Data Sheet

VIAVI T-BERD/MTS
8100-Series OTDR EVO Modules

For T-BERD/MTS-6000A/-8000 Platforms

The VIAVI Solutions® 8100-Series OTDR EVO family transforms fiber testing. Connect the OTDR EVO family anywhere on the fiber to characterize single-mode and multimode fibers for commissioning, network upgrades, and troubleshooting with the added insurance of workflow optimization and accurate fiber-link fingerprinting.

The OTDR EVO family's optical performance combined with the T-BERD/MTS platform's complete suite of testing features ensures that testing jobs are performed right—the first time.

Standard testing features include:

- Automatic macrobend detection

- Summary results table with pass/fail analysis

- Bidirectional OTDR analysis

- FastReport onboard report generation

Applications

- Metro and ultra-long-haul fiber network characterization

- Advanced FTTH PON network qualification and troubleshooting

- Upgrading core fiber networks to 40 and 100 G

- Remotely monitoring fiber while in or out of service

- Advanced Tier-2 certification for enterprise and data center networks

Key Benefits

- Industry-leading dead zone performance for full element event characterization on fiber links 2 m apart

- Includes an integrated power meter, light source, and OTDR in a one-port tool for added flexibility

- Instantaneous, automatic traffic detection avoids risking live signal interference or optical transmitter damage during an OTDR test

- Eliminates OTDR interpretation errors with Smart Link Mapper (SLM) without compromising on test time

- Reduces event loss measurement uncertainty and improves measurement repeatability

Key Features

- Up to 50 dB dynamic range

- Integrated CW light source and broadband power meter (single-mode wavelengths)

- PON-optimized to test through a 1x128 splitter

- Single connector port for 1310, 1550, and in-service 1650 nm wavelengths

- FiberComplete™ version available for automated bidirectional OTDR, IL, and ORL measurements

- Built-in encircled flux multimode source compliant with IEC 61280–1–4 and TIA-526-14-B

Platform Compatibility

T-BERD/MTS-6000A

Compact multilayer platform for network installation and maintenance

T-BERD/MTS-8000 V2

Scalable platform for multiple-layer and multiple-protocol testing

Specifications (Typical at 25°C)

General	
Weight	approx. 500 g (1.1 lb)
Dimensions (W x H x D)	213 x 124 x 32 mm (8.38 x 4.88 x 1.26 in)
Laser safety class (21 CFR)	Class 1
Distance units	Kilometer, meter, feet, and miles
Group index range	1.30000 to 1.70000 in 0.00001 steps
Number of data points	Up to 256,000 data points

Distance Measurements	
Mode	Automatic or dual cursor
Display range	Single-mode: 0.1 – 400 km Multimode: 0.05 – 10 km
Display resolution	1 cm
Cursor resolution	From 1 cm
Sampling resolution	From 4 cm
Accuracy (Excluding group index uncertainties)	Single-mode: ±(0.75 m + sampling resolution + 0.001% x distance) Multimode: ± (0.33m + sampling resolution + 0.001% x distance)

Attenuation Measurements	
Mode	Automatic, manual, 2-point, 5-point, and LSA
Display resolution	0.001 dB
Linearity	Single-mode: ±0.03 dB/dB Multimode: ±0.05 dB/dB
Threshold	0.01 to 4.99 dB in 0.01 dB steps

Reflectance/ORL Measurements	
Mode	Automatic or manual
Reflectance accuracy	±2 dB
Display resolution	0.01 dB
Threshold	−11 to −99 dB in 1 dB steps

OTDR Modules	8100A	8100B	8100C	8100D
Central wavelength[1]	850 +10/-30 nm; 1300 ±20 nm; 1310 ±20 nm; 1550 ±20 nm; 1625 ±20 nm	1310 ±20 nm; 1550 ±20 nm; 1625 ±20 nm	1310 ±20 nm; 1550 ±20 nm; 1625 ±10 nm; 1650 +15/−5 nm	1310 ±20 nm; 1550 ±20 nm; 1625 +15/−5 nm; 1650 ±1 nm
Dynamic range[2]	Multimode: 24/24 Single-mode: 40/40/40 dB	41/40/40 dB	47.5/47/47.5/46 dB	50/50/50/48 dB
Pulse width	Multimode: 1 ns to 20 µs Single-mode: 3 ns to 20 µs	5 ns to 20 µs	2 ns to 20 µs	2 ns to 20 µs
Event dead zone[3]	Multimode: 0.25 m Single-mode: 0.60 m	0.65 m	0.5 m[9]	0.5 m
Attenuation dead zone[4]	2 m	2 m	2 m	2.5 m
Splitter attenuation dead zone	25 m after a 15 dB splitter loss (single-mode only)	25 m after a 15 dB splitter loss	25 m after a 15 dB splitter loss/60 m after a 18 dB splitter loss	15 m after a 15 dB splitter loss
Power meter				
Calibrated wavelengths[5]	N/A	1310/1490/1550/1625 nm	1310/1490/1550/1625 nm	1310/1490/1550/1625 nm
Power range		−3 to −55 dBm	−3 to −55 dBm	−5 to −55 dBm
Accuracy[6]		±0.5 dB at −30 dBm	±0.5 dB at −30 dBm	±0.5 dB at −30 dBm
Continuous wave light source[7]				
Wavelengths	850/1300/1310/1550/1625 nm	1310/1550/1625 nm	1310/1490/1550/1625 nm	1310/1550/1625 nm
Output power	0 dBm	−3.5 dBm	−3.5 dBm	0 dBm
Stability	±0.2 dB @25°C over 1 hr	±0.1 dB at 25°C over 1 hour	±0.1 dB at 25°C over 1 hour	±0.1 dB at 25°C over 1 hour
Operating modes[8]	CW (single-mode only), 270 Hz, 330 Hz, 1 kHz, 2 kHz, Twintest	CW, 270 Hz, 330 Hz, 1 kHz, 2 kHz, TWINtest	CW, 270 Hz, 330 Hz, 1 kHz, 2 kHz, TWINtest	270 Hz, 330 Hz, 1 kHz, 2 kHz, TWINtest

1. Laser at 25°C and measured at 10 µs.

2. The one-way difference between the extrapolated backscattering level at the start of the fiber and the RMS (SNR=1) noise level, after 3 minutes averaging using the largest pulse width.

3. Measured at ±1.5 dB below the peak of an unsaturated reflective event using the shortest pulse width.

4. Measured ±0.5 dB from the linear regression using an FC/UPC reflectance and the shortest pulse width.

5. 1625 nm is not available on the 8138C-65 version.

6. At calibrated wavelengths.

7. At calibrated wavelengths; multimode source (850 nm) is compliant to the IEC 61280-1-4 standard related to the encircled flux.

8. Subtract 3 dB when in modulation mode (270 Hz/330 Hz/1 kHz/2 Khz).

9. Measured at 1.5 dB below the peak of an unsaturated 27 dB reflective event using the shortest pulse width.

Ordering Information

Description	Part Number
8100A Modules	
850/1300/1310/1550 nm OTDR module[2]	E8146A
850/1300/1310/1550/1625 nm OTDR module[2]	E8156A
8100B Modules	
1310/1550 nm OTDR module	E8126B
1310/1550/1625 nm OTDR module	E8136B
8100C Modules	
1550 nm OTDR module[1]	E8115C
In-service 1625 nm OTDR module[1]	E81162C
In-service 1650 nm OTDR module[1]	E81165C
1310/1550 nm OTDR module	E8126C
1310/1550/1625 nm OTDR module	E8136C
8100D Modules	
1550 nm OTDR module[1]	E8115D
In-service 1625 nm OTDR module[1]	E81162D
In-service 1650 nm OTDR module[1]	E81165D
1310/1550 nm OTDR module	E8126D
1550/1625 nm OTDR module[1]	E8129D-62
1310/1550/1625 nm OTDR module	E8136D
Universal Optical Connectors	
Straight connectors	EUNIPCFC, EUNIPCSC, EUNIPCST, EUNIPCDIN
8° angled connectors	EUNIAPCFC, EUNIAPCSC, EUNIAPCDIN

1. Source and power meter not available on these versions.

2. APC connector not available on these versions.

For more information about the T-BERD/MTS-6000A and -8000 test platforms, refer to their respective data sheets.

VIAVI Care Support Plans

Increase your productivity for up to 5 years with optional VIAVI Care Support Plans:

- Maximize your time with on-demand training, priority technical application support and rapid service.
- Maintain your equipment for peak performance at a low, predictable cost.

Plan availability depends on product and region. Not all plans are available for each product or in every region.

To find out which VIAVI Care Support Plan options are available for this product in your region, contact your local representative or visit: viavisolutions.com/viavicareplan

Features

*5-year plans only

Plan	Objective	Technical Assistance	Factory Repair	Priority Service	Self-paced Training	5 Year Battery and Bag Coverage	Factory Calibration	Accessory Coverage	Express Loaner
BronzeCare	Technician Efficiency	Premium	✓	✓	✓				
SilverCare	Maintenance & Measurement Accuracy	Premium	✓	✓	✓	✓*	✓		
MaxCare	High Availability	Premium	✓	✓	✓	✓*	✓	✓	✓