# ES1625-31

# 16-port 10/100M PoE + 2 Gigabit Copper/SFP Combo Rackmount Web Smart PoE Switch

User's Manual





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EVERFOCUS ELECTRONICS CORPORATION

# ES1625-31

# User's Manual

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# **Safety Precautions**

# FCC Warning

This Equipment has been tested and found to comply with the limits for a Class-B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. It may cause harmful interference to radio communications if the equipment is not installed and used in accordance with the instructions. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- > Reorient or relocate the receiving antenna.
- > Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- > Consult the dealer or an experienced radio/TV technician for help.

# **CE Mark Warning**

This is a Class-B product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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# 1. Introduction

#### **1.1 Product Overview**

This switch provides 16 10/100Mbps RJ-45 ports and can support 2 Combo Gigabit RJ-45/SFP to uplink. This web-smart switch includes auto-MDI/MDIX crossover detection function. 16 of those ports are all built with PoE functionality, providing the ultimate choice in network flexibility. With this added PoE feature, this switch is an ideal solution for building wireless, IP surveillance, and VoIP networks.

It also provides port-based and 802.1Q tag VLAN function to provide better traffic management, reduces latency, improve security and save bandwidth. This is also a cost-saving feature as it reduces the need to add additional hardware to the network.

These 16 10/100Mbps RJ-45 support the IEEE 802.3at PoE protocol. Each port and transmit a maximum power 30 watts. User can also enable or disable power supply on PoE ports from UI.

# **1.2 Key Features**

#### 1.2.1 Web Management Features

- <u>Port Management</u>
   Port Configuration
   Port Mirroring
   Bandwidth Control
   Broadcast Strom Control
   PoE On/Off Setting
- <u>VLAN Setting</u>
   Port-based/ Tag-based
   VLAN ID: 1~4094
- <u>Trunking</u> Link Aggregation Setting
   2 groups (1~4 port for each group)
- <u>QoS Setting</u> Priority Mode



Class of Service Configuration TCP/UDP Port-based

- <u>Security Setting</u> MAC address filtering TCP/UDP Port filtering
- <u>STP/RSTP</u>
- Spanning Tree Protocol
- <u>Backup Recovery Configuration</u>

#### **1.2.2** Specifications

#### • <u>Standard</u>

IEEE 802.3 10BaseT IEEE 802.3u 100BaseTX IEEE 802.3x Full-duplex and Flow Control IEEE 802.af PoE IEEE 802.at PoE IEEE 802.3ad Link Aggregation IEEE 802.1d Spanning tree protocol IEEE 802.1w Rapid Spanning tree protocol IEEE 802.1x Port-based Network Access Control IEEE 802.1Q VLAN IEEE 802.1p Class of Service

<u>Number of Port</u>
 16-port 10/100BaseTX with PoE
 2-port Combo Gigabit uplink (RJ-45/SFP)

#### 1.2.3 Mechanical

- <u>LED Indicator</u> Per Port: Link/ Act PoE Port: Act/Status Per Unit: Power
- Power Consumption: 250Watts (Max)
- <u>Power Input:</u> 100~240V/AC, 50~60HZ

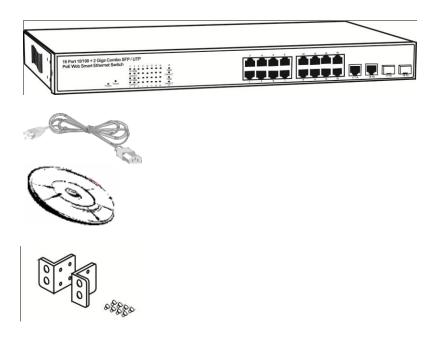


- <u>Power Output:</u> 53V/DC per Port Output 30W Max per Port
- Product Dimensions/ Weight 44 × 440 × 331 mm (H × W ×D) / 4.2kg
- **1.2.4** Performance
- MAC Address: 4K
- Buffer Memory: 2.75Mb
- Switching Capacity: 7.2 Gbps
- Jumbo Frame: 10K
- Transmission Method: Store and Forward

# 1.3 Package

Before you start to install this switch, please verify your package that contains the following items:

- 1. One Fast Ethernet PoE Switch
- 2. One EU Power Cord
- 3. A User Manual CD
- 4. Rack-mount kit





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# 2. Hardware Description

This section mainly describes the hardware of the 8 PoE port Ethernet Combo Web-Smart Switch and gives a physical and functional overview on the certain switch.

# 2.1 Physical Dimensions/ Weight

44 × 440 × 331 mm (H × W ×D) / 4.2kg

# 2.2 Front Panel

The front panel of the web smart switch consists of 16 10/100Base-TX RJ-45 ports and 2 combo gigabit uplink RJ-45/SFP ports. The LED Indicators are also located on the front panel.



# 2.3 LED Indicators

The LED Indicators present real-time information of systematic operation status. The following table provides description of LED status and their meaning.

LED	Status	Description	No. Of LED
Power	On	Power on	Power



1000M	On	Link 1000Mbps	2 (17~19)
TOOON	off	Link 10/100Mbps	2 (17~18)
	On	Link	18 (1~18)
Link/ ACT	Flashing	Data activating	18 (1~18)
	0n	Port is linked to Power	16 (1~16)
PoE	On	Device	16 (1~16)
PUE	Off	No Power Device is	16 (1~16)
		connected	10(1 10)

Ever Ferrer'		4		10	12	14	16				
Everrocus	2 4 6 8 10 12 14 18 18										
16 Port 10/100 + 2 Giga Combo SFP / UTP PoE Web Smart Ethernet Switch	Fuic 103444										
	Lives 1056M										
ES1625-31 🚬 🚛											
	1 3 5 7 9 11 13 15 17			•	11	13	15	17TX	18TX	17FX	18FX

# 2.4 Rear Panel

The 3-pronged power plug is placed at the rear panel of the switch right side shown as below.



# 2.5 Hardware Installation

Set the switch on a large flat space with a power socket close by. The flat space should be clean, smooth, level and sturdy. Make sure there is enough clearance around the switch to allow attachment of cables, power cord and allow air circulation. The last, use twisted pair cable to connect this switch to your PC then user could start to operate the switch



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# 3. User Log In

This part instructs user how to set up and manage the switch through the web user interface. Please follow the description to understand the procedure.

At the first, open the web browser, and go to 192.168.2.1 site then the user will see the login screen. Key in the password to pass the authentication then clicks the **OK**. The log in process is completed and comes out the sign "Password successfully entered".

#### Log in

ID: admin

Password: admin

	LOG IN
Site:	192.168.2.1
ID:	admin
Password:	

\*Note: It will show error message if you key in wrong user name or password.





#### Main Page

	2 4 6 8 1 3 5 7	10 12 14 16 9 11 13 15 17 18	
<ul> <li>Administrator</li> <li>Port Management</li> <li>VLAN Setting</li> </ul>	16-Port 10/100	Mbps Plus 2-Port Gigabit Ethernet Switch	
Per Port Counter	Advanced Features	Basic Features	
CooS Setting Security Spanning Tree Trunking OHCP Relay Agent Backup/Recovery Miscellaneous	Bandwidth control     Port based & Tag based VLAN     Statistics Counter     Firewall     VLAN Uplink     L2 ~ L4 Class of Service	Embedded HTTP web Management     Configuration Backup/Recovery     TFTP Firmware upgradeable     Secure Management     User name/Password security	
SNMP Settings			



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# 4. Administrator

# 4.1 Authentication Configuration

This page shows authentication configuration information. User can set new Username and Password in this page.

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

# Authentication Configuration

Note:

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

# 4.2 System IP Configuration

This page shows system configuration including the current IP address and sub-net mask and gateway.

# System IP Configuration

Setting	Value
IP Address	192 168 2 1
Subnet Mask	255 255 0
Gateway	192 168 1 X



User can configure the IP settings, Subnet Mask, Gateway as below:

- ➢ IP address: Manually assign the IP address that the network is using. The default IP is 192.168.2.1
- Subnet Mask: Assign the subnet mask to the IP address.
- Sateway: Assign the network gateway for industrial switch.

If you change the IP address of this switch and then press **Update**. It will show "**update** successfully" then press **Reboot** button. It will enter user login screen automatically.

#### 4.3 System Status

This page displays the information about the switch of MAC address, how many ports it has, system version and. Besides, users can also fill in up to 15 characters in the Comment, Contact and Location field for note.

MAC Address	10:f0:13:f0:18:26
Number of Ports	16+2
Comment	switch MAX:15
System Version	V110615
Idle Time Security	Idle Time (1~30 Minutes) Auto Logout(Default). Back to the last display.
	Update

Comment name only can use "a-z","A-Z","\_","+","-","0-9"

- > MAC Address: Displays the unique hardware address assigned by manufacturer (default).
- > Number of Ports: Displays number of ports in the switch.
- System Version: Displays the switch's firmware version.
- Idle Time Security: User can set the time security. When user leave the computer for a moment, the software will auto logout or back to the last display.

And then click **Update** button.



# 4.4 Load Default Setting

Clicking the **Load** button will make the switch being set to the original configuration.

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

X Note: It exclude to change user name, password and IP configuration. If you want to restore default setting including IP and user name password, then you can press the reset button for hardware base reset.

More detail information about Load Default Setting - Hardware Base is described as following. The purpose of this function is to provide a method for the network administrator to restore all configurations to the default value.

(1) To activate this function, the user should follow the following procedures. Press the "Load default" button for 3 seconds until you see the LED blinking.

(2) 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. It includes the IP address, the user name, the password and all switch configurations.

# 4.5 Firmware Update

Before the firmware update procedure is executed, you should enter the password twice and then press **Update** button. The smart switch will erase the flash memory. There is a self-protection mechanism in the Boot Loader, so the Boot Loader will keep intact. Even though the power is turned off or the cable link fails during the firmware update procedure, the Boot loader will restore the code to firmware update page.

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



After pressing Update button, the old web code will be erased. Then you can select the image file and press "update" button to update the firmware you need.

Firmware Update by Web	1
Select the image file:	
	Browse
UPDATE	
If the update process somehow goes wrong(Ex: power t http://192.168.2.1 to restart.(If possible, reset device for	20 Sharrawa a kata a mana mana mana ana ka
Firmware Update by TFT	p

# 4.6 Reboot Device

Click **Confirm** button to reboot the device.

Reboot Device:	
Click "Confirm" to Reboot the Device	Confirm

\*Note: The reboot is for software base instead of hardware base.



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# 5. Port Management

Port Management includes Port Configuration, Port Mirroring, Bandwidth Control, Broadcast Storm Control and PoE.

#### 5.1 Port Configuration

In Port Configuration, you can set and view the operation mode for each port.

		Te/Re Ability		Auto-Negotiation	Speed	Duplos		Peuse	80	ckpressure	Addr. Learning
Punction		_ •			_ •		_ •		_	-	_
ideat fort No.						0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0					
						(Updam)					
			Current Status					Setting Status			
ort .	Link	Speed	Duples	FlowCal	Ta/Ra Ability	Auto-Napo	Speed	Duples	Pause	Backpressure	Addr. Legening
4					ON	AUTO	1004	FULL	CN	CN	CN
2					QN	AUTO	100M	FULL	ON	ON	QN
3					CN	AUTO	10004	FILL	CDV	C21	011
4					QN	AUTO	100M	FULL	CN CN	ON	QN
5					CN	AUTO	1004	FULL	CIN .	Q11	011
6					CN	AUTO	10004	FULL	CN	QN	CN
7					QN	AUTO	1004	FULL	CIN .	Q11	CIN
8					CN	AUTO	10004	FILL	CDV	C21	011
9					QN	AUTO	10014	FULL	ON .	01	CIN
10					QN	AUTO	10044	NULL	CN CN	CN	CN
11					QN	AUTO	10014	FULL	ON .	01	CIN
12	•	10004	FULL	CN CN	QN	AUTO	10004	RULL	CN CN	CN CN	QN
43					ON	AUTO	10004	FULL	CN	CN	CN
14					QN	AUTO	10054	FULL	CN	ON	CIN
35					CN	AUTO	10044	FILL	CN	ON	CN
16					ON	AUTO	10014	FULL	ON .	CN CN	QN
17					ON	AUTO	10	NULL	CN	CN	CIN
18					ON	AUTO	10	2.11	CN	ON	CN

- Auto-Negotiation: Enable and Disable. Being set as 'Enable', the Speed, Duplex mode, Pause, Backpressure, TX Capability and Address Learning are negotiated automatically. When you set it as 'Disable', you have to assign those items manually.
- Speed: When the Auto-Negotiation column is set as Disable, users have to set the connection speed to the ports ticked.
- Duplex: When the Auto-Negotiation column is set as Disable, users have to set the connection mode in Half/Full to the ports ticked.
- > Pause: Flow Control for connection at speed of 10/100Mbps in Full-duplex mode.
- > Backpressure: Flow Control for connection at speed of 10/100Mbps in Half-duplex mode.
- TX/RX Capability: When the Auto-Negotiation column is set as Disable, users have to set this column as Enable or Disable.
- Addr. Learning: When the Auto-Negotiation column is set as Disable, users have to set this column as Enable or Disable.
- Select Port No.: Tick the check boxes beside the port numbers being set.
- Click Update to have the configuration take effect.



- Current Status: Displays current port status.
- Setting Status: Displays current status.

Click **Update** to make the configuration effective.

# 5.2 Port Mirroring

The Port mirroring is a method for monitoring traffic in switched networks. That Traffic through ports can be monitored by any of the ports means traffic goes in or out monitored (source) ports will be duplicated into mirroring (destination) port.

Port Mirroring									
				1			1	1	1
Dest	1	2	3	4	5	6	7	8	9
Port	10	11	12	13	14	15	16	17	18
Monitored Packets	Disable 👻								
Source	1	2	3	4	5	б	7	8	9
Port	10	11 ()	12	13	14	15	16	17	18
				Update					
Multi to Multi Sniffer function									

- Destination (mirroring) port for monitoring Rx only, Tx only or both RX and TX traffic which come from the source port. Users can connect the mirroring port to LAN analyzer or Netxray.
- Monitored Packets: Pull down the selection menu to choose what kind of packet is to be monitored.
- Source Port: The ports that the user wants to monitor. All monitored port traffic will be copied to mirroring (destination) port. Users can select multiple source ports by ticking the check boxes beneath the port number label to be monitored.

And then, click **Update** to have the configuration take effect.

# 5.3 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.



#### Bandwidth Control

	Port No		Tx Rate				Rx Rate	
	01 👻		(0~255) (0:Fu	II Speed)		(0~255	) (0:Full Speed)	
	Speed Base	Actual Tx/l High: (1)256Kbps Actual Tx/l When link (2)the bandy Actual Tx/l When link	wRx bandwidth resolution for pr Rx bandwidth =Rate value x 32 i TuRx bandwidth =Rate value x 32 i Rx bandwidth=Rate value Rx bandwidth=Rate value width resolution is 2048/bps for Rx bandwidth=Rate value x 204 speed is 100MB. The rate value speed is 100MB. The rate value	ops. The rate value is opt 1~ port 16. Kbps. The rate value i is 1~39. port 17, port 18. 8Kbps. The rate value is 1~4.	s 1~255.			
				Update	LoadDefault			
If the lin	nk speed of selected p	oort is lower th	an the rate that you seting, this	system will use the va	alue of link spee	ed as your setting rate.		
Port No.	Tx Rate		Rx Rate	Link Speed	Port No.	Tx Rate	Rx Rate	Link Speed
1		Full Speed	Full Speed		10	Full Speed	Full Speed	
2	1	Full Speed	Full Speed		11	Full Speed	Full Speed	
3	1	Full Speed	Full Speed		12	Full Speed	Full Speed	100M
4	1	Full Speed	Full Speed		13	Full Speed	Full Speed	
5		Full Speed	Full Speed		14	Full Speed	Full Speed	
6		Full Speed	Full Speed		15	Full Speed	Full Speed	
7		Full Speed	Full Speed		16	Full Speed	Full Speed	
		Full Speed	Full Speed		17	Full Speed	Full Speed	
8								

#### 5.4 Broadcast Storm Control

The switch implements a broadcast storm control mechanism. Tick the check boxes to have them beginning to drop incoming broadcast packets if the received broadcast packet counts reach the threshold defined. Each port's broadcast storm protection function can be enabled individually by ticking the check boxes.

**Broadcast Storm Control** 

Threshold		63 1~63									
Enable	1	2	3	4	5	6	7	8	9		
Port	10	11 	12	13	14	15 	16 	17	18 		
				Update							
This value indicates the numb 10Mbps speed	er of broadcast packet	which is allowed	I to enter each po	rt in one time un	it. One time unit i	is 50us for Gigat	it speed, 500 us	for 100Mbps sp	eed and 5000us for		
Note: This effect may be not si	ignificant for long broad	cast packet, sind	ce the broadcast	packet count pas	sing through the	switch in a time	unit is probably	less than the spe	ecified number.		

The broadcast packet is only checked at the selected port and the number of broadcast packets is counted in every time unit. One time unit is 500 us for 10Mbps speed and 5ms for 100Mbps. 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.

- Threshold: Type in the threshold in the range between 1 and 63 to limit the maximum byte counts, which a port can send or receive in a period of time.
- Enable Port: Having ticked the boxes, the port will stop transmitting or receiving data when their sending byte counts or receiving byte counts reach the defined threshold.

Click **Update** to have the configuration take effect.



# 5.5 PoE

User could know per PoE port out power status in this page and also enable or disable per port. POE Configuration

Image: No Load                 14           Image: No Load	Image: Constraint of the second sec	Image: Constraint of the second sec
  14	  15 I	  16 V
 14	 15 I	 16 V
14	15	16
2	2	<b>V</b>
No Load		
	No Load	No Load



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Chapter



# 6. VLAN Setting

A Virtual LAN (VLAN) is a logical network grouping that limits the broadcast domain, which would allow you to isolate network traffic, so only the members of the same VLAN will receive traffic from the ones of the same VLAN. 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 plugged into the same switch physically.

# 6.1 VLAN Mode

You may select the VLAN Mode of the switch. Port-based VLAN is for separating traffic only on this single switch. There is no handover of network traffic within VLAN groups to other switches. For the handover to other switches use Tag Based VLAN. In VLAN Mode you can switch from Tag to Port Based VLAN. Port Based VLAN is the default mode.

After having switched to Tag Based VLAN Mode, the screen changes. On this screen you can now define and configure your Up- and Downlink ports. These are important since here the handover between the switches of your network takes place.

VLAN Moo		
VLAN Mode	Port Based VLAN Change VLAN mode	

VLAN Mode	Tag Based VLAN	Change VLAN :	mode						
Tag Mode	Port 01 AddTag don't care RemoveTag Port 10 AddTag don't care RemoveTag	Port 02 AddTag don't care RemoveTag Port 11 AddTag don't care RemoveTag	Port 03 AddTag don't care RemoveTag Port 12 AddTag don't care RemoveTag	Port 04 Add Tag don't care Remove Tag Port 13 Add Tag don't care Remove Tag	Port 05 AddTag don't care RemoveTag Port 14 AddTag don't care RemoveTag	Port 06 Add Tag don't care Remove Tag Port 15 Add Tag don't care Remove Tag	Port 07 Add Tag don't care Remove Tag Port 16 Add Tag don't care Remove Tag	Port 08 Add Tag don't care Remove Tag Port 17 Add Tag don't care Remove Tag	Port 09 Add Tag don't care Remove Tag Port 18 Add Tag don't care Remove Tag
					Update				

- VLAN Mode: Displays VLAN mode: port based/Tag based VLAN. Here you can also switch back to Port Based VLAN Mode
- > Add tag means the outgoing packet of the selected port will be inserted a 802.1Q tag. Use this



setting for your Up- and Downlink Ports in your VLAN Tagged Network.

- Don't care means the outgoing packet of the selected port keep the original packet received at the source port. This is the default setting when starting VLAN configuration. You should change to either Add or Remove Tag.
- Remove tag means the 802.1Q tag of the outgoing packet of the selected port will not be sent. Use this setting for your Network Connections to PCs. Only packets of the VLAN Group the Port is member of will be sent.

# 6.2 VLAN Member

The ports need to be made member of your VLAN groups. This is for Tag Based and Port Based VLAN Mode. The screen here looks different whether you run Tag Based or Port Based Mode.

#### VLAN Member in Port Based Mode

	Post									-	-							
	Dest PORT			01		02	03		04		05	05				08	_	09
	solect							2		2	2		8		17	_	2	
	Dist PORT			10		11	12		13		14	1		16	_	18		
	select		_	2		2	2		E		2	2	8	2		2		2
								(199414)										
								VLAN	MEMBER									
Port								1	1	1	1	1	1	1	1	1	1	1
	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8
1	×	¥	¥	*	¥	v	*	v	٧	×	×	Y	*	¥	7	7	×	Y
2	*	*	Y	v	Y	×	Y.	<b>v</b>	Y	Y	*	×	*	v	v	v	×	٣
3	Y	v	v	v	v	v	v	v	v	Y	Y.	v	v	v	v	v	v	Y
4	Y	٣	¥	*	v	v	*	v	Y	Y	Y	Y	*	Y	7	v	Y	Y
5	×	¥	Ŧ	*	¥	×	*	v	٣	×	×	Y	*	Ŧ	7	v	×	Y
6	×	Y	¥	v	¥	Y	*	*	٧	×	Y	×	v	×	v	v	×	*
7	v	v	v	v	v	v	v	v	Y	Y	v	v	v	v	v	v	v	Y
8	v	v	v	v	v	v	v	v	Y	Y	v	Y	v	v	v	v	v	×.
9	×.	*	Ŧ	*	r	r	¥.	×	¥.	Y	*	×	*	*	*	*	x.	×
10	*	*	×	*	×	×	¥.	*	¥.	Y	*	×	*	*	*	*	×	٠
11	×.	Y	v	v	v	v	v	Y	Y	Y	Y	Y	v	v	v	Y	v	Y
12	v	٧	v	v	v	v	v	v	v	Y	Y	Y	v	v	v	v	v	Y
15	×	¥	Ŧ	*	¥	×	*	v	×	×	×	×	*	Ŧ	7	7	×	Y
14	×	Y	¥	v	¥	¥	*	*	٧	×	×	×	v	¥	v	v	×	*
45	Y	v	×	v	v	v	v	v	٧	×	Y	×	v	×	v	v	v	v
16	v	v	v	v	v	v	v	v	v	Y	Y	v	v	v	v	v	v	Y
17	×	¥	Ŧ	*	×	×	*	*	<b>v</b>	×	×	×	*	Ŧ	*	*	×	Y
18	×	Y	¥	v	¥	¥	*	v	٠	×	×	×	v	¥	*	v	×	Y
Port		1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

In Port Based Mode you see a matrix of your 8 Ports. Simply select the port on top screen you want to configure, click on Read, and then select or deselect the ports that are on the same VLAN group. In this configuration mode you do not need to worry about defining VLAN groups and VLAN IDs.

#### VLAN Member in Tag Based Mode

In Tag Based Mode you need to define and configure your VLAN groups. Since you want the handover to other switches take place smoothly, the VLAN IDs (Numbers) need to be like on the rest of your network. On other switches you may have the chance to configure names. These are just for your reference. Only the numbers are important!



There firstly add your VLAN Groups (identified throughout your network by unique and constant numbers). Start with IDs from 100 and up. Keep in mind that some switches use "1" as the default, while others use "4095" or "4096" as default. Starting with 100 gives you enough free room and less compatibility issues.

So enter "100" in the field right of VID Setting, then select or deselect which ports are member of that group. Your up- and downlink ports need to member of every existing group! Then click on add. The new group with its setting will be displayed at the bottom of the screen.

With the PVID Setting you define to which VLAN group incoming traffic belongs. Consider the example that Port 1 is member of group 100 and 101. A simple PC is connected to Port 1. If that PC is now sending out data, with PVID you define if that data is for group 100 or 101.

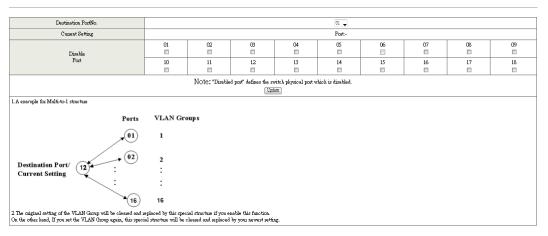
7ID: (1~4094) 🧾	4dd				-	Delete	Update								
.dd: Enter a VID, select the Del: Select a VID in the tabl Ipdate:Modify the existing	e and then press this bu	tton to remove a V	D entry from		LAN entry to th	e table.									
	VLAN Mem	oer Port			01	02	03	3	04	05	06	0	7	08	09
	select						1	]				E	1		
	VLAN Mem	oer Port			10	11	12	3	13	14	15	1	5	17	18
	select		V	]	<b>V</b>	V		8	•	<b>v</b>	<b>V</b>				
lote: If you do not select a	ay port, this ∛ID will b	e treated as a VID e	nbedded in	a 802.1Q tag											
VID Source port         01         02         03         04         05         06         07         08         09															
	select														
VID	Source port		10	11	12		13		14	15		16	17		18
	select														
			_			'ID Map.								1	
Port	01	02	-	03	04	_	05		06		07		08		09
VID						_		_							
Port	10	11	-	12	13	_	14	_	15		16		17		18
ΥID															
					,	VLAN M	EMBER								



# 6.3 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**. When VLAN member Setting is updated, multi to 1 setting will be void and vice versa. 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 a normal Tag Based VLAN network you will not need this configuration option.

Multi to 1 Setting





# 7

# 7. Per Port Counter

# 7.1 Port Counter

This page provides port counter of each port. There are 4 categories: Receive Packet & Transmit Packet/ Transmit & Collision / Receive Packet & Drop /Receive & CRC error. Once you change the counter category, the counter will be cleared automatically.

	Counter Mode Selection: Transmit Packet & Receive Packet 🗸 (Update)	
Port		Receive Packet
01	0	0
02	0	0
08	0	0
04	0	0
05	0	0
06	0	0
07	0	0
08	0	0
09	0	0
10	0	0
11	0	0
12	2496	4154
13	0	0
14	0	0
15	0	0
16	0	0
17	0	0
18	0	0
	(Clear) (Refresh)	

- 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 packet & Receive packet: This category shows the received correct packet and received CRC error.
- Clear: Press "clear" will clear all counters.
- > Refresh: Press "Refresh" button will aggregate the number of the counter for all ports.



# 7.2 QoS Setting

Here you can configure QoS policy priority mode and CoS (Class of Service) configuration. QoS (Quality of Service) refers to mechanisms in the network software that make the actual determination of which packets have priority. CoS refers to feature sets, or groups of services, that are assigned to users based on company policy. If a feature set includes priority transmission, then CoS winds up being implemented in QoS functions within the routers and switches in the network. In an enterprise network, class of service (CoS) differentiates high-priority traffic from lower-priority traffic. Tags may be added to the packets to identify such classes, but they do not guarantee delivery as do quality of service (QoS) functions, which are implemented in the network devices.

# 7.3 Priority Mode

There are three priority modes available to specify the priority of packets being serviced. Those include First-In-First-Out, All-High-Before-Low, and Weight-Round-Robin.

#### Priority Mode

Priority Mode	
Mode	<ul> <li>● First-In-First-Out</li> <li>● All-High-before-Low</li> <li>● Weight-Round-Robin. Low weight 0 - High weight: 0 -</li> </ul>
	Updata
The "low wieght"	e queue weight is set to "0", it will be treated as "8". ' and "high weight" means the ratio of the packet in the transmit queue. For example, nd "high weight" are set to "3" and "5", the ratio of the trasmit packet for the low priority to high priority is 3/5.

- First-In-First-Out: Packets are placed into the queue and serviced in the order they were received.
- All-high-before-low(Strict priority) : All packets will be assigned to either high priority queue (Queue 2) or low priority queue (Queue 1). The packet on the low priority queue will not be forwarded until the high priority queue is empty.
- WRR mode: There are 4 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.



# 7.4 Port, 802.1p, IP/DS based

#### Class of Service Configuration

Port No.\Mode	Port Base	VLAN Tag	IP / DS	Port No.\Mode	Port Base	VLAN Tag	IP / DS
1				10			
2				11			
3				12			
4				13			
5				14			
6				15			
7				16			
8				17			
9				18			
Updata							

#### **TCP/UDP** Port

#### Based

#### Class of Service Configuration

Protocol		C	Option		
FTP(20,21)		P-1	-F-O 👻		
SSH(22)		F-1-F-0 🗸			
TELNET(23)		F-1:F-0 🗸			
SMTP(25)		F-I	-F-O 🚽		
DNS(53)		F-I	·F-0 🔶		
TFTP(69)		F-I	NF-0 👻		
HTTP(80,8080)		F-I	LF-0 <del>↓</del>		
POP3(110)		F-L	VF-0 👻		
NEWS(119)		P-I	.F-0 ▼		
SNTP(123)		F-L	NF-0 🚽		
NetBIOS(137~139)		P-I	NF-0 👻		
IMAP(143,220)		F-L	NF-0 👻		
SNMP(161,162)		F-1F-O 🗸			
HTTPS(443)		FJFO 🗸			
MSN(1863)	FMFO 🗸				
XRD_RDP(3389)		F3F0 🗸			
QQ(4000,8000)		F-I	NF-0 🗸		
ICQ(5190)		P-I	NF-0 👻		
Yahoo(5050)	-	F-I-	F-0 🚽		
BOOTP_DHCP(67,68)		Lo	w 🗸		
User_Define_a		P-I-	F-0 👻		
User_Define_b		F-I-	F-0 👻		
User_Define_c		F-I-	F-0 🗸		
User_Define_d		F-I-	F-0 🗸		
User_Define Port number	User_Define_a	User_Define_b	User_Define_c	User_Define_d	
(1~65535) Mask(0~255)	Port: Mask:0	Port: Mask: 0	Port: Mask:0	Port: Mask: 0	
masku(250) Mote:The mask defines which bit is ignored within the IP address bit 0 ~ bit 7. For example, UDPTCP port = 65535 and mask = 5,this means 65530, 65531, 65534 and 65535 are all taken into account. UDPTCP port =65535 and mask=0, this means only 65535 is taken into account. TCP/UDP port Qos function: Montomic ↓ Note:When the "override" item is selected, the Port_based, Tag_based, IP TOS_based, CoS listed above will be ignored.					
		Updam			
Looks The focume packet will be forwareded with the Low prorty.					



#### ES1625-31

# Chapter



# 8. Security

# 8.1 MAC Address Binding

#### MAC Address Binding

Port No.	MAC Address			
1				
Select Port 01 • Binding Disable • Updam				

Note: If you enable the MAC address binding function, the address leaning function will be disabled automatically.

Port No.	Binding Status	Port No.	Binding Status
1	Disable	10	Disable
2	Disable	11	Disable
3	Disable	12	Disable
4	Disable	13	Disable
5	Disable	14	Disable
6	Disable	15	Disable
7	Disable	16	Disable
8	Disable	17	Disable
9	Disable	18	Disable

Note: The MAC address of current management connection is 00:26:6c:48:af:57 at port 12.

- > Port No: Displays the port number being assigned the MAC addresses.
- > MAC Address: Users can assign up to 3 MAC addresses to the port.
- Read: Pull down the selection bar to choose a port number and click the read button to show the MAC addresses bound with the port or modify the MAC addresses.
- > Select Port: Pull down the selection menu bar to choose a port number to be set.
- Binding: Enable or disable the binding function.

Click **Update** to have the configuration take effect.

# 8.2 TCP/UDP Filter

#### TCP\_UDP Filter Configuration

Function Enable	·								
Function Enable	Enable Datable •								
Port Filtering Rule	sector     FRenty Rue     In Characteristic and sector protocol will be setted protocol will be despected and sector WAM port as the faque above.     To the originate and works above.     To protocol will be despected and other periods will be despected.								
	FTP(20,21)	🗆 SSH(22)	TELNET(23)	SMTP(25)	DNS(53)	TFTP(69)	HTTP(80,8080)	POP9(110)	■ NEWS(119)
Protocol	SNTP(123)	🔲 NetBIOG(137~139)	DMAP(143,220)	SNMP(161,162)	HTTPS(443)	IXRD_RDP(3389)	BOOTP_DHCP(67,68)		
	User_Define_o	🔲 User_Define_b	🗆 Usex_Define_o	🗆 Uses_Define_d					
Secure WAN port	⊟Por01	E Port02	□ Port08	E Port04	E Port05	⊟Por06	□Port07	□ Port08	□Port09
Secure WAN port	Port10	E Post11	Port12	E Post13	E Port14	□ Port15	E Part16	E Port17	□Port18
				Update					
Note: The description of Traffic Path Port	Totic Page								





# 9. Spanning Tree

# 9.1 STP Bridge Settings

#### STP Bridge Settings

Spanning Tree Settings						
STP Mode	Bridge Priority	Hello Time	Max Age	Forward Delay		
51F Mode	(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 Priority must be multiplies of 4096						

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

Bridge Status						
STP Mode	Bridge ID	Hello Time	Max Age	Forward Delay		
RSTP	32768:00 OF C9 05 BB 57	2	20	15		

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

- Bridge Priority: This parameter configures the spanning tree priority globally for this switch. The device with the highest priority becomes the STP root device. However, if all devices have the same priority, the device with the lowest MAC address will then become the root device. Number between 0 61440 in increments of 4096. Therefore, there are 16 distinct values.
- Hello Time: Interval (in seconds) at which the root device transmits a configuration message (BPDU frame). Number between 1-10 (default is 2).
- Max Age The maximum time (in seconds) a device can wait without receiving a configuration message before attempting to reconfigure. That also means the maximum life time for a BPDU frame. Number between 6-40 (default is 20).
- ➢ Forward Delay: The maximum time (in seconds) the root device will wait before changing states (i.e., discarding to learning to forwarding). Number between 4 − 30 (default is 15).



# 9.2 STP Port Settings

#### STP Port Settings

STP Port Settings					
		RPC			
Port No.	Priority (0~240)	(1~200000000)			
	(0 2.00)	0=AUTO			
-					
Submit					
Priority should b	e a multipe of 1	16			

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	_	_
11	Auto:0	0x80	_	Disable	_	_
12	Auto:0	0x80	-	Disable	_	_
13	Auto:0	0x80	-	Disable	-	-
14	Auto:0	0x80	-	Disable	-	-
15	Auto:0	0x80	-	Disable	-	-
16	Auto:0	0x80	_	Disable	_	_
17	Auto:0	0x80	_	Disable	_	_
18	Auto:0	0x80	-	Disable	_	-

- Port No: The port ID. It cannot be changed. Aggregations mean any configured trunk group.
- Root Path Cost: This parameter is used by the STP to determine the best path between devices. Therefore, lower values should be assigned to ports attached to faster media, and higher values assigned to ports with slower media. Set the RSTP path cost on the port. Number between 0 -200000000. 0 means auto generated path cost.
- State: Show the current port state includes designated port, root port or blocked port. Status: Show the current port status includes forwarding, disable etc...



# 9.3 Loopback Detection Settings

# Loopback Detection Settings

Loopback Detect Function	Disable 🖵
Auto Wake Up	Disable 🗸
Wake-Up Time Interval	10 soc 🔪
Sut	mit 5 soc
	30 scc 60 scc

Reset All Ports

Port No.	Status
1	
2	
3	
4	
5	
6	
7	
8	



# **10. Trunking**

Port trunk allows multiple links to be bundled together and act as a single physical link for increased throughput. It provides load balancing, and redundancy of links in a switched inter-network. Actually, the link does not have an inherent total bandwidth equal to the sum of its component physical links. Traffic in a trunk is distributed across an individual link within the trunk in a deterministic method that called a hash algorithm. The hash algorithm automatically applies load balancing to the ports in the trunk. A port failure within the trunk group causes the network traffic to be directed to the remaining ports. Load balancing is maintained whenever a link in a trunk is lost or returned to service. This switch may use Port ID, Source MAC Address, Destination MAC Address, or a combination of Source MAC Address and Destination MAC Address to be the selection for Trunk Hash Algorithm. Traffic pattern on the network should be considered carefully before applying it. When a proper hash algorithm is used, traffic is kind of randomly decided to be transmitted across either link within the trunk and load balancing will be seen.

This managed switch supports two trunk group, each trunk consists of 2~4 ports. Trunk hash algorithm can be selected according to 4 different methods.

#### Trunking

System Priority	1 (1~65535)	
Link Aggregation Algorithm MAC Stratute +		
Submit		

Refresh

		Link Group		
	P17	P18		
Member				
State		Disable 👻		
Туре		Static 🚽		
Operation Key		(1~65535)		
Time Out		Long Time Out 👻		
Activity		Passivo 👻		
Submit				

Note: If you enable LACP on some specified ports and their link partners are normal port without LACP, these specified ports cannot transmit packet to/eceive packet from the link partner.





# 11. Backup / Recovery

This function provides the user with a method to backup/recovery the switch configuration. The user can save configuration file to a specified file. If the user 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 original configuration of the switch will be recovered.

#### **Configuration Backup/Recovery**

Backup(Switch→PC)
Please check "Download" to download EEPROM contents.

Recovery(PC→Switch	)	
Select the image file :		瀏覽
Password:	Update	



# 12. Miscellaneous

Miscellaneous setting is used to configure output queue aging time, VLAN stride and IGMP snooping. Miscellaneous Setting

Output Queue Aging Time								
Aging time Disable 👻 ms								
				VLAN Stridir	ng			
VLAN Striding								
				IGMP Snooping V	1 & V2			
IGMP Snooping Disable -								
IGMP Leave Packet Disable +								
				VLAN Uplink Se	etting			
Port 01 © Uplink1 © Uplink2	Port 02 © Uplink1 © Uplink2	Port 03 © Uplink1 © Uplink2	Port 04 © Uplink1 © Uplink2	Port 05 © Uplink1 © Uplink2	Port 06 © Uplink1 © Uplink2	Port 07 © Uplink1 © Uplink2	Port 08 © Uplink1 © Uplink2	Port 09 O Uplink1 O Uplink2
Port 10 © Uplink1 © Uplink2	Port 11 © Uplink1 © Uplink2	Port 12 © Uplink1 © Uplink2	Port 13 © Uplink1 © Uplink2	Port 14 © Uplink1 © Uplink2	Port 15 © Uplink1 © Uplink2	Port 16 © Uplink1 © Uplink2	Port 17 © Uplink1 © Uplink2	Port 18 © Uplink1 © Uplink2
© Clear Uplink1 ♥ Clear Uplink2					·			
				Update				

- Output queue aging: This function is used to avoid the poor utilization of the switch. When a packet is stored in a switch for a long time, it will expire from the allowable time defined by the protocol and become a useless packet. To prevent these packets from wasting the bandwidth, this switch provide an option for the administrator to enable the queue aging function.
- > 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.

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 and leave packets are automatically handled by the switch.





# 13. Logout

The administrator has write access for all parameters governing the onboard agent. User should therefore assign a new administrator password as soon as possible, and store it in a safe place.

When you forgot your IP or password, please use the reset button for the factory default setting?

Please take the following steps to reset the Web Smart Switch back to the original default:

#### Step 1:

Turn on the Web Smart Switch

#### Step 2:

Press and hold the reset button continuously for 5 seconds and release the reset button.

#### Step 3:

The switch will reboot for 20 seconds and the configuration of switch will back to the default setting.

User Login		
Site:	192.168.2.1	
ID:	admin	
Password:	•••••	
OK		

Key in the user ID and the password to pass the authentication; the user ID and the password are "admin"

IP: 192.168.2.1 ID: admin Password: admin





# 14. Specification

Model Name	ES1325-31
Standards	Ethernet: IEEE 802.3 10BaseT, IEEE 802.3u 100BaseTX, IEEE
	802.ab 1000BaseT, IEEE 802.3z 1000BaseSX/LX
	IEEE 802.3x Flow Control
	IEEE 802.3ad Link Aggregation Control Protocol
	IEEE 802.1Q VLAN
	IEEE 802.1p Class of Service
	IEEE 802.1D Spanning Tree Protocol
	IEEE 802.1w Rapid Spanning Tree Protocol
	IEEE 802.3at Power Over Ethernet (PoE+)
Features	Number of Ports: 18
	10/100BaseTX with RJ-45 Connectors: 16 port with PoE+
	Gigabit Uplink: 2x 10/100/1000BaseT RJ-45 / Gigabit SFP
	Combo Port
	MAC Address: 4K
	Buffer Memory: 2.75Mb
	Switching Capacity: 7.2 Gbps
	Jumbo Frame: 10K
	Transmission Method: Store and Forward
Smart Features	Port Based VLAN: 18
	Tagged Based VLAN: 32, VID = 1~4094
	STP/RSTP
	IGMP Snooping V1&V2
	Link Aggregation: 1, Gigabit Ports
	Quality of Service(QoS): High & Low queues, 802.1p
	Security: Port & MAC binding, 3 MAC per port
	Port: Port State, Speed/Duplex, Flow Control
	Port Mirroring
	Bandwidth Control



Weight

	Broadcast Storm Control
	PoE Control: PoE Port Enable/Disable, PoE Status
	Management: Web Management, password protected access,
	Configuration backup/restore, TFTP firmware upgrade
Filtering/Forwarding Rates	1000Mbps port – 1,488,000pps
	100Mbps port - 148,800pps, 10Mbps port - 14,880pps
Transmission Media	10/100BaseTX Cat. 5 UTP/STP
	1000BaseT Cat. 5 / Cat. 5E UTP/STP
LED Indicators	Per Port: Link/Act, PoE : Act / Status, Per Unit: Power
Power Input	100~240 V/AC, 50~60Hz
Power Output	53V DC Per Port Output
Power Consumption	250 Watts
Dimensions	44 × 440 × 331 mm (H x W x D)
Operating Temperature	0 to 40°C
Storage Temperature	-20 to 90°C
Humidity	10 to 90% RH (non-condensing)
Certifications	FCC Class B, CE

4.2kg

# EverFocus Electronics Corp.

#### **EverFocus Taiwan:**

12F-1, No.79, Sec. 1, Shin-Tai Wu Road, Hsi-Chih, New Taipei City, Taiwan TEL: +886 2 2698 2334 FAX: +886 2 2698 3943 www.everfocus.com.tw marketing@everfocus.com.tw

#### **EverFocus China - Beijing:**

Room 609, Technology Trade Building, Shangdi Information Industry Base, Haidian District, Beijing 100085, China TEL: +86 10 6297 3336~39 FAX: +86 10 6297 1423 www.everfocus.com.cn <u>marketing@everfocus.com.cn</u>

#### **EverFocus USA - California:**

1801 Highland Avenue, Unit A, Duarte, CA 91010, USA TEL: +1 626 844 8888 FAX: +1 626 844 8838 www.everfocus.com sales@everfocus.com

#### **EverFocus Japan:**

3F, Kuramochi, Building II 2-2-3 Koto-Bashi, Sumida-Ku, Tokyo, 130-0022, Japan TEL: +81-3-5625-8188 FAX: +81 3 5625 8189 www.everfocus.co.jp info@everfocus.co.jp

#### **EverFocus India:**

UBS, 629/1243, 1st Floor, G Block, Behind Teacher's Colony, Bandra Kurla Complex, Bandra (E), Mumbai 400 051, India TEL: +91 22 6726 4500 FAX: +91 22 6726 4518 www.everfocus.in sales@everfocus.in

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Albert-Einstein-Strasse 1, D-46446 Emmerich, Germany TEL: +49 2822 93940 FAX: +49 2822 939495 www.everfocus.de sales@everfocus.de

#### **EverFocus China - Shenzhen:**

4F, No. 2, D4 Building, Wan Yelong Industrial Park, Tangtou Road, Shiyan, Baoan, Shenzhen, Guangdong 518101, China TEL: +86 755 2765 1313 FAX: +86 755 2765 0337 www.everfocus.com.cn marketing@everfocus.com.cn

#### **EverFocus USA - New York:**

415 Oser Avenue, Unit S, Hauppauge, NY 11788, USA TEL: +1 631 436 5070 FAX: +1 631 436 5027 www.everfocus.com <u>sales@everfocus.com</u>

#### EverFocus China - Shanghai:

Room 403, Ruijin Business Center, No.96, Zhaojiabang Road, Luwan district, Shanghai 200020, China TEL: +86 21 6471 2229 / 6471 2291 FAX: +86 21 6471 0566 www.everfocus.com.cn <u>marketing@everfocus.com.cn</u>

