SPEC SHEET

FTBx-720D LAN/WAN access OTDR

OPTIMIZED FOR MULTIMODE AND SINGLEMODE ACCESS NETWORK TESTING

Purpose-built construction OTDRs for everyday field testing in any access network. With an intelligent Optical Link Mapper (iOLM) application for both singlemode and multimode testing, this is the most automated and intelligent troubleshooting tool for FTTA, LAN and data centers.

COMPATIBLE WITH EXchange

3-year warranty

Swap-Out connectors

iOLM READY

ISE NETWORK INNOVATORS' AWARDS 3.5

KEY FEATURES

- Dynamic range of up to 38 dB in singlemode (SM) and 30 dB in multimode (MM)
- Event dead zone (EDZ) / Attenuation dead zone (ADZ): 0.7/2.5 m in SM; 0.5/2 m in MM, PON dead zone 35 m in SM
- Live and dark fiber characterization, troubleshooting and activation through the same OTDR port
- SM and quad SM/MM versions available
- FTTx in-service testing at 1650 nm with optional in-line GPON/XGS-PON power meter
- Swap-Out connector, replaceable whenever necessary for optimal performance over time without undue service cost and downtime
- iOLM-ready: one-touch multiple acquisitions, with clear go/no-go results presented in a straightforward visual format
- 3-year warranty

APPLICATIONS

- Access network construction and troubleshooting
- FTTx/PON testing through splitters (up to 1×32)
- FTTx service activation: GPON, EPON, XGS-PON, 10GE EPON
- Central office link certification
- Data center and private networks (Tier-2 certification)
- LAN/WAN characterization
- Fronthaul/backhaul (FTTA, FTTT, RRH, DAS and small cells)

RELATED PRODUCTS AND ACCESSORIES

Platform FTB-1v2/ FTB-1 Pro

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

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

FastReporter

Advanced data post-processing software

SM Swap-Out connector

MM Swap-Out connector

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.

Data center cable certification (iCERT [a])

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).

Bidirectional analysis

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.

TROUBLESHOOTING HIGH-SPEED MULTIMODE NETWORKS WITH ENCIRCLED FLUX

Whether for expanding enterprise-class businesses or large-volume data centers, 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.

EF launch fiber (SPSB-EF-C30)

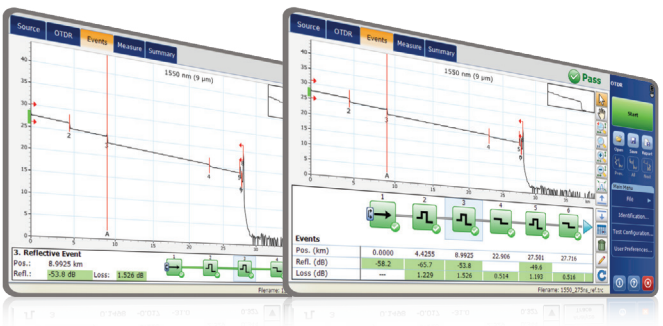
Multimode fibers are the trickiest links to test, because the test results are highly dependent on each device's output conditions. Troubleshooting with a unit other than the construction unit may mislead the technician or result in the inability to find the fault, creating longer network downtimes.

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.

LOOKING FOR ICON-BASED MAPPING?

Linear view (included with 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.

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

iOLM | 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
- **Optimode:** Short-link close events, fast short link, fast medium range

iOLM Advanced (iADV) [a]

- Real-time OTDR
- SOR pulse and wavelength editor (up to 3)
- SOR trace view
- Custom elements
- Advanced link edition and re-analysis
- 2:N splitter characterization
- **Optimode:** SFP-safe troubleshooting [b]

iLOOP [a]

- iOLM loopback (uni- or bidirectional)
- iOLM automated bidirectional analysis over TestFlow [b, c]

iCERT [a]

- Cabling certification option

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

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	•	•	
Wireless connectivity to an EXFO platform or PC		•	
Wireless connectivity to a smartphone		•	•
Manual scanning for multifiber / MPO connectors	•	•	
Semi-automated multifiber / MPO inspection	•	•	
Fully automated multifiber / MPO inspection			•
On-board touch screen			•
SmarTips with automated thresholds			•
Quick-connect mechanism			•

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

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.

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 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.

FastReporter
Data post-processing software

GET ALL ADVANCED CAPABILITIES FOR FREE

FastReporter is a consolidated data management and post-processing solution designed to improve results quality as well as auditing and reporting productivity.

Download the latest version of FastReporter, launch the application and create your EXFO Exchange account to get the full range of capabilities, at no cost. EXFO Exchange automates and optimizes workflows, troubleshooting, field testing and reporting within a secured collaborative software platform for each step of network deployment.

FEATURES	FastReporter (version 3)	
	Basic	**Full** (now free with EXFO Exchange account)
Number of files	Up to 24 results	Unlimited
Measurement type	OTDR, iOLM, FIP, OLTS, OPM, CD, PMD	
Results viewer	•	•
Reporting – Basic (PDF)	•	•
Reporting – Advanced (Excel, PDF, custom)		•
Basic analysis – Bidir (OTDR and iOLM)	•	•
Advanced editing		•
Automated validation and results correction		•
Job management and identification edition	One file	Batch processing
Hundreds of additional features		•

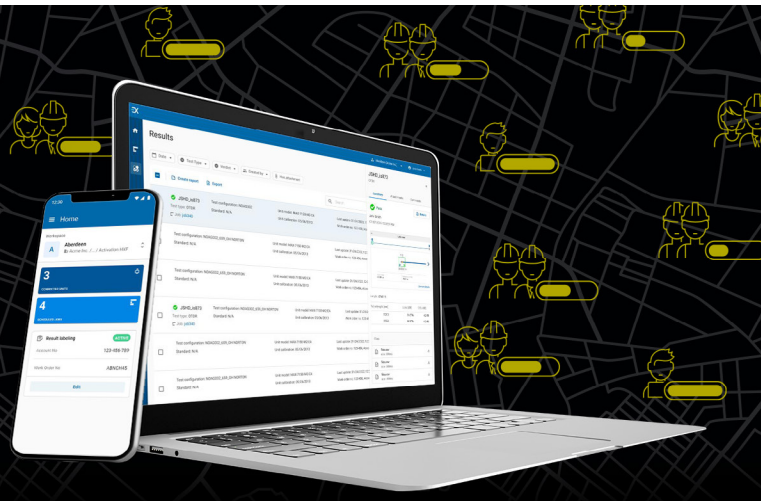
Table 1. Comparison of basic and full versions of FastReporter (version 3).

EXchange

SHARE TEST RESULTS. BOOST COMPLIANCE. UNLOCK INSIGHTS.

Cloud-hosted solution for sharing test results and ensuring compliance.

Paired with EXFO's leading test instruments, EXFO Exchange drives an entire ecosystem, while integrating seamlessly with existing operation processes.



KEY BENEFITS

- **Automate test results management**
- **Boost compliance and efficiency**
- **Improve collaboration and visibility**
- **Access comprehensive reporting**
- **Unlock insights to see what matters**

SIMPLE SETUP IN THREE STEPS

1

Create your free EXFO Exchange account

Begin your journey by creating an EXFO Exchange account. Setting up your account is quick and easy.

Create an account

2

Install the mobile app

Download the EXFO Exchange app to allow test data from compatible EXFO devices to be uploaded securely to the cloud (free of charge).

GET IT ON Google Play | Download on the App Store

For MaxTester and FTB users, install the native app.

Access the Native app

3

Save time and boost efficiency

Once your account created—and the mobile app installed and paired with compatible EXFO devices—all test results will be sent to the cloud. On the web app, you will see field test results from all invited testers.

Get **started >**

EXFO

SPECIFICATIONS

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

TECHNICAL SPECIFICATIONS		
Wavelength (nm) [a]	850 ± 20/1300 ± 20/1310 ± 30/1550 ± 30/1650 ± 15	
Live wavelength (nm)	1650 Isolation: 50 dB from 1265 nm to 1617 nm	
Dynamic range (dB) [b]	28/30/38/36/37	
Event dead zone (m) [c]	SM: 0.7	MM: 0.7
Attenuation dead zone (m)	SM: 2.5 [d]	MM: 2.5 [e]
PON dead zone (m) [f]	35	
Distance range (km)	SM: 0.1 to 260	MM: 0.1 to 40
Pulse width (ns)	SM: 3 to 20 000	MM: 3 to 1000
MM launch conditions [g]	EF-compliant	
Linearity (dB/dB)	±0.03	
Loss threshold (dB)	0.01	
Loss resolution (dB)	0.001	
Sampling resolution (m)	SM: 0.04 to 10	MM: 0.04 to 5
Sampling points	Up to 256 000	
Distance uncertainty (m) [h]	±(0.75 + 0.0025 % x distance + sampling resolution)	
Measurement time	User-defined (maximum: 60 minutes)	
Reflectance accuracy (dB) [a]	±2	
Typical real-time refresh (Hz)	4	

IN-LINE POWER CHECKER [a, k, l]	
Power range (dBm)	–60 to 23
Power uncertainty (dB) [i, j]	±0.5
Calibrated wavelengths (nm)	1310, 1490, 1550, 1625, 1650
Selectable wavelengths (nm)	1310, 1490, 1550, 1577, 1625, 1650
Tone detection	270 Hz, 330 Hz, 1 kHz, 2 kHz

TECHNICAL SPECIFICATIONS (in-line PON power meter with OPM2 in option) [a, k]	
Power range (dBm)	–60 to 23
PON power meter (nm)	Two channels: 1490/1550 and 1490/1577
Power uncertainty (dB) [i, j]	±0.5
Calibrated wavelengths (nm)	1310, 1490, 1550, 1625, 1650
Selectable wavelengths (nm)	1310, 1490, 1550, 1577, 1625, 1650, 1490/1550, 1490/1577

SOURCE		
Output power (dBm) [b]	SM: –8	MM: –2
Modulation	CW, 270 Hz, 330 Hz, 1 kHz, 2 kHz	

a. Typical.
b. Typical dynamic range with longest pulse and three-minute averaging at SNR = 1.
c. Typical, for reflectance of –55 dB in SM and –45 dB in MM.
d. Typical, for reflectance at –55 dB, using a 3-ns pulse.
e. Typical, for reflectance at –45 dB, using a 3-ns pulse.
f. Non-reflective FUT, non-reflective splitter, 13-dB loss, 50-ns pulse in SM, typical value.
g. Compliant with Encircled Flux TIA-526-14-B and IEC 61280-4-1 Ed. 2.0 using an external EF conditioner (SPSB-EF-C-30).
h. Does not include uncertainty due to fiber index.
i. At calibrated wavelengths.
j. Requires a good entry connector's health.
k. Specifications valid when OTDR not in operation or in idle mode.
l. Not available when OPM2 is selected.

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 Storage	Refer to platform's specification sheet –40 °C to 70 °C (–40 °F to 158 °F)
Relative humidity		0% to 95% non-condensing

LASER SAFETY (COMPLIES WITH FDA 1040.10 AND IEC 60825-1:2014-05)

IEC 60825-1:2014-05

WARNING
Viewing the laser output with telescopic optical instruments (for example, telescopes and binoculars) may pose an eye hazard and thus the user should not direct the beam into an area where such instruments are likely to be used.

IMPORTANT
The host unit that you use with your module may have different laser classes. Refer to the host unit documentation for exact information.

ORDERING INFORMATION

FTBx-720D-XX-XX-XX-XX-XX-XX

Optical configuration
SM1 = SM OTDR, 1310/1550 nm
SM8 = SM OTDR, 1310/1550 nm and 1650 nm live on single port
Q2-QUAD = QUAD OTDR, 850/1300 nm and 1310/1550 nm [a]

OPM option
00 = Without OPM2 option
OPM2 = In-line PON power meter mode (dual band) [b]

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

iOLM software pack [c]
00 = iOLM Standard
iADV = iOLM Advanced

Software option
00 = Without additional software option
iLOOP = iOLM loopback mode [c]
iCERT = iOLM tier-2 certification [c]

SM and MM connector [d]
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-EUI-28 = UPC/DIN 47256
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
EI connectors = See section below about APC connectors

Example: FTBx-720D-Q2-QUAD-EA-EUI-89-EI-EUI-89-iCERT-iADV

a. The two ports are configured with the same adapter.
b. Available with SM8 model.
c. Please refer to the **iOLM specification sheet** for the complete and most recent description of these value packs.
d. MM connectors available in EI (UPC) only.

EI CONNECTORS

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

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EXFO serves over 2000 customers in more than 100 countries. To find your local office contact details, please go to **www.EXFO.com/contact**.

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