Keysight Technologies

MOST Compliance Application for Infiniium Oscilloscopes

Data Sheet
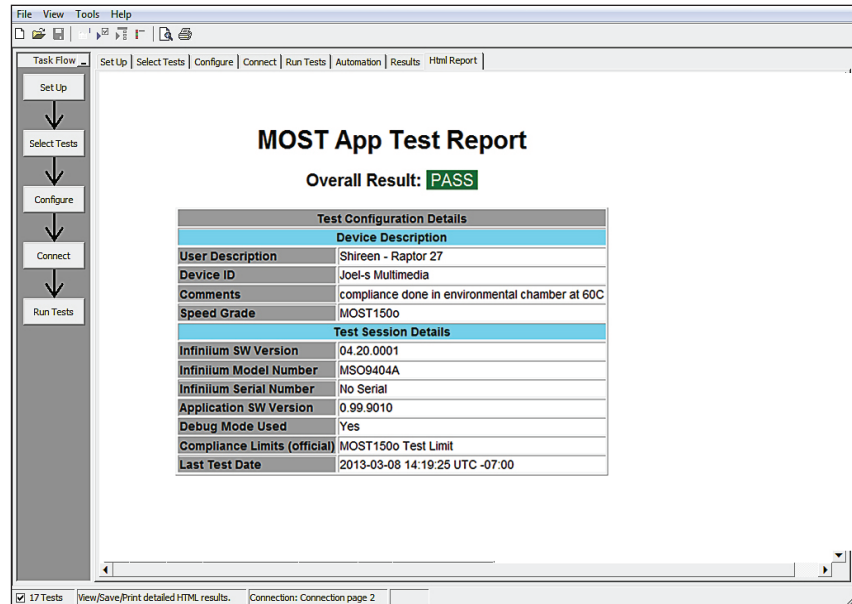

KEYSIGHT TECHNOLOGIES
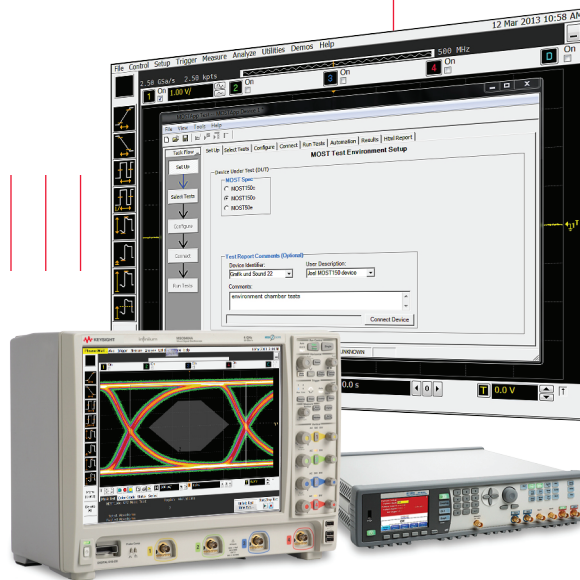
MOST50 and MOST150 Compliance Application Overview

This application is available in the following license variations

- Fixed to an oscilloscope frame
- Floating licenses
  - Server-based license
  - Transportable license

Features

- Quickly and easily test physical layer compliance to MOST technology standards.
- Supports
  - MOST50
  - MOST150 o-Phy
  - MOST150 c-Phy
- Automated setup saves time, reduces complexity, and ensures repeatability.
- 100% test coverage for both MOST50 and MOST150 specifications and included additional informative tests for MOST150 SP3 test points.
- Automatically generates detailed .html test reports with margin analysis.
- Supports remote control and automated testing.
- Multi-trial tests can be run over an extended period of time, for example, in an environmental chamber. A single .html report covers the results of all single run tests combined into a multi-trial report.

Quickly validate compliance to MOST technology standards.

Need to validate physical layer compliance to MOST technology standards? The Keysight Technologies, Inc. MOST compliance application will help you do this quickly and easily without having to be an expert.

The application runs on current Keysight Infiniium oscilloscopes. Unlike other vendors, who require additional jitter (EZJIT+) or serial data analysis (SDA) software to be purchased separately for MOST testing, Keysight's MOST compliance application embeds all jitter and serial data analysis capability needed for testing MOST devices, which provides lower pricing.

The application automates the process, loading the proper setup files; analyzing the measured results by comparing them to limits published in the specification; and report generation including margin analysis of each test so you can see precisely by how much each of your devices passed or failed each test.

Keysight's application can be run programmatically over a long period of time to facilitate testing over an extended period, for example, in an environmental chamber.

Need to generate MOST150 SP4 stress test patterns for receiver testing? Keysight's 81160 is certified as a source for MOST150 stress test patterns. Keysight's application controls both the oscilloscope and the pulse/function generator.

Infiniium oscilloscope users can equip their oscilloscopes with a variety of other automotive test tools including LIN, CAN, FlexRay protocol decode, and BroadR-Reach compliance testing.

MOST Compliance Setup

Setup

Quickly specify which MOST technology standard you are testing. The test selections available are then filtered according to the technology standard you select.

You can optionally name the device you are testing to provide your own generic description. These fields will be added to the test report, enabling you to more easily identify which results are associated with specific devices tested.
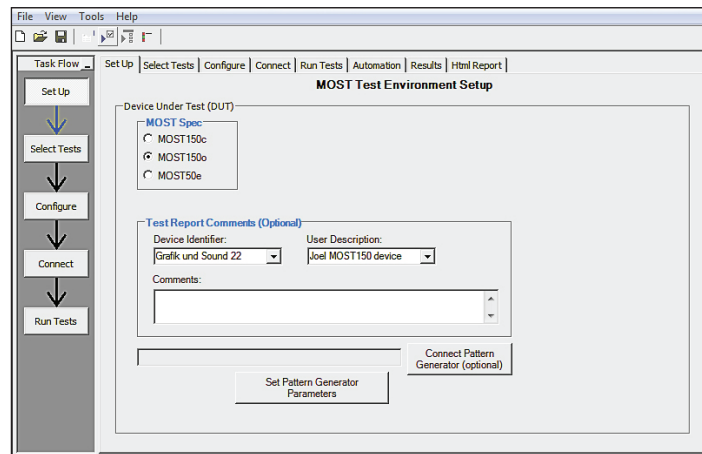
Select tests

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. After tests are run, this menu will reflect test results as shown here.
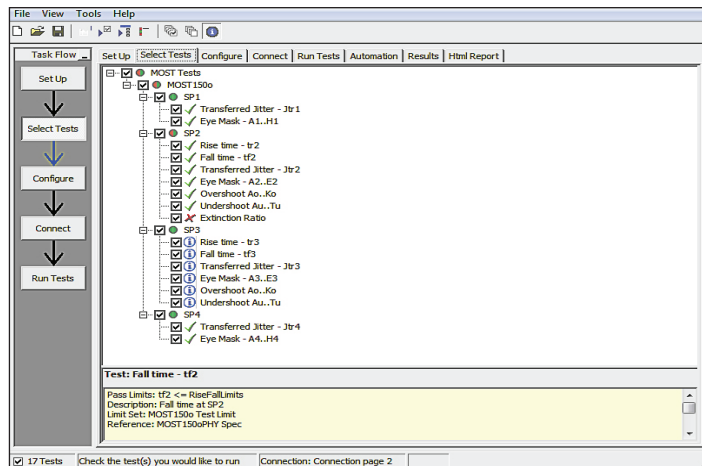
Connect to 81160 for receiver stress testing

Keysight's 81160 allows users to perform additional stress testing for MOST150 receiver design and characterization. Change voltage levels, edge rates and edge delays.
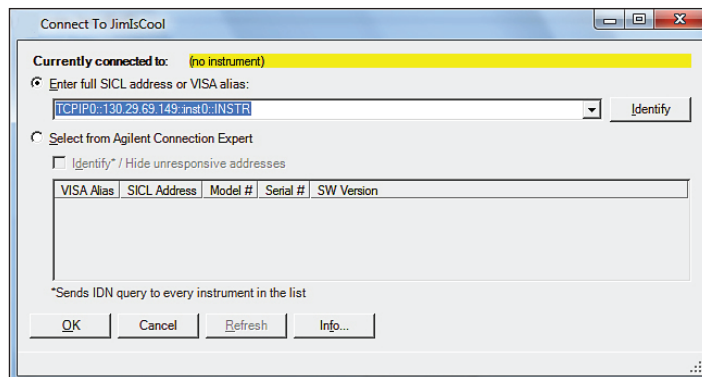
MOST Test Connections and Running Tests

Connect

This tab provides a graphical description of where and how to connect probes to each specification point.

MOST testing requires a differential probe. MOST150 requires a differential probe such as Keysight's N2750A with 1.5 GHz bandwidth.

For MOST150 optical testing, users will need an OEC (optical-to-electrical converter). MOST150 SP2 extinction ratio testing requires a DC-coupled OEC while all the other tests can use either AC-coupled or DC-coupled optical probe. Keysight has completed testing with the Hamamatsu C5658 AC-coupled OEC module while Graviton offers a DC-coupled OEC.
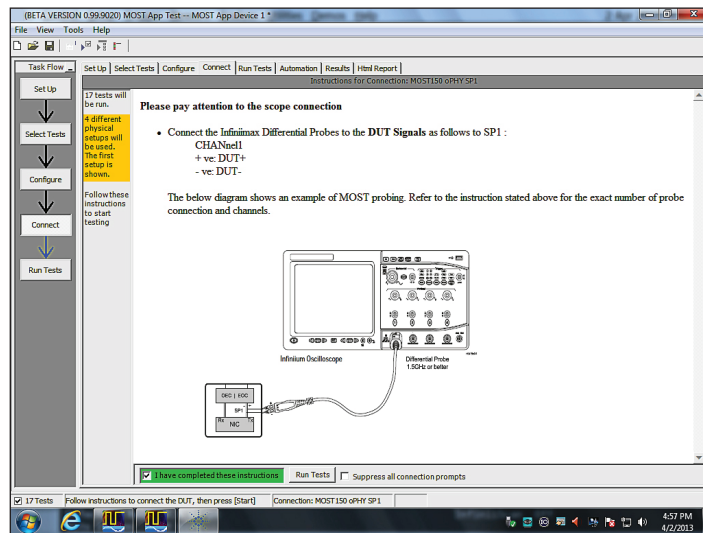
Run tests

Once connected, start the automated testing process. If testing across multiple specification points (SP1, SP2, SP3, SP4), the application will prompt when connections need to be changed to a new specification point.

The application allows single run testing or multiple run testing with up to 250 multi-run tests in a trial. The application will store details of up to 25 of the trial runs.

Users can specify that tests run a certain number of times or until a test fails. The application can automatically e-mail when a test fails, is within a user-specified margin, or passes.
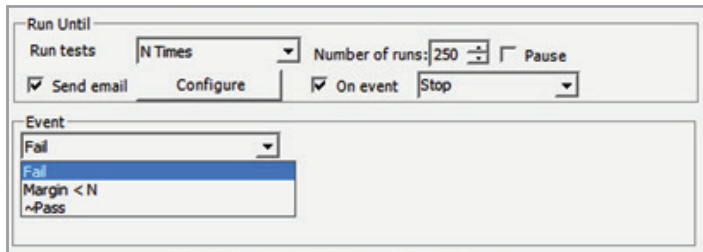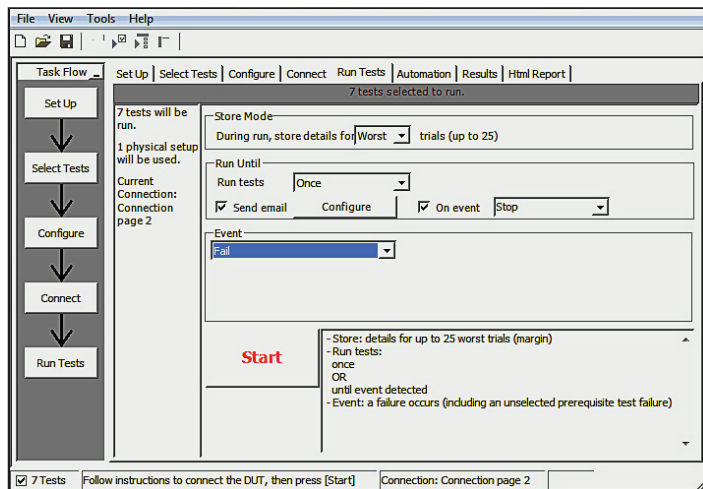
MOST Test Results Report

Test results report

The application automatically generates an .html report. The report can be loaded on a PC or oscilloscope. It includes:

- Date and test equipment used along with any user naming of the tested device.
- Device pass or fail overview.
- Margins and limits for each specified test.
- The test report includes embedded screen shots taken during each test. Click on a hyperlink in the main test report to jump to a specific test result and associated image.
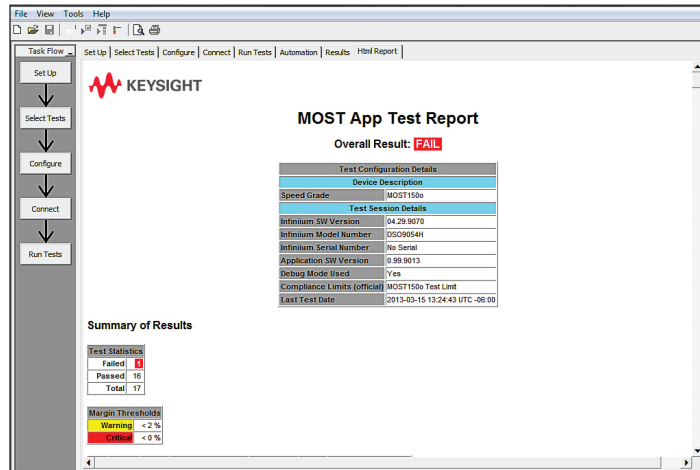
Users can save a project file that includes the test setup and report file. The project file can be loaded on any Infiniium oscilloscope with a MOST compliance application license.
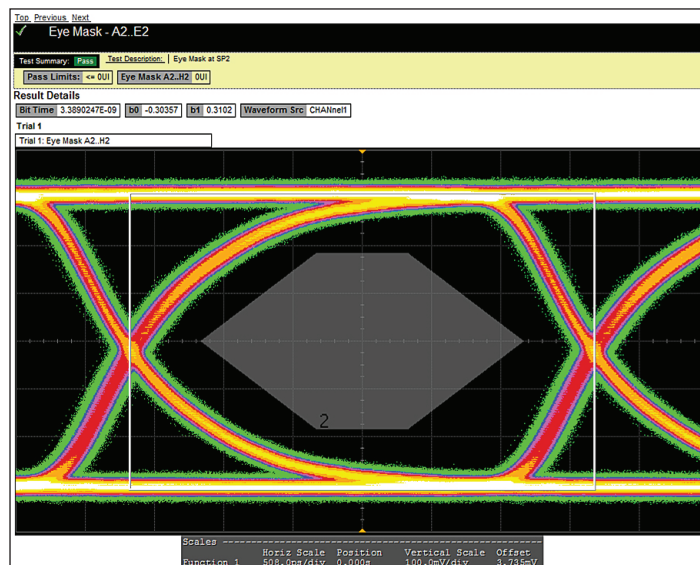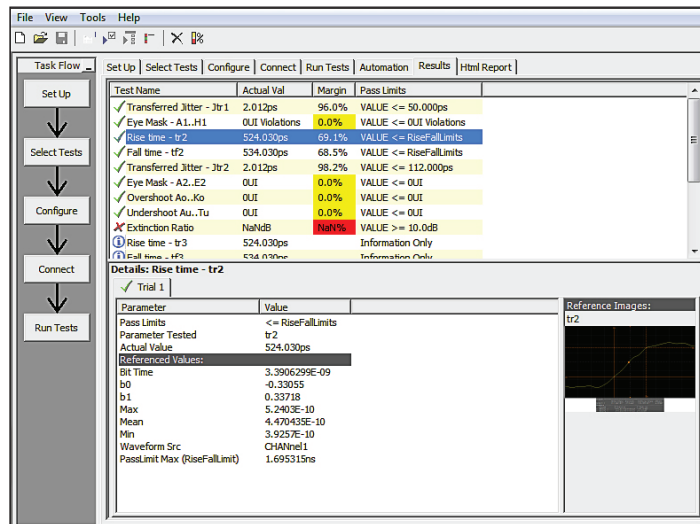
MOST Test Coverage and Optional User-Defined Tests

MOST50	SP1	SP2	SP3	SP4
Measurements supported	Eye diagram	Eye diagram	Eye diagram	Eye diagram
	Transferred jitter	Transferred jitter	Bit Rate	Bit Rate
	Bit Rate	Bit Rate		

MOST150 cPhy	SP1	SP2	SP3 (informative only)	SP4
Measurements supported	Eye mask	Eye mask	Eye mask	Eye mask
	Transferred jitter	Transferred jitter	Transferred jitter	Bit Rate
	Bit Rate	Rise/fall transition times	Rise/fall transition times	Transferred jitter
		Alignment jitter	Alignment jitter	
		Bit Rate	Bit Rate	

MOST150 oPhy	SP1	SP2	SP3 (informative only)	SP4
Measurements supported	Eye mask	Eye mask	Eye mask	Eye mask
	Transferred jitter	Transferred jitter	Transferred jitter	Bit Rate
	Bit Rate	Rise/fall transition times	Rise/fall transition times	Transferred jitter
		Optical overshoot and undershoot	Optical overshoot and undershoot	
		Extinction ratio	B0 and B1 level	
		B0 and B1 level	Alignment jitter	
		Alignment jitter	Bit Rate	
		Bit Rate		

Extensibility

Add additional custom tests or steps to your application using the N5467A User-Defined Application (UDA) development tool (www.keysight.com/find/uda).

Add-ins may be designed as:

– Complete custom tests with configuration variables and connection prompts.
– Any custom steps such as pre- or post-processing scripts, external instrument control, and your own device control.
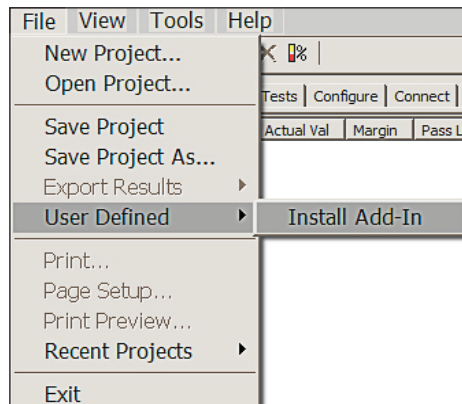
Importing a UDA Add-In into your test application
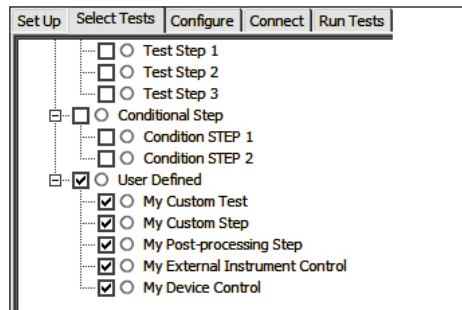
UDA Add-In tests and utilities in your test application

Specifications and Compatibility

MOST specifications

– MOST50, MOST Electrical Physical Layer Compliance Specification Rev 2.1, 7/2010
– MOST150 oPhy, Automotive Physical Layer Sub-Specification, Rev 1.1, 5/2010
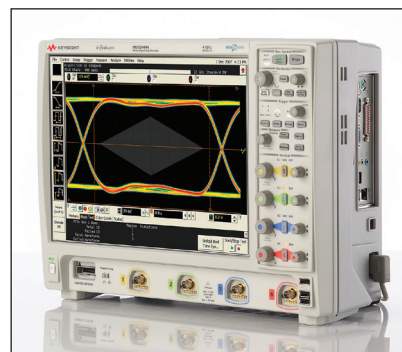– MOST150 oPhy Compliance Measurement Guideline Rev 1.1, 6/2010
– MOST150 cPhy Automotive Physical Layer Sub-specification, Rev 1.0, 1/2011

MOST compliance application for Infiniium oscilloscopes

Application Software			9000 Series	S-Series	90000 Series	Z-Series
MOST compliance application	Fixed	Factory-installed	Option 073	N6466B-1FP	Option 073	N6466A-1FP
		User-installed	N6466B-1NL	N6466B-1FP	N6466A-1NL	N6466A-1FP
			N6466B-1FP*		N6466A-1FP*	
	Floating	Transportable	N6466B-1TP*		N6466A-1TP*	
		Server-based	N5435A-068			

* Requires Infiniium 5.0 or above

Additional required applications

– None

Oscilloscope compatibility

Supported Infiniium frames

– 9000 Series
– S-Series
– 90000 Series
– Z-Series

Required bandwidth

– MOST50: 500 MHz or more
– MOST150 1 GHz or more

MOST150 stress test source

Keysight 81160A pulse function generator

– Official stress test patterns for MOST150 SP4 testing automatically programmed into 81160 when needed

Recommended probing

– MOST50 – 500 MHz or better differential probe
– MOST150 – 1.5 GHz or better differential probe such as N2750A with solder-in or browser or 1130A probe amp with socketed probe head
– MOST150 oPhy
– Testing of optical standards require an OEC (optical to electrical converter). MOST150 SP2 extinction ratio testing requires a DC-coupled OEC while all the other tests can use either AC-coupled or DC-coupled optical probe. Hamamatsu offers the C5658 AC-coupled OEC module, while Graviton offers a DC-coupled OEC

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