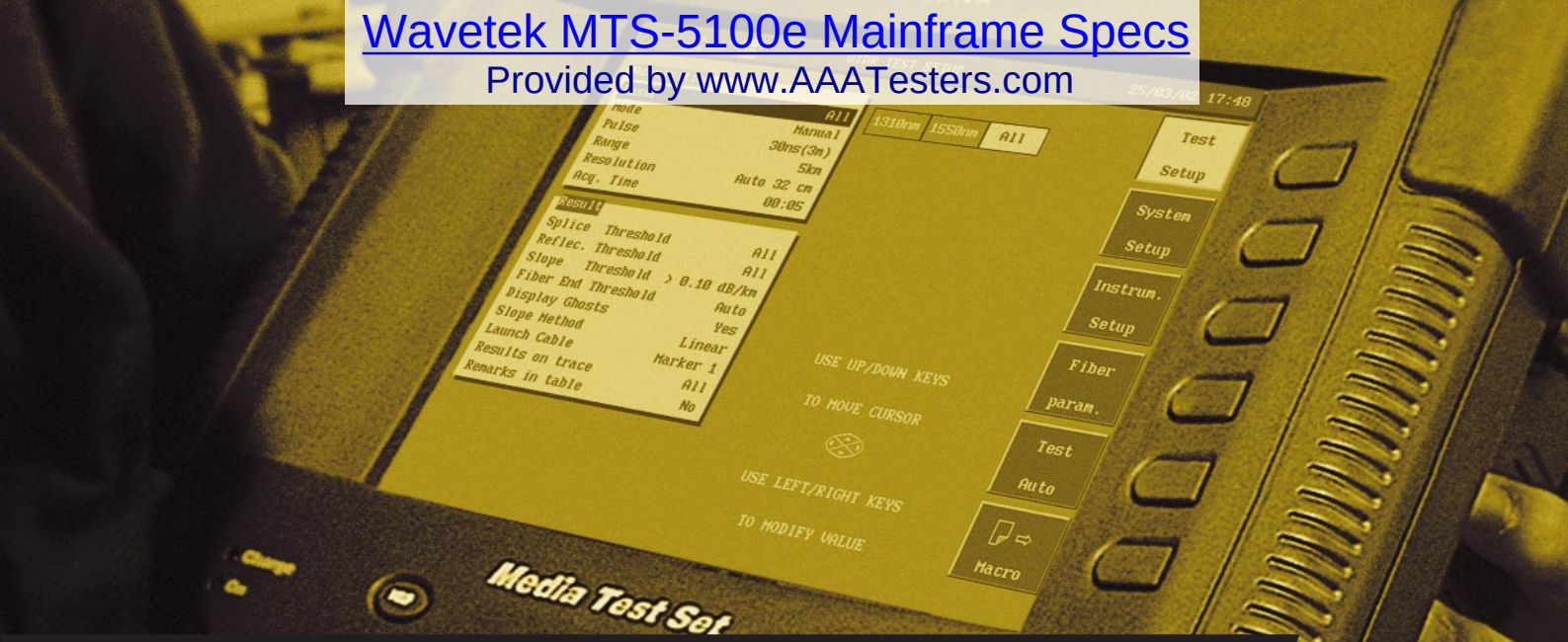

Acterna MTS 5000e Series

OTDR and Loss Test modules

Advanced modular tester for Fiber Characterization

The unique Acterna Media Test Set (MTS^e) is a universal fiber test platform with a range of plug-in modules providing a comprehensive, integrated solution for OTDR, DWDM, Chromatic Dispersion and Polarization Mode Dispersion testing in one field-rugged instrument. Powerful, easy to use and highly cost-effective, MTS^e is designed to push the boundaries of field test productivity for network installers, operators and maintenance teams.

A wide range of field-interchangeable modules is available for the MTS^e platform, including OTDRs for short haul (SR), medium haul (DR), long haul (HD), very long haul (VHD) and 1625 nm, WDM modules for C and L-band testing, optical spectrum analyzers, polarization mode dispersion and chromatic dispersion testers, visual fault locators, optical talk sets and a range of light sources and power meters.

Acterna's optical time domain reflectometer (OTDR) and loss test (LTS) plug-in modules are compact, yet powerful additions to the MTS^e family of testers.

The OTDR module is the industry's fastest, offering the highest performance solutions of any OTDR field instrument on the market. Used with the MTS^e platform, both the OTDR and LTS modules deliver high accuracy, cost-effective, reliable testing for the installation and maintenance of optical fiber networks.

Highlights

- New generation singlemode and multimode modules
- From LAN (1.5 m event dead zone) to very long haul applications (44 dB dynamic range)
- High performance testing (up to 128,000 acquisition points with 0.1 s realtime sweep)
- Fiber characterization using field interchangeable CD, PMD, LTS, OTDR, DWDM testing modules
- Offers maximum portability (3.5 kg) and up to 16 hours battery operation
- A complete range of PC software to enhance your OTDR reporting capabilities on MTS^e

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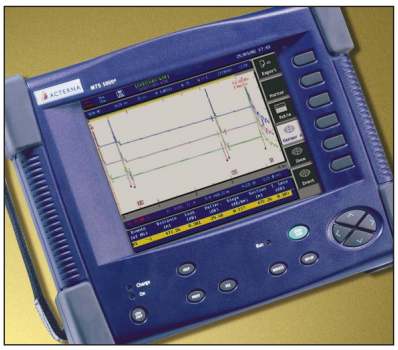
The Acterna MTS^{e} OTDR is the fastest, most reliable and accurate OTDR on the market currently



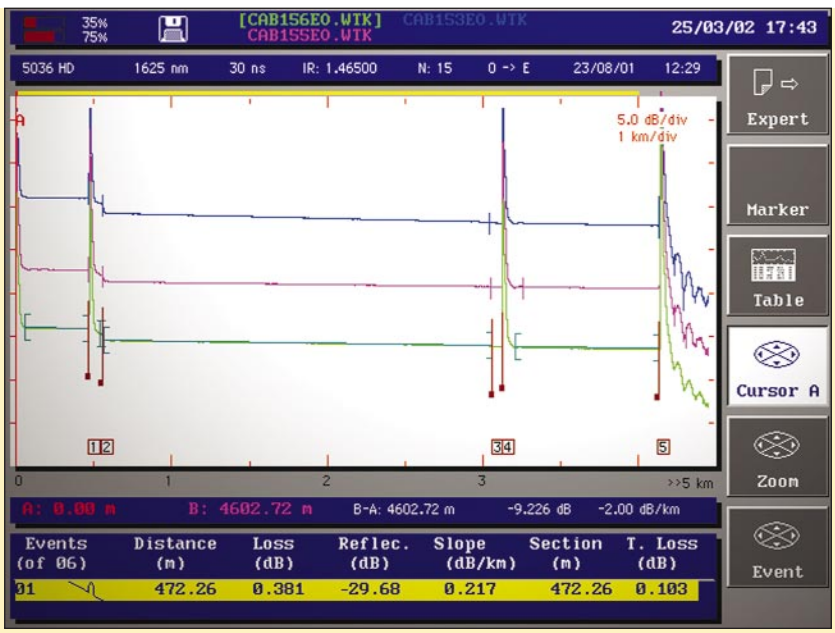
Taken together, the module's automation and rapid testing features offer impressive time savings for companies involved in commissioning and locating faults in optical fiber networks.

Maximizing field productivity

The most important prerequisites for testing in the field are ease-of-use and speed of acquisition. The OTDR module ensures maximum test productivity by providing one-button, automated operation for all of its critical test routines and a very high data acquisition speed of 40 dB in seconds.

Delivering the industry's highest performance OTDR

The MTS^{e} OTDR module is the fastest and most accurate OTDR to-date. It offers a dynamic range of up to 44 dB at 1550 nm and boasts a 0.1 second sweep time. As part of the MTS^{e}, the OTDR module has a test capability of more than 200 km and can measure up to 128,000 separate datapoints with 4 cm sampling resolution. The product's short deadzone enables the user to differentiate events down to 1 meter.



Multiple wavelength display with a single press of a button

Optimized functions for in-depth analysis/operation

The OTDR's bidirectional analysis capability enables true splice loss measurement with both end traces. Its multiple trace management feature greatly assists the process of proactively managing fiber problems and helps compare different current and stored measurements for in-depth analysis. A powerful macro function enables users to perform a series of tests without ongoing user intervention.

Suitable for every skill level

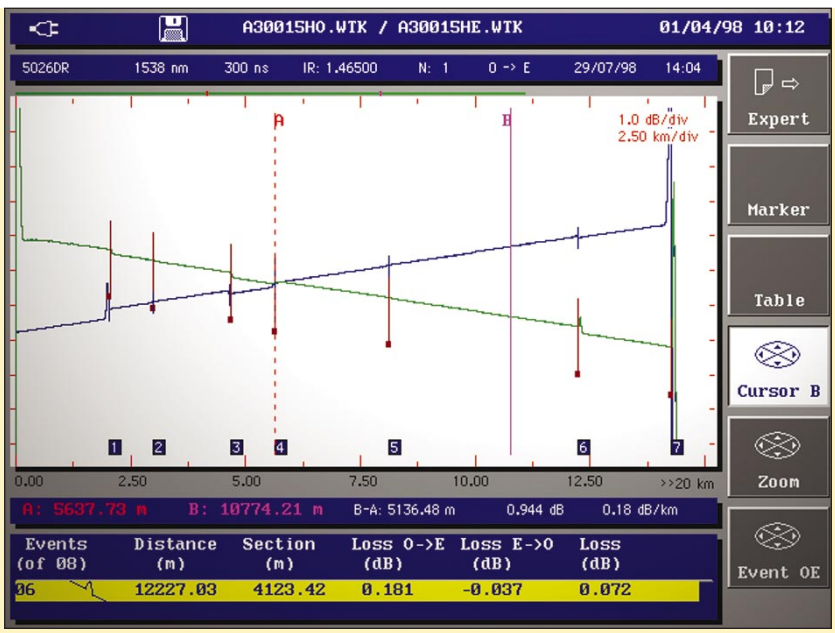
Whatever the user's skill level, the OTDR module and MTS[e] instrument combination can rise to the challenge. Direct access keys ensure that users can access all the instrument's sophisticated features via a highly intuitive interface and by a comprehensive setup and results screen. The OTDR module delivers complete trace analysis, with a direct link between trace and table.

Enhanced reporting power

Powerful instruments require powerful reporting tools. The OTDR and loss test set come with the most complete analysis and reporting software. The package supports direct Ethernet transfer to a PC running Acterna's OFS-100 Optical Fiber Trace Software or OFS-200 Optical Fiber Cable Software. This enables users to perform automatic multiple trace analysis and print out cable test results in batches, for fast generation of dedicated acceptance reports.

A multitude of testing excellence models

The MTS[e] houses all the essential tools for installation and maintenance of fiber optic links. The complete range of test modules enables fiber characterization using a single unit.



Bidirectional trace and table

Technical specifications

Base unit (typical at 25°C)

Display

Black and white 8 inches	LCD/640 x 480
Passive color 8 inches	LCD/640 x 480
Active TFT color 8.4 inches	LCD/640 x 480

Languages

English, French, German, Spanish, Portuguese, Italian, Chinese, Taiwanese, Russian, Korean, Japanese, Turkish

Weight

MTS 5100^e	3.5 kg (7.7 lb) including 1 module and 1 battery
MTS 5200^e	5.5 kg max (12.1 lb) including 2 modules, 2 batteries and internal printer

Size

MTS 5100^e	300 x 235 x 90 mm 11.8 x 9.25 x 3.5 in
MTS 5200^e	300 x 235 x 130 mm 11.8 x 9.2 x 5.1 in

Input/Output

MTS 5100^e	RS-232-C, Centronics interface, external keyboard (optional), Ethernet interface (optional)
MTS 5200^e	MTS 5100^e plus IEEE–488 GPIB (optional), computer display output – VGA type (optional)

Internal printer	MTS 5200^e High quality graphical thermal printer, 832 dots/line, 112 mm paper width (optional)
Power supply	AC or internal removable NiMH batteries
Operation time	up to 16 hours with 2 batteries (Bellcore GR-196)
Internal charger	Yes (external charger available)
Charging time	< 3 hours per battery
DC input	11 to 14 V
AC adapter	
MTS 5100^e	Input 100–250 V, 50–60 Hz, 1.6 A, Output 12 V DC / 4.2 A
MTS 5200^e	Input 85-264 V, 47-400 Hz, 1.3 A, Output 12 V DC / 55 Watts max
	Results display dBm, dBr, nW, µW, mW
Temperature range	
Operating AC Power (no options)	–20°C to 50°C (–4°F to +122°F)
Operating with all options	0°C to 40°C (+32°F to +104°F)
Storage	–20°C to 60°C (–4°F to +140°F)
Humidity	95% without condensing
EMI/ESD	CE compliant

OTDR characteristics

Distance units

Kilometers, feet and miles

Group index range

1.30000 to 1.70000 in 0.00001 steps

Number of data points

Up to 128 000 data points

Distance measurement

Automatic or dual cursor

Display span	From 2.6 m up to maximum range (380 km for HD and VHD modules)
Display resolution	1 cm
Cursor resolution	From 1 cm
Sampling resolution	From 4 cm
Accuracy	±1 m ±sampling resolution ±1.10^{-5} x Distance (excluding group index uncertainties)

Attenuation measurement

	Automatic, manual, 2-point, 5-point and LSA
Display span	From 1.25 dB to 55 dB
Display resolution	0.001 dB
Cursor resolution	From 0.001 dB
Accuracy	±0.05 dB ±0.05 dB/dB
Threshold	0.01 to 5.99 dB in 0.01 dB step

Reflectance/ORL measurements

	Automatic or manual
Display resolution	0.01 dB
Threshold	–11 to –99 dB in 1 dB step

Storage	Bellcore/Telcordia compatible Version 1.1 and Version 2.0
Internal memory	400 traces typical in internal memory
Floppy disk drive	3.5 inches, MS DOS compatible (optional)

OTDR test setup

OTDR Module technical specifications (typical at 25°C) Fully compatible with the MTS 5100^e and 5200^e OTDR Modules

Feature	Description					
	Multimode modules MM	***Multimode modules ML***	***Short range modules SR***	***Medium range modules DR***	***Long range modules HD***	***Very long range modules VHD***
Central wavelength[1]	850/1310 nm ±20 nm	850/1310 nm ±20 nm	1310/1550 nm ±20 nm	1310/1550 ±20 nm	1310/1550/1625 nm ±20 nm ±10 nm for 1625 nm	1310/1550/1625 nm ±20 nm ±10 nm for 1625 nm
Laser safety class (21 CFR)	Class 1	Class 1	Class 1	Class 1	Class 1	Class 1
Pulsewidth	3 ns to 200 ns	3 ns to 200 ns	10 ns to 10 µs	5 ns to 10 µs	10 ns to 20 µs	10 ns to 20 µs
Distance range	Up to 80 km	Up to 80 km	Up to 260 km	Up to 260 km	Up to 380 km	Up to 380 km
RMS dynamic range[2]	25 dB/23 dB	18 dB/16 dB	35 dB/33 dB	37 dB/35 dB	42 dB/40 dB/40 dB	44 dB/44 dB/44 dB
Event dead zone[3]	1.5 m	2 m	3 m	1 m	4 m	6 m
Attenuation dead zone[4]	5 m	10 m	15 m	8 m	15 m	20 m
VFL option for OTDR module	635 nm ±15 nm Class 2, 21 CFR		635 nm ±15 nm Class 2, 21 CFR	635 nm ±15 nm Class 2, 21 CFR	635 nm ±15 nm Class 2, 21 CFR	635 nm ±15 nm Class 2, 21 CFR

*[1]**Central wavelength:** Laser at 25°C and measured at 10 µs for singlemode and 50 ns for multimode*
*[2]**RMS dynamic range:** The one way difference between the extrapolated backscattering level at the start of the fiber and the RMS noise level, after 3 minutes averaging.*
*[3]**Event dead zone:** Measured at ±1.5 dB down from the peak of an unsaturated reflective event.*
*[4]**Attenuation dead zone:** Measured at ± 0.5 dB from the linear regression using a FC/PC type reflectance.*

LTS Module technical specifications (typical at 25°C)

Feature	***Power meter***
Type of sensor	InGaAs
Spectral range	From 800 to 1650 nm in 1 nm step
Calibrated wavelength	850 nm, 1310 nm, 1550 nm
Accuracy	±0.2 dB
Resolution	0.01 dBm/0.01 nW
Measurement range	+5 dBm to –65 dBm at 850 nm +5 dBm to –70 dBm at 1310/1550 nm +25 dBm to –50dBm at 1310/1550 nm with adapter/attenuator
Results display	dBm, dBr, nW, µW, mW
Tone detection	270 Hz, 330 Hz, 1 kHz, 2 kHz for fiber identification

Features	***Singlemode light source***	***Multimode light source***	
Calibrated wavelength	1310/1550 nm ±30 nm	850 nm ±30 nm	1300 nm ±30 nm
Spectral width	< 5 nm	50 nm	150 nm
Stability	(1 hour) ±0.05 dB	±0.05 dB	
Stability (24 hour)	±0.15 dB	±0.15 dB	
Calibrated output power	0 dBm	–17 (850), –19 (1300) or –18/20 dBm	
Modulation	270 Hz, 330 Hz, 1 kHz, 2 kHz for fiber identification	270 Hz, 330 Hz, 1 kHz, 2 kHz for fiber identification	
Feature	***Dynamic range***		
Talk Set option	35 dB		

Ordering information

Base instrument options

5000/Hdisk	Hard disk drive
5000/FD	Floppy disk drive
5000/Pas	High definition VGA color display: passive matrix
5000/Col	High definition VGA color display: active matrix
5000/ETH	Ethernet option
5200/IEEE	IEEE interface for MTS 5200e
5200/PR	Built in thermal printer for MTS 5200e (with 12 rolls)
5200/VGA	Display output for MTS 5200e (with 5000/Col only)

Main OTDR modules

(single and dual wavelength versions available)

5023 ML	Multimode LAN 850/1300 nm Module
5023 MM	Multimode 850/1300 nm Module
5026 SR	Short Range Singlemode 1310/1550 nm Module
5026 DR	Medium Range/High Resolution Singlemode 1310/1550 nm Module
5026 HD	Long Range Singlemode 1310/1550 nm Module
5027 HD	Long Range Singlemode 1625 nm Module
5036 HD	Long Range Singlemode 1310/1550/1625 nm Module
5026 VHD	Very Long Range 44 dB 1310/1550 nm Module
5027 VHD	Very Long Range 44 dB 1625 nm Module
5029 VHD	Very Long Range 44 dB 1550/1625 nm Module
502X/VFL/FC	VFL Option for OTDR module, FC/PC Connector
502X/VFL/ST	VFL Option for OTDR module, ST Connector

Main LTS modules

(single and dual wavelength versions available)

50600 PM	Power Meter, 800-1650 nm
506X0 LTS	Combined singlemode or multimode light source and Power Meter
506X1 LTS/TS	Combined singlemode light source and Power Meter with Talk Set

Application software

OFS-100	Optical Fiber Trace Software: PC Analysis Software under Windows
OFS-200	Optical Fiber Cable Software: PC Cable Acceptance Software under Windows

Main accessories

5000/Keyb	External keyboard
5001	Additional rechargeable battery
5002	External battery charger
5004	Soft carrying case
5005	Hard transit case
5006	Cigarette lighter power adapter
5008	Additional batch of 12 paper rolls for MTS 5200e printer

Optical connectors

Universal single and multimode PC connectors	UNI/PC/NAD
Universal single mode APC connectors	UNI/APC/NAD
Universal adapters	UNI/FC/AD, UNI/SC/AD, UNI/ST/AD, UNI/DIN/AD

Acterna Advantage℠ – adding value with global services and solutions

From basic instrument support for your field technicians to management of complex, company-wide initiatives, Acterna's service professionals are committed to helping you maximize your return on investment. Whatever your needs – product support, system management, education services, or consulting and OSS (operations support systems) business planning – we offer programs that will give you the competitive edge. This is the foundation of Acterna Advantage.

Acterna is the world's largest provider of test and management solutions for optical transport, access and cable networks, and the second largest communications test company overall. Focused entirely on providing equipment, software, systems and services, Acterna helps customers develop, install, manufacture and maintain optical transport, access, cable, data/IP and wireless networks.

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Note: Specifications, terms and conditions are subject to change without notice.

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