

# FTB-720 LAN/WAN Access OTDR

OPTIMIZED FOR MULTIMODE AND SINGLEMODE ACCESS NETWORK TESTING



Please note that this model has been discontinued. For more information, visit [EXFO.com](http://EXFO.com)

iOLM  
READY

EF  
READY

EXFO Connect  
Compatible



The ideal construction OTDRs for everyday field testing in any access network. With an iOLM application for both singlemode and multimode testing, it's the most automated and intelligent troubleshooting tool for FTTA, LAN and data centers.

## KEY FEATURES

- Dynamic range of up to 36 dB
- Event dead zone as low as 0.8 meter
- Combined singlemode/multimode wavelengths
- EF ready: use with external launch mode conditioner for EF-compliant multimode results
- Live fiber testing at 1625 nm
- iOLM ready: one-touch multiple acquisitions, with clear go/no-go results presented in a straightforward visual format

## APPLICATIONS

- Access network testing
- LAN/WAN characterization
- Private networks
- Data centers
- Fronthaul/backhaul (FTTA, FTTH, remote radio heads, DAS and small cells)

## COMPLEMENTARY PRODUCTS



Platform  
FTB-1



Fiber Inspection Probe  
FIP-400B



Encircled Flux (EF) Conditioner  
SPSB-EF-C30

EXFO

## LOADED WITH FEATURES TO BOOST YOUR EFFICIENCY



### 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. For a more complete event characterization, use iOLM and benefit from maximum resolution on both directions (multiple pulse widths at multiple wavelengths), as well as a consolidated view.



### DATA CENTER CABLE CERTIFICATION (iCERT<sup>®</sup>)

iCERT option turns the iOLM into an intelligent tier-2 certifier with automated pass/fail thresholds for SM/MM cables, helping fiber installers to certify or troubleshoot any enterprise or datacenter network according to the recognized international standards (including TIA-568, ISO 11801).

#### Note

a. This software option is only available if you select the iOLM or Oi application.

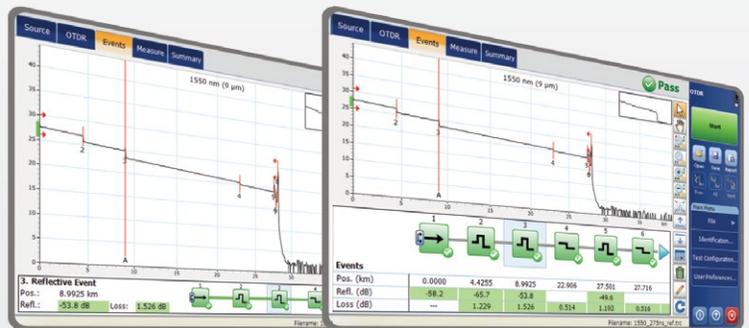
## LOOKING FOR ICON-BASED MAPPING?

### Linear View (Included on All EXFO OTDRs)

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.

Although this linear view simplifies the OTDR reading of a single pulse width's trace, the user will still need to set the OTDR parameters. In addition, multiple traces must often be performed in order to fully characterize the fiber links. See the section below to learn how the iOLM can perform this automatically and with more accurate results.



REMOVING COMPLEXITY FROM THE OTDR

OTDR TESTING COMES WITH ITS LOAD OF CHALLENGES...



WRONG OTDR TRACES



COUNTLESS TRACES TO ANALYZE



REPEATING THE SAME JOB TWICE



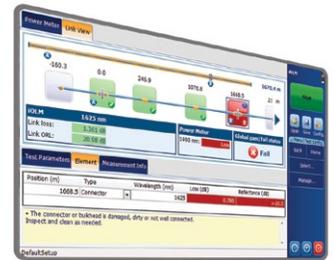
COMPLEX INSTRUMENT TRAINING/SUPPORT

**iOLM** | intelligent Optical Link Mapper

**In response to these challenges, EXFO developed a better way to test fiber optics:**

The iOLM is an OTDR-based application designed to simplify OTDR testing by eliminating the need to configure parameters, and/or analyze and interpret multiple complex OTDR traces. Its advanced algorithms dynamically define the testing parameters, as well as the number of acquisitions that best fit the network under test. By correlating multipulse widths on multiple wavelengths, the iOLM locates and identifies faults with maximum resolution—all at the push of a single button.

HOW DOES IT WORK?



Turning traditional OTDR testing into clear, automated, first-time-right results for technicians of any skill level.

Patent protection applies to the intelligent Optical Link Mapper, including its proprietary measurement software. EXFO's Universal Interface is protected by US patent 6,612,750.

Three ways to benefit from the iOLM:

**OTDR Combo (Oi Code)**

Run iOLM and OTDR applications on one unit

**Upgrade**

Add the iOLM software option, even while in the field

**iOLM Only**

Order a unit with the iOLM application only

Three iOLM feature value packs:

**iOLM Standard**

- › Dynamic multipulse acquisition
- › Intelligent trace analysis
- › Map view
- › Diagnosis
- › SOR trace generation

**iOLM Advanced**

All the features of iOLM, plus additional Advanced features

**iOLM Pro**

All the features of iOLM Advanced, plus additional high-value professional features

Note: Refer to the intelligent Optical Link Mapper (iOLM) specification sheet for the most recent description of the added-value features available in the iOLM Advanced and iOLM Pro packs.

TROUBLESHOOTING OF HIGH-SPEED MULTIMODE NETWORKS WITH ENCIRCLED FLUX



SPSB-EF-C30

Whether for an expanding enterprise-class business or a large-volume data center, new high-speed data networks built with multimode fibers are running under tighter tolerances than ever before. In the event of failure, intelligent and accurate test tools are needed to quickly find and fix the fault.

Multimode fibers are the trickiest links to test, because the test results are highly dependent on each device's output conditions. Troubleshooting with a different unit than the construction unit may mislead the technician or result in the inability to find the fault, creating longer network downtimes.

For multimode fibers, EXFO recommends using an external launch mode conditioner that is Encircled Flux (EF)-compliant. The EF standard (as recommended in TIA-568 via TIA-526-14-B and IEC 61280-4-1 Ed. 2.0) is a way of controlling the source launch conditions so that tier-2 troubleshooting can be performed with maximum accuracy and consistency.

Use of an external EF-compliant device\* such as the SPSB-EF-C30 is a fast and easy way to fix faulty networks.

\*For more detailed information about EF compliance, please read the Encircled Flux test solution specification sheet.

## AUTOMATE ASSET MANAGEMENT. PUSH TEST DATA IN THE CLOUD. GET CONNECTED.



EXFO Connect pushes and stores test equipment and test-data content automatically in the cloud, allowing you to streamline test operation from build-out to maintenance.

## ADDITIONAL SOFTWARE TEST CAPABILITIES ON THE FTB-1 PLATFORM



EXpert Test Tools is a series of software applications leveraged through the FTB ecosystem platforms and designed to enhance and simplify FTTH/FTTx service deployments:

**EXpert VoIP:** Generate voice-over-IP call to validate performance during service turn-up and troubleshooting. This tool boasts a highly configurable test interface to maximize control over test parameters yet maintains an intuitive user interface, allowing for fast and easy test setup and completion.

**EXpert IP:** Benefit from six commonly used IP test tools in one application, helping field technicians deal with the complex testing environments of today's networks and further preparing them to handle unexpected customer issues easily and without interruption.

**EXpert IPTV:** Enables quick pass/fail verification on IPTV installations during service turn-up. By emulating a set-top box and displaying a real-time video preview, video and audio quality can be determined before any other equipment is installed, further ensuring subscribers' quality of experience (available on FTB-1 platform only).

SPECIFICATIONS <sup>a</sup>

TECHNICAL SPECIFICATIONS	
Wavelength (nm) <sup>b</sup>	850 ± 20, 1300 ± 20, 1310 ± 20, 1550 ± 20, 1625 ± 15 (filtered)
Dynamic range (dB) <sup>c, d</sup>	27, 26, 36, 34, 34
Event dead zone (m) <sup>e</sup>	0.8
Attenuation dead zone (m) <sup>e</sup>	4, 4.5, 5, 5, 5
Distance range (km)	Multimode: 0.1, 0.3, 0.5, 1.3, 2.5, 5, 10, 20, 40 Singlemode: 1.25, 2.5, 5, 10, 20, 40, 80, 160, 260
Pulse width (ns)	Multimode: 5, 10, 30, 50, 100, 275, 500, 1000 Singlemode: 5, 10, 30, 50, 100, 275, 500, 1000, 2500, 10 000, 20 000
Launch conditions <sup>f</sup>	Encircled Flux (EF) compliant <sup>g</sup>
Linearity (dB/dB) <sup>b</sup>	±0.03
Loss threshold (dB)	0.01
Loss resolution (dB)	0.001
Sampling resolution (m)	Multimode: 0.04 to 2.5 Singlemode: 0.04 to 5
Sampling points	Up to 256 000
Distance uncertainty (m) <sup>h</sup>	±(0.75 + 0.0025 % x distance + sampling resolution)
Measurement time	User-defined (60 min. maximum)
Typical real-time refresh (Hz)	3
Stable source output power (dBm) <sup>i</sup>	-3 (1300 nm), -7 (1550 nm)

## NOTES

- All specifications valid at 23 °C ± 2 °C with an FC/PC connector, unless otherwise specified; APC connector for FTB-720 singlemode model.
- Typical.
- Typical dynamic range with longest pulse and three-minute averaging at SNR = 1.
- Multimode dynamic range is specified for 62.5 µm fiber; a 3 dB reduction is seen when testing 50 µm fiber.
- Typical dead zone for multimode reflectance below -35 dB and singlemode reflectance below -45 dB, using a 5 ns pulse.
- For multimode port, controlled launch conditions allow 50 µm and 62.5 µm multimode fiber testing.
- Compliant with Encircle Flux TIA-526-14-B and IEC 61280-4-1 Ed. 2.0 using an external EF conditioner (SPSB-EF-C-30) and Class CPR 1 or 2 if used without.
- Does not include uncertainty due to fiber index.
- Typical output power is given at 1300 nm for multimode output and 1550 nm for singlemode output.

## GENERAL SPECIFICATIONS

Size (H x W x D)	130 mm x 36 mm x 252 mm (5 1/8 in x 1 7/16 in x 9 15/16 in)
Weight	0.65 kg (1.4 lb)
Temperature	
operating	0 °C to 50 °C (32 °F to 122 °F)
storage	-40 °C to 70 °C (-40 °F to 158 °F)
Relative humidity	0% to 95% non-condensing

## LASER SAFETY



## ORDERING INFORMATION

### Multimode and singlemode (access and LAN/WAN OTDR)

FTB-720-XX-XX-XX-XX-XX

#### Model

FTB-720-000-04B = OTDR with filtered 1625 nm port  
 FTB-720-023B-04B = OTDR 1310/1550 nm with filtered 1625 nm port  
 FTB-720-23B = OTDR 1310/1550 nm  
 FTB-720-12CD = OTDR 850/1300 nm  
 FTB-720-12CD-23B = OTDR 850/1300 nm, 1310/1550 nm

#### Base Software

OTDR = Enables the OTDR application only  
 iOLM = Enables the iOLM application only  
 Oi = Enables iOLM and OTDR applications

#### Multimode Connector

EI-EUI-28 = UPC/DIN 47256  
 EI-EUI-76 = UPC/HMS-10/AG  
 EI-EUI-89 = UPC/FC narrow key  
 EI-EUI-90 = UPC/ST  
 EI-EUI-91 = UPC/SC  
 EI-EUI-95 = UPC/E-2000  
 EI-EUI-98 = UPC/LC

#### iOLM Software Option

00 = iOLM Standard  
 iADV = iOLM Advanced<sup>a</sup>  
 iPRO = iOLM Pro<sup>a</sup>

#### Singlemode 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 note below about APC connectors

Example: FTB-720-023B-OTDR-EA-EUI-89

### Notes

a. The features available in iOLM Advanced and Pro depend on the platform and the module. Please refer to the intelligent Optical Link Mapper (iOLM) specification sheet for package details.

## THE BENEFITS OF APC CONNECTORS FOR OTDR/iOLM TESTING



To maximize the performance of your OTDR, EXFO recommends using APC connectors. 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.

For best results, APC connectors are mandatory on singlemode ports using the iOLM application.

Note: UPC connectors are also available. Simply replace EA-XX by EI-XX in the ordering part number. Additional connectors available are the EI-EUI-76 (UPC/HMS-10/AG) and EI-EUI-90 (UPC/ST).

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