

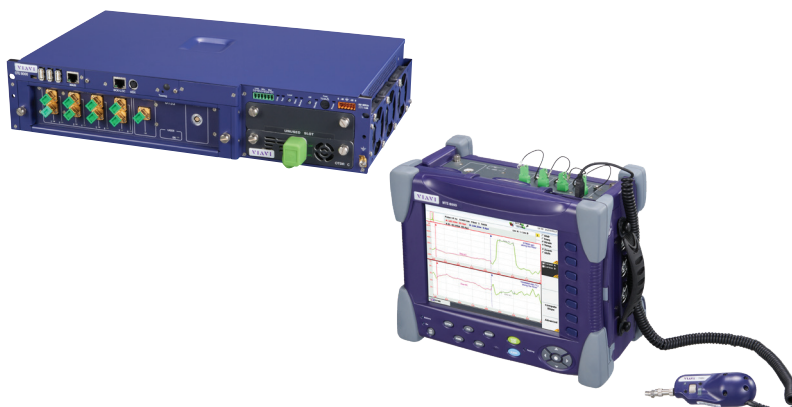
VIAVI

T-BERD/MTS-8000 DTSS

Distributed Fiber Optic solution for measuring Temperature and Strain using single ended Brillouin OTDR

With over 30 years of experience in fiber optic test equipment for field measurements and monitoring systems, VIAVI migrates its knowledge and technology to Distributed Fiber Sensing Applications.

Based on Brillouin scattering technology, VIAVI BOTDR module measures the temperature and strain along an optical fiber cable. Forget heavy devices and generators ... the BOTDR module can be set up in portable platform (T-BERD®/MTS-8000) for cable commissioning and routine auditing or in rackable platform (OTU-8000) for permanent monitoring through the most widely deployed fiber monitoring system, the ONMSi.



Key Benefits

- Simultaneous temperature and strain measurement requiring only one fiber
- Single-ended solution
- Portable and Rackable form factors
- Portable: Compact, modular, lightweight, and battery operated (no generators needed)
- Rackable: Fully compatible with VIAVI Fiber Monitoring solution (ONMSi)

Key Features

- BOTDR solution (Brillouin OTDR)
- Temperature and strain threshold monitoring
- Decorrelation of temperature and strain
- Multi-port measurements
- Low power consumption – rackable version
- Battery operated – portable version
- Connected product (Bluetooth, WiFi, and remote control operation with Smart Access Anywhere (SAA))

Applications

- Pipeline Monitoring
- Telecommunication
- Power cable monitoring
- Structural Health Monitoring (SHM)

Applications

Pipeline monitoring

- Leak detection
- Ground movement monitoring
- Fatigue detection



Telecommunication

- Buried fiber optic cables monitoring
- Aerial cable monitoring
- Optical cable commissioning for strain measurement following IEC-60794-3-20:2016



Power Cable Monitoring

- Hot spot detection and localization



Structural Health Monitoring

- Crack detection
- Infrastructure management and design
- Dam, Dike, Tunnel, Bridge monitoring



Compatible VIAVI application software expands your capabilities:

- **Post-Processing PC Software for Fiber Sensing Trace:** Post-Processing PC software for fast and efficient viewing, editing, analyzing and printing of the Fiber Sensing data file
- **Remote Access Application:** SmartAccessAnywhere (SAA), App enables Workforce support in real time; Remote control of VIAVI Interrogator; data files, reports transfer, or firmware upgrades
- **Optical Network Monitoring System (ONMSi):** The ONMSi platform enables permanent, proactive monitoring of the fiber integrity, as well as temperature for a complete analysis of the fiber health

Technical Specifications for DTSS (Brillouin Single-end, Portable and rackable version)

| General Description (base unit with DTSS module) | | |
|---|--|--|
| Base Unit | Portable | Rackable |
| Height | 267 mm | 2U |
| Width | 326 mm | 19", 21" (ETSI), 23" |
| Depth | 93 mm | 260 mm (ETSI) / 280 mm (19" and 23") |
| Weight | Less than 10 kg | Less than 15 kg |
| Power Supply | AC 110/220 V; Battery offering 3 hours min | -48 V DC; Dual inputs |
| Consumption | < 50 W | < 50 W |
| Operating Temperature | -10°C to +45°C | +5°C to +45°C |
| Storage Temperature | -20°C to +60°C | -20°C to +60°C |
| Humidity | 95% without condensing | 95% without condensing |
| EMI/ESD | CE Compliant | CE Compliant |
| ROHS | Compliant | Compliant |
| Interface | 1xRJ45 Ethernet 10/100/1000baseT port | 2xRJ45 Ethernet 10/100/1000baseT ports |
| Media | SATA hard disk 250 GB | Solid State Disk 4 GB (32 GB option) |
| Screen | Yes (10.4" TFT color touch screen) | No |
| Temperature Sensor | | |
| Input | One on front panel | One on front panel |
| PT100 | Yes (4 wires Platinum, 5 meters long) | Yes (4 wires Platinum, 5 meters long) |
| Optical Switch | | |
| Internal Optical Switch | 4 ports | 8 ports |
| Connector Type | E2000/APC with cord and caps | SC/APC |
| Lifetime | 1E09 switches | 1E09 switches |
| Internal 2 by 1 switch | No | Option (SC/APC connector) |
| DTSS Specifications (Typical at 25°C unless specified) | | |
| Technology | Brillouin Single End DTSS | |
| Laser Safety | Class 1 | |
| Distance Range | 100 m to 200 km | |
| Measurement time ¹ | From 1 min to several hours | |
| Spatial Resolution (IEC 61757) | 1 m (up to 10 km); 5 m (up to 60 km) | |
| Spatial Step (sampling resolution) | 8 cm min | |
| Temperature Range | -200°C to +700°C ² ; (relative to frequency range 9-13GHz) | |
| Temperature Repeatability (IEC 61757) | 0.8°C ³ | |
| Strain Range | - 30 000 µε to +40 000 µε; (relative to frequency range 9-13 GHz) | |
| Strain Repeatability (IEC 61757) ⁴ | 17 µε ³ | |
| Combo Temperature and Strain repeatability (IEC 61757) ⁴ | 1.25°C AND 27 µε ⁵ | |
| Measurement Variables | Strain, Temperature, Brillouin spectrum and shift, OTDR (loss), Monitoring (for rack-able unit only) | |

1. Measurement time depends on multiple parameters as mode, range, resolution, average, frequency scan.

2. Depending on Optical Fiber Type.

3. All instruments tested in production are under following conditions:

- At 2σ; Distance sampling resolution: 0.25 m; Pulse width: 10 ns; Distance range: 13 km; Measurement time: 5 mn

4. Similar method as temperature in strain mode.

5. All instruments tested in production are under following conditions:

- At 2σ; Distance sampling resolution: 1 m; Pulse width: 50 ns; Distance range: 13 km; Measurement time: 7 mn30

Ordering Information

Portable solution:

| Part Number | Description |
|-----------------------------------|--|
| Hardware package | |
| PACK-DTSS4-MTS | Fiber Sensing complete package including T-BERD/MTS-8000 platform and BOTDR with 4 ports E2000APC Switch |
| EM8000E | T-BERD/MTS-8000 V2 Tester for Standard Power |
| E80HCASE1 | Hard Carrying Case for Multiple Module Configuration |
| E80EWIFIBLUE | WiFi and Bluetooth Option for 8000E Platform |
| EDFOS-MTS-TS4 | OTDR Module 4 ports (T-BERD/MTS) |
| EDFOS-MTS-PT100 | PT100 Temperature sensor 5 meters long (T-BERD/MTS) |
| Base unit Software options | |
| EDFOS-MTS-DECSW | Decorrelation of temperature and strain |
| Services options | |
| EDFOS-Wk-Rate | Renting DTSS pack during one week |
| EDFOS-Mo-Rate | Renting DTSS pack during one month |
| E9STRAINING | One day of training |
| E9SSUPPORT | One day of support |



Rackable solution:

| Part Number | Description |
|-----------------------------------|---|
| Base unit | |
| E98OTU-FP-RF | OTU-8000 BASE UNIT 48VDC - 2U – Front power input - FAN |
| EDFOS-OTU-SW | OTU software license for ONMSI and Fiber Sensing |
| Base unit options | |
| E98KIT19 | 19 inches rack-mounting kit for OTU-8000 |
| E98KIT21 | 21 inches rack-mounting kit for OTU-8000 |
| E98KIT23 | 23 inches rack-mounting kit for OTU-8000 |
| E98RELAYS | Relay for external alarm reporting device |
| E98SSDHC | High capacity SSD for OTU-8000 (Fiber Sensing) |
| E98LEFTFAN | Left Fan |
| E98ACDC | AC/DC converter (external unit) |
| Base unit Software options | |
| EDFOS-OTU-DECSW | Decorrelation of temperature and strain |
| BOTDR module | |
| EDFOS-OTU-TS8 | BOTDR Module 8 ports switch (DTSS/OTU) |
| EDFOS-OTU-PT100 | PT100 Temperature sensor 5 meters long (OTU) |
| EDFOS-OTU-TS8A | BOTDR Module 2 by 8 ports switch (DTSS/OTU) |
| ONMSi Software options | |
| EDFOS-ONMSI-SW | Temperature and strain monitoring under ONMSi |



VIAMI Care Support Plans



Increase your productivity for up to 5 years with optional VIAMI 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 VIAMI 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 | ✓ | ✓ | ✓ | ✓* | ✓ | ✓ | ✓ |



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