

New Rock Technologies, Inc.

SX1000 Enterprise Session Border Controller (SBC)

Installation Guide

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1 Installation Preparation

For avoidance of personal injury and device damage, please read this chapter carefully before installation.

1.1 Installation Precautions

- For your safety, please follow the precautions when SX1000 is installed and used.
- Keep the site far from the heat and humidity
- Take precautions with use of high-voltage electricity
- Please let the experienced or trained operator to install and maintain SX1000
- Wear static discharge wrist strap
- Ensure the proper electric ground of installed equipment
- Properly connect the power cable to SX1000
- Do not plug the power cable when in use
- UPS is advised



Note

Please read carefully the **Note** labeled content when installing SX1000, and strictly follow the operation procedures.

1.2 Site Requirements

1.2.1 Temperature and Humidity

Check the temperature and humidity of equipment room. To ensure the normal operation and long service life of the device, the temperature and humidity in the room should be kept at the proper range.

The humidity in the equipment room should be kept between 10% and 90% (non-condensing). Abnormal humidity condition may cause problems to the device:

- Long term high humidity may lead to bad insulation and even cause electricity leakage, mechanical property change and corrosion.
- Low humidity is likely to leave captive screws to loose due to static electricity built up and the insulation washer shrunk.

The temperature in the equipment room should be kept between 0°C and 40°C. Abnormal temperature condition may cause problems to the device:

- High temperature acceralets aging of electrical parts and insulation materials.
- Low temperature, however, may destabilize the operation of the device.

1.2.2 Cleanliness

Dust is very harmful to the safe operation of the device. Dust that is adsorbed by static electricity acts as insulator, which not only affects the service life of the device but also leads to communication failure. Therefore, the room for the device must be kept clean.

To ensure adequate ventilation to keep the device from overheating, there should be adequate clearance for the air intake and the air exhaust vents. Keep at least 6 cm clearance at the left and right side of the chassis where the air intake is and at least 15 cm clearance at the rear of the chassis where the exhaust vents located.

The rack for SX1000 should have a good ventilation system.

1.2.3 Grounding

To maintain good voice quality, proper grounding of the AC supply is critical to minimize the noise from the AC interference. Therefore, the following conditions must be ensured:

- The AC power outlet has a protection ground contact.
- The ground contact of AC supplier must be grounded properly.
- Avoid sharing the multi-outlet power strip with other devices that may generate elctrical interference.

SX1000 is chassis based with ground tab. In a site that can provide ground for the chassis, the ground tab at the rear panel of chassis for SX1000 must be properly grounded.

1.2.4 Electromagnetic Environment

Any possible interference source, wherever it is from, impacts the device negatively. To resist the interference, make sure that:

- Keep the device far from radio transmitting station, radar station, and high-frequency devices. Use electromagnetic shielding when necessary.
- The device is capable for secondary lighten protection on wires and cables that connected to outside buildings. The site must provide the primary lighten protection.
- The power supply system should be used independently as much as possible and effective measures of preventing electric grid from interference should be adopted.
- Ensure a good power grounding effect of equipment or add a lightning protector.

1.2.5 Other Facilities

Rack/Workbench

SX1000 is designed to be installed in a standard 19-inch rack, which should provide adequate air-flow to cool down the device, and should be firm enough to support the weight of the device. It is also recommended that the rack is earth grounded properly.

IP Network

SX1000 is connected to IP network through its 10/100 base-T Ethernet port and can communicate with other equipments through the network. Inspect IP network on the site, including router, switch, cable

wiring and etc, and make sure they are ready for the device.

AC Power Outlets

SX1000 needs AC power supply, and sometimes the power is provided through a power strip with extension cord. Verify that each socket outlet on the power strip is equipped with protective earth contact and the protective action is not negated by using extension power cord.

1.3 Opening Inspection

After the completion of installation preparation, you should open the box for inspection. Make sure the device and all in-box accessories match the description below.

A SX1000 with basic configuration should include components as shown in the following table.

Table 1-1 Standard Configuration of SX1000

Description	Quantity	Unit
SX1000	1	Set
Power Cord, 3 Meters, AC250V/10A	1	Set
Rack Mounting Kits	1	Set
User Manual CD	1	Set



Note

The package list is only for reference. Changes may be made without notification. The detailed inclusions are on the shipping list enclosed in the device package. Please contact your supplier if you have any question.

2 Installation

2.1 Tools Required for Installation

- Screwdriver
- Static discharge wrist strip
- Ethernet and console port cables
- Power cable
- Terminals (a PC running terminal program can be used)
- Universal electric meter

2.2 Installing the Main Control Module

Before installing the main control module, be sure to disconnect the AC power; otherwise may cause damage to the equipment and invalid the warranty.

Step1 Slide the module along the guide rail into the chassis.

Step2 Snap the module on to the backplane in the chassis.

Step3 Turn the two thumb screws clock-wise to secure the module.

2.3 Rack Mounting

The SX1000 chassis is designed to be mounted on a standard 19-inch rack with 1U height.

2.3.1 Attaching the Brackets

Place the SX1000 chassis on the workbench, take two L-shape rack mounting brackets and screws, install the brackets at the left and right sides of the equipment, as shown in the following figure.

The L-shape brackets are used to secure the device to the rack. The brackets cannot support the weight of the equipment alone. Prior to install the SX1000 chassis into rack, a supporting shelf must be installed in place where the device will sit.

Figure 2-1 Installation of SX1000 L-shape brackets



2.3.2 Mounting the Device

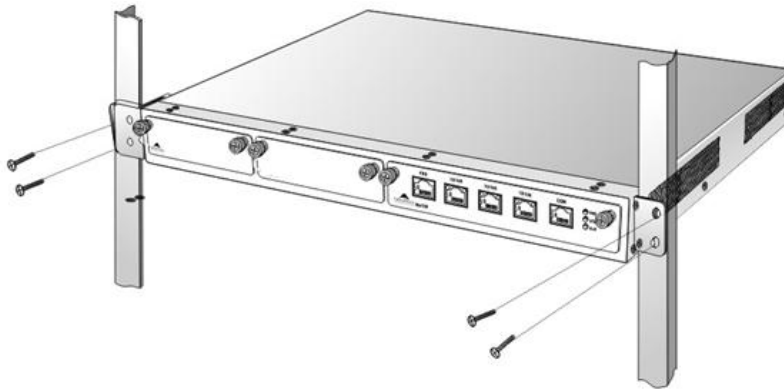
Attention should be paid during the installation:

- Ensure that the rack is firmly and stably attached to the ground.
- If the device is installed in a closed cabinet shelf, the cabinet must provide adequate air-flow. So the equipments inside can be well ventilated.
- If multiple devices are installed in a rack, it is recommended to keep at least 1/2U space between devices for heat dissipation.

Follow the steps to install the device:

- Place the device on a shelf in the rack.
- Slide it to a proper position along the guide rails.
- Fix the rack-mount brackets to the rack posts with supplied Phillips screws. Make sure that the device is in level position and securely fixed as shown in the following figure.

Figure 2-2 Mount SX1000 to rack



The SX1000 chassis is securely attached to the rack by the rack mounting brackets and the supporting shelf.

2.4 Installing Cables

2.4.1 Connecting Console Port

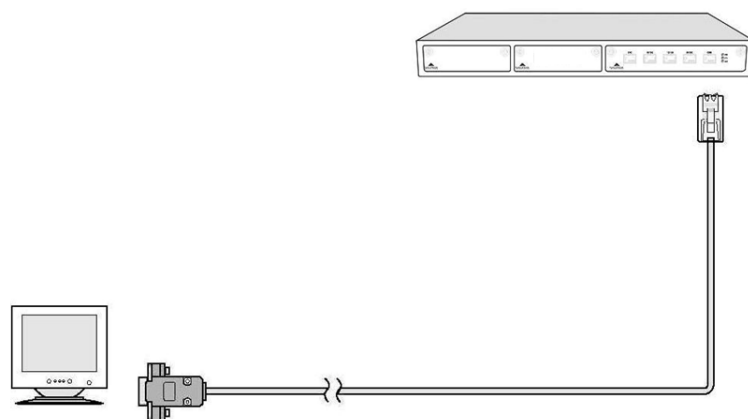
A CON should be provided by SX1000 to check errors of the device. Connect the CON with computer's RS232 serial ports, then local computers can interwork with the device through simulating terminal program.

As to SX1000, RJ45 Plug is used. One port is applied for connecting CON, while the other is applied for DB9 Adapter to insert serial ports of configuration terminal. CON Ratio: 115200.

Console Port cable installation procedure is as followed:

Step1 Choose a terminal (PC)

Step2 Power off the terminal and connect RS232 port with the Console port.

Figure 2-3 Cable of connecting SX1000 CON

2.4.2 Connecting the Ethernet Cable

Connect one end of the Ethernet cable to the Ethernet port of the device and connect the other end to the peer Ethernet switch or router. Check that the ETH LED on the front panel is lit, which indicates that the network cable is correctly connected.

2.5 Connecting the Grounding Cable

When installing in equipment room which provides independent grounding facility, it is required to connect the chassis ground tab on SX1000 with the protective grounding system in this environment. Proper grounding not only provides a guarantee for safe operation of the equipment but also enhances the capacity of the equipment to resist disturbance and ensures the quality of voice communication.

The SX1000 main chassis and expansion chassis are equipped with a M4 grounding screw with a mark in their backs. Please use the M4 screw to connect the grounding wire.

2.6 Connecting the Power Cord

Before connecting the power cord, make sure the AC power outlet is provided with a protective earth contact which is proper grounded.



Note

Please contact the device supplier if the power LED does not light up after the power is turned on. Never install / uninstall the device or plug / unplug any cable on the device when the power is turned on.

Follow the steps to connect power cord:

Step1 Turn the switch of AC power outlet to “OFF” position.

Step2 SX1000 uses the shipped power cord to connect between the AC input at rear of the chassis and the AC power outlet.

2.7 Verifying Installation

Installation verification is extremely important, because operations of the device depend on its stability, grounding, and power supply.

Each time you turn on the power during the installation, verify that:

- Enough clearance has been reserved around the ventilation, openings of the device and the workbench/rack is stable enough.
- The protection ground is connected properly.
- Proper power is used as specified.
- The device is correctly connected to console terminal and other devices.

3 Powering up the SX1000

3.1 Verification before Power-up

3.1.1 Checking Appearance

This is a review process of the installation work, including the chassis, wiring, connectors, ports, labels and site as described in the subsections.

SX1000

- Check whether there is adequate clearance around the device for thermal, and whether the workbench or rack for the mounting of the device is firm enough.
- Check whether the device is correctly connected to the configuration terminal and other devices.

Cable

- Check whether the Ethernet cable is connected properly.
- Check whether the grounding cable is connected properly.
- Check whether the power cord is connected to the proper power supply as required.

Port and Connector

Check whether the ports and connectors are secured.

Equipment Room

Check whether the temperature and humidity in the equipment room are within the proper range. The humidity should be kept at 10% to 90% non-condensing and the temperature should be kept at 0-40°C.

3.1.2 Checking Power Supply

Check whether the power supply is in normal operation with a multimeter.

3.2 Powering up the SX1000

Turn the power switch to **ON** position. Check the status of PWR LED, and if it is lit, the device is powered properly.