



Agilent N2X

MPLS Protocol Conformance Test Suites

N5710A and N5711A

Technical Data Sheet



Most comprehensive MPLS signaling protocol conformance tests suites enable rapid verification and problem isolation with the industry leading N2X Test Manager.



Agilent Technologies

Key Features

- **Comprehensive RSVP & LDP protocol conformance testing**
- **Industry leading Test Manager designed to simplify conformance testing**
- **Rapid result diagnosis and problem isolation**
- **Easily extendable test suite**
- **Automatic configuration and control of device under test**
- **Comprehensive test documentation and reporting tools**

Product Overview

The Agilent N2X is the industry's most comprehensive test solution for testing the development and deployment of network services for converging network infrastructures. Agilent N2X delivers unparalleled test realism to verify the ultimate performance, scalability and resilience of carrier grade services and infrastructure.

N2X Productivity Advantage delivers a rich set of automated applications designed to maximize testing productivity. Service providers and network equipment manufacturers will save months of engineering effort by eliminating the need for developing and supporting customized applications.

N2X Productivity Advantage incorporates a comprehensive protocol conformance solution with a unique Test Manager that provides industry leading usability and reporting features for rapid result diagnosis and problem isolation.

Agilent N2X delivers industry's most comprehensive range of MPLS signaling test suites for validating protocol conformance. Equipment manufacturers and service providers can expect to achieve a higher confidence with regard to their signaling implementation and quickly establish a flexible regression test environment with N2X's automated Conformance Test Suites (CTSs).

- N5710A – MPLS RSVP Conformance Test Suite
- N5711A – MPLS LDP Conformance Test Suite

N2X MPLS Conformance Test Suites when combined with the N2X MPLS Protocol Emulation Software provides the fastest and most comprehensive scalability and performance verification of your MPLS networks and devices.

Industry leading Test Manager

The N2X protocol conformance solution incorporates a unique Test Manager with industry leading usability and reporting features. This allows for rapid result diagnosis and problem isolation saving engineers time and effort involved in developing and validating protocol implementations. The Test manager also has the flexibility to be easily integrated within a user's regression strategy.

The tree-based navigation and test suite configuration, dynamic graphical protocol sequence diagram and comprehensive reporting features of the N2X Conformance Test Manager simplifies testing. Combined with the granular test result evaluation (pass, conditional pass, inconclusive and fail), detailed packet decode and filtering capabilities, N2X accelerates resolution of test case errors.

The test configurations (including tester and DUT) can be saved and restored to ensure the exact replication of a previous test run. At the completion of each test, the test results (along with all the configuration and results detail) are automatically saved and available for loading through an integrated result selection panel.

The N2X Conformance Test Manager combined with the MPLS test suites provide a comprehensive set of automated tests that assess the protocol compliance and interoperability.

Rapid result diagnosis and problem isolation

The Conformance Test Manager window instantly displays progress at the test case, test group, and test suite level. The progress and results for each test case and for the test as a whole can be viewed in real-time.

Users can view a log of test case events, the actual PDU sequence and PDU decodes. The outcome of each test case is color coded for instant recognition of the result. These features enable users to assess the outcome of a particular test case or test group at a glance and isolate problems quickly.

Multiple instances of the Test Manager can be opened allowing for easy comparison between tests that use the same configuration, but have been run at different times.

Extendable test suite

The N2X Conformance Test Suites can be readily extended to include corner cases, verify proprietary features or test features of new standards that have not yet been implemented.

A comprehensive list of programming interfaces, well-documented test case templates and on-line help provide users with a step by step guide on how to write their own test script and make it available for execution through the N2X Test Manager.

A test case written by the user will have all the unique fault isolation and reporting features of the Test Manager.

Automatic configuration and interaction with device under test

Automatic device under test (DUT) control and configuration capabilities further simplify the testing process and allow the N2X Conformance Test Suite to be integrated into users own test environment. The N2X Test Manager provides some commonly used device types with sample configuration parameters that users can easily modify using the GUI. User can also create a new DUT type using the XML and Tcl templates provided. Once the DUT type has been setup users will never need to manually configure the device under test during run time - saving a great deal of testing time.

Comprehensive test documentation and reporting tools

The N2X Conformance Test Manager has an integrated test description and expected PDU sequence diagram, provide quick identification of the test purpose, and its implementation.

These features are crucial when trying to isolate and understand any issues encountered during a test execution.

All information displayed before and after a test execution can be saved into many different file formats for future analysis or printing. This includes test case description documentation, sequence diagrams, test run results, as well as a purpose designed test run report.

Test Suites and Applicable Standards

N5710A MPLS RSVP Conformance Test Suite

The suite provides automatic conformance verification for the RSVP signaling protocol standards with its comprehensive coverage. All common signaling protocol behaviors can be verified including traffic engineering and refresh reduction extensions.

N5710A-001 MPLS RSVP Basic CTS License

This suite comprises 185 test cases for the following standards.

- Basic RSVP [as it applies to RSVPTE only] –(RFC 2205)
- RSVP Refresh Overhead Reduction - (RFC 2961)
- MPLS Architecture Specification - (RFC 3031)
- MPLS Label Stack Encoding – (RFC 3032)
- RSVP-TE [MPLS Extension for RSVP] – (RFC3209)
- RSVP-TE UnNumbered Links - (RFC 3477)

N5710A-002 MPLS RSVP CTS Extension License

This suite comprises 66 test cases for the following standards.

- RSVP Refresh Overhead Reduction [S.Refresh messaging] (RFC 2961 - Extension)
- GMPLS RSVP-TE - GR section only (RFC 3473 Sct9: Fault Handling)
- Fast Re-Route for RSVP-TE (RFC 4090)
- RSVP messaging Processing Rules (RFC 2209) (info only, no test cases)
- RSVP QOS (RFC 2210) (info only, no test cases)

N5711A MPLS LDP Conformance Test Suite

It is the most comprehensive suite designed to accelerate the conformance verification and regression testing of LDP implementations.

N5711A-001 MPLS LDP Basic CTS License

This suite comprises 207 test cases for the following standards.

- MPLS Architecture Specification - (RFC 3031)
- MPLS Label Stack Encoding - (RFC 3032)
- LDP and VC ATM - (RFC 3035)
- LDP Specification - (RFC 3036 – Basic)
- [LDP State Machine] - (RFC 3215)

N5711A-002 MPLS LDP CTS Extension License

This suite comprises 34 test cases for the following standards.

- LDP Loop Detection (RFC 3036 – Extension)
- LDP Graceful Restart (RFC 3478)

Software Requirements

Each conformance test suite has a Software and Support Agreement (SSA) contract options associated with it:

- PS-S12-001 - 1 year contract included with initial purchase
- PS-S12-102 - 1 year contract extended to 2 years
- PS-S12-103 - 1 year contract extended to 3 years

Please ensure that you have a current SSA in order to automatically receive future releases and technical product support.

The following N2X software licenses are a pre-requisite to supporting any conformance test suite:

- E7880B - Packets or E7881B - Packets and Protocols Application Software

Hardware Requirements

All the conformance test suites are supported on both Ethernet and POS N2X XR test cards.

N2X XP test cards do not support the N2X conformance test application.

Agilent N2X

Agilent's N2X multi-service tester combines leading-edge services with carrier grade infrastructure testing and emulation. The N2X solution set allows network equipment manufacturers and service providers to more comprehensively test new services end-to-end, resulting in higher quality of service and lower network operating costs.

Warranty and Support

Hardware Warranty

All N2X hardware is warranted against defects in materials and workmanship for a period of 1 year from the date of shipment.

Software Warranty

All N2X software is warranted for a period of 90 days. The applications are warranted to execute and install properly from the media provided.

This warranty only covers physical defects in the media, whereby the media is replaced at no charge during the warranty period.

Software Updates

With the purchase of any new system controller Agilent will provide 1 year of complimentary software updates. At the end of the first year you can enroll into the Software and Support Agreement (SSA) contract for continuing software product enhancements.

Support

Technical support is available throughout the support life of the product. Support is available to verify that the equipment works properly, to help with product operation, and to provide basic measurement assistance for the use of the specified capabilities, at no extra cost, upon request.

Ordering Information

To order and configure the test system consult your local Agilent field engineer.

Sales, Service and Support

United States:

Agilent Technologies
Test and Measurement Call Center
P.O. Box 4026
Englewood, CO 80155-4026
1-800-452-4844

Canada:

Agilent Technologies Canada Inc.
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