FTBx-940/945 Fiber Certifier OLTS

OPTIMIZED FOR DATA CENTER AND ENTERPRISE TIER-1 FIBER CERTIFICATION

FASTEST

EF COMPLIANT

EXFO Connect

DATA-CENTER SOLUTION

SPEC SHEET

Fully featured Tier-1 certifier compatible with the FTB-2 modular platform. Combine the FTBx-940/945 with EXFO's OTDR/iOLM for an all-in-one Tier-1 & Tier-2 test.

KEY FEATURES

- Leading FasTesT™ performances: certifies two fibers at two wavelengths in 3 seconds
- Onboard assistant and diagnosis to reduce the risk of reference errors and negative loss
- Built-in Encircled-Flux compliancy as per ANSI/TIA and ISO/IEC
- 100% automated fiber inspection: one-step process with pass/fail analysis at both ends of the fiber
- Certifies to multiple industry standards simultaneously
- Onboard professional PDF reporting
- Optional Optical Return Loss measure (FTBx-945)
- Batch processing of results with FastReporter 2 software
- Best-in-class singlemode distance range of 200 km
- EXFO Connect-ready

APPLICATIONS

- Data centers
- Enterprise structured cabling

COMPLEMENTARY PRODUCTS

Platform
FTB-2/FTB-2 Pro

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

OTDR/iOLM
FTBx-720C QUAD OTDR/iOLM

EXFO

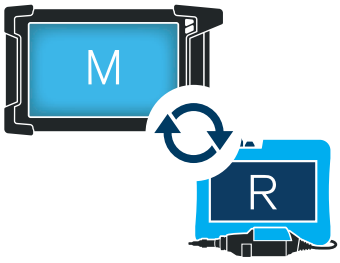
THE FIBER CERTIFIER OLTS WITH THE EXPERT BLUE TOUCH

The FTBx-940/945 Fiber Certifier OLTS has been specifically designed to certify fiber cabling in data centers and enterprise networks. The unit's intuitive Windows-like user interface ensures a minimal learning curve. The FTBx-940/945 Fiber Certifier offers icon-based functions, onboard assistance and onboard professional reporting.

FULL-FLEDGED UNITS AT BOTH ENDS

The FTBx-940/945 can be paired with another FTBx-940/945 or a handheld MAX-940/945 instrument. Both the main and remote units are full-fledged to maximize each technician's efficiency:

- FasTesT™ results with diagnostics are displayed on both units at the end of each test.
- Both technicians can certify the fiber connectors with a fiber inspection probe via the large touchscreens available on both units.



The FTBx-940/945 and MAX-940/945 Fiber Certifier gives remote technicians greater visibility and efficiency.

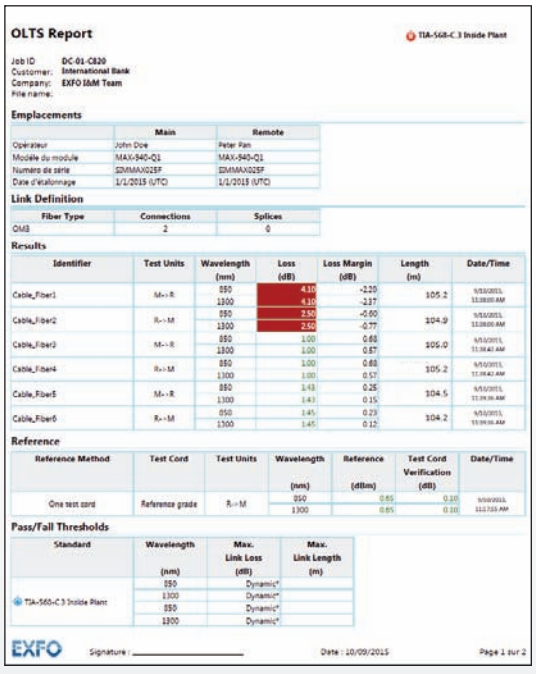
ONBOARD MULTISTANDARD CERTIFICATION

The FTBx-940/945 Fiber Certifier lets you certify to both cabling and application standards simultaneously. You can therefore certify the cabling (i.e., the physical quality of the fiber and its components, such as splices and connectors), as well as the application that the fiber can carry; for instance, IEEE or Fibre Channel.

ONBOARD PDF REPORTING

The FTBx-940/945 Fiber Certifier comes with onboard PDF reporting to convert multiple measurements into a single professional report in a format recognized by industry standards. The reporting includes clear pass/fail certification status against the multiple standards tested, and a summary of the measurements with margins, anomalies, test-cord references and verification.

This feature serves as a natural complement to our FastReporter 2 PC-based software designed for batch processing of high-count fiber and multiple measurement combinations (e.g., connector certification, loss and OTDR).



OLTS Report

TIA-568-C.3 Inside Plant

Job ID: DC-01-CB20
Customer: International Bank
Company: EXFO I&M Team
File name:

Emplacements

	Main	Remote
Opérateur	John Doe	Peter Pan
Modèle du module	MAX-940-Q1	MAX-940-Q1
Numéro de série	SIMMAX025F	SIMMAX025F
Date d'étalonnage	1/1/2015 (UTC)	1/1/2015 (UTC)

Link Definition

Fiber Type	Connections	Splices
OM3	2	0

Results

Identifier	Test Units	Wavelength (nm)	Loss (dB)	Loss Margin (dB)	Length (m)	Date/Time
Cable_Fiber1	M->R	850	4.10	-2.20	105.2	9/10/2015, 11:38:00 AM
		1300	4.10	-2.37		
Cable_Fiber2	R->M	850	2.50	-0.60	104.9	9/10/2015, 11:38:00 AM
		1300	2.50	-0.77		
Cable_Fiber3	M->R	850	1.00	0.68	105.0	9/10/2015, 11:39:42 AM
		1300	1.00	0.67		
Cable_Fiber4	R->M	850	1.00	0.68	105.2	9/10/2015, 11:39:42 AM
		1300	1.00	0.57		
Cable_Fiber5	M->R	850	1.43	0.25	104.5	9/10/2015, 11:39:36 AM
		1300	1.43	0.15		
Cable_Fiber6	R->M	850	1.45	0.23	104.2	9/10/2015, 11:39:36 AM
		1300	1.45	0.12		

Reference

Reference Method	Test Cord	Test Units	Wavelength (nm)	Reference (dBm)	Test Cord Verification (dB)	Date/Time
One test cord	Reference grade	R->M	850	0.65	0.10	9/10/2015, 11:27:55 AM
			1300	0.65	0.10	

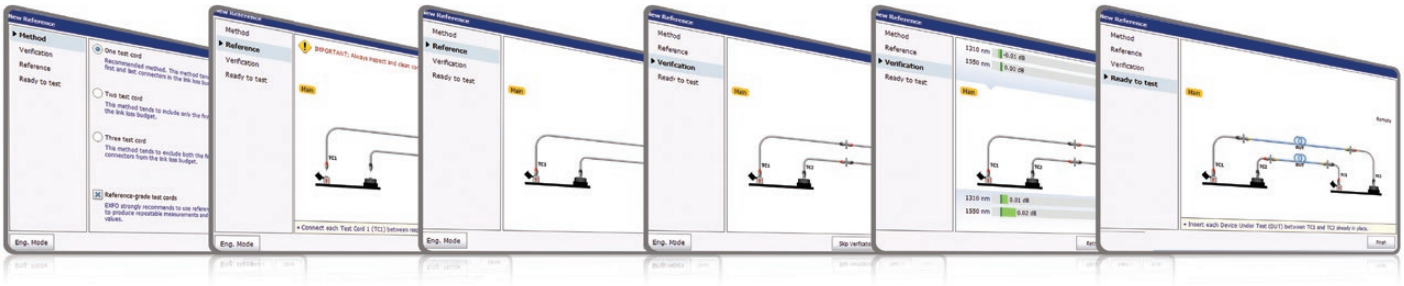
Pass/Fail Thresholds

Standard	Wavelength (nm)	Max. Link Loss (dB)	Max. Link Length (m)
TIA-568-C.3 Inside Plant	850	Dynamic*	
	1300	Dynamic*	
	850	Dynamic*	
	1300	Dynamic*	

EXFO Signature: _____ Date: 10/09/2015 Page 1 sur 2

ONBOARD ASSISTANCE AND DIAGNOSIS

The FTBx-940/945 Fiber Certifier provides a foolproof method against test-cord reference mistakes and negative loss thanks to its step-by-step wizard that guides technicians through the referencing and verification process, as per industry standards. The FTBx-940/945 Fiber Certifier goes even further by diagnosing the possible causes for fail results and provides guidance to fix issues.



BUILT-IN ENCIRCLED FLUX COMPLIANCY

Each Fiber Certifier comes with a built-in Encircled Flux (EF)-compliant multimode light source. Furthermore, in order to maximize measurement accuracy and avoid invalid results, EXFO designed reference-grade test cords in compliance with ISO/IEC 14763-3 standard requirements.

EXFO's test cords are made from reference-grade connectors, and the fiber used is strictly controlled to ensure proper core size and geometry. For multimode testing, this makes it possible to remain within Encircled Flux template limits at the output of the test cord, without the need for an external EF-mode conditioner. These high-quality, reference-grade test cords are less fragile and less expensive than EF-conditioned test cords, helping to reduce your overall equipment cost of ownership.

EXFO's test cords are also color-coded to prevent manipulation errors when they are connected to the test ports and device under test. The user interface displays animated instructions with the same color codes to facilitate the test process.

THREE YEARS OF PEACE OF MIND FOR REPAIRS AND CALIBRATION

The FTBx-940/945 Fiber Certifier has been rigorously tested to guarantee the highest standards of reliability and durability. This is why we feel so confident about offering a warranty and a recommended calibration interval of three years.

You can safely use this highly-reliable instrument for accurate test results while significantly reducing your certifier's cost of ownership (your cost of calibration and the related downtime will be divided by a factor of three).

Quad Option for Multimode Units

The FTBx-940/945 Fiber Certifier multimode units offer maximum flexibility by featuring a unique quad-ready ability. Upgrading to the quad option is easy and instantaneous thanks to a software key that activates singlemode wavelengths that are precalibrated at the factory to enable you to test singlemode fibers immediately after the upgrade, without any other constraints. This will save you both time and money.

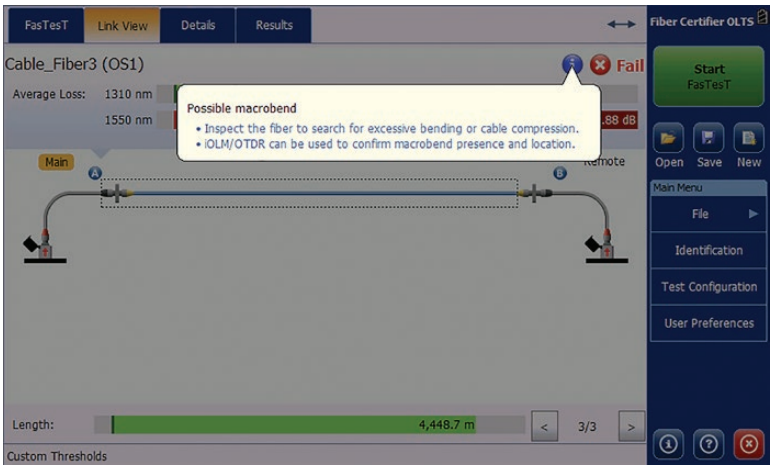
Test Efficiency

- FasTesT™: acquisition time less than three seconds
- Online reporting–live from the field
- Maximum simplicity and fast-learning curve with onboard user assistance:
  - **Port LED indicators**: guide the user through the referencing and testing processes. LED indicators show the user on which optical port to connect the fiber and a beep indicates that the connection is established to confirm continuity.
  - **On-board diagnosis**: throughout the referencing and testing processes, the instrument delivers real-time information on the test cord health as well as pass/fail results according to pre-set or custom criteria. When performing testing, the instrument delivers diagnosis about the loss, length and can even identify the presence of a macrobend (refer to side picture).
  - **Margin meters**: indicate the result status as well as the margin according to preset thresholds.

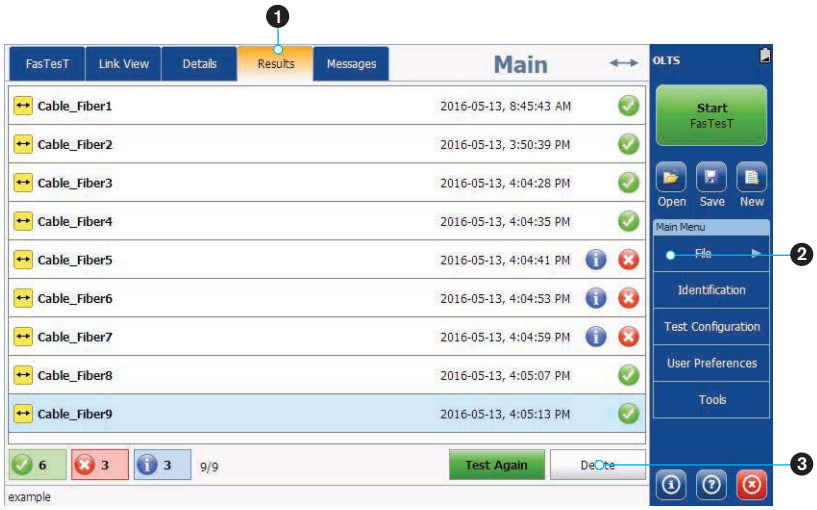
- The FTBx-940/945 includes a *Test Again* feature allowing the user to re-test bad fibers in three easy steps:
  1. Go back to test results
  2. Quickly and correctly identify the bad fiber by looking at the pass/fail status
  3. Press *Test Again*

Optimized Test Sequence

- **Real-time continuity feature:** The main and remote units emit visual and audible signals to let the technicians on both ends know that a connection has been established on the specific fiber under test. This also allows the technicians to start the test right away, saving time on each fiber tested.
- **Text messaging capabilities:** Allows users to send text messages through the fiber under test faster than other test sets in the industry.



On-board diagnosis helps the technician take proper action



See results clearly and test again easily

1. ***Results*** tab lists all the fibers tested in a cable
2. Pass/Fail status indicated under ***Results***
3. ***Test Again*** button allows for testing a "failed fiber" using the same settings

FULLY AUTOMATED FIBER INSPECTION PROBE

Neglecting to clean, inspect and certify connectors can lead to serious, time-consuming problems accounting for up to 80% of network failures.

With its two full-fledged units, the FTBx-940/945 Fiber Certifier lets you certify connectors at both ends of the fiber, in the same workflow as the Tier-1 certification. Accordingly, it is now easy to include connector certification in your regular method of procedures without compromising the efficiency of your technicians. You'll no longer leave any stones unturned or any connectors uninspected!

Years of experience in the field has given EXFO the insight and expertise to re-engineer a truly unique and innovative fiber inspection probe that greatly simplifies and speeds up this critical step.

Housing a unique automatic focus-adjustment system, the FIP-400B automates each operation in the connector endface inspection sequence. **The result: fiber inspection is now a quick, one-step process that can be performed by technicians of all skill levels.**

FIVE MODELS TO FIT YOUR BUDGET

The FIP-410B: offers all the basic inspection features needed for manual inspection only.

The semi-automated FIP-420B: has the same features as the FIP-430B, without the automated focus adjustment.

The semi-automated FIP-425B: the wireless version of the semi-automated FIP-420B.

The FIP-430B: complete and fully automated feature set that includes the powerful fiber image-centering system, focus adjustment and optimization, and onboard pass/fail analysis.

The FIP-435B: go one step further with the wireless probe. Includes all FIP-430B features.

100% Automated [a] | **1-step** Process [a] | **57%** Shorter Test Time [b]

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	√	√

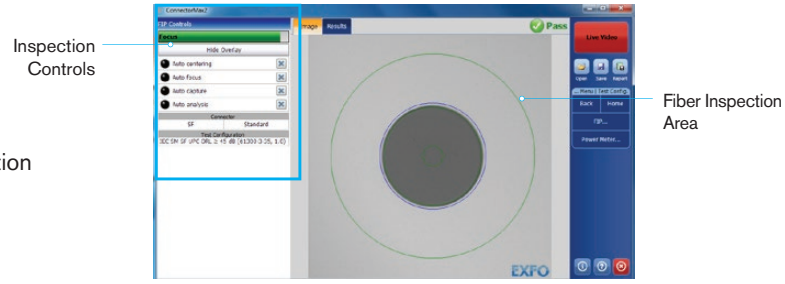
Notes

a. Models FIP-430B and FIP-435B.

b. Data sourced from EXFO's case study, with calculation based on typical analysis time.

POWERFUL CONNECTOR ENDFACE IMAGE VIEWING AND ANALYSIS SOFTWARE

- Automatic pass/fail analysis of the connector endfaces
- Lightning-fast results in seconds with simple one-touch operation
- Complete test reports for future referencing
- Stores images and results for record-keeping



FAST TRACK DATA POST-PROCESSING WITH FastReporter2

Optical test-data analysis involves various challenges, whether for loss, OTDR and iOLM testing, or connector inspection. Designed for off-line analysis, EXFO's FastReporter 2 offers reliable data and report management in a user-friendly environment. This unit packs all the essentials to boost efficiency and productivity for all your optical tests.

CHALLENGE NO. 1 | EDITING MULTIPLE MEASUREMENT FILES

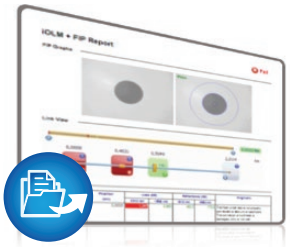
Close your jobs faster

Measurements often require extra processing in order to perform proper analysis, and ultimately document and report jobs appropriately. FastReporter 2 includes a series of powerful tools that automate repetitive operations on an unlimited number of files via batch operations.

CHALLENGE NO. 2 | ANALYZING MULTIPLE MEASUREMENT FILES

Wrong limits? Simply recertify

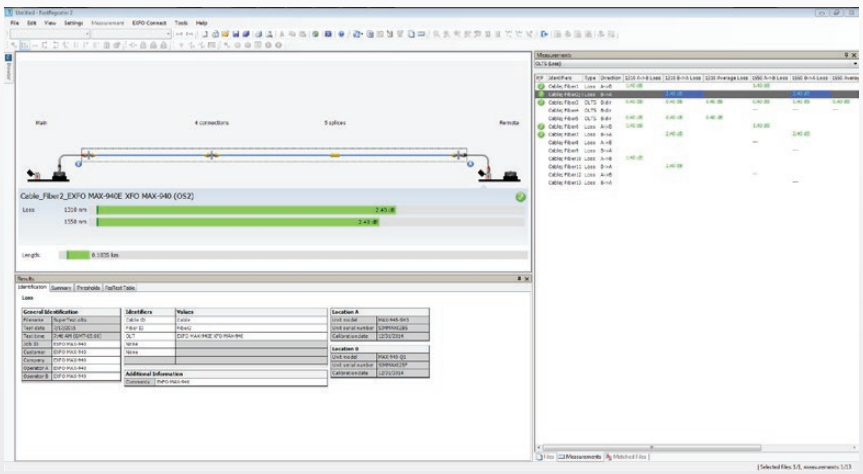
Setting up the wrong limits by selecting the wrong standard or the wrong project is no longer an issue. FastReporter 2 allows you to reset the limits and re-analyze the results to obtain the certification that you need. Instead of redoing tests, you can move on to other projects.



CHALLENGE NO. 3 | DOCUMENTING YOUR WORK

Create your report fast and like a pro

FastReporter 2 generates professional, customized reports containing all test measurements under multiple formats (PDF, HTML and XLS). Your customer can now easily see and validate the quality of your work.



SOFTWARE TEST TOOLS

This series of platform-based software testing tools enhances the value of the FTB-2 platform, 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.

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
WiFi, 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!

POWER METER SPECIFICATIONS [a]

Input connector	Interchangeable adapter (LC, SC or FC) [b]
Detector type	InGaAs
Uncertainty [c]	±(5 % + 32 pW)
Measurement range (dBm)	5 to −75
Calibrated wavelengths (nm)	8850, 1270, 1290, 1300, 1310, 1330, 1350, 1370, 1383, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590, 1610, 1625, 1650
Tone detection (Hz)	270/330/1000/2000

SOURCE SPECIFICATIONS

Output power (dBm) [d]	Multimode: −25 Singlemode: 2.5
Output power stability (dB)	±0.05 over 8 h
Spectral width (FWHM) (nm)	850 nm: 30 to 60 1300 nm: 100 to 150

FasTesT™ LOSS/LENGTH SPECIFICATIONS [a]

Testing speed [d]	FasTesT™ Duplex: 3 seconds (two wavelengths, one direction, automated, IL + fiber length) FasTesT™ Simplex: 5 seconds (two wavelengths, bidirectional, automated, IL + ORL + fiber length)
Input/Output connectors	Interchangeable adapter (LC, SC or FC) [b]
Wavelengths (nm) [d]	MM (LED): 850 ± 20, 1300 ± 20 SM (Laser): 1310 ± 20, 1550 ± 20
Launch condition [e]	EF compliancy guaranteed at multimode source port Within TIA-526-14-B, ISO/IEC 14763-3 and IEC 61280-4-1 Encircled Flux template limits at the end of an EXFO reference-grade 50/125 µm test cord
Length measurement range (km)	Multimode: 20 [f] Singlemode: 200
Length measurement uncertainty [d, g]	±(0.5 m + 0.5 % x length)
ORL measurement range (dB) [d, h]	50
ORL measurement uncertainty (dB) [d, h, i]	± 1

Notes

a. At 23 °C ± 1 °C and 1550 nm, on batteries and after 15 minutes of warm up, unless specified otherwise.
b. Specifications are provided with FC type connectors.
c. Uncertainty is valid at calibration conditions.
d. Typical.
e. Measured at 850 nm with SC connector.
f. At 1300 nm.
g. In duplex.
h. ORL measurement available on MAX-945 singlemode wavelengths only.
i. No discrete reflectance greater than −65 dB. Up to 45 dB

LASER SAFETY

GENERAL SPECIFICATIONS

Size (H x W x D)		158 mm x 25 mm x 196 mm (6 ¼ in x 1 in x 7 ¾ in)
Weight		0.4 kg (0.9 lb)
Temperature	Operating Storage	0 °C to 50 °C (32 °F to 122 °F) −30 °C to 70 °C (−22 °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.

ORDERING INFORMATION

FTBx-940-XX-XX

Model
FTBx-940 = Fiber Certifier OLTS

Optical configuration
ICERT-SM1 = Singlemode OLTS 1310/1550 nm
ICERT-Q1 = Multimode OLTS 850/1300 nm
ICERT-Q1-QUAD = Quad OLTS 850/1300 nm; 1310/1550 nm

Optical connector [a]
EA-EUI-89 = APC/FC
EA-EUI-91 = APC/SC
EA-EUI-98 = APC/LC
EI-EUI-89 = UPC/FC
EI-EUI-91 = UPC/SC
EI-EUI-98 = UPC/LC

Example: FTBx-940-ICERT-Q1-QUAD-EI-EUI-91

Note

a. EUI adapters are the same on SM, MM source ports and power meter ports. Multimode connectors are always UPC.

ORDERING INFORMATION

FTBx-945-XX-XX

Model
FTBx-945 = Fiber Certifier OLTS

Optical configuration
ICERT-Q1-QUAD = Quad
Port 1: 850/1300 nm IL and length measurement
Port 2 : 1310/1550 nm IL, length and ORL measurement

Connector [a]
EA-EUI-89 = APC/FC narrow key
EA-EUI-91 = APC/SC
EA-EUI-98 = APC/LC
EI-EUI-89 = UPC/FC [b]
EI-EUI-91 = UPC/SC [b]
EI-EUI-98 = UPC/LC [b]

Example: FTBx-945-ICERT-Q1-QUAD-EA-EUI-91

Notes

a. Connector adapters are the same on singlemode source ports, multimode source ports and power meter ports. Multimode connectors are always UPC.

b. An hybrid REF Grade Test Cord will be supplied when EI (UPC) interfaces is required.

EA CONNECTORS

To maximize the performance of your FTBx-945 ORL measurements, APC connectors are mandatory on the singlemode port. These connectors generate lower reflectance, which is a critical parameter that affects performance for ORL measurement. APC connectors provide better performance than UPC connectors, thereby improving testing efficiency.

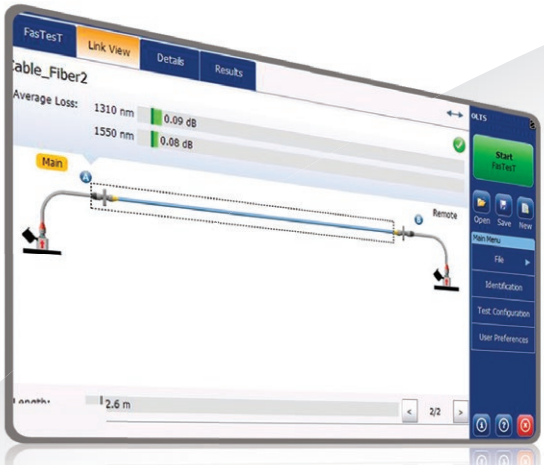
EXFO Headquarters > Tel.: +1 418 683-0211 | Toll-free: +1 800 663-3936 (USA and Canada) | Fax: +1 418 683-2170 | info@EXFO.com | www.EXFO.com

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

SPFTBX940/945ICERT.2AN Printed in Canada 17/10

FTBx-940/945 Telco OLTS

FULLY AUTOMATED FasTesT™ BIDIRECTIONAL MEASUREMENTS FOR INSERTION LOSS, OPTICAL RETURN LOSS AND FIBER LENGTH



FASTEST

EF COMPLIANT

ConnectorMax2

EXFO Connect

SPEC SHEET

Multifunction optical loss test set (OLTS) measuring insertion loss (IL), optical return loss (ORL) and fiber length at two wavelengths in 5 seconds via fully automated bidirectional FasTesT™ analysis.

KEY FEATURES

- Unmatched FasTesT™ performances: 100% automated bidirectional test at two wavelengths under 5 seconds
- 100% automated fiber inspection: one-step process with pass/fail analysis at both fiber ends
- On-board assistant and diagnosis to reduce reference errors and negative loss
- Improved short fiber measurement
- On-board professional PDF reporting
- Compatible with the FTB-2 and FTB-2 PRO platforms.
- Best-in-class singlemode distance range of 200 km
- EXFO Connect-ready

APPLICATIONS

- FTTx construction
- Telecommunications and outside plant networks testing
- Data centers
- Enterprise structured cabling

COMPLEMENTARY PRODUCTS

Platform
FTB-2/FTB-2 Pro

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

OTDR/iOLM
FTBx-720C QUAD OTDR/iOLM

EXFO

THE NEXT GENERATION OF AUTOMATED OLTS: MORE FEATURES, GREATER PERFORMANCE

Ever since its introduction in 1996, the patented FasTesT™ technology revolutionized the industry by fully automating the test sequence, saving countless hours of testing and troubleshooting in the field. Proven in thousands of diverse network deployments across the globe, FasTesT™ truly enables CAPEX/OPEX savings.

THE BENEFITS

Trustworthy Test Results

Fully automated fiber inspection

Fiber inspection is at the heart of ensuring that accurate references and measurements can be made. The FTBx-940/945 integrates EXFO's fully automated line of fiber inspection probes to assess and certify connector health within a few seconds. EXFO's FIP-430B (USB) and FIP-435B (wireless) rely on elaborate algorithms that do the hard work for you to automatically center, focus, capture and analyze the connector image. No user intervention needed: achieve repeatable and accurate inspection, 100% of the time.

On-board, step-by-step animated reference assistant

Accurate and repeatable test results start with proper test cord referencing. Accurate referencing greatly reduces common mistakes often encountered in the field. Thanks to the reference assistant's animated and interactive interface this step of the testing sequence is now as simple and easy as can be.

Test shorter links than ever before

Thanks to highly accurate optics, this OLTS can test with extreme precision short links with very low loss.

EXFO's patent-pending, one-cord Simplex reference method

Greatly reduces test uncertainty for greater test accuracy, which is a key factor when testing short fiber links such as drop fibers in FTTH networks.

Test Efficiency

› FasTesT™: acquisition time in five seconds

› Online reporting–live from the field

› Maximum simplicity and fast-learning curve with on-board user assistance:

  › **Port LED indicators**: guide the user through the referencing and testing processes. LED indicators show the user on which optical port to connect the fiber and a beep indicates that the connection is established to confirm continuity.

  › **On-board diagnosis**: throughout the referencing and testing processes, the instrument delivers real-time information on the test cord health as well as pass/fail results according to pre-set or custom criteria. When performing testing, the instrument delivers diagnosis about the loss, length and can even identify the presence of a macrobend (refer to side picture).

  › **Margin meters**: indicate the result status as well as the margin according to preset thresholds.

› The FTBx-940/945 includes a *Test Again* feature allowing the user to re-test bad fibers in three easy steps:

  1. Go back to test results
  2. Quickly and correctly identify the bad fiber by looking at the pass/fail status
  3. Press *Test Again*

Optimized Test Sequence

› **Real-time continuity feature:** The main and remote units emit visual and audible signals to let the technicians on both ends know that a connection has been established on the specific fiber under test. This also allows the technicians to start the test right away, saving time on each fiber tested.

› **Text messaging capabilities:** Allows users to send text messages through the fiber under test faster than other test sets in the industry.

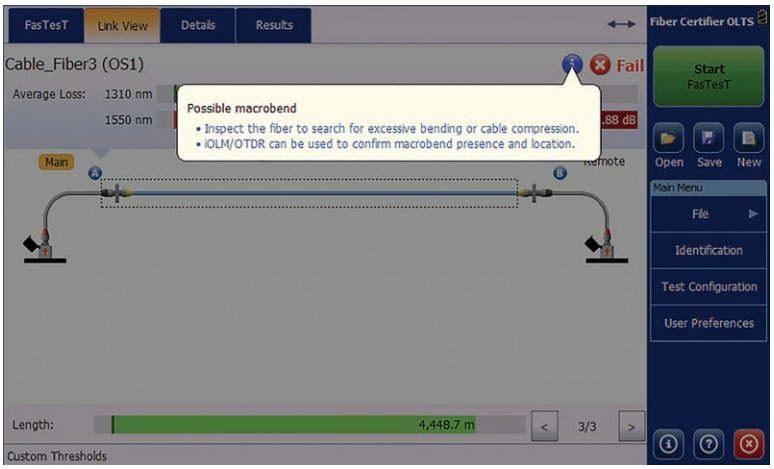


Figure 1. On-board diagnosis helps the technician take proper action

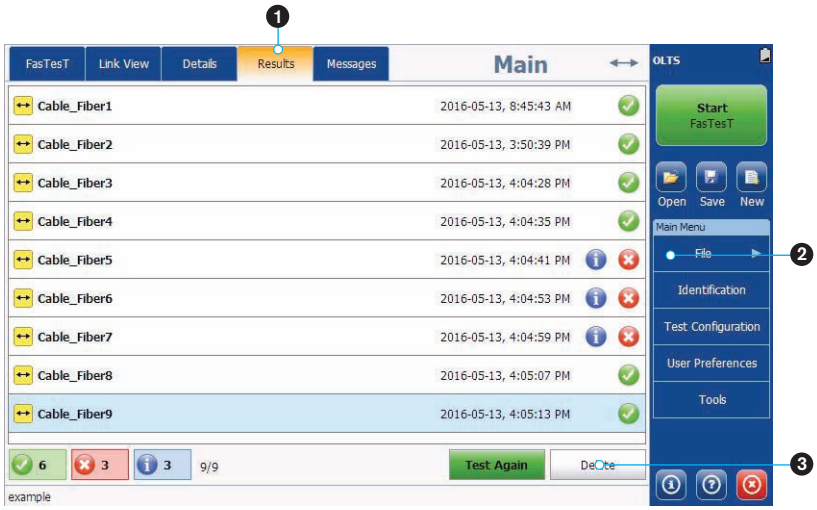


Figure 2. See results clearly and test again easily

❶ ***Results*** tab lists all the fibers tested in a cable

❷ Pass/Fail status indicated under ***Results***

❸ ***Test Again*** button allows re-testing a "failed fiber" using the same settings

Figure 3. Continuity feature

SOFTWARE TEST TOOLS

This series of platform-based software testing tools enhances the value of the FTB-2 platform, 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.

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
WiFi, 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!

KEEP YOUR CONNECTORS CLEAN. KEEP YOUR NETWORK RUNNING SMOOTHLY.

AUTOMATION AT YOUR FINGERTIPS

In combination with EXFO's automated fiber inspection probes and backed by FasTesT™, the FTBx-940/945 OLTS allows for 100% automated fiber inspection at both ends of the fiber link.

DISCOVER THE INDUSTRY'S FIRST FULLY AUTOMATED FIBER INSPECTION PROBE

Housing a unique automatic focus adjustment system, the FIP-400B automates each operation in the sequence of inspecting a connector endface. The result: **fiber inspection is now a quick, one-step process that can be performed by technicians of all skill levels**.

FIVE MODELS TO FIT YOUR BUDGET

- **The FIP-430B**: complete and fully automated feature set, includes the powerful fiber image-centering system, focus adjustment and optimization, and on-board pass/fail analysis.
- **The FIP-435B**: go one step further with the wireless probe. Includes all FIP-430B features.
- **The semi-automated FIP-420B**: same features as the FIP-430B, without the automated focus adjustment.
- **The semi-automated FIP-425B**: wireless version of the semi-automated FIP-420B.
- **The FIP-410B**: all basic inspection features needed for manual inspection only.

100% Automated [a]

1-step Process [a]

57% Shorter Test Time [b]

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	√	√

POWERFUL CONNECTOR ENDFACE IMAGE VIEWING AND ANALYSIS SOFTWARE

- Automatic pass/fail analysis of the connector endfaces
- Lightning-fast results in seconds with simple one-touch operation
- Complete test reports for future referencing
- Stores images and results for recordkeeping

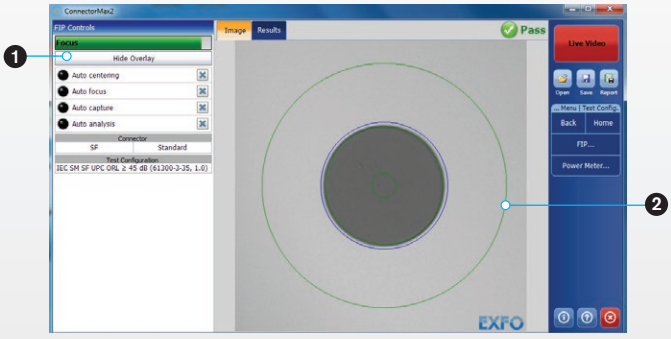


Figure 4. Clear pass/fail results

1 Inspection Controls 2 Fiber Inspection Area

Notes

a. Models FIP-430B and FIP-435B.

b. Data sourced from EXFO's case study, with calculation based on typical analysis time.

FAST TRACK DATA POST-PROCESSING WITH FastReporter 2 (OPTIONAL)

ONE SOFTWARE DOES IT ALL

This powerful reporting software is the perfect complement to your FTBx-940/945 OLTS. It allows you to create and customize reports to fully address your needs. Being able to rely on a single software to manage all your data and generate all your reports for your entire optical-layer test applications is your best option for maximum efficiency. FastReporter 2 was designed to handle everything for you.

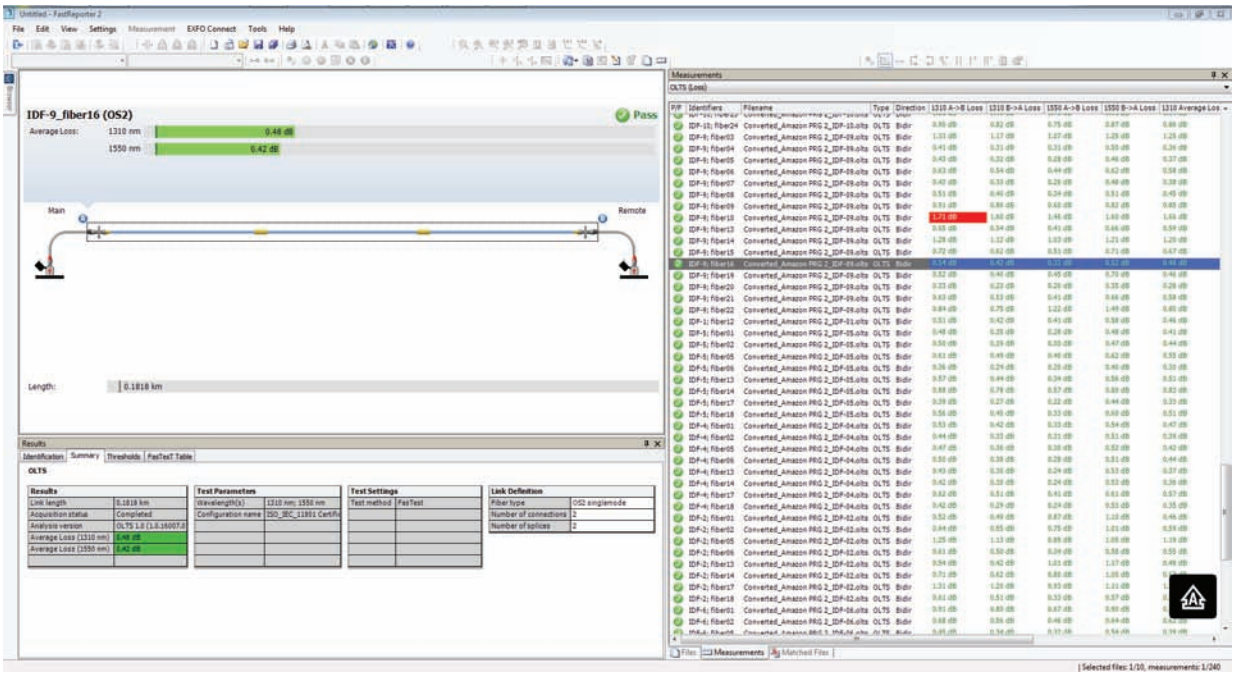


Figure 5. FastReporter 2 takes care of all the documenting and reporting for you

CHALLENGE NO. 1 — EDITING MULTIPLE MEASUREMENT FILES

Batch documenting

- Document an entire project/cable
- Manage separate measurements simultaneously

Batch standardization

- Adjust cable and fiber parameters
- Add/remove OTDR events
- Adjust detection thresholds
- Perform manual measurements on OTDR files
- Set pass/fail thresholds

CHALLENGE NO. 2 — ANALYZING MULTIPLE MEASUREMENT FILES

Specialized analysis tool to:

- Perform OTDR-iOLM bidirectional batch analysis
- Detect duplicated measurements
- Easily identify results that don't meet network requirements
- Apply new configurations, threshold and/or standards in batch

CHALLENGE NO. 3 — DOCUMENTING YOUR NETWORK

Flexibility

- Various report templates and formats (PDF, Excel, HTML)
- Report customization via Excel or Crystal Reports
- Combined reports such as:
  - Fiber characterization (CD, PMD, OTDR and OLTS)
  - OTDR and fiber inspection (FIP)
  - iOLM and fiber inspection (FIP)

POWER METER SPECIFICATIONS [a]

Detector type	InGaAs
Uncertainty [b]	±(5 % + 32 pW)
Measurement range (dBm)	5 to −75
Calibrated wavelengths (nm)	850, 1270, 1290, 1300, 1310, 1330, 1350, 1370, 1383, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590, 1610, 1625, 1650
Tone detection (Hz)	270/330/1000/2000

SOURCE SPECIFICATIONS [a]

Output power (dBm) [c]	Multimode (850 nm/1300 nm): −25 SM1 (1310 nm/1550 nm): 2.5 SM3 (1310 nm/1550 nm/1625 nm): 1 / −1 / −5 SM4 (1310 nm/1490 nm/1550 nm): 1 / −5 / −1
Output power stability (dB)	±0.05 over 8 h
Spectral width (FWHM) (nm)	850 nm: 30 to 60 1300 nm: 100 to 150

FasTesT™ LOSS/LENGTH SPECIFICATIONS [a]

Testing speed [c]	FasTesT™ Simplex: 3 seconds (two wavelengths, bidirectional, automated, IL + fiber length) FasTesT™ Simplex: 6 seconds (three wavelengths, bidirectional, automated, IL + ORL + fiber length)	
Wavelengths (nm) [c]	Multimode (LED) 850 ± 20 1300 ± 20	Singlemode (Laser) 1310 ± 20 1490 ± 10 1550 ± 20 1625 ± 10
Launch condition [d]	Encircled Flux (EF) compliancy guaranteed at 50/125 µm multimode source port. Within TIA-526-14-B, ISO/IEC 14763-3 and IEC 61280-4-1 EF template limits at the end of an EXFO reference-grade 50/125 µm test cord.	
Loss range (dB) [e]	Multimode: 20 Singlemode Simplex: 45 Singlemode Duplex: 50	
Length measurement range (km) [f]	Multimode: 20 Singlemode: 200	
Length measurement uncertainty [c]	Duplex: ±(0.5 m + 0.5 % x length) Simplex: ±(1 m + 0.5 % x length)	
ORL measurement range (dB) [c]	50	
ORL measurement uncertainty (dB) [c, g]	±1	

Notes

a. All specifications valid at 23 °C ± 1 °C and 1550 nm, on batteries and after 15 minutes of warm up, unless otherwise specified.
b. Uncertainty is valid at calibration conditions.
c. Typical.
d. Measured at 850 nm with SC connector.
e. Typical value, at 850 nm for multimode and 1550 nm for singlemode.
f. At 1300 nm for multimode and 1550 nm for singlemode.
g. No discrete reflectance greater than −65 dB. Up to 45 dB.

LASER SAFETY

GENERAL SPECIFICATIONS

Size (H x W x D)		158 mm x 25 mm x 196 mm (6 ¼ in x 1 in x 7 ¾ in)
Weight		0.4 kg (0.9 lb)
Temperature	Operating Storage	0 °C to 50 °C (32 °F to 122 °F) −30 °C to 70 °C (−22 °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.

ORDERING INFORMATION

FTBx-940-XX-XX

Model
FTBx-940 = OLTS

Optical configuration
SM1 = Singlemode 1310/1550 nm, IL

Connector [a]
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
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

Example: FTBx-940-SM1-EI-EUI-89

Notes

a. Power meter connector type is the same as the EUI connector type.

ORDERING INFORMATION

FTBx-945-XX-XX

Model
FTBx-945 = OLTS

Optical configuration
SM1 = Singlemode 1310/1550 nm, IL and ORL
SM3 = Singlemode 1310/1550/1625 nm, IL and ORL
SM4 = Singlemode 1310/1490/1550 nm, IL and ORL
ICERT-Q1-QUAD = QUAD 850/1300/1310/1550 nm, IL and ORL

Connector [a]
EA-EUI-28 = APC/DIN 47256 [c]
EA-EUI-89 = APC/FC narrow key
EA-EUI-91 = APC/SC
EA-EUI-95 = APC/E-2000 [c]
EA-EUI-98 = APC/LC
EI-EUI-89 = UPC/FC [b]
EI-EUI-91 = UPC/SC [b]
EI-EUI-98 = UPC/LC [b]

Example: FTBx-945-SM1-EA-EUI-91

Notes

a. Connector adapters are the same on singlemode source ports, multimode source ports and power meter ports. Multimode connectors are always UPC.

b. An hybrid REF Grade Test Cord will be supplied when EI (UPC) interfaces is required.

c. Not available for iCERT model.

EA CONNECTORS

To maximize the performance of your FTBx-945 ORL measurements, APC connectors are mandatory on the singlemode port. These connectors generate lower reflectance, which is a critical parameter that affects performance for ORL measurement. APC connectors provide better performance than UPC connectors, thereby improving testing efficiency.

EXFO Headquarters > Tel.: +1 418 683-0211 | Toll-free: +1 800 663-3936 (USA and Canada) | Fax: +1 418 683-2170 | info@EXFO.com | www.EXFO.com

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

SPFTBX940/945TELCO.1AN Printed in Canada 16/12