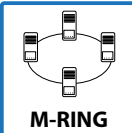
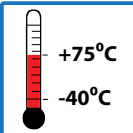
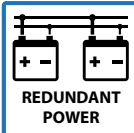


HARDENED 10-PORT MANAGED PoE ETHERNET SWITCH WITH 8x10/100BASE-TX (RJ-45) (PoE + 30W) P.S.E. AND 2x100/1000 BASE-X COMBO PORTS, SFP SOCKET



MANAGED ETHERNET SWITCH

FEATURES

- Supports 8 10/100 Base-TX and 2 100/1000 Base-X combo ports
- World's fastest Redundant Ethernet Ring: M-Ring (recovery time < 10ms over 250 units of connection)
- Open-Ring supports other vendor's ring technology in open architecture
- M-Chain allow multiple redundant network rings
- M-RSTP supports applications with complex topology
- STP/RSTP/MSTP supported
- 8 ports P.S.E. fully compliant with IEEE802.3af standard - up to 30 Watts per port
- Provides PoE power on delay function. Users can define delay time for PoE power supply
- Supports PTP Client (Precision Time Protocol) clock synchronization
- Support Modbus/TCP protocol
- IGMP v2/v3 (IGMP snooping support) for filtering multicast traffic
- Port Trunking for easy bandwidth management
- SNMP v1/v2c/v3 support for secured network management
- RMON for traffic monitoring
- Supports LLDP (Link Layer Discovery Protocol)
- Supports DDM (Digital Diagnostic Monitoring) function
- Event notification through Syslog, Email, SNMP trap, and Relay Output
- Port lock to prevent access from unauthorized MAC address
- Optional Windows utility (SpectraVISION) supports centralized management and configurable by Web-based, Telnet, Console (CLI)
- Rugged IP-30 housing design
- DIN-Rail or wall mounting

DESCRIPTION

Meridian's MS10FT8GX2POEH is a managed redundant ring Ethernet switch with 8x10/100Base-TX ports with 30Watts PoE (P.S.E.) function and 2x100/1000 Base-X combo ports.

With complete support of Ethernet redundancy protocol, M-Ring (recovery time < 10ms over 250 units of connection), Open-Ring, M-RSTP and MSTP/RSTP/STP (IEEE 802.1s/w/D) these switches will protect your mission-critical applications from network interruptions with its fast recovery technology.

M-Chain is the revolutionary network redundancy technology that provides the add-on network redundancy topology for any backbone network. M-Chain allows multiple redundant network rings of different redundancy protocols to join and function together as a larger and more robust compound network topology. M-Chain is providing ease-of-use, while maximizing fault-recovery timing, flexibility, compatibility, and cost effectiveness in one set of network redundancy topology.

The MS10FT8GX2POEH also supports Power over Ethernet, a system to transmit electrical power, along with data, to remote devices over standard twisted-pair cable in an Ethernet network. Each MS10FT8GX2POEH switch has 8X10/100Base-TX 30Watts P.S.E. (Power Sourcing Equipment) ports. P.S.E. is a device that will provide power in a PoE setup.

The MS10FT8GX2POEH supports the DDM (Digital Diagnostic Monitoring) function, which can monitor the status of electronic voltage, current and temperature in real time.

All functions of the MS10FT8GX2POEH switch can be managed by a powerful windows utility — SpectraVISION (optional). In addition, with its wide operating temperature range from -40 to 75°C, this switch will operate even in the most severe environments. This switch is one of the most sought-after choices for highly-managed Fiber Ethernet applications with PoE functionality.

SPECIFICATIONS

Physical Ports

10/100 Base-TX Ports in RJ45 Auto MDI/MDIX with P.S.E.	8
Gigabit Combo Ports with 10/100/1000Base-TX and 100/1000Base-X SFP port	2

Technology

Ethernet Standards	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX and 100Base-FX IEEE 802.3z for 1000Base-X IEEE 802.3ab for 1000Base-T IEEE 802.3x for Flow control IEEE 802.3ad for LACP (Link Aggregation Control Protocol) IEEE 802.1D for STP (Spanning Tree Protocol) IEEE 802.1p for COS (Class of Service) IEEE 802.1Q for VLAN Tagging IEEE 802.1w for RSTP (Rapid Spanning Tree Protocol) IEEE 802.1s for MSTP (Multiple Spanning Tree Protocol) IEEE 802.1x for Authentication IEEE 802.1AB for LLDP (Link Layer Discovery Protocol) IEEE 802.3at PoE specification (up to 30 Watts per port for P.S.E.)
MAC Table	8192 MAC addresses
Priority Queues	4
Processing	Store-and-Forward
Switch Properties	Switching latency: 7 us Switching bandwidth: 5.6Gbps Max. Number of Available VLANs: 4096 IGMP multicast groups: 1024 Port rate limiting: User Define
Security Features	Enable/disable ports, MAC based port security Port based network access control (802.1x) VLAN (802.1Q) to segregate and secure network traffic Supports Q-in-Q VLAN for performance & security to expand the VLAN space Radius centralized password management SNMP v1/v2c/v3 encrypted authentication and access security
Software Features	STP/RSTP/MSTP (IEEE 802.1D/w/s) Redundant Ring (O-Ring) with recovery time less than 10ms over 250 units TOS/Diffserv supported Quality of Service (802.1p) for real-time traffic VLAN (802.1Q) with VLAN tagging and GVRP supported IGMP Snooping for multicast filtering Port configuration, status, statistics, monitoring, security SNTP for synchronizing of clocks over network Support PTP Client (Precision Time Protocol) clock synchronization DHCP Server / Client support Port Trunk support MVR (Multicast VLAN Registration) support Modbus TCP

Network Redundancy	M-Ring, Open-Ring, M-Chain, M-RSTP, STP, RSTP, MSTP
Warning / Monitoring System	Relay output for fault event alarming Syslog server / client to record and view events Include SMTP for event warning notification via email Event selection support
DDM Function	Voltage / Current / Temperature
RS-232 Serial Console Port	RS-232 in RJ45 connector with console cable. 9600bps, 8, N, 1

LED indicators

Power/PoE Indicator	Green : Power LED x 3, Green : PoE LED x 8
R.M. indicator	Green : Indicate system operated in M-RING Master mode
Fault indicator	Amber : Indicate unexpected event occurred
10/100Base-TX RJ45 Port Indicator	Green for port Link/Act. Amber for Duplex/Collision
10/100/1000Base-TX RJ45 Port Indicator	Green for Link/Act. Amber for 100Mbps indicator
100/1000Base-X Fiber Port Indicator	Green for port Link/Act.

Fault contact

Relay	Relay output to carry capacity of 1A at 24VDC
-------	---

Power

Redundant Input Power	Dual DC inputs. 50 ~ 57VDC on 6-pin terminal block *
Power Consumption (Typ.)	7.68 Watts (power consumption of P.S.E. is not included)
Overload Current Protection	Yes
Reverse polarity protection	No

Physical Characteristic

Enclosure	IP-30
Dimension (W x D x H)	74.3 (W) x 109.2 (D) x 153.6 (H) mm (2.93 x 4.3 x 6.05 inch)
Weight (g)	1185 g (2.44 lb)

Environmental

Storage Temperature	-40 to 85°C (-40 to 185°F)
Operating Temperature	-40 to 75°C (-40 to 168°F)
Operating Humidity	5% to 95% Non-condensing

Regulatory approvals

EMI	FCC Part 15, CISPR (EN55022) class A
EMS	EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS), EN61000-4-8, EN61000-4-11
Shock	IEC60068-2-27
Free Fall	IEC60068-2-32
Vibration	IEC60068-2-6
Safety	EN60950-1

* In order to achieve full power capacity, power supply output voltage need to be adjusted in the 50-57VDC range

RJ-45 Port Pin Definition

PIN #1	TD+ with PoE Power input +
PIN #2	TD- with PoE Power input +
PIN #3	RD+ with PoE Power input -
PIN #6	RD+ with PoE Power input -

Ordering Information

Description	MS10FT8GX2POEH - Hardened 10-port managed PoE Ethernet switch with 8x10/100Base-TX (RJ-45) (PoE + 30W) P.S.E. and 2x100/1000 Base-X combo ports, SFP socket
SFP Options	refer to Optical SFP Data Sheet for complete part numbers and ordering information
Power supplies	PSH48DC240 - 48VDC @ 5 Amp Amps (240 Watts) PSH48DC480 - 48VDC @ 10 Amp Amps (480 Watts)
SpectraVISION	S500 - Powerful Network Management Windows Utility Suit, 500 IP devices

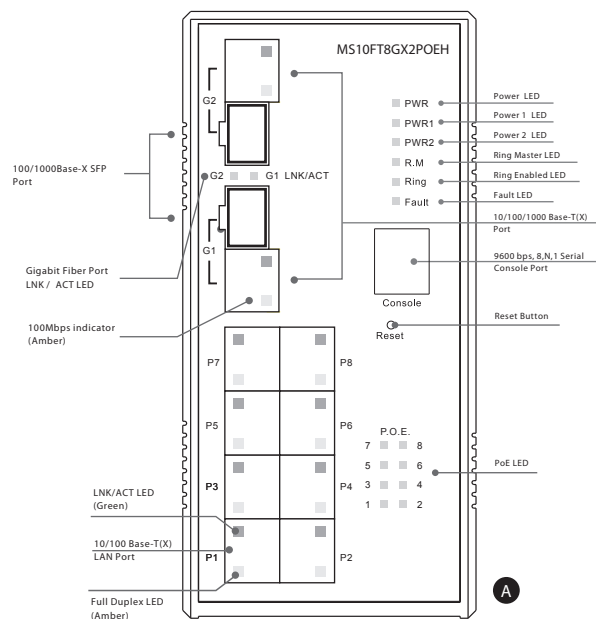
Packing List

MS10FT8GX2POEH	1
Wall-Mount Kit	1
Quick Installation Guide	1
M-Ring Tool CD	1
Console Cable	1
Din-Rail Kit (attached)	1

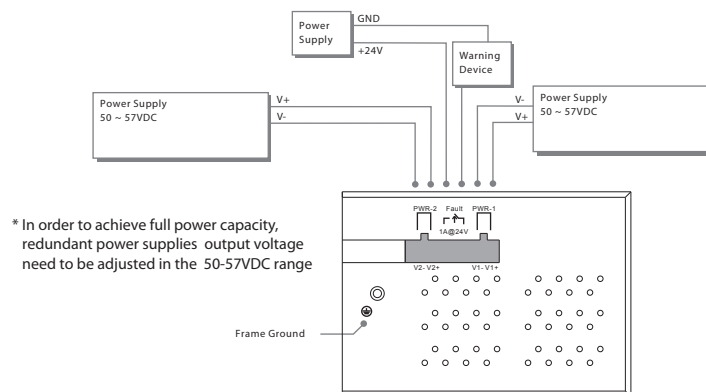
QUICK INSTALLATION GUIDE

HARDENED MANAGED SWITCH

❑ Front Panel

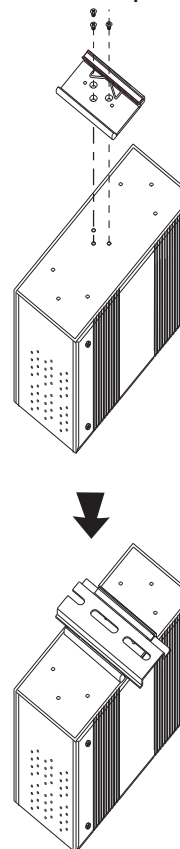


❖ Power Connection Guide

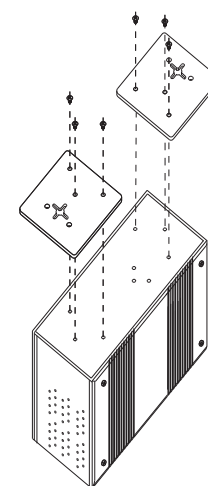


❖ Installation

- ☐ **DIN-RailInstallStep**



- **Wall-mountedInstallStep**

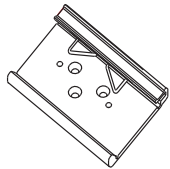


QUICK INSTALLATION GUIDE

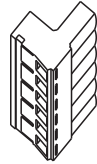
HARDENED MANAGED SWITCH

Accessory

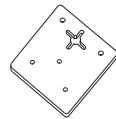
① 66mm DIN-Rail kit



② 6-Pin Terminal block



③ Wall-mounted Kit



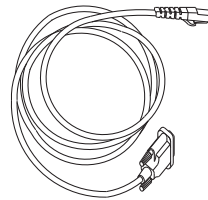
④ Dust Cover (RJ-45)



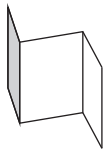
⑤ Dust Cover (SFP)



⑥ Console Cable



⑦ QIG



⑧ CD



Packing list

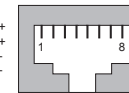
Model name	Model Description	Accessory
MS10FT8GX2POEH	Industrial 10-port managed PoE Ethernet Switch with 8x10/100Base-TX P.S.E. and 2xGigabit combo ports, SFP socket	○X1, ○X1, ○X2, ○X10, ○X2, ○X1, ○X1, ○X1

Communication Connections

10/100Base-T(X) Ethernet Port Connection

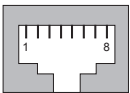
RJ45 (8-pin, MDI) Port Pinouts

Pin	Single
1	PoE Power output+
2	PoE Power output+
3	PoE Power output-
6	PoE Power output-

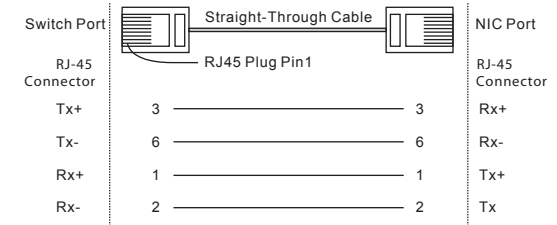


RJ45 (8-pin, MDI-X) Port Pinouts

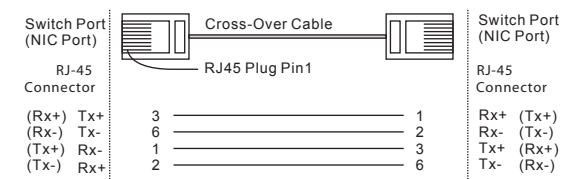
Pin	Single
1	PoE Power output+
2	PoE Power output+
3	PoE Power output-
6	PoE Power output-



RJ45 (8-pin) to RJ45 (8-Pin) Straight-Through Cable Wiring



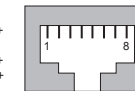
RJ45 (8-pin) to RJ45 (8-Pin) Cross-Over Cable Wiring



1000Base-T Ethernet Port Connection

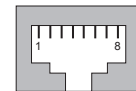
RJ45 (8-pin, MDI) Port Pinouts

Pin	MDI
1	BI_DA+
2	BI_DA-
3	BI_DB+
4	BI_DC+
5	BI_DC-
6	BI_DB-
7	BI_DD+
8	BI_DD-

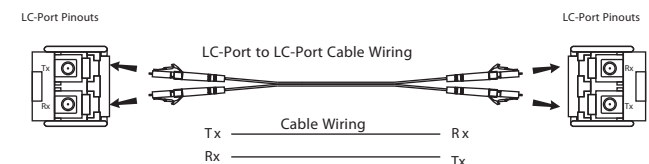


RJ45 (8-pin, MDI-X) Port Pinouts

Pin	MDI-X
1	BI_DB+
2	BI_DB-
3	BI_DA+
4	BI_DD+
5	BI_DD-
6	BI_DA-
7	BI_DC+
8	BI_DC-



100/1000Base-X SFP Port Connection



Industrial P.O.E. + Managed Ethernet Switch

MS10FT8GX2POEH User's Manual



Version 2.2

January 2013

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Getting to Know Your Switch

1.1 About the MS10FT8GX2POEH Managed Industrial Switch

The MS10FT8GX2POEH is powerful managed industrial switch with a number of advanced features. With its industrial temperature rating, this switch will work in extreme environments. The MS10FT8GX2POEH supports Power over Ethernet, a system to transmit electrical power with data to remote devices over standard twisted-pair cable. The MS10FT8GX2POEH has 8 X 10/100Base-T(X) P.S.E. (Power Sourcing Equipment) ports, which are fully compliant with IEEE 802.3at standard.

WEB, TELNET, Console or other third-party SNMP software can manage the MS10FT8GX2POEH as well. In addition, the switch can be managed by a useful utility called Open-Vision, a powerful network management software application. With its friendly and powerful interface, several switches can be easily configured at the same time in order to monitor each switch's performance and operational status.

1.2 Software Features

- World's fastest Redundant Ethernet Ring :M-Ring(Recovery time < 10ms over 250 units of connectivity)
- Supports Ring Coupling, Dual Homing over M-Ring
- Supports SNMPv1/v2/v3 & RMON & Port base/802.1Q VLAN Network Management
- Event notification by Email, SNMP trap and Relay Output
- Web-based ,Telnet, Console, CLI configuration
- Enable/disable ports, MAC based port security
- Port based network access control (802.1x)
- VLAN (802.1Q) to segregate and secure network traffic
- Radius centralized password management
- SNMPv3 encrypted authentication and access security
- RSTP (802.1w)
- Quality of Service (802.1p) for real-time traffic

- VLAN (802.1Q) with double tagging and GVRP supported
- IGMP Snooping for multicast filtering
- Port configuration, status, statistics, mirroring, security
- Remote Monitoring (RMON)

1.3 Hardware Features

- Redundant two DC power inputs
- Wide Operating Temperature: -40 to 75°C
- Storage Temperature: -40 to 85°C
- Operating Humidity: 5% to 95%, non-condensing
- Casing: IP-30
- 10/100Base-T(X) Ethernet port
- 10/100/1000Base-T(X) Gigabit Ethernet port (combo)
- 100/1000Base-X on SFP port (combo)
- Console Port
- Dimensions (W x D x H) : 74.3mm(W)x 109.2 mm(D)x 153.6 mm(H)

Hardware Installation

2.1 Installing Switch on DIN-Rail (not included)

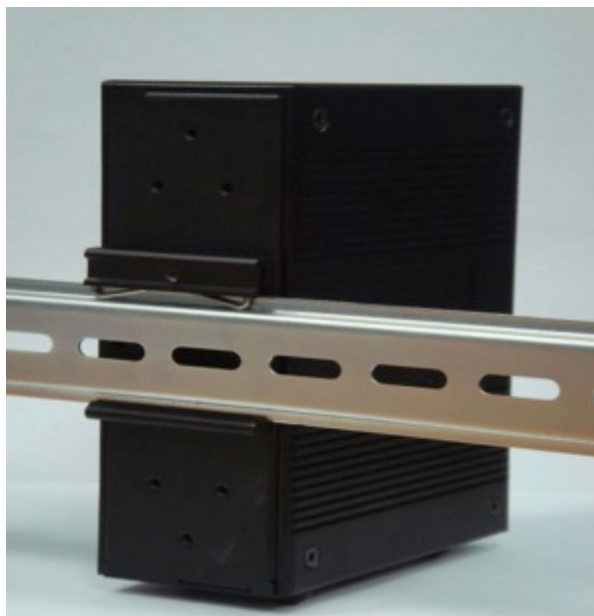
Each switch has a DIN-Rail kit attached to the rear panel. The DIN-Rail kit is used to mount the unit on the DIN-Rail. It is easy to install the switch on the DIN-Rail using the instructions below.

2.1.1 Mount MS10FT8GX2POEH on DIN-Rail

Step 1: Slant the switch and mount the metal spring to DIN-Rail.



Step 2: Push the switch toward the DIN-Rail until you heard a “clicking” sound.



2.2 Wall Mounting Installation

The switch can also be mounted using the supplied wall mount bracket. The following steps illustrate how to mount the switch on the wall:

2.2.1 Mount MS10FT8GX2POEH on the wall

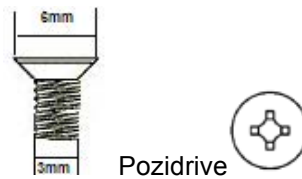
Step 1: Remove DIN-Rail kit.



Step 2: Use 6 screws that can be found in the package to attach the wall mount panel to the switch as shown in the photo:



The screw type is shown in the photos below. In order to prevent switches from any damage, the screws should not larger than the size that used in the switch.



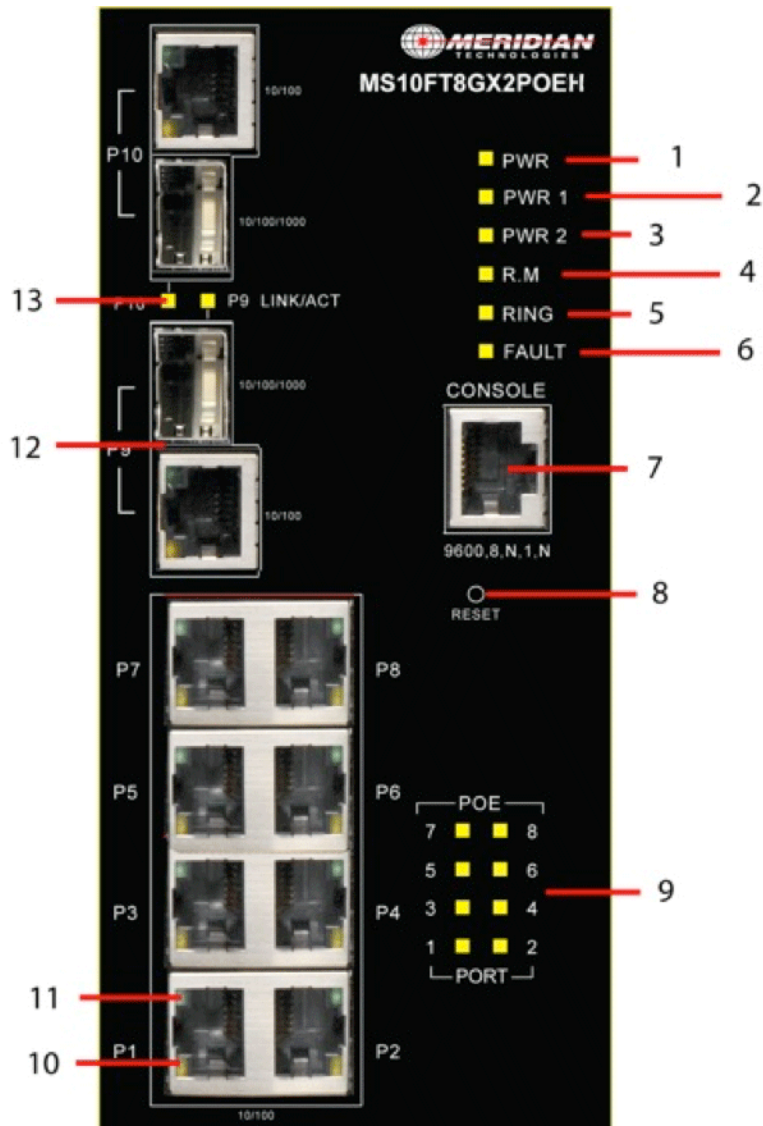
Hardware Overview

3.1 Front Panel

The following table describes the labels that stick on the MS10FT8GX2POEH.

Port	Description
10/100 RJ-45 fast Ethernet ports	8 10/100Base-T(X) RJ-45 fast Ethernet ports support auto-negotiation. Default Setting : Speed: auto Duplex: auto Flow control : disable
Gigabit RJ-45 ports	2 10/100/1000Base-T(X) Gigabit ports(combo ports)
SFP ports	2 100/1000Base-X on SFP port (combo)
P.O.E. Ports	Port 1 ~ 8 contain P.S.E. function compliant with IEEE802.3af P.O.E. specifications.
Console	Use RS-232 to RJ-45 connector to manage switch.
Reset	Push reset button 2 to 3 seconds to reset the switch. Push reset button 5 seconds to reset the switch to the Factory Default settings.

MS10FT8GX2POEH



1. LED for PWR. When the PWR links, the green led will be illuminated.
2. LED for PWR1. When the PWR1 links, the green led will turn on.
3. LED for PWR2. When the PWR2 links, the green led will turn on.
4. LED for R.M (Ring master). This light is will turn on when the switch is set to be the ring master in the M-Ring.
5. Ring.
6. LED for Fault Relay. When the fault occurs, the amber LED will turn on.
7. Console port (RJ-45).
8. Reset button. Push the button 3 seconds for reset; 5 seconds for factory default.
9. LED for P.O.E. power supplied.
10. LED for Ethernet ports speed.

11. LED for Ethernet ports link status.
12. 10/100Base-T(X) P.S.E. Ethernet ports.
13. Gigabit Combo ports with 10/100/1000Base-T(X) and 100/1000Base-X SFP ports
14. LED for SFP ports link/Act status.

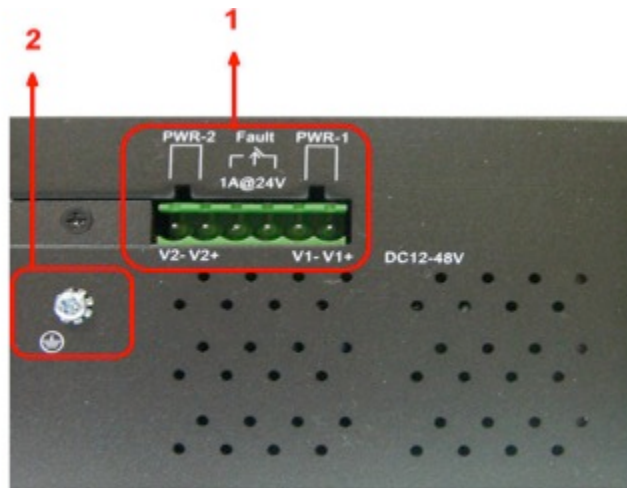
3.2 Front Panel LEDs

LED	Color	Status	Description
PWR	Green	On	DC power ready
PW1	Green	On	DC power module 1 activated.
PW2	Green	On	DC power module 2 activated.
R.M	Green	On	M-Ring Master.
Fault	Amber	On	Fault relay. Power failure or Port down/fail.
10/100Base-T(X) Fast Ethernet ports			
LNK / ACT	Green	On	Port link up.
		Blinking	Data transmitted.
Full Duplex	Amber	On	Port works under full duplex.
Gigabit Ethernet ports			
LNK / ACT	Green	On	Port link up.
		Blinking	Data transmitted.
Speed	Amber	On	Port working on 100Mbps
Gigabit SFP ports			
LNK / ACT	Green	On	Port link up.
		Blinking	Data transmitted.

3.3 Top view Panel

The bottom panel components of MS10FT8GX2POEH are shown as below:

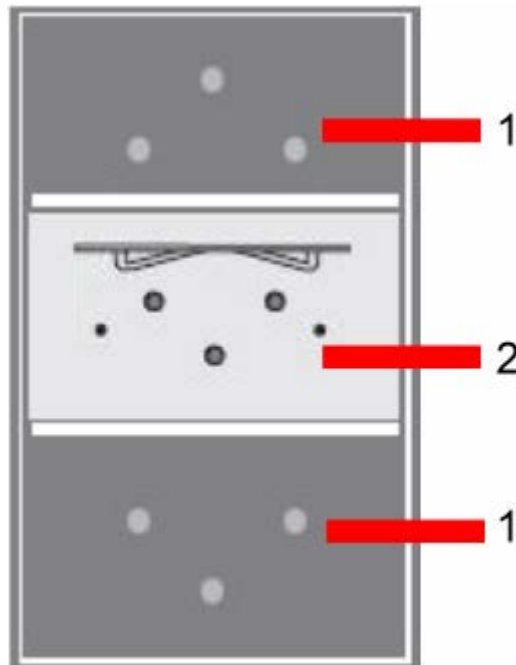
1. Terminal block includes: PWR1, PWR2 (48V DC)
2. Ground wire



3.4 Rear Panel

The components on the rear of MS10FT8GX2POEH are shown below:

1. Screw holes for wall mount kit.
2. DIN-Rail kit



Cables

4.1 Ethernet Cables

The MS10FT8GX2POEH switch has standard 10/100 Ethernet ports. According to the link type, the switches use CAT 3, 4, 5, or 5e UTP cables to connect to any other network device (PCs, servers, switches, routers, or hubs). Please refer to the following table for cable specifications.

Cable Types and Specifications

Cable	Type	Max. Length	Connector
10BASE-T	Cat.3, 4, 5 100-ohm	UTP 100 m (328 ft)	RJ-45
100BASE-TX	Cat.5 100-ohm UTP	UTP 100 m (328 ft)	RJ-45
1000BASE-TX	Cat.5/Cat.5e 100-ohm UTP	UTP 100 m (328ft)	RJ-45

4.1.1 100BASE-TX/10BASE-T Pin Assignments

With 100BASE-TX/10BASE-T cable, pins 1 and 2 are used for transmitting data, and pins 3 and 6 are used for receiving data.

10/100 P.S.E. Base-TX RJ-45 Pin Assignments

Pin Number	Assignment
1	P.O.E Power input +
2	P.O.E Power input +
3	P.O.E Power input -
4	Not used
5	Not used
6	P.O.E Power input -
7	Not used
8	Not used

1000 Base-TRJ-45 Pin Assignments

Pin Number	Assignment
1	BI_DA+
2	BI_DA-
3	BI_DB+
4	BI_DC+
5	BI_DC-
6	BI_DB-
7	BI_DD+
8	BI_DD-

The MS10FT8GX2POEH switch also supports auto MDI/MDI-X operation. As such, you can use a straight-through cable to connect a standard computer to the switch using the computer's RJ45 Ethernet port. The tables below show the 10BASE-T/100/1000BASE-TX MDI and MDI-X port pinouts.

10/100 Base-TX MDI/MDI-X pins assignment

Pin Number	MDI port	MDI-X port
1	TD+(transmit)	RD+(receive)
2	TD-(transmit)	RD-(receive)
3	RD+(receive)	TD+(transmit)
4	Not used	Not used
5	Not used	Not used
6	RD-(receive)	TD-(transmit)
7	Not used	Not used
8	Not used	Not used

1000 Base-T MDI/MDI-X pins assignment

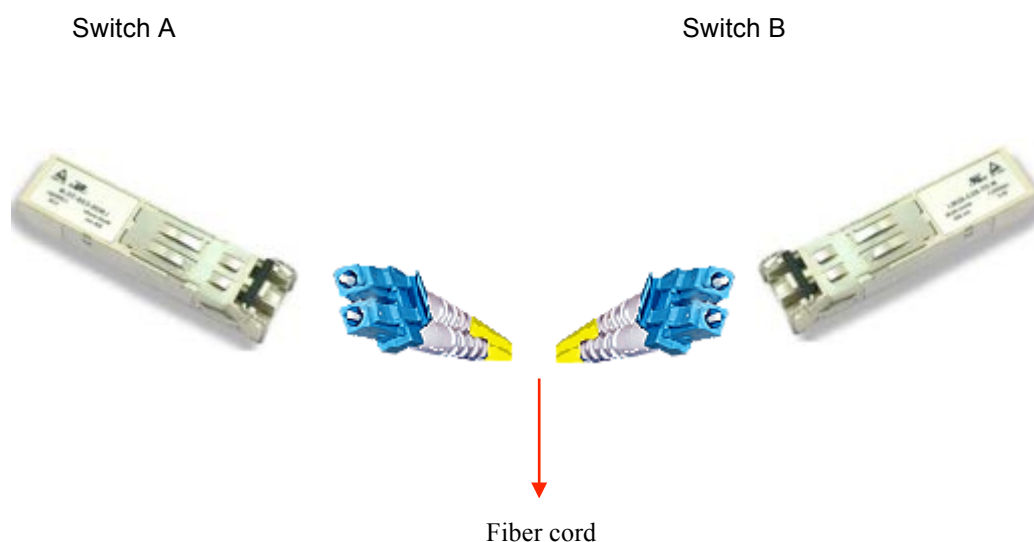
Pin Number	MDI port	MDI-X port
1	BI_DA+	BI_DB+
2	BI_DA-	BI_DB-
3	BI_DB+	BI_DA+
4	BI_DC+	BI_DD+
5	BI_DC-	BI_DD-
6	BI_DB-	BI_DA-

7	BI_DD+	BI_DC+
8	BI_DD-	BI_DC-

Note: "+" and "-" signs represent the polarity of the wires that make up each wire pair.

4.2 SFP

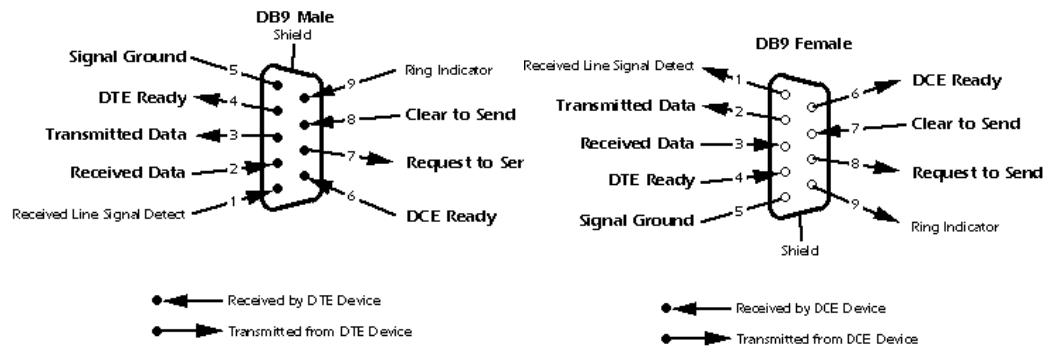
This switch is also equipped with two RJ45/SFP fiber optic/combo ports. These are available in a variety of configurations including singlemode, multimode, one fiber, two fibers, long reach & short reach. Please consult the SFP data sheet for a complete listing of the available SFP devices.



4.3 Console Cable

The MS10FT8GX2POEH switch can be managed from the console port. The DB-9 to RJ-45 cable can be found in the package and is used to connect the switch to the computer via the RS-232 port on the computer. The other end (RJ-45 connector) connects to console port on the switch.

PC pin out (male) assignment	RS-232 with DB9 female connector	DB9 to RJ 45
Pin #2 RD	Pin #2 TD	Pin #2
Pin #3 TD	Pin #3 RD	Pin #3
Pin #5 GD	Pin #5 GD	Pin #5



WEB Management



5.1 Configuration using the Web Browser

This section introduces the switch configuration using a standard Web browser.

5.1.1 About Web-based Management

An embedded HTML web site resides in flash memory on the CPU board. It contains advanced management features and allows you to manage the switch from anywhere on the network through a standard web browser such as Microsoft Internet Explorer.

The Web-Based Management function supports Internet Explorer 5.0 or later. It is based on Java Applets with an aim to reduce network bandwidth consumption, enhance access speed and present an easy viewing screen.

Note: By default, IE5.0 or later version does not allow Java Applets to open sockets. You need to explicitly modify the browser setting in order to enable Java Applets to use network ports.

Preparing for Web Management

The default value is as below:

IP Address: **192.168.10.1**

Subnet Mask: **255.255.255.0**

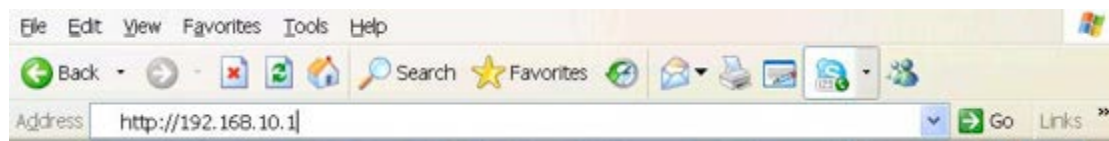
Default Gateway: **192.168.10.254**

User Name: **admin**

Password: **admin**

System Login

1. Launch the Internet Explorer.
2. Type http:// and the IP address of the switch. Press "**Enter**".

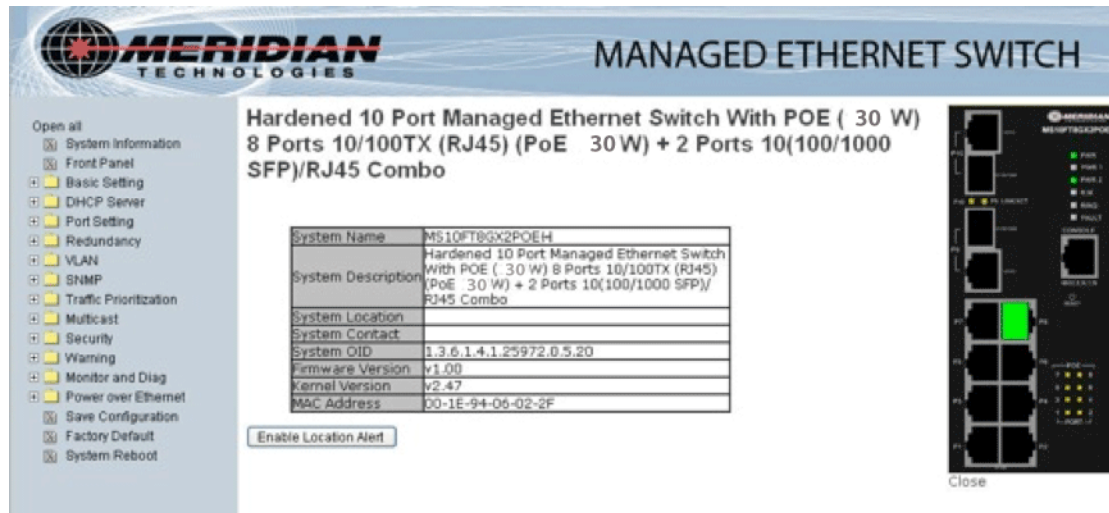


3. The login screen appears.
4. Key in the username and password. The default username and password is **"admin"**.
5. Click **"Enter"** or **"OK"** button, then the main interface of the Web-based management appears.



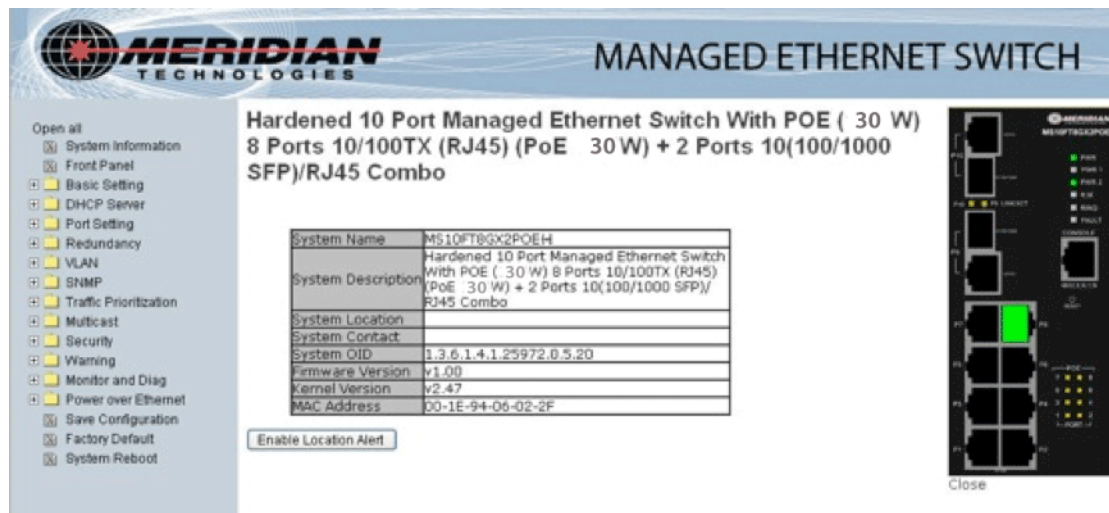
Login screen

Main Interface



Main interface

5.1.2 System Information



System Information interface

The system information will display the configuration of Basic Setting / Switch Setting page.

Enable Location Alert

Selecting **Enable Location Alert**, the PWR1 and PWR2 LEDs on the switch will start to flash together. Selecting **Disable Location Alert** will cause the LEDs to stop flashing

5.1.3 Front Panel

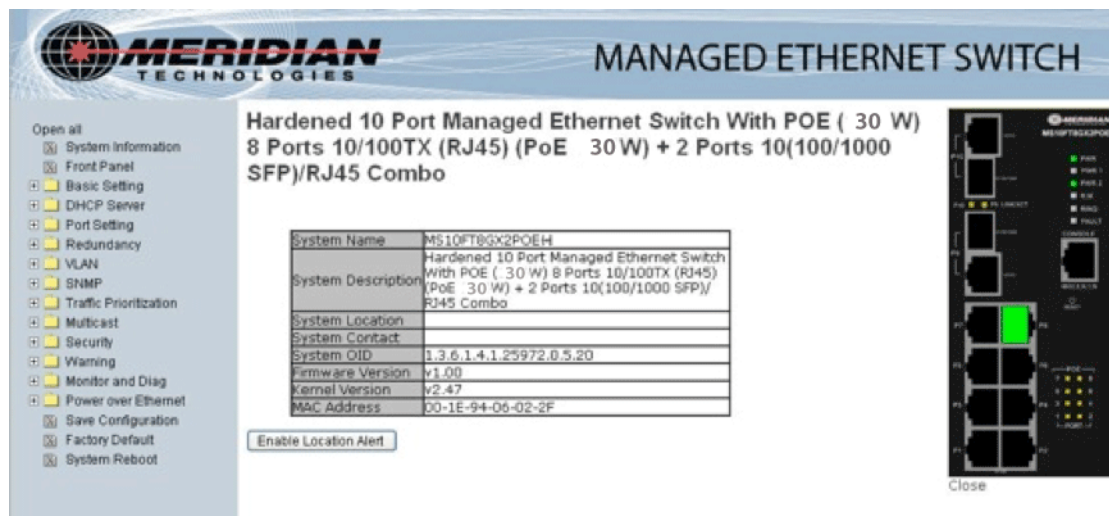
The front panel of the MS10FT8GX2POEH is shown below,

Click “Close” to close panel on web.



5.1.4 Basic setting

5.1.4.1 Switch Setting



Switch setting interface

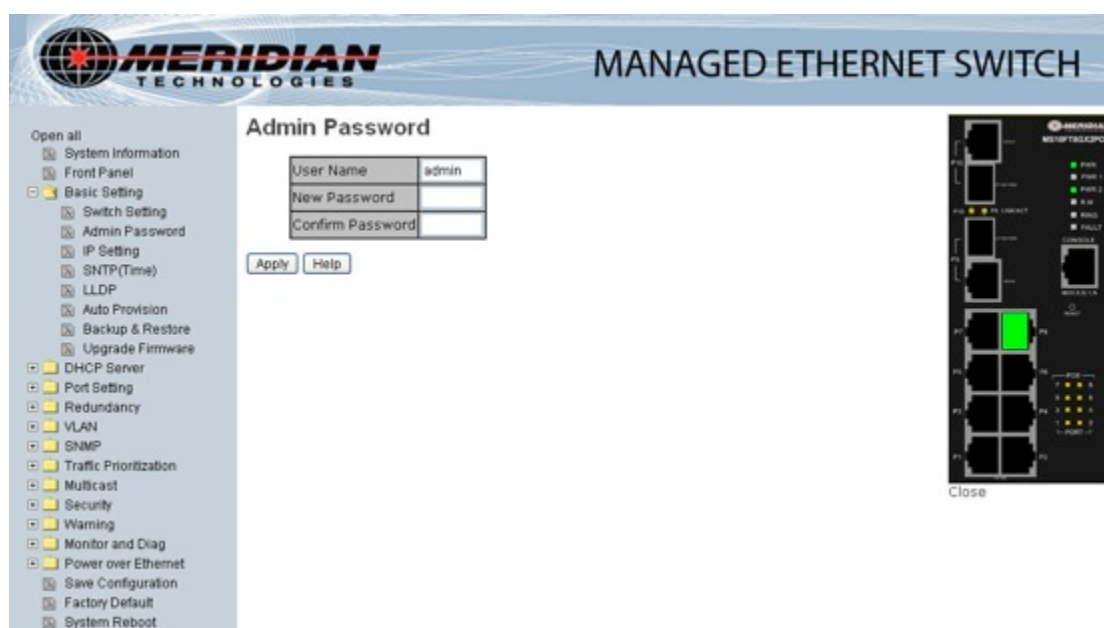
The following table describes the labels in this screen.

Label	Description
System Name	Assign the name of switch. The maximum length is 64 bytes
System Description	Display the description of switch.
System Location	Assign the switch physical location. The maximum length is 64 bytes

System Contact	Enter the name of contact person or organization
System OID	Display the switch's OID information
Firmware Version	Display the switch's firmware version
Kernel Version	Display the kernel software version
MAC Address	Display the unique hardware address assigned by manufacturer (default)

5.1.4.2 Admin Password

Change web the management login username and password for the management security issue



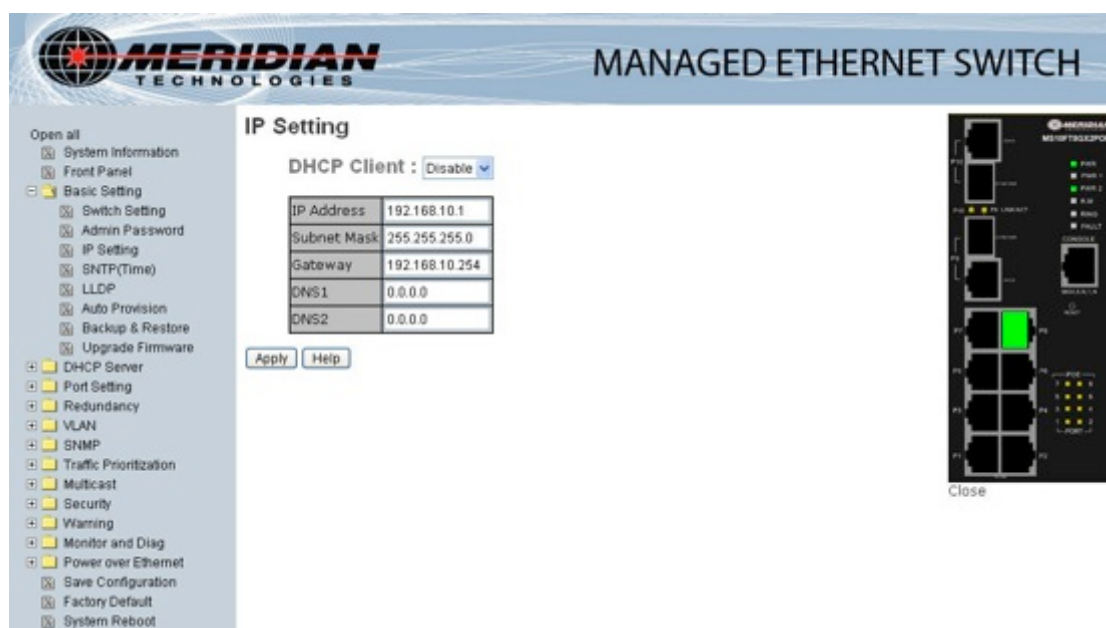
Admin Password interface

The following table describes the labels in this screen.

Label	Description
User name	Key in the new username (The default is “ admin ”)
New Password	Key in the new password (The default is “ admin ”)
Confirm password	Re-type the new password.
Apply	Click “ Apply ” to activate the configurations.

5.1.4.3 IP Setting

You can configure the IP Settings and DHCP client function through IP configuration function.



IP Configuration interface

The following table describes the labels in this screen.

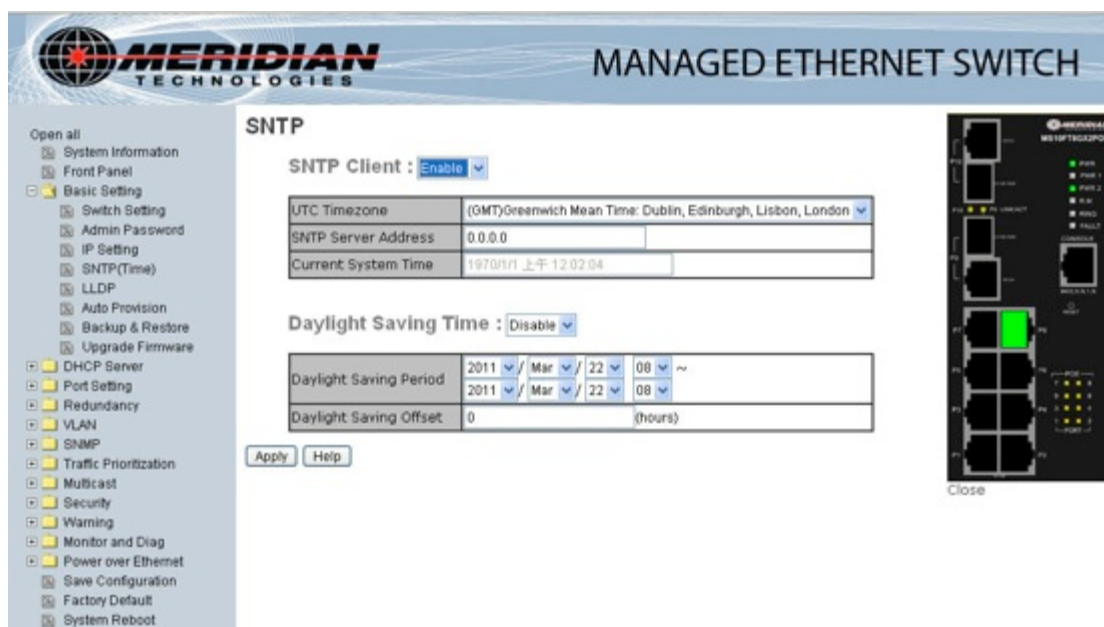
Label	Description
DHCP Client	To enable or disable the DHCP client function. When DHCP client function is enabling, the switch will be assigned the IP address from the network DHCP server. The default IP address will be replaced by the IP address which the DHCP server has assigned. After clicking “ Apply ” button, a popup dialog shows up to inform when the DHCP client is enabling. The current IP will lose and you should find a new IP on the DHCP server.
IP Address	Assign the IP address that the network is using. If DHCP client function is enabling, you do not need to assign the IP address. The network DHCP server will assign the IP address for the switch and it will be display in this column. The default IP is 192.168.10.1
Subnet Mask	Assign the subnet mask of the IP address. If DHCP client function is enabling, you do not need to assign the subnet mask

Gateway	Assign the network gateway for the switch. The default gateway is 192.168.10.254
DNS1	Assign the primary DNS IP address
DNS2	Assign the secondary DNS IP address
Apply	Click “ Apply ” to activate the configurations.

5.1.4.4 Time Setting

SNTP

The SNTP (Simple Network Time Protocol) settings allow you to synchronize switch clocks over the Internet.



SNTP Configuration interface

The following table describes the labels in this screen.

Label	Description
SNTP Client	Enable or disable SNTP function to get the time from the SNTP server.
Daylight Saving Time	Enable or disable daylight saving time function. When daylight saving time is enabling, you need to configure the daylight saving time period.
UTC Time zone	Set the switch location time zone. The following table lists the different location time zone for your reference.

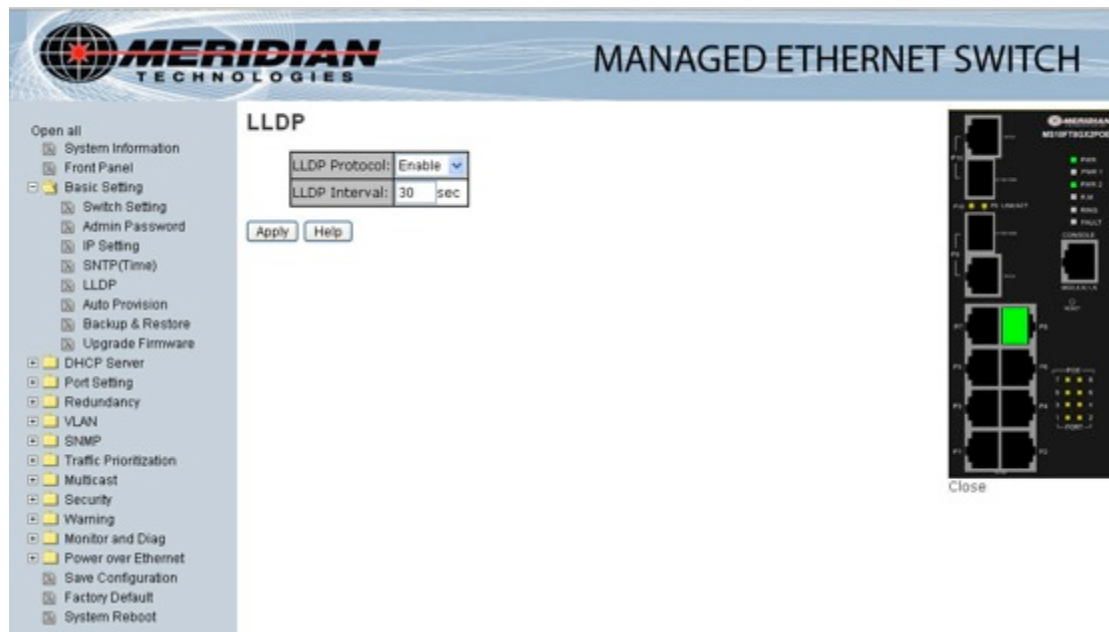
Local Time Zone	Conversion from UTC	Time at 12:00 UTC
November Time Zone	- 1 hour	11 am
Oscar Time Zone	-2 hours	10 am
ADT - Atlantic Daylight	-3 hours	9 am
AST - Atlantic Standard EDT - Eastern Daylight	-4 hours	8 am
EST - Eastern Standard CDT - Central Daylight	-5 hours	7 am
CST - Central Standard MDT - Mountain Daylight	-6 hours	6 am
MST - Mountain Standard PDT - Pacific Daylight	-7 hours	5 am
PST - Pacific Standard ADT - Alaskan Daylight	-8 hours	4 am
ALA - Alaskan Standard	-9 hours	3 am
HAW - Hawaiian Standard	-10 hours	2 am
Nome, Alaska	-11 hours	1 am
CET - Central European FWT - French Winter MET - Middle European MEWT - Middle European Winter SWT - Swedish Winter	+1 hour	1 pm
EET - Eastern European, USSR Zone 1	+2 hours	2 pm
BT - Baghdad, USSR Zone 2	+3 hours	3 pm
ZP4 - USSR Zone 3	+4 hours	4 pm
ZP5 - USSR Zone 4	+5 hours	5 pm

ZP6 - USSR Zone 5	+6 hours	6 pm
WAST - West Australian Standard	+7 hours	7 pm
CCT - China Coast, USSR Zone 7	+8 hours	8 pm
JST - Japan Standard, USSR Zone 8	+9 hours	9 pm
EAST - East Australian Standard GST Guam Standard, USSR Zone 9	+10 hours	10 pm
IDLE - International Date Line NZST - New Zealand Standard NZT - New Zealand	+12 hours	Midnight

Label	Description
SNTP Sever IP Address	Set the SNTP server IP address.
Daylight Saving Period	Set up the Daylight Saving beginning time and Daylight Saving ending time. Both will be different each year.
Daylight Saving Offset	Set up the offset time.
Switch Timer	Display the switch current time.
Apply	Click "Apply" to activate the configurations.

5.1.4.5 LLDP

LLDP (Link Layer Discovery Protocol) function allows the switch to advertise its information to other nodes on the network and store the information it discovers.



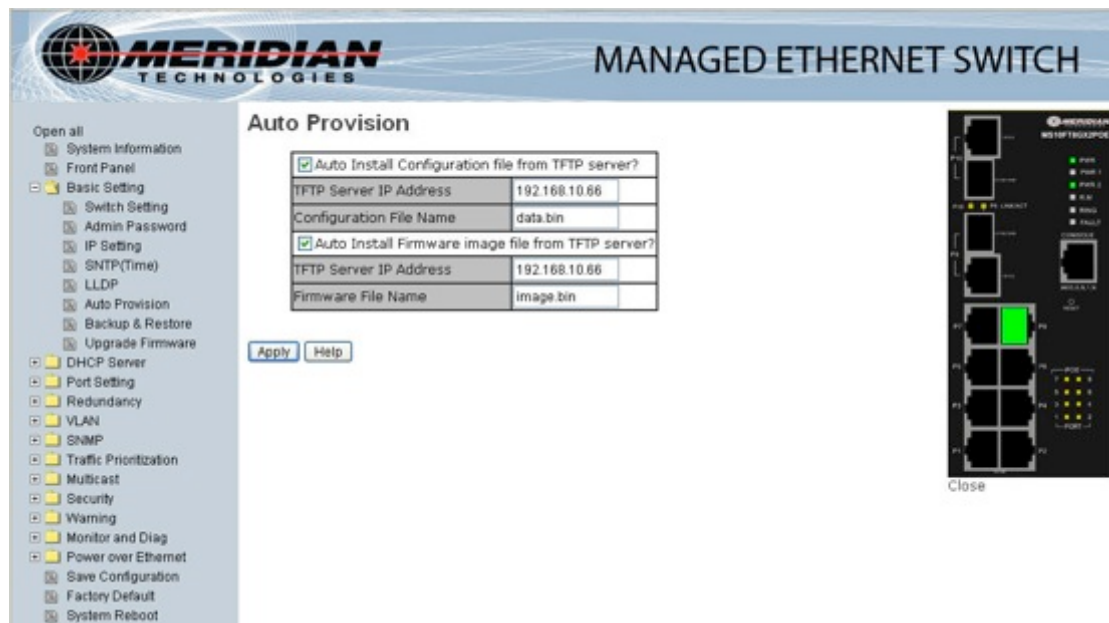
LLDP configuration interface

The following table describes the labels in this screen.

Label	Description
LLDP Protocol	“Enable” or “Disable” LLDP function.
LLDP Interval	The interval of resend LLDP (by default at 30 seconds)
Apply	Click “Apply” to activate the configurations.
Help	Show help file.

5.1.4.6 Auto Provision

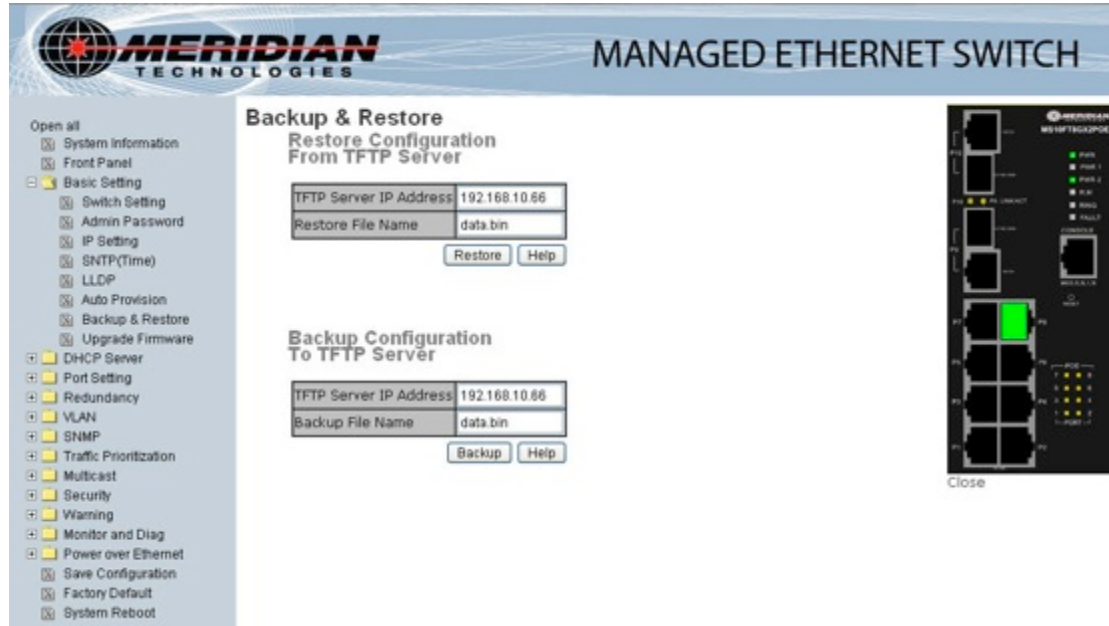
The Auto Provision function allows you to update the switches’ firmware automatically. You can put the firmware or configuration file on TFTP server. When you reboot the switch, it will update automatically. Before updating, make sure you have your TFTP server ready and the firmware image and configuration file is on the TFTP server.



Auto Provision interface

5.1.4.7 Backup & Restore

You can save the current configuration from the switch to TFTP server, or restore the configuration from TFTP server on this page.



Backup & Restore interface

The following table describes the labels in this screen.

Label	Description
TFTP Server IP Address	Fill in the TFTP server IP
Restore File Name	Fill the file name.
Restore	Click “ restore ” to restore the configurations.
Restore File Name	Fill the file name.
Restore	Click “ restore ” to restore the configurations.
Backup	Click “ backup ” to backup the configurations.

5.1.4.8 Upgrade Firmware

This function allows you to update the firmware of the switch. Before updating, make sure you have your TFTP server ready and the firmware image is on the TFTP server.

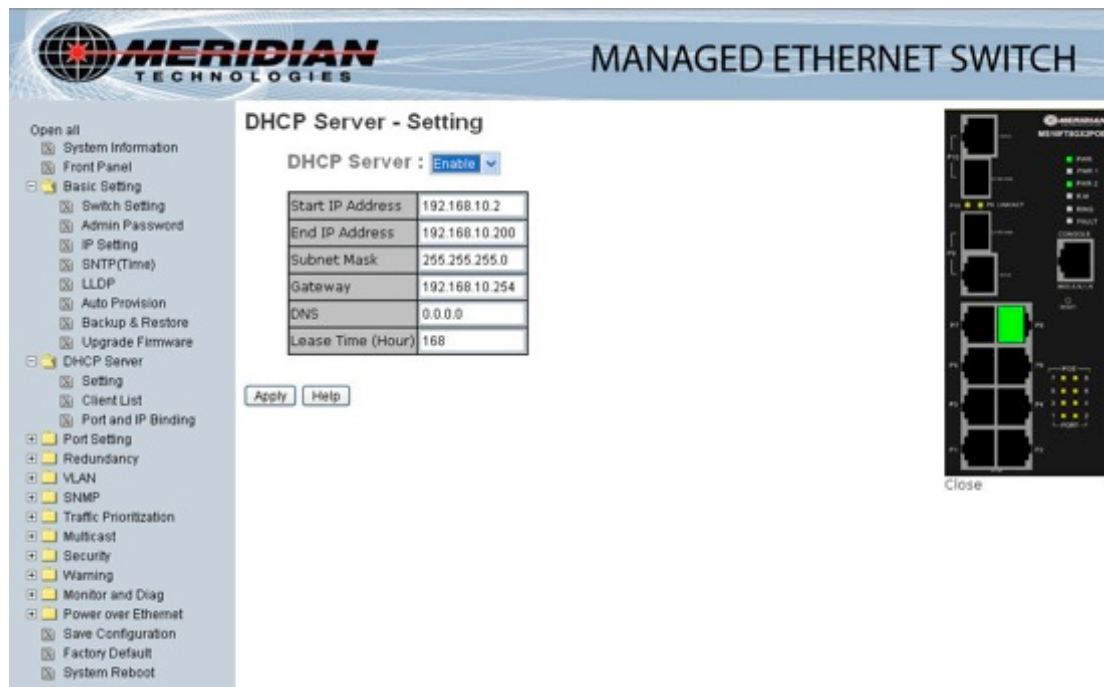


Update Firmware interface

5.1.5 DHCP Server

5.1.5.1 DHCP Server – Setting

Enable this DHCP server function will cause the switch system to function as a DHCP server.



DHCP Server Configuration interface

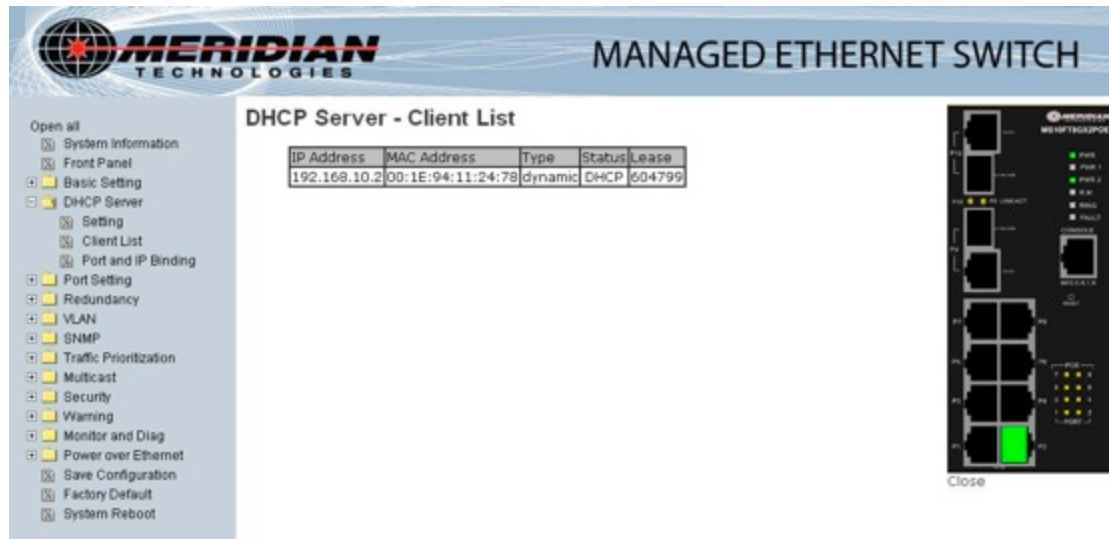
The following table describes the labels in this screen.

Label	Description
DHCP Server	Enable or Disable the DHCP Server function. Enable – the switch will be the DHCP server on your local network
Start IP Address	The dynamic IP assign range. Low IP address is the beginning of the dynamic IP assigns range. For example: dynamic IP assign range is from 192.168.1.100 to 192.168.1.200. 192.168.1.100 will be the Start IP address.
End IP Address	The dynamic IP assign range. High IP address is the end of the dynamic IP assigns range. For example: dynamic IP assign range is from 192.168.1.100 to 192.168.1.200. 192.168.1.200 will be the End IP address
Subnet Mask	The dynamic IP assign range subnet mask
Gateway	The gateway in your network.
DNS	Domain Name Server IP Address in your network.
Lease Time (Hour)	It is the period that system will reset the assigned dynamic IP to ensure the IP address is in used.

ApplyClick “**Apply**” to activate the configurations.

5.1.5.2 DHCP Server – Client List

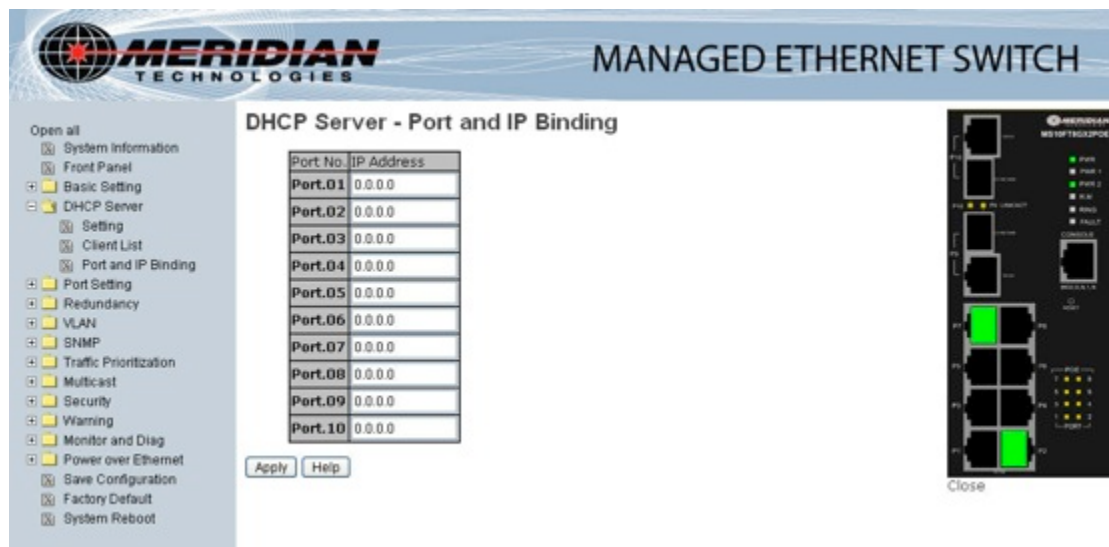
When this DHCP server function is activated, the system will collect the DHCP client information and display here.



DHCP Server Client Entries interface

5.1.5.3 DHCP Server – Port and IP bindings

You can assign the specific IP address, which is in the assigned dynamic IP range to the specific port. When the device is connecting to the port and asks for dynamic IP assigning, the system will assign the IP address that has been assigned before in the connected device.

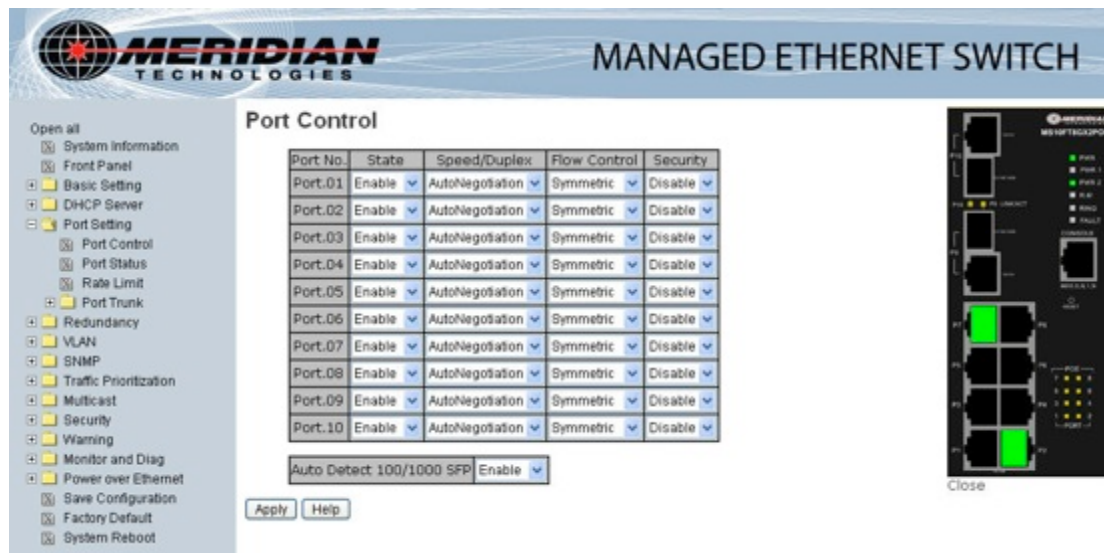


DHCP Server Port and IP Binding interface

5.1.6 Port Setting

5.1.6.1 Port Control

By this function, you can set the state, speed/duplex, flow control, and security of the port.



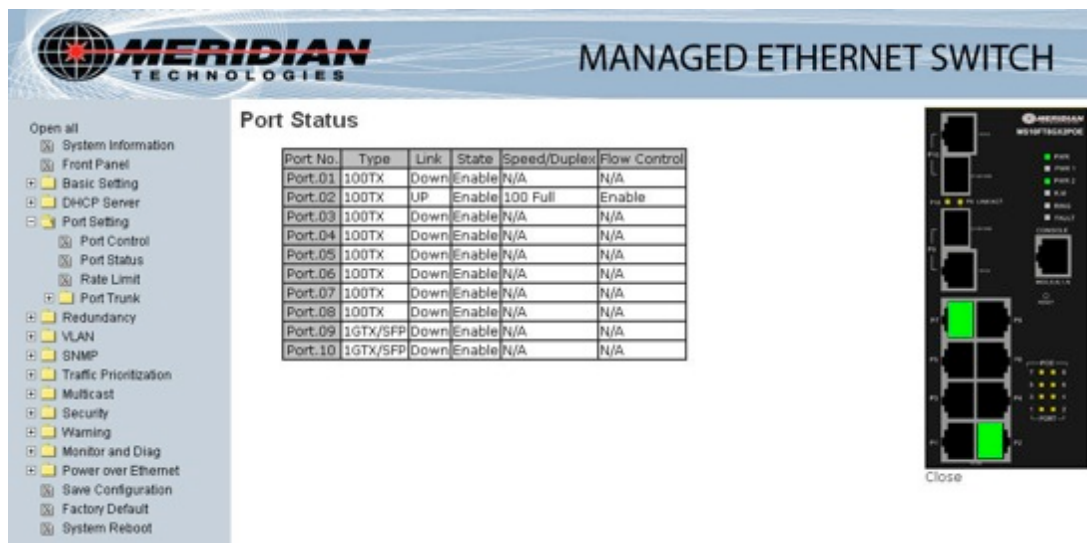
Port Control interface

The following table describes the labels in this screen.

Label	Description
Port NO.	Port number for setting.
Speed/Duplex	You can set Auto-negotiation,100 full,100 half,10 full or 10 half
Flow Control	Support symmetric and asymmetric mode to avoid packet loss when congestion occurred.
Security	Support port security function. When enable the function, the port will STOP learning MAC address dynamically.
Apply	Click “ Apply ” to activate the configurations.

5.1.6.2 Port Status

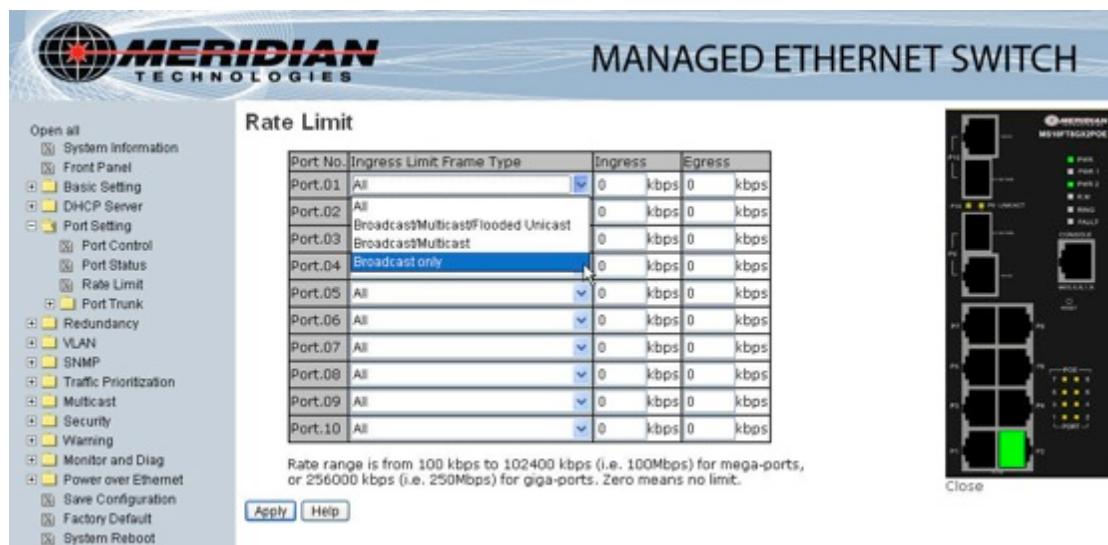
The following information provides the current port status information



Port Status interface

5.1.6.3 Rate Limit

With this function, you can limit traffic of all ports, including broadcast, multicast and flooded Unicast. You can also set the “Ingress” or “Egress” to limit traffic received or transmitted bandwidth.



Rate Limit interface

The following table describes the labels in this screen.

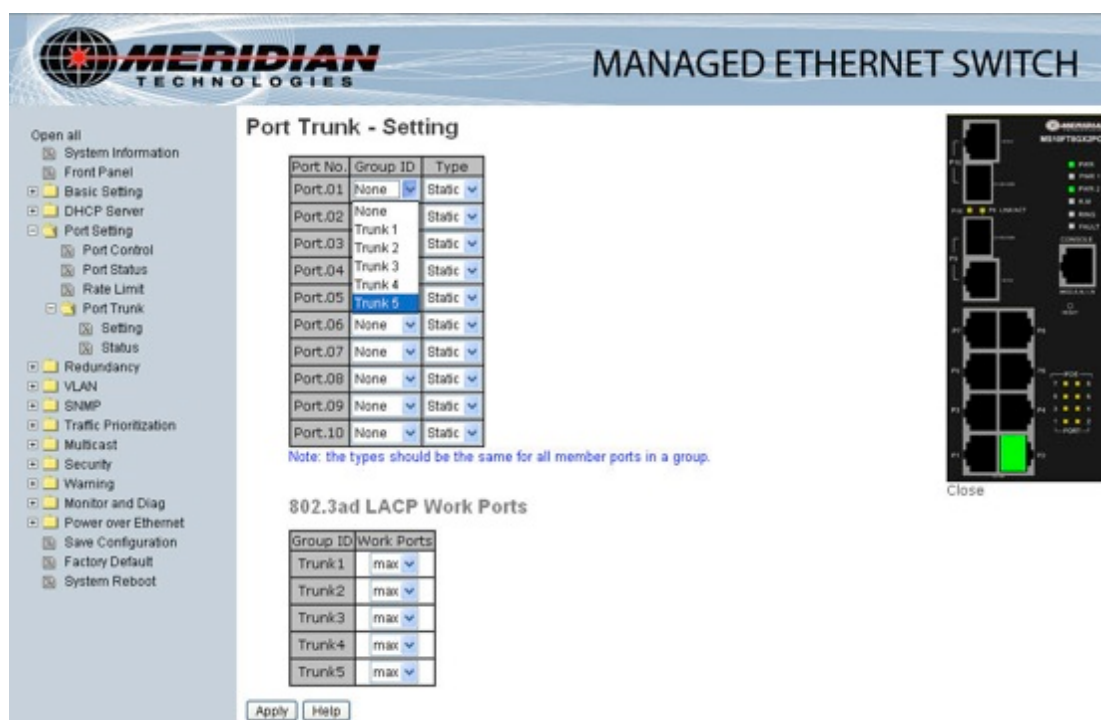
Label	Description
Ingress Limit Frame Type	You can set “all”, “Broadcast only”, “Broadcast/Multicast” or “Broadcast/Multicast/Flooded Unicast” mode.
Ingress	The switch port received traffic.

Egress	The switch port transmitted traffic.
Apply	Click “ Apply ” to activate the configurations.

5.1.6.4 Port Trunk

Port Trunk – Setting

You can select static trunk or 802.3ad LACP to combine several physical links with a logical link to increase the bandwidth.



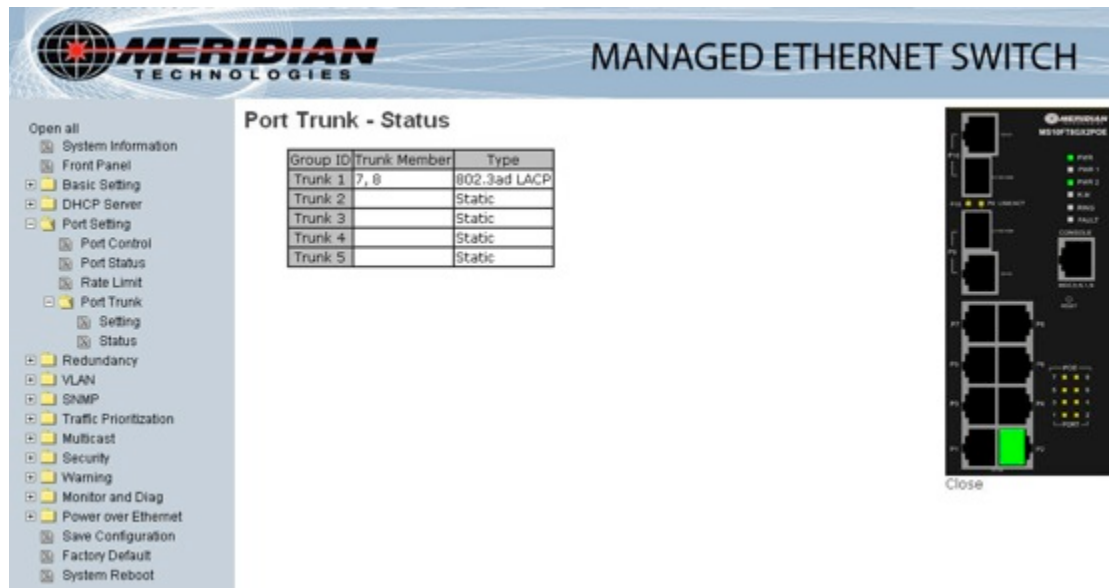
Port Trunk - Setting interface

The following table describes the labels in this screen.

Label	Description
Group ID	Select port to join a trunk group.
Type	Support static trunk and 802.3ad LACP
Apply	Click “ Apply ” to activate the configurations.

Port Trunk – Status

You can check the configuration of port trunk.

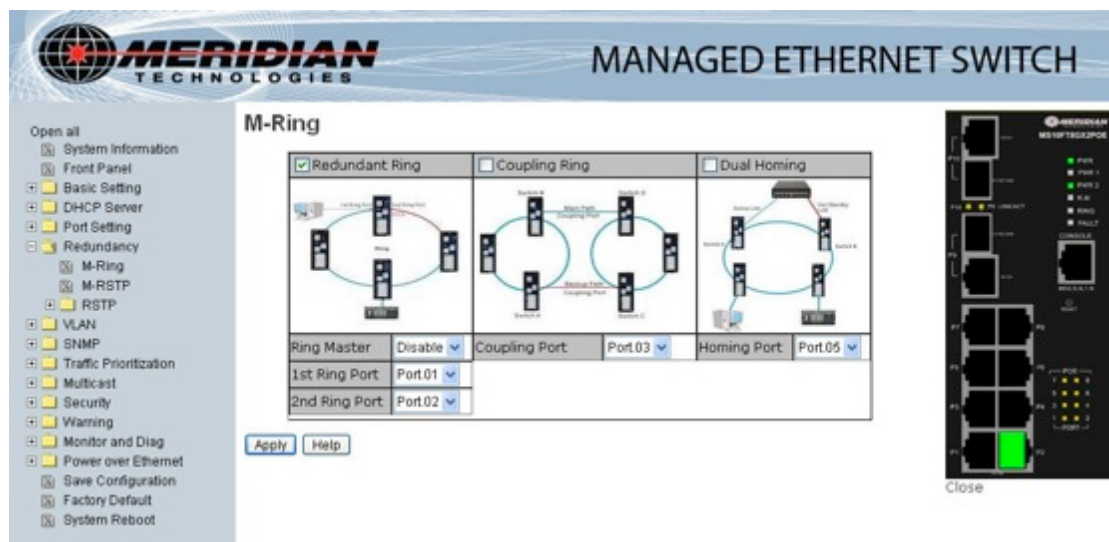


Port Trunk - Status interface

5.1.7 Redundancy

5.1.7.1 M-Ring

M-Ring is the most powerful Ring available. The recovery time of Ring is less than 10 ms which minimizes the time for the ring to recover and reduce unexpected damage caused by network topology changes. M-Ring supports 3 Ring topologies for network redundancy: M-Ring, Coupling Ring and Dual Homing.



M-Ring interface

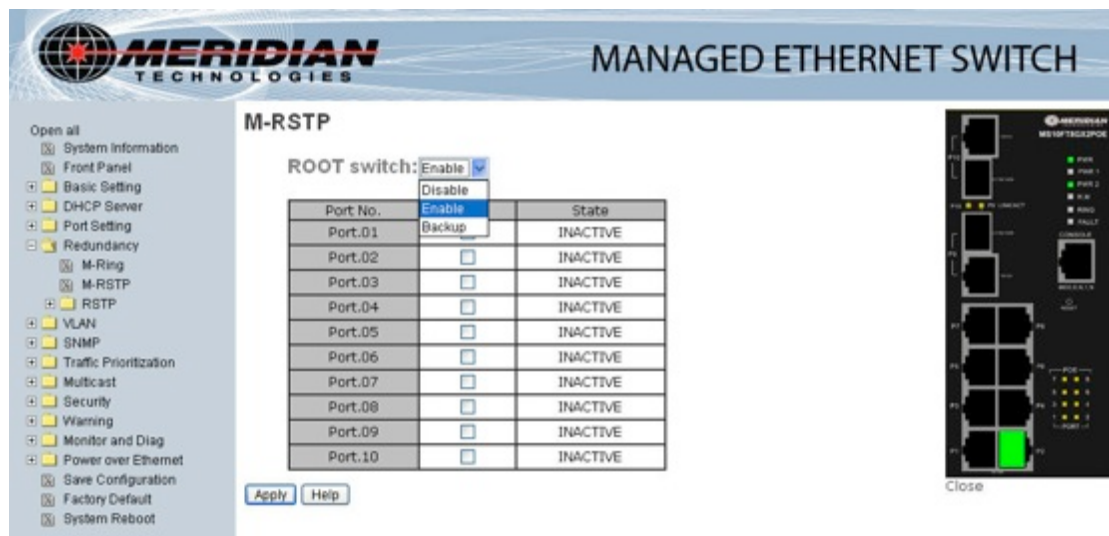
The following table describes the labels in this screen.

Label	Description
M-Ring	To enable M-Ring.
Ring Master	There should be one and only one Ring Master in a ring. However if there are two or more switches which set Ring Master to enable, the switch with the lowest MAC address will be the actual Ring Master and others will be Backup Masters.
1st Ring Port	The primary port of M-Ring.
2nd Ring Port	The backup port of M-Ring
Coupling Ring	To enable Coupling Ring. Coupling Ring can be used to divide a big ring into two smaller Rings to avoid effecting all switches when network topology change. It is a good application for connecting two Rings.
Coupling Port	Set a port as coupling port to link to the Coupling Port of the switch in another ring. Coupling Ring need four switch to construct an active and a backup link. The coupled four ports of four switches will be operated at active/backup mode.
Control Port	Set a port as Control Port to link to the Control Port of the switch in the same ring. Control Port used to transmit control signals.
Dual Homing	To enable Dual Homing. By selecting Dual Homing mode, Ring will be connected to normal switches through two RSTP links (i.e., backbone Switch). The two links act as active/backup mode, and connect each Ring to the normal switches in RSTP mode.
Apply	Click " Apply " to activate the configurations.

Note: It is not recommended to set one switch as a Ring Master and a Coupling Ring at the same time due to heavy load of system.

5.1.7.2 M-RSTP

Different from standard STP/RSTP, the recovery time of M-RSTP is less than 10mS and supports more nodes of connection in a ring topology.



M-RSTP interface

The application of M-RSTP is shown as below.



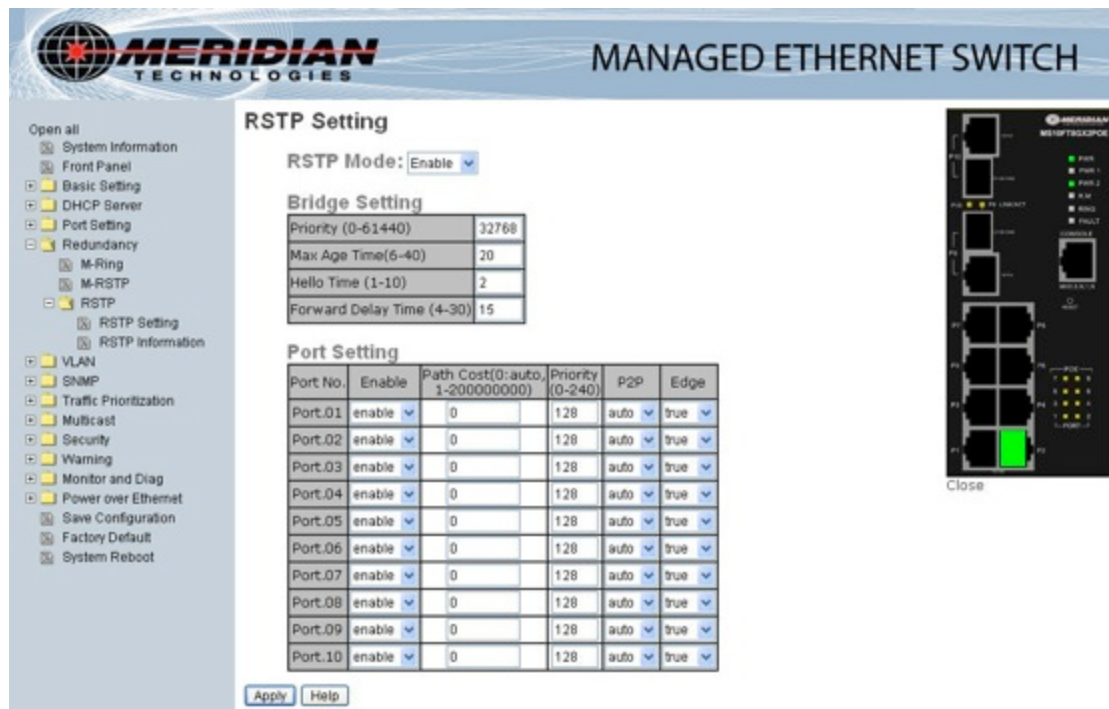
M-RSTP connection

5.1.7.3 RSTP

The Rapid Spanning Tree Protocol (RSTP) is an evolution of the Spanning Tree Protocol (STP). It provides faster convergence of spanning tree after a topology change. The system also supports STP and the system will detect the connected device that is running STP or RSTP protocol automatically.

RSTP setting

You can enable/disable RSTP function, and set parameters for each port.



RSTP Setting interface

The following table describes the labels in this screen.

Label	Description
RSTP mode	You must enable or disable RSTP function before configuring the related parameters.
Priority (0-61440)	A value used to identify the root bridge. The bridge with the lowest value with the highest priority and is selected as the root. If the value changes, you must restart the switch. The value must be multiple of 4096 according to the rule of the protocol.
Max Age (6-40)	The number of seconds for a bridge to wait without receiving Spanning-tree Protocol configuration messages before reconfiguration. Enter a value between 6 through 40.
Hello Time (1-10)	The time that controls switch sends out the BPDU (Bridge Protocol Data Unit) packet to check RSTP current status. Enter a value between 1 through 10.
Forwarding Delay Time (4-30)	The number of seconds a port to wait before changing from its learning/listening state to forwarding state. Enter a value

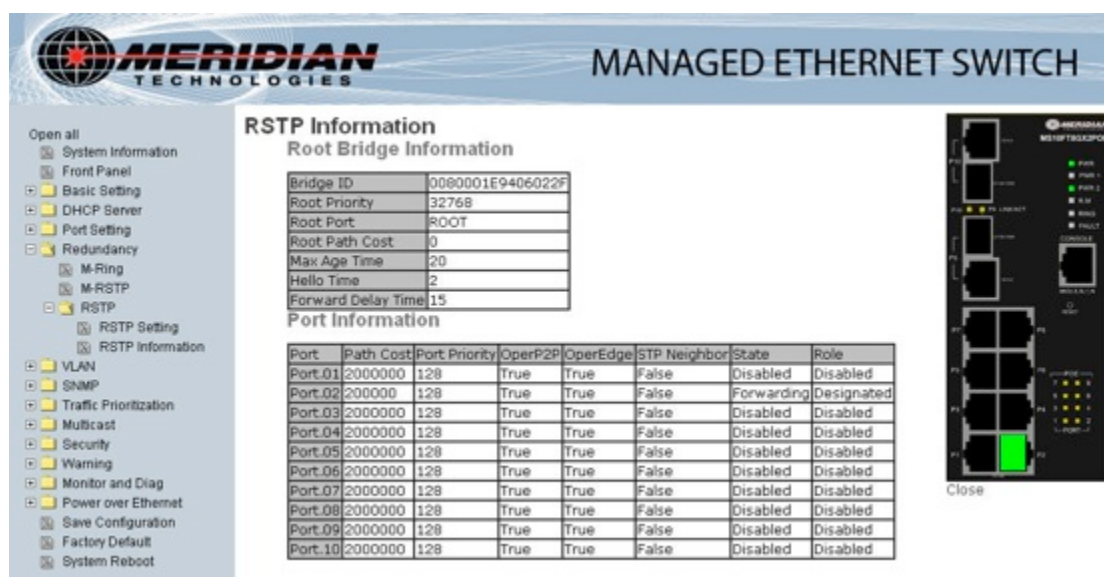
	between 4 through 30.
Path Cost (1-200000000)	The cost of the path to the other bridge from this transmitting bridge at the specified port. Enter a number 1 through 200000000.
Priority (0-240)	Decide which port should be blocked by setting the priority in LAN. Enter a number 0 through 240. The value of priority must be the multiple of 16
Admin P2P	Some of the rapid state transactions that are possible within RSTP are dependent upon whether the port concerned can only be connected to exactly one other bridge (i.e., It is served by a point-to-point LAN segment), or it can be connected to two or more bridges (i.e., It is served by a shared medium LAN segment). This function allows the P2P status of the link to be manipulated administratively. True means P2P enabled. False means P2P disabled.
Admin Edge	The port directly connected to end stations, and it cannot create bridging loop in the network. To configure the port as an edge port, set the port to " True ".
Admin Non STP	The port includes the STP mathematic calculation. STP algorithm is included for " True " setting, STP algorithm is not included for " False " setting.
Apply	Click " Apply " to activate the configurations.

NOTE: Follow the rule to configure the MAX Age, Hello Time, and Forward Delay Time:

$$2 \times (\text{Forward Delay Time value} - 1) \geq \text{Max Age value} \geq 2 \times (\text{Hello Time value} + 1)$$

RSTP Information

Show RSTP algorithm result at this table.



RSTP Information interface

5.1.8 VLAN

A Virtual LAN (VLAN) is a logical network grouping that limits the broadcast domain allowing you to isolate the network traffic. Only the members of the same VLAN will receive the traffic from the other members. Creating a VLAN from a switch is logically equivalent to separating a group of network devices. However, all the network devices are still connected to the same switch physically.

This managed switch supports port-based and 802.1Q (tagged-based) VLAN. The default configuration of VLAN operation mode is at “**802.1Q**”.

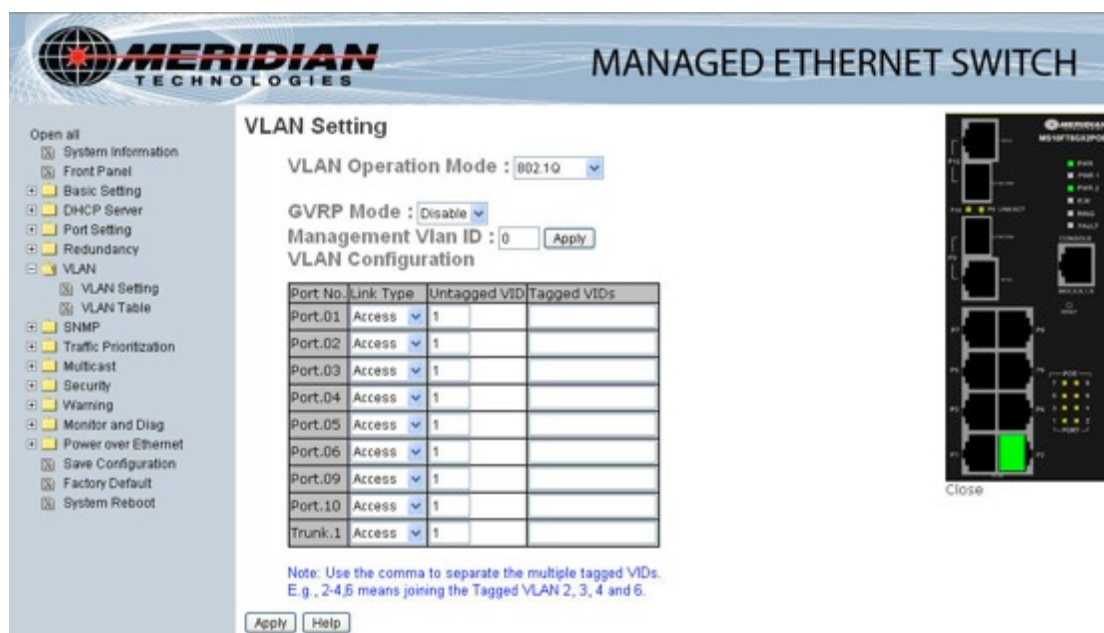
5.1.8.1 VLAN Setting

Tagged-based VLAN is an IEEE 802.1Q specification standard allowing you to create a VLAN across devices from different switch vendors. IEEE 802.1Q VLAN uses a technique to insert a “tag” into the Ethernet frames. Tag contains a VLAN Identifier (VID) that indicates the VLAN numbers.

You can create Tag-based VLANs, and enable or disable GVRP protocol. There are 256 VLAN groups available. When the 802.1Q VLAN is enabled, all ports on the switch belong to

the default VLAN. The VID identifier is 1. The default VLAN cannot be deleted.

GVRP allows automatic VLAN configuration between the switch and nodes. If the switch is connected to a device with GVRP enabled, you can send a GVRP request by using the VID of a VLAN defined on the switch; the switch will automatically add that device to the existing VLAN.



VLAN Configuration – 802.1Q interface

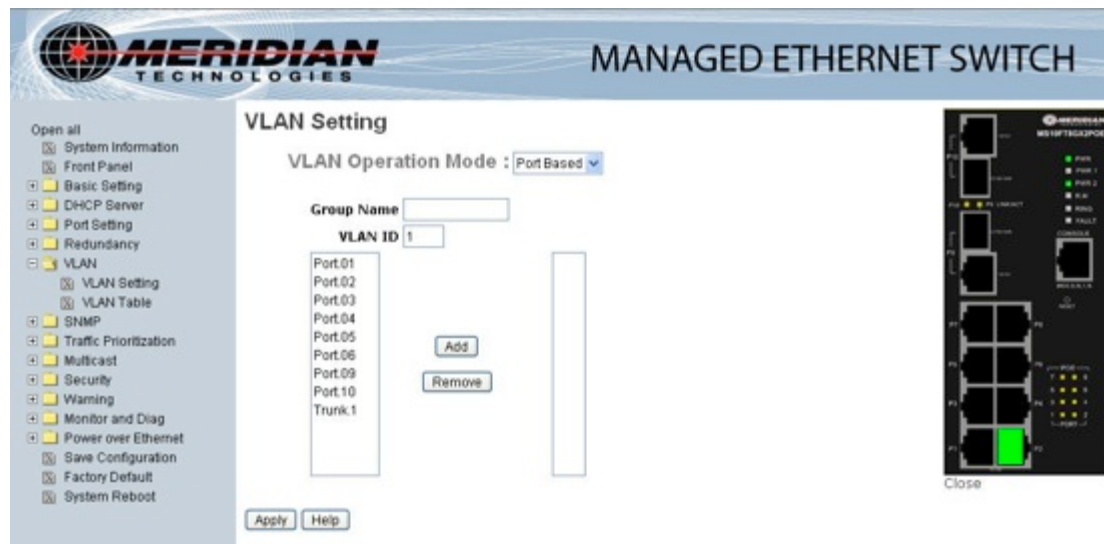
The following table describes the labels in this screen.

Label	Description
VLAN Operation Mode	Configure VLAN Operation Mode: disable, Port Base, 802.1Q
GVRP Mode	Enable/Disable GVRP function.
Management VLAN ID	Management VLAN provide network administrator a secured VLAN to management Switch. Only the devices in the management VLAN can access the switch.
Link type	There are 3 types of link type: Access Link: single switch only, allows you to group ports by setting the same VID. Trunk Link: extended application of Access Link , allows you to group ports by setting the same VID with 2 or more switches.

	Hybrid Link: Both Access Link and Trunk Link are available. Hybrid(QinQ) Link: enable QinQ mode , allow you to insert one more VLAN tag in a original VLAN frame.
Untagged VID	Set the port default VLAN ID for untagged devices that connect to the port. The range is 1 to 4094.
Tagged VIDs	Set the tagged VIDs to carry different VLAN frames to other switch.
Apply	Click " Apply " to activate the configurations.

5.1.8.2 VLAN Setting – Port Based

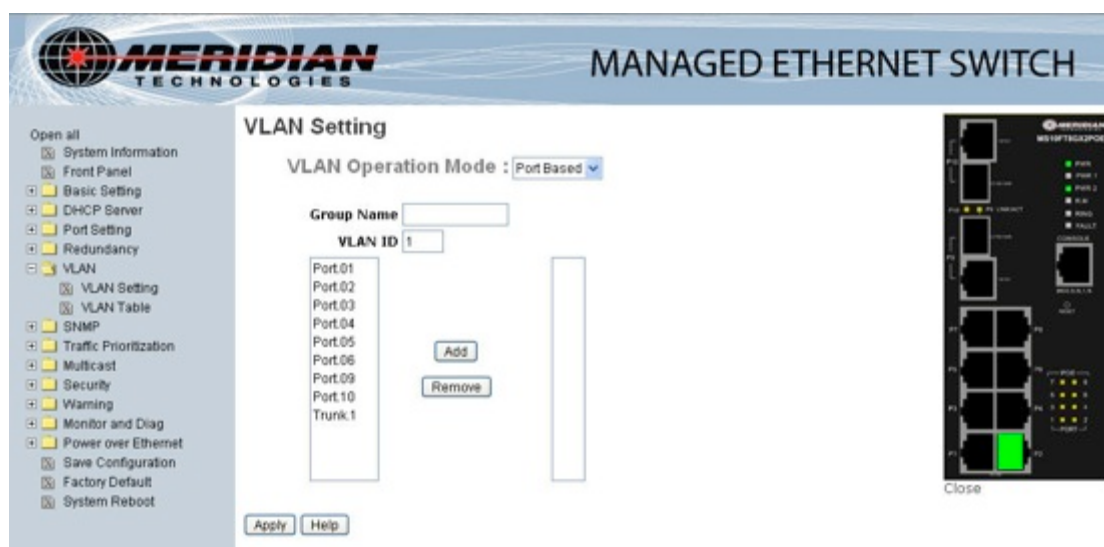
Traffic is forwarded to the member ports of the same vlan group.vlan port based startup, set in the same group of the port, can be a normal transmission packet, without restricting the types of packets.



VLAN Configuration – Port Base interface-1

The following table describes the labels in this screen.

Label	Description
Add	Click " add " to enter VLAN add interface.
Edit	Edit exist VLAN
Delete	Delete exist VLAN
Help	Show help file.



VLAN Configuration – Port Base interface-2

The following table describes the labels in this screen.

Label	Description
Group Name	VLAN name.
VLAN ID	Specify the VLAN ID
Add	Select port to join the VLAN group.
Remove	Remove port of the VLAN group
Apply	Click “ Apply ” to activate the configurations.
Help	Show help file.

5.1.9 SNMP

Simple Network Management Protocol (SNMP) is the protocol developed to manage nodes (servers, workstations, routers, switches and hubs etc.) on an IP network. SNMP enables network administrators to manage network performance, find and solve network problems, and plan for network growth. Network management systems identify network problems by receiving traps or change notices from network devices implementing SNMP.

5.1.9.1 SNMP –Agent Setting

You can set SNMP agent related information by Agent Setting Function.

Meridian Technologies **MANAGED ETHERNET SWITCH**

Open all
☐ System Information
☐ Front Panel
☐ Basic Setting
☐ DHCP Server
☐ Port Setting
☐ Redundancy
☐ VLAN
☒ **SNMP**
 ☒ **Agent Setting**
 ☐ Trap Setting
☐ Traffic Prioritization
☐ Multicast
☐ Security
☐ Warning
☐ Monitor and Diag
☐ Power over Ethernet
☐ Save Configuration
☐ Factory Default
☐ System Reboot

SNMP - Agent Setting

SNMP Agent Version:

SNMP V1/V2c Community

Community String	Privilege
public	Read Only
private	Read and Write
	Read Only
	Read Only

SNMPv3 Engine ID: 1465000003001e9406022f

SNMPv3 User

User Name	Auth Password	Privacy Password

Current SNMPv3 User Profile

User Name	Auth. Password	Priv. Password

SNMP Agent Setting interface

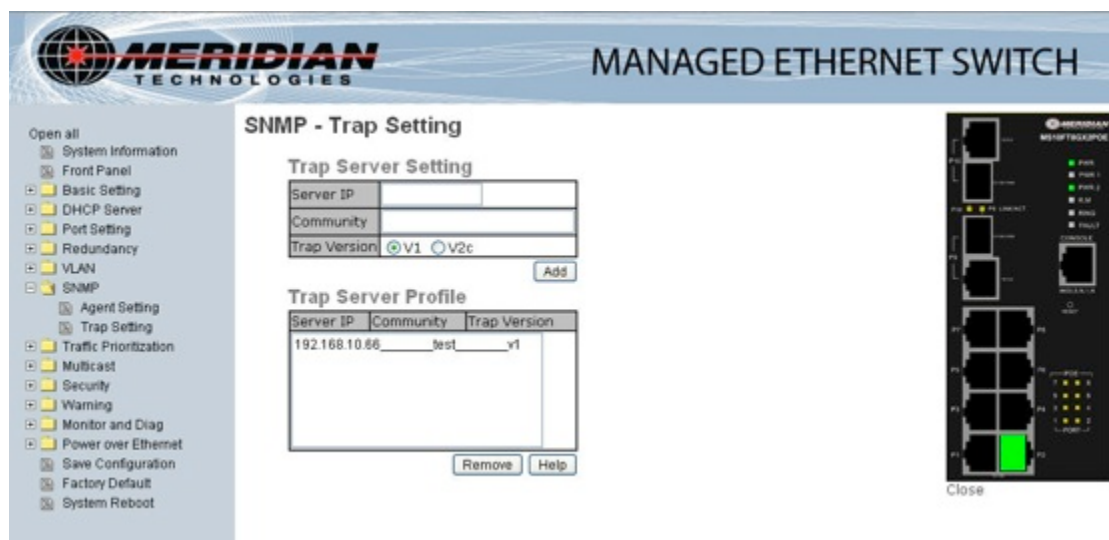
The following table describes the labels in this screen.

Label	Description
SNMP agent Version	The three SNMP versions are supported are SNMP V1, SNMP V2c, and SNMP V3. SNMP V1, SNMP V2c agents use a community string match for authentication, that means SNMP servers access objects with read-only or read/write permissions with the community default string public/private. SNMP V3 requires an authentication level of MD5 or DES to encrypt data to enhance data security.
SNMP V1/V2c Community	SNMP Community should be set for SNMP V1/V2c. Four sets of "Community String/Privilege" are supported. Each Community String is maximum 32 characters. Keep empty to remove this Community string.
SNMPv3User	If SNMP V3 agent is selected, the SNMPv3 you profiled should be set for authentication. The Username is necessary. The Auth Password is encrypted by MD5 and the Privacy Password which is encrypted by DES. There are maximum 8 sets of SNMPv3 User and maximum 16 characters in username, and password. When SNMP V3 agent is selected, you can:

	1. Input SNMPv3 username only. 2. Input SNMPv3 username and Auth Password. 3. Input SNMPv3 username, Auth Password and Privacy Password, which can be different with Auth Password. To remove a current user profile: 1. Input SNMPv3 user name you want to remove. 2. Click "Remove" button
Current SNMPv3 User Profile	Show all SNMPv3 user profiles.
Apply	Click " Apply " to activate the configurations.
Help	Show help file.

5.1.9.2 SNMP –Trap Setting

A trap manager is a management station that receives traps or system alerts generated by the switch. If no trap manager is defined, no traps will be issued. You can create a trap manager by entering the IP address of the station and a community string. To define management stations as trap manager enter the SNMP community strings and select the SNMP version.



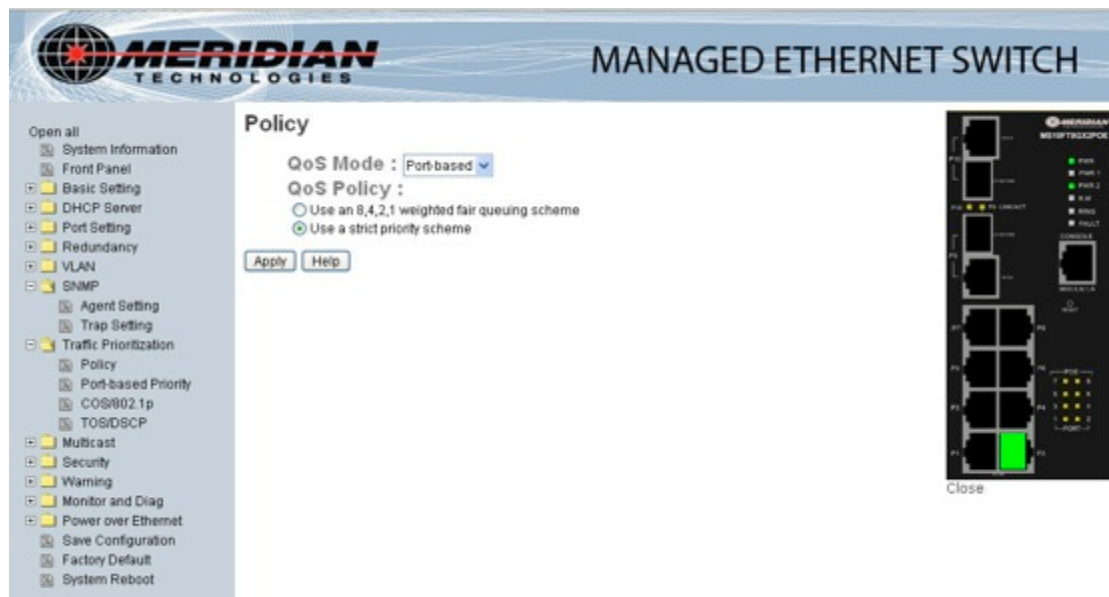
SNMP Trap Setting interface

The following table describes the labels in this screen.

Label	Description
Server IP	The server IP address to receive Trap
Community	Community for authentication
Trap Version	Trap Version supports V1 and V2c.
Add	Add trap server profile.
Remove	Remove trap server profile.
Help	Show help file.

5.1.10 Traffic Prioritization

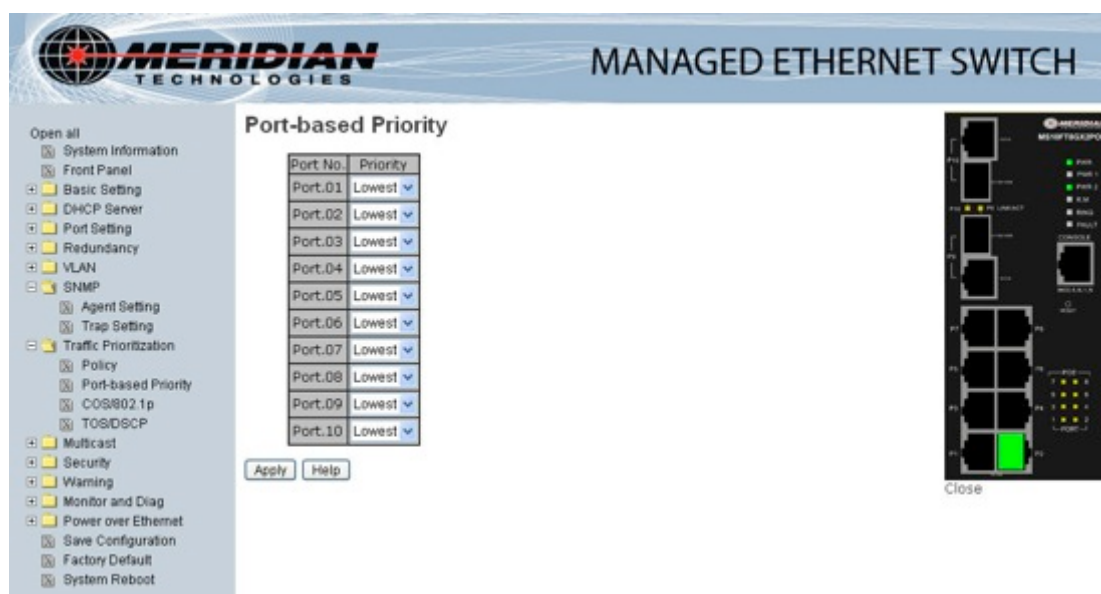
Traffic Prioritization includes 3 modes: port base, 802.1p/COS, and TOS/DSCP. By traffic prioritization function, you can classify the traffic into four classes for differential network application. MS10FT8GX2POEH support 4 priority queues.



Policy Setting interface

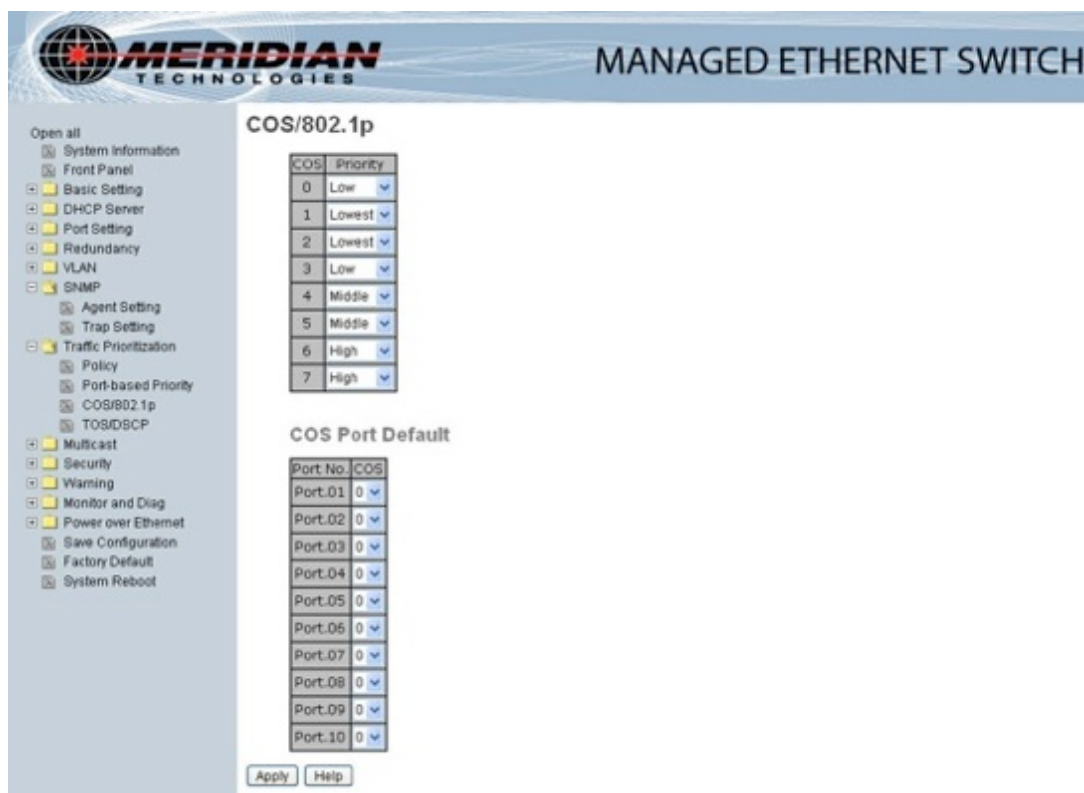
Label	Description
QoS Mode	Port-base: the output priority is determined by ingress port. COS only: the output priority is determined by COS only. TOS only: the output priority is determined by TOS only. COS first: the output priority is determined by COS and TOS, but COS first. TOS first: the output priority is determined by COS and

	TOS, but TOS first.
QoS policy	• Using the 8,4,2,1 weight fair queue scheme: the output queues will follow 8:4:2:1 ratio to transmit packets from the highest to lowest queue. For example: 8 high queue packets, 4 middle queue packets, 2 low queue packets, and the one lowest queue packets are transmitted in one turn. • Use the strict priority scheme: always the packets in higher queue will be transmitted first until higher queue is empty.
Help	Show help file.
Apply	Click " Apply " to activate the configurations.



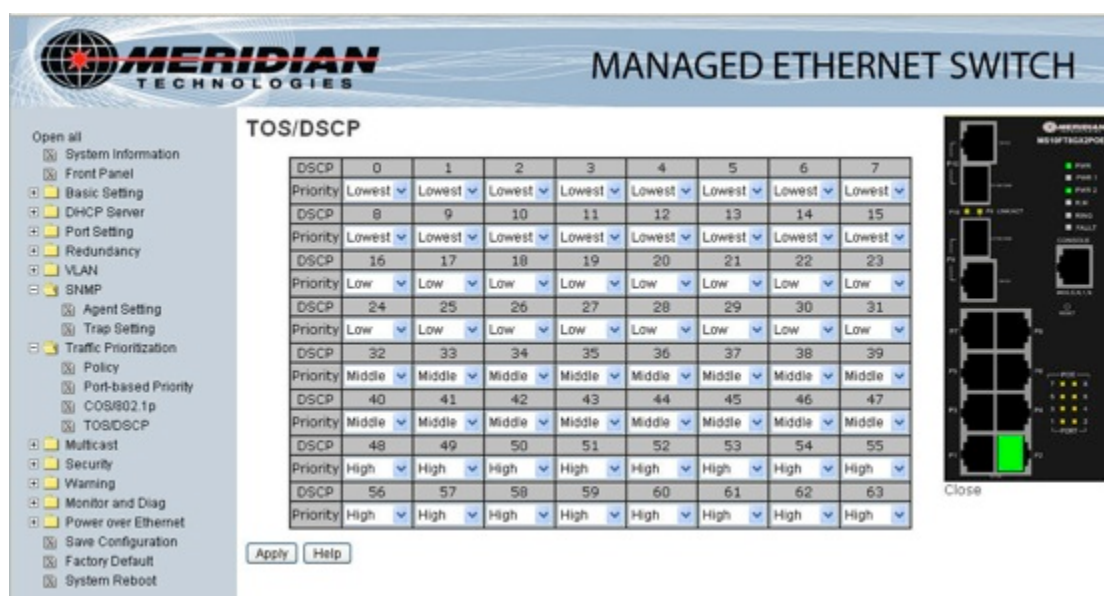
Port-based Priority interface

Label	Description
Port base Priority	Assign Port with a priority queue. 4 priority queues can be assigned: High, Middle, Low, and Lowest.
Help	Show help file.
Apply	Click " Apply " to activate the configurations.



COS/802.1p interface

Label	Description
COS/802.1p	COS (Class Of Service) is well known as 802.1p. It describes that the output priority of a packet is determined by user priority field in 802.1Q VLAN tag. The priority value is supported 0 to 7. COS value map to 4 priority queues: High, Middle, Low, and Lowest.
COS Port Default	When an ingress packet has not VLAN tag, a default priority value is considered and determined by ingress port.
Help	Show help file.
Apply	Click " Apply " to activate the configurations.



TOS/DSCP interface

Label	Description
TOS/DSCP	TOS (Type of Service) is a field in IP header of a packet. This TOS field is also used by Differentiated Services and is called the Differentiated Services Code Point (DSCP). The output priority of a packet can be determined by this field and the priority value is supported 0 to 63. DSCP value map to 4 priority queues: High, Middle, Low, and Lowest.
Apply	Click “ Apply ” to activate the configurations.
Help	Show help file.

5.1.11 Multicast

5.1.11.1 IGMP Snooping

Internet Group Management Protocol (IGMP) is used by IP hosts to register their dynamic multicast group membership. IGMP has 3 versions, IGMP v1, v2 and v3. Please refer to RFC 1112, 2236 and 3376. IGMP Snooping improves the performance of networks that carry multicast traffic. It provides the ability to prune multicast traffic so that it travels only to those end destinations that require that traffic and reduces the amount of traffic on the Ethernet LAN.



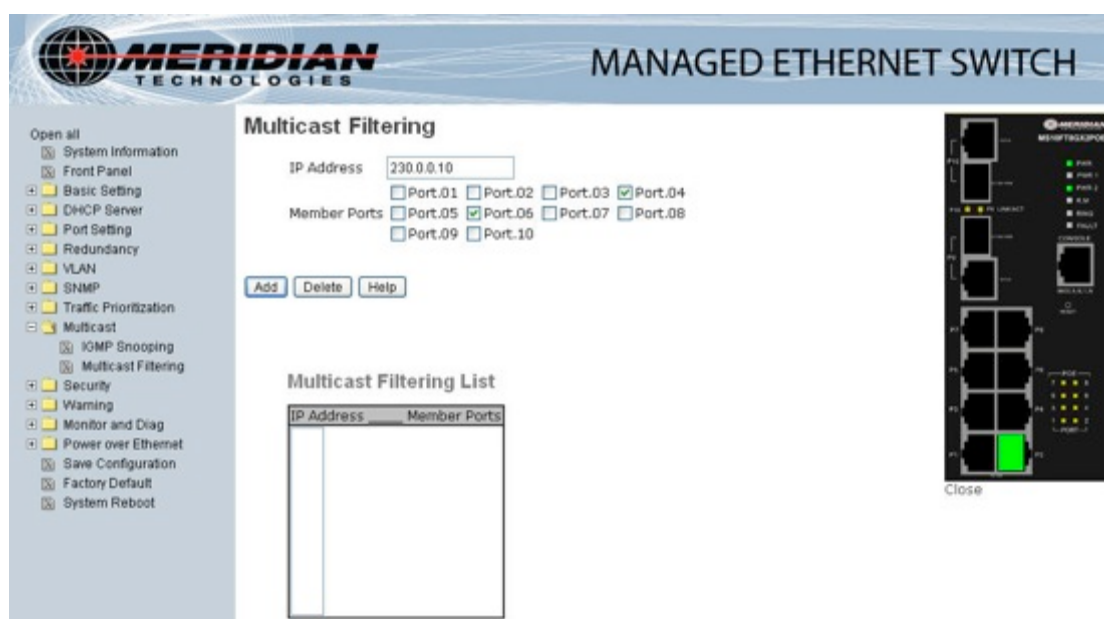
IGMP Snooping interface

The following table describes the labels in this screen.

Label	Description
IGMP Snooping	Enable/Disable IGMP snooping.
IGMP Query Mode	Switch will be IGMP query or not. There should exist one and the only one IGMP query in an IGMP application. The "Auto" mode means that the query is the one with lower IP address.
IGMP Snooping Table	Show current IP multicast list
Apply	Click " Apply " to activate the configurations.
Help	Show help file.

5.1.11.2 Multicast Filter

Multicast filtering is the system by which end stations only receive multicast traffic if they register to join specific multicast groups. With multicast filtering, network devices only forward multicast traffic to the ports that are connected to registered end stations.



Multicast Filtering interface

The following table describes the labels in this screen.

Label	Description
IP Address	Assign a multicast group IP address in the range of 224.0.0.0 ~ 239.255.255.255
Member Ports	Tick the check box beside the port number to include them as the member ports in the specific multicast group IP address.
Add	Show current IP multicast list
Delete	Delete an entry from table
Help	Show help file.

5.1.12 Security

Five useful functions can enhance security of switch: IP Security, Port Security, MAC Blacklist, and MAC address Aging and 802.1x protocol.

5.1.12.1 IP Security

IP security can enable/disable remote management from WEB or Telnet or SNMP. Additionally, IP security can restrict remote management to some specific IP addresses. Only these secure IP addresses will be allowed to manage this switch remotely.



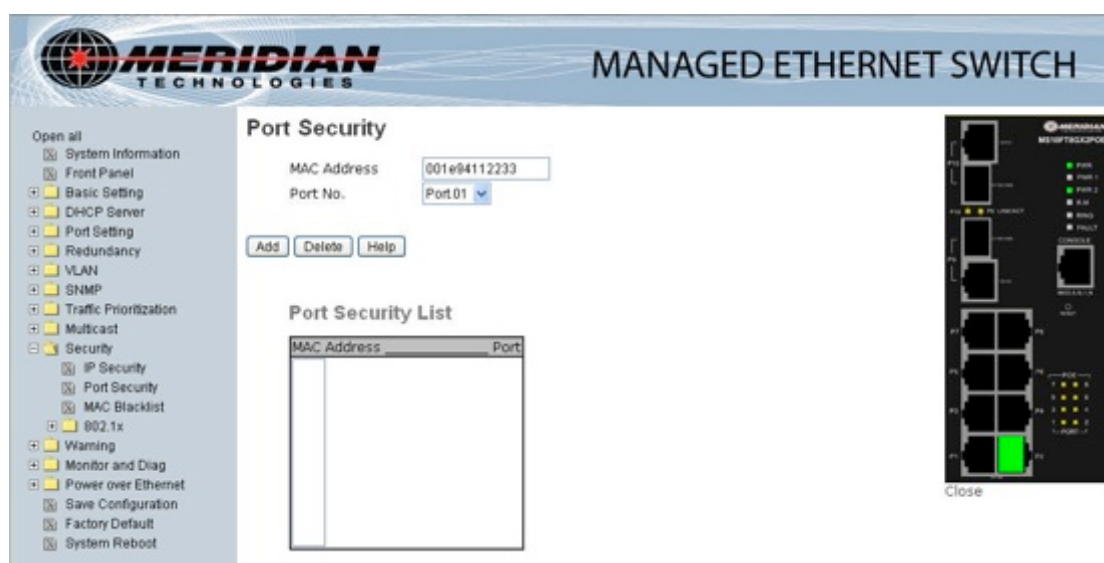
IP Security interface

The following table describes the labels in this screen.

Label	Description
IP security MODE	Enable/Disable the IP security function.
Enable WEB Management	Mark the blank to enable WEB Management.
Enable Telnet Management	Mark the blank to enable Telnet Management.
Enable SNMP Management	Mark the blank to enable MPSN Management.
Apply	Click “ Apply ” to activate the configurations.
Help	Show help file.

5.1.12.2 Port Security

Port security is to add static MAC addresses to hardware forwarding database. If port security is enabled at **Port Control** page, only the frames with MAC addresses in this list will be forwarded, otherwise will be discarded.



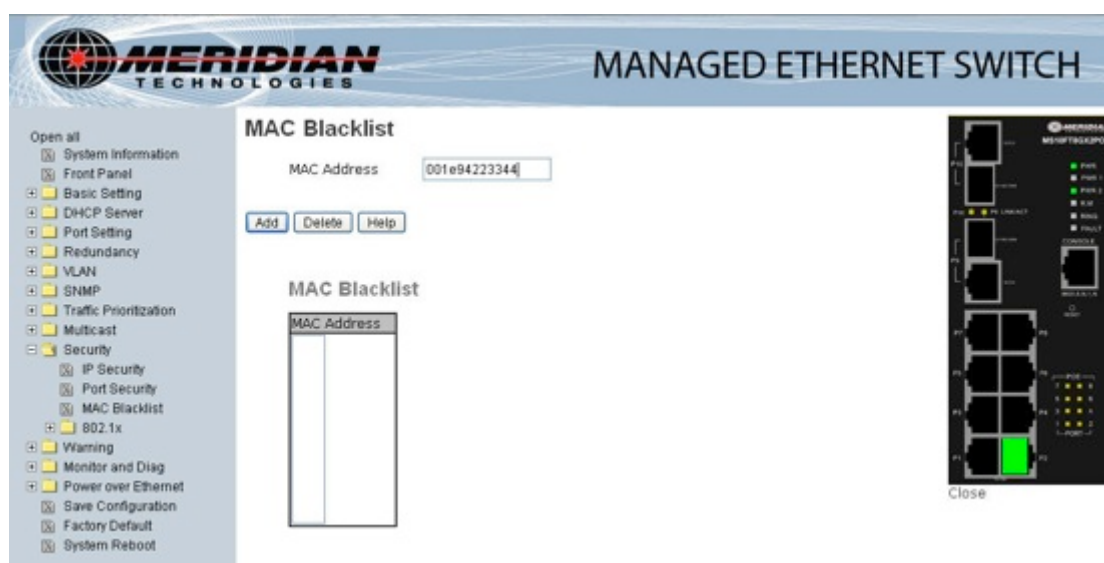
Port Security interface

The following table describes the labels in this screen.

Label	Description
MAC Address	Input MAC Address to a specific port.
Port NO.	Select port of switch.
Add	Add an entry of MAC and port information.
Delete	Delete the entry.
Help	Show help file.

5.1.12.3 MAC Blacklist

MAC Blacklist can eliminate the traffic forwarding to specific MAC addresses in list. Any frames forwarding to the MAC addresses in this list will be discarded. Thus the target device not receive any frames from the blacklisted MAC addresses.



MAC Blacklist interface

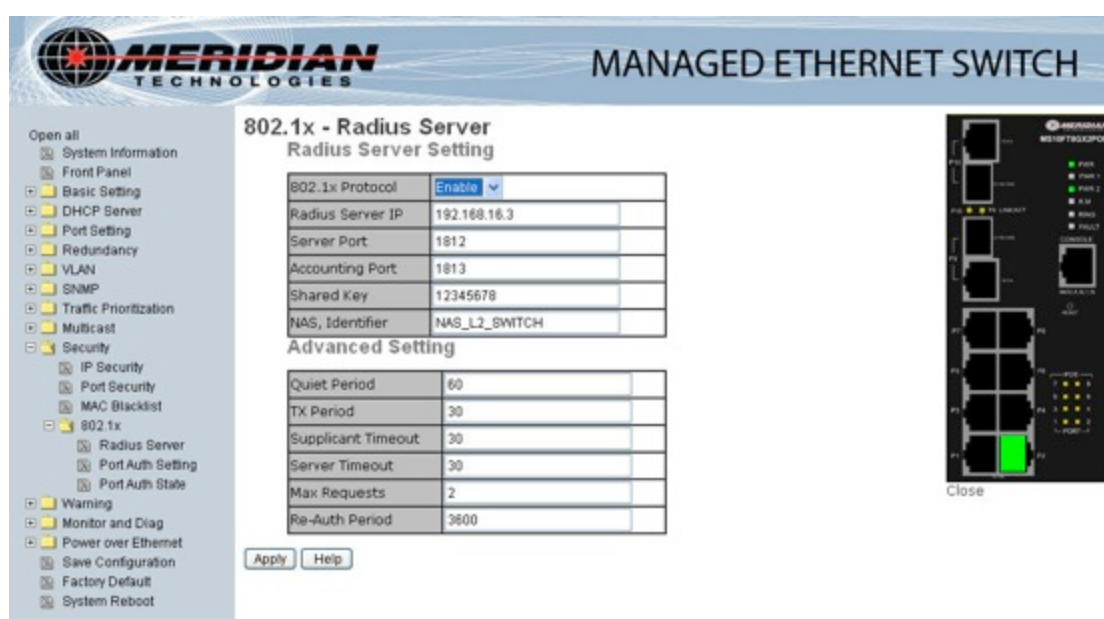
The following table describes the labels in this screen.

Label	Description
MAC Address	Input MAC Address to add to MAC Blacklist.
Port NO.	Select port of switch.
Add	Add an entry to Blacklist table.
Delete	Delete the entry.
Help	Show help file.

5.1.12.4 802.1x

802.1x - Radius Server

802.1x makes the use of the physical access characteristics of IEEE802 LAN infrastructures in order to provide a authenticated and authorized devices attached to a LAN port. Please refer to IEEE 802.1X - Port Based Network Access Control.



802.1x Radius Server interface

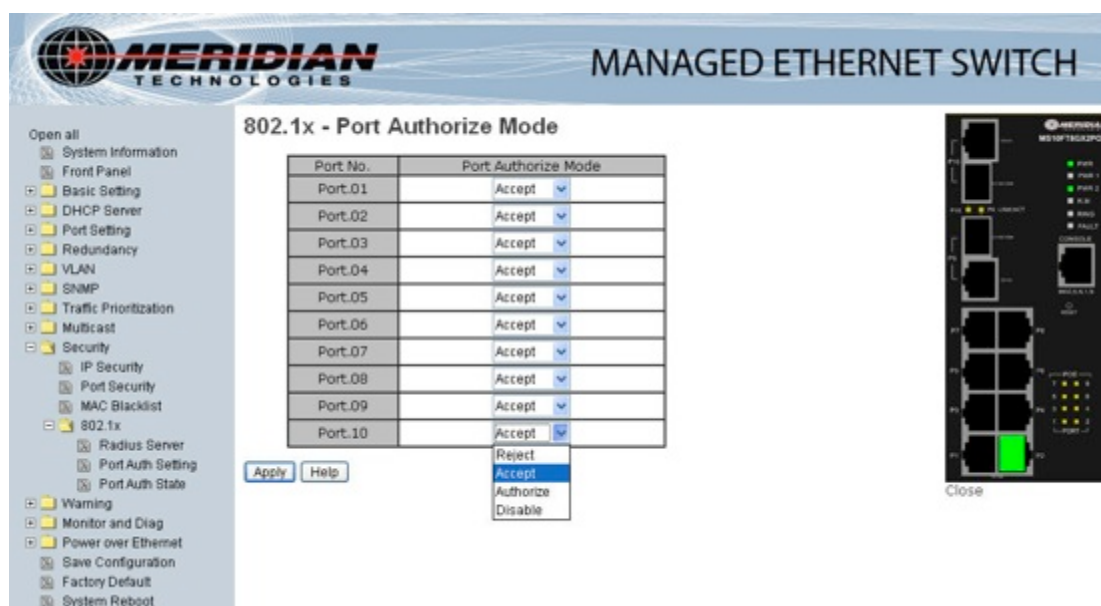
The following table describes the labels in this screen.

Label	Description
Radius Server Setting	
Radius Server IP	The IP address of the authentication server.
Server port	Set the UDP port number used by the authentication server to authenticate.
Account port	Set the UDP destination port for accounting requests to the specified Radius Server.
Shared Key	A key shared between this switch and authentication server.
NAS, Identifier	A string used to identify this switch.
Advanced Setting	
Quiet Period	Set the time interval between authentication failure and the start of a new authentication attempt.
Tx Period	Set the time that the switch can wait for response to an EAP request/identity frame from the client before resending the request.
Supplicant Timeout	Set the period of time the switch waits for a supplicant response to an EAP request.
Server Timeout	Set the period of time the switch waits for a Radius server response to an authentication request.
Max Requests	Set the maximum number of times to retry sending packets to the supplicant.

Re-Auth Period	Set the period of time after which clients connected must be re-authenticated.
Apply	Click “ Apply ” to activate the configurations.
Help	Show help file.

802.1x-Port Authorized Mode

Set the 802.1x authorized mode of each port.



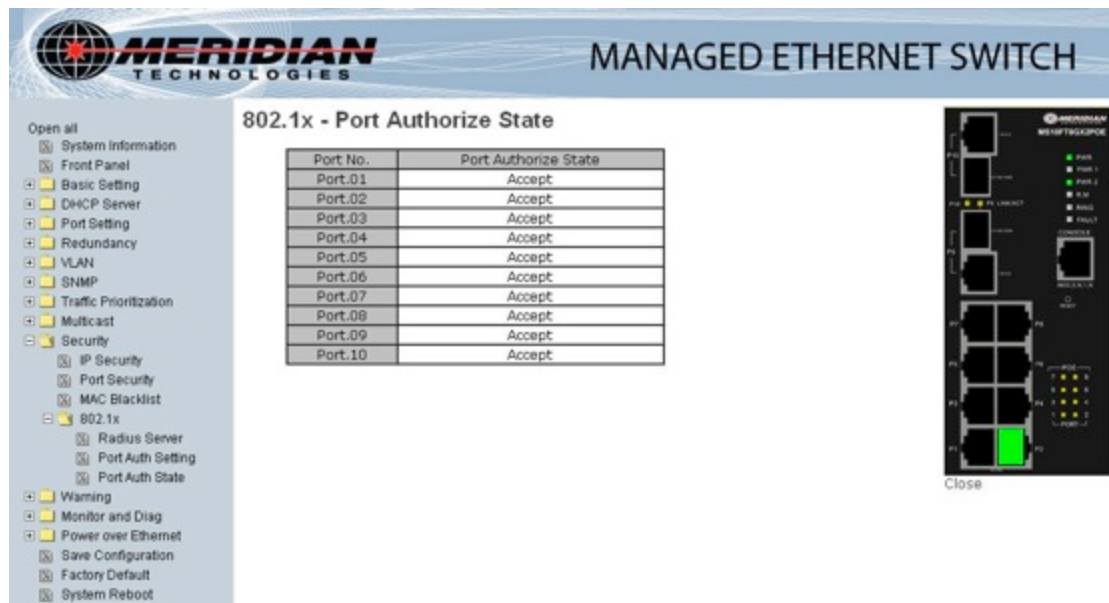
802.1x Port Authorize interface

The following table describes the labels in this screen.

Label	Description
Port Authorized Mode	• Reject: force this port to be unauthorized. • Accept: force this port to be authorized. • Authorize: the state of this port was determined by the outcome of the 802.1x authentication. • Disable: this port will not participate in 802.1x.
Apply	Click “ Apply ” to activate the configurations.
Help	Show help file.

802.1x-Port Authorized State

Show 802.1x port authorized state.



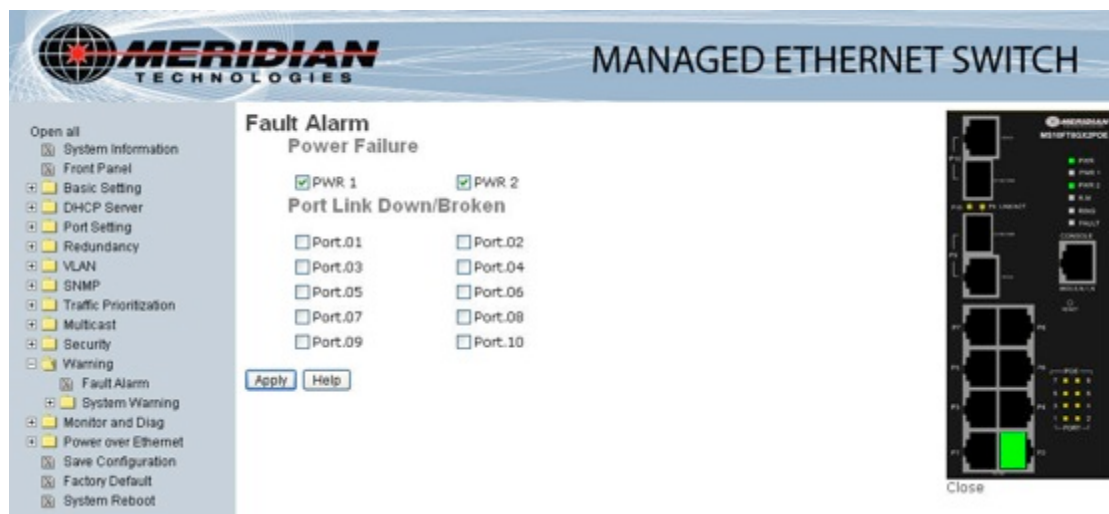
802.1x Port Authorize State interface

5.1.13 Warning

The warning function is very important for managing the switch. You can manage the switch by SYSLOG, E-MAIL, and Fault Relay. This feature helps you monitor the switch's status at a remote location. When events occurred, the warning message will be sent to your appointed server, E-MAIL, or relay fault to the switch panel.

5.1.13.1 Fault Alarm

When any selected fault event is happened, the Fault LED in switch panel will light up and the electric relay will signal at the same time.



Fault Alarm interface

The following table describes the labels in this screen.

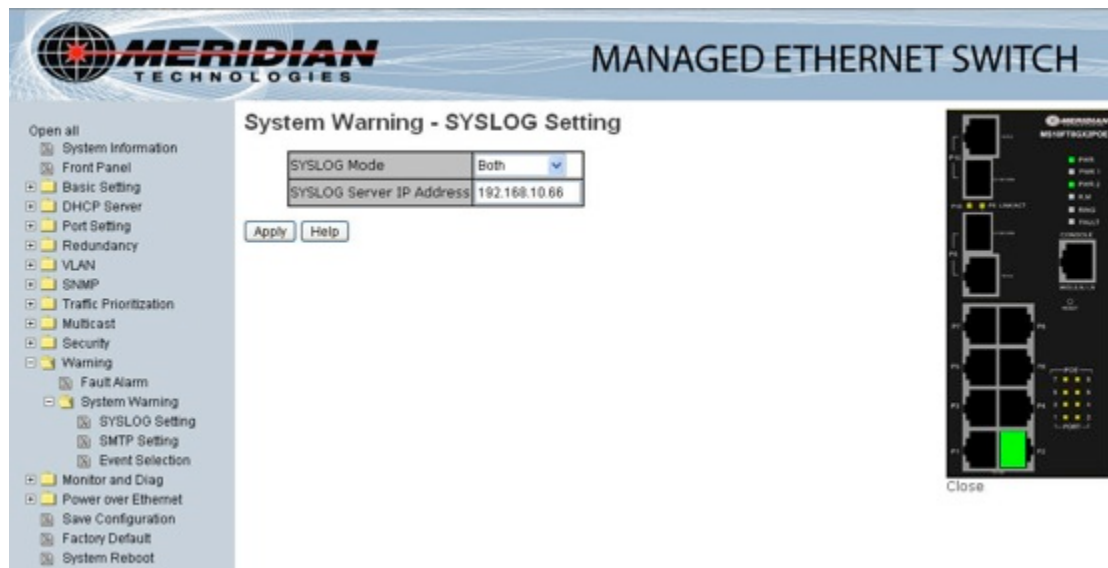
Label	Description
Power Failure	Mark the blank of PWR 1 or PWR 2 to monitor.
Port Link Down/Broken	Mark the blank of port 1 to port 8 to monitor.
Apply	Click “ Apply ” to activate the configurations.
Help	Show help file.

5.1.13.2 System Alarm

System alarm support two warning mode: 1. SYSLOG. 2. E-MAIL. You can monitor switch through selected system events.

System Warning – SYSLOG Setting

The SYSLOG is a protocol to transmit event notification messages across networks. Please refer to RFC 3164 - The BSD SYSLOG Protocol



System Warning – SYSLOG Setting interface

The following table describes the labels in this screen.

Label	Description
SYSLOG Mode	Disable: disable SYSLOG. Client Only: log to local system. Server Only: log to a remote SYSLOG server. Both: log to both of local and remote server.
SYSLOG Server IP	The remote SYSLOG Server IP address.

Address	
Apply	Click “ Apply ” to activate the configurations.
Help	Show help file.

System Warning – SMTP Setting

The SMTP (Simple Mail Transfer Protocol) is a protocol for e-mail transmission across the Internet. Please refer to RFC 821 - Simple Mail Transfer Protocol for more detailed information.

System Warning - SMTP Setting

E-mail Alert : ☒ Enable

SMTP Server Address	192.168.10.66
Sender E-mail Address	administrator
Mail Subject	Automated Email Alert
☐ Authentication	
Recipient E-mail Address 1	test@192.168.10.66
Recipient E-mail Address 2	
Recipient E-mail Address 3	
Recipient E-mail Address 4	
Recipient E-mail Address 5	
Recipient E-mail Address 6	

Close

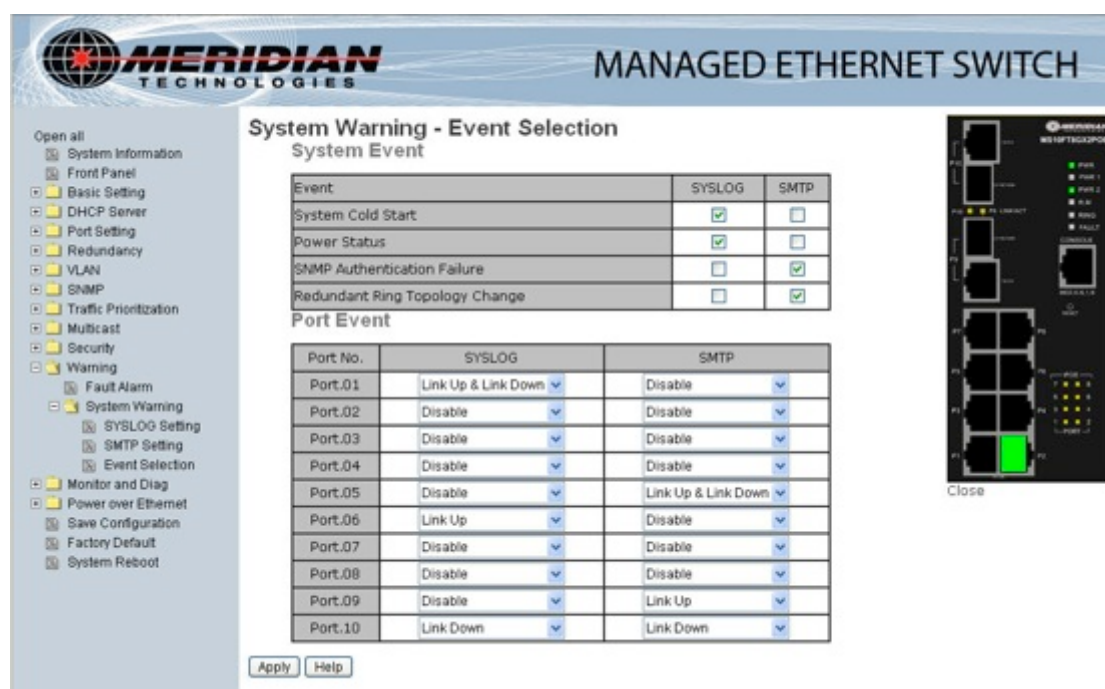
System Warning – SMTP Setting interface

The following table describes the labels in this screen.

Label	Description
E-mail Alarm	Enable/Disable transmission system warning events by e-mail.
Sender E-mail Address	The SMTP server IP address
Mail Subject	The Subject of the mail
Authentication	• Username: the authentication username. • Password: the authentication password. • Confirm Password: re-enter password.
Recipient E-mail Address	The recipient's E-mail address. It supports 6 recipients for a mail.
Apply	Click “ Apply ” to activate the configurations.
Help	Show help file.

System Warning – Event Selection

SYSLOG and SMTP are the two warning methods supported by the system. Check the corresponding box to enable the system event warning method you wish to use. Please note that the box cannot be checked when SYSLOG or SMTP is disabled.



System Warning – Event Selection interface

The following table describes the labels in this screen.

Label	Description
System Event	
System Cold Start	Alert when system restart
Power Status	Alert when a power up or down
SNMP Authentication Failure	Alert when SNMP authentication failure.
M-Ring Topology Change	Alert when M-Ring topology changes.
Port Event SYSLOG / SMTP event	• Disable • Link Up • Link Down • Link Up & Link Down
Apply	Click " Apply " to activate the configurations.
Help	Show help file.

5.1.14 Monitor and Diag

5.1.14.1 MAC Address Table

Refer to IEEE 802.1 D Sections 7.9. The MAC Address Table, that is Filtering Database, supports queries by the Forwarding Process, as to whether a frame received by a given port with a given destination MAC address is to be forwarded through a given potential transmission port.



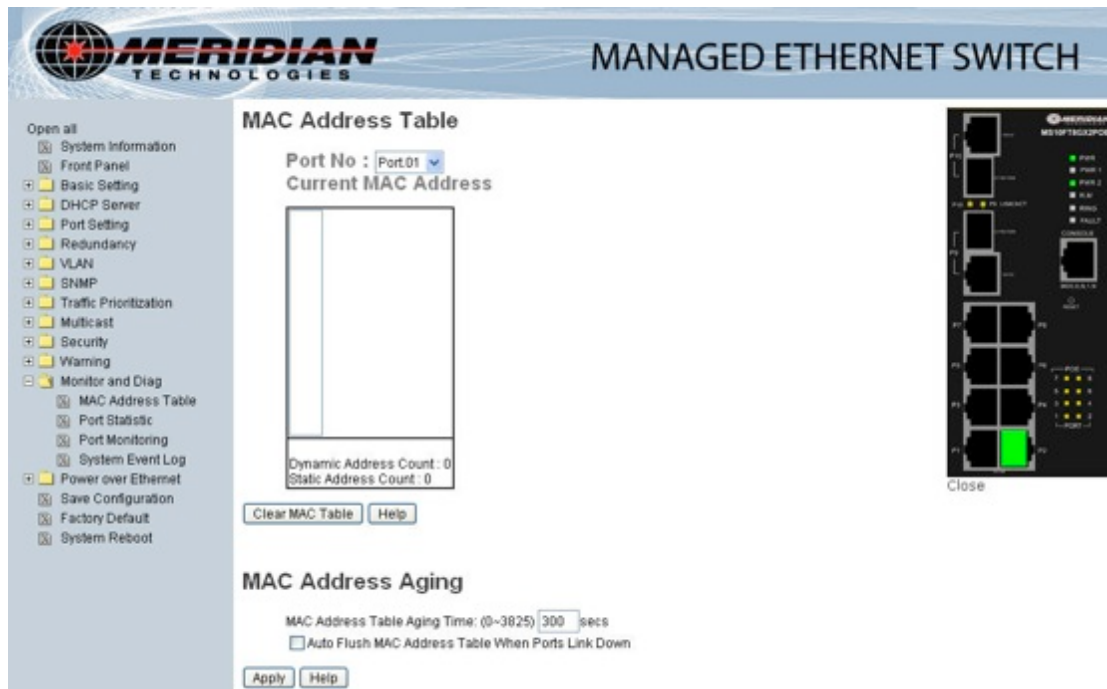
MAC Address Table interface

The following table describes the labels in this screen.

Label	Description
Port NO. :	Show all MAC addresses mapping to a selected port in table.
Clear MAC Table	Clear all MAC addresses in table
Help	Show help file.

5.1.14.2 MAC Address Aging

You can set the MAC Address aging timer. As time expires, the unused MAC will be cleared from MAC table. The MS10FT8GX2POEH also supports Auto Flush MAC Address Table When ports Link Down.



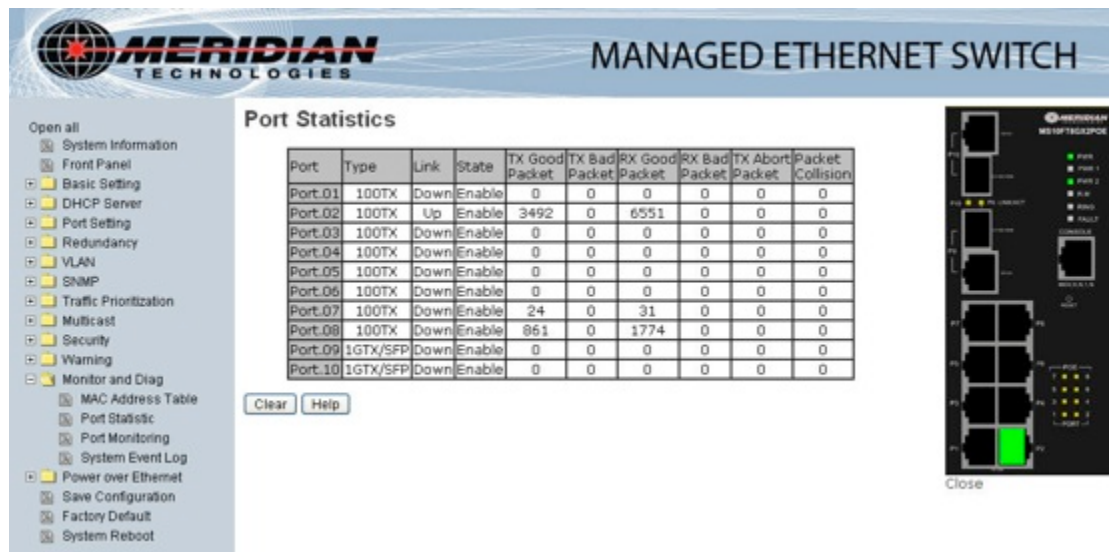
MAC Address Aging interface

The following table describes the labels in this screen.

Label	Description
MAC Address Table Aging Time	Set the aging time for MAC table. The value is between 0 and 3825. Default setting is 300 seconds.
Auto Flush MAC Address Table When ports Link Down	Enable this function,
Apply	Click “ Apply ” to activate the configurations.
Help	Show help file.

5.1.14.3 Port Statistics

Port statistics show several statistics counters for all ports



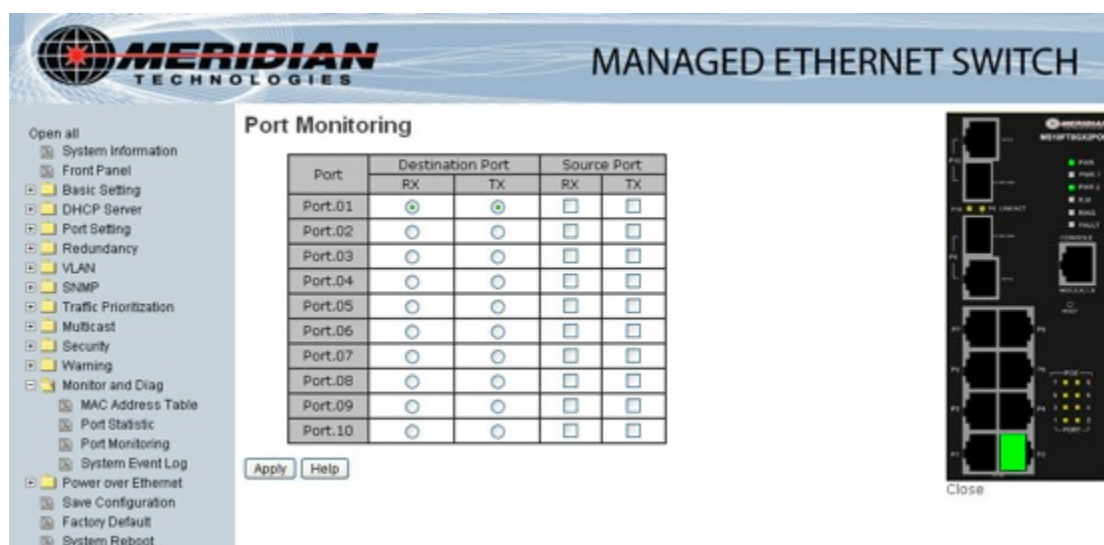
Port Statistics interface

The following table describes the labels in this screen.

Label	Description
Type	Show port speed and media type.
Link	Show port link status.
State	Show ports enable or disable.
TX GOOD Packet	The number of good packets sent by this port.
TX Bad Packet	The number of bad packets sent by this port.
RX GOOD Packet	The number of good packets received by this port.
RX Bad Packet	The number of bad packets received by this port.
TX Abort Packet	The number of packets aborted by this port.
Packet Collision	The number of times a collision detected by this port.
Clear	Clear all counters.
Help	Show help file.

5.1.14.4 Port Monitoring

The port monitoring functions support TX (egress) only, RX (ingress) only, and data TX/RX. TX monitoring sends any data that egress out a monitored TX source ports to a selected TX destination port as well. RX monitoring sends any data that ingress in the monitored RX source ports out to a selected RX destination port. In addition, the data is sent to the port where it is normally directed. When disabling the port monitoring function completely, keep all the source ports unchecked.



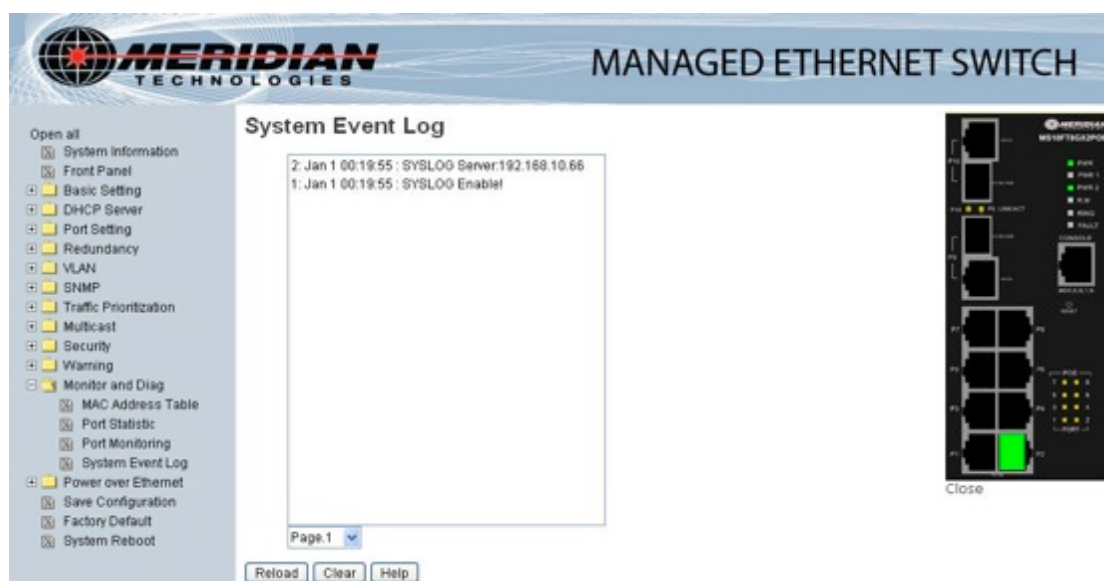
Port monitoring interface

The following table describes the labels in this screen.

Label	Description
Destination Port	The port will receive a copied frame from source port for monitoring purpose.
Source Port	The port will be monitored. Mark the blank of TX or RX to be monitored.
TX	The frames come into switch port.
RX	The frames receive by switch port.
Apply	Click " Apply " to activate the configurations.
Clear	Clear all marked blank.(disable the function)
Help	Show help file.

5.1.14.5 System Event Log

If system log client is enabled, the system event logs will be shown in this table.



System event log interface

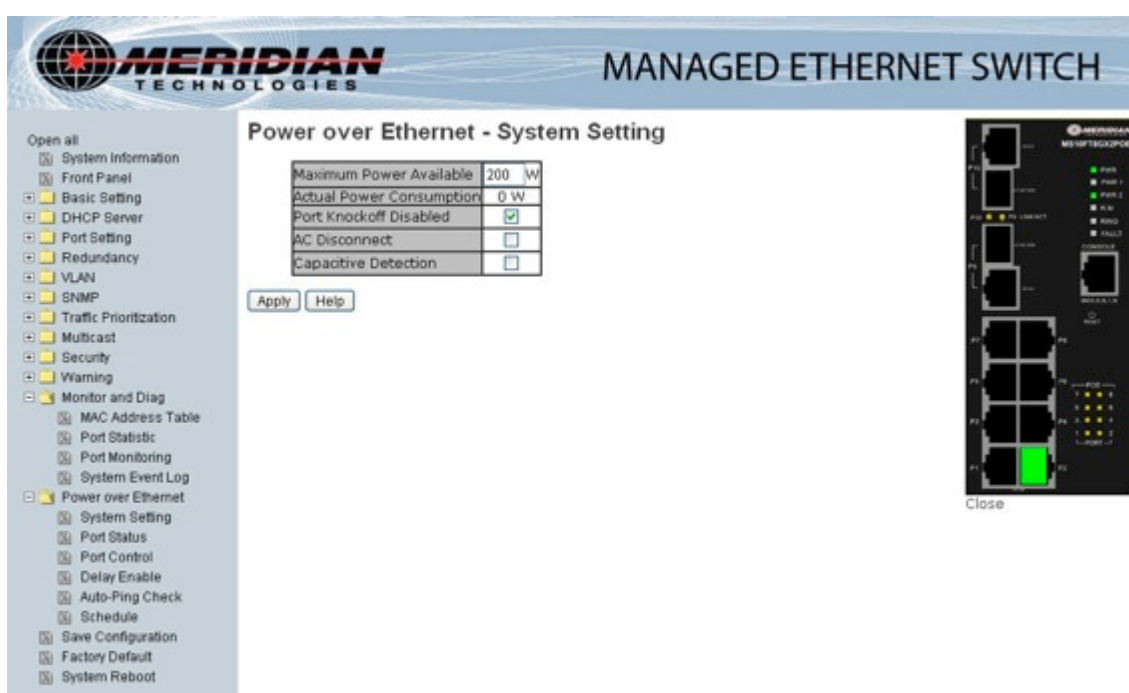
The following table describes the labels in this screen.

Label	Description
Page	Select LOG page.
Reload	To get the newest event logs and refresh this page.
Clear	Clear log.
Help	Show help file.

5.1.15 Power over Ethernet (P.O.E.)

5.1.15.1 System setting

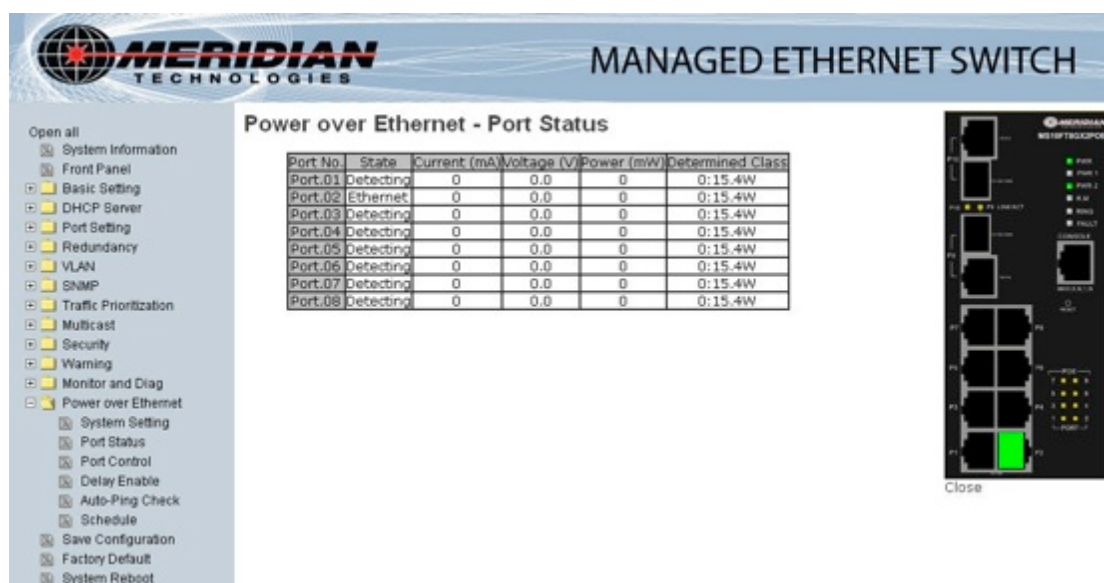
The following interface is for the P.O.E. setting interface. There are 8 ports (port 1 to port 8) act as P.S.E. (Power Supply Equipment) ports.



Label	Description
Maximum Power Available	Display <u>s</u> the maximum power available.
Actual Power Consumption	Display <u>s</u> the actual power consumption.
Port Knockoff Disabled	Mark the blank to enable “Port Knock off Disabled” function.
AC Disconnect	Mark the blank to enable “ AC Disconnect ” function.
Capacitive Detection	Mark the blank to enable “ Capacitive Detection ” function

5.1.15.2 Power over Ethernet - Port Status

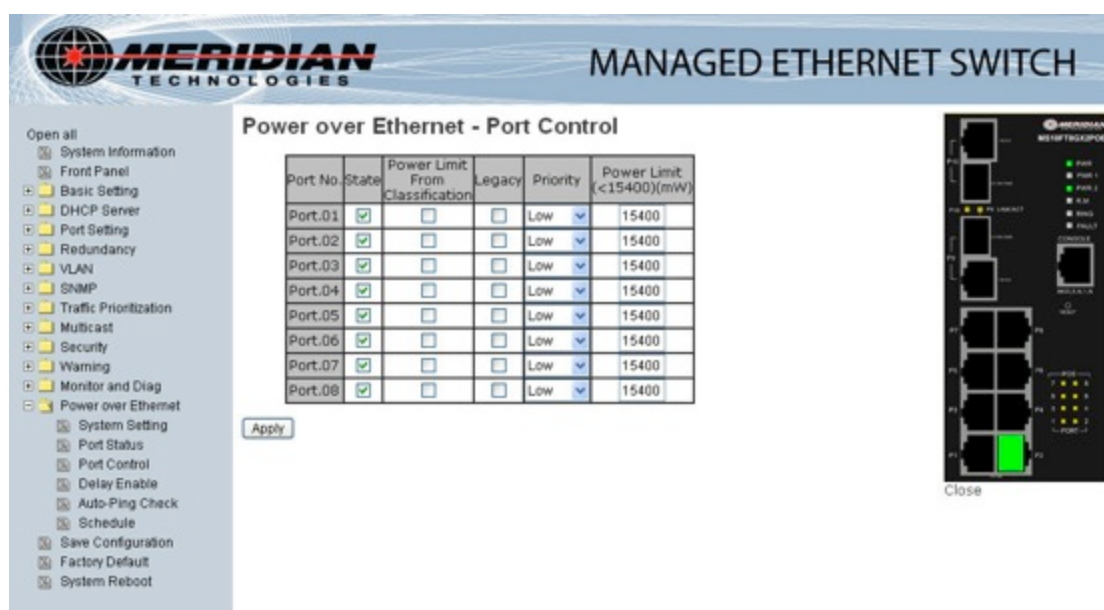
This screen shows the power status of each port enabled for POE operation.



Label	Description
Port	Port number.
Link	P.S.E. Function Port Link or Down
State	Show P.S.E. Status.
Power Limit From Classification	Set the “ Power Limit From Classification ” function for each P.O.E. ports
Current(mA)	Display current value
Voltage(V)	Display voltage value
Power(mW)	Display watt value
Determined Class	Display power class. When the Bypass classification enable, the class value will not show in here

5.1.15.3 Power over Ethernet - Port Control

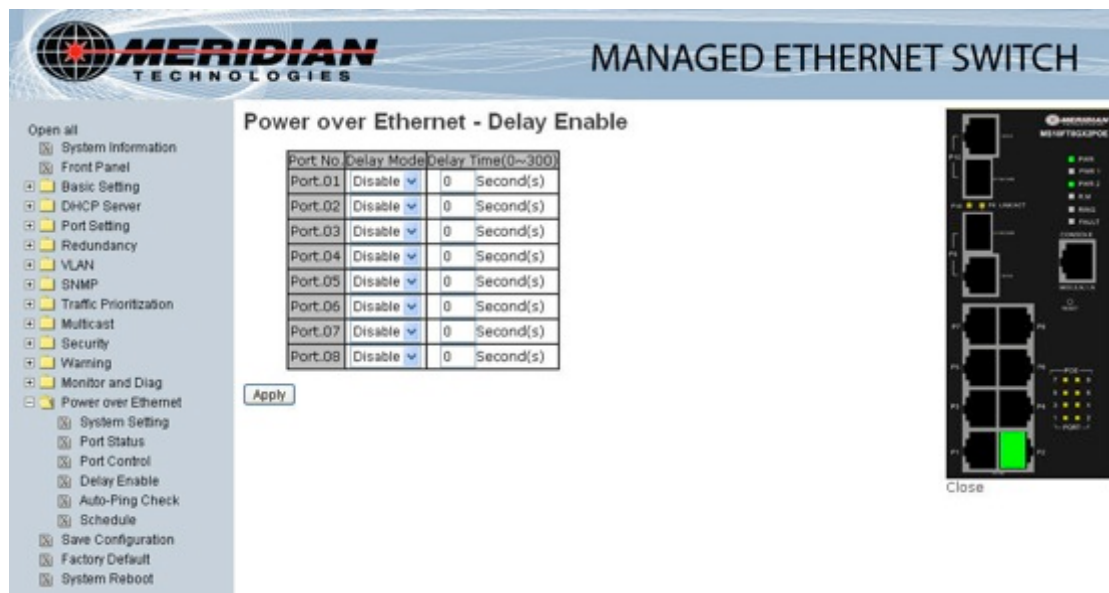
The following screen is used to configure the POE interface. There are 8 ports (1 through 8). Each can be configured as P.S.E. (Power Supply Equipment) ports.



Label	Description
Port	Port number.
Enable state	Mark the blank to enable P.O.E. function for specific ports
Power Limit From Classification	Set the “ Power Limit From Classification ” function for each P.O.E. ports
Legacy	The legacy detection is to identify the PD devices that did not follow the IEEE 802.3at standard their unique electrical signatures in order for the P.O.E. switch can provide the power to those PD devices
Priority	Set port priority for the P.O.E. power management. 1 = C (critical), 2 = H (High), 3 = L (Low)
Power Limit	Set the power limit value. The maximum value must be < 36000

5.1.15.4 Power over Ethernet - Delay Enable

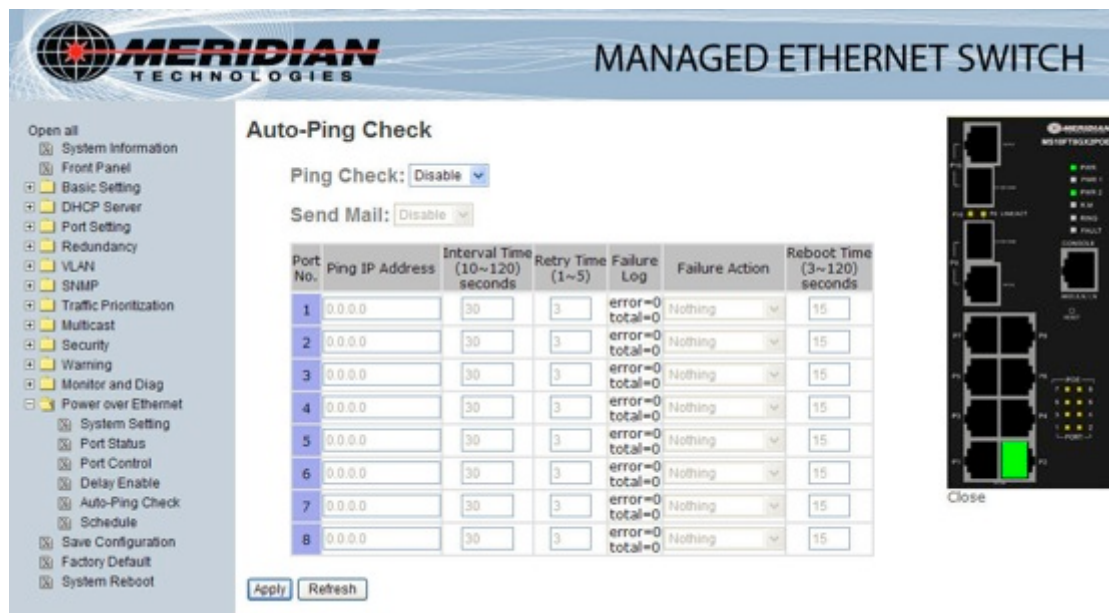
With this feature, users can define their own time for enabling each port’s P.O.E. power supply.



Label	Description
Port	Port number.
Delay Mode	Enable or disable Delay Mode
Delay Time (0-300)	Time to provide power

5.1.15.5 Auto-Ping Check

You can control the P.O.E. function by using the ping command in order to turn on or off the P.O.E. device connected to the assigned port.

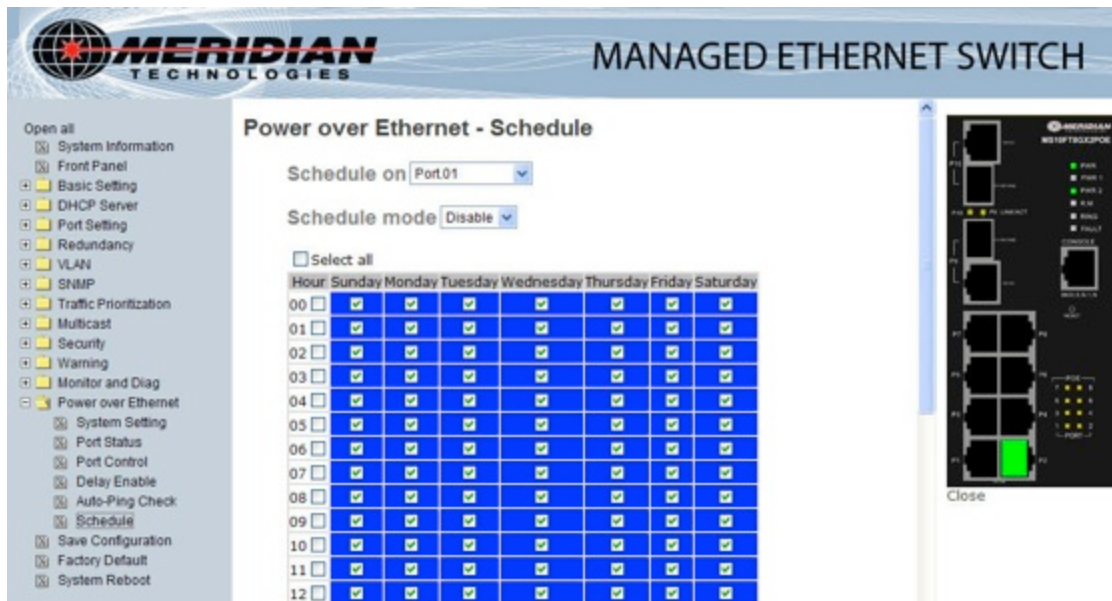


The following table describes the labels in this screen.

Label	Description
Ping Check	Enable or disable Ping Check function
Send Mail	When " ping " fails, can notify users by mail
Port	You can appoint to want to control P.O.E. port number
Ping IP Address	Set up IP Address
Interval Time	Spacing interval to set up Ping (10 sec~120 sec)
Retry Time	Set up the number of times of ping
Failure Log	Note down " Ping Check " a result of movement after starting.
Failure Action	Set up movements wanted to carry out
Reboot Time	Switch ping check failure " P.O.E. " restarts the buffer time of switch.

5.1.15.6 Schedule

The user can use this feature to schedule specific dates and times for either enabling or disabling the PoE function of the switch. Note that the SNTP Function must be enabled.



The following table describes the labels in this screen.

Label	Description
Schedule on	Setting action port
Schedule mode	Schedule mode enable or disable
Select all	Select all Data & Time
Hour	Set up enable Time
Sunday~Saturday	Set up enable Data

5.1.16 Save Configuration

If any system configurations have changed, the **“Save Configuration”** box should be clicked in order to save current configuration data to the permanent flash memory. Otherwise, the current configuration will be lost when power is removed or the system is reset.

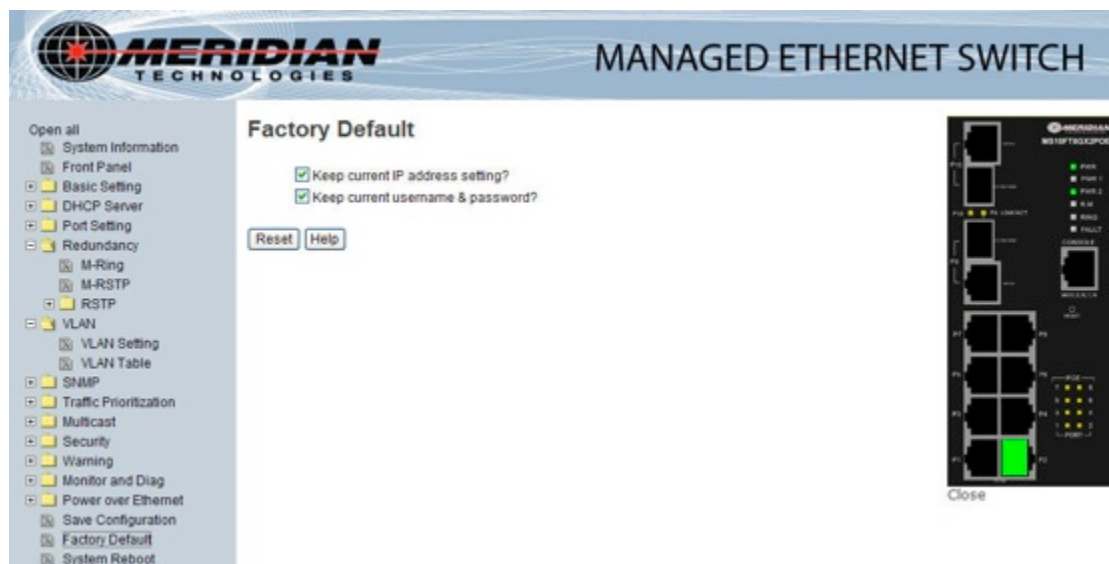


System Configuration interface

The following table describes the labels in this screen.

Label	Description
Save	Save all configurations.
Help	Show help file.

5.1.17 Factory Default

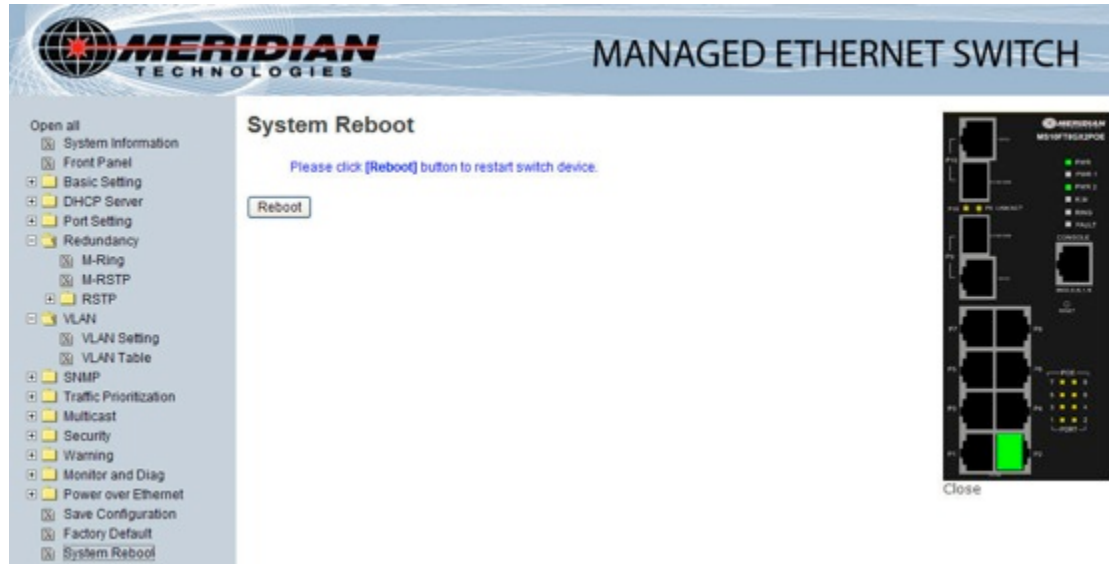


Factory Default interface

Reset switch to factory default configurations. Click **Reset** to reset all configurations to the original factory default values. You can select “**Keep current IP address setting**” and “**Keep current username & password**” to keep the current IP and username and

passwords.

5.1.18 System Reboot



System Reboot interface

Command Line Interface Management

6.1 About CLI Management

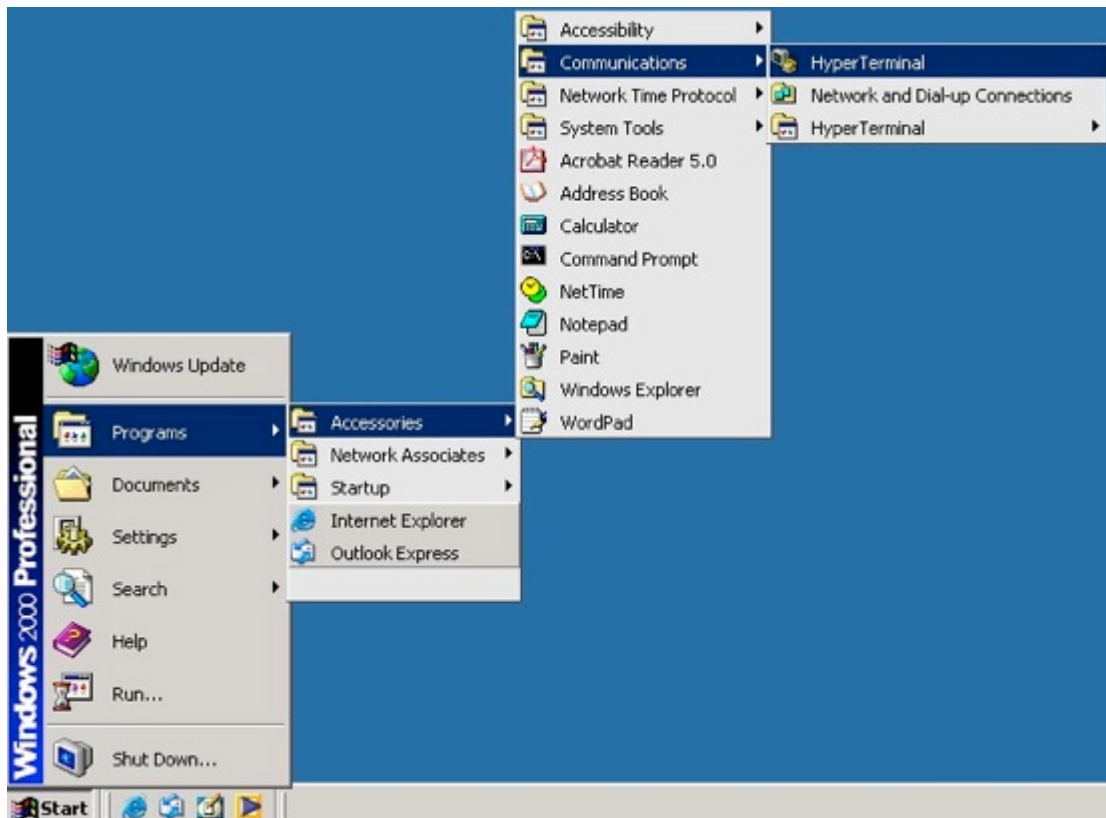
Besides WEB-base management, the MS10FT8GX2POEH also supports CLI management. You can use console or telnet to manage the switch by CLI.

CLI Management by RS-232 Serial Console (9600, 8, none, 1, none)

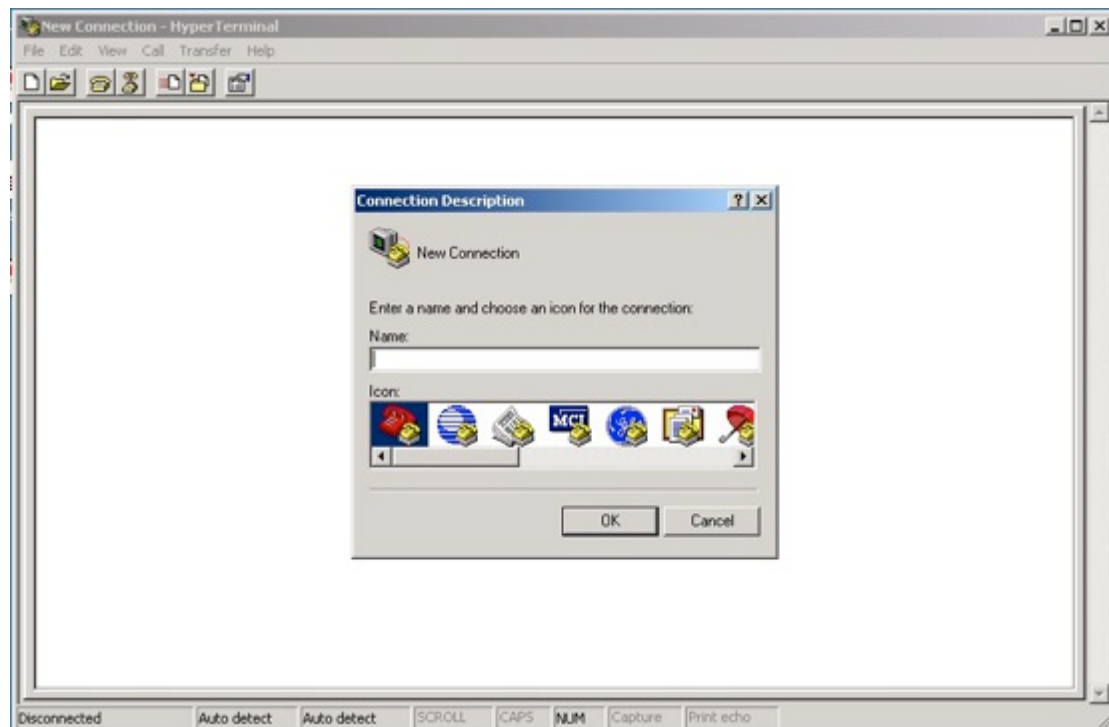
Before Configuring by RS-232 serial console, use an RJ45 to DB9-F cable to connect the Switches' RS-232 Console port to your computer's COM port.

Follow the steps below to access the console via RS-232 serial cable.

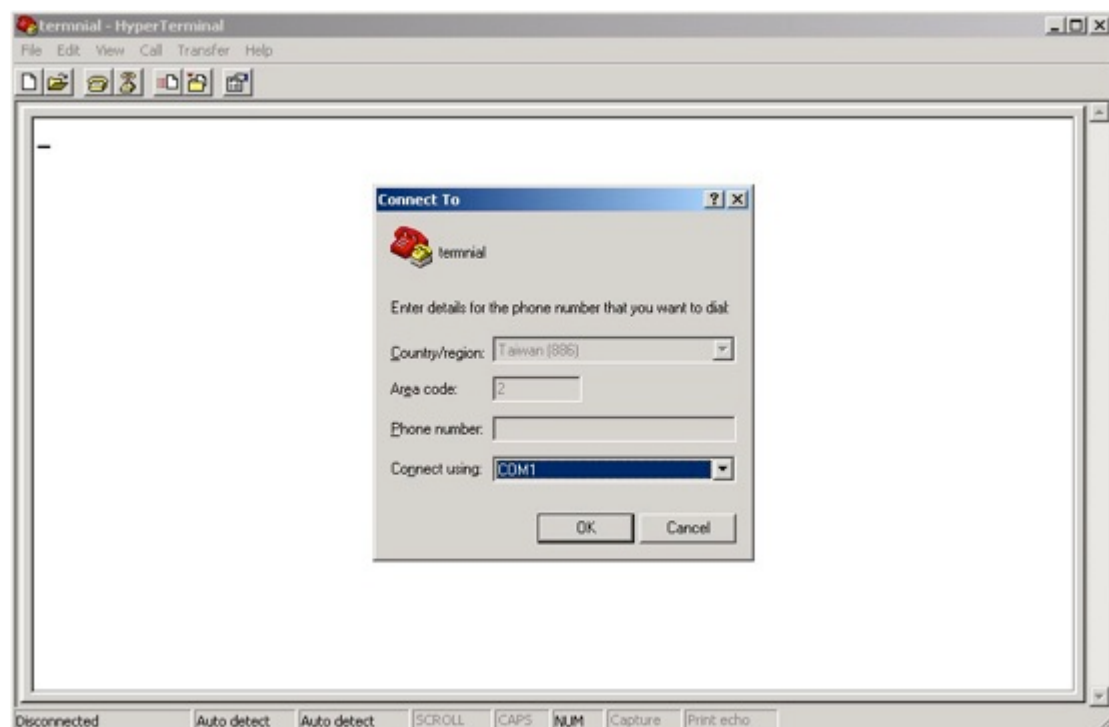
Step 1. From the Windows desktop, click on Start -> Programs -> Accessories -> Communications -> Hyper Terminal



Step 2. Input a name for new connection



Step 3. Select the appropriate COM port number



Step 4. The COM port should be set to the following:

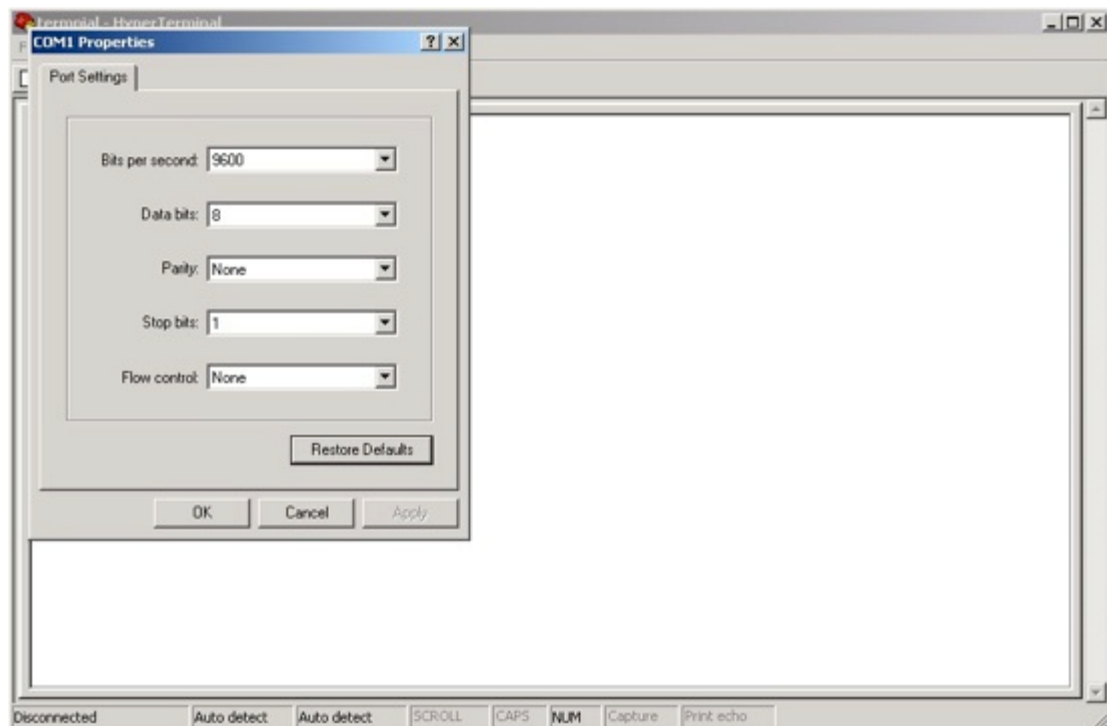
Baud rate: 9600

of data bits: 8

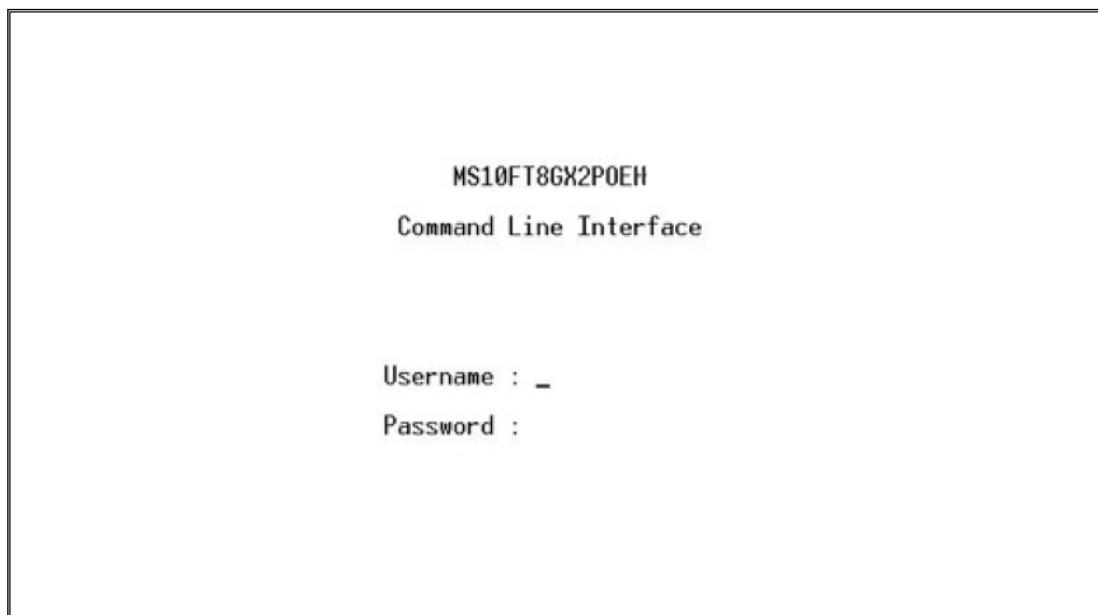
Parity: None

Stop bits: 1

Flow control: None



Step 5. The Console login screen will appear. Use the keyboard to enter the Username and Password (The same with the password for Web Browser), then press “**Enter**”.



CLI Management by Telnet

Users can use “TELNET” to configure the switches.

The default value is as below:

IP Address: **192.168.10.1**

Subnet Mask: **255.255.255.0**

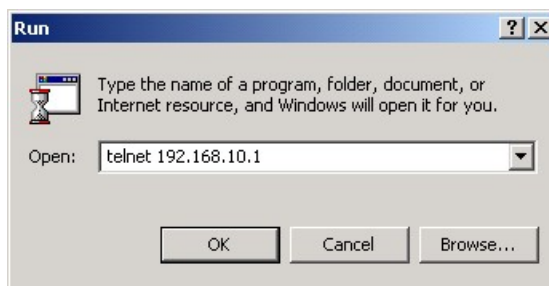
Default Gateway: **192.168.10.254**

User Name: **admin**

Password: **admin**

Follow the steps below to access the console via Telnet.

Step 1. Telnet to the IP address of the switch from the Windows “Run” command (or from the MS-DOS prompt) as below.



Step 2. The Login screen will appear. Use the keyboard to enter the Username and Password (The same with the password for Web Browser), and then press “Enter”

MS10FT8GX2POEH
Command Line Interface

Username : _

Password :

Commands Level

Modes	Access Method	Prompt	Exit Method	About This Model
User EXEC	Begin a session with your switch.	switch>	Enter logout or quit .	The user command available at the level of user is the subset of those available at the privileged level. Use this mode to • Enter menu mode. • Display system information.
Privileged EXEC	Enter the enable command while in user EXEC mode.	switch#	Enter disable to exit.	The privileged command is advance mode Privileged this mode to • Display advance function status • save configures
Global configuration	Enter the configure command while in privileged EXEC mode.	switch(config)#	To exit to privileged EXEC mode, enter exit or end	Use this mode to configure parameters that apply to your Switch as a whole.
VLAN	Enter the vlan	switch(vla	To exit to	Use this mode to

database	database command while in privileged EXEC mode.	n)#	user EXEC mode, enter exit .	configure VLAN-specific parameters.
Interface configuration	Enter the interface command (with a specific interface) while in global configuration mode	switch(config-if)#	To exit to global configuration mode, Enter exit . To exist privileged EXEC mode or end .	Use this mode to configure parameters for the switch and Ethernet ports.

Symbol of Command Level.

Mode	Symbol of Command Level
User EXEC	E
Privileged EXEC	P
Global configuration	G
VLAN database	V
Interface configuration	I

6.2 Commands Set List—System Commands Set

MS10FT8GX2POEH Commands	Level	Description	Example
show config	E	Show switch configuration	switch>_show config
show terminal	P	Show console information	switch#_show terminal
write memory	P	Save your configuration into permanent memory (flash rom)	switch#_write memory
system name [System Name]	G	Configure system name	switch(config)#system name xxx
system location	G	Set switch system	switch(config)#system location xxx

[System Location]		location string	
system description [System Description]	G	Set switch system description string	switch(config)#system description xxx
system contact [System Contact]	G	Set switch system contact window string	switch(config)#system contact xxx
show system-info	E	Show system information	switch>show system-info
ip address [Ip-address] [Subnet-mask] [Gateway]	G	Configure the IP address of switch	switch(config)#ip address 192.168.1.1 255.255.255.0 192.168.1.254
ip dhcp	G	Enable DHCP client function of switch	switch(config)#ip dhcp
show ip	P	Show IP information of switch	switch#show ip
no ip dhcp	G	Disable DHCP client function of switch	switch(config)#no ip dhcp
reload	G	Halt and perform a cold restart	switch(config)#reload
default	G	Restore to default	Switch(config)#default
admin username [Username]	G	Changes a login username. (maximum 10 words)	switch(config)#admin username xxxxxx
admin password [Password]	G	Specifies a password (maximum 10 words)	switch(config)#admin password xxxxxx
show admin	P	Show administrator information	switch#show admin
dhcpserver enable	G	Enable DHCP Server	switch(config)#dhcp_server enable
dhcpserver lowip [Low IP]	G	Configure low IP address for IP pool	switch(config)# dhcp_server low_ip 192.168.1.1
dhcpserver highip [High IP]	G	Configure high IP address for IP pool	switch(config)# dhcp_server high_ip 192.168.1.50
dhcpserver subnetmask [Subnet mask]	G	Configure subnet mask for DHCP clients	switch(config)#dhcpserver subnetmask 255.255.255.0
dhcpserver gateway [Gateway]	G	Configure gateway for DHCP clients	switch(config)#dhcp_server gateway 192.168.1.254
dhcpserver dnsip	G	Configure DNS IP for	switch(config)# dhcp_server dns_ip

[DNS IP]		DHCP clients	192.168.1.1
dhcpserver leasetime [Hours]	G	Configure lease time (in hour)	switch(config)#dhcpserver leasetime 1
dhcpserver ipbinding [IP address]	I	Set static IP for DHCP clients by port	switch(config)#interface fastEthernet 2 switch(config-if)#dhcpserver ipbinding 192.168.1.1
show dhcpserver configuration	P	Show configuration of DHCP server	switch#show dhcpserver configuration
show dhcpserver clients	P	Show client entries of DHCP server	switch#show dhcpserver clients
show dhcpserver ip-binding	P	Show IP-Binding information of DHCP server	switch#show dhcpserver ip-binding
no dhcpserver	G	Disable DHCP server function	switch(config)#no dhcpserver
security enable	G	Enable IP security function	switch(config)#security enable
security http	G	Enable IP security of HTTP server	switch(config)#security http
security telnet	G	Enable IP security of telnet server	switch(config)#security telnet
security ip [Index(1..10)] [IP Address]	G	Set the IP security list	switch(config)#security ip 1 192.168.1.55
show security	P	Show the information of IP security	switch#show security
no security	G	Disable IP security function	switch(config)#no security
no security http	G	Disable IP security of HTTP server	switch(config)#no security http
no security telnet	G	Disable IP security of telnet server	switch(config)#no security telnet

6.3 Commands Set List—Port Commands Set

MS10FT8GX2POEHCom	Level	Description	Example
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mands			
interface fastEthernet [Portid]	G	Choose the port for modification.	switch(config)#interface fastEthernet 2
duplex [full half]	I	Use the duplex configuration command to specify the duplex mode of operation for Fast Ethernet.	switch(config)#interface fastEthernet 2 switch(config-if)#duplex full
speed [10 100 1000 auto]	I	Use the speed configuration command to specify the speed mode of operation for Fast Ethernet., the speed can't be set to 1000 if the port isn't a giga port..	switch(config)#interface fastEthernet 2 switch(config-if)#speed 100
flowcontrol mode [Symmetric Asymmetric]	I	Use the flowcontrol configuration command on Ethernet ports to control traffic rates during congestion.	switch(config)#interface fastEthernet 2 switch(config-if)#flowcontrol mode Asymmetric
no flowcontrol	I	Disable flow control of interface	switch(config-if)#no flowcontrol
security enable	I	Enable security of interface	switch(config)#interface fastEthernet 2 switch(config-if)#security enable
no security	I	Disable security of interface	switch(config)#interface fastEthernet 2 switch(config-if)#no security
bandwidth type all	I	Set interface ingress limit frame type to "accept all frame"	switch(config)#interface fastEthernet 2 switch(config-if)#bandwidth type all
bandwidth type broadcast-multicast-floo	I	Set interface ingress limit frame type to	switch(config)#interface fastEthernet 2

ded-unicast		“accept broadcast, multicast, and flooded unicast frame”	switch(config-if)#bandwidth type broadcast-multicast-flooded-unicast
bandwidth type broadcast-multicast	I	Set interface ingress limit frame type to “accept broadcast and multicast frame”	switch(config)#interface fastEthernet 2 switch(config-if)#bandwidth type broadcast-multicast
bandwidth type broadcast-only	I	Set interface ingress limit frame type to “only accept broadcast frame”	switch(config)#interface fastEthernet 2 switch(config-if)#bandwidth type broadcast-only
bandwidth in [Value]	I	Set interface input bandwidth. Rate Range is from 100 kbps to 102400 kbps or to 256000 kbps for giga ports, and zero means no limit.	switch(config)#interface fastEthernet 2 switch(config-if)#bandwidth in 100
bandwidth out [Value]	I	Set interface output bandwidth. Rate Range is from 100 kbps to 102400 kbps or to 256000 kbps for giga ports, and zero means no limit.	switch(config)#interface fastEthernet 2 switch(config-if)#bandwidth out 100
show bandwidth	I	Show interfaces bandwidth control	switch(config)#interface fastEthernet 2 switch(config-if)#show bandwidth
state [Enable Disable]	I	Use the state interface configuration command to specify the state mode of operation for Ethernet ports. Use the disable form of this	switch(config)#interface fastEthernet 2 switch(config-if)#state Disable

		command to disable the port.	
show interface configuration	I	show interface configuration status	switch(config)#interface fastEthernet 2 switch(config-if)#show interface configuration
show interface status	I	show interface actual status	switch(config)#interface fastEthernet 2 switch(config-if)#show interface status
show interface accounting	I	show interface statistic counter	switch(config)#interface fastEthernet 2 switch(config-if)#show interface accounting
no accounting	I	Clear interface accounting information	switch(config)#interface fastEthernet 2 switch(config-if)#no accounting

6.4 Commands Set List—Trunk command set

MS10FT8GX2POEH Commands	Level	Description	Example
aggregator priority [1to65535]	G	Set port group system priority	switch(config)#aggregator priority 22
aggregator activityport [Port Numbers]	G	Set activity port	switch(config)#aggregator activityport 2
aggregator group [GroupID] [Port-list] lACP workp [Workport]	G	Assign a trunk group with LACP active. [GroupID] :1to3 [Port-list]:Member port list, This parameter could be a port range(ex.1-4) or a port list separate by a comma(ex.2, 3, 6) [Workport]: The	switch(config)#aggregator group 1 1-4 lACP workp 2 or switch(config)#aggregator group 2 1,4,3 lACP workp 3

		amount of work ports, this value could not be less than zero or be large than the amount of member ports.	
aggregator group [GroupID] [Port-list] nolacp	G	Assign a static trunk group. [GroupID] :1to3 [Port-list]:Member port list, This parameter could be a port range(ex.1-4) or a port list separate by a comma(ex.2, 3, 6)	switch(config)#aggregator group 1 2-4 nolacp or switch(config)#aggregator group 1 3,1,2 nolacp
show aggregator	P	Show the information of trunk group	switch#show aggregator
no aggregator lacp [GroupID]	G	Disable the LACP function of trunk group	switch(config)#no aggregator lacp 1
no aggregator group [GroupID]	G	Remove a trunk group	switch(config)#no aggregator group 2

6.5 Commands Set List—VLAN command set

MS10FT8GX2POEH Commands	Level	Description	Example
vlan database	P	Enter VLAN configure mode	switch#vlan database
vlan [8021q gvrp]	V	To set switch VLAN mode.	switch(vlan)# vlanmode 802.1q or switch(vlan)# vlanmode gvrp
no vlan [VID]	V	Disable vlan group(by VID)	switch(vlan)#no vlan 2
no gvrp	V	Disable GVRP	switch(vlan)#no gvrp
IEEE 802.1Q VLAN			
vlan 8021q port [PortNumber] access-link untag	V	Assign a access link for VLAN by port, if the port belong to a trunk	switch(vlan)#vlan 802.1q port 3 access-link untag 33

[UntaggedVID]		group, this command can't be applied.	
vlan 8021q port [PortNumber] trunk-link tag [TaggedVID List]	V	Assign a trunk link for VLAN by port, if the port belong to a trunk group, this command can't be applied.	switch(vlan)#vlan 8021q port 3 trunk-link tag 2,3,6,99 or switch(vlan)#vlan 8021q port 3 trunk-link tag 3-20
vlan 8021q port [PortNumber] hybrid-link untag [UntaggedVID] tag [TaggedVID List]	V	Assign a hybrid link for VLAN by port, if the port belong to a trunk group, this command can't be applied.	switch(vlan)# vlan 8021q port 3 hybrid-link untag 4 tag 3,6,8 or switch(vlan)# vlan 8021q port 3 hybrid-link untag 5 tag 6-8
vlan 8021q aggreateor [TrunkID] access-link untag [UntaggedVID]	V	Assign a access link for VLAN by trunk group	switch(vlan)#vlan 8021q aggreateor 3 access-link untag 33
vlan 8021q aggreateor [TrunkID] trunk-link tag [TaggedVID List]	V	Assign a trunk link for VLAN by trunk group	switch(vlan)#vlan 8021q aggreateor 3 trunk-link tag 2,3,6,99 or switch(vlan)#vlan 8021q aggreateor 3 trunk-link tag 3-20
vlan 8021q aggreateor [PortNumber] hybrid-link untag [UntaggedVID] tag [TaggedVID List]	V	Assign a hybrid link for VLAN by trunk group	switch(vlan)# vlan 8021q aggreateor 3 hybrid-link untag 4 tag 3,6,8 or switch(vlan)# vlan 8021q aggreateor 3 hybrid-link untag 5 tag 6-8
show vlan [VID] or show vlan	V	Show VLAN information	switch(vlan)#show vlan 23

6.6 Commands Set List—Spanning Tree command set

MS10FT8GX2POEH Commands	Level	Description	Example
spanning-tree enable	G	Enable spanning tree	switch(config)#spanning-tree enable

spanning-tree priority [0to61440]	G	Configure spanning tree priority parameter	switch(config)#spanning-tree priority 32767
spanning-tree max-age [seconds]	G	Use the spanning-tree max-age global configuration command to change the interval between messages the spanning tree receives from the root switch. If a switch does not receive a bridge protocol data unit (BPDU) message from the root switch within this interval, it recomputed the Spanning Tree Protocol (STP) topology.	switch(config)# spanning-tree max-age 15
spanning-tree hello-time [seconds]	G	Use the spanning-tree hello-time global configuration command to specify the interval between hello bridge protocol data units (BPDUs).	switch(config)#spanning-tree hello-time 3
spanning-tree forward-time [seconds]	G	Use the spanning-tree forward-time global configuration command to set the forwarding-time for the specified spanning-tree instances. The	switch(config)# spanning-tree forward-time 20

		forwarding time determines how long each of the listening and learning states last before the port begins forwarding.	
stp-path-cost [1to200000000]	I	Use the spanning-tree cost interface configuration command to set the path cost for Spanning Tree Protocol (STP) calculations. In the event of a loop, spanning tree considers the path cost when selecting an interface to place into the forwarding state.	switch(config)#interface fastEthernet 2 switch(config-if)#stp-path-cost 20
stp-path-priority [Port Priority]	I	Use the spanning-tree port-priority interface configuration command to configure a port priority that is used when two switches tie for position as the root switch.	switch(config)#interface fastEthernet 2 switch(config-if)# stp-path-priority 127
stp-admin-p2p [Auto True False]	I	Admin P2P of STP priority on this interface.	switch(config)#interface fastEthernet 2 switch(config-if)# stp-admin-p2p Auto
stp-admin-edge [True False]	I	Admin Edge of STP priority on this	switch(config)#interface fastEthernet 2

		interface.	switch(config-if)# stp-admin-edge True
stp-admin-non-stp [True False]	I	Admin NonSTP of STP priority on this interface.	switch(config)#interface fastEthernet 2 switch(config-if)# stp-admin-non-stp False
Show spanning-tree	E	Display a summary of the spanning-tree states.	switch>show spanning-tree
no spanning-tree	G	Disable spanning-tree.	switch(config)#no spanning-tree

6.7 Commands Set List—QoS command set

MS10FT8GX2POEH Commands	Level	Description	Example
qos policy [weighted-fair strict]	G	Select QOS policy scheduling	switch(config)#qos policy weighted-fair
qos prioritytype [port-based cos-only tos-only cos-first tos-first]	G	Setting of QOS priority type	switch(config)#qos prioritytype
qos priority portbased [Port] [lowest low middle high]	G	Configure Port-based Priority	switch(config)#qos priority portbased 1 low
qos priority cos [Priority][lowest low middle high]	G	Configure COS Priority	switch(config)#qos priority cos 22 middle
qos priority tos [Priority][lowest low middle high]	G	Configure TOS Priority	switch(config)#qos priority tos 3 high
show qos	P	Display the information of QoS configuration	switch>show qos
no qos	G	Disable QoS function	switch(config)#no qos

6.8 Commands Set List—IGMP command set

MS10FT8GX2POEH Commands	Level	Description	Example
igmp enable	G	Enable IGMP snooping function	switch(config)#igmp enable
lgmp-query auto	G	Set IGMP query to auto mode	switch(config)#lgmp-query auto
lgmp-query force	G	Set IGMP query to force mode	switch(config)#lgmp-query force
show igmp configuration	P	Displays the details of an IGMP configuration.	switch#show igmp configuration
show igmp multi	P	Displays the details of an IGMP snooping entries.	switch#show igmp multi
no igmp	G	Disable IGMP snooping function	switch(config)#no igmp
no igmp-query	G	Disable IGMP query	switch#no igmp-query

6.9 Commands Set List—MAC/Filter Table command set

MS10FT8GX2POEH Commands	Level	Description	Example
mac-address-table static hwaddr [MAC]	I	Configure MAC address table of interface (static).	switch(config)#interface fastEthernet 2 switch(config-if)#mac-address-table static hwaddr 000012345678
mac-address-table filter hwaddr [MAC]	G	Configure MAC address table(filter)	switch(config)#mac-address-table filter hwaddr 000012348678
show mac-address-table	P	Show all MAC address table	switch#show mac-address-table
show mac-address-table static	P	Show static MAC address table	switch#show mac-address-table static
show mac-address-table filter	P	Show filter MAC address table.	switch#show mac-address-table filter
no mac-address-table	I	Remove an entry of	switch(config)#interface fastEthernet

static hwaddr [MAC]		MAC address table of interface (static)	2 switch(config-if)#no mac-address-table static hwaddr 000012345678
no mac-address-table filter hwaddr [MAC]	G	Remove an entry of MAC address table (filter)	switch(config)#no mac-address-table filter hwaddr 000012348678
no mac-address-table	G	Remove dynamic entry of MAC address table	switch(config)#no mac-address-table

6.10 Commands Set List—SNMP command set

MS10FT8GX2POEH Commands	Level	Description	Example
snmp agent-mode [v1v2c v3]	G	Select the agent mode of SNMP	switch(config)#snmp agent-mode v1v2c
snmp-server host [IP address] community [Community-string] trap-version [v1 v2c]	G	Configure SNMP server host information and community string	switch(config)#snmp-server host 192.168.10.50 community public trap-version v1 (remove) Switch(config)# no snmp-server host 192.168.10.50
snmp community-strings [Community-string] right [RO RW]	G	Configure the community string right	switch(config)#snmp community-strings public right RO or switch(config)#snmp community-strings public right RW
snmp snmpv3-user [User Name] password [Authentication Password] [Privacy Password]	G	Configure the userprofile for SNMPV3 agent. Privacy password could be empty.	switch(config)#snmp snmpv3-user test01 password AuthPW PrivPW
show snmp	P	Show SNMP configuration	switch#show snmp

show snmp-server	P	Show specified trap server information	switch#show snmp-server
no snmp community-strings [Community]	G	Remove the specified community.	switch(config)#no snmp community-strings public
no snmp snmpv3-user [User Name] password [Authentication Password] [Privacy Password]	G	Remove specified user of SNMPv3 agent. Privacy password could be empty.	switch(config)# no snmp snmpv3-user test01 password AuthPW PrivPW
no snmp-server host [Host-address]	G	Remove the SNMP server host.	switch(config)#no snmp-server 192.168.10.50

6.11 Commands Set List—Port Mirroring command set

MS10FT8GX2POEH Commands	Level	Description	Example
monitor rx	G	Set RX destination port of monitor function	switch(config)#monitor rx
monitor tx	G	Set TX destination port of monitor function	switch(config)#monitor tx
show monitor	P	Show port monitor information	switch#show monitor
monitor [RX TX Both]	I	Configure source port of monitor function	switch(config)#interface fastEthernet 2 switch(config-if)#monitor RX
show monitor	I	Show port monitor information	switch(config)#interface fastEthernet 2 switch(config-if)#show monitor
no monitor	I	Disable source port of monitor function	switch(config)#interface fastEthernet 2 switch(config-if)#no monitor

6.12 Commands Set List—802.1x command set

MS10FT8GX2POEH Commands	Level	Description	Example
8021x enable	G	Use the 802.1x global configuration command to enable 802.1x protocols.	switch(config)# 8021x enable
8021x system radiusip [IP address]	G	Use the 802.1x system radius IP global configuration command to change the radius server IP.	switch(config)# 8021x system radiusip 192.168.1.1
8021x system serverport [port ID]	G	Use the 802.1x system server port global configuration command to change the radius server port	switch(config)# 8021x system serverport 1815
8021x system accountport [port ID]	G	Use the 802.1x system account port global configuration command to change the accounting port	switch(config)# 8021x system accountport 1816
8021x system sharekey [ID]	G	Use the 802.1x system share key global configuration command to change the shared key value.	switch(config)# 8021x system sharekey 123456
8021x system nasid [words]	G	Use the 802.1x system nasid global configuration command to change the NAS ID	switch(config)# 8021x system nasid test1
8021x misc quietperiod [sec.]	G	Use the 802.1x misc quiet period global configuration command to specify the quiet period value	switch(config)# 8021x misc quietperiod 10

		of the switch.	
8021x misc txperiod [sec.]	G	Use the 802.1x misc TX period global configuration command to set the TX period.	switch(config)# 8021x misc txperiod 5
8021x misc supportimeout [sec.]	G	Use the 802.1x misc supp timeout global configuration command to set the supplicant timeout.	switch(config)# 8021x misc supportimeout 20
8021x misc servertimeout [sec.]	G	Use the 802.1x misc server timeout global configuration command to set the server timeout.	switch(config)#8021x misc servertimeout 20
8021x misc maxrequest [number]	G	Use the 802.1x misc max request global configuration command to set the MAX requests.	switch(config)# 8021x misc maxrequest 3
8021x misc reauthperiod [sec.]	G	Use the 802.1x misc reauth period global configuration command to set the reauth period.	switch(config)# 8021x misc reauthperiod 3000
8021x portstate [disable reject accept authorize]	I	Use the 802.1x port state interface configuration command to set the	switch(config)#interface fastethernet 3 switch(config-if)#8021x portstate accept

		state of the selected port.	
show 8021x	E	Display a summary of the 802.1x properties and also the port sates.	switch>show 8021x
no 8021x	G	Disable 802.1x function	switch(config)#no 8021x

6.13 Commands Set List—TFTP command set

MS10FT8GX2POEH Commands	Level	Description	Defaults Example
backup flash:backup_cfg	G	Save configuration to TFTP and need to specify the IP of TFTP server and the file name of image.	switch(config)#backup flash:backup_cfg
restore flash:restore_cfg	G	Get configuration from TFTP server and need to specify the IP of TFTP server and the file name of image.	switch(config)#restore flash:restore_cfg
upgrade flash:upgrade_fw	G	Upgrade firmware by TFTP and need to specify the IP of TFTP server and the file name of image.	switch(config)#upgrade lash:upgrade_fw

6.14 Commands Set List—SYSLOG, SMTP, EVENT command set

MS10FT8GX2POEH Commands	Level	Description	Example
systemlog ip [IP address]	G	Set System log server IP address.	switch(config)# systemlog ip 192.168.1.100

systemlog mode [client server both]	G	Specified the log mode	switch(config)# systemlog mode both
show systemlog	E	Display system log.	Switch>show systemlog
show systemlog	P	Show system log client & server information	switch#show systemlog
no systemlog	G	Disable systemlog function	switch(config)#no systemlog
smtp enable	G	Enable SMTP function	switch(config)#smtp enable
smtp serverip [IP address]	G	Configure SMTP server IP	switch(config)#smtp serverip 192.168.1.5
smtp authentication	G	Enable SMTP authentication	switch(config)#smtp authentication
smtp account [account]	G	Configure authentication account	switch(config)#smtp account User
smtp password [password]	G	Configure authentication password	switch(config)#smtp password
smtp rcptemail [Index] [Email address]	G	Configure Rcpt e-mail Address	switch(config)#smtp rcptemail 1 Alert@test.com
show smtp	P	Show the information of SMTP	switch#show smtp
no smtp	G	Disable SMTP function	switch(config)#no smtp
event device-cold-start [Systemlog SMTP Both]	G	Set cold start event type	switch(config)#event device-cold-start both
event authentication-failure [Systemlog SMTP Both]	G	Set Authentication failure event type	switch(config)#event authentication-failure both
eventM-Ring-topology-change [Systemlog SMTP Both]	G	Set s ring topology changed event type	switch(config)#event ring-topology-change both
event systemlog [Link-UP Link-Down Both]	I	Set port event for system log	switch(config)#interface fastethernet 3 switch(config-if)#event systemlog both

event smtp [Link-UP Link-Down Both]	I	Set port event for SMTP	switch(config)#interface fastethernet 3 switch(config-if)#event smtp both
show event	P	Show event selection	switch#show event
no event device-cold-start	G	Disable cold start event type	switch(config)#no event device-cold-start
no event authentication-failure	G	Disable Authentication failure event type	switch(config)#no event authentication-failure
no event M-Ring-topology-change	G	Disable M-Ring topology changed event type	switch(config)#no event ring-topology-change
no event systemlog	I	Disable port event for system log	switch(config)#interface fastethernet 3 switch(config-if)#no event systemlog
no event smtp	I	Disable port event for SMTP	switch(config)#interface fastethernet 3 switch(config-if)#no event smtp
show systemlog	P	Show system log client & server information	switch#show systemlog

6.15 Commands Set List—SNTP command set

MS10FT8GX2POEH Commands	Level	Description	Example
sntp enable	G	Enable SNTP function	switch(config)#sntp enable
sntp daylight	G	Enable daylight saving time, if SNTP function is inactive, this command can't be applied.	switch(config)#sntp daylight
sntp daylight-period [Start time] [End time]	G	Set period of daylight saving time, if SNTP function is inactive, this command can't be applied.	switch(config)# sntp daylight-period 20060101-01:01 20060202-01-01

		Parameter format: [yyyymmdd-hh:mm]	
sntp daylight-offset [Minute]	G	Set offset of daylight saving time, if SNTP function is inactive, this command can't be applied.	switch(config)#sntp daylight-offset 3
sntp ip [IP]	G	Set SNTP server IP, if SNTP function is inactive, this command can't be applied.	switch(config)#sntp ip 192.169.1.1
sntp timezone [Timezone]	G	Set timezone index, use "show sntp timzezone" command to get more information of index number	switch(config)#sntp timezone 22
show sntp	P	Show SNTP information	switch#show sntp
show sntp timezone	P	Show index number of time zone list	switch#show sntp timezone
no sntp	G	Disable SNTP function	switch(config)#no sntp
no sntp daylight	G	Disable daylight saving time	switch(config)#no sntp daylight

6.16 Commands Set List—M-Ring command set

MS10FT8GX2POEH Commands	Level	Description	Example
Ring enable	G	Enable M-Ring	switch(config)# ring enable
Ring master	G	Enable ring master	switch(config)# ring master
Ring couplering	G	Enable couple ring	switch(config)# ring couplering
Ring dualhoming	G	Enable dual homing	switch(config)# ring dualhoming
Ring ringport [1st Ring Port] [2nd Ring	G	Configure 1st/2nd Ring Port	switch(config)# ring ringport 7 8

Port]			
Ring couplingport [Coupling Port]	G	Configure Coupling Port	switch(config)# ring couplingport 1
Ring controlport [Control Port]	G	Configure Control Port	switch(config)# ring controlport 2
Ring homingport [Dual Homing Port]	G	Configure Dual Homing Port	switch(config)# ring homingport 3
show Ring	P	Show the information of M-Ring	switch#show ring
no Ring	G	Disable M-Ring	switch(config)#no ring
no Ring master	G	Disable ring master	switch(config)# no ring master
no Ring couplering	G	Disable couple ring	switch(config)# no ring couplering
no Ring dualhoming	G	Disable dual homing	switch(config)# no ring dualhoming

Technical Specifications

Technology	
Ethernet Standards	802.3-10Base-T, 802.3u-100Base-TX, 100Base-FX, 802.3z - 1000Base-LX, SX 802.3ab - 1000Base-TX, 802.3ad - Link Aggregation Control Protocol 802.3x - Flow Control 802.1D - Spanning Tree Protocol 802.1p - Class of Service, 802.1Q - VLAN Tagging 802.1w-Rapid Spanning Tree Protocol, 802.1X - Authentication 802.1ad - VLAN QinQ 802.1AB - LLDP 802.1s - MSTP 802.3af - P.O.E.
MAC addresses	8192
Priority Queues	4
Flow Control	IEEE 802.3x Flow Control and Back-pressure
Processing	Store-and-Forward
Interface	
RJ45 Ports	10/100Base-T(X), Auto MDI/MDI-X
GigabitComboPorts	10/100/1000Base-T(X), auto MDI/MDI-X 100/1000Base-X SFP
LED Indicators	Per Unit : Power x 3(Green) RJ45 Ports: Per Port : Link/Activity(Green/Blinking Green) Full duplex(Amber) Gigabit RJ45 Ports” Per Port : Link/Activity (Green) 100Mbps indicator (Amber) GigabitSFP Ports: Per Port :Link/Activity(Green)

Power Requirements	
Power Input Voltage	PWR1/2: 48VDC in 6-pin Terminal Block
Reverse Polarity Protection	Not Present
Power Consumption	9 Watts (Power consumption of P.S.E. not included)
Environmental	
Operating Temperature	-40 to 70 °C
Storage Temperature	-40 to 85 °C
Operating Humidity	5% to 95%, non-condensing
Mechanical	
Dimensions(W x D x H)	74.3 mm(W)x 109.2 mm(D)x 153.6 mm(H)
Casing	IP-30 protection
Regulatory Approvals	
Regulatory Approvals	FCC Part 15, CISPER (EN55022) class A
EMS	EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS),EN61000-4-8,EN61000-4-11
Shock	IEC 60068-2-27
Free Fall	IEC 60068-2-32
Vibration	IEC 60068-2-6
Warranty	5 years