VectorStar ME7848A Opto-Electronic Network Analyzer

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VectorStar™ ME7848A 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, an MN4775A E/O converter, 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.

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O/E Calibration Module
MN4765B

E/O Converter
MN4775A

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-200 series ONA enables error-corrected transfer function, group delay, and return loss measurements of E/O and O/E components and subsystems.

- **MN4765B O/E calibration module –** This photodiode reference standard detector is thermally stabilized to eliminate drift over temperature. Accurate bias voltage to the photodiode is maintained internally.

- **MN4775A E/O converter –** 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.

- **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 MN4775A E/O converter and MN4765B O/E calibration detector. The ME7848A 100 series can be upgraded to a 200 series by including the appropriate MN4775A E/O converter.

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System Components

Performance
MS464xB Vector Network Analyzer with option 051 (access loops; option 061 or 062 may be chosen as options)
MN4765B-xxxx O/E Calibration Module
MN4775A-0040/0070/0071 E/O Converter (-02XX systems only)
1m single mode patch cord (FC/PC-FC/APC)
Two 1m RF cables
Fiber connector cleaning kit
Two semi-rigid cables to support the reversed couple configuration

Model Number	Description
Optional Automatic Calibrators (AutoCal) and Calibration Kits	
36585V Series	Precision AutoCal module; K 70 kHz to 40 GHz, 2-port; V 70 kHz to 70 GHz, 2-port
36585 Series	Precision AutoCal calibration kit
3650A Series	SMA/3.5 mm calibration kit
3652A Series	K (2.92 mm) calibration kit
3654D Series	V (1.85 mm) calibration kit
3657 Series	V (1.85 mm) multi-line calibration kit

Ordering Information

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

Model Number	Description
ME7848A-0240	40 GHz, 850 nm system
ME7848A-0270	70 GHz, 1550 nm system
ME7848A-0271	70 GHz, 1310 nm system
ME7848A-0140	40 GHz, 850 nm system (VNA and O/E module only)
ME7848A-0170	70 GHz, 1550 nm system (VNA and O/E module only)
ME7848A-0171	70 GHz, 1310 nm system (VNA and O/E module only)

Included Accessories – Each system comes with a set of included accessories.

Online Help	Operation Manual, User Interface Reference Manual, Programming Manual, Programming Manual Supplement, and Calibration and Measurement Guide.
Peripherals	Optical USB Mouse
Power	Power Cord
2000-1957-R	Accessory Kit, 40 GHz (-0x40 systems)
2000-1958-R	Accessory Kit, 70 GHz (-0x7x systems)

Separately-orderable Accessory Kit Items

2000-1962-R	40 GHz semi-rigid cable set
2000-1964-R	70 GHz semi-rigid cable set
808-20-R	850 nm, 1m, patch cable

36585V Series AutoCal Module

36585 Series Cal Kit

3654D Series Cal Kit

3657 Series V Cal Kit

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