TekExpress® USB3.2

Automated Test Solution Software

Application Help

Register now!

Click the following link to protect your product.

www.tek.com/register

077-0939-08 July 2026

Supports Product Firmware

These are the original instructions in English.

Go to tek.com/eula to read the Tektronix End User License Agreement.

Contacting Tektronix

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P.O. Box 500
Beaverton, OR 97077
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For product information, sales, service, and technical support:

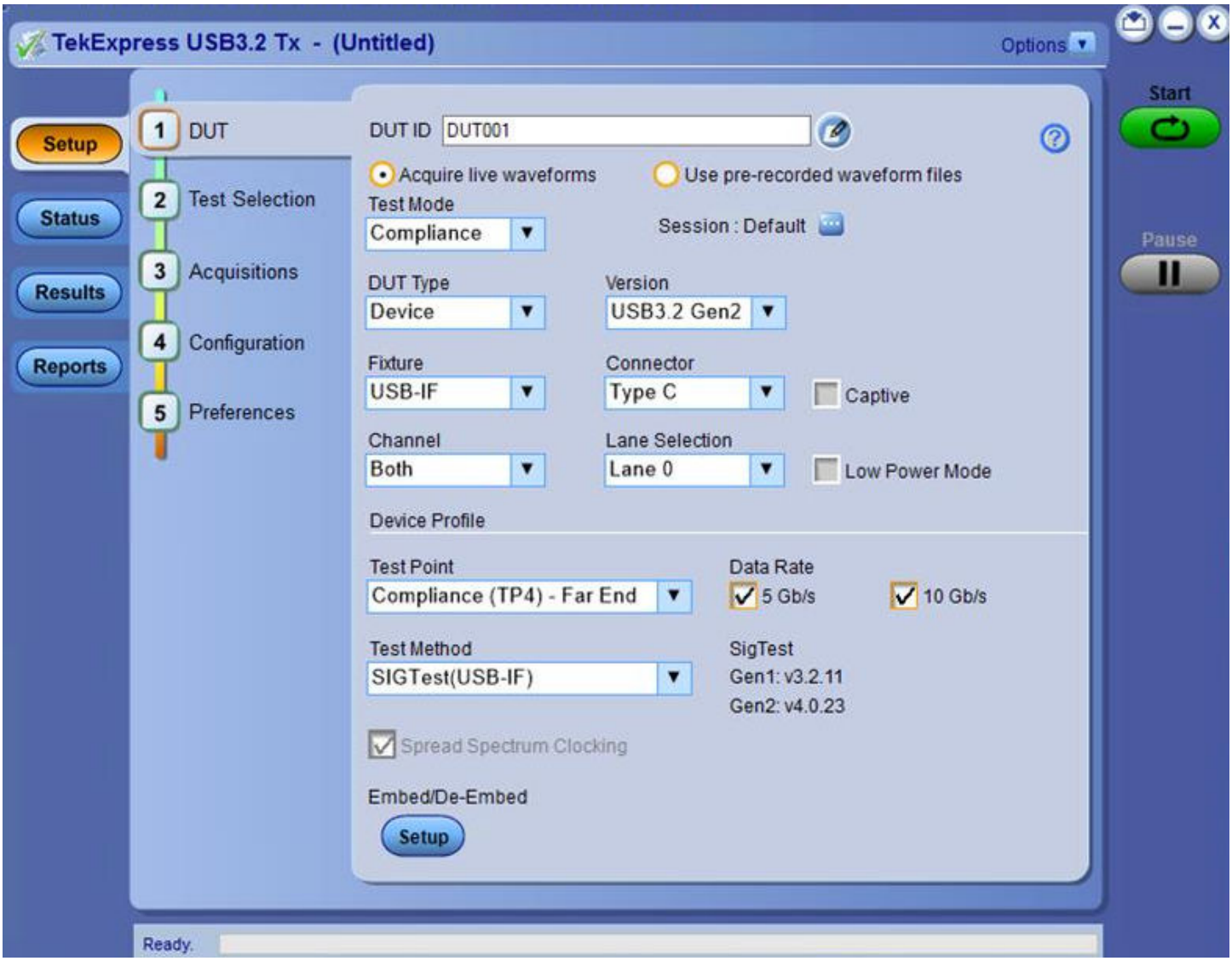
In North America, call 1-800-833-9200.

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

Contents

Welcome

Welcome to the TekExpress® USB3.2 Tx Automated Test Solution Software application (referred to as USB3.2 Tx in the rest of the document). The TekExpress USB3.2 Tx provides an automated, simple, and efficient way to test USB3.2 Tx transmitter interfaces and devices for USB-IF compliance and allows you to correlate Sig Test results with DPOJET (This feature is supported only for MSO/DPO70000 models) for better margin, debugging, and analysis.



Key features and benefits

- Automated solution for USB Type C, Standard, and Micro connectors which support USB3.2 Tx specification and CTS (Gen1 & Gen2)
- DPOJET plugin for USB Type C, Standard, and Micro connectors which support USB3.2 Tx specification and CTS (Gen1 & Gen2) with setup files and MOI
- Support embedding Channels (1 m, 2 m, and 3 m cable) and their respective filter files for Type C, Standard, and Micro connectors
- Automated Lane Switching for reversible Type C connector

- Command line support for SigTest (latest released version by USB-IF)
- Manual support for compliance to debug with DPOJET USB and USBSSP plug-ins
- Support for DUT toggle using Internal AFG on DPO714AX

Getting help and support

Product documents

Use the product documents for more information on the application functions, understand the theory of operation, how to remotely program or operate the application, and do other tasks.

TekExpress Application documents

To learn about	Use this document
How to use the application How to remotely control the instrument	TekExpress USB3.2 Help PDF version can be downloaded from www.tek.com. Compiled HTML (CHM) version is integrated with the application. Press F1 key from the keyboard to start the help. Tektronix Part Number: 077-xxxx-xx

Conventions

This application help uses the following conventions:

- The term "Application," and "Software" refers to the TekExpressUSB3.2Application.
- The term “DUT” is an abbreviation for Device Under Test.
- The term “select” is a generic term that applies to the two methods of choosing a screen item (button control, list item): using a mouse or using the touch screen.
- A **Note** identifies important information.

Icons used in the help

Icon	Description
	This icon identifies important information
	This icon identifies conditions or practices that could result in loss of data.
	This icon identifies additional information that will help you use the application more efficiently.

Technical support

Tektronix values your feedback on our products. To help us serve you better, please send us your suggestions, ideas, or comments on our application or oscilloscope. Contact Tektronix through mail, telephone, or the Web site. See Contacting information (on page 2) at the front of this document for contact 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
- Modules 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

Hardware requirements

Minimum system requirements

The following table shows the minimum system requirements needed for an oscilloscope to run TekExpress USB3.2.

TekExpress USB3.2 system requirements

Component	Requirement
Oscilloscope	See Supported instruments (on page 10)
Processor	Same as the oscilloscope
Operating System	Same as the oscilloscope: ▪ Windows 10 (64-bit only) SP1 Windows 10 user account settings (on page 13)
Memory	Same as the oscilloscope
Hard Disk	Same as the oscilloscope
Display	Super VGA resolution or higher video adapter (800 x 600 minimum video resolution for small fonts or 1024 x 768 minimum video resolution for large fonts). The application is best viewed at 96 dpi display settings*. **NOTE:** If TekExpress is running on an instrument that has a video resolution less than 800x600, connect and configure a second monitor to the instrument.
Firmware	▪ DPO714AX: TekScope 2.20.x or later ▪ DPO/DSA/MSO70000C, D, DX, and SX series oscilloscopes: TekScope 10.10.0 or later (for Windows 10)

* If TekExpress is running on an instrument that has a video resolution less than 800x600, connect and configure a second monitor to the instrument.

Supported instruments

Required equipment

Resource	Model supported
Real-time oscilloscope	▪ DPO714AX ▪ Tektronix DPO/DSA/MSO70000C, D, DX, and SX series oscilloscopes (Windows 7/ Windows 10 OS): • 16 GHz bandwidth and above required for both Gen1 (5 Gbps) and Gen2 (10 Gbps) Normative and Informative measurements • 12.5 GHz bandwidth and above is suitable for Gen1 (5 Gbps) Normative and Informative measurements • 8 GHz bandwidth model is suitable for Gen1 (5 Gbps) debug only

Probes	▪ Two units of TCA SMA cables ▪ Two units of SMP cables ▪ P7313SMA differential probe ▪ P7500 TriMode probe	
USB3.2 Standard and Micro-B fixtures	The USB31AET fixture includes all Standard and Micro-B test fixtures for USB3.2 Tx compliance testing. This fixture set includes Tx Host and device testing, captive device testing, and Rx cal testing. ▪ For Gen1 (5 Gb/s), use the USB3.0 Electrical Test Fixture. ▪ For Gen2 (10 Gb/s), use th USB31AET fixture set	
USB3.2 Type C fixtures	▪ The USB31CET fixture includes Type C fixtures for USB3.2 Tx Type C compliance testing. ▪ The fixture set includes Tx Host and Device testing, captive device testing, and Rx Cal testing.	
Tektronix AWG/AFG instruments	AWG7102, AWG7122 series with options 6, 8 AWG70001A, AWG70002A AWG5202, AWG5204 and AWG5208 AWG5014B, AWG5014C, AWG5012C, AWG5002C AFG3051C, AFG3052C, AFG3101, AFG3101C, AFG3102, AFG3102C, AFG3251, AFG3251C, AFG3252, AFG3252C, AFG3151C, AFG3152C AFG31101 /AFG31102, AFG31151 /AFG31152 or AFG31251 / AFG31252	
Tektronix Power Supply instruments	PWS4205, PWS4305, PWS4323, PWS4602, PWS4721, AWG7102, AWG7122B, AWG7122C	
Connector Type	Standard	Standard A to B connector* [1]
	Micro	Micro A and micro B connector
	Type C	Symmetrical connector on both side

See also

Minimum system requirements (on page 10)

Software requirements

Minimum software license requirements

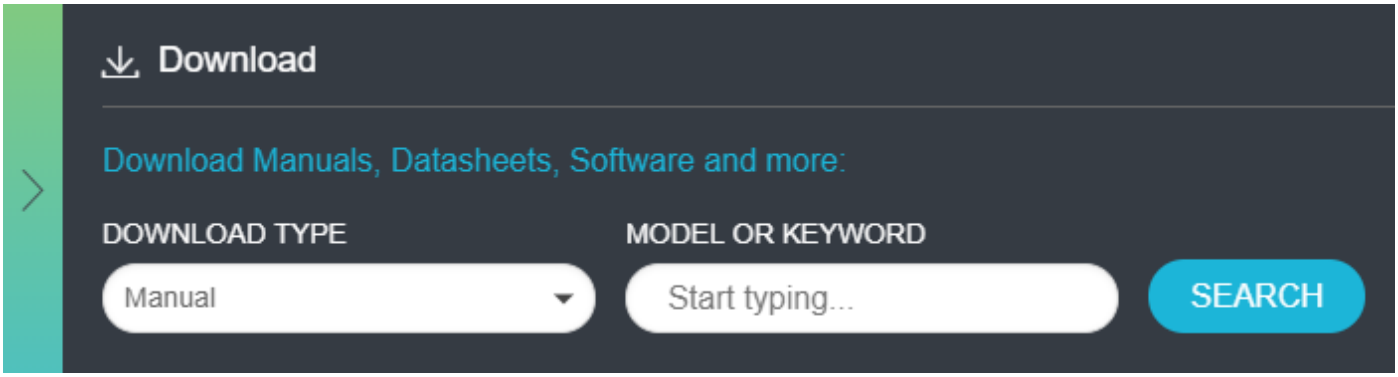
Software	Details
DPOJET* [2]	Jitter and Eye Analysis Tool (version 10.0.10 or higher) with Advanced Jitter and Eye analysis (DJA option) installed
Serial Data Link Analysis (SDLA)[3]	version 3.0.4 or later, for Channel De- Embed, for custom filter development.
Microsoft Internet Explorer	Version 7.0 SP1 or later, or other Web browser for viewing reports.
Adobe Reader software	Version 7.0 or later for viewing portable document format (PDF) files

[1] A to mini-B from USB-IF is not compliant any more.
[2] This feature is supported only for MSO/DPO70000 models

Downloading and installing the software

Complete the following steps to download and install the latest TekExpress USB3.2 application.

1. Go to www.tek.com.
2. Click **Downloads**. In the Downloads menu, select DOWNLOAD TYPE as Software and enter the application name in the MODEL OR KEYWORD field and click **SEARCH**.



3. Select the latest version of software and follow the instructions to download the software. Copy the executable file into the oscilloscope.
4. Double-click the executable and follow the on-screen instructions.

   The software is installed at `C:\Program Files\Tektronix\TekExpress\TekExpress USB3.2`.
5. Select **Application/Analyze>TekExpress USB3.2** from the Oscilloscope menu, to open the application.

Activate the license

To activate the license, access the oscilloscope's help documentation, navigate to the License Activation section, and follow the on-screen instructions using the oscilloscope interface.

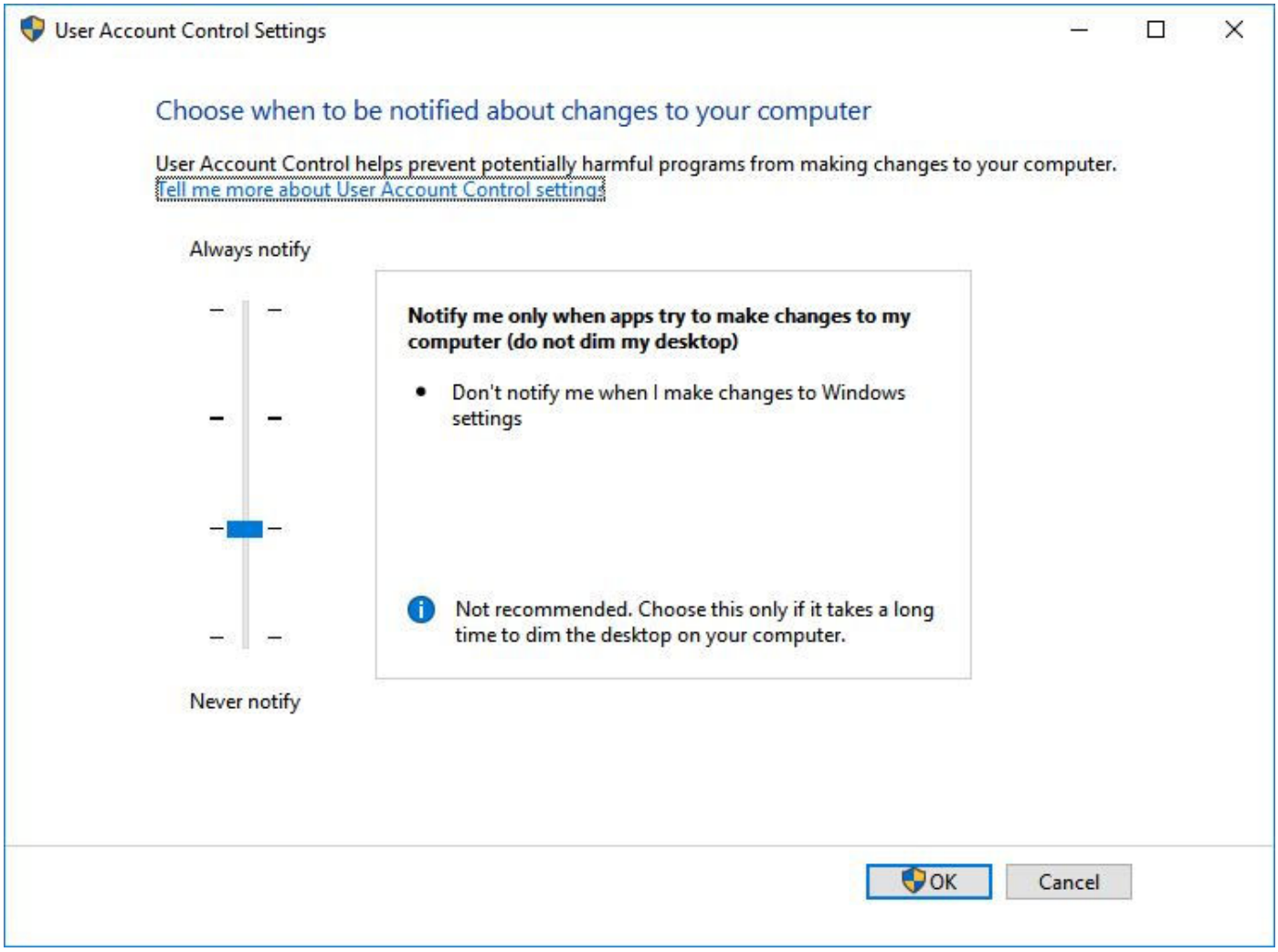
Check Software Version and License Agreement

To view version information of the application, click **Options > About TekExpress**.

Required windows 10 user account setting

Windows 10 instruments need to have the User Account Control Settings set to **Never Notify**. To set User Account Control Settings:

1. Go to **Control Panel > User Accounts > Change User Account Control settings**.
2. Set the sliding control to **Never Notify** as shown in the image, and click **OK**.



Windows 10 User Account Control Settings

See also

Supported oscilloscopes (on page 10)

Required my TekExpress folder settings

Before you run tests for the first time, Refer Set my TekExpress folder permissions (on page 14) for the folder permission.

See also

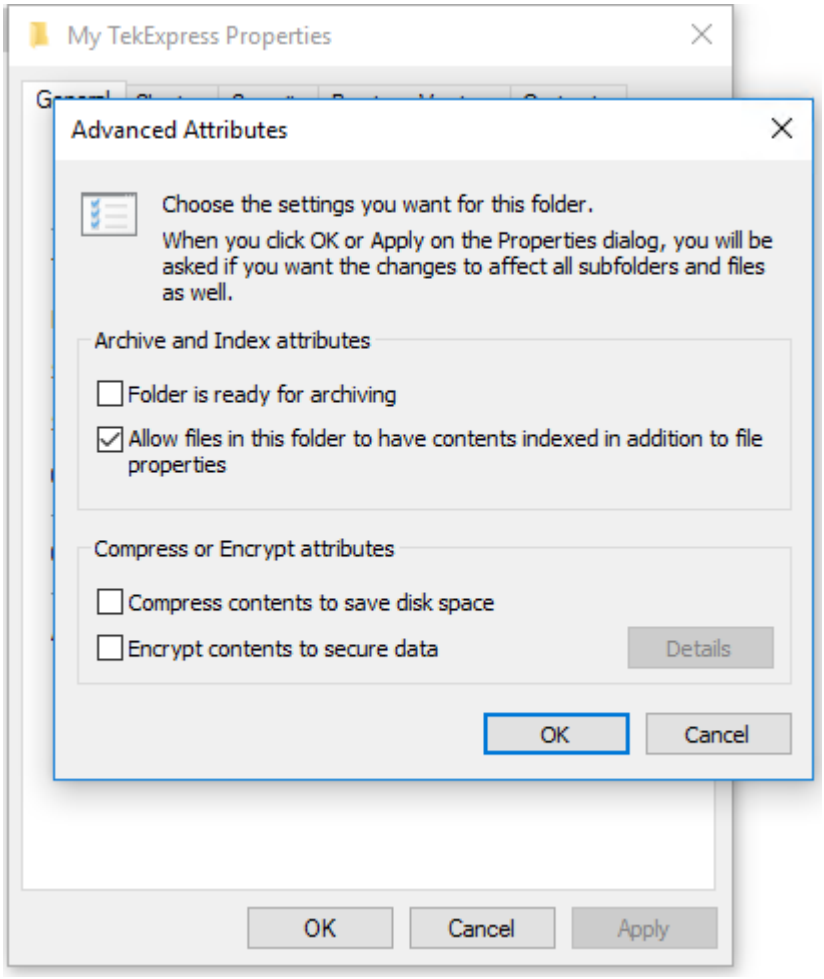
Application directories (on page 104)

File name extensions (on page 104)

Set my TekExpress folder permissions

Follow the steps to ensure, you have read and write access to the My TekExpress folder and also verify that the folder is not set to be encrypted:

1. Right-click the folder and select **Properties**.
2. Select the **General** tab, and then click **Advanced**.
3. In the Advance Attributes dialog box, ensure that the option **Encrypt contents to secure data** is not selected.



4. Click the **Security** tab and verify that the correct read and write permissions are set.

See also

Application directories (on page 104)

File name extensions (on page 104)

View test-related files (on page 105)

Test files storage location

When you launch TekExpress USB3.2 for the first time, it creates the following folders on the oscilloscope:

- `\My Documents\My TekExpress\USB3.2`
- `\My Documents\My TekExpress\USB3.2\Untitled Session`

Every time you launch TekExpress USB3.2, an **Untitled Session** folder is created in the **USB3.2**folder. The **Untitled Session** folder is automatically deleted when you exit the **USB3.2** application. To preserve your test session files, save the test setup before exiting the TekExpress application.

CAUTION: Do not 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.

See also

Set the My TekExpress folder permissions (on page 14)

Application directories (on page 104)

File name extensions (on page 104)

Setting up the test environment

Test process flow

Use the following list to set up and performing USB3.2 tests.

1. Allow test instruments to warm up (~20 minutes).
2. Deskew the real-time oscilloscope (on page 16).
3. Set up test equipment (on page 17).
4. Verify the required instruments are connected to USB3.2(refer TekExpress instrument control settings (on page 24)).
5. Set DUT Parameters.
6. Select tests.
7. View acquisition settings.
8. Set global signal-related parameters.
9. Select test notification preferences.
10. Select report options (on page 46).
11. Check the prerun checklist (on page 17)
12. Click Start to Run tests (on page 17).
13. Click **Start** to Run tests (on page 17).

See also

Save the configured test setup (on page 51)

Running tests (on page 17)

De-skew real-time oscilloscopes for DPO/MSO70000 Series oscilloscope

Use the following procedure to deskew direct input SMA channels on a Real Time Oscilloscope.

NOTE: DPOJET has an automatic deskew option. Refer to your DPOJET online help for information on how to deskew the channels.

1. Run Signal Path Compensation (SPC) on the oscilloscope.
2. Connect a SMA Power Splitter (preferred) or SMA 50 Ω coaxial “T” connector to the Fast Edge output of the oscilloscope.
3. Connect SMA cables from each of the two channels to be deskewed to the power splitter (or SMA coaxial “T” connector). Use matched cables for high speed serial measurements.**It is important to use the same cables during deskew that you will use for subsequent measurements.**
4. Select **Default Setup**, and then select **Autoset** on the oscilloscope front panel.
5. Set the oscilloscope for 70% to 90% full screen amplitude on both channels. Center both traces to overlap.
6. Make sure that volts/div, position, and offset are identical for the two channels being deskewed.

7. Set the time/div to approximately 100 ps/div or less, with the sample rate at 1 ps/pt. These settings are not critical, but should be close.
8. Set the horizontal acquisition mode to average, which provides a more stable display.
9. Select **Deskew** from the **Vertical** menu.
10. Verify that the reference channel (typically CH1 or CH2) is set to 0 ps deskew.
11. In the deskew control window, select the channel to deskew (typically CH3 or CH4). Adjust the deskew to overlay the rising edge as best as possible.

NOTE: Typical values are in the 10's of ps or less with cables connected directly from Fast Edge to SMA inputs. If you are using a switch box (for example, Keithley), deskew the complete path from where the test fixture connects, through the switch, and into the oscilloscope. Deskew values in these cases may be as much as 30 ps or more.

There can be significant differences in the skew between two TCA-SMA adapters. If you find that a system requires a very large correction, obtain a pair of TCA-SMA adapters that closely match each other to reduce the amount of correction.

TekExpress retains the user configured Deskew values, and does not override the values during test runs.

Instrument and DUT connection setup

Click the **Setup > Test Selection > Schematic** button to open a PDF file that shows the compliance test setup diagrams (instrument, DUT, and cabling) for supported testing configurations.

See also

Minimum system requirements (on page 10)

TekExpress instrument control settings (on page 24)

Running tests

After selecting and configuring the tests, review the prerun checklist (on page 17) 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 TekExpressUSB3.2 application on top, select **Keep On Top** from the TekExpress **Options menu**.

See also

Configuration tab parameters (on page 34)

Prerun checklist

Follow the below steps before you click Start to run a test:

NOTE: If you are running a test on the application for the first time, Ensure that you have completed the procedures mentioned in Required My TekExpress folder settings (on page 13) before continuing.

1. Ensure that all the required instruments are properly warmed up (approximately 20 minutes).
2. To perform Signal Path Compensation (SPC):

a. On the oscilloscope main menu, select the **Utilities** menu.
b. Select **Instrument Calibration**.
c. Follow the on-screen instructions.

3. Verify that the correct instruments are connected (oscilloscope and signal sources):
    1. In TekExpress USB3.2, click **Setup > Configuration**.
    2. Click **Global Settings**.
    3. In the **Instruments Detected** list, verify that the test setup instruments are listed. If they are not in the list, click the arrow button to list and select from all detected instruments. If the required instrument is still not listed, use the TekExpress Instrument Control Settings dialog box to scan for and detect instruments (refer TekExpress instrument control settings (on page 24)).

See also

Instrument and DUT connection setup (on page 17)

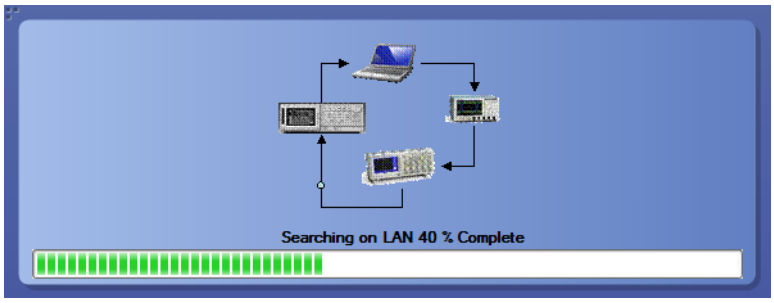
Search instruments connected to the application

Use the TekExpress Instrument Control Settings dialog box to search the instruments (resources) connected to the application. The application uses TekVISA to discover the connected instruments.

NOTE: The instruments required for the test setup must be connected and detected by the application, before running the test.

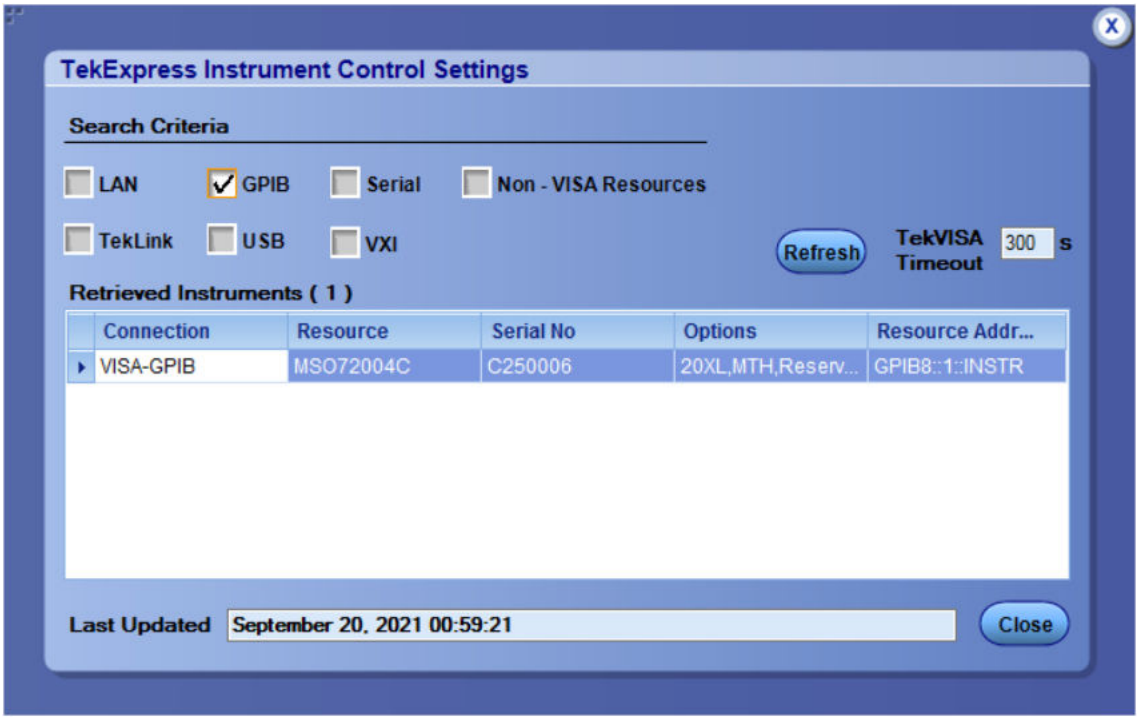
To refresh the list of connected instruments:

1. Select **Options > 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. Instrument search is based on the VISA layer, but different connections 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 the TekExpress that are communicating over the LAN.
3. Click **Refresh**. The TekExpress application searches for the connected instruments.



Search status of the instruments connected to LAN

4. When the search is complete, a dialog box lists the instrument-related details based on the search criteria. For example, for the Search Criteria as LAN and GPIB, the application displays all the LAN and GPIB instruments connected to the application.

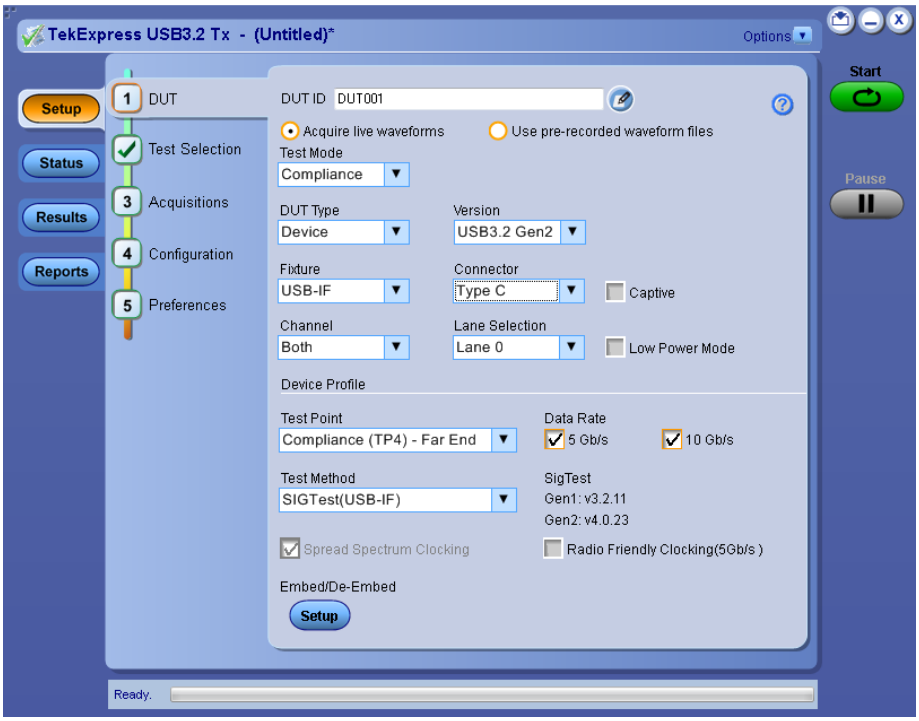


TekExpress Instrument Control Settings window

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.

Starting the application

To start the TekExpress USB3.2, select from the oscilloscope menu bar **Applications/Analyze > TekExpress USB3.2**



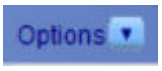
During start, a "My TekExpress" folder is created in the Documents folder of the current user and gets mapped to "X" drive. When the application is closed properly, the "X" drive gets unmapped. Session files are then stored inside the `X:\USB3.2` folder. If this file is not found, the application runs an instrument discovery program to detect connected instruments before starting TekExpress USB3.2.

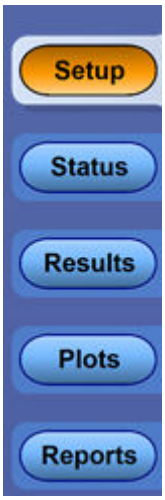
To keep the TekExpress USB3.2application on top of any application, select **Keep On Top** from the options menu (on page 22). If the application goes behind the oscilloscope application, select **Applications/Analyze>TekExpress USB3.2** to bring the application to the front.

Application controls

This section describes the application controls with functionality and its details.

Application control description

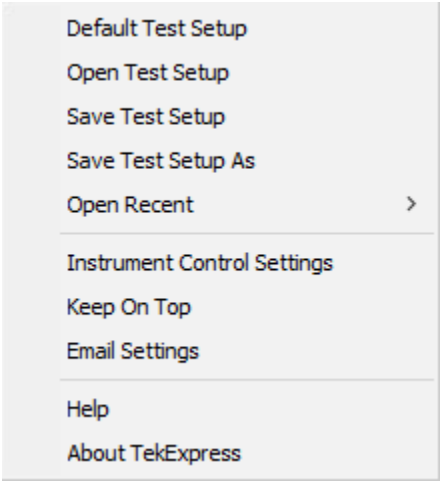
Item	Description
Options menu (on page 22) **Options** 	Menu to display global application controls.

Item	Description
Test panel 	Controls that open tabs for configuring test settings and options.
Start / Stop button  	Use the **Start** button to start the test run of the measurements in the selected order. If prior acquired measurements are not cleared, then new measurements are added to the existing set. The button toggles to the Stop mode while tests are running. Use the **Stop** button to abort the test.
Pause / Continue button 	Use the **Pause** button to pause the acquisition. When a test is paused, this button changes as **Continue**.
Clear button 	Use the **Clear** button to clear all existing measurement results. Adding or deleting a measurement, or changing a configuration parameter of an existing measurement, also clears measurements. This is to prevent the accumulation of measurement statistics or sets of statistics that are not coherent. This button is available only on Results panel (on page 44). **NOTE:** This button is visible only when there are results data on the panel.
Application window move icon 	Place the cursor over the top of the application window to move the application window to the desired location
Minimize icon 	Minimizes the application.

Item	Description
Close icon 	Close the application.
Mini view / Normal view  	Mini view displays the run messages with the time stamp, progress bar, Start / Stop button, and Pause / Continue button. The application moves to mini view when you click the Start button.

Options menu functions

To access the **Options** menu, click  in the upper-right corner of the application. It has the following selections:



Options menu

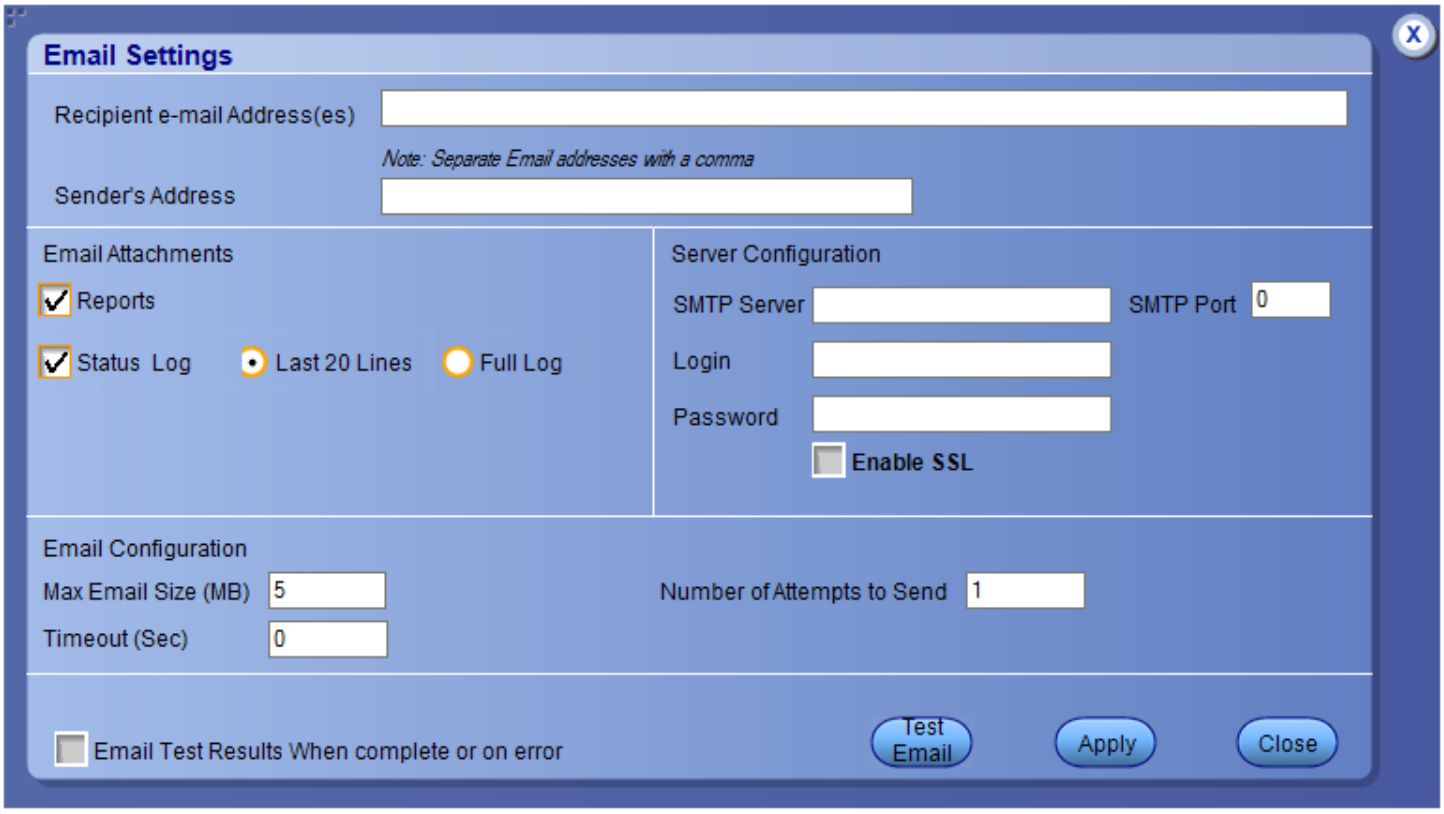
Options menu settings

Menu	Function
Default Test Setup	Opens a new test setup with default configurations.
Open Test Setup	Opens a previously saved test setup. Displays the list of previously saved test setup file names. Make the selection and click **OK** to open the test setup.
Save Test Setup	Saves the current test configurations with the specified file name.
Save Test Setup As	Saves the current test setup with a different file name or file type.
Open Recent	Displays the recently opened test setup file names. Make the selection and click **OK** to open the test setup.

Menu	Function
Instrument control settings (on page 24)	Detects, lists, and refreshes the connected instruments found on the specified connections (LAN, GPIB, USB, Serial, Non-VISA Resources, TekLink, and VXI).
Keep On Top	Always keeps the TekExpressUSB3.2 application on top of all the applications.
Email settings (on page 23)	Configures email options for test run and result notifications.
Deskew	Loads oscilloscope channel deskew settings into the application.
Help	Displays the TekExpress USB3.2 help.
About TekExpress	Displays the application name, version, and hyperlink to end the user license agreement.

Configure email settings

Use the **Email Settings** utility to get notified by email when a measurement completes or produces any error condition. Follow the steps to configure email settings:



Email settings window

1. Select **Options > Email Settings** to open the Email Settings dialog box.
2. (Required) For **Recipient email Address(es)**, enter one or more recipient email addresses. 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, then the @ symbol, and the email server ID. For example: user@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.

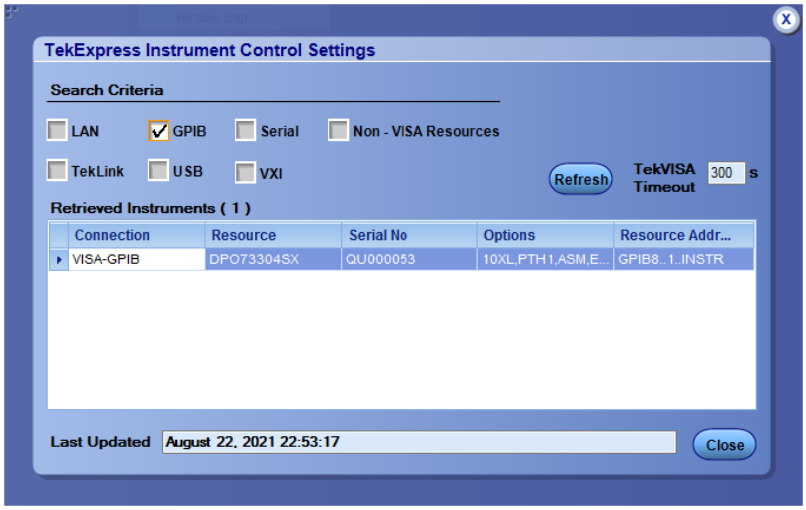
   NOTE: If any of the above required fields are left blank, the settings will not be saved, and email notifications will not be sent.

5. In the **Email Attachments** section, select from the following options:
   - **Reports**: Select to receive the test report with the notification email.
   - **Status Log**: Select to receive the test status log with 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:
   - Enter a maximum file size for the email message. 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.

TekExpress instrument control settings

Use the **TekExpress Instrument Control Settings** dialog box to search the instruments (resources) connected to the application. You can use the **Search Criteria** options to search the connected instruments depending on the connection type. The details of the connected instrument is displayed in the Retrieved Instruments window.

To access, click **Options** > **Instrument Control Settings**. Select **GPIB** as search criteria for TekExpress application and click **Refresh**. The connected instruments displayed in the Retrieved Instruments window and can be selected for use under Global Settings in the test configuration section.



TekExpress Instrument Control Settings window

See also

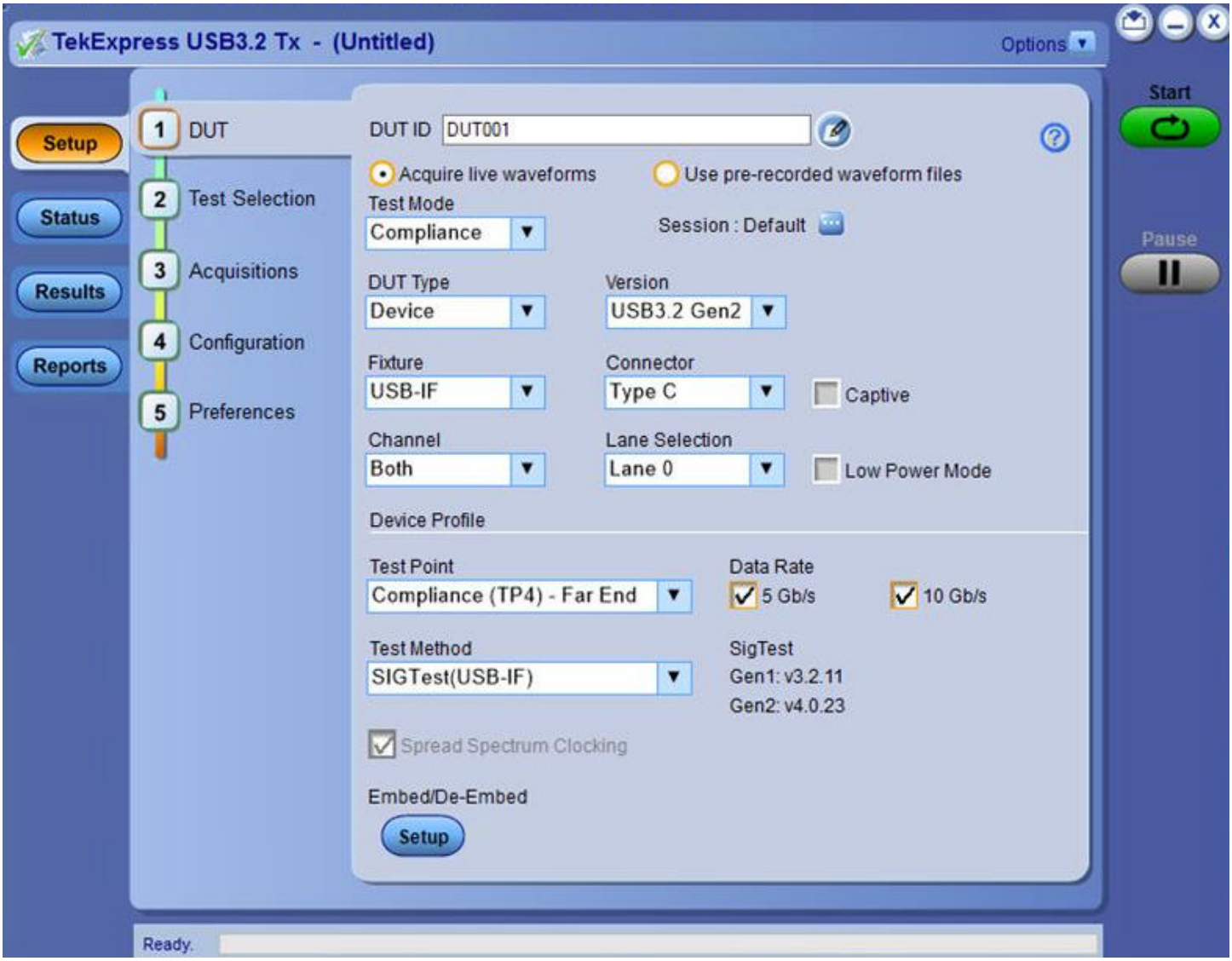
Options menu functions (on page 22)

Setup panel: Configure the test setup

The Setup panel contains sequentially ordered tabs that help you guide through the test setup and execution process.

DUT: Set DUT settings

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

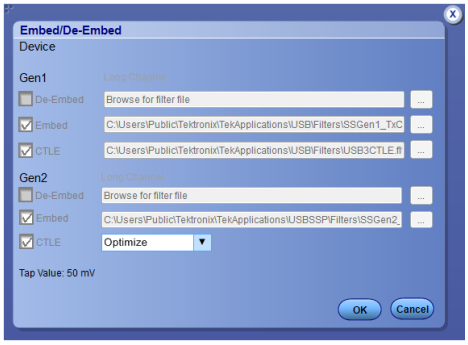


Click **Setup** > **DUT** to access the DUT parameters:

DUT tab configuration

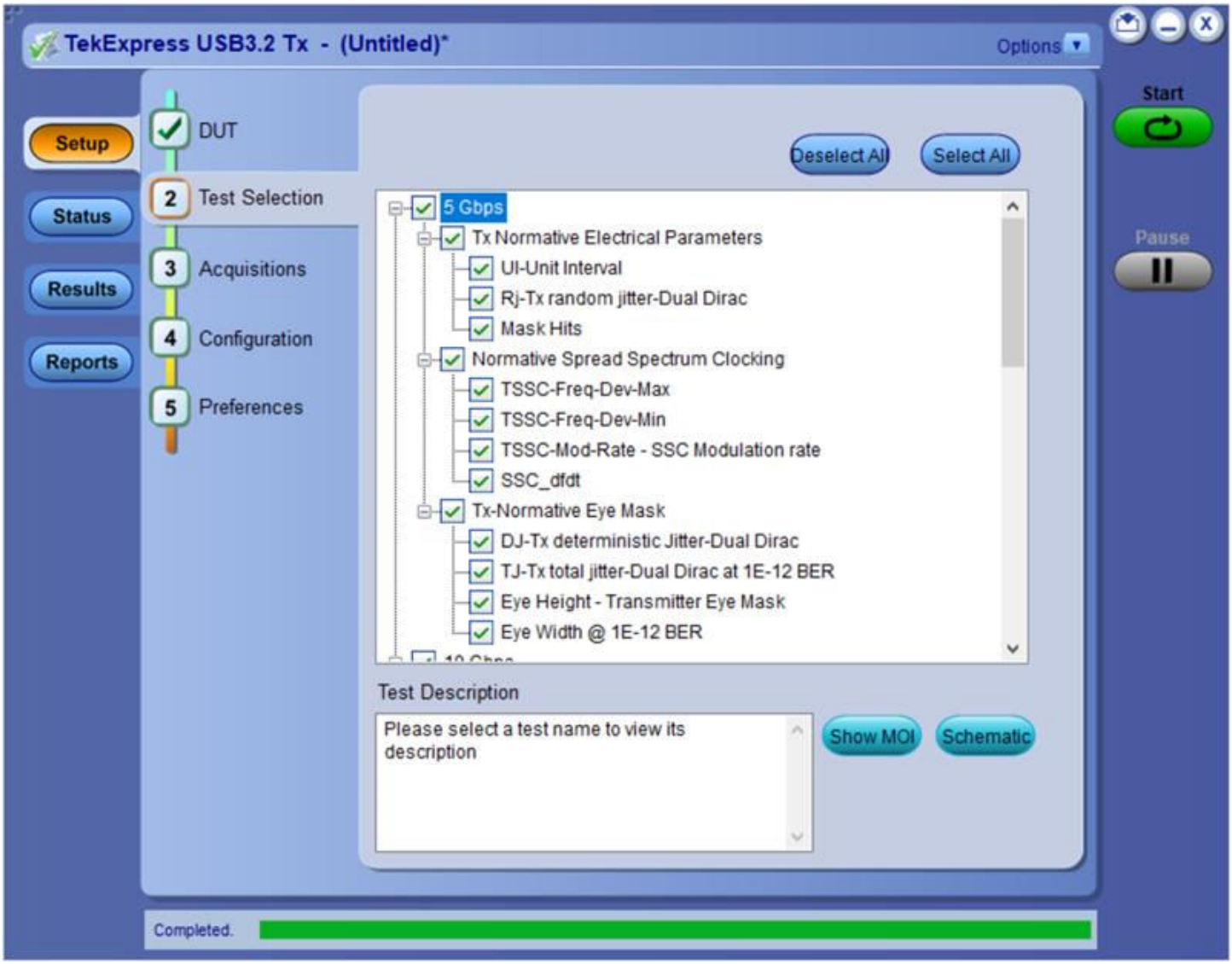
Setting	Description
DUT ID	Adds an optional text label for the DUT to reports. The default value is DUT001. The maximum number of characters is 32. You cannot use the following characters in an ID name: (.,..,...,\,/:?"<>|*).
Icon_1.png  Comments icon (to the right of the DUT ID field)	Opens a Comments dialog box in which to enter optional text to add to a report. Maximum number of characters is 256. To enable or disable comments appearing on the test report, see (Select report options (on page 46)).
Acquire live waveforms	Acquire active signals from the DUT for measurement and analysis.
Use prerecorded waveform files	Run tests on a saved waveform. Refer Load a saved test setup (on page 52).
DUT Type	▪ Device: Select the DUT type as Device. ▪ Host: Select the DUT type as Host.
Version	Lists the supported USB3.2 generations: ▪ USB3.2 Gen1 ▪ USB3.2 Gen2
Fixture	▪ USB-IF: For Standard and Type-C connector of USB3.2 Gen1 and USB3.2 Gen2
Connector	Select the appropriate connector form the options. ▪ Standard: For Type A and Type B, select Standard. ▪ Micro: For Micro B, select Micro. ▪ Type C: Select for Type C
Captive	Select Captive check box if DUT type is Captive/Tethered. Captive check box is applicable only if you select DUT Type as Device and Connector type as Type C or Standard.
Low power mode	Selected when USB 3.2 DUT is operating in low power mode.
Channel	It is a combination of different length of cables and PCBs. Depending on channel selection, different filters will be selected on the DUT tab. ▪ Long: Consists of 3 m cable or 1 m cable with PCB assembly. ▪ Short: Only PCBs, no cables attached ▪ Both: For Long and Short channel to be executed in single execution. During execution, user needs to change the channel from **Long** to **Short** as prompted by application.
Lane selection	Select the Lane Selection as Lane 0, Lane 1 or Both. This configuration is enabled only when the Connector type is Type C.

Test Mode	Compliance: Preselects tests and parameters needed to meet compliance specifications for the selected device type. Disables the compliance filter controls. User Defined: Enables the user to select specific tests and set custom parameters for tests (using the Configuration button). **NOTE:** Compliance Mode is selected by default on the DPO714AX and user cannot change it.
Device Profile	
Test Point	Select the appropriate test point location from those listed. Only Compliance (TP4) - Far End test point is available when Test Mode is set to Compliance. For Tx Pins - Near End and Custom test point, select Test Mode as User Defined.
Data Rates	Sets the test data rate (5 Gbps, 10 Gbps, or Both).
Test Method	Sets the algorithms used to measure and analyze the signal. SigTest (USB-IF) is default test method for Compliance. ▪ DPOJET: Select to perform measurements implemented in DPOJET. ▪ SIGTest(USB-IF): Select to perform measurements implemented in SIGTest (USB-IF). ▪ Both: Select to perform measurement implemented in DPOJET and SIGTest (USB-IF) simultaneously.
SigTest	Displays the SigTest version for Gen1 and Gen2.
Spread Spectrum Clocking	Select this check box if your DUT supports Spread Spectrum Clocking (SSC). Selects SSC tests based on your DUT configuration.
Radio Friendly Clocking(5Gb/s)	Select this check box to select the Radio Friendly Clocking. This option is available onlywhen Datarate 5 Gb/s is selected.

Filter Selection	Click to view and select the filter files. Lists deembed, embed, and CTLE filter files or settings used for the current DUT test points. Use filters to take cable and fixture signal path length and characteristics into account. This configuration is enabled only when the Test Mode is User Defined and the Channel type is Long or Both. **Filter Selection** **Filter selection.png**  For USB3.2 Gen2, CTLE is performed using SDLA with default value as "Optimize". You can also select a specific CTLE index when in the User Defined test mode.

Test Selection: Select the tests

Use the Test Selection tab to select the tests. The test measurements available depends on the settings selected in the DUT tab.



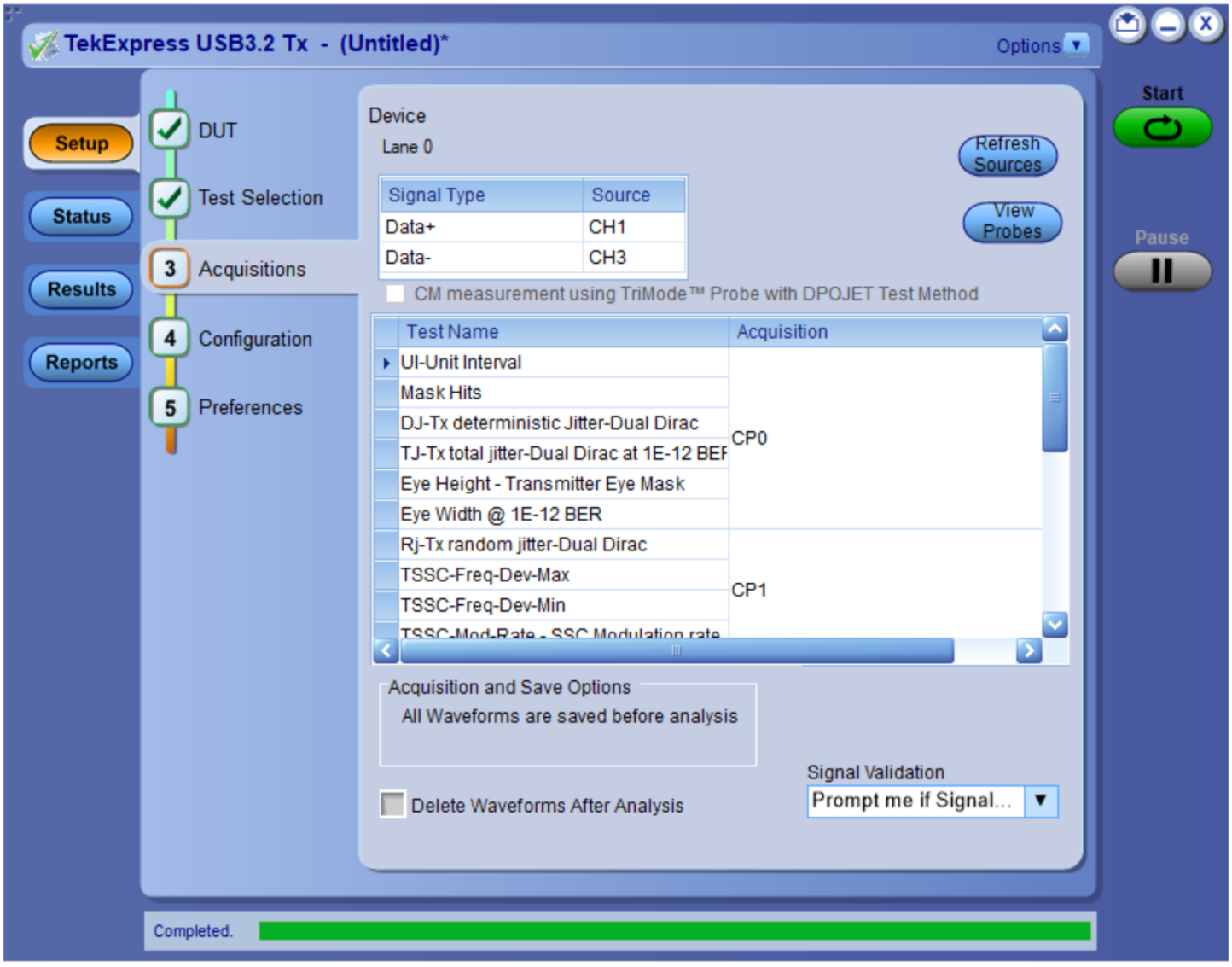
Test selection tab

Test Selection tab configuration

Setting	Description
Deselect All, Select All	Deselect or select all tests in the list.
Tests	Click a test to select or deselect. Selecting a test also show details about that test in the Test Description pane. All required tests are selected when in Compliance test mode.
Schematic	Displays equipment connection setup for the selected measurements. You need to select at least a measurement before you click the Schematic.
Show MOI	Displays the MOI (USB3.2 DPOJET MOI)

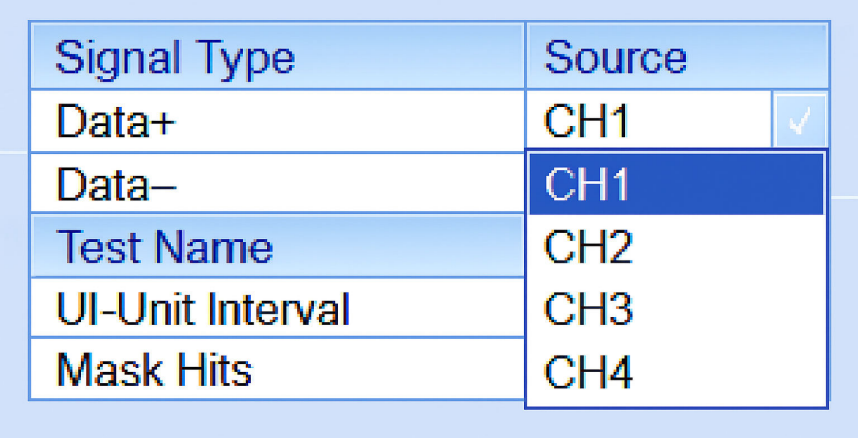
Acquisitions: Set waveform acquisition settings

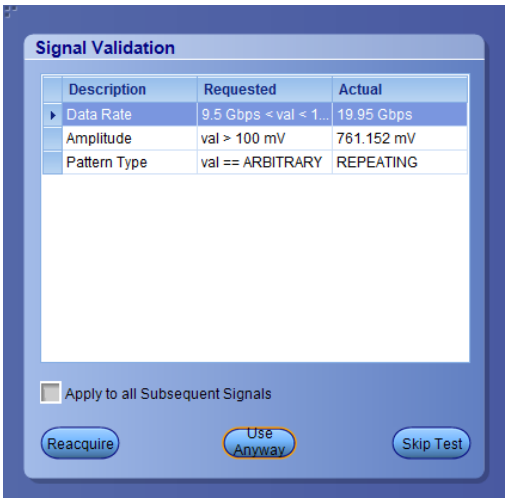
Use Acquisitions tab to view the test acquisition parameters. The contents displayed on this tab depends on the DUT type and the tests selected.



Acquisition tab

Acquisitions tab configuration

Setting	Description
Source Selection	Lists the signal type and input channel assigned to that type. Click on Source fields to assign a channel source to a signal type.  The (Source) channels are auto selected, based on the probe type used and Lane selected on the DUT tab.
Refresh sources	Updates the list of available channel sources as used by the Source fields in the Device list. Click this button if you want to change the channel connections in the test setup.
View Probes	Displays the Source, Probe Type, and Probe models.
Acquisition and save options	Saves all waveforms before the analysis.

Signal Validation	Sets the signal validation actions. Select from the available list items. ▪ Prompt me if signal fails ▪ Skip test if signal validation fails ▪ Use signal as is - Don't Check When the signal validation option is set to "Prompt me if signal validation fails", the application validates whether the signal is PRBS31, PRBS15, SQ128, or SQ2 pattern. Additionally, it also validates if the signal is Electrical idle. If the signal is valid, the measurement continues normally. If the signal is invalid, the following window displays:  **NOTE:** If Pattern type validation is selected as **No**, then the measurement continues with the acquired waveform. ▪ Click **Reacquire** to start the acquisition again. ▪ Click **Use Anyway** to continue with the currently acquired waveform. ▪ Click **Skip Test** to skip all pattern type tests. The rest of the selected measurements continue.
Delete waveform after analysis	Select to delete the waveforms after analyzing from the current acquisition. This is applicable only for live waveforms.

TekExpress USB3.2 application saves all acquisition waveforms to files by default. Waveforms are saved in a unique folder for each session (a session is started when you click the **Start** button).

The folder path is X:\TekExpressUSB3.2\Untitled Session\<dutid>\<date>_<time>. Images created for each analysis, XML files with result values, reports, and other information specific to that particular execution are also saved in this folder.

Saving a session moves the session file contents from the Untitled Session folder to the specified folder name and changes the session name to the specified name.

Configuration: Set measurement limits for tests

Use Configuration tab to view and configure the Global Settings and the measurement configurations. The measurement specific configurations available in this tab depends on the selections made in the DUT panel and Test Selection panel.

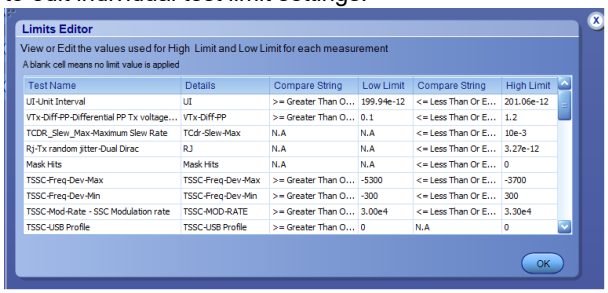
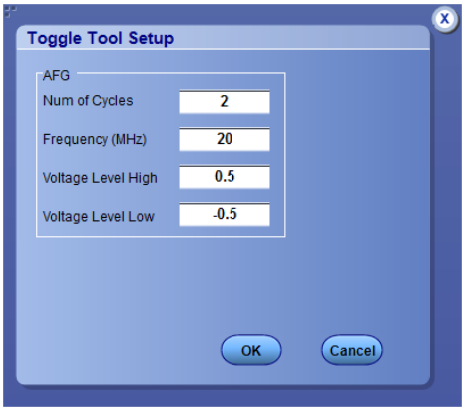
Configuration tab: Common parameters

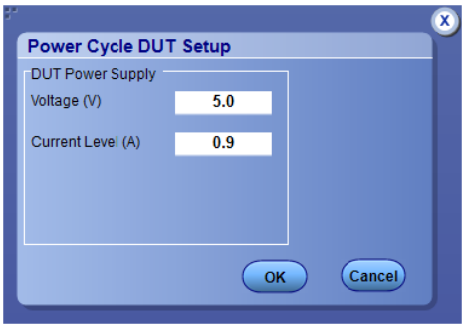
Settings	Description
Limit Editor	Displays the upper and lower limits for the applicable measurement using different types of comparisons. In the Compliance Mode, you can view the measurement high and low limits used for the tests displayed in the tree view of the Measurements tab. When running tests in User Defined Mode, you can edit the limit settings in the Limits Editor.

Configuration tab: Global Settings

Configuration tab: Global Settings configuration

Setting	Description
Compliance Mode	Select Compliance Mode. By default, Compliance Mode is selected.
User Defined Mode	Select User Defined Mode.

Limits Editor	Opens the Limits Editor dialog box. In User Defined Mode, use the Limits Editor to edit individual test limit settings.  To edit a value, click that field and either select from the displayed list or enter a new value. Use scroll bars to view all available fields. In Compliance Mode, use the Limits Editor to view the measurement high and low limits used for selected tests. You cannot edit values while in Compliance mode.
Global Settings	
Instruments Detected	Displays a list of the connected instruments found during the instrument discovery. Instrument types includes oscilloscopes. Select **Options > Instrument Control Settings** to refresh the connected instrument list. Refer TekExpress Instrument control settings (on page 24).
Toggle tool setup	Click to configure the device selected to Toggle. The Toggle Tool Setup window displays the configurations for the selected Toggle Using in the Instruments Detected dialog box. **Toggle Tool Setup for AFG** 

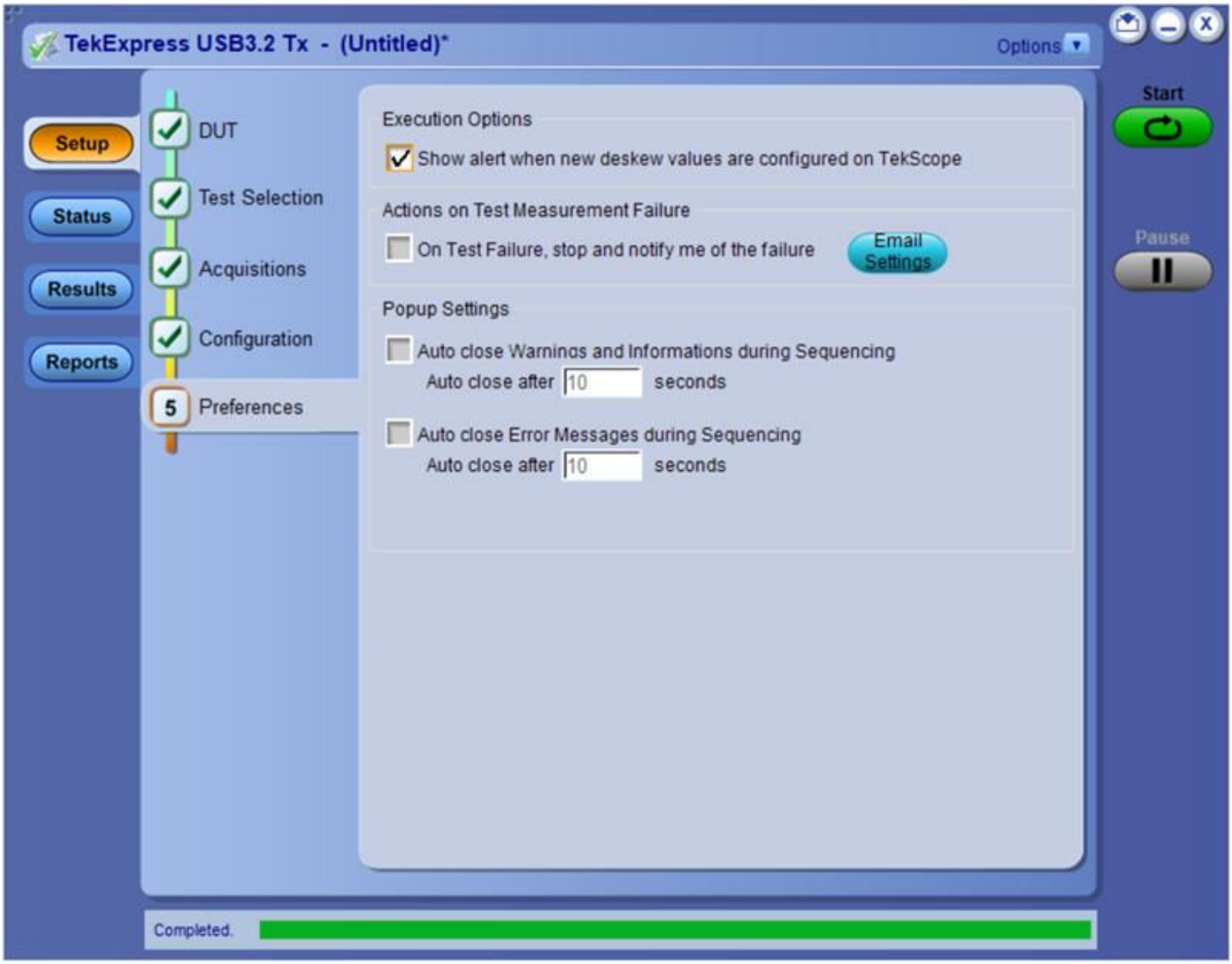
Power Cycle DUT Setup	Click to configure the power cycle setup. The Power Cycle DUT Setup displays the configurations for the selected DUT Power Cycle Method in the Instruments Detected dialog box. **Power Cycle DUT Setup for power supply** 
CP Settings	Select User Define Mode to enable the controls of CP Settings tab.
Record Length (M)	Set the record length for 5 Gb/s and 10 Gb/s. The default values are as follows: ▪ Gen1 CP0: 10 M ▪ Gen1 CP1: 20 M ▪ Gen2: 20 M Range: 5 M - 30 M
Sample Rate (GS/s)	Set the sample rate for 5Gb/s and 10 Gb/s. The default values are as follows: ▪ Gen1: 50 GS/s ▪ Gen2: 100 GS/s The minimum and maximum values are as follows: ▪ Gen1: Min: 25 GS/s, Max: 100 GS/s ▪ Gen2: Min: 50 GS/s, Max: 100 GS/s
Bandwidth (GHz)	Set the bandwidth for 5 Gb/s and 10 Gb/s. The default values are as follows: ▪ Gen1: 12.5 GHz ▪ Gen2: 16 GHz The minimum and maximum bandwidth values depend on theoscilloscope bandwidth limits.
Do Not Autoset	Select not to autoset. Selecting this check box, enables the Vertical Scale (mV/div) control.
Vertical Scale (mV/dv)	Set the vertical scale for 5 Gb/s and 10 Gb/s. The default values are as follows: ▪ Gen1: 60 mV/div ▪ Gen2: 60 mV/div The minimum and maximum vertical scale values depend on the oscilloscope resolution.

Trigger Level (mV)	Set the trigger level (mV) for 5 Gb/s and 10 Gb/s. The default values are as follows: ▪ Gen1: 10 mV ▪ Gen2: 10 mV Range: -100 mV - 300 mV
LFPS Settings* [3]	
Width Trigger Lower Limit (ns)	Set the width trigger lower limit in nanoseconds. The default value is 10 ns. Range: 1 ns - 15 ns
Width Trigger Upper Limit (ns)	Set the width trigger upper limit in nanoseconds. The default value is 40 ns. Range: 15 ns - 100 ns
Trigger Level (mV)	Set the trigger level in millivolt. The default value is 140 mV. Range: 20 mV - 250 mV
Mid Edge Ref Level (mV)	Set the mid edge ref level in millivolt. The default value is 150 mV. Range: 100 mV - 1000 mV
Hysteresis Level (mV)	Set the hysteresis level in millivolt. The default value is 50 mV. Range: 10 mV - 300 mV
Acquisition Bandwidth (GHz)	Select the acquisition bandwidth from the drop-down list. The default value is 5 GHz.

Preferences: Set the test run preferences

Use **Preferences** tab to set the application action on completion of a measurement. The **Preferences** tab has the feature to enable or disable certain options related to the measurement execution.

[3] If the oscilloscope does not properly trigger on the DUT LFPS signal, adjust these trigger settings to enable the oscilloscope to detect and trigger on theLFPS signal.



Preferences tab

Refer the below table for the options available in the **Preferences** tab:

Preferences tab settings

Setting	Description
Execution Options	
Show alert when new deskew values are configured on TekScope	Select to display the alert when new deskew values are configured on TekScope.
On Test Failure, pause the test and let me investigate	Select to pause the test run and allow you to investigate when the test execution is failed.
Popup Settings	
Auto close Warnings and informations during Sequencing Auto close after <no> seconds	Select to close the warnings and information window automatically after the specified amount of time. Specify the time in seconds using the edit box.

Setting	Description
Auto close Error Messages during Sequencing. Show in Reports Auto close after <no> seconds	Select to close the error message window automatically after the specified amount of time. Specify the time in seconds using the edit box.

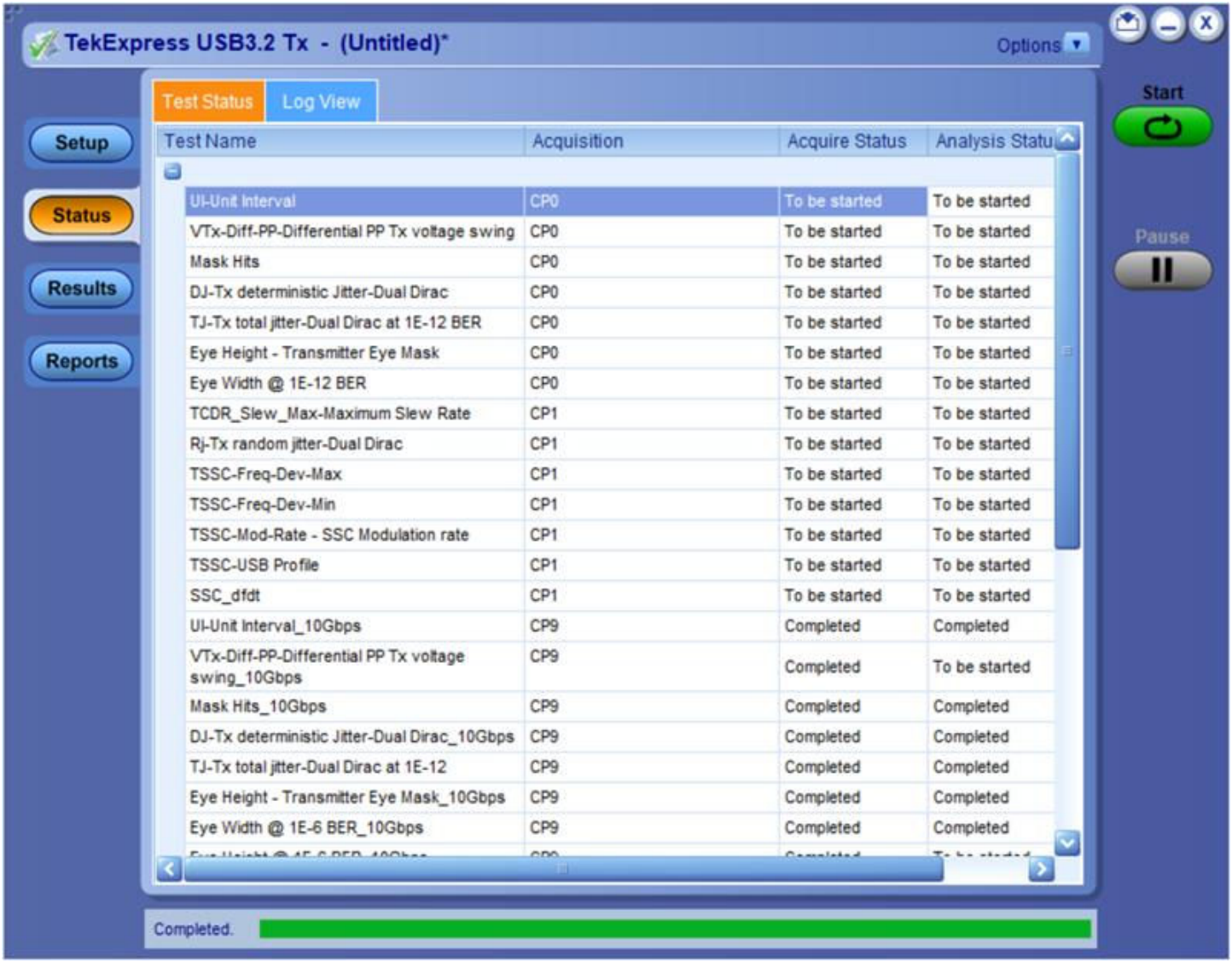
Status panel: View the test execution status

The Status panel contains the **Test Status** and **Log View** tabs, which provides status on the test acquisition and analysis (Test Status) and listing of test tasks performed (Log View tab). The application opens the **Test Status** tab when you start to execute the test. Select the **Test Status** or the **Log View** tab to view these items while the test execution is in progress.

View test execution status

The tests are grouped and displayed based on the Clock and Data lane. It displays the tests along with the acquisition type, acquire, and analysis status of the tests. In pre-recorded mode, **Acquire Status** is not valid.

The **Test Status** tab presents a collapsible table with information about each test as it is running. Use the symbols to expand ( ) and collapse ( ) the table rows.



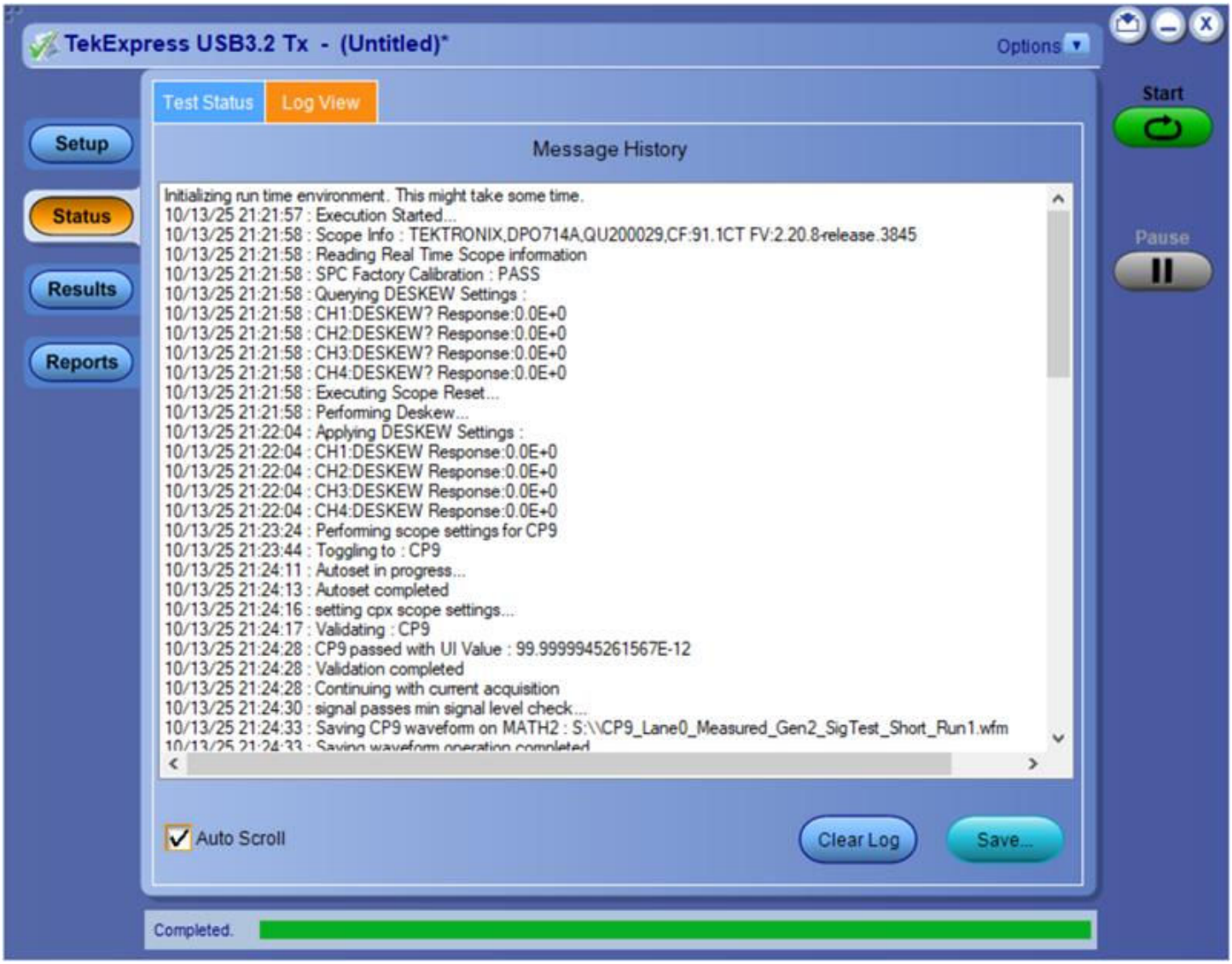
Test execution status view in Status panel

Test execution status table headers

Control	Description
Test Name	Displays the measurement name.
Acquisition	Describes the type of data being acquired.
Acquire Status	Displays the progress state of the acquisition: ▪ To be started
Analysis Status	Displays the progress state of the analysis: ▪ To be started ▪ Completed

View test execution logs

The Test Status tab displays the detailed execution status of the tests. Also, displays each and every execution step in detail with its timestamp information. The log details can be used to troubleshoot and resolve any issue/bug which is blocking the test execution process.



Log view in Status panel

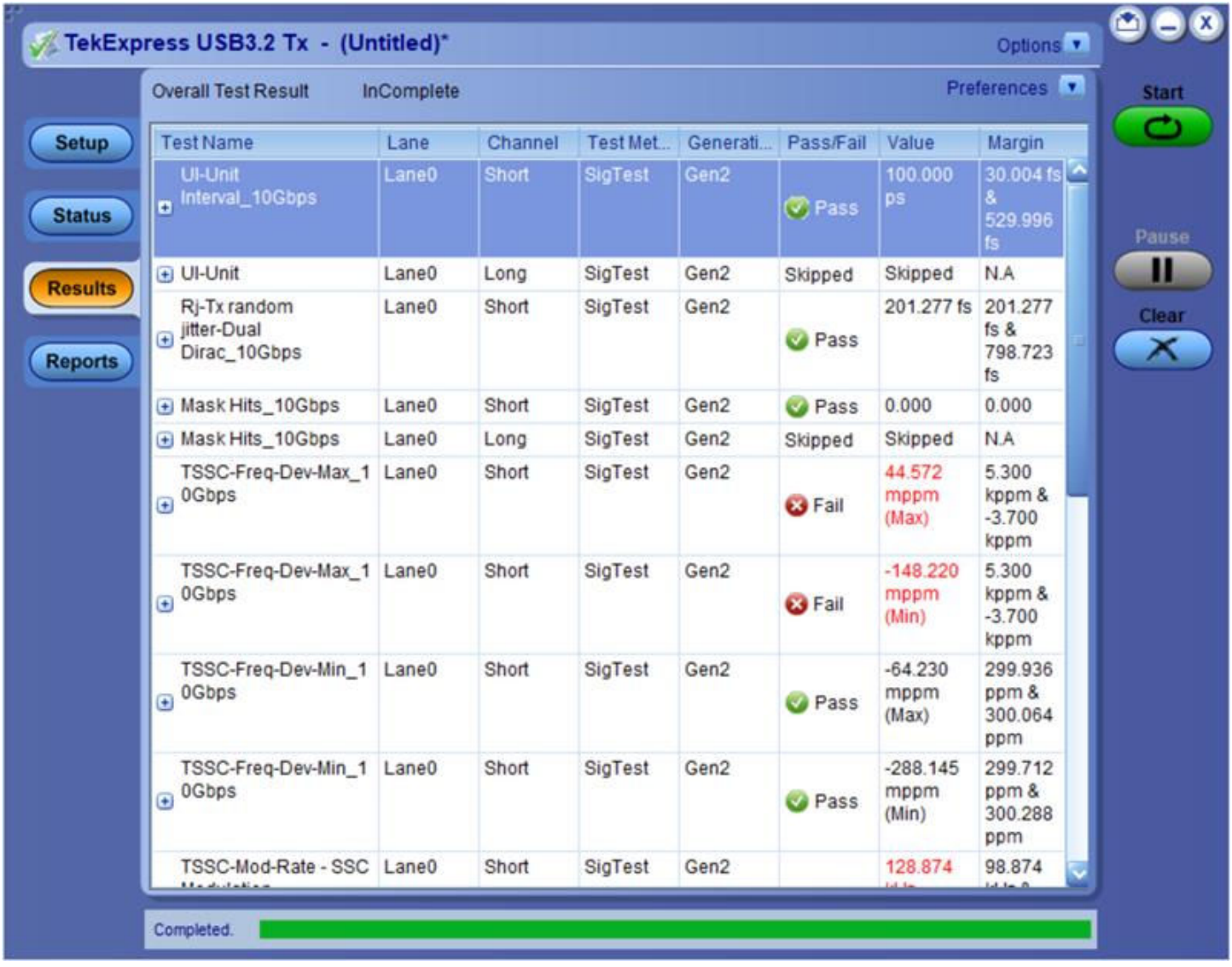
Status panel settings

Control	Description
Message History	Lists all the executed test operations and timestamp information.
Auto Scroll	Enables automatic scrolling of the log view as information is added to the log during the test execution.
Clear Log	Clears all the messages from the log view.
Save	Saves the log file into a text file format. Use the standard Save File window to navigate to and specify the folder and file name to save the log text.

Results panel: View summary of test results

When a test execution is complete, the application automatically opens the Results panel to display a summary of test results.

In the Results table, each test result occupies a row. By default, results are displayed in summary format with the measurement details collapsed and with the Pass/Fail column visible.



Results panel with measurement results

Click  icon on each measurement in the row to expand and to display the minimum and maximum parameter values of the measurement.

Filter the test results

Each column in the result table can be customized and displayed by enabling or disabling any column as per your requirement. You can change the view in the following ways:

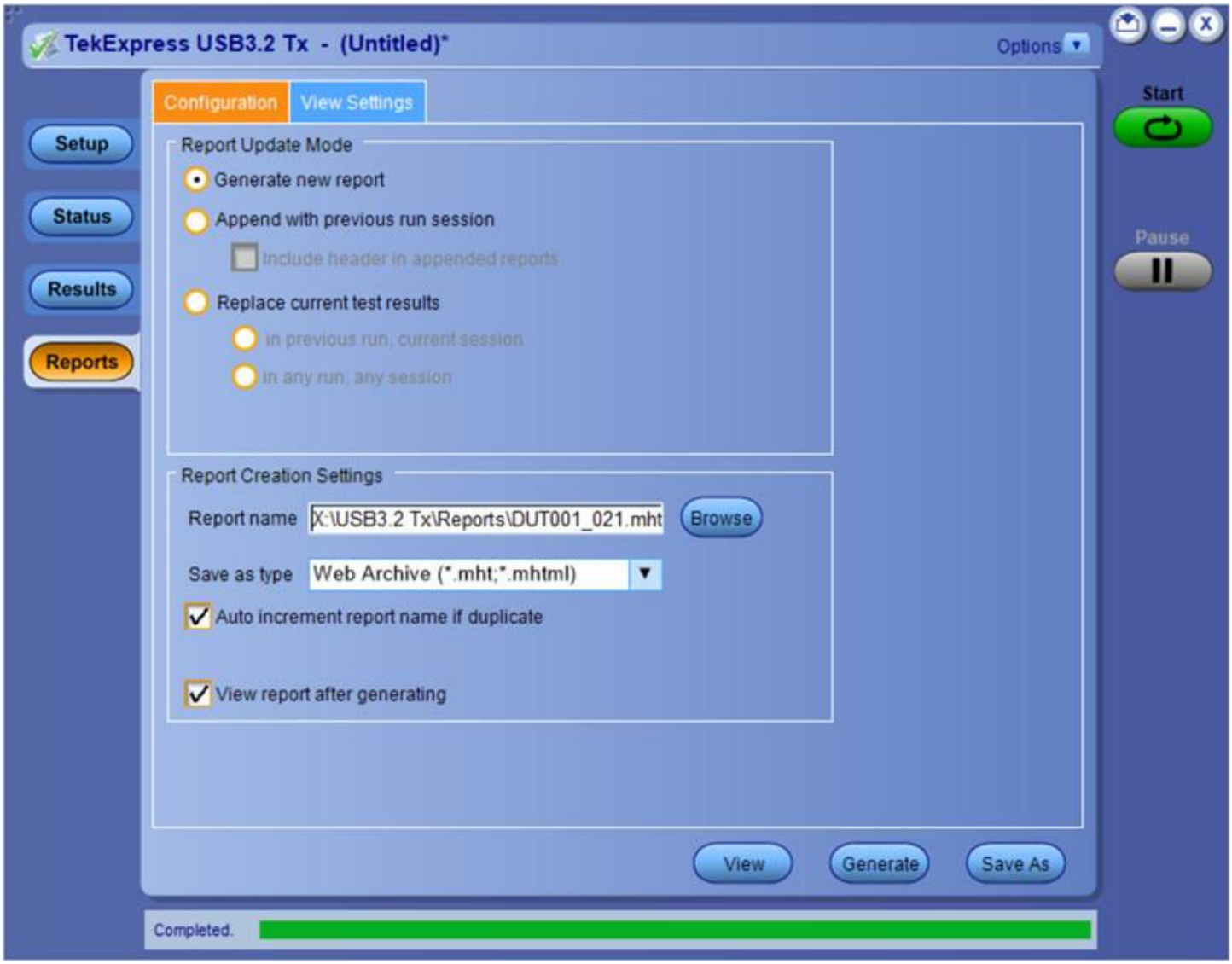
- To remove or restore the Pass/Fail column, select **Preferences→ Show Pass/Fail**.
- To collapse all expanded tests, select **Preferences→ View Results Summary**.
- To expand all the listed tests, select **View Results Details** from the **Preferences menu** in the upper right corner.
- To enable or disable the wordwrap feature, select **Preferences→ Enable Wordwrap**.
- To view the results grouped by lane or test, select the corresponding item from the **Preferences** menu.
- 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 clear all test results displayed, click **Clear**.

Reports panel: Configure report generation settings

Click **Reports** panel to configure the report generation settings and select the test result information to include in the report. You can use the Reports panel to configure report generation settings, select test content to include in reports, generate the report, view the report, browse for reports, name and save reports, and select report viewing options.

Report configuration settings

The Configuration tab describes the report generation settings to configure the Reports panel. Select report settings before running a test or when creating and saving test setups. Report settings configured are included in saved test setups.



Report panel- Configuration tab

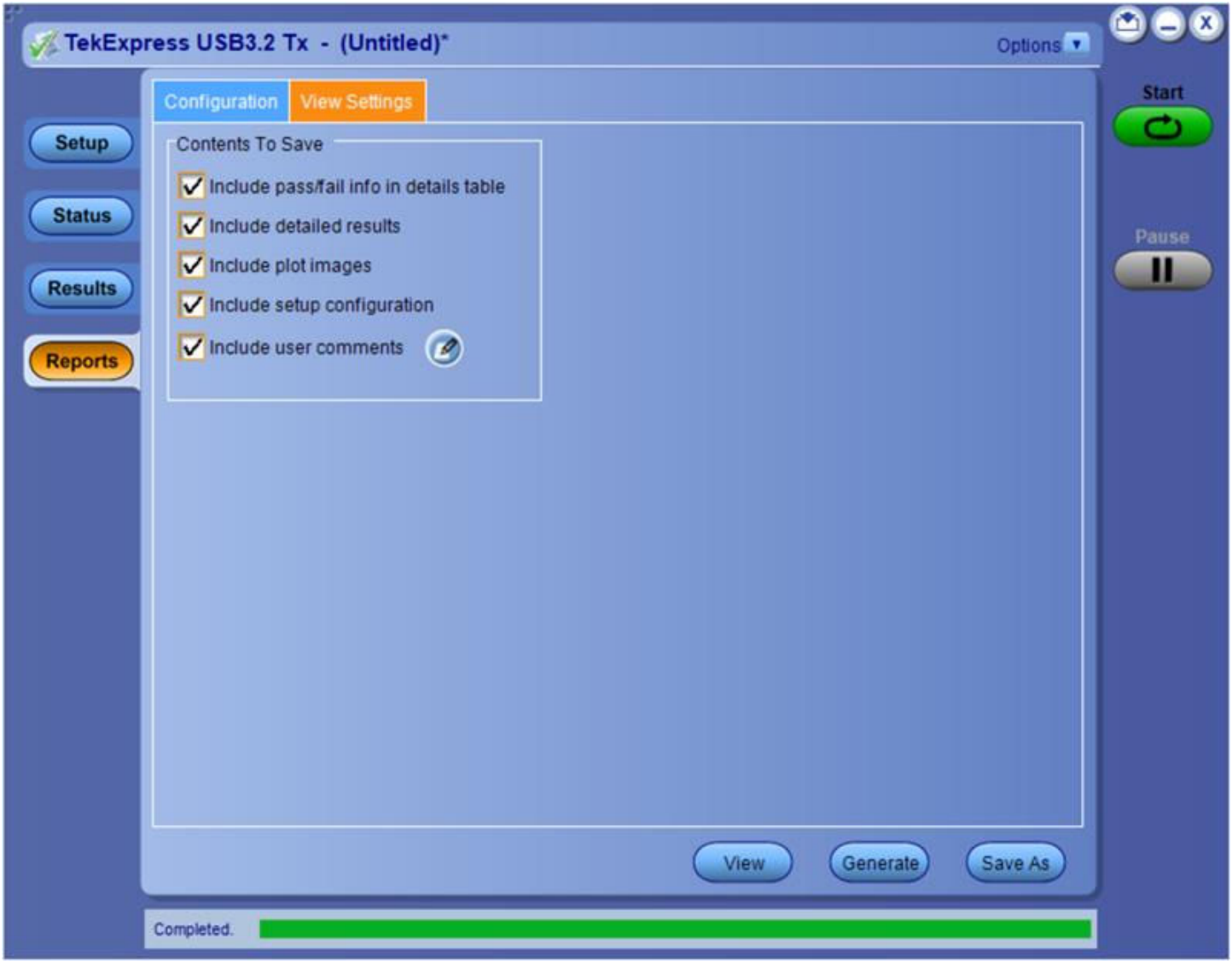
Report configuration panel settings

Control	Description
View	Click to view the most current report.
Generate	Generates a new report based on the current analysis results.
Report Update Mode Settings	
Generate new report	Each time when you click **Run** and when the test execution is complete, it will create a new report. The report can be in either .mht, .pdf, or .csv file formats.
Append with previous run session	Appends the latest test results to the end of the current test results report. Each time when you click this option and run the tests, it will run the previously failed tests and replace the failed test result with the new pass test result in the same report.
Include header in appended reports	Select to include header in appended reports.
Replace current test results	Replaces the previous test results with the latest test results. Results from newly added tests are appended to the end of the report.
In previous run, current session	Select to replace current test results in the report with the test result(s) of previous run in the current session.
In any run, any session	Select to replace current test results in the report with the test result(s) in the selected run session's report. Click and select test result of any other run session.
Report Creation Settings	
Report name	Displays the name and path of the <Application Name> report. The default location is at **\My Documents>\My TekExpress\<Application Name>\Reports**. 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. **To change the report name or location, do one of the following:** ▪ In the Report Path field, type the current folder path and name. ▪ Double-click in the Report Path field and then make selections from the popup keyboard and click **Enter**. Be sure to include the entire folder path, the file name, and the file extension. For example: **C:\Documents and Settings\your user name\My Documents\My TekExpress\<Application Name> \DUT001.mht**. **NOTE:** You cannot set 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.
Save as type	Saves a report in the specified file type, selected from the drop-down list. The report is saved in .csv, .pdf, or .mht. **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.

Control	Description
Auto increment report name if duplicate	Sets the application to 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.

Configure report view settings

The **View Settings** tab describes the report view settings to configure the Reports panel. Select report view settings before running a test or when creating and saving test setups. Report settings configured are included in saved test setups.



Report panel-View settings tab

Report panel view settings

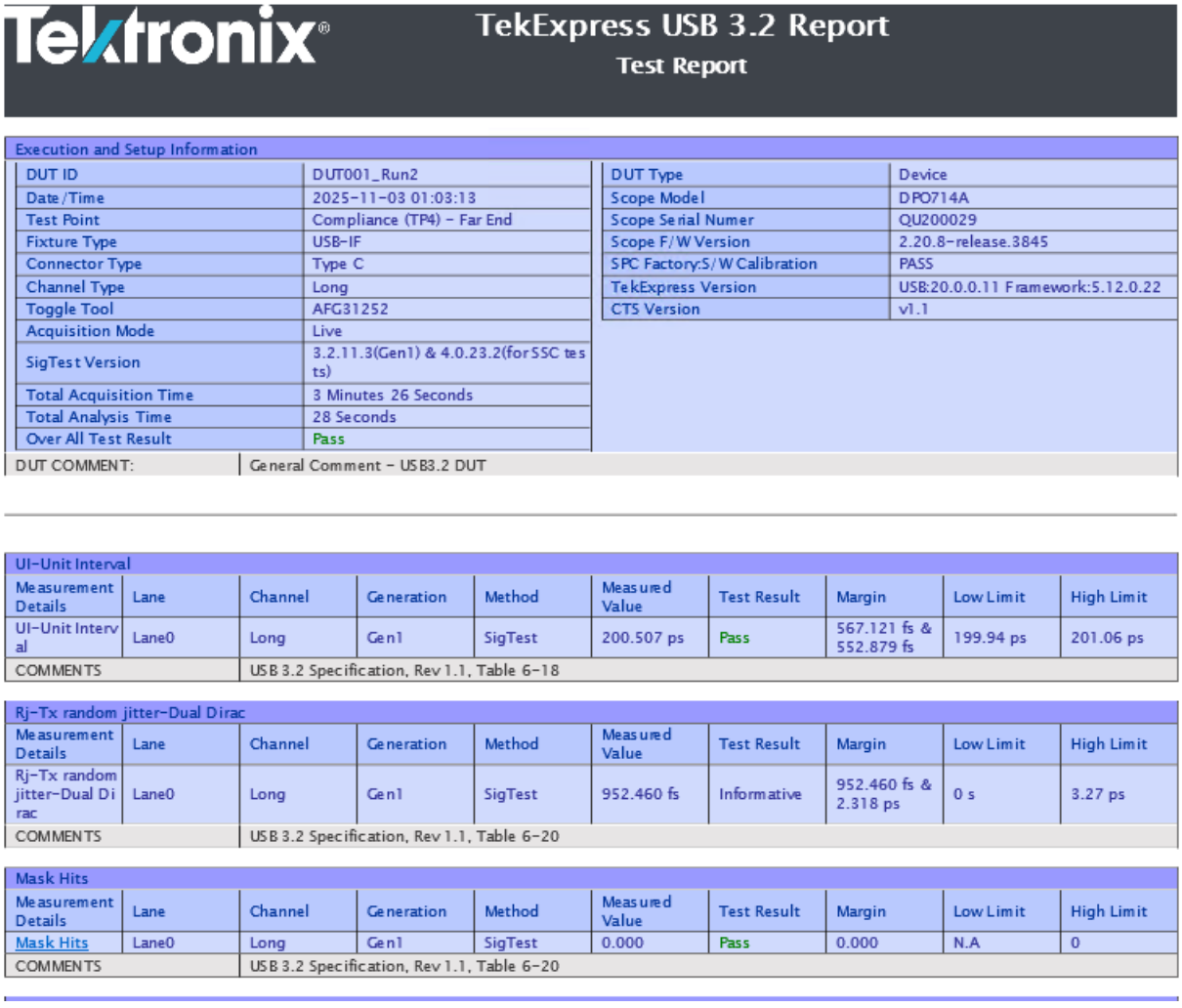
Control	Description
Contents To Save Settings	
Include pass/fail info in details table	Select to include pass/fail information in the details table of the report.

Control	Description
Include detailed results	Select to include detailed results in the report.
Include plot images	Select to include the plot images in the report.
Include setup configuration	Sets the application to include hardware and software information in the summary box at the top of the report. Information includes: the oscilloscope model and serial number, the oscilloscope firmware version, and software versions for applications used in the measurements.
Include user comments	Select to include any comments about the test that you or another user have added in the DUT tab of the Setup panel. Comments appear in the Comments section, below the summary box at the beginning of each report.

View a generated report

Sample report and its contents

A report shows detailed results and plots, as set in the Reports panel.



TekExpress USB 3.2 Report

Test Report

Execution and Setup Information

DUT ID	DUT001_Run2	DUT Type	Device
Date/Time	2025-11-03 01:03:13	Scope Model	DPO714A
Test Point	Compliance (TP4) - Far End	Scope Serial Numer	QU200029
Fixture Type	USB-IF	Scope F/W Version	2.20.8-release.3845
Connector Type	Type C	SPC Factory:S/W Calibration	PASS
Channel Type	Long	TekExpress Version	USB:20.0.0.11 Framework:5.12.0.22
Toggle Tool	AFG31252	CTS Version	v1.1
Acquisition Mode	Live		
SigTest Version	3.2.11.3(Gen1) & 4.0.23.2(for SSC tests)		
Total Acquisition Time	3 Minutes 26 Seconds		
Total Analysis Time	28 Seconds		
Over All Test Result	Pass		
DUT COMMENT:	General Comment - USB3.2 DUT		

UI-Unit Interval

Measurement Details	Lane	Channel	Generation	Method	Measured Value	Test Result	Margin	Low Limit	High Limit
UI-Unit Interval	Lane0	Long	Gen1	SigTest	200.507 ps	Pass	567.121 fs & 552.879 fs	199.94 ps	201.06 ps
COMMENTS	USB 3.2 Specification, Rev 1.1, Table 6-18								

Rj-Tx random jitter-Dual Dirac

Measurement Details	Lane	Channel	Generation	Method	Measured Value	Test Result	Margin	Low Limit	High Limit
Rj-Tx random jitter-Dual Dirac	Lane0	Long	Gen1	SigTest	952.460 fs	Informative	952.460 fs & 2.318 ps	0 s	3.27 ps
COMMENTS	USB 3.2 Specification, Rev 1.1, Table 6-20								

Mask Hits

Measurement Details	Lane	Channel	Generation	Method	Measured Value	Test Result	Margin	Low Limit	High Limit
Mask Hits	Lane0	Long	Gen1	SigTest	0.000	Pass	0.000	N.A	0
COMMENTS	USB 3.2 Specification, Rev 1.1, Table 6-20								

Report

Setup Information

The summary box at the beginning of the report lists setup configuration information. This information includes the oscilloscope model and serial number, optical module model and serial number, and software version numbers of all associated applications.

Test Name Summary Table

The test summary table lists all the tests which are executed with its result status.

Measurement

The measurement table displays the measurement related details with its parameter value.

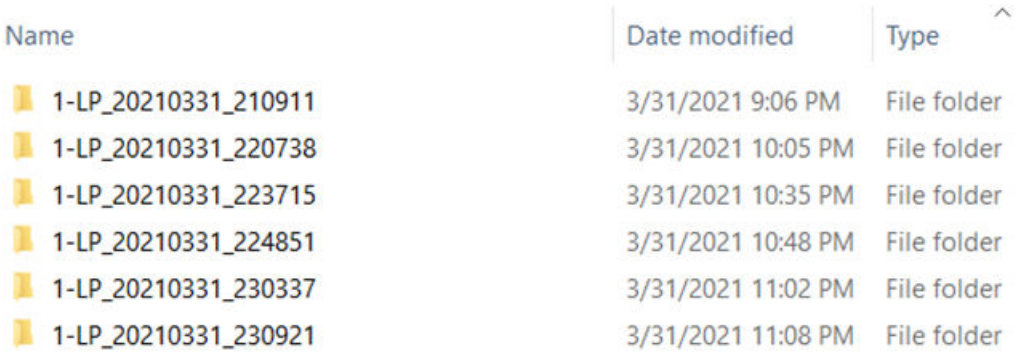
User comments

If you had selected to include comments in the test report, any comments you added in the DUT tab are shown at the top of the report.

Saving and recalling test setup

Overview

You can save the test setup and recall it later for further analysis. Saved setup includes the selected oscilloscope, general parameters, acquisition parameters, measurement limits, waveforms (if applicable), and other configuration settings. The setup files are saved under the setup name at X:\USB3.2



Example of Test Setup File

Use test setups to:

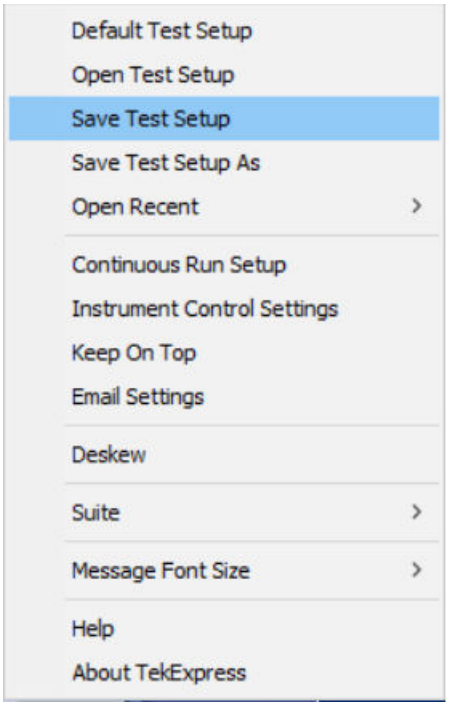
- Recall a saved configuration.
- Run a new session or acquire live waveforms.
- Create a new test setup using an existing one.
- View all the information associated with a saved test, including the log file, the history of the test status as it executed, and the results summary.
- Run a saved test using saved waveforms.

NOTE: Images that are shown in this Saving and recalling test setup chapter are for illustration purpose only and it may vary depending on the TekExpress application.

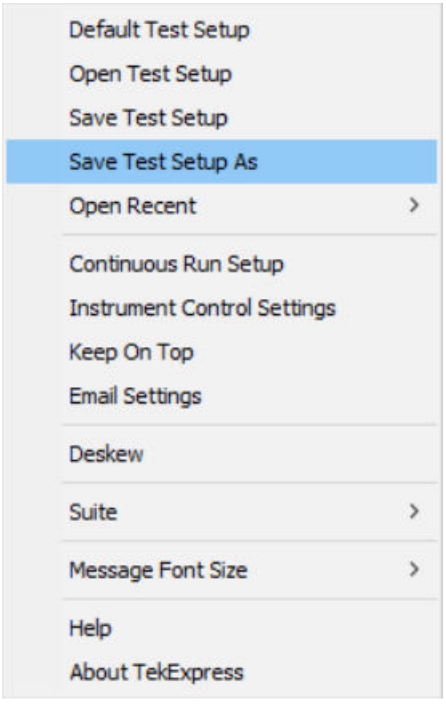
Save the configured test setup

You can save a test setup before or after running a test. You can create a test setup from already created test setup or using a default test setup. When you save a setup, all the parameters, measurement limits, waveform files (if applicable), test selections, and other configuration settings are saved under the setup name. When you select the default test setup, the parameters are set to the application's default value.

- Select **Options > Save Test Setup** to save the opened setup.



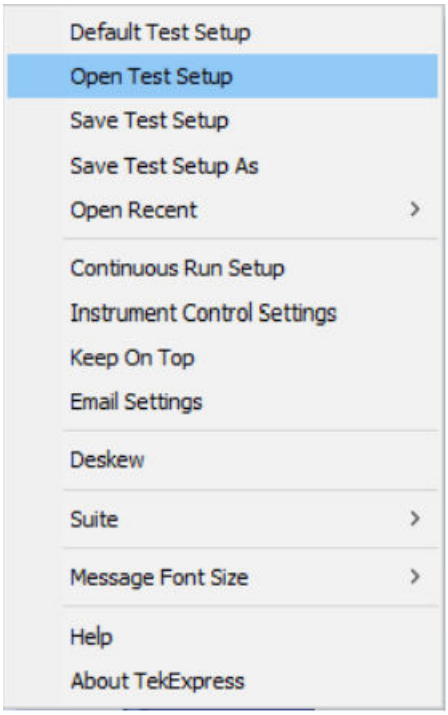
- Select **Options> Save Test Setup As** to save the setup with different name.



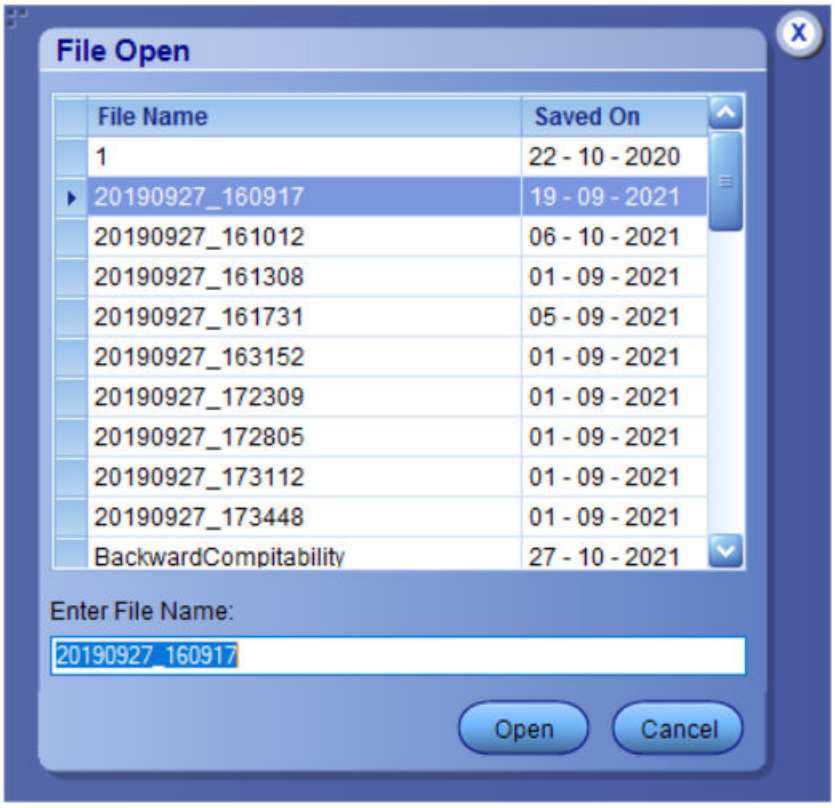
Load a saved test setup

To open (load) a saved test setup, do the following:

- Select **Options> Open Test Setup**.



- From the **File Open** menu, select the setup file name from the list and click **Open**.

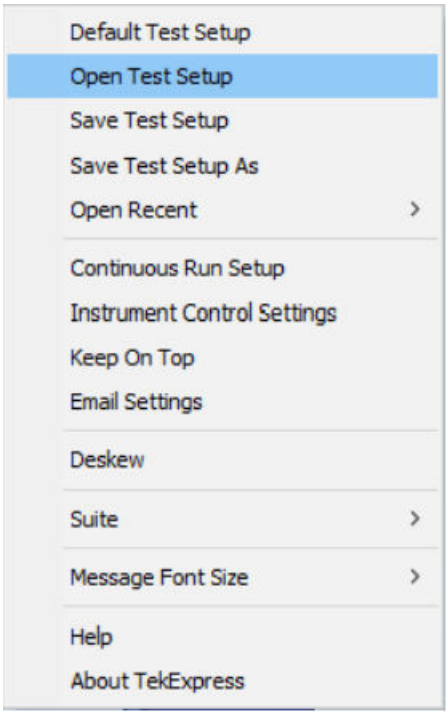


NOTE: Parameters that are set for the respective test setup will enable after opening the file.

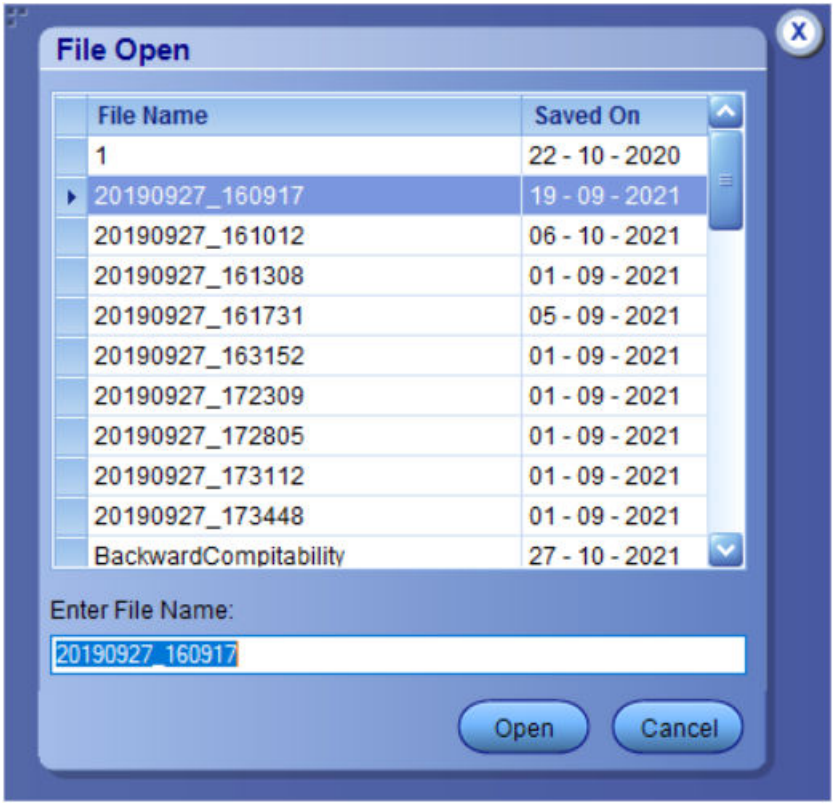
Perform a test using pre-run session files

Complete the following steps to load a test setup from a pre-run session:

1. Select **Options> Open Test Setup**.

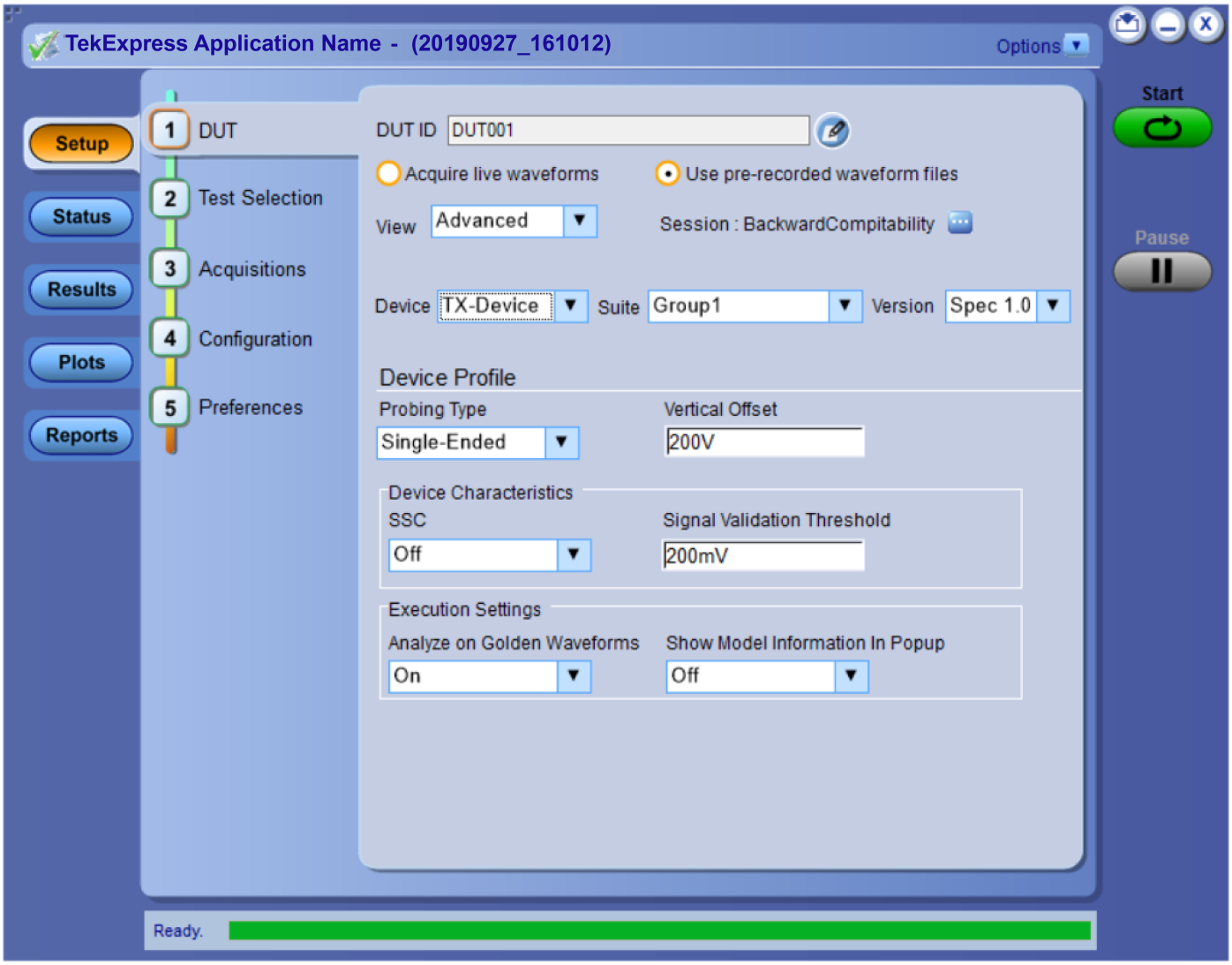


2. From the **File Open** menu, select a setup from the list and then click **Open**.

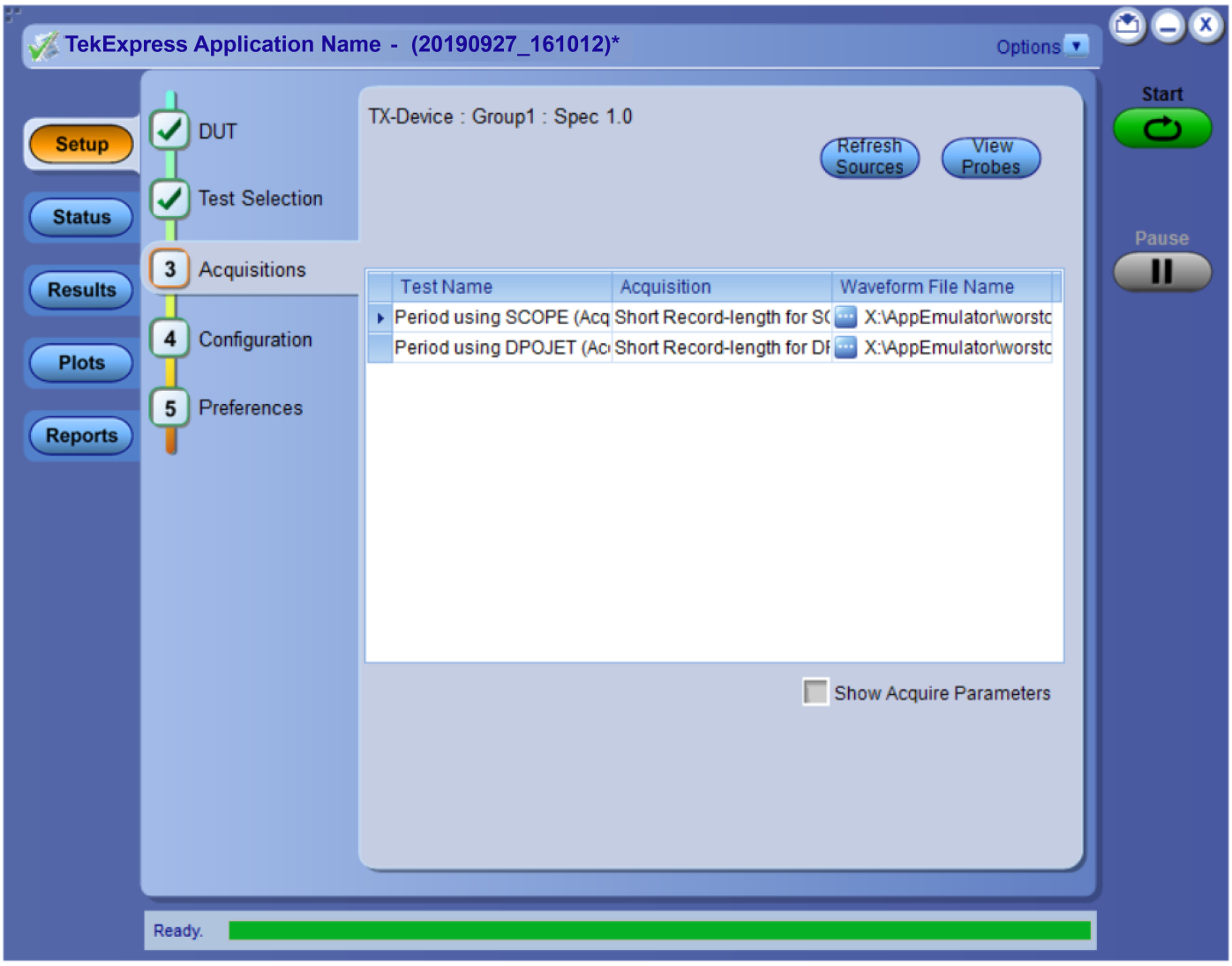


NOTE: Parameters that are set for the respective test setup will enable after opening the file.

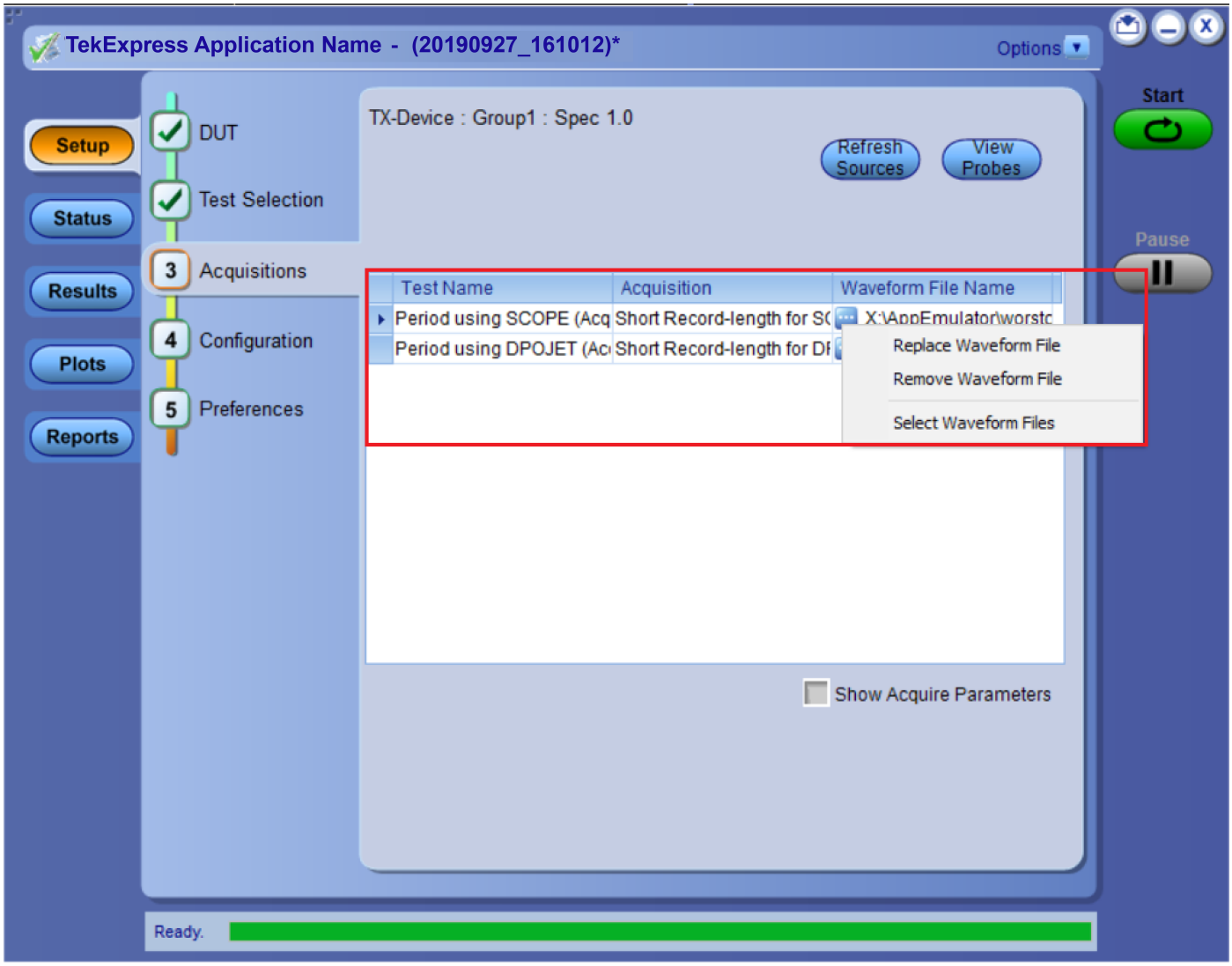
3. Switch the mode to **Use Pre-recorded waveform files** in the DUT panel.


TekExpress Application Name - (20190927_161012)
Options
Start
Pause
Setup
Status
Results
Plots
Reports
1 DUT
2 Test Selection
3 Acquisitions
4 Configuration
5 Preferences
DUT ID
DUT001
Acquire live waveforms
Use pre-recorded waveform files
View
Advanced
Session : BackwardCompitability
Device
TX-Device
Suite
Group1
Version
Spec 1.0
Device Profile
Probing Type
Single-Ended
Vertical Offset
200V
Device Characteristics
SSC
Off
Signal Validation Threshold
200mV
Execution Settings
Analyze on Golden Waveforms
On
Show Model Information In Popup
Off
Ready.

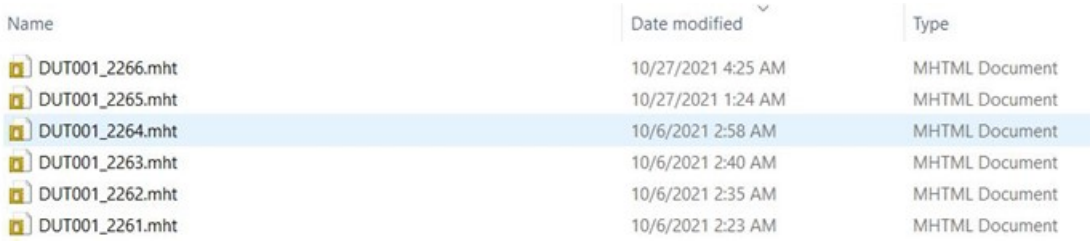
4. Select the required waveforms from the selected setup in the **Acquisitions** tab and click **Start**.



5. The selected waveform file can be removed/replaced by clicking on the ( ) icon.

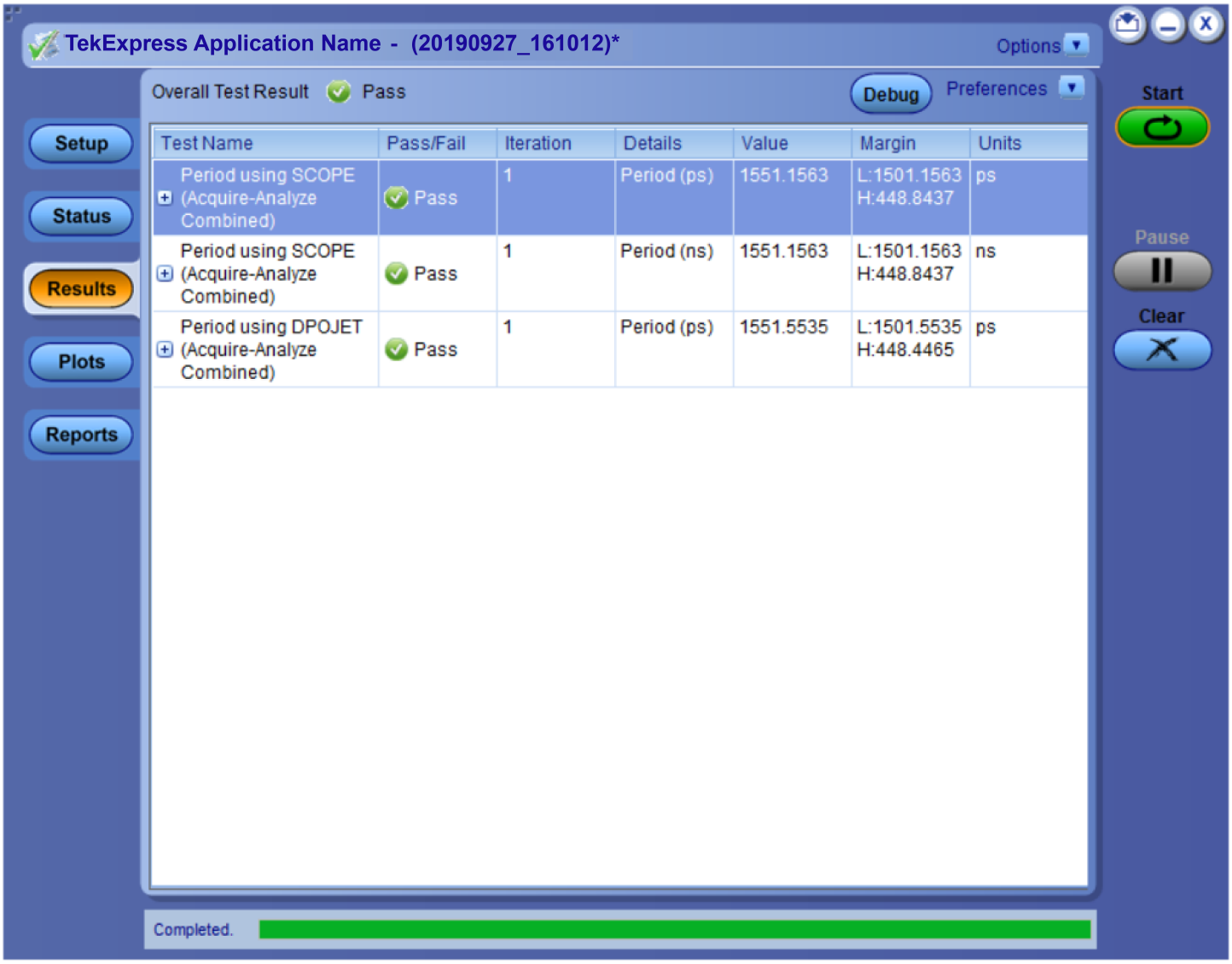


6. After successful completion of the test, the waveform report files are stored at **X:\<Application Name>\Reports**.



Name	Date modified	Type
DUT001_2266.mht	10/27/2021 4:25 AM	MHTML Document
DUT001_2265.mht	10/27/2021 1:24 AM	MHTML Document
DUT001_2264.mht	10/6/2021 2:58 AM	MHTML Document
DUT001_2263.mht	10/6/2021 2:40 AM	MHTML Document
DUT001_2262.mht	10/6/2021 2:35 AM	MHTML Document
DUT001_2261.mht	10/6/2021 2:23 AM	MHTML Document

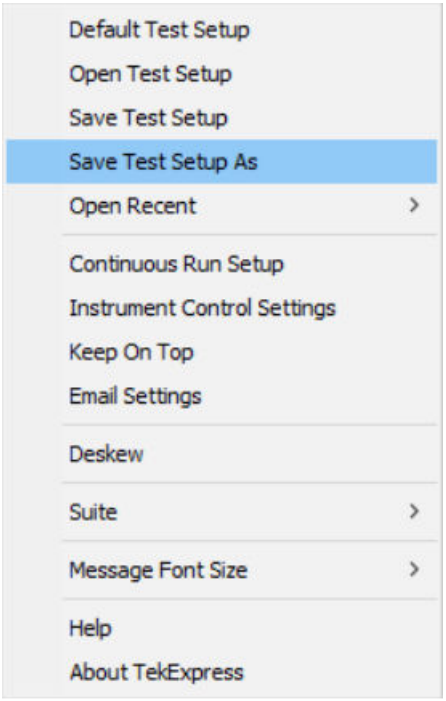
7. The overall test result status after completion of the test execution is displayed in the Results Panel.



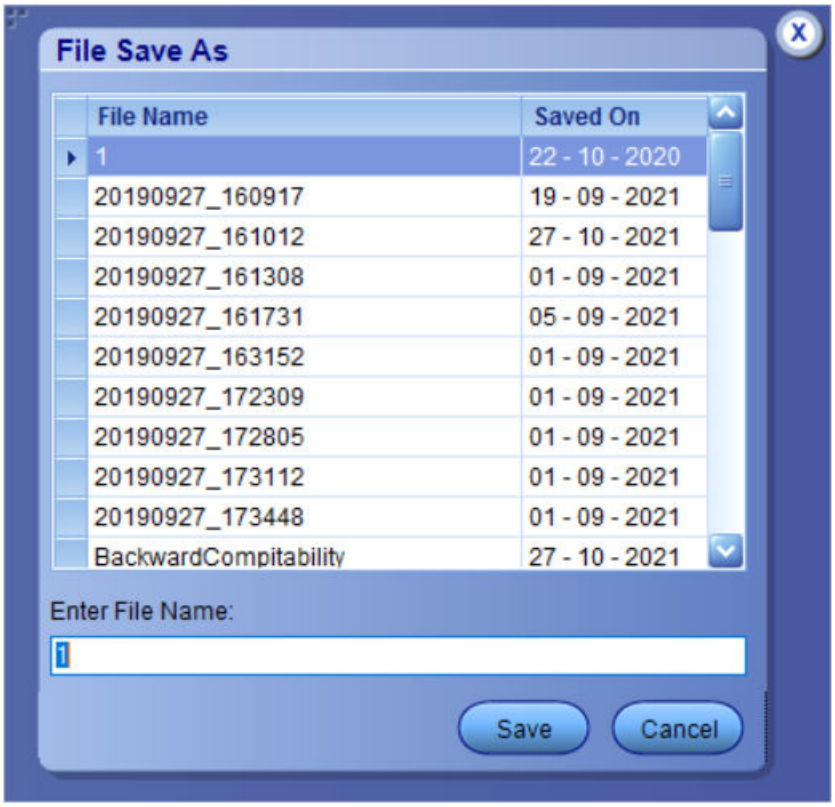
Save the test setup with a different name

To save a test setup with a different name, follow the steps:

1. Select **Options> Save Test Setup As**.



2. Enter the new test setup name and click **Save**.



SCPI Commands

About SCPI command

You can use the standard commands for Programmable Instruments (SCPI) to communicate remotely with the TekExpress application. Complete the TCPIP socket configuration and the TekVISA configuration in the oscilloscope or in the device where you are executing the script.

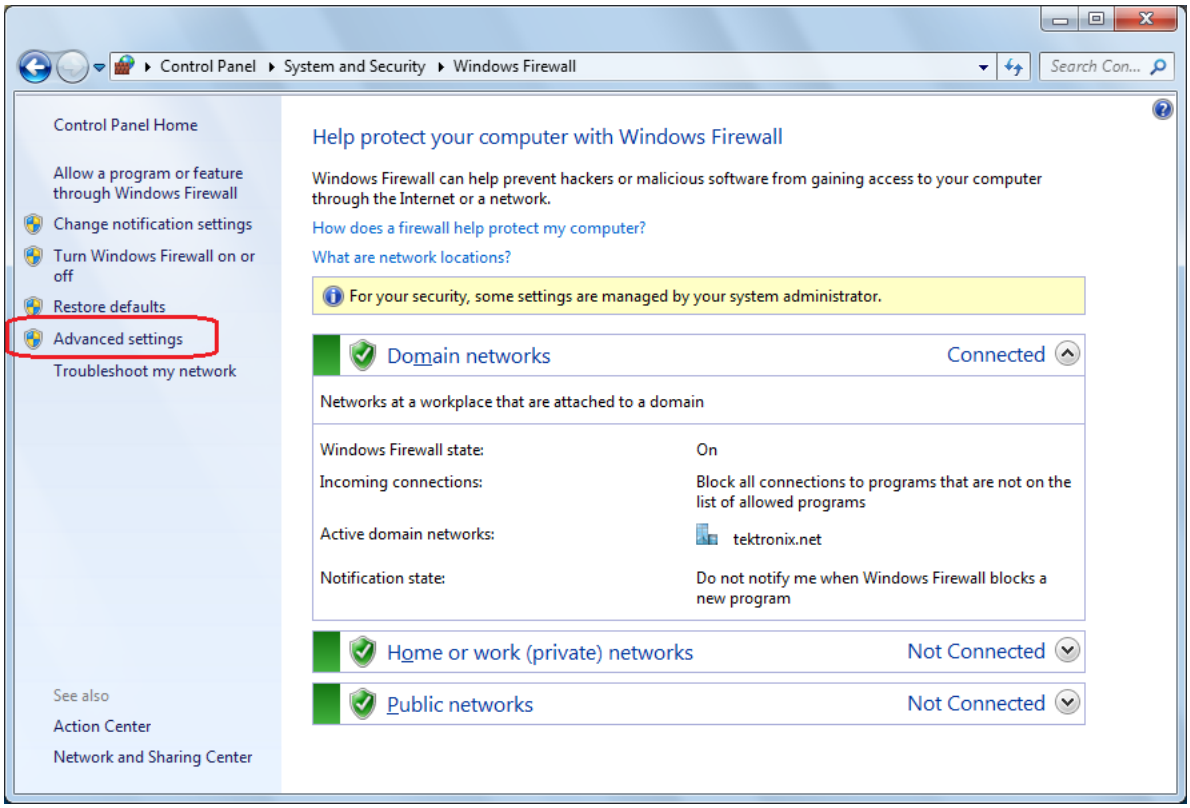
NOTE: If you are using an external PC to execute the remote interface commands, then install TekVISA in the PC to make the configurations.

Socket configuration for SCPI commands

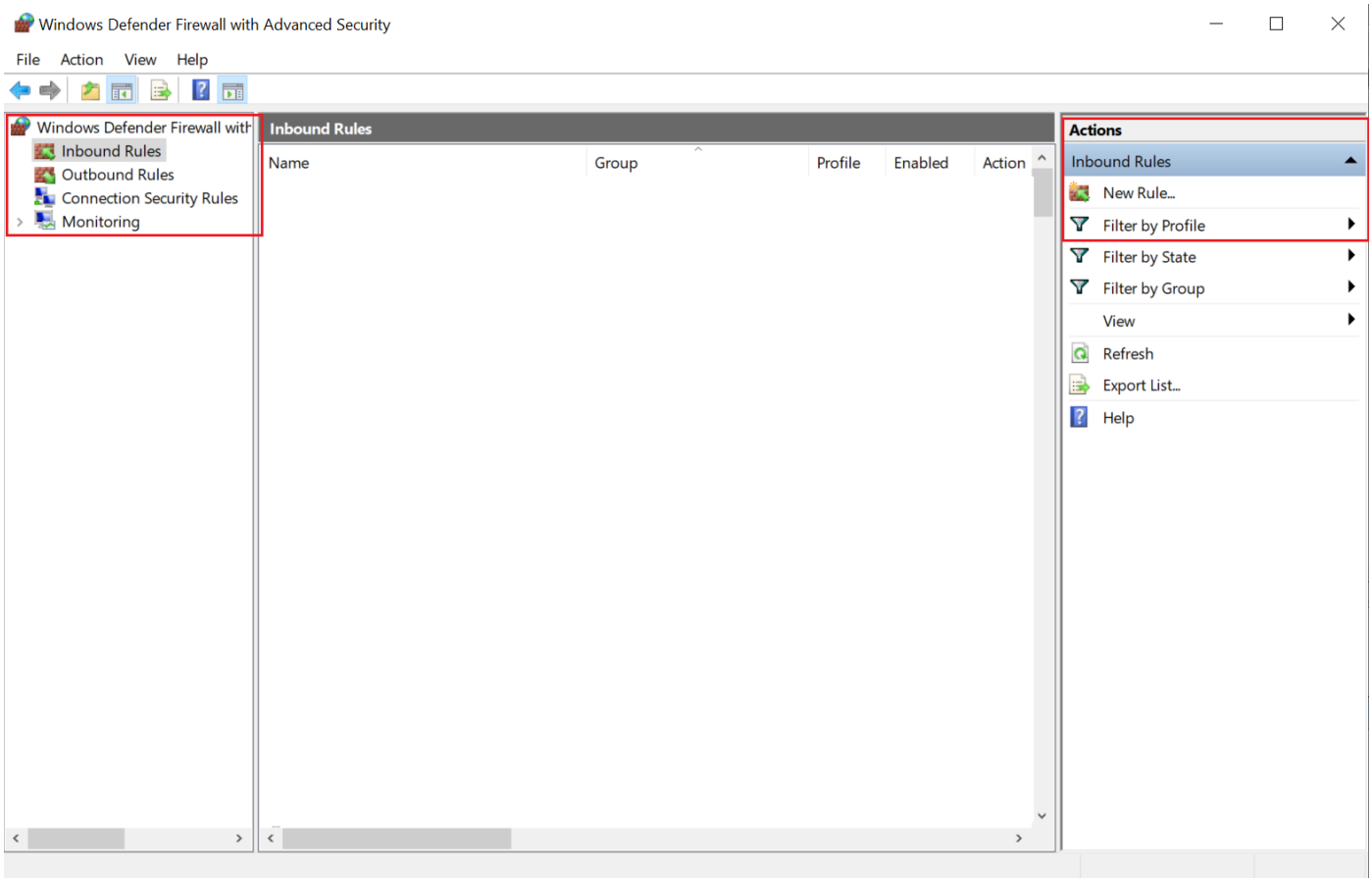
This section describes the steps to configure the TCPIP socket configuration in your script execution device and the steps to configure the TekVISA configuration in the oscilloscope to execute the SCPI commands.

TCPIP socket configuration

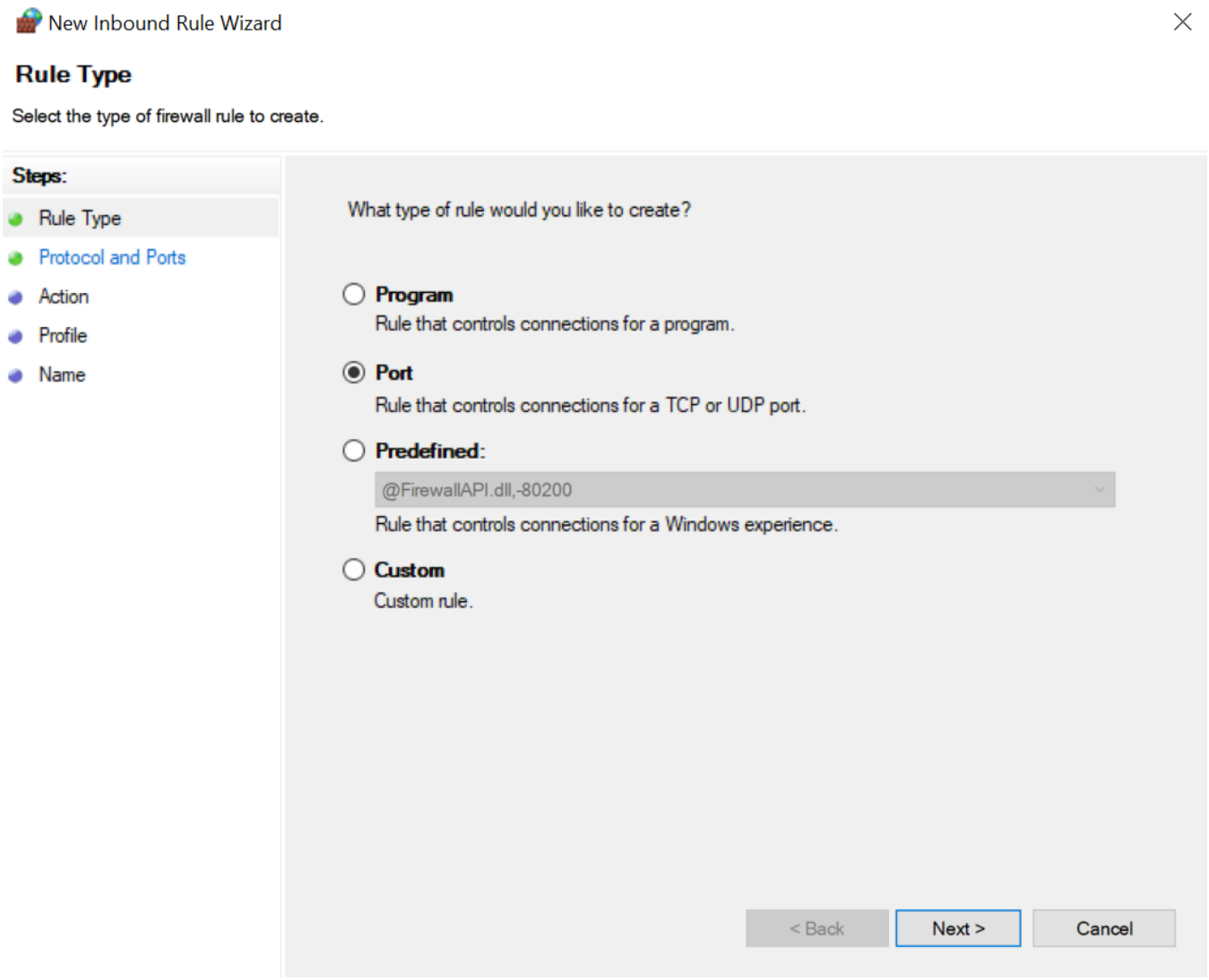
1. Click **Start→ Control Panel→ System and Security→ Windows Firewall→ Advanced settings**.



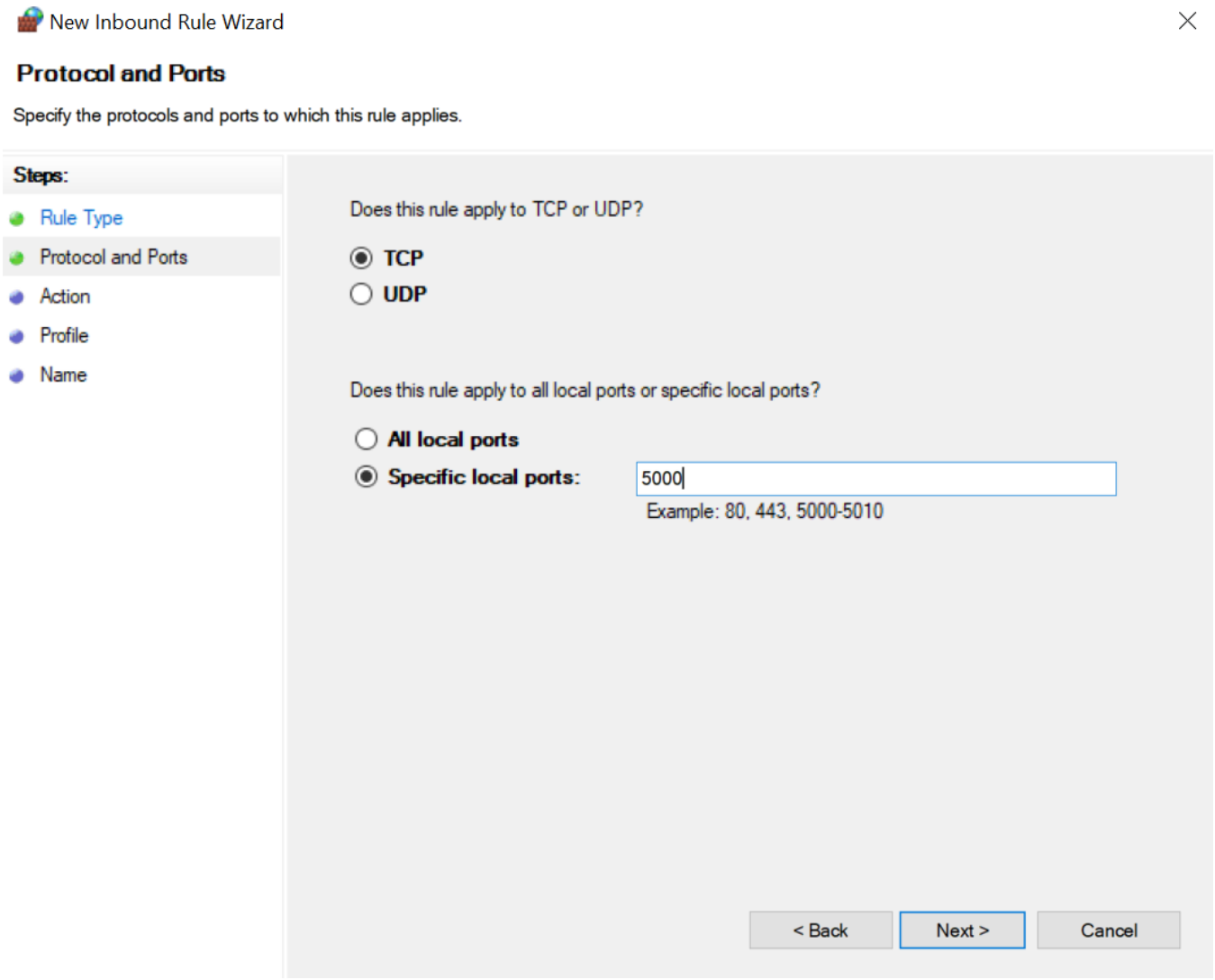
2. In Windows Firewall with Advanced Security menu, select **Windows Firewall with Advanced Security on Local Computer→ Inbound Rules** and click **New Rule…**



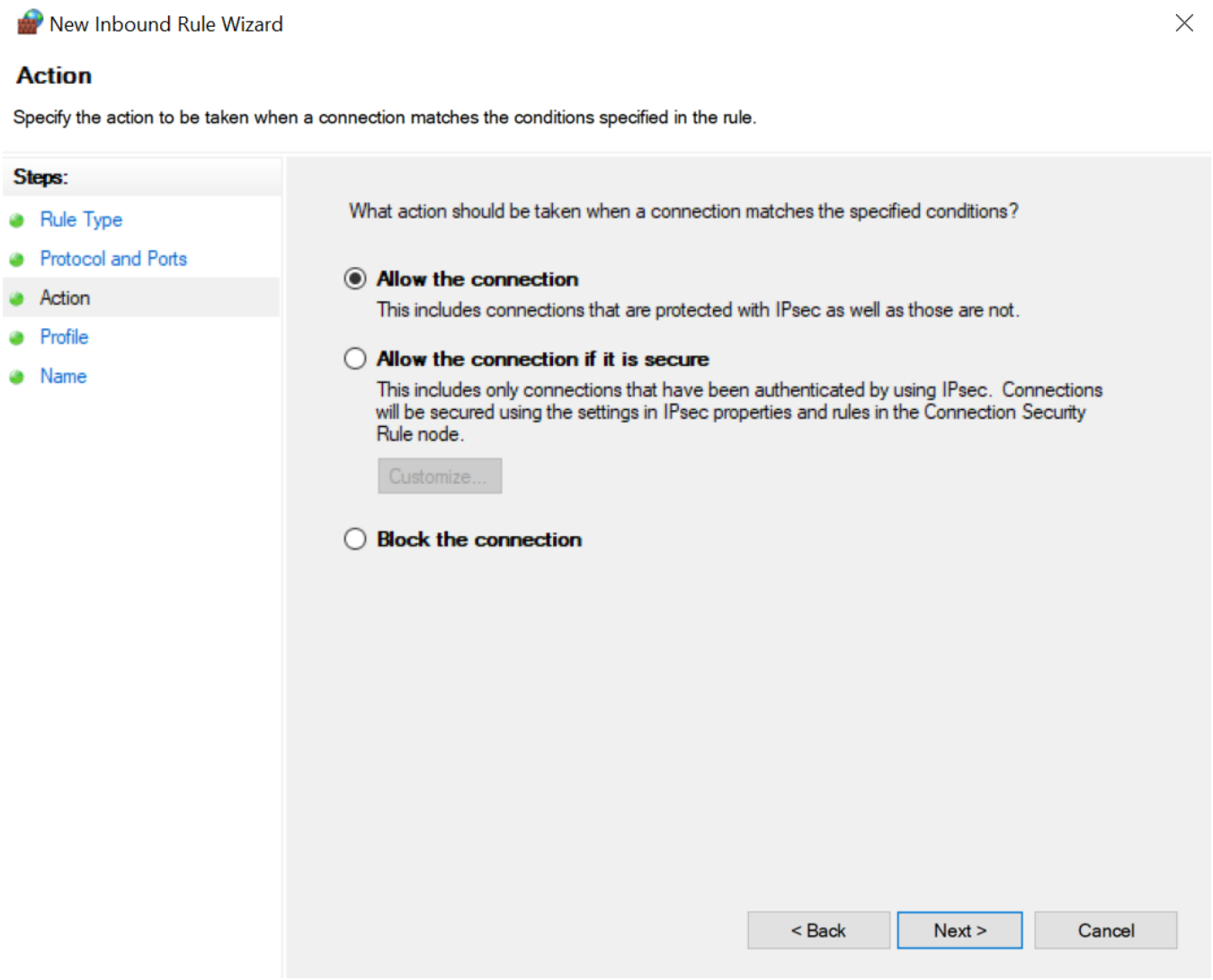
3. In **New Inbound Rule Wizard** menu
   a. Select **Port** and click **Next**.



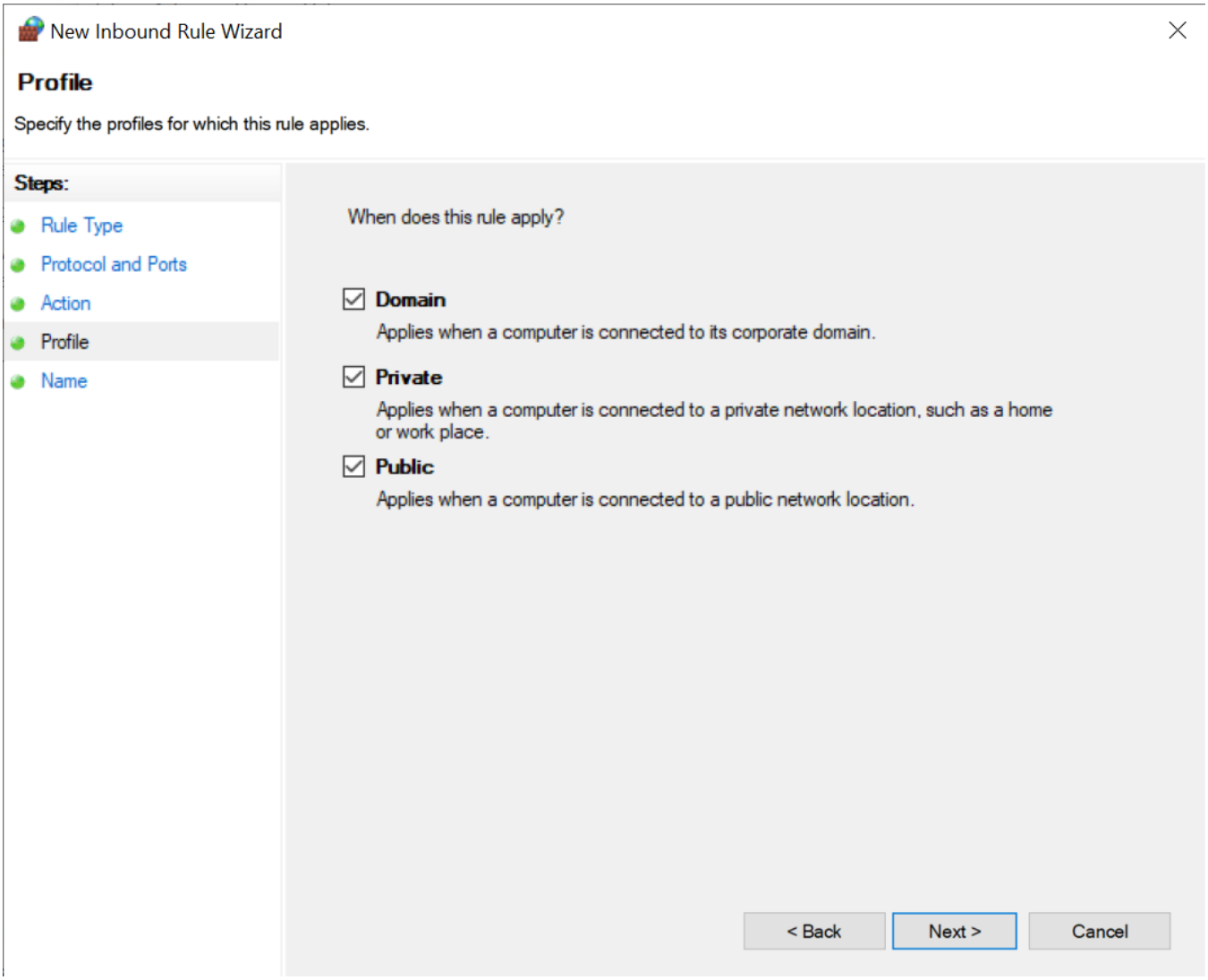
b. Select **TCP** as rule apply, enter 5000 for **Specific local ports** and click **Next**.



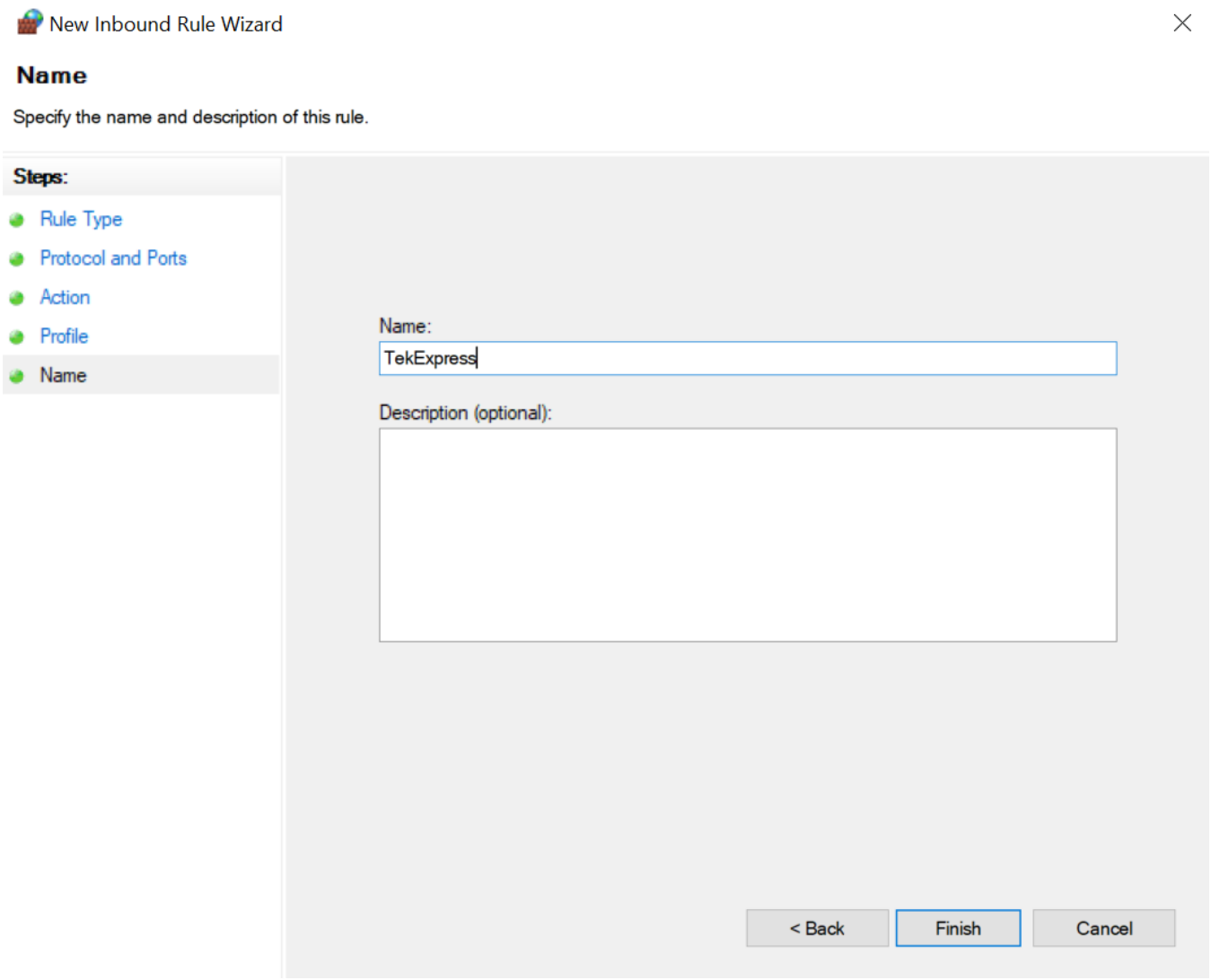
c. Select **Allow the connection** and click **Next**.



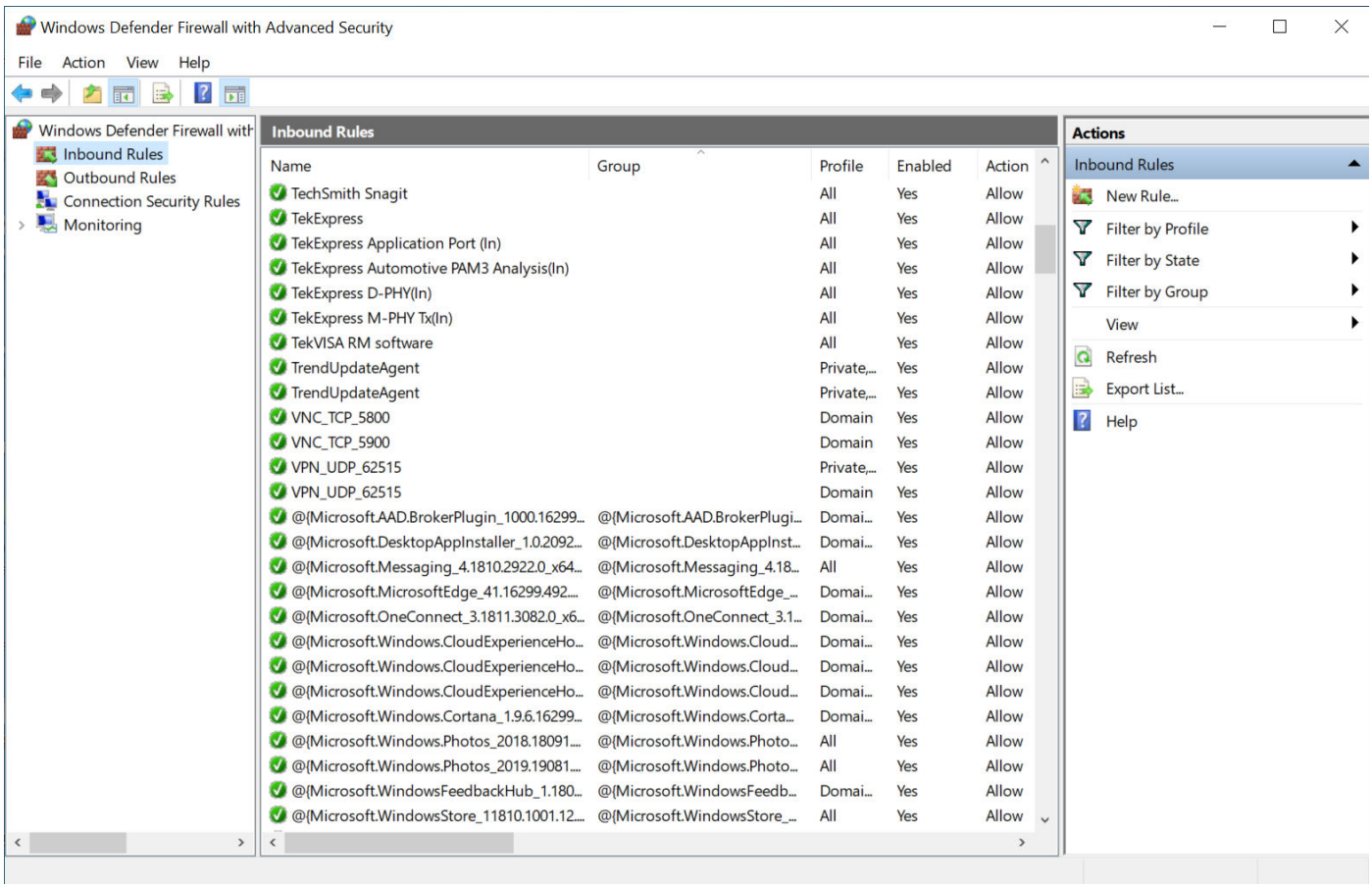
d. Select **Domain, Private, Public** checkbox and click **Next**.



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

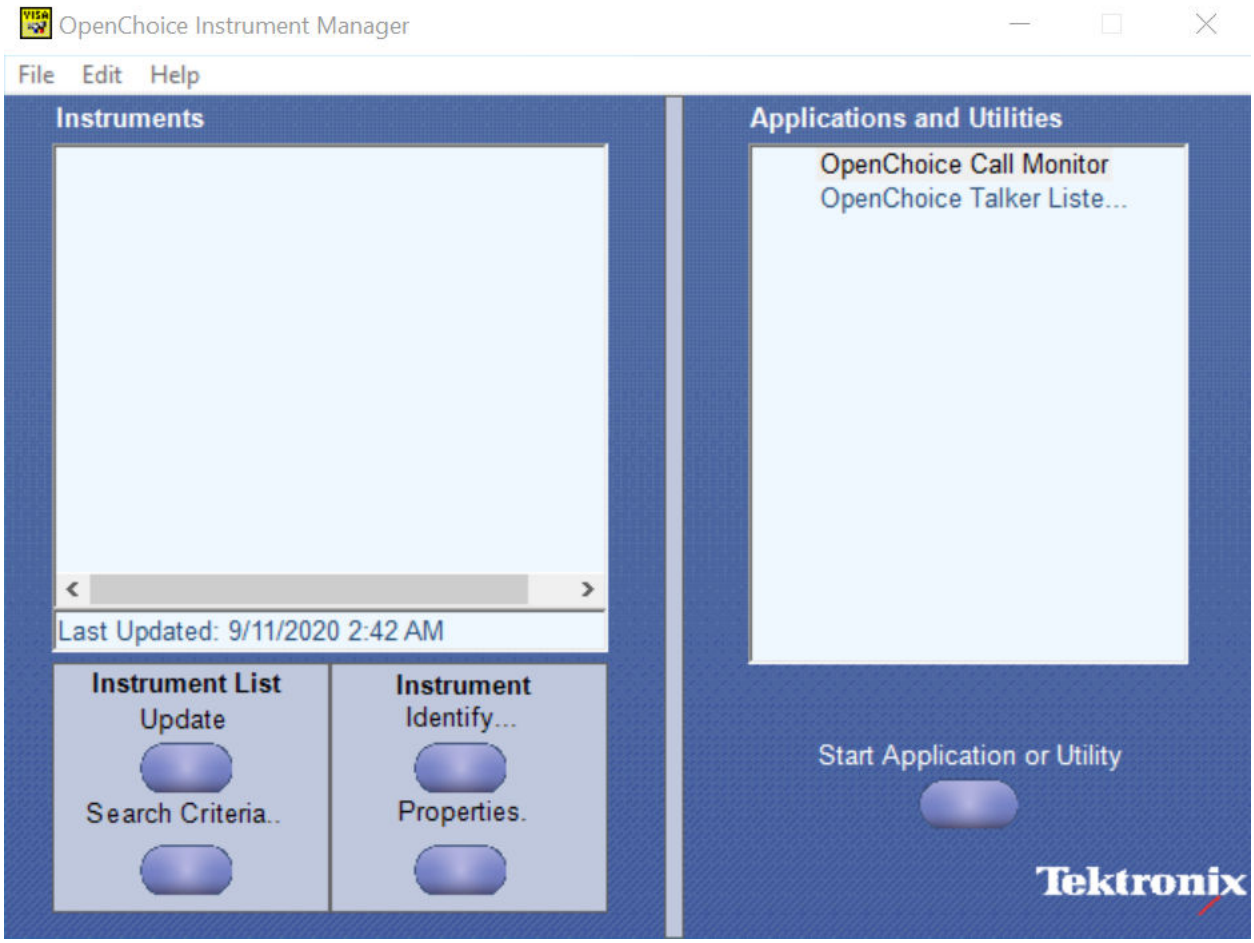


4. Check whether the Rule name is displayed in **Windows Firewall with Advanced Security menu→ Inbound Rules**.



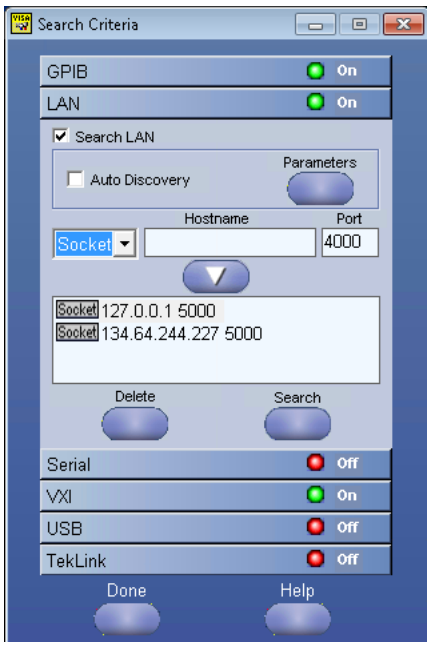
TekVISA configuration

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

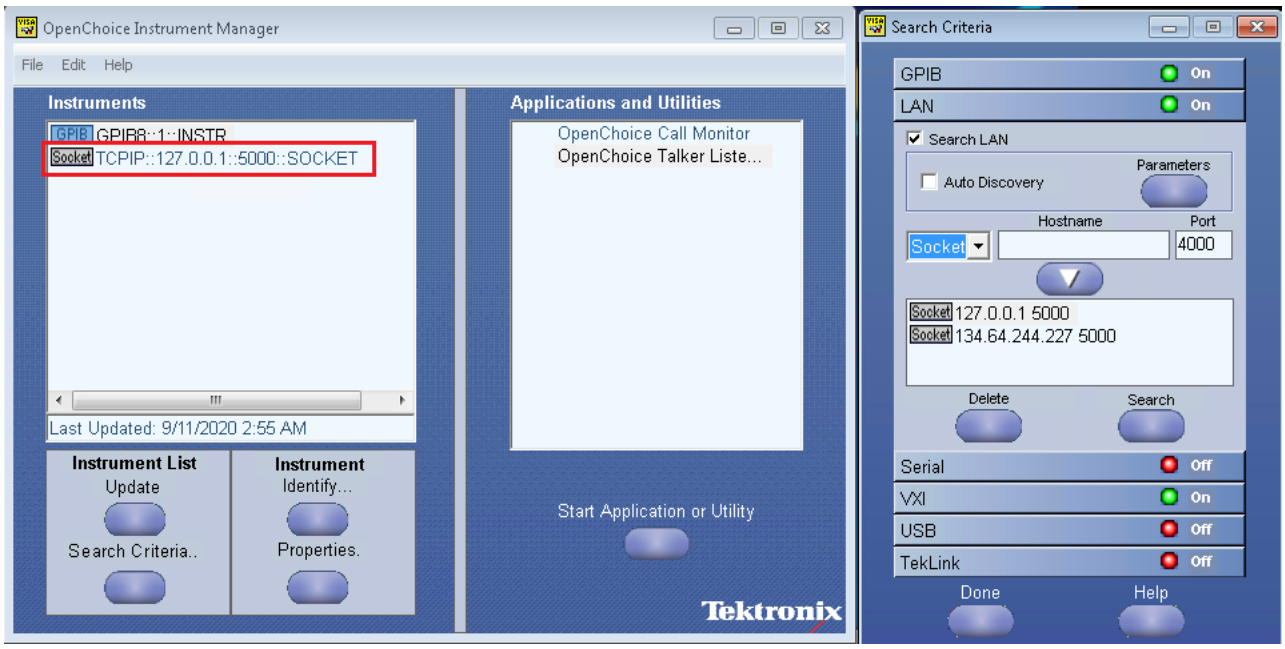


2. Click **Search Criteria**. In **Search Criteria** menu, click **LAN** to Turn-on. Select **Socket** from the drop-down list, enter the IP address of the TekExpress device in **Hostname** and type **Port** as 5000. Click  to configure the IP address with Port.

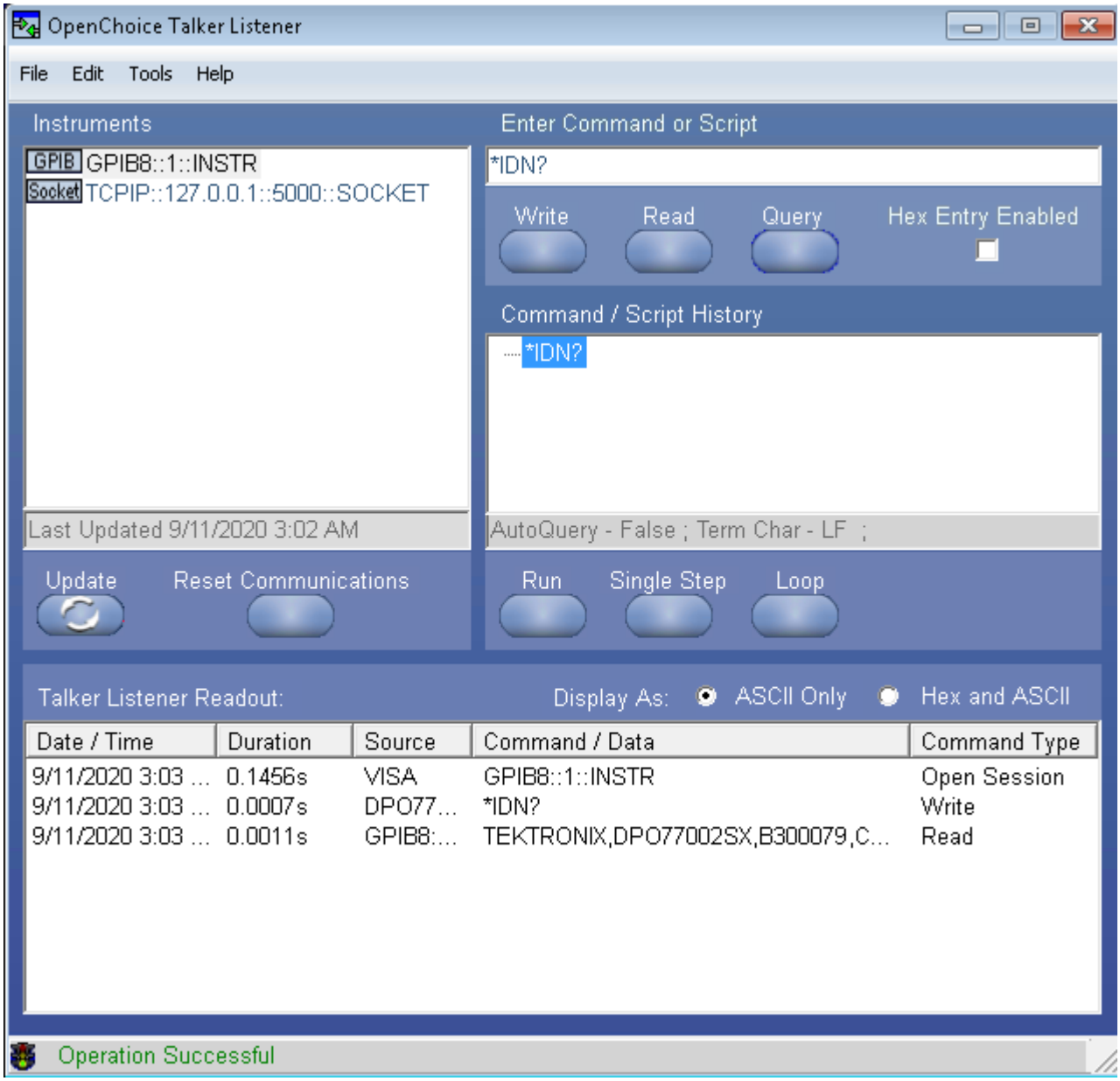
   Enter the Hostname as 127.0.0.1 if the TekVISA and TekExpress application are in the same system, else enter the IP address of the oscilloscope where the TekExpress application is running.



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.



Set or query the device name of application

This command sets or queries the device name of the application.

Syntax

`TEKEXP:SELECT DEVICE,"<DeviceName>"` (Set)

`TEKEXP:SELECT? DEVICE` (Query)

Command arguments

Argument Name	Argument Type
<DeviceName>	<String>

Returns

<String>

Examples

`TEKEXP:SELECT DEVICE,"<DUT001>"` command sets the device name of the application to DUT001.

`TEKEXP:SELECT? DEVICE` command returns the selected device name of the application.

Set or query the suite name of the application

This command sets or queries the suite name of the application.

Syntax

`TEKEXP:SELECT SUITE,"<SuiteName>"` (Set)

`TEKEXP:SELECT? SUITE` (Query)

Command arguments

DeviceName	SuiteName
Device	Device Connector
Host	Host Connector

Returns

<String>

Examples

`TEKEXP:SELECT SUITE,"<SuiteName>"` command sets the suite name of the application.

`TEKEXP:SELECT? SUITE` command returns the selected suite of the application.

Set or query the test name of the application

This command selects or deselects the specified test name of the application.

Syntax

`TEKEXP:SELECT TEST,"<TestName>",<Value>` (Set)

`TEKEXP:SELECT? TEST` (Query)

Command arguments

TestName	Relevant name in the UI
TestName for Test Point - Compliance (TP4) - Far End	
UI-Unit Interval	UI-Unit Interval
VTx-Diff-PP-Differential PP Tx voltage swing	VTx-Diff-PP-DifferentialPP Tx voltage swing
TCDR_Slew_Max-Maximum Slew Rate	TCDR_Slew_Max-MaximumSlew Rate

TestName	Relevant name in the UI
TestName for Test Point - Compliance (TP4) - Far End	
Rj-Tx random jitter-Dual Dirac	Rj-Tx random jitter-Dual Dirac
Mask Hits	Mask Hits
TSSC-Freq-Dev-Max	TSSC-Freq-Dev-Max
TSSC-Freq-Dev-Min	TSSC-Freq-Dev-Min
TSSC-Mod-Rate- SSC Modulation rate	TSSC-Mod-Rate- SSC Modulation rate
TSSC-USB Profile	TSSC-USB Profile
DJ-Tx deterministic Jitter-Dual Dirac	DJ-Tx deterministic Jitter-Dual Dirac
TJ-Tx total jitter-Dual Dirac at 10E-12 BER	TJ-Tx total jitter-Dual Dirac at 10E-12 BER
Eye Height - Transmitter Eye Mask	EyeHeight - Transmitter Eye Mask
Width@BER	EyeWidth @ 10E-12 BER
UI-Unit Interval_10Gbps	UI-UnitInterval_10Gbps
VTx-Diff-PP-DifferentialPP Tx voltage swing_10Gbps	VTx-Diff-PP-DifferentialPP Tx voltage swing_10Gbps
Rj-Tx random jitter-Dual Dirac_10Gbps	Rj-Tx random jitter-Dual Dirac_10Gbps
MaskHits_10Gbps	MaskHits_10Gbps
TSSC-Freq-Dev-Max_10Gbps	TSSC-Freq-Dev-Max_10Gbps
TSSC-Freq-Dev-Min_10Gbps	TSSC-Freq-Dev-Min_10Gbps
TSSC-Mod-Rate- SSC Modulation rate_10Gbps	TSSC-Mod-Rate- SSC Modulation rate_10Gbps
TSSC-USB Profile_10Gbps	TSSC-USB Profile_10Gbps
SSC_dfdt_10Gbps	SSC_dfdt_10Gbps
DJ-Tx deterministic Jitter-Dual Dirac_10Gbps	DJ-Tx deterministic Jitter-Dual Dirac_10Gbps
TJ-Tx total jitter-Dual Dirac at 10E-12 BER_10Gbps	TJ-Tx total jitter-Dual Dirac at 10E-12 BER_10Gbps
Eye Height - Transmitter Eye Mask_10Gbps	EyeHeight - Transmitter Eye Mask_10Gbps
Width@BER_10Gbps	EyeWidth @ 10E-6 BER_10Gbps
Height@BER_10Gbps	EyeHeight @ 10E-6 BER_10Gbps

TestName	Relevant name in the UI
TestName for Test Point - Compliance (TP4) - Far End	
Preshoot_10Gbps	Preshoot
DeEmphasis_10Gbps	DeEmphasis
LFPS Duty Cycle	LFPS Duty Cycle
LFPS Fall Time	LFPS Fall Time
LFPS Rise Time	LFPS Rise Time
LFPS TPeriod	LFPS Tperiod
LFPS Vcm-AC	LFPS Vcm-AC
LFPS Vtx-DIFF-PP	LFPS Vtx-DIFF-PP
LFPS Vtx-DIFF-PP-LP	LFPS Vtx-DIFF-PP-LP
LFPS TBurst	LFPS Tburst
LFPS TRepeat	LFPS Trepeat
TestName for Test Point - Tx Pins - Near End or Custom	
UI-Unit Interval	UI-UnitInterval
VTx-Diff-PP-Differential PP Tx voltage swing	VTx-Diff-PP-DifferentialPP Tx voltage swing
TCDR_Slew_Max-MaximumSlew Rate	TCDR_Slew_Max-MaximumSlew Rate
Rj-Tx random jitter-Dual Dirac	Rj-Txrandom jitter-Dual Dirac
Mask Hits-NTBit	MaskHits-NTBit
Mask Hits-Tbit	MaskHits-Tbit
TSSC-Freq-Dev-Max	TSSC-Freq-Dev-Max
TSSC-Freq-Dev-Min	TSSC-Freq-Dev-Min
TSSC-Mod-Rate- SSC Modulation rate	TSSC-Mod-Rate- SSC Modulation rate
TSSC-USB Profile	TSSC-USB Profile
DJ-Tx deterministic Jitter-Dual Dirac	DJ-Txdeterministic Jitter-Dual Dirac
TJ-Tx total jitter-Dual Dirac at 10E-12 BER	TJ-Txtotal jitter-Dual Dirac at 10E-12 BER

TestName	Relevant name in the UI
TestName for Test Point - Compliance (TP4) - Far End	
Eye Height-NTBit	EyeHeight-NTBit
Eye Height-Tbit	EyeHeight-Tbit
Width@BER	EyeWidth @ 10E-12 BER
Tmin-Pulse-Tj- Tx min pulse	Tmin-Pulse-Tj- Tx min pulse
VTx-CM-AC-PP-Active-TxAC common mode voltage active	VTx-DC-CM-TxDC common-mode voltage
VTx-DC-CM-TxDC common-mode voltage	VTx-De-Ratio-Tx De-emphasis
VTx-De-Ratio-Tx De-emphasis	VTx-De-Ratio-Tx De-emphasis
UI-Unit Interval_10Gbps	UI-UnitInterval_10Gbps
VTx-Diff-PP-DifferentialPP Tx voltage swing_10Gbps	VTx-Diff-PP-DifferentialPP Tx voltage swing_10Gbps
Rj-Tx random jitter-Dual Dirac_10Gbps	Rj-Txrandom jitter-Dual Dirac_10Gbps
MaskHits-NTBit_10Gbps	MaskHits-NTBit_10Gbps
MaskHits-Tbit_10Gbps	MaskHits-Tbit_10Gbps
TSSC-Freq-Dev-Max_10Gbps	TSSC-Freq-Dev-Max_10Gbps
TSSC-Freq-Dev-Min_10Gbps	TSSC-Freq-Dev-Min_10Gbps
TSSC-Mod-Rate- SSC Modulation rate_10Gbps	TSSC-Mod-Rate- SSC Modulation rate_10Gbps
TSSC-USB Profile_10Gbps	TSSC-USB Profile_10Gbps
SSC_dfdt_10Gbps	SSC_dfdt_10Gbps
DJ-Tx deterministic Jitter-Dual Dirac_10Gbps	DJ-Txdeterministic Jitter-Dual Dirac_10Gbps
TJ-Tx total jitter-Dual Dirac at 10E-12 BER_10Gbps	TJ-Txtotal jitter-Dual Dirac at 10E-12 BER_10Gbps
Eye Height-NTBit_10Gbps	EyeHeight-NTBit_10Gbps
Eye Height-Tbit_10Gbps	EyeHeight-Tbit_10Gbps
Tmin-Pulse-Tj- Tx min pulse_10Gbps	Tmin-Pulse-Tj- Tx min pulse_10Gbps
Width@BER_10Gbps	EyeWidth @ 10E-6 BER_10Gbps
Height@BER_10Gbps	EyeHeight @ 10E-6 BER_10Gbps

TestName	Relevant name in the UI
TestName for Test Point - Compliance (TP4) - Far End	
VTx-CM-AC-PP-Active-TxAC common mode voltage active_10Gbps	VTx-CM-AC-PP-Active-TxAC common mode voltage active_10Gbps
VTx-DC-CM-TxDC common-mode voltage_10Gbps	VTx-DC-CM-TxDC common-mode voltage_10Gbps
Preshoot_10Gbps	Preshoot
DeEmphasis_10Gbps	DeEmphasis
LFPSDuty Cycle	LFPSDuty Cycle
LFPSFall Time	LFPSFall Time
LFPSRise Time	LFPSRise Time
LFPS Tperiod	LFPS Tperiod
LFPS Vcm-AC	LFPS Vcm-AC
LFPS Vtx-DIFF-PP	LFPS Vtx-DIFF-PP
LFPS Vtx-DIFF-PP-LP	LFPS Vtx-DIFF-PP-LP
LFPS Tburst	LFPS Tburst
LFPS Trepeat	LFPS Trepeat

Returns

{True | False} or {1 | 0}

Examples

`TEKEXP:SELECT TEST,"<TestName>",1` command selects the specified test in the Test Panel.

`TEKEXP:SELECT? TEST` command returns the list of selected tests.

Set or query the general parameter values

This command sets or queries the general parameter values of the application.

Syntax

`TEKEXP:VALUE GENERAL,"<ParameterName>","<Value>"` (Set)

`TEKEXP:VALUE? GENERAL,"<ParameterName>"` (Query)

Command arguments

Command arguments for general settings

ParameterName	Value
Generation Version	▪ USB3.2 Gen1 ▪ USB3.2 Gen2
DataRate 5Gbps Option Button	▪ Included ▪ Excluded
DataRate 10Gbps Option Button	▪ Included ▪ Excluded
SSC On	▪ Included ▪ Excluded
Channel	▪ Long ▪ Short ▪ Both
Fixture	▪ USB-IF ▪ Wilder
Connector	▪ TypeC ▪ Micro ▪ Standard
Version	▪ Compliance(TP4) - Far End ▪ TxPins - Near End ▪ Custom
Flip Selection	▪ Lane0 ▪ Lane1 ▪ Both
Gen1 Test Method	▪ DPOJET ▪ SIGTest(USB-IF) ▪ Both
Compliance (TP4) - Far End - Deembed Filter Option	▪ Included ▪ Excluded
Compliance (TP4) - Far End - Gen2 Deembed Filter Option	▪ Included ▪ Excluded
Compliance (TP4) - Far End - Embed Filter Option	▪ Included ▪ Excluded
Compliance (TP4) - Far End - Gen2 Embed Filter Option	▪ Included ▪ Excluded
Compliance (TP4) - Far End - CTLE Filter Option	▪ Included ▪ Excluded
Compliance (TP4) - Far End - Gen2 CTLE Filter Option	▪ Included ▪ Excluded
Gen2 Ctle Option	▪ Fixed ▪ Optimize

ParameterName	Value
Gen2 Ctle Index	0dB
USB3.1 Gen1 - Long - Deembed Filter File Path	Tx_Device_TF_8G.flt
USB3.1 Gen2 - Long - Deembed Filter File Path	SSP_De-embed_Tx_Device.flt
USB3.1 Gen1 - Long - Embed Filter File Path	SSGen1_TxComp12p7dB_Embedding.flt
USB3.1 Gen2 - Long - Embed Filter File Path	SSGen2_TxComp12p2dB_Embedding.flt
USB3.1 Gen1 - Long - CTLE Filter File Path	USB3CTLE.flt
Auto Recovery Settings	▪ Yes ▪ No
Pattern Validation	▪ Turn Off Signal Check ▪ Prompt me if Signal Check Fails
Record Length for CP0 CP1 CP7	5000000
Record Length for CP9 CP10	5000000
LFPS Width Trigger Lower limit (ns)	15
Gen2 LFPS Width Trigger Upper limit (ns)	100
LFPS Trigger level (mV)	250
LFPS Mid Edge Ref Level (mV)	1000
LFPS Hysteresis Level (mV)	300
Band width for LFPS acquisition (GHz)	6
Fixture	USB-IF
Captive	▪ Included ▪ Excluded
Low Power Mode	▪ Included ▪ Excluded
Gen1 Trigger Level (mV)	-100 to 300
Gen2 Trigger Level (mV)	-100 to 300
Gen2 TxEqTrigger Level (mV)	-100 to 300
Gen1 Sample Rate(GS/s)	25 to 100
Gen2 Sample Rate(GS/s)	50 to 200

ParameterName	Value
Gen2 TxEqSample Rate(GS/s)	25 to 200
Do not autoset	▪ Included ▪ Excluded
Gen1 Vertical Scale(mV/div)	10 to 500
Gen2 Vertical Scale(mV/div)	10 to 500
Gen2TxEq Vertical Scale(mV/div)	10 to 500
Record Length for CP0 CP7	5 to 30
Record Length for CP1	5 to 30
Record Length for CP9 CP10	5 to 30
Record Length for CP13 CP14 CP15	5 to 30
Delete waveforms after analysis	▪ Included ▪ Excluded

Command arguments for report settings

ParameterName	Value
Report Update Mode	▪ New ▪ Append ▪ Replace
On Failure Stop and Notify	▪ TRUE ▪ FALSE
Include Pass/Fail Results Summary	▪ TRUE ▪ FALSE
Include Detailed Results	▪ TRUE ▪ FALSE
Include Plot Images	▪ TRUE ▪ FALSE
Include Setup Configuration	▪ TRUE ▪ FALSE
Include User Comments	▪ TRUE ▪ FALSE
Report Path	X:\USB3.1Tx\Reports\USB.pdf
Save As Type	▪ WebArchive (*.mht;*.mhtml) ▪ PDF (*.pdf;)

ParameterName	Value
Auto increment report name if duplicate	▪ TRUE ▪ FALSE
View Report After Generating	▪ TRUE ▪ FALSE

Returns

<NRf> or <String>

Examples

`TEKEXP:VALUE GENERAL,"<ParameterName>","<Value>"` command set the value for the specified general parameter.

`TEKEXP:VALUE? GENERAL,"<ParameterName>"` command returns the value for the specified general parameter.

Set or query the analyze parameter values

This command sets or queries the analyze parameter values of the application.

Syntax

`TEKEXP:VALUE ANALYZE,”<TestName>","<ParameterName>","<ParameterValue>"` (Set)

`TEKEXP:VALUE? ANALYZE,”<TestName>","<ParameterName>"` (Query)

Command arguments

TestName	ParameterName	ParameterValue
CTLE Table Lane1	Data Rate Applicable	10 Gbps
CTLE Table Lane2	Data Rate Applicable	10 Gbps
DeEmphasis_10Gbps	Data Rate Applicable	10 Gbps
DJ-Tx deterministic Jitter-Dual Dirac	Data Rate Applicable	5 Gbps
DJ-Tx deterministic Jitter-Dual Dirac_10Gbps	Data Rate Applicable	10 Gbps
Eye Height - Transmitter Eye Mask	Data Rate Applicable	5 Gbps
Eye Height - Transmitter Eye Mask_10Gbps	Data Rate Applicable	10 Gbps
Eye Height-NTBit	Data Rate Applicable	5 Gbps
Eye Height-NTBit_10Gbps	Data Rate Applicable	10 Gbps
Eye Height-Tbit	Data Rate Applicable	5 Gbps
Eye Height-Tbit_10Gbps	Data Rate Applicable	10 Gbps

TestName	ParameterName	ParameterValue
Height@BER_10Gbps	Data Rate Applicable	10 Gbps
LaneToLaneSkew_10Gbps	Data Rate Applicable	10 Gbps
	Connector Applicable	Type C
	Lane Selection Applicable	Both
LaneToLaneSkew_5Gbps	Data Rate Applicable	5 Gbps
	Connector Applicable	Type C
	Lane Selection Applicable	Both
LaneToLaneSkew_10Gbps	Data Rate Applicable	10 Gbps
	Connector Applicable	Type C
	Lane Selection Applicable	Both
LFPS Duty Cycle	Data Rate Applicable	NA
LFPS Fall Time	Data Rate Applicable	NA
LFPS Rise Time	Data Rate Applicable	NA
LFPS TBurst	Data Rate Applicable	NA
LFPS TPeriod	Data Rate Applicable	NA
LFPS TRepeat	Data Rate Applicable	NA
LFPS Vcm-AC	Data Rate Applicable	NA
LFPS Vtx-DIFF-PP	Data Rate Applicable	NA
LFPS Vtx-DIFF-PP-LP	Data Rate Applicable	NA
Mask Hits-NTBit	MaskFile path	USB_3_0_Tx_Informative_NTbit.msk
	Data Rate Applicable	5 Gbps
Mask Hits-NTBit_10Gbps	MaskFile path	USB_3_0_Tx_Informative_NTbit.msk
	Data Rate Applicable	10 Gbps
Mask Hits-Tbit	MaskFile path	USB_3_0_Tx_Informative_Tbit.msk
	Data Rate Applicable	5 Gbps

TestName	ParameterName	ParameterValue
Mask Hits-Tbit_10Gbps	MaskFile path	USB_3_0_Tx_Informative_Tbit.msk
	Data Rate Applicable	10 Gbps
Mask Hits	MaskFile path	USB_3_0_Rx_Normative.msk
	Data Rate Applicable	5 Gbps
Mask Hits_10Gbps	MaskFile path	USB_3_0_Rx_Normative.msk
	Data Rate Applicable	10 Gbps
Preshoot_10Gbps	Data Rate Applicable	10 Gbps
Rj(CP0)	Data Rate Applicable	5 Gbps
Rj(CP9)	Data Rate Applicable	5 Gbps
Rj-Tx random jitter-Dual Dirac	Data Rate Applicable	5 Gbps
Rj-Tx random jitter-Dual Dirac_10Gbps	Data Rate Applicable	10 Gbps
SSC_dfdt_10Gbps	Data Rate Applicable	10 Gbps
SSC_dfdt	Data Rate Applicable	5 Gbps
TCDR_Slew_Max-Maximum Slew Rate	Data Rate Applicable	5 Gbps
TJ(CP0)	Data Rate Applicable	5 Gbps
TJ(CP9)	Data Rate Applicable	5 Gbps
TJ-Tx total jitter-Dual Dirac at 1E-12 BER	Data Rate Applicable	5 Gbps
TJ-Tx total jitter-Dual Dirac at 1E-12 BER_10Gbps	Data Rate Applicable	10 Gbps
Tmin-Pulse-Tj - Tx min pulse	Data Rate Applicable	5 Gbps
Tmin-Pulse-Tj - Tx min pulse_10Gbps	Data Rate Applicable	10 Gbps
TSSC-Freq-Dev-Max	Data Rate Applicable	5 Gbps
TSSC-Freq-Dev-Max_10Gbps	Data Rate Applicable	10 Gbps
TSSC-Freq-Dev-Min	Data Rate Applicable	5 Gbps

TestName	ParameterName	ParameterValue
TSSC-Freq-Dev-Min_10Gbps	Data Rate Applicable	10 Gbps
TSSC-Mod-Rate - SSC Modulation rate	Data Rate Applicable	5 Gbps
TSSC-Mod-Rate - SSC Modulation rate_10Gbps	Data Rate Applicable	10 Gbps
TSSC-USB Profile	Data Rate Applicable	5 Gbps
TSSC-USB Profile_10Gbps	Data Rate Applicable	10 Gbps
UI-Unit Interval	Data Rate Applicable	5 Gbps
UI-Unit Interval_10Gbps	Data Rate Applicable	10 Gbps
VTx-CM-AC-PP-Active common mode	Data Rate Applicable	5 Gbps
VTx-CM-AC-PP-Active common mode_10Gbps	Data Rate Applicable	10 Gbps
VTx-DC-CM-Tx DC common-mode voltage	Data Rate Applicable	5 Gbps
Tx-DC-CM-Tx DC common-mode voltage_10Gbps	Data Rate Applicable	10 Gbps
VTx-De-Ratio-Tx De-emphasis	Data Rate Applicable	5 Gbps
VTx-Diff-PP-Differential PP Tx voltage swing	Data Rate Applicable	5 Gbps
VTx-Diff-PP-Differential PP Tx voltage swing_10Gbps	Data Rate Applicable	10 Gbps
Width@BER	Data Rate Applicable	5 Gbps
Width@BER_10Gbps	Data Rate Applicable	10 Gbps

Returns

<Nrf>

Examples

`TEKEXP:VALUE ANALYZE,”<TestName>","<ParameterName>","<ParameterValue>"` command set the value for the specified test and its analyze parameter.

`TEKEXP:VALUE? ANALYZE,”<TestName>","<ParameterName>"` command returns the value for the specified test and its analyze parameter.

Query the available devices in the DUT panel of the application

This command queries the list of available devices on the DUT panel as comma separated values.

Syntax

`TEKEXP:LIST? DEVICE` (Query)

Command arguments

Returns

<String>

Examples

`TEKEXP:LIST? DEVICE` command returns the list of available devices.

Query the available suites for the selected device

This command queries the list of available suites for the selected device as comma separated values.

Syntax

`TEKEXP:LIST? SUITE` (Query)

Returns

<String>

Examples

`TEKEXP:LIST? SUITE` command returns the list of available suites for the selected device.

Query the list of available tests of the application

This command queries the list of available tests of the application for the selected device as comma separated values.

Syntax

`TEKEXP:LIST? TEST` (Query)

Command arguments

Returns

<String>

Examples

`TEKEXP:LIST? TEST` command returns the list of available tests for the selected device.

Query the available version names of the application

This command queries the list of available version names of the application for the selected device as comma separated values.

Syntax

`TEKEXP:LIST? VERSION` (Query)

Returns

<String>

Examples

`TEKEXP:LIST? VERSION` command returns the list of version names for the selected device.

Query the list of available instruments based on the specified instrument type

This command queries the list of available instruments based on the specified instrument type.

Syntax

`TEKEXP:LIST? INSTRUMENT,"<InstrumentType>"` (Query)

Command argument

Argument Name	Argument value
<InstrumentType>	<String>

Returns

<String>

Examples

`TEKEXP:LIST? INSTRUMENT,"Real Time Scope"` command returns the list of available instruments based on the real time scope type.

Set or query the IP address of the instrument based on the specified instrument type

This command sets or queries the IP address of the instrument based on the specified instrument type.

Syntax

`TEKEXP:INSTRUMENT? "<InstrumentType>"` (Query)

`TEKEXP:INSTRUMENT, "<InstrumentType>","<Value>"` (Set)

Command argument

Argument Name	Argument Type
<InstrumentType>	<String>
<Value>	<String> TCPIP::XXX.XX.XXX.XXX::INSTR

Returns

<String>

Examples

`TEKEXP:INSTRUMENT? "<InstrumentType>"` command returns the IP address of the oscilloscope.

`TEKEXP:INSTRUMENT, "<InstrumentType>","<value>"` command sets the oscilloscope to the specified IP address.

Query the information of the generated report file

This command queries the information of the generated report file in the format "<FileSize>","<FileName>".

Pre-requisite

A session should be run earlier and the report should be generated to get the information of the report.

Syntax

`TEKEXP:INFO? REPORT` (Query)

Returns

<FileSize>:: <String>

<FileName>:: <String>

Examples

`TEKEXP:INFO? REPORT` command returns the information of the generated report in the format ("1215","DUT001.mht").

Query the information of the generated waveform files

This command queries the information of the generated waveform files in the format.

<File1Size,"File1Name">.

If there are more than one waveform, the waveform file names are displayed with the comma separated values in the format

<File1Size,"File1Name">,<File2Size,"File2Name">.

Syntax

`TEKEXP:INFO? WFM` (Query)

Returns

<FileSize>:: <String>

<FileName>:: <String>

Examples

`TEKEXP:INFO? WFM` command returns the information of the generated waveform in the format (20000858,"X:\USB3.2\Untitled Session\DUT001\20200916_041609\Iter1_Short Record-length for SCOPE Period_NoSSC_DIFF.wfm").

Query the information of the generated image files

This command queries the information of the generated image files in the format.

<File1Size,"File1Name”>.

If there are more than one image, the image file names are displayed with the comma separated values in the format

<File1Size,"File1Name">,<File2Size,"File2Name">.

Syntax

`TEKEXP:INFO? IMAGE` (Query)

Returns

<FileSize>:: <String>

<FileName>:: <String>

Examples

`TEKEXP:INFO? IMAGE` command returns the information of the generated image in the format (109058, "X:\USB3.2\Untitled Session\DUT001\20200916_041609\Iter1_Short Record-length for SCOPE Period_NoSSC_DIFF.png";22794,"X:\USB3.2\Untitled Session\DUT001\20 200916_041609\ScopePeriodPlot_Iteration1WithCursor.png").

Query the active TekExpress application name

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

Syntax

`TEKEXP:*IDN?` (Query)

Returns

<String>

Examples

`TEKEXP:*IDN?` command returns the active TekExpress application name running on the oscilloscope.

Set or query the DUTID of application

This command sets or queries the DUTID of the application.

Syntax

`TEKEXP:VALUE DUTID,"<Value>"` (Set)

`TEKEXP:VALUE? DUTID` (Query)

Command arguments

Argument Name	Argument Type
<Value>	<String>

Returns

<String>

Examples

`TEKEXP:VALUE DUTID,"DUT001"` command sets the DUTID of the application to DUT001.

`TEKEXP:VALUE? DUTID` command returns the DUTID of the application.

Sets or query the acquire mode status

This command sets or queries the acquire mode status.

Syntax

`TEKEXP:ACQUIRE_MODE <Mode>` (Set)

`TEKEXP:ACQUIRE_MODE?` (Query)

Command arguments

Argument Name	Argument value
<Mode>	▪ LIVE ▪ PRE-RECORDED

Returns

LIVE | PRE-RECORDED

Examples

`TEKEXP:ACQUIRE_MODE LIVE` command sets the acquire mode to the Live mode.

`TEKEXP:ACQUIRE_MODE?` command returns the current acquire mode.

Set or query the execution mode status

This command sets or queries the execution mode status.

Syntax

`TEKEXP:MODE <Mode>` (Set)

`TEKEXP:MODE?` (Query)

Command arguments

Argument Name	Argument value
<Mode>	▪ COMPLIANCE ▪ USER-DEFINED

Returns

COMPLIANCE | USER-DEFINED

Examples

`TEKEXP:MODE COMPLIANCE` command sets the execution mode to the compliance mode.

`TEKEXP:MODE?` command returns the current execution mode.

Generate the report for the current session

This command generates the report for the current session.

Syntax

`TEKEXP:REPORT GENERATE`(Set)

Arguments

N/A

Examples

`TEKEXP:REPORT GENERATE` command generates the report for the current session.

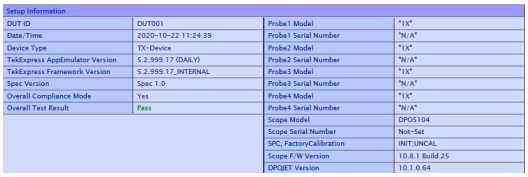
Query the value of specified report header field in the report

This command queries the value of specified report header field in the report.

Syntax

`TEKEXP:REPORT? ”<Device Field>”` (Query)

Command arguments

Argument Name	Argument Type
<Device Field> Device field is the header name of each field in the setup information section of the report. 	<String>

Setup Information			
DUT ID	DUT001	Probe1 Model	"1X"
Date/Time	2020-10-22 11:24:39	Probe1 Serial Number	"N/A"
Device Type	TX- Device	Probe2 Model	"1X"
TekExpress AppEmulator Version	5.2.999.17 (DAILY)	Probe2 Serial Number	"N/A"
TekExpress Framework Version	5.2.999.17_INTERNAL	Probe3 Model	"1X"
Spec Version	Spec 1.0	Probe3 Serial Number	"N/A"
Overall Compliance Mode	Yes	Probe4 Model	"1X"
Overall Test Result	Pass	Probe4 Serial Number	"N/A"
		Scope Model	DPO5104
		Scope Serial Number	Not-Set
		SPC, FactoryCalibration	INIT:UNCAL
		Scope F/W Version	10.8.1 Build 25
		DPOJET Version	10.1.0.64

Returns

<String>

Examples

`TEKEXP:REPORT? "DUT ID"` command returns the value of DUT ID field in the report.

Query the value of specified result detail available in report summary/details table

This command queries the value of specified result detail available in report summary/details table.

Syntax

`TEKEXP:RESULT? "<TestName>"` (Query)

`TEKEXP:RESULT? "<TestName>","<ColumnName>"` (Query)

`TEKEXP:RESULT? "<TestName>","<ColumnName>",<RowNumber>` (Query)

Command arguments

Argument Name	Argument Type
<TestName> It is the test name of which the details are required in the report.	<String>
<ColumnName> It is the column header name of which the details are required in the report.	<String>
<RowNumber> It is the row number of which the details are required in the report.	<String>

Returns

<String>

Examples

`TEKEXP:RESULT? "<TestName>"` will return the pass fail status of test.

`TEKEXP:RESULT? "<TestName>","<ColumnName>"` will return all the row values of specific column for the test with comma separated values.

`TEKEXP:RESULT? "<TestName>","<ColumnName>",<RowNumber>` will return the column value of specified row number.

Restore the setup to default settings

This command restores the setup to default settings.

Syntax

`TEKEXP:SETUP Default` (Set)

Arguments

N/A

Examples

`TEKEXP:SETUP Default` command restores the setup to default settings.

Save the setup

This command saves the setup.

Syntax

`TEKEXP:SETUP Save` (Set)

Examples

`TEKEXP:SETUP Save` command saves the setup.

Save the settings to a specified session

This command saves the settings to a specified session.

Syntax

`TEKEXP:SETUP Save,"<SessionName>"`

Command arguments

Argument Name	Argument value
<SessionName>	<String>

Examples

`TEKEXP:SETUP Save,"<SessionName>"` command saves the settings to a specified session.

Open the setup from a specified session

This command opens the setup from a specified session.

Syntax

`TEKEXP:SETUP Open,"<SessionName>"` (Set)

Command arguments

Argument Name	Argument value
<SessionName>	<String>

Examples

`TEKEXP:SETUP Open,"<SessionName>"` command opens the setup from a specified session.

Query the current setup file name

This command queries the current setup file name.

Syntax

`TEKEXP:SETUP? CURRENT` (Query)

Returns

<String>

Examples

`TEKEXP:SETUP? CURRENT` command returns the current setup file name.

Run/stop/pause/resume the selected measurements execution in the application

This command run/stop/pause/resume the selected measurements execution in the application.

Syntax

`TEKEXP:STATE <operation mode>` (Set)

Command arguments

Argument Name	Argument value
<operation mode>	▪ RUN ▪ STOP ▪ PAUSE ▪ RESUME

Returns

RUN | STOP | PAUSE | RESUME

Examples

`TEKEXP:STATE RUN` command runs the execution for the selected measurements.

Query the current measurement execution status

This command queries the current measurement execution status.

Syntax

`TEKEXP:STATE?` (Query)

Returns

RUNNING | PAUSED | WAIT | ERROR | READY

Examples

`TEKEXP:STATE?` command returns the current measurement execution status.

Query whether the current setup is saved or not saved

This command queries whether the current setup is saved or not saved.

Syntax

`TEKEXP:STATE? SETUP` (Query)

Returns

Saved or Not-Saved

Examples

`TEKEXP:STATE? SETUP` command returns whether the current setup is saved or not saved.

Exit or close the application

The command exits or close the application.

Syntax

`TEKEXP:EXIT(Set)`

Examples

`TEKEXP:EXIT` command close the application.

Query the status of the previous command execution

This command queries whether the previous command execution is completed successfully.

Syntax

`TEKEXP:*OPC?` (Query)

Returns

{0 | 1} or {True | False}

1 or True indicates that command execution is successful.

0 or False indicates that command execution is failed.

Examples

`TEKEXP:*OPC?` command returns whether the previous command operation is completed successfully.

Query the last error occurred

This command queries the last error occurred.

Syntax

`TEKEXP:LASTERROR?` (Query)

Returns

<String>

Examples

`TEKEXP:LASTERROR?` command returns the last error occurred.

Set or query the popup details

This command sets or queries the popup details.

Syntax

`TEKEXP:POPUP?` (Query)

`TEKEXP:POPUP "<PopupResponse>"` (Set)

Command arguments

Argument Name	Argument value
<PopupResponse>	▪ Yes ▪ No

Returns

The pop-up details return in the following format:

"<Tittle>","<message>","<response1>,<response2>".

Where,

<Tittle> :: <String>

<message> :: <String>

<response1>,<response2> :: <String>

Examples

`TEKEXP:POPUP?` command returns the popup details in following format ": "Do you really want to exit TekExpress?";Responses: "Yes, No".

`TEKEXP:POPUP "Yes"` command sets the popup response to Yes.

Sets or query the limit values in the limits editor window

This command sets or queries the limit values in the limits editor window.

Syntax

`TEKEXP:VALUE LIMIT,<TestName>,<LimitHeader>,<Value1>,<CompareString>,<Value2>`(Set)

`TEKEXP:VALUE? LIMIT,<TestName>,<LimitHeader>` (Query)

Returns

<String> or <NRf>

Examples

`TEKEXP:VALUE LIMIT,<TestName>,<LimitHeader>,<Value1>,<CompareString>,<Value2>` command sets the limits value for the specified testname and limit header.

`TEKEXP:VALUE? LIMIT,<TestName>,<LimitHeader>` command returns the limits value for the specified testname and limit header.

Set or query the waveform file recalled for the specified test name and acquire type

This command set or queries the waveform file recalled for the specified test name and acquire type.

If there are more than one waveform, the waveform file names are displayed with the symbol "$" separated values in the format

<WaveformFileName1$ WaveformFileName2>.

Syntax

`TEKEXP:VALUE WFMFILE,<TestName>,<AcquireType>,<WaveformFileName>` (Set)

`TEKEXP:VALUE? WFMFILE,<TestName>,<AquireType>` (Query)

Returns

<String>

Examples

`TEKEXP:VALUE WFMFILE,<TestName>,<AquireType>,<WaveformFileName>` command recalls the specified waveform file for the specified testname and acquire type.

`TEKEXP:VALUE? WFMFILE,<TestName>,<AquireType>` command returns the waveform file name recalled for the specified testname and acquire type.

Set or query the enable/disable status of Verbose function

This command sets or queries the enable/disable status of Verbose function.

Syntax

`TEKEXP:VALUE VERBOSE,"<Value>"` (Set)

`TEKEXP:VALUE? VERBOSE` (Query)

Arguments

Argument Name	Argument value
<Value>	{True | False} or {1 | 0} It represents enabled or disabled. Where, ▪ True or 1 - enabled ▪ False or 0 - disabled

Returns

{True | False} or {0 | 1}

Examples

`TEKEXP:VALUE VERBOSE,"<Value>"` command enable or disable the Verbose function.

`TEKEXP:VALUE? VERBOSE` command returns the enable or disable status of Verbose function.

Query the enable or disable status of Continuous run function.

This command queries the enable or disable status of Continuous run function.

Syntax

`TEKEXP:VALUE? GENERAL,"Enable Continuous Run"` (Query)

Returns

{True | False} or {0 | 1}

Where,

1 or True indicates that the continuous run function is enabled.

0 or False indicates that the continuous run function is disabled.

Examples

`TEKEXP:VALUE? GENERAL,"Enable Continuous Run"` command returns the enable or disable status of continuous run function.

Set or query the enable/disable status of Continuous Run function

This command sets or queries the enable/disable status of Continuous Run function.

Syntax

`TEKEXP:VALUE ContinuousRun,"<Value>"` (Set)

`TEKEXP:VALUE? ContinuousRun` (Query)

Arguments

Argument Name	Argument value
<Value>	{True | False} or {1 | 0} It represents enabled or disabled. Where, ▪ True or 1 - enabled ▪ False or 0 - disabled

Returns

{True | False} or {0 | 1}

Examples

`TEKEXP:VALUE? ContinuousRun` command returns the enable or disable status of Continuous run function.

`TEKEXP:VALUE ContinuousRun,"<Value>"` command enable or disable the Continuous run function.

Set or query the continuous run duration time value

This command sets or queries the continuous run duration time value.

Syntax

`TEKEXP:VALUE? ContinuousRun_Duration` (Query)

`TEKEXP:VALUE ContinuousRun_Duration,"<Value>"` (Set)

Arguments

Argument Name	Argument value
<Value>	Infinite | hh:mm Infinite sets the radio on button to infinite. hh:mm sets the continuous run duration to the specified time in hours and minutes. The minimum time duration you can set is 00:30.

Returns

Infinite | hh:mm

Examples

`TEKEXP:VALUE? ContinuousRun_Duration` command returns the continuous run duration time value.

`TEKEXP:VALUE ContinuousRun_Duration,"<Value>"` command sets the continuous run duration time value.

Set or query the session create option in the continuous run function

This command sets or queries the option for session creation in the continuous run function.

Syntax

`TEKEXP:VALUE? ContinuousRun_RunSessionOption`**s** (Query)

`TEKEXP:VALUE ContinuousRun_RunSessionOptions,"Value`**"** (Set)

Arguments

Argument Name	Argument value
<Value>	NewSession | SameSession_ClearResults NewSession - creates new session for each run. SameSession_ClearResults - Clears the test results of the current session and starts the test execution. The session results will be added in the same session, by erasing the previous run results.

Returns

NewSession | SameSession_ClearResults

Examples

`TEKEXP:VALUE? ContinuousRun_RunSessionOptions` command returns the option for session creation in the continuous run function.

`TEKEXP:VALUE ContinuousRun_RunSessionOptions,"Value"` command sets the option for session creation in the continuous run function.

Set or query the View report after generating option status

This command sets or queries the enable/disable status of the View report after generating function.

Syntax

`TEKEXP:VALUE? GENERAL,"View Report After Generating"` (Query)

`TEKEXP:VALUE GENERAL,"View Report After Generating",<value>` (Set)

Arguments

Argument Name	Argument value
<Value>	{True | False} or {1 | 0} It represents enabled or disabled. Where, ▪ True or 1 - enabled ▪ False or 0 - disabled

Returns

{True | False} or {0 | 1}

Examples

`TEKEXP:VALUE? GENERAL,"View Report After Generating"` command returns the enable or disable status of view report after generating option.

`TEKEXP:VALUE GENERAL,"View Report After Generating",<value>` command enable or disable the view report after generating option.

Returns the report as XML string

This command returns the report as XML string.

Syntax

`TEKEXP:REPORTASXML?` (Query)

Returns

<String>

Examples

`TEKEXP:REPORTASXML?` command returns the report XML string.

Copies all the images from current run session to the given destination location

This command copies all the images from current run session to the given destination location.

Syntax

`TEKEXP:COPYIMAGES <DestinationPath>` (Set)

Command argument

<DestinationPath> :: <String>

Returns

NA

Examples

`TEKEXP:COPYIMAGES C:\Temp` command copies all the images from current run session to the mentioned location.

Selects the specified test(s) and deselect all other tests

This command selects the specified test(s) and deselect all other tests.

Syntax

`TEKEXP:SELECTID <"TestID">` (Set)

Command argument

Argument Name	Argument value
TestID	String

Returns

NA

Examples

`TEKEXP:SELECTID "11101"`This command select the test associated with the ID and deselects all other tests in the application.

`TEKEXP:SELECTID "11101,11102"`This command selects the tests associated with the IDs and other tests will be deselected.

Returns the complete information about the selected test

This command returns the complete information about the selected test.

The information includes application name, TestID, Device selected, Suite selected, version, Test name, Test description.

Syntax

`TEKEXP:TESTINFO?` (Query)

Returns

<String>

Examples

`TEKEXP:TESTINFO?` This command returns the following details:

<TekExpress> <Test Id="11101" Device="TX-Device" Suite="Group1" Version="Spec 1.0" Name="Algorithm Library Measurement" Description="This is Algorithm Library measurement test. Refer Section-B of TekExpress SampleApp Development Guide for more details.

Set the default session

Sets the application configurations to default value.

Syntax

`TEKEXP:SESSION DEFAULT` (set)

Examples

`TEKEXP:SESSION DEFAULT`, sets the application configurations to default value.

Save the run/config sessions

Enter the name to save/config the session.

Syntax

`TEKEXP:SESSION SAVE,"Session Name"` (set)

Command arguments

Argument Name	Argument value
<Session Name>	<String>

Examples

`TEKEXP:SESSION SAVE,"Session Name"` saves the session.

Load the run/config session

Load the selected config/run session.

Syntax

`TEKEXP:SESSION LOAD, "Session Name"` (set)

Command arguments

Argument Name	Argument value
<Session Name>	<String>

Examples

`TEKEXP:SESSION LOAD, "Session Name"`, load the selected config/run session.

Delete the run/config session

Deletes the selected config/run session.

Syntax

`TEKEXP:SESSION DELETE, "Session1, Session2"` (set)

Command arguments

Argument Name	Argument value
<Session Name>	<String>

Examples

`TEKEXP:SESSION DELETE, "Session1, Session2"`, deletes the selected config/run session.

Run the run/config saved session

Run the selected config/run session.

Syntax

`TEKEXP:SESSION RUN, “Session Name’s separated by comma” (set)`

Command arguments

Argument Name	Argument value
<Session Name>	<String>
Session Name’s separated by comma (to run the multiple run sessions)	<String>

Examples

`TEKEXP:SESSION RUN, “Session Name’s separated by comma”`, runs the selected config/run session.

Query the available list in the run/config session

Returns the list of available config/run session.

Syntax

`TEKEXP:SESSION? LIST`

Returns

Returns the list of available config/run session.

Examples

`TEKEXP:SESSION? LIST`, returns the list of available config/run session.

Query the current run/config session

Returns the selected config/run session.

Syntax

```
TEKEXP:SESSION? CURRENT
```

Returns

Returns the selected config/run session.

Examples

`TEKEXP:SESSION? CURRENT`, returns the selected config/run session.

Override the run/config session

Overrides the selected config/run session.

Syntax

```
TEKEXP:SESSION SAVE,"SessionName", "True" (set)
```

Command arguments

Argument Name	Argument Type	Argument Value
<Session Name>	<String>	{True | False} or {1 | 0} It represents enabled or disabled. Where, ▪ True or 1 - enabled ▪ False or 0 - disabled

Returns

{True | False} or {0 | 1}

Examples

`TEKEXP:SESSION SAVE,"SessionName", "True"`, overrides the selected config/run session.

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:ACQUIRE_MODEPRE-RECORDED\n	It sets the acquire mode as pre-recorded.
TEKEXP:ACQUIRE_MODE?\n	It returns LIVE when acquire mode is set to live.

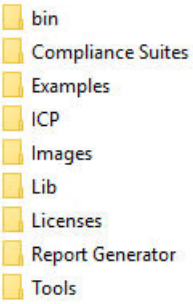
Example	Description
TEKEXP:EXPORT REPORT\n	It returns the report file in bytes. This can be written into another file for further analysis.
TEKEXP:EXPORT IMAGE,"ImageA.png"\n	It returns the image file in bytes. This can be written into another file for further analysis.
TEKEXP:EXPORT WFM,"WaveformA.wfm"\n	It returns the waveform 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:INFO? WFM\n	It returns “100,“WfmFileName1.wfm”";“200,“WfmFileName2.wfm”" when 100 is the filesize in bytes for the filename WfmFileName1.wfmand 200 is the filesize in bytes for the filename WfmFileName2.wfm.
TEKEXP:INFO? IMAGE	It returns the image file name.
TEKEXP:INSTRUMENT"Real Time Scope",DPO77002SX (GPIB8::1::INSTR)\n	It sets the instrument value as DPO77002SX (GPIB8::1::INSTR) for the selected instrument type Real Time Scope.
TEKEXP:INSTRUMENT?“Real Time Scope”\n	It returns "IDPO77002SX (GPIB8::1::INSTR), when DPO77002SX (GPIB8::1::INSTR)" is the selected instrument for the instrument type Real Time Scope.
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,"Real Time Scope"\n	It returns "DPO77002SX (GPIB8::1::INSTR),MSO73304DX (TCPIP::134.64.248.91::INSTR)" when DPO72504D (GPIB8::1::INSTR),MSO73304DX (TCPIP::134.64.248.91::INSTR) are the list of 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 "DPO73304SX" when DPO73304SX is the scope model.
TEKEXP:REPORT?“DUT ID”\n	It returns "DUT001" when DNI_DUT001 is the DUT ID.
TEKEXP:RESULT?"Period using SCOPE (Acquire-Analyze Combined)"\n	It returns Pass when the test result is Pass.

Example	Description
TEKEXP:RESULT?"Period using SCOPE (Acquire-Analyze Combined)","Margin",1\n	It returns "L:-50.000ps H:2000.000ps" when L:-50.000ps H: 2000.000ps is the value.
TEKEXP:SELECT DEVICE,TX_Device, TRUE\n	It selects TX_Device
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.

References

Application directories

You can find the application files at C:\Program Files\Tektronix\USB3.2. The application directory and associated files are organized as follows:



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

Application directories and usage

Directory names	Usage
Bin	Contains application libraries
Compliance Suites	Contains test suite specific files
Examples	Contains various support files
ICP	Contains instrument and application specific interface libraries
Images	Contains images of the application
Lib	Contains utility files specific to the application
Report Generator	Contains style sheets for report generation
Tools	Contains instrument and application specific files

File name extensions

The TekExpress USB3.2 software uses the following file name extensions:

File name extension

File name extension	Description
*.TekX	Application session files (the extensions may not be displayed)
*.py	Python sequence file.

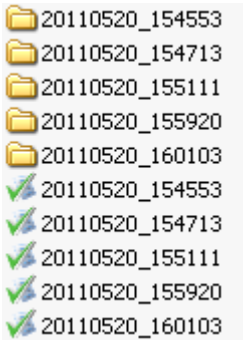
File name extension	Description
*.xml	Test-specific configuration information (encrypted) files. Application log files
*.csv	Test result reports Plot data
*.mht	Test result reports (default) Test reports can also be saved in HTML format
*.pdf	Test result reports Application help document
*.xslt	Style sheet used to generate reports
*.png	Captured images

View test-related files

Files related to tests are stored in My DocumentsUSB3.2\Untitled session folder. Each test setup in this folder has both a test setup file and a test setup folder, both with the test setup name. The test setup file is preceded by the TekExpress icon.

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 also 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:



Each session folder contains image files of any plots generated from running the test session. If you selected to save all waveforms or ran tests using prerecorded waveform files, these are included here.

The first time you run a new, unsaved session, the session files are stored in the Untitled Session folder located at X:\USB3.2. When you name and save the session, the files are placed in a folder with the name that you specify. A copy of the test files stay in the Untitled Session folder until you run a new test or until you close the application.