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Find the *Tektronix TekRanger-2 TFS3031* at our website: ***Click HERE***

Mini Optical Time Domain Reflectometer

TekRanger®2 TFS3031



Features and Benefits

- One-button Fully Automatic IntelliTrace Fiber Analysis
- Singlemode Distance and Loss Measurements Traceable to NIST
- Large, Backlit, High-resolution Display
- Multimode/Singlemode in One Unit (Optional)
- Keyboard Port and Optional Mini-keyboard
- RS-232 and Parallel Ports for Printing and PC Access
- Shock, Water and Dust Resistant
- Auto Echo Detection
- Selectable Splice Loss and Reflectance Thresholds
- Files are Compatible with, FiberMaster® OTDR, FMTAP™, PC Spreadsheets
- Export to Bellcore SOR
- Context Sensitive Help

Applications

- Installation and Acceptance Testing of Fiber Optic Networks
- Fiber Optic System Maintenance Testing
- Locating Optical Cable Faults During Restoration
- Optical System Documentation

TEKRANGER® 2 TFS3031

If your job is to install, maintain or restore optical fiber, the TekRanger 2 TFS3031 mini-OTDR with IntelliTrace Automated Fiber Analysis System is a rugged, easy-to-use, mini-optical time domain reflectometer (OTDR) that's built for you. It's designed to stand the rigors of field work, while providing precise measurements on singlemode or multimode optical fiber systems.

THE INTELLITRACE ADVANTAGE

IntelliTrace technology automatically adjusts and optimizes test parameters so you don't have to. Just press the Start/Stop button and it will provide the best possible resolution, while maximizing dynamic range to give you the most accurate measurements available in a mini-OTDR today. Unlike competitive units, one IntelliTraceFilter acquisition provides consistent, repeatable and accurate results. The location, reflectance and loss of every splice appears quickly and clearly on the large, high-contrast display.

The TFS3031 is the only mini-OTDR that can locate an event at 10 meters while also finding an end at 175 km away (on singlemode fiber) with the push of a single button. No need for multiple acquisitions to get a complete picture of your fiber, either with a displayed trace or an event table. You get greater productivity in labor with less training.

TRACEABLE MEASUREMENTS

The TekRanger 2 TFS3031 offers traceability on singlemode distance and loss measurements. This means that both the hardware and the software are included in our accuracy specifications. What this

Tektronix®

means to you is that you can count on the TFS3031 mini-OTDR to provide the most reliable and repeatable measurements of any OTDR in the world.

SUPERIOR PERFORMANCE

The TFS3031 sets a new performance standard for the combination of dynamic range, measurement range and dead zone performance in a mini-OTDR. We've made it easier to see events up close as well as to see events as far as 175 km.

CONVENIENT DATA STORAGE

Test results can be stored in the TekRanger® 2's ample internal memory or collected on the optional floppy disk drive. Windows based FMTAP™ software package gives you virtually unlimited flexibility when analyzing and documenting your spliced fibers. The data can also be used in the Tektronix FiberMaster® OTDR.

EASY SYSTEM SOFTWARE UPDATES

The TFS3031's optional disk drive and RS-232 port permit updating of the unit's firmware in the field so you can easily keep up with the latest technology.

Characteristics

WAVELENGTHS

850 nm ±30 nm, multimode.
1300 nm ±30 nm, multimode.
1310 nm ±20 nm, singlemode.
1550 nm ±20 nm, singlemode.
1625 nm ±20 nm, singlemode.

Dynamic Range*1

	Dynamic Range
850 nm (Opt. 01)	31 dB
850/1300 nm (Opt. 03)	31/28 dB
1310 nm (Opt. 04)	30 dB
1310/1550 nm (Opt. 06)	30/28 dB
1310/1550 nm (Opt. 10)	35/35 dB
1625 nm (Opt. 12)	30 dB

Readout Resolution –
25 cm minimum.
Loss threshold: 0.02 dB.
Loss resolution: 0.001dB.

Distance Measurements – Meters, Feet, Miles.

OTDR Distance Range Settings –
Singlemode: 1 to 240 km.
Multimode: 1 to 40 km.

Distance Resolution (IntelliTrace™) – 25 cm to 40 m.

Hardware Scale Accuracy*3 –
Horizontal Time Base: ±1.25 m ±1.25 m ± 10^{-5} x Distance
Vertical Linearity: 0.02 dB/dB.

System Measurement Accuracy*4 –
Distance: ±4 m.
Loss: ±0.01 dB.

Reflectance Accuracy – Exceeds Bellcore GR-196-CORE*2.

Measurement Time (Auto) – Less than 3 minutes (20 dB loss).

Dead Zone*2 (Options 01, 03, 04, 06, 10, 12)

	Event	Loss Measurement
Singlemode	5 m	15 m
Multimode	3.5 m	8 m

Display – High resolution 640 x 480; 7.2 in., high contrast; Operator switchable backlight.

Selectable Pulse Widths – (dependent on option).
Multimode:
850 nm: 1 m, 5 m, 10 m.
1300 nm: 1 m, 5 m, 10 m, 20 m, 50 m, 100 m.
Singlemode: 1 m, 5 m, 10 m, 20 m, 50 m, 100 m, 200 m, 500 m, 1000 m, 2000 m, 3200 m (with Opt. 10 and 12 only).

Memory Capacity –
100 traces in internal memory (typical).
3.5 in. floppy disk drive (optional).

Output Ports – RS-232 Serial; Centronics parallel printer, mini-DIN (keyboard).

Power Options – AC (100 to 240 V, 50 to 60 Hz). DC Operation: 9 to 16 VDC. Internal NiCad rechargeable battery (4 hours of operation depending on operating mode).

Laser Safety –
Class 1 per 21 CFR 1040.
Class 1 per CEI/IEC 825-1: 1993.
Options 3T, 4T and 7T are Class 1.
Option 6T is Class 2.

(WITHOUT INTERNAL DISK DRIVE)

Temperature Range –
Operating: –10°C to +40°C.
Nonoperating: –20°C to +60°C.

Storage Temperature – -20°C to +60°C.

Relative Humidity – 5% to 95% (noncondensing).

Field Usage*2 – Shock, water and dust resistant.

Shock*2 – 30 in. drop.

Safety – UL 3111-1, CSA 1010.1.

Physical Characteristics

Dimensions	cm	in.
Width	29.2	11.5
Height	11.4	4.5
Depth	24.1	9.5
Weight	**kg**	**lb.**
Net	4.2	9.2

**1 Typical performance @ 25°C.*

**2 Per Bellcore GR-196-CORE.*

**3 Excludes uncertainty in fiber IR and cabling factor.*

**4 Verified on NIST traceable calibration system, singlemode options only.*

Ordering Information

TFS3031

TekRanger® 2 Base Unit.

Includes: Operator Manual (070-9027-06); Quick Reference Card (063-2096-02); NiCad Battery Pack (146-0112-00); Power/Charger Adapter (119-4545-01); Power Cord (161-0228-00); Soft Carrying Case (016-1215-02).

OUTPUT PORT OPTIONS*[1]

Multimode Options (62.5 µm GI Fiber) –

Opt. 01: Single wavelength 850 nm.

Opt. 03: Dual wavelength 850/1300 nm.

Singlemode Options (ITU-T G.652) –

Opt. 04: Single wavelength 1310 nm.

Opt. 06: Dual wavelength 1310/1550 nm.

Opt. 10: Dual wavelength 1310/1550 nm extended range.

Opt. 12: Single wavelength 1625 nm.

INTERNATIONAL POWER PLUGS

Opt. A1 – Universal Euro 220 V. Order 161-0066-09.

Opt. A2 – United Kingdom 240 V. Order 161-0066-10.

Opt. A3 – Australia 240 V. Order 161-0066-11.

Opt. A4 – N. American 240V, 60 Hz.

Opt. A5 – Switzerland 220 V. Order 161-0154-00.

Opt. A6 – Japan 110 V. Order 161-0288-00.

LANGUAGE OPTIONS

Includes: Alternate language instrument interface and User Manual. All language options can also be run in English.

Opt. L1 – French.

Opt. L2 – Italian.

Opt. L3 – German.

Opt. L4 – Spanish.

Opt. L5 – Japanese.

Opt. L6 – Portuguese.

Opt. L7 – Simple Chinese.

Opt. L8 – Standard Chinese.

Opt. LF – Finnish.

Opt. LD – Dutch.

MEASUREMENT SERVICE OPTIONS

Opt. R3 – Repair warranty extended to cover three years.

Opt. R5 – Repair warranty extended to cover five years.

OPTIONAL ACCESSORIES

Opt. 11 – 3.5 in. Disk Drive.

Opt. 19 – Mini-keyboard (118-9402-00).

Opt. 1D – Test Data Sheet.

Opt. 1S – FMTAP™ Software.

Connector Options*[2]

Multimode Options	Singlemode Option	Connector Type	Part Number
20	30	Biconic	119-4515-00
21	31	FC/PC	119-4516-00
22	32	D4/PC	119-4514-00
24	34	ST/PC	119-4513-00
25	35	DIN/PC 47256	119-4546-00
26	36	DIAMOND 3.5	119-4558-00
28	38	SC/PC	119-4518-00
	41	FC/APC*[3]	119-5115-00
	42	SC/APC*[3]	119-5154-00
	44	ST/APC*[3]	119-5888-00
	45	DIN/APC*[3]	119-5887-00

Opt. 1T – Hard Transit Case (016-1210-00).

Opt. 2T*[4] – Optical LED Source, multimode 850/1300 nm reference source (TOP130).

Opt. 3T*[5] – Optical Laser Source, singlemode 1310 nm reference source (TOP140).

Opt. 5T*[4] – Optical Power Meter 850/1310/1550 nm (TOP200).

Opt. 6T*[4] – Visual Fault Finder 635 nm (TOP300).

Opt. 7T*[5] – Optical Laser Source, singlemode 1310/1550 nm reference source (TOP160).

Opt. 8T*[5] – High Power Optical Power Meter 980/1310/1550 nm (TOP220).

Opt. 9T*[5] – Adjustable Optical Attenuator, singlemode 0-35 dB (TOP400).

Hard Travel Case – Order 016-1210-00.

RS-232 PC Interface Cable – Order 012-1379-00.

FMTAP Trace Analysis Package – Order FMTAP.

Cigarette Lighter Power Adapter – Order 198-5810-00

Centronics Parallel Printer Cable – Order 012-1214-00.

Module Level Service Manual – Order 070-9026-04.

E2000/PC Connector – Order 119-5164-00.

Portable Printer – Order DMAPRN.

CONFIGURATION KITS

TFS3031 Opt. AN – LAN Configuration.

Includes: 850/1300 nm multimode OTDR port, 3.5 in. disk drive, ST connector, FMTAP software, Hard travel case.

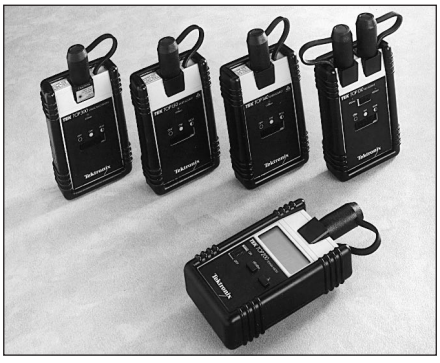
TFS3031 Opt. AX – Installer Configuration.

Includes: 850/1300 nm multimode port, 1310/1550 nm singlemode OTDR Port, 3.5 in. disk drive, ST connector on multimode, FC connector on singlemode, FMTAP Software, Hard travel case.

Recommended Accessories

TOP Handheld Optical Test Products — Overview

The TOP series of handheld fiber optic tools are compact, rugged and extremely reliable instruments for installing and maintaining fiber optic networks. The series includes both LED and laser sources, optical power meters, a visual fault finder and an optical attenuator.



TOP130 Optical LED Source

- Excellent long-term stability
- Dual wavelength multi-mode (850 nm and 1300 nm)
- Selectable CW or modulated outputs

TOP140 Optical Laser Source

- Singlemode 1310 nm
- Stabilized calibrated output
- Hermetically sealed laser diode for longevity

TOP160 Optical Laser Source

- Dual wavelength single-mode (1310 and 1550 nm)
- Stabilized calibrated output
- Hermetically sealed laser diode for longevity

TOP200 Optical Power Meter

- Relative dB mode for direct attenuation and insertion loss measurements

TOP220 High-level Optical Power Meter

- Measures up to +27 dBm
- 980 nm to 1550 nm in 3 calibrated wavelengths
- >100 hours battery life

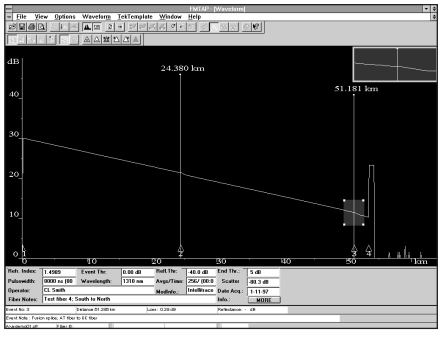
TOP300 Visual Fault Finder

- Wavelength 635 nm
- Universal connector interface
- Highly visual fiber tracing fault location

TOP400 Adjustable Optical Attenuator

- 0 to 35 dB attenuation

FMTAP™ Analysis Software — Overview



FMTAP version 3.1 OTDR trace analysis software allows you to access, analyze and document OTDR test data from a PC Windows platform. You can easily analyze single and multiple fibers and document the quality of fiber links in your network using FMTAP software and your saved OTDR data files.

FMTAP is compatible with tests from Tektronix mainframe and mini-OTDRs including the TFP2, TFP2A, TFS3030 and TFS3031. It is also compatible with Bellcore SOR file formats.

For further information, contact Tektronix:

Worldwide Web: for the most up-to-date product information visit our web site at: www.tektronix.com/Measurement/commtest/

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