

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 |

- Side by side reference, excluding connector uncertainty
- Ten (10) consecutive measurements, without disconnection
- From 10 to 40 dB range, with References, excluding connector uncertainty
- Excluding Group Index uncertainties
- Laser at 25°C measured at 10 μ s
- Laser in CW and 25°C
- The one-way difference between the extrapolated backscattering level at the start of the fiber and the RMS noise level, after 3 minutes averaging
- Measured at \pm 1.5 dB down from the peak of an unsaturated reflective event, using 5ns pulse width at 1310 nm
- Measured at \pm 0.5 dB down from the linear regression using a FC/UPC-type reflectance, using 5 ns pulse width at 1310 nm
- 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
- 4100 B FiberComplete modules series: in CW Mode, \pm 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: +5/-15 nm, with laser temperature of 25°C
- After warm up time of 20 min
- Additional temperature restrictions may apply based on the mainframe used

Modules and Software Options

| Description | IL/ORL + Length | OTDR | | |
|--|-----------------|-----------------|---------------------|--------------------|
| | | Uni-directional | Bi-directional | |
| Modules | Bi-directional | Uni-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 | E4126B-FCOMPFF-PC/-APC |
| 4100 Module B FiberComplete – Fault Finder – 1310/1550/1625 nm – PC /APC | E4136B-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* | E410TDRCR |
| 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)

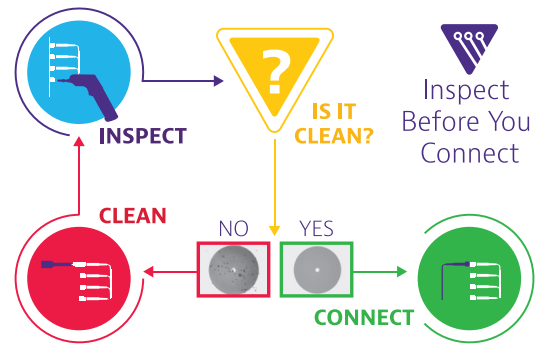


Test Process Automation (TPA)

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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