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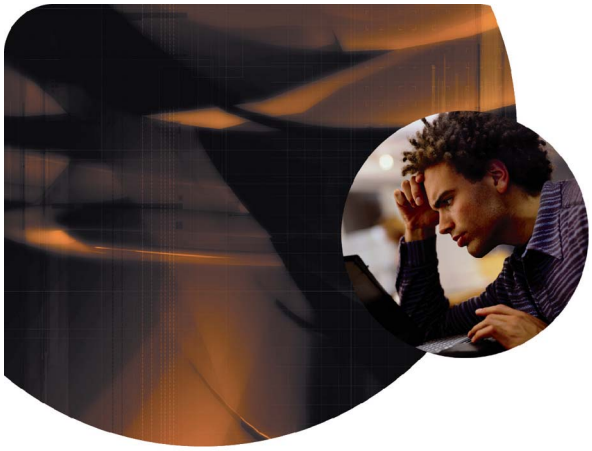
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Agilent N2X

Agilent N2X Chassis

N5540A, N5541A and N5542A
Technical Data Sheet



The most powerful, scalable, and realistic multi-port test system for verifying the ultimate performance of multi-service networks and devices.

Agilent Technologies

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Key Features

- **Hot-swappable test cards**
- **Multi-user, remotely accessible**
- **Support for SONET/SDH, POS, ATM, Ethernet, FR and Fibre Channel interfaces**
- **Capable of daisy-chaining up to 60 chassis, time synchronized to 10 ns**
- **Hundreds of test ports available in one system**
- **Completely backward compatible with existing RouterTester 900, OmniBER XM and SAN Tester hardware and software**

Product Overview

Agilent N2X is the industry's most comprehensive test solution for testing the development and deployment of network services for converging network infrastructures. Service providers, network equipment manufacturers (NEMs), and component manufacturers can verify service attributes of entire networks end-to-end, while also isolating problems down to individual networking devices and subsystems.

Agilent N2X has significantly enhanced RouterTester 900, OmniBER XM and SAN Tester, and combined them into an integrated test solution. What distinguishes N2X is its ability to test leading-edge services such as metro Ethernet, MPLS L2/3 VPNs, Multicast and SAN services, over the latest converging infrastructures such as MPLS, IPv6 and next-generation SONET/SDH, simultaneously in the one test environment.

The Agilent N2X provides cost-effective multi-port test system for verifying the ultimate performance of multi-services networks and devices – from multi-channel simulation and analysis of SDH and SONET standards, to wire-speed packet generation, through to simulation of Internet-scale network topologies around Multi Service Platforms, switches and routers.

Agilent offers 3 types of N2X chassis from a 2-slot portable unit to a 4-slot platform which can be mounted in a standard 19" rack or stacked on a bench top.

N5540A 2-slot Portable Chassis

The chassis provides a convenient platform for testing scenarios where portability or small size is a factor. Two different card types can be configured simultaneously allowing for test scenarios that use a combination of port types.

N5541A 4-slot Chassis

The chassis provides a small, flexible platform that can be either mounted in a standard 19" rack or stacked on a bench top. It can accommodate up to 4 test cards, providing added flexibility in system configuration.

N5542A 4-slot Chassis with ext BITS / MTS clock input

This version of the 4-slot chassis has the capability to synchronize the transmit clock on all the N2X XM test cards in a system to a common source. Users have a choice of four external reference clock inputs for synchronization:

- 1.544 Mb/s BITS
- 2.048 Mb/s MTS
- 2.048 MHz
- 10 MHzT



Agilent N2X chassis family

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Product Features

Hot-swappable test cards

Cards can be easily swapped between chassis in different locations, even while the system is powered, allowing cards to be added or removed without interrupting another user's test configuration.

Versatile test port arrangement

With support for up to 64 ports of 10/100 Ethernet or 8 ports of OC-48c POS in 2U of rack space, the Agilent N2X chassis provides a dense port arrangement.

The N2X chassis will scale to provide hundreds of ports of connectivity to your system under test (SUT), providing a powerful large-scale test solution.

Multi-user, remotely accessible

Multiple users can access a single chassis, each controlling their own set of test ports within the chassis. The chassis, together with other chassis forms a complete test system that is remotely accessible via the on-board application programming interface.

Support for SONET/SDH, POS, ATM, Ethernet, Frame Relay and Fibre Channel interfaces

The Agilent N2X solution provides support for SONET/SDH (OC-3/12/48 & OC-192), POS (OC-3c to OC-768c), ATM(OC-3c & OC-12c, Ethernet (10 Mb/s to 10Gb/s), Frame Relay (OC-3c to OC-48c) and Fibre Channel (1 Gb/s to 4Gb/s) interfaces.

Daisy-chain up to 60 chassis, time synchronized to 10 ns

The Agilent N2X 4-slot chassis is highly scalable to provide hundreds of ports of combined real-time traffic and protocol testing. Up to 60 chassis, or 3 full test racks, can be daisy chained and synchronised to 10 ns for large scale testing.

Backward compatible with existing RouterTester, OmniBER XM and SAN Tester

Designed as an extension to the industry leading RouterTester 900, OmniBER XM and SAN Tester system, this chassis is completely compatible with existing hardware and test software.

Configuration

The N2X Chassis is a component of the Agilent N2X solution. Test cards, system controller PC, and system software are required to form a complete N2X system.
Product Numbers

- N5540A 2-slot Portable Chassis
- N5541A 4-slot Chassis
- N5542A 4-slot Chassis with ext BITS / MTS clock input

Accessories

- E7912-80012
  N2X 2-slot Chassis Hard Transit Case
- E7900-80012
  N2X 4-slot Chassis Hard Transit Case
- E7900-64207
  N2X Chassis-to-Chassis Cable
- E7900-64208
  N2X Rack-to-Rack Cable

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Technical Specifications.

Mechanical & Electrical Specifications

Physical

Test card slots	2 and 4
Width	• 30 cm (11.81″) - 2 slot • 45.4 cm (17.87″) (mounts in EIA-standard 19″ rack) - 4 slot
Depth	• 49.0 cm (19.29″) - 2 slot • 49.0 cm (19.29″) - 4 slot
Height	• 11 cm (4.33″) - 2 slot • 8.89 cm (3.50″ = 2U) - 4 slot
Weight (empty)	• 5.1 kg (11.2 lbs) - 2 slot • 9.1 kg (20 lbs) - 4 slot
Weight (fully loaded)	• 7.5 kg (16.5 lbs) typical - 2 slot • 12.7 kg (28 lbs) - 4 slot

Electrical

AC Voltage	• 100 to 120 V nominal • 200 to 240 V nomina
Frequency	• 47 to 63 Hz
Power consumption	• 330 W max - 2slot • 630W max - 4 slot

Environmental

Location	Indoor use only Altitude up to 2000m
Operating temperature	• 5 °C to 40 °C
Storage temperature	• -40 °C to 70 °C
Cooling requirements	Air vents must remain unobstructed (minimum clearance 3 inches/7.62 cm). Inlet air temperature must not exceed the operating temperature limits.
Humidity	Maximum relative humidity 80% for temperatures up to 31°C decreasing linearly to 50% relative humidity at 40°C - non-condensing
Safety	• Installation category: II • Pollution degree: 2

Front Panel

Power	• On/Off Rocker Switch

Rear Panel

Connectors

Power	Male AC power receptacle
MDI	RJ-45. 100 Mb/s Ethernet (to PC controller or previous chassis)
MDI-X	RJ-45. 100 Mb/s Ethernet (to next chassis)
Daisy-chain Out	Male D-shell. Event/clock connections to next chassis
Daisy-chain In	Male D-shell. Event/clock connections from previous chassis
External Trigger In	Female BNC. Trigger input from external device. Only one external reference clock source should be applied to the rear panel at any given time. In response to the fault condition where more than one clock source is introduced during operation the chassis will lock to the first valid signal presented. If more than one signal is present at re-boot the chassis will lock using the following order of preference: • 50 Ohm BNC - 10 MHz • 100 Ohm Bantam - 1.544 Mbs BITS • 75 Ohm BNC - 2.048 Mbs MTS • 75 Ohm BNC - 2.048 MHz • Siemens 3-pin - 2.048 Mbs MTS
External Trigger Out	• Female BNC. Trigger output to external device.

LED Indicators

LINK	• Ethernet Link
ACT	• Ethernet Activity

Regulatory Compliance

Electrical (Electromagnetic Compliance - EMC)	• As per IEC 61326-1:1997 + A1:1998 / EN 61326-1:1997 + A1:1998 +A2:2000 +A3:2003. • Electrical equipment for measurement, control and laboratory use. (ClassA) • EMC Directive 89/336/EEC (including 93/68/EEC) • For complete compliance information refer to Declaration of Conformity E7900-91300
Electrical (Safety)	• IEC 61010-1:1990 + A1:1992 + A2:1995. • Safety requirements for electrical equipment for measurement, control, and laboratory use • Low voltage directive 73/23/EEC
Optical Safety (when fitted with optical interfaces/blades)	• Complies with IEC 60825/CDRH Class 1, and 21 CFR 1040 - Class 1 Laser Products

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www.agilent.com/find/n2x

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.
2660 Matheson Blvd. E
Mississauga, Ontario
L4W 5M2
1-877-894-4414

Europe:
Agilent Technologies
European Marketing Organisation
P.O. Box 999
1180 AZ Amstelveen
The Netherlands
(31 20) 547-2323

United Kingdom
07004 666666

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Tel: 0-800-738-378 (New Zealand)
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