Quick Fact Sheet

VectorStar™ ME7848A

10 MHz to 40/70/110 GHz

Anritsu
Advancing beyond

Opto-Electronic Network Analyzer

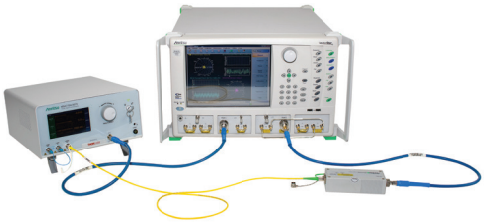
The VectorStar ME7848A opto-electronic network analyzer (ONA) is a VNA-based system for characterizing opto-electronic components used in photonic high-speed data transmission networks. The VectorStar ME7848A 200 series ONA consists of the appropriate frequency range VectorStar VNA, a MN4775A E/O converter, and a MN4765B O/E calibration module/detector. The VectorStar ME7848A 100 series ONA includes the VectorStar VNA and MN4765B O/E calibration module without the converter.

Key Benefits

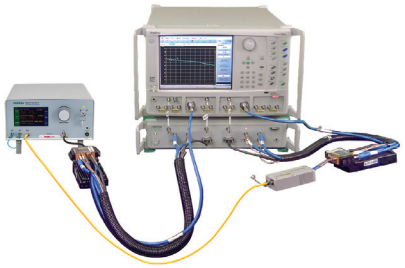
The VectorStar ME7848A ONA system continues with the modular concept available with previous systems. For opto-electronic measurements, this means the same VectorStar can be used for different wavelength measurements. Unlike other solutions, users do not need to purchase additional VNAs when changing wavelengths (e.g., 850 to 1310 or 1550 nm).

Key Features

- **Fast and accurate optoelectronic measurements** – The VectorStar ME7848A-100 series ONA enables error-corrected transfer function, group delay, and return loss measurements of E/O and O/E components and subsystems.
- **O/E calibration module MN4765B** – This photodiode reference standard detector is thermally stabilized to eliminate drift over temperature. Accurate bias voltage to the photodiode is maintained internally.
- **E/O converter MN4775A** – Includes a lithium niobate (LiNbO3) modulator stabilized by a fully automatic bias controller and a tunable or fixed-wavelength laser source. Excellent converter stability ensures characteristics remain consistent during measurement of opto-electronic DUT detectors and receivers.



VectorStar ME7848A
40/70 GHz Baseband
Opto-Electronic Network Analyzer



VectorStar ME7848A
110 GHz Broadband
Opto-Electronic Network Analyzer

O/E Calibration Module MN4765B

E/O Converter MN4775A

- **National Institute of Standards and Technology (NIST) derived characterization** – Magnitude and phase characterization of the O/E calibration module is obtained using a primary standard characterized 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 set-up and calibrations required for making E/O, O/O, and O/E measurements.
- **Excellent stability and repeatability** – The use of full 12-term calibration with de-embedding results in stable and repeatable measurements of opto-electronic devices using the VectorStar VNA solution.
- **Modularity and upgradeability** – The VectorStar ME7848A ONA can be easily modified to a different wavelength by adding the appropriate E/O converter MN4775A and O/E calibration detector MN4765B. The O/E network analyzer ME7848A 100 series can be upgraded to a 200 series by including the appropriate E/O converter MN4775A.

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System Components

Performance
MS464xB Vector Network Analyzer with Option 51 (access loops; Option 61 or 62 may be chosen as options)
MN4765B-xxxx O/E Calibration Module up to 145 GHz
MN4775A-0040/0070/0071/0072/0110/0111 E/O Converter (-02XX systems only)
1 meter single mode patch cord (FC/PC-FC/APC)
Qty-two, 1-meter RF cables
Fiber connector cleaning kit
Two semi-rigid cables to support the reversed coupler configuration

Ordering Information

Instrument Models –The ME7848A/E series systems are available to meet different frequency range requirements.

Model Number	Description
ME7848A-0210	110 GHz 1550 nm system with O/E Calibration Module and E/O Converter (based on ME7838AX broadband VNA system)
ME7848A-0211	110 GHz 1310 nm system with O/E Calibration Module and E/O Converter (based on ME7838AX broadband VNA system)
ME7848E-0210	110 GHz 1550 nm system with O/E Calibration Module and E/O Converter (based on ME7838EX broadband VNA system)
ME7848E-0211	110 GHz 1310 nm system with O/E Calibration Module and E/O Converter (based on ME7838EX broadband VNA system)
ME7848A-0240	40 GHz, 850 nm system with O/E Calibration Module and E/O Converter (requires Option 51, 61, or 62 (for MS4644B), sold separately)
ME7848A-0270	70 GHz, 1550 nm system with O/E Calibration Module and E/O Converter (requires Option 51, 61, or 62 (for MS4647B), sold separately)
ME7848A-0271	70 GHz, 1310 nm system with O/E Calibration Module and E/O Converter (requires Option 51, 61, or 62 (for MS4647B), sold separately)
ME7848A-0272	70 GHz, 1310/1550 nm system with O/E Calibration Module and E/O Converter (requires Option 51, 61, or 62 (for MS4647B), sold separately)
ME7848A-0110	110 GHz 1550 nm system with O/E Calibration Module only (based on ME7838AX broadband VNA system)
ME7848A-0111	110 GHz 1310 nm system with O/E Calibration Module only (based on ME7838AX broadband VNA system)
ME7848A-0112	110 GHz 1310/1550 nm system with O/E Calibration Module only (based on ME7838AX broadband VNA system)
ME7848E-0110	110 GHz 1550 nm system with O/E Calibration Module only (based on ME7838EX broadband VNA system)
ME7848E-0111	110 GHz 1310 nm system with O/E Calibration Module only (based on ME7838EX broadband VNA system)

Model Number	Description
ME7848E-0112	110 GHz 1310/1550 nm system with O/E Calibration Module only (based on ME7838EX broadband VNA system)
ME7848A-0140	40 GHz, 850 nm system with O/E Calibration Module only (requires Option 51, 61, or 62 (for MS4644B), sold separately)
ME7848A-0170	70 GHz, 1550 nm system with O/E Calibration Module only (requires Option 51, 61, or 62 (for MS4647B), sold separately)
ME7848A-0171	70 GHz, 1310 nm system with O/E Calibration Module only (requires Option 51, 61, or 62 (for MS4647B), sold separately)
ME7848A-0172	70 GHz, 1310/1550 nm system with O/E Calibration Module only (requires Option 51, 61, or 62 (for MS4647B), sold separately)

36585V Series AutoCal Module

36585 Series Cal Kit

3654D Series Cal Kit

3657 Series V Cal Kit

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