

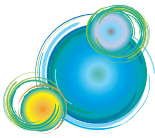
MT9083 Series

MT9083A/B/C ACCESS Master™

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.

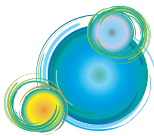
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850/1300 nm OTDR for Multimode Fiber

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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.

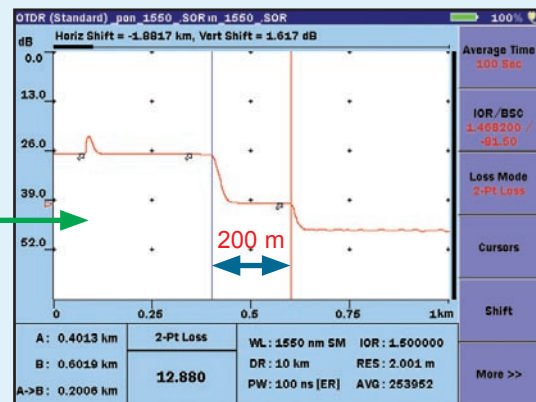
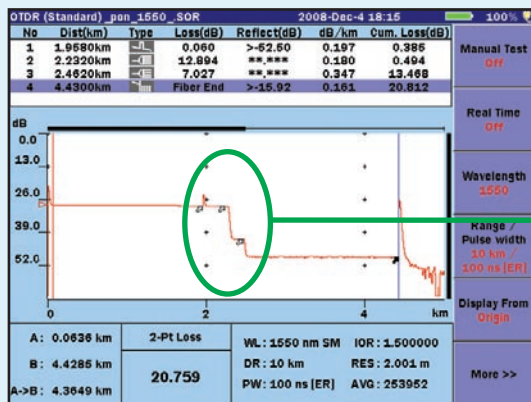
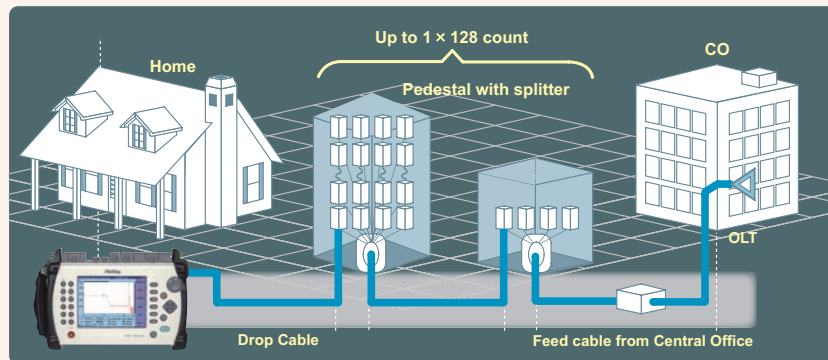


Fig 1: Typical PON 1 × 64 count System Measurement from the customer premise.

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.

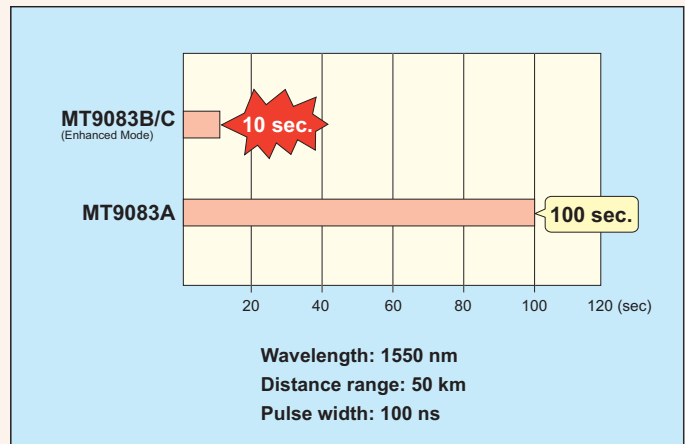
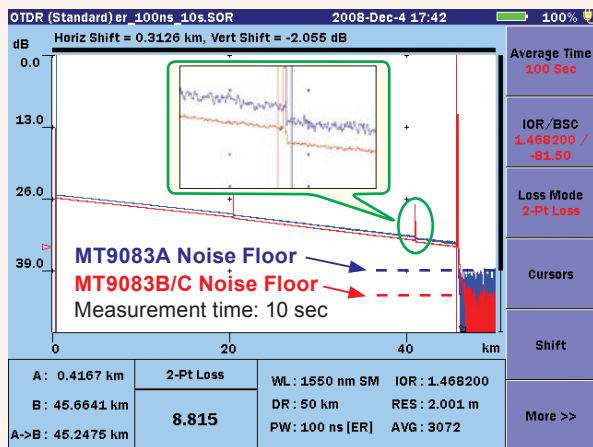
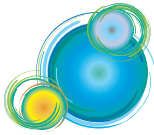


Fig. 2: Improved measurement range from MT9083A to MT9083B/C (100 ns shown)



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 seem 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.

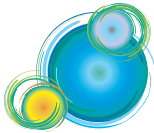
Integrated Macrobend Detection

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.



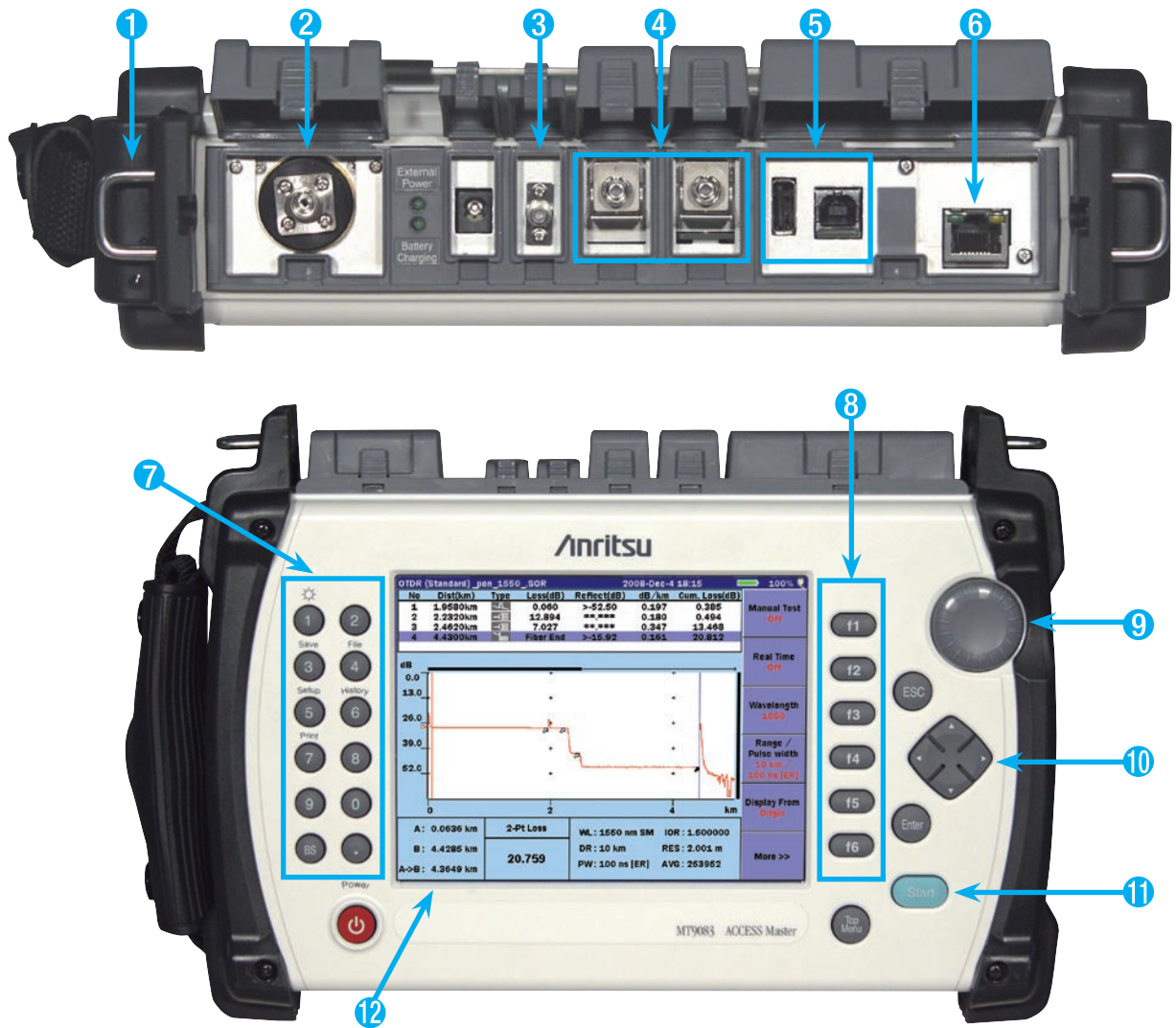


Compact, Light Weight and All-in-one

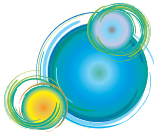
With its versatile built-in functions, the ACCESS Master offers the ideal solution for efficient optical fiber construction and maintenance.

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
- ② Optical Power meter options with up to +30 dBm measurement range
- ③ Visible laser source for easy fiber identification and bend/break location
- 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
- ⑩ Arrow keys for quick zooming and navigation through menus
- ⑪ START key for simple one-button testing
- ⑫ 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.

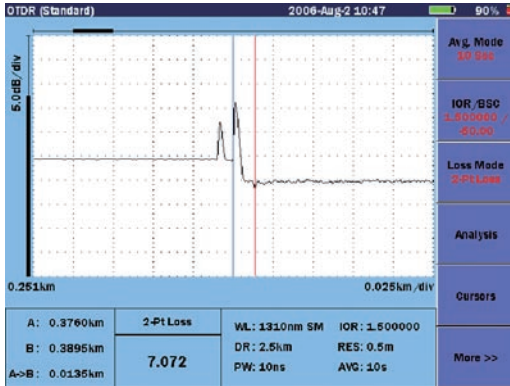


Fig. 3: With its high resolution optics, the MT9083 provides exceptional detail allowing users to quickly determine where the problem is-even when events are closely spaced.

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.

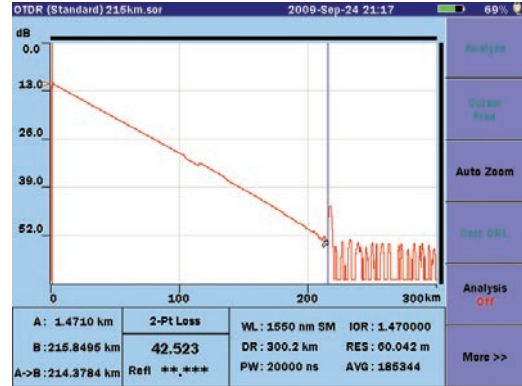


Fig. 4: Spans of over 200 km are also easily tested making the MT9083 the only tool you will need - for any network type.

Convenient Features

New

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 x 128 or closely spaced, cascaded splitters are completely and accurately measured with industry leading resolution.

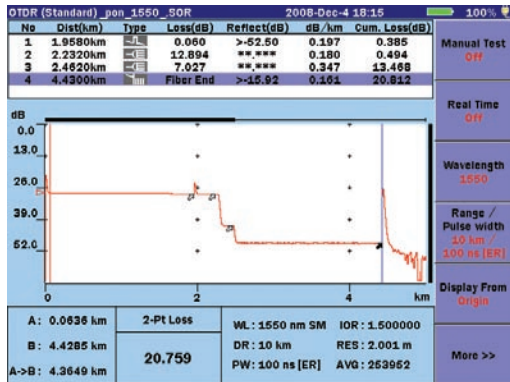


Fig. 5: MT9083B and MT9083C series provides high range and excellent resolution of PON systems

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.

New

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.

New

Up to 150,001 Data Points for Increased Accuracy

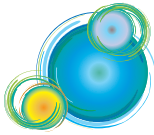
The MT9083C series also collects up to 150,001 with a resolution of just 2 m. This provides the necessary detail when installing and maintaining fiber spans.

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.

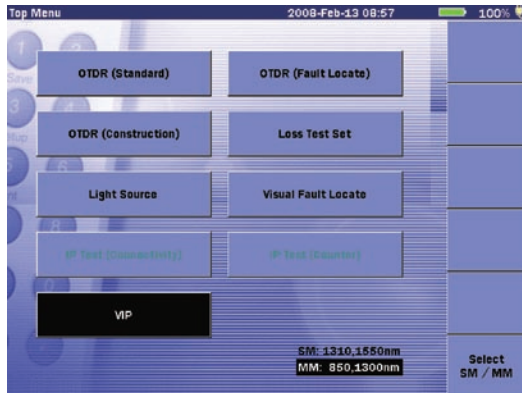


Fig. 6: Dedicated measurement modes simplify testing for any skill level.

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.

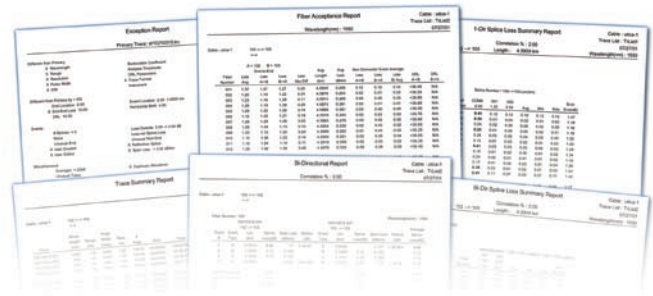


Fig. 7: Comprehensive, professional reports are easily generated



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.

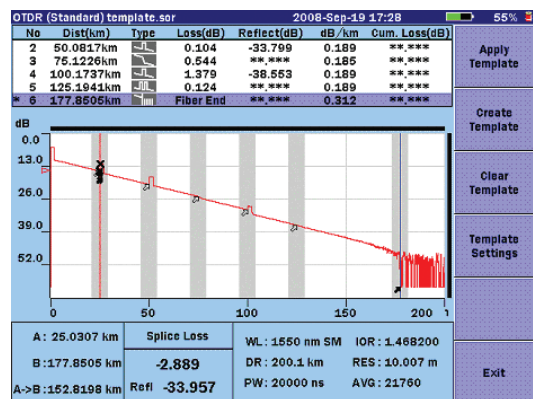
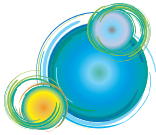


Fig. 8: Template Mode



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.



A True All-in-One Tester

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.

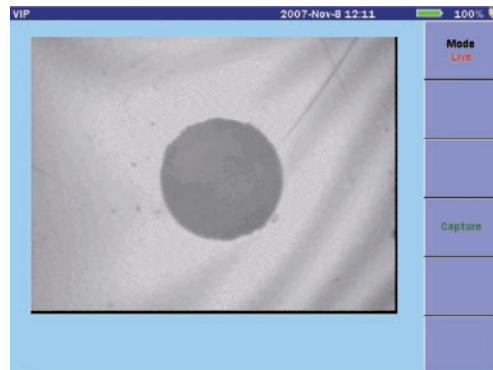


Fig. 9: VIP Mode

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

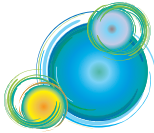
The ACCESS Master has a two-way throughput measurement function for efficient evaluation of guaranteed bandwidth services. When an MT9083 is connected to each end of the service, both the upload and download speeds can be evaluated. And since the built-in frame counter functions can be used to measure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

Item	General Specifications	
Dimensions and Mass	Without protector (option 010)	Size: 270 (W) × 165 (H) × 61 (D) mm 10.6 × 6.5 × 2.4 inches
		Weight: 2.2 kg (4.8 lbs) including battery
	With protector (option 010)	Size: 284 (W) × 200 (H) × 77 (D) mm 11.2 × 7.9 × 3 inches
		Weight: 2.9 kg (6.4 lbs) including battery
Display	6.5 inch TFT-LCD (640 × 480, with backlight, transparent type), enhanced indoor/outdoor optional	
Interface	USB 1.1, TypeA × 1 (memory), Type B × 1 (USB mass storage)	
Data Storage	Internal memory: 440 MB (up to 1000 traces), External memory (USB): up to 30,000 traces with 512 MB	
Power Supply	12 V(dc), 100 V(ac) to 240 V(ac), Allowable input voltage range: 90 V to 264 V, 50 Hz/60 Hz	
Battery	Type: Lithium ion Operating Time*1: 8 hours Recharge Time: <5 hours (power off)	
Power Saving Functions	Backlight off: Disable/1 to 99 minutes Auto shutdown: Disable/1 to 99 minutes	
Vertical Scale	0.13, 0.33, 0.65, 1.3, 3.25, 6.5, 13 dB/div	
IOR Setting	1.400000 to 1.699999 (0.000001 steps)	
Units	km, m, kft, ft, mi	
Languages	User selectable (English, Simplified Chinese, Traditional Chinese, French, German, Italian, Korean, Portuguese, Russian, Spanish and Swedish - contact Anritsu for availability of others)	
Sampling Points*2	Normal: 5001, High density: 20001 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: ±4 dB	
Distance Accuracy	±1 m ±3 × measurement distance × 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, displayed in table format User defined PASS/FAIL thresholds: - Reflective and non-reflective events: 0.01 to 9.99 dB (0.01 dB steps) - Reflectance: -70.0 to -20.0 dB (0.1 dB steps) - Fiber end/break: 1 to 99 dB (1 dB steps) Number of detected events: up to 99 Macrobend detection	
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	
Environmental Conditions	Operating temperature and humidity: 0° to +40°C (MT9083A and B series), <80% (non-condensing) 0° to +45°C (MT9083C series), <80% (non-condensing) Storage temperature and humidity: -20° to +60°C, <80% (non-condensing) Vibration: Conforming to MIL-T-28800E Class 3 Dust proof: MIL-T-28800E Class 2 Drip proof: IP51 (IEC 60529), JIS C 0920 TYPE I	
EMC	EN61326-1, EN61000-3-2	
LVD	EN61010-1	

Notes

*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

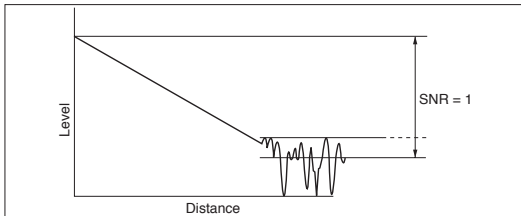
*3 : Except 780 nm

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

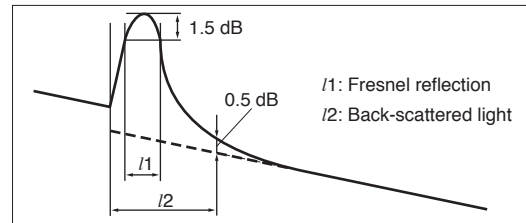
OTDR Specifications

Options	HR/ER Mode	Wavelength*5	Fiber Type	Pulse width	Dynamic Range*6,7	Deadzone (Fresnel)*8	Deadzone (Backscatter)*9		
MT9083C	053	√	1310/1550 nm ±25 nm	Single Mode (SMF) 10/125 μm ITU-T G.652	3, 10, 20, 50, 100, 200, 500, 1000, 2000, 4000, 10000, 20000 ns	45/45 dB	≤1 m, ≤0.8 m (typ.)	≤3.8/4.3 m	
	057	√	1310/1550/1625 nm ±25 nm			25/25 dB *10 (Pulse width:100 ns)		45/45/43 dB	≤3.8/4.3/4.8 m
MT9083B	053	√	1310/1550 nm ±25 nm	Single Mode (SMF) 10/125 μm ITU-T G.652	3, 10, 20, 50, 100, 200, 500, 1000, 2000, 4000, 10000, 20000 ns	42/41 dB *11	≤1 m (80 cm typ.)	≤5/5.5 m	
	055	√	1310/1550 nm ±25 nm, 1650 nm ±5 nm			42/41/35 dB *11		≤5/5.5/6.5 m	
	056	√	1310/1490/1550 nm ±25 nm			40/39/39 dB *11		≤6/6.5/6.5 m	
	057	√	1310/1550/1625 nm ±25 nm			40/39/38 dB *11		≤6/6.5/7.5 m	
	058	√	1310/1490/1550/1625 nm ±25 nm			38/37/37/36 dB *11		≤7/7.5/7.5/8.5 m	
	059	√	1310/1550/1625 nm ±25 nm, 1383 nm ±2 nm			38/37/37/36 dB *11		≤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.)			
MT9083A	050		1310 nm ±25 nm	Single Mode (SMF) 10/125 μm ITU-T G.652	3, 10, 20, 50, 100, 200, 500, 1000, 2000, 4000, 10000, 20000 ns	38.5 dB	≤1 m (80 cm typ.)	≤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	√	1310/1550 nm ±25 nm			38/36.5 dB		≤5/5.5 m	
	054		1550 nm ±25 nm, 1645 nm to 1655 nm			36/33.5 dB		≤5.5/6.5 m	
	055		1310/1550 nm ±25 nm, 1645 nm to 1655 nm			37.5/36/33.5 dB		≤5/5.5/6.5 m	
	056		1310/1490/1550 nm ±25 nm			36/34.5/34.5 dB		≤6/6.5/6.5 m	
	057		1310/1550/1625 nm ±25 nm			36/34.5/31.5 dB		≤6/6.5/7.5 m	
	058		1310/1490/1550/1625 nm ±25 nm			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.)
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	Multimode (MMF) 62.5/125 μm*12	3, 10, 20, 50, 100, 200, 500,1000, 2000, 4000 ns 850 nm: Not Support 1000, 2000, 4000 ns	28/27 dB	≤1 m (80 cm typ.)	≤4/5 m (3/4 m typ.)		
065		850 nm ±30 nm			28 dB	≤4 m (3 m typ.)			
Laser Safety *13		IEC 60825-1:2007 CLASS 1: option 051, 052, 054, 060, 061, 062, 068 IEC 60825-1:2007 CLASS 1M: option 050, 053, 055, 056, 057, 058, 059, 063, 064, 065, 073 21 CFR1040.10 Excludes deviations caused by conformance to Laser Notice No. 50 dated June 24, 2007							

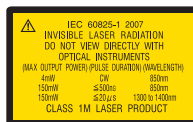
- *5: 25°C, Pulse width: 1 μs (all except 850, 1300, 780 nm), 850/1300 nm: 100 ns, 780 nm: 10 ns
- *6: Pulse widths: 20 μs (Options 050 to 061, 063, 068, 073, 1310/ 1550 nm) at Distance range: 100 km
Pulse width: 4 μs (Options 063, 064 1300 nm) at Distance range: 25 km
Pulse width: 500 ns (Options 063, 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 about 3.0 dB
- *13: Safety measures for laser products
This product complies with optical safety standards in IEC 60825-1, 21CFR1040.10 and 1040.11; 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 JUNE 24, 2007

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	Specification
Maximum Input	+10 dBm
Measurement Range	-50 to -5 dBm
Fiber Type	Same as OTDR
Optical Connector	Same as OTDR
Accuracy*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 Specifications – Optional on all Models *14, *15 Power meters (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	±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 60825-1: 2007 CLASS 3R 21CFR1040.10 and 1040.11 Excludes deviations caused by conformance to Laser Notice No. 50 dated June 24, 2007
Environmental	Same as OTDR

*14: Some models do not support built-in light source and power meter
(See next page)

*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

*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 IEC 60825-1, 21CFR1040.10 and 1040.11; 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 JUNE 24, 2007

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	√	√
MT9083A-051	1550 nm SM	√	√
MT9083A-052	1650 nm SM	√	—
MT9083B/C-053	1310/1550 nm SM	√	√
MT9083A-073	1310/1550 nm SM	√	√
MT9083A-054	1550 nm SM	√	√
	1650 nm SM	√	√
MT9083A/B-055	1310/1550 nm SM	√	√
	1650 nm SM	√	√
MT9083A/B-056	1310/1490/1550 nm SM	√	√
MT9083A/B/C-057	1310/1550/1625 nm SM	√	√
MT9083A/B-058	1310/1490/1550/1625 nm SM	√	√
MT9083A/B-059	1310/1550/1625/1383 nm SM	√	√

Model	Optical Port	LS	OPM
MT9083A-060	1490 nm SM	√	√
MT9083A-061	1625 nm SM	√	√
MT9083A-062	780 nm SM	—	—
MT9083A/B-063	850/1300 nm MMF	√	—
	1310/1550 nm SM	√	√
MT9083A-064	850/1300 nm MMF	√	—
MT9083A-065	850 nm GI	√	—
MT9083A-068	780 nm SM	—	—
	1550 nm SM	√	√

Battery pack: Z0921A

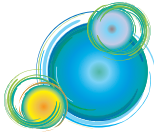
Battery	Lithium Ion secondary battery
Voltage, Capacity	11.1 V, 4200 mAh
Dimensions and Mass	53 (W) × 19 (H) × 215 (D) mm, 330 g typ.
Operating Temperature	Charging: +5° to +30°C, ≤80%RH
	Discharging: -20° to +60°C, ≤80%RH
	Storage: -20° to +50°C, ≤80%RH

AC adapter: Z1467A

Rated AC Input	100 V(ac) to 240 V(ac), 50 Hz/60 Hz
Rated DC Output	12 V(dc), 5 A
Dimensions and Mass	47 (W) × 33 (H) × 112 (D) mm, ≤240 g
Environmental Conditions	Operating temperature: 0° to +45°C, 20 to 80% R.H.
	Storage temperature: -20° to +70°C, 10 to 90% 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 IF Speed	10BASE-T/100BASE-TX : 1 port	10BASE-T/100BASE-TX/1000BASE-T : 1 port
	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 Manual Mode. Single VLAN tag is supported. VID: 1 to 4094, COS: 0 to 7	
Connection Test Ping Test Trace Route Test	Can be executed after the connection is established by using the Connectivity Check function. Number of Times: 1 to 999, Timeout Threshold: 1 to 60 s Timeout Threshold: 2 to 60 s, Hops: 1 to 255	
Download Throughput Measurement Download File Size Download Throughput Value	Can be performed after the connection is established by using the Connectivity Check function. The full wire rate is supported. Up to 1 GB Download file size [bits] / Download time [s]	
Throughput Measurement Frame Size Transmit Rate Transmit Duration Time Resolution Loss Tolerance	Can be performed after the connection is established by using the Connectivity Check function. 64, 128, 256, 512, 768, 1024, 1280, 1518, 9018, 9618 : The frame size 9018 and 9618 can be selected when the link speed is 1000 M. 1 to 100% of the line band (100% at full-wire rate), in steps of 1% 5, 10, 15, 20, 30, 60, 180, 300 s 1% or 5% of the line band 0, 0.01, 0.1, 1, 5, 10%	
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/adaptor, line cord, battery pack (1), printed quick user's guide and user's manual (CD).

Model/Order No.	Description
MT9083A/B/C	ACCESS Master base unit, Standard display for indoor use
MT9083A1/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)

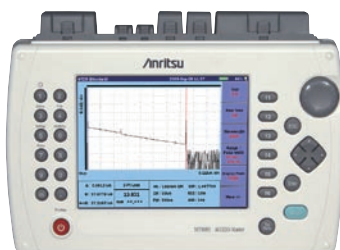
Model/Order No.	HR/ER Mode	Wavelength	Application
MT9083A-050		1310 nm, SM	General-purpose model for construction, maintenance and fault location
MT9083A-051		1550 nm, SM	General-purpose model for construction, maintenance and fault location
MT9083A-052		1650 nm, SM	In-service measurement – integrated filter to block transmissions
MT9083A-073	√	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 In-service measurement – integrated filter to block transmissions
MT9083A-055		1310/1550 nm & 1650 nm, SM	
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.

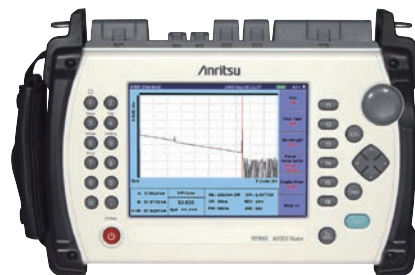
3) Select Factory Installed Options

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.	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)

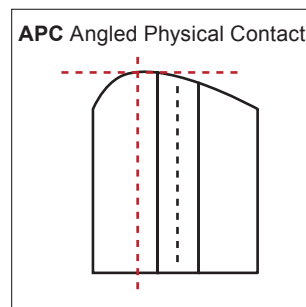
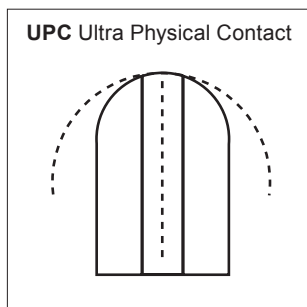
Visible Light Source	
Model/Order No.	Description
MT9083A/B/C-002	Visible Laser Diode

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.	Description	Model/Order No.	Description
MT9083A/B/C-025	FC-APC Connector key width 2.0 mm (single mode OTDR only, additional charge applies)	MT9083A/B/C-038	ST Connector
MT9083A/B/C-026	SC-APC Connector key width 2.0 mm (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 Diamond 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	Model/Order No.	Description
W2838AE	MT9083 Series ACCESS Master Operation Manual (CD)	J0982	C7 Power Cord
W2839AE	MT9083 Operation Manual (Hard copy)	J0983	S3 Power Cord
W3272AE	MT9083 Quick User's Guide (Hard copy)	J1027	P4 Power Cord
B0582A	Soft Carrying Case	J1028	D1 Power Cord
B0583A	Hard Transit Case (for MT9083 - attache style)	Z0942A	Battery Charger
B0549	Hard Carry Case (for MT9083 with handle and wheels)	J1295	Car Plug Cord
Z0921A	Battery Pack (for MT9083)	J1480A	USB-Ethernet Converter
Z1467A	AC Adapter	OPTION-545VIP	Connector Video Inspection Probe (VIP) Option
J0979	A-2 (Japan) Power Cord	NETWORKS	PC Emulation Software for Data Analysis and Reporting
J0980	A-2 Power Cord (for USA, Canada, Taiwan)	MT9083A/B/C-ES210	2 Years Extended Warranty Service
J0981	B4 Power Cord	MT9083A/B/C-ES310	3 Years 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 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)		
Replacement Adapters			
Type	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	
Configuration	Model	Name
	MT9083B1	ACCESS Master
	MT9083B-053	SMF 1.31/1.55 µm OTDR
	MT9083B-010 B0582A	Protector Soft Carrying Case
Model/Order No.	Z1094A	
Name	MT9083A1-063-BKIT	
Configuration	Model	Name
	MT9083A1	ACCESS Master
	MT9083A-063	MMF 0.85/1.3 µm & SMF 1.31/1.55 µm OTDR
	MT9083A-010 B0582A	Protector Soft Carrying Case
Model/Order No.	Z1254A	
Name	MT9083A1-073-BKIT	
Configuration	Model	Name
	MT9083A1	ACCESS Master
	MT9083A-073	SMF 1.31/1.55 µm OTDR
	MT9083A-010 B0582A	Protector Soft Carrying Case

Deluxe Kits		
Model/Order No.	Z1095B	
Name	MT9083B1-053-DKIT	
Configuration	Model	Name
	MT9083B1	ACCESS Master
	MT9083B-053	SMF 1.31/1.55 µm OTDR
	MT9083B-010 B0582A	Protector Soft Carrying Case
	MT9083B-007	SMF/MMF Optical Power Meter
	MT9083B-002 NETWORKS	Visible LD NetWorks
Model/Order No.	Z1371A	
Name	MT9083A1-063-DKIT	
Configuration	Model	Name
	MT9083A1	ACCESS Master
	MT9083A-063	SMF 0.85/1.3 µm & SMF 1.31/1.55 µm OTDR
	MT9083A-010 B0582A	Protector Soft Carrying Case
	MT9083A-007	SMF/MMF Optical Power Meter
	MT9083A-002 NETWORKS	Visible LD NetWorks
Model/Order No.	Z1255A	
Name	MT9083A1-073-DKIT	
Configuration	Model	Name
	MT9083A1	ACCESS Master
	MT9083A-073	SMF 1.31/1.55 µm OTDR
	MT9083A-010 B0582A	Protector Soft Carrying Case
	MT9083A-007	SMF/MMF Optical Power Meter
	MT9083A-002 NETWORKS	Visible LD NetWorks

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



Soft Carrying Case (B0582A)



Hard Carrying Case (B0583A)-Attache style



Hard Carrying Case (B0549)



Video Inspection Probe
(OPTION-545VIP)

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Specifications are subject to change without notice.

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