4ТЕСТ

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FTBx-730C PON FTTx/MDU OTDR

OPTIMIZED FOR 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

NEW OTDR GENERATION

The perfect tool for field technicians who need to seamlessly characterize splitters in PON FTTx and MDU applications.

SPEC SHEET

KEY FEATURES

Dynamic range up to 39 dB for up to 132 km point-to-point (P2P)

Support high port count PON splitters (up to 1x128)

Live fiber testing at 1625 nm or 1650 nm

Short dead zones: event dead zone (EDZ) = 0.5 m; attenuation dead zone (ADZ) = 2.5 m; PON dead zone = 30 m

Single port for in-service troubleshooting with in-line 1490/1550 nm PON power meter (optional)

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

Access network testing (P2P)

Metro links testing (P2P)

Passive optical LAN (POL)

Manufacturing automation

COMPLEMENTARY PRODUCTS AND OPTIONS

FastReporter

Platform
FTB-1v2/
FTB-1 Pro

Platform
FTB-2/FTB-2 Pro,
FTB-4 Pro

Fiber inspection scope
FIP-400B
(WiFi or USB)

Data post-processing software
FastReporter 3

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.

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.

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.

Bidirectional analysis (Via FastReporter 3 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 OTDR parameters. In addition, multiple traces must often be performed in order to fully characterize fiber links. See the section below to learn how iOLM can do this automatically and provide more accurate results.

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i OLM | intelligent Optical Link Mapper

iOLM—REMOVING THE COMPLEXITY FROM OTDR TESTING

OTDR testing comes with its load of challenges...

WRONG OTDR TRACES

COUNTLESS TRACES TO ANALYZE

REPEATING THE SAME JOB TWICE

COMPLEX INSTRUMENT TRAINING/SUPPORT

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.

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 and options

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

iOLM Standard

- Dynamic multipulse multiwavelength acquisition
- Intelligent traces analysis and diagnostics
- Single link view and event table
- SOR trace generation
- Single iOLM file per link for easy reporting
- Unbalanced/tapered PON characterization and troubleshooting
- **Optimode**: Short-link close events, fast short link, fast medium range

iOLM Advanced (iADV) [a]

- Real-time OTDR
- SOR pulse and wavelength editor
- SOR trace view
- Custom elements
- Advanced link edition and re-analysis
- 2:N splitter characterization
- **Optimode:** SFP-Safe Troubleshooting [b], PON last-mile certification

iLOOP [a]

- iOLM loopback
- iOLM automated bidirectional analysis over TestFlow [b, c]

iOLM Pro (iPRO includes iADV and iLOOP) [a]

Automated MPO cable characterization and troubleshooting (with EXFO switch) (iMF)

iCERT [a]

Cabling certification option

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a. Require enabling iOLM standard.
b. Singlemode only, configuration without splitter.
c. Requires TestFlow subscription.

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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 scope 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.

FEATURES	USB WIRED	WIRELESS	AUTONOMOUS
	FIP-430B	FIP-435B	FIP-500
Image capture	√	√	√
Five-megapixel CMOS capturing device	√	√	√
Automatic fiber image-centering function and focus adjustment	√	√	√
On-board pass/fail analysis	√	√	√
Pass/fail LED indicator	√	√	√
USB connectivity to an EXFO platform or PC	√	√	X
Wireless connectivity to an EXFO platform or PC	X	√	X
Wireless connectivity to a smartphone	X	√	√
Manual scanning for multifiber / MPO connectors	√	√	X
Semi-automated multifiber / MPO inspection	√	√	X
Fully automated multifiber / MPO inspection	X	X	√
On-board touch screen	X	X	√
SmarTips with automated thresholds	X	X	√
Quick-connect mechanism	X	X	√

For more information, visit www.EXFO.com/fiberinspection.

AVAILABLE IN THE FTB-1v2/FTB-1 PRO, FTB-2/FTB-2 PRO AND FTB-4 PRO PLATFORMS

The EXFO FTB platforms are the most compact solutions 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 multitouch capability

UNMATCHED CONNECTIVITY
WiFi, Bluetooth, Gigabit Ethernet and multiple USB ports

INCREASED PRODUCTIVITY
Store, push and share test data automatically

Do more with the EXFO FTB 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 email 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-1v2/FTB-1 Pro, FTB-2/FTB-2 Pro and FTB-4 Pro platforms, providing additional testing capabilities without the need for additional modules or units.

Remote control and measurement automation

SCPI commands available for OTDR measurements. With FTB-1v2/FTB-1 Pro, FTB-2/FTB-2 Pro and FTB-4 Pro: GPIB (IEEE 488.1, IEEE 488.2) or Ethernet.

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 mean-opinion-score (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 file-transfer-protocol (FTP) performance and hypertext-transfer-protocol (HTTP) availability

EXpert IPTV TEST TOOLS

This powerful Internet-protocol-television (IPTV) quality assessment solution enables set-top box emulation and passive monitoring of IPTV streams, allowing for quick and easy pass/fail verification of IPTV installations.

- Real-time video preview
- Analyzes up to 10 video streams
- Comprehensive quality-of-service (QoS) and quality-of-experience (QoE) metrics, including the MOS score

Automate asset management. Push test data to the cloud. Get connected.

EXFO|Connect

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

GET THE BEST OUT OF YOUR DATA POST-PROCESSING—THE SOFTWARE THAT DOES IT ALL

FastReporter

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.

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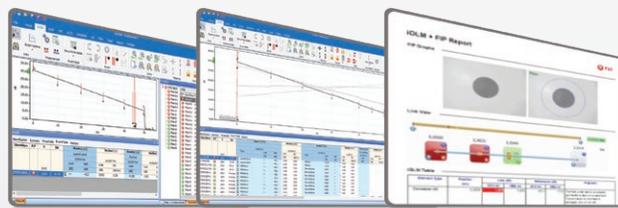
All specifications valid at 23 °C ± 2 °C with an FC/APC connector, unless otherwise specified.

TECHNICAL SPECIFICATIONS

Wavelengths (nm) [a]	1310 ± 20/1550 ± 20/1625 ± 10/1650 ± 5

SM live port built-in filter	1625 nm: highpass >1595 nm
	           isolation >50 dB from 1270 nm to 1585 nm
	
	1650 nm: bandpass 1650 nm ± 7 nm
	           isolation >50 dB out of 1650 nm ± 10 nm

Dynamic range at 20 μs (dB) [b]	39/38/39/39
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 or 1577 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
PON power meter selectable wavelengths (nm)	1490, 1550, 1490/1550
Broadband power meter selectable wavelengths (nm)	1270, 1290, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1577, 1590, 1610,1625
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.

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, using a 3-ns pulse. 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

⚠ **ATTENTION**
⚠ **CAUTION**
LASER 1M

ORDERING INFORMATION

FTBx-730C-XX-XX-XX-XX-XX

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
SM7 = SM OTDR module, 1650 nm live
SM8 = SM OTDR module, 1310/1550 nm and 1650 nm live [a]

OPM option [b]
OPM = In-line power meter, one broadband channel (included)
OPM2 = In-line power meter, broadband mode or PON power meter mode (dual band)

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

Example: FTBx-730C-SM2-OPM-OI-EA-EUI-89

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

a. The two ports are configured with the same adapter type.
b. Available for FTBx-730C-SM2, SM7, SM8.
c. Please refer to the iOLM specification sheet for the complete and most recent description of these value packs.

EI CONNECTORS

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).

4TECT

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