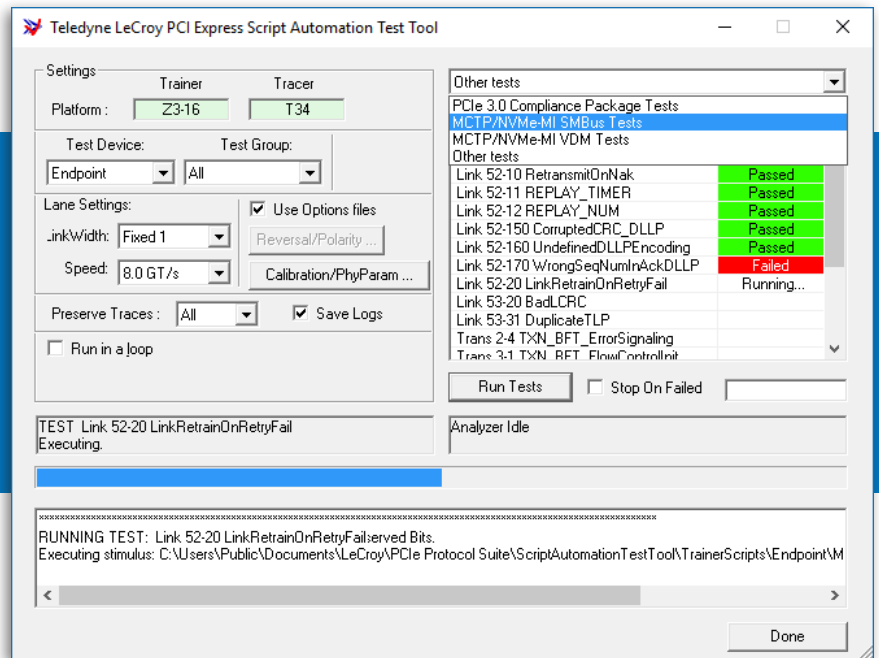


NVMe Management Interface (NVMe-MI) Conformance Tests



Key Features

Fully Integrated and Automated

Simplifies and speeds testing of new product designs for implementing NVMe-MI specification

Supports PCIe SSDs

Supports all PCI Express data rates up to and including 8.0 GT/s

Supports x1, x2, x4 and x8 Link Width

Test all lane widths to validate all possible configurations

Over 670 Test Cases

Extensive validation of full NVMe-MI feature set

Customizable Test Scripts

Allows for custom test development and modifications

Preserves Trace Data on Failure

Guides engineers directly to problem areas and enables fast debug

Assure Product Quality and Minimize Time-to-Market

The NVMe-MI Conformance tests are designed to determine if a product conforms to specifications defined in the NVM Express Management Interface (NVMe-MI) specification.

Successful completion of these tests provide a reasonable level of confidence that the Device Under Test (DUT) will function properly in a NVMe-MI environment. Teledyne LeCroy offers a fully integrated and automated validation testing system for NVM Express SSD



devices. The NVMe-MI Conformance Tests run on the PCI Express Automation Test Tool. The NVMe-MI Conformance Tests require Teledyne LeCroy's Summit™ T34 protocol analyzer and Summit Z3-16 Test Platform with SMBus support in order to run the tests. Tests are available to run on x1, x2, x4, and x8 links, and at data rates of 2.5 GT/s, 5.0 GT/s and 8.0 GT/s. The NVMe Conformance Tests are separately sold from the PCIe Protocol Suite.

The PCI Express Automation Test Tool allows you to:

- Run the NVMe-MI Conformance Tests
- Prepare your SSD to pass the NVMe-MI Conformance test from the UNH-IOLS
- Display a log window that show you the test events leading up to the pass or fail of an individual Conformance Test
- Identify error, including type, shows you where the errors occurs in the trace, and includes hyperlinks back to that trace
- Automatically run tests and save log files
- Error logs and their corresponding failure in the protocol trace are saved together for product development records
- Modify the Conformance test and generate test scenarios through the script editor.

The Automated Test Application and NVMe Conformance tests together support twelve groups of tests, including: MCTP Base Tests, MCTP Control Message Test, MCTP Commands, NVMe Error handling, NVMe Manage Interface, NVMe-MI Message Processing, Control Primitives Tests, Management Interface Command, NVMe Admin Command Set, Management Enhancement, Vital Product Data, and Management Endpoint Reset. A list is given below of the various tests.

MCTP Base Tests

Test 1.1 – MCTP Endpoint ID	PASSED
Test 1.1.1 – MCTP Endpoint ID – Reserved Bits	PASSED
Test 1.2 – MCTP Packet Sequence Number	PASSED
Test 1.3 – MCTP Tag Owner and Message Tag Bits	PASSED

MCTP Control Message Test

Test 1.4.1 – MCTP Bad Packet 1	PASSED
Test 1.4.2 – MCTP Bad Packet 2	PASSED
Test 1.4.3 – MCTP Bad Packet 3	PASSED
Test 1.4.4 – MCTP Bad Packet 4	PASSED
Test 1.4.5 – MCTP Bad Packet 5	PASSED

MCTP Commands

Test 2.1 – MCTP Control Instance ID	PASSED
Test 3.1 – MCTP Command Set Endpoint ID	PASSED
Test 3.2 – MCTP Command Get MCTP Version	PASSED
Test 3.3 – MCTP Command Get Message Type	PASSED
Test 3.6 – MCTP Command Get Endpoint ID	PASSED
Test 3.4 – MCTP Command Prepare for Endpoint Discovery	PASSED
Test 3.5 – MCTP Command Endpoint Discovery	PASSED

NVMe Error Handling

Test 4.1 - NVMe-MI Invalid Opcode	PASSED
Test 4.2 - NVMe-MI Reserved Identifier	PASSED
Test 4.3 - NVMe-MI Health Status Change	PASSED
Test 4.4 - NVMe-MI Reserved Identifier 2	PASSED
Test 4.5 - NVMe-MI MAXRENT Error	PASSED
Test 4.6 - NVMe-MI Reserved Data Structure Type	PASSED
Test 4.7 - NVMe-MI Invalid VPD Read Size	PASSED
Test 4.8 - NVMe-MI Invalid VPD Write Status	PASSED
Test 4.9 - NVMe-MI Invalid Parameter Status	PASSED
Test 4.10 - NVMe-MI Invalid Command Size	PASSED

NVMe Manage Interface

Test 5.1 – NVMe-MI Message Type	PASSED
Test 5.2 – NVMe-MI Message IC	PASSED
Test 5.3 – NVMe-MI CRC Check	PASSED
Test 5.4 – NVMe-MI Command Slot	PASSED
Test 5.5 – NVMe-MI Request Data size mismatch	PASSED

Test 5.6 – NVMe-MI MCTP packet padding	PASSED
Test 5.7 – NVMe-MI Message Integrity Check	PASSED

NVMe-MI Message Processing

Test 6.1 – NVMe-MI Reserved Fields	PASSED
Test 6.2 – NVMe-MI Error Response Code	PASSED

Control Primitives Tests

Test 7.1 – NVMe-MI Response Tag	PASSED
Test 7.2 – NVMe-MI Response Message	PASSED
Test 7.3 – NVMe-MI GetState Primitive Response	PASSED
Test 7.4 – NVMe-MI Response Message Replay	PASSED

Management Interface Command

Test 8.1 – NVMe-MI Response Header	PASSED
Test 8.2 – NVMe-MI Configuration Set	PASSED
Test 8.3 – NVMe-MI Config Get Response	PASSED
Test 8.4 – NVMe-MI Health Status Poll	PASSED
Test 8.5 – NVMe-MI Controller Health Status Poll	PASSED
Test 8.6 – NVMe-MI Read Data Structure	PASSED
Test 8.7.1 – NVMe-MI NVMSSI Data Length	PASSED
Test 8.7.2 – NVMe-MI PortInfo Data Length	PASSED
Test 8.7.3 – NVMe-MI CtrlrList Data Length	PASSED
Test 8.7.4 – NVMe-MI CtrlrInfo Data Length	PASSED
Test 8.7.5 – NVMe-MI OptCmds Data length	PASSED

NVMe Admin Command Set

Test 9.1 – NVMe-MI Mandatory Admin Commands	PASSED
---------------------------------------------	--------

Management Enhancement

Test 10.1 – NVMe-MI Identify Structure ME Capabilities	PASSED
Test 10.2 – NVMe-MI Identify Capabilities	PASSED
Test 10.3 – NVMe-MI Namespace Metadata	PASSED

Vital Product Data

Test 11.1 – NVMe-MI VPD Default Values	PASSED
----------------------------------------	--------

Management Endpoint Reset

Test 12.1 – NVMe-MI PCIe Reset	PASSED
--------------------------------	--------

Ordering Information

Product Description

- Summit T34 Protocol Analyzer
- Summit T34 MCTP SMBus/NVMe-MI Decode Option
- Summit T34 MCTP PCIe/NVMe-MI Inband Decode Option
- Summit Z3-16 Exerciser with SMBus support
- Summit Z3-16 MCTP SMBus/NVMe-MI Option
- Summit Z3-16 MCTP PCIe/NVMe-MI Inband Option
- Test Platform for Summit Z3-16 with SMBus support
- x4-to-x8 Straight iPass Blue Cable, 1 meter
- NVMe-MI Conformance Tests

Product Code

- PE080AAA-X
- PE182SUA-A
- PE184SUA-A
- PE072AGA-X
- PE181SUA-A
- PE183SUA-A
- PE052UEA-X
- PE015UCA-X
- PE189SUA-A



Local sales offices are located throughout the world.
Visit our website to find the most convenient location.

1-800-5-LeCroy • teledynelecroy.com



TELEDYNE LECROY
Everywhere you look™