# Ruijie RG-S7800C Series Switches

# Quick Installation Guide V1.2

## Copyright statement



## Exemption statement

## Preface

Thank you for using our products. This manual will guide you through the installation of the switch.

## Scope

It is intended for the users who have some experience in installing and maintaining network hardware. At the same time, it is assumed that the users are already familiar with the related terms and concepts.

## Obtaining Technical Assistance

- Ruijie Networks Website: https://www.ruijienetworks.com/
- Technical Support Website: https://ruijienetworks.com/support
- Case Portal: http://caseportal.ruijienetworks.com
- Community: http://community.ruijienetworks.com
- Technical Support Email: service_rj@ruijienetworks.com
- Skype: service_rj@ruijienetworks.com

## Related Documents

| Documents | Description |
| --- | --- |
| Configuration Guide | Describes network protocols and related mechanisms that supported by the product, with configuration examples. |
| Command Reference | Describes the related configuration commands, including command modes, parameter descriptions, usage guides, and related examples. |
| Hardware Installation and Reference Guide | Describes the functional and physical features and provides the device installation steps, hardware troubleshooting, module technical specifications, and specifications and usage guidelines for cables and connectors. |

## Documentation Conventions

The symbols used in this document are defined as follows:

This symbol brings your attention to some helpful suggestions and references.

This symbol means that you must be extremely careful not to do some things that may damage the switch or cause data loss.

# 1 Product Overview

Launched by Ruijie independently, RG-S7800C series next generation core switches adopt the Crossbar/FULLMESH architecture. RG-S7800C series switches support dual supervisor modules and power supply redundancy.

There are two models available:

- Designed with eight horizontal slots, RG-S7808C series support dual supervisor modules and provides six slots for service modules.
- Designed with five horizontal slots, RG-S7805C series support dual supervisor modules and provides three slots for service modules.

# 2 Safety Precautions for Movement

RG-S7800C series switches are large and heavy. When you move them, please pay attention to the following requirements:

- Unplug all power cords before you move the switch. Note: There may be more than one power cord.
- Remove the power supply, fans and service modules to reduce the chassis weight before moving the switch for a long distance.
- At least two people are needed to move the switch.
- Grasp the handles on top side of the chassis, not the power supply handle, fan handle or the rear panel handle. Those handles are just used to install and remove corresponding parts, and cannot bear the whole switch weight.
- The whole switch weight may be greater than 70 kg during the movement.

# 3 Preparations Before Installation

## 3.1 ESD Prevention

### Precaution

To avoid the damages from static electricity to the internal parts of switches, do as follows:

- ESD prevention measures are taken in the sites where switches are installed.
- Wear the anti-static wrist strap while installing various switch parts, especially when you may touch circuit boards with hands.
- Grasp the edge of modules. Do not touch the parts or printed circuits directly.

### Wearing the anti-static wrist strap

The anti-static wrist strap is shipped with RG-S7800C, which is used as follows:

1. Stretch out your hand into the anti-static wrist strap.
2. Lock the wrist strap and make sure that the metal part of the anti-static wrist strap is in good contact with skin.
3. Insert the anti-static wrist strap in the anti-static wrist strap jack of the switch chassis or clip on the grounding pole of the chassis. The anti-static wrist strap jack is located on the front panel of the chassis marked with yellow ESD.

4. The anti-static wrist strap is grounded well and the DC electric resistance between the body and the ground is in the range of 1 to 10 mega ohms.

Figure 3-1 ESD Prevention on RG-S7808C

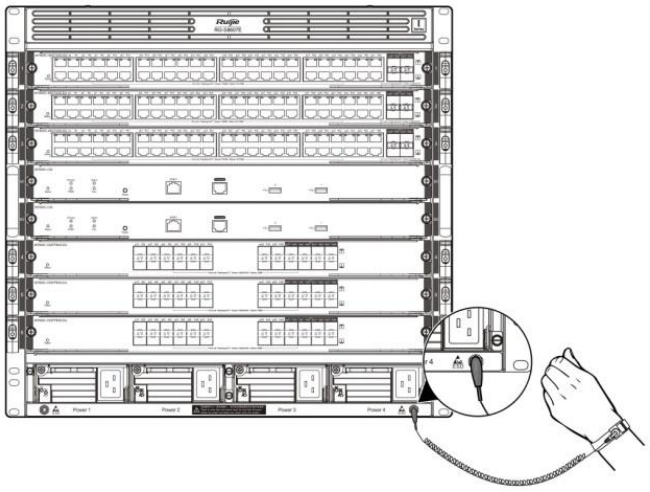
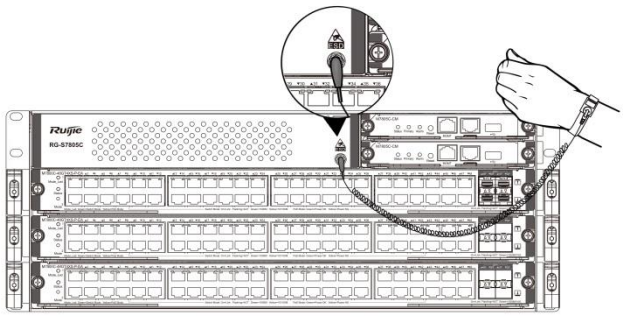


Figure 3-2 ESD Prevention on RG-S7805C



## 3.2 Installation Site

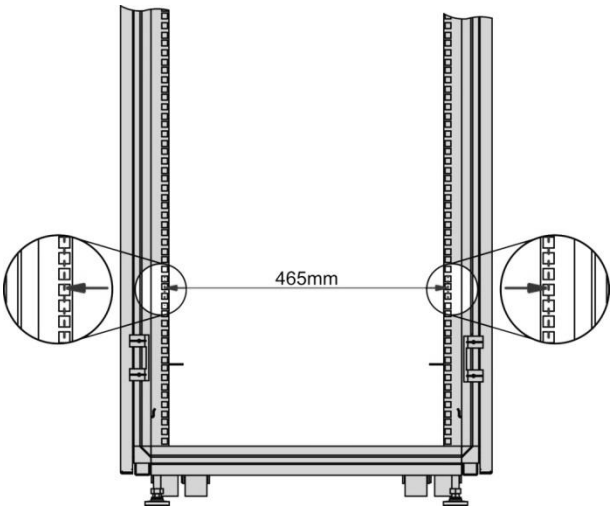
RG-S7800C series must be used in the room. To ensure normal operation and a prolonged use life of the device, the installation site must meet the requirements of weight capacity, humidity , cleanness, EMI consideration, grounding system, power, and ventilation. See the *Preparation before Installation* chapter of *RG-S7800C Series Switches Hardware Installation and Reference Guide* for details.

## 3.3 Cabinet Mounting

Make sure the cabinet complies with the following conditions:

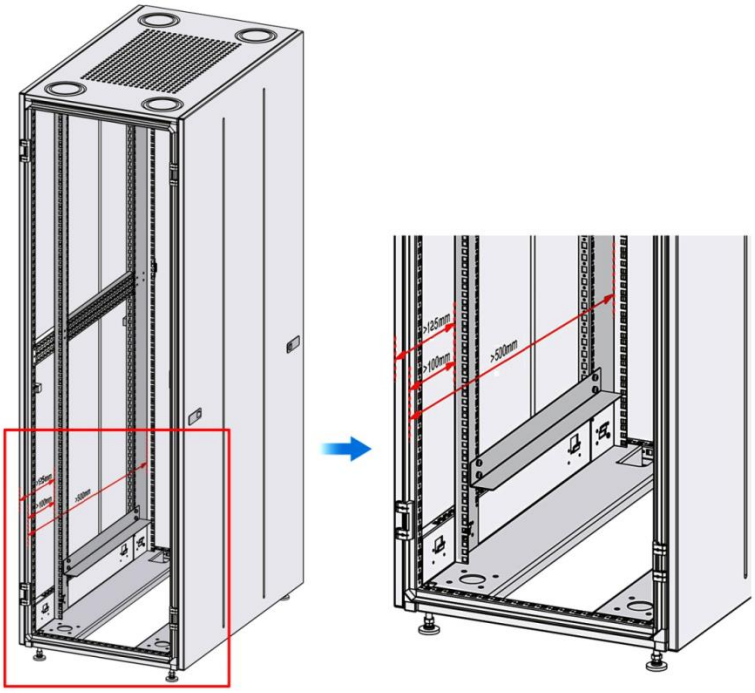
- Install the switch in a 19-inch cabinet in 4-port form hold.
- Be sure the distance between two square hole strips, one on each side, is 465 mm.

Figure 3-3 19-inch Cabinet




- Be sure that the square hold strip is at least 125 mm far from the outboard front door and the door is at most 25 mm thick to ensure a minimum available distance of 100 mm. The front door is at least 500 mm far from the back door,

Figure 3-4 Cabinet Dimensions




- Be sure that the slide rail in the cabinet is enough to bear the weight of a RG-S7800C and its installation accessories.
- Be sure that the cabinet provides an earthing terminal for the switch to be grounded.
- Be sure that the front and back doors of the cabinet have porosities greater than 50% for good ventilation and heat dissipation.

## 3.4 Installation Tools

| | |
|---|---|
| **Common Tools** | Cross screwdriver, straight screwdriver, related electric and optical cables<br>Bolts, diagonal pliers, straps |
| **Special Tools** | Anti-static glove, stripping pliers, crimping pliers, crimping pliers for the crystal head, wire cutter |
| **Fiber Optic Cleaning Tools** | Air-laid paper, optical fiber microscope |
| **Meter** | Multimeter, bit error rate tester (BERT), optical power meter |

The tool kit is customer supplied.

## 3.5 Fiber Connection

Before connecting fiber cables, make sure the model of the optical transceiver and fiber type match the optical port. The transmit port on the local device should be connected to the receive port on the peer device and vice versa.

## 3.6 Unpacking

### Package Checklist

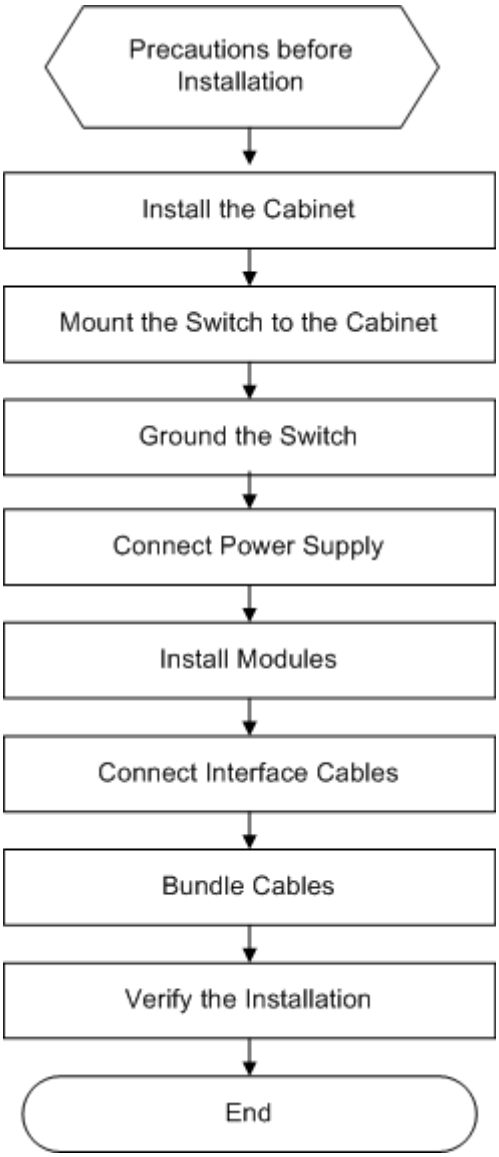
| | |
|---|---|
| **Chassis Carton** | Device panels are installed and operational.<br>Fans, screwdriver, anti-static wrist strap, yellow/green grounding wires, quick installation guide, packing list |
| **Module Carton** | Modules, packing list, documentation |

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 against the packing list or purchase contract. If you have any questions or there are any errors, please contact your distributor.

# 4 Installing the Switch

## 4.1 Installation Flowchart

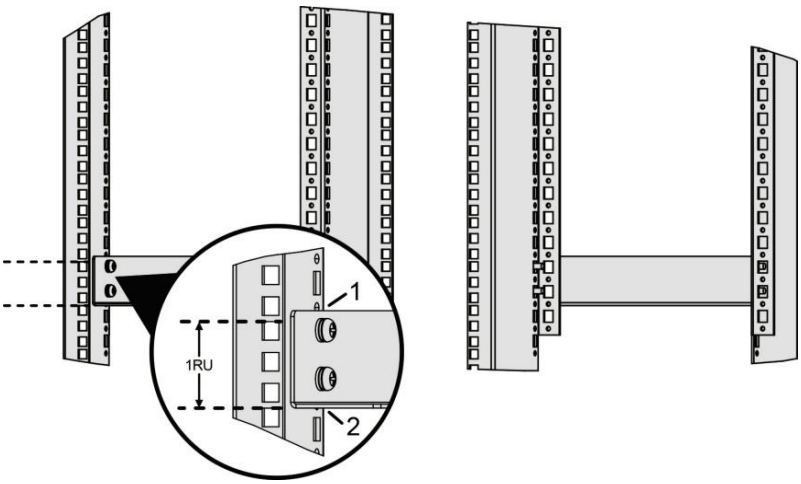
Figure 4-1 Installation Flowchart




## 4.2 Installing Slide Rails

When installing slide rails for the RG-S7800C, ensure that the plane to carry the chassis should be installed on the plane of delimiters of 1 RU, as shown in Figure 4-2.

Figure 4-2 Installing Slide Rails




Note: ① and ② represents 1 RU delimiters.

Before installing a slide rail, please verify that it is firm enough to bear the device weight and its installation accessories.

There are variable kinds of slide rails. The rail appearance and installation is subject to actual conditions.

In order to keep the cabinet balanced, please install the slide rail to as low a position as possible in the cabinet if only one RG-S7800C switch is installed. If you are mounting multiple devices to the cabinet, mount the heaviest device in the lowest position of the cabinet first and proceed to mount the rest of the devices from bottom to top.

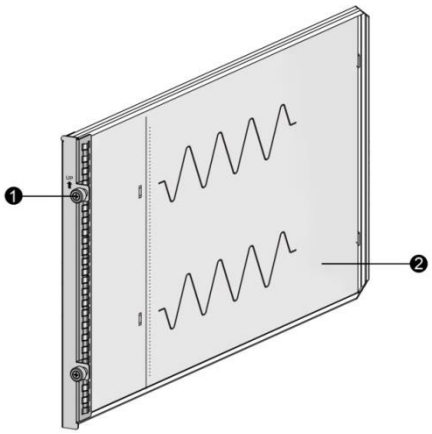
## 4.3 Installing the Air Filter (Optional)

The air filter is an optional accessory for the RG-S7808C. The air filter is not supported on the RG-S7805C.

If an air filter is used for a long time, dust may block its air vent, weakening system ventilation. It is recommended you wash the air filter every three months.

### Installing the Air Filters of the Supervisor Module and Service Module

Figure 4-3 Air Filter of Supervisor Module and Service Module on RG-S7808C



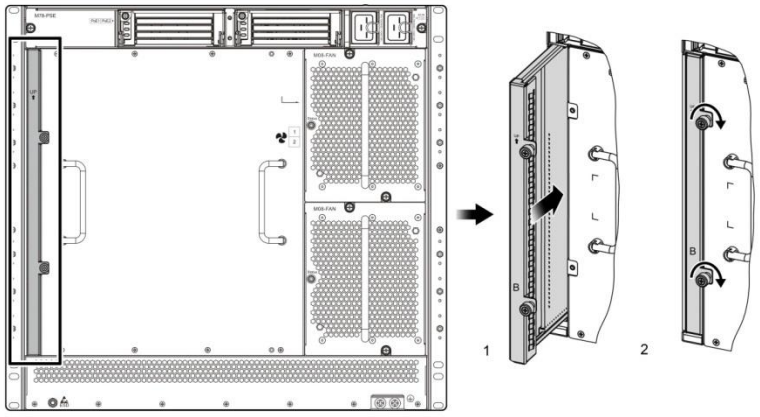
| Note: | ① Captive screw | ② Air filter |
|---|---|---|

- To install the air filter, follow these steps:

1) Insert the air filter along the slide rail. Make sure the air filter is installed properly.

2) Tighten the captive screws.

Figure 4-4 Installing the Air Filter of the Supervisor Module and Service Module on RG-S7808C Switch



## 4.4 Installing External PoE Power Frame (Optional)

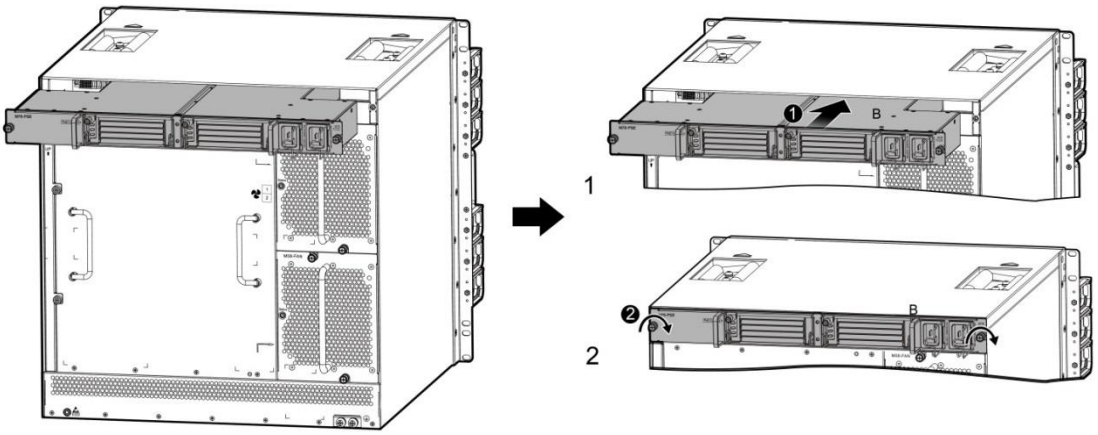
The PoE power frame M78-PSE is an optional accessory for the RG-S7808C. See *RG-S7800C Series Switch Installation and Reference Guide* for details. The PoE power frame is not supported on the RG-S7805C.

⚠ If the system is installed with a PoE-powered service module, e.g., M7800C-48GT4XS-P-EA, you should select the proper PoE power frame and PoE module.

To install the external PoE power frame, follow these steps:

1. Insert the PoE power frame into the slot along the rail. Make sure the PoE power frame is installed properly.
2. Tighten the captive screws.

Figure 4-5 Installing External PoE Power Frame



## 4.5 Mounting Cable Management Bracket

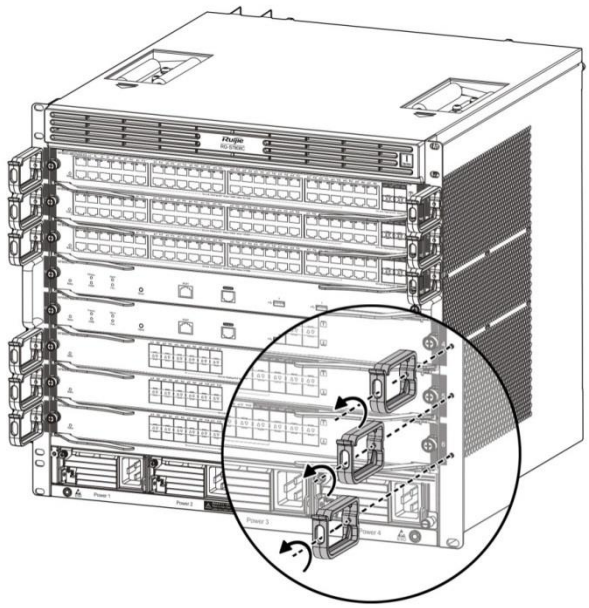
Make sure the anti-static wrist strap is grounded well and wear the anti-static wrist strap.

The cable management bracket of RG-S7800C is not mounted before delivery.

- Mount cable management brackets for RG-S7808C

1. Take out cable management brackets.
2. There are six cable management brackets on each side respectively. Make sure the cable management brackets are mounted properly, as shown in figure 4-6.
3. Align the screw holes on the cable management brackets with those on the chassis and tighten the screws, as shown in figure 4-6.

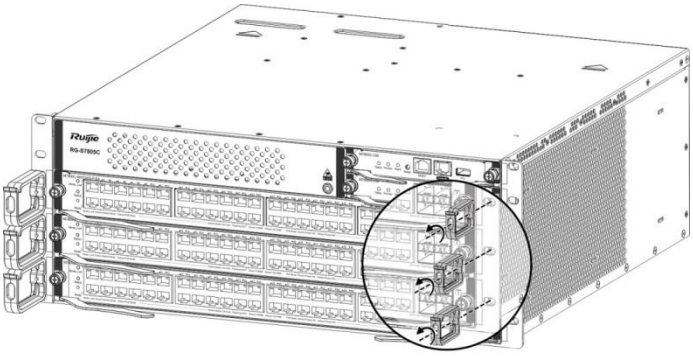
Figure 4-6 Mounting Cable Management Brackets for RG-S7808C



- Mount cable management brackets for RG-S7805C

1. Take out cable management brackets.
2. There are six cable management brackets on each side respectively. Make sure the cable management brackets are mounted properly, as shown in figure 4-7.
3. Align the screw holes on the cable management brackets with those on the chassis and tighten the screws, as shown in figure 4-7.

Figure 4-7 Mounting Cable Management Brackets for RG-S7805C



## 4.6 Mounting the Switch to a Cabinet

### Precautions

Before mounting RG-S7800C series to the cabinet, first verify that the front and back brackets of the cabinet are at the right locations. If the bracket is too far forward, the front panel of the equipment may be too close to the front door, so that the front door cannot be closed when network cables and fibers are connected. Usually, you should reserve at least 10 mm between the front panel of the switch and the front door of the cabinet. Before mounting the switch to a cabinet, you need to meet the following conditions:

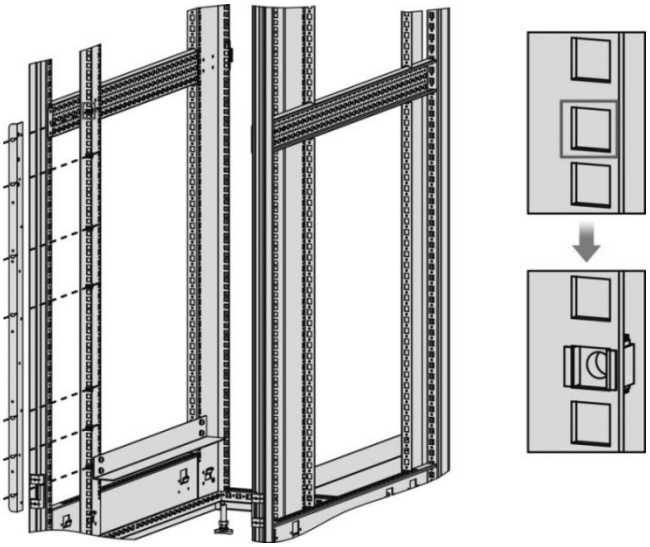
- Fasten the cabinet.
- Insert various modules in the frame properly.
- Remove any obstacle in the frame and the surrounding environment.
- Prepare the equipment and move it to the place near the cabinet where you can handle it easily.

It is recommended to have three people carry or lift the switch. One is responsible for directing and the other two carrying or lifting the switch.

### Installation Steps

Measure the cabinet height and locate the position on the bracket for installing the slide rail. Then locate the position on the other bracket through the carrying plane and mark the locations. Install seven cage nuts on the marked square holes on each bracket as shown in figure 4-8.

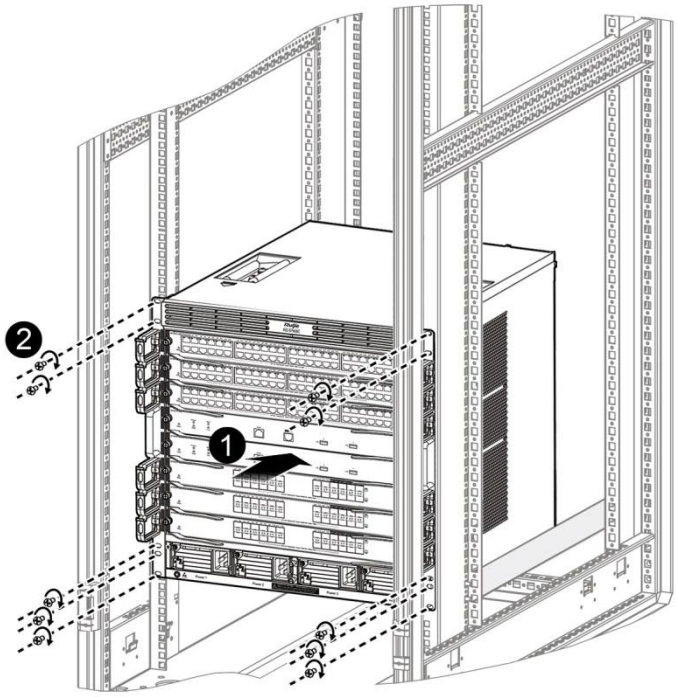
Figure 4-8 Slide Rail Installation Position



Place the switch on the slide rail, and drive it smoothly into the cabinet until the front bracket reaches the square hole strip.

Align the installation holes on the bracket with the cage nuts on the square hole strip, and mount them with screws.

Figure 4-9 Mounting Switch into Cabinet




## 4.7 Connecting the System Ground

A good grounding system protects your switch against lightning strikes and interferences and ensures its normal operation and reliability.

### Precautions

- The sectional area of the grounding wire should be determined according to the possible maximum current. Cables of good conductor should be used.
- Do not use bare wire.
- To ensure security, the switch should be well grounded. The grounding resistance for combined grounding should be less than 1Ω.

### Connecting the System Ground

To connect the system ground, follow these steps:

1) Remove the screw on the rear of the switch.

2) Attach the one end of the grounding wire to the switch using the screw in step 1. Connect the other end of the grounding wire to the grounding wire of the cabinet.

Figure 4-10 Grounding Point on Rear of RG-S7808C

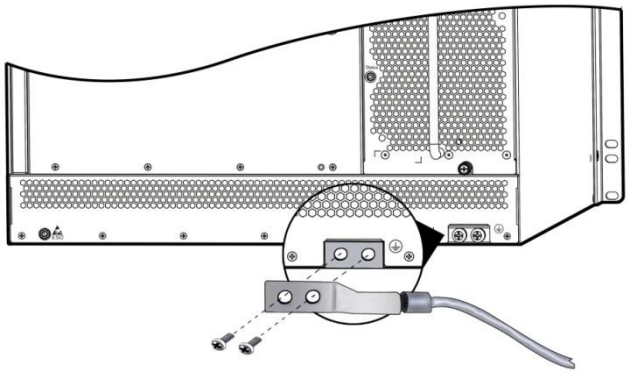
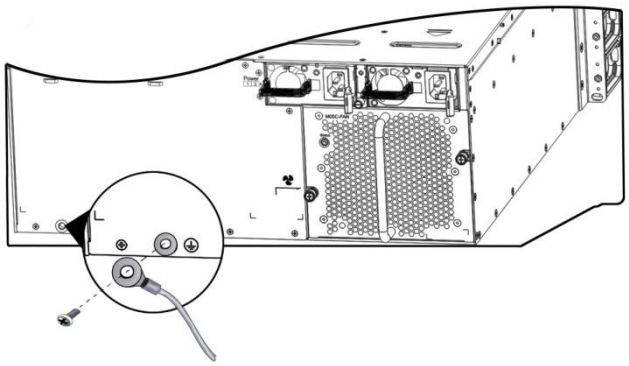


Figure 4-11 Grounding Point on Rear of RG-S7805C



To guarantee the security of the person and the device, the RG-S7800C must be well-grounded. The grounding resistance shall be less than 1Ω.

A service person shall check whether or not the socket-outlet from which the equipment is to be powered provides a connection the building protective earth. If not, the service person shall arrange for the installation of a protective earthing conductor from the separate protective earthing terminal to the protective earth wire in the building.

The socket-outlet shall be installed near the equipment and shall be easily.

When installing the unit, always make the ground connection first and disconnect it last.

The cross-sectional area of protective earthing conductor shall be at least 2.5 $mm^2$ (12AWG).

## 4.8 Installing Power Supplies

The RG-S7808C series switches provide AC power supplies including RG-PA1600I-F and RG-PA600I-F, and PoE power supplies including RG-PA3000I-PLand RG-PA1600I-PL. The RG-S7805C series switches provide AC power supplies including RG-PA300I-F and RG-PA460I-F. Before performing the following procedures, wear an anti-static wrist trap close to your kin and keep it grounded.

The RG-S7808C power system provides four power supply slots and two PoE power slots. It is recommended that you configure1+1 power supply redundancy.

The RG-S7805C power system provides two power supply slots. It is recommended that you configure1+1 power supply redundancy.

When RG-S7808C/RG-S7805C is powered up by more than one source, the power must be in the same model.

If you want to carry or lift the power module, please hold the bottom of the module with your hand instead of carrying the module by the handle. Otherwise, the module may be damaged.

Before inserting or removing the power module, please verify whether the switch is well mounted. The switch is high, avoid switch tumble when you are inserting or removing the power module.

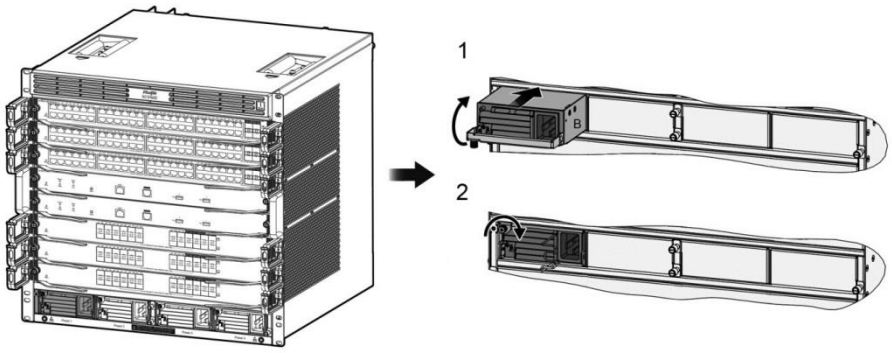
If you want to hot swap a power supply, please make sure that the interval between two operation is greater than 30s.

Please do not touch the golden finger part of the power supply which is removed after power off in case that capacitor discharge is not full.

- Install the AC power system on RG-S7808C

1. Loosen the captive screws on the blank panel covering the power slot at the rear of the chassis.
2. Insert the power module into the slot along the rail until the rear connector of the power module stays in good contact with the rear panel.
3. Tighten the captive screws on the power module to fix it.

Figure 4-12 Installing AC Power Supplies on RG-S7808C



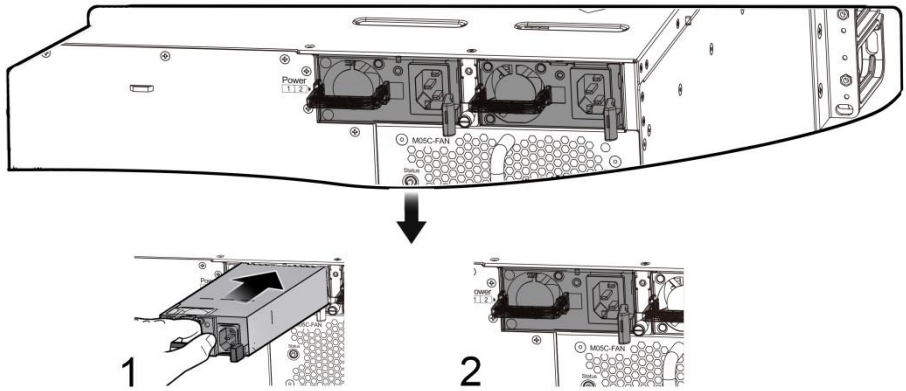

- Install the PoE power system

Take the same installation steps as the AC power installation.

- Install the AC power system on RG-S7805C

1. Loosen the captive screws on the blank panel covering the power slot at the rear of the chassis.
2. Insert the power module into the slot along the rail until the power module clicks into place.

Figure 4-13 Installing AC Power Supplies on RG-S7805C




The total power of power supplies of the RG-S7800C must be greater than the working power of the host. Otherwise, some modules may fail to start.

The host power is the summation of the power of all working modules, including the supervisor module, service module and fan. For the power of each module, see *RG-S7800C Series Switches Installation and Reference Guide.*

## 4.9 Installing Fans

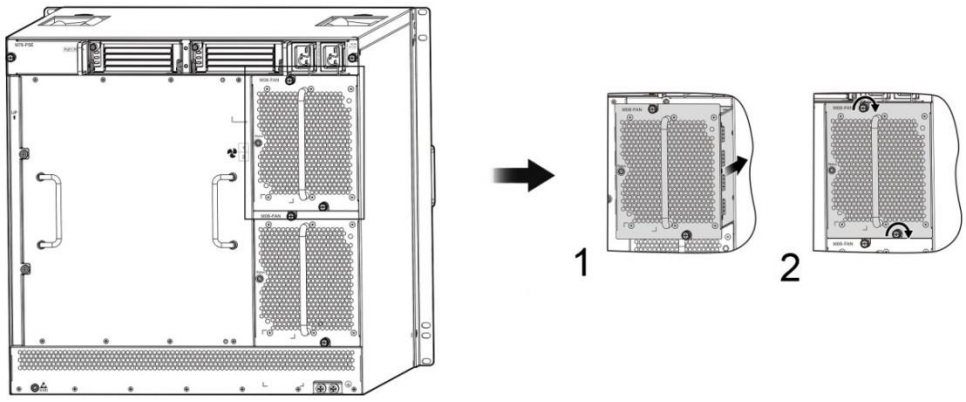
The fan tray model of the RG-S7808C and RG-7805C is M08-FAN and M05C-FAN respectively. Before the following procedures, wear an anti-static wrist trap close to your skin and have it properly grounded.

- Steps for installing the M08-FAN fan tray:

1) Install the fan tray into the fan slot in the back panel of RG-S7808C. Make sure that the fan is installed properly.

2) Tighten the captive screws on the fan tray with a screwdriver.

Figure 4-14 Installing M08-FAN

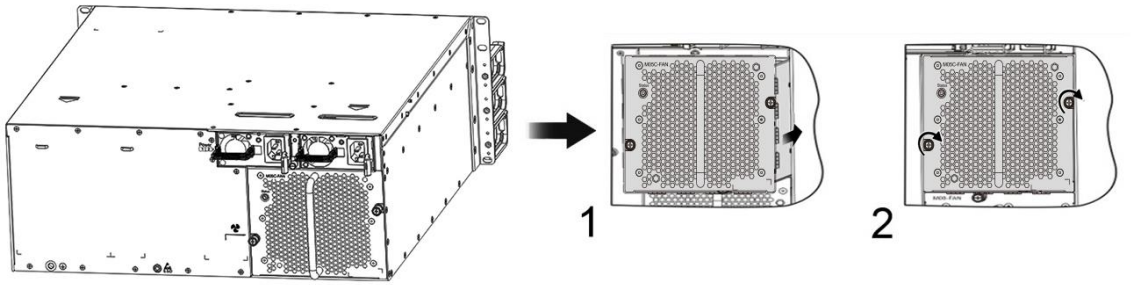



- Steps for installing the M05C-FAN fan tray:

1) Install the fan tray into the fan slot in the back panel of RG-S7805C. Make sure that the fan is installed properly.

2) Tighten the captive screws on the fan tray with a screwdriver.

Figure 4-15 Installing M05C-FAN




⚠ Do not remove the fan tray forcibly. You can use the fan handle. Otherwise, component damage may occur, which causes deformation of the fan tray, and the fan tray cannot be removed.

## 4.10 Installing Modules

Always wear an anti-static wrist strap when installing the module and the metallic part of the anti-static wrist strap should be fully touched with the skin. Besides, for the sake of security, please not touch any component of the module.

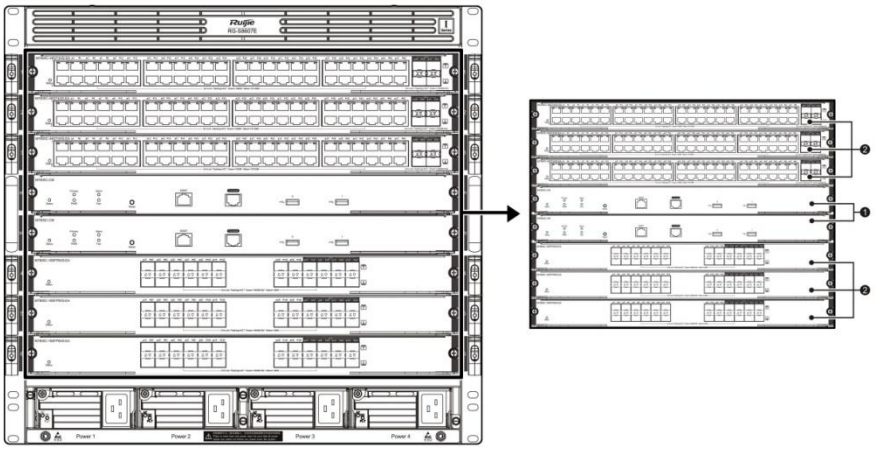
⚠ Do not hold the edge of the PCB or collide the components on the PCB.

⚠ Do not plug/unplug a supervisor module or service module forcibly, use the ejector.

- Select Slots

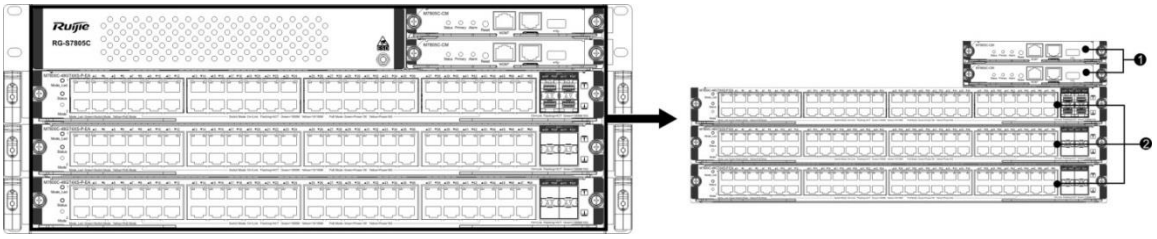
ℹ For the slot location of the supervisor module and service module, please see figure 4-12.

Figure 4-16 Slot Location on RG-S7808C



| Note: | ① Supervisor module slot | ② Service module slot |
|---|---|---|

Figure 4-17 Slot Location on RG-S7805C



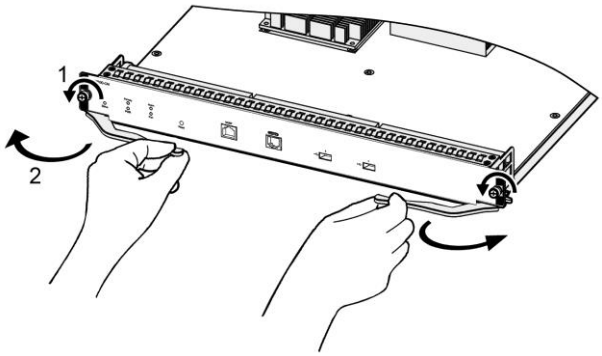
| Note: | ① Supervisor module slot | ② Service module slot |
|---|---|---|

- Install Modules

The supervisor module and service module adopt the design of self-locking lever. See figure 4-13 for operation.

(1) Lever Operation

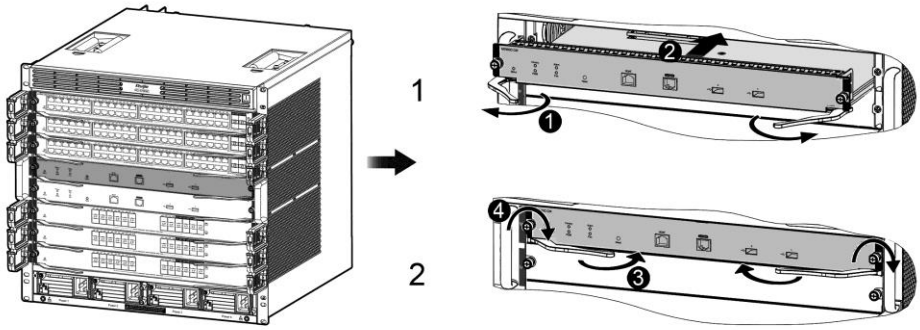
Figure 4-18 Pulling out Lever




(2) Module Installation on RG-S7808C

1) Pull out both levers (① in figure 4-19).
2) Insert the module into the slot along the rail and drive it ahead smoothly (② in figure 4-19).
3) Push both levers toward the slot (③ in figure 4-19).
4) Tighten captive screws on both sides of the panel (④ in figure 4-19).

Figure 4-19 RG-S7808C in Chassis

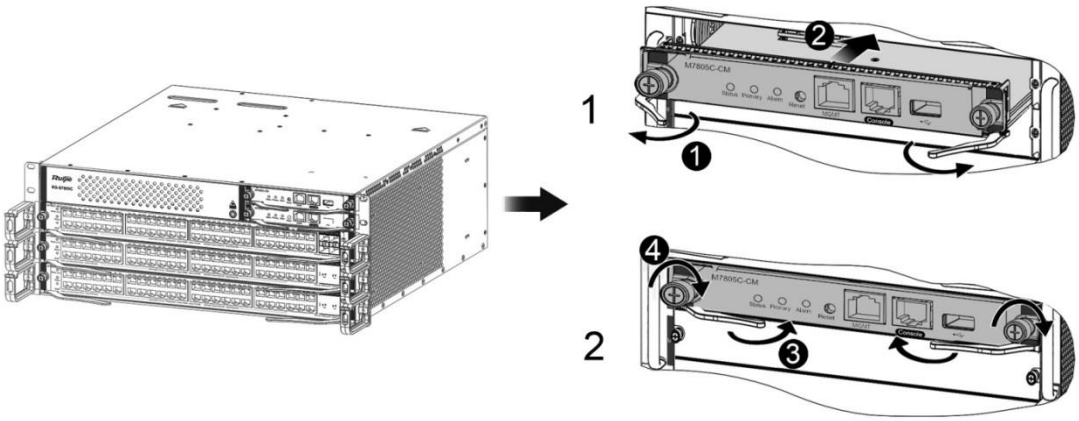



If a slot is not inserted with a supervisor module, or service module, please cover the slot with a filler panel for heat dissipation.

(3) Module Installation on RG-S7805C

1) Pull out both levers (① in figure 4-20).
2) Insert the module into the slot along the rail and drive it ahead smoothly (② in figure 4-20).
3) Push both levers toward the slot (③ in figure 4-20).
4) Tighten captive screws on both sides of the panel (④ in figure 4-20).

Figure 4-20 RG-S7805C in Chassis




## 4.11 Connecting the Power Cord

Connect the power cord to the location as required according to the identification on the power module panel, including RG-PA1600I-F, RG-PA600I-F, PA300I-F, PA460I-F, RG-PA3000I-PL and RG-PA1600I-PL.

Make sure the socket is powered off before the power cord is connected.

1) Insert the AC power plug into the power module socket.
2) Take out the spring clip.
3) Install the spring clip on the front panel of the power module.
4) Fasten the spring clip to the power cord.
5) Connect the other end of the power cord to an external power socket.

Figure 4-21 Connecting Power Cord on RG-S7808C

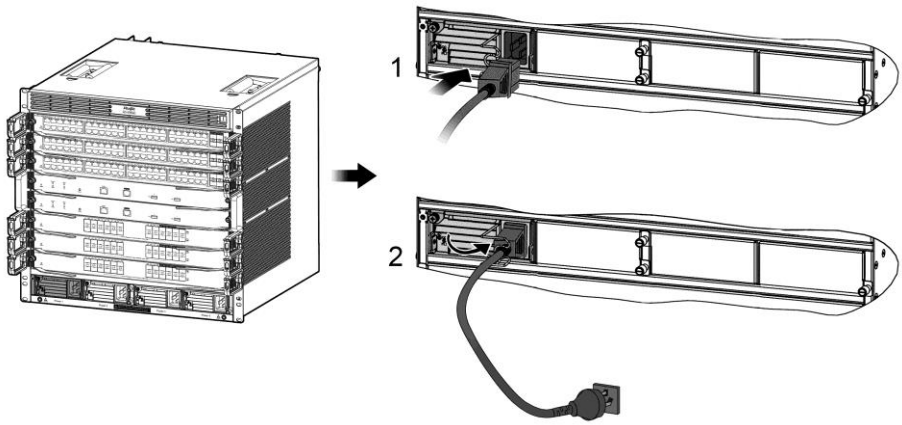
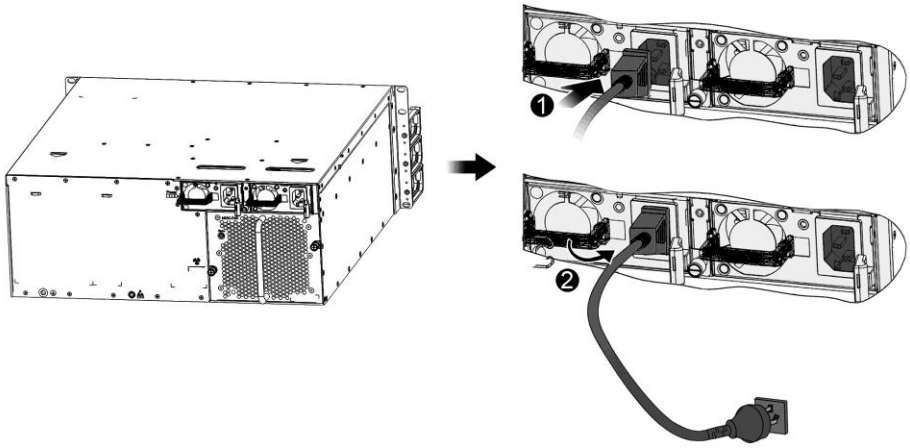



Figure 4-22 Connecting Power Cord on RG-S7805C




⚠ Please use the 3-pin power cord. The cross-sectional area of each pin is 1.5 $mm^2$ or 14 AWG minimum.

⚠ 16A and 10A power cords are available for the RG-S7808C AC power supply. Only 10A power cord is available for the RG-S7805C AC power supply. Adopt the proper socket and verify the AC power supply capacity in the machine room.

## 4.12 Installation Verification

⚠ Before you check the installation, please make sure that all power supplies have been turned off to avoid hurting you or the switch.

Before powering up the RG-S7800C, please verify the following items:

- Verify that the fan meets the requirement. See *RG-S7800C Series Hardware Installation and Reference Guide* for details.
- Verify that the power supply is properly selected. See *RG-S7800C Series Hardware Installation and Reference Guide* for details.
- Verify that the power module is inserted properly and the screws are fastened tightly.
- Please don’t power up the switch by yourself and don’t perform live-line maintenance.
- Verify that there is no potential danger in the working area, for example, the power supply is not grounded well, or the ground is wet.
- Please do not place the switch at a damp place to prevent the moisture from entering the switch.
- Be sure of the location of the emergency power switch. If an emergency occurs, cut off the power first.

- Verify that all power supplies are turned off if you want to turn off the power.
- Verify that the power cord is connected properly and won’t be loosened.
- Verify that the power cord is long enough to avoid being stretched.
- Verify that the rated current of the external power socket is greater 16A and that the socket is grounded well.
- Verify that each power module is connected to a power socket.
- Verify that the vacant slot is covered with a filler panel for ventilation and heat dissipation.

# 5 Logging in to the Switch

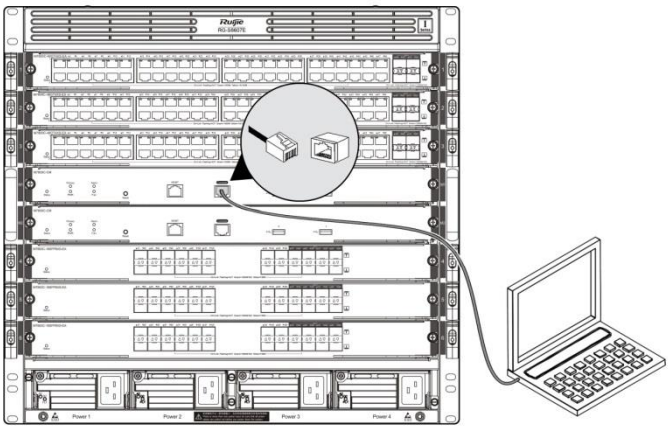
You can log in to the switch through the Console port.

## Connecting Console Cables

1) Connect one end of the DB-9 jack of the console cable to the serial port of the PC or the terminal.

2) Connect one end of the console cable DB-9 to the console port on the supervisor module.

Figure 5-1 Connecting Switch to PC through Console Port



## Powering-on and Checking

Make sure that the power cord is connected to the power supply, and the power supply is operational. The following table lists the operational conditions indicated by the module LEDs.

| Module | LED Indicator | Status |
|---|---|---|
| Supervisor Module | Status | Solid green |
| Service Module | Status | Solid green |
| Power Supply | Status | Solid green |
| Fan | Status | Solid green |

For the detailed description of LEDs, see *RG-S7800C Series Switches Hardware Installation and Reference Guide*.