

# **SMART SWITCH**

**USER GUIDE** 

24FE POE+2GE

V6.1.43.1

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# CATALOG

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# [INTRODUCTION]

These instructions are intended to ensure that the user can use the product correctly to avoid danger or property loss.

### 1.1/SAFETY SYMBOLS

# Follow these precautions to prevent potential injury or material damage.

### 1.2 /ITEM LIST

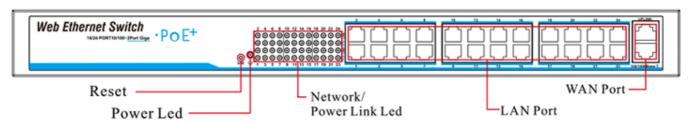
ITEM	NAME	QTY
1	Power Cable	1
2	Device	1
3	User Manual	1
4	Screw	1
5	Ear hanging	2

### 1.3 / PRODUCT APPEARANCE INTRODUCTION

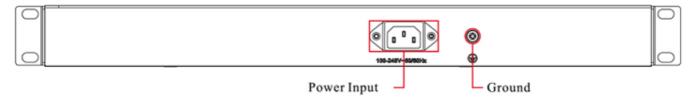


The appearance of products, including buttons, interfaces and layout, are for reference only, and the actual delivered goods shall prevail

### FRONT PANEL:



### REAR PANEL:



# [INTRODUCTION]

### 1.4/SPECIFICATIONS

ITEM		DESCRIPTION	
Power	Power Adapter Voltage	Input100-230V/AC 50-60Hz	
	Consumption	270W	
	Network Port	1~24 port: 10/100Mbps POE Ethernet port 25~26 port: 10/100/1000Mbps	
Network Connector	Transmission Distance	1~24 port. The transmission distance is 100m	
	Transmission Medium	Cat5/5e/6 standard network cable	
		IEEE802.3/10BASE-T	
Network	Network Standard	IEEE802.3u/100BASE-TX	
Switch		IEEE802.3ab 1000BASE-T	
	Maximum Frame Size	1536 Bytes	
Network	MAC address list	2K	
Switch	PoE Standard	IEEE802.3af、IEEE802.3at	
Power Over	PoE Power Supply Type	End-Span(1/2+;3/6-)	
Ethernet	PoE Power Consumption	at, (every port)	
LED Status	POF Filtered	POE: 24 green light indicates that the POE is power on;	
Indicator POE Ethernet		Ethernet: 24 yellow light indicates that the Ethernet Link and Act;	
	Working temperature	0°C~55°C	
Environ mental	Storage Humidity	0-95%	
[	Storage temperature	-40°C~85°C	
	Dimension (L x W x H) mm	442*207*44	
Mechanical	Material	SECC	
1	Color	Dark gray	
Stability	MTBF	>30000h	

Product specifications are subject to change without notice.





# [INSTALLATION]

### 2.1/INSTALLATION NOTES

To avoid equipment damage or personal injury caused by improper use, observe the following precautions.



This is a class a product and may cause radio interference in a live environment. in this case, it may be necessary for the user to take practical measures to interfere with it.

- ★Please do not install equipment at moist place or place with dust or soot.
- ★Please do not use in the environment with crrosive gass, which will destroy the equipment.
- ★Please keep a clean working environment for the switch, the overmuch dust will absorb static and lead the life span shorten and communication failure easy.
- ★Do unplug the power cable before cleaning the switch. Do not use the moist cloth or any liquid to clean it.

### 2.2 / REQUIREMENTS FOR INSTALLATION PLACE

- ★Set up the product in an open and well-ventilated area. Allow at least 15cm of clearance behind the product and at least 5cm of clearance on either side of the product
- ★A good cooling system is required for the cabinet or table.
- ★The cabinet or table must be solid enough, available to bear the switch and the installation accessories.
- ★There must be a good grounding for the cabinet or the table.

### 2.3 /ELECTRO MAGNETIC ENVIRONMENT REQUIREMENTS

Some interference may happen during in use, which will have the effect on the devices, so please pay your attention to these issues:

- ★If AC power supply system is TN system, the AC power socket should be the single-phase three-wire power socket with PE.
- ★Do not set up the product in an area that is exposed or susceptible to strong magnetism, radio waves, and/or impact and avoid setting up the product in the vicinity of wireless transmission devices such as a radio or a television.
- ★If necessary, shield the electro magnetic, for example, use the shiled cable for interface cable.
- ★Interface cable goes indoor wiring, no outdoor wiring, in case that the signal port is destroyed by the overvoltage or overcurrent caused by thunder and lightning.

# [INSTALLATION]

### 2.4/INSTALLATION TYPE

Three installation types: Install on the cabinet, Install on the table, or hang on the wall.



Do unplug the power cable during installation or moving. the system must be grounded before use. please use the 20# grounding wire.



The diagrams in this manual only for reference perpose, detailed information is in accordana with the final product.

### 2.4.1 /INSTALL ON THE CABINET:



(Figure. 2-1)

- [1] Chect out the grounding and stability of the cabinet.
- [2] Fix the ear hanging on two sides of the device.
- [3] Lay the device on one cabinet's mounting bracket, slide the device on sliding slot to appropriate position.
- [4] Fix the ear hangings on the fixed guide slot, make sure the device installed on cabinet's mounting bracket solidly.



(Figure. 2-2)



The ear hanging as a fixed role, can not be used for bearing, theremust be a mounting bracket under the device to bear the switch.

### 2.4.2 /INSTALL ON THE TABLE

Lay the device on the table, make sure the table clean, solid and with good grounding:

- [1] Make the device upside down, clean the groove of the bottom pannel with a soft cloth, make sure no oil stain and dust absorbed on the device.
- [2] Remove the sticker paper of the foot pad, stick the foot pad on the bottom pannel's groove.
- [3] Make the device upside, put it on the table.



# [CONNECTION]

### 2.4.3 /HANG ON THE WALL

- [1] Hang the device on the vertical wall, make sure the wall clean and solid.
- [2]Drill out the holes in the wall to put the rubber plugs in.
- [3] Lay the device to the rack, aiming the rubber plug holes, screw in and fix the equipment.



(Figure. 2-3)

### 3.1/CONNECT WITH THE EQUIPMENTS

### Power Cable Connecting

Connect POE switch and power socket with the AC power supply enclosed.

Power the POE switch, power indicator on front pannel is on means the device is powered correctly. Lock the AC power cable with the power cord buckle enclosed.



(Figure. 3-1)

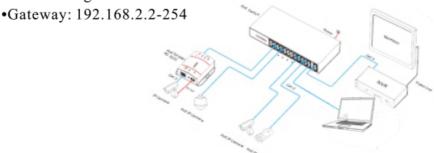
### Establish a network connection

### **Product Notes:**

- [1]LAN port 1-24 channel, the 1-24 port, with POE function, 10/100Mbps
- [2]WAN port 2 channels, the 25-26 port, without POE, 10/100/1000Mbps
- [3] Without computer connected, it can be used as normal POE switch, no need to set up IP address of you PC.
- [4] With computer connected, it can be used as a WebSwitch, please refer these

### Informations:

- •Default IP address of the switch: 192.168.2.1
- •User: admin passwords: system
- •The connected PC requires the same network segment as the switch's.
- •Network segment: 192.168.2.2-250



(Figure. 3-2)



# [CONNECTION]

### 3.2 /ESTABLISH A NETWORK CONNECTION

Sets the IP of the management computer: The operation steps as follow (operation under Windows XP system)

- ⇒ Click "Start ? "→ Control Pannel → Network and Internet → Local Connect → Interface "Local Connect Status" pop up as picture shown: (Figure. 3-3)
- ⇒ Click "Properties" → "Internet Protocol Version 4(TCP/Ipv4)", IP configuration interface pop up as picture shown(Figure. 3-4). Select "Use Below IP address", input IP address (between 192.168.2.2 and 192.168.2.250) and Subnet Mask (255.255.255.0), then click confirm to finish the operation.





(Figure. 3-3)

(Figure. 3-4)



NTP and EMALL will use the DNS service, if the application of the service, be sure to fill in the correct DNS address.

Use the ping command to confirm network connectivity the steps are as follows:

- ⇒ Click "Start 69" → Run, a runing interface pop up.
- ⇒ Enter "ping 192.168.2.1" and click the "Enter" button. If the response of the device is displayed in the dialog box that is displayed, it indicates that the network is connected. Otherwise, check whether the network connection is correct.

```
Microsoft Windows [Version 6.1.7600]

Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\en_pc\ping 192.168.2.1

Pinging 192.168.2.1 with 32 bytes of data:

Reply from 192.168.2.1: bytes=32 time=1ms TTL=64

Reply from 192.168.2.1: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.2.1:

Packets: Sent = 4, Received = 4, Lost = 0 <0% loss>,

Approximate round trip times in milli-seconds:

Hinimum = 0ms, Maximum = 1ms, Average = 0ms

C:\Users\en_pc>__
```

(Figure. 3-5)

# [CONFIGURATION]

### 4/WEB CONFIGURE GUIDE

Recommended browser version: IE7 and above, Firefox, Chrome, (IE7 and above).

### 4.1/STARTUPAND LOGIN

Enter the correct administrator name and password after the login page shows up.

•Default IP address: 192.168.2.1

•Default administrator name: admin

Default password: system

•Press "OK" to login.



(Figure. 4-1)



The administrator name and password fields are case-sensitive. The higher case characters will be recognized as different characters. For example: "ADMIN" will be recognized as the different character from "admin".

- •If you input the incorrect administrator name or password, the following warning message will show up and you must click "ok" to go back to the login page.
- •On the Web side, you can configure the Administrator, POE, Port Management, VLAN Setting, Per Port Counter, QoS Setting, Security, Spanning Tree, Trunking, DHCP Relay Agent, Backup/Recovery, Miscellaneous, SNMO Settings, Logout function of the switch.



(Figure. 4-2)

### 4.2 / ADMINISTRATOR

### 4.2.1 / AUTHENTICATION CONFIGURATION

This page allows the administrator to change the administrator name and the password. You can input up to 15 characters for each field.

Setting		Value
Username	admin	max:15
Password Confirm	•••••	max:15
	•••••	
Update		

(Figure. 4-3)



Username & Password can only use "a-z","A-Z","0-9","\_","+","-","=".

### 4.2.2 /SYSTEM IP CONFIGURATION

This page shows system configuration including the current IP address and sub-net mask and Gateway. IP address, Subnet Mask, and Gateway at system IP Configuration and be configured by the administrator. The smart switch also supports DHCP method to allow the dynamic IP address allocated by DHCP server.

Setting	Value	
IP Address	192 . 168 . 2 . 1	
Subnet Mask	255 . 255 . 0	
Gateway	192 . 168 . 2 . 254	
IP Configure	● Static ● DHCP	
Update		

(Figure. 4-4)

# [CONFIGURATION]

### 4.2.3 /SYSTEM STATUS

This page allows the administrator to check the status of switch, including switch MAC address and software version.

MAC Address	10:f0:13:f0:18:26	
Number of Ports	24+2	
Comment	switch MAX:15	
System Version	IP1826D_WebCtrl_IP210L3.95_IP808_v118.6	
☐ Idle Time Security	Idle Time: 0 (1~30 Minutes)  Auto Logout(Default).  Back to the last display.	
Update		

(Figure. 4-5)

- •The comment field allows the network administrator to input an easy-to-remember nickname for this switch. The legal characters are "a~z", "A~Z", "0~9", "\_", "+", "-", "=", excluding special character.
- •The Idle time field allows the administrator to set a timer for auto logout. When the system detects no web page activity for a pre-defined time, the system will auto-logout.

### 4.2.4/LOAD DEFAULT SETTING

Clicking the "Load" button will make the switch go back to the original configuration.



This change only concerns the switch behavior, excluding the change for IP Address, User Name and password.

After Load Default is executed, the all settings will be restored to default setting.

# Load Default Setting

recover switch default setting excluding the IP address, User name and Password

Load

(Figure. 4-6)





# [CONFIGURATION]

### 4.2.5 /FIRMWARE UPDATE

Before the firmware update procedure is executed, you should enter the login password twice and then press "Update" button. There is a self-protection mechanism in the BootLoader, so the BootLoader will keep intact. Even though the power is turned off or the cable link fails during the firmware update procedure, the BootLoader will restore the code to firmware update page.

Firmware Update	
Please input the password to continue the Firmware Update process.  Password  ReConfirm	
Update	

Notice:

After clicking the "UPDATE" button, IF the firmware update webpage is not redirected correctly or is shown as "Webpage not found".

Please connect to http://192.168.2.1

(Figure. 4-7)

After you press "Update" button, the old web code will be erased. After completing, you should select the image file and press "Update" button to take effect.

### 4.2.6/REBOOT DEVICE

This page is used to reboot device. No hardware reset is executed by means of executing "Reboot Device" (As shown (Pic.15)).

Reboot Device:

Click "Confirm" to Reboot the Device Confirm

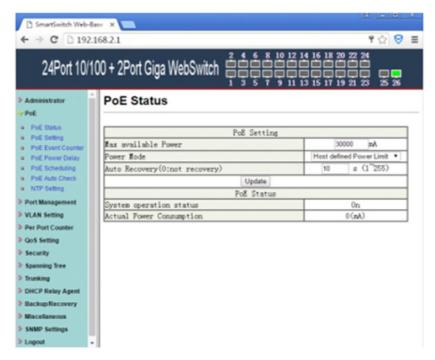
(Figure. 4-8)

# [CONFIGURATION]

### 4.3 /POE

### 4.3.1 /POE STATUS

This page allows the administrator to check PoE status of this Switch, including Max available Power, System operation status, Main Power consumption and all Device Temperture.



(Figure. 4-9)

### Total power consumption of the POE switch: 300W

### PoE Setting under the PoE Status:

- •Max available Power:30000MA
- Power mode:host defined power limit

(Under this mode, you can configure a max power consumption to 1-24CH each port, in case of IPC non-working or offline because of the overlarge power consumption.

The max power consumption of each port is 30W.)

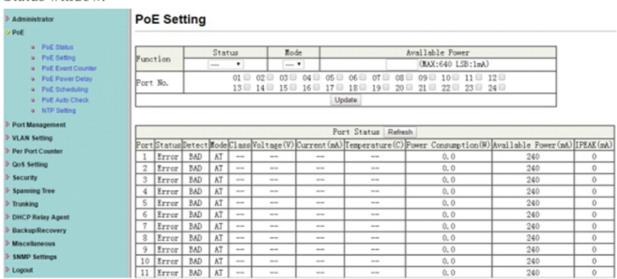
Auto Recovery: 10S.

### PoE Status under the PoE Status:

- •System operation status: (ON means poe is on, the ipc with poe will be activated automatically.)
- •Actual power consumption:(The total current working power consumption of the POE. The max power consumption of our power supply is 5A.)

### 4.3.2 /POE SETTING

This page allows the administrator to configure PoE setting of the physical port. After selecting the settings, you should press "Update" button to take effect. The setting will be reflected at Port Status window.



(Figure. 4-10)

FIELD	DESCRIPTION
Status	Set all ports enable or disable PoE feature
Mode	Supports both 802.3at and 802.3af
Available power	Set all ports power supplies watts, the maximum watt is "30w"

- ⇒ In this page, you can set up the max power of POE for 1-24CH each port.
- ⇒ Under option "Available power", 1-640MA for selection.
- ⇒ PORT NO.: 1-24 Port, tick the channel you want to set up, input the power consumption value under option "Available Power", this value means the max power consumption for this port. This value can be set according to IPC's power consumption. (For example, IPC power consumption is 10.4W, we can set it 240MA. Because 52\*0.24 = 12.48W, a little higher than IPC's, which will promise IPC with stable working, on the other hand, make no waste of the switch's total power consumption.)

### Default setting of the Available Power:

- •Port 1-12: 240MA
- Port 13-24: 220MA
- •Total is, 52V\*0.24A\*12+52\*0.22A\*12=149.76W+137.28=274.56W
- •The max power consumption is 300W, larger than 274.56W, meets this setting request.

### 4.3.3 /POE POWER DELAY

This page allows the administrator to configure the PoE power delay time for all physical ports in the Switch boot. After selecting the settings, you should press "Update" button to take effect. The setting will be reflected at the following window.



FIELD	DESCRIPTION
Delay Mode	Set all ports enable or disable power delay feature
Delay Time	Set all ports power supplies delay time.this delay time is counted starting from the switch boot. when the port is enabled this function and delay time is up, the psw will begin supplies power

### 4.3.4 /NTP SETTING

This page allows the administrator to configure NTP Server and Time Zone to get Universal Time Coordinate. After selecting the settings, you should press "Update" button to take effect. This time will be reflected at the System Time window.

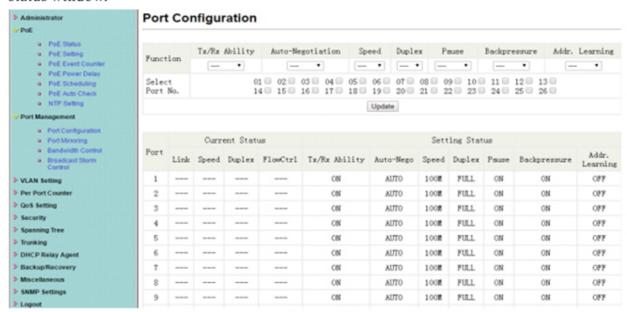
NTP Enable	Disable ▼
System Time	::
NTP Server	#1 210.0.235.14
	#2 59.124.196.85
Time Zone	UTC 0:00 ▼
	Update

(Figure. 4-12)

### 4.4 / PORT MANAGEMENT

### 4.4.1 / PORT CONFIGURATION

This page allows the administrator to configure operating mode of the physical port. After selecting the settings, you should press "Update" button to take effect. The setting will be reflected at current status window.



(Figure. 4-13)

FIELD	DESCRIPTION
Tx/Rx Ability	Enable: Set this port normal operating mode. Disable: Shut down this port.
Auto-Negotiation	Enable/Disable Auto-negotiation.
Speed	Select 1Gbps, 100Mbps or 10Mbps
Duplex	Select Half duplex or Full duplex
Pause	Enable/Disable symmetric pause ability
Backpressure	Enable/Disable backpressure flow control in half duplex mode
Addr. Learning	Enable/Disable MAC address learning ability

### 4.4.2 /PORT MIRRORING

The port mirroring function is accomplished by setting the following items.

- ⇒ Destination port: Theoretically it's possible to set more than one destination port in a network. Actually the port mirroring function will lower the network throughput, and therefore it's recommended to set "only one" destination port in a network.
- ⇒ Source port: the traffic source that will be copied to the destination port.
- ⇒ Monitored method:
  - ·Disable: means this function is disabled.
  - •Rx: means copy the incoming packets of the selected source port to the selected destination port.
  - •Tx: means copy the outgoing packets of the selected source port to the selected destination port.
  - •Tx & Rx: means the combination of Tx and Rx.

### **Port Mirroring**

	14	15	16	17	18	19	20	21	22	23	24	25	26
Source Port	1	2	3	4	5	6	7	8	9	10	11	12	13
Monitored Packets	Disat	ble 🔻											
Port	14	15	16	17	18	19	20	21	22	23	24	25	26
Dest	1	2	3	4	5	6	7	8	9	10	11	12	13

(Figure. 4-14)

- ⇒ Take the following configuration as an example.
  - •Destination Port: Port 9 ~Port 12
  - •Source port: Port 1 ~ Port 4
  - ·Mirrored method: Rx
  - •This means all packets received at port 1 ~port 4 will be copied to port 9, port 10, port 11 and port 12. Care should be taken that the more source ports and destination ports is set, the lower network throughput is available for normal traffic.

# [CONFIGURATION]

### 4.4.3 /BANDWIDTH CONTROL

- ⇒ This page allows the setting of the bandwidth for each port. The Tx rate and Rx rate can be filled with the number ranging from 1 to 255. This number should be multiplied by the selected bandwidth resolution to get the actual bandwidth.
- ⇒In the "Low" mode, the Tx/Rx bandwidth resolution is 32Kbps for port 1~ port 26. In the "High" mode, the Tx/Rx bandwidth resolution is 256Kbps for port 1~ port 24, and 2048Kbps for port 25, port 26.



(Figure. 4-15)

Bandwidth control example reference sheet

•If low bandwidth speed base set to low if highbandwidth speed base set to high

FOX TX							
Port No.	Low Bandwidth	High Bandwidth					
Port 1(10)	32 kbps 10	256 kbps 10					
Port 2(20)	32 kbps 20	256 kbps 20					
Port 3(30)	32 kbps 30	256 kbps 30					
Port 4(40)	32 kbps 40	256 kbps 40					

	FOX RX	
Port No.	Low Bandwidth	High Bandwidth
Port 1(50)	32 kbps 50	256 kbps 50
Port 2(60)	32 kbps 60	256 kbps 60
Port 3(70)	32 kbps 70	256 kbps 70
Port 4(80)	32 kbps 80	256 kbps 80

# [CONFIGURATION]

### 4.4.3 /BANDWIDTH CONTROL

For 1000mbps ports(port 25-26)

Link Speed	Bandwidth
1000Mbps	<b>&lt;</b> 480Mbps
100Mbps	<b>&lt;</b> 48Mbps

·Speed base is set to high

For 100mbps ports(port 1-24)

Link Speed	Bandwidth
100Mbps	<b>&lt;</b> 48Mbps
10Mbps	<b>&lt;</b> 4Mbps

·Speed base is set to high

### 4.4.4/BROADCAST STORM CONTROL

- •The broadcast storm control is used to block the excessive broadcast packets received during the specified time unit. The valid number ranges from 1 to 63.
- •The broadcast packet is only checked at the selected port and the number of broadcast packets is counted in every time unit.

Threshold							63 1~63	3					
Enable	1	2	3	4	5	6	7	8	9	10	11	12	13
Port	14	15	16	17	18	19	20	21	22	23	24	25	26

This value indicates the number of broadcast packet which is allowed to enter each port in one time unit. One time unit is 50us for Gigabit speed, 500 us for 100Mbps speed and 5000us for 10Mbps speed

**Note:** This effect may be not significant for long broadcast packet, since the broadcast packet count passing through the switch in a time unit is probably less than the specified number.

(Figure. 4-16)

⇒ There are 3 options for the selection of the time unit, as the figure shown above (Figure. 4-16). Once the broadcast storm protection is enabled, the excessive broadcast packet will be discarded. For those broadcast packets incoming from the un-selected port, the switch treats it as the normal traffic.

# [CONFIGURATION]

### 4.5 /VLAN SETTING

### 4.5.1 /VLAN MODE

The smart switch supports two VLAN modes, tag based and port based. Only one VLAN mode can be enabled at one time.



### (Figure. 4-17)

When the tag based VLAN is selected, the administrator can define the handling method of a VLAN tag to the specified port, including "Add Tag", "don't care" or "Remove Tag". Add tag/Don't Care/Remove tag definitions are as follows.

- ⇒ "Add Tag" means the outgoing packet should contain a 802.1Q tag.
  - •The 802.1Q tag will be inserted to the outgoing packet of the selected port if the packet received at the source port does not contain 802.1Q tag.

The original 802.1Q tag will be kept if the source port received a packet with 802.1Q tag.

- ⇒ "don't care" means the outgoing packet of the selected port keep the original packet format of the source port.
- ⇒ "Remove Tag" means the outgoing packet should not contain a 802.1Q tag.
  - •The 802.1Q tag of the outgoing packet of the selected port will be removed if the incoming packet received at the source packet contains 802.1Q tag.
  - •The packet format of the source port will be kept if the packet does not contain the 802.1Q tag.



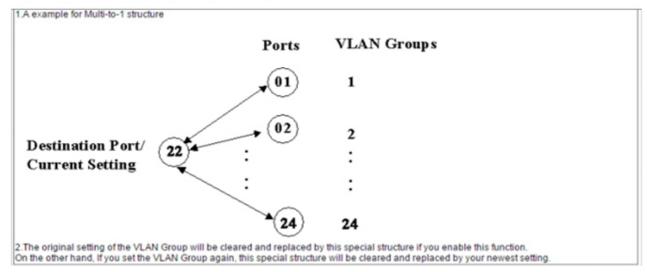
In tag based VLAN mode, adding tag on the port which is used to configure this switch is not allowed, because some NICs can't recognize 802.1Q tag. Example:

Port 1: The 802.1Q tag of every packet outgoing from this port will be removed. Port 4: The 802.1Q tag of every packet outgoing from this port should be included. Other ports: keep every outgoing packet intact.

### 4.5.2 /MULTI-TO-1 SETTING

- •Multi-to-1 VLAN is used in CPE side of Ethernet-to-the-Home and is exclusive to VLAN setting on "VLAN member setting". In the other words, once multi-to-1 is set, the previous VLAN setting will be overridden.
- •The "disable port" means the port which will be excluded in this setting. All ports excluded in this setting are treated as the same VLAN group.
- •In the following example, port 3, port 4, port 6, port 7, port 8 and port 9 are excluded in this VLAN Furthermore these ports are treated as the member of other VLAN. All ports which are not specified in this table only communicate with port 1.

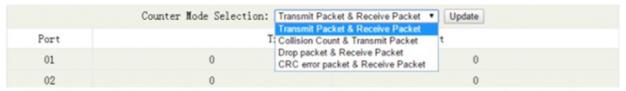
### 4.5.2 /MULTI-TO-1 SETTING



(Figure. 4-18)

### 4.6 / PER PORT COUNTER

This page provides port counter for each port. There are 4 groups of statistics in total. These 4 categories cannot work simultaneously. Once you change the counter category, the counter will be cleared automatically.



(Figure. 4-19)

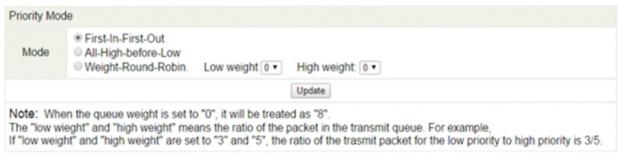
FIELD	DESCRIPTION
Transmit Packet & Receive Packet	This category shows both the received packet count (excluding the incorrect packet) and the transmitted packet count
Collision Count & Transmit Packet	This category shows the packets outgoing from the switch and the count of collision
Drop Packet & Receive Packet	This category shows the number of received valid packet and the number of dropped packet
CRC error Packet & Receive Packet	This category shows the received correct packet and received CRC error
Refresh	Press "Refresh" button will aggregate the number of the counter for all ports
Clear	Press "Clear" button will clear all counters

# [CONFIGURATION]

### 4.7/QOS SETTING

### 4.7.1 /PRIORITY MODE

This page allows the administrator to set the scheduling mode for the TX packets at each port.



(Figure. 4-20)

FIELD	DESCRIPTION
First-In-First-Out (FIFO)	All output packet are queued to one queue, first comes first out
All-High-before-Low (Strict priority)	All packets will be assigned to either high priority queue or low priority queue. The low priority packet will not forwarded until the high priority queue is empty
Weight-Round-Robin (WRR)	There are 2 priority queues for Weighted-and -round-robin (WRR) mode. When this mode is selected, the traffic will be forwarded according to the number set in each queue. The queue ID has nothing to do with the priority

Example: If High, Low queue are set to 5, 3, then the traffic at the specific port will go out in the following sequence. 5 packets stored in High queue, 3 packets stored in Low queue, 5 packets stored in High queue, 3 packets stored in Low queue ......

### 4.8/SECURITY

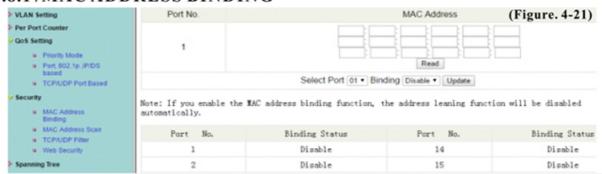
### 4.8.1 /MAC ADDRESS BINDING

This function provides a method for the administrator to specify the relationship between the physical port and the MAC address. Only the packet with specified source MAC address can communicate with other port. By specifying the MAC address to each port, the network administrator can prevent the unauthorized administrator from accessing the switch. Each port can bind up to 3 MAC addresses.

To activate the port binding function, you should enter the correct MAC address, select the port number, and set the port binding to "Enable" and then press "Update".

## [CONFIGURATION]

### 4.8.1 /MAC ADDRESS BINDING





Setting the multicast address to these fields is not allowed. A warning message will show up if you do so.

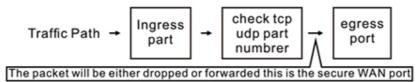
### 4.8.2 /TCP/UDP FILTER

By selecting the TCP/UDP port, the network administrator can optionally block some specific applications. There are two kinds of protocol filter functions. The "positive" function makes the switch forward the selected protocol and drop other protocols.

The "negative" function makes the switch drop the selected protocol and forward other protocols.

The protocol is checked at the secure WAN port. And it should be set at the server side.

Note: the description of secure WAN port is shown below



The figure shown below illustrates how this function is applied to the real environment. Example:

- (a) Enable TCP/UDP Filter function.
- (b) Select "positive" rule.
- (c) Set port 5 as secure WAN port and select FTP and TELNET as the filtering protocol.
- (d) Place the server of the selected protocol at the secure WAN port.

Function Enable	Disable *						
Port Filtering Rule	(2) "negative" :	seans the selected	cted protocol will be protocol will be dro lected protocol will	pped and other pro	tocols will be for	warded.	the figure sha
	FTP (20, 21)	☐ SSH(22)	TELNET (23)	SMTP(25)	DMS(53)	@ TFTP(69)	#TTP(80,800
Protocol	□ NEWS(119)	SMTP(123)	☐ NetBIOS(137~139)	□ IMAP(143, 220)	SMMP (161, 162)	@ HTTPS(443)	O XRD_RDP (33)
	User_Define_a	User_Define_b	User_Define_c	User_Define_d			
Note: These User-	defined A/B/C TCP/	UDP settings use t	he smae port number s	ettings as the Use	ers-defined A/B/C	Port number set	tings in Qos's
	Port01	@Port02	Port03	□Port04	□Port05	Port06	□ Port07
Secure WAN port	Port09	Port10	@Port11	Port12	Port13	Port14	Port15
Secure WAN port	□ Port17	□ Port18	Port19	Port20	□Port21	□ Port22	Port23

(Figure. 4-22)

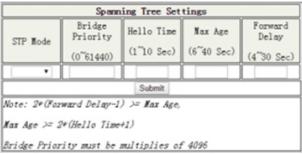
### Result:

Physical	The Behavior of Switch
Port	TELNET and FTP will be forwarded. Other protocol will be discarded
Other ports	All protocol will be forwarded as the normal packet

### 4.9 /SPANNING TREE

### 4.9.1/STP BRIDGE SETTINGS

The parameters concerning the configuration of RSTP/STP bridge are described below.



(Figure. 4-23)

Note: If you enable the MAC address binding function, the address leaning function will be disabled automatically. Then both RSTP/STP and address learning will be affected.

	Bridge	Status		
STP Mode	Bridge ID	Hello Time	Max Age	Forward Delay
RSTP	32768:10 FO 13 FO 18 26	2	20	15

(Figure. 4-24)

Root Status							
Root ID	Hello Time	Max Age	Forward Delay				
I'm the root bridge!	2	20	15				

(Figure. 4-25)

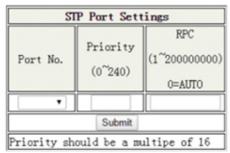
Field	Description	
STP Mode	<ul> <li>Disable: Disable RSTP/STP.</li> <li>STP: Enable STP function.</li> <li>RSTP: Enable RSTP function, including STP</li> </ul>	
Bridge Priority	This field in conjunction with the MAC address forms the Bridge ID. The lowest number of the Bridge ID in a Spanning Tree domain will be selected as the root. Enter a multiple of 4096 this field	
Hello Time, Max Age and Forwarding Delay	These fields control how this device handles BPDU. The relationship of these fields is listed below	



2\*(Forward Delay-1) >= Max Age, Max Age >= 2\*(Hello Time+1)

### 4.9.2 /STP PORT SETTINGS

This web page provides an interface for the administrator to set the STP/RSTP port configuration.



(Figure. 4-26)

	STP Port Status					
Port No.	RPC	Priority	State	Status	Designated Bridge	Designated Port
1	Auto:0	0x80		Disable		
2	Auto:0	0x80		Disable		
3	Auto:0	0x80		Disable		
4	Auto:0	0x80		Disable		
5	Auto:0	0x80		Disable		
6	Auto:0	0x80		Disable		
7	Auto:0	0x80		Disable		
8	Auto:0	0x80		Disable		
9	Auto:0	0x80		Disable		
10	Auto:0	0x80		Disable		

(Figure. 4-27)

Field	Description	
Port NO	To configure the parameters of RSTP/STP port, the administrator should select a physical port number, assign a priory number, enter the RPC and then press "Submit" button	
Priority(0~240)	Priority field defines the priority of the RSTP/STP port. The lower the number is, the higher possibility it will become a root port. There is a default value for each port	
RFC(0~20000000)	RPC stands for "Root Path Cost". The higher the cost is, the lower possibility it become a root path. In the general case, the physical port with the higher bandwidth will be assigned a lowe cost	

# [CONFIGURATION]

### 4.10/TRUNKING

This page is used to set trunk group for load balance and cable link auto-backup. There are 2 methods to set a trunk; i.e. Static and LACP. The meaning of each field shown in the following table is explained as following. The smart switch supports three trunk groups, which can set port  $1 \sim \text{port } 8$ , port 25 and port 26, and trunk 1 consists of port  $1 \sim \text{port } 4$ , trunk 2 consists of port  $5 \sim \text{port } 8$ , trunk 3 consists of port 25, port 26. Trunk hash algorithm can be selected according to 2 different methods.



(Figure. 4-28)

Link Aggregation Algorithm	Description	
SA	Among the trunk member ports, the packet will be distributed based on the source MAC address	
DA XOR SA	Among the trunk member ports, the packet will be distributed based on the XOR calculation result of the source MAC address and the destination MAC address	

Field	Description
Member	There are three configurable trunk groups. "" means the trunk has not been built on the corresponding port. "A" means trunk has been built on the corresponding port
State	Administrator can enable/disable the function of this trunk
Type	Static: Static setting by manual. LACP: Setting by ACP
Operation Key	Assign an operation key for this device
Time out	Short Time Out: Re-configure LACP trunk every 1 second. Long Time Out: Re-configure LACP trunk every 30 second
Activity	You should set at least one side of each trunk to "Active" state. If both sides of a trunk are all set to "Passive", LACP trunk will never be built up

# [CONFIGURATION]

### 4.11/DHCPRELAYAGENT

### 4.11.1/RELAY AGENT CONFIGURATION

This web page allows the administrator to enable/disable DHCP Relay Agent function. In addition, option 82 message is selectable by setting.

24Port 10/100 + 2Port Giga WebSwitch			
> Administrator > PoE	DHCP Relay Agent		
<ul><li>Port Management</li><li>VLAN Setting</li></ul>	DHCP Relay State :	Disable ▼	
<ul><li>▶ Per Port Counter</li><li>▶ QoS Setting</li></ul>	DHCP Relay Hops Count Limit (1-16): DHCP Relay Option 82 State :	16 Disable ▼	
<ul><li>Security</li><li>Spanning Tree</li></ul>	Update		
<ul> <li>Trunking</li> <li>DHCP Relay Agent</li> </ul>			
<ul> <li>DHCP Relay Agent</li> <li>Relay Server</li> <li>VLAN MAP Relay</li> </ul>			
Agent  Backup/Recovery			
<ul> <li>Miscellaneous</li> <li>SNMP Settings</li> <li>Logout</li> </ul>			

(Figure. 4-29)

Field	Description	
DHCP Relay State	Allow the administrator to enable/disable Relay Agent function	
DHCP Relay Hops Count Limit	Specify the maximum number of Relay Agent traveling from DHCP agent to DHCP server	
DHCP Relay Option 82 State	The pre-condition for enabling/disabling this function is that DHCP Relay State is set to "enable".  Once the Relay State is set to "enable", the administrator can enable/disable Option 82, depending on whether the Option 82 information is required	

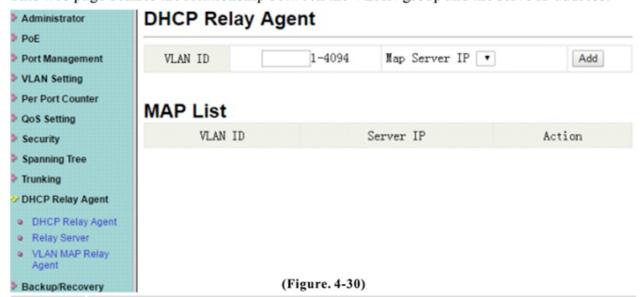
# [CONFIGURATION]

### 4.11.2 /SERVER IP LIST

The IP address of DHCP server, which can be relayed by this Relay Agent, should be specified on this web page.

### 4.11.3 /VLAN TO SERVER IP MAP

This web page defines the relationship between the VLAN group and the serve IP address.





One server should belong to only one VLAN ID. If you set the same server IP address to different VLAN ID, the warning message will show up, as the figure shown below. You can set more than one server IP address in a VLAN ID.

### 4.12 / CONFIGURATION BACKUP/RECOVERY

This function provides the administrator with a method to backup/recovery the switch configuration. The administrator can save configuration file to a specified file. If the administrator wants to recover the original configuration, which is saved at the specified path, just enter the password and then press the "Upload" button. Finally the backup configuration of the switch will be recovered.

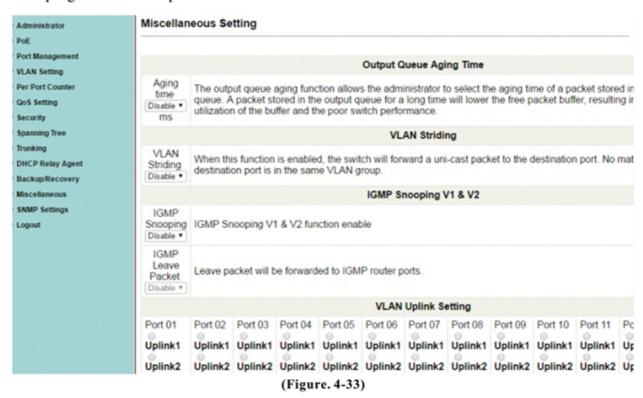


The switch will check whether or not the uploaded file is correct. If the content of the uploaded file is incorrect, the switch will show a warning message.

# [CONFIGURATION]

### 4.13 /MISCELLANEOUS SETTINGS

Miscellaneous setting is used to configure Output Queue Aging Time, VLAN Striding, IGMP Snooping and VLAN Uplink.



### 4.13.1 /OUTPUT QUEUE AGING TIME

This function is used to avoid the poor utilization of the switch. When a packet is stored in a switch for a long time, the time slot defined by the protocol will expire and this packet becomes useless. To prevent these useless packets from wasting the bandwidth, this switch provides an option to enable the queue aging function. Once enabled, the switch will monitor the aging timer for each packet before it is sent out. The packet which stays inside a queue for a long time will be discarded.

### 4.13.2 /VLAN STRIDING

By selecting this function, the switch will forward uni-cast packets to the destination port, no matter whether destination port is in the same VLAN.

# [CONFIGURATION]

### 4.13.3 / IGMP SNOOPING

When this function is enabled, the switch will execute IGMP snooping version 1 and version 2 without the intervention of CPU. The IGMP report packets are automatically handled by the switch. When the user enable "Leave packet will be forwarded to IGMP router ports" function. If members want to leave this multicast group, the IGMP leave packet will be forwarded to the router ports.

### 4.13.4 /VLAN UPLINK

In the VLAN, the user can define the "Uplink port". This is normally the port that attached to the uplink router. This feature is similar to the "Router port". After that is set. Any frame transferred to the other VLAN member is forwarded only out the uplink port.



### For example:

(Figure. 4-34)

- •Step 1: set port 1, 2 and 3 are the same VLAN; set port 4, 5 and 6 are the same VLAN.
- •Step 2: set port 1 is uplink port of Uplink 1, set port 4 is uplink port of Uplink 2, and press "Update" button.
- •Step 3: If port 2 want to sent uni-case packet to port 5. The packet will be transferred to the port 1.

### 4.14/SNMP SETTING

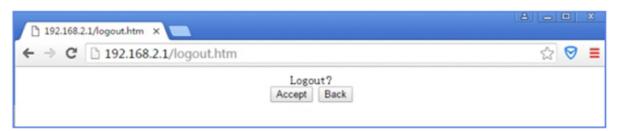


### 4.14/SNMP SETTING

Field	Description
Community Name	This field allows the administrator to enter the community name
Access Right	This filed defines the access attribute. "Read only" means the administrator can view this community only. "Read/Write" means the administrator can view and modify this community
System Description	The administrator can enter a device name for the identification in the network
System Contact	The contact person responsible for maintaining network
System Location	The location of this device
Trap state	Enable/Disable trapped event. The trapped event are: 1-Power up event. 2-Physical port status change event

### 4.15/LOGOUT

The page provides the administrator to logout web page. Press "Accept" button to logout. Press "Back" button to browse the previous web page.



(Figure. 4-36)

### 4.16/LOAD DEFAULT SETTING - HARDWARE BASED

The purpose of this function is to provide a method for the network administrator to restore all configurations to the default value.

- ⇒ To activate this function, the administrator should follow the following procedures. Press the "Load Default" button for 3 seconds until you see the LoadDefault LED blinking.
- ⇒ When LED starts blinking, it means the CPU is executing the "load default" procedure. You can release the button now.

After completing this procedure, all the factory default value will be restored. This includes the IP address, the administrator name, the password and all switch configurations.

S M A R T USERGUIDE S W I T C

