S M A R T USERGUIDE

S W I T

> Մ ...





SMART SWITCH

USER GUIDE

24FE POE+2GE

V6.1.43.1

Thank you for using our products, please read this manual carefully before use. Related tools and documents of products, please download from www.herospeed.net.

CATALOG CATALOG

1	Intr	oduction
	1.1 1.2 1.3 1.4	Safety Symbols 1 Item Lis 1 Product Appearance Introduction 4 Specifications 2
2	Inst	allation
	2.1 2.2 2.3 2.4	Installation Notes 3 Requirements For Installation Place 3 Electro Magnetic Environment Requirements 3 Installation Type 4
		2.4.1 Install On The Cabinet 4 2.4.2 Install On The Table 4 2.4.3 Hang On The Wall 5
3	Con	nection
	3.1 3.2	Connect With The Equipments
4	Cor	figuration
	4.0 4.1 4.2	Web Configure Guide
		4.2.1 Authentication Configuration 8 4.2.2 System Ip Configuration 8 4.2.3 System Status 9 4.2.4 Load Default Setting 9 4.2.5 Firmware Update 10 4.2.6 Reboot Device 10
	4.3	POE11
		4.3.1 POE Status 11 4.3.2 POE Setting 12 4.3.3 POE Power Delay 12 4.3.4 NTP Setting 13

CATALOGI

4 Configuration

4.4	Port Management	.14
	4.4.1 Port Configuration	.14
	4.4.2 Port Mirroring	
	4.4.3 Bandwidth Control	
	4.4.4 Broadcast Storm Control	
4.5	Vlan Setting	18
	4.5.1 Vlan Mode	
	4.5.2 Multi-to-1 Setting	18
4.6	Per Port Counter	19
4.7	Qos Setting	20
	4.7.1 Priority Mode	20
4.8	Security	20
	4.8.1 Mac Address Binding	21
	4.8.2 TCP/UDP Filter	21
4.9	Spanning Tree	22
	4.9.1 STP Bridge Settings	22
	4.9.2 STP Port Settings	23
4.10	Trunking	24
4.11	Dhcp Relay Agent	25
	4.11.1 Relay Agent Configuration	25
	4.11.2 Server Ip List	
	4.11.3 Vlan To Server Ip Map	26
4.12	Configuration Backup/recovery	26
4.13		
	4.13.1 Output Queue Aging Time	27
	4.13.2 Vlan Striding	27
	4.13.4 Vlan Uplink	28
4.14	Snmp Setting	28
4.15		
4.16	Load Default Setting – Hardware Based	.29

[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

1.2 /ITEM LIST

1.175AFETT STMBOLS				
•	Notes for the instuction			
\wedge	Follow these precautions to prevent potential injury			

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

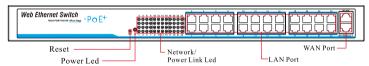
1.3 / PRODUCT APPEARANCE INTRODUCTION

or material damage.



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		
rower	Consumption	270 W		
	Network Port	1~24 port: 10/100Mbps POE Ethernet port 25~26 port: 10/100/1000Mbps		
Network Connector	Transmission Distance	l∼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	DOFFEL	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%		
Ī	Storage temperature	-40°C~85°C		
	Dimension (L x W x H) mm	442*207*44		
Mechanical	Material	SECC		
	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.



- ★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
- ·Gateway: 192.168.2.2-254



(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)

- Interface"Local Connect Status" pop up as picture shown: (Figure. 3-3)
- ⇒ Click "Properties" → "Internet Protocol Version 4(TCP/Inv4)". IP configuration interface non un 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)



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

- ⇒ Click "Start ? → 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.

```
icrosoft Windows [Version 6.1.7600]
convright (c) 2009 Microsoft Corporation. All rights reserved.
:\Users\en_pc>ping 192.168.2.1
inging 192.168.2.1 with 32 bytes of data:
eply from 192.168.2.1: bytes=32 time=1ms TTL=64
eply from 192.168.2.1: bytes=32 time<1ms ITL=64
Reply from 192.168.2.1: bytes=32 time<1ms TTL=64
Reply from 192.168.2.1: bytes=32 time<1ms TTL=64
ing statistics for 192.168.2.1:
   Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
pproximate round trip times in milli-seconds:
   Minimum = Oms, Maximum = 1ms, Average = Oms
 :\Users\en_pc>_
```

(Figure. 3-5)

4/WEB CONFIGURE GUIDE

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

4.1/STARTUP AND 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	•••••	max:15				
Confirm	•••••					
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)

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: 0 (1~30 Minutes)		
☐ Idle Time Security	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



(Figure, 4-6)





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 theBootLoader 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)

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.

➤ Administrator ✓ PoE PoE Status PoE Stating PoE Event Counter PoE Power Delay PoE Scheduling PoE Asia Chick NTP Sesting

> Port Management
> VLAN Setting
> Per Port Counter
> QoS Setting
> Security
> Spanning Tree
> Trunking
> DHCP Relay Agent
> BackupRecovery
> Mis cellaneous
> SMMP Settings

PoE Setting

Function	Status	Mode	Available Power		
	- *	*	(MAX:640 LSB:1mA)		
Port No.			05 06 07 08 09 10 11 12 17 18 19 20 21 22 23 24		

	Port Status Refresh									
Port	Status	Detect	Mode	Class	Voltage(V)	Current (mā)	Temperature(C)	Power Consumption(W)	Available Power(mA)	IPEAK (mA)
1	Error	BAD	AT					0.0	240	0
2	Error	BAD	AT					0.0	240	0
3	Error	BAD	AT					0.0	240	0
4	Error	BAD	AT					0.0	240	0
5	Error	BAD	AT					0.0	240	0
6	Error	BAD	AT					0.0	240	0
7	Error	BAD	AT					0.0	240	0
8	Error	BAD	AT					0.0	240	0
9	Error	BAD	AT					0.0	240	0
10	Error	BAD	AT					0.0	240	0
11	Error	BAD	AT					0.0	240	0

(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.
- \Rightarrow 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.

▶ Administrator	PoE F	ower Delay	/					
√ PoE								
PoE Status PoE Setting PoE Event Counter PoE Power Delay PoE Scheduling	Function Port No.	1	Delay Mode		07 = 08 =	09 🗆 1		
PoE Auto Check				Update				
NTP Setting								
Port Management	Port	Delay Mode	Delay Time (se	cond)]			
VLAN Setting	1	Disable	0					
Per Port Counter	2	Disable	0					
QoS Setting	3	Disable	0					
	4	Disable	0					
Security	5	Disable	0]			
Spanning Tree	6	Disable	0]			
Trunking	7	Disable	0		1			
DHCP Relay Agent	8	Disable	0]			
Backup/Recovery	9	Disable	0		1			
Miscellaneous	10	Disable	0]			
	11	Disable	0		1			
SNMP Settings	12	Disable	0		1			
Logout	13	Disable	0		1	(F	igure.	4-11)

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.

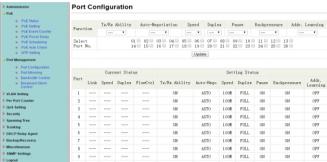
NTP Enable	Disable ▼
System Time	::
MED G	#1 210.0.235.14
NTP Server	#2 59.124.196.85
Time Zone	UTC 0:00 ▼
	Update

(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.
 - •Ty & Ry: means the combination of Ty and Ry

Port Mirroring

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

4.4.3 /RANDWIDTH 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

4.4.3/BANDWIDTH CONTROL

For 1000mbps ports(port 25-26)

Link Speed	Bandwidth
1000Mbps	< 480Mbps
100Mbps	< 48Mbps

·Speed base is set to high

For 100mbps ports(port 1-24)

Link Speed	Bandwidth
100Mbps	< 48Mbps
10Mbps	< 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.

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

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.

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

VLAN Mode	Port Based VLA	Change VLAN mode

(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.



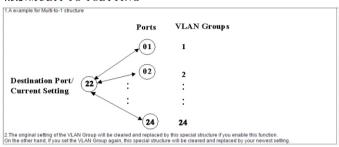
In tag based VLAN mode, adding tag on the port which is used to configure this switch is not allowed, because some NICs can't recognize 802.1Q tag. Example:

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.

	Counter Mode Selection:	Transmit Packet & Receive Packet ▼	Update
Port		Transmit Packet & Receive Packet Collision Count & Transmit Packet	t
01		Drop packet & Receive Packet CRC error packet & Receive Packet	0
02	0		0

(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

4.7/OOS SETTING

4.7.1/PRIORITY MODE

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

Mode	First-In-First-OutAll-High-before-Low		
	 Weight-Round-Robin. 	Low weight 0 ▼	High weight: 0 ▼
			Update

If "low weight" and "high weight" are set to "3" and "5", the ratio of the trasmit packet for the low priority to high priority is 3/5.

(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, 5 packets stored in Low queue, 5 packets stored in Liph 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".

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

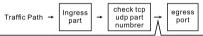
By selecting the TCP/UDP port, the network administrator can optionally block some specific applications. There are two kinds of protocol filter functions. The "positive" function makes the switch forward the selected

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 packet will be either dropped or forwarded this is the secure WAN port

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

. /		the selected	protocor at the	Joedie Will	· port.		
Function Enable	Disable *						
Port Filtering Rule	(2) "negative" r	eans the selected	oted protocol will be protocol will be dro lected protocol will	pped and other pro	tocols will be for	warded.	the figure sh
	FTP (20, 21)	SSH(22)	TELNET (23)	SMTP(25)	DNS(53)	☐ TPTP(69)	HTTP(80, 80
Protocol	■ NBMS(119)	☐ SNTP(123)	☐ NetBIOS(137~139)	■ IMAP(143, 220)	SMMP (161, 162)	☐ HTTPS(443)	□ 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 :	settings 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	Port 21	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.

Spanning Tree Settings					
STP Mode	Bridge Priority	Hello Time	Nax Age	Forward Delay	
	(0~61440)	(1~10 Sec)	(6~40 Sec)	(4~30 Sec)	
Submit					
Note: 2*(Forward Delay-1) >= Max Age,					
Max Age >= 2*(Hello Time+1)					
Bridge Prior	ity must be	multiplies or	F 4096		

(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 F0 13 F0 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
STPMode	Disable: Disable RSTP/STP. STP: Enable STP function. RSTP: Enable RSTP function, including STP
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.

STP Port Settings			
		RPC	
Port No.	Priority (0~240)	(1~200000000)	
	(0 240)	0=AUTO	
•			
Submit			
Priority should be a multipe of 16			

(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

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 ~ port 8, port25 and port 26, and trunk 1 consists of port 1 ~ port 4, trunk 2 consists of port 5 ~ port 8, trunk 3 consists of port 25, port 26. Trunk hash algorithm can be selected according to 2 different methods.

	•										
t Management	System Pri	ority			1		(1~6	5535)			
	Link Aggregation Algor		hm		MAC Src&Dst ▼						
Port Counter	Brist inggregation in ger rum			Submit							
S Setting										1	
urity											
MAC Address Refresh											
MAC Address Scan		Link Group 1 Link Group 2					Link Group 3				
TCP/UDP Filter		P1	P2	P3	P4	P5	P6	P7	PB	P25	P26
Web Security	Hember		€	€	€.	· ·	8	€	€	€	€
		_						-	-		
nning Tree				Disable ▼ Disable ▼					Disable ▼		
nning Tree STP Bridge Settings	State		Disa	ble *			Disa				
onning Tree STP Bridge Settings STP Port Settings	State Type			ble *			LAC				P *
onning Tree STP Bridge Settings STP Port Settings Loopback Detection		1			535)	2			535)		P +
Inning Tree STP Bridge Settings STP Port Settings Loopback Detection Open	Туре	1	LAG	CP *			LAC	P +		3 LAG	
Inning Tree > STP Bridge Settings > STP Port Settings > Loopback Detection nking Open Link Aggregation	Type ration Key	1	LAG	(1 [~] 65			LAC Short Tir	P ▼ 1 1 65		3 Short Ti	(1~6553

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

4.11 / DHCP RELAY AGENT

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 10/10	00 + 2Port Giga WebSwitch 📋 🍦 📛	11 13 15 17 19 21 23 25 26
Administrator	DHCP Relay Agent	
PoE Port Management	DHCP Relay State :	Disable ▼
VLAN SettingPer Port Counter	DHCP Relay Hops Count Limit (1-16):	16
QoS SettingSecurity	DHCP Relay Option 82 State :	Disable ▼
Spanning TreeTrunking	Opulate	
→ DHCP Relay Agent →		
Relay Server VLAN MAP Relay Agent		
Backup/Recovery Miscellaneous		
SNMP SettingsLogout		

(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

4.11.2/SERVER IPLIST

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.

4.13 /MISCELLANEOUS SETTINGS

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

Administrator	Miscellan	Miscellaneous Setting										
PoE												_
Port Management						Output C	ueue Aai	na Time				
VLAN Setting						Output C	ueue Agi	ng IIme				
Per Port Counter	Aging time	The output queue aging function allows the administrator to select the aging time of a packet stored in										
QoS Setting	Disable ▼		queue. A packet stored in the output queue for a long time will lower the free packet buffer, resulting in utilization of the buffer and the poor switch performance.									
Security	ms	utilization	i oi the bu	iller and tr	ie poor sw	ntcri perio	mance.					
Spanning Tree						VL	AN Stridi	ng				
Trunking	VLAN											
DHCP Relay Agent	Striding		When this function is enabled, the switch will forward a uni-cast packet to the destination port. No mat destination port is in the same VLAN group.									
Backup/Recovery	Disable ▼	dosanda	on port is	iii dio saii	10 11119	roup.						
Miscellaneous		IGMP Snooping V1 & V2										
SNMP Settings	IGMP											
Logout	Snooping Disable ▼	GMP Snooping V1 & V2 function enable										
	IGMP Leave											
	Packet	Leave packet will be forwarded to IGMP router ports.										
	Disable ▼											
						VLAN	Uplink S	etting				
	Port 01	Port 02	Port 03	Port 04	Port 05	Port 06	Port 07	Port 08	Port 09	Port 10	Port 11	Po
	Uplink1	Uplink1	Uplink1	Uplink1	Uplink1	Uplink1	Uplink1	Uplink1	Uplink1	Uplink1	Uplink1	Up
	Uplink2	Uplink2	Uplink2	Uplink2	Uplink2	Uplink2	Uplink2	Uplink2	Uplink2	Uplink2	Uplink2	U
				(Figur	re. 4-33)						

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

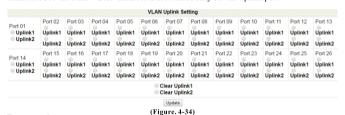
By selecting this function, the switch will forward uni-cast packets to the destination port, no matter whether destination port is in the same VLAN.

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:

-
- •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

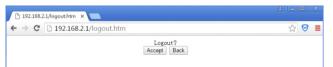


4.14/SNMP SETTING

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.