FiberComplete Module (4100 Series)
For T-BERD/MTS-2000 V2, −4000 V2 and OneAdvisor 800 Platforms

4100 Series FiberComplete™ module is the ideal solution to fully automate all the fundamental fiber qualification tests: bidirectional insertion loss (IL) and optical return loss (ORL), length and optical time domain reflectometry (OTDR), with one module from one optical port.

Each technician can now be equipped with a single piece of equipment and perform bidirectional IL/ORL, length and OTDR in one unique test sequence. The VIAVI 4100-Series FiberComplete module for the T-BERD/MTS-2000 V2, 4000 V2 and OneAdvisor 800 platforms offers the most complete fiber-testing solution for quick and easy use in characterizing point-to-point or point-to-multipoint passive-optical networks (PON).

Platform Compatibility

T-BERD/MTS-2000 V2

One-slot handheld modular test platform for fiber applications

T-BERD/MTS-4000 V2

Two-slot handheld modular test platform for fiber applications

OneAdvisor 800

Three-slot handheld modular test platform for fiber, wireless and transports applications

Features and Benefits

Match every test configuration

- Dual/tri wavelength versions
- Up to 45dB dynamic range

Speed up tests and certification

- Real time end to end fiber continuity check,
- Instant fiber length measurement
- < 5 s for Bidir. IL/ORL at three wavelengths
- IL/ORL and OTDR in a single test sequence, results file and reports
- End to end, instant bidirectional OTDR with TrueBIDIR/FiberComplete PRO SW option (patented)

Ease testing for increased confidence

- One test set fits all the acceptance tests
- Convenient onboard referencing wizard
- 1 connection, 1 start, 1 set up

Applications

- Network construction, expansion and maintenance
- Data center (inside, campus and metro interconnect)
- Access FTTx, mobile fronthaul
- Wireless backhaul/CRAN/5G x-haul
- Metro and Core/Long haul Networks

Specifications (Typical at 25°C)

General	
Size (w x h x d)	128 x 134 x 40 mm (5.04 x 5.28 x 1.58 in)
Weight	0.4 Kg (0.88 lb.)
Operating Temperature	0 to +50°C (+32°F to +122°F)[13]
Storage Temperature	-20°C to +60°C (-4°F to 140°F)
Humidity	5 to 95% (without condensation)

Loss Test set (CW): IL/ ORL/ Length – Bidirectional		
Module	4100 B FiberComplete	4100 C FiberComplete
Insertion Loss		
Loss Dynamic Range	40 dB	45 dB
Uncertainty[1]	± 0.2 dB	
Repeatability[2]	0.05 dB	
Display Resolution	0.01 dB	
Optical Return Loss		
ORL Display Range	10 to 55 dB	
Uncertainty[3]	±0.5 dB	
Display Resolution	0.01 dB	
Length		
Length Range	150 Km	200 Km
Uncertainty[4]	0 /+5 m ± 0.001% x distance @ 1550 nm	

OTDR		
Sampling Points	Up to 256,000 acquisition points	
Sampling Resolution	4 cm	
Distance Accuracy[4]	±(0.5 m + sampling resolution + 0.001% x distance)	
Attenuation Linearity	± 0.03 dB/dB	
Reflectance Accuracy	± 2 dB	
Module	4100 B FiberComplete	4100 C FiberComplete
Central Wavelengths	1310 ± 20 nm[6]	1310 ± 20 nm[5]
	1550 ± 20 nm[6]	1550 ± 20 nm[5]
	1625 ± 10 nm[5]	1625 ± 10 nm[5]
	1650 + 10/-5 nm[5]	1650 ± 15 nm[5]

Specifications (Typical at 25°C) continued

Module continued	4100 B FiberComplete	4100 C FiberComplete
RMS Dynamic Range[7]		
1310 nm	42 dB	45 dB
1550 nm	40 dB	44 dB
1625 nm	40 dB	43 dB
1650 nm	40 dB	42 dB
Event Dead Zone[8]	0.70 m	0.65 m
Attenuation Dead Zone[9]	3 m	2.5 m
Splitter Attenuation Dead Zone[10]	45 m	20 m
Pulse Width	5 ns to 20 µs	
Distance Display Range	Up to 260 Km	Up to 400 Km
Light Source		
Laser Safety Class	Class 1 - IEC 60825-1:2014	
Wavelengths[11]	1310/1550/1625 nm	
Output Power Level (CW Mode)	-3.5 dBm	
Output Power Level (Modulation Mode)	-6.5 dBm	
Modulation Frequency (Tone Generation)	270 Hz, 330 Hz, 1 KHz, 2 KHz	
Stability (8 Hours)[12]	< ± 0.1 dB	
Auto λ Mode	Yes (with VIAVI compatible power meters)	
Built-in Data Link (@ 1550 nm)		
Modules Series	4100 B FiberComplete	4100 C FiberComplete
Dynamic Range	Up to 40 dB	Up to 45 dB

1. Side by side reference, excluding connector uncertainty
2. Ten (10) consecutive measurements, without disconnection
3. From 10 to 40 dB range, with References, excluding connector uncertainty
4. Excluding Group Index uncertainties
5. Laser at 25°C measured at 10 µs
6. Laser in CW and 25°C
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, using 5ns pulse width at 1310 nm
9. Measured at ±0.5 dB down from the linear regression using a FC/UPC-type reflectance, using 5 ns pulse width at 1310 nm
10. 4100B Measured on a 16 dB loss (typical 1x32 split ratio) non-reflective splitter at 1310 nm, using 200 ns pulse width 4100C Measured on a 16 dB loss (typical 1x32 split ratio) non-reflective splitter at 1310 nm, using 100 ns pulse width
11. 4100 B FiberComplete modules series: in CW Mode, ± 20 nm, with laser temperature of 25°C,
    4100 C FiberComplete modules series: in CW Mode, 1310 nm: +5/-35 nm, 1550 nm: +0/-40 nm, 1625 nm: +0/-20 nm, with laser temperature of 25°C
12. After warm up time of 20 min
13. Additional temperature restrictions may apply based on the mainframe used

Modules and Software Options

Description	IL/ORL + Length	OTDR		
Modules	Bi-directional	Uni-directional	Bi-directional	
			TrueBIDIR SW option	Loopback SW option
4100 Module B FiberComplete	✓	✓	✓	✓
4100 Module C FiberComplete	✓	✓	✓	✓
4100 Module B FiberComplete Fault Finder	✓	X	X	X

Ordering Information

Description	Order Number
Modules (all modules are delivered with a SC/PC or SC/APC test port adapter)	
Loss Test Set	
4100 Module B FiberComplete – Fault Finder – 1310/1550 nm – PC/APC	E4126-FCOMPFF-PC/-APC
4100 Module B FiberComplete – Fault Finder - 1310/1550/1625 nm – PC /APC	E4136-FCOMPFF-PC/-APC
Loss Test Set + OTDR	
4100 Module B FiberComplete – 1310/1500 nm – PC/APC	E4126B-FCOMP-PC/-APC
4100 Module B FiberComplete – 1310/1550/1625 nm – PC/APC	E4136B-FCOMP-PC/-APC
4100 Module B FiberComplete– 1310/1550/Filtered 1650 nm – APC	E4138FB65- FCOMP-APC
4100 Module C FiberComplete – 1310/1550/1625 nm – PC/APC	E4136C-FCOMP-PC/-APC
Calibration Report	
Module Calibration Report*	E41OTDRCR
Modules Accessories	
SC/PC (Blue), SC/APC (Green) test port adapter - screw type	EUSCADS/-APC
LC/PC (Blue), LC/APC (Green) test port adapter - screw type	EULCADS/-APC
FC Test Port Adapter - screw type	EUFCADS
Screwdrivers kit for screw type test port adapters	ESCREWDRIVER-SENKO
Software Options - Generic (to be installed on the mainframe)	
TrueBIDIR: Software option for Bidirectional OTDR Acquisition, with instant on board analysis and averaging for all networks	ETRUEBIDIR-FCOMP-PRO/-UPG
Loopback: Software option for Bidirectional Loopback OTDR Acquisition with instant on board analysis and averaging for access networks	ELOOPBACK-FCOMP-PRO/-UPG
Cable-SLM: Project cable management, up to 10,000 fibers	ECABLESLM/-UPG

* Calibration report with OTDR data. Loss test set data are guaranteed by design.

Ordering Information continued

Description	Order Number
Software Options – Specific (to be installed on the mainframe)	
3 ns pulse width option for 4100 Module C OTDR	EPULSE3NS
Mainframe HW Option (mandatory for Loss Test Set Referencing) (to be installed on the mainframe)	
Powermeter – for T-BERD/MTS-2000V2 mainframe	E20PM
Powermeter – for T-BERD/MTS-4000V2 mainframe	E40PM
Powermeter and VFL – for OneAdvisor 800 mainframe	ONA-PMVFL

FiberComplete modules comes with:

• Light source and calibrated power meter

• Built-in high speed data link - Fiber under test- (patented)

• Accessory referencing kit (ENRTERMKIT) with SC and LC non reflective terminations and bulkhead adapters for zero ORL referencing best accuracy. (Mandatory for use with PC connectors or bend insensitive test cords)

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.
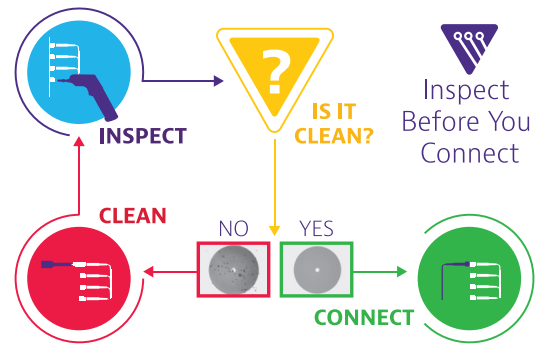
VIAVI Care Support Plans

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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