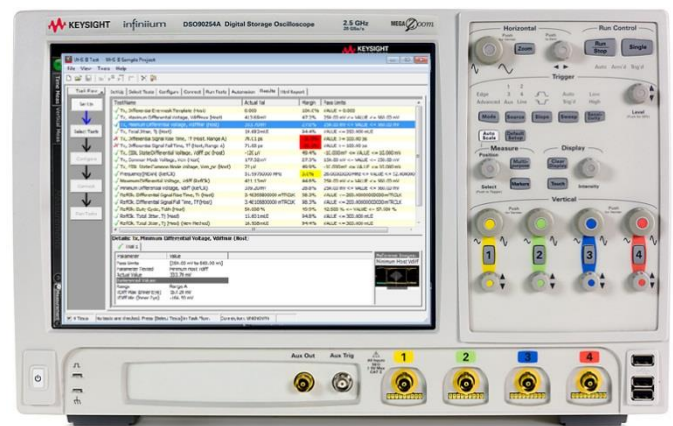


# D9010UHSC SD UHS-II Compliance Test Application Software

The Keysight Technologies, Inc. SD UHS-II compliance test application provides a fast and easy way to test, debug and characterize your SD UHS-II designs. The tests performed by the SD UHS-II compliance test software are based on the SD<sup>1</sup> version 4.0 specifications. The test application offers a user-friendly setup wizard and a comprehensive report that includes margin analysis.

The next-generation SDXC memory card specification with increased bus interface of UHS-II speeds up to 1.56 GB per second or higher, dramatically improves consumers' digital lifestyles by increasing storage capacity to 2 TB. The compliance test offers reference clock tests and host and device transmitter tests. The compliance test covers signal quality and common mode voltage tests for both host and device transmitter tests. The SD UHS-II compliance test application is compatible with Keysight 90000 Series Infiniium oscilloscopes.



## Features

- 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 SD 4.0 specification.
- Use with M8020A high performance serial BERT to generate test patterns like the PRBS 2<sup>7</sup>-1 pattern that is looped back from the UHS-II device to the oscilloscope for signal integrity test.
- Test framework that reports multi trial results with full array of statistics for each measurement with worst case measurement result.
- Offline capability to allow user to run the compliance test with saved waveforms files from device

1. The SD (Secure Digital) is a set of industry standards and promote Secure Digital (SD) product acceptance in a variety of applications

## Comprehensive Test Coverage

With the SD UHS-II compliance test application, you can use the same oscilloscope you use for everyday debugging to perform automated testing and margin analysis based on the host and device transmitter physical layer specification. The application automatically configures the oscilloscope for each test and provides informative results. It includes margin analysis indicating how close your device comes to passing or failing the test for each specification. Some of the difficulties in performing the compliance tests are connecting to the target device, configuring the oscilloscope, performing the tests and analyzing the measured results. The SD UHS-II compliance test application does most of this work for you.

## Easy Test Definition

The test application enhances the usability of Keysight Infiniium oscilloscopes for testing SD UHS-II devices. The Keysight automated test framework guides you quickly through the steps required to define the setup, perform the tests and view the test results. You can select a category of tests or specify individual tests. The user interface is designed to minimize unnecessary reconnections, which saves time and minimizes potential operator error. You can save the tests and configurations as project files and recall them later for quick testing and review of previous results. Clear menus let you perform tests with minimum mouse clicks.

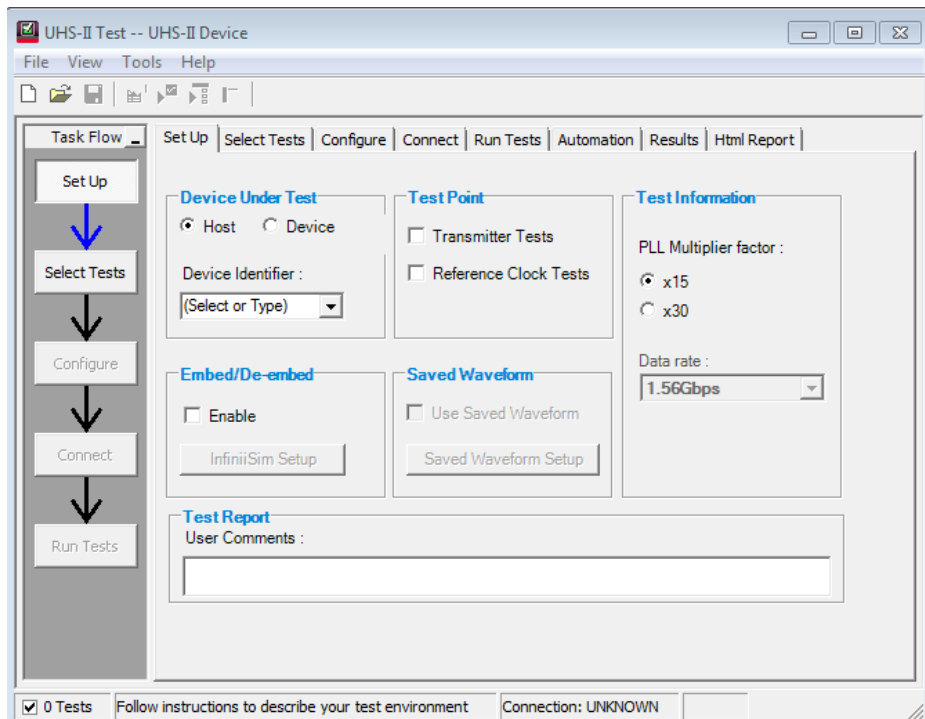


Figure 1: SD UHS-II card compliance test software application provides both host and device transmitter tests as per SD version 4.0 specification.

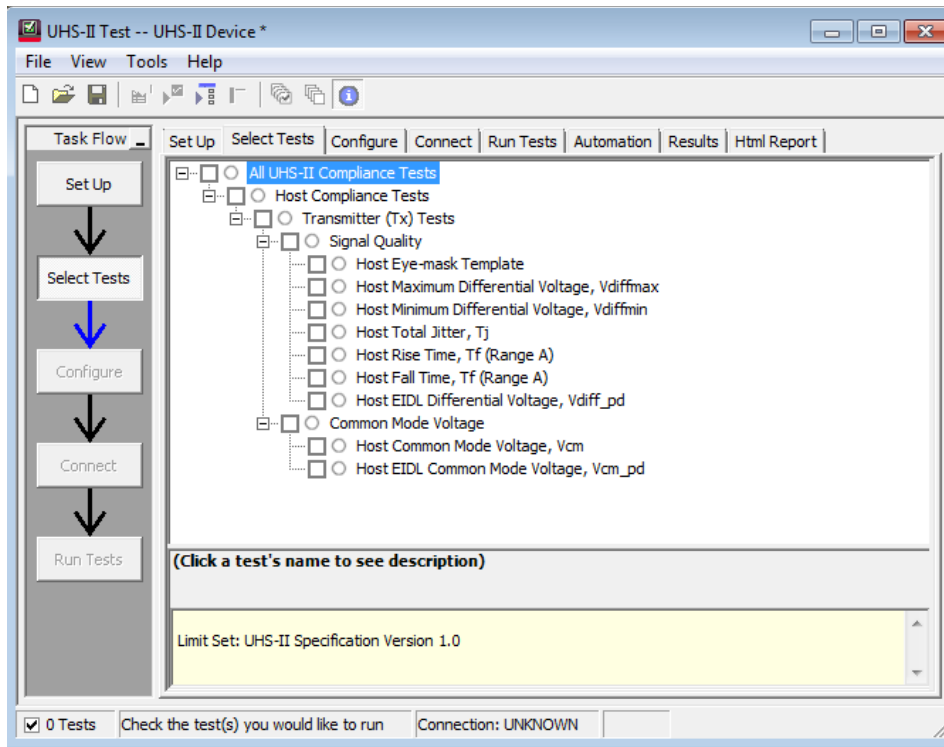


Figure 2: The Keysight automated test engine filters the test selection based on your test setup. You can easily select individual tests or groups of tests with a mouse-click.

## Configurability and Guided Connection

The SD UHS-II compliance test application provides flexibility in your setup. The SD UHS-II compliance test application provides you with user-defined controls for critical test parameters such as sampling rate, number of UIs used for analysis and setting for signal ended or differential connection types. Once you have configured the tests, the connection page will display the connection diagram for the test you have selected. With multiple test trial capability, you can extensively characterize the performance of your SD UHS-II devices. You can run the selected tests until the stop condition is met. The application will then save the worst-case conditions and help you track down the anomalies in your signals.

The SD UHS-II compliance test reports the margin and you can specify the limits at which warnings are to be issued. You are provided with a full array statistic for each measurement, and you can save worst case conditions to extensively test the performance of your device.

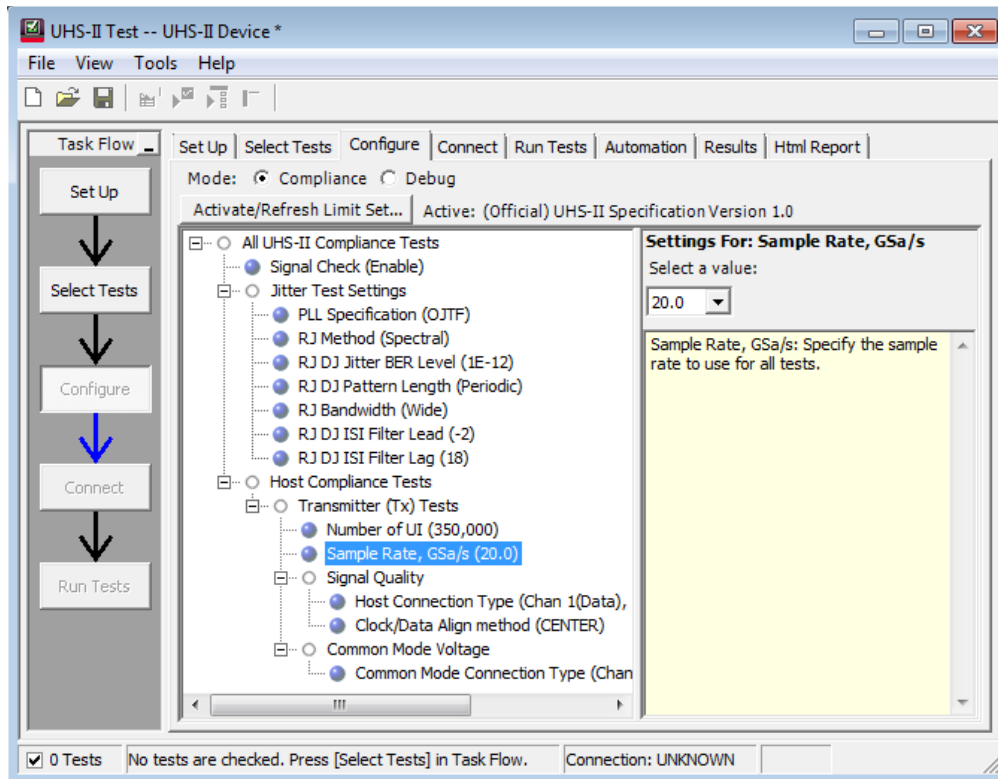


Figure 3: The software provides user-defined controls for test parameters such as sampling rate.

## Thorough Performance Reporting

The SD UHS-II compliance test application generates thorough HTML reports that capture the performance, status and margins of your device. It also captures screen shots of critical measurements for your reference and documentation. This report is suitable for printing and sharing with your vendors, customers or colleagues.

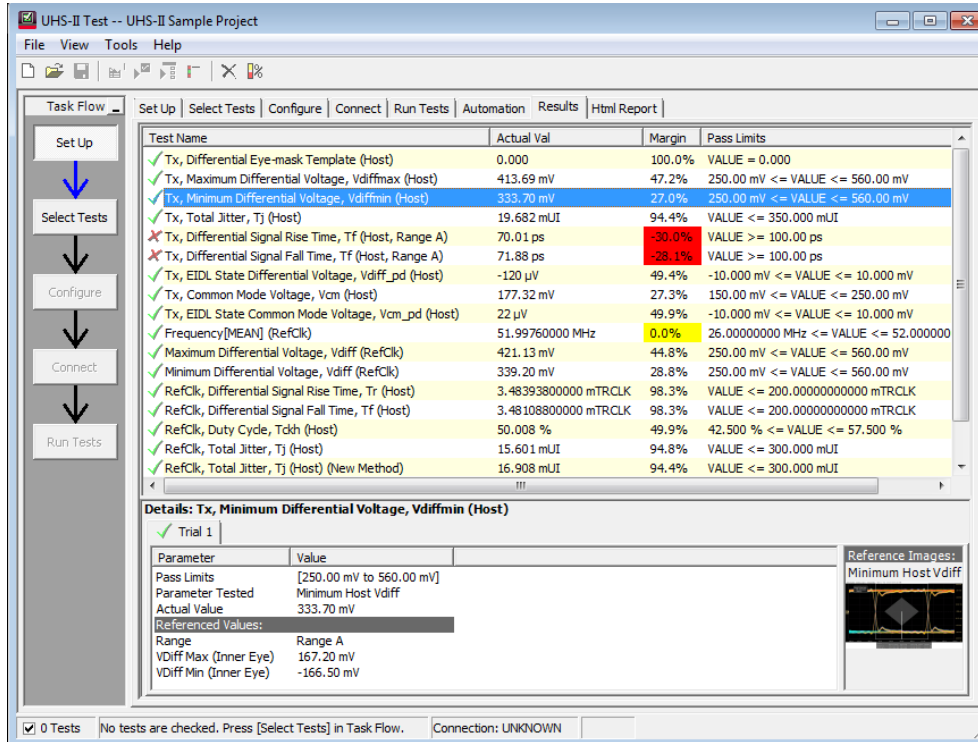


Figure 4: The SD UHS-II test application documents your test parameters, pass or fail status, test specification range, measured values and pass/fail margin.

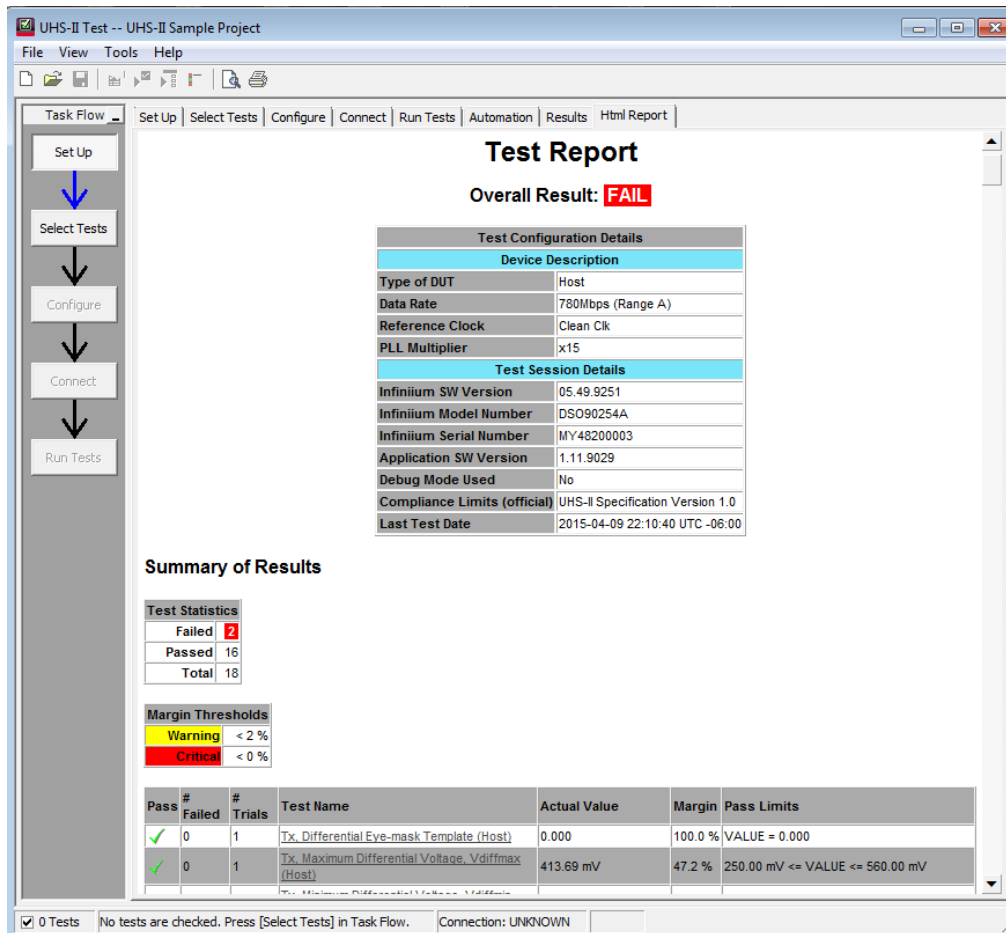


Figure 5. The test application generates a summary report where you can see your device's test results quickly and clearly. Details are available for each test including test limits, test description and test results. In addition, the pass/fail margin is indicated to give you further insight.

## Recommended oscilloscope

The D9010UHSC SD UHS-II software is compatible with the Infiniium series oscilloscopes with operating software revision of 6.30 or higher.

Data rate	Minimum Bandwidth	Minimum Channels	Description
Up to 1.56 GT/s	6 GHz	2	Infiniium 90000A

## Ordering Information

Model number	Description	Note
D9010UHSC	SD UHS-II Compliance Test Software	Required
D9020JITA	Jitter, Vertical and Phase Noise Analysis Software	Required

## Example of Hardware Configuration

Model number	Description	Quantity
DSO90604A	6 GHz Infiniium oscilloscope	1
1168B	InfiniiMax II 10 GHz probe amplifier	Minimum 2
M8020A	High performance serial BERT (as BIST generator to provide test patterns). Optional if BIST mode capability is available with other equipment or internal test mode	1
A9-UHS2	SD UHS-II test fixture kit: <a href="https://www.astekcorp.com/products/test-measurement/bus-protocol-testing/uhs-ii-test-fixture-set">https://www.astekcorp.com/products/test-measurement/bus-protocol-testing/uhs-ii-test-fixture-set</a>	1

## 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 (eg. 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.

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