VIAVI
VIAVI Solutions

SmartOTDR Handheld Fiber Tester

The affordable, easy-to-use handheld tester for techs at any level

The lightweight and compact SmartOTDR speeds and optimizes field testing of metro and access networks—with a tailored OTDR interface and automatic analysis that any technician can understand.

With SmartOTDR, generic or user-defined setup configurations eliminate setup errors and maintain results consistency. One-touch operation and a single results window ensure fast and easy measurements, while robust wireless connectivity options increase productivity anywhere.

Microscope	VFL	Powermeter	SmartTEST OTDR
	Source	Dual-band Powermeter	Expert OTDR
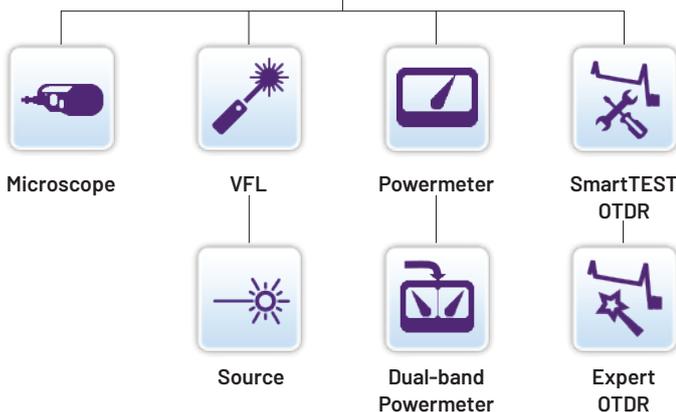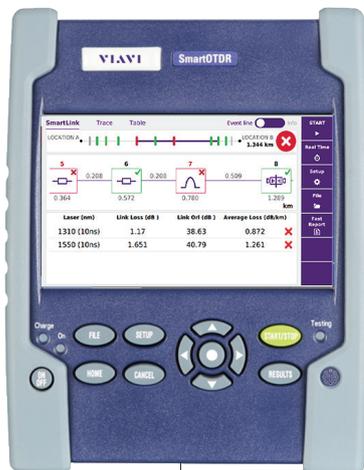
Benefits

- Combines all essential fiber tests in one handheld with visual fault locator (VFL), optical power meter (OPM), and connector inspection scope options
- Simplifies OTDR analysis with Smart Link Mapper (SLM) result view
- Upgrades easily in the field
- Automates testing with objective, pass/fail results
- Enhances productivity anywhere with powerful network connectivity options

Features

- Single-/dual-/tri-wavelength versions with 1310/1550 nm and in-service 1625 or 1650 nm wavelengths
- Light, compact, hands-free design includes 5" high-visibility outdoor touch screen
- Integrated CW light source
- PON optimized to test through 1x128 splitter ratio with FTTH-SLM
- Supports distributed PON architectures (un-balanced, tapered and indexed splitter)
- Built-in broadband and dual-band selective power meter (1490/1550/1577 nm)
- Automated fiber inspection with pass/fail analysis software
- 4G/5G connectivity via USB, Bluetooth®/ WiFi options
- All-day battery life (17-hour autonomy)
- Password protection and Watermark logo options

Powerful Connectivity

Several connectivity options (4G/5G smartphones via USB and optional Bluetooth/WiFi) enable remote control as well as data and work-order transfers to-and-from tablets, smartphones, and computers. The SmartOTDR quickly resolves field issues in real time, and optional SmartAccess Anywhere (SAA) can open a tunnel in the cloud so a technician can remotely access and operate the instrument. Compatible with a wide range of cloud servers (WebDAV service providers), the SmartOTDR can also instantly share measurement reports using onboard FastReport.pdf report generation.

SmartOTDR includes a one-year trial of cloud-based StrataSync™ for asset, configuration, and test-data management, and to ensure that all instruments have the latest software and options installed.

Upload files Remote control

Transfer to PC, tablets, smartphones...

Test and create report

Data and report storage Post-processing Remote coaching
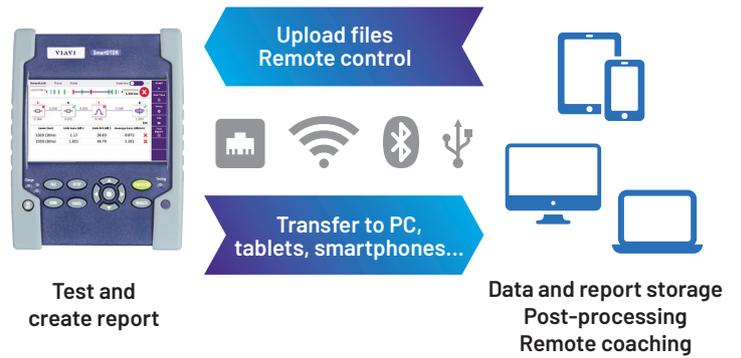
Connectivity features and options enhance workflows

1. 5-inch high-visibility capacitive touch screen
2. Charge indicator
3. On indicator
4. File menu
5. Setup menu
6. Start/Stop
7. Testing indicator
8. On/Off
9. Home page
10. Cancel (switch off functions)
11. Direction and validation keys
12. Results page
13. Loudspeaker
14. AC/DC input
15. Slave mini USB port
16. Visual fault locator (VFL)
17. Master USB ports
18. OTDR port/continuous light source/power meter
19. OTDR live port (in-service test)/dual-band power meter
20. WiFi/Bluetooth options

Specifications (typical at 25°C)

General	
Display	5-inch (12.5 cm) capacitive color touch screen - 800 x 480 W VGA
Interfaces	2x USB 2.0 ports, 1x mini-USB 2.0 port, built-in Bluetooth 4.2 and WiFi 802.11b/g/n (optional)
Storage	1 GB (20,000 OTDR traces typical)
Battery	Rechargeable Lithium-ion battery, up to 17 hours of operation[1]
Power supply	AC/DC adapter, input 100-240 V AC, 50-60 Hz; 2 A max, output 12 V DC, 24 W
Electrical safety	EN/IEC 60950-1 compliant
Size (HxWxD)	175 x 138 x 57 mm (6.9 x 5.4 x 2.24 in)
Weight (battery included)	Less than 0.9 kg (1.98 lb)
Operating/storage temperature	Operating: –20 to +50°C (–4 to 122°F); storage: –20 to +60°C (–4 to 140°F)
Humidity (noncondensing)	5 to 95%

OTDR			
Laser safety	Class 1 per IEC 60825-1:2014 and FDA 1040.10 standards		
Sampling points	Up to 256,000 data points		
Display range	0.1 km to 260 km		
Sampling resolution	4 cm		
Distance accuracy	$(\pm 1\,m) \pm (sampling\ resolution) \pm (1.10^{-5} \times distance)$, excluding group index uncertainties		
Attenuation resolution	0.001 dB		
Attenuation linearity	±0.04 dB/dB		
	SmartOTDR 100AS	SmartOTDR 100A	SmartOTDR 100B
Central wavelength[2]	1310/1550 nm ±20 nm	1310/1550/1650 nm ±20 nm	1310/1550/1625/1650 nm ±20 nm
RMS dynamic range[3]	30/30 dB	37/35/34 dB	40/40/41/41 dB
Pulse widths	5 ns to 20 µs	5 ns to 20 µs	3 ns to 20 µs
Event dead zone[4]	1.35 m	1.35 m	0.8 m
Attenuation dead zone[5]	4 m	4 m	2.5 m
Live wavelength isolation	Not available	1650 nm : > 45 dB; 1290 to 1580 nm	1625 nm: > 45 dB; 1290 to 1580 nm 1650 nm: > 45 dB; 1260 to 1620 nm
Splitter attenuation dead zone[10]	Not available	40 m after 12 dB splitter loss	45 m after 15 dB splitter loss

Specifications (typical at 25°C) continued

Light Source[9]	
Wavelengths	1310/1550/1650 nm
Tone generation	270 Hz, 330 Hz, 1 kHz, 2 kHz
Output power level[6]	– 3.5 dBm in CW mode
Stability (8 hr)[7]	±0.05 dB
In-line Broadband Power Meter Option[9] (InGaAs)	
Tone detection	270 Hz, 330 Hz, 1 kHz, 2 kHz, and TWINTest
Measurement range[11]	–55 to 0 dBm
Wavelengths	Calibrated: 1310, 1490, 1550, 1625, and 1650 nm
	Selectable: 1310 nm to 1650 nm in 1 nm step
Measurement accuracy[8]	±0.5 dB
Built-in Visual Fault Locator Option	
Wavelength	650 nm –10/+15 nm
Emission mode	CW, 1 Hz
Laser safety	Class 2 per IEC 60825-1:2014 and FDA 1040.10 standards
Built-in Dual-band Power Meter (118FA65PPM and 118FB65PPM versions)	
PON Power Meter (2 channels)	Selectable wavelengths: 1310/1550 nm; 1490/1550 nm; 1490/1577 nm
Power Meter (1 channel)	Selectable wavelengths: 1310 to 1500 nm and 1540 to 1650 nm in 1 nm step
Measurement ranges	1310 to 1500 nm: –35 to +5 dBm; 1540 to 1650 nm: –35 to +23 dBm

1. Per Telcordia GR-196-CORE

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

3. 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 of averaging using the largest pulsewidth

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

5. Measured at ±0.5 dB from the linear regression using a FC/UPC-type reflectance and the shortest pulse width

6. ±1 dB. Not applicable for 138FB65 & 118FB65PPM versions at 1650nm.

7. After light source stabilization, warm-up time of 20 min

8. At calibrated wavelengths and at –30 dBm

9. Not available on 138FA65 version at 1650 nm

10. At 300 ns

11. –55 to –5 dBm for 100B version

Ordering Information

SmartOTDR Configurations	Part Number
All configurations include an AC Adapter Charger, a Lithium-ion battery and SC/PC or SC/APC connector(s)	
SmartOTDR 1550 nm AS-range handheld tester	E100AS-PC/-APC*
SmartOTDR 1550 nm A-range handheld tester	E100A-APC*
SmartOTDR filtered 1650 nm A-range handheld tester	E118FA65-APC*
SmartOTDR filtered 1650 nm A-range handheld tester with in-line selective power meter	E118FA65PPM-APC*
SmartOTDR 1310/1550 nm A-range handheld tester	E126A-PC/-APC*
SmartOTDR 1310/1550/filtered 1650 nm A-range handheld tester	E138FA65-PC/-APC*
SmartOTDR filtered 1650 nm B-range handheld tester with in-line selective power meter	E118FB65PPM-APC*
SmartOTDR 1310/1550 nm B-range handheld tester	E126B-PC/-APC*
SmartOTDR 1310/1550/filtered 1625 nm B-range handheld tester	E136FB-APC*
SmartOTDR 1310/1550/filtered 1650 nm B-range handheld tester	E138FB65-APC*
Additional OTDR Connector Adapters	
SC universal adapter	EUSCADS/EUSCADS-APC
FC universal adapter	EUFCADS
LC universal adapter	EULCADS/EULCADS-APC
Accessories	
Additional AC Adapter/Charger with UK/US/EU/AUS plugs or US plug only	E20PWMC/E20PWUS
Additional Lithium-ion battery	E10LIION
Hands-free soft case with neck strap/enhanced hands-free soft case	E10GLOVE/E10GLOVE2
Stylus for capacitive touch screen	EHVT-STYLUS
Soft carrying case	FBPP-SCASE2
12 V car lighter adapter	E40LIGHTER
EU/US-to-India type D power adapter	EINDIADPLUG
Optional Tools	
VFL with 2.5 mm UPP adapter (1.25 mm UPP adapter optional)	E10VFL (FFL-050-U12)
Optical power meter option (same port as OTDR)	E10PM
P5000i digital microscope kit with 4 tips/with 7 tips	FBP-SD101/FBP-MTS-101
Built-in WiFi/Bluetooth (BLE) / External WiFi/Bluetooth (BLE) USB dongle	E10WIFIBLUE/EWIFIBLUE

* For ordering in the USA replace E for F in the part number, e.g. E100AS-PC becomes F100AS-PC

Ordering Information continued

Software Options	
FTTH-SLM Base - Tailored OTDR App. for FTTH Networks (Basic PON Architectures)	ESMARTFTTH-100-BASE
FTTH-SLM Premium - Tailored OTDR App. for FTTH Networks (Advanced PON Architectures, including Unbalanced/tapered Splitters)	ESMARTFTTH-100
SFP Protect Mode - Avoid accidental transceiver shut-down during OTDR troubleshooting at 1650 nm	ESFPPROTECT
FTTA-SLM - Tailored OTDR App. for FTTA Networks	ESMARTFTTA-100
LOOPBACK OTDR - Management and Automation of Bi-directional OTDR Loopback Measurements	ELOOPBACK-FCOMP-PRO
CABLE-SLM - Management and Automation of High Count Fiber Cables OTDR Measurements	ESMARTCABL-100
SmartAccess Anywhere - Remote Access and Control from Anywhere	SAA-100-L2
GPS - Embedded GPS Coordinates into Test Files and Reports	EGPS
Password Protection	EPASSWORDPROTECT
Additional Software Options	
Addition of 1310 nm wavelength (E100A and E100AS versions only)	E113-UPG
SmartLink Mapper/SLM view (E100AS version only)	ESMARTLINK100UP
Increased Dynamic Range - 37/35 dB at 1310/1550 nm (E100AS version only)	EXTRANGE-UPG

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.

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	✓	✓	✓	✓*	✓	✓	✓

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