

100B

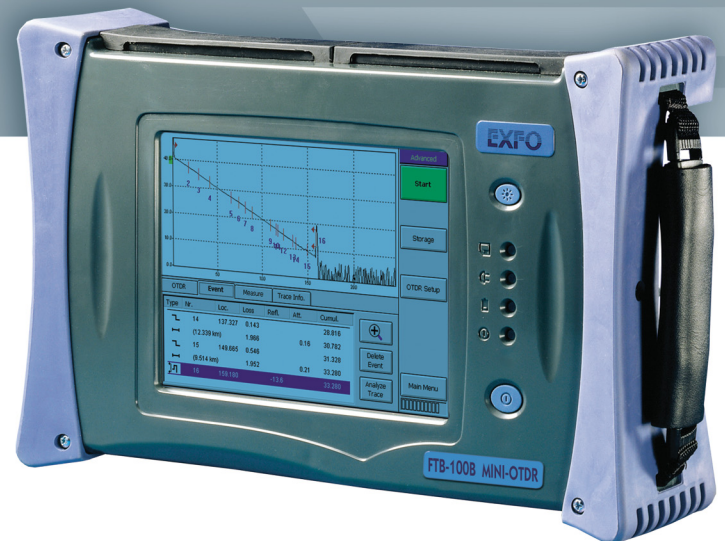
NETWORK TESTING

MINI-OTDR

FTB-100B

EXFO's rugged, flexible OTDR-dedicated portable platform

- Rugged, splashproof unit
- Modular design for field use
- High-quality touchscreen



Houses the FTB-7000D—all-new OTDR module offering next-generation features

- 1 m event dead zone: shortest in the industry
- Testing time: four times shorter than industry standard
- FTTx-ready: passive optical network (PON) testing capability
- Triple-wavelength models: 1310/1490/1550 nm and 1310/1550/1625 nm configurations
- Four-wavelength model (850, 1300, 1310, 1550 nm) integrating multimode and singlemode functionalities

www.exfo.com

Telecommunications Test and Measurement

EXFO

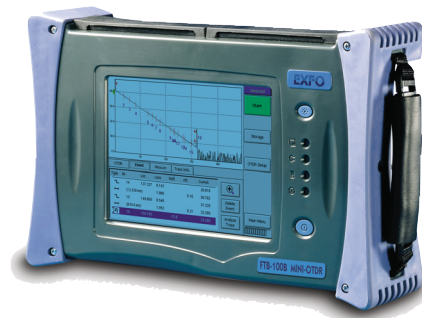
EXPERTISE REACHING OUT

First-Class OTDR Performance in an Easy-to-Use Package

The FTB-100B Mini-OTDR is a convenient, rugged field platform that supports any of EXFO's OTDR modules. It delivers the features you need, whether you're an intensive or occasional OTDR user.

KEY FEATURES

- Color touchscreen
- Integrated power meter
- Internal memory of 700 traces
- Additional storage capacity of up to 6000 traces
- Standard floppy drive and PCMCIA port
- Battery operating time of over eight hours



Rugged Platform

The FTB-100B is built to handle even the harshest field conditions. Thanks to its sturdy design, it absorbs 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.



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.



Durable Touchscreen

This platform's touchscreen gives fast access to all menus and functions—each function is always a single touch away. Tested to endure over a million touches in one spot without failure, the touchscreen design offers many times the durability of push buttons.



Modular Flexibility

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

Wide Range of OTDR Modules

The FTB-100B can house multiple singlemode OTDR modules designed to test at five essential wavelengths—1310, 1410, 1490, 1550 and 1625 nm—covering all fiber applications from long-haul and WDM to metro and FTTH networks. It is also ideal for LAN applications, because it can host multimode OTDR modules. All EXFO OTDR modules provide a stable light source, as well as the option to add a visual fault locator.

All the OTDR Modes You Need

The FTB-100B's OTDR software is both automated and simple to use. You can choose from three operating modes according to your specific requirements:

Auto Mode

Lets you select acquisition parameters automatically. Perfect for basic, repetitive OTDR applications or for occasional users.

Advanced Mode

Offers multiple setup and measurement capabilities for increased flexibility. 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.

New Fault Finder Mode

The FTB-100B's OTDR software now features a new Fault Finder mode, available for all EXFO OTDR modules:

- Ideal for users who are inexperienced or non-specialized in fiber-optic testing
- Locates fiber cuts or defects, drastically reducing troubleshooting and repair time

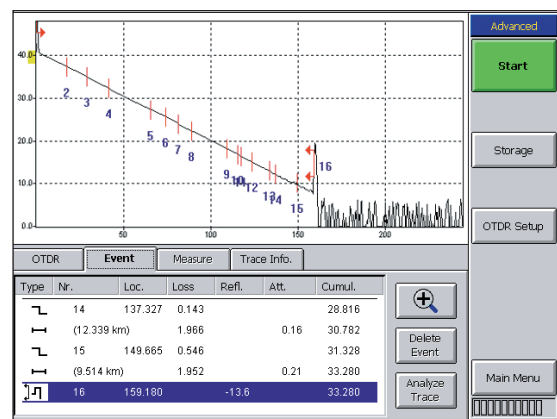
Integrated Power Meter

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 five calibrated wavelengths: 850, 1300, 1310, 1550 and 1625 nm.

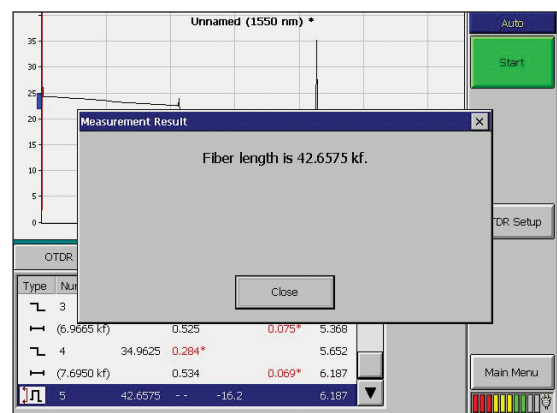
With one rugged platform, you can accurately measure insertion loss, as well as detect and analyze splices, connectors, breaks and other events along a fiber.

Thanks to its integrated power meter, the FTB-100B offers:

- Power measurements in dB, dBm and W
- Easy wavelength selection
- Quick saving
- Quick printing



Advanced mode test interface



New fault finder mode test interface



Integrated power meter option

The New FTB-7000D OTDR:

Designed for Metro, Access and FTTH Test Applications

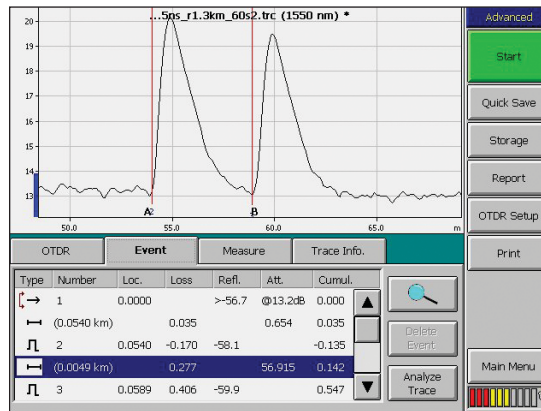
The Shortest Dead Zones in the Industry

EXFO's FTB-7000D helps you boost test productivity for inside-plant applications. Its exceptional 1 m event dead zone enables you to easily locate and characterize all events between the transmitter and the central office's fiber distribution panel. This feature also comes in handy in metro, access and FTTH network applications, where events are usually closely spaced.

Delivering Higher Accuracy for Event Location

Thanks to high-efficiency technical features, the FTB-7000D locates events with pinpoint accuracy:

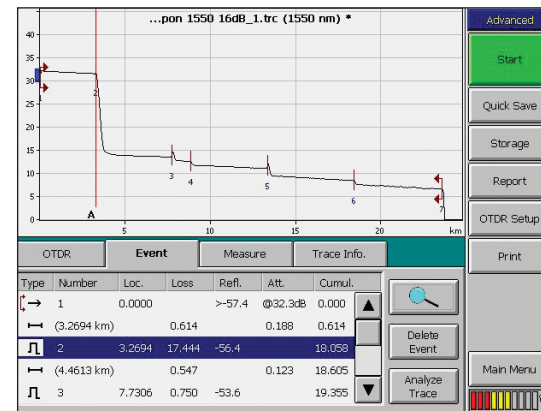
- Up to 128 000 sampling points for higher trace resolution
- Sampling resolution down to 4 cm, for ultra-accurate fault location
- Better linearity—down to ± 0.03 dB/dB—for more accurate event characterization



The FTB-7000D OTDR's market-leading dead zone allows the full characterization of a typical tie-cable—as short as five meters—with UPC connectors (reflectance below -55 dB).

Optimizing Passive Optical Network (PON) Testing

Designed to meet the testing requirements brought by FTTH networks in general, and PONs in particular, the FTB-7000D enables testing at 1310, 1490 and 1550 nm. What's more, EXFO's next-generation OTDR software lets you test through high-port-count splitters—even 1x32 splitters—with loss levels of over 16 dB.



EXFO's FTB-7000D OTDR easily tests through high-port-count splitters with high loss levels.

Faster Trace Acquisition

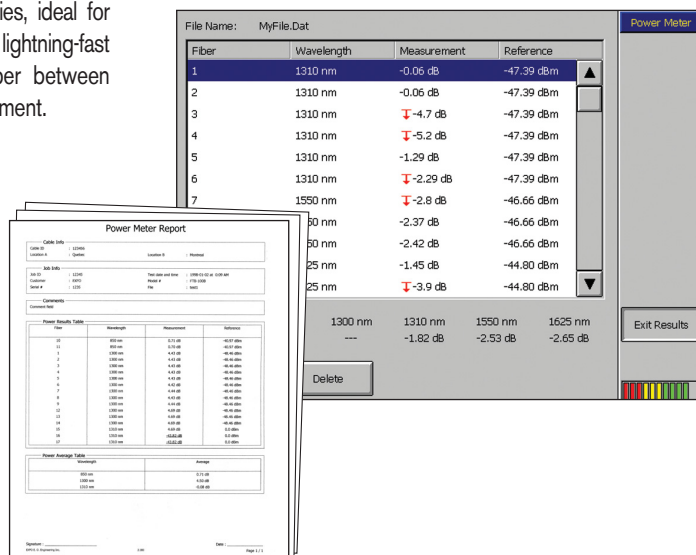
The FTB-7000D features a highly optimized, lightning-fast trace acquisition routine: full averaging is performed in 45 seconds—four times faster than the industry standard averaging time of three minutes. When installing or troubleshooting metro networks, the FTB-7000D therefore reduces the three-wavelength testing time for a typical 288-fiber cable from more than 43 hours to less than 11 hours, also minimizing testing costs.

Multimode and Singlemode Flexibility

The FTB-7200D model combines singlemode and multimode functionalities, ideal for private network testing. It offers the industry's shortest dead zones, as well as lightning-fast acquisitions. Test multimode fiber within premises, or singlemode fiber between premises—all with a single OTDR unit—and maximize your return on investment.

Professional Data Management

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



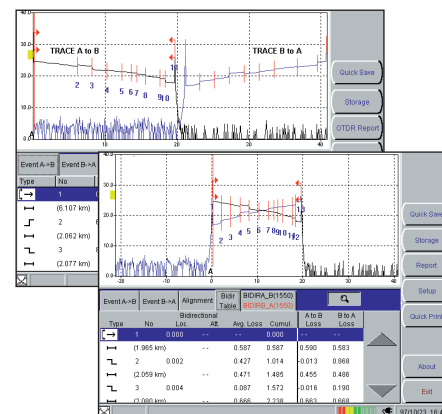
ToolBox Office PC Emulation Software for Post-Processing

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

Bidirectional Trace Analysis*

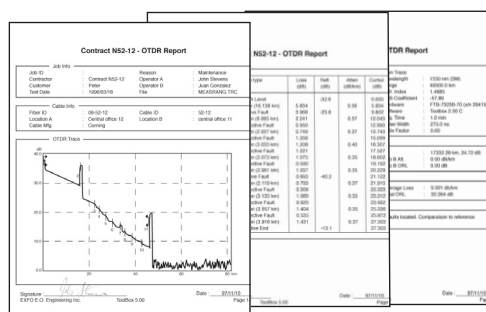
Improve the accuracy of your loss measurements with the bidirectional averaging feature, which uses OTDR acquisitions from both ends of a fiber span to average loss results for each event.

* Available on singlemode OTDRs only.



Efficient Multifiber Testing with Template Trace

Reduce testing time when commissioning a large number of fibers by using the Template Trace mode. This mode 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.

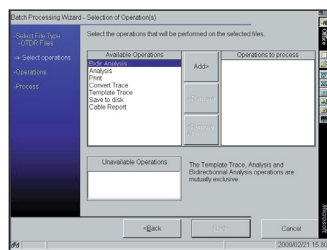
Export OTDR Files in Bellcore or ASCII Format

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 R/T Pro

Optional ToolBox R/T Pro software accelerates data post-processing by as much as 90 % with two key utilities: batch processor and cable report generator. ToolBox R/T 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

Cable Report Generator

Event	Loss	Loss	Loss	Loss	Loss	Loss	Loss
Event 1	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Event 2	0.002	0.002	0.002	0.002	0.002	0.002	0.002
Event 3	0.004	0.004	0.004	0.004	0.004	0.004	0.004
Event 4	0.004	0.004	0.004	0.004	0.004	0.004	0.004

- 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	Color LCD touchscreen, 19.6 cm (7.7 in), 640 x 480, 256 colors	
Touchscreen	Resistive, 8 wires Positional accuracy better than 2 %, full scale, worst-case error $\leq \pm 0.5$ cm (0.18 in) Resistant to most common chemicals ²	
External power supply	AC input: 100 to 240 V, 50 Hz to 60 Hz	
Battery	Nickel metal-hydride (NiMH), rechargeable, smart (standard)	
Battery operating time ³	8 h – NiMH battery	
Recharge time	2.5 h (off), 8 h (on)	
Size (H x W x D)	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 ⁵	–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 % to 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 dBm to –46 dBm)	
Linearity (dB)	± 0.05 (0 dBm to –46 dBm) ± 0.1 (–46 dBm to –57 dBm)	
Display resolution (dB)	0.01 (4 dBm to –63 dBm) 0.1 (–63 dBm to –70 dBm)	
Tone detection (Hz)	270/1000/2000	

Notes:

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

FTB-100B MINI-OTDR – ORDERING INFORMATION

FTB-100B-DX-N4-XX-FOA-XX-XX

Display

D2 = Color 7.7 in touchscreen
D5 = Outdoor enhanced screen

Standard Features

- 19.6 cm (7.7 in) color LCD
- Touchscreen display
- 700-trace internal OTDR storage (approx.)
- 3.5 in floppy drive
- PCMCIA interface for flash memory card
- AC adapter/charger
- NiMH smart battery
- Serial cable: null modem cable, DB9F to DB9F
- Free software upgrades for one year

Power Meter

00 = Without power meter
PM = With power meter

Connector Adapter

FOA-12 = Biconic
FOA-14 = D4, D4/PC
FOA-16 = SMA/905, SMA/906
FOA-22 = FC, FC (PC/SPC/UPC/APC), NEC-D3
FOA-32 = ST, ST (PC/SPC/UPC)
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
FOA-98 = LC

For other FOA types, please contact us.

Language Options

GA = English, French, Spanish, German, Italian, Czech and Russian
GB = Traditional Chinese and GA
GC = Simplified Chinese and GA
GD = Japanese and GA
GE = Korean and GA

Example: FTB-100B-N4-D2-PM-FOA-22-GA

Accessories

GP-10-034	Spare semi-rigid carrying case	GP-288	Spare external AC adapter/charger for FTB-100B
GP-10-035	Spare rigid carrying case	(A-E-I-S-U)	Specify: A-North America, E-Europe, I-India, S-Australia and New Zealand, U-United Kingdom
GP-216	Null modem cable, DB9F to DB9F	GP-297	CANON BJC-50 Printer including parallel cable
GP-219	External keyboard	(A-E-I-S-U)	Specify: A-North America, E-Europe, I-India, S-Australia and New Zealand, U-United Kingdom
GP-225	FTB power cable for vehicle cigarette lighter (12 V)	GP-320	256 MB ATA flash card for FTB-100B or FTB-400 (8000 traces typ.)
GP-285	Spare NiMH smart battery	GP-321	512 MB ATA flash card for FTB-100B or FTB-400 (16000 traces typ.)
GP-287	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-322	1024 MB ATA flash card for FTB-100B or FTB-400 (32000 traces typ.)

OTDR MODULES— SPECIFICATIONS

Singlemode and Multimode OTDR Module Specifications¹

All specifications below apply to the FTB-7200D-12CD-23B multimode (MM)/singlemode (SM) model and the FTB-7200D-12CD multimode-only version.

Model	Wavelength (nm)	Dynamic range ^{2,3} (dB)	Event dead zone ⁴ (m)	Attenuation dead zone ⁴ (m)
FTB-7200D-12CD-23B/FTB-7200D-12CD	850 ± 20/1300 ± 20	27/26	1/1	3/4
	1310 ± 20/1550 ± 20	37/35	1/1	4.5/5
Distance range (km)	Multimode: 0.1, 0.3, 0.5, 1.3, 2.5, 5, 10, 20, 40 Singlemode: 1.3, 2.5, 5, 10, 20, 40, 80, 160, 260			
Pulse width (ns)	Multimode: 5, 10, 30, 100, 275, 1000 Singlemode: 5, 10, 30, 100, 275, 1000, 2500, 10 000, 20 000			
Launch conditions ⁵	Class CPR 1 or 2			
Linearity (dB/dB)	± 0.03			
Loss threshold (dB)	0.01			
Loss resolution (dB)	0.001			
Sampling resolution (m)	Multimode: 0.04 to 2.5 Singlemode: 0.04 to 5			
Sampling points	Up to 128 000			
Distance uncertainty ⁶ (m)	± (0.75 + 0.0025 % x distance)			
Measurement time	User-defined (60 min maximum)			
Real-time refresh (s)	Guaranteed: ≤ 0.4			
Stable source output power ⁷ (dBm)	-1.5 (1300 nm), -7 (1550 nm)			
Visual fault locator (optional)	Laser, 650 nm ± 10 nm CW, typical P _{out} in 62.5/125 μm: 3 dBm (2 mW)			

Notes

- All specifications valid at 23 °C ± 2 °C (73.4 °F ± 3.6 °F) with an FC/PC connector, unless otherwise specified.
- Typical dynamic range with longest pulse and three-minute averaging at SNR = 1.
- Multimode dynamic range is specified for 62.5 μm fiber; a 3 dB reduction is seen when testing 50 μm fiber.
- Typical dead zone for multimode reflectance below -35 dB and singlemode reflectance below -45 dB, using a 5 ns pulse.
- Controlled launch conditions allow 50 μm and 62.5 μm multimode fiber testing.
- Does not include uncertainty due to fiber index and sampling resolution.
- Typical output power is given at 1300 nm for multimode output and 1550 nm for singlemode output.

Singlemode OTDR Module Specifications⁸

Model	Wavelength (nm)	Dynamic range at 10 μs ⁹ (dB)	Dynamic range at 20 μs ⁹ (dB)	Event dead zone ¹⁰ (m)	Attenuation dead zone ¹⁰ (m)
FTB-7200D-XXX	1310 ± 20/1550 ± 20	35/34	37/35	1/1	4.5/5
FTB-7300D-XXX	1310 ± 20/1490 ± 10/1550 ± 20/1625 ± 10	38/34/37/35	39/35/38/36	1/1/1/1	4.5/5.5/5/5
FTB-74XXB-B	1310 ± 20/1410 ± 10/1550 ± 20/1625 ± 10	40/37/40 ¹² /38	41.5/38.5/40.5 ¹² /39	3/3/3/3	10/10/15/16
FTB-74234C	1310 ± 20/1550 ± 20/1625 ± 10	41/40/38	42.5/41.5/39.5	3/3/3	8/10/10
FTB-75XXB-B ¹¹	1310 ± 20/1550 ± 20/1625 ± 10	43.5/43.5 ¹³ /41.5	45/45 ¹³ /43	3/3/3	10/15/16
FTB-7503B-B-ER ¹¹	1550 ± 20	44	45.5	3	15

For full information on available configurations, please refer to the OTDR Module Series specifications sheet, available on our website at www.exfo.com.

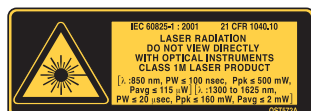
General Specifications

	7200D/7300D series	7400B-B/ 7500B-B/74234C-B series
Distance range (km)	1.25, 2.5, 5, 10, 20, 40, 80, 160, 260	1.25, 2.5, 5, 10, 20, 40, 80, 160, 260
Pulse width (ns)	5, 10, 30, 100, 275, 1000, 2500, 10 000, 20 000	10, 30, 100, 275, 1000, 2500, 10 000, 20 000
Linearity (dB/dB)	± 0.03	± 0.05
Loss threshold (dB)	0.01	0.01
Loss resolution (dB)	0.001	0.001
Sampling resolution (m)	0.04 to 5	0.08 to 5
Sampling points	Up to 128 000	Up to 52 000
Distance uncertainty ¹⁴ (m)	± (0.75 + 0.0025 % x distance)	± (1 + 0.0025 % x distance)
Measurement time	User-defined (60 min maximum)	User-defined (60 min maximum)
Real-time refresh (s)	Guaranteed: ≤ 0.4 Typical: ≤ 0.3	≤ 1
Stable source output power ¹⁵ (dBm)	-8 (7200D), -4.5 (7300D)	-5
Visual fault locator (optional)	Laser, 650 nm ± 10 nm CW, typical P _{out} in 62.5/125 μm: 3 dBm (2 mW)	Laser, 650 nm ± 10 nm CW, maximum P _{out} : ≤ 800 μW

Notes

- All specifications valid at 23 °C ± 2 °C (73.4 °F ± 3.6 °F) with an FC/PC connector, unless otherwise specified.
- Typical dynamic range with a three-minute average at SNR = 1.
- Typical dead zone of singlemode modules for reflectance below -45 dB, using a 10 ns pulse (5 ns pulse for 7200D and 7300D).
- Typical dynamic range on NZDS fiber with a three-minute average at SNR = 1.
- Typical dynamic range at 1550 nm for the FTB-7423B-B configuration is 2 dB lower at 10 μs and 1 dB lower at 20 μs.
- Typical dynamic range at 1550 nm for the FTB-7503B-B and FTB-7523B-B configurations is 2 dB lower.
- Does not include uncertainty due to fiber index and sampling resolution.
- Typical output power value.

Safety



LASER SAFETY

21 CFR 1040.10 AND
IEC 60825-1:1993+A2:2001

CLASS 1M WITHOUT VFL OPTION
CLASS 3R WITH VFL OPTION

ORDERING INFORMATION

For detailed OTDR ordering information, please refer to the OTDR Module Series specifications sheet, available on our website at www.exfo.com.

FTB-100B MINI-OTDR KITS

TK-100B-XX-XX-XX-XX-XX-XX

Platform

- P6** = FTB-100B-D2-N4, modular mainframe unit (one-module capacity), 7.7 in color touchscreen display, 32 MB RAM
- P8** = FTB-100B-D2-N4-PM, modular mainframe unit (one-module capacity) 7.7 in color touchscreen display, 32 MB RAM, power meter (InGaAs detector)
- P9** = FTB-100B-D5-N4, modular mainframe unit (one-module capacity) 7.7 in color touchscreen display (outdoor enhanced screen), 32 MB RAM
- P10** = FTB-100B-D5-N4-PM, modular mainframe unit (one-module capacity) 7.7 in color touchscreen display (outdoor enhanced screen), 32 MB RAM, power meter (InGaAs detector)

Language Options

- GA** = English, French, Spanish, German, Italian, Czech and Russian
- GB** = Traditional Chinese and GA
- GC** = Simplified Chinese and GA
- GD** = Japanese and GA
- GE** = Korean and GA

First OTDR

- D3** = FTB-7200D-023B-EI, SM OTDR module, 1310/1550 nm (9/125 μm)
- D4** = FTB-7300D-023B-EI, SM OTDR module, 1310/1550 nm (9/125 μm)
- D5** = FTB-7423B-B-EI, SM OTDR module, 1310/1550 nm (9/125 μm)
- D6** = FTB-7434B-B-EI, SM OTDR module, 1550/1625 nm (9/125 μm)
- D7** = FTB-7523B-B-EI, SM OTDR module, 1310/1550 nm (9/125 μm)
- D8** = FTB-7534B-B-EI, SM OTDR module, 1550/1625 nm (9/125 μm)
- D9** = FTB-7300D-034B-EI, SM OTDR module, 1550/1625 nm (9/125 μm)
- D10** = FTB-74234C-B-EI, SM OTDR module, 1310/1550/1625 nm (9/125 μm)
- D13** = FTB-7300D-234B-EI, SM OTDR module, 1310/1550/1625 nm (9/125 μm)
- D14** = FTB-7300D-236B-EI, SM OTDR module, 1310/1490/1550 nm (9/125 μm)
- D15** = FTB-7200D-12CD-23B-EI, MM/SM OTDR module, 850/1300/1310/1550 nm (50/125, 62.5/125 and 9/125 μm)
- D16** = FTB-7200D-12CD-EI, MM OTDR module, 850/1300 nm (50/125 and 62.5/125 μm)

Connector

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

Second Connector

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

Second OTDR

- F3** = FTB-7404B-B-EI, SM OTDR module, 1625 nm (9/125 μm)
- F4** = FTB-7504B-B-EI, SM OTDR module, 1625 nm (9/125 μm)
- F5** = FTB-7200D-12CD-EI, SM OTDR module, 1625 nm (9/125 μm)

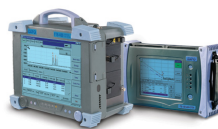
Example: TK-100B-P6-GA-D3-EI-EUI-91-F3-EI-EUI-91

Find out more about EXFO's extensive line of high-performance portable instruments by visiting our website at www.exfo.com.



Rugged Handheld Solutions

- OLTS
- Power meter
- Light source
- Talk set



Optical Fiber

- OTDR
- OLTS
- ORL meter
- Switch

DWDM Test Systems

- OSA
- PMD analyzer
- Chromatic dispersion analyzer
- Multiwavelength meter

Telecom/Datacom

- 10/100 and Gigabit Ethernet
- SONET/DSn (DS0 to OC-192c)
- SDH/PDH (64 kb/s to STM-64c)
- SAN

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