TekExpress®
M-PHY Transmitter Automated Solution

Printable Application Help

077-0683-03

TekExpress®
M-PHY Transmitter Automated Solution
Printable Application Help

Supports M-PHY TX Product Firmware V2.0 and above.

www.tek.com
077-0683-03

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- In North America, call 1-800-833-9200.
- Worldwide, visit *www.tek.com* to find contacts in your area.

Table of Contents

Running tests

Saving and recalling test setups

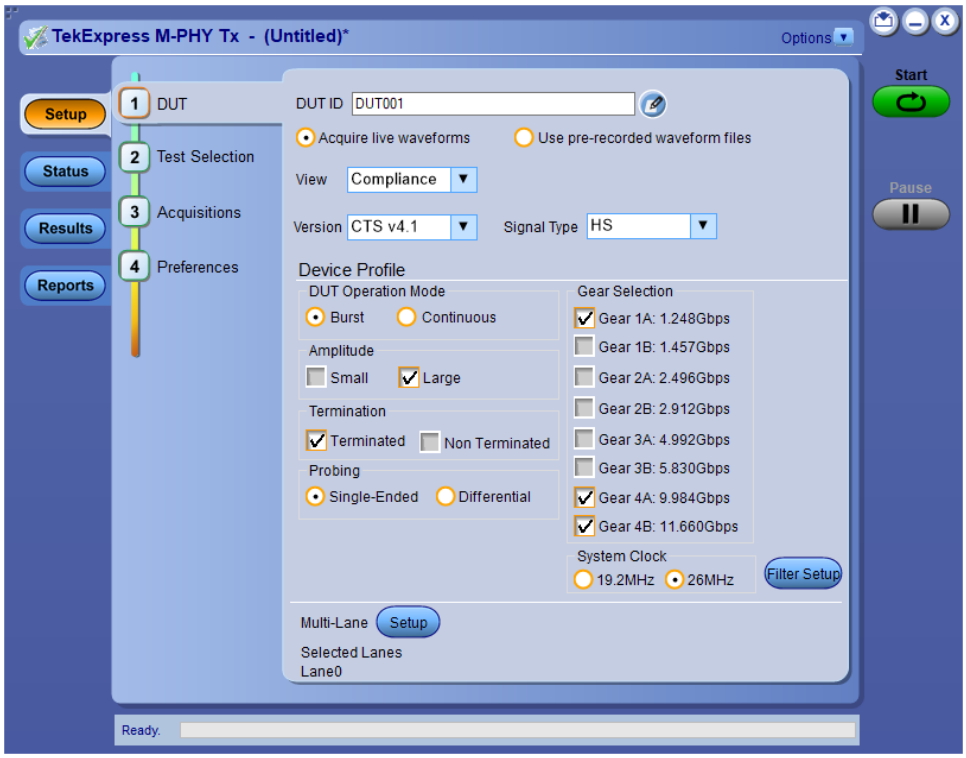
TekExpress programmatic interface

SCPI commands

Reference

Welcome

The Tektronix M-PHY TX Automated Test software runs on Tektronix real-time oscilloscopes that are based on Windows 7/10 computer operating systems. M-PHY TX provides an automated, simple, and efficient way to test M-PHY Transmitter interfaces and devices consistent to the requirements of the M-PHY Base Specification and Conformance Test Specification.



Getting help and support

Related documentation

The following information is available as part of the TekExpress M-PHY TX Automated Solution application.

Table 1: Product documentation

Item	Purpose	Location
Online Help	In-depth operation and UI help	Application Help menu
PDF of the Online Help	Operation and user interface help	Application Help menu Downloadable file from www.tektronix.com (Search keywords 'tekexpress m-phy tx', type = manual; sort by date for latest release)

See also *Technical support*

Conventions used in help

Online Help uses the following conventions:

- The term “DUT” is an abbreviation for Device Under Test.
- The terms “click” and “select” are generic terms that mean to select an item in the application user interface (UI). You can use a mouse or the touch screen to select UI items.

Technical support

Tektronix values your feedback on our products. To help us serve you better, please send us your suggestions, ideas, or comments on your application or oscilloscope. Contact Tektronix through mail, telephone, or the Web site. See *Contacting Tektronix* for more information.

When you contact Tektronix Technical Support, please include the following information (be as specific as possible):

General Information

- All instrument model numbers
- Hardware options, if any
- Probes used
- Your name, company, mailing address, phone number, FAX number
- Please indicate if you would like to be contacted by Tektronix about your suggestion or comments.

Application Specific Information

- Software version number
- Description of the problem such that technical support can duplicate the problem
- If possible, save the setup files for all the instruments used and the application.
- If possible, save the TekExpress setup files, log.xml, *.TekX (session files and folders), and status messages text file.

Getting started

Software installation

Install the software

The TekExpress M-PHY TX web installer page provides a link to the software package TekExpressM-PHY TX WebInstaller.exe used to install the application on a supported oscilloscope. For a list of compatible instruments, see *Supported oscilloscopes and probes*.

To download and install the files:

1. Close the TekScope application.
2. Go to the www.tek.com Web site and search for M-PHY TX to locate the installation file. Download the file TekExpressM-PHYTXWebInstaller.exe.
3. If you downloaded the file to a PC, copy the file to a supported Tektronix oscilloscope model.
4. Double-click the executable file to extract the installation files and automatically start the installer program. The software is installed at the following location:
   - Windows 7/10 instruments: C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX
5. To run the application, open the TekScope application and select **Analyze > TekExpress M-PHY TX**.

See also. *Minimum system requirements*

Supported oscilloscopes and probes

Activate the license

Activate the license using the Option Installation wizard on the oscilloscope. The oscilloscope Online Help has instructions for using the Options Installation window to activate licenses for installed applications. Follow these steps to activate the TekExpress M-PHY TX license:

1. From the oscilloscope menu, click **Utilities > Option Installation**. The TekScope Option Installation wizard opens.
2. Press the **F1** key on the oscilloscope keyboard to open the **Option Installation** help topic. Follow the directions in the topic to activate the license.

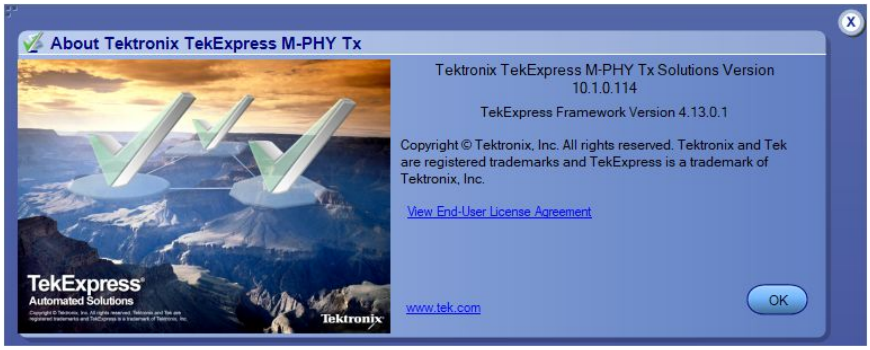
See also. *View software version and license information*

View software version and license information

The following instructions show how to view version and license information for the application and associated modules such as the Programmatic Interface and the Programmatic Interface Client.

To view the version information:

1. Select **Options > About TekExpress**. You can view the version numbers of the installed test suites.



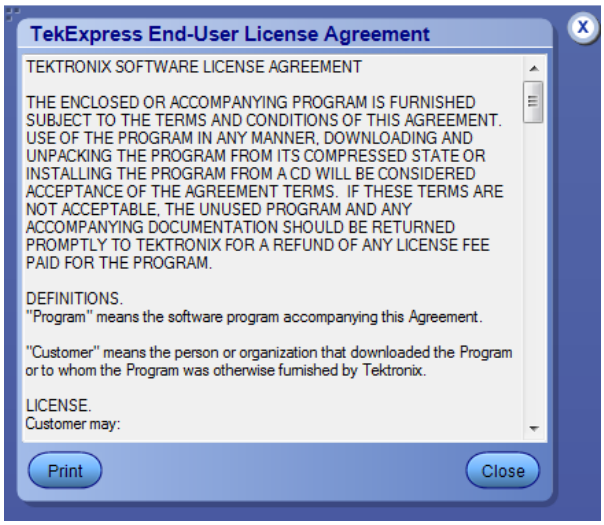
2. Click **OK** to close the dialog box when finished.

To view the end-user license agreement:

1. Select **Options > About TekExpress**.

   Click **View End-User Agreement**. You can view the TekExpress End-User License Agreement.

2. Click **Print** to print the software license agreement.
3. Click **Close** to close the dialog box.



See also. *Activate the license*

Options menu overview

Application overview

M-PHY TX key features

Welcome to the TekExpress® M-PHY Transmitter Automated Solution application (Option M-PHY TX). M-PHY TX provides an automated, simple, and efficient way to test M-PHY Transmitter interfaces and devices consistent to the requirements of the M-PHY Base Specification v4.1 and Conformance Test Suite (CTS) v4.1.

M-PHY TX is based on TekExpress version 4, the Tektronix Test Automation Framework developed to support your current and future test automation needs. TekExpress uses a highly modular architecture that allows you to deploy the automated test solutions for various standards.

Key M-PHY Transmitter testing features include:

- 100% Test Coverage for all modes, gears, and data rates for HS, PWM, and SYS mode with M-PHY TX (Automated)
- Enables full customization and comprehensive characterization, debug and analysis using setup libraries and MOI in DPOJET; the state of the art jitter analysis and debugging tool
- Automation support and scripting interface with Iron Python which supports socket based programming and .NET remote interface
- M-PHY TX Automated User-defined mode allows modifying every parameter of different HS, PWM, and SYS tests, for comprehensive debug analysis and characterization
- Automated testing reduces the complexity of executing transmitter tests and enables you to test devices faster
- Selection of different Gears and Subgears of HS, PWM, and SYS signals, large/small amplitudes, impedance terminated/un-terminated
- Full Contour Extrapolated eye diagram for BER analysis in steps at E- 6 to E-10
- Ability to extrapolate further to E-12 and beyond for margin testing
- Ability to extrapolate further to E-12 and beyond for margin testing
- Accumulation of 3 M UIs in a single acquisition reduces test times for analysis
- Ability to embed/de-embed using filter files to enable mid bus probing
- Support for tri mode probes for single ended and differential signaling probing using Industry lowest noise probe P76xx series
- Manual mode testing for multi lanes

- Highly optimized setup performs Power Spectral Density (PSD) tests using oscilloscope-integrated algorithms uniquely, and does not require an external spectral analyzer or extra hardware to perform PSD measurements
- Single printable report for all tests across different combinations, provides pass/fail summary table, along with margin details, optional waveform captures, and eye diagrams. Available in (.mht and pdf)

Supported oscilloscopes and probes

The TekExpress M-PHY TX application runs HS, PWM and SYS tests on the following Tektronix oscilloscope and probe configurations:

Table 2: Real-time Digital Oscilloscopes (any one of the following instruments)

Supported Oscilloscopes	HS				PWM	SYS
	G1	G2	G3	G4		
70604C	✓	X	X	X	✓	✓
70804C	✓	X	X	X	✓	✓
71254C	✓	✓	X	X	✓	✓
71604C	✓	✓	X	X	✓	✓
72004C	✓	✓	X	X	✓	✓
72304DX	✓	✓	✓	X	✓	✓
72504DX	✓	✓	✓	✓	✓	✓
73304DX	✓	✓	✓	✓	✓	✓
73304SX	✓	✓	✓	✓	✓	✓
75002SX [1]	✓	✓	✓	✓	✓	✓
75902SX [1]	✓	✓	✓	✓	✓	✓
77002SX [1]	✓	✓	✓	✓	✓	✓

Table 3: Probes that support M-PHY TX HS/PWM/SYS tests

Supported Probes	HS RT				PWM NT with Fixtures	SYS NT with Fixtures
	G1	G2	G3	G4		
P7630	✓	✓	✓	✓	X	X
P7633	✓	✓	✓	✓	X	X
P7625	✓	✓	✓	✓	X	X
P7313SMA	✓	✓	X	X	X	X
P7360A	✓	X	X	X	X	X
P7380A	✓	X	X	X	X	X
P7313	X	X	X	X	✓	✓

[1] Supported only in non-ATI mode

NOTE.

- *For P7520A limited support is available. Contact your local sales representative for more details.*
- *Additional 2 Qty of probe (Single ended mode) to measure Lane to Lane Skew, if DUT supports multilane.*

See also. *Minimum system requirements*

Minimum system requirements

The following table shows the minimum system requirements for an oscilloscope to run TekExpress.

Table 4: System requirements

Component	Requirement
Oscilloscope	*Supported oscilloscopes and probes*
Processor	Same as the oscilloscope
Operating System	Same as the oscilloscope: ■ Windows 7/10 64-bit
Memory	Same as the oscilloscope
Hard Disk	Same as the oscilloscope.
Display	Same as the oscilloscope [2]
Firmware	DPO/DSA/MSO TekScope v10.10.0 or later
Software	■ SDLA 3.0.4.3 ■ DPOJET version 10.0.11 or above ■ Microsoft .NET 4.0 Framework ■ Microsoft Internet Explorer 7.0 SP1 or later ■ Adobe Reader 7.0 or equivalent software for viewing portable document format (PDF) files
Probes	*Supported oscilloscopes and probes*

See also. *Supported oscilloscopes and probes*

Instrument connection setup

[2] If TekExpress is running on an instrument having a video resolution lower than 800x600 (for example, sampling oscilloscope), it is recommended that you connect a secondary monitor. The secondary monitor must be configured and active before launching the application.

Application directories and files

The following table lists the default application directory names and their usage:

Table 5: Application directories

Directory names	Contains
InstallDir\TekExpress\TekExpress MIPI_MPHY_TX	Path to the root application directory and associated sub-folders. The folders described in this table (ACP, Bin, and so on) are all in this root directory
Bin	Miscellaneous M-PHY TX application libraries
Compliance Suites	Compliance-specific files
Images	Tektronix Logo images
Examples	Various support files
ICP	Instrument and M-PHY TX application-specific interface libraries
Lib	Utility files specific to the M-PHY TX application
Report Generator	Excel Active X interface Library for Report Generation
Tools	Instrument and M-PHY TX application-specific files

See also. *View test-related files*

File name extensions

File name extensions

The M-PHY TX application uses the following file name extensions:

File name extension	Description
.TekX	Saved session files. The extensions may not be displayed.
.seq	Test sequence files
.xml	Encrypted XML files that contain test-specific configuration information Note that the log file extension is also xml
.wfm	Test waveform files
.mht .pdf .mhtml	Test result report file formats (.mht is the default format).

See also. *Select report options*

View test-related files

Application directories and files

Operating basics

Run the application

To run the M-PHY TX application, do either of the following:

- Select **Analyze > TekExpress M-PHY TX** from the TekScope menu.
- Click any saved M-PHY session file.

When you open the application after installation, the application checks for a file called Resources.xml located in the My TekExpress folder. If this file is not found, instrument discovery is performed before launching M-PHY TX. The Resources.xml file contains information regarding instruments that are available on your network.

If the application license was not installed using the TekScope menu **Utilities > Option Installation** selection, you can open and demo the application 10 times. Each time you open the application without supplying a valid license key, one of the free trials is used.

See also *Activate the license*

Exit the application

Use the following method to exit the application:

NOTE. *Using other methods to exit the application results in abnormal termination of the application.*

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1. Click  on the application title bar.
2. Do one of the following:
   - If you have an unsaved session or test setup open, you are asked to save it before exiting. To save it, click **Yes**. Otherwise click **No**. The application closes.
   - A message box appears asking if you really want to exit TekExpress. To exit, click **Yes**.

Application controls and menus

Application controls

Table 6: Application control descriptions

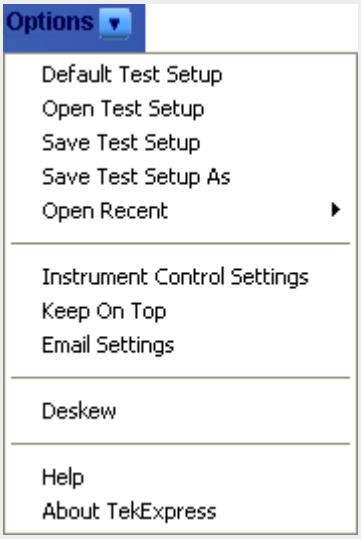
Item	Description
Options menu	Opens the Options menu for access to global controls
Panels	Visual frames with sets of related options
Command buttons	Buttons that initiate an immediate action such as the Start, Stop, Pause, Continue, and Clear command buttons
Start button 	Starts measurement acquisition and analysis.
Stop button 	Stops (aborts) the current test run.
Pause \ Continue button 	Use the Pause button to temporarily interrupt the current test run. When a test is paused, the button name changes to Continue.
Clear button 	Clears all existing measurement results. Adding or deleting a measurement, or changing a configuration parameter of an existing measurement, also clears measurements. This prevents the accumulation of measurement statistics or sets of statistics that are not coherent. This button is available only on the *Results panel*.
Clear Log 	This button is available only on the *Status panel*.
Save 	This button is available only on the *Status panel*.
Application window move icon 	Place the cursor over the three-dot pattern in the upper left corner of the application window. When the cursor changes to a hand, drag the window to the desired location.

Options menu

Options menu overview. The Options menu is located in the upper right corner of the application.

The Options menu has the following selections:

Options Menu

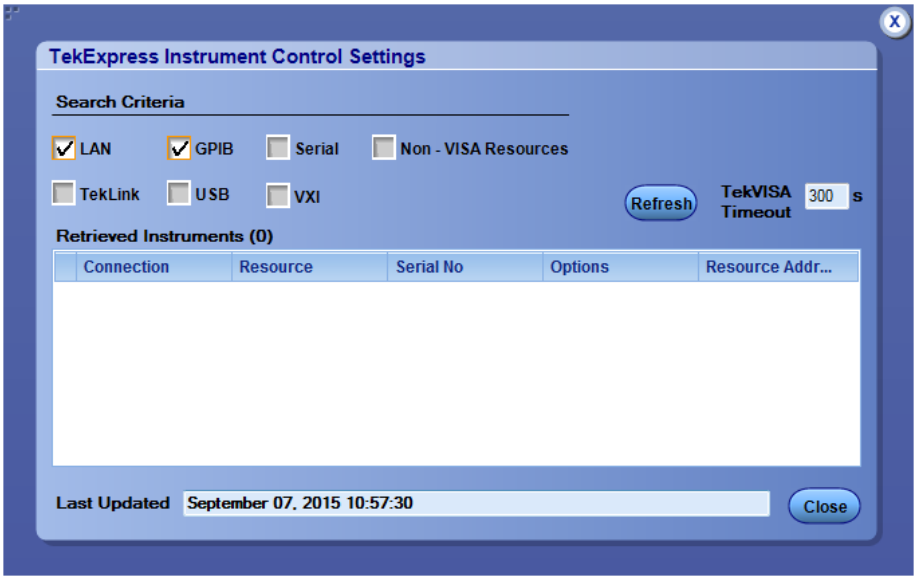


Menu	Function
Default Test Setup	Opens an untitled test setup with defaults selected
Open Test Setup	Opens a saved test setup
Save Test Setup	Saves the current test setup selections
Save Test Setup As	Creates a new test setup based on an existing one
Open Recent	Displays a menu of recently opened test setups from which to select
Instrument control settings	Shows the list of instruments connected to the test setup and allows you to locate and refresh connections to connected instruments
Keep On Top	Keeps the TekExpress M-PHY TX utility on top of other open windows on the desktop
Email settingsdialog box	Use to configure email options for test run and results notifications
Deskew	Loads oscilloscope channel deskew settings into the application.
Help	Displays TekExpress Help

Menu	Function
About TekExpress	■ Displays application details such as software name, version number, and copyright ■ Provides access to *software version and license information* for your M-PHY TX installation ■ Provides a link to the Tektronix Web site

See also. *Application controls*

Instrument control settings. Use the TekExpress Instrument Control Settings dialog box to search for and list the connected resources (instruments) found on specified connections (LAN, GPIB, USB, and so on) and each instruments connection information. You can access this dialog box from the Options menu.



Use the Instrument Control Settings feature to and view instrument connection details. Connected instruments displayed here can be selected for use in the Global Settings tab in the configuration section. See step 1 of *Configure tests* for details.

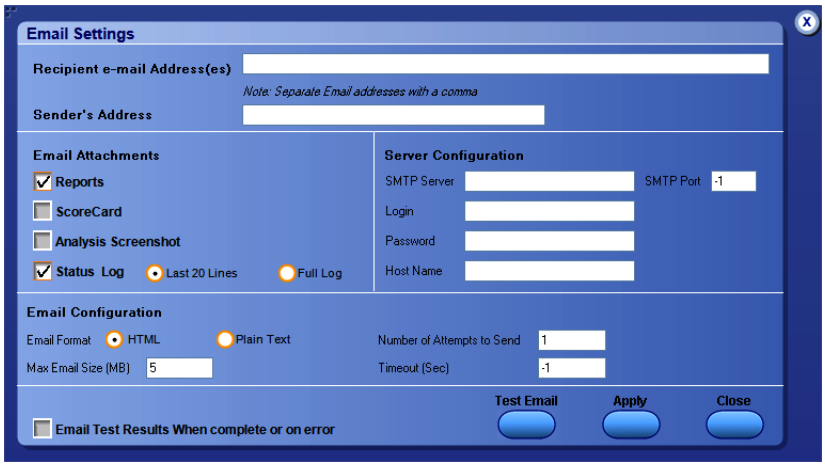
See also. *View connected instruments*

Options menu overview

Email settings dialog box overview. Use the Email Settings dialog box to enable M-PHY TX to send an email message when a test completes, produces an error, or fails. Select the type of test run information to attach to the email (such as test reports and test logs), the email message format, and the email message size limit.

Open the Email Settings dialog box from the **Options** menu.

NOTE. *Recipient email address, sender's address, and SMTP Server are mandatory fields.You cannot clear these fields after you enter a value. You can change the email address or enable or disable the mailing option.*



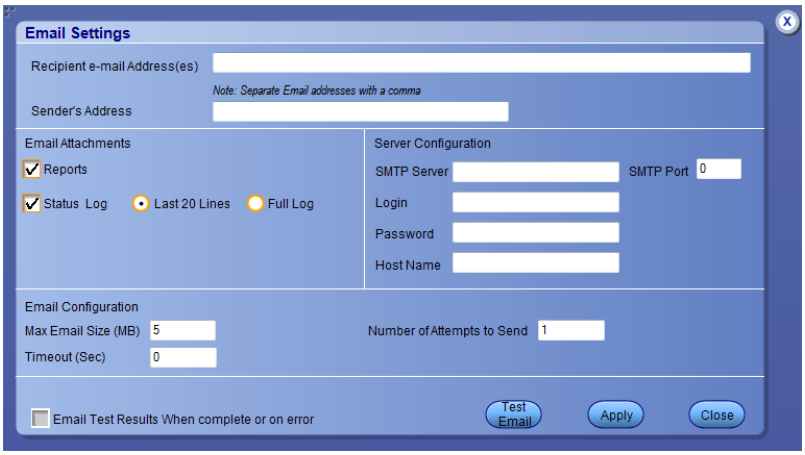
NOTE. *Once user enters the value in these fields, user will not be able to clear the fields. However user can enable or disable the mailing option.*

See also. *Configure email settings*

Options menu

Set test notification preferences

Configure email settings. To be notified by email when a test completes, fails, or produces an error, configure the email settings.



1. Select **Options > Email Settings** to open the Email settings dialog box.
2. (Required) For Recipient email Address(es), enter one or more email addresses to which to send the test notification. To include multiple addresses, separate the addresses with commas.
3. (Required) For Sender's Address, enter the email address used by the instrument. This address consists of the instrument name, followed by an underscore, followed by the instrument serial number, the @ symbol and then the email server used. For example: DPO72004C_B130099@yourcompany.com.
4. (Required) In the Server Configuration section, type the SMTP Server address of the Mail server configured at the client location, and the SMTP Port number, in the corresponding fields.

   If this server requires password authentication, enter a valid login name, password, and host name in the corresponding fields.

   NOTE. *If any of the above required fields are left blank, the settings will not be saved and email notifications will not be sent.*

5. In the Email Attachments section, select from the following options:
   - **Reports**: Attach the test report to the notification email.
   - **Status Log**: Attach the test status log to the notification email. If you select this option, then also select whether you want to receive the full log or just the last 20 lines.
6. In the Email Configuration section:
   - Select the message file format to send: HTML (the default) or plain text.
   - Enter a maximum file size for the email message (message plus attachment files). Messages with attachments larger than this limit will not be sent. The default is 5 MB.

- Enter the number in the Number of Attempts to Send field, to limit the number of attempts that the system makes to send a notification. The default is 1. You can also specify a timeout period.

7. Select the **Email Test Results When complete or on error** check box. Use this check box to quickly enable or disable email notifications.
8. To test your email settings, click **Test Email**.
9. To apply your settings, click **Apply**.
10. Click **Close** when finished.

Deskew. If skew is present between positive and negative channels, then the channels need to be deskewed before being used for waveform measurements. TekExpress M-PHY TX provides support for channel deskew using the following method:

1. Determine what the skew is for each channel.
2. From the TekScope menu, select **Vertical** > **Deskew**.
3. In the Deskew/Attenuation window, click the channel (1 – 4) button for the first channel to be deskewed.
4. Click in the Ch(x) Deskew Time entry field and enter the skew. The skew can be +ve or –ve.
5. Click the channel button for the next channel and repeat step 4.
6. After entering the skew for all the channels that require it, from the Options menu in TekExpress M-PHY TX, select Deskew.
7. In the Deskew and Attenuation dialog box, select the desired level:
   - Less than 100 mV signal amplitude: Select this if the signal amplitude is such that the oscilloscope's vertical setting is less than 100 mV/division.
   - 100 mV or greater signal amplitude: Select this if the signal amplitude is such that the oscilloscope's vertical setting is greater than 100 mV/division.

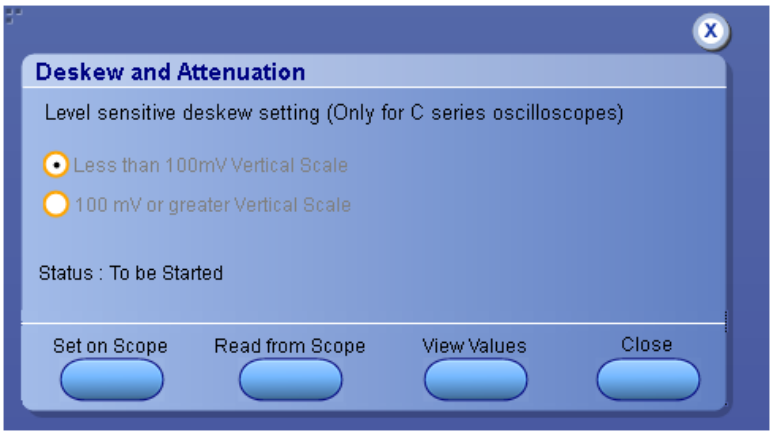
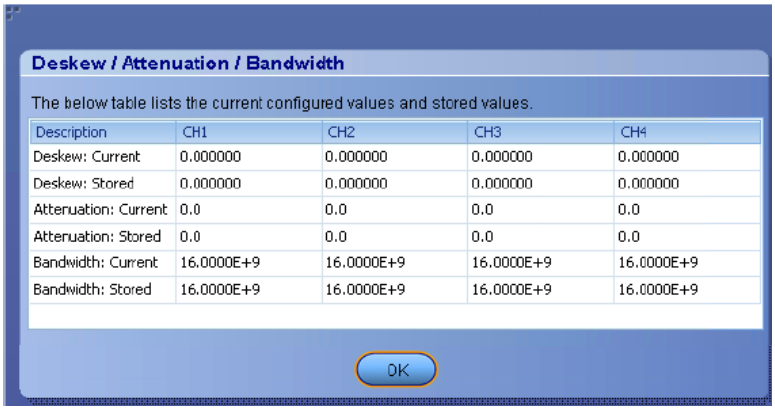


Figure 1: Deskew

8. Click **Set on Scope** to set the stored deskew and attenuation values on oscilloscope.
9. Click **Read from Scope** to read the deskew and attenuation values from the oscilloscope.
10. Click **View values** to view the deskew, attenuation, and bandwidth values.
11. When the status in the dialog box indicates the deskew is finished, click **Close**.



Description	CH1	CH2	CH3	CH4
Deskew: Current	0.000000	0.000000	0.000000	0.000000
Deskew: Stored	0.000000	0.000000	0.000000	0.000000
Attenuation: Current	0.0	0.0	0.0	0.0
Attenuation: Stored	0.0	0.0	0.0	0.0
Bandwidth: Current	16.0000E+9	16.0000E+9	16.0000E+9	16.0000E+9
Bandwidth: Stored	16.0000E+9	16.0000E+9	16.0000E+9	16.0000E+9

Figure 2: Deskew-View values

Each input channel has its own deskew settings. Deskew compensates individual channels for probes or cables of different lengths. The instrument applies the delay values after each completed acquisition. The deskew values are saved as part of the instrument setup. The deskew values for the selected channel are retained until you change the probe, you restore a saved setup, or you recall the factory setup.

NOTE. *If you perform the de-embed settings, then performing the Deskew and Attenuation settings are not required.*

Application panels

Application panel overview

Panels group related configuration, test and results settings.

The TekExpress M-PHY TX panels are:

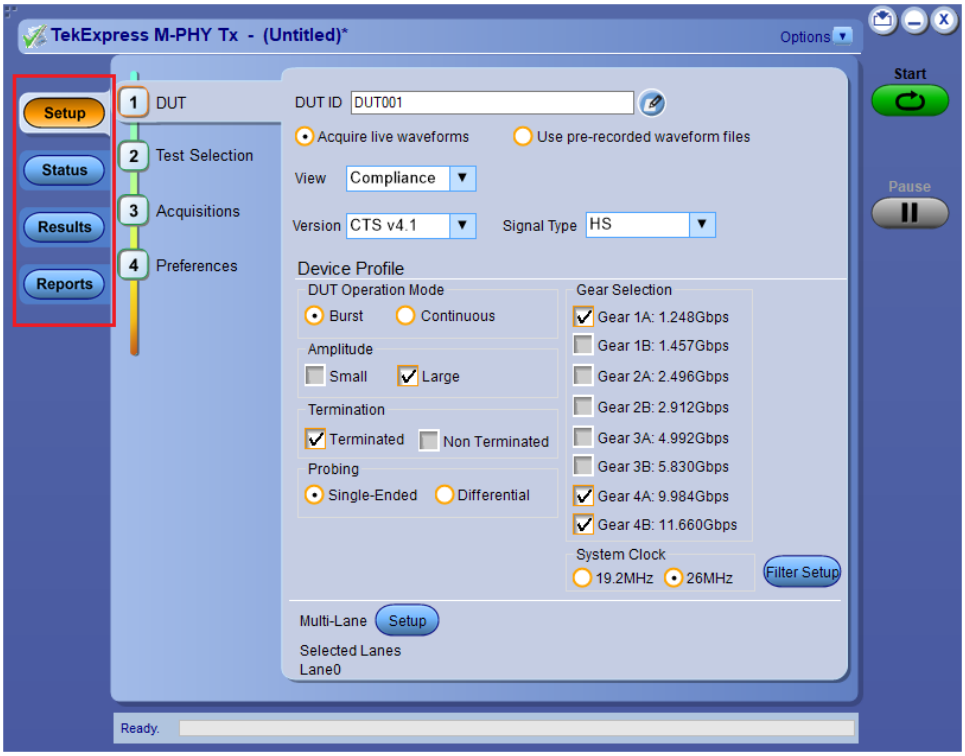


Figure 3: Application panels

Table 7: Application panels

Panel name	Description
Setup	Configures the DUT, test, acquisition, test specific parameters and report parameters.
Status	View the progress and analysis status of the selected tests, and view test logs.
Results	View a summary of test results and select results viewing preferences.
Reports	Browse for reports, save reports as specific file types, specify report naming conventions, select report content to include (such as summary information, detailed information, user comments, setup configuration, application configuration), and select report viewing options.

See also. *Application controls*

About setting up tests.

Setup panel

Setup panel overview. The Setup panel contains sequentially ordered tabs that guide you through a typical test setup process.

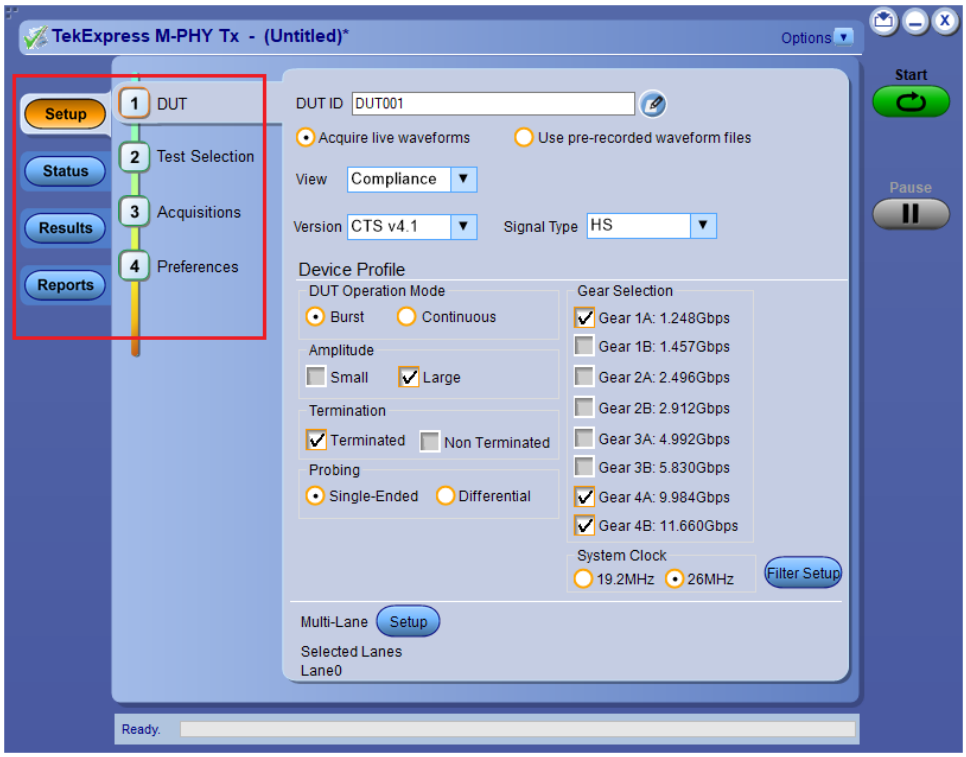
Set the DUT parameters.

Select test(s).

Set lane acquisition source

Configure tests.

Select test notification preferences.



Items selected in one Setup tab may change options available in the following tabs. You can switch between the tabs in any order to modify your test parameters.

DUT tab controls. Use the Setup panel DUT tab to select parameters for the device under test. The settings are global and apply to all tests for the current session. DUT settings also affect the list of available tests in the Test Selection tab.

1. Click **Setup > DUT**.
2. (Optional) Enter the ID for the device. The default value is DUT001. The DUT ID parameter is added to reports.
3. (Optional) To add comments to the test report, click the notepad icon ( ) to the right of the DUT ID field. You can enter comment text up to 256 characters. To enable or disable displaying comments in the test report, see *Select report options*.

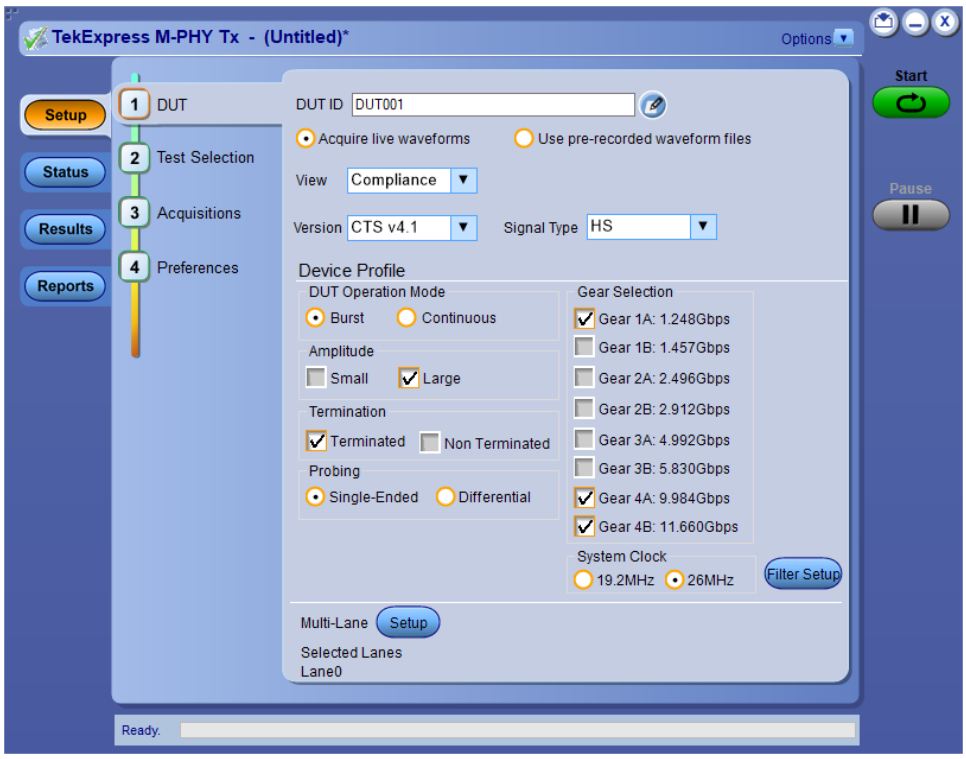


Figure 4: DUT tab

4. Select from the following parameters.

NOTE. *Settings that do not apply to compliance testing cannot be changed and are grayed out.*

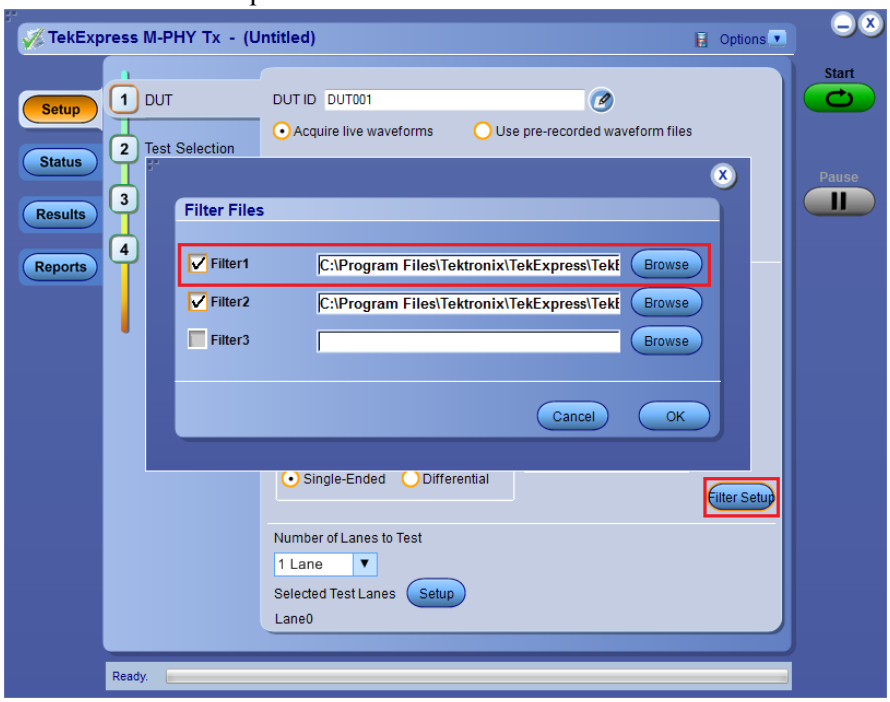
Table 8: DUT tab settings

Control or field	Description
Acquire live waveforms	Acquire active signals from the oscilloscope for testing.
Use pre-recorded waveform files	Run an analysis on a saved run session file. Select a file from the Run Session field.
Run Session	Lists saved run sessions (waveform acquisitions) on which you can perform analysis. Use in conjunction with the 'Use pre-recorded waveform files' control. ***NOTE.*** *Pre-recorded (saved) waveform file names follow a specific naming syntax. To use your own waveform files (generated outside of this application), name the waveform files appropriately.Waveform naming conventions (pre-recorded mode)*
View	Determines where to access the test configuration settings: ■ **Compliance**: View configuration settings by clicking **Setup > Test Selection > Configure** ■ **Advanced**: Enables the **Setup > Configuration** tab in which to view configuration settings.
Version	Displays the latest version of M-PHY TX testing specification version.
Signal Type	■ HS: High Speed ■ PWM: Pulse Width Modulation ■ SYS: System Clock
DUT Operation Mode	■ Burst ■ Continuous For HS *Burst and Continuous* For PWM ■ *Burst* ■ *Continuous* For SYS *Burst and Continuous*
Amplitude	■ Small ■ Large You can select both of these settings.

Control or field	Description
Termination	■ Terminated ■ Non Terminated You can select both of these settings.
Probing	■ Single-Ended ■ Differential *Instrument connection setup*
Gear Selection for HS	Select the Gear and Gear variation supported by the DUT. Available parameters are: **Gear 1** ■ A : 1.248 Gbps ■ B : 1.457 Gbps ■ A and B **Gear 2** ■ A : 2.496 Gbps ■ B : 2.915 Gbps ■ A and B **Gear 3** ■ A : 4.992 Gbps ■ B : 5.830 Gbps ■ A and B **Gear 4** ■ A : 9.984 Gbps ■ B : 11.660 Gbps ■ A and B
Gear Selection for PWM	Select one or more Gears (0-7) relevant to your DUT PWM signal testing requirements. Gear 0: 0.01-3 Mbps Gear 1: 3-9 Mbps Gear 2: 6-18 Mbps Gear 3: 12-36 Mbps Gear 4: 24-72 Mbps Gear 5: 48-144 Mbps Gear 6: 96-288 Mbps Gear 7: 192-576 Mbps
Frequency Selection for SYS	Select one or more frequencies. Available frequencies are 26 MHz, 38.4 MHz and 52 MHz.
Filter Setup	Click to browse and select the filter files.

Control or field	Description
Number of Lanes to Test	Select the number of lanes for testing. You can select 1/2/4/8 lanes.
Selected Test Lanes	View the default selected lanes to test. You can also select the lanes to test.

Embed / De-embed for Mid-bus probing . For M-PHY TX testing, measurements are specified at the TX pins. Many a times, users measure signals at the end of the channel to see the effect at the RX pins or some test point in the middle of the channel (Mid-bus probing). For conformance testing, to ensure the values meet the CTS, there would have a need to embed and/or de-embed channel to make measurements at the pin.



TekExpress Automated software allows you to do mid-bus probing via embedding/de-embedding signal path using filter files. You can use the "Filter Setup" option in DUT panel to add the filters. This setting will be applied globally to all the measurements during acquisition.

DUT Operation Mode - HS Tests

Test Name	Burst								Continuous							
	Differential				Single Ended				Differential				Single Ended			
	G1	G2	G3	G4	G1	G2	G3	G4	G1	G2	G3	G4	G1	G2	G3	G4
Test 1.1.1-HS-TX Unit Interval and Frequency Offset	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Test Name	Burst								Continuous							
	Differential				Single Ended				Differential				Single Ended			
	G1	G2	G3	G4	G1	G2	G3	G4	G1	G2	G3	G4	G1	G2	G3	G4
Test 1.1.2-HS-TX Common-Mode AC Power Spectral Magnitude Limit [1]	X	X	X	X	✓	X	X	X	X	X	X	X	✓	X	X	X
Test 1.1.3-HS-TX PREPARE Length	✓	✓	✓	✓	✓	✓	✓	✓	X	X	X	X	X	X	X	X
Test 1.1.4-HS-TX Common Mode DC Output Voltage Amplitude	X	X	X	X	✓	✓	✓	✓	X	X	X	X	X	X	X	X
Test 1.1.5-HS-TX Differential DC Output Voltage Amplitude	✓	✓	✓	✓	✓	✓	✓	✓	X	X	X	X	X	X	X	X
Test 1.1.6-HS-TX G1 and G2 Differential AC Eye	✓	✓	X	X	✓	✓	X	X	✓	✓	X	X	✓	✓	X	X
Test 1.1.7-HS-TX G3 and G4 Differential AC Eye	X	X	✓	✓	X	X	✓	✓	X	X	✓	✓	X	X	✓	✓
Test 1.1.8-HS-TX 20-80% Rise and Fall Times	✓	✓	✓	✓	✓	✓	✓	✓	X	X	X	X	X	X	X	X
Test 1.1.9-HS-TX Lane-to-Lane [2]	✓	✓	✓	X	✓	✓	✓	X	✓	✓	✓	X	✓	✓	✓	X
Test 1.1.10-HS-TX Slew Rate Control Range [3]	✓	✓	✓	✓	✓	✓	✓	✓	X	X	X	X	X	X	X	X

[1] Informative test
[2] Supported only for multilane
[3] Informative test for Gear2 and Gear3

Test Name	Burst								Continuous							
	Differential				Single Ended				Differential				Single Ended			
	G1	G2	G3	G4	G1	G2	G3	G4	G1	G2	G3	G4	G1	G2	G3	G4
Test 1.1.11-HS-TX Slew Rate Monotonicity [3]	✓	✓	✓	✓	✓	✓	✓	✓	X	X	X	X	X	X	X	X
Test 1.1.12-HS-TX Slew Rate Resolution [3]	✓	✓	✓	✓	✓	✓	✓	✓	X	X	X	X	X	X	X	X
Test 1.1.13-HS-TX Intra-Lane Output Skew	X	X	X	X	✓	✓	✓	✓	X	X	X	X	✓	✓	✓	✓
Test 1.1.14-HS-TX Transmitter Pulse Width	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Test 1.1.15-HS-TX Total Jitter	X	X	X	X	X	X	X	X	✓	✓	✓	✓	✓	✓	✓	✓
Test 1.1.16-HS-TX Short-Term Total Jitter	X	X	X	X	X	X	X	X	✓	✓	✓	✓	✓	✓	✓	✓
Test 1.1.17-HS-TX Deterministic Jitter	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Test 1.1.18-HS-TX Short term Deterministic Jitter	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BER Eye Contour [1]	X	X	X	X	X	X	X	X	✓	✓	✓	✓	✓	✓	✓	✓

DUT Operation Mode - PWM Tests (Burst Mode).

Test Name	Differential								Single Ended							
	G0	G1	G2	G3	G4	G5	G6	G7	G0	G1	G2	G3	G4	G5	G6	G7
Test 1.2.1-PWM-TX Transmit Bit Duration	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Test Name	Differential								Single Ended							
	G0	G1	G2	G3	G4	G5	G6	G7	G0	G1	G2	G3	G4	G5	G6	G7
Test 1.2.2-PWM-TX Transmit Ratio	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Test 1.2.3-PWM-TX PREPARE Length	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Test 1.2.4-PWM-TX Common Mode DC Output Voltage Amplitude	X	X	X	X	X	X	X	X	✓	✓	✓	✓	✓	✓	✓	✓
Test 1.2.5-PWM-TX Differential DC Output Voltage Amplitude	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Test 1.2.7-PWM-TX Maximum Differential AC Output Voltage Amplitude	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Test 1.2.8-PWM-TX 2080 Rise and Fall Times	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Test 1.2.9-PWM-TX Lane-to-Lane Skew	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Test 1.2.10-PWM-TX Transmit Bit Duration Tolerance	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Test 1.2.11-PWM-TX G0 Minor Duration	✓	X	X	X	X	X	X	X	✓	X	X	X	X	X	X	X

DUT Operation Mode - PWM Tests (Continuous Mode).

Test Name	Differential								Single Ended							
	G0	G1	G2	G3	G4	G5	G6	G7	G0	G1	G2	G3	G4	G5	G6	G7
Test 1.2.1-PWM-TX Transmit Bit Duration	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Test 1.2.2-PWM-TX Transmit Ratio	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Test 1.2.3-PWM-TX PREPARE Length	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Test 1.2.4-PWM-TX Common Mode DC Output Voltage Amplitude	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Test 1.2.5-PWM-TX Differential DC Output Voltage Amplitude	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Test 1.2.7-PWM-TX Maximum Differential AC Output Voltage Amplitude	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Test 1.2.8-PWM-TX 2080 Rise and Fall Times	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Test 1.2.9-PWM-TX Lane-to-Lane Skew	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Test 1.2.10-PWM-TX Transmit Bit Duration Tolerance	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Test Name	Differential								Single Ended							
	G0	G1	G2	G3	G4	G5	G6	G7	G0	G1	G2	G3	G4	G5	G6	G7
Test 1.2.11-PWM-TX G0 Minor Duration	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

DUT Operation Mode - SYS Tests.

Test Name	Burst		Continuous	
	Differential	Single Ended	Differential	Single Ended
Test 1.3.1-SYS-TX Unit Interval and Frequency Offset	✓	✓	✓	✓
Test 1.3.2-SYS-TX Ref Clock frequency [4]	X	X	X	X
Test 1.3.3-SYS-TX PREPARE Length	✓	✓	X	X
Test 1.3.4-SYS-TX Common Mode DC Output Voltage Amplitude	X	✓	X	X
Test 1.3.5-SYS-TX Differential DC Output Voltage Amplitude	✓	✓	X	X
Test 1.3.7-SYS-TX Maximum Differential AC Output Voltage Amplitude	✓	✓	✓	✓
Test 1.3.8-SYS-TX 20-80% Rise and Fall Times	✓	✓	X	X
Test 1.3.9-SYS-TX Lane-to-Lane Skew [1]	✓	✓	✓	✓

See also. *About setting up tests*

[4] Clock Signal

Test selection tab controls. Use the Test Selection tab to select the tests to run on the connected DUT and configure individual test parameters. Click **Setup > Test Selection** to open this tab.

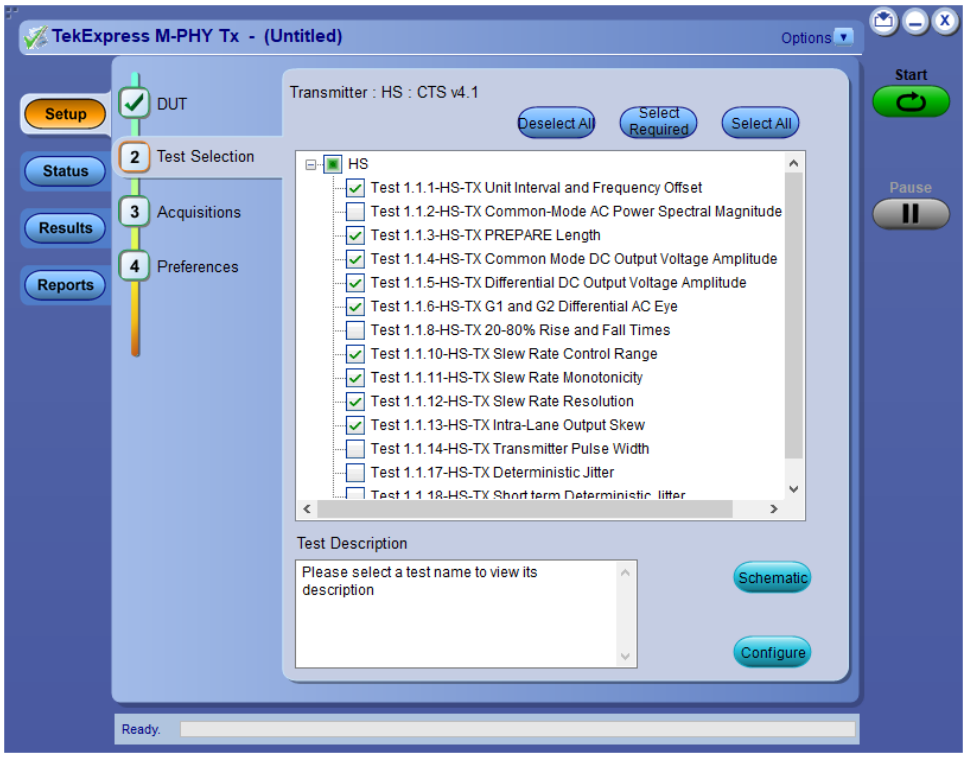


Figure 5: Test Selection tab

Table 9: Test Selection tab settings

Control or field	Description
Deselect All	Deselects (clears) all tests.
Select Required	Selects all test required to pass compliance.
Select All	Selects all listed tests.
Test selection field	Lists available test and if they are selected to run. Click in the box adjacent to a test to select or unselect a test. Tests listed are affected by DUT tab selections (GEAR, Continuous Mode, Burst Mode, Single-Ended, or Differential).
Test Description field	Shows a description of the selected test.
Schematic	Opens a connection diagram that shows the DUT test setup. Use the diagram to verify the test setup before running the test.
Configure	Opens the configuration settings view. Use this display to view or change global and measurement parameters.

See also. *About setting up tests*

Configure test parameters. Use the **Configuration** button in the Test Selection tab to view or edit the global and measurement parameters for selected tests. Global parameters set the instrument source and related parameters that are common for all tests. Measurement parameters listed are specific to the tests in the Configuration view.

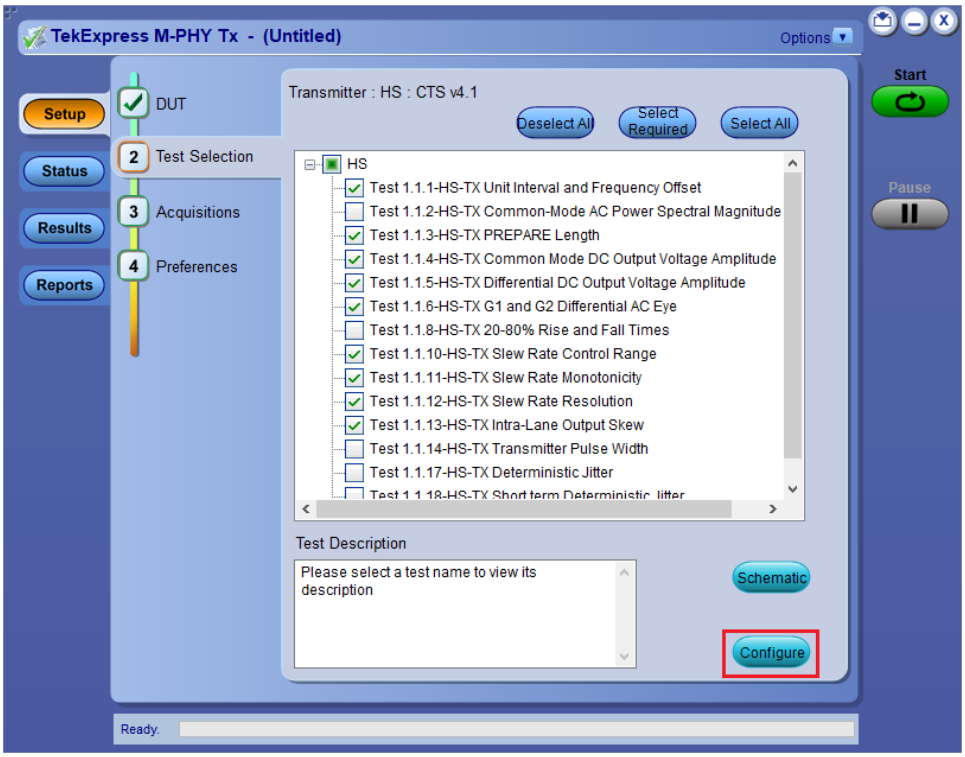


Figure 6: Test Selection - Configure

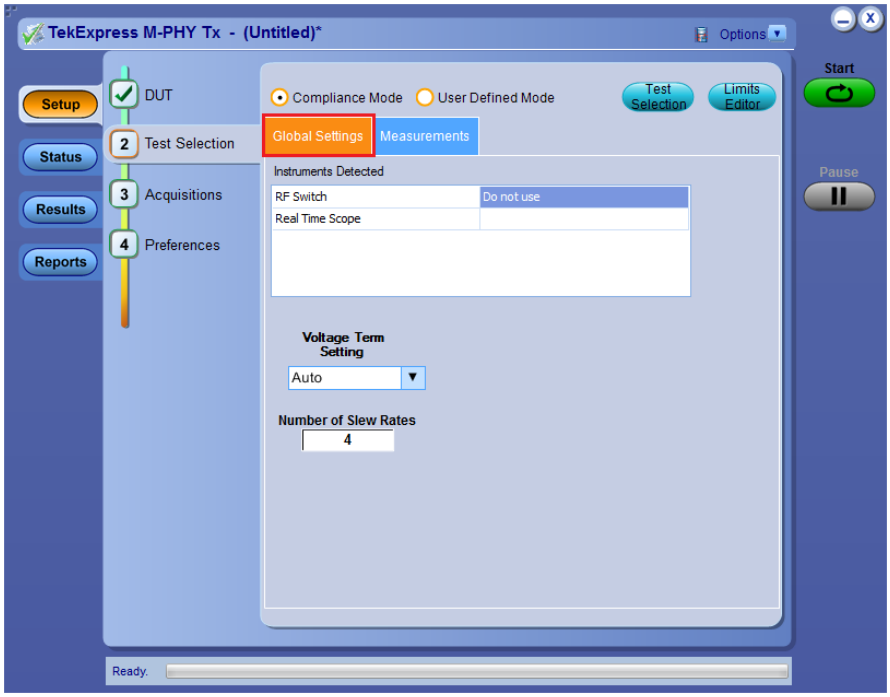


Figure 7: Configure - Global Settings

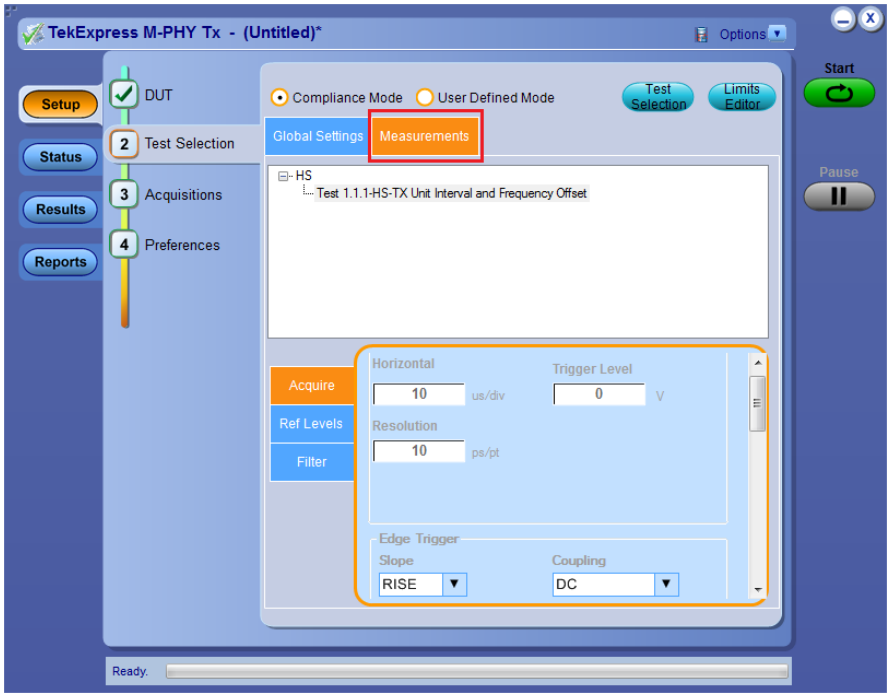


Figure 8: Configure - Measurements

Table 10: Test configuration settings

Control or field	Description
Compliance Mode	Sets the global and measurement parameters of all measurements to the values required to pass compliance testing. If you are in User Define Mode, selecting compliance mode returns all global settings and measurement parameters to their compliance default values. ***NOTE.*** *Save test setups made in the User Defined Mode before changing to Compliance Mode, as the application does not automatically save user defined changes or prompt you to save settings before changing modes.*
User Defined Mode	Enables editing of the global and measurement parameters for tests.
Test Selection	Returns the application window to the default Test Selection tab listing.
Limits Editor	Opens the Limits Editor window where you can set high and low limits for each test when in User Defined Mode. If you are in Compliance Mode you can only view the default limit values. *Limits Editor*
Global Settings	Click this tab to list the detected instrument(s) and any available global parameters that you can set. The global settings apply to all tests. To select a different instrument, click on the instruments list in the **Instruments Detected** area and select an instrument from the menu. If you do not see the desired instrument in the list, *refresh the list*. If the instrument is still not listed, verify that the instrument is powered on, has correct network settings, and is connected to the network or instrument.

Control or field	Description
Measurements	Lists all tests for the selected measurement type (HS or PWM or SYS). Click on a measurement to view the available parameters in the tabbed field below the list. The parameters and parameter type tabs shown depend on the selected test. Select User Defined Mode to edit test parameters. Use the scroll bar in the parameters area to scroll through all available parameters. ***NOTE.*** *Save test setups made in the User Defined Mode before changing to Compliance Mode, as the application does not automatically save user defined changes or prompt you to save settings before changing modes.*

Table 11: Acquire tab parameters for HS test measurements (User Defined mode)

Test Name	Parameter name	Range
1.1.1 HS-TX Unit Interval and Frequency Offset 1.1.3 HS-TX PREPARE length 1.1.4 HS-TX Common-Mode DC Output Voltage Amplitude 1.1.5 HS-TX Differential DC Output Voltage Amplitude 1.1.6 HS-TX G1 and G2 Differential AC Eye 1.1.10 HS-TX Slew Rate Control Range 1.1.11 HS-TX Slew Rate Monotonicity 1.1.12 HS-TX Slew Rate Resolution 1.1.13 HS-TX Intra-Lane Output Skew test	Horizontal	1 to 100
	Resolution (ps/pt)	10 to 100
	Trigger Level (V)	■ RISE ■ FALL ■ EITHER
	Edge Trigger: Slope	0 to 100
	Edge Trigger: Coupling	■ DC ■ AC ■ HF REJECT ■ LF REJECT ■ NOISE REJ
	Width Trigger: Pulse Width When	■ WITHIN ■ OUTSIDE
	Width Trigger: HF Filtering	Select, Unselect
	Width Trigger: Lower Limit (UI)	1 to 100
	Gear 1 A/B: Upper Limit (UI)	100 to 5000
	Gear 1 A/B: Polarity	■ Positive ■ Negative
	Gear 1 A/B: Sample rate Gear 1A (GS/s)	■ 100 ■ 50 ■ 25 ■ 12.5
	Gear 1 A/B: Sample rate Gear 1B (GS/s)	

Table 12: Prepare Length tab parameters for HS test measurements (User Defined mode)

Test Name	Parameter name	Range
1.1.3 HS-TX PREPARE length test	Gear 1A - HS Prepare Length	0 to 15
	Gear 1B - HS Prepare Length	0 to 15
	Gear 2A - HS Prepare Length	0 to 15
	Gear 2B - HS Prepare Length	0 to 15
	Gear 3A - HS Prepare Length	0 to 15
	Gear 3B - HS Prepare Length	0 to 15
	Gear 4A - HS Prepare Length	0 to 15
	Gear 4B - HS Prepare Length	0 to 15

Table 13: Filter tab parameters for HS test measurements (User Defined mode)

Test Name	Parameter name	Range
1.1.13 HS-TX Intra-Lane Output Skew test	Gear	■ Gear1A ■ Gear1B ■ Gear2A ■ Gear2B ■ Gear3A ■ Gear3B ■ Gear4A ■ Gear4B

Test Name	Parameter name	Range
1.1.1 HS-TX Unit Interval and Frequency Offset 1.1.13 HS-TX Intra-Lane Output Skew test	High pass filter (F1) spec	■ FIRST ■ SECOND ■ THIRD
	High pass filter (MHz)	1 to 10
	Low pass filter (F1) spec	■ FIRST ■ SECOND ■ THIRD
	Low pass filter (MHz)	1 to 10
	Filter ramp time	0 to 10
	Filter blanking time	0 to 10

Table 14: Skew tab parameters for HS test measurements (User Defined mode)

Test Name	Parameter name	Range
1.1.13 HS-TX Intra-Lane Output Skew test	From Edge	■ RISE ■ FALL ■ BOTH
	To Edge	■ SAMEAS ■ OPPOSITEAS

Table 15: Clock Recovery tab parameters for HS test measurements (User Defined mode)

Test Name	Parameter name	Range
1.1.6 HS-TX G1 and G2 Differential AC Eye	Clock Recovery Method	■ Constant Clock-Mean ■ PLL-Custom BW
	PLL Model Type	■ 1 ■ 2
	Damping (m)	500 to 2000
	JTF Bandwidth (MHz)	0.1 to 10
	Pattern file path	File path
	Nominal data rate	Select, Unselect
	Known data pattern	Select, Unselect

Table 16: Mask File path tab parameters for HS test measurements (User Defined mode)

Test Name	Parameter name	Range
1.1.6 HS-TX G1 and G2 Differential AC Eye	Gear	■ Gear1A ■ Gear1B ■ Gear2A ■ Gear2B ■ Gear3A ■ Gear3B ■ Gear4A ■ Gear4B
	RT LA Mask file path	File path

Table 17: Other settings tab parameters for HS test measurements (User Defined mode)

Test Name	Parameter name	Range
1.1.6 HS-TX G1 and G2 Differential AC Eye	Save Waveforms	Select, Unselect
	Enable high-performance eye rendering	Select, Unselect

See also. *Configure tests*

About running tests

Global HS test parameters list

Global PWM test parameters list

Limits editor controls. The Limits Editor window lets you set high and low limits for each test when in User Defined Mode.

NOTE. *In Compliance Mode limit settings can only be viewed and cannot be edited.*

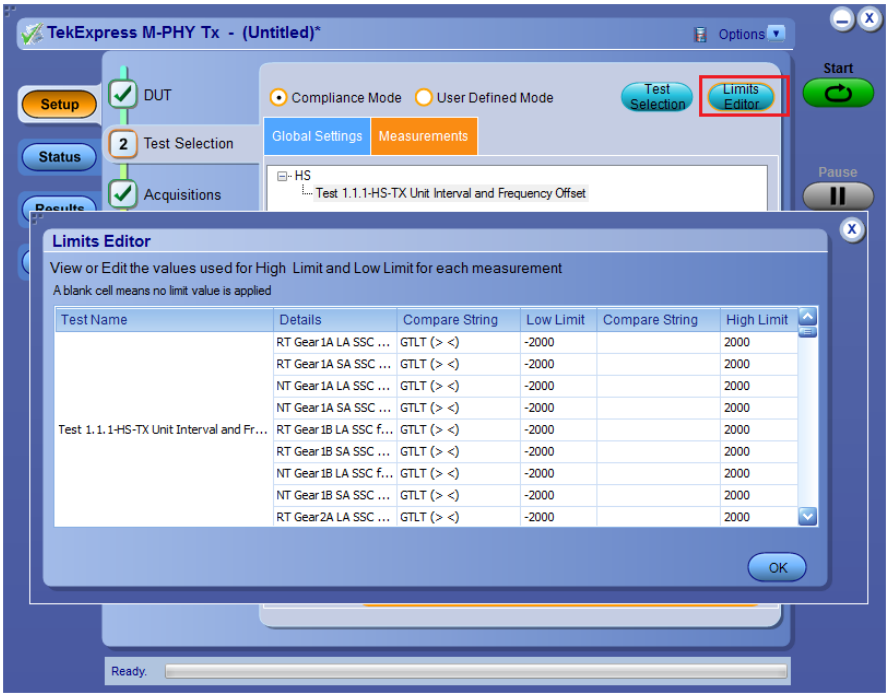


Figure 9: Limits Editor

Table 18: Limits Editor controls

Control or field	Description
Test Name	The name of the test.
Details	The limit test(s) that are part of the overall test suite.
Compare String	Sets the comparison logic for the high or low limit test parameter. Click on this field and select the appropriate comparison logic from the menu. There is a separate Compare String field for each low limit and the high limit parameter.
Low Limit/High Limit	The numeric value of the low or high limit parameter. Click in the field and enter a value. The limit units are shown in the Description field for that limit test.

Control or field	Description
OK	Click OK to close the Limits Editor window and return to the test configuration view. ***NOTE.*** *Save test setups made in the User Defined Mode before changing to Compliance Mode, as the application does not automatically save user defined changes or prompt you to save settings before changing modes.*

Limits Editor warning.

- Press the keyboard Esc button or click the X button (upper right corner of Limits Editor dialog box) to cancel or not save the current edits.
- If you enter the wrong compare string or wrong value in a field, you cannot select or move to another cell until you enter a correct value into the field in question.
- You cannot delete or clear a compare string or value once entered.

Acquisitions tab controls. Use the Acquisitions tab to set the signal source (channel) used to acquire data for the tested lanes.

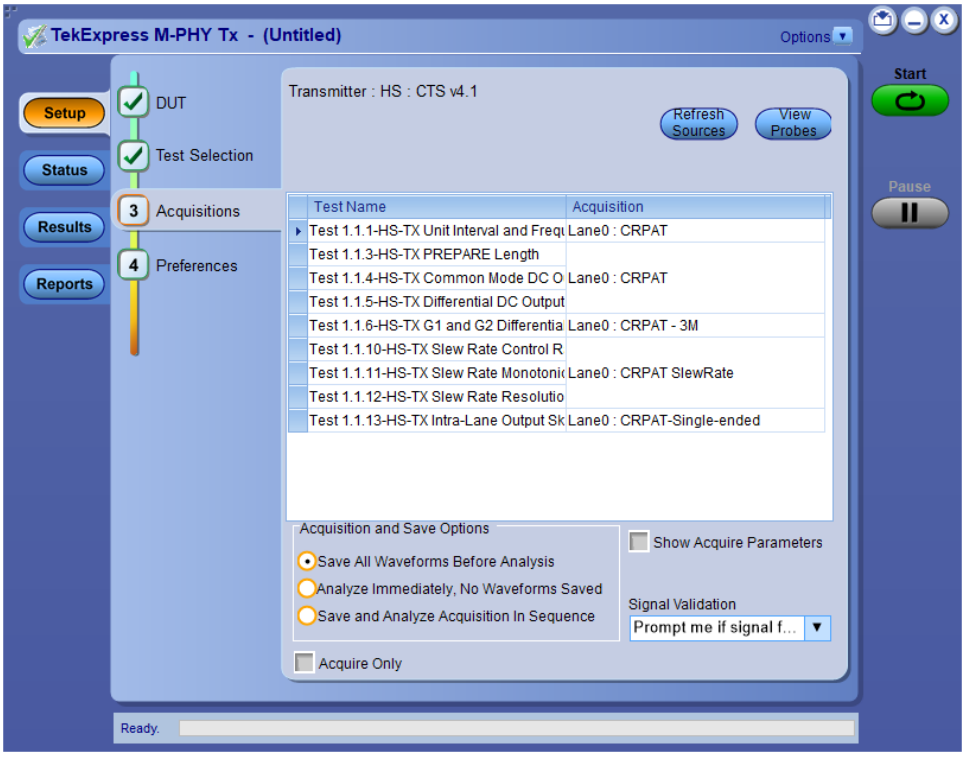
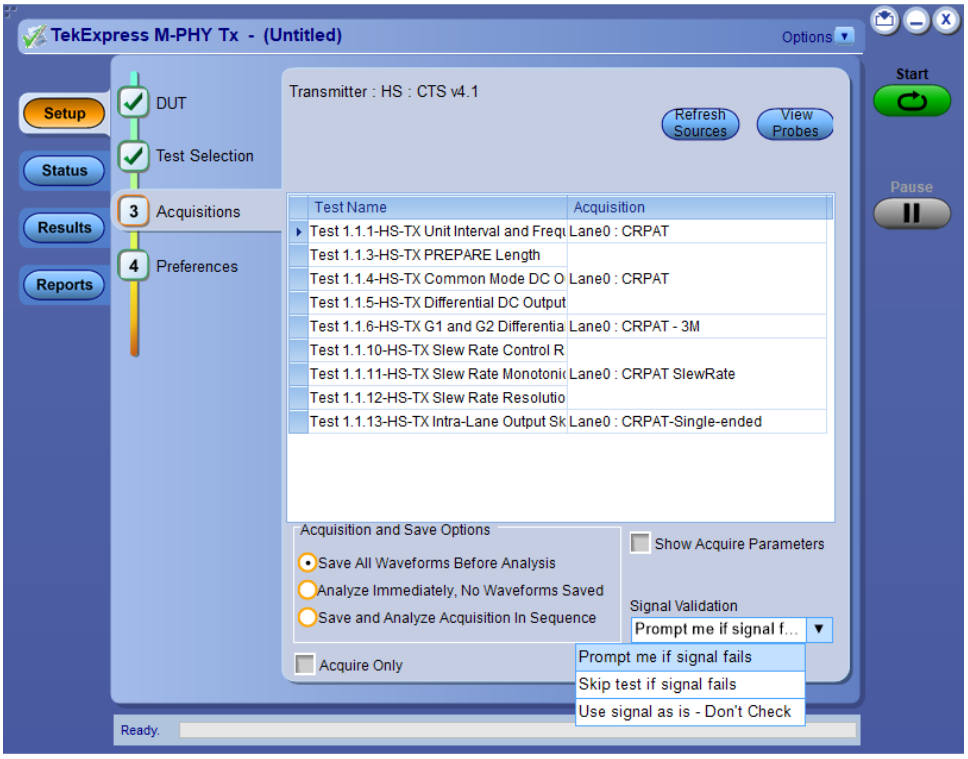


Figure 10: Acquisition tab

1. Click **Setup > Acquisitions**.
2. Click the **Lane 0 (+)** and **Lane 0 (-)** fields to select the oscilloscope channels to use for those lanes. Lane 0(+) and Lane 0(-) fields apply to Single-ended mode (DUT Panel > Probing). A single Lane 0 field is available for Differential mode probing.
3. Select **Show Acquire Parameters** to show the acquisition parameters in the test list.

4. Select a Signal validation parameter (Signal validation is valid only for Live acquisitions):



- Select **Prompt me if signal fails** to open a dialog box when the application fails to acquire a valid signal after a specified number of retries (as set in the Configuration tab or fields). Select one of the three options in the dialog box:
  - **Re-Acquire**: The application attempts to re-acquire the signal.
  - **Use Anyway**: Use the acquired signal for all applicable tests.
  - **Skip Test**: Skip (ignore) any test(s) that depend on this acquisition. Skipped tests are listed in the status panel and in the report.
- Select **Skip test if signal fails** to skip all tests that depend on an acquired signal that fails signal validation. The comments section in the report file will show the details as "User skipped acquisitions for this pattern".
- Select **Use signal as is - Don't Check** to skip signal validation and use the signal as-is for testing. The test results may not be as expected.

NOTE. *In Pre-recorded mode, the acquisition table includes a column called "Waveform File Name." Use the fields in this column to browse and select waveform files to load for analysis.*

Signal validation overview

Options displayed in Acquisition panel for Signal Validation are

- **Prompt me if signal fails**: Signal validation is performed on the acquired signal and if the validation fails, the application will attempt to re-acquire the signal depending on the retry count set by you in the configuration menu. In case the validation still fails after exceeding the retry count, a pop-up is displayed to select one of the following three options:
  - **Re-acquire**: A fresh attempt is made to re-acquire the signal.
  - **Use Anyway**: Current acquired signal is used for all the tests.
  - **Skip Test**: Any test(s) that depend on this acquisition will be skipped and the same will be displayed in the report.
- **Skip test if signal fails**: Signal validation is performed on the acquired signal and if validation fails, any test(s) that depend on this acquisition will be skipped and the same will be displayed in the report. The comments section in the report file will display the details as 'User skipped acquisitions for this pattern'.
- **Use signal as is - Don't Check**: Signal validity will be skipped and no check will be made after the signal is acquired. The signal will directly be used for testing and hence, the final results in report may not be as expected.

Signal validation checks the following signal parameters on each acquisition for the indicated measurement type:

- **Data Rate** (HS): If the difference between the measured and expected data rate is less than 2000 ppm, the signal is considered valid for this parameter. The Data Rate check is mandatory for signal validation.
- **MARKER0** (HS): If MARKER0 is present, the signal is considered valid for this parameter. The MARKER0 check is mandatory for signal validation.
- **CRPAT** (HS): If one complete CRPAT (LLI specific) is present, then the signal is considered valid for this parameter. The CRPAT check is not mandatory for signal validation.

Set test notification preferences. Use the Preferences tab to set the application to send an email when a test measurement completes:

1. Click **Setup > Preferences**.
2. Select the **On Test Failure, stop and notify me of the failure** check box to stop the test and notify me if the test is a failure.
3. Click **Email Settings** to *configure the email settings*.

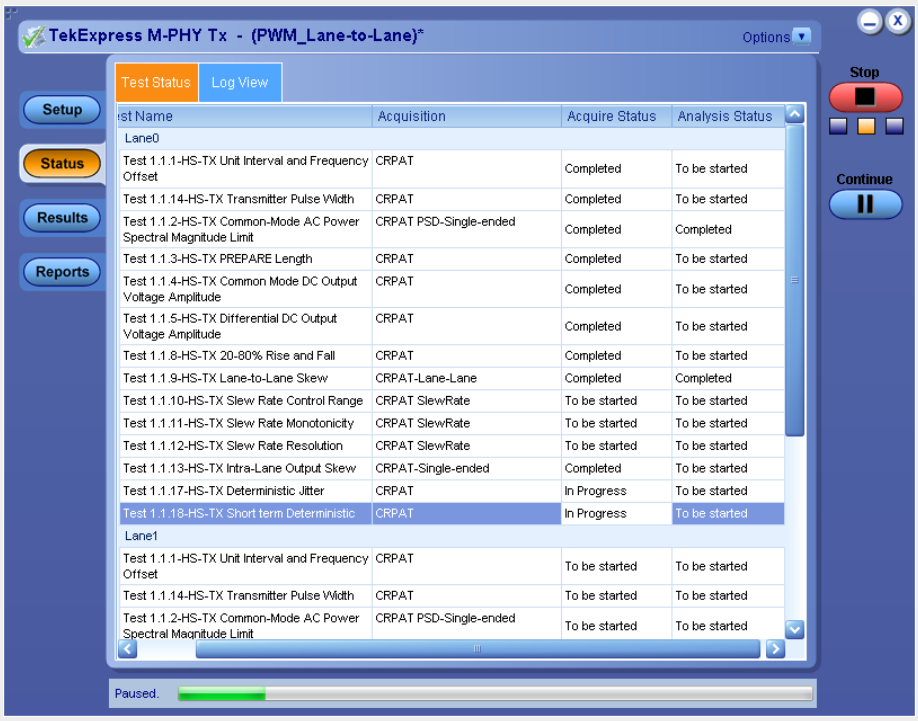
See also. *About setting up tests*

Select report options

Status panel overview

The Status panel provides status on test acquisition and analysis (Test Status tab) and a listing of test tasks performed (Log View tab). The application opens the Test Status tab when you start a test run. You can select the Test Status or the Log View tab to view these items while tests are running.

The Test Status tab lists a high level status for each test.



Test Name	Acquisition	Acquire Status	Analysis Status
Lane0			
Test 1.1.1-HS-TX Unit Interval and Frequency Offset	CRPAT	Completed	To be started
Test 1.1.14-HS-TX Transmitter Pulse Width	CRPAT	Completed	To be started
Test 1.1.2-HS-TX Common-Mode AC Power Spectral Magnitude Limit	CRPAT PSD-Single-ended	Completed	Completed
Test 1.1.3-HS-TX PREPARE Length	CRPAT	Completed	To be started
Test 1.1.4-HS-TX Common Mode DC Output Voltage Amplitude	CRPAT	Completed	To be started
Test 1.1.5-HS-TX Differential DC Output Voltage Amplitude	CRPAT	Completed	To be started
Test 1.1.8-HS-TX 20-80% Rise and Fall	CRPAT	Completed	To be started
Test 1.1.9-HS-TX Lane-to-Lane Skew	CRPAT-Lane-Lane	Completed	Completed
Test 1.1.10-HS-TX Slew Rate Control Range	CRPAT SlewRate	To be started	To be started
Test 1.1.11-HS-TX Slew Rate Monotonicity	CRPAT SlewRate	To be started	To be started
Test 1.1.12-HS-TX Slew Rate Resolution	CRPAT SlewRate	To be started	To be started
Test 1.1.13-HS-TX Intra-Lane Output Skew	CRPAT-Single-ended	Completed	To be started
Test 1.1.17-HS-TX Deterministic Jitter	CRPAT	In Progress	To be started
Test 1.1.18-HS-TX Short term Deterministic	CRPAT	In Progress	To be started
Lane1			
Test 1.1.1-HS-TX Unit Interval and Frequency Offset	CRPAT	To be started	To be started
Test 1.1.14-HS-TX Transmitter Pulse Width	CRPAT	To be started	To be started
Test 1.1.2-HS-TX Common-Mode AC Power Spectral Magnitude Limit	CRPAT PSD-Single-ended	To be started	To be started

Table 19: Test Status tab

Column	Description
Test Name	Name of the test
Acquire Status, Analysis Status	Status of the signal acquisition or test analysis ■ To be started ■ In progress ■ Testing ■ Completed ■ Aborted

The Log View tab provides a list of the actions executed during the test. Use this information to review or troubleshoot tests.

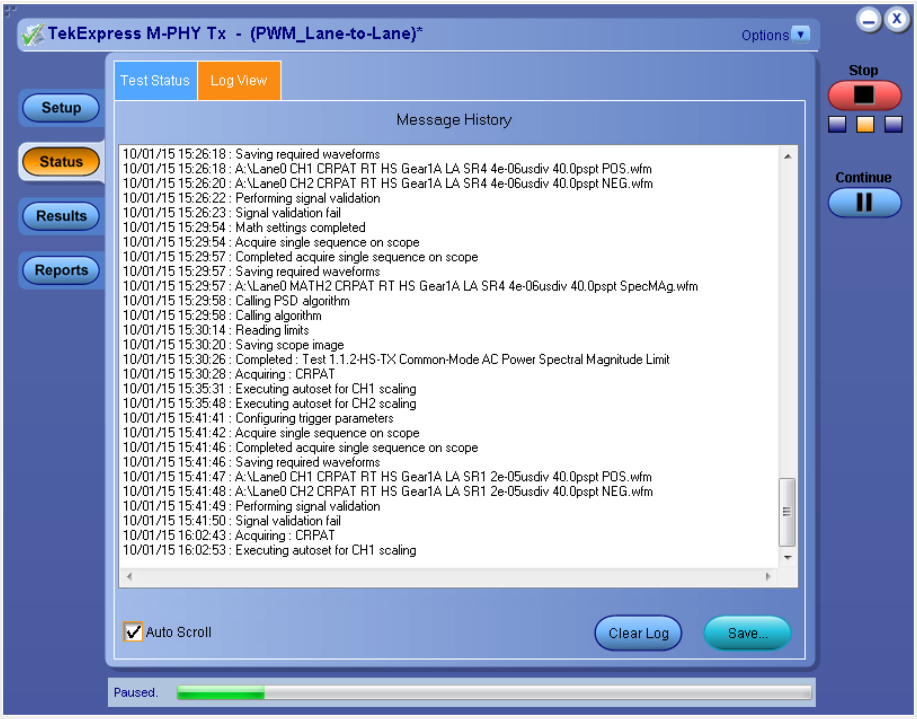


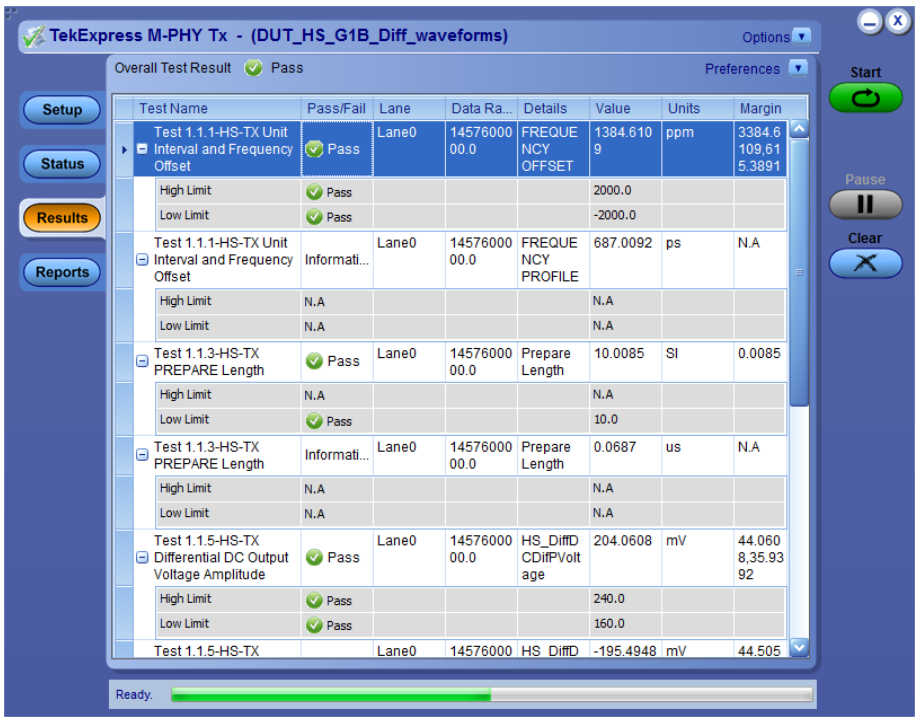
Table 20: Log View fields

Item	Description
Message History	Displays all run messages with timestamp information.
Show Detailed Log	Records a detailed history of test execution.
Auto Scroll	Sets the program to automatically scroll down the Message History window as information is added to the log during the test.
Clear Log	Clears all messages in the Message History window.
Save	Saves the log file as a text file for examination. Displays a standard Save File window and saves the status messages in the file that you specify.

See also. *View test results*

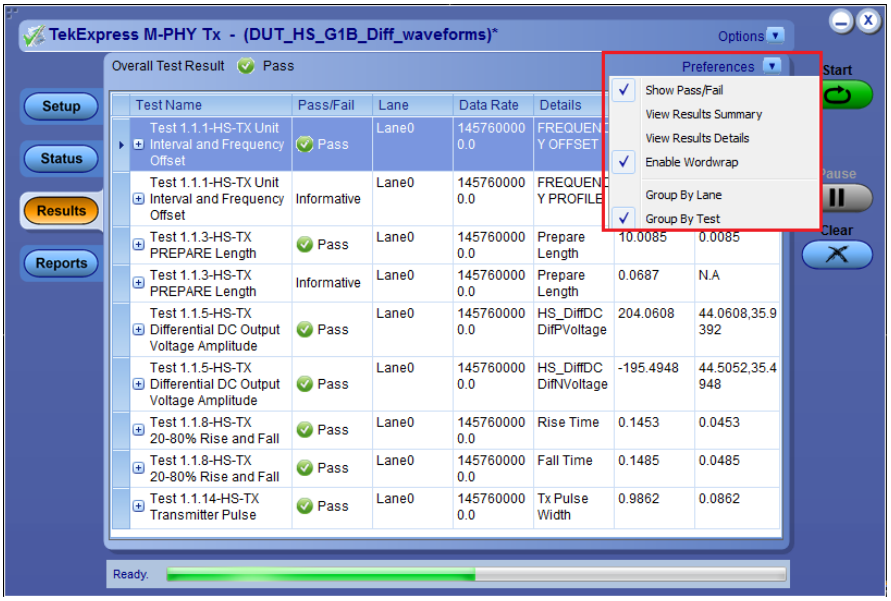
Results panel

Results panel overview. When a test finishes, the application switches to the Results panel to display a summary of test results. Set viewing preferences for this panel from the Preferences menu in the upper right corner. Viewing preferences include showing whether a test passed or failed, summary results or detailed results, and enabling wordwrap. For information on using this panel, see *View test results*.



View test results. When a test finishes, the application switches to the *Results panel*, which displays a summary of test results. The Overall Test Result is displayed at the top left of the Results table. If all of the tests for the session pass, the overall test result will be Pass. If one or more tests fail, the overall test result will show Fail.

Each test result occupies a row in the Results table. By default, results are displayed in summary format with the measurement details collapsed and with the Pass/Fail column visible. Change the view in the following ways:



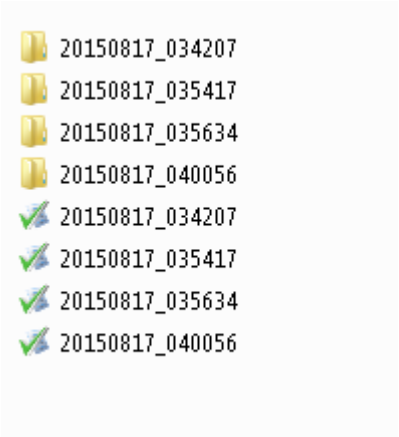
- To expand all tests listed, select **View Results Details** from the Preferences menu in the upper right corner.
- To expand and collapse tests, click the plus and minus buttons.
- To collapse all expanded tests, select **Preferences > View Results Summary**.
- To remove or restore the Pass/Fail column, select **Preferences > Show Pass/Fail**.
- To enable or disable the wordwrap feature, select **Preferences > Enable Wordwrap**.
- To expand the width of a column, place the cursor over the vertical line that separates the column from the column to the right. When the cursor changes to a double-ended arrow, hold down the mouse button and drag the column to the desired width.
- To sort the test information by column, click the column head. When sorted in ascending order, a small up arrow is displayed. When sorted in descending order, a small down arrow is displayed.
- To clear all test results displayed, click **Clear**.

See also. *View a report*

View test-related files. Files related to tests are stored in the My TekExpress\M-PHY TX folder. In the M-PHY TX folder, each test setup has a test setup file and a test setup folder, both with the test setup name. The test setup file is preceded by the M-PHY TX icon and usually has no visible file extension.

Inside the test setup folder is another folder named for the DUT ID used in the test sessions. The default is DUT001.

Inside the DUT001 folder are the session folders and files. Each session has a folder and file pair, both named for the test session using the naming convention (date)_(time). Each session file is stored outside its matching session folder.



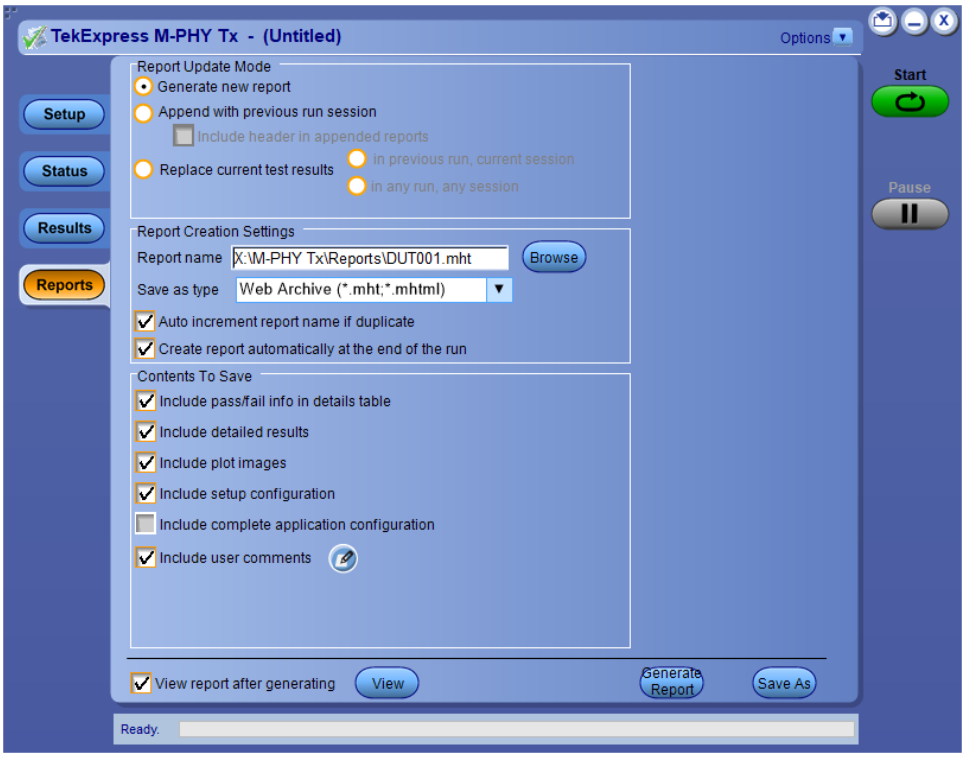
The first time you run a new, unsaved session, the session files are stored in the Untitled Session folder located at ..\My TekExpress\M-PHY TX. When you name and save the session, the files are placed in a folder with the name that you specify.

See also. *File name extensions*

Reports panel

Reports panel overview. Use the Reports panel to open reports, name and save reports, select report content to include, and select report viewing options.

For information on setting up reports, see *Select report options*. For information on viewing reports, see *View a report*.



Select report options. Use the *Reports panel* to select which test information to include in the report, and the naming conventions to use for the report. For example, always give the report a unique name or select to have the same name increment each time you run a particular test. Generally, you would select report options before running a test or when creating and saving test setups. Report settings are included in saved test setups.

In the Reports panel, select from the following options:

Table 21: Report options

Setting	Description
Generate new report	Creates new report
Append with previous run session	Appends the last run session and the previous run session.
Include header in appended reports	Includes the header in the appended report.
Replace current test results in previous run session	Replaces the current test results in the previous run session. Newly added tests results are appended to the end of the report.
Report name	Displays the name and location from which to open a report. The default location is at \My TekExpress\ M-PHY TX \Untitled Session). The report file in this folder gets overwritten each time you run a test unless you specify a unique name or select to auto increment the report name. Change the report name or location. Do one of the following: ■ In the Report Name field, type over the current folder path and name. ■ Double-click in the Report Name field. Make selections from the popup keyboard and then click the **Enter** button. Be sure to include the entire folder path, the file name, and the file type. For example: C:\Documents and Settings\your user name\My Documents\My TekExpress\M-PHY TX \DUT001_Test_211.mht. ***NOTE.*** *You cannot change the file location using the Browse button.* Open an existing report. Click **Browse**, locate and select the report file and then click **View** at the bottom of the panel.

Setting	Description
Save as type	Saves a report in the specified file type. Supported file types are: .mht (Web archive) and .html (HTML page). ***NOTE.*** *If you select a file type different from the default, be sure to change the report file name extension in the Report Name field to match.*
Auto increment report name if duplicate	Automatically increment the name of the report file if the application finds a file with the same name as the one being generated. For example: DUT001, DUT002, DUT003. This option is enabled by default.
Include pass/fail info in details table	Includes the color block labeled Test Result (indicating whether the test passed or failed) in the report. For details, see Report Contents in *View a report*.
Include detailed results	Includes parameter limits, execution time, and test-specific comments generated during the test.
Include plot images	Includes waveform plots in the report.
Include setup configuration	Includes information about hardware and software used in the test in the summary box at the top of the report. Information includes: the oscilloscope model and serial number, probe model and serial number, the oscilloscope firmware version, SPC and factory calibration status, and software versions for applications used in the measurements.
Include complete application configuration	Includes a table listing general, common, and acquired parameters used in the test. This option is disabled by default.
Include user comments	Select to include any comments about the test that you or another user added in the DUT tab of the Setup panel. Comments appear in the Comments section under the summary box at the beginning of each report.
View report after generating	Automatically opens the report in your Web browser when the test completes. This option is selected by default.

See also. *View a report*

About setting up tests

View a report. The application automatically generates a report when test analysis is completed and displays the report in your default Web browser (unless you cleared the **View Report After Generating** check box in the Reports panel before running the test). If you cleared this check box, or if you want to view a different test report, do the following:

1. Click the **Reports > Browse** button and locate and select the report file to view.

   NOTE. *If you did not save the test setup after running the test and you either closed the application or you ran another test, the report file was not saved.*

2. At the bottom of the Reports panel,
   - Click **View**, to view the report.
   - Click **Generate Report**, to generate a report.
   - Click **Save As**, to save the report.

For information on changing the file type, file name, and other report options, see *Select report options*.

Report contents. A report shows specified test details, as defined in the Reports panel. Details include:

Setup Configuration Information

Setup configuration information is listed in the summary box at the top of the report. This information includes the oscilloscope model and serial number, probe model and serial number, and software versions. To exclude this information from the report, clear the **Include Setup Configuration** check box in the Reports panel before running the test.

Tektronix

TekExpress MPHY-TX

SYS Test Report

Setup Information			
DUT ID	DUT001	Probe CH1 Model	1X
Date/Time	2019-10-01 00:07:10	Probe CH2 Model	TCA292D
Device Type	Transmitter	Probe CH3 Model	1X
TekExpress Framework Version	Framework:4.14.0.6	Probe CH4 Model	N/A
App Version	MPHY-TX:10.1.0.116	Scope Model	MSO73304DX
CTS Version	CTS v4.1	Scope Serial Number	B260507
Compliance Mode	True	SPC, FactoryCalibration	PASS;PASS
Execution Mode	Live	Scope F/W Version	10.8.1 Build 37
Overall Execution Time	0:01:46	DPOJET Version	10.0.11.50
Over All Test Result	Pass	Probing	Differential
		DUT Operation Mode	Burst
DUT COMMENT:			

DUT Comments

If you selected to include comments in the test report, any comments you added in the DUT tab of the Setup panel appear in the Comments section directly below the summary box.

Test Name Summary Table	
Test 1.3.3-SYS-TX PREPARE Length	Pass
Test 1.3.7-SYS-TX Maximum Differential AC Output Voltage Amplitude	Pass
Test 1.3.8-SYS-TX 20-80% Rise and Fall Times	Pass

Test 1.3.3-SYS-TX PREPARE Length

Lane	Measurement Details	Frequency	Amplitude	Termination	Low Limit	Measured Value	High Limit	Margin	Units	Test Result
Lane0	Prepare Length	19.2MHz	LA	NT	10.0	10.000	10.0	0.000	SI	Pass
Lane0	Prepare Length	19.2MHz	LA	NT	N.A	5.209	N.A	N.A	us	Informative
COMMENTS										

Back to Summary Table

Test 1.3.7-SYS-TX Maximum Differential AC Output Voltage Amplitude

Lane	Measurement Details	Frequency	Amplitude	Termination	Low Limit	Measured Value	High Limit	Margin	Units	Test Result
Lane0	Mask Hits	19.2MHz	LA	NT	N.A	0.000	0		HITS	Pass
Lane0	EYE Low	19.2MHz	LA	NT	N.A	-0.233	N.A	N.A		Informative
Lane0	EYE High	19.2MHz	LA	NT	N.A	0.227	N.A	N.A		Informative
COMMENTS										

Back to Summary Table

Test 1.3.8-SYS-TX 20-80% Rise and Fall Times

Lane	Measurement Details	Frequency	Amplitude	Termination	Low Limit	Measured Value	High Limit	Margin	Units	Test Result
Lane0	Rise Time	19.2MHz	LA	NT	N.A	0.056	0.2	0.144	UI	Pass
Lane0	Fall Time	19.2MHz	LA	NT	N.A	0.057	0.2	0.143	UI	Pass
COMMENTS										

Back to Summary Table

Test results

This table lists the tests results. The contents of this table depend on the selections made in the Reports panel before running the test (Include Pass/Fail Results Summary, Include User Comments, Include Detailed Results, Include Complete Application Configuration, and so on).

If Include Plots Images is selected, then measurement waveform plots are shown below the test results table.

See also. *View test results*

View test-related files

Setting up and configuring tests

About setting up tests

Set up tests using the tabs in the Setup panel. Settings in the DUT tab use a top-down, left-to-right logic flow, so that any parameter that affects or acts as a filter for other parameters appears either to the top of or to the left of the affected parameters.

Tests are saved when you save a test setup. To avoid overwriting test results, remember to assign a unique name to the test either before running it or immediately after.

All listed tests are required for compliance testing.

See also *About test setups*

Before you click Start

About running tests

Instrument connection setup

The following table helps you to view the connection diagrams for all the signal types of M-PHY Tx measurements.

Signal Types	Setup diagram For differential tests	Setup diagrams for single ended tests
HS	*HS G1 & G2 RT P7313 SMA*	*HS G1 & G2 RT P7313 SMA*
HS	*HS G3 RT P76XX*	*HS G3 RT P76XX*
PWM	*PWM NT P7313*	*PWM NT P7313*
SYS	*SYS NT P7313*	*SYS NT P7313*

NOTE. *Minimum two lanes are needed to run the Lane to Lane Skew measurement. The other lanes should be connected to additional channels. If more than two lanes are used, then manually change the lane where ever the skew need to be measured.*

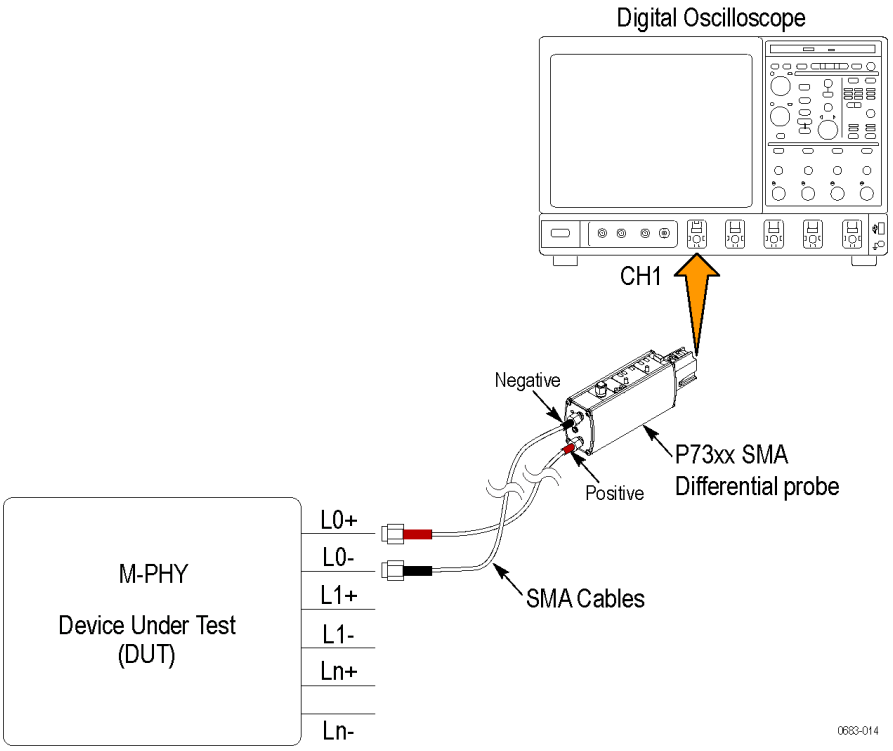


Figure 11: HS G1 & G2 RT P7313 differential

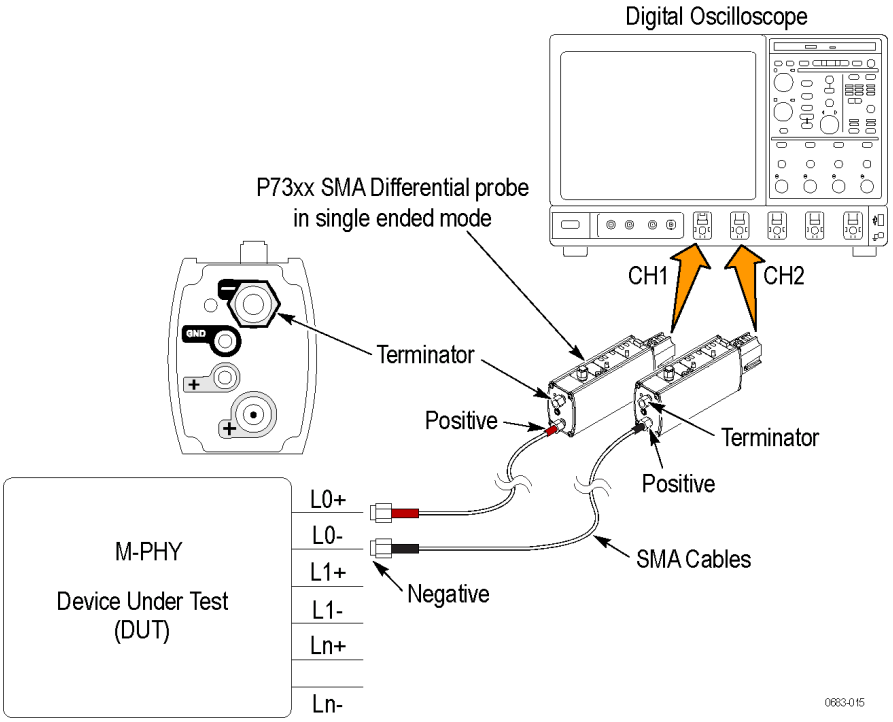


Figure 12: HS G1 & G2 RT P7313 SMA single ended

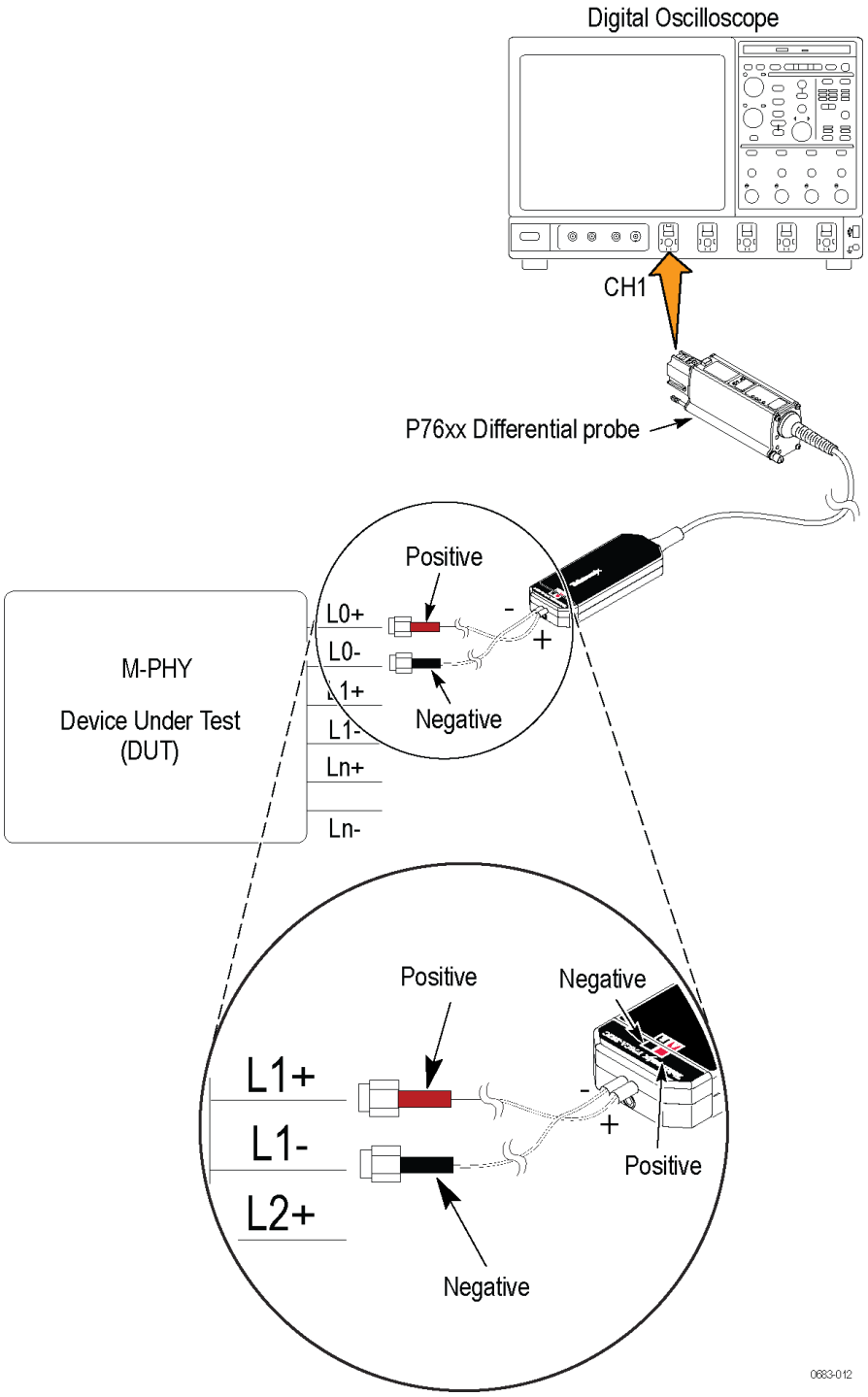


Figure 13: HS G3 RT P76XX differential

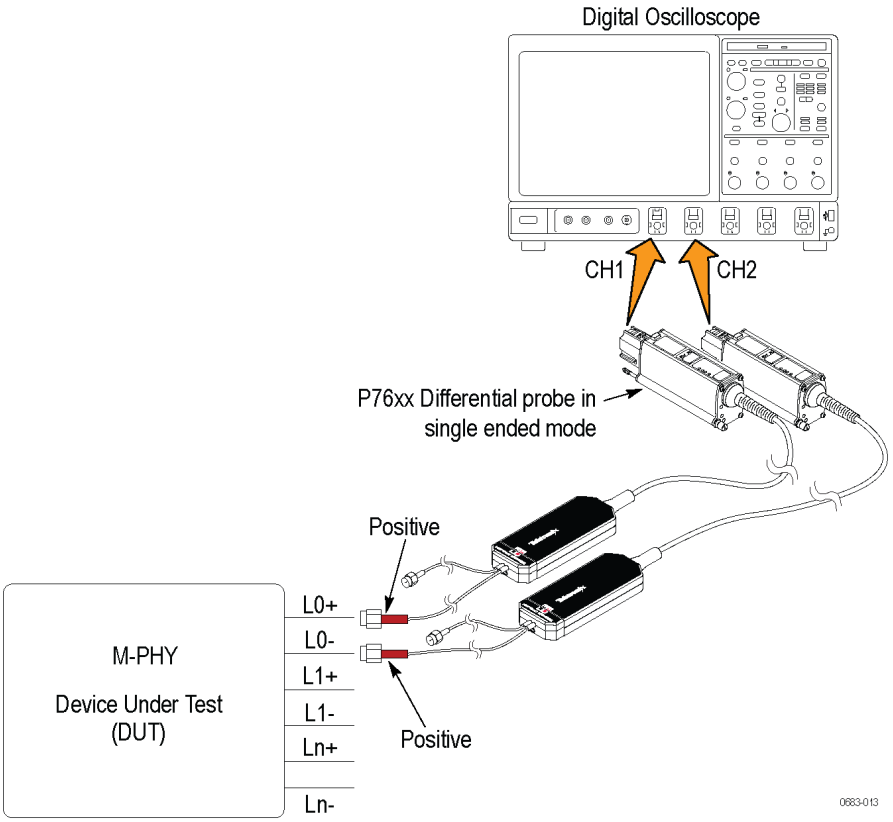


Figure 14: HS G3 RT P76XX single ended

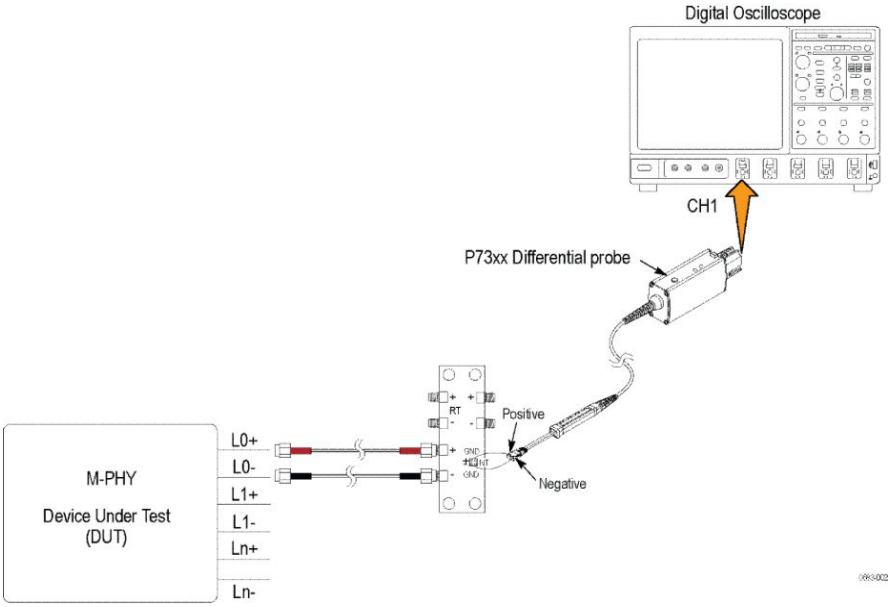


Figure 15: PWM NT P7313 differential

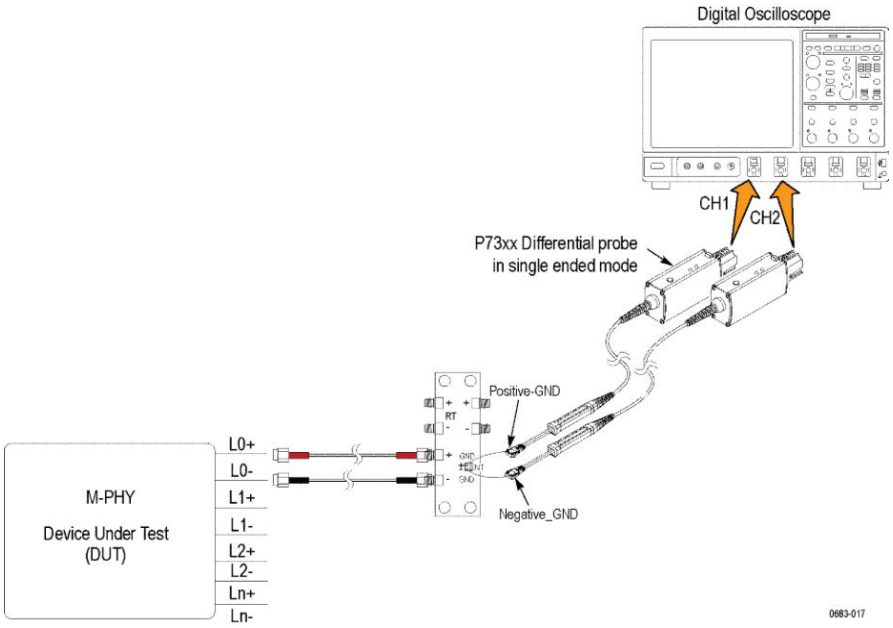


Figure 16: PWM NT P7313 single ended

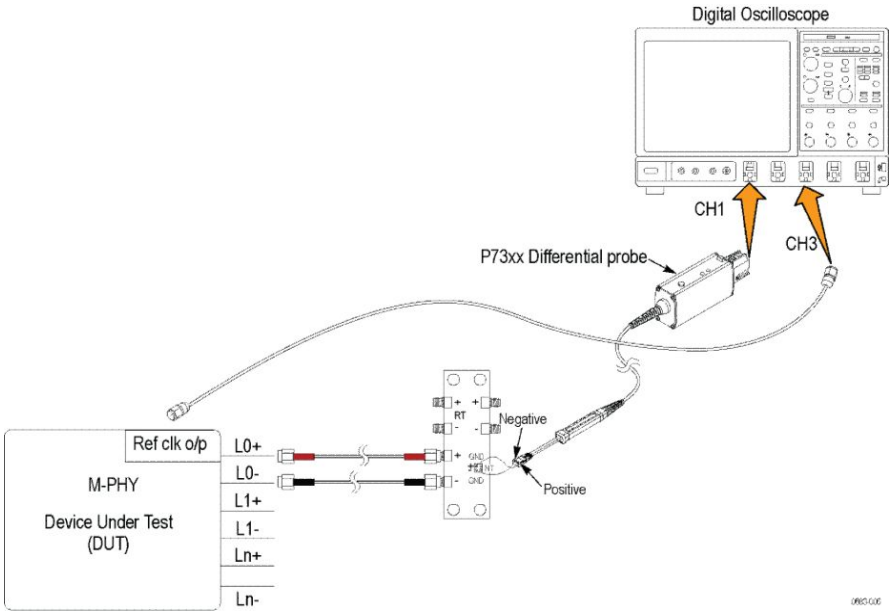


Figure 17: SYS NT P7313 differential

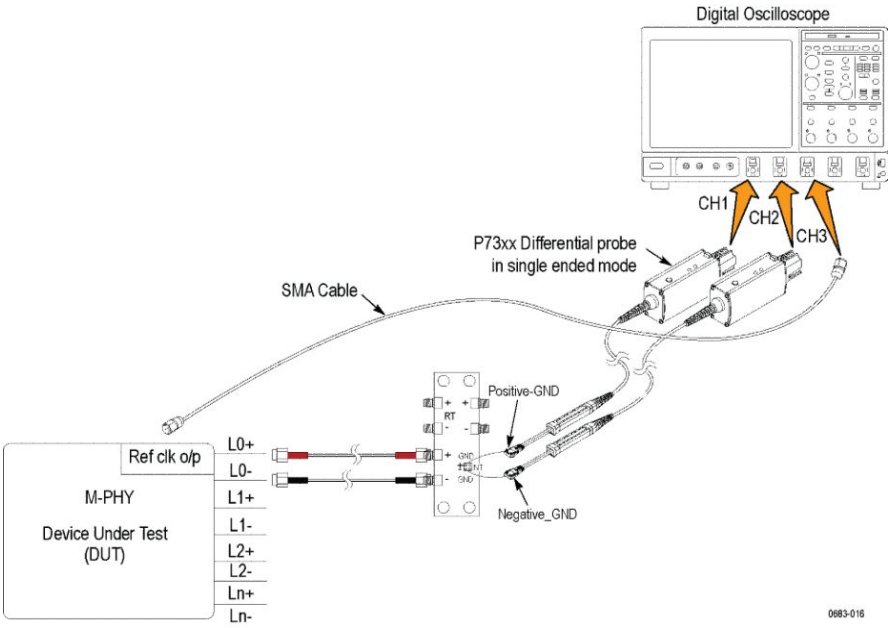


Figure 18: SYS NT P7313 single ended

See also *Minimum system requirements*

View connected instruments

About setting up tests

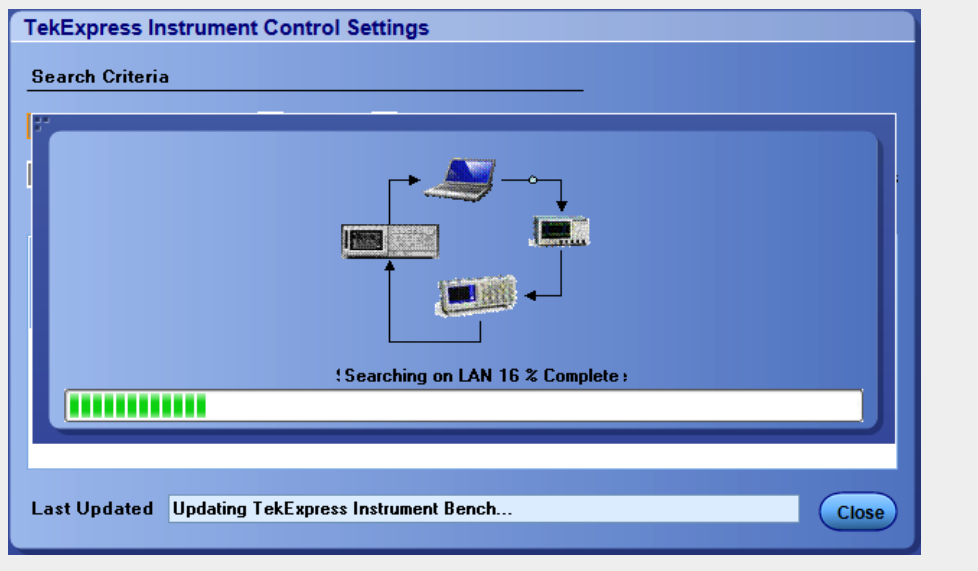
View connected instruments

Use the Instrument Control Settings dialog box to view or search for connected instruments required for the tests. The application uses TekVISA to discover the connected instruments.

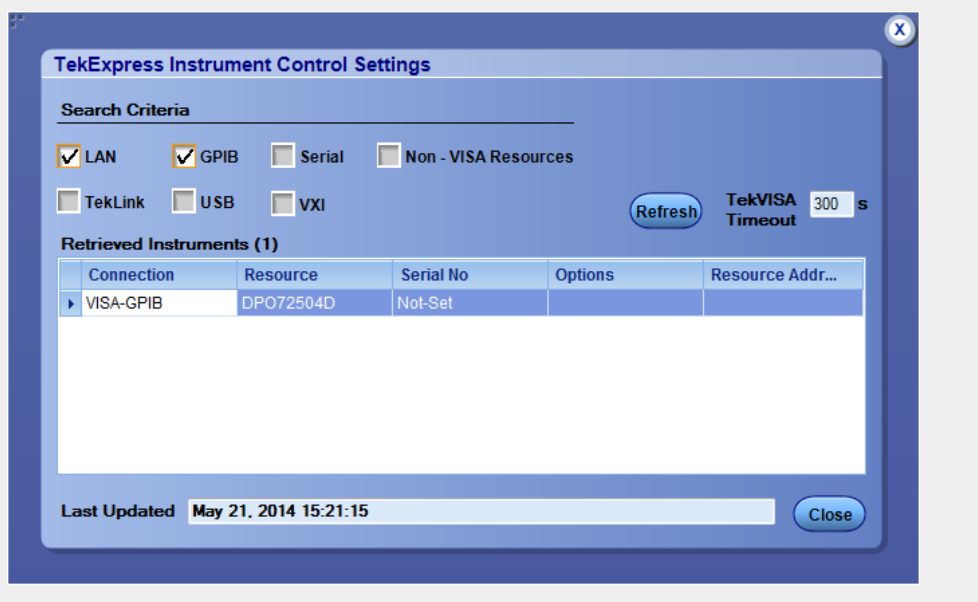
To refresh the list of connected instruments:

1. From the Options menu, select **Instrument Control Settings**.
2. In the Search Criteria section of the Instrument Control Settings dialog box, select the connection types of the instruments to search for.

   Instrument search is based on the VISA layer but different connected cables determine the resource type, such as LAN, GPIB, and USB. For example, if you choose LAN, the search will include all the instruments supported by TekExpress that are communicating over the LAN. If the search does not find any instruments that match a selected resource type, a message appears telling you that no such instruments were found.
3. Click **Refresh**. TekExpress searches for connected instruments.



4. After discovery, the dialog box lists the instrument-related details based on the search criteria you selected. For example, if you selected LAN and GPIB as the search criteria, the application checks for the availability of instruments over LAN, then GPIB.



The details of the instruments are displayed in the Retrieved Instruments table. The time and date of instrument refresh is displayed in the Last Updated field.

See also

Configure test parameters

Instrument connection setup

Test setup overview

A test setup includes configuration parameters and report options. Use the options in the Setup panel and *Reports panel* to select and configure tests.

1. *Select the DUT parameters*.
2. *Select one or more tests*.
3. *Configure test parameters*.
4. *Select test notification preferences*.
5. *Select report options*.

See also

Test setups overview

Pre-run checklist

Before you click Start

About running tests

Running tests

About running tests

After selecting and configuring the test, *review the pre-run checklist* and then click **Start** to run the tests. While tests are running, you cannot access the Setup or Reports panels. To monitor the test progress, switch back and forth between the Status panel and the Results panel.

The application displays a report when the tests are complete. While the tests are running, other applications may display windows in the background. The TekScope application takes precedence over other applications, but you can switch to other applications by using the **Alt** + **Tab** key combination. To keep the TekExpress M-PHY TX application on top, select **Keep On Top** from the M-PHY TX Options menu.

See also

Configure test parameters

About setting up tests

Before you click Start

Before you click start

Before you run tests for the first time, do the following:

1. Understand where your test files are stored on the instrument.

After you install and launch TekExpress M-PHY TX, it creates the following folders on the oscilloscope:

- \Program Files\Tektronix\TekExpress**TekExpress MIPI_MPHY TX**

  NOTE. *The Program Files folder for Windows 7 is for 64-bit.*

- \My Documents\My TekExpress**M-PHY TX**
- \My Documents\My TekExpress\M-PHY TX**Untitled Session**

  Every time you launch TekExpress M-PHY TX, an Untitled Session folder is created in the M-PHY TX folder. The Untitled Session folder is automatically deleted when you exit the M-PHY TX application (you are prompted to save the session before exiting if it has not already been saved or if there are unsaved changes).

CAUTION.

Do not directly edit or modify any of the session files or folders because this may result in loss of data or corrupted session files. Each session has multiple files associated with it. When you save a session, the application creates a .TekX file, and a folder named for the session that contains associated files, on the oscilloscope X: drive.

2. *Map the shared My TekExpress folder* as X: (X drive) on all instruments used in test setup running Microsoft Windows Operating System.

   The My TekExpress folder has the shared name format <domain><user ID>My TekExpress. Or, if the instrument is not connected to a domain, then the shared name format is <instrument name><user ID>My TekExpress. This shared folder is used to save the test session files and is used during any other file transfer operations.

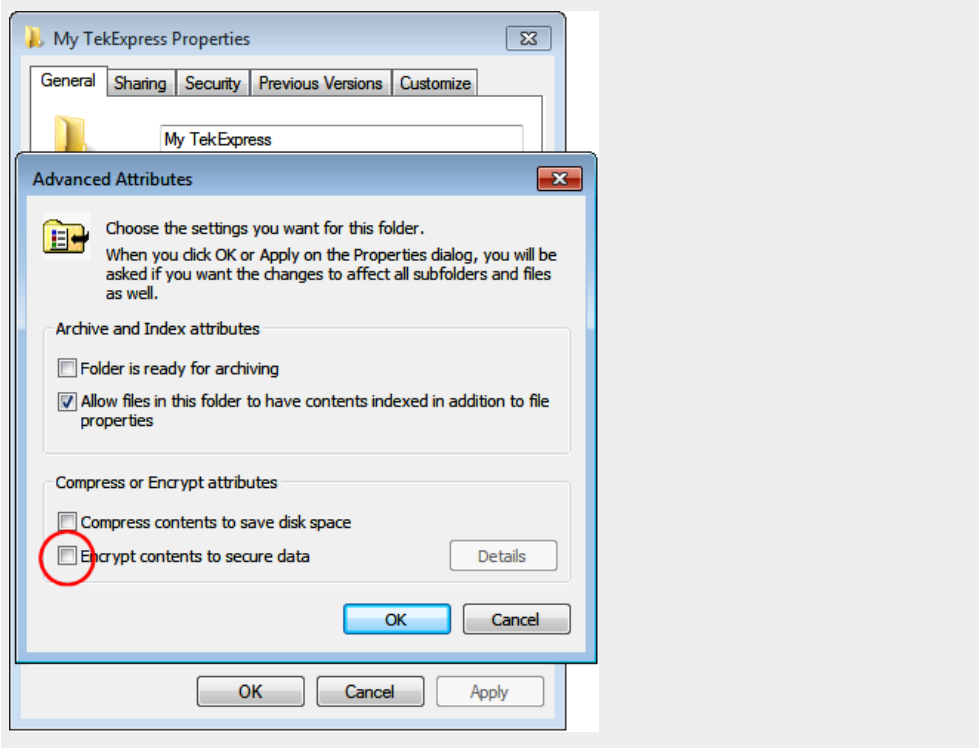
   NOTE. *If the X: drive is mapped to any other shared folder, the application will display a warning message asking you to disconnect the X: drive manually.*

3. Make sure that the My TekExpress folder has read and write access and that the contents are not set to be encrypted:

   a. Right-click the My TekExpress folder and select **Properties**.

   b. Select the **General** tab and then click **Advanced**.

   c. In the Advanced Attributes dialog box, make sure that the option **Encrypt contents to secure data** is NOT selected. Example



4. Review the *pre-run checklist* before you run a test.

See also

View test-related files

Application directories and file types

File name extensions

Pre-test checklist

Do the following before you click Start to run a test. If this is the first time you are running a test for a setup, refer to the information in *Before you click Start*.

On the oscilloscope:

- Make sure that all the required instruments are properly warmed up (approximately 20 minutes).
- Perform Signal Path Compensation (SPC).

1. On the oscilloscope main menu, select the **Utilities** menu.
2. Select **Instrument Calibration** and run the SPC utility.

- Perform deskew on any cables.

In the M-PHY TX application:

1. Verify that the application is able to find the instrument. If it cannot, *perform a search for connected instruments*.

a. Select **Setup > Test Selection**. Select any test and then click **Configure**.

b. In the Configuration section, click **Global Settings**.

c. In the Instruments Detected section, click the drop-down arrow to the right of the listed instruments and make sure that the instrument is listed.

2. Run the Deskew utility (**Options > Deskew**).

See also *Instrument connection setup*

Saving and recalling test setups

Test setups overview

A test setup file contains the oscilloscope connection and setting information, general parameters, measurement limits, test selections, and other settings for the current application configuration. This information is saved to a file under the setup name. Use a saved test setup to quickly load and run a test without having to do any other setup except ensuring that the correct oscilloscope is connected and accessible by M-PHY TX.

See also

About setting up tests

Save a test setup

Recall a saved test setup

Create a new test setup based on an existing one

Save a test setup

Save a test setup before or after running a test using the parameters you want saved. Create a new test setup from any open setup or from the default setup. When you select the default test setup, all application settings are returned to their defaults.

The following instructions start from the default test setup:

1. Select **Options > Default Test Setup**.
2. Select **Setup** and set required options and parameters in the tabs (DUT, Test Selection, and so on).
3. Select Reports and set your *report options*.
4. Click Start to run the test and verify that it runs correctly and captures the information you want. If it does not, edit the parameters and repeat this step until the test runs to your satisfaction.
5. Select **Options > Save Test Setup**. Enter the file name for the setup file. The application saves the file to X:\M-PHYTX\<*session_name*>.

See also *About setting up tests*

Configure test parameters

Test setup overview

Recall a saved test setup

To recall a saved test setup:

1. Select **Options > Open Test Setup**.
2. Select the setup from the list and click **Open**.

See also *Test setups overview*

Create a new test setup based on an existing one

Create a new test setup based on an existing one

Use this procedure to create a variation on a test setup without having to create the entire setup from the beginning.

1. Select **Options > Open Test Setup**.
2. Select a setup from the list and then click **Open**.
3. Use the Setup and Reports panels to modify the parameters to meet your testing requirements.
4. Select **Options > Save Test Setup As**.
5. Enter a test setup name and click **Save**.

See also *Test setups overview*

TekExpress programmatic interface

Programmatic interface overview

The Programmatic interface allows you to seamlessly integrate the TekExpress test automation application with the high-level automation layer. This also allows you to control the state of the TekExpress application running on a local or a remote computer.

For simplifying the descriptions, the following terminologies are used in this section:

- **TekExpress Client:** A high-level automation application that communicates with TekExpress using TekExpress Programmatic Interface.
- **TekExpress Server:** The TekExpress application when being controlled by TekExpress Client.

TekExpress leverages .Net Marshalling to enable the Programmatic Interface for TekExpress Client. TekExpress provides a client library for TekExpress clients to use the programmatic interface. The TekExpress client library is inherited from .Net MarshalByRef class to provide the proxy object for the clients. The TekExpress client library maintains a reference to the TekExpress Server and this reference allows the client to control the server state.

See also

Requirements for developing a TekExpress client

Remote proxy object

Client proxy object

Requirements for developing TekExpress client

While developing the TekExpress Client, use the TekExpressClient.dll. The client can be a VB .Net, C# .Net or Web application. The examples for interfaces in each of these applications are in the Samples folder.

References Required

- *TekExpressClient.dll* has an internal reference to *IIdlglib.dll* and *IRemoteInterface.dll*.
- *IIdlglib.dll* has a reference to *TekDotNetLib.dll*.
- *IRemoteInterface.dll* provides the interfaces required to perform the remote automations. It is an interface that forms the communication line between the server and the client.
- *IIdlglib.dll* provides the methods to generate and direct the secondary dialog messages at the client-end.

NOTE. *The end-user client application does not need any reference to the above mentioned DLL files. It is essential to have these DLLs (IRemoteInterface.dll, IIdlglib.dll and TekDotNetLib.dll) in the same folder as that of TekExpressClient.dll.*

Required Steps for a Client

The following steps are used by the client to programmatically control the server using TekExpressClient.dll:

Develop a client UI to access the interfaces exposed through the server. This client loads TekExpressClient.dll to access the interfaces. After TekExpressClient.dll is loaded, the client UI can call the specific functions to run the operations requested by the client. When the client is up and running, it does the following to run a remote operation:

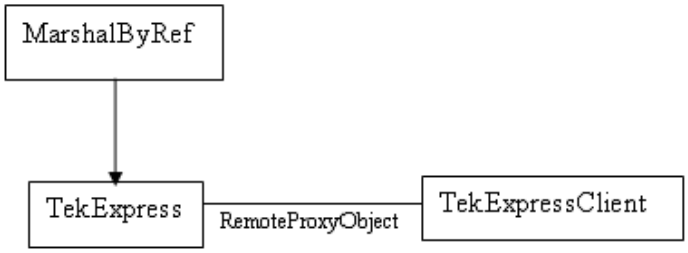
1. To connect to the server, the client provides the IP address of the PC where the server is running.
2. The client locks the server application to avoid conflict with any other Client that may try to control the server simultaneously. “Lock” would also disable all user controls on the server so that server state cannot be changed by manual operation.

   If any other client tries to access a server that is locked, it will receive a notification that the server is locked by another client.
3. When the client has connected to and locked the server, the client can access any of the programmatic controls needed to run the remote automations.
4. After the client operations finish, the client unlocks the server.

See also *M-PHY TX application command flow*

Remote proxy object

The server exposes a remote object to let the remote client access and perform the server-side operations remotely. The proxy object is instantiated and exposed at the server-end through marshalling.



The following is an example:

RemotingConfiguration.RegisterWellKnownServiceType (typeof (TekExpressRemoteInterface), “TekExpress Remote interface”, WellKnownObjectMode.Singleton);

This object lets the remote client access the interfaces exposed at the server side. The client gets the reference to this object when the client gets connected to the server.

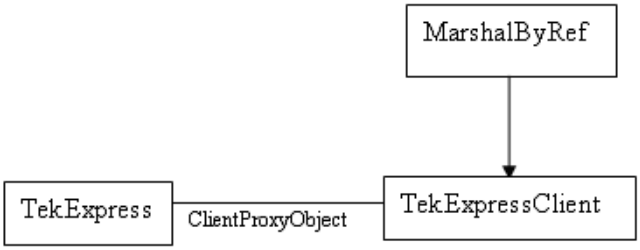
For example,

//Get a reference to the remote object

remoteObject = (IRemoteInterface)Activator.GetObject(typeof(IRemoteInterface), URL.ToString());

Client proxy object

Client exposes a proxy object to receive certain information.



For example,

//Register the client proxy object

WellKnownServiceTypeEntry[] e = RemotingConfiguration.GetRegisteredWellKnownServiceTypes();

clientInterface = new ClientInterface();

RemotingConfiguration.RegisterWellKnownServiceType(typeof(ClientInterface), “Remote Client Interface”, WellKnownObjectMode.Singleton);

//Expose the client proxy object through marshalling

RemotingServices.Marshal(clientInterface, "Remote Client Inteface");

The client proxy object is used for the following:

- To get the secondary dialog messages from the server.
- To get the file transfer commands from the server while transferring the report.

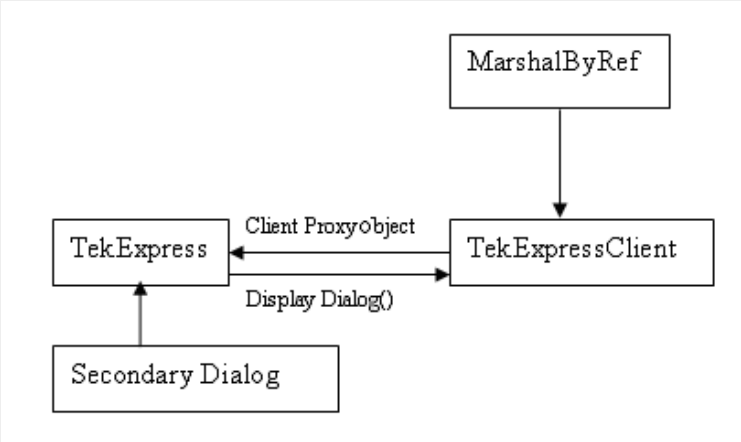
Examples

```
clientObject.clientIntf.DisplayDialog(caption, msg,iconType, btnType);

clientObject.clientIntf.TransferBytes(buffer, read, fileLength);
```

For more information, click the following links:

Secondary Dialog Message Handling



The secondary dialog messages from the Secondary Dialog library are redirected to the client-end when a client is performing the automations at the remote end.

In the secondary dialog library, the assembly that is calling for the dialog box to be displayed is checked and if a remote connection is detected, the messages are directed to the remote end.

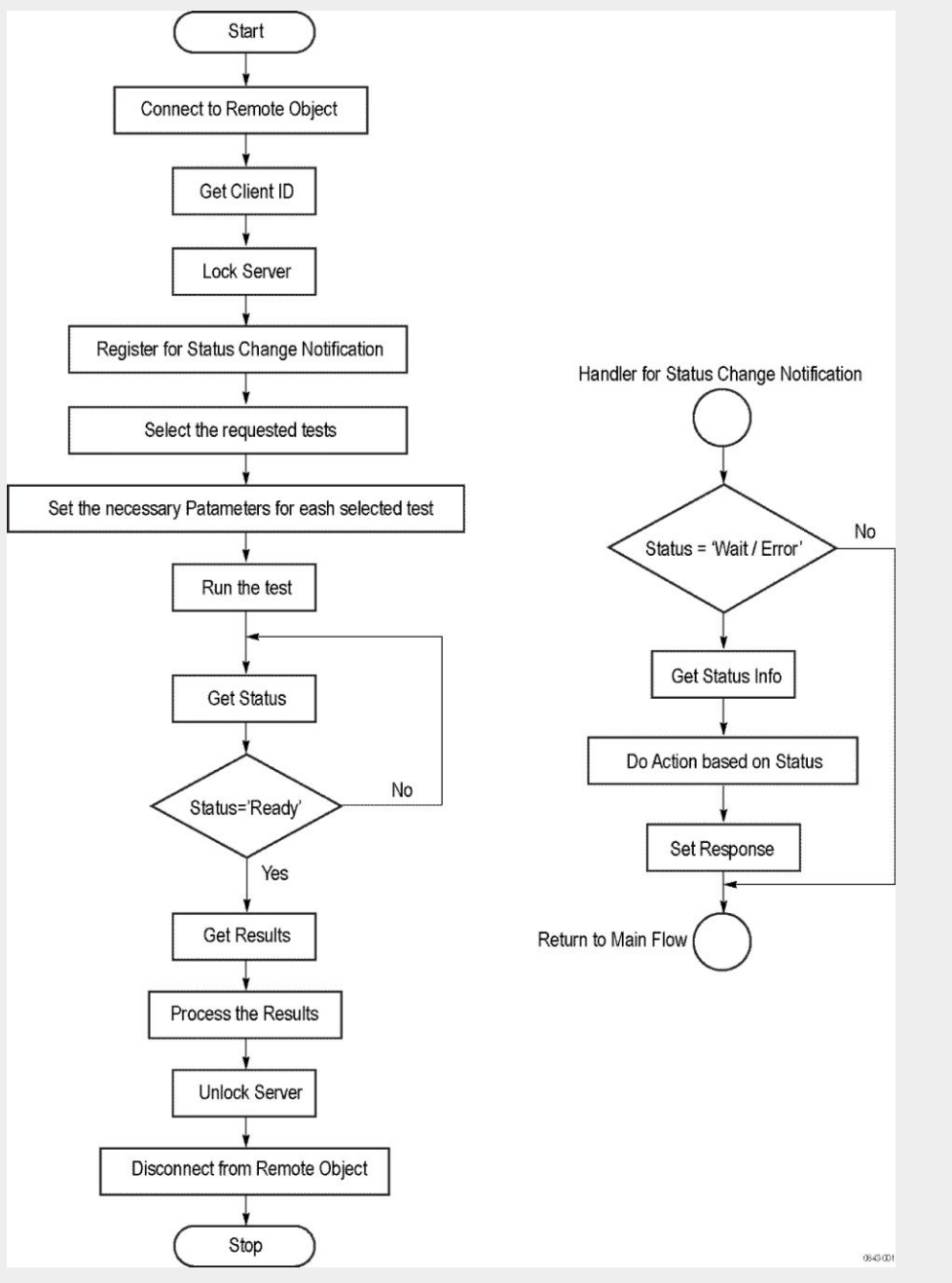
File Transfer Events

When the client requests the transfer of the report, the server reads the report and transfers the file by calling the file transfer methods at the client-end.

Client programmatic interface overview

The following is an overview of the client programmatic interface:

Process flowchart



Process overview:

1. Connect to a server or remote object using a programmatic interface.
2. Get the client ID that is created when connecting to the remote object. This client ID is one of the required parameters to communicate with the server.

NOTE. *The server identifies the client with this ID only and rejects any request if the ID is invalid.*

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3. Lock the server for further operations. This disables the application interface.

   NOTE. *You can get values from the server or set values from the server to the client only if the application is locked.*

4. Register for receiving notifications on status change events on the server. To register you need to give a handler as a parameter. For details, see *Handler of Status Change Notification*.

   NOTE. *Whenever there is a change in the status of the server, all the clients registered with the server receive a notification from the server.*

5. Select the tests to run through the programmatic interface.
6. Set the necessary parameters for each test.
7. Run the tests.
8. Poll for the status of the application.

   NOTE. *Skip this step if you are registered for the status change notification and the status is Ready.*

9. After completing the tests, get the results.
10. Create a report or display the results and verify or process the results.
11. Unlock the server after completing all the tasks.
12. Disconnect from the remote object.

Handler of Status Change Notification

1. Get the status. If the status is Wait or Error, get the information that contains the title, message description, and the expected responses for the status.
2. Perform the actions based on the status information.
3. Set the response as expected.

See also

M-PHY TX application command flow

Program remote access code example

Program remote access code example

This code example shows how to communicate between a remote PC and TekExpress M-PHY TX.

Table 22: Remote access code example

Task	Code
Start the application	
Connect through an IP address.	m_Client.Connect("localhost") 'True or False clientID = m_Client.getClientID
Lock the server	m_Client.LockServer(clientID)
Disable the Popups	m_Client.SetVerboseMode(clientID, false)
Set the DUT ID	m_Client.SetDutId(clientID, "DUT_Name")
Select a test	mClient.SelectsingleTest(clientID, "Transmitter", "HS", “CTS v3.1”, "Test 1.1.6-HS-TX Minimum Differential AC Eye Opening", true)
Select an amplitude	mClient.SetGeneralParameter(clientID, "Transmitter", "HS", " Test 1.1.6-HS-TX Minimum Differential AC Eye Opening ", "Amplitude$Large Amplitude")
Select a termination	mClient.SetGeneralParameter(clientID, "Transmitter", "HS", " Test 1.1.6-HS-TX Minimum Differential AC Eye Opening ", "Termination$Unterminated")
Run with set configurations	m_Client.Run(clientID)
Wait for the test to complete.	Do Thread.Sleep(500) m_Client.Application_Status(clientID) Select Case status Case "Wait"
Get the current state information	mClient.GetCurrentStateInfo(clientID, WaitingMsbBxCaption, WaitingMsbBxMessage, WaitingMsbBxButtontexts)
Send the response	mClient.SendResponse(clientID, WaitingMsbBxCaption, WaitingMsbBxMessage, WaitingMsbBxResponse) End Select Loop Until status = "Ready"
Save results	'Save all results values from folder for current run m_Client.TransferResult(clientID, logDirname)
Unlock the server	m_Client.UnlockServer(clientID)
Disconnect from server	m_Client.Disconnect()
Exit the application	

M-PHY Tx application commands

M-PHY TX application command flow

Click a client action link to see the associated command name, description, parameters, return value, and an example.

Connect through an IP address

Lock the server

Disable popup messages

Set or get the DUT ID

Set the configuration parameters for a suite or measurement

Query the configuration parameters for a suite or measurement

Select a test

Select a suite

Select a channel

Run with set configurations or stop the run operation

Handle error codes

Get or set the timeout value

Wait for the test to complete

After the test is complete

Save, recall, or query a saved session

Unlock the server

Disconnect from the server

string id

Name	Type	Direction	Description
id	string	IN	Identifier of the client performing the remote function

Ready: Test configured and ready to start

Running: Test running

Paused: Test paused

Wait: A popup that needs your inputs

Error: An error is occurred

string dutName

Name	Type	Direction	Description
dutName	string	IN	The new DUT ID of the setup

out bool saved

Name	Type	Direction	Description
saved	bool	OUT	Boolean representing whether the current session is saved

This parameter is used as a check in SaveSession() and SaveSessionAs() functions.

string ipAddress

Name	Type	Direction	Description
ipAddress	string	IN	The ip address of the server to which the client is trying to connect. This is required to establish the connection between the server and the client.

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

NOTE. *If the dutName parameter is null, the client is prompted to provide a valid DUT ID.*

NOTE. *The server must be active and running for the client to connect to the server. Any number of clients can be connected to the server at a time.*

NOTE. *When the client is disconnected, it is unlocked from the server and then disconnected. The id is reused.*

string dutId

Name	Type	Direction	Description
dutId	string	OUT	The DUT ID of the setup

The dutId parameter is set after the server processes the request.

string device

Name	Type	Direction	Description
device	string	IN	Specifies the name of the device

string suite

Name	Type	Direction	Description
suite	string	IN	Specifies the name of the suite

string test

Name	Type	Direction	Description
test	string	IN	Specifies the name of the test to obtain the pass or fail status

string parameterString

Name	Type	Direction	Description
parameterString	string	IN	Selects or deselects a test

int rowNr

Name	Type	Direction	Description
rowNr	int	IN	Specifies the zero based row index of the sub-measurement for obtaining the result value

NOTE. *When the client tries to lock a server that is locked by another client, the client gets a notification that the server is already locked and it must wait until the server is unlocked. If the client locks the server and is idle for a certain amount of time then the server is unlocked automatically from that client.*

out string[] status

Name	Type	Direction	Description
status	string array	OUT	The list of status messages generated during the run

string name

Name	Type	Direction	Description
name	string	IN	The name of the session being recalled

The name parameter cannot be empty. If it is empty, the client is prompted to provide a valid name.

NOTE. *When the run is performed, the status of the run is updated periodically using a timer.*

string name

Name	Type	Direction	Description
name	string	IN	The name of the session being saved

The name parameter cannot be empty. If it is empty, the client is prompted to provide a valid name.

Once the session is saved under ‘name’ you cannot use this method to save the session in a different name. Use SaveSessionAs instead.

string name

Name	Type	Direction	Description
name	string	IN	The name of the session being recalled

The same session is saved under different names using this method. The name parameter cannot be empty. If it is empty, the client is prompted to provide a valid name.

bool isSelected

Name	Type	Direction	Description
isSelected	bool	IN	Selects or deselects a test

string time

Name	Type	Direction	Description
time	string	IN	The time in seconds that refers to the timeout period

The time parameter gives the timeout period, which is the time the client is allowed to be locked and idle. After the timeout period if the client is still idle, it gets unlocked.

The time parameter should be a positive integer; otherwise, the client is prompted to provide a valid timeout period.

bool_verbose

Name	Type	Direction	Description
_verbose	bool	IN	Specifies whether the verbose mode should be turned ON or OFF

NOTE. *When the session is stopped, the client is prompted to stop the session and is stopped at the consent.*

string filePath

Name	Type	Direction	Description
filePath	string	IN	The location where the report must be saved in the client

NOTE. *If the client does not provide the location to save the report, the report is saved at C:\ProgramFiles.*

NOTE. *When the client is disconnected, the client is unlocked automatically.*

out string WaitingMsbBxCaption

Name	Type	Direction	Description
caption	string	OUT	The wait state or error state message sent to you

out string WaitingMsbBxMessage

Name	Type	Direction	Description
message	string	OUT	The wait state/error state message sent to you

out string[] WaitingMsbBxButtontexts

Name	Type	Direction	Description
buttonTexts	string array	OUT	An array of strings containing the possible response types that you can send

string WaitingMsbBxResponse

Name	Type	Direction	Description
response	string	IN	A string containing the response type that you can select (it must be one of the strings in the string array buttonTexts)

out string clientID

Name	Type	Direction	Description
clientID	string	OUT	Identifier of the client that is connected to the server clientID = unique number + ipaddress of the client. For example, 1065–192.157.98.70

Connect through an IP address

Command name	Parameters	Description	Return value	Example
Connect()	string ipAddress out string clientID	This method connects the client to the server. Note The client provides the IP address to connect to the server. The server provides a unique client identification number when connected to it.	Return value is either True or False	m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL. returnval as boolean returnval = m_Client.Connect(ipaddress,m_clientID)

string ipAddress

Name	Type	Direction	Description
ipAddress	string	IN	The ip address of the server to which the client is trying to connect. This is required to establish the connection between the server and the client.

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

NOTE. *The server must be active and running for the client to connect to the server. Any number of clients can be connected to the server at a time.*

NOTE. *The Fail condition for PI commands occurs in any of the following cases:*

The server is LOCKED and the message displayed is "Server is locked by another client".

The session is UNLOCKED and the message displayed is "Lock Session to execute the command".

The server is NOTFOUND and the message displayed is "Server not found...Disconnect!".

When none of these fail conditions occur, then the message displayed is "Failed...".

Lock the server

Command name	Parameters	Description	Return value	Example
LockSession()	string clientID	This method locks the server. Note The client must call this method before running any of the remote automations. The server can be locked by only one client.	String value that gives the status of the operation after it has been performed The return value is "Session Locked...” on success.	m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL. returnval as string returnval = m_Client.LockServer(clientID)

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

NOTE. *When the client tries to lock a server that is locked by another client, the client gets a notification that the server is already locked and it must wait until the server is unlocked. If the client locks the server and is idle for a certain amount of time then the server is unlocked automatically from that client.*

NOTE. *The Fail condition for PI commands occurs in any of the following cases:*

The server is LOCKED and the message displayed is "Server is locked by another client".

The session is UNLOCKED and the message displayed is "Lock Session to execute the command".

The server is NOTFOUND and the message displayed is "Server not found...Disconnect!".

When none of these fail conditions occur, then the message displayed is "Failed...".

Disable popup messages

Use these commands to disable popup messages that require user intervention. Popup messages will interfere with remote access testing procedures.

Command name	Parameters	Description	Return value	Example

SetVerboseMode()	string clientID
	bool _verbose
		This method sets the verbose mode to either true or false.
		When the value is set to true, any message boxes that appear during the application will be routed to the client machine that is controlling TekExpress.
		When the value is set to false, all the message boxes are shown on the server machine.
			String that gives the status of the operation after it has been performed
			When Verbose mode is set to true, the return value is “Verbose mode turned on. All dialog boxes will be shown to client”.
			When Verbose mode is set to false, the return value is “Verbose mode turned off. All dialog boxes will be shown to server”.
				m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL.
				returnval as string
				Verbose mode is turned on
				return=m_Client.SetVerboseMode(clientID, true)
				Verbose mode is turned off
				returnval=m_Client.SetVerboseMode(clientID, false)

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

bool_verbose

Name	Type	Direction	Description
_verbose	bool	IN	Specifies whether the verbose mode should be turned ON or OFF

NOTE. *The Fail condition for PI commands occurs in any of the following cases:*

The server is LOCKED and the message displayed is "Server is locked by another client".

The session is UNLOCKED and the message displayed is "Lock Session to execute the command".

The server is NOTFOUND and the message displayed is "Server not found...Disconnect!".

When none of these fail conditions occur, then the message displayed is "Failed...".

Set or get the DUT ID

Command name	Parameters	Description	Return value	Example
SetDutId()	string clientID string dutName	This method changes the DUT ID of the setup. The client must provide a valid DUT ID.	String that gives the status of the operation after it has been performed Return value is "DUT Id Changed" on success	m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL. returnval as string return=m_Client.SetDutId(clientID,desiredDutId) Note
GetDutId()	string clientID string dutId	This method gets the DUT ID of the current setup.	String that gives the status of the operation after it has been performed	m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL. returnval as string return=m_Client.GetDutid(clientID, out DutId)

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

string dutName

Name	Type	Direction	Description
dutName	string	IN	The new DUT ID of the setup

string dutId

Name	Type	Direction	Description
dutId	string	OUT	The DUT ID of the setup

The dutId parameter is set after the server processes the request.

NOTE. *If the dutName parameter is null, the client is prompted to provide a valid DUT ID.*

NOTE. *The Fail condition for PI commands occurs in any of the following cases:*

The server is LOCKED and the message displayed is "Server is locked by another client".

The session is UNLOCKED and the message displayed is "Lock Session to execute the command".

The server is NOTFOUND and the message displayed is "Server not found...Disconnect!".

When none of these fail conditions occur, then the message displayed is "Failed...".

Set the configuration parameters for a suite or measurement

Command name	Parameters	Description	Return value	Example

SetGeneralParameter	string clientID
	string device
	string suite
	string test
	string parameterString
		This method sets the number of video lanes for the selected measurement.
		NOTE. *Use this command to select a lane, channel, or source type.*
			String that gives the status of the operation after it has been performed
			The return value is "" (an empty String) on success.
				m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL.
				returnval as string
				Select channel example
				Select termination example

SetAnalyzeParameter()	string clientID
	string device
	string suite
	string test
	string parameterString
		This method sets the configuration parameters in the Analyze panel of the Configuration Panel dialog box for a suite or measurement.	String that gives the status of the operation after it has been performed
			The return value is "" (an empty String) on success.
				m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL.
				returnval as string

SetAcquireParameter()	string clientID
	string device
	string suite
	string test
	string parameterString
		This method sets the configuration parameters in the Acquire panel of the Configuration Panel dialog box for a suite or measurement.	String that gives the status of the operation after it has been performed
			The return value is "" (an empty String) on success.
				m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL.
				returnval as string
				returnVal = remoteObject.SetAcquireParameter(id, device, suite, test, parameterString)
				if ((OP_STATUS) returnVal != OP_STATUS.SUCCESS)
				return CommandFailed(returnVal)

NOTE. *The Fail condition for PI commands occurs in any of the following cases:*

The server is LOCKED and the message displayed is "Server is locked by another client".

The session is UNLOCKED and the message displayed is "Lock Session to execute the command".

The server is NOTFOUND and the message displayed is "Server not found...Disconnect!".

When none of these fail conditions occur, then the message displayed is "Failed...".

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

string device

Name	Type	Direction	Description
device	string	IN	Specifies the name of the device

string suite

Name	Type	Direction	Description
suite	string	IN	Specifies the name of the suite

string test

Name	Type	Direction	Description
test	string	IN	Specifies the name of the test to obtain the pass or fail status

string parameterString

Name	Type	Direction	Description
parameterString	string	IN	Specifies the name of the parameter

Set Scope channel example

returnval=mClient.SetGeneralParameter(clientID, "Transmitter", "PWM", "Test 1.2.1-PWM-TX Transmit Bit Duration", "Scope Channel for Trigger$CH1")

Set Termination example

returnval=mClient.SetGeneralParameter(clientID, "Transmitter", "HS", " Test 1.1.6-HS-TX Minimum Differential AC Eye Opening ", "Termination $Unterminated")

Query the configuration parameters for a suite or measurement

Command name	Parameters	Description	Return value	Example

GetGeneralParameter()	string clientID
	string device
	string suite
	string test
	string parameterString
		This method gets the general configuration parameters for a suite or measurement.	The return value is the general configuration parameter for a specified suite or measurement that is set.	m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL.
				returnval as string
				Query Channel

GetAnalyzeParameter()	string clientID
	string device
	string suite
	string test
	string parameterString
		This method gets the configuration parameters set in the Analyze panel of the Configuration Panel dialog box for a specified suite or measurement.	The return value is the configuration parameter set in the Analyze panel of the Configuration Panel dialog box for a specified suite or measurement.	m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL.
				returnval as string

GetAcquireParameter()	string clientID
	string device
	string suite
	string test
	string parameterString
		This method gets the configuration parameters set in the Acquire panel for a specified suite or measurement.	The return value is the configuration parameter set in the Acquire panel for a specified suite or measurement.	m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL.
				returnval as string

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

string device

Name	Type	Direction	Description
device	string	IN	Specifies the name of the device

string suite

Name	Type	Direction	Description
suite	string	IN	Specifies the name of the suite

string test

Name	Type	Direction	Description
test	string	IN	Specifies the name of the test to obtain the pass or fail status

string parameterString

Name	Type	Direction	Description
parameterString	string	IN	Specifies the name of the parameter to get its value

NOTE. *The Fail condition for PI commands occurs in any of the following cases:*

The server is LOCKED and the message displayed is "Server is locked by another client".

The session is UNLOCKED and the message displayed is "Lock Session to execute the command".

The server is NOTFOUND and the message displayed is "Server not found...Disconnect!".

When none of these fail conditions occur, then the message displayed is "Failed...".

Query channel for trigger example

returnval = mClient.SetGeneralParameter(clientID, "Transmitter", "HS", "Test 1.1.1-HS-TX Unit Interval and Frequency Offset", "Scope Channel for Trigger $CH1")

Select a test

Command name	Parameters	Description	Return value	Example

SelectTest()	string clientID
	string device
	string suite
	string test
	bool isSelected
		This method selects or deselects a specified test.
		If this Setting parameter is set to true, you can select a measurement.
		If this Setting parameter is set to false, you can deselect a measurement.
			String that displays the status of the operation after it has been performed
			The return value is "" (an empty String) on success.
				m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL
				returnval as string
				Select test example

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

string device

Name	Type	Direction	Description
device	string	IN	Specifies the name of the device

string suite

Name	Type	Direction	Description
suite	string	IN	Specifies the name of the suite

string test

Name	Type	Direction	Description
test	string	IN	Specifies the name of the test to obtain the pass or fail status

bool isSelected

Name	Type	Direction	Description
isSelected	bool	IN	Selects or deselects a test

NOTE. *The Fail condition for PI commands occurs in any of the following cases:*

The server is LOCKED and the message displayed is "Server is locked by another client".

The session is UNLOCKED and the message displayed is "Lock Session to execute the command".

The server is NOTFOUND and the message displayed is "Server not found...Disconnect!".

When none of these fail conditions occur, then the message displayed is "Failed...".

Select test example

To select measurement test 1.1.6-HS-TX Minimum Differential AC Eye Opening:

returnval = mClient.SelectTest(clientID, "Transmitter", "HS", "1.1.6-HS-TX Minimum Differential AC Eye Opening", true)

Select a suite

Test suite must be set for HS or PWM tests.

Command name	Parameters	Description	Return value	Example
SelectSuite()	string clientID string device string suite bool isSelected	This method selects or deselects a specified suite. When this parameter is set to true, you can select a suite. When this parameter is set to false, you can deselect a suite.	String that gives the status of the operation after it has been performed The return value is "" (an empty String) on success.	m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL. returnval as string **Select Suite (Default):** returnval=mClient. Select-Suitet(clientID, "Transmitter", "HS", true)

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

string device

Name	Type	Direction	Description
device	string	IN	Specifies the name of the device

string suite

Name	Type	Direction	Description
suite	string	IN	Specifies the name of the suite

bool isSelected

Name	Type	Direction	Description
isSelected	bool	IN	Selects or deselects a test

NOTE. *The Fail condition for PI commands occurs in any of the following cases:*

The server is LOCKED and the message displayed is "Server is locked by another client".

The session is UNLOCKED and the message displayed is "Lock Session to execute the command".

The server is NOTFOUND and the message displayed is "Server not found...Disconnect!".

When none of these fail conditions occur, then the message displayed is "Failed...".

Select a channel

Command name	Parameters	Description	Return value	Example

SetGeneralParameter()	string clientID
	string device
	string suite
	string test
	string parameterString
		This method sets the parameters that are not specific to any one test.
		NOTE. *Using this command we can select a lane, channel, or source type.*
			String that gives the status of the operation after it has been performed
			The return value is "" (an empty String) on success.
				m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL.
				returnval as string
				Set channel for trigger example
				Set amplitude example

SetAnalyzeParameter()	string clientID
	string device
	string suite
	string test
	string parameterString
		This method sets the configuration parameters in the Analyze panel of the Configuration Panel dialog box for a specified suite or measurement.	The return value is "" (an empty String) on success.	m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL.
				returnval as string

SetAcquireParameter()	string clientID
	string device
	string suite
	string test
	string parameterString
		This method sets the configuration parameters in the Acquire panel of the Configuration Panel dialog box for a specified suite or measurement.	The return value is "" (an empty String) on success.	m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL.
				returnval as string
				returnVal = remoteObject.SetAcquireParameter(id, device, suite, test, parameterString)
				if ((OP_STATUS) returnVal != OP_STATUS.SUCCESS) return CommandFailed(returnVal)

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

string device

Name	Type	Direction	Description
device	string	IN	Specifies the name of the device

string suite

Name	Type	Direction	Description
suite	string	IN	Specifies the name of the suite

string test

Name	Type	Direction	Description
test	string	IN	Specifies the name of the test to obtain the pass or fail status

string parameterString

Name	Type	Direction	Description
parameterString	string	IN	Selects or deselects a test

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

string device

Name	Type	Direction	Description
device	string	IN	Specifies the name of the device

string suite

Name	Type	Direction	Description
suite	string	IN	Specifies the name of the suite

string test

Name	Type	Direction	Description
test	string	IN	Specifies the name of the test to obtain the pass or fail status

string parameterString

Name	Type	Direction	Description
parameterString	string	IN	Selects or deselects a test

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

string device

Name	Type	Direction	Description
device	string	IN	Specifies the name of the device

string suite

Name	Type	Direction	Description
suite	string	IN	Specifies the name of the suite

string test

Name	Type	Direction	Description
test	string	IN	Specifies the name of the test to obtain the pass or fail status

string parameterString

Name	Type	Direction	Description
parameterString	string	IN	Selects or deselects a test

NOTE. *The Fail condition for PI commands occurs in any of the following cases:*

The server is LOCKED and the message displayed is "Server is locked by another client".

The session is UNLOCKED and the message displayed is "Lock Session to execute the command".

The server is NOTFOUND and the message displayed is "Server not found...Disconnect!".

When none of these fail conditions occur, then the message displayed is "Failed...".

Set channel for trigger example

returnval = mClient.SetGeneralParameter(clientID, "Transmitter", "HS", "Test 1.1.1-HS-TX Unit Interval and Frequency Offset", "Scope Channel for Trigger $CH1")

Set amplitude example

returnval=mClient.SetGeneralParameter(clientID, "Transmitter", "HS", "Test 1.1.6-HS-TX Minimum Differential AC Eye Opening", "Amplitude$Large Amplitude")

Configure the selected measurement

Command name	Parameters	Description	Return value	Example

SetAnalyzeParameter()	string clientID
	string device
	string suite
	string test
	string parameterString
		This method sets the Analyze parameters (Configuration parameters) for a specified test.	The return value is "" (an empty String) on success.	m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL.
				returnval as string

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

string device

Name	Type	Direction	Description
device	string	IN	Specifies the name of the device

string suite

Name	Type	Direction	Description
suite	string	IN	Specifies the name of the suite

string test

Name	Type	Direction	Description
test	string	IN	Specifies the name of the test to obtain the pass or fail status

string parameterString

Name	Type	Direction	Description
parameterString	string	IN	Selects or deselects a test

NOTE. *The Fail condition for PI commands occurs in any of the following cases:*

The server is LOCKED and the message displayed is "Server is locked by another client".

The session is UNLOCKED and the message displayed is "Lock Session to execute the command".

The server is NOTFOUND and the message displayed is "Server not found...Disconnect!".

When none of these fail conditions occur, then the message displayed is "Failed...".

Run with set configurations or stop the run operation

Command name	Parameters	Description	Return value	Example
Run()	string clientID	Runs the selected tests Note After the server is set up and configured, run it remotely using this function.	String that gives the status of the operation after it has been performed. The return value is "Run started..." on success.	m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL. returnval as string returnval=m_Client.Run(clientID)
Stop()	string clientID	Stops the currently running tests Note	String that gives the status of the operation after it has been performed The return value is "Stopped..." on success.	m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL. returnval as string returnval=m_Client.Stop(clientID)

NOTE. *When the session is stopped, the client is prompted to stop the session and is stopped at the consent.*

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

NOTE. *When the run is performed, the status of the run is updated periodically using a timer.*

NOTE. *The Fail condition for PI commands occurs in any of the following cases:*

The server is LOCKED and the message displayed is "Server is locked by another client".

The session is UNLOCKED and the message displayed is "Lock Session to execute the command".

The server is NOTFOUND and the message displayed is "Server not found...Disconnect!".

When none of these fail conditions occur, then the message displayed is "Failed...".

Handle error codes

The return value of the remote automations at the server-end is OP_STATUS, which changes to a string value depending on its code, and returned to the client. The values of OP_STATUS are:

Code	Value	Description
-1	FAIL	The operation failed
1	SUCCESS	The operation succeeded
2	NOT FOUND	Server not found
3	LOCKED	The server is locked by another client, so the operation cannot be performed
4	UNLOCK	The server is not locked; lock the server before performing the operation
0	NULL	Nothing

NOTE. *The Fail condition for PI commands occurs in any of the following cases:*

The server is LOCKED and the message displayed is "Server is locked by another client".

The session is UNLOCKED and the message displayed is "Lock Session to execute the command".

The server is NOTFOUND and the message displayed is "Server not found...Disconnect!".

When none of these fail conditions occur, then the message displayed is "Failed...".

Get or set the timeout value

Command name	Parameters	Description	Return value	Example
GetTimeOut()	string clientID	Returns the current timeout period set by the client	String that gives the status of the operation after it has been performed The default return value is 1800000.	m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL. returnval as string returnval=m_Client.GetTimeOut()
SetTimeOut()	string clientID string time	Sets a timeout period specified by the client. After this timeout period expires, the server is unlocked automatically.	String that gives the status of the operation after it has been performed On success the return value is "TimeOut Period Changed".	m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL. returnval as string returnval=m_Client.SetTimeOut(clientID, desiredTimeOut)

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

string time

Name	Type	Direction	Description
time	string	IN	The time in seconds that refers to the timeout period

The time parameter gives the timeout period, which is the time the client is allowed to be locked and idle. After the timeout period if the client is still idle, it gets unlocked.

The time parameter should be a positive integer; otherwise, the client is prompted to provide a valid timeout period.

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

NOTE. *The Fail condition for PI commands occurs in any of the following cases:*

The server is LOCKED and the message displayed is "Server is locked by another client".

The session is UNLOCKED and the message displayed is "Lock Session to execute the command".

The server is NOTFOUND and the message displayed is "Server not found...Disconnect!".

When none of these fail conditions occur, then the message displayed is "Failed...".

Wait for the test to complete

The commands in this group execute while tests are running. The GetCurrentStateInfo() and SendResponse() commands are executed when the application is running and in the wait state.

Command name	Parameters	Description	Return value	Example
ApplicationStatus()	string clientID	This method gets the status of the server application. The states are Ready, Running, Paused, Wait, or Error.	String value that gives the status of the server application	m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL. returnval as string returnval=m_Client.ApplicationStatus(clientID)
QueryStatus()	string clientID out string[] status	An interface for the user to transfer Analyze panel status messages from the server to the client	String that gives the status of the operation after it has been performed On success the return value is “Transferred...”.	m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL. returnval as string Query status example
GetCurrentStateInfo() ***NOTE.*** *This command is used when the application is running and is in the wait or error state.*	string clientID out string WaitingMsbBxCaption out string WaitingMsbBxMessage out string[] WaitingMsbBxButtontexts	This method gets the additional information of the states when the application is in Wait or Error state. Except client ID, all the others are Out parameters.	This command does not return any value. This function populates the Out parameters that are passed when invoking this function.	m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL mClient.GetCurrentStateInfo(clientID, WaitingMsbBxCaption, WaitingMsbBxMessage, WaitingMsbBxButtontexts)

Command name	Parameters	Description	Return value	Example
SendResponse() ***NOTE.*** *This command is used when the application is running and is in the wait or error state.*	string clientID out string WaitingMsbBxCaption out string WaitingMsbBxMessage string WaitingMsbBxResponse	After receiving the additional information using the method GetCurrentStateInfo(), the client can decide which response to send and then send the response to the application using this function. The response should be one of the strings that was received earlier as a string array in the GetCurrentStateInfo function. The _caption and _message should match the information received earlier in the GetCurrentStateInfo function.	This command does not return any value.	m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL mClient.SendResponse(clientID, WaitingMsbBxCaption, WaitingMsbBxMessage, WaitingMsbBxResponse)

NOTE. *The Fail condition for PI commands occurs in any of the following cases:*

The server is LOCKED and the message displayed is "Server is locked by another client".

The session is UNLOCKED and the message displayed is "Lock Session to execute the command".

The server is NOTFOUND and the message displayed is "Server not found...Disconnect!".

When none of these fail conditions occur, then the message displayed is "Failed...".

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

out string[] status

Name	Type	Direction	Description
status	string array	OUT	The list of status messages generated during the run

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

out string WaitingMsbBxCaption

Name	Type	Direction	Description
caption	string	OUT	The wait state or error state message sent to you

out string WaitingMsbBxMessage

Name	Type	Direction	Description
message	string	OUT	The wait state/error state message sent to you

out string[] WaitingMsbBxButtontexts

Name	Type	Direction	Description
buttonTexts	string array	OUT	An array of strings containing the possible response types that you can send

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

out string WaitingMsbBxCaption

Name	Type	Direction	Description
caption	string	OUT	The wait state or error state message sent to you

out string WaitingMsbBxMessage

Name	Type	Direction	Description
message	string	OUT	The wait state/error state message sent to you

out string[] WaitingMsbBxResponse

Name	Type	Direction	Description
response	string	IN	A string containing the response type that you can select (it must be one of the strings in the string array button Texts)

Ready: Test configured and ready to start

Running: Test running

Paused: Test paused

Wait: A popup that needs your inputs

Error: An error is occurred

Query status example

```
returnVal=m_Client.QueryStatus(clientID, out statusMessages)
if ((OP_STATUS)returnVal == OP_STATUS.SUCCESS)
return “Status updated...”
else
return CommandFailed(returnVal)
```

After the test is complete

Command name	Parameters	Description	Return value	Example
GetPassFailStatus()	string clientID string device string suite string test	This method gets the pass or fail status of the measurement after test completion. ***NOTE.*** *Execute this command after completing the measurement.*	String that gives the status of the operation after it has been performed Returns the pass or fail status in the form of a string	m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL. returnval as string returnval=m_Client.GetPass-FailStatus(clientID, device, suite, ”Test 1.2.1-PWM-TX Transmit Bit Duration”)
GetResultsValue()	string clientID string device string suite string test string parameterString	This method gets the result values of the measurement after the run.	String that gives the status of the operation after it has been performed Returns the result value in the form of a string	m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL. returnval as srting returnval=m_Client.GetResultsValue(clientID,"Transmitter", "PWM", "Test 1.2.1-PWM-TX Transmit Bit Duration", "Measured Value")

Command name	Parameters	Description	Return value	Example

GetResultsValueForSubMeasurements()	string clientID
	string device
	string suite
	string test
	string parameterString
	int rowNr
		This method gets the result values for individual sub-measurements after the run.	String that gives the status of the operation after it has been performed Returns the result value in the form of a string	m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL.
				returnval as string Get results for a submeasurement example

GetReportParameter()	string clientID
	string device
	string suite
	string test
	string parameterString
		This method gets the general report details such as oscilloscope model, TekExpress version, and M-PHY TX version.	The return value is the oscilloscope model, TekExpress version, and M-PHY TX version.	m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL.
				returnval as string
				Oscilloscope Model
				returnval=m_Client.GetReportParameter(clientID,"Scope Model")
				TekExpress Version
				returnval=m_Client.GetReportParameter(clientID,"TekExpress Version")
				M-PHY TX Version
				returnval=m_Client.GetReportParameter(clientID,"Application Version")

Command name	Parameters	Description	Return value	Example

TransferReport()	string clientID
	string filePath
		This method transfers the report generated after the run.
		The report contains the summary of the run.
		The client must provide the location where the report is to be saved at the client-end.
			String that gives the status of the operation after it has been performed
			Transfers all the result values in the form of a string
				m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL.
				returnval as string
				returnval=m_Client.TransferReport(clientID,"C:\Report")

TransferImages()	string clientID
	string filePath
		This method transfers all the images (screen shots) from the specified client and folder for the current run (for a suite or measurement).
		NOTE. *Every time you click Start, a folder is created in the X: drive. Transfer the waveforms before clicking Start.*
			String that gives the status of the operation after it has been performed
			Transfers all the images in the form of a string
				m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL.
				returnval as string
				returnval=m_Client.TransferImages(clientID, "C:\Waveforms")

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

string device

Name	Type	Direction	Description
device	string	IN	Specifies the name of the device

string suite

Name	Type	Direction	Description
suite	string	IN	Specifies the name of the suite

string test

Name	Type	Direction	Description
test	string	IN	Specifies the name of the test to obtain the pass or fail status

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

string device

Name	Type	Direction	Description
device	string	IN	Specifies the name of the device

string suite

Name	Type	Direction	Description
suite	string	IN	Specifies the name of the suite

string test

Name	Type	Direction	Description
test	string	IN	Specifies the name of the test to obtain the pass or fail status

string parameterString

Name	Type	Direction	Description
parameterString	string	IN	Selects or deselects a test

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

string device

Name	Type	Direction	Description
device	string	IN	Specifies the name of the device

string suite

Name	Type	Direction	Description
suite	string	IN	Specifies the name of the suite

string test

Name	Type	Direction	Description
test	string	IN	Specifies the name of the test to obtain the pass or fail status

string parameterString

Name	Type	Direction	Description
parameterString	string	IN	Selects or deselects a test

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

string device

Name	Type	Direction	Description
device	string	IN	Specifies the name of the device

string suite

Name	Type	Direction	Description
suite	string	IN	Specifies the name of the suite

string test

Name	Type	Direction	Description
test	string	IN	Specifies the name of the test to obtain the pass or fail status

string parameterString

Name	Type	Direction	Description
parameterString	string	IN	Selects or deselects a test

NOTE. *The Fail condition for PI commands occurs in any of the following cases:*

The server is LOCKED and the message displayed is "Server is locked by another client".

The session is UNLOCKED and the message displayed is "Lock Session to execute the command".

The server is NOTFOUND and the message displayed is "Server not found...Disconnect!".

When none of these fail conditions occur, then the message displayed is "Failed...".

string parameterString

Name	Type	Direction	Description
parameterString	string	IN	Specifies the oscilloscope model, TekExpress version, and M-PHY TX version

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

string filePath

Name	Type	Direction	Description
filePath	string	IN	The location where the report must be saved in the client

NOTE. *If the client does not provide the location to save the report, the report is saved at C:\ProgramFiles.*

string filePath

Name	Type	Direction	Description
filePath	string	IN	The location where the report must be saved in the client

NOTE. *If the client does not provide the location to save the report, the report is saved at C:\ProgramFiles.*

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

int rowNr

Name	Type	Direction	Description
rowNr	int	IN	Specifies the zero based row index of the sub-measurement for obtaining the result value

Get results for a submeasurement example

This example returns the specified submeasurement results for test 1.2.1-PWM-TX (transmit bit duration).

returnval=m_Client.GetResultsValue(clientID,"Transmitter", "PWM", "Test 1.2.1-PWM-TX Transmit Bit Duration", "Measured Value",0)

returnval=m_Client.GetResultsValue(clientID,"Transmitter", "PWM", "Test 1.2.1-PWM-TX Transmit Bit Duration", "Measured Value",1)

Save, recall, or query a saved session

Command name	Parameters	Description	Return value	Example
CheckSessionSaved()	string clientID out bool saved	This method checks whether the current session is saved.	Return value is either True or False	m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL. returnval as string returnval=m_Client.CheckSessionSaved(m_clientID, out savedStatus)
RecallSession()	string clientID string name	Recalls a saved session. The client provides the session name.	String that gives the status of the operation after it has been performed The return value is “Session Recalled...”	m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL. returnval as string returnval=m_Client.RecallSession(clientID, savedSessionName)
SaveSession()	string clientID string name	Saves the current session. The client provides the session name.	String that gives the status of the operation after it has been performed The return value is "Session Saved..."/"Failed..."	m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL. returnval as string returnval=m_Client.SaveSession(clientID, desiredSessionName)
SaveSessionAs()	string clientID string name	Saves the current session under a different name every time this method is called. The client provides the session name.	String that gives the status of the operation after it has been performed The return value is "Session Saved..."	m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL. returnval as string returnval=m_Client.SaveSessionAs(clientID, desiredSessionName)

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

out bool saved

Name	Type	Direction	Description
saved	bool	OUT	Boolean representing whether the current session is saved

This parameter is used as a check in SaveSession() and SaveSessionAs() functions.

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

string name

Name	Type	Direction	Description
name	string	IN	The name of the session being recalled

The name parameter cannot be empty. If it is empty, the client is prompted to provide a valid name.

string name

Name	Type	Direction	Description
name	string	IN	The name of the session being recalled

The name parameter cannot be empty. If it is empty, the client is prompted to provide a valid name.

string name

Name	Type	Direction	Description
name	string	IN	The name of the session being recalled

The name parameter cannot be empty. If it is empty, the client is prompted to provide a valid name.

NOTE. *The Fail condition for PI commands occurs in any of the following cases:*

The server is LOCKED and the message displayed is "Server is locked by another client".

The session is UNLOCKED and the message displayed is "Lock Session to execute the command".

The server is NOTFOUND and the message displayed is "Server not found...Disconnect!".

When none of these fail conditions occur, then the message displayed is "Failed...".

Unlock the server

Command name	Parameters	Description	Return value	Example
UnlockSession()	string clientID	This method unlocks the server from the client. The ID of the client to be unlocked must be provided. Note	String that gives the status of the operation after it has been performed The return value is "Session Un-Locked..."	m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL. returnval as string returnval=m_Client.UnlockServer(clientID)

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

NOTE. *When the client is disconnected, the client is unlocked automatically.*

NOTE. *The Fail condition for PI commands occurs in any of the following cases:*

The server is LOCKED and the message displayed is "Server is locked by another client".

The session is UNLOCKED and the message displayed is "Lock Session to execute the command".

The server is NOTFOUND and the message displayed is "Server not found...Disconnect!".

When none of these fail conditions occur, then the message displayed is "Failed...".

Disconnect from the server

Command name	Parameters	Description	Return value	Example
Disconnect()	string clientID	This method disconnects the client from the server. Note	Integer value that gives the status of the operation after it has been performed 1 for Success –1 for Failure	m_Client = new Client() //m_Client is a reference to the Client class in the Client DLL. returnval as string returnval=m_Client.Disconnect(m_clientID)

out string clientID

Name	Type	Direction	Description
clientid	string	OUT	Identifier of the client that is connected to the server clientId = unique number + ipaddress of the client. For example, 1065+192.157.98.70

NOTE. *When the client is disconnected, it is unlocked from the server and then disconnected. The id is reused.*

NOTE. *The Fail condition for PI commands occurs in any of the following cases:*

The server is LOCKED and the message displayed is "Server is locked by another client".

The session is UNLOCKED and the message displayed is "Lock Session to execute the command".

The server is NOTFOUND and the message displayed is "Server not found...Disconnect!".

When none of these fail conditions occur, then the message displayed is "Failed...".

SCPI commands

About SCPI command

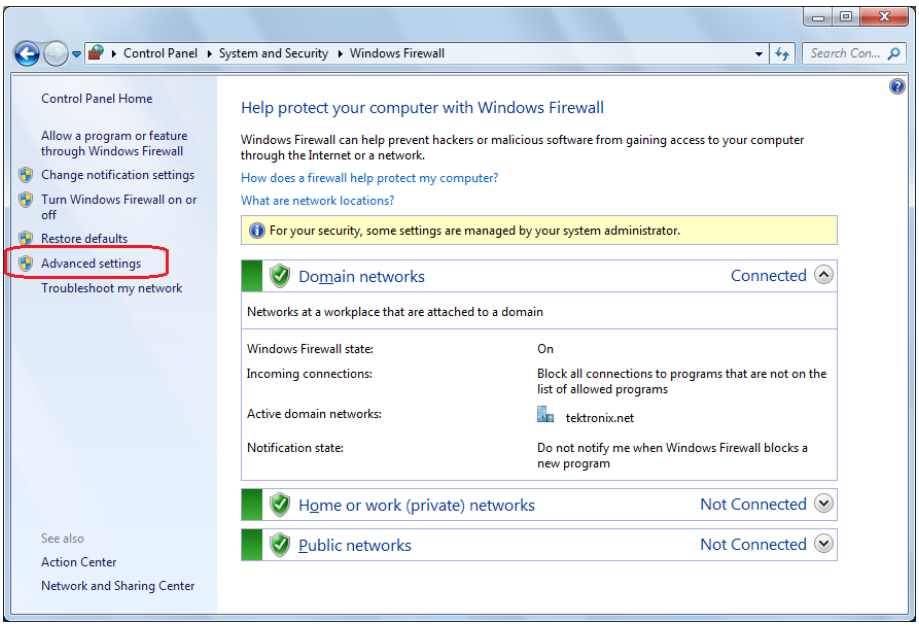
You can use Standard Commands for Programmable Instruments (SCPI) to communicate with the TekExpress application.

Socket configuration for SCPI commands

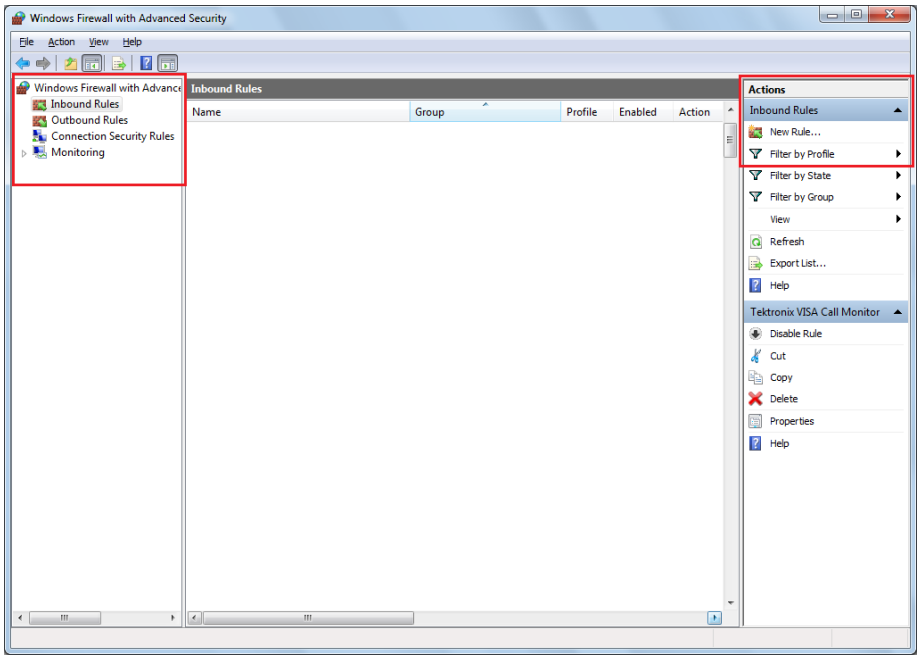
This section describes the steps for TCPIP socket configuration and TekVISA configuration to execute the SCPI commands.

TCPIP socket configuration

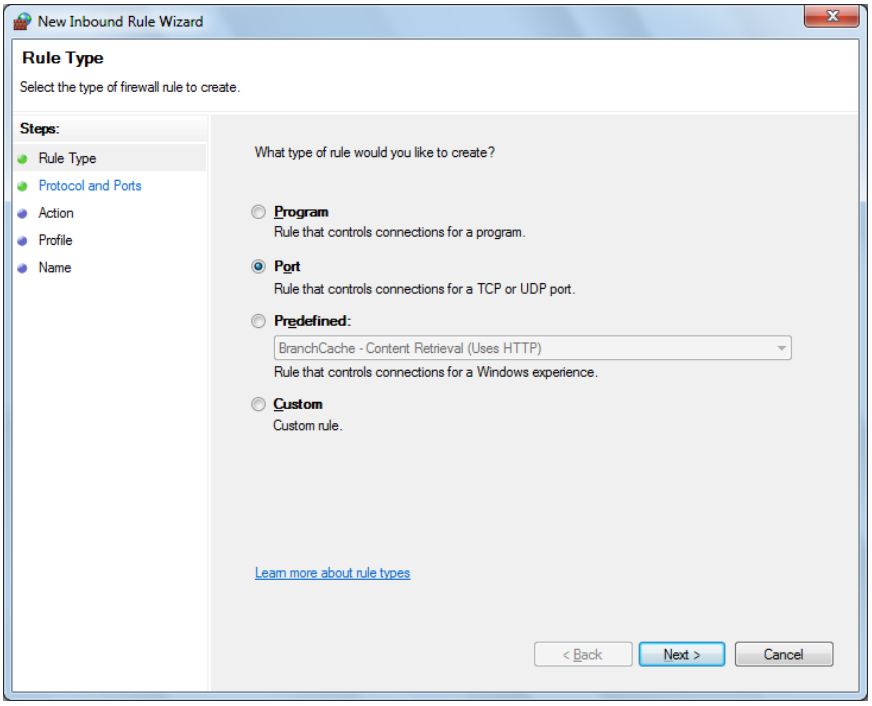
1. Click **Start** > **Control Panel** > **System and Security** > **Windows Firewall** > **Advanced settings**.



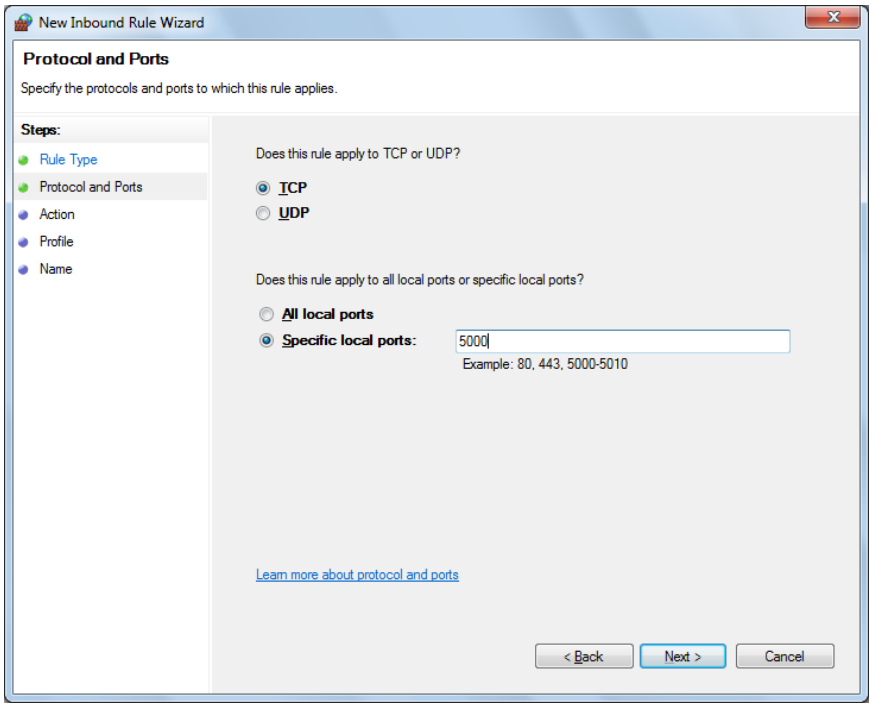
2. In Windows Firewall with Advanced Security menu, select **Windows Firewall with Advanced Security on Local Computer** > **Inbound Rules** and click New Rule…



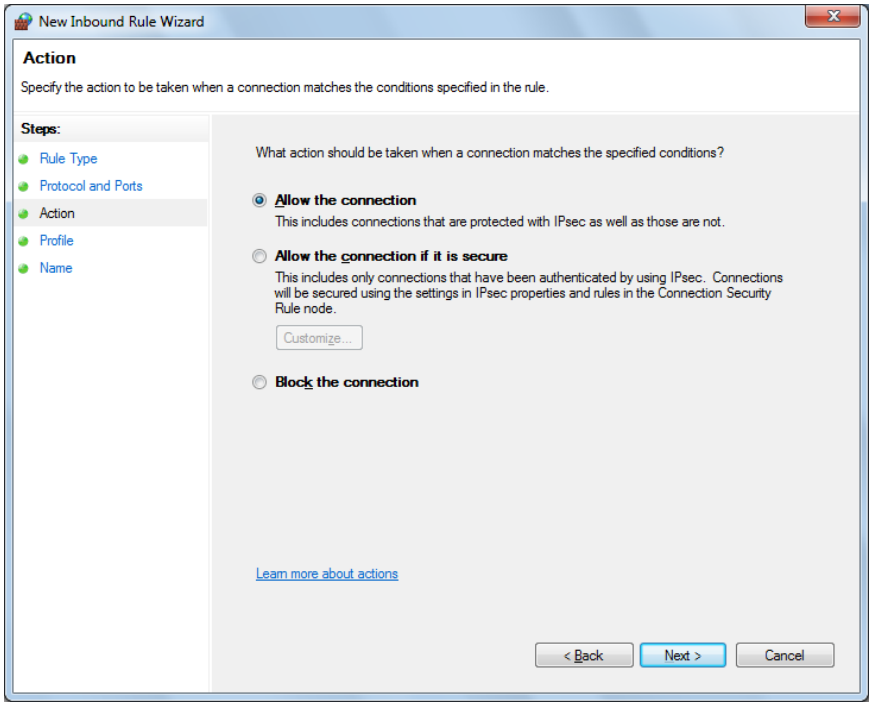
3. In New Inbound Rule Wizard menu
   a. Select **Port** and click **Next**.



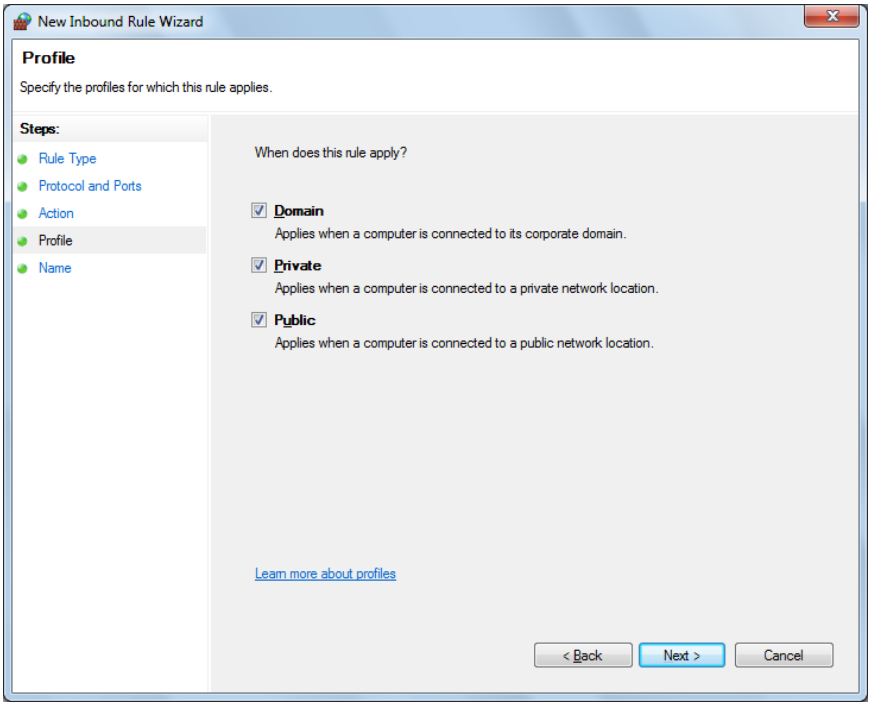
b. Select **TCP** as rule apply and enter 5000 for **Specific local ports** and click **Next**.



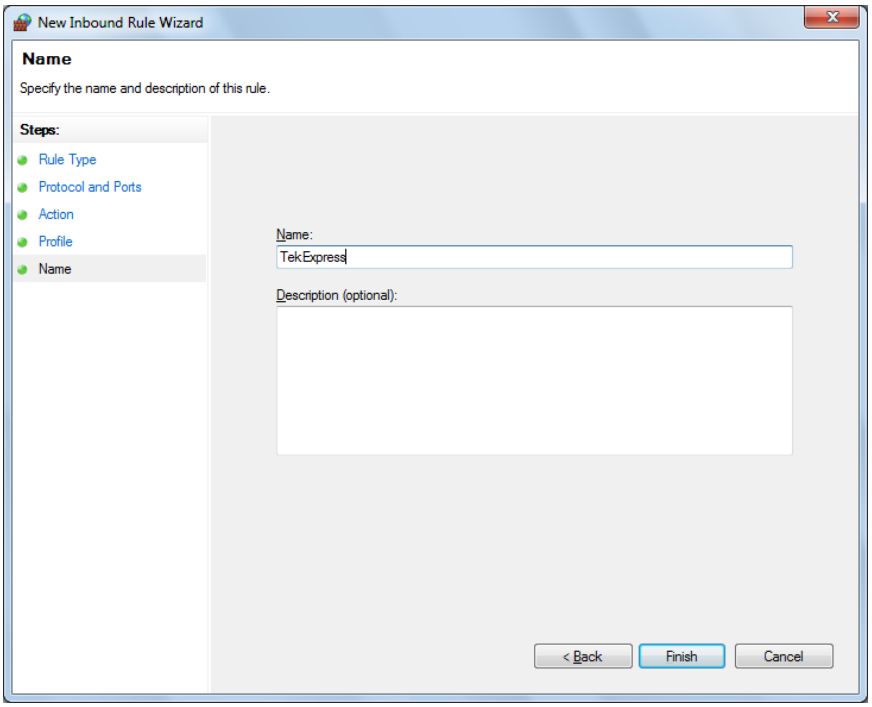
c. Select **Allow the connection** and click **Next**.



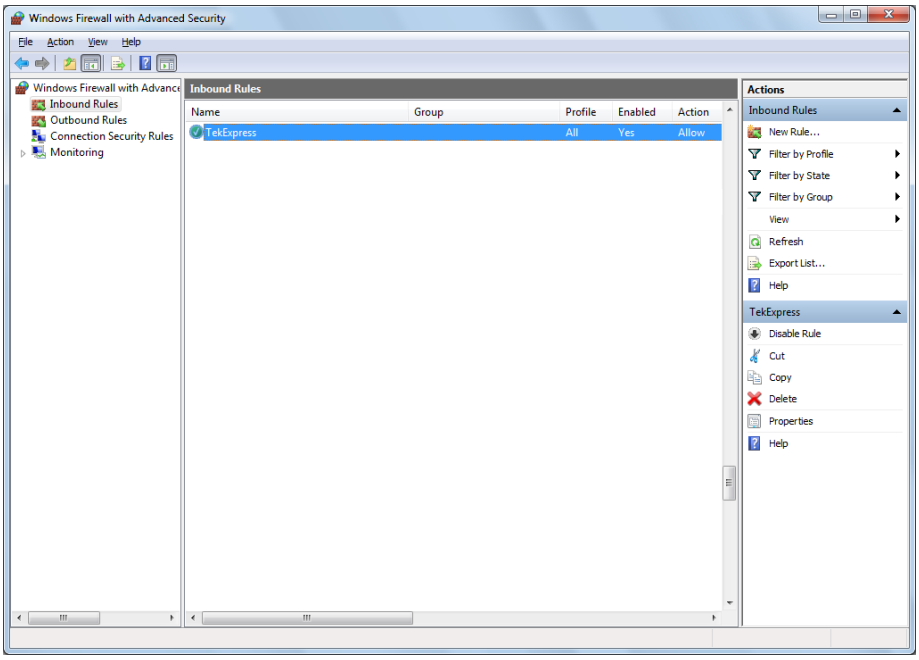
d. Select **Domain, Private, Public** and click **Next**.



e. Enter **Name**, Description (optional), and click **Finish**.

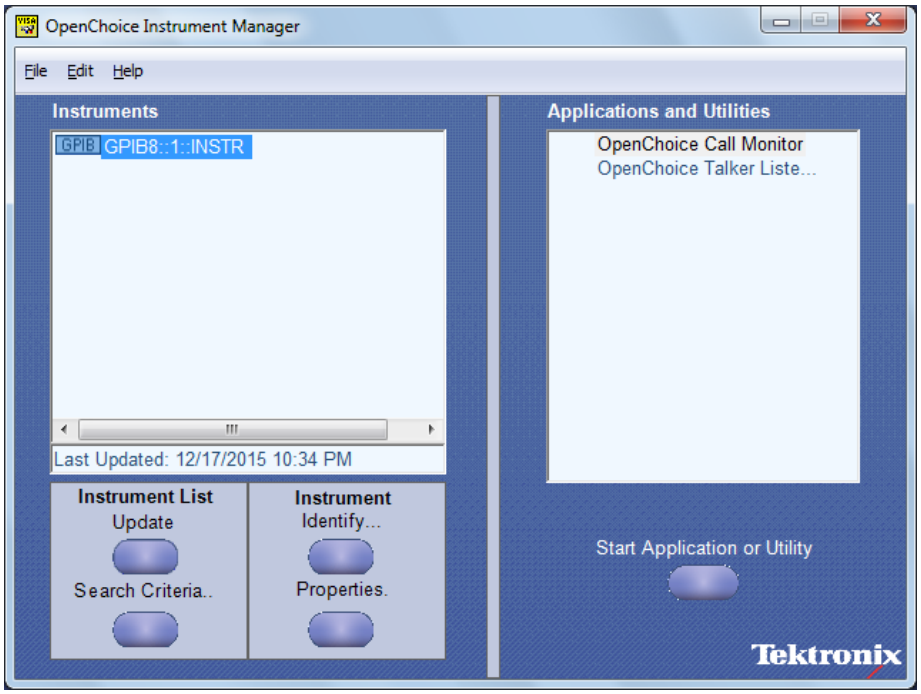


4. Check whether the Rule name is displayed in **Windows Firewall with Advanced Security menu** > **Inbound Rules**.



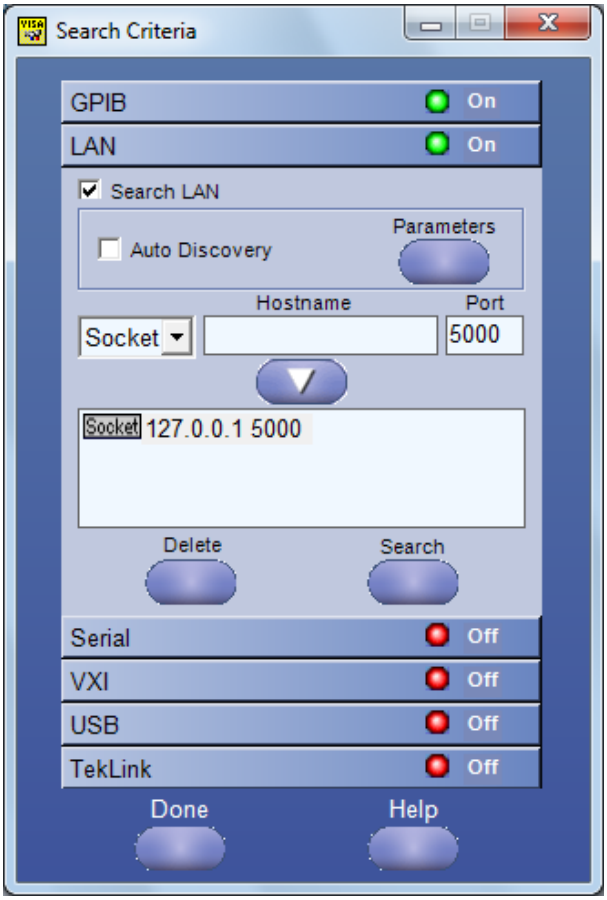
TekVISA configuration

1. Click **Start** > **All Programs** > **TekVISA** > **OpenChoice Instrument Manager**.

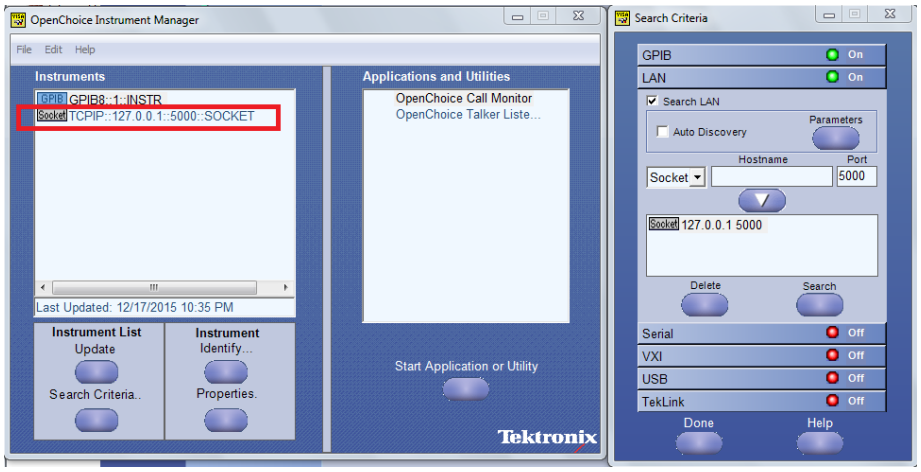


2. Click **Search Criteria**. In Search Criteria menu, click **LAN** to Turn-on. Select **Socket** from the drop-down list, enter the IP address of the TekExpress device in **Hostname** and type **Port** as 5000. Click  to configure the IP address with Port.

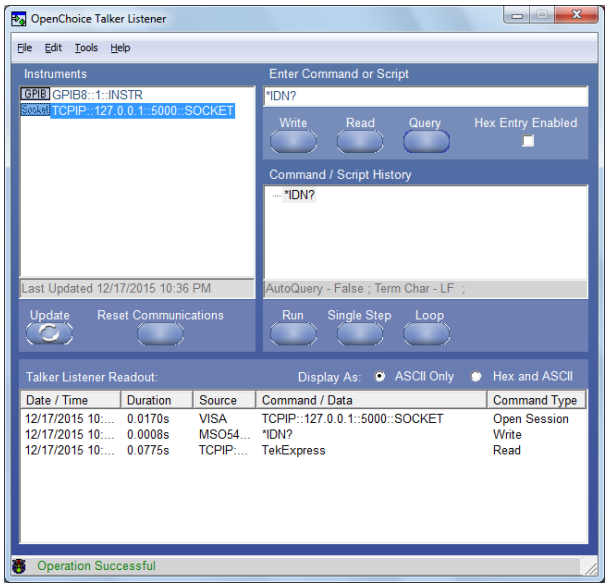
   Enter the Hostname as 127.0.0.1 if the TekVISA and TekExpress application are in the same system, else enter the IP address of the TekExpress application system.



3. Click **Search** to setup the TCPIP connection with the host. Check whether the TCPIP host name is displayed in **OpenChoice Instrument Manager** > **Instruments**.



4. Double-click **OpenChoice Talker Listener** and enter the Command *IDN? in command entry field and click **Query**. Check that the Operation is successful and Talker Listener Readout displays the Command / Data.



TEKEXP:*IDN?

This command queries the active TekExpress application name running on the oscilloscope.

Syntax TEKEXP:*IDN?\n

Inputs NA

Outputs Returns active TekExpress application name running on the oscilloscope.

TEKEXP:*OPC?

This command queries the execution status of the last executed command.

Syntax TEKEXP:*OPC?\n

Inputs NA

Outputs 0 - last command execution is not complete

1 - last command execution is complete

TEKEXP:ACQUIRE_MODE

This command sets the acquire mode as live or pre-recorded.

Syntax TEKEXP:ACQUIRE_MODE {LIVE | PRE-RECORDED}\n

Inputs {LIVE | PRE-RECORDED}

Outputs NA

TEKEXP:ACQUIRE_MODE?

This command queries the acquire mode type.

Syntax TEKEXP:ACQUIRE_MODE?\n

Inputs NA

Outputs {LIVE | PRE-RECORDED}

TEKEXP:EXPORT

This command returns all the bytes of data to the specified file.

Syntax	Outputs
TEKEXP:EXPORT REPORT\n	Returns the report file in bytes
TEKEXP:EXPORT WFM,"<FileName>"\n	Returns the specified waveform file in bytes
TEKEXP:EXPORT IMAGE,"<FileName>"\n	Returns the specified image file in bytes

Inputs FileName - Specifies the file name

TEKEXP:INFO?

This command queries the information about the file(s).

Syntax	Outputs
TEKEXP:INFO? REPORT\n	<ReportFileSize>,"<ReportFileName.mht>"
TEKEXP:INFO? WFM \n	<WfmFile1Size>,"<WfmFileName1.wfm>";<WfmFile2Size>,"<WfmFileName2.wfm>";...
TEKEXP:INFO? IMAGE\n	<Image1FileSize>,"<Image1FileName>";<Image2FileSize>,"<Image2FileName>" ;...

TEKEXP:INSTRUMENT

This command sets the value for the selected instrument type.

Syntax

TEKEXP:INSTRUMENT "<InstrumentType>",<Value>"\n

Inputs

InstrumentType

Value

TIP. *Check Command parameters list section for InstrumentType and Value parameters.*

Outputs

NA

TEKEXP:INSTRUMENT?

This command queries the instrument selected for the specified instrument type.

Syntax

TEKEXP:INSTRUMENT? "<InstrumentType>"\n

Inputs

InstrumentType

TIP. *Check Command parameters list section for InstrumentType parameters.*

Outputs

Returns the instrument selected for the specified instrument type

TEKEXP:LASTERROR?

This command queries the last error string occurred for the current TCP session. If there are no errors since startup, or since the last call to TEKEXP:LASTERROR?\n, this command returns an empty string.

Syntax TEKEXP:LASTERROR?\n

Inputs NA

Outputs <string>

TEKEXP:LIST?

This command queries the list of available device, suite, test, version or instrument.

Syntax	Outputs
TEKEXP:LIST? DEVICE\n	Returns the list of available device(s) as comma separated values.
TEKEXP:LIST? SUITE\n	Returns the list of available suite(s) as comma separated values.
TEKEXP:LIST? TEST\n	Returns the list of available test(s) as comma separated values.
TEKEXP:LIST? VERSION\n	Returns the list of available version(s) as comma separated values.
TEKEXP:LIST? INSTRUMENT,"<InstrumentType>"\n	Returns the list of available instruments' for the given Instrument type as comma separated values.

NOTE. *This command returns the list of items within double quotes ("). Iterate the receive procedure until the list ends with double quotes otherwise the next query commands won't work as expected.*

Inputs InstrumentType

TIP. *Check Command parameters list section for InstrumentType parameters.*

TEKEXP:MODE

This command sets the execution mode as compliance or user defined.

Syntax TEKEXP:MODE {COMPLIANCE | USER-DEFINED}\n

Inputs {COMPLIANCE | USER-DEFINED}

Outputs NA

TEKEXP:MODE?

This command queries the execution mode type.

Syntax TEKEXP:MODE?\n

Inputs NA

Outputs {COMPLIANCE | USER-DEFINED}

TEKEXP:POPUP

This command sets the response to the active popup shown in the application.

Syntax TEKEXP:POPUP “<PopupResponse>”\n

Inputs PopupResponse

Outputs NA

TEKEXP:POPUP?

This command queries the active popup information shown in the application.

Syntax TEKEXP:POPUP?\n

Inputs NA

Outputs Returns the active popup information in the application.

TEKEXP:REPORT

This command generates the report for the current session.

Syntax TEKEXP:REPORT GENERATE\n

Inputs GENERATE

Outputs NA

TEKEXP:REPORT?

This command queries the queried header field value in the report.

Syntax TEKEXP:REPORT? “<HeaderField>”\n

Inputs HeaderField - Specifies to return the measured value for the indicated test.

TIP. *Check **Report** for HeaderField parameters.*

Outputs Returns the queried header field value in the report

TEKEXP:RESULT?

This command queries the result available in report summary/details table.

Syntax	Outputs
TEKEXP:RESULT? "<TestName>"\n	Return Pass/Fail status of the test.
TEKEXP:RESULT? "<TestName>","<ColumnName>"\n	Returns all the row values of the specified column for the test.
TEKEXP:RESULT? "<TestName>","<ColumnName>",<RowNumber>\n	Returns the column value for the specified row number [1]

Inputs

TestName - Specifies the name of the test for which to obtain the test result value.

ColumnName - Specifies the column name for the measurement

RowNumber - Specifies the row number of the measurement

TIP. *Check **Results** panel for TestName, ColumnName, and RowNumber parameters.*

[1] Row number starts from zero.

TEKEXP:SELECT

This command selects the device, suite, version, or test.

Syntax

TEKEXP:SELECT <string1>,<string2>,<string4>\n

TEKEXP:SELECT TEST,<string3>,<string4>\n

Inputs

<string1> = {DEVICE | SUITE | VERSION}

<string2> = {DeviceName | SuiteName | VersionName}

<string3> = {“<TestName>"| ALL| REQUIRED }

<string4> = {TRUE | FALSE}

TIP. *Check Command parameters list section for DeviceName, SuiteName, VersionName, and TestName parameters.*

Outputs

NA

TEKEXP:SELECT?

This command queries the name of the selected device, suite, version, or test.

Syntax

TEKEXP:SELECT? {DEVICE | SUITE | TEST | VERSION}\n

Inputs

{DEVICE | SUITE | TEST | VERSION}

Outputs Returns the name of the selected device, suite, version, or test.

TEKEXP:SETUP

This command sets the value of the current setup.

Syntax	Outputs
TEKEXP:SETUP DEFAULT\n	Restore to default Setup
TEKEXP:SETUP OPEN,"<SessionName>"\n	Open the session
TEKEXP:SETUP SAVE\n	Saves the already existing modified session
TEKEXP:SETUP SAVE,"<SessionName>"\n	Save the session

Inputs SessionName - The name of the session

TEKEXP:STATE

This command sets the execution state of the application.

Syntax TEKEXP:STATE {RUN | STOP | PAUSE | RESUME}\n

Inputs {RUN | STOP | PAUSE | RESUME}

Outputs NA

TEKEXP:STATE?

This command queries the current setup state.

Syntax	Outputs
TEKEXP:STATE?	RUNNING | PAUSED | WAIT | ERROR | READY
TEKEXP:STATE? SETUP	SAVED | NOT_SAVED

TEKEXP:VALUE

This command sets the value of parameters of type General, Acquire, Analyze, or DUTID.

Syntax

TEKEXP:VALUE GENERAL,"<ParameterName>",“<Value>”\n

TEKEXP:VALUE ACQUIRE,“<TestName>","<AcquireType>", "<ParameterName>",“<Value>”\n

TEKEXP:VALUE ANALYZE,“<TestName>","<ParameterName>".“<Value>” \n

TEKEXP:VALUE DUTID,“<Value>”\n

TEKEXP:VALUE VERBOSE,{TRUE | FALSE}\n

TEKEXP:VALUE WFMFILE,<Test_Name>,<Aquire_Type>,<FilesName1$FileName2>\n

Inputs

ParameterName - Specifies the parameter name

TestName - Specifies the test name

AcquireType - Specifies the acquire type

Value - Specifes the value to set

FilesName1$FileName2 - Specifies the waveform file name

TRUE - Pop-ups are enabled

FALSE - Pop-ups are disabled

TIP. *Check Command parameters list section for ParameterName, AcquireType, and Value parameters.*

Outputs NA

TEKEXP:VALUE?

This command queries the value of the parameter for type General, Acquire, Analyze, or DUTID.

Syntax	Outputs
TEKEXP:VALUE? GENERAL,"<ParameterName>"\n	Returns the value of Parameter for type GENERAL
TEKEXP:VALUE? ACQUIRE,“<TestName>", "<AcquireType>","<ParameterName>"\n	Returns the value of Parameter for type ACQUIRE
TEKEXP:VALUE? ANALYZE, “<TestName>","<ParameterName>"\n	Returns the value of Parameter for type ANALYZE
TEKEXP:VALUE? DUTID\n	Returns the DUTID value
TEKEXP:VALUE? WFMFILE,<Test_Name>,<Aquire_Type>\n	Returns the waveform file name
TEKEXP:VALUE? VERBOSE	Returns the verbose mode type

Inputs ParameterName - Specifies the parameter name

TestName - Specifies the test name

AcquireType - Specifies the acquire type

TRUE - Pop-ups are enabled

FALSE - Pop-ups are disabled

TIP. *Check Command parameters list section for ParameterName and AcquireType parameters.*

Outputs Returns the value of Parameter for type GENERAL | ACQUIRE | ANALYZE | DUTID.

Command parameters

This section provides the parameters list for the SCPI commands.

TekExpress M-PHY command parameters

ParameterName and Value for DUT, Test selection, Acquisition, Configuration and Preferences tabs

Specifies the ParameterName and Value for DUT, Test selection, Acquisition, Configuration, and Preferences tabs

Table 23: ParameterName and Value for DUT tab

Parameters	Description
DUT ID	Specifies the value parameters. For DUTID, valid value is: Comment
Acquiremode	Specifies the acquire mode parameter: Acquire live waveforms
Use pre-recorded mode	Specifies the pre-recorded parameter: Use pre-recorded waveform files
View	■ Compliance ■ Advanced
Version	CTS v4.1
Signal Type	■ HS ■ PWM ■ SYS
Device Profile	
DUT Operation Mode	■ Burst ■ Continuous
Amplitude	■ Small ■ Large
Termination	■ Terminated ■ Non Terminated
Probing	■ Single-Ended ■ Differential

Parameters	Description
Gear Selection	■ Gear 1A: 1.248Gbps ■ Gear 1B: 1.457Gbps ■ Gear 2A: 2.496Gbps ■ Gear 2B: 2.912Gbps ■ Gear 3A: 4.992Gbps ■ Gear 3B: 5.830Gbps ■ Gear 4A: 9.984Gbps ■ Gear 4B: 11.660Gbps
System Clock	■ 19.2MHz ■ 26MHz

Table 24: ParameterName and Value for Test Selection tab

Parameters	Description
Test Name	Specifies the test measurement name. Test Names for HS : ■ Test 1.1.1-HS-TX Unit Interval and Frequency Offset ■ Test 1.1.2-HS-TX Common-Mode AC Power Spectral Magnitude Limit ■ Test 1.1.3-HS-TX PREPARE Length ■ Test 1.1.4-HS-TX Common Mode DC Output Voltage Amplitude ■ Test 1.1.5-HS-TX Differential DC Output Voltage Amplitude ■ Test 1.1.6-HS-TX G1 and G2 Differential AC Eye ■ Test 1.1.7-HS-TX G3 and G4 Differential AC Eye ■ Test 1.1.8-HS-TX 20-80% Rise and Fall Times ■ Test 1.1.9-HS-TX Lane-Lane Output Skew ■ Test 1.1.10-HS-TX Slew Rate Control Range ■ Test 1.1.11-HS-TX Slew Rate Monotonicity ■ Test 1.1.12-HS-TX Slew Rate Resolution ■ Test 1.1.13-HS-TX Intra-Lane Output Skew ■ Test 1.1.14-HS-TX Transmitter Pulse Width ■ Test 1.1.15-HS-TX Total Jitter ■ Test 1.1.16-HS-TX Short-Term Total Jitter ■ Test 1.1.17-HS-TX Deterministic Jitter ■ Test 1.1.18-HS-TX Short term Deterministic Jitter ■ BER Eye Contour Test Names for PWM : ■ Test 1.2.1-PWM-TX Transmit Bit Duration ■ Test 1.2.2-PWM-TX Transmit Ratio ■ Test 1.2.3-PWM-TX PREPARE Length ■ Test 1.2.4-PWM-TX Common Mode DC Output Voltage Amplitude ■ Test 1.2.5-PWM-TX Differential DC Output Voltage Amplitude ■ Test 1.2.7-PWM-TX Maximum Differential AC Output Voltage Amplitude ■ Test 1.2.8-PWM-TX 2080 Rise and Fall Times ■ Test 1.2.9-PWM-TX Lane-Lane Output Skew ■ Test 1.2.10-PWM-TX Transmit Bit Duration Tolerance

Parameters	Description
	■ Test 1.2.11-PWM-TX G0 Minor Duration Test Names for SYS : ■ Test 1.3.1-SYS-TX Unit Interval and Frequency Offset ■ Test 1.3.2-SYS-TX Ref Clock frequency ■ Test 1.3.3-SYS-TX PREPARE Length ■ Test 1.3.4-SYS-TX Common Mode DC Output Voltage Amplitude ■ Test 1.3.5-SYS-TX Differential DC Output Voltage Amplitude ■ Test 1.3.7-SYS-TX Maximum Diffrential AC Output Voltage Amplitude ■ Test 1.3.8-SYS-TX 20-80% Rise and Fall Times ■ Test 1.3.9-SYS-TX Lane-Lane Output Skew

Table 25: ParameterName and Value for Acquisition tab

Parameters	Description
Acquire Only	TRUE or FALSE
Acquisition and Save Options	Saves the acquisitions and waveforms ■ Save All Waveforms Before Analysis ■ Analyze immediately, No Waveforms Saved ■ Save and Analyze Acquisition in Sequence
Show Acquire Parameters	TRUE or FALSE
Signal Validation	■ Prompt me if signal fails ■ Skip test if signal fails ■ Use signal as is - Don't check

Table 26: ParameterName and Value for Preferences tab

Parameters	Description
On Test Failure, stop and notify me of the failure	TRUE or FALSE
Email Settings	Recipient e-mail Address Sender's Address

Table 27: ParameterName and Value for Analyze

ParameterName	Value
HS Analyze Parameters	
Ref Levels Autoset Basetop Method	■ MINMAX ■ FULLHISTOGRAM ■ EYEHISTOGRAM ■ AUTO
Ref levels	■ Absolute ■ Percentage
High level	■ -10 to 10(Absolute) ■ 51 to 90(Percentage)
Mid level	■ -10 to 10(Absolute) ■ 20 to 80(Percentage)
Low level	■ -10 to 10(Absolute) ■ 10 to 49(Percentage)
Hysteresis	■ -2 to 2(Absolute) ■ 2 to 20(Percentage)
BER-1E-6	■ Included ■ Excluded
BER-1E-9	■ Included ■ Excluded
BER-1E-10	■ Included ■ Excluded
BER-1E-12	■ Included ■ Excluded
BER-1E-15	■ Included ■ Excluded
BER-1E-18	■ Included ■ Excluded
HS Prepare Length Gear1A	0-15

ParameterName	Value
HS Prepare Length Gear1B	0-15
HS Prepare Length Gear2A	0-15
HS Prepare Length Gear1B	0-15
HS Prepare Length Gear3A	0-15
HS Prepare Length Gear3B	0-15
HS Prepare Length Gear4A	0-15
HS Prepare Length Gear4B	0-15
Clock recovery method	■ Constant Clock-Mean ■ PLL-Custom BW
PLL Model Type	1-2
Damping (m)	500-2000
Nominal data rate	■ True ■ False
Known data patten	■ True ■ False
Patten file path	INSTALL FOLDER\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Pattern Files \SomePattern.txt
Loop bandwidth (MHz)	0.1-10
RT Gear1A LA Mask file path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear1A\1.1.6_VDIFF_AC_LA_RT_G1A.msk
RT Gear1A SA Mask file path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear1A\1.1.6_VDIFF_AC_SA_RT_G1A.msk
NT Gear1A LA Mask file path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear1A\1.1.6_VDIFF_AC_LA_NT_G1A.msk
NT Gear1A SA Mask file path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear1A\1.1.6_VDIFF_AC_SA_NT_G1A.msk
RT Gear1B LA Mask file path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear1B\1.1.6_VDIFF_AC_LA_RT_G1B.msk

ParameterName	Value
RT Gear1B SA Mask file path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear1B\1.1.6_VDIFF_AC_SA_RT_G1B.msk
NT Gear1B LA Mask file path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear1B\1.1.6_VDIFF_AC_LA_NT_G1B.msk
NT Gear1B SA Mask file path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear1B\1.1.6_VDIFF_AC_SA_NT_G1B.msk
RT Gear2A LA Mask file path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear2A\1.1.6_VDIFF_AC_LA_RT_G2A.msk
RT Gear2A SA Mask file path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear2A\1.1.6_VDIFF_AC_SA_RT_G2A.msk
NT Gear2A LA Mask file path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear2A\1.1.6_VDIFF_AC_LA_NT_G2A.msk
NT Gear2A SA Mask file path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear2A\1.1.6_VDIFF_AC_SA_NT_G2A.msk
RT Gear2B LA Mask file path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear2B\1.1.6_VDIFF_AC_LA_RT_G2B.msk
RT Gear2B SA Mask file path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear2B\1.1.6_VDIFF_AC_SA_RT_G2B.msk
NT Gear2B LA Mask file path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear2B\1.1.6_VDIFF_AC_LA_NT_G2B.msk
NT Gear2B SA Mask file path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear2B\1.1.6_VDIFF_AC_SA_NT_G2B.msk
RT Gear3A LA Mask file path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear3A\1.1.6_VDIFF_AC_LA_RT_G3A.msk

ParameterName	Value
RT Gear3A SA Mask file path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear3A\1.1.6_VDIFF_AC_SA_RT_G3A.msk
NT Gear3A LA Mask file path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear3A\1.1.6_VDIFF_AC_LA_NT_G3A.msk
NT Gear3A SA Mask file path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear3A\1.1.6_VDIFF_AC_SA_NT_G3A.msk
RT Gear3B LA Mask file path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear3B\1.1.6_VDIFF_AC_LA_RT_G3B.msk
RT Gear3B SA Mask file path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear3B\1.1.6_VDIFF_AC_SA_RT_G3B.msk
NT Gear3B LA Mask file path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear3B\1.1.6_VDIFF_AC_LA_NT_G3B.msk
NT Gear3B SA Mask file path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear3B\1.1.6_VDIFF_AC_SA_NT_G3B.msk
RT Gear4A LA Mask file path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear4A\1.1.6_VDIFF_AC_LA_RT_G4A.msk
RT Gear4A SA Mask file path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear4A\1.1.6_VDIFF_AC_SA_RT_G4A.msk
NT Gear4A LA Mask file path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear4A\1.1.6_VDIFF_AC_LA_NT_G4A.msk
NT Gear4A SA Mask file path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear4A\1.1.6_VDIFF_AC_SA_NT_G4A.msk
RT Gear4B LA Mask file path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear4B\1.1.6_VDIFF_AC_LA_RT_G4B.msk

ParameterName	Value
RT Gear4B SA Mask file path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear4B\1.1.6_VDIFF_AC_SA_RT_G4B.msk
NT Gear4B LA Mask file path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear4B\1.1.6_VDIFF_AC_LA_NT_G4B.msk
NT Gear4B SA Mask file path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear4B\1.1.6_VDIFF_AC_SA_NT_G4B.msk
RT Gear1A LA Mask file path 19.2MHz	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear1A\1.1.6_VDIFF_AC_LA_RT_G1A.msk
RT Gear1A SA Mask file path 19.2MHz	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear1A\1.1.6_VDIFF_AC_SA_RT_G1A.msk
NT Gear1A LA Mask file path 19.2MHz	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear1A\1.1.6_VDIFF_AC_LA_NT_G1A.msk
NT Gear1A SA Mask file path 19.2MHz	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear1A\1.1.6_VDIFF_AC_SA_NT_G1A.msk
RT Gear1B LA Mask file path 19.2MHz	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear1B\1.1.6_VDIFF_AC_LA_RT_G1B.msk
RT Gear1B SA Mask file path 19.2MHz	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear1B\1.1.6_VDIFF_AC_SA_RT_G1B.msk
NT Gear1B LA Mask file path 19.2MHz	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear1B\1.1.6_VDIFF_AC_LA_NT_G1B.msk
NT Gear1B SA Mask file path 19.2MHz	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear1B\1.1.6_VDIFF_AC_SA_NT_G1B.msk
RT Gear2A LA Mask file path 19.2MHz	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear2A\1.1.6_VDIFF_AC_LA_RT_G2A.msk

ParameterName	Value
RT Gear2A SA Mask file path 19.2MHz	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear1B\1.1.6_VDIFF_AC_SA_RT_G2A.msk
NT Gear2A LA Mask file path 19.2MHz	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear2A\1.1.6_VDIFF_AC_LA_NT_G2A.msk
NT Gear2A SA Mask file path 19.2MHz	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear2A\1.1.6_VDIFF_AC_SA_NT_G2A.msk
RT Gear2B LA Mask file path 19.2MHz	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear2B\1.1.6_VDIFF_AC_LA_RT_G2B.msk
RT Gear2B SA Mask file path 19.2MHz	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear2B\1.1.6_VDIFF_AC_SA_RT_G2B.msk
NT Gear2B LA Mask file path 19.2MHz	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear2B\1.1.6_VDIFF_AC_LA_NT_G2B.msk
NT Gear2B SA Mask file path 19.2MHz	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear2B\1.1.6_VDIFF_AC_SA_NT_G2B.msk
RT Gear3A LA Mask file path 19.2MHz	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear3A\1.1.6_VDIFF_AC_LA_RT_G3A.msk
RT Gear3A LA Mask file path 19.2MHz	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear3A\1.1.6_VDIFF_AC_LA_RT_G3A.msk
NT Gear3A LA Mask file path 19.2MHz	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear3A\1.1.6_VDIFF_AC_LA_NT_G3A.msk
NT Gear3A SA Mask file path 19.2MHz	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear3A\1.1.6_VDIFF_AC_SA_NT_G3A.msk
RT Gear3B LA Mask file path 19.2MHz	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear3B\1.1.6_VDIFF_AC_LA_RT_G3B.msk

ParameterName	Value
RT Gear3B SA Mask file path 19.2MHz	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear3B\1.1.6_VDIFF_AC_SA_RT_G3B.msk
NT Gear3B LA Mask file path 19.2MHz	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear3B\1.1.6_VDIFF_AC_LA_NT_G3B.msk
NT Gear3B SA Mask file path 19.2MHz	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear3B\1.1.6_VDIFF_AC_SA_NT_G3B.msk
RT Gear4A LA Mask file path 19.2MHz	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear4A\1.1.6_VDIFF_AC_LA_RT_G4A.msk
RT Gear4A SA Mask file path 19.2MHz	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear4A\1.1.6_VDIFF_AC_SA_RT_G4A.msk
NT Gear4A LA Mask file path 19.2MHz	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear4A\1.1.6_VDIFF_AC_LA_NT_G4A.msk
NT Gear4A SA Mask file path 19.2MHz	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear4A\1.1.6_VDIFF_AC_SA_NT_G4A.msk
RT Gear4B LA Mask file path 19.2MHz	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear4B\1.1.6_VDIFF_AC_LA_RT_G4B.msk
RT Gear4B SA Mask file path 19.2MHz	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear4B\1.1.6_VDIFF_AC_SA_RT_G4B.msk
NT Gear4B LA Mask file path 19.2MHz	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear4B\1.1.6_VDIFF_AC_LA_NT_G4B.msk
NT Gear4B SA Mask file path 19.2MHz	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS\Mask Files \Gear4B\1.1.6_VDIFF_AC_SA_NT_G4B.msk
Save Waveform	■ True ■ False

ParameterName	Value
Enable Eye Rendering	■ True ■ False
Gear3A Short(CH1)	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Lib\Filter Files \Gear3A\ShortChannel_G3A.flt
Gear3A Long(CH2)	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Lib\Filter Files \Gear3A\LongChannel_G3A.flt
Gear3B Short(CH1)	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Lib\Filter Files \Gear3B\ShortChannel_G3B.flt
Gear3B Long(CH2)	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Lib\Filter Files \Gear3B\LongChannel_G3B.flt
Gear4A De-embed Filter(Continuous)	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Lib\SDLA \DeEmbed\De_Embed.s4p
Gear4B De-embed Filter(Continuous)	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Lib\SDLA \DeEmbed\De_Embed.s4p
Gear4A De-embed Filter(Burst)	
Gear4B De-embed Filter(Burst)	
Gear4AB Short	■ Included ■ Excluded
Gear4AB Long	■ Included ■ Excluded
Include Gear4AB Package	■ Included ■ Excluded
Include Gear4A De embed Filter	■ Included ■ Excluded
Include Gear4B De embed Filter	■ Included ■ Excluded
Manual Setting Mode	■ UI Selection ■ File Selection
SDLA Mode	■ Auto ■ Manual

ParameterName	Value
Adc	■ 2 ■ 1.33 ■ 1.0 ■ 0.8 ■ 0.66
fp1	■ 0.401(GHz) ■ 0.6(GHz) ■ 1.75(GHz) ■ 0.8(GHz) ■ 1.6(GHz) ■ 2.3(GHz) ■ 1.0(GHz) ■ 2.6(GHz) ■ 2.1(GHz)
fp2	10(GHz)
fz	■ 0.4(GHz) ■ 1.8(GHz) ■ 1.2(GHz) ■ 1.05(GHz) ■ 0.7(GHz)
De-Emphasis 6.0dB	■ Included ■ Excluded
De-Emphasis 0dB	■ Included ■ Excluded
De-Emphasis 3.5dB	■ Included ■ Excluded
SDLA Settings File Path	C:\Program Files\Tektronix\TekExpress \TekExpress MIPI_MPHY_TX\Compliance Suites\MIPI\M-PHY\Transmitter\HS \SDLAEqualizerSettings.csv
From Edge value	■ RISE ■ FALL ■ EITHER

ParameterName	Value
To Edge value	■ SAMEAS ■ OPPOSITEAS
Gear1AHigh pass filter (MHz)	1-10
Gear1AHigh pass filter (F1) spec	■ NONE ■ FIRST ■ SECOND ■ THIRD
Gear1ALow pass filter (MHz)	620-630
Gear1AFilter ramp time (ms)	1-10
Gear1AFilter blanking time (ms)	1-10
Gear1BHigh pass filter (MHz)	1-10
Gear1BHigh pass filter (F1) spec	■ NONE ■ FIRST ■ SECOND ■ THIRD
Gear1BLow pass filter (F2) spec	■ NONE ■ FIRST ■ SECOND ■ THIRD
Gear1BLow pass filter (MHz)	725-735
Gear1BFilter ramp time (ms)	1-10
Gear1BFilter blanking time (ms)	1-10
Gear2AHigh pass filter (MHz)	1-10
Gear2AHigh pass filter (F1) spec	■ NONE ■ FIRST ■ SECOND ■ THIRD
Gear2ALow pass filter (F2) spec	■ NONE ■ FIRST ■ SECOND ■ THIRD
Gear2ALow pass filter (MHz)	1245-1255
Gear2AFilter ramp time (ms)	1-10

ParameterName	Value
Gear2AFilter blanking time (ms)	1-10
Gear2BHigh pass filter (MHz)	1-10
Gear2BHigh pass filter (F1) spec	■ NONE ■ FIRST ■ SECOND ■ THIRD
Gear2BLow pass filter (F2) spec	■ NONE ■ FIRST ■ SECOND ■ THIRD
Gear2BLow pass filter (MHz)	1455-1465
Gear2BFilter ramp time (ms)	1-10
Gear2BFilter blanking time (ms)	1-10
Gear3AHigh pass filter (MHz)	1-10
Gear3AHigh pass filter (F1) spec	■ NONE ■ FIRST ■ SECOND ■ THIRD
Gear3ALow pass filter (F2) spec	■ NONE ■ FIRST ■ SECOND ■ THIRD
Gear3ALow pass filter (MHz)	2490-2500
Gear3AFilter ramp time (ms)	1-10
Gear3AFilter blanking time (ms)	1-10
Gear3BHigh pass filter (MHz)	1-10
Gear3BHigh pass filter (F1) spec	■ NONE ■ FIRST ■ SECOND ■ THIRD

ParameterName	Value
Gear3BLow pass filter (F2) spec	■ NONE ■ FIRST ■ SECOND ■ THIRD
Gear3BLow pass filter (MHz)	2910-2920
Gear3BFilter ramp time (ms)	1-10
Gear3BFilter blanking time (ms)	1-10
Gear4AHigh pass filter (MHz)	1-10
Gear4AHigh pass filter (F1) spec	■ NONE ■ FIRST ■ SECOND ■ THIRD
Gear4ALow pass filter (F2) spec	■ NONE ■ FIRST ■ SECOND ■ THIRD
Gear4ALow pass filter (MHz)	2490-2500
Gear4AFilter ramp time (ms)	1-10
Gear4AFilter blanking time (ms)	1-10
Gear4BHigh pass filter (MHz)	1-10
Gear4BHigh pass filter (F1) spec	■ NONE ■ FIRST ■ SECOND ■ THIRD
Gear4BLow pass filter (F2) spec	■ NONE ■ FIRST ■ SECOND ■ THIRD
Gear4BLow pass filter (MHz)	2910-2920
Gear4BFilter ramp time (ms)	1-10
Gear4BFilter blanking time (ms)	1-10
PWM Analyze Parameters	
LS Prepare Length Gear0	0-15
LS Prepare Length Gear1	0-15

ParameterName	Value
LS Prepare Length Gear2	0-15
LS Prepare Length Gear3	0-15
LS Prepare Length Gear4	0-15
LS Prepare Length Gear5	0-15
LS Prepare Length Gear6	0-15
LS Prepare Length Gear7	0-15
SYS Analyze Parameters	
High pass filter (MHz)	1-10
High pass filter (F1) spec	■ NONE ■ FIRST ■ SECOND ■ THIRD
Low pass filter (F2) spec	■ NONE ■ FIRST ■ SECOND ■ THIRD
Low pass filter (MHz)	1-10
Filter ramp time (ms)	0-10
Filter blanking time (ms)	0-10
Ref Levels Autoset Basetop Method	■ MINMAX ■ FULLHISTOGRAM ■ EYEHISTOGRAM ■ AUTO
Ref levels	■ Absolute ■ Percentage
High level	■ -10 to 10(Absolute) ■ 51 to 90(Percentage)
Mid level	■ -10 to 10(Absolute) ■ 20 to 80(Percentage)
Low level	■ -10 to 10(Absolute) ■ 10 to 49(Percentage)

Table 28: ParameterName and Value for General

Parameters	Description

Report Update Mode	■ Generate new report
	■ Append with previous run session
	  ■ Include header in appended reports
	■ Replace current test results
	  ■ in previous run, current session
	  ■ in any run, any session

Report name	X:\M-PHY Tx\Reports\DUT001.mht
Save as type	■ Web Archive (*.mht;*.mhtml) ■ PDF (*.pdf;)
Auto increment report name if duplicate	TRUE or FALSE
Create report automatically at the end of the run	TRUE or FALSE
Include pass/fail info in details table	TRUE or FALSE
Include detailed results	TRUE or FALSE
Include plot images	TRUE or FALSE
Include setup configuration	TRUE or FALSE
Include complete application configuration	TRUE or FALSE
Include user comments	TRUE or FALSE
View report after generating	TRUE or FALSE

Table 29: ParameterName and Value for HS General Parameters

Parameters	Description
Appview mode	■ Compliance ■ Advanced
Report Generation Template Path	INSTALL FOLDER\Report Generator \TekExpress_Template_GroupByTestName.xsl
Report Settings Column Template	INSTALL FOLDER\Report Generator\MPHYTX-TekExpress_ReportColumnTemplate_MultiLane.xml
Compliance Mode	TRUE or FALSE
HS System Clock	■ 19.2MHz ■ 26MHz
Probing Type	■ Differential ■ Single-ended

Parameters	Description
DUT Type	■ Type1 ■ Type2
DUT Tracing	■ Included ■ Excluded
RF Switch	■ Included ■ Excluded
Tek Fixture	■ Included ■ Excluded
Acquire Only	TRUE or FALSE
DUT Tracing Filter Path	Session file path
RF Switch Filter Path	Session file path
Tek Fixture Filter Path	Session file path
Lane0	■ Included ■ Excluded
Lane1	■ Included ■ Excluded
Lane2	■ Included ■ Excluded
Lane3	■ Included ■ Excluded
Lane4	■ Included ■ Excluded
Lane5	■ Included ■ Excluded
Lane6	■ Included ■ Excluded
Lane7	■ Included ■ Excluded

Parameters	Description
DUT Operation Mode	■ Continuous ■ Burst
CRPAT	■ Included ■ Excluded
Signaling Mode	■ HS ■ PWM ■ SYS
Termination	■ Terminated ■ Unterminated ■ Both Supported
Acquire-Analyze Sequence	■ Save All Waveforms Before Analysis ■ Analyze Immediately - No Waveforms Saved ■ Save and Analyze Acquisitions In Sequence
Gear1	■ Included ■ Excluded
HS Gear1A	■ Included ■ Excluded
HS Gear2A	■ Included ■ Excluded
HS Gear3A	■ Included ■ Excluded
HS Gear1B	■ Included ■ Excluded
HS Gear2B	■ Included ■ Excluded
HS Gear3B	■ Included ■ Excluded
HS Gear4A	■ Included ■ Excluded

Parameters	Description
HS Gear4B	■ Included ■ Excluded
Amplitude	■ Small Amplitude ■ Large Amplitude ■ Both Supported
Number of slew rates	1-8
DUT control	■ Manual ■ Custom
Signal Validation	■ Prompt me if signal fails ■ Skip test if signal fails ■ Use signal as is - Don't Check
Email when test setup change is needed	TRUE or FALSE
On Failure Stop and Notify	TRUE or FALSE
Lane0 Connected to Lane0:Differential	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane0 Connected to:Lane0+: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane0 Connected to:Lane0 Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane1 Connected to:Lane1:Differential	■ CH1 ■ CH2 ■ CH3 ■ CH4

Parameters	Description
Lane1 Connected to Lane1+ Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane1 Connected to Lane1-: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane2 Connected to:Lane2:Differential	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane2 Connected to:Lane2+: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane2 Connected to:Lane2-: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane3 Connected to Lane3:Differential	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane3 Connected to:Lane3+: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4

Parameters	Description
Lane3 Connected to:Lane3-Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane4 Connected to:Lane4:Differential	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane4 Connected to: Lane4+: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane4 Connected to:Lane4-: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane5 Connected to:Lane5:Differential	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane5 Connected to: Lane5+ Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane5 Connected to: Lane5 Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4

Parameters	Description
Lane6 Connected to: Lane6:Differential	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane6 Connected to:Lane6+: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane6 Connected to:Lane6-: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane7 Connected to:Lane7:Differential	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane7 Connected to:Lane7+ Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane 7 Connected to: Lane 7-: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Number of retries for instrument IO errors	0-5
Time between retries (seconds)	5-60
Auto increment report name if duplicate	TRUE or FALSE
Include Pass/Fail Results Summary	TRUE or FALSE
Report Settings Include Header In Appended Reports	TRUE or FALSE

Parameters	Description
Link Widths	■ 1 Lane ■ 2 Lanes ■ 4 Lanes ■ 8 Lanes
Vterm Source	■ Auto ■ Manual
Vterm Source (Vt)	-4 to 4
Acquisition Save Options	■ Save All Waveforms Before Analysis ■ Analyze Immediately - No Waveforms Saved ■ Save and Analyze Acquisitions In Sequence
PreRecorded Mode	TRUE or FALSE
View Probes	TRUE or FALSE
Gear1 Pos Mask Fle Path	INSTALL FOLDER\Lib\Filter Files\P7520A Gear1\SE Mode \Gear1_ch1.flt
Gear1 Neg Mask Fle Path	INSTALL FOLDER\Lib\Filter Files\P7520A Gear1\SE Mode \Gear1_ch2.flt
Gear2 Pos Mask File Path	INSTALL FOLDER\Lib\Filter Files\P7520A Gear2\SE Mode \Gear2_ch1.flt
Gear2 Neg Mask File Path	INSTALL FOLDER\Lib\Filter Files\P7520A Gear2\SE Mode \Gear2_ch2.flt
Gear3 Pos Mask File Path	INSTALL FOLDER\Lib\Filter Files\P7520A Gear3\SE Mode \Gear3_ch1.flt
Gear3 Neg Mask File Path	INSTALL FOLDER\Lib\Filter Files\P7520A Gear3\SE Mode \Gear3_ch2.flt3
Gear1 Diff Mask File Path	INSTALL FOLDER\Lib\Filter Files\P7520A Gear1\Diff Mode \Gear1_diff.flt
Gear2 Diff Mask Fle Path	INSTALL FOLDER\Lib\Filter Files\P7520A Gear2\Diff Mode \Gear2_diff.flt
Gear3 Diff Mask File Path.	INSTALL FOLDER\Lib\Filter Files\P7520A Gear3\Diff Mode \Gear3_diff.flt

Table 30: ParameterName and Value for PWM General Parameters

Parameters	Description
Probing Type	■ Differential ■ Single-ended
DUT Operation Mode	■ Continuous ■ Burst

Parameters	Description
Amplitude	■ Small Amplitude ■ Large Amplitude ■ Both Supported
Termination	■ Terminated ■ Unterminated ■ Both Supported
Acquire Only	TRUE or FALSE
DUT Tracing	■ Included ■ Excluded
RF Switch	■ Included ■ Excluded
Tek Fixture	■ Included ■ Excluded
DUT Tracing Filter Path	
RF Switch Filter Path	
Tek Fixture Filter Path	
Link Widths	■ 1 Lane ■ 2 Lanes ■ 4 Lanes ■ 8 Lanes
Lane0	■ Included ■ Excluded
Lane1	■ Included ■ Excluded
Lane2	■ Included ■ Excluded
Lane3	■ Included ■ Excluded
Lane4	■ Included ■ Excluded

Parameters	Description
Lane5	■ Included ■ Excluded
Lane6	■ Included ■ Excluded
Lane7	■ Included ■ Excluded
CRPAT	■ Included ■ Excluded
Gear0	■ Included ■ Excluded
Gear1	■ Included ■ Excluded
Gear2	■ Included ■ Excluded
Gear3	■ Included ■ Excluded
Gear4	■ Included ■ Excluded
Gear5	■ Included ■ Excluded
Gear6	■ Included ■ Excluded
Gear7	■ Included ■ Excluded
DUT control	■ Manual ■ Custom

Parameters	Description
Acquisition Save Options	■ Save All Waveforms Before Analysis ■ Analyze Immediately - No Waveforms Saved ■ Save and Analyze Acquisitions In Sequence
Signal Validation	■ Prompt me if signal fails ■ Skip test if signal fails ■ Use signal as is - Don't Check
Email when test setup change is needed	TRUE or FALSE
On Failure Stop and Notify	TRUE or FALSE
Lane0 Connected to:Lane0:Differential	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane0 Connected to:Lane0+: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane0 Connected to:Lane0-: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane1 Connected to:Lane1:Differential	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane1 Connected to:Lane1+: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4

Parameters	Description
Lane1 Connected to:Lane1-: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane2 Connected to:Lane2:Differential	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane2 Connected to:Lane2+: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane2 Connected to:Lane2-: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane3 Connected to:Lane3:Differential	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane3 Connected to:Lane3+: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane3 Connected to:Lane3-: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4

Parameters	Description
Lane4 Connected to:Lane4:Differential	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane4 Connected to:Lane4+: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane4 Connected to:Lane4-: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane5 Connected to:Lane5:Differential	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane5 Connected to:Lane5+: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane5 Connected to:Lane5-: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane6 Connected to:Lane6:Differential	■ CH1 ■ CH2 ■ CH3 ■ CH4

Parameters	Description
Lane6 Connected to:Lane6+: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane6 Connected to:Lane6-: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane7 Connected to:Lane7:Differential	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane7 Connected to:Lane7+: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane7 Connected to:Lane7-: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Vterm Source	■ Auto ■ Manual
Vterm Source (Vt)	-4 to 4
Number of retries for signal acquisition	1-5
Auto increment report name if duplicate	TRUE or FALSE
Include Pass/Fail Results Summary	TRUE or FALSE
Report Settings: Include Header In Appended Reports	TRUE or FALSE

Table 31: ParameterName and Value for SYS General Parameters

Parameters	Description
Probing Type	■ Differential ■ Single-ended
DUT Operation Mode	■ Continuous ■ Burst
Amplitude	■ Small Amplitude ■ Large Amplitude ■ Both Supported
Termination	■ Terminated ■ Unterminated ■ Both Supported
DUT Tracing	■ Included ■ Excluded
RF Switch	■ Included ■ Excluded
Tek Fixture	■ Included ■ Excluded
DUT Tracing Filter Path	
RF Switch Filter Path	
Tek Fixture Filter Path	
Link Widths	■ 1 Lane ■ 2 Lanes ■ 4 Lanes ■ 8 Lanes
Lane0	■ Included ■ Excluded
Lane1	■ Included ■ Excluded
Lane2	■ Included ■ Excluded

Parameters	Description
Lane3	■ Included ■ Excluded
Lane4	■ Included ■ Excluded
Lane5	■ Included ■ Excluded
Lane6	■ Included ■ Excluded
Lane7	■ Included ■ Excluded
Clock Lane	■ CH1 ■ CH2 ■ CH3 ■ CH4
Clock Source	■ Internal ■ External
CRPAT	■ Included ■ Excluded
Acquisition Save Options	■ Save All Waveforms Before Analysis ■ Analyze Immediately - No Waveforms Saved ■ Save and Analyze Acquisitions In Sequence
SYS 26MHz	■ Included ■ Excluded
SYS 38.4MHz	■ Included ■ Excluded
SYS 52MHz	■ Included ■ Excluded
Email when test setup change is needed	TRUE or FALSE

Parameters	Description
On Failure Stop and Notify	TRUE or FALSE
Lane0 Connected to:Lane0:Differential	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane0 Connected to:Lane0+: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane0 Connected to:Lane0-: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane1 Connected to:Lane1:Differential	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane1 Connected to:Lane1+: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane1 Connected to:Lane1-: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane2 Connected to:Lane2:Differential	■ CH1 ■ CH2 ■ CH3 ■ CH4

Parameters	Description
Lane2 Connected to:Lane2+: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane2 Connected to:Lane2-: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane3 Connected to:Lane3:Differential	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane3 Connected to:Lane3+: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane3 Connected to:Lane3-: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane4 Connected to:Lane4:Differential	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane4 Connected to:Lane4+: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4

Parameters	Description
Lane4 Connected to:Lane4-: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane5 Connected to:Lane5:Differential	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane5 Connected to:Lane5+: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane5 Connected to:Lane5-: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane6 Connected to:Lane6:Differential	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane6 Connected to:Lane6+: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane6 Connected to:Lane6-: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4

Parameters	Description
Lane7 Connected to:Lane7:Differential	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane7 Connected to:Lane7+: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Lane7 Connected to:Lane7-: Single Ended	■ CH1 ■ CH2 ■ CH3 ■ CH4
Vterm Source (Vt)	-4 to 4
Number of retries for signal acquisition	1-5
Auto increment report name if duplicate	TRUE or FALSE
Include Pass/Fail Results Summary	TRUE or FALSE
Report Settings: Include Header In Appended Reports	TRUE or FALSE

Table 32: ParameterName and Value for Acquire

Test Name / Acquire Type	Parameter Name	Values
HS Acquire Parameters		
Test 1.1.1-HS-TX Unit Interval and Frequency Offset **Acquire Type** : CRPAT Test 1.1.2-HS-TX Common-Mode AC Power Spectral Magnitude Limit **Acquire Type** : CRPAT PSD-Single-ended Test 1.1.3-HS-TX PREPARE Length **Acquire Type** : CRPAT	Record Length	■ 5 ■ 30 ■ 50 ■ 60 ■ 80 ■ 100

Test Name / Acquire Type	Parameter Name	Values
Test 1.1.4-HS-TX Common Mode DC Output Voltage Amplitude **Acquire Type** : CRPAT Test 1.1.5-HS-TX Differential DC Output Voltage Amplitude **Acquire Type** : CRPAT Test 1.1.6-HS-TX G1 and G2 Differential AC Eye **Acquire Type** : CRPAT-3M Test 1.1.7-HS-TX G3 and G4 Differential AC Eye **Acquire Type** : CRPAT Test 1.1.8-HS-TX 20-80% Rise and Fall Times **Acquire Type** : CRPAT Test 1.1.10-HS-TX Slew Rate Control Range **Acquire Type** : CRPAT Slew Rate Test 1.1.11-HS-TX Slew Rate Monotonicity **Acquire Type** : CRPAT Slew Rate Test 1.1.12-HS-TX Slew Rate Resolution **Acquire Type** : CRPAT Slew Rate Test 1.1.13-HS-TX Intra-Lane Output Skew **Acquire Type** : CRPAT Single-ended Test 1.1.14-HS-TX Transmitter Pulse Width	Record LengthGear4	■ 5 ■ 10 ■ 20 ■ 30 ■ 40 ■ 50 ■ 60 ■ 80 ■ 100
	Horizontal scale (us/div)	1-200
	Horizontal scale for Gear4A/B(us/div)	1-200
	Resolution (ps/pt)	10-100
	Sample rate Gear1A (GS/s)	■ 12.5 ■ 25 ■ 50 ■ 100
	Sample rate Gear1B (GS/s)	■ 12.5 ■ 25 ■ 50 ■ 101
	Sample rate Gear2A (GS/s)	■ 12.5 ■ 25 ■ 50 ■ 102
	Sample rate Gear2B (GS/s)	■ 12.5 ■ 25 ■ 50 ■ 103

Test Name / Acquire Type	Parameter Name	Values
Acquire Type : CRPAT Test 1.1.15-HS-TX Total Jitter **Acquire Type** : CRPAT Test 1.1.16-HS-TX Short-Term Total Jitter **Acquire Type** : CRPAT Test 1.1.17-HS-TX Deterministic Jitter **Acquire Type** : CRPAT Test 1.1.18-HS-TX Short term Deterministic Jitter **Acquire Type** : CRPAT Test 1.1.9-HS-TX Lane-to-Lane Skew **Acquire Type** : CRPAT-Lane-Lane BER Eye Contour **Acquire Type** : CRPAT-3M	Sample rate Gear3A (GS/s)	■ 12.5 ■ 25 ■ 50 ■ 104
	Sample rate Gear3B (GS/s)	■ 12.5 ■ 25 ■ 50 ■ 105
	Sample rate Gear4A (GS/s)	■ 12.5 ■ 25 ■ 50 ■ 106
	Sample rate Gear4B (GS/s)	■ 12.5 ■ 25 ■ 50 ■ 107
	Trigger level (V)	0-100
	Edge trigger slope	■ RISE ■ FALL ■ EITHER
	Edge trigger coupling	■ DC ■ AC ■ HF REJECT ■ LF REJECT ■ NOISE REJ
	Gear1A/Gear1B Width Trigger Polarity	■ Positive ■ Negative
	Gear2A/Gear2B Width Trigger Polarity	■ Positive ■ Negative
	Gear3A/Gear3B Width Trigger Polarity	■ Positive ■ Negative

Test Name / Acquire Type	Parameter Name	Values
	Gear4A/Gear4B Width Trigger Polarity	■ Positive ■ Negative
	Pulse Width qualification	■ OCCURS ■ LOGIC ■ OCCURS AND
	Pulse Width when	■ WITHIN ■ OUTSIDE
	HF Filtering	■ Included ■ Excluded
	Width trigger lower limit (UI)	1-100
	Gear1A/Gear1B Width trigger upper limit (UI)	1-100
	Gear2/Gear2B Width trigger upper limit (UI)	300-400
	Gear3A/Gear3B Width trigger upper limit (UI)	600-5000
	Gear4A/Gear4B Width trigger upper limit (UI)	600-5000
PWM Acquire Parameters		
Test 1.2.1-PWM-TX Transmit Bit Duration **Acquire Type** : CRPAT Test 1.2.2-PWM-TX Transmit Ratio **Acquire Type** : CRPAT Test 1.2.3-PWM-TX PREPARE Length **Acquire Type** : CRPAT Test 1.2.4-PWM-TX Common Mode DC Output Voltage Amplitude **Acquire Type** : CRPAT Test 1.2.5-PWM-TX Differential DC Output Voltage Amplitude	Horizontal scale (us/div)	1000-10000
	Resolution (ps/pt)	2000-20000
	Sample rate (GS/s)	■ 0.25 ■ 0.625 ■ 1.25 ■ 3.5
	Trigger level (V)	0-200
	Edge trigger slope	■ RISE ■ FALL ■ EITHER
	Edge trigger coupling	■ DC ■ AC ■ HF REJECT ■ LF REJECT ■ NOISE REJ

Test Name / Acquire Type	Parameter Name	Values
Acquire Type : CRPAT Test 1.2.7-PWM-TX Maximum Differential AC Output Voltage Amplitude **Acquire Type** : CRPAT Test 1.2.8-PWM-TX 2080 Rise and Fall Times **Acquire Type** : CRPAT Test 1.2.9-PWM-TX Lane-to-Lane Skew **Acquire Type** : CRPAT-Lane-Lane Test 1.2.10-PWM-TX Transmit Bit Duration Tolerance **Acquire Type** : CRPAT Test 1.2.11-PWM-TX G0 Minor Duration **Acquire Type** : CRPAT	Width trigger polarity	■ Positive ■ Negative
	Pulse Width when	■ WITHIN ■ OUTSIDE
	Width trigger lower limit (UI)	1-10
	Gear0 Width trigger upper limit (UI)	1-20
	Gear1 Width trigger upper limit (UI)	1-20
	Gear2 Width trigger upper limit (UI)	1-20
	Gear3 Width trigger upper limit (UI)	1-20
	Gear4 Width trigger upper limit (UI)	1-20
	Gear5 Width trigger upper limit (UI)	1-20
	Gear6 Width trigger upper limit (UI)	1-20
	Gear7 Width trigger upper limit (UI)	1-20
SYS Acquire Parameters		
Test 1.3.1-SYS-TX Unit Interval and Frequency Offset **Acquire Type** : CRPAT Test 1.3.2-SYS-TX Ref Clock frequency **Acquire Type** : CRPAT-Clock Test 1.3.3-SYS-TX PREPARE Length **Acquire Type** : CRPAT	Horizontal scale (us/div)	1-600
	Resolution (ps/pt)	10-100
	Sample rate (GS/s)	■ 0.25 ■ 0.65
	Trigger level (V)	10-100
	Edge trigger slope	■ RISE ■ FALL ■ EITHER

Test Name / Acquire Type	Parameter Name	Values
Test 1.3.4-SYS-TX Common Mode DC Output Voltage Amplitude **Acquire Type** : CRPAT Test 1.3.5-SYS-TX Differential DC Output Voltage Amplitude **Acquire Type** : CRPAT Test 1.3.7-SYS-TX Maximum Differential AC Output Voltage Amplitude **Acquire Type** : CRPAT Test 1.3.8-SYS-TX 20-80% Rise and Fall Times **Acquire Type** : CRPAT Test 1.3.9-SYS-TX Lane-to-Lane Skew **Acquire Type** : CRPAT-Lane-Lane	Edge trigger coupling	■ DC ■ AC ■ HF REJECT ■ LF REJECT ■ NOISE REJ
	26MHz Width Trigger Polarity	■ Positive ■ Negative
	38.4MHz Width Trigger Polarity	■ Positive ■ Negative
	52MHz Width Trigger Polarity	■ Positive ■ Negative
	Pulse Width when	■ WITHIN ■ OUTSIDE
	Width trigger lower limit (UI)	1-100
	SYS 26MHz Width trigger upper limit (UI)	100-200
	SYS 38.4MHz Width trigger upper limit (UI)	300-400
	SYS 52MHz Width trigger upper limit (UI)	600-3000

Examples

This section provides the examples for the SCPI commands.

Example	Description
TEKEXP:*IDN?\n	It returns the active TekExpress application name running on the oscilloscope.
TEKEXP:*OPC?\n	It returns the last command execution status.
TEKEXP:EXPORT REPORT\n	It returns the report file in bytes. This can be written into another file for further analysis.
TEKEXP:INFO? REPORT\n	It returns “100,”ReportFileName.mht”", when 100 is the filesize in bytes for the filename ReportFileName.
TEKEXP:INSTRUMENT? “Sampling Scope”\n	It returns "DSA8300 (GPIB8::1::INSTR), when DSA8300 (GPIB8::1::INSTR)" is the connected.
TEKEXP:LASTERROR?\n	It returns ERROR: INSTRUMENT_NOT_FOUND, when no instrument is found.
TEKEXP:LIST? DEVICE\n	It returns "TX-Device,RX-Device" when TX-Device, RX-Device are the available device.
TEKEXP:LIST? INSTRUMENT,"Sampling Scope"\n	It returns "DSA8300 (GPIB8::1::INSTR)" when DSA8300 is the available instruments.
TEKEXP:MODE COMPLIANCE\n	It sets the execution mode as compliance.
TEKEXP:MODE?\n	It returns COMPLIANCE when the execution mode is compliance.
TEKEXP:POPUP “OK”\n	It sets OK as the response to active popup in the application.
TEKEXP:POPUP?\n	It returns "OK", when OK is the active popup information shown in the application.
TEKEXP:REPORT GENERATE\n	It generates report for the current session.
TEKEXP:REPORT? “Scope Information”\n	It returns "DSA8300" when DSA8300 is the scope model.
TEKEXP:REPORT? “DUT ID”\n	It returns "DUT001" when DNI_DUT001 is the DUT ID.
TEKEXP:SELECT? DEVICE\n	It returns "TX-Device" when TX-Device is the selected device type.
TEKEXP:SETUP DEFAULT\n	It restores the application to default setup.
TEKEXP:STATE STOP\n	It stops the test execution.
TEKEXP:STATE?\n	It returns as READY when the application is ready to run next measurement.
TEKEXP:STATE? SETUP\n	It returns as NOT_SAVED when the current setup is not saved.
TEKEXP:VALUE GENERAL,"Report Update Mode","Replace"	It sets to replace current test results in the report with the test result(s) of previous run in current session.
TEKEXP:VALUE GENERAL,"Report Update Mode","ReplaceAny"	It sets to replace current test results in the report with the test result(s) from the selected session.
TEKEXP:VALUE GENERAL,"Replace Runsession Path","X:\400GTXO\Session1\DUT001\20170421_121534"	It sets the session from which to replace the result(s).

Reference

HS test parameters

Setup diagram for HS

The following schematics helps you to connect the setup for P75XX probes - HS measurements.

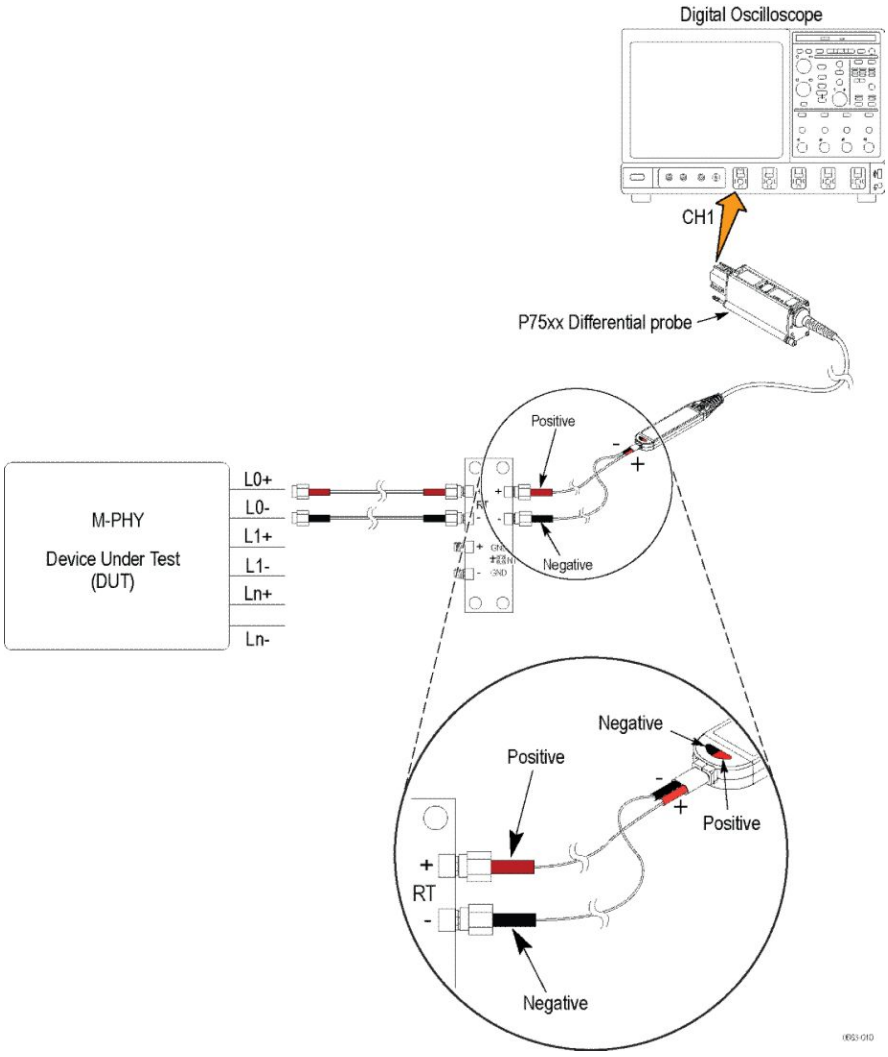


Figure 19: HS RT P75XX Differential

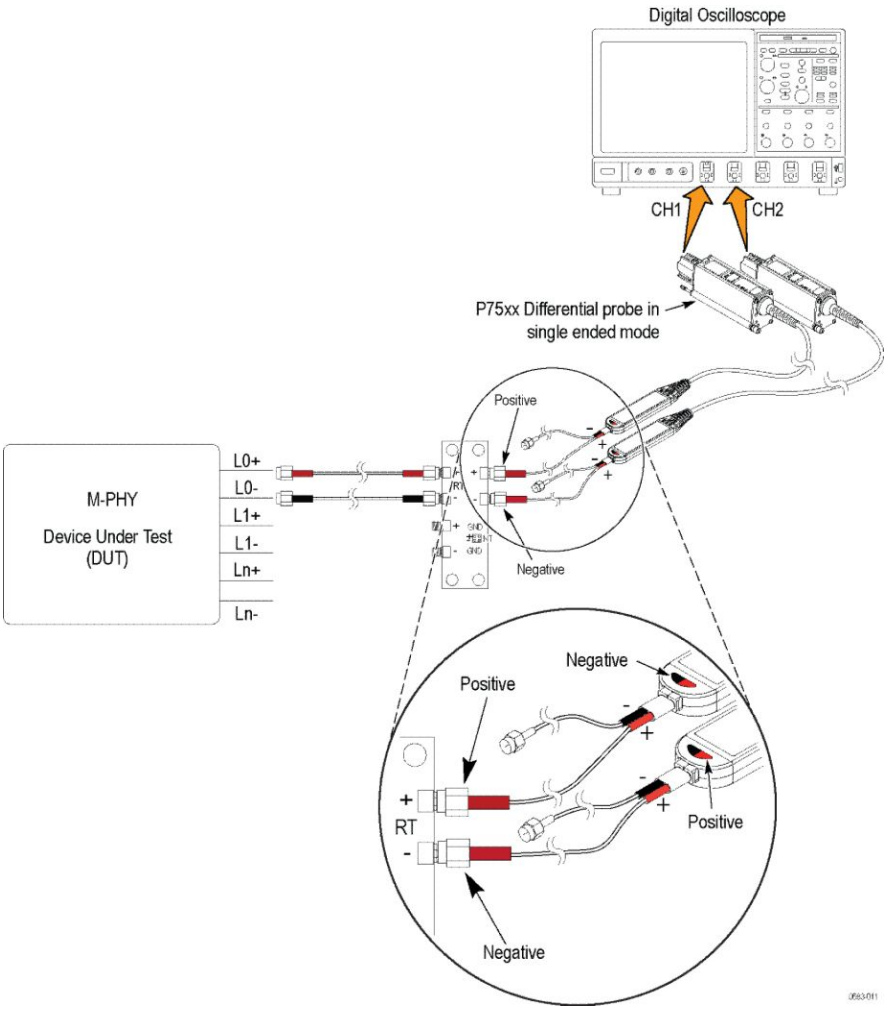


Figure 20: HS RT P75XX Single ended

NOTE. *HS G3 probe support for P7500A has limited support only.*

HS test user defined mode parameters

This table lists the HS test parameters that can be changed in the User Defined Mode.

Table 33: HS test parameters (User Defined mode)

Parameter group	Parameter name	Range	Default	Units
HS: Acquire	Horizontal scale (Gear 1/2/3)	1–100	10	µs/div
	Horizontal scale (Gear 4)	1–100	5	µs/div
	Resolution	1–100	10	ps/pt
	Trigger level [1], [2]	0–100	0	V
	Slope [1]	RISE, FALL, EITHER	RISE	N/A
	Coupling [1]	DC, AC, HF REJECT, LF REJECT, NOISE REJ	DC	N/A
	Pulse width when [1]	WITHIN, OUTSIDE	WITHIN	N/A
	HF Filtering	Included, Excluded	Included	N/A
	Lower limit [1]	1–100	10	UI
	Gear 1A/B Upper limit [1]	100–5000	150	UI
	Gear 1A/B Polarity [1]	Positive, Negative	Positive	N/A
	Gear 2A/B Upper limit [1]	300–5000	300	UI
	Gear 2A/B Polarity [1]	Positive, Negative	Positive	N/A
	Gear 3A/B Upper limit [1]	600–5000	2550	UI
	Gear 3A/B Polarity [1]	Positive, Negative	Negative	N/A
	Gear 4A/B Upper limit [1]	600-5000	3000	UI
	Gear 4A/B Polarity [1]	Positive, Negative	Negative	N/A
	Sample rate G1A(GS/s) [1]	12.5, 25, 50, 100	50	GS/s
	Sample rate G1B(GS/s) [1]	12.5, 25, 50, 100	50	GS/s
	Sample rate G2A(GS/s) [1]	12.5, 25, 50, 100	50	GS/s
	Sample rate G2B(GS/s) [1]	12.5, 25, 50, 100	50	GS/s

[1] This parameter is global for all tests. If the value is changed in one test, it is applied to all other tests of that group.
[2] This parameter is applicable only in continuous mode. In Burst mode, AutoSetLevel is executed.

Parameter group	Parameter name	Range	Default	Units
	Sample rate G3A(GS/s) [1]	12.5, 25, 50, 100	50	GS/s
	Sample rate G3B(GS/s) [1]	12.5, 25, 50, 100	50	GS/s
	Sample rate G4A(GS/s) [1]	12.5, 25, 50, 100	100	GS/s
	Sample rate G4B(GS/s) [1]	12.5, 25, 50, 100	100	GS/s
HS: Ref Levels	Absolute/Percentage	Absolute, Percentage	Percentage	N/A
	Autoset basetop method	AUTO, MINMAX, FULLHISTOGRAM, EYEHISTOGRAM	AUTO	N/A
	High level [3]	51 to 90 (in %) -10 to 10 (in Absolute)	90 (in %) 0 (in Absolute)	% or V
	Mid level [3]	20 to 80 (in %) -10 to 10 (in Absolute)	50 (in %) 0 (in Absolute)	% or V
	Low level [3]	10 to 49 (in %) -10 to 10 (in Absolute)	10 (in %) 0 (in Absolute)	% or V
	Hysteresis [3]	2 to 20 (in %) -2 to 2(in Absolute)	5 (in %) 0.05 (in Absolute)	% or V
HS: Filters	Low pass filter (F1) spec	NONE, FIRST, SECOND, THIRD	NONE	N/A
	High pass filter	1-100(1-10 for test 1.1.1 and 1.1.13 only)	1	MHz
	Low pass filter (F2) spec	NONE, FIRST, SECOND, THIRD	NONE (SECOND for test 1.1.1 only)	N/A
	Low pass filter	620–630 (1–10 for test 1.1.1 only)	2	MHz

[3] The unit of this field (value) is based on the‘Ref Level’ parameter. It will be either percentage (%) or Volts (V).

Parameter group	Parameter name	Range	Default	Units
	Filter ramp time	0–10	■ 0.25 for test 1.1.1 ■ 2 for test 1.1.13 ■ 0 for test 1.1.17 and 1.1.18	/F
	Filter blanking time	0–10	■ 0.25 for test 1.1.1 ■ 4 for test 1.1.13 ■ 0 for test 1.1.17 and 1.1.18	/F
HS: Prepare Length	Gear1A-HS Prepare Length	0–15	10	N/A
	Gear1B-HS Prepare Length	0–15	10	N/A
	Gear2A-HS Prepare Length	0–15	10	N/A
	Gear2B-HS Prepare Length	0–15	10	N/A
	Gear3A-HS Prepare Length	0–15	10	N/A
	Gear3B-HS Prepare Length	0–15	10	N/A
	Gear4A-HS Prepare Length	0–15	10	N/A
	Gear4B-HS Prepare Length	0–15	10	N/A
HS: Clock Recovery	Clock Recovery Method	Constant Clock-Mean, PLL Custom BW	■ Constant Clock-Mean (For burst) ■ PLL custom bandwidth (For continuous)	N/A
	PLL Model Type	1/2	2	N/A
	Damping	500–2000	700	m
	Loop Bandwidth	0.1–10	2	MHz
	Nominal data rate	Enabled, Disabled	Enabled	N/A

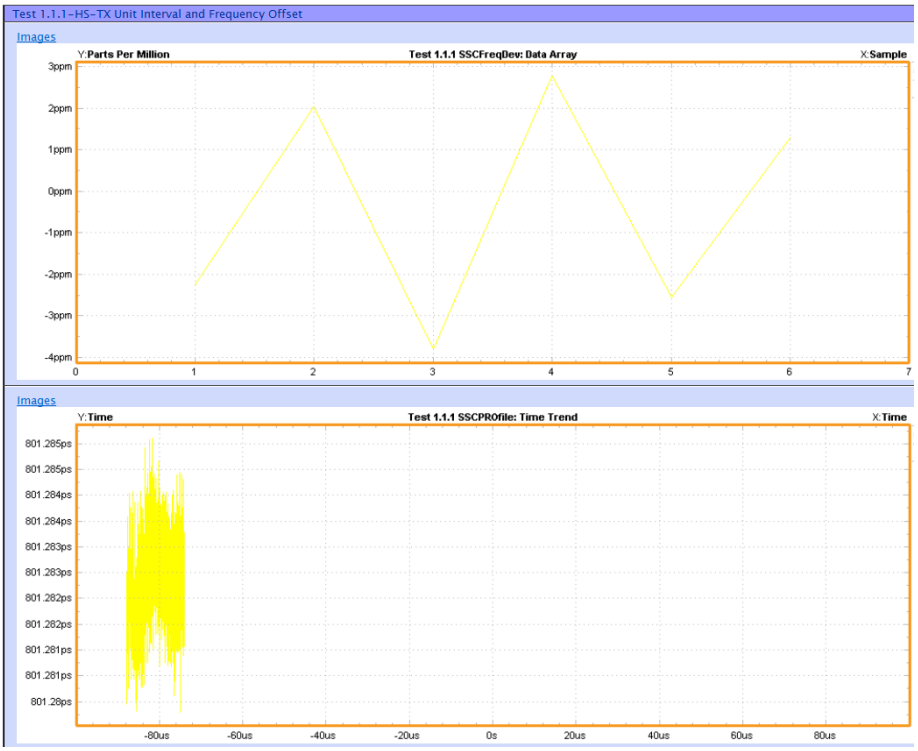
Parameter group	Parameter name	Range	Default	Units
	Known data pattern	Enabled, Disabled	Disabled	N/A
	Pattern file path	N/A	INSTALL FOLDER \Compliance Suites\MIPI \MPHY\ Transmitter \HS\Pattern Files \SomePattern.txt	N/A
HS: Mask file path	Gear Type	Gear1A, Gear1B, Gear2A, Gear2B, Gear3A, Gear3B, Gear4A, Gear4B	Gear1A	N/A
	NT LA Mask File path	Path to mask folder	INSTALL FOLDER \Compliance Suites\MIPI \MPHY\ Transmitter \HS\Mask Files\Gear1A \1.1.6_VDIFF_AC_LA_RT_Gr1A.msk	N/A
	NT SA Mask File path	Path to mask folder	INSTALL FOLDER \Compliance Suites\MIPI \MPHY\ Transmitter \HS\Mask Files\Gear1A \1.1.6_VDIFF_AC_SA_RT_Gr1A.msk	N/A
	RT LA Mask File path	Path to mask folder	INSTALL FOLDER \Compliance Suites\MIPI \MPHY\ Transmitter \HS\Mask Files\Gear1A	N/A

Parameter group	Parameter name	Range	Default	Units
			\1.1.6_VDIFF_AC_SA_RT_Gr1A.msk	
	RT SA Mask File path	Path to mask folder	INSTALL FOLDER \Compliance Suites\MIPI \MPHY\ Transmitter \HS\Mask Files\Gear1A \1.1.6_VDIFF_AC_SA_RT_Gr1A.msk	N/A
HS: Skew	From Edge	RISE, FALL, BOTH	BOTH	N/A
	To Edge	SAME AS, OPPOSITE AS	SAME AS	N/A
HS: RjDj	RjDj Pattern type	Arbitrary, Repeating	Arbitrary	N/A
	Arbitrary window length (UI)	2–24	5	UI
	Repeating pattern length (UI)	2–1000000	1270	UI
	Population	5–5000	100	N/A
HS: BER	BER = 1E-6	Enabled, Disabled	Enabled	N/A
	BER = 1E-9	Enabled, Disabled	Enabled	N/A
	BER = 1E-12	Enabled, Disabled	Enabled	N/A
	BER = 1E-15	Enabled, Disabled	Enabled	N/A
	BER = 1E-18	Enabled, Disabled	Enabled	N/A
	Target BER(1E-10)	Enabled, Disabled	Enabled	N/A
HS: Eye Parameters	Reference Channel for Gear3A, Short(Ch1)	N/A	C:\Program Files\Tektronix \TekExpress \TekExpress MIPI_MPHY_TX\Lib\Filter Files\Gear3A \ShortChannel _G3A.flt	N/A

Parameter group	Parameter name	Range	Default	Units
	Reference Channel for Gear3A, Long(Ch2)	N/A	C:\Program Files\Tektronix\TekExpress\TekExpress MIPI_MPHY_TX\Lib\Filter Files\Gear3A\LongChannel_G3A.flt	N/A
	Reference Channel for Gear3B, Short(Ch1)	N/A	C:\Program Files\Tektronix\TekExpress\TekExpress MIPI_MPHY_TX\Lib\Filter Files\Gear3B\ShortChannel_G3B.flt	N/A
	Reference Channel for Gear3B, Long(Ch2)	N/A	C:\Program Files\Tektronix\TekExpress\TekExpress MIPI_MPHY_TX\Lib\Filter Files\Gear3B\LongChannel_G3B.flt	N/A
	Reference Channel for Gear4A/B, Short(Ch1)	N/A	Enabled	N/A
	Reference Channel for Gear4A/B, Long(Ch2)	N/A	Enabled	N/A
	Reference Channel for Gear4A/B, Package	N/A	Enabled	N/A
	De-embed file (G4A)	N/A	Disabled	N/A
	De-embed file (G4B)	N/A	Disabled	N/A
	De-emphasis 0 dB	N/A	Enabled	N/A
	De-emphasis 3.5 dB	N/A	Enabled	N/A
	De-emphasis 6 dB	N/A	Enabled	N/A
	Save Waveforms	N/A	Disabled	N/A
HS: Other Settings	Save Waveforms	N/A	Disabled	N/A
	Enable high-performance eye rendering	N/A	Enabled	N/A

1.1.1 HS-TX Unit Interval and Frequency Offset test

Verifies that the unit interval and frequency offset of the DUTs HS-TX are within the conformance limits for all supported HS Gears, RATEs and LANEs.



Configurable parameters. *HS Acquire*, *HS Ref Levels*, *HS Filters*

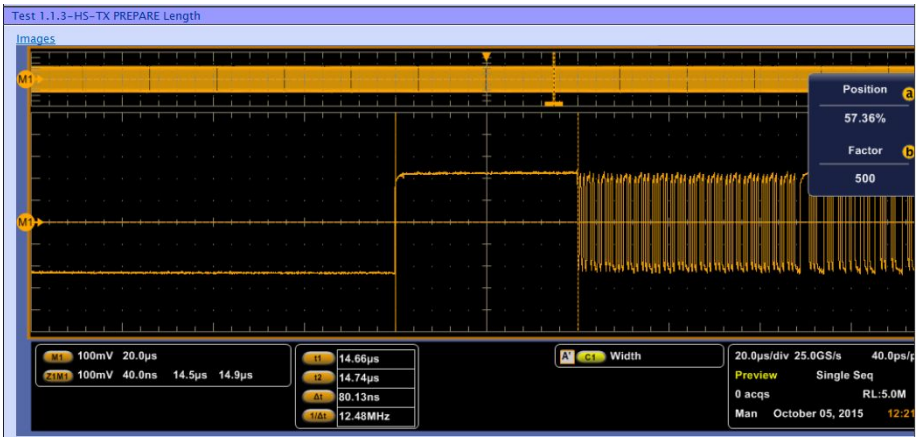
1.1.2 HS-TX Common-Mode AC Power Spectral Magnitude Limit test

Verifies that the common-mode AC power spectral magnitude ($P_{SDCM\text{-}TX}$) of the DUTs HS-TX is below the conformance limit, for large and small amplitudes, in terminated mode, for all lanes, for HS-G1.

Configurable parameters. *HS Acquire*

1.1.3 HS-TX PREPARE length test

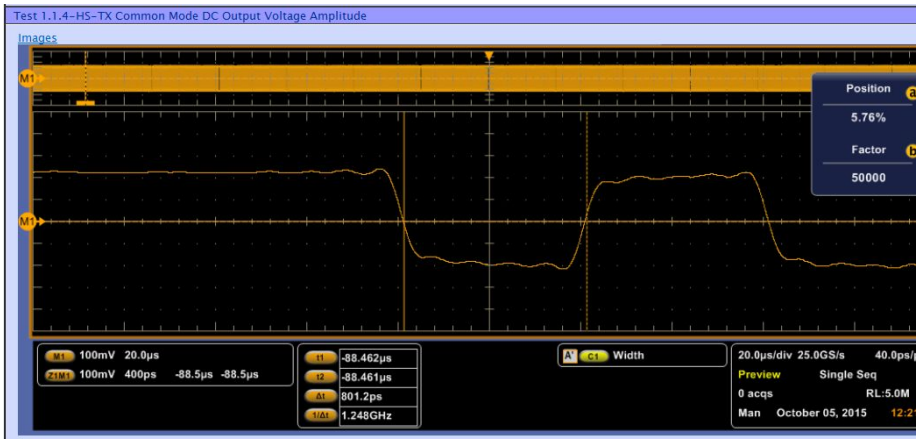
Verifies that the length of the DUT's transmitted HS-PREPARE period ($T_{HS\text{-}PREPARE}$) is consistent with the value indicated by its TX_HS_PREPARE_LENGTH configuration attribute.



Configurable parameters. *HS Acquire*, *HS Prepare Length*

1.1.4 HS-TX Common-Mode DC Output Voltage Amplitude test

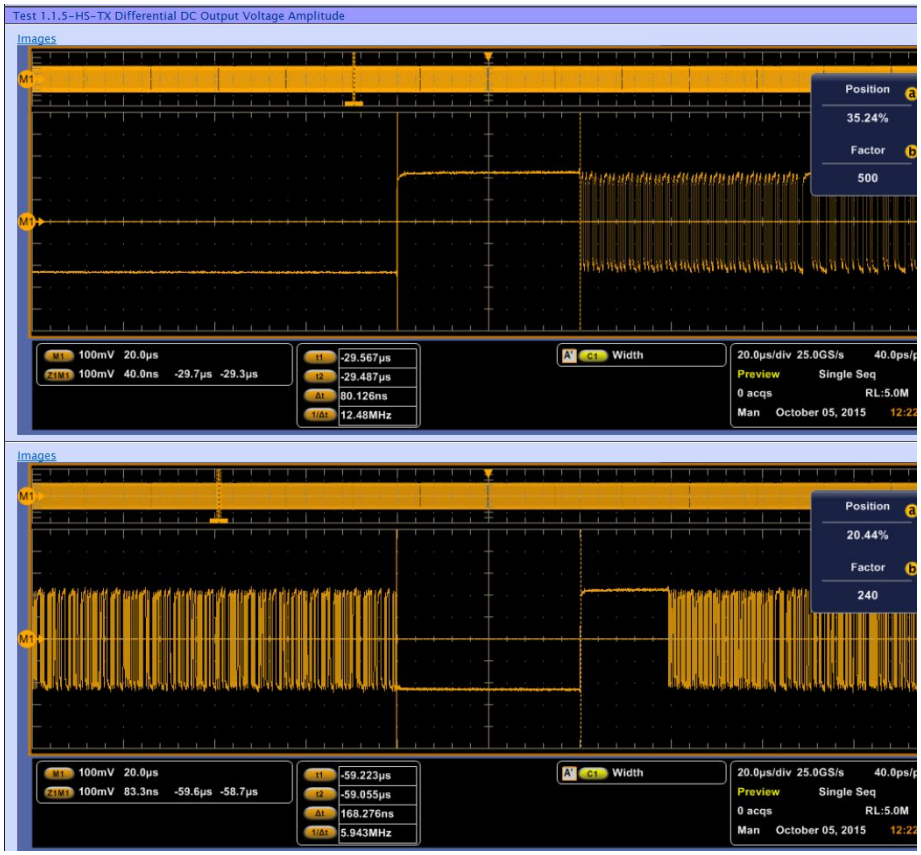
Verifies that common mode DC output voltage amplitude ($V_{CM\text{-}TX}$) of the DUT's HS TX is within the conformance limits for all combinations of supported amplitudes, terminations, lanes and HS Gears.



Configurable parameters. *HS Acquire*

1.1.5 HS-TX Differential DC Output Voltage Amplitude test

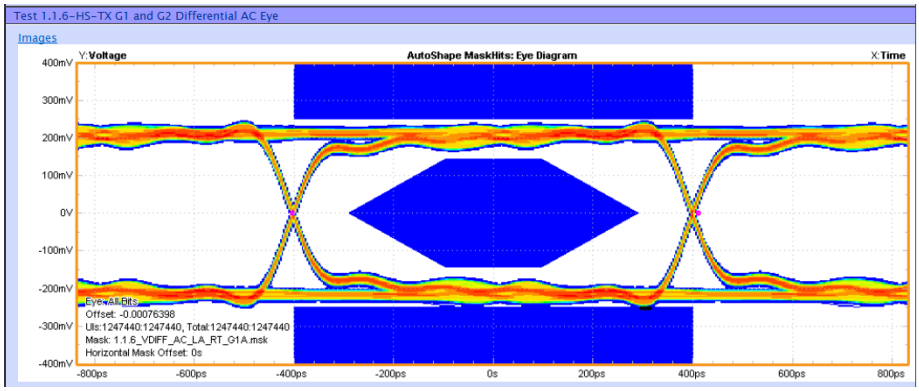
Verifies that the differential DC output voltage amplitude ($V_{DIF\text{-}DC\text{-}TX}$) of the DUT's HS-TX is within the conformance limits, for all combinations of supported amplitudes, terminations, lanes and HS Gears.



Configurable parameters. *HS Acquire*

1.1.6 HS-TX G1 and G2 Differential AC Eye test

Verifies that the DUT's HS-TX meets the requirements for transmitter eye opening ($T_{EYE\text{-}TX}$), and maximum and minimum differential AC output voltage amplitude (VDIF-AC-TX), for all combinations of supported Amplitudes and LANEs, for HS-G1 and G2.



Configurable parameters. *HS Acquire*, *HS Ref Levels*, *HS Clock Recovery*, *HS Mask Filter Path*

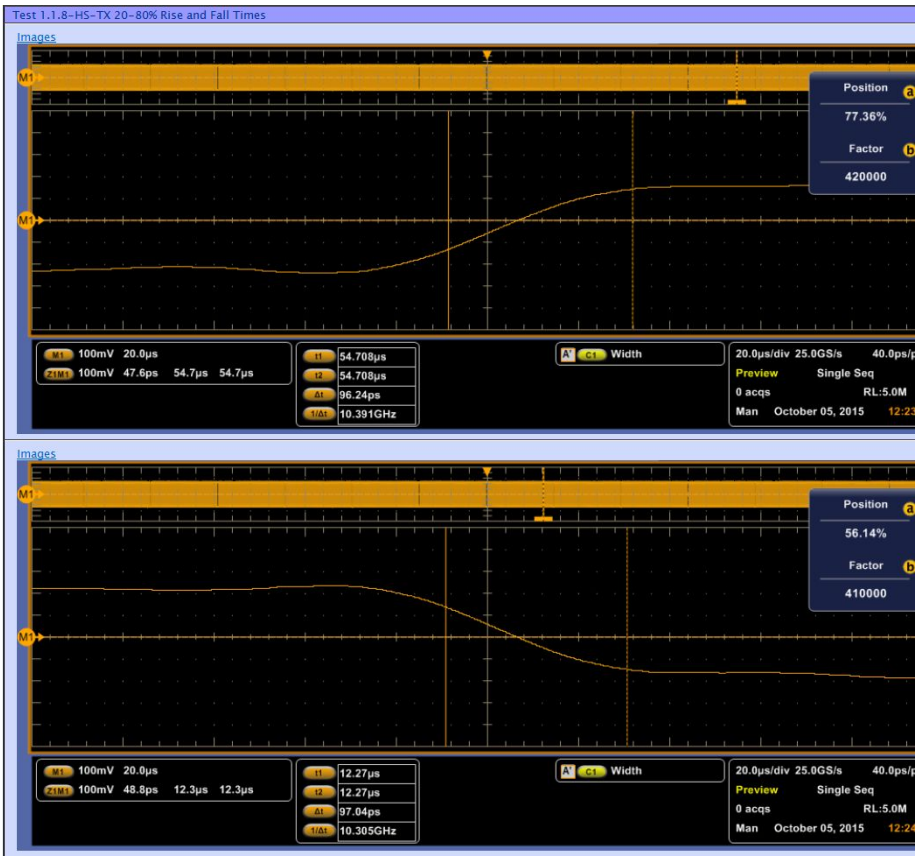
1.1.7 HS-TX G3 and G4 Differential AC Eye test

Verifies that the DUT's HS-TX meets the requirements for transmitter eye opening ($T_{EYE\text{-}HS\text{-}G3\text{-}TX}$), and maximum and minimum differential AC output voltage amplitude ($V_{DIF\text{-}AC\text{-}HS\text{-}G3\text{-}TX}$, $V_{DIF\text{-}AC\text{-}TX}$), for all combinations of supported Amplitudes and LANEs, for HS-G3 and G4.

Configurable parameters. *HS Acquire*, *HS Ref Levels*, *HS Clock Recovery*, *HS Mask Filter Path*

1.1.8 HS-TX 20/80% Rise and Fall Times test

Verifies that the 20%/80% rise and fall times ($T_{R\text{-}HS\text{-}TX}$ and $T_{F\text{-}HS\text{-}TX}$) of the DUT's HS-TX are within the conformance limits, for all combinations of supported amplitudes, terminations, lanes and HS Gears.



Configurable parameters. *HS Acquire*

1.1.9 HS-TX Lane-to-Lane Skew test

Verifies that the Skew between any two DUT HS-TX LANEs (TL2L-SKEW-HS-TX) is less than the maximum allowed conformance limit, for the highest supported HS GEAR.

Configurable parameters. *HS Acquire*

1.1.10 HS-TX Slew Rate Control Range test

Verifies that the slew rate (SR_{DIF-TX}) of the DUT's HS-TX can be suitably adjusted across the minimum required range of values, for all supported amplitudes, in terminated mode and for all lanes and HS Gears.

Configurable parameters. *HS Acquire*

1.1.11 HS-TX Slew Rate Monotonicity test

Verifies that the slew rate control states of the DUT's HS-TX support monotonically decreasing slew rate settings, for large and small amplitudes, in terminated mode, for all lanes, for lanes and HS Gears.

Configurable parameters. *HS Acquire*

1.1.12 HS-TX Slew Rate Resolution test

Verifies that the slew rate state resolution (ΔSR_{DIF-TX}) of the DUT's HS-TX slew rate control satisfies the conformance requirements.

Configurable parameters. *HS Acquire*

1.1.13 HS-TX Intra-Lane Output Skew test

Verifies that the intra lane output skew ($T_{INTRA-SKEW-TX}$) of the DUT’s HS-TX is within the conformance limits, for all combinations of supported amplitudes, terminations, lanes and HS Gears.

Configurable parameters. *HS Acquire*, *HS Ref Levels*, *HS Filters*, *HS Skew*

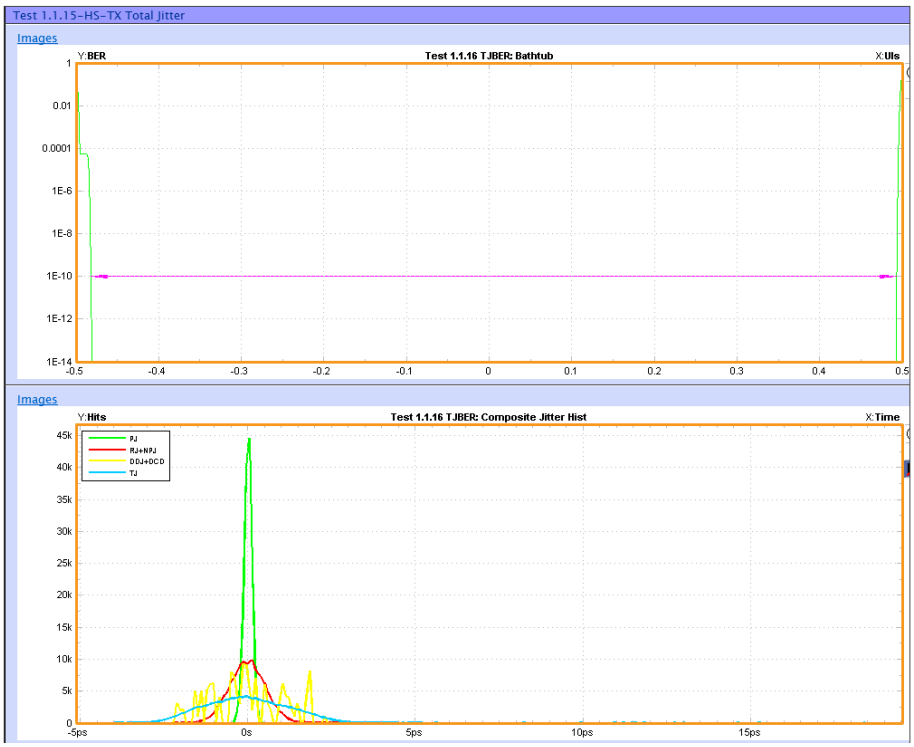
1.1.14 HS-TX Transmitter Pulse Width test

Verifies that the pulse width ($T_{PULSE-TX}$) of the DUT's HS-TX is within the conformance limits, for all combinations of supported amplitudes, terminates, lanes and HS-Gears.

Configurable parameters. *HS Acquire*, *HS Ref Levels*, *HS Filters*

1.1.15 HS-TX Total Jitter test

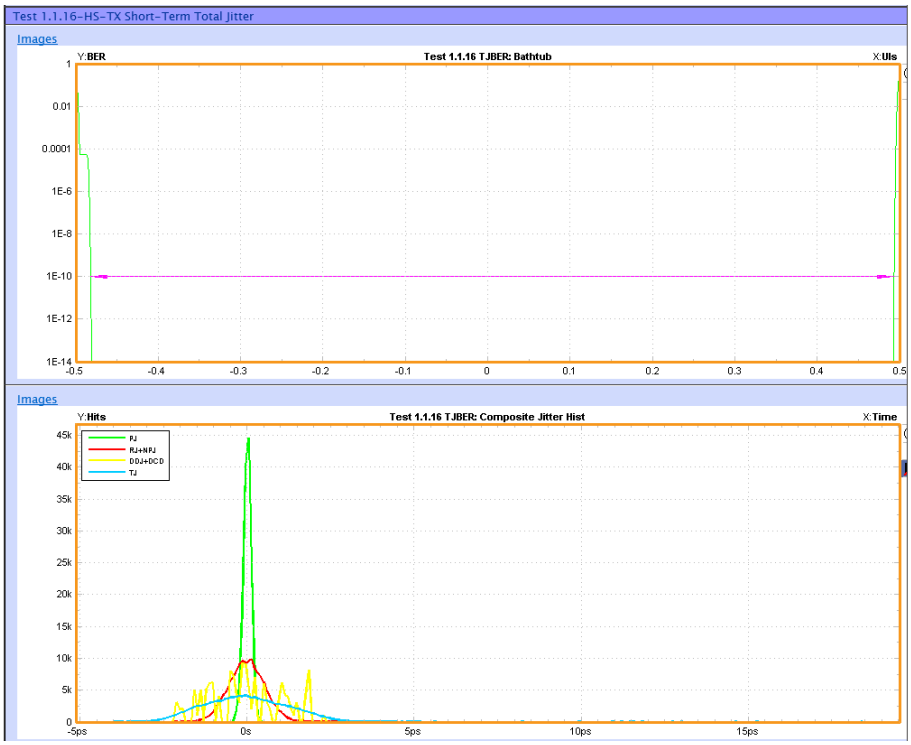
Verifies that the total jitter (TJ_{TX}) of the DUT's HS-TX is within the conformance limits, for all combinations of supported amplitudes, terminations, lanes and HS Gears.



Configurable parameters. *HS Acquire*, *HS Ref Levels*, *HS Clock Recovery*, *HS Filters*, *HS RjDj*

1.1.16 HS-TX Short term Total Jitter test

Verifies that the short-term total jitter ($STTJ_{TX}$) of the DUT's HS-TX is within the conformance limits, for all combinations of supported amplitudes, terminations, lanes and HS Gears.



Configurable parameters. *HS Acquire*, *HS Ref Levels*, *HS Clock Recovery*, *HS Filters*, *HS RjDj*

1.1.17 HS-TX Deterministic Jitter test

Verifies that the deterministic jitter (DJ_{TX}) of the DUT's HS-TX is within the conformance limits, for all combinations of supported amplitudes, terminations, lanes and HS Gears.

Configurable parameters. *HS Acquire*, *HS Ref Levels*, *HS Clock Recovery*, *HS Filters*, *HS RjDj*

1.1.18 HS-TX Short term Deterministic Jitter test

Verifies that the short term deterministic jitter ($STDJ_{TX}$) of the DUT's HS-TX is within the conformance limits, for all combinations of supported amplitudes, terminations, lanes and HS Gears.

Configurable parameters. *HS Acquire*, *HS Ref Levels*, *HS Clock Recovery*, *HS Filters*, *HS RjDj*

HS-TX BER Eye Contour

BER contour-Plots the Eye contour at various BER levels including Target BER 1E-10

NOTE. *This test will be available only when DJN license is enabled.*

Configurable parameters. *HS Acquire*, *HS BER*

Global HS test parameters list

The following table lists the common high-speed test parameters with their default, minimum and maximum values.

Table 34: Common HS test parameters

Parameter	Enum values	Default	Minimum	Maximum
DUT Operation Mode	Burst Continuous	Burst	NA	NA
Amplitude	Both Supported Large Amplitude Small Amplitude	Large Amplitude	NA	NA
Termination	Both Supported Terminated Unterminated	Terminated	NA	NA
Gear1	Included Excluded	Included	NA	NA
Gear Selection for Gear1	A : 1.248Gbps B : 1.457Gbps A and B	A : 1.248Gbps	NA	NA
Gear2	Included Excluded	Excluded	NA	NA
Gear Selection for Gear2	A : 2.496Gbps B : 2.915Gbps A and B	A : 2.496Gbps	NA	NA
Gear3	Included Excluded	Excluded	NA	NA
Gear Selection for Gear3	A : 4.992Gbps B : 5.830Gbps A and B	A : 4.992Gbps	NA	NA
Gear4	Included Excluded	Excluded	NA	NA

Parameter	Enum values	Default	Minimum	Maxim
Gear Selection for Gear4	A : 9.984Gbps B : 11.660Gbps A and B	A : 9.984Gbps	NA	NA
Signal Validation	Prompt me if signal fails Skip test if signal fails Use signal as is - Don't Check	Prompt me if signal fails	NA	NA

HS Gear3 Testing only

As per the CTS for Test 1.1.7, based on the amount of emphasis enabled in the DUT and the swing of the signal, the channel effects should be applied for running the measurements and claiming the conformance. The channel S-parameters are defined and provided by the specification. The software uses the filter files and applies them as described in the CTS. This is applicable for Gear 3 only.

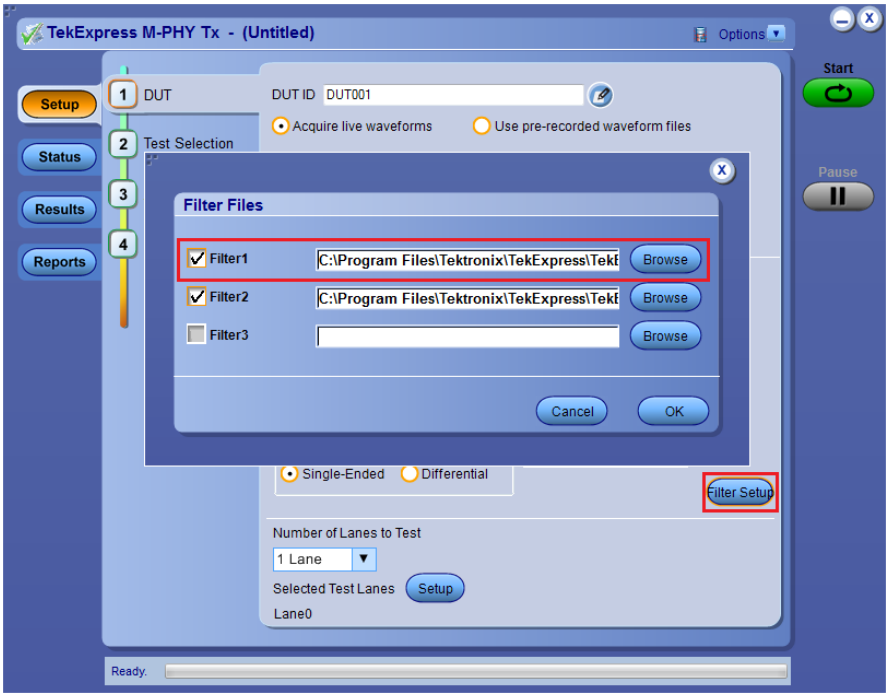
For instance, if the DUT is transmitting small amplitude signal with 3.5dB of emphasis turned on, the software automatically applies the filter files for the short channel defined in the specification. And the long channel is not applied. If the DUT has 3.5 dB of emphasis enabled on large amplitude, no channel effect is needed for conformance.

	Small amplitude		Large Amplitude	
	Reference Channels			
	Ch1	Ch2	Ch1	Ch2
3.5 dB	yes			
6.0 dB				Yes
0 dB			Yes	

Ch1-Short channel

Ch2-Long channel

Green color indicates the channel effect applied by the software based on the level of emphasis enabled and the type of amplitude the DUT transmits. Red color indicates that there is no channel effect and no filter files were applied, based on CTS recommendation. You have the flexibility to apply this manually using the filter file option as shown below.



NOTE. *For Test 1.1.7-HS-TX G3 and G4 Differential AC Eye test the short channel and long channel selection are based on DUT Signal Validation.*

PWM test parameters

PWM tests user defined mode parameters

This table lists which PWM parameters that can be changed in the User Defined Mode.

Table 35: PWM test parameters (User Defined mode)

Parameter group	Parameter name	Range	Default	Units
PWM: Acquire	Horizontal scale	1000–10000	1	µs/div
	Resolution	2000–10000	10	ps/pt
	Sampling Rate [1]	0.10, 0.25, 0.50	0.25	GS/s
	Trigger Level [4], [2]	0–100	0	V
	Slope[4]	RISE, FALL, EITHER	RISE	N/A
	Coupling [4]	DC, AC, HF REJECT, LF REJECT, NOISE REJ	DC	N/A
	Pulse width when [4]	WITHIN, OUTSIDE	WITHIN	N/A
	Polarity	Positive, Negative	Positive	N/A
	Lower limit [4]	1–10	1	UI
	Gear 0 Upper limit [4]	1–20	15	UI
	Gear 1 Upper limit [4]	1–20	15	UI
	Gear 2 Upper limit [4]	1–20	15	UI
	Gear 3 Upper limit [4]	1–20	15	UI
	Gear 4 Upper limit [4]	1–20	15	UI
	Gear 5 Upper limit [4]	1–20	15	UI
	Gear 6 Upper limit [4]	1–20	15	UI
	Gear 7 Upper limit [4]	1–20	15	UI

[1] This parameter will be global for all tests. If the value is changed in one test, it will be applied to all other tests of that group.
[2] This parameter is applicable only in continuous mode. In Burst mode, AutoSetLevel is executed.

Parameter group	Parameter name	Range	Default	Units
PWM: Prepare Length	G0 - LS Prepare Length	0–15	10	N/A
	G1 - LS Prepare Length	0–15	9	N/A
	G2 - LS Prepare Length	0–15	8	N/A
	G3 - LS Prepare Length	0–15	7	N/A
	G4 - LS Prepare Length	0–15	6	N/A
	G5 - LS Prepare Length	0–15	5	N/A
	G6 - LS Prepare Length	0–15	4	N/A
	G7 - LS Prepare Length	0–15	3	N/A

1.2.1 PWM-TX Transmit Bit Duration test

Verifies that the transmit bit duration ($T_{PWM\text{-}TX}$) of the DUT's PWM-TX is within the conformance limits for all combinations of supported amplitudes, terminations, lanes, and PWM GEARs.

Configurable parameters. *PWM Acquire*

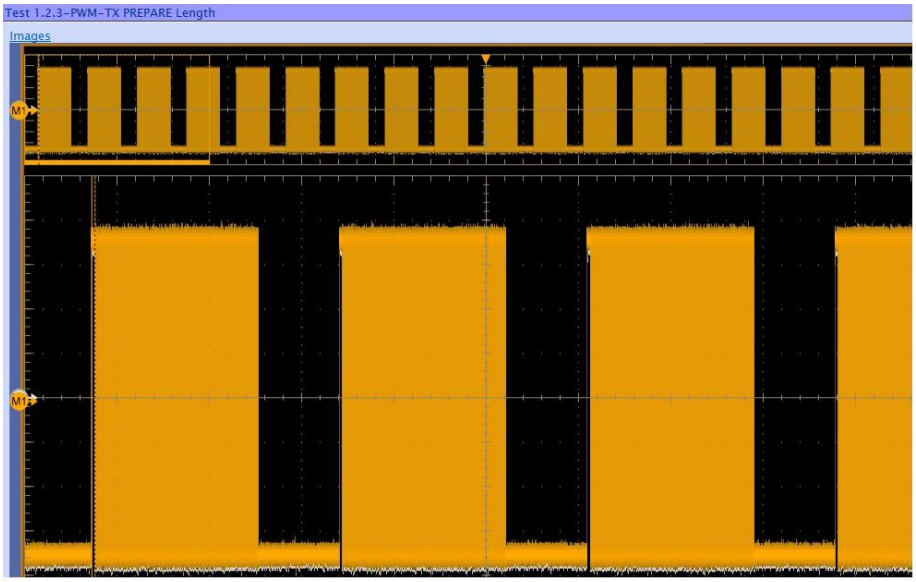
1.2.2 PWM-TX Transmit Ratio test

Verifies that the PWM tramsmit ratio ($k_{PWM\text{-}TX}$) of the DUT's PWM-TX is within the conformance limits for all LANEs.

Configurable parameters. *PWM Acquire*

1.2.3 PWM-TX PREPARE Length test

Verifies that the length of the DUT's transmitted period (PWM-PREPARE) is consistent with the value indicated by its TX_LS_PREPARE_LENGTH configuration attribute.



Configurable parameters. *PWM Acquire*, *PWM Prepare Length*

1.2.4 PWM-TX CommonMode DC Output Voltage Amplitude test

Verifies that the common Mode output voltage amplitude (V_{CM-TX}) of the DUT's PWM-TX is within the conformance limits, for all combinations of supported amplitudes, terminations, LANEs, and PWM GEARs

Configurable parameters. *PWM Acquire*

1.2.5 PWM-TX Differential DC Output Voltage Amplitude test

Verifies that the Differential DC Output Voltage Amplitude ($V_{DIF-DC-TX}$) of the DUT's PWM-TX is within the conformance limits for all combinations of supported amplitudes, terminations, LANEs, and PWM GEARs.

Configurable parameters. *PWM Acquire*

1.2.7 PWM-TX Maximum Differential AC Output Voltage Amplitude test

Verifies that the DUTs PWM-TX meets the requirements for the maximum differential AC output voltage amplitude ($V_{DIF-AC-TX}$), for all combinations of supported amplitudes, terminations, and lanes and and PWM Gears.

Configurable parameters. *PWM Acquire*

1.2.8 PWM-TX 20/80% Rise and Fall Times test

Verifies that the rise and fall times ($T_{R-PWM-TX}$ and $T_{F-PWM-TX}$) of the DUT's PWM-TX are less than the maximum conformance limit for all combinations of supported amplitudes, terminations, LANEs, and PWM GEARs.

Configurable parameters. *PWM Acquire*

1.2.9 PWM-TX Lane to Lane Skew test

Verify that the Lane-to-Lane Skew ($T_{L2L-SKEW-PWM-TX}$) of the DUT's PWM-TX is within the conformance limits, for all LANEs and supported PWM GEARs.

Configurable parameters. *PWM Acquire*

1.2.10 PWM-TX Transmit Bit duration Tolerance test

Verifies that the transmit bit duration tolerance ($TOL_{PWM-G1-TX}$) of the DUT's PWM-TX is within the conformance limits for PWM-GEAR1

Configurable parameters. *PWM Acquire*

1.2.11 PWM-TX G0 Minor Duration test

Verifies that the PWM-G0 Minor Duration ($T_{PWM\text{-}MINOR\text{-}G0\text{-}TX}$) of the DUT's PWM-TX is within the conformance limits, for all LANEs.

Configurable parameters. *PWM Acquire*

Global PWM test parameters list

The following table lists the common PWM test parameters with their default, minimum and maximum values.

Table 36: Common PWM test parameters

Parameter	Enum values	Default	Minimum	Maximum
DUT Operation Mode	Burst Continuous	Burst	NA	NA
Amplitude	Both Supported Large Amplitude Small Amplitude	Large Amplitude	NA	NA
Termination	Both Supported Terminated Unterminated	Terminated	NA	NA
Gear0	Included Excluded	Included	NA	NA
Gear1 through Gear7	Included Excluded	Excluded	NA	NA
Vterm source (V_t) (Manual mode)	NA	0	–4	4
Signal Validation	Prompt me if signal fails Skip test if signal fails Use signal as is - Don't Check	Use signal as is - Don't Check	NA	NA

See also. *Configure test parameters*

SYS test parameters

SYS test user defined mode parameters

This table lists the SYS test parameters that can be changed in the User Defined Mode.

Table 37: SYS test parameters (User Defined mode)

Parameter group	Parameter name	Range	Default	Units
SYS: Acquire	Horizontal scale	1–100	0	µs/div
	Resolution	1–100	10	ps/pt
	Trigger level [1], [2]	0–100	0	V
	Sample Rate	0.25 - 0.50	0.25	GS/s
	Slope [1]	RISE, FALL, EITHER	RISE	N/A
	Coupling [1]	DC, AC, HF REJECT, LF REJECT, NOISE REJ	DC	N/A
	Pulse width when [1]	WITHIN, OUTSIDE	WITHIN	N/A
	Lower limit [1]	1–100	10	UI
	Gear 26 MHz Upper limit [1]	100–200	150	UI
	Gear 26 MHz Polarity [1]	Positive, Negative	Positive	N/A
	Gear 38.4 MHz Upper limit [1]	300–400	300	UI
	Gear 38.4 MHz Polarity [1]	Positive, Negative	Positive	N/A
	Gear 58 MHz Upper limit [1]	600–3000	2550	UI
	Gear 58 MHz Polarity [1]	Positive, Negative	Negative	N/A
SYS: Ref Levels	Absolute/Percentage	Absolute, Percentage	Absolute	N/A

[1] This parameter is global for all tests. If the value is changed in one test, it is applied to all other tests of that group.
[2] This parameter is applicable only in continuous mode. In Burst mode, AutoSetLevel is executed.

Parameter group	Parameter name	Range	Default	Units
	Autoset basetop method	AUTO, MINMAX, FULLHIST OGRAM, EYEHIST OGRAM	AUTO	N/A
	High level [3]	51 to 90 (in %) -10 to 10 (in Absolute)	90 (in %) 0 (in Absolute)	% or V
	Mid level [3]	20 to 80 (in %) -10 to 10 (in Absolute)	50 (in %) 0 (in Absolute)	% or V
	Low level [3]	10 to 49 (in %) -10 to 10 (in Absolute)	10 (in %) 0 (in Absolute)	% or V
	Hysteresis [3]	2 to 20 (in %) -2 to 2(in Absolute)	5 (in %) 0.05 (in Absolute)	% or V
SYS: Filters	Low pass filter (F1) spec	NONE, FIRST, SECOND, THIRD	NONE	N/A
	High pass filter	1–100 (1–10 for test 1.1.1 only)	1	MHz
	Low pass filter (F2) spec	NONE, FIRST, SECOND, THIRD	SECOND	N/A
	Low pass filter	620–630 (1–10 for test 1.1.1 only)	2	MHz
	Filter ramp time	0–10	0.25	/F
	Filter blanking time	0–10	0.25	/F
SYS: Prepare Length	Gear 26 MHz-SYS Prepare Length	0–15	10	N/A
	Gear 38.4 MHz-SYS Prepare Length	0–15	10	N/A

[3] The unit of this field (value) is based on the‘Ref Level’ parameter. It will be either percentage (%) or Volts (V).

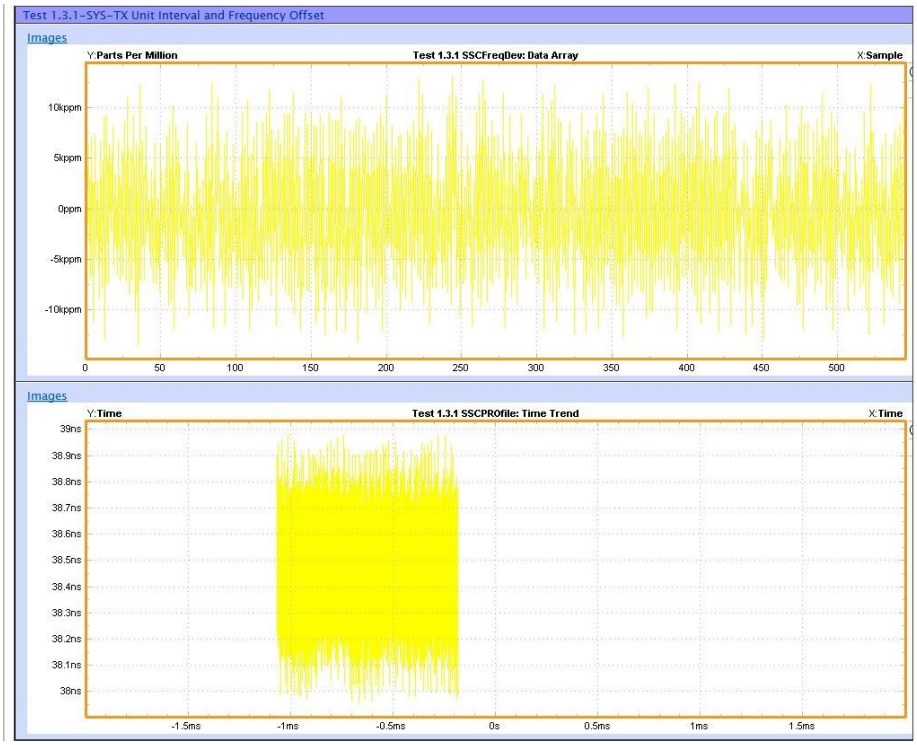
Parameter group	Parameter name	Range	Default	Units
	Gear 58 MHz-SYS Prepare Length	0–15	10	N/A
SYS: Clock Recovery	Clock Recovery Method	Constant Clock-Mean, PLL Custom BW	Constant Clock-Mean	N/A
	PLL Model Type	1/2		N/A
	Damping	500–2000		m
	Loop Bandwidth	0.1–10		MHz
	Nominal data rate	Enabled, Disabled	Enabled	N/A
	Known data pattern	Enabled, Disabled	Disabled	N/A
	Pattern file path	N/A	INSTALL FOLDER \Compliance Suites \MIPI \MPHY\ Transmitter\HS \Pattern Files \SomePattern.txt	N/A
SYS: Mask file path	Frequency Type	26 MHz SYS, 38.4MHz SYS, 58 MHz SYS	Gear1A	N/A
	NT LA Mask File path	Path to mask folder	INSTALL FOLDER \Compliance Suites \MIPI\M-PHY \Transmitter\SYS \Mask Files \26MHz \1.3.7_T_EYE_TX_LA_NT_26.msk	N/A

Parameter group	Parameter name	Range	Default	Units
	NT SA Mask File path	Path to mask folder	INSTALL FOLDER \Compliance Suites \MIPI\M-PHY \Transmitter\SYS \Mask Files \26MHz \1.3.7_T_EYE_TX_SA_NT_26.msk	N/A
	RT LA Mask File path	Path to mask folder	INSTALL FOLDER \Compliance Suites \MIPI\M-PHY \Transmitter\SYS \Mask Files \26MHz \1.3.7_T_EYE_TX_SA_RT_26.msk	N/A
	RT SA Mask File path	Path to mask folder	INSTALL FOLDER \Compliance Suites \MIPI\M-PHY \Transmitter\SYS \Mask Files \26MHz \1.3.7_T_EYE_TX_SA_RT_26.msk	N/A
	From Edge	RISE, FALL, EITHER	RISE	N/A

Parameter group	Parameter name	Range	Default	Units
	To Edge	SAME AS, OPPOSITE AS	OPPOSITE AS	N/A
	SDLA Mode	Auto, Manual	Auto	N/A
	Manual Setting Mode	UI Selection, File Selection	UI Selection	N/A
Under UI Selection	fp1	0.401(GHz, 0.6(GHz), 1.75(GHz), 0.8(GHz), 1.6(GHz, 2.3(GHz), 1.0(GHz), 2.6(GHz), 2.1(GHz)	2.3(GHz)	GHz
	fp2	10(GHz)	10(GHz)	GHz
	fz	0.4(GHz), 0.8(GHz), 1.2(GHz), 1.05(GHz), 0.7(GHz)	1.2(GHz)	GHz
	Adc	2, 1.33, 1.0, 0.8, 0.66	2	N/A
Under File Selection	File Selection Path	INSTALL FOLDER \Compliance Suites \MIPI\M-PHY \Transmitter\HS \SDLAEqualizerSettings.csv	N/A	N/A

1.3.1 SYS-TX Unit Interval and Frequency Offset test

Verifies that the unit interval and frequency offset of the DUTs SYS-TX are within the conformance limits, for all supported Reference Frequencies.



Configurable parameters. *SYS Acquire*, *SYS Ref Levels*, *SYS Filters*

1.3.2 SYS-TX Ref Clock Frequency test

Verifies that the frequency ($f_{REFCLK\text{-}TX}$) of the DUT's shared reference clock is within the conformance limits.

Configurable parameters. *SYS Acquire*, *SYS Ref Levels*, *SYS Filters*

1.3.3 SYS-TX PREPARE Length test

Verifies that the length of the DUT's transmitted SYS-PREPARE period is consistent with the value indicated by its TX_LS_PREPARE_LENGTH configuration attribute.

Configurable parameters. *SYS Acquire*, *Prepare Length*

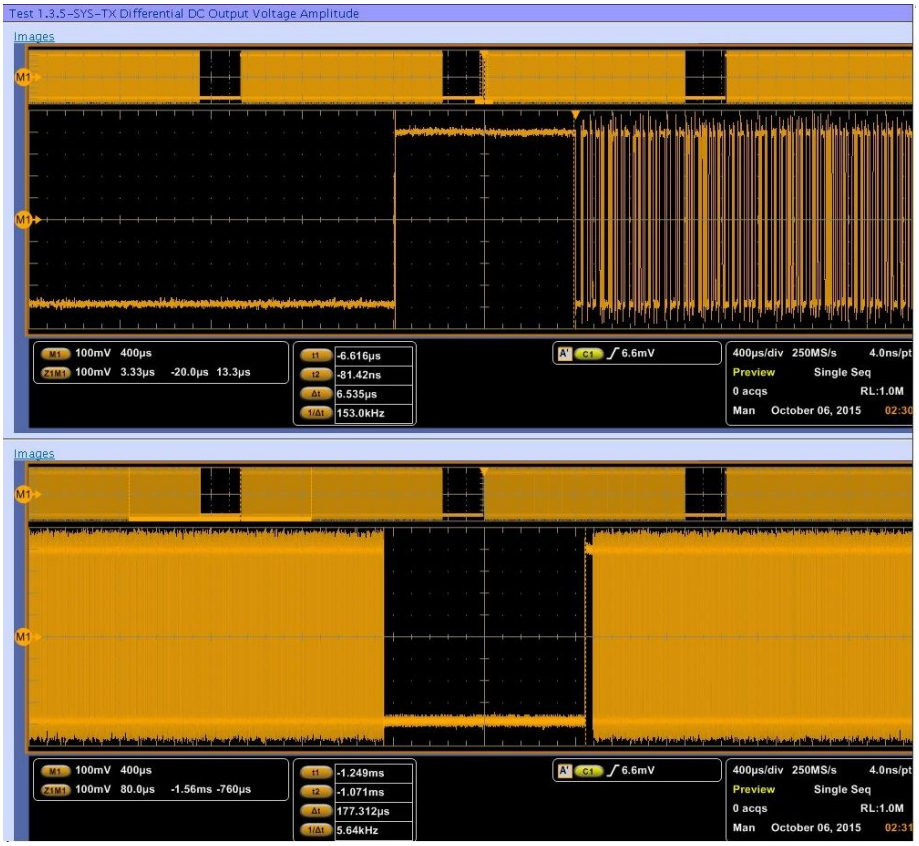
1.3.4 SYS-TX Common Mode DC Output Voltage Amplitude test

Verifies that the common-mode output voltage amplitude (VCM-TX) of the DUT's SYS-TX is within the conformance limits, for all combinations of supported amplitudes, terminations, lanes and reference frequencies.

Configurable parameters. *SYS Acquire*

1.3.5 SYS-TX-Differential DC Output Voltage Amplitude test

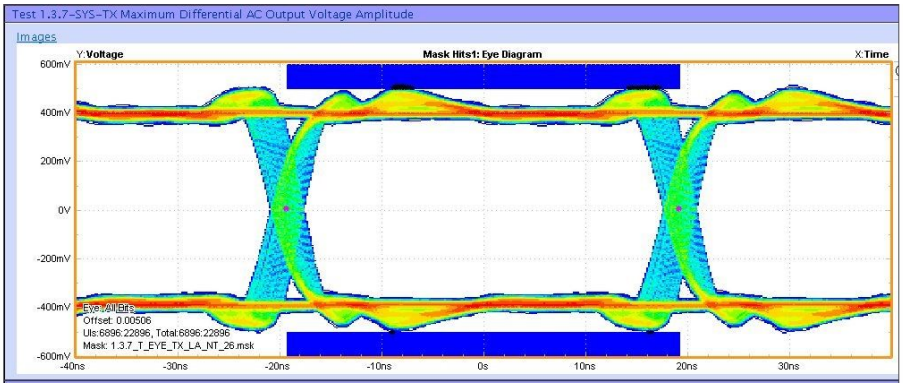
Verifies that the differential DC output voltage amplitude ($V_{DIF\text{-}DC\text{-}TX}$) of the DUT's SYS-TX is within the conformance limits, for all combinations of supported amplitudes, terminations, lanes, and reference frequencies.



Configurable parameters. *SYS Acquire*

1.3.7 SYS-TX Maximum Differential AC Output Voltage Amplitude test

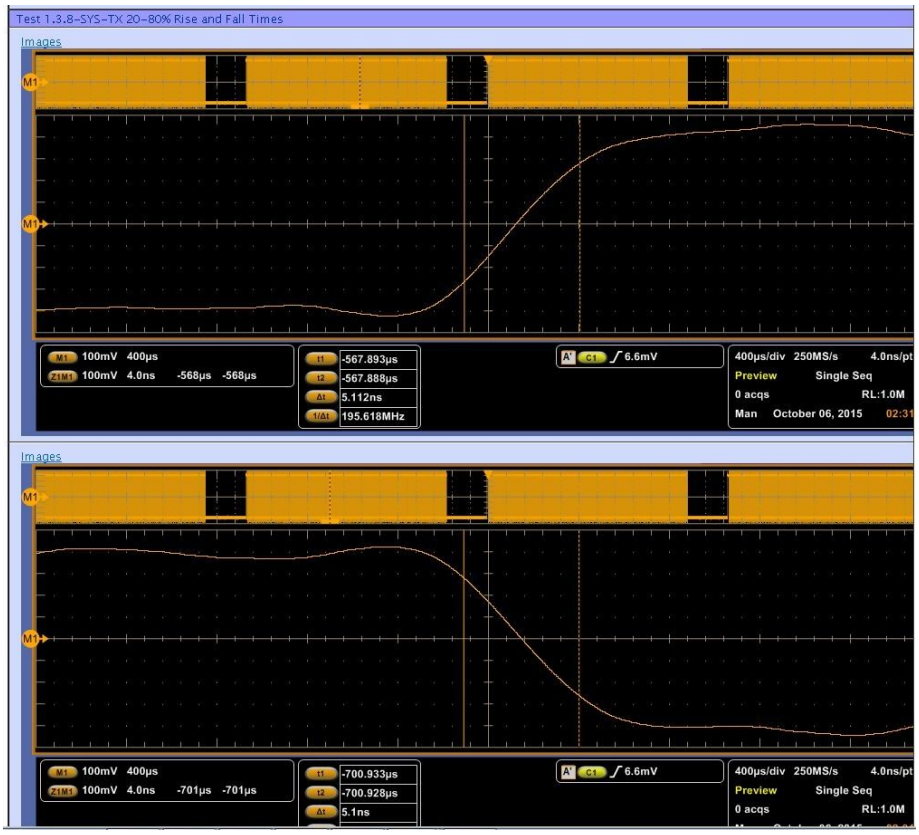
Verifies that the DUT's SYS-TX meets the requirements for the maximum differential AC output voltage amplitude for all combinations of supported frequency, terminations, and lanes.



Configurable parameters. *SYS Acquire*, *SYS Ref Levels*, *SYS Clock Recovery*, *SYS Mask File path*

1.3.8 SYS-TX 20-80% Rise and fall Times test

Verifies that the rise and fall times ($T_{R\text{-}SYS\text{-}TX}$ and $T_{F\text{-}SYS\text{-}TX}$) of the DUT's SYS-TX are within the conformance limits, for all combinations of supported amplitudes, terminations, lanes and reference frequencies.



Configurable parameters. *SYS Acquire*

1.3.9 SYS-TX Lane to Lane Skew test

Verifies that the Lane-to-Lane Skew ($T_{L2L\text{-}SKEW\text{-}SYS\text{-}TX}$) of the DUT's SYS-TX meets the specified conformance limits.

Configurable parameters. *SYS Acquire*

Global SYS test parameter list

This following table lists the common SYS test parameters with the default, range and units.

Table 38: Common SYS parameters

Parameter name	Range	Default	Units
DUT Operation Mode	Burst. Continuous	Burst	N/A
Amplitude	Both Supported Large Amplitude Small Amplitude	Large Amplitude	N/A
Termination	Both Supported Terminated Unterminated	Terminated	N/A
DUT Signal Probing	Differential Single-ended	Single-ended	N/A
SYS 26MHz	Included, Excluded	Included	N/A
SYS 38.4MHz	Included, Excluded	Excluded	N/A
SYS 52MHz	Included, Excluded	Excluded	N/A
Clock Source	Internal, External	Internal	N/A
Connected to	CH1, CH2, CH3, CH4	CH1	N/A

Map my TekExpress folder

In the case where you operate the TekExpress application on one oscilloscope, but acquire data from another (remotely-accessed) oscilloscope, you need to share and map the My TekExpress folder on the remote instrument with the M-PHY TX application.

To map the My TekExpress folder on a remote instrument:

1. Open Windows Explorer.
2. From the Windows Explorer menu, click **Computer**.
3. In the menu bar, click **Map network drive**.
4. Select the Drive letter as **X:** (if there is any previous connection on X:, disconnect it first through **Tools > Disconnect Network drive** menu of Windows Explorer. Windows 7 users: if you do not see the Tools menu, press the **Alt** key).
5. In the Folder field, enter the remote My TekExpress folder path (for example, \\192.158.97.65\ My TekExpress).
6. Click **Finish**.

To determine the IP address of the instrument where the My TekExpress folder exists, do the following:

1. On the instrument where the My TekExpress folder exists, click **Start** and select **Run**.
2. Type **cmd** and press **Enter**.
3. At the command prompt, type **ipconfig** and press **Enter**.

Waveform naming conventions (pre-recorded mode)

HS test output file name conventions

The following file name syntax is used for HS test output waveform files:

[LANEx] [CHy/MATHy] [CRPAT] [Termination] [Gear] [Amplitude] [Slew Rate] [Horizontal Scale] [Resolution] [POS/NEG].wfm

HS tests (1.1.xx)	Acquire type	Example file names
1, 3–8	CRPAT	Lane0 CH1 CRPAT RT Gear1A LA SR1 10usdiv 10pspt POS.wfm Lane0 CH2 CRPAT RT Gear1A LA SR1 10usdiv 10pspt NEG.wfm
2	CRPAT PSD-Single-ended [1]	Lane0 CH1 CRPAT RT Gear1A LA SR1 10usdiv 10pspt POS.wfm Lane0 CH2 CRPAT RT Gear1A LA SR1 10usdiv 10pspt NEG.wfm Lane0 MATH1 CRPAT RT Gear1A LA SR1 10usdiv 10pspt CM.wfm Lane0 MATH2 CRPAT RT Gear1A LA SR1 10usdiv 10pspt SPECMAG.wfm Lane0 MATH2 CRPAT RT Gear1A LA SR1 10usdiv 10pspt OUTdB.wfm [2] Lane0 MATH2 CRPAT RT Gear1A LA SR1 10usdiv 10pspt OUTLimit.wfm
10–12	CRPAT Slew Rate	Lane0 CH1 CRPAT RT Gear1A LA SR1 10usdiv 10pspt POS.wfm Lane0 CH2 CRPAT RT Gear1A LA SR1 10usdiv 10pspt NEG.wfm
13	CRPAT Single-ended	Lane0 CH1 CRPAT RT Gear1A LA SR1 10usdiv 10pspt POS.wfm Lane0 CH2 CRPAT RT Gear1A LA SR1 10usdiv 10pspt NEG.wfm

[1] Test 1.1.2 (HS-TX Common-Mode AC Power Spectral Magnitude Limit), Test 1.1.6 (HS-TX G1 and G2 Differential AC Eye test) and Test 1.1.7-HS-TX G3 and G4 Differential AC Eye test) cannot be executed in pre-recorded mode.

[2] These waveforms are output of PSD test.

PWM test output file name conventions

The following file name syntax is used for PWM test output waveform files:

[LANEx] [CHy] [CRPAT] [Termination] [Gear] [Amplitude] [Horizontal Scale] [Resolution] [POS/NEG].wfm

The following are a few PWM file name examples:

Lane0 CH3 CRPAT RT Gear0 LA 2000usdiv 4000pspt POS.wfm

Lane0 CH3 CRPAT RT Gear0 LA 2000usdiv 4000pspt NEG.wfm

SYS test output file name conventions

The following file name syntax is used for SYS test output waveform files:

[LANEx] [CHy] [CRPAT] [Termination] [Gear] [Amplitude] [Horizontal Scale] [Resolution] [POS/NEG].wfm

In the pre recorded mode, the automation expects the waveforms to be provided in the same naming format.

NOTE. *For Lane to Lane skew measurements in HS, PWM, and SYS (Test 1.1.9 - HS-TX Lane-to-Lane Skew, 1.2.9 - PWM-TX Lane-to Lane Skew, and 1.3.9 -SYS-TX Lane-to-Lane Skew) uses inputs from two lanes. The following file name syntax is used for Lane to Lane skew measurements for HS, PWM and SYS tests for output waveform file:*

[LANEx] [LANEX1] [CHy] [CRPAT] [Termination] [Gear] [Amplitude] [Horizontal Scale] [Resolution] [POS/NEG].wfm

where X is reference lane (Lane0/L0) and X1 is another lane (Lane1, Lane2, Lane3...).

Index

I

K

L

M

O

P

Q

R

S

T

U

V