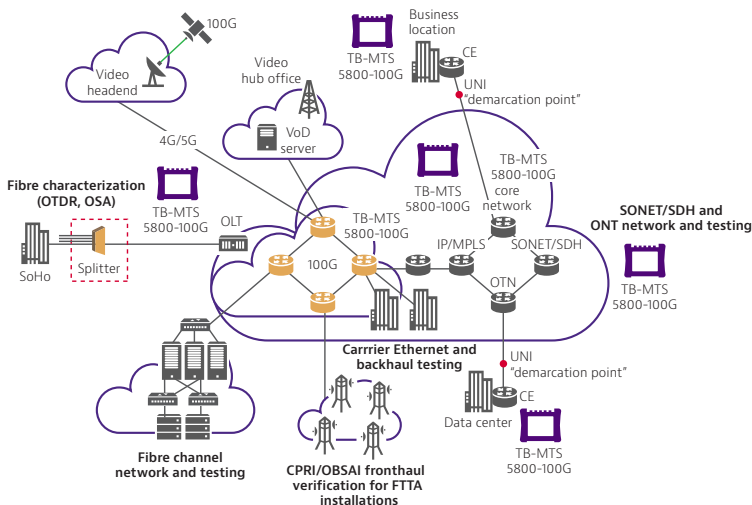


VIAVI T-BERD/MTS-5800-100G

All-in-one handheld network and fiber testing

The T-BERD®/MTS-5800-100G handheld network tester is the one tool that network technicians and engineers need to install and maintain their networks. It supports both legacy and emerging technologies to address network applications including metro/core, data center interconnect, and business services test applications.

The industry's smallest handheld, dual-port 100G test instrument can test throughout the life cycle of a network service, including fiber testing, service activation, troubleshooting, and maintenance. Equipped with latest technology interfaces including SFP/SFP+/SFP28 and QSFP+/QSFP28/CFP4, the 5800-100G provides the investment protection needed to manage network growth while keeping customer satisfaction high. With advanced test features such as Optics Self-Test, high-Speed cable testing for data centers, Ethernet line rate capture/decode, and OTN Check, technicians can now test their networks faster and more accurately than ever before.



Benefits

- Simplifies multi-technology testing with an all-in one dual 100 G handheld unit. Any rate, any port, any time
- Optimized for field use with a multitouch screen, scripted workflows, and clear pass/fail results
- Complete support of protocols including Ethernet, FlexE, OTN, SONET/SDH, PDH, Fibre Channel up to 32G, CPRI up to 24.3G, and eCPRI
- Speeds up fiber optics testing, Ethernet service activation, and troubleshooting tests

Features

- Supports comprehensive rate testing ranging from DSx PDH (1.5M/2M) through to 112G OTU4
- Saves time with the industry's fastest RFC 2544 and Y.1564 SAMComplete™ Ethernet service activation test including nanosecond accurate latency measurements. Also supports RFC 6349 TrueSpeed
- Ensures QSFP+/QSFP28 and CFP4 modules run error-free with the field optimized Optics Self Test
- Provides speed and efficiency in testing OTN service activation with the OTN Check workflow automated script
- Supports the VIAVI 4100-Series OTDR and COSA modules with Smart Link and FiberComplete
- Tests synchronization and timing using the built-in GNSS feature or by supplementing with the TEM (Timing Expansion Module) to provide holdover support

All-in-One Handheld Tool

The configurable T-BERD/MTS-5800-100G is the industry's smallest dual-port 100G handheld test instrument. It can test a wide range of interfaces such as Ethernet, SONET/SDH, OTN, PDH, Fibre Channel, OBSAI, and CPRI.

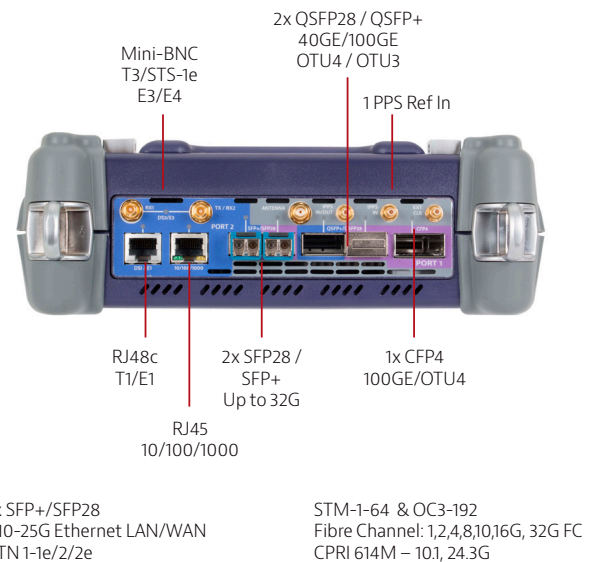
- Compact form factor for easy portability:
7 x 9.5 x 3.2 in (17.8 x 24.1 x 8 cm)
- Large 7 in multi-touch display
- Tablet-like interface for easy navigation through test information and advanced workflows
- Support of SmartAccess Anywhere providing an easy interface from an Android device or PC
- Support of cloud based StrataSync™ for asset management and result-data management

Compatible with VIAVI Solutions Fiber Test Tools

Metro/longhaul, business services, and data center technicians can test virtually any interface in a network as well as qualifying fiber plants with one handheld instrument. The T-BERD/MTS-5800-100G is compatible with:

- The FiberChek Pro and P5000i microscopes for connector end-face inspection and analysis
- MP-Series optical power meters for optical power and loss measurements
- OTDR modules for fiber link characterization and fault finding Smart Link Mapper optical analysis software that displays OTDR results in a simple, icon-based map view for clear diagnostics of detected issues. Also support of FiberComplete for IL, ORL, and bi-directional OTDR tests.
- COSA, a CWDM Optical Spectrum Analyzer

5800-100G hardware supports multiple independent concurrent applications



Optimized for Easy Field Use

- Fixed test interfaces eliminate loose pluggable modules
- LEDs indicate plug-ins for tests
- A streamlined user interface provides simple pass/fail, green/red results
- Extended battery life enables longer test times and offload results
- Boots up rapidly from power-on to test start
- Dual-port operation runs two tests simultaneously, including two 100 G high-speed tests
- Expandable with support for additional modules such as the TEM (Timing Expansion Module) for network synchronization and timing

Troubleshooting with Optics Self-Test/ Cable Test

Optics Self-Test is a workflow tool to verify and troubleshoot performance issues related to high-speed optics. It is especially well suited to field environments and helps isolate pluggable optics issues. This easy-to-use test integrates items such as a bit error theory algorithm, clock offset verification, and per-lambda power monitoring. Coupled with RS-FEC, it offers pre-FEC and post-FEC testing.

AOC/DAC/Breakout Cable Test

Cable Test is tailor-made to test high-speed Active Optical Cables (AOC), Direct Attach Copper (DAC), and breakout cables inside the data center. Such cables may be the cause of errors due to defects such as reversed polarities or squeezed fibers. Errors can be identified before cables are laid avoiding extra effort to replace the cable. The 5800-100G provides a slick built-in script with test report which captures the cable serial number and can test multiple cables in succession with job manager.



Time-Saving Ethernet Service Activation

Test more quickly and efficiently using automated tests combined into one integrated module covering electrical, Gigabit optical, 10 Gbps, 25Gbps, 40 Gbps, 50 Gbps, and 100 Gbps Ethernet:

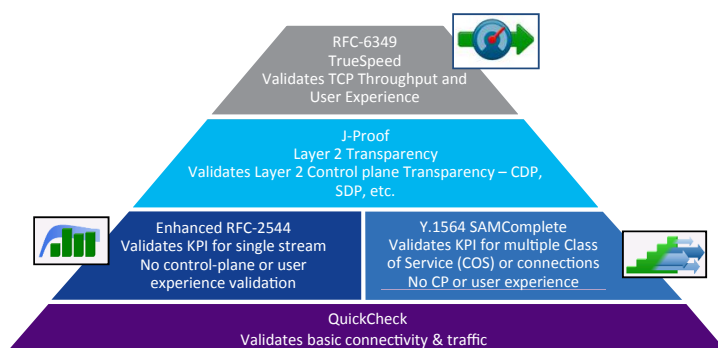
- QuickCheck — a fast, automated test that validates end-to-end configurations; runs as a pre-check test before RFC 2544 or Y.1564 or as a stand-alone test
- Enhanced RFC 2544 — an automated turn-up test with built-in time efficiency for validating key performance indicators (KPIs), concurrently measuring throughput, frame delay, and frame delay variation in addition to frame loss and committed burst size (CBS)
- Y.1564 SAMComplete™ — An automated service verification test that speeds the verification of multiple classes of service (COS) or connections based on SLAs
- High-accuracy latency — integrated into RFC 2544 and Y.1564 SAMComplete; CSAM provides 10 ns resolution and an accuracy of ± 65 ns or better at 100 GE and offload results

- TrueSpeed™ — an automated, RFC 6349-based TCP test that can save up to 25% on OpEx and reveals the causes of service degradation such as slow file downloads; this test suite especially helps eliminate finger pointing
- Loop protection mode in all functions. Especially suitable when testing against a centralized rack-mounted MAP-2100 unit.

More Ethernet Testing

5800-100G provides further depth to test Ethernet with additional functionality:

- RS-FEC testing for interfaces such as IEEE 802.3 SR4 and 25GE, PSM4, CWDM4 and KP4 FEC for 50GE. Required for data center and short reach testing
- Capture and decode — available at all Ethernet rates; includes decodes with integrated Wireshark and the VIAVI built-in J-Mentor troubleshooting tool providing post-analysis problem identification
- IPv4 and IPv6 support including RFC 2544 and Y.1564 SAMComplete
- Layer 2 transparency testing with J-Proof — confirms end-to-end transparency between two endpoints anywhere in a network using control plane protocol data unit (PDU) information; examples include messages such as STP, GARP, and Cisco® CDP
- Operator lab evaluation tools — includes functionality such as skew injection, and per-lane alarms/errors injection, and reporting
- Ethernet Service Disruption with pass/fail results and with multi-tier triggers and detailed logs
- Service OAM and layer 4 testing up to 100Gbps
- FlexE



Virtual Lane ID	Skew (Bits)	Skew (ns)	Sync Acquired	Marker Lock	Code Violations	Invalid Align. Mtrs.
0	47	9.12	✓ ON	✓ ON	0	0
1	48	9.31	✓ ON	✓ ON	0	0
2	1,033	200.34	✓ ON	✓ ON	129	0
3	33	6.40	✓ ON	✓ ON	0	0
4	38	7.37	✓ ON	✓ ON	0	0
5	1	0.19	✓ ON	✓ ON	0	0
6	0	0.00	✓ ON	✓ ON	0	0
7	0	0.00	✓ ON	✓ ON	0	0
8	10	1.94	✓ ON	✓ ON	0	0
9	6	1.16	✓ ON	✓ ON	0	0

Per-lane Results

Enhanced RFC 2544

Y:1564 SAMComplete

RFC 6349-based TrueSpeed™

OTN Service Activation with OTN Check

The unique VIAVI OTN Check tool provides great efficiencies in testing OTN services. This workflow tool automates the process of turning up a new OTN service by integrating key tests that include OTN payload verification, round-trip delay, and overhead transparency testing including encryption testing. It is offered at all OTN line rates. OTN Check greatly simplifies the process for users and generates a report with pass/fail results. Functionality includes the following:

- RFC 2544 for Ethernet clients in OTN
- Complete ODU multiplexing mappings with nested ODU functionality including ODU0, ODU1, ODU2/2e, ODU3, and ODUFLEX.
- FEC testing for correctable and uncorrectable errors
- All 6 TCMs concurrently

OTN service disruption

Complete Fiber Channel Testing

T-BERD/MTS-5800-100G supports all fibre channel rates across dual ports. This includes 32GFC at 28.05Gbps. Support includes:

- Line rate traffic generation with buffer-to-buffer credit flow control
- RFC 2544 adapted for Fibre Channel
- Bit Error Rate, frame loss, and latency testing

Mobility Transport Testing

A suite of CPRI, at all rates up to CPRI 10 running at 24.3Gbps, OBSAI, and eCPRI is available on the 5800-100G.

Support and testing of eCPRI and 1588 up to 25GE.

Part of the Leading T-BERD/MTS Test Portfolio



Common application base - same user interface + same results
+ same methods and procedures

StrataSync — Empower Your Assets

StrataSync is a hosted, cloud-enabled solution for managing assets, configurations, and test data on VIAVI instruments. It ensures that all instrument software is current and the latest options are installed. StrataSync enables inventory management, test result consolidation, and performance data distribution anywhere with browser-based ease. It also improves technician and instrument efficiency. StrataSync manages and tracks test instruments, collects and analyzes results from the entire network, and helps train and inform the workforce



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.

For more Information: go to 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	✓	✓	✓	✓*	✓	✓	✓



Contact Us **+1 844 GO VIAMI**
(+1 844 468 4284)

To reach the VIAMI office nearest you,
visit viavisolutions.com/contact.

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Product specifications and descriptions in this document are subject to change without notice.
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VIAVI T-BERD/MTS 4100-Series OTDR Modules

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

The OTDR modules' optical performance, combined with the complete suite of T-BERD/MTS, CellAdvisor 5G and OneAdvisor-800 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



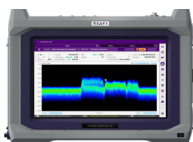
T-BERD/MTS-2000
one-slot handheld modular platform for testing fiber networks



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



CellAdvisor 5G
Cell site test solution



OneAdvisor-800
All-in-One Cell-site Installation and Maintenance Test Solution

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)	128 x 134 x 40 mm (5 x 5.28 x 1.58 in)
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	$\pm 0.5 \text{ m} \pm \text{sampling resolution}$ $\pm 1.10^{-5} \times \text{distance}$ (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 ± 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	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
MA2	1310 ± 20 nm 1383 ± 3 nm 1550 ± 20 nm 1625 ± 10 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 1383 nm
MA3	1310 ± 20 nm 1550 ± 20 nm 1625 ± 10 nm 1650 $+10/-5$ 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 ± 20 nm 1550 ± 20 nm 1625 ± 10 nm 1650 ± 10 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 ± 1.5 dB down from the peak of an unsaturated reflective event

9. Measured at ± 0.5 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 1546 nm

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

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

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

For more information on T-BERD/MTS-2000, -4000 V2, -5800 and CellAdvisor 5G test platforms or individual modules, refer to their respective data sheets and brochures.

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>

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.

For more Information: go to [viavisolutions.com/viavicareplan](https://www.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
 BronzeCare	Technician Efficiency	Premium	✓	✓	✓		
 SilverCare	Maintenance & Measurement Accuracy	Premium	✓	✓	✓	✓*	✓



Contact Us **+1 844 GO VIAVI**
(+1 844 468 4284)

To reach the VIAVI office nearest you, visit [viavisolutions.com/contact](https://www.viavisolutions.com/contact).

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otdr20004000-ds-fop-tm-ae
30168330 911 0220