VIAVI Solutions | SAVITRI TELECOM SERVICES

T-BERD/MTS-4000 V2 Optical Test Platform

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

StrataSync™ ENABLED

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.

BENEFITS

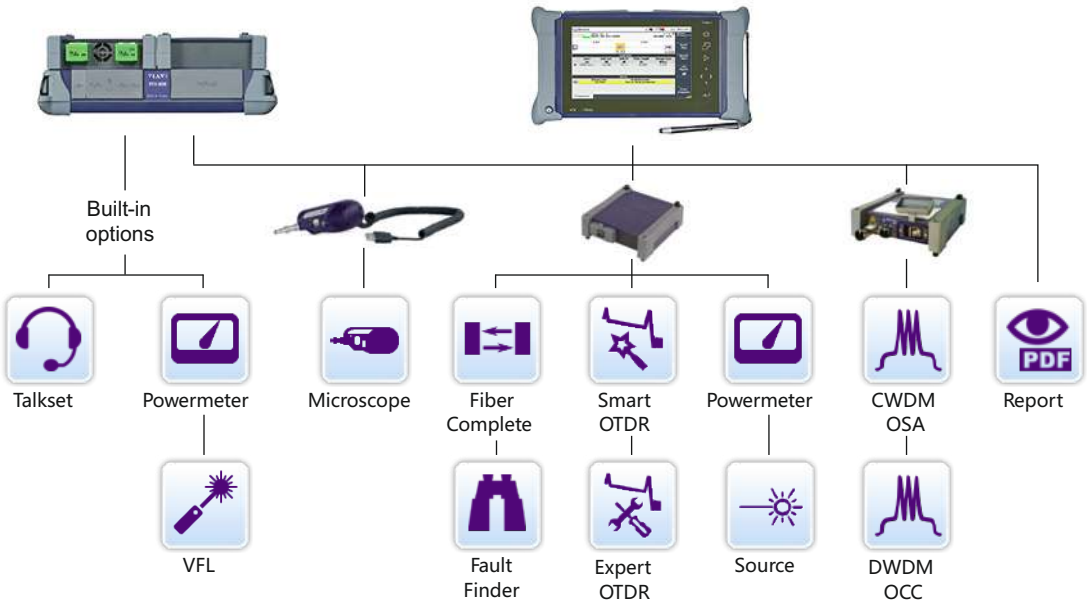
- Certify the fiber physical layer of FTTx/PON, access, metro and enterprise networks
- Two field-replaceable modules increase flexibility
- Smarter and faster field testing with tablet user interface
- Advanced cloud support and remote connectivity

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
- VIAVI TPA™ (Test Process Automation) enabled — centralized cloud based asset, configuration, test data and workflow management with Job Manager option

APPLICATIONS

- Fiber optic test, qualification, certification and reporting

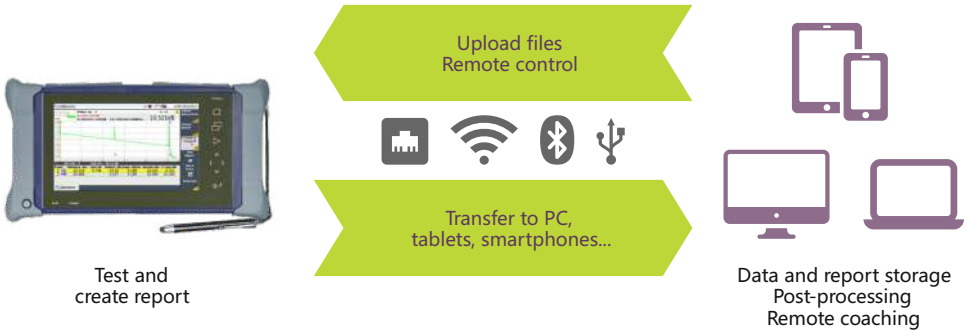


The T-BERD/MTS-4000 V2 platform is a highly integrated optical test platform with two module bays, a large 9-inch color touchscreen with multi-touch capability, enabling the use of many optical test functions.

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 StrataSyncenabled 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	
Screen	800 x 480 LCD, 9 in (23 cm) capacitive high visibility touchscreen, 7 in (18 cm) display size
Interfaces	2 x USB 2.0 ports, 1 x RJ45 LAN 10/100/1000 Mbit/s port, 1 x 2.5 mm female jack port (headset)
	Built-in WiFi 802.11 b/g/n and Bluetooth 4.2 (optional)
Storage	1 GB standard (20,000 OTDR traces typical)
	32 GB with extended memory (optional)
Battery	Rechargeable Lithium Ion smart battery up to 16 hours of operation[1]
Power supply	AC/DC adapter, Input 100-240 Vac / 50-60 Hz ., Output: 15V / 3.34A max.
Electrical safety	EN/IEC 60950-1 compliant
Size (WxHxD)	Mainframe with 2 modules: 282 x 153 x 93 mm (11.1 x 6 x 3.8 inch)
Weight (battery included)	Mainframe only: 1.6Kg
Operating temperature	-20 to +50 °C (-4 to +122 °F)[2]
Storage temperature	-20 to +60 °C (-4 to +140 °F) (without battery)
Humidity (non condensing)	5 to 95%
Built-in Broadband Power Meter Option (InGaAs)[3]	
Tone detection	270 Hz, 330 Hz, 1 kHz, 2 kHz
Power range	-60 to +10 dBm
Measurement accuracy	±0.2 dB[4]
Wavelengths	Calibrated: 850/1310/1490/1550/1625/1650 nm
	Selectable: 800 to 1650 nm in 1 nm step
Display resolution	0.01 dB/0.01 nW
Connector type	2.5 mm Universal Push/Pull (UPP) (1.25 mm UPP adapter optional)
Built-in Visual Fault Locator (VFL) Option	
Wavelength	650 nm ±10 nm
Emission modes	CW, 1 Hz
Laser safety class	Class 2 per IEC 60825-1:2014 and FDA21 CFR Part 1040.10 standards
Connector type	2.5 mm UPP adapter (1.25 mm UPP adapter optional)
Built-in Talkset Option	
Dynamic range	32 dB[5]
Wavelength	1625 nm
Laser safety	Class 1 per IEC 60825-1:2014 and FDA21 CFR Part 1040.10 standards
Connector type	FC/PC

[1] Per Telcordia GR-196-CORE
[2] With all mainframe options: 0 to +40 °C (+32 to +104 °F)
[3] At 25 °C, after 20-minute warm-up
[4] At -30dB. At calibrated wavelengths (except 1650 nm)
[5] With a FC/PC connector

Ordering Information

Each mainframe comes with a Lithium-Ion battery, an AC/DC adapter/charger (with the country specific power cord to be specified). If only one optical test module is ordered, the mainframe is equipped with a dummy module on its second slot.

Mainframes and Built-in Options	Part Number
T-BERD/MTS-4000 Platform with High Visibility Touchscreen	ETB4000HVT/EM4000HVT
AC/DC Adapter/Charger	E40PWxxx*
Built-in Power Meter option	E40PM
Built-in Power Meter and VFL options	E40PMVFL
Built-in Talkset and Power Meter options	E40TSPM
Built-in WiFi/Bluetooth	E40WIFIBLU2
Accessories	
Spare Lithium-Ion battery	ELIION9C
Stylus for capacitive touchscreen	EHVTSTYLUS
Screen cover	E4KSCREENPROTECTOR
Hand strap	E40HANDSTRAP1
Spare dummy module	E40EMPTYMOD
12 V car lighter adapter	E40LIGHTER
USB GPS receiver	EUSBGPSRECEIVER
External WiFi/Bluetooth USB dongle	EWIFIBLUE
32 GB extended memory option	EXTMEM32GB
1.25 mm UPP adapter for built-in VFL option	FFL-050-U12
1.25 mm UPP adapter for built-in Power Meter option	EUPP125PM
Carrying cases	
Wrap-around/glove soft case	E40GLOVE2
Backpack/large soft carrying case	EBACKPACK-CASE1
Hookstrap**	E40HOOKSTRAP1
Shoulder harness**	EHARNESS
Hardcase for one T-BERD/MTS-4000 platform and accessories	EHCASE6
Hardcase for two T-BERD/MTS-4000 platforms and accessories	EHCASE4X2
Software Options (Other software options available depending on optical test modules)	
SmartAccess Anywhere - Remote Access and Control from Anywhere	SAA-L2
GPS - Embedded GPS coordinates into test files and reports	EGPS
Password Protection - To prevent resell/use of stolen units	EPASSWORDPROTECT
Job Manager - To deploy test plan procedures to simplify and automate tests.	EJOBMANAGER

*xxx = AU for Australia, CH for Switzerland, DK for Denmark, E for Europe, IL for Israel, IND for India D, IT for Italy, JP for Japan, MC for Europe and UK, SA for South Africa, UK for UK, US for USA

** Can be attached to the mainframe or to the glove case

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4100 Series OTDR A, B and C Modules

For T-BERD/MTS-2000, -4000 V2, -5800, CellAdvisor 5G, OneAdvisor 800 and FTH-9000

VIAVI Solutions 4100-Series OTDR modules let field technicians rapidly, reliably, and cost-effectively install, turn up, and troubleshoot any optical network architecture: data center interconnection, metro, long-haul and FTTx/access for wireless/5G x-haul, point-to-point or point-to-multipoint passive optical networks (PONs).

Fiber infrastructure is the foundation of the network performance and the quality of delivered services. An OTDR is the only tool that verifies the condition of installed cables and passive components to ensure fiber links meet design specifications and contractor's workmanship meets the required quality.

Module portability allows migration of fiber test capabilities between different VIAVI platforms, offering the flexibility to move existing fiber certification tools to different technologies such as coax and RF, active xWDM, MPO/ribbon cables or network layer tests such as Ethernet, BERT, CPRI, etc.

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

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

OneAdvisor 800
All-in-One wireline and wireless network Installation and Maintenance Test Solution

BENEFITS

- Up to 46 dB dynamic range and 256,000 acquisition points
- PON-optimized for next generation architectures, up to 1x256 split ratio and unbalanced splitters
- Dual/tri-wavelength versions with 1310/1550/1625 or 1650 nm, quad(850/1300/1310/1550)nm
- Single test port connection for standard and filtered wavelengths – faster, error free testing avoiding customer services disruption
- Consolidated reporting for all wavelengths tested reduces volume of test results to manage by 50%
- Test port condition check to prevent poor launch conditions and inaccurate event detection
- Supports SLM application tailored for various network applications (FTTA, FTTH, Enterprise, High fiber count cables)
- Field upgradeable for FiberComplete PRO applications - OTDR loopback, bi-directional OTDR analysis (TrueBIDIR), high fiber count (MPO)

Standard feature benefits include:

- Standard multi-pulses acquisition **(SmartAcq)** – improves event detection (splices, connectors, bends, ...) and removes the need for expensive and heavy launch cables.
- Icon-based map view (**Smart Link Mapper** – SLM) – eliminates OTDR interpretation errors and speeds up the results analysis with instant identification of faults and impairments
- The **SmartTEST** mode assists the fiber technicians (new or experienced) throughout the steps of OTDR testing. It is eliminating the complex OTDR tasks (setup configuration, analysis and reporting) and guiding the user through an easy and clear test process.
- For more information, please refer to the OTDR Features brochure.

SPECIFICATIONS (TYPICAL AT 25°C)

General	
Weight	0.35 kg (0.77 lb)
Optical interfaces	
Interchangeable optical connectors	FC, SC and LC
Technical characteristics	
Laser safety class (21CFR)	Class 1
Group index range	1.30000 to 1.70000 in 0.00001 steps
Sampling points	Up to 256,000
Pulse width	From 3ns[1]/5ns to 20µs
Distance measurement	
Modes	Automatic or dual cursor
Display range	0.1 up to 260 (A and B module), 400 km for C module
Cursor resolution	1 cm
Sampling resolution	4 cm
Accuracy[2]	±0.5 m ±sampling resolution ±+0.001% x distance
Attenuation measurement	
Modes	Automatic, manual, 2-point, 5-point, and LSA
Display resolution	0.001 dB
Linearity	±0.03 dB/dB
Reflectance/ORL measurement	
Reflectance accuracy	±2 dB
Display resolution	0.01 dB
Threshold	-11 to -99 dB in 1 dB steps
Optical light source (standard)	
Wavelengths	Same as OTDR port[3]
Output power level	-3.5 dBm in CW mode
Tone generation	270Hz, 330Hz, 1 kHz, 2kHz
Auto λ mode	Yes (with VIAVI power meters)
Stability (8h)	<±0.1 dB
Power meter (optional)	
Input power range	-3 to -55 dBm
Calibrated wavelengths	1310/1490/1550/1625/1650 nm
Power level accuracy[4]	±0.5 dB

OTDR specifications (Typical at 25°C)						
	Central wavelengths[5]	**Pulse width**	**RMS dynamic range[6]**	**Event dead zone[7]**	**Attenuation dead zone[8]**	**Splitter attenuation dead zone[9]**
E4146A	850/1300 ±30 nm 1310/1550 ±20 nm	3 ns to 1 µs 3 ns to 20 µs	26/24 dB 37/35 dB	0.55 m 0.65 m	3 m 3 m	–
4100 A	1310±20 nm 1550±20 nm 1625±15 nm	5ns to 20 µs	37 dB[11] 36 dB[11] 36 dB[11]	0.65 m	2.5 m	–
4100 B	1310±20 nm 1550±20 nm 1625±10 nm 1650+10/-5 nm	5ns to 20 µs	43 dB 41 dB 41 dB 40 dB	0.60 m	2.5 m	45 m[9]
4100 C	1310±20 nm 1550±20 nm 1625±10 nm 1650±15 nm	3ns to 20 µs	46 dB 45 dB 45 dB 43 dB	0.50 m	2.5 m	20 m[10]

[1]With 4100 C OTDR modules and EPULSE3NS software

[2]Excluding group index uncertainties

[3]Except filtered wavelengths

[4]At calibrated wavelengths, at -30 dBm excluding connection uncertainty

[5]Laser at 25°C and measured at 10 µs

[6]The one-way difference between the extrapolated backscattering level at the start of the fiber and the RMS noise level, after 3 minutes averaging

[7]Measured at ±1.5 dB down from the peak of an unsaturated reflective event, using 5ns pulsewidth at 1310 nm

[8]Measured at ±0.5 dB down from the linear regression using a FC/UPC-type reflectance, using 5 ns pulsewidth at 1310 nm

[9]Measured on a 16 dB loss (typical 1x32 split ratio) non-reflective splitter at 1310nm, using 200 ns pulsewidth

[10]Measured on a 16 dB loss (typical 1x32 split ratio) non-reflective splitter at 1310nm, using 100 ns pulsewidth

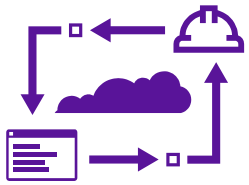
[11]RMS dynamic range extended to 40/38/38 dB with EXTRANGE or EXTRANGE-UPG license

ORDERING INFORMATION

Description	Part number
Multi-mode/single-mode -850/1300/1310/1550 nm – PC	E4146A-PC
Multi-mode/single-mode -850/1300/1310/1550 nm – APC	E4146A-APC
4100 Module A OTDR - 1310/1500 nm - PC/APC	E4126A-PC/-APC
4100 Module A OTDR - 1310/1625 nm - PC/APC	E4106A-PC/-APC
4100 Module A OTDR - 1310/1550/1625 nm - PC/APC	E4136A-PC/-APC
4100 MODULE B OTDR - 1310/1550 nm – PC/APC	E4126B-PC/-APC
4100 Module B OTDR - 1310/1550/1625 nm – PC/APC	E4136B-PC/-APC
4100 MODULE B OTDR - 1310/1550/Filtered 1650 NM – APC	E4138FB65-APC
4100 MODULE B OTDR - Filtered 1650 nm – APC	E4118FB65-APC
4100 MODULE C OTDR - 1310/1550 nm – PC/APC	E4126C-PC/-APC
4100 MODULE C OTDR - 1310/1550/1625 nm – PC/APC	E4136C-PC/-APC
4100 MODULE C OTDR - 1310/1550/Filtered 1625 nm – APC	E4136FC-APC
4100 MODULE C OTDR - 1310/1550/Filtered 1650 nm – APC	E4138FC65-APC
Universal PC connector adapters	EUSCADS, EULCADS, EUFCADS
Universal APC connector adapters	EUSCADS-APC, EULCADS-APC, EUFCADS
Optical power meter option	E41OTDRPM

TEST PROCESS AUTOMATION (TPA)

Allows your team to deliver expert-level test results and close projects on the first try, every time. TPA is a closed loop test system that optimizes workflows, eliminates manual, error prone work and automates immediate data reporting for job close out, team progress updates and network health analytics. Execute jobs efficiently to ensure high quality network builds, rapid turn-up/activation and enhanced operational visibility.



INSPECT BEFORE YOU CONNECT (IBYC)

Contamination is the number 1 reason for troubleshooting optical networks. Proactive inspection and cleaning of fiber connectors can prevent poor signal performance, equipment damage, and network downtime.

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203, Ansal Chamber-II, 6, Bhikaji Cama Place, New Delhi-110066
+91 11 26700500/26103358 +91 11 26183229 +91-9212605204
marketing@savitritelecom.com

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@0225STSACds-MTS-4000-AOM-006