# Industrial P.O.E.

# Lite-Managed Ethernet Switch

## IPS-2042P User's Manual


**Version 1.3**

**Feb, 2010.**

**ORing Industrial Networking Corp.**

4F., NO.3, Lane235, Baociao Rd.Sindian City,

Taipei County 23145 Taiwan, R.O.C.

Tel: + 886 2 2918 3036

Fax: + 886 2 2918 3084

Website: www.oring-networking.com

E-mail: support@oring-networking.com

# Table of Content

# Getting to Know Your Switch

## 1.1 About the IPS-2042P P.O.E Lite-Managed Industrial Switch

The IPS-2042P switch are cost-effect and powerful industrial switch with many features. The switch can work under wide temperature and dusty environment and humid condition. IPS-2042P support Power over Ethernet, a system to transmit electrical power with data to remote devices over standard twisted-pair cable. The IPS-2042P switch has 4 X 10/100Base-T(X) P.S.E. (Power Sourcing Equipment) ports which are fully compliant with IEEE 802.3af standard.

The IPS-2042P switch can be managed by WEB and a useful Window Utility we called Open-Vision. Open-Vision is powerful network management software. With its friendly and powerful interface, you can easily configure multiple switches at the same time, and monitor switches' status

## 1.2 Software Features

- World's fastest Redundant Ethernet Ring : O-Ring (Recovery time < 10ms over 250 units connection)
- Supports Ring Coupling, Dual Homing over O-Ring and standard STP/RSTP
- Support fast recovery mode
- Easy-to-configure: Web / Windows utility
- Windows utility (Open-Vision) for network management

## 1.3 Hardware Features

- Wide Operating Temperature: -40 to 70 $^{o}$C
- Storage Temperature: -40 to 85 $^{o}$C
- Operating Humidity: 5% to 95%, non-condensing
- 4 10/100Base-T(X) Ethernet port with P.S.E. provides up to 25 watts
- 2 100Base-FX SFP ports

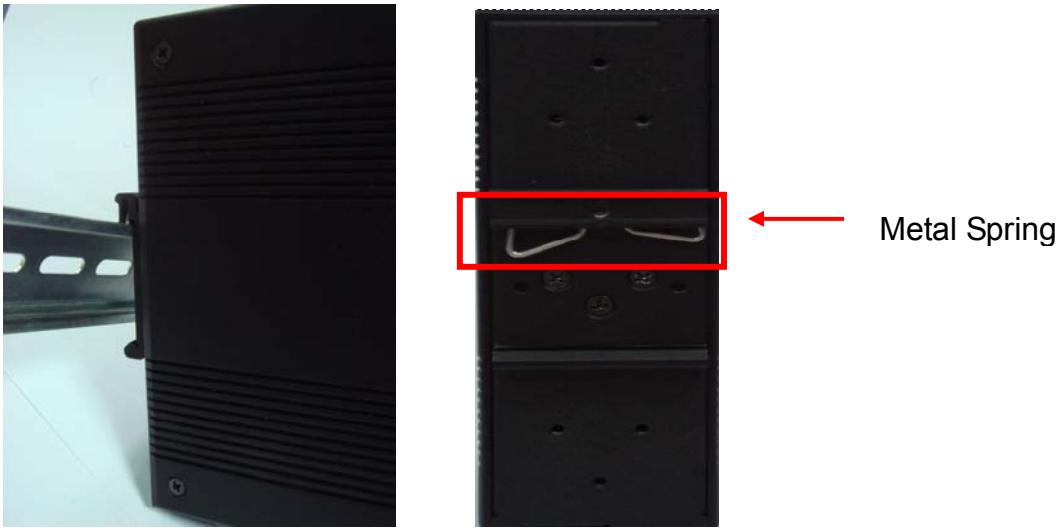
# Hardware Installation

## 2.1 Installing Switch on DIN-Rail

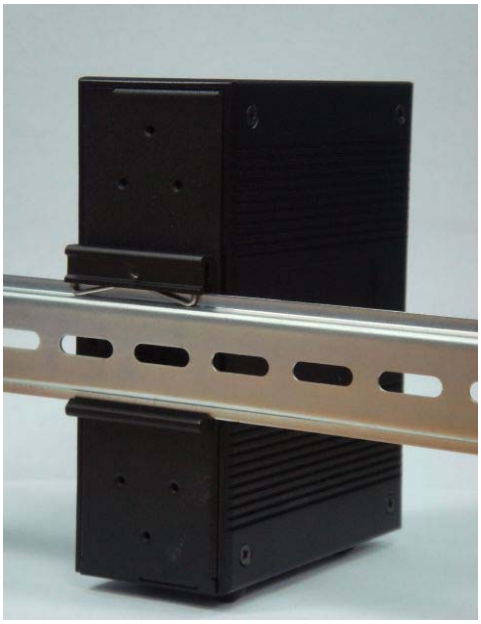
Each switch has a DIN-Rail kit on rear panel. The DIN-Rail kit helps switch to fix on the DIN-Rail. It is easy to install the switch on the DIN-Rail:

### 2.1.1 MountIPS-2042P on DIN-Rail

Step 1: Slant the switch and mount the metal spring to DIN-Rail.




Step 2: Push the switch toward the DIN-Rail until you heard a "click" sound.

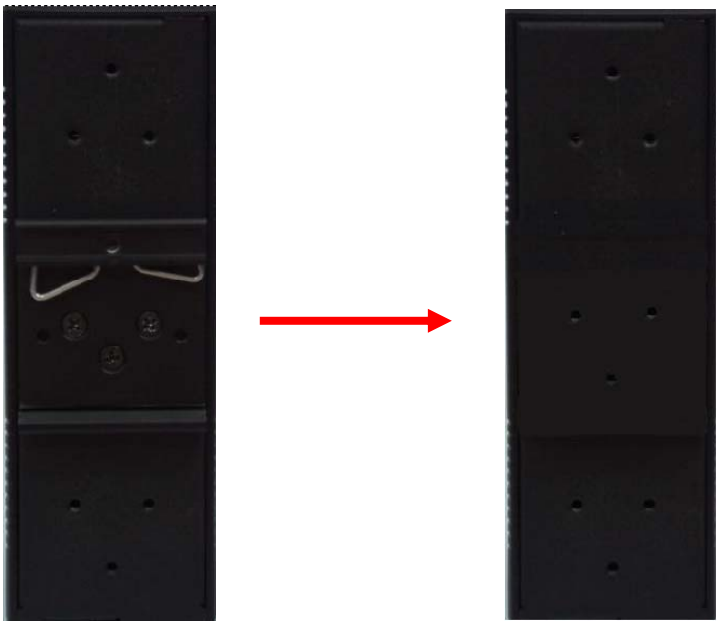


## 2.2 Wall Mounting Installation

Each switch has another installation method for users to fix the switch. A wall mount panel can be found in the package. The following steps show how to mount the switch on the wall:

### 2.2.1 MountIPS-2042P on wall

Step 1: Remove DIN-Rail kit.



Step 2: Use 6 screws that can be found in the package to combine the wall mount panel. Just like the picture shows below:

The screws specification shows in the following two pictures. In order to prevent switches from any damage, the screws should not larger than the size that used in IPS-2042P.


Pozidrive 

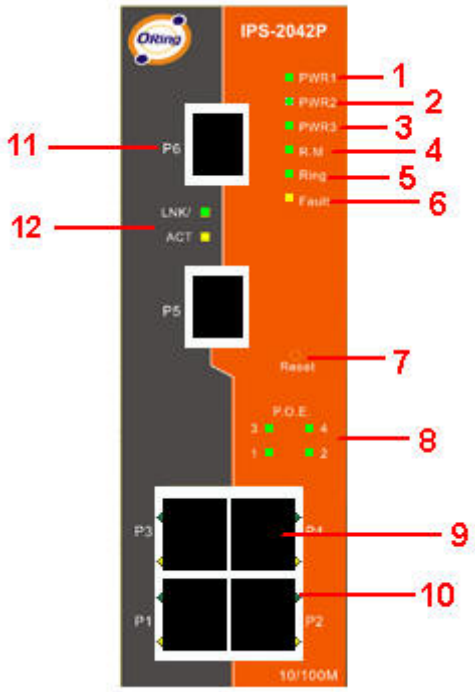
# Hardware Overview

## 3.1 Front Panel

The following table describes the labels that stick on the IPS-2042P.

| Port | Description |
|---|---|
| **10/100 RJ-45 fast Ethernet ports** | 10/100Base-T(X) RJ-45 fast Ethernet ports support auto-negotiation.<br>Default Setting :<br>Speed: auto<br>Duplex: auto<br>Flow control : disable |
| **Fiber ports** | 100Base-FX SFP ports |
| **P.O.E. Ports** | Port 1 ~ 4 contain P.S.E. function compliant with IEEE802.3af P.O.E. specifications. |
| **Reset** | Push reset button 2 to 3 seconds to reset the switch.<br>Push reset button 5 second to reset the switch into **Factory Default.** |

IPS-2042TX




1. LED for PWR1. When the PWR1 links, the green led will be light on.
2. LED for PWR2. When the PWR2 links, the green led will be light on.
3. LED for PWR3. When the PWR3 links, the green led will be light on.
4. LED for R.M (Ring master). When the LED light on, it means that the switch is the ring master of O-Ring.
5. LED for Ring. When the led light on, it means the O-Ring is activated.
6. LED for Fault Relay. When the fault occurs, the amber LED will be light on.
7. Reset button. Push the button 3 seconds for reset; 5 seconds for factory default.
8. LED for P.O.E. power supplied.
9. 10/100Base-T(X) P.S.E. Ethernet ports..
10. LED for Ethernet ports status.
11. 100Base-FX Ethernet ports..
12. LED for SFP ports status.

## 3.2 Front Panel LEDs

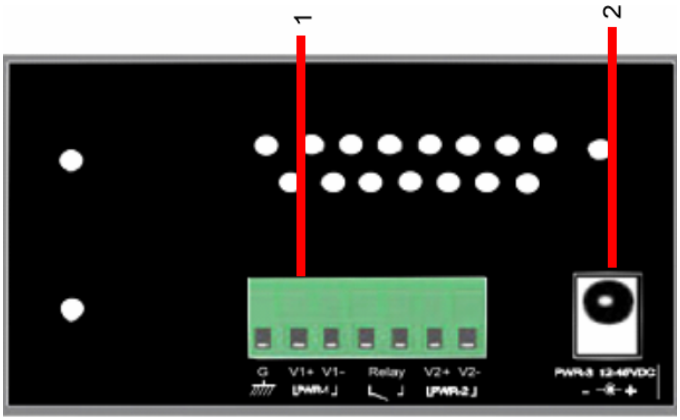
| LED | Color | Status | Description |
|---|---|---|---|
| **PWR1** | Green | On | DC power module 1 activated. |
| **PWR2** | Green | On | DC power module 2 activated. |
| **PWR3** | Green | On | Power jack activated. |
| **R.M** | Green | On | O-Ring Master. |
| **Ring** | Green | On | O-Ring enabled. |
| | | Slowly blinking | O-Ring topology has problem |
| | | Fast blinking | O-Ring work normally. |
| **Fault** | Amber | On | Fault relay. Power failure or Port down/fail. |
| **10/100Base-T(X) Fast Ethernet ports** | | | |
| **LNK / ACT** | Green | On | Port link up. |
| | | Blinking | Data transmitted. |
| **Link** | Amber | On | Port works under Link. |
| **P.O.E.** | Green | On | P.O.E. activated |
| **100Base-FX SFP ports** | | | |
| **ACT** | Green | Blinking | Data transmitted. |
| **LNK** | Amber | On | Port link up. |

## 3.3 Bottom Panel

The bottom panel components of IPS-2042P are showed as below:

1. Terminal block includes: PWR1, PWR2 (+48V DC) and Relay output (1A@24VDC).
2. Power jack for PWR3 (+48VDC).

.

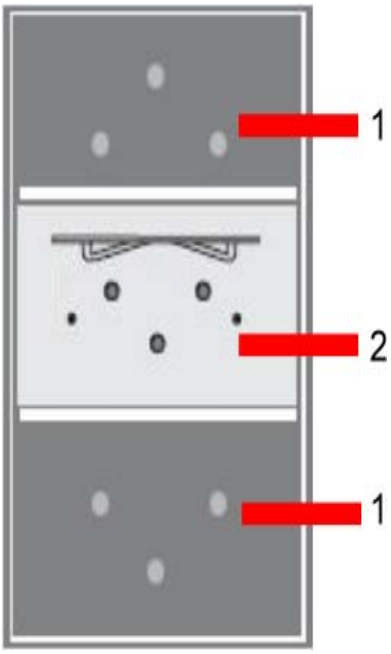



IPS-2042P power connection

## 3.4 Rear Panel

The rear panel components of IPS-2042P are showed as below:

1. Screw holes for wall mount kit.
2. DIN-Rail kit



# Cables

## 4.1 Ethernet Cables

The IPS-2042P switch have standard Ethernet ports. According to the link type, the switch use CAT 3, 4, 5, 5e UTP cables to connect to any other network device (PCs, servers, switches, routers, or hubs). Please refer to the following table for cable specifications.

Cable Types and Specifications

| Cable | Type | Max. Length | Connector |
|---|---|---|---|
| 10BASE-T | Cat. 3, 4, 5 100-ohm | UTP 100 m (328 ft) | RJ-45 |
| 100BASE-TX | Cat. 5 100-ohm UTP | UTP 100 m (328 ft) | RJ-45 |

### 4.1.1 100BASE-TX/10BASE-T Pin Assignments

With 100BASE-TX/10BASE-T cable, pins 1 and 2 are used for transmitting data, and pins 3 and 6 are used for receiving data.

RJ-45 Pin Assignments

| Pin Number | Assignment |
|---|---|
| 1 | TD+ |
| 2 | TD- |
| 3 | RD+ |
| 4 | P.O.E. power input + |
| 5 | P.O.E. power input + |
| 6 | RD- |
| 7 | P.O.E. power input - |
| 8 | P.O.E. power input - |

The IPS-2042P switch support auto MDI/MDI-X operation. You can use a straight-through cable to connect PC and switch. The following table below shows the 10BASE-T/ 100BASE-TX MDI and MDI-X port pin outs.

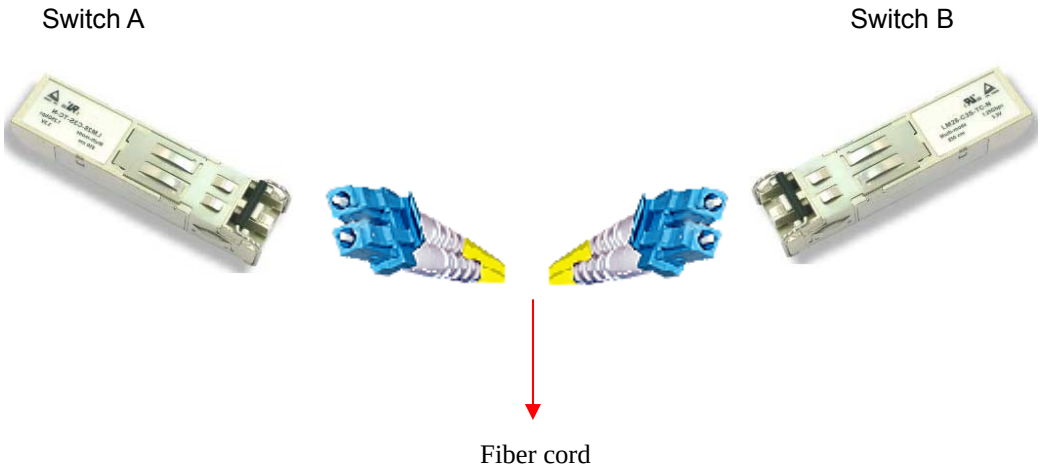
MDI/MDI-X pins assignment

| Pin Number | MDI port | MDI-X port |
|---|---|---|
| 1 | TD+(transmit) | RD+(receive) |
| 2 | TD-(transmit) | RD-(receive) |
| 3 | RD+(receive) | TD+(transmit) |
| 4 | P.O.E. power input + | P.O.E. power input + |
| 5 | P.O.E. power input + | P.O.E. power input + |
| 6 | RD-(receive) | TD-(transmit) |
| 7 | P.O.E. power input - | P.O.E. power input - |
| 8 | P.O.E. power input - | P.O.E. power input - |

**Note:** "+" and "-" signs represent the polarity of the wires that make up each wire pair.

## 4.2 SFP

The Switch has fiber optical ports with SFP connectors. The fiber optical ports are in multi-mode and single-mode with LC connector. Please remember that the TX port of Switch A should be connected to the RX port of Switch B.



# WEB Management


## 5.1 Configuration by Web Browser

This section introduces the configuration by Web browser.

### 5.1.1 About Web-based Management

An embedded HTML web site resides in flash memory on the CPU board. It contains advanced management features and allows you to manage the switch from anywhere on the network through a standard web browser such as Microsoft Internet Explorer.

The Web-Based Management function supports Internet Explorer 5.0 or later. It is based on Java Applets with an aim to reduce network bandwidth consumption, enhance access speed and present an easy viewing screen.

**Note:** By default, IE5.0 or later version does not allow Java Applets to open sockets. You need to explicitly modify the browser setting in order to enable Java Applets to use network ports.

#### Preparing for Web Management

The default value is as below:

IP Address: **192.168.10.1**

Subnet Mask: **255.255.255.0**

Default Gateway: **192.168.10.254**

User Name: **admin**

Password: **admin**

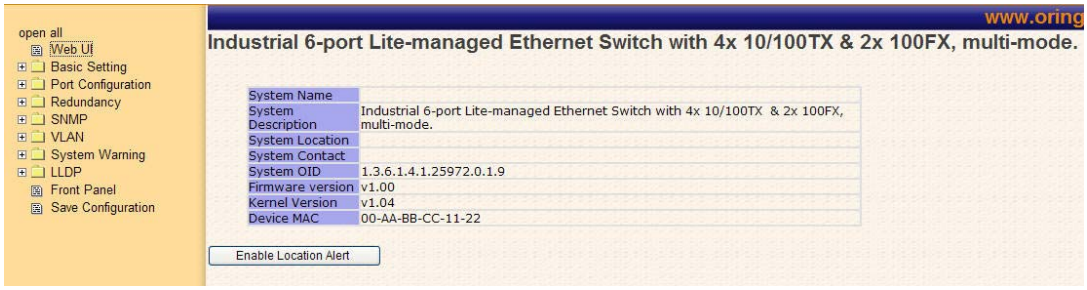
#### System Login

1. Launch the Internet Explorer.
2. Type http:// and the IP address of the switch. Press "**Enter**".


3. The login screen appears.
4. Key in the username and password. The default username and password is "**admin**".
5. Click "**Enter**" or "**OK**" button, then the main interface of the Web-based management appears.


Login screen

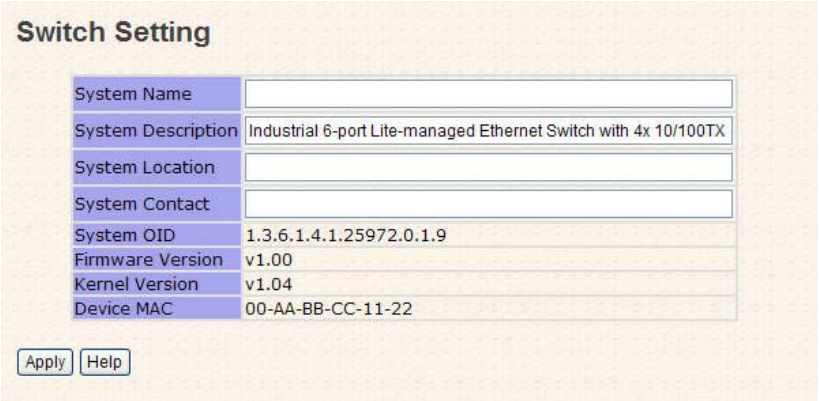
## Main Interface




Main interface

## 5.1.2 Basic Setting

### 5.1.2.1 Switch setting




Switch setting interface

The following table describes the labels in this screen.

| Label | Description |
|---|---|
| **System Name** | Assign the name of switch. The maximum length is 64 bytes |
| **System Description** | Display the description of switch. |
| **System Location** | Assign the switch physical location. The maximum length is 64 bytes |
| **System Contact** | Enter the name of contact person or organization |
| **Firmware Version** | Display the switch's firmware version |
| **Kernel Version** | Display the kernel software version |
| **MAC Address** | Display the unique hardware address assigned by manufacturer (default) |

### 5.1.2.2 Admin Password

Change web management login username and password for the management security issue

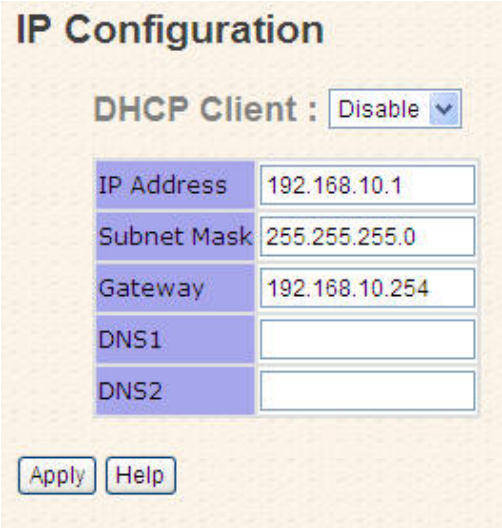

Admin Password interface

The following table describes the labels in this screen.

| Label | Description |
|---|---|
| **User name** | Key in the new username (The default is "**admin**") |
| **New Password** | Key in the new password (The default is "**admin**") |
| **Confirm password** | Re-type the new password. |
| **Apply** | Click "**Apply**" to activate the configurations. |

### 5.1.2.3 IP configuration

You can configure the IP Settings and DHCP client function through IP configuration.




IP Configuration interface

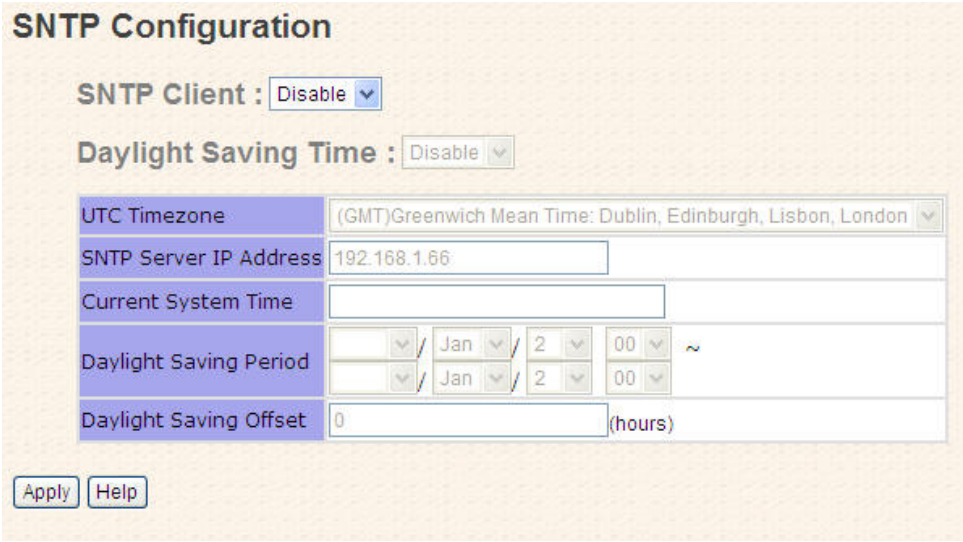
The following table describes the labels in this screen.

| Label | Description |
|---|---|
| **DHCP Client** | To enable or disable the DHCP client function. When DHCP client function is enabling, the switch will assign the IP address from the network DHCP server. The default IP address will be replaced by the IP address which the DHCP server has assigned. After clicking "**Apply**" button, a popup dialog will show up to inform you when the DHCP client is enabling. The current IP will lose and you should find the new IP on the DHCP server. |
| **IP Address** | Assign the IP address that the network is using. If DHCP client function is enabling, you do not need to assign the IP address. The network DHCP server will assign the IP address for the |

| | |
|---|---|
| | switch and it will be displayed in this column. The default IP is 192.168.10.1 |
| **Subnet Mask** | Assign the subnet mask for the IP address. If DHCP client function is enabling, you do not need to assign the subnet mask. |
| **Gateway** | Assign the network gateway for the switch. The default gateway is 192.168.10.254 |
| **DNS1** | Assign the primary DNS IP address |
| **DNS2** | Assign the secondary DNS IP address |
| **Apply** | Click "**Apply**" to activate the configurations. |

### 5.1.2.4 SNTP Configuration

The SNTP (Simple Network Time Protocol) settings allow you to synchronize switch clocks in the Internet.




SNTP Configuration interface

The following table describes the labels in this screen.

| Label | Description |
|---|---|
| **SNTP Client** | Enable or disable SNTP function to get the time from the SNTP server. |
| **Daylight Saving Time** | Enable or disable daylight saving time function. When daylight saving time is enabling, you need to configure the daylight saving time period. |
| **UTC Time zone** | Set the switch location time zone. The following table lists the different location time zone for your reference. |

| Local Time Zone | Conversion from UTC | Time at 12:00 UTC |
|---|---|---|
| November Time Zone | - 1 hour | 11 am |
| Oscar Time Zone | -2 hours | 10 am |
| ADT - Atlantic Daylight | -3 hours | 9 am |
| AST - Atlantic Standard<br>EDT - Eastern Daylight | -4 hours | 8 am |
| EST - Eastern Standard<br>CDT - Central Daylight | -5 hours | 7 am |
| CST - Central Standard<br>MDT - Mountain Daylight | -6 hours | 6 am |
| MST - Mountain Standard<br>PDT - Pacific Daylight | -7 hours | 5 am |
| PST - Pacific Standard<br>ADT - Alaskan Daylight | -8 hours | 4 am |
| ALA - Alaskan Standard | -9 hours | 3 am |
| HAW - Hawaiian Standard | -10 hours | 2 am |
| Nome, Alaska | -11 hours | 1 am |
| CET - Central European<br>FWT - French Winter<br>MET - Middle European<br>MEWT - Middle European Winter<br>SWT - Swedish Winter | +1 hour | 1 pm |
| EET - Eastern European, USSR<br>Zone 1 | +2 hours | 2 pm |
| BT - Baghdad, USSR Zone 2 | +3 hours | 3 pm |
| ZP4 - USSR Zone 3 | +4 hours | 4 pm |
| ZP5 - USSR Zone 4 | +5 hours | 5 pm |

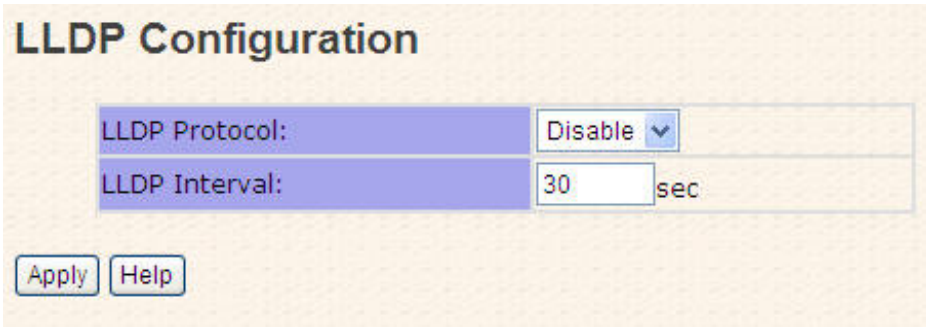
| | | |
|---|---|---|
| ZP6 - USSR Zone 5 | +6 hours | 6 pm |
| WAST - West Australian Standard | +7 hours | 7 pm |
| CCT - China Coast, USSR Zone 7 | +8 hours | 8 pm |
| JST - Japan Standard, USSR Zone 8 | +9 hours | 9 pm |
| EAST - East Australian Standard<br>GST<br>Guam Standard, USSR Zone 9 | +10 hours | 10 pm |
| IDLE - International Date Line<br>NZST - New Zealand Standard<br>NZT - New Zealand | +12 hours | Midnight |

The following table describes the labels in this screen.

| Label | Description |
|---|---|
| **SNTP Sever IP Address** | Set the SNTP server IP address. |
| **Daylight Saving Period** | Set up the Daylight Saving beginning time and Daylight Saving ending time. Both will be different each year. |
| **Daylight Saving Offset** | Set up the offset time. |
| **Switch Timer** | Display the switch current time. |
| **Apply** | Click "**Apply**" to activate the configurations. |

### 5.1.2.5 LLDP

LLDP (Link Layer Discovery Protocol) function allows the switch to advertise its information to other nodes on the network and store the information it discovers.



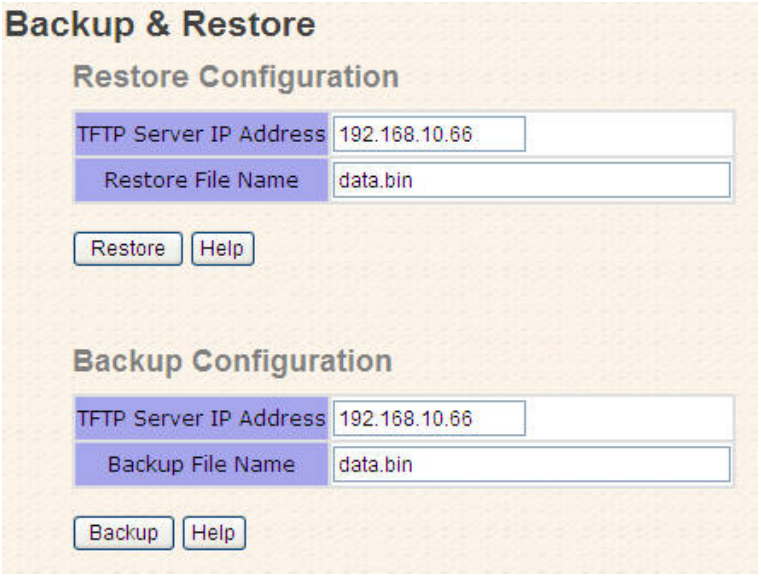

LLDP interface

The following table describes the labels in this screen.

| Label | Description |
|---|---|
| **LLDP Protocol** | "Enable" or "Disable" LLDP function. |
| **LLDP Interval** | The interval of resend LLDP (by default at 30 seconds) |
| **Apply** | Click "**Apply**" to activate the configurations. |
| **Help** | Show help file. |

### 5.1.2.6 Backup & Restore

You can save current EEPROM value of the switch to TFTP server, then go to the TFTP restore configuration page to restore the EEPROM value.




Backup & Restore interface

The following table describes the labels in this screen.

| Label | Description |
|---|---|
| **TFTP Server IP Address** | Fill in the TFTP server IP |
| **Restore File Name** | Fill the file name. |
| **Restore** | Click "**restore**" to restore the configurations. |
| **Restore File Name** | Fill the file name. |
| **Restore** | Click "**restore**" to restore the configurations. |
| **Backup** | Click "**backup**" to backup the configurations. |

### 5.1.2.7 Upgrade Firmware

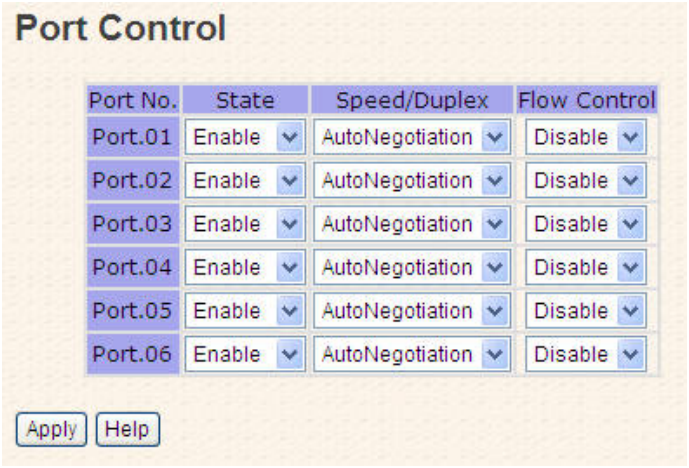
Upgrade Firmware allows you to update the switch firmware. Before updating, make sure you have your TFTP server ready and the firmware image is on the TFTP server.


Update Firmware interface

## 5.1.3 Port Configuration

### 5.1.3.1 Port Control

By this function, you can set the state, speed/duplex, flow control, and security of the port.



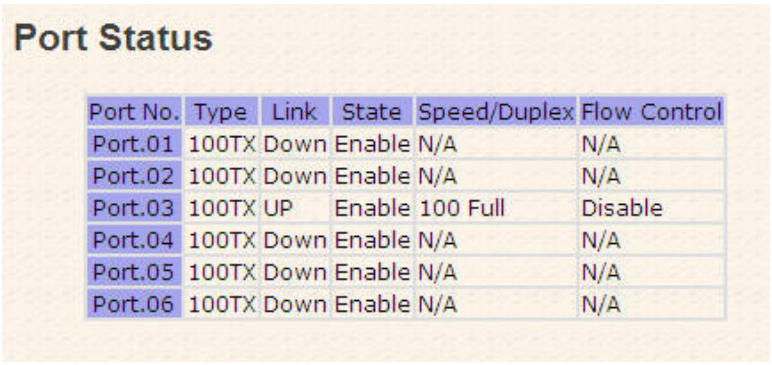

Port Control interface

The following table describes the labels in this screen.

| Label | Description |
|---|---|
| **Port NO.** | Port number for setting. |
| **State** | Enable/Disable the port. |
| **Speed/Duplex** | You can set Auto-negotiation, 100 full,100 half,10 full,10 half mode. |
| **Flow Control** | Support symmetric and asymmetric mode to avoid packet loss when congestion occurred. |
| **Apply** | Click "**Apply**" to activate the configurations. |

#### 5.1.3.2 Port Status

The following information provides the current port status.

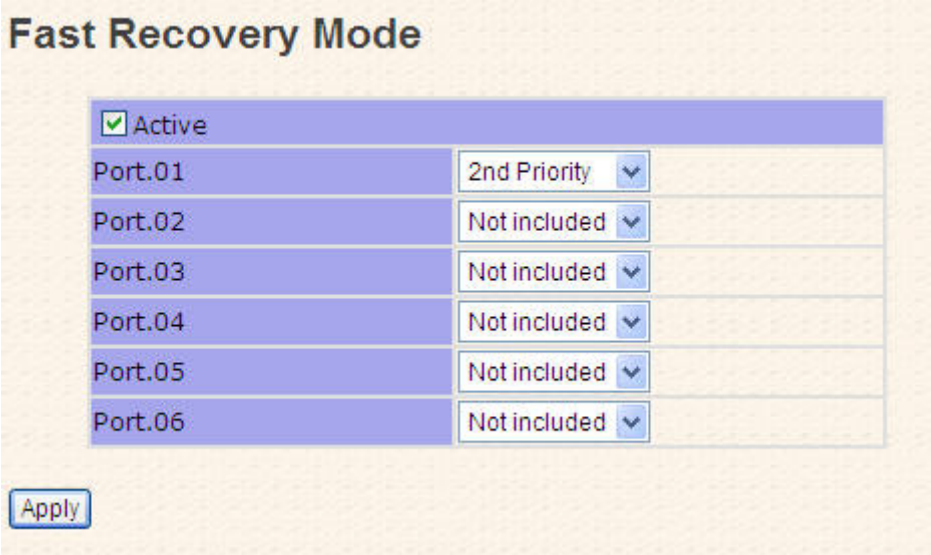



Port Status interface

### 5.1.4 Redundancy

#### 5.1.4.1 Fast Recovery Mode

The Fast Recovery Mode can be set to connect multiple ports to one or more switches. The IPS-2042P with its fast recovery mode will provide redundant links. Fast Recovery mode supports 4 priorities, only the first priority will be the act port, the other ports configured with other priority will be the backup ports.



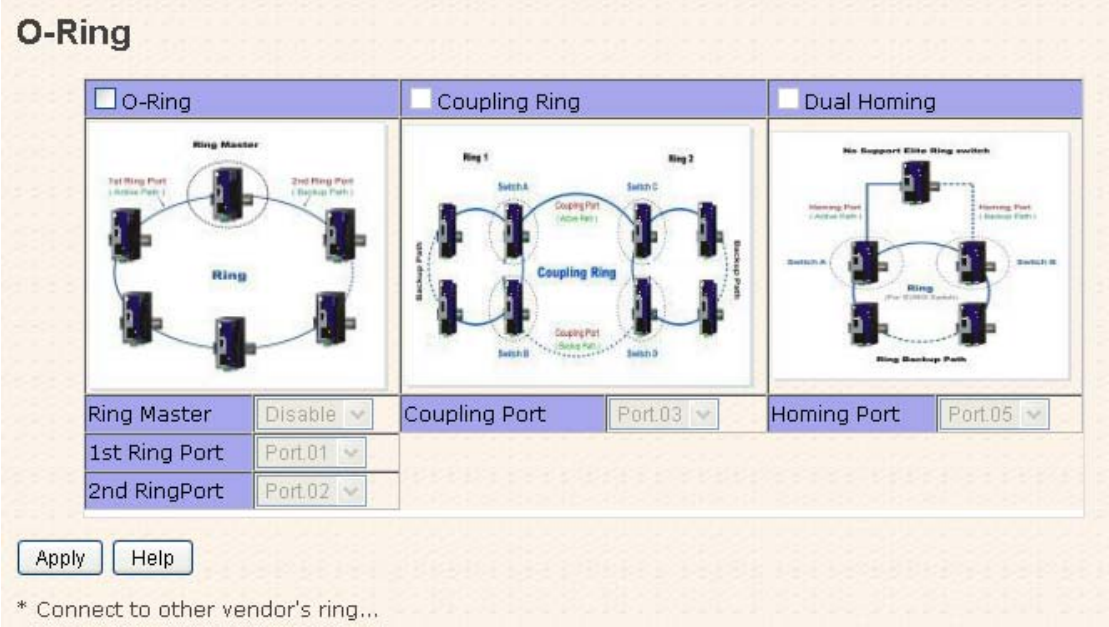

Fast Recovery Mode interface

The following table describes the labels in this screen.

| Label | Description |
|---|---|
| **Active** | Activate the fast recovery mode. |
| **port** | Port can be configured as 5 priorities. Only the port with highest priority will be the active port. 1st Priority is the highest. |
| **Apply** | Click "**Apply**" to activate the configurations. |

### 5.1.4.2 O-Ring

O-Ring is one of the most powerful Redundant Ring technology in the world. The recovery time of O-Ring is less than 10 ms over 250 units of connections. It can reduce unexpected malfunction caused by network topology change. O-Ring technology supports three Ring topologies for network redundancy: O-Ring, Coupling Ring and Dual Homing.




O-Ring interface

The following table describes the labels in this screen.

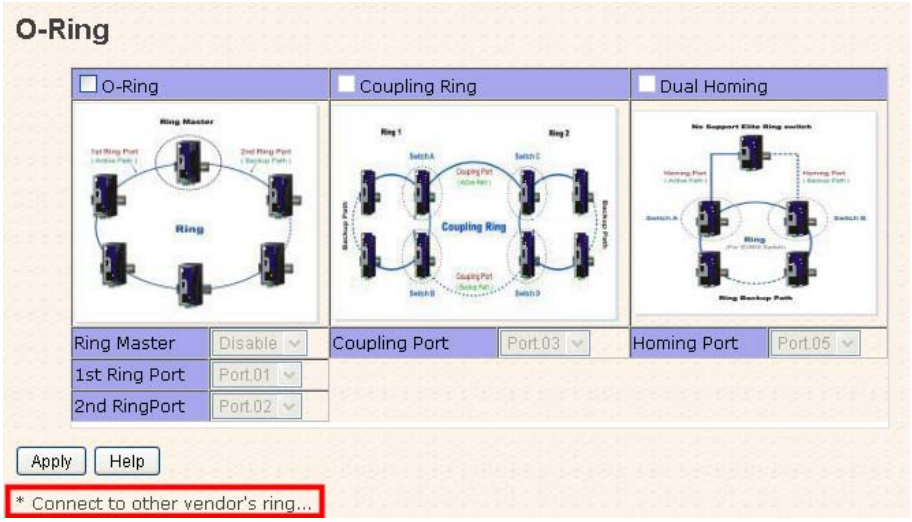
| Label | Description |
|---|---|
| **O-Ring** | Mark to enable O-Ring. |
| **Ring Master** | There should be one and only one Ring Master in a ring. However if there are two or more switches which set Ring Master to enable, the switch with the lowest MAC address will be the |

| | |
|---|---|
| | actual Ring Master and others will be Backup Masters. |
| **1st Ring Port** | The primary port |
| **2nd Ring Port** | The backup port |
| **Coupling Ring** | Mark to enable Coupling Ring. Coupling Ring can be used to divide a big ring into two smaller rings to avoid effecting all switches when network topology change. It is a good application for connecting two O-Rings. |
| **Coupling Port** | Link to Coupling Port of the switch in another ring. Coupling Ring need four switch to build an active and a backup link. Set a port as coupling port. The coupled four ports of four switches will be run at active/backup mode. |
| **Control Port** | Link to Control Port of the switch of the same ring. Control Port used to transmit control signals. |
| **Dual Homing** | Mark to enable Dual Homing. By selecting Dual Homing mode, O-Ring will be connected to normal switches through two RSTP links (ex: backbone Switch). The two links work as active/backup mode, and connect each O-Ring to the normal switches in RSTP mode. |
| **Apply** | Click "**Apply**" to activate the configurations. |

**Note:** We don't suggest you to set one switch as a Ring Master and a Coupling Ring at the same time due to heavy load.

### 5.1.4.3 Open-Ring

Open-Ring technology can be applied for other vendor's proprietary ring. Thus, you can add switches of ORing into the network constructed by other ring technology and enable Open-Ring to co-operate with other vendor's managed switch.

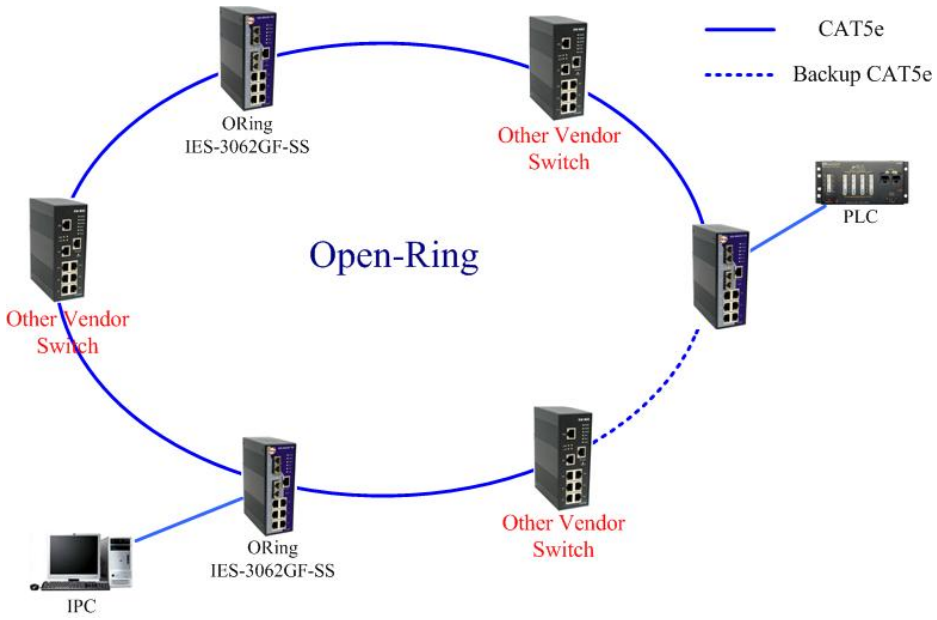


Click "Connect to other vendor's ring….." to join the ring constructed by other vendor.


Open-Ring interface

| Label | Description |
|---|---|
| **Enable** | Enabling the Open-Ring function |
| **Vender** | Choosing the venders that you want to join to their ring |
| **1st Ring Port** | Choosing the port which connect to the ring |
| **2nd Ring Port** | Choosing the port which connect to the ring |

The application of Open-Ring is shown as below.



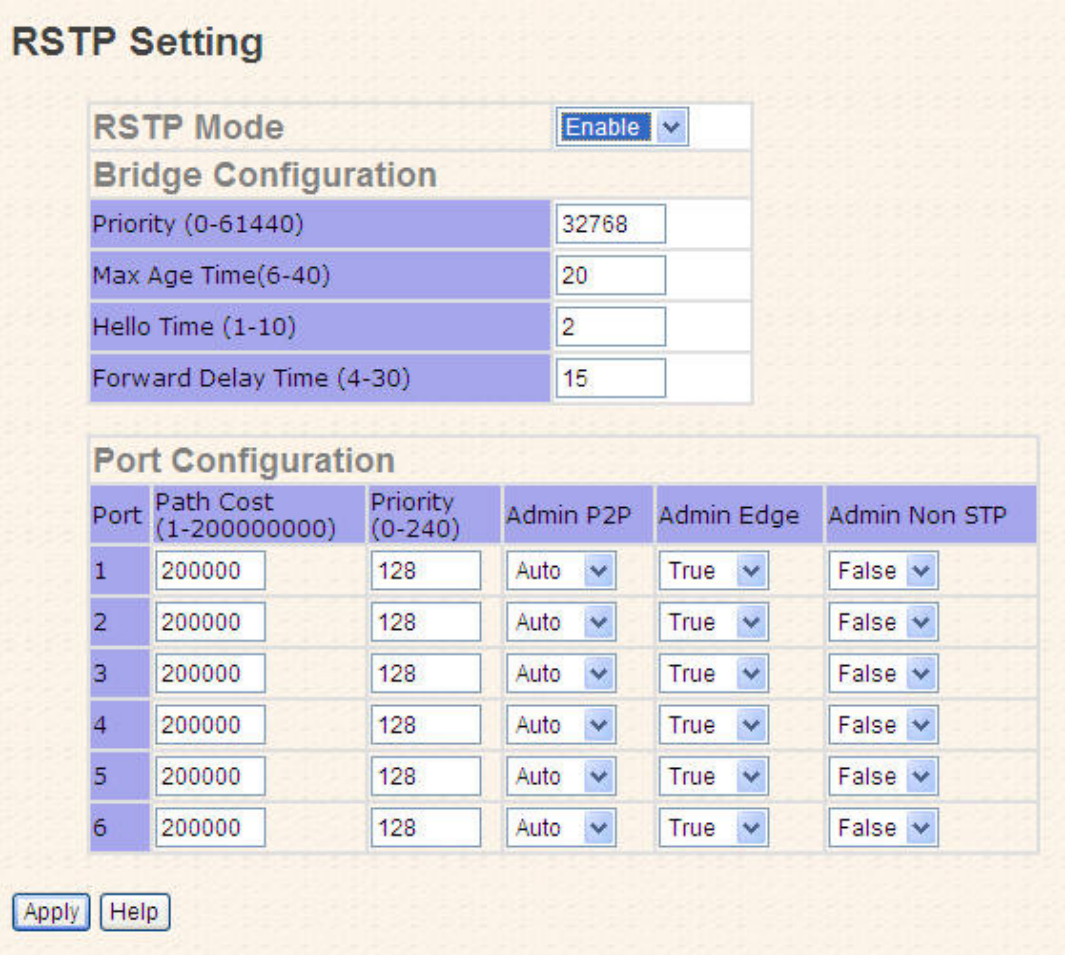

Open-Ring connection

### 5.1.4.4 RSTP

The Rapid Spanning Tree Protocol (RSTP) is an evolution of the Spanning Tree Protocol. It provides faster spanning tree convergence after a topology change. The system also supports STP and the system will auto detect the connected device that is running STP or RSTP protocol.

**RSTP setting**

You can enable/disable the RSTP function, and set the parameters for each port.




RSTP Setting interface

The following table describes the labels in this screen.

| Label | Description |
|---|---|
| **RSTP mode** | You must enable or disable RSTP function before configuring the related parameters. |
| **Priority (0-61440)** | A value used to identify the root bridge. The bridge with the lowest value has the highest priority and is selected as the root. If the value changes, you must reboot the switch. The value must be multiple of 4096 according to the protocol standard rule. |
| **Max Age (6-40)** | The number of seconds a bridge waits without receiving Spanning-tree Protocol configuration messages before attempting a reconfiguration. Enter a value between 6 through 40. |

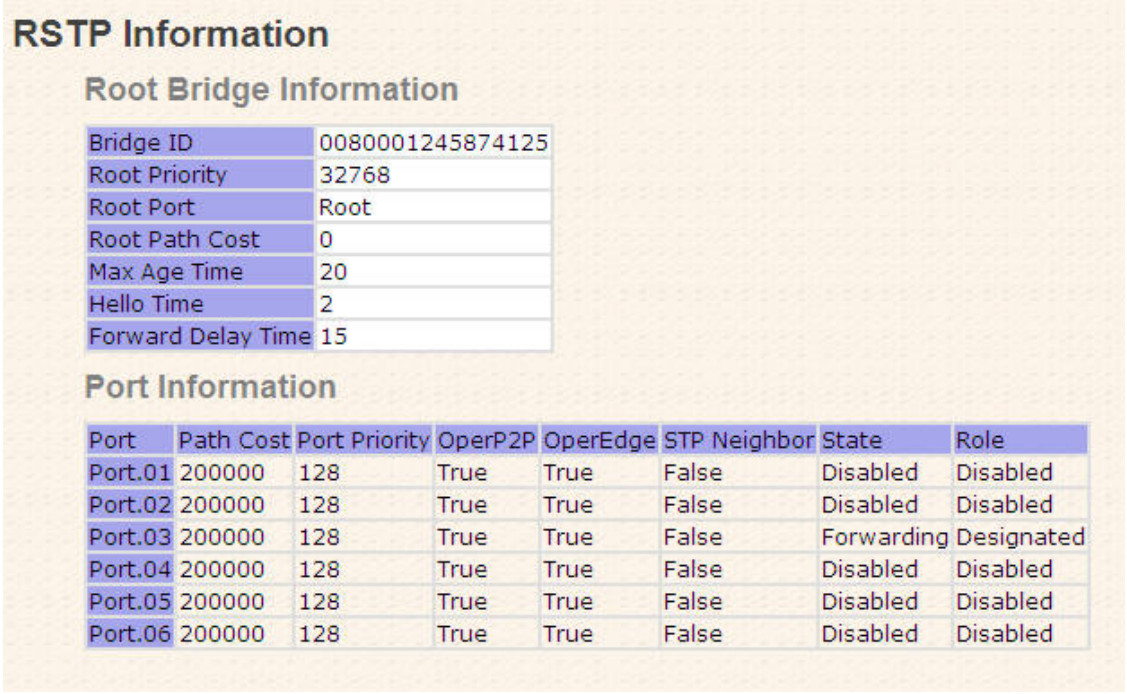
| | |
|---|---|
| **Hello Time (1-10)** | The time that controls switch sends out the BPDU packet to check RSTP current status. Enter a value between 1 through 10. |
| **Forwarding Delay Time (4-30)** | The number of seconds a port waits before changing from its Rapid Spanning-Tree Protocol learning and listening states to the forwarding state. Enter a value between 4 through 30. |
| **Path Cost (1-200000000)** | The cost of the path to the other bridge from this transmitting bridge at the specified port. Enter a number 1 through 200000000. |
| **Priority (0-240)** | Decide which port should be blocked by priority in LAN. Enter a number 0 through 240. The value of priority must be the multiple of 16 |
| **Admin P2P** | Some of the rapid state transactions that are possible within RSTP are dependent upon whether the port concerned can only be connected to exactly one other bridge (i.e. It is served by a point-to-point LAN segment), or it can be connected to two or more bridges (i.e. It is served by a shared medium LAN segment). This function allows the P2P status of the link to be manipulated administratively. True means P2P enabling. False means P2P disabling. |
| **Admin Edge** | The port is directly connected to end stations, and it cannot create bridging loop in the network. To configure the port as an edge port, set the port to "**True**". |
| **Admin Non STP** | The port includes the STP mathematic calculation. **True** is not including STP mathematic calculation. **False** is including the STP mathematic calculation. |
| **Apply** | Click "**Apply**" to activate the configurations. |

**NOTE:** Follow the rule to configure the MAX Age, Hello Time, and Forward Delay Time:

2 x (Forward Delay Time value –1) ≥ Max Age value ≥ 2 x (Hello Time value +1)

**RSTP Information**

Show RSTP algorithm result at this table.



RSTP Information

Root Bridge Information

| | |
|---|---|
| Bridge ID | 0080001245874125 |
| Root Priority | 32768 |
| Root Port | Root |
| Root Path Cost | 0 |
| Max Age Time | 20 |
| Hello Time | 2 |
| Forward Delay Time | 15 |

Port Information

| Port | Path Cost | Port Priority | OperP2P | OperEdge | STP Neighbor | State | Role |
|---|---|---|---|---|---|---|---|
| Port.01 | 200000 | 128 | True | True | False | Disabled | Disabled |
| Port.02 | 200000 | 128 | True | True | False | Disabled | Disabled |
| Port.03 | 200000 | 128 | True | True | False | Forwarding | Designated |
| Port.04 | 200000 | 128 | True | True | False | Disabled | Disabled |
| Port.05 | 200000 | 128 | True | True | False | Disabled | Disabled |
| Port.06 | 200000 | 128 | True | True | False | Disabled | Disabled |

RSTP Information interface

## 5.1.5 SNMP Configuration

Simple Network Management Protocol (SNMP) is the protocol developed to manage nodes (servers, workstations, routers, switches and hubs etc.) on an IP network. SNMP enables network administrators to manage network performance, find and solve network problems, and plan for network growth. Network management systems learn of problems by receiving traps or change notices from network devices implementing SNMP.

### 5.1.5.1 SNMP – Agent Setting

You can set SNMP agent related information by Agent Setting Function.

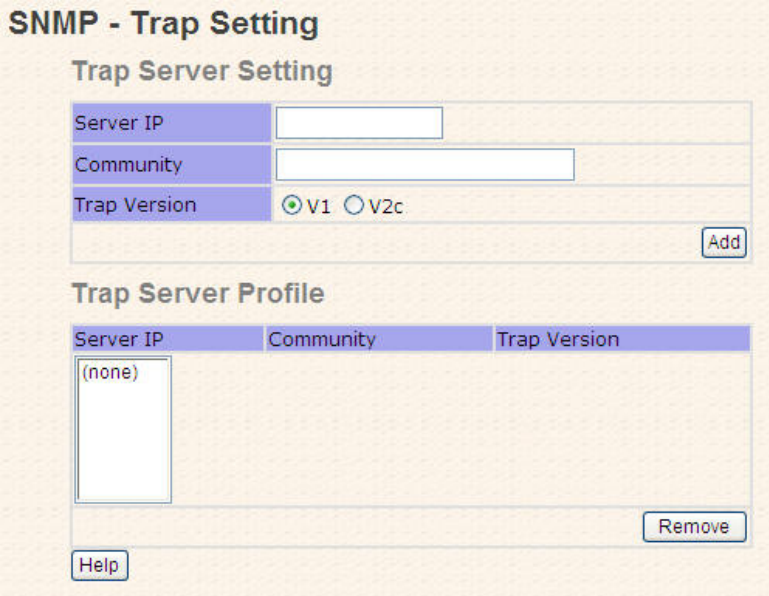

SNMP – Agent Setting interface

The following table describes the labels in this screen.

| Label | Description |
|---|---|
| **SNMP – Agent Setting** | SNMP Community should be set for SNMP. Four sets of "Community String/Privilege" are supported. Each Community String is maximum 32 characters. Keep empty to remove this Community string. |

### 5.1.5.2 SNMP –Trap Setting

A trap manager is a management station that receives traps, the system alerts generated by the switch. If no trap manager is defined, no traps will issue. Create a trap manager by entering the IP address of the station and a community string. To define management stations as trap manager and enter SNMP community strings and selects the SNMP version.




SNMP –Trap Setting interface

The following table describes the labels in this screen.

| Label | Description |
|---|---|
| **Server IP** | The server IP address to receive Trap |
| **Community** | Community for authentication |
| **Trap Version** | Trap Version supports V1 and V2c. |
| **Add** | Add trap server profile. |
| **Remove** | Remove trap server profile. |
| **Help** | Show help file. |

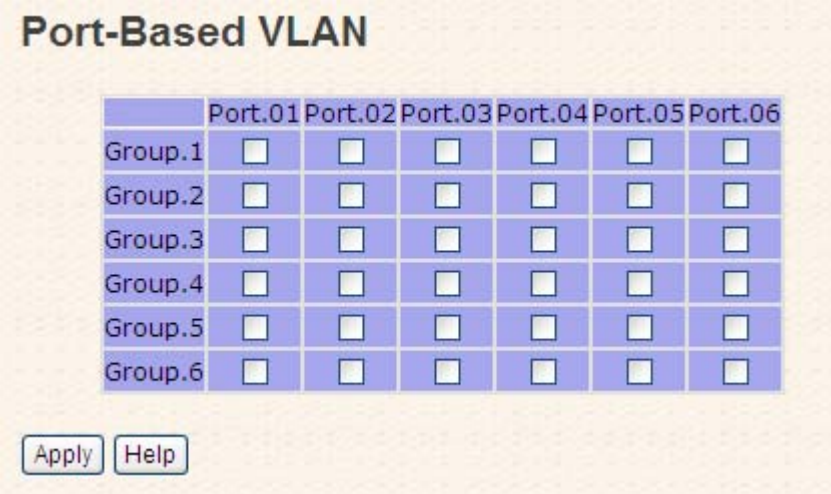
## 5.1.6 VLAN

A Virtual LAN (VLAN) is a logical network grouping that limits the broadcast domain, which allows you to isolate network traffic. Only the members of the VLAN will receive traffic from the same members of 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.

The switch supports port-based VLAN only.

### 5.1.6.1 VLAN Configuration – Port Based

Traffic is forwarded to the member ports of the same vlan group. vlan port based startup, set in the same group of the port, can be a normal transmission packet, without restricting the types of packets.




VLAN Configuration – Port Based VLAN interface

The following table describes the labels in this screen.

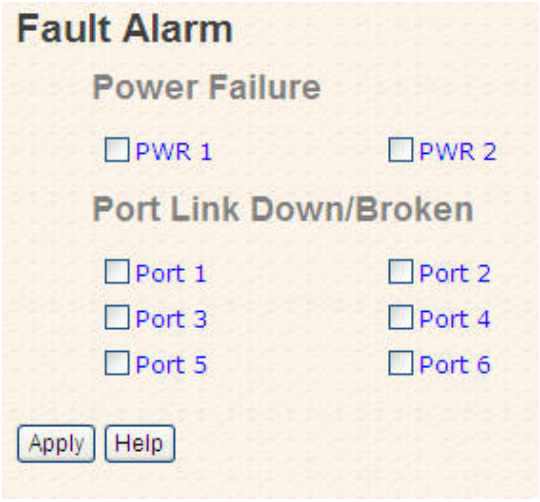
| Label | Description |
|---|---|
| **Group** | Mark the blank to assign the port into VLAN group. |
| **Apply** | Click "**Apply**" to activate the configurations. |
| **Help** | Show help file. |

### 5.1.7 Warning

Warning function is very important for managing switch. You can manage switch by SYSLOG, E-MAIL, and Fault Relay. It helps you to monitor the switch status on remote site. When events occurred, the warning message will send to your appointed server, E-MAIL, or relay fault to switch panel.

#### 5.1.7.1 Fault Alarm

When any selected fault event is happened, the Fault LED in switch panel will light up and the electric relay will signal at the same time.




Fault alarm interface

**System Warning – SYSLOG Setting**

The SYSLOG is a protocol to transmit event notification messages across networks.

Please refer to RFC 3164 - The BSD SYSLOG Protocol


System Warning – SYSLOG Setting interface

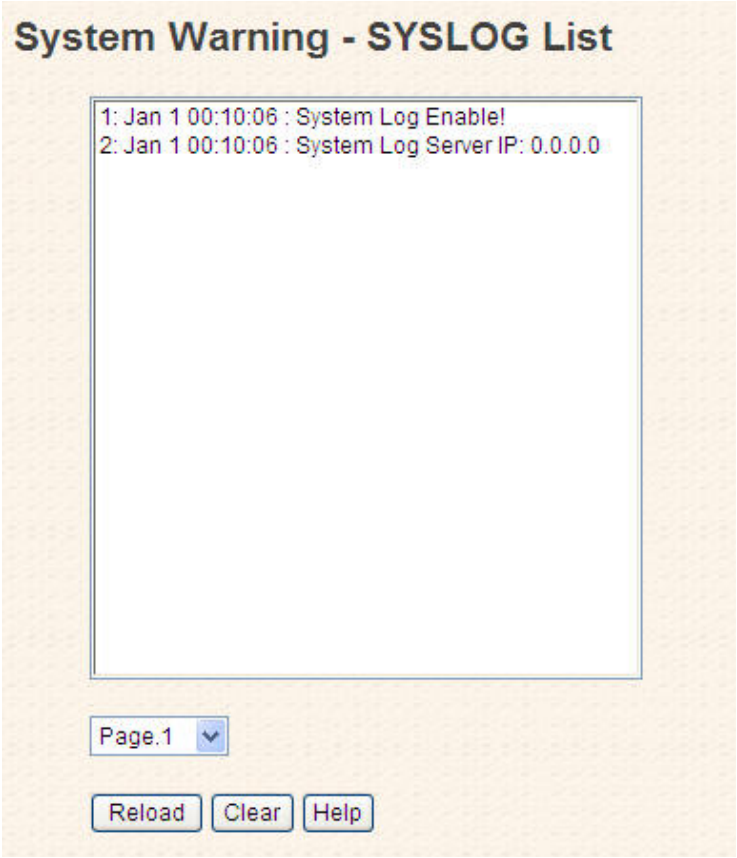
The following table describes the labels in this screen.

| Label | Description |
|---|---|
| **SYSLOG Mode** | ■ **Disable:** disable SYSLOG.<br>■ **Client Only:** log to local system.<br>■ **Server Only:** log to a remote SYSLOG server.<br>■ **Both:** log to both of local and remote server. |
| **SYSLOG Server IP Address** | The remote SYSLOG Server IP address. |

| | |
|---|---|
| **Apply** | Click "**Apply**" to activate the configurations. |
| **Help** | Show help file. |

**System Event LOG**

If system log client is enabled, the system event logs will show in this table.



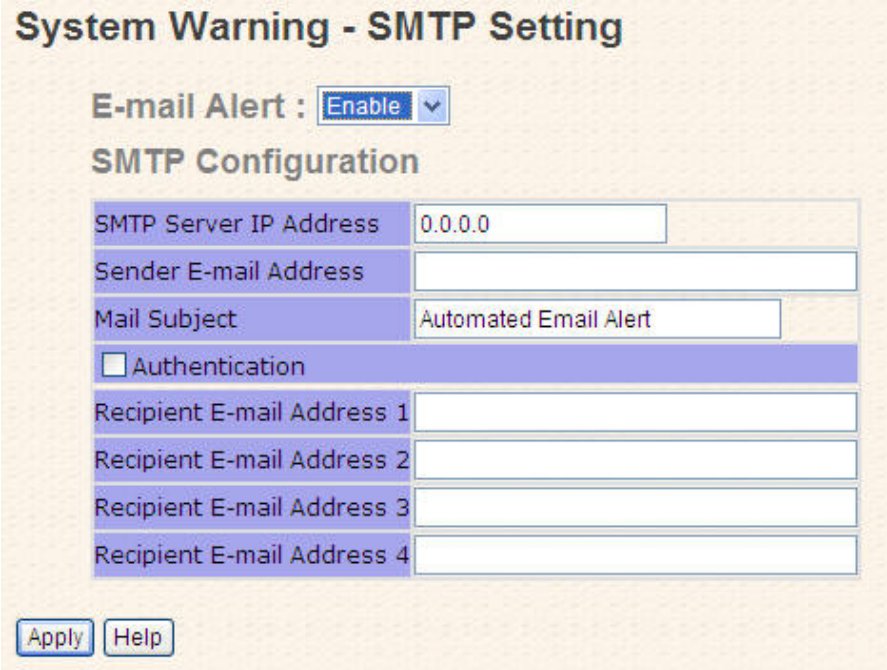

System event log interface

The following table describes the labels in this screen.

| Label | Description |
|---|---|
| **Page** | Select LOG page. |
| **Reload** | To get the newest event logs and refresh this page. |
| **Clear** | Clear log. |
| **Help** | Show help file. |

**System Warning – SMTP Setting**

The SMTP is Short for Simple Mail Transfer Protocol. It is a protocol for e-mail transmission across the Internet. Please refer to RFC 821 - Simple Mail Transfer Protocol.



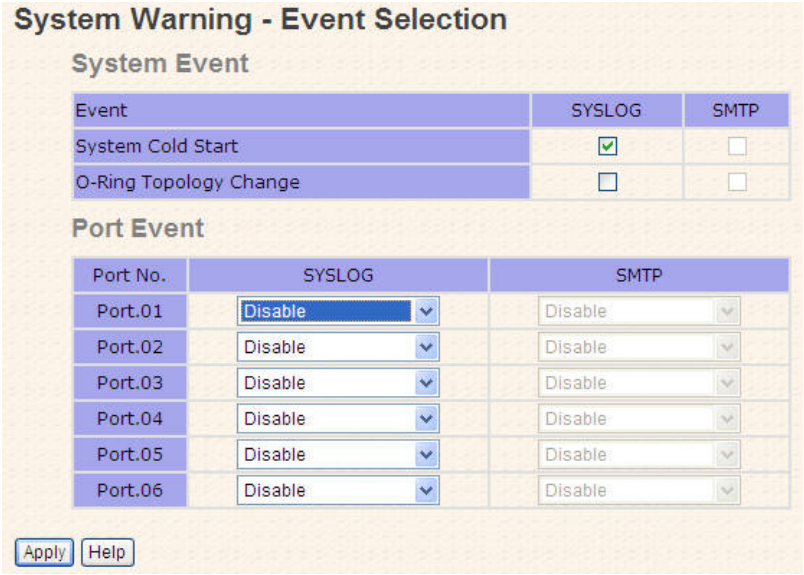

System Warning – SMTP Setting interface

The following table describes the labels in this screen.

| Label | Description |
|---|---|
| **E-mail Alarm** | Enable/Disable transmission system warning events by e-mail. |
| **Sender E-mail Address** | The SMTP server IP address |
| **Mail Subject** | The Subject of the mail |
| **Authentication** | ■ **Username:** the authentication username.<br>■ **Password:** the authentication password.<br>■ **Confirm Password:** re-enter password. |
| **Recipient E-mail Address** | The recipient's E-mail address. It supports up to 6 recipients per mail. |
| **Apply** | Click "**Apply**" to activate the configurations. |
| **Help** | Show help file. |

**System Warning – Event Selection**

SYSLOG and SMTP are the two warning methods that supported by the system. Check the corresponding box to enable system event warning method you wish to choose. Please note that the checkbox can not be checked when SYSLOG or SMTP is disabled.



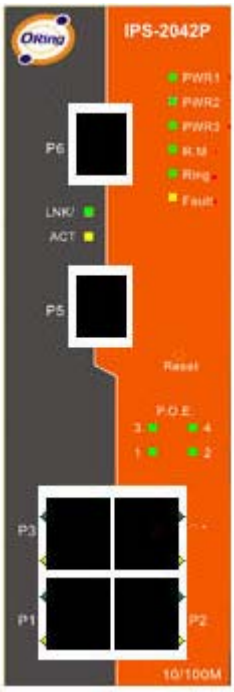

System Warning – Event Selection interface

The following table describes the labels in this screen.

| Label | Description |
|---|---|
| **System Event** | |
| **System Cold Start** | Alert when system restart |
| **O-Ring Topology Change** | Alert when O-Ring topology change |
| **Port Event** | ■ **Disable**<br>■ **Link Up**<br>■ **Link Down**<br>■ **Link Up & Link Down** |
| **Apply** | Click "**Apply**" to activate the configurations. |
| **Help** | Show help file. |

### 5.1.8 Front Panel

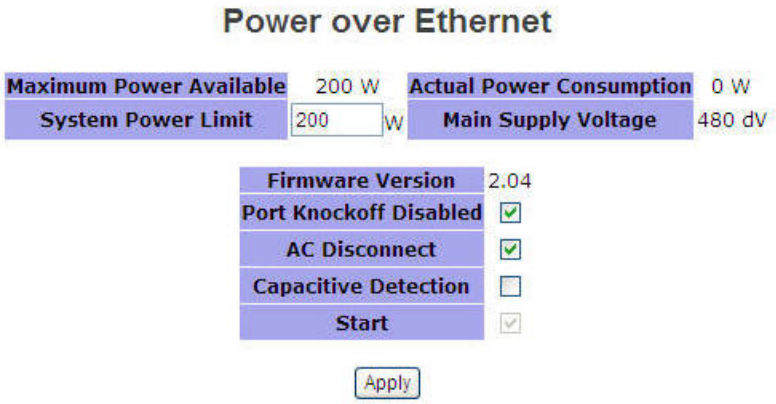
Show IPS-2042P panel. Click "**Close**" to close panel on web.




Front panel interface

### 5.1.9 Power over Ethernet (P.O.E.)

The following interface is the P.O.E. setting interface. There are 4 ports (port 1 to port 4) act as P.S.E. (Power Supply Equipment) ports.



The following table describes the labels in this screen.

| Label | Description |
|---|---|
| **Maximum Power Available** | Display the maximum power available. |
| **System Power Limit** | Set the system power limit. |
| **Actual Power Consumption** | Display the actual power consumption. |
| **Main Supply Voltage** | Display the main supply voltage. |
| **Firmware Version** | Display the firmware version. |
| **Pork Knockoff Disabled** | Mark the blank to enable "Pork Knock off Disabled" function. |
| **AC Disconnect** | Mark the blank to enable "**AC Disconnect**" function. |
| **Capacitive Detection** | Mark the blank to enable "**Capacitive Detection**" function |
| **Start** | Mark the blank to enable "**P.O.E.**" function. |
| **Apply** | Click "**Apply**" to set the configurations. |


P.S.E. port control setting interface

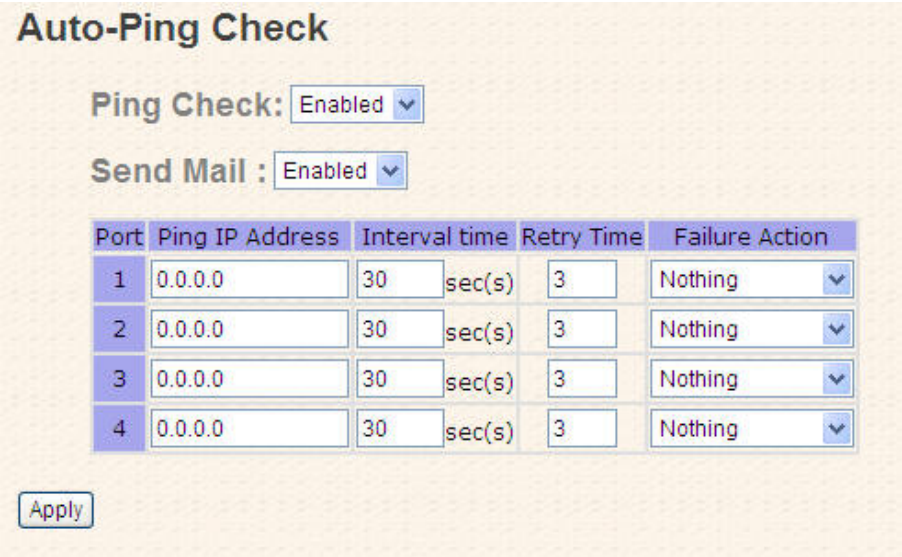
The following table describes the labels in this screen.

| Label | Description |
|---|---|
| **Port** | Port number. |
| **Enable state** | Mark the blank to enable P.O.E. function for specific ports |
| **Power Limit From Classification** | Set the "**Power Limit From Classification**" function for each P.O.E. ports |
| **Legacy** | The legacy detection is to identify the PD devices that did not follow the IEEE 802.3af standard their unique electrical signatures in order for the P.O.E. switch can provide the power to those PD devices |
| **Priority** | Set port priority for the P.O.E. power management. 1 = C (critical), 2 = H (High), 3 = L (Low) |
| **Power Limit** | Set the power limit value. The maximum value must less 15400 |
| **Mode** | Display the PD current operation mode status |

| | |
|---|---|
| **Current(mA)** | Display current value |
| **Voltage(V)** | Display voltage value |
| **Power(mW)** | Display watt value |
| **Determined Class** | Display power class. When the Bypass classification enable, the class value will not show in here |
| **Apply** | Click "**Apply**" to set the configurations. |

## 5.1.10 Auto-Ping Check

You can control the P.O.E. function by using the ping command , in order to turn on or off other P.O.E. device which connect with port assign.

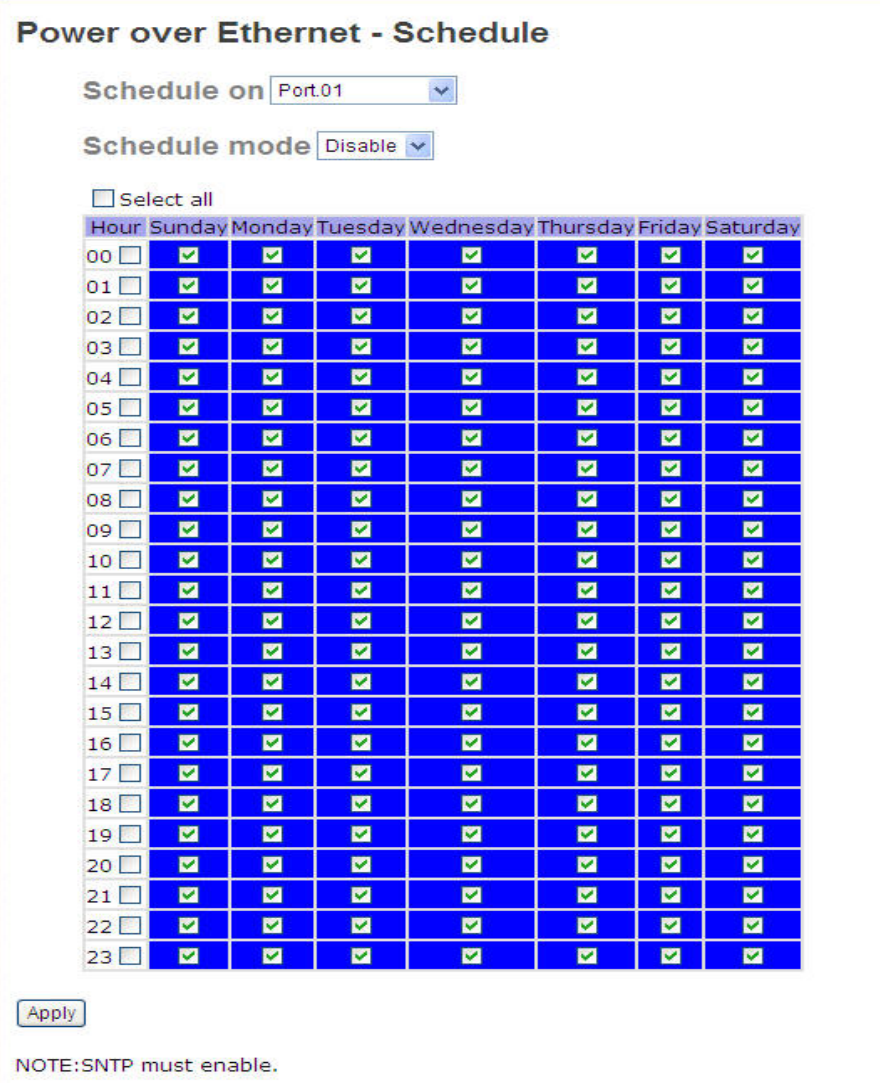



The following table describes the labels in this screen.

| Label | Description |
|---|---|
| **Ping Check** | Enable or disable Ping Check function |
| **Send Mail** | When " ping " fails, can notify users by mail |
| **Port** | You can appoint to want to control P.O.E. port number |
| **Ping IP Address** | Set up IP Address |
| **Interval Time** | Spacing interval to set up Ping |
| **Retry Time** | Set up the number of times of ping |
| **Failure Action** | Set up movements wanted to carry out |

## 5.1.11 Schedule

User can appointed date and time, Enable or Close Power Over Ethernet Function, switch can with according to the time when is set up, carry on the designated movements (SNTP Function must Enable)




The following table describes the labels in this screen.

| Label | Description |
|---|---|
| **Schedule on** | Setting action port |
| **Schedule mode** | Schedule mode enable or disable |
| **Select all** | Select all Data & Time |
| **Hour** | Set up enable Time |
| **Sunday ~ Saturday** | Set up enable Data |

### 5.1.12 Save Configuration

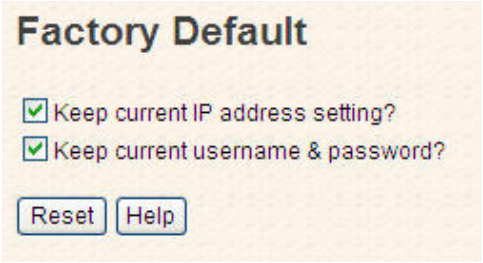
If any configuration changed, "**Save Configuration**" should be clicked to save current configuration data into the permanent flash memory. Otherwise, the current configuration will be lost when power off or system reset.


System Configuration interface

The following table describes the labels in this screen.

| Label | Description |
|---|---|
| **Save** | Save all configurations. |
| **Help** | Show help file. |

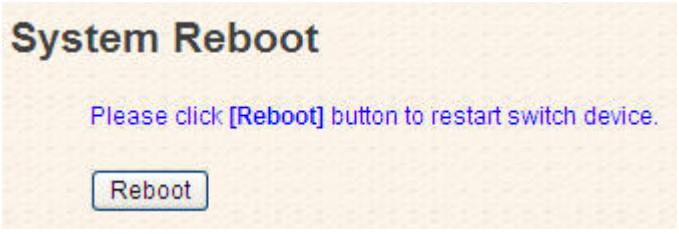
### 5.1.13 Factory Default




Factory Default interface

Reset switch to default configuration. Click Reset to reset all configurations to the default value. You can select "**Keep current IP address setting**" and "**Keep current username & password**" to prevent IP and username & password from default.

### 5.1.14 System Reboot




System Reboot interface

# Technical Specifications

| | |
|---|---|
| **Technology** | |
| Ethernet Standards | IEEE802.3 10BASE-T<br>IEEE802.3u 100BASE-TX and 100BASE-FX<br>IEEE802.3x Flow Control and Back pressure<br>IEEE802.3af Power over Ethernet specification<br>IEEE802.1D Spanning tree protocol<br>IEEE802.1w Rapid Spanning tree protocol<br>IEEE802.1AB LLDP |
| MAC addresses | 2048 |
| Flow Control | IEEE 802.3x Flow Control and Back-pressure |
| VLAN | Port based |
| Processing | Store-and-Forward |
| Firmware upgrade | TFTP |
| Ring redundancy | O-Ring<br>Couple Ring<br>Dual Homing<br>Open-Ring<br>Fast recovery<br>STP<br>RSTP |
| **Interface** | |
| RJ45 Ports | 10/100Base-T(X), Auto MDI/MDI-X (4x P.O.E. P.S.E.) |
| Fiber Ports | 100 Base-FX SFP<br>Multi-Mode SFP module<br>Single-Mode SFP module |
| LED Indicators | Per Unit : Power x 3(Green)<br>RJ45 Ports:<br>Per Port : Link/Activity(Green/Blinking Green),<br>Link(Amber)<br>P.O.E. LED: P.O.E. power supplied(Green)<br>SFP Ports:<br>Per Port : Link/Activity (Green) |
| **Power Requirements** | |
| Power Input Voltage | PWR1/2: +48V DC in 7 pin Terminal block |

| | |
|---|---|
| | PWR3: +48VDC in Power Jack |
| Reverse Polarity Protection | Present |
| Power Consumption | 7 Watts (Power supplied for PD not included) |
| **Environmental** | |
| Wide Operating Temperature | -40 to 70°C |
| Storage Temperature | -40 to 85°C |
| Operating Humidity | 5% to 95%, non-condensing |
| **Mechanical** | |
| Dimensions(W x D x H) | 54.2 mm(W)x 106.1 mm( D )x 145.4 mm(H) |
| Casing | IP-30 protection |
| **Regulatory Approvals** | |
| Regulatory Approvals | FCC Part 15, CISPER (EN55022) class A |
| EMS | EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS) |
| Shock | IEC 60068-2-27 |
| Free Fall | IEC 60068-2-32 |
| Vibration | IEC 60068-2-6 |
| **Warranty** | 5 years |