DATA SHEET

D9010BJAC 40GBASE-CR4 and 100GBASE-CR10 Compliance Test Application Software

The Keysight Technologies, Inc. D9010BJAC 40GBASE-CR4 and 100GBASE-CR10 compliance test application provides a fast and effortless way to test, debug and characterize your 40GBASE-CR4 and 100GBASE-CR10 designs. The tests performed by the D9010BJAC software are based on the IEEE 802.3 Specification. In addition, the application features other tests, which covers crucial measurements such as Differential Manchester Encoding (DME) and Energy Efficient Ethernet (EEE) for characterizing40GBASE-CR4 and 100GBASE-CR10 devices. The test application offers a user-friendly setup wizard and a comprehensive report that includes margin analysis.

Transform complexity into simplicity

- Setup wizard for quick setup, configuration and test selection.
- Execution speed and proven test algorithm which minimizes test time.
- User-select tests and configuration based on the IEEE 802.3 40GBASE-CR4 and 100GBASE-CR10specification.
- Test framework that reports multi trial results with full array of statistics for each measurementwith worst case measurement result.
- Accurate and repeatable results with Keysight Technologies Infiniium oscilloscopes
- Automated reporting in a comprehensive HTML format with margin analysis

With the D9010BJAC 40GBASE-CR4 and 100GBASE-CR10 Ethernet electrical test software, you canuse the same oscilloscope you use for everyday debugging to perform automated testing and margin analysis based on the IEEE802.3-2018 standard.

KEYSIGHT TECHNOLOGIES

D9010BJAC 40GBASE-CR4 and 100GBASE-CR10 Application Software Saves You Time

The D9010BJAC 40GBASE-CR4 and 100GBASE-CR10 Ethernet electrical compliance test application software saves you time by setting the stage for automatic execution of 40GBASE-CR4 and 100GBASE-CR10 electrical tests. Part of the difficulty of performing electrical tests for Ethernet transmitters is properly connecting to the oscilloscope, loading the proper setup files, and then analyzing the measured results by comparing them to limits published in the specification. The Ethernet electrical compliance test application software does much of this work for you. The 40GBASE-CR4 and 100GBASE-CR10 Ethernet electrical compliance test application software automatically configures the oscilloscope for each test, and it provides an informative results report that includes margin analysis indicating how close your product is to passing or failing that specification.

Easy test definition

The D9010BJAC 40GBASE-CR4 and 100GBASE-CR10 Ethernet electrical compliance test application software extends the ease-of-use advantages of Keysight's Infiniium oscilloscopes to testing 40GBASE-CR4 and 100GBASE-CR10 designs. The Keysight automated test engine walks you quickly through the steps required to define the tests you want to make, set up the tests, perform the tests, and view the test results. A setup page enables you to quickly make decisions from the outset regarding the choice of tests and perform functions that affect the testing task. The test selections available in the following steps are then filtered according to the choices made in the setup page. While selecting tests, you can select a category of tests all at once or specify individual tests. You can save tests and configurations as project files and recall them later for quick testing and review of previous test results. Straightforward menus let you perform tests with a minimum of mouse clicks.

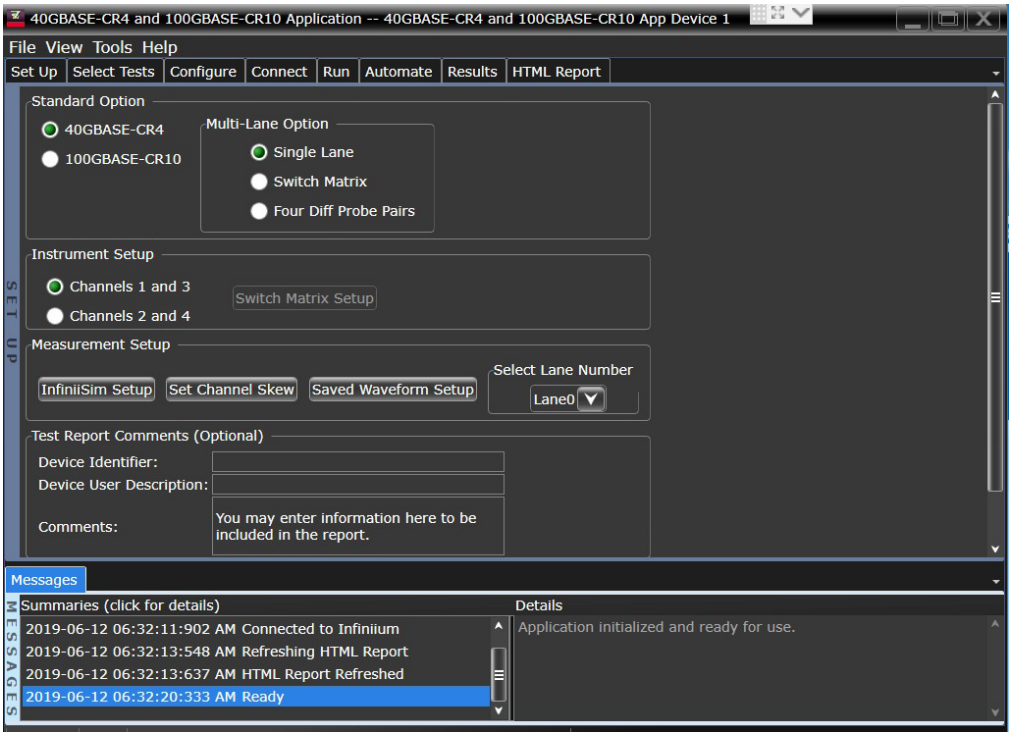

Figure 1. The clean interface of the setup page enables you to quickly make decisions and perform functions that affect the testing task.

Compliance Measurement Tests

The D9010BJAC 40GBASE-CR4 or 100GBASE-CR10 compliance test application allows you to run single or multiple tests based on your needs. Highlight a test to show more details including tests limits and references to related details of the specification. Accurate and repeatable results give you confidence in your measurements.

You can also specify the number of test trials and only stop running selected tests when the stop condition is met. The application will save the worst-case test result to help you track down the anomalies in your signals.

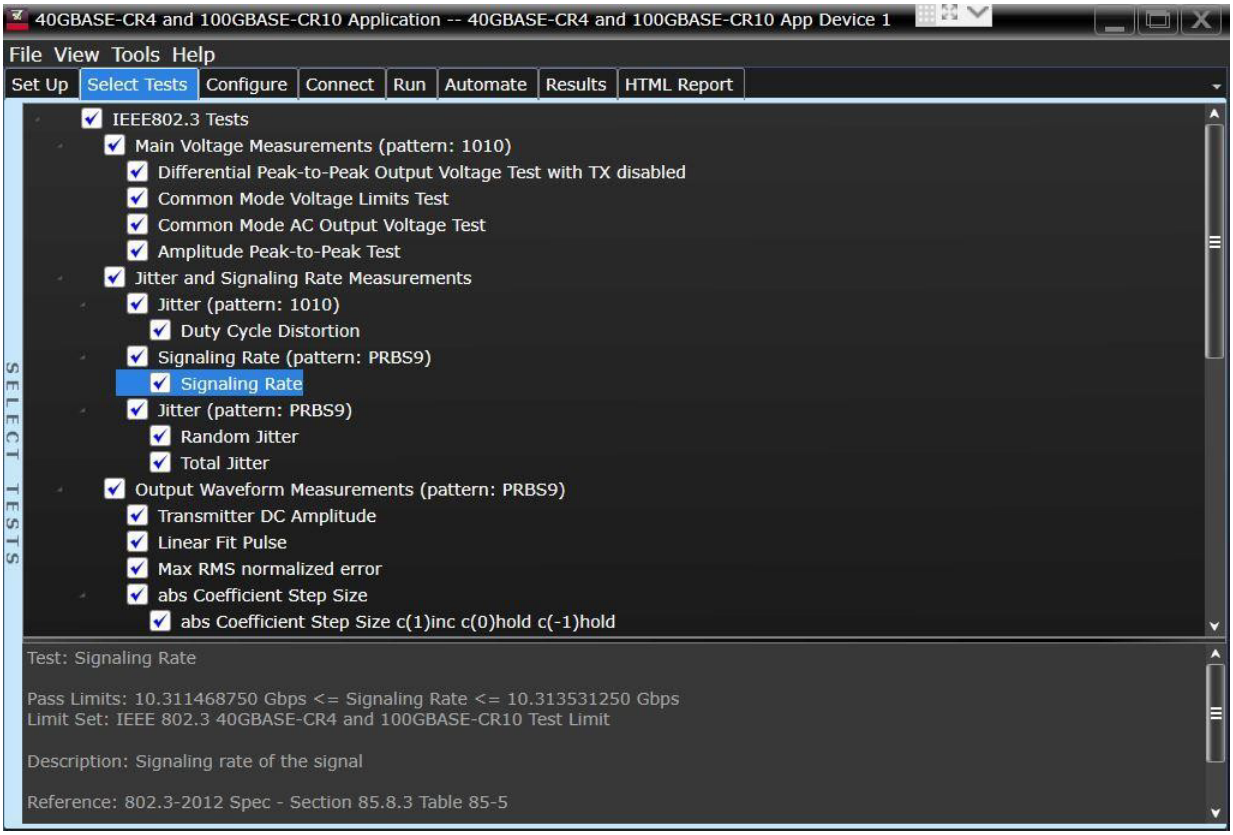

Figure 2. The Keysight automated test engine quickly guides you through selecting and configuring tests, setting up the connection, running the tests, and viewing the results. You can easily select individual tests or groups of tests with a mouse-click.

Configurability and Guided Connection

The D9010BJAC 40GBASE-CR4 or 100GBASE-CR10 compliance test application provides flexibility in your test setup. The application lets you define controls for critical test parameters such as voltage threshold values, number of waveforms used for analysis and customizable violation settings. Once you have configured the tests, the connection page will display the connection diagram for the test you have selected. The compliance application guides you to make connection changes with hookup diagrams when the tests you select require it. You connect the oscilloscope to the device under test using Wilder test fixture www.wilder-tech.com. SMA cables may be required to attach the Wilder test fixtures to the Keysight Infiniium oscilloscope. See ordering information for more details.

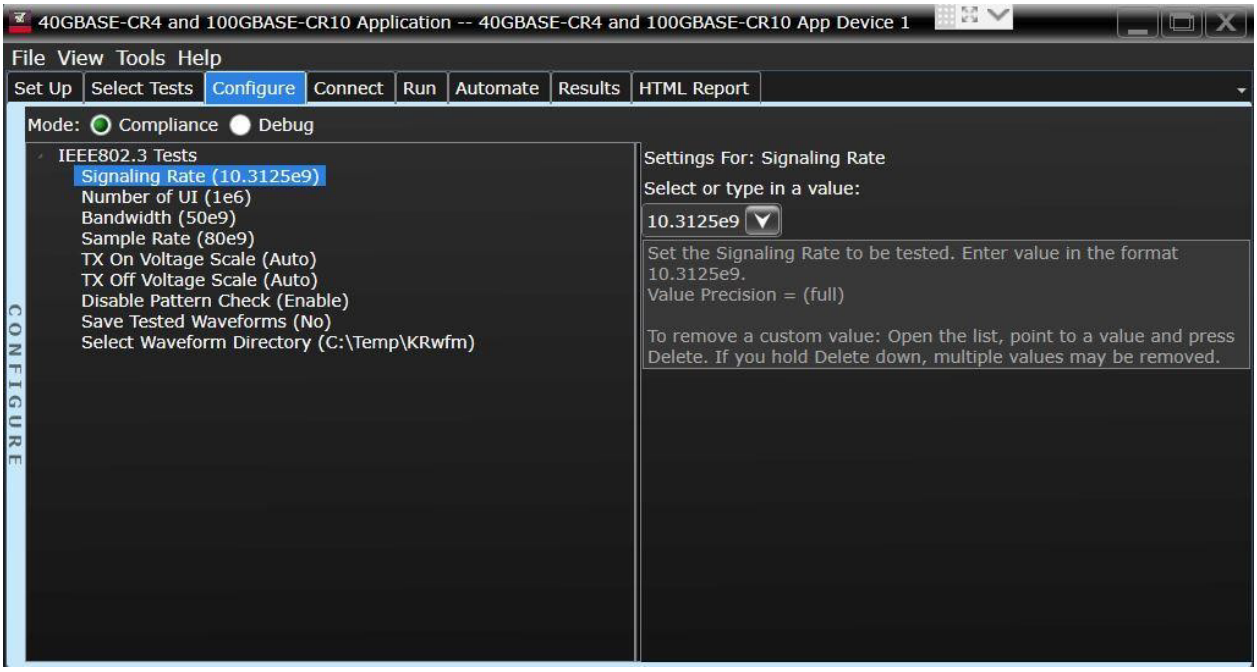

Figure 3. To set up tests, you define the device to test, its configuration, and how the oscilloscope is connected to it.

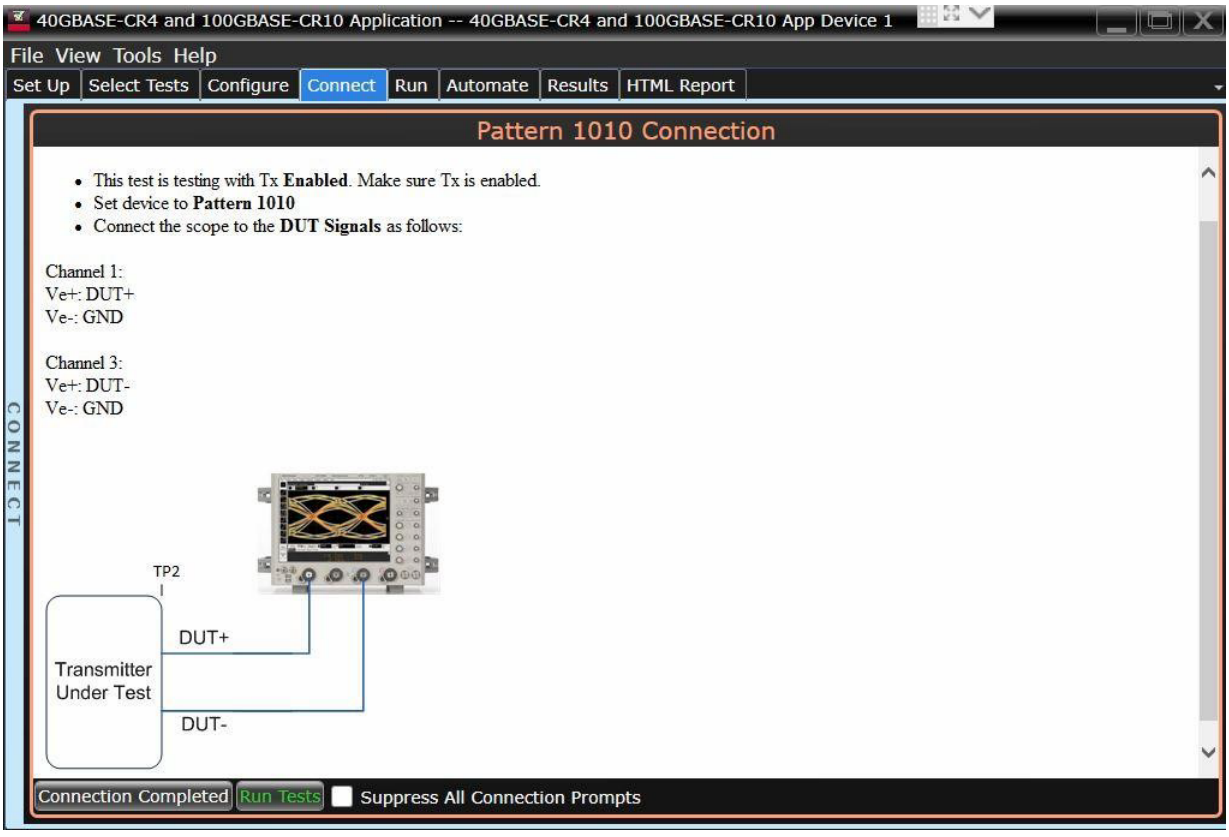

Figure 4. When you make multiple tests where the connections must be changed, the software prompts you with connection diagrams.

Comprehensive Result Analysis

In addition to providing you with measurement results, the D9010BJAC 40GBASE-CR4 or 100GBASE-CR10 compliance test application software provides a report format that shows you not only where your product passes or fails, but also reports how close you are to the limits specified for a test. You can select the margin test report parameter, which means you can specify the level at which warnings are issued to alert you to electrical tests where your product is operating close to the official test limit defined by the 40GBASE CR4 and 100GBASE-CR10 specification.

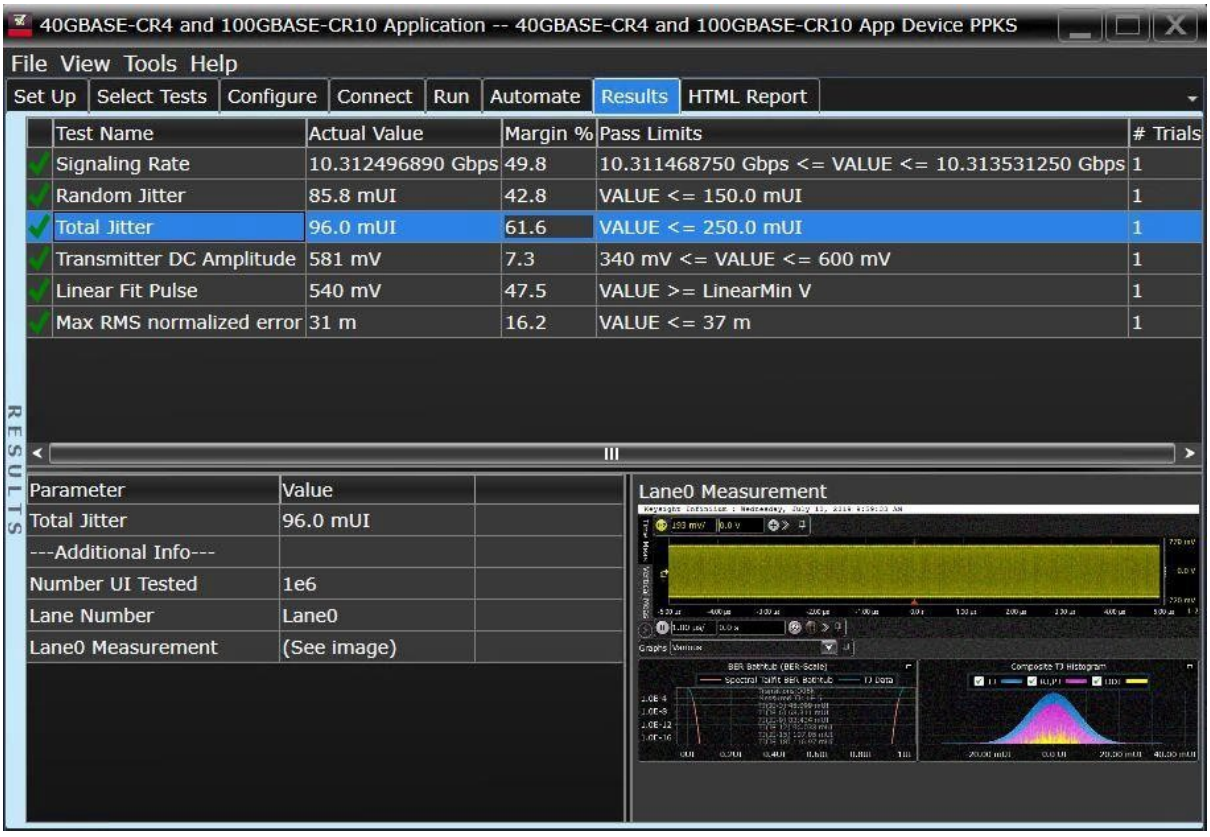

Figure 5. The D9010BJAC 40GBASE-CR4 or 100GBASE-CR10 compliance test application software results screen shows a summary of the tests performed, pass/fail status, and margin. Clicking on a specific test also shows the test specification and a measurement waveform, if appropriate.

Thorough Performance Reporting

The D9010BJAC 40GBASE-CR4 or 100GBASE-CR10 compliance test application software generates HTML reports that captures the performance, status and margins of your device under test. It also captures screenshots of critical measurements of your reference and documentation. This report is suitable for printing and sharing with your test vendors, customers and suppliers.

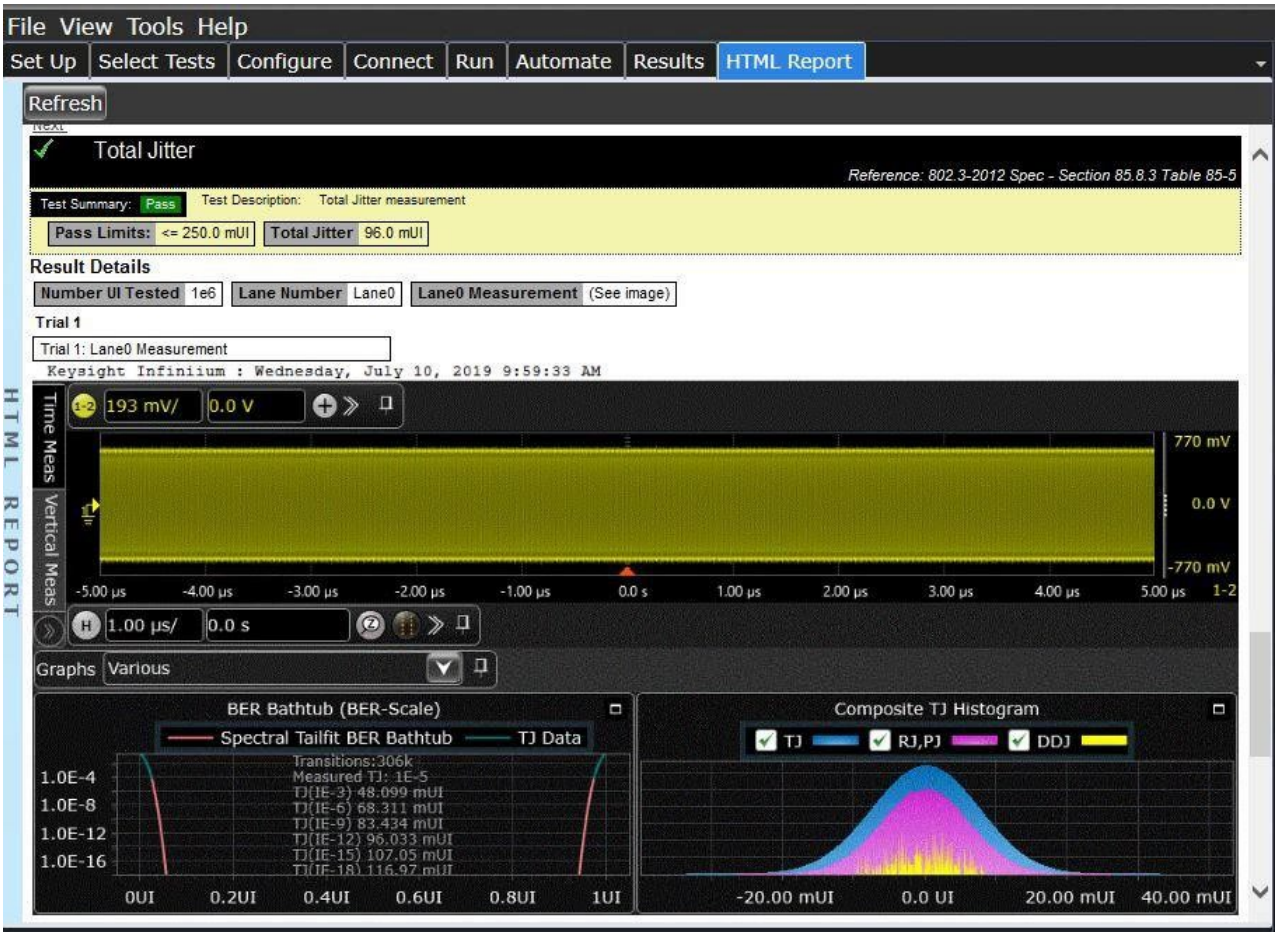

Figure 6. Additional details are available for each test, including the test limits, test description, and test results, including waveforms, if appropriate.

Recommended oscilloscope

The D9010BJAC 40GBASE-CR4 and 100GBASE-CR10 Compliance Test Application Software is compatible with Keysight Infiniium Series oscilloscopes with operating software revision 6.30 or higher.

Data Rates	Minimum Bandwidth	Minimum Channels	Compatible Oscilloscopes
40 Gbps (4 x 10) 100 Gbps (10 x 10)	25 GHz	2	V-Series, Z-Series and UXR

Software Ordering Information

Model number	Description	Note
D9010BJAC	40GBASE-CR4 and 100GBASE-CR10 Compliance Test Application Software	Required
D9120ASIA	Advanced Signal Integrity Software (EQ, InfiniiSim Advanced)	Required
D9120JITA	EZJIT Complete - Jitter and Vertical Noise Analysis Software	Required

Recommended Probes and Fixtures

Model number	Description	Quantity
QSFP28-TPA100GM-HCB-P	Wilder Technologies QSFP28 Plug Adapter	1
QSFP28-TPA100G-MCB-R	Wilder Technologies QSFP28 Receptacle Adapter	1

Note: Wilder Fixtures are based on either host and/or module testing. They can either be order together or separately depending on customer needs and application. www.wilder-tech.com

Example of Hardware Configuration

Model number	Description	Quantity
UXR0254A	25 GHz Infiniium UXR-series oscilloscope	1
QSFP28-TPA100GM-HCB-P	Wilder Technologies QSFP28 Plug Adapter	1
1250-1158	Adapter, SMA (f) to SMA (f)	2

Recommended Accessories

Model number	Description	Quantity
1810-0118 (as needed)	SMA (m) 50 Ω termination	As needed
N2812B	High-performance input cable, 2.92 mm connectors, 1 m length	2
1250-1158	Adapter, SMA (f) to SMA (f)	2

Flexible Software Licensing and KeysightCare Software Support Subscriptions

Keysight offers a variety of flexible licensing options to fit your needs and budget. Choose your license term, license type, and KeysightCare software support subscription.

License Terms

Perpetual – Perpetual licenses can be used indefinitely.

Time-based – Time-based licenses can be used through the term of the license only (6, 12, 24, or 36 months).

License Types

Node-locked – License can be used on one specified instrument/computer.
Transportable – License can be used on one instrument/computer at a time but may be transferred to another using Keysight Software Manager (internet connection required).
USB Portable – License can be used on one instrument/computer at a time but may be transferred to another using a certified USB dongle (available for additional purchase with Keysight part number E8900-D10).
Floating (single site) – Networked instruments/computers can access a license from a server one at a time. Multiple licenses can be purchased for concurrent usage.

KeysightCare Software Support Subscriptions

Perpetual licenses are sold with a 12 (default), 24, 36, or 60-month software support subscription. Support subscriptions can be renewed for a fee after that.

Time-based licenses include a software support subscription through the term of the license.

KeysightCare Software Support Subscription provides peace of mind amid evolving technologies.

- Ensure your software is always current with the latest enhancements and measurement standards.
- Gain additional insight into your problems with live access to our team of technical experts.
- Stay on schedule with fast turnaround times and priority escalations when you need support.

Selecting your license:

Step 1. Choose your software product (e.g. S1234567A).
Step 2. Choose your license term: perpetual or time-based.
Step 3. Choose your license type: node-locked, transportable, USB portable, or floating.
Step 4. Depending on the license term, choose your support subscription duration.

Learn more at: www.keysight.com

For more information on Keysight Technologies' products, applications or services, please contact your local Keysight office. The complete list is available at: www.keysight.com/find/contactus

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