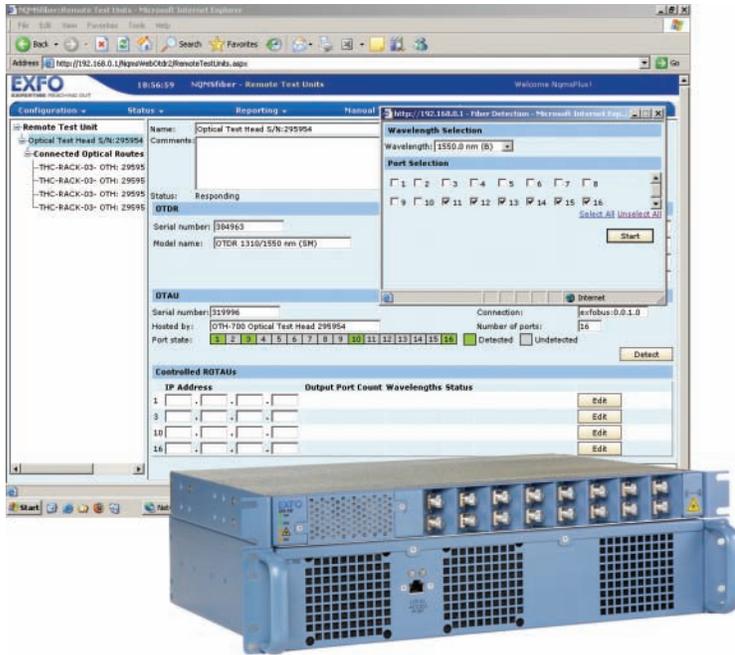


Fiber Guardian

NETWORK TESTING—ACCESS



Fiber Guardian

Where fiber monitoring starts.

Key Features

- All-in-one remote OTDR testing and monitoring functions
- Multitasking test system for multiple users
- Discovery and auto-provisioning functions
- SMS-triggered test-on-demand
- Flexible alert subsystem
- OTDRs offering high measurement range and peak-level monitoring
- Secure and seamless integration with your LAN

Affordable—Monitoring at your own pace

Remote, stand-alone unit

Fiber Guardian is an entirely stand-alone OTDR remote test unit, designed to enable you to start monitoring critical fibers without the larger investment required for a client-server RFTS application.

If you are experiencing any one of these situations, Fiber Guardian is the ideal solution.

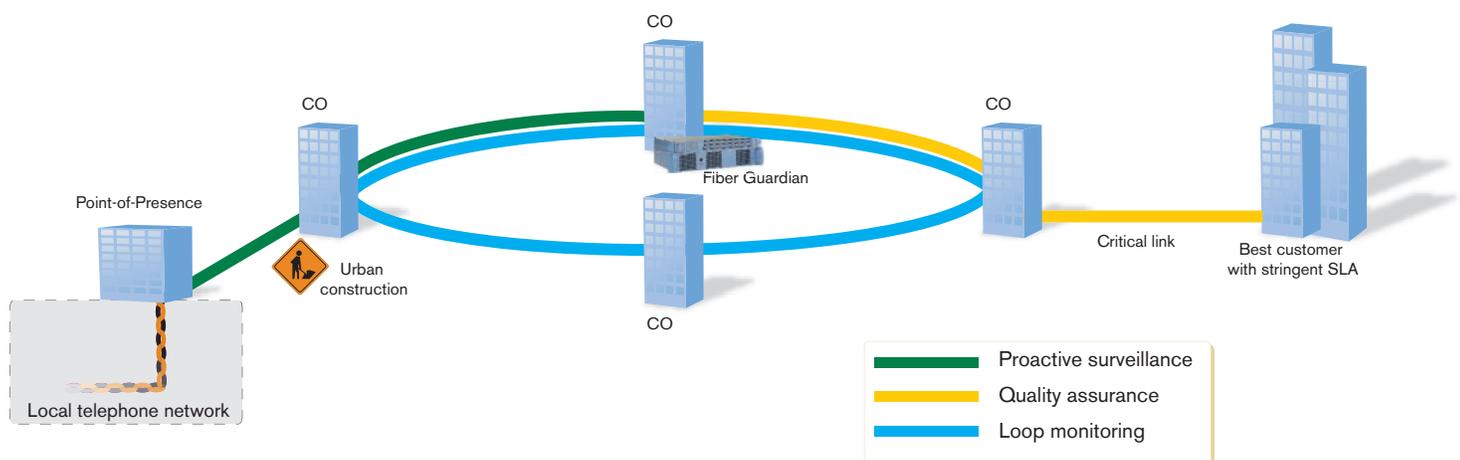
- Must fulfill stringent support-level agreements that require restoration time of less than a few hours or network/service availability of 99.99% or higher.
- Need to measure and improve contractor efficiency throughout the restoration process.
- Having difficulty finding qualified personnel for on-site troubleshooting.
- Want to begin investing progressively, starting with the most vulnerable part of your network.

No commitment, no hassles

Fiber Guardian is a plug-and-play solution that is easy enough for beginners but powerful and flexible enough for your experts. The unit doesn't involve any additional infrastructure—no server, no external PC—only minimal software maintenance is required. You can access it remotely from virtually anywhere, simply by using your personal login user name and password, just like any secured server on your LAN or through a dial-up connection. There is no need for third-party remote-access tools such as VNCs or PCAnywhere, no hanging views, no unexpected disconnection in low-bandwidth situations—just a reliable http session.

Fully scalable, whenever you're ready

If your long-term plan includes expanding to a full-fledged client-server fiber test and monitoring solution, invest in one or two Fiber Guardians, and migrate seamlessly to EXFO's system solution (NQMS*fiber*) when you're ready. Scaling up to NQMS*fiber* doesn't require any change to the test units. NQMS*fiber* includes sophisticated functions such as alarm management and reporting, trouble-ticket handling, view of the entire network status on a schematic, etc. The system solution enables you to centralize your network operation and maintenance and integrates with your existing network management systems. NQMS*fiber* can also be provided with network documentation based on GIS for mapping of the as-built and fault-on-map feature.



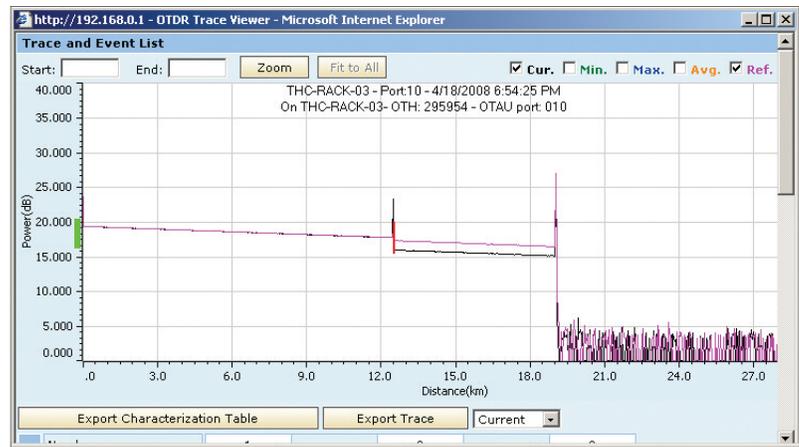
■ Typical configuration of a Fiber Guardian test application

Proactive testing—Be a step ahead

From reactive to proactive

Define, run and analyze a series of OTDR acquisitions on multiple fibers, whenever you like, without having to do it all manually. When you expect trouble, don't just wait—put a Fiber Guardian to work and be in control of the situation. Fiber Guardian is a multitasking test unit that allows for several different tests to run concurrently and enables multiple users to access and view results during or after tests are completed.

Fiber Guardian captures and logs events based on thresholds. These thresholds can be specific to each test or to each port. Each fault event, newly created or cleared, activates OTDR result storage, permitting analysis of intermittent situations and without storing an enormous quantity of unnecessary measurements.



■ OTDR Trace Viewer displaying a fault along with reference

Top-of-the-line measurements

Fiber Guardian was designed to serve various sections of your network. The following are a few examples of the test and measurement know-how and expertise engineered into Fiber Guardian:

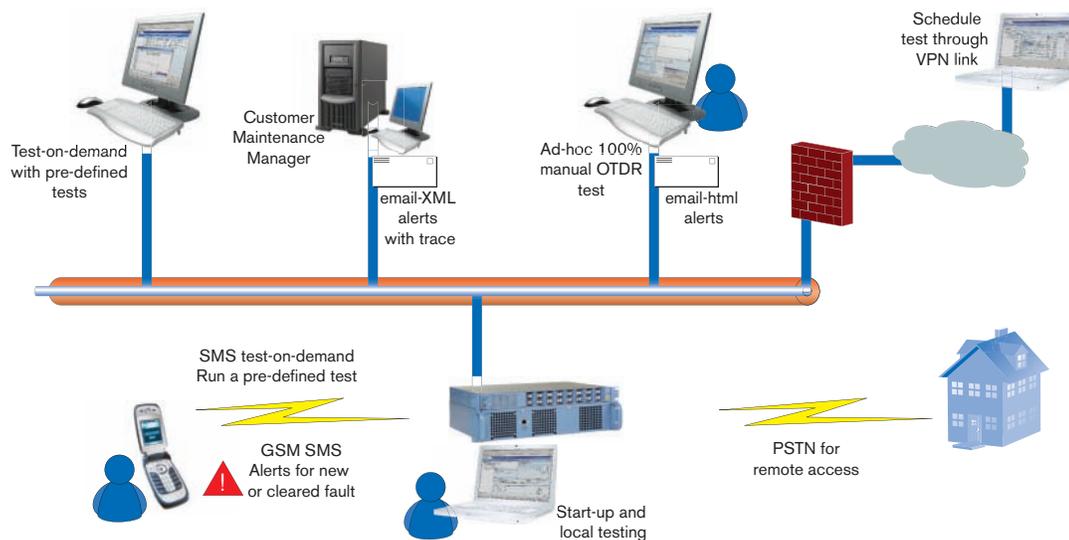
- Highest measurement range on the market, allowing you to maximize your investment
- High-resolution scans (1 m)
 - resolve closely spaced events such as connectors or mechanical splices at an access site
- Degradation measurement based on peak-level monitoring
 - can be used in conjunction with demarcation elements strategically located in the network
- Learning function
 - automatically establishes and optimizes fault-detection thresholds across full dynamic range
- Season-change management capability
 - extends learning to incorporate small changes to your reference data and to your fault detection thresholds—or reset to re-optimize around new average values
- Fast and simple operation
 - immediately detects degradations and locates them accurately with only one reference trace, whereas other solutions require two scans to perform this task.

Fiber Guardian can be set to monitor some things more closely than others; for example, it can check a particular section and/or total loss degradation more closely, while being less sensitive to event loss degradation or reflective peaks. Keep an eye on what you *really* want to know.

Strategic operation

Fiber Guardian is also a multiport OTDR unit that has the capability of recording a situation at T0 and reporting automatically, or on-demand, if the situation has changed. Testing can be performed in various modes—from simple manual unplanned tests to programmed testing that can be executed hourly, daily or weekly at the same set time again and again.

- **OTDR testing** – Performs unplanned and fully manual tests with result download
- **On-demand testing** – If a fault condition exists, it is logged and alerting starts
- **24/7 monitoring** – Only fault-related events are stored
- **Scheduled testing** – Tests can be set for predefined times and repeated (daily, weekly)



■ *Fiber Guardian's functional diagram*

SMS features: test and alert tool

Keep a close eye on your fibers and cables. When a problem occurs, Fiber Guardian can alert you through SMS no matter where you are. An SMS message is only sent to you when faults occur or when they are cleared by a user or resolved by the remote test unit. If you want to check the status of a fiber through SMS, simply enter an easy-to-remember SMS code identifying the port and test setup, and send it to Fiber Guardian, which will process the test immediately. If a fault is found, an SMS alert will be sent back with details.



■ *SMS messaging and test-on-demand triggering*

Peace of mind—Doing all the work for you

Open, secure and advanced

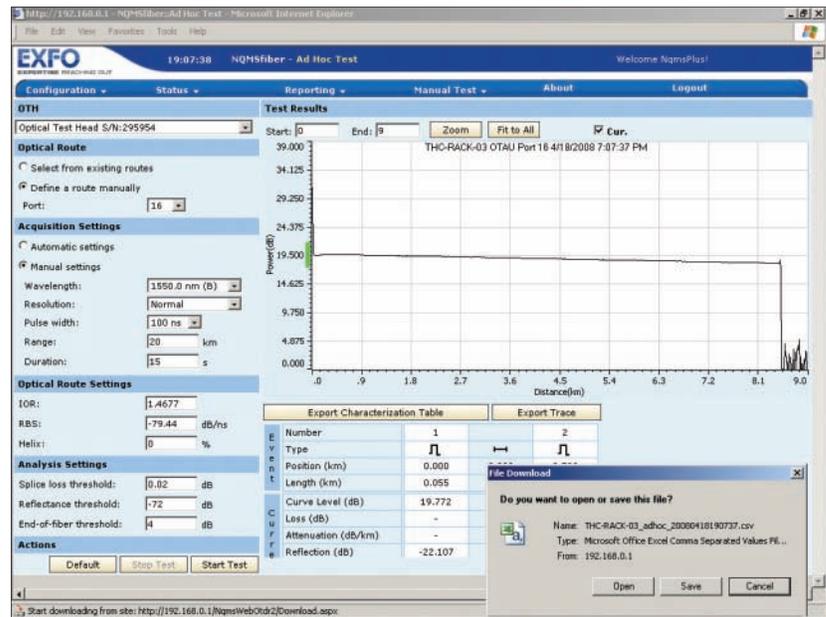
Based on today's most advanced technologies, Fiber Guardian is reliable and secure. Installed on your LAN, it provides a test access point to your field technicians, central office operators or test experts.

Fiber Guardian has a local data storage capacity of up to 80 GB, protected with a RAID configuration. Fiber Guardian provides the status of your RAID and other subsystems. A dry-contact relay opens when one of the subsystems becomes faulty, even if there is a power shut-down.

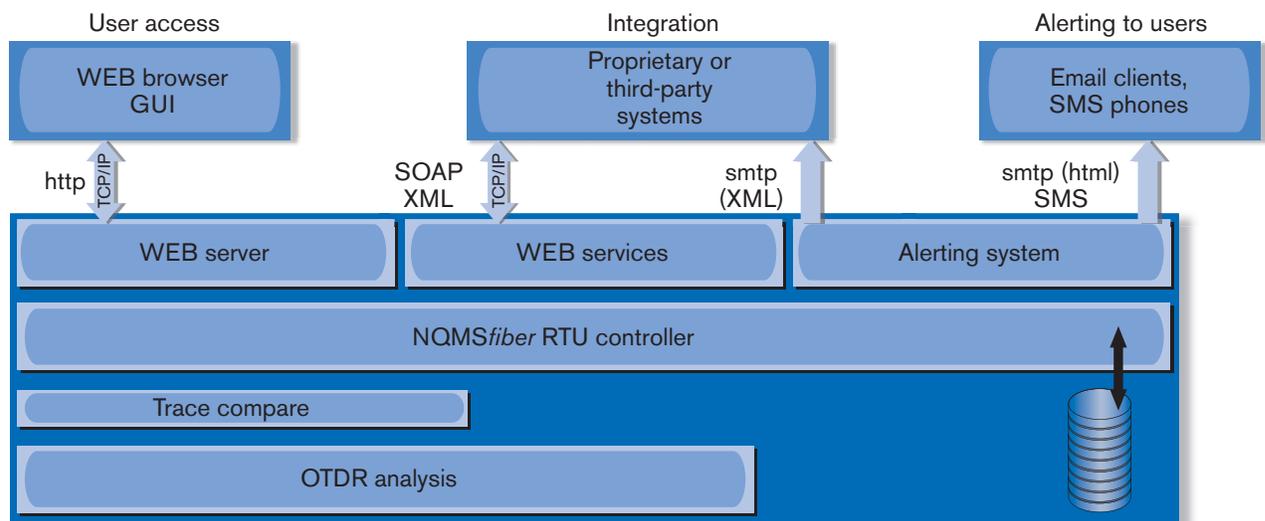
Based on an embedded operating system, the unit is a WEB server that allows local or remote access, just like any other WEB server on the network.

Easy to integrate with your systems

If you want to integrate Fiber Guardian with your own network management system, it can be done quickly and efficiently thanks to the availability of documented (.chm) web services. Simply create a mailbox and capture XML alerts that your system can parse and manage like any other alert from your other network elements.



Manual OTDR testing



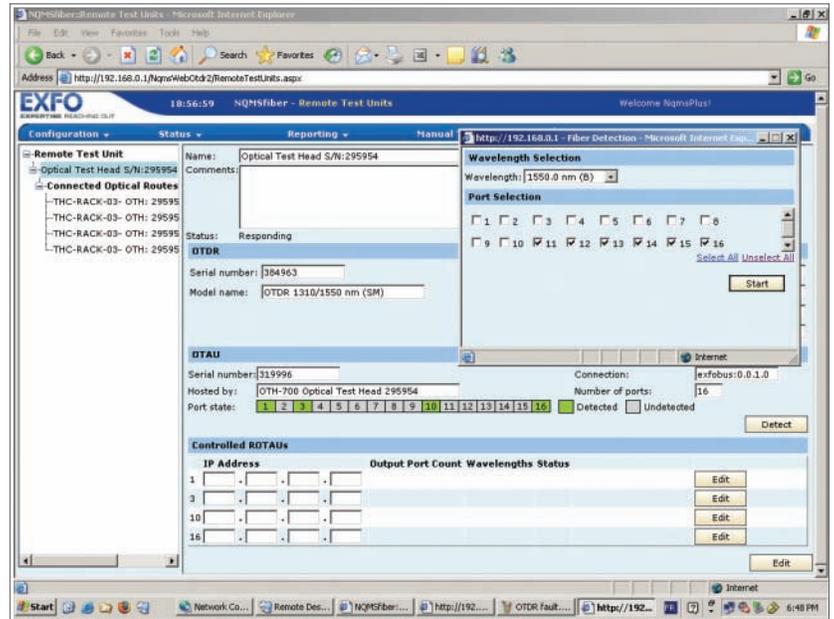
Fiber Guardian's architecture

Self-learning, plug-and-play unit

Fiber Guardian can be put to work, right at your desk. A site technician can connect any free test port to a designated cable termination port, and the unit will search for a new fiber when you decide it is time—and then start monitoring.

If you have limited knowledge of what the fault-detection thresholds should be for this new fiber, for each section or event, simply select the appropriate sensitivity level—fine, normal or coarse—and Fiber Guardian does it for you. Other discovery functions include:

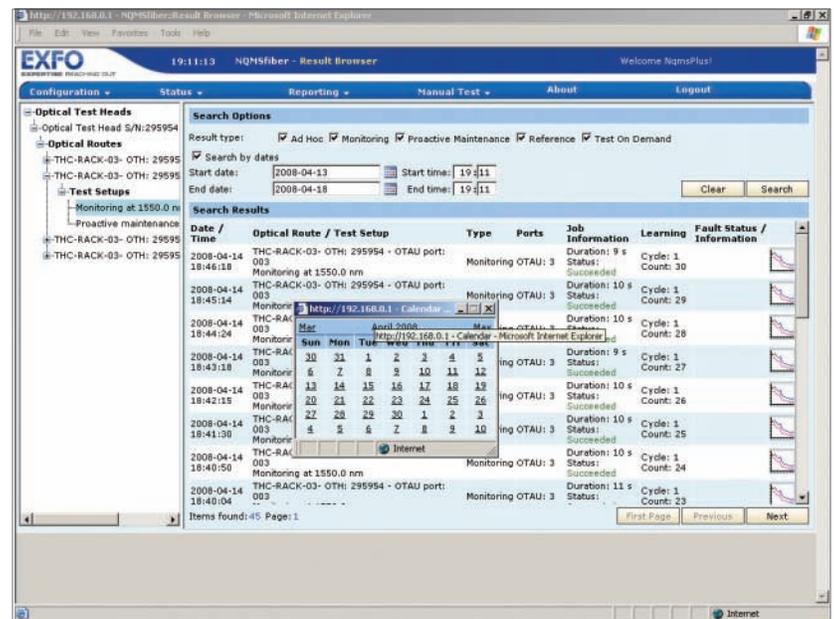
- Auto-naming of all test entities and setups
- Auto-detection of optical modules and hardware to facilitate upgrades or module swap



Fiber detection and auto-provisioning

Advanced functions

- Packages can be updated by connecting to a secure FTP site—you can plan for your update to run at predefined date and time.
- PASS/FAIL remote verification of optical ports
- Check optical connection quality from your desk
- Multiple optical test heads with each one OTDR for higher surveillance pace of your critical fibers
- Multimode fiber version of test head (on request)
- Adjust to seasonal variations efficiently
- Extend learning function—it can be programmed automatically
- Demarcation point monitoring
- Monitor peaks beyond RBS end-of-fiber



Result browser tool

Customization—The right options for the right situation

Configure and add options to your Fiber Guardian to make it your most powerful rackmounted optical test unit:

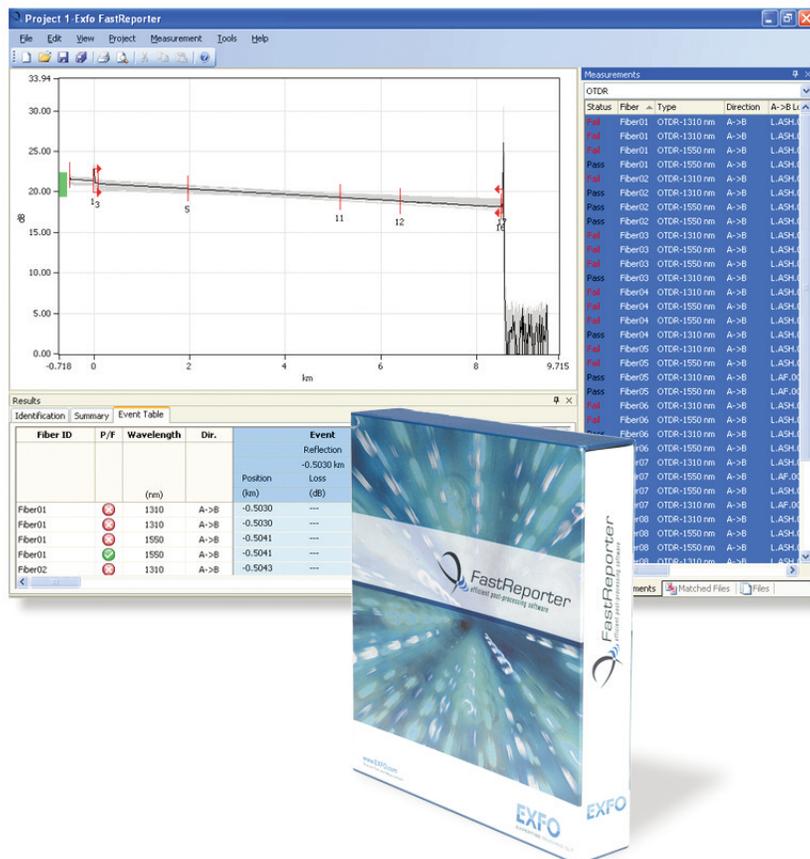
- One- or two-wavelength models – standard
- OTDRs with dynamic range of 30 dB to 50 dB
- Three- or four-wavelength models – on request
- Internal optical test access unit (OTAU) with 8 or 16 local ports.
- External optical test access unit (OTAU) with 24 to 96 local ports through RS-232
- External OTAU with 24 to 96 remote ports though IP network
 - Double-star – connected to one of the local OTAU ports
- Filtered WDMs for live-fiber monitoring at 1625 nm or 1650 nm with chassis
- GSM/GPRS modem
- Offline optical measurement reporting software (see below)
- Filtered, narrow-laser OTDRs for live fiber monitoring
- Mapping and network documentation (on request)
- UPS for AC supply models
- Extended warranty including software updates
- Spare-part kit
- Jumper cables
- Optical port inspection probes – FIP-400 series

Fiber Guardian and Fast Reporter—additional value

Get the most out of your EXFO equipment—Combine measurements taken with your monitoring system with baseline or construction traces for advanced analysis.

Applications include:

- Comparing proactive maintenance traces with traces taken at construction
- Converting your Fiber Guardian reference, fault or proactive maintenance traces with the initial set of results taken on the fiber when it was deployed.
- Using Fiber Guardian to build a bank of fiber test results on an existing fiber before commissioning new services. Use Fast Reporter to create your fiber report.
- Uploading fault events and traces you receive through e-mail alerts and analyzing the various events sorted by time.



ORDERING INFORMATION

FG-720-XXXX-XX-XX-XX-XX-XX

Models ■

FG-720-003M = Fiber Guardian unit, 1550 nm, 38 dB SM OTDR; metro
 FG-720-023M = Fiber Guardian unit, 1310/1550 nm, 35/38 dB SM OTDR; metro
 FG-720-004M = Fiber Guardian unit, 1625 nm, 36 dB SM OTDR; metro
 FG-720-034M = Fiber Guardian unit, 1550/1625 nm, 38/36 dB SM OTDR; metro
 FG-720-023L = Fiber Guardian unit, 1310/1550 nm, 45/43 dB SM OTDR; core
 FG-720-034L = Fiber Guardian unit, 1550/1625 nm, 45/45 dB SM OTDR; core
 FG-720-023U = Fiber Guardian unit, 1550 nm, 50/50 dB SM OTDR; ultra
 FG-720-034U = Fiber Guardian unit, 1550/1625 nm, 50/48 dB SM OTDR; ultra

Number of ports ■

08 = 8 ports
 16 = 16 ports

Connectors ■

58 = FC/APC
 88 = SC/APC

Additional modem ■

GSM = GSM modem (USB external)

Power input ■

AC = 100-240 VAC, 50/60Hz
 DC = -48 VDC power supply

Rackmount kit ■

RK19 = RTU rackmount kit 19 in
 RK23 = RTU rackmount kit 23 in
 RKET = ETSI adapters

Example: FG-720-004M-16-88-GSM-DC-RK19

FIBER GUARDIAN REMOTE TEST UNIT

OTDR Module	Metro	Core	Ultra
FTB-7000 series model	FTB-7300E	FTB-7500E	FTB-7600E
Fiber type	Singlemode		
Wavelength models (nm)	1550	1310/1550	1310/1550
	1310/1550	1550/1625	1550/1625
	1550/1625		
Dynamic range (dB) ^a			
1310 nm	39	45	50 ^c
1550 nm	37	45 ^b	50 ^c
1625 nm	37	45	48 ^c

FIBER GUARDIAN REMOTE TEST UNIT

Standard OTDR modules (see below)	Metro Core Ultra
Optical ports	8 or 16
Number of external optical ports	Up to 96
OTDR-to-port-loss (dB) (typical at 1550 nm, 8-port model)	0.8
Internal OTAU lifetime (cycles)	10 million 1 billion (on request)
Alarm relay output	System status
Network interfaces (2) (standard CAT-5 cable)	10/100 Base-T Ethernet (one dedicated to local access)
Dial-up modem (for dial-in remote access)	v. 92, 56 k
GSM modem (for alerting purpose only – optional)	EDGE (E-GPRS) CLASS 10 QUAD-BAND GSM
Unit status front LEDs	4
Storage capacity (HDDs)	80GB in RAID
Power supply	
AC	100-240 VAC, 50/60 Hz
DC	-40/-57 VDC
UPS (optional)	15 min. autonomy
Power consumption steady state (watts)	
AC	90
DC	70
Software user interface	Web-based
Local access, LAN and dial-up	Internet Explorer™
Rear port can be DHCP or fixed address	Mozilla™

GENERAL SPECIFICATIONS

Operating temperature	0 °C to 50 °C (32 °F to 122 °F)
Size (H x W x D)	44 mm x 427 mm x 312 mm (1.72 in x 16.8 in x 12.3 in)
Weight	13 kg (28.5 lb)
Certifications	CE, CSA-UL, RoHS

STANDARD ACCESSORIES AND FUNCTIONS

Functions:
 Notification agent for local alerting to any PC over LAN

Accessories:
 SQL Server 2005 Workgroup Edition (one license)
 User guide
 Rackmount kit

Notes

- a. SNR = 3 min. average using 20 μs pulse width.
- b. For FTB-7500E 1310/1550 nm model, dynamic range at 1550 nm is 43 dB.
- c. With NZDSF fiber (G.655).

LASER SAFETY

21 CFR 1040.10 AND IEC 60825-1
 CLASS 1M



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EXFO is certified ISO 9001 and attests to the quality of these products. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. EXFO has made every effort to ensure that the information contained in this specification sheet is accurate. However, we accept no responsibility for any errors or omissions, and we reserve the right to modify design, characteristics and products at any time without obligation. Units of measurement in this document conform to SI standards and practices. In addition, all of EXFO's manufactured products are compliant with the European Union's WEEE directive. For more information, please visit www.EXFO.com/recycle. Contact EXFO for prices and availability or to obtain the phone number of your local EXFO distributor.

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In case of discrepancy, the Web version takes precedence over any printed literature.