

# CERIO Corporation

## CS-2005G-4P

**PoE CS-2000 Series - 5 Port 10/100/1000M  
Gigabit Web Managed Switch with 4 Port PoE+  
( 72Watt Power )**



## User's Manual

### **FCC Warning**

This device has been tested and found to comply with limits for a Class A digital device, pursuant to Part 2 and 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiates radio frequency energy and, if not installed and used in accordance with the user's manual, may cause interference in which case user will be required to correct the interference at his own expense.

### **CE Mark Warning**

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

<b>1. Introduction</b> .....	4
<b>1.1 Feature</b> .....	4
<b>1.2 Package Contents</b> .....	6
<b>1.3 Front Panel</b> .....	6
<b>1.4 Rear Panel Layout</b> .....	6
<b>2. Software Configuration</b> .....	7
<b>2.1 Example of Segment: (Windows 7)</b> .....	7
<b>2.2 System login</b> .....	11
<b>Menu Function</b> .....	12
<b>3. System</b> .....	12
<b>4. Management</b> .....	13
<b>5. VLAN</b> .....	14
<b>6. Trunking</b> .....	15
<b>7. Mirror</b> .....	16
<b>8. QoS</b> .....	17
<b>9. Rate Limiting</b> .....	18
<b>10. IGMP Snooping</b> .....	19
<b>11. PoE</b> .....	20
<b>12. Password</b> .....	21
<b>13. Logout</b> .....	21
<b>Specifications</b> .....	22

# 1. Introduction

CERIO CS-2000 Series Model: **CS-2005G-4P** is a powerful high-performance 5 port 10/100/1000Mbps web managed switch and utilizes 4 ports compliant to **IEEE 802.3at PoE+** and **802.3af PoE**. This layer 2 Web Management switch bundles a 72watt power adapter and supports Remote on/off control of PoE power ports. Additional supported features include port base IEEE802.1Q VLAN Tagging, IGMP snooping, and IEEE802.1p port-based QoS prioritization. CS-2005G-4P can solve limitations of power outlet locations and offer system relocation convenience

CERIO's **CS-2005G-4P** PoE+ Switch is designed for dispersing managed Power over Ethernet to small and medium sized networks architectures. It is ideal for micro-segmenting large network into smaller networks, connecting subnets for improved performance, and enabling the bandwidth demanded for multimedia and imaging applications. Users can **easily connect Wireless APs, VoIP phones, and IP Cameras** to this switch for convenient power and data transmission. Over current protection and circuit shorting protection are also supported to ensure product safety. This high power device provides easy installation, eliminates limitations of power outlet locations, and offers a simple solution for system relocation.

## 1.1 Feature

- Complying with IEEE 802.3 10Base-T, IEEE 802.3u 100Base-TX, IEEE 802.3ab 1000Base-T, IEEE 802.3z 1000Base-SX/LX , IEEE 802.3az EEE, IEEE-802.3af PoE, IEEE802.3at PoE+
- 5 port 10/100/1000Mbps TX Auto-Negotiation Ethernet Switch , 4 Port Gigabit PSE / PoE function compliant with IEEE-802.3af class3 /class2/class1 and IEEE802.3at
- Supports PoE Green Power Energy Saving function to automatically detect connected devices and smartly direct necessary output wattage to only those ports to achieve green power saving
- Supports power of up to 30Watt/15.4Watt/7.5Watt/4Watt for each PSE/PoE port

- Bundle 72watt power supply ,supports a maximum PoE power budget of 60 Watt (shared between 4 PoE Ports)
- Supports remote power control of PoE powered devices (PD), allowing by internet web on/off/restart control and supports monitoring of individual port PoE consumption (wattage)
- Full/Half-Duplex capability on each TX port , Auto-learning networking configurations
- Supporting flow control: back pressure for Half-duplex and IEEE 802.3x for Full-duplex mode
- Supports Store and Forward functionality
- Non-blocking & Non-head-of-line blocking full-wire speed forwarding
- Supports TP interface Auto MDIX function for auto TX/RX swap
- Provides 9K Jumbo frames to improve network utilization of a large file transfers
- Supports up to 4K MAC addresses
- Up to 1Mb Packet Buffer size
- VLAN and IEEE802.1Q tag-base VLAN based on ports & VIDs; add/remove/modify tag
- IEEE802.3ad Link Aggregation Port trunking ( LACP )
- Provides IGMP v1/v2 snooping function
- Supports IEEE802.1p QoS with 4 Priority Queues and 8 Priority Weights, and Port-based QoS with 4 Priority Queues
- Supports bandwidth control to set control traffic limits (inflow and outflow) for each port
- Supports Port Mirroring function
- Supports file backup and recovery
- Web-based management interface

## 1.2 Package Contents

CS-2005G-4P Main Unit	x1
CD Manual	x1
Power Adapter	x1
Warranty Card	x1

## 1.3 Front Panel



- 1) Full PoE status LED light.
- 2) Power and system status LED light.
- 3) Hardware Reset to default button.
- 4) 4 PoE Ports and Ethernet status LED lights
- 5) 1 Gigabit Ethernet Port.

## 1.4 Rear Panel Layout



- DC 55V input
- Power on/off switch

## 2. Software Configuration

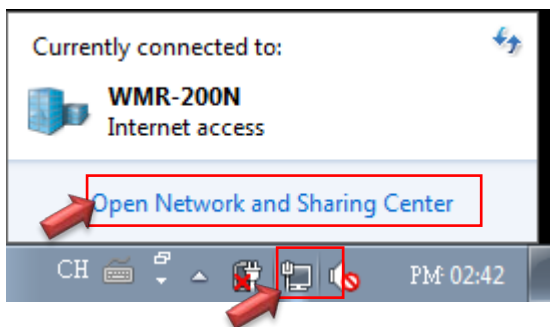
CS-2005G-4P supports web-based configuration. Upon the completion of hardware installation, CS-2005G-4P can be configured through a PC/NB by using its web browser such as Internet Explorer 6.0 or later.

Set the IP segment of the administrator's computer to be in the same range as CS-2005G-4P for accessing the system. Do not duplicate the IP Address used here with IP Address of CS-2005G-4P or any other device within the network. *Please refer to the following steps*

### 2.1 Example of Segment: (Windows 7)

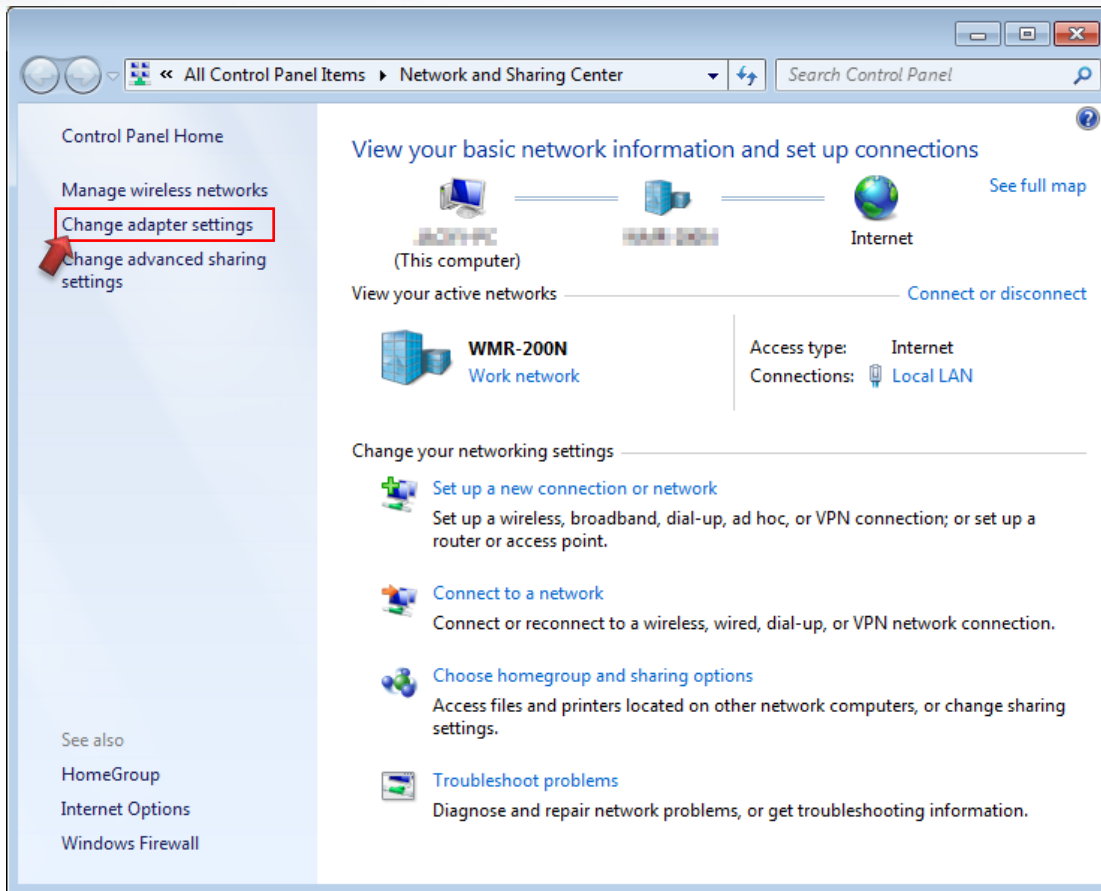
#### Step 1 :

Please click on the computer icon in the bottom right window, and click “**Open Network and Sharing Center**”



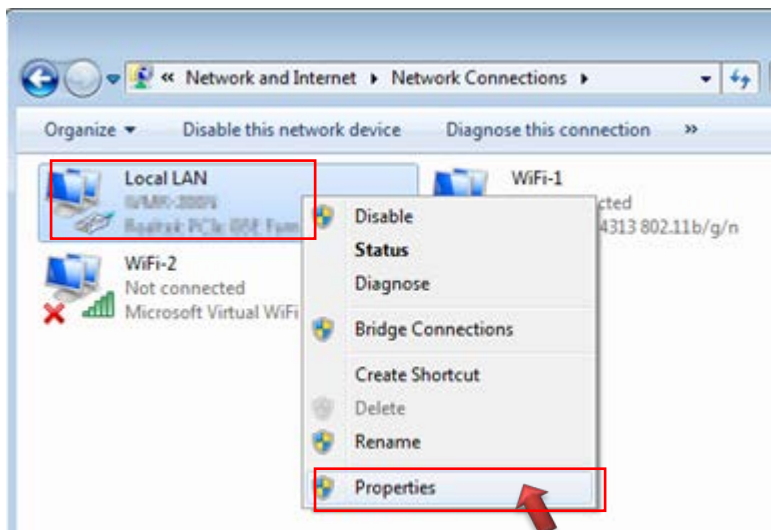
#### Step 2 :

In the Network and Sharing Center page, click on the left side of “**Change adapter setting**” button



**Step 3 :**

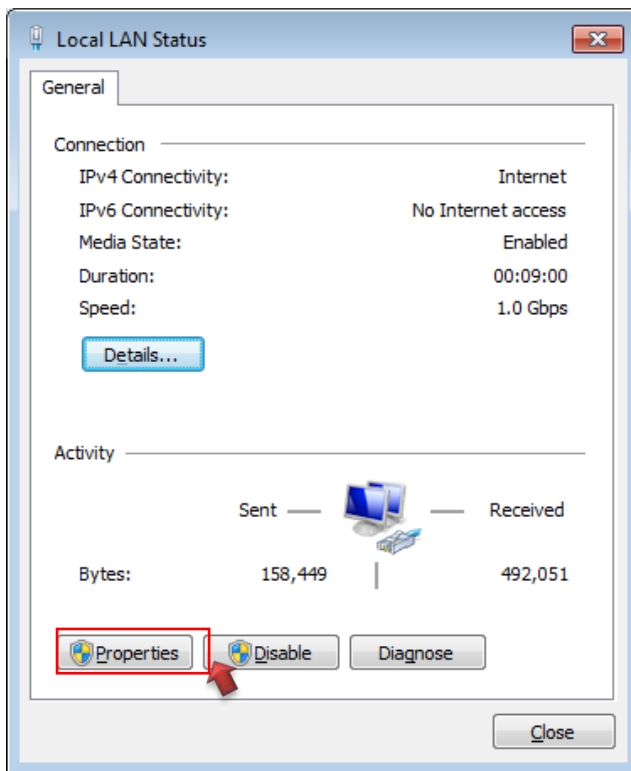
In "Change adapter setting" Page, right click on Local LAN then select "Properties"





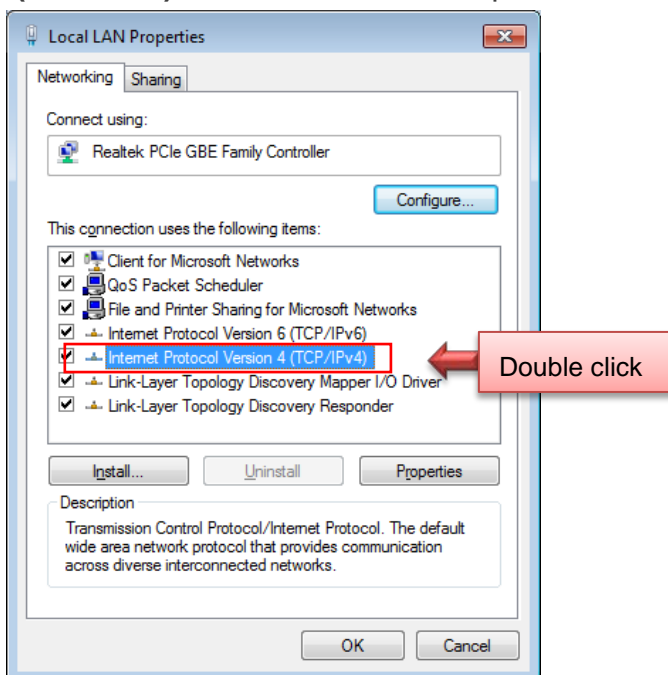
**Step 4 :**

In the “**Properties**” page, click the “**Properties**” button to open TCP/IP setting



**Step 5 :**

In Properties page for setting IP addresses, find “**Internet Protocol Version 4 (TCP/IPv4)**” and double click to open TCP/IPv4 Properties window



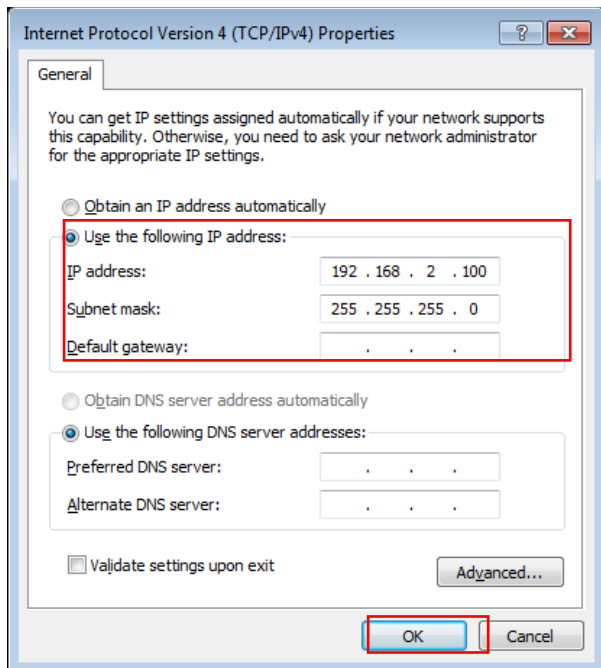
**Step 6 :**

Select **“Use the following IP address”**, and fix in IP Address to: 192.168.2.X

ex. The X is any number from 1 to 253

Subnet mask : 255.255.255.0

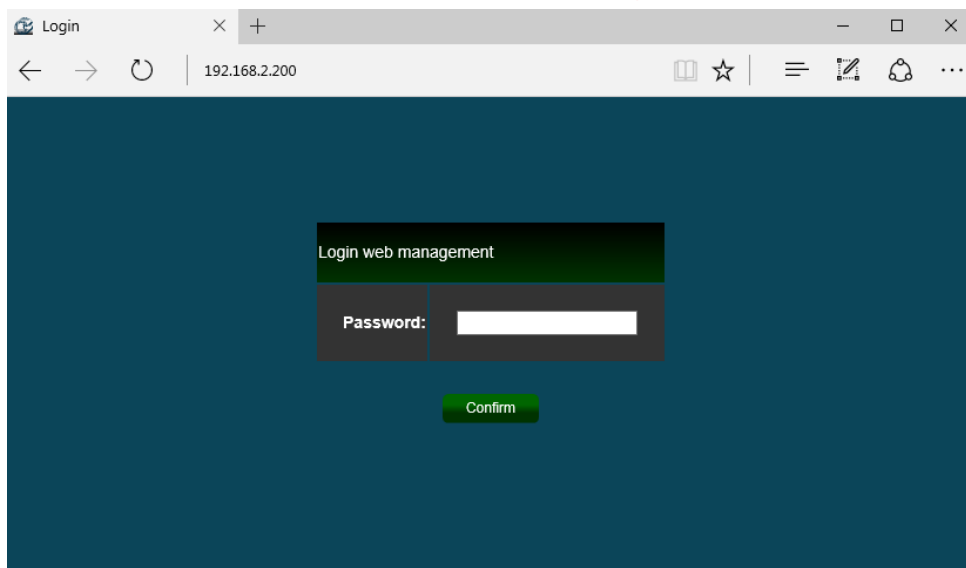
And Click **“OK”** to complete fixing the computer IP settings



**Step 7 :**

**Open Web Browser**

Without a valid certificate, users may encounter the following problem in IE7 when they try to access system's WMI (<https://192.168.2.200>). There will be a **“Certificate Error”**, because the browser treats system as an illegal website.



System login Overview page will appear after successful login.

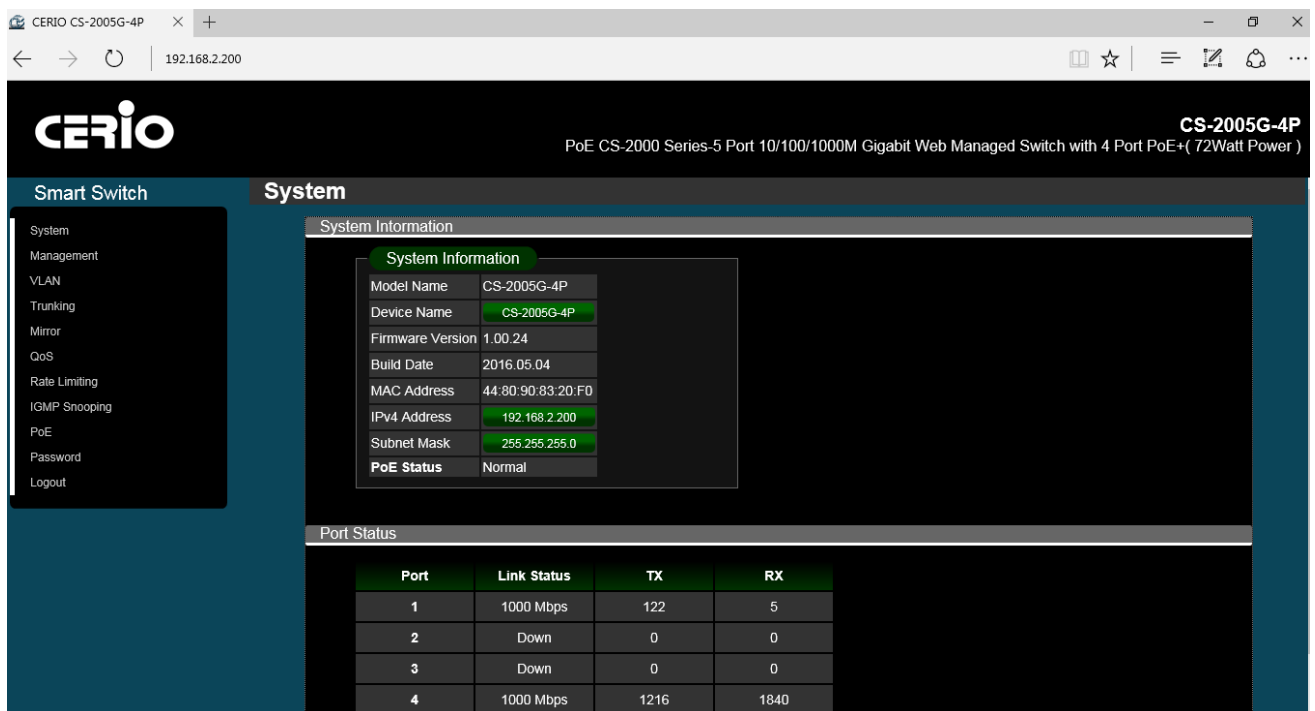
## 2.2 System login

The **CS-2005G-4P** web switch default IP is 192.168.2.200 (enter into browser URL bar) Into the management page as follows, please enter Username and password

- **Default IP Address:** 192.168.2.200
- **Default Username and Password**

<b>Management Account</b>	Root Account
<b>Password</b>	default

After logging in the page will display system information.



The screenshot shows a web browser window with the URL 192.168.2.200. The page title is "CERIO CS-2005G-4P". The interface includes a navigation menu on the left with options like System, Management, VLAN, Trunking, Mirror, QoS, Rate Limiting, IGMP Snooping, PoE, Password, and Logout. The main content area is titled "System" and contains two sections: "System Information" and "Port Status".

**System Information**

Model Name	CS-2005G-4P
Device Name	CS-2005G-4P
Firmware Version	1.00.24
Build Date	2016.05.04
MAC Address	44:80:90:83:20:F0
IPv4 Address	192.168.2.200
Subnet Mask	255.255.255.0
PoE Status	Normal

**Port Status**

Port	Link Status	TX	RX
1	1000 Mbps	122	5
2	Down	0	0
3	Down	0	0
4	1000 Mbps	1216	1840

## Side Panel Functions

### 3. System

The page administrator can monitor switch information and modify network IP / mask.

System Information	
Model Name	CS-2005G-4P
Device Name	CS-2005G-4P
Firmware Version	1.00.24
Build Date	2016.05.04
MAC Address	8C:4D:EA:04:04:04
IPv4 Address	192.168.2.200
Subnet Mask	255.255.255.0
PoE Status	Normal

- **Model Name:** Display switch model name.
- **Device Name:** Administrator can modify the system name.
- **Firmware Version:** Display system firmware version.
- **Build Date:** Display firmware release date.
- **MAC Address:** Display the system MAC Address.
- **IPv4 Address:** Display system IP address of the current, administrator can click the button to change system IP address.
- **Subnet Mask:** Display network Mask, administrator can click the button to change Mask.
- **PoE Status:** Display PoE used power.

Port	Link Status	TX	RX
1	1000 Mbps	122	5
2	Down	0	0
3	Down	0	0
4	1000 Mbps	1216	1840
5	1000 Mbps	1045	947

Clear Counters

## 4. Management

This page administrator can reboot the system or reset the system to default settings. Users can also backup or restore device settings, and also upgrade firmware from this page.

The screenshot displays a web interface with three main sections:

- System:** Contains two buttons: "Reset" (next to "Reset to default:") and "Reboot" (next to "Reboot system:").
- Configuration Restore/Backup:** Includes a "Path:" input field, a "Select file:" button with a file browser icon and the text "未選擇檔案。", a "Restore" button, and a "Backup system Profile:" button with a "Backup" button.
- Firmware Upgrade:** Includes a "Path:" input field, a "Select firmware file:" button with a file browser icon and the text "未選擇檔案。", and an "Upgrade" button.

### System

- **Reset to default:** Administrator can click the button to reset system default.
- **Reboot system:** Administrator can click the button to reboot system.

### Configuration

- **Path:** Display path for the restore config file.
- **Select file:** Administrator can click button to find the restore config file in the PC.
- **Backup system Profile:** Administrator can click the button to backup system profile.

### Firmware Upgrade

- **Path:** Display path for the firmware file.
- **Select firmware file:** Administrator can click button to find the firmware file in the PC.

## 5. VLAN

The VLAN function administrator can set IEEE 802.1q Tag Based VLAN or Port Based VLAN. System default is tag based VLAN.

### IEEE 802.1Q VLAN

**Select VLAN Type**

IEEE 802.1Q VLAN

Port-Based VLAN

**PVID Configurations**

Apply

Port	01	02	03	04	05
PVID	1	1	1	1	1

**IEEE 802.1Q VLAN Configurations**

Maximum number of IEEE 802.1Q VLAN : 5 Create New VLAN

VLAN ID	Non-Member	Tag Egress Member	Untag Egress Member			Modify	Delete
	01	02	03	04	05		
1						Modify	Delete

Click on bottom to change member state or remove vlan.

- **PVID:** Administrator can set Port tag VLAN ID
- **802.1Q VLAN:** Administrator can set tag number for 802.1Q VLAN.

### Port-Based VLAN

Administrator can set Group for Port VLAN

**Change VLAN Type**

IEEE 802.1Q VLAN

Port-Based VLAN

Maximum number of Port-Based VLAN : 2 Apply Add VLAN

Group ID	Member Port					Delete
	01	02	03	04	05	
1	☑	☑	☑	☑	☑	Delete

Click on checkbox to change group member.  
A port can belong to only one group !

## 6. Trunking

The trunking function support 802.3ad (LACP, Link Aggregation Control Protocol) Link Aggregation Control Protocol (LACP) can aggregate multiple Ethernet ports together to form a logical aggregation group. To upper layer entities, all the physical links in an aggregation group are a single logical link.

LACP Setup

LACP Global State	Disable ▾	
Link Aggregation Algorithm	MAC SA & DA ▾	
Link Group Activity	Passive ▾	
Link Group Member	Port 4	Port 5
	<input type="checkbox"/>	<input type="checkbox"/>

Apply

If Trunking enable, Please verify VLAN configurations in trunk port.

- **LACP Global State:** Administrator can Enable/Disable this function.
- **Link Aggregation Algorithm:** Administrator can select SA or DA or SA+DA for the MAC Frame.

---

**MAC DA:** Destination Address



**MAC SA:** Source Address

**Layer2 Packet Frame :** The following example

Preamble	SFD	DA	SA	Ether type	Payload	.....
----------	-----	----	----	------------	---------	-------

- 
- **Link Group Activity:** Administrator can select active/passive for the Link Group Activity.



To properly use LACP, the two switches must have one switch enable “**active**” function or both enable “**active**”, Administrator can’t set “**passive**” in the two switch

- 
- **Link Group Member:** If LACP function establish, the Link Group member will auto-display.

## 7. Mirror

Port mirroring function can mirror Ingress/Egress traffic, the packet can mirror to Destination port and for analysis

### Mirror Port setup

Enable Mirror

Mirror To : Port 1

Port	None	Ingress	Egress	Mirror Both
1	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
2	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
3	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
4	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
5	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>

- **Enable Mirror:** Administrator can check to start mirror function
- **Mirror To:** Administrator can mirror traffic to select post.
- **List:** Administrator can selected mirror type by ingress or Egress



## 8. QoS

Quality of Service (QoS) prioritizes network traffic and manages available bandwidth so that the most important traffic goes first. QoS is implemented as rules or policies that prioritize packets, optionally change information in the packet header, and assign them to outbound port queues based on their priority.

Administrator can select disable service or 802.1p/Port-Based QoS function. The default is Disables QoS.

**Select QoS Type**

Disable QoS

Port-Based QoS

IEEE 802.1p QoS

Port	1	2	3	4	5	weight
Queue0	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	1
Queue1	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	2
Queue2	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	4
Queue3	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	8

Queue0 Low Priority

Queue1 Normal Priority

Queue2 Medium Priority

Queue3 High Priority

Select QoS Type

- **Disable QoS:** Administrator can disable QoS function.
- **Port-Based QoS:** Administrator can use Port-Based mode to traffic management.
- **IEEE 802.1q QoS:** Administrator can use IEEE 802.1q mode to traffic management.

### Port-Based QoS:

Administrator can set Queue (weight) QoS by Port.

Port	1	2	3	4	5	weight
Queue0	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	1
Queue1	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	2
Queue2	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	4
Queue3	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	8



Queue0 is Low Priority, Queue3 is High Priority.

### IEEE 802.1q QoS

Administrator can set Queue (weight) QoS by Tag VLAN.

Port	1	2	3	4	5	weight
Queue0	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1
Queue1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	2
Queue2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	4
Queue3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	8



Queue0 is Low Priority, Queue3 is High Priority.

## 9. Rate Limiting

The rate limiting function can be configured to limit the rate of traffic received on a particular interface.

Administrator can to click the “**Edit**” button to set rate limiting for each port.

Port	Ingress rate	Engress rate
1	no limit	no limit
2	no limit	no limit
3	no limit	no limit
4	no limit	no limit
5	no limit	no limit

**Edit**

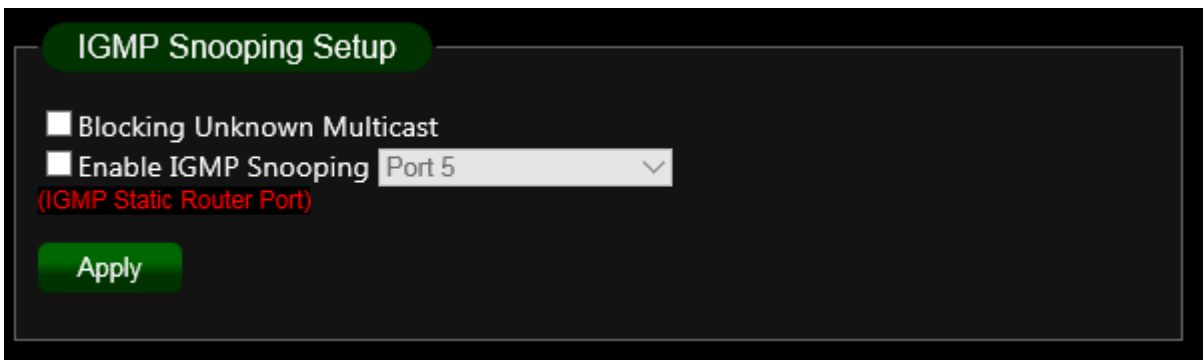
Port	Ingress rate	Engress rate
1	no limit ▾	no limit ▾
2	no limit ▾	no limit ▾
3	no limit ▾	no limit ▾
4	no limit ▾	no limit ▾
5	no limit ▾	no limit ▾

**Apply**

- **Port:** Display Port list.
- **Ingress/ Egress rate:** Administrator can set ingress or Egress for rate limiting.

## 10. IGMP Snooping

IGMP snooping is the process of listening to Internet Group Management Protocol (IGMP) network traffic. The feature allows a network switch to listen in on the IGMP conversation between hosts and routers. By listening to these conversations the switch maintains a map of which links need which IP multicast streams. Multicasts may be filtered from the links which do not need them and thus controls which ports receive specific multicast traffic. Administrator can enable “Blocking Unknown Multicast” or IGMP Snooping by port (use static router port)



The screenshot shows a configuration window titled "IGMP Snooping Setup". It contains two checkboxes: "Blocking Unknown Multicast" and "Enable IGMP Snooping". The "Enable IGMP Snooping" checkbox is checked, and a dropdown menu next to it is set to "Port 5". Below the dropdown, the text "(IGMP Static Router Port)" is displayed in red. At the bottom left of the window is a green "Apply" button.

- **Blocking Unknown Multicast:** Administrator can start Blocking unknown multicast addresses.
- **Enable IGMP Snooping:** To alleviate the burden of IGMP queries.

## 11. PoE

The function can monitor PoE used power status / Module Temperature and PoE voltage status. Administrators can control PoE usage through the per port On/Off option.

### POE Global Settings

POE Total Power	60W
POE MAX LED Power	42W
POE IC Real Temperature	55°C (MAX : 158°C )
POE vmain voltage low setting	42V
POE vmain voltage	48V
POE vport voltage	48V

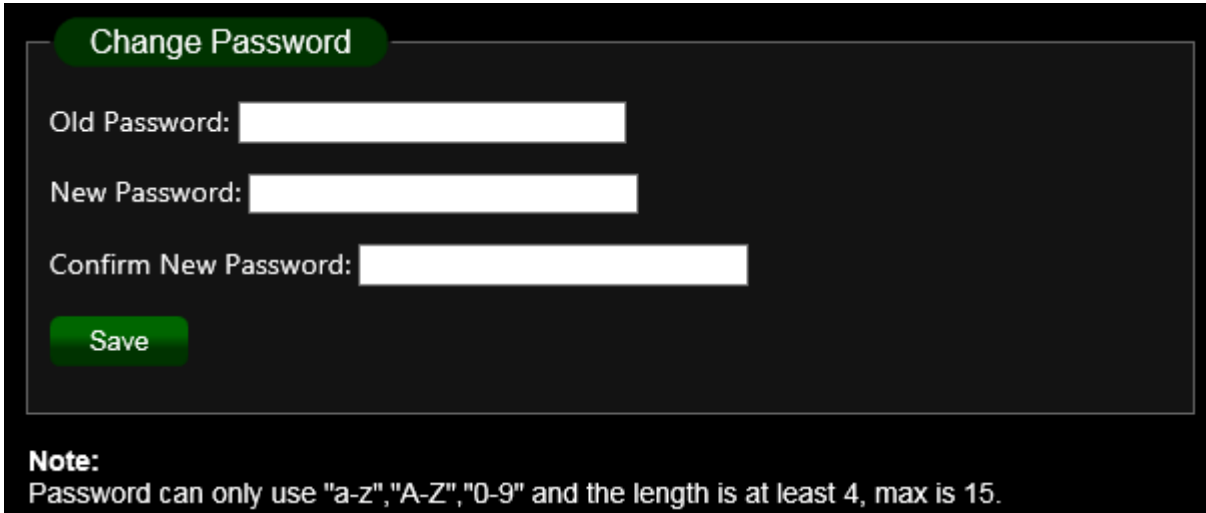
### POE Status

Port	Power Status	Real Power(W)
1	Turn on ▾	4
2	Turn on ▾	0
3	Turn on ▾	0
4	Turn on ▾	0

Apply

## 12. Password

Administrator can change the Switch login password on this page. The default login password is default



**Change Password**

Old Password:

New Password:

Confirm New Password:

**Save**

**Note:**  
Password can only use "a-z", "A-Z", "0-9" and the length is at least 4, max is 15.

## 13. Logout

Clicking the logout button will log the administrator out of the management page.

## Specifications

### Standards & Hardware Specifications

	IEEE 802.3 10Base-T
	IEEE 802.3u 100Base-TX,
	IEEE 802.3ab 1000Base-T,
	IEEE 802.3z 1000Base-SX/LX
	IEEE 802.3x Flow Control
<b>Standards Conformance</b>	IEEE 802.3az EEE
	IEEE 802.1p QoS
	IEEE 802.1Q VLAN Tag
	IEEE 802.3ad Link Aggregation
	IEEE 802.3af Power over Ethernet ( 15.4 Watt PoE+ )
	IEEE 802.3at Power over Ethernet Plus ( 30 Watt PoE+ )
	5 ports RJ-45 connectors for 10/100/1000 BASE-T and PSE/ PoE function (With 4 Ports PSE/PoE+ function)
<b>Port Configuration</b>	
<b>Hardware Reset</b>	Reset Button for returning to original factory settings
<b>Hardware on /off</b>	Power Switch
<b>Media Access Protocol</b>	CSMA / CD
	10BASE -T: UTP Cat. 3 or up,
<b>Network Media</b>	100BASE-TX: UTP Cat. 5 or up,
	1000BASE-T: UTP Cat. 5 or up
<b>Transmission Method</b>	Store and Forward
<b>MAC Address Table</b>	4K
<b>Built-in Buffer</b>	1Mb
<b>Data Transfer Rate</b>	10/100Mbps (Half-duplex), 20/200Mbps (Full-duplex) 1000Mbps ( Half-duplex), 2000Mbps (Full-Duplex)
<b>Jumbo Frames</b>	9k Jumbo Frames Support
<b>Auto MDI/MDIX</b>	Yes
	Per Port:(Link/Act): Status * 5 , PoE : Status *4
<b>LED Indicators</b>	Max. PoE*1 (PoE Load greater than 70% warning) Per Unit: Power / SYS*1,
<b>Internal Bus Speed</b>	10Gbps

## Switch Specifications

<b>Link Aggregation</b>	IEEE802.3ad LACP Link Aggregation Supported
<b>Port Mirroring</b>	Supported
<b>QoS</b>	Support IEEE 802.1p QoS , Port-based QoS
<b>Bandwidth Control</b>	Supported
<b>IGMP Snooping</b>	v1 and v2 supported
<b>VLAN</b>	IEEE802.1Q Tagging VLAN , Port-Based ,Tag based VLAN

## Environmental & Mechanical Characteristics

<b>PoE Power Budget</b>	55V/1.3A for 60Watt (shared) for all PoE ports
<b>Power Consumption</b>	55V for 6.2Watt (max. with no PoE Device connected)
<b>Power Type</b>	DC-Jack : for bundled External Power adapter
<b>Power Requirement</b>	AC 100~240 AC Power, 55V / 1.3A DC Input
<b>Operating Temperature</b>	0° to 40° C
<b>Storage Temperature</b>	-40° to 70° C
<b>Operating Humidity</b>	10% to 90% non-condensing
<b>Storage Humidity</b>	5% to 90% non-condensing
<b>Dimension ( W x D x H )</b>	193 x 84 x 26 mm
<b>Weight</b>	397g
<b>Certification</b>	FCC, CE, RoHS-compliant