

Network Master Series

MT9090A

Mainframe

MU909011A

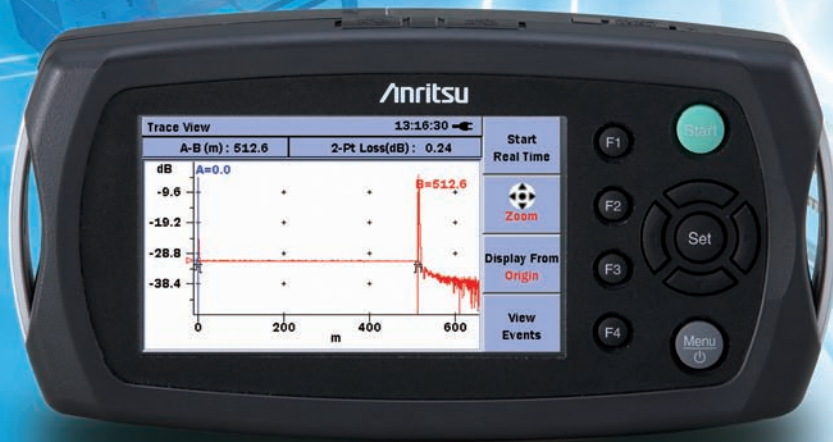
Drop Cable Fault Locator Module

780 nm and 1550 nm OTDR for Single Mode Fiber



Network Master





Last Mile Testing Redefined!

MT9090A/MU909011A OVERVIEW

Until now, the right tool just didn't exist for cost effectively testing short fibers. Handheld OTDRs and Fault Locators lacked the resolution and in such short spans while mini-OTDRs were too large, too expensive and too complicated.

The new MT9090A from Anritsu finally addresses this need by providing all of the features and performance required for installation and maintenance of short 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 five centimeters and deadzones of less than one meter, ensure accurate and complete fiber evaluation while a simple testing sequence requires only one key press to initiate – allowing anyone to make error-free measurements.

The MT9090A represents a new era in drop cable and premise testing. Its ease of use, low price, high-resolution and size make this the perfect product for "last mile" and intra-building testing.

Key Features

- Unique, purpose-built solution for short fiber applications such as FTTx drop, MDU riser and CO cables
- Exclusive, integrated launch fiber provides accurate initial connector measurement without external devices
- High resolution, widescreen color display that is easy to read indoors or out
- Fixed parameters simplify operation and ensure proper set-up – just press "START"
- High resolution and extremely short deadzones ensure thorough short fiber evaluation
- Rugged, sealed design provides years of service in the most challenging environments
- Modular platform ensures maximum return on investment
- Compact and lightweight design for maximum portability in the field
- Complete FTTx maintenance tool including optical power meter and visible source "red light"
- Unique 780 nm wavelength for in-service maintenance of PONs without filters
- High performance without a high price
- Basic multimode fiber testing with 1550 nm single mode module

Purpose-Built for Short Fiber Applications

Realizing that short fiber premise applications such as FTTx drop cables, intra-building riser cables and cell towers have different testing requirements, Anritsu designed the MT9090A from the ground up. It features 5 cm resolution for accurate mapping of events, deadzones of less than 1 meter (3 feet) and a built-in 10 m (30 ft) launch fiber to ensure everything is evaluated.

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 3.5 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. The standard softcase with shoulder strap further increases portability when traveling from the truck to the testing site.

Rugged

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

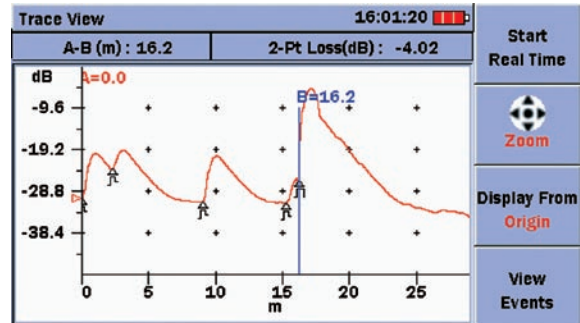
Video Inspection Probe Support

When equipped with the optional connector video inspection probe (VIP), the MU909011A 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.



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.

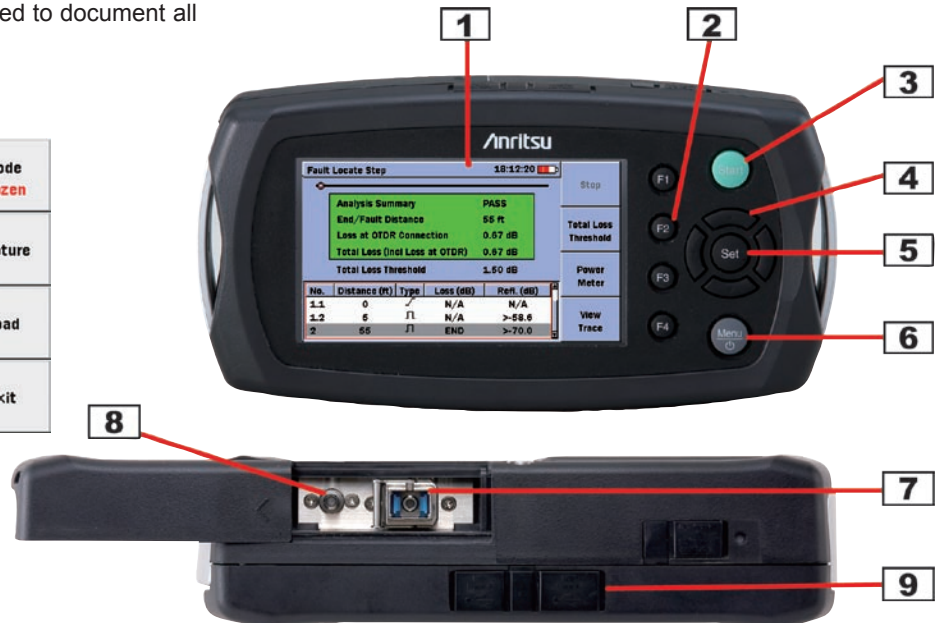


<1 m Dead Zone for Short Fiber Analysis

With less than 1 m dead zones, the MT9090A is perfect for evaluating central office, FTTx and intra building cables.

No Experience Required

With the MT9090A, the expertise is built in. With an automated testing sequence, fixed parameters and PASS/FAIL classification, anyone can certify and troubleshoot drop cables or premise networks.



- 1) 4.3" 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) Integrated power meter option
- 8) Visible laser diode option
- 9) Dual USB ports for quick and easy data transfer

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

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.



Real Time Sweeping

In the field, real-time sweeping is often very useful to confirm correct fiber splicing and placement.

Integrated Launch Fiber

To further simplify testing, the MU909011A has 10 m (30 ft) of fiber built-in so initial fiber connections can be verified without the need for additional patchcords or launch fibers.

Full Trace View

The user can also select to view the full trace for additional information or to initiate real time testing.

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.

Visible Light Source

An optional visible laser diode "red light" to visually troubleshoot splices, connectors and the fiber management is also available.



Integrated Power Meter (through OTDR port)

The optional power meter allows users to verify the presence of signals and then fault locate with one instrument – and without having to disconnect and move the fiber to another port.

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.

Multimode Fiber Testing (Option)

Basic multimode fiber testing can be performed with the 1550 nm single mode module.

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

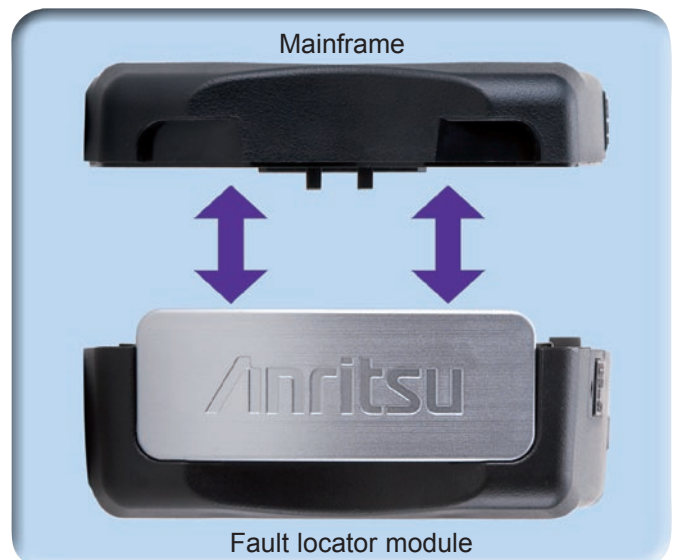
The MT9090A supports the universal Telcordia SR-4731 format making it compatible with not only legacy Anritsu and NetTest products, but with many other vendors data.

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.

Modular Design

The MT9090A features a modular design allowing modules to be easily changed in the field. Users can interchange different wavelength fault locator modules or perform other optical network testing such as optical channel analysis with the available CWDM channel analyzer module. Operation is quite similar between modules so the user is immediately familiar with operation.



Installation and Maintenance Simplified

Since the MT9090A is purpose built for testing short fiber spans, its hardware and user interface are optimized for simplicity. A customizable testing sequence automates testing and guides novice users.

Installation Simplified

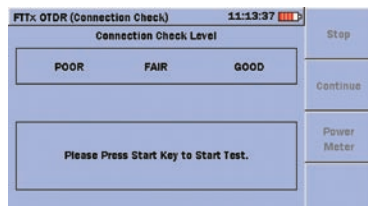
The MU909011A fault locator module provides easy and accurate verification of drop cable installation. The user simply connects the fiber and presses “START” for true one-button testing - all settings are fixed to ensure accurate and consistent results for any skill level. Upon completion, the length, total loss and PASS/FAIL status are displayed within seconds. A full event table of all characteristics is also shown providing additional information on the fiber under test.

Step 1 – Connect fiber and power on



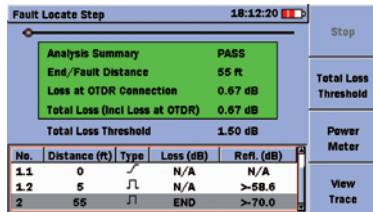
Step 2 – Press “START”

The connection check feature ensures that the fiber to be tested is properly cleaned and connected correctly.



Step 3 – Read Results

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



A Unique Approach to In-Service Maintenance

Since multiple users share the common feed fiber, FTTx maintenance becomes difficult when only one or two users are down. Traditionally, 1625 nm or 1650 nm wavelengths were used to test active fibers however these wavelengths typically need costly WDM couplers and filters in the network. As a unique approach to this, Anritsu also offers a 780 nm Fault Locator module that can be used to troubleshoot in-service FTTx networks without costly filters and without disruption to other customers. This offers a clear advantage over PON specific power meters that only verify signal presence but still rely on an additional OTDR or fault locator to locate the cause. With the MT9090A, one box does it all !

Step 1 – Verify ONT Fault

Step 2 - Disconnect fiber from ONT and connect to MT9090A

Step 3 – Verify signal presence and level

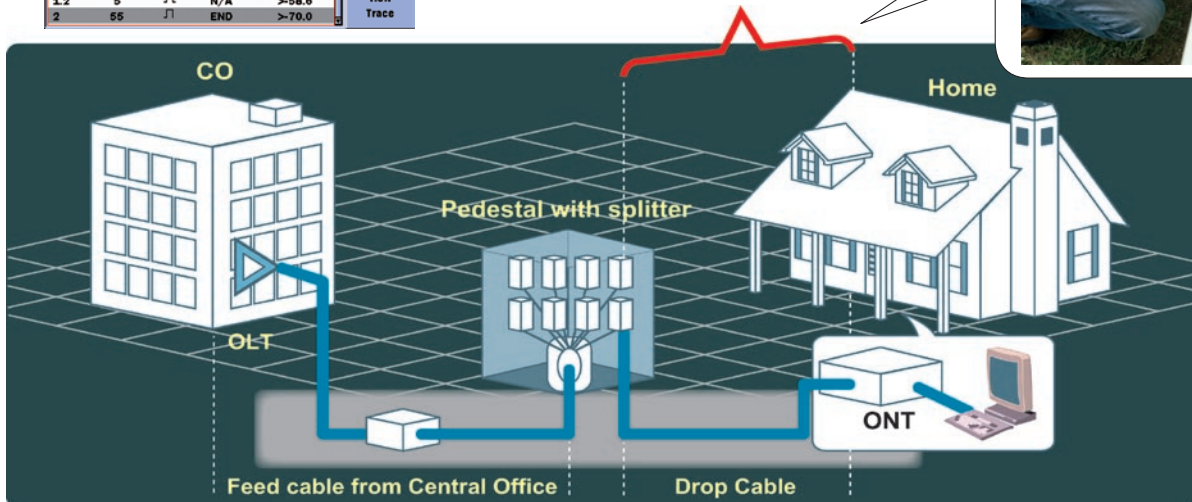
Good signal – replace ONT

No signal – press “continue” to launch fault locate test

Low signal - press “continue” to launch fault locate test

(780 nm will not interfere with 1490 nm or 1550 nm transmissions)*1, *2

Step 4 – Review Results



*1: At actual work, Only use the 780 nm OTDR after confirming that there is no effect on the customer's communications system. Anritsu cannot guarantee in advance that there will be no impact on communications.
*2: Fiber bending loss (attenuation) cannot be detected at the 780 nm wavelength.

Specifications

| | |
|---------------------|--|
| Dimensions and Mass | 190 (W) × 96 (H) × 48 (D) mm (7.5" × 3.8" × 1.9") (Including mainframe and module) Mass (including mainframe, module and battery): <800 g (<2 lbs.) |
| 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) |

| Model | MU909011A, A1, A2, A3-052/062 | MU909011A, A1, A2, A3-050/060 | |
|---|---|--|-------------------------|
| | | SingleMode Fiber Test | MultiMode Fiber Test*12 |
| Wavelength*1 | 780 ±20 nm | 1550 ±30 nm | Undefined |
| Fiber Type | 10/125 μm SMF (ITU-T G.652) | | 62.5/125 μm MMF |
| Distance Range | 1.0 km (3,000 ft) or 2.5 km (8,000 ft) set automatically | 1.0 km (3,000 ft), 2.5 km (8,000 ft) or 10 km (32,000 ft) set automatically | |
| Pulse width | <10 ns | | |
| Dynamic Range*2 | >7.0 dB | | Undefined |
| Deadzone | Fresnel: <1 m*3, Backscatter: <5 m*4 | | Undefined |
| Sampling Resolution | 5 cm (Distance range 1.0 km), 10 cm (Distance range 2.5 km) (IOR = 1.50000), 50 cm (Distance range 10 km) | | |
| Sampling Points | 20001 (Distance range 1.0 km), 25001 (Distance range 2.5 km), 20001 (Distance range 10 km) | | |
| Data Storage | Internal memory: 40 MB (up to 800 traces), External (USB): up to 20,000 traces with 1 GB | | |
| IOR Setting | 1.3000 to 1.7000 (0.0001 steps) | | |
| Units | ft, m | | |
| Fiber Event Analysis | Automatic, displayed in table format based on user defined PASS/FAIL thresholds | | Undefined |
| Loss Modes | 2 point loss, dB/km | | |
| OTDR Trace Format | Telcordia universal (.SOR), issue 2 (SR-4731) | | |
| Other Functions | Integrated launch fiber: 10 m (30 ft) | | |
| | Connector Inspection Microscope (Optional); verifies connector condition and cleanliness | | |
| | Connection check: Automatic check of OTDR to FUT connection quality | | |
| | Live Fiber detect: verifies presence of communication light in optical fiber | | |
| | Real time sweep: <1 sec (typical) | | |
| Languages | Spanish, French, German, Italian, Simplified Chinese, Traditional Chinese and English | | |
| Integrated Optical Power Meter (Optional) | Wavelength 1550 nm, same port as OTDR | | |
| | Power range: -5 to -45 dBm, Accuracy: ±0.5 dB*5, Maximum input: +10 dBm | | |
| Visible Laser Diode (Optional) | Connector: 2.5 mm universal, Wavelength: 650 ±15 nm, Output: 0 ±3 dBm | | |
| | Laser safety: IEC 60825-1: 2007 CLASS 3R: MU909011A1/A3-050/060/052/062*9 (CW) 21CFR1040.10*11 | | |
| Power Supply | 9 VDC, 100 V(ac) to 240 V(ac), Allowable input voltage range: 90 V to 264 V, 50 Hz/60 Hz | | |
| Battery | NiMH, Operating Time: 3.5 hours (typical)*6, Recharge Time:<3 h*7 | | |
| Environmental Conditions | Operation: 0° to +50°C, <80% (non-condensing)*8, Storage: -20° to +60°C | | |
| | Vibration: MIL-T-28800E Class 3, Dust and Drip proof: IP 51 | | |
| EMC | EN61326-1, EN61000-3-2 | | |
| LVD | EN61010-1 | | |
| Laser safety | IEC 60825-1: 2007 CLASS 1: MU909011A/A1/A2/A3-050/060/052/062*10 21CFR1040.10*11 | | |

- *1: @25°C
- *2: Averaging: 10 seconds, SNR = 1, 25°C
- *3: Return loss: 45 dB, 25°C (1.5 dB down from the peak of Fresnel)
- *4: Return loss 45 dB, Deviation ±0.5 dB, 25°C
- *5: CW input, -20 dBm @ 1550 nm, 25°C
- *6: Back light low, Sweeping halted at 25°C
- *7: 10° to +30°C, Power OFF
- *8: 10° to +30°C (During Recharging battery, Power OFF)

- *9: Safety measures for laser products
This product complies with optical safety standards in 21CFR1040.10 and IEC 60825-1; the following descriptive labels are affixed to the product.



THIS PRODUCT COMPLIES WITH 21 CFR 1040.10 AND 1040.11 EXCEPT FOR DEVIATIONS PURSUANT TO LASER NOTICE NO. 50, DATED JUNE 24, 2007

- *10: Safety measures for laser products
This product complies with optical safety standards in 21CFR1040.10 and IEC 60825-1; the following descriptive labels are affixed to the product.



THIS PRODUCT COMPLIES WITH 21 CFR 1040.10 AND 1040.11 EXCEPT FOR DEVIATIONS PURSUANT TO LASER NOTICE NO. 50, DATED JUNE 24, 2007

- *11: Excludes deviations caused by conformance to Laser Notice No. 50 dated June 24, 2007.
- *12: MU909011A/A1/A2/A3-002 Multimode Test Function installed and selected.

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 and strap

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

2) Select Base Module

Includes printed operation manual

| Model/Order No. | Description |
|-----------------|--|
| MU909011A | Drop Cable Fault Locator Module |
| MU909011A1 | Drop Cable Fault Locator Module (with visible laser diode) |
| MU909011A2 | Drop Cable Fault Locator Module (with Power Meter) |
| MU909011A3 | Drop Cable Fault Locator Module (with visible laser diode and Power Meter) |

3) Select Module Option

| Model/Order No. | Description |
|-----------------|---|
| MU909011A-050 | 1550 nm, single mode, UPC |
| MU909011A1-050 | 1550 nm, single mode, UPC, visible laser diode |
| MU909011A2-050 | 1550 nm, single mode, UPC, power meter |
| MU909011A3-050 | 1550 nm, single mode, UPC, visible laser diode, power meter |
| MU909011A-060 | 1550 nm, single mode, APC |
| MU909011A1-060 | 1550 nm, single mode, APC, visible laser diode |
| MU909011A2-060 | 1550 nm, single mode, APC, power meter |
| MU909011A3-060 | 1550 nm, single mode, APC, visible laser diode, power meter |
| MU909011A-052 | 780 nm, single mode, UPC |
| MU909011A1-052 | 780 nm, single mode, UPC, visible laser diode |
| MU909011A2-052 | 780 nm, single mode, UPC, power meter |
| MU909011A3-052 | 780 nm, single mode, UPC, visible laser diode, power meter |
| MU909011A-062 | 780 nm, single mode, APC |
| MU909011A1-062 | 780 nm, single mode, APC, visible laser diode |
| MU909011A2-062 | 780 nm, single mode, APC, power meter |
| MU909011A3-062 | 780 nm, single mode, APC, visible laser diode, power meter |

4) Select Connector Adapter

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

| Model/Order No. | Description |
|-----------------|--|
| MU909011A-037 | FC Connector (UPC: Models -050 and -052 only) |
| MU909011A-038 | ST Connector (UPC: Models -050 and -052 only) |
| MU909011A-039 | DIN 47256 Connector (UPC: Models -050 and -052 only) |
| MU909011A-040 | SC Connector (UPC: Models -050 and -052 only) |
| MU909011A-025 | FC-APC Connector key width 2.0 mm (APC: Models -060 and -062 only) |
| MU909011A-026 | SC-APC Connector (APC: Models -060 and -062 only) |



Standard Soft Case



Deluxe Soft Case
Full Network Master operation without removal from the case. Providing excellent protection for use in harsh conditions.



Hard Case

5) Select Software Option

Must be added as a separate line item.

Available for models -050, -060 only

| Model/Order No. | Description |
|------------------------|-------------------------|
| MU909011A/A1/A2/A3-002 | Multimode Test Function |

6) Select Accessories

Must be added as separate line items.

| Model/Order No. | Description |
|--------------------------|---|
| G0203A | AC adapter (Replacement) |
| G0202A | NiMH Battery Pack (Replacement) |
| B0600A | Hard Case |
| B0601A | Standard Soft Case |
| Z1023A | Strap |
| B0602A | Deluxe Soft Case (for MT9090A) |
| J1402A | Car plug cord |
| W2988AE | MU909011A OPERATION MANUAL (Hardcopy) |
| W2989AE | MU909011A OPERATION MANUAL (CD) |
| OPTION-545VIP | Connector Inspection Microscope Kit |
| MU909011A/A1/A2/A3-ES210 | 12 month extended warranty (total 2 years warranty) |
| MU909011A/A1/A2/A3-ES310 | 24 month extended warranty (total 3 years warranty) |

7) Replacement Adaptors

Must be added as separate line items.

| Model/Order No. | Description |
|-----------------|--------------------------------------|
| J1413A | LC (UPC: Models -050 and -052 only) |
| J0617B | FC (UPC: Models -050 and -052 only) |
| J0618D | ST (UPC: Models -050 and -052 only) |
| J0618E | DIN (UPC: Models -050 and -052 only) |
| J0619B | SC (UPC or APC: all models) |
| J0739A | FC (APC: Models -060 and -062 only) |

MT9090A Series Network Master

MU909060A GigE Module

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



MU909020A OCA Module

Compact CWDM channel analyzer to verify power levels, drift and channel presence of CWDM networks.



MU909014x/15x μOTDR Module

Compact OTDR for fully automatic verification of optical networks, FTTx-PON, Metro and Core.



MT9083 Series ACCESS Master Mini-OTDR

All in one test tool for fiber construction and maintenance.



CMA50 Loss Test Sets

Anritsu's CMA50 series loss test sets are designed for attenuation and throughput measurements of fiber optic links. Key features include automated, bi-directional testing, ORL, data storage, referencing and auto-wavelength switching.



CMA5 Basic Power Meter and Light Source

The CMA 5 series power meters and light sources are basic, economical tools for loss budget testing in optical networks.

Anritsu

Specifications are subject to change without notice.

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