

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/adaptor:**

Use this adaptor to provide power from an AC source or to charge the battery pack.

- **External car plug cord/adaptor (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

F1

F2

F3

F4

Start

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:

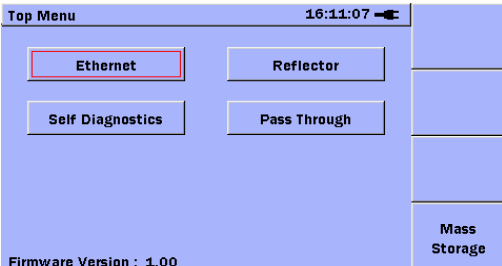
- Press the **Menu/Power** key.
- The Top Menu is displayed.

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

Status:

Gives status of hardware, connection and traffic

Setup

Setup:

Sets Interface, Test Automator and individual tests

Result

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

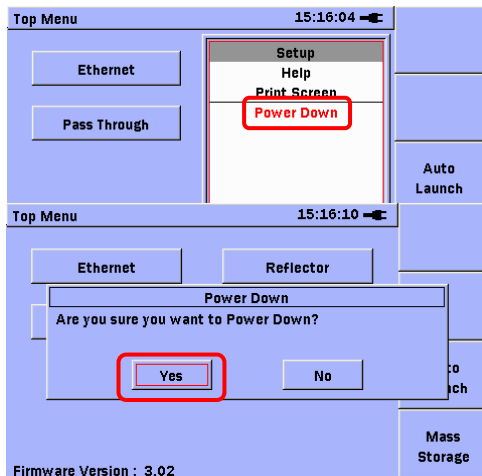
Power Up: Press the **Menu** button to start.

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**.

Top Menu 15:17:10

Ethernet Reflector

Pass Through Self Diagnostics

Firmware Version : 3.02

Auto Launch

Mass Storage

Status 0n 0n 15:18:13

Basic ETH IP SFF

Port

No Conn

Utilization

Errored Frames

MDI/ MDIX N/A

Link Time N/A

Frames TX 0

Frames RX 0

Test Report

Save Setup

Load

Mass Storage

Print Screen

Top Menu

Power Down

Status

Setup

Result

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

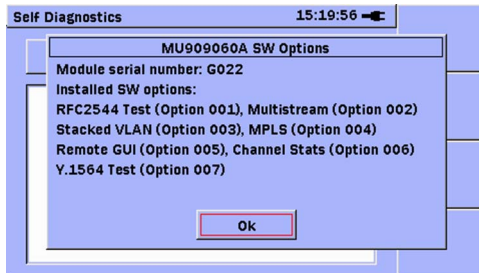
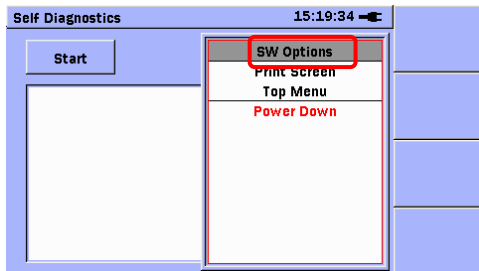
This mode is used to check the performance of frames by inserting the MT9090A into the network.

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.



Default Settings

Select **Setup** at the **Top Menu**.

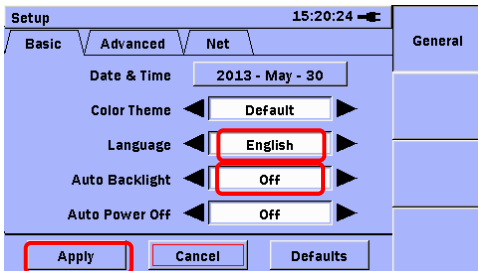
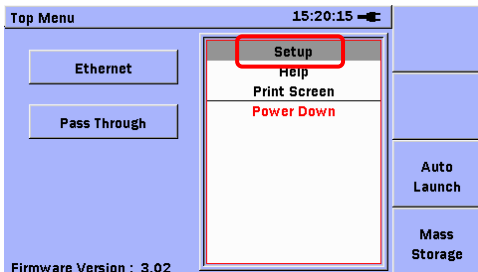
The following settings are recommended.

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 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.

Top Menu 15:20:53

Ethernet Reflector

Pass Through Self Diagnostics

Auto Launch

Mass Storage

Firmware Version : 3.02

Status 0n 0n 15:23:29

Basic ETH IP SFP Interface

Port Test Automator

General Setup Setup

No Connection No Connection

Utilization		
Errored Frames		
MDI/MDIX	N/A	N/A
Link Time	N/A	N/A
Frames TX	0	0
Frames RX	0	0

Result

General Setup 0n 0n 15:23:42

Back

Thresholds Recovery Time

3 Seconds

Logging Mode

Wrap on Full Stop on Full

Auto Save Mode

ON OFF

Stream Key Mode

Select Stream Next Stream

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.

The image shows two screenshots of a network device's configuration interface. The top screenshot is the 'Interface' configuration page, with the 'Port' tab selected. The 'Port' button is highlighted with a red box. Below it, a table shows 'No Connection' for both ports. The bottom screenshot is the 'Port' configuration page, with the 'Port' button highlighted in red and labeled 'Port A'. A red box highlights the 'Port' button in both screenshots, with arrows pointing to explanatory text boxes below.

Utilization		
Errored Frames		
MDI/MDIX	N/A	N/A
Link Time	N/A	N/A
Frames TX	0	0
Frames RX	0	0

Interface Type:	RJ-45
Port Mode:	Auto Negotiate
Autoneg. Advertisement:	FDX 10 100 1000 HDX 10 100
1000Mbps clock mode:	Auto
Flow Control	<input checked="" type="checkbox"/> Respond to PAUSE frames

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.

Utilization		
Errored Frames		
MDI/MDIX	N/A	N/A
Link Time	N/A	N/A
Frames TX	0	0
Frames RX	0	0

Interface Type: RJ-45

Port Mode: Auto Negotiate

Autoneg. Advertisement: FDx 10 100 1000
HDx 10 100

1000Mbps clock mode: Auto

Flow Control: Respond to PAUSE frames

Interface On On 15:24:06

General Filter Advanced

Port Address Wizard MAC

Interface Type: RJ-45

Port Mode: Auto Negotiate

Autoneg. Advertisement: FDX 10 100 1000
HDX 10 100

1000Mbps clock mode: Auto

Flow Control: Respond to PAUSE frames

Back

Next Tab

Port
A

Interface On On 15:25:07

General Filter Advanced

SNAP MPLS IPv4

Source IP Address: 192.168.1.2

DHCP: Use DHCP Setup...

DNS: DNS Servers Setup...

Gateway: Use Gateway Setup...

DSCP/TOS: 0x00

MF: More fragments

Back

Next Tab

Port
A

Stream
1

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.

The screenshot shows a network device configuration page. At the top, there are status indicators for 'On' and 'On' with a time of 15:25:29. Below this are tabs for 'Basic', 'ETH', 'IP', and 'SFP'. The 'SFP' tab is selected, and the 'Interface' sub-tab is active. A red box highlights the 'Test Automator' button. Below the button is a 'General Setup' button. A port icon is shown with 'No Connection' status. A table displays utilization and error statistics for two ports.

Utilization		
Errored Frames		
MDI/MDIX	N/A	N/A
Link Time	N/A	N/A
Frames TX	0	0
Frames RX	0	0

Below the table, there is a 'Generator 1' section with a time of 16:10:36. It has tabs for 'Unit', 'Mode/Duration', and 'Line Load'. The 'Unit' tab is selected and highlighted with a red box. Below the tabs is a 'Stream ID Control' section with a dropdown menu labeled 'Accept Frames From:' and the selected option 'This Unit-Same Port'.

Test Automator 0n 0n 15:27:04

Test schedule

⚙️ ↕ Generator 1

+ Add new test

Status

Setup

Result

Generator 1 0n 0n 15:27:24

◀ Frame Size Address Wizard Destination ▶

MAC

Destination MAC: 00-00-91-05-71-18

Use ARP Broadcast OFF

IP

Dest. IP Address: 192.168.1.3

DNS: Use DNS

Back







Stimuli









Port A

Stream 1

Ethernet Test/Status

This displays the Link status, optical power, etc.

Status		15:36:04	
Basic	ETH	IP	SFP
Port A		Port B	
			
100 BASE-T FDX		1000BASE-LX	
Utilization			
Errored Frames			
MDI/MDIX	MDIX	N/A	
Link Time	0:03:00	0:04:16	
Frames TX	453 k	4.53 M	
Frames RX	453 k	4.53 M	

Status		15:36:08	
Basic	ETH	IP	SFP
Port A		Port B	
Link Partner abilities:			
Auto Negotiation Complete:			
Pause Capable:			
Asymmetric Pause Request:			
Remote Fault:			
Local Clock:	N/A	N/A	
Speed FDX	10 100 1000	10 100 1000	
Speed HDX	10 100	10 100	

Status		100Mbps		1000Mbps		15:36:13		
Basic		ETH		IP		SFP		
IP/DHCP Info:								
Port A IPv4	IP Address:	192.168.1.2						A
	Gateway:	0.0.0.0						
	Network Mask:	0.0.0.0						
	DNS Pri Server:	0.0.0.0						
	DNS Sec Server:	0.0.0.0						
	Lease Renew Time:	N/A						
Port B	IP Address:	192.168.1.3						B
	Gateway:	0.0.0.0						
	Network Mask:	0.0.0.0						
	DNS Pri Server:	0.0.0.0						

Status

Setup

Result

Stream

1

Status		100Mbps		1000Mbps		15:36:18	
Basic		ETH		IP		SFP	
		Port A		Port B			
Module present		🟡		🟢			
Vendor				AGILENT			
Laser wavelength				N/A			
Bit rate (nominal)				1200 Mbps			
ETH Compliance				1000BASE-LX			
Length, 9um SM				10 km			
Length, 50um MM				550 m			
Length, 63um MM				550 m			
Length, Copper				N/A			
Power TX				N/A			
Power RX				N/A			

Status

Setup

Result

