930

MULTIFUNCTION LOSS TESTER

FOT-930 MaxTester

NETWORK TESTING

- FasTesT: three-wavelength measurement of optical loss, ORL and fiber length in 10 seconds
- All-in-one portable test solution: up to eight instruments combined in a single, eye-catching handheld package
- FTTx ready: allows for the testing of passive optical networks (PONs) at 1310 nm, 1490 nm and 1550 nm, the three wavelengths recommended by the ITU-T (G.983.3) for PONs
- Cost of ownership: lowest in the industry, thanks to three-year warranty and recommended calibration interval, error-free testing and minimized training time

FTTx TEST SOLUTIONS

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Telecommunications Test and Measurement

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EXFO's Next-Generation MaxTester: Much More Features, Much Bigger Performance

The new FOT-930 MaxTester Multifunction Loss Tester is designed to help network service providers address CAPEX and OPEX issues, enable installers to easily adapt to all network types, and provide CATV operators with a single-unit solution to their backreflection, fiber-length, high-power and bidirectional loss measurement needs. Combined with its video fiber inspection probe, this unit also enables the easy detection of dirty or damaged connectors, providing a clear view of connectors and fiber ends on the FOT-930's high-resolution display.

All-in-one unit: combines up to eight instruments

- Loss meter
- Power meter
- Optical return loss (ORL) meter
- Visual fault locator
- Multimode and singlemode light sources
- Digital talk set
- Fiber length tester
- Video fiber inspection probe

FasTesT function: one-touch, automated measurements in 10 seconds

- Bidirectional loss and ORL testing at up to three singlemode wavelengths
- Bidirectional loss testing at two multimode wavelengths
- Fiber length measurement

Flexible solution: five-wavelength multimode and singlemode configurations meeting the requirements of installers/contractors for all test situations

- Up to three singlemode wavelengths–1310, 1550 and a choice between 1490 and 1625 nm–on one port
- Two multimode wavelengths–850 and 1300 nm–on a second port

With countless configurations available, the FOT-930 MaxTester is the handheld unit of choice for today's network service providers, fiber-optic network installers/contractors and CATV operators.

Future-proof: next-generation features meeting the latest industry requirements

- User-configurable pass/fail thresholds that can be adjusted to different industry standards
- FTTx ready, allowing for the testing of passive optical networks (PONs) at 1310, 1490 and 1550 nm, the three ITU-T G.983.3 recommended wavelengths for PONs

Cost of ownership: lowest on the market

- Three-year warranty and recommended calibration interval
- Error-free testing achieved through visual loss and ORL pass/fail analysis
- Minimized training time, thanks to a single user interface for the eight instruments included in this all-in-one unit

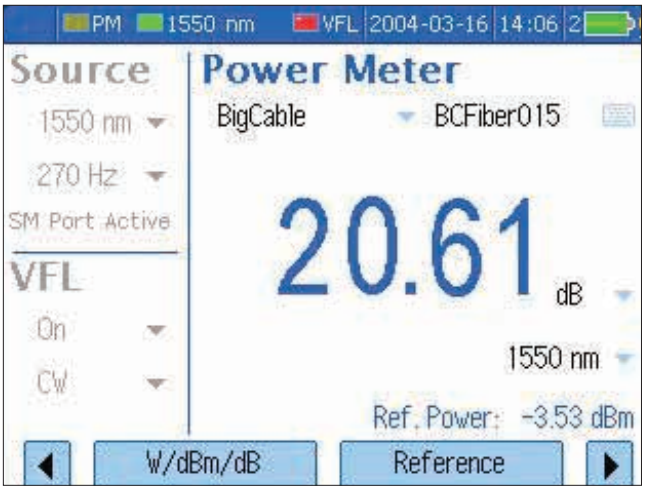
Easy to use and ergonomic: built for today's fiber-optic test requirements

- Handy, eye-catching and rugged handheld package
- High-resolution color display
- Complete data management and report generation
- Nine hours power autonomy provided by field-swappable rechargeable batteries

KEY FEATURES

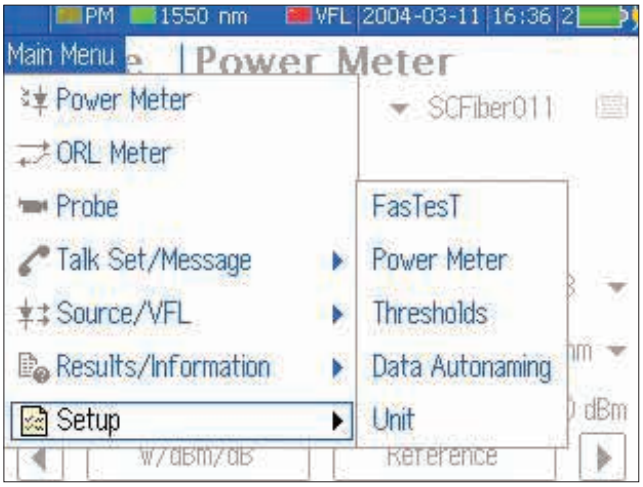
- Two FasTesT ports: a three-wavelength singlemode port, including either 1625 or 1490 nm, and a two-wavelength multimode port, for a total of up to five wavelengths
- Automatic measurement of ORL and fiber length during FasTesT
- Visual loss and ORL pass/fail analysis
- Field-swappable rechargeable batteries
- Easily accessible connectors
- Large 320 x 240 color screen
- Storage of over 1000 complete test reports, with automated report generation
- Options: high-power detector, talk set, visual fault locator (VFL) and video fiber inspection probe
- No offset nulling required
- Internal InGaAs FasTesT detector

While performing FasTesT measurements, the FOT-930 can launch automated loss and ORL measurements on all three wavelengths and perform fiber-length measurements.



The FOT-930 lets you use a high-power source, a high-power power meter, as well as a talk set and visual fault locator combination, all at once.

The video fiber inspection probe enables quick, easy inspection of fiber ends or connectors. View is displayed on the FOT-930's high-resolution display.



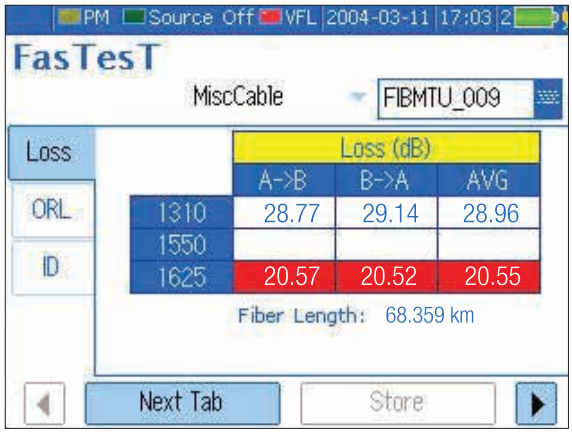
The FOT-930's Windows-like, 320 x 240 color interface provides first-class user-friendliness.

Network Service Providers: Addressing CAPEX and OPEX Concerns

Currently, the first order of business for telecom operators is reducing capital expenses (CAPEX) and operating expenses (OPEX)–without compromising quality of service. In today's ultra-competitive telecom industry, network service providers (NSPs) have to constantly come up with new, more affordable programs for fast Internet, as well as long-distance and local phone services. This makes it difficult for them to upgrade and even maintain their networks, and to meet the challenge of keeping costs down while maintaining high quality.

One way to do it is to choose more efficient network testing gear, which can help minimize CAPEX by doing more, faster, with a more simple approach, considerably reduce OPEX by cutting testing and training time and significantly lowering error potential.

The FOT-930 MaxTester fits this description: its flexibility enables the user to perform the required tests and validation for various network types and environments.



In 10 seconds, the MaxTester's FasTest function provides insertion loss and ORL values for up to three wavelengths—including either 1490 or 1625 nm—on a single port.

Key Advantages for NSPs

- Fast, three-wavelength loss and ORL testing
- User-configurable pass/fail thresholds
- Video fiber probe for easy connector inspection
- Ease of use for faster testing, reduced training, minimum error potential, etc.

Installers and Contractors: A Single Tool for All Network Types

In today's market conditions, installers and contractors face critical challenges. For instance, since they never know where their next assignment will take them, they need to be proficient on both private and public networks. This is why their test crews should be versatile, and should carry test equipment that offers built-in flexibility.

Because learning how to operate only one instrument is easier and much faster, test specialists should choose an all-in-one tool that enables them to perform tasks such as high-speed long-haul network installation, 1310/1490/1550 nm transmission testing in FTTH networks, multimode testing in entreprise networks, etc.–a do-it-all solution such as the FOT-930.

Key Advantages for Installers and Contractors

- The only unit designed for testing both multimode and singlemode fiber
- User-configurable pass/fail thresholds for error-free testing
- Complete report generation capabilities

Talk Set Port

For crystal-clear voice communication.

Power Meter Detector Port

Compatible with almost every connector on the market. Manually and efficiently perform power and loss testing. Accurately measure power up to +26 dBm.

FasTesT Ports

Perform loss, ORL and fiber length measurements for up to three SM wavelengths on one port, and for two MM wavelengths on a second port.

VFL

Built-in 650 nm visual fault location on a universal connector.

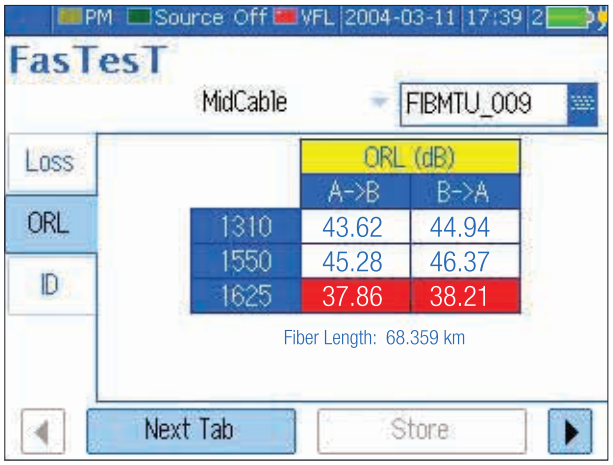
CATV Operators: One Unit for All Backreflection, Fiber-Length and Loss Measurement Needs

As video-on-demand is on the verge of becoming the next big thing, bandwidth and distance are increasing and fiber tolerances are becoming more and more stringent. Related analog transmission systems use high power up to 26 dBm. As a result, network engineers need to worry about potentially high backreflection–mostly caused by dirty or damaged connectors–and perform fiber-length measurements.

In short, CATV test crews need a backreflection meter, an OTDR (for measuring fiber length), a video fiber inspection probe and a bidirectional, dual- or triple-wavelength loss meter. Choosing the FOT-930 combines all these functionalities in a compact, easy-to-carry unit.

Key Advantages for CATV Operators

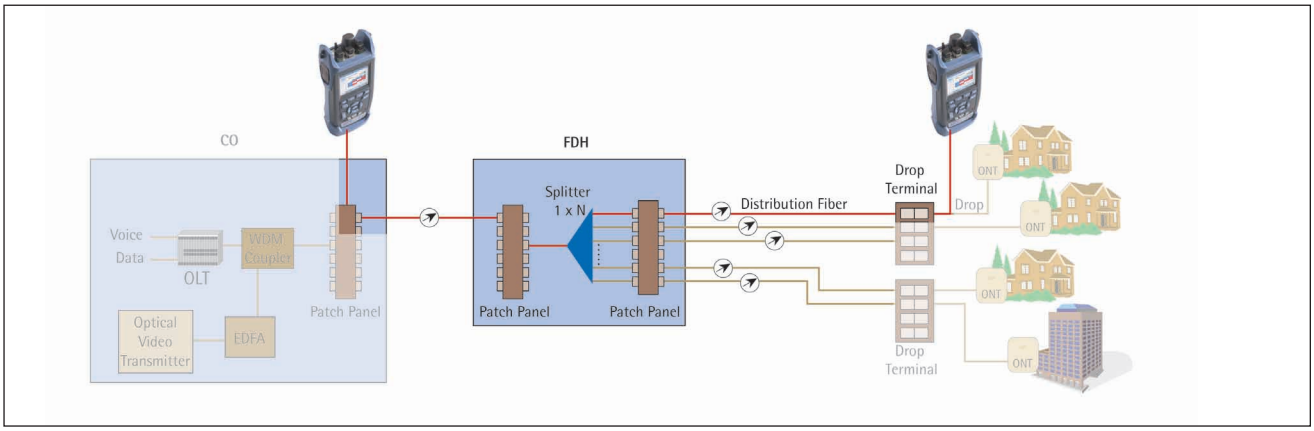
- Automated ORL measurement based on pass/fail thresholds
- GeX detector, for high-power measurement up to +26 dBm
- Video fiber inspection probe, for easy viewing of connectors and fiber ends on the FOT-930's high-resolution display



The FOT-930's colored pass/fail indicators help you quickly identify unacceptable ORL values.

FTTx Ready: The Ultimate Certification Tool for PONs

The FOT-930 allows for automated, bidirectional loss and ORL testing of passive optical networks (PONs) at 1310 nm, 1490 nm and 1550 nm, the three wavelengths recommended by the ITU-T (G.983.3) for PONs.



Testing the bidirectional loss and ORL from the CO to the drop terminal in a passive optical network.

Full Report Generation in a Snap

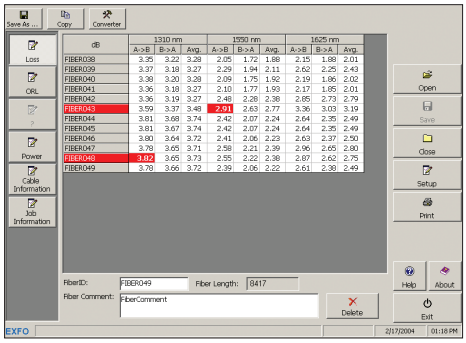
The FOT-930's software automatically sets up test data in an easy-to-read, well-organized table. Testing is simplified thanks to the highly intuitive user interface and integrated test functions, taking software user-friendliness to the next level.

- Select predefined test parameters and pass/fail thresholds
- Customize user settings and cable identification parameters
- Add operator comments
- Generate reports for ORL, bidirectional loss (three wavelengths) and fiber length measurement

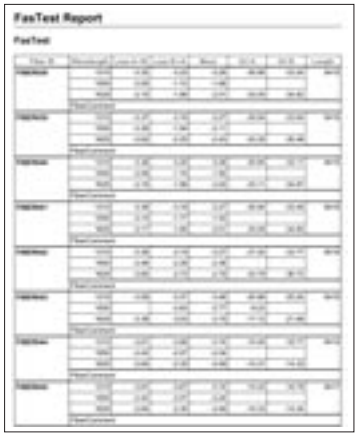
Report Generation

Growing fiber deployment in NSP and CATV networks sometimes leads installation companies to hire subcontractors. These subcontractors must produce proper test documentation to corroborate the tests were performed as specified.

EXFO's FOT-930 MaxTester easily and efficiently provides complete, high-quality test documentation. Its data logging and management features help users quickly access and download test results to any PC through the RS-232 port for in-depth analysis and first-class report generation.



Display comprehensive test results thanks to ToolBox data management software.



The FOT-930 quickly provides you with full FasTesT reports.

Online Help Menu and Multilingual Interface, for Enhanced User-Friendliness

The FOT-930 MaxTester features a comprehensive, easy-to-use on-line help menu providing all the necessary information required for highly efficient instrument operation–an advantage offered by no other test unit on the market. This feature contributes to the FOT-930's unequaled user-friendliness.

The FOT-930's interface is available in six languages: English, Simplified Chinese, Spanish, French, German and Czech. This allows users to choose their preferred language, further reduce training and testing time.

The online help menu and choice of interface language significantly increase user efficiency.

SPECIFICATIONS[1]

External Power Meter	FOT-932	FOT-932X	FOT-933
Detector type	Ge	GeX	InGaAs
Measurement range (dBm)	10 to –70	26 to –55	6 to –73
Range displayed (dBm)	Down to –77	Down to –65	Down to –80
Uncertainty[2, 3]	± 5 % ± 0.1 nW	± 5 % ± 3 nW	± 5 % ± 0.05 nW
Wavelength range (nm)	800 to 1650	800 to 1650	800 to 1650
Display resolution[2] (dB)	0.01	0.01	0.01
Calibrated wavelengths	40	42	40
Recommended recalibration period (years)	3	3	3
Automatic offset nulling[4]	Yes	Yes	Yes

Sources	Standard	–4	–5	–12C (second port)	–12D (second port)
Wavelengths[5] (nm)	1310 ± 20	1310 ± 20	1310 ± 20	850 ± 25	850 ± 25
	1550 ± 20	1550 ± 20	1490 ± 10	1300 +50/–10	1300 +50/–10
		1625 ± 10	1550 ± 20		
Emitter type	Laser	Laser	Laser	LED	LED
Minimum output power[5] (dBm)	–1/–1	–1/–4/–7	–1/–7/–4	–30/–30 (50/125 µm)	–24/–24 (62.5/125 µm)
Spectral width[6] (nm)	≤ 5/≤ 5	≤ 5/≤ 5/≤ 5	≤ 5/≤ 5/≤ 5	50/135	50/135
Stability[7] (8 hours) (dB)	± 0.05	± 0.05	± 0.05	± 0.05	± 0.05

FasTesT	Standard	–4	–5	–12C (second port)	–12D (second port)
Wavelengths (nm)	1310	1310	1310	850	850
	1550	1550	1490	1300	1300
		1625	1550		
Loss range[8] (dB)	60	56	56	40	46
Loss precision[9] (repeatability) (dB)					
side-by-side	0.15	0.15	0.15	0.15	0.15
loopback	0.25	0.25	0.25	0.25	0.25
Length measurement range (km)	200	200	200	5	5
Length measurement uncertainty[10]	± (10 m + 1 % x length)				

Dedicated ORL	All SM Wavelengths
ORL range (APC / UPC) (dB)	65/55
ORL uncertainty[11] (dB)	± 0.5
Resolution[2] (dB)	0.01

Talk Set	
Emitter type	Laser
Wavelength (nm)	1550 ± 20
Dynamic range at 1550 nm (dB)	45
Dynamic range MM[12] (dB)	40

VFL[9]	
Emitter type	Laser
Wavelength (nm)	650
Output power (dBm)	3

General Specifications

Size (H x W x D)		25.0 cm x 12.5 cm x 7.5 cm	(9 7/8 in x 4 15/16 in x 3 in)
Weight		1 kg	(2.2 lb)
Temperature	operating	–10 °C to 50 °C	(14 °F to 122 °F)
	storage[13]	–40 °C to 70 °C	(–40 °F to 158 °F)
Storage		Capacity of 1024 complete tests	
Relative humidity		0 % to 95 % non-condensing	
Power[9]		Li-ion battery (9 hours)	
		3 hours to fully recharge when unit is off	
Warranty (years)		3	

Standard Accessories

User guide, AC adapter/charger, 2 Li-ION batteries, shoulder strap, Certificate of Calibration.

Notes

1. At 23 °C ± 1 °C and 1550 nm with FC connector and on batteries, unless otherwise specified.
2. Resolution, uncertainty and linearity are functions of input power; uncertainty is valid at calibration conditions.
3. Traceable to NIST; up to 20 dBm for GeX.
4. Power of > –45 dBm for Ge, > –30 dBm for GeX and > –57 dBm for InGaAs.
5. In High source mode.
6. As defined by Telcordia TR-TSY-000887, rms for lasers and at –3 dB for LEDs; typical values for LEDs.
7. After a warm-up time of 6 minutes, in CW source mode.
8. Typical value, at 1550 nm for SM and 850 nm for MM.
9. Typical value.
10. For fiber length ≤ 120 km.
11. Typical value.
12. For graded-index MM fibers, typical.
13. Without batteries.

ORDERING INFORMATION

FOT-93X-XX-XX-XX-X-XX

Model
FOT-932 = Ge detector, dual-wavelength 1310/1550 nm
FOT-932-4 = Ge detector, triple-wavelength 1310/1550/1625 nm
FOT-932-5 = Ge detector, triple-wavelength 1310/1490/1550 nm
FOT-932X = GeX detector, dual-wavelength 1310/1550 nm
FOT-932X-4 = GeX detector, triple-wavelength 1310/1550/1625 nm
FOT-932X-5 = GeX detector, triple-wavelength 1310/1490/1550 nm
FOT-933 = InGaAs detector, dual-wavelength 1310/1550 nm
FOT-933-4 = InGaAs detector, triple-wavelength 1310/1550/1625 nm
FOT-933-5 = InGaAs detector, triple-wavelength 1310/1490/1550 nm

Second Source
00 = Without second source
12C = 850/1300 nm LED 50/125 µm
12D = 850/1300 nm LED 62.5/125 µm

Talk Set and Visual Fault Locator[4]
00 = Without talk set and VFL
VFL = With visual fault locator
VFT = With talk set and VFL[2] (universal 2.5 mm connector)

Notes
1. Not available with second source.
2. Not available with triple-wavelength model equipped with second source.
3. Comes with FIPT-U25M for 2.5 mm connectors, FIPT-FC and FIPT-SC for bulkhead connectors.
4. Connector type for the talk set is the same as the one specified for the main source.

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
EA-EUI-28 = APC/DIN 47256[1]
EA-EUI-89 = APC/FC narrow key[1]
EA-EUI-91 = APC/SC[1]
EA-EUI-95 = APC/E-2000[1]

Software Language
A = English
C = Simplified Chinese
E = Spanish
F = French
G = German
X = Czech

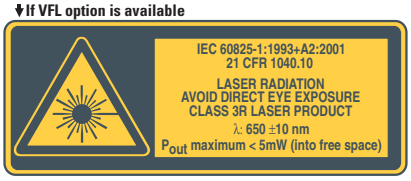
Fiber Inspection Probe
00 = Without probe
FP = Probe option and connection cable
FP1 = Probe connection cable and 200x probe[3]
FP5 = Probe connection cable and 200x/400x probe[3]

Example: FOT-932X-4-VFL-FP-A-EI-EUI-89

Safety

21 CFR 1040.10 and IEC 60825-1:1993+A1:1997+A2:2001:
Emitters used for sources, FasTesT, ORL and talk set
CLASS 1 LASER PRODUCT
CLASS 1 LED PRODUCT
The FOT-930's optional VFL is a Class 3R laser product. Output power level is lower than the maximum specified on label.
Refer to specifications for output power.

If VFL option is available



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