24-Port 10/100Mbps with PoE

+ 2G TP/SFP Combo

Managed Ethernet Switch

WGSW-2620PV

User's Manual

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Revision

PLANET Fast Ethernet Switch User's Manual

FOR MODELS: WGSW-2620PV

Part No. 2081-A92300-000

Table of Contents

1. INTRODUCTION

1.1 Packet Contents

Check the contents of your package for following parts:

- Fast Ethernet PoE Switch x1
- CD-ROM user's manual x1
- Quick installation guide x1
- 19" rack mounting kit x1
- Power cord x1
- Rubber feet x 4

If any of these are missing or damaged, please contact your dealer immediately, if possible, retain the carton including the original packing material, and use them against to repack the product in case there is a need to return it to us for repair.

1.2 How to Use This Manual

This User Manual is structured as follows:

Chapter 2, **Installation**

The chapter explains the functions of the Switch and how to physically install the Switch.

Chapter 3, **CONSOLE MANAGEMENT**

The chapter explains how to manage the switch by Console interface.

Chapter 4, **WEB-BASED MANAGEMENT**

The chapter explains how to manage the switch by Web interface.

Chapter 5, **TROUBLE SHOOTING**

The chapter explains how to trouble shooting of the Switch.

Chapter 6, **APPENDIX**

The chapter contains cable information of the Switch.

In the following section, terms **"SWITCH"** with upper case denotes the WGSW-2620PV Ethernet switch. Terms with lower case "switch" means any Ethernet switches.

1.3 Product Feature

- 24-Port 10/100Mbps TP ports with PoE injector
- 2G TP/SFP combo interface
- Complies to IEEE802.3 10BASE-T, 802.3u 100BASE-TX/FX, 802.3ab 1000BASE-T, 802.3z

Gigabit fiber, 802.3af power over Ethernet

▫ High back-plane bandwidth 8.8Gbps

▫ IGMP snooping and IGMP Query mode for Multi-media application

▫ Port mirror and bandwidth control

▫ Supports GVRP function

▫ End point insert mode remote power feeding

▫ Provides extra DC 48V input with redundant function and management power status through RS-232 port

▫ On line extra power supply testing through RS-232 port

▫ Management by Web/SNMP/Telnet/Console

▫ Port Based VLAN /802.1Q Tag VLAN

▫ IEEE802.3x Flow control – flow control for full duplex, back pressure for half duplex

▫ IEEE802.3ad Port trunk with LACP

▫ Spanning tree protocol IEEE 802.1d/802.1w

▫ IEEE 802.1p class of service

▫ IEEE 802.1x user authentication, TACACS+

▫ Broadcast storm filter

▫ DHCP client/DHCP relay

▫ Support command line interface management

▫ System event log support

1.4 Product Specification

Model	WGSW-2620PV
Network Connector	24-port RJ-45 for 10/100TX RJ-45 Pin assignment and polarity: 1/2:RX signal and -48V DC; 3/6:TX signal and +48V DC
Gigabit Connector	2 TP + 2 mini-GBIC
RS-232 connector	One RS-232 DB-9 female connector for switch management and 2 RS-232 DB-9 male connectors on rear side for DC power supply and UPS management.
Switch architecture	Store and forward switch architecture. Back-plan up to 8.8Gbps
MAC address	8K MAC address table with Auto learning function
Memory	3Mbits for packet buffer
LED	System Power 10/100TX RJ-45 Port: Link/Active, Full-duplex, Power Forwarding Gigabit Fiber (module): Link/ Activity Gigabit Copper (module): Link/Activity, Full duplex/collision, 1000Mbps, 100Mbps

	100FX module (module)): Link/Activity, Full duplex
Remote power feeding	End-point insert type and compatible with IEEE802.3af Per port feeding power: 15.4Watts (maximum)
Power	Embedded AC power supply: AC 90~240V, 2.5A, 50/60Hz, 200W Extra power input: DC48V
Operating environment	0 ~40 , 10%~95%RH
Storage environment	-40 ~70 , 95% RH
Dimension	440mm(W) x 280mm(D) x 44mm(H)
EMI	FCC Class A, CE
Safety	UL, cUL, CE/EN60950
Standard Compliance	IEEE802.3 10BASE-T IEEE802.3u 100BASE-TX/100BASE-FX IEEE802.3z Gigabit SX/LX IEE802.3ab Gigabit 1000T IEEE802.3x Flow Control and Back pressure IEEE802.3ad Port trunk with LACP IEEE802.1d Spanning tree protocol IIEEE802.1w Rapid spanning tree protocol IEEE802.1p Class of service IEEE802.1Q VLAN Tagging IEEE 802.1x user authentication IEEE802.3af Power over Ethernet

2. INSTALLATION

This section describes the functionalities of the Switch's components and guides how to install it on the desktop or shelf. Basic knowledge of networking is assumed. Please read this chapter completely before continuing.

2.1 Product Description

The PLANET WGSW-2620PV PoE Switch features Power-over-Ethernet (PoE), which optimizes the installation and power management of network devices such as wireless access points (AP), Voice over IP (VoIP) phones, and security video cameras. Power-over-Ethernet (IEEE 802.3af) capabilities reduce installation costs for many new network productivity devices. It frees the wireless AP deployment from restrictions due to power outlet locations. Power and data switching are integrated into one unit and delivered over a single cable, eliminating costs for additional AC wiring and reducing installation time. With twenty-four 10/100Mbps RJ-45 ports, two GbE copper ports and two shared SFP / copper GbE interface, PLANET WGSW-2620PV boasts a high performance switch architecture that is capable of providing non-blocking switch fabric and wire-speed throughput as high as 8.8Gbps. Its four built-in GbE uplink ports also offer incredible extensibility, flexibility and connectivity to the Core switch or Servers. The IEEE 802 standard-based firmware provides a rich set of features and ensures interoperability with equipment from other vendors. Additionally, the firmware includes advanced features such as IGMP snooping, broadcast storm control, and MAC address filtering, to enhance security and bandwidth utilization.

2.1.1 Product Overview

With its built-in web-based management, the PLANET WGSW-2620PV offers an easy-to-use, platform-independent management and configuration facility. The PLANET WGSW-2620PV supports standard Simple Network Management Protocol (SNMP) and can be managed via any standard-based management software. For text-based management, the WGSW-2620 can also be accessed via Telnet and the console port.

An optional power supply, the USP-400, can be chosen as UPS or redundant power for WGSW-2620PV. The WGSW-2620 can take electrical power from the AC outlet, the UPS-400 and both for redundant. The UPS-400 supports 400 watts of electrical power, once the AC power shut off, the UPS-400 then take over as the UPS power supply for WGSW-2620PV and keep the switch and the connected powered devices working.

2.1.2 Switch Front Panel

Figure 2-1 shows the front panel of the switch.
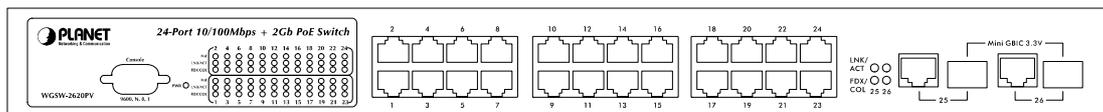
Figure 2-1 WGSW-2620PV front panel.

2.1.3 LED Indications

Network/PoE:

LED	Color	Function
PWR	Green	Lights to indicate that the Switch is powered on.
PoE	Green	Lights to indicate the port is providing 48VDC in-line power.
LNK/ACT	Green	Lights to indicate the link through that port is successfully established.
FDX/COL	Green	Blink to indicate that the switch is actively sending or receiving data over that port.

Gigabit:

LED	Color	Function
LNK/ACT	Green	Lights to indicate the link through that port is successfully established.
FDX/COL	Green	Blink to indicate that the switch is actively sending or receiving data over that port.

2.1.4 Switch Rear Panel

Figure 2-2 shows the rear panel of the switch
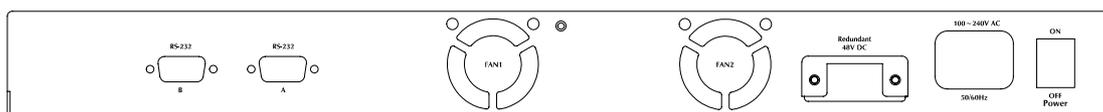
Figure 2-2 WGSW-2620PV rear panel.

Power Notice:

1. The device is a power-required device, it means, it will not work till it is powered. If your networks should active all the time, please consider using UPS (Uninterrupted Power Supply) for your device. It will prevent you from network data loss or network downtime.

2. In some area, installing a surge suppression device may also help to protect your switch from being damaged by unregulated surge or current to the Switch or the power adapter.

2.2 Install the Switch

This section describes how to install the Ethernet Switch and make connections to it. Please read the following topics and perform the procedures in the order being presented.

2.2.1 Desktop Installation

To install the Switch on desktop or shelf, please follows these steps:

Step1: Attach the rubber feet to the recessed areas on the bottom of the switch.

Step2: Place the switch on the desktop or the shelf near an AC power source.

Step3: Keep enough ventilation space between the switch and the surrounding objects.

✎*Note:* When choosing a location, please keep in mind the environmental restrictions discussed in Chapter 1, Section 4, in Specification.

Step4: Connect the Switch to network devices.

    A. Connect one end of a standard network cable to the 10/100/1000 RJ-45 ports on the front of the Switch

    B. Connect the other end of the cable to the network devices such as printer servers, workstations or routers…etc.

✎*Note:* Connection to the Switch requires UTP Category 5 network cabling with RJ-45 tips. For more information, please see the Cabling Specification in Appendix A.

Step5: Supply power to the switch.

    A. Connect one end of the power cable to the switch.

    B. Connect the power plug of the power cable to a standard wall outlet.

When the switch receives power, the Power LED should remain solid Green.

2.2.2 Rack Mounting

To install the switch in a 19-inch standard rack, please follows the instructions described below.

Step1: Place the switch on a hard flat surface, with the front panel positioned towards the front side.

Step2: Attach the rack-mount bracket to each side of the switch with supplied screws attached to the package.

Figure 2-5 shows how to attach brackets to one side of the switch.
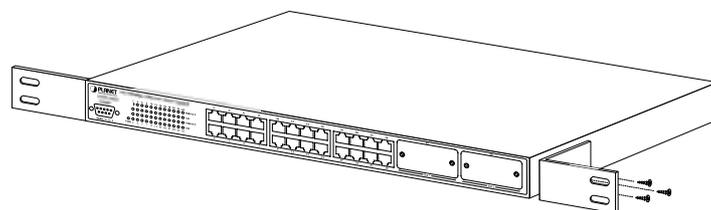
Figure 2-5 Attach brackets to the switch.

Caution:

You must use the screws supplied with the mounting brackets. Damage caused to the parts by using incorrect screws would invalidate the warranty.

Step3: Secure the brackets tightly.

Step4: Follow the same steps to attach the second bracket to the opposite side.

Step5: After the brackets are attached to the Switch, use suitable screws to securely attach the brackets to the rack, as shown in Figure 2-6
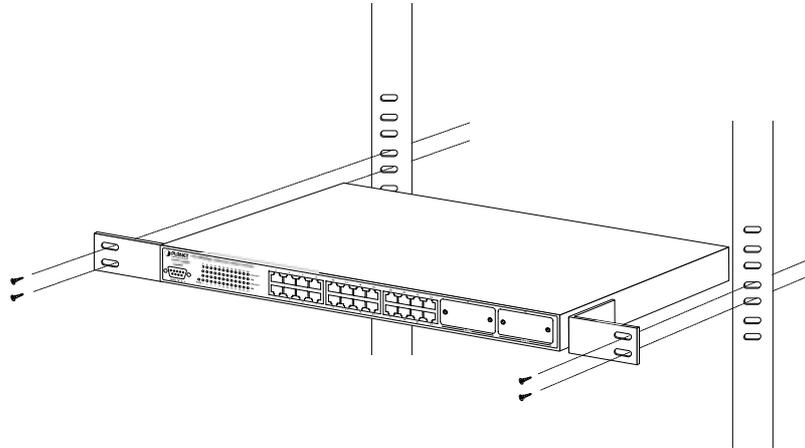
Figure 2-6 Mounting the Switch in a Rack

Step6: Proceeds with the steps 4 and steps 5 of session 2.2.1 Desktop Installation to connect the network cabling and supply power to the switch.

3. CONSOLE MANAGEMENT

3.1 Connecting to the Switch

The console port is a female DB-9 connector that enables a connection to a PC or terminal for monitoring and configuring the Switch. Use the supplied RS-232 cable with a male DB-9 connector to connect a terminal or PC to the Console port. The Console configuration (out of band) allows you to set Switch for remote terminal as if the console terminal were directly connected to it.

3.2 Login in the Console Interface

When the connection between Switch and PC is ready, turn on the PC and run a terminal emulation program or Hyper Terminal and configure its communication parameters to match the following default characteristics of the console port:

Baud Rate: 9600 bps

Data Bits: 8

Parity: none

Stop Bit: 1

Flow control: None
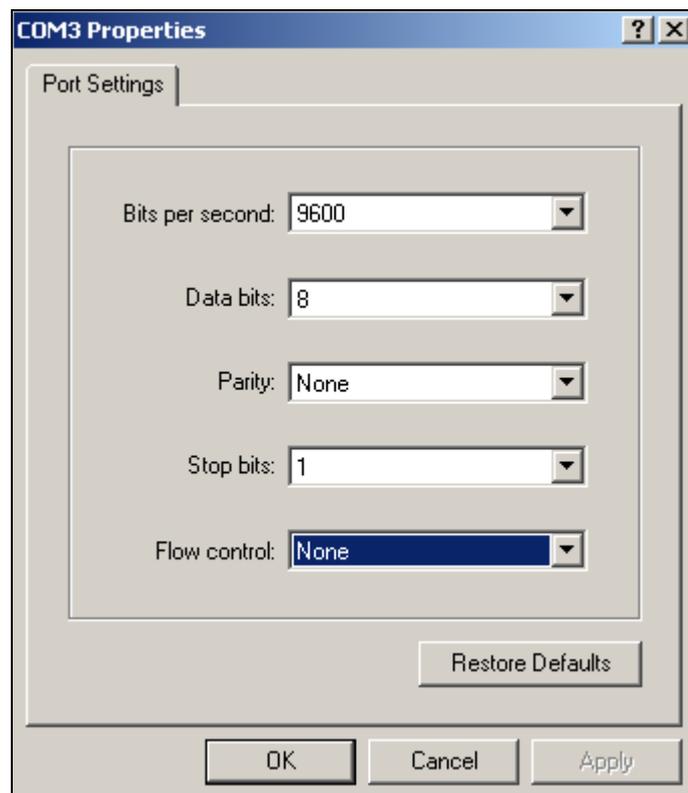
The settings of communication parameters

After finished the parameter settings, click "**OK**". When the blank screen shows up, press Enter key to

bring out the login prompt. Key in the **"admin"**(default value) for the both User name and Password (use **Enter** key to switch), then press Enter key and the Main Menu of console management appears. Please see below figure for login screen.

```
        Welcome to PLANET WGSW-2620PV
    24-Port 10/100Mbps + 2G Power over Ethernet Switch




            User Name : _
            Password  :



        Copyright (c) 2005 Planet Technology Corp.
```
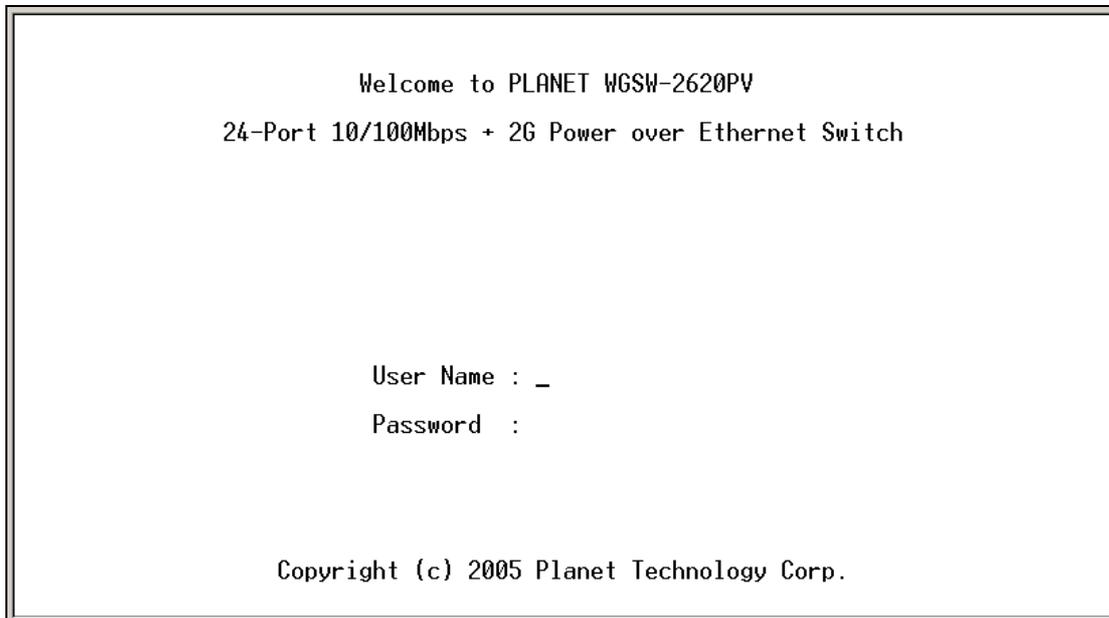
Console login screen

3.3 CLI Management

The system supports two types of console management - CLI command and Menu selection. After you login to the system, you will see a command prompt. To enter CLI management interface, enter "enable" command. The following tables list the CLI commands and description.

3.3.1 Commands Level

Modes	Access Method	Prompt	Exit Method	About This Mode
User EXEC	Begin a session with your switch.	switch>	Enter logout or quit.	The user commands available at the user level are a subset of those available at the privileged level. Use this mode to • Perform basic tests. • 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 database	Enter the vlan database command while in privileged EXEC mode.	switch (vlan)#	To exit to user EXEC mode, enter exit.	Use this mode to 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 to privileged EXEC mode, or end.	Use this mode to configure parameters for the switch and Ethernet ports.
UPS	Enter the **ups** command while in privileged EXEC mode.	switch(ups)#	To exit to privileged EXEC mode, enter **exit**	Use this mode to UPS parameters for the switch.
POE	Enter the **poe** command while in privileged EXEC mode.	switch(poe)#	To exit to privileged EXEC mode, enter **exit**	Use this mode to POE parameters for the switch.

3.3.2 Commands Set List

3.3.2.1 System Commands Set

Commands	Command Level	Description	Defaults	Example
system name [systemname]	Global configuration mode	Set switch system name string		Switch (config)# *system name* xxx
system location [system location]	Global configuration mode	Set switch system location string		Switch (config)# *system location* xxx
system description [systemdescription]	Global configuration mode	Set switch system description string		Switch (config)# *system description* xxx
system contact [systemcontact]	Global configuration mode	Set switch system contact window string		Switch (config)# *system contact* xxx
ip address [ip-address] [subnet-mask] [gateway]	Global configuration mode	Use the ip address interface configuration command to set an IP address for a switch. Use the no form of this command to remove an IP address or to disable IP processing.		Switch (config)# *ip address* 192.168.0.100 255.255.255.0 192.168.0.254
reload	Global configuration mode	Halt and perform a cold restart		Switch (config)# *reload*

default	Global configuration mode	Restore to default		Switch (config)# *default*
username [user-name]	Global configuration mode	Changes a login username. (maximum 10 words)		Switch (config)# *username* xxxxxx
password [password]	Global configuration mode	Specifies a password (maximum 10 words)		Switch (config)# *password* xxxxxx
show system info	User EXEC	Show system information		Switch> *show system info* Name: switch1 location: lab Description: layer2 switch Contact: somewhere Serial NO: 1.00
show ip	Privileged EXEC	Show ip information		Switch# *show ip address* ip: 192.168.0.100 Address subnet: 255.255.255.0 Address gateway: 192.168.0.254

Commands	Command Level	Description	Defaults	Example
show accounting	Privileged EXEC	Show username & password		Switch# *show accounting* Username: admin Password: admin
show version	User EXEC	Use the show version user EXEC command to display version information for the hardware and firmware.		Switch> *show version* Firmware version: 1.0 Hardware version: 3.0 Kernel version: 1.10
show terminal	Privileged EXEC	Use the show terminal command to display console information for the switch		Switch (config)# *show terminal* Baud rate (bits/sec): 9600 Data Bits: 8 Parity Check: none Stop Bits: 1 Flow Control: none

3.3.2.2 Port Commands Set

Commands	Command Level	Description	Defaults	Example
interface [FastEthernet /module Ethernet] [slot id] [id]	Interface configuration mode	Use the fast Ethernet interface configuration command		Switch (config)# *interface fastEthernet 0/1*

		Use the module Ethernet interface configuration command		Switch (config)# *interface moduleEthernet 1/1*
duplex [full | half| auto]	Interface configuration mode	Use the duplex configuration command to specify the duplex mode of operation for Fast Ethernet.	Auto	Switch (config)# *interface fastEthernet 0/1* Switch (config-if)# *duplex full*
		Use the duplex configuration command to specify the duplex mode of operation for module Ethernet.	Auto	Switch (config)# *interface moduleEthernet 1/1* Switch (config-if)# *duplex full*
speed **[10 | 100 | 1000 | auto]**	Interface configuration mode	Use the speed configuration command to specify the speed mode of operation for Fast Ethernet.	Auto	Switch (config)# *interface fastEthernet 0/1* Switch (config-if)# *speed 10*
speed [10| 100 | 1000 | auto]	Interface configuration mode	Use the speed configuration command to specify the speed mode of operation for module Ethernet. (The 100Base-FX module only supported		Switch (config)# *interface fastEthernet 1/2* Switch (config-if)# *speed 1000*

		for speed 100) (The 1000Base-FX module only supported for speed 1000 & auto)		
flowcontrol on or no flowcontrol	Interface configuratio n mode	Use the flow control configuration command on Ethernet ports to control traffic rates during congestion. Use the no form of this command to disable security on the port.	On	Switch (config)# *interface fastEthernet 0/1* Switch (config-if)# *flowcontrol on*
security on or no security	Interface configuratio n mode	Use the security configuration command on Ethernet ports. Use the no form of this command to disable security on the port.	Disable	Switch (config)# *interface fastEthernet 0/1* Switch (config-if)# *security on*
priority on [hi | low] or no priority	Interface configuratio n mode	Use the priority configuration command on Ethernet ports. Use the no form of this command to disable security on the port.	Disable	Switch (config)# *interface fastEthernet 0/1* Switch (config-if)# *priority on hi*

Bandwidth [in | out] [value]	Interface configuration mode	Set bandwidth in or out rate. The value rage is (0~999), and zero of the value is disable (The module can't be setting)	Disable	Switch (config)# *interface fastEthernet 0/1* Switch (config-if)# *bandwidth hi 50*
State [Enable | Disable]	Interface configuration mode	Use the state interface configuration command to specify the state mode of operation for Ethernet ports. Use the disable form of this command to disable the port.	Enable	Switch (config)# *interface fastEthernet 0/1* Switch (config-if)# *state disable*
show interface configuration	Interface configuration mode	show interface configuration status		Switch (config)# *interface fastEthernet 0/1* Switch (config-if)# *show interface configuration*
show interface status	Interface configuration mode	show interface actual status		Switch (config)# *interface fastEthernet 0/1* Switch (config-if)# *show interface status*

Commands	Command Level	Description	Defaults	Example
show interface accounting	Interface configuration mode	show interface statistic counter		Switch (config)# *interface fastEthernet 0/1* Switch (config-if)# *show interface accounting*
show bandwidth	Interface configuration mode	Display the bandwidth of the values		Switch (config)# *interface fastEthernet 0/1* Switch (config-if)# *show bandwidth*

3.3.2.3 Trunk Commands Set

Commands	Command Level	Description	Defaults	Example

show group [group-ID]	Privileged EXEC mode	Display trunk group information. If there is no group-number in put, display all trunk groups.		Switch # *show group 1*
				
				Group Trunk.1:
				
				  Ports: 02 03 04
				
				  Priority: 0001
				
				  Lacp: Enable
				
				  Work ports: 0

Commands	Command Level	Description	Defaults	Example
port group [group-number] [port-list] lacp [on | off] workp [work ports] **no port group [group-number] lacp [on | off] workp [work ports]**	Global configuration mode	Add trunking group. Use the no form of this command to delete trunking group.	Disable	LACP: Switch (config)# *port group 1 1-4* *lacp on workp 2* Trunk without LACP: Switch (config)# *port group 1 1-4* *lacp off workp 4*
port group [group-number] activityport [port-list]	Global configuration mode	Set trunking group port active		Switch (config)# *port group 3 activityport 2-4* Trunk.1 Lacp: Enable Check OK! NEW: 2 4 Update finished!!

3.3.2.4 VLAN Commands Set

Commands	Command Level	Description	Defaults	Example
Vlan datatbase	Privileged EXEC mode	To enter the VLAN configuration interface		Switch# *vlan database* Switch(vlan)#

vlanmode [disable| portbase| 802.1q | gvrp]	VLAN database mode	To set switch VLAN mode .Use the no form of this command to restore to default.	Disable	Switch (vlan)# *vlanmode 802.1q*
Port Base VLAN				
vlan [Group Name] grpid [Group ID] port [Port Number]	VLAN database mode	Add new Port Base VLAN		Switch (vlan)# *vlan v2 grpid 2 port 1-4*
no vlan Group Name] [Group ID]	VLAN database mode	Delete port base VLAN group		Switch (vlan)# *no vlan v2 2*
show vlan [GroupName] [GroupID] or show vlan	VLAN database mode	Show VLAN of Group Name or Group ID information		Switch (vlan)# *Show vlan v2 2*
vlan [Group name] add [port Number] [tagged | untagged]	VLAN database mode	Set the port of some port group tagged or untagged		Switch (vlan)# *vlan v2 add 5*
vlan [Group name] delete [port Number]	VLAN database mode	Remove the port from it's port group.		Switch (vlan)# *vlan v2 delete 5*
802.1Q | 802.1Q with GVRP VLAN mode				
vlan [Group name] vlanid [Vlan ID] port [port Number] tag [port Number]	VLAN database mode	Add new 802.1Q VLAN [VLAN name]: VLAN name [VLAN ID]: 1 ~ 4094		Switch(vlan)# *vlan v2 vlanid 2 port 1-4 tag 2-4*

		[port ID]: port members 1~9		
vlan [group name] delete [port ID]	VLAN database mode	Remove the port from its port group.		Switch(vlan)# *vlan v2 delete 5*
no vlan **[Group name] or [VLAN ID]**	VLAN database mode	Delete 802.1Q VLAN group		Switch (vlan)# *no vlan v2* Switch (vlan)# *no vlan v2 2*
vlan protocol [VLAN name] [protocol value] **vlanid [VLAN ID] port [port ID] tag [port ID]**	VLAN database mode	Add protocol vlan [VLAN name]: vlan group name ■　VIA 6510 serial of values [protocol value]: IP-ip ARP-arp Appletalk-app Appletalk_AARP-app_arp Novell_IPX-ipx Banyan_vines-banyan Decent_mop-decent_mop Decent_dpr-decent_dpr Decent_LAT-decent_lat Decent_LAVC-decent_lavc		Switch(vlan)# *vlan protocol v3 ip vlanid 2 port 5-8 tag 6,8* Switch(vlan)# *vlan protocol v3 arp vlanid 2 port 5-8 tag 6,8* Switch(vlan)# *vlan protocol v3 banyan vlanid 2*

		IBM SNA-ibm		*port 5-8*
				tag 6,8
		X.75 internet-x75		
		X.25 Layer3-x25		
		NetBIOS-netbios		
		IOS Network Layer PDU		
		-IOS		
		Novell_IPX(raw Ethernet)		
		-ipx_raw		
		Spanning Tree Protocol BPDU-stp		
		Null SAP-sap		
		■ VIA 6526 serial of values		
		IP-ip		
		ARP-arp		
		Appletalk-app		
		Appletalk_AARP-app_arp		
		Novell_IPX-ipx		
		Banyan_vines-banyan_c4		
		Banyan_vines-banyan_c5		
		Banyan_vines-banyan_ad		
		Decent_mop_01-decent_01		
		Decent_mop_02-decent_02		
		Decent_dpr-decent_dpr		
		Decent_LAT-decent_lat		
		Decent_LAVC-decent_lavc		

		IBM SNA-ibm X.75 internet-x75 X.25 Layer3-x25 [VLAN ID]: 1 ~ 4094 [port ID]: port ID 1~9(1~26)		
vlanidrange [VLANidrange]	VLAN database mode	Set VLAN ID range [1~255] range 0 [256~511] range 1 [512~767] range 2 [768~1023] range 3 [1024~1279] range 4 [1280~1535] range 5 [1536~1791] range 6 [1792~2047] range 7 [2048~2303] range 8 [2304~2559] range 9 [2560~2815] range 10 [2816~3071] range 11 [3072~3327] range 12 [3328~3583] range 13 [3584~3839] range 14 [3840~4094] range 15		Switch (vlan)# *vlanidrange 2* OLD: 0 NEW: 2

VLAN protocol [Groupname] add [portNumber] [tagged | untagged]	VLAN database mode	Set the port of some port group tagged or untagged		Switch (vlan)# *vlan protocol v2 add 5 tagged*
VLAN protocol [Groupname] delete [portNumber]	VLAN database mode	Remove the port from its port group.		Switch (vlan)# *vlan protocol v2 delete 5*
show vlan [Groupname] [GroupID] or show vlan	VLAN database mode	Show VLAN of Group Name or VLAN ID information vlanid: 1 ~ 4094		Switch (vlan)# *show vlan v2 2*
show vlan protocol	VLAN database mode	show protocol vlan Protocol ip ipx netbios		Switch (vlan)# *show vlan protocol*
port [port ID] pvid [port VID] ingressfilter1 [on | off] ingressfilter2 [on | off]	VLAN database mode	Set Port PVID and Ingress Filter Rules1 & Ingress Filter Rules2		Switch (vlan)# *port 2 pvid 2 ingressfilter1 off ingressfilter2 on*
show port [port ID]	VLAN database mode	show Port PVID and Ingress Filter Rules1 & Ingress Filter Rules2		Switch (vlan)# s*how port 2* Port ID: 2

				Port Vid: 2
				Ingress 1 Filter: Disable
				Ingress 2 Filter: Enable

3.3.2.5 Spanning Tree Commands Set

Commands	Command Level	Description	Defaults	Example
show spanning-tree	User EXEC mode	Display a summary of the spanning-tree states.		Switch> *show spanning-tree* System: Priority: 32768 Max Age: 20 Hello Time: 2 Forward Delay: 15 Priority: 32768 Mac Address: 004063800030 Root_Path_Cost: 0 Root Port: we are root Max Age: 20 Hello Time: 2 Forward Delay: 15

spanning-tree [on / off] or no spanning-tree	Global configuration mode	Use the spanning-tree global configuration command to enable Spanning Tree Protocol (STP). Use the no form of the command to restore to default	Disable	Switch (config)# *spanning-tree on*
spanning-tree priority [number]	Global configuration mode	Use the spanning-tree max-age global configuration command to change the priority. Use the no form of this command to return to the default interval.	32768	Switch (config)# *spanning-tree priority 32767*
spanning-tree max-age [seconds]	Global configuration mode	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	20 sec	Switch (config)# *spanning-tree max-age 15*

		receive a bridge protocol

data unit (BPDU) message from the root switch within this interval, it recomputes the Spanning Tree Protocol (STP) topology. Use the no form of this command to return to the default interval. | | |
| **spanning-tree hello-time [seconds]** | Global configuration mode | Use the spanning-tree hello-time global configuration command to specify the interval between hello

bridge protocol data units (BPDUs). Use the no form of this command to return to the default interval. | 2 sec. | Switch (config)# *spanning-tree hello-time 3* |
| **stp-path-cost [PortCost]** | Interface configuration mode | Use the spanning-tree cost interface configuration command to set the path cost for Spanning Tree | 10 Mbps – 100

100 Mbps | Switch (config)# *interface fastEthernet 0/2*

Switch (config-if)# *stp-path-cost 20* |

		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. Use the no form of this command to return to the default value.	– 10	
spanning-tree forward-time [seconds]	Global configuration mode	Use the spanning-tree forward-time global configuration command to set the forwarding-time for the specified spanning-tree instances. The forwarding time determines how long each of the listening and learning states last before the port begins forwarding. Use the no form of this command to return to the default value.	15 sec.	Switch (config)# *spanning-tree forward-time 20*

Commands	Command Level	Description	Defaults	Example
stp-path-priority [Port Priority]	Interface configuratio n mode	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. Use the no form of this command to return to the default value.	128	Switch (config)# *interface fastEthernet 0/2* Switch (config-if)# *stp-path-priority 127*

3.3.2.6 QoS Commands Set

Commands	Command Level	Description	Defaults	Example
qos storm-control [5|10|15|20|25| off (%)] or no storm-control	Global configuratio n mode	Enable/Disable broadcast storm control. Use the no form of this command to restore to default.	OFF	Switch (config)# *qos storm-control 5*
qos low-priority-delay-b ound [on|off] [sec.] or no qos low-priority-delay-b ound	Global configuratio n mode	Enable/Disable low priority delay board. Use the no form of this command to restore to default.	OFF	Switch (config)# *qos low-priority-delay-boun d on 1*

qos level [priority] enable	Global configuration mode	[Priority] 0~7	0~3 LOW 4~7 HI	Switch (config)# *qos level 2,3 enable*
no qos level [priority]	Global configuration mode	[Priority] 0~7	0~3 LOW 4~7 HI	Switch (config)# *no qos level 0-7*
qos queuepolicy [Policy] hi [Priority] low [Priority]	Global configuration mode	[Policy]:fcfs: first in and first out wrr: weight round robin sp: all high before low. [Priority] Hi:1~7 Low:1	WRR Hi 2 Low 1	WRR: Switch (config)# *qos queuepolicy wrr hi 7 low 1* First Come First Served: Switch (config)# *qos queuepolicy fcfs* All High before Low: Switch (config)# *qos queuepolicy sp*
qos bridge-delay-bound [number] . no qos bridge-delay-bound	Global configuration mode	Set qos bridge delay bound Use the no form of this command to restore to default.	OFF	Switch (config)# *qos bridge-delay-bound 1*
show qos storm-control	Global configuration mode	Show broadcast storm control.		Switch (config)# *show qos storm-control* QOS storm control mode: ENABLE

Commands	Command Level	Description	Defaults	Example
show qos low-priority-delay-bound	Privileged EXEC mode	Show low priority delay board.		Switch (config)# ***show qos low-priority-delay-bound*** Qos low priority delay bound: 1
show qos policy	Privileged EXEC mode	Show qos policy		Switch (config)# ***show qos policy*** Qos Mode: WRR
show qos bridge-delay-bound	Privileged EXEC mode	Show bridge delay bound		Switch (config)# ***show qos bridge-delay-bound*** bridge-delay-bound 5

3.3.2.7 IGMP Commands Set

Commands	Command Level	Description	Defaults	Example
**igmp [on	off]**	Global configuration mode	Enable /Disable IGMP snooping function	Off	Switch (config)# ***igmp on***
**Igmp-query [auto |enable	disable]**	Global configuration mode	Modify IGMP query mode	Disable	Switch (config)# ***Igmp-query enable***
show ip igmp profile	Privileged EXEC mode	Displays the details of an IGMP profile entry.		Switch# show ip ***igmp profile*** ***IP***　　　　　VID

				Port 224.1.1.1 10 1,2,6

3.3.2.8 Mac / Filter Table Commands Set

Commands	Command Level	Description	Defaults	Example
mac-address-table aging-time [on | off] **mac-address-table aging-time [sec.]** or **no mac-address-table aging-time**	Global configuration mode	Use the mac-address-table aging-time global configuration command to set the length of time that a dynamic entry remains in the MAC address table after the entry is used or updated. Use the no form of this command to use the default aging-time interval. The aging time applies to all VLANs.	300 secs	(Enable) Switch (config)# ***mac-address-table aging-time on*** Switch (config)# ***mac-address-table aging-time 333*** (Disable) Switch (config)# ***mac-address-table aging-time off*** Or Switch(config)# ***no mac-address-table aging-time***
mac-address-table table [static | filter] hwaddr [MAC address] vlanid [VLAN-ID]	Interface configuration mode	Use the mac-address-table static to add static | filter addresses to the MAC address table. Use the no form of this	N/A	Switch (config)# ***interface fastEthernet 0/2*** Switch (config-if)# ***mac-address-table static hwaddr***

Commands	Command Level	Description	Defaults	Example
		command to remove static entries from the MAC address table.		*004063112233 vlanid 10*
no mac-address-table [static | filter] hwaddr [MAC address] vlanid [VLAN-ID]	Interface configuration mode	Use the no mac-address-table privileged EXEC command to delete entries from the MAC address table.		Switch (config)# *interface fastEthernet 0/2* Switch (config-if)# no *mac-address-table static hwaddr 004063112233 vlanid 10*
show mac-address-table [static | filter]	Privileged EXEC mode	Use the show mac-address-table user EXEC command to display the MAC address table.		Switch (config)# *show mac-address-table static*
show mac-address-table aging-time	Privileged EXEC mode	Use the show mac-address-table user EXEC command to display the MAC address table.		Switch (config)# *show mac-address-table aging-time* MAC Address aging-time: 300

3.3.2.9 SNMP Commands Set

Commands	Command Level	Description	Defaults	Example
snmp system-name [SystemName]	Global configuration mode	Set Snmp agent system name	N/A	Switch (config)# *snmp system-name* l2switch

Commands	Command Level	Description	Defaults	Example
snmp **system-location** **[SystemLocation]**	Global configuration mode	Set Snmp agent system location	N/A	Switch (config)# *snmp system-location lab*
snmp **system-contact** **[SystemContact]**	Global configuration mode	Set Snmp agent system contact	N/A	Switch (config)# *snmp system-contact* where
snmp **community-strings** **[Community] right** **[RO	RW]** Or **no snmp** **community-strings** **[Community]**	Global configuration mode	Add snmp community string. Use the no form of this command to remove the specified community.	PUBLIC RO	Switch (config)# *snmp community-strings public right RW*
Snmp-server host **[host-address]** **community** **community-string**	Global configuration mode	Configure SNMP server host information and community string	N/A	Switch (config)# *snmp-server host* 192.168.0.10 *community* rw
No snmp-server **host**	Global configuration mode	Delete the snmp server host setting	N/A	Switch (config)# no snmp-server host

3.3.2.10 Port Mirroring Commands Set

Commands	Command Level	Description	Defaults	Example
port monitor **[RX|TX|Both** **|Disable] PortList** Or	Interface configuration mode	Use the port monitor interface configuration command to enable Switch Port	N/A	Switch (config)# *Interface fastEthernet 0/8* Switch (config-if)# *port*

no port monitor		Analyzer (SPAN) port monitoring on a port. Use the no form of this command to return the port to its default value.		*monitor both 3*
show port monitor	Interface configuration mode	Use the show port monitor privileged EXEC command to display the ports for which Switched Port Analyzer (SPAN) port monitoring is enabled.		Switch (config-if)# *show port monitor* State: ENABLE AnalysisPortId: 8 Port 1 Rx: Monitor Port 1 Rx: Monitor Port 2 Rx: Port 2 Rx: Port 3 Rx: Monitor Port 3 Rx: Monitor Port 4 Rx: Port 4 Rx: Port 5 Rx: Port 5 Rx: Port 6 Rx: Port 6 Rx: Port 7 Rx: Port 7 Rx: Port 8 Rx: Analysis Port 8 Tx: Analysis Port 9 Rx: Port 9 Rx:

3.3.2.11 802.1x Commands Set

Commands	Command Level	Description	Defaults	Example
show 8021x	User EXEC mode	Display a summary of the 802.1x properties and also the port sates.	N/A	Switch> *show 8021x*
8021x [on | off]	Global configuration mode	Use the 802.1x global configuration command to enable 802.1x protocols. Use the no form of the command to restore to default	Disable	Switch (config)# *8021x on*
8021x system radiusip **[RadiusServerIP]** Or **no 8021x system radiusip**	Global configuration mode	Use the 802.1x system radius IP global configuration command to change the radius server IP. Use the no form of this command to return to the default interval.	N/A	Switch (config)# *8021x system radiusip* 192.168.0.10

8021x system sharekey [Sharekey] Or **no 8021x system sharekey**	Global configuration mode	Use the 802.1x system sharekey global configuration command to change the shared key value. Use the no form of this command to return to the default interval.	N/A	Switch (config)# *8021x system sharekey* 123456
8021x system serverport [Port Number]	Global configuration mode	set radius server port	N/A	Switch (config)# *8021x system serverport* 1
8021x system accountport [Port Number]	Global configuration mode	set accounting port	N/A	Switch (config)# *8021x system accountportt* 1
8021x system nasid [ID]	Global configuration mode	set NAS ID	N/A	Switch (config)# *8021x system nasid* 1
8021x misc quietperiod [quietperiod value] Or **no 8021x misc quietperiod**	Global configuration mode	Use the 802.1x misc quiet period global configuration command to specify the quiet period value of the switch. Use the no form of	N/A	Switch (config)# *8021x misc quietperiod* 10

		this command to return to the default interval.		
8021x misc txperiod [TXPeriod value] Or **no 8021x txperiod**	Global configuratio n mode	Use the 802.1x misc TX period global configuration command to set the TX period. Use the no form of this command to return to the default value.	N/A	Switch (config)# *8021x misc txperiod* 5
8021x misc supptimeout [SEC] Or **no 8021x supptimeout**	Global configuratio n mode	Set the period of time the switch wait for a supplicant response to an EAP request.	N/A	Switch(config)# *8021x misc supptimeout* 30
8021x misc servertimeout [SEC] Or **no 8021x servertimeout**	Global configuratio n mode	Set the period of time the switch wait for a server response to an authentication request.	N/A	Switch(config)# *8021x misc servertimeout* 50
8021x misc maxrequest [Number] Or **no 8021x**	Global configuratio n mode	Set the number of authentication that must time-out before authentication fails and the	N/A	Switch (config)# *8021x misc maxrequest* 2

maxrequest		authentication session ends.		
8021x misc reauthperiod [SEC] Or **no 8021x reauthperiod**	Global configuratio n mode	Set the period of time after which clients connected must be re-authenticated..	N/A	Switch(config)# *8021x misc reauthperiod* 20
8021x prostate [reject | accept | authorize | disable]	Interface configuratio n mode	Use the 802.1x port state interface configuration command to set the state of the selected port. ■ **Reject:** the specified port is required to be held in the unauthorized state. ■ **Accept:** the specified port is required to be held in the Authorized state. ■ **Authorized:** the specified port is set to the Authorized or Unauthorized state in accordance with the outcome of an authentication exchange between the Supplicant and the authentication server. ■ **Disable:** The specified port is required to be held in the Authorized	N/A	Switch (config)# *interface fastethernet* 0/3 Switch (config-if)# *8021x portstate accept*

		state.		

3.3.2.12 TFTP Commands Set

Commands	Command Level	Description	Defaults	Example
copy flash:config.text tftp [TFTP IP address] [file name]	Global configuration mode	Backup configure file command		Switch (config)# *copy flash:config.*text tftp >192.168.0.10 >backup.dat
tftp:config.text flash [TFTP IP address] [file name]	Global configuration mode	Restore configure file command		Switch(config)# *Tftp:config.text flash* >192.168.0.10 >restore.dat
tftp:firmware flash [TFTP IP address] [file name]	Global configuration mode	Update firmware command		Switch (config)# *Tftp:firmware flash* >192.168.0.10 >image.bin

3.3.2.13 UPS Commands Set

Commands	Command Level	Description	Defaults	Example
status	UPS mode	Display a summary of the		Switch (ups)#*status*

Commands	Command Level	Description	Defaults	Example
		UPS status.		*Input Output Voltage* like web information
Info	UPS mode	Show UPS information		Switch (ups)# *info* *Company* Name :xxx Model :xxx Version :xxx
test 10	UPS mode	UPS will perform the self-test for 10 seconds.		Switch (ups)# *test 10* test OK

3.3.2.14 POE Commands Set

Commands	Command Level	Description	Defaults	Example
status	POE mode	Show POE information		Switch (poe)#*status* like web information
setpm	POE mode	Enabling or disabling the power management.		Switch (poe)# *setpm*

setlimit	POE mode	Enabling or disabling total power output limit. When is enabling, the total power output limit will follow the value that set in power limit max.		Switch (poe)# *setlimit* Set Total Power Limit [123]=100
setps1	POE mode	Setup Power Supply 1 Limit		Switch (poe)#*setps1* Set Power Supply 1 Limit [123]= 111
portebl	POE mode	Enabling or disabling the port POE inject function.		Switch (poe)#*portebl* Enable/Disable Port [1~8]=3
portcls	POE mode	Enabling or disabling per port power output limit.		Switch (poe)# *portcls* Enable/Disable Port [1~8]=3
portmng	POE mode	Enabling or disabling the port limit management for power supply management.		Switch (poe)# *portmng* Enable/Disable Port [1~8]=3

portpri	POE mode	Set port priority for the power supply management.		Switch (poe)# *portpri* Set Port [1~8]=1 Set Port 19847000 Priority (1:Critical, 2:High, 3:Low) Old=[0], New=2
portplm	POE mode	Port Power Limit Max Setting		Switch (poe)# *portpplm* Set Port [1~8]=1 Set Port 1 Power Limit Max Old=[15400],New=20000 Set Port 1 Power Limit Max 20000
save	POE mode	Store current configure		Switch (poe)#*save*
restore	POE mode	Restore to default		Switch (poe)#*restore*

3.4 Menu Management

After you login to the system, you will see a command prompt. To enter Menu management interface, enter "menu" command. You will see the main menu interface.

1. Provide a menu line interface to manage and monitor the switch. User can use windows Hyper Terminal program through the console port to connect the switch for configuration.
2. The default user name and password is "admin".

There are 8 selections as follow.

Status and Counters: Show the status of the switch.

Switch Configuration: Configure the switch.

Protocol Related Configuration: Configure the protocol function.

System Reset Configuration: Restart the system or reset switch to default configuration.

UPS menu: configure the UPS function.

POE menu: configure the POE function.

Save Configuration: save the current configuration into the system memory.

Logout: Exit the menu line program.

```
                          Main Menu
                          =========



                  Status and Counters

                  Switch Configuration

                  Protocol Related Configuration

                  System Reset Configuration

                  Power Menu

                  POE Menu

                  Save Configuration

                  Logout
                  Show the status of the switch.
[TAB/BKSPC] Move Item        [Enter] Select Item
```

Main Menu Line Interface

Control Key description:

The control keys provided in all menus:

➢ **Tab/Backspace:** Move the vernier to configure item.

➢ **Enter:** Select item.

➢ **Space:** Toggle selected item to next configure or change the value.

➢ **Esc:** to exit the current action mode.

3.4.1 Status and Counters

In Status and Counters, you can view Port status, counters, and configure system parameter.

```
  24TX + 2FX with 24 POE Injector Managed Switch : Status and Counters
  ================================================

                        Port Status

                        Port Counters

                        System Information

                        Main Menu




             Display current status of all the switch ports.
[TAB/BKSPC] Move Item          [Enter] Select Item
```
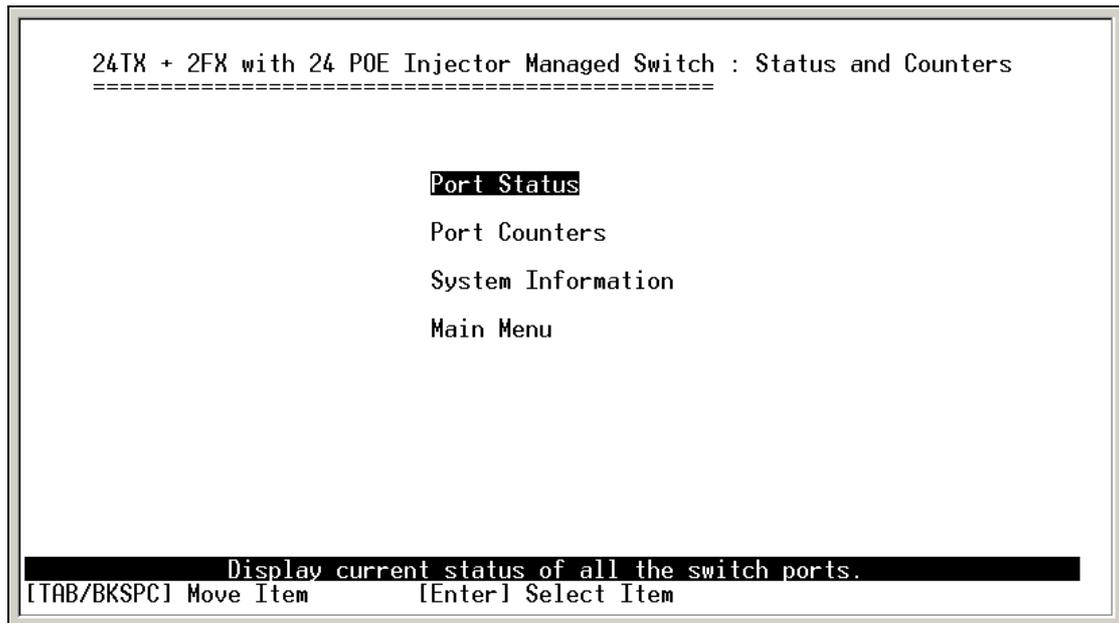
Status and Counters main configuration interface

3.4.1.1 Port Status

It displays status of each port. Select the **<Previous Page>** action to display previous page. And, select the **<Next page>** action to display next page.

Type: display port connection speed.

Link: display port statuses link status. When the port is connecting with the device and work normally, the link status is "**UP**". Opposite is "**Down**".

State: The port current status.

Negotiation: display the auto negotiation status.

Speed Duplex: display port duplex mode.

FC: display the flow control status is "enable" or "disable".

BP: display backpressure status.

Bandwidth In/Out: display bandwidth In/out control status.

Priority: display the port priority status.

Security: display the port security status.

```
    24TX + 2FX with 24 POE Injector Managed Switch : Port Status
    ==============================================

                 State            Speed            Band Width    Security
 Port    Type    Link   Negotiation  Duplex  FC  BP  In   Out    Priority
 -----------------------------------------------------------------------
 Port.01 100TX  Down Enable   Auto   100 Full ON  OFF  OFF  OFF   Disable OFF
 Port.02 100TX  Down Enable   Auto   100 Full ON  OFF  OFF  OFF   Disable OFF
 Port.03 100TX  Down Enable   Auto   100 Full ON  OFF  OFF  OFF   Disable OFF
 Port.04 100TX  Down Enable   Auto   100 Full ON  OFF  OFF  OFF   Disable OFF
 Port.05 100TX  Down Enable   Auto   100 Full ON  OFF  OFF  OFF   Disable OFF
 Port.06 100TX  Down Enable   Auto   100 Full ON  OFF  OFF  OFF   Disable OFF
 Port.07 100TX  Down Enable   Auto   100 Full ON  OFF  OFF  OFF   Disable OFF
 Port.08 100TX  Down Enable   Auto   100 Full ON  OFF  OFF  OFF   Disable OFF




 Actions->   <Previous Page>   <Next Page>    <Quit>
                      Select the action menu.
 [TAB/BKSPC] Move Item      [Enter] Select Item      [Esc] Previous Menu
```

Port status display interface

3.4.1.2 Port Counters

It displays the current port counter information. Select the **<Refresh>** to get newest counter information.

Select **<Clear>** to set all ports counter to 0.

```
    24TX + 2FX with 24 POE Injector Managed Switch : Port Status
    ==============================================

                 State            Speed            Band Width    Security
 Port    Type    Link   Negotiation  Duplex  FC  BP  In   Out    Priority
 -----------------------------------------------------------------------
 Port.01 100TX  Down Enable   Auto   100 Full ON  OFF  OFF  OFF   Disable OFF
 Port.02 100TX  Down Enable   Auto   100 Full ON  OFF  OFF  OFF   Disable OFF
 Port.03 100TX  Down Enable   Auto   100 Full ON  OFF  OFF  OFF   Disable OFF
 Port.04 100TX  Down Enable   Auto   100 Full ON  OFF  OFF  OFF   Disable OFF
 Port.05 100TX  Down Enable   Auto   100 Full ON  OFF  OFF  OFF   Disable OFF
 Port.06 100TX  Down Enable   Auto   100 Full ON  OFF  OFF  OFF   Disable OFF
 Port.07 100TX  Down Enable   Auto   100 Full ON  OFF  OFF  OFF   Disable OFF
 Port.08 100TX  Down Enable   Auto   100 Full ON  OFF  OFF  OFF   Disable OFF




 Actions->   <Previous Page>   <Next Page>    <Quit>
                      Select the action menu.
 [TAB/BKSPC] Move Item      [Enter] Select Item      [Esc] Previous Menu
```

Port counter information interface

3.4.1.3 System Information

It displays the system parameter.

System Name: the name of device.

System Location: where the device is located.

System Description: the name of device type.

Firmware Version: the switch's firmware version.

Hardware Version: the switch's Hardware version.

Kernel Version: the system kernel software version.

MAC Address: The unique hardware address assigned by manufacturer.

Module Information: display information of installed module.

```
    24TX + 2FX with 24 POE Injector Managed Switch : System Information
    ================================================

 System Name        :
 System Location    :
 System Description : 24-Port 10/100Mbps + 2G PoE Switch

 Firmware Version : v1.03
 Kernel Version   : v12.12
 Hardware Version : A7.00
 MAC Address      : 00304F000001

 Module    Type      Description
 ---------------------------------------------------------------
 Port 25   1000TX    1000TX Copper/1000FX MiniGBIC
 Port 26   1000TX    1000TX Copper/1000FX MiniGBIC




Actions->   <Quit>
                      Display the switch system information.
[TAB/BKSPC] Move Item       [Enter] Select Item        [Esc] Previous Menu
```

System Information interface

3.4.2 Switch Configuration

In Switch Configuration, it has 8 main functions - Administration, Port, Trunk, Port Mirroring, VLAN, Priority, MAC Address, and Misc Configuration. Under each function, there are more sub-functions. We will describe in following paragraph.

```
   24TX + 2FX with 24 POE Injector Managed Switch : Switch Configuration
   ===============================================
                        Administration Configuration

                        Port Configuration

                        Trunk Configuration

                        Port Mirroring Configuration

                        VLAN Configuration

                        Priority Configuration

                        MAC Address Configuration

                        Misc Configuration

                        Main Menu

                    Configure the system, IP, and password._
[TAB/BKSPC] Move Item        [Enter] Select Item
```

Switch Configuration interface

3.4.2.1 Administration Configuration

In Administration Configuration, you can configuration system parameter, IP, login username, password, and SNTP configuration.

```
      24TX + 2FX with 24 POE Injector Managed Switch : Administration Configurati
on    ===============================================


                        Device Information

                        IP Configuration

                        User Name Configuration

                        Password Configuration

                        SNTP Configuration

                        System Log Client Configuration

                        Previous Menu


                    Configure the device information.
[TAB/BKSPC] Move Item        [Enter] Select Item
```

Administration Configuration main interface

3.4.2.1.1 Device Information

You can configure the device information.

Select <Edit> action to configure.

1.   **Name:** assign the name for the switch.

2. **Description:** a short description for the switch.

3. **Location:** the switch location, ex: Taipei.

4. **Contact:** the contact person or information.

5. Select **<Apply>** action to apply the configuration.

```
    24TX + 2FX with 24 POE Injector Managed Switch : Device Information
    ===============================================


Name        :

Description : 24-Port 10/100Mbps + 2G PoE Switch

Location    :

Contact     :




Actions->   <Edit>   <Apply>   <Quit>
                  Select the action menu.
[TAB/BKSPC] Move Item      [Enter] Select Item      [Esc] Previous Menu
```

Device Information interface

3.4.2.1.2 IP Configuration

You can configure the IP for this switch. The system has the default IP address. You can re-configure or use the default value.

1. Select the **<Edit>**

2. **DHCP Client: "Enable"** is to get IP from DHCP server. **"Disable"** is opposite. The DHCP client function only works if you haven't assigned a static IP address that different than the switch default IP.   Once the default IP has been changed the DHCP will not effective and the switch will continue using the manually entered static IP.   If you have changed the switch to a static IP address, you can set the IP address back to its default IP address or you can reset the switch back to factory default. And then you can enable the DHCP client function to work.

3. **IP Address:** assign the switch IP address. The default IP is 192.168.0.100.

4. **Subnet Mask:** assign the switch IP subnet mask.

5. **Gateway:** assign the switch gateway. The default value is 192.168.0.254.

6. Select **<Apply>** action to apply the configuration.

Note: Always restart the switch after finished the setup to apply the new IP setting.

```
   24TX + 2FX with 24 POE Injector Managed Switch : IP Configuration
   ================================================

                       DHCP Client : Disable

                       IP Address  : 192.168.0.100

                       Subnet Mask : 255.255.255.0

                       Gateway     : 192.168.0.254




Actions->    <Edit>   <Apply>   <Quit>
                     Select the action menu.
[TAB/BKSPC] Move Item         [Enter] Select Item         [Esc] Previous Menu
```

IP Configuration interface

3. 4.2.1.3 User Name Configuration

You can change the console and web management login user name.

1.   Select the **<Edit>**

2.   Enter the new user name

3.   Select the **<Apply>**

```
   24TX + 2FX with 24 POE Injector Managed Switch : User Name Configuration
   ================================================



                       User Name : admin




Actions->    <Edit>   <Apply>   <Quit>
                     Select the action menu.
[TAB/BKSPC] Move Item         [Enter] Select Item         [Esc] Previous Menu
```

User Name Configuration interface

3.4.2.1.4 Password Configuration

You can change the console and web management login password.

1. Select the **<Edit>**

2. **Old Password:** enter the old password.

3. **New Password:** enter the new password.

4. **Enter Again:** reenter the new password for confirmation.

5. Select the **<Apply>**

```
    24TX + 2FX with 24 POE Injector Managed Switch : Password Configuration
    ================================================




                    Old Password :

                    New Password :

                    Enter Again  :






Actions->   <Edit>   <Apply>   <Quit>
                    Select the action menu.
[TAB/BKSPC] Move Item      [Enter] Select Item      [Esc] Previous Menu
```

Password Configuration interface

3.4.1.4.5 SNTP Configuration

You can configure the SNTP (Simple Network Time Protocol) settings. The SNTP allows you to synchronize switch clocks in the Internet.

> **SNTP Client:** enable or disable SNTP function to get the time from the SNTP server.
>
> **UTC Timezone:** set the switch location time zone.
>
> **Server IP:** set the SNTP server IP address.

```
    24TX + 2FX with 24 POE Injector Managed Switch : SNTP Configuration
    ==============================================
                        SNTP Client : Disable

                        UTC Timezone: 0

                        Server IP    : 192.168.16.2




 Actions->    <Edit>    <Apply>    <Quit>
                         Select the action menu.
 [TAB/BKSPC] Move Item        [Enter] Select Item        [Esc] Previous Menu
```

SNTP Configuration Interface

3.4.1.4.6 Syslog Client Configuration

You can configure the switch as the system log client that can view the system log information that from the system log server that you have assigned.

1. Select **<Edit>**

2. **Syslog Client:** enabling or disabling the system log client function. **"Enable"** can view the system log information from the assigned system log server.

3. **Server IP:** assigned the system log server IP.

4. Select **<Apply>** to apply the configuration.

```
    24TX + 2FX with 24 POE Injector Managed Switch : System Log Client Configur
 ation==============================================
                        Client Mode : Disable

                        Server IP    : 192.168.0.2










 Actions->    <Edit>    <Apply>    <Quit>
                         Select the action menu.
 [TAB/BKSPC] Move Item        [Enter] Select Item        [Esc] Previous Menu
```

Syslog Client Configuration Interface

3.4.2 Port Configuration

You can set up every port status.

1. Select **<Edit>**

2. Use **"Tab/Backspace"** key to move between items.

3. **State:** Current port status. The port can be set to disable or enable mode. If the port setting is disable then will not receive or transmit any packet.

4. **Negotiation:** set auto negotiation function of port.

5. **Speed/Duplex:** set the port link speed and duplex mode.

6. **FC:** enable or disable Flow control function (Flow control for full duplex link mode).

7. **BP:** enable or disable Back Pressure function (Backpressure for half duplex mode).

8. **Bandwidth In/ Out:** per port packet transmission rate control. Per level is 100Kbps. It supports individual control method of TX and RX.

9. **Priority:** set packet of port to high or low priority queue.

10. **Security:** enable or disable port security function.

11. Select the **<Apply>.**

```
    24TX + 2FX with 24 POE Injector Managed Switch : Port Configuration
    ================================================

                   Negotiation  Speed                Band Width      Security
    Port    Type   State        Duplex     FC   BP   In    Out   Priority
    ----------------------------------------------------------------------
    Port.01 100TX  Enable  Auto  100 Full  ON   OFF  0     0     Disable  OFF
    Port.02 100TX  Enable  Auto  100 Full  ON   OFF  0     0     Disable  OFF
    Port.03 100TX  Enable  Auto  100 Full  ON   OFF  0     0     Disable  OFF
    Port.04 100TX  Enable  Auto  100 Full  ON   OFF  0     0     Disable  OFF
    Port.05 100TX  Enable  Auto  100 Full  ON   OFF  0     0     Disable  OFF
    Port.06 100TX  Enable  Auto  100 Full  ON   OFF  0     0     Disable  OFF
    Port.07 100TX  Enable  Auto  100 Full  ON   OFF  0     0     Disable  OFF
    Port.08 100TX  Enable  Auto  100 Full  ON   OFF  0     0     Disable  OFF




    Actions->   <Edit>   <Apply>   <Previous Page>   <Next Page>   <Quit>
                              Select the Action menu.
    [TAB/BKSPC] Move Item      [Enter] Select Item        [Esc] Previous Menu
```

Port Configuration interface

3.4.3 Trunk Configuration

You can configure port trunk group.

1. Select **<Edit>**

2. Using **"Tab"** key move to the port that want to be added as trunk group.

3. Using **"Space"** key to mark the port.

4. Using **Tab** key move to **Trunk #** (ex. Trunk1, Trunk2…) to change the Trunk # value to **Static**, **LACP**, or **Disable**.

5.　　　Apply the configuration by selecting **<Apply>**.

```
    24TX + 2FX with 24 POE Injector Managed Switch : Trunk Configuration
    ================================================

  01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26
T1 .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
T2 .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
T3 .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
T4 .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
T5 .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
T6 .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .
T7 .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .  .

Trunk 1: Disable
Trunk 2: Disable
Trunk 3: Disable
Trunk 4: Disable
Trunk 5: Disable
Trunk 6: Disable
Trunk 7: Disable

Actions->   <Edit>    <Apply>    <Quit>
                       Select the action menu.
[TAB/BKSPC] Move Item      [Enter] Select Item      [Esc] Previous Menu
```

Trunk Configuration interface

3.4.4 Port Mirroring Configuration

The port mirroring is a method for monitor traffic of switched networks. The specific port can monitor

traffic through the mirror ports. The monitored ports in or out traffic will be duplicated into monitoring port.

1.　　　Select the **<Edit>**

2.　　　**Mirroring State:** select the port-mirroring mode. The default value is **"Disable"**. To start port

　　　　mirroring, you must select one of port mirroring mode.

　　　　　　RX: RX packet only

　　　　　　TX: TX packet only

　　　　　　Both: RX and TX packet

```
   24TX + 2FX with 24 POE Injector Managed Switch : Port Mirroring
   =============================================

   Mirroring State : Disable

















Actions->   <Edit>    <Apply>    <Quit>
                    Select the action menu.
[TAB/BKSPC] Move Item        [Enter] Select Item        [Esc] Previous Menu
```

Port Mirroring interface

3. **Analysis port:** Set the destination port of mirroring packet. All of the packets of mirroring port will
   be duplicated and sent to Analysis port.

4. **Port State:** Select the ports that want to be mirrored.

5. Use **"Space"** key to mark the mirroring port can.

6. Select the **<Apply>**.

```
   24TX + 2FX with 24 POE Injector Managed Switch : Port Mirroring
   =============================================

   Mirroring State : Both
   Analysis Port : Port.01

   Port  State        Port  State        Port  State        Port  State
   ----------------------------------------------------------------------
   Port.01  -         Port.09  -         Port.17  -         Port.25  -
   Port.02  -         Port.10  -         Port.18  -         Port.26  -
   Port.03  -         Port.11  -         Port.19  -
   Port.04  -         Port.12  -         Port.20  -
   Port.05  -         Port.13  -         Port.21  -
   Port.06  -         Port.14  -         Port.22  -
   Port.07  -         Port.15  -         Port.23  -
   Port.08  -         Port.16  -         Port.24  -




Actions->   <Edit>    <Apply>    <Quit>
                    Select the action menu.
[TAB/BKSPC] Move Item        [Space] Toggle        [Esc] Previous Menu
```

Port Mirroring interface

3.4.5 VLAN Configuration

You can configure VLAN group in VLAN Configuration. There are four functions in VLAN Configuration

mode: VLAN Configuration, Create a VLAN Group, Edit/Delete VLAN Group and Group Sorted Mode.
Follow the below description to configure VLAN.

```
  24TX + 2FX with 24 POE Injector Managed Switch : VLAN Configuration
  =================================================


                        VLAN Configure

                        Create VLAN Group

                        Edit/Delete VLAN Group

                        Group Sorted Mode

                        Previous Menu




              Configure VLAN mode and ingress, egress rule.
[TAB/BKSPC] Move Item        [Enter] Select Item        [Esc] Previous Menu
```

VLAN Configuration Main interface

3.4.5.1 VLAN Configure

Before starting to configure VLAN, you must select the VLAN mode in VLAN Configure function.
Otherwise, user cannot create any new VLAN.

1.   Select the **<Edit>**.

2.   Select the VLAN mode by using **"Tab"** key. There are two VLAN modes: PortBase mode and
      802.1Q mode. When select the 802.1Q VLAN mode, you need to configuration the following
      settings.

      802.1Q VLAN mode: configuration VLAN ID, Ingress Filter, and Acceptable Frame Type.

      ➢   **VLAN ID Range:** Type the PVID. The PVID will only assign to the Ingress packets, not
            for all packets.

      ➢   **Ingress Filter:** It matches that Ingress Filtering Rule 2 on web. Drop untagged frame.
            Press "Space" key to select drop or forward the untagged frame.

      ➢   **Acceptable Frame type:** It matches that Ingress Filtering Rule 1 on web. Only forward
            packets with VID matching this port's configured VID. Press "Space" key to choose
            "forward" or "drop" the frame that VID not matching this port's configured VID.

3.   Select **<Apply>** to apply the configuration.

✍*Note:* When the VLAN mode changed that user has to restart the switch for valid value.

```
    24TX + 2FX with 24 POE Injector Managed Switch : VLAN Configure
    ===========================================

         VLAN Mode : 802.1Q
         VLAN ID Range : 1~255

                                 Ingress          Acceptable
         Port      VLAN ID       Filter           Frame Type
         ----------------------------------------------------
         Port.01   1             Enable           All
         Port.02   1             Enable           All
         Port.03   1             Enable           All
         Port.04   1             Enable           All
         Port.05   1             Enable           All
         Port.06   1             Enable           All
         Port.07   1             Enable           All
         Port.08   1             Enable           All



Actions->   <Edit>    <Apply>    <Previous Page>    <Next Page>    <Quit>
                            Select the Action menu.
[TAB/BKSPC] Move Item          [Space] Toggle          [Esc] Previous Menu
```

VLAN Configure interface

3.4.5.2 Create VLAN Group

Create Port-Based VLAN

1. Select **<Edit>**.

2. **VLAN Name:** Type a name for the new VLAN, ex: VLAN01.

3. **Group ID:** Type the VLAN group ID.

4. **Member:** Press "Space" key to change the member value. There are two types to selected:

    Member: the port is a member port.

    NO: it means that port is NOT a member port.

5. Press **"ESC"** key to go back action menu line.

6. Select **<Apply>** to apply the configuration.

✍*Note:* If you have configured the trunk groups, you can see it (ex: Trunk1, Trunk2…) in the port list.

You also can configure the trunk group as the VLAN member.

```
   24TX + 2FX with 24 POE Injector Managed Switch : Create VLAN Group
   ================================================

            VLAN Name : Security_VLAN      VLAN ID : 255

            Protocol VLAN : None

            Port            Member
            -----------------------
            Port.01         UnTagged
            Port.02         UnTagged
            Port.03         UnTagged
            Port.04         UnTagged
            Port.05         UnTagged
            Port.06         UnTagged
            Port.07         UnTagged
            Port.08         UnTagged


Actions->   <Edit>    <Apply>   <Previous Page>   <Next Page>   <Quit>
                           Select the Action menu.
[TAB/BKSPC] Move Item        [Enter] Select Item        [Esc] Previous Menu
```

Create VLAN Group: PortBase interface

Create 802.1Q VLAN

1.   **Enable security VLAN setting:** select to enable or disable security VLAN group. When you select
     to enable security VLAN group, only the members in this VLAN group can access to the switch.
     The steps of setting security VLAN refer to the following step 2~ 8. After you have configured the
     security VLAN group, you can continue to create other VLAN groups. When you didn't select to
     configure security VLAN group, then just create VLAN group refer to following step 2 ~ 8.

✎ *Note:* There is only one security VLAN group.

```
   24TX + 2FX with 24 POE Injector Managed Switch : Create VLAN Group
   ================================================

            VLAN Name :                    VLAN ID :

            Do you want to enable security VLAN setting (y/N)
```

2.   Select **<Edit>**.

3. **VLAN Name:** Type a name for the new VLAN, ex: VLAN01.

4. **VLAN ID:** Type a VID. The default is 1. There are 256 VLAN groups to provided configure.

5. **Protocol VLAN:** Press "Space" key to choose protocols type.

6. **Member:** Press "Space" key to change the member value.

> **Untagged:** this port is the member port of this VLAN group and outgoing frames are NO VLAN-Tagged frames.
>
> **Tagged:** this port is the member port of this VLAN group and outgoing frames are VLAN-Tagged frames.
>
> **NO:** it means that the port is NOT member of this VLAN group.

7. Press **"ESC"** key to go back action menu line.

8. Select **<Apply>** to apply the configuration.

✎*Note:* If the trunk groups exist, you can see it (ex: Trunk1, Trunk2…) on the port list, and you can configure it is the member of the VLAN or not.

```
   24TX + 2FX with 24 POE Injector Managed Switch : Create VLAN Group
   ===============================================

           VLAN Name : Security_VLAN     VLAN ID : 255

           Protocol VLAN : None

           Port            Member
           -----------------------
           Port.01         UnTagged
           Port.02         UnTagged
           Port.03         UnTagged
           Port.04         UnTagged
           Port.05         UnTagged
           Port.06         UnTagged
           Port.07         UnTagged
           Port.08         UnTagged


Actions->   <Edit>    <Apply>   <Previous Page>   <Next Page>   <Quit>
                        Select the Action menu.
[TAB/BKSPC] Move Item        [Enter] Select Item        [Esc] Previous Menu
```

Create VLAN Group: 802.1Q interface

3.4.5.3 Edit / Delete VLAN Group

User can edit or delete a VLAN group.

1. Select **<Edit>** or <Delete> action.

2. Select the VLAN group that you want to edit or delete, then press enter.

3. In **<Edit>** action, user can modify the member port and remove some member ports from this VLAN group.

✎*Note:*

1. The VLAN Name and VLAN ID cannot modify.

2. In 802.1Q VLAN mode, the default VLAN can't be deleting.

3. In Port Base VLAN mode, there is no default VLAN.

```
        Name                  VLAN ID    Name                 VLAN ID
        ---------------------  -------    ---------------------  -------
        DEFAULT                  1
                                 2




Actions->   <Edit>   <Delete>   <Previous Page>   <Next Page>   <Quit>
                          Edit/Delete a VLAN Group.
[TAB/BKSPC] Move Item       [Enter] Select Item      [Esc] Previous Menu  _
```

Edit/Delete a VLAN Group interface

Group Sorted Mode

You can select VLAN groups sorted mode: (1) **Name** (2) **VLAN ID**.

In the Edit/Delete a VLAN group page will display the result.

1. Select **<Edit>**

2. Use **"Space"** key to select the sort mode.

3. Select **<Apply>**

```
    24TX + 2FX with 24 POE Injector Managed Switch : Group Sorted Mode
       =============================================



                    VLAN Group Sorted by : Name






Actions->   <Edit>   <Apply>   <Quit>
                          Select the action menu.
[TAB/BKSPC] Move Item       [Enter] Select Item      [Esc] Previous Menu
```

3.4.6 Priority Configuration

You can configure port priority level. There are 0~7-priority level can map to high or low queue.

1. Select **<Edit>**.

2. Press **"Space"** key to select the priority level mapping to high or low queue.

3. **Qos Mode:** User can select the ratio of high priority packets and low priority packets.

> **First Come first service:** the switch will process the packet that is coming first.
>
> **All High Before low:** the packet priority is high will be process before the packet priority is low.
>
> **Weight Round Ration 2:1:** the switch will process 2 high priority packet first, the process 1 low priority packet.
>
> **Weight Round Ration 3:1:** the switch will process 3 high priority packet first, the process 1 low priority packet.
>
> **Weight Round Ration 4:1:** the switch will process 4 high priority packet first, the process 1 low priority packet.
>
> **Weight Round Ration 5:1:** the switch will process 5 high priority packet first, the process 1 low priority packet.
>
> **Weight Round Ration 6:1:** the switch will process 6 high priority packet first, the process 1 low priority packet.
>
> **Weight Round Ration 7:1:** the switch will process 7 high priority packet first, the process 1 low priority packet.

4. Press **"ESC"** goes back action menu line.

5. Select **<Apply>** to apply all configure value.

```
   24TX + 2FX with 24 POE Injector Managed Switch : Priority Configuration
   =============================================

                  Level 0 : Low
                  Level 1 : Low
                  Level 2 : Low
                  Level 3 : Low
                  Level 4 : High
                  Level 5 : High
                  Level 6 : High
                  Level 7 : High

                  QoS Mode : All High Before Low




Actions->   <Edit>   <Apply>   <Quit>
                     Select the action menu.
[TAB/BKSPC] Move Item      [Enter] Select Item      [Esc] Previous Menu
```

Priority Configuration interface

3.4.7 MAC Address Configuration

When you add a static MAC address, it remains in the switch's address table, regardless of whether the device is physically connected to the switch. This saves the switch from having to re-learn a device's MAC address when the disconnected or powered-off device is active on the network again. You can add / modify / delete a static MAC address.

```
   24TX + 2FX with 24 POE Injector Managed Switch : MAC Address Configuration
   =================================================

                        Static MAC Address

                        Filtering MAC Address

                        Previous Menu




                        Configure the MAC address._
[TAB/BKSPC] Move Item          [Enter] Select Item
```
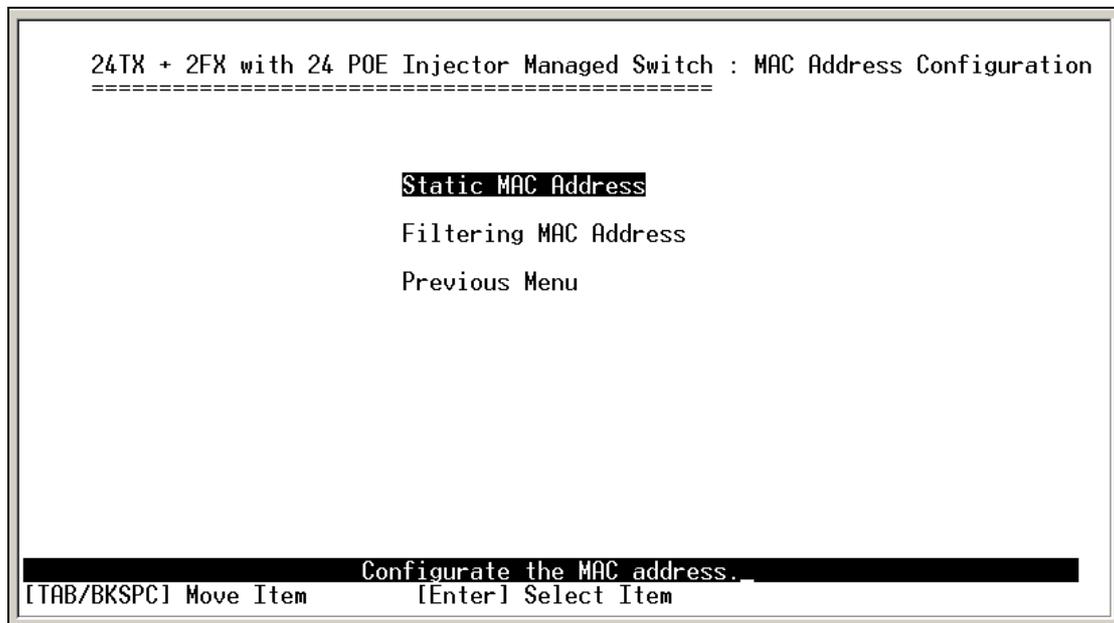
MAC Address Configuration interface

3.4.7.1 Static MAC Address

Add the Static MAC Address

You can add static MAC address in switch MAC table.

1.   Select **<Add> --> <Edit>** key to add the static MAC address.

2.   **MAC Address:** Enter the MAC address of the port that should permanently forward traffic, regardless of the device network activity.

3.   **Port No.:** press "Space" key to select the port number.

4.   **VLAN ID:** select the VLAN ID that the added Mac address belongs to.

5.   Press **"ESC"** to go back action menu line.

6.   Select **<Apply>** to apply all configure value.

```
    24TX + 2FX with 24 POE Injector Managed Switch : Add Static MAC Address
    ========================================================================



                    MAC Address :

                    Port No.    :

                    VLAN ID     :










Actions->    <Edit>    <Apply>    <Quit>
                            Select the action menu.
[TAB/BKSPC] Move Item          [Enter] Select Item        [Esc] Previous Menu
```
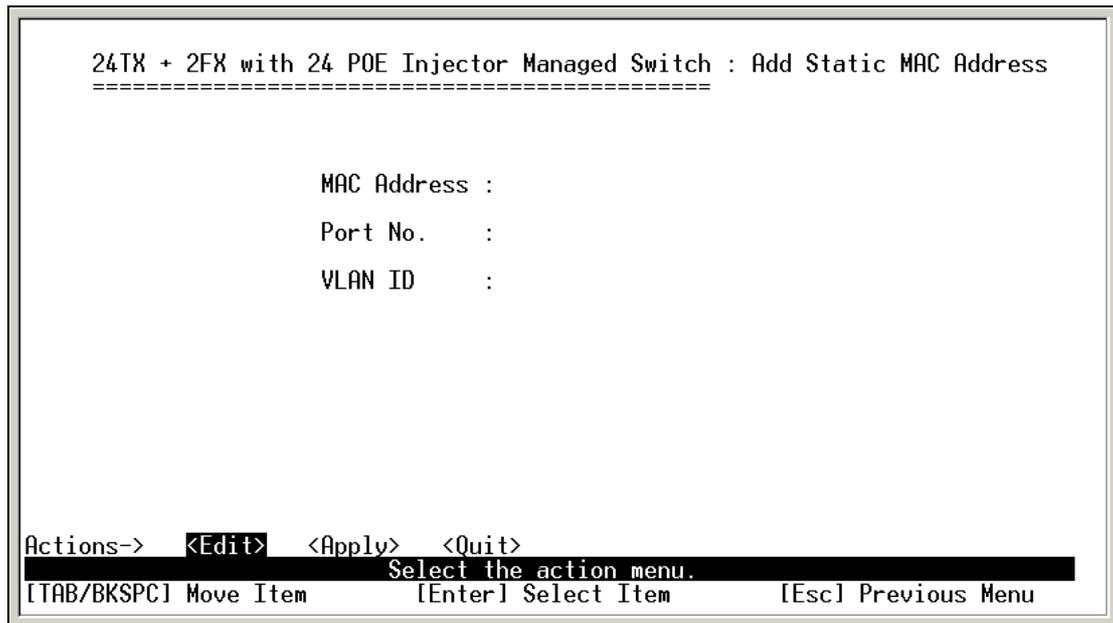
Add Static MAC Address interface

Edit static MAC address

1.   Press **<Edit>**.

2.   Choose the MAC address that you want to modify and then press **"Enter"**.

3.   Press **<Edit>** key to modify.

4.   Press **"ESC"** to go back action menu line.

5.   Select **<Apply>** to apply all configure value.

Delete static MAC address

1.   Press **<Delete>** key.

2.   Choose the MAC address that you want to delete and then press **"Enter"**.

3.   When pressing **"Enter"** will complete deletion.

3.4.7.2 Filtering MAC Address

You can add, delete, and edit filtering MAC address.

```
     24TX + 2FX with 24 POE Injector Managed Switch : Filtering MAC Address
     =================================================

  MAC Address    VLAN ID                    MAC Address    VLAN ID
  ------------------------------             ------------------------------










Actions->   <Add>   <Edit>   <Delete>   <Previous Page>   <Next Page>   <Quit>
                         Add/Edit/Delete a Mac.
[TAB/BKSPC] Move Item          [Enter] Select Item          [Esc] Previous Menu  _
```

Filtering MAC Address interface

Add the Filtering MAC Address

1. Select <Add> --> <Edit> key to add the static MAC address.

2. MAC Address: Enter the MAC address that you want to filter.

3. Press "ESC" to go back action menu line.

4. Select <Apply> to apply all configure value.

```
     24TX + 2FX with 24 POE Injector Managed Switch : Add Filter MAC Address
     =================================================


               MAC Address :

               VLAN ID     :









Actions->  <Edit>_   <Apply>   <Quit>
                    Select the action menu.
[TAB/BKSPC] Move Item          [Enter] Select Item          [Esc] Previous Menu
```

Add Filtering MAC Address interface

Edit Filtering MAC address

1. Press <Edit> key to modify a static Filtering address.

2. Choose the MAC address that you want to modify and then press "Enter".

3. Select <Edit> key to modify.

4. Press "ESC" to go back action menu line

5. Select <Apply> to apply all configure value.

Delete Filtering MAC address

1. Press <Delete> to delete a Filtering MAC address.

2. Choose the MAC address that you want to delete and then press "Enter".

3.4.7.3 Misc Configuration

You can configure the switch parameters.

- **MAC Address Ageing Time:** MAC address table refresh time setting. Type the number of seconds that an inactive MAC address remains in the switch's address table. The valid range is 0, 300~765 seconds. Default is 300 seconds.

- **Broadcast Storm Filter mode:** configure the broadcast storm filter mode. The valid threshold values are 5%, 10%, 15%, 20%, 25%, and N/A. The port will be block cause of broadcast packet is over the percentage of traffic.

- **Max Bridge Transmit Delay Bound:** Limit the packets queuing time in switch. If enable, the packets queued exceed will be drop. Press Space key to set the time. This valid value are 1sec, 2sec, 4sec and off. Default is off.

- **Low Queue Delay Bound:** Limit the low priority packets queuing time in switch. If enable, the low priority packet stays in switch exceed Low Queue Max Delay Time, it will be sent. Press Space key to enable or disable this function.

- **Low Queue Max Delay Time:** To set the time that low priority packets queuing in switch. Default Max Delay Time is 255ms. The valid range is 1~255 ms.

  ✍*Note:* Make sure of "Max bridge transit delay bound control" is enabled before enable Low Queue Delay Bound, because Low Queue Delay Bound must be work under "Max bridge transit delay bound control" is enabled situation.

- **Collisions Retry Forever:** Disable In half duplex, if happen collision will retry 48 times and then drop frame. Enable - In half duplex, if happen collision will retry forever

- **Hash Algorithm:** This Hash Algorithm is for hardware maintain on MAC table calculation. Provide CRC or Direct Map

- **IFG compensation:** Disable or Enable

```
      24TX + 2FX with 24 POE Injector Managed Switch : Misc Configuration
      ===============================================

            MAC Address Ageing Time (0, 300..765) : 300

            Broadcast Storm Filter Mode          :  5%

            Max Bridge Transmit Delay Bound      : OFF
            Low Queue Delay Bound                : Disable
            Low Queue Max Delay Time (1..255)    : 255

            Collisions Retry Forever             : Enable

            Hash Algorithm                       : CRC Hash

            IFG Compensation                     : Enable



Actions->    <Edit>    <Apply>    <Quit>
                        Select the action menu.
[TAB/BKSPC] Move Item        [Enter] Select Item        [Esc] Previous Menu
```

Misc Configuration interface

3.4.8 Protocol Related Configuration

You can configure Spanning Tree Protocol, SNMP, LACP, IGMP/GVRP, and 802.1x in Protocol Relate

Configuration section.

```
      24TX + 2FX with 24 POE Injector Managed Switch : Misc Configuration
      ===============================================

            MAC Address Ageing Time (0, 300..765) : 300

            Broadcast Storm Filter Mode          :  5%

            Max Bridge Transmit Delay Bound      : OFF
            Low Queue Delay Bound                : Disable
            Low Queue Max Delay Time (1..255)    : 255

            Collisions Retry Forever             : Enable

            Hash Algorithm                       : CRC Hash

            IFG Compensation                     : Enable



Actions->    <Edit>    <Apply>    <Quit>
                        Select the action menu.
[TAB/BKSPC] Move Item        [Enter] Select Item        [Esc] Previous Menu
```

Protocol Relate Configuration interface

3.4.8.1 STP

Spanning tree is a link management protocol that provides path redundancy while preventing undesirable

loops in the network.

```
    24TX + 2FX with 24 POE Injector Managed Switch : Misc Configuration
    =============================================

            MAC Address Ageing Time (0, 300..765) : 300

            Broadcast Storm Filter Mode           : 5%

            Max Bridge Transmit Delay Bound       : OFF
            Low Queue Delay Bound                 : Disable
            Low Queue Max Delay Time (1..255)     : 255

            Collisions Retry Forever              : Enable

            Hash Algorithm                        : CRC Hash

            IFG Compensation                      : Enable




Actions->    <Edit>   <Apply>   <Quit>
                     Select the action menu.
[TAB/BKSPC] Move Item        [Enter] Select Item        [Esc] Previous Menu
```

STP Configuration interface

3.4.8.1.1 STP Setup

You must enable Spanning Tree function before configuration.

1.   Select **<Edit>**

2.   Use **"Space"** key to select the option.

3.   Select **<Apply>**.

```
    24TX + 2FX with 24 POE Injector Managed Switch : STP Setup
    =============================================


                        STP : Disable










Actions->    <Edit>   <Apply>   <Quit>
                     Select the action menu.
[TAB/BKSPC] Move Item        [Enter] Select Item        [Esc] Previous Menu
```

STP Setup interface

3.4.8.1.2 System Configuration

You can configure the STP system parameter after enable the STP function. You can view spanning tree informationa about the Root Bridge on the left.

1.   Select **<Edit>**

2.   **Priority:** assign path priority number.

3.   **Max Age:** the maximum path age

4.   **Hello Time:** the time that controls switch sends out the BPDU packet to check STP current status.

5.   **Forward Delay Time:** forward delay time.

6.   Select **<Apply>**.

```
   24TX + 2FX with 24 POE Injector Managed Switch : STP System Configuration
   =============================================


   Root Bridge Information             Configure Spanning Tree Parameters
   ----------------------------        ----------------------------------
   Priority        : 32768             Priority (0-65535)        : 32768
   Mac Address     : 00304F000001
   Root Path Cost  : 0                 Max Age (6-40)            : 20
   Root Port       : Root
   Max Age         : 20                Hello Time (1-10)         : 2
   Hello Time      : 2
   Forward Delay   : 15                Forward Delay Time (4-30) : 15




Actions->   <Edit>    <Apply>    <Quit>
                        Select the action menu.
[TAB/BKSPC] Move Item       [Enter] Select Item       [Esc] Previous Menu
```

STP System Configuration interface

3.4.8.1.3 Per Port Setting

1.   Select **<Edit>**.

2.   **Path Cost:** specifies the path cost of the port that switch uses to determine which port are the forwarding ports.

3.   **Priority:** This is mean port priority; you can make it more or less likely to become the root port.

4.   Press **"ESC"** goes back action menu line.

5.   Select **<Apply>** to apply all configure value.

6.   On the action menu line you can press **<Next Page>** to configure rest of ports, press <Previous Page> return to previous page.

```
   24TX + 2FX with 24 POE Injector Managed Switch : STP Per Port Setting
   =============================================

   Port         State          Path Cost        Priority
   ----------------------------------------------------------------
   Port.01      Disconnect     10               128
   Port.02      Disconnect     10               128
   Port.03      Disconnect     10               128
   Port.04      Disconnect     10               128
   Port.05      Disconnect     10               128
   Port.06      Disconnect     10               128
   Port.07      Disconnect     10               128
   Port.08      Disconnect     10               128




Actions->   <Edit>   <Apply>   <Previous Page>   <Next Page>   <Quit>
                          Select the Action menu.
[TAB/BKSPC] Move Item          [Enter] Select Item          [Esc] Previous Menu
```

Per Port Setting interface

3.4.8.2 SNMP

To define management stations as trap managers and to enter SNMP community strings. You can also define a name, location, and contact person for the switch.

```
   24TX + 2FX with 24 POE Injector Managed Switch : SNMP Configuration
   =============================================




                        System Options

                        Community Strings

                        Trap Managers

                        Previous Menu






                    Configurate the system information.
[TAB/BKSPC] Move Item          [Enter] Select Item
```

SNMP Configuration interface

3.4.8.2.1 SNMP System Options

1.   Press **<Edit>**.

2.   **Name:** assign a name for the switch.

3.   **Contact:** Type the name of contact person or organization.

4. **Location:** Type the location of the switch.

5. Press **"ESC"** goes back action menu line.

6. Press **<Apply>** to apply configuration value.

```
   24TX + 2FX with 24 POE Injector Managed Switch : SNMP System Options
   =================================================


  Name     :

  Contact  :

  Location :






Actions->   <Edit>    <Apply>    <Quit>
                     Select the action menu.
[TAB/BKSPC] Move Item      [Enter] Select Item      [Esc] Previous Menu
```

SNMP System Options interface

3.4.8.2.2 Community Strings

Add Community Strings

1. Select **<Add>** -> **<Edit>.**

2. **Community Name:** type the name of community strings.

3. **Write Access:** enable the rights is read only or read/write.

> **Read only:** Read only, enables requests accompanied by this string to display MIB-object information.

> **Read/Write:** Read write, enables requests accompanied by this string to display MIB-object information and to set MIB objects.

```
    24TX + 2FX with 24 POE Injector Managed Switch : Add SNMP Community
    ================================================



                    Community Name :

                    Write Access   : Read Only







 Actions->    <Edit>    <Apply>    <Quit>
                         Select the action menu.
 [TAB/BKSPC] Move Item        [Enter] Select Item        [Esc] Previous Menu
```
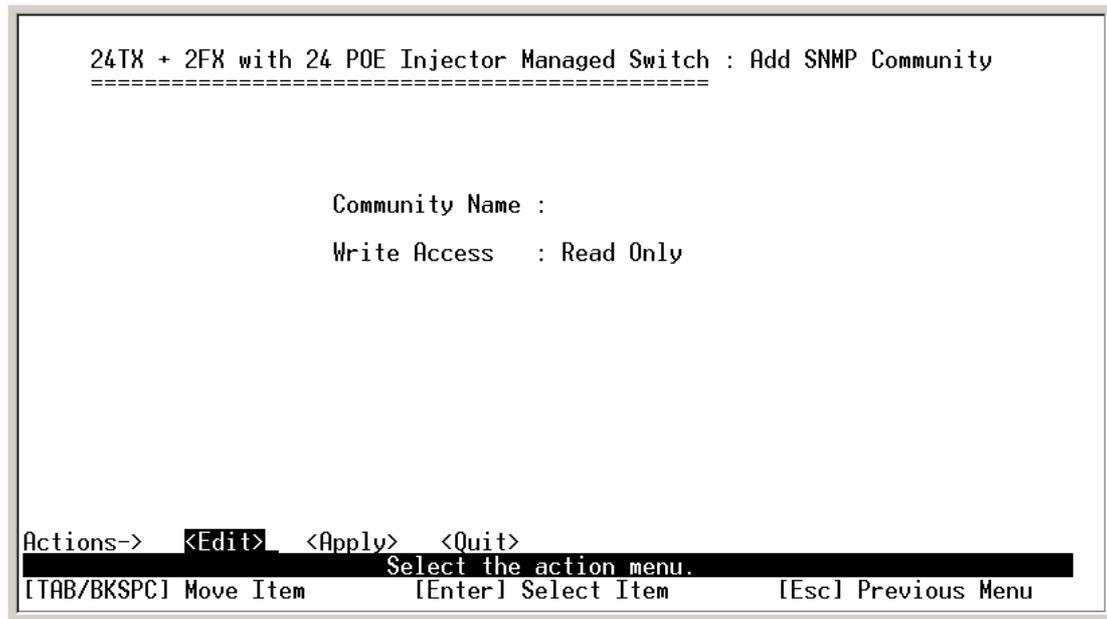
Add Community Strings interface

Edit SNMP Community

1.   Select **<Edit>**

2.   Choose the item that you want to modify and then press **"Enter"**.

3.   **Community Name:** type the new name.

4.   **Write Access:** Press "Space" key to change the right.

5.   Select **<Apply>**.

Delete SNMP Community string

1.   Select **<Delete>**.

2.   Choose the community string that you want to delete and then press **"Enter"**.

3.   When pressing **"Enter"** will complete deletion.

3.4.8.2.3 Trap Managers

A trap manager is a management station that receives traps, the system alerts generated by the switch. If

no trap manager is defined, no traps will issue. Create a trap manager by entering the IP address of the

station and a community string.

```
       24TX + 2FX with 24 POE Injector Managed Switch : SNMP Trap Managers
       =========================================

   IP                  Community Name
   ----------------------------------------------------








   Actions->    <Add>   <Edit>   <Delete>   <Quit>
                     Add/Edit/Delete trap managers.
   [TAB/BKSPC] Move Item        [Enter] Select Item      [Esc] Previous Menu
```

Trap Managers interface

Add the trap manager

1.   Select **<Add> -> <Edit>** to add the trap manager.

2.   **IP:** type the IP address.

3.   **Community Name:** type the community name.

4.   Press **"ESC"** go back to actions menu line

5.   Select **<Apply>** to apply all configure.

```
       24TX + 2FX with 24 POE Injector Managed Switch : Add SNMP Trap Manager
       =========================================



                    IP :

                    Community Name :






   Actions->    <Edit>   <Apply>   <Quit>
                     Select the action menu.
   [TAB/BKSPC] Move Item        [Enter] Select Item      [Esc] Previous Menu
```

Add Trap Manager interface

Delete Trap Manager

1.   Select **<Delete>**

2. Choose the trap manager that you want to delete and then press **"Enter"**.

3. When pressing **"Enter"** will complete deletion.

3.4.8.3 LACP

The Link Aggregation Control Protocol (LACP) provides a standardized means for exchanging information between Partner Systems on a link to allow their Link Aggregation Control instances to reach agreement on the identity of the Link Aggregation Group to which the link belongs, move the link to that Link Aggregation Group, and enable its transmission and reception functions in an orderly manner. Link aggregation lets you group up to eight consecutive ports into a single dedicated connection. This feature can expand bandwidth to a device on the network. **LACP operation requires full-duplex mode**, more detail information refers to IEEE 802.3ad. You can configure and view all the LACP status.

```
24TX + 2FX with 24 POE Injector Managed Switch : LACP Configuration
==============================================


                          Working Ports
                          State Activity
                          Group Status
                          Previous Menu






                       Working ports setting.
[TAB/BKSPC] Move Item        [Enter] Select Item
```
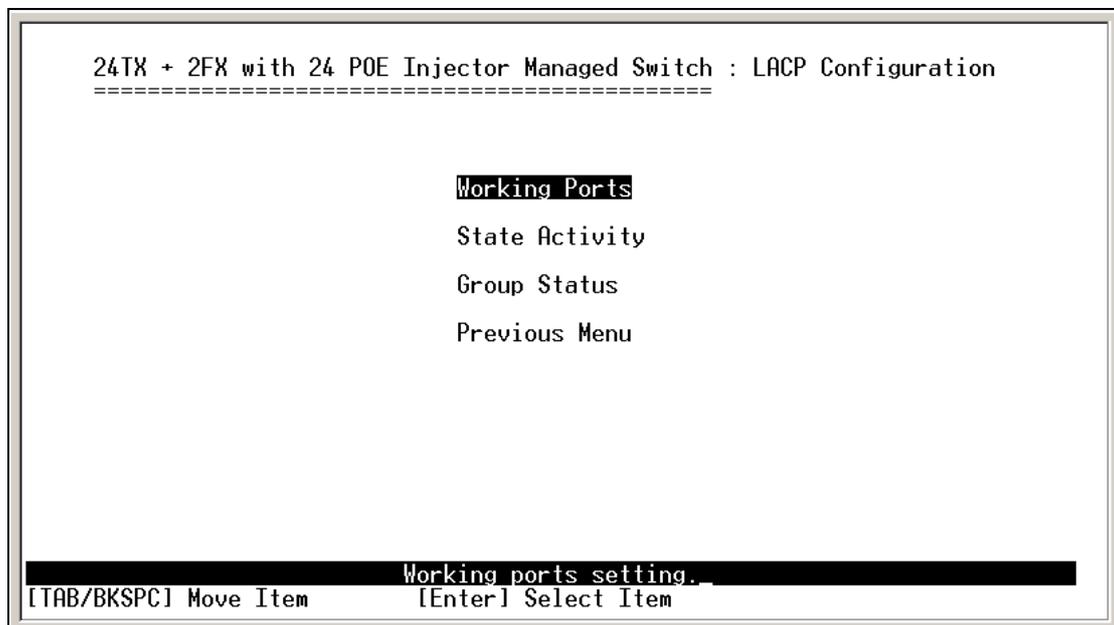
LACP Configuration interface

3.4.8.3.1 Working Ports Setting

1. Select **<Edit>**
2. **Group:** Display the trunk group ID.
3. **Working Port Num:** The max number of ports can be aggregated at the same time. If LACP static trunk group, the exceed ports is standby and able to aggregate if work ports fail. If it is local static trunk group, the number must be the same as group ports.
4. Select **<Apply>**

✎*Note:*   Before set LACP support, you have to set trunk group on the Trunk Configuration.

```
     24TX + 2FX with 24 POE Injector Managed Switch : LACP Working Ports
     ==============================================


                    Group      Work Ports
                    ---------------------------













Actions->    <Edit>    <Apply>   <Quit>
                         Select the action menu.
[TAB/BKSPC] Move Item        [Enter] Select Item      [Esc] Previous Menu
```

LACP Working Ports configuration interface

3.4.8.3.2 LACP State Activity

1.   Select **<Edit>**

2.   Use **"Space"** key to select the Port State Activity.

     Active: The port automatically sends LACP protocol packets.

     Passive: The port does not automatically send LACP protocol packets, and responds only if

     it receives LACP protocol packets from the opposite device.

3.   Select **<Apply>**.

```
     24TX + 2FX with 24 POE Injector Managed Switch : LACP State Activity
     ================================================

     Port         State Activity          Port         State Activity
     ---------------------------          ---------------------------










Actions->    <Edit>    <Apply>   <Quit>
                         Select the action menu.
[TAB/BKSPC] Move Item        [Enter] Select Item      [Esc] Previous Menu
```

LACP State Activity configuration interface

3.4.8.3.3 LACP Group Status

When you are setting trunk group, you can see the relation information in here.

```
    24TX + 2FX with 24 POE Injector Managed Switch : LACP Group Status
    ================================================



                            NO GROUP ACTIVE








Actions->    <Previous Page>   <Next Page>    <Quit>
                         Select the action menu.
[TAB/BKSPC] Move Item        [Enter] Select Item        [Esc] Previous Menu
```

LACP Group State interface

3.4.8.4 IGMP/GVRP Configuration

You can enable or disable the IGMP/GVRP (GARP VLAN Registration Protocol).

1.   Select **<Edit>**

2.   Use **"Space"** key to change the value

3.   Select **<Apply>**

```
    24TX + 2FX with 24 POE Injector Managed Switch : IGMP/GVRP Configuration
    ================================================



                   IGMP       : Disable

                   Query Mode : Disable

                   GVRP       : Disable






Actions->    <Edit>   <Apply>    <Quit>
                         Select the action menu.
[TAB/BKSPC] Move Item        [Enter] Select Item        [Esc] Previous Menu
```

IGMP/GVRP Configuration interface

3.4.8.5 802.1x Configuration

You can configure 802.1x relate settings.

```
   24TX + 2FX with 24 POE Injector Managed Switch : 802.1x Configuration
   ================================================


                          802.1x Setup

                          System Configuration

                          Per Port Setting

                          Misc Configuration

                          Previous Menu




              Enable or disable 802.1x Protocol function.
[TAB/BKSPC] Move Item        [Enter] Select Item
```

802.1x Configuration interface

3.4.8.5.1 802.1x Setup

1.   Select **<Edit>**

2.   Use **"Space"** key to Enable or Disable the 802.1x.

3.   Select **<Apply>**

```
   24TX + 2FX with 24 POE Injector Managed Switch : 802.1x Setup
   ================================================


                     802.1x : Disable












Actions->    <Edit>    <Apply>    <Quit>
                   Select the action menu.
[TAB/BKSPC] Move Item        [Enter] Select Item        [Esc] Previous Menu
```

802.1x Setup interface

3.4.8.5.2 System Configuration

After enabling the IEEE 802.1X function, you can configure the parameters of this function.

1. Select **<Edit>**

2. **Radius Server IP:** set the Radius Server IP address.

3. **Shared Key:** set an encryption key for using during authentication sessions with the specified radius server. This key must match the encryption key used on the Radius Server.

4. **NAS, Identifier:** set the identifier for the radius client.

5. **Server Port:** set the UDP destination port for authentication requests to the specified Radius Server.

6. **Accounting Port:** set the UDP destination port for accounting requests to the specified Radius Server.

7. Select **<Apply>**

```
   24TX + 2FX with 24 POE Injector Managed Switch : 802.1x Configuration
   ================================================

                        802.1x Setup

                        System Configuration

                        Per Port Setting

                        Misc Configuration

                        Previous Menu




                     System configuration setup.
[TAB/BKSPC] Move Item        [Enter] Select Item
```
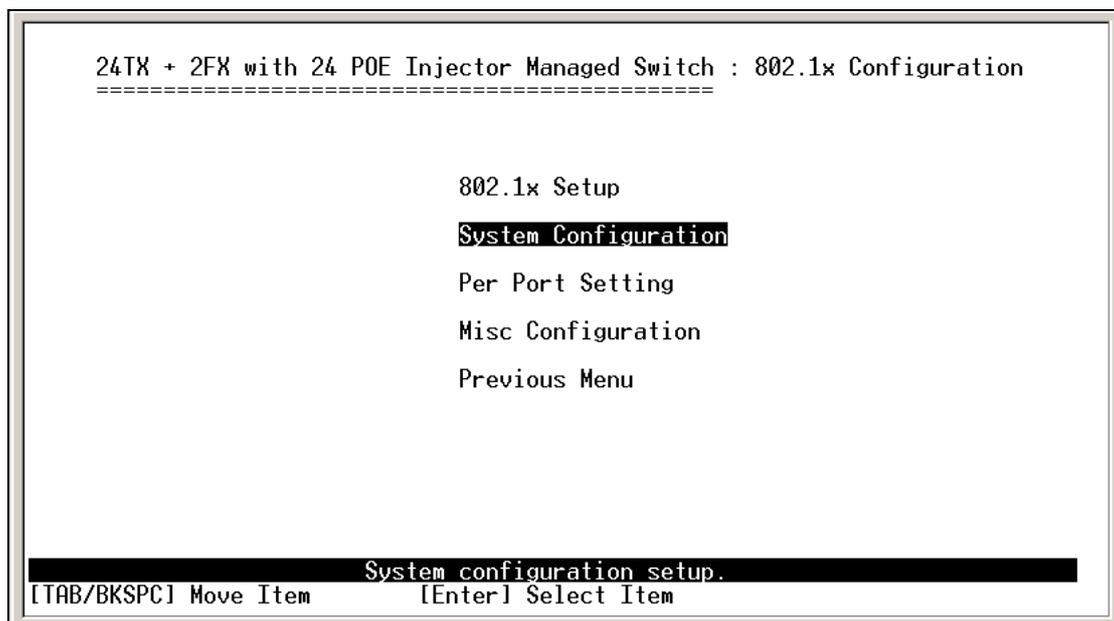
802.1x System Configuration interface

3.4.8.5.3 Per Port Setting

The State provides Disable, Accept, Reject and Authorize. Use "Space" key change the state value.

    Reject: the specified port is required to be held in the unauthorized state.

    Accept: the specified port is required to be held in the Authorized state.

    Authorized: the specified port is set to the Authorized or Unauthorized state in accordance with the outcome of an authentication exchange between the Supplicant and the authentication server.

    Disable: The specified port is required to be held in the Authorized state.

```
   24TX + 2FX with 24 POE Injector Managed Switch : 802.1x Per Port Setting
   =================================================


        Port              State
        ----------------------------
        Port.01           Disable
        Port.02           Disable
        Port.03           Disable
        Port.04           Disable
        Port.05           Disable
        Port.06           Disable
        Port.07           Disable
        Port.08           Disable




Actions->    <Edit>    <Apply>    <Previous Page>    <Next Page>    <Quit>
                            Select the Action menu.
[TAB/BKSPC] Move Item        [Enter] Select Item        [Esc] Previous Menu
```

802.1x Per Port Setting interface

3.4.8.5.4 Misc Configuration

1. Select **<Edit>**

2. **Quiet period:** set the period during which the port doesn't try to acquire a supplicant.

3. **TX period:** set the period the port wait for retransmit next EAPOL PDU during an authentication session.

4. **Supplicant timeout:** set the period of time the switch waits for a supplicant response to an EAP request.

5. **Server timeout**: set the period of time the switch waits for a server response to an authentication request.

6. **Reauthorize Maximum:** set the number of authentication that must time-out before authentication fails and the authentication session ends.

7. **Reauthorize period:** set the period of time after which clients connected must be re-authenticated.

8. Select **<Apply>**

```
   24TX + 2FX with 24 POE Injector Managed Switch : 802.1x Misc Configuration
   =========================================

                   Quiet Period (0..65535, Default=60)      : 60

                   Tx Period (0..65535, Default=30)         : 30

                   Supplicant Timeout (1..300, Default=30)  : 30

                   Server Timeout (1..300, Default=30)      : 30

                   Reauthorize Maximum (1..10, Default=2)   : 2

                   Reauth Period (1..9999999, Default=3600) : 3600



 Actions->    <Edit>   <Apply>   <Quit>
                    Select the action menu.
 [TAB/BKSPC] Move Item        [Enter] Select Item      [Esc] Previous Menu
```

802.1x Misc Configuration interface

3.4.9 System Reset Configuration

```
   24TX + 2FX with 24 POE Injector Managed Switch : System Reset Configuration
   =========================================



                        Factory Default

                        System Reboot

                        TFTP Configuration

                        Previous Menu





                     Restore to factory default setting.
 [TAB/BKSPC] Move Item        [Enter] Select Item
```

System Reset Configuration interface

3.4.9.1 Factory Default

Reset switch to default configuration. Press "Y", switch will load default setting. After finished load default
setting, switch will reboot automatically.

```
Do you want to restore factory default setting? (y/N)
```
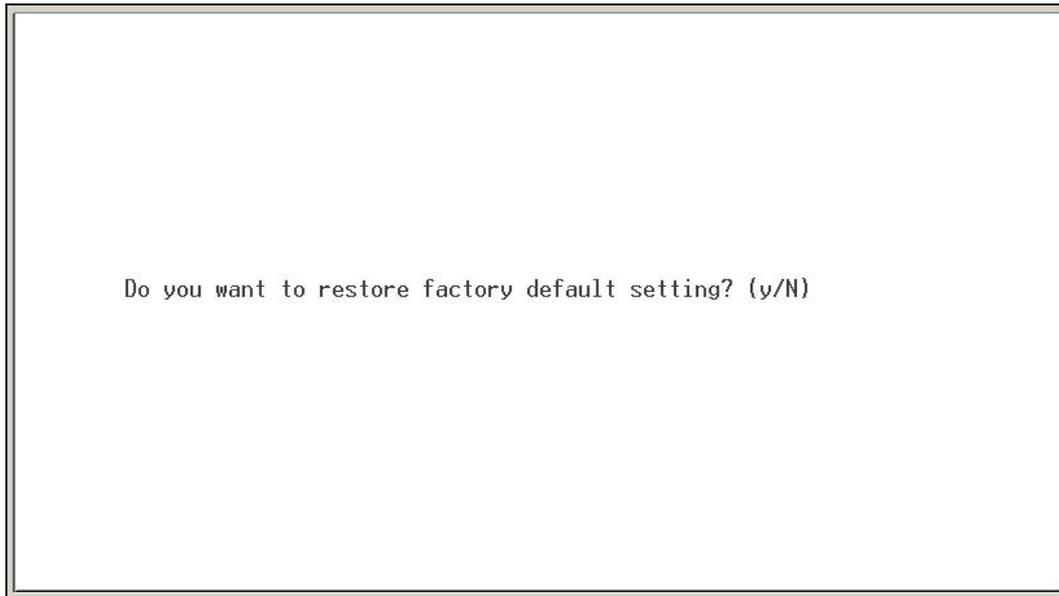
Factory Default interface

3.4.9.2 System Reboot

Reboot the switch in software reset.

3.4.9.3 TFTP Configuration

It provides user to update firmware or restore Flash ROM value or upload current Flash ROM value.
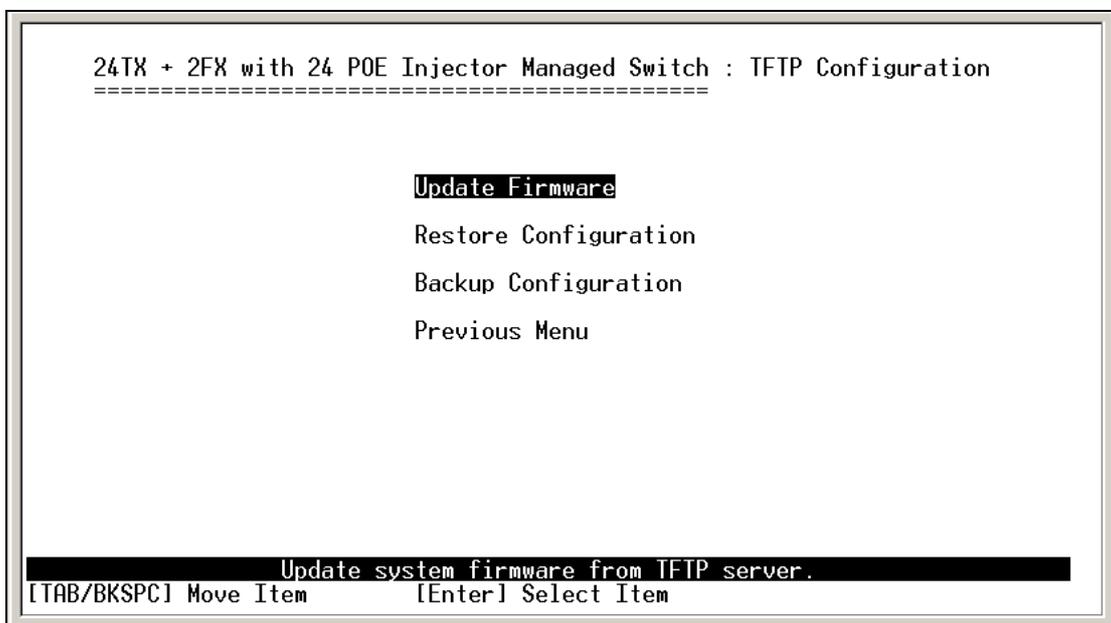
```
24TX + 2FX with 24 POE Injector Managed Switch : TFTP Configuration
============================================

                    Update Firmware

                    Restore Configuration

                    Backup Configuration

                    Previous Menu




                    Update system firmware from TFTP server.
[TAB/BKSPC] Move Item        [Enter] Select Item
```

TFTP Update Firmware interface

3.4.9.3.1 TFTP Update Firmware

It provides user uses TFTP to update firmware.

1.   Start the TFTP server, and copy firmware update version image file to TFTP server.

2.   Select **<Edit>**.

3.   **TFTP Server IP:** type the IP of TFTP server.

4.   **Firmware File Name:** type the image file name.

5.   Press **"ESC"** goes back to action line.

6.   Select **<Apply>**, it will start to download the image file.

7.   When save successfully, the image file download finished, too.

8.   Restart switch.

```
   24TX + 2FX with 24 POE Injector Managed Switch : TFTP Update Firmware
   =============================================



            TFTP Server IP     : 192.168.0.2

            Firmware File Name : image.bin








Actions->   <Edit>    <Apply>    <Quit>
                          Select the action menu.
[TAB/BKSPC] Move Item       [Enter] Select Item      [Esc] Previous Menu
```

TFTP Update Firmware interface

3.4.9.3.2 TFTP Restore Configuration

You can restore EEPROM value, which saved in TFTP server, from TFTP server.

1.   Start the TFTP server.

2.   Select **<Edit>**.

3.   **TFTP Server IP:** type the IP of TFTP server.

4.   **Restore File Name:** type the image file name.

5.   Press **"ESC"** back to action menu line.

6.   Select **<Apply>**, it will start to download the image file.

7.   When save successfully, the image file download finished too.

8.   Restart switch.

```
   24TX + 2FX with 24 POE Injector Managed Switch : TFTP Restore Configuration
   =============================================


            TFTP Server IP    : 192.168.0.2

            Restore File Name : data.dat






Actions->   <Edit>    <Apply>    <Quit>
                        Select the action menu.
[TAB/BKSPC] Move Item        [Enter] Select Item        [Esc] Previous Menu
```

TFTP Restore Configuration interface

3.4.9.3.3 TFTP Backup Configuration

You can save current EEPROM value to TFTP server as backup. The backup file can be restore from TFTP server when you need.

1. Start the TFTP server.

2. Select **<Edit>**.

3. **TFTP Server IP:** type the IP of TFTP server.

4. **Backup File Name:** type the image file name.

5. Press **"ESC"** back to action line.

6. Select **<Apply>** key, it will start to upload the image file.

7. When save successfully, the image file upload finished too.

8. Restart switch.

```
    24TX + 2FX with 24 POE Injector Managed Switch : TFTP Backup Configuration
    ================================================


             TFTP Server IP   : 192.168.0.2

             Backup File Name : data.dat






Actions->    <Edit>    <Apply>    <Quit>
                      Select the action menu.
[TAB/BKSPC] Move Item        [Enter] Select Item      [Esc] Previous Menu
```

TFTP Backup Configuration interface

3.4.10 UPS Menu

You can view connected UPS information and set command to UPS.

```
==========================UPS Command Menu==========================

               Now / Min /  Max    [1]: Test for 10 seconds
I/P Volt. =   0.0 / 0.0 /  0.0 V   [2]: Test until battery low
O/P Volt. =   0.0 / 0.0 /  0.0 V   [3]: Test for 5 mins
Frequency =   0.0 / 0.0 /  0.0 Hz  [4]: Shutdown after 1 min
Bty. Cap. =   0   / 0   /  0   %   [5]: Shutdown af. 1m and restore af. 2m
Overload  =   0   / 0   /  0   %   [6]: Cancel Test
Temperat. =   0.0 / 0.0 /  0.0 C   [7]: Cancel Shutdown
                                   [8]: Turn ON/OFF Beeper

RatVoltage    =   0.0 Vac
RatBtyVoltage =   0.0 Vdc
RatCurrent    =   0   A
RatFreqency   =   0.0 Hz           [a]: Auto refresh (On/Off)
                                   [0]: Exit
Company Name:
Module     :                           Select command:[_]
Version    :

[NG] UPS Connect   [NG] UPS Break
[NG] UPS Input     [NG] UPS Bypass
[NG] Potential     [NG] UPS Testing
[NG] Beeper        [NG] UPS Shutdown
```

UPS information display area   UPS command setting area

UPS information display

    I/P Volt.: display the current value, minimum, and maximum value of UPS input voltage.

    O/P Volt.: display the current value, minimum, and maximum value of UPS output voltage.

    Frequency: display the frequency value of UPS.

Bty. Cap.: display the battery capacity of UPS.

Overload: display the overload capacity of UPS.

Temperat.: display the current temperature of UPS.

UPS commands

Command	Description
[1] Test for 10 seconds	UPS will perform the self test for 10 seconds
[2] Test until battery low	UPS will perform the battery test until the battery capacity is low
[3] Test for 5 min.	UPS will perform the self test for 5 minutes
[4] Shutdown after 1 min.	Shutdown UPS after 1 minute
[5] Shutdown af. 1m and restore of 2m	Shutdown UPS after 1 minute and then restart the UPS after 2 minutes
[6]. Cancel Test	Cancel the any test action command
[7] Cancel Shutdown	Cancel the any shutdown action command
[8] Turn ON/OFF Beeper	Turn on the UPS beeper or turn off the UPS beeper
[a] Auto Refresh	Enabling the screen auto refresh
[0] Exit	Exit the UPS menu mode

Select command: enter the UPS command number in this prompt and press enter.

Bty. cap.: display the remain battery capacity in percentage.

3.4.11 POE Menu

You can view POE port information and set command to POE port.

```
POE Information display
```
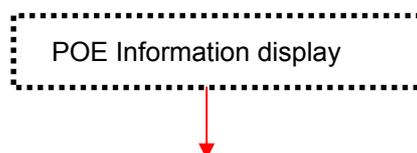
```
 Firmware Version: 2.1 ========= POE Menu ==============================
           Port:01 Port:02 Port:03 Port:04 Port:05 Port:06 Port:07 Port:08
Port Enable       Y       Y       Y       Y       Y       Y       Y       Y
PwrLimitClass.    N       N       N       N       N       N       N       N
PwrLimitManag.    N       N       N       N       N       N       N       N
Detect Legacy.    N       N       N       N       N       N       N       N
Priority          Low     Low     Low     Low     Low     Low     Low     Low
PowerLimitMax     15400   15400   15400   15400   15400   15400   15400   15400
Fault Status      null    null    null    null    null    null    null    null
Mode Status       R Detct R Detct R Detct R Detct V Smpl  R Detct R Detct R Detct
Dsvry.R(ohms)     131068  131068  131068  131068  131068  131068  131068  131068
Port Curr(mA)     0       0       0       0       0       0       0       0
Port Volt(V)      002.2   002.4   002.4   002.4   000.3   002.3   002.2   002.2
Port Pwr(mW)      0       0       0       0       0       0       0       0
Class Curr(mA)    0       0       0       0       0       0       0       0
Dtm.Class         0:15.4W 0:15.4W 0:15.4W 0:15.4W 0:15.4W 0:15.4W 0:15.4W 0:15.4W
[1]: Power Management [Enable]            [2]: Set Port Enable         (ON/OFF)
[3]: Set Port PwrLimitClass.(ON/OFF)      [4]: Set Port PwrLimitManag.(ON/OFF)
[5]: Set Port DetectLegacy                [6]: Set Port Priority (1:C 2:H 3:L)
[7]: Set Port PowerLimitMax (<15400)      [a]: Auto Refresh [OFF]
[0]: Exit  [S]: Save  [R]: Restore
[t]: Set Total Power Limit                Select command:[ ]
Total Power : 0.0 W
Total Power Limit =   123 W
```

Power Supply management   POE management

Port Enable: display the POE port status. Y means the port is enabling. N means the port is disabling and will not have any power providing but the port still can transmit the data packet.

PwrLimitClass.: display the power class limit status. N means the power class limit is disabling. Y means the power class limit is enabling. The power limit class will follow the value that set in the power limit max when is enabling.

PwrLimitManag.: display the POE management that will follow or will not following the priority rules.

Detect Legacy: The legacy detection is to identify the PD devices that did not follow the IEEE 802.3af standard their unique electrical signatures in order for the PoE switch can provide the power to those PD devices.

Priority: the port priority for power supply's priority. 1 = C (critical), 2 = H(High), 3 = L(Low).

PowerLimitMax: per port power output to PD's power limit.

Fault Status: display the PD error status message. There are three error status and explain as following.

➢ **Null:** It means there is no PD connected or the connected PD device status is normal.

➢ **Overload:** It means the current is over the PD current classification limited (475mA @ 48V DC) that the situation happens over 50msec.

Mode Status: display the PD current operation mode status.

➢ **V sample or I sample:** It means " Current sample or Voltage sample".   When PD is detected and current is supplied, the POE switch will keep detecting and sampling some current or voltage to ensure whether the PD still present on this port. It is an IEEE 802.3af operating procedure.

> ➢ **R detect:** When the port doesn't connect with any PD, the POE switch will poll each port and detects the resistor.

Dsvry R (ohms): display resistance value.

Port Curr (mA): display current value.

Port Volt (V): display voltage value.

Port Pwr (W): display watt value.

Class Curr(mA): display power class. When you enable the "Bypass classification" function, the class value will not show in here.

Firmware Version: display the system firmware version.

Total Port Power (W): total of all the port power that provided to PD.

Power Management: status of the power management function.

Total Power Limit: total power of the total ports' output power.

Commands

Select command: enter the POE command number or Power supply management command integer in the prompt and press enter. The Power supply management command will show up when the Port PwrLimit Mangag. is enabling.

Command	Description
[1] Power Management (Enable)	Enabling or disabling the POE power management function.
[2] Set Port Enable (ON/OFF)	Enabling or disabling the port POE inject function
[3]. Set Port PwrLimitClass. (ON/OFF)	Enabling or disabling per port power output limit. When is enabling, per port power output limit will follow the value that set in power limit max.
[4] Set Port PwrLimitManag. (ON/OFF)	Enabling or disabling the port power limit management for power supply management.
[5] Set Port DetectLegacy	Enabling the port power legacy detect.
[6] Set Port Priority (1:C 2:H 3:L)	Set port priority for the power supply management.
[7] Set Power Limit Max (<15400)	Set the port power output limit value. The maximum value must less than 15400.
[a] Auto Refresh [OFF]	Enabling or disabling auto refresh system parameters.

[t] Set Total Power Limit	Set the total port power limit. When the Power Management is enabling, this function will show up.
[0] Exit	Exit POE Menu mode

3.4.12 Save Configuration

You must save the configuration to the flash memory when you have changed the configuration. Otherwise, the new configuration will be lost when the switch restart or power off.

```
Save user configuration into flash rom !
Do you want to continue? (y/n)_
```
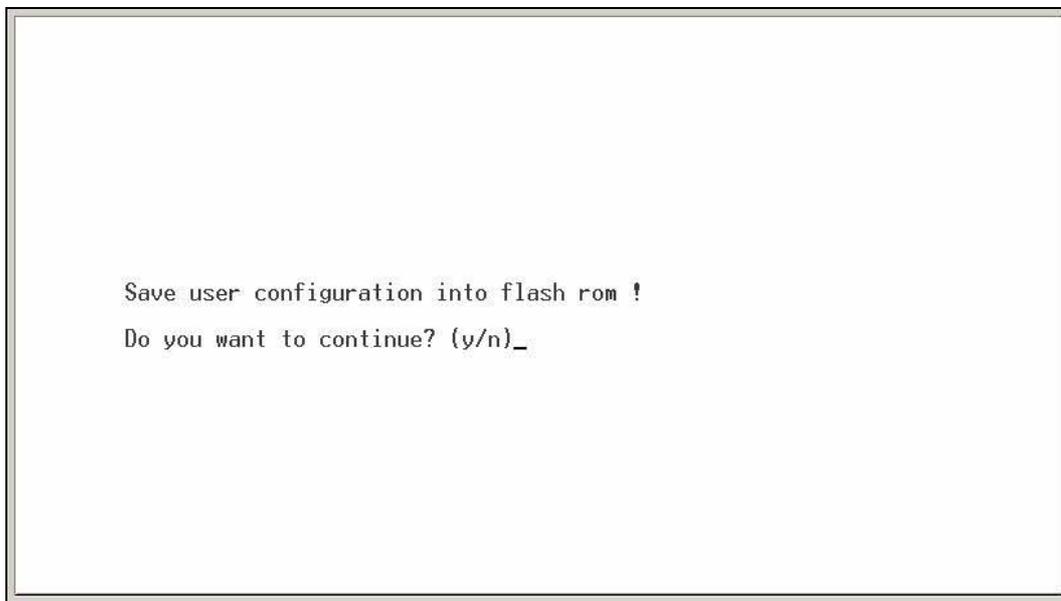
Save Configuration Interface

3.4.13 Xmodem Upgrade

Before using Xmodem upgrade, disconnect terminal and modify baud rate to 57600bps, then connect again.

1.   Press "X" key to start upgrading from Xmodem.

2.   You will see the following screen displays.

```
$$$ Switch LOADER Checksum O.K !!!
$$$ Press X key to  start Xmodem receiver:
$$$ Download IMAGE through console(1K Xmodem;baudrate=57600bps)
$$$ Start Xmodem Receiver:
```
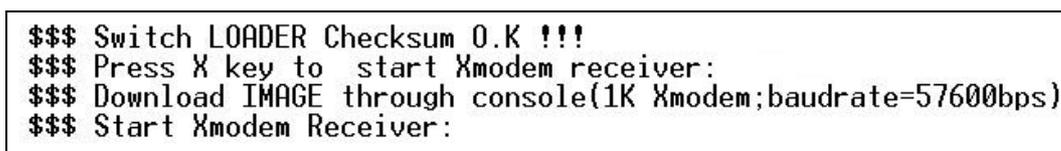
3.   Select "send file" under Transfer menu from menu bar.

4.   Select "browse" button to select the path.

5.   Select "1K Xmodem" of protocol and click "Send" button.

```
$$$ Switch LOADER Checksum O.K !!!
$$$ Press X key to  start Xmodem receiver: Key = 58
$$$ Download IMAGE through console(1K Xmodem;baudrate=57600bps)
$$$ Start Xmodem Receiver:
```

COM1 Properties

Port Settings

Bits per second: 57600

Data bits: 8

Parity: None

Stop bits: 1

Flow control: None

Advanced...   Restore Defaults

OK   Cancel   Apply

Disconnected   ANSI   9600 8-N-1
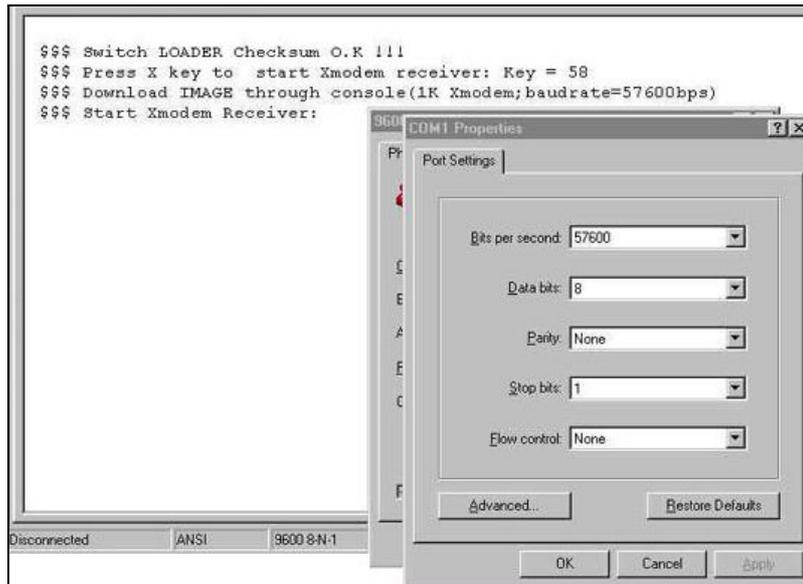
6.   After successfully upgraded the new firmware, please modify baud rate to 9600bps.

4. WEB-BASED MANAGEMENT

This section introduces the configuration and functions of the Web-Based management. The following configuration descriptions are based on the kernel software version 11.14.

4.1 About Web-based Management

Inside the CPU board of the switch exist an embedded HTML web site residing in flash memory. It offers advanced management features and allow users to manage the switch from anywhere on the network through a standard browser such as Microsoft Internet Explorer.

The Web-Based Management supports Internet Explorer 5.0. 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. The user has to explicitly modify the browser setting to enable Java Applets to use network ports.

4.2 Preparing for Web Management

Before use web management, you can use console to login the Switch checking the default IP of the Switch. Please refer to Console Management Chapter for console login. If you need change IP address in first time, you can use console mode to modify it. The default value is as below:

IP Address: **192.168.0.100**
Subnet Mask: **255.255.255.0**
Default Gateway: **192.168.0.254**
User Name: **admin**
Password: **admin**

4.3 Online Help

You can click **Help** button when you have any configuration question during the configuring.

4.4 System Login

1.   Launch the Internet Explorer.

2.   Type **"http://"** and the IP address of the WGSW-2620PV and press **"Enter"**.

3.   The login screen appears.

4.   Key in the user name and password. The default user name and password is **"admin "**.

5.   Click "Enter" or **"OK"**, then the home screen of the Web-based management appears.
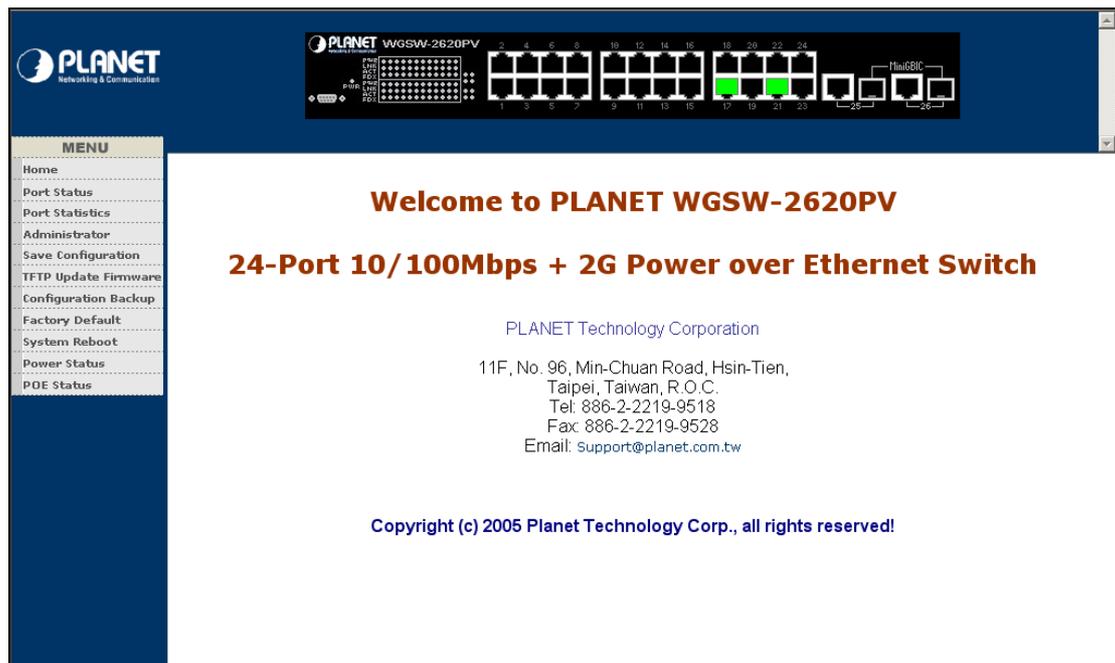
WGSW-2620PV Web Management Interface

4.5 Port status

In Port status, you can view every port status that depended on user setting and the negotiation result.

1.   **Link:** Down is "No Link". UP is "Link".

2.   **State:** display port statuses "disable" or "enable". "Unlink" will be treated as "off ".

3.   **Negotiation:** display the auto negotiation mode: auto/force/Nway-force. "Config" means the value that user configured. "Actual" means the current value of the port.

4.   **Speed Duplex:** display port connection speed. "Config" means the value that user configured. "Actual" means the current value of the port.

5.   **Flow Control:** Full: display the flow control status is "enable" or "disable" in full mode. "Config" means the value that user configured. "Actual" means the current value of the port.

6.   **Back Pressure:** Display the Back Pressure status setting. "Config" means the value that user configured. "Actual" means the current value of the port.

7.   **Bandwidth:** display the in and out bandwidth of each port.

8.   **Priority:** display the port static priority status is "High" or "Low" or "Disable".

9. **Port Security:** display the port security is "enable" or "disable".

Port Status

| Port | Type | Link | State | Negotiation | | Speed Duplex | | Flow Control | | Back Pressure | | Band Width | | Priority | Security |
				Config	Actual	Config	Actual	Config	Actual	Config	Actual	In	Out		
Port.01	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.02	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.03	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.04	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.05	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.06	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.07	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.08	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.09	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.10	100TX	Up	Enable	Auto	Auto	100 Full	100 Full	ON	ON	ON	OFF	OFF	OFF	Disable	OFF
Port.11	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.12	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.13	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.14	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.15	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.16	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.17	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.18	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.19	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.20	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.21	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	OFF
Port.22	100TX	Down	Enable	Auto	N/A	100 Full	N/A	ON	N/A	ON	N/A	OFF	OFF	Disable	

Port Status interface

4.5.1 View the Port Information

You can direct click the port on the Switch figure on the top of web page. Then, you will see the port information.

Port	10
Link	Up
State	On
Trunking	None
VLAN	Disable
Tx Good Packet	1017
Tx Bad Packet	0
Rx Good Packet	4879
Rx Bad Packet	0
Tx Abort Packet	0
Packet Collision	0

Port information interface

4.6 Port Statistics

The following information provides a view of the current port statistic information. Scroll down for more

ports statistics. Click [Clear] button to clean all counts.

Port Statistics

Port	Type	Link	State	Tx Good Packet	Tx Bad Packet	Rx Good Packet	Rx Bad Packet	Tx Abort Packet	Packet Collision
Port.01	100TX	Down	Enable	0	0	0	0	0	0
Port.02	100TX	Down	Enable	0	0	0	0	0	0
Port.03	100TX	Down	Enable	0	0	0	0	0	0
Port.04	100TX	Down	Enable	0	0	0	0	0	0
Port.05	100TX	Down	Enable	0	0	0	0	0	0
Port.06	100TX	Down	Enable	0	0	0	0	0	0
Port.07	100TX	Down	Enable	0	0	0	0	0	0
Port.08	100TX	Down	Enable	0	0	0	0	0	0
Port.09	100TX	Down	Enable	0	0	0	0	0	0
Port.10	100TX	Up	Enable	1249	0	5919	0	0	0
Port.11	100TX	Down	Enable	0	0	0	0	0	0
Port.12	100TX	Down	Enable	0	0	0	0	0	0
Port.13	100TX	Down	Enable	0	0	0	0	0	0
Port.14	100TX	Down	Enable	0	0	0	0	0	0
Port.15	100TX	Down	Enable	0	0	0	0	0	0
Port.16	100TX	Down	Enable	0	0	0	0	0	0
Port.17	100TX	Down	Enable	0	0	0	0	0	0
Port.18	100TX	Down	Enable	0	0	0	0	0	0
Port.19	100TX	Down	Enable	0	0	0	0	0	0

[Clear]

Port Statistics interface

4.7 Administrator

In Administrator function, it provides the following functions **-- IP Configuration, Switch Settings, Console Port Information, Port Controls, Trunking, Forwarding and Filtering, VLAN Configuration, Spanning Tree, Port Mirroring, SNMP Management, Security Manager, and 802.1x Configuration.**

4.7.1 IP Address

User can configure the IP Settings and DHCP client function, than clicks [Apply] button. After reset the IP address, you must reboot the switch.

1. **DHCP Client:** "Enable" is to get IP from DHCP server. "Disable" is opposite. The DHCP client function only works if you haven't assigned a static IP address that different than the switch default IP.   Once the default IP has been changed the DHCP will not effective and the switch will continue using the manually entered static IP.   If you have changed the switch to a static IP address, you

can set the IP address back to its default IP address or you can reset the switch back to factory default. And then you can enable the DHCP client function to work.

2. **IP Address:** assign the switch IP address. The default IP is 192.168.0.100.

3. **Subnet Mask:** assign the switch IP subnet mask.
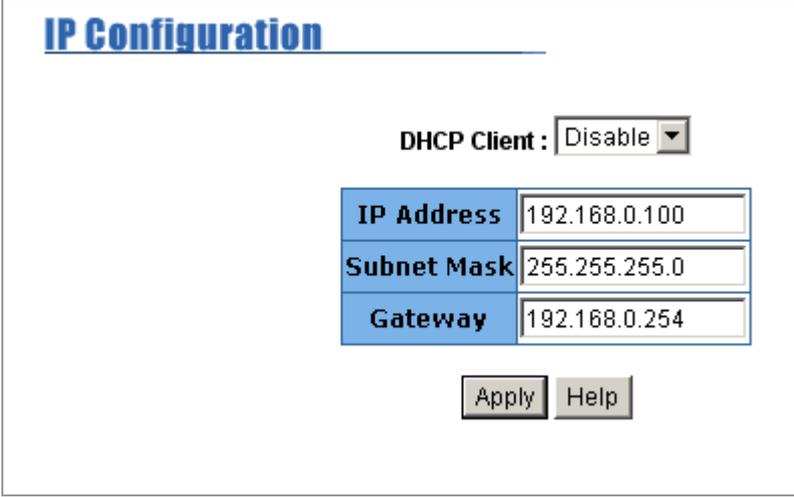
4. **Gateway:** assign the switch gateway. The default value is 192.168.0.254.

IP configuration interface

4.7.2 Switch Setting

In Switch setting, it has three parts of setting - Basic, Advance, and Misc Config. We will describe the configure detail in following.

4.7.2.1 Basic

In Basic switch setting, it displays the switch basic information.

System Name: the name of switch.

System Location: the switch physical location.

System Description: the description of switch.

Firmware Version: the switch's firmware version.

Kernel Version: the kernel software version.

Hardware version: the switch hardware version.

MAC Address: the unique hardware address assigned by manufacturer (default)

Module: the module information, if the switch doesn't install the module, then this column will be no any information.

Switch basic setting interface

4.7.2.2 Advanced Setting

Queue Service. After the configuration, click [Apply] button to complete the configuration.

■   MAC Address Table Entry

Age-out Time: fill in the number of seconds that an inactive MAC address remains in the switch's address table. The valid range is 300~765 seconds. Default is 300 seconds.

Max Bridge Transmit Delay Bound Control: limit the packets queuing time in switch. If enable, the packets queued exceed will be drop. This valid value are 1sec, 2 sec, 4 sec and off.

Enable Low Queue Delay Bound: limit the low priority packets queuing time in switch. If the low priority packet stays in switch exceed Max Delay Time, it will be sent. The valid range is 1~255 ms.

✍*Note:* Make sure of "Max bridge transit delay bound control" is enabled before enable Delay Bound, because Enable Delay Bound must be work under "Max bridge transit delay bound control is enabled" situation.

Broadcast Storm Filter Mode: configure broadcast storm control. Enable it and set the upper threshold for individual ports. The threshold is the percentage of the port's total bandwidth used by broadcast traffic. When broadcast traffic for a port rises above the threshold you set, broadcast storm control becomes active. The valid threshold values are 5%, 10%, 15%, 20%, 25% and off.

Switch Advanced setting interface

■ Priority Queue Service settings: select the priority queue service type.

First Come First Service: the sequence of packets sent is depend on arrive order.

All High before Low: the high priority packets sent before low priority packets.

Weighted Round Ratio: select the preference given to packets in the switch's high-priority queue. These options represent the number of high priority packets sent before one low priority packet is sent. For example, 5 High: 1 Low means that the switch sends 5 high priority packets before sending 1 low priority packet.

Qos Policy (checked for High Priority): 0~7 priority level can map to high or low queue.

4.7.2.3 Misc Configuration

Collisions Retry Forever: disable is in half duplex. If happen collision will retry 48 times and then drop frame. Enable is in half duplex. If happen collision will retry forever.

Hash Algorithm: CRC Hash or Direct Map for MAC address learning algorithm

IFG Compensation: Internal Packet Gap time compensation configure. Select to "Enable" or "Disable".

802.1x Protocol: enable or disable 802.1x protocol.

IGMP Query Mode: recognizes different queries from clients or servers to decide which

Query will be the first priority. The modes are:

    A.   Auto Mode: chooses the switch that has the smallest IP address to be set for the IGMP Query mode.

    B.   Enable Mode: enables the switch to be the IGMP Querier.

    C.   Disable Mode: disables all other switches from being the IGMP Querier.

Switch Misc Config setting interface

4.7.3 Console Port Information

Console is a standard UART interface to communicate with Serial Port. User can use windows HyperTerminal program to link the switch. Please refer to Console Management ' Console login for detail steps.

Console port information shows as follow:

Bits per seconds: **9600**

Data bits: **8**

Parity: **none**

Stop Bits: **1**

Flow control: **none**

Console Port Information	
Baud Rate (bps)	9600
Parity Check	none
Data Bits (bit)	8
Stop Bits (bit)	1
Flow Control	none

4.7.4 Port Controls

You can change the port status.

1 Select the port by scroll the list in Port column.

2 **State:** User can disable or enable this port control.

3 **Negotiation:** User can set auto negotiation mode is Auto, N-way (specify the speed/duplex on this port and enable auto-negotiation), Force of the port.

4 **Speed:** set the speed of each port.

5 **Duplex:** set full-duplex or half-duplex mode of the port.

6 **Flows Control:** set flow control function is ON or OFF in Full Duplex mode.

7 **Back Pressure:** set Back Pressure is ON or OFF in Half Duplex mode.

8 **Band Width:** The port1 ~ port 8, supports port ingress and egress rate control. For example, assume port 1 is 10Mbps, users can set it's effective egress rate is 1Mbps, ingress rate is 500Kbps. The switch will perform flow control or Back Pressure to confine the ingress rate to meet the specified rate.

    In: fill in the port effective ingress rate. The valid range is 0 ~ 999. The unit is 100K. 0: disable rate control. 1 ~ 999: valid rate value.

    Out: fill in the port effective egress rate. The valid range is 0~999. The unit is 100K. 0: disable rate control. 1 ~ 999: valid rate value.

9 **Priority:** this static priority based on port, if you set the port is high priority, income frame from this port always high priority frame.

10 **Security:** when the port is in security mode, the port will be "locked" without permission of address learning. Only the incoming packets with SMAC already existing in the address table can be forwarded normally. User can disable the port from learning any new MAC addresses, and then use the static MAC addresses screen to define a list of MAC addresses that can use the secure port.
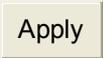
11 Click **Apply** button to apply all configuration.

12 When you select the port, you can see port current configure shows in below.

Port Control interface

4.7.5 Trunking

The Link Aggregation Control Protocol (LACP) provides a standardized means for exchanging information between Partner Systems on a link to allow their Link Aggregation Control instances to reach agreement on the identity of the Link Aggregation Group to which the link belongs, move the link to that Link Aggregation Group, and enable its transmission and reception functions in an orderly manner. Link aggregation lets you group up to eight consecutive ports into a single dedicated connection. This feature can expand bandwidth to a device on the network. **LACP operation requires full-duplex mode,** more detail information refers to IEEE 802.3ad.

4.7.5.1 Aggregator setting

1. System Priority: a value used to identify the active LACP. The switch with the lowest value has the highest priority and is selected as the active LACP.

2. Group ID: There are seven trunk groups to provide configure. Choose the "Group ID" and click
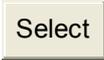
   Select button.

3. LACP: If enable, the group is LACP static trunk group. If disable, the group is local static trunk group. All ports support LACP dynamic trunking group. If connecting to the device that also supports LACP, the LACP dynamic trunking group will be created automatically.

4. Work ports: allow max four ports can be aggregated at the same time. If LACP static trunk group, the exceed ports are standby and able to aggregate if work ports fail. If it is local static trunk group, the number must be as same as the group member ports.

5. Select the ports to join the trunk group. Allow max four ports can be aggregated at the same time.
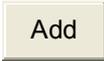
   Click Add button to add the port. To remove unwanted ports, select the port and click
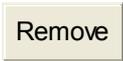
   Remove button.

6. If LACP enable, you can configure LACP Active/Passive status in each ports on State Activity page.

7. Click Apply button.
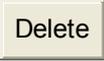
8. Use Delete button to delete Trunk Group. Select the Group ID and click Delete button.

Aggregator Information

When you had setup the LACP aggregator, you will see relation information in here.

Trunking - Aggregator Information interface

4.7.5.2 Aggregator State Activity

When you had setup the LACP aggregator, you can configure port state activity. You can mark or un-mark the port. When you mark the port and click   button the port state activity will change to Active. Opposite is Passive.

1. **Active:** The port automatically sends LACP protocol packets.
2. **Passive:** The port does not automatically send LACP protocol packets, and responds only if it receives LACP protocol packets from the opposite device.

✍*Note:*

1. A link having either two active LACP ports or one active port can perform dynamic LACP

trunking.

2. A link has two passive LACP ports will not perform dynamic LACP trunking because both ports are waiting for and LACP protocol packet from the opposite device.

3. If you are active LACP's actor, when you are select trunking port, the active status will be created automatically.

Trunking

Aggregator Setting		Aggregator information		State Activity	
Port	**LACP State Activity**	**Port**	**LACP State Activity**		
1	☑ Active	2	☑ Active		
3	☑ Active	4	☑ Active		
5	N/A	6	N/A		
7	N/A	8	N/A		
9	N/A	10	N/A		
11	N/A	12	N/A		
13	N/A	14	N/A		
15	N/A	16	N/A		
17	N/A	18	N/A		
19	N/A	20	N/A		
21	N/A	22	N/A		
23	N/A	24	N/A		
25	N/A	26	N/A		

Apply   Help

Trunking – State Activity interface

4.7.6 Forwarding and Filtering

4.7.6.1 IGMP Snooping

The switch support IP multicast, you can enable IGMP protocol on web management's switch setting advanced page, then display the IGMP snooping information in this page, you can view difference multicast group VID and member port in here, IP multicast addresses range from 224.0.0.0 through 239.255.255.255.

The Internet Group Management Protocol (IGMP) is an internal protocol of the Internet Protocol (IP) suite. IP manages multicast traffic by using switches, routers, and hosts that support IGMP. Enabling IGMP allows the ports to detect IGMP queries and report packets and manage IP multicast traffic through the switch. IGMP have three fundamental types of message as follows:

Message	Description

Query	A message sent from the querier (IGMP router or switch) asking for a response from each host belonging to the multicast group.
Report	A message sent by a host to the querier to indicate that the host wants to be or is a member of a given group indicated in the report message.
Leave Group	A message sent by a host to the querier to indicate that the host has quit to be a member of a specific multicast group.

When you enable the IGMP Snooping, you will see the relate information show as following figure.

IGMP Snooping interface

4.7.6.2 Static MAC Address

When you add a static MAC address, it remains in the switch's address table, regardless of whether the device is physically connected to the switch. This saves the switch from having to re-learn a device's MAC address when the disconnected or powered-off device is active on the network again.

1. **MAC Address:** enter the MAC address to and from which the port should permanently forward traffic, regardless of the device network activity.
2. **Port Number:** select a port number.
3. **VLAN ID:** If tag-based (IEEE 802.1Q) VLANs are set up on the switch, static addresses are associated with individual VLANs. Type the VID (tag-based VLANs) to associate with the MAC address.
4. Click Add button.
5. Use Delete button to delete unwanted MAC address.

Static MAC Address interface

MAC filtering

MAC address filtering allows the switch to drop unwanted traffic. Traffic is filtered based on the destination addresses.

1. In **MAC Address** box, enter the MAC address that wants to filter.
2. **VLAN ID:** If tag-based (802.1Q) VLAN are set up on the switch, in the VLAN ID box, type the VID to associate with the MAC address.
3. Click Add button.
4. Use Delete button to delete unwanted MAC address.
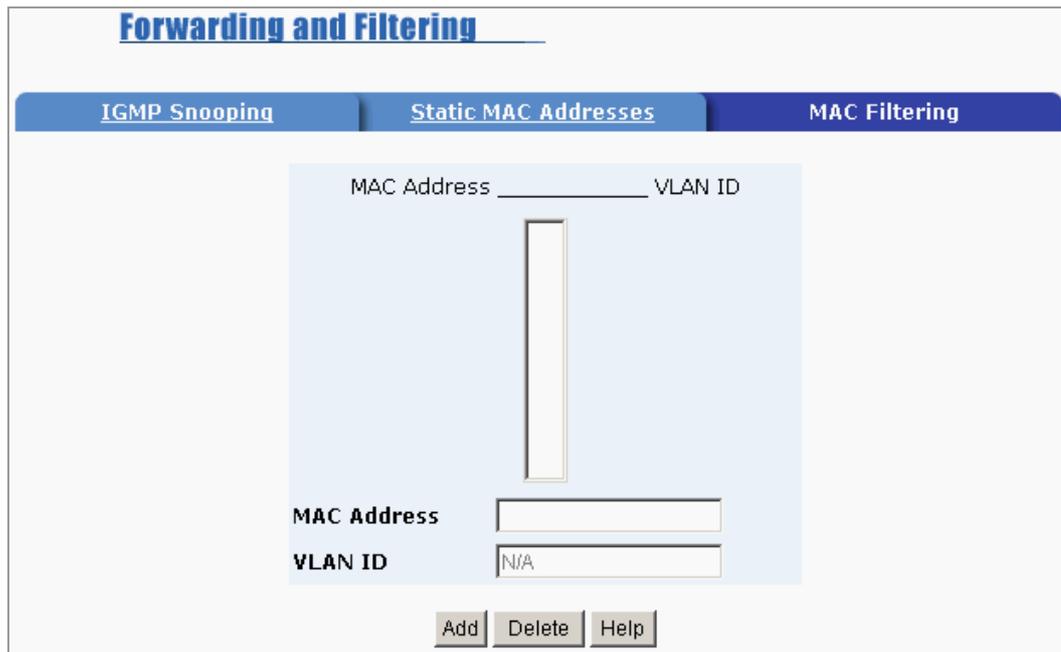
MAC Filtering interface

4.7.7 VLAN configuration

A Virtual LAN (VLAN) is a logical network grouping that limits the broadcast domain. It allows you to isolate network traffic so only members of the VLAN receive traffic from the same VLAN members. Basically, creating a VLAN from a switch is logically equivalent of reconnecting a group of network devices to another Layer 2 switch. However, all the network devices are still plug into the same switch physically.

The switch supports port-based, 802.1Q (tagged-based) and protocol-base VLAN in web management page. In the default configuration, VLAN support is "disable".

✎*Note:* Change VLAN mode for every time, you have to reboot the switch to apply new settings.

4.7.7.1 Port-based VLAN

Packets can go among only members of the same VLAN group. Note all unselected ports are treated as belonging to another single VLAN. If the port-based VLAN enabled, the VLAN-tagging is ignored.

In order for an end station to send packets to different VLANs, it itself has to be either capable of tagging packets it sends with VLAN tags or attached to a VLAN-aware bridge that is capable of classifying and tagging the packet with different VLAN ID based on not only default PVID but also other information about the packet, such as the protocol.

1.   Click the hyperlink "Configuration" to enter the VLAN configuration interface.

VLAN – PortBase interface

2. Click [Add] to create a new VLAN group

3. Enter the VLAN name, VLAN ID and select the members for the VLAN group.

4. Click [Apply] button.

5. You will see the VLAN displays.

6. If there are many groups that over the limit of one page, you can click ┌Next Page┐ to view other VLAN groups.

7. Use ┌Delete┐ button to delete unwanted VLAN.

8. Use ┌Edit┐ button to modify existing VLAN group.

✍*Note:* If the trunk groups exist, you can see it (ex: Trunk1, Trunk2…) in select menu of ports, and

you can configure it is the member of the VLAN or not.

4.7.7.2 802.1Q VLAN

Tagged-based VLAN is an IEEE 802.1Q specification standard. Therefore, it is possible to create a VLAN across devices from different switch venders. 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 VLAN, and enable or disable GVRP protocol. There are 256 VLAN groups to provide configure. Enable 802.1Q VLAN, the all ports on the switch belong to default VLAN, VID is 1. The default VLAN can't be deleting.

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 using the VID of a VLAN defined on the switch; the switch will automatically add that device to the existing VLAN.
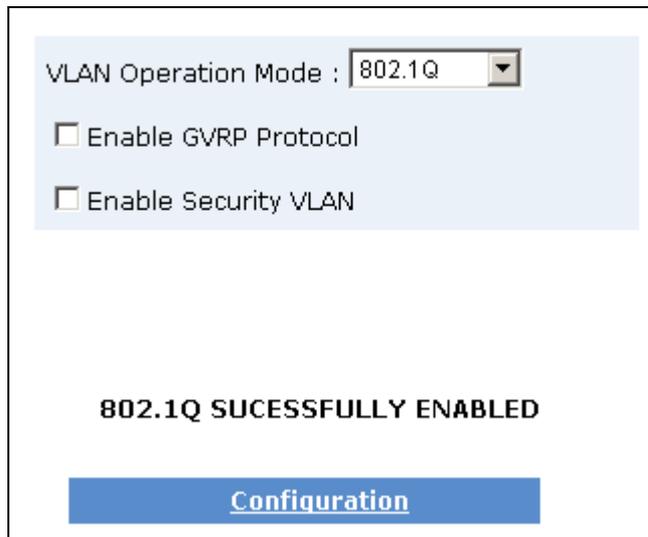
802.1q VLAN interface

Click the hyperlink "Configuration" to enter the VLAN configuration interface.

Enable GVRP Protocol: checked the box to enable GVRP protocol.

Enable security VLAN setting: checked the box to enable security VLAN group. When you select to enable security VLAN group, only the members in this VLAN group can access to the switch. The steps of setting security VLAN refer to the following below steps in **Basic** section. After you have configured the security VLAN group, you can continue to create other VLAN groups.

✎*Note:* There is only one security VLAN group.

Basic

1. Click Add button.

802.1q VLAN –Add interface

2. **Group Name:** assign a name for the new VLAN.

3. **VLAN ID:** fill in a VLAN ID (between 2 and 4094). The default is 1.

4. **Protocol VLAN:** choose the protocol type. Default is NONE.

5. From the Available ports box, select ports to add to the switch and click ![Add] button. If the trunk groups exist, you can see it in here (ex: TRK1, TRK2…), and you can configure it is the member of the VLAN or not.

Click **Next** Then you will see the page as follow.

7.	To set the outgoing frames are VLAN-Tagged frames or untagged. Then click [Apply] button.

	Tag: outgoing frames with VLAN-Tagged.

	Untag: outgoing frames without VLAN-Tagged.

Port VID: Configure port VID settings

1.	**VLAN ID:** set the port VLAN ID that will be assigned to untagged traffic on a given port. This feature is useful for accommodating devices that you want to participate in the VLAN but that don't support tagging. The switch each port allows user to set one VLAN ID, the range is 1~255, default VLAN ID is 1. The VLAN ID must as same as the VLAN ID that the port belong to VLAN group, or the untagged traffic will be dropped.

2.	**Ingress Filtering:** Ingress filtering lets frames belonging to a specific VLAN to be forwarded if the port belongs to that VLAN.

	Enable: Forward only packets with VID matching this port's configured VID.

	Disable: Disable Ingress filter function

3.	**Acceptable Frame type:**

	ALL: Acceptable all Packet

	Tag Only: Only packet with match VLAN ID can be permission to go through the port.

4.	Click [Apply] button.

802.1q VLAN - Port VLAN ID interface

4.7.8 Spanning Tree

The Spanning-Tree Protocol (STP) is a standardized method (IEEE 802.1d) for avoiding loops in switched networks. When STP enabled, to ensure that only one path at a time is active between any two nodes on the network. We are recommended that you enable STP on all switches ensures a single active path on the network.

4.7.8.1 System Configuration

1. You can view spanning tree information about the Root Bridge.

2. You can view spanning tree status about the switch.

3. You can modify STP state. After modification, click Apply button.

> **Priority:** assign path priority number.
>
> **Max Age:** the maximum path age
>
> **Hello Time:** the time that controls switch sends out the BPDU packet to check STP current status.
>
> **Forward Delay Time:** forward delay time.

Spanning Tree - System Configuration interface

4.7.8.2 Per Port Configuration

You can configure path cost and priority of every port.

1. Select the port in Port column.

2. Assign the **Path Cost**. The value range is from 1 to 65535.

3. Assign the **port priority** value. The value range is from 0 to 255. The lowest value has higher priority.

4. Click Apply button.

SPT - Per Port Configuration interface

4.7.9 Port Mirroring

The Port mirroring is a method for monitor traffic in switched networks. Traffic through ports can be monitored by one specific port. That is, traffic goes in or out monitored ports will be duplicated into mirror port.

1. **Port Mirroring State:** set mirror mode: Disable, RX, TX, and Both.

2. **Analysis Port:** It's mean mirror port can be used to see all monitor port traffic. You can connect mirror port to LAN analyzer or netxray.

3. **Monitor Port:** the ports you want to monitor. All monitor port traffic will be copied to mirror port. You can select max 25 monitor ports in the switch. User can choose which port want to monitor in only one mirror mode.

✎*Note:* If you want to disable the function, you must select monitor port to none.

Port Mirroring

Port Mirroring State :	Disable
Analysis Port :	None

Monitor Port	State
Port.01	☐
Port.02	☐
Port.03	☐
Port.04	☐
Port.05	☐
Port.06	☐
Port.07	☐
Port.08	☐
Port.09	☐
Port.10	☐
Port.11	☐
Port.12	☐
Port.13	☐
Port.14	☐
Port.15	☐
Port.16	☐

Prot Mirroring interface

4.7.10 SNMP Management

The SNMP is a Protocol that governs the transfer of information between management and agent. The switch supports SNMP V1.

You can define management stations as trap managers and to enter SNMP community strings. You also can define a name, location, and contact person for the switch. Fill in the system options data, and then click Apply to update the changes.

System Options

1. **Name:** enter a name for the switch.
2. **Location:** enter the switch physical location.
3. **Contact:** enter the name of contact person or organization.

SNMP Management interface

Community strings: serve as password

1. **Strings:** fill the name of string.

2. **RO:** Read only. Enables requests accompanied by this string to display MIB-object information.

3. **RW:** Read write. Enables requests accompanied by this string to display MIB-object information and to set MIB objects.

4. Click [Add] button.

Trap Manager

A trap manager is a management station that receives traps, the system alerts generated by the switch. If no trap manager is defined, no traps will issue. Create a trap manager by entering the IP address of the station and a community string.

1. **IP Address:** fill in the trap device IP.

2. **Community Strings:** the trap device community strings.

3. Click [Add] button.

4.7.11 Security Manager

You can change web management login user name and password.

1. User name: type the new user name. The default is "admin"

2. New Password: type the new password. The default is "admin"

3. Confirm password: retype the new password.

4. Click Apply button.

The Security Manager interface

4.7.12 Save Configuration

You must save the configuration to the flash memory when you have changed the configuration.

Otherwise, the new configuration will be lost when the switch restart or power off. Click the

Save Configuration button to save the configuration to the flash memory.

Save Configuration Interface

4.7.13 SNTP Configuration

You can configure the SNTP (Simple Network Time Protocol) settings. The SNTP allows you to synchronize switch clocks in the Internet.

SNTP Client: enable or disable SNTP function to get the time from the SNTP server.

UTC Timezone: set the switch location time zone.

Server IP: set the SNTP server IP address.

SNTP Configuration Interface

4.7.14 802.1X Configuration

When enabling the IEEE 802.1X function, you can configure the parameters of this function. To enable the IEEE 802.1X function, go to Administrator ' Switch Setting ' Misc Config.

4.7.14.1 System Configuration

1. Radius Server IP: set the Radius Server IP address.

2. Server Port: set the UDP destination port for authentication requests to the specified Radius Server.

3. Accounting Port: set the UDP destination port for accounting requests to the specified Radius Server.

4. Shared Key: set an encryption key for use during authentication sessions with the specified radius server. This key must match the encryption key used on the Radius Server.

5. NAS, Identifier: set the identifier for the radius client.

6. Click Apply button.

4.7.14.2 Per port Configuration

1. Select the port in Port column.

2. Select the state of port. There are four states:

    Reject: the specified port is required to be held in the Unauthorized state.

    Accept: the specified port is required to be held in the Authorized state.

    Authorized: the specified port is set to the Authorized or Unauthorized state in accordance with the outcome of an authentication exchange between the Supplicant and the authentication server.

    Disable: The specified port is required to be held in the Authorized state.
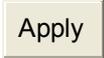
3. Click Apply button.

4. You can see the every port Authorization information list in table.
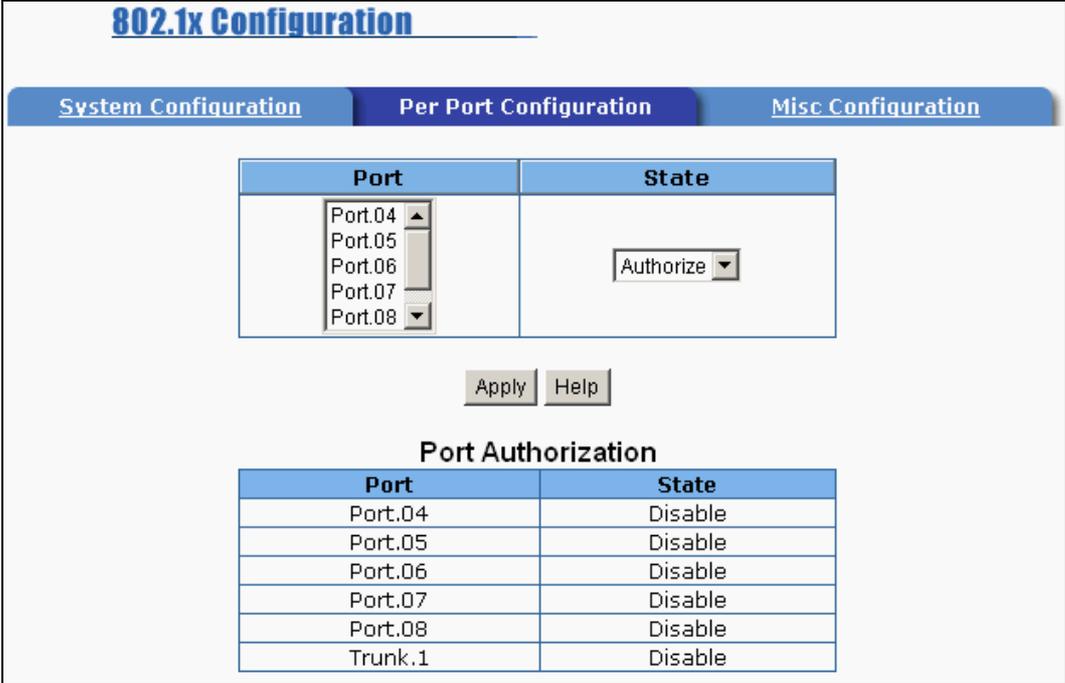
802.1x Configuration - Per Port Configuration

4.7.14.3 Misc Configuration

1. **Quiet period:** Set the period during which the port doesn't try to acquire a supplicant.

2. **TX period:** Set the period the port waits to retransmit next EAPOL PDU during an authentication session.

3. **Supplicant timeout:** Set the period of time the switch waits for a supplicant response to an EAP request.

4. **Server timeout:** Set the period of time the switch waits for a server response to an authentication

request.

5. **Max requests:** Set the number of authentication that must time-out before authentication fails and the authentication session ends.

6. **Reauth period:** Set the period of time after which clients connected must be re-authenticated.

7. Click Apply button.

802.1x Configuration - Misc Configuration interface

4.7.15 System Log

You can view the system log events in here. Click   button to get newest system log event.

System Log Interface

4.8 TFTP Update Firmware

It provides the functions to allow a user to update the switch firmware. Before updating, make sure you have your TFTP server ready and the firmware image is on the TFTP server.

1. **TFTP Server IP Address:** fill in your TFTP server IP.

2. **Firmware File Name:** the name of firmware image.

3. Click [Apply] button.

TFTP Update Firmware interface

4.9 Configuration Backup

In Configuration Backup, you can restore the backup configuration into the switch. Also, you can backup the configuration to TFTP server.

4.9.1 TFTP Restore Configuration

You can restore EEPROM value from TFTP server, but you must put back image in TFTP server, switch will download back flash image.

1. **TFTP Server IP Address:** fill in the TFTP server IP.
2. **Restore File Name:** fill in the correct restore file name.
3. Click Apply button.
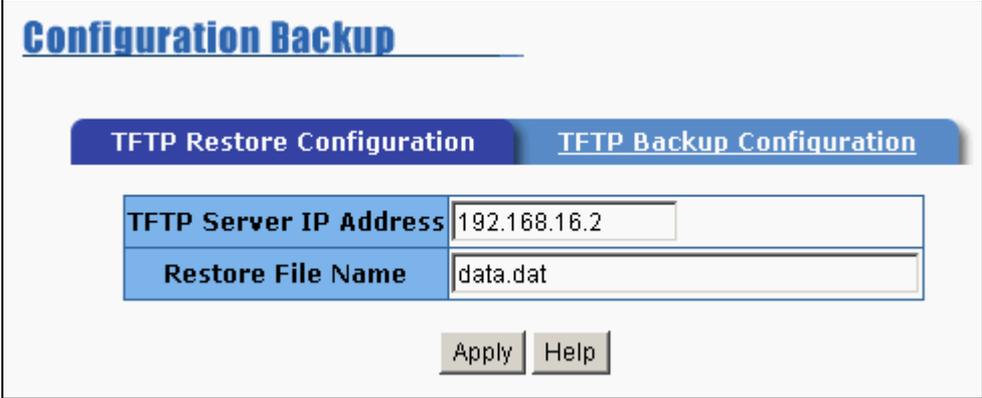
TFTP Restore Configuration interface

4.9.2 TFTP Backup Configuration

You can save current EEPROM value from the switch to TFTP server, then go to the TFTP restore configuration page to restore the EEPROM value.

1. **TFTP Server IP Address:** fill in the TFTP server IP
2. **Backup File Name:** fill the file name
3. Click Apply button.

TFTP Backup Configuration interface

4.10 Factory Default

Reset Switch to default configuration, default value to as following configuration:

Default IP address: 192.168.0.100

Default Gateway: 192.168.0.254

Subnet mask: 255.255.255.0

The other setting value is back to disable or none.

Click Default button to reset switch to default setting.

Factory Default interface

4.11 System Reboot

Reboot the Switch in software reset. Click   button to reboot the switch.

System Reboot interface

4.12 UPS Status

You can view connected UPS information and set command to UPS.

UPS Status Interface

UPS information: the information will be available when the UPS is connected with switch and the

connection is normal and UPS is power on status. Click [Refresh Now] button to get the newest

information.

➢ **Input Voltage:** display the current value, minimum, and maximum value of UPS input voltage.

➢ **Output Voltage:** display the current value, minimum, and maximum value of UPS output voltage.

➢ **Frequency:** display the frequency value of UPS.

➢ **Battery Capacity:** display the battery capacity of UPS.

➢ **UPS Overload:** display the overload capacity of UPS.

➢ **Temperature:** display the current temperature of UPS.

➢ **RatVoltage:** range of the UPS voltage.

➢ **RatBtyVoltage:** range of the UPS battery voltage.

➢ **RatCurrent:** range of the UPS current.

➢ **RatFrequency:** range of the UPS frequency.

➢ **Company Name:** Name of UPS Company.

> **Model:** model name of the UPS.

> **Version:** UPS internal software version.

....
The figure represents the UPS status, when the status has been detected,
the figure color change from yellow to red and the status description will
changed.
....

4.13 POE Status

You can view POE port information and set configuration to each port. Select the port and set

configuration and click the Apply button to apply new value. Click the Save button to save

the configuration to the flash memory.

POE Status Interface

Power Management: Enabling or disabling the POE power management function.

Firmware: display the system firmware version.

Total Power Limit: Set limit value of the total POE port provided power to the PDs.

Total Power (W): total of all the port power that provided to PD.

Port: select the port that you want to configure from the drag down menu in the bottom of the interface.

Enable: enable or disable the port status.

Power Limit by Classification: Enabling or disabling power classification function.

Power Limit by Management: Enabling or disabling the port power limit management for POE power management.

Detect Legacy Signature: The legacy detection is to identify the PD devices that did not follow the IEEE 802.3af standard their unique electrical signatures in order for the PoE switch can provide the power to those PD devices.

Priority: Set port priority for the POE power management. 1 = C (critical), 2 = H(High), 3 = L(Low).

Power Limit Max (mW) (<15400): Set the power limit value. The maximum value must less 15400.

Fault Status: the PD error status message. There are three error status and explain as following.

  ➢ **Null:** It means there is no PD connected or the connected PD device status is normal.

  ➢ **Overload:** It means the current is over the PD current classification limited (475mA @ 48V DC) that the situation happens over 50msec.

Mode Status: the PD current operation mode status.

  ➢ **V sample or I sample:** It means "Current sample or Voltage sample". When PD is detected and current is supplied, the POE switch will keep detecting and sampling some current or voltage to ensure whether the PD still present on this port. It is an IEEE 802.3af operating procedure.

  ➢ **R detect:** When the port doesn't connect with any PD, the POE switch will poll each port and detects the resistor.

Discovery R (ohms): display resistance value.

Port Current (mA): display current value.

Port Voltage (V): display voltage value.

Port Power (W): display watt value.

Class Current (mA): display power class. When you enable the "Bypass classification" function, the class value will not show in here.

Determined Class: display power class. When you enable the "Bypass classification" function, the class value will not show in here.

5. TROUBLESHOOTING

This section is intended to help you solve the most common problems on the 8 10/100TX plus 100FX Exp. Slot managed POE switch.

5.1 Incorrect connections

The switch port can auto detect straight or crossover cable when you link switch with other Ethernet device. For the RJ-45 connector should use correct UTP or STP cable, 10/100Mbps port use 2 pairs twisted cable. If the RJ-45 connector is not correct pin on right position then the link will fail.　For fiber connection, please notice that fiber cable mode and fiber module should be match.

5.1.1 Faulty or loose cables

Look for loose or obviously faulty connections. If they appear to be OK, make sure the connections are snug. IF that does not correct the problem, try a different cable.

5.1.2 Non-standard cables

Non-standard and miss-wired cables may cause numerous network collisions and other network problem, and can seriously impair network performance. A category 5-cable tester is a recommended tool for every 100Base-T network installation.

5.1.3 Improper Network Topologies

It is important to make sure that you have a valid network topology. Common topology faults include excessive cable length and too many repeaters (hubs) between end nodes. In addition, you should make sure that your network topology contains no data path loops. Between any two ends nodes, there should be only one active cabling path at any time. Data path loops will cause broadcast storms that will severely impact your network performance.

5.2 Diagnosing LED Indicators

The Switch can be easily monitored through panel indicators to assist in identifying problems, which describes common problems you may encounter and where you can find possible solutions.
IF the power indicator does turn on when the power cord is plugged in, you may have a problem with power outlet, or power cord. However, if the Switch powers off after running for a while check for loose power connections, power losses or surges at power outlet. IF you still cannot resolve the problem, contact your local dealer for assistance.

5.2.1 Cabling

RJ-45 ports: use unshielded twisted-pair (UTP) or shield twisted-pair (STP) cable for RJ-45 connections: 100Ω Category 3, 4 or 5 cable for 10Mbps connections or 100Ω Category 5 cable for 100Mbps connections. Also be sure that the length of any twisted-pair connection does not exceed 100 meters (328 feet).

5.3 Diagnosing POE problems

5.3.1 No Power Forward

➢ Make sure your PD device comply with IEEE 802.3af standard, the 8 10/100TX plus One Exp. slot unmanaged POE switch only support the IEEE 802.3af compliant PD.

➢ The POE switch uses the signal power pair to forward power, the data and the power is traverse the pin. Please, check the documentation for your PD device to make sure the power pair it uses. The following table is the signal power pair RJ-45 port pinout.

Pin	Signal / Name
1	RX+ / VCC -
2	RX- / VCC -
3	TX+ / VCC +
4	NC
5	NC
6	TX- / VCC +
7	NC
8	NC

6. Appendix

6.1 Console Port Pin Assignments

The DB-9 serial port on the front panel is used to connect to the switch for out-of-band console configuration. The console menu-driven configuration program can be accessed from a terminal or a PC running a terminal emulation program. The pin assignments used to connect to the serial port are provided in the following tables.
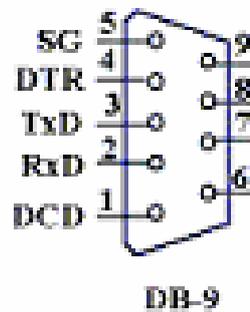
DB-9 Console Port Pin Numbers

DB-9 Port Pin Assignments

EIA Circuit	CCITT Signal	Description	Switch's DB9 DTE Pin #	PC DB9 DTE Pin #
BB	104	RxD (Received Data)	2	2
BA	103	TxD (Transmitted Data)	3	3
AB	102	SGND (Signal Ground)	5	5

Console Port to 9-Pin DTE Port on PC

Switch's 9-Pin Serial Port	CCITT Signal PC's 9-Pin	DTE Port
2 RXD	<---------RXD ------------	3 TxD
3 TXD	----------TXD ---------->	2 RxD
5 SGND	----------SGND ----------	5 SGND

Cable Types and Specifications

Cable	Type	Max. Length	Connector
10BASE-T	Cat. 3, 4, 5100-ohm	UTP 100 m (328 ft)	RJ-45
100BASE-TX	Cat. 5 100-ohm UTP	100 m (328 ft)	RJ-45
100BASE-FX	50/125 or 62.5/125 micron core multimode fiber (MMF)	2 km (1.24 miles)	SC or ST

6.2 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 for receiving data.

RJ-45 Pin Assignments

Pin Number	Assignment
1	Tx+
2	Tx-
3	Rx+
6	Rx-

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

All ports on this switch support automatic MDI/MDI-X operation, you can use straight-through cables for all network connections to PCs or servers, or to other switches or hubs. In straight-through cable, pins 1, 2, 3, and 6, at one end of the cable, are connected straight through to pins 1, 2, 3 and 6 at the other end of the cable. The table below shows the 10BASE-T/ 100BASE-TX MDI and MDI-X port pin outs.

Pin MDI-X	Signal Name	MDI Signal Name
1	Receive Data plus (RD+)	Transmit Data plus (TD+)
2	Receive Data minus (RD-)	Transmit Data minus (TD-)
3	Transmit Data plus (TD+)	Receive Data plus (RD+)
6	Transmit Data minus (TD-)	Receive Data minus (RD-)