

# Network Master™ Series

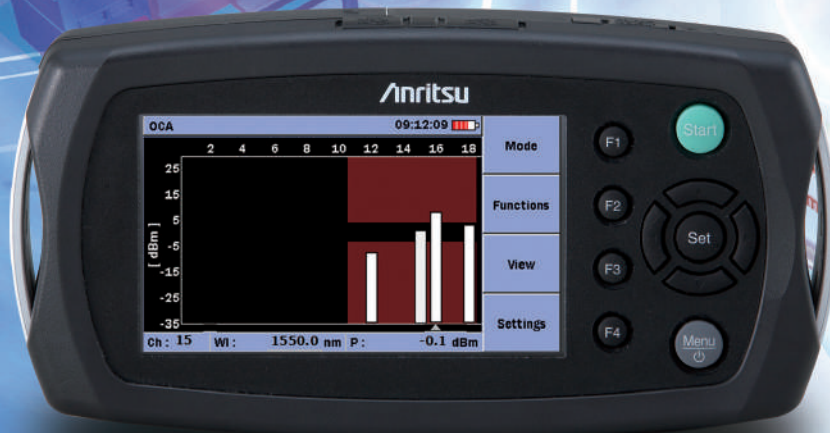
## MT9090A

Mainframe

## MU909020A

Optical Channel Analyzer Module





# CWDM Access Network Testing Redefined!

## MT9090A/MU909020A OVERVIEW

Many operators choose Coarse Wavelength Division Multiplexing (CWDM) technology to increase bandwidth capacity in metro access and enterprise networks, where deploying DWDM systems would be cost prohibitive. Although OSAs are well adapted for testing long-haul WDM links, their complexity, big size, heavy weight, slow measuring time, and high price make them inappropriate for use as field testers in CWDM access networks.

The new MT9090A Optical Channel Analyzer from Anritsu finally addresses this need by providing all the features and performance required for installation and maintenance of CWDM networks in a compact modular test set. It provides unmatched value and ease of use, while not compromising performance. The MT9090A provides an overview of the power levels and wavelengths of all 18 CWDM channels at a glance, with easy comparison to pass and fail indicators. It also enables long-term characterizations with several drift functions.

The MT9090A with the MU909020A module is an essential tool for CWDM networks. Its ease of use, low price, measuring speed, robustness, and size make it the perfect product for field CWDM testing.

## Key Features

- Dedicated tool for installation, commissioning, and troubleshooting of CWDM networks
- Fast and accurate overview of all CWDM channels and channel drifts over time
- Fully compliant to the ITU-T G.695 and G.694.2 standards
- Pre-stored or user-defined threshold values for easy Go/No Go testing
- Power meter operation with measurement of the total incident power
- Short boot-up and warm-up times plus long battery life, for rapid field characterization of CWDM networks
- High resolution, widescreen color display that is easy to read indoors or out
- Rugged, sealed design provides years of service in the most challenging environments
- Compact and lightweight design for maximum portability in the field
- High performance without a high price

# Designed for field operations

The MT9090A is purpose built for testing CWDM channels in the field. Its hardware and user interface are optimized for simplicity, making it easy to use for any skill level, and it is rugged enough to function in any harsh environment.

## Quick Startup

The MT9090A is ready for measurement in about 15 seconds, 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 MT9090A typically provides 4 hours of testing on a single charge. This, coupled with an optional car cigarette lighter cord, guarantees the MT9090A is ready when you are.

## Portable

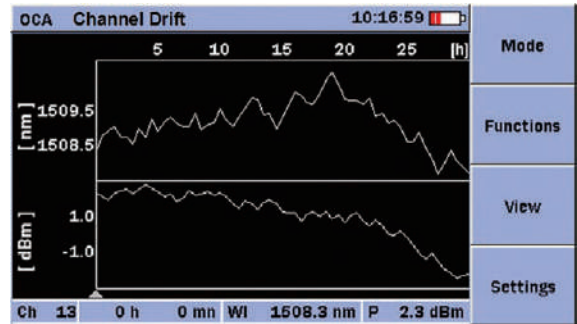
With its lightweight design and user friendly dimensions, the MT9090A is perfect for the outside plant environment and can easily be managed with one hand. Its standard softcase with shoulder strap further facilitates portability when traveling from the truck to the testing site.

## Rugged

With no moving parts for channel detection, and no fans or vents to allow dust or moisture to enter the unit, the MT9090A was designed for the challenging outside plant environment.

## 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 results. It also provides excellent readability both indoors and outdoors.



## No Experience Required

With the MT9090A, the expertise is built in. Using intuitive graph and table displays of wavelength and power levels and drifts, with pass and fail indicators defined by the ITU-T G.695 standard, anyone can certify and troubleshoot CWDM networks.

## Small on price, not on features!



- 1) 4.3 inch high resolution, indoor/outdoor color display
- 2) Dedicated function keys for performing tasks
- 3) START key for fast 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) Optical port with universal connector adapter
- 8) Dual USB ports for quick and easy data transfer

# Dedicated tool for CWDM applications

Anritsu designed the MT9090A/MU909020A to measure and monitor power and wavelength over the 18 CWDM channels. With its fast and reliable measurements, and a software interface focused exclusively on the features needed for quick and easy characterization of CWDM links, it is a cost-effective alternative to more complex OSAs for the CWDM market.

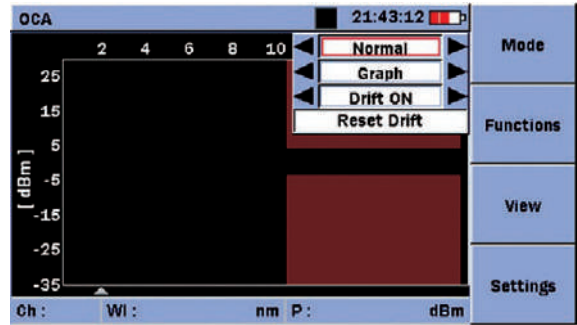
## Fast Measurement

With no moving parts, the MU909020A is faster than any OSA, providing quick troubleshooting of a CWDM network.

## Intuitive Operation

Using simple navigation in the function keys menu, results are displayed in comprehensive graphs and tables. These provide an instantaneous overview of channels, central wavelengths, power levels, and drifts over time.

Press the F1 key to select the displayed mode,



Mode selection

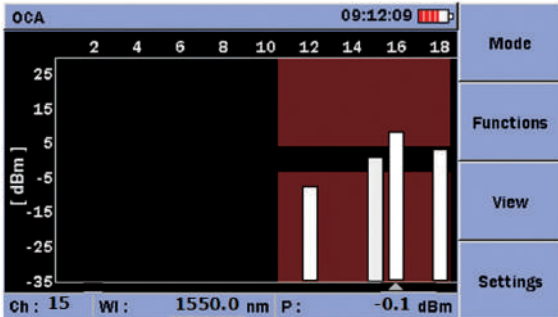
And simply press the START key to begin the characterization.

## PASS/FAIL Thresholds

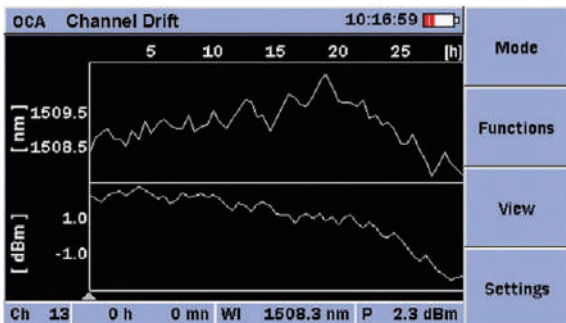
Threshold values are stored for all parameters and configurations defined in ITU-T G.695 standard. Select the appropriate alarm class and position in the network in the settings menu. User defined thresholds and configurations can also be set and stored.

OCA						11:52:50	Mode
Ch	WI (nm)	P (dBm)	Ch	WI (nm)	P (dBm)		Functions
1			10				View
2			11				
3	1311.1	-12.8	12	1492.2	-3.0		Settings
4			13				
5			14				
6			15				
7			16	1572.2	-2.2		
8			17				
9	1430.2	2.9	18				
Total Power = 4.1 dBm							

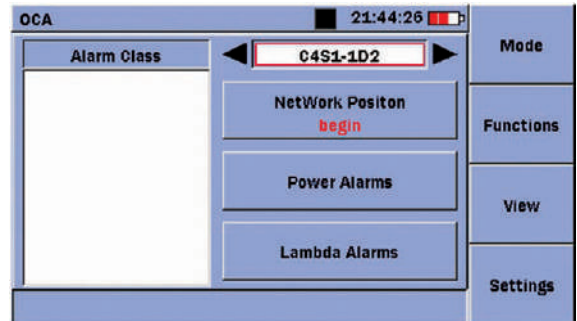
Table mode



Graph mode

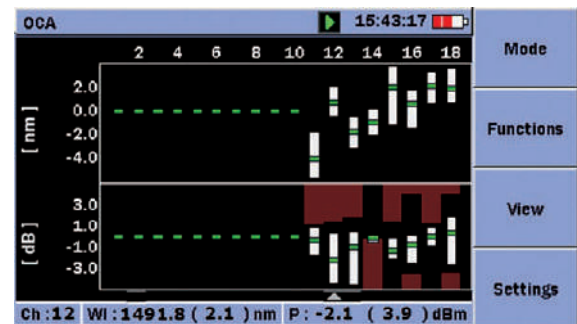


Channel drift graph mode



Alarms settings

Failures are easily identified with pass and fail indicators in any displayed mode, for immediate diagnosis of the CWDM link.



Alarms in drift graph mode

# Despite its size...it is not a toy!

People prefer to choose products that are innovative and supplied by established companies. When you need to install and maintain optical networks, this same criteria should apply. With many years of experience in optical testing, Anritsu delivers the features that matter.

Having a long history in the test and measurement business, we understand the importance of performance, portability, reliability, easy operation, and of course price.



## Screen Capture Function

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

## Free and Simple Software Upgrades

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

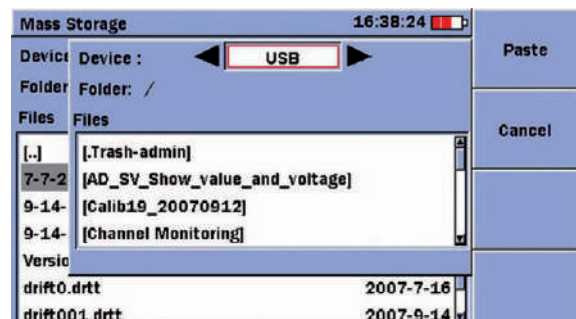
## Simple Data Storage

With internal data storage plus support for external USB memory devices, the MT9090A is more than capable. Press the Menu key and store up to 256 MB of images, results, and settings in the internal memory.



## Easy “drag and drop” File Transfers

When the MT9090A is connected to a PC via a USB cable, the internal memory can be directly accessed. Data can be selected, dragged, and dropped into the PC memory, greatly simplifying file transfers. The MT9090A also supports the use of USB memory sticks.



File transfer to USB memory stick

# Specifications

## MT9090A Mainframe

Dimensions and Mass	190 (W) × 96 (H) × 48 (D) mm (7.5" × 3.8" × 1.9") (including mainframe and module) <800 g (<2 lbs.) (including mainframe, module and battery)
Display	4.3-inch TFT-LCD (480 × 272, with backlight, transparent type)
Interface	USB 1.1, Type A × 1 (memory), Type B × 1 (USB mass storage)

## MU909020A Optical Channel Analyzer

Model	MU909020A	
Number of channels	All 18 CWDM channels, compliant to ITU-T G.694.2	
Channel pass band	±6.5 nm, compliant to ITU-T G.695	
Channel wavelength accuracy	±1 nm*2	
Power range per channel	−40 to +10 tdBm	
Channel power accuracy	±0.5 dB*1	
Channel power linearity	±0.3 dB*2	
Total power accuracy	±0.5 dB*1	
Total power linearity	±0.3 dB*2	
Maximum total safe power	+17 dBm	
Maximum channel safe power	+13 dBm	
Instrument repeatability	±0.2 dB*1	
Channel imbalance (adjacent channels)	≥12 dB*2, *3	
Polarization Dependant Loss	±0.3 dB	
Power supply	9 V(dc), 100 V(ac) to 240 V(ac)	
Battery	NiMH, Operating Time: 4 hours (typical)*4, Recharge Time:<3 hours*5, Operation Possible with 4 × AA alkaline: operating time depends on batteries type	
Environmental Conditions	Operation: 0° to +50°C*6, <80% (non-condensing)*7, Storage: −20° to +60°C	
	Vibration: MIL-T-28800E Class 3, Dust and Drip proof: IP 51	
CE	EMC	2014/30/EU, EN61326-1, EN61000-3-2
	LVD	2014/35/EU, EN61010-1
	RoHS	2011/65/EU, EN50581

- \*1: Measured at −10 dBm
- \*2: Signal from −35 to +10 dBm
- \*3: for wavelengths spacing >15 nm. Channel imbalance >15 dB for wavelengths spacing >20 nm
- \*4: Backlight low
- \*5: +10° to +30°C, Power OFF
- \*6: Specifications are guaranteed from +10° to +40°C. Operation possible from 0° to +50°C.
- \*7: +10° to +30°C (During Recharging battery, Power OFF)



# 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/adaptor, standard soft case, strap and protector

Model/Order No.	Description
MT9090A	Mainframe (with color LCD)

## 2) Select Base Module\*1

Include operation manual on CD

Model/Order No.	Description
MU909020A	Optical Channel Analyzer Module

## 3) Select Connector Interface

Model/Order No.	Description
MU909020A-050	OCA with UPC optical connector
MU909020A-060	OCA with APC optical connector

## 4) Select Connector Adapter

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

Model/Order No.	Connector Type
MU909020A-037	FC Connector (UPC: Model -050 only)
MU909020A-040	SC Connector (UPC: Model -050 only)
MU909020A-025	FC-APC Connector key width 2.0 mm (APC: Model -060 only)
MU909020A-026	SC-APC Connector (APC: Model -060 only)

## 5) Select Accessories

Must be added as separate line items.

Model/Order No.	Description
G0203A	AC adaptor (Replacement)
G0202A	NiMH Battery Pack (Replacement)
Z1580A*2	Protector & Soft Case
B0663A*3	Protector
B0600B	Hard Case
B0601B	Standard Soft Case
B0602B	Deluxe Soft Case (for MT9090A)
Z1023A	Strap
CD005568	Hardcopy MT9090A/MU909020A Operation manual
CD005780	Hardcopy MT9090A/MU909020A Quick Reference Guide
MU909020A-ES210	2 years Extended Warranty Service (total 2 years warranty)
MU909020A-ES310	3 years Extended Warranty Service (total 3 years warranty)

## 6) Replacement Adaptors

Must be added as separate line items.

Model/Order No.	Description
J0617B	FC (UPC: Models -050)
J0619B	SC (UPC or APC: all models)
J0739A	FC (APC: Model -060 only)

- \*1: Not support MT9090A with MT9090A-001.
- \*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.



**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 harsh 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.).



**B0663A Protector** (Standard accessory)

## MT9090 Series

### MU909014/15 $\mu$ OTDR

Compact OTDR for full automatic verification of optical networks, FTTH-PON, Metro and Core.



### MU909060A GigE Module

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



## 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  $\leq 0.8$  m and high dynamic range of 46 dB max.
- Power meter option for measuring optical power up to +30 dBm



## MT1000A Network Master Pro

### MU100020A OTDR Module 1310/1550 nm SMF

### MU100021A OTDR Module 1310/1550/850/1300 nm SMF/MMF

### MU100022A OTDR Module 1310/1550/1625 nm SMF

Installing an OTDR Module MU100020A/MU100021A/MU100022A 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 10-Gbps communications networks can be executed by simultaneously installing the MU100010A. In addition to supporting Ethernet, OTN, etc., networks, Mobile base station CPRI and OBSAI, as well as SyncE protocols are also supported.

### MU100010A 10G Multirate Module

### MU100011A 100G Multirate Module

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, etc., networks, the CPRI, OBSAI, and SyncE protocols used by mobile-network base stations are supported too.



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Specifications are subject to change without notice.

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