WIRELINE COMMS TEST EQUIPMENT & NETWORK ASSURANCE SOLUTIONS

N2X Multiservices Test Solution
Network Tester Layer 4-7 Test Solution
Signaling Analyzer Real-Time
Distributed Network Analyzer
Triple Play Analyzer
FrameScope™ Pro
WireScope™ Pro
Optical Time Domain Reflectometer
Modular Network Tester
assureME Assurance Solutions
The Agilent N2X provides the ultimate solution for validating the performance and scalability characteristics of next-generation network equipment for voice, video and data (triple-play) services. N2X addresses the complex challenges of validating next generation equipment by providing a single test environment to simultaneously validate leading edge services over the latest infrastructures.

Network equipment manufacturers and service providers can gain unique insight into quality of experience (QoE) of each individual subscriber service under real-world conditions. N2X uniquely validates QoS mechanisms and high availability implementations. Using powerful emulation software, purpose built applications and industry-leading hardware test cards, users can test a broader range of test cases in much less time than ever before.

Triple Play Infrastructure Testing

Triple play services are driving significant change throughout the core, edge and broadband access networks. Access networks must deliver real-time services (IPTV, VoIP) which mandate multicast technologies at the edge, and a tighter tolerance of non-stop traffic forwarding under protection and restoration conditions in the core. Aggressive data services, such as peer-to-peer file-sharing applications, consume bandwidth and threaten the delivery of real-time services and business VPNs.

Manufacturers and service providers need powerful tools to optimize per-subscriber service quality under highly scaled and dynamic environments before they deploy their networks. The Agilent N2X enables realistic triple play testing with simultaneous voice, video, and hardware-based stateful TCP data on the same physical port, controlled through a single software application.

N2X: Industry-leading Solutions

Agilent continues to lead the industry with innovative and industry-first solutions for cutting edge technologies. From layer 2/3 MPLS VPNs, multicast, and high availability routing solutions through to access protocols, EPON, 40G, Carrier Ethernet, IPTV, voice and stateful data services testing, N2X continues to address the most complex service and infrastructure test challenges for today and tomorrow.

Specifications

The N2X system consists of a system controller and multiple chassis containing purpose built Test Cards for specific test requirements. The system controller provides a graphical user interface to drive applications running on the test cards.

System Controller

A number of system controllers are available depending upon your performance requirements. The controller provides an easy-to-use Windows environment.

N2X Chassis

The highly compact 4-slot chassis and 2-slot portable chassis are available for both development environment and in-field use. Hot-swappable test cards can be moved between chassis without affecting other test sessions.

N2X Test Cards

The N2X product architecture is based on programmable measurement test cards that offer best in class performance over a wide range of interfaces from 10/100 Ethernet through to OC-768c.

Accessories

E7912-89012 N2X 2-slot Chassis Hard Transit Case
E7900-89012 N2X 4-slot Chassis Hard Transit Case
E7900-64207 N2X Chassis to Chassis Cable
E7900-64208 N2X Rack-to-Rack Cable

Key Literature and Web Link

www.agilent.com/find/N2X
The Agilent Network Tester is the most powerful and flexible solution for testing the real-world performance and stress resilience of network security and application-aware devices. Network Equipment Manufacturers, Service Providers and Network Operators use Network Tester to analyze application-aware device real-world performance characteristics under peak levels of load and stress expected in real network environments. This allows test engineers to confidently assess equipment’s ability to perform without disrupting service or compromising quality of user experience.

Network Tester achieves unparalleled testing realism by using real Internet Data, VoIP, VoD and IPTV traffic in realistic protocol and transaction distributions combined with malicious attacks and exploits to subject the devices to complex traffic conditions indistinguishable from real-world network environments. Coupled with the ability to simulate proprietary protocols such as Peer-to-Peer, IM and On-line Gaming, Network Tester provides for the most comprehensive Layer 4-7 performance and stress testing system on the market. Network Tester key application areas include network security, traffic management and content networking.

Typical devices-under-test include Firewalls; Intrusion Detection and Prevention Systems; Virus and Spam Filters; Content Switches and Servers; SSL Accelerators; Load Balancers and IPsec VPN Gateways. As security enforcement and other application aware features are integrated into Service/Edge Routers, B-RASs and IP DSLAMs, Network Tester provides perfect match to L4-7 performance and stress testing requirements of those network elements. Network Tester is specifically designed to test integrated devices where point test solutions fall short.

**Specifications**

The Network Tester system consists of a number of stackable Ethernet traffic modules, a system controller, a system management Ethernet switch, the NetPressure software application, and optional software licenses such as IPsec, IPv6, and VoIP.

**Traffic Modules**

Each traffic module has four test interfaces to connect Network Tester to the System Under Test (SUT), as well as one management interface. Two of the test interfaces are RJ-45 based Electrical Gigabit Ethernet. Two other test interfaces are SFP based and can be populated with any combination of Electrical or Optical Gigabit Ethernet SFPs. Multiple modules can be stacked to linearly increase system performance.

**System Controller**

A system controller runs the NetPressure software application. Portable and rackmount controller configurations are available to match your performance requirements. Rackmount controllers have remote access and multi-user capabilities.

**Management Switch**

The 10/100 Mb/s Ethernet system management switch interconnects the Ethernet management interfaces of the traffic modules and the system controller.

**IPSec Software License**

The IPSec software license fully integrates emulation of the IPSec into the NetPressure application, enabling rapid configuration of IPSec and powerful testing of stateful traffic over IPSec tunnels.

**IPv6 Software License**

The IPv6 software license adds integrated IPv6 emulation into the NetPressure application, enabling testing of next-generation devices that support both IPv4 and IPv6.

**VoIP Software License**

The VoIP Software License adds integrated VoIP emulation into the NetPressure application, enabling testing of devices such as application-aware firewalls, session border controllers and integrated security devices that support VoIP.

**Key Literature and Web Link**

www.agilent.com/find/networktester
The Agilent J7830A Signaling Analyzer is a high-performance solution for 2G, 2.5G and 3G system verification, troubleshooting, and RAN optimization. Its intelligent call trace-centric approach enables distributed call trace, performance measurements, and drill-down problem isolation for calls on UMTS, GSM, and CDMA RANs, as well as the mobile core, IMS, PSTN and Internet.

The Signaling Analyzer solution allows complete testing of network and individual call performance across mobile networks which simplifies the resolution of the most complex interoperability problems in telephony.

The Signaling Analyzer has an intuitive graphical interface that makes it popular with both new and experienced network engineers. Its design makes it ideal for use in distributed as well as centralized text environments.

**Specifications**
For the most current information, please visit www.agilent.com/find/sart

**Accessories**
For the most current information, please visit www.agilent.com/find/sart

**Key Literature & Web link**
For the most current collateral, press releases and product information, please visit www.agilent.com/find/sart

**Ordering Information**
For the most current ordering information, please visit www.agilent.com/find/sart
Testing today’s complex network infrastructures can be a daunting task. The use of distributed configurations, wide and dynamic range of network protocols, and emerging triple play services all produce significant challenges.

Agilent DNA allows network professionals to quickly maintain and optimize Voice, Data, Video and Mobile services over Next Generation Networks decreasing operational cost by testing any technology, over any interface, from anywhere by anyone. Agilent’s scaleable DNA hardware platform provides the foundation of advanced protocol analysis. Take advantage of extensive diagnostic capabilities for troubleshooting and optimizing voice, video, data networks, as well as 2G, 2.5G and 3G mobile networks.

The Agilent Distributed Network analyzer product family is a breakthrough in test and measurement technology, bringing together the testing of all access network technologies into a single product. This allows full and uniform testing of network and higher-supported lower-layer LAN or WAN technology. The system is designed for multiple operational modes of testing, including dispatched on-site testing, remote attended, remote unattended, and distributed testing. Time-synchronization of local and remote analyzers provides the means to deliver advanced quality of service measurements, essential for testing multiple-service networks.

Specifications
For the most current information, please visit www.agilent.com/find/dna

Accessories
For the most current information, please visit www.agilent.com/find/dna

Key Literature & Web Link
DNA Data Sheet, p/n 5988-4176EN
DNA Platform Technical Overview, p/n 5989-5455EN
For the most current literature, press releases and up-to-date product information, please visit: www.agilent.com/find/dna

Ordering Information
For the most current ordering information, please visit: www.agilent.com/find/dna
The Network Analyzer software allows network professionals to maintain and optimize voice, data, and video services quickly over next-generation networks, and to decrease operational costs by testing any technology, over any interface, from anywhere and by anyone.

The Network Analyzer software, in coordination with Distributed Network Analyzer hardware platform, provides an expert network testing and troubleshooting solution that supports real-time measurements in LAN, WAN, and ATM environments. In addition, this solution provides SNMP/RMON2 data collection and can be deployed so that network monitoring and troubleshooting activities can be coordinated from a single, centralized location.

The Network Analyzer software runs on a standalone PC or on the Distributed Network Analyzer platform.

Specifications

For the most current information, please visit www.agilent.com/find/networkanalyzer

Accessories

For the most current information, please visit www.agilent.com/find/networkanalyzer

Key Literature & Web Link

DNA Platform Technical Overview, p/n 5989-5455EN
For the most current collateral, press releases and product information, please visit www.agilent.com/find/networkanalyzer
• Extensive IPTV, MSTV, VoD, VoIP and data analysis in a single solution
• In-depth signaling and media analysis for IPTV, MSTV, VoD and VoIP
• Passive analysis and troubleshooting of user traffic in real time
• Analysis of channel zapping latency and VoD command response times
• Video and voice MOS, QoE with transmission layer analysis, including RFC4445 – MDI (Media Delivery Index) and ETSI TR101-290 analysis
• IPTV channels, VoD programs and voice calls statistics

The Triple Play Analyzer is based on the successful Agilent DNA (Distributed Network Analyzer) platform and is the new addition to Agilent solutions for triple play analysis. The Agilent Triple Play Analyzer is the most complete in-service analysis and troubleshooting tool in a single solution for network equipment manufacturers and communication service providers, who develop, install, monitor and troubleshoot voice, data and video applications. The analyzer provides accurate measurements of VoIP, IPTV, MSTV and VoD Quality of Experience as well as channel zapping analysis. By providing the essential measurements and key performance indicators, the analyzer helps you realize faster time to market and decrease operational costs by passively testing any technology, over any interface, from anywhere and by anyone.

• Simplify Triple Play Test Complexity
• Reduce development and deployment time: Get ahead in the IPTV race

Specifications
For the most current information, please visit www.agilent.com/find/tpa

Accessories
For the most current information, please visit www.agilent.com/find/tpa

Key Literature & Web Link
Triple Play Analyzer Technical Overview, p/n 5989-5783EN
For the most current collateral, press releases and product information, please visit www.agilent.com/find/tpa

Ordering Information
For the most current information, please visit www.agilent.com/find/tpa
FrameScope™ Pro
Handheld Gigabit Ethernet Network and Service Quality Tester

- RFC 2544 network performance benchmarking
- Autotest application performance testing
- Triple Play transport quality and GoS testing
- Network discovery of stations and resources
- Remote control via any web browser
- Gigabit copper and fiber interfaces on board

Quickly Diagnose and Troubleshoot Network Problems

With the FrameScope™ Pro, technicians deploying Ethernet based services and networks can rely on a fast, efficient and very cost effective test solution for measuring bandwidth at line rates up to 1 Gbit/s. FrameScope™ Pro connects via RJ45 interface to 10/100/1000 Mbit/s copper networks and via SFP (Small Form Factor Pluggable) interface to Gigabit fiber networks.

End-User Centric Quality of Service Testing

Using RFC 2544 test parameters, the FrameScope™ Pro is capable to measure network transport quality up to Gigabit line rate between any two points in an Ethernet-based network. Its unique network Autotest applies service quality scores to network resources such as DNS, DHCP, web, print, file servers and other automatically discovered services. Its voice and video over IP test functions accelerate the deployment of new services at high quality of experience, and help resolving troubleshooting tickets faster. A complete arsenal of test tools is included to locate failures and bottlenecks, ranging from a simple ping to more advanced functions such as traffic generator, statistics, SNMP queries, locate switch port and others.

Specifications

- Copper and SFP fiber interfaces
- Supported Protocols: IP, IPX, PPPoE, NetBIOS
- Autotest performance measurement of Email, Web, File, DNS, DHCP, WINS, Novell, Print, FTP, Primary DC, Secondary DC Servers, Switches and Routers
- Ping, Trace Route, and SNMP Queries verify device connectivity
- Statistical analysis of the network condition
- Traffic Generator up to 1 Gbit/s speed
- RFC 2544 tests for throughput, latency, back-to-back frames and frame loss measurement up to 1 Gbit/s
- Stacked VLAN support with configurable tags and priority fields
- GoS, IP TOS and DSCP settings are configurable
- Layer 2 (MAC) and 3 (IP) Loopback measurement of roundtrip delay
- Locate Switch Port
- Blink Hub Port locates live network cable connections
- Network Database stores station information
- Optional: Wiremap Test to locate miswires using the Wiremap Adapter
- Optional: Auxiliary Ethernet port for remote control over separate LAN

Test of SIP (RFC 3261) based VoIP Service (options N2620A-030, -03E)

- R-factor and MOS calculation (ITU-T G.107)
- Packet loss, packet inter-arrival jitter and round-trip delay
- STUN support (option N2620A-03E)

IPTV Service Test (option N2620A-071)

- RTP packet loss, packet statistics, packet inter-arrival jitter
- ETSI TR 101 290 MPEG-2 transport stream statistics
- IGMP join/leave latency, channel zapping time
- Media Delivery Index (MDI), average throughput

Memory

- 512 MB CompactFlash™ card included

Power

- Removable/Rechargeable Li-Ion battery
- Battery life: 5 to 8 hours of operation

Dimensions

- Size: 228 mm x 114 mm x 66 mm (9 in x 4.5 in x 2.6 in)
- Weight: 1.2 kg (2.5 lbs.)
- Display Dimensions: 60 mm x 160 mm (2.38 in x 6.25 in) touch-sensitive color LCD display

Ports

- RJ45 10/100/1000BASE-T Ethernet test port
- SFP interface for 1000BASE-SX or -LX 1 Gbit/s fiber connections
- Talkset Interface: 3.5 mm stereo jack
- Alternatively: RJ45 Wiremap test port or auxiliary 10/100BASE-T port

Accessories

N2620A-050 Multimode SFP Transceiver, 1000BASE-SX
N2620A-051 Single Mode SFP Transceiver, 1000BASE-LX
N2620A-053 Media Converter, 1000BASE-FX
N2620A-060 Headset, 2 ear pieces, microphone and volume control (included in N2620A-003)
N2595A-086 Rechargeable Battery Pack
N2620A-080 Additional Universal AC Adapter
N2595A-094 Auto Lighter DC Adapter
N2605A-134 Hard Carrying Case

Key Literature & Web Link

FrameScope™ Pro Data Sheet, p/n 5989-1908EN
www.agilent.com/find/framescope

Ordering Information

N2620A-001 FrameScope™ Pro Ethernet with RFC 2544 Testing License
N2620A-003 FrameScope™ Pro without Additional Licenses

Software Licenses

N2620A-030 VoIP Testing (standard SIP stack)
N2620A-03E VoIP Testing (SIP stack with STUN support)
N2620A-031 RFC 2544 Testing (included in N2620A-001)
N2620A-071 IPTV – RTP Transport and MPEG-TS Analysis

Ports (must choose one)

N2620A-040 Wiremap Port (requires N2614A-001 Wiremap Adapter)
N2620A-041 Auxiliary 10/100 Mbit/s Port

English URL www.agilent.com/find/products
WireScope™ Pro supports cable certification to TIA Categories 3 to 6 and 6A, and ISO Classes C through E, Class E and Class F. Sweeping a full 1 GHz in a few seconds, it boosts Cat 6A and Class F automated measurement times to industry leading speed, and provides a future proof platform. The WireScope™ Pro grows with its users’ needs, offering a lower cost Category 6 product and supporting upgrades through software licenses later as needed.

Faster Measurement and Optimized Workflow

WireScope™ Pro has been designed for best user friendliness with a bright color 6" touchscreen that simplifies navigation through easy-to-read menus and comprehensive test results. User interactions have been optimized for a better workflow when testing LAN cable parameters. Once connected, the DualRemote Pro unit operates entirely remote controlled. Auto-continuous testing eliminates key clicks when certifying an entire bundle of cables, or a patchpanel. The validation of Alien Crosstalk for compliance with 10GBASE-T operation, a task that used to take hours, can now be completed in minutes. And finally, documenting the test results of an installation is a breeze with the ScopeData Pro software: clear, systematic measurement reports are easily generated for submission and approval.

Specifications

Supported frequency range: 1 MHz to 1000 MHz
TIA Level IV accuracy, compliance certified by ETL

Supported Tests
- Attenuation (Insertion Loss)
- Near End Crosstalk (NEXT, pair to pair and PowerSum)
- Equal Level Far End Crosstalk (ELFEXT)
- Return Loss and Loop Resistance
- Ambient noise versus frequency (optional)
- Wiremap, cable length, fiber length
- Total propagation delay and delay skew between pairs
- PSANEEXT, PSAACRF (optional)
- Optical power and attenuation

Test Standards
- TIA/EIA-568-A and TIA/EIA-568-B Categories 3 through 6 and 6A
- ISO/IEC 11801, EN 50173 and Australia/New Zealand Classes C, D, E, E, and F
- UTP, STP, and SCTP cabling
- IEEE 802.3 10BASE-T, 100BASE-TX, 1000BASE-T, 10GBASE-T
- IEEE 802.5 Token Ring and IBM Type 1, TP and PMD interfaces
- Fiber TIA 568A, 568.3, ISO/IEC 11801
- 10BASE-F, 802.5, 803.4, 803.2, and 803.1
- ATM-155, 155, ATM/SONET OC-3, OC-12
- FDDI, FiberChannel-135, 296, 531, 1062

Power Supply
- Removable/Rechargeable Li-Ion batteries last a full work shift

Dimensions
- Size: 232 mm x 126 mm x 86.7 mm (9.1 in x 5 in x 3.4 in)
- Weight: approx. 1.36 kg (approx. 3 lbs.)

Memory
- 64 MByte internal flash memory, 16 MByte available
- 256 MByte USB Flash Drive included
- Semi-automated software upgrade using USB Flash Drive
The Mini-OTDR is designed to provide you with the fastest tool available for installing and commissioning multiple fiber links and locating faults for fiber maintenance. This is accomplished through high measurement performance and an award winning simple user interface.

The Agilent Mini OTDR family offers you the most advanced technology for portable equipment: measurements that are simultaneously fast, reliable and accurate, best trace resolution from the connector to the end of the link, 8 hours of battery operation and just 2.9 kg. It makes your work easier before you even switch it on.

Agilent’s new E6020B FTTx OTDR is a cost-effective, easy to use solution for the installation and maintenance of access fiber networks, ideally suited to serve the needs of technicians who deploy fiber-to-the-home or short distance fiber links, such as enterprise networks or links to wireless base stations.

**Built-in Applications**

- OTDR expert mode
- Multi-fiber test
- Pass fail test and event table
- Optical return loss and end to end loss
- Traffic detection
- Fiber break locator
- OTDR wizard and auto-text for novice operators

**Specifications**

- **Minimum Sample Space:** 4 cm
- **Pulse Width:** 10 ns to 20 µs
- **Event Dead Zone:** 3 m
- **Attenuation Dead Zone:** 10/12/14 m at 1310/1550/1625 nm

**Single Mode OTDR Modules**

<table>
<thead>
<tr>
<th>Wavelength</th>
<th>Deadzone</th>
<th>30 dB</th>
<th>35 dB</th>
<th>40 dB</th>
<th>45 dB</th>
</tr>
</thead>
<tbody>
<tr>
<td>1310/1550 nm</td>
<td>3 m</td>
<td>E6004A</td>
<td>E6005A</td>
<td>E6008B</td>
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</tr>
<tr>
<td>1310/1550 nm</td>
<td>1.5 m</td>
<td>E6003C</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>1550/1625 nm</td>
<td>3 m</td>
<td>E6012A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1310/1550/1625 nm</td>
<td>3 m</td>
<td>E6013A</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Multimode OTDR Modules**

<table>
<thead>
<tr>
<th>Wavelength</th>
<th>Deadzone</th>
<th>23 dB</th>
<th>35 dB</th>
</tr>
</thead>
<tbody>
<tr>
<td>850/1300 nm</td>
<td>3 m</td>
<td>E6005A</td>
<td></td>
</tr>
<tr>
<td>850/1300 nm</td>
<td>3 m</td>
<td>E6009A</td>
<td></td>
</tr>
</tbody>
</table>

**Power Meter Submodule E6006A**

- **Wavelength**
- **Power Range**
  - 800 – 1850 nm: –70 dBm to +10 dBm

**Visual Fault Locator Submodule E6007A**

- **Wavelength**
- **Distance Range**
  - Red Visible Light: up to 5 km (635 nm)

**Accessories**

- E6080A Spare NiMH Battery Pack
- E6081A Mini-Keyboard
- E6082A Hard Transit Case
- E6092A OTDR Toolkit III Plus Trace Analysis & Acceptance Test Documentation Software
- N3980A CompactFlash™ Card 192 MB
- E6000-13601 OTDR Support CD

**Key Literature & Web Link**

- E6000C Mini-OTDR Color Brochure, p/n 5988-2238EN
- E6000C Mini-OTDR Technical Specifications, p/n 5988-2302EN
- www.agilent.com/comms/otdr

**Ordering Information**

- E6000C Mini-OTDR Mainframe
- E6000C-003 Color Screen VGA – LCD
- E6003A 1310/1550 nm Standard Performance Single Mode Module
- E6003B 1310/1550 nm High Performance Single Mode Module
- E6003C 1310/1550 nm Very High Performance Single Mode Module
- E6004A 1310/1550 nm Economy Single Mode Module
- E6005A 850/1300 nm High Performance Multimode Module
- E6006A Optical Power Meter Submodule
- E6007A Visual Fault Finder Submodule
- E6008B 1310/1550 nm Ultra High Performance Single Mode Module
- E6009A 850/1300 nm Economy Multimode Module
- E6012A 1550/1625 nm Ultra High Performance Single Mode Module
- E6013A 1310/1550/1625 nm Very High Performance Single Mode Module
- E6020B FTTx OTDR with Color Display and Visual Fault Finder Submodule
- E6020B-011 1310 nm Single-mode OTDR Module, 30 dB
- E6020B-012 1310 nm/1550 nm Single-mode OTDR Module, 30 dB
- E6020B-013 1310/1550 nm Single-mode OTDR Module, 30 dB
- and 850 nm/1300 nm Multimode OTDR Module, 23 dB

Note: the submodules E6006A and E6007A can not be inserted to the E6013A OTDR module.
**Modular Network Tester**

**Fiber Installation, Commissioning and Maintenance (cont.)**

- Large, brilliant 10.4” color TFT display 800 x 600 pixels
- Only 3.3 kg (including battery pack)
- 5 hours of continuous measurement, <3 hours charging time
- OTDR Mode
- Multi Fiber Test
- Accumulated optical return loss
- Accumulated end-to-end loss
- Loop Back fiber testing mode
- Build-in continuous wave source (CW)
- Pass/Fail Test

The Agilent N3900A Modular Network Tester is a portable, lightweight, rugged test platform for the installation, commissioning and maintenance of optical networks. Developed from customer feedback from installation and maintenance (I&M) technicians worldwide, its modular design delivers the measurements you need, when you need them. Snap-on measurement modules meet your test requirements for today’s communications networks; the modular platform protects your investment, and lets you grow into your future measurement needs.

The Modular Network Tester can hold up to three modules to perform OTDR measurements, chromatic dispersion, polarization mode dispersion or optical spectrum analysis. From the carrying case to the handles and tilt-stand, from the pop-up connector to your choice of interface, attention to detail and to your feedback provide the perfect fit for the way you work.

Each OTDR engine has built in RISC processing power for fast and accurate trace acquisition. For long haul links, use Agilent N3910AM (1310 & 1550 nm) and N3911AL (1550 & 1625 nm). For metro links, use Agilent N3914AL (1310, 1550 & 1625 nm).

The Agilent N3909A is a field PMD analyzer based on the “golden standard” Jones Matrix Eigenanalysis method. It helps to optimize revenues through fiber plant capacity and repeater distance optimization by minimizing the effects of PMD using the most robust PMD measurement available. The measurement result includes the DGD distribution over the transmission band and link loss over wavelength up to the L-band.

The Agilent N3916AL Chromatic Dispersion Analyzer comes with powerful built-in measurement algorithms that provide fiber type and accurate chromatic dispersion information. Access to just one fiber end is necessary. This engine combines the CD analyzer with the capabilities of a 4-Wavelength OTDR, measuring fiber loss test and chromatic dispersion in one go. For easy dispersion compensation planning, measurement are expressed in dispersion values and dispersion slope ratios as a function of the wavelength.

The Agilent N3935A Optical Spectrum Analyzer Engine is designed for use in systems with channel spacing down to 25 GHz. It covers the S, C, L bands and beyond. It is capable to resolve up to 256 simultaneous channels. Built-in test routines and applications include a channel planning tool, real time and averaged spectral analysis, automatic detection of missing and/or unexpected channels and pass/fail test for all parameters (OSNR, power, channel frequency and drift, total power).

### Specifications

<table>
<thead>
<tr>
<th>Single Mode OTDR Modules</th>
<th>Wavelength</th>
<th>40 dB</th>
<th>43 dB</th>
<th>45 dB</th>
</tr>
</thead>
<tbody>
<tr>
<td>N3910AM</td>
<td>1310/1550 nm</td>
<td>N3910AM</td>
<td>N3910AL</td>
<td></td>
</tr>
<tr>
<td>N3911AL</td>
<td>1550/1625 nm</td>
<td>N3911AL</td>
<td>N3914AL</td>
<td></td>
</tr>
<tr>
<td>N3916AL</td>
<td>1310/1480/1550/1625 nm</td>
<td>N3916AL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Minimum Sample Spacing:** 4 cm

**Pulse Width:** selectable, from 10 ns to 20 µs

**Event Dead Zone:** 3 m (for all single mode modules)

**Attenuation Dead Zone:** 10 m @ 1310 nm/12 m @ 1550 nm, 14 m @ 1625 nm

**Linearity:** ±0.03 dB (1 – 100 km)

**Chromatic Dispersion Analyzer Agilent N3916AL**

- Zero Dispersion Wavelength: ±0.8 nm
- Dispersion Coefficient: Repeatability ±0.5 ps/nm/km
- Dispersion Range: ±2500 ps/nm
- Wavelength Range: 1250 nm to 1700 nm

**Polarization Mode Dispersion Analyzer Agilent N3909A**

- Wavelength Range: 1525 nm to 1620 nm
- Wavelength Resolution: 50 pm
- DGD Range: 0 ps to 150 ps
- PMD Range: 0 ps to 50 ps
- PMD Accuracy: ±(0.03 ps + 2% of PMD)
- Link Loss Accuracy: ±0.4 dB

**Optical Spectrum Analyzer Engine Agilent N3935A**

- Wavelength Range: 1450 nm to 1650 nm
- Dynamic Range: 45 dB @ 100 GHz and 40 dB @ 50 GHz
- Resolution Bandwidth (FWHM): ±100 pm
- Scanning Resolution: 0.005 nm
- POL: ±0.05 dB
- Wavelength Accuracy: ±40 pm
- Power Noise Level: -70 dBm

### Accessories

- N3980A CompactFlash™ Card 192 MB
- N3980A Battery LiIon
- N3985A Hard Carrying Case for Modular Network Tester, Modules and Accessories
- E6081A Mini-Keyboard
- E6092A OTDR Toolkit III Plus Trace Analysis & Acceptance Test Documentation Software

### Key Literature & Web Link

Agilent N3900A Modular Network Tester Brochure, p/n 5988-5065EN
Agilent N3900A Modular Network Tester Technical Specifications, p/n 5988-8190EN

[www.agilent.com/comms/mnt](http://www.agilent.com/comms/mnt)

### Ordering Information

- N3900A Agilent Modular Network Tester Mainframe
- N3910AM OTDR Test Engine 1310/1550 nm 40/39 dB
- N3910AL OTDR Test Engine 1310/1550 nm 45/43 dB
- N3911AL OTDR Test Engine 1550/1625 nm 43/39 dB
- N3914AL OTDR Test Engine 1310/1550/1625 nm 43/41/38 dB
- N3909A Polarization Mode Dispersion Test Solution, includes N3909AR Polarization Mode Dispersion Receiver Module, B1944A Compact Tunable Laser Source, B169B Lightwave Multimeter
- N3916AL CD/OTDR Test Engine 1310/1480/1550/1625 nm 43/40/41/38 dB
- N3935A Optical Spectrum Analyzer Test Engine

English URL [www.agilent.com/find/products](http://www.agilent.com/find/products)
In today’s hotly competitive communications markets, it’s not enough to simply win new customers. To protect your revenue base and grow your business, you have to also win your customers’ loyalty—day after day.

How do you do that? Provide a consistently great customer experience. Agilent assureME solutions help you make this happen. The assureME portfolio puts a customer-centric focus on traditional network assurance. It broadens the management scope to encompass measurement of the actual customer experience, as well as network faults and performance issues.

To enable this customer-centric approach, the assureME portfolio combines new, ground-breaking technologies with Agilent’s existing industry-leading management products to address critical challenges for service providers. By measuring the actual customer experience, you gain the insights you need to deliver a consistently great customer experience and keep your revenue growing.

Measure the Actual Experience
Agilent assureME solutions vault you ahead of today’s common network monitoring products, which can’t get to the heart of the customer experience. Some do little more than provide information on the status of network elements, so all you can do is make educated guesses about the customer experience.

In today’s competitive markets, guesses aren’t good enough. To deliver a consistently great customer experience, you need precise measurements based on continuous data collection and non-stop testing of services, networks and user experiences. Customer assurance is becoming increasingly important in marketing, customer care and service management operations, as well as network operations.

Solutions in the assureME portfolio draw on Agilent’s unique ability to collect and analyze information from a broad spectrum of sources to enable end-to-end customer assurance management. These comprehensive solutions give you new insights into service quality for individual customers, groups of customers or customer categories. They help you to understand not only the quality of service delivered to the customer, but also how network and service information relates to each customer. This information is important to network operations teams that keep networks and services running smoothly, helping them to prioritize repairs based on customer impact.

Exploit the Power of 3
Agilent assureME solutions deliver a unique set of tools for service assurance across 3 key process areas: monitoring, troubleshooting and intelligence. The solutions in the assureME family help you correlate the actual customer experience with network performance—in real-time—for root-cause analysis and analytics.

The assureME family arms you with the Power of 3: Alarms in 3 minutes. Troubleshooting in 3 clicks. Intelligence across 3 dimensions: customer, service and network. You can now spend less time wondering what’s happening out there and more time enhancing the customer experience. That’s the Power of 3.

Agilent assureME Monitor: Detect violations within 3 minutes
Agilent assureME Monitor provides real-time monitoring of KPIs—providing the insight required to enable you to proactively maintain service levels. In addition to highlighting anomalies, these advanced surveillance tools, provide you with alarms when pre-defined thresholds are violated in less than 3 minutes.

Agilent assureME Troubleshoot: Identify the root cause in 3 clicks
Agilent assureME Troubleshoot arms you with a consistent, efficient solution for fast troubleshooting across technologies—at both the session and protocol levels. These tools get you to the root cause of many network and service problems in just 3 clicks, saving you time and money.

Agilent assureME Intelligence: Capture insight across 3 dimensions
Agilent assureME Intelligence provides historical analysis and insight into performance and quality issues across 3 key dimensions of your business: networks, services and customers. These tools help you identify usage trends, understand complex service issues and utilize the KPIs you need to deliver a better customer experience.

Agilent Assurance Solutions for Communications
The assureME solutions are based on the technology in Agilent’s broad family of customer assurance solutions. The offerings in the Agilent portfolio enable you to get new services to market quickly, improve quality of service and reduce the cost of operations. Our open, modular solutions support both current and next-generation network architectures, by improving levels of performance and reducing fault resolution times.

Collectively, Agilent assurance solutions help network operations teams keep networks and services running smoothly and provide business-critical information to the customer care, marketing, planning and corporate sales groups tasked with customer retention, value-added services upselling and new services rollout.

To learn more about assureME solutions, visit: www.agilent.com/comms/assureME