Anritsu Advancing beyond

Network Master™ Series

MT9090A
Mainframe

MU909014A1/B/B1/C/C6
MU909015A6/B/B1/C/C6
µOTDR Module™

1310 nm/1490 nm/1550 nm for Installation,
1625 nm & 1650 nm for Maintenance,
1310 nm/1550 nm plus 1625 nm or 1650 nm

Network Master

FiberVisualizer

Field Optical Testing Redefined!

MT9090A with MU909014/15 Overview

There are many handheld OTDRs on the market that appear to be a good value until they are put into action and the user quickly finds out that they lack the performance needed to install and maintain today's networks.

The new MU909014/15 µOTDR Module series for the MT9090A Network Master™ platform from Anritsu finally addresses this need by providing all of the features and performance required for installation and maintenance of optical fibers in a compact, modular test set. The MT9090A represents an unmatched level of value and ease of use, while not compromising performance. Data sampling of 2 centimeters, dead zones of 0.8-meter and dynamic range up to 38 dB ensure accurate and complete fiber evaluation of any network type – premise to access, metro to core…including PON-based FTTx networks featuring up to a 1 × 64 split.

The MT9090A with MU909014/15 module represents a new era in optical fiber testing!

Key Features

- Tri-wavelength OTDR for both installation and maintenance (1310 nm/1550 nm plus filtered 1650 nm or 1625 nm)
- Built-in PON Power Meter, Loss Test Set and Light Source functions
- High-end OTDR performance in a pocket-size package with unique battery operation
- "Fiber Visualizer" mode simplifies operation, no OTDR knowledge needed
- Complete PON testing through splitters up to 1 × 64
- Bluetooth, WLAN and Ethernet connectivity*

*: These features use an USB Ethernet converter, USB WLAN dongle, or USB Bluetooth dongle.

The *Bluetooth*® wordmark and logos are owned by the Bluetooth SIG, Inc. and any use of such marks by Anritsu is under license.

MU909014/15

µOTDR Module™

1310 nm/1490 nm/1550 nm for Installation,
1625 nm & 1650 nm for Maintenance,
1310 nm/1550 nm plus 1625 nm or 1650 nm

Network Master™ and µOTDR Module™ are a trademark of Anritsu Corporation.

A Truly Revolutionary OTDR!

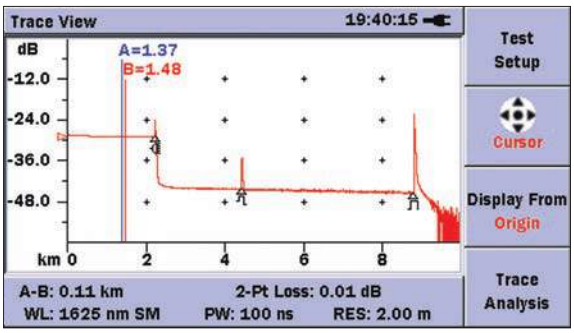
Introducing the first handheld OTDR that does not compromise performance – the new µOTDR from Anritsu. With performance that rivals traditional OTDRs that are four times the size and more than double the price, the Network Master MT9090A µOTDR has created a new class of test instruments. It features 2 cm resolution for accurate mapping of events, dead zones of 0.8-meter (2.6-feet) and a dynamic range of up to 38 dB – enough to test over 150 km (90+ miles). The MT9090A µOTDR also takes portability to a new level by being the first handheld OTDR that truly fits in the palm of your hand.

Complete Testing Tool - Premise to Core

With a dynamic range of up to 38 dB, the µOTDR evolves far beyond the premise/access applications that other handheld OTDRs service. Metro links can be tested with lower pulsewidths which provides greater detail and better resolution while long haul fibers up to 175 km (108 miles) can also be completely evaluated.

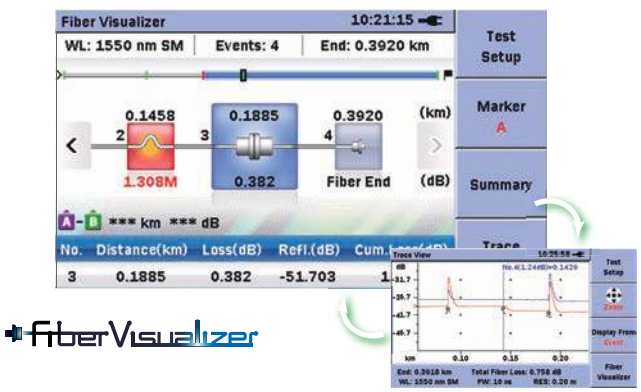
FTTx and PON Ready

With splitter-based fiber-to-the-x (FTTx) deployments becoming more popular, the need for test equipment to thoroughly test and maintain them has risen. The µOTDR series features the ability to test up to a 1 × 64 split completely from end-to-end and with high resolution.



Easy Operation and Analysis

“Fiber Visualizer (FV)” is a new fault location function designed to simplify the entire testing process. Fiber Visualizer automatically selects the testing parameters to ensure the correct setup and provides a simple, graphical summary of the fiber under test within seconds. A comprehensive PDF report can then be customized and generated, completing the testing process.



0.8-m Dead Zone for Short Fiber Analysis

With 0.8-meter dead zones, the MT9090A is perfect for evaluating central office, FTTx and intra building cables.

Fast Real Time Sweeping

The MT9090A µOTDR features real-time updates as quickly as 0.25 seconds. This is useful for connector and splice optimizations as well as verifications of parameter selection.

Portable

The MT9090A µOTDR takes portability to a whole new level. With dimensions of just 19 cm × 9.6 cm × 4.8 cm (7.5” × 3.8” × 1.9”) and a weight of only 700 g (1.54 lbs.), the µOTDR is the smallest and lightest OTDR on the market. With its lightweight design and user friendly dimensions, the MT9090A is perfect for the outside plant environment and can easily be managed with one hand. The standard soft case with shoulder strap further increases portability when traveling from the truck to the testing site.

Bluetooth, WLAN and Ethernet Connectivity

The Bluetooth feature enables you to share files between the µOTDR series and a PC. The WLAN and Ethernet features enable you to share files as well as use the remote GUI feature. You can connect the µOTDR and PC, and control the µOTDR series from a browser.

Bluetooth:
- Share file folder

WLAN and Ethernet:
- Share file folder
- Remote GUI

4.3-inch Wide Screen Display for Easy Viewing

The high resolution, full color, 4.3-inch wide screen display is the perfect format for viewing OTDR results. It also provides excellent readability both indoors and outdoors.

Integrated Launch Fiber

To further simplify testing, the MU909014/15 series is the only handheld OTDR that features an integrated launch cable. A ten meter (30 feet) fiber is built-in so initial fiber connections can be verified without the need for additional patchcords or launch fibers.

Reliable. Capable.

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, which now includes NetTest, delivers the features that matter. Having been in the test and measurement business for a long time, we understand the importance of performance, portability, reliability, easy operation and of course price.

Event Table with User Defined Thresholds

PASS/FAIL thresholds for key acceptance criteria such as splice loss, reflectance and total span loss can be set in the MT9090A allowing technicians to easily assess a fiber's condition. Failing values are clearly highlighted in the event table alerting technicians of potential problems.

Unique Battery Operation

Since AC power is not always available where you need it, especially at fiber pedestals, the MT9090A typically provides 8 hours of testing on a single charge. This coupled with an optional car cigarette lighter cord guarantees the MT9090A is ready when you are. µOTDR supports widely available NiMH and Alkaline batteries for truly unique battery operation.

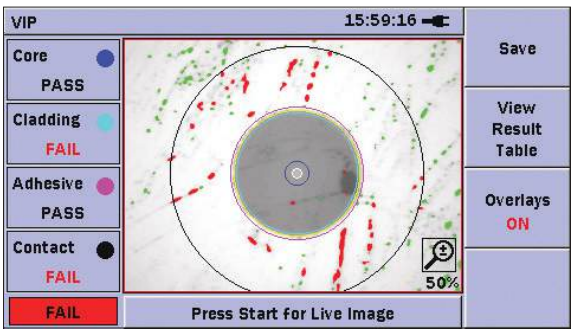
Quick Startup

The MT9090A is ready for measurement in under 15 seconds so productive work can start immediately.

Video Inspection Probe Support

When equipped with the optional connector video inspection probe (G0306C), the µOTDR becomes a powerful tool for evaluating connector cleanliness and quality. The G0306C can reduce issues by verifying the condition and cleanliness of connector end faces during the installation phase.
The G0306C has added a Pass/Fail analysis function to the conventional VIP.

This new function inspects the state of the connector end using video. It can automatically inspect the end of the optical connector for defects and scratches (The automatic pass/fail determination is made in accordance with the IEC61300-3-35 standard.)
You can also create a PDF report on the µOTDR series.



Screen Capture Function

Screen shots are sometimes useful for adding to reports so the MT9090A features the ability to save screen shots as Bitmap images.

Functions for FTTx

One µOTDR module supports FTTx installation and maintenance (PON Power Meter, Loss Test Set, Light Source) in addition to µOTDR functions. (See page 6 for details.)

Small on price, Not on features!

Top View

1 4.3-inch high resolution, indoor/outdoor color display
2 Dedicated function keys for performing tasks
3 Start key for true one-button testing
4 Arrow keys for zooming, cursor movement and menu navigation
5 Set to select/accept
6 Menu key for easy access to set-ups and mass storage
7 Visible laser diode*1
8 OTDR or power meter port*2
9 Dual USB ports for quick and easy data transfer

*1: There are installation restrictions, depending on the model. See the Ordering Information for details.
*2: The number of ports is different, depending on the model. See the Ordering Information for details.

Installation and Maintenance Simplified

Since the MT9090A is designed for technicians of any level, its hardware and user interface are optimized for simplicity. A customizable testing sequence and “Full Auto” mode automates testing and guides novice users. Specialized maintenance wavelengths are also available to eliminate equipment damage and transmission interruptions.

Installation Simplified

The MU909014/15 µOTDR Module series provides easy and accurate verification of fiber installations at 1310 nm, 1490 nm and 1550 nm to ensure your network is ready for any transmission type. The user simply connects the fiber, selects “Full Auto” and presses “Start” - all settings are automatically selected to ensure accurate and constant results for any skill level. Upon completion, all key fiber characteristics are displayed within seconds. Experienced users can also “fine tune” all testing parameters and make manual measurements.

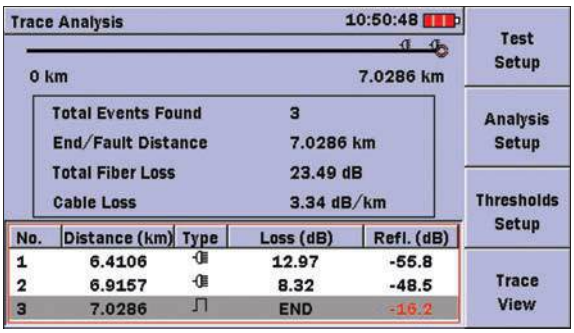
Step 1 – Connect fiber and Power on
Step 2 – Select “Full Auto” and Press “Start”

All testing parameters are automatically selected.

∗: The screen items depend on the selected module.

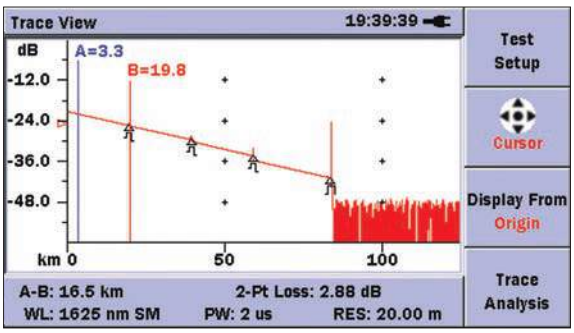
Step 3 – Read Results

Test results including all splices and connectors, as well as total fiber length and loss are shown in an easy to read table.



Step 4 – View Trace

View trace if desired to see the complete fiber trace and make any manual measurements.

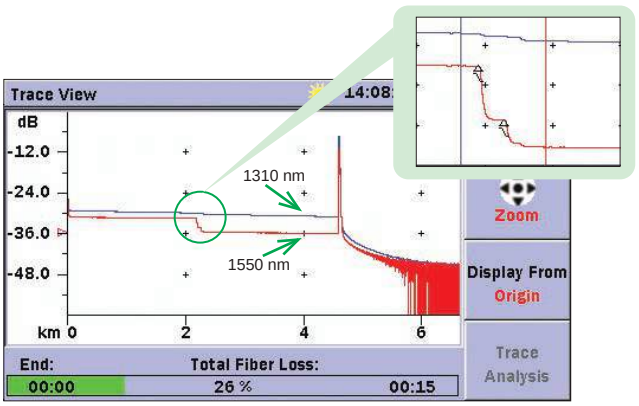


Maintenance Simplified

Being able to test active fibers is a key requirement for network maintenance since multiple users often share portions of the network and taking them all out of service is not an option. To address this need, special modules are available in the MT9090A µOTDR series. 1650 nm is recommended by the ITU-T L.41 for active maintenance since it features 100 nm of isolation from the nearest 1550 nm transmission wavelength. The 1650 nm OTDR also features an integrated filter to block transmissions from damaging the OTDR. 1625 nm is also available and can be used for in-service testing or as an “extra” test to verify installation for stresses such as macrobends.

Added Macro Bending analysis function:

The µOTDR series finds macro bending points by comparing data from two traces: one 1310 nm and the other 1550 nm.



Network Documentation Simplified

Simple Data Storage

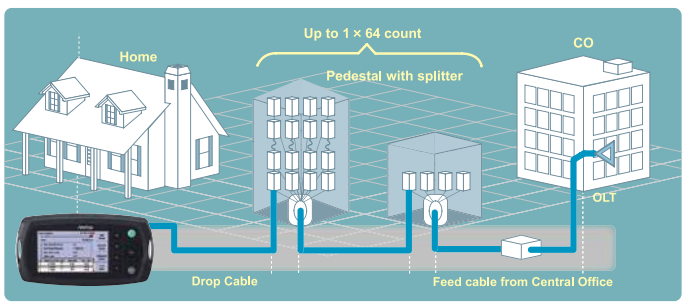
With internal data storage plus support for external USB memory devices, the MT9090A is more than capable. Add to this auto file saving and naming for easy, error-free documenting of your network.

Common OTDR Data Format

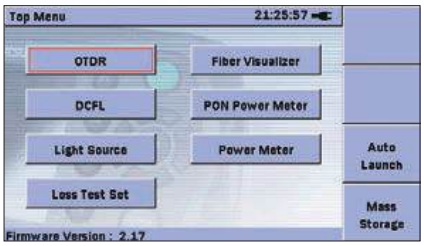
The MT9090A supports the universal Telcordia SR-4731 format making it compatible with not only legacy Anritsu and NetTest products, but with many other vendors data.

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.



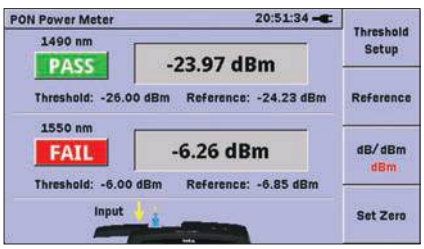
All-in-one FTTx Installation and Maintenance Functions



There are three types of µOTDR module: single wavelength (1625 nm or 1650 nm) for the FTTx maintenance market including Metro networks, dual wavelength (1310 nm/1550 nm) for the installation market, and triple wavelength for both these markets.
These all-in-one µOTDR modules support every function required at fiber installation and maintenance, as well as OTDR functions. The PON Power Meter and Power Meter are ideal for loss measurements required for quality measurements and basic fault tests.

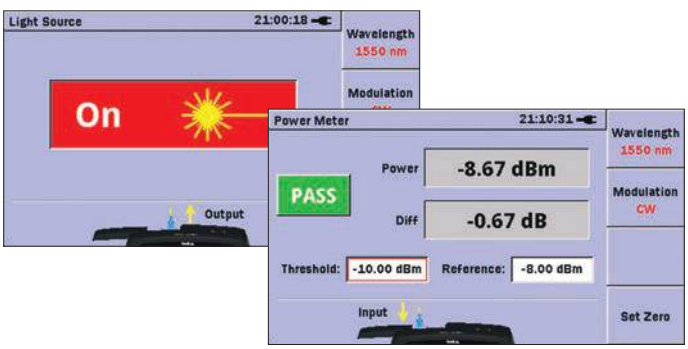
PON Power Meter (1490 nm/1550 nm)

Generally, PON communications use three wavelengths: 1310 nm, 1490 nm, and 1550 nm. Data (1490 nm) and video (1550 nm) signals are sent to subscribers through one optical fiber but a general-purpose optical power meter cannot separate the two wavelengths, making it difficult to locate faults using optical level measurements. The PON Power Meter can identify and measure the two 1490 nm and 1550 nm signals to support PASS/FAIL evaluations based on a set threshold and reference value. Additionally, power measurements and µOTDR tests are quick and easy without changing the optical fiber because the PON Power Meter port is shared with the µOTDR function.



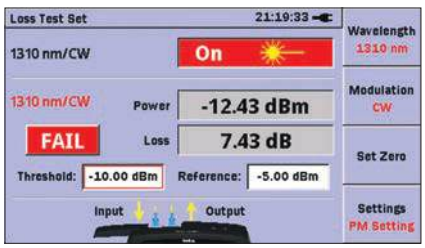
Light Source/Power Meter

The µOTDR module can be used as a light source to identify an optical fiber and measure the loss by connecting an optical fiber identifier and optical power meter at the other end of the fiber. Since all wavelengths are shared by one µOTDR port, the fiber identification, loss, and µOTDR measurements can all be performed as a single task without changing the fiber connection. Both modulation (270 Hz, 1 kHz, 2 kHz) and CW signals are supported. The simple power meter function is ideal for checking optical levels to confirm a fault occurrence using total received power. Setting a threshold and reference value makes PASS/FAIL evaluation easy too. In addition, power measurements and µOTDR tests are quick and easy without changing the optical fiber, because the Power Meter port is shared with the µOTDR.



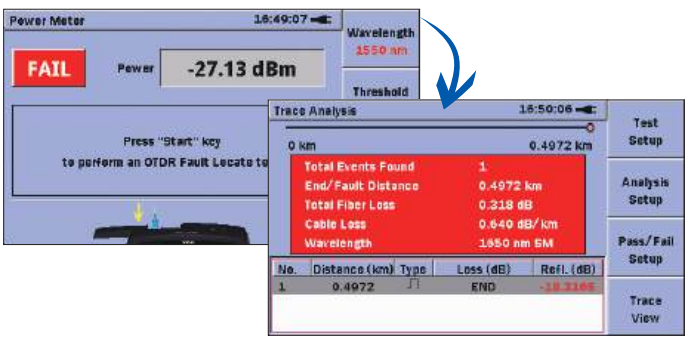
Loss Test Set

Combining the µOTDR module light source with the Power Meter supports use as a Loss Test Set.
The loss at both 1310 nm and 1550 nm can be measured with one µOTDR by looping-back the optical fiber. And both modulation (270 Hz, 1 kHz, 2 kHz) and CW signals are supported. Just setting the threshold and reference value makes PASS/FAIL evaluation easy.



DCFL Function

The Drop Cable Fault Locate (DCFL) mode is a useful function to investigate faults occurring in a drop cable. It consists of the Power Meter function and OTDR function, so you are not required to switch measuring instruments or applications.



∗: DCFL mode depend on the selected module

Visible Laser Diode

The optional visible red LD light source makes it easy to spot faults in splices and connectors and well as to manage fibers.

∗: The PON Power Meter, Light Source, Power Meter, Loss Test Set, and Visible Laser Diode functions have different menus, depending on the selected module. See the Ordering Information for details.
∗: The Visible Laser Diode is operated from the µOTDR and Power Meter menus.
∗: The screen items depend on the selected module.

Specifications

MT9090A Mainframe

Dimensions and Mass	190 (W) × 96 (H) × 48 (D) mm (7.5” × 3.8” × 1.9”) (including Mainframe and Module) <700 g (1.54 lbs.) (including Mainframe, Module and Standard battery)
Display	4.3-inch TFT Color LCD (480 × 272 pixels, Transmissive)
Interface	USB 1.1, Type A × 1 (memory), Type B × 1 (USB mass storage)

µOTDR Module Common (MU909014C/C6, MU909015C/C6, MU909014A1/B/B1 and MU909015B/B1, MU909015A6)

Fiber Type		10 µm/125 µm SMF (ITU-T G.652)
Optical Connector		FC, SC adapter are changeable
Distance Range		0.5, 1, 2.5, 5, 10, 25, 50, 75, 125, 250 km (IOR = 1.500000)
Pulse Width		5, 10, 20, 50, 100, 200, 500 ns, 1, 2, 5, 10, 20 µs
Linearity		Which ever is greater ±0.05 dB/dB or ±0.1 dB
Return Loss Measurement Accuracy*1		±2 dB
Distance Measurement Accuracy		±1 m ±3 × Measurement distance × 10^{-5} ±Marker resolution (excluding IOR uncertainty)
Data Storage		Internal memory: 40 MB (<1,000 traces) External (USB Memory): 1 GB (<30,000 traces)
IOR Setting		1.3000 to 1.7000 (0.0001 steps)
Units		km, m, kft, ft, mi
Other Functions		Integrated launch fiber: 10 m (30 ft) Connection check: Automatic check of OTDR to FUT connection quality Live fiber detect: Verifies presence of communication light in fiber Real time sweep: <1 sec (typ.) Macro bend analysis (without single-wavelength model) Bluetooth, WLAN and Ethernet connectivity “Fiber Visualizer (FV)” function “DCFL” function (differs with selected module) Password protect function Video inspection probe (option)
Language		User selectable (English, Simplified Chinese, Traditional Chinese, Korean, Japanese, French, German, Italian, Spanish, Polish, Portuguese, Finnish, Danish, Swedish, Spanish (Latin America), Russian and Dutch)
Power Supply		9 V(dc), 100 V(ac) to 240 V(ac), Allowable Input voltage range: 90 V(ac) to 264 V(ac), 50 Hz/60 Hz
Fiber Event Analysis		Automatic, Displayed in table format based on user defined PASS/FAIL thresholds
Loss Measurement Modes		2-point loss, Splice loss, dB/km Loss LSA, ORL, Event
OTDR Trace Format		Telcordia universal (.SOR) issue 2 (SR-4731)
Battery		NiMH (Standard battery), NiMH (AA Type), Alkaline Dry Battery (AA Type)*2 Operating time (Standard battery): 8 hours (typ.)*3, Telcordia GR-196-CORE Issue2, September 2010 Recharging time: <4 hours (typ.)*4
CE	EMC	2014/30/EU, EN61326-1, EN61000-3-2
	LVD	2014/35/EU, EN61010-1
	RoHS	2011/65/EU, (EU) 2015/863, EN IEC 63000: 2018
UKCA	EMC	S.I. 2016 No.1091, EN 61326-1, EN61000-3-2
	LVD	S.I. 2016 No.1101, EN 61010-1
	RoHS	S.I. 2012 No.3032, EN IEC 63000:2018

MU909014C/C6 and MU909015C/C6 µOTDR Module

Model Name		MU909015C/C6-057 MU909015C/C6-067	MU909015C/C6-058 MU909015C/C6-068	MU909015C/C6-059 MU909015C/C6-069	MU909014C/C6-057 MU909014C/C6-067	MU909014C/C6-058 MU909014C/C6-068
Center Wavelength*5		1310/1550 ±20 nm*6 1625 ±15 nm	1310/1550 ±20 nm*6 1650 ±15 nm	1310/1490/1550 ±20 nm*6	1310/1550 ±20 nm*6 1625 ±15 nm	1310/1550 ±20 nm*6 1650 ±15 nm
Dynamic Range*7, *8	PW = 20 µs	38 dB/37 dB/35 dB*9, *10	38 dB/37 dB/35 dB*9, *10	36 dB/35 dB/35 dB	32.5 dB/31 dB/32.5 dB*9, *11	32.5 dB/31 dB/32.5 dB*9, *11
	PW = 500 ns	27 dB/26 dB/25 dB*9, *10	27 dB/26 dB/24 dB*9, *10	25 dB/24 dB/24 dB	24.5 dB/23 dB/24 dB*9, *11	24.5 dB/23 dB/24 dB*9, *11
Dead Zone*12 (IOR = 1.500000)		Fresnel: ≤0.8 m (Typical) Backscatter: ≤4.0 m (1310 nm, Typical), ≤4.5 m (1490/1550/1625/1650 nm, Typical)				
Number of Sampling Points*13		<250,001 pts (Course: <7,501 pts, Medium: <20,001 pts, Fine: <250,001 pts)				
Sampling Resolution		2 cm (min.)				
Testing Modes		OTDR (Full automatic, Manual, Real time), Power Meter, [Video Inspection Probe (Option)] [PON Power Meter, Loss Test Set, Light Source (MU909015C6, MU909014C6)]				
Power Meter		Please refer to the spec “Power Meter”				
PON Power Meter (only for MU909015C6/14C6)		Please refer to the spec “PON Power Meter”				
Light Source (only for MU909015C6/14C6)		Please refer to the spec “Light Source”				
Loss Test Set (only for MU909015C6/14C6)		Please refer to the spec “Loss Test Set”				
Environment		Operating temperature and humidity: –10°C to +50°C, <95% (no condensation) Storage temperature and humidity: –30°C to +70°C, <95% (no condensation) Vibration: MIL-T-28800E Class 3, Ingress Protection Rating: IEC60529 IP51				
Laser Safety*14		IEC 60825-1: 2014 CLASS 1 Complies with 21CFR1040.10 and 1040.11 except for conformance with IEC 60825-1 Ed.3., as described in Laser Notice No. 56, dated May 8, 2014				

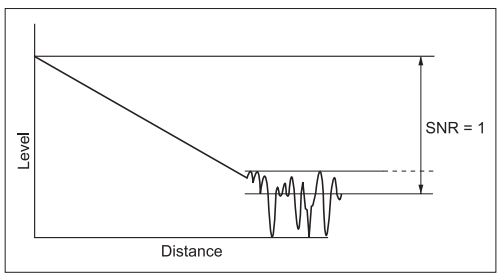
MU909014A1/B/B1 and MU909015B/B1 µOTDR Module

Model name		MU909015B/B1-056 MU909015B/B1-066	MU909014B/B1-056 MU909014B/B1-066	MU909014A1-053 MU909014A1-063	MU909014A1-054 MU909014A1-064
Center Wavelength*5		1310/1550 ±20 nm*6		1625 ±15 nm	1650 ±15 nm
Dynamic Range*7, *8	PW = 20 µs	37 dB/36 dB	32.5 dB/31 dB	32.5 dB*9, *11	
	PW = 500 ns	28 dB/26 dB	24.5 dB/23 dB	24.5 dB*9, *11	24 dB*9, *11
Dead Zone*12 (IOR = 1.500000)		Fresnel: ≤1 m Backscatter: ≤5 m			
Number of Sampling Points*13		<125,001 pts (Course: <6,251 pts, Medium: <25,001 pts, Fine: <125,001 pts)			
Sampling Resolution		5 cm (min.)			
Testing Modes		OTDR (Full automatic, Manual, Real time), Power Meter, [Visible Fault Locator (Option)], [Video Inspection Prove (Option)]			
Power Meter (only for MU909014B/B1/15B/15B1)		Please refer to the spec “Power Meter”		Not applicable	
Visible Fault Locator (only for MU909014A1/B1/15B1)		Connector: 2.5 mm universal Wavelength: 650 ±15 nm (CW, +25°C) Output power: 0 ±3 dBm (CW, +25°C) Modulation: CW, 1 Hz			
Environment		Operating temperature and humidity: –5°C to +40°C, <80% (no condensation) Storage temperature and humidity: –20°C to +60°C, <80% (no condensation) Vibration: MIL-T-28800E Class 3, Ingress Protection Rating: IEC60529 IP51			
Laser Safety*14		IEC 60825-1: 2014 CLASS 1, CLASS 3R (VLD Option) Complies with 21CFR1040.10 and 1040.11 except for conformance with IEC 60825-1 Ed.3., as described in Laser Notice No. 56, dated May 8, 2014			

MU909015A6 µOTDR Module

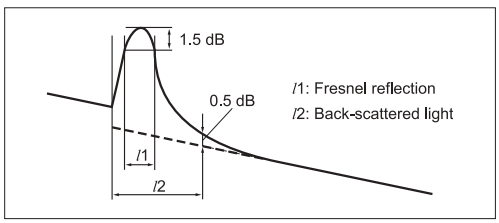
Model Name		MU909015A6-053 MU909015A6-063	MU909015A6-054 MU909015A6-064
Center Wavelength*5		1625 ±15 nm	1650 ±15 nm
Dynamic Range*7, *8	PW = 20 µs	35 dB*9, *10	
	PW = 500 ns	25 dB*9, *10	24 dB*9, *10
Dead Zone*12 (IOR = 1.500000)		Fresnel: ≤0.8 m (Typical) Backscatter: ≤4.5 m (Typical)	
Number of Sampling Points*13		<250,001 pts (Course: <7,501 pts, Medium: <20,001 pts, Fine: <250,001 pts)	
Sampling Resolution		2 cm (min.)	
Testing Modes		OTDR (Full automatic, Manual, Real time), Power Meter, [Video Inspection Probe (Option)] [PON Power Meter, Light Source]	
Power Meter		Please refer to the spec “Power Meter”	
PON Power Meter		Please refer to the spec “PON Power Meter”	
Light Source		Please refer to the spec “Light Source”	
Environment		Operating temperature and humidity: –10°C to +50°C, <95% (no condensation) Storage temperature and humidity: –30°C to +70°C, <95% (no condensation) Vibration: MIL-T-28800E Class 3, Ingress Protection Rating: IEC60529 IP51	
Laser Safety*14		IEC 60825-1: 2014 CLASS 1 Complies with 21CFR1040.10 and 1040.11 except for conformance with IEC 60825-1 Ed.3., as described in Laser Notice No. 56, dated May 8, 2014	

∗1: Design assurance. Distance range: 25 km, Pulse width: 2 µs, 20 km open the fiber-end. BSC: –78.5 (1310 nm), –80.1(1490 nm), –81.5 (1550 nm), –82.5 (1625 nm/1650 nm)
∗2: All specifications are guaranteed by standard battery.
∗3: Back light low, Sweeping halted, +25°C
∗4: +10 to +30°C, Power off
∗5: At +25°C, 1 µs, except charging battery
∗6: Typical value, ±25 nm is Guaranteed
∗7: Typical value, Distance range: 125 km, Averaging: 180 sec, SNR = 1, +25°C, Except while charging battery, Subtract 1 dB for guarantee
∗8: Dynamic range (one-way back-scattered light)
SNR = 1: The level difference between the RMS nose level and the level where near end back-scattering occurs.



∗9: 1490 nm/1550 nm cut filter included (1625 nm or 1650 nm port)
∗10: Specified without background light (1625 nm, 1650 nm)

∗11: In service Signal is –20 dBm (CW) at 1310 nm/1550 nm
∗12: Return Loss 45 dB, +25°C
Fresnel: PW = 5 ns, 1.5 dB down from the peak of Fresnel
Backscatter: PW = 5 ns, Deviation ±0.5 dB



∗13: Either medium and fine density value is selected depends on distance range
∗14: Safety measures for laser products
The following descriptive labels are affixed to the product.

Other Functions

Light Source

Models	MU909015C6/14C6, MU909015A6
Wavelength*15	1310/1550 ±25 nm (MU909015C6/14C6) 1490 ±25 nm (MU909015C6-059, MU909015C6-069) 1625 ±25 nm (MU909015C6/14C6-057, MU909015A6-053, MU909015C6/14C6-067, MU909015A6-063) 1650 ±25 nm (MU909015C6/14C6-058, MU909015A6-054, MU909015C6/14C6-068, MU909015A6-064)
Fiber Type	10 µm/125 µm SMF (ITU-T G.652)
Output port	Shared with OTDR port
Output power*15, *16	–5 ±1.5 dBm
Output stability*17	≤0.2 dB
Modes of Operation	CW, 270 Hz, 1 kHz, 2 kHz
Laser Safety	Same as OTDR

Power Meter

Models	MU909015C6/14C6, MU909015A6	MU909015C/14C	MU909015B/B1, MU909014B/B1
Setting Wavelength	1310/1490/1550/1625/1650 nm	1310/1490/1550 nm	1310/1490/1550/1625/1650 nm
Fiber Type	10 µm/125 µm SMF (ITU-T G.652)		
Measurement range*18	–50 to +26 dBm (CW) –40 to +13 dBm (270 Hz, 1 kHz, 2 kHz)	–50 to –5 dBm (CW)	
Measurement port	Shared with OTDR port 1625 nm or 1650 nm OTDR port Dedicated port (Options 059 and 069)	Shared with OTDR port 1310 nm/1550 nm OTDR port (Except options 059 and 069) 1310 nm/1490 nm/1550 nm OTDR port (Options 059 and 069)	
Measurement Accuracy*19	±0.5 dB		
Modes of Operation	CW, 270 Hz, 1 kHz, 2 kHz	CW	

PON Power Meter (1490 nm/1550 nm)

Models	MU909015C6/14C6, MU909015A6
Wavelength	1490 nm/1550 nm
Fiber Type	10 µm/125 µm SMF (ITU-T G.652)
Measurement range	–50 to +13 dBm (1490 nm, CW) –50 to +26 dBm (1550 nm, CW)
Measurement port	Shared with OTDR port (1625 nm or 1650 nm) Dedicated port (Options 059 and 069)
Measurement Accuracy*20	±0.5 dB
Isolation*21	1490 nm: >35 dB, 1550 nm: >50 dB

Loss Test Set

Models	MU909015C6/14C6
Fiber Type	10 µm/125 µm SMF (ITU-T G.652)
Measurement port	Light Source: Shared with OTDR port 1310 nm/1550 nm OTDR port (Except options 059 and 069) 1310 nm/1490 nm/1550 nm OTDR port (Options 059 and 069) Power Meter: Shared with OTDR port 1625 nm or 1650 nm OTDR port (Except options 059 and 069) Dedicated port (Options 059 and 069)
Light Source	
Wavelength	1310 ±25 nm, 1550 ±25 nm (Except options 059 and 069) 1310 ±25 nm, 1490 ±25 nm, 1550 ±25 nm (Options 059 and 069)
Output Power*15, *16	–5 ±1.5 dBm (CW, 25°C)
Output stability*17	≤0.2 dB
Modes of Operation	CW, 270 Hz, 1 kHz, 2 kHz
Laser Safety	Same as OTDR
Power Meter	
Setting Wavelength	1310/1490/1550/1625/1650 nm
Measurement range*18	–50 to +26 dBm (CW) –40 to +13 dBm (270 Hz, 1 kHz, 2 kHz)
Measurement Accuracy*19	±0.5 dB
Modes of Operation	CW, 270 Hz, 1 kHz, 2 kHz

∗15: At +25°C, CW
∗16: Fiber length 2 m, after the warm-up.
∗17: Wavelength 1310 nm/1550 nm, CW, ±1°C at one point within –10°C to +50°C, deference between the largest value and shortest value for one minute, single mode fiber 2 m, when the optical power meter with return loss of 40 dB or more is used. After the warm-up time (10 minutes) passed.
∗18: At 1550 nm
∗19: 1310 nm/1490 nm/1550 nm, CW, –20 dBm, 25°C, Using Anritsu's reference single mode fiber with FC/UPC connector, after zero offset execution.
∗20: 1490 nm/1550 nm, CW, –20 dBm, +25°C, Using Anritsu's reference single mode fiber with FC/UPC connector, after zero offset execution.
∗21: Design assurance.

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) Select Mainframe

Includes battery pack, AC charger/adapter, standard soft case, strap and protector.

Model/Order No.	Description
Mainframe	
MT9090A	Mainframe
Mainframe Option (Remember to specify)	
MT9090A-001	Dedicated for µOTDR Module

⋆1: When ordering MT9090A and MT9090A-001, two matching G0202A battery packs are supplied as standard accessories.
⋆2: This can be used as a neck strap to support waist-level operation.

Model/Order No.	Description
Standard Accessories for MT9090A	
G0202A⋆1	Replacement NiMH Battery Pack
G0203A	Replacement AC Charger/Adapter
B0601B	For MT9090A with/without Protector. This soft case is a standard accessory for the MT9090A main frame.
Z1023A	Replacement Strap
B0663A⋆2	Protector
Standard Accessories for MT9090A-001	
G0202A⋆1	Replacement NiMH Battery Pack

2) Select Base Module

Model/Order No.	Description
MU909014A1⋆3	µOTDR (Single wavelength, 30 dB class OTDR with VLD)
MU909015A6⋆4	µOTDR (Single wavelength, 35 dB class OTDR with PM, PON-PM and LS)
MU909014B⋆3	µOTDR (2-wavelength, 30 dB class OTDR)
MU909014B1⋆3	µOTDR (2-wavelength, 30 dB class OTDR with VLD)
MU909015B⋆3	µOTDR (2-wavelength, 35 dB class OTDR)
MU909015B1⋆3	µOTDR (2-wavelength, 35 dB class OTDR with VLD)

Model/Order No.	Description
MU909014C⋆6	µOTDR (3-wavelength, 30 dB class OTDR)
MU909014C6⋆6	µOTDR (3-wavelength, 30 dB class OTDR with PM, PON-PM, LTS and LS)
MU909015C⋆5, ⋆6	µOTDR (3-wavelength, 35 dB class OTDR)
MU909015C6⋆6, ⋆7	µOTDR (3-wavelength, 35 dB class OTDR with PM, PON-PM, LTS and LS)

⋆3: One OTDR port (any of 1310 nm/1550 nm, 1625 nm, 1650 nm) and visible light source (option) (Fig. 1)
⋆4: One OTDR port (1625 nm or 1650 nm) (Fig. 2)
⋆5: One OTDR port (1310 nm/1490 nm/1550 nm; Options 059 and 069) (Fig. 2)
⋆6: Two OTDR ports (1310 nm/1550 nm, and 1625 nm or 1650 nm; Except options 059 and 069) (Fig. 3)
⋆7: One OTDR port and dedicated power meter port (1310 nm/1490 nm/1550 nm, and power meter; Options 059 and 069) (Fig. 3)

Fig. 1

Fig. 2

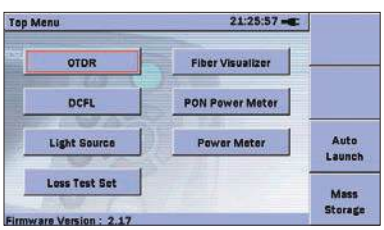
Fig. 3

3) Select Module, Connector Interface and Testing Options

Includes operation manual and quick reference guide.

Model/Order No.		Description	PM	PON-PM	LTS	LS⋆14	VLD⋆15	FV	DCFL
UPC type	APC type	Installation and Maintenance Models							
MU909014C-057	MU909014C-067	µOTDR (1310/1550/1625 nm, 32.5/31/32.5 dB)	✓⋆8					✓	
MU909014C-058	MU909014C-068	µOTDR (1310/1550/1650 nm, 32.5/31/32.5 dB)	✓⋆8					✓	
MU909015C-057	MU909015C-067	µOTDR (1310/1550/1625 nm, 38/37/35 dB)	✓⋆8					✓	
MU909015C-058	MU909015C-068	µOTDR (1310/1550/1650 nm, 38/37/35 dB)	✓⋆8					✓	
MU909015C-059	MU909015C-069	µOTDR (1310/1490/1550 nm, 36/35/35 dB)	✓⋆8					✓	
MU909014C6-057	MU909014C6-067	µOTDR (1310/1550/1625 nm, 32.5/31/32.5 dB)	✓⋆8	✓⋆10	✓⋆12	✓		✓	✓
MU909014C6-058	MU909014C6-068	µOTDR (1310/1550/1650 nm, 32.5/31/32.5 dB)	✓⋆8	✓⋆10	✓⋆12	✓		✓	✓
MU909015C6-057	MU909015C6-067	µOTDR (1310/1550/1625 nm, 38/37/35 dB)	✓⋆8	✓⋆10	✓⋆12	✓		✓	✓
MU909015C6-058	MU909015C6-068	µOTDR (1310/1550/1650 nm, 38/37/35 dB)	✓⋆8	✓⋆10	✓⋆12	✓		✓	✓
MU909015C6-059	MU909015C6-069	µOTDR (1310/1490/1550 nm, 36/35/35 dB)	✓⋆9	✓⋆11	✓⋆13	✓		✓	
UPC type	APC type	General Purpose Models							
MU909014B-056	MU909014B-066	µOTDR (1310/1550 nm, 32.5/31 dB)	✓⋆8					✓	
MU909014B1-056	MU909014B1-066	µOTDR (1310/1550 nm, 32.5/31 dB)	✓⋆8				✓	✓	
MU909015B-056	MU909015B-066	µOTDR (1310/1550 nm, 37/36 dB)	✓⋆8					✓	
MU909015B1-056	MU909015B1-066	µOTDR (1310/1550 nm, 37/36 dB)	✓⋆8				✓	✓	
UPC type	APC type	Maintenance Models							
MU909014A1-053	MU909014A1-063	µOTDR (1625 nm, 32.5 dB)					✓	✓	
MU909014A1-054	MU909014A1-064	µOTDR (1650 nm, 32.5 dB)					✓	✓	
MU909015A6-053	MU909015A6-063	µOTDR (1625 nm, 35 dB)	✓⋆8	✓⋆10		✓		✓	✓
MU909015A6-054	MU909015A6-064	µOTDR (1650 nm, 35 dB)	✓⋆8	✓⋆10		✓		✓	✓

⋆8: PM (Power Meter) function shared with OTDR port.
⋆9: Dedicated PM port.
⋆10: PON-PM (PON Power Meter) shared with 1625 nm or 1650 nm OTDR port. Identifies and measures 1490 nm and 1550 nm wavelengths.
⋆11: Dedicated PON-PM port. Identifies and measures 1490 nm and 1550 nm wavelengths.
⋆12: LTS (Loss Test Set) function for measuring 1310/1550 nm wavelengths. Light source shared with 1310/1550 nm OTDR port. Power meter shared with 1625 nm or 1650 nm OTDR port.
⋆13: LTS function for measuring 1310/1490/1550 nm wavelengths. Light source shared with 1310/1490/1550 nm OTDR port. Power meter is dedicated port.
⋆14: LS (Stabilized Light Source) shared with OTDR port for each wavelength.
⋆15: VLD (Visible Laser Diode) function with visible light source port operated from OTDR or Power Meter.



Top Menu differs with selected module

4) Select Connector Adapter

Adapter included at no charge – must be added as a separate line item.

Model/Order No.	Description
MU909014A/B/C-025 MU909015A/B/C-025	FC-APC Connector key width 2.0 mm (APC: Models -063, 064, 066, 067, 068, and 069)
MU909014A/B/C-026 MU909015A/B/C-026	SC-APC Connector (APC: Models -063, 064, 066, 067, 068, and 069)
MU909014A/B/C-037 MU909015A/B/C-037	FC Connector (UPC: Models -053, 054, 056, 057, 058, and 059)
MU909014A/B/C-040 MU909015A/B/C-040	SC Connector (UPC: Models -053, 054, 056, 057, 058, and 059)

5) Select Accessories*1

Must be added as separate line items.

Model/Order No.	Description
Z1580A*2	Protector & Soft Case
B0663A*3	Protector
G0203A	AC Adapter (for Replacement)
G0202A	NiMH battery pack (for Replacement)
B0602B	Deluxe Soft Case (for MT9090A)
B0601B	Standard Soft Case
B0600B	Hard Case (for MT9090A)
Z1023A	Strap
J1402A	Car Plug Cord
J1530A	SC Plug-in Converter (UPC(P)-APC(J))
J1531A	SC Plug-in Converter (APC(P)-UPC(J))
J1532A	FC Plug-in Converter (UPC(P)-APC(J))
J1533A	FC Plug-in Converter (APC(P)-UPC(J))
J1534A	LC-SC Plug-in Converter (for SM, SC(P)-LC(J))
J1535A	LC-SC Plug-in Converter (for MM, SC(P)-LC(J))
W3585AE	Quick Reference Guide (English, Printed)
W3586AE	Operation Manual (English, Printed)
Z1579A	Operation Manual (English and Japanese, Electronic (CD-R))
G0306C	Video Inspection Probe (× 400)
NETWORKS	PC Emulation Software for Data Analysis and Reporting

*1: Optional Accessories cannot be repaired.
*2: The protector (B0663A) and standard soft case (B0601B) from a set.
The protector includes a shoulder strap.
*3: The shoulder strap can be used to hang the instrument around the neck while working.

6) Replacement Adaptors

Must be added as separate line items.

Model/Order No.	Description
J0617B	FC (UPC: Models -053, -054, -056, -057, -058)
J0619B	Replaceable Optical Connector SC (UPC: Models -053, -054, -056, -057, -058) (APC: Models -063, -064, -066, -067, -068)
J0739A	FC (APC: Models -063, -064, -066, -067, -068)
J1602A	Replaceable optical connector (SC) Phosphor bronze
J1603A	Replaceable optical connector (FC) Phosphor bronze

B0601B Standard Soft Case

This standard accessory accommodates the mainframe with fitted protector.

B0602B Deluxe Soft Case

Full Network Master operation without removal from the case.
Provides excellent protection for use in hash conditions.
This does not accommodate the mainframe if the protector is fitted.

B0600B Hard Case

This accommodates two mainframes (with or without fitted protector), accessories (light source or power meter, backup battery, fiber cleaner, etc.).

Mainframe with Protector

B0663A Protector

The mainframe with fitted protector.

J1530A to J1535A
Plug-in Converter

(The photo shows the J1534A)

G0306C
Video Inspection Probe (× 400)

Related Products

Network Master Pro MT1000A

OTDR Module 1310/1550 nm SMF	**MU100020A**
OTDR Module 1310/1550/850/1300 nm SMF/MMF	**MU100021A**
OTDR Module 1310/1550/1625 nm SMF	**MU100022A**
OTDR Module 1310/1550/1650 nm SMF	**MU100023A**

Installing an OTDR Module MU100020A/MU100021A/MU100022A/MU100023A provides the OTDR functions required for optical fiber I&M. Work efficiency is increased by all-in-one support for optical fiber tests and data communications network commissioning.
I&M tests of 1.5 Mbps to 100 Gbps communications networks can be executed by simultaneously installing the MU100010A or MU100011A. In addition to supporting Ethernet, OTN, etc., networks, Mobile base station CPRI and OBSAI, as well as SyncE protocols are also supported.

10G Multirate Module	**MU100010A**
100G Multirate Module	**MU100011A**

Installing the MU100010A or MU100011A in the MT1000A supports commissioning and maintenance tests of communications networks operating at speeds from 1.5 Mbps to 100 Gbps.
In addition to Ethernet, OTN, eCPRI/RoE/CPRI/OBSAI, Fibre Channel and SyncE protocols used by mobile-network base stations are supported too.

Network Master Pro MT1040A

The Network Master Pro MT1040A for 400G networks is a portable tester for evaluating the communications quality of various network types operating at speeds from 10 Mbps to 400 Gbps.
The stackable module configuration facilitates dual-port 400G Ethernet measurements using two installed 400G measurement modules.

- All-in-one, multiport network evaluation
- OTDR configuration by re-arranging stackable module configuration
- Efficient on-site automated testing and remote control

MT9090 Series

Gigabit Ethernet Module	**MU909060A**

Dedicated field test solution for installation and troubleshooting Ethernet links in access networks.

Light Source/Optical Power Meter CMA5 Series

For optical fiber installation and maintenance.

ACCESS Master MT9085 Series

For WAN/MFH/DCI/FTTH Optical Fiber I&M

- Improved operability with powerful synergy of 8-inch touchscreen and hardware keys
- At-a-glance Pass/Fail evaluation using Fiber Visualizer
- All OTDR, OLTS, and Visible Light Source operations on one screen
- Short event dead zone of ≤0.8 m and high dynamic range of 46 dB max.
- Power meter option for measuring optical power up to +30 dBm

Note

Note

Note

Anritsu Advancing beyond

Specifications are subject to change without notice.

• **United States**
Anritsu Americas Sales Company
490 Jarvis Drive, Morgan Hill, CA 95037-2809, U.S.A.
Phone: +1-800-Anritsu (1-800-267-4878)

• **Canada**
Anritsu Electronics Ltd.
Americas Sales and Support
490 Jarvis Drive, Morgan Hill, CA 95037-2809, U.S.A.
Phone: +1-800-Anritsu (1-800-267-4878)

• **Brazil**
Anritsu Eletronica Ltda.
Praça Amadeu Amaral, 27 - 1 Andar
01327-010 - Bela Vista - Sao Paulo - SP, Brazil
Phone: +55-11-3283-2511
Fax: +55-11-3288-6940

• **Mexico**
Anritsu Company, S.A. de C.V.
Blvd Miguel de Cervantes Saavedra #169 Piso 1, Col. Granada
Mexico, Ciudad de Mexico, 11520, MEXICO
Phone: +52-55-4169-7104

• **United Kingdom**
Anritsu EMEA Ltd.
200 Capability Green, Luton, Bedfordshire, LU1 3LU, U.K.
Phone: +44-1582-433200
Fax: +44-1582-731303

• **France**
Anritsu S.A.
12 avenue du Québec, Immeuble Goyave,
91140 VILLEBON SUR YVETTE, France
Phone: +33-1-60-92-15-50

• **Germany**
Anritsu GmbH
Nemetschek Haus, Konrad-Zuse-Platz 1,
81829 München, Germany
Phone: +49-89-442308-0
Fax: +49-89-442308-55

• **Italy**
Anritsu S.r.l.
Spaces Eur Arte, Viale dell'Arte 25, 00144 Roma, Italy
Phone: +39-6-509-9711

• **Sweden**
Anritsu AB
Kistagången 20 B, 2 tr, 164 40 Kista, Sweden
Phone: +46-8-534-707-00

• **Finland**
Anritsu AB
Technopolis Aviapolis, Teknobulevardi 3-5 (D208.5.),
FI-01530 Vantaa, Finland
Phone: +358-20-741-8100

• **Denmark**
Anritsu A/S
c/o Regus Winghouse, Ørestads Boulevard 73, 4th floor,
2300 Copenhagen S, Denmark
Phone: +45-7211-2200

• **Spain**
Anritsu EMEA GmbH
Representation Office in Spain
Calle Manzanares 4, Primera planta, 28005 Madrid, Spain
Phone: +34-91-572-6761

• **Austria**
Anritsu EMEA GmbH
Am Belvedere 10, A-1100 Vienna, Austria
Phone: +43-(0)1-717-28-710

• **United Arab Emirates**
Anritsu A/S
Office No. 164, Building 17, Dubai Internet City
P. O. Box – 501901, Dubai, United Arab Emirates
Phone: +971-4-3758479

• **India**
Anritsu India Private Limited
6th Floor, Indiqube ETA, No.38/4, Adjacent to EMC2,
Doddanekundi, Outer Ring Road, Bengaluru – 560048, India
Phone: +91-80-6728-1300
Fax: +91-80-6728-1301

• **Singapore**
Anritsu Pte. Ltd.
1 Jalan Kilang Timor, #07-04/06 Pacific Tech Centre
Singapore 159303
Phone: +65-6282-2400
Fax: +65-6282-2533

• **Vietnam**
Anritsu Company Limited
16th Floor, Peakview Tower, 36 Hoang Cau Street, O Cho Dua Ward,
Dong Da District, Hanoi, Vietnam
Phone: +84-24-3201-2730

• **P.R. China (Shanghai)**
Anritsu (China) Co., Ltd.
Room 2701-2705, Tower A, New Caohejing International
Business Center No. 391 Gui Ping Road Shanghai, 200233, P.R. China
Phone: +86-21-6237-0898
Fax: +86-21-6237-0899

• **P.R. China (Hong Kong)**
Anritsu Company Ltd.
Unit 1006-7, 10/F., Greenfield Tower, Concordia Plaza,
No. 1 Science Museum Road, Tsim Sha Tsui East,
Kowloon, Hong Kong, P.R. China
Phone: +852-2301-4980
Fax: +852-2301-3545

• **Japan**
Anritsu Corporation
8-5, Tamura-cho, Atsugi-shi, Kanagawa, 243-0016 Japan
Phone: +81-46-296-6509
Fax: +81-46-225-8352

• **Korea**
Anritsu Corporation, Ltd.
8F, A TOWER, 20, Gwacheondaero 7-gil, Gwacheon-si,
Gyeonggi-do, 13840, Republic of Korea
Phone: +82-2-6259-7300
Fax: +82-2-6259-7301

• **Australia**
Anritsu Pty. Ltd.
Unit 20, 21-35 Ricketts Road, Mount Waverley, Victoria 3149, Australia
Phone: +61-3-9558-8177
Fax: +61-3-9558-8255

• **Taiwan**
Anritsu Company Inc.
7F, No. 316, Sec. 1, NeiHu Rd., Taipei 114, Taiwan
Phone: +886-2-8751-1816
Fax: +886-2-8751-1817

2404

Printed in Japan 13/MAY/2024 ddcw/CDT Catalog No. MU909014x/15x-E-A-1-(17.00)