MyPower S3000 Series Switch Install Manual (For S3008G, S3008G-POE, and S3026G-M)

Version 1.0

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Document History

Date	Revision No.	Description
12/11/2009	R1.0	The MyPower S3000 Series Switch Install Manual (For S3008G, S3008G-POE, and S3026G-M) provides information about the installation of the router designed and developed by Maipu Communication Technology Co., Ltd

Maipu Feedback Form

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Contents

About Installation Manual

Purpose

The MyPower S3000 Series Switch Install Manual (For S3008G, S3008G-POE, and S3026G-M) provides information you need to understand installation requirements of the switch. The document provides right answers to your technical queries.

How to Get in Touch

The following sections provide information on how to obtain support for the Maipu English documentation and Maipu products.

Customer Support

If you have problems or questions regarding your product, please contact us by e-mail at overseas@maipu.com. You can also call our Overseas Business Division over +86–28-85148850, 85148041, 85148050, 85148750, and 85148997.

Documentation Support

Maipu Communication Technology Co., Ltd welcomes comments and suggestions on the document usefulness. For further queries or suggestions, contact us by e-mail overseas@maipu.com or fax comments to +86-28-85148948 or 85148139. You can visit our website at http://www.maipu.com, which comprises interesting subjects such as product knowledge base, sales & support, and the Maipu news.

Product Introduction

Overview

MyPower S3026G-M switch:

Figure 1-1 MyPower S3026G-M switch

MyPower S3008G switch:

Figure 1-2 MyPower S3008G switch

MyPower S3008G-POE switch:

Figure 1-3 MyPower S3008G-POE switch

About the Product

MyPower S3000 series switches are the L2 100M plus Gigabit uplink switches launched by Maipu. The switches cover three models, MyPower S3026G-M, MyPower S3008G, and MyPower S3008G-POE. MyPower S3026G-M provides 26 fixed interfaces (24 10/100Base-T fixed interfaces

and two Gigabit COMBO interfaces). MyPower S3008G and MyPower S3008G-POE provide 9 fixed ports (8 10/100Base-T fixed ports and one Gigabit COMBO interface). MyPower S3000 series switches are the leading products in the industry. The switches meet the networking requirements of large-scale network and provide abundant intelligent and security features. The products are particularly suitable to serve as the access devices of large-scale campus network, enterprise network, and IP MAN.

Features

- **Abundant and Flexible Interface Types**

The product provides multiple fixed 10/100Base-T ports and SFP COMBO ports. Abundant ports facilitate the networking.

- **Supporting Abundant Network Protocols**

The product supports 802.1d/w/s spanning tree protocol; supports 802.1Q, 802.1p，802.3ad, 802.3x, GVRP, DHCP and SNTP.

- **Powerful ACL Function**

The product provides complete ACL policy. It sorts data according to the source/destination IP, source/destination MAC address, IP protocol type, TCP/UDP port number, IP precedence, time range, and ToS. In addition, the data is forwarded through different policies. Through the ACL policy, users can filter the Worm.msBlast, Worm.Sasser, and Code Red virus packages to prevent spreading and impacting on core devices. It supports IEEE802.1x port-based authentication and thus provides port-level security for the network. Wit the authentication mechanisms including RADIUS, the unauthorized access to the network can be prevented.

- **Abundant QoS Policies**

The DiffServ model is completely implemented. Each port provides four priority queues supporting WRR/SP/SWRR dispatching mode. Port trust is supported. You can configure parameters to trust CoS, DSCP, IP priority, and port priority; modify the DSCP and COS values of the packets; sort the traffic according to the port, VLAN, DSCP, IP priority, and ACL table; modify the DSCP and IP priority of the packet; specify different bandwidth for voice/data/video to provide different QoS.

- **Sophisticated Network Management**

The product supports:

1. SNMP;
2. In-band and out-of-band management;

3. CLI and Web interface
4. RMON;
5. Automatically sending sensitive messages to the administrator mailbox through the SMTP protocol;
6. SSH protocol, which ensures the security of the configuration management in the switch.

Physical Characteristics

- Console port

One RJ-45 serial console port

- AC/DC input power

AC: 100 - 240VAC, 50～60Hz

- Operating temperature

0°C～50°C

- Storage temperature

-40°C～70°C

- Relevant humidity

10%-90%, non-condensing

- Size

MyPower S3026G-M: WidexHighxDeep 442.9mm×44mm×230.2mm

MyPower S3008G: WidexHighxDeep 282.2mm×44mm×178mm

MyPower S3008G-POE: WidexHighxDeep 442.9mm×44mm×230.2mm

- Weight

About 4kg

- Mean time between failure

Minimal MTBF: 80,000 Hours

Product Appearance

Front Panel

In the front panel of MyPower S3026G-M switch, there are 24 10/100Base-T ports, two Combo ports (two RJ-45 and two SFP ports), one Console port and 53 LED indicators.

The front panel of MyPower S3026G-M is shown as follows:

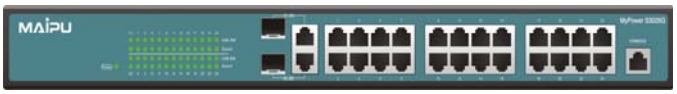

Figure 1-4 Front panel of MyPower S3026G-M switch

In the front panel of MyPower S3008G switch, there are 8 10/100Base-T ports, one Combo port (one RJ-45 and one SFP port), one Console port and 19 LED indicators.

The front panel of MyPower S3008G is shown as follows:

Figure 1-5 Front panel of MyPower S3008G switch

In the front panel of MyPower S3008G-POE switch, there are 8 10/100Base-T ports, one Combo port (one RJ-45 and one SFP port), one Console port and 27 LED indicators.

The front panel of MyPower S3008G-POE is shown as follows:

Figure 1-6 Front panel of MyPower S3008G-POE switch

Back Panel

In the back panel of MyPower S3026G-M, MyPower S3008G, and MyPower S3008G-POE, there is one 220V AC socket. The back panel is shown in the following figure:

Figure 1-7 Back panel of MyPower S3026G-M switch

Figure 1-8 Back panel of MyPower S3008G switch

Figure 1-9 Back panel of MyPower S3008G-POE switch

LED Indicators

In the front panel of MyPower S3000, there are port indicators and system state indicators.

Port Indicators

Figure 1-10 MyPower S3026G-M LED layout

Table 1-1 MyPower S3026G-M port indicators

Panel LED	State	Description
Port1-24(Link/Act)	On (green)	The port is successfully linked
	Blink (green)	The port is successfully linked; receives/sends data
	Off	The port is not linked
PortG1/G2(Link/Act)	On (green)	The port is successfully linked
	Blink (green)	The port is successfully linked; receives/sends data
	Off	The port is not linked
Port1-24 (Speed)	On (green)	The port is linked with the rate of 100Mbps
	Off	The port is linked with the rate of 10Mbps or is down.
PortG1/G2 (Speed)	On (green)	The port is linked with the rate of 1000Mbps
	Off	The port is linked with the rate of 10/100Mbps or is down.

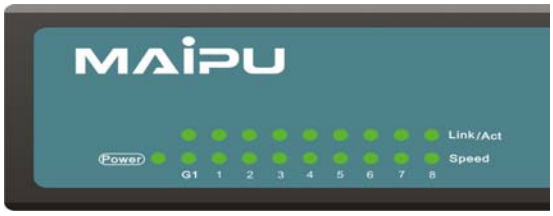

Figure 1-11 MYPOWER S3008G LED layout

Table 1-2 MYPOWER S3008G port indicators

Panel LED	State	Description
Port1-8(Link/Act)	On (green)	The port is successfully linked
	Blink (green)	The port is successfully linked; receives/sends data
	Off	The port is not linked
	On (green)	The port is successfully linked
	Blink (green)	The port is successfully linked; receives/sends data

	Off	The port is not linked
Port1-8 (Speed)	On (green)	The port is linked with the rate of 100Mbps
	Off	The port is linked with the rate of 10Mbps or is down.
PortG1/G2 (Speed)	On (green)	The port is linked with the rate of 1000Mbps
	Off	The port is linked with the rate of 10/100Mbps or is down.

Figure 1-12 MyPower S3008G-POE LED layout

Table 1-3 MyPower S3008G-POE port indicators

Panel LED	State	Description
Port1-8(Link/Act)	On (green)	The port is successfully linked
	Blink (green)	The port is successfully linked; receives/sends data
	Off	The port is not linked
PortG1/G2(Link/Act)	On (green)	The port is successfully linked
	Blink (green)	The port is successfully linked; receives/sends data
	Off	The port is not linked
Port1-8 (Speed)	On (green)	The port is linked with the rate of 100Mbps
	Off	The port is linked with the rate of 10Mbps or is down.
PortG1/G2 (Speed)	On (green)	The port is linked with the rate of 1000Mbps
	Off	The port is linked with the rate of 10/100Mbps or is down.

System State Indicators

Figure 1-13 MyPower S3000 LED layout

Table 1-4 MyPower S3000 system indicators

LED	State	Description
Power	On (green)	Internal power supply is normal.
	Off	Not power on or the power supply is damaged.

POE Indicators

Figure 1-14 MyPower S3008G-POE LED layout

Table 1-5 MyPower S3008G-POE indicators

LED	State	Description
PoE	Green	Port is powered on
	Off	Port is not powered on

Device Installation

Precautions

To ensure your security and the normal operation of MyPower S3000 series, please carefully read the following instructions and notices while installing and using the switch.

Installation Environment

- A clean environment is necessary for normal operation of the switch. No dust is allowed. Otherwise, the switch may be damaged by electrostatic adherence.
- The switch requires a non-condensing environment with a temperature between 0 and 50 °C and a humidity between 10% and 90%.
- The switch must be kept in a dry and cool place with sufficient space around it for air circulation.
- The switch requires a power input ranging from 100 to 240 VAC (50 Hz).
- Make sure that the switch is safely grounded, which can prevent electrostatic damage to the device and potential dangers to people.
- Avoid direct exposure to sunlight, and keep the switch away from heat sources and strong electromagnetic interference sources.
- The switch must be stably mounted to a standard 19'' rack or placed on a desktop.

Cleanliness of the Installation Environment

Dust is harmful for the operation of the switch. Dust causes electrostatic absorption, which makes the poor contact of metal pieces. Electrostatic absorption appears especially when the temperature and humidity are lower, which affects the device life and causes communication fault. The recommended values of dust content and particle diameter of the switch's working environment are listed below:

Maximum diameter (μm)	0.5	1	3	5
Maximum diameter (particles /m^3)	1.4×10^5	7×10^5	2.4×10^5	1.3×10^5

Recommended working environment (dust content and particle diameter)

Other than dust, the content of salt, acid and sulfide in the air should also be restricted to meet the requirements of switch's working environment. Such harmful gases will aggravate metal corrosion and the aging of some parts. The working environment should be free of harmful gases, like SO_2, H_2S, NO_2, NH_3 and Cl_2, and etc. The table below demonstrates the recommended threshold of those gases:

Gas	Average (mg/m^3)	Maximum value (mg/m^3)
SO_2	0.2	1.5
H_2S	0.006	0.03
NO_2	0.04	0.15
NH_3	0.05	0.15
Cl_2	0.01	0.3

Table 2-2 Recommended working environment (thresholds of harmful gases)

Temperature and Humidity

For a good air circulation after the switch being installed, it is recommended to keep the switch rack in a room with a stable temperature and humidity. Please use an air-conditioner to cool it up in summer and a heating system in winter. If the humidity in the equipment room is too high for long time, it causes the poor insulation and even electricity leak of insulation materials easily. Sometimes, the mechanical performances of materials change and the metal parts are corroded easily, too. If the relative humidity is too low, insulation pads shrink, which causes the fastened screws loose. Meanwhile, in dry environment, static electricity appears easily, which harms the circuits on the switch. If the temperature is too high, the reliability of the switch reduces greatly. The long-time high temperature affects the life and speeds up the aging of insulation materials. The recommended working temperature and humidity are listed in the following table:

Temperature		Relevant humidity	
Long-term	Short-term	Long-term	Short-term
15～30℃	0～50℃	40～65%	10～90%

Note:

The working environment temperature and humidity of the switch should be measured at 1.5m above the floor and 0.4m in front of the rack, without front or back protective panel on the rack. The short-term working condition means less than 48 hours continuously and less than 15 days for the annual total; Extreme adverse working environment means the environment temperature and humidity when the air-conditioning system in the equipment room fails. The duration should be within 5 hours.

Power

The switch uses module switching power. The parameters of input power are as follows:

Input Voltage: 100-240VAC

Frequency: 50-60Hz

Before powering on the switch, please make sure a proper grounding of the power supply system and the stability of the input power. Use a voltage adapter device if necessary. A fuse or a circuit-breaker no greater than 240 V, 10 A is required to prevent short circuits. A UPS is recommended to provide a more reliable power supply.

Warning

An improper grounding of power supply system, dramatic electric fluctuations or pulses can result in abnormal operation and even hardware damage!

Preventing Static Electricity

Static electric may damage the switch circuits, or the entire device. To prevent the damages of static electricity, please ensure a good grounding; keep the environment dust-free, and maintain a proper temperature and humidity. Operators should wear antistatic uniforms, straps, or gloves.

Anti-interference

Various interference sources, no matter from the switch or other devices, or from interior or exterior, affect the switch through capacitance coupling, inductance coupling, electromagnetic radiation, public impedance (including grounding system) and lead (such as power lines, signal lines and output lines). To avoid the interferences, please follow the instructions below:

- Take anti-electric network interference for power system.

- The switch working place had better not be used with the grounding settings of power devices or anti-lightening grounding settings, and the distance between them had better be as long as possible.

- Be away from the strong power radio transmitters, radar transmitter, and high frequency high-current equipments;

- Take electromagnetic shielding methods when necessary.

Rack Configuration

The switch size fits the standard 19'' rack. The dimension is 440mm (wide) × 44mm (high)× 229mm (deep). Pay attention to the following instructions to ensure a good ventilation and air circulation:

- All devices on the rack will generate heat during their operation, therefore vents and fans are required for an enclosed rack. Keep devices at a certain distance from each other to ensure a good ventilation and air circulation.

- On the open rack, do not block the vents on both sides of the switch. After the switch is installed, check the state of the switch.

Note:

Put the switch on a stable and clean desktop as a substitute of a standard 19'' rack, leaving a space of 10mm around the switch for ventilation. And don't place anything on top of it.

Installation Instructions

- Read related chapters in this manual carefully or participate in concerning technology training before the installation. Make sure all materials, tools and other items required by the installation are prepared, as well as a proper site for installation and debugging.

- During the installation, it is required to use the brackets and screws provided in the accessory kit, and proper tools to ensure stability and reliability. Users should always wear antistatic uniforms and ESD wrist straps to prevent damaging the switch, and should only use and make standard cables and connecters. Be cautious to potential dangers during the installation, and make protective preparations to avoid accidents.

Clean the site after the installation. Please ensure the switch is well grounded before powering it on. Users should also maintain the switch regularly to extend its lifespan.

Security Warnings

- Do not stare directly at the fiber port during operation to prevent eye damage caused by the laser transceiver in the SFP optical module of the switch.
- Do not attempt to conduct any operation which may cause physical injuries, accidents or damage the switch.
- Do not install, remove, or disassemble switch and modules with power on to avoid injuring yourself or damaging the equipment.
- Do not open the switch without permission. Please resort to the manufacturer for help if any problem occurs, to prevent physical injuries and device damages.
- No contact between metals and the working power is allowed, and do not drop metals into the switch, to prevent short-circuit and device damages.
- Do not touch the power plug and power socket, to prevent electric shock.
- Do not place the tinder near the switch, to prevent fire.
- Do not debug the switch alone in a dangerous situation, to prevent accidents.
- Use standard power sockets which have overload and leakage protection, to prevent accidents.
- Check the circuits, installation and the working environment for potential dangers, and maintain them regularly, for the sake of security.
- Place the emergency power switch in the working site, so that the power can be cut off immediately if any accident occurs.

Note:

The potential dangers include: electric leakage in the power, the ignition of the power, broken electric cables or lines, bad grounding, electric overload, short-circuit and etc. In cases of accidents like electric shock, fire or short-circuit, please cut off the power immediately and call the police. Please help the victims after confirming the security and provide first aid according to their situations. Call professional medical organizations for help in time.

Installation Preparations

Check the Packing List

Open the package box of the switch and ensure that the switch and the accessories are complete. If any item in the package is lost or damaged, contact the dealer or the Maipu engineers.

Installation Tools and Materials

Required tools and utilities are as follows:

- Cross point screwdriver
- Flat-blade screwdriver
- ESD wrist strap
- Antistatic uniform

Note:

The tools above are not provided along with the switch.

Device Installation

Mount Switches onto a Rack

Perform the following steps to install the switch.

1. Attach the brackets on both sides of the switch with screws provided in the accessory kit.

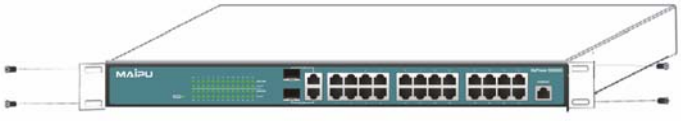

Figure 2-1 Fix the angle iron to the switch

2. Put the bracket-mounted switch onto a standard 19'' rack. Fasten it at a proper location with the screws provided, leaving enough space around the switch for good air circulation.

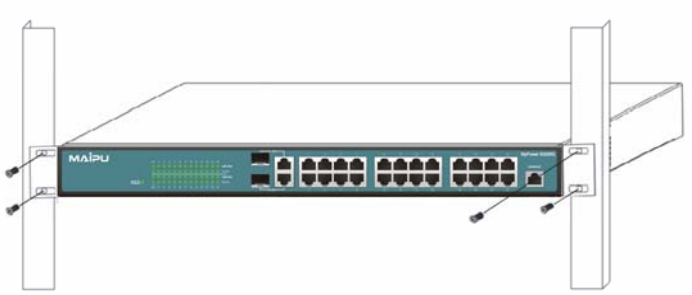

Figure 2-2 Mount the switch to a rack

Caution:

The brackets are used to fix the switch on the rack rather than bearing its weight, so it is recommended to place a rack shelf under the switch. Do not place anything on top of the switch or block the vents, to prevent device damages and abnormal operation.

Console Cable Connection

MyPower S3000 provides a RJ45 asynchronous serial console port.

Figure 2-3 Connecting Console to MyPower S3000

Perform the following steps to connect the Console:

1. Insert the RJ45 connector of the Console cable to the Console port of the switch.

2. Connect the other end of the console to a character terminal (usually a computer).

3. After the switch and the character terminal are powered on, you can create the configuration management connection with the switch through the character terminal.

SFP Transceiver Installation

The procedure for installing the SFP Gigabit fiber transceiver is as follows:

Step 1: Wear an ESD-preventive glove (or wrist strap).

Step 2: Insert the SFP transceiver into the guiding track of the Gigabit optical interface board. Do not reverse the SFP transceiver.

Step 3: Push the SFP transceiver along the guiding track until it is closely contacted with the slot of the internal guide track of the Gigabit optical interface board.

Note

The SFP Gigabit optical transceiver is hot-swappable.

Caution:

When the switch is operating, do not stare at the two optical holes of the SFP Gigabit optical transceiver to prevent injuring the eyes.

Connection of Cable and Fiber

The procedure for connecting the Ethernet cable is as follows:

Step 1: Insert the Ethernet cable into the RJ45 Ethernet connector of the electrical interface board.

Step 2: Insert the other end of the Ethernet cable into the RJ45 Ethernet interfaces of other devices.

Step 3: Check the state indicator of the corresponding interface. If the Link indicator is on, the link is connected; if the Link indicator is off, the link is not connected. Check the cable.

During the connection, note the ID on the interface to avoid inserting to other interfaces, which causes the damage of modules and switches.

The procedure for connecting the fiber is as follows:

Step 1: Remove the protection plug in the SFP/XFP fiber transceiver interface. Take out the fiber and remove the protection jacket. Keep the fiber header clean

Step 2: Connect one end of the fiber to the SFP/XFP transceiver of the switch. Connect the other end to the corresponding optical transceiver of other devices. Connect the TX interface of SFP/XFP transceiver to the RX interface of other devices; the RX interface of the SFP/XFP transceiver connects the TX interface of other devices.

Step 3: Check the state of the corresponding optical interface indicator. If the Link indicator is on, the link is connected; if the Link indicator is off, the link is not connected. Check the cable.

Caution:

During the connection, note the ID on the interface to avoid inserting to other interfaces, which may cause the damage of transceiver and other interfaces.

When the optical interfaces of other devices are connected to the switch, ensure that the output optical power is no greater than the maximum receiving power of the corresponding module. Otherwise, the switch will be damaged. When the switch is working, do not stare at the optical interface to avoid injury.

Power Cable Connection

The power of MyPower S3000 is 240VAC, allowing a certain extent of voltage fluctuation. For details, refer to the product specification.

Perform the following steps to connect the power cable.

Figure 2-3 Connecting power cable to MyPower S3000

1. Insert one end of the provided power cable into the power slot at the back of the switch. Insert the other end of the power cable into power socket with overloading/leakage protection.

2. Check whether the power indicator in the front panel is on. MyPower S3000 can adapt to the input voltage. Therefore, if the input voltage complies with the specified voltage range, the switch can operate normally and extra debugging is not required.

3. After the switch is powered on, the system performs self-check and is started.

Caution:

The input voltage must comply with the power specification of the switch. Otherwise, the switch may be damaged or work improperly. If the power indicator is off or the self-check is abnormal after the switch is powered on, contact Maipu customer service center. Do not disassemble the switch.