

MTS 5100 Media Test Set

WAVETEK

Mini OTDR and Optical Test Set for Fiber Networks



Advanced Tools for Advanced Services

Wavetek Fiber Optic Test Equipment

Fiber networks are rapidly expanding as the demand for high bandwidth digital services grows. New optical transport technologies, such as SONET/SDH, ATM, DWDM, HFC, and corresponding network architectures require advanced test equipment. Wavetek's complete family of fiber optic test equipment provides cost-effective solutions with improved optical performance.

Ten Years of OTDR Design Experience

Wavetek is a major worldwide supplier of test and measurement instruments for LAN, CATV, and Telephony applications. Over the past ten years, Wavetek has led the test and measurement industry in developing innovative field-based test equipment with advanced optical technology. With the introduction of the Media Test Set, we continue to provide the most effective test tools for field installation and maintenance.

We maximize installation and maintenance efficiency by providing dependable test tools that ensure fiber plant quality at every stage. Wavetek has proven experience in handheld optical test tools, mini and mainframe OTDRs, application software for acceptance records, and advanced fiber monitoring systems. You can rely on this tradition of quality equipment to make sure your fiber conforms to the highest standards.

Worldwide Leaders in Test Equipment Design

Established in 1962, Wavetek is the global leader in cable television test and is a premier supplier of test equipment for the wireless, cable television, fiber optic and local area network communications industries. Wavetek's customers are supported by our large network of employees, independent representatives and distributors in all major markets.



- ✓ Multi-Purpose
- ✓ Mobile and Compact
- ✓ Advanced Performance
- ✓ Extended User Life



MTS 5100 Media Test Set

Affordable Field Modularity

New and enhanced network services require increased bandwidth, leading the communications industry to expand its test requirements. Advanced test and measurement needs call for advanced equipment, allowing craftsmen to perform multiple functions with a single test instrument. MTS 5100 is at the forefront of new OTDR technology.

Universal Test Set

The Universal Test Set concept outlines the requirements and objectives for multifunction, compact test gear. Documented by Bellcore, the concept can be found in GR-2876-CORE Generic Requirements for Universal Test Sets from December 1995. Today, telecommunications, cable television, and data communications users appreciate the advantages of more portable test gear with expanded capabilities and a common user interface.

MTS 5100 Media Test Set

With the MTS 5100, Wavetek is one of the first companies to develop and market a modular OTDR that embodies the Universal Test Set concept. Based upon the latest RISC microprocessor interfacing with modular architecture,

the MTS provides excellent performance and enhanced field modularity.

MTS provides a comprehensive set of optical test functions for incoming test, fiber plant construction, splicing, cable acceptance, and cable restoration. MTS tests short or long haul fiber networks in singlemode or multimode applications. Two optical module bays allow the user to configure and upgrade the tester in the field, while the familiar user interface and integrated help functions simplify testing.



Applications	OTDR Modules					Optical Test Set	Options
	Multimode	Short Range Singlemode	Medium Range Singlemode	Long Range Singlemode	1625nm	Power Meter & Light Source	Visual Fault Locator
	MM	SR	DR	HD	1625	OTS	VFL
Local Data Communications	✓	✓				✓	✓
Broadband Analog Transmission		✓	✓			✓	✓
Short Haul Digital Telecommunications		✓	✓			✓	✓
Long Haul Digital Telecommunications			✓	✓	✓	✓	✓
Broadband Digital Transmission		✓	✓	✓	✓	✓	✓
Amplified Systems			✓	✓	✓	✓	✓

Applications

Local Data Communications

Broadband Analog Transmission

Short Haul Digital Telecommunications

Long Haul Digital Telecommunications

Broadband Digital Transmission

Amplified Systems

MTS 5100 Media Test Set

Multiple Test Functions In A Single Unit

- † Two bays available in the unit to house two optical test modules
- † Quad wavelength singlemode and multimode OTDR for installations
- † Link loss, fiber loss, event loss, return loss, ORL, end-to-end loss, and optical budget tests
- † Short distance performance for building, riser, patch panel tests
- † Long distance performance for amplified systems in supertrunking, SONET/SDH, and submarine cables
- † OTDR and insertion loss test functions for fiber plant acceptance
- † 1625nm module for testing fibers with live traffic
- † VFL option for fault-finding in the OTDR deadzone

The MTS is designed to integrate several field test functions in a single unit. Two slots are provided for optical modules, and the user can mix and match the test configuration according to the testing needs at hand. Typical MTS configurations include a four-window 850nm to 1550nm dual port multimode and singlemode OTDR, or a dual wavelength OTDR with a complete set of insertion loss tests with integrated light source and power meter.

Complete User Flexibility

With over nine available OTDR modules, the user is equipped to cost-effectively test short and long spans of fiber at all operating wavelengths with maximum precision. The 1625nm OTDR module is ideal for systems applications where fiber is tested outside wavelengths used for traffic.

To ease fiber tracing in multi-fiber cables, the visible light source option illuminates and identifies the fiber connected to the source. An additional module allows users to combine a light source, power meter, and optical talk set providing all necessary functions for effective insertion loss testing.

Upgradable Investment

The MTS modular concept reduces the number of different testers required for the job and eases instrument stock monitoring. Whether you need test equipment today for short or long haul cables, point-to-point or complex branching systems, or multimode or singlemode networks, MTS provides both an immediate solution and an upgrade path for future transport technologies.



Top Screen With simple pull-down measurement parameters and system option menus, MTS is easy to operate.



Bottom Screen The Instrument Setup screen permits rapid selection and setup of optical test functions. MTS immediately recognizes installed modules and displays a clear, graphical representation of available and selected functions.

- Multi-Purpose
- Mobile and Compact
- Advanced Performance
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Optimized for Field Use

- † *Small and compact at less than 3.5kg (7.8lbs)*
- † *Water and dust resistant with all input/output connectors protected from the elements*
- † *Extended operating life of up to 16 hours*
- † *Intelligent battery management with charge indicator, rapid two hour charging, and optional 12VDC adapter*
- † *Fast processing for immediate results and on-site analysis for cable restoration*
- † *Universal optical connectors increase flexibility*

Optical test equipment needs to couple high performance with maximum portability to be productive in the field. MTS has a small footprint to ease testing in areas with limited access such as crowded wiring closets or underground enclosures. A hardened outer case with protective bumpers ensures that the unit survives even the harshest conditions.

Efficient Testing of High Count Cables

MTS provides extremely rapid sweep times, straightforward and vivid presentation of the fiber trace and results, and fast storage possibilities with SRAM or other internal memory devices. These features are particularly useful for fiber plant commissioning where the requirement for two-way measurements at both wavelengths demands high productivity.

Extended Battery Life Improves Productivity

Testing high fiber count cables requires a unit that can operate for extended periods on battery. With a maximum operating time of 16 hours, MTS is at the top of its class in this category. Its internal battery compartment accommodates up to two removable, rechargeable Nickel Metal Hydride cells.

Simple User Interface Reduces Training Requirements

MTS has a familiar, intuitive user interface, requiring little to no training for experienced OTDR users, and shortening the learning curve for novices. Simple direct access keys make primary test functions available to the user at the push of a button for maximum productivity, while results are logically organized on the large color display for easy interpretation.

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High Performance for the Novice and the Expert

- † *Fast real-time sweep (0.5s) for mechanical splicing and bare fiber testing*
- † *Super-fast data processor reaches maximum dynamic range in less than one minute*
- † *Up to 32000 data points for maximum resolution at 16cm sampling*
- † *Down to 1m event deadzone and up to 35dB dynamic range with DR OTDR module*
- † *High dynamic range (40dB) OTDR module for long haul testing*
- † *Full Bellcore GR196 data compliance*
- † *Automatic detection of splices or fiber bends down to 0.01dB*
- † *Macro function for dual wavelength testing in one step*

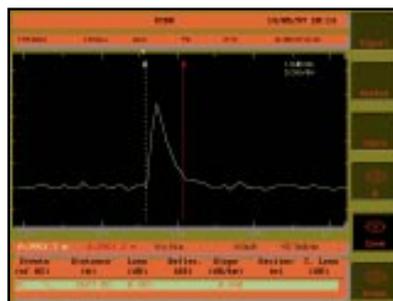
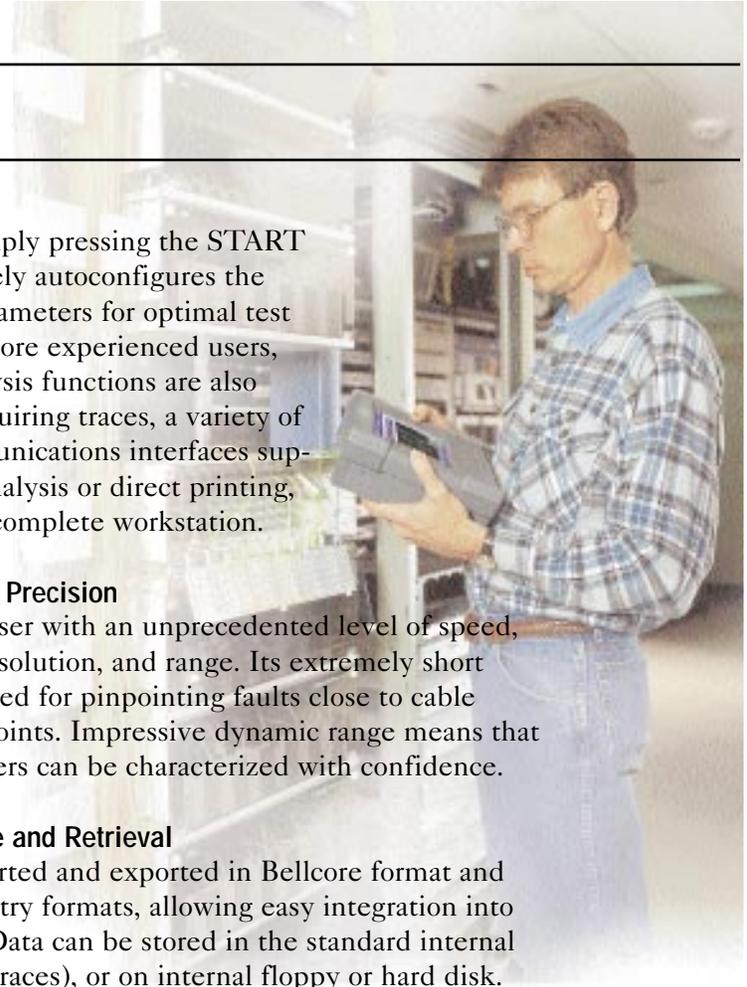
For the novice, simply pressing the START button immediately autoconfigures the measurement parameters for optimal test performance. For more experienced users, advanced trace analysis functions are also accessible. After acquiring traces, a variety of standard data communications interfaces support download for analysis or direct printing, making the MTS a complete workstation.

Maximum Speed and Precision

MTS provides the user with an unprecedented level of speed, processing power, resolution, and range. Its extremely short deadzones can be used for pinpointing faults close to cable junctions or splice points. Impressive dynamic range means that even the longest fibers can be characterized with confidence.

Flexible Data Storage and Retrieval

Results can be imported and exported in Bellcore format and other standard industry formats, allowing easy integration into existing databases. Data can be stored in the standard internal memory (up to 200 traces), or on internal floppy or hard disk. Optional 1GB hard disk drive capacity is useful for commissioning and acceptance tests on high fiber count cables, while an auto-incrementing file utility simplifies storage and retrieval.



Top Screen The singlemode DR module attains very short deadzones, an important parameter for trouble shooting. Shown, an attenuation deadzone of less than 10m after a connector.



Bottom Screen Ideal for long haul supertrunk testing, the DR OTDR module has over 35dB dynamic range. On a very long fiber, MTS allows the user to easily step along the trace from event to event.

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Built for Maximum Use and Longest Life Span

Wavetek has built a reputation as a leader in test equipment service and support. Our global network of technical support and service centers is aimed at serving you. The MTS is manufactured in a high technology ISO 9002 facility, ensuring that you get the best quality product.

Improved Service

MTS modules can be upgraded without returning the unit to the manufacturer. The MTS chassis accepts and automatically recognizes all available modules, leaving the user free to replace faulty or out-of-calibration modules in the field.

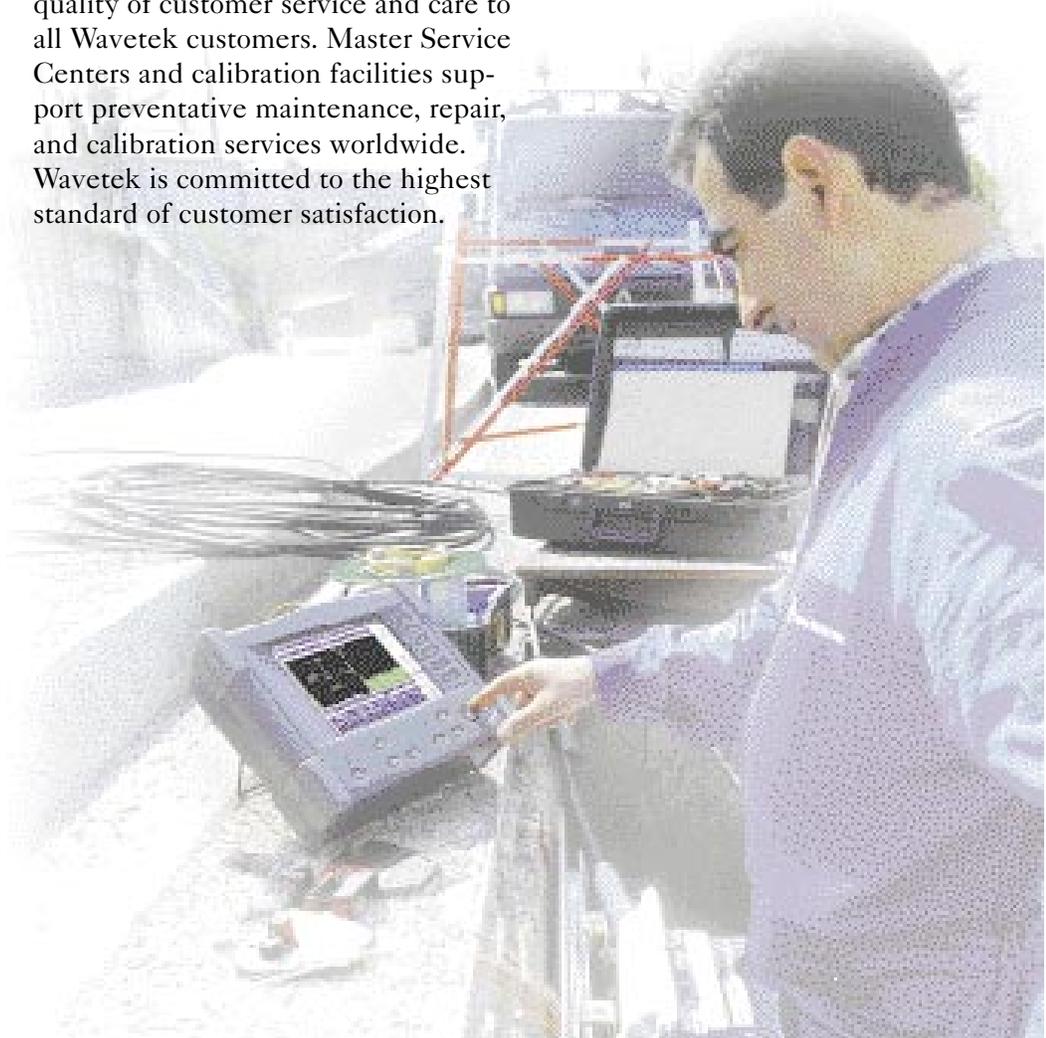
Improved Upgradability

MTS hardware and firmware can be upgraded without return to the manufacturer. As new technology develops, Wavetek designs new modules that can be simply inserted into one of the MTS module slots. New instrument firmware can be downloaded via floppy disk so that you have all the latest functionality and test parameters.

Worldwide Service and Customer Care

Our mission is to provide the highest quality of customer service and care to all Wavetek customers. Master Service Centers and calibration facilities support preventative maintenance, repair, and calibration services worldwide. Wavetek is committed to the highest standard of customer satisfaction.

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Product Information

General Information

Standard MTS 5100 base unit is delivered with an 8" LCD screen, an RS232C and Centronics interface, one battery, and a user manual. It can accept up to two field-interchangeable optical modules and two batteries.

Base Unit Characteristics

Weight: 3.5 kg (7.8 lbs) including two modules
Size: 330 x 235 x 90 mm (13 x 9.25 x 3.5")
Power: Rechargeable removable NiMH batteries
Storage: Internal memory for 200 typical traces; optional hard and floppy disk drives
Datapoints: Up to 32,000 with minimum 16cm spacing
Operating Life: 16 hours using two batteries
Safety: IEC825 Class 1

Base Unit Options

5000/COL 8.4" active matrix TFT color screen
5000/HDISK 1GB hard disk drive
5000/FD 1.44MB floppy disk drive
5000/KEYB RS232C external keyboard

OTDR Modules

502XMM Multimode 850, 1330, and 850/1300nm
502XSR Short range 1310, 1550 and 1310/1550nm
502XDR Medium range high resolution 1310, 1550, and 1310/1550nm
502XHD Long range 1310, 1550, 1310, and 1550nm
5027DR Medium range high resolution 1625nm
502X/VFL Visual fault locator 635nm

OTS Modules

50501TS Talk set option
505X1/LS/TS Light source and talk set
50600PM Power meter 800 to 1650nm
50601PM/TS Power meter with talk set
506XOLTS Combined light source and power meter

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