VIAVI Solutions

VIAVI
4100-Series MP2 OTDR Modules
For T-BERD/MTS-2000, –4000, –5800 Platforms

The VIAVI Solutions MP2 OTDR modules provide the optimum performance that fiber installers and service providers need to install, turn-up and maintain optical network architecture, such as long-haul, metro, PON/FTTH, and wireless backhaul.

The OTDR module's optical performance, combined with the complete suite of T-BERD/MTS platform testing features, ensures that comprehensive testing is done right the first time.

Standard testing features include:

- Auto-setting of the acquisition parameters
- Automatic macro-bend detection
- Summary results table with pass/fail analysis per the international standards
- Comprehensive event diagnosis
- Bidirectional OTDR analysis
- FastReport onboard report generation

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

T-BERD/MTS-5800 handheld test instrument for testing 10/100G Ethernet and fiber networks

T-BERD/MTS-4000 two-slot handheld modular platform for testing fiber, copper, and multiple services

Benefits

- Affordable high performance OTDR for long-haul and metro high-speed fiber links
- Turns any technician into an instant fiber expert on Smart Link Mapper (SLM) apps
- Instantly detects traffic when connected to live fiber
- Eliminates testing errors due to incorrect setup with SmartTEST
- Characterize FTTH and Passive Optical LAN (POL) with high split counts (typical 1x128)

Features

- Up to 45dB dynamic range and 256,000 acquisition points
- Dual, tri-wavelength versions with 1310/1550/1625 nm or 1650 nm
- Integrated CW light source and optional power meter through the OTDR port
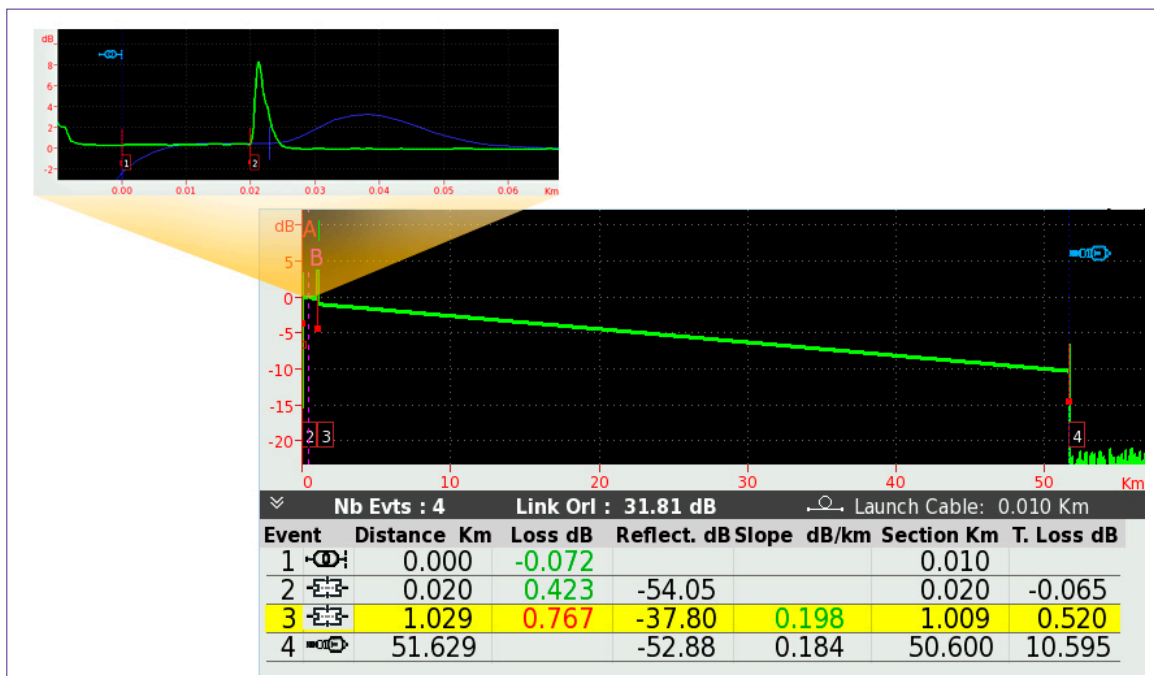- Ready for SLM and SmartAcq intelligent optical application software
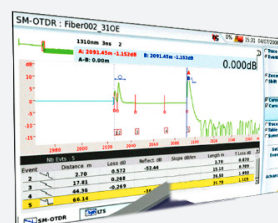
SmartTEST

The SmartTEST OTDR assistant eliminates all complex OTDR setup errors. The TEST AUTO mode guides the user through easy and clear operation steps. Critical testing parameters are included in test configuration files, set by VIAVI; or customer specific, set by the manager or network engineer.
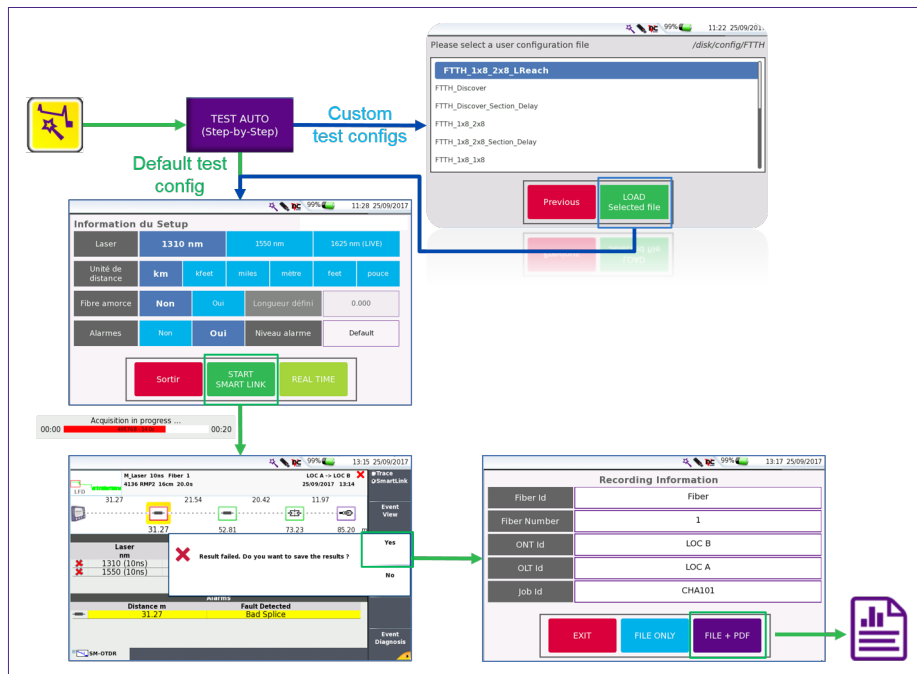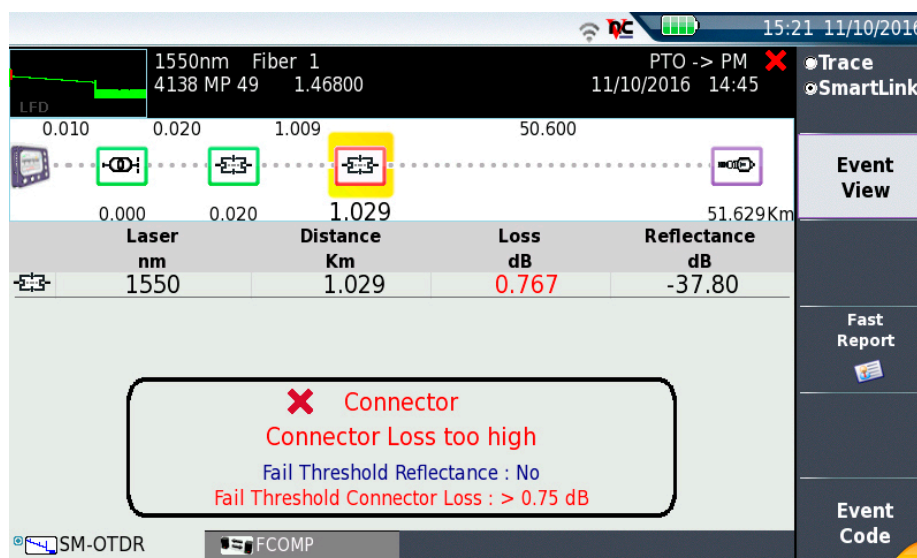

SmartAcq (License)

The SmartAcq OTDR option uses an automated multi-pulse acquisition to let technicians characterize the entire link, from the few first meters, at the central office, to the last kilometers. Short-pulse and long-pulse OTDR traces are displayed on the same graphic with the information from both combined into a single table of events.

Event		Distance Km	Loss dB	Reflect. dB	Slope dB/km	Section Km	T. Loss dB
1		0.000	-0.072			0.010	
2		0.020	0.423	-54.05		0.020	-0.065
3		1.029	0.767	-37.80	0.198	1.009	0.520
4		51.629		-52.88	0.184	50.600	10.595

Nb Evts : 4   Link Orl : 31.81 dB   Launch Cable: 0.010 Km

Smart Link Mapper (SLM)

SLM analyzes and identifies events of any OTDR trace, new or old. It represents them as simple icons with immediate pass/fail information based on user-defined or IEC/TIA standards thresholds. It explicitly names the type of optical element such as splice, connector or bend.

Specifications (Typical at 25º C)

General	
Weight	approx. 500 g (1.1 lbs)
Dimensions (w x h x d)	128 x 134 x 40 mm (5 x 5.28 x 1.58 in)
Laser safety class (21 CFR)	Class 1/1M
Distance units	Kilometer, meter, feet and miles
Group index range	1.30000 to 1.70000 in 0.00001 steps
Number of data points	up to 256,000 data points
Distance measurement	
Mode	Automatic or dual cursor
Display range	From 0.1 up to 400 km
Display resolution	1 cm
Sampling resolution	From 4 cm
Cursor Resolution	From 1cm
Accuracy	±0.75 m ±sampling resolution ±1.10-5 * x Distance (excluding group index uncertainties) *Time base controller/clock accuracy
Attenuation measurement	
Mode	Automatic, manual, 2-point, 5-point and LSA
Display range	1.25 dB to 55 dB
Display resolution	0.001 dB
Cursor Resolution	From 0.001 dB
Linearity	±0.03 dB/dB
Threshold	0.01 to 5.99 dB in 0.01 dB step

Reflectance/ORL measurements	
Mode	Automatic or manual
Reflectance accuracy	±2 dB
Display resolution	0.01 dB
Threshold	−11 to −99 dB in 1 dB step
4100MP2 OTDR Modules	
Wavelength[1]	1310+/-20nm; 1550+/-20nm; 1625+/-10nm; 1650+/-10nm
Dynamic Range[2]	45/43/43/42 dB
Pulsewidth	5 ns to 20 µs
Event Dead Zone[3]	0.65m
Attenuation Dead Zone[4]	2.5 m
Splitter Attenuation Dead Zone[5]	<35 m after a 16 dB splitter loss
Power Meter	Calibrated wavelengths: 1310, 1490, 1550, 1625, 1650 nm Power range: -3 to -55 dBm Accuracy: +/- 0.5 dB @ -30 dBm
Continuous Wave Light Source	Wavelengths: same as OTDR Output power[6] : -3.5 dBm Stability: <+/-0.1dB @25°C over 1hour Operating modes: CW, 270Hz, 330Hz, 1kHz, 2kHz, Twintest

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

2. 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 averaging and using the largest pulse-width

3. Measured at ±1.5 dB down from the peak of an unsaturated reflective event using the shortest pulse-width

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

5. Measured at 1550 nm using the 100 ns pulse-width

6. Subtract 3dB when used in modulation mode (270/330/1k/2kHz)

Ordering Information (contact Viavi Solutions for additional references)

Part Number	Description
4100MP2 Modules	
E4126MP2-PC/-APC	1310/1550 nm MP2 OTDR Module
E4136MP2-PC/-APC	1310/1550/1625 nm MP2 OTDR Module
E4136FMP2-APC	1310/1550 nm // Filtered 1625 nm MP2 OTDR Module
E4138FMP265-APC	1310/1550 nm // Filtered 1650 nm MP2 OTDR Module
Options	
E41OTDRPM	Power meter option through the OTDR port
E41OTDRCR	Calibration report
Software Licenses (n=2, 4 or 5 per the TB/MTS platforms chosen)	
ESMARTACQ-nK	SMART ACQUISITION SOFTWARE LICENSE PROVIDING MULTI-PULSES OTDR ACQUISITIONS
ESMARTLINK-nK	SOFTWARE LICENSE PROVIDING OPTIMIZED LINEAR TRACE VIEW OF FIBER UNDER TEST
ESMARTFTTH-nK	FTTH-SLM SOFTWARE LICENSE PROVIDING OPTIMIZED FTTH OTDR MODE WITH SMARTACQ CAPABILITY AND SLM ICON BASED MAP VIEW.
Universal Optical Connectors	
EUSCADS, EUFCADS, EULCADS, EUSCADS-APC, EULCADS-APC	Connector adapters