

S2528GX Hardware Installation Manual

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Chapter 1 Overview of S2528GX Switch

The document describes the characteristics and parameters of S2528GX and gives an overview of S2528GX.

1.1 Standard Configuration

S2528GX has 24 gigabit SFP ports, 4 TX/SFP ports, 1 console port and 1 Phone Jack power-supply port. For details, see table 1-1.

Table 1-1 Attributes of the necessary port

Port	Attribute
Gigabit Ethernet port	SFP port and UTP port (RJ45), having LINK/ACT LEDs
Console port	An RJ45 port with a rate of 9600 bps
Port for power source	AC220V port which is used for power input

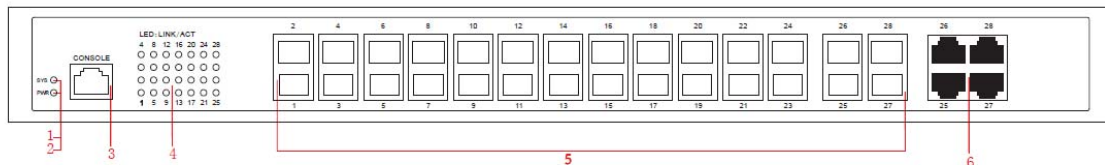


Figure 1-1 Front template of the S2528GX switch

Table 1-2 Parts at the front template of the S2528GX switch

No.	Abbrev.	Name	Remarks
1	PWR	Power LED	If the switch is powered on, the LED is on.
2	SYS	System LED	If the LED is always on, the system is being started. If the LED flickers, the system works normally.
3	CONSOLE	Console port	Manages the switch locally.
4	LINK/ACT	LED of each port	If the LED is always on, the link on the port is normal.
5		28 gigabit SFP ports	
6		4 gigabit TX ports	

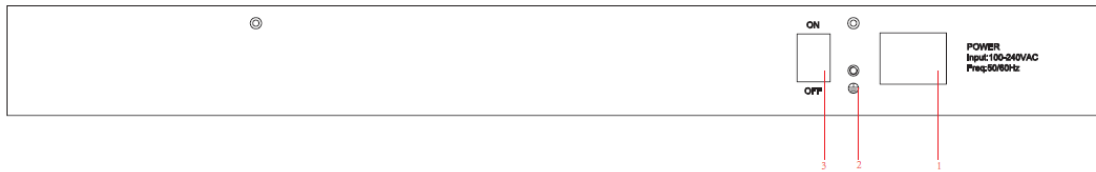


Figure 1-2 Back template of the S2528GX switch

Table 1-3 Parts at the back template of the S2528GX switch

No.	Abbrev.	Name	Remarks
1	None	AC power socket	100 to 240V AC
2	None	Grounding column	The grounding must be fine.
3	None	Power switch	It is used to open or cut off the power supply.

1.2 Attribute Parameters of S2528GX

Protocol standard	Supported standard	IEEE 802.1d Spanning Tree Protocol IEEE 802.1s multiple spanning trees IEEE 802.1p Class of Service IEEE 802.1q tagged VLAN IEEE 802.3x Flow control IEEE 802.3z asymmetric flow control IEEE 802.3ad Link aggregation
	Standard of IP routing protocol	RFC 1058 RIP RFC 1723 RIP v2 RFC 1583 OSPF v2
	Network management standard	RFC 1157 SNMP v1/v2 RFC 1213 MIB II RFC 1757 RMON 1,2,3,9
Hardware features	Memory	EPROM: 512K Bytes Flash Memory: 16MB SPI FLASH SDRAM: 128MB
	Standard configuration	24 gigabit SFP ports and 4 TX/SFP ports One Console port 1 power-supply port

	Specifications	440*180*44mm
	Working temperature/humidity	0°C to 60°C; 10%-85% non-condensing
	Storage temperature/humidity	-40°C to 80°C; 5%-95% non-condensing
	Power specifications	Input voltage: 220V AC
	Power consumption	<40W

Chapter 2 Installation Preparation

2.1 Cautions

Similar to other electronic products, the semiconductor chip easily gets damaged if you power on and off abruptly and frequently. To restart up the switch of S2528GX, you have to open the power on-off three or five seconds after the power is cut off.

Avoid severe collision or falling down from the height to protect the parts in the switch.

Use correct lining ports to connect S2528GX outside. Do not insert the Ethernet plug into the console port (RJ45 8-line socket). Similarly, do not insert the console cable into the console port (RJ45 8-line socket).

Note:

- 1) When you plug or dial out the power line, keep the power line horizontal with the power socket.
- 2) When the lifetime of our products ends, handle them according to national laws and regulations, or send these products to our company for collective processing.

2.2 Safety Advice

2.2.1 Safety Principles

- Keep dustless and clean during or after the installation.
- Put the chassis at the safe place.
- Put tools at the right place where they are not easily falling down.
- Put on relatively tight clothes, fasten the tie or scarf well and roll up the sleeve, avoiding stumbling the chassis.
- Put on the protective glasses if the environment may cause damage to your eyes.
- Avoid incorrect operations that may cause damage to human or devices.

2.2.2 Safety Notices

The safety notices mentioned here means that improper operation may lead to body damage.

- Read the installation guide carefully before you operate the system.
- Only professionals are allowed to install or replace the switch.

- Pull out the AC power socket and close the direct-current power before operating on the chassis or working beside the power source.
- The final configuration of products must comply with relative national laws and regulations.

2.2.3 Safety Principles for Live Working

When you work under electricity, following the following principles:

- Put off ornaments, such as ring, necklace, watch and bracelet, before you operate under live working. When metal articles connect the power to the ground, short circuit happens and components may be damaged.
- Pull out the AC power socket and close the direct-current power before operating on the chassis or working beside the power source.
- When the power is on, do not touch the power.
- Correctly connect the device and the power socket.
- Only professionals are allowed to operate and maintain the device.
- Read the installation guide carefully before the system is powered on.

Note:

- 1) Check potential dangers, such as the humid floor, ungrounded extensible power line and tatty power line.
- 2) Install the emergent on-off at the working room for turning off the power when trouble happens.
- 3) Turn off the power on-off of the switch and plug off the power line before installing or uninstalling the chassis or working beside the power.
- 4) Do not work alone if potential dangers exist.
- 5) Cut off the power before checkout.
- 6) If trouble happens, take the following measures:
 - A. Cut off the system's power.
 - B. Alarm
 - C. Take proper measures to help persons who are hit by the disaster. Artificial respiration is needed if necessary.
 - D. Seek for medical help, or judge the loss and seek for available help.

2.2.4 Electrostatic Discharge Prevention

Electrostatic discharge may damage devices and circuits. Improper treatment may cause the switch to malfunction completely or discontinuously.

Move or locate the devices according to the measures of electrostatic discharge prevention, ensuring the chassis connects the ground. Another measure is to wear the static-proof hand ring. If there is no hand ring, use the metal clip with the metal cable to clip the unpainted metal part of the chassis. In this case, the static is discharged to the ground through the metal cable of the clip. You can also discharge the static to the ground through your body.

2.3 Requirements for Common Locations

This part describes the requirements for the installation locations.

2.3.1 Environment

The switch can be installed on the desk or the cabinet. The location of the chassis, cabinet planning and indoor cabling are very important for normal system's function. Short distance between devices, bad ventilation and untouchable control plate will cause maintenance problems, systematic faulty and breakdown.

For location planning and device locating, refer to section 2.3.2 "Location Configuration Prevention".

2.3.2 Location Configuration Prevention

The following preventive measures assist you to design the proper environment for the switch.

- Make sure that the workshop is well-ventilated, the heat of electrical devices is well-discharged and sufficient air circulation is provided for device cooling.
- Avoid to damage devices by following the electrostatic discharge prevention procedure.
- Put the chassis at the place where cool air can blow off the heat inside the chassis. Make sure the chassis is sealed because the opened chassis will reverse the cool air flow.

2.3.3 Cabinet Configuration

The following content assists you to make a proper cabinet configuration:

- Each device on the cabinet gives off heat when it runs. Therefore, the sealed cabinet must have the heat-discharge outlet and the cooling fan. Do not put the devices too close, avoiding bad ventilation.
- When you install the chassis at the open cabinet, prevent the frame of the cabinet from blocking the airway of the chassis.

- Ensure that nice ventilation is provided for the devices installed at the bottom of the cabinet.
- The clapboard separates exhaust gas and inflow air, and boost the cool air to flow in the chassis. The best location of the clapboard is decided by the air flow mode in the chassis, which can be obtained through different location tests.

2.3.4 Power Requirements

Make sure that the power supply has nice grounding and the power at the input side of the switch is reliable. The voltage control can be installed if necessary. At least a 240 V, 10A fuse or a breaker is provided in the phase line if you prepare the short-circuit prevention measures for a building.

Caution:

If the power supply system does not have good grounding, or the input power disturbs too much and excessive pulses exist, the error code rate of communication devices increases and even the hardware system will be damaged.

2.4 Installation Tools and Device

The tools and devices to install the S2528GX switch are not provided by the S2528GX switch. You yourself need to prepare them. The following are the tools and devices needed for the typical installation of the S2528GX switch:

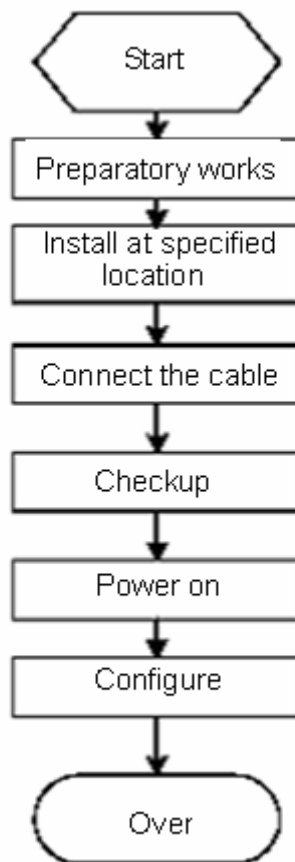
- Screwdriver
- Static armguard
- Bolt
- Ethernet cable
- Other Ethernet terminal devices
- Control terminal

Chapter 3 Installing the S2528GX Switch

Caution:

Only professionals are allowed to install or replace the devices of the switch.

3.1 Installation Flow of S2528GX



3.2 Installing the Chassis of the Switch

The chassis of S2008WS-B can be installed on the desk or can be fixed to other cabinets. Your network installation requirements can be met if you conduct the operations according to the following procedure. It can be described in the following two parts:

- Installing the Machine Box on the Desk
- Installing the Chassis on the Cabinet

3.2.1 Installing the Machine Box on the Desk

The S2528GX switch can be directly put on the smooth and safe desk.

Note:

Do not put things weighing 4.5 kg or over 4.5 kg on the top of the switch.

3.2.2 Installing the Chassis on the Cabinet

The chassis of the switch is fixed on the cabinet through the brackets. When you fix the brackets, the front template of the switch faces forward. The detailed operations are shown in Figure 3-1.

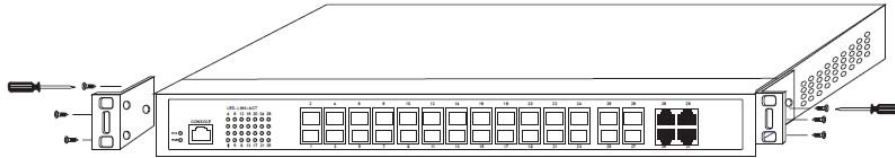


Figure 3-1 Fixing the chassis of the switch

Note: The switch shown in the previous figure does not represent real S2528GX switch.

After the brackets are installed, install the switch on the cabinet. See Figure 3-2.

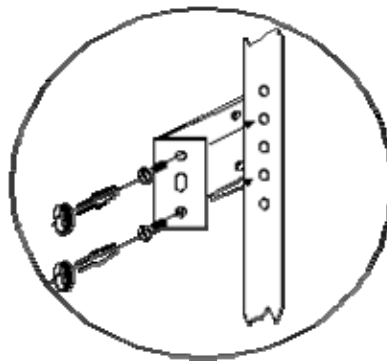


Figure 3-2 Installing the switch on the cabinet

3.3 Connecting the Port

3.3.1 Connecting the Console Port

The switch of S2528GX has a Console port.

The rate of the console port is a value ranging from 1200bps to 115200bps. It has a standard RJ45 plug. After you connect the console port to the serial port of PC through a console cable, you can configure and monitor the switch of S2528GX by running a terminal emulation software, such as super Windows terminal. The cable is provided according to the host. The communication parameters of the terminal serial port can be set to a rate of 9600bps, eight data bits, one stop bit, no sum check bit and traffic control.

The RJ45 connector of the console port is shown in the following figure. The RJ45 plug corresponds to the RJ45 socket, whose pins can be aligned from left to right with the value from 1 to 8.

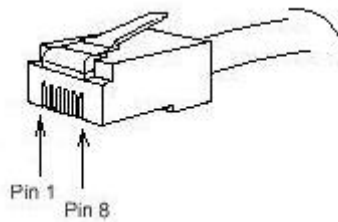


Figure 3-3 RJ-45 connector of the console port

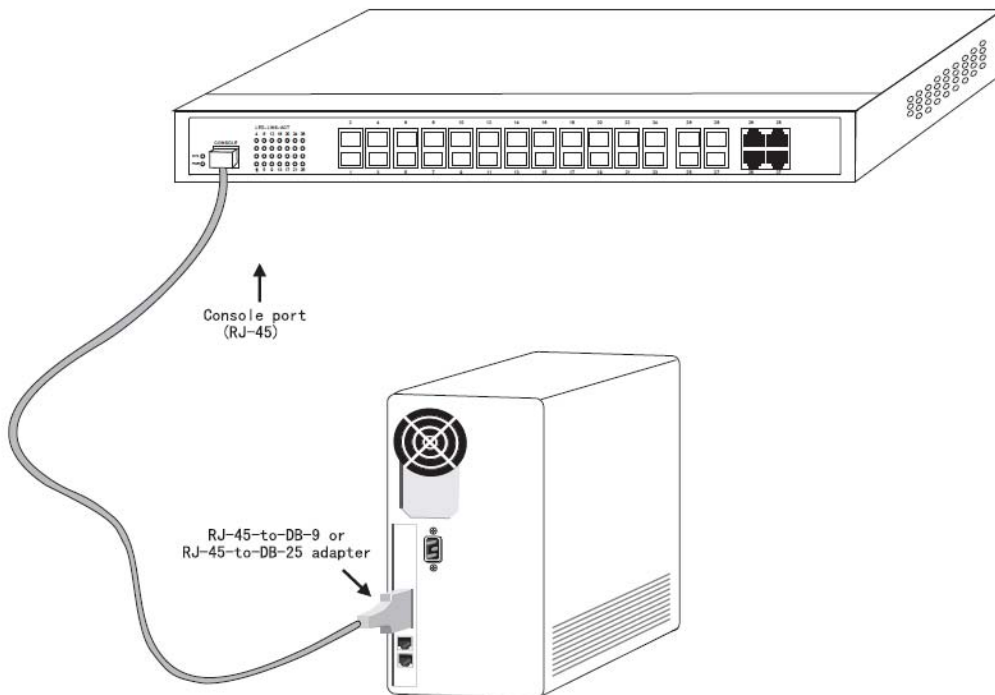


Figure 3-1 Connecting the console port of S2528GX and the computer

Note: The switch shown in the previous figure does not represent real S2528GX switch.

Table 3-1 Definition of the pins of the console port

No.	Name	Symbol	Remarks
1	Carrier Detecting	CD	No connect
2	Data receiving	RXD	Input
3	Data-line device ready	DSR	No connect
4	Data transmitting	TXD	Output
5	Transmission requesting	RTS	No connect
6	Response transmitting	CTS	No connect
7	Data terminal ready	DTR	No connect
8	Signal ground	SG	GND

Note:

Because the console port of S2528GX bears no flow control, you need to set Data flow control to none when using a superior terminal to manage S2528GX configurations, or the single-pass problem will arise from the superior terminal.

The cable is used to connect the console port of the S2528GX switch and the outside console terminal device. One end of the cable is a 8-pin RJ45 plug and the other end is a 9-hole plug (DB9). The RJ45 plug is put into the socket of the console port on the S2528GX switch. The inner line connection in the cable is shown in figure 3-1. The console cable is numbered as RLC0301.

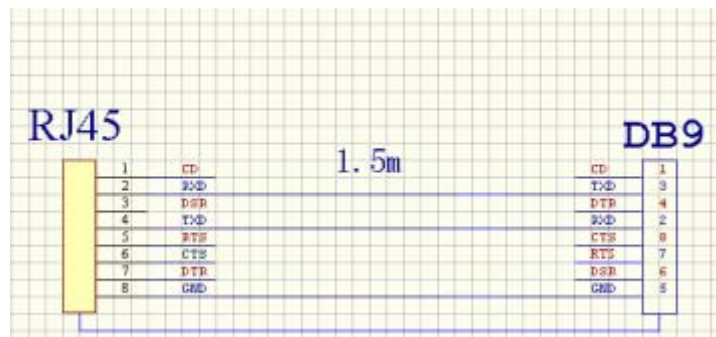
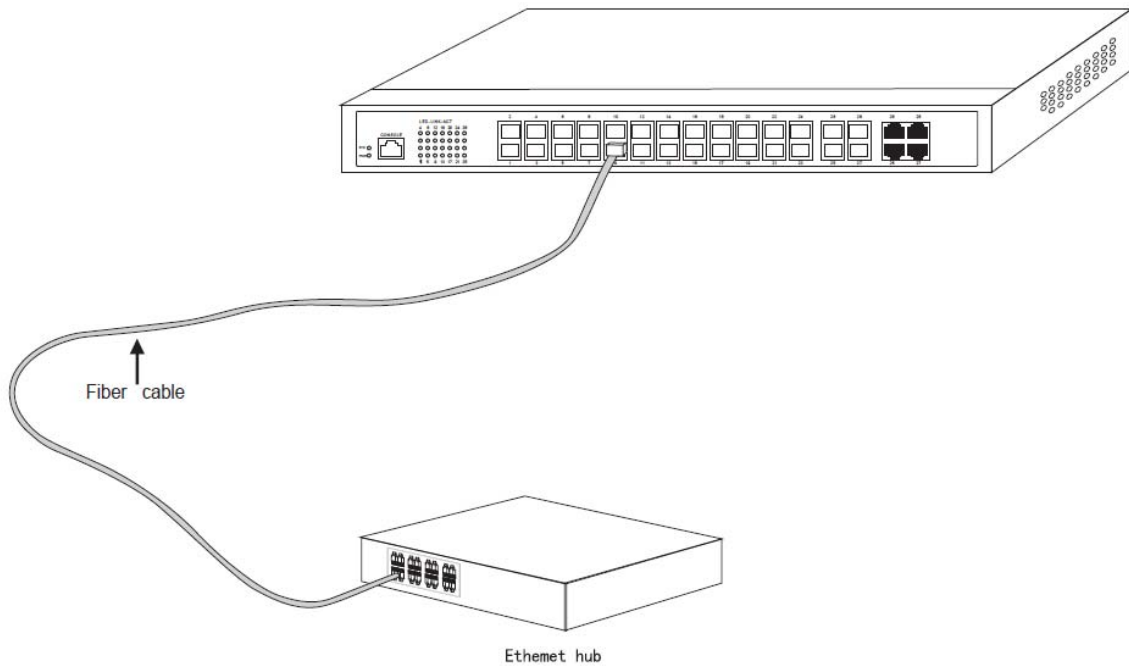


Figure 3-5 External wiring of the console port

3.3.2 Connecting Gigabit SFP Ports

S2528GX provides 4 gigabit SFP ports. The LEDs of four SFP ports are multiplexed with TX ports 21-24. The upper LEDs are used to indicate the link state of the port and the lower LEDs are used to indicate the ACT state of the ports. You can insert the SFP module and then connect it to other Ethernet terminal devices through the optical fiber if you want to use the gigabit SFP port.



Note: The switch shown in the previous figure does not represent real S2528GX switch.

3.3.3 Connecting Ethernet TX Port

The S2528GX switch has 24 10/100/1000Base-T ports. The LEDs are labeled with numbers 1-24, indicating the link/ACT state of the port. You can connect other Ethernet terminal devices to the UTP port through the cut-through or cross network cable. The numbering order of the pins in the UTP port is the same as the console port.

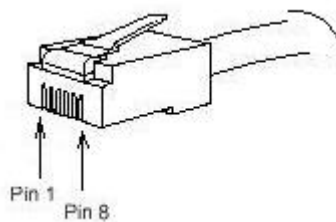


Figure 3-6 RJ-45 connector of the console port

Because 24 10/100/1000Base-T ports of S2528GX support the MDI/MDIX auto-identification of the cable, S2528GX can adopt five classes of direct-through/cross network cables when it connects other Ethernet terminals.

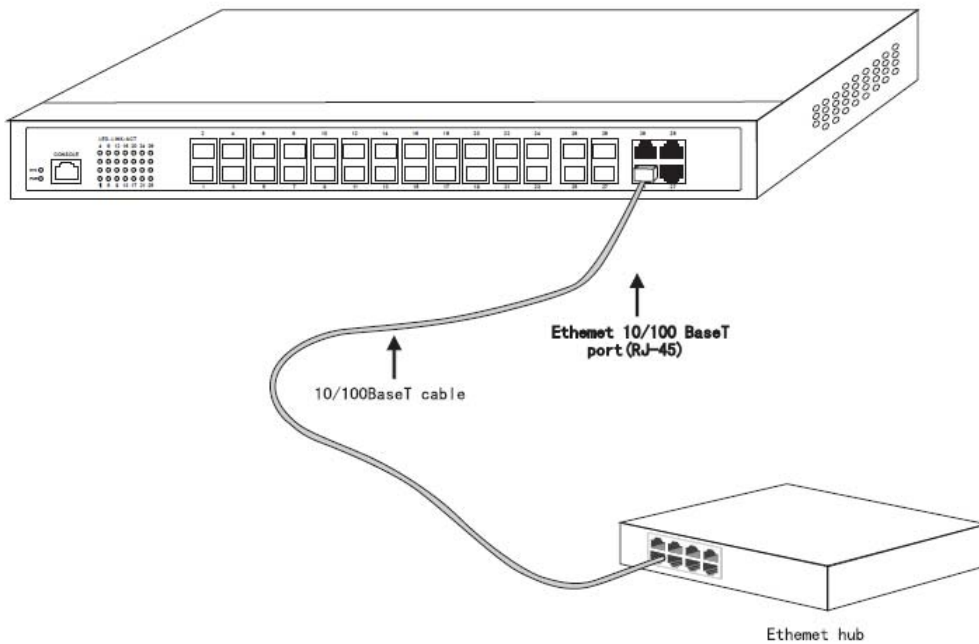


Figure 3-7 Connecting the 1000Base-TX port and other Ethernet terminals

Note: The switch shown in the previous figure does not represent real S2528GX switch.

Table 3-2 Definition of the pins of the 1000M RJ45 port

No.	Pin name	Symbol
1	Receiving and transmitting the normal phase of data 0	TP0+
2	Receiving and transmitting the paraphase of data 0	TP0-
3	Receiving and transmitting the normal phase of data 1	TP1+
4	Receiving and transmitting the normal phase of data 2	TP2+
5	Receiving and transmitting the paraphase of data 2	TP2-
6	Receiving and transmitting the paraphase of data 1	TP1-
7	Receiving and transmitting the normal phase of data 3	TP3+
8	Receiving and transmitting the paraphase of data 3	TP3-

The direct-through or cross network cable has the function of auto-identification, so the five classes of direct-through/cross network cables can be used to connect other Ethernet devices.

3.4 Checkup After Installation

Before electrically starting up the switch, perform the following checkups after the switch is installed:

- If the switch is installed on the cabinet, check whether the installation point between the cabinet and the switch is strong. If the switch is installed on the desk, check whether there is enough space for the switch to discharge its heat and whether the desk is stable.
- Check whether the connected power meets the power requirements of the switch.
- Check whether the grounding line is correctly connected.
- Check whether the switch is correctly connected to other terminal devices.

Chapter 4 Maintaining the Switch

Caution:

- 1) Before opening the chassis, make sure that you have released the static you carried and then turn off the power on-off of the switch. Before operating any step in Appendix B, read the section "Safety Advice".
- 2) Before performing operations beside the power source or on the chassis, turn off the power on-off and plug out the power cable.

4.1 Opening the Chassis

This section describes how to open the cover of the switch, required tools and operation methods.

Caution:

When the power cable still connects the power source, do not touch it.

When you open the cover the switch, you may use the following tools: These tools are:

- Crossed screwdriver
- Static armguard

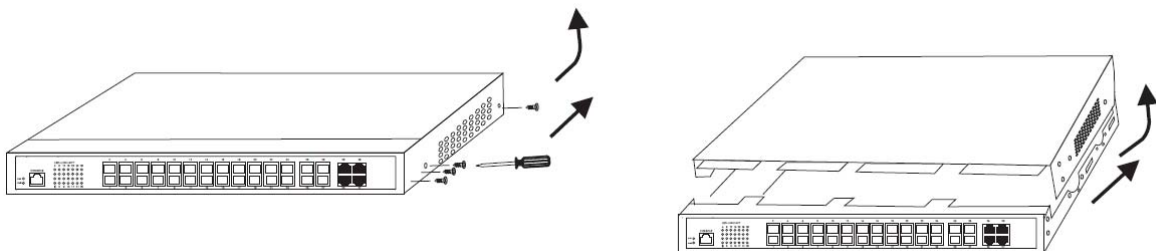
Perform the following steps to open the cover of the switch:

- (1) Turn off the power on-off of the switch.
- (2) Plug out all cables connected the back of the switch.
- (3) Take out the bolt from the chassis with the screwdriver;

Note:

The chassis comprises of two parts: chassis and bottom.

- (4) Open the chassis by holding two sides of the chassis towards the direction of the arrow key shown in the following figure;



Note: The switch shown in the previous figure does not represent real S2528GX switch.

- (5) Put the chassis aside after you open it. The main board of the system appears.

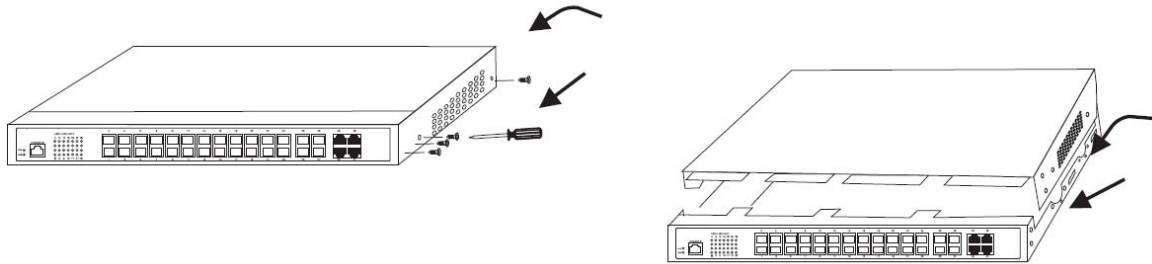
Note:

After taking off the chassis, put it horizontally and avoid it to be crushed or collided. Otherwise, the chassis is hard to install.

4.2 Closing Chassis

The section mainly describes how to put the chassis and close the chassis. Do as follows:

- (1) Put them well according to their locations and joint them together along their sides.



- (2) See the following figure.
- (3) When the cover and the bottom are closely tied, let the cover slide the slot of the front template at the bottom.
- (4) Nail the bolt and screw it tightly with the screwdriver.
- (5) Reinstall the switch on the cabinet or the desk.
- (6) Reconnect all cables of the switch.

4.3 Memory Upgrade

4.3.1 SDRAM Expansion

Because SDRAM of S2528GX adopts the patch design, you have to offer your SDRAM expansion requirement before purchase.

Chapter 5 Hardware Fault Analysis

The part describes how to remove the fault from the switch.

5.1 Fault Separation

The key for resolving the systematic faults is to separate the fault from the system. You can compare what the system is doing with what the system should do to detect the fault. You need to check the following subsystems:

- Power and cooling systems—power and fan
- Port, cable and connection—ports on the front template of the switch and the cables connecting these ports

5.1.1 Faults Relative with Power and Cooling System

Do the following checkups to help remove the fault:

- When the power on-off is at the “ON” location, check whether the fan works normally. If the fan does not work well, check the fan.
- If the switch is too hot, check whether the air outlet and air inlet are clean and then do relative operations in section 2.3 “Requirements for Common Locations”. The working temperature of the switch is from 0 to 40 Celsius degrees.
- If the switch cannot be started and the PWR LED is off, check the power.

5.1.2 Faults Relative with Port, Cable and Connection

Do the following checkups to help remove the fault:

- If the port of the switch cannot be linked, check whether the cable is correctly connected and whether the peer connection is normal.
- If the power on-off is at the “ON” location, check the power source and the power cable.
- If the console port does not work after the system is started up, check whether the console port is set to a baud rate of 9600 bps, eight data bits, no sum check bit, one stop bit and no traffic control.

5.2 LED description

The LED shows that the switch is running. The following table shows the LEDs of the S2528GX switch and their description:

No.	Abbrev.	Name	Remarks

1	PWR	Power LED	If the switch is powered on, the LED is on.
2	SYS	System LED	If the LED is always on, the system is being started. If the LED flickers, the system works normally.
3	LINKACT	LED at the top of each port	If the LED is always on, the link on the port is normal. If the LED is off, the port is not connected.

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