Product Brochure

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MT9083A/B/C ACCESS MasterTM

850/1300 nm OTDR for Multimode Fiber 780/1310/1383/1490/1550/1625/1650 nm OTDR for Single Mode Fiber





All-in-One Solution that Reduces Testing Times to Install and Maintain FTTx, CATV, LAN, Access and Metro Networks

850/1300 nm OTDR for MMF 780/1310/1383/1490/1550/1625/1650 nm OTDR for SMF

MT9083 ACCESS MASTER SERIES OVERVIEW

Optical fibers are a key technology in today's modern communications systems, including access networks such as FTTx, CATV, and optical LANs. Moreover, optical-fiber technologies are playing increasingly important roles in mobile communications and digital broadcasting systems. Technicians maintaining these diverse systems are forced to carry a large variety of test equipment on-site, including OTDRs, Light Sources, Optical Power Meters, Visible Light Sources, etc., as well as a notebook computer for evaluating the FTTx QoS. On the other hand, fiber construction requires measuring instruments with different functions and performance. As an example, FTTx access networks use single mode (SM) fiber whereas optical LANs use multimode (MM) fiber. In addition, core and backbone networks utilize long fibers while optical access networks use short fibers, both requiring different types of measuring instruments with different performance. But now Anritsu's new line of MT9083 ACCESS Master OTDRs solves all these problems by providing all the measurement functions and performance required for optical fiber construction and maintenance in a compact, lightweight, all-in-one unit that eliminates the burden of carrying many different test sets and instruments on-site. Whatever your work, construction or maintenance, long haul or intra-building, Anritsu has an MT9083 model for your needs.

ACCESS Master Key Features

- Ready to test in about 15 seconds...and all day without recharging
- · Specialized testing modes simplify operation
- High resolution and high dynamic range ensure quick and through fiber evaluation
- Intelligent analysis software identifies problem splices, connectors and even macrobends
- Rugged, sealed design provides years of service in the most challenging environments
- · IP testing option verifies throughput, frame loss and point-to-point connectivity
- · Test up to four wavelengths with a single unit single mode, multimode or both
- · Unique in-service testing without the need for external filters
- · Verify connector quality with optional connector inspection microscope

Full Scpi Command Support for Remote Operation or Automated Testing Multiple Models to Meet Any Testing Requirement

- MT9083A: General purpose, good range, up to 38 dB.
- MT9083B: High performance, enhanced range with full 1 × 64 PON support, up to 42 dB.
- MT9083C: Ultra-high performance, enhanced range with full 1 × 128 PON support, up to 45 dB.

MT9083 Series

MT9083A/B/C ACCESS MasterTM 850/1300 nm OTDR for Multimode Fiber 780/1310/1383/1490/1550/1625/1650 nm OTDR for Single Mode Fiber





New Feature Highlight

Optimized for Verifying Pon Splitters Up to 1 × 128 Count

Many OTDRs claim to be able to test splitter-based, passive optical networks (PON) but the MT9083 delivers in a way others wish they could. With its high dynamic range and quick data acquisition, the MT9083 provides unparalleled resolution of single or closely spaced, cascaded splitters up to an industry-leading 1 × 128 count.





Fig 1: Typical PON 1 × 64 count System Measurement from the customer premise.

The MT9083B or C Enhanced Range Mode and a Pulse width of 100 ns provides excellent dynamic range while not compromising deadzone resolution to clearly display multiple, high loss splitters.

Enhanced Performance to Reduce Testing Time by 75%

The MT9083B and MT9083C series feature high dynamic range (up to 45 dB) allowing fibers over 200 km to be measured. It is also optimized at the most commonly used pulse widths like 100 ns to provide excellent resolution and measurement distance while greatly reducing test time.





Designed with the Features that Matter Most

When buying products, you tend to choose ones that are innovative and from established companies. When you need to install and maintain optical networks, this should also apply. With over 50 years of combined OTDR design, Anritsu, delivers the features that matter.

Having been in the test and measurement business for a long time, we understand that things like performance, portability, reliability, easy operation and of course price are important.

Quick Startup

The ACCESS Master is ready for measurement about 15 seconds after power-on so productive work can start immediately.

Long Battery Life

Since AC power is not always available where you need it, especially at fiber pedestals, the MT9083 typically provides up to 8 hours of operation on a single charge. This coupled with an optional car cord (for cigarette lighter operation) guarantees the MT9083 is ready when you are.

Portable

With its light weight design and user friendly dimensions, the MT9083 is perfect for the outside plant environment and can easily be managed with one hand. The shoulder strap (part of the protector option) further increases portability when travelling from the truck to the testing site.

Rugged

The MT9083 features a solid casework with no fans or vents to keep dust or moisture from entering the unit.In addition, the protector option (MT9083A/B/C-010) includes rubber bumpers and a display cover for additional protection from those minor mishaps.

Generous Data Storage

With the ability to store up to 1,000 traces in internal memory and up to 30,000 via a USB device, the MT9083 offers plenty of storage for collecting and managing data.

No Experience Required

With the ACCESS Master, the experience is built in. With specialized testing modes, automatic parameter selection, PASS/FAIL indicators as well as features to virtually eliminate the chance to get "bad" results, the MT9083 can make anyone seems like a 20 year veteran. Let it help you master your network.

Easy "drag and drop" File Transfers

When the MT9083 is connected to a PC via a USB cable, the internal memory of the ACCESS Master can be directly accessed. Data can be selected, dragged and dropped into the PC memory, greatly simplifying file transfers. The MT9083 also supports use of USB memory sticks.

Common OTDR Data Format

The MT9083 supports the universal Telcordia SR-4731 (issue 2) format making it compatible with not only legacy Anritsu and NetTest products, but with many other vendors data.

Free and Simple Software Upgrades

Firmware upgrades are easily performed via USB and available from the Anritsu website for registered users or through Anritsu customer support.

Active fiber check

Not only can OTDR measurements be effected when the optical fiber is in-service but there is a potential risk of damage to the transmitter and OTDR receiver. To prevent these problems, the MT9083 verifies if light is present before starting measurement and will not transmit if it is. An on-screen warning and internal OTDR protection are also part of this useful feature.

Integrated Macrobend Detection

With many technicians making the switch from copper installations to optical fiber, installation issues such as macrobends are bound to occur. To help prevent this, Anritsu has developed a macrobend detection feature for the MT9083 that will alert technicians when a possible macrobend is present. This provides a higher quality of service for the customer and eliminates costly troubleshooting for you.

Wavelengths for Today's Networks

Sometimes you just need more than the traditional 1310 and 1550 nm wavelengths to certify your next generation networks. The MT9083 offers a host of specialized wavelengths including 1383 nm for water peak verification of CWDM carrying fibers, 1650 nm (with integrated filter) for live fiber troubleshooting, 1490 nm for verification of voice, data and IP based video services and 780 nm for in-service troubleshooting of FTTx networks - without the need for any additional filters.





Compact, Light Weight and All-in-one

With its versatile built-in functions, the ACCESS Master offers the ideal solution for efficient optical fiber construction and maintenance.

All-in-one Test Set

The MT9083 delivers full featured OTDR performance plus loss test set and quality of service measurement in a surprisingly small and lightweight package. At only 28.4 cm wide × 20 cm tall × 7.7 cm deep and 2.2 kg (4.8 lbs.), it is field portable, yet rugged enough to withstand the outside plant environment. When equipped with power meter, visual light source and IP test options, it replaces several, larger pieces of test equipment.



1 Up to 8 hours battery life plus quick recharge

- Optical Power meter options with up to +30 dBm measurement range
- Over the second seco
- 4 Up to four wavelengths from a single port for any application
- **5** Dual USB ports for easy data transfer and connector inspection microscope
- 6 IP options for verifying QoS of 10/100/1000 MB links

- 7 Numeric keypad with dedicated keys for easy operation
- 8 Dedicated function keys for selecting parameters
- 9 Rotary dial for precision cursor movement
- Arrow keys for quick zooming and navigation through menus
- START key for simple one-button testing
- 6.5 inch color, TFT-LCD display with simple menus There are two types—a Standard type for indoor use, and an Enhanced type for use both indoors and outdoors

Exceptional OTDR Performance from the World's First OTDR Manufacturer

Evaluation of access networks ranging from a few kilometers to metro networks reaching up to 100 km in length is becoming commonplace, requiring OTDRs to have the performance and functions for evaluating both short and long fibers. Designed with this in mind, the ACCESS Master delivers on both fronts.

Improved Short Fiber Analysis

An event dead zone of less than 1 m (80 cm typical) and a sampling resolution of 5 centimeters allow the MT9083 to evaluate connections and troubleshoot central office, FTTx and intra-building faults with ease – providing a level of detail never before seen.



Fig. 3: With its high resolution optics, the MT9083 provides exceptional detail allowing users to quickly determine where the problem is-even when events are closely spaced.

Convenient Features

Full PON Testing

Many OTDRs claim to be able to test PONs but being able to do it with both high resolution and high range is what sets the MT9083B/C apart. Splitters up to a single 1 × 128 or closely spaced, cascaded splitters are completely and accurately measured with industry leading resolution.



Fig. 5: MT9083B and MT9083C series provides high range and excellent resolution of PON systems

Waveform Comparison Function

Compare current and stored trace data to easily assess changes over time and to locate problems before they effect service or compare traces at different wavelengths to identify installation issues such as macrobending.

Supports Two Display Types

There are two types of 6.5 inch, TFT color LCDs: the standard type (MT9083A/B/C), offering easy viewing for indoors, and the enhanced type (MT9083A1/B1/C1), offering easy viewing for working both indoors and outdoors - even in direct sunlight.

Extended Range Testing of 200 + km Fibers

In addition to its superb high-resolution performance, the MT9083 also features up to 45 dB of dynamic range allowing it to easily test 200 + km spans making it a very useful tool for any network type.



Fig. 4: Spans of over 200 km are also easily tested making the MT9083 the only tool you will need - for any network type.

Dual-Mode High Resolution/Enhanced Range Operation

While many OTDRs provide good deadzone resolution or high dynamic range, the MT9083A-073, MT9083B and MT9083C series features a dual-mode design that allows a single unit to excel in both categories. The user can simply select HIGH RESOLUTION (HR) mode or ENHANCED RANGE (ER) based on the current task at hand. When HR mode is selected, these modes provides good measurement range with an industry leading deadzone (<1 m). When ER mode is selected, they provides unparalleled performance for measurement distance, measurement speed and deadzone allowing a 100 km fiber to be tested in less than 10 seconds. ER mode is also used for testing PON networks with up to 128 branches.

Up to 150,001 Data Points for Increased Accuracy

The MT9083C series also collects up to 150,001 with a resolution of just 2 m. This provides the necessary detail when installing and maintaining fiber spans.

Event Table with User Defined Thresholds

PASS/FAIL thresholds for key acceptance criteria such as splice loss, connector loss and reflectance can be set in the MT9083 allowing technicians to easily assess a fiber's condition. Failing values are clearly highlighted in the event table alerting technicians of potential problems.

Multiple Wavelengths and Models

With nine available wavelengths spanning both single mode and multimode, the ACCESS Master MT9083 is sure to meet your individual needs. Up to four of these wavelengths can be combined into a single optical output providing full spectrum characterization.



Solutions for Various Measurement Needs

Products that offer many features are often complicated to use. The ACCESS Master however, simplifies operation by offering task-specific testing modes that automate testing and guide novice users. Dedicated testing modes are available for fault location, cable installation, loss budget testing, visual fault location and IP testing.

Simple Operation

To simplify testing, the MT9083 features dedicated measurement modes via the top menu to automate and simplify the task at hand.



Fig. 6: Dedicated measurement modes simplify testing for any skill level.

Fault Location

FAULT LOCATE mode is designed for the novice or someone who only uses an OTDR occasionally. Simply connect the fiber and press START. The unit will verify the fiber is connected correctly, select testing parameters and provide a text response indicating fault/break location - easy to read results for any skill level.

General OTDR Testing

For those who have more experience or would like to perform more advanced testing, STANDARD OTDR mode allows the user to set all parameters and compare traces manually, automatically or somewhere in between.

Optical Fiber Construction and Certification

When final cable acceptance is the task at hand, CONSTRUCTION mode greatly simplifies operation through its innovative wizard. Select the required testing wavelengths, number of fibers and file naming scheme and construction mode acts as the project manager guiding the user through the testing, while ensuring consistency with testing parameters and filenames - virtually eliminating user induced errors and missing files.

Value

Whatever your construction or maintenance needs, the new ACCESS Master MT9083 is designed to reduce the time to install, commission and maintain your optical networks – without breaking your budget.

NETWORKS PC Software for Analysis and Reporting

Once the data is collected, NetWorks PC emulation software makes analysis and report generation a breeze. Professional reports including splice loss, fiber acceptance and exceptions as well as various printing options are possible with only a few mouse clicks.



Fig. 7: Comprehensive, professional reports are easily generated

Template Feature

To simplify fiber acceptance, the Access Master incorporates an on-the-fly template feature to quickly locate and measure all splices in a fiber cable. In addition, an on-screen highlight blocks out the expected splice locations during trace acquisition.



Fig. 8: Template Mode

Remote Command Support

To simplify and automate testing in manufacturing and lab environments, the MT9083 supports SCPI commands. Through the use of a USB converter and a common scripting program such as LabView[™], the MT9083 can be quickly integrated and immediately reduce testing times, Remote control can also be used for remote, unmanned monitoring applications.



An OTDR, Optical Power Meter, Visible Light Source, and IP tester are built into Anritsu's compact, light-weight MT9083 supporting tasks ranging from searching for faults in optical fibers to QoS evaluation to FTTx troubleshooting with just one unit.

Complete Loss Test Set Features

Standard Stabilized Light Source

The OTDR port also functions as a stabilized light source providing continuous wave, 270 Hz, 1 kHz and 2 kHz modulations for easy fiber identification. This is standard equipment on all single mode models - a chargeable option on most other OTDRs.

Standard or Optional Integrated Power Meter

In the base unit, the OTDR port also functions as an integrated power meter for verification of optical power levels. Additional power meter options are available for higher power transmissions and loop-back testing.

Visual Laser Source for Easy Fault Location and Fiber Identification

A Visible Light Source is useful for tracking down bad connections, splices and fiber management issues such as macrobends. The optional Visible Light Source is factory installed in the MT9083 and features up to 5 km (3 miles) of operation.

Data Table for Saved Results

Loss test set measurements for multiple wavelengths can be saved into a results table for easy comparison and archiving. The table can also be saved as a text file and exported to a PC spread-sheet program for further manipulation or integration into a standard company template.

Video Inspection Probe Support

When equipped with the optional connector video inspection probe (VIP), the MT9083 becomes a powerful tool for evaluating connector cleanliness and quality. Connector end faces can be safely viewed and images stored to document all aspects of your network.



Fig. 9: VIP Mode

Optical Access Network QoS Evaluation Using IP Testing

Faults that cause drops in FTTx service speed are handled differently according to whether the cause is outside or inside the building. In addition, business users are starting to think about guaranteed bandwidth services and higher-speed gigabit services. The ACCESS Master has a built-in IP Network Connection Check function that can be used for both optical fibers and optical access QoS evaluation.

Connection and Ping Tests

The first step in testing a service is to verify continuity. The built-in IP Connection Test Function supports both PPPoE and DHCP services.

FTTx Download Speed Evaluation

FTTx service performance is easily evaluated from the download throughput. Previous evaluation systems were always limited by the PC performance (CPU speed, memory size, OS, load) and never provided accurate measurements. Using the MT9083 Download Throughput Measurement function frees the results from the impact of PC performance and provides accurate results. This allows the causes of drops in FTTx service speeds to be pinpointed to the network side or the user's PC side.

Throughput Measurement and Frame Counter

The ACCESS Master has a two-way throughput measurement function for efficient evaluation of guaranteed bandwidth services. When an MT9083 is connected to each end of the service, both the upload and download speeds can be evaluated. And since the built-in frame counter functions can be used to measure received frame types and to count error frames, network usage efficiency can be measured easily too.

Gigabit Ethernet Support

The MT9083 has an optional built-in 1000BASE-T electrical interface for evaluating Gigabit Ethernet throughput (up to full line rate) for verifying performance on increasing common Gigabit Ethernet service.

Faults Identified

When issues are present, possible causes are displayed on-screen to help isolate the source of the problem.



Specifications

MT9083A/B/C ACCESS Master Common Specifications

ltem		General Specifications Size: 270 (W) × 165 (H) × 61 (D) mm
	Without protector (option 010)	10.6 × 6.5 × 2.4 inches
Dimensions and Mass		Weight: 2.2 kg (4.8 lbs) including battery
		Size: 284 (W) × 200 (H) × 77 (D) mm
	With protector (option 010)	11.2 × 7.9 × 3 inches
		Weight: 2.9 kg (6.4 lbs) including battery
Display	6.5 inch TFT-LCD (640 × 480, wit	h backlight, transparent type), enhanced indoor/outdoor optional
Interface	USB 1.1, TypeA × 1 (memory), T	ype B × 1 (USB mass storage)
Data Storage	Internal memory: 440 MB (up to External memory (USB): up to 3	
	12 VDC,	
Power Supply	100 to 240 VAC, Allowable input	voltage range: 90 to 264 V, 50/60 Hz
Battery	Type: Lithium ion Operating Time*1: 8 hours Recharge Time: <5 hours (powe	r off)
Power Saving Functions	Backlight off: Disable/1 to 99 min Auto shutdown: Disable/1 to 99 n	
Vertical Scale	0.13, 0.33, 0.65, 1.3, 3.25, 6.5, 1	3 dB/div
IOR Setting	1.400000 to 1.699999 (0.00000	
Units	km, m, kft, ft, mi	
Languages	User selectable (English, Simplif	fied Chinese, Traditional Chinese, French, German, Italian, Korean, Portuguese · contact Anritsu for availability of others)
Sampling Points*2		01 or 25001 (MT9083A and B series), up to 150,001 (MT9083C series)
Sampling Resolution*3	5 cm (min.)	
Reflectance Accuracy	Single mode: ±2 dB, multimode:	
,		
Distance Accuracy		e × 10 ⁻⁵ ± marker resolution (excluding IOR uncertainty)
Distance Range	Single mode: 0.5, 1, 2.5, 5, 10, 25, 50, 100, 200 km (MT9083A and B series, except 780 nm: 0.5, 1, 2.5 km) 0.5, 1, 2.5, 5, 10, 25, 50, 100, 200, 300 km (MT9083C series) Multimode: 0.5, 1, 2.5, 5, 10, 25, 50, 100 km	
Testing Modes	Fault locate: Provides end/break location, end to end loss, fiber length Standard OTDR: User selectable automatic or manual set-up Construction OTDR: Automated, multi-wavelength testing Light source: Stabilized Light source (CW, 270 Hz, 1 kHz, 2 kHz output) Loss test set (optional): Power meter and Light source Connector Video Inspection Probe Visual fault locator (optional): Visible red light for fiber identification and troubleshooting	
Fiber Event Analysis	Auto or manual operation, displa User defined PASS/FAIL thresho - Reflective and non-reflectiv - Reflectance: -70.0 to -20.0 - Fiber end/break: 1 to 99 dB Number of detected events: up to Macrobend detection	olds: e events: 0.01 to 9.99 dB (0.01 dB steps) dB (0.1 dB steps) (1 dB steps)
OTDR Trace Format	Telcordia universal. SOR, issue	2 (SR-4731)
Other Functions	Real time sweep*4: 0.15 sec. Loss modes: 2 point loss, dB/km, 2 point LSA, splice loss, ORL Averaging modes: Timed (1 to 3600 sec.) Live Fiber detect : Verifies presence of communication light in optical fiber Connection check: Automatic check of OTDR to FUT connection quality Trace overlay and comparison, Template function, USB keyboard support, Remote control, Video output to PC	
	Operating temperature and hum	idity: 0° to +40°C (MT9083A and B series), <80% (non-condensing) 0° to +45°C (MT9083C series), <80% (non-condensing) ity: -20° to +60°C, <80% (non-condensing) 28800E Class 3
Environmental Conditions	Dust proof: MIL-T-28800E Class Drip proof: IP51 (IEC 60529), JIS	
Environmental Conditions		

*1 : Typical, backlight off, sweeping halted at 25°C, 6 hours typical continuous testing
*2 : Either high density value is selected depending on distance range
*3 : Except 780 nm

*4 : Resolution: Low Density. Except models 062, 068 -1 sec. or less

~					DR Specifications				
0	ptions	HR/ER Mode	Wavelength*5	Fiber Type	Pulse width	Dynamic Range*6,7	Deadzone (Fresnel) ^{*8}	Deadzone (Backscatter)*	
	053		1310/1550 nm ±25 nm	Single Mode (SMF) 10/125 µm	3, 10, 20, 50, 100, 200, 500, 1000, 2000, 4000,	45/45 dB 25/25 dB * ¹⁰ (Pulse width:100 ns) 45/45/43 dB	≤1 m, ≤0.8 m	≤3.8/4.3 m	
	057	V	1310/1550/1625 nm ±25 nm	ITU-T G.652	10000, 20000 ns	25/25/23 dB * ¹⁰ (Pulse width:100 ns)	(typ.)	≤3.8/4.3/4.8 m	
	053	\checkmark	1310/1550 nm ±25 nm			42/41 dB *11	-	≤5/5.5 m	
	055	\checkmark	1310/1550 nm ±25 nm, 1650 nm ±5 nm			42/41/35 dB *11		≤5/5.5/6.5 m	
	056	\checkmark	1310/1490/1550 nm ±25 nm	Single Mode	3, 10, 20, 50, 100, 200,	40/39/39 dB *11		≤6/6.5/7.5 m	
	057	\checkmark	1310/1550/1625 nm ±25 nm	(SMF) 10/125 µm	500, 1000, 2000, 4000,	40/39/38 dB *11		≤6/6.5/7.5 m	
	058	\checkmark	1310/1490/1550/1625 nm ±25 nm	ITU-T G.652	10000, 20000 ns	38/37/37/36 dB *11	≤1 m	≤7/7.5/7.5/8.5 m	
	059	\checkmark	1310/1550/1625 nm ±25 nm, 1383 nm ±2 nm			38/37/37/36 dB *11	(80 cm typ.)	≤7/7.5/8.5/7.5 m	
	063		1310/1550 nm ±25 nm, 850/1300 nm ±30 nm	HYBRID (SMF/MMF)* ¹¹	SMF: above MMF: 3, 10, 20, 50, 100, 200, 500, 1000, 2000, 4000 ns 850 nm: Not support 1000, 2000, 4000 ns	42/41 dB *11 29/28 dB *11		≤5/5.5 m, ≤4/5 m (3/4 m typ.)	
	050		1310 nm ±25 nm			38.5 dB	-	≤5 m	
	051		1550 nm ±25 nm			37 dB		≤5.5 m	
	052		1645 nm to 1655 nm			33.5 dB		≤6.5 m	
	073	\checkmark	1310/1550 nm ±25 nm			38/36.5 dB		≤5/5.5 m	
	054		1550 nm ±25 nm, 1645 nm to 1655 nm		3, 10, 20, 50, 100, 20 500, 1000, 2000, 400		36/33.5 dB	_ ≤1 m	≤5.5/6.5 m
	055		1310/1550 nm ±25 nm, 1645 nm to 1655 nm			3, 10, 20, 50, 100, 200,	37.5/36/33.5 dB		≤5/5.5/6.5 m
	056		1310/1490/1550 nm ±25 nm	Single Mode	10000, 20000 ns	36/34.5/34.5 dB	(80 cm typ.)	≤6/6.5/6.5 m	
	057		1310/1550/1625 nm ±25 nm	(SMF) 10/125 µm		36/34.5/31.5 dB		≤6/6.5/7.5 m	
	058		1310/1490/1550/1625 nm ±25 nm	ÌTU-T G.652		34/32.5/32.5/29.5 dB		≤7/7.5/7.5/8.5 m	
	059		1310/1550/1625 nm ±25 nm, 1383 nm ±2 nm			34/32.5/29.5/33 dB		≤7/7.5/8.5/7.5 m	
	060		1490 nm ±25 nm			36.5 dB		≤5.5 m	
	061		1625 nm ±25 nm			33.5 dB		≤6.5 m	
	062		780 nm ±20 nm			8 dB (10 ns)	≤1 m	≤7 m	
	068		780 nm ±20 nm, 1550 nm ±25 nm		1550 nm above 780 nm: 5, 10 ns	8/36.5 dB	≤1 m 1550 nm: (80 cm typ.)	≤7/5.5 m	
	063		1310/1550 nm ±25 nm, 850/1300 nm ±30 nm	HYBRID (SMF/MMF)* ¹²	Same as SMF & MMF	38/36.5 dB, 28/27 dB		≤5/5.5 m, ≤4/5 m (3/4 m typ.)	
	064		850/1300 nm ±30 nm		3, 10, 20, 50, 100, 200,	28/27 dB	≤1 m	≤4/5 m (3/4 m typ.)	
	065		850 nm ±30 nm	Multimode (MMF) 62.5/125 µm ^{*12}	500,1000, 2000, 4000 ns 850 nm: Not Support 1000, 2000, 4000 ns	28 dB	(80 cm typ.)	≤4 m (3 m typ.)	

V *13 [IEC Pub 60825-1:2001 Class1M: option 050, 053, 055, 056, 057, 058, 059, 063, 064, 065, 073
 21 CFR1040.10 Excludes deviations caused by conformance to Laser Notice N.50 (issued 26 July 2001)

*5: 25°C, Pulse width: 1 μs (all except 850, 1300, 780 nm),

850/1300 nm: 100 ns, 780 nm: 10 ns
*6: Pulse widths: 20 µs (Options 050 to 061, 063, 068, 073, 1310/ 1550 nm) at Distance range: 100 km
Pulse width: 4 µs (Options 063, 064 1300 nm) at Distance range: 25 km

Pulse width: 4 µs (Options 063, 064 1300 nm) at Distance range: 25 km Pulse width: 500 ns (Options 063, 065 850 nm) at Distance range: 25 km Pulse width: 10 ns (Options 062, 068 780 nm) at Distance range: 2.5 km Averaging: 180 sec., SNR=1, 25°C

*7: Dynamic range (one-way back-scattered light), SNR = 1: The level difference between the RMS noise level and the level where near end back-scattering occurs.



- *8: Pulse width: 3 ns (Options 050 to 061, 063, 064, 065, 068, 073, 1550 nm) Pulse width: 5 ns (Options 062, 068, 780 nm) Return loss: 40 dB, 25°C (Refer to the figure right)
- *9: Pulse width 10 ns, return loss 55 dB, Deviation ±0.5 dB, 25°C (Options 050 to 055, 060 to 063, 068, 073, MT9083C-057. All except 850/1300 nm) Pulse width 20 ns, return loss 55 dB, Deviation ±0.5 dB, 25°C (Options 056 to 059, except MT9083C-057) Pulse width 3 ns, return loss 40 dB, Deviation ±0.5 dB, 25°C (Options 063 to 065. 850/1300 nm)



*10: Pulse width: 100 ns (ER Mode), Distance range: 100 km Averaging: 180 sec., SNR = 1, 25°C

- *11: Typical. Subtract 1 dB for guarantee
- *12: At measurement of 50/125 μm MM Fiber, the dynamic range drops by abot 3.0 dB *13: Safety measures for laser products
 - This option complies with optical safety standards in Class 1, 1M of IEC 60825-1; the following descriptive labels are affixed to the product.



THIS PRODUCT COMPLIES WITH 21 CFR 1040.10 AND 1040.11 EXCEPT FOR DEVIATIONS PURSUANT TO LASER NOTICE NO 50 DATED JULY 26 2001



ООО "Техэнком" Контрольно-измерительные приборы и оборудование www.tehencom.com

	Light Source Specifications – Standard on all models *14		
Stabilized Light Source (through OTDR port)			
Item	Specification		
Wavelength*16	Same as OTDR		
Spectral Width*16	≤5 nm (1310 nm) ≤10 nm (1490/1550/1625 nm), ≤3 nm (1650 nm), ≤1 nm (1383 nm)		
Wavelength Accuracy	850/1300/1310/1490/1550/1625 nm: ±30 nm 780 nm: ±20 nm, 1383 nm: ±2 nm, 1650 nm: ±5 nm		
Fiber Type	Same as OTDR		
Optical Connector	Same as OTDR		
Output Power*16	-5 ±1.5 dBm		
Output Stability*17	±0.1 dB		
Modes of Operation*18	CW, 270 Hz, 1 kHz, 2 kHz		
Laser Safety	Same as OTDR		

Power Meter Specifications – Standard on all models *14				
Standard Integrated Power Meter ^{*15} (through OTDR port)				
Item	Item Specification			
Maximum Input	+10 dBm			
Measurement Range	-50 to -5 dBm			
Fiber Type	Fiber Type Same as OTDR			
Optical Connector	Optical Connector Same as OTDR			
Accuracy*19	ıracy ^{∗19} ±6.5%			
Supported Wavelengths	1310, 1550, 1625 nm plus * 1490 nm (056, 058, 060) * 1383 nm (059) * 1650 nm (050, 051, 053, 054, 055, 057, 061, 063, 068, 073)			
Features Store reference, loss table				

	Loss Test Set Specifica Power m	ations – Optional on all Models * ^{14, *15} eters (004, 005 and 007)		
Option Number	MT9083A/B/C-007	MT9083A/B/C-004	MT9083A/B/C-005	
Fiber Type	Single Mode: 10/125 μm (G.652), Multimode: 62.5/125 μm	Single Mode: 10/125 µm (G.652) *PC only for UPC connector	Single Mode: 10/125 µm (G.652)	
Measurement Range*20	-67 to +6 dBm*21	–50 to +23 dBm	-43 to +30 dBm	
Wavelength Range	750 nm to 1700 nm	1200 nm to 1700 nm		
Calibrated Wavelengths	850, 1300, 1310, 1383, 1490, 1550, 1625, 1650 nm	1310 1383 1490 1550 1625 1650 nm		
Optical Connector	Universal – uses LP-XX adapters	Universal – uses JXXXX adapters (same as OTDR)	Universal – uses MA9005B adapters	
Accuracy*22	¹² ±5%			
Modulation	CW, 270 Hz, 1 kHz, 2 kHz			
Features	Store reference, loss table			

Visible Light Source (Option 002)			
Central Wavelength	650 nm±15 nm (at 25°C)		
Optical Output	0 ±3 dBm (CW)		
Output Optical Fiber	10/125 µm, SMF (ITU-T G.652)		
Optical Connector	2.5 mm universal		
Laser Safety*23	IEC Pub 60825-1Class 3R, 21 CFR1040.10 Excludes deviations caused by conformance to Laser Notice N.50 (issued 26 July 2001)		
Environmental	Same as OTDR		
*14: Some models do not s	14: Some models do not support built-in light source and power meter *22: CW, model 007: At –10 dBm, 1310/1550 nm,		

(See next page)

 $\ast 15:$ If option 004, 005 or 007 is ordered, the standard integrated power meter is not available

*16: CW, 25°C

- *17: CW, 0° to 40°C (±1°C) difference between max/min. values over 1 minute, SM fiber 2 m
- *18: Modulation +1.5% with 10 minute warm up
- *19: CW input, –20 dBm at 1550 nm, 23°C ± 2 Using Master FC connector

 $\ast 20:$ Peak power, subtract 3 dB for modulated tones

*21: -60 to +3 dBm (Option 007 @850 nm)

- 22: CW, model 007: At –10 dBm, 1310/1550 nm, At –10 dBm, 850 nm, 25°C
- model 004/005: At 0 dBm, 1310 nm and 1550 nm Using Master FC connector, After zero offset

*23: Safety measures for laser products This option complies with optical safety standards in Class 3R of IEC 60825-1; the following descriptive labels are affixed to the product.



THIS PRODUCT COMPLIES WITH 21 CFR 1040.10 AND 1040.11 EXCEPT FOR DEVIATIONS PURSUANT TO LASER NOTICE NO 50 DATED JULY 26 2001

Standard Light Source and Power Meter Built-in

LS: MT9083A/B/C standard built-in stabilized Light Source, OPM: MT9083A/B/C standard built-in Optical Power Meter

Options	Optical Port	LS	OPM
MT9083A-050	1310 nm SM	\checkmark	\checkmark
MT9083A-051	1550 nm SM	\checkmark	\checkmark
MT9083A-052	1650 nm SM		—
MT9083B/C-053	1310/1550 nm SM	\checkmark	
MT9083A-073	1310/1550 nm SM	\checkmark	\checkmark
MT9083A-054	1550 nm SM	\checkmark	\checkmark
WI 19063A-034	1650 nm SM	\checkmark	\checkmark
MT9083A/B-055	1310/1550 nm SM		\checkmark
WT 9003A/B-055	1650 nm SM	\checkmark	
MT9083A/B-056	1310/1490/1550 nm SM	\checkmark	
MT9083A/B/C-057	1310/1550/1625 nm SM		
MT9083A/B-058	1310/1490/1550/1625 nm SM		\checkmark
MT9083A/B-059	1310/1550/1625/1383 nm SM		\checkmark

Model	Optical Port	LS	OPM
MT9083A-060	1490 nm SM	\checkmark	\checkmark
MT9083A-061	1625 nm SM	\checkmark	\checkmark
MT9083A-062	780 nm SM	_	—
MT9083A/B-063	850/1300 nm MMF		—
IVI I 9003A/B-003	1310/1550 nm SM	\checkmark	
MT9083A-064	850/1300 nm MMF	\checkmark	—
MT9083A-065	850 nm GI	\checkmark	_
MT9083A-068	780 nm SM	_	_
IVI I 9003A-008	1550 nm SM	\checkmark	\checkmark

Battery pack: Z0921A

Battery	Lithium Ion secondary battery
Voltage, Capacity	11.1 V, 4200 mAh
Dimensions and Mass	53 (W) × 19 (H) × 215 (D) mm, 330 g typ.
	Charging: +5° to +30°C, ≤80%RH
Operating Temperature	Discharging: –20° to +60°C, ≤80%RH
	Storage: –20° to +50°C, ≤80%RH

AC adapter: Z0933A

Rated AC Input	100 to 240 Vac, 50 Hz/60 Hz
Rated DC Output	12 Vdc, 3 A
Dimensions and Mass	60 (W) × 34 (H) × 122 (D) mm, 331 ±5 g typ.
	Operating temperature:
Environmental	0° to +40°C, 20 to 80% R.H.
Conditions	Storage temperature:
	–20° to +80°C, 10 to 95% R.H.

IP Testing Option

Options	MT9083A/B/C-001	MT9083A/B/C-011
Name	IP Network Connection Check Function	Gigabit Ethernet Upgrade
Measurement IF	10BASE-T/100BASE-TX : 1 port	10BASE-T/100BASE-TX/1000BASE-T : 1 port
IF Speed	10M/100M Full, 10M/100M Half, Auto negotiation, Auto	MDI/MDI-X
Connectivity Check Connection Mode VLAN	OK/NG Judgment PPPoE, DHCP, Manual VLAN setup is possible in the DHCP Mode and Manua VID: 1 to 4094, COS: 0 to 7	al Mode. Single VLAN tag is supported.
Connection Test Ping Test Trace Route Test	Can be executed after the connection is established by Number of Times: 1 to 999, Timeout Threshold: 1 to 60 Timeout Threshold: 2 to 60 s, Hops: 1 to 255	
Download Throughput Can be performed after the connection is established by using the Connectivity Check function. Measurement The full wire rate is supported. Download File Size Up to 1 GB Download Throughput Value Download file size [bits] / Download time [s]		by using the Connectivity Check function.
Throughput Measurement Frame Size Transmit Rate Transmit Duration Time Resolution Loss Tolerance	e Size 64, 128, 256, 512, 768, 1024, 1280, 1518, 9018, 9618 : The frame size 9018 and 9618 can be selected the link speed is 1000 M. smit Rate 1 to 100% of the line band (100% at full-wire rate), in steps of 1% smit Duration Time 15, 10, 15, 20, 30, 60, 180, 300 s 1% or 5% of the line band	
Counter Measurement Measurement Time Frame Type	1 to 720 min., in steps of 1 min. All frame, Only PPPoE frame, Only VLAN frame	



Ordering Information

Please specify the model/order number, name and quantity when ordering. The names listed in the chart below are Order Names. The actual name of the item may differ from the Order Name.

1) Specify Base Unit

Includes ACCESS Master OTDR, AC charger/adapter, line cord, battery pack (1), printed quick user's guide and user's manual (CD).

Μ	lodel/Order No.	Description	
M	1T9083A/B/C	ACCESS Master base unit, Standard display for indoor use	
M	1T9083A1/B1/C1	ACCESS Master base unit, Enhanced display for indoor/outdoor use	

2) Select Optical Configuration

Includes choice of OTDR connector adapters – select in step 5 below.

MT9083C Series (OTDR Ultra-high Performance Model)

Model/Order No.	HR/ER Mode	Wavelength	Application
MT9083C-053		1310/1550 nm, SM	General-purpose model for construction, maintenance and fault location
MT9083C-057		1310/1550/1625 nm, SM	General-purpose plus enhanced macrobend detection at 1625 nm

MT9083B Series (OTDR High Performance Model)

Model/Order No.	HR/ER Mode	Wavelength	Application	
MT9083B-053		1310/1550 nm, SM	General-purpose model for construction, maintenance and fault location	
MT9083B-055		1310/1550 nm & 1650 nm, SM	General-purpose models for construction, maintenance and fault location plus In-service measurement – integrated filter to block transmissions	
MT9083B-056		1310/1490/1550 nm, SM	General-purpose plus 1490 nm for FTTx/PON applications	
MT9083B-057		1310/1550/1625 nm, SM	General-purpose plus enhanced macrobend detection at 1625 nm	
MT9083B-058		1310/1490/1550/1625 nm, SM	General purpose for any application or full spectrum characterization	
MT9083B-059		1310/1383/1550/1625 nm, SM	General-purpose plus supports Water Peak testing at 1383 nm	
MT9083B-063		850/1300 nm MM, 1310/1550 nm SM	Best unit for contractors or anyone who installs or maintains hybrid networks	

MT9083A Series (OTDR Base Model)

	•	•	
Model/Order No.	HR/ER Mode	Wavelength	Application
MT9083A-050		1310 nm, SM	General-purpose model for construction, maintenance and fault location
MT9083A-051		1550 nm, SM	General-purpose model for construction, maintenance and fault location
MT9083A-052		1650 nm, SM	In-service measurement – integrated filter to block transmissions
MT9083A-073	\checkmark	1310/1550 nm, SM	General-purpose model for construction, maintenance and fault location
MT9083A-054		1550 nm & 1650 nm, SM	General-purpose models for construction, maintenance and fault location plus
MT9083A-055		1310/1550 nm & 1650 nm, SM	In-service measurement – integrated filter to block transmissions
MT9083A-056		1310/1490/1550 nm, SM	General-purpose plus 1490 nm for FTTx/PON applications
MT9083A-057		1310/1550/1625 nm, SM	General-purpose plus enhanced macrobend detection at 1625 nm
MT9083A-058		1310/1490/1550/1625 nm, SM	General purpose for any application or full spectrum characterization
MT9083A-059		1310/1383/1550/1625 nm, SM	General-purpose plus supports Water Peak testing at 1383 nm
MT9083A-060		1490 nm, SM	FTTx/PON testing
MT9083A-061		1625 nm, SM	Enhanced macrobend detection
MT9083A-062		780 nm, SM	For troubleshooting live FTTx/PON networks
MT9083A-068		780 &1550 nm, SM	For troubleshooting live FTTx/PON networks plus general testing
MT9083A-063		850/1300 nm MM, 1310/1550 nm SM	Best unit for contractors or anyone who installs or maintains hybrid networks
MT9083A-064		850/1300 nm, MM	Multimode fiber model
MT9083A-065		850 nm, MM	Multimode fiber model

Note: Models noted feature user-selectable enhanced range (ER) for measuring PON systems/detecting faults in short time and high resolution (HR) for the shortest dead zone.

3) Select Factory Installed Options

Must be added as separate, chargeable line items.

Model/Order No.	Description	
MT9083A/B/C-010	Protector option (includes rubber bumpers, display cover and shoulder strap)	
MT9083A/B/C-001	IP Network Connection Check Function	
MT9083A/B/C-011 Gigabit Ethernet Upgrade (requires option MT9083A/B/C-001)		



Without Protector option -010



With Protector option -010

4) Select Loss Test Set Options

Optical Power Meter Must be added as separate, chargeable line items.			
Model/Order No.	Model/Order No. Description		
MT9083A/B/C-004	SMF Optical Power Meter (UPC only)		
MT9083A/B/C-005	SMF High Power Optical Power Meter (UPC/APC)		
MT9083A/B/C-007	SMF/MMF Optical Power Meter (UPC/APC)		
	Visible Light Source		
Model/Order No.	Description		
MT9083A/B/C-002	Visible Laser Diode		

5) Select Connector Types

The ACCESS Master MT9083 can be optioned to feature up to three optical ports – single mode OTDR, multimode OTDR and an Optical Power Meter (options -004, -005, and -007). Selecting a single connector code below will populate all optical ports with that connector type **or** customer can select different adapters by specifying the adapter for each of the three optical ports – see examples below.

Optical Connectors One adapter type is provided for each port at no charge - must be added as separate line items. NOTE: FC-APC and SC-APC are not available for MM OTDR or Optical Power Meter.			
Model/Order No.	Iodel/Order No. Description Model/Order No. Description		
MT9083A/B/C-025	FC-APC Connector - single mode OTDR only (additional charge applies)	MT9083A/B/C-038	ST Connector
MT9083A/B/C-026	SC-APC Connector - single mode OTDR only (additional charge applies)	MT9083A/B/C-039	DIN Connector
MT9083A/B/C-033	LC Connector	MT9083A/B/C-040	SC Connector
MT9083A/B/C-037	FC Connector	MT9083A/B/C-043	HMS-10/A Connector

Note: UPC and APC connectors are not compatible - the internal optics are different and must be specified at time or order.





Examples:

1) MT9083B-053 with MT9083B-004 Power Meter option

Customer can specify "MT9083B-040 for the SM OTDR" port and "MT9083B-037 for the OPM" port at no charge. 2) MT9083A-063 with MT9083A-007 Power Meter option

Customer can specify "MT9083A-040 for the SM OTDR" port, "MT9083A-037 for the MM OTDR" port and "MT9083A-037 for the OPM" port at no charge.

3) MT9083C-053 with no options

Customer can specify "MT9083C-026 for the SM OTDR" port however an additional charge applies.

6) Select Accessories & Replacement Items

Accessories Must be added as separate, chargeable line items.			
Model/Order No.	Description		
W2838AE	MT9083 Series ACCESS Master Operation Manual (CD)		
W2839AE	Hard copy MT9083 Operation Manual		
W3272AE	Hard copy MT9083 Quick User's Guide		
B0582A	Soft Carrying Case		
B0583A	Hard Carry Case for MT9083 - attache style		
B0549	Hard Carry Case for MT9083 with handle and wheels		
Z0921A	Replacement Battery Pack for MT9083		
Z0933A	Replacement AC Charger/Adapter		
Z0942A	External Battery Charger		
J1295	Car Plug Cord		
OPTION-545VIP	Connector Video Inspection Probe (VIP) Option		
NETWORKS	PC Emulation Software for Data Analysis and Reporting		
MT9083A/B/C-ES210	12 month Extended Warranty Service		
MT9083A/B/C-ES310	24 month Extended Warranty Service		

Peripherals				
BL-80R2	Thermal Printer Kit (must also order BL-100W AC adapter, J1314 printer cable and BL-80-30 paper rolls)			
BL-100W	AC Adapter for BL-80R2 Printer			
J1314	Printer Cable for BL-80R2 Printer			
BL-80-30	Printer Paper for BL-80R2 Thermal Printer (10 rolls/set)		
Retrofit Options for existing units – unit must be returned to authorized service center				
MT9083A/B/C-101	IP Network Connection Check Function (Retrofit)			
MT9083A/B/C-111	Gigabit Ethernet Upgrade (Retrofit - requires	s option MT9083A/B/C-001 or MT9083A	/B/C-101)	
MT9083A/B/C-110	Protector Option (Retrofit)			
MT9083A/B/C-107	SMF/MMF Optical Power Meter (Retrofit)			
MT9083A/B/C-104	SMF Optical Power Meter (Retrofit)			
MT9083A/B/C-105	SMF High Power Optical Power Meter (Retrofit)			
MT9083A/B/C-102	Visible LD (Retrofit)			
	Repla	acement Adapters		
Туре	OTDR and Power Meters (MT9083A/B/C-004)	Power Meter (MT9083A/B/C-005 only)	Power Meter (MT9083A/B/C-007 only)	
LC	J1270	MA9005B-33	LP-LC	
FC	J0617B	MA9005B-37	LP-FC	
Angled FC (AFC)	J0739A	MA9005B-37	LP-FC	
ST	J0618D	MA9005B-38	LP-ST	
DIN	J0618E MA9005B-39 LP-DIN			
HMS-10A	J0618F MA9005B-43 N/A			
SC (UPC or APC)	J0619B	MA9005B-40	LP-SC	

Basic Kits			
Model/Order No.	Z1093B		
Name	MT9083B1-053-BKIT		
	Model	Name	
Configuration	MT9083B1 MT9083B-053 MT9083B-010	ACCESS Master SMF 1.31/1.55 µm OTDR Protector	
	B0582A	Soft Carrying Case	
Model/Order No.	Z1094A		
Name	MT9083A1-063-BKIT		
	Model	Name	
Configuration	MT9083A1 MT9083A-063 MT9083A-010 B0582A	ACCESS Master MMF 0.85/1.3 µm & SMF 1.31/1.55 µm OTDR Protector Soft Carrying Case	
Model/Order No.	Z1254A		
Name	MT9083A1-073-BKIT		
	Model	Name	
Configuration	MT9083A1 MT9083A-073 MT9083A-010 B0582A	ACCESS Master SMF 1.31/1.55 µm OTDR Protector Soft Carrying Case	

Deluxe Kits			
Model/Order No.	Z1095B		
Name	MT9083B1-053-DKIT		
	Model	Name	
	MT9083B1	ACCESS Master	
	MT9083B-053	SMF 1.31/1.55 µm OTDR	
Configuration	MT9083B-010	Protector	
Gernigaration	B0582A	Soft Carrying Case	
	MT9083B-007	SMF/MMF Optical Power Meter	
	MT9083B-002	Visible LD	
	NETWORKS	NetWorks	
Model/Order No.	Z1255A		
Name	MT9083A1-073-D	окіт	
	Model	Name	
	MT9083A1	ACCESS Master	
	MT9083A-073	SMF 1.31/1.55 µm OTDR	
Configuration	MT9083A-010	Protector	
Gorngaration	B0582A	Soft Carrying Case	
	MT9083A-007	SMF/MMF Optical Power Meter	
	MT9083A-002	Visible LD	
	NETWORKS	NetWorks	

Note: Specify the optical connector. -"5) Select Connector Types".



Soft Carrying Case (B0582A)



Video Inspection Probe (OPTION-545VIP)



Hard Carrying Case (B0583A)-Attache style



Hard Carrying Case (B0549)



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