



N6465A eMMC Compliance Test Application for Infiniium 9000 Series Oscilloscopes

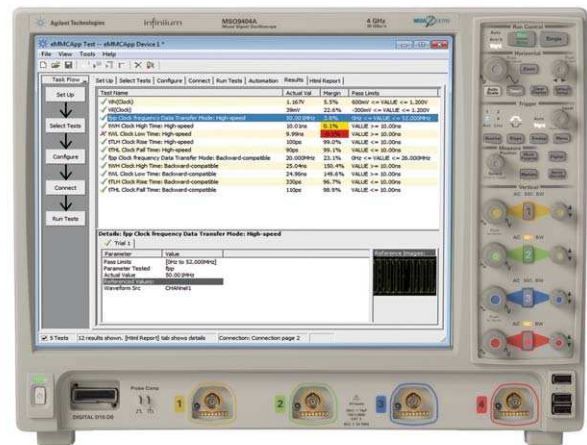
Data Sheet

Introduction

The Agilent Technologies N6465A eMMC compliance test application provides a fast and easy way to test, debug and characterize your eMMC designs. The tests performed by the eMMC compliance test software are based on the JEDEC1 JESD84-B451 specification. The test application offers a user-friendly setup wizard and comprehensive report that includes margin analysis.

The eMMC standard is designed for mobile devices for storing code and data. The eMMC offers the performance and features required by mobile devices while maintaining low power consumption. The eMMC device contains features that support high throughput for large data transfers and performance for small random data in code usage.

The compliance test offers electrical and timing tests as per the JEDEC specification. The N6465A eMMC compliance test application is compatible with Agilent 9000 Series Infiniium oscilloscopes.



Features

The eMMC compliance test application offers several features to simplify the validation of your eMMC designs:

- Setup wizard for quick setup, configuration and test
- Execution speed and proven test algorithm for host and device transmitter tests, which minimizes your compliance test time
- User-selected tests and configurations based on JESD84-B451 specification
- Test framework provides powerful characterization through multiple trials that show a full array of statistics for each measurement and returns the worst measurement value
- Offline capability to allow users to run the compliance test with saved waveform files from device

1 The JEDEC (Joint Electronic Device Engineering Council) Solid State Technology Association is a semiconductor engineering standardization body of the Electronic Industries Alliance (EIA), a trade association that represents all areas of the electronic industry.



Comprehensive test coverage

With the eMMC compliance test application, you can use the same oscilloscope you use for everyday debugging to perform automated testing and margin analysis-based 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 eMMC compliance test application does most of this work for you.

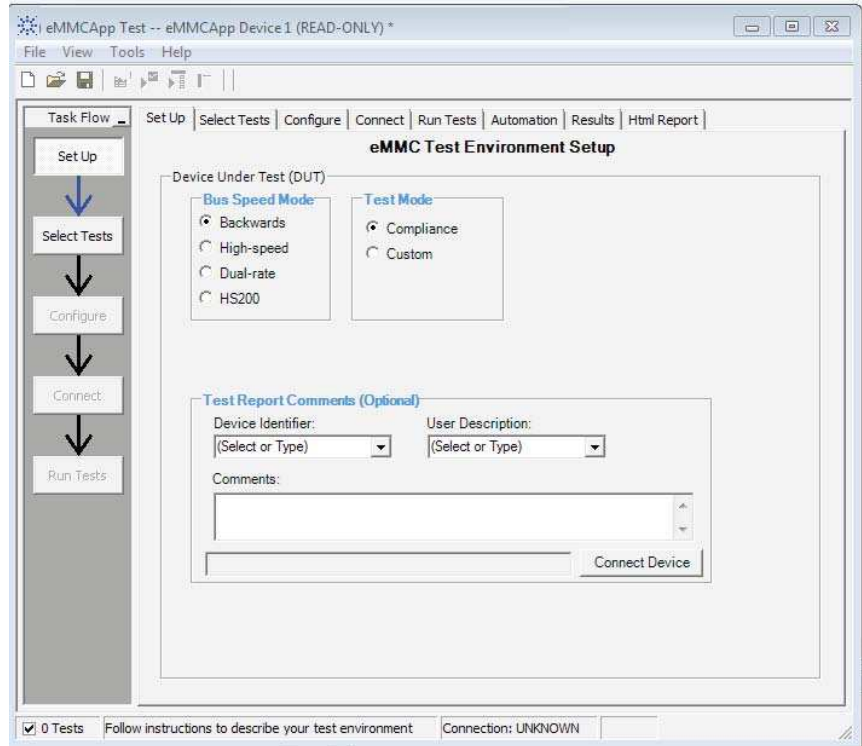


Figure 1: N6465A eMMC compliance test software application provides electrical and timing tests as per JESD84-B451 specifications.

Easy test definition

The test application enhances the usability of Agilent's Infiniium oscilloscopes for testing eMMC devices. The Agilent automated test framework quickly guides you 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.

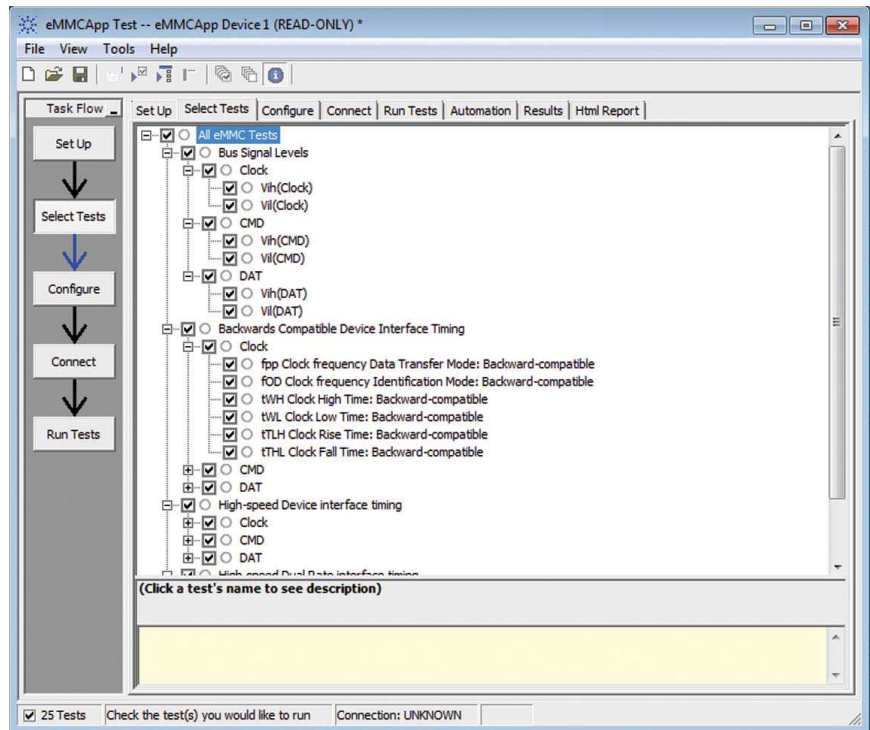


Figure 2: The Agilent automated test engine filters the test selection based on your test setup. You can easily select individual tests or groups of tests with a mouse-click.

Configurability and guided connection

The N6465A compliance test application provides flexibility in your test setup. The eMMC compliance test application provides you with user-defined controls for critical test parameters such as sampling rate and setting for single-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 the multiple test trial capability, you can extensively characterize the performance of your eMMC 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. In addition to providing you with measurement results, the N6465A eMMC compliance test application reports how close you are to the specified limit. You can specify the level at which warnings are to be issued. You are provided with a full array of statistics for each measurement, and you can save worst-case conditions to extensively test the performance of your device.

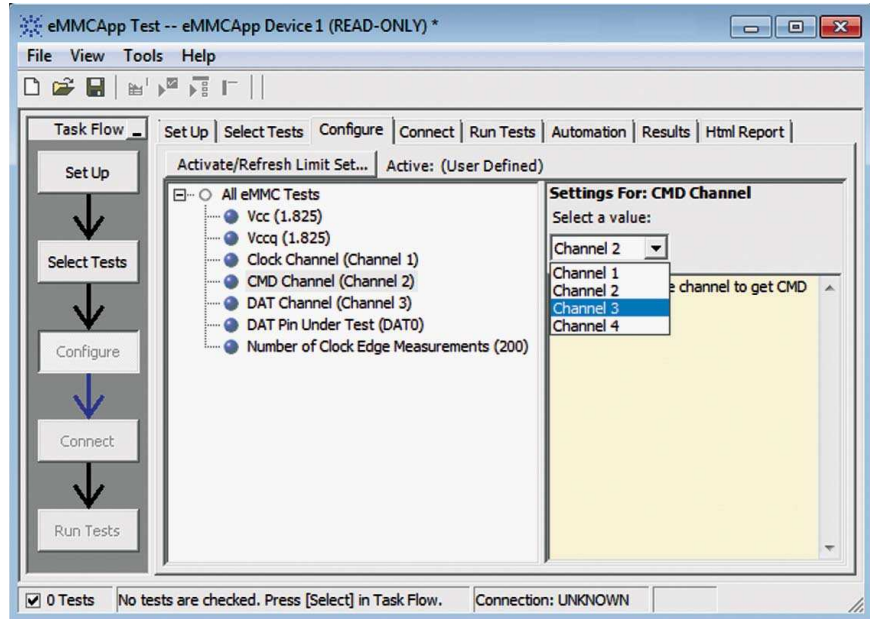


Figure 3: The software provides user-defined controls for test parameters such as number of measurements and channel assignments.

Thorough performance reporting

The N6465A eMMC 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.

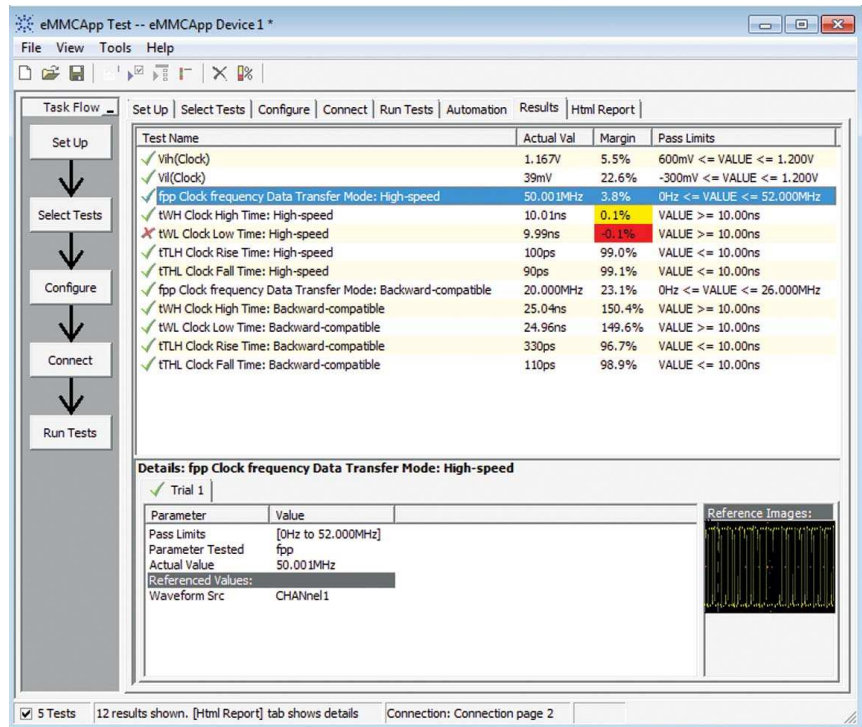


Figure 4: The eMMC test application documents your test parameters, pass or fail status, test specification range, measured values and pass/fail margin.

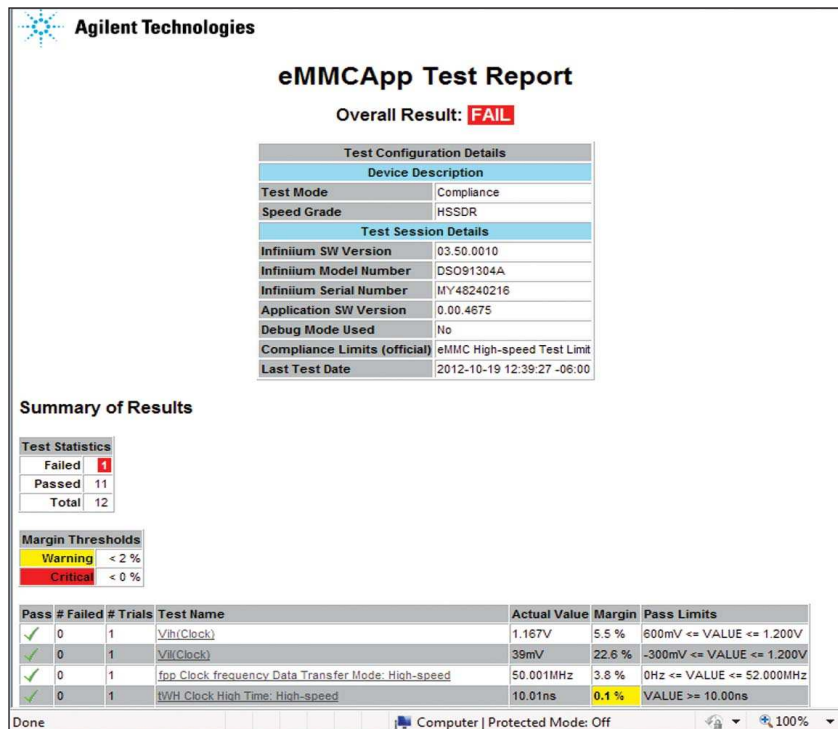


Figure 5: The test application generates a summary report where you can see your device's test results quickly and clearly. Details are available for each test including the test limits, test description and test results. In addition, the pass/fail margin is indicated to give you further insight.

Extensibility

You may add additional custom tests or steps to your application using the N5467A User Defined Application (UDA) development tool (www.agilent.com/find/uda). Use UDA to develop functional “Add-ins” that you can plug into your application.

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

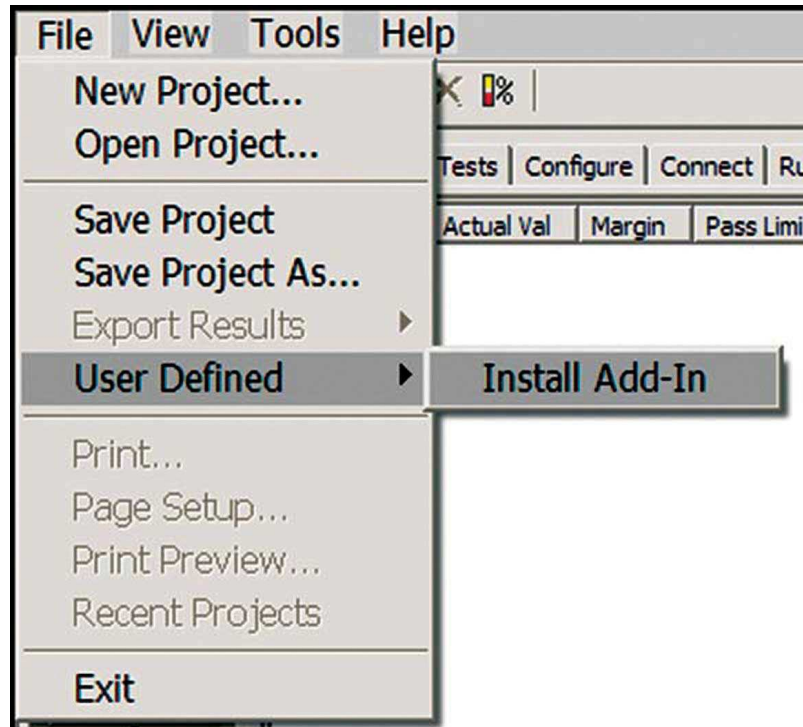


Figure 6: Importing a UDA Add-in into your test application.

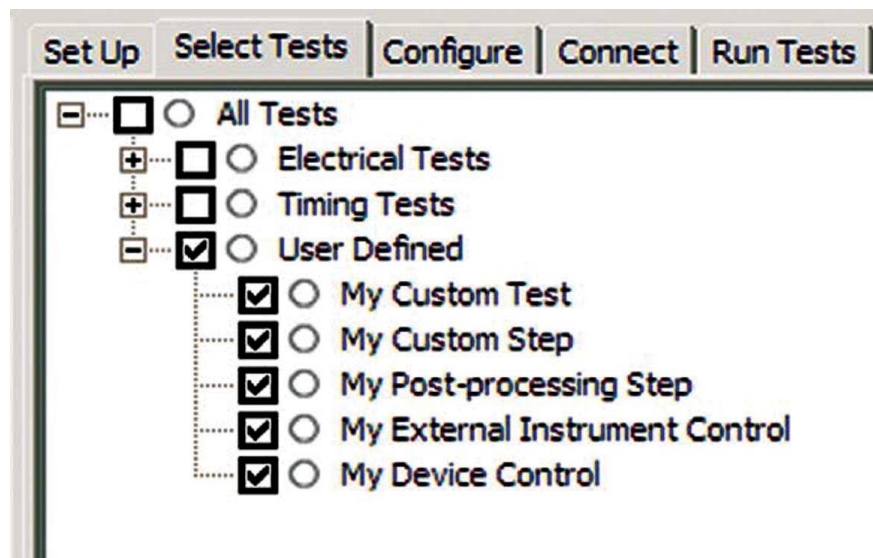


Figure 7: UDA Add-in tests and utilities in your test application.

Automation

You can completely automate execution of your application's tests and Add-ins from a separate PC using the included N5452A Remote Interface feature (download free toolkit from www.agilent.com/find/scope-apps-sw). You can even create and execute automation scripts right inside the application using a convenient built-in client.

The commands required for each task may be created using a command wizard or the "remote hints" accessible throughout the user interface. Using automation, you can accelerate complex testing scenarios and even automate manual tasks such as:

- Opening projects, executing tests and saving results
- Executing tests repeatedly while changing configurations
- Sending commands to external instruments
- Executing tests out of order

Combine the power of built-in automation and extensibility to transform your application into a complete test suite executive:

- Interact with your device controller to place it into desired states or test modes before test execution
- Configure additional instruments used in your test suite such as a pattern generator and probe switch matrix
- Export data generated by your tests and post-process it using your favorite environment, such as MATLAB, Python, LabVIEW, C, C++, Visual Basic, etc.
- Sequence or repeat the tests and "Add-in" custom steps execution in any order for complete test coverage of the test plan

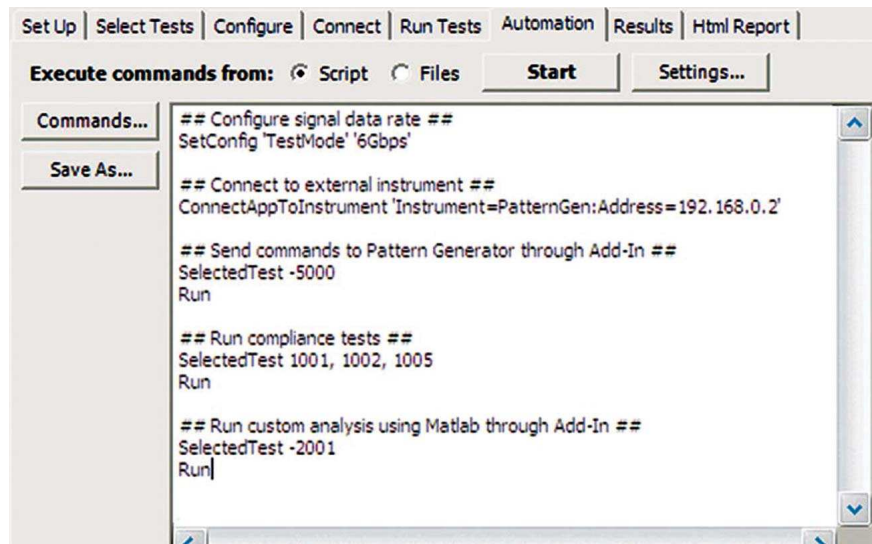


Figure 8: Remote Programming script in the Automation tab.

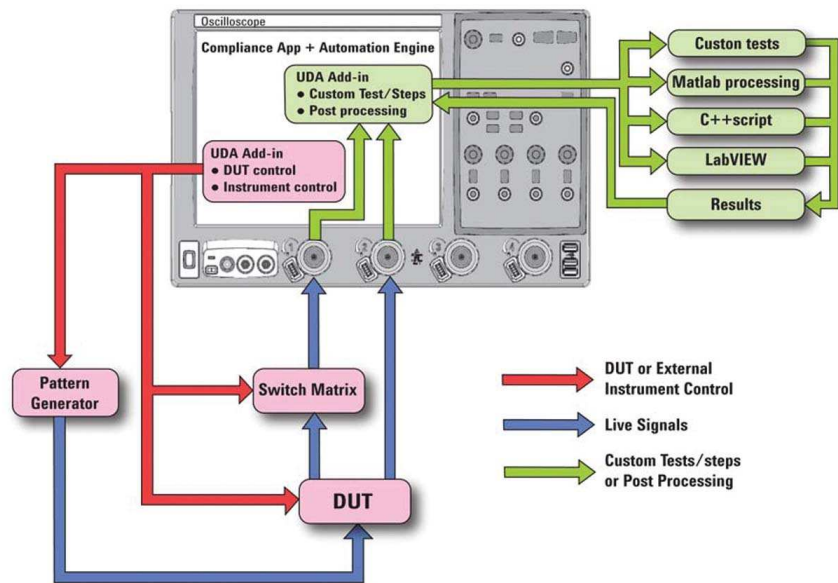


Figure 9: Combine the power of built-in automation and extensibility to transform your application into a complete test suite executive.

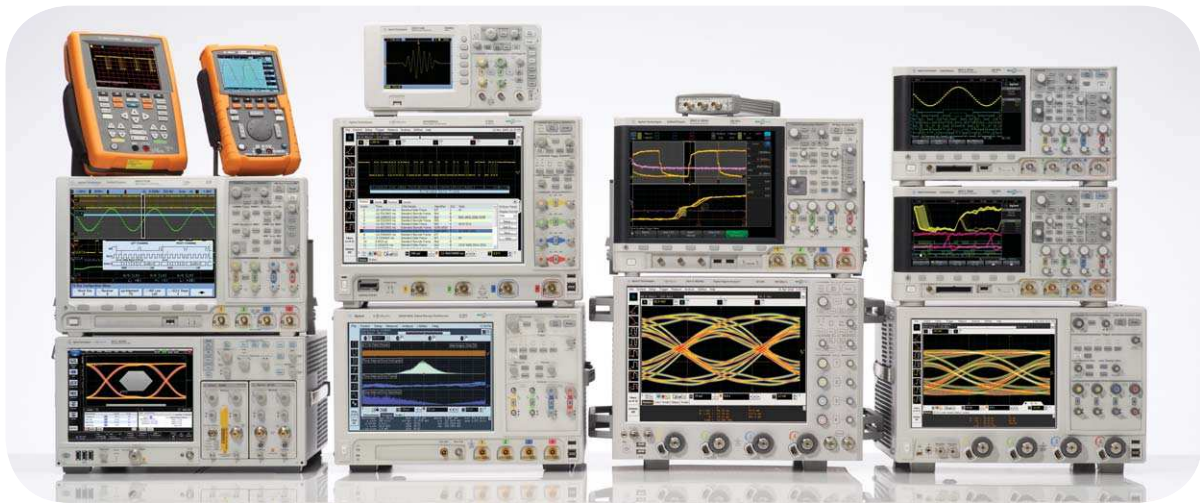
Ordering information

To purchase the Agilent N6465A eMMC compliance test application for your new or existing Infiniium 9000 Series oscilloscope, order the following:

Model Number	Description
9000	Infiniium Series scope (1GHz is recommended for 200MHz testing)
N6465A or N5435A-061	eMMC Compliance Test Software Application Server-based license

Related Literature

Publication Title	Publication Type	Publication Number
<i>Agilent Technologies Infiniium 9000 Series Oscilloscopes</i>	Data Sheet	5990-3746EN
<i>Agilent Oscilloscope Probes and Accessories</i>	Data Sheet	5989-6162EN



Agilent Technologies Oscilloscopes

Multiple form factors from 20 MHz to > 90 GHz | Industry leading specs | Powerful applications



myAgilent

www.agilent.com/find/myagilent

A personalized view into the information most relevant to you.



www.axiestandard.org

AdvancedTCA[®] Extensions for Instrumentation and Test (AXIe) is an open standard that extends the AdvancedTCA for general purpose and semiconductor test. Agilent is a founding member of the AXIe consortium.



www.lxistandard.org

LAN eXtensions for Instruments puts the power of Ethernet and the Web inside your test systems. Agilent is a founding member of the LXI consortium.



www.pxisa.org

PCI eXtensions for Instrumentation (PXI) modular instrumentation delivers a rugged, PC-based high-performance measurement and automation system.

Agilent Channel Partners

www.agilent.com/find/channelpartners

Get the best of both worlds: Agilent's measurement expertise and product breadth, combined with channel partner convenience.



Agilent Advantage Services is committed to your success throughout your equipment's lifetime. We share measurement and service expertise to help you create the products that change our world. To keep you competitive, we continually invest in tools and processes that speed up calibration and repair, reduce your cost of ownership, and move us ahead of your development curve.

www.agilent.com/find/advantageservices



Windows[®] is a U.S. registered trademark of Microsoft Corporation.

www.agilent.com
www.agilent.com/find/n6465a

For more information on Agilent Technologies' products, applications or services, please contact your local Agilent office. The complete list is available at:

www.agilent.com/find/contactus

Americas

Canada	(877) 894 4414
Brazil	(11) 4197 3600
Mexico	01800 5064 800
United States	(800) 829 4444

Asia Pacific

Australia	1 800 629 485
China	800 810 0189
Hong Kong	800 938 693
India	1 800 112 929
Japan	0120 (421) 345
Korea	080 769 0800
Malaysia	1 800 888 848
Singapore	1 800 375 8100
Taiwan	0800 047 866
Other AP Countries	(65) 375 8100

Europe & Middle East

Belgium	32 (0) 2 404 93 40
Denmark	45 45 80 12 15
Finland	358 (0) 10 855 2100
France	0825 010 700*
	*0.125 €/minute
Germany	49 (0) 7031 464 6333
Ireland	1890 924 204
Israel	972-3-9288-504/544
Italy	39 02 92 60 8484
Netherlands	31 (0) 20 547 2111
Spain	34 (91) 631 3300
Sweden	0200-88 22 55
United Kingdom	44 (0) 118 927 6201

For other unlisted countries:

www.agilent.com/find/contactus

Revised: October 11, 2012

Product specifications and descriptions in this document subject to change without notice.

© Agilent Technologies, Inc. 2012
Published in USA, November 13, 2012
5991-1397EN



Agilent Technologies