Web-Smart 26-Port Gigabit Ethernet PoE Switch

with

24 10/100Mbps 802.3af Power Over Ethernet Ports

&

2 10/100/1000Mbps 1000BASE-T Gigabit Ethernet Ports

User's Manual

FCC Warning

This equipment has been tested and found to comply with the regulations for a Class A digital device, pursuant to Part 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 radiate radio frequency energy and, if not installed and used in accordance with this user's guide, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his or her 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.

VCCI Warning

This is a product of VCCI Class A Compliance.

注意
この装置は、情報処理装置等電波障害自主規制協議会(VCCI)の基準
に基づく第一種情報技術装置です。この装置を家庭環境で使用すると電波妨
害を引き起こすことがあります。この場合には使用者が適切な対策を講ずる
よう要求されることがあります。

UL Warning

a) Elevated Operating Ambient Temperature- If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacturer's maximum rated ambient temperature (Tmra).

b) Reduced Air Flow- Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

c) Mechanical Loading- mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

d) Circuit Overloading- Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of circuits might have on over current protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

e) Reliable Earthing- Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g., use of power strips).

Ver. 1.00

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ABOUT THIS GUIDE

Congratulations on your purchase of the *24+2 Ports Web Smart 10/100/1000Mbps Gigabit Ethernet PoE Switch*. This Switch integrates 100Mbps Fast Ethernet and 10Mbps Ethernet network capabilities in a highly flexible package. Since this Switch's Port-1 to Port-24 are Power over Ethernet (PoE) ports, it will automatically detect the presence of IEEE 802.3af-compliant devices and will provide power through these PoE ports. The Switch provides up to 15.4Watts per port and can be connected to WLAN access point, IP phone, video camera, and other PD devices. The Switch will automatically detect the network appliance's requirements, and the Switch will supply the required power current to each appliance.

Purpose

This guide discusses how to install your *24+2 Ports Web Smart 10/100/1000Mbps Gigabit Ethernet PoE Switch*.

Terms/Usage

In this guide, the term "Switch" (first letter upper case) refers to your *24+2 Ports Web Smart 10/100/1000Mbps Gigabit Ethernet PoE Switch* and "switch" (first letter lower case) refers to other Ethernet switches.

INTRODUCTION

This chapter describes the features of the *24+2 Ports Web Smart 10/100/1000Mbps Gigabit Ethernet PoE Switch* and some background information about Fast Ethernet, Gigabit Ethernet, Switching, VLAN and Power over Ethernet technologies.

Fast Ethernet Technology

The growing importance of LANs and the increasing complexity of desktop computing applications are fueling the need for high performance networks. A number of high-speed LAN technologies have been proposed to provide greater bandwidth and improve client/server response times. Among them, 100BASE-T (Fast Ethernet) provides a non-disruptive, smooth evolution from the current 10BASE-T technology. The non-disruptive and smooth evolution nature, and the dominating potential market base, virtually guarantees cost-effective and high performance Fast Ethernet solutions.

100Mbps Fast Ethernet is a standard specified by the IEEE 802.3 LAN committee. It is an extension of the 10Mbps Ethernet standard with the ability to transmit and receive data at 100Mbps, while maintaining the CSMA/CD Ethernet protocol. Since the 100Mbps Fast Ethernet is compatible with all other 10Mbps Ethernet environments, it provides a straightforward upgrade and takes advantage of the existing investment in hardware, software, and personnel training.

Gigabit Ethernet Technology

Gigabit Ethernet is an extension of IEEE 802.3 Ethernet utilizing the same packet structure, format, and support for CSMA/CD protocol, full duplex, flow control, and management objects, but with a tenfold increase in theoretical throughput over 100Mbps Fast Ethernet and a one hundred-fold increase over 10Mbps Ethernet. Since it is compatible with all 10Mbps and 100Mbps Ethernet environments, Gigabit Ethernet provides a straightforward upgrade without wasting a company's existing investment in hardware, software, and trained personnel. The increased speed and extra bandwidth offered by Gigabit Ethernet are essential to coping with the network bottlenecks that frequently develop as computers and their busses get faster and more users use applications that generate more traffic. Upgrading key components, such as your backbone and servers to Gigabit Ethernet can greatly improve network response times as well as significantly speed up the traffic between your sub-networks. Gigabit Ethernet enables fast optical fiber connections to support video conferencing, complex imaging, and similar data-intensive applications. Likewise, since data transfers occur 10 times faster than Fast Ethernet, servers outfitted with Gigabit Ethernet NIC's are able to perform 10 times the number of operations in the same amount of time. In addition, the phenomenal bandwidth delivered by Gigabit Ethernet is the most cost-effective method to take advantage of today and tomorrow's rapidly improving switching and routing internetworking technologies.

Switching Technology

Another approach to pushing beyond the limits of Ethernet technology is the development of switching technology. A switch bridges

Ethernet packets at the MAC address level of the Ethernet protocol transmitting among connected Ethernet or Fast Ethernet LAN segments.

Switching is a cost-effective way of increasing the total network capacity available to users on a local area network. A switch increases capacity and decreases network loading by dividing a local area network into different segments, which do not compete with each other for network transmission capacity.

The switch acts as a high-speed selective bridge between the individual segments. The switch, without interfering with any other segments, automatically forwards traffic that needs to go from one segment to another. By doing this the total network capacity is multiplied, while still maintaining the same network cabling and adapter cards.

Switching LAN technology is a marked improvement over the previous generation of network bridges, which were characterized by higher latencies. Routers have also been used to segment local area networks, but the cost of a router, the setup and maintenance required make routers relatively impractical. Today switches are an ideal solution to most kinds of local area network congestion problems.

VLAN (Virtual Local Area Network)

A VLAN is a group of end-stations that are not constrained by their physical location and can communicate as if a common broadcast domain, a LAN. The primary utility of using VLAN is to reduce latency and need for routers, using faster switching instead. Other VLAN utility includes:

Security, Security is increased with the reduction of opportunity in eavesdropping on a broadcast network because data will be switched to only those confidential users within the VLAN.

Cost Reduction, VLANs can be used to create multiple broadcast domains, thus eliminating the need of expensive routers.

Port-based (or port-group) VLAN is the common method of implementing a VLAN, and is the one supplied in the Switch.

Power over Ethernet (PoE)

Power over Ethernet (PoE) integrates power and data onto one single cabling infrastructure, eliminating the need to have AC power available at all locations.

Power and Data are integrated onto the same cable. Supporting category 5/5e up to 100 Meters, PoE will provide power to PoE compatible device, such as IP telephones, wireless LAN access points, and IP security cameras.

PoE is already widely adopted in the market, saving up to 50% of overall installation costs by eliminating the need to install separate electrical wiring and power outlets.

Features

- 24×10/100Mbps Auto-negotiation Fast Ethernet RJ-45 ports PoE enabled
- 2 x 1000BASE-T Gigabit Ethernet ports
- Compliant with 802.3af specification
- Supports PoE power up to 15.4W for each PoE port
- Supports PoE power maximum 170W for the device
- Supports PoE Powered Device (PD) classification identify
- Each port supports auto MDI/MDIX, so there is no need to use cross-over cables or an up-link port
- Full-duplex transfer mode for speed of 10Mbps, 100Mbps and 1000Mbps
- Half- duplex transfer mode for speed of 10Mbps and 100Mbps
- Wire speed reception and transmission

- Store-and-Forward switching scheme capability to support rate adaptation and ensure data integrity
- Up to 4K unicast addresses entities per device, self-learning, and table aging
- 768KBytes packet buffer
- Supports IEEE 802.3x flow control for full-duplex mode ports
- Supports Back-pressure flow control for half-duplex mode ports
- Supports Port-based VLAN
- Supports Port-based Trunking
- Supports Port-mirroring
- Supports Port-setting for Speed/Disable, Flow control and Port based QoS (Quality of Service)
- Easy configuration via Web Browser
- Easy setting via Web Management Utility
- Standard 19” Rack-mount size

UNPACKING AND INSTALLATION

This chapter provides unpacking and installation information for the Switch.

Unpacking

Open the shipping cartons of the Switch and carefully unpacks its contents. The carton should contain the following items:

- One *24+2 Ports Web Smart 10/100/1000Mbps Gigabit Ethernet PoE Switch*
- One AC power cord, suitable for your area's electrical power connections
- Four rubber feet to be used for shock cushioning
- Screws and two mounting brackets
- CD-ROM with Web Management Utility and Manual

If any item is found missing or damaged, please contact your local reseller for replacement.

Installation

The site where you install the hub stack may greatly affect its performance. When installing, consider the following pointers:

- Install the Switch in a fairly cool and dry place. See ***Technical Specifications*** for the acceptable temperature and humidity operating ranges.
- Install the Switch in a site free from strong electromagnetic field generators (such as motors), vibration, dust, and direct exposure to sunlight.

- Leave at least 10cm of space at the front and rear of the hub for ventilation.
- Install the Switch on a sturdy, level surface that can support its weight, or in an EIA standard-size equipment rack. For information on rack installation, see the next section, titled Rack Mounting.
- When installing the Switch on a level surface, attach the rubber feet to the bottom of each device. The rubber feet cushion the hub and protect the hub case from scratching.

Installing the Switch on a Desktop

When installing the Switch on a desktop or shelf, the rubber feet included with the Switch should first be attached. Attach these cushioning feet on the bottom at each corner of the device. Allow enough ventilation space between the Switch and any other objects in the vicinity.

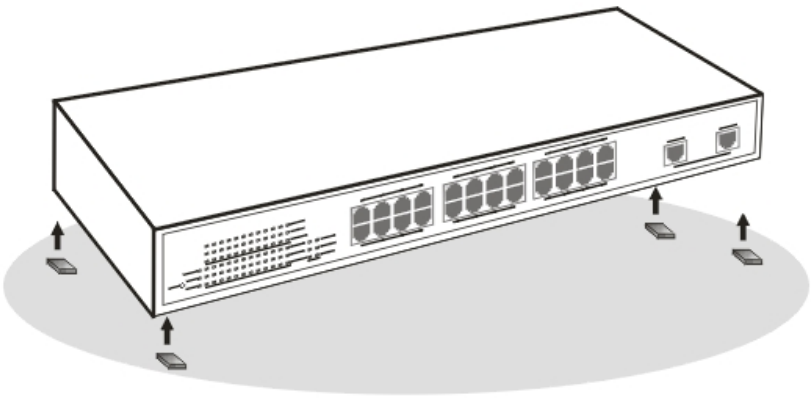


Figure 1. Installed on a Desktop

Installing the Switch on a Rack

The Switch can be mounted in an EIA standard-size, 19-inch rack, which can be placed in a wiring closet with other equipment. Attach the mounting brackets at the Switch's front panel (one on each side), and secure them with the provided screws.

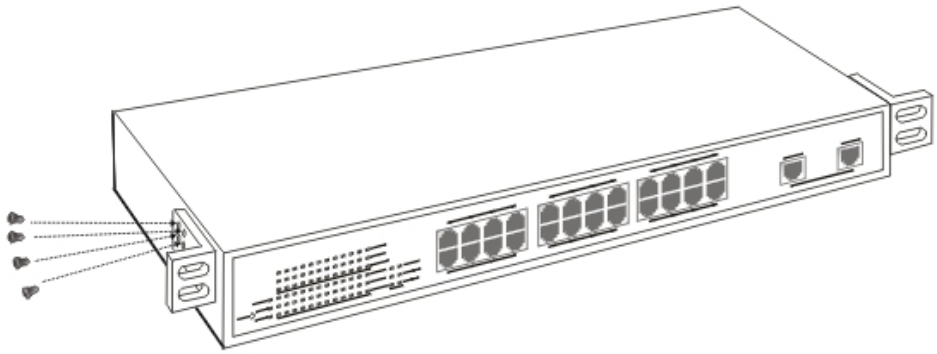


Figure 2. Combine the Switch with the provided screws.

Then, use screws provided with the equipment rack to mount each switch in the rack.

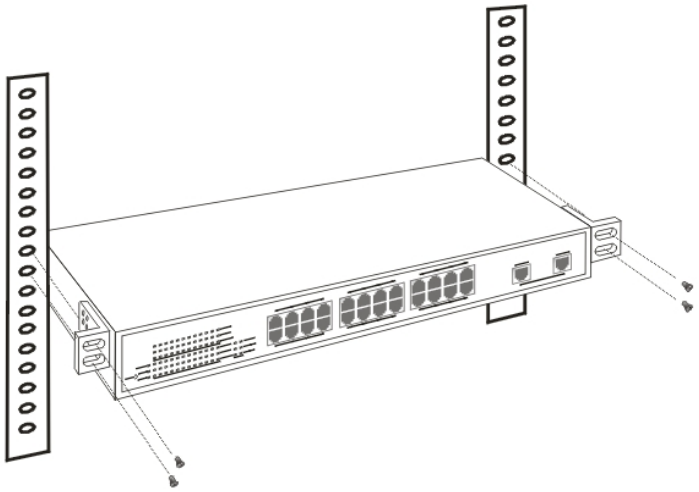


Figure 3. Mount the Switch in the rack.

Connecting Network Cable

The Switch supports 24 10/100BASE-TX Fast Ethernet PoE enabled ports and 2 1000BASE-T Gigabit Ethernet ports. These 24 PoE ports will be automatically activated when a compatible terminal is identified. The Switch will supply power through the PoE port to the connected PD.

For Legacy devices that are not yet compatible, the PoE port will not offer the power to these devices. This feature allows users to freely and safely mix legacy and Power over Ethernet compatible devices on their network.

The Switch supports 10Mbps Ethernet or 100Mbps Fast Ethernet and it runs both in half- and full- duplex mode using two pairs of Category 5 cables.

The Switch also supports 2 1000BASE-T Gigabit Ethernet ports; When using the RJ-45 ports, it runs in Auto-negotiation mode and 10Mbps Ethernet or 100Mbps Fast Ethernet that runs both in half and full duplex mode and 1000Mbps Gigabit Ethernet runs in full duplex mode using four pair Category 5.

These RJ-45 ports are Auto-MDI type port. The Switch can auto transform to MDI-II or MDI-X type, so you can just make an easy connection that without worrying if you are using a standard or crossover RJ-45 cable.

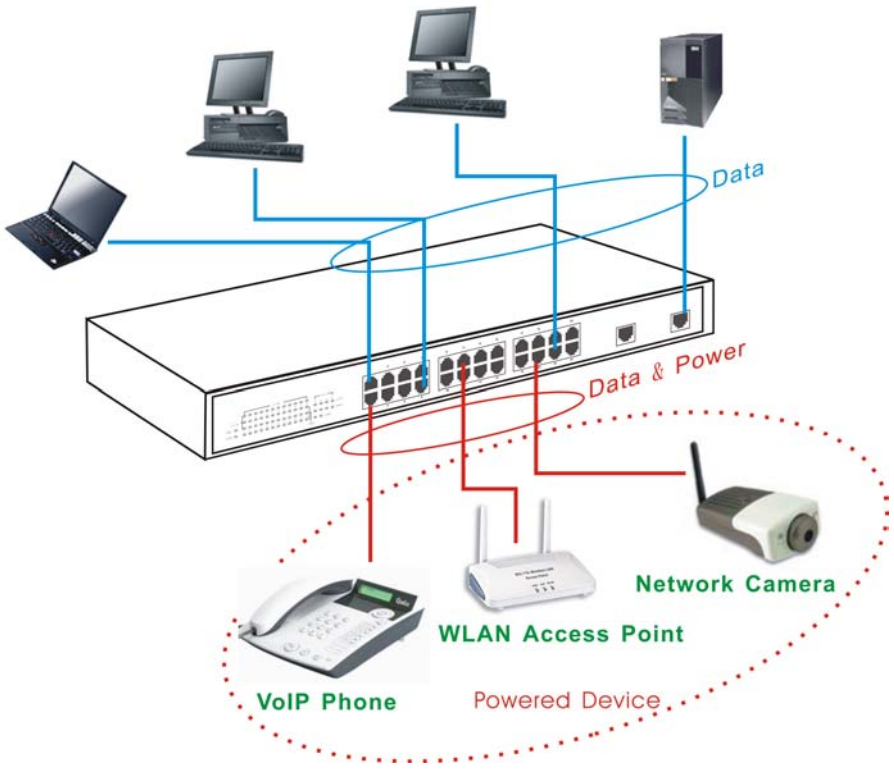


Figure 4. Connecting Network Cable

AC Power

The Switch uses the AC power supply 100-240V AC, 50-60 Hz. The power switch is located at the rear of the unit adjacent to the AC power connector and the system fan. The Switch's power supply will adjust to the local power source automatically and may be turned on without having any or all LAN segment cables connected.

IDENTIFYING EXTERNAL COMPONENTS

This chapter describes the front panel, rear panel, and LED indicators of the Switch.

Front Panel

The figure below shows the front panels of the Switch.

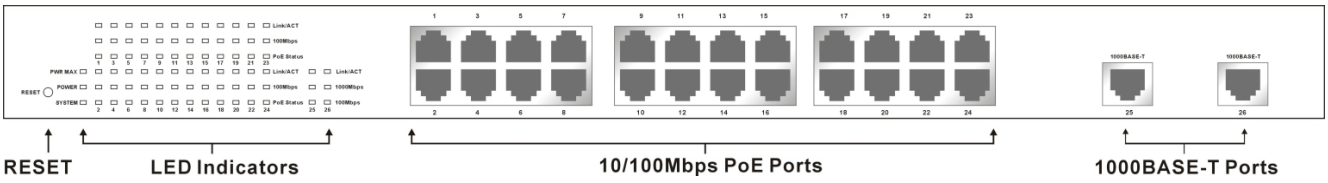


Figure 5. Front panel view

LED Indicator:

Comprehensive LED indicators display the status of the Switch and the network (see the LED Indicators chapter below).

10/100Mbps PoE Ports (Port 1~24):

These ports are PoE enable ports. These PoE ports will be automatically activated when a compatible terminal is identified, and the PoE port will supply power to the connected PoE device.

The Switch PoE function supports PoE ports priority management. When the system power is shortage with the PD, the Switch will enforce the PoE port priority management, the lower port number will have the higher priority than the higher port number, Port 1 > Port 2 > … > Port 24.

For legacy devices that are not yet compatible, the PoE port will not offer the power to these devices. This feature allows users to freely and safely mix legacy and Power over Ethernet compatible devices on their network.

These ports support network speeds of either 10Mbps or 100Mbps, and can operate in half- and full- duplex transfer modes. These ports also support the automatic MDI/MDIX crossover detection function, providing true "plug and play" capability. Just plug-in the network cable to the hub directly and regardless if the end node is a NIC (Network Interface Card) or switch and hub.

1000BASE-T Gigabit Ethernet Ports (Port 25~26):

The Switch is equipped with two Gigabit twisted pair ports, supported auto negotiable 10/100/1000Mbps and auto MDI/MDIX crossover detection function. These two ports can operate in half-duplex mode for 10/100Mbps and full-duplex mode for 10/100/1000Mbps.

Note: When the port was set to "Forced Mode", the Auto MDI/MDIX will be disabled.

Reset:

The Reset button is to reset all settings back to the factory defaults.

Note: Be sure that you recorded the settings of your device, else all settings will be erased when pressing the "Reset" button.

Rear Panel

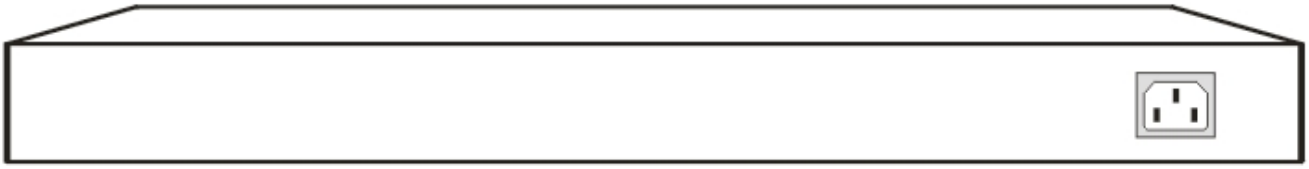


Figure 6. Rear panel of the Switch

AC Power Connector:

This is a three-pronged connector that supports the power cord. Plug in the female connector of the provided power cord into this connector, and the male into a power outlet. Supported input voltages range from 100-240V AC at 50-60Hz.

UNDERSTANDING LED INDICATORS

The front panel LEDs provides instant status feedback, and helps monitor and troubleshoot when needed.

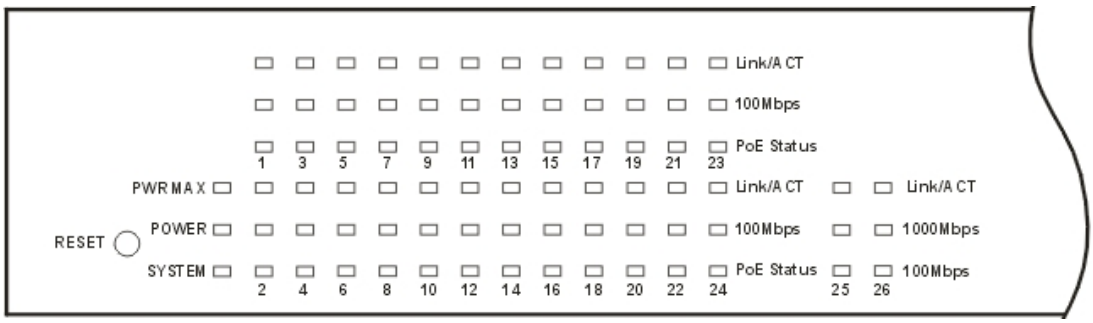


Figure 7. LED indicators of the Switch

System LEDs

POWER:

On	**:**	When the Power LED lights on, the Switch is receiving power.
Off	**:**	When the Power turns off or the power cord has improper connection.

Power Maximum (PWR MAX)

On	**:**	When the system power resource remain <=15.4W (the system power consumption >= 155W), the LED will be lights on, the system will not provide power to the additional POE PD inserted.
Off	**:**	When the system has enough power more then 15.4W (the system power consumption <155W).

CPU: Management Indicator

Blinking	**:**	When the CPU is working, the CPU LED is blinking.
On/Off	**:**	The CPU is not working.

Fast Ethernet PoE Port Status LEDs (Port 1 ~ 24)

Link/ACT: Link/Activity

On	**:**	When the Link/ACT LED lights on, the respective port is successfully connected to an Ethernet network.
Blinking	**:**	When the Link/ACT LED is blinking, the port is transmitting or receiving data on the Ethernet network.
Off	**:**	There is no link.

100Mbps

On	**:**	When the 100Mbps LED lights on, the respective port is connected to a 100Mbps Fast Ethernet network.
Off	**:**	When the respective port is connected to a 10Mbps Ethernet network.

PoE Status

Green	**:**	When the PoE powered device (PD) was connected and the port supplies power normally.
Red	**:**	When the PoE port have the following failure happens: ● PoE power circuit shortage. ● Power over current: over the power current of PD's classification. ● Out of PoE voltage of 44 ~ 57 VDC output. ● Cause fail.
Off	**:**	No PoE powered device (PD) connected or unplugged the PoE output port.

Gigabit Ethernet Port Status LEDs

Link/ACT: Link/Activity

On	:	When the Link/ACT LED lights on, the respective port is successfully connected to an Ethernet network.
Blinking	:	When the Link/ACT LED is blinking, the port is transmitting or receiving data on the Ethernet network.
Off	:	There is no link.

1000Mbps

On	:	When the 1000Mbps LED lights on, the respective port is connected to a 1000Mbps Gigabit Ethernet network.
Off	:	When the respective port is connected to a 10Mbps Ethernet or 100Mbps Fast Ethernet network.

100Mbps

On	:	When the 100Mbps LED lights on, the respective port is connected to a 100Mbps Fast Ethernet network.
Off	:	When the respective port is connected to a 10Mbps Ethernet or 1000Mbps Gigabit Ethernet network.

CONFIGURATION

Through the Web browser you can configure Switch functions such as VLAN, Trunking, and QoS… etc.

With the attached Web Management Utility, you can easily discover all the Web Management Switches, assign the IP Address, changing the password, and upgrade new firmware.

Installing the Web Management Utility

The following instructions guide you through the installation of the Web Management utility.

1. Insert the Utility CD in the CD-ROM Drive.
2. From the **Start** menu on the Windows desktop, choose **Run**.
3. In the **Run** dialog box, type D:\Web Management Utility\setup.exe (D:\ depends where your CD-ROM drive is located) and click **OK**.
4. Follow the on-screen instructions to install the utility.
5. Upon completion, go to **Program Files -> web_management_utility** and execute the Web Management utility. (Figure 8.)

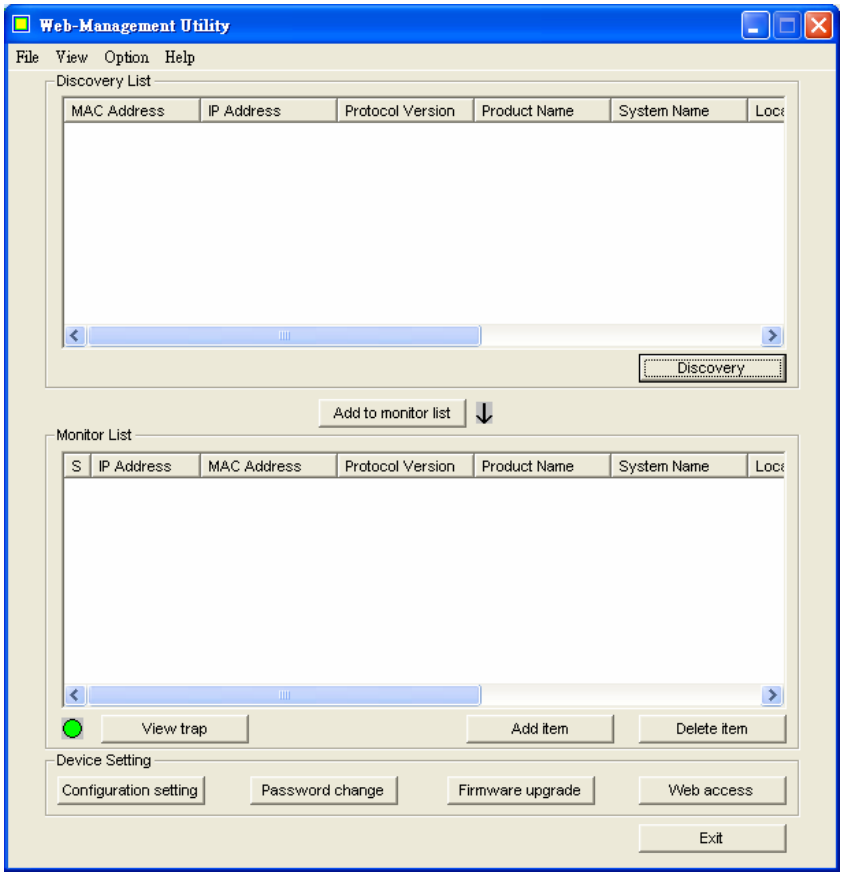


Figure 8. Web Management Utility

The Web Management Utility is divided into four parts, ***Discovery List***, ***Monitor List***, ***Device Setting***, and ***Toolbar function***, for detailed instructions, follow the section below.

Discovery List

This is the list where you can discover all the Web management devices in the entire network.

By pressing the ***"Discovery"*** button, you can list all the Web Management devices in the discovery list.

Double click or press the ***"Add to monitor list"*** button to select a device from the Discovery List to the Monitor List.

System word definitions in the Discovery List:

- ***MAC Address:*** Shows the device MAC Address.
- ***IP Address:*** Shows the current IP address of the device.
- ***Protocol version:*** Shows the version of the Utility protocol.
- ***Product Name:*** Shows the device product name.
- ***System Name:*** Shows the appointed device system name.
- ***Location:*** Shows where the device is located.
- ***Trap IP:*** Shows the IP where the Trap is to be sent.
- ***Subnet Mask:*** Shows the Subnet Mask set of the device.
- ***Gateway:*** Shows the Gateway set of the device.

Monitor List

All the Web Smart Devices in the Monitor List can be monitored; you can also receive the trap and show the status of the devices.

System word definitions in the Monitor List:

- ***S:*** Shows the system symbol of the Web-Smart device, represents a device system that is not alive.
- ***IP Address:*** Shows the current IP address of the device.
- ***MAC Address:*** Shows the device MAC Address.
- ***Protocol version:*** Shows the version of the Utility protocol.
- ***Product Name:*** Shows the device product name.
- ***System Name:*** Shows the appointed device system name.
- ***Location:*** Shows where the device is located.
- ***Trap IP:*** Shows the IP where the Trap is to be sent.
- ***Subnet Mask:*** Shows the Subnet Mask set of the device.
- ***Gateway:*** Shows the Gateway set of the device.

View Trap

The Trap function can receive the events that happen on the Web Management Switch in the Monitor List.

There is a light indicator behind the ***"View Trap"*** button. When the light is green, it means that there is no trap transmitted, and when it is red, it means that a new trap has been transmitted, reminding us to view the trap. (Figure 9)

Figure 9. View trap button

When the ***"View Trap"*** button is clicked, a Trap Information window will pop up. It will display the trap information including the Symbol, Time, Device IP, and the Event occurred. (Figure 10)

The symbol " " represents the trap signal, this symbol will disappear after you review and click on the event record.

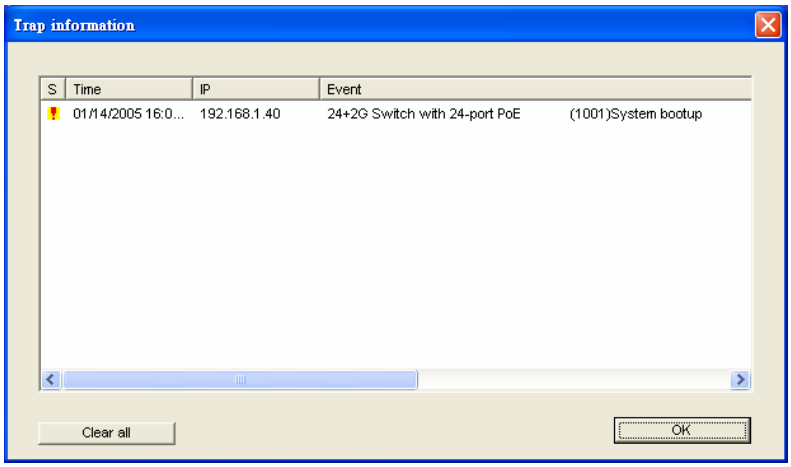


Figure 10. Trap information

Note: In order to receive Trap information, the Switch has to be configured with Trap IP and Trap Events in the Web browser. These settings are available in the Trap Setting Menu.

Add Item

To add a device to the Monitor List manually, enter the IP Address of the device that you want to monitor.

Delete Item

To delete the device in the Monitor List.

Device Setting

You can set the device by using the function key in the Device Setting Dialog box.

Configuration Setting

You can set the device by using the function key in the Device Setting Dialog box.

Configuration Setting: In this Configuration Setting, you can set the IP Address, Subnet Mask, Gateway, Set Trap to (Trap IP Address), System name and Location.

Select the device in the Discovery list or Monitor List and press this button, then the Configuration Setting window will pop out as Figure 11, after filling up the data that you want to change, you must fill up the password and press the "Set" to process the data changed immediately. The default password of this 24-Port 10/100/1000Mbps Gigabit Ethernet Web Smart Switch configuration is ***"admin"***.

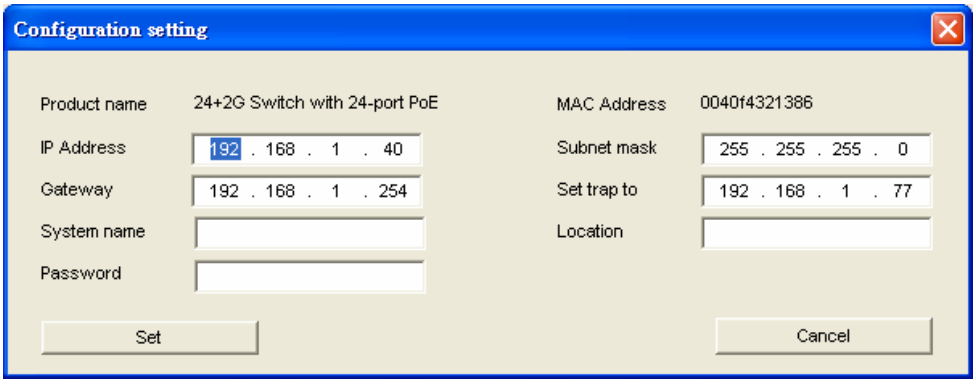


Figure 11. Configuration Setting

Password Change

You can use this when you need to change the password. Fill in the required passwords in the dialog boxes and press the ***"Set"*** button to process the password change immediately.

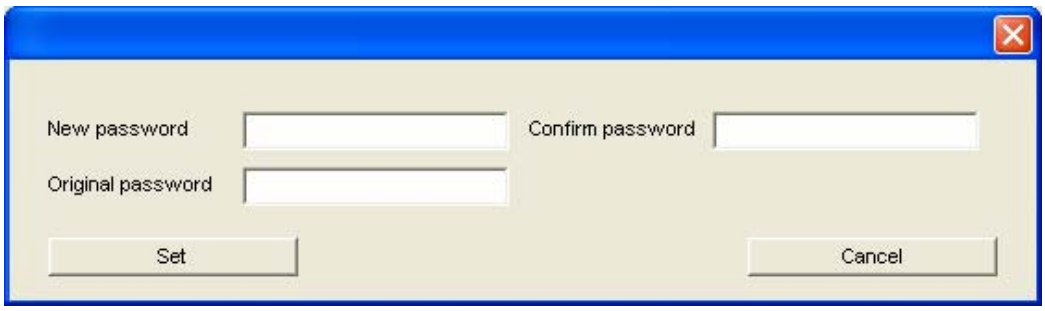


Figure 12. Password Change

Firmware Upgrade

When the device has a new function, there will be a new firmware to update the device; use this function to upgrade the firmware.

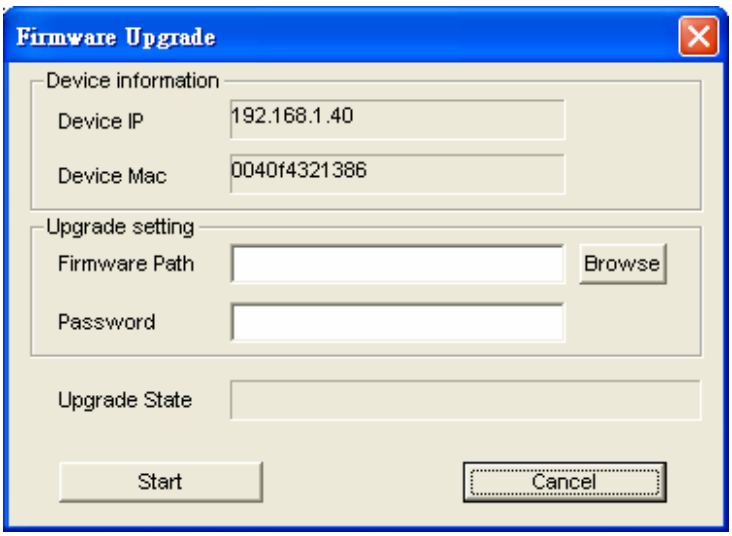


Figure 13. Firmware upgrade

Web Access

Double click the device in the Monitor List or select a device in the Monitor List and press the ***"Web Access"*** button to access the device in Web browser.

Toolbar

The toolbar in the Web Management Utility has four main tabs: File, View, Options, and Help.

File TAB

In the ***"File TAB"***, there is Monitor Save, Monitor Save As, Monitor Load, and Exit.

Monitor Save: To record the settings of the Monitor List to the default settings so that when you open the Web Management Utility the next time, it will automatically load the default recorded setting.

Monitor Save As: To record the setting of the Monitor List to an appointed filename and file path.

Monitor Load: To manually load the setting file of the Monitor List.

Exit: To exit the Web Management Utility.

View TAB

In the ***"View TAB"***, there are the view log and clear log functions, the view log function will help you display trap settings.

View Log: To display the event of the Web Management Utility and the device.

Clear Log: To clear the log.

Option TAB

In the ***"Option TAB"***, there is the Refresh Time function. This function helps you to refresh the time for monitoring the device. Choose ***15 secs***, ***30 secs***, ***1 min***, ***2 min***, ***and 5 min*** to select the time for monitoring.

Help TAB

In the ***"Help TAB"***, there is About function, it will show out the version of the Web Management Utility.

Configuring the Switch

The Switch has a Web GUI interface for smart switch configuration. The Switch can be configured through the Web Browser. A network administrator can manage, control, and monitor the Switch from the local LAN. This section indicates how to configure the Switch to enable its smart functions including: ***Port Setting, VLAN Setting, Trunking Setting, Port Mirroring, PoE Setting, Status, Statistics, System Setting, Trap Setting, Password Setting, Backup Setting, Reset Setting.***

Login

Before you configure this device, note that when the Web Smart Switch is configured through an Ethernet connection, make sure the manager PC must be set on same the **IP network**. For example, when the default IP address of the Web Smart Switch is ***192.168.0.1***, then the manager PC should be set at 192.168.0.x (where x is a number between 2 and 254), and the default subnet mask is 255.255.255.0.

Open the web browser program and Enter IP address ***http://192.168.0.1*** (the factory-default IP address setting) to the address location.

Figure 14.

Or through the Web Management Utility, you do not need to remember the IP Address, select the device shown in the Monitor List

of the Web Management Utility to settle the device on the Web Browser.

When the following dialog page appears, remain enter the default password ***"admin"*** and press Login to enter the main configuration window.

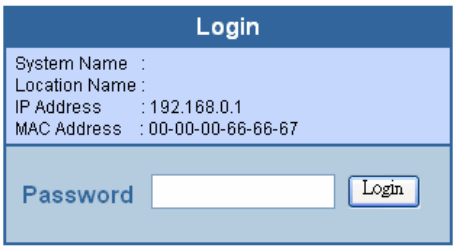


Figure 15

After entering the password, the main page appears, and the screen will display the device status.

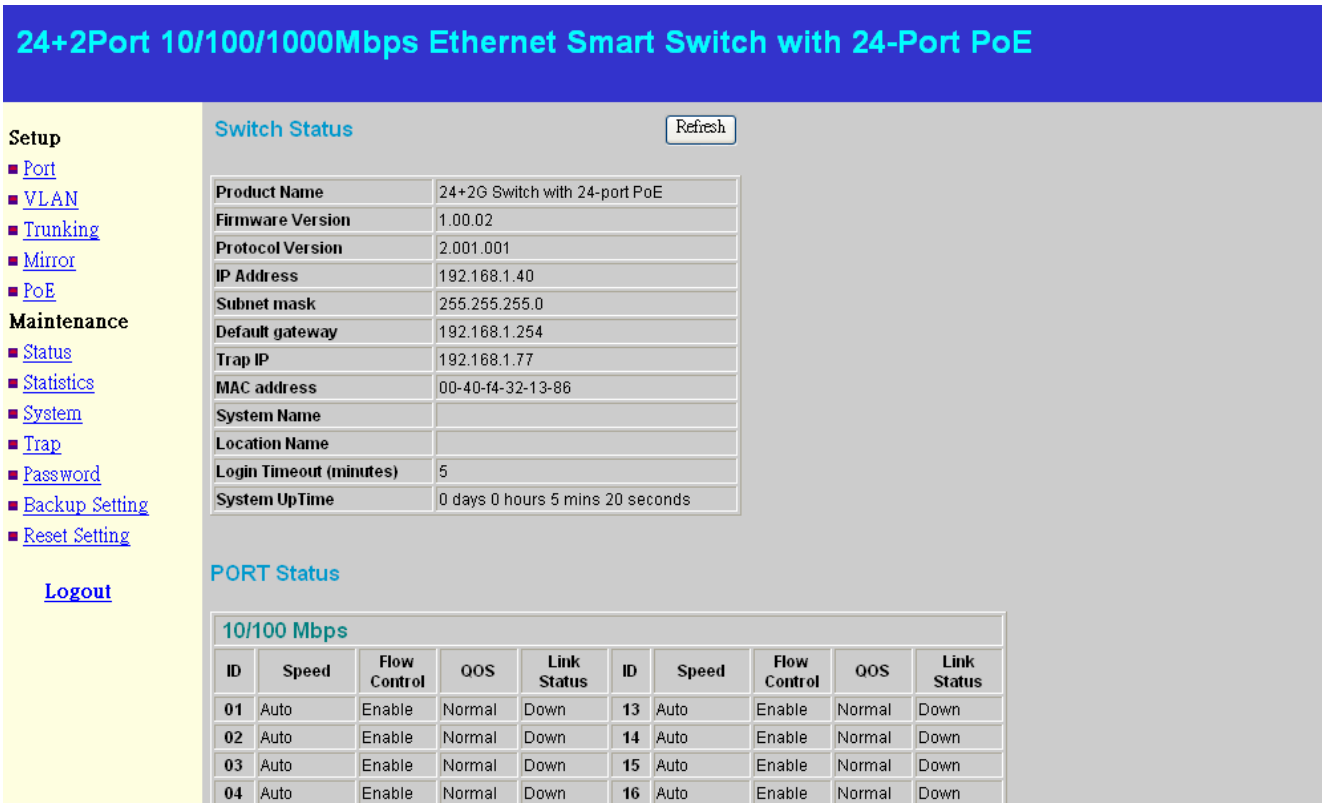


Figure 16

Setup Menu

When the main page appears, find the ***Setup menu*** on the left side of the screen (Figure 17). Click on the setup item that you want to configure. There are eleven options: ***Port Settings, VLAN Settings, Trunk Settings, Mirror Settings, SNMP Settings, PoE Settings, Device Status, Statistic, System Settings, Trap Setting, Password Settings, Backup Settings, and Reset Settings*** as shown in the Main Menu screen.

Figure 17. Setup menu

Configuring Setup Setting

There are five items, including Port Settings, VLAN Settings, Trunk Settings, Mirror Settings, and PoE Settings in Setup menu.

Port Settings

In the Port Settings menu (Figure 18), this page will display each port's status. Press the ID parameter to set each port's *Speed, Flow Control, QoS and Link Status*. When you need to renew the posted information, press the "Refresh" button.

The *Link Status* in the screen will display the connection speed and duplex mode; otherwise this dialog box will display ***down*** when the port is disconnected.

PORT Setting Refresh

10/100 Mbps

ID	Speed	Flow Control	QOS	Link Status	ID	Speed	Flow Control	QOS	Link Status
01	Auto	Enable	Normal	Down	13	Auto	Enable	Normal	Down
02	Auto	Enable	Normal	Down	14	Auto	Enable	Normal	Down
03	Auto	Enable	Normal	Down	15	Auto	Enable	Normal	Down
04	Auto	Enable	Normal	Down	16	Auto	Enable	Normal	Down
05	Auto	Enable	Normal	Down	17	Auto	Enable	Normal	Down
06	Auto	Enable	Normal	Down	18	Auto	Enable	Normal	Down
07	Auto	Enable	Normal	Down	19	Auto	Enable	Normal	Down
08	Auto	Enable	Normal	Down	20	Auto	Enable	Normal	Down
09	Auto	Enable	Normal	Down	21	Auto	Enable	Normal	Down
10	Auto	Enable	Normal	Down	22	Auto	Enable	Normal	Down
11	Auto	Enable	Normal	Down	23	Auto	Enable	Normal	100M Full
12	Auto	Enable	Normal	Down	24	Auto	Enable	Normal	Down

10/100/1000 Mbps

ID	Speed	Flow Control	QOS	Link Status	ID	Speed	Flow Control	QOS	Link Status
25	Auto	Enable	Normal	Down	26	Auto	Enable	Normal	Down

Figure 18. Port Configuration

To change the port setting, click on the ID parameter to enter the selected port to configure its Speed/Disable and Flow control.

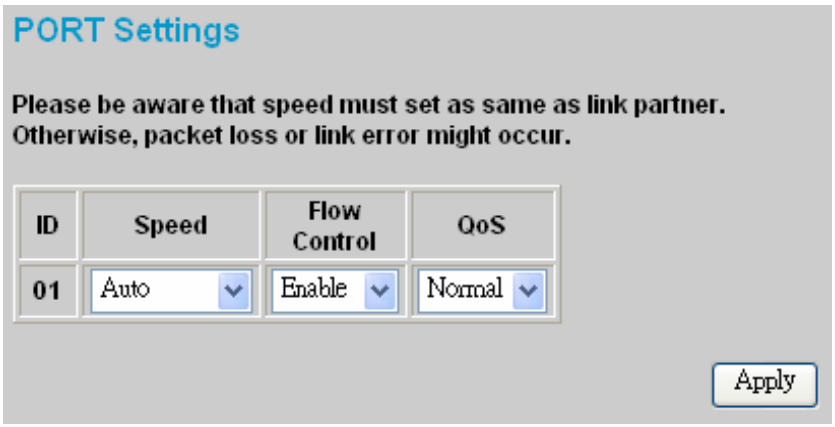


Figure 19. Port Settings.

Speed/Disable:

This setting has six modes—***100M Full***, ***100M Half***, ***10M Full***, ***10M Half***, ***Auto***, ***and Disable***—for speed or port disable selections.

Flow Control:

This setting determines whether or not the Switch will be handling flow control. Set ***FlowCtrl*** to ***Enable*** for avoiding data transfer overflow. If it is set to ***Disable***, there is either no flow control or other hardware/software management.

When the 10/100M port is set to ***full-duplex mode***, then the flow control will be automatically set to ***disable***; and if the 10/100M port is set to ***half-duplex mode***, the flow control will be automatically set to ***enable***.

QoS:

In some ports that need to have a high priority to manage the data transfer, QoS should be change, Set the port's QoS to high to determine the port will always transfer their data first.

VLAN Settings (Virtual Local Area Network)

Group individual ports into a small "Virtual" network of their own to be independent of the other ports. To add a VLAN group, press "Add Group" button, the new VLAN configuration window will pop out, you can fill in the description in order to describe this VLAN Group, check on the port to be a member to this VLAN Group, and press ***"Apply"*** button to execute the setting.

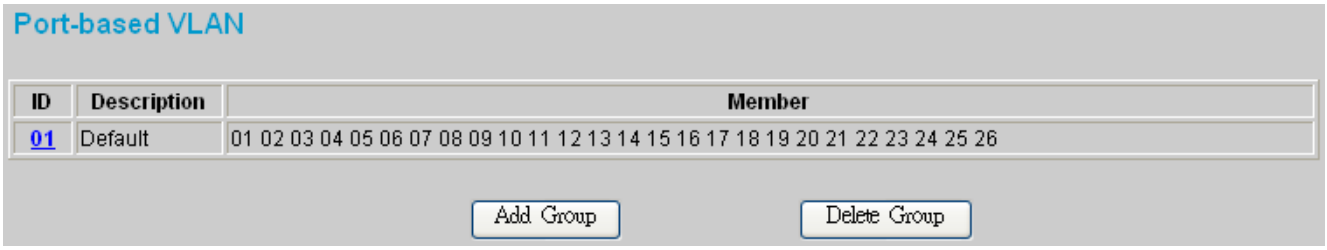


Figure 20. VLAN Group Settings

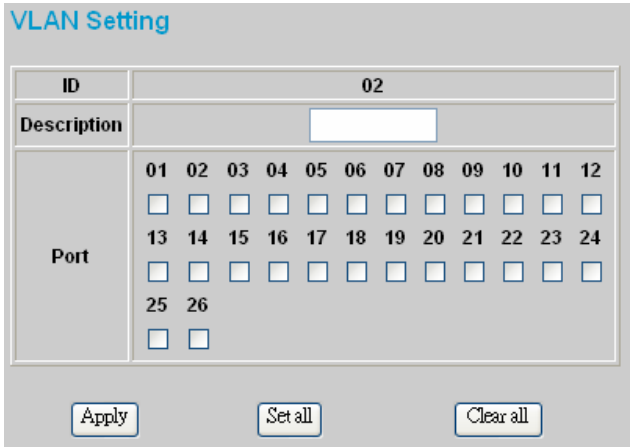


Figure 21. Add VLAN Group

Once you want to modify the VLAN Group, check on the ID parameter, the ID VLAN configuration window will pop out.

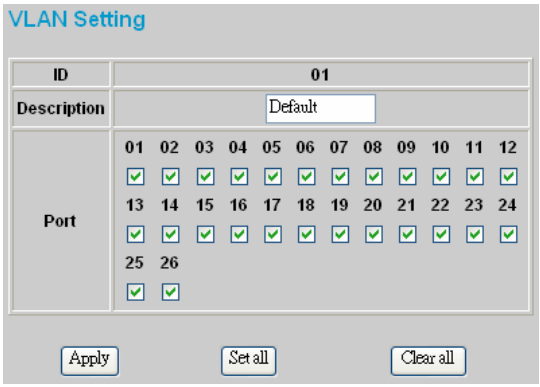


Figure 22. VLAN Settings

Trunk Setting

The Trunk function enables to cascade two or more devices with a larger bandwidths.

There are four Trunking groups to be set; and there are default ports in each member. Checked "Enable" to use the trunk function, select the ports in each member to be trunk, and click "Apply" to activate the selected trunk group.

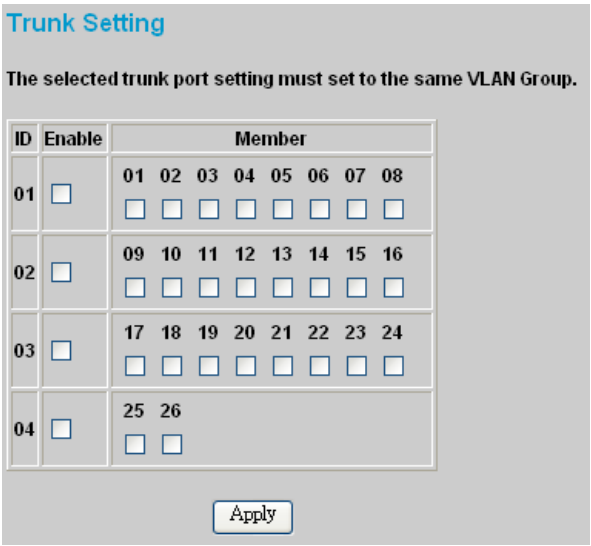


Figure 23. Trunk Settings

Be sure that the selected trunk setting port must connect to the device with a same VLAN group.

Mirror Setting

Port Mirroring is a method of monitoring network traffic that forwards a copy of each incoming and/or outgoing packet from one port of a network switch to another port where the packet can be studied. It enables the manager to keep close track of switch performance and alter it if necessary.

Configuring the port mirroring by assigning a source port from which to copy all packets and a sniffer port where those packets will be sent.

The selections of the sniffer mode are as follows:

TX (transmit) mode: This mode will duplicate the data transmitted from the source port and forward it to the sniffer port.

RX (receive) mode: This mode will duplicate the data sent to the source and forward it to the sniffer port.

Both (transmit and receive) mode: This mode will duplicate both the data transmitted from and data sent to the source port, then it will forward the data to the sniffer port.

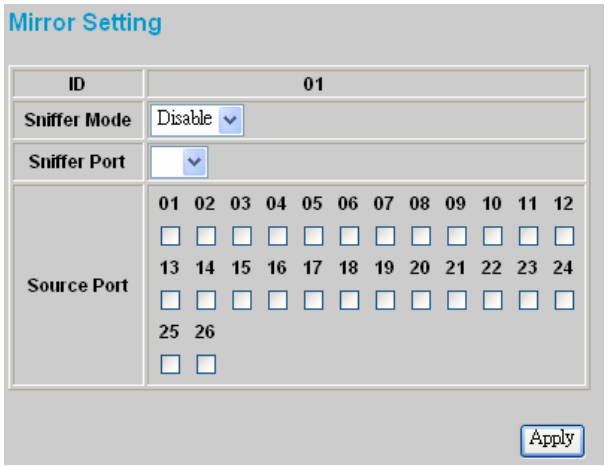
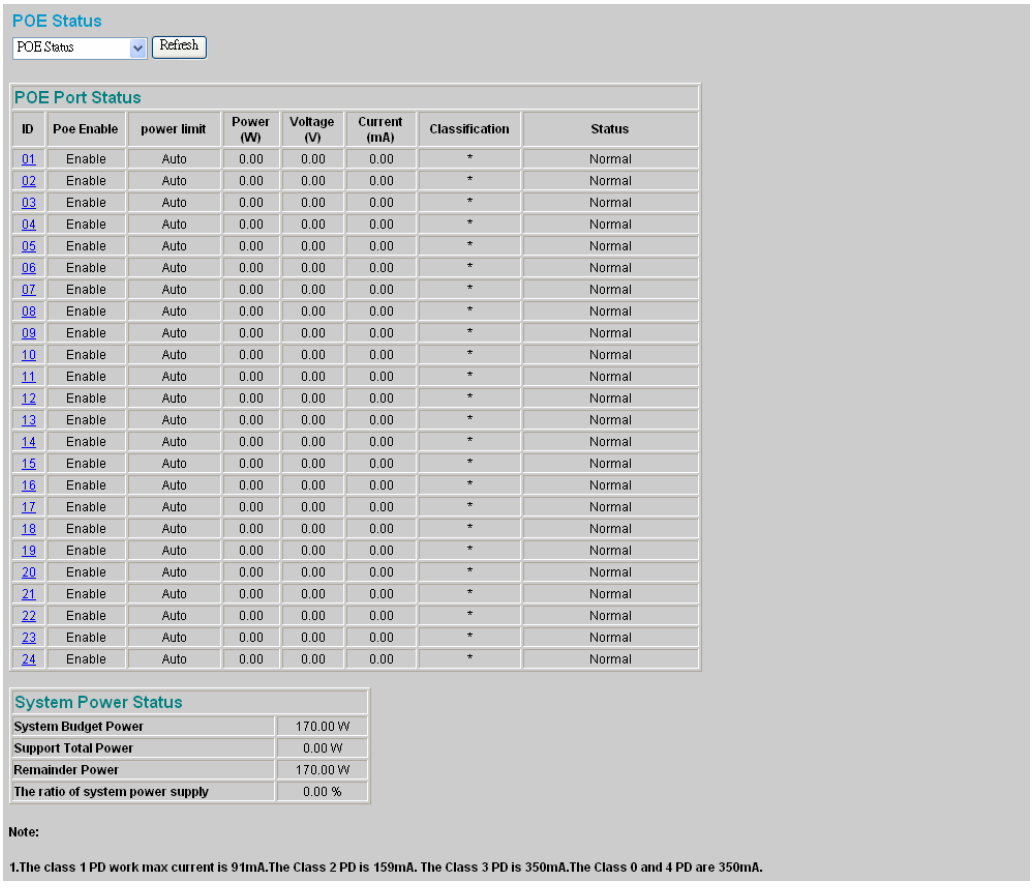


Figure 24. Mirror Setting.

PoE Setting

When you click on the PoE Setting, the PoE Status will appear on the screen, it will display the PoE status including, Port Enable, Power limit, Power (W), Voltage(V), Current (mA), Classification, Port status, System Budget Power, Support Total Power, Remainder Power and The ratio of system power supply.

Note: The PoE Status information of Power current, Power Voltage and Current are exist power usage information of connected PD, please "Refresh" to renew information.



POE Status

POE Status | Refresh

POE Port Status

ID	Poe Enable	power limit	Power (W)	Voltage (V)	Current (mA)	Classification	Status
01	Enable	Auto	0.00	0.00	0.00	*	Normal
02	Enable	Auto	0.00	0.00	0.00	*	Normal
03	Enable	Auto	0.00	0.00	0.00	*	Normal
04	Enable	Auto	0.00	0.00	0.00	*	Normal
05	Enable	Auto	0.00	0.00	0.00	*	Normal
06	Enable	Auto	0.00	0.00	0.00	*	Normal
07	Enable	Auto	0.00	0.00	0.00	*	Normal
08	Enable	Auto	0.00	0.00	0.00	*	Normal
09	Enable	Auto	0.00	0.00	0.00	*	Normal
10	Enable	Auto	0.00	0.00	0.00	*	Normal
11	Enable	Auto	0.00	0.00	0.00	*	Normal
12	Enable	Auto	0.00	0.00	0.00	*	Normal
13	Enable	Auto	0.00	0.00	0.00	*	Normal
14	Enable	Auto	0.00	0.00	0.00	*	Normal
15	Enable	Auto	0.00	0.00	0.00	*	Normal
16	Enable	Auto	0.00	0.00	0.00	*	Normal
17	Enable	Auto	0.00	0.00	0.00	*	Normal
18	Enable	Auto	0.00	0.00	0.00	*	Normal
19	Enable	Auto	0.00	0.00	0.00	*	Normal
20	Enable	Auto	0.00	0.00	0.00	*	Normal
21	Enable	Auto	0.00	0.00	0.00	*	Normal
22	Enable	Auto	0.00	0.00	0.00	*	Normal
23	Enable	Auto	0.00	0.00	0.00	*	Normal
24	Enable	Auto	0.00	0.00	0.00	*	Normal

System Power Status

System Budget Power	170.00 W
Support Total Power	0.00 W
Remainder Power	170.00 W
The ratio of system power supply	0.00 %

Note:

1.The class 1 PD work max current is 91mA.The Class 2 PD is 159mA. The Class 3 PD is 350mA.The Class 0 and 4 PD are 350mA.

Figure 25. PoE Status

POE Port Status:

Selected “POE Port Status” to configure the PoE Port setting.

To configure the settings, press click on the ID parameter to enter to the selected port.

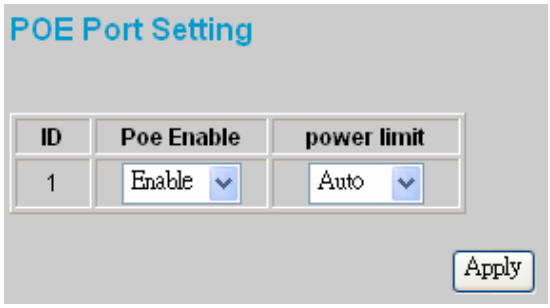


Figure 26. PoE Port Setting

Poe Enable: Select to enable or disable the PoE function.

Power limit: This function let you to manually setting the port power current limitation to be given to the PD, to protect the Switch and the connected device, the power limit function will disable the PoE function of the port when the power over loaded. Select “<5W”, “<10W”, “<14W” and “Auto” for the power limit, the “Auto” will follow the classification from the PD power current.

POE System Setting:

Selected “POE System Setting” to configure the PoE System setting.

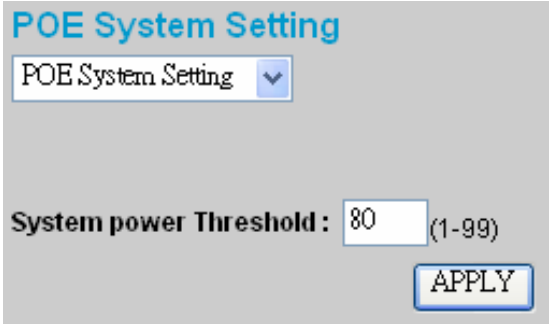


Figure 27. PoE System Setting

System power Threshold: When the radio of the system power supply large than or smaller than the *System power Threshold setting*, the Switch will send trap event to the Management Station.

Note: When the system power is shortage with the PD, the Switch will enforce the PoE port priority management, the lower port number will have the higher priority than the higher port number, Port 1 > Port 2 > … > Port 24.

Device Status

Click on the ***"Status"*** button to display the device status on this screen. It will display the System Status, Port Status, VLAN Status, Trunk Status, Mirror Status and PoE Status.

Press ***"Refresh"*** when you need to renew the posted information.

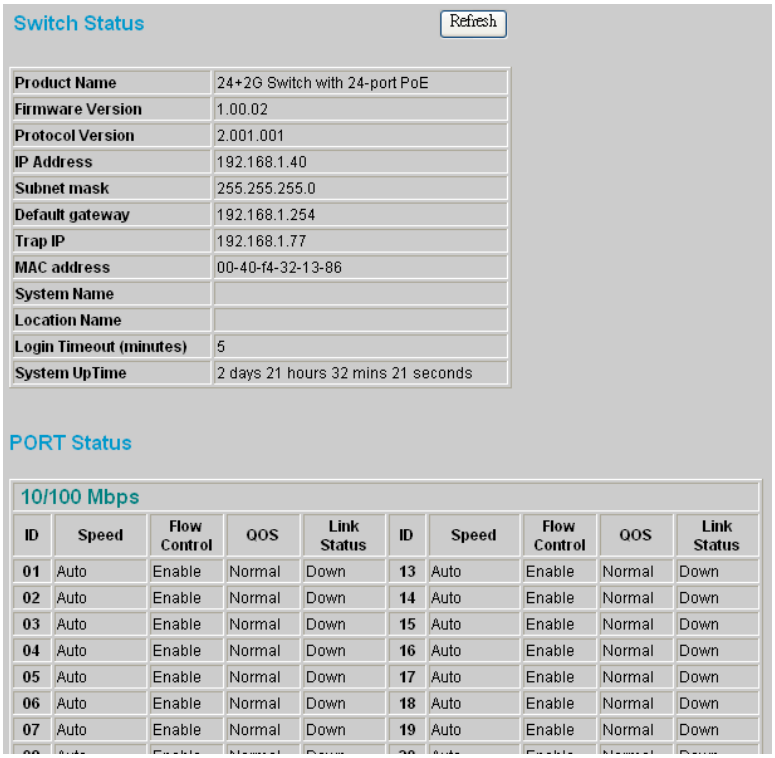
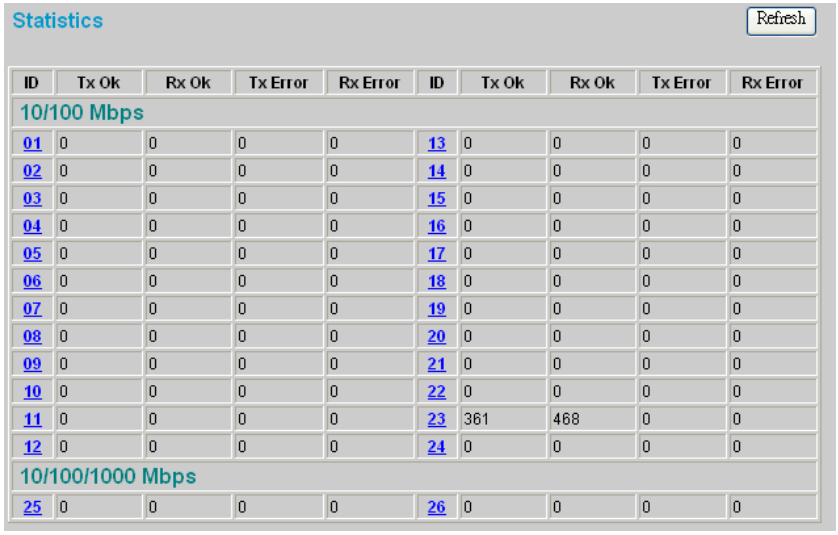


Figure 28. System Status

Statistic

The Statistics Menu screen will display the status of each port packet count.

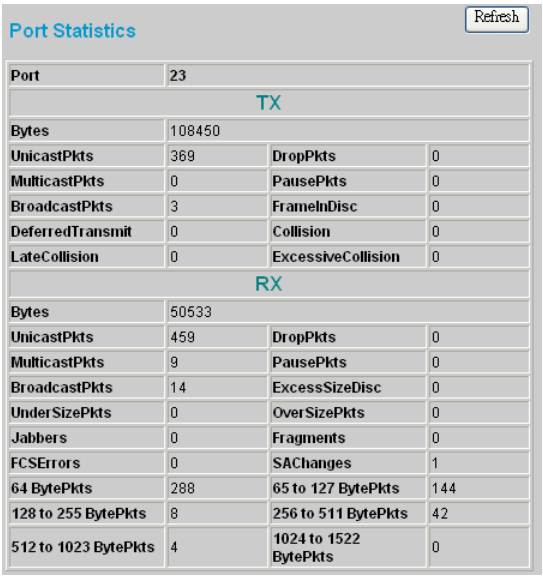


Statistics — Refresh

ID	Tx Ok	Rx Ok	Tx Error	Rx Error	ID	Tx Ok	Rx Ok	Tx Error	Rx Error
10/100 Mbps									
01	0	0	0	0	13	0	0	0	0
02	0	0	0	0	14	0	0	0	0
03	0	0	0	0	15	0	0	0	0
04	0	0	0	0	16	0	0	0	0
05	0	0	0	0	17	0	0	0	0
06	0	0	0	0	18	0	0	0	0
07	0	0	0	0	19	0	0	0	0
08	0	0	0	0	20	0	0	0	0
09	0	0	0	0	21	0	0	0	0
10	0	0	0	0	22	0	0	0	0
11	0	0	0	0	23	361	468	0	0
12	0	0	0	0	24	0	0	0	0
10/100/1000 Mbps									
25	0	0	0	0	26	0	0	0	0

Figure 29. Statistic

For detailed packet information, click on the ID parameter as Figure 30.



Port Statistics — Refresh

Port	23		
TX			
Bytes	108450		
UnicastPkts	369	DropPkts	0
MulticastPkts	0	PausePkts	0
BroadcastPkts	3	FrameInDisc	0
DeferredTransmit	0	Collision	0
LateCollision	0	ExcessiveCollision	0
RX			
Bytes	50533		
UnicastPkts	459	DropPkts	0
MulticastPkts	9	PausePkts	0
BroadcastPkts	14	ExcessSizeDisc	0
UnderSizePkts	0	OverSizePkts	0
Jabbers	0	Fragments	0
FCSErrors	0	SAChanges	1
64 BytePkts	288	65 to 127 BytePkts	144
128 to 255 BytePkts	8	256 to 511 BytePkts	42
512 to 1023 BytePkts	4	1024 to 1522 BytePkts	0

Figure 30. Port Statistics

System Setting

The System Setting includes the System name, Location name, Login Timeout, IP Address, Subnet Mask and Gateway. Through the Web Management Utility, you can easily recognize the device by using the System Name and the Location Name.

The Login Timeout is to set the idle time-out for security issue, when there is no action when running the Web Smart Utility and the time is up, you must re-login to Web Smart Utility before you set the Utility.

Fill up the IP address, Subnet mask and Gateway for the device or enable DHCP get IP address from DHCP server.

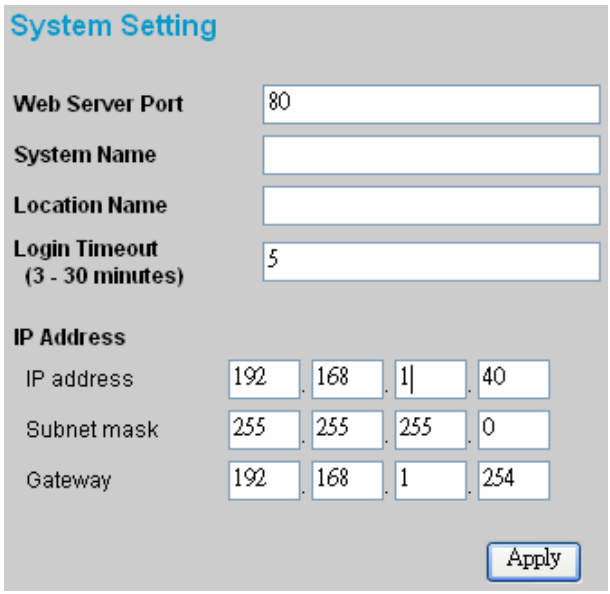


Figure 31.

Trap Setting

The Trap Setting enables the device to monitor the Trap through the Web Management Utility. Set the Trap IP Address of the manager where the trap is to be sent.

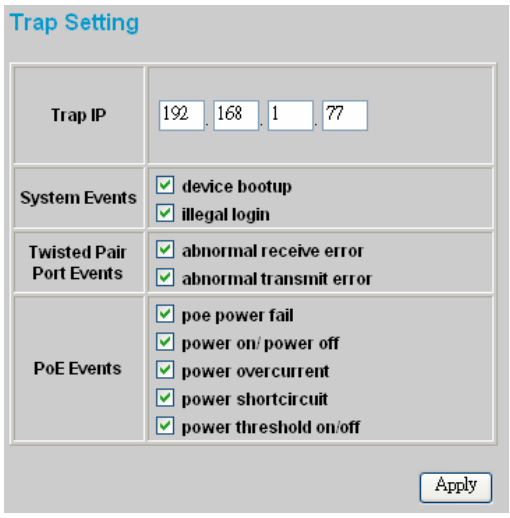


Figure 32. Trap Setting

System Events: Monitoring the system's trap.

Device Bootup: a trap when booting up the system.

Illegal Login: a trap when there is using a wrong password login, and it will record from where the IP to be login.

Twisted Pair Port Events: Monitoring the twisted pair port status.

Abnormal* Receive Error: a trap when there are receive data error in twisted pair port.

Abnormal* Transmit Error: a trap when there are transmit data error in twisted pair port.

Abnormal*: 50 error packet count within 10 seconds.

PoE Events: Monitoring the PoE ports status.

PoE Power fail: A trap when the port's power source fails or the PD64012 fails.

Power on/Power off: A trap when the PoE port's power is on and down.

Power over current: A trap when the PoE port's power is over current.

Power short circuit: A trap when the PoE port's power circuit was short.

Power threshold on/off: A trap when the radio of the system power supply larger than or smaller than the System power Threshold setting.

Set Password

Password is the invaluable tool for the manager to secure the Web Management Switch. You can use this function to change the password.

If you forget the password, press the "Reset" button in the rear panel of the Switch. The current setting includes VLAN, Port Setting… etc. will be lost and the Switch will be restored to the default setting.

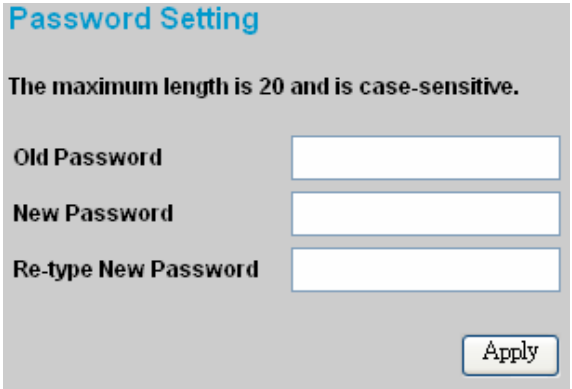


Figure 33.Set Password

Backup Setting

The backup tools help you to backup the current setting of the Switch. Once you need to backup the setting, press the ***"Backup"*** button to save the setting.

To restore a current setting file to the device, you must specify the backup file and press the ***"Restore"*** button to process the setting of the recorded file.

Figure 34. Backup Setting

Note: When restoring a recorded file, the current password will not be erased.

Reset Setting

The Factory Reset button helps you to reset the device back to the default setting from the factory. Be aware that the entire configuration will be reset, the IP address of the device will be get from DHCP server (factory default is DHCP enabled) or got the default IP address of 192.168.0.1 when fail to get the IP address from DHCP server.

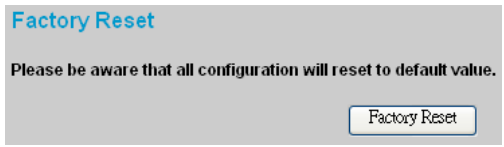


Figure 35. Reset Setting

Logout

When you select this function, the Web configuration will log out and return to first Login page.

Figure 36. Logout

TECHNICAL SPECIFICATIONS

General	
Standards	IEEE 802.3 10BASE-T Ethernet IEEE 802.3u 100BASE-TX Fast Ethernet IEEE 802.3ab 1000BASE-T Gigabit Ethernet IEEE 802.3x Full Duplex Flow Control IEEE 802.3af compliant
Protocol	CSMA/CD
Data Transfer Rate	Ethernet: 10Mbps (half-duplex), 20Mbps (full-duplex) Fast Ethernet: 100Mbps (half-duplex), 200Mbps (full-duplex) Gigabit Ethernet: 2000Mbps (full-duplex)
Topology	Star
Network Cables	10BASET: 2-pair UTP Cat. 3, 4, 5; up to 100m 100BASE-TX: 2-pair UTP Cat. 5; up to 100m 1000BASE-T: 4-pair UTP Cat. 5; up to 100m PoE: 4-pair UTP Cat. 5; up to 100m
Number of Ports	24 x 100BASE-TX PoE Ethernet ports 2 x 1000BASE-T Gigabit Ethernet ports

Power over Ethernet	
Standard	IEEE 802.3af
Power current	Up to 15.4W per port Maximum 185W per device
PD Classification	Auto PD classification identify
PoE pin assignment	Power(+): pin 3 & pin 6 in RJ-45 Power(-): pin 1 & pin 2 in RJ-45
Safety protection	Over current protect Circuit shortage protect

Physical and Environmental	
AC inputs	100-240V AC, 50-60 Hz internal universal power supply
Power Consumption	9Watts (max. no PD Device connected) 180Watts (max. with 11 x 15.4 w PoE Device connected)
Temperature	Operating: 0° ~ 40° C (32° ~ 104° F), Storage: -10° ~ 70° C (14° ~ 158° F)
Humidity	Operating: 10% ~ 90%, Storage: 5% ~ 90%
Dimensions	440 x 310 x 44 mm
EMI:	FCC Class A, CE Mark Class A, VCCI Class A
Safety:	cUL(UL60950), CB(IEC60950)

Performance	
Transmits Method:	Store-and-forward
Filtering Address Table:	4K entries per device
Packet Filtering/Forwarding Rate:	10Mbps Ethernet: 14,880/pps 100Mbps Fast Ethernet: 148,800/pps 1000Mbps Gigabit Ethernet: 1,488,000/pps
MAC Address Learning:	Automatic update
Transmits Method:	Store-and-forward
RAM Buffer:	768K bytes per device