Quick Guide

Network Master Series
MT9090A Mainframe
MU909060A Series
Gigabit Ethernet Module

Second Edition

Additional safety and warning information is provided within the “Network Master Series MT9090A Mainframe MU909060A Series Gigabit Ethernet Module” Operation Manual. Please also refer to this document before using the equipment. Keep this manual with the equipment.
Quick Start

Overview

① LCD
② Soft keys
③ Start key
④ Arrow keys and Set key
⑤ Menu/Power key
Power and Batteries
The unit can be powered in three ways.

• **External AC charger/adapter:**
  
  Use this adapter to provide power from an AC source or to charge the battery pack.

• **External car plug cord/adapter (optional):**

• **Ni-MH rechargeable battery pack:**
  
  When installed, this battery powers the unit.

• **Replaceable batteries:**
  
  The unit can be powered by four AA Ni-MH batteries.
Panel Keys

The unit has four soft keys (F1 to F4) on the right hand side of the LCD. The function of each key is determined by the current operation mode and is displayed on the screen to the left of the key.

Press to start the test.

Left arrow key
Moves cursor to left

Right arrow key
Moves cursor to right

Up arrow key
Moves cursor up

Down arrow key
Moves cursor down

Set key
Selects highlighted item
Unit is off: Press the **Menu/Power** key to power-up.

Unit is on: Press the **Menu/Power** key. **Power Down** can be selected from the pop-up menu.

---

**Back Panel**

1. Battery compartment
2. Fastener
3. Module model/serial label
4. Compliance and warning labels

---

**General Operation**
Power Up/Power Down

To Power Up:

- Press the Menu/Power key.
- The Top Menu is displayed.

To Power Down:

- Press the Menu/Power key to display the menu.
- Highlight Power Down and press the Set key.
- Highlight Yes and press the Set key.

Selecting Application
At the Top Menu, use the Left/Right/Up/Down arrow keys to highlight the application and press the Set key.
Basic Application Screens

An application uses three basic screens via soft keys at the right of the screen.

Status:
Gives status of hardware, connection and traffic

Setup:
Sets Interface, Test Automator and individual tests

Result:
Shows overall test progress and individual test results
Save and Load

To save setup

- Press the Menu/Power key and select Save.
- Use the Up/Down/Set keys to select the folder.
- Press F1 to save.

To load the setup/results file:

- Press the Menu/Power key and select Load.
- Use the Up/Down/Set keys to select the folder and file.
- Press F1 to load setup or F2 to load results.

Applications
The following three applications can be selected.

Ethernet

This is an advanced testing application to generate different types of traffic while monitoring flow while also simulating different types of errors and alarms.

Reflector
This reflects all unicast frames back to the network and can be used to send data and monitor how it is returned.

**Pass Through**

This passes all data from one port to another port while monitoring and can be inserted into a data path.

**Updating Firmware**

The application software is updated by uploading the latest Anritsu firmware. The firmware file extension is BBM.

Update the firmware as follows:

1. Copy the BBM file released by Anritsu to a USB flash drive (version 1.1 or later).
2. Plug the USB flash drive into the USB (Type A) port on the instrument.
3. Press and continue pressing the F1 key while powering-up (press the Menu/Power key).
4. Release the Menu/Power key when the Anritsu splash screen appears, but continue pressing the F1 key until the
first Firmware Update screen is displayed.

*Note*

If there is more than one BBM file on the USB flash drive, the **Choose Update File** dialog is displayed in front of the first Firmware Update screen. Select (highlight) the correct BBM file and press the **Set** key to continue.

5. The **Finding Update File** text changes to **Extracting Update File**. When the update file is fully extracted, the **Installing New Firmware** screen is displayed.

6. If necessary, the controller can be re-installed by selecting **Re-Install Controller**. This is only supported when the version of the currently installed controller and the version in the BBM update are the same.

7. If necessary, the internal user drives can be reformatted during installation by selecting the **Format Drives During Installation** checkbox.
8. Press the Set key to continue. The first Installing Update screen is displayed.
9. The installation is finished when the Finish button is displayed. Press the Set key to complete the firmware version upgrade.
Operation Example

Power Up/Power Down

Power Up: Press the Menu button to start.

Power Down: Press the Menu button again to stop.

- When the selection options appear, use the Up/Down/Left/Right keys to select Power Down and press the Set button.

- Press OK at the displayed confirmation dialog.
Four Application Modes

At power up, the MT9090A Top Menu displays four application modes.

- Ethernet Test
- Reflector
- Pass Through
- Self Diagnostics

Select the application mode to start.

To return to the Top Menu, press the Menu button and select Top Menu.
**Ethernet Test**

The network status can be checked at the **Status** screen.

Each test type can be run consecutively using **Test Automator.**

**Generator**
Generates and receives Ethernet frames, and displays performance

**Ping**
Used to check whether destination IP connected and display ping packet return time

**Cable Test**
Validate and detect open/short CAT5/CAT5E cables

**RFC2544 (Option)**
Tests throughput, latency and bursts

**BERT**
Inserts test pattern into payload and tests for pattern bit errors

**HTTP/FTP Download**
Tests HTTP/FTP download performance

Trace Route
Displays network route to destination

Y.1564 (Option)
Runs ITU-T Y.1564 tests

---

**Reflector**
This mode is used to perform loopback tests over the network by an MT9090A unit at the far end of the fiber.

The received frame send source and destination addresses are switched to send.

---

**Pass Through**
This mode is used to check the performance of frames by inserting the MT9090A into the network.

It can be used to discover broadcast storms when extending a new network, etc.
Self Diagnostics
This is the MT9090A Self Diagnostics mode.

Press the Menu button to display the menu and select SW Options to display the MT9090A serial numbers and a list of the installed software options.
Module serial number: G022
Installed SW options:
RFC2544 Test (Option 001), Multistream (Option 002)
Stacked VLAN (Option 003), MPLS (Option 004)
Remote GUI (Option 005), Channel Stats (Option 006)
Y.1564 Test (Option 007)
Default Settings
Select Setup at the Top Menu.

The following settings are recommended.

Language: The language used in your country
Auto Backlight Off: Off

Select Apply and press the Set button after making the setting.

Settings are displayed in English after firmware has been updated but can be set as required at this screen.
Ethernet Test
The MT9090A has a function for saving results automatically after testing to prevent loss of results.

The Auto Save Mode requires time to save all set parameters. When performing multiple tests at troubleshooting, set this mode to OFF so that the results of each measurement are not saved.

Setting Auto Save Mode to OFF:

Select the Ethernet Test application.
Press the F2 Setup soft key.
Select General Setup.
Set Auto Save Mode to OFF.
Press Back to return to the Ethernet Test application mode.
Basic Settings

Port Selection
Select the port to use at Setup/Interface using Set. The LED for the selected port becomes green.

Check that the selected port is either A or B.
Selected port LED becomes green.

Check selected port is A or B.
Tx Source Address
Send Source Address: Setup/Interface/General

MT9090A's MAC/IP address, VLAN, etc. 
Check that the selected port is A or B.
Stream number appears if multistream option is installed.
Destination Address

Destination Address: Setup/Test Automator/destination address in each Test Automator item

This can be used to set a different destination address for each Test Automator item.
Ethernet Test/Status
This displays the Link status, optical power, etc.
### IP/DHCP Info:

<table>
<thead>
<tr>
<th>Port</th>
<th>IP Address</th>
<th>Gateway</th>
<th>Network Mask</th>
<th>DNS Pri Server</th>
<th>DNS Sec Server</th>
<th>Lease Renew Time</th>
<th>Lease Expire Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>192.168.1.2</td>
<td>0.0.0.0</td>
<td>0.0.0.0</td>
<td>0.0.0.0</td>
<td>0.0.0.0</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>IPv4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>192.168.1.3</td>
<td>0.0.0.0</td>
<td>0.0.0.0</td>
<td>0.0.0.0</td>
<td>0.0.0.0</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### Status

<table>
<thead>
<tr>
<th>Module present</th>
<th>Vendor</th>
<th>Laser wavelength</th>
<th>Bit rate (nominal)</th>
<th>ETH Compliance</th>
<th>Length, 9um SM</th>
<th>Length, 50um MM</th>
<th>Length, 63um MM</th>
<th>Length, Copper</th>
<th>Power TX</th>
<th>Power RX</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AGILENT</td>
<td>N/A</td>
<td>1200 Mbps</td>
<td>1000BASE-LX</td>
<td>10 km</td>
<td>550 m</td>
<td>550 m</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>