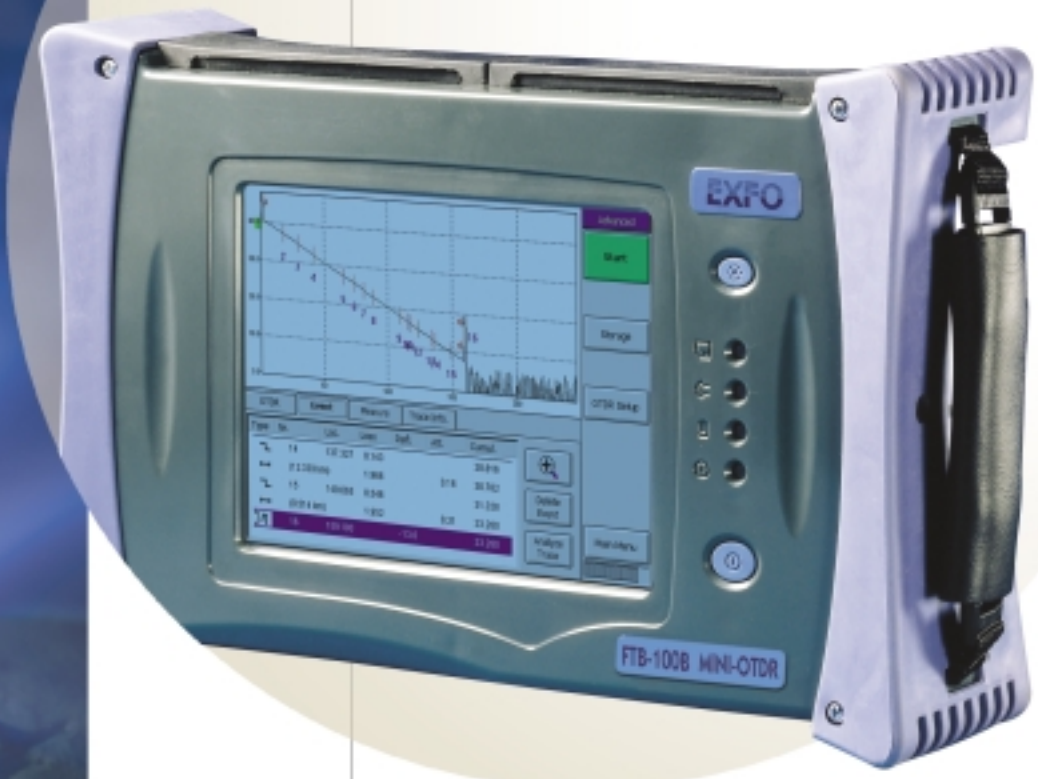
Mini-OTDR

FTB-100B

- Rugged, splashproof unit
- Modular design for field use
- High-quality touchscreen
- Wide variety of OTDR modules

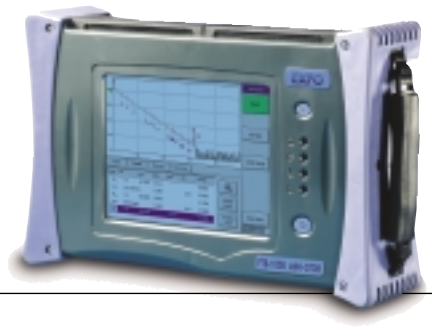


Fiber-optic test, measurement and monitoring instruments

EXFO

High-Performance OTDR in an Easy-to-Use Package

The FTB-100B is a mini-OTDR that supports all of EXFO's OTDR modules. The FTB-100B has the features you need, whether you're an intensive or occasional OTDR user.



Key Features

- Monochrome or color screen
- Integrated Power Meter
- Internal memory of 700 traces
- Additional storage capacity up to 6000 traces
- Standard floppy drive and PCMCIA port
- Over eight hours battery operating time

Rugged Platform

The FTB-100B is built to handle the harshest field conditions. Its sturdy design lets it absorb the hits and shocks that are par for the course in outside plant testing. Splashproof casing makes the FTB-100B a high-performance, all-weather instrument.

Modular Flexibility

The FTB-100B hosts the OTDR module of your choice. Optical modules can be swapped without tools in a matter of seconds. Reconfigure the test set easily anywhere, anytime, as often as you need. FTB-100B modules are also compatible with the FTB-400 Universal Test System, so multiple users can share one module.

Durable Touchscreen

The FTB-100B's touchscreen gives fast access to all menus and functions with the FTB-100B's touchscreen, each function is only a touch away. Tested to endure over a million touches in one spot without failure, the touchscreen offers many times the durability of push buttons.

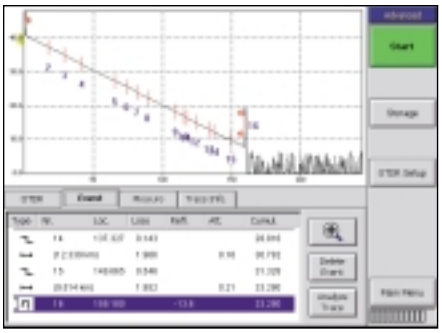
PC Connectivity

The FTB-100B is supported by Windows CE, a compact operating system used in personal digital assistant and palmtop PC products. Ideal for portable test equipment, Windows CE provides superior power management, data storage and transfer, and PC connectivity.

Top-of-the-Line OTDR Performance

EXFO offers a variety of singlemode OTDR modules at four essential wavelengths—1310 nm, 1550 nm, 1625 nm, and 1410 nm— to cover all fiber applications from long-haul and WDM to metropolitan networks. The FTB-100B is also ideal for LAN applications since it can host multimode OTDR modules.

EXFO's OTDR modules offer an impressive dynamic range with short dead zones to meet today's stringent network test requirements. OTDR modules perform rapid acquisitions with low noise levels to enable accurate low-loss splice location. An OTDR trace, consisting of up to 52 000 points, provides a sampling resolution as small as 8 cm. This unmatched sampling capability produces optimal resolution for even the longest distances. Each OTDR module provides a stable light source a power meter, as well as the option to add a visual fault locator.



High-Performance OTDR Modules

- Full range of singlemode and multimode modules
- Dynamic range up to 45 dB
- Dual-wavelength OTDR files
- Four-point loss measurements
- ORL calculation
- Pass/Fail test result validation
- Universal connector interface
- Visual fault locator

Integrated Power Meter

EXFO delivers another all-in-one solution. The FTB-100B comes complete with an integrated power meter to optimize your field performance and efficiency. This practical InGaAs detector power meter is as accurate as our popular handheld power meters and features calibrated wavelengths of 850 nm, 1300 nm, 1310 nm, 1550 nm and 1625 nm.

With one rugged platform, you can accurately measure insertion loss, and precisely detect and analyze splices, connectors, breaks and other events along a fiber.

With the integrated power meter, the FTB-100B now offer:

- Power measurement in dB, dBm, and Watts
- Easy wavelength selection
- Quick save
- Quick print

Professional DataManagement

- Convenient result tables
- Produce high-quality documents in minutes
- Download data to your PC or the FTB-400 via the RS-232 port
- Compatible with ToolBox Office multitest software
- View, export or print your data

A Complete OTDR Software Application

All the OTDR Modes You'll Need

The FTB-100B's OTDR software is designed for simplicity and automation. Three operation modes meet all your OTDR testing needs:

- Auto mode lets you select acquisition parameters automatically. Perfect for basic, repetitive OTDR applications or for occasional users.
- Advanced mode offers more flexibility with multiple setup and measurement capabilities. Change index of refraction and helix factor settings for optimal distance measurements.
- Template Trace mode compares each acquisition with a designated template for complete cable testing and documentation.

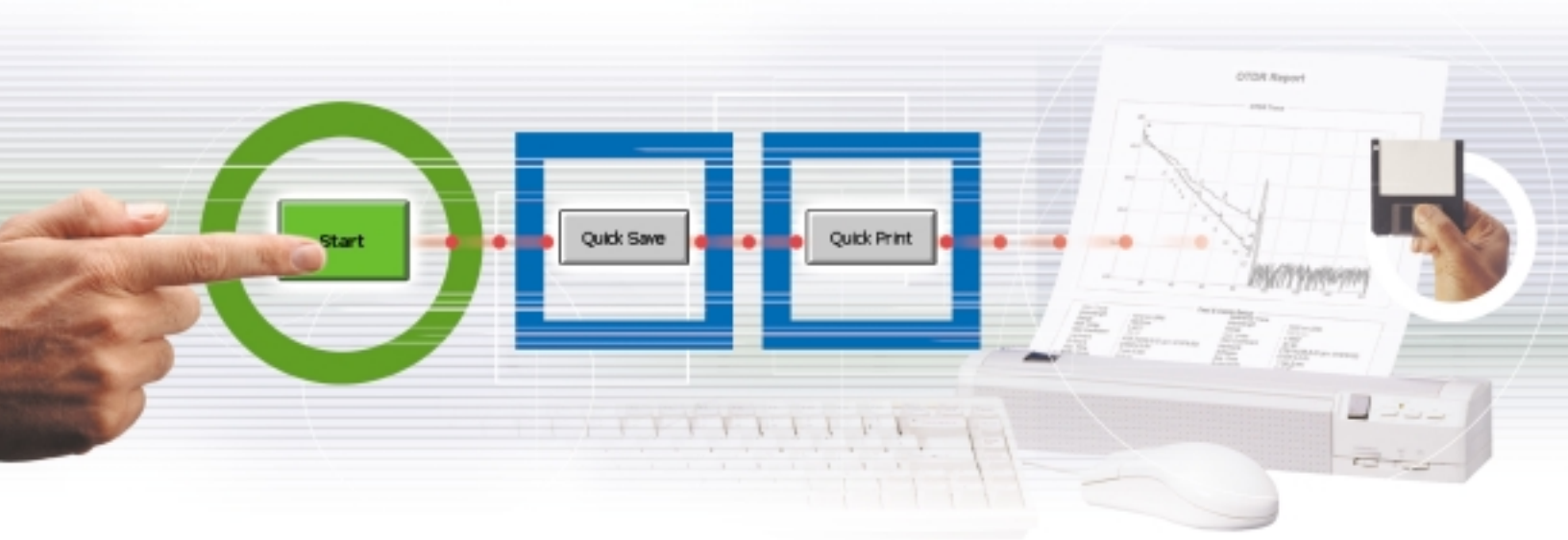
Automatic Data Synchronization

Downloading data between a mini-OTDR and a PC has never been easier. Connect the serial cable to the FTB-100B and data synchronization begins automatically.

Immediate Pass/Fail Test Result Validation

Submit fiber test results for Pass/Fail validation to ensure that data does not exceed user-defined thresholds such as splice loss, total loss, and backreflection. The OTDR automatically validates the results for faster, more reliable testing.

As easy as 1-2-3!



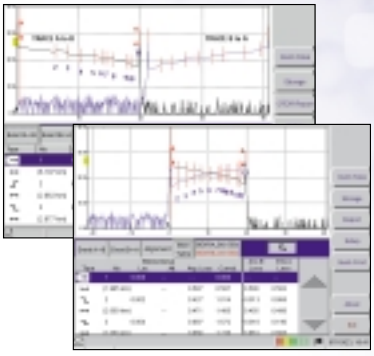
Press Start, *and Auto mode sets test parameters, performs single- or dual-wavelength OTDR testing, and issues detailed results.*

The one-button quick-save feature with automatic trace-naming completes the test routine.

The quick-print function automatically issues a complete test report.

ToolBox Office PC Emulation Software for Post-Processing

Performing data post-processing with optional ToolBox 5 Office software gives you more OTDR processing functions.



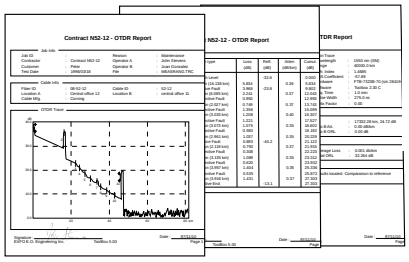
Bidirectional Trace Analysis*

Improve the accuracy of your loss measurements with the bi-directional averaging feature, which uses OTDR acquisitions from both ends of a fiber span to average loss results for each event.

** available on singlemode OTDRs only.*

Efficient Multifiber Testing with Template Trace

Cut testing time when commissioning a large number of fibers by using the template trace feature. Template trace dynamically compares new OTDR results with a trace you assign as a reference. Reference trace documentation is automatically pasted onto new acquisitions to save you time.



Professional Report Generation

User-configurable test reports and batch printing let you generate complete, professional OTDR reports quickly and efficiently.

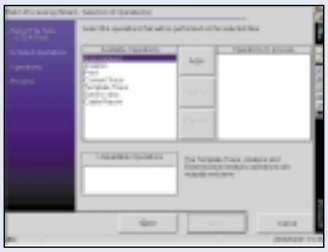
Export OTDR Files in Bellcore or ASCII Format

Save and load OTDR test results in the Bellcore-standard OTDR record format. Export results in ASCII or ASCII+ format to spreadsheet or word-processing applications.

More Power with ToolBox Office Pro

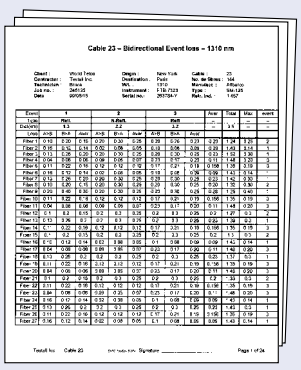
Optional ToolBox Office Pro software accelerates data post-processing by as much as 90 % with two key utilities: batch processor and cable report generator. ToolBox Pro is available in convenient CD format.

Batch Processor



- Data analysis
- File conversion
- Printing and saving
- Bidirectional OTDR averaging
- Template trace comparison
- Zoom function
- Document operation photo: batch processor screen shot

Cable Report Generator



- Event table compiles all event measurements
- Fiber table provides attenuation values for each fiber and fiber section of a cable
- Fault table lists all events and measurements exceeding user-defined thresholds
- Report available in PDF and Excel format

FTB-100B Mini-OTDR Specifications

Processor	Intel StrongArm, 206 MHz	
Interfaces	Serial RS-232C	Parallel printer
External	Keyboard PS/2	PCMCIA Type II
Internal memory[1]	32 MB total (700 traces typ.), standard	
Additional storage (optional)	PCMCIA flash cards, up to 6000 traces	
Floppy drive	3.5 inch floppy drive, 1.44 MB	
Display	Monochrome LCD touchscreen, 7.4 inches, 640 x 480, transflective Color LCD touchscreen, 7.7 inches, 640 x 480, 256 colors (optional)	
Touchscreen	Resistive, 8 wires Positional accuracy better than 2 %, full scale, worst-case error < ± 0.18 in Resistant to most common chemicals[2]	
External power supply	AC input: 100 to 240 V, 50 to 60 Hz	
Battery	Nickel metal-hydride (NiMH), rechargeable, smart (standard)	
Battery operating time[3]	8 hours – NiMH battery	
Recharge time	2.5 hours (off), 8 hours (on)	
Size	21.6 cm x 33.6 cm x 8.9 cm	(8 1/2 x 13 1/4 x 3 1/2 in)
Weight[4]	3.7 kg	(8.1 lb)
Operating temperature[5]	-5 °C to 50 °C	(23 °F to 122 °F)
Storage temperature[6]	-40 °C to 60 °C (-40 °F to 140 °F) (shipping)	-20 °C to 50 °C (-4 °F to 122 °F) (long term)
Relative humidity	0 - 95 % max. non-condensing	

Power Meter Specifications (InGaAs detector)

Calibrated wavelengths (nm)	850, 1300, 1310, 1550, 1625
Power range (dBm)	4 to -70
Uncertainty (%)	± 5 (0 to –46 dBm)
Linearity (dB)	± 0.05 (0 to –46 dBm)
	± 0.1 (–46 to –57 dBm)
Display resolution (dB)	0.01 (4 to –63 dBm)
	0.1 (–63 to –70 dBm)
Tone detection (Hz)	270/1000/2000

FTB-100B Product Information

Ordering Information and Price List (Platform)

Standard features
- 7.4 in monochrome LCD (transflective)
- Touchscreen display
- 700-trace internal OTDR storage (approx.)
- 3.5 in floppy drive
- PCMCIA interface for flash memory card
- Semi-rigid case (not included if rigid case is ordered)
- AC adapter/charger
- NiMH smart battery
- Serial cable: null modem cable, DB9F to DB9F
- Free software upgrades for one year

FTB-100B-N4-ZZ-Options

ZZ = Specify language choice:
GA = English, French, Spanish, Portuguese, German, and Italian
GB = Traditional Chinese, GA
GC = Simplified Chinese, GA
GD = Japanese, GA
GE = Korean, GA

D2 = 7.7 in color touchscreen
RC = Rigid carrying case (replaces standard, semi-rigid case)
PM-XX = Power Meter InGaAs detector XX: FOA-XX type selection

Notes:

1. With GB, GC, GD, and GE language options, total internal storage is 550 traces (typical).
2. Heptane, ethanol, isopropanol, acetone, methyl ethyl ketone, cellosolve acetate, toluene, carbitol acetate, hydrochloric acid, turpentine, Vm and naptha, unleaded gasoline, motor oil, diesel fuel, transmission fluid, antifreeze.
3. According to Bellcore TR-NWT-001138, with monochrome display.
4. FTB-100B with OTDR module and battery.
5. Excluding floppy drive (use is not recommended below 0 °C). OTDR module performance can be affected at sub-zero temperatures.
6. Excluding the battery.

Specify the FOA adapter type you wish to obtain.
(one free adapter included)
example: PM-22 for Power Meter option with FC type FOA

FOA-12	Biconic
FOA-14	D4: D4, D4/PC
FOA-16	SMA/905, SMA/906
FOA-22	FC: FC, FC(/PC/SPC/UPC/APC), NEC-D3
FOA-32	ST: ST, ST(/PC/SPC/UPC)
FOA-34	Mini-BNC
FOA-40	Diamond HMS-0, HFS-3 (3.5 mm)
FOA-54	SC: SC(/PC/SPC/UPC/APC)
FOA-84	Diamond HMS-10, HFS-13

For other FOA types, please contact EXFO

Accessories	
GP-10-034	Spare semi-rigid carrying case
GP-10-035	Spare rigid carrying case
GP-216	Null modem cable, DB9F to DB9F
GP-219	External keyboard
GP-225	FTB power cable for vehicle cigarette lighter (12 V)
GP-281	16 MB ATA flash card (500 traces typ.)
GP-282	32 MB ATA flash card (1000 traces typ.)
GP-283	80 MB ATA flash card (3000 traces typ.)
GP-284	160 MB ATA flash card (6000 traces typ.)
GP-285	Spare NiMH smart battery
GP-287(A-E-I-S-U)	External battery charger for smart battery (requires external AC adapter/charger) Specify: A-North America, E-Europe, I-India, S-Australia and New Zealand, U-United Kingdom
GP-288 (A-E-I-S-U)	Spare external AC adapter/charger for FTB-100B Specify: A-North America, E-Europe, I-India, S-Australia and New Zealand, U-United Kingdom
GP-297	CANON BJC-50 Printer including parallel cable Specify: A-North America, E-Europe, I-India, S-Australia and New Zealand, U-United Kingdom

OTDR Module Specifications

OTDR Multimode Module Specifications[1]

Wavelength (nm)	Dynamic range[2] (dB) at 100 ns/1 µs	Event dead zone[3] (m)	Attenuation dead zone[3] (m)	Model
850/1300 ±20	23/27 (C), 25/29 (D)	1.5/1.5	5/5	FTB-7212B-C or D

OTDR Singlemode Module Specifications[1]

Wavelength (nm)	Dynamic range[2] (dB) at 10 µs	Dynamic range[2] (dB) at 20 µs	Event dead zone[5] (m)	Attenuation dead zone[5] (m)	Model
1310/1550 ± 20/± 20	37.5/35.5	38.5/37.5	3/3	10/15	FTB-7323B-B
1310/1550 ± 20/± 20	40/38	41.5/39.5	3/3	10/15	FTB-7423B-B
1310/1550 ± 20/± 20	43.5/41.5[4]	45/43[4]	3/3	10/15	FTB-7523B-B
1410 ± 10	37	38.5	3	10	FTB-7405B-B
1550 ± 20	42	43.5	3	15	FTB-7503B-B-ER
1625 ± 10	35	36	3	16	FTB-7304B-B
1625 ± 10	38	39	3	16	FTB-7404B-B
1625 ± 10	40	41.5	3	16	FTB-7504B-B
1550/1625 ± 20/± 10	35.5/35	37.5/36	3/3	15/16	FTB-7334B-B
1550/1625 ± 20/± 10	40/38	40.5/39	3/3	15/16	FTB-7434B-B
1550/1625 ± 20/± 10	42/40	43.5/41.5	3/3	15/16	FTB-7534B-B

Other OTDR configurations are available. Contact your EXFO representative for more information.

General Specifications

Models		200B-C/D series	300B-B/400B-B/ 500B-B series
Distance range (km)		0.625, 1.25, 2.5, 5, 10, 20, 40	1.25, 2.5, 5, 10, 20, 40, 80, 160, 260
Pulse width (ns)	850 nm:	10, 30, 100	10, 30, 100, 275, 1000, 2500,
	1300 nm:	10, 30, 100, 275, 1000	10 000, 20 000
Linearity (dB/dB)		± 0.05	± 0.05
Loss threshold (dB)		0.01	0.01
Loss resolution (dB)		0.001	0.001
Sampling resolution (m)		0.08 to 5	0.08 to 5
Sampling points		Up to 16 000	Up to 52 000
Distance uncertainty[6]		± (1 m + 0.0025 % x distance)	± (1 m + 0.0025% x distance)
Measurement time		User-defined (60 min maximum)	User-defined (60 min maximum)
Real-time refresh		< 1 s	< 1 s
Stable source output power (dBm)		-7	-5
Visual fault locator (optional)		Laser, 650 ± 10 nm	Laser, 650 ± 10 nm
CW		P_{out} maximum: 800 µW	P_{out} maximum: 800 µW

Safety

21 CFR 1040.10	CLASS 1 LASER PRODUCT
IEC 60825-1: 1993+A1:1997	
FTB-7200B-C/D	CLASS 3A LASER PRODUCT
FTB-7300B-B	CLASS 1 LASER PRODUCT
FTB-7400B-B	CLASS 3A LASER PRODUCT
FTB-7500B-B	CLASS 3A LASER PRODUCT

Notes

1. All specifications are for a temperature of 23 °C (73 °F) with a FC/PC connector unless otherwise specified.
2. Typical dynamic range with a three-minute average at SNR=1.
3. Typical dead zone of multimode modules for reflectance below -35 dB, using a 10 ns pulse.
4. Typical dynamic range on NZDSF with a three-minute average at SNR = 1.
5. Typical dead zone of singlemode modules for reflectance below -45 dB, using a 10 ns pulse.
6. Does not include uncertainties due to fiber index and sampling resolution.

Ordering Information

FTB-7XXXB-X-XX-(VFL-XX)

X: Power level
- 2 = Low power[2]
- 3 = Regular power[3]
- 4 = High power[3]
- 5 = Ultra-high power[3]

XX: OTDR code
- 01 = 850 nm MM
- 02 = 1310 nm SM or 1300 nm MM[1]
- 03 = 1550 nm SM
- 04 = 1625 nm SM
- 05 = 1410 nm SM
- 12 = 850/1300 nm MM
- 23 = 1310/1550 nm SM
- 34 = 1550/1625 nm SM

XX: Connector code
- EI = UPC Universal Interface
- EA = APC Universal Interface

X: Fiber type
- B = Singlemode fiber 9/125 µm
- C = Multimode fiber 50/125 µm
- D = Multimode fiber 62.5/125 µm

VFL (Visual fault locator option)**-XX**
- 50 = FC/PC
- 54 = SC/PC
- 74 = ST/PC

EUI: The fixed baseplate (EI or EA) must be ordered with a removable universal connector adapter (**EUI-XX**). Please specify one EUI from the following list:

EUI-28 = DIN 47256 (LSA)	**EUI-90** = ST (EI only)
EUI-76 = HMS-10/AG (EI only)	**EUI-91** = SC
EUI-89 = FC narrow key	**EUI-95** = E-2000

Notes
1. Depends on selected fiber type.
2. Available in MM only.
3. Available in SM only.

FTB-100B Mini-OTDR Kits

Kit/System	
TK100B-PP-MM-MM	FTB-100B-OTDR Kit
Test Kit Platform	**Description**
P5-ZZ	FTB-100B-N4-ZZ, Modular mainframe unit, 7.4 in monochrome touchscreen display, 32 MB RAM
P6-ZZ	FTB-100B-N4-D2-ZZ, Modular mainframe unit, 7.7 in color touchscreen display, 32 MB RAM
P7-ZZ-XX	FTB-100B-N4-PM-ZZ, Modular mainframe unit (1 module capacity), 7.4 in monochrome touchscreen display (transflective), 32 MB RAM with power meter InGaAs detector
P8-ZZ-XX	FTB-100B-N4-D2-PM-ZZ, Modular mainframe unit (1 module capacity), 7.7 in color touchscreen display, 32 MB RAM with power meter InGaAs detector
First OTDR Module	**Description**
D1-XX	FTB-7212B-C-EI-XX MM OTDR Module, 850/1300 nm, 23/27 dB (50/125 µm)
D2-XX	FTB-7212B-D-EI-XX MM OTDR Module, 850/1300 nm, 25/29 dB (62.5/125 µm)
D4-XX	FTB-7323B-B-EI-XX SM OTDR Module, 1310/1550 nm, 37.5/35.5 dB (9/125 µm)
D5-XX	FTB-7423B-B-EI-XX SM OTDR Module, 1310/1550 nm, 40/38 dB (9/125 µm)
D6-XX	FTB-7434B-B-EI-XX SM OTDR Module, 1550/1625 nm, 40/38 dB (9/125 µm)
D7-XX	FTB-7523B-B-EI-XX SM OTDR Module, 1310/1550 nm, 45/43 dB (9/125 µm)
D8-XX	FTB-7534B-B-EI-XX SM OTDR Module, 1550/1625 nm, 42/40 dB (9/125 µm)
D9-XX	FTB-7334B-B-EI-XX SM OTDR Module, 1550/1625 nm, 35.5/35 dB
Second OTDR Module	**Description**
F1-XX	FTB-7212B-C-EI-XX MM OTDR Module, 850/1300 nm, 23/27 dB (50/125 µm)
F2-XX	FTB-7212B-D-EI-XX MM OTDR Module 850/1300 nm, 25/29 dB (62.5/125 µm)
F3-XX	FTB-7404B-B-EI-XX SM OTDR Module, 1625 nm, 38 dB (9/125 µm)
F4-XX	FTB-7504B-B-EI-XX SM OTDR Module, 1625 nm, 40 dB (9/125 µm)

Notes
PP: Test kit platform code available below
Z: Replace Z with specified language : GA=English, French, Spanish, Portuguese, German, Italian, Hungarian, Swedish GB=Traditional Chinese, GC=Simplified Chinese, GD=Japanese, GE=Korean
MM: Test Kit OTDR modules code
Please specify connector type for each OTDR module (singlemode, multimode).

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