4100-Series OTDR Modules

T-BERD®/MTS-2000, –4000, –5800 platforms

Viavi Solutions 4100-Series OTDR modules let field technicians rapidly, reliably, and cost-effectively install, turn up, and troubleshoot any optical network architecture—enterprise, metro, and FTTx/access point-to-point or point-to-multipoint passive (PONs).

The OTDR modules' optical performance, combined with the complete suite of T-BERD/MTS platform testing features, ensures that testing is done right the first time.

Standard testing features include:

- Automatic macrobend detection
- Summary results table with pass/fail analysis
- Bidirectional OTDR analysis
- Fast-Report — onboard report generation

Key Features and Benefits

- Up to 43 dB dynamic range and 256,000 acquisition points
- PON-optimized to test through a 1x128 splitter
- Combined single-mode/multimode into one (quad)
- Single/dual/tri-wavelength versions with 1310/1490/1550/1625/1650 nm
- Single connector port for 1310/1550, and in-service 1625/1650 nm wavelengths
- Integrated CW light source and broadband power meter
- Ready for SLM, FTTA-SLM, and FTTH-SLM intelligent optical application software
- Instantly detects traffic when connected to live fiber

T-BERD/MTS-2000 one-slot handheld modular platform for testing fiber networks

T-BERD/MTS-5800* handheld test instrument for testing 10 G Ethernet and fiber networks

T-BERD/MTS-4000 two-slot handheld modular platform for testing fiber, copper, and multiple services

Specifications

General (typical at 25°C)	
Weight	0.35 kg (0.77 lb)
Dimensions (w x h x d)	128 x 134 x 40 mm (5 x 5.28 x 1.58 in)
Optical Interfaces	
Interchangeable optical connectors[1]	FC, SC, DIN, LC (PC or APC) and ST (PC)
Technical Characteristics	
Laser safety class (21CFR)	Class 1
Distance units	Kilometers, feet, and miles
Group index range	1.30000 to 1.70000 in 0.00001 steps
Number of data points	Up to 128,000 or 256,000 data points
Distance measurement	
Mode	Automatic or dual cursor
Display range	0.5 up to 260 km
Cursor resolution	1 cm
Sampling resolution	4 cm
Accuracy	±1 m ±sampling resolution ±1.10^{-5} x distance (excluding group index uncertainties)

Attenuation Measurement	
Mode	Automatic, manual, 2-point, 5-point, and LSA
Display range	1.25 to 55 dB
Display resolution	0.001 dB
Cursor resolution	0.001 dB
Linearity	±0.03 dB/dB/±0.05 for LA
Threshold	0.01 to 5.99 dB in 0.01 dB steps
Reflectance/ORL Measurements	
Reflectance accuracy	±2 dB
Display resolution	0.01 dB
Threshold	–11 to –99 dB in 1 dB steps
Source and Broadband Power Meter (optional)	
CW source output power level	–3.5 dBm
Power level range (MM/SM)[2]	–3 to –30/0 to –55 dBm
Calibrated wavelengths (SM)[3]	1310/1490/1550/1625/1650 nm
Calibrated wavelengths (MM)[4]	850/1300 nm
Measurement accuracy (SM)	±0.5 dB
Measurement accuracy (MM)[5]	±1 dB

OTDR Modules (typical at 25°C)

	Central Wavelength[6]	RMS Dynamic Range[7]	Event Dead Zone[8]	Attenuation Dead Zone[9]	Network Type	Applications
MM	850/1300±30 nm	26/24 dB	0.8 m	4 m	Enterprise/FTTA	Multimode network qualification
Quad	850/1300 ± 30 nm 1310/1550 ±20 nm	26/24 dB 37/35 dB	0.8 m 0.9 m	4 m 4 m	Enterprise/FTTA/ access/metro	Multimode and single-mode short- and medium-haul network qualification
LA	1310/1550/1650 ±20 nm	35/33/30 dB	1.5 m	6 m	FTTA/FTTH/ access	Short-haul qualification FTTH drop-cable qualification/maintenance
MA	1310 ±20 nm 1550 ±20 nm 1625 ±10 nm 1650 ±20 nm	40 dB 38 dB 37 dB 37 dB	0.9 m	4 m	FTTH/access/ metro	Short/medium-haul qualification FTTH test up to 1x32 splitter
MP	1310 ±20 nm 1490 ±20 nm 1550 ±20 nm 1625 ±10 nm 1650 +10/–5 nm	43 dB 41 dB 41 dB 41 dB 40 dB	0.8 m	4 m	FTTH/access/ metro/long haul	Short/medium/long-haul qualification FTTH test up to 1x128 splitter

1. FC and SC for LA module
2. –2 to –50 dBm for Quad
3. Available on MA, MP, and Quad modules
4. Available on MM and Quad modules
5. Using a modal controller
6. Laser at 25°C and measured at 10 µs
7. The one-way difference between the extrapolated backscattering level at the start of the fiber and the RMS noise level, after 3 minutes averaging
8. Measured at ±1.5 dB down from the peak of an unsaturated reflective event
9. Measured at 1310 nm and ± 0.5 dB from the linear regression using a FC/UPC-type reflectance

Ordering Information

Description	Part Number
OTDR Modules	
Multimode 850/1300 OTDR module	E4123MM
Multimode/single-mode 850/1300/1310/1550 nm OTDR module	E4146QUAD
LA 1310/1550 nm OTDR module	E4126LA
MA 1310/1550 nm OTDR module	E4126MA
MP 1310/1550 nm OTDR module	E4126MP

For more information on T-BERD/MTS-2000, -4000, -5800 test platforms or individual modules, refer to their respective data sheets and brochure.

Description	Part Number
Universal Optical Connectors (not applicable for LA module)	
Straight	EUNIPCFC, EUNIPCSC, EUNIPCST, EUNIPCDIN, EUNIPCLC
8° angled	EUNIAPCFC, EUNIAPCSC, EUNIAPCDIN, EUNIAPCLC

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