Tektronix®

Clarius Compliance DDR5 Receiver Calibration and Test Solution

Application Help

Version 2.0.0

Register now!
Click the following link to protect your product.
tek.com/register

077-1885-00 December 2024

Tektronix, Inc.
14150 SW Karl Braun Drive
P.O. Box 500
Beaverton, OR 97077
US

For product information, sales, service, and technical support visit *tek.com* to find contacts in your area. For warranty information visit *tek.com/warranty*.

Contents

Welcome

The DDR (Dual Data Rate) is a dominant and fast-growing memory technology. It offers high data transfer rates required for virtual computing applications, from consumer products to the most powerful servers. The high speed of these signals requires high-performance measurement tools. The Tektronix Clarius compliance DDR Rx solution is an automated test application used to validate and debug the DDR5 designs of the DUT as per the JEDEC specifications. The solution enables you to achieve new levels of productivity, efficiency, and measurement reliability.

The Clarius compliance DDR Rx solution uses optimized computing and parallel execution methods which reduces the execution time of measurements. It also provides test data management and test data analytics.

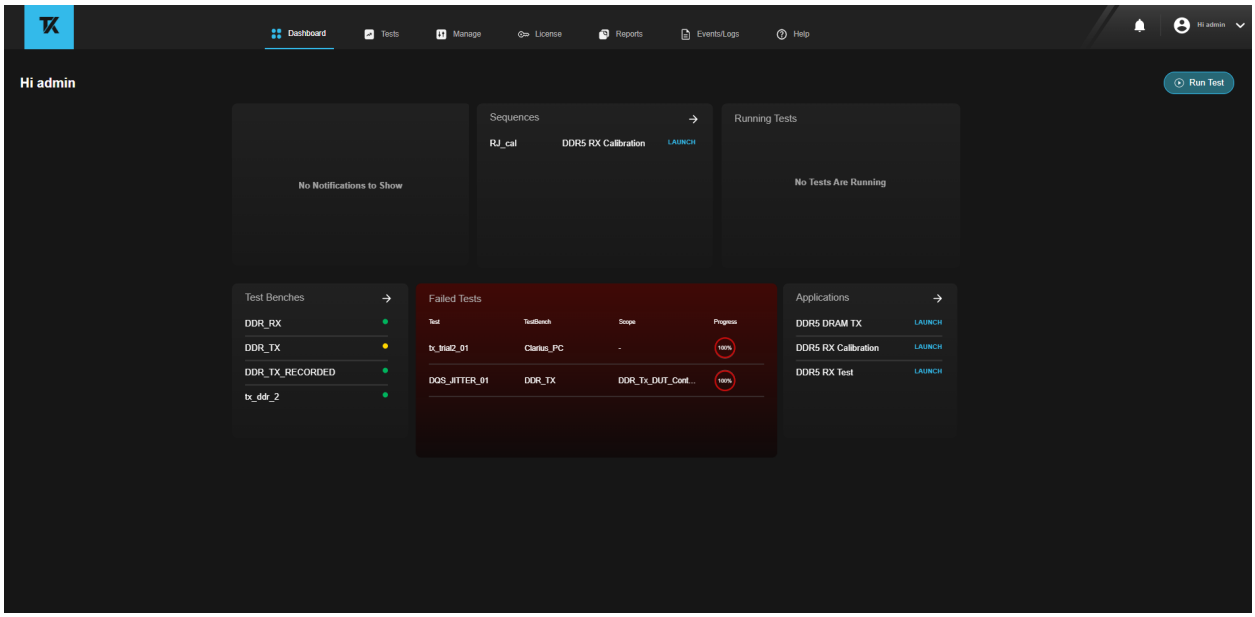


Figure 1: Clarius compliance DDR Rx

Key Features

- DDR Calibration for DQ & DQS Voltage, DQS Jitter (RJ, DCD), and DQ Stressed Eye.
- DDR Tests for DQ & DQS Voltage, DQS Jitter Sensitivity, and DQ Stressed Eye Test.
- Calibration compatibility with both a CTC + Parametric Test Card and a CTC2 + Replica Channel.
- Support for DDR5 Data Rates from 3200 MT/s to 8400 MT/s.
- De-embedding support across all scenarios.
- Integration of external ISI/internal BERT ISI channels is supported.
- Access to pre-built loopback scripts that can be customized or replaced with user-specific scripts for different DUT setups.
- Base loopback scripts are provided and can be easily modified to suit the user's DUT configuration.
- Advanced sweep tests for DQ, DQS, and Jitter that go beyond standard specification requirements.
- Both calibrated and uncalibrated advanced tests for stressed eye that go beyond standard specification requirements.
- Adaptive DFE optimization is included in the calibration process.
- Graphical representation of test results with bathtub curves and sweep curves for all four phases, accompanied by detailed reports with plots and result tables.
- An import sequence feature that allows users to save and import test sequences, avoiding the need for manual setup each time.
- Supports both Single Rank and Dual Rank devices.

- Debug features include options to Skip DUT initialization, Skip Loopback and Pause Before Phase Change.
- BERT offset calibration for VRef DQ settings.
- Offset calculation methods support both the average offset across all phases and individual phase offset calculations.

Getting help and support

Product documents

Use the product documents for more information about getting started with the Clarius, the application functions, and how to remotely use the application.

Table 1: Clarius automation framework and application documents

To learn about	Use this document
How to install the Clarius	Clarius Automation Framework Getting Started Guide
How to use the application	Clarius Compliance DDR Rx Application Help
How to automate using the API and SDK commands	Clarius Automation Framework (API and SDK) Programming Guide

Conventions

This application help uses the following conventions:

- The terms "Application" and "Software" refer to the Clarius compliance DDR Rx application.
- The term "target system" refers to the Computer/Laptop where the Clarius automation framework and application is installed.
- The acronym “DUT” is an abbreviation for Device Under Test.
- The term “select” refers choosing a screen item (button control or list item) using a mouse.
- A **Note** identifies important information.
- The acronym "Rx" is an abbreviation for Receiver.

Technical support

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

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

General information

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

Application specific information

- Software version number
- Description of the problem
- If possible, save the log file(s) and share it with the Tektronix support person to understand the problem and get it resolved.

System requirements

This section explains the recommended system requirements to install the Clarius automation framework and the application(s).

Requirement	Recommended requirements
Operating system	Windows 10 Enterprise and Pro (version 21H1 and above) or Windows 11 Enterprise and Pro (version 21H1 and above). **Language:** English (United States) only.
CPU cores	16
RAM	64 GB
Disk space	1 TB
Network speed	1 Gbps
Browser	Microsoft Edge (default) or Google Chrome
Additional software	• Python 3.12.x • BERT Firmware version MX190000A_VER_10_03_04 or above.
Oscilloscope	Real Time Oscilloscope with Bandwidth ≥ 21 GHz. • DPO72304SX, DPO72504SX, and DPO73304SX. • Non-ATI channels of DPO75002SX, DPO75902SX, DPO7702SX, DPS75004SX,DPS75904SX, and DPS77004SX. **Note:** DDR5 Rx needs 3 channels for running calibrations, hence 2 channel scopes can be used in Stack mode. **Quantity:** 1 **Vendor:** Tektronix
Bit Error Rate Tester (BERT)[1]	Bit Error Rate Tester (BERT) **Quantity:** 1 **Vendor:** Anritsu
CTC2 Test fixture	A9-CTC2-01 **Quantity:** 1 **Vendor:** Astek
Parametric Test Fixture (PTF) for calibration	A9-DIMM5 **Quantity:** 1 **Vendor:** Astek
Astek Reset Automation Kit	A9-AUTO-01 **Quantity:** 1 **Vendor:** Astek

Table continued…

[1] Cables required for the connection between BERT modules shall be included by the 3rd party vendor.

Requirement	Recommended requirements
6 dB Attenuator	41KB-6 **Quantity:** 3 **Vendor:** Anritsu
SMA-SMA, 1-meter, phase matched cable pair	PMCABLE1M **Quantity:** 3 pairs **Vendor:** Tektronix
SMA-SMP, 1-meter, phase matched cable pair	174-6659-00 **Quantity:** 1 pair **Vendor:** Tektronix
SMA-SMP adaptor, right angle (pair)	174-6657-01 **Quantity:** 3 pairs **Vendor:** Tektronix
Red Banana Jumper Cable (8 in.)	CA-560-2 **Quantity:** 1 pair **Vendor:** Keithley
Black Banana Jumper Cable (8 in.)	CA-560-0 **Quantity:** 1 **Vendor:** Keithley
SMP 50 Ohm Terminator[2]	50 ohms (Female) **Quantity:** As needed **Vendor:** Any
3 Channel Programmable Power Supply for powering fixtures	2230-30-3 **Quantity:** 1 **Vendor:** Keithley

[2] To terminate unused SMP lanes in the fixture.

Recommended deployment models

This section lists the supported deployment models for setting up Clarius automation framework and run the tests.

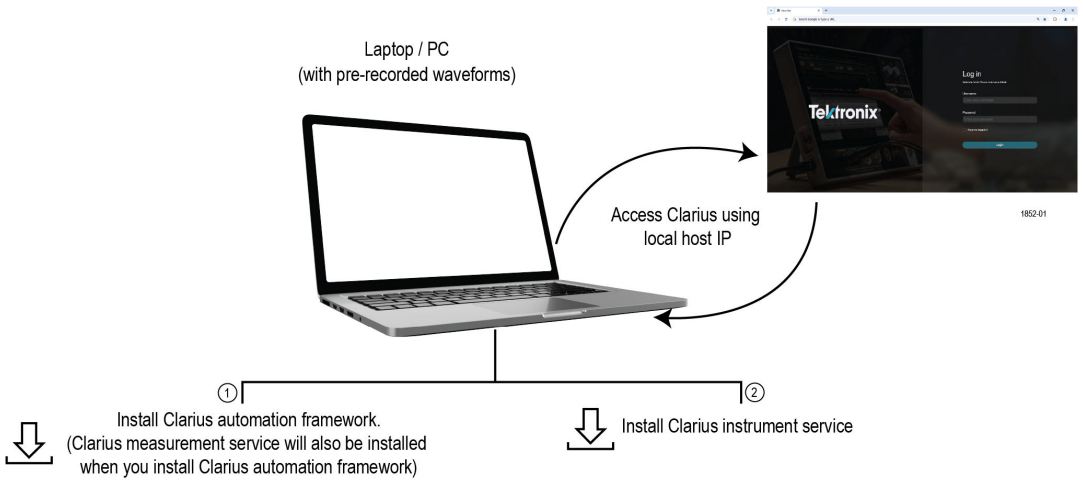


Figure 2: Deployment model 1: Single system deployment

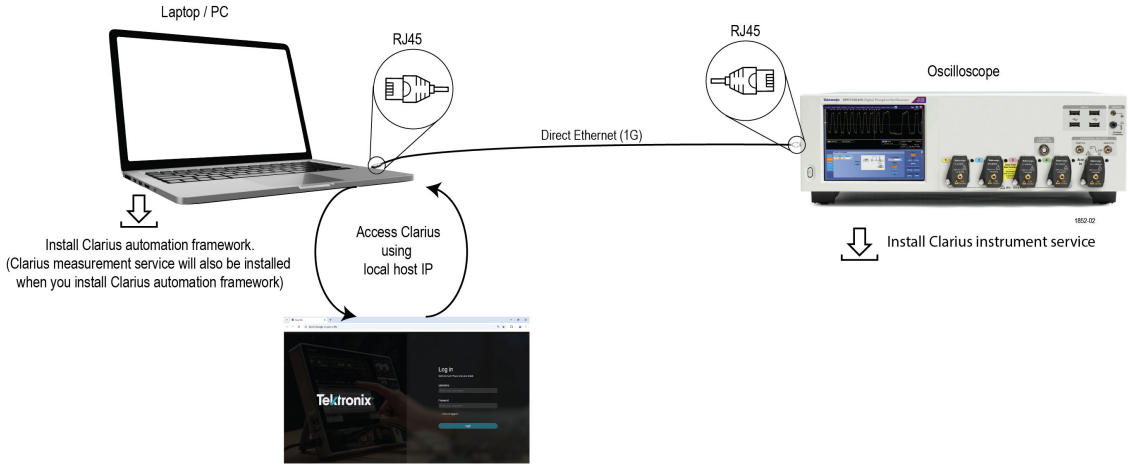


Figure 3: Deployment model 2: Peer to peer connection

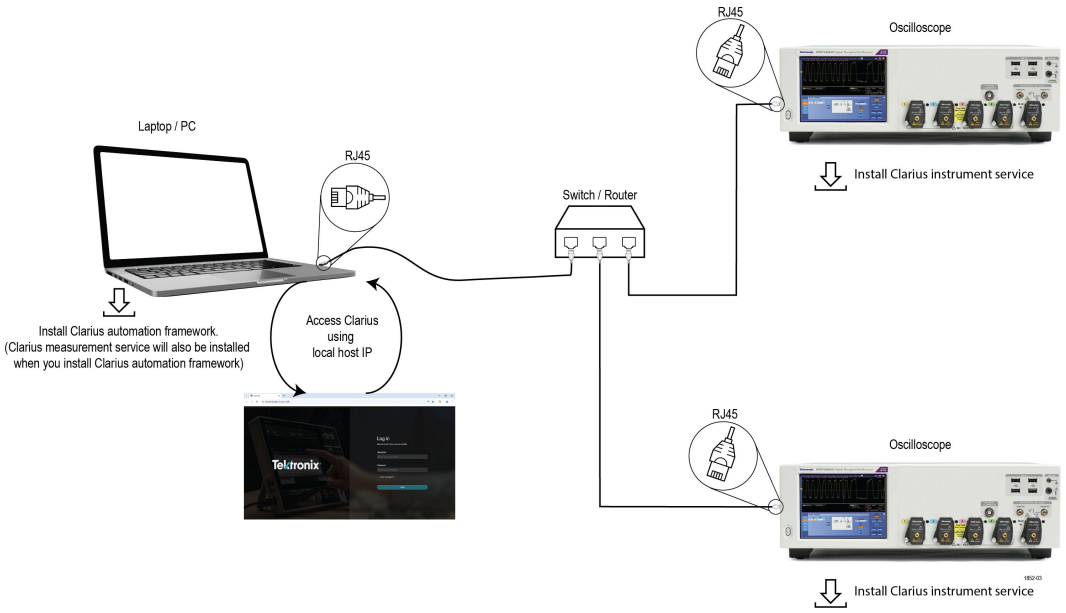


Figure 4: Deployment model 3: Private network setup via standard switch / router / hub

Enable ports to install Clarius automation framework

The installer checks for the first available port within the range incrementally and allocates the port of the services. If no ports are available within the range, installation will prompt user to enter their custom ports.

The following table lists the services and the port ranges.

Port name	Port range
Clarius user interface	4200:4209
Event communication with instruments	5672:5679
Programming interface	8443:8449
SSL certificates download interface	8080:8089
Large objects transfer interface	9001:9009

Dynamic memory and diskspace allocation for the Clarius automation framework virtual machine

Dynamic memory allocation

The minimum RAM required to install the Clarius automation framework is 8 GB.

By default, the installer allocates 12 GB, if the 50% of available RAM is greater than 12 GB. You can also manually allocate RAM from 8 GB up to 50% of total available RAM.

Example

Total RAM available in the target system	64 GB
Minimum RAM required	8 GB
RAM allocated	12 GB (50% of 64 GB = 32 GB, you can choose from 8 GB to 32 GB)

Note: If the 50% of the total available RAM is less than 8 GB, then the installation will fail.

Diskspace allocation

The maximum allocated diskspace for Clarius automation framework installation is 90% of the available diskspace.

Example

Total diskspace available in the target system	300 GB
Minimum diskspace required	20 GB
Maximum diskspace required	90% of available storage

Installing Clarius automation framework

This section describes the instructions for installing the Clarius automation framework in a target system. Follow the steps to complete the installation.

1. *Enable Virtualization technology in BIOS*[3]
2. *Enable ports to install Clarius automation framework*
3. *Dynamic memory and diskspace allocation for the Clarius automation framework virtual machine* on page 13
4. *Enable Hyper-V in the target system*
5. *Install Clarius automation framework in the target system*
6. *Install Clarius instrument service*

Enable Hyper-V on the target system

Hyper-V is a hardware virtualization tool that allows you to create and run a virtual machine on your system without affecting the host operating system. To enable Hyper-V on your computer, follow these steps:

1. Log in to the system with an administrator account.
2. Type **Control Panel** in the search box and press **Enter**.

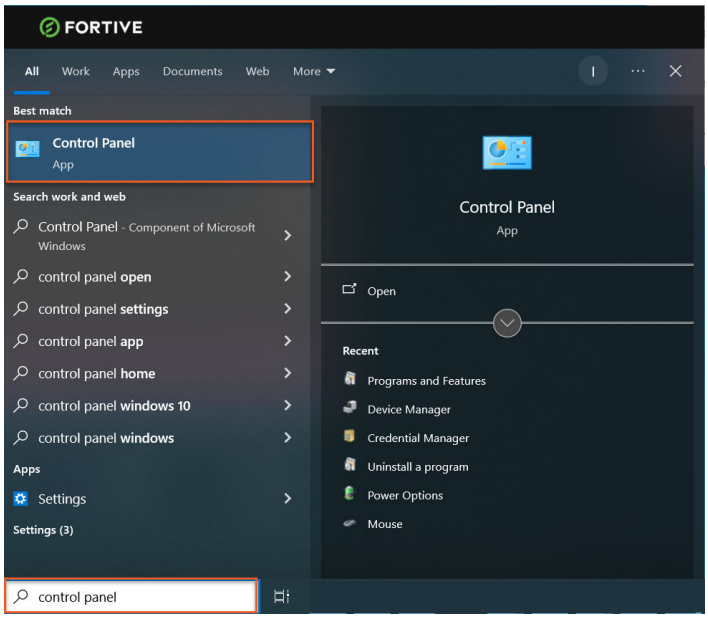


Figure 5: Control Panel

3. Select **Control Panel** > **Programs and Features**.

[3] Contact the IT team of your organization to enable the virtualization technology in your system.

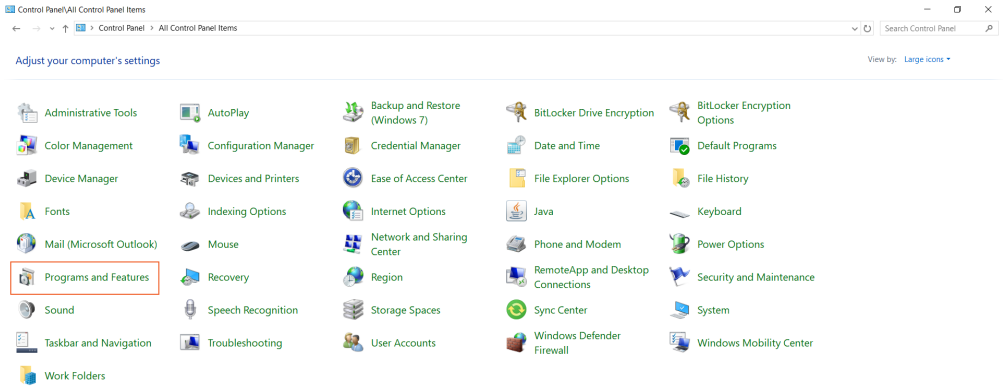


Figure 6: Programs and Features dialog

4. Select **Turn Windows features on or off.**

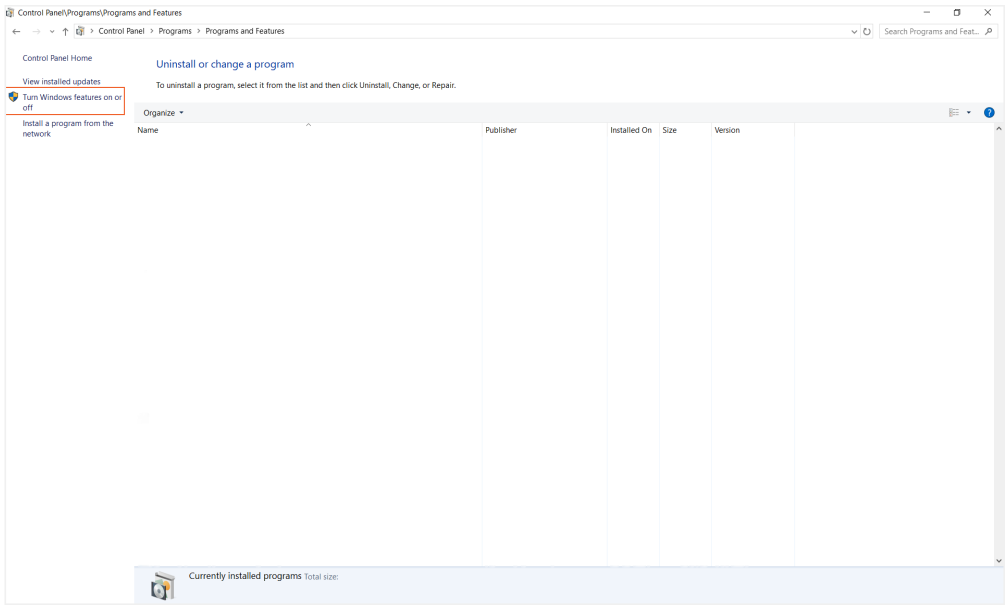


Figure 7: Turn Windows features on or off dialog

5. Select **Hyper-V** and its sub features.

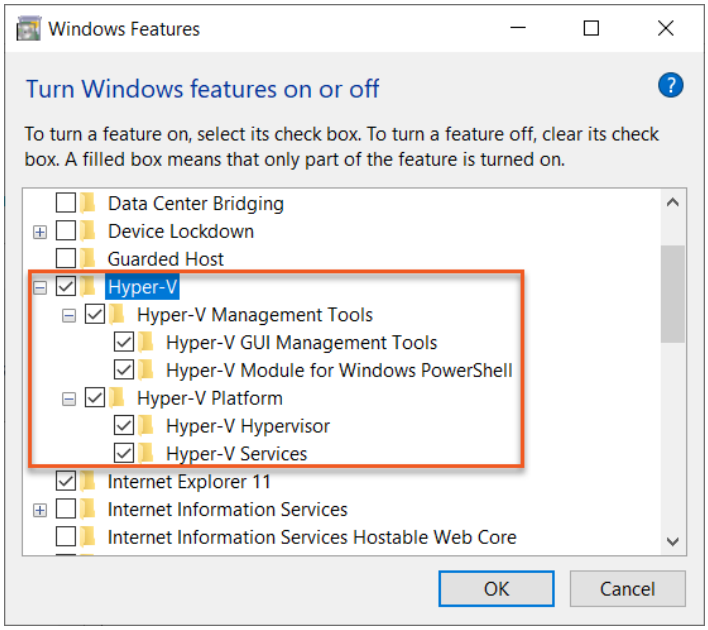


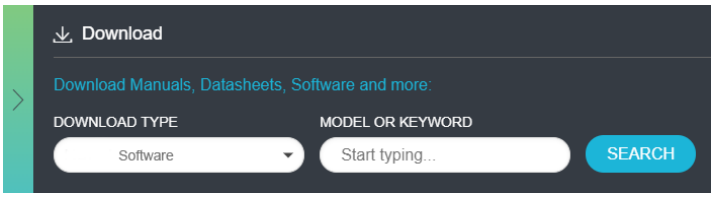
Figure 8: Enabling Hyper-V in the Windows Features dialog box

6. Select **OK** to install. You must restart the system when prompted.

Install Clarius automation framework

To install the Clarius automation framework in the target system, follow these detailed steps.

1. Go to *www.tek.com*.
2. Click **Download**. 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 compatible version of Clarius automation framework and follow the instructions to download the software. Copy the installer package (.zip) to the target system[4] and extract the file.

Note:

- Check the Release Notes for the version compatibility details of Clarius automation framework and application.
- To unzip the package, right-click, select **Extract All** and select **Extract**.

4. Double-click the Clarius installer (**clarius-automation-framework-<<version>>.exe**) from the extracted folder and select **Yes** on the User Account Control.

[4] A PC/Laptop/Computer where the Clarius automation framework and application will be installed.

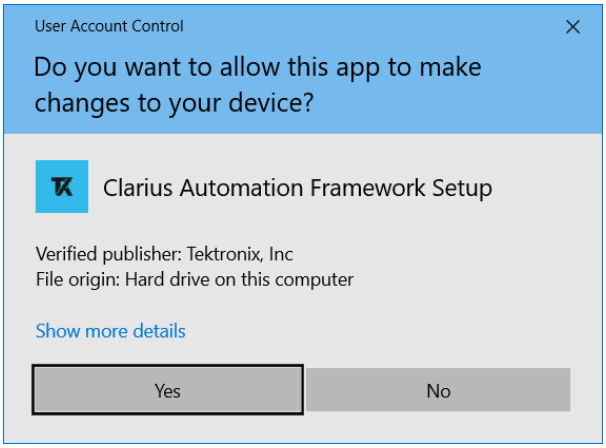


Figure 9: Clarius user account control dialog

5. Read the welcome instructions and select **Next**.

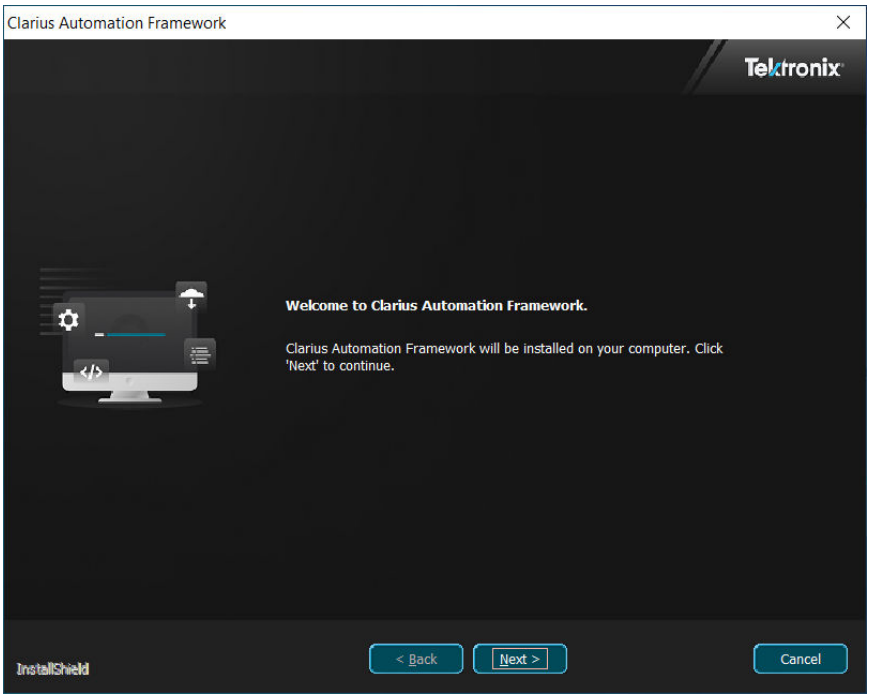


Figure 10: Clarius installer setup

6. Read the license agreement; accept the terms of the license agreement and select **Next**. Please wait until the prerequisites progress check is complete.

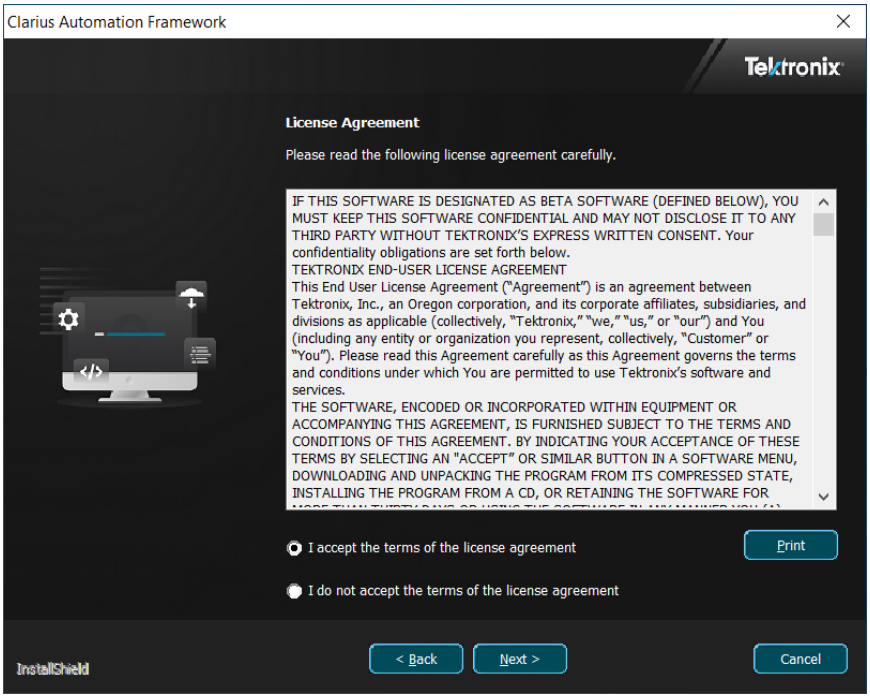


Figure 11: Clarius license agreement

7. Browse to select the install path and select **Next**. The default path is `C:\Program Files\Tektronix\Clarius\`.

   You can select any local disk drive other than a network drive path for installation.

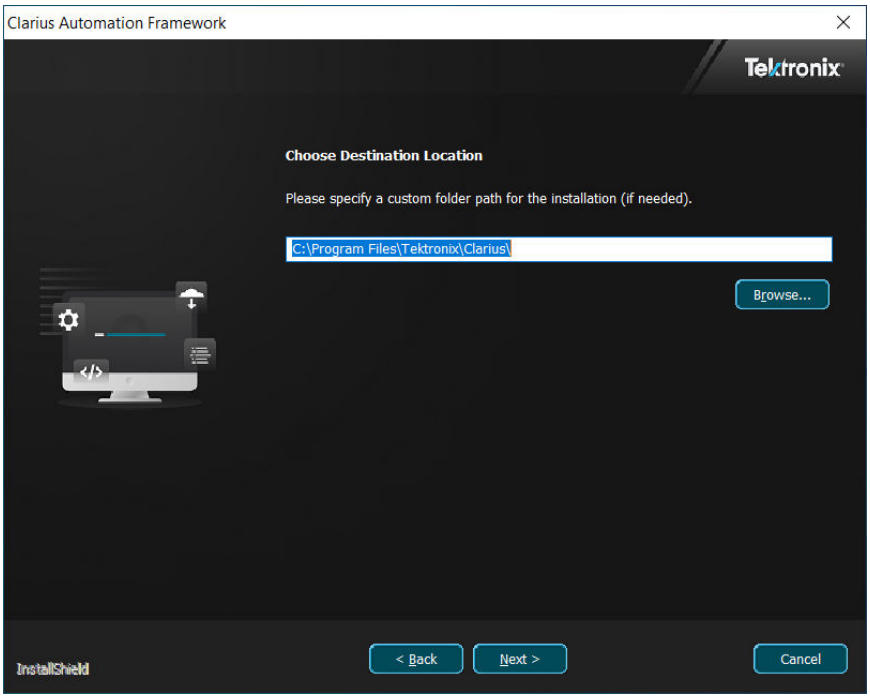


Figure 12: Clarius install path

8. Set the password for the Clarius automation framework matching the criteria and select **Next**.

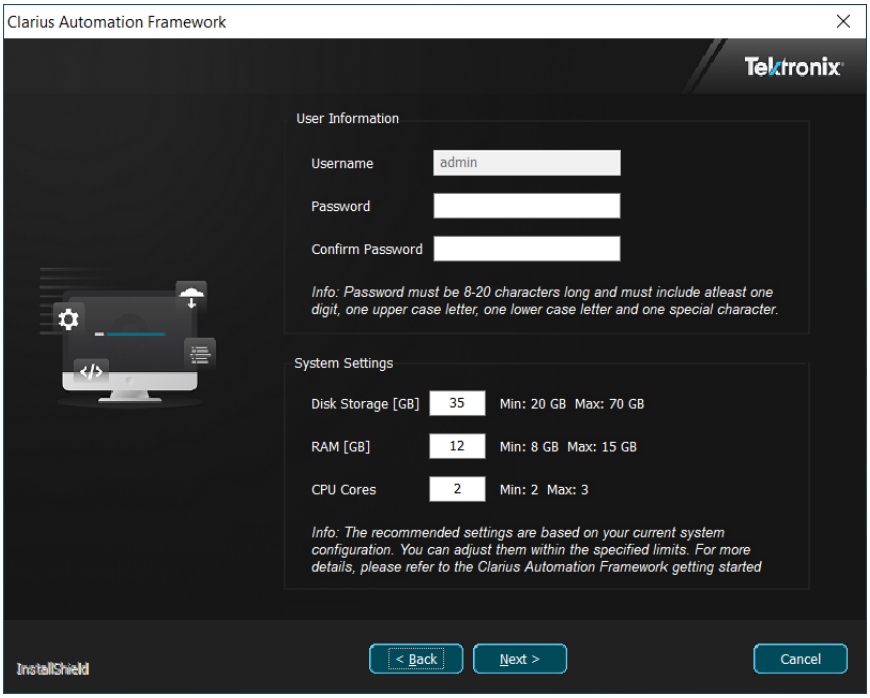


Figure 13: Clarius user information

Note:

- For details on Disk Storage allocation, *click here*.
- For details on RAM allocation, *click here*.
- **CPU cores allocation example:** The minimum logical CPU cores required is 2 and the maximum core is calculated as 75% of total logical CPU cores. By default, a midpoint value between the minimum and maximum cores will be added in the installation wizard field. If the allocated logical CPU cores is in decimal value, then the number after the decimal point will be discarded. For example, value 3.5 will be added as 3.

  For details on recommended CPU cores to install, refer *System requirements* section.

9. Displayed only if the ports required for installation are not available. Refer *Enable ports to install Clarius automation framework* for more information.

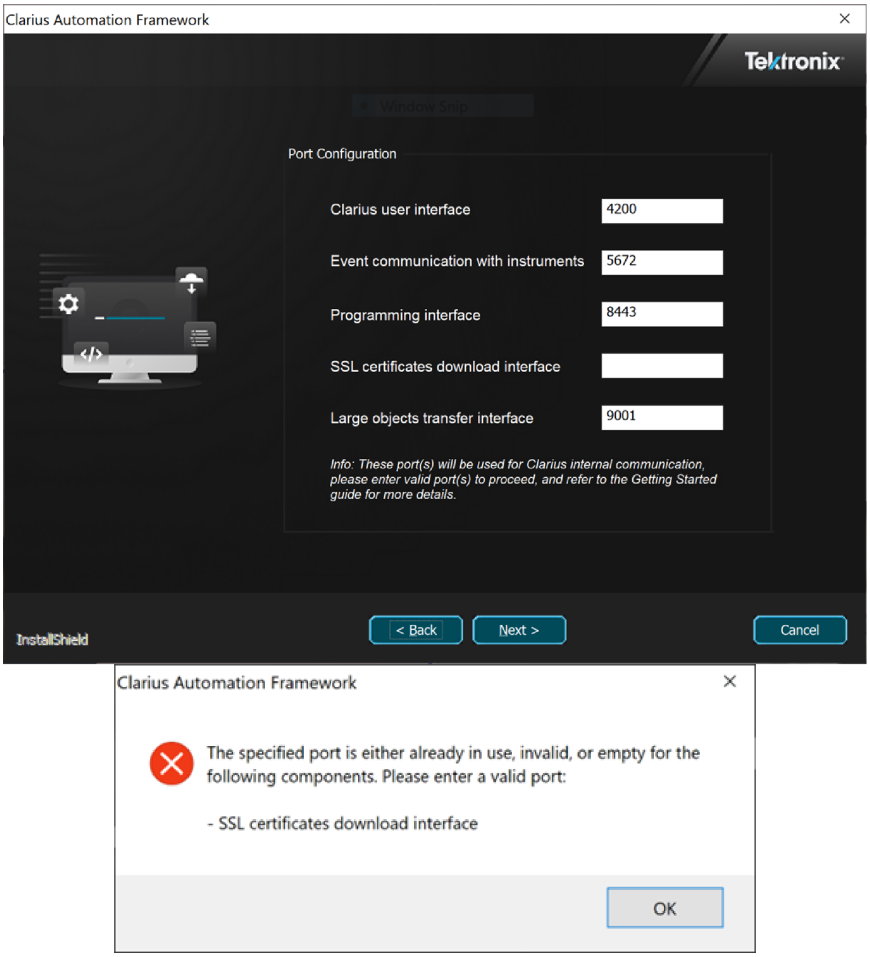


Figure 14: Port configuration

10. Select **Yes** to install the Instrument Service. This will create a local test bench(Clarius_PC) in the target system for pre-recorded waveform analysis.

    Installing instrument service will also install Clarius SDK in an isolated Python environment.

    Tip: If you skip the instrument service installation, you can refer *Install Clarius instrument service* section for the installation steps.

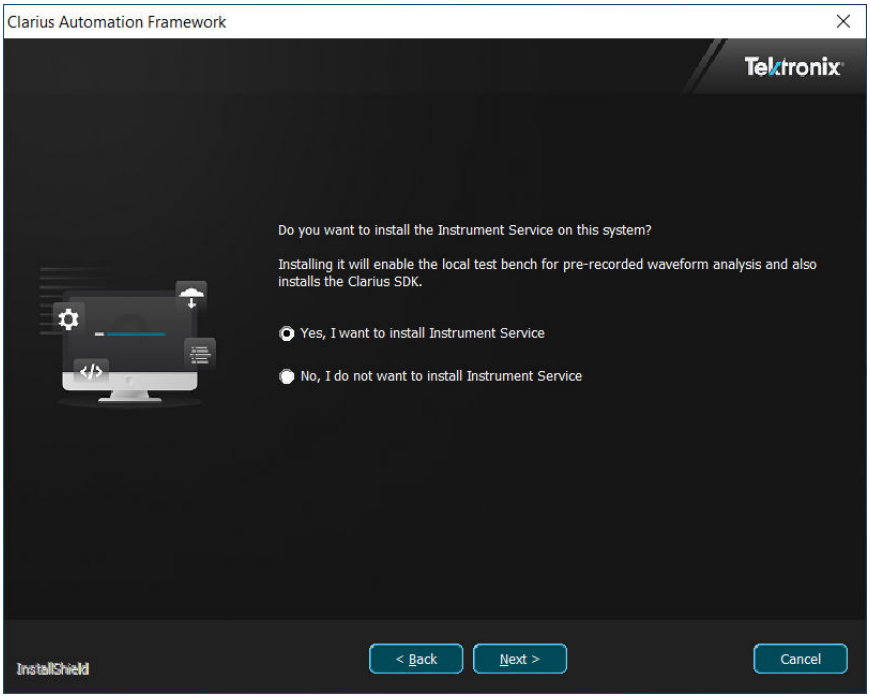


Figure 15: Install instrument service

11. Displayed only if step *10* on page 20 is selected **No**.

Select the Clarius SDK installation option from the installer wizard and select **Next**.

You can install Clarius SDK in the following ways:

- Install Python in a global environment and then install SDK in that environment. If a supported Python version is detected, then select to install the SDK in that environment.
- Install Python in an isolated Python environment and install SDK in that environment.[5]

[5] An isolated Python environment will have its own independent set of Python packages installed in its site directories.

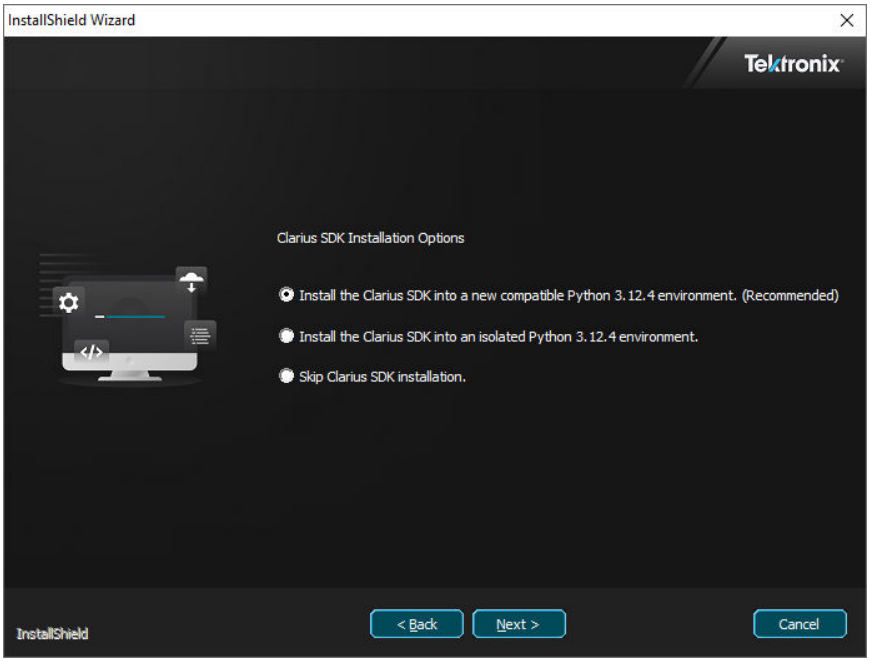


Figure 16: Clarius SDK installation options

Note:

- Clarius SDK requires Python version 3.12.x.
- If you skipped the SDK installation, refer to the *Install Clarius SDK* section to install.

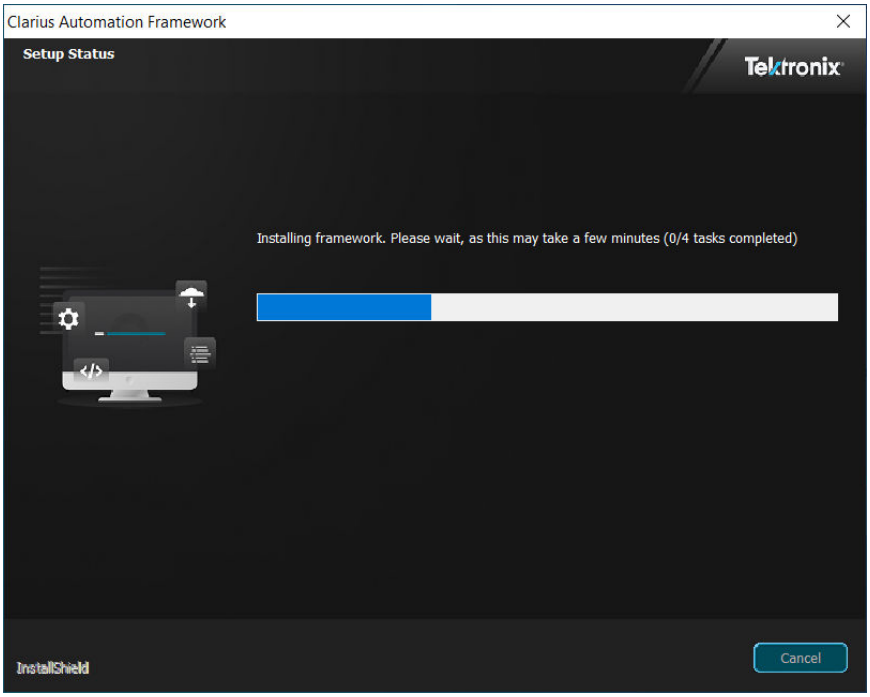


Figure 17: Installing Clarius automation framework

12. Select the Launch Clarius automation framework checkbox once the installation is complete and select **Finish** to exit setup. By default, the Clarius automation framework will be launched in the Microsoft Edge browser.

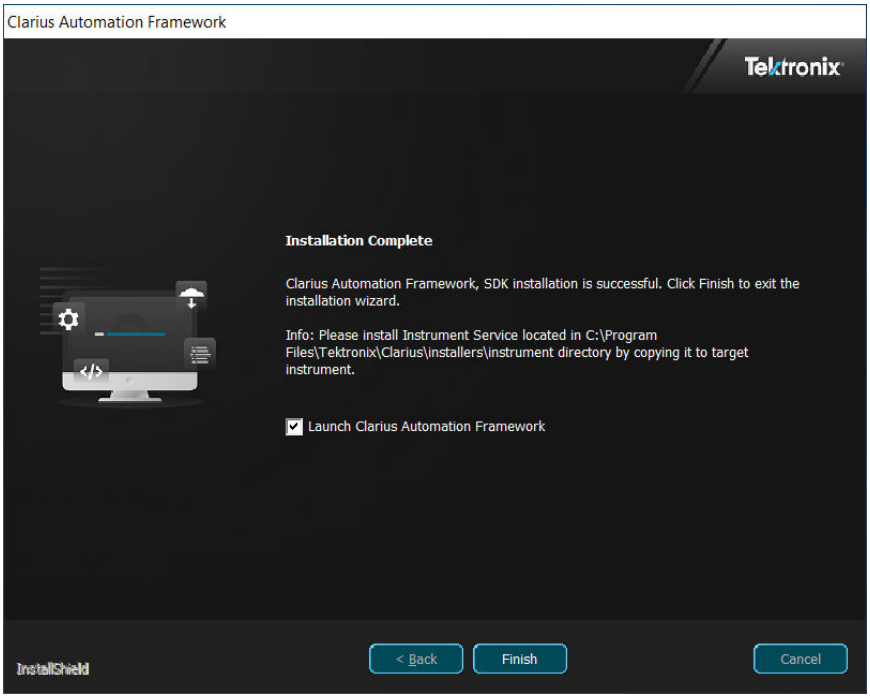


Figure 18: Launch Clarius automation framework

Note: If the installation fails, check the installation logs at `(C:\ProgramData\Tektronix\Clarius\logs)` for more details about the failure or contact a Tektronix field engineer for support.

The ProgramData folder is hidden by default. Enable **Show hidden files, folders, and drives** to view the folder path.

13. (Optional) Launch the Clarius automation framework from the desktop.

Note: You can access the Clarius automation framework from the target system using the local host URL `https://127.0.0.1:4200`[6]. To remotely access the Clarius automation framework, use the host name or IP address of the Clarius automation framework installed system.

Log in to the Clarius automation framework with the following credentials

- **Username:** admin
- **Password:** Enter the user configured password set during installation.

.

[6] The default port allocated is 4200. If this port was not available during the installation, then the first available port within the range of 4200 to 4209 will be checked incrementally and allocated.

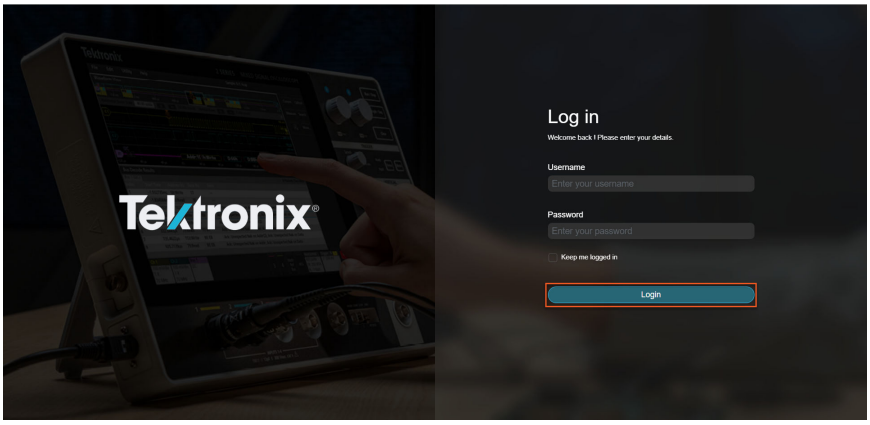


Figure 19: Clarius login page

Note: During installation, if port 4200 was already used, then the first available port within the range of 4200 to 4209 will be checked incrementally and allocated.

By default, no application(s) will be installed and the home screen displays no data. To install the application, refer to *Install DDR Rx application* on page 31.

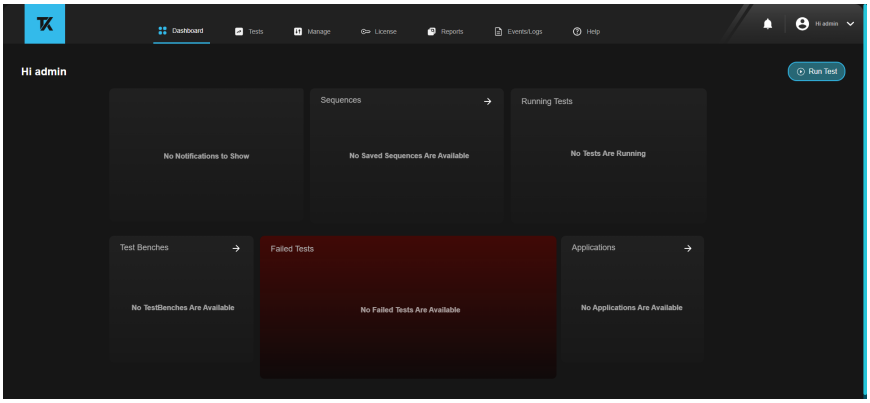


Figure 20: Clarius homepage

Install Clarius instrument service

Clarius instrument service sends the waveforms to the Clarius measurement service[7] for analysis. Refer to *Network topology* diagram for more information on instrument service.

The instrument service can be installed by the following ways:

- Install instrument service in the target system or remote PC where pre-recorded waveforms are located.
- Install instrument service in the oscilloscope to use pre-recorded waveforms or live acquisitions.

Follow these steps to install the Clarius instrument service:

1. Navigate to the Clarius automation framework installation path. The default path is `C:\Program Files\Tektronix\Clarius\installers`.
2. (Optional) Select and copy the Instrument folder and paste in the oscilloscope or computer.
3. Open Instrument folder, double-click **clarius-instrument-service-<<version>>.exe** and follow the steps to complete the installation.

[7] Measurement service will be installed in the target system where Clarius automation framework is installed.

Clarius instrument service installation path:

- If Clarius instrument service is installed in a computer or oscilloscope, then the installation path is `C:\Program Files\Tektronix\Clarius\installers\instrument`.
- If Clarius instrument service is installed in the target system, then the installation path will be the same as that of the Clarius automation framework.

Note: Installing instrument service will also install Clarius SDK. If a supported Python version is detected, Clarius SDK will be installed in that environment. Otherwise, Python 3.12.x will be installed in an isolated environment and Clarius SDK will be installed in that environment.

Upgrade Clarius automation framework

This section describes the instructions for upgrading Clarius automation framework.

Table 2: Clarius automation framework version upgrade table

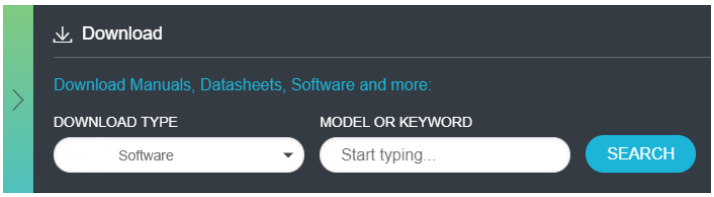
Version	Upgrade Support	Upgradable version(s)
2.0.0	Yes	1.1.0

Prerequisite:

- You must have at least 30 GB of free disk storage available in Clarius virtual machine to upgrade the Clarius automation framework. You can check the available free disk storage from the admin console. Refer to *Admin Console and Monitoring* on page 114 section.

To upgrade the Clarius automation framework in the target system, follow these detailed steps.

1. Go to *www.tek.com*.
2. Click **Download**. 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 compatible version of Clarius automation framework and follow the instructions to download the software. Copy the install package (.zip) to the target install system and extract the zip file.
4. Double-click the installer and select **Yes** on the User Account Control.

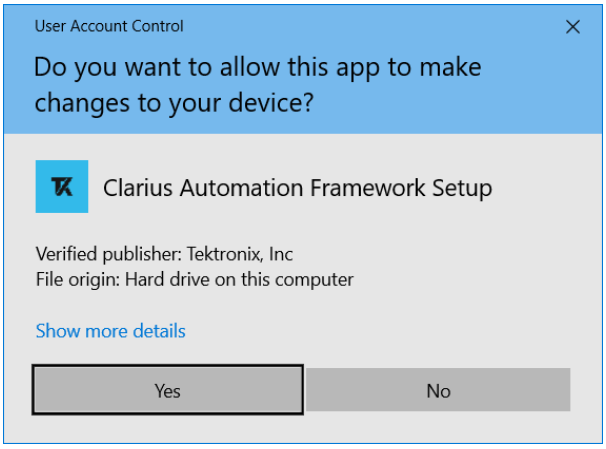


Figure 21: Clarius user account control

5. Displayed only if Clarius automation framework is already installed in the target system.

   Select **Yes** to proceed with upgrade version of the Clarius.

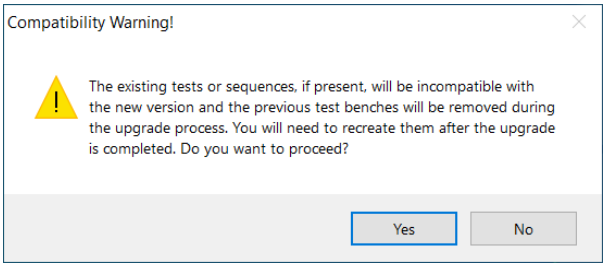


Figure 22: Upgrade pop-up

6. Read the welcome instructions and click **Update**.

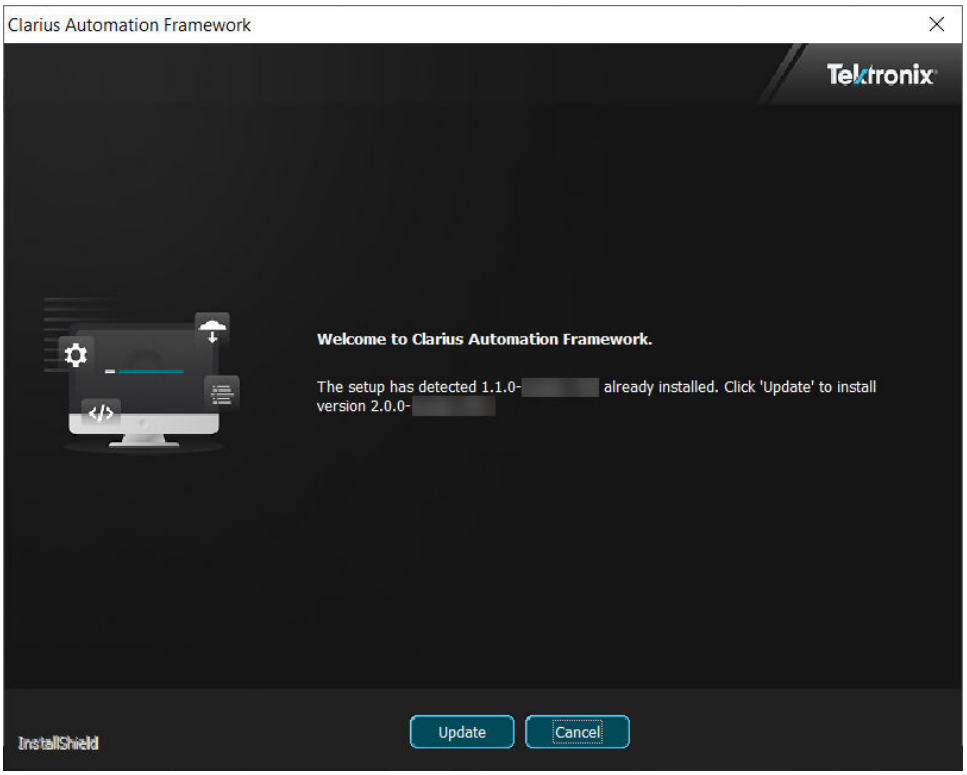


Figure 23: Upgrade Clarius installer setup

7. Accept the terms of the license agreement and click **Next**. Please wait until the upgrade process is complete.

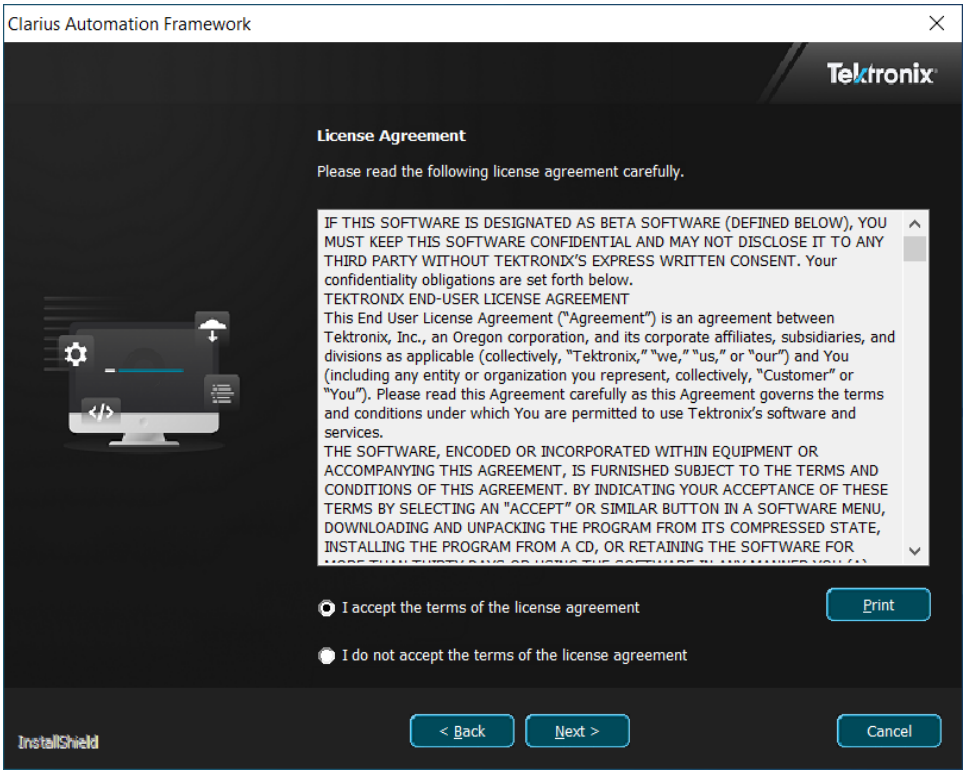


Figure 24: Clarius license agreement

8. Displayed only if Instrument Service is not installed in the previous version.

Select **Yes** to install the Instrument Service. This will create a local test bench in the target system for pre-recorded waveform analysis.

Installing instrument service will also install Clarius SDK in an isolated Python environment.

Tip: If you skip the instrument service installation, you can refer *Install Clarius instrument service* section for the installation steps.

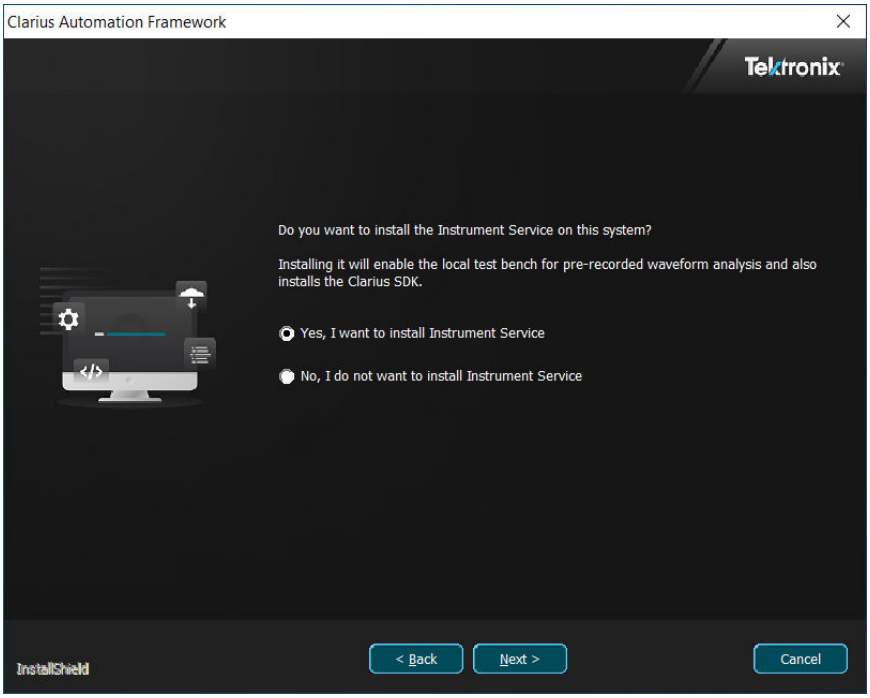


Figure 25: Install instrument service

9. The Clarius upgrade starts, please wait until the tasks and configuration process are complete.

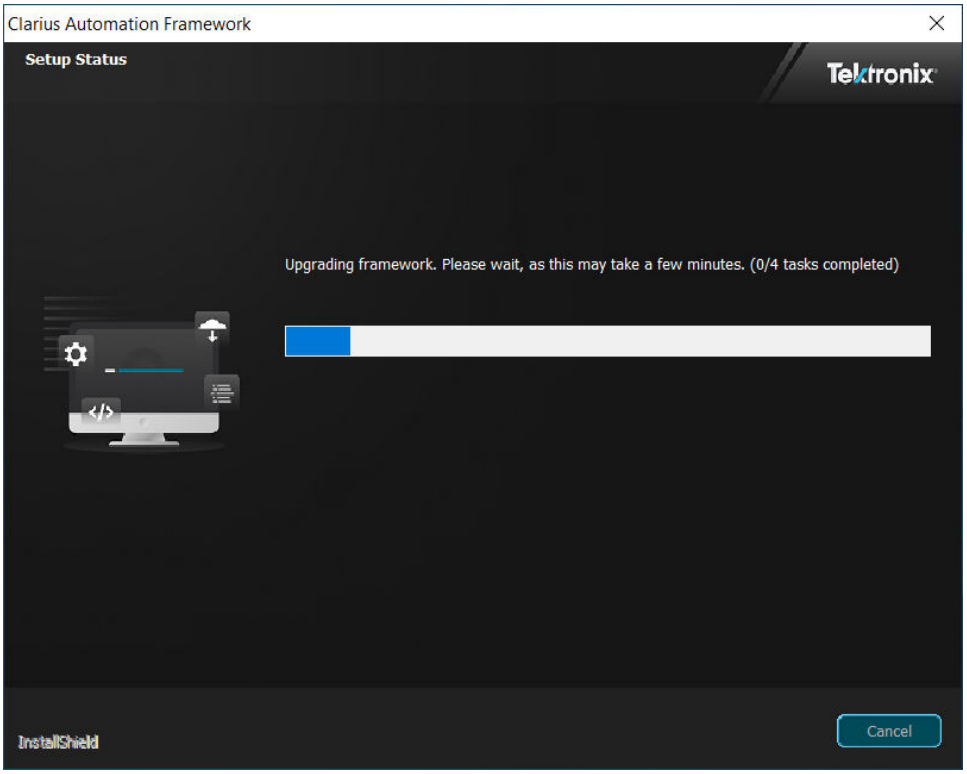


Figure 26: Upgrade

10. The Clarius upgrade is successful. Select the **Launch Clarius** checkbox to launch the Clarius compliance and click **Finish**. By default, the application will be launched in the Microsoft Edge browser.

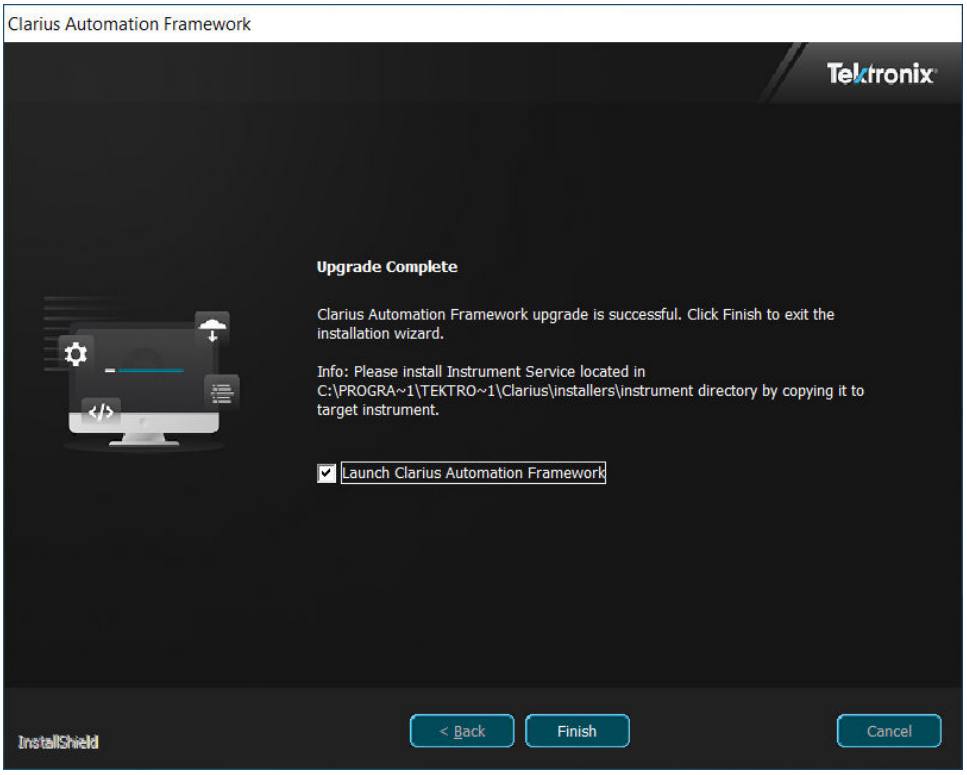


Figure 27: Launch Clarius

11. Log in to the Clarius automation framework with the following credentials.

- **Username:** admin
- **Password:** Enter the user configured password set during installation.

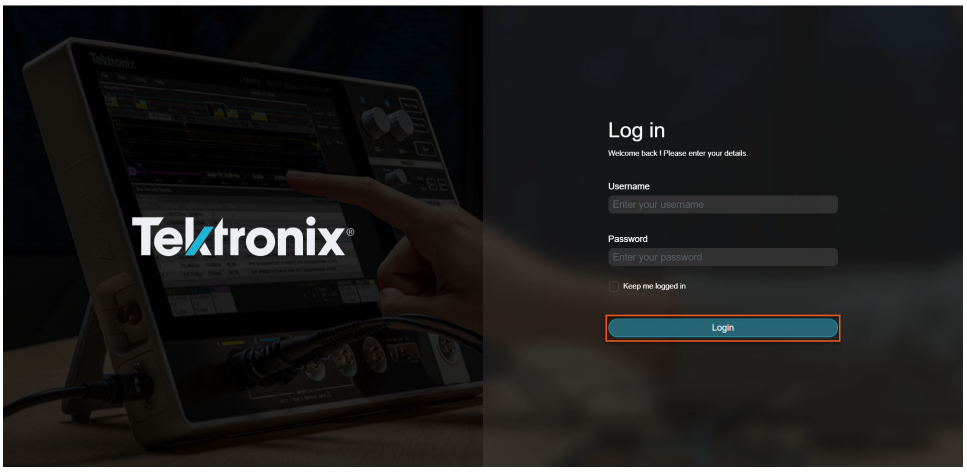


Figure 28: Clarius login page

Note: If the installation fails, please check the installation logs at `(C:\ProgramData\Tektronix\Clarius\logs)` for more details about the failure or contact Tektronix field engineer for support.

Installing application in Clarius automation framework

This section describes the instructions for installing a DDR Rx application in a target system. Follow the steps to complete the installation.

1. *Install Clarius DDR Rx application*
2. *Install instrument service plug-in of DDR Rx*

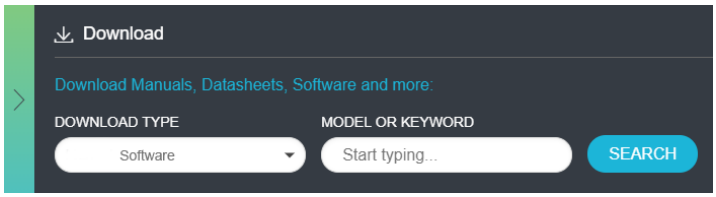
Install DDR Rx application

Prerequisite:

Compatible version of Clarius automation framework must be installed. Check *Install Clarius automation framework* section for installation steps.

To install the DDR Rx application in the target system, follow the steps:

1. Go to *www.tek.com*.
2. Click **Download**. 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. Copy the installer package to the target system[8].
4. Double-click the DDR Rx installer and follow the instructions in the installation wizard to complete the installation process.

   By default, the application license will not be activated in Clarius compliance and the home screen displays no data. Refer *Activate application license* on page 34 to activate the license.

Note: If the installation fails, check the installation logs (`C:\ProgramData\Tektronix\Clarius\logs`) for details about the failure or contact a Tektronix field engineer for support.

Install instrument service plug-in of the DDR Rx application

Install the instrument service plug-in of the application in the oscilloscope or the computer, where you have installed the Clarius instrument service. To install the Clarius instrument service, *click here*.

Follow the steps to install the DDR Rx instrument service plug-in:

1. In the target system where the Clarius automation framework is installed, navigate to the installed path. The default path is `C:\Program Files\Tektronix\Clarius\installers`.
2. Select and copy the Instrument folder and paste in the oscilloscope or computer, where you have installed the Clarius instrument service.
3. Open the folder, double-click the **clarius-compliance-DDR-Rx-instrument-service-<<version>>.exe** and install the plug-in.

[8] A PC/Laptop/Computer where the Clarius automation framework is installed.

Clarius SDK

Install Clarius SDK (Software Development Kit) in the target system (where Clarius automation framework is installed) or in the oscilloscope or computer where the Clarius instrument service is installed.

Clarius SDK can be installed in the following ways:

- Install Python in the global environment and then install Clarius SDK in that environment. If a supported Python version is detected, you can select to install the Clarius SDK in that environment.
- Install Python in an isolated Python environment[9] and install Clarius SDK in that environment.

Install Clarius SDK

If you have skipped Clarius SDK installation during the installation of Clarius automation framework, follow the steps to install.

1. In the target system, where the Clarius automation framework is installed, navigate to the installed path. The default path is `C:\Program Files\Tektronix\Clarius\installers\sdk`.
2. Select and copy the **sdk** folder and paste it to the oscilloscope or computer.
3. Open sdk folder, double-click **clarius-sdk-<<version>>.exe** and follow the steps to complete the installation.

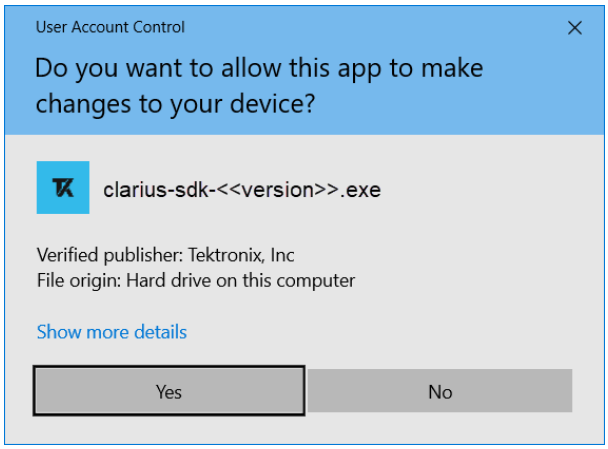


Figure 29: User account control dialog

[9] An isolated Python environment will have its own independent set of Python packages installed in its site directories.

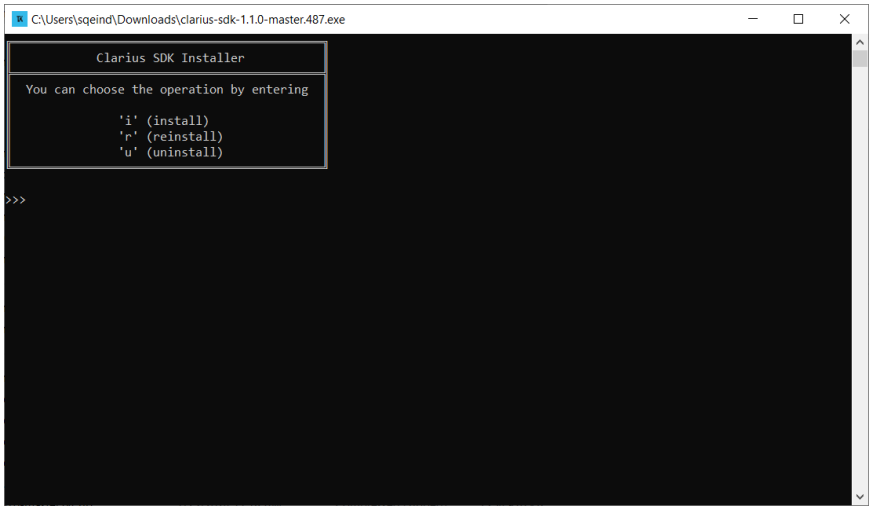


Figure 30: SDK installer setup

Activate application license

1. Double-click the **Clarius** icon from the desktop to launch the Clarius automation framework.
2. Log in using the **Username** as **admin** and the user configured password that was set during the installation.
3. Select the **License** tab and click  to copy the **Host ID**.

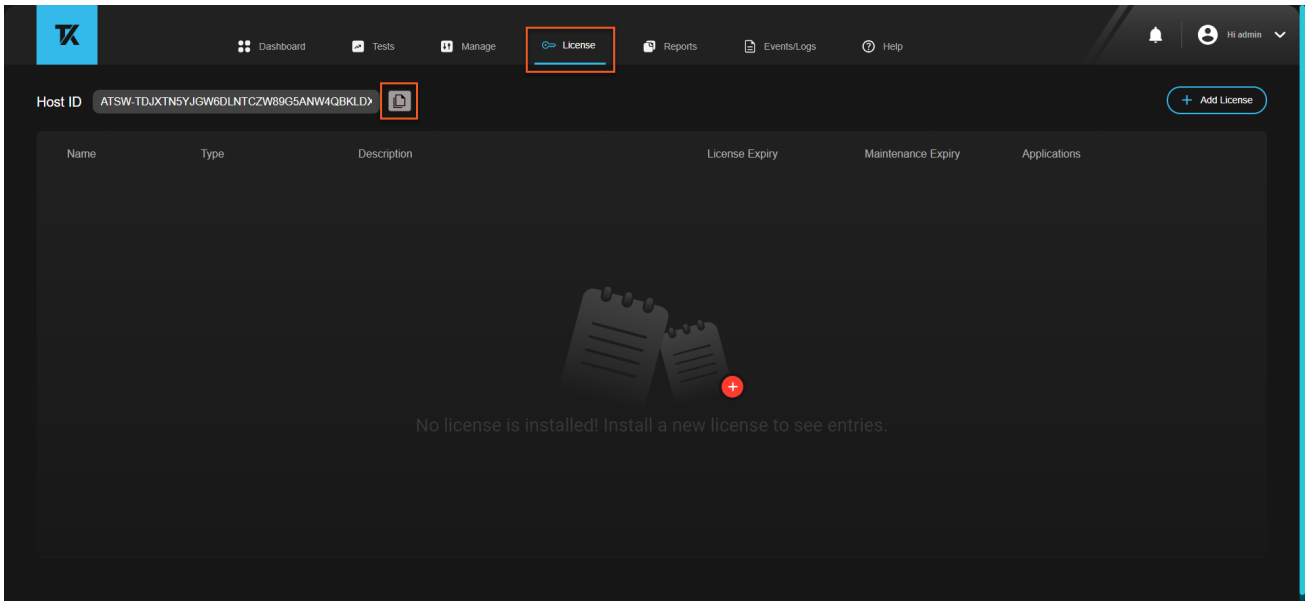


Figure 31: Copy Host ID for license request

4. Send the copied **Host ID** to the Tektronix application engineer and request for license file.
5. In the **License** tab, click **Add License**; browse and select the license file and click **Activate**.

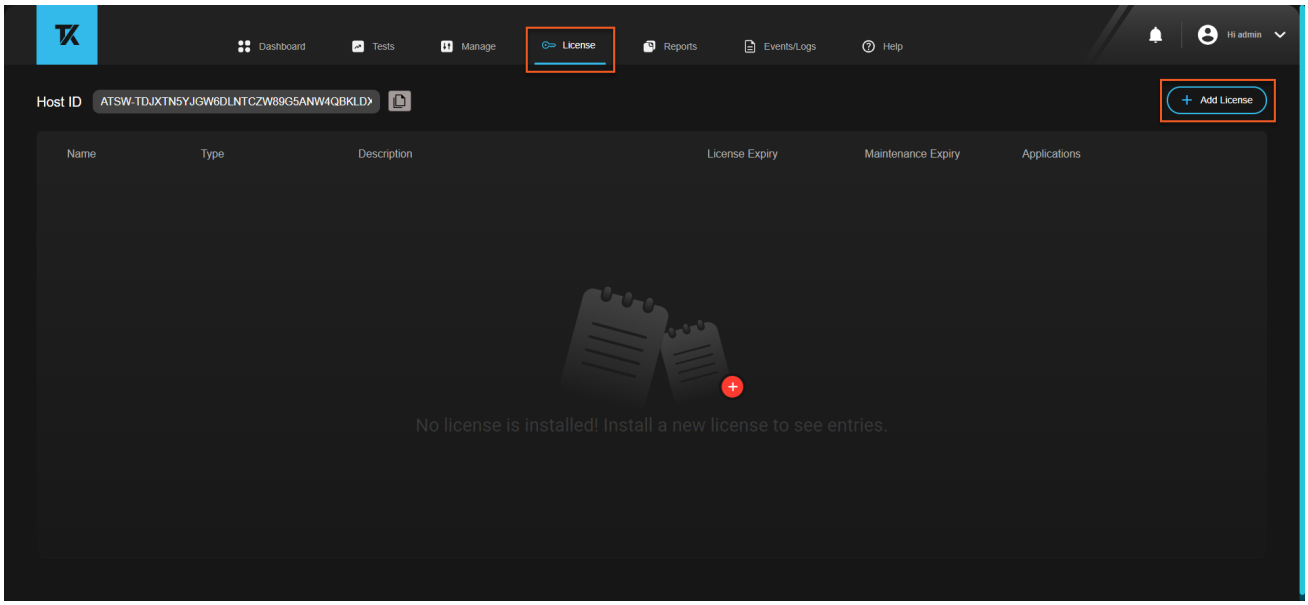


Figure 32: Add License

6. After successful activation, the application license details will be displayed in the license tab.

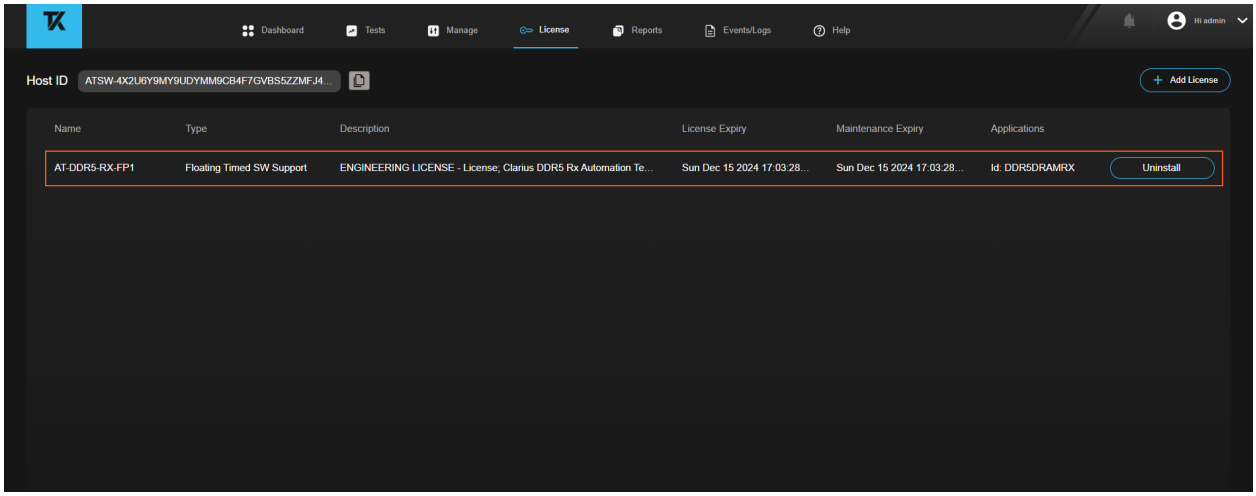


Figure 33: Installed application license in Clarius automation framework

Run the services

This section lists the services to run before performing tests in the Clarius automation framework. To perform testing within the Clarius automation framework, make sure all the installations are complete and all supporting services are running for the following scenarios.

- The *Clarius measurement service* must be up and running in the target system.
- The *Clarius instrument service* must be up and running in the system or oscilloscope from where the analysis of the waveform will be done.

Run Clarius measurement service

If the Clarius measurement service is running in the target system where Clarius automation framework is installed, you must see the Measurement service window. If it is not running then double-click the **MeasurementServiceStart.bat** icon from the desktop to run the Clarius measurement service.

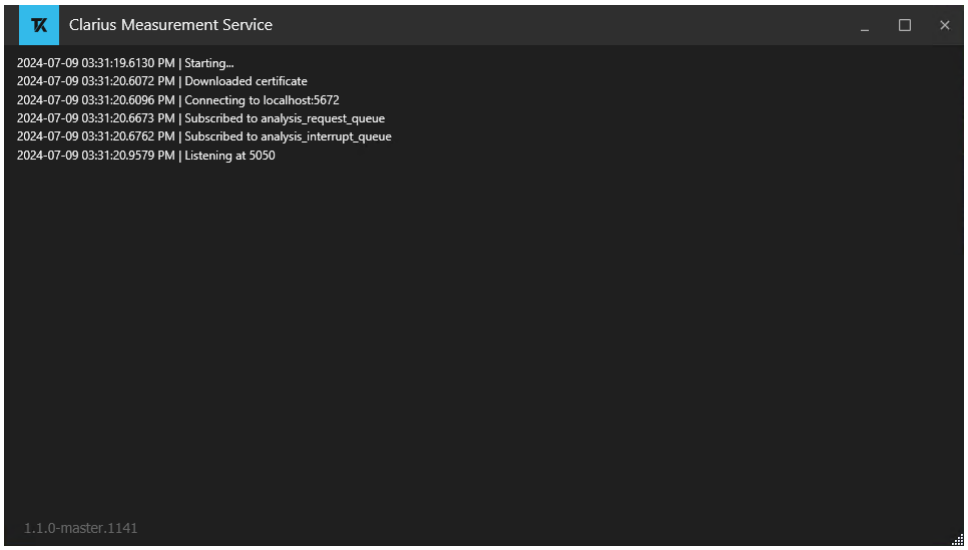


Figure 34: Clarius measurement service window

You can also run the measurement service by navigating to the installation path and double-click the **MeasurementServiceStart.bat**. The default installation path is `C:\Program Files\Tektronix\Clarius\lib\analysis\service`.

Run Clarius instrument service

Clarius instrument service sends the waveform to the measurement service[10] for analysis. To check if the instrument service is running, click the **Show hidden icons** arrow in the task bar of Windows and check for Instrument Service.

If the instrument service is not running, double-click the **InstrumentServiceStart.bat** icon from the desktop and run the instrument service. This will run the instrument service and the automator.

10 Measurement service will be installed in the target system where Clarius automation framework is installed.

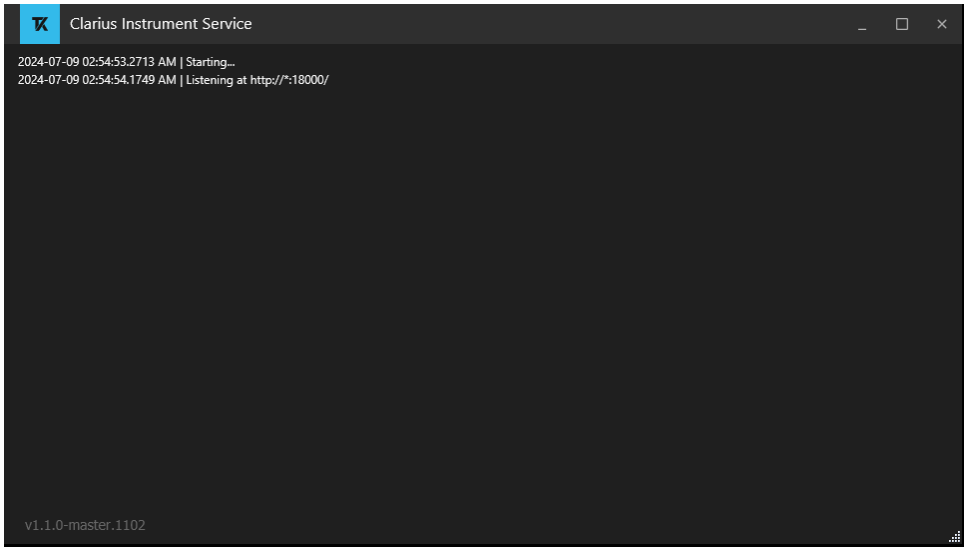


Figure 35: Clarius instrument service window

You can also run the instrument service by navigating to the installation path and double-click the **InstrumentServiceStart.bat**. The default installation path is `C:\Program Files\Tektronix\Clarius\lib\instrument\service`.

Application overview

This section describes the steps to log in to the Clarius automation framework, lists of the application controls, and the list of tabs that are in the navigation panel.

Start and log in to the application

1. Double-click the **Clarius** icon from desktop to launch Clarius automation framework.

   Note: You can access the Clarius automation framework from the target system using the local host URL `https://127.0.0.1:4200`. To remotely access the Clarius automation framework, use the host name or IP address of Clarius automation framework installed system.

2. Log in to the application using the credentials.

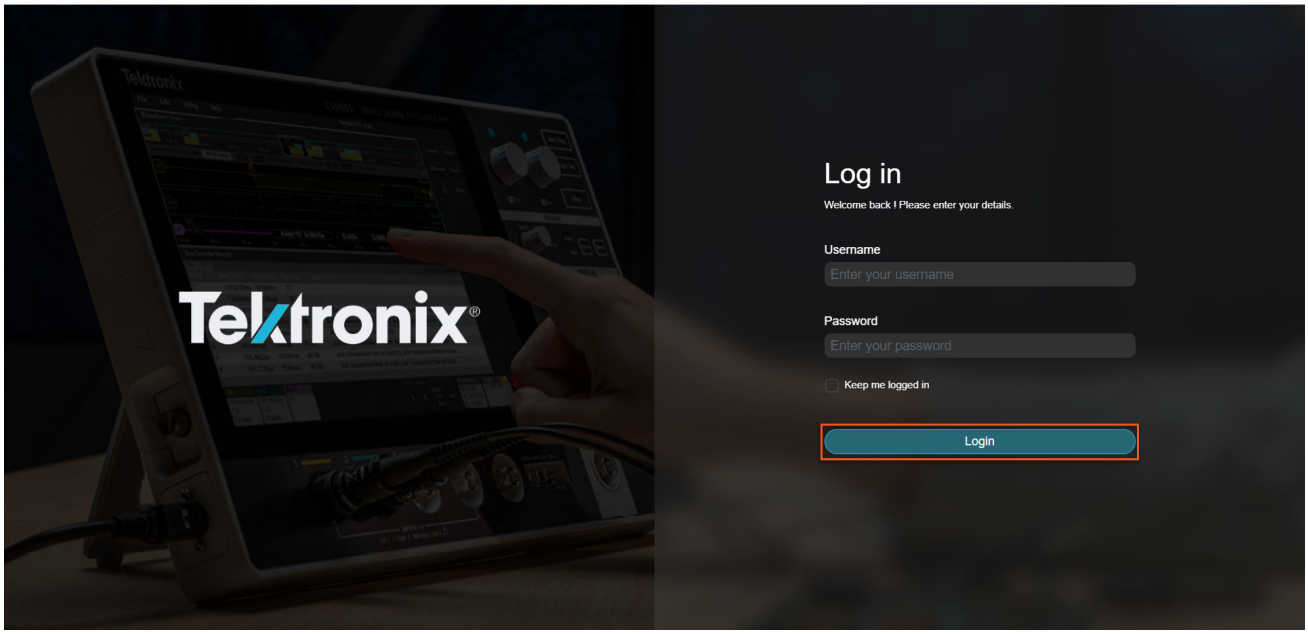


Figure 36: Clarius automation framework login page

After successful log in, you will be navigated to the home page. It displays the activated application(s), saved sequences of the application, test benches status, running tests, failed tests list, and notifications.

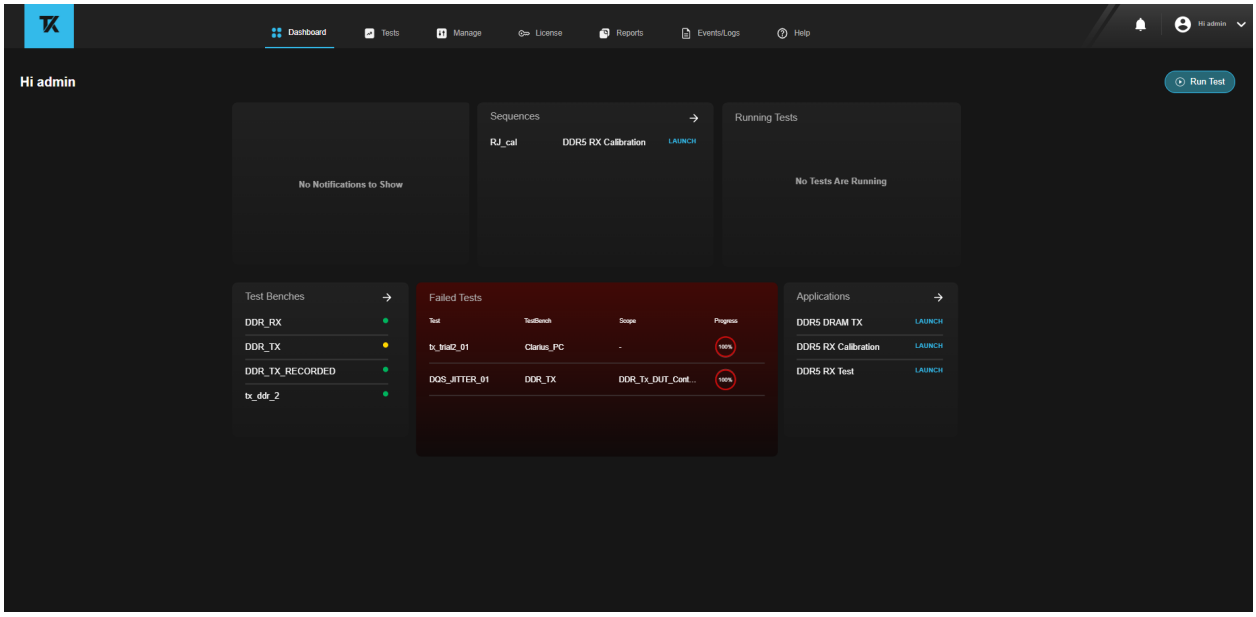


Figure 37: Clarius automation framework home page

Application controls

The Clarius automation framework uses the menus to group the related configurations, test, result, logs, and report settings. Click the respective menu to open the associated details.

A menu may have one or more tabs and frames that lists the selections available in that panel. Controls in a menu can change based on the settings made in that menu or another menu.

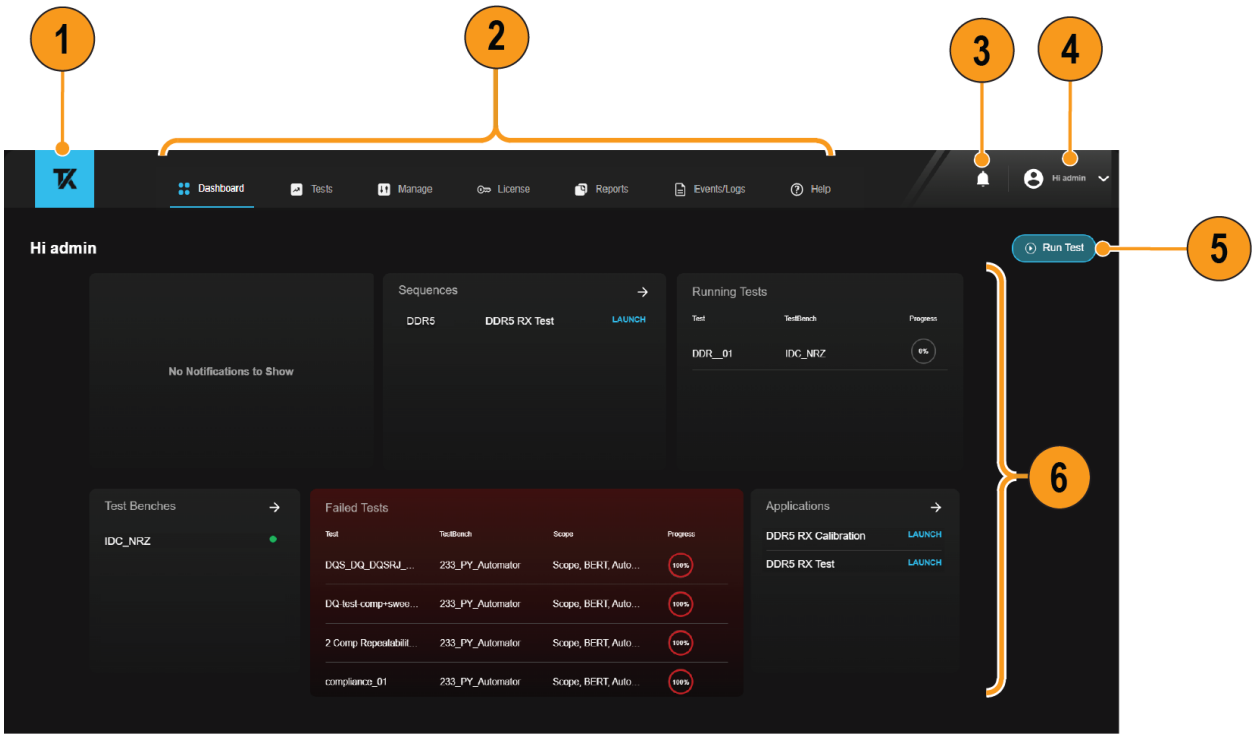


Figure 38: Application controls interface

Table 3: Application controls description

Identifier	Element	Description
1	Navigation panel	The navigation panel contains list of tabs that allows you to select the application, create and configure tests, create and configure test bench, and generate the test report.
2	Notifications	Displays alerts when an event or action occurs in the application.
3	User profile	Displays the profile information and settings details of the account. You can view the version and user license agreement details in **About** menu.
4	Run Test	Click to perform a test by entering the required test information.
5	Widgets	An element of a graphical user interface that displays information or provides a specific details to the user to interact with the application.

Navigation panel

The navigation panel contains a list of tabs that allows you to select the application, create and configure tests, test bench, generate the test report, view the logs of the executed test, and the license information. Click the respective tab to open the associated panel.

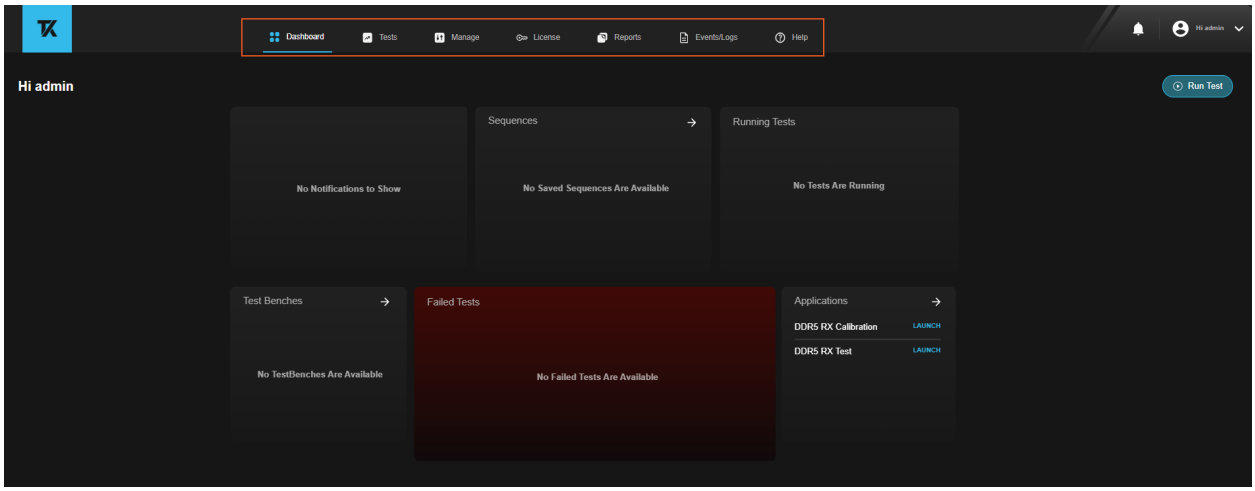


Figure 39: Clarius compliance navigation panel

Table 4: Navigation panel and tabs description

Tabs	Description
Dashboard	Displays the test data and test execution summary. It includes test progress, test notifications to view the status of each test, list of active applications, sequences, and test benches.
Tests	Allows you to create, configure, and run a new test. It also analyzes and displays the details of all executed tests.
Manage	Allows you to manage the application, test bench, and sequences that are created for the test execution.
License	Allows you to add license to the application and also view the licenses that are enabled.
Reports	Allows you to generate a test report and/or export a detailed test report for an executed test(s).
Events and logs	Displays the logs and events for a test.
Help	Allows you to open Help window to browse topics and read Help files.

Dashboard: View the test execution details, progress, and results

The dashboard allows you to get quick insight about the test execution summary. The widgets in the dashboard displays the test related information such as applications used, available test benches, test notifications, sequences, and more.

The test execution results displayed here depends on the configurations in the other panels.

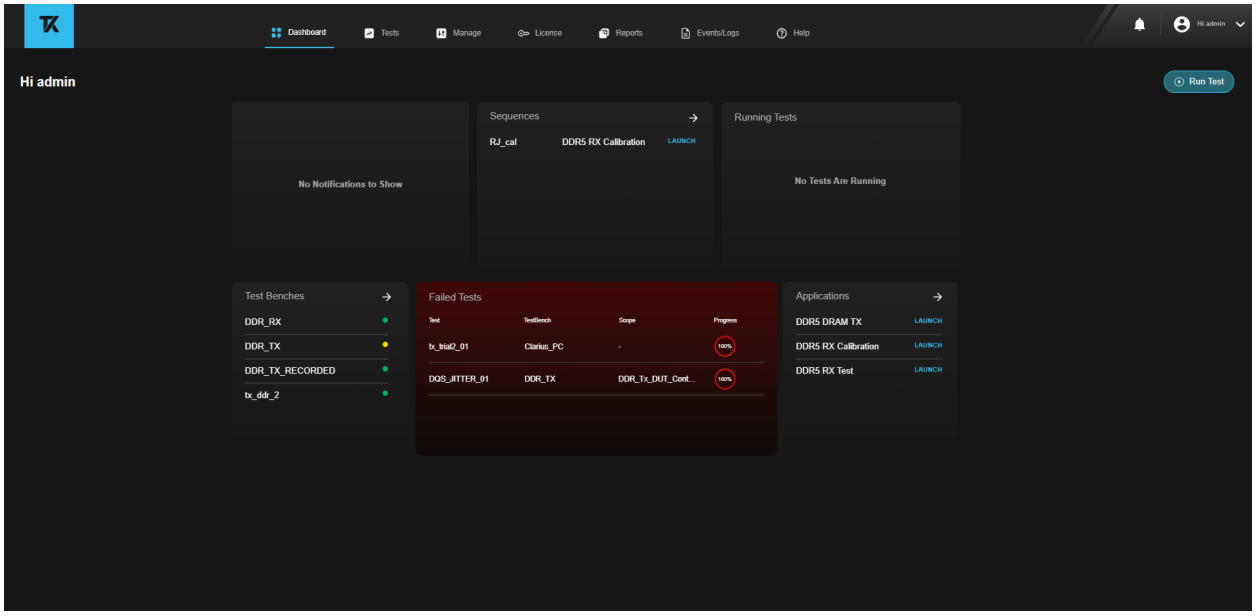


Figure 40: Clarius compliance dashboard view

Perform a test

The **Run Test** allows you to perform a test by entering the fields such as the test name, tags, test description, acquisition mode, test bench, and test sequences.

Widgets

A widget is a part of an interface that allows you to perform a task or access a service on the platform.

Running tests

This widget displays the current test execution status with details such as Test Name, Testbench, and Progress. The progress status displays the test status as Running, Failed, or Complete.

If tests are not performed, then the widget displays **No Tests Are Running** message.

Click the particular test from the **Running Test** widget to view the test details and progress of the currently running test from the **Test** tab.

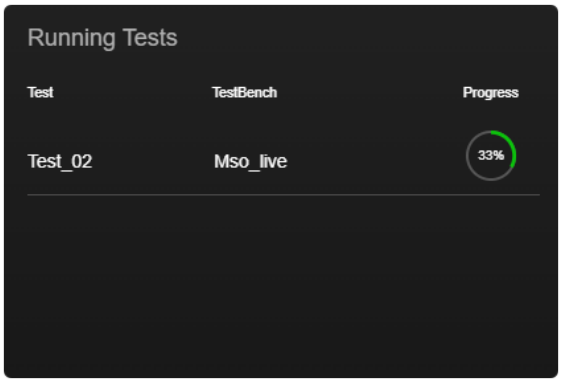


Figure 41: Clarius compliance running tests widget

Test benches

Displays the list of available test benches along with its status. Click → to navigate to the **Test benches** tab.

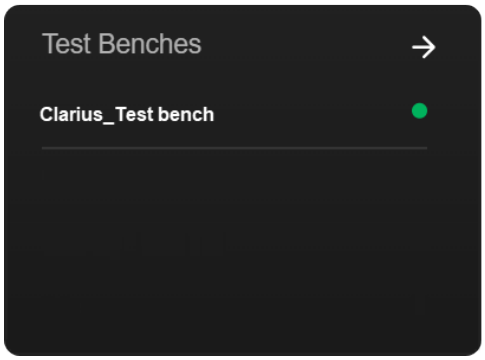


Figure 42: Clarius compliance test benches widget

Applications

Displays the list of activated application(s). Click **LAUNCH** to start the application.

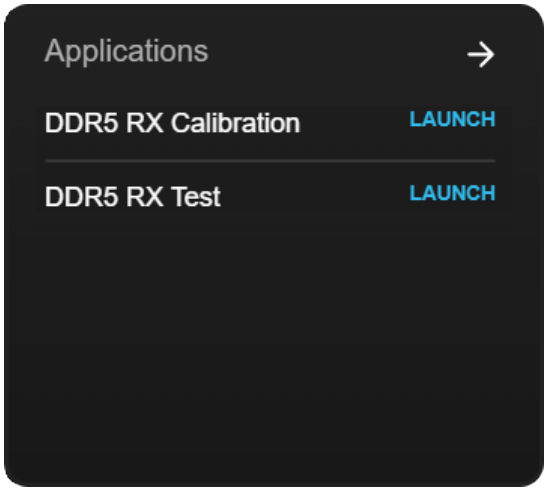


Figure 43: Clarius compliance applications widget

Failed tests

Displays the list of failed tests with details of Test Name, Test bench, Scope, and Progress. Click the particular failed test to navigate to the test details and view the test results from the **Tests** tab.

Figure 44: Clarius compliance failed tests widget

Sequences

Displays the list of available sequence(s). Click **LAUNCH** to run the sequence.

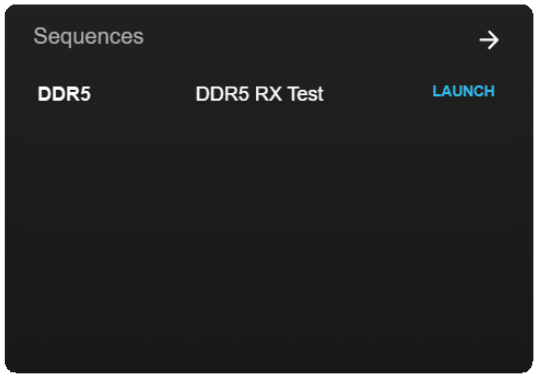


Figure 45: Clarius compliance sequences widget

Notifications

Displays the list of notifications for the active running test. If no tests are performed, the widget displays **No Notification to Show** message.

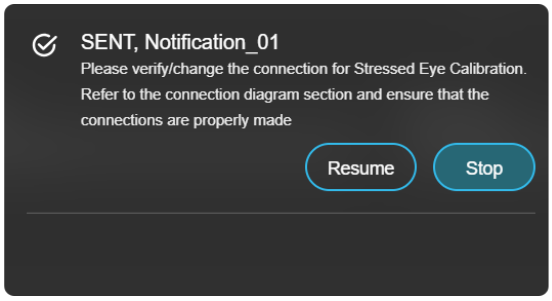


Figure 46: Clarius compliance notifications widget

Tests: Create and run a test, view run statistics and results

The **Tests** tab allows you to create, configure, and run a test. It also displays the name of the test, test mode, application name, execution time stamp, execution duration, and the test execution status. You can delete and view results of the executed test from **Tests** tab.

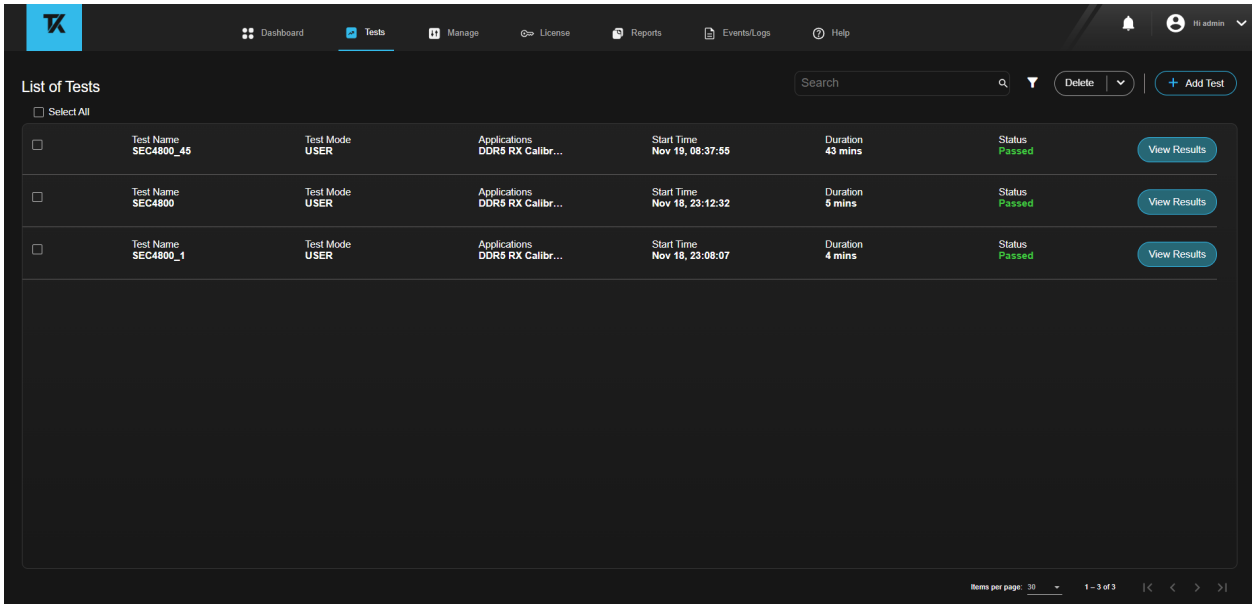


Figure 47: Tests tab in Clarius compliance

Select a test or tests and click **Delete** to delete the test or waveforms from the **Test** tab.

Create and run a test

The **Add Test** button allows you to create and configure a test.

Follow the steps to create a test:

1. In the **Tests** tab, click **Add Test**.

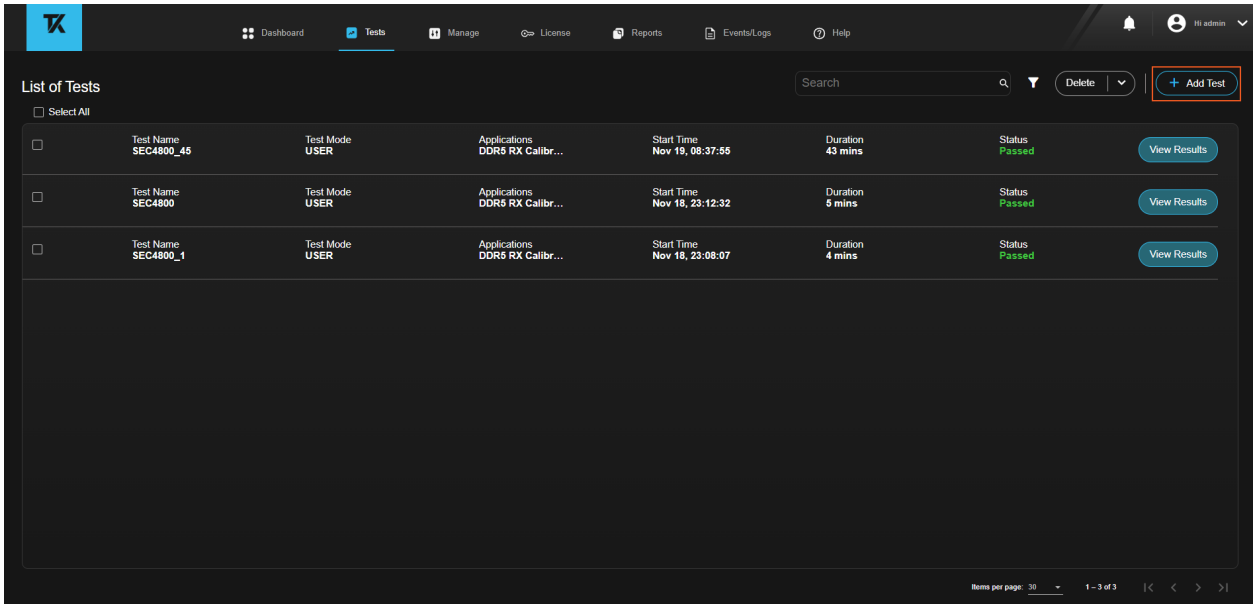


Figure 48: Add Test

2. Enter the test details in the respective fields.

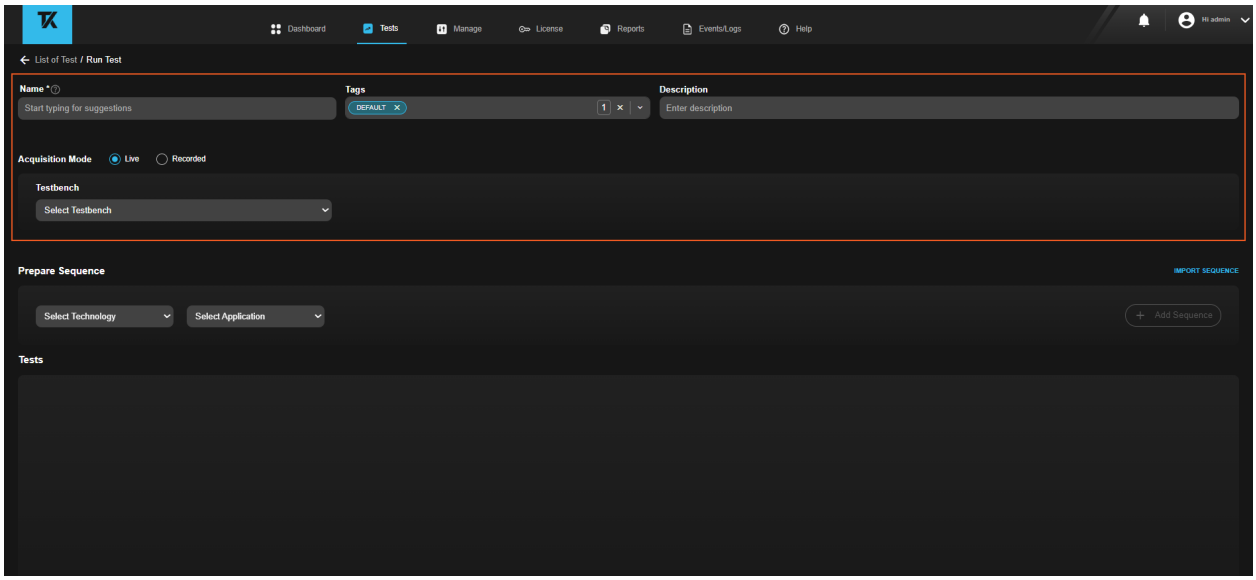
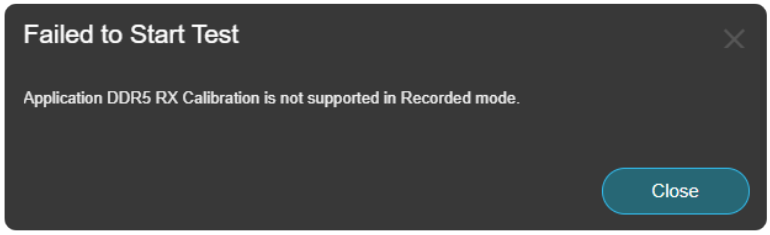


Figure 49: Test Parameters

Menu	Description
Name	Enter a unique test name.

Table continued…

Menu		Description
Tags		Tags are used to group the tests. There is a default tag added. You can add the required tag to the tests and can filter the tests based on the tag value.
Description		Enter the test description.
Acquisition Mode		Select the acquisition mode (Live or Recorded).
	Live	Select **Live** to run a test measurements on live signal. • Select the *testbench* from the drop-down list.
	Recorded	Recorded Mode is not applicable for DDR5 Rx. 

3. *Create and prepare a sequence.*
4. *Configure the sources and signals.*
5. *Configure the global settings.*
6. *Instrument connection diagram setup.*
7. *Configure the test scenario.*
8. Click **Run** to run the measurements with the configured settings.

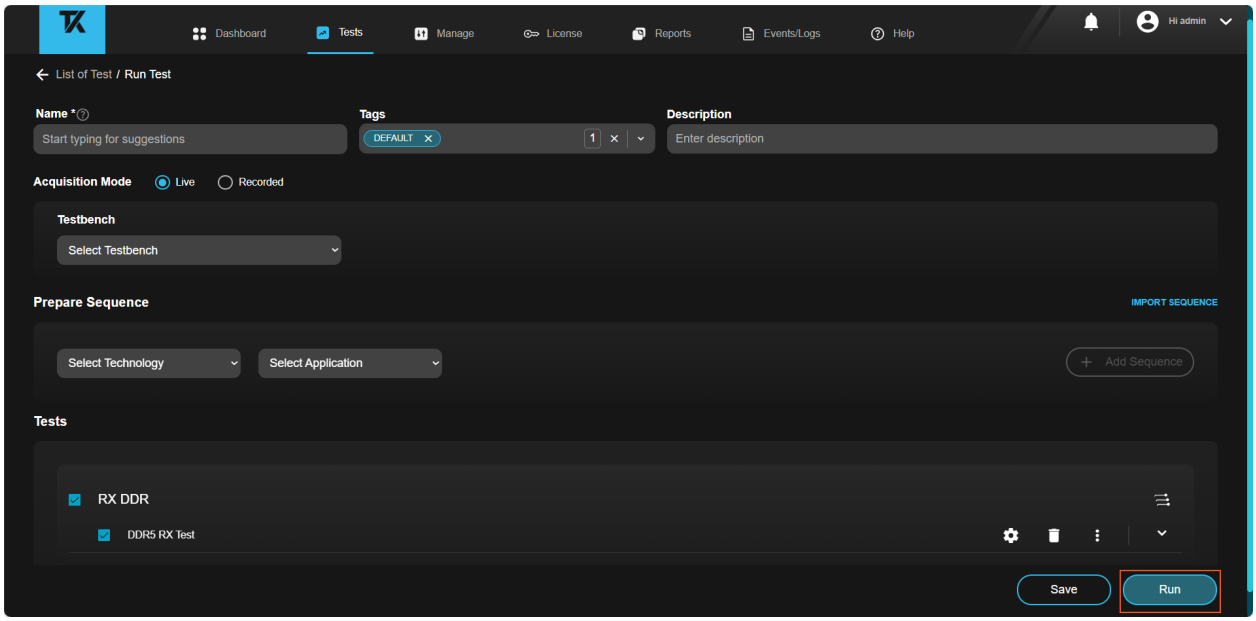


Figure 50: Run a test

Create and prepare a sequence

The create and prepare a sequence settings allows you to add a sequence by setting up the required details.

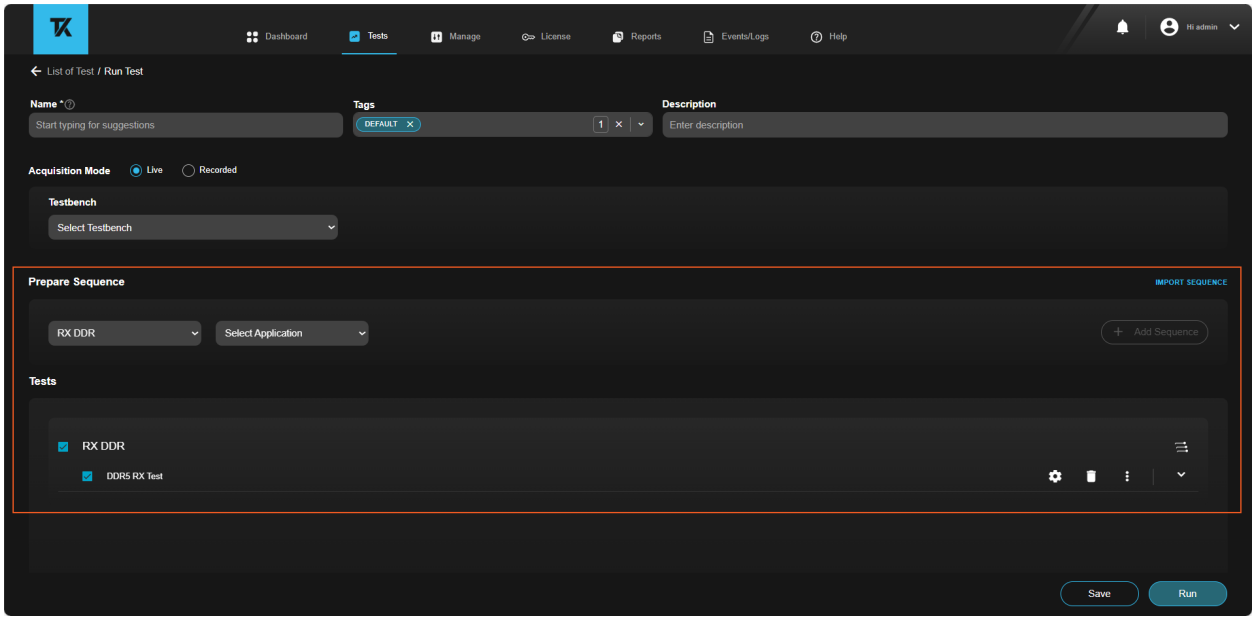


Figure 51: Tests tab: Create and prepare a sequence

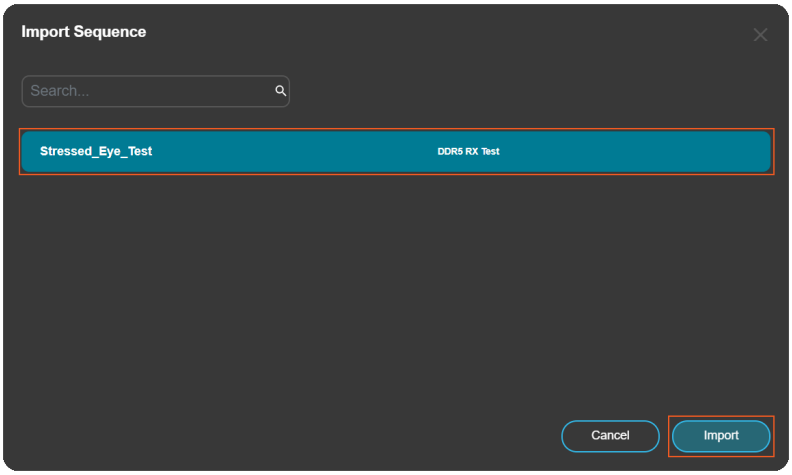
Menu	Description
Import Sequence	It allows to import the sequence that is created as a template. • Click the **IMPORT SEQUENCE** button and select the desired sequence. • Click **Import**. 
Select Technology	Select the technology from the drop-down to prepare a sequence.
Select Application	Select the active application from the drop-down to prepare a sequence.
Add Sequence	It allows to add a new sequence in the current test.
Sources and Signals	Select the required sources and signals to run the test.
Global Settings	Select the required global settings to run the test.
Delete sequence	Deletes the created sequence.
Connection Diagram	Shows the connection between the instruments to make the test setup.

Table continued…

Menu	Description
Scenarios	It displays the list of scenarios with their **Names** and **Local Settings** related to the sequence. You can select and unselect a scenario.
Save	Saves all the sequence settings that are added.
Run	Run the test when all the settings are added.

Configure the sources and signals

The Sources and Signals allows you to select source and assign signals to the channels.

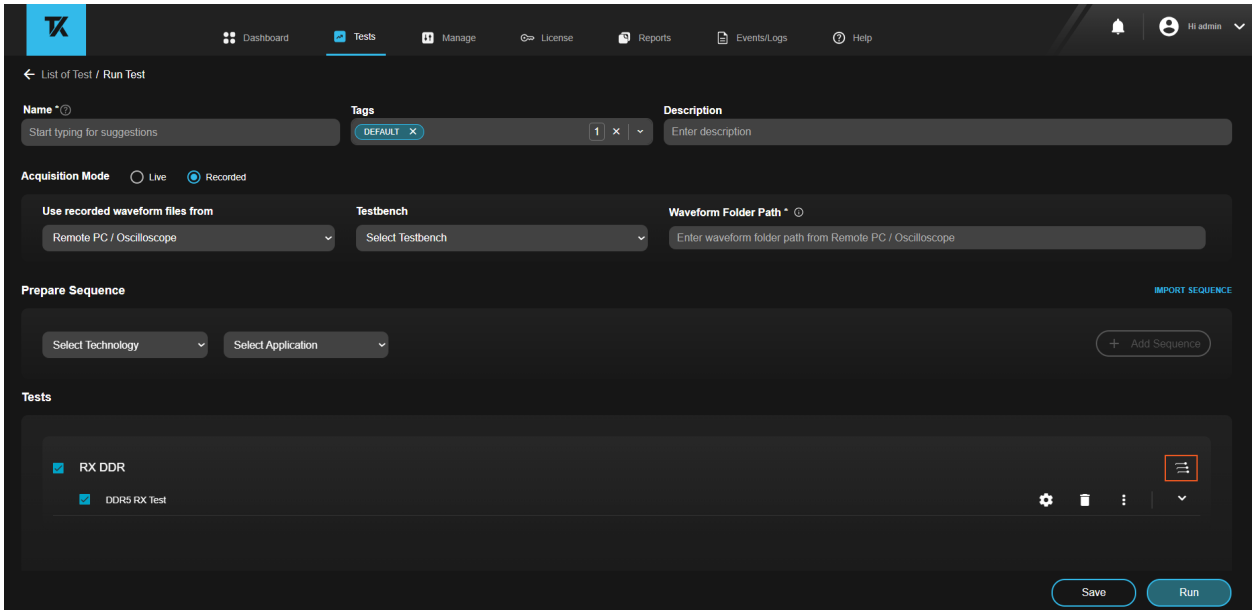


Figure 52: Tests tab: Configure the sources and signals for a test

To add the sources and signals, do the following:

1. Click to assign the sources and signals for the test setup.
2. By default, signals will be added as per the selected technology and application.
3. To add additional signal, click **+ Add Signal**.

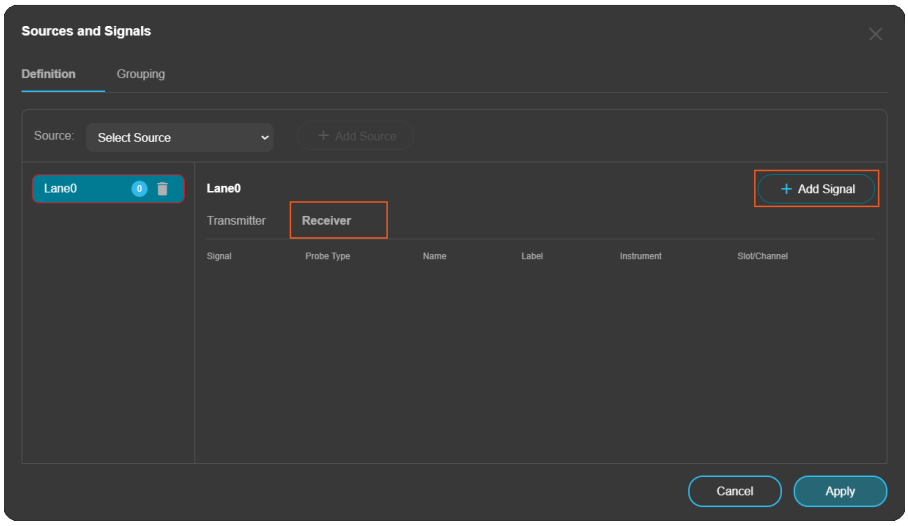


Figure 53: Add Signal for selected source

4. Select or unselect the required sources from the drop-down.
5. Navigate to the **Grouping** tab and click **+ Add Group** to add group of sources.
6. Click **Apply**.

Table 5: Sources and Signals for DDR Rx Calibration

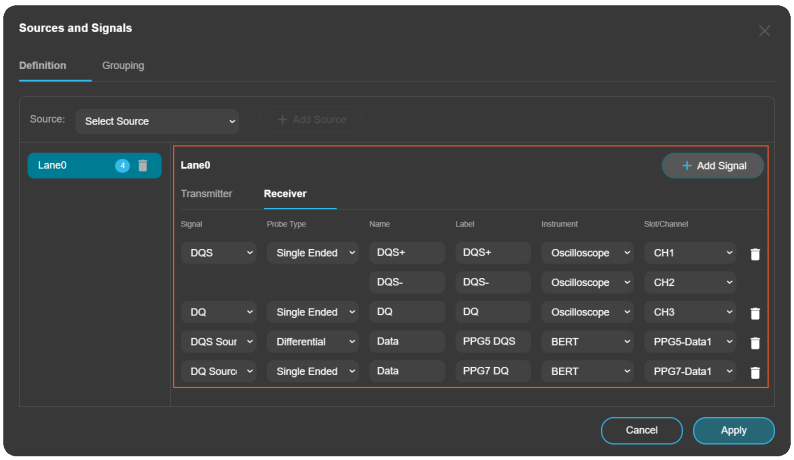
Sources	Description
Source	Configures to select the DUT LANE under test. **Default:** Lane0
Lane0 	
Signal	Select the signal. **Options:** DQS, DQ, DQS Source, DQ Source

Table continued…

<table>
<tr><th>Sources</th><th>Description</th></tr>
<tr><td>Probe Type</td><td>Select the probe type.
Default:
<table>
<tr><th>Signal</th><th>Probe type</th></tr>
<tr><td>DQS</td><td rowspan="2">Single Ended</td></tr>
<tr><td>DQ</td></tr>
<tr><td>DQS Source</td><td>Differential</td></tr>
<tr><td>DQ Source</td><td>Single Ended</td></tr>
</table></td></tr>
<tr><td>Name</td><td>Displays the source name based on the Probe Type selected.
Default:
<table>
<tr><th>Signal</th><th>Name</th></tr>
<tr><td>DQS</td><td>• DQS+
• DQS-</td></tr>
<tr><td>DQ</td><td>DQ</td></tr>
<tr><td>DQS Source</td><td rowspan="2">Data</td></tr>
<tr><td>DQ Source</td></tr>
</table></td></tr>
<tr><td>Label</td><td>Enter the label of the source in the field.
Default:
<table>
<tr><th>Signal</th><th>Label</th></tr>
<tr><td>DQS</td><td>• DQS+
• DQS-</td></tr>
<tr><td>DQ</td><td>DQ</td></tr>
<tr><td>DQS Source</td><td>PPG5 DQS</td></tr>
<tr><td>DQ Source</td><td>PPG7 DQ</td></tr>
</table></td></tr>
</table>

Table continued…

<table>
<tr><th>Sources</th><th>Description</th></tr>
<tr><td>Instrument</td><td>Select the required instrument from the drop-down.
Options: Scope, BERT
Default:
<table>
<tr><th>Signal</th><th>Instrument</th></tr>
<tr><td>DQS</td><td>• DQS+: Oscilloscope
• DQS-: Oscilloscope</td></tr>
<tr><td>DQ</td><td>Oscilloscope</td></tr>
<tr><td>DQS Source</td><td rowspan="2">BERT</td></tr>
<tr><td>DQ Source</td></tr>
</table></td></tr>
<tr><td>Slot/Channel</td><td>Select the required channel from the drop-down.
Options: CH1, CH2, CH3, CH4, PPG1-Data1, PPG1-Data2, PPG2-Data1, PPG2-Data2, PPG3-Data1, PPG3-Data2, PPG4-Data1, PPG4-Data2, PPG5-Data1, PPG5-Data2, PPG6-Data1, PPG6-Data2, PPG7-Data1, PPG7-Data2, PPG8-Data1, PPG8-Data2, ED1-Data1, ED1-Data2, ED2-Data1, ED2-Data2, ED3-Data1, ED3-Data2, ED4-Data1, ED4-Data2, ED5-Data1, ED5-Data2, ED6-Data1, ED6-Data2, ED7-Data1, ED7-Data2, ED8-Data1, ED8-Data2.
Default:
<table>
<tr><th>Signal</th><th>Slot/Channel</th></tr>
<tr><td>DQS</td><td>• DQS+: CH1
• DQS-: CH2</td></tr>
<tr><td>DQ</td><td>CH3</td></tr>
<tr><td>DQS Source</td><td>PPG5-Data1</td></tr>
<tr><td>DQ Source</td><td>PPG7-Data1</td></tr>
</table></td></tr>
<tr><td>Delete</td><td>Removes the added signal source.</td></tr>
</table>

Table 6: Sources and Signals for DDR Rx Test

Sources	Description
Source	Configures to select the DUT LANE under test. **Default:** Lane0

Table continued…

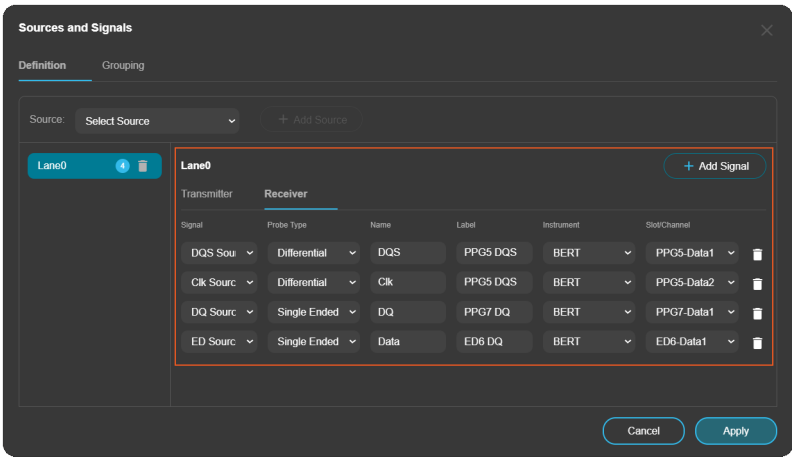
<table>
<tr><th>Sources</th><th>Description</th></tr>
<tr><td colspan="2">Lane0
 
</td></tr>
<tr><td>Signal</td><td>Select the signal.
Options: DQS Source, Clk Source, DQ Source, ED Source</td></tr>
<tr><td>Probe Type</td><td>Select the probe type.
Default:
<table>
<tr><th>Signal</th><th>Probe type</th></tr>
<tr><td>DQS Source</td><td rowspan="2">Differential</td></tr>
<tr><td>Clk Source</td></tr>
<tr><td>DQ Source</td><td rowspan="2">Single Ended</td></tr>
<tr><td>ED Source</td></tr>
</table></td></tr>
<tr><td>Name</td><td>Displays the source name based on the Probe Type selected.
Default:
<table>
<tr><th>Signal</th><th>Name</th></tr>
<tr><td>DQS Source</td><td>DQS</td></tr>
<tr><td>Clk Source</td><td>Clk</td></tr>
<tr><td>DQ Source</td><td>DQ</td></tr>
<tr><td>ED Source</td><td>Data</td></tr>
</table></td></tr>
</table>

Table continued…

<table>
<tr><th>Sources</th><th>Description</th></tr>
<tr><td>Label</td><td>Enter the label of the source in the field.
Default:<table><tr><th>Signal</th><th>Label</th></tr><tr><td>DQS Source</td><td>PPG5 DQS</td></tr><tr><td>Clk Source</td><td>PPG5 DQS</td></tr><tr><td>DQ Source</td><td>PPG7 DQ</td></tr><tr><td>ED Source</td><td>ED6 DQ</td></tr></table></td></tr>
<tr><td>Instrument</td><td>Select the required instrument from the drop-down.
Options: Scope, BERT
Default: BERT</td></tr>
<tr><td>Slot/Channel</td><td>Select the required channel from the drop-down.
Options: CH1, CH2, CH3, CH4, PPG1-Data1, PPG1-Data2, PPG2-Data1, PPG2-Data2, PPG3-Data1, PPG3-Data2, PPG4-Data1, PPG4-Data2, PPG5-Data1, PPG5-Data2, PPG6-Data1, PPG6-Data2, PPG7-Data1, PPG7-Data2, PPG8-Data1, PPG8-Data2, ED1-Data1, ED1-Data2, ED2-Data1, ED2-Data2, ED3-Data1, ED3-Data2, ED4-Data1, ED4-Data2, ED5-Data1, ED5-Data2, ED6-Data1, ED6-Data2, ED7-Data1, ED7-Data2, ED8-Data1, ED8-Data2.
Default:<table><tr><th>Signal</th><th>Slot/Channel</th></tr><tr><td>DQS Source</td><td>PPG5-Data1</td></tr><tr><td>Clk Source</td><td>PPG5-Data2</td></tr><tr><td>DQ Source</td><td>PPG7-Data1</td></tr><tr><td>ED Source</td><td>ED6-Data1</td></tr></table></td></tr>
<tr><td>Delete</td><td>Removes the added signal source.</td></tr>
</table>

Configure the global settings

Global settings configured for the application will be applied for all the measurements within the application. These settings are applicable for all the scenarios present in the sequence.

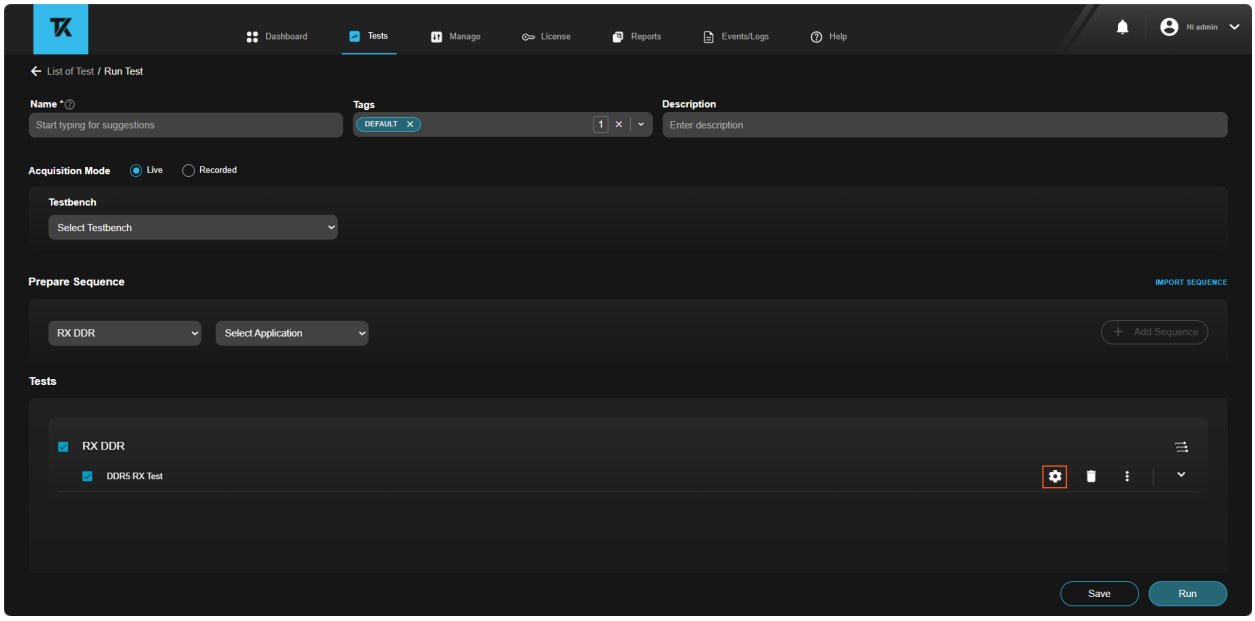


Figure 54: Tests tab: Configure global settings

Follow the steps to add or update the global settings:

1. Click ⚙ from the **Tests** pane.
2. Select or update the respective global settings and click **Apply**.

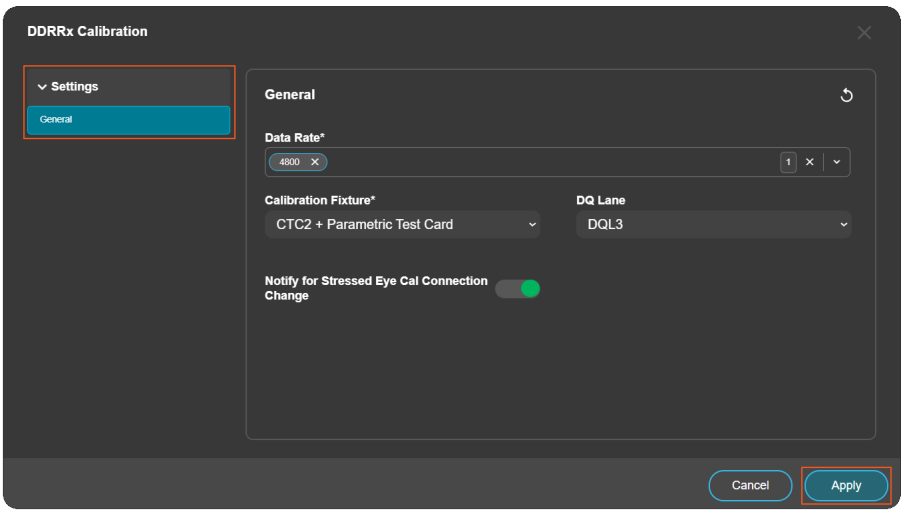


Figure 55: Test tab: Global settings Calibration

Table 7: Global settings for DDR Rx Calibration

Configuration Name	Details
↺	Reset all settings to default.
General	
Data Rate	Configure the Data Rate for the calibration.

Table continued…

Configuration Name	Details
	Options: 3200, 3600, 4000, 4400, 4800, 5200, 5600, 6000, 6400, 6800, 7200, 7600, 8000, 8400 MT/s **Default:** 4800 MT/s
Calibration Fixture	Select the Calibration Fixture that is going to be used for the calibration. **Options:** CTC2 + Parametric Test Card, CTC2 + Replica Channel. **Default:** CTC2 + Parametric Test Card
DQ Lane	Configure the DQ lane for the calibration. **Options:** DQL0, DQL1, DQL2, DQL3, DQL4 (X8 and X16 only), DQL5(X8 and X16 only), DQL6(X8 and X16 only), DQL7(X8 and X16 only) **Default:** DQL3
Notify for Stressed Eye Cal Connection Change	This option allows the user to enable/disable the notification to change the setup connection before initiating the Stressed Eye Calibration.

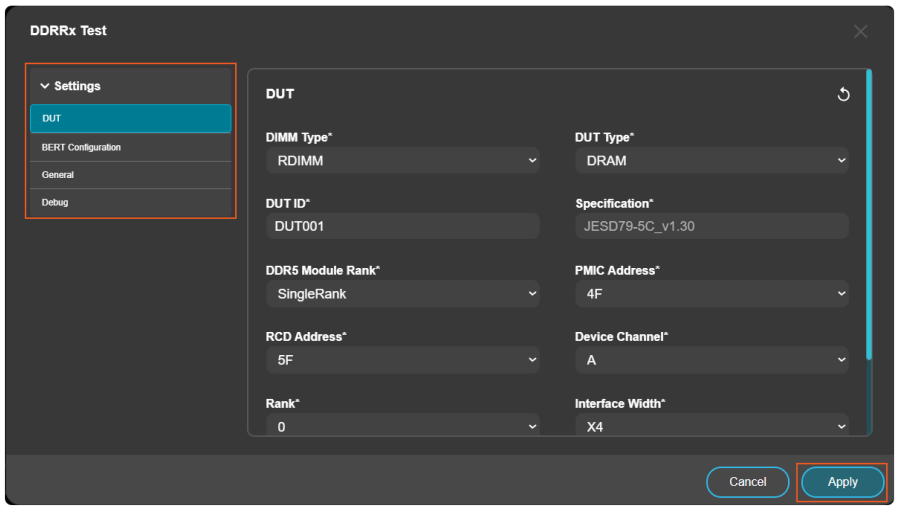


Figure 56: Test tab: Global settings Test

Table 8: Global settings for DDR Rx Test

Configuration Name	Details
	Reset all settings to default.
DUT	

Table continued…

Configuration Name	Details
DIMM Type	Configure the DIMM Type. **Options:** RDIMM, LRDIMM, UDIMM, SO-DIMM **Default:** RDIMM **Note:** At present, only RDIMM is enabled.
DUT Type	Configure the DUT Type. **Options:** DRAM, RCD, Buffer. **Default:** DRAM **Note:** At present, only DRAM is enabled.
DUT ID	Configure the DUT ID. **Default:** DUT001
DDR5 Module Rank	Configure the device to specific Rank during DUT testing. **Options:**SingleRank, DualRank **Default:** SingleRank
Specification	Information of the specification version support. **Default:** JESD79-5C.01_v1.31
PMIC Address	Configure the PMIC address in the DRAM during DUT testing. **Options:** 48, 49, 4A, 4B, 4C, 4D, 4E, 4F **Default:** 4F
RCD Address	Configure the RCD address in the DRAM during DUT testing. **Options:** 58, 59, 5A, 5B, 5C, 5D, 5E, 5F **Default:** 5F
Device Channel	Configure the Device Channel in the DRAM during DUT testing. **Options:** A, B **Default:** A
Rank	Configure the Rank in the DRAM during DUT testing. **Options:** 0,1 **Default:** 0
Interface Width	Configure the Interface Width supported by DUT. **Options:** X4, X8, X16 **Default:** X4

Table continued…

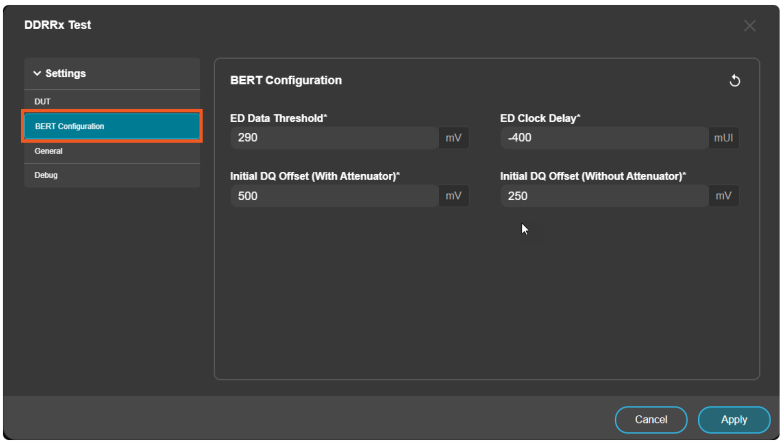
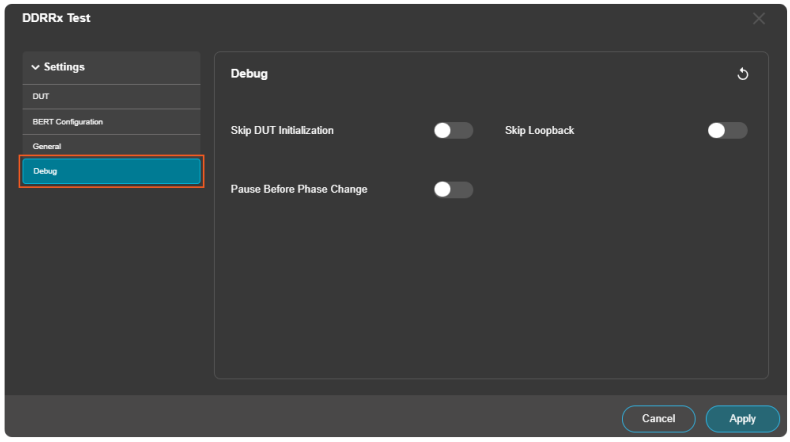
Configuration Name	Details
DQ Lane	Configure to run tests on the selected lane. **Options:** DQL0, DQL1, DQL2, DQL3, DQL4 (X8 and X16 only),DQL5(X8 and X16 only), DQL6(X8 and X16 only), DQL7(X8 andX16 only). **Default:** DQL3 **Note:** Choose the suitable calibration file under **Local Settings > General** of the test scenario, that has been performed calibration to the specific DQ Lane.
BERT Configuration 	
ED Data Threshold	Configure the Error Detector threshold to help the DUT in entering loopback mode. **Default:** 290 mV
ED Clock Delay	Configure the Error Detector Clock Delay to help the DUT in entering loopback mode. **Default:** -400 mUI
Initial DQ Offset (With Attenuator)	Configure the Initial DQ Offset (With Attenuator) to help the DUT in entering loopback mode. **Default:** 500 mV **Note:** This option is applicable only for DQ, DQS, DQS Jitter Calibration/Test.
Initial DQ Offset (Without Attenuator)	Configure the Initial DQ Offset (Without Attenuator) to help the DUT in entering loopback mode. **Default:** 250 mV **Note:** This option is applicable only for Stressed Eye Calibration/Test.

Table continued…

Configuration Name	Details
General	
	
Notify for Stressed Eye Test Connection Change	This option allows the user to enable/disable the notification tochange the setup connection before initiating the Stressed Eye Test.
Debug	
	
Pause Before Phase Change	This option allows the user to enable/disable the Pause Before Phase Change. When enabled, it pauses test execution before running each phase. **Default:** Disable
Skip DUT Initialization	This option allows the user to enable/disable Skip DUT Initialization. When enabled, it pauses test execution, allowing the user to manually initialize the DUT before continuing with Loopback and tests. **Default:** Disable
Skip Loopback	This option allows the user to enable/disable the Skip Loopback. When enabling, it Pauses test execution, allowing the user to manually put DUT into Loopback and continues with tests. **Default:** Disable

Instrument connection diagram setup

The instrument connection diagram setup shows how to connect the DUT to the oscilloscope for the tests.

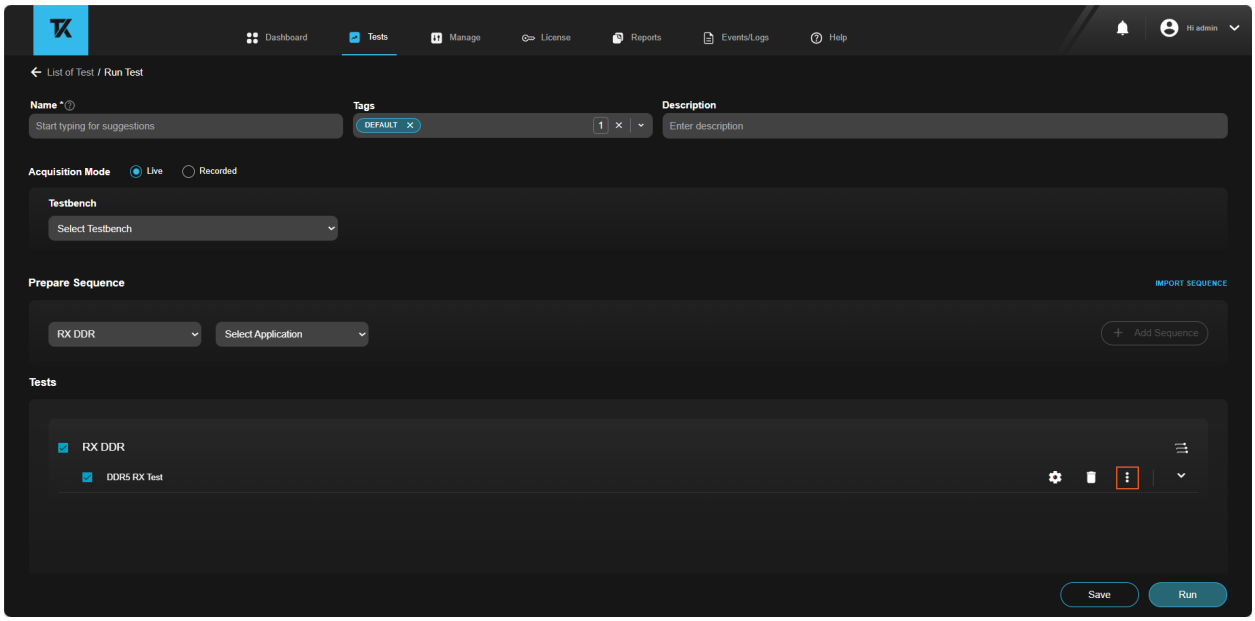
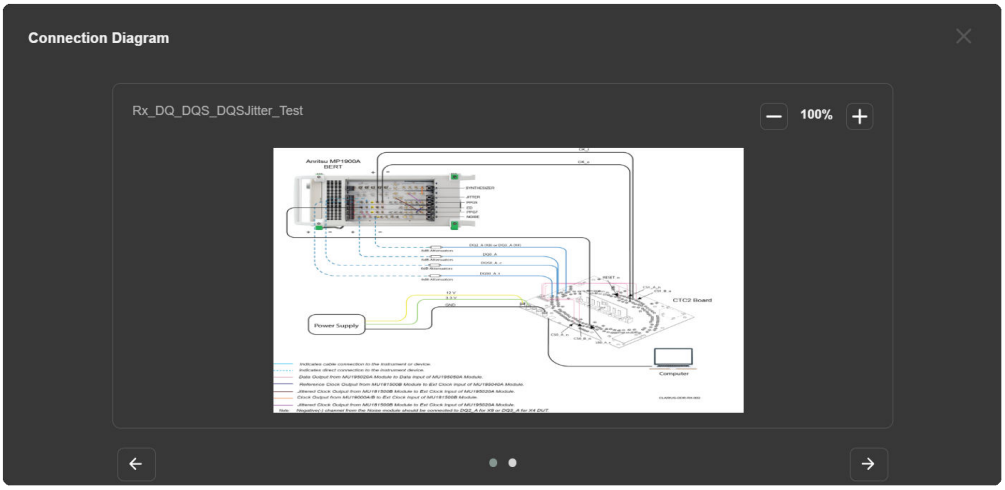


Figure 57: Tests tab: Connection diagram setup

Follow the steps to view the test setup connections between the instruments.

1. Click ⋮ and then click **Connection Diagram.**
2. Click ← → to view the different connection diagrams that are associated to the test setup.



Configure the test scenarios

The scenarios and their measurements can be configured using the parameters in the scenario frame. Initially the scenarios and measurements are configured to the default values.

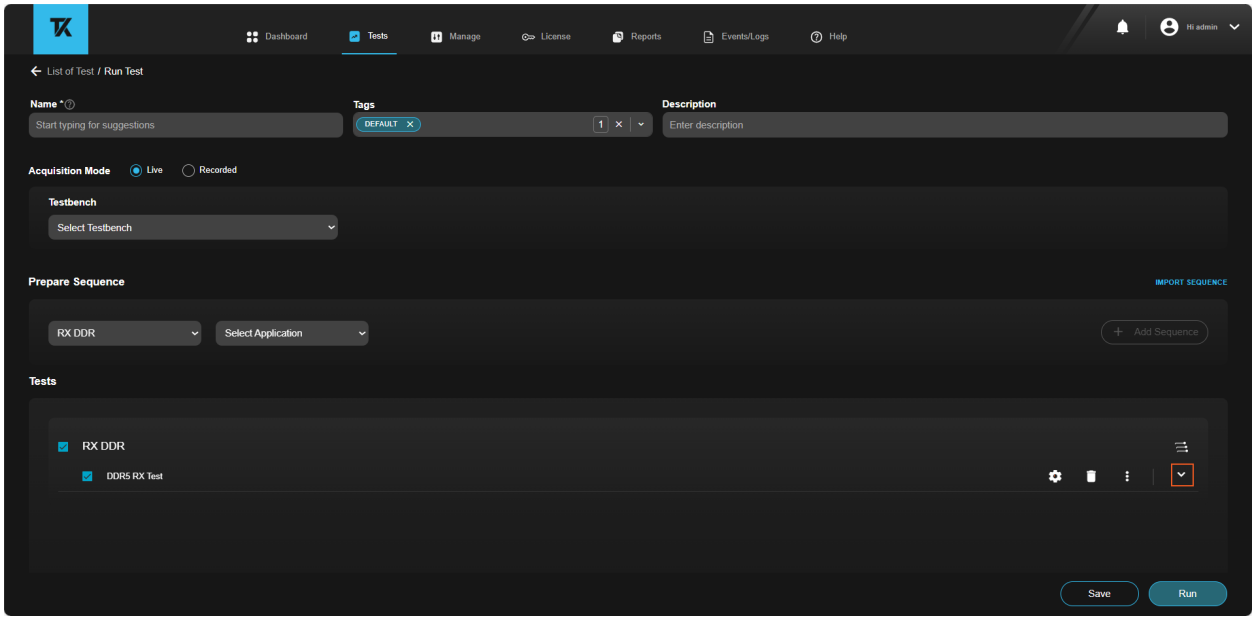


Figure 58: Tests tab: Configure test scenarios

Follow the steps to configure the scenarios:

1. Click ▾ in the **Tests** frame to view and configure the scenarios settings.

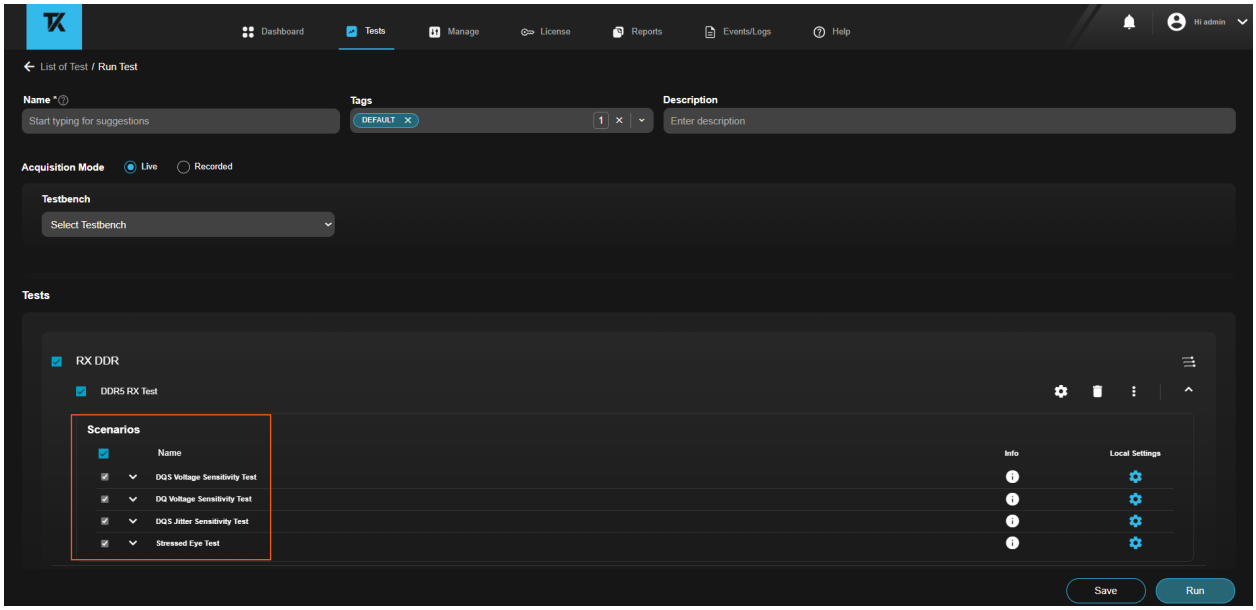


Figure 59: Configure the measurements

2. Click ⚙ from **Local Settings** to configure the respective scenario setting.

Table 9: DDR Rx Calibration

Item	Description
↺	Reset all settings to default.

Table continued…

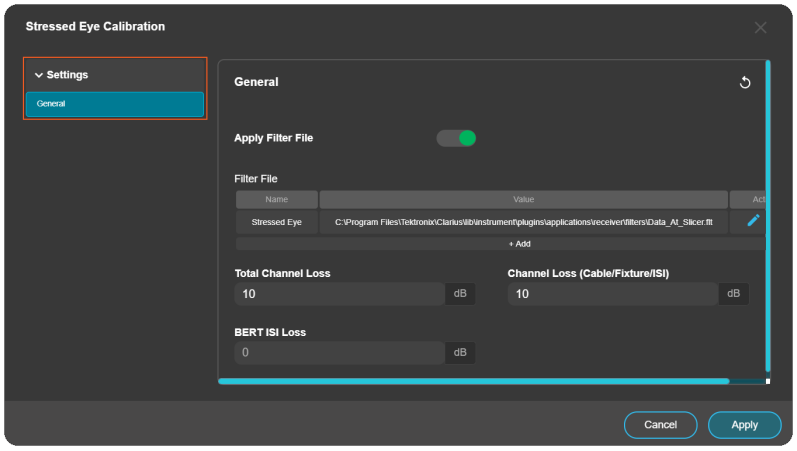
Item		Description
General 		
Apply Filter File		Enable or disable to Apply Filter File
Filter File		
	Name	Name of the filter. • DQS Voltage Calibration: **DQS** • DQ Voltage Calibration: **DQ** • DQS RJ Calibration: **DQS** • DQS DCD Calibration: **DQS** • Stressed Eye Calibration: **Stressed Eye**
	Value	File path of the filter in Real Time Scope. `C:\Program Files\Tektronix\Clarius\lib\instrument\plugins\applications\receiver\filters\Clock_At_Pin.flt`
	Actions	Allows to Modify or Delete the current filter file configuration.
	Modify	Modifies the path.
	Delete	Clears filter path.
	Add	Adds new filter file configuration
Total Channel Loss		Configure the Total Channel Loss that needs to be present in the calibration setup. Total Channel Loss = Channel Loss (Cable/Fixture/ISI) + BERT ISI Loss. **Default:** 10 dB **Note:** This option is applicable only for the Stressed Eye Calibration.

Table continued…

Item	Description
Channel Loss (Cable/Fixture/ISI)	Configure the Channel Loss which can be combination of Cable, Fixture, and external ISI board. Loss can be calculated from the VNA (Vector Network Analyzer). **Default:** 10 dB **Note:** This option is applicable only for Stressed Eye Calibration.
BERT ISI Loss	This is an auto-populated field. BERT ISI Loss = Total Channel Loss - Channel Loss (Cable/Fixture/ISI). If the difference is less than 1.5 dB, then it will set 0 due to BERT limitation as a minimum value. **Default:** 0 dB **Note:** This option is applicable only for Stressed Eye Calibration.
Initial Vswing	Configure the Initial Vswing (Amplitude) of the DQ Signal for the Stressed Eye Convergence. With appropriate configuration, convergence could be faster. **Default:** 300 mV **Note:** This option is applicable only for Stressed Eye Convergence which is present as a sub-step of Stressed Eye Calibration measurement.
Initial Vnoise	Configure the Initial Vnoise (CMI) of the DQ Signal for the Stressed Eye Convergence. With appropriate configuration, convergence could be faster. **Default:** 25 mV **Note:** This option is applicable only for Stressed Eye Convergence which is present as a sub-step of Stressed Eye Calibration measurement.
Initial RJ	Configure the Initial RJ injection in the DQ Signal for the Stressed Eye Convergence. With appropriate configuration, convergence could be faster. **Default:** 0.02 UI rms **Note:** This option is applicable only for Stressed Eye Convergence which is present as a sub-step of Stressed Eye Calibration measurement.
Initial SJ	Configure the Initial SJ injection in the DQ Signal for the Stressed Eye Convergence. With appropriate configuration, convergence could be faster. **Default:** 0.225 UI pp **Note:** This option is applicable only for Stressed Eye Convergence which is present as a sub-step of Stressed Eye Calibration measurement.

Table 10: Configuring Scenario for DDR Rx Test

Item	Description
	Reset all settings to default.

Table continued…

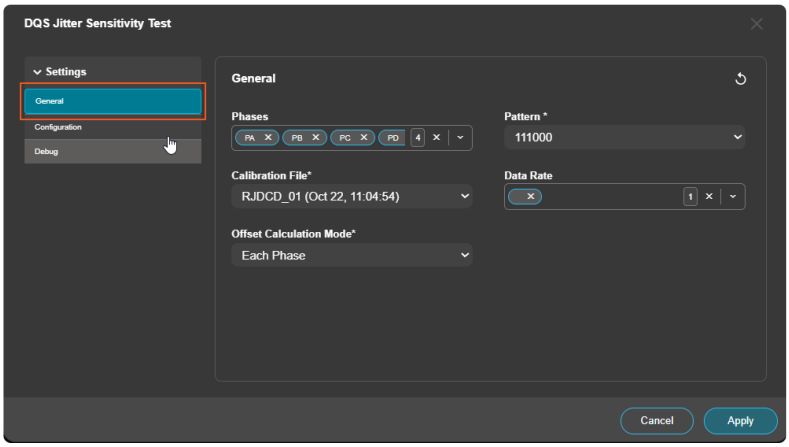
Item	Description
General 	
Phases	Configure one or more Phases to test the DUT. **Options:** PA, PB, PC, PD **Default:** PA, PB, PC, PD
Pattern	Configure the test Pattern to test the DUT. **Options:** PRBS7, 111000 **Default:** • 111000 for DQS and DQ Voltage Sensitivity Test, DQS Jitter Sensitivity Test • PRBS7 for Stressed Eye Test
Calibration File	This is an auto-populated field. It will list all relevant completed calibration for associated measurement.
Data Rate	This is an auto-populated field. It will list all Data Rates that were selected during the calibration as this is read from the calibration file. By default, the first DataRate will be selected.

Table continued…

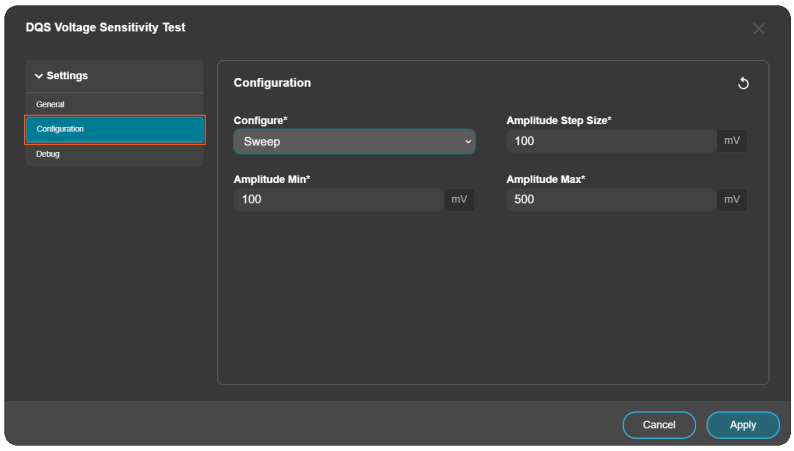
Item	Description
Configuration 	
Configure	Configure either Compliance or Sweep test. **Options:** Compliance, Sweep, Advanced (Calibrated), Advanced (Uncalibrated) **Default:** Compliance
Amplitude Step Size	Configure the amplitude step size. **Default:** • 100 mV for DQS Voltage Sensitivity Test • 50 mV for DQ Voltage Sensitivity Test **Note:** This option is applicable when Configure is selected as **Sweep**.
Amplitude Min	Configure the amplitude min value. **Default:** 100 mV for DQS and DQ Voltage Sensitivity Test **Note:** This option is applicable when Configure is selected as **Sweep**.
Amplitude Max	Configure the amplitude max value. **Default:** • 500 mV for DQS Voltage Sensitivity Test • 300 mV for DQ Voltage Sensitivity Test **Note:** This option is applicable when Configure is selected as **Sweep**.

Table continued…

Item	Description
Compliance Measurements	Configure the Jitter test. **Options:** RJ, DCD, RJ+DCD **Default:** RJ, DCD, RJ+DCD **Note:** This option is applicable only for the DQS Jitter Sensitivity Test measurement.
Sweep RJ	Configure the Sweep RJ. **Options:** Enable, Disable **Default:** Enable **Note:** This option is applicable only for the DQS Jitter Sensitivity Test measurement when Configure is selected as **Sweep**.
RJ Step Size	Configure the Step Size of the RJ. The Step Size will be added to the RJ Minimum up to the RJ Maximum (including RJ Minimum and Maximum) to create the list of the RJ amplitude. **Default:** 0.005 UI rms **Note:** This option is applicable only for the DQS Jitter Sensitivity Test measurement when Configure is selected as **Sweep**.
RJ Minimum	Configure the Minimum value of the RJ to establish the starting point of the sweep. **Default:** 0 UI rms **Note:** This option is applicable only for the DQS Jitter Sensitivity Test measurement when Configure is selected as **Sweep**.
RJ Maximum	Configure the Maximum value of the RJ to determine the endpoint of the sweep. **Default:** 0.025 UI rms **Note:** This option is applicable only for the DQS Jitter Sensitivity Test measurement when Configure is selected as **Sweep**.
DCD (for sweep RJ)	Configure the DCD as a fixed parameter while Sweep RJ. **Default:** 0 UI pp **Note:** This option is applicable only for the DQS Jitter Sensitivity Test measurement when Configure is selected as **Sweep**.
Sweep DCD	Configure the Sweep DCD. **Options:** Enable, Disable **Default:** Enable **Note:** This option is applicable only for the DQS Jitter Sensitivity Test measurement when Configure is selected as **Sweep**.

Table continued…

Item	Description
DCD Step Size	Configure the Step Size of the DCD. The Step Size will be added to the DCD Minimum up to the DCD Maximum (including DCD Minimum and Maximum) to create the list of the DCD. **Default:** 0.02 UI pp **Note:** This option is applicable only for the DQS Jitter Sensitivity Test measurement when Configure is selected as **Sweep**.
DCD Minimum	Configure the Minimum value of the DCD to establish the starting point of the sweep. **Default:** 0 UI pp **Note:** This option is applicable only for the DQS Jitter Sensitivity Test measurement when Configure is selected as **Sweep**.
DCD Maximum	Configure the Maximum value of the DCD to determine the endpoint of the sweep. **Default:** 0.1 UI pp **Note:** This option is applicable only for the DQS Jitter Sensitivity Test measurement when Configure is selected as **Sweep**.
RJ (for sweep DCD)	Configure the RJ as a fixed parameter while Sweep DCD. **Default:** 0 UI rms **Note:** This option is applicable only for the DQS Jitter Sensitivity Test measurement when Configure is selected as **Sweep**.
DFE Tap1	Configure the DFE Tap1 to set in the DRAM during DUT testing. **Default:** 0 mV for both Calibrated and Uncalibrated configuration. **Note:** This option is applicable only for the Stressed Eye Test measurement when Configure is selected as **Advanced (Calibrated)** or **Advanced (Uncalibrated)**.
DFE Tap2	Configure the DFE Tap2 to set in the DRAM during DUT testing. **Default:** 0 mV for both Calibrated and Uncalibrated configuration. **Note:** This option is applicable only for the Stressed Eye Test measurement when Configure is selected as **Advanced (Calibrated)** or **Advanced (Uncalibrated)**.
DFE Tap3	Configure the DFE Tap3 to set in the DRAM during DUT testing. **Default:** 0 mV for both Calibrated and Uncalibrated configuration. **Note:** This option is applicable only for the Stressed Eye Test measurement when Configure is selected as **Advanced (Calibrated)** or **Advanced (Uncalibrated)**.
DFE Tap4	Configure the DFE Tap4 to set in the DRAM during DUT testing. **Default:** 0 mV for both Calibrated and Uncalibrated configuration. **Note:** This option is applicable only for the Stressed Eye Test measurement when Configure is selected as **Advanced (Calibrated)** or **Advanced (Uncalibrated)**.

Table continued…

Item	Description
Vswing	Configure the Vswing (Amplitude). **Default:** • 550 mV for Calibrated configuration. • 1016 mV for Uncalibrated configuration. **Note:** This option is applicable only for the Stressed Eye Test measurement when Configure is selected as **Advanced (Calibrated)** or **Advanced (Uncalibrated)**.
Vnoise	Configure the Vnoise (CMI feature in BERT). **Default:** • 3 mV for Calibrated configuration. • 58 mV for Uncalibrated configuration. **Note:** This option is applicable only for the Stressed Eye Test measurement when Configure is selected as **Advanced (Calibrated)** or **Advanced (Uncalibrated)**.
RJ	Configure RJ for Advanced Stressed Eye Test. **Default:** • 0.0306 UI rms for Calibrated configuration. • 0.32 UI pp for Uncalibrated configuration. **Note:** This option is applicable only for the Stressed Eye Test measurement when Configure is selected as **Advanced (Calibrated)** or **Advanced (Uncalibrated)**.
SJ	Configure SJ for Advanced Stressed Eye Test. **Default:** • 0.297 UI pp for Calibrated configuration. • 0.3 UI pp for Uncalibrated configuration. **Note:** This option is applicable only for the Stressed Eye Test measurement when Configure is selected as **Advanced (Calibrated)** or **Advanced (Uncalibrated)**.

Table continued…

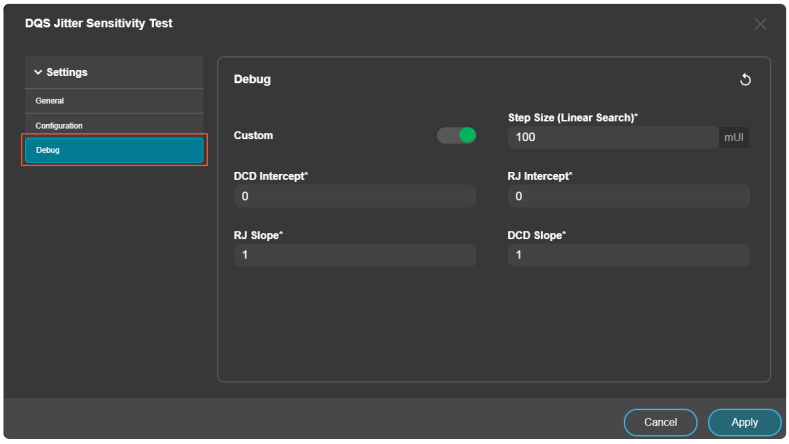
Item	Description
Debug 	
Step Size (Linear Search)	Configure the PPG DQ/DQS delay search step size to find the optimum eye. **Default:** 100 mUI

Table continued…

Item	Description	
Custom	Enable and provide the Slope and Intercept for the calibration curve to test with the custom user input. This custom value will override the values from the selected calibration file. **Note:** This option is not applicable for the Stressed Eye Test.	
	Slope	It allows user to configure custom Slope. **Default:** 1 **Note:** This option is applicable for DQS Voltage Sensitivity Test and DQ Volltage Sensitivity Test.
	Intercept	It allows user to configure custom Intercept. **Default:** 0 **Note:** This option is applicable for DQS Voltage Sensitivity Test and DQ Volltage Sensitivity Test.
	DCD Intercept	It allows user to configure custom DCD Intercept. **Default:** 0 **Note:** This option is applicable for DQS Jitter Sensitivity Test.
	RJ Slope	It allows user to configure custom RJ Slope. **Default:** 1 **Note:** This option is applicable for DQS Jitter Sensitivity Test.
	RJ Intercept	It allows user to configure custom RJ Intercept. **Default:** 0 **Note:** This option is applicable for DQS Jitter Sensitivity Test.
	DCD Slope	It allows user to configure custom DCD Slope. **Default:** 1 **Note:** This option is applicable for DQS Jitter Sensitivity Test

3. Select the required measurements from the drop-down list.
4. Update the parameters with the required values.
5. Click **Apply**.

View test execution status and results

The status and results of each executed test in the **Tests** tab displays the test status and result details.

1. Go to **Tests** tab and click **View Results** of an executed test.

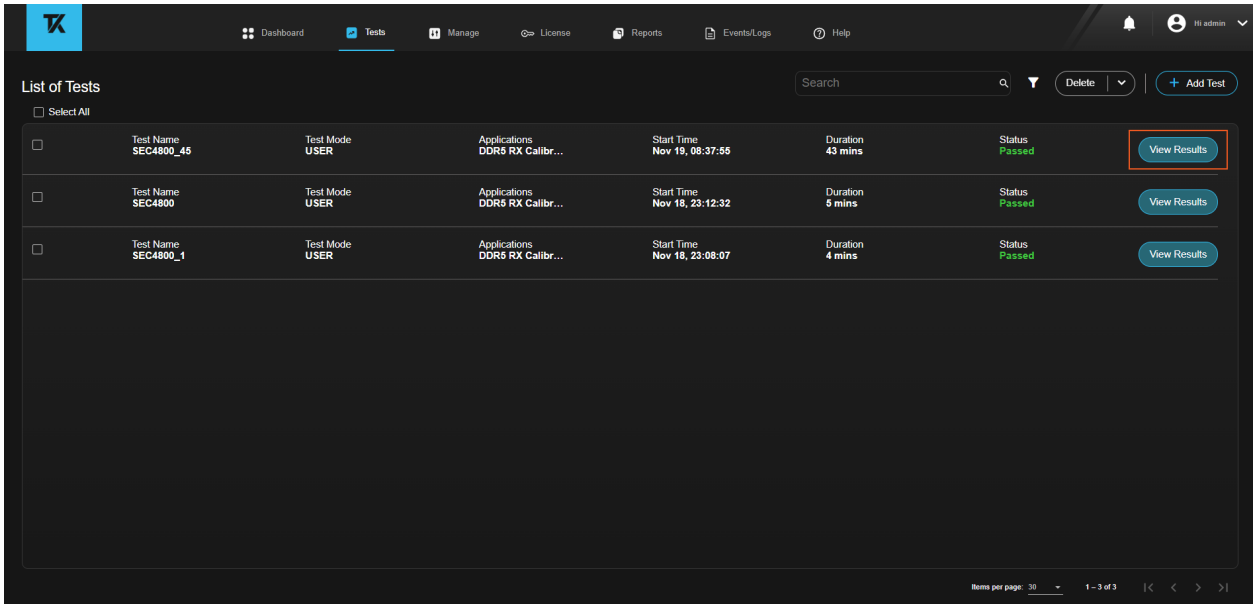


Figure 60: Tests: View Results

2. The test execution details with results, plots, and waveforms are summarized as follows.

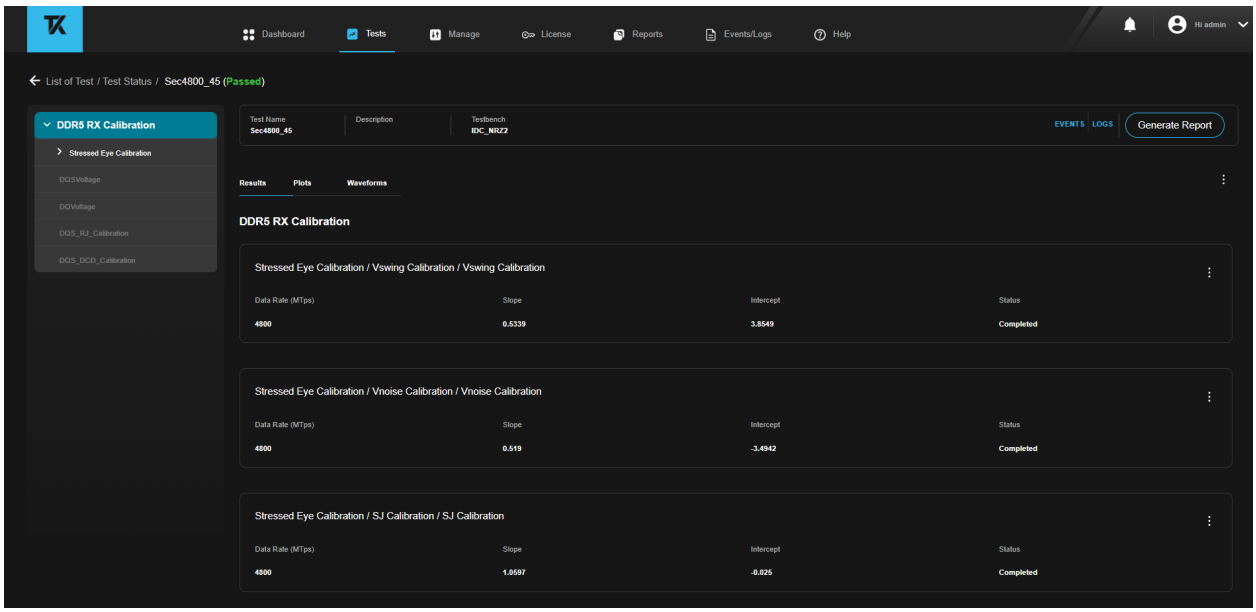


Figure 61: View test execution details

Control	Description
Test Name	Displays the test name that is set.
Description	Displays the test description.

Table continued…

Control	Description
Testbench	Displays the testbench that is used.
Events	View the events of an executed test. Refer *Events* for more information.
Logs	View the logs of an executed test. Refer *Logs* for more information.
Generate Report	Generates the report of an executed test. Refer *Add and Generate New Report* for more information.

Test results

The **Results** tab displays the results of an executed test measurement.

Follow the steps to view the test results:

1. Select the required measurement from the left side bar to view the results. The top level selections displays all the results whereas, the lower level displays results for only that particular parameter.
2. Click the **Results** tab to view the measurement results.

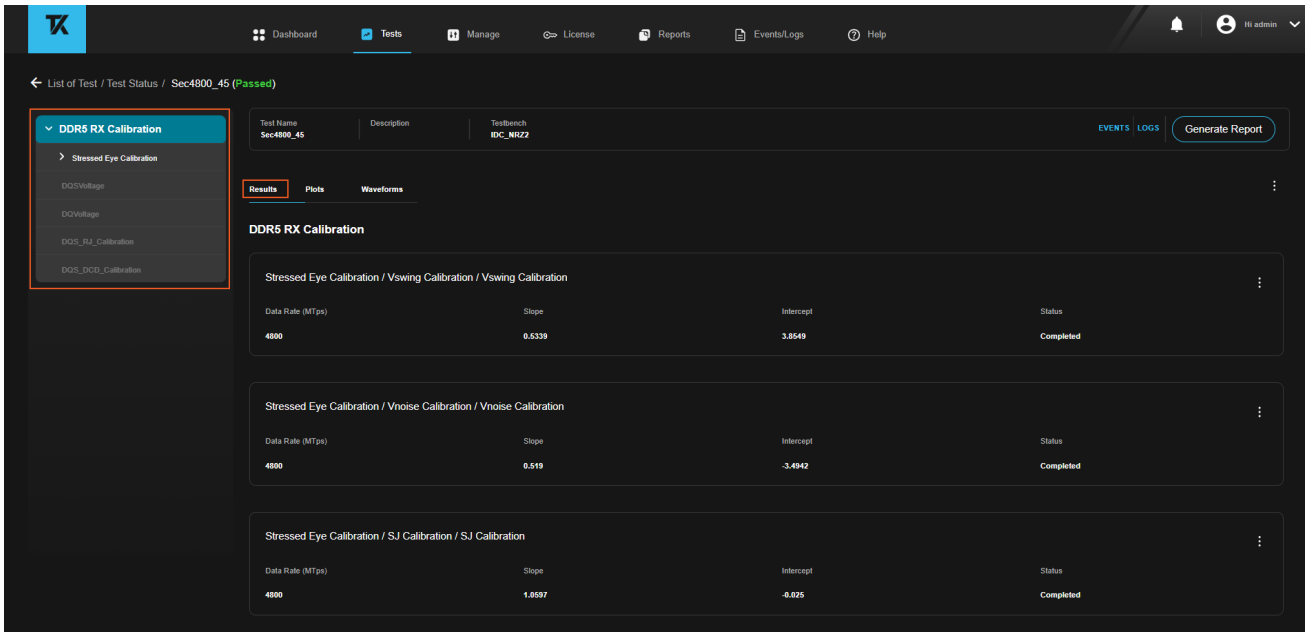


Figure 62: Test Results: DDR5 Rx Calibration

Table 11: Results for Calibration

Menu	Description
Data Rate (Mbps)	Displays the data rate of the measured value.
Target Value	Displays the target measured value.
BERT Setting	Displays the BERT setting of the measured value.
Slope	Displays the slope value.
Intercept	Displays the intercept value.
Status	Displays the measurement status.
Index	Displays the serial count.

Table continued…

Menu	Description
Amplitude (mV)	Displays the calibrated amplitude.
Ampl Setting (mV)	Displays the setting value of Amplitude on BERT.
VNoise (mV)	Displays the calibrated VNoise.
VNoise Setting (mV)	Displays the setting value of VNoise on BERT.
RJ (UI rms)	Displays the calibrated RJ.
RJ Setting (UI pp)	Displays the setting value of RJ on BERT.
SJ (UI pp)	Displays the calibrated SJ.
SJ Setting (UI pp)	Displays the setting value of SJ on BERT.
DFE Taps (mV)	Displays the measured DFE Taps on Amplitude changes.
EW (UI)	Displays the measured eye width.
EH (mV)	Displays the measured eye height.

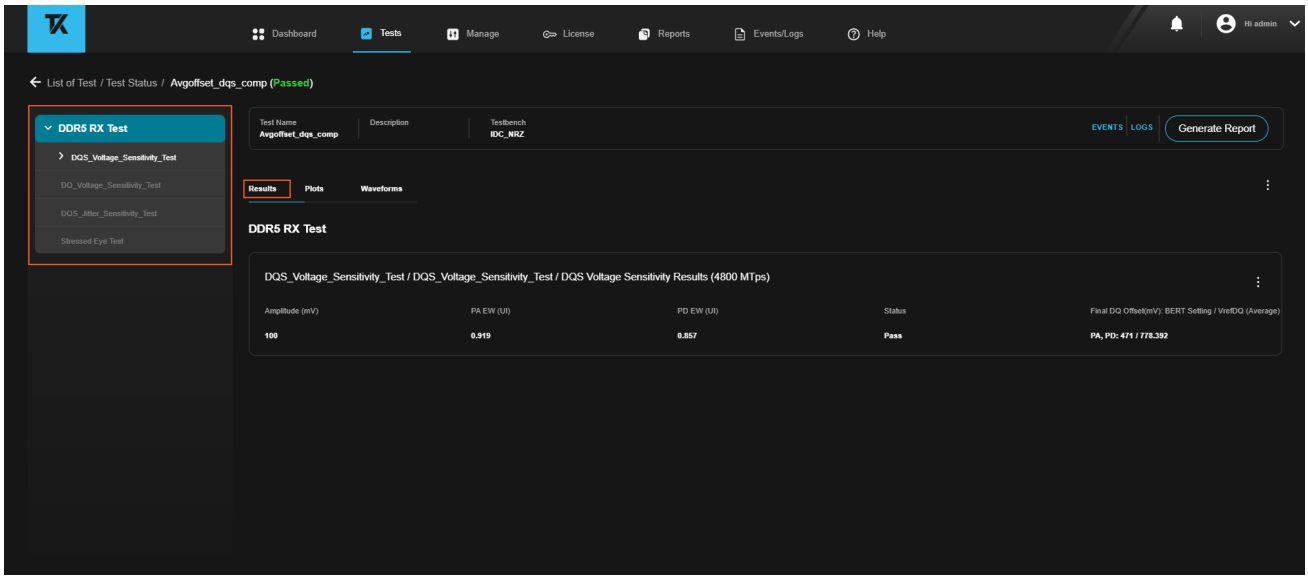


Figure 63: Test Results: DDR5 Rx Test

Table 12: Results for Tests

Menu	Description
Amplitude (mV)	Displays the amplitude at which test executed.
PA EW (UI)	Displays the Phase A eye width.
PB EW (UI)	Displays the Phase B eye width.
PC EW (UI)	Displays the Phase C eye width.
PD EW (UI)	Displays the Phase D eye width.
Status	Displays the status of the test.
Symbol	Displays the symbol of the measurements.
Jitter	Displays the jitter added in the test.

Table continued…

Menu	Description
PA EW / Delta (UI)	Displays the Phase A eye width and change in eye width with respect to the zero/initial Jitter case.
PB EW / Delta (UI)	Displays the Phase B eye width and change in eye width with respect to the zero/initial Jitter case.
PC EW / Delta (UI)	Displays the Phase C eye width and change in eye width with respect to the zero/initial Jitter case.
PD EW / Delta (UI)	Displays the Phase D eye width and change in eye width with respect to the zero/initial Jitter case.
Min Limit (UI)	Displays the minimum limit of Delta UI as per specification.
Max Limit (UI)	Displays the maximum limit of Delta UI as per specification.
DCD (UI pp)	Displays the Duty Cycle Distortion.
RJ (UI rms)	Displays the random jitter.
Info	Displays the additional information.

3. Click ⋮ and select the sub-menu to customize the columns to display the respective results data, and click **Apply**.

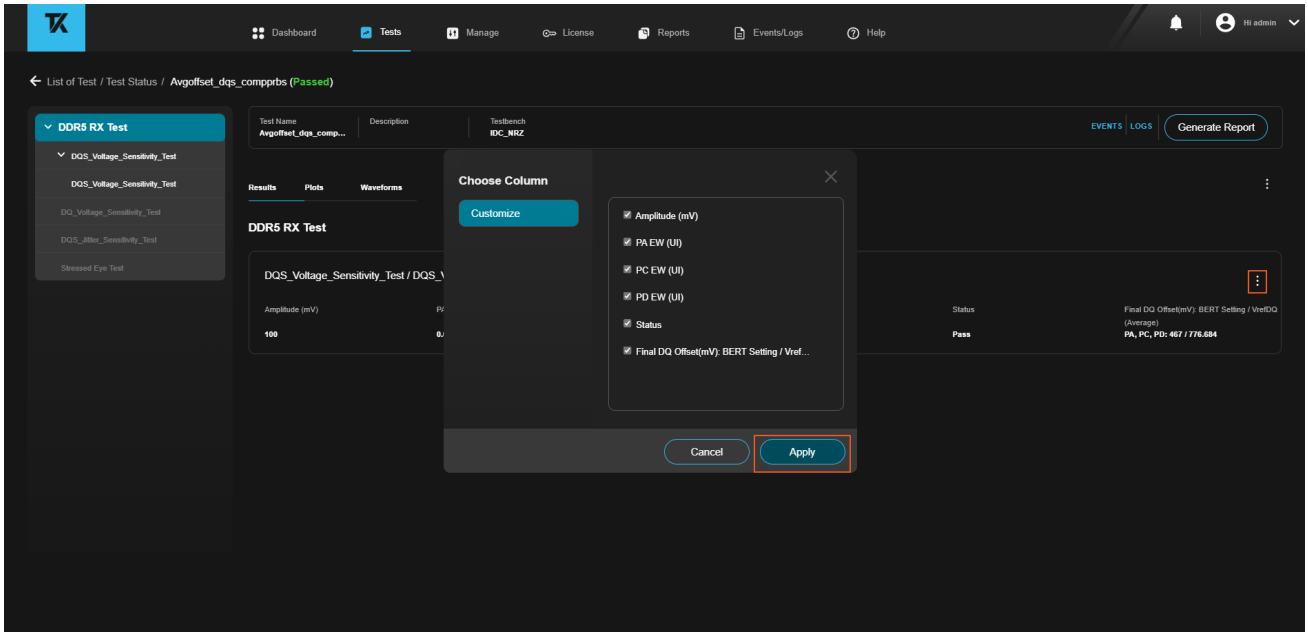


Figure 64: Customize test results columns

4. Click ⋮ and select **Download CSV Result** to download the test results.

Test plots

The **Plots** tab displays the plots of an executed test measurement.

Follow the steps to view the test plots:

1. Select the required measurement from the left side bar to view the plots. The top level selections displays all the plots whereas, the lower level displays results for only that particular parameter.
2. Click the **Plots** tab to view the Bathtub/Linear regression plots.

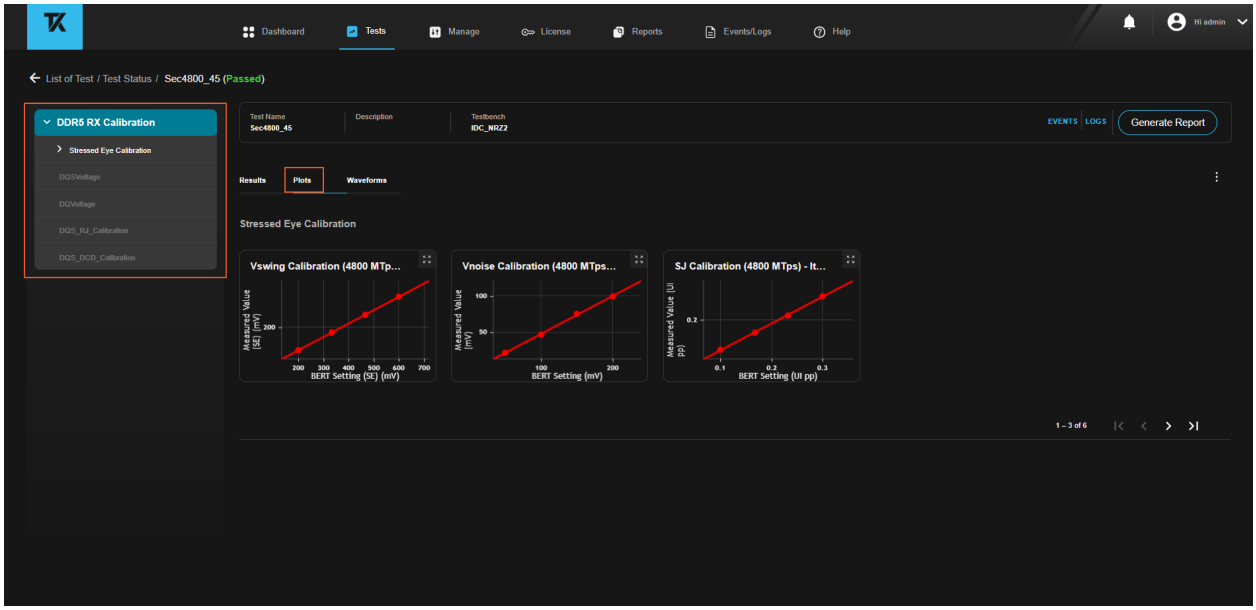


Figure 65: Test Plots: DDR5 Calibration

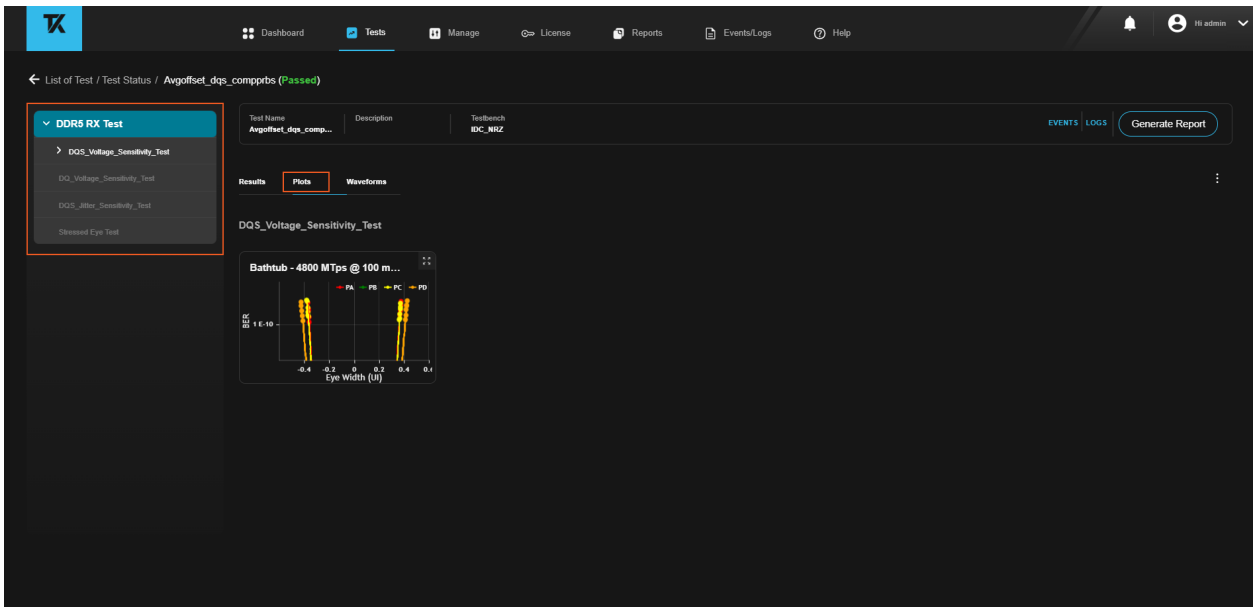


Figure 66: Test Plots: DDR5 Test

3. Click ⋮ and select **Download CSV Result** to download the test plots.

Filter tests

The filter by option under **Tests** tab allows the user to filter the test based on the criteria, such as: Status, Date Executed, and Applications.

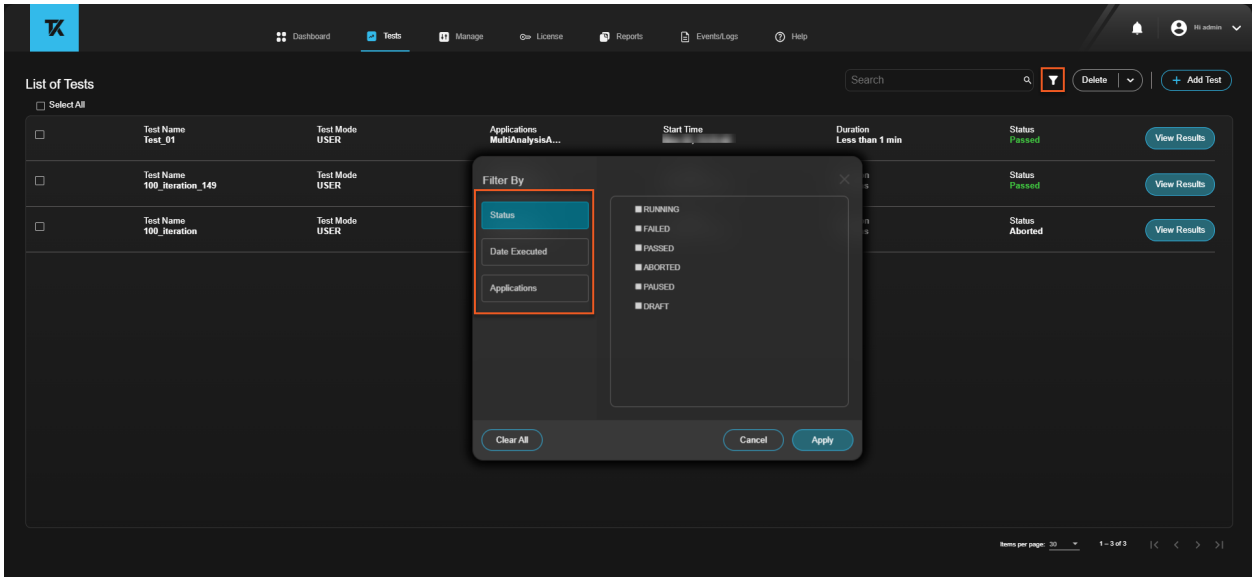


Figure 67: Filter test

Filter By	Description
Status	Displays the test status. • RUNNING • FAILED • PASSED • ABORTED • PAUSED • DRAFT
Date Executed	Select the **From** and **To** date to filter required tests.
Applications	Select the required applications to filter the test.
Clear All	Clear all the filters.
Apply	Applies the filter to a particular test.
Cancel	Click to cancel all the changes.

Manage: Test benches, sequence, and applications

The manage tab allows you to view the list of activated applications, create and configure test benches, and sequences. It also allows you to save the settings for further analysis.

Test Bench: Create and configure the test bench

A test bench is an environment that is used to verify the correctness of a test setup. The **Test Benches** tab allows you to create a test bench or edit an existing test bench for an application. You can also modify and delete the available test bench.

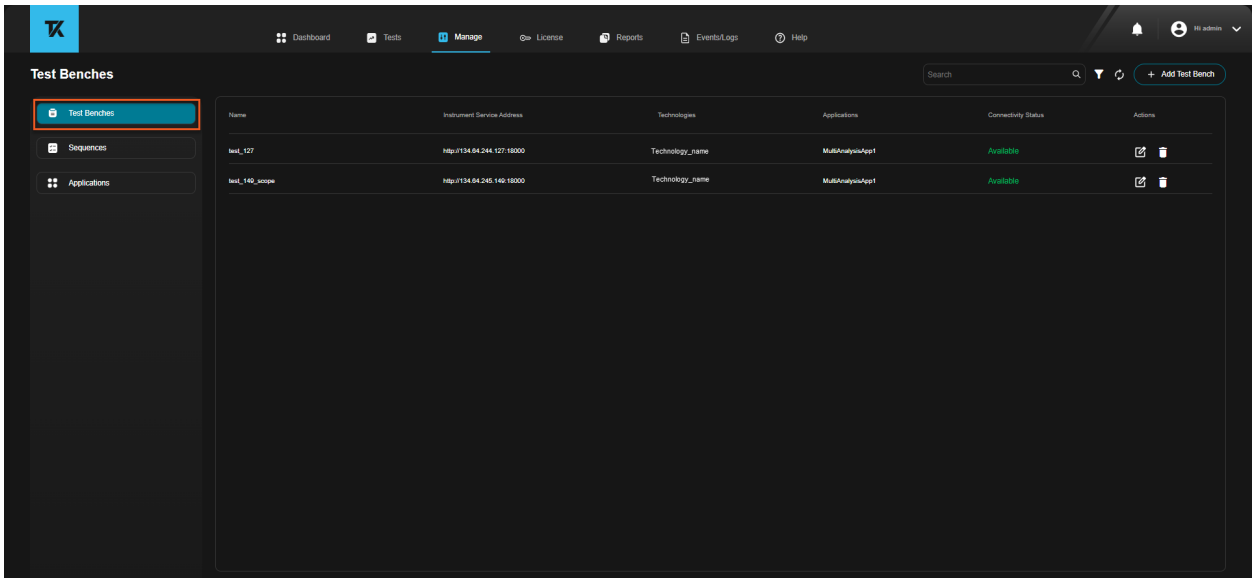


Figure 68: Manage test benches tab

Element	Description
Name	The test bench name.
Instrument Service Address	The instrument service URL. • `http://<<IP address of instrument service>>:18000`
Technologies	Active technology.
Applications	Active application.
Connectivity Status	Shows the testbench availability status. • Available • Unavailable • In Use
Actions	
Modify	Change or modify the existing test bench.
Delete	Delete the test bench.

Table continued…

Element	Description	
Filter By	Technologies	Filter by active technology.
	Applications	Filter by active application.
	Connectivity Status	Filter by active connectivity status. • Available • Unavailable • In use
	Acquisition Mode	Filter by active acquisition mode. • Live • Recorded
Refresh All	Click the **Refresh All** to refresh the testbench details.	

Create a test bench

Follow the steps to create a test bench:

1. Go to **Manage > Test Benches** and click **+ Add Test Bench**.

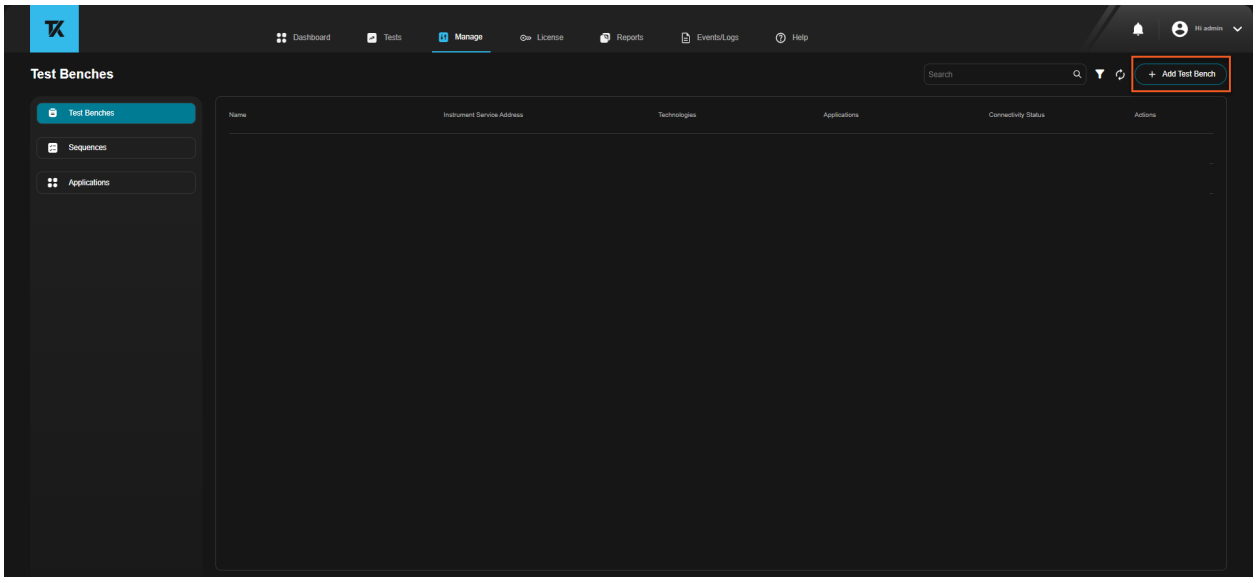


Figure 69: Create a test bench

2. Enter the test bench details in the respective fields.

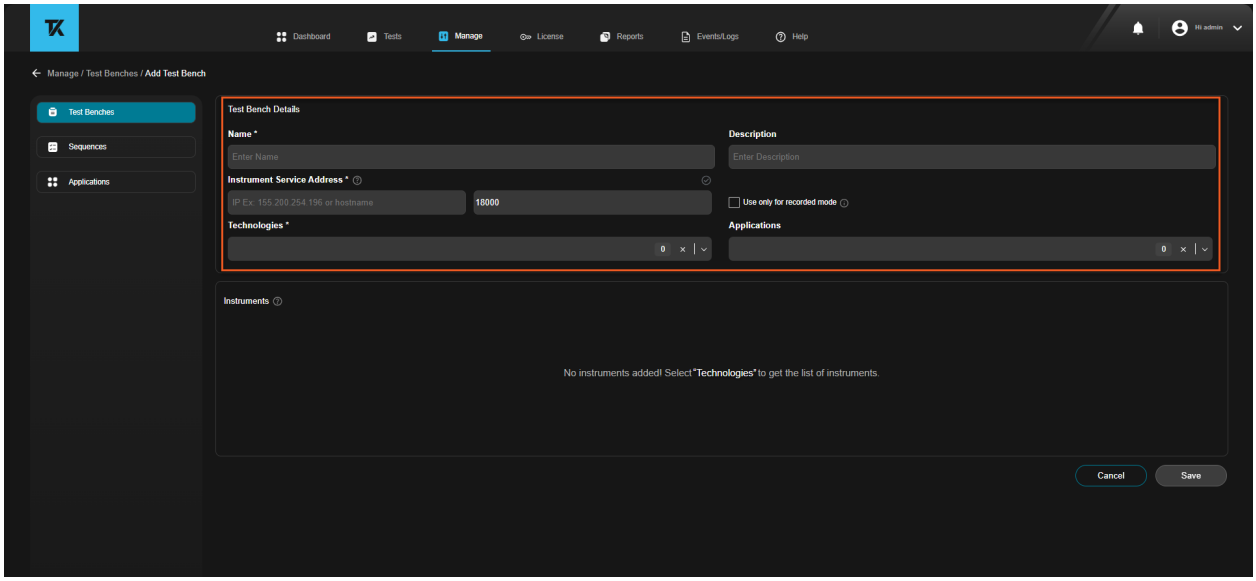


Figure 70: Test bench details

Menu	Description	
Test Bench Details		
Name	Enter the test bench name.	
Description	Enter the test bench description (Optional).	
Instrument Service Address	Enter the instrument service address (IP address/Host id) of the oscilloscope or target system.	
	Check connection	Enter the instrument address or host name. You can select the to check the status of the instrument. This will be green if the instrument is available and connected.
Use only for recorded mode	When this setting is selected, the system will automatically upload the recorded waveforms from the oscilloscope. **Note:** Recorded Mode is not applicable for RX applications.	
Technologies	Select the technology. The test bench will be created for the selected technologies. • RX DDR	
Applications	Select the application. The test bench will be created for the selected applications (Optional). • DDR5 RX Calibration • DDR5 RX Test	

3. Select the instruments detail.

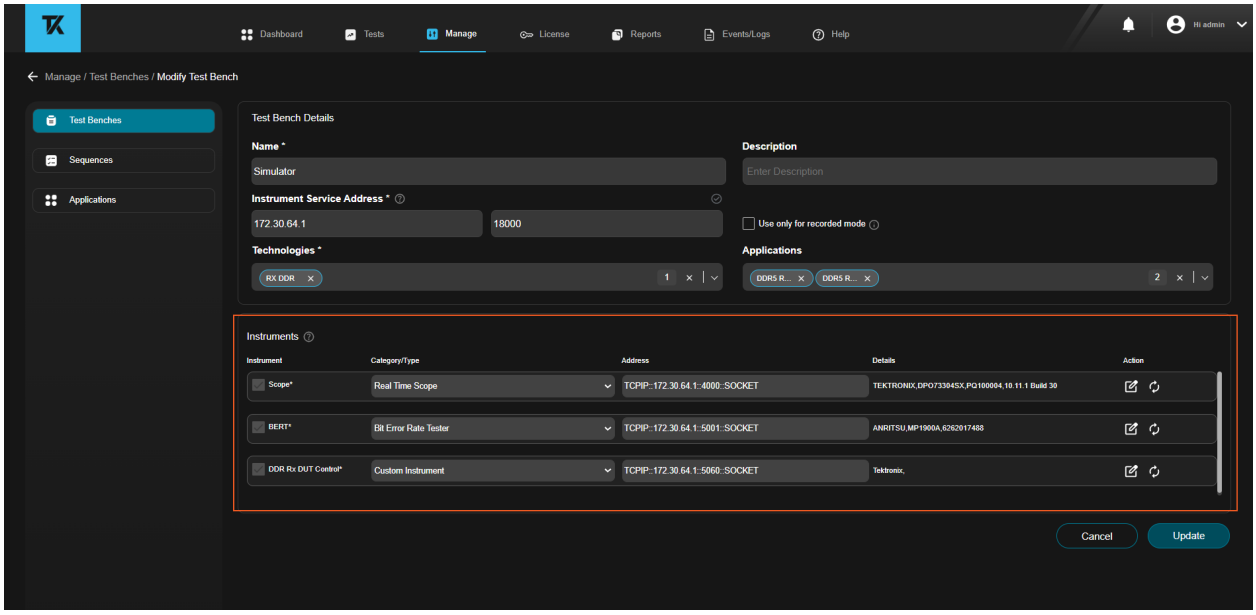


Figure 71: Instrument details

Menu	Description
Instruments	Select the required **Instrument** to create a new test bench. • Scope • BERT • DDR Rx DUT Control
Category/Type	Select the required instrument category or type with respective to the instrument selected. When instrument selected as **Scope** • Real Time Scope When instrument selected as **BERT** • Bit Error Rate Tester When instrument selected as **DDR Rx DUT Control** • Custom Instrument
Address	Enter the VISA resource address from the instrument service manager of the oscilloscope. Example: • For Scope: TCPIP::134.64.246.84::4000::SOCKET • For BERT: TCPIP::134.64.246.174::5001::SOCKET • For DUT Control: TCPIP::134.64.246.84::5060::SOCKET **Note:** • The scope addresses must be captured from TekVisa Instrument manager. • IP address in DUT Control must be of the machine where instrument service is running.

Table continued…

Menu	Description
Details	Click the from the action panel after entering Address. It will displays the scope and properties details retrieving from the oscilloscope.
Action	Allows user to edit and refresh the instrument properties that are added. **Note:** To edit the instrument properties, first you need to add address and select refresh icon.
Scope/BERT/DDR Rx DUT Control Details	
Address	Enter the IP address of the instrument in the field. • TCPIP::134.64.246.84::4000::SOCKET
Properties	
Refresh	Click the properties refresh to auto-populate the instrument details.
Manufacturer	Displays the instrument manufacturer details in the field. By default, the manufacturer will be added as **TEKTRONIX**.
Serial Number	Displays the serial number of the instrument in the field.
Model	Displays the model in the field.
Firmware Version	Displays the firmware version of the instrument in the field.

4. Click **Save** to save the test bench.

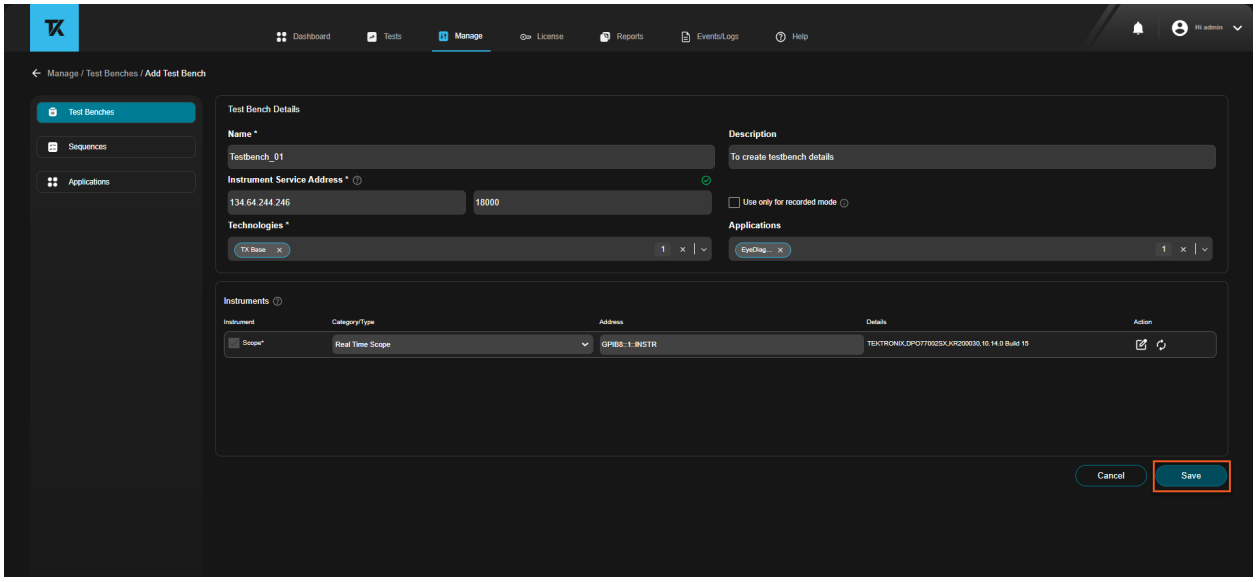


Figure 72: Save test bench details

5. You can view the saved test bench in the **Test Benches** tab. You can also edit or delete the existing test bench.

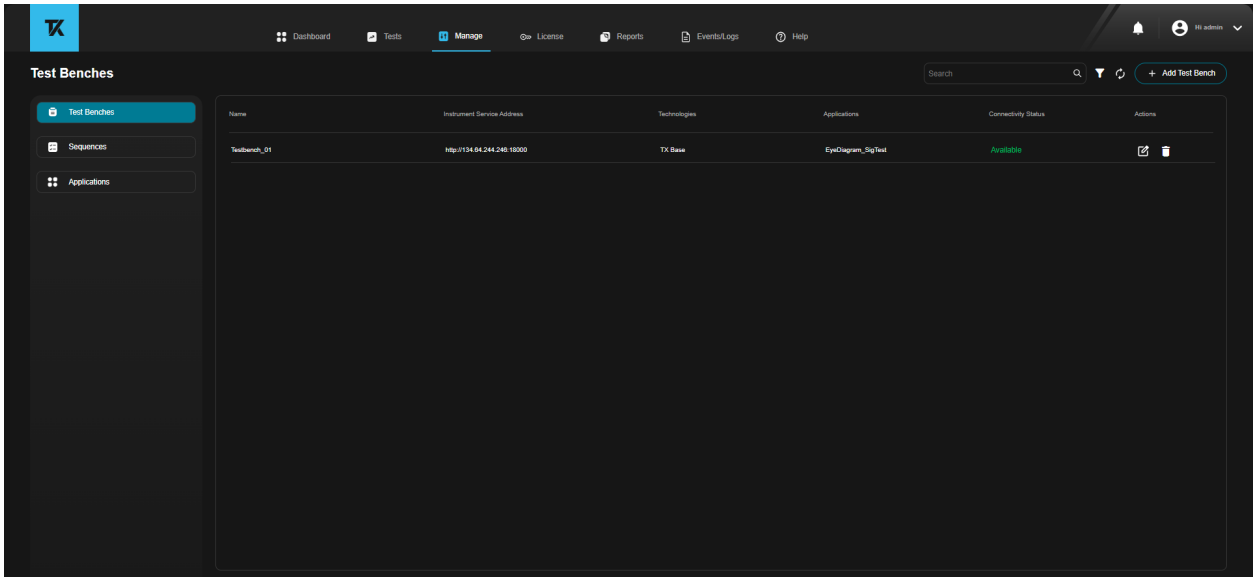


Figure 73: View test bench details

Create test bench for Rx calibration and test

1. In the **Test Bench** tab, click **Add Test Bench** and enter the test bench details in the respective fields. Refer *Create a new test bench*.
2. The instrument details will be displayed once the technology and its respective applications are selected.
3. *Create test bench for calibration*
4. *Create test bench for test in the oscilloscope*

Create test bench for Rx calibration

For DDR Rx calibration, Scope and BERT instruments are required.

1. Enter the **Catagory/Type** and **VISA** resource address in the respective fields for each instrument.

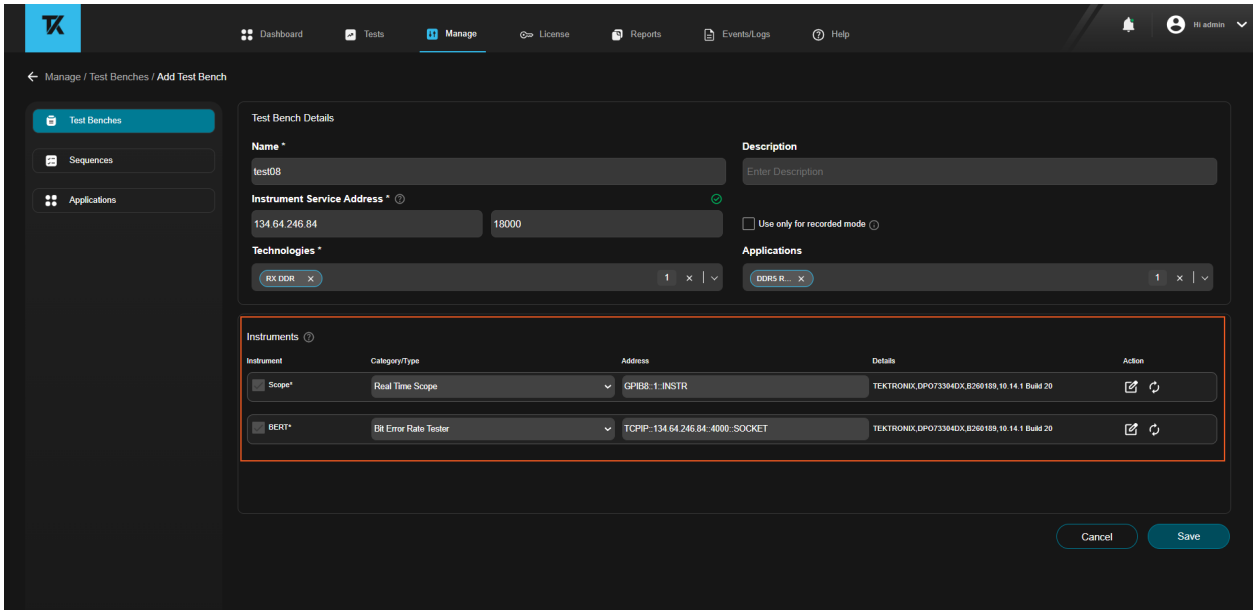


Figure 74: Instrumetnt details

2. Click to display the instrument details in the edit properties.
3. Click to view and update the details.

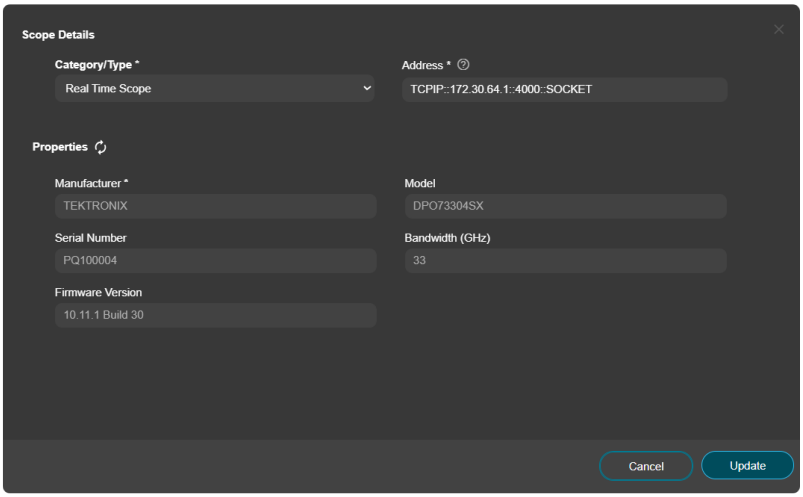


Figure 75: Scope edit properties details

4. Click **Save** to save the test bench.

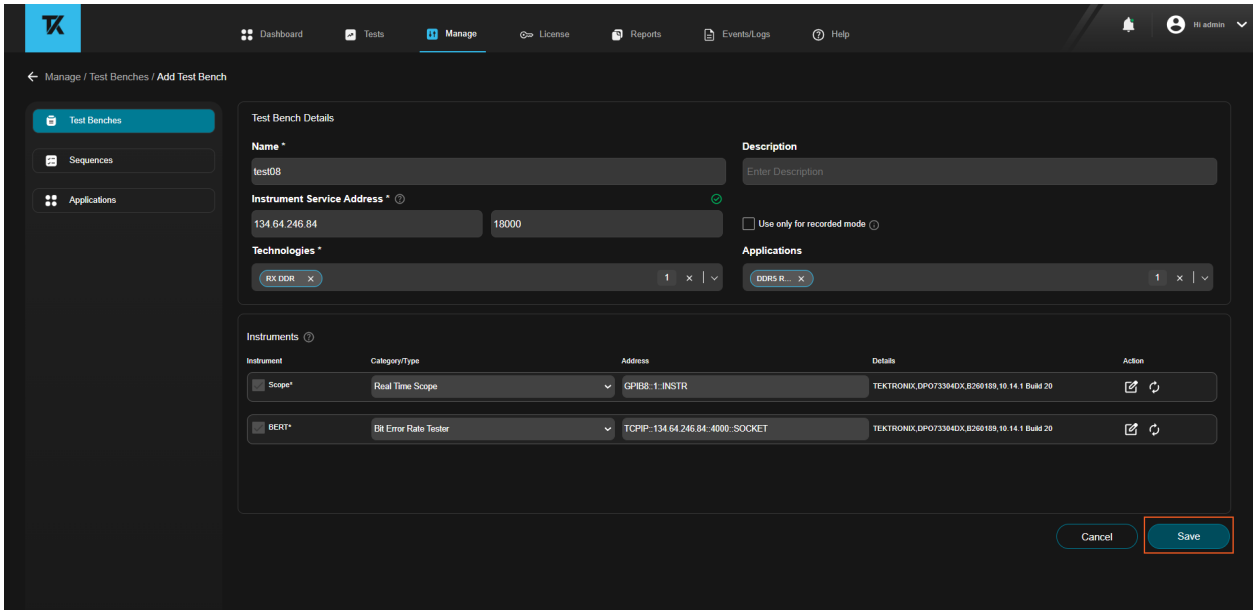


Figure 76: Save calibration testbench details

Create test bench for Rx test

For DDR Rx test, BERT, and DDR Rx DUT Control instruments are required.

Pre-requisites: The instrument service, instrument service plugins, Astek controller, and Clarius SDK must have installed and should run either in the oscilloscope or in the computer.

- **Create a test bench to run DDR Rx DUT Control in the oscilloscope/computer**

  For DDR Rx test, BERT and DDR Rx DUT Control instruments are required.

  1. Enter the **Catagory/Type** and **VISA** resource address in the respective fields of each instrument.

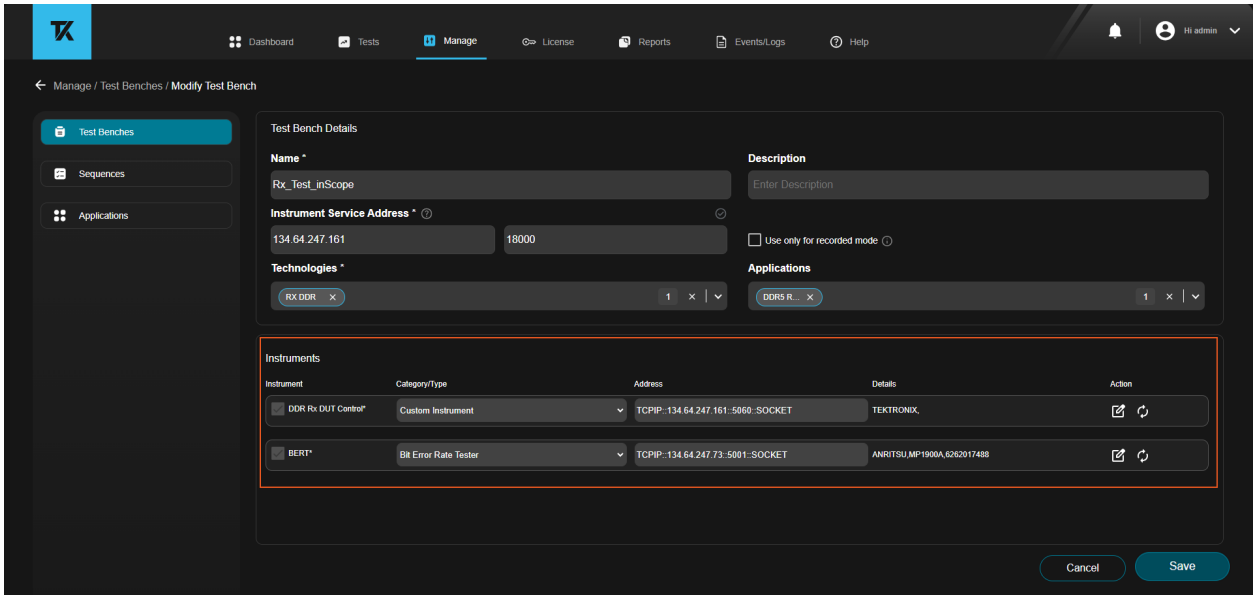


Figure 77: Instrumetnt details of Bert and DDR Rx DUT Control

  2. Click **Refresh** to display the instrument details in the edit properties.

3. Click **Edit Properties** to view the details.

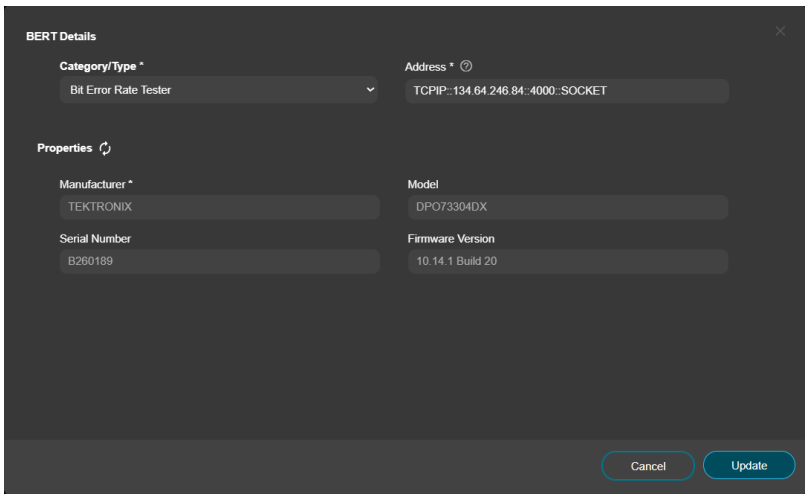


Figure 78: BERT edit properties details

4. Click **Save** to save the test bench.

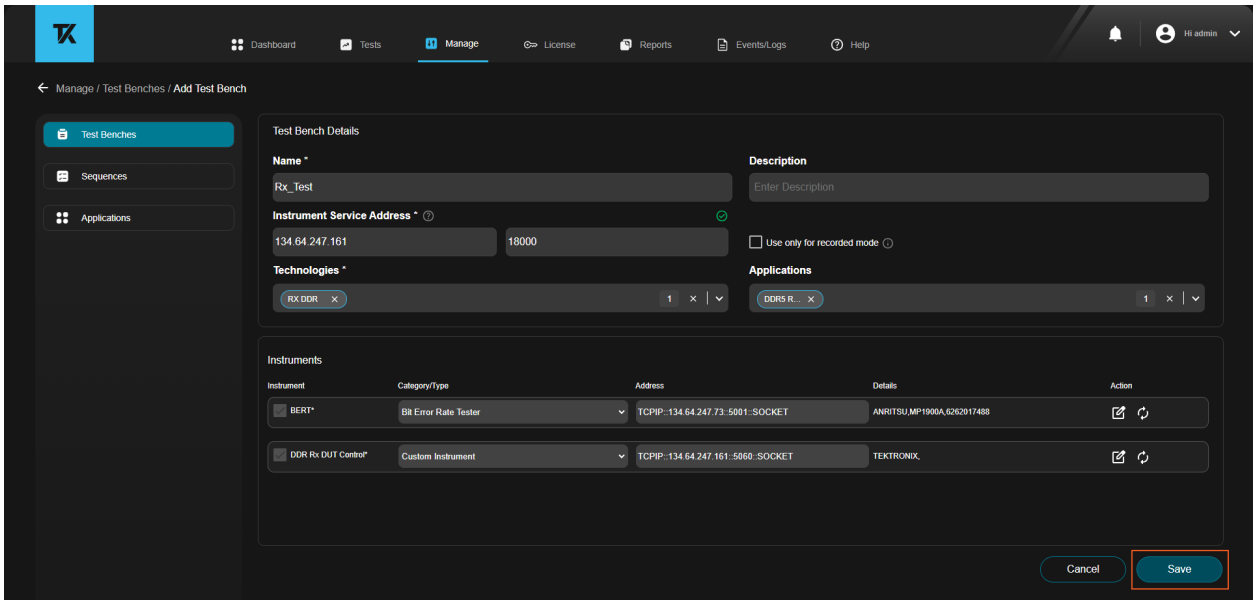


Figure 79: Save test bench for Test

Sequences

The **Sequences** tab displays the list of created sequences along with the application names. This acts as a test template and can be imported while creating a test. You can also modify or delete the existing sequences.

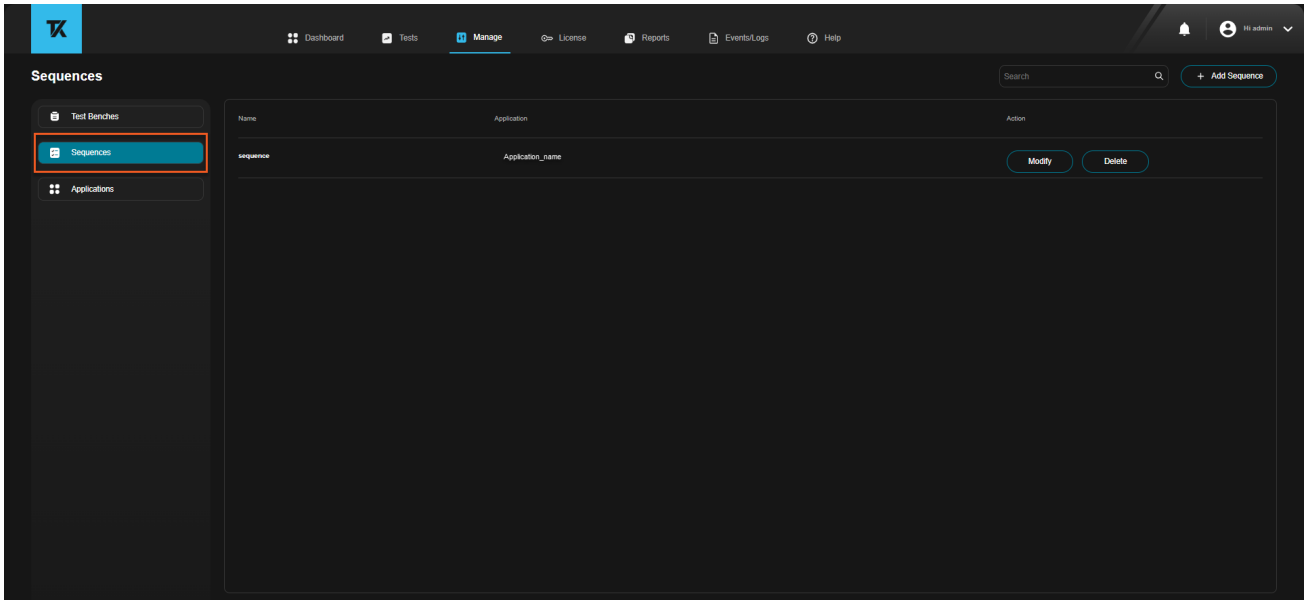


Figure 80: Sequences tab

Add new sequence

Follow the steps to create a sequence:

1. Go to **Manage > Sequences** and click **New Sequence**.

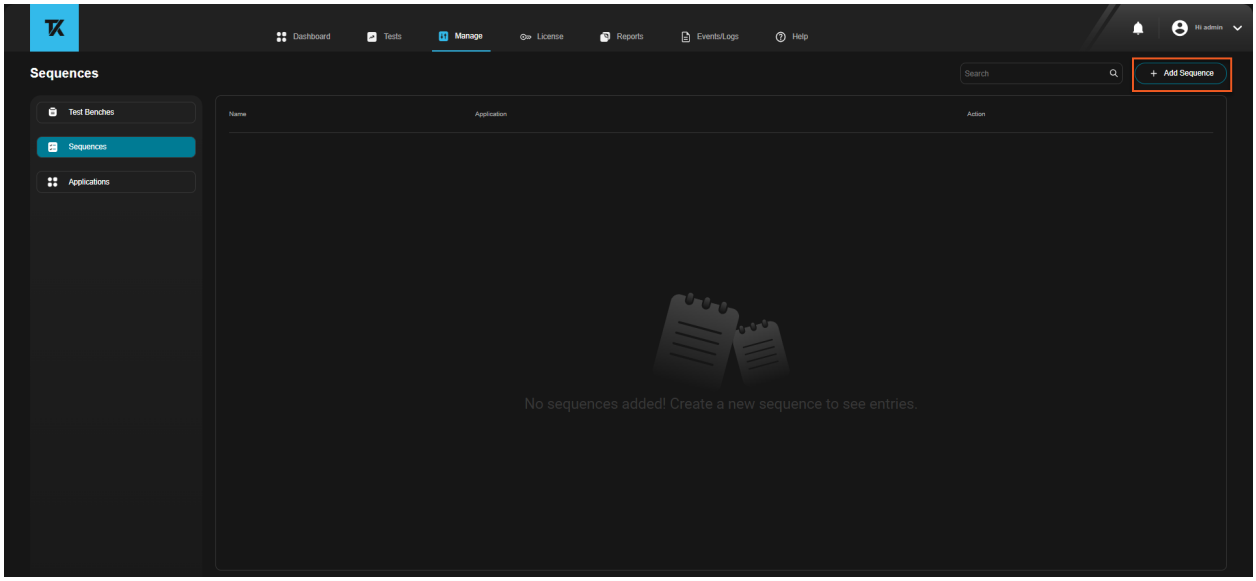


Figure 81: Add new sequence details

2. Enter **Sequence Details** in the respective fields; select the **Technology** and **Application** from prepare sequence pane and click **Add Sequence**.

Sequence Details	Description
Name	Enter the name of the sequence.
Description	Enter the description of the sequence.

Table continued…

Sequence Details	Description
Prepare Sequence	Click **+ Add Sequence** to add a test sequence. Refer *Create and Prepare a Sequence* for more information.

3. Check and update the global settings for the respective fields and click **Apply**.
4. Configure the scenarios and measurements, and click **Apply**.
5. You can view the saved sequence in the **Sequences** tab. You can also modify or delete the existing sequence.
6. Click **Save**.

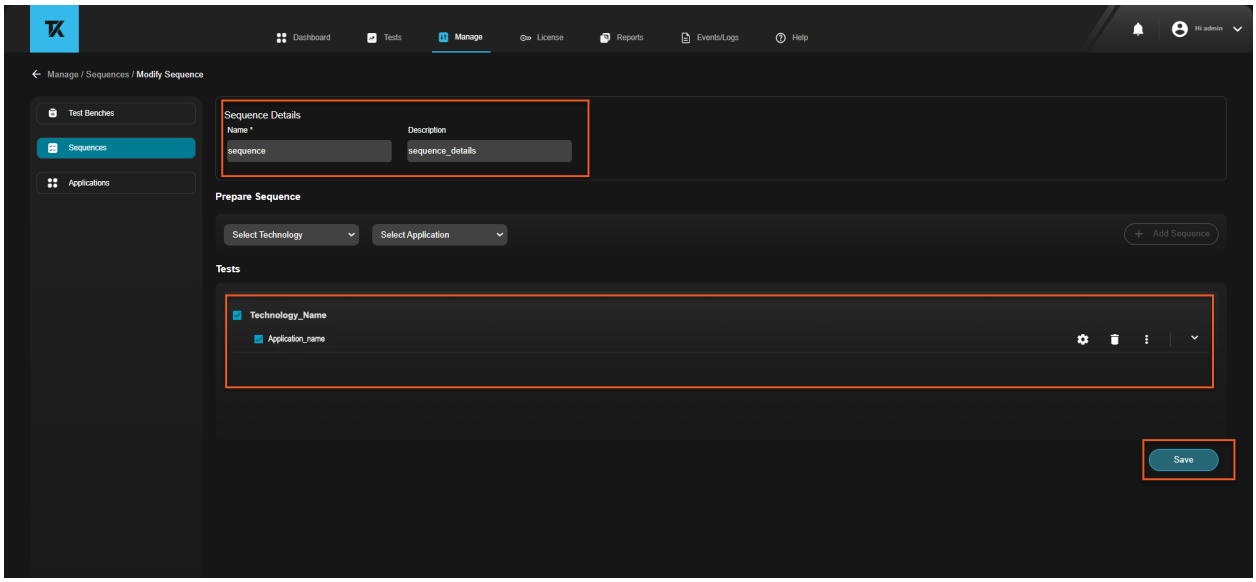


Figure 82: Save sequence details

7. You can view the saved sequence details. You can modify or delete the existing sequence.

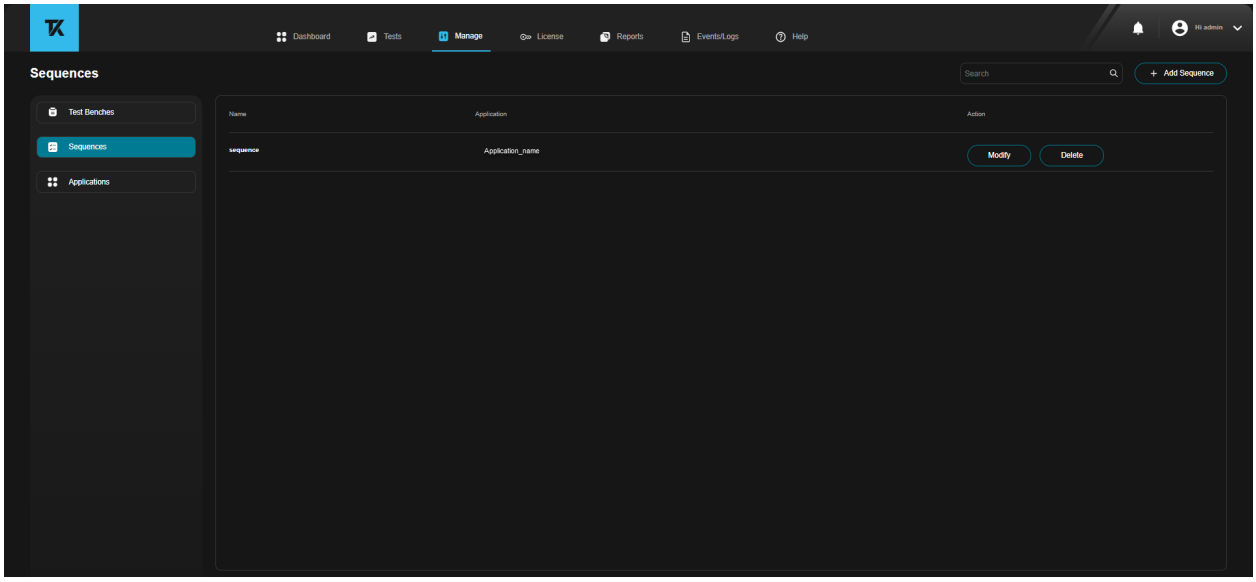


Figure 83: Sequence details

Applications

The **Applications** tab displays the list of activated applications with its name, type, sub-type, and version. You can also filter the applications by selecting the filter options.

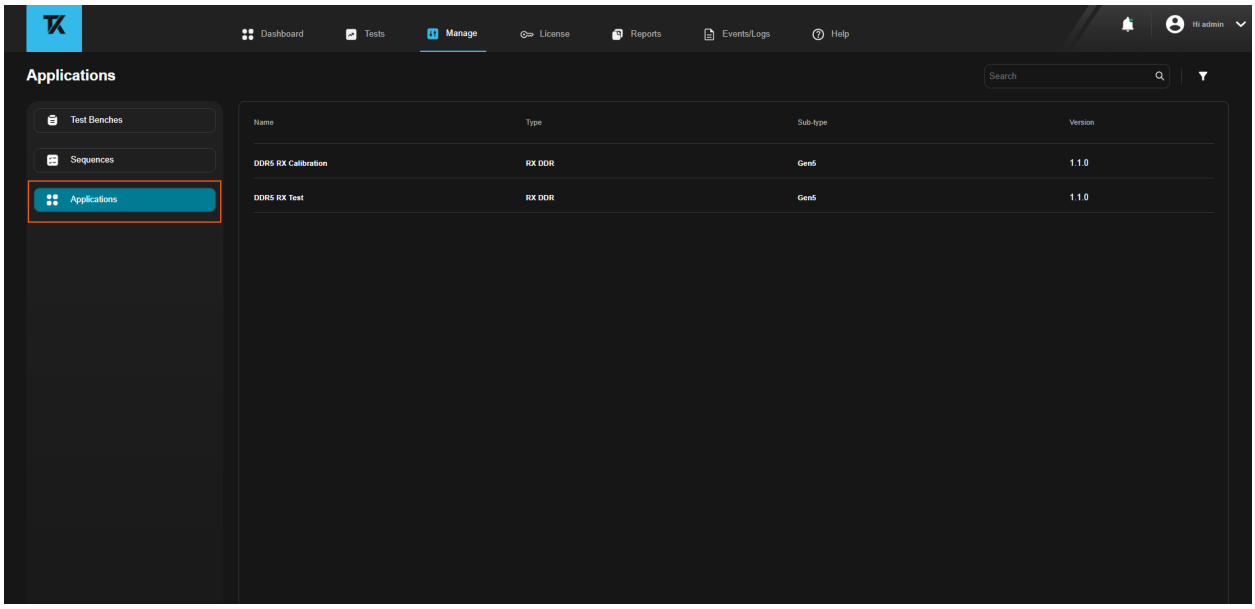


Figure 84: Manage application tab

Reports: View, generate, and export report of a test

The **Reports** tab allows you to generate a report, view the report, and export a detailed test report for all the executed tests. It also allows you to search for a specific report using the search bar.

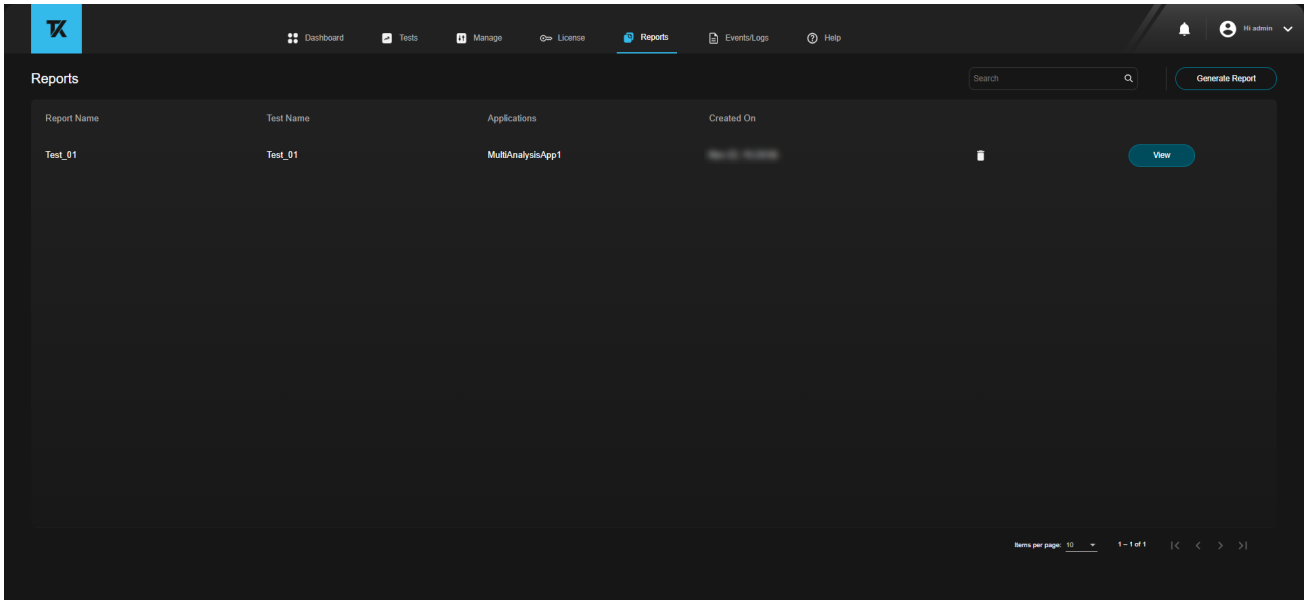


Figure 85: Reports tab

Element	Description
Report Name	Displays the report name.
Test Name	Displays the test name.
Applications	Displays the application name.
Created On	Displays the date and time by when the report is created.
Delete	Click the icon to delete the report.
View	Click to view the report.
Generate Report	You can generate the report of an executed test. Refer *Generate Report* for more information.

Generate report

The **Generate Report** allows you to generate a report of an executed test.

Generate report of a particular test

Follow the steps to generate a report of a particular test:

1. Go to **Tests** tab and click **View Results** of a particular test.

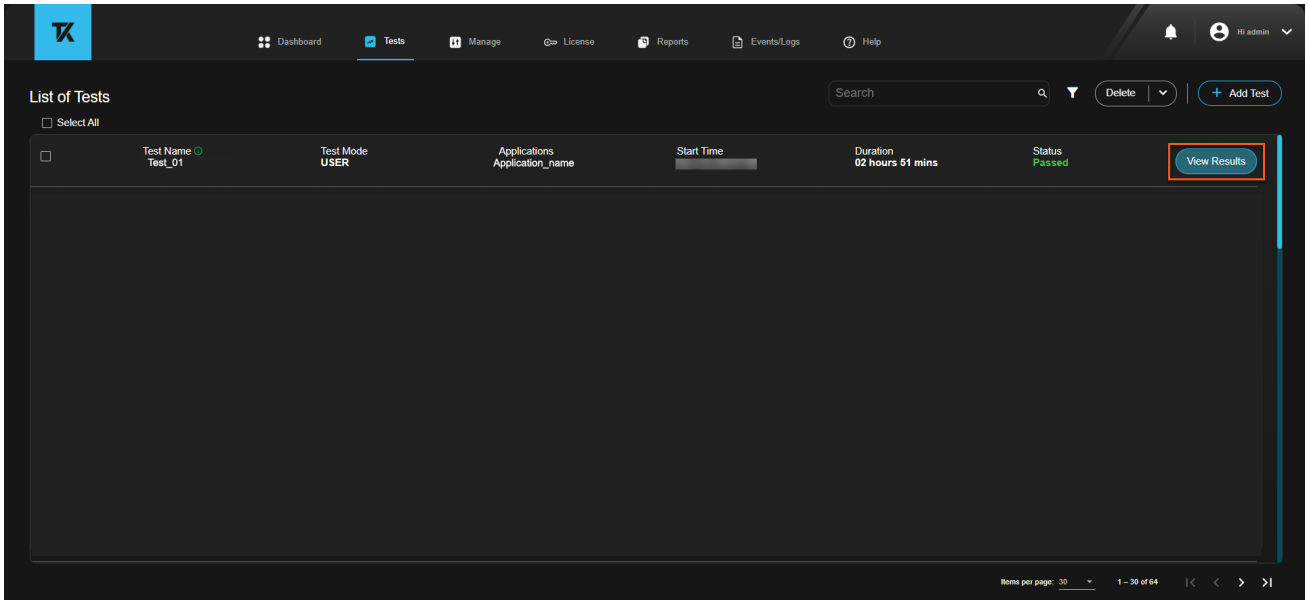


Figure 86: Tests tab: View results

2. Click **Generate Report**.

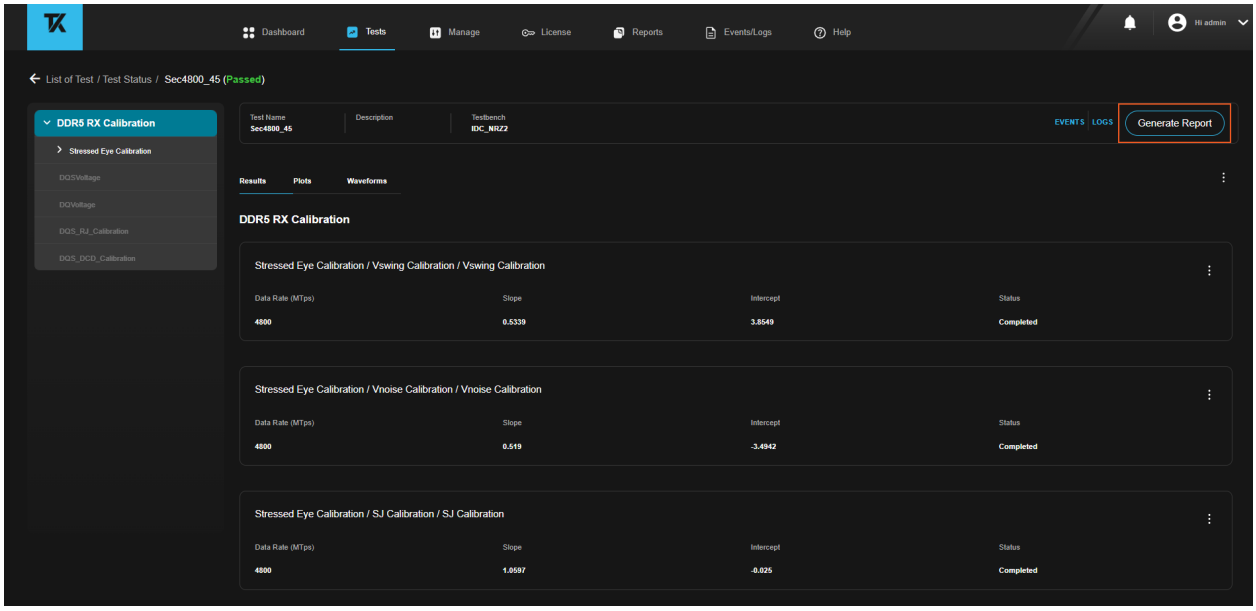


Figure 87: Generate report of a particular test

3. Select the report template from the drop-down.

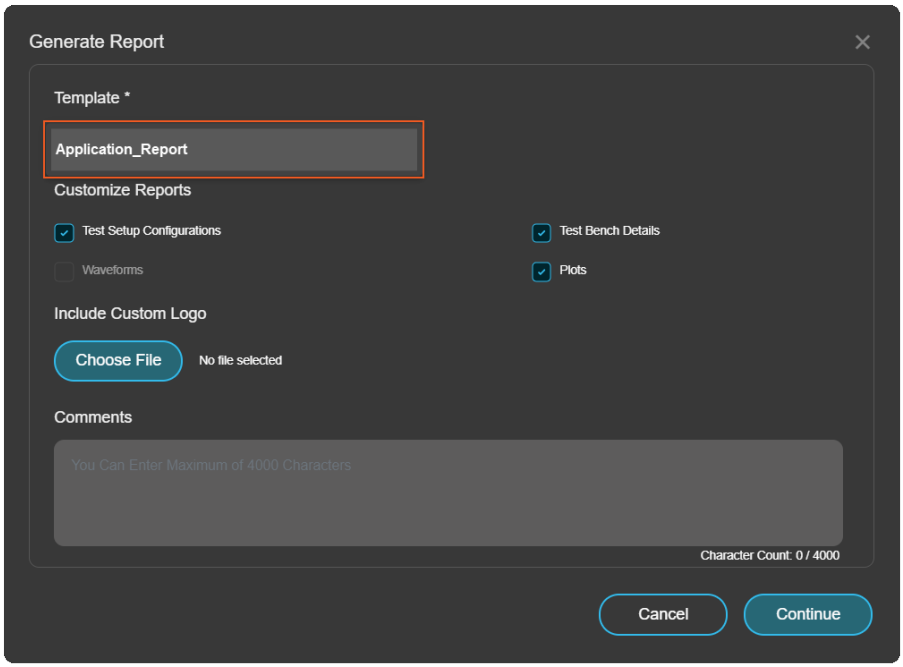


Figure 88: Generate report: Select template

4. Check the options to customize the reports.

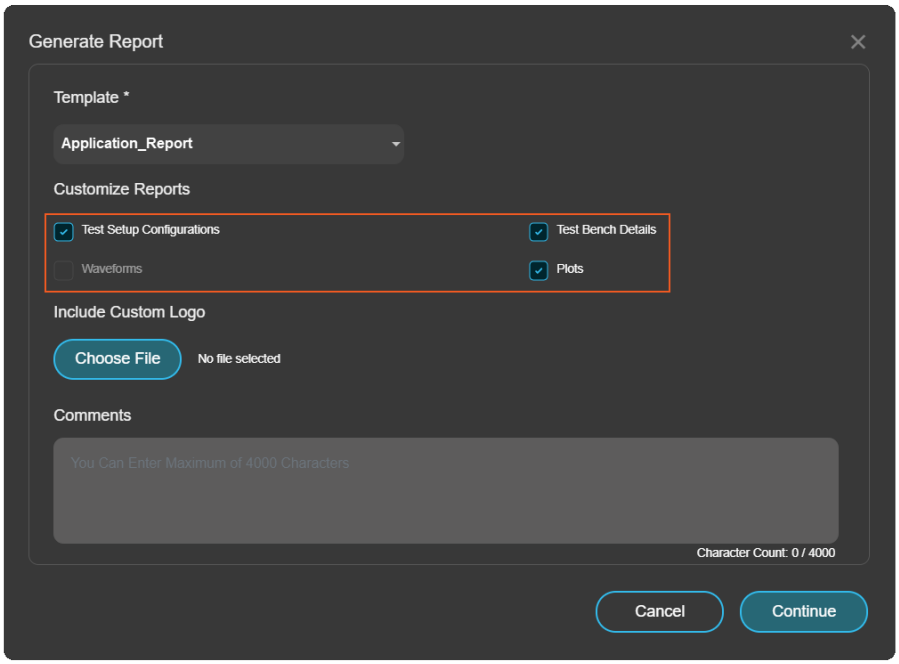


Figure 89: Generate report: Customize report

5. Click **Choose File** and browse to add a custom logo to get printed in the test report.

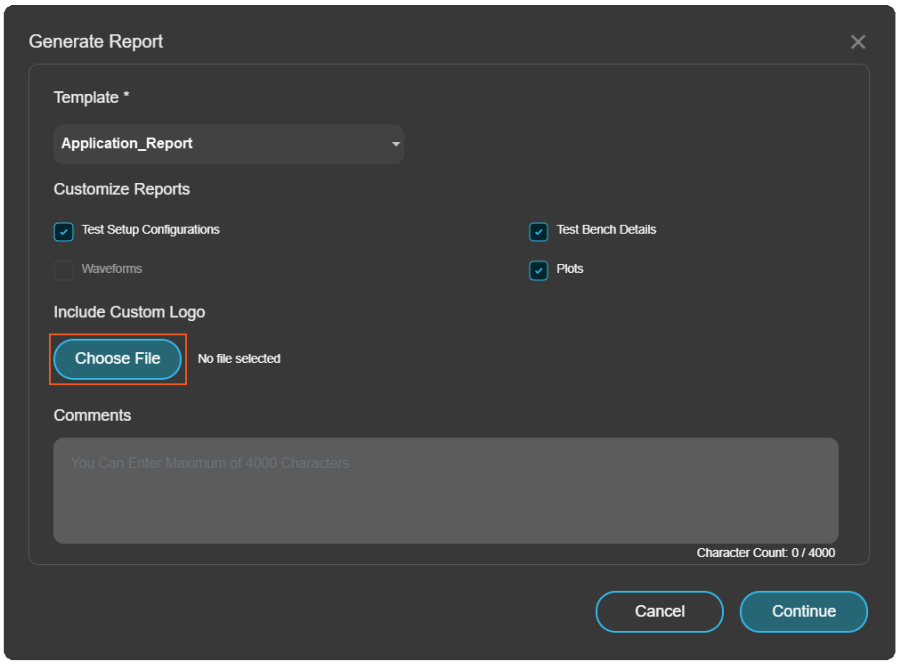


Figure 90: Generate report: Include custom logo

6. Enter additional comments in the field if required and click **Continue**.

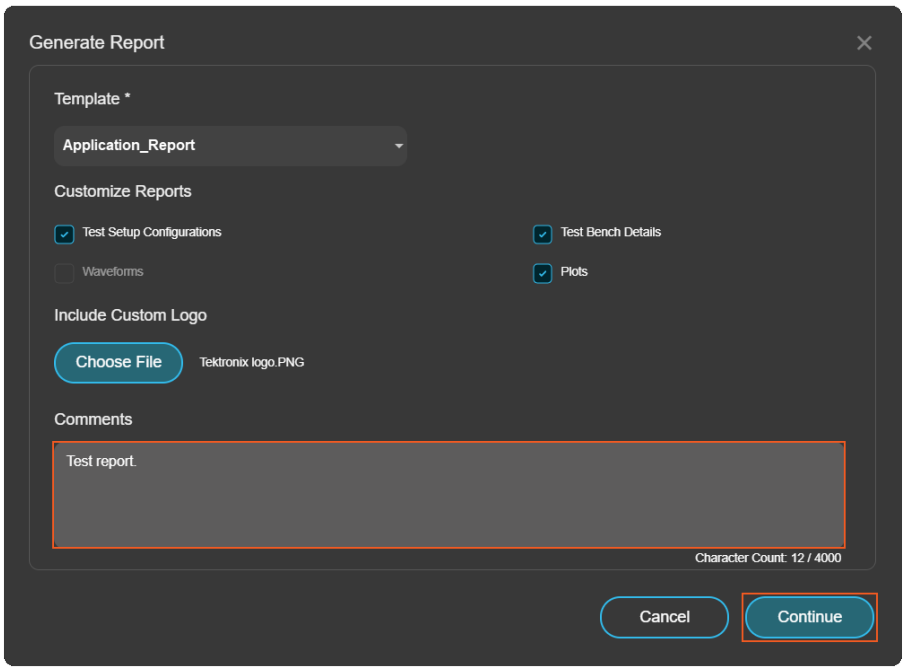


Figure 91: Generate report: Add additional comments in the field

Generate report for a group of test

Follow the steps to generate a report for a group of test:

1. Go to **Reports** tab and click **Generate Report**.

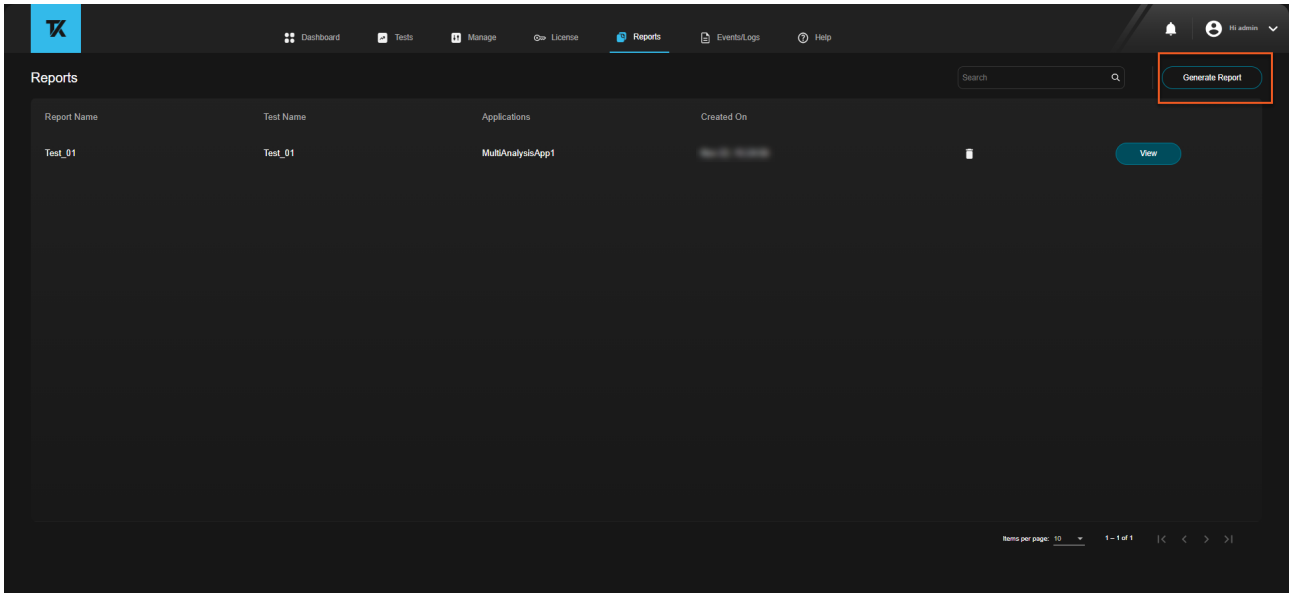


Figure 92: Generate report for a group of test

2. Enter the **Report Name** and click **Select Tests**.

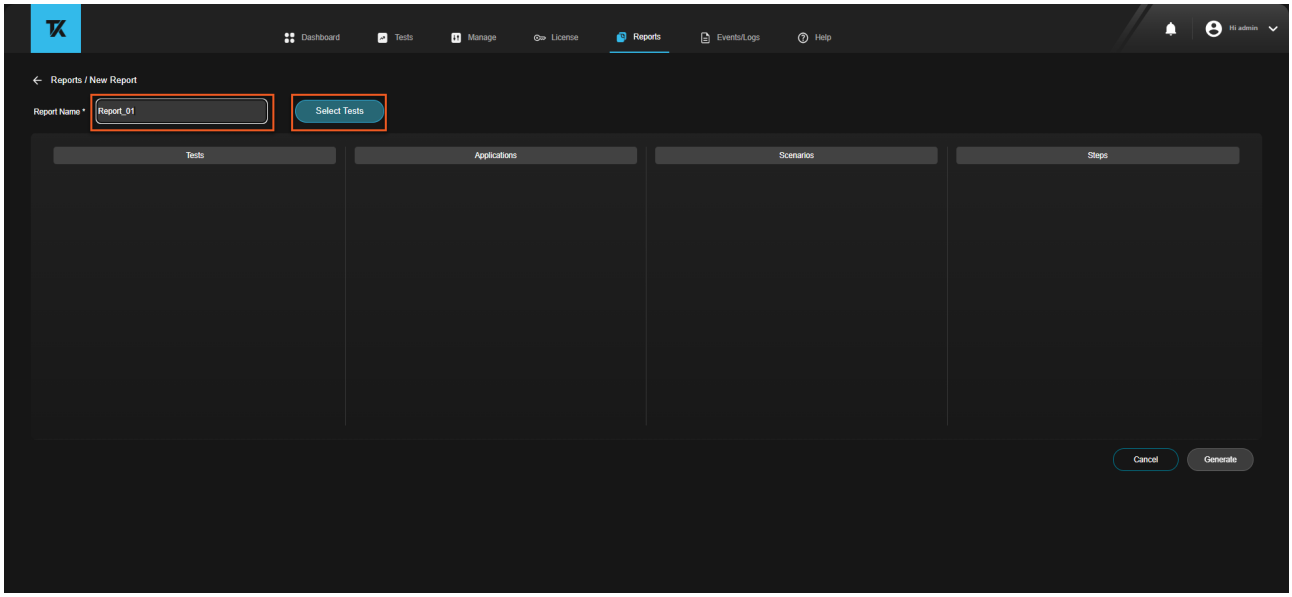


Figure 93: Reports tab: Select tests

3. Select the list of tests that needs to be generated and click **Continue**.

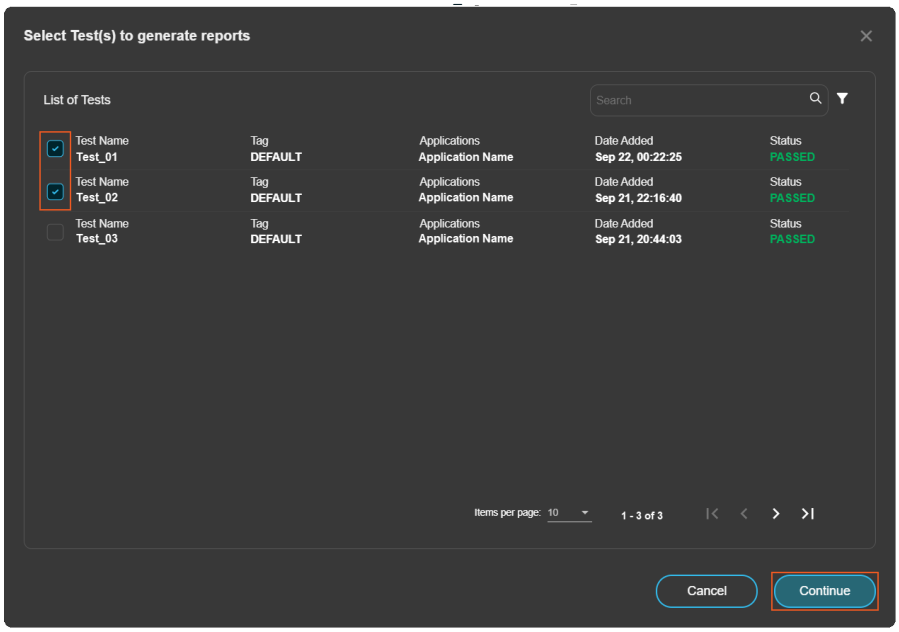


Figure 94: Select list of tests

4. Select the **Tests** and **Applications** from the sub menu.

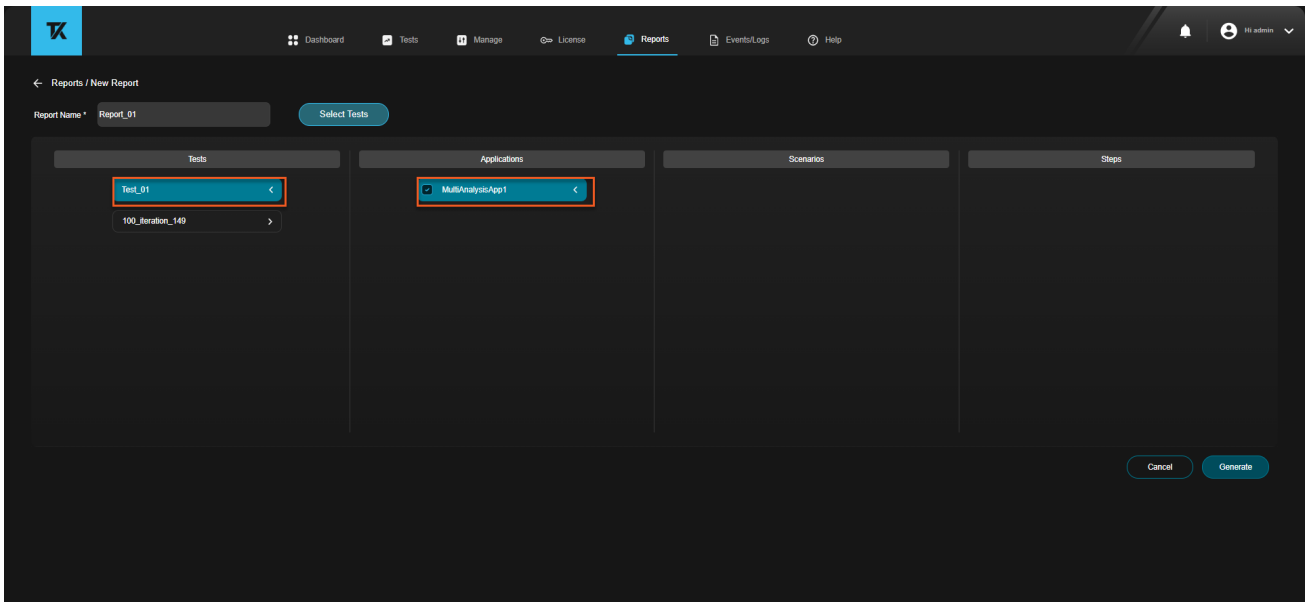


Figure 95: Reports: Select tests and applications

5. Click **Generate**. A dialog window appears to customize the report.

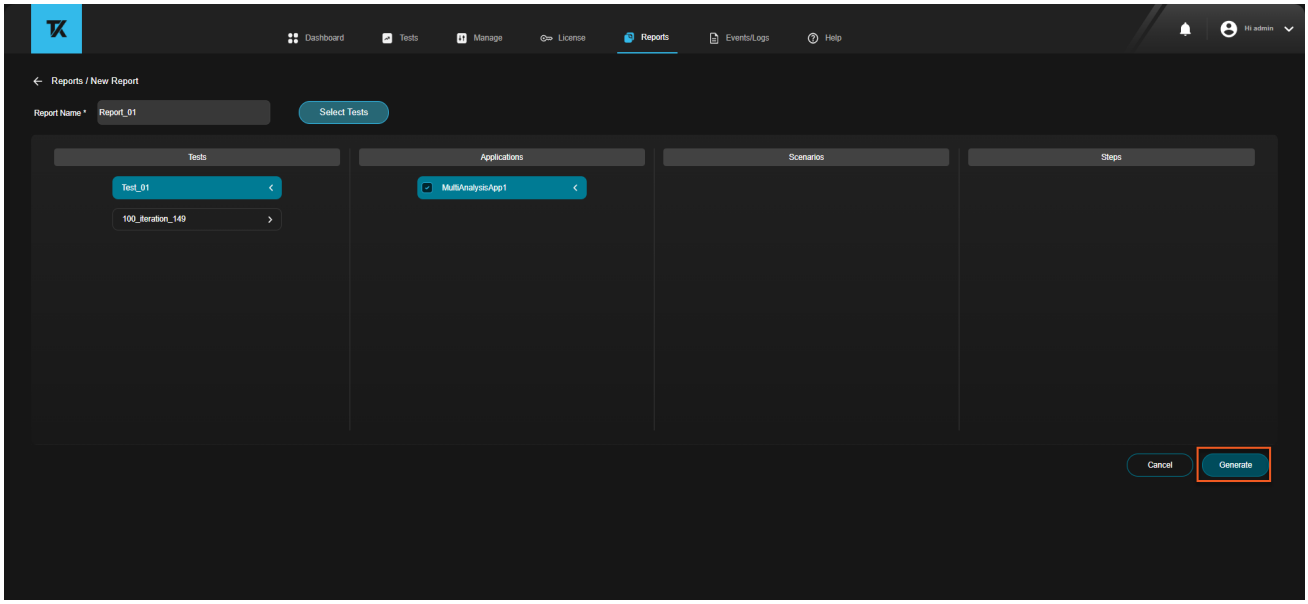


Figure 96: Reports: Generate the report

6. Select the report template from the drop-down.

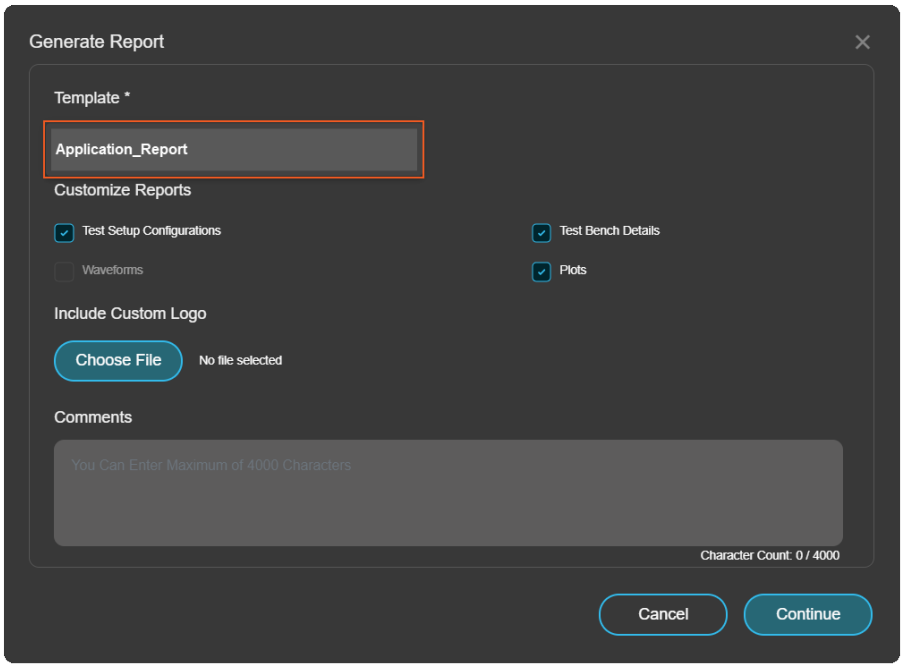


Figure 97: Generate report: Select template

7. Check the options to customize the reports.

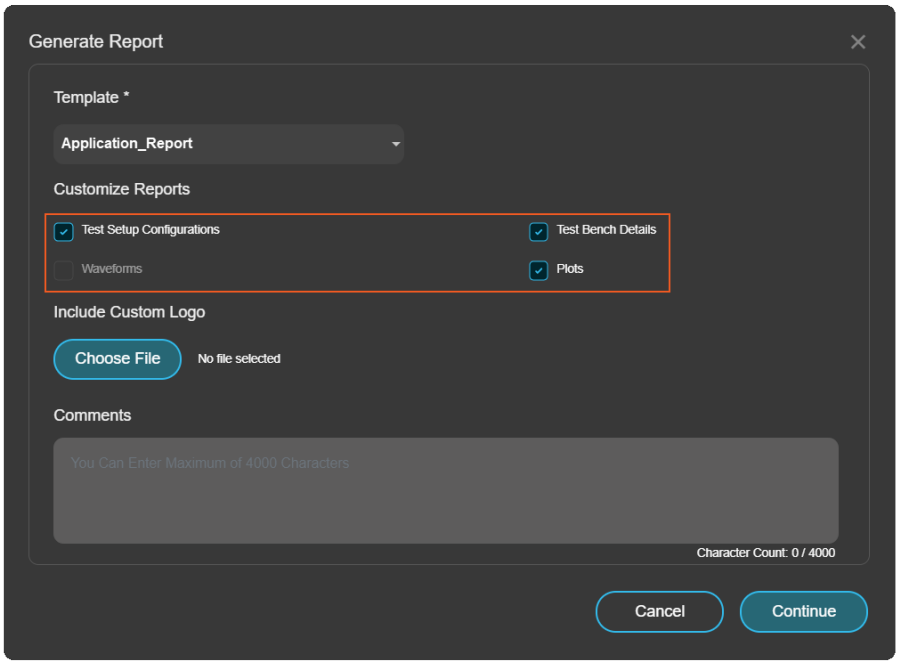


Figure 98: Generate report: Customize report

8. Click **Choose File** and browse to add a custom logo to get printed in the report.

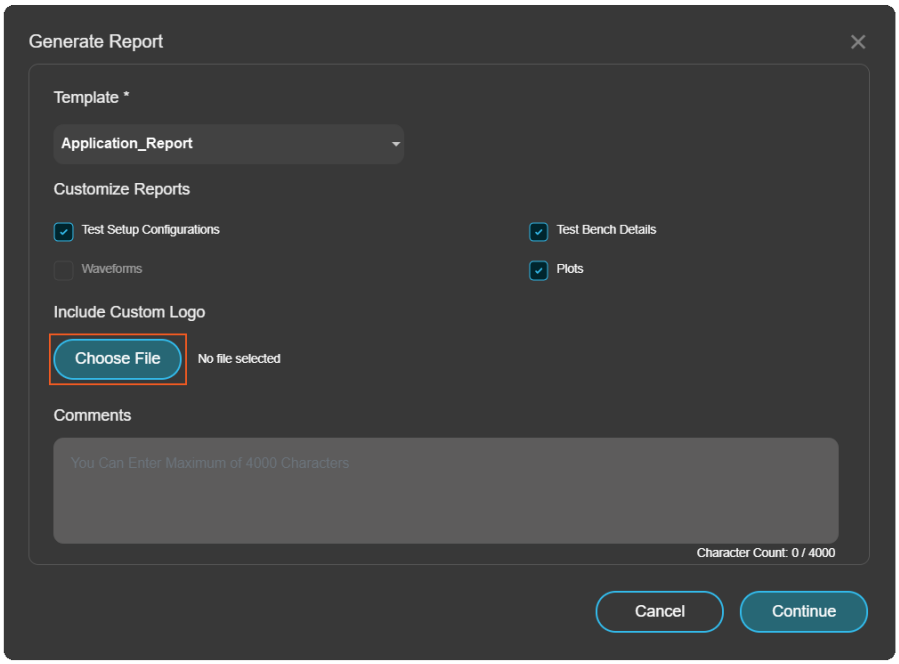


Figure 99: Generate report: Include custom logo

9. Enter additional comments in the field if required and click **Continue**.

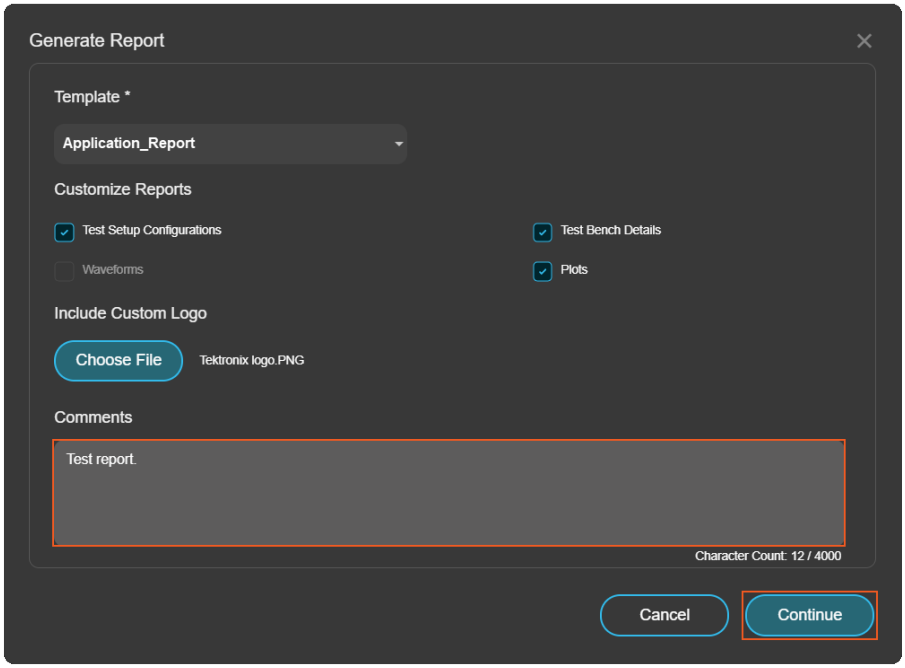


Figure 100: Generate report: Add additional comments in the field

View and export a report

Pre-requisites: Make sure the report is generated after successful execution of a test.

Follow the steps to view and export the generated report:

1. Go to **Reports** tab and click **View** of a particular report.

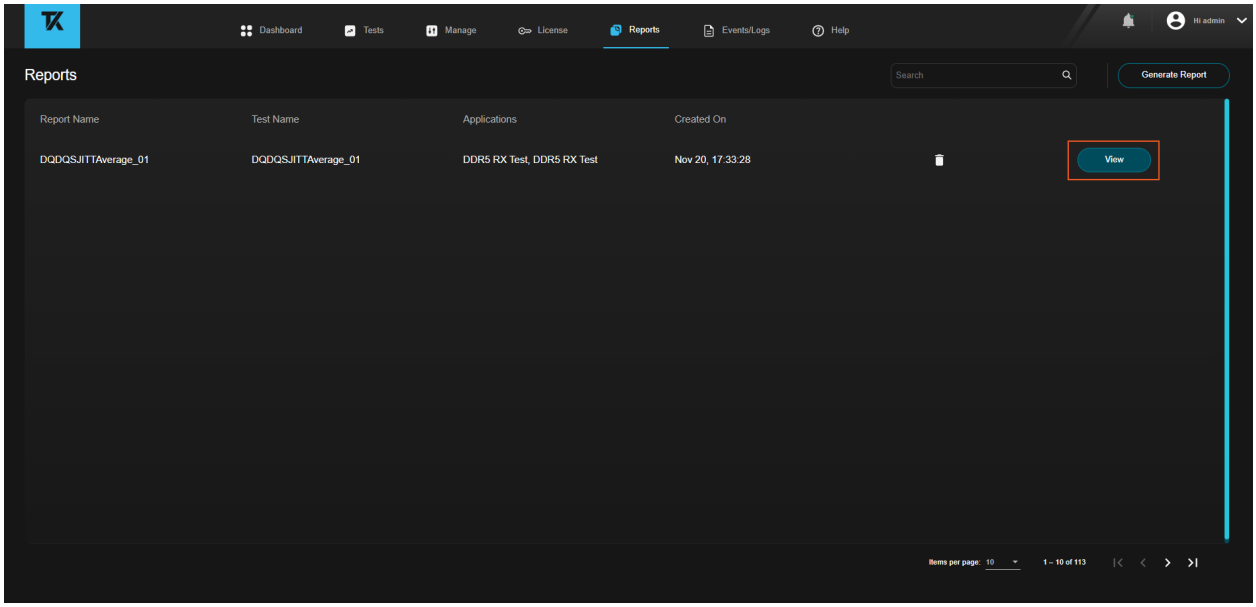


Figure 102: Reports tab: View

2. Enter the title and select the format (PDF) of the report. By default the title will be displayed as the test name.

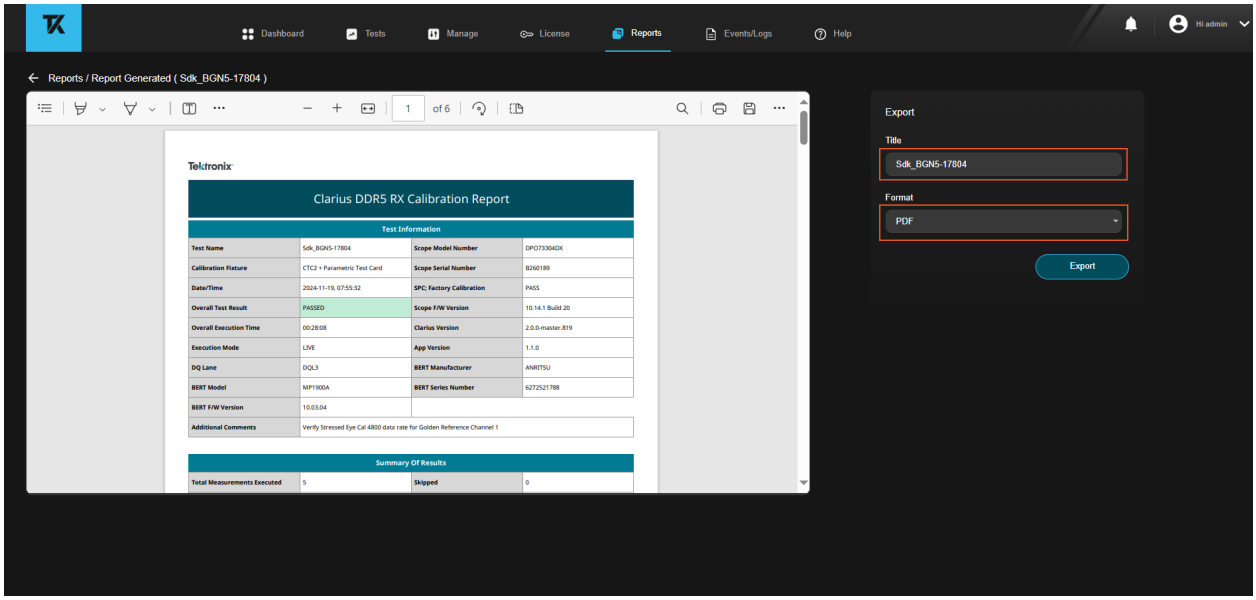


Figure 103: Reports tab: Enter title and format

3. Click **Export**.

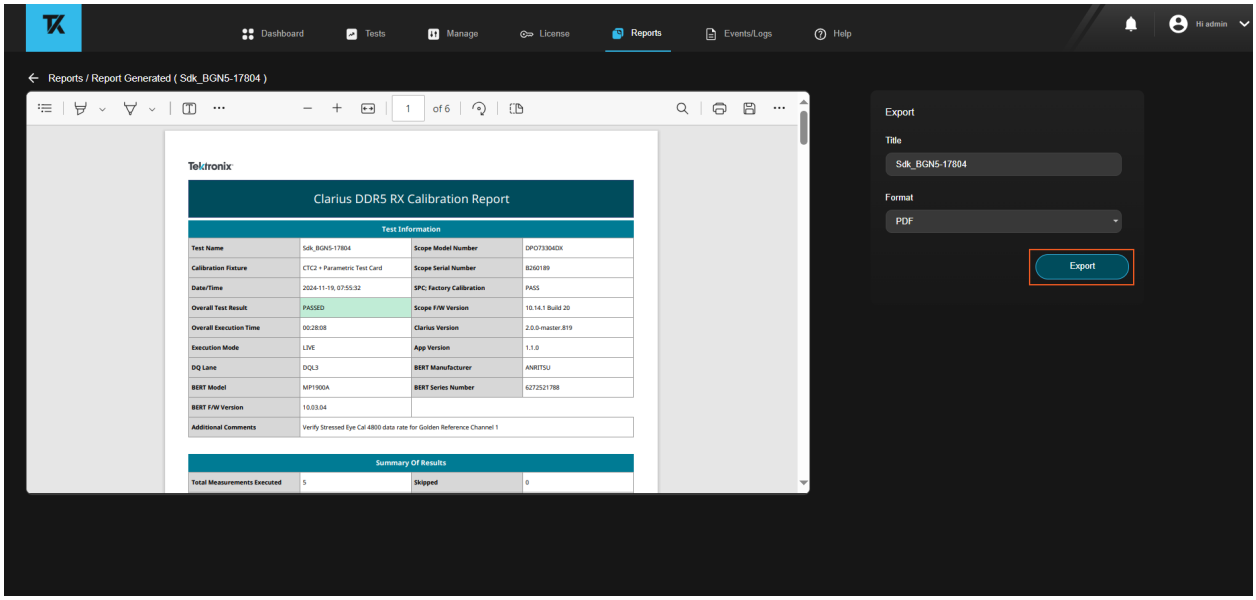


Figure 104: Reports tab: Export the report

Events and logs

The **Events and logs** tab displays the overall record of events and logs captured during a test acquisition and analysis.

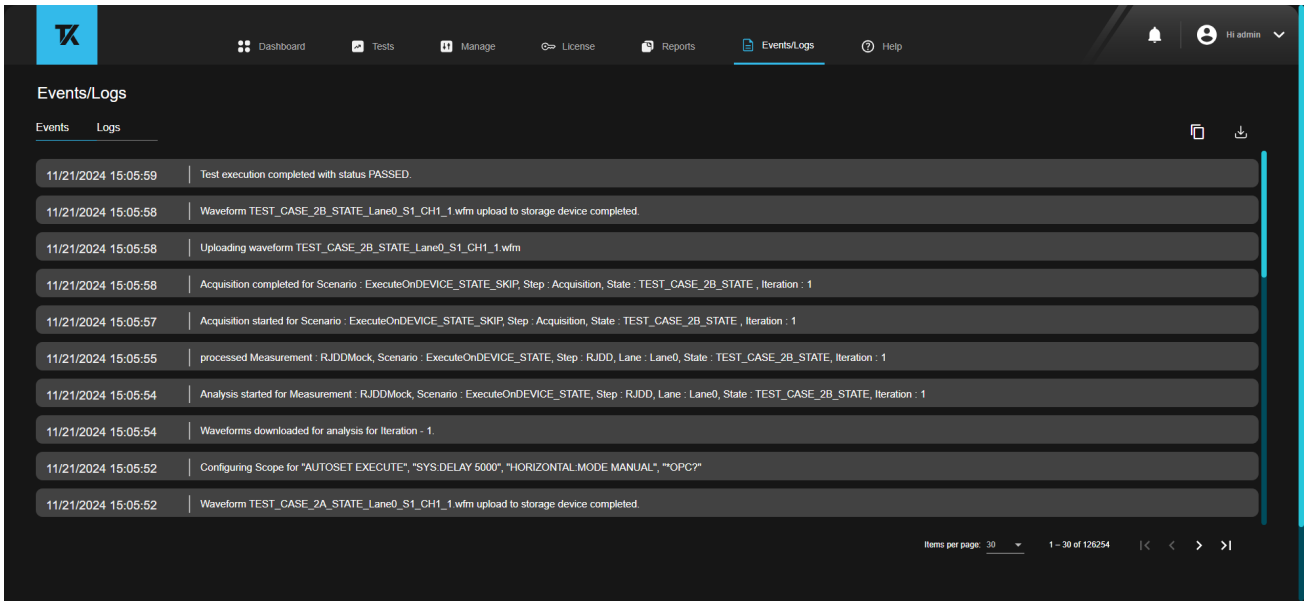


Figure 105: Events tab

Option	Element	Description
	Copy Events	Click to copy the events and paste it in the clipboard for further analysis.
	Download Events	Click to download the events in the target system.

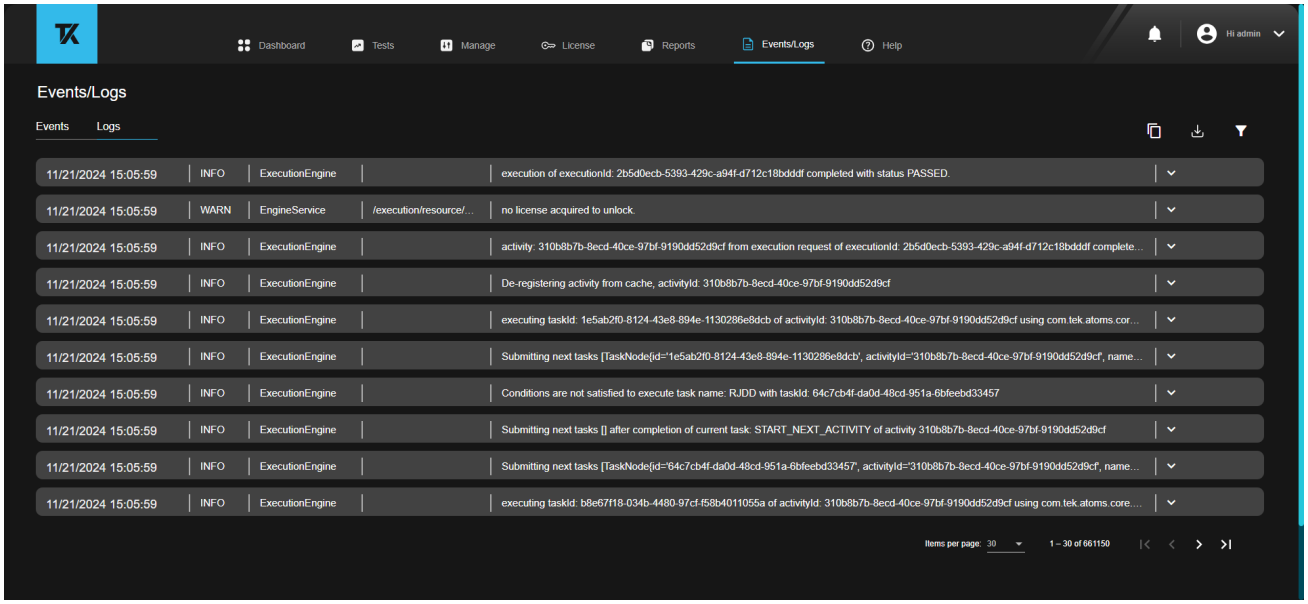


Figure 106: Logs tab

Option	Element	Description
	Copy Logs	Click to copy logs and paste it in the clipboard for further analysis.
	Download Logs	Click to download the logs in the target system.
	Filter	Click to filter the logs.

Filter logs

The **Filter By** option under logs tab allows you to filter the logs based on the criteria such as Component, Data Added, Level, Service, and Transaction Type.

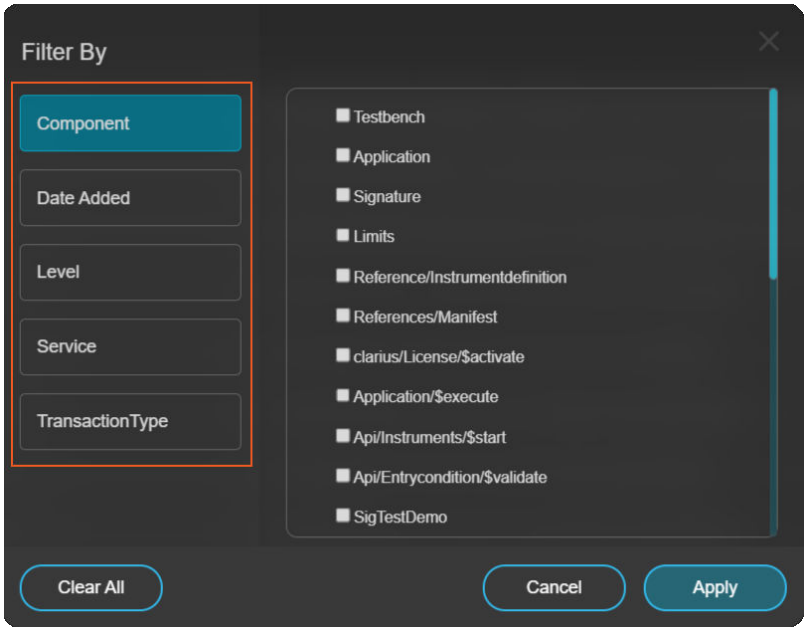


Figure 107: Filter logs

Filter type	Description
Component	Select the required component(s) to filter the logs. • Testbench • Application • Signature • Limits • Reference/Instrumentdefinition • References/Manifest • Clarius/License/$activate • Application/$execute • Api/Instruments/$start • Api/Entrycondition/$validate • SigTestDemo • Build_Catalog • Application/SourceNames • Application/Source • Api/Rules/$validate • Limits/RJ_Mean_Limits • Config/Instrument • RiseTime • Ui • Application/$execute/Status • Sequence • Histogram • SSCFreqDevPlot • TimeTrendPlot • EyePlot • EyeMaskPlot
Date Added	Select the date and time range to filter the logs.
Level	Displays the level of logs. • WARN • ERROR • INFO

Table continued…

Filter type	Description
Service	Select the required service(s) to filter the logs. • Measurement_Service • Instrument_Service • Reporting-Service • License_Service • Gateway-Service • EngineService • Pre-Processor-Service • Constraints_Service • CatalogService • CalibrationService • Infra_Service/Infra-Service • Monitor_Service/Monitor-Service • Plots_Service/Plot-Service • ui_service/ui-service • UserManagement_Service/UserManagement-Service • RequestTransformer • Waveform_Service/Waveform-Service • ExecutiveEngine • Blob_Service
Transaction Type	Select the required transaction type(s) to filter the logs. • TEST • RESOURCE
Clear All	Clear all the filters.
Apply	Applies the filter based on the log criteria selected.
Cancel	Click to cancel all the changes.

DDR5 Rx test and measurements

List of Calibrations

The following are the list of measurements that can be performed in the DDR Rx Calibration.

1. DQS Voltage Calibration
2. DQ Voltage Calibration
3. DQS RJ Calibration
4. DQS DCD Calibration
5. Stressed Eye Calibration
    - VSwing
    - Vnoise
    - SJ
    - RJ
    - Stressed Eye Convergence

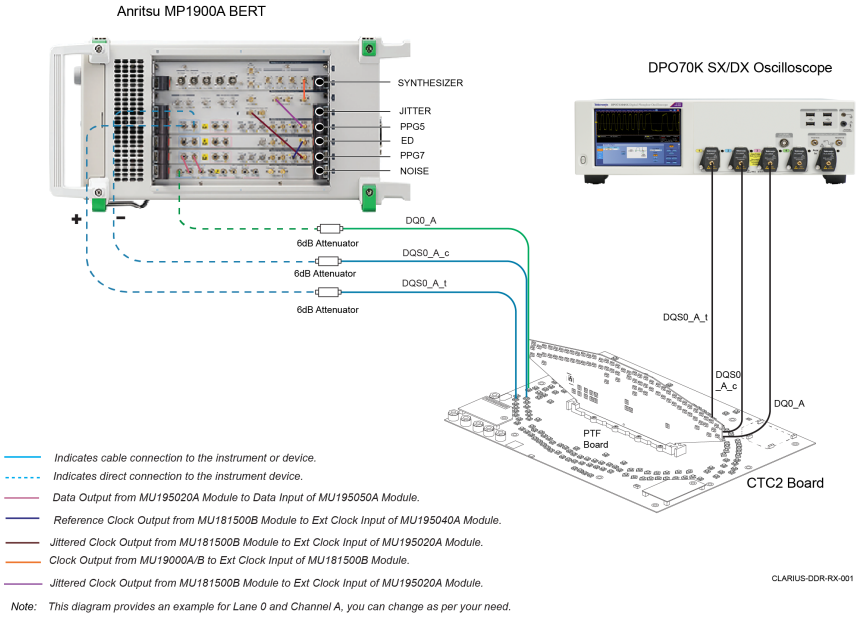


Figure 108: Example-DQ/DQS voltage calibration setup

List of Tests

The following are the list of measurements that can be performed in the DDR Rx Tests.

1. DQS Voltage Sensitivity Test
2. DQ Voltage Sensitivity Test
3. DQS Jitter Sensitivity Test
4. Stressed Eye Test

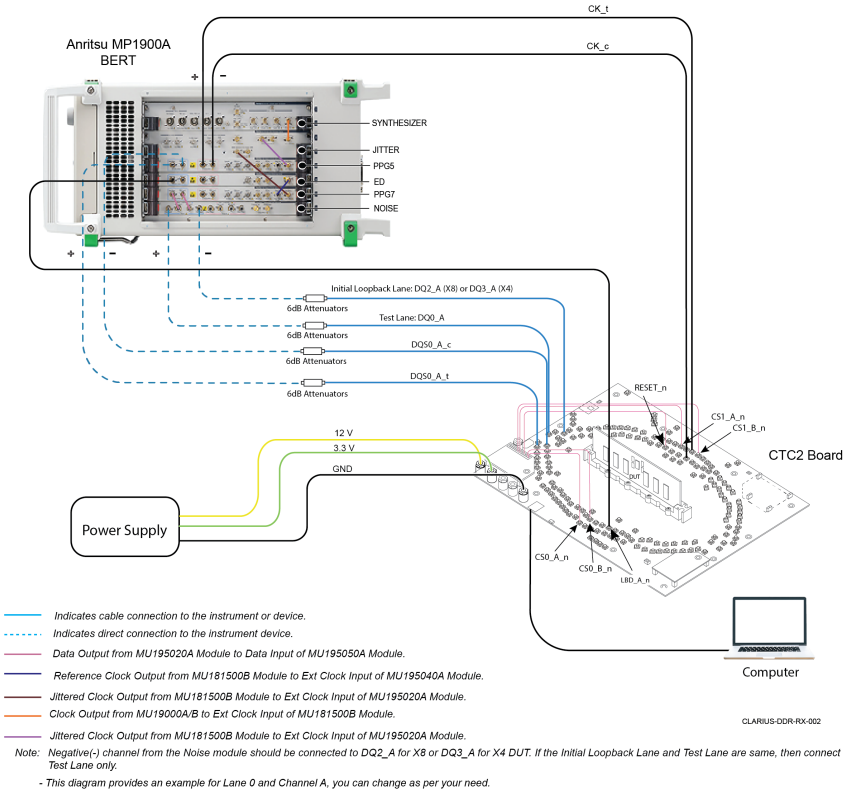


Figure 109: Example-DQ/DQS voltage test setup

DQ/DQS Voltage Sensitivity Calibration limits

The DQ/DQS Voltage Sensitivity and Calibration limits specify the maximum allowable voltage levels for DQS and DQ signals at different data rates (MT/s). The following table provides the calibration limits in millivolts (mV) for each data rate.

Calibration	Data Rate (MT/s)	Limit (mV)
DQS	3200	130
	3600	115
	4000	105
	4400	100
	4800	
	5200	90
	5600	
	6000	83
	6400	
	6800	80
	7200	
	7600	77.5
	8000	
	8400	75
DQ	3200	85
	3600	75
	4000	70
	4400	65
	4800	
	5200	60
	5600	
	6000	55
	6400	
	6800	50
	7200	
	7600	
	8000	
	8400	47.5

Note: For Test: Eye Width at BER E-16 should be > 0 when testing with above limits.

DQS Jitter Sensitivity Calibration and Test limits

The DQS Jitter Sensitivity Calibration and Test limits define the acceptable levels of jitter for DQS signals at different data rates (MT/s). The following table provides the limits for various parameters related to jitter sensitivity.

Data Rate (MT/s)	tRx_DQ_tMargin (UI)	tRx_DQS_DCD (UI)	ΔtRx_DQ_tMargin_DQS_DCD (UI)	tRx_DQS_Rj (UI rms)	ΔtRx_DQ_tMargin_DQS_Rj (UI)
3200	0.9	0.045	0.06	0.0075	0.09
3600	0.875				
4000	0.825				
4400					
4800					
5200	0.835				
5600					
6000	0.845				
6400					
6800					
7200					
7600					
8000					
8400					

Note: For Test: Eye Width at BER E-9 should be > 0 when testing with above limits.

Stressed Eye Calibration limits

The Stressed Eye Calibration limits define the acceptable parameters for the eye diagram of a signal under stressed conditions. The following table provides the limits for various parameters related to stressed eye calibration.

Data Rate (MT/s)	Eye Height (mV)	Eye Width (UI)
3200	95	0.25
3600	85	
4000	80	
4400	75	
4800	70	
5200	65	0.235
5600	60	
6000	57.5	0.230
6400		
6800	55	
7200		
7600	54	
8000		
8400	53	

Note: For Test: Eye Width at BER E-16 should be > 0 when testing with above limits.

User profile

The **User Profile** displays the information about your user account.

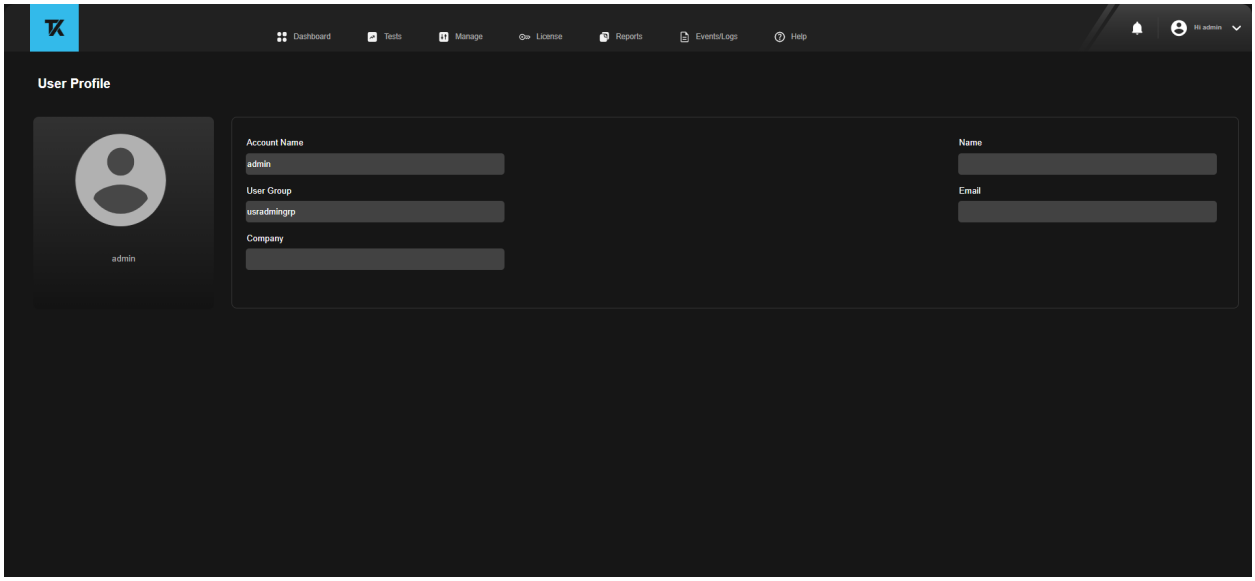


Figure 110: User profile

Manage accounts (admin only)

The **Manage Accounts** allows you to create a user account, update the existing user details, and delete an user account. Click **Manage Accounts** to access the **Manage Users** page.

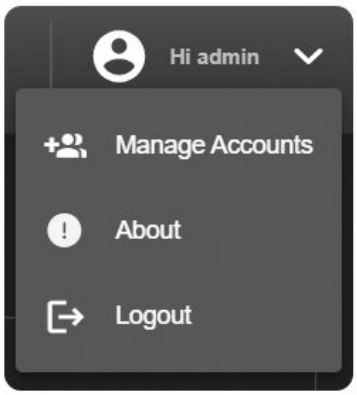


Figure 111: Manage accounts

My profile

My Profile displays information about user account.

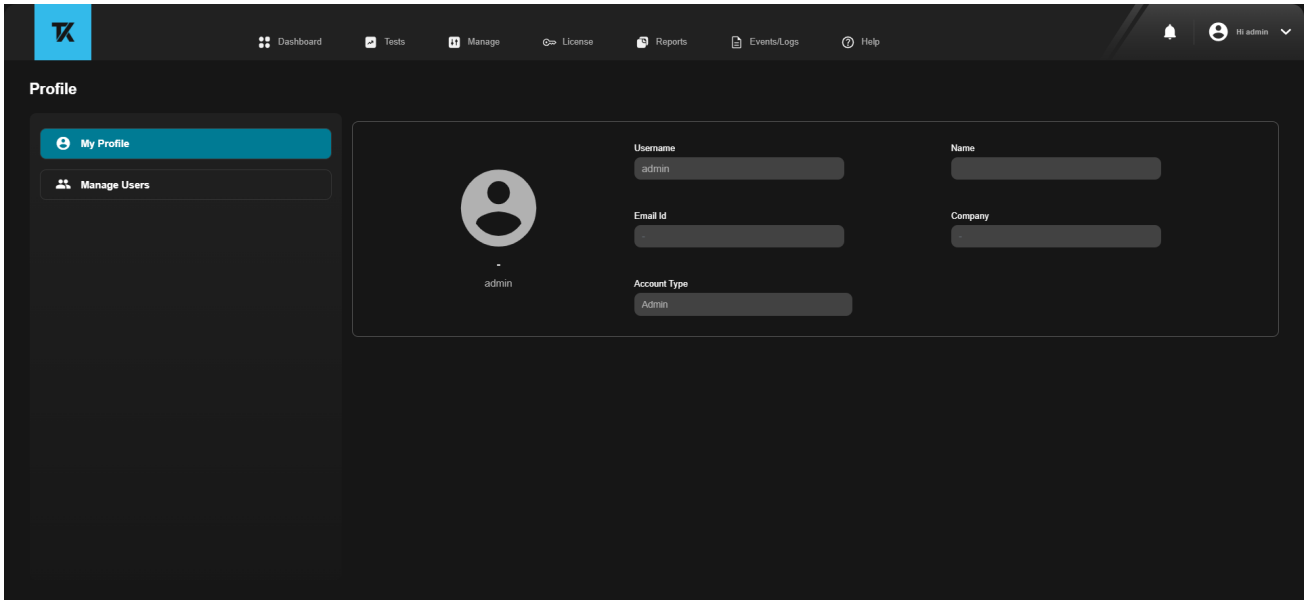


Figure 112: Profile details

Manage users

Manage Users allows you to add, modify, delete, lock, or unlock the user account.

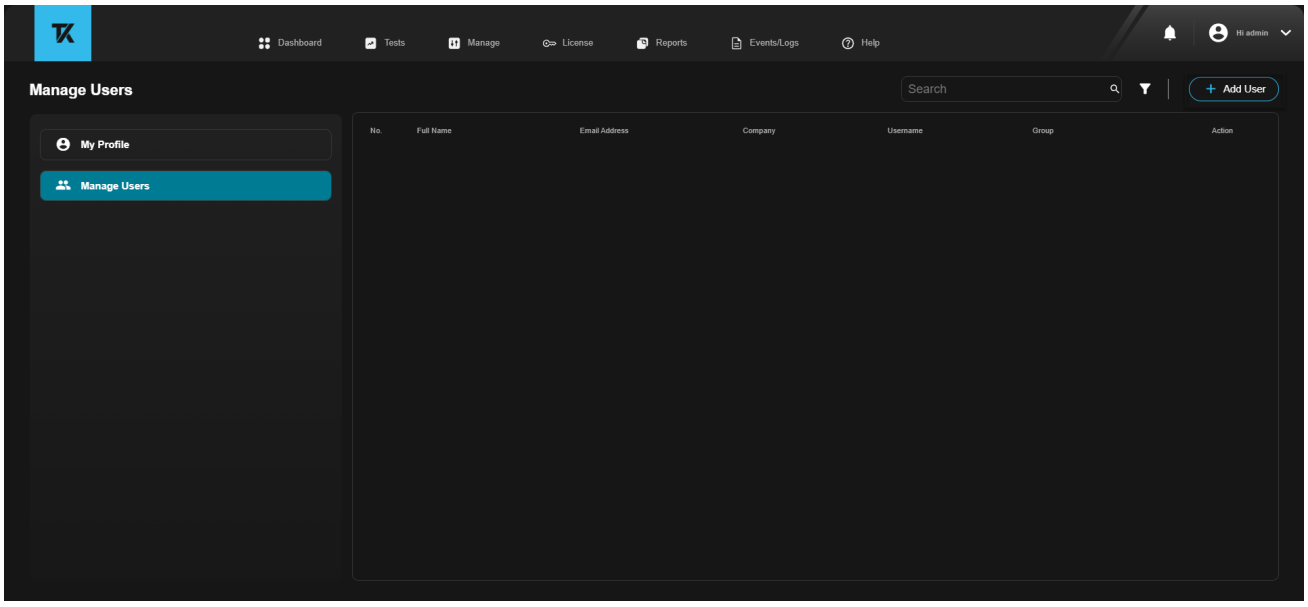


Figure 113: Manage users

Note: In Manage Users, if you reset password for admin (default user), then the password is reset only for Clarius UI login and not for Clarius Virtual machine login. It is recommended to use the *Clarius password reset utility* to reset the admin (default user account) password always.

Add user

The **Add User** allows you to create a new user account.

Follow the steps to add a user account.

- Select **Manage Accounts > Manage Users** and click **Add User**.

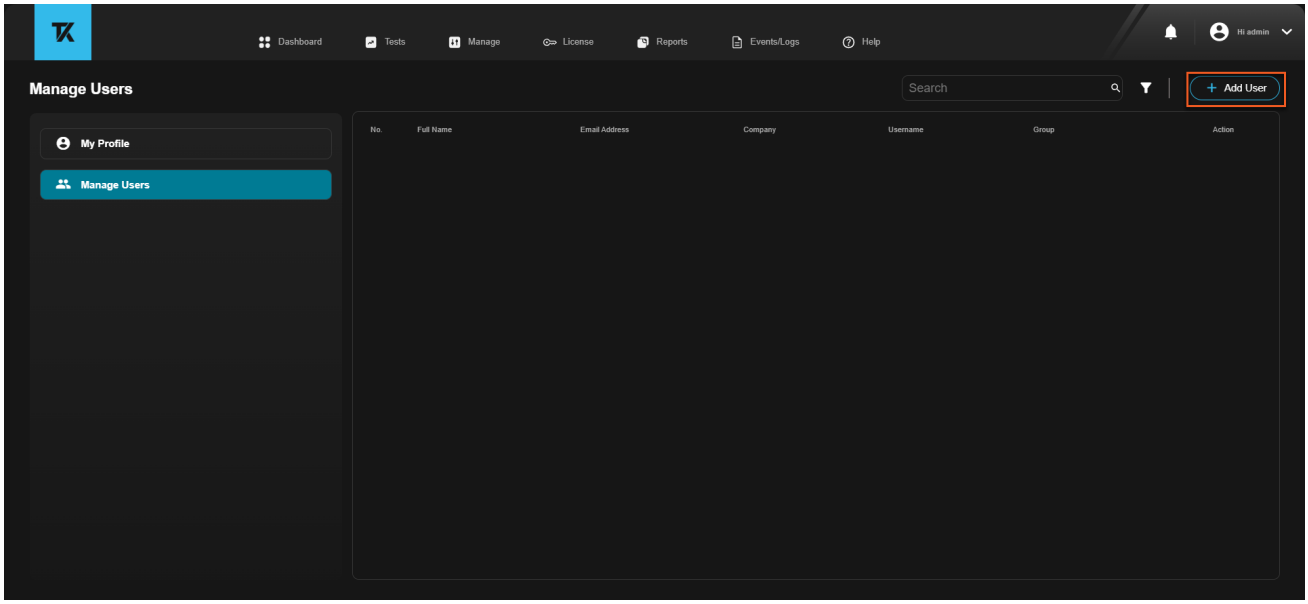


Figure 114: Add user

- Enter the details in the respective fields and click **Submit**.

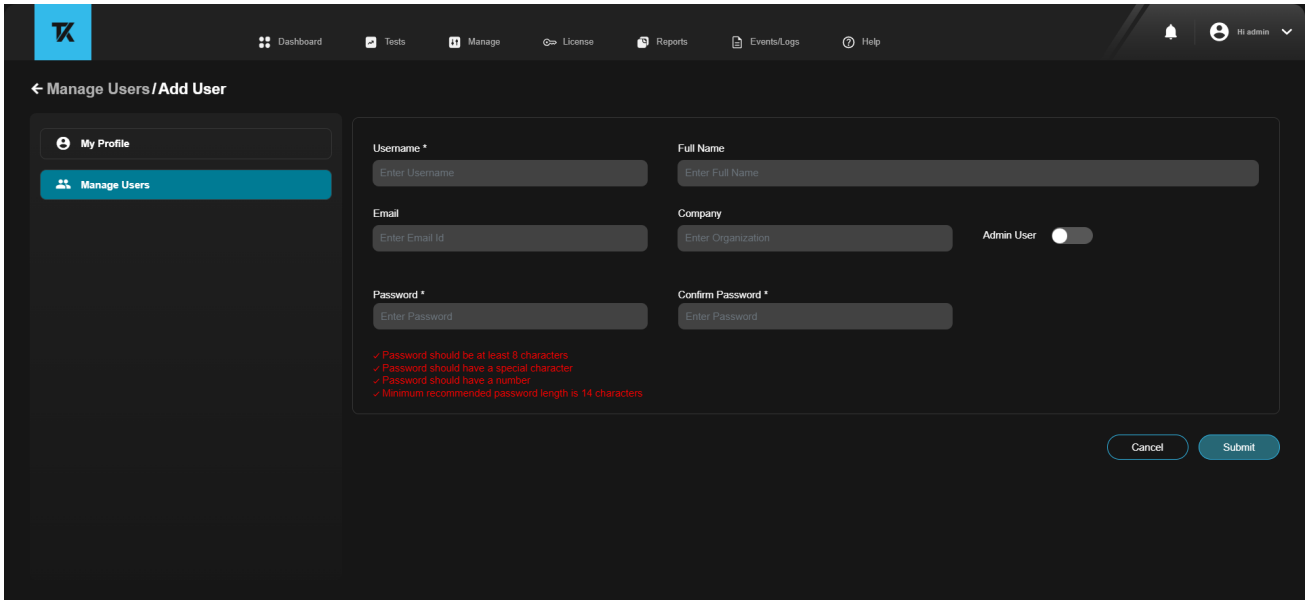


Figure 115: Add user details

Element	Description
Username	Enter the username to login the UI.

Table continued…

Element	Description
Full Name	Enter the full name of the user.
Email	Enter the valid email id of the user.
Company	Enter the organization name of the user.
Admin User	Enable or disable to set the account as admin or non admin account.
Password	Set a password matching the criteria.
Confirm Password	Re-enter the password.
Submit	Click to save the configured details.
Cancel	Click to cancel. All the entered details will be discarded.

Reset admin (default user account) password

This section describes the steps to reset the password of an admin (default user account). A default user is the user account that is created during the installation.

To reset the password, follow the steps:

1. Run the command prompt in **Administrator** mode.
2. Execute the command **clarius resetpwd -p "new password"**.

Note:

- It is recommended to use the Clarius password reset utility to reset the admin (default user account) password always.
- Clarius password reset utility will reset the admin (default user account) password. It will also reset the login password of Clarius virtual machine which can be used for debugging purposes.
- You cannot use this command to reset the password of non-admin/admin user accounts created in Clarius GUI.

Admin Console and Monitoring

The Monitoring and admin console provides a holistic view of the performance of the **Host** (Clarius installed PC) and the Clarius **Platform** (Virtual machine running critical services). This service allows users to monitor CPU load, memory usage, disk and storage status, ensuring optimal performance and facilitates troubleshooting.

Double-click Clarius **Admin Console** from the desktop to open the monitoring service.

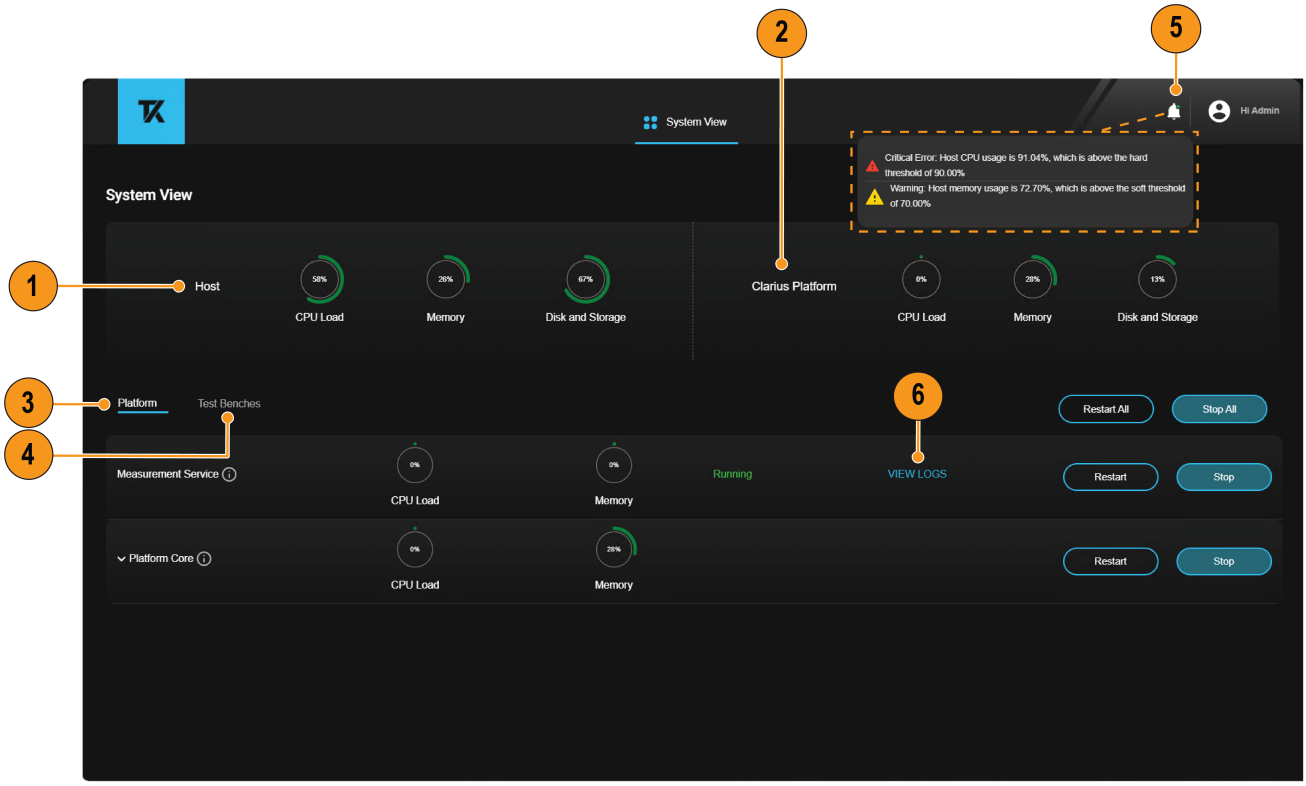


Figure 116: Clarius compliance monitoring service interface

Table 13: Components of monitoring service

Identifier	Element	Description
1	Host	The Host (Clarius installed PC) provides the hardware resources for the Clarius platform. You can view metrics related to CPU load, memory usage, disk and storage status for the host.
2	Clarius Platform	The Clarius platform is a virtual machine created on the host, running critical services essential for system operations. Metrics for the platform include CPU load, memory usage, disk and storage status.
3	Platform	You can view the real-time status of Clarius services, which include CPU load and memory usage. The available status are Running, Not Running, and Exited.
4	Test Benches	Users can view the real-time status of the test benches, which includes CPU load and memory usage. The available status are *Available*, *Occupied*, *Unavailable*, and *Not Reachable*.

Table continued…

Identifier	Element	Description
5	Notifications	Warnings and alerts are displayed in the notification icon and Windows system tray, providing real-time updates on the system status. **Warning Threshold:** An alert is triggered when the metric exceeds the set value (For example, 70%)[11]. **Critical Threshold:** A critical alert is triggered when the metric exceeds the set value (For example, 90%).
6	Logs	The logs screen displays detailed logs for each service. **Note:** If there is any issue with the service, save the log file and share it with the Tektronix support person for troubleshooting.

Test bench status scenarios

The **Test Benches** tab in the monitoring service allows you to view the status of the test bench.

The following table explains the scenarios for using the test bench to perform a test.

Test bench status	Description
Available	If both instrument service and instrument service agent (ClariusISAgent) are running, but no test is executed on the test bench.
	If instrument service is running and instrument service agent (ClariusISAgent) is down; Technical difficulties to Restart or Stop the service.
Occupied	If instrument service and instrument service agent (ClariusISAgent) are running, and a test is being executed on the test bench.
Unavailable	If instrument service is down and instrument service agent (ClariusISAgent) is running; Use Start to bring up the setup.
Not Reachable	If both instrument service and instrument service agent (ClariusISAgent) are not reachable.

Note:

- You can check the status of instrument service agent (ClariusISAgent) from the **Services** window. Click **Start** > **Run** and then type services.msc to launch the Services window.
- Clarius Monitoring and Admin console is only accessible from the target system where the Clarius automation framework is installed.
- File Store Create Buckets service operates as an internal start-up service and will cease its operations post-initialization. It is not essential for the ongoing test procedures, and its absence will not affect the test runs or their outcomes.

[11] If the alert is from hard disk, delete old test data from **Tests** > **List of Tests** to free up the hard disk space.

Tutorial

Steps to execute a test

This section describes the steps to run a test in the Clarius automation framework.

Prerequisite

1. Install Clarius automation framework
2. Install Clarius application in the Clarius automation framework
3. Activate the license for Clarius application
4. Run the services

Steps to execute a test

1. Double-click the **Clarius** icon from desktop to launch Clarius automation framework.

   Note: To remotely access Clarius use the host name or IP address of the Clarius automation framework installed device.
2. After successful login, you will be navigated to the home page. It displays the navigation panel and the widgets in the dashboard.
3. Create Test Bench. A test bench is an environment that is used to verify the correctness of a test setup. *Creating a Test bench*:
   a. Go to **Manage** > **Test Benches** and click **New Test Bench**.
   b. Enter test bench details in the respective fields.
   c. Add the required instruments into the test bench.
   d. Click **Save** and save the test bench
4. Create Test. *Creating a Test*:
   a. Go to **Tests** > **Add Test**.
   b. Enter the test details in the respective fields.
   c. Select the acquisition mode as Live or Recorded and select the Test bench or waveforms respectively.
   d. Select the technology and active application from the drop-down list and click **Add Sequence**. To import an already created sequence, click **Import Sequence**.
   e. Click and configure the **Sources and Signals** for the test setup.
   f. Click and configure the **Global Settings** for the test setup.
   g. Click and to view the **Connection Diagram**.
   h. Click to view the scenarios. Click from Local Settings to configure the settings for the respective scenario or the measurement
5. Select **Run** to run the measurements with the configured settings. You can also save the test and run later.
6. Navigate to the **Tests** tab to view the executed test *status and results*.
7. In **Tests** tab, click **View Results** to view the results of a particular test.
8. In the Reports page, click **Generate Report** to generate the report in PDF. You can view the PDF report and download.

References

File name extensions

The DDR Rx application uses the following file name extensions:

Table 14: File name extension

File name extension	Description
*.py	Python files.
*.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
*.flt	Filter files

Error messages

The following error messages may be displayed in the Clarius automation framework and description section helps you understand the error messages and the possible solution.

Table 15: Clarius error messages

Error message	Description
Invalid login credentials, Username or Password cannot be blank	Please enter username and password.
Error, Unrecognized client. Please contact Tektronix support	Configuration error. Please contact Tektronix field engineer for support.
Error, Error connecting to the system. Please contact tek support.	Configuration/Connection error. Access Admin console and check if all services are running. Start the services which are not running and check again. If the issue stills exist, please contact Tektronix field engineer for support.
Error, New user creation failed; Username already exists	Username already exists. Please enter a unique username.
Error, Please select a test bench to configure the sources and signals	Select a test bench to configure the sources and signals.

Table continued…

Error message	Description
Failed, <*scenario name*> cannot be unchecked because of the dependent scenarios	Uncheck the dependent configurations and then try again.
Error, Please select the instruments and channels for all the defined signals and then click Apply	Validation Error - Select instruments and channels for all defined signals before you select Apply.
Invalid Grouping, 'Duplicate instrument channels configured in ' <*channels*>	Channels in a group are used to signals in a single acquisition hence multiple occurrence of a channel in a single group is not allowed.
Cannot add new signal, Please select the instruments and channels for all the defined signals before adding new signal.	Please select the instruments and channels for all the defined signals before adding new signal.
Unable to find internal application for technology	Multi-lane grouping is not supported in this technology or the technology is deleted.
Locking application failed, Execution id <*execution id*>	Indicates an error occurred while locking the application, license is already used, try after the completion of the test using license.
Duplicate test name, name <*test name*>	Test name already exists. Please enter a unique test name.
Test Bench not available, <*test bench id*>	Test bench is not available or deleted. Please select an available test bench.
Error, Limits ID already exist	Limits ID already exists. Please enter a unique Limits ID.
Error, Rule catalog already exists	Rule catalog name already exists. Please enter a unique Rule catalog name.
Your account is currently locked. Please login after <*remaining*> of minute(s) or contact the system administrator.	Account is locked due to 5 incorrect login attempts. Please wait for five minutes and then try again.
Account locks after <*remaining*> login attempts	Account is locked due to 5 incorrect login attempts. Please wait for five minutes and then try again.

Index

V

W