

SoftCo 5816 VoIP Integrated Exchange  
V100R002

## **Quick Installation Guide**

SoftCo 5816 IP语音综合交换机  
V100R002

## **快速安装指南**

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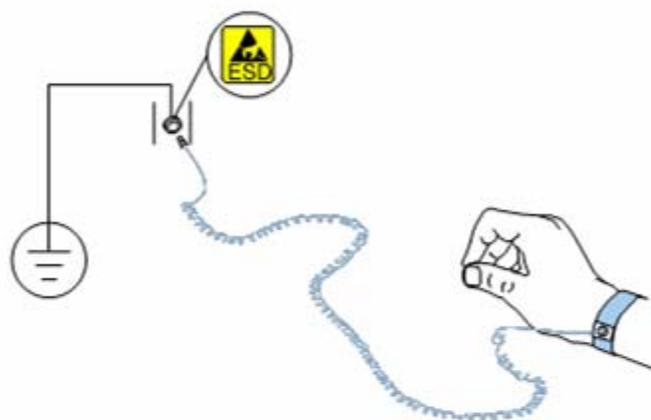
## Safety Information

### 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手腕。防静电手腕的另一端必须良好接地。

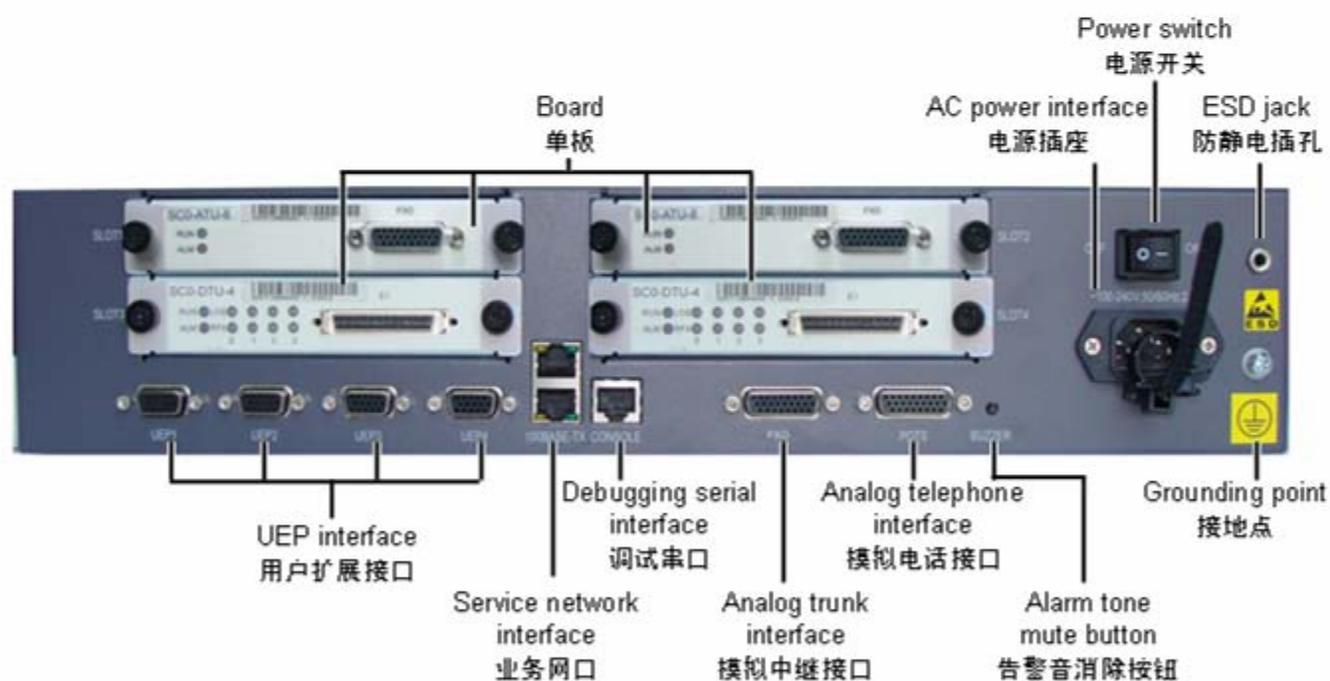


#### DANGER

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。

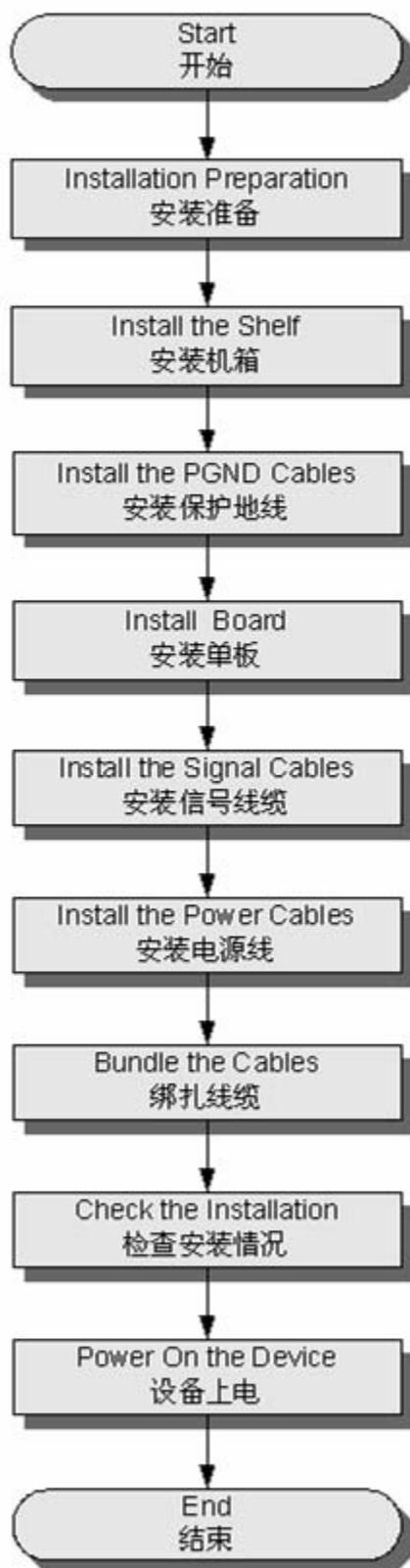
## Device Appearance 设备外观结构



## Installation Procedure 安装流程

The installation procedure of the SoftCo5816 is as follows:

SoftCo5816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 for 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 防静电手腕</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 SoftCo5816 is 2U (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 SoftCo5816 shelf in the cabinet.

SoftCo5816机箱高2U (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SoftCo5816安装在机柜中的过程。

### a Installing Slide Rails 安装滑道

#### NOTE

Ensure that at least space of 1U exists between the SoftCo5816 and other devices to guarantee the device dissipation.

确保SoftCo5816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 following takes the installation on the left side as an example. The lower edge of the slide rail and the narrow brim of the cabinet mount bar must be aligned.

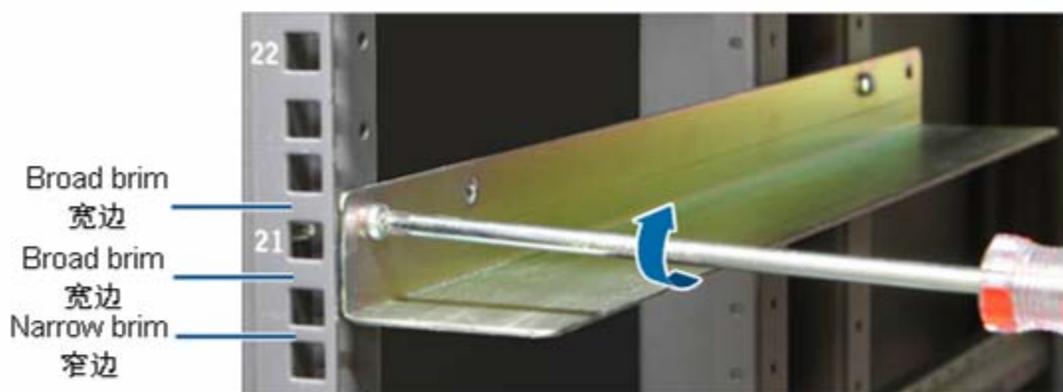
在机柜左右两侧用M4螺钉固定滑道。滑道下边沿需与机柜方孔条上的窄边对齐。



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

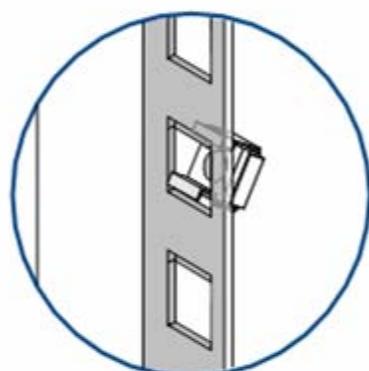
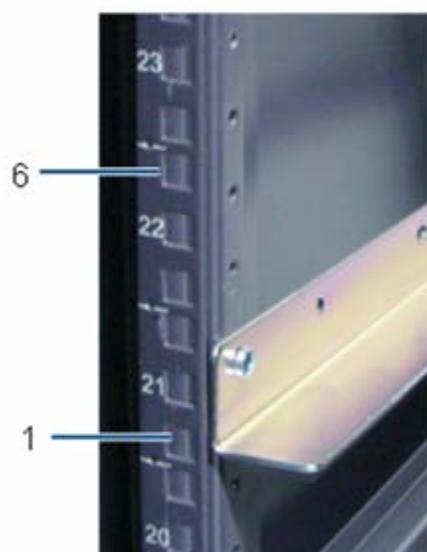
Install the captive nuts on both sides of the cabinet mount bar.

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 first and sixth square holes counted upwards from the lower edge of the slide rail.
- 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.

确定浮动螺母的安装位置，即滑道下边沿往上第1和6个方孔。

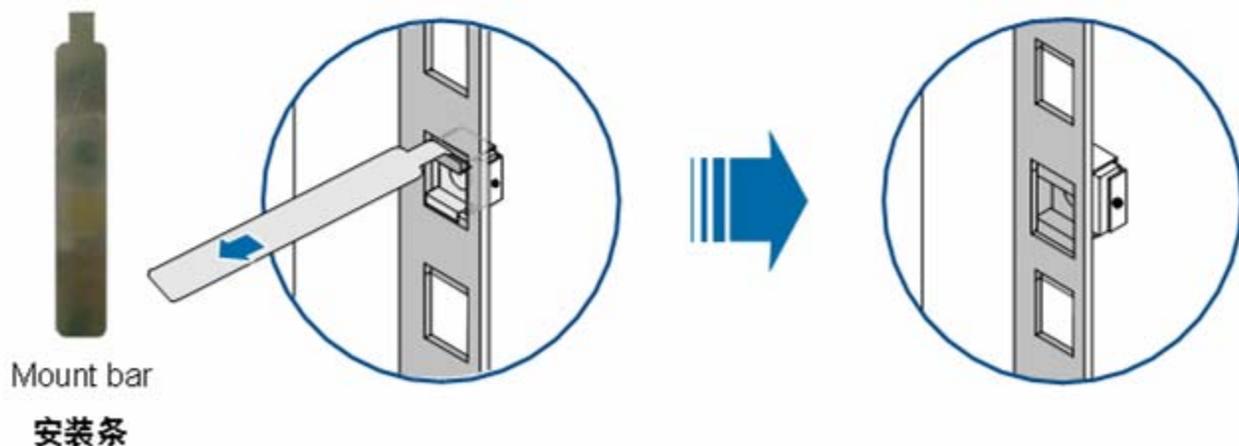
将浮动螺母的一脚从机柜内侧往机柜外装入方孔，卡住方孔下边框。



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 SoftCo5816 into the Cabinet 在机柜中固定SoftCo5816

- 1 Carry the SoftCo5816 and put it on the slide rails. Then push it into the cabinet.  
将SoftCo5816抬放到滑道上，往里推入机柜。



- 2 Fasten four M6 screws on both sides of the chassis to fix the SoftCo5816 into the cabinet.  
用4颗M6螺钉将SoftCo5816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 $5\Omega$ 。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 Installing Board 安装单板

The procedure of installing boards is as follows:

安装单板的步骤如下:

- 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.

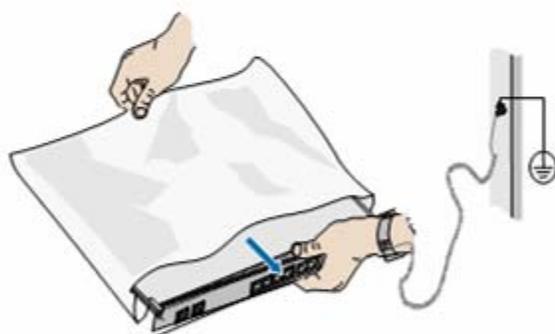
正确佩戴防静电手腕，确保防静电手腕的金属扣和皮肤充分接触，并且防静电手腕另一端的连接器正确连接到设备的防静电插孔上。



- 2 Loosen the screws on the filler panel anticlockwise. Take out the filler panel.  
逆时针拧松假面板上的松不脱螺钉，取出假面板。



- 3 Take the board from the antistatic package.  
从防静电包装袋中取出单板。



- 4 Push the board along the slide rail into the shelf until the board is well connected to the shelf.

沿着插槽推入单板，直至单板贴紧机箱。



- 5 Clockwise fasten the captive screws in the front panel of the board.

沿顺时针方向拧紧面板上的松不脱螺钉，固定单板。



## 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 Connecting 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 SoftCo5816 is interconnected with the router or OLT, use the crossover network cable.

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

## 5 Installing the Signal Cables 安装信号线缆

### NOTE

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

插入带插针的接口前先检查接头插针是否有变形，如有变形则校直后再插入。

### b Connecting Digital Trunk Cables 安装数字中继电缆

Connect DB50 interface of the digital trunk cable to the E1 interface of the SC0-DTU-4 board and fix the card buckle on the board. 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SC0-DTU-4板的E1接口，插入后将卡扣扣牢在单板上。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

### c Installing Analog Trunk Cables 安装模拟中继电缆

### NOTE

Check whether the connector pins of the DB26 interface are deformed before inserting FXO. If the pins are deformed, resume the pins and insert FXO horizontally. If the cable is unsuitable for the RJ-11 interface at the delivery, make an RJ-11 interface on site according to the actual situation.

注意插入FXO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。发货时，线缆不配RJ-11接口，请根据现场实际情况自行制作RJ-11接口。

Connect DB26 interface of the analog trunk cable to the FXO interface of the SC0-ATU-8 board or the shelf and clockwise fasten the captive screws after insert the DB26 interface of the analog trunk cable. Connect the RJ-11 interface to the analog trunk cable introduced to the installation site.

连接模拟中继电缆的DB26接口端到SC0-ATU-8板或机箱上的FXO接口，插入后顺时针拧紧松不脱螺钉。连接电缆RJ-11端口到现场的模拟中继引入线。



Analog trunk cable

模拟中继电缆

## 5 Installing the Signal Cables 安装信号线缆

### d Installing UEP Interface Cables 安装UEP接口电缆

Connect DB26 of the UEP interface cable to the UEP port on the SoftCo5816 shelf and clockwise fasten the captive screws after insert the DB26 interface of the UEP interface cable. Connect the other end of the cable to the UEP port of the POTS-32 subscriber box.

连接DB26接口电缆的一端到SoftCo5816机箱上的UEP接口，插入后顺时针拧紧松不脱螺钉。连接另一端到POTS-32用户盒的UEP接口。



UEP interface cable

UEP接口电缆

### e Connecting Analog Subscriber Cable 安装模拟用户电缆

#### NOTE

Check whether the connector pins of the DB26 interface are deformed before inserting POTS. If the pins are deformed, resume the pins and insert POTS horizontally. If the cable is unsuitable for the RJ-11 interface at the delivery, make an RJ-11 interface on site according to the actual situation.

注意插入POTS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。发货时，线缆不配RJ-11接口，请根据现场实际情况自行制作RJ-11接口。

Connect DB26 interface of the analog trunk cable to the POTS interface of the shelf and clockwise fasten the captive screws after insert the DB26 interface of the analog subscriber cable. Connect the RJ-11 interface of the analog subscriber cable to the MDF in the installation site.

连接模拟用户电缆的DB26接口端到机箱POTS接口，插入后顺时针拧紧松不脱螺钉。连接电缆RJ-11接口到现场的用戶配线架。



Analog subscriber cable

模拟用户电缆

## 5 Installing the Signal Cables 安装信号线缆

### f 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。



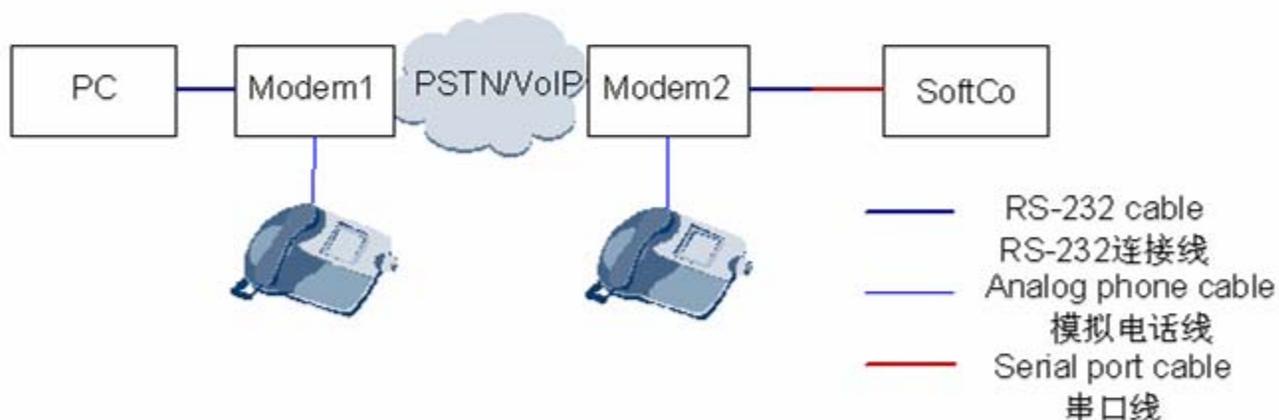
Serial port cable  
串口线

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

### f 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

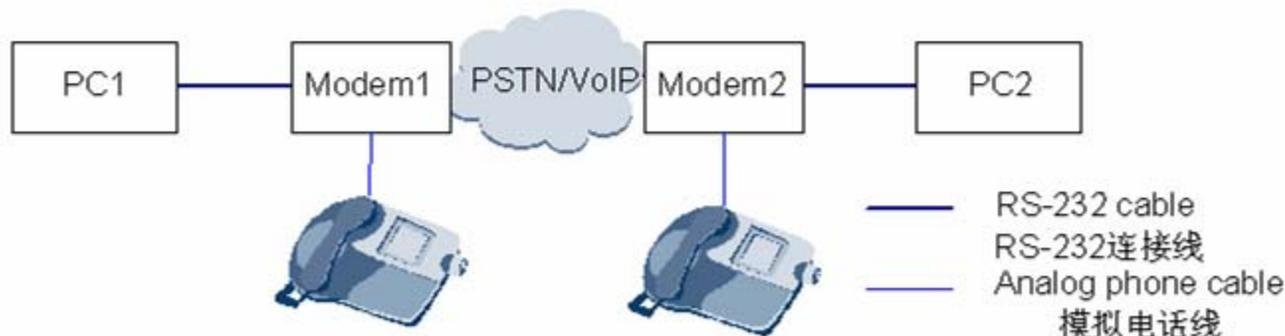
### NOTE

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。



## 7 Bundling 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。

## 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 SoftCo5816 is 110V/220V AC; the actual input voltage ranges from 100V to 240 V; the frequency of the power is 50Hz/60 Hz.

SoftCo5816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 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 of the SoftCo5816 shelf to ON.  
将SoftCo5816机箱后面板的电源开关拨到ON位置。



- 2 When the SoftCo5816 is powered on, it takes five minutes to start the SoftCo5816. After the SoftCo5816 is started, the RUN LED blinks (on for 1s; off for 1s).

设备通电后约需要5分钟时间启动，正常启动后前面板的RUN指示灯闪烁（1秒亮，1秒灭）。



# 10 Reference for Analog Subscriber Cable Distribution

## 模拟用户电缆配线参考

X1 Pin Foot X1针脚	Color 线对颜色	Twisted Relation 对绞关系	Port 端口
1	Blue蓝	Twisted 对绞	Port 1 端口1
10	White白		
2	Orange橙	Twisted 对绞	Port 2 端口2
11	White白		
3	Green绿	Twisted 对绞	Port 3 端口3
12	White白		
4	Brown棕	Twisted 对绞	Port 4 端口4
13	White白		
5	Grey灰	Twisted 对绞	Port 5 端口5
14	White白		
6	Blue蓝	Twisted 对绞	Port 6 端口6
15	Red红		
7	Orange橙	Twisted 对绞	Port 7 端口7
16	Red红		
8	Green绿	Twisted 对绞	Port 8 端口8
17	Red红		

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