Trademarks

Disclaimer

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If you find information in this manual that is incorrect, misleading, or incomplete, we would appreciate your comments and suggestions.

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 when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the Instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CE Mark Warning

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

Revision

PLANET NOVASwitch User's Manual
FOR MODELS: GSW-1200S
Part No.: EM-GSW12V1

Before Starting

In this User's Manual, "Switch" is used for GSW-1200S, where “switch” represent the third party switch.

TABLE OF CONTENTS

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1. INTRODUCTION

1.1 Package Contents

Check the contents of your package for following parts:

- GSW-1200S.
- User's manual.
- Power cord.
- 19” rack mounting brackets.
- RS-232 cable.

If any of these pieces are missing or damaged, please contact your dealer immediately. If possible, retain the carton including the original packing material, and use them against to repack the product in case there is a need to return it to us for repairing.

1.2 How to Use This Manual

This GSW-1200S User Manual is structured as follows:

- Chapter 2, **Installation**

  It explains the functions of GSW-1200S and how to physically install the GSW-1200S.

- Chapter 3, **Configuration**

  It contains information about the smart function of GSW-1200S.

- Chapter 4 **Switch operation**

  It contains troubleshooting and specifications of GSW-1200S.

- **Appendices**

  It contains cable information of GSW-1200S.

1.3 Product Specifications

Model	GSW-1200S
Standards	IEEE 802.3, IEEE 802.3u, IEEE 802.3x, IEEE 802.3ab.
Protocol	CSMA/CD
Ports	12 10/100/1000 Mbps ports
Connector	RJ-45 connector
Speed	10/100Mbps at half duplex. 20/200/2000Mbps at full duplex
Cabling Type	UTP/STP Category 5 or better
Topology	Star
LEDs	PWR, Over Heat, Fan Failure for unit 10 Mbps, 100 Mbps, 1000 Mbps, ACT, FDX per port
Maximum Segment Length	100m (328 ft) over Category 5 twisted-pair cable or better
VLAN	12 Groups with overlapping
Trunking	2, 4 and 6 port trunking with fail-over
Port Mirroring	1 mirrored port support
QoS	IEEE802.1p priority queuing and 4 priority queues per port
Jumbo Packet	Support 9K Bytes packet size
Buffer Memory	1M-byte packet memory
MAC Address	32K
Dimensions (WxDxH)	430mm x240 mm x 44mm
Weight	3 kg
System Configuration	1 Console port, RS-232 for out of band management
AC Power	100~240VAC, 50W, 50~60Hz, 1A

Environmental Requirements	Operating temperature: 0℃ to 50℃ (32℉ to 122℉) Storage temperature: -40℃ to 70℃ (-40℉ to 158℉) Operating humidity: 5% to 95% relative humidity, non-condensing Storage humidity: 5% to 95% relative humidity, non-condensing
EMC Certification	FCC, CE

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2. INSTALLATION

This Chapter describes the functionalities of GSW-1200's components and guides how to install it on the desktop or rack. Basic knowledge of networking is assumed. Please read this chapter completely before continuing.

2.1 Product Description

The PLANET GSW-1200S provides 12 Gigabit Ethernet Switch ports. The PLANET GSW-1200S delivers twelve ports worth of high-performance, feature-rich integrated Gigabit Ethernet switching over traditional copper cabling. It provides 12 Ethernet ports and is capable of smart functions, such as VLAN, Port Trunking and Prot Mirroring. GSW-1200S can be configured by out-of-band channel via the console port (RS232) directly. Each port supports 10Mbps, 100Mbps, and 1000Mbps as well as half/full mode and can be easily connected to corporate backbones and servers.

2.1.1 Product Overview

PLANET GSW-1200S is a gigabit Ethernet switch with 12 RJ-45 10/100/1000 Mbps ports for high-speed network connectivity. GSW-1200S can also automatically identify and determine the correct transmission speed and half/full duplex mode of the attached devices with its 12 ports. Plus, the Gigabit port, together with jumbo frame feature supported, can handle extremely large amounts of data transmission in a secure topology linking to a backbone or high-power servers.

This product also supports store-and-forward forwarding scheme to ensure low latency and high data integrity, eliminates unnecessary traffic and relieves congestion on critical network paths. With an intelligent address recognition algorithm, GSW-1200S could recognize up to 32K different MAC address and enables filtering and forwarding at full wire speed.

2.1.2 Product Features

- § Fully compliant with IEEE 802.3, IEEE 802.3u, IEEE 802.3x, IEEE 802.3ab.
- § Twelve 10/100 Mbps auto-detecting half/full duplex and 1000 Mbps full duplex switch ports.
- § Features Store-and-Forward mode with wire-speed filtering and forwarding rates.
- § Hardware based 10/100Mbps, half/full duplex and 1000Mbps full duplex mode, flow control and auto-negotiation.
- § IEEE802.3x flow control for full duplex operation.
- § Backpressure for half duplex operation.
- § Integrated address look-up engine, support 32K absolute MAC addresses.
- § Automatic address learning and address aging.
- § Embedded 1MB data packet memory.
- § Jumbo packet support with max. 9KB packet size.
- § Head of Line (HOL) blocking prevention.
- § Broadcast storm protection.
- § Auto MDI/MDI-X detection.
- § Up to 12 Port-based VLAN support.
- § Up to 6 groups of Trunk.
- § Port mirroring support.
- § QoS support with 4-level priority for switching.

2.1.3 GSW-1200S Front Panel

Figure 2-1 shows a front panel of GSW-1200S.

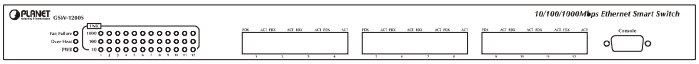

Figure 2-1 PLANET GSW-1200S Front Panel

2.1.4 LED Indicators

LED	Color	Function
PWR	Green	Lit: Power on
Over Heat*1	Red	Lit: indicate over limiting the operation temperature
Fan Failure*2	Red	Lit: indicate the two fans at rear panel not active
10Mbps	Orange	Lit: indicate that the port is operating at 10Mbps.
100Mbps	Green	Lit: indicate that the port is operating at 100Mbps.
1000Mbps	Green	Lit: indicate that the port is operating at 1000Mbps.
FDX	Orange	Lit: indicate that the connection made through the corresponding port is running in Full Duplex mode.
ACT	Green	Lit: indicate the link through that port is successfully established Blink: indicate that the switch is actively sending or receiving data over that port

*1 When the internal temperature is equal to or higher than 60 degree C, the **Over Heat** LED will light on. Once the temperature is equal to or higher than 70 degree C, the buzzer will make a continuous warning sound. Users can press the buzzer On/Off button to turn off the buzzer.

*2 There are three fans in the unit. Normally, all of the fans are running. If one of the two running fans at rear panel is failed, the **Fan Failure** LED will light on.

2.1.5 GSW-1200S Rear Panel

The rear panel of the GSW-1200S has a Power Connector and two Fans at the rear of the switch. Besides, a Buzzer ON/OFF button is placed between. The power port is where you will connect the AC power cord. (See Figure 2-2 of Rear Panel of GSW-1200S)

Figure 2-2 Rear Panel of GSW-1200S

Power Notice:

1. The device is a power-required device, it means, it will not work till it is powered. If your networks should active all the time, please consider using UPS (Uninterrupted Power Supply) for your device. It will prevent you from network data loss or network downtime.
2. In some area, installing a surge suppression device may also help to protect your switch from being damaged by unregulated surge or current to the Switch or the power adapter.

2.2 Installing a GSW-1200S

This section describes how to install your GSW-1200S Gigabit Ethernet Switch and make connections to the switch. Please read the following topics and perform the procedures in the order being presented.

PLANET GSW-1200S Gigabit Ethernet Switch do not need software configuration. To install your GSW-1200S on a desktop or shelf, simply complete the following steps.

2.2.1 Desktop or Shelf Mounting

To install a GSW-1200S on a desktop or shelf, simply complete the following steps:

Step1: Attach the rubber feet to the recessed areas on the bottom of the switch.

Step2: Place the GSW-1200S on a desktop or shelf near an AC power source.

Step3: Keep enough ventilation space between the switch and the surrounding objects

Note: When choosing a location, please keep in mind the environmental restrictions discussed in Chapter 1.3, Specification.

Step4: Connect your GSW-1200S to network devices

- **A.** Connect one end of a standard network cable to the 10/100/100 RJ-45 ports on the front of the GSW-1200S.
- **B.** Connect the other end of the cable to the network devices such as printer servers, workstations or routers…etc.

Note: Connection to the Switch requires UTP Category 5 network cabling with RJ-45 tips. For more information, please see the Cabling Specification in Chapter 1.3, Specification and Appendix.

Step5**: Supply power to the Switch.**

- **A.** Connect one end of the power cable to the GSW-1200S
- **B.** Connect the power plug of the power cable to a standard wall outlet.

When the GSW-1200S receives power, the Power LED should remain solid Green.

2.2.2 Rack Mounting

To install the switch in a **19-inch** standard rack, follow the instructions described below.

Step1: Place your GSW-1200S on a hard flat surface, with the front panel positioned towards your front side.

Step2: Attach a rack-mount bracket to each side of the switch with supplied screws attached to the package. Figure 2-3 shows how to attach brackets to one side of the switch.

Figure 2-3 Attaching the brackets to the GSW-1200S

Caution:

You must use the screws supplied with the mounting brackets. Damage caused to the parts by using incorrect screws would invalidate your warranty.

Step3: Secure the brackets tightly.

Step4: Follow the same steps to attach the second bracket to the opposite side.

Step5: After the brackets are attached to the switch, use suitable screws to securely attach the brackets to the rack, as shown in Figure 2-4

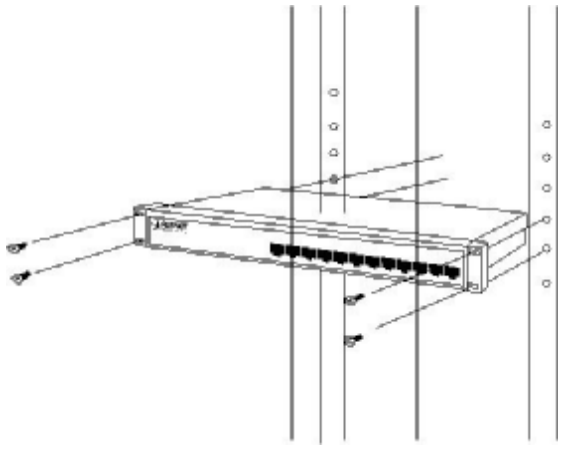

Figure 2-4 Mounting the Switch in a Rack

Step6: Proceed with the steps 4 and steps 5 of session **2.2.1 Desktop or Shelf Mounting** to connect the network cabling and supply power to your switch.

3. CONFIGURATION

Unlike the unmanaged switch (Dumb switch), GSW-1200S performs series smart functions that make the switch operate more effectively. This Chapter will describe the common usage of the Switch Smart Configuration.

3.1 Preparing for configuration

3.1.1 Connecting a PC or Terminal to the RS-232 Port

When you are ready to configure the smart functions of the switch, make sure you had connected the supplied RS-232 serial cable to the RS-232 port at the front panel of your GSW-1200S switch and your PC.

3.1.2 Terminal Emulation Setup Program

In Windows 95/98/2000/XP,launch “HyperTerminal”, create a new connection, and adjust settings as below:

- Emulation: VT-100 compatible
- Baud per second: 38400
- Data bits: 8
- Parity: None
- Stop bits: 1
- Flow Control: None

To gain a demo, please see the Figure 3-1.

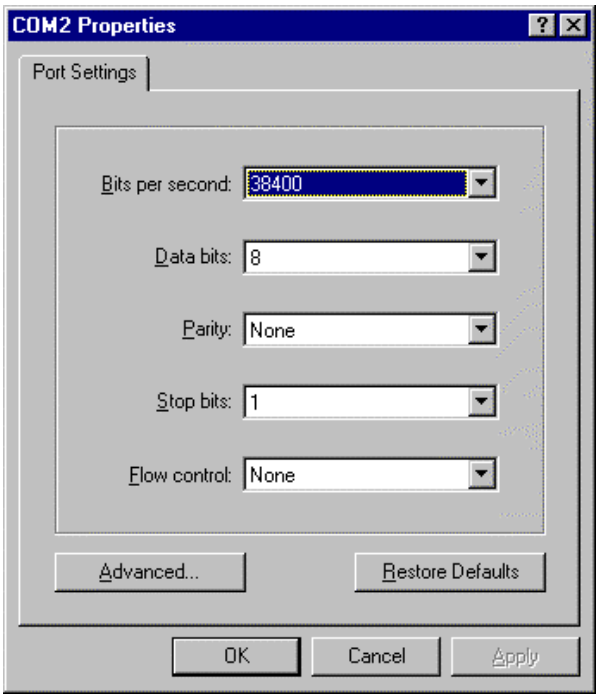

Figure 3-1 Port Settings for smart functions

3.1.3 Power-up Self-test Status

As the switch powers on, it goes through a self-test process to ensure proper operations of the GSW-1200S hardware. A series of messages will be displayed to show the test progress and result. When the test completes successfully, the system will display a log-in message. **If any of the components fails during the test, you may need to contact your local dealer and have the switch replaced.** Figure 3-2 shows a successful Self-test menu of the Power-up System Self-diagnostic Process.

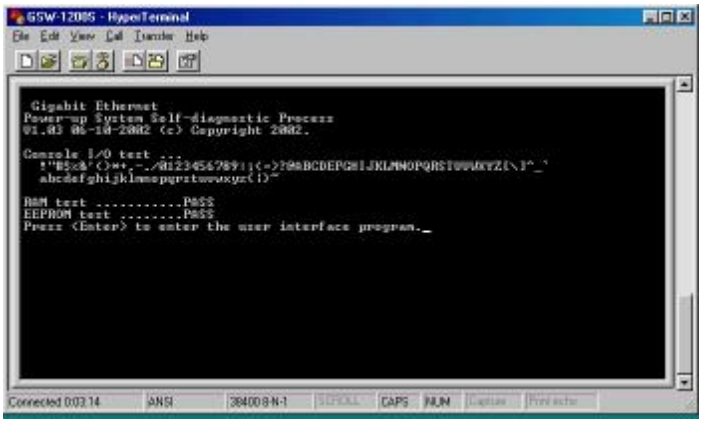

Figure 3-2 Self-test menu of the Power-up System Self-diagnostic Process

3.1.4 Log-in

Log-in is required to access the command console after the self-test completes successfully. The factory default user name and password is "**admin**". You may change password in the System Menu. To access to the Main Menu, please always enter the correct password. (See Figure 3-3)

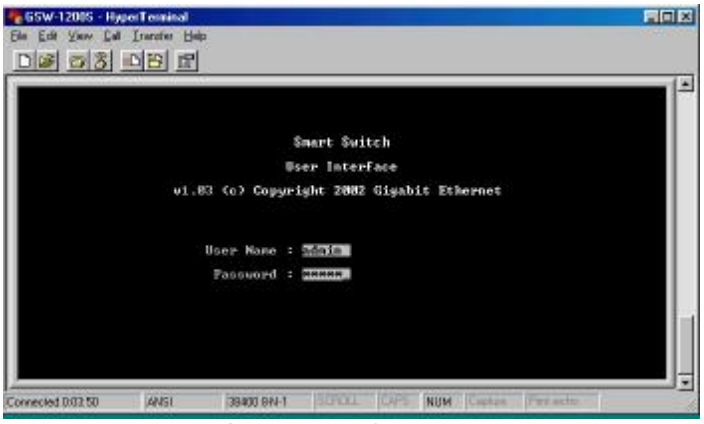

Figure 3-3 Log-in Message

3.2 Getting Started

3.2.1 General Guidelines

GSW-1200S allows users to configure the machine via menu-driven screens. To work within the menu, please follow the guidelines shown in Table 3-1.

Items	Description
OBJECTS	Objects are strings of characters on the screen. Each object represents a distinct function. There are a few kinds of objects.
INFO OBJECTS	They only display information or messages and cannot be changed. The cursor never stops at them either.
COMMANDS OBJECTS	They provide function trigger or menu navigation. When highlighted, an "Enter" key triggers the object and the function or navigation is performed.
LIST OBJECTS	They provide a list of predefined values for the selection. The "Space" key starts the selection process and "Enter" key confirms the selection. The Ctrl-X key cancels the process and reverts the original value
VALUE OBJECTS	The user can change them. The "Enter" key starts the edit process. The user can then input the desired value. If the change value is not a desire one, press the "Ctrl-X" to cancel the edit process.
CURRENT OBJECTS	There are many distinct objects on the command screen. The one that is currently being accessed is highlighted.
Status Line	The Status line is at the second line to the bottom. It is highlighted. The left area of the line shows the description of the current object. The right area shows the type of the object. There are 3 possible types: READ/SELECT The object is a List object READ/WRITE The object is a Value object Nothing The object is either a selector to the next menu level or a direct command.
ARROWS KEY	Provides navigation functions. “I”, “J”, “K” and “M” keys and also be used to navigate.
TAB KEY	The Tab key is used to access the next object. Some terminal or terminal emulation program might not be able to provide Arrow keys correctly, such as some

	versions of Microsoft HyperTerminal. The Tab key is the only way to navigate the screen with those terminals.
ENTER KEY	The Enter key is used extensively to start a selected function, to start or end the editing process, or to access the next level of menu functions.
Ctrl-X key	When a list selection or text editing is being performed, the Ctrl-X key can be used to cancel the change and revert to original value.
ESC KEY	When menu selection is being performed, the ESC key exit the current menu level and enters the upper level.
SPACE KEY	When a List Object is performed, the Space key starts the selection and scrolls through the available choices.
<Return>	A common menu item, exits the current menu level

Table 3-1 General Guideline within the Menu

3.2.2 Main Menu Screen

The main menu enables you to view and manage the GSW-1200S settings. Use the "Arrow" keys to move the highlight over a selection. Press the "Return" key to select and "Esc" key to return to the previous selection. Please see Figure 3-4.

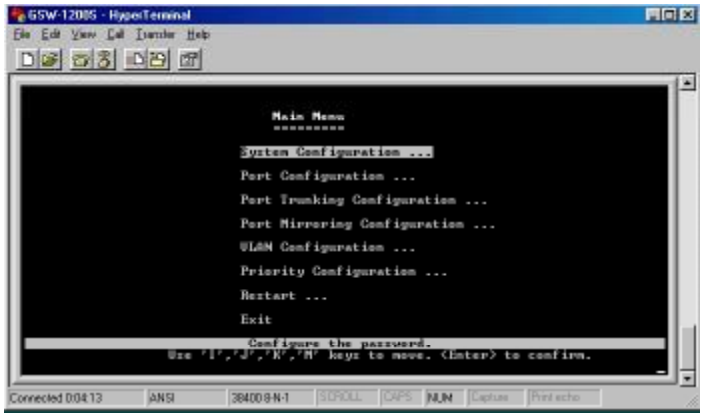

Figure 3-4 Main Menu Screen

System Configuration Menu

Displays the System Configuration Menu, which enables you to change the password, aging time, Jumbo frame, logout time and auto refresh time.

Port Configuration Menu

Displays the Port Configuration Menu, which allows you to configure admin status, auto negotiation, speed/duplex and flow control.

Port Trunking Configuration Menu

Displays the screen for trunking a group of ports together to speed up data transmission.

Port Mirroring Configuration Menu

Displays the screen for selecting a port to monitor.

VLAN Configuration Menu

Displays options for configuring VLAN.

Priority Configuration Menu

Displays the options available for assigning varying degree of priority to each port.

Restart Menu

Displays options for restarting the switch.

Exit

Highlighting this selection and pressing the “Enter” key will take you out of the configuration.

3.2.3 System Configuration

The following screen (Figure 3-5) is displayed when the **System Configuration** heading is selected from the Main menu. Use the System configuration menu to view and change the values. To change the password, aging time, logout time or auto refresh time, use the "Arrow" keys to move the highlight to the selection and then press the "Enter" key. Entering the value for the highlighted selection. And then press "Enter" again for confirmation.

Caution:
Record your new password in a safe place. There is NO method of recovery if you forget or lost your password but return to us for firmware code refresh.

Table 3-2 describes the objects that shown in the system configuration menu screen.

Figure 3-5 System Configuration Menu Screen

Object	Default	Description
Password	admin	The administrative password you choose to assign for the switch.
Aging Time	240	How long the Switch will keep an MAC address, which has had no activity in its buffer memory. The higher the value, the longer the Switch will remember the MAC address before dumping it. Maximum 1920 seconds.
Jumbo Frame	Disable	designed to dramatically increase end-to-end through-put and decrease server processing by extending the maximum Ethernet frame size to 2K,4K,8K,9K bytes
Logout Time	15	How long the Switch will automatically log an inactive user out. 0 for no timeout. Range: (0~99 minutes)
Auto Refresh Time	30	How often the Switch will refresh the values on any screens in the menu. Range: (0~99 seconds)

Table 3-2 Descriptions of the System Configuration Menu Objects

3.2.4 Port Configuration

The following screen is displayed when the Port Configuration is selected from the Main Menu. Use this menu to view or change the Port Configuration information for each port. Note that the Link Status is automatically determined by the Switch and cannot be changed. The user can determine other information such as Admin Status, Auto Negotiate, Speed/Duplex or Flow control. To change the setting, use the "Arrow" keys to move the highlight to the selection and press the "Space Bar" key to toggle back and forth between the options. Pressing "Enter" key to confirm your option.

Table 3-3 describes the status and configuration objects for Gigabit Ethernet ports.

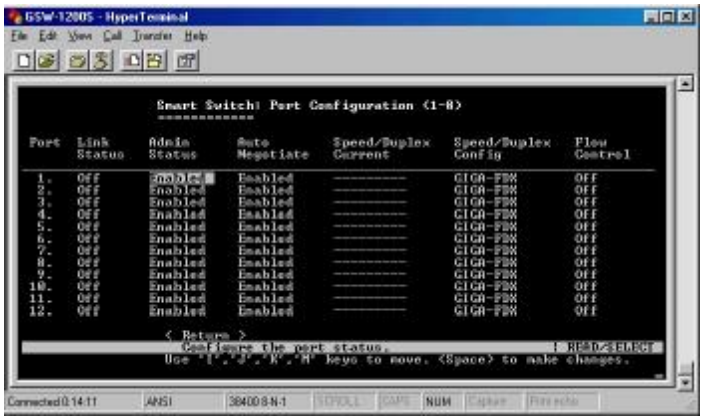

Figure 3-6 Port Configuration Menu Screen

Object	Type	Description
Link Status	Info	The status of the link test, indicating a valid link partner. "On" means a device is successful connect to the port. "Off" means no device is connected.
Admin Status	List	Operational status of the port. Default: Enabled
Auto Negotiation	List	Auto Negotiation status of the port Default: Enabled
Speed / Duplex current	Info	Shows the current speed and duplex negotiation of the port.
Speed / Duplex config	List	The speed of these ports. The value can be 10HDX/10FDX/100TX-HDX/100TX-FDX/GIGA-FDX
Flow Control	Info	Flow control function enable/disable

Table 3-3 Status and Configuration of Gigabit Ethernet Port

3.2.5 Port Trunking Configuration

The Port Trunking Configuration menu controls the port trunking or the so-called “Link Aggregation” function. Several ports in the GSW-1200S Gigabit Ethernet Switch can be bundled together to form a higher-bandwidth trunk.

Figure 3-7 shows the Port Trunking Configuration Menu.

Figure 3-7 Port Trunking Configuration Menu

Setting up a new trunk:

Please note that the trunk list should be empty when you first start the Port Trunking Configuration function. To set up a new trunk, select the <Add> function with the "Arrow" keys and then press the "Enter" key. The **Add Trunking Port Screen** will display. (See Figure 3-8 Add Trunking Port screen)
Each item shown in the Add Trunking Port screen represents a set of ports that can be trunked together. Press "Enter" key on your desired item to select the set as a new trunk. Note that selecting a set of ports may cause other sets to be excluded in further selections. You may select more than one set until the trunking ports are all being defined. Figure 3-8 shows the example of the defined trunking ports.

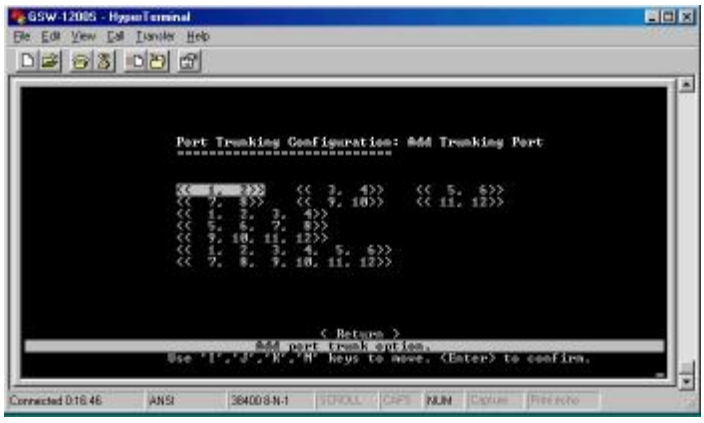

Figure 3-8 Add Trunking Port Screen

The following shows the Trunking Configuration screen after trunking ports are defined.

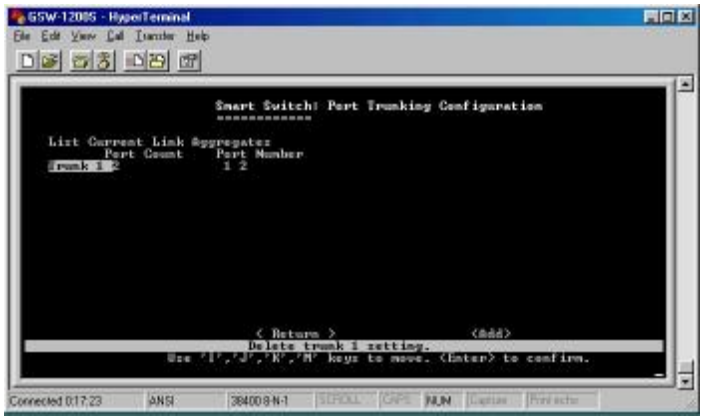

Figure 3-9 Example of the Defined Trunking Ports

Deleting a trunk group:

To delete a trunk from the configuration process, simply highlight the trunk group that you want to delete and then press the "Enter" key. Then, the following question will appear in the status line:

Are you sure you want to perform this operation? (y/n)

Press the **Y** key to delete the selected trunk group.

3.2.6 Mirror Port Configuration

To verify whether all the data is being transmitted and received properly, GSW-1200S supports the mirror port configuration allowing users to assign two different ports to carry the same data stream.

Figure 3-10 shows the menu of Mirror Port Configuration. Table 3-5 shows the descriptions of the Mirror Port Configuration Menu Objects. To change the values of this menu, use the "Arrow" key to move the highlight to the selection and press the "Space Bar" key to toggle back and forth between the options. Pressing "Enter" key to confirm your options.

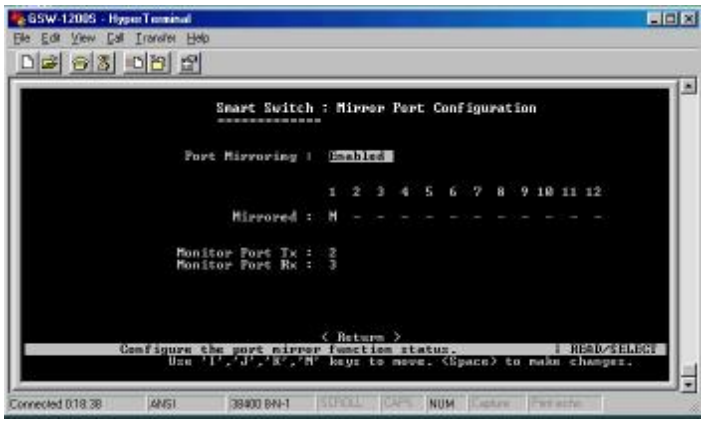

Figure 3-10 Mirror Port Configuration

Object	Type	Description
Port Mirroring	List	"Enable" or "Disable" the port mirroring function in the system.
Mirrored	List	Any port can be monitored.
Monitor port TX	List	Any port can monitor Transmitted Packets on the mirrored port.
Monitor Port RX	List	Any port can monitor Received Packets on the mirrored port.

Table 3-5 Descriptions of the Port Mirroring Configuration Menu Objects

3.2.7 VLAN Configuration

The VLAN Configuration sets up the VLAN configuration of the switch. Users can use this configuration to segment their own networks into a smaller subgroup and making this group as its own network.

The GSW-1200S supports 12 Port-based VLANs. It supports VLAN overlapping which means one port can belong to multiple VLANs. However, ports on VLAN 1 can not overlap with other VLANs.

Figure 3-11 VLAN Table Configuration Menu

Setting up a new VLAN:

To add a new Virtual LAN, select the <Add> function with the "Arrow" keys and then press the "Enter" key. The **ADD VLAN** screen will display. Please see Figure 3-12. To add a new VLAN, enter and edit the member set of the VLAN. The <OK> functions take you back to the VLAN Configuration Menu screen.

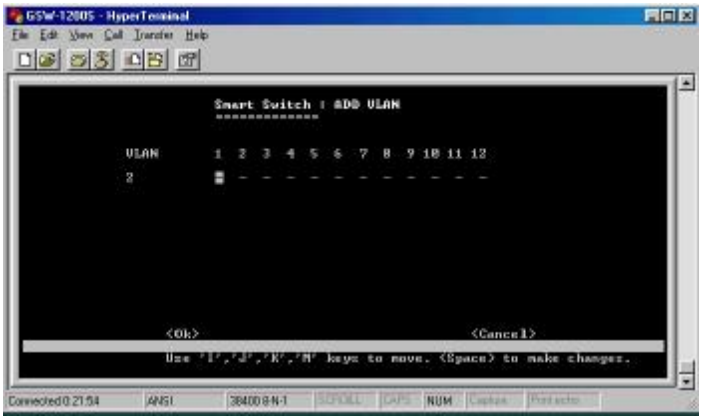

Figure 3-12 Add VLAN screen

Deleting or Modifying a VLAN:

To delete or modify a VLAN from the VLAN Table, simply highlight the VLAN that you want to delete or modify and then press the "Enter" key. It will take you to the Modify VLAN Menu. Please see Figure 3-13. After making new VLAN configuration, use the <Config> function to activate the new settings. To delete the VLAN, use the <Delete> function to delete it.

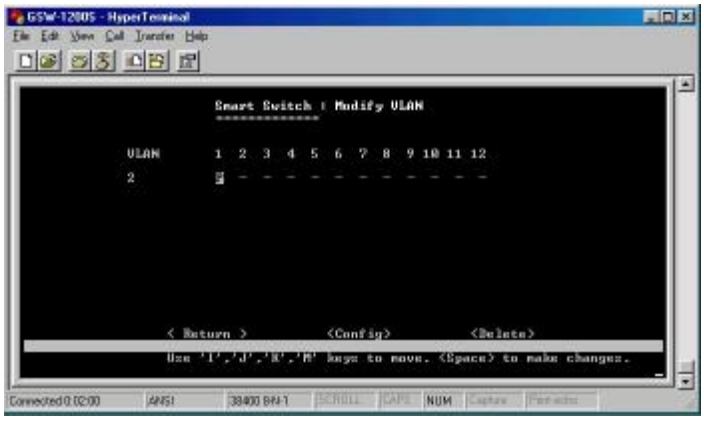

Figure 3-13 Modify VLAN screen

3.2.8 Priority Configuration

To decide which ports get the first right to send its data, you can set the priority for the ports. Use the Port Priority Configuration Menu to change the values within the screen.

The priority configuration sets the port-based priority function of the system. PLANET GSW-1200S has **4** priority queues. Each frame can be sent via higher or lower priority queue depending on the priority setting of it with strict mode (see the Figure 3-14) or weighted round-robin (see the Figure 3-15).

Use the "Arrow" key to move the highlight to the selection and press the "Space Bar" key to toggle back and forth between the options. Press "Enter" key for confirmation.

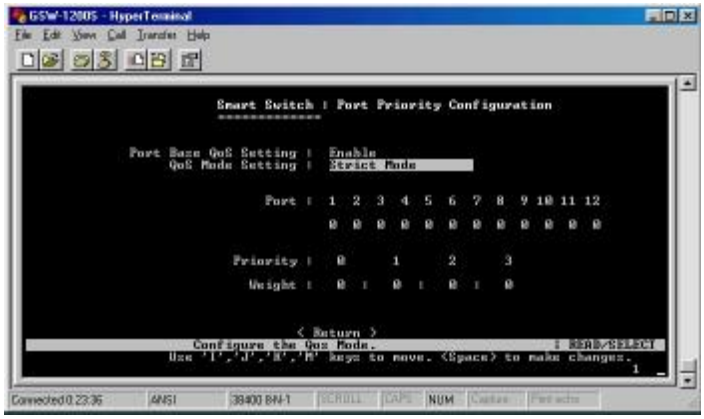

Figure 3-14 Port Priority Strict Mode Configuration Menu Screen

Figure 3-15 Port Priority Weight Round Robin Configuration Menu Screen

A description of the objects within the Port Priority Configuration Menu shows in Table 3-7.

Object	Type	Decsription	Values
Port Base QoS setting	List	“Enable” or “Disable” the Port Base QoS setting function in the system.	
QoS Mode setting	List	Provide Strict mode and Weight Round Robin mode in the system **Strict mode:** Only when higher priority queue is empty, the packets on lower priority queue got the chance to send. **Weight Round Robin**: The packets on priority queue with higher weight got more chance to send.	
Port	List	Four priority can be set on each port	0-3
Priority / Weight	List	Each priority can be configured its weight	0-15

Table 3-7 Descriptions of the Objects within the Port Priority Menu

3.2.9 Restart

The Restart Menu is accessed from the Main Menu. The System Restart Screen, as shown below, allows you to view or change the <Factory default> or <Restart> values. Use the "Arrow" keys to move the highlight to <Factory default> and press the "Enter" key. Then you will clear all the configuration data and put the Switch back to factory default state. The switch then restarted.

If you choose the <Restart> function, you will perform a reset of the switch.

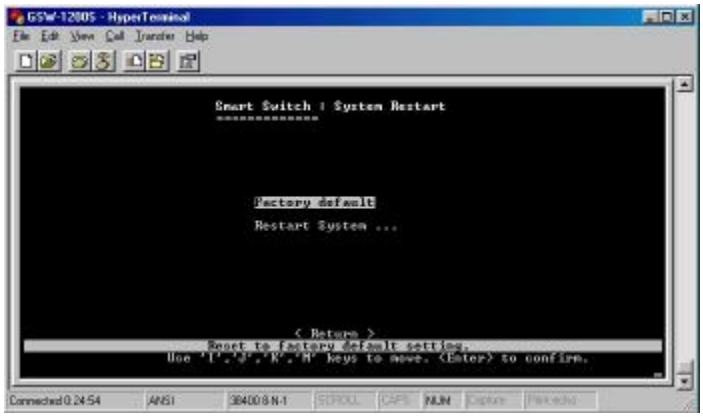

Figure 3-16 System Restart Main Screen

3.2.10 Exit

The Exit function would bring you out of the configuration of GSW-1200S.

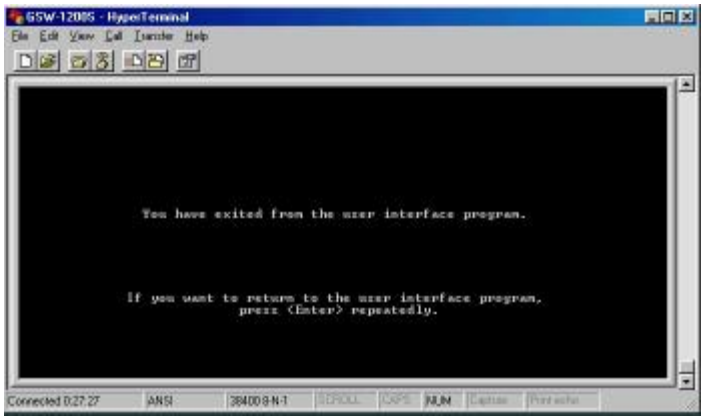

Figure 3-17 Exit of User Interface screen

4. SWITCH OPERATION

4.1 Address Table

The Switch is implemented with an address table. This address table composed of many entries. Each entry is used to store the address information of some node in network, including MAC address, port no, etc. This information comes from the learning process of Ethernet Switch.

4.2 Learning

When one packet comes in from any port, the Switch will record the source address, port no. and the other related information in address table. This information will be used to decide either forwarding or filtering for future packets.

4.3 Forwarding & Filtering

When one packet comes from some port of the Ethernet Switching, it will also check the destination address besides the source address learning. The Ethernet Switching will lookup the address-table for the destination address. If not found, this packet will be forwarded to all the other ports except the port which this packet comes in. And these ports will transmit this packet to the network it connected. If found, and the destination address is located at different port from this packet comes in, the Ethernet Switching will forward this packet to the port where this destination address is located according to the information from address table. But, if the destination address is located at the same port with this packet comes in, then this packet will be filtered. Thereby increasing the network throughput and availability

4.4 Store-and-Forward

Store-and-Forward is one type of packet-forwarding techniques. A Store-and Forward Ethernet Switching stores the incoming

frame in an internal buffer, do the complete error checking before transmission. Therefore, no error packets occurrence, it is the best choice when a network needs efficiency and stability.

The Ethernet Switch scans the destination address from the packet-header, searches the routing table provided for the incoming port and forwards the packet, only if required. The fast forwarding makes the switch attractive for connecting servers directly to the network, thereby increasing throughput and availability. However, the switch is most commonly used to segment existing hubs, which nearly always improves overall performance. A Ethernet Switching can be easily configured in any Ethernet network environment to significantly boost bandwidth using conventional cabling and adapters.

Due to the learning function of the Ethernet switching, the source address and corresponding port number of each incoming and outgoing packet are stored in a routing table. This information is subsequently used to filter packets whose destination address is on the same segment as the source address. This confines network traffic to its respective domain, reducing the overall load on the network.

The Switch performs "Store and forward" therefore, no error packets occur. More reliably, it reduces the re-transmission rate. No packet loss will occur.

4.5 Auto-Negotiation

The STP ports on the Switch have built-in “Auto-negotiation”. This technology automatically sets the best possible bandwidth when a connection is established with another network device (usually at Power On or Reset). This is done by detect the modes and speeds at the second of both device is connected and capable of, Both 10Base-T and 100Base-TX devices can connect with the port in either Half- or Full-Duplex mode. 1000Base-T can be only connected in Full-duplex mode.

5. TROUBLESHOOTING

This chapter contains information to help you solve problems. If Giga Switch is not functioning properly, make sure the Ethernet Switch was set up according to instructions in this manual.

The Link LED is not lit

Solution:
Check the cable connection and remove duplex mode of the Giga Switch

Some stations can not talk to other stations located on The other port

Solution:
The address table may contain older information than of the address table of that node. Please power down to refresh the address information. Please also check VLAN configuration.

Performance is bad

Solution:
Check the full duplex status of the Ethernet Switch. If the Ethernet Switch is set to full duplex and the partner is set to half duplex, then the performance will be poor.

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APPENDIX A SWITCH'S RJ-45 PIN ASSIGNMENTS

A.1 1000Mbps, 1000Base T

Contact	MDI	MDI-X
1	BI_DA+	BI_DB+
2	BI_DA-	BI_DB-
3	BI_DB+	BI_DA+
4	BI_DC+	BI_DD+
5	BI_DC-	BI_DD-
6	BI_DB-	BI_DA-
7	BI_DD+	BI_DC+
8	BI_DD-	BI_DC-

Implicit implementation of the crossover function within a twisted-pair cable, or at a wiring panel, while not expressly forbidden, is beyond the scope of this standard.

A.2 10/100Mbps, 10/100Base-TX

Contact	MDI	MDI-X
1	1	3
2	2	6
3	3	1
6	6	2

EM-GSW12V1