RG-S5760C-X Series Switches

Hardware Installation and Reference Guide

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Preface

Intended Audience

This document is intended for:

- Network engineers
- Technical support and servicing engineers
- Network administrators

Technical Support

- Ruijie Networks website: https://www.ruijienetworks.com/
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- Email support: service_rj@ruijienetworks.com
- Live chat: https://www.ruijienetworks.com/rita
- Documentation feedback: doc@ruijie.com.cn

Conventions

1. Signs

The signs used in this document are described as follows:

Danger

An alert that contains important safety instructions. Before you work on any equipment, be aware of the hazards involved and be familiar with standard practices in case of accidents.

Warning

An alert that calls attention to important rules and information that if not understood or followed can result in data loss or equipment damage.

Caution

An alert that calls attention to essential information that if not understood or followed can result in function failure or performance degradation.

Note

An alert that contains additional or supplementary information that if not understood or followed will not lead to serious consequences.

Specification

An alert that contains a description of product or version support.

2. Note

The manual provides configuration information, including models, port types, and command line interfaces, for reference purposes only. In the event of any discrepancy or inconsistency between the manual and the actual version, the actual version shall take precedence.

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1 Product Overview

Ruijie RG-S5760C-X series switches are the next-generation Layer 3 switches. Featured with high performance, reliable security, and multiple services, RG-S5760C-X series switches are mainly applicable to the convergence layer of large-scale networks to provide full line-rate exchanging. Complete QoS features differentiate services according to business needs to ensure the prompt transmission of key data. The RG-S5760C-X series switches provide various interfaces to meet the requirement for interfaces in network constructions.

Model	10/100/1000 BASE-T Port	1GE SFP Port	1GE/10GE SFP+ Port	MGMT Port	USB Port	Console Port	Fan	RPS
RG-S5760C-24GT8XS-X	24	N/A	8	1	1	1	3 x fixed fan modules	Dual
RG-S5760C-48GT4XS-X	48	N/A	4	1	1	1	3 x fixed fan modules	Dual
RG-S5760C-24SFP/8GT8XS-X	8	24 (8 combo)	8	1	1	1	3 x fixed fan modules	Dual
RG-S5760C-48SFP4XS-X	N/A	48	4	1	1	1	3 x pluggable fan modules	Dual
RG-S5760C-48GT4XS-HP-X	48 (PoE+ capable)	N/A	4	1	1	1	2 x pluggable fan modules	Dual

Note

- A combo port consists of one 1000Base-X SFP port and one10/100/1000Base-T Ethernet port. That is, only one port of them is available at a particular time.
- SFP+ port supports both 10Gbase-R and 1000base-X.
- PoE+ ports are downward compatible with PoE.

RG-S5760C-X series switches have the following external ports:

- MGMT port: This port is a 10/100/1000M management port. It is used to connect with an Ethernet port of a PC to perform program. Users can do remote management and maintenance for the switch through the port. Use standard network cables when the port is connected with an Ethernet port.
- USB port: The Universal Serial Bus (USB) port is used to connect with USB memory to save logs, host versions, warnings and other diagnostic messages.
- Console port: This port applies RS-232 interface electrical level and standard RJ45 connectors. It is used to connect the serial ports of the terminal PC to perform tasks including system commissioning, configuration, maintenance, management, and software loading.

Caution

Operation of this device in a residential environment could cause radio interference.

Caution

There is a risk of electric shock. The circuit breaker is on the neural wire of the grid power supply. Cut off the grid power supply to disconnect each phase conductor.

Caution

- The device is equipped with a lithium battery. Take note of the following:

(1) Replacing the battery with the incorrect model may cause explosion or danger. If the battery is damaged, replace it with the same model.

(2) Exposing the battery to extremely high temperatures and/or extremely low air pressure may cause the battery to explode or leak flammable liquids or gases.

(3) Throwing the battery into a fire or oven, or mechanically crushing or cutting it may cause the battery to explode.

1.1 RG-S5760C-24GT8XS-X

1.1.1 Specifications

Model	RG-S5760C-24GT8XS-X
Fixed service port	24 x 10/100/1000BASE-T ports 8 x 1GE/10GE SFP+ ports
Transmission medium	100/1000BASE-T Cat 5 UTP 1000BASE-X to 1000BASE-T Cat 5e/6/6a 1000BASE-SX (850 nm) 1000BASE-LX (1310 nm) 1000BASE-LH (1310 nm) 1000BASE-ZX (1550 nm) 1000BASE-LX (1310 nm, 1550 nm)

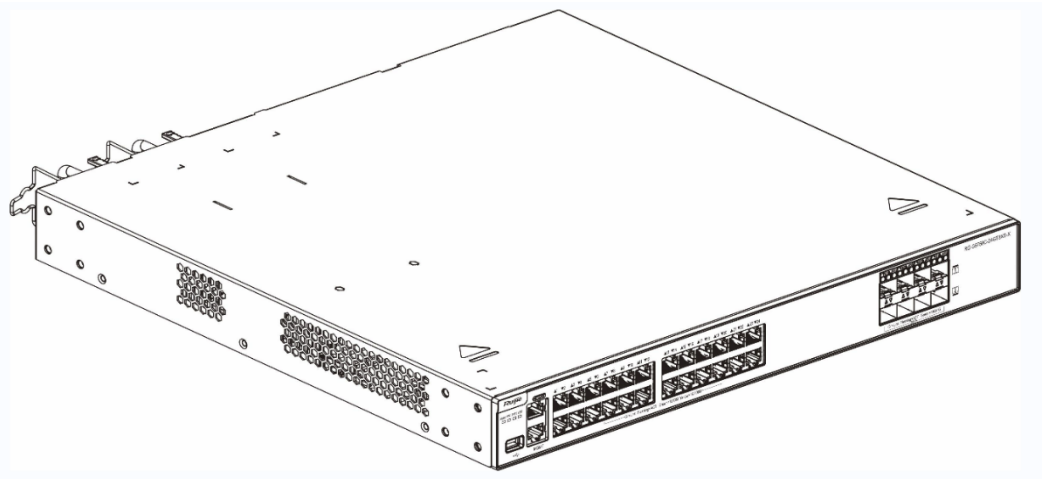
	1000BASE-LH (1310 nm, 1550 nm) 10GBASE-SR (850 nm) 10GBASE-LR (1310 nm) 10GBASE-ER (1550 nm) 10GBASE-ZR (1550 nm) 10GBASE SFP+ active optical cable (AOC)
Module slot	1 x expansion module slot 2 x power module slots
Expansion module	M5000X-4XS2CQ Note: The V1.X switch needs to be upgraded to version 12.5(4)B0701 or later to support the expansion module.
Power module	RG-PA150IB-F RG-PD150IB-F
Fixed management port	1 x RJ45 console port 1 x RJ45 MGMT port
USB	1 x USB 2.0 port
Status LED	1 x system status LED 1 x MGMT port LED 2 x power status LEDs 24 x 10/100/1000BASE-T port LEDs 8 x 1GE/10GE SFP+ port LEDs
CPU	Dual-core CPU, each core with the clock speed of 1.2 GHz
Real-time clock (RTC)	Supported
BootROM	16 MB (2 flash chips for 1+1 boot redundancy)
Flash memory	4 GB eMMC
Memory	1 GB
Power supply	2 x pluggable power modules
Maximum output power	RG-PA150IB-F: 150 W RG-PD150IB-F: 150 W
Maximum power consumption	60 W (excluding expansion modules) 85 W (including expansion modules)

Unit dimensions (W x D x H)	440 mm x 340 mm x 44 mm (17.32 in. x 13.39 in. x 1.73 in.)
Rack height	1 RU
Space requirements	Rack depth > 500 mm (19.69 in.)
Unit weight	4.4 kg (9.70 lbs)
Temperature	Operating temperature: ● 0°C to 45°C (32°F to 113°F), V1.X without expansion modules or V2.X ● 0°C to 40°C (32°F to 104°F), V1.X with expansion modules Storage temperature: –40°C to +70°C (–40°F to +158°F) Note: At an altitude between 1,800 m (5,905.51 ft.) and 5,000 m (16,404.20 ft.), every time the altitude increases by 220 m (721.78 ft.), the maximum temperature decreases by 1°C (1.8°F).
Humidity	Operating humidity: 10% to 90% RH (non-condensing) Storage humidity: 5% to 95% RH (non-condensing)
Altitude	Operating altitude: –500 m to 5,000 m (–1640.42 ft. to 16404.20 ft.) Storage altitude: –500 m to 5,000 m (–1640.42 ft. to 16404.20 ft.)
Mean time between failure (MTBF)	1,025,280 hours (about 120 years)
Fan	2 x fixed fan modules
Acoustic noise	45°C (113°F): 56.2 dB
Power module redundancy	1+1 redundancy
Fan redundancy	Not supported
Power module hot swapping	Supported
USB hot swapping	Supported
Cable hot swapping	Supported
Safety regulation	IEC 62368-1
EMC regulation	EN 300386, EN 55032 Class A, EN 55035, EN IEC 61000-3-2, EN 61000-3-3, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11
RoHS	European RoHS Directive 2011/65/EU & Amendment(EU) 2015/863

1.1.2 Product Appearance

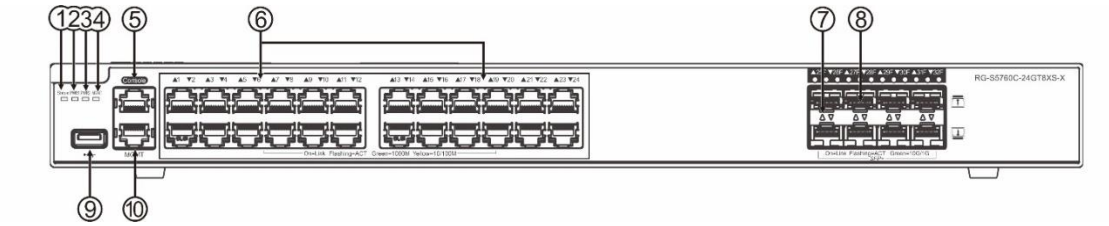
The S5760C-24GT8XS-X Ethernet switch provides 24 10/100/1000Base-T Ethernet ports, eight 10GE SFP+ ports, one MGMT port, one USB port, and one Console port on the front panel, two power supply module slots and one expansion slot on the back panel.

Figure 1-1 Appearance of RG-S5760C-24GT8XS-X



Front Panel

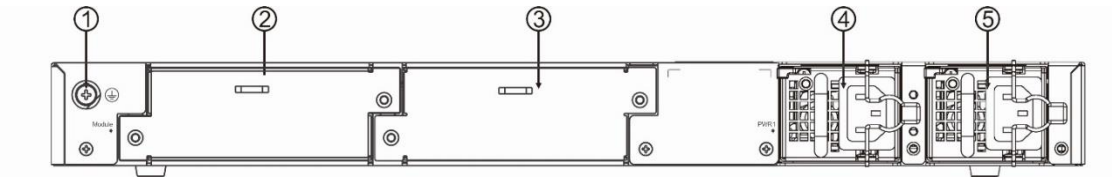
Figure 1-2 Front Panel of RG-S5760C-24GT8XS-X



Note:	1. System Status LED 2. Power Status LED (PWR1) 3. Power Status LED (PWR2) 4. MGMT Port LED 5. Console Port 6. 10/100/1000Base-T Port and Port LED	7. 1GE/10GE SPF+ Port LED 8. 1GE/10GE SFP+ Port 9. USB Port 10. MGMT Port

Rear Panel

Figure 1-3 Rear Panel of RG-S5760C-24GT8XS-X



Note:	1. Grounding Lug 2. Filler Panel (Expansion Module) 3. Filler Panel (Non-expansion Module)	4. Power Module Slot 1 5. Power Module Slot 2

Power Supply

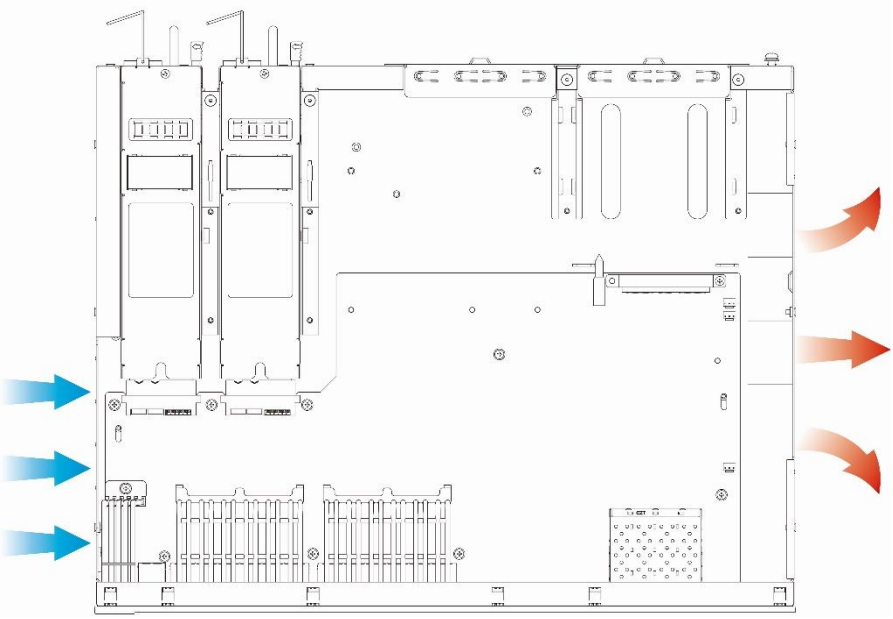
RG-S5760C-24GT8XS-X supports 2 power supply modules.

Dual-power input: The switch can be powered by one power supply module, or two power supply modules. When both modules are working, the switch is working in power redundancy mode.

Heat Dissipation System

The switch uses left-to-right airflow for heat dissipation, thereby ensuring the normal function of the device in the specified environment. Maintain a minimum clearance of 100 mm (3.94 in.) around the chassis for air circulation.

Figure 1-4 Airflow Direction



LED

LED	Panel Identification	Status	Meaning
System status LED	Status	Off	The switch is not powered on.
		Blinking green (3 Hz)	Initialization is in progress. Continuous blinking indicates a fault.
		Blinking green (10 Hz)	It is used for on-site positioning of the device, and allows operation and maintenance personnel to perform remote power on and off control.
		Solid green	The switch is operational.
		Solid yellow	Temperature alarm: 1. The temperature of inlet/outlet vent exceeds the warning threshold. 2. The power is insufficient for the system. Check the working environment of the switch and power supplies immediately.
		Solid red	The temperature of the inlet/outlet vent exceeds the warning threshold. The switch is faulty.
Power supply status LED	PWR1/PWR2	Off	The power supply module is not in place or not powered on.
		Solid green	The power supply module is operating normally.
		Solid yellow	The power model is identified but not recognized.
		Solid red	The redundant power is faulty or the AC power cord is not connected.
MGMT port status LED	MGMT	Off	The port is not connected.
		Solid green	The port is connected at 1000 Mbps.
		Blinking green	The port is receiving or transmitting data at 1000 Mbps.
		Solid yellow	The port is connected at 10/100 Mbps.
		Blinking yellow	The port is receiving or transmitting data at 10/100 Mbps.

LED	Panel Identification	Status	Meaning
10GE SFP+ port status LED	25F-32F	Off	The port is not connected.
		Solid green	The port is connected at 1/10 Gbps.
		Blinking green	The port is receiving or transmitting data at 1/10 Gbps.
10/100/1000Base-T Ethernet port status LED	1-24	Off	The port is not connected.
		Solid green	The port is connected at 1000 Mbps.
		Blinking green	The port is receiving or transmitting data at 1000 Mbps.
		Solid yellow	The port is connected at 10/100 Mbps.
		Blinking yellow	The port is receiving or transmitting data at 10/100 Mbps.

1.2 RG-S5760C-48GT4XS-X

1.2.1 Specifications

Model	RG-S5760C-48GT4XS-X
Fixed service port	48 x 10/100/1000BAST-T ports 4 x 1GE/10GE SFP+ ports
Transmission medium	100/1000BASE-T Cat 5 UTP 1000BASE-X to 1000BASE-T Cat 5e/6/6a 1000BASE-SX (850 nm) 1000BASE-LX (1310 nm) 1000BASE-LH (1310 nm) 1000BASE-ZX (1550 nm) 1000BASE-LX (1310 nm, 1550 nm) 1000BASE-LH (1310 nm, 1550 nm) 10GBASE-SR (850 nm) 10GBASE-LR (1310 nm) 10GBASE-ER (1550 nm) 10GBASE-ZR (1550 nm) 10GBASE SFP+ active optical cable (AOC)
Module slot	1 x expansion module slot

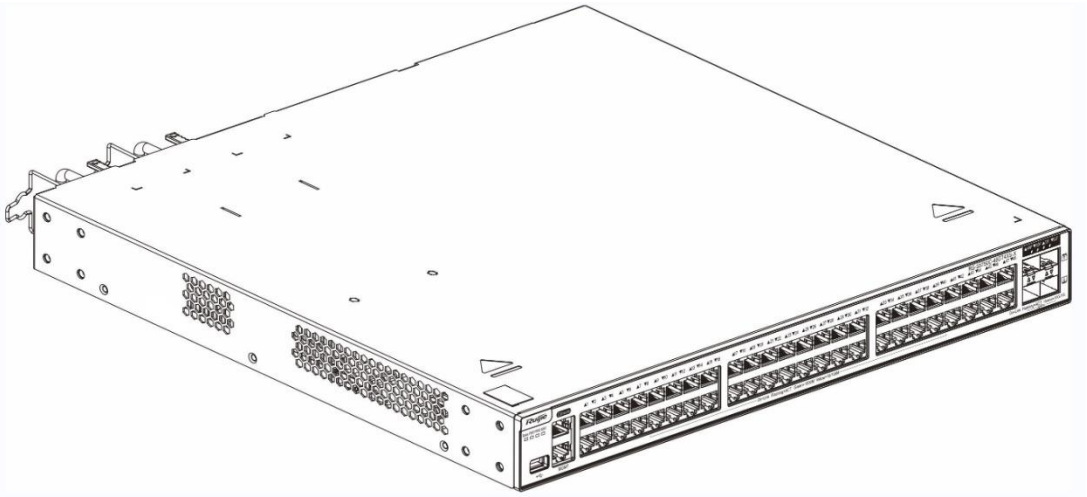
	2 x power module slots
Expansion module	M5000X-4XS2CQ Note: The V1.X switch needs to be upgraded to version 12.5(4)B0701 or later to support the expansion module.
Power module	RG-PA150IB-F RG-PD150IB-F
Fixed management port	1 x RJ45 console port 1 x RJ45 MGMT port
USB	1 x USB 2.0 port
Status LED	1 x system status LED 1 x MGMT port LED 2 x power status LEDs 48 x 10/100/1000BASE-T port LEDs 8 x 1GE/10GE SFP+ port LEDs
CPU	Dual-core CPU, each core with the clock speed of 1.2 GHz
Real-time clock (RTC)	Supported
BootROM	16 MB (2 flash chips for 1+1 boot redundancy)
Flash memory	4 GB eMMC
Memory	1 GB
Power supply	2 x pluggable power modules
Maximum output power	RG-PA150IB-F: 150 W RG-PD150IB-F: 150 W
Maximum power consumption	70 W (excluding expansion modules) 95 W (including expansion modules)
Unit dimensions (W x D x H)	440 mm x 340 mm x 44 mm (17.32 in. x 13.39 in. x 1.73 in.)
Rack height	1 RU
Space requirements	Rack depth > 500 mm (19.69 in.)
Unit weight	4.5 kg (9.92 lbs)
Temperature	Operating temperature: ● 0°C to 45°C (32°F to 113°F), V1.X without expansion modules or V2.X ● 0°C to 40°C (32°F to 104°F), V1.X with expansion modules Storage temperature: –40°C to +70°C (–40°F to +158°F)

	Note: At an altitude between 1,800 m (5,905.51 ft.) and 5,000 m (16,404.20 ft.), every time the altitude increases by 220 m (721.78 ft.), the maximum temperature decreases by 1°C (1.8°F).
Humidity	Operating humidity: 10% to 90% RH (non-condensing) Storage humidity: 5% to 95% RH (non-condensing)
Altitude	Operating altitude: –500 m to 5,000 m (–1640.42 ft. to 16404.20 ft.) Storage altitude: –500 m to 5,000 m (–1640.42 ft. to 16404.20 ft.)
Mean time between failure (MTBF)	939,840 hours (about 110 years)
Fan	2 x fixed fan modules
Acoustic noise	45°C (113°F): 57.9 dB
Power module redundancy	1+1 redundancy
Fan redundancy	Not supported
Power module hot swapping	Supported
USB hot swapping	Supported
Cable hot swapping	Supported
Safety regulation	IEC 62368-1
EMC regulation	EN 300386, EN 55032 Class A, EN 55035, EN IEC 61000-3-2, EN 61000-3-3, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11
RoHS	European RoHS Directive 2011/65/EU & Amendment(EU) 2015/863

1.2.2 Product Appearance

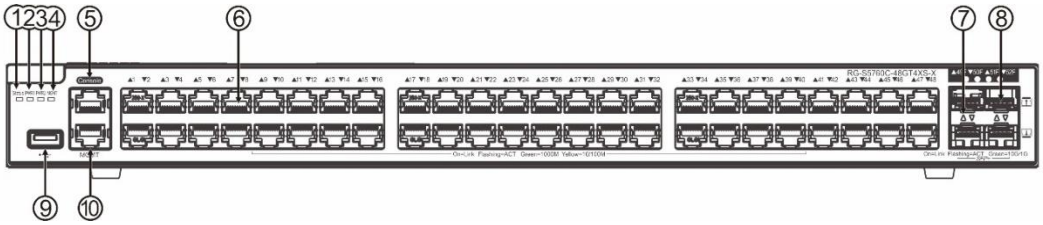
The RG-S5760C-48GT4XS-X Ethernet switch provides 48 10/100/1000Base-T Ethernet ports, four 10GE SFP+ ports, one MGMT port, one USB port, and one Console port on the front panel, as well as two power supply module slots on the back panel.

Figure 1-5 Appearance of RG-S5760C-48GT4XS-X



Front Panel

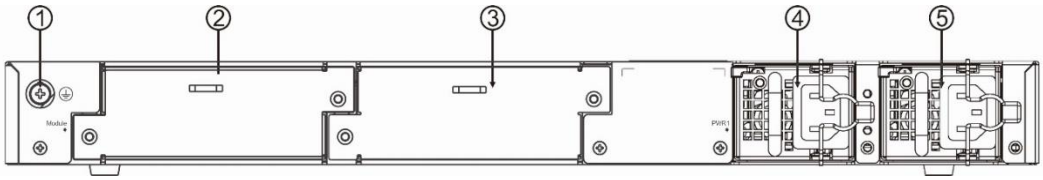
Figure 1-6 Front Panel of RG-S5760C-48GT4XS-X



Note:	1. System Status LED	7. 1GE/10GE SPF+ Port LED
	2. Power Status LED (PWR1)	8. 1GE/10GE SFP+ Port
	3. Power Status LED (PWR2)	9. USB Port
	4. MGMT Port LED	10. MGMT Port
	5. Console Port	
	6. 10/100/1000Base-T Port and Port LED	

Rear Panel

Figure 1-7 Rear Panel of RG-S5760C-48GT4XS-X



Note:	1. Grounding Lug 2. Filler Panel 3. Filler Panel (Non-expansion Module)	4. Power Module Slot 1 5. Power Module Slot 2

Power Supply

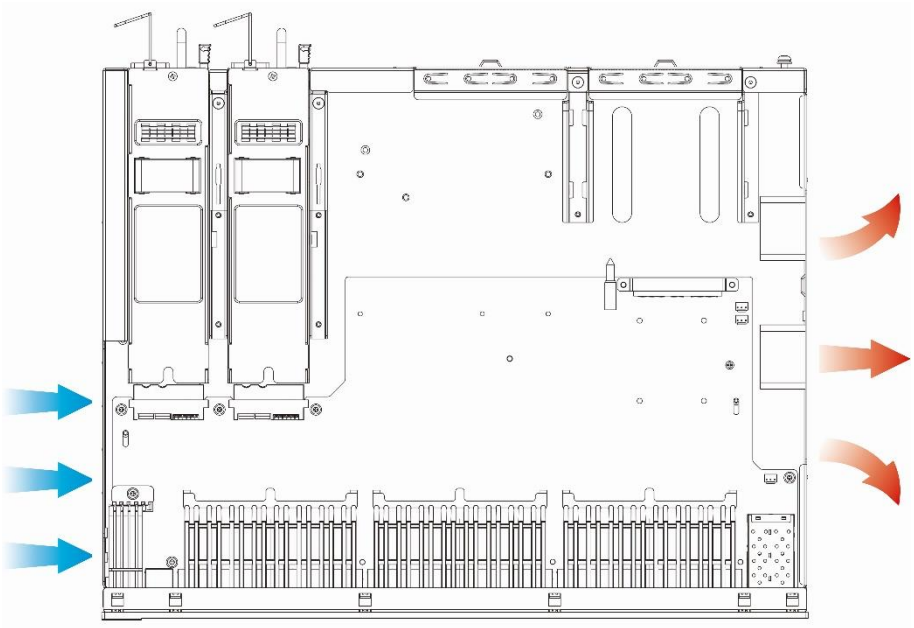
The RG-S5760C-48GT4XS-X supports two power supply modules.

Dual-power input: The switch can be powered by one power supply module, or two power supply modules. When both modules are working, the switch is working in power redundancy mode.

Heat Dissipation

RG-S5760C-48GT4XS-X uses left-to-right airflow for heat dissipation, thereby ensuring the normal function of the device in the specified environment. Maintain a minimum clearance of 100 mm (3.94 in.) around the chassis for air circulation.

Figure 1-8 Airflow Direction



LED

LED	Panel Identification	Status	Meaning
System status LED	Status	Off	The switch is not powered on.
		Blinking green (3 Hz)	Initialization is in progress. Continuous blinking indicates a fault.
		Blinking green (10Hz)	It is used for on-site positioning of the device, and allows operation and maintenance personnel to perform remote

LED	Panel Identification	Status	Meaning
			power on and off control.
		Solid green	The switch is operational.
		Solid yellow	Temperature alarm: 1. The temperature of inlet/outlet vent exceeds the warning threshold. 2. The power is insufficient for the system. Check the working environment of the switch and power supplies immediately.
		Solid red	The temperature of the inlet/outlet vent exceeds the warning threshold. The switch is faulty.
Power supply status LED	PWR1/PWR2	Off	The power supply module is not in place or not powered on.
		Solid green	The power supply module is operating normally.
		Solid red	The redundant power is faulty or the AC power cord is not connected.
MGMT port status LED	MGMT	Off	The port is not connected.
		Solid green	The port is connected at 1000 Mbps.
		Blinking green	The port is receiving or transmitting data at 1000 Mbps.
		Solid yellow	The port is connected at 10/100 Mbps.
		Blinking yellow	The port is receiving or transmitting data at 10/100 Mbps.
10GE SFP+ port status LED	49F-52F	Off	The port is not connected.
		Solid green	The port is connected at 1/10 Gbps.
		Blinking green	The port is receiving or transmitting data at 1/10 Gbps.
10/100/1000Base-T Ethernet port status LED	1-48	Off	The port is not connected.
		Solid green	The port is connected at 1000 Mbps.
		Blinking green	The port is receiving or transmitting data at 1000 Mbps.

LED	Panel Identification	Status	Meaning
		Solid yellow	The port is connected at 10/100 Mbps.
		Blinking yellow	The port is receiving or transmitting data at 10/100 Mbps.

1.3 RG-S5760C-24SFP/8GT8XS-X

1.3.1 Specifications

Model	RG-S5760C-24SFP/8GT8XS-X
Fixed service port	24 x 1GE SFP ports ● Ports 1 to 16 support the rate of 100Mbps, ports 17 to 24 do not support the rate of 100Mbps ● Ports 1 to 8 are 10/100/1000BASE-T combo ports 8 x 1GE/10GE SFP+ ports
Transmission medium	100/1000BASE-T Cat 5 UTP 1000BASE-X to 1000BASE-T Cat 5e/6/6a 1000BASE-SX (850 nm) 1000BASE-LX (1310 nm) 1000BASE-LH (1310 nm) 1000BASE-ZX (1550 nm) 1000BASE-LX (1310 nm, 1550 nm) 1000BASE-LH (1310 nm, 1550 nm) 10GBASE-SR (850 nm) 10GBASE-LR (1310 nm) 10GBASE-ER (1550 nm) 10GBASE-ZR (1550 nm) 10GBASE SFP+ active optical cable (AOC)
Module slot	1 x expansion module slot 2 x power module slots
Expansion module	M5000X-4XS2CQ Note: The V1.X switch needs to be upgraded to version 12.5(4)B0701 or later to support the expansion module.
Power module	RG-PA150IB-F RG-PD150IB-F

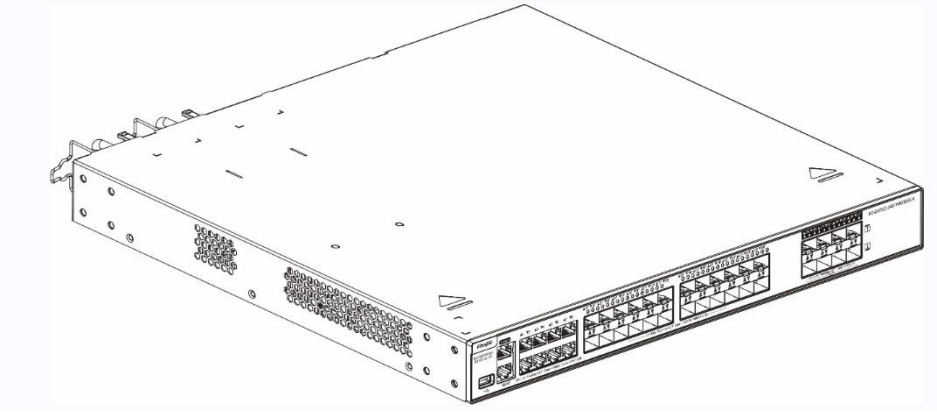
Fixed management port	1 x RJ45 console port 1 x RJ45 MGMT port
USB	1 x USB 2.0 port
Status LED	1 x system status LED 1 x MGMT port LED 2 x power status LEDs 24 x 1GE SFP port LEDs 8 x 1GE/10GE SFP+ port LEDs
CPU	Dual-core CPU, each core with the clock speed of 1.2 GHz
Real-time clock (RTC)	Supported
BootROM	16 MB (2 flash chips for 1+1 boot redundancy)
Flash memory	4 GB eMMC
Memory	1 GB
Power supply	2 x pluggable power modules
Maximum output power	RG-PA150IB-F: 150 W RG-PD150IB-F: 150 W
Maximum power consumption	77 W (excluding expansion modules) 102 W (including expansion modules)
Unit dimensions (W x D x H)	440 mm x 340 mm x 44 mm (17.32 in. x 13.39 in. x 1.73 in.)
Rack height	1 RU
Space requirements	Rack depth > 500 mm (19.69 in.)
Unit weight	4.3 kg (9.48 lbs)
Temperature	Operating temperature: ● 0°C to 45°C (32°F to 113°F), V1.X without expansion modules or V2.X ● 0°C to 40°C (32°F to 104°F), V1.X with expansion modules Storage temperature: –40°C to +70°C (–40°F to +158°F) Note: At an altitude between 1,800 m (5,905.51 ft.) and 5,000 m (16,404.20 ft.), every time the altitude increases by 220 m (721.78 ft.), the maximum temperature decreases by 1°C (1.8°F).
Humidity	Operating humidity: 10% to 90% RH (non-condensing) Storage humidity: 5% to 95% RH (non-condensing)
Altitude	Operating altitude: –500 m to 5,000 m (–1640.42 ft. to 16404.20 ft.)

	Storage altitude: –500 m to 5,000 m (–1640.42 ft. to 16404.20 ft.)
Mean time between failure (MTBF)	803,136 hours (about 94 years)
Fan	2 x fixed fan modules
Acoustic noise	45°C (113°F): 56.2 dB
Power module redundancy	1+1 redundancy
Fan redundancy	Not supported
Power module hot swapping	Supported
USB hot swapping	Supported
Cable hot swapping	Supported
Safety regulation	IEC 62368-1
EMC regulation	EN 300386, EN 55032 Class A, EN 55035, EN IEC 61000-3-2, EN 61000-3-3, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11
RoHS	European RoHS Directive 2011/65/EU & Amendment(EU) 2015/863

1.3.2 Product Appearance

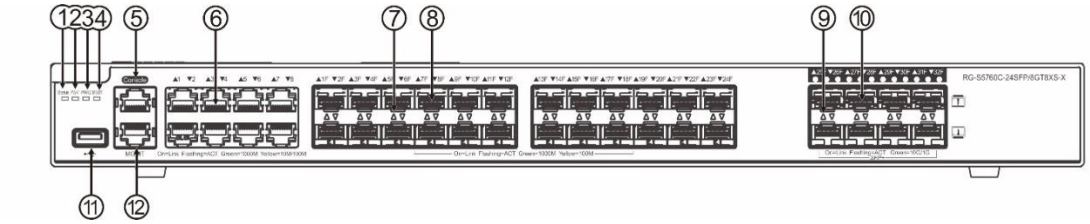
The RG-S5760C-24SFP/8GT8XS-X Ethernet switch provides 24 GE SFP ports (port 17-24 do not support the rate of 100Mbps), eight 10/100/1000Base-T combo ports, eight 10GE SFP+ ports, one MGMT port, one USB port, and one Console port on the front panel, two power supply module slots and two expansion slot on the back panel.

Figure 1-9 Appearance of RG-S5760C-24SFP/8GT8XS-X



Front Panel

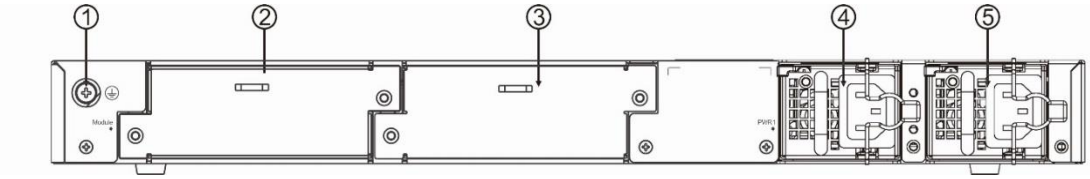
Figure 1-10 Front Panel of RG-S5760C-24SFP/8GT8XS-X



Note:	1. System Status LED	7. 1GE SFP Port LED
	2. Power Status LED (PWR1)	8. 1GE SFP Port
	3. Power Status LED (PWR2)	9. 1GE/10GE SPF+ Port LED
	4. MGMT Port LED	10.1GE/10GE SFP+ Port
	5. Console Port	11. USB Port
	6. 10/100/1000Base-T Port and Port LED	12. MGMT Port

Rear Panel

Figure 1-11 Rear Panel of S5760C-24SFP/8GT8XS-X



Note:	1. Grounding Lug	4. Power Module Slot 1
	2. Filler Panel (Expansion module)	5. Power Module Slot 2
	3. Filler Panel (Non-expansion module)	

Power Supply

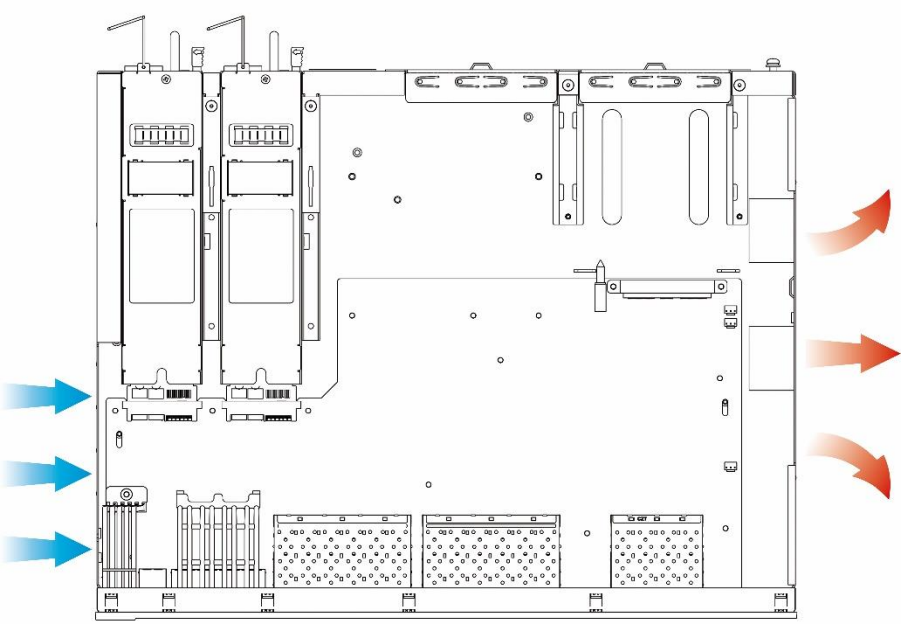
The S5760C-24SFP/8GT8XS-X supports two power supply modules.

Dual-power input: The switch can be powered by one power supply module, or two power supply modules. When both two modules are working, the switch is working in power redundancy mode.

Heat Dissipation

The RG-S5760C-24SFP/8GT8XS-X uses left-to-right airflow for heat dissipation, thereby ensuring the normal function of the device in the specified environment. Maintain a minimum clearance of 100 mm (3.94 in.) around the chassis for air circulation.

Figure 1-12 Airflow Direction



LED

LED	Panel Identification	Status	Meaning
System status LED	Status	Off	The switch is not powered on.
		Blinking green (3 Hz)	Initialization is in progress. Continuous blinking indicates a fault.
		Blinking green (10 Hz)	It is used for on-site positioning of the device, and allows operation and maintenance personnel to perform remote power on and off control.
		Solid green	The switch is operational.
		Solid yellow	Temperature alarm: 1. The temperature of inlet/outlet vent exceeds the warning threshold. 2. The power is insufficient for the system. Check the working environment of the switch and power supplies immediately.
		Solid red	The switch is faulty. For details, see Troubleshooting.
Power supply status LED	PWR1/PWR2	Off	The power supply module is not in place or not powered on.

LED	Panel Identification	Status	Meaning
		Solid green	The power supply module is in place and operational.
		Solid red	The redundant power is faulty or the AC power cord is not connected.
MGMT port status LED	MGMT	Off	The port is not connected.
		Solid green	The port is connected at 1000 Mbps.
		Blinking green	The port is receiving or transmitting data at 1000 Mbps.
		Solid yellow	The port is connected at 10/100 Mbps.
		Blinking yellow	The port is receiving or transmitting data at 10/100 Mbps.
1GE SFP port status LED	1F-16F	Off	The port is not connected.
		Solid green	The port is connected at 1000 Mbps.
		Blinking green	The port is receiving or transmitting data at 1000 Mbps.
		Solid yellow	The port is connected at 100 Mbps.
		Blinking yellow	The port is receiving or transmitting data at 100 Mbps.
10GE SFP+ port status LED	25F-32F	Off	The port is not connected.
		Solid green	The port is connected at 1/10 Gbps.
		Blinking green	The port is receiving or transmitting data at 1/10 Gbps.
1GE SFP port status LED	17F-24F	Off	The port is not connected.
		Solid green	The port is connected at 1000 Mbps.
		Blinking green	The port is receiving or transmitting data at 1000 Mbps.
10/100/1000Base-T Ethernet port status LED	1-8	Off	The port is not connected.
		Solid green	The port is connected at 1000 Mbps.
		Blinking green	The port is receiving or transmitting data at 1000 Mbps.
		Solid yellow	The port is connected at 10/100 Mbps.

LED	Panel Identification	Status	Meaning
		Blinking yellow	The port is receiving or transmitting data at 10/100 Mbps.

1.4 RG-S5760C-48SFP4XS-X

1.4.1 Specifications

Model	RG-S5760C-48SFP4XS-X
Fixed service port	48 x 1GE SFP ports 4 x 1GE/10GE SFP+ ports
Transmission medium	1000BASE-X to 1000BASE-T Cat 5e/6/6a 1000BASE-SX (850 nm) 1000BASE-LX (1310 nm) 1000BASE-LH (1310 nm) 1000BASE-ZX (1550 nm) 1000BASE-LX (1310 nm, 1550 nm) 1000BASE-LH (1310 nm, 1550 nm) 10GBASE-SR (850 nm) 10GBASE-LR (1310 nm) 10GBASE-ER (1550 nm) 10GBASE-ZR (1550 nm) 10GBASE SFP+ active optical cable (AOC)
Module slot	1 x expansion module slot 2 x power module slots 3 x fan module slots
Expansion module	M5000X-4XS2CQ Note: The V1.X switch needs to be upgraded to version 12.5(4)B0701 or later to support the expansion module.
Power module	RG-PA150IB-F RG-PD150IB-F
Fan module	M2SFAN I-F (pre-installed 3)
Fixed management port	1 x RJ45 console port 1 x RJ45 MGMT port

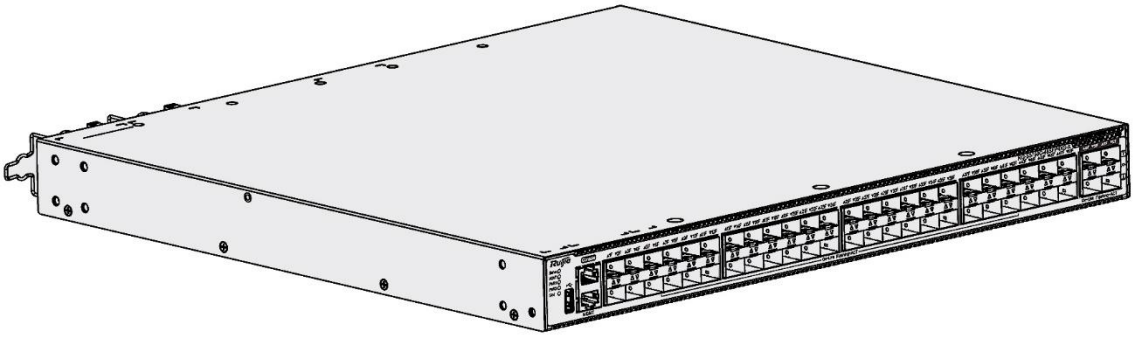
USB	1 x USB 2.0 port
Status LED	1 x system status LED 1 x MGMT port LED 1 x fan status LED 2 x power status LEDs 48 x 1GE SFP port LEDs 4 x 1GE/10GE SFP+ port LEDs
CPU	Dual-core CPU, each core with the clock speed of 1.2 GHz
Real-time clock (RTC)	Supported
BootROM	16 MB (2 flash chips for 1+1 boot redundancy)
Flash memory	4 GB eMMC
Memory	2 GB
Power supply	2 x pluggable power modules
Maximum output power	RG-PA150IB-F: 150 W RG-PD150IB-F: 150 W
Maximum power consumption	105 W (excluding expansion modules) 125 W (including expansion modules)
Unit dimensions (W x D x H)	442.0 mm x 420.0 mm x 43.6 mm (17.40 in. x 16.54 in. x 1.72 in.)
Rack height	1 RU
Space requirements	Rack depth > 500 mm (19.69 in.)
Unit weight	5.3 kg (11.68 lbs)
Temperature	Operating temperature: 0°C to 45°C (32°F to 113°F) Storage temperature: –40°C to +70°C (–40°F to +158°F) Note: At an altitude between 1,800 m (5,905.51 ft.) and 5,000 m (16,404.20 ft.), every time the altitude increases by 220 m (721.78 ft.), the maximum temperature decreases by 1°C (1.8°F).
Humidity	Operating humidity: 10% to 90% RH (non-condensing) Storage humidity: 5% to 95% RH (non-condensing)
Altitude	Operating altitude: –500 m to 5,000 m (–1640.42 ft. to 16404.20 ft.) Storage altitude: –500 m to 5,000 m (–1640.42 ft. to 16404.20 ft.)

Mean time between failure (MTBF)	768,960 hours (about 90 years)
Fan	3 x pluggable fan modules
Acoustic noise	27°C (80.6°F): 50 dB 45°C (113°F): 65 dB
Power module redundancy	1+1 redundancy
Fan redundancy	2+1 redundancy
Power module hot swapping	Supported
USB hot swapping	Supported
Cable hot swapping	Supported
Safety regulation	IEC 62368-1
EMC regulation	EN 300386, EN 55032 Class A, EN 55035, EN IEC 61000-3-2, EN 61000-3-3, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11
RoHS	European RoHS Directive 2011/65/EU & Amendment(EU) 2015/863

1.4.2 Product Appearance

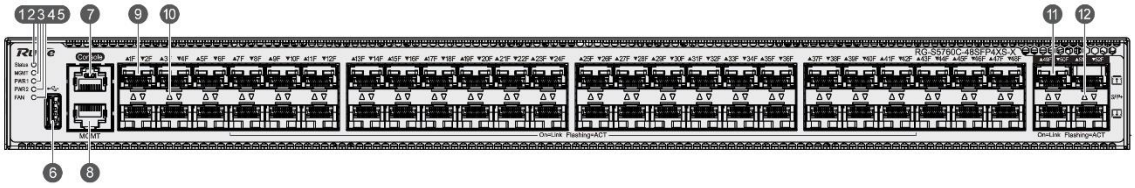
The RG-S5760C-48SFP4XS-X Ethernet switch provides 48 GE SFP ports, four 10GE SFP+ ports, one management port, one USB port and one Console port on the front panel, three fan module slots, two power supply module slots and one expansion module slot on the back panel.

Figure 1-13 Appearance of RG-S5760C-48SFP4XS-X



Front Panel

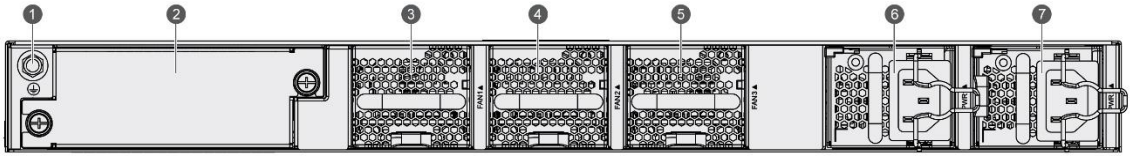
Figure 1-14 Front Panel of RG-S5760C-48SFP4XS-X



Note:	1. System Status LED 2. MGMT Port LED 3. Power Status LED (PWR1) 4. Power Status LED (PWR2) 5. Fan Status LED 6. USB Port	7. Console Port 8. MGMT Port 9. 1GE SFP Port 10. 1GE SFP Port LED 11. 1GE/10GE SFP+ Port 12. 1GE/10GE SPF+ Port LED

Rear Panel

Figure 1-15 Rear Panel of RG-S5760C-48SFP4XS-X



Note:	1. Grounding Lug 2. Filler Panel 3. Fan Module 1 4. Fan Module 2 5. Fan Module 3	6. Power Module Slot 1 (A filler panel is required if the slot is vacant.) 7. Power Module Slot 2 (A filler panel is required if the slot is vacant.)

Power Supply

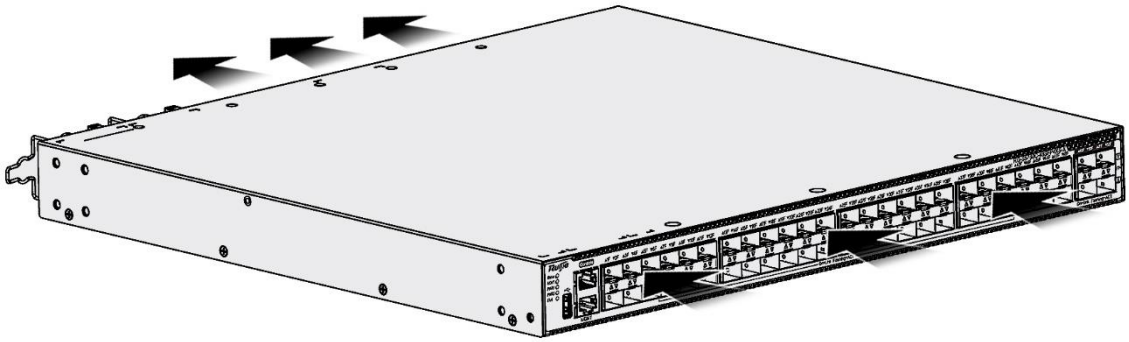
The RG-S5760C-48SFP4XS-X supports dual power supply modules. For details of the power supply, see Power Supply Modules.

The switch can be powered on by either one power supply module or dual power supply modules. If both power supply modules are used, the switch works in the power redundancy mode.

Heat Dissipation

The RG-S5760C-48SFP4XS-X adopts front-to-back airflow for heat dissipation, thereby ensuring the normal function of the device in the specified environment. Maintain a minimum clearance of 100 mm (3.94 in.) around the chassis for air circulation.

Figure 1-16 Airflow Direction



LED

LED	Panel Identification	Status	Meaning
System status LED	Status	Off	The switch is not powered on.
		Blinking green (3 Hz)	Initialization is in progress. Continuous blinking indicates a fault.
		Blinking green (10 Hz)	It is used for on-site positioning of the device, and allows operation and maintenance personnel to perform remote power on and off control.
		Solid green	The switch is operational.
		Solid yellow	The temperature at the air intake and exhaust vents exceeds the threshold.
		Solid red	1. The temperature at the air intake and exhaust vents well exceeds the threshold. 2. The device is not functioning properly.
Power supply status LED	PWR1/PWR2	Off	The power supply module is not in place.
		Solid green	The power supply module is in place and operational.
		Solid Yellow	The model of the power supply module is not supported or cannot be identified.
		Solid red	The redundant power supply module is not

LED	Panel Identification	Status	Meaning
			functioning properly or not connected with the AC power cord.
MGMT port status LED	MGMT	Off	No link is detected for this port.
		Solid green	The port has made a successful 1000 Mbps link.
		Blinking green	The port is sending and receiving traffic at 1000 Mbps.
		Solid yellow	The port has made a successful 10/100 Mbps link.
		Blinking yellow	The port is sending and receiving traffic at 10/100 Mbps.
Fan status LED	FAN	Solid green	The fan module is in place and functioning properly
		Solid red	1. A fan module is faulty. 2. The module type is not compatible with the system. 3. A fan module is not in place.
10GE SFP+ port status LED	49F-52F	Off	No link is detected for this port.
		Solid green	The port has made a successful 1/10 Gbps link.
		Blinking green	The port is sending and receiving traffic at 1/10 Gbps.
1GE SFP port status LED	1F-48F	Off	No link is detected for this port.
		Solid green	The port has made a successful 100/1000 Mbps link.
		Blinking green	The port is sending and receiving traffic at 100/1000 Mbps.

1.5 RG-S5760C-48GT4XS-HP-X

1.5.1 Specifications

Model	RG-S5760C-48GT4XS-HP-X
Fixed service port	48 x 10/100/1000BASE-T ports, supporting PoE/PoE+

	4 x 1GE/10GE SFP+ ports
Transmission medium	100/1000BASE-T Cat 5 UTP 1000BASE-X to 1000BASE-T Cat 5e/6/6a 1000BASE-SX (850 nm) 1000BASE-LX (1310 nm) 1000BASE-LH (1310 nm) 1000BASE-ZX (1550 nm) 1000BASE-LX (1310 nm, 1550 nm) 1000BASE-LH (1310 nm, 1550 nm) 10GBASE-SR (850 nm) 10GBASE-LR (1310 nm) 10GBASE-ER (1550 nm) 10GBASE-ZR (1550 nm) 10GBASE SFP+ active optical cable (AOC)
Module slot	1 x expansion module slot 2 x power module slots 2 x fan module slots
Expansion module	M5000X-4XS2CQ Note: The V1.X switch needs to be upgraded to version 12.5(4)B0701 or later to support the expansion module.
Power module	RG-PA600I-P-F RG-PA1000I-P-F
Fan module	M2SFAN I-F (pre-installed 2)
Fixed management port	1 x RJ45 console port 1 x RJ45 MGMT port
USB	1 x USB 2.0 port
Button	1 x LED mode button
Status LED	1 x system status LED 1 x MGMT port LED 2 x power status LEDs 1 x fan status LED 1 x LED mode indicator 48 x 10/100/1000BASE-T port LEDs 4 x 1GE/10GE SFP+ port LEDs

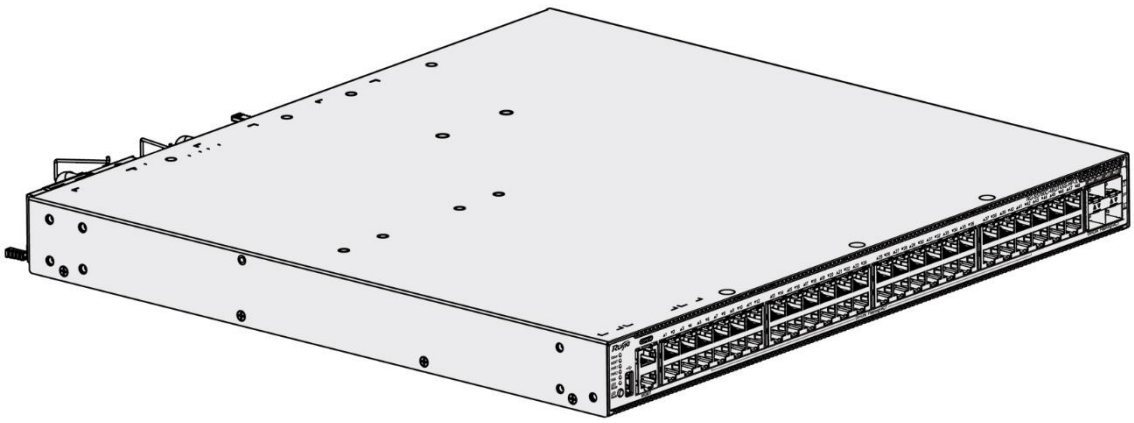
CPU	Dual-core CPU, each core with the clock speed of 1.2 GHz
Real-time clock (RTC)	Supported
BootROM	16 MB (2 flash chips for 1+1 boot redundancy)
Flash memory	4 GB eMMC
Memory	2 GB
Power supply	2 x pluggable power modules
Maximum output power	RG-PA600I-P-F: 600 W RG-PA1000I-P-F: ● 100 V AC to 130 V AC: 930 W ● 200 V AC to 240 V AC: 1000 W
PoE port	Ports 1 to 48 support PoE/PoE+ (IEEE 802.3af/at) power supply
PoE power cable pairs	Mode A (1-2, 3-6 pairs)
PoE output power	Each PoE port provides up to 30 W of power The maximum power depends on the configured power supply ● 1 x RG-PA600I-P-F: 370 W ● 2 x RG-PA600I-P-F: 740 W ● 1 x RG-PA1000I-P-F: 740 W ● 2 x RG-PA1000I-P-F: 1480 W, a maximum output of 1440 W over 48 ports (30 W x 48) Note: The maximum number of powered devices supported by the switch is determined by the available power of the switch and the actual power consumption of each device.
Maximum power consumption	120 W (without PoE) 1,600 W (full PoE load)
Energy saving	Not supported
Unit dimensions (W x D x H)	442.0 mm x 420.0 mm x 43.6 mm (17.40 in. x 16.54 in. x 1.72 in.)
Rack height	1 RU
Space requirements	Rack depth > 500 mm (19.69 in.)
Unit weight	5.5 kg (12.13 lbs)
Temperature	Operating temperature: 0°C to 45°C (32°F to 113°F) Storage temperature: –40°C to +70°C (–40°F to +158°F) Note: At an altitude between 1,800 m (5,905.51 ft.) and 5,000 m (16,404.20 ft.), every time the altitude increases by 220 m (721.78 ft.), the maximum temperature decreases by 1°C (1.8°F).
Humidity	Operating humidity: 10% to 90% RH (non-condensing)

	Storage humidity: 5% to 95% RH (non-condensing)
Altitude	Operating altitude: –500 m to 5,000 m (–1640.42 ft. to 16404.20 ft.) Storage altitude: –500 m to 5,000 m (–1640.42 ft. to 16404.20 ft.)
Mean time between failure (MTBF)	811,680 hours (about 95 years)
Fan	2 x pluggable fan modules
Acoustic noise	27°C (80.6°F): 53 dB 45°C (113°F): 68 dB
Power module redundancy	1+1 redundancy
Fan redundancy	1+1 redundancy
Power module hot swapping	Supported
USB hot swapping	Supported
Cable hot swapping	Supported
Safety regulation	IEC 62368-1
EMC regulation	EN 300386, EN 55032 Class A, EN 55035, EN IEC 61000-3-2, EN 61000-3-3, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11
RoHS	European RoHS Directive 2011/65/EU & Amendment(EU) 2015/863

1.5.2 Product Appearance

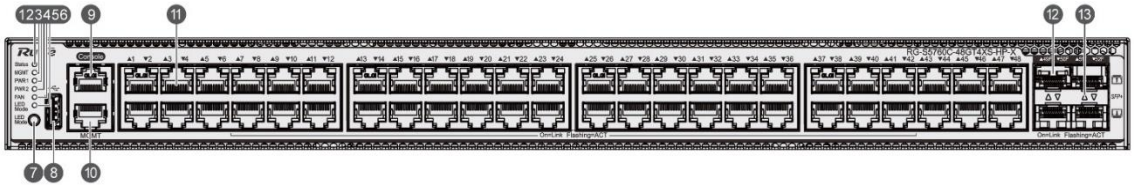
The RG-S5760C-48GT4XS-HP-X Ethernet switch provides 48 10/100/1000Base-T Ethernet ports (PoE+ capable), four 10GE SFP+ ports, one management port, one USB port and one Console port on the front panel, two fan module slots, two power supply module slots and one expansion module slot on the back panel.

Figure 1-17 Appearance of RG-S5760C-48GT4XS-HP-X



Front Panel

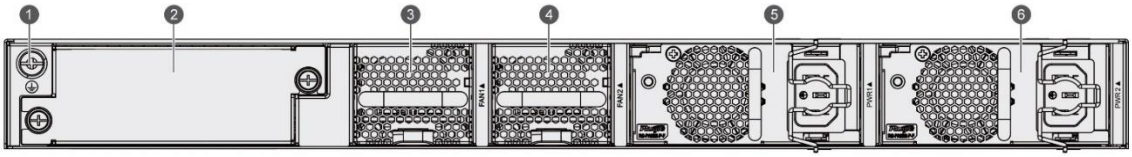
Figure 1-18 Front Panel of RG-S5760C-48GT4XS-HP-X



Note:	1. System Status LED 2. Power Status LED (PWR1) 3. Power Status LED (PWR2) 5. Fan Status LED 6. LED Mode Indicator	7. LED Mode Button 8. USB Port 9. Console Port 10. MGMT Port 11. 10/100/1000Base-T Port and Port LED 12. 1GE/10GE SFP+ Port 13. 1GE/10GE SPF+ Port LED

Rear Panel

Figure 1-19 Rear Panel of RG-S5760C-48GT4XS-HP-X



Note:	1. Grounding Lug 2. Filler Panel 3. Fan Module 1 4. Fan Module 2	5. Power Module Slot 1 (A filler panel is required if the slot is vacant.) 6. Power Module Slot 2 (A filler panel is required if the slot is vacant.)

Power Supply

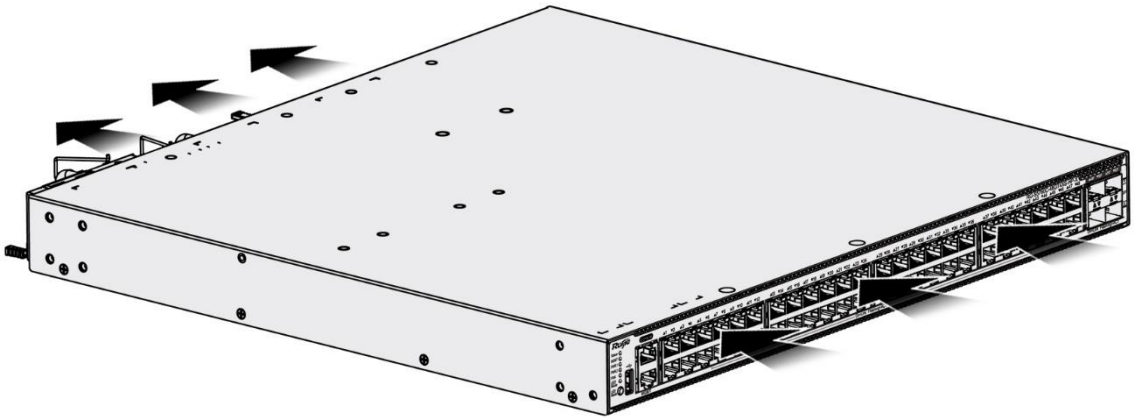
The RG-S5760C-48GT4XS-HP-X supports dual power supply modules. For details of the power supply, see Power Supply Modules.

The switch can be powered on by either one power supply module or dual power supply modules. If both power supply modules are used, the switch works in the power redundancy mode.

Heat Dissipation

The RG-S5760C-48GT4XS-HP-X adopts front-to-back airflow for heat dissipation, thereby ensuring the normal function of the device in the specified environment. Maintain a minimum clearance of 100 mm (3.94 in.) around the chassis for air circulation.

Figure 1-20 Airflow Direction



LED

LED	Panel Identification	Status	Meaning
System status LED	Status	Off	The switch is not powered on.
		Blinking green (3 Hz)	Initialization is in progress. Continuous blinking indicates a fault.
		Blinking green (10 Hz)	It is used for on-site positioning of the device, and allows operation and maintenance personnel to perform remote power on and off control.
		Solid green	The switch is operational.
		Solid yellow	The temperature at the air intake and exhaust vents exceeds the threshold.
		Solid red	1. The temperature at the air intake and exhaust vents well exceeds the threshold. 2. The device is not functioning properly.
Power supply status LED	PWR1/PWR2	Off	The power supply module is not in place.
		Solid green	The power supply module is in place and operational.
		Solid Yellow	The model of the power supply module is not supported or cannot be identified.

LED	Panel Identification	Status	Meaning
		Solid red	The redundant power supply module is not functioning properly or not connected with the AC power cord.
MGMT port status LED	MGMT	Off	No link is detected for this port.
		Solid green	The port has made a successful 1000 Mbps link.
		Blinking green	The port is sending and receiving traffic at 1000 Mbps.
		Solid yellow	The port has made a successful 10/100 Mbps link.
		Blinking yellow	The port is sending and receiving traffic at 10/100 Mbps.
Fan status LED	FAN	Solid green	The fan module is in place and functioning properly
		Solid red	1. A fan module is faulty. 2. The module type is not compatible with the system. 3. A fan module is not in place.
LED Mode Indicator	LED Mode	Solid green	Switching status
		Solid yellow	PoE status
10GE SFP+ port status LED	49F-52F	Off	No link is detected for this port.
		Solid green	The port has made a successful 1/10 Gbps link.
		Blinking green	The port is sending and receiving traffic at 1/10 Gbps.
10/100/1000Base-T Ethernet port status LED	1 to 48	Off	No link is detected for this port.
		Solid green	The port has made a successful 10/100/1000 Mbps link.
		Blinking green	The port is sending and receiving traffic at 10/100/1000 Mbps.
PoE status LED	1 to 48	Off	PoE is disabled.
		Solid green	PoE is enabled.
		Blinking green	PoE overload occurs.

LED	Panel Identification	Status	Meaning
		(3 Hz)	

LED Mode Button

The LED Mode button is used to switch the LED mode. The green LED Mode indicator indicates the switching status. Press the **LED Mode** button, and the LED Mode indicator will turn yellow, indicating the PoE status. Press the **LED Mode** button again, the indicator switches to indicating the switching status.

If you want to switch the LED mode, press the button for over two seconds.

1.6 M5000X-4XS2CQ

Note

After upgraded to 12.5(4)B0701, RG-S5760C-X V1.X supports M5000X-4XS2CQ.

1.6.1 Specifications

Model	M5000X-4XS2CQ
Fixed service port	4 x 1GE/10GE SFP+ ports 2 x 40GE/100GE QSFP28 ports
Transmission medium	1000BASE-X to 1000BASE-T Cat 5e/6/6a 1000BASE-SX (850 nm) 1000BASE-LX (1310 nm) 1000BASE-LH (1310 nm) 1000BASE-ZX (1550 nm) 1000BASE-LX (1310 nm, 1550 nm) 1000BASE-LH (1310 nm, 1550 nm) 10GBASE-SR (850 nm) 10GBASE-LR (1310 nm) 10GBASE-ER (1550 nm) 10GBASE SFP+ active optical cable (AOC) 40GBASE-LSR (850 nm) 40GBASE-LR4 (1310 nm) 40GBASE-iLR4 (1310 nm) 40GBASE QSFP+ active optical-cable (AOC) 100GBASE-SR (850 nm) 100GBASE-LR4 (1310 nm)

	100GBASE QSPP28 active optical-cable (AOC)
Status LED	1 x system status LED 4 x 1GE/10GE SFP+ port LEDs 2 x 40GE/100GE QSFP28 port LEDs
Maximum power consumption	22 W
Module dimensions (W x D x H)	125 mm x 120 mm x 39 mm (4.92 in. x 4.72 in. x 1.54 in.)
Module weight	0.45 kg (0.99 lbs)
Temperature	Operating temperature: 0°C to 45°C (32°F to 113°F) Storage temperature: –40°C to +70°C (–40°F to +158°F) Note: At an altitude between 1,800 m (5,905.51 ft.) and 5,000 m (16,404.20 ft.), every time the altitude increases by 220 m (721.78 ft.), the maximum temperature decreases by 1°C (1.8°F).
Humidity	Operating humidity: 10% to 90% RH (non-condensing) Storage humidity: 5% to 95% RH (non-condensing)
Altitude	Operating altitude: –500 m to 5,000 m (–1640.42 ft. to 16404.20 ft.) Storage altitude: –500 m to 5,000 m (–1640.42 ft. to 16404.20 ft.)
Mean time between failure (MTBF)	6,193,320 hours (about 707 years)
Safety regulation	IEC 62368-1
Module hot swapping	Not supported
EMC regulation	EN 300386, EN 55032 Class A, EN 55035, EN IEC 61000-3-2, EN 61000-3-3, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11
RoHS	European RoHS Directive 2011/65/EU & Amendment(EU) 2015/863

1.6.2 Product Appearance

The M5000X-4XS2CQ module provides four 10GE SFP+ ports and two QSFP28 ports. The QSFP28 ports support 100G and 40G modes. The 100G can be split into 4*25G mode and the 40G can be split into 4*10G mode.

Figure 1-21 Appearance of M5000X-4XS2CQ Module

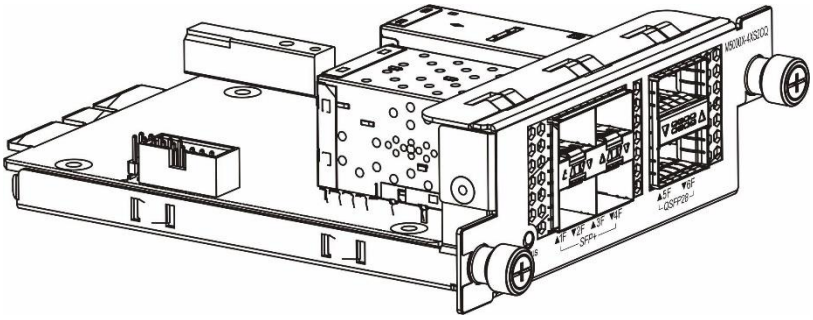
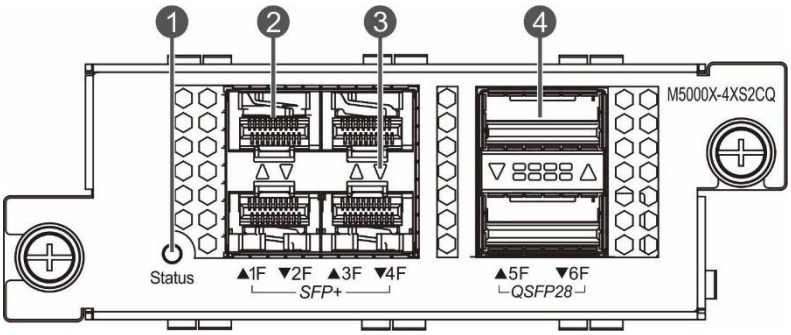


Figure 1-22 Front Panel of M5000X-4XS2CQ Module



Note:	1. System Status LED 2. 1GE/10GE SPF+ Port	3. 1GE/10GE SPF+ Port LED 4. 40GE/100GE QSFP28 Port and Port LED

LED

LED	Panel Identification	Status	Meaning
System status LED	Status	Off	The switch is not powered on.
		Blinking green (3 Hz)	Initialization is in progress. Continuous blinking indicates a fault.
		Solid green	The module is operational.
		Solid red	The module is faulty. For details, see Troubleshooting.
1GE/10GE SFP+ port status LED	1F-4F	Off	The port is not connected.
		Solid green	The port is connected at 1/10 Gbps.
		Blinking green	The port is receiving or transmitting data at 1/10 Gbps.
40GE/100GE	5F-6F	Off	The port is not connected.

LED	Panel Identification	Status	Meaning
QSFP28 port status LED		Solid green	The port is connected at 40/100 Gbps.
		Blinking green	The port is receiving or transmitting data at 40/100 Gbps.

1.7 Power Supply Modules

1.7.1 RG-PA150IB-F Modules

The RG-S5760C-24GT8XS-X, RG-S5760C-48GT4XS-X and RG-S5760C-24SFP/8GT8XS-X V1.X support RG-PA150I-F, and V2.X of the preceding models support RG-PA150I-F and RG-PA150IB-F power modules.

The RG-S5760C-48SFP4XS-X switch supports RG-PA150I-F and RG-PA150IB-F power modules.

RG-PA150I-F and RG-PA150IB-F are AC modules (AC/HVDC input and DC output) providing an output voltage of 12 V and an output power of up to 150 W.

Note

- The switch can be powered on by either one power supply module or dual power supply modules. If both power supply modules are used, the switch works in the power redundancy mode.
- At least one power supply module is required. If any slot is unoccupied, install a filler panel to enable proper airflow.
- RG-PA150I-F is no longer for sale.

1. Specifications

Model	RG-PA150IB-F
Power input	AC input： ● Rated input voltage: 100 V AC to 240 V AC, 50/60 Hz ● Maximum input voltage: 90 V AC to 264 V AC, 47 Hz to 63 Hz ● Maximum input current: 3 A
Power output	12 V DC, 12.5 A max
Maximum output power	150 W
Leakage current	≤ 3.5 mA
Module dimensions (W x D x H)	196.0 mm x 50.5 mm x 40.0 mm (7.72 in. x 1.99 in. x 1.57 in.)
Weight of power module	0.55 kg (1.21 lbs)

Caution

(1) When you plug a power cord, install the power cord retainer on the power cord correctly to prevent the cord from loosening.

(2) Power cords should be connected to a grounded output socket.

2. Features

Feature	Description
Conformal Coating	Protects circuits against moisture, frog, mold, electrical shock and leakage, and so on.
Protection	Provides undervoltage protection, output overcurrent protection, output overvoltage protection and output short circuit protection.
I2C Communication	Allows the host to communicate with the power supply module by I2C.
Power Supply Redundancy	Supports dual power supply modules to cooperate in parallel, enabling PE with 1+1 redundancy and redundant power supplies with current sharing.
Hot Swapping	Supports to disconnect one redundant power supply module from the outside power supply system, plug and unplug power supply modules while the device is powered on.
Power Supply Alarm	When a power fault occurs, the output status LED turns off.

3. LED

LED	Status	Meaning
Output Status LED	Off	There is no power output or output fault occurs.
	On	Power output is normal.

1.7.2 RG-PD150IB-F Module

The RG-S5760C-24GT8XS-X, RG-S5760C-48GT4XS-X, RG-S5760C-24SFP/8GT8XS-X and RG-S5760C-48SFP4XS switches support RG-PD150IB-F power module.

The RG-PD150IB-F is a DC module (DC/LVDC input and DC output) providing an output voltage of 12 V and an output power of up to 150 W.

Note

- The switch can be powered on by either one power supply module or dual power supply modules. If both power supply modules are used, the switch works in the power redundancy mode.
- At least one power supply module is required. If any slot is unoccupied, install a filler panel to enable proper airflow.

1. Specifications

Model	RG-PD150IB-F
Power input	DC input: ● Rated input voltage: –48 V DC to –60 V DC ● Maximum input voltage: –36 V DC to –75 V DC ● Maximum input current: 5 A
Power output	12 V DC, 12.5 A max
Maximum output power	150 W
Module dimensions (W x D x H)	196.0 mm x 50.5 mm x 40.0 mm (7.72 in. x 1.99 in. x 1.57 in.)
Weight of power module	0.55 kg (1.21 lbs)

Caution

(1) When you plug a power cord, install the power cord retainer on the power cord correctly to prevent the cord from loosening.

(2) Power cords should be connected to a grounded output socket.

2. Features

Feature	Description
Conformal Coating	Protects circuits against moisture, frog, mold, electrical shock and leakage, and so on.
Protection	Provides undervoltage protection, output overcurrent protection, output overvoltage protection and output short circuit protection.
I2C Communication	Allows the host to communicate with the power supply module by I2C.
Power Supply Redundancy	Supports dual power supply modules to cooperate in parallel, enabling PE with 1+1 redundancy and redundant power supplies with current sharing.
Hot Swapping	Supports to disconnect one redundant power supply module from the outside power supply system, plug and unplug power supply modules while the device is powered on.
Power Supply Alarm	When a power fault occurs, the output status LED turns off.

3. LED

LED	Status	Meaning
Output Status LED	Off	There is no power output or output fault occurs.
	On	Power output is normal.

1.7.3 RG-PA600I-P-F Module

The RG-S5760C-48GT4XS-HP-X switch support the RG-PA600I-P-F power module. The RG-PA600I-P-F is an AC module (AC/HVDC input and DC output) providing an output voltage of 56 V and an output power of up to 600 W (PoE power: 370 W).

Caution

- The switch can be powered on by either one power supply module or dual power supply modules. If both power supply modules are used, the switch works in the power redundancy mode. The switch supports 1+1 power redundancy when the PoE power consumption is less than 370 W.
- At least one power supply module is required. If any slot is unoccupied, install a filler panel to enable proper airflow.

1. Specifications

Model	RG-PA600I-P-F
Power input	AC input: ● Rated input voltage: 100 V AC to 240 V AC, 50/60 Hz ● Maximum input voltage: 90 V AC to 264 V AC, 47 Hz to 63 Hz ● Maximum input current: 8 A
Power output	56 V DC, 0 A to 10.72 A
Maximum output power	600 W
PoE output power	370 W
Leakage current	≤ 3.5 mA
Module dimensions (W x D x H)	196 mm x 90 mm x 40 mm (7.72 in. x 3.54 in. x 1.57 in.)
Weight of power module	0.9 kg (1.98 lbs)

Caution

(1) When you plug a power cord, install the power cord retainer on the power cord correctly to prevent the cord from loosening.

(2) Power cords should be connected to a grounded output socket.

2. Features

Feature	Description
Conformal Coating	Protects circuits against moisture, frog, mold, electrical shock and leakage, and so on.
Protection	Provides undervoltage protection, output overcurrent protection, output

Feature	Description
	overvoltage protection and output short circuit protection.
I2C Communication	Allows the host to communicate with the power supply module by I2C.
Power Supply Redundancy	Supports 1+1 power redundancy when the PoE power consumption is less than 370 W. Dual power supply modules are connected in parallel for current sharing.
Hot Swapping	Supports to disconnect one redundant power supply module from the outside power supply system, plug and unplug power supply modules while the device is powered on.
Power Supply Alarm	When a power fault occurs, the output status LED turns off.

3. LED

LED	Status	Meaning
Output Status LED	Off	The power supply module is not connected with a power cord.
	Solid Red	A power output error occurs, including fan fault, output short-circuit, output overcurrent protection, output overvoltage protection, power supply failure and overheat protection.
	Solid Green	The power supply module is outputting power normally.

1.7.4 RG-PA1000I-P-F Module

The RG-S5760C-48GT4XS-HP-X switch supports the RG-PA1000I-P-F power module. The RG-PA1000I-P-F module is an AC module (AC/HVDC input and DC output) providing an output voltage of 56 V and an output power of up to 1000 W (PoE power: 740 W).

Caution

- The switch can be powered on by either one power supply module or dual power supply modules. If both power supply modules are used, the switch works in the power redundancy mode. The switch supports 1+1 power redundancy when the PoE power consumption is less than 740 W.
- At least one power supply module is required. If any slot is unoccupied, install a filler panel to enable proper airflow.

1. Specifications

Model	RG-PA1000I-P-F
Power input	AC input 1: ● Rated input voltage: 100 V AC to 130 V AC, 50/60 Hz ● Maximum input voltage: 90 V AC to 143 V AC, 47 Hz to 63 Hz ● Maximum input current: 12 A

	AC input 2: ● Rated input voltage: 200 V AC to 240 V AC, 50/60 Hz ● Maximum input voltage: 180 V AC to 264 V AC, 47 Hz to 63 Hz ● Maximum input current: 8 A
Power output	100 V AC to 130 V AC: 56 V DC, 0 A to 16.61 A 200 V AC to 240 V AC: 56 V DC, 0 A to 17.86 A
Maximum output power	100 V AC to 130 V AC: 930 W 200 V AC to 240 V AC: 1000 W
PoE output power	740 W
Leakage current	≤ 3.5 mA
Module dimensions (W x D x H)	196 mm x 90 mm x 40 mm (7.72 in. x 3.54 in. x 1.57 in.)
Weight of power module	1 kg (2.20 lbs)

Caution

(1) When you plug a power cord, install the power cord retainer on the power cord correctly to prevent the cord from loosening.

(2) Power cords should be connected to a grounded output socket.

2. Features

Feature	Description
Conformal Coating	Protects circuits against moisture, frog, mold, electrical shock and leakage, and so on.
Protection	Provides undervoltage protection, output overcurrent protection, output overvoltage protection and output short circuit protection.
I2C Communication	Allows the host to communicate with the power supply module by I2C.
Power Supply Redundancy	Supports 1+1 power redundancy when the power consumption is less than 740 W. Dual power supply modules are connected in parallel for current sharing.
Hot Swapping	Supports to disconnect one redundant power supply module from the outside power supply system, plug and unplug power supply modules while the device is powered on.
Power Supply Alarm	When a power fault occurs, the output status LED turns off.

3. LED

LED	Status	Meaning
Output Status LED	Off	The power supply module is not connected with a power cord.
	Solid Red	A power output error occurs, including fan fault, output short-circuit, output overcurrent protection, output overvoltage protection, power supply failure and overheat protection.
	Solid Green	The power supply module is outputting power normally.

1.8 Pluggable Modules

The following table describes the compatibility between switches and optical transceivers.

For more information, visit Ruijie Networks official website at https://www.ruijienetworks.com/. Choose **Support** > **Documentation and Download** > **Products** > **Switches** > **Accessories** > **Optics and Transceivers**. Click on the optical transceiver model to access related documents, or use keywords to search for required documents.

Models	Matching Optical Transceivers
RG-S5760C-24GT8XS-X ● 8 x 1GE/10GE SFP+ ports RG-S5760C-48GT4XS-X ● 4 x 1GE/10GE SFP+ ports RG-S5760C-24SFP/8GT8XS-X ● 24 x 1GE SFP ports ● 8 x 1GE/10GE SFP+ ports RG-S5760C-48SFP4XS-X ● 48 x 1GE SFP ports ● 4 x 1GE/10GE SFP+ ports RG-S5760C-48GT4XS-HP-X ● 4 x 1GE/10GE SFP+ ports M5000X-4XS2CQ ● 4 x 1GE/10GE SFP+ ports	1GE optical transceivers ● Mini-GBIC-GT ● MINI-GBIC-SX-MM850 ● MINI-GBIC-LX-SM1310 ● MINI-GBIC-LH40-SM1310 ● MINI-GBIC-ZX80-SM1550 ● GE-SFP-LX20-SM1310-BIDI ● GE-SFP-LX20-SM1550-BIDI ● GE-SFP-LH40-SM1310-BIDI ● GE-SFP-LH40-SM1550-BIDI ● GE-SFP-LX03-SM1310-BIDI-I ● GE-SFP-LX03-SM1550-BIDI-I
RG-S5760C-24GT8XS-X ● 8 x 1GE/10GE SFP+ ports RG-S5760C-48GT4XS-X ● 4 x 1GE/10GE SFP+ ports RG-S5760C-24SFP/8GT8XS-X ● 8 x 1GE/10GE SFP+ ports RG-S5760C-48SFP4XS-X ● 4 x 1GE/10GE SFP+ ports RG-S5760C-48GT4XS-HP-X	10GE optical transceivers and cables ● XG-SFP-SR-MM850 ● XG-SFP-LR-SM1310 ● XG-SFP-ER-SM1550 ● XG-SFP-ZR-SM1550 ● XG-SFP-LR10-SM1270-BIDI-I ● XG-SFP-LR10-SM1330-BIDI-I ● XG-SFP-AOC1M ● XG-SFP-AOC3M ● XG-SFP-AOC5M

Models	Matching Optical Transceivers
● 4 x 1GE/10GE SFP+ ports M5000X-4XS2CQ ● 4 x 1GE/10GE SFP+ ports	
M5000X-4XS2CQ ● 2 x 40GE/100GE QSFP28 ports	40GE optical transceivers and cables ● 40G-QSFP-LSR-MM850 ● 40G-QSFP-LR4-SM1310 ● 40G-QSFP-iLR4-SM1310 ● 40G-AOC-5M 100GE optical transceivers and cables ● 100G-QSFP-SR-MM850 ● 100G-QSFP-LR4-SM1310 ● 100G-AOC-10M

Caution

Use pluggable modules supplied by Ruijie Networks. The reliability of modules supplied by other vendors cannot be guaranteed, which may cause service instability. If you use a module supplied by other vendors, Ruijie Networks will not be liable for the service issues and will not solve them in principle.

1.9 Package Contents

Item	RG-S5760C-X Series
Chassis	1
Grounding wire	1
Mounting bracket	2
Rubber pad	4
M4x8 cross recessed countersunk head screw, GB819-85	8
Mounting Bracket Installation Guide	1
Network Product Warranty Manual and Hazardous Substance Statement	1
Ruijie Networks Convergence Product Management Software	1 (pre-installed)

Item	CM85-4XS2CQ
Expansion module	1
Network Product Warranty Manual and Hazardous Substance Statement	1

Note

A normal delivery should contain the above mentioned items, which may differ from the actual delivery, depending on purchase contracts. Please check your goods carefully according to the packing list or purchase contract. If you have any questions or there are any errors, please contact your distributor.

2 Preparing for Installation

2.1 Safety Precautions

Caution

- To avoid personal injury and equipment damage, please carefully read the safety precautions before you install the RG-S5760C-X series.
- The following safety precautions may not cover all possible dangers.

2.1.1 General Safety Precautions

- Keep the chassis clean and dust-free.
- Do not place the device in walking areas.
- Do not wear loose clothes, ornaments, or any other things that may be hooked by the chassis during the installation and maintenance.
- Cut off all power supplies and unplug all power cords before dismantling the cabinet.

2.1.2 Handling Safety

- Prevent the switch from being frequently handled.
- Cut off all power supplies and unplug all power cords before moving or handling the switch.
- Keep balance and prevent personal injuries when handling the switch.

2.1.3 Electric Safety

- Observe local regulations and specifications during electric operations. Only personnel with relevant qualifications can perform such operations.
- Check whether there are potential risks in the work area. For example, check whether the power supply is grounded, whether the grounding is reliable, and whether the ground is wet.
- Learn about the position of the indoor emergency power switch before installation. Cut off the power switch in case of accidents.
- Do not maintain the switch that is powered-on alone.
- Check the switch carefully before shutting down the power supply.
- Do not place the switch in a wet position, and keep the chassis away from liquid.

Caution

- Improper or incorrect electric operations may cause a fire, electric shock, and other accidents, and lead to severe and fatal personal injury and device damage.
- Direct or indirect touch on high voltage or mains power supply through wet objects may cause fatal dangers.
- If a power supply system is equipped with a leakage protector (also referred to as "leakage current switch" or "leakage current breaker"), the rated leakage action current of each leakage protector is greater than twice of the theoretical maximum leakage current of all the power supplies in the system.

For example, if a system is equipped with eight identical power supplies, the leakage current of each power supply is equal to or less than 3 mA, and the leakage current of the system totals 24 mA. A leakage protector with 30 mA rated action current supports less than five power supplies (that is, Action current of the leakage protector/2/Maximum leakage current of each power supply = 30/2/3 = 5). In other words, the leakage protector with 30 mA rated action current supports no more than four power supplies. In this case, the eight power supplies in the system require at least two leakage protectors with 30 mA rated action current and each leakage protector supports four power supplies. If power supplies in a system differ in models, the rated leakage action current of each leakage protector divided by two is greater than the sum of maximum leakage currents of all the power supplies. The rated leakage non-action current of a leakage protector shall be 50% of the leakage action current. Take a leakage protector with 30 mA rated leakage action current as an example. The rated leakage non-action current shall be 15 mA. When the leakage current is below 15 mA, the protector shall not act. Otherwise, misoperation may easily occur due to high sensitivity and thus the leakage protector trips, devices are powered off, and services are interrupted.

- To guarantee personal safety, the rated leakage action current of each leakage protector in the system must be equal to or less than 30 mA (human body safety current is 30 mA). When twice of the total leakage current of the system is greater than 30 mA, the system must be equipped with two or more leakage protectors.
- For the leakage current value of each power supply model, see the power supply model parameter table in Chapter 0.

2.1.4 Electrostatic Discharge Safety

To ensure electrostatic discharge safety, there are some precautions:

- Properly ground the device and floor.
- Keep the indoor installation environment clean and dust-free.
- Maintain appropriate humidity conditions.

2.1.5 Laser Safety

Among the modules supported by the RG-S5760C-X series, here are many transceiver modules that are Class I laser products.

Precaution:

- When a fiber transceiver works, ensure that the port has been connected with a fiber or covered by a dust cap to keep out dust and prevent it from burning your eyes.

Caution

Do not approach or stare at any fiber port under any circumstances, as this may cause permanent damage to your eyes.

2.2 Installation Environment Requirements

Install the switch indoors to ensure its normal operation and prolonged service life.

The installation site must meet the following requirements.

2.2.1 Ventilation Requirements

RG-S5760C-X should be placed at least 10 cm away from surrounding walls to ensure normal heat dissipation. After various cables are connected, bundle the cables or place them in the cable management bracket to avoid blocking air inlets.

2.2.2 Temperature/Humidity Requirements

To ensure the normal operation and prolonged service life of the RG-S5760C-X switch, maintain an appropriate temperature and humidity in the equipment room.

The equipment room with too high or too low temperature and humidity for a long period may damage the switch.

- In an environment with high relative humidity, the insulating material may have poor insulation or even leak electricity.
- In an environment with low relative humidity, the insulating strip may dry and shrink, loosening screws.
- In a dry environment, static electricity is prone to occur and damage the internal circuits of the switch.
- Too high temperatures can accelerate the aging of insulation materials, greatly reducing the reliability of the switch and severely affecting its service life.

Temperature and humidity requirements of the RG-S5760C-X series are as follows:

Temperature	Relative Humidity
0ºC to 45ºC (32°F to 113°F)	10% to 90% (non-condensing)

Caution

The working temperature and humidity are measured 1.5 m above the ground and 0.4 m away from the front plat and when the chassis' front and rear protective plates are removed. The ambient temperature and humidity of the switch are measured at the point that is 1.5 m (59.06 in.) above the floor and 0.4 m (15.75 in.) before the switch rack when there is no protective plate in front or at the back of the rack.

2.2.3 Cleanliness Requirements

Dust poses a major threat to the switch. The indoor dust takes on a positive or negative static electric charge when falling on the switch, causing poor contact of the metallic joint. Such electrostatic adhesion may occur more easily when the relative humidity is low, not only affecting the service life of the switch, but also causing communication faults. The following table describes the requirements for the dust content and granularity in the equipment room.

Min Dust Diameter (μm)	0.5	5
Dust Particle (Particles/m^3)	≤ $3.5x10^6$	≤ $3x10^4$

Apart from dust, the salt, acid, and sulfide in the air in the equipment room must meet strict requirements. These harmful substances will accelerate metal corrosion and component aging. Therefore, the equipment room should

be properly protected against the intrusion of harmful gases, such as sulfur dioxide, hydrogen sulfide, nitrogen dioxide, and chlorine gas. The following table lists limit values for harmful gases.

Gas	Average (mg/m^3)	Maximum (mg/m^3)
Sulfur dioxide (SO_2)	0.3	1.0
Hydrogen sulfide (H_2S)	0.1	0.5
Nitrogen dioxide (NO_2)	0.5	1.0
Chlorine gas (Cl_2)	0.1	0.3

2.2.4 Grounding Requirements

A good grounding system is the basis for stable and reliable running of the RG-S5760C-X series and is indispensable for preventing lightning strikes and interference. Please carefully check the grounding conditions at the installation site according to the grounding specifications, and complete grounding properly based on the actual situation.

Caution

Correct grounding is the key to prevent lightning strikes and resist interference and must be performed by users.

Safety Grounding

Ensure that the switch are grounded through the yellow/green safety grounding cable when the device adopts the AC power supply. Otherwise, electric shock may occur when the insulation resistance between the power supply inside the switch and the chassis becomes small.

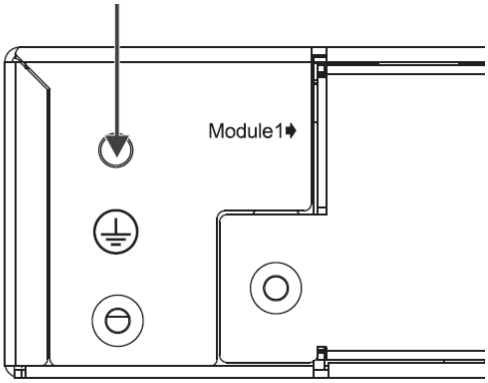
Lightning Grounding

The lightning protection system of facilities is standalone, and is composed of a lightning rod, a lower conductor, and a connector connected to the grounding system. The grounding system is usually used for power reference grounding and safety grounding of the cabinet. Lightning grounding is required only for facilities and is not required for the switch.

EMC Grounding

Grounding required for electromagnetic compatibility includes shielded grounding, filter grounding, noise and interference suppression, and level reference, which contribute to the overall grounding requirements. The grounding resistance should be smaller than 1 ohm. The RG-S5760C-X back panel has one grounding connector.

Figure 2-1 Grounding of the RG-S5760C-X



2.2.5 Lightning Protection Requirements

The AC power port must be connected to an external lightning protection power strip to prevent the switch from being struck by lightning when the AC power cord is introduced from the outdoor and directly connected to the power port of the switch. The lightning protection power strip can be fixed on the cabinet, workbench, or wall in the equipment room by using cable ties and screws. AC power enters the lightening protection power strip and then gets to the switch.

Caution

- The RG-S5760C-X switch is delivered without a lightning protection socket. Please prepare a lightning protection socket yourself.
- For the usage of the lightning protection socket, refer to its manual.

2.2.6 EMI Consideration

Various interference sources, from either outside or inside the equipment or application system, affect the system in the conductive ways such as capacitive coupling, inductive coupling, and electromagnetic radiation.

There are two types of electromagnetic interferences: radiated interference and conducted interference, depending on the type of the propagation path. When the energy, often RF energy, from a component arrives at a sensitive component via the space, the energy is known as radiated interference. The interference source can be both a part of the interfered system and a completely electrically isolated unit. Conducted interference results from the electromagnetic wire or signal cable connection between the source and the sensitive component, along the cable the interference conducts from one unit to another. Conducted interference often affects the power supply of the equipment, but can be controlled by a filter. Radiated interference may affect any signal path in the equipment, and is difficult to shield.

- Take effective measures for the power system to prevent the interference from the electric grid.
- Keep the running position of the switch as far as possible from the grounding device of the power equipment or the anti-lightning grounding device.
- Keep the device away from high-power radio transmitter, radar transmitting station, and high-frequency large-current device.
- Take measures to isolate static electricity.

2.3 Precautions for Fiber Connection

Before you connect the fibers, check that the optical connector type and fiber type match the optical interface type used. In addition, pay attention to the Tx and Rx directions of the fiber. The Tx end of this device should be connected to the Rx end of the peer device, and the Rx end of this device to the Tx end of the peer device.

2.4 Tools

List of Tools

Common Tools	Phillips screwdriver, flat-head screwdriver, wires, network cables, fastening bolts, diagonal pliers, and binding straps
Special Tools	Anti-static tools
Meters	Multimeter

Note

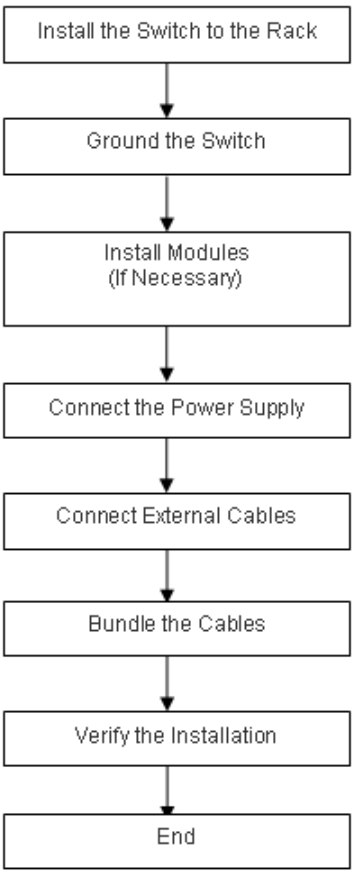
The RG-S5760C-X series switch is delivered without a tool kit. Please prepare a tool kit yourself.

3 Installing the Switch

Caution

Please ensure that you have carefully read Chapter 1.9 and make sure that the requirements in Chapter 1.9 are all met.

3.1 Installation Procedure



3.2 Preparing

Before installation, please confirm the following requirements before installation:

- The installation position provides sufficient space for heat dissipation.
- The installation position meets the temperature and humidity requirements of the switch.
- The power supply and required current are available in the installation position.
- The network cables have been deployed in the installation position.

3.3 Mounting the Switch

Precautions

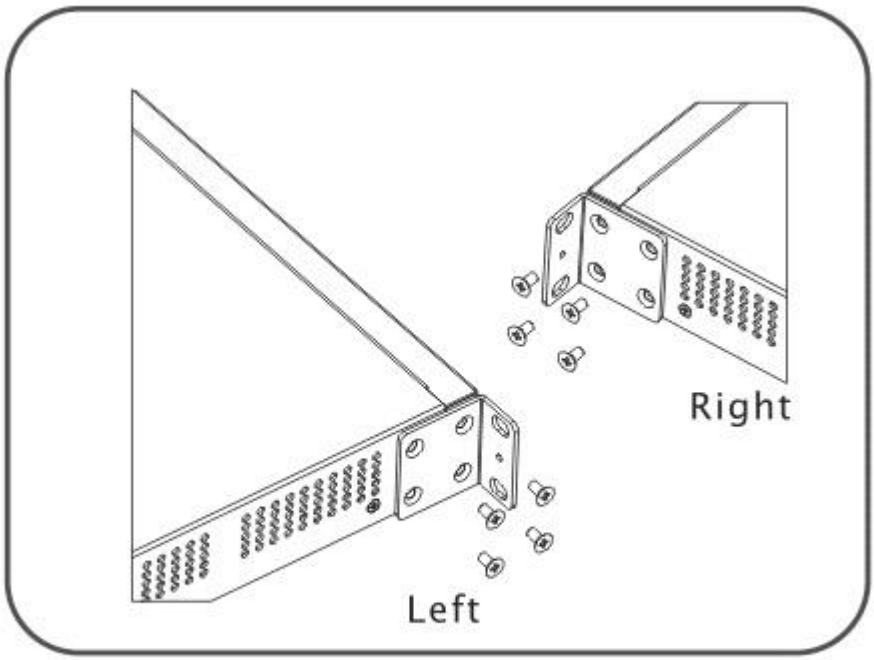
During installation, note the following points:

- Connect the power cables of different colors to the corresponding grounding connectors.
- Ensure that the power cables are well grounded.
- Do not place heavy objects on the switch.
- Maintain a minimum clearance of 10 cm (3.94 in.) around the chassis to facilitate heat dissipation. Do not stack the devices.
- Keep the switch far away from high-frequency current devices such as high-power radio transmitting station and radar launcher. Take electromagnetic shielding measures when necessary, such as electromagnetic shielding cables.
- Adopt indoor cabling. Outdoor cabling is prohibited to prevent damages to interfaces due to over-voltage or over-current caused by lightning.

3.3.1 Mounting the Switch into a Cabinet

The RG-S5760C-X series switches follow the EIA standard dimensions and can be installed in 19-inch cabinet. During the installation, place the front panel on the front part of the bracket. For safety, fasten screws to secure the bracket on the switch. Figure 3-1 Securing the Mounting Bracket on the RG-S5760C-48GT4XS-X/RG-S5760C-24GT8XS-X/RG-S5760C-24SFP/8GT8XS-X Switches

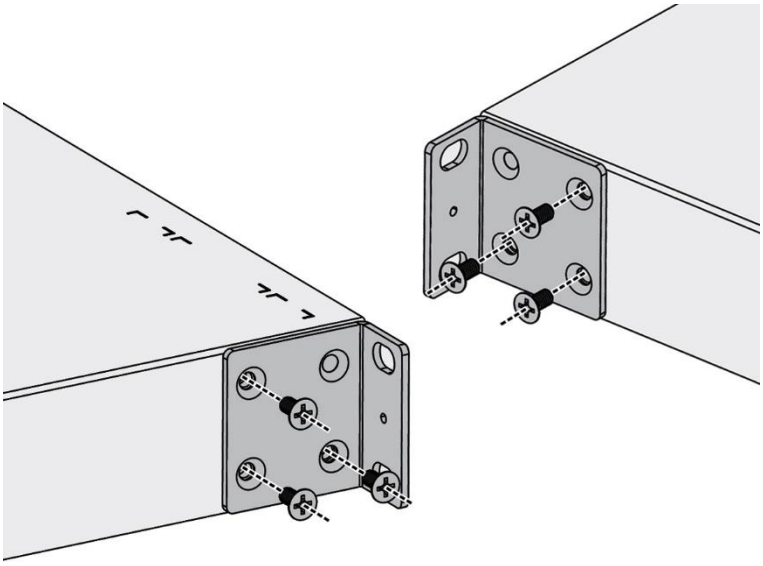
Figure 3-1



Secure the Switch on the 19 inch Standard Rack

Figure 3-2 Securing the Mounting Bracket on the RG-S5760C-48GT4XS-HP-X/RG-S5760C-48SFP4XS-X Switches

Figure 3-2



3.3.2 Mounting the Switch on a Workbench

If a standard 19-inch cabinet is unavailable, you can mount the switch onto a workbench with the following 2 steps.

- Attach the foot pads delivered with the switch to small holes at the bottom of the switch.
- Place the switch on the workbench and maintain a minimum clearance of 10 cm (3.94 in.) around the chassis to facilitate ventilation.

3.4 Installing and Removing the Expansion Module

Note

M5000X Series Expansion Module is not hot-swappable.

Wear anti-static gloves before the following operations.

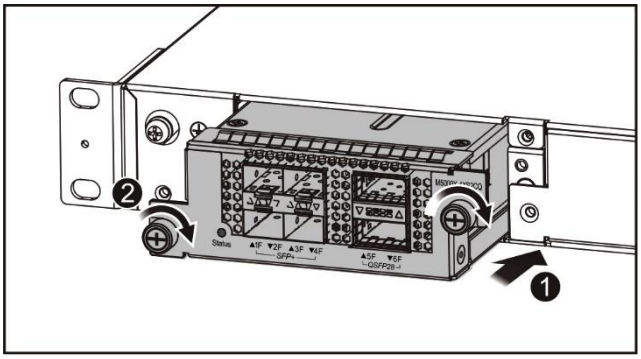
Installing an M5000X Series Expansion Module

Step 1: Take off the filler panel in the expansion module slot on the front panel of a RG-S5700-X series switch.

Step 2: Take out a new expansion module. Pinch the captive screws on the module. Align the expansion module with the guide rail of the corresponding slot and straightly and slowly insert the module into the chassis along the guide rail until it clicks into place.

Step 3: Fasten captive screws with a screwdriver to secure the expansion module in the switch chassis.

Figure 3-3 Installing an Expansion Module



Caution

- Insert the expansion module smoothly. Pay attention to the direction of the expansion panel to avoid wrong insertion.
- Do not hold the PCB edges or crash the components on the PCB.
- Insert the expansion module into the chassis gently. If it is difficult to push it, pull the expansion module out and check whether it is aligned with the expansion module slot. If yes, proceed with the operation.
- If the screws cannot be tightened, it is probably because the expansion module is not fully inserted. Please have a double check.

Removing an M5000X Series Expansion Module

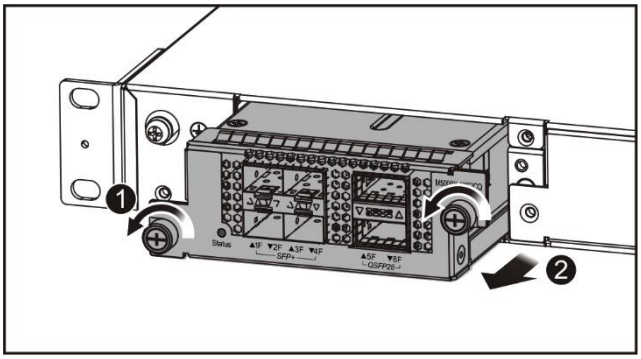
Step 1: Unplug all cables on the panels like optical fiber and RJ45 twisted pairs.

Step 2: Use the screwdriver to loosen the captive screws of the expansion module.

Step 3: Pinch the captive screws and pull out the expansion module along the guide rail straightly and slowly.

Step 4: Install a filler panel in a vacant slot and put the removed expansion module into its package.

Figure 3-4 Removing an Expansion Module



Caution

- Pull out the expansion module straightly and slowly.
- Do not hold the edge of the PCB or crash the components on the PCB.
- Install a filler panel in a vacant slot where an expansion module is removed to ensure normal ventilation and dissipation and avoid dust in the chassis.

3.5 Installing and Removing the Fan Module

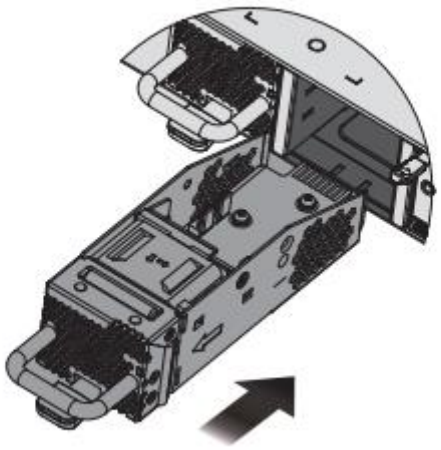
Wear anti-static gloves before the following operations.

Installing an Fan Module

Step1: Wear anti-static gloves and take out a new fan module from its packing materials.

Step 2: Grasp the handle and insert the fan module straightly and slowly into the chassis along the guide rail until it clicks into place.

Figure 3-5 Installing a Fan Module



Caution

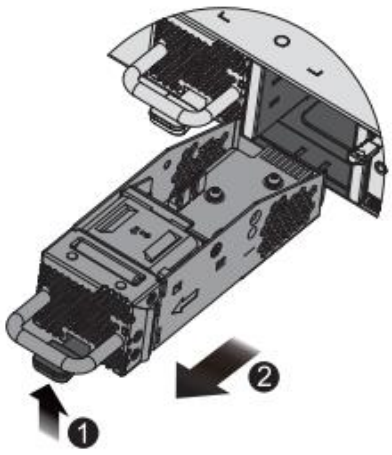
Slide the fan module into the slot straightly and slowly. Verify that the fan module is in the correct orientation. If not, pull the fan module out, and slide it into the slot again

Removing a Fan Module

Step 1: Press the latch with one hand. Meanwhile, grasp the handle and pull out a part of the fan module with another hand. Then pull the fan module out straightly and slowly.

Step 2: Put the removed fan module into its packaging materials.

Figure 3-6 Removing a Fan Module



Caution

- Remove the fan module straightly and slowly.
- Install a filler panel in a vacant slot to ensure the normal ventilation and dissipation and avoid the dust in the chassis.

3.6 Installing and Removing the Power Supply Module

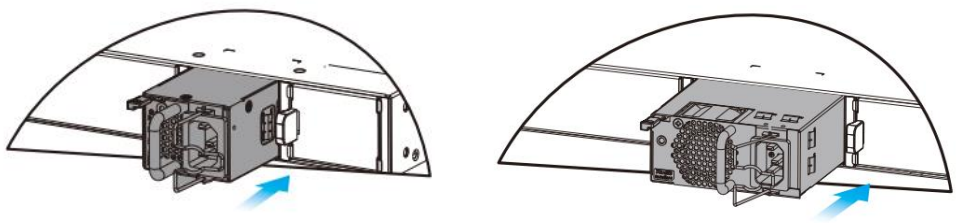
Wear anti-static gloves before the following operations.

Installing the AC Power Supply Module

Step 1: Take out a new power supply module and ensure that the input mode and input indicators of the power supply module meet requirements.

Step 2: Remove the filler panel. With the panel printed with the power nameplate information as the upper panel, grab the power supply module handle with one hand and hold the bottom of the power supply module with the other hand. Straightly and slowly insert the power supply module into the chassis along the guide rail until it clicks into place.

Figure 3-7 Installing a Power Supply Module



Caution

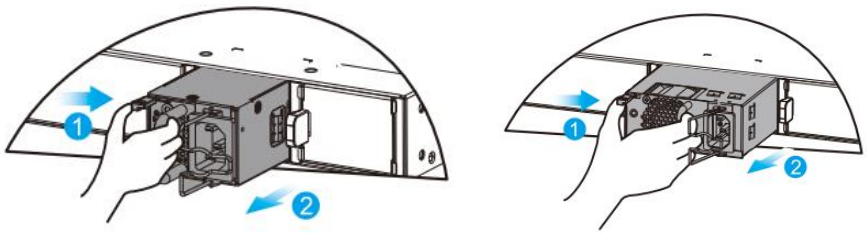
- Insert the power supply module straightly and slowly. Verify that the power supply module is in the correct orientation.
- Insert the power supply module into the chassis gently. If it is difficult to fully insert the module, pull the module out, align it to the guide rails and slide it into the slot again.

Removing the AC Power Supply Module

Step 1: Press the latch to pull out the power supply module with one hand. Hold the power supply module with another hand.

Step 2: Install a filler panel in the vacant slot and store the removed power supply module into its package.

Figure 3-8 Removing a Power Supply Module



Caution

- Remove the power supply module straightly and slowly.
- Install a filler panel in a vacant slot when the power supply module is removed to ensure the normal ventilation and dissipation and avoid the dust in the chassis.

Installing the DC Power Supply Module

(1) Remove the module from its packing materials and make sure the input specifications meet requirements.

(2) Remove the blank filler panel in the empty slot. Keep the module nameplate face upward. Grasp the handle with one hand and place your other hand under the module to support its weight. Slide the module all the way into the slot along the guide rail until you feel the connector snap into place. The two screws of the DC power supply are the input of the power supply. Remove the protective cover of the power input terminal, loosen the screw, and connect the terminals of the power cord. From left to right, they are blue and red, and then cover the terminal protective cover.

(3) Connect the other end of the power cord to the DC terminal block of the rack. Connect the blue power cord to -48 V DC, and the red power cord to the -48 V GND.

Figure 3-9 Installing a Power Supply Module

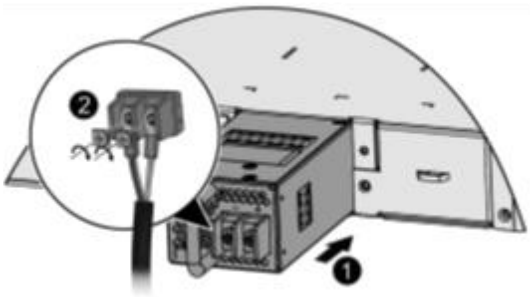
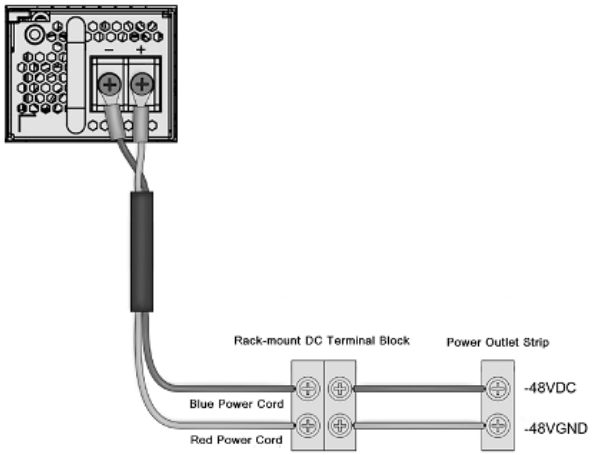


Figure 3-10 DC Terminal Block



Caution

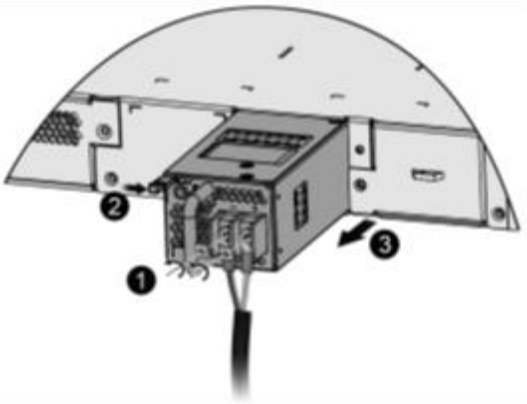
- Slide the module into the slot. Verify that the power supply module is in the correct orientation.
- If you find it difficult to fully insert the module, pull the module out, align it to the guide rails and slide it into the slot again.

Removing the DC Power Supply Module

(1) Press the latch on the module and grasp the handle with one hand. Place your other hand under the module to support its weight. Pull the module fully out of the slot.

(2) Install the filler panel in the empty slot. Put the removed module back into its packing materials.

Figure 3-11 Removing the Module



Caution

- Pull the module out of the slot gently.
- Install the filler panel in the empty slot to allow for adequate airflow.

3.7 Connecting the Ground Cable of the Switch

A PGND is installed on the back of RG--S5760C-X (M5*12PWM screws. First connect the PGND to the grounding terminal of the cabinet and then connect the grounding terminal to the grounding bar of the equipment room.

Precautions

- The cross-sectional area of the ground cable should be determined according to the possible maximum current. Cables with good conductor should be used.
- Do not use bare wire.
- To ensure human safety and device security, the switch must be properly grounded. The resistance between the chassis and ground should be less than 1 ohm.

Caution

- To ensure human safety and device security, the switch must be properly grounded. The resistance between the switch chassis and ground should be less than 1 ohm.
- Please check whether the AC socket of the switch is reliably connected to the protection ground of the building. If not, please use a protection ground wire to connect the protection ground terminal of the AC socket to the protection ground of the building.
- The power socket should be installed in an easily operable position near the switch.
- During the device installation, always make the ground cable connected first and disconnected last.
- The cross-sectional area of the protection ground cable should be at least 2.5 mm2 (12 AWG).

3.8 Connecting the External Interface Cables

Precautions

- Correctly distinguish single-mode and multi-mode fibers and ports.

- Avoid bends of small curvature at the connector.

Simple Connection Steps

Step 1: Connect one end of the RJ45 connector to the Ethernet MGMT interface of the device board, and the other end to the NMS or a control terminal.

Step 2: Insert the single-mode or multi-mode fiber into the appropriate interface according to the identification on the panel of the line card. Distinguish the Rx/Tx end of the fiber. Step 3: Insert the twisted pair with the RJ45 port into the appropriate interface according to the identification on the panel of the line card. Distinguish the crossover cable and straight-through cable.

3.9 Bundling the Cables

Precautions

- The power cables and other cables should be bundled in a visually pleasing way.
- When you bundle fibers, make sure that the fibers at the connectors have natural bends or bends of large radius.
- Do not bundle fibers and twisted pairs too tightly, as this may press the fibers and affect their service life and transmission performance.

Simple Bundling Steps

- Bind the drooping part of the fibers and twisted pairs of each board, and lead them to both sides of the chassis for convenience.
- On the both sides of the chassis, fasten the fibers and twisted pairs to the cabinet cable management ring or cabling chute.
- For the power cables, you should bundle them closely along the chassis downward in a straight line wherever possible.

3.10 Verifying Installation

Caution

Before verifying the installation, cut off the power supply to avoid any personal injury or damage to the component due to connection errors.

- Verify that the ground cable is connected.
- Verify that the cables and the power cord are properly connected.
- Verify that the cablings are all indoor. If any outdoor cabling is found, check the connection to lightening protection power strip of AC power or lightening arrester of Ethernet port.
- Maintain a minimum clearance of 10 cm (3.94 in.) around the chassis to facilitate heat dissipation.

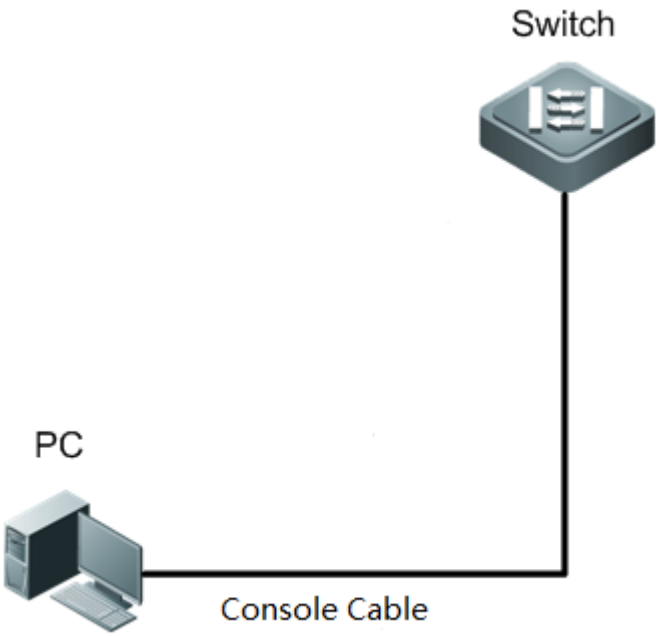
4 Verifying Operating Status

4.1 Setting up Configuration Environment

Setting up Configuration Environment

Connect the PC to the management port of the switch through a network cable, as shown in Figure 4-1.

Figure 4-1 Configuration Environment



Connecting the Console Cable

The RG-S5760C-X series switches adopt console cable connecting:

- Plug the DB-9 head of the console cable into the network port of the PC.
- Plug the RJ45 connector of the console cable into the console port of the switch.

Setting Terminal Parameters

- Start the PC and run the terminal simulation program on the PC, such as Terminal on Windows 3.1 or HyperTerminal on Windows 95/98/NT/2000/XP.
- Set terminal parameters. The parameters are as follows: baud rate 9600, data bit 8, parity check none, stop bit 1, and flow control as none.

(1) Choose **Setup** > **Program** > **Attachment** > **Communication** > **Super Terminal**.

(2) Choose **Cancel**. A window appears as shown in Figure 4-2.

Figure 4-2



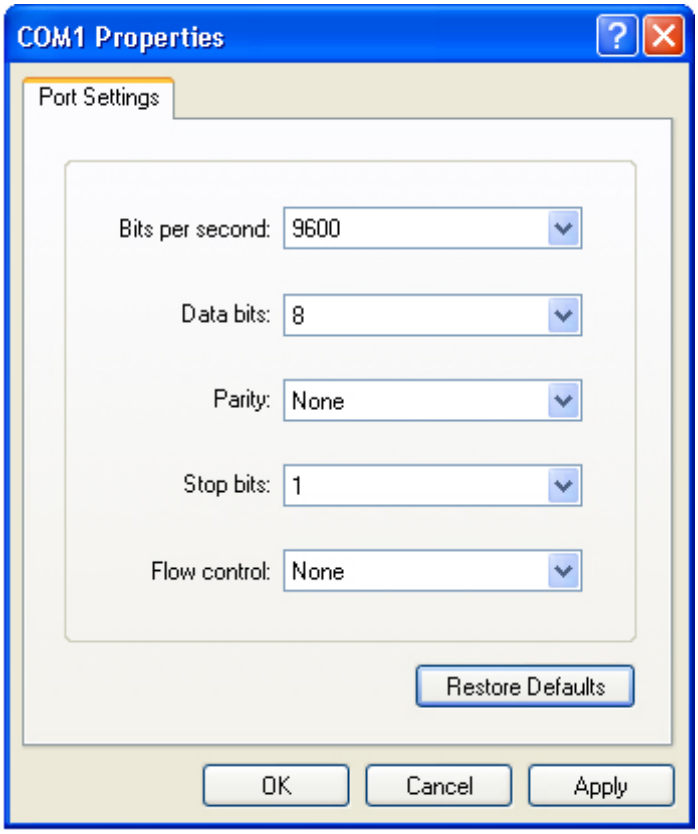
(3) In the Connectivity Note window, enter the name of the new connection and click **OK**. A window appears as shown in Figure 4-3. In the Connect Using field, select the serial port you want to use.

Figure 4-3



(4) After selecting the serial port, click **OK**. The Serial Port Parameter Setting window is displayed, as shown in Figure 4-4. Set the baud rate to 9600, data bit to 8, parity check to none, stop bit to 1, and flow control to none.

Figure 4-4



(5) After setting the serial port parameters, click **OK**. The Hyperterminal window appears.

4.2 Checking Environment before/after Power-on

Checking Environment before Power-on

- Check whether the switch is properly grounded.
- Check whether the power cord is properly connected.
- Check whether the power supply voltage meets the requirement.
- Check whether the network cable is properly connected, whether the terminal (may be PC) is started, and whether configuration parameters are configured.

Checking Environment after Power-on (Recommended)

After power-on, check the following items:

- Check the information appears on the terminal interface.
- Check the switch indicator status.

5 Monitoring and Maintenance

5.1 Monitoring

Indicator

When the RG-S5760C-X switch is running, you can monitor the module status by observing the module indicator

- If the SYS indicator of the device is red, it indicates that the power supply module is faulty or not in place or the service module is faulty. Log in to the web-based management system to confirm and troubleshoot the fault.
- If the SYS indicator of the device is yellow, it indicates that the system temperature reaches the warning value or the service module is abnormal. This case may affect the system performance, but the system can keep running. Log in to the web-based management system to confirm and troubleshoot the fault.
- If the SYS indicator of the device is red, it indicates that the module is faulty. Check the cause of the fault. Cut off the power supply if necessary.
- When the PWR1/PWR2 indicator of the device is yellow, it indicates that the power is not sufficient to support the whole system, insert RPS modules.
- When the PWR1/PWR2 indicator of the device is red, check whether the power cord is in place and operational; if yes, it indicates that the power supply is faulty, replace the power supply in time.

Caution

The fast flashing green (10 Hz) status of the system indicator is a function used to locate the switch, which should be distinguished from the slow flashing status (3 Hz).

CLI Commands

The switch allows you to monitor various system statuses by executing the appropriate CLI commands, including:

- Working status of the switch
- Configuration information and status of port
- Working status of fan and power supply
- Temperature status

Note

For the monitoring commands, refer to RG-S5760C-X Series Switch RGOS Configuration Guide.

5.2 Maintenance

Ventilation System Maintenance

- The fan module responsible for heat dissipation is equipped with the fault monitoring signal. When the fan module is faulty, an alarm will occur.

- Power off the device, and replace the faulty fan module with a qualified one.

Power Supply Module Maintenance

When a power supply module is faulty, unplug the power cord, press the latch, grab the handle, pull it out, replace it with a qualified one, and then plug the power cord.

Replacing Lithium Battery

The built-in lithium batteries can support the real time clock of the RG-S5760C-X switch without external power supply.

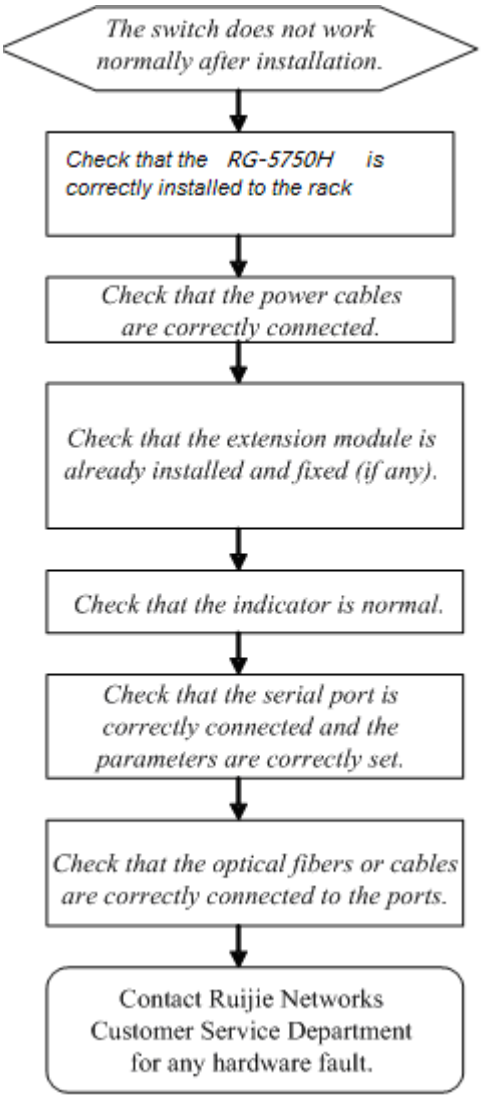
To replace lithium batteries, please contact technical support personnel of Ruijie Networks. The technical support personnel will select lithium batteries of the same specifications for replacement.

Replacing Fuses

To replace fuses, please contact technical support personnel Ruijie Networks. The technical support personnel will select fuses of the same specifications for replacement.

6 Troubleshooting

6.1 General Troubleshooting Procedure



6.2 Common Troubleshooting Procedures

Fault 1: The system login password is lost.

[Fault Description]

The system login password of the switch is forgotten or lost, and so it is not possible to configure the data.

[Troubleshooting]

Please contact Ruijie Customer Service Department for technical support.

Fault 2: The AC power supply module does not work.

[Fault Description]

The indicator on the front panel of the switch is OFF. The Status indicator of fan module is OFF, and the fan does not work.

The indicator on the panel of the power module is OFF. The fan does not work.

[Troubleshooting]

First unplug the power cord of the power module. Check if the cables of the cabinet have been correctly connected. Check whether the cabinet power sockets are loosely connected to power modules. Check whether the power modules are installed correctly. If necessary, pull out the power modules and check whether the connectors of the power system get loose.

Fault 3: The serial port console has no output.

[Fault Description]

After the system is started, the serial console does not display any information.

[Troubleshooting]

Check whether serial port cables are connected correctly, whether serial port cables are disconnected, and whether the connected serial port is identical with that configured on the hyper terminal. Check whether the configuration of the serial port on the hyper terminal is the same as that described in RG-S6920-4C Software Configuration Guide. If not, modify the serial port configuration parameters. If there is still no serial port printed information, please contact Ruijie Customer Service Department for technical support.

Fault 4: The serial port console outputs illegible characters.

[Fault Description]

The serial port console outputs illegible characters, which are unable to identity.

[Troubleshooting]

Such a problem is related to the settings of the serial port. Check if the settings of such parameters as the baud rate match those in *RG-S5760C-X Series Switch RGOS Configuration Guide*.

Fault 5: The newly-inserted service card module fails to be powered on.

[Fault Description]

The system is running, yet all indicators on the panel of the newly-inserted expansion module are OFF, and the port is faulty.

[Troubleshooting]

Check whether the module is inserted correctly. If the newly-inserted module still cannot be powered on even though the checking is ok, please contact Ruijie Customer Service Department for technical support.

Fault 6: The link cannot be set up between fiber interfaces.

[Fault Description]

The system runs normally. After the fiber interface is inserted into the optical module and the optical fiber is properly connected, the link cannot be set up.

[Troubleshooting]

- Check whether the receiving and sending ends are wrongly connected. The sending end of the fiber interface needs to be connected to the receiving end of the other fiber interface. You can check by changing the sequence in which the two optical fibers are connected on the optical module.
- Check whether the optical module wavelengths of the two sides are consistent. For example, an optical module of 1310 nm wavelength cannot be connected to an optical module of 1550 nm wavelength.
- Check whether the distance between the two sides exceeds the length indicated on the optical module.
- Check whether the rates of the two sides match and whether the optical fiber type meets requirements. In addition, for ports supporting different rate, check whether rate modes are configured correctly.

7 Appendix

7.1 Connectors and Media

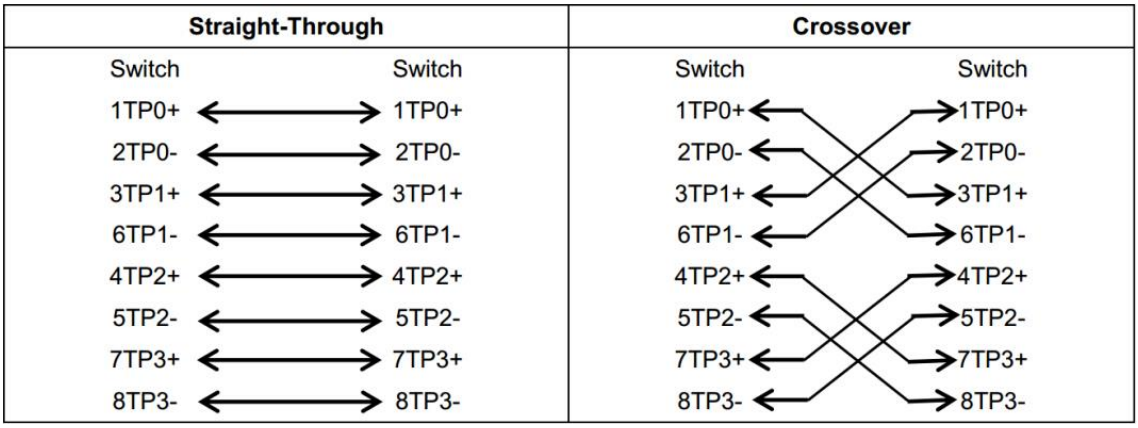
1000BASE-T/100BASE-TX/10BASE-T Port

The 1000BASE-T/100BASE-TX/10BASE-T is a port that supports adaptation of three rates, and automatic MDI/MDIX Crossover at these three rates.

The 1000BASE-T complies with IEEE 802.3ab, and uses the cable of 100-ohm Category-5 or Supper Category-5 UTP or STP, which can be up to 100 m (328 feet).

The 1000BASE-T port uses four pairs of wires for transmission, all of which must be connected. Figure 7-1 shows the connections of the twisted pairs used by the 1000BASE-T port.

Figure 7-1 Schematic Diagram for the Four Twisted Pairs of the 1000BASE-T



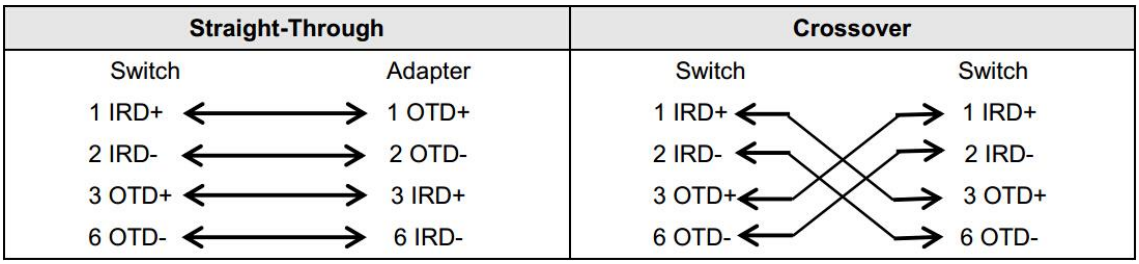
In addition to the above cables, the 100BASE-TX/10BASE-T can also use 100-ohm Category-3, 4, 5 cables for 10 Mbps, and 100-ohm Category-5 cables for 100 Mbps, both of which can be up to 100 m (328 feet). Figure 7-2 shows the pinouts of the 100BASE-TX/10BASE-T.

Figure 7-2 Pinouts of the 100BASE-TX/10BASE-T

Pin	Socket	Plug
1	Input Receive Data+	Output Transmit Data+
2	Input Receive Data-	Output Transmit Data-
3	Output Transmit Data+	Input Receive Data+
6	Output Transmit Data-	Input Receive Data-
4,5,7,8	Not used	Not used

Figure 7-3 shows the straight-through and crossover cable connections for the 100BASE-TX/10BASE-T.

Figure 7-3 Connections of the Twisted Pairs of the 100BASE-TX/10BASE-T



Optical Fiber Connection

For the optical fiber ports, select single-mode or multiple-mode optical fibers for connection according to the fiber module connected. The connection schematic diagram is shown in Figure 7-4:

Figure 7-4 Schematic Diagram for optical fiber connection

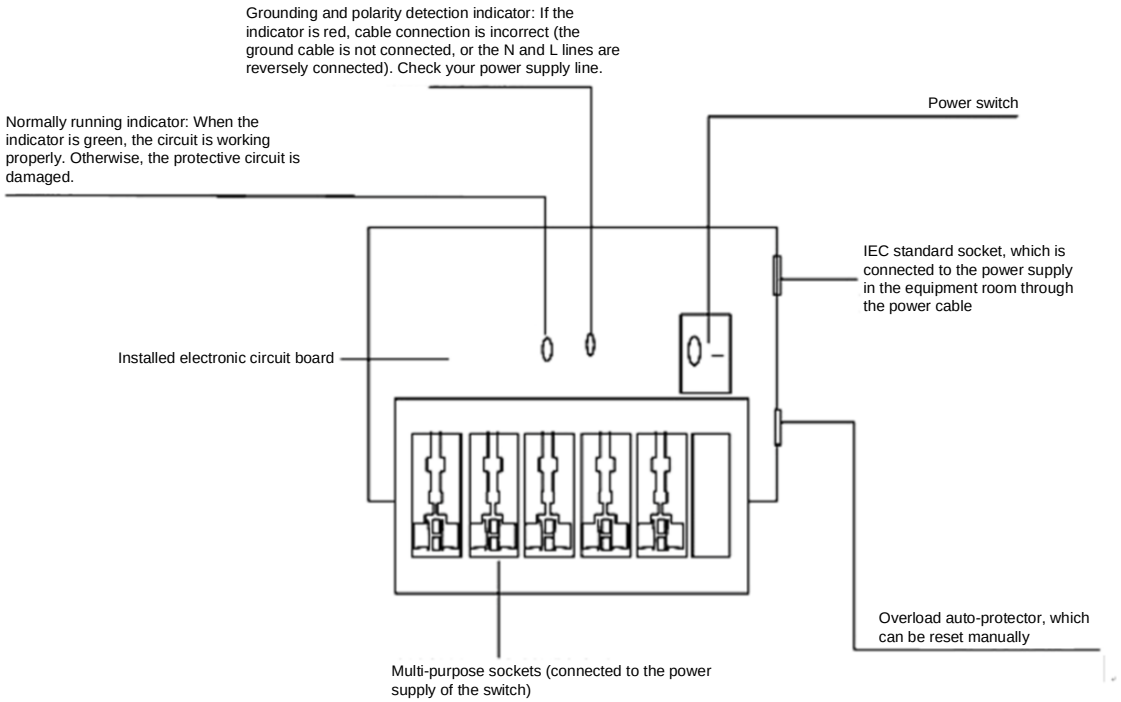


7.2 Lightning Protection

Installing AC Power Arrester (Lightning Protection Power Strip)

The AC power port must be connected to an external lightning protection power strip to prevent the switch from being struck by lightning when the AC power cord is introduced from the outdoor and directly connected to the power port of the switch. The lightning protection power strip can be fixed on the cabinet, workbench, or wall in the equipment room by using cable ties and screws. AC power enters the lightening protection power strip and then gets to the switch.

Figure 7-5 Power Arrester



Caution

The power arrester is not delivered with the switch. Please purchase it based on actual requirements.

Precautions:

- Make sure that the PE terminal of the power arrester is well grounded.
- After the AC power plug of the switch is connected to the socket of the power arrester (lightning protection power strip), the lightning protection function is implemented only if the RUN indicator is green and the ALARM indicator is OFF.
- If the ALARM indicator on the power arrester is red, check whether it is caused by poor grounding connection or by the reversed connection of the Null and Live lines. The detection method is as follows: Use a multimeter to measure the polarity of the power socket for the arrester when the indicator is red. If the N line is on the left and the L line is on the right (facing the socket), the arrester's PE terminal is not grounded. If not, the polarity of the arrester power cord should be reversed. In this case, you should open the power arrester and rectify the polarity of the connection. If the indicator is still red, the arrester's PE terminal has not been grounded.

Installing the Ethernet Port Arrester

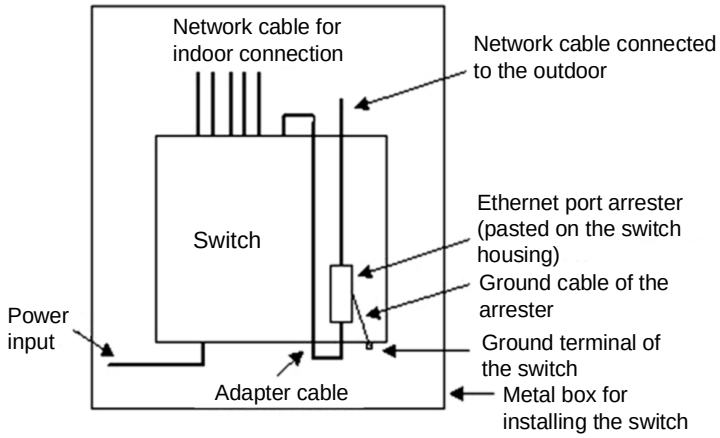
Please connect an Ethernet port arrester to the switch to prevent the damage by lightning before connecting an outdoor network cable to the switch.

Tools: Phillips screwdrivers or flat-head screwdriver, multimeter, and diagonal pliers

Installation Steps:

- Tear one side of the protective paper for the double-sided adhesive tape and paste the tape to the housing of the Ethernet port arrester. Tear the other side of the protective paper for the double-sided adhesive tape and paste the Ethernet port arrester to the switch housing. The paste position for the Ethernet port arrester should be as close to the ground terminal of the switch as possible.
- Based on the distance between the switch ground terminal and the Ethernet port arrester, cut the ground cable for the Ethernet port arrester and firmly tighten the ground cable to the ground terminal of the switch.
- Use a multimeter to check whether the ground cable for the arrester is in good contact with the ground terminal and the housing of the switch.
- Connect the arrester by using an adapter cable (note that the external network cable is connected to the IN end, while the adapter cable connected to the switch is connected to the OUT end) and check whether the service module indicator is normal.
- Use a nylon cable tie to bundle the power cords.

Figure 7-6 Ethernet port Arrester Installation



Caution

- The Ethernet port arrester is only for the 10 M/100 M copper Ethernet ports with an RJ-45 connector;
- The Ethernet port arrester is not delivered with the switch. Please purchase it based on actual requirements.

Pay attention to the following conditions during the actual installation to avoid affecting the performance of the Ethernet port arrester:

- Reversed installation direction of the arrester. Connect the external network cable to the "IN" end and connect the Ethernet port of the switch to the "OUT" end.
- Poor grounding of the arrester. The ground cable of the arrester should be as short as possible to ensure that it is in good contact with the ground terminal of the switch. Use a multimeter to confirm the contact condition after the grounding.
- Incomplete arrester installation. If there is more than one port connected to the peer device on the switch, arresters need to be installed on all connection ports for the purpose of lightning protection.

7.3 Cabling

When the RG-S5760C-X switch is installed in a standard 19-inch cabinet, secure the cables around the cable management brackets. Top cabling or bottom cabling is adopted according to the actual situation in the equipment room. All transferred cable connectors should be placed at the bottom of the cabinet in an orderly manner instead of outside the cabinet that is easy to touch. Power cables are routed beside the cabinet, and top cabling or bottom cabling is adopted according to the actual situation in the equipment room, such as the positions of the DC power distribution box, AC socket, or lightning protection box.

Requirement for the Minimum Cable Bend Radius

- The bend radius of a fixed power cord, network cable, or flat cable should be over five times greater than their respective diameters. The bend radius of these cables that are often bent or plugged should be over seven times greater than their respective diameters.
- The bend radius of a fixed common coaxial cable should be over seven times greater than its diameter. The bend radius of the common coaxial cable that is often bent or plugged should be over 10 times greater than its diameter.
- The bend radius of a fixed high-speed cable (such as SFP+ cable) should be over five times greater than its diameter. The bend radius of the fixed high-speed cable that is often bent or plugged should be over 10 times greater than its diameter.

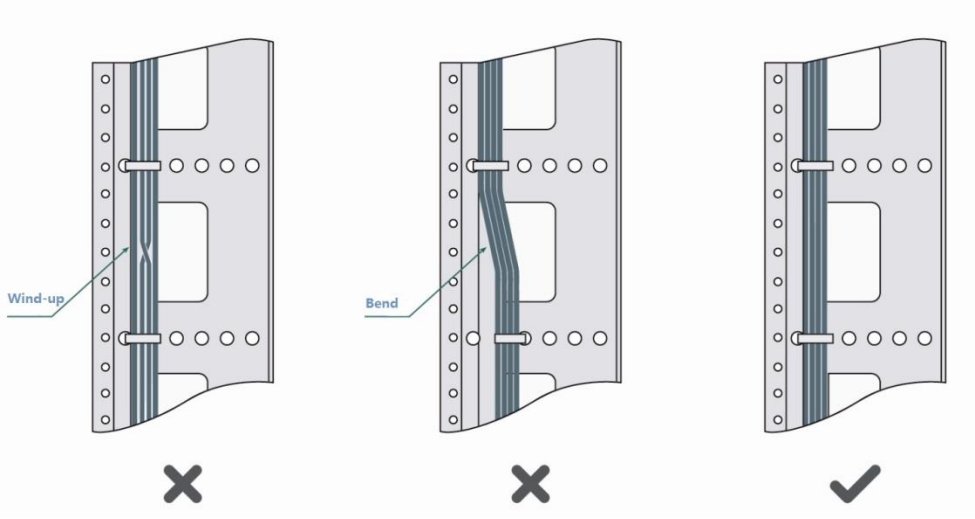
Requirement for the Minimum Fiber Bend Radius

- The diameter of a fiber tray to hold fibers should be over 25 times greater than the diameter of the fiber.
- When an optical fiber is moved, the bend radius of the fiber should be over 20 times greater than the diameter of the fiber.
- During cabling of an optical fiber, the bend radius of the fiber should be over 10 times greater than the diameter of the fiber.

Precautions for Cable Bundling up Cables

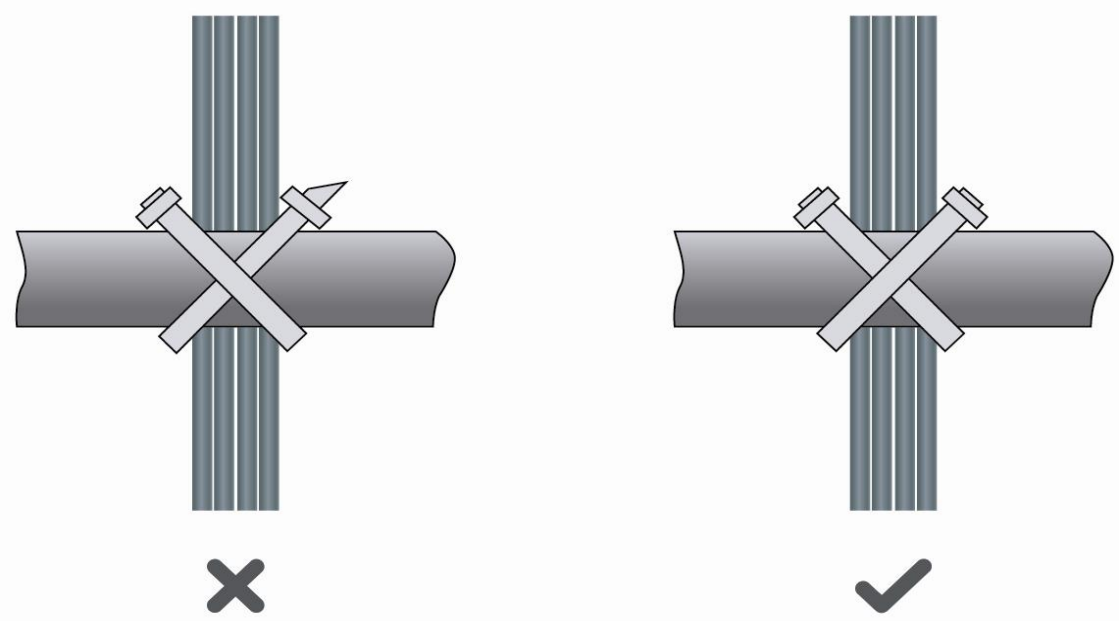
- Before bundling cables, correctly mark labels and stick the labels to cables where appropriate.
- Cables should be neatly and properly bundled in the cabinet without twisting or bending, as shown in Figure 7-7.

Figure 7-7 Bundling Cables (1)



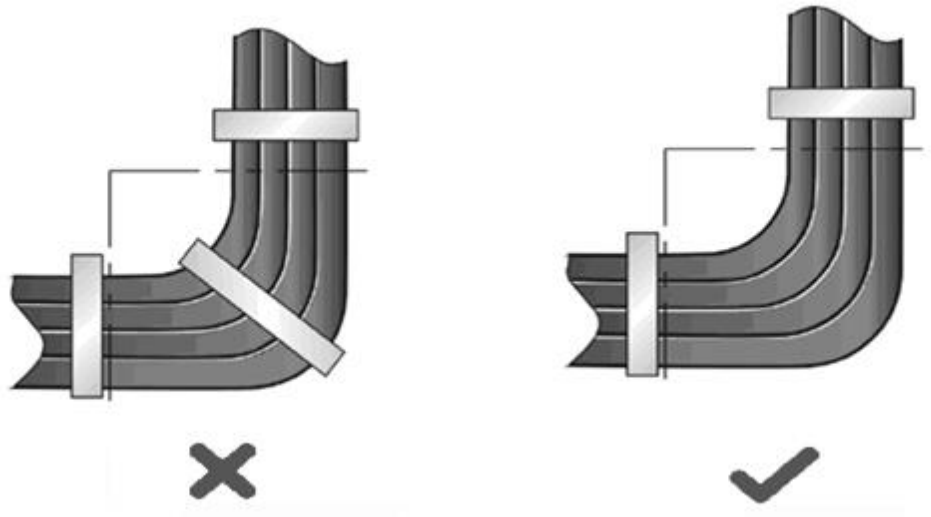
- Cables of different types (such as power cords, signal cables, and ground cables) should be separated in cabling and bundling. Mixed bundling is disallowed. When they are close to each other, it is recommended to adopt crossover cabling. In the case of parallel cabling, maintain a minimum distance of 30 mm (1.18 in.) between power cords and signal cables.
- The cable management brackets and cabling troughs inside and outside the cabinet should be smooth without sharp corners.
- The metal hole traversed by cables should have a smooth and fully rounding surface or an insulated lining.
- Use cable ties to bundle up cables properly. Please do not connect two or more cable ties to bundle up cables.
- After bundling up cables with cable ties, cut off the remaining part. The cut should be smooth and trim, without sharp corners, as shown in Figure 7-8.

Figure 7-8 Binding Cables (2)



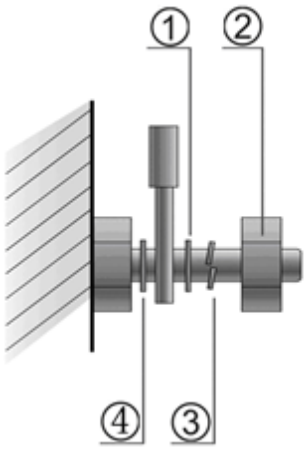
- When cables need to be bent, please bundle them up but do not tie them where the cables will be bent. Otherwise, considerable stress may be generated in cables, breaking cable cores, as shown in Figure 7-9

Figure 7-9 Binding Cables (3)



- Cables not to be assembled or remaining parts of cables should be folded and placed in a proper position of the cabinet or cable trough. The proper position refers to a position that does not affect device running or damage the switch or cable.
- 220 V and -48 V power cords must not be bundled on the guide rails of moving parts.
- The power cords connecting moving parts such as door grounding wires should be reserved with some access after being assembled to avoid suffering tension or stress. After the moving part is installed, the remaining cable part should not touch heat sources, sharp corners, or sharp edges. If heat sources cannot be avoided, high-temperature cables should be used.
- When screw threads are used to fasten cable terminals, the bolt or screw must be tightly fastened, and anti-loosening measures should be taken, as shown in Figure 7-10.

Figure 7-10 Cable Fastening



Note	(1) Flat washer (2) Nut	(3) Spring washer (4) Flat washer

- Hard power cords should be fastened in the terminal connection area to prevent stress on terminal connection and cable.
- Do not use self-tapping screws to fasten terminals.
- Power cables of the same type and in the same cabling direction should be bundled up into cable bunches, with cables in cable bunches clean and straight.
- Bundle up cables by using cable ties based on the following table.

Cable Bunch Diameter	Distance between Every Binding Spot
10 mm (0.39 in.)	80 mm to 150 mm (3.15 in. to 5.91 in.)
10 mm to 30 mm (0.39 in. to 1.18 in.)	150 mm to 200 mm (5.91 in. to 7.87 in.)
30 mm (1.18 in.)	200 mm to 300 mm (7.87 in. to 11.81 in.)

- No knot is allowed in cabling or bundling.
- For wiring terminal blocks (such as circuit breakers) with cord end terminals, the metal part of the cord end terminal should not be exposed outside the terminal block when assembled.

7.4 Site Selection

- The equipment room should be at least 5 km away from heavy pollution sources, such as the smelter works, coal mine, and thermal power plant. The equipment room should be at least 3.7 km away from medium pollution sources, such as the chemical factory, rubber factory, and electroplating factory. The equipment room should be at least 2 km away from light pollution sources, such as the food factory and leather plant. If these pollution sources are unavoidable, the equipment room should be located on the windward side of the pollution sources perennially with advanced protection.
- The equipment room should be at least 3.7 km away from the sea or salt lake. Otherwise, the equipment room must be sealed, with air conditioner installed for temperature control. Saline soil cannot be used for construction. Otherwise, you should select devices with advanced protection against severe environments.
- Do not build the equipment room in the proximity of livestock farms. Otherwise, the equipment room should be located on the windward side of the pollution source perennially. The previous livestock house or fertilizer warehouse cannot be used as the equipment room.
- The equipment room should be firm enough to withstand severe weather conditions such as windstorm and heavy rain. The equipment room should be away from the dusty road or quarry. If the dust is unavoidable, keep the door and window away from the pollution source.
- The equipment room should be away from the residential area. Otherwise, the equipment room should meet the construction standard in terms of noise.
- Make sure that the air vents of the equipment room are away from the sewage pipe, septic tank, and sewage treatment tank. Keep the equipment room under positive pressure to prevent corrosive gas from entering the

equipment room to corrode components and PCBs.

- Keep the equipment room away from industrial boilers and heating boilers.
- The equipment room had better be on the second floor or above. Otherwise, the equipment room floor should be 600 mm higher than the highest flood level ever recorded.
- Make sure there are no cracks or holes on the wall and floor. If there are cable entries on the wall or window, take proper sealing measures. Ensure that the wall is flat, wear-resistant, and dust-free, which should be up to the standard for flame retarding, soundproofing, heat absorption, dust reduction, and electromagnetic shielding.
- Keep the door and the window closed to make the equipment room sealed.
- The steel door is recommended for soundproofing.
- Sulfur-containing materials are forbidden.
- Keep the air conditioner from blowing wind straight toward the switch.