GeoVision inc
The Vision of Security

GV-PoE Switch

GV-POE0811-V2 User's Manual

Before attempting to connect or operate this product,
please read these instructions carefully and save this manual for future use.

POE0811V2-A

Every effort has been made to ensure that the information in this manual is accurate. GeoVision, Inc. makes no expressed or implied warranty of any kind and assumes no responsibility for errors or omissions. No liability is assumed for incidental or consequential damages arising from the use of the information or products contained herein. Features and specifications are subject to change without notice.

GeoVision, Inc.
9F, No. 246, Sec. 1, Neihu Rd.,
Neihu District, Taipei, Taiwan
Tel: +886-2-8797-8377
Fax: +886-2-8797-8335
http://www.geovision.com.tw

April 2017

Contents

1. Safety Precautions

FCC Warning

This Equipment has been tested and found to comply with the limits 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 in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. It may cause harmful interference to radio communications if the equipment is not installed and used in accordance with the instructions. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the users are encouraged to try to correct the interference by one or more of the following measures:

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

CE Mark Warning

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

2. Introduction

2.1 Product Overview

The GV-POE0811-V2 is an 8-port 10/100/1000BaseT(X) Ports + 2-port Gigabit uplink (1 x RJ-45 + 1 x SFP) Desktop Web Managed PoE Switch. The switch supports IEEE 802.3at Power over Ethernet standard and maximum 130W power consumption per system and no special network cable required for your powered devices (PD), such as IP cameras. The switch also provides exceptionally smart Web management features, such as VLAN, QoS, LLDP, IGMP Snooping, Link Aggregation and etc. The switch is designed for small or medium network environment to strengthen its network connection. It also gives you the option of installing it in a 19" cabinet by rack-mount kits or underneath a desk.

2.2 Key Features

Interface

- Number of Ports: 10
  - 8-port 10/100/1000BaseT(X) with RJ-45 Connectors, PoE+
  - 1-port Gigabit SFP Uplink Port
  - 1-port Gigabit RJ-45 Uplink Port

Performance

- MAC Address: 8 K
- Buffer Memory: 4 M bits
- Jumbo Frames: 9.6 KB
- Transmission Method: Store and Forward Mechanism

Software Feature Description

- Port Management
  - Port Configuration: Enable / Disable such as Link State, Speed, Flow Control, Monitor Link Status
  - Port Mirroring: One to one, one to many, many to one mirroring
  - PoE Control: PoE Enable / Disable, PoE Status

- Port Counter (Statistic): Monitor the port statistic

- VLAN Setting
  - VLAN Mode: Port-based and Tag-based VLAN
  - Port Based VLAN: 16 ports
  - Tag Based VLAN: Up to 16 VLANs, Available VID from 1~4094
- QoS Setting
  - Supports up to 8 queues
  - Class of Service schemes: 802.1p, DSCP
  - TCP / UDP Port & Priority queue mapping
- Trunking
  - Trunking Type: Static Trunk
  - Trunk Group: Up to 8 Groups
- IGMP Snooping V1&V2
- Basic Features
  - Embedded HTTP Web Management
  - User name / Password Authentication Configuration
  - Configuration Backup / Recovery
  - Secure Management
  - Firmware Upgrade

2.3 Package Contents

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

1. GV-POE0811-V2 x 1

2. AC Power Cord x 1

3. Rack Mount Kit x 1 + Screw x 8

4. User's Manual CD x 1

5. GV-POE0811-V2 Installation Guide x 1

2.4 Options

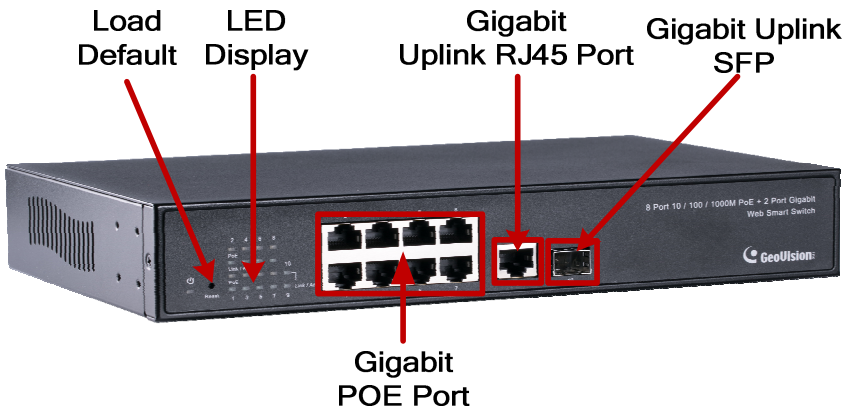
Optional devices can expand your GV-POE0811-V2's capabilities and versatility. Contact your dealer for more information.

GV-LC and GV-LC10	The SFP Transceiver is designed to plug into the SFP port of the GV-POE Switch and is the interface between the switch and optical fiber cables. This product complies with IEEE 802.3z 1000BaseSX/LX standards. The SFP Transceiver is a hot swappable device; you can add or remove the device without powering down.

3. Hardware Description

This section gives a physical and functional overview on the 8-Port Gigabit Ethernet with 2-Port Open Slots Gigabit SFP Web Management Switch.

Product Overview



Front Ethernet Ports

The front panel of this switch consists of 8 10/100/1000 Base-TX RJ-45 ports, 1 Gigabit SFP Uplink port, and 1 10/100/1000 Base RJ-45 Uplink port. The LED Indicators are also located on the front panel.

LED Indicators

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

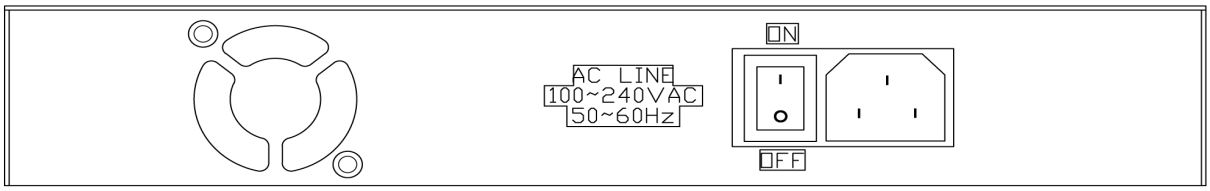
LED	Color/Status	Description	No. of LED
Power	Amber On	Power on	Power
Link / ACT	Green On	Link Up	Port 1~8 (10/100M/1000M)
	Green Blinking	Data activating	
PoE	Amber On	Port is linked to Power Device	
	Off	No Power Device is connected	

Reset Button

The button allows you to restore the configuration to default. For details see *10. Restoring Default Settings* later in this manual.

Rear Panel

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



Hardware Installation

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

AC Power Input

Connect the attached power cord to the AC power input connector; the available AC power input is range from 100-240 V/AC.

Ethernet Cable Request

The wiring cable types are as below.

10/100BaseT(X): 2-pair UTP/STP Cat. 5 cable, EIA / TIA-568 100-ohm (Max. 100 m)

1000BaseT: 4-pair UTP/STP Cat. 5e, 6 cable, EIA / TIA-568 100-ohm (Max. 100 m)

PoE: To deliver power without problem, the Cat 5 / 5e and Cat 6 cable is suggested. The high quality Ethernet cable reduces the lost while power transmission.

SFP Installation

While installing the SFP transceiver, make sure the SFP type of the 2 ends and the transmission distance, wavelength, fiber cable meet your request. The way to connect the SFP transceiver is to plug in SFP fiber transceiver first. The SFP transceiver has 2 plugs for fiber cable: one is TX (transmit), and the other is RX (receive). Cross-connect the transmit channel at each end to the receive channel at the opposite end.

Important: The maximum cable length for Gigabit RJ-45 is100 meters. For connection that exceeds 100 meters, you can use the Gigabit SFP ports.

---

4. Preparation for Web Configuration

The Web management page allows you to use a standard Web-browser such as Microsoft Internet Explorer, Google Chrome or Mozilla Firefox, to configure and interrogate the switch from anywhere on the network.

Before using the Web user interface to manage switch operation, verify that your switch is properly installed on your network and that every PC on this network can access the switch via the Web browser.

Verify that your network interface card (NIC) is operational, and that your operating system supports TCP/IP protocol.

Wire the switch power and connect your computer to the switch. The switch default IP address is **192.168.0.250**. The switch and the connected PC should locate within the same IP Subnet.

Change your computer's IP address to 192.168.0.xxx or other IP address which is located in the 192.168.0.xxx (For example: IP Address: 192.168.0.2; Subnet Mask: 255.255.255.0) subnet.

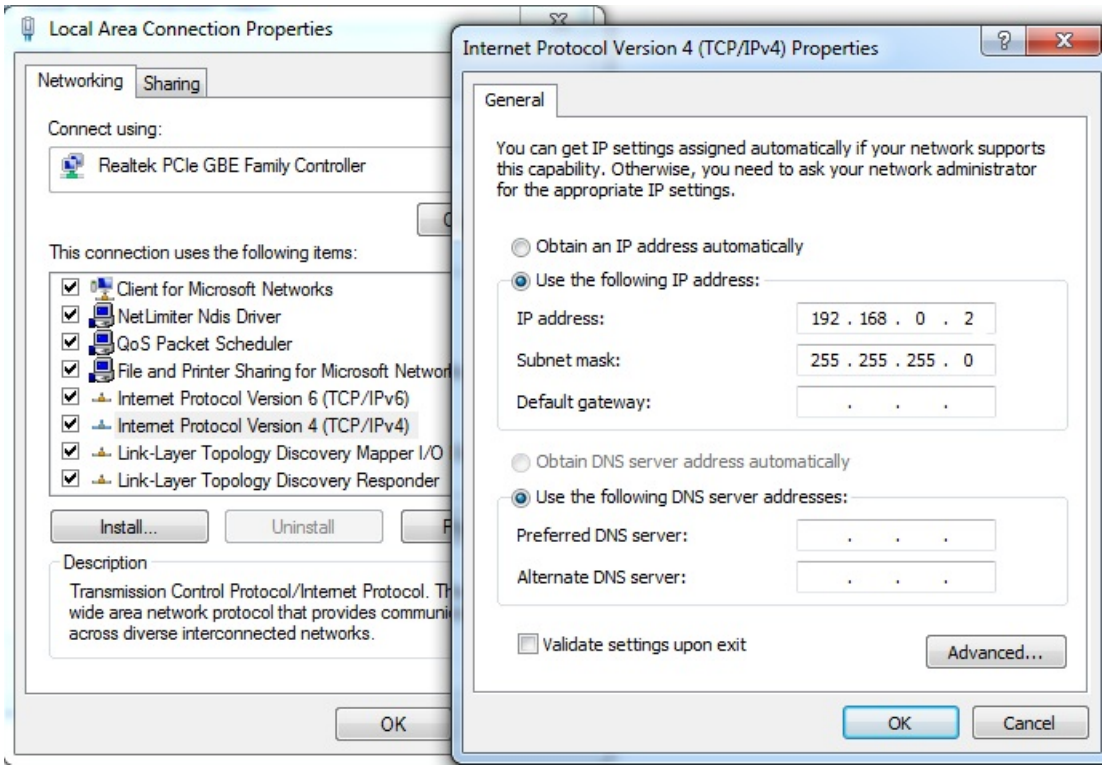


Figure 4-1

Launch the Web browser and Login

1. Launch the Web browser (Internet Explorer, Mozilla Firefox or Google Chrome) on the PC.
2. Type **http://192.168.0.250** (or the IP address of the switch). And then press **Enter**.
3. The login screen will appear next.
4. Type the default password: **admin**.

If you can't login the switch, the following steps can help you to identify the problem.

1. Switch to DOS command mode and type the "***ipconfig***" to check the NIC's setting. Type the "***ping 192.168.0.250***" to verify a normal response time.

2. Check the security or Firewall settings, high security level may limit the Web access.

3. Try a different Web browser, like the Mozilla or Google Chrome.

5. User Login

This part instructs users how to set up and manage the switch through the Web user interface. Follow the description to understand the procedure.

At first, open the Web browser, type **http://192.168.0.250** and then the users will see the login page. Type the default password **admin** and click **Apply** to pass the authentication.

Login Page

Figure 5-1

Once you are logged in, the main page will appear.

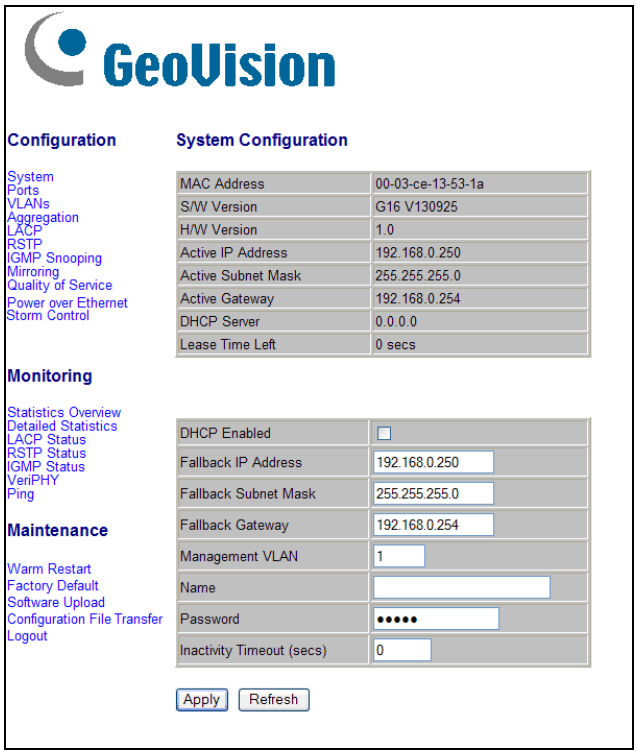


Figure 5-2

6. Configuration

6.1 System

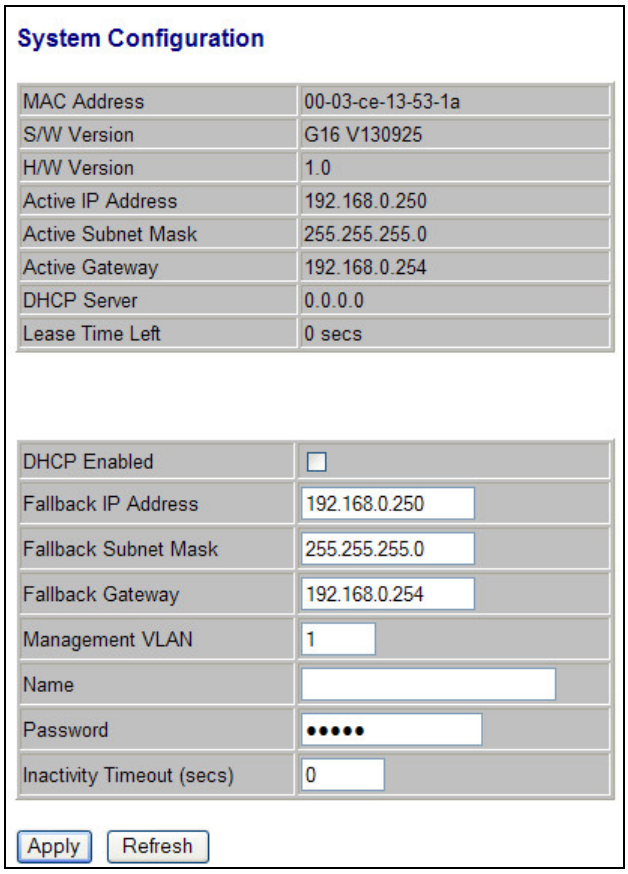


Figure 6-1

The System Configuration page displays the following information:

- **MAC Address:** Displays the unique hardware address assigned by manufacturer (default).
- **S/W Version:** Displays the switch's firmware version.
- **H/W Version:** Displays the switch's Hardware version.
- **Active IP Address:** Displays current IP address.
- **Active Subnet Mask:** Displays current Subnet Mask.
- **Active Gateway:** Displays current Gateway.
- **DHCP Server:** Displays current DHCP Server.
- **Lease Time Left:** Displays the least received from the DHCP server after the DHCP Client is enabled.

- **DHCP Enabled:** Click to enable the switch to act as the DHCP Client, and the switch will try getting the IP Address from the DHCP server.
- **Fallback IP address:** Manually assign the IP address that the network is using. The default IP is **192.168.0.250**.
- **Fallback Subnet Mask:** Assign the subnet mask to the IP address. The default IP is **255.255.255.0**.
- **Fallback Gateway:** Assign the network gateway for industrial switch. The default gateway is **192.168.2.254**.
- **Management VLAN:** ID of a configured VLAN (1-4094) through which you can manage the switch. By default, all ports on the switch are members of VLAN 1. However, if the management VLAN is changed, the management station must be attached to a port belonging to this VLAN.
- **Name:** Type in the new user name. The default value is **admin**.
- **Password:** Type in the new password. The default value is **admin**.
- **Inactivity Timeout (secs):** Specify the period for the system to time out and display the login page when there is no activity.

Click **Apply** to have the configuration take effect. Click **Refresh** to reset the configuration.

Note: After changed to DHCP mode, the switch must be restarted to get a new IP address. However, since the switch only provides Web management, it is hard for users to find its new IP. Do not try this mode without pre-configured DHCP setting in DHCP Server.

6.2 Ports

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

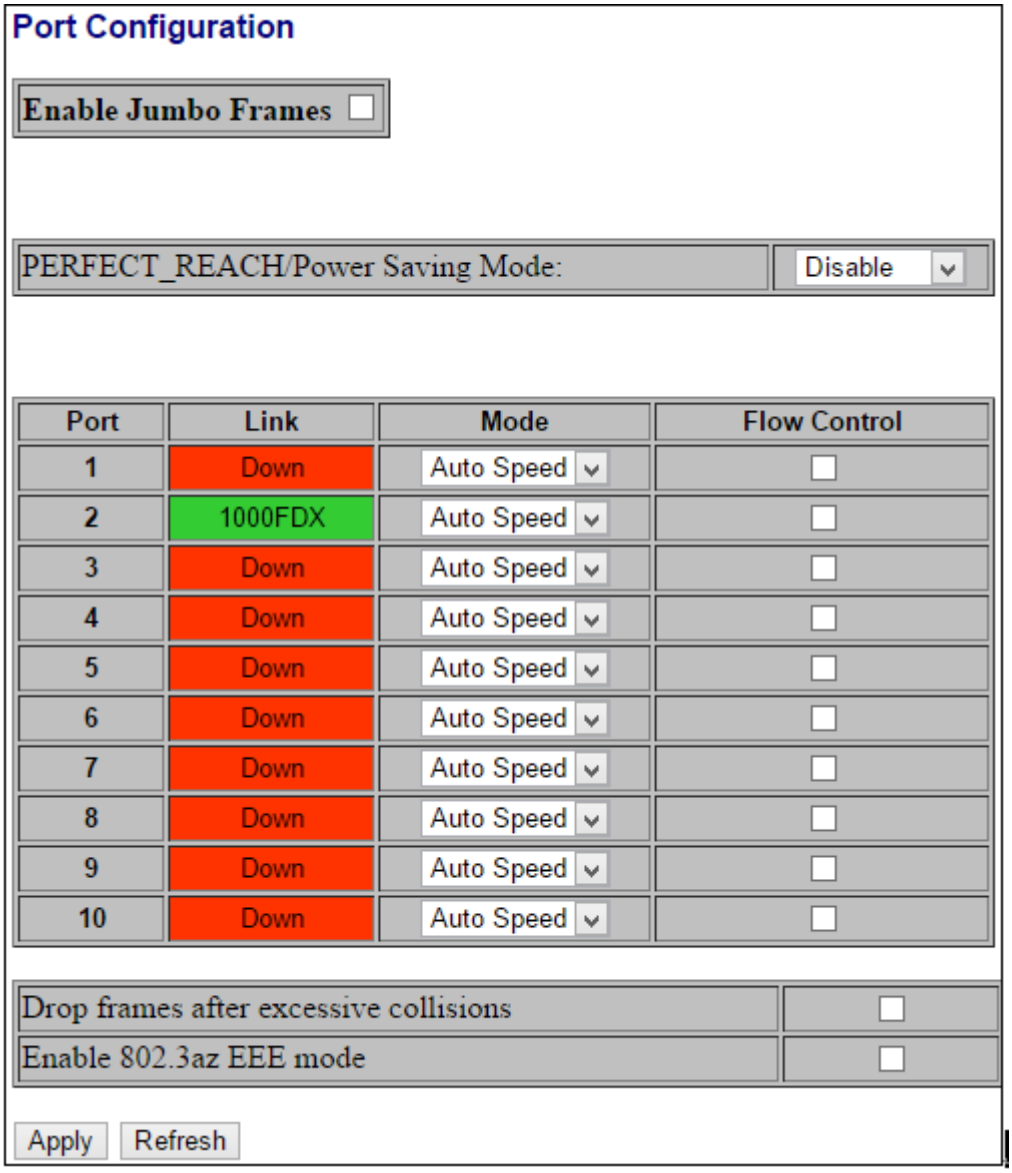


Figure 6-2

- **Enable Jumbo Frames:** This switch provides more efficient throughput for large sequential data transfers by supporting jumbo frames on Gigabit Ethernet ports up to 9216 bytes. Compared to standard Ethernet frames that run only up to 1.5 KB, using jumbo frames significantly reduces the per-packet overhead required to process protocol encapsulation fields.
- **Power Saving Mode:** Select **Full**, **Link-up**, **Link-down** or **Disable** to adjust the power provided to ports based on the length of the cable used to connect to other devices. Only sufficient power is used to maintain connection requirements.

- **Port Configuration**
  - **Mode:** Set the port speed as **Auto**, **10 half**, **10 Full**, **100 Half**, **100 Full**, **1000 Full** or **Disabled**.
  - **Flow Control:** Enable the automatic management of transmission speed.
- **Drop frames after excessive collisions:** Enable the switch to drop frames when excessive collisions occur in half-duplex mode.
- **Enable 802.3az EEE mode:** EEE (Energy-Efficient Ethernet) is a power saving option that reduces the power usage when there is low or no traffic utilization by powering down circuits when there is no traffic. You can enable this function to save power.

IMPORTANT: To ensure the speed of data transmission, make sure the network card of the PC used for accessing the switch supports Gigabit Ethernet before enabling the Jumbo Frames function.

6.3 VLANs

A Virtual LAN (VLAN) is a logical network grouping that limits the broadcast domain, which would allow you to isolate network traffic, so only the members of the same VLAN will receive traffic from the ones of the same VLAN. Basically, creating a VLAN from a switch is logically equivalent of reconnecting a group of network devices to another Layer 2 switch. However, all the network devices are still plugged into the same switch physically.

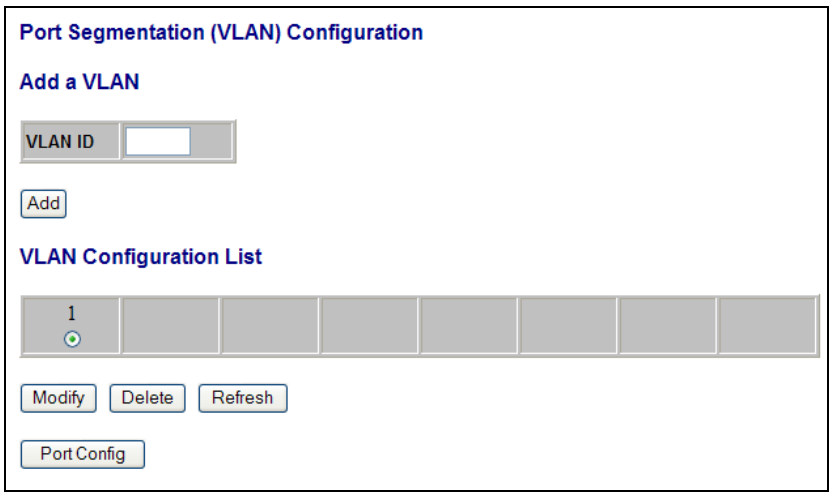


Figure 6-3

[Add a VLAN]

- **VLAN ID:** ID of configured VLAN (1-4094, no leading zeroes). Click **Add** to select the member ports of the added VLAN.

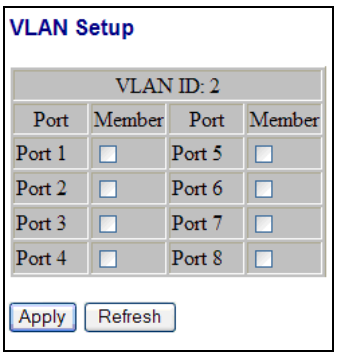


Figure 6-4

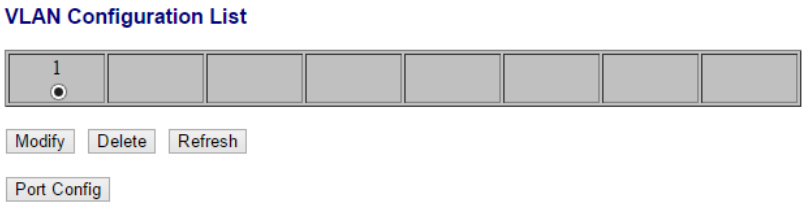


Figure 6-5

[VLAN Configuration List]

Lists all the current VLAN groups created for this system. Up to 16 VLAN groups can be defined. VLAN 1 is the default untagged VLAN.

- **Modify:** Press this button to modify the VLAN member port of the selected VLAN.
- **Delete:** Press this button to delete the selected VLAN.
- **Refresh:** Press this button to refresh web page.
- **Port Config:** Press this button to enter the VLAN Per Port Configuration.

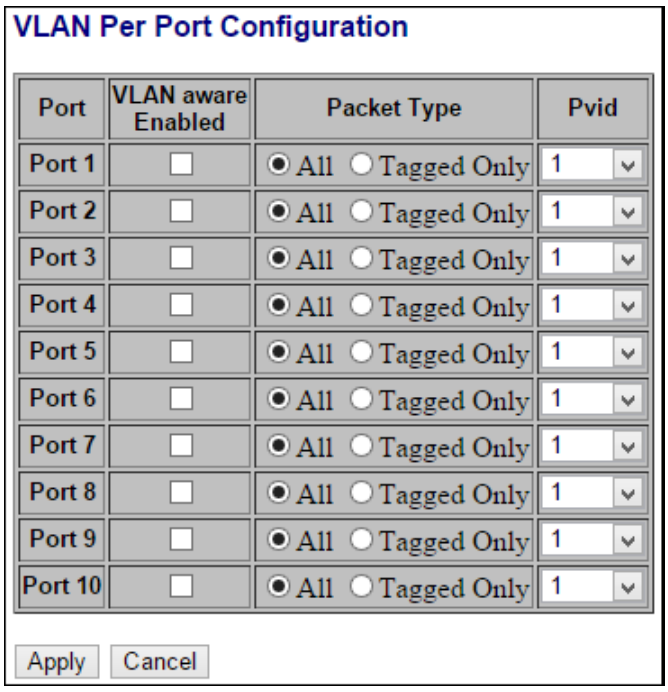


Figure 6-6

[VLAN Per Port Configuration]

- **LAN Aware Enabled :** Click the check box to enable the VLAN Aware function.
- **Packet Type :** Here you can set if the port will accept all packets, or only packets that are tagged with the set PVID.
- **PVID :** Click the scroll-down menu to select an existing VLAN as the PVID.

6.4 Aggregation

Port trunk allows multiple links to be bundled together and act as a single physical link for increased throughput. It provides load balancing, and redundancy of links in a switched inter-network. Actually, the link does not have an inherent total bandwidth equal to the sum of its component physical links. Traffic in a trunk is distributed across an individual link within the trunk in a deterministic method that called a hash algorithm. The hash algorithm automatically applies load balancing to the ports in the trunk. A port failure within the trunk group causes the network traffic to be directed to the remaining ports. Load balancing is maintained whenever a link in a trunk is lost or returned to service.

To assign a port to a trunk, click the required trunk number and click **Apply**.

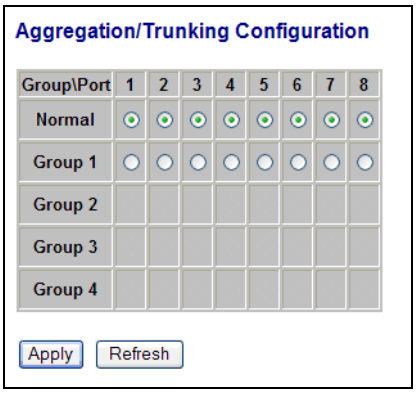


Figure 6-7

6.5 IGMP Snooping

IGMP Snooping is the process of listening to IGMP network traffic. IGMP Snooping, as implied by the name, is a feature that allows a layer 2 switch to “listen in” on the IGMP conversation between hosts and routers by processing the layer 3 IGMP packets sent in a multicast network.

When IGMP Snooping is enabled in a switch it analyzes all IGMP packets between hosts connected to the switch and multicast routers in the network. When a switch hears an IGMP report from a host for a given multicast group, the switch adds the host’s port number to the multicast list for that group. And, when the switch hears an IGMP Leave, it removes the host’s port from the table entry.

Prevents flooding of IP multicast traffic, and limits bandwidth intensive video traffic to only the subscribers.

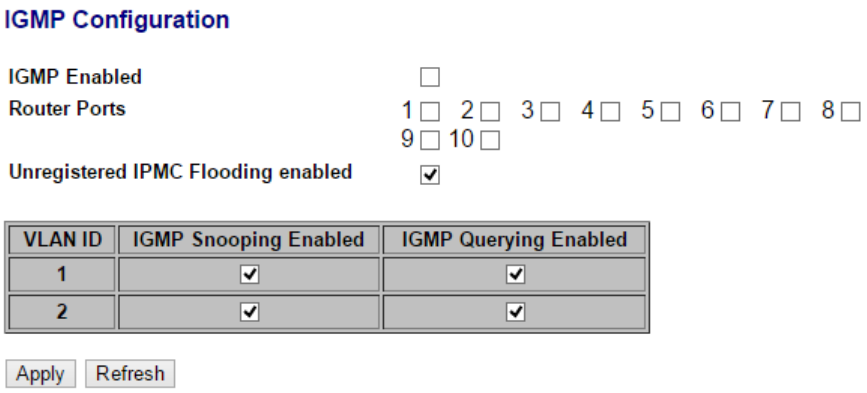


Figure 6-8

- **IGMP Enabled:** When enabled, the switch will monitor network traffic to determine which hosts want to receive multicast traffic.
- **Router Ports:** Set if ports are connecting to the IGMP administrative routers.
- **Unregistered IPMC Flooding enabled:** Set the forwarding mode for unregistered (not-joined) IP multicast traffic. The traffic will flood when enabled, and forward to router-ports only when disabled.
- **IGMP Snooping Enabled:** When enabled, the port will monitor network traffic to determine which hosts want to receive the multicast traffic.
- **IGMP Querying Enabled:** When enabled, the port can serve as the Querier, which is responsible for asking hosts if they want to receive multicast traffic.

6.6 Mirroring

Port Mirroring is used on a network switch to send a copy of network packets seen on one switch port (or an entire VLAN) to a network monitoring connection on another switch port. This is commonly used for network appliances that require monitoring of network traffic, such as an intrusion-detection system.

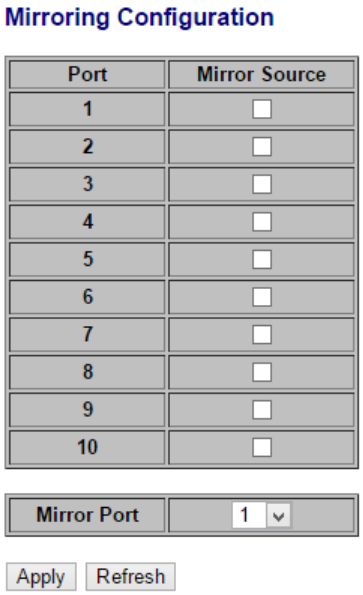


Figure 6-9

- **Mirror Source:** The port that will “duplicate” or “mirror” the traffic on the source port. Only incoming packets can be mirrored. Packets will be dropped when the available egress bandwidth is less than ingress bandwidth.
- **Mirror Port:** Select the ports that you want to mirror from this section of the page. A port will be mirrored when the “Mirroring Enabled” check-box is checked.

6.7 LLDP

The Link Layer Discovery Protocol (LLDP) allows stations attached to an IEEE 802 LAN to advertise, to other stations attached to the same IEEE 802 LAN, the major capabilities provided by the system incorporating that station, the management address or addresses of the entity or entities that provide management of those capabilities, and the identification of the stations point of attachment to the IEEE 802 LAN required by those management entity or entities. The information distributed via this protocol is stored by its recipients in a standard Management Information Base (MIB), making it possible for the information to be accessed by a Network Management System (NMS) using a management protocol such as the Simple Network Management Protocol (SNMP).

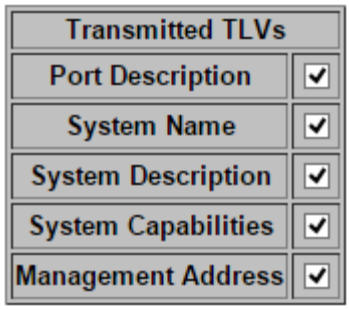


Figure 6-10

- **Port Description:** The port description will be included in LLDP information transmitted when this option is selected.
- **System Name:** The system name will be included in LLDP information transmitted when this option is selected.
- **System Description:** The system description will be included in LLDP information transmitted when this option is selected.
- **System Capabilities:** The system capability will be included in LLDP information transmitted when this option is selected.
- **Management Address:** The management address will be included in LLDP information transmitted when this option is selected.

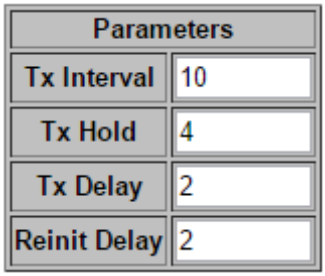


Figure 6-11

- **Tx Interval:** The switch periodically transmits LLDP frames to its neighbours for having the network discovery information up-to-date. The interval between each LLDP frame is determined by the Tx Interval value.
- **Tx Hold:** Each LLDP frame contains information about how long the information in the LLDP frame shall be considered valid. The LLDP information valid period is set to Tx Hold multiplied by Tx Interval seconds.
- **Tx Delay:** If some configuration is changed (e.g. the IP address) a new LLDP frame is transmitted, but the time between the LLDP frames will always be at least the value of Tx Delay seconds. Tx Delay cannot be larger than 1/4 of the Tx Interval value.
- **Reinit Delay:** When a port is disabled, LLDP is disabled or the switch is rebooted, an LLDP shutdown frame is transmitted to the neighboring units, signalling that the LLDP information isn't valid anymore. Tx Reinit controls the amount of seconds between the shutdown frame and a new LLDP initialization.

6.8 LLDP State

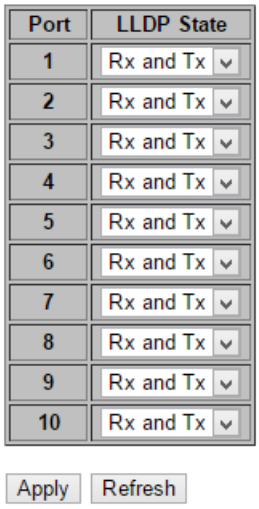


Figure 6-12

Select LLDP mode here. The modes here available here include:

- **Rx and Tx:** The switch will send out LLDP information, and will analyze LLDP information received from neighbours.
- **Rx only:** The switch will not send out LLDP information, but LLDP information from neighbour units is analyzed.
- **Tx only:** The switch will drop LLDP information received from neighbours, but will send out LLDP information.
- **Disabled:** The switch will not send out LLDP information, and will drop LLDP information received from neighbours.

6.9 Quality of Service

In QoS Mode, select **QoS Disabled**, **802.1p** or **DSCP**, and click **Apply** to configure the related parameters.

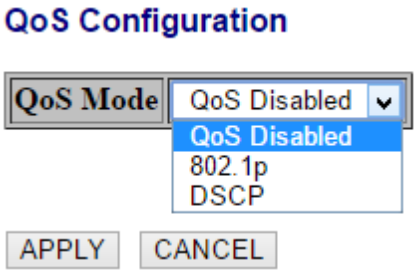


Figure 6-13

[802.1p Configuration]

Packets are prioritized using the 802.1p field in the VLAN tag.

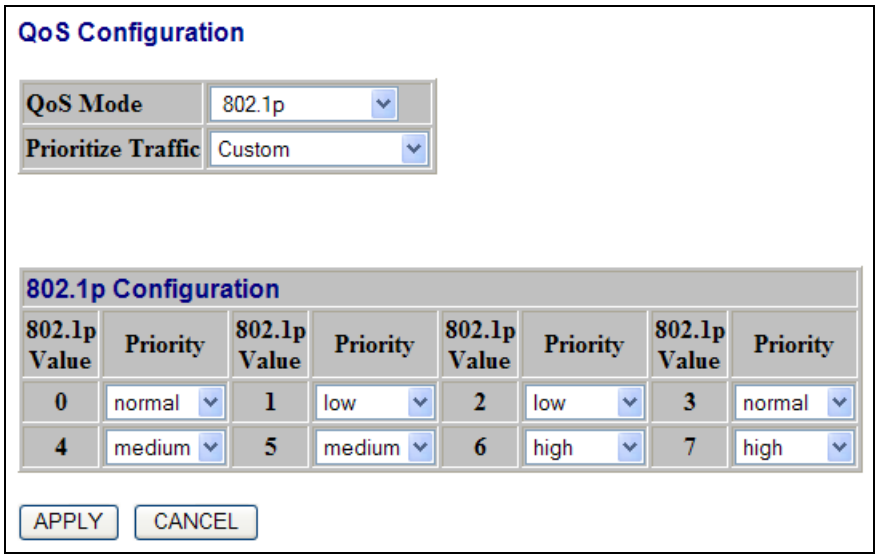


Figure 6-14

- **Prioritize Traffic:** Allows the customization of 802.1p to Traffic classifiers to quickly set the values in the DSCP Configuration table to a common priority queue. Select **Custom** if you want to set each value individually.
- **802.1p Value:** Represents the 802.1p value in the range 0 - 7.
- **Priority:** Allows you to map each of the eight 802.1p values to a local priority queue as **low**, **normal**, **medium** or **high**.

[DSCP Configuration]

Packets are prioritized using the DSCP (Differentiated Services Code Point) value.

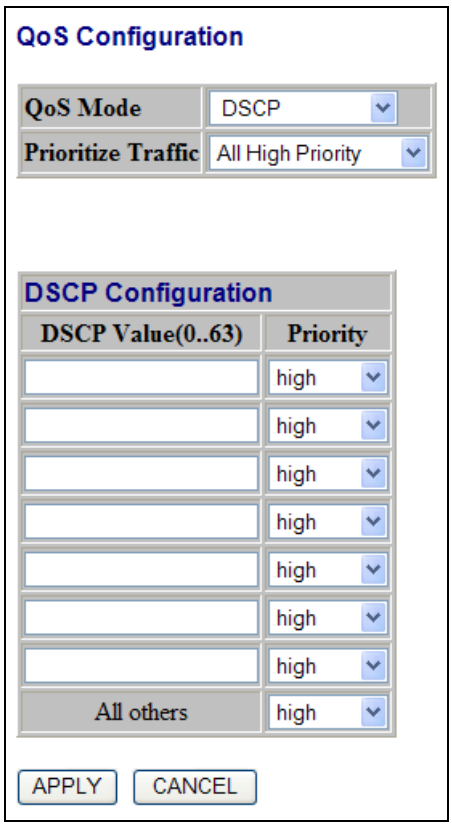


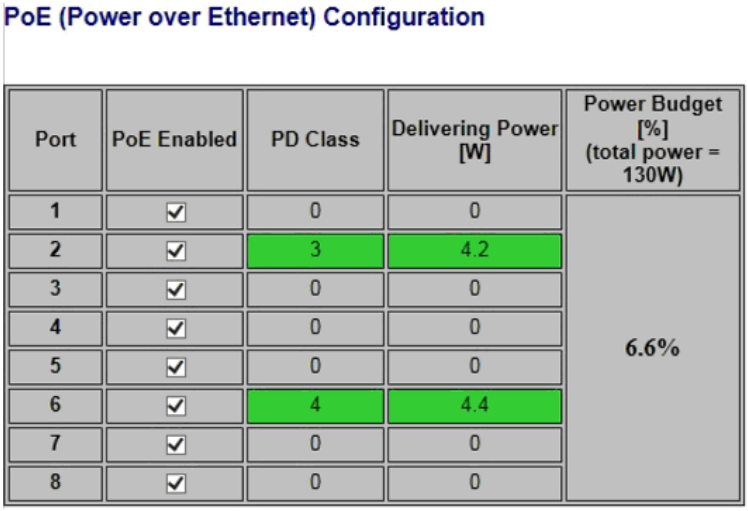
Figure 6-15

- **Prioritize Traffic:** Allows the customization of DSCP to Traffic classifiers to quickly set the values in the DSCP Configuration table to a common priority queue. Select **Custom** if you want to set each value individually.
- **DSCP Value (0..63):** The Differentiated Services Code Point (DSCP) is a six-bit field that is contained within an IP (TCP or UDP) header. The six bits allow the DSCP field to take any value in the range 0 - 63.
- **Priority:** Allows you to map each of the DSCP values to a hardware output queue as **low**, **normal**, **medium** or **high**. The default settings map all DSCP values to the high priority queue.
- **Strict:** Services the egress queues in sequential order, transmitting all traffic in the higher priority queues before servicing lower priority queues.
- **WRR:** Weighted Round-Robin shares bandwidth at the egress ports by using scheduling weights with default values of 1, 2, 4, 8 for queues 0 through 7, respectively. (This is the default selection.)

6.10 Power over Ethernet

PoE technology is a system to pass electrical power safely, along with data, on Ethernet cabling. Power is supplied in common mode over two or more of the differential pairs of sires found in the Ethernet cables and comes from a power supply within a PoE enabled networking devise such as Switch or can be injected into a cable run with a mid-span power supply.

This figure shows all the PoE status when connect or disconnect to the PD device.



PoE (Power over Ethernet) Configuration

Port	PoE Enabled	PD Class	Delivering Power [W]	Power Budget [%] (total power = 130W)
1	☑	0	0	6.6%
2	☑	3	4.2	
3	☑	0	0	
4	☑	0	0	
5	☑	0	0	
6	☑	4	4.4	
7	☑	0	0	
8	☑	0	0	

Figure 6-16

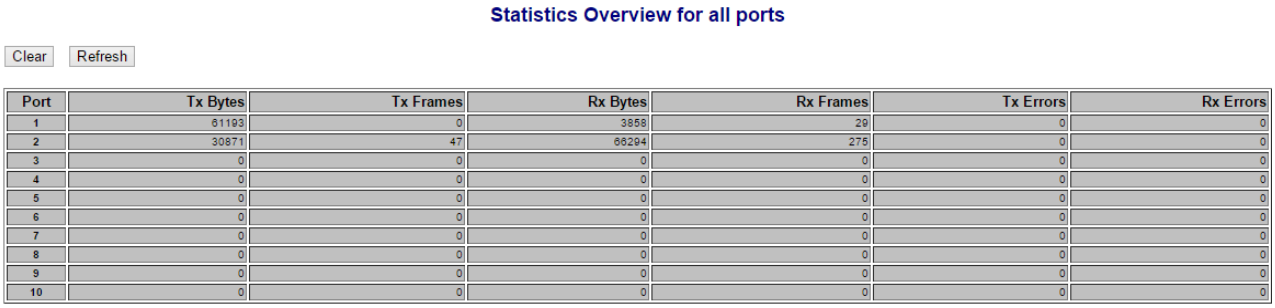
- **PoE Enabled:** POE of the port is able to supply power to the attached PD (Powered Device)
- **PD Class:** Detects the class of PD.
- **Delivering Power (W):** Output power.
- **Power Budget:** Percentage of PoE power that has been used.

Note: The green columns show the status of the connected PD. To protect the system and better product life, configure the Power Budget as lower than 80%.

7. Monitoring

7.1 Statistics Overview

User can mirror traffic from any source port to a target port for real-time analysis the following figures shows clearly the statistics overview. Click **Clear** to renew the details collected and displayed. Click **Refresh** to reset the details displayed.



Statistics Overview for all ports

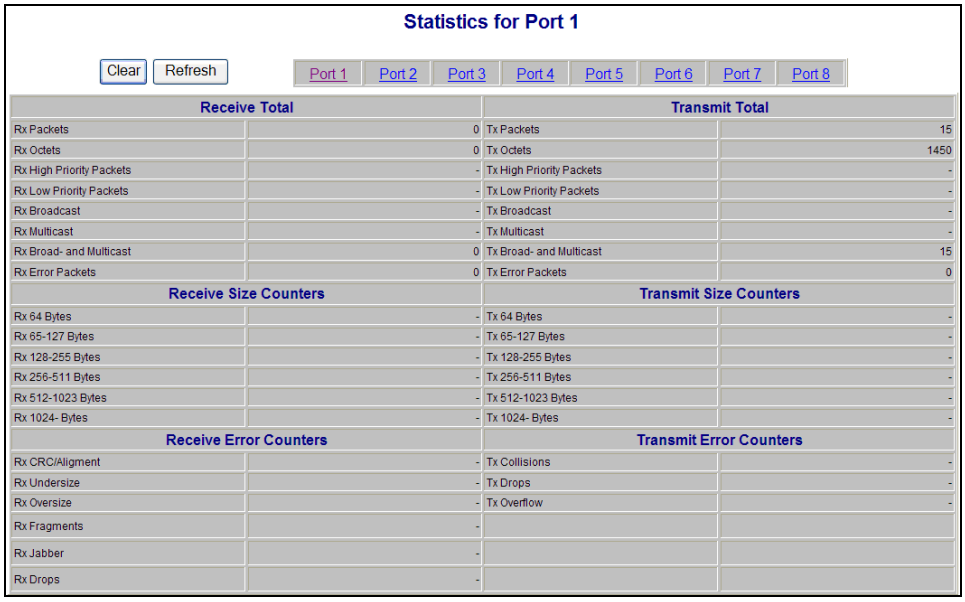
Clear Refresh

Port	Tx Bytes	Tx Frames	Rx Bytes	Rx Frames	Tx Errors	Rx Errors
1	61193	0	3858	29	0	0
2	30871	47	66294	275	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0

Figure 7-1

7.2 Detailed Statistics

To view the statistics of individual ports, click one of the linked port numbers for details.



Statistics for Port 1

Clear Refresh Port 1 Port 2 Port 3 Port 4 Port 5 Port 6 Port 7 Port 8

Receive Total		Transmit Total	
Rx Packets	0	Tx Packets	15
Rx Octets	0	Tx Octets	1450
Rx High Priority Packets	-	Tx High Priority Packets	-
Rx Low Priority Packets	-	Tx Low Priority Packets	-
Rx Broadcast	-	Tx Broadcast	-
Rx Multicast	-	Tx Multicast	-
Rx Broad- and Multicast	0	Tx Broad- and Multicast	15
Rx Error Packets	0	Tx Error Packets	0
Receive Size Counters		**Transmit Size Counters**	
Rx 64 Bytes	-	Tx 64 Bytes	-
Rx 65-127 Bytes	-	Tx 65-127 Bytes	-
Rx 128-255 Bytes	-	Tx 128-255 Bytes	-
Rx 256-511 Bytes	-	Tx 256-511 Bytes	-
Rx 512-1023 Bytes	-	Tx 512-1023 Bytes	-
Rx 1024- Bytes	-	Tx 1024- Bytes	-
Receive Error Counters		**Transmit Error Counters**	
Rx CRC/Aligment	-	Tx Collisions	-
Rx Undersize	-	Tx Drops	-
Rx Oversize	-	Tx Overflow	-
Rx Fragments	-		
Rx Jabber	-		
Rx Drops	-		

Figure 7-2

7.3 IGMP Status

IGMP Status shows the IGMP Snooping statistics for the whole switch.

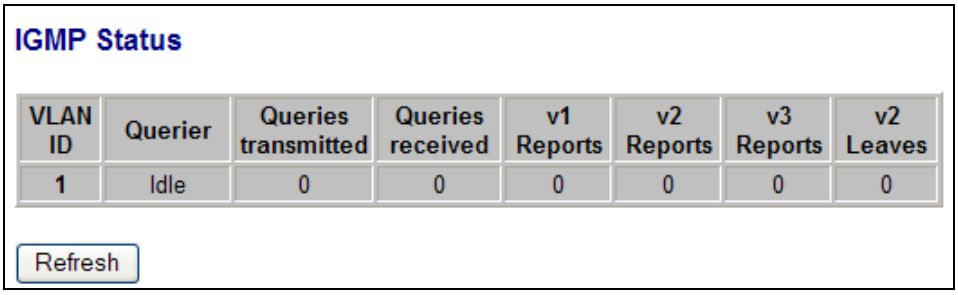
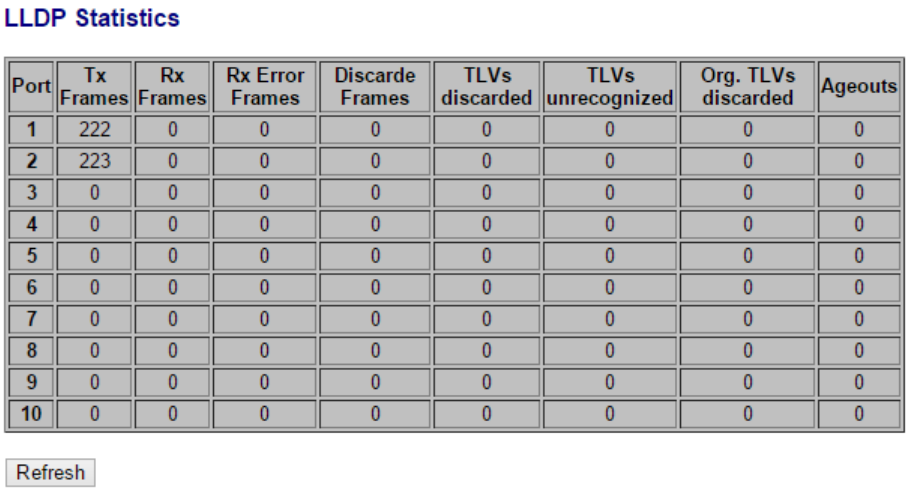


Figure 7-3

- **VLAN ID:** VLAN ID number.
- **Querier:** Shows whether Querying is enabled.
- **Queries transmitted:** Shows the number of transmitted Query packets.
- **Queries received:** Shows the number of received Query packets.
- **v1 Reports:** Shows the number of received v1 Report packets.
- **v2 Reports:** Shows the number of received v2 Report packets.
- **v3 Reports:** Shows the number of received v2 Report packets.
- **v3 Leave:** Shows the number of v3 leave packets received.

7.4 LLDP Statistics



LLDP Statistics

Port	Tx Frames	Rx Frames	Rx Error Frames	Discarde Frames	TLVs discarded	TLVs unrecognized	Org. TLVs discarded	Ageouts
1	222	0	0	0	0	0	0	0
2	223	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0

Refresh

Figure 7-4

- **Tx Frames:** The number of LLDP frames transmitted on the port.
- **Rx Frames:** The number of LLDP frames received on the port.
- **Rx Error:** The number of received LLDP frames containing some kind of error.
- **Discarded Frames:** If an LLDP frame is received on a port, and the switch's internal table has run full, the LLDP frame is counted and discarded. This situation is known as "Too Many Neighbours" in the LLDP standard. LLDP frames require a new entry in the table when the Chassis ID or Remote Port ID is not already contained within the table. Entries are removed from the table when a given port's link is down, an LLDP shutdown frame is received, or when the entry ages out.
- **TLVs Discarded:** Each LLDP frame can contain multiple pieces of information, known as TLVs (TLV is short for "Type Length Value"). If a TLV is malformed, it is counted and discarded.
- **TLVs Unrecognized:** The number of well-formed TLVs, but with an unknown type value.
- **Org. TLVs Discarded:** The number of organizationally received TLVs.
- **Ageouts:** Each LLDP frame contains information about how long time the LLDP information is valid (age-out time). If no new LLDP frame is received within the age out time, the LLDP information is removed, and the Age-Out counter is incremented.

7.5 LLDP Table

LLDP Neighbour Table

Local Port	Chassis Id	Remote Port ID	System Name	Port description	System Capabilities	Management Address
No entries in table						

Refresh

Figure 7-5

- **Local Port:** The port on which the LLDP frame was received.
- **Chassis ID:** The Chassis ID is the identification of the neighbor's LLDP frames.
- **Remote Port ID:** The Remote Port ID is the identification of the neighbor port.
- **System Name:** System Name is the name advertised by the neighbor unit.
- **Port Description:** Port Description is the port description advertised by the neighbor unit.
- **Sytem Capabilities:** System Capabilities describes the neighbor unit's capabilities. The possible capabilities are:

  1. Other
  2. Repeater
  3. Bridge
  4. WAN Access Point
  5. Router
  6. Telephone
  7. DOCSIS cable device
  8. Station only
  9. Reserved

  When a capability is enabled, the capability is followed by (+). If the capability is disabled, the capability is followed by (-).
- **Management Address:** Management Address is the neighbor unit's address that is used for higher layer entities to assist discovery by the network management. This could for instance hold the neighbor's IP address.

7.6 Ping

This command sends ICMP echo request packets to another node on the network.

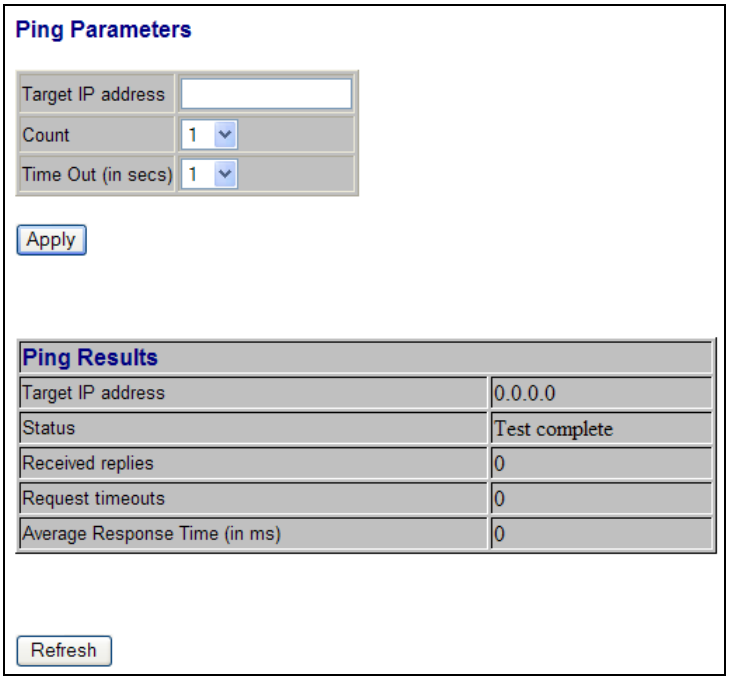


Figure 7-6

[Ping Parameters]

- **Target IP Address:** Type the IP address of the host.
- **Count:** Set the number of packets to send.
- **Time Out (in secs):** Set the timeout period to wait for reply.

[Ping Results]

Use the ping command to see if another site on the network can be reached. The following are some results of the **ping** command:

- **Normal response:** The normal response occurs in one to ten seconds, depending on network traffic.
- **Destination does not respond:** If the host does not respond, a “timeout” appears in ten seconds.
- **Destination unreachable:** The gateway for this destination indicates that the destination is unreachable.
- **Network or host unreachable:** The gateway finds no corresponding entry in the route table.

To get the latest Ping results, click **Refresh**. To stop pinging, press <Esc> on the keyboard.

8. Maintenance

8.1 Warm Restart

Press **Yes** to restart the switch. The reset will be complete when the power light stops blinking.

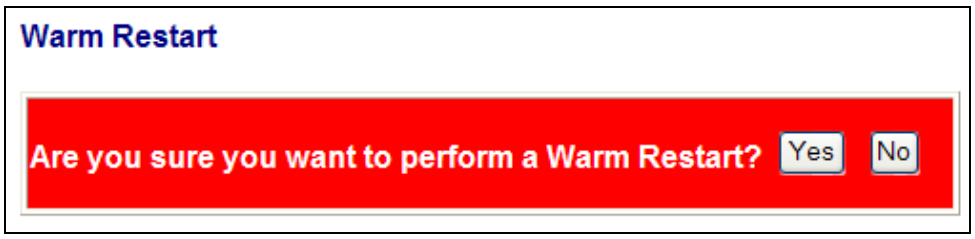


Figure 8-1

8.2 Factory Default

To restore the switch to the default settings, select **Factory Default** from the left menu and click **Yes**.

Figure 8-2

If you forgot the password, you can press the **Reset** button on the front panel for 5 seconds. The system will be reset to default configuration.

Note: Load default from the Web interface will not change the user name, password and IP configuration. If you want to restore the default setting of IP address, user name and password, press the **Reset** button on the front panel of the switch.

8.3 Software Upload

To upgrade the firmware version of the switch, follow the steps below:

1. Click **Browse** to select the firmware file and click **Upload**.

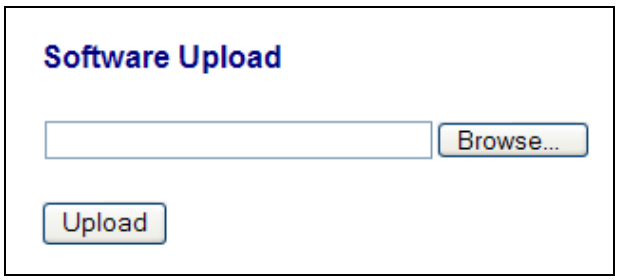


Figure 8-3

2. After the uploading process is completed, this message appears. Click **Yes** to activate the new software.

Figure 8-4

8.4 Configuration File Transfer

Configuration file transfer allows you to save the current configuration or restore a previously saved configuration back to the switch. Configuration files can be saved to any location on the Web management station. In this page, you can upload or download the configuration file.

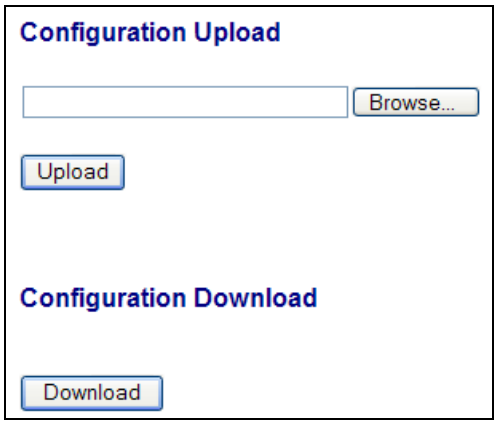


Figure 8-5

9. Logout

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

After finishing configuring the switch, you can click **Logout** to leave the configuration page.

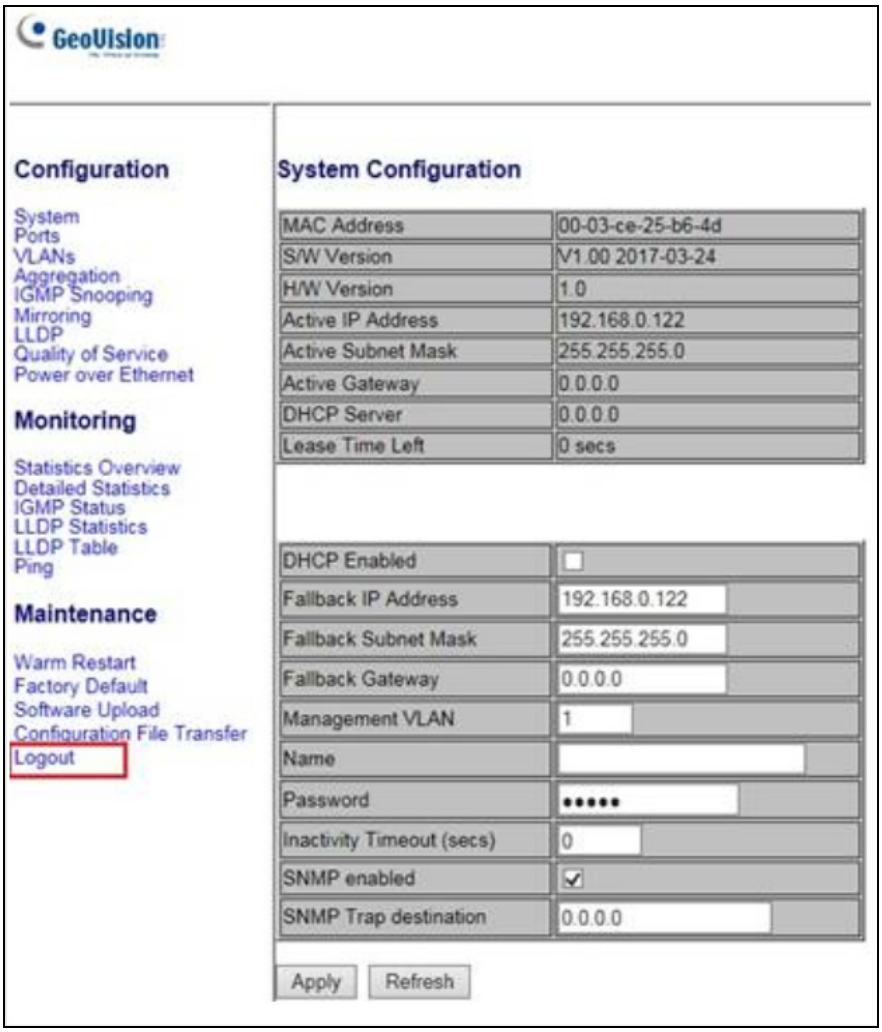


Figure 9-1

10. Restoring Default Settings

You can load the default value with the Reset button or with the Web interface.

Hardware

To restore the switch to its default settings using the **Reset** button, follow the steps below:

1. Turn on the switch.
2. Press and hold the **Reset** button for 5 seconds until all the LED start blinking.
3. Release the button. The switch is restored to its default settings.

Note: After restoring default settings, you will need to configure IP address and Password again.

Web Interface

1. On the Web interface, select **Factory Default**. This page appears.

Figure 10-1

2. Click **Yes** to restore the switch to the original configuration.

Note: Load default from the Web interface will not change the user name, password and IP configuration. If you want to restore the default setting of IP address, user name and password, press the **Reset** button on the front panel of the switch.

---

11. Specifications

Ports		
Number of Ports		10 ports, including: 8-port 10/100/1000BaseT(X) with RJ-45 Connectors, PoE+ 1-port Gigabit SFP Uplink Slot 1-port Gigabit RJ-45 Uplink Port
Performance		
MAC Address		8 K
Buffer Memory		4 M bits
Jumbo Frames		9.6 KB
Transmission Method		Store and Forward
Transmission Media		10/100BaseT(X) Cat. 5 UTP/STP 1000BaseT Cat. 5e, 6 UTP/STP
Filtering/Forwarding Rates		10 Mbps port - 14,880 pps 100 Mbps port - 148,800 pps 1000 Mbps port - 1,488,000 pps
Backplane Capacity		20 Gbps
Smart Features		
Port Based VLAN		16
Tag Based VLAN		16, VID 1~4094
IGMP Snooping		V1 & V2
Link Aggregation		up to 8 groups
Quality of Service (QoS)		up to 8 queues, 802.1p, DSCP
Port Management		Port State, Speed, Flow Control Configuration, Port Mirroring, PoE
Administrator Management		Web Management, Password Protection, Configuration, Backup / Restore, Firmware Upgrade
Mechanical Characteristics		
LED Indicators		Per Port: Link/Act PoE Act/Status Power
Electrical Characteristics		
PoE Power	Input	100 ~ 240 V/AC, 50 ~ 60 Hz
	Output	IEEE 802.3at Compliant Voltage, Per Port Max. 30 watts (8 Ports at Full 15.4 W / 4 Ports at Full 30 W)
Max. Power Consumption		130 W
General		
Dimensions (H x W x D)		44 x 266 x 161 mm (1.73” x 10.47” x 6.33”)
Weight		1.8 kg (3.96 lb)
Operating Temperature		0°C ~50°C (32°F ~ 122°F)
Storage Temperature		-20°C ~ 85°C (-4°F ~ 185°F)
Humidity		10 to 90% RH (non-condensing)
Standards and Regulatory		
Standards		IEEE 802.3 10BaseT, IEEE 802.3u 100BaseTX, IEEE 802.3ab 1000BaseT, IEEE 802.3z 1000BaseSX/LX IEEE 802.3x Flow Control IEEE 802.1Q VLAN IEEE 802.1p Class of Service IEEE 802.3af Power Over Ethernet (PoE) IEEE 802.3at Power Over Ethernet (PoE+)
Regulatory		CE, Commercial FCC Part 15 Class B

Note: Specifications are subject to change without prior notice.