# FTB-7600E—Ultra-Long-Haul OTDR

## HIGH-END FIBER CHARACTERIZATION AND SUBMARINE CABLE TESTING

**Characterize fiber with maximum accuracy over distances of more than 200 km**

## KEY FEATURES

Dynamic range of up to 50.5 dB

Dual-wavelength configurations (1310/1550/1625 nm)

Up to 256 000 sampling points

Industry-leading linearity of ±0.03 dB/dB

EXFO Connect-compatible: automated asset management; data goes through the cloud and into a dynamic database

## APPLICATIONS

Ultra-long-haul network testing

Submarine cable testing

## COMPLEMENTARY PRODUCTS AND OPTIONS

**Platform**
FTB-2/FTB-2 Pro

**Platform**
FTB-500

**Fiber Inspection Probe**
FIP-400B (Wi-Fi or USB)

*FastReporter2*
EFFICIENT POST-PROCESSING SOFTWARE

**Data Post-Processing Software**
FastReporter 2

**EXFO**

## LOADED WITH FEATURES TO BOOST YOUR EFFICIENCY [a]

**Real-Time Averaging**

Activates the OTDR laser in continuous shooting mode, the trace refreshes in real time and allows to monitor the fiber for a sudden change. Perfect for a quick overview of the fiber under test.

**Automode**

Used as a discovery mode, this feature automatically adjusts the distance range and the pulse width in function of the link under test. It is recommended to adjust the parameters to perform additional measurements to locate other events.

**Zoom Tools**

Zoom and center to facilitate the analysis of your fibers. Draw a window around the area of interest and center in the screen quicker.

**Set Parameters on the Fly**

Dynamically change OTDR settings for the ongoing acquisition without stopping or returning to submenus.

**Macrobend Finder**

This built-in feature enables the unit to automatically locate and identify macrobends, no need to spend further time analyzing the traces.

**Bidirectional Analysis (Via FastReporter 2 Data Post-Processing Software)**

Recommended to ensure true splice characterization, bidirectional analysis combines results from both directions to provide an average loss for each event.
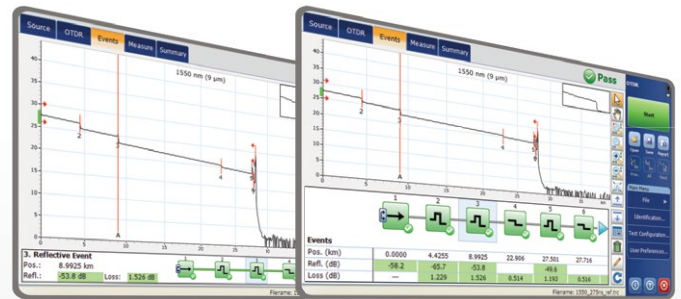
**Note**

a. Some features may not be available in FTB-500 platform.

## LOOKING FOR ICON-BASED MAPPING?

### Linear View (Included on All EXFO OTDRs) [a]

Available on our OTDRs since 2006, the linear view simplifies the reading of an OTDR trace by displaying icons in a linear way for each wavelength. This view converts the graph data points obtained from a traditional single pulse trace into reflective or non-reflective icons. With applied pass/fail thresholds, it becomes easier to pinpoint faults on your link.

This improved version of linear view provides the flexibility to display both the OTDR graph and its linear view without having to toggle to analyze your fiber link.



## SOFTWARE APPLICATIONS

*FastReporter 2*
EFFICIENT POST-PROCESSING SOFTWARE

**One Software Does It All**

This powerful reporting software is the perfect complement to your OTDR. It allows creating and customizing reports to fully address your needs.



**Note**

a. Linear view representation depends on the OTDR version installed on the platform.

**EXFO**

## FIBER CONNECTOR INSPECTION AND CERTIFICATION—THE ESSENTIAL FIRST STEP BEFORE ANY OTDR TESTING

Taking the time to properly inspect a fiber-optic connector using an EXFO fiber inspection probe can prevent a host of issues from arising further down the line, thus saving you time, money and trouble. Moreover, using a fully automated solution with autofocus capabilities will turn this critical inspection phase into a fast and hassle-free one-step process.

### DID YOU KNOW THAT THE CONNECTOR OF YOUR OTDR IS ALSO CRITICAL?

The presence of a dirty connector at an OTDR port or launch cable can negatively impact your test results, and even cause permanent damage during mating. Therefore, it is critical to regularly inspect these connectors to ensure that they are free of any contamination. Making inspection the first step of your OTDR best practices will maximize the performances of your OTDR and your efficiency.

## FIVE MODELS TO FIT YOUR BUDGET

| FEATURES | USB WIRED | | | WIRELESS | |
|---|---|---|---|---|---|
| | Basic **FIP-410B** | Semi-Automated **FIP-420B** | Fully Automated **FIP-430B** | Semi-Automated **FIP-425B** | Fully Automated **FIP-435B** |
| Three magnification levels | √ | √ | √ | √ | √ |
| Image capture | √ | √ | √ | √ | √ |
| Five-megapixel CMOS capturing device | √ | √ | √ | √ | √ |
| Automatic fiber image-centering function | X | √ | √ | √ | √ |
| Automatic focus adjustment | X | X | √ | X | √ |
| Onboard pass/fail analysis | X | √ | √ | √ | √ |
| Pass/fail LED indicator | X | √ | √ | √ | √ |
| Wi-Fi connectivity | X | X | X | √ | √ |

For additional information, please refer to the FIP-400B USB or FIP-400B wireless specification sheets.

## AVAILABLE IN THE FTB-2/FTB-2 PRO PLATFORM

The FTB-2, available in a standard or Pro model, is the most compact solution on the market for **multirate, multitechnology, multiservice testing**, delivering all the power of a high-end platform in a conveniently sized, go-anywhere field-testing tool.

**INTUITIVE INTERFACE**
Widescreen display and single touch gesture support

**UNMATCHED CONNECTIVITY**
Wi-Fi, Bluetooth, Gigabit Ethernet and multiple USB ports

**INCREASED PRODUCTIVITY**
Store, push and share test data automatically

## DO MORE BY GOING FTB PRO

The Windows 8.1 Pro operating system allows for a wide choice of third-party applications and supports an extensive range of USB devices.

› Start faster and multitask
› Use any office suite
› Connect to printers, cameras, keyboards, mice, and more

**Bring Your Own Apps**

Share your desktop (e.g., using TeamViewer)

Antivirus software

Communicate via e-mail services and over-the-top (OTT) apps

Record and automate actions

Share files via cloud-based storage

**Go FTB Pro!**

All specifications valid at 23 °C ± 2 °C with an FC/APC connector, unless otherwise specified.

## TECHNICAL SPECIFICATIONS

| | |
|---|---|
| Model [a] | FTB-7600E |
| Wavelengths (nm) [b] | 1310 ± 20/1550 ± 20/1625 ± 10 |
| Dynamic range at 20 µs (dB) [c] | 50.5/50.5/48 [d] |
| Event dead zone (m) [e] | 1 |
| Attenuation dead zone (m) [e] | 5 |
| Distance range (km) | 1.25, 2.5, 5, 10, 20, 40, 80, 160, 260, 400 |
| Pulse width (ns) | 5, 10, 30, 100, 275, 1000, 2500, 10 000, 20 000 |
| Linearity (dB/dB) [b] | ± 0.03 |
| Loss threshold (dB) | 0.01 |
| Loss resolution (dB) | 0.001 |
| Sampling resolution (m) | 0.04 to 10 |
| Sampling points | Up to 256 000 |
| Distance uncertainty (m) [f] | ± (0.75 + 0.001 % x distance + sampling resolution) |
| Measurement time | User-defined (minimum: 5 seconds ; maximum: 60 minutes) |
| Typical real-time refresh (Hz) | 4 |
| Stable source output power (dBm) [g] | 5 |

**Notes**

a. For complete details on all available configurations, refer to the Ordering Information section.

b. Typical.

c. Typical dynamic range with a 3-minute averaging at SNR = 1.

d. With NZDS fiber (G.655).

e. Typical dead zone of singlemode modules for reflectance below −45 dB, using a 5-ns pulse.

f. Does not include uncertainty due to fiber index.

g. Typical output power value at 1550 nm.

## LASER SAFETY

IEC 60825-1:2007     21 CFR 1040.10
**INVISIBLE LASER RADIATION**
**DO NOT VIEW DIRECTLY**
**WITH OPTICAL INSTRUMENTS**
**CLASS 1M LASER PRODUCT**
λ: 800-1300 nm, PW ≤ 1 µsec, Ppk ≤ 500 mW
λ: 1250-1400 nm, PW ≤ 20 µsec, Ppk ≤ 260 mW
λ: 1400-1700 nm, PW ≤ 20 µsec, Ppk ≤ 600 mW
1064848

**EXFO**

## ORDERING INFORMATION

**FTB-7600E-XX-XX**

Model
**Dual-wavelength**
FTB-7600E-0023B = SM OTDR module,
1310/1550 nm (9/125 μm)
FTB-7600E-0034B = SM OTDR module,
1550/1625 nm (9/125 μm)

**Connector**
EA-EUI-28 = APC/DIN 47256
EA-EUI-89 = APC/FC narrow key
EA-EUI-91 = APC/SC
EA-EUI-95 = APC/E-2000
EA-EUI-98 = APC/LC
EI connectors : See section below

Example: FTB-7600E-0023B-EI-EUI-89

## EI CONNECTORS

**APC**

To maximize the performance of your OTDR, EXFO recommends using APC connectors on singlemode port. These connectors generate lower reflectance, which is a critical parameter that affects performance, particularly in dead zones. APC connectors provide better performance than UPC connectors, thereby improving testing efficiency.

Note: UPC connectors are also available. Simply replace EA-XX by EI-XX in the ordering part number. Additional connector available: EI-EUI-90 (UPC/ST).

**EXFO**