutpre:PT_Fmt? query.)
`PT_ORDER LINEAR`	This value is always `LINear`.
`XUNIT "s"`	This value indicates the units of the x-axis of the waveform record. This is determined by the horizontal settings for the waveform source. Typically, this value is “s”, representing seconds. When using the math waveform as a source, the value can be “s” or “Hz”. This is query only. (If you would like to determine only this value, use the WFMOutpre:XUNit? query.)
`XINCR 100.0000E-9`	This value indicates the time, in seconds, or frequency, in hertz, between data points in the waveform record. This is query only. (If you would like to determine only this value, use the WFMOutpre:XINcr? query.)

WFMOutpre? Query results	Explanation
XZERO -500.0000E-6	This value indicates the time, in seconds, or frequency, in hertz, of the first data point in the waveform record. This time or frequency is relative to the time of the trigger, which is always 0. So, this XZEro time or frequency can be negative. This is query only. (If you would like to determine only this value, use the WFMOutpre:XZEro? query.)
PT_OFF 0	This is a query provided only for compatibility with other Tektronix oscilloscopes. The returned value is always 0. (If you would like to determine only this value, use the WFMOutpre:PT_Off? query.)
YUNIT "State"	This value indicates the vertical units of data points in the waveform record. This can be any of several string values, depending upon the vertical units of the source waveform – in this case, State. This is query only. (If you would like to determine only this value, use the WFMOutpre:YUNit? query.)
YMULT 1.0000	This value indicates the multiplying factor to convert the data point values from digitizing levels to the units specified by the `WFMOUTpre:YUNit` command. This is query only. (If you would like to determine only this value, use the WFMOutpre:YMUlt? query.)
YOFF 0.0E+0	This value indicates the vertical position of the source waveform in digitizing levels. There are 25 digitizing levels per vertical division. This is query only. (If you would like to determine only this value, use the WFMOutpre:YOFf? query.)
YZERO 0.0E+0	This value indicates the vertical offset of the source waveform in units specified by the `WFMOUTpre:YUNit` command. This is query only. (If you would like to determine only this value, use the WFMOutpre:YZEro? query.)

Example 5: Digital with 4 Bytes Per Point and Zoom On

Goal: Transfer 25 points of Digital data from the oscilloscope to a PC using 4 bytes per point and Zoom on.

Command	Comment
:DATa:SOUrce CH1_D1	
:ACQuire:MAGnivu 1	
:DATa:START 1	
:DATa:STOP 25	
:WFMOutpre:ENCdg ASCii	
:WFMOutpre:BYT_Nr 4	
:HEADer 1	
:VERBose 1	

Command	Comment
:WFMOutpre?	Returns the following values. Each value represents the current settings that a CURVe? query will use to format the data that will be transferred from the oscilloscope to a PC or other device (see next table for explanations): :WFMOUTPRE:BYT_NR 4;BIT_NR 32;ENCDG ASCII;BN_FMT RI;BYT_OR MSB;WFID "Digital, unknown coupling, 100.0us/div, 10000 points, Digital mode";NR_PT 25;PT_FMT Y;PT_ORDER LINEAR;XUNIT "s";XINCR 1.2121E-9;XZERO -6.0606E-6;PT_OFF 0;YUNIT "State";YMULT 1.0000;YOFF 0.0E+0;YZERO 0.0E+0
:CURVe?	Returns the following values. Each value represents a data point: :CURVe FB6E6,FB666,FB6E6,FB666,FB666,FB6E6,FB666,FB6E6,FB666, FB666, FB6E6,FB666,FB6E6,FB6E6,FB666,FB6E6,FB666,FB666, FB6E6,FB666,FB6E6,FB6E6,FB666,FB6E6,FB666

NOTE. *The returned hexadecimal data values are formatted without leading zeroes.*

NOTE. *You can also use the WAVFrm? query, which concatenates the WFMOutpre? and CURVe? queries.*

WFMOutpre? Query results	Explanation
WFMOUTPRE:BYT_NR 4	This value specifies the number of bytes per data point in the waveform data. To change this value automatically, use the WFMOutpre:BYT_Nr command. Note that changing this value automatically changes the BIT_NR value accordingly. (This value can also be set using the DATa:WIDth command.)
BIT_NR 32	This value specifies the number of bits per data point in the waveform data. To change this value, use the WFMOutpre:BIT_Nrcommand. Note that changing this value automatically changes the BYT_NR value accordingly.
ENCDG ASCII	This value specifies the encoding of the waveform data. To change this value (the other possibility is BINARY), use the WFMOutpre:ENCdg command. (This value can also be set using the DATa:ENCdg command, which provides the ability to set the WFMOutpre:ENCdg, WFMOutpre:BN_Fmt,: and WFMOutpre:BYT_Or values using a single command.)
BN_FMT RI	This value specifies the binary format, which in this case is RI (signed integer). To change this value (the other possibility is RP or positive integer), use the WFMOutpre:BN_Fmt command. Note: this field is not applicable for ASCii encoding.
BYT_OR MSB	This value specifies the byte order for the BINARY encoding, which in this case is MSB (most significant byte first, also known as IBM format). To change this value to LSB, use the WFMOutpre:BYT_Or command. Note: this field is not applicable for ASCii encoding.

WFMOutpre? Query results	Explanation
`WFID "Digital, unknown coupling, 100.0us/div, 10000 points, Digital mode"`	This quoted string represents information about the source waveform that would be returned by a. `WFMOutpre:WFId?` query. It cannot be changed.
`NR_PT 25`	This value indicates the number of data points in the waveform record to be transferred using the CURVE? query. (If you would like to determine only this value, use the WFMOutpre:NR_Pt? query.) Note: this value is typically equal to the full record length, but you also have the option to transfer only a portion of the record length by using the DATa:STARt and DATa:STOP commands.
`PT_FMT Y`	This value indicates the format of the data points in the waveform record. In this case, the value represents YT format. This is query only – the returned values can be Y for YT format or ENV for envelope format (min/max pairs). (If you would like to determine only this value, use the WFMOutpre:PT_Fmt? query.)
`PT_ORDER LINEAR`	This value is always `LINear`.
`XUNIT "s"`	This value indicates the units of the x-axis of the waveform record. This is determined by the horizontal settings for the waveform source. Typically, this value is “s”, representing seconds. When using the math waveform as a source, the value can be “s” or “Hz”. This is query only. (If you would like to determine only this value, use the WFMOutpre:XUNit? query.)
`XINCR 1.2121E-9`	This value indicates the time, in seconds, or frequency, in hertz, between data points in the waveform record. This is query only. (If you would like to determine only this value, use the WFMOutpre:XINcr? query.)
`XZERO -6.0606E-6`	This value indicates the time, in seconds, or frequency, in hertz, of the first data point in the waveform record. This time or frequency is relative to the time of the trigger, which is always 0. So, this XZEro time or frequency can be negative. This is query only. (If you would like to determine only this value, use the WFMOutpre:XZEro? query.)
`PT_OFF 0`	This is a query provided only for compatibility with performance oscilloscopes. The returned value is always 0. (If you would like to determine only this value, use the WFMOutpre:PT_Off? query.)
`YUNIT "State"`	This value indicates the vertical units of data points in the waveform record. This can be any of several string values, depending upon the vertical units of the source waveform – in this case, State. This is query only. (If you would like to determine only this value, use the WFMOutpre:YUNit? query.)
`YMULT 1.0000`	This value indicates the multiplying factor to convert the data point values from digitizing levels to the units specified by the `WFMOUTpre:YUNit` command. This is query only. (If you would like to determine only this value, use the WFMOutpre:YMUlt? query.)
`YOFF 0.0E+0`	This value indicates the vertical position of the source waveform in digitizing levels. There are 25 digitizing levels per vertical division. This is query only. (If you would like to determine only this value, use the WFMOutpre:YOFf? query.)
`YZERO 0.0E+0`	This value indicates the vertical offset of the source waveform in units specified by the `WFMOUTpre:YUNit` command. This is query only. (If you would like to determine only this value, use the WFMOutpre:YZEro? query.)

Example 6: Digital with 8 Bytes Per Point and MagniVu On

Goal: Transfer 25 points of Digital data from the oscilloscope to a PC using 8 bytes per point and Zoom on.

Command	Comment
:DATa:SOUrce CH1_D1	
:ACQuire:MAGnivu 1	
:DATa:START 1	
:DATa:STOP 25	
:WFMOutpre:ENCdg ASCii	
:WFMOutpre:BYT_Nr 8	
:HEADer 1	
:VERBose 1	
:WFMOutpre?	Returns the following values. Each value represents the current settings that a CURVe? query will use to format the data that will be transferred from the oscilloscope to a PC or other device (see next table for explanations): :WFMOUTPRE:BYT_NR 8;BIT_NR 64;ENCDG ASCII;BN_FMT RI;BYT_OR MSB;WFID "Digital, unknown coupling, 100.0us/div, 10000 points, Digital mode";NR_PT 25;PT_FMT Y;PT_ORDER LINEAR;XUNIT "s";XINCR 1.2121E-9;XZERO -6.0606E-6;PT_OFF 0;YUNIT "State";YMULT 1.0000;YOFF 0.0E+0;YZERO 0.0E+0
:CURVe?	Returns the following values. Each value represents a data point: :CURVe 80000FB787,80000FB787,E8000FB787,8C000FB7E7,8C000FB7E7, 84000FB7EF,CC000FB7A7,8C000FB7A7,8C000FB7A7,84000FB7A7, 84000FB7A7,80000FB7A7,80000FB7A7,80000FB7A7,80000FB7A7, 80000FB7A7,80000FB7A7,80000FB7A7,C8000FB7A7,8C000FB7E7, 8C000FB7E7,84000FB7EF,CC000FB7A7,8C000FB7A7,8C000FB7A7

NOTE. *The returned hexadecimal data values are formatted without leading zeroes.*

NOTE. *You can also use the `WAVFrm?` query, which concatenates the `WFMOutpre?` and `CURVe?` queries.*

WFMOutpre? Query results	Explanation
WFMOUTPRE:BYT_NR 8	This value specifies the number of bytes per data point in the waveform data. To change this value automatically, use the WFMOutpre:BYT_Nr command. Note that changing this value automatically changes the BIT_NR value accordingly. (This value can also be set using the DATa:WIDth command.)
BIT_NR 64	This value specifies the number of bits per data point in the waveform data. To change this value, use the WFMOutpre:BIT_Nr command. Note that changing this value automatically changes the BYT_NR value accordingly.
ENCDG ASCII	This value specifies the encoding of the waveform data. To change this value (the other possibility is BINARY), use the WFMOutpre:ENCdg command. (This value can also be set using the DATa:ENCdg command, which provides the ability to set the WFMOutpre:ENCdg, WFMOutpre:BN_Fmt,: and WFMOutpre:BYT_Or values using a single command.)
BN_FMT RI	This value specifies the binary format, which in this case is RI (signed integer). To change this value (the other possibility is RP or positive integer), use the WFMOutpre:BN_Fmt command. Note: this field is not applicable for ASCii encoding.
BYT_OR MSB	This value specifies the byte order for the BINARY encoding, which in this case is MSB (most significant byte first, also known as IBM format). To change this value to LSB, use the WFMOutpre:BYT_Or command. Note: this field is not applicable for ASCii encoding.
WFID "Digital, unknown coupling, 100.0us/div, 10000 points, Digital mode"	This quoted string represents information about the source waveform that would be returned by a. WFMOutpre:WFId? query. It cannot be changed.
NR_PT 25	This value indicates the number of data points in the waveform record. (If you would like to determine only this value, use the WFMOutpre:NR_Pt? query.) Note: this value is typically equal to the full record length, but you also have the option to transfer only a portion of the record length by using the DATa:STARt and DATa:STOP commands.
PT_FMT Y	This value indicates the format of the data points in the waveform record. In this case, the value represents YT format. This is query only – the returned values can be Y for YT format or ENV for envelope format (min/max pairs). (If you would like to determine only this value, use the WFMOutpre:PT_Fmt? query.)
PT_ORDER LINEAR	This value is always LINear.
XUNIT "s"	This value indicates the units of the x-axis of the waveform record. This is determined by the horizontal settings for the waveform source. Typically, this value is “s”, representing seconds. When using the math waveform as a source, the value can be “s” or “Hz”. This is query only. (If you would like to determine only this value, use the WFMOutpre:XUNit? query.)
XINCR 1.2121E-9	This value indicates the time, in seconds, or frequency, in hertz, between data points in the waveform record. This is query only. (If you would like to determine only this value, use the WFMOutpre:XINcr? query.)
XZERO -6.0606E-6	This value indicates the time, in seconds, or frequency, in hertz, of the first data point in the waveform record. This time or frequency is relative to the time of the trigger, which is always 0. So, this XZEro time or frequency can be negative. This is query only. (If you would like to determine only this value, use the WFMOutpre:XZEro? query.)
PT_OFF 0	This is a query provided only for compatibility with other Tektronix oscilloscopes. The returned value is always 0. (If you would like to determine only this value, use the WFMOutpre:PT_Off? query.)

WFMOutpre? Query results	Explanation
`YUNIT "State"`	This value indicates the vertical units of data points in the waveform record. This can be any of several string values, depending upon the vertical units of the source waveform – in this case, State. This is query only. (If you would like to determine only this value, use the WFMOutpre:YUNit? query.)
`YMULT 1.0000`	This value indicates the multiplying factor to convert the data point values from digitizing levels to the units specified by the `WFMOUTpre:YUNit` command. This is query only. (If you would like to determine only this value, use the WFMOutpre:YMUlt? query.)
`YOFF 0.0E+0`	This value indicates the vertical position of the source waveform in digitizing levels. There are 25 digitizing levels per vertical division. This is query only. (If you would like to determine only this value, use the WFMOutpre:YOFf? query.)
`YZERO 0.0E+0`	This value indicates the vertical offset of the source waveform in units specified by the `WFMOUTpre:YUNit` command. This is query only. (If you would like to determine only this value, use the WFMOutpre:YZEro? query.)

Example 7: RF Frequency Domain Waveform

Goal: Transfer 5 points of RF frequency domain data from the oscilloscope to a PC using 4 bytes per point.

NOTE. *A frequency domain waveform used in data transfer from the oscilloscope to a PC or other device may be one of the four RF frequency domain traces or the Spectrum Math waveform.*

Command	Comment
`:DATa:SOUrce RF_NORMal`	
`:DATa:STARt 495`	
`:DATa:STOP 505`	
`:WFMOutpre:ENCdg ASCii`	
`:WFMOutpre:BYT_Nr 4`	
`:HEADer 1`	
`:VERBose 1`	

Command	Comment
`:WFMOutpre?`	Returns the following values. Each value represents the current settings that a `CURVe?` query will use to format the data that will be transferred from the oscilloscope to a PC or other device (see next table for explanations): `:WFMOUTPRE:BYT_NR 4;BIT_NR 32;ENCDG ASCII;BN_FMT FP;BYT_OR MSB;WFID "RF_NORMAL, unknown coupling, 10.00W/div, 200.0MHz/div, 1001 points, Sample mode, Center Freq: 2.400GHz, Span: 2.000GHz, Reference Level: 1.000mW";NR_PT 21;PT_FMT Y;PT_ORDER LINEAR;XUNIT "Hz";XINCR 2.0000E+6;XZERO 1.4000E+9;PT_OFF 0;YUNIT "W";YMULT 1.5625E-3;YOFF 0.0E+0;YZERO 0.0E+0;DOMAIN FREQUENCY;WFMTYPE RF_FD;CENTERFREQUENCY 2.4000E+9;SPAN 2.0000E+9;REFLEVEL 1.0000E-3`
`:CURVe?`	Returns the following values. Each value represents a data point: `:CURVE 2.43108E-10,1.62648E-10,2.78478E-10,4.15163E-10,7.66223E-10,7.63905E-10,3.68375E-10,3.42668E-10,3.06422E-10,1.81561E-10,2.0223E-10,4.24327E-10,1.95298E-10,2.1304E-10,9.41791E-11,4.56513E-10,4.33067E-10,6.57215E-11,1.65388E-10,9.09116E-10,5.39507E-10`

WFMOutpre? Query results	Explanation
BYT_NR 4	This value specifies the number of bytes per data point in the waveform data. This value is fixed for RF frequency domain traces.
BIT_NR 32	This value specifies the number of bits per data point in the waveform data. This value is fixed for RF frequency domain traces.
ENCDG ASCII	This value specifies the encoding of the waveform data. To change this value (the other possibility for RF frequency domain traces is FPBINARY), use the WFMOutpre:ENCdg command. This value can also be set using the DATa:ENCdg command.
BN_FMT FP	This value specifies the binary format, which in this case is FP (floating point). This value is fixed for RF frequency domain traces. Note: This field is not applicable for ASCii encoding.
BYT_OR MSB	This value specifies the byte order for the BINARY encoding, which in this case is MSB (most significant byte first, also known as IBM format). To change this value to LSB, use the WFMOutpre:BYT_Or command. Note: This field is not applicable for ASCii encoding.
WFID "RF_NORMAL, unknown coupling, 10.00W/div, 200.0MHz/div, 1001 points, Sample mode, Center Freq: 2.400GHz, Span: 2.000GHz, Reference Level: 1.000mW"	This quoted string represents information about the source waveform that would be returned by a WFMOutpre:WFId? Query. It cannot be changed.
NR_PT 21	This value indicates the number of data points in the waveform record. (If you would like to determine only this value, use the WFMOutpre:NR_Pt? query.) Note: This value is typically equal to the full record length of the RF frequency domain trace, but you also have the option to transfer only a portion of the record using the DATs:STARt and DATa:STOP commands.
PT_FMT Y	This value indicates the format of the data points in the waveform record. In this case, the value represents YF (Amplitude vs. Frequency) format. This is query only. (If you would like to determine only this value, use the WFMOutpre:PT_Fmt? query.
PT_ORDER LINEAR .	This value is always LINear

XUNIT "Hz"	This value indicates the units of the x-axis of the waveform record. This value is always "Hz" for RF frequency domain traces. This is query only. (If you would like to determine only this value, use the WFMOutpre:XUNit? query.)
XINCR 2.0000E+6	This value indicates the frequency, in hertz, between data points in the waveform record. This is query only. (If you would like to determine only this value, use the WFMOutpre:XINcr? query.)
XZERO 1.4000E+9	This value indicates the frequency, in hertz, of the first data point in the waveform record. This frequency is relative to the time of the trigger, which is always 0. This XZEro frequency can be negative. This is query only. (If you would like to determine only this value, use the WFMOutpre:XZEro? query.)
PT_OFF 0	This is a query provided only for compatibility with other Tektronix oscilloscopes. The returned value is always 0. (If you would like to determine only this value, use the WFMOutpre:PT_Off? query.)
YUNIT "W"	This value indicates the units of data points in the waveform record. This value depends on the vertical units of the source waveform – in this case, watts. This is query only. (If you would like to determine only this value, use the WFMOutpre:YUNit? query.)
YMULT 1.5625E-3	This value indicates the multiplying factor to convert the data point values to the units specified by the:WFMOutpre:YUNit command. This is query only. (If you would like to determine only this value, use the WFMOutpre:YMUlt? query.)
YOFF 0.0E+0	This value indicates the vertical position of the source waveform. This value is unused for RF frequency domain traces and is always 0.
YZERO 0.0E+0	This value indicates the vertical offset of the source waveform. This value is unused for RF frequency domain traces and is always 0.
DOMAIN FREQUENCY	This value indicates the domain in which the source waveform is displayed and stored. For RF time domain traces, the domain is Time and waveform transfer information is treated as integer information. For RF frequency domain traces, the domain is Frequency and waveform transfer information is treated as floating point information. This is query only. (If you would like to determine only this value, use the WFMOutpre:DOMain? query.)
WFMTYPE RF_FD	This value indicates the type of the source waveform. RF_FD indicates an RF frequency domain trace (frequency domain waveform). This is query only. (If you would like to determine only this value, use the WFMOutpre:WFMTYPe? query.)
CENTERFREQUENCY 2.4000E+9	This value indicates the center frequency, in hertz, of the source waveform. This is query only. (If you would like to determine only this value, use the WFMOutpre:CENTERFREQuency? query.)
SPAN 2.0000E+9	This value indicates the frequency span, in hertz, of the source waveform. This is query only. (If you would like to determine only this value, use the WFMOutpre:SPAN? query.)
REFLEVEL 1.0000E-3	This value indicates the reference level, in watts, of the source waveform. This is query only. (If you would like to determine only this value, use the WFMOutpre:REFLEvel? query.)

Appendix E: Search and Trigger Command Sequence Examples

The following are some example command sequences that show a variety of different searches and triggers. The commands in these sequences are not order-dependent.

To use these examples, connect channel 1, channel 2, channel 3 and channel 4 to the probe compensation signal located on the right hand side of the front panel.

The search and trigger command group sections contain more information on general search and trigger concepts. ,

Example 1: Single Threshold Edge Search

Goal: Search the channel 2 waveform and place a mark at each instance where it crosses below a threshold of 1.4 volts.

Command	Comment
*RST;:*OPC?	Resets the oscilloscope and waits for that operation to complete (approximately 1 to 5 seconds depending on the complexity of the previous setup).
display:waveview1:ch2:state 1	Turns the CH2 waveform on.
:AUTOset EXECute>;*OPC?	Autosets the displayed waveform CH2 and waits for the auto setup to complete.
:SEARCH:SEARCH1:TRIGger:A:TYPe EDGE	Specifies that this will be an edge search (a mark will be placed when the source waveform passes through a specified threshold level in the specified direction).
:SEARCH:SEARCH1:TRIGger:A:EDGE:SOUrce CH2	Specifies the CH2 waveform as the source waveform.
:SEARCH:SEARCH1:TRIGger:A:LOWerthreshold:CH2 1.4	Specifies 1.4 volts as the threshold level.
:SEARCH:SEARCH1:TRIGger:A:EDGE:SLOpe FALL	Specifies the falling edge as the direction.
:SEARCH:SEARCH1:STATE 1	Turns the search on.
:SEARCH:SEARCH1:TOTal?	Returns 4, indicating that CH2 fell below the 1.4 volt threshold 4 times.
:SEARCH:SEARCH1:LIST?	Returns a list of the 4 marks: **CH2**,11.2411,11.2411,11.2411,-1.5504E-3, 0.0E+0,0.0E+0,0.0E+0;**CH2**,37.0737,37.0737,37.0737, -517.0517E-6,0.0E+0,0.0E+0,0.0E+0;**CH2**,62.9163,62.9163,62.9163, 516.6517E-6,0.0E+0,0.0E+0, 0.0E+0;**CH2**,88.7489,88.7489,88.7489, 1.5500E-3,0.0E+0,0.0E+0,0.0E+0

Example 2: Single Threshold Edge Trigger

Goal: Trigger on the channel 2 waveform when the waveform crosses below a threshold of 1.4 volts.

Command	Comment
*RST	Resets the oscilloscope. Wait for the reset to complete (approximately 3 seconds).
:DISPLAY:WAVEVIEW1:CH2:STATE 1	Turns the CH2 waveform on.
:TRIGger:A:TYPe EDGE	Specifies that this will be an edge trigger (trigger will occur when the source waveform passes through a specified threshold level in the specified direction).
:TRIGger:A:EDGE:SOUrce CH2	Specifies the CH2 waveform as the source waveform.
:TRIGger:A:LOWerthreshold:CH2 1.4	Specifies 1.4 volts as the threshold level.
:TRIGger:A:EDGE:SLOpe FALL	Specifies as falling edge as the direction.
:TRIGger:STATE?	Should return TRIGGER, not AUTO.

Example 3: Dual Threshold Runt Search

Goal: Search the channel 3 waveform for negative runt pulses and place a mark at each instance when the waveform drops below an upper threshold of 1.4 volts, but does not cross a lower threshold of -2 volts before re-crossing the upper threshold. The pulse width must be less than 600 microseconds.

Command	Comment
*RST	Resets the oscilloscope. Wait for the reset to complete (approximately 3 seconds).
:DISPLAY:WAVEVIEW1:CH3:STATE 1	Turns the CH3 waveform on.
:AUTOset EXECute	Autosets the displayed waveform CH3. Wait for the autoset to complete (approximately 3 seconds).
:SEARCH:SEARCH1:TRIGger:A:TYPe RUNT	Specifies that this will be a runt search (a mark will be placed on a pulse amplitude that crosses one threshold but fails to cross a second threshold before re-crossing the first).
:SEARCH:SEARCH1:TRIGger:A:EDGE:SOUrce CH3	Specifies to use channel 3 as the source waveform.
:SEARCH:SEARCH1:TRIGger:A:LOWerthreshold:CH3 -2	Specifies to use -2 volts as the lower threshold.
:SEARCH:SEARCH1:TRIGger:A:UPPerthreshold: CH3 1.4	Specifies to use 1.4 volts as the upper threshold.
:SEARCH:SEARCH1:TRIGger:A:RUNT:POLarity NEGative	Specifies to search for when the runt polarity is negative.
:SEARCH:SEARCH1:TRIGger:A:RUNT:WIDth 600E-6	Specifies a pulse width of 600E-6 seconds.
:SEARCH:SEARCH1:TRIGger:A:RUNT:WHEn LESSthan	Specifies to search for when the pulse width is less than 600E-6 seconds.
:SEARCH:SEARCH1:STATE 1	Turns the search on.

Command	Comment
:SEARCH:SEARCH1:TOTal?	Returns 3, indicating that 3 total negative runt pulses were less than 600E-6 seconds wide
:SEARCH:SEARCH1:LIST?	Returns a list of 3 marks: **CH3**,11.2311,24.1624,24.1624,1.0335E3,0.0E+0,0.0E+0,0.0E+0;**CH3**,37.0837,50.0150,50.0150,600.0600E9,0.0E+0,0.0E+0,0.0E+0;**CH3**,62.9263,75.8576,75.8576,1.0343E-3,0.0E+0,0.0E+0,0.0E+0

NOTE. *You could use a similar command sequence with a transition type search.*

Example 4: Single Threshold Logic Search on Three Waveforms

Goal: Search the channel 1, 2 and 3 waveforms and place a mark at each instance when either channel 1 is above 1.4 volts, channel 2 is above 1.5 volts, or channel 3 is above 1.3 volts.

Command	Comment
*RST	Resets the oscilloscope. Wait for the reset to complete (approximately 3 seconds).
:DISPLAY:WAVEVIEW1:CH1:STATE 1	Turns the CH1 waveform on.
:DISPLAY:WAVEVIEW1:CH2:STATE 1	Turns the CH2 waveform on.
:DISPLAY:WAVEVIEW1:CH3:STATE 1	Turns the CH3 waveform on.
:AUTOset EXECute	Autosets the displayed waveforms CH1, CH2 and CH3. Wait for the autoset to complete (approximately 3 seconds).
:SEARCH:SEARCH1:TRIGger:A:TYPe LOGIc	Specifies that this will be a logic search (a mark will be placed when all channels transition to the specified state).
:SEARCH:SEARCH1:TRIGger:A:LOGIc:INPut:CH1 HIGH	Specifies the Boolean logic criteria for channel 1; in this case, high.
:SEARCH:SEARCH1:TRIGger:A:LOGIc:INPut:CH2 HIGH	Specifies the Boolean logic criteria for channel 2; in this case, high.
:SEARCH:SEARCH1:TRIGger:A:LOGIc:INPut:CH3 HIGH	Specifies the Boolean logic criteria for channel 3; in this case, high.
:SEARCH:SEARCH1:TRIGger:A:LOGIc:THReshold:CH1 1.4	Specifies to use 1.4 volts as the threshold for CH1.
:SEARCH:SEARCH1:TRIGger:A:LOGIc:THReshold:CH2 1.5	Specifies to use 1.5 volts as the threshold for CH2.
:SEARCH:SEARCH1:TRIGger:A:LOGIc:THReshold:CH3 1.3	Specifies to use 1.3 volts as the threshold for CH3.
:SEARCH:SEARCH1:TRIGger:A:LOGIc:PATtern:WHEn TRUE	Specifies the condition for generating a logic pattern search; in this case, true.
:SEARCH:SEARCH1:TRIGger:A:LOGIc:FUNCtion OR	Specifies the logic operator for the logic search; in this case, OR.
:SEARCH:SEARCH1:STATE 1	Turns the search on.

Command	Comment
:SEARCH:SEARCH1:TOTal?	Returns 3 or 4, indicating 3 or 4 times when one of channels 1, 2 or 3 became high. Note: Depending upon the number of transitions displayed, you may get 3 or 4 search marks for this example. If you get 3 search marks, try adjusting the horizontal position until you see 4 search marks.
:SEARCH:SEARCH1:LIST?	Returns a list of 3 marks on 3 waveforms: **CH1**,24.1600,24.1600,24.1600,1.0336E3,0.0E+0,0.0E+0, 0.0E+0;**CH2**,24.1600,24.1600,24.1600,1.0336E3,0.0E+0, 0.0E+0,0.0E+0;**CH3**,24.1600,24.1600,24.1600,1.0336E3, 0.0E+0,0.0E+0,0.0E+0;**CH1**,50.0000,50.0000,50.0000,0.0E+0, 0.0E+0,0.0E+0,0.0E+0;**CH2**,50.0000,50.0000,50.0000, 0.0E+0,0.0E+0,0.0E+0,0.0E+0;**CH3**,50.0000,50.0000,50.0000,0.0E+0, 0.0E+0,0.0E+0,0.0E+0;**CH1**,75.8300,75.8300,75.8300, 1.0332E3,0.0E+0,0.0E+0,0.0E+0;**CH2**,75.8300,75.8300,75.8300,1.0332E3, 0.0E+0,0.0E+0,0.0E+0;**CH3**,75.8300,75.8300,75.8300,1.0332E-3 ,0.0E+0,0.0E+0,0.0E+0

Glossary

ASCII
Acronym for the American Standard Code for Information Interchange. Controllers transmit commands to the instrument using ASCII character encoding.

Address
A 7-bit code that identifies an instrument on the communication bus. The digitizing instrument must have a unique address for the controller to recognize and transmit commands to it.

Backus-Naur Form (BNF)
A standard notation system for command syntax diagrams. The syntax diagrams in this manual use BNF notation.

Controller
A computer or other device that sends commands to and accepts responses from the digitizing instrument.

EOI
A mnemonic referring to the control line End or Identify. One of the two possible end-of-message terminators.

EOM
A generic acronym referring to the end-of-message terminator. The end-of-message terminator can be either an EOI or the ASCII code for line feed (LF).

Equivalent-Time sampling (ET)
A sampling mode in which the instrument acquires signals over many repetitions of the event. This instrument uses a type of equivalent time sampling called random equivalent time sampling. It utilizes an internal clock that runs asynchronously with respect to the input signal and the signal trigger. The instrument takes samples continuously, independent of the trigger position, and displays them based on the time difference between the sample and the trigger. Although the samples are taken sequentially in time, they are random with respect to the trigger.

Real-Time sampling
A sampling mode where the instrument samples fast enough to completely fill a waveform record from a single trigger event. Use real-time sampling to capture single-shot or transient events.

IEEE
An acronym for the Institute for Electrical and Electronic Engineers.

Serial poll
A device on the bus can request service from the Controller by asserting the SRQ line. When a controller acknowledges the SRQ, it serial polls each device on the bus to determine which device on the bus requested service. Any device requesting service returns a status byte indicating it needs to be serviced and then

unasserts the SRQ line. Devices not requiring service return a status byte that indicates they do not need servicing.

TEKSecure
A Tektronix custom command that initializes both waveform and setup memories. This overwrites any previously stored data.

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