FTBx-735C Metro/PON FTTx/MDU OTDR

OPTIMIZED FOR METRO/CORE AND FTTx/MDU FIBER DEPLOYMENTS AND TROUBLESHOOTING

iOLM READY

EXFO Connect Compatible

FROST & SULLIVAN 2015 BEST PRACTICES AWARD
GLOBAL PORTABLE FIBER OPTIC TEST EQUIPMENT MARKET LEADERSHIP AWARD

SPEC SHEET

NEW OTDR GENERATION

High-resolution OTDR designed for metro networks testing and splitter characterization in PON FTTx applications.

KEY FEATURES

Dynamic range of up to 42 dB

Event dead zone of 0.5 m and attenuation dead zone of 2.5 m

Test through high-port-count splitters (up to 1x128)

Singlemode port for in-service troubleshooting with in-line 1490/1550 nm power meter

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

iOLM-ready: one-touch multiple acquisitions, with clear go/no-go results presented in a straightforward visual format

APPLICATIONS

FTTx/MDU test challenges within PON networks

Metro/core network testing (point-to-point [P2P])

Manufacturing automation

COMPLEMENTARY PRODUCTS AND OPTIONS

FastReporter 2
DATA POST-PROCESSING SOFTWARE

Platform
FTB-2/FTB-2 Pro

Platform
FTB-4 Pro

Fiber Inspection Probe
FIP-400B (WiFi or USB)

Data Post-Processing Software
FastReporter 2

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 intelligent Optical Link Mapper (iOLM) and benefit from maximum resolution on both directions (multiple pulse widths at multiple wavelengths) as well as a consolidated view.

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.

iOLM—REMOVING THE COMPLEXITY FROM OTDR TESTING

OTDR TESTING COMES WITH ITS LOAD OF CHALLENGES. . .

WRONG OTDR TRACES

COUNTLESS TRACES TO ANALYSE

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?

Dynamic multipulse acquisition → Intelligent trace analysis → All results combined into a single link view → Comprehensive diagnosis →

Turning traditional OTDR testing into clear, automated, first-time-right results for technicians of any skill level.
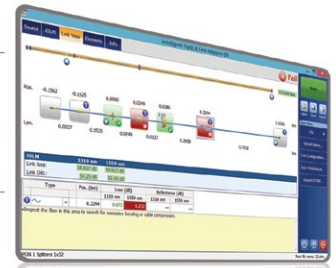
Patent protection applies to the iOLM, including its proprietary measurement software. EXFO's Universal Interface is protected by US patent 6,612,750.

THREE WAYS TO BENEFIT FROM THE iOLM

COMBO
Run both iOLM and OTDR applications (Oi code)

UPGRADE
Add the iOLM software option to your iOLM-ready unit, even while in the field

iOLM ONLY
Order a unit with the iOLM application only

iOLM FEATURES VALUE PACK

In addition to the standard iOLM feature set, you can select added-value features as part of the **Advanced** or **Pro** packages. Please refer to the iOLM specification sheet for the complete and most recent description of these value packs.

GET THE BEST OUT OF YOUR DATA POST-PROCESSING

FastReporter2 DATA POST-PROCESSING SOFTWARE

ONE SOFTWARE DOES IT ALL

This powerful reporting software is the perfect complement to your OTDR, and can be used to create and customize reports to fully address your needs.

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/iOLM 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.

ConnectorMax2

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	√	√	√	√
WiFi 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 AND FTB-4 PRO PLATFORMS

The FTB-2, FTB-2 Pro and FTB-4 Pro are 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
WiFi, Bluetooth, Gigabit Ethernet and multiple USB ports

INCREASED PRODUCTIVITY
Store, push and share test data automatically

DO MORE WITH THE PRO PLATFORM

The Windows 10 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

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SOFTWARE TEST TOOLS

This series of platform-based software testing tools enhance the value of the FTB-2, FTB-2 Pro and FTB-4 Pro platforms, providing additional testing capabilities without the need for additional modules or units.

EXpert TEST TOOLS

EXpert VoIP TEST TOOLS

EXpert VoIP generates a voice-over-IP call directly from the test platform to validate performance during service turn-up and troubleshooting.
› Supports a wide range of signaling protocols, including SIP, SCCP, H.248/Megaco and H.323
› Supports MOS and R-factor quality metrics
› Simplifies testing with configurable pass/fail thresholds and RTP metrics

EXpert IP TEST TOOLS

EXpert IP integrates six commonly used datacom test tools into one platform-based application to ensure that field technicians are prepared for a wide range of testing needs.
› Rapidly performs debugging sequences with VLAN scan and LAN discovery
› Validates end-to-end ping and traceroute
› Verifies FTP performance and HTTP availability

EXpert IPTV TEST TOOLS

This powerful IPTV quality assessment solution enables set-top-box emulation and passive monitoring of IPTV streams, allowing quick and easy pass/fail verification of IPTV installations.
› Real-time video preview
› Analyzes up to 10 video streams
› Comprehensive QoS and QoE metrics including MOS score

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

EXFO│Connect

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.

REMOTE CONTROL AND MEASUREMENT AUTOMATION

SCPI commands available for OTDR measurements. With FTB-2, FTB-2 Pro and FTB-4 Pro: GPIB (IEEE 488.1, IEEE 488.2) or Ethernet.

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

TECHNICAL SPECIFICATIONS

Wavelengths (nm) [a]	1310 ± 20/1490 ± 20/1550 ± 20/1625 ± 10
SM live port built-in filter	1625 nm: highpass >1595 nm isolation >50 dB from 1270 nm to 1585 nm
Dynamic range at 20 µs (dB) [b]	42/41/41/41
Event dead zone (m) [c]	0.5
Attenuation dead zone (m) [d]	2.5
Distance range (km)	0.1 to 400
Pulse width (ns)	3 to 20 000
Linearity (dB/dB) [a]	±0.03
PON dead zone (m) [e]	30
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 + 0.0025 % x distance + sampling resolution)
Measurement time	User-defined (maximum: 60 minutes)
Typical real-time refresh (Hz)	4
Stable source output power (dBm) [g]	−2.5
Reflectance (dB) [a]	±2

TECHNICAL SPECIFICATIONS (In-Line Power Meter) [a, h]

Input power range (dBm)	1490 nm: −65 to 18 1550 nm: −50 to 28
PON power meter (nm)	Two channels: 1490/1550
Broadband power meter (nm)	One channel: 1270 to 1625
Power uncertainty (dB) [a]	±0.2
Calibrated wavelengths (nm)	1310, 1490, 1550 and 1625
PON power meter spectral band (nm)	1450 to 1530
Broadband power meter spectral band (nm)	1270 to 1625
Display resolution (dB)	0.1
PON power meter ORL (dB) [a]	−55
Broadband power meter ORL (dB) [a]	−50

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

Notes

a. Typical.

b. Typical dynamic range with a three-minute averaging at SNR = 1.

c. Typical, for reflectance from −35 dB to −55 dB, using a 3-ns pulse.

d. Typical at 1310 nm, for reflectance at −55 dB. Attenuation dead zone at 1310 nm is 3.5 m typical with reflectance below −45 dB.

e. Non-reflective FUT, non-reflective splitter, 13-dB loss, 50-ns pulse, typical value.

f. Does not include uncertainty due to fiber index.

g. Typical output power value at 1550 nm.

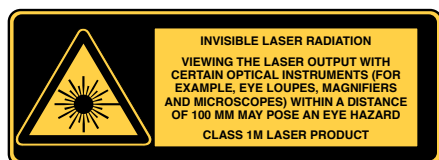h. Specifications valid when OTDR not functioning or in idle mode.

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GENERAL SPECIFICATIONS

Size (H x W x D)		158 mm x 24 mm x 174 mm (6 ¼ in x $^{15}/_{16}$ in x 6 $^{7}/_{8}$ in)
Weight		0.4 kg (0.9 lb)
Temperature	Operating	Refer to platform's specification sheet
	Storage	−40 °C to 70 °C (−40 °F to 158 °F)
Relative humidity		0% to 95% non-condensing

This picture is shown as a guideline only. Actual module may differ depending on the configuration selected.

LASER SAFETY

INVISIBLE LASER RADIATION

VIEWING THE LASER OUTPUT WITH CERTAIN OPTICAL INSTRUMENTS (FOR EXAMPLE, EYE LOUPES, MAGNIFIERS AND MICROSCOPES) WITHIN A DISTANCE OF 100 MM MAY POSE AN EYE HAZARD

CLASS 1M LASER PRODUCT

ORDERING INFORMATION

FTBx-735C-XX-XX-XX-XX-XX

Model
FTBx-735C = OTDR

Optical configuration
SM1 = SM OTDR module, 1310/1550 nm
SM2 = SM OTDR module, 1310/1550 nm and 1625 nm live [a]
SM3 = SM OTDR module, 1310/1550/1625 nm
SM4 = SM OTDR module, 1310/1490/1550 nm

OPM option [b]
OPM = In-line power meter, one broadband channel (included)
OPM2 = In-line power meter, dual channel 1490/1550 nm

Base software
OTDR = Enables OTDR application only
iOLM = Enables iOLM application only
Oi = Enables OTDR and iOLM applications

iOLM software option [c]
00 = iOLM Standard
iADV = iOLM Advanced
iPRO = iOLM Pro
iLOOP = iOLM loopback mode
iCERT = iOLM tier-2 certification

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 section below about APC connectors

Example: FTBx-735C-SM1-OTDR-EA-EUI-89

Notes

a. The two ports are configured with the same adapter.

b. Available with SM2 model only.

c. Please refer to the iOLM specification sheet for the complete and most recent description of these value packs.

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.

For best results, APC connectors are mandatory with the iOLM application.

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).

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