

VIAVI T-BERD/MTS-4000 V2

Optical Test Platform

Modular Test Platform designed for the installation, turn-up and maintenance of fiber optic networks

Telecommunication network topologies and technologies are evolving rapidly to respond to increased bandwidth requirements. Installers and service providers must equip technicians with scalable and easy-to-use test tools that addresses a wide range of up-to-date optical test applications quickly and accurately under all field conditions.

The VIAVI T-BERD®/MTS-4000 V2 is the optical test platform engineers, technicians, installers and contractors can rely on, providing:

- An easy-to-use solution with intuitive icon-based graphical user interface (GUI) and multi-touch screen requiring minimal training
- A compact platform with field-replaceable modules covering multiple optical test functions (OTDRs, optical power & loss testing, Optical Spectrum Analyzer (OSA), etc...) that enable complete optical network qualification.
- Optimum workflow and operation within the platform or through the cloud with VIAVI StrataSync and SmartAccess Anywhere



T-BERD/MTS-4000 V2

Key Benefits

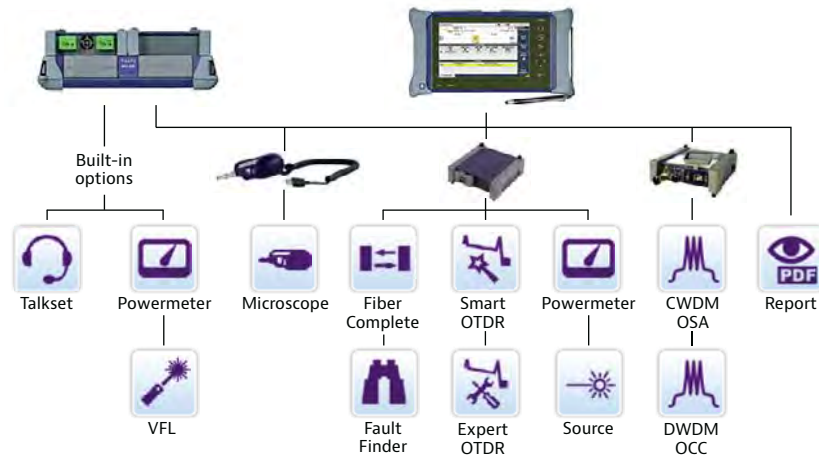
- Certify the fiber physical layer of FTTx/PON, access, metro and enterprise networks
- Two field-replaceable modules increase flexibility
- Smarter and faster field testing with tablet user interface
- Advanced cloud support and remote connectivity

Features

- Dual-modular handheld platform
- Large 9-inch high visibility touchscreen with permanent function keys
- Essential tools integrated and supported in the platform (visual fault locator, optical power meter, optical microscope and talkset)
- Flexible connectivity; Ethernet, WiFi, Bluetooth
- Smart Access Anywhere (SAA) for remote control & field tech support
- StrataSync enabled — centralized cloud based asset, configuration, test data and workflow management

Applications

- Fiber optic test, qualification, certification and reporting



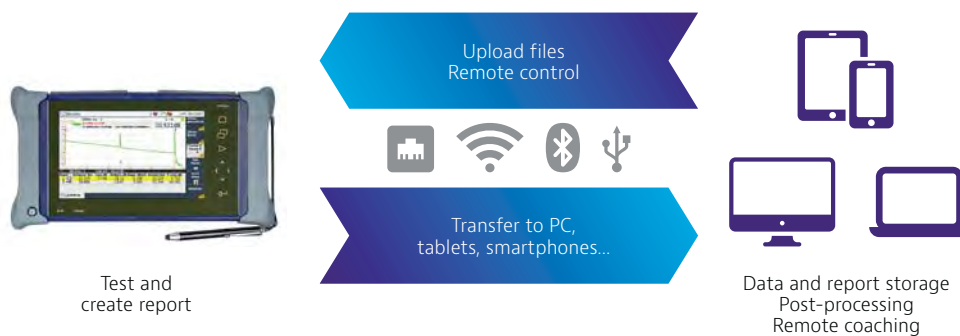
Dual Slot Modular Platform for Maximum Scalability and Usability

The T-BERD/MTS-4000 V2 platform is a highly integrated optical test platform with two module bays, a large 9-inch color touchscreen with multi-touch capability, enabling the use of many optical test functions

It supports the range of VIAVI fiber analysis tools including OSA, OTDR, bidirectional insertion loss/ORL, light source, power meter, and connector inspection.

The dual module slot design delivers an all-in-one optical network test solution with a combination of key optical functions, for example:

- For MPO fiber qualification: integrated OTDR and MPO switch test platform
- For CWDM/DWDM network deployment: integrated CWDM/DWDM OTDRs and OSA test platform
- For full CWDM network deployment: full 18 CWDM wavelengths OTDR test platform



Advanced connectivity, workflow and reporting capabilities

The T-BERD/MTS-4000 V2 supports advanced connectivity via wireline, wireless and the cloud. Test workflow, reporting and asset management is made easier with StrataSync while SmartAccess Anywhere (SAA) enables remote control, from a PC browser or smartphone/tablet app, for launching tests or providing support to techs on site. Instruments and techs can also talk to each other using the fiber under test or separate comms fiber via the optical module in use or talkset.

T-BERD/MTS-4000 Dual-slot Modular Platform Overview

- ① 9-inch high visibility touchscreen
- ② On/off button
- ③ On indicator
- ④ Charge indicator
- ⑤ Home button
- ⑥ Result/Setup/File button
- ⑦ Start/Stop
- ⑧ Direction keys
- ⑨ Validation/Enter key
- ⑩ Testing indicator
- ⑪ Two interchangeable module fields
- ⑫ AC/DC input
- ⑬ High-speed Ethernet
- ⑭ Headset
- ⑮ Two USB 2.0 ports
- ⑯ Optical (VLF, Power meter, Talkset)
- ⑰ Battery
- ⑱ Wifi/Bluetooth





StrataSync — Empower Your Assets

StrataSync Core capabilities are included when you purchase any StrataSync-enabled instrument from VIAVI, there is nothing to buy to take advantage of these benefits. StrataSync Core includes asset and configuration management, test data management with 35 day limit, and even instrument self-management for techs via the Tech Portal. StrataSync Plus extends test data storage for up to 6 years and provides access to seasoned VIAVI StrataSync experts for assistance with setup, config, usage, reporting – just about anything that you desire.

Specifications (typical at 25°C)

General Description	
Display 9-inch touchscreen with high visibility LCD 800x480	
Storage and I/O Interfaces	
Internal memory	1 Gb
WiFi/Bluetooth	Standard IEEE 802.11 b/g and Bluetooth Class 2
Ethernet	10/100/1000 MHz
USB	2x USB 2.0 ports
Power Supply	
Battery type	Standard removable Lilon
AC/DC adapter	Input 100-250V, 50-60Hz Output 12-15 V DC/3.7A
Electrical Safety	EN 60950 Compliant
Operation time	Up to 16 hours Telcordia GR-196-CORE
Size and Weight	
Mainframe with two modules and battery (WxHxD)	282x153x97 mm (11.1x6.02x3.8 in)
Mainframe only (with battery)	1.4 kg (3 lb)
Mainframe with one module (with battery)	2.3 kg (5.1 lb)
Environmental	
Operating temperature range (no option)	-20 to +50°C (-4 to 122°F)
Operating temperature range (all options)	0 to 40°C (32 to 104°F)
Storage temperature range	-20 to +60°C (-4 to 140°F)
Humidity, non condensing	95%
EMC	EN61326-1 / FCC 47-1 Part 15

Platform Optical Interface	
Power meter	
Power level	+10 to -60 dBm
Calibrated wavelengths	850, 1310, 1550nm ...
Connector type	Universal push/pull (UPP)
Visual Fault Locator	
Wavelength	635nm ±15 nm
Output power level	< 1mW
Laser safety	Class 2 laser
TalkSet	
Dynamic range	32 dB typical

Ordering Information

Platform	
Part Number	Description
ETB4000HVT EM4000HVT	T-BERD/MTS-4000 V2 Platform
E40PWx	Power supply (x: E, UK, US...)
E40VFL, E40PM, E40TSPM	VFL, Optical power meter, talkset/power meter
E40WIFIBLU2	Built-in WiFi/Bluetooth
Accessories	
ELIION6C	Additional 6 cell Li-Ion standard rechargeable battery
ELIION9C	Additional 9 cell Li-Ion long life rechargeable battery
E40GLOVE	Wrap-around Glove soft case for 4000
E40SCASE1	Large soft case for 4000
EHCASE6	Hard case
EHCASE4X2	Hard case for two 4000 platforms



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Product specifications and descriptions in this document are subject to change without notice.
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VIAVI

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, long-haul, 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
- Smart Link Mapper (SLM) icon-based map view of the fiber link
- SmartAcq perform a short and long pulse acquisition to improve measurement reliability
- SmartTEST Assistant guides users with an easy step by step process



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



T-BERD/MTS-4000 v2 two-slot handheld modular platform for testing fiber networks



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

Benefits

- Up to 45 dB dynamic range and 256,000 acquisition points
- PON-optimized to test through a 1x256 splitter
- Combined single-mode/multimode into one (quad)
- Single/dual/tri-wavelength versions with 1310/1550/1625/1650 nm
- Integrated CW light source and power meter
- Ready for Enterprise-SLM, FTTA-SLM, and FTTH-SLM intelligent optical application software
- Instantly detects traffic when connected to live fiber (except on live/filtered port)
- ITU Fiber type identification (G65x A, B, C and D) with water peak detection at 1383nm



Specifications

General (typical at 25°C)	
Weight	0.35 kg (0.77 lb)
Dimensions (w x h x d)	Software can be enhanced and upgraded in the field
Optical Interfaces	
Interchangeable optical connectors ¹	FC, SC, 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 for MM, QUAD, LA - Up to 256,000 for MA2, MA3, MP2
Distance measurement	
Mode	Automatic or dual cursor
Display range	0.1 up to 400 km
Cursor resolution	1 cm
Sampling resolution	4 cm
Accuracy	$\pm 5 \text{ m} \pm \text{sampling resolution}$ $\pm 1.10^{-5} \times \text{distance}$ (excluding group index uncertainties) for MA2, MA3, MP2 $\pm 1 \text{ m} \pm \text{sampling resolution}$ $\pm 1.10^{-5} \times \text{distance}$ for LA, MM and QUAD

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	$\pm 0.03 \text{ dB/dB} / \pm 0.05$ for LA
Threshold	0.01 to 5.99 dB in 0.01 dB steps
Reflectance/ORL Measurements	
Reflectance accuracy	$\pm 2 \text{ dB}$
Display resolution	0.01 dB
Threshold	-11 to -99 dB in 1 dB steps
Source ² Power Meter (optional)	
CW source output power level	-3.5 dBm
Power level range (MM/SM) ³	-3 to -30/0 to -55 dBm
Calibrated wavelengths (SM)	1310/1490/1550/1625/1650 nm
Calibrated wavelengths (MM) ⁴	850/1300 nm
Measurement accuracy (SM)	$\pm 0.5 \text{ dB}$
Measurement accuracy (MM) ⁵	$\pm 1 \text{ dB}$

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 $\pm 30 \text{ nm}$	26/24 dB	0.8 m	4 m	Enterprise/FTTA	Multimode network qualification
Quad	850/1300 $\pm 30 \text{ nm}$ 1310/1550 $\pm 20 \text{ nm}$	26/24 dB 37/35 dB	0.8 m 0.9 m	4 m	Enterprise/FTTA/ access/metro	Multimode and single-mode short- and medium-haul network qualification
LA	1310/1550/1650 $\pm 20 \text{ nm}$	35/33/30 dB	1.5 m	6 m	FTTA/FTTH/access	Short-haul qualification FTTH drop-cable qualification/maintenance
MA2	1310 $\pm 20 \text{ nm}$ 1383 $\pm 3 \text{ nm}$ 1550 $\pm 20 \text{ nm}$ 1625 $\pm 10 \text{ nm}$	40 dB 37 dB 40 dB ¹⁰ 38 dB	0.7 m 2 m 0.7 m 0.7 m	3 m 6 m 3 m 3 m	FTTA/access/metro	Short/medium-haul qualification Wireless fronthaul and backhaul Water peak detection at 1383nm
MA3	1310 $\pm 20 \text{ nm}$ 1550 $\pm 20 \text{ nm}$ 1625 $\pm 10 \text{ nm}$ 1650 $\pm 10 / -5 \text{ nm}$	43 dB 41 dB 41 dB 41 dB	0.7 m	3 m	FTTH/access/ metro/long-haul	Short/medium/long-haul qualification FTTH test up to 1x128 splitter
MP2	1310 $\pm 20 \text{ nm}$ 1550 $\pm 20 \text{ nm}$ 1625 $\pm 10 \text{ nm}$ 1650 $\pm 10 \text{ nm}$	46 dB 45 dB 44 dB 42 dB	0.65 m	2.5 m	FTTH/long-haul/ very long-haul	Long haul/very long haul qualification FTTH test up to 1x256 splitter

1. ST for QUAD/MM only

2. Same wavelengths as the OTDR port. Not available on live port.

3. -2 to -50 dBm for Quad

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 $\pm 1.5 \text{ dB}$ down from the peak of an unsaturated reflective event

9. Measured at $\pm 0.5 \text{ dB}$ from the linear regression using a FC/UPC-type reflectance

10. Measured on optical fiber with Rayleigh parameter $K(-82.01\text{dB} \pm 0.17\text{dB}$ at 1546nm

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
MA2 1310/1550 nm OTDR module with straight connector	E4126MA2-PC
MA2 1310/1383/1550 nm OTDR module with straight connector	E4138MA283-PC
MA3 1310/1550 nm OTDR module with angled connector	E4126MA3-APC
MP2 1310/1550/1625 nm OTDR module with straight connector	E4136MP2-PC

Additional part numbers are available, please contact your VIAVI sales representative.

For more information on T-BERD/MTS-2000, -4000 V2, -5800 test platforms or individual modules, refer to their respective data sheets and brochure.

Description	Part Number
Universal Optical Connectors (for MM and QUAD)	
Straight	EUNIPCFC, EUNIPCSC, EUNIPCST
8° angled	EUNIAPCFC, EUNIAPCSC
Universal Optical Connectors (for MA2, MA3 and MP2 modules)	
Straight	EUSCADS, EUFCADS, EULCADS
8° angled	EUSCADS-APC, EUFCADS, EULCADS-APC

For more information about our SLM (Smart Link Mapper) OTDR applications, refer to this document:

<https://www.viavisolutions.com/en-us/literature/smart-link-mapper-otdr-applications-promo-sheet-en.pdf>

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