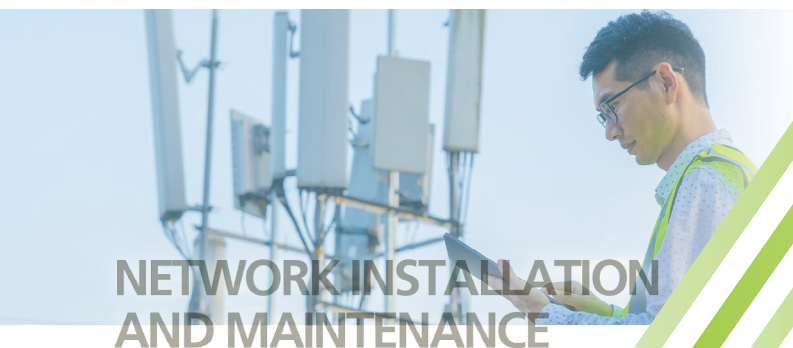




High-speed Digital Interface Optical Transceiver and Transport Network Testing Solutions



Anritsu's High-Speed Digital Interface, Optical Transceiver, and Transport Testing Solutions

Development

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Network Installation & Maintenance

Network Master Pro
100-400G



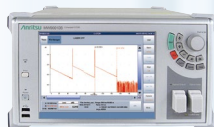
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Network Master Pro
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Signal Quality Analyzer-R



MP1900A

Support of 400GbE/800GbE and PCIe® Gen4/5/6.

All-in-One Support for Evaluating Next-Generation NRZ/PAM4 Network Interfaces and High-Speed Serial Buses

- All-in-one support for the evaluation of high-speed interfaces, including PCI Express®, USB, DisplayPort, DDR, and Ethernet
- Easily configured and easy-to-use all-in-one 64-GBaud PAM4 BER measurement system supporting FEC analysis
- Receiver tests are supported by the built-in Protocol Awareness PCIe Link Training and Link Training Status State Machine (LTSSM) analysis functions
- Highly reproducible measurements due to good waveform quality and high input sensitivity
- Supports true signal integrity analysis, such as bit error rate measurements, Jitter Tolerance tests, etc.



The MP1900A is a high-performance BERT with excellent expandability for supporting the physical layer evaluation of these high-speed interfaces. The all-in-one design is ideal for the early-stage R&D evaluation of all interfaces used to interface next-generation Ethernet networks with bus interconnects.



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VectorStar™ Broadband VNA

ME7838AX/A4X/EX/E4X/D/D4/G/G4 70 kHz to 110 GHz/145 GHz/220 GHz with mmWave bands up to 1.1 THz

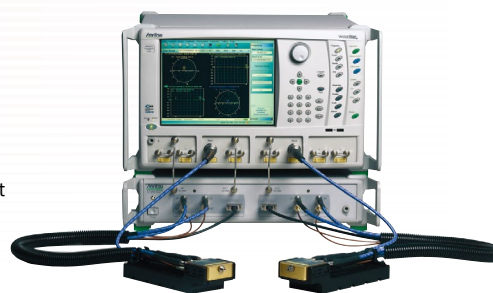
High-performance, Broadband Network Analysis Solutions

- The ME7838AX or EX versions can easily be upgraded to 145 or 220 GHz
- All versions may be configured to include banded mmWave modules up to 1.1 THz
- Ensures measurement consistency through broadband single-sweep coverage
- Industry-best calibration and measurement stability: 0.1 dB vs. 0.6 dB over 24 hours
- All versions support the 3744x-Rx receiver for noise figure measurements up to 125 GHz
- Compact, lightweight mmWave modules (0.6 lb. vs. 7+ lbs. and 1/50 volume) enable low-cost installation in smaller probe stations
- Dual SPA mode supported: suitable for Mixer/Amplifier/Harmonics/Spurious testing
- SPA is available on all ports. Users can define which port to use as the SPA port

The ME7838 series offers high performance in a compact millimeter-wave (mmWave) module featuring industry-best calibration stability. While other broadband systems continue to provide raw performance with negative directivity in the critical frequency bands, the ME7838 series is the only broadband system with positive raw directivity.

The result is better calibration stability and superior measurement stability with significantly longer durations between calibrations, leading to accurate measurements and improved productivity. The ME7838G VNA addresses the market need to conduct on-wafer measurements that span into the sub-terahertz region for better device characterization. The system offers unprecedented broadband coverage from 70 kHz to 220 GHz in a single sweep and is optimized for on-wafer measurements utilizing the TITAN T220 probe from MPI. The innovative design allows the 220 GHz probe to connect directly to the mmWave module for accurate, stable on-wafer measurements while avoiding the limits presented by threaded connectors.

More information on the TITAN T220 probe, including specifications and a data sheet, is available on the MPI website.



ME7838A



(2-port model)



(4-ports model)

1



DEVELOPMENT

VectorStar™ Microwave VNA

MS4640B 10 MHz to 20 GHz/40 GHz/70 GHz

Premium Family of RF to Microwave and Millimeter-wave Vector Network Analyzers

- SPA supported from 70 kHz (optional) to 20/40/70/110/125/145 and 220 GHz. Also supports banded configuration to 1.1 THz
- Dual SPA mode supported: suitable for Mixer/Amplifier/Harmonics/Spurious testing
- Highest-performance pulse measurements — PulseView™ offers a 2.5 ns pulse resolution with a 100 dB dynamic range
- 4-port single-ended or balanced measurements using DifferentialView™ analysis
- Internal trace-based eye diagram option can display time domain, S-parameter, and eye diagram analyses with active sweep updates
- Superior dynamic range: up to 142 dB



The VectorStar™ family is Anritsu's premium VNA line, providing the highest overall performance on a modern platform.

The MS4640B offers the broadest coverage in a single instrument, 70 kHz (optional) to 70 GHz. The additional two decades at the low end are even more impressive than the guaranteed 70 GHz coverage at the high end.



VectorStar™ Opto-Electronic Network Analyzer

ME7848A series 70 kHz to 40 GHz/70 GHz/110 GHz, 850/1310/1550 nm

For Characterizing of Transmitters, Receivers, Modulators, and Light Sources in Silicon Photonics and Photonic Integrated Chips

- Fast and accurate opto-electronic measurements — the ME7848A 200 series ONA supports an error-corrected transfer function, group delay, and return loss measurements of E/O and O/E components and subsystems
- O/E Calibration Module MN4765B — The O/E calibration module is a thermally stabilized photodiode reference standard detector that can eliminate drift with changes in temperature. An accurate bias voltage on the photodiode is maintained internally
- Electrical to Optical Converter MN4775A — The E/O converter includes a lithium niobate (LiNbO3) modulator stabilized by a fully automatic bias controller and a tunable or fixed-wavelength laser source. The excellent converter stability ensures that the characteristics remain consistent during the testing of opto-electronic DUT detectors and receivers
- National Institute of Standards and Technology (NIST) derived characterization — The magnitude and phase characterization of the O/E calibration module is determined using a primary standard provided by NIST and held in the Anritsu Calibration Lab
- Internal VNA de-embedding for simplified calibration — The built-in application menus provide instructions that guide the user through the setup and calibration required for making E/O, O/O, and O/E measurements
- Excellent stability and repeatability — Use of full 12-term calibration with de-embedding results in the stable and repeatable testing of opto-electronic devices using the VectorStar VNA
- Modularity and upgradeability — The VectorStar ONA ME7848A ONA can be easily modified to a different wavelength by adding the appropriate MN4775A E/O converter and MN4765B O/E calibration detector. The VectorStar Opto-Electronic Network Analyzer ME7838A 100 series can be upgraded to a 200 series by including the appropriate E/O converter MN4775A



The ME7848A ONA provides a modular approach to optical measurements of O/E, E/O, and O/O devices operating at 850-, 1310-, and 1550-nm wavelengths. There are two configurations available: the ME7848A 100 series includes the MN4765B, while the ME7848A 200 series adds the MN4775A.

The ME7848A 200 series can quickly switch between O/E, E/O, and O/O measurements with specified traceable measurements established by the MN4765B.

The ME7848A can be easily adjusted to work with different wavelengths by adding the appropriate MN4775A and MN4765B. The ME7838A 100 series can be upgraded to a 200 series by adding the appropriate MN4775A.



BERTWave™ Sampling Oscilloscope/BERT



MP2110A

For 10G to 800G Multi-channel Optical Module/Device R&D and Manufacturing

- Integrated sampling oscilloscope and Bit Error Rate Tester (BERT) combined into a single unit
- Reduces the optical module evaluation time by enabling the simultaneous measurement of up to 4 channels
- Supports the analysis of both NRZ and PAM4 signals with a high level of performance (up to 250 ksamples/s, enabling the acquisition of 1 million samples in just 5 s).
- Offers low-noise characteristics (200 fs rms, typical), and high sensitivity (−15 dBm with SMF, typical)
- The optional clock recovery unit (CRU) supports the evaluation of optical modules without requiring a trigger clock.
- Includes a low-jitter PPG (600 fs rms, typical) and a high-sensitivity ED (25 mV, typical) with the BERT
- User-friendly interface with simplified test parameters and backward-compatible remote commands
- Enables high-speed eye-pattern analysis and mask-merge measurement, contributing to the streamlining of optical module production while reducing manufacturing costs.



The BERTWave MP2110A is an all-in-one instrument. The MP2110A will improve optical module production efficiency and reduce manufacturing costs.



Optical Spectrum Analyzer



MS9740B 600 nm to 1750 nm

Ideal All-in-One Design for Active Optical Device Evaluation

- Wavelength sweeping time <0.35 s
- Provides applications for evaluating active optical devices
- Pulsed light measurement
- Dynamic range >58 dB (at ± 0.4 nm from peak wavelength)
- 30 pm minimum resolution
- Low power consumption (<75 VA), lightweight body (<15 kg)

The MS9740B contributes to the more efficient testing of active optical devices through its high performance and comprehensive test menu.



Network Master Pro 100-400G



Mainframe MT1040A

400G (QSFP-DD) Multirate Module MU104014A

400G (OSFP) Multirate Module MU104015A

100G Multirate Module MU104011A

One Unit Supports 400G Ethernet I&M

- Supports network speeds from 10 Mbps to 400 Gbps
- Continuous and quantitative 400G FEC measurements
- Remote control over the cloud and automated tests without the need for an external PC
- Compact and lightweight for easy portability



The MU104014A supports a QSFP-DD module and a dual-port interface, making it compatible with speeds of 10M to 100G when evaluating network equipment.

The MU104015A supports the addition of OSFP modules for evaluating 400G. The MU104011A has a dual-port interface for speeds of 100G or less.

In addition, by combining two measurement modules, the MT1040A can test 2-port 400G Ethernet and also perform equipment evaluation tests.



Network Master Pro 10/100GbE



Mainframe MT1000A

10G Multirate Module MU100010A1

100G Multirate Module MU100011A

High Performance GNSS Disciplined Oscillator MU100090B

All-in-One Transport Tester for Metro and Backhaul Network Installation and Maintenance

- Supports testing from 10 Mbps to 100 Gbps
- Remote operation & scripting
- Remote control over the cloud and automated tests in a standalone configuration
- Compact, lightweight design for maximum field portability



The modular design of the Network Master Pro MT1000A platform makes it easy to support I&M for different network configurations. Combining it with the 10G Multirate Module MU100010A1 gives the necessary functions for the I&M of networks at speeds from 10 Mbps to 10 Gbps.

When combined with the 100G Multirate Module MU100011A, it supports more interface standards than any other handheld transport tester currently on the market, including CFP4/QSFP28, QSFP+, SFP28 (25GbE), SFP+/SFP and RJ45. The MU100090B enables easy pass/fail evaluations when installing and commissioning time and phase synchronous networks.



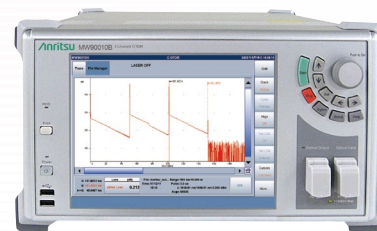
Coherent OTDR

MW90010B

Tests Submarine Cables up to 20,000 km Long

- Fault detection with 10-m resolution
- Wide dynamic range supporting the fault detection and troubleshooting of submarine cables with repeaters at 80 km or greater intervals
- Compact and lightweight all-in-one design for on-site portability 320 (W) × 177 (H) × 451 (D) mm, < 10 kg
- Simple and easy touch-panel operation for simple first-time use by any operator

The MW90010B is used for detecting faults in ultra-long optical submarine cables of up to 20,000 km in length (with the necessary options), including multiple repeaters (EDFAs).



Multi Channel Fiber Tester

MT9100A

Verification of Optical Transmission Characteristics of Multicore Fibers (MCF)

- Four-channel OTDR capable of measuring Inter-core crosstalk between optical transmission paths (cores) of a multicore fiber
- Capable of measuring up to four cores simultaneously and visualizing optical transmission characteristics of optical transmission loss and reflection, and inter-core crosstalk in the direction of distances
- The tester can evaluate optical transmission characteristics of multiple cores simultaneously in a single action without the need to switch the optical fiber connection.
This increases work efficiency significantly compared to the conventional power-meter method
- Optical fiber end-face inspection with an external fiberscope (Video Inspection Probe G0306C)



Since the MT9100A conducts the evaluation only from one end of the transmission path, the test or evaluation can be done only by one operator, no matter how far apart its two ends are. The simultaneous real-time measurement of up to four cores supports the check of the connection quality of a field-installed optical fiber connected by fusion splicing or connectors.



Network Master Pro



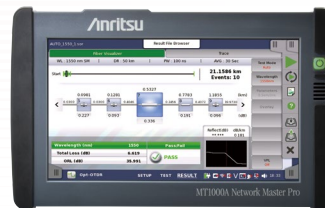
Mainframe MT1000A

OTDR Module MU100020A/MU100021A/MU100022A/MU100023A

1310 nm/1550 nm SMF, 1310/1550/850/1300 nm SMF/MMF, 1310/1550/1625 nm SMF, 1310/1550/1650 nm SMF

Mobile Network I&M

- All-in-one OTDR, light source, optical power meter, visual light source, and CPRI/OBSAI with MU100010A1/MU100011A
- Filtered 1650-nm port for maintenance
- Remote control over the cloud and automated testing without the need for an external PC
- Optical connector inspection with IEC 61300-3-35 pass/fail
- Graphical summary and pass/fail evaluation using the Fiber Visualizer function
- Intuitive touch-screen operation



The OTDR module lineup includes the MU100021A for OTDR measurements of both SM and MM fibers, currently in high demand by mobile network I&M, plus the MU100020A/MU100022A/MU100023A for OTDR measurements of the SM fiber used by PON networks and long-range measurements in core/metro networks.



ACCESS Master™ OTDR



MT9085 series 850 nm/1300 nm (MM), 1310/1490/1550/1625/1650 nm (SM)

All-in-One Solution for Optical Fiber Construction and Maintenance of Core, Metro, and Access Networks

- 8-inch LCD is easy to read, even in direct sunlight
- Better work efficiency with an ideal combination of LCD touchscreen, rotary knob, and dedicated hard keys
- Easy-to-use Fiber Visualizer function for simple fiber path analysis
- Passive Optical Network (PON) analysis for up to 1 × 128 branches
- Optical fiber end-face inspection with an external fiberscope (Video Inspection Probe G0306C)



The MT9085 series is a compact handheld all-in-one tester for performing optical pulse tests, optical loss/power measurements, and optical fiber end-face inspections. It can be applied to a wide variety of uses, ranging from the installation and maintenance (I&M) of trunk fibers (core, metro, mobile fronthaul, mobile backhaul) to the troubleshooting of access networks, enabling the identification of the likes of breaks in drop cables.



Network Master™ OTDR



Mainframe MT9090A

μOTDR Module™ MU909014/MU909015

1310/1490/1550 nm plus filtered 1650 nm or 1625 nm

Field Optical Testing Redefined

- High-performance OTDR in a pocket-size package with unique battery operation
- Tri-wavelength OTDR for both installation and maintenance 1310/1490/1550 nm plus filtered 1650 nm or 1625 nm
- Built-in PON power meter, loss test set and light source function
- "Fiber Visualizer" mode simplifies operation (no OTDR knowledge needed)
- Bluetooth®, wireless LAN, and Ethernet connectivity



The MU909014/15 series for the MT9090A from Anritsu finally addresses this need by providing all of the features and performance required for the installation and maintenance of optical fibers in a compact, battery-operated device.

The MT9090A offers an unmatched level of value and ease of use, while not compromising performance. Data sampling of five centimeters, dead zones of less than 0.8 m, and a dynamic range up to 38 dB ensure accurate and complete fiber evaluation of any network type – premises to access, metro to core...including PON-based FTTx networks featuring up to a 1 × 64 split.



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Optical Loss Tester/Light Source/Optical Power Meter

CMA5 series 850 nm/1300 nm (MM), 1310/1490/1550/1625 nm (SM)

For Optical Fiber Installation and Maintenance

- Built-in light source and power meter (Optical Loss Tester)
- Two wavelengths at one port (Light Source)
- Level measurement up to +23 dBm (Optical Power Meter)

The compact and durable design of the CMA5 series makes these instruments an ideal combination of light source and optical power meter for measuring optical power when installing and servicing optical fiber cables.



Video Inspection Probe

Autofocus Video Inspection Probe G0382A

Video Inspection Probe G0306C

Optical Connector End Face Inspection

- Fully automated one-button operation (G0382A)
- Supported pass/fail analysis according to the IEC61300-3-35 standard
- Wide range of optical adapters available

The Video Inspection Probe (VIP) application for Anritsu field testing platforms gives operators a safe, easy way to analyze and document connector conditions.

