



SoftCo 9500 VoIP Integrated Exchange V100R002
Quick Installation Guide

SoftCo 9500 IP语音综合交换机
V100R002

快速安装指南

Issue: 03

Part Number: 31502424

Date: 2011-01-30

文档版本: 03

部件编码: 31502424

发布日期: 2011-01-30

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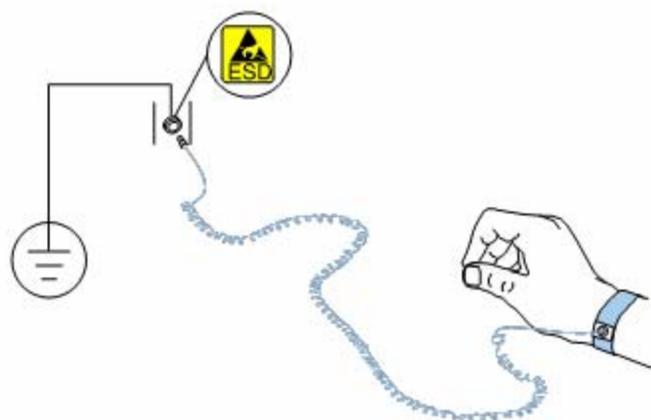
Safety Information

安全注意事项

CAUTION

Before touching the device, or holding the boards, wear the antistatic gloves or the antistatic wrist strap to prevent the electrostatic discharge of the human body from damaging the sensitive components. Ensure that the other end of the antistatic wrist strap is well grounded.

在接触设备、手拿单板之前，为防止人体静电损坏敏感元器件，必须佩戴防静电手套或防静电腕带。防静电腕带的另一端必须良好接地。

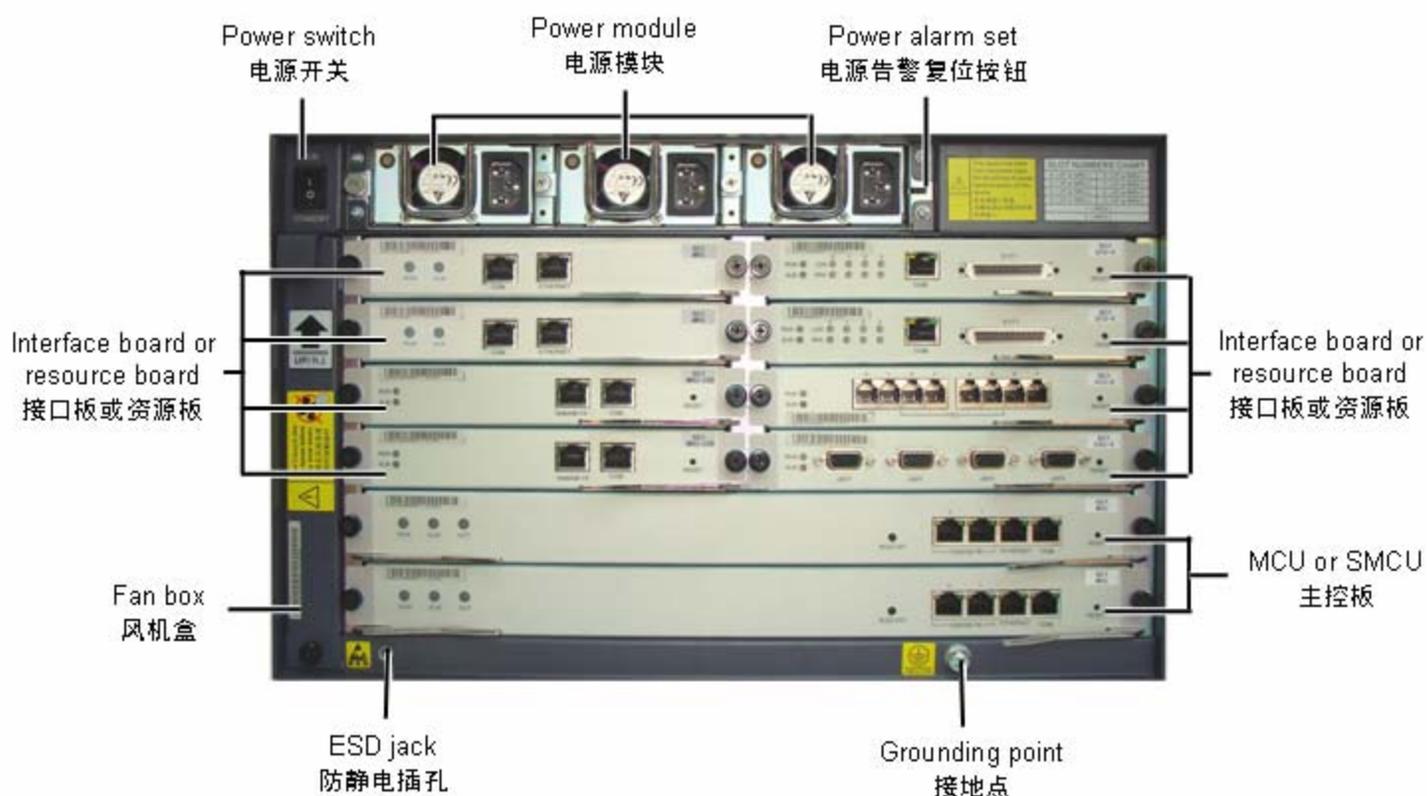


DANGER

Do not install or remove a power cable with power on. Transient contact between the core of the power cable and the conductor might generate electric arc or spark, which can cause fire or damage to the human body. Before installing or removing the power cable, turn off the power.

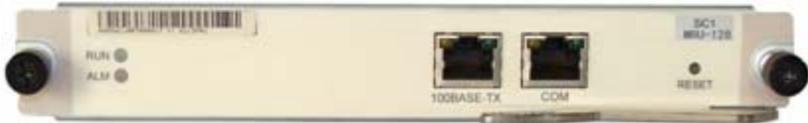
严禁带电安装、拆除电源线。电源线在接触导体的瞬间，会产生电火花或电弧，可导致火灾或人身伤害。在安装或拆除电源线之前，必须关闭电源。

Device Appearance 设备外观结构



Board For Installation

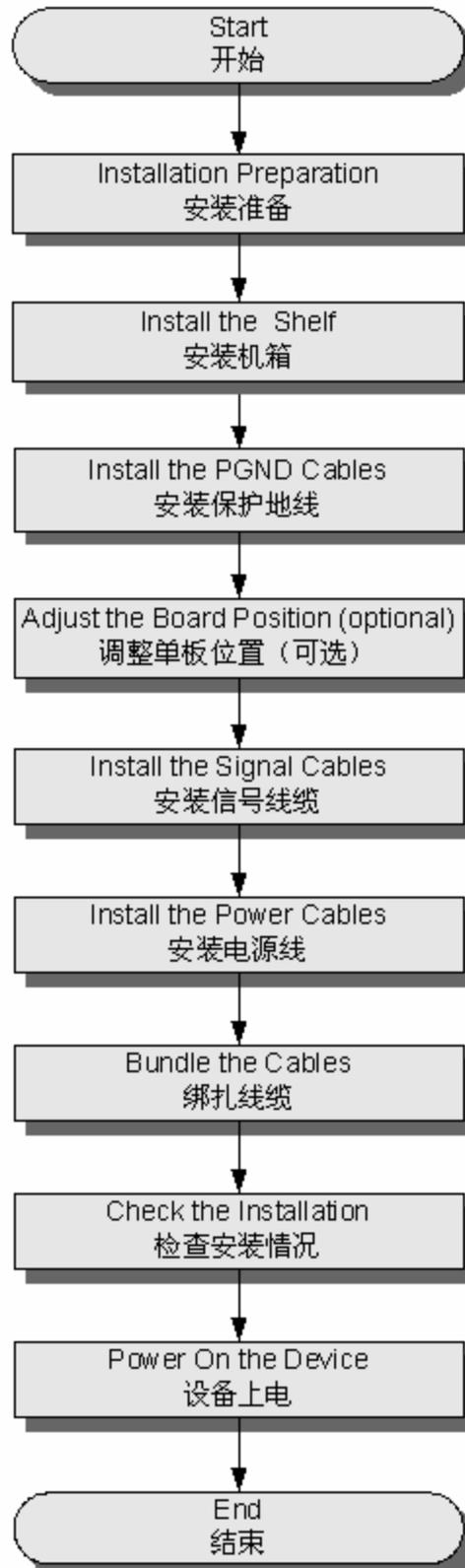
单板展示

1	<p>MCU board MCU单板</p> 
2	<p>SMCU board (The SMCU and MCU cannot be used on the SoftCo at the same time.) SMCU单板 (不能与MCU单板同时使用)</p> 
3	<p>MRU board MRU单板</p> 
4	<p>MRS board MRS单板</p> 
5	<p>DTU board DTU单板</p>  <p style="text-align: right;">DTU-4board DTU-4单板</p> <p style="text-align: right;">DTU-8board DTU-8单板</p>
6	<p>EXU board EXU单板</p> 
7	<p>ATU board ATU单板</p> 

Installation Procedure 安装流程

The installation procedure of the SoftCo9500 is as follows:

SoftCo9500的安装流程如下:



1 Installation Preparation 安装准备

The tools for installation are not delivered along with the device. Please provide the tools by yourself.

安装工具不随设备发货，请自行准备。

<p>Cross screwdriver 十字螺丝刀</p> 	<p>Diagonal pliers 斜口钳</p> 	<p>Mount bar 安装条</p> 
<p>Horizontal ruler 水平尺</p> 	<p>Glove 手套</p> 	<p>Antistatic glove 防静电手套</p> 
<p>Antistatic wrist strap 防静电腕带</p> 	<p>RJ-45 connector clamping tool 水晶头压线钳</p> 	<p>Cable tester 测线器</p> 
<p>Cable stripper 剥线钳</p> 	<p>Cable tie 线扣</p> 	<p>Multimeter 万用表</p> 

2 Installing the Shelf 安装机箱

The SoftCo9500 is 6U (1U=44.45mm) high and can be installed in a 19-inch cabinet that complies with the standard of the International Electrotechnical Commission (IEC). This guide takes the N68-22 cabinet of Huawei as an example to illustrate the process of installing the SoftCo9500 in the cabinet.

SoftCo9500高6U(1U=44.45mm)，可安装在符合IEC（International Electrotechnical Commission）标准的19英寸机柜中。本指南以华为公司的N68-22机柜为例说明SoftCo9500安装在机柜中的过程。

a Installing Slide Rails 安装滑道

NOTE

You must install the slide rails before installing the SoftCo9500.

安装SoftCo9500必须先安装滑道。

Ensure that at least space of 1U exists between the SoftCo9500 and other devices to guarantee the device dissipation.

确保SoftCo9500和其他设备之间至少有1U空隙，以保证设备良好散热。

Fix slide rails on the left and right sides of the cabinet with M4 screws. The lower edge of the slide rail and the narrow brim of the cabinet mount bar must be aligned.

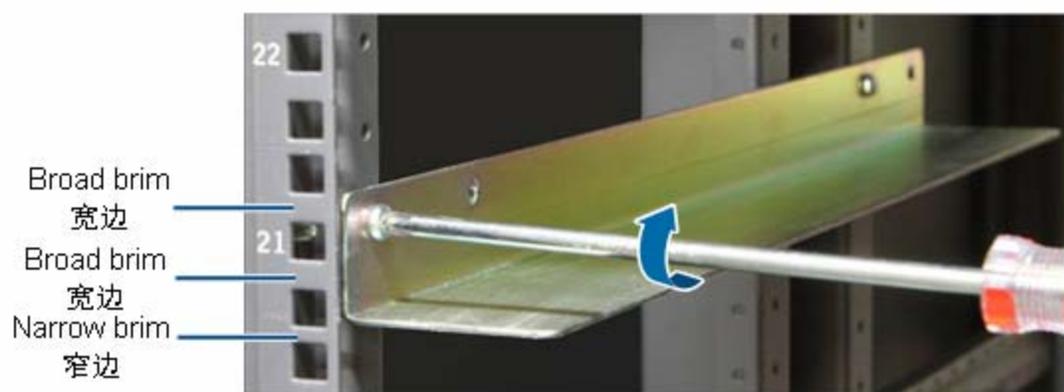
在机柜左右两侧用M4螺钉固定滑道。滑道下边沿需与机柜方孔条上的窄边对齐。



Slide rail
滑道



M4 screw
M4螺钉



2 Installing the Shelf 安装机箱

b Installing Captive Nuts 安装浮动螺母

Install the captive nuts on both sides of the cabinet mount bar.

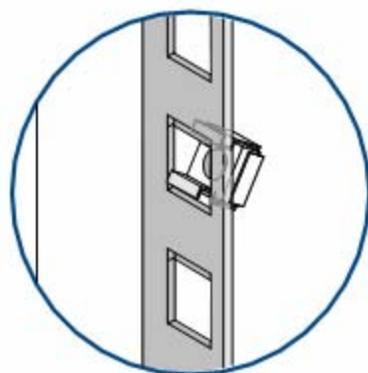
在机柜左右两侧的方孔条上安装浮动螺母。

- 1 Decide the installation positions are the third, seventh, twelfth, and sixteenth square holes counted upwards from the lower edge of the slide rail.

确定浮动螺母的安装位置，即滑道下边沿往上第3、7、12和16个方孔。

- 2 Install one foot of the captive nut into the square hole from the inside of the cabinet. Secure it on the lower boarder of the square hole.

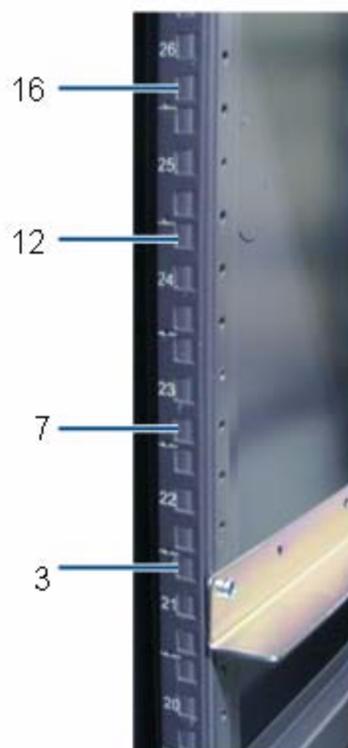
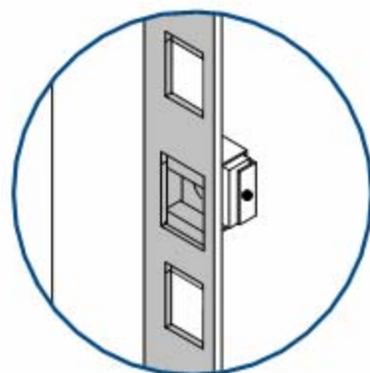
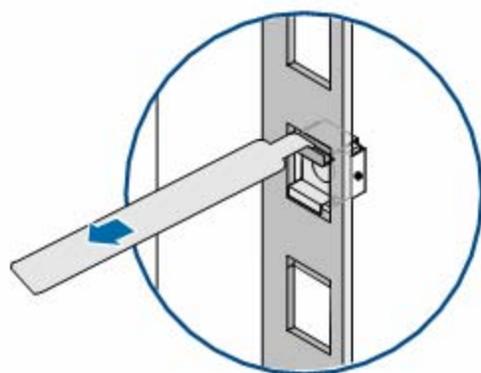
将浮动螺母的一脚从机柜内侧往机柜外装入方孔，卡住方孔下边框。



Captive nut
浮动螺母

- 3 Pull the other foot of the captive nut with the mount bar until it is clipped on the upper boarder of the square hole.

用安装条勾住浮动螺母另一脚，往前拉，直到卡住方孔上边框为止。



2 Installing the Shelf 安装机箱

C Fixing the SoftCo9500 into the Cabinet 在机柜中固定SoftCo9500

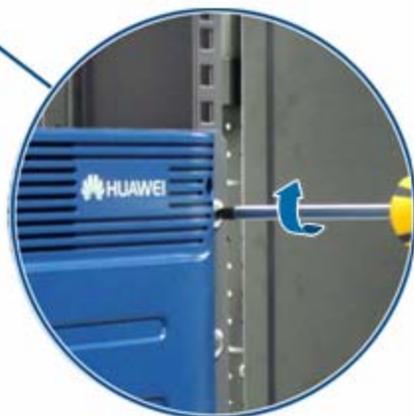
- 1 Two people carry the SoftCo9500 and put it on the slide rails. Then push it into the cabinet.
两人将SoftCo9500抬放到滑道上，往里推入机柜。



- 2 Fasten eight M6 screws on both side of the chassis to fix the SoftCo9500 into the cabinet.
用8颗M6螺钉将设备固定在机柜上。



M6 screw
M6螺钉



3 Installing the PGND Cables 安装保护地线

NOTE

Before the operation, make sure that the grounding resistance should be less than 5 ohms. The grounding resistance can be measured by earth resistance tester.

操作前，请确保接地电阻小于 5Ω 。接地电阻可使用地阻测量仪测量。



Protection Grounding (PGND) cable
保护地线

- 1 Loosen the grounding screw.
拆卸接地螺钉。



- 2 Aim one end of the PGND cable at the grounding hole.
将地线一端对准接地孔。



- 3 Fasten the grounding screw clockwise.
顺时针拧紧接地螺钉。



- 4 Connect the other end of the PGND cable to the grounding terminal on the cabinet.
连接地线另一端到机柜上的接地端子。



4 Adjusting Board Position (Optional) 调整单板位置 (可选)

The board of the SoftCo9500 is preinstalled before delivery. For the cabling on site, the board position needs to be adjusted. To adjust the board position, do as follows:

SoftCo9500的单板是预安装后才发货到现场的，不需要在现场进行安装。但为现场的走线方便，可能需要调整单板位置，插拔单板的步骤如下：

- 1 Wear the antistatic wrist strap correctly. Ensure that the metal buckle of the wrist strap is in full contact with the skin. The other end of the wrist strap should be connected to the equipment ESD jack.

正确佩戴防静电腕带，确保防静电腕带的金属扣和皮肤充分接触，并且防静电腕带另一端的连接器正确连接到设备的防静电插孔上。



- 2 Loosen the captive screws on the board anticlockwise.
逆时针拧松待调整位置单板上的松不脱螺钉。



- 3 Pull out the handle. 往外拉动扳手。



- 4 Take out the board. 取出单板。



- 5 Pull out the handle on the board. Push the card along the guide rail of the slot. Then press the handle into place.

往外拉开单板上的扳手后，沿插槽的导轨推入单板，再将扳手往里压紧。



- 6 Fasten the captive screws clockwise.
顺时针拧紧松不脱螺钉。



5 Installing the Signal Cables 安装信号线缆

NOTE

The types and numbers of cables to be installed on site depend on the contract and the networking. The wiring diagram and operation procedures below are for reference only.

现场需要安装的线缆的种类和数量，视具体合同和组网情况而定，这里给出不同线缆的连接方法。

a Connect Network Cable 安装网线

Connect one end of the straight through network cable to the 100BASE-TX service network port 0 or 1 on the SC1-MCU and connect the other end to the downlink network port of the Ethernet switch. Service network port 0 and service network port 1 have the same function. Two service network ports can be connected to two Ethernet switches for backup. (If the SoftCo9500 is interconnected with the router or OLT, use the crossover network cable. For details about the sequence of the network cables, see **10 Cable Sequence**.)

连接直通网线的一端至SC1-MCU板上的100BASE-TX主备业务网口0或1，连接直通网线的另一端至以太网交换机下行网口。0和1网口功能相同，若两个网口分别连接至两个交换机，则起到备份作用。若与路由器或OLT(Optical Line Terminal)对接，请使用交叉网线。



Straight through network cable
直通网线

b Installing Analog Trunk Cables 安装模拟中继电缆

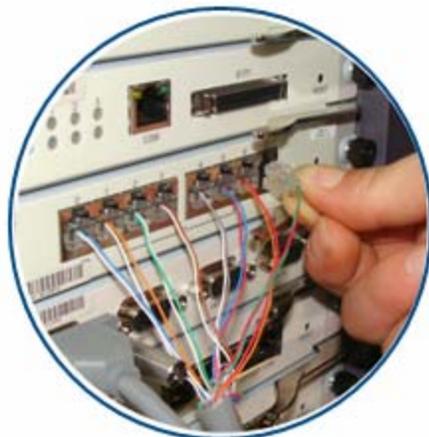
NOTE

The analog trunk cable is not provided along with the delivery of the SoftCo9500. Connect the analog trunk cable of the peer device to the SC1-ATU-8 board. Make the RJ-11 connectors according to the actual situation on site.

SoftCo9500发货时不配模拟中继电缆，将对端设备引出的模拟中继线缆连接到SC1-ATU-8板。请根据现场实际情况自行制作RJ-11接口。

Connect RJ-11 interface of the analog trunk cable to the SC1-ATU-8 board, and connect the other end to the analog trunk cable introduced to the installation site.

连接模拟中继电缆的RJ-11接口到SC1-ATU-8板，连接电缆另一端到现场的模拟中继引入线。



5 Installing the Signal Cables 安装信号线缆

c Installing UEP Interface Cables 安装UEP接口电缆

NOTE

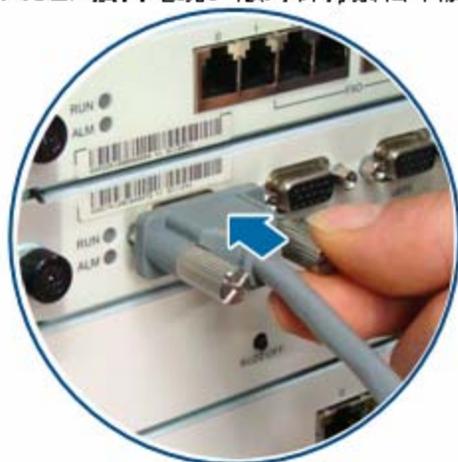
Check whether the connector pins of the UEP interface are deformed before inserting UEP. If the pins are deformed, resume the pins and insert UEP horizontally.

注意插入UEP接口前先检查接头插针是否有变形，如有变形则校直后平行插入。

Connect DB15 interface of the UEP interface cable to the UEP interface of the SC1-EXU-4 board, and connect the other end of DB15 interface to the POTS-32 subscriber box.

连接DB15接口到SC1-EXU-4单板的UEP接口，连接电缆另一端DB15接口到POTS-32用户盒的UEP接口。插入UEP接口电缆。顺时针拧紧松不脱螺钉。

插入UEP接口电缆。顺时针拧紧松不脱螺钉。



UEP interface cable
UEP接口电缆

d Connect Digital Trunk Cables 安装数字中继电缆

NOTE

Check whether the connector pins of the DB50 interface are deformed before inserting E1/T1. If the pins are deformed, resume the pins and insert DB50 horizontally. The card buckle is fixed on the board.

注意插入E1/T1接口前先检查接头插针是否有变形，如有变形则校直后平行插入，卡扣扣牢在单板上。

Connect DB50 interface of the digital trunk cable to E1/T1 interface of the SC1-DTU-4, and connect the SMB interface to the digital trunk cable introduced to the installation site.

连接数字中继电缆的DB50接口到SC1-DTU-4板的E1/T1接口，连接电缆SMB接口到现场的数字中继引入线。



Digital trunk cable
数字中继电缆

5 Installing the Signal Cables 安装信号线缆

e Connect the Serial Port Cable 连接串口线

Connect RJ-45 interface of the serial port cable to the COM port on the SC1-MCU board, and connect the DB29 interface of the serial port cable to serial port of the configuration terminal (PC).

连接串口线的RJ-45端口到SC1-MCU板上的COM口，连接串口线的DB29端口到配置终端（PC）的串口。



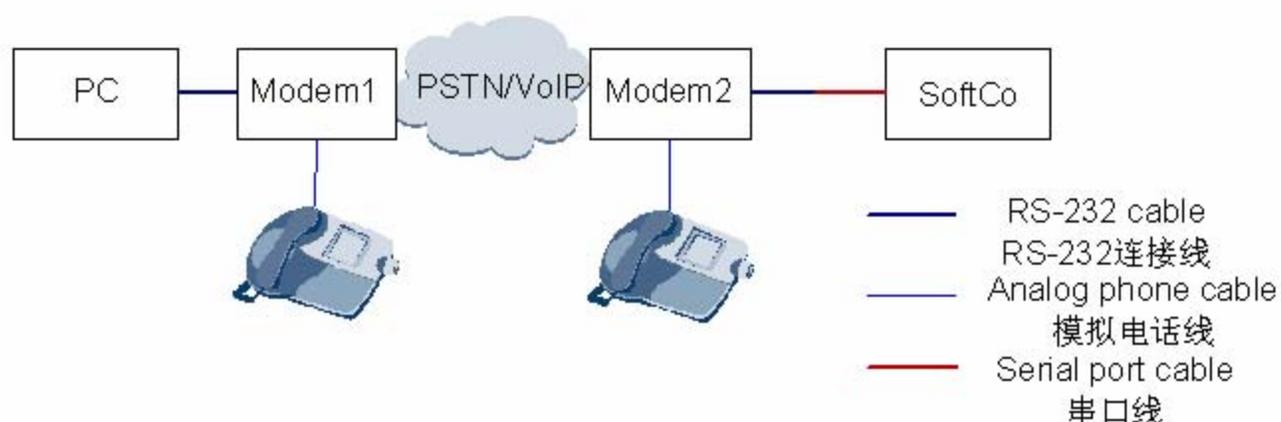
Serial port cable
串口线

You can perform the remote maintenance on SoftCos in serial port mode or Telnet mode through the modem.

若通过Modem进行远程调测，可以使用串口方式和在线方式两种方式实现。

The serial port connection is as follows:

串口方式连接如下：



5 Installing the Signal Cables 安装信号线缆

e Connect the Serial Port Cable 连接串口线

- 1 Connect RJ-45 interface of the serial port cable to the COM port on the SC1-MCU board.
连接串口线的RJ-45端口到SC1-MCU板上的COM口。
- 2 Connect the DB9 interface of the serial port cable to the DB9 interface of the RS-232 cable.
Connect the DB25 interface of the RS-232 cable to the RS-232 interface on the rear panel of Modem2.
连接串口线的DB9端口到RS-232连接线的DB9端口，连接RS-232连接线的DB25到Modem2后面板的RS-232端口。
- 3 Connect the DB25 interface of the RS-232 cable to the RS-232 interface on the rear panel of Modem1. Connect the other DB25 interface of the RS-232 interface to the PC.
连接RS-232连接线的DB25端口到Modem1后面板的RS-232端口，连接RS-232连接线另一端DB25到PC。



RS-232 cable
RS-232连接线

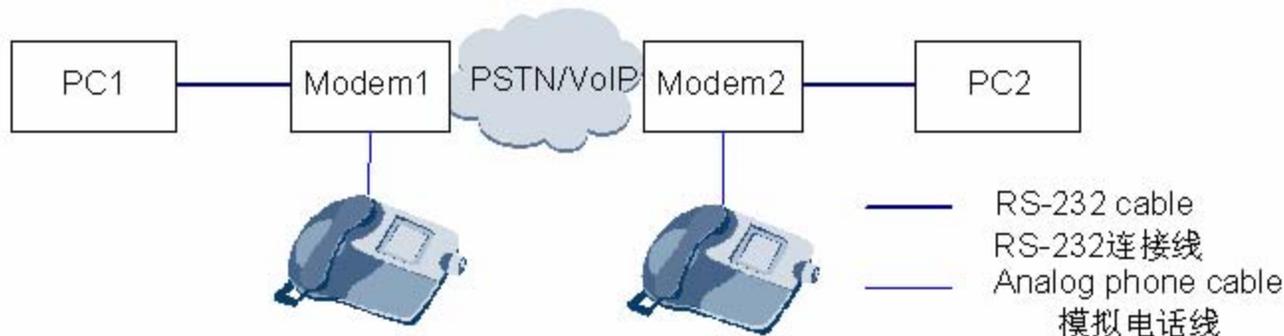
NOTE

The RS-232 cable is provided along with the delivery of the Modem. For details about the connection method of Modem, see the *User Manual*.

RS-232连接线随Modem发货，Modem的详细连接方法请参见用户手册。

The online connection is as follows:

在线方式连接如下：



Connect the modem to the PC using an RS-232 cable, and connect the SoftCo to the Ethernet.
通过RS-232连接线将Modem与PC相连，同时将SoftCo连接到以太网上。

6 Installing the Power Cables 安装电源线



NOTE

Installing the AC power cable or DC power cable according to the actual situation.

请根据实际情况，安装AC或DC电源线。



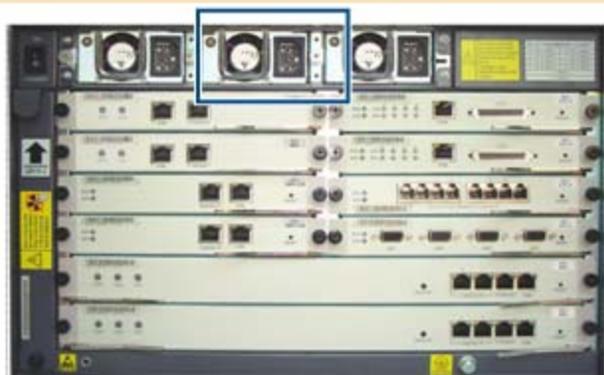
Installing the AC Power Cable 安装交流电源线



NOTE

Before the operation, disconnect the AC power supply, and turn the power switch of the device to STANDBY. If multiple power modules exist, connect each power module to the AC power supply according to the following procedure. Otherwise, an alarm is sounded.

操作前，断开交流供电电源，并将设备电源开关拨到STANDBY位置。如果有多个电源模块，请参照以下步骤将每个电源模块都连接到交流电源上，否则设备会报警。



Power cable
电源线

- 1 Pull the self-locking fastener outward to loosen it.
将防松扣往外打开。
- 2 Insert the connector to the AC power cable.
将电源线的一端（母头）插入电源接口。



6 Installing the Power Cables 安装电源线

- 3 Push the self-locking fastener inward to fasten the AC power cable.

将防松扣往里拉，卡紧交流电源线。



- 4 Insert the other connector of the power cable into the power socket

将电源线的插头一端插到交流电源插座上。

b Installing the DC Power Cable 安装直流电源线

NOTE

Before the operation, disconnect the DC power supply, and turn the power switch of the device to STANDBY. If multiple power modules exist, connect each power module to the DC power supply according to the following procedure. Otherwise, an alarm is sounded.

操作前，断开直流供电电源，并将设备电源开关拨到STANDBY位置。如果有多个电源模块，请参照以下步骤将每个电源模块都连接到直流电源上，否则设备会报警。



DC Power module

直流电源模块



DC Power cable

电源线

- 1 Insert the blue connector to the RTN(+) power cable. Insert the black connector to the NEC(-) power cable. Clockwise fasten the captive screws.

将蓝色电源线的一端插入RTN(+)电源接口，黑色电源线的一端插入NEC(-)电源接口。顺时针拧紧螺钉。

- 2 Insert the blue and black connector of the power cable into the DC power socket.

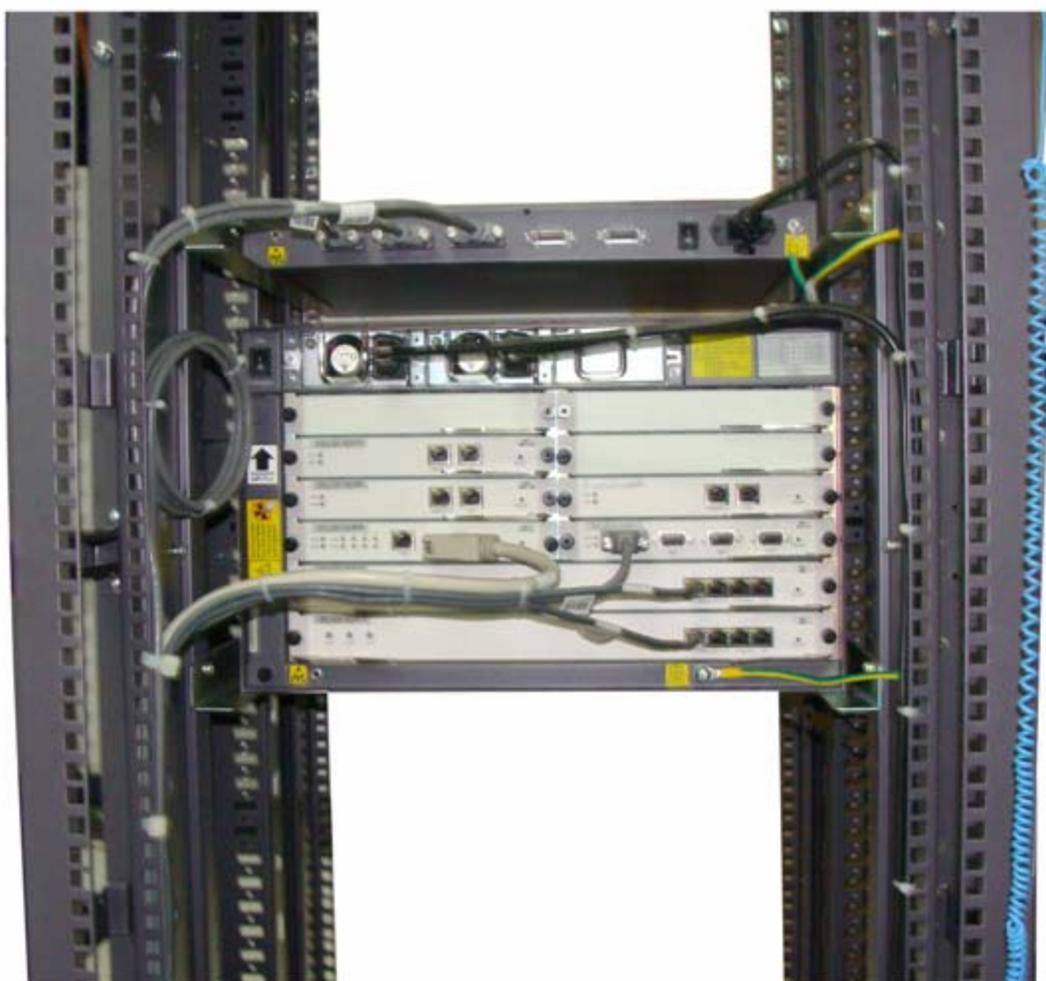
将蓝色和黑色电源线插头的一端插到直流电源插座上。

7 Bundling the Cables 绑扎线缆

Bundling requirements:
请按以下要求绑扎线缆:

- 1 Ensure that the cables are connected reliably.
确保线缆连接牢固、插头无松动现象。
- 2 The signal cables and power cables are bound separately. The intervals between power cables and signal cables must be larger than 30 mm.
信号线应与电源线分开绑扎。电源线与信号线的间距要大于30mm。
- 3 The cables are arranged straightly and smoothly, and stay loose at the turning points. Redundant length is reserved for every cable.
走线应平直、顺滑，线缆在转弯处应放松，不得拉紧。各线缆应按要求留出余量。
- 4 User one cable tie every 200 mm. The cable strap is clearly cut, the cable ties point to the same direction, there is no exposed thorn, and there is no repeated binding.
每隔200mm绑扎1个线扣，扎带接头应剪齐，线扣朝向一致，无尖刺外露，扎带绑扎无重叠现象。
- 5 The signal cables are clearly labeled at the two ends, and the labels point to the same direction. It is recommended to stick a label to a place 20 mm away from the connector.
各信号线两端标志应清晰（贴标签），标签朝向一致。建议标签粘贴在距连接器20mm处。

The following figure shows that the cables are placed in the cabling troughs.
下图为线缆布放完成后的示例。



8 Checking the Installation 检查安装情况

a Checking the Shelf 检查机箱

- 1 Ensure that all the boards are installed properly, all screws are well fastened and flat washer, and spring washer are used for every screw in correct order.
所有单板全部插紧。所有螺钉全部拧紧，每个螺钉均使用平垫、弹垫，其顺序不能垫反。
- 2 Ensure that filler panels are installed for all empty slots on the rear panel of the shelf.
机箱后面板的空槽位均已安装假面板。
- 3 Ensure that the device and the rack are well grounded. If the rack is not grounded, the information must be recorded in the engineering memo.
确保设备接地，机架接地良好。若机架没有接地，需纳入工程备忘录中。

b Checking the Equipment Room 检查机房环境

- 1 Ensure that the top, bottom, and surrounding area of the shelf are free from cable strap, cable residues and desiccant bag.
机箱顶部、底部、周围，不应有扎带、线头、干燥剂袋等遗留物。
- 2 Remove the left items from the equipment room and arrange the necessary items in the equipment room neatly.
应将剩余的物品清除出机房，放置于机房内的物品应摆放整齐。

9 Powering On the Device 设备上电

The rated input voltage of the SoftCo9500 is 110V/220V AC; the actual input voltage ranges from 100V to 240 V; the frequency of the power is 50Hz/60 Hz.

SoftCo9500的额定输入电压为110V/220V AC，实际输入电源的电压范围可以是100V~240V AC，频率为50Hz/60Hz。

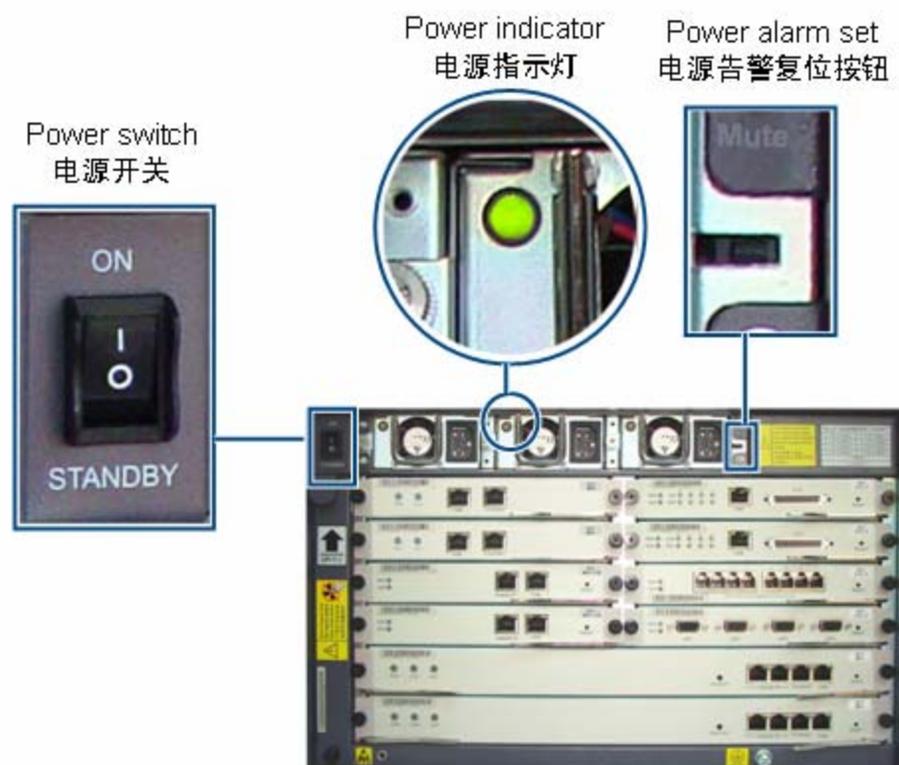
a Checking before Power-on 上电前检查

Before the power switch of the shelf is turned on, measure the input voltage by using a multimeter.

在确保机箱电源开关未打开的情况下，用万用表测量一下电源的输入电压是否正确。

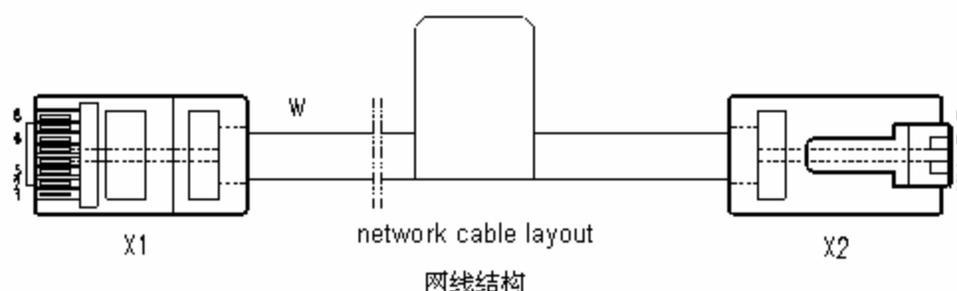
b Power-on Procedure 上电操作

- 1 Turn the power switch on the rear panel of the SoftCo9500 shelf ON.
将SoftCo9500机箱后面板的电源开关按钮按向ON侧，打开电源。
- 2 Check whether the indicator light on the power module turns on.
检查电源模块上的指示灯是否变亮。
- 3 An alert sound may be generated because of unstable voltage when the device is powered on. Press the Power alarm set button to mute the alert sound.
设备上电时由于电压不稳可能会出现啸叫告警，可按电源告警复位按钮消除告警声。



Sequence of Network Cables

网线线序



The straight through network cable is used for the communication and connection between the terminal device and the upper-level network. The following table describes the internal cable connection relations.

直通网线用于终端设备和上级网络之间通讯连接。其内部接线关系如下表。

X1 Pin Foot X1针脚	Color 接线颜色	X2 Pin Foot X2针脚
1	White (orange)白(橙)	1
2	Orange橙	2
3	White (green)白(绿)	3
4	Blue蓝	4
5	White (blue)白(蓝)	5
6	Green绿	6
7	White (brown)白(棕)	7
8	Brown棕	8

The crossover network cable is used for the direct communication between two terminal devices. The following table describes the internal cable connection relations.

交叉网线用于两个终端设备之间直接通讯。其内部接线关系如下表。

X1 Pin Foot X1针脚	Color 接线颜色	X2 Pin Foot X2针脚
1	White (orange)白(橙)	3
2	Orange橙	6
3	White (green)白(绿)	1
4	Blue蓝	4
5	White (blue)白(蓝)	5
6	Green绿	2
7	White (brown)白(棕)	7
8	Brown棕	8

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