User Manual

GSW-3100C

Managed CPE Switch

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CPE Switch

User Manual
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CHAPTER 1. INTRODUCTION

1.1 Welcome

Welcome and thank you for purchasing **GSW-3100C** Managed Ethernet Switch. We hope this product is everything you wanted and more. Our Product Managers and R&D team have placed a "quality first" motto in our development of this series of Gigabit Ethernet switches with the desire of providing a highly stable and reliable product that will give years of trouble free operation.

In this chapter we will provide general introduction to GSW-3100C including product features and specifications. Chapter 2 will describe panels, LED definitions and functions of reset push-button. GSW-3100C provides HTTP (Web GUI) or SNMP (Simple Network Management Protocol) for management purposes. Chapter 3 will detail all of the configuration settings by using an easy to point and click Web interface which can be accessed from any available web browser.

1.2 Product Description

GSW-3100C is a brand new generation CPE Ethernet switch designed to make conversion between 4-Port 100M/1G/2.5G RJ-45, 1-Port 10G RJ-45 and 1-port 1G/10G fiber optics with SFP+ optical modules. Traditionally, transmission distance of Gigabit Ethernet over fiber interface can be extended from 550m to 100km using the flexibility of any third party pluggable SFP modules. GSW-3100C is fully compliant with IEEE 802.3, 802.3u, 802.3ab, 802.3z, 8022.3bz and 802.3ae standards. End-users can simply connect their devices, such as Ethernet home gateway, wireless access point or NIC on PC/laptop the RJ-45 ports of the CPE switch. No Ethernet crossover cables are required and link status can be easily monitored from the comprehensive LED display.

When GSW-3100C is deployed as a stand-alone solution, it incorporates an easy to use Web user interface for operation, administration and maintenance both locally and remotely. All of the enabled Layer 2 features and functions of GSW-3100C can be configured and monitored via web interface and SNMP management. GSW-3100C is the most suitable solution for deploying and provisioning the FTTX service of operators or service providers.

1.3 Product Features

- 4 x 100M/1G/2.5G RJ-45 LAN + 1 x 1G/2.5G/5G/10G RJ-45 LAN
- 1 x 1G/10G SFP+ Fiber SFP+
- Optional Fiber tray design can help to manage fiber cable in a tidy and organized way.
- Supports IEEE802.3az EEE (Energy Efficient Ethernet) Management to optimize power consumption
- STP, RSTP, QoS, IEEE802.1q VLAN, Dynamic IEEE 802.3ad LACP Link Aggregation, Static Link Aggregation, IGMP snoopingv2 & v3, etc.
- Security: Port based and MAC based IEEE802.1X
- Web based management and SNMP v1/v2c management
- Software upgrade via HTTP
- DHCP client, DHCPv4 Snooping, Port mirroring, SNTP, IEEE802.1ab LLDP
- CE, FCC Certified

1.4 Product Specifications

Standards	IEEE 802.3	10Base-T 10Mbit/s Ethernet
	IEEE 802.3u	100Base-TX, 100Base-FX, Fast Ethernet
	IEEE 802.3ab	1000Base-T Gbit/s Ethernet over twisted pair
	IEEE 802.3z	1000Base-X Gbit/s Ethernet over Fiber-Optic
	IEEE 802.3bz	2.5GBase-T Ethernet over tiwisted pair
	IEEE 802.3ae	10G Ethernet over Fiber-Optic
	IEEE 802.1Q	Virtual LANs (VLAN)
	IEEE 802.1X	Port-based Network Access Control, Authentication
	IEEE 802.3x	Flow control for Full Duplex
	IEEE 802.1ad	Stacked VLANs, Q-in-Q
	IEEE 802.1p	LAN Layer 2 QoS/CoS Protocol for Traffic Prioritization
	IEEE 802.1ab	Link Layer Discovery Protocol (LLDP)
	IEEE 802.3az	EEE (Energy Efficient Ethernet)
Switch	VLAN Groups	up to 64
	Switching Fabric	60Gbps
	Data Processing	Store and Forward
	Flow Control	IEEE 802.3x for full duplex mode
	Jumbo Frame Size	10K Bytes
	MAC Table	16K
Connectors	LAN	4 x 100M/1G/2.5G RJ-45 LAN + 1 x 1G/2.5G/5G/10G RJ-45 LAN Auto detect speed, auto negotiate duplex, auto MDI/MDI-X function, auto crossover, Full/Half duplex
	Fiber	1 x 1G/10G dual speed mode SFP+ slots, supporting DDMI
Ethernet	Network Cable	UTP/STP Cat.5e cable or above
	EIA/TIA-568	100-ohm (100m)
	Protocol	CSMA/CD
Power	Power Supply	AC/DC power adaptor, 12VDC/1A
LED	LED Indicators	PWR, LAN (1~4), LAN 5, 10G SFP+
Environmental Requirements	Operating Temperature	0°C~40°C
	Storage Temperature	-25°C~70°C
	Humidity	5%~90% (Non-condensing)
Certifications		CE, FCC class A

CHAPTER 2. INSTALLATION

This section describes panels of GSW-3100C, functions of reset push-button, LED definitions, cable tray & wall-mounting installation. The front panel of GSW-3100C provides LAN ports, SFP fiber slot and power input port. LED indicators are also located on the top panel to provide real-time indications of link status. See below for detailed descriptions.

2.1 Panels

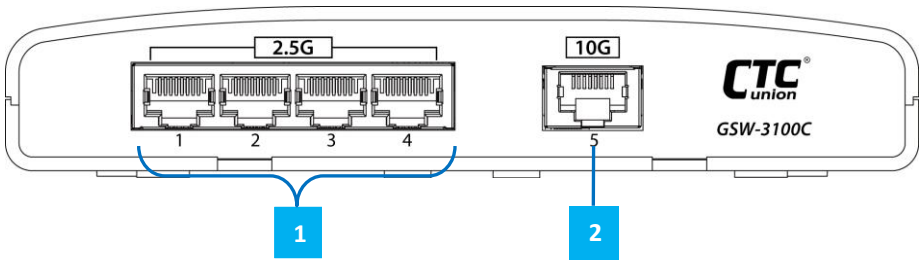


Figure 1. Front Panel

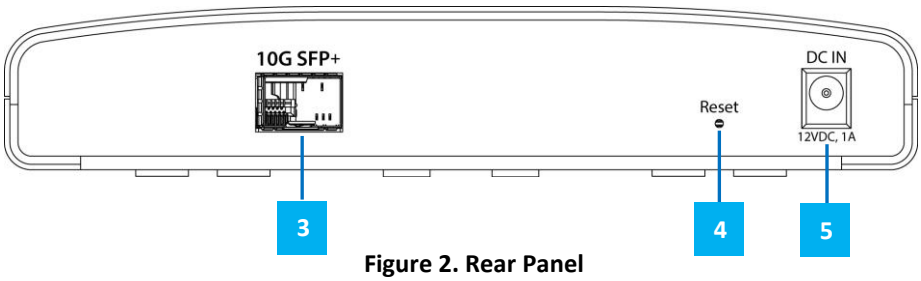


Figure 2. Rear Panel

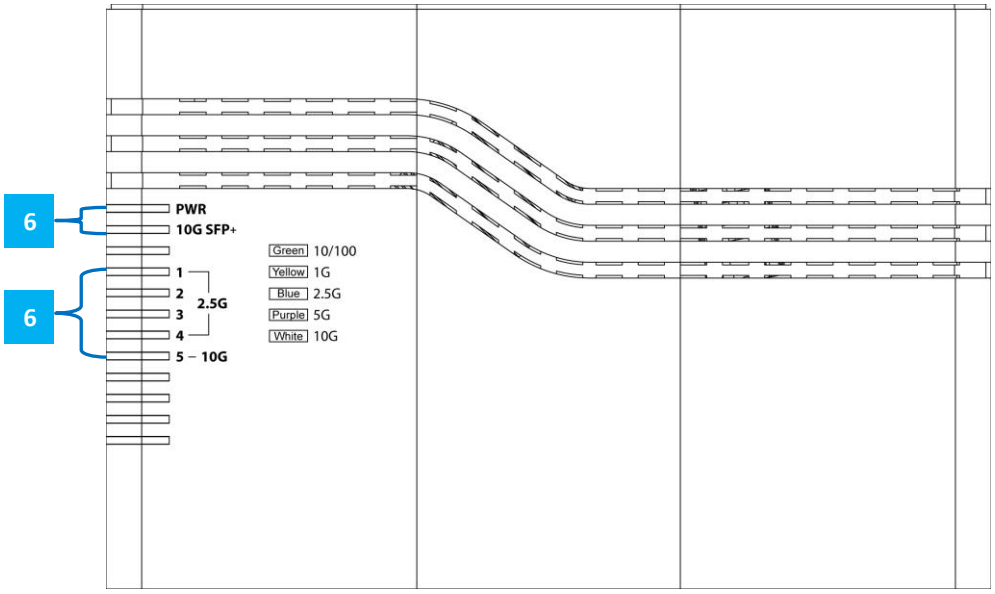


Figure 2. Rear Panel

1	4 x 100M/1G/2.5G LAN Ports	4	Reset push button
2	1 x 100M/1G/2.5G/10G LAN Port	5	DC Jack Power Input
3	1 x 1G/10G SFP fiber slot	6	LED indicators

Table 1. Index Reference Table for GSW-3100C Panels

2.2 Connections

2.2.1 LAN Connections

GSW-3100C provides four RJ-45 LAN ports that support speed of 100M/1G/2.5G and one RJ-45 LAN port that supports speed of 100M/1G/2.5G/5G/10G on the front panel. Each of these LAN ports has associated LEDs, displayed on the top panel, which indicate the active link state and the detected speed of the interface.

2.2.2 Fiber Connections

GSW-3100C utilizes one SFP module for fiber transmission. The fiber port have an associated status LED on the top panel to indicate the presence or absence of fiber link and will also flash when there is Ethernet activity on the port. The SFP cage may insert any standard SFP or SFP+ module and be configured for 1G or 10G operation. There is no 'lock out' mechanism, so any third party SFP, compliant with MSA, can be used in GSW-3100C.

2.3 Reset Push-Button

The "Reset" push-button is located on the rear panel which provides the following two functions:

Function	Press and hold for~	LED Status	Description
Reboot	1~6 seconds	PWR LED blinks	Using a ball-point pen, press the "Reset" button and hold for 1~6 seconds then release. The switch will clear all unsaved settings and restart.
Reset to factory defaults	> 6 seconds	PWR LED blinks rapidly	Using a ball-point pen, press the "Reset" button and hold for 6 seconds or longer then release to set running configurations to factory defaults, including the original factory default IP address. If the IP address of the switch is unknown, it may be necessary to do a factory default reset. The IP address will then be the known default.

2.4 LED Indicators

LED indicators are located on the top panel of the unit. Each port has a corresponding LED indicator that provides a visual and real-time indication of the current operating state. A description of these LED indicators is provided below.

LED	Color	Status	Meaning
PWR	Blue	On	The switch is receiving power.
		Off	The switch does not receive power.
		Blinking	The switch performs a "warm reboot".
		Rapid Blinking	The switch resets its configurations to factory defaults.
		Slow Blinking	The switch restarts.
Port 1~4 (2.5G)	Green	On	When the LAN port is up and operating at 10/100Mbps.
		Blinking	The LAN port is receiving and transmitting traffic.
		Off	The LAN port link is down.
	Yellow	On	When the LAN port is up and operating at 1Gbps.
		Blinking	The LAN port is receiving and transmitting traffic.
		Off	The LAN port link is down.
	Blue	On	When the LAN port is up and operating at 2.5Gbps.
		Blinking	The LAN port is receiving and transmitting traffic.
		Off	The LAN port link is down.
Port 5 (10G)	Green	On	When the LAN port is up and operating at 10/100Mbps.
		Blinking	The LAN port is receiving and transmitting traffic.
		Off	The LAN port link is down.
	Yellow	On	When the LAN port is up and operating at 1Gbps.
		Blinking	The LAN port is receiving and transmitting traffic.
		Off	The LAN port link is down.
	Blue	On	When the LAN port is up and operating at 2.5Gbps.
		Blinking	The LAN port is receiving and transmitting traffic.
		Off	The LAN port link is down.
	Purple	On	When the LAN port is up and operating at 5Gbps.
		Blinking	The LAN port is receiving and transmitting traffic.
		Off	The LAN port link is down.
	White	On	When the LAN port is up and operating at 10Gbps.
		Blinking	The LAN port is receiving and transmitting traffic.
		Off	The LAN port link is down.
10G SFP+	Yellow	On	The fiber port link is up and operating at 1Gbps.
		Blinking	The fiber port is receiving and transmitting traffic.
		Off	The fiber port link is down.
	Blue	On	When the LAN port is up and operating at 2.5Gbps.
		Blinking	The LAN port is receiving and transmitting traffic.
		Off	The LAN port link is down.
	White	On	The fiber port link is up and operating at 10Gbps.
		Blinking	The fiber port is receiving and transmitting traffic.
		Off	The fiber port link is down.

2.5 Cable Tray & Wall-Mounting Installation

GSW-3100C is designed for placing on a desktop or can be mounted on the wall optionally. We also offer a fiber cable tray that can meet varying needs of cable management. GSW-3100C comes without wall-mounting kit and fiber tray from the factory. If you need to order optional accessories, please contact our sales representatives directly.

2.5.1 Cable Tray Installation

Cable tray kit is an optional accessory. It does not come with the standard package of the device. The cable tray is the specially-designed fiber organizer that is used to store the excessive fiber so as to prevent the fiber cable from unexpected damages. Before installing the cable tray, please make sure you have the device and cable tray kit at hand. Follow the steps below to correctly install the cable tray.

Step 1. Check the cable tray kit. Your cable tray kit should contain two items (Figure 4, 5) or four items (Figure 4, 5, 6, 7) depending on the order you placed. Each item is provided below graphically.

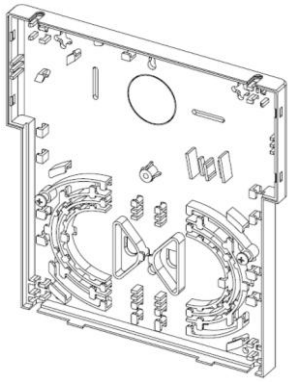


Figure 4. Cable tray base

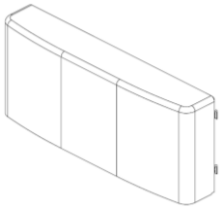


Figure 5. Cable tray upper cover

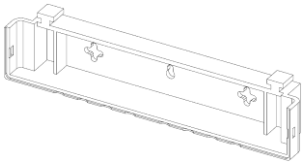


Figure 6. LAN cable protection holder

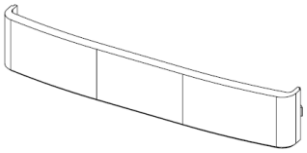


Figure 7. LAN cable protection cover

Step 2. Combine “Cable tray base” and “LAN cable protection holder” together using the snap fit joint as indicated in Figure 8. (If your cable tray kit does not contain “LAN cable protection holder” & “LAN cable protection cover”, proceed to Step 3.)

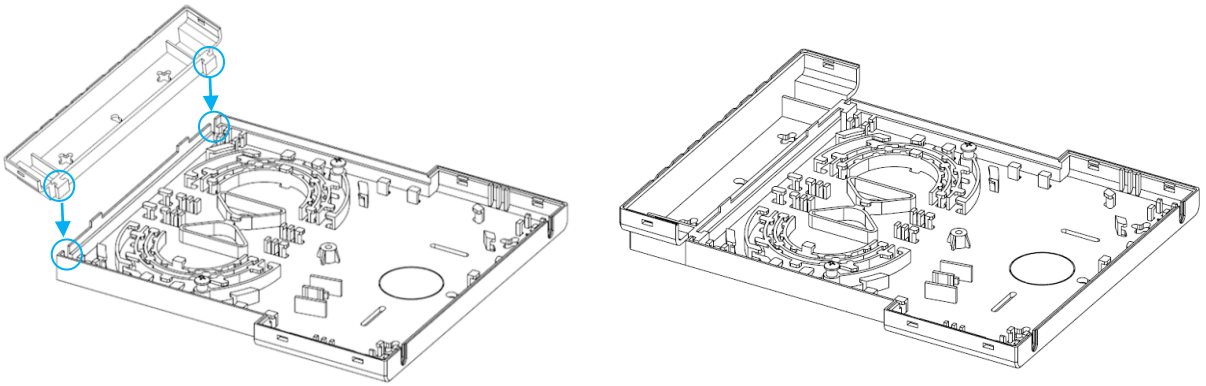


Figure 8. LAN cable protection holder assembly

Step 3. Organize the fiber cable into the cable tray base. There are two fiber cable input holes that you can use to organize your cable (Figure 9 & 10). Use the cable tray fixations to fix your fiber cable securely on the cable tray while organizing. See Figure 11 & 12 for an example.

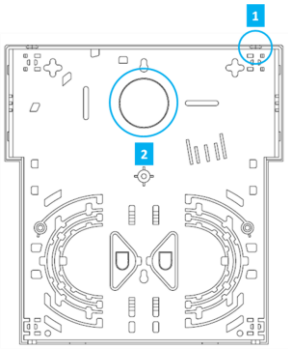


Figure 9. Fiber cable input holes

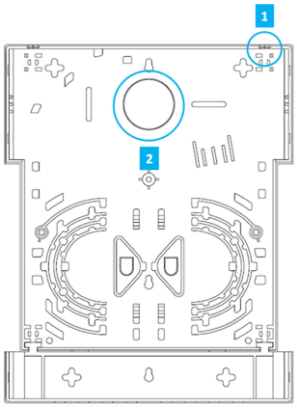


Figure 10. Fiber Cable Input Holes (with LAN Cable Protection Holder)

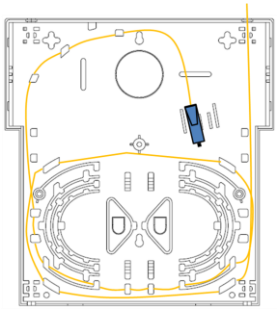


Figure 11. Fiber cable installation

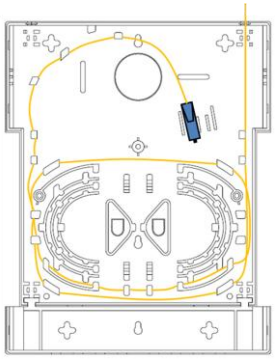


Figure 12. Fiber cable installation (with LAN cable protection holder)

Step 4. Use two mounting holes (Figure 13) on the bottom to install the device on the cable tray base (Figure 14 & 15).

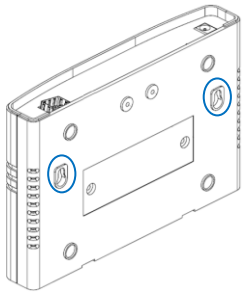


Figure 13. Cable tray mounting holes

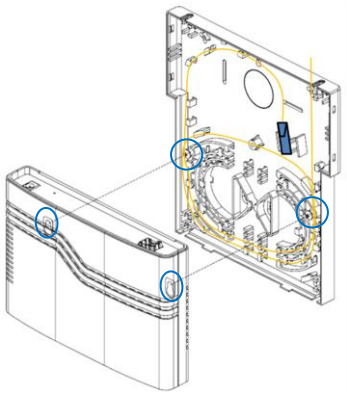


Figure 14. Install the device onto the cable tray

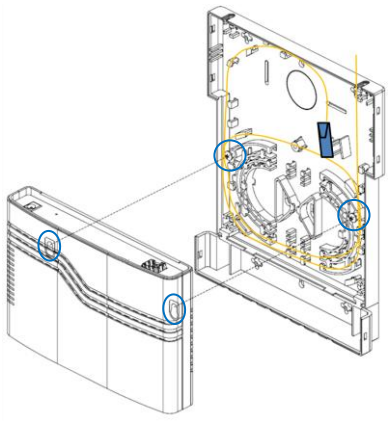


Figure 15. Install the device onto the cable tray (with LAN Cable Protection Holder)

Step 5. Slide GSW-3100C downward to attach two items securely together.

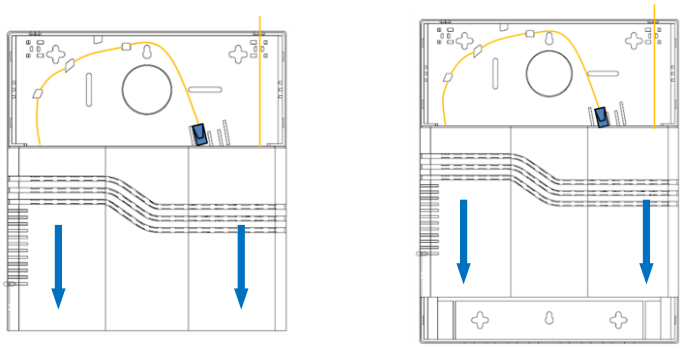


Figure 16. Slide the device down

Step 6. Connect the fiber cable connector to the SFP transceiver and power cable to the power port.

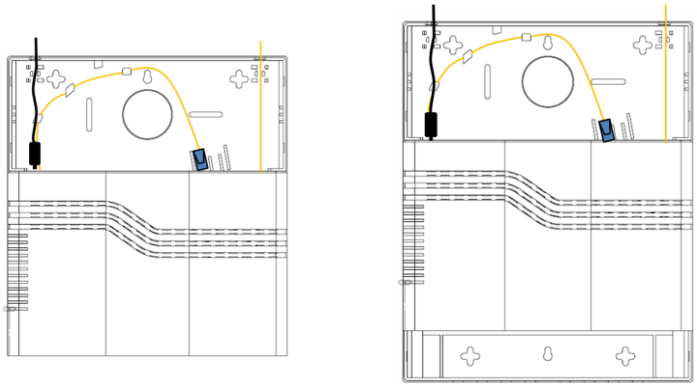


Figure 17. Connect to the SFP transceiver and power port

Step 7. Install the “Cable tray upper cover”.

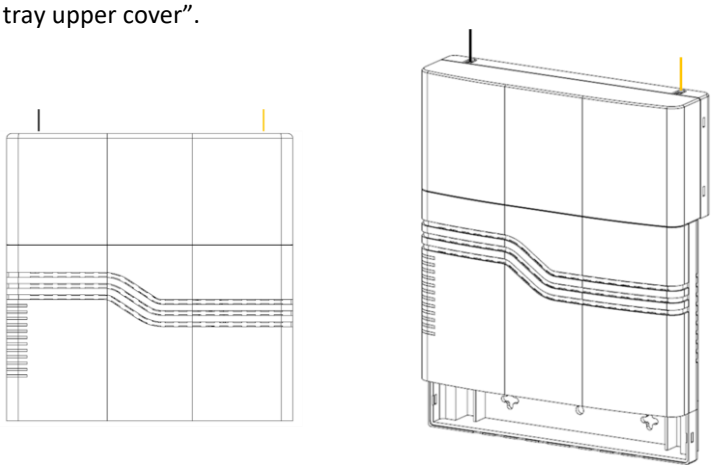


Figure 18. Install the cable tray upper cover

Step 8. Connect LAN cable and place the LAN cable on the corresponding cable slot as shown in Figure 19.

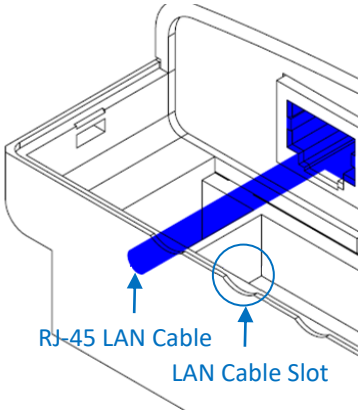


Figure 19. Install LAN cable

Step 9. Remove hole baffles on the "LAN cable protection cover" (Figure 20) and finally install the "LAN cable protection cover" (Figure 21).

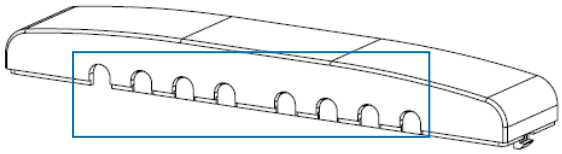


Figure 20. Remove RJ-45 hole baffles

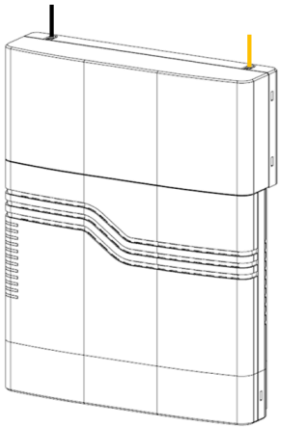


Figure 21. Install LAN cable protection cover

2.5.2 Wall-Mounting Installation (without Cable Tray)

Wall-mounting kit is an optional accessory. It does not come with the standard package of the device. Before starting installing your device on the wall, please make sure you have a bracket and screws at hand. Then, follow the steps below to correctly install the device on a wall.

Step 1. Attach the bracket correctly and securely to the device using two wall-mounting screws as shown in Figure 22.

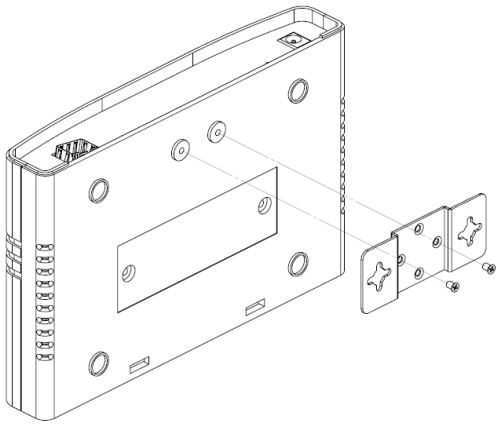


Figure 22. Attach the wall-mounting bracket to the device

Step2. Then, drill Hole A & B and install screws for hanging purposes as shown in Figure 23.

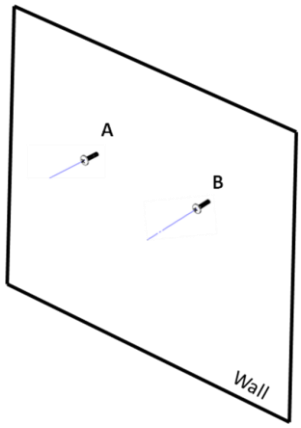


Figure 23. Drill two holes and install screws for hanging purposes

Step 3. Mount the device on the wall using two hanging screws with front panel facing downwards and slide it downward until it locks securely.

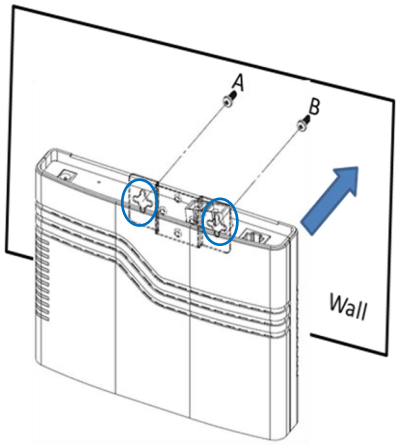


Figure 24. Mounting the device on the wall

2.5.3 Wall-Mounting Installation (with Cable Tray)

GSW-3100C with cable tray management can also be mounted on the wall. Before starting wall-mounting installation, make sure you have organized fiber cable into the cable tray base.

Step 1. Make sure you have organized fiber cable into the cable tray base.

Step 2. Drill Hole A & B and install screws for hanging purposes as shown in Figure 25.

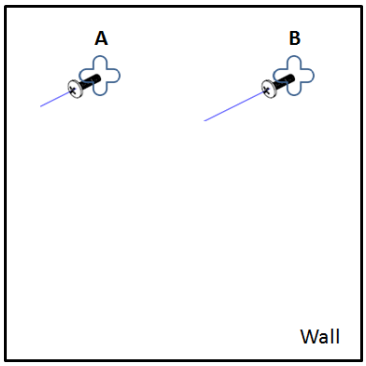


Figure 25. Drill two holes and install two screws for hanging purposes

Step 3. Mount the device on the wall using two hanging screws with front panel facing downwards and slide it downward until it locks securely.

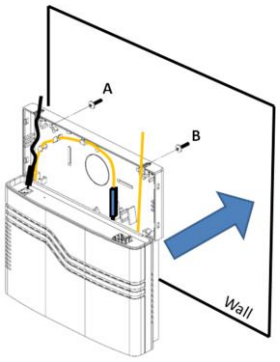


Figure 26. Mount the device on the wall

Step 4. Install the upper case cover.

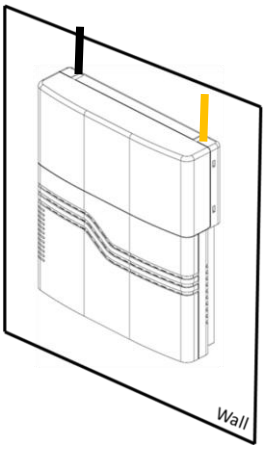


Figure 27. Install the upper case cover

2.5.4 Wall-Mounting Installation (with Cable Tray & LAN Protection)

GSW-3100C with cable tray management & LAN cable protection can also be mounted on the wall. Before starting wall-mounting installation, make sure you have organized fiber cable into the cable tray base.

Step 1. Make sure you have organized fiber cable into the cable tray base.

Step2. Drill Hole A, B, C & D and install screws for hanging purposes as shown in Figure 28. (Hole A & B are enough for wall mounting installation. However, we suggest that four screws are used for extra stability while hanging on the wall.)

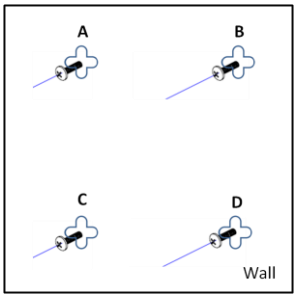


Figure 28. Drill four holes and install four screws for hanging purposes

Step 3: Mount the device on the wall using four hanging screws with front panel facing downwards and slide it downward until it locks securely.

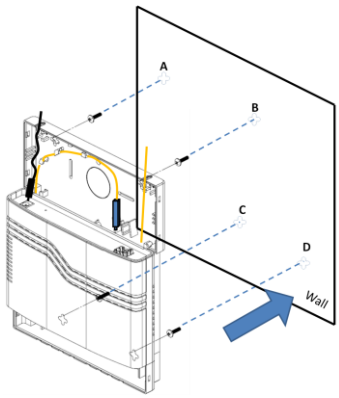


Figure 29. Mount the device on the wall

Step 4. Connect RJ-45 LAN cable and install the “LAN cable protection cover”.

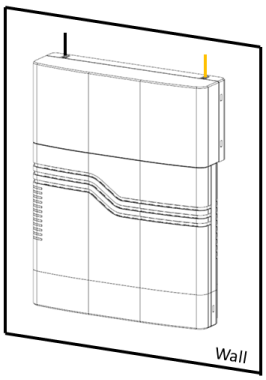


Figure 30. Install the LAN cable protection cover

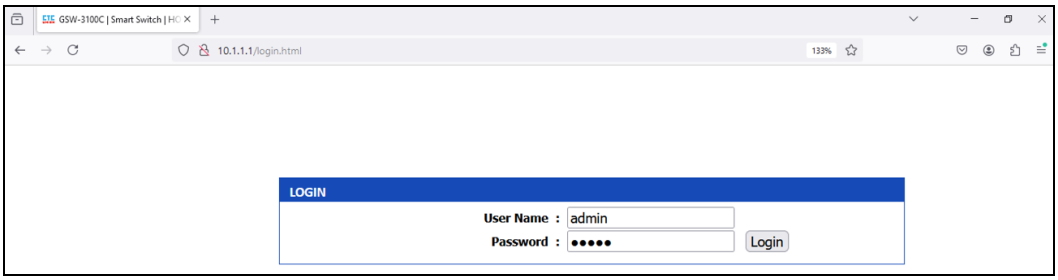
CHAPTER 3. WEB CONFIGURATION & OPERATION

3.1 Home Page

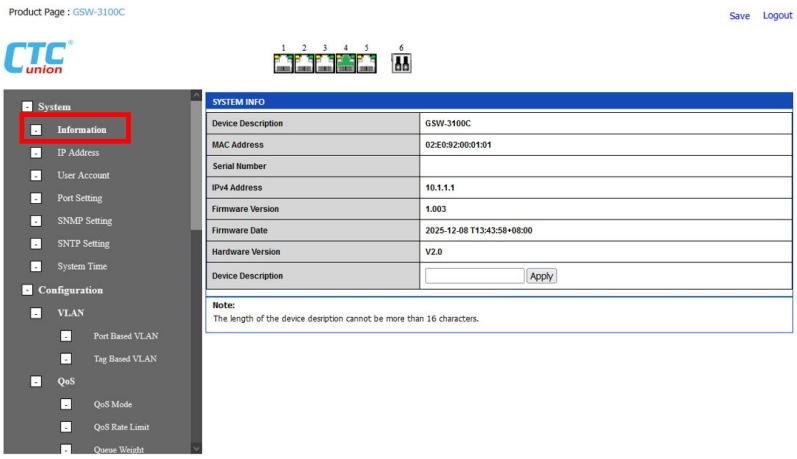
Using your favorite web browser, enter the IP address of the GSW-3100C in the browser's location bar. The factory default address is 10.1.1.1.

3.1.1 Login

A standard login prompt will appear depending on the type of browser used. The example below is with Firefox browser.

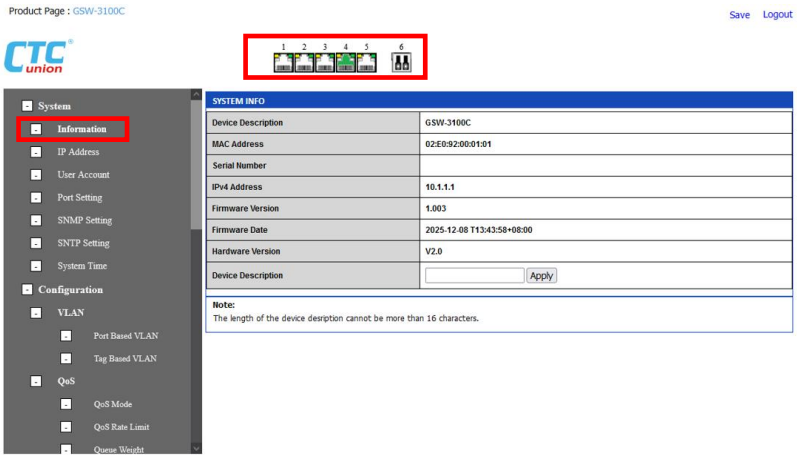


The GSW-3100C factory default username is '**admin**' and default password is '**admin**'. When you successfully enter web-based management, you will be directed to "System Information" page.



3.1.2 Port Status

The initial page, when logged in, displays a graphical overview of the port status for the electrical and optical ports. The colored "Green" LED indicates that LAN or fiber connection is up. The status display can be reached by using the left side menu, and go to System > Information page.



3.1.3 Save

After completing configurations, all running configurations must be saved in startup configurations so that you can use all changed configurations next time when you log in. All unsaved changes will be lost when power of the switch is down. Click the “Save” button once located on the upper right corner to save all changed configurations.

3.1.4 Logout

After completing configuration, we recommend logging out of the web GUI. This is easily accomplished by clicking the logout icon.

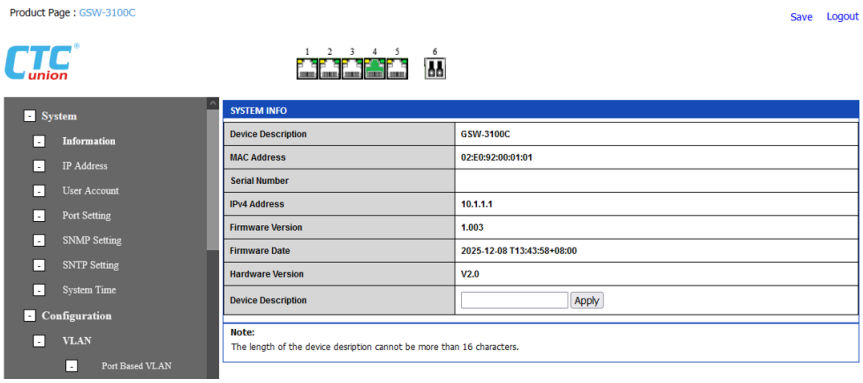
3.2 System

The configuration under the "System" menu includes device settings such as IP address, time server, etc.

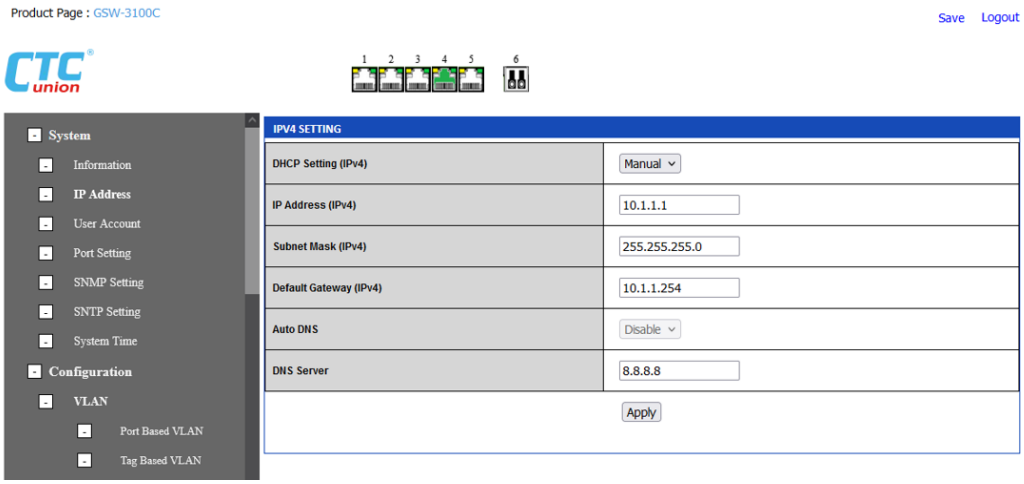
3.2.1 Information

The system information screen displays the device description, MAC address, serial number, IP address, firmware version & date and hardware version.

At the bottom of the table, you can self-define the device description. Click “Apply” button to use your desired description. Please remember to click “Save”button to store your changes in startup configurations.



3.2.2 IP Address



DHCP Setting (IPv4): Select your IPv4 address type. “Manual” means that users manually assign a fixed IPv4 address to this device. “DHCP” means that this device will get IPv4 address from a DHCP server.

When “DHCP” option is selected, the system will configure the IPv4 address and mask of the interface using the DHCP protocol.

IP Address (IPv4): The IPv4 address of the interface is entered in dotted decimal notation. If DHCP is enabled, this field is not used. The field may also be left blank if IPv4 operation on the interface is not desired.

Subnet Mask (IPv4): The IPv4 network mask is entered by a number of bits (prefix length). Valid values are between 0 and 30 bits for a IPv4 address. If DHCP is enabled, this field is not used. The field may also be left blank or leave it in th default setting if IPv4 operation on the interface is not desired.

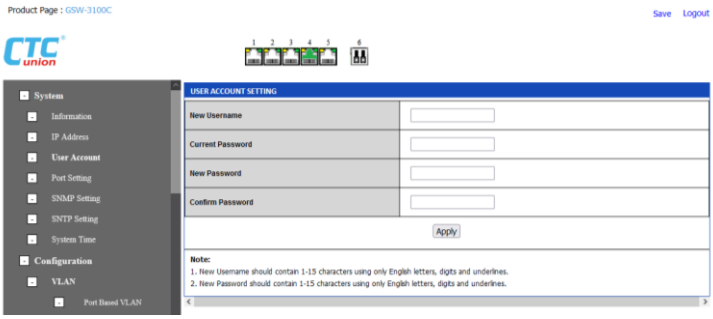
Default Gateway (IPv4): This is the IPv4 address of the gateway.

Auto DNS: Enable or disable Auto DNS function. When enabled, your device received DNS address automatically from a network especially via a DHCP server.

DNS Server: Specify the DNS server address.

Click “Apply” button to use your configured settings immediately. Please remember to store your changed settings in Startup configurations by clicking the “Save” button.

3.2.3 User Account



New Username: Enter the new user name. The username setting allows 1~15 characters using only English letters, digits and underlines.

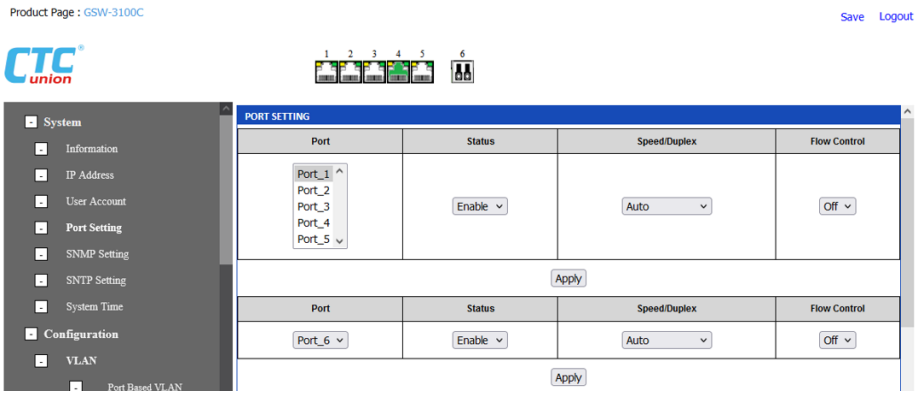
Current Password: Enter the current password for your current user account.

New Password: Enter the new password for this user account. The new password allows 1~15 characters using only English letters, digits and underlines.

Corfirm Password: Retype the new password again to confirm.

Click “Apply” button to use your configured settings immediately. Please remember to store your changed settings in Startup configurations by clicking the “Save” button.

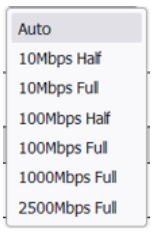
3.2.4 Port Setting



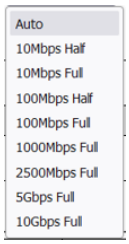
Port: This device is managed Gigabit switches with 5 electrical LAN ports numbered 1~5 and 1 fiber optical port (for SFP/SFP+ module) numbered 6.

Status: Enable or disable the selected port. When disabled, all traffic transmission will be stopped.

Speed/Duplex: This pull down selects any available link speed for the given switch port. Only speed options supported by the specific port are shown.



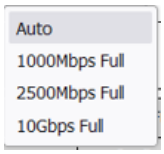
Port 1~4



Port 5

Possible copper port settings are:

Auto - Port auto negotiating speed with the link partner, selecting the highest speed that is compatible with the link partner and negotiating the duplex mode.
10Mbps Half - Forces the port to 10Mbps half duplex mode.
10Mbps Full - Forces the port to 10Mbps full duplex mode.
100Mbps Half - Forces the port to 100Mbps half duplex mode.
100Mbps Full - Forces the port to 100Mbps full duplex mode.
1000Mbps Full - Forces the port to 1000Mbps full duplex.
2500Mbps Full - Forces the port to 2.500Mbps full duplex.



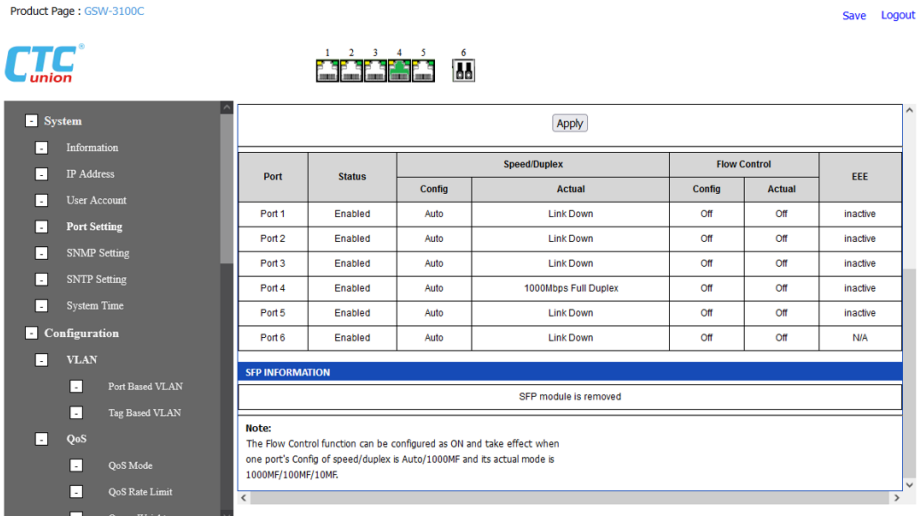
Port 6

Possible fiber port settings are:

Auto – Supports auto speed with the link partner. If this option can not link with the link partner, please try other options.
1000Mbps Full - Forces the fiber port to 1000Mbps full duplex mode.
2500Mbps Full - Forces the fiber port to 2500Mbps full duplex mode.
10Gbps Full - Forces the fiber port to 10Gbps full duplex mode.

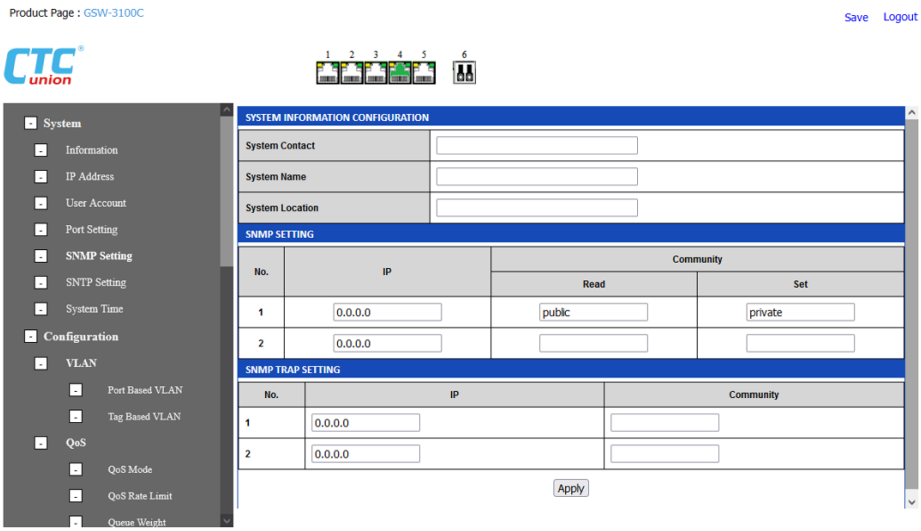
Flow Control: Enable or disable flow control.

Click “Apply” button to use your configured settings immediately. Please remember to store your changed settings in Startup configurations by clicking the “Save” button.



The port status table under the port configuration fields shows the current port status including port speed, link status, flow control and EEE status.

3.2.5 SNMP Setting



System Information Configuration

System Contact: Indicate the descriptive contact information. This could be a person's name, email address or other descriptions. The allowed string length is 0~30.

System Name: Indicate the hostname for this device. Alphabets (A-Z; a-z), digits (0-9) and minus sign (-) can be used. However, space characters are not allowed. The first character must be an alphabet character. The first and last character must not be a minus sign. The allowed string length is 0~30.

System Location: Indicate the location of this device. The allowed string length is 0~30.

SNMP Setting

Source IP: Indicates the SNMP access source address. A particular range of source addresses can be used to restrict source subnet when combined with source mask.

Read Community: Indicates the Read Community access string name to map the community to the SNMP Groups information. The allowed string length is 1 to 32, and the allowed content is ASCII characters from 33 to 126.

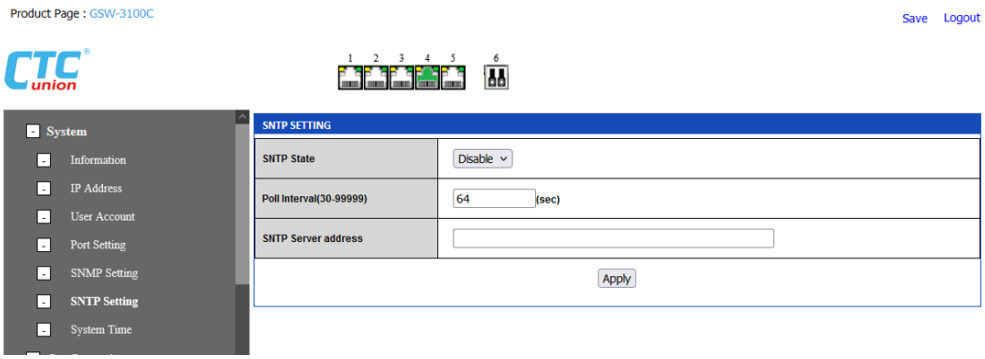
Set Community: Indicates the Set Community access string to map the community to the SNMP Groups information. The allowed string length is 1 to 32, and the allowed content is ASCII characters from 33 to 126.

SNMP Trap Setting

Trap Destination Address: Indicates the SNMP trap destination address. It allows a valid IP address in dotted decimal notation ('x.y.z.w'). Also allowed is a valid hostname. A valid hostname is a string drawn from the alphabet (A-Za-z), digits (0-9), dot (.) and dash (-). Spaces are not allowed. The first character must be an alpha character, and the first and last characters cannot be a dot or a dash.

Trap Community: Indicates the community access string when sending SNMP trap packet. The allowed string length is 1 to 32, and the allowed content is ASCII characters from 33 to 126.

3.2.6 SNTP Setting



SNTP State: Indicates the SNTP mode operation. Possible modes are:

Enabled: Enable SNTP client mode operation.

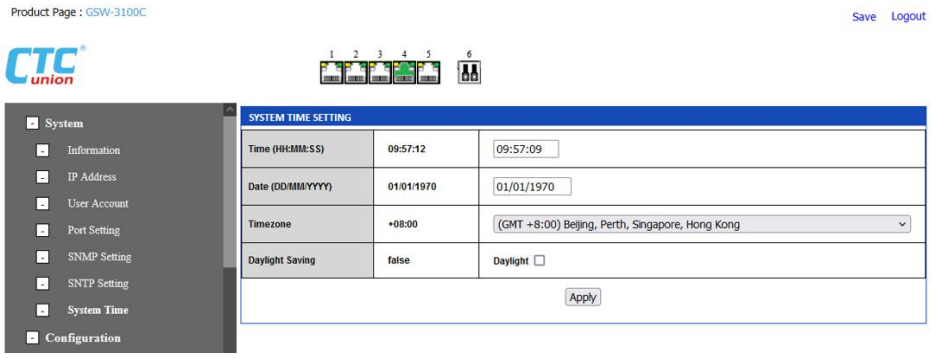
Disabled: Disable SNTP client mode operation.

Poll Interval (30~99999): Specify the polling interval for the SNTP client to initiate a request to the clock server so that the client can calibrate local system time. The default polling interval is 64 seconds. The allowed polling value is 30 to 99999 seconds.

SNTP Server Address: Provides the IPv4 of a SNTP server.

Click “Apply” button to use your configured settings immediately. Please remember to store your changed settings in Startup configurations by clicking the “Save” button.

3.2.7 System Time



Time (HH:MM:SS): Manually set up the current time in HH:MM:SS (24-Hour clock) format.

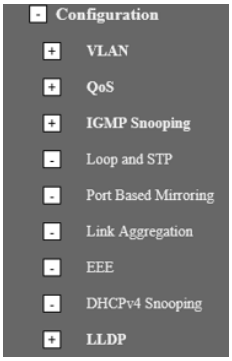
Date (DD/MM/YYYY): Manually set up the current date.

Time Zone: Select the appropriate time zone from the drop-down menu.

Daylight Saving: Tick the checkbox to enable daylight saving function.

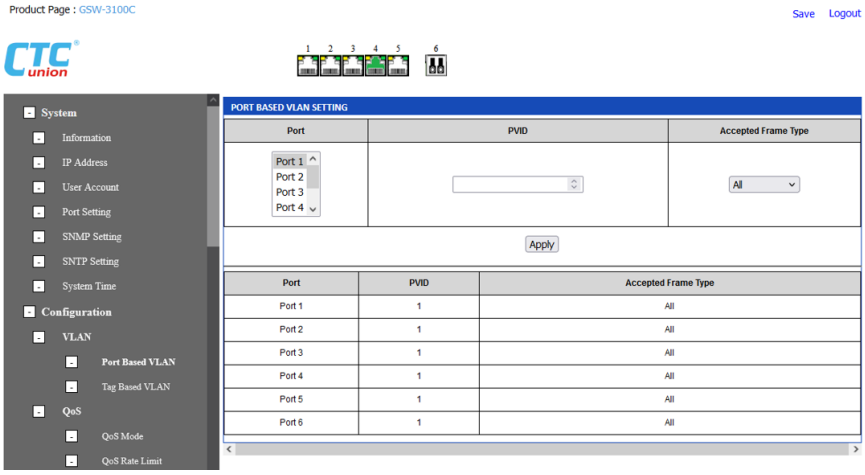
Click “Apply” button to use your configured settings immediately. Please remember to store your changed settings in Startup configurations by clicking the “Save” button.

3.3 Configuration



3.3.1 VLAN

3.3.1.1 Port Based VLAN



Port: Select the port that you would like to define.

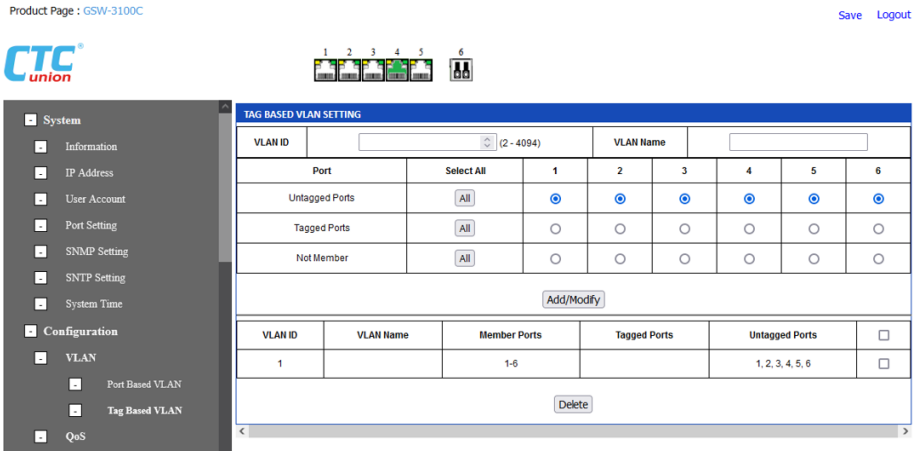
PVID: Specify the Port VLAN ID for the selected port.

Accepted Frame Type: The selected port support “Tag-Only” frame, “Untag-Only” frame and “All” frame.

Click “Apply” button to use your configured settings immediately. Please remember to store your changed settings in Startup configurations by clicking the “Save” button.

When you click “Apply” button, your current settings will be shown in the table under the configuration fields.

3.3.1.2 Tag Based VLAN



VLAN ID: Specify a VLAN ID.

VLAN Name: Specify a descriptive name for this VLAN.

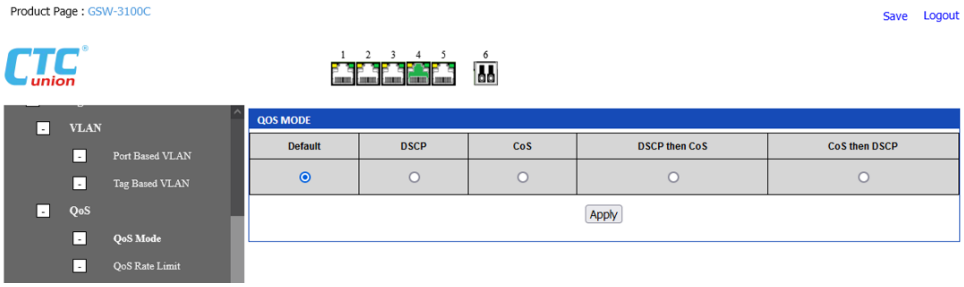
Port Type: The ports can belong to untagged ports, tagged ports or not member ports.

When you click “Apply/Modify” button, your current settings will be shown in the table below configuration box.

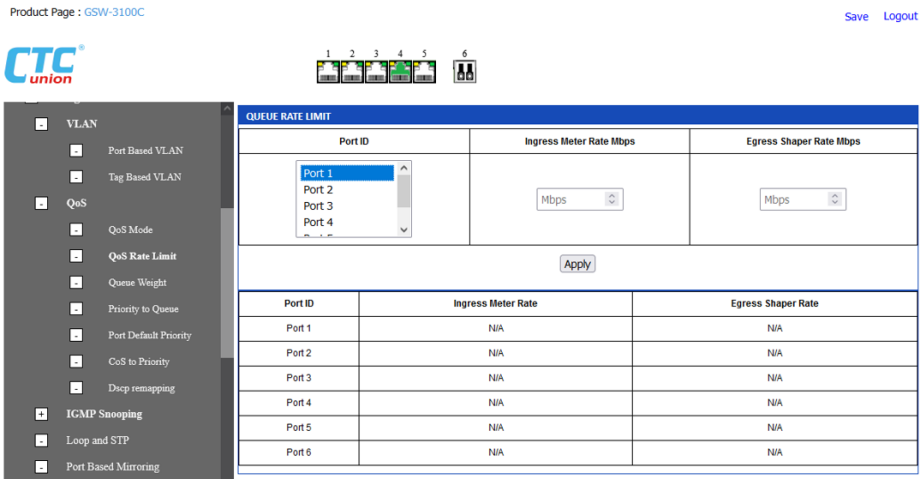
Tick the checkbox of the VLAN ID item and click “Delete” button to remove the selected item.

3.3.2 QoS

3.3.2.1 QoS Mode



3.3.2.2 QoS Rate Limit



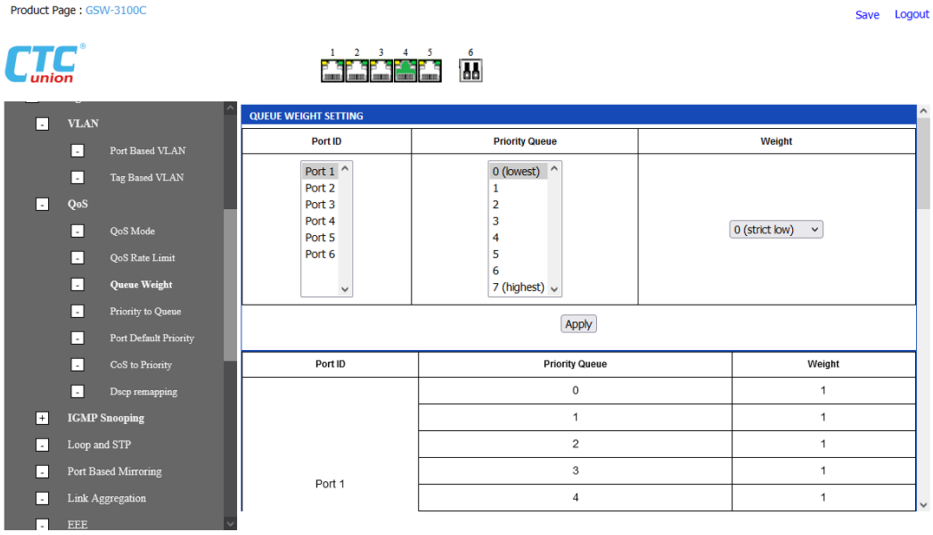
Port ID: Select the port number that you would like configure.

Ingress Meter Rate (Mbps): Specify the valid ingress rate . The valid range for port 1~4 is 0~2500 and for port 5~6 is 0~10000.

Egress Shaper Rate (Mbps): Specify the valid egress rate . The valid range for port 1~4 is 0~2500 and for port 5~6 is 0~10000.

You settings will immediately apply to the device when you click “Apply” button. The valid settings will also be shown in the table under the configuration fields. Please remember to store your changed settings in Startup configurations by clicking the “Save” button.

3.3.2.3 Queue Weight



Map Priority Queue to a Weight value.

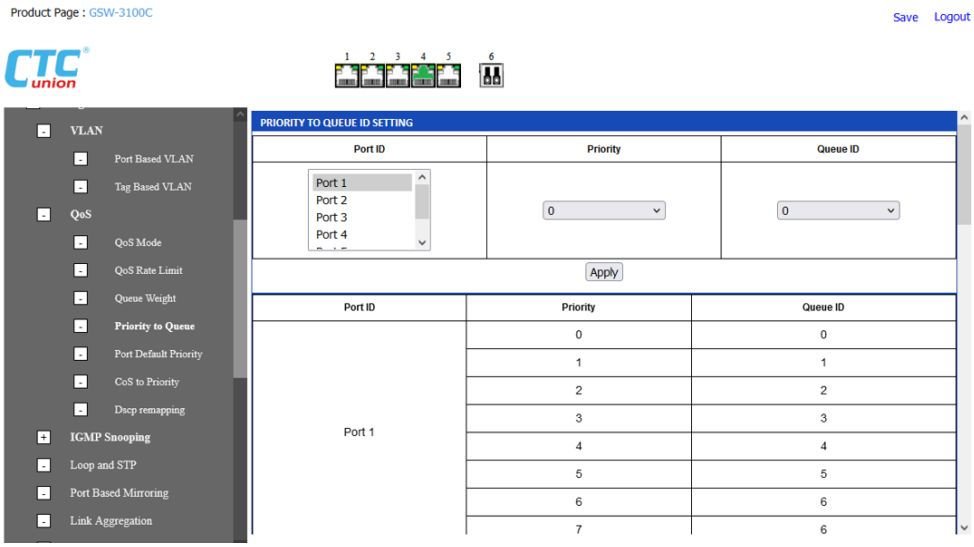
Port ID: Select a port that applies to this queue weight setting.

Priority Queue: Select a priority queue for the selected port. The priority queues available are 0 (Lowest) to 7 (Highest).

Weight: Select a weight value for the selected port. The weight values available are 0 (Strict Low) to 15 (Strict High).

Click “Apply” button to use your configured settings immediately. The current settings will also appear in the table under the configuration fields. Please remember to store your changed settings in Startup configurations by clicking the “Save” button.

3.3.2.4 Priority to Queue



Map a Priority value to a Queue ID.

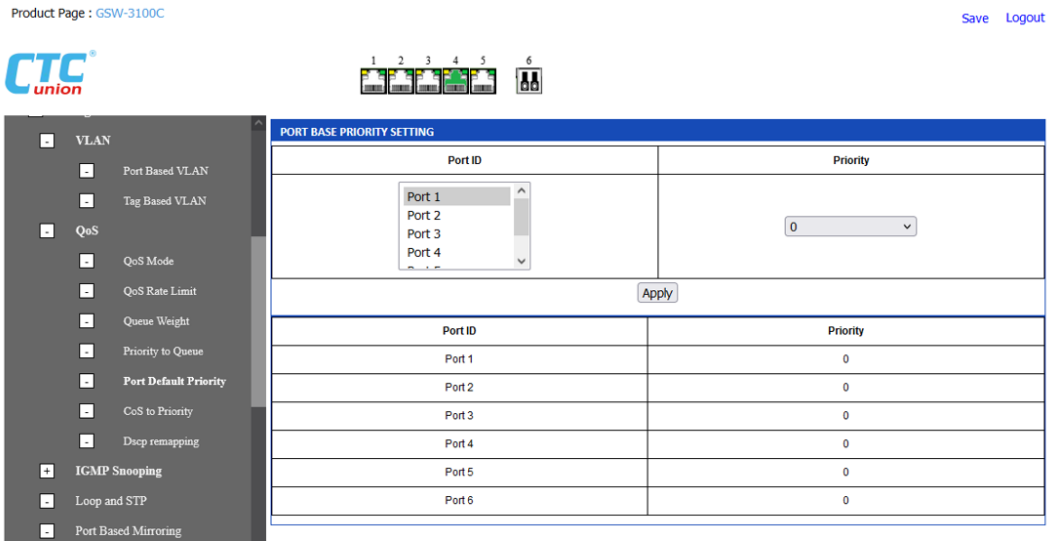
Port ID: Select a port that applies to this priority to queue setting.

Priority: Select a priority value for the selected port. The priority values available are 0 to 7.

Queue ID: Select a queue ID for the selected port. The queue IDs available are 0 to 7 (Strict High).

Click “Apply” button to use your configured settings immediately. The current settings will also appear in the table under the configuration fields. Please remember to store your changed settings in Startup configurations by clicking the “Save” button.

3.3.2.5 Port Default Priority

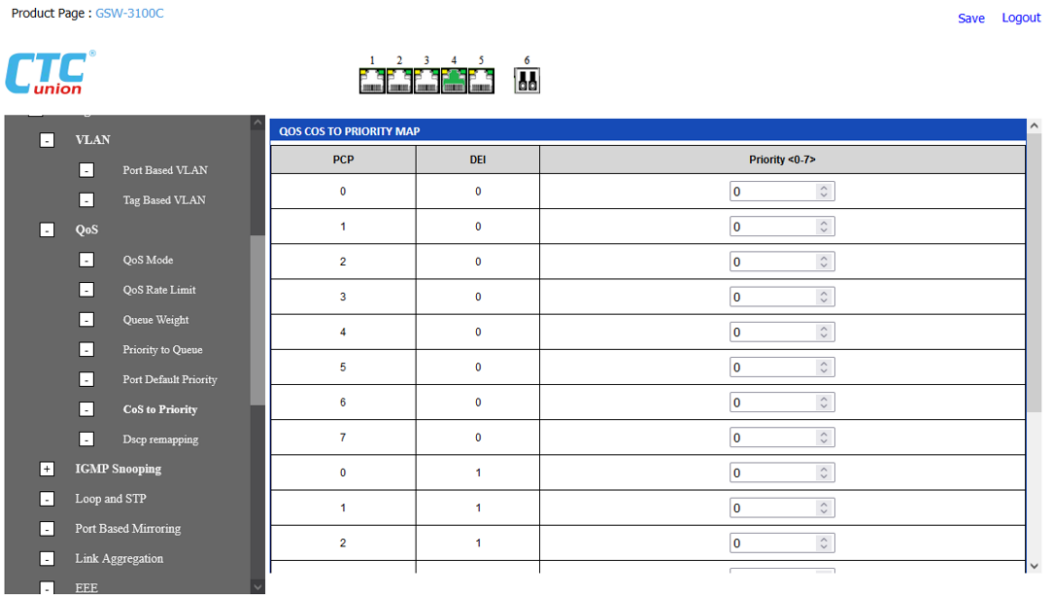


Port ID: Select a port that applies to this priority setting.

Priority: Select a priority value for the selected port. The priority values available are 0 to 7.

Click “Apply” button to use your configured settings immediately. The current settings will also appear in the table under the configuration fields. Please remember to store your changed settings in Startup configurations by clicking the “Save” button.

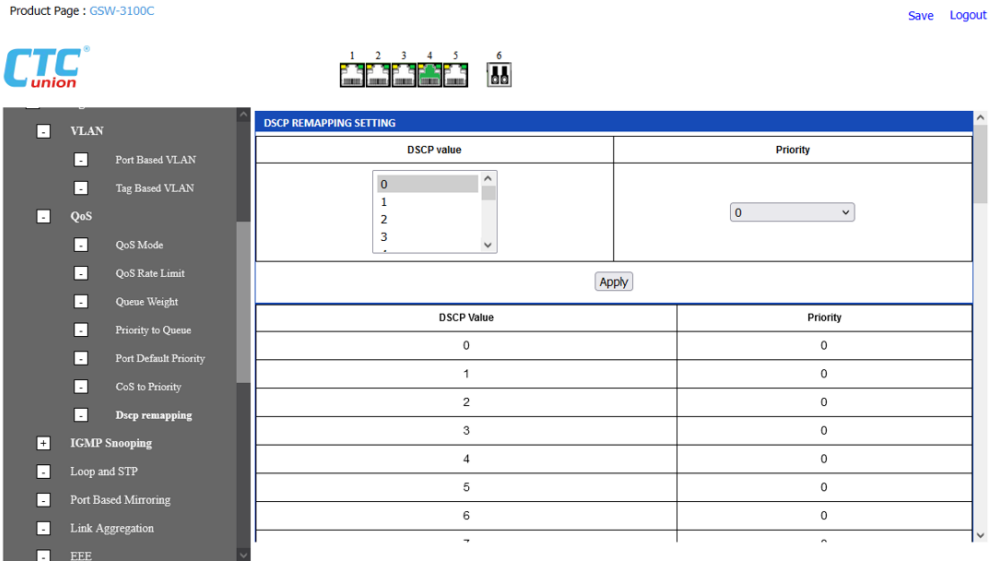
3.3.2.6 CoS to Priority



Priority <0-7>: Select a priority value that maps to PCP/DEI value.

Click “Apply” button to use your configured settings immediately. Please remember to store your changed settings in Startup configurations by clicking the “Save” button.

3.3.2.7 DSCP Remapping



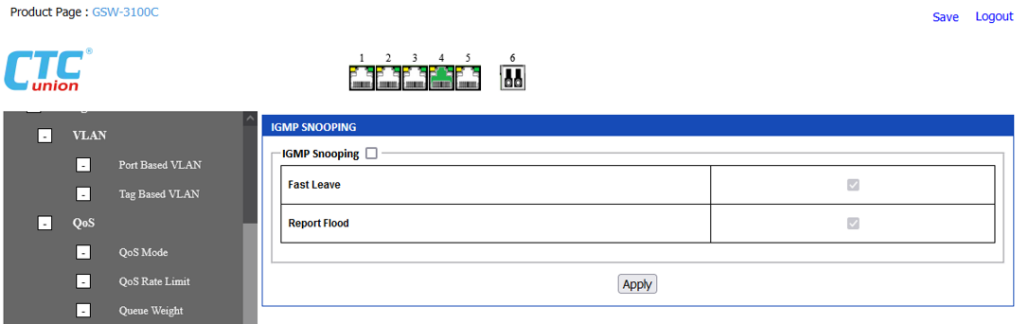
DSCP Value: Select a DSCP value to map to the priority value.

Priority: Select a priority value to the selected DSCP value.

Click “Apply” button to use your configured settings immediately. The current settings will also appear in the table under the configuration fields. Please remember to store your changed settings in Startup configurations by clicking the “Save” button.

3.3.3 IGMP

3.3.3.1 Snooping



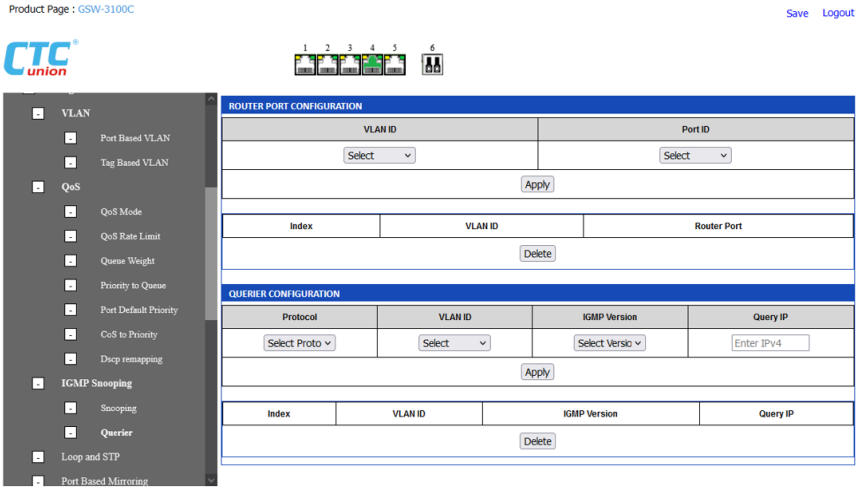
IGMP Snooping: Tick the checkbox to enable IGMP Snooping function globally.

Fast Leave: Enable fast leave function if the checkbox is ticked. When a leave packet is received, the switch immediately removes it from a multicast service without sending an IGMP group-specific (GS) query to that interface.

Report Flood: Enable floods of IGMP reports on all active ports.

Click “Apply” button to use your configured settings immediately. The current settings will also appear in the table under the configuration fields. Please remember to store your changed settings in Startup configurations by clicking the “Save” button.

3.3.3.2 Querier



Router Port Configuration

A router port is a port on the device that leads device towards the Layer 3 multicast device (IGMP querier).

VLAN ID: Select a VLAN ID for IGMP Snooping.

Port ID: Select a router port ID.

Querier Configuration

Protocol: Select the IGMP protocol.

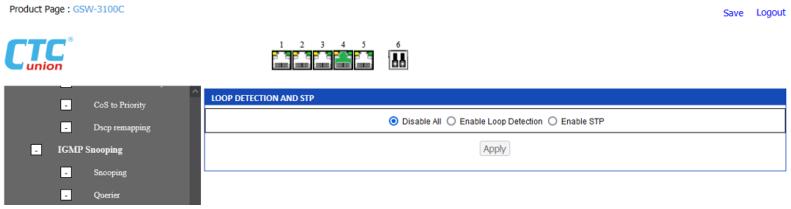
VLAN ID: Specify the VLAN ID that participatesin IGMP Querier election.

IGMP Version: This configures how hosts and routers take actions within a network depending on IGMP version selected. Available options are “IGMPv2” & “IGMPv3”.

Query IP: Specify the IPv4 unicast source address used in IP header for IGMP querier election.

Click “Apply” button to use your configured settings immediately. The current settings will also appear in the table under the configuration fields. Please remember to store your changed settings in Startup configurations by clicking the “Save” button.

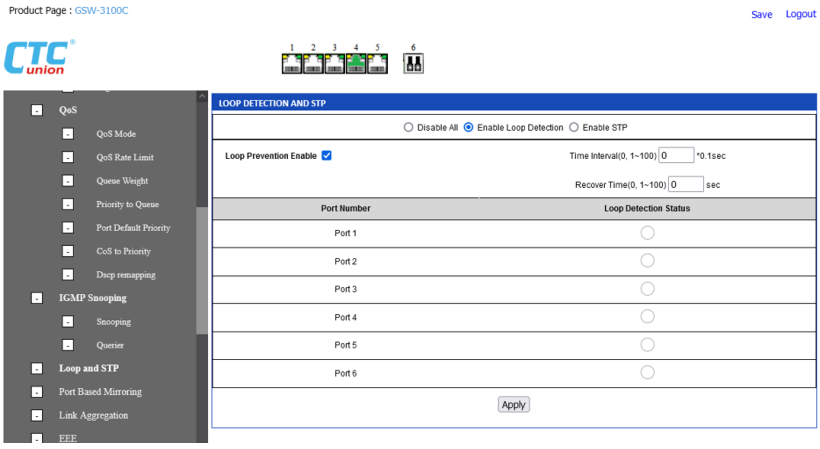
3.3.4 Loop and STP



Loop Detection and STP: Select an item that applies to your scenario.

Disable All: Disable both loop detection and STP function.

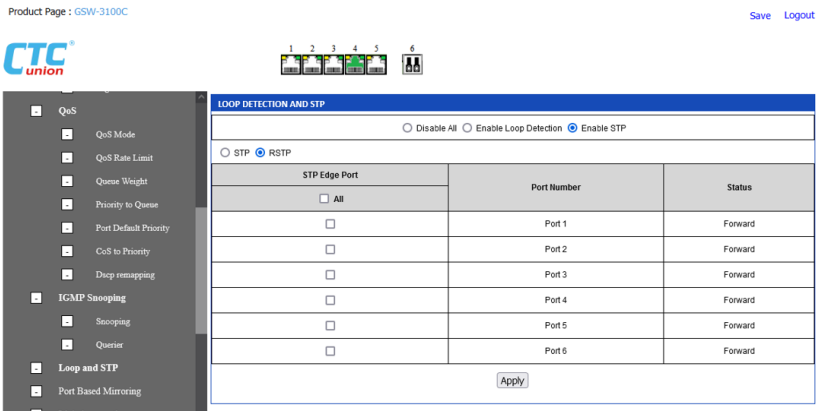
Enable Loop Detection: Tick the checkbox to enable loop detection or STP function. When enabled, the additional fields will appear.



Time Interval: The interval between each loop protection PDU sent on each port. Valid values are 1 to 100 (1 to 10 seconds).

Recover Time: The period for which a port will be kept disabled. Valid values are 0 to 100 seconds. 0 means that a port is kept disabled until next device restart.

Enable STP: Tick the checkbox to enable STP function. When enabled, the additional fields will appear. You can select either STP or RSTP protocol when new options appear. Then, select the port or ports that will become STP edge port or ports.

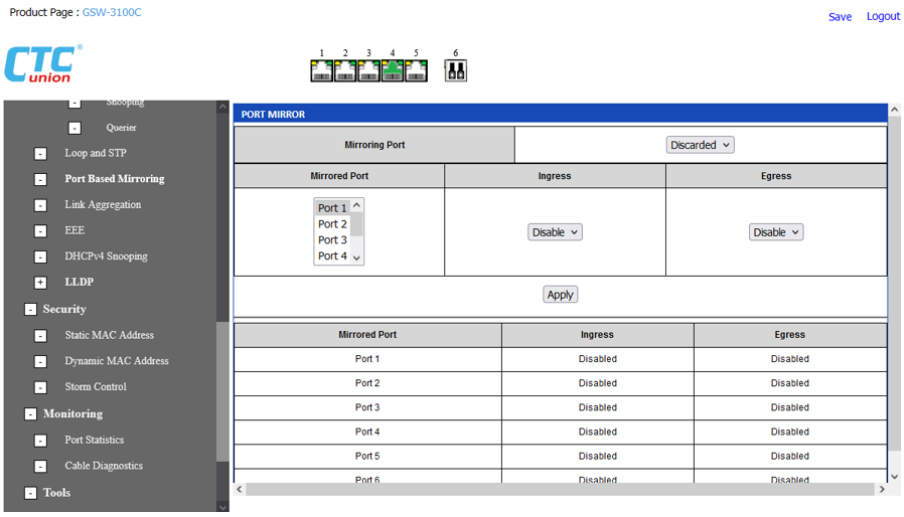


STP or RSTP: Select which STP protocol you want to use. RSTP has faster convergence and changes directly to the Forwarding state.

STP Edge Port: Select the STP Edge port which is connected to end device such as PC, printer.

Status: This field shows the current port forwarding status.

3.3.5 Port Based Mirroring



Mirroring Port: Select a port or “Discard” option. Mirroring port is for monitoring traffic. A copy of traffic from the mirrored port will be sent to the mirroring port. When “Discard” is selected, monitoring traffic will be discarded.

Mirrored Port: The port that is to be mirrored.

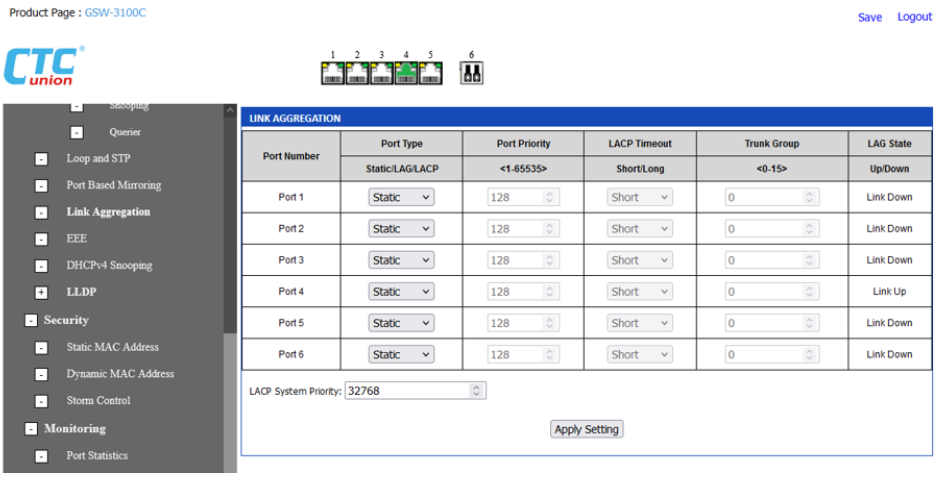
Ingress: Select the ingress traffic to be mirrored or not.

Egress: Select the egress traffic to be mirrored or not.

Click “Apply” button to use your configured settings immediately. The current settings will also appear in the table uner the configuration fields. Please remember to store your changed settings in Startup configurations by clicking the “Save” button.

3.3.6 Link Aggregation

The Switch supports dynamic Link Aggregation Control Protocol (LACP) which is specified in IEEE 802.3ad. Static trunks have to be manually configured at both ends of the link. In other words, LACP configured ports can automatically negotiate a trunked link with LACP configured ports on another devices. You can configure any number of ports on the Switch as LACP, as long as they are not already configured as part of a static trunk. If ports on other devices are also configured as LACP, the Switch and the other devices will negotiate a trunk link between them.



Port Type: Select the port type. The port can be Static, LAG, or LACP.

Port Priority: The priority of the port. The lower number means greater priority. This priority value controls which ports will be active and which ones will be in a backup role.

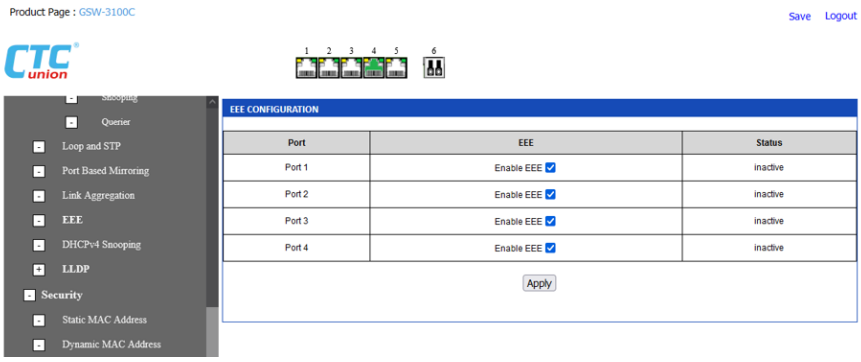
LACP Timeout: The Timeout controls the period between BPDU transmissions. “Long” will transmit LACP packets each second, while “Short” will wait for 30 seconds before sending a LACP packet.

Trunk Group: Specify a trunk group for the selected port.

LAG State: This field shows LAG (Link Aggregation Group) state.

LACP System Priority: Specify the LACP system priority. The lower number means greater priority. This priority value controls which ports will be active and which ones will be in a backup role.

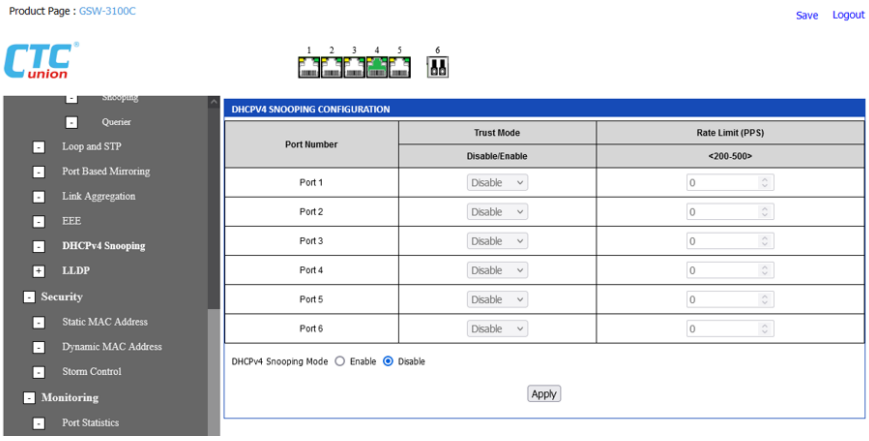
3.3.7 EEE



Enable EEE: Tick the checkbox on the preferred RJ-45 port or ports to enable EEE function.

Status: This field shows the current EEE status which can be either “Active” or “Inactive”.

3.3.8 DHCPv4 Snooping



DHCP Snooping allows the switch to protect a network from attacking by other devices or rogue DHCP servers. When DHCP Snooping is enabled on the switch, it can filter IP traffic on insecure (untrusted) ports that the source addresses cannot be identified by DHCP Snooping. The addresses assigned to connected clients on insecure ports can be carefully controlled by either using the dynamic binding registered with DHCP Snooping or using the static binding configured with IP Source Guard.

Trust Mode: Enable or disable the “Trust” mode on a specific port. If it is set to “Disable”, the port will be set to “Untrusted”.

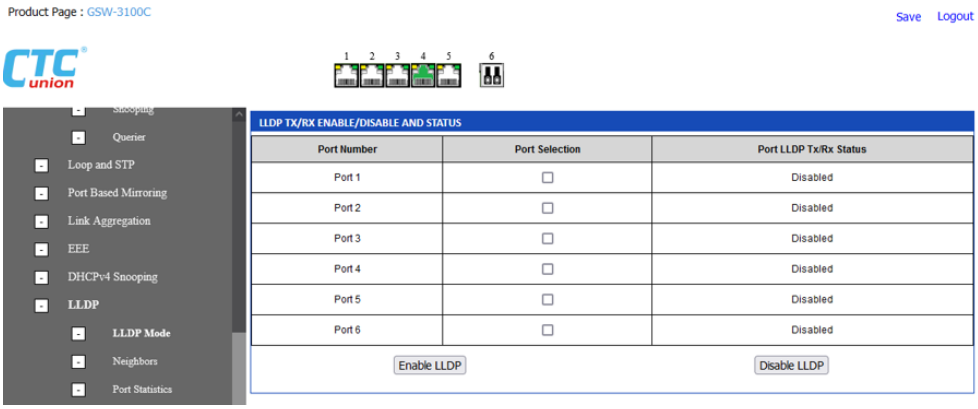
Rate Limit (PPS): Specify the rate limit value. The valid range is 200~500pps. To disable this function, type in the value “0”.

DHCPv4 Snooping Mode: Globally enable or disable DHCPv4 Snooping function.

3.3.9 LLDP

LLDP (Link Layer Discovery Protocol) runs over data link layer which is used for network devices to send information about themselves to other directly connected devices on the network. By using LLDP, two devices running different network layer protocols can learn information about each other. A set of attributes referred to TLVs are used to discover neighbour devices. Details such as port description, system name, system description, system capabilities, management address can be sent and received on this device.

3.3.9.1 LLDP Mode



LLDP PARAMETERS

Tx Interval: Specify the interval between LLDP frames are sent to its neighbours for updated discovery information. The valid values are 5 - 32768 seconds. The default is 30 seconds.

Tx Hold: This setting defines how long LLDP frames are considered valid and is used to compute the TTL. Valid range is 2~10 times. The default is 4.

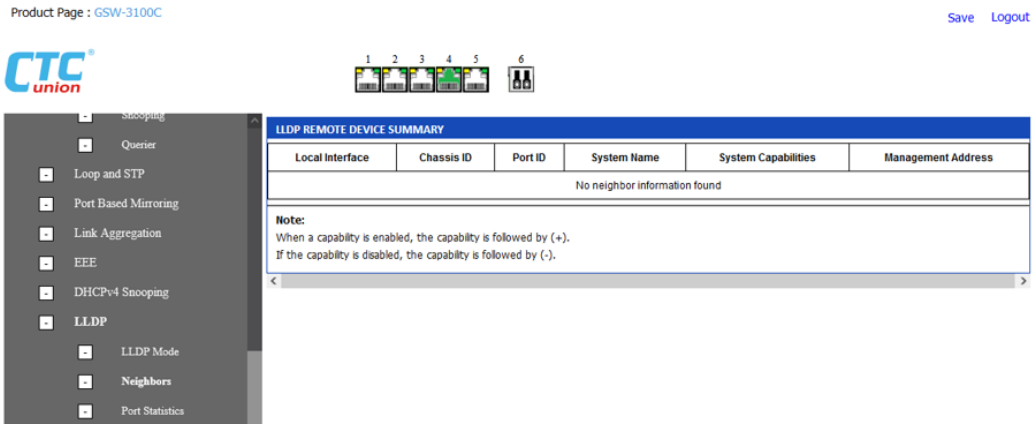
Tx Delay: Specify a delay between the LLDP frames that contain changed configurations. Tx Delay cannot be larger than 1/4 of the Tx interval value. The valid values are 1 - 8192 seconds.

Tx Reinit: Specify a delay between the shutdown frame and a new LLDP initialization. The valid values are 1~10 seconds.

LLDP TX/RX ENABLE/DISABLE AND STATUS

Port Selection: Select a port or ports and then click “Enable LLDP” or “Disable LLDP” button depending on your actual configuration needs. When LLDP is enable on a port, LLDP information will be sent and LLDP information received from neighbours will be analyzed.

3.3.9.2 Neighbors



This page shows information of the remote device that is exchanged via LLDP.

Local Interface: The local interface that a remote LLDP-capable device is attached.

Chassis ID: An ID indicating the particular chassis in this system.

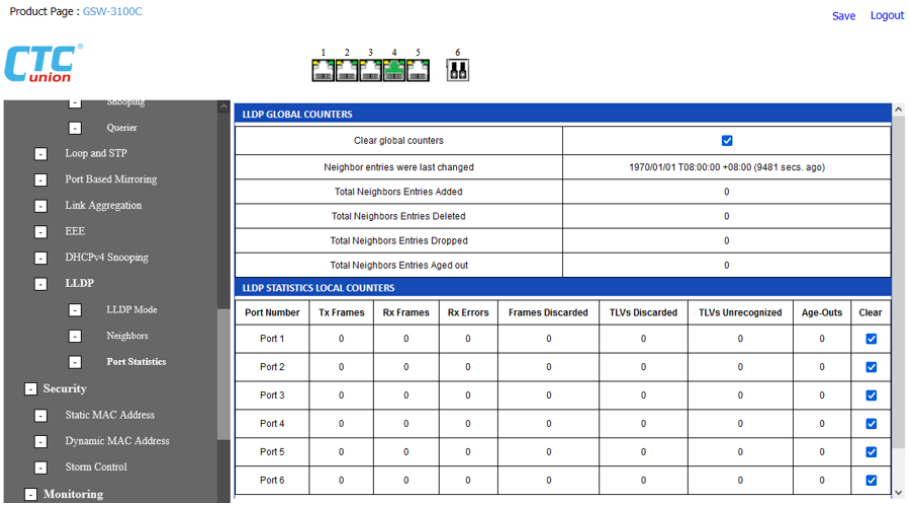
Port ID: A remote port ID that LDPDUs are transmitted.

System Name: The system name assigned to the remote system.

System Capabilities: This shows the neighbour unit's capabilities. When a capability is enabled, the capability is followed by (+). If disabled, the capability is followed by (-).

Management Address: The IPv4 address of the remote device. If no management address is available, the address should be the MAC address for the CPU or for the port sending this advertisement. If the neighbor device allows management access, clicking on an entry in this field will re-direct the web browser to the neighbor's management interface.

3.3.9.3 Port Statistics



LLDP GLOBAL COUNTERS

Clear global counters: Tick the checkbox to clear counters.

Neighbor entries wer last changed: The date and time record when the neighobr was discovered since the last changed.

Total Neighbors Entries Added: Shows the number of new entries added since the switch was rebooted, and for which the remote TTL has not yet expired.

Total Neighbors Entries Deleted: The number of LLDP neighbors which have been removed from the LLDP remote systems MIB for any reason.

Total Neighbors Entries Dropped: The number of times which the remote database on this switch dropped an LLDPDU because the entry table was full.

Total Neighbors Entries Aged Out: The number of times that a neighbor's information has been deleted from the LLDP remote systems MIB because the remote TTL timer has expired.

LLDP STATISTICS LOCAL COUNTERS

Port Number: The port number.

Tx Frames: The number of LLDP PDUs transmitted.

Rx Frames: The number of LLDP PDUs received.

Rx Errors: The number of received LLDP frames with some kind of error.

Frames Discarded: The number of frames discarded because they did not conform to the general validation rules as well as any specific usage rules defined for the particular Type Length Value (TLV).

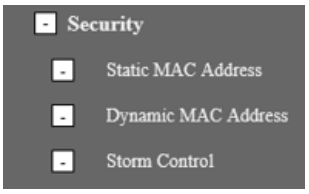
TLVs Discarded: Each LLDP frame can contain multiple pieces of information, known as TLVs. If a TLV is malformed, it is counted and discarded.

TLVs Unrecognized: The number of well-formed TLVs, but with an unknown type value.

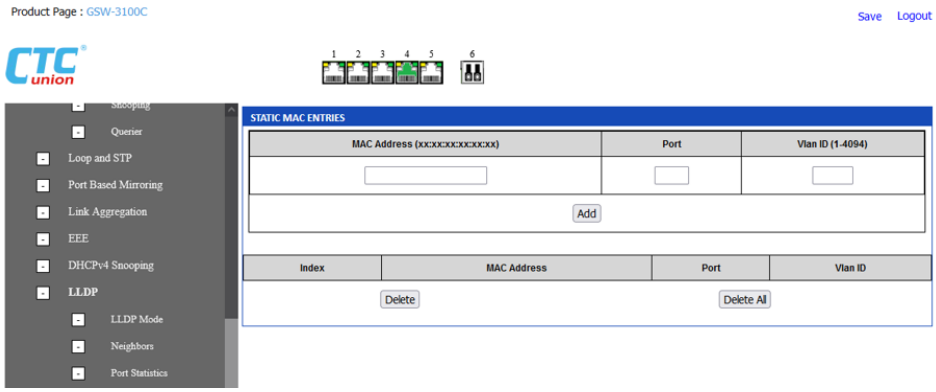
Age-Outs: Each LLDP frame contains information about how long the LLDP information is valid (age-out time). If no new LLDP frame is received within the age-out time, the LLDP information is removed, and the Age-Out counter is incremented.

Clear: Tick the checkbox on a port or ports and then click “Clear Counters” to clear counters to “0”.

3.4 Security



3.4.1 Static MAC Address



MAC Address: Specify the MAC address that will bind to the specified port.

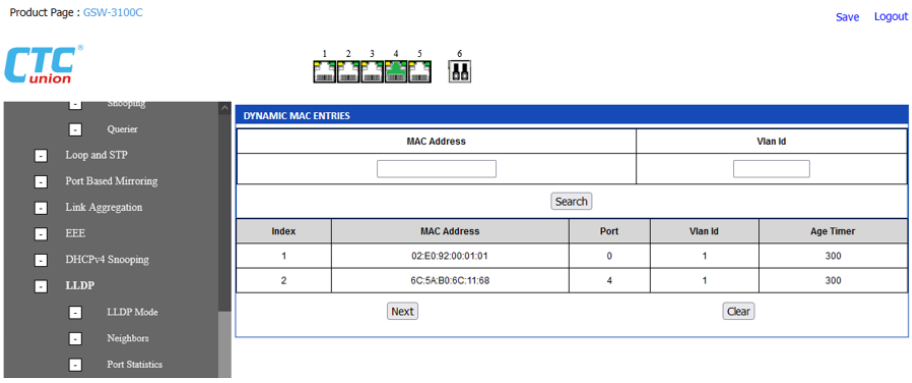
Port: Associate the physical port with the specified MAC address. The prot number can be 1~6.

VLAN ID: The binding MAC address and port pair is on the specified VLAN ID.

Click the “Add” button to add this new entry to the Static Address table. The total of 8 entries can be added to the list.

Check on the entry that you would like to delete. Then click “Delete” button to remove it from the list. Click the “Delete All” button to remove all entries specified in the table.

3.4.2 Dynamic MAC Address



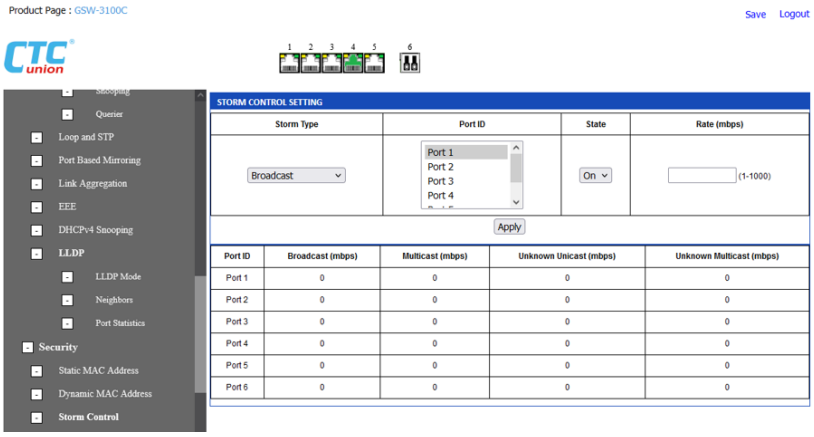
MAC Address: Specify the MAC address that you would like to search.

VLAN ID: The MAC address belongs to the specified VLAN ID.

Click the “Search” button to search this specified MAC address.

Click the “Clear” button to remove all dynamic MAC addressses listed in the table.

3.4.3 Storm Control



Storm Type: Select the strom type. The pull-down menu contains “Broadcast”, “Multicast”, “Unknown Unicast” & “Unknown Multicast”.

Port ID: Select the port number.

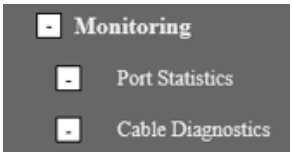
State: Enable or disable the strom control function on the specified port.

Rate: Specify the packet threshold (1~1000Mbps). The packets received exceed the selected value will be dropped.

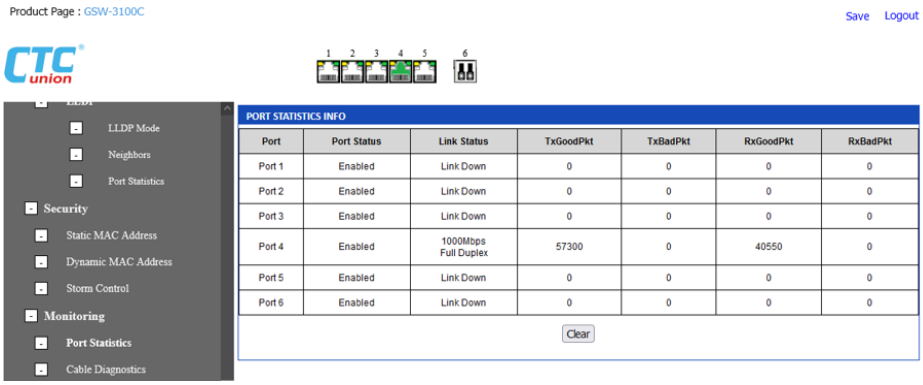
Click “Apply” button to use your configured settings immediately. Please remember to store your changed settings in Startup configurations by clicking the “Save” button.

The table under the configuration fields shows the current broadcast, multicast, unknown unicast, and unknown multicast rate information in mbps.

3.5 Monitoring



3.5.1 Port Statistics



Port: The logical port (1~6) for the data contained in the same row.

Port Status: This shows a port is enabled or disabled.

Link Status: This shows the port is link down or operates at a certain speed and duplex mode.

TxGoodPkt: The number of transmitted good packets on a per port basis.

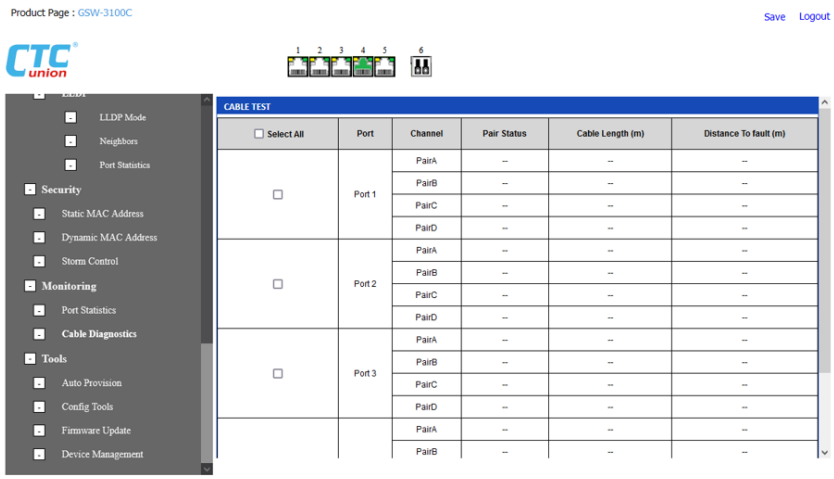
TxBadPkt: The number of transmitted bad packets on a per port basis.

RxGoodPkt: The number of received good packets on a per port basis.

RxBadPkt: The number of received bad packets on a per port basis.

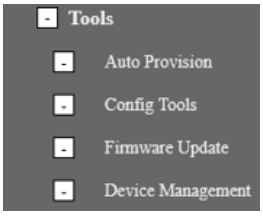
Clicking the "Clear" button will zero all counters and start counting again.

3.5.2 Cable Diagnostics

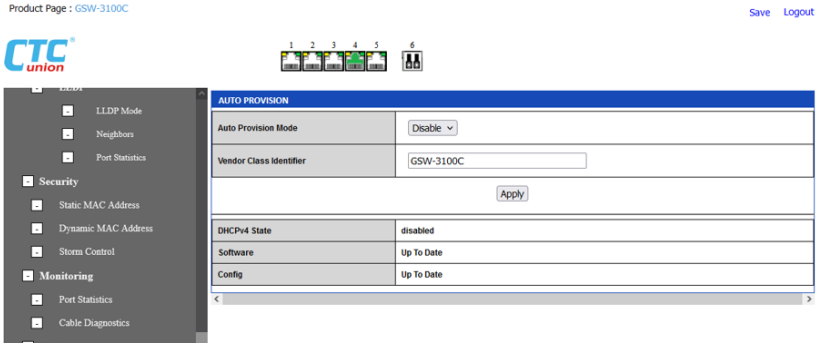


Select the port that you want to do cable diagnostics. Then, click “Start Test” to run cable diagnostics. When all ports are selected for the cable diagnostics test, the device will take a little while to run the test. Results of cable diagnostics will be shown on this page when the test is completed.

3.6 Tools



3.6.1 Auto Provision



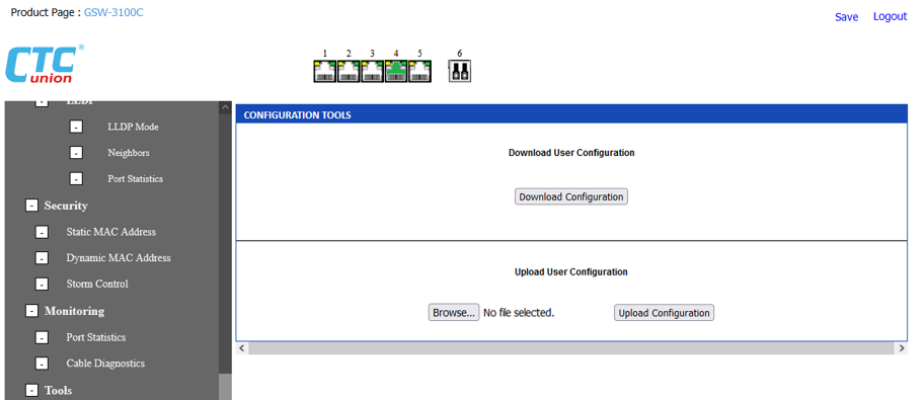
Auto Provision Mode: Enable or disable auto provisioning mode.

Vendor Class Identifier:

Click “Apply” button to use the configured settings immediately.

The table under the configuration fields shows the current DHCPv4, Software and Config status.

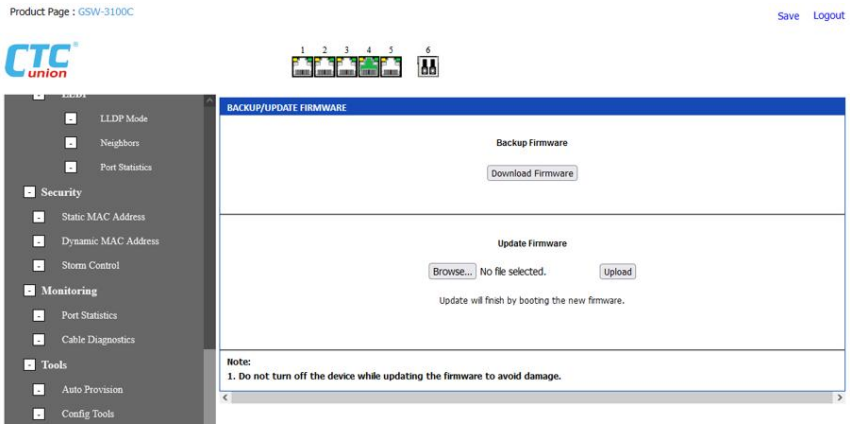
3.6.2 Config Tools



Download User Configuration: Click “Download Configuration” button to store a copy of current running configuration in your local PC or laptop. When “Download Configuration” button is clicked, another dialog box will appear to guide you to store your configurations.

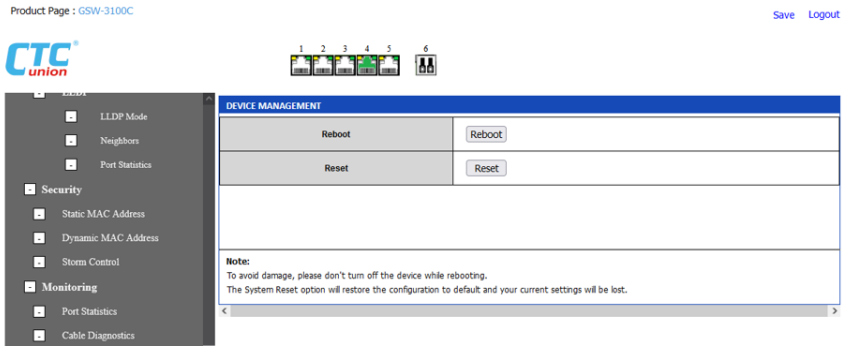
Upload User Configuration: Click “Browse” button to locate the configuration file that you want to restore to the device. Then, click “Upload Configuration” button to use the uploaded configuration file.

3.6.3 Firmware Update



Update Firmware: Click “Browse” button to locate the firmware file that you want to update to the device. Then, click “Upload” button to update the firmware file.

3.6.4 Device Management



Click the “Reboot” button to restart the device. Please note that all unsaved changes will be lost.

Click the “Reset” button to restore all configurations back to factory default settings including previously-changed settings. When the reset process is completed, you will have to log in again using the default username and password.

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