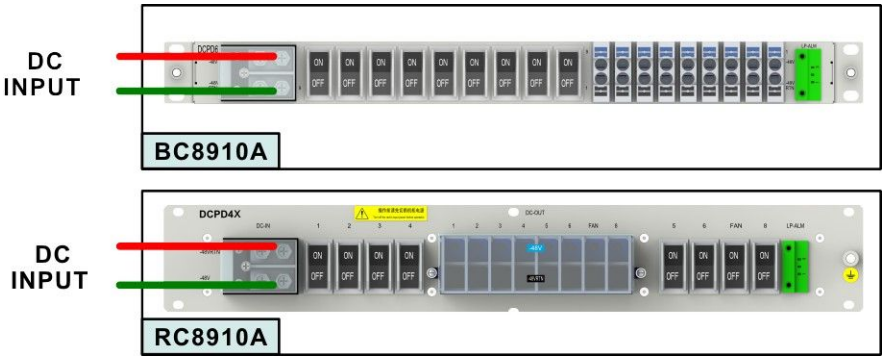
Figure 7-18 DC Power Distribution of the ZXSDR BS8900A Cabinets




# 7.5.1 Power Cable Installation in the BC Cabinet

## 7.5.1.1 Installing a B121 AC Input Power Cable

This procedure describes how to install a B121 AC input power cable for the three-phase AC input and single-phase AC input respectively.

### Prerequisite

- Before the installation, you must wear an ESD wrist strap.
- The tributary output of the power supply has been cut off.

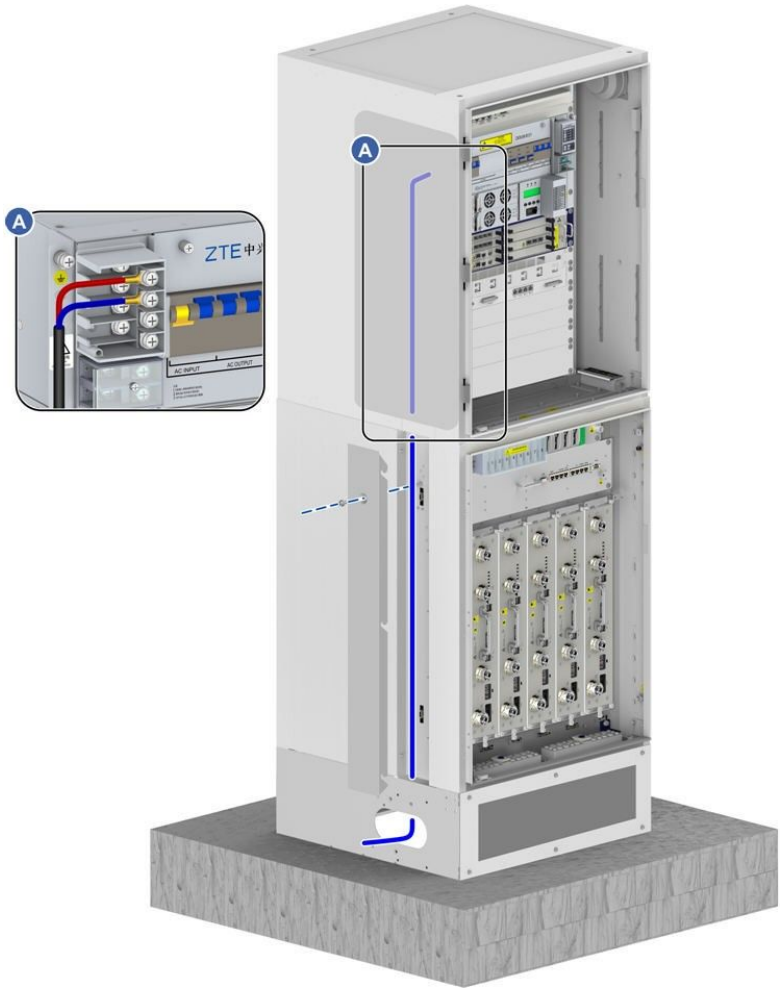
**Danger!**

Ensure that the cabinet is powered off. The cable installation with power on can result in personal injury or even death.

### Steps

1. Remove the cover plate of the AC connection box at the left side of the B121 power by using a screw driver.
2. Cut the power cable in a proper length, and crimp the both connectors by using a pair of crimp pliers.
3. Lay out the power cable along the left-side cable tray, through the waterproof module on the left side of the baseband cabinet, and to the input end of the power module, see Figure 7-19.

**Figure 7-19 External AC Input Cable Connections**




4. Connect the AC input cable to the screw terminal of the B121 in accordance with the AC power mode (three-phase or single-phase). For the screw terminal of the B121, see Figure 7-19. When using the three-phase five-wire mode for AC input, connect L1, L2, L3 and N of AC input to the corresponding L1, L2, L3 and N of the B121 power AC-INPUT terminals. For the detailed positions, see 7.5 Power Cable Installation.
   - If the AC power input uses the three-phase five-wire mode, connect L1, L2, L3, and N of the AC input cable to L1, L2, L3, and N at the **AC-INPUT** terminal of the B121.
   - If the AC power input uses the single-phase mode, connect the phase wire L (red) and neutral wire N (blue) to L1 and N at the **AC-INPUT** terminal of the B121.

5. Reseat the cover plate of the B121 power AC connection box, and fasten the bolts by using the screw driver.
6. Connect the other end of the power cable to the AC output connector of an external power supply.

**– End of Steps –**

## 7.5.1.2 Installing a B201 AC Input Power Cable

This procedure describes how to install a B201 AC input power cable for the three-phase AC input and single-phase AC input respectively.

### Prerequisite

- Before the installation, you must wear an ESD wrist strap.
- The tributary output of the power supply has been cut off.

---

**Danger!**

Ensure that the cabinet is powered off. The cable installation with power on can result in personal injury or even death.

---

### Steps

- Remove the four retaining screws at the four corners of the power switch cover plate of ZXDU68 B201, and then remove the cover plate.
- Cut the power cable in a proper length, and crimp the both connectors by using a pair of crimp pliers.
- Lay out the power cable along the left-side cable tray of the RF cabinet, through the waterproof module on the left side of the baseband cabinet, and to the input end of the power module.
- Connect the AC input cable to the screw terminal of the B201 in accordance with the AC power mode (three-phase or single-phase). For the screw terminal of the B201, refer to 7.5 Power Cable Installation.

  → If the AC power input uses the three-phase five-wire mode, connect L1, L2, L3, and N of the AC input cable to L1, L2, L3, and N at the AC-INPUT terminal of the B201.

  → If the AC power input uses the single-phase mode, connect the phase wire L (red), neutral wire N (blue), PE to the corresponding AC-INPUT terminal of the B201. The PE is connected to the grounding bar on the left side of the baseband cabinet.

- Reseat the cover plate of the B201 power AC connection box, and fasten the bolts by using the screw driver.
- Connect the other end of the power cable to the AC output connector of an external power supply.

**– End of Steps –**

## 7.5.1.3 Installing a DC Input Power Cable for the BC8910A Cabinet

This procedure describes how to install a DC input power cable for the BC8910A cabinet.

### Prerequisite

- Before the installation, you must wear an ESD wrist strap.
- The tributary output of the power supply has been cut off.

**Danger!**

Ensure that the cabinet is powered off. The cable installation with power on can result in personal injury or even death.

### Context

When using the -48 V DC power supply, only configure the DCPD6 instead of other powers. Connect the DC input power cable to the DC input terminal of DCPD6.

### Steps

1. Remove the cover plate of the connection box of DCPD6 DC-IN by using a screw driver.
2. Cut the power cable in a proper length, and crimp the both connectors by using a pair of crimp pliers.
3. Lay out the power cable along the left-side cable tray of the RF cabinet, through the waterproof module on the left side of the baseband cabinet, and to the input end of the power module.
4. Connect the –48 V end of the DC input power to the –48 V terminal of DCPD6 DC-IN, and connect the –48 VRTN to the –48 VRTN terminal of DCPD6 DC-IN, see Figure 7-20.

**Figure 7-20 Cable Connection of –48 V DC Input**


5. Reseat the cover plate of the connection box of DCPD6 DC-IN., and fasten the bolts by using the screw driver.
6. Connect the other end of the power cable to the AC output connector of an external power supply.

**– End of Steps –**

# 7.5.2 Power Cable Installation in the RC Cabinet

## 7.5.2.1 Installing RC8910A DC Input Power Cables (BC8910A Cabinet Stacked with RC8910A Cabinet)

This procedure describes how to connect the DC power cables of the RC8910A cabinet.

### Prerequisite

- The ESD wrist strap must be worn.
- The tributary output of the power supply is cut off.

---

**Danger!**

Ensure that the cabinet is powered off. The cable installation with power on can result in personal injury or even death.

---

### Steps

1. Remove the cover on the connectors of the power subrack **DC OUT**.
2. On the DC output interface **DC OUT** on the right side of the power subrack, for example, **Load 3**, connect one end of the blue –48 V cable to **-48 V** connector, and connect one end of the black –48 V VRTN cable to the **-48 V RTN** connector.

   For how to connect the connectors of the power subrack, refer to 7.5 Power Cable Installation.

   ---

   **Note:**

   By default, some cables are installed on the BC8910A cabinet before delivery. During the onsite installation, ensure that these cables are not loosened when installing other cables.

   ---

3. Route these cables along the cable rack and the side of the BC8910A cabinet and then through the cable-through holes on the right side of the RC8910A cabinet.
4. Connect one end of these cables to the -48 V and -48 V RTN power terminals on the RC8910A cabinet.
5. Bundle and secure these cables.

   **– End of Steps –**

### 7.5.2.2 Installing a RC8910A DC Input Power Cable (RC8910A Cabinet Placed Individually)

This procedure describes how to connect the DC input cable for a single RC8910A cabinet.

#### Prerequisite

- The ESD wrist strap must be worn.
- The tributary output of the power supply is cut off.

#### Steps

1. Connect one end of these cables to the -48 V and -48 V RTN power terminals on the RC8910A cabinet.
2. Connect the other end of these cables to the DC output terminals of the DC power supply.
3. Bundle and secure these cables.
4. Give waterproof treatments to the cables.

**– End of Steps –**

## 7.5.3 Installing DC Input Cables for the PC8910A Cabinet

This procedure describes how to connect the DC power cables of a PC8910A cabinet. The DC power cable of the PC cabinet is used for charging batteries and powering the ZXSDR BS8900A.

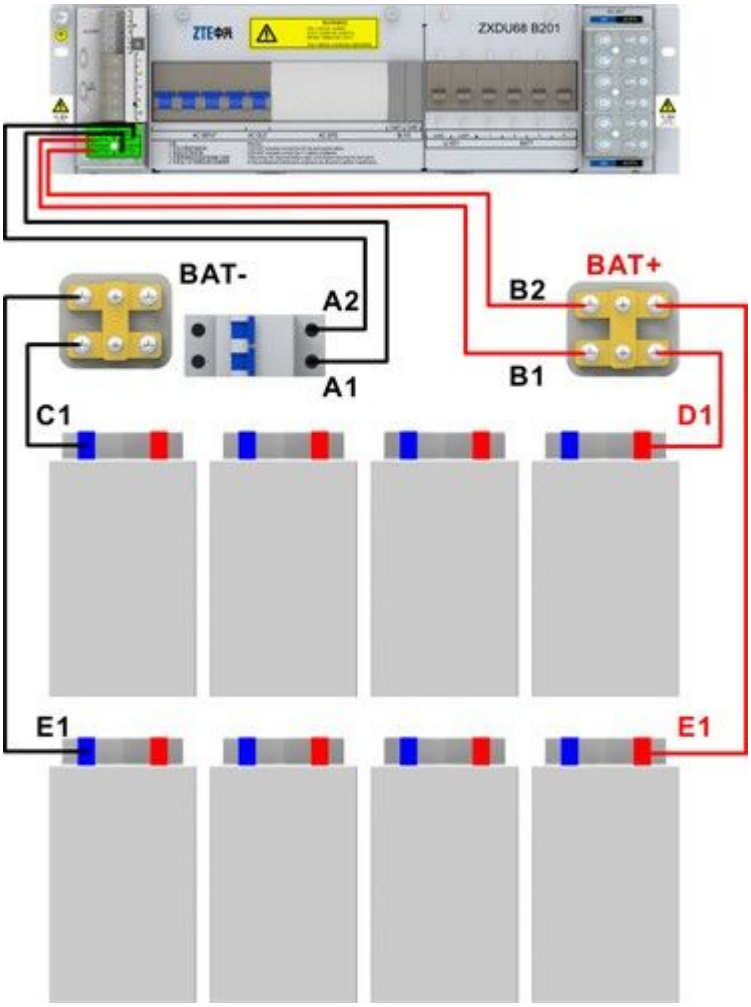
**Danger!**

Ensure that the cabinet is powered off. The cable installation with power on can result in personal injury or even death.

#### Context

For how to connect the power cable of the battery, see Figure 7-21.

**Figure 7-21 Battery Power Cable Connection**



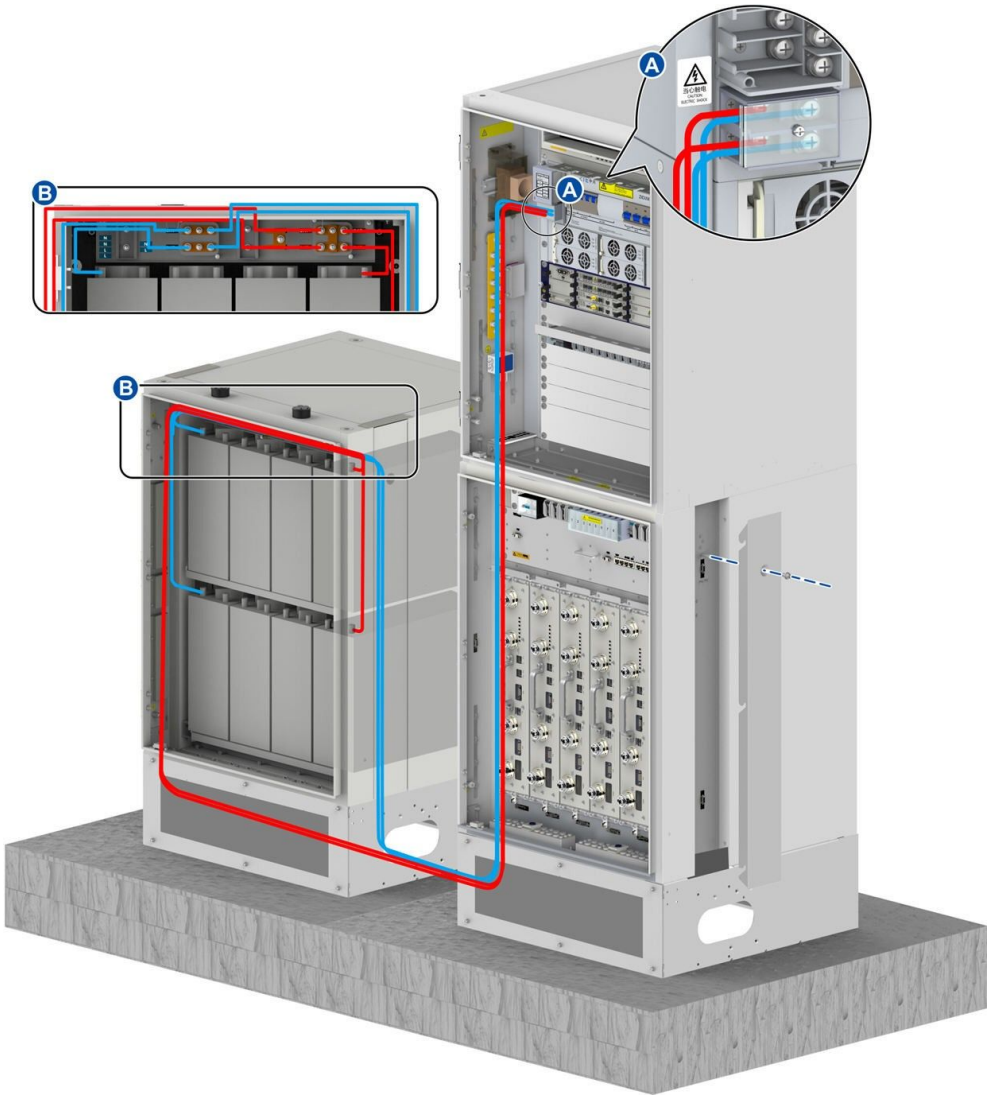

## Prerequisite

- The ESD wrist strap must be worn.
- The tributary output of the power supply is cut off.

## Steps

1. Remove the cover of the terminals on the top of the PC8910A cabinet.
2. Crimp the screw terminals, and then route the cables, see Figure 7-22.

**Figure 7-22 DC Power Cable Routing of the PC8910A Cabinet**




1. -48 V RTN cable (red)
2. -48 V cable (blue)

**Note:**

- When the cable goes through the waterproof module, select a proper hole in accordance with the cable diameter.
- The exposed cables must be protected with corrugated pipes.
- The cable-through holes are protected with waterproof plugs. Remove these plugs before the cables are routed and then reset them.

3. Connect one end of the power cable to the power switch at the top of the PC cabinet. The black cable is connected to the **-48 V** connector (BAT–) on the right side of the power switch, and the red cable is connected to the **-48 V RTN** connector (BAT+).

4. Connect one end of the power cables to the ports of the B121 or B201 PDMs of the BC8910A cabinet.

   For the B121 and B201 PDMs, connect the power cable to the **BATT Input** interface on the left side of the power subrack. Connect the red wire to the –48 V RTN screw terminal, and connect the black wire to the –48 V screw terminal, see Figure 7-22.

5. Bundle the cables reliably and neatly along the side of the cabinet and the cabling aperture on the bottom of the cabinet.

   **– End of Steps –**

## 7.5.4 Installing a Fan Power Cable for the PC8910A Cabinet

This procedure describes how to install the fan power cables for air-ventilated and thermoelectric-cooling PC8910A cabinets.

### Prerequisite

The ESD wrist strap must be worn.

### Steps

- Connecting the fan power cable for the air-ventilated PC8910A cabinet

  1. Connect the fan power cable to the fan power port on the left wall of the PC8910A cabinet, see Figure 7-23.

**Figure 7-23 Connecting the Fan Power Cable**


2. Thread the fan power cable through the cable-through hole at the left bottom of the PC8910A cabinet, and bind the cable along the wall of the PC8910A cabinet. Thread the fan power cable through the base of the RC8910A cabinet, and route the cable along the cable trough on the right of the RC8910A cabinet and the right waterproof module of the BC8910A cabinet to the PDM of the BC8910A cabinet.
3. Connect the fan power cable to the DC output interface of the B121 or B201 PDM.

   For the B121 and B201 PDMs, connect the fan power cable to the DC power output port of the subrack, for example, **Load 3**, see Figure 7-23.

**Note:**

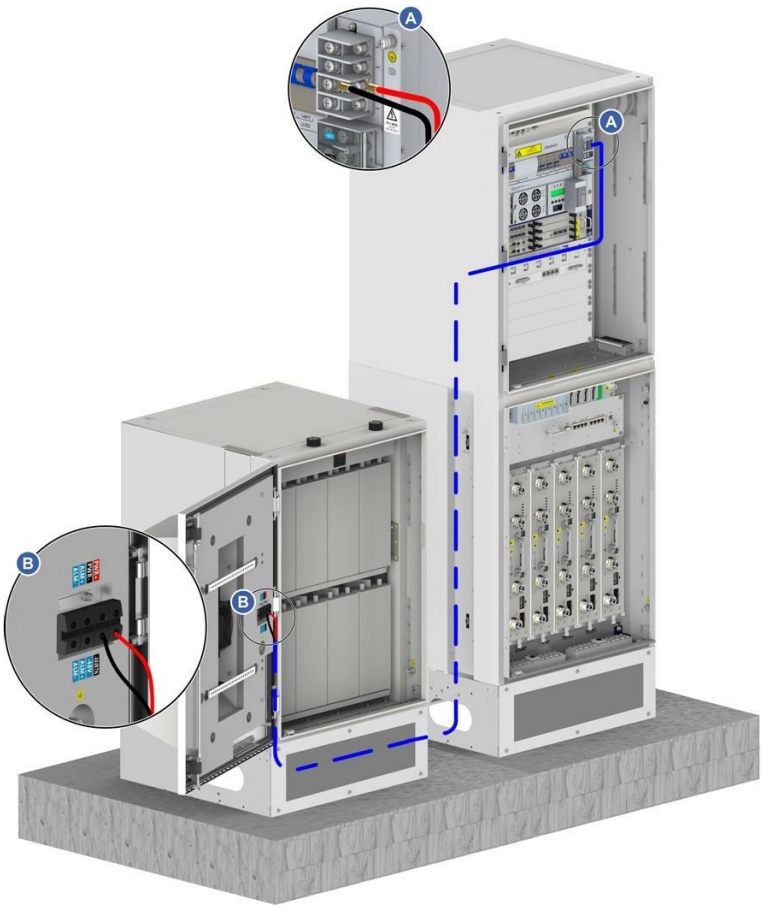
By default, some cables are connected to the power switches of the BC8910A cabinet before delivery. During the onsite installation, ensure that these cables are not loosened when installing other cables.

When a DPCP module is installed but no interfaces are left on the **DC OUT** of the power subrack, the fan power cable of the PC cabinet can be connected to the interface for the fan power cable of the BC cabinet. They share the same **Load** interface. The fan power cable of the BC cabinet is installed before delivery.

- Connecting the fan power cable of the thermoelectric-cooling PC8910A cabinet

1. Figure 7-24 shows the fan power cable connection of thermoelectric-cooling PC8910A cabinet.

**Figure 7-24 Fan Power Cable Connections of the Thermoelectric Cooling battery Cabinet**




2. Connect the power cable to the DC power output terminals of the PDM.

**– End of Steps –**

# 7.5.5 Installing the Power Cable of the Heater (Optional)

The heater is an optional component that can be installed in accordance with the device operation environment.

This procedure describes how to install the power cable of the heaters for the BC8910A cabinet and RC8910A cabinet. The power cable of the heaters in the BC8910A and the RC8910A cabinets are connected to the **AC OUTPUT** ports. The **AC OUTPUT** ports are beside the **AC INTPUT** port.

## Prerequisite

- An ESD wrist strap must be worn.
- The power to the cabinets is off.

## Context

The heater of the BC cabinet is required to be configured when the minimum temperature is lower than -15°C.

AC power is supplied to the heater of the BC cabinet with a power consumption of 100 W. The heater is 3/4U high and installed at the bottom layer of the BC8910 cabinet.

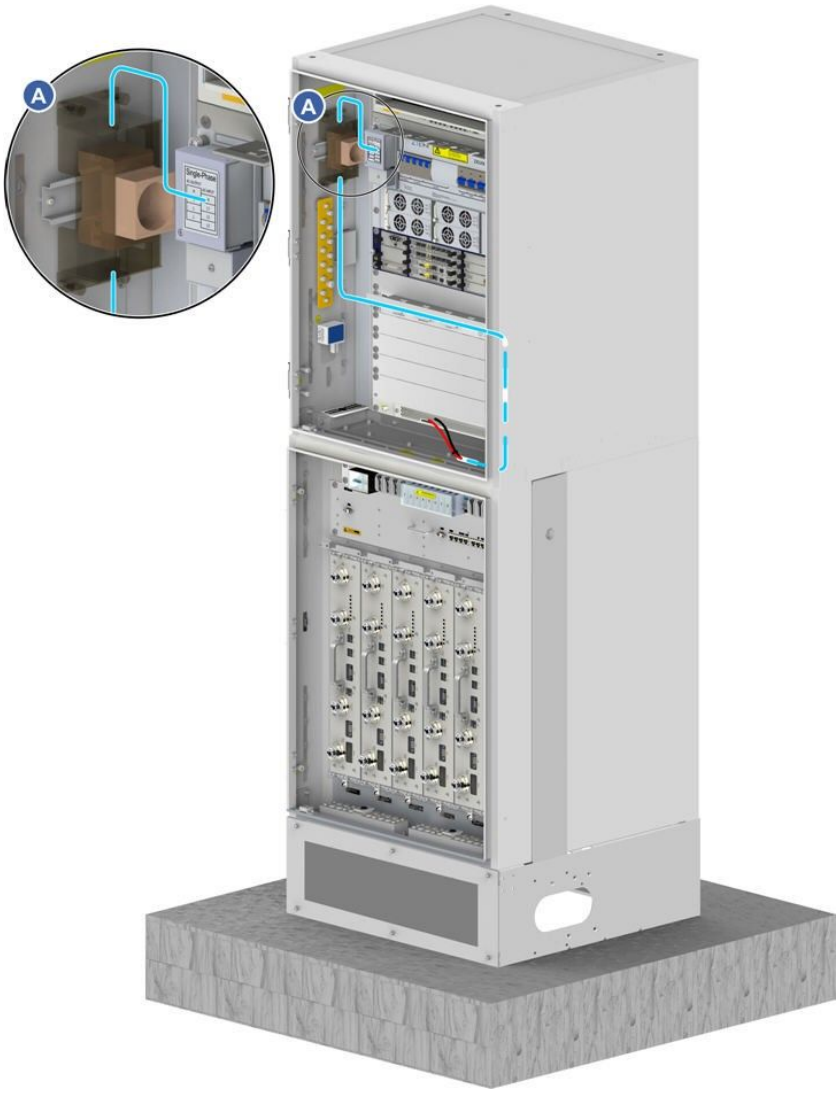
The PC8910A cabinet uses two heating films with a power consumption of 100 W. The heating films are installed below the battery supporting plate by screws.

When the temperature is lower than the specified temperature, the temperature-controlling switch of the heating films is closed, and the heating films start heating. The heat is dissipated naturally to warm up the batteries.

## Steps

- Installing the power cable of the heater in the BC cabinet
  1. Connect the power cable of the heater to the **AC OUTPUT** screw terminal on the left side of the PDM, see Figure 7-25.

**Figure 7-25 Power Cable Routing of the Heater in the BC Cabinet**



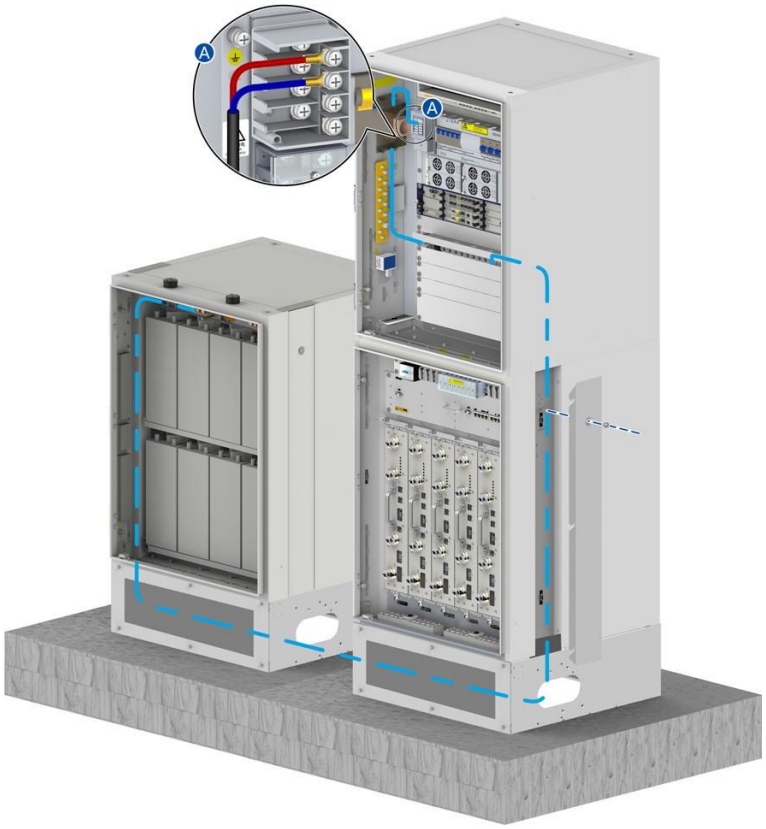

**Note:**

Before powering on the cabinet, verify that there is not short circuit between the **AC OUTPUT** terminal and the cabinet by using a multimeter.

- Installing the power cable of the heater in the PC cabinet

  1. Thread the power cable of the heater through the left waterproof module of the PC cabinet, route the cable in to the BC cabinet through the cabinet base, and connect the cable to the **AC OUTPUT** screw terminal on the left side of the PDM, see Figure 7-26.

**Figure 7-26 Power Cable Routing of the Heater in the PC Cabinet**




**– End of Steps –**

# 7.5.6 Installing the Power Cable for a Remote RRU (Optional)

If remote RRUs are connected, the ZXSDR BS8900A needs to power the RRUs. This procedure describes how to connect the power cable from the ZXSDR BS8900A to a remote RRU.

If RRUs are connected, the DCPD6/DCPD7 modules are configured in the baseband cabinet. The DCPD module provides power for RRUs.

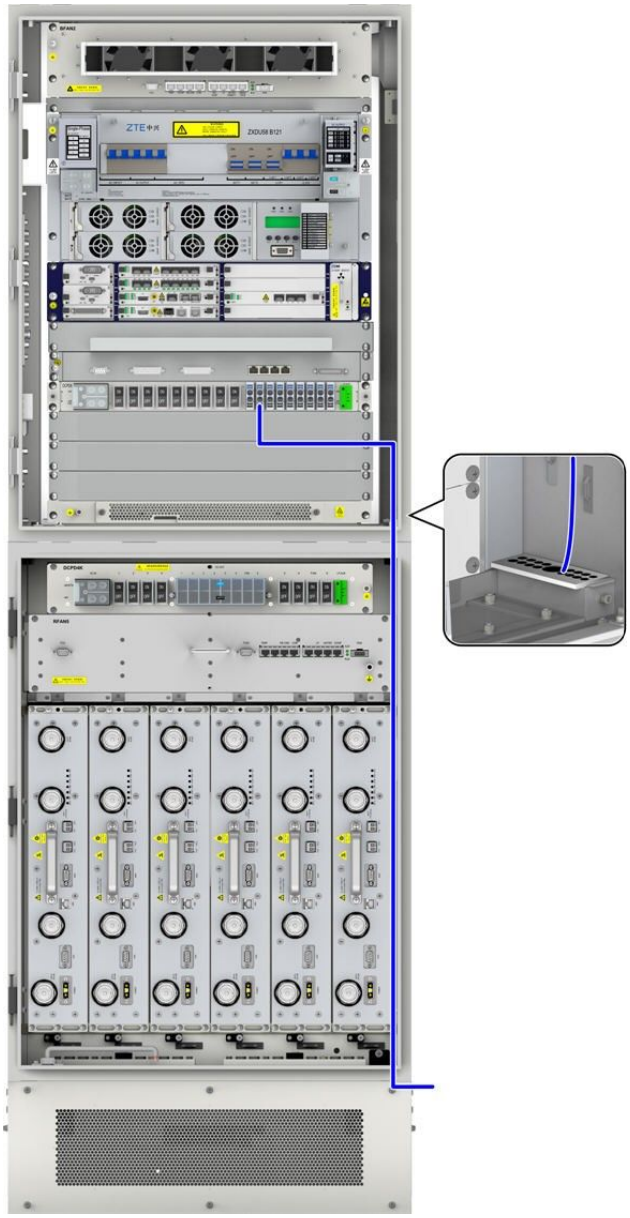
## Prerequisite

- An ESD wrist strap must be worn.
- The power to the cabinets is off.

## Steps

1. Lay out the power cable along the right-side cable tray of the RF cabinet, through the waterproof module on the right side of the baseband cabinet, and to the output end of the power module, see Figure 7-27.

**Figure 7-27 RRU Power Cable Connections**



2. Fabricate the connector of the power cable on the DCPD side with a pair of crimp pliers, and connect the connector to the DC output interface of the DCPD.
3. Fabricate the connector of the power cable on the RRU side, and connect the connector to the power interface of the RRU.

**– End of Steps –**

# 7.6 Transmission Cable Installation

The ZXSDR BS8900A uses either optical fibers or Ether cables as transmission cables. Transmission cables are determined based on particular situations.

# 7.6.1 Installing Transmission Fibers (Optional)

This procedure describes how to install the optical fibers connecting the BC8910A cabinet to transmission devices..

The transmission fibers of a base station transmit S1-/X2-interface signals.

### Prerequisite

The ESD wrist strap must be worn.

### Context

The following requirements must be met when you install optical fibers:

- Do not damage the optical fiber cladding during operations.
- Protect optical fiber connectors and avoid contaminating them.
- Do not forcibly bundle optical fibers.
- Curve optical fibers at the turning.

The following requirements must be met when you bind the cables:

- The cables must be bound in order. The cables of the same category must be adjoined closely.
- To bend the bound cables, the cable clips should be tied at two sides of the corner to avoid wire breaks.

### Steps

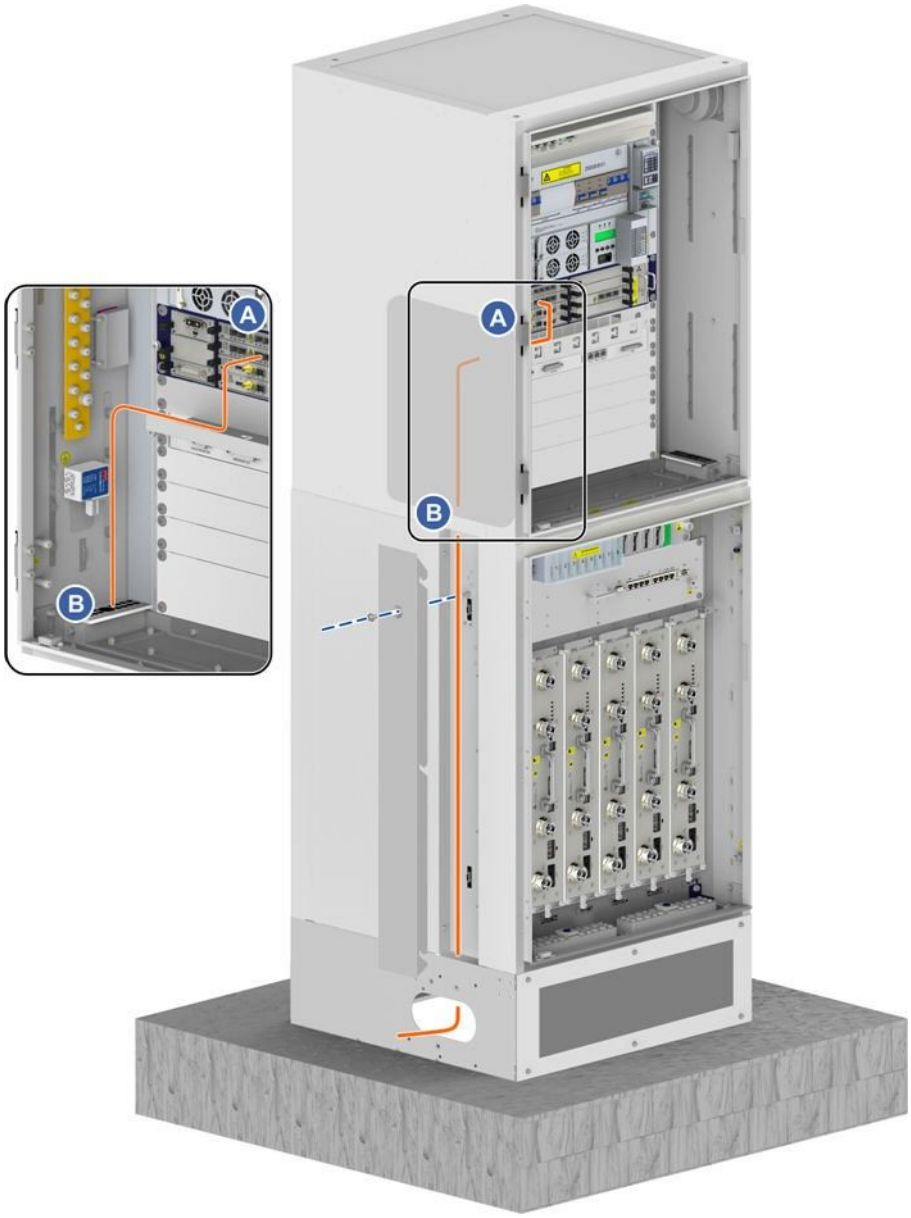
1. Paste temporary labels.

   Paste temporary labels at both ends of the new optical fiber to set up a mapping. If more than one optical fiber needs to be installed, use different labels to distinguish the optical fibers.

2. Lay out optical fibers.

   One ends of the optical fibers are connected to the external transmission device. The other ends of the optical fibers are threaded through the cabinet base, and routed along the left cable trough of the RC8910A cabinet and along the left waterproof module of the BC8910A cabinet to the optical interface **TX/RX** on the BBU CC board in the BC8910A cabinet. For the routing of the optical fibers, see Figure 7-28.

**Figure 7-28 Optical Fiber Routing**




3. Insert optical fiber connectors to the corresponding **TX/RX** interfaces in accordance with the labels on the optical fibers..

**Caution!**

Insert optical fiber connectors tightly.

4. Bundle the optical fibers.

   Bundle and secure optical fibers along the routing troughs, which complies with relevant regulations about optical fiber binding.

5. Paste an engineering label on an optical fiber.
   Remove the temporary label for the optical fiber and paste an engineering label.

**Caution!**

Protect an optical fiber with the winding tube when routing the optical fiber inside the cabinet. Protect an optical fiber with the corrugated pipe when routing the optical fiber outside the cabinet.

**– End of Steps –**

## 7.6.2 Installing Ethernet Cables (Optional)

This procedure describes how to connect the Ethernet cable from the baseband cabinet to transmission devices.

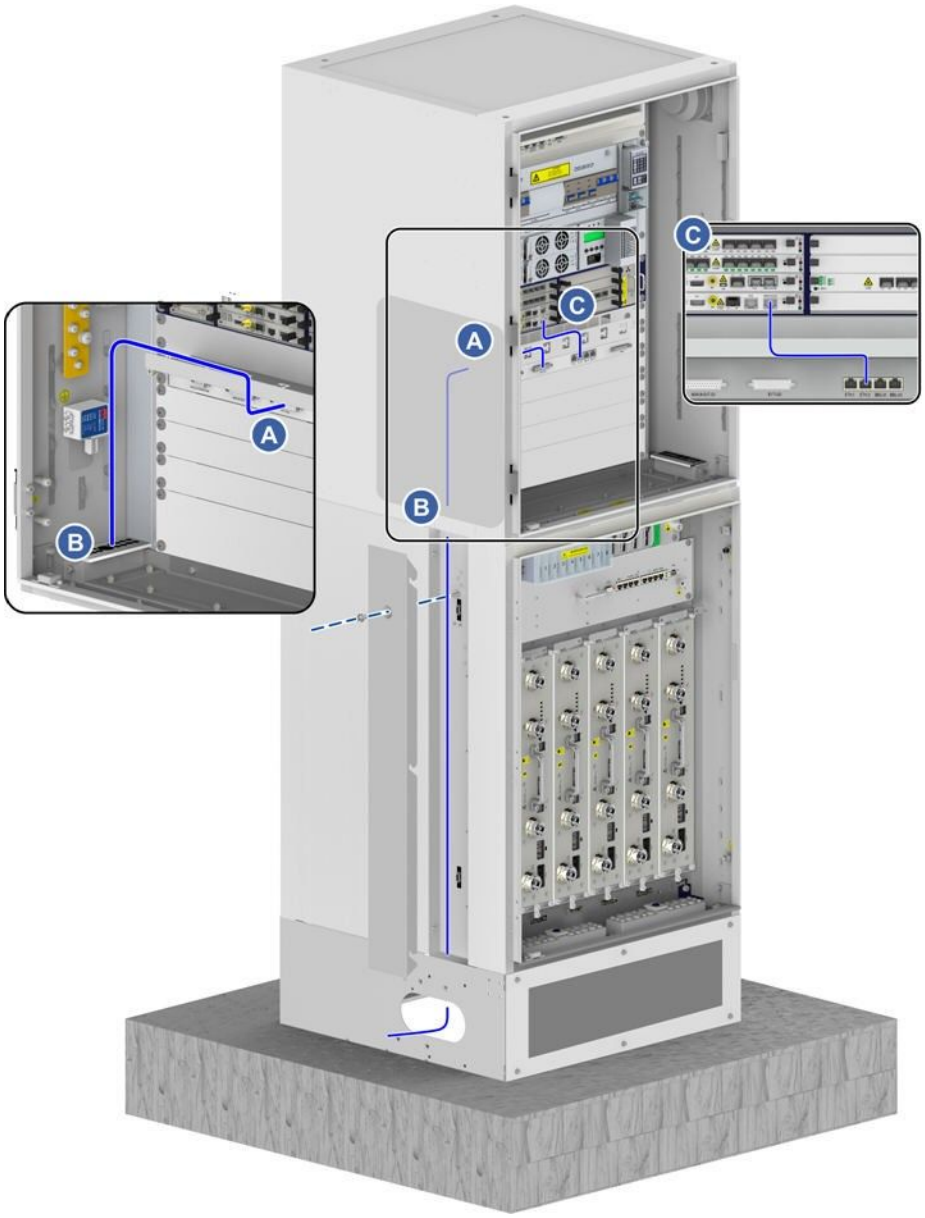
### Prerequisite

The ESD wrist strap must be worn.

### Steps

1. Lead one end of the Ethernet cable through the cable hole.
2. Thread the Ethernet cable through the base of the floor-mounting cabinet (PC8910A or RC8910A), route the cable along the left cable trough of the RC8910A cabinet, thread the cable through the waterproof module at the left bottom of the BC8910A cabinet into the BC8910A cabinet, and then connect the cable to the **ETH_0** or **ETH_1** interface of the LPU, see Figure 7-29.

**Figure 7-29 Ethernet Cable Routing**




**Note:**

The Ethernet cable between the LPU and the **ETH** interface of the CC board is installed before delivery. During the onsite installation, ensure that the both ends of the Ethernet cable are connected securely.

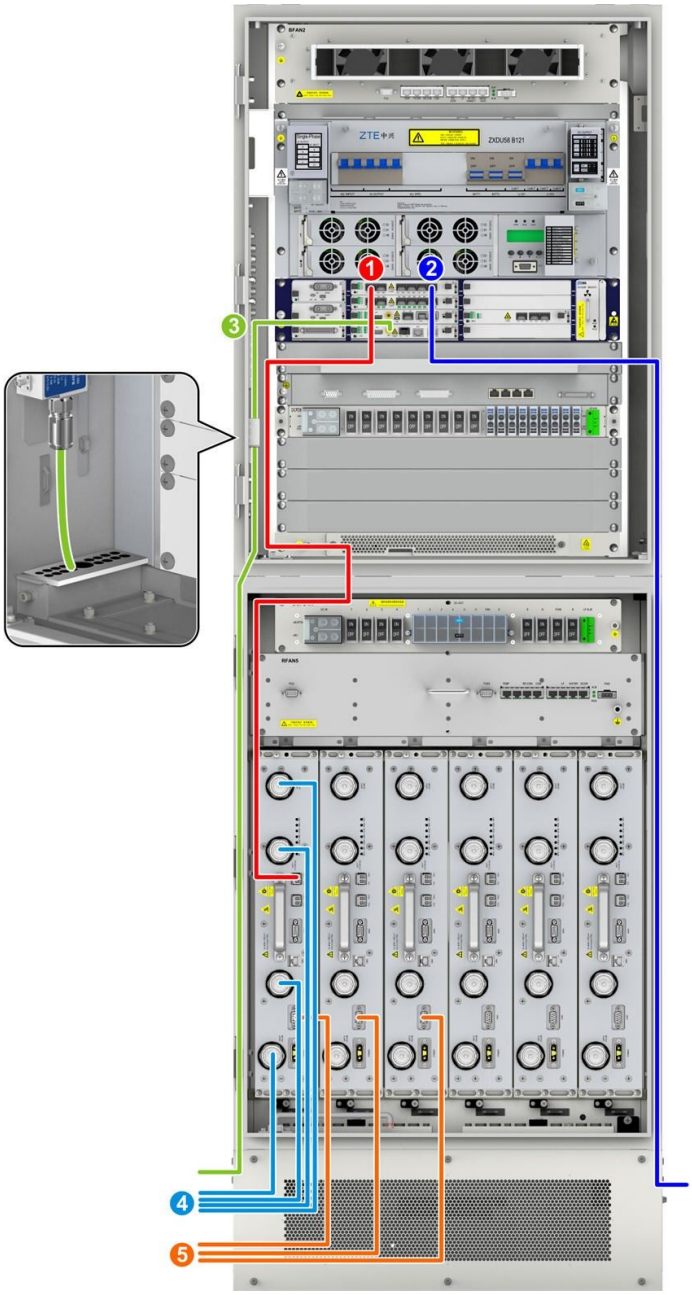
3. Connect the other end of the Ethernet cable to a proper interface of the switch.
4. Bundle the Ethernet cable and paste an engineering label to the Ethernet cable.

**– End of Steps –**

# 7.7 Signal Cable Installation

For the signal cables of the ZXSDR BS8900A, see Figure 7-30.

**Figure 7-30 Signal Cables of the ZXSDR BS8900A**



1. SFP cable
2. Outdoor fiber
3. GPS cable
4. Antenna feeder
5. AISG cable

## 7.7.1 Installing an Interconnected Cable Between BBU and RSU

This procedure describes how to install SFP cables.

In the ZXSDR BS8900A system, optical fibers or SFP cables can be used to connect the BBU and RSU. During the stacked installation of the ZXSDR BS8900A, a 2 m SFP high-speed cable is recommended for interconnecting the BBU and RSU.

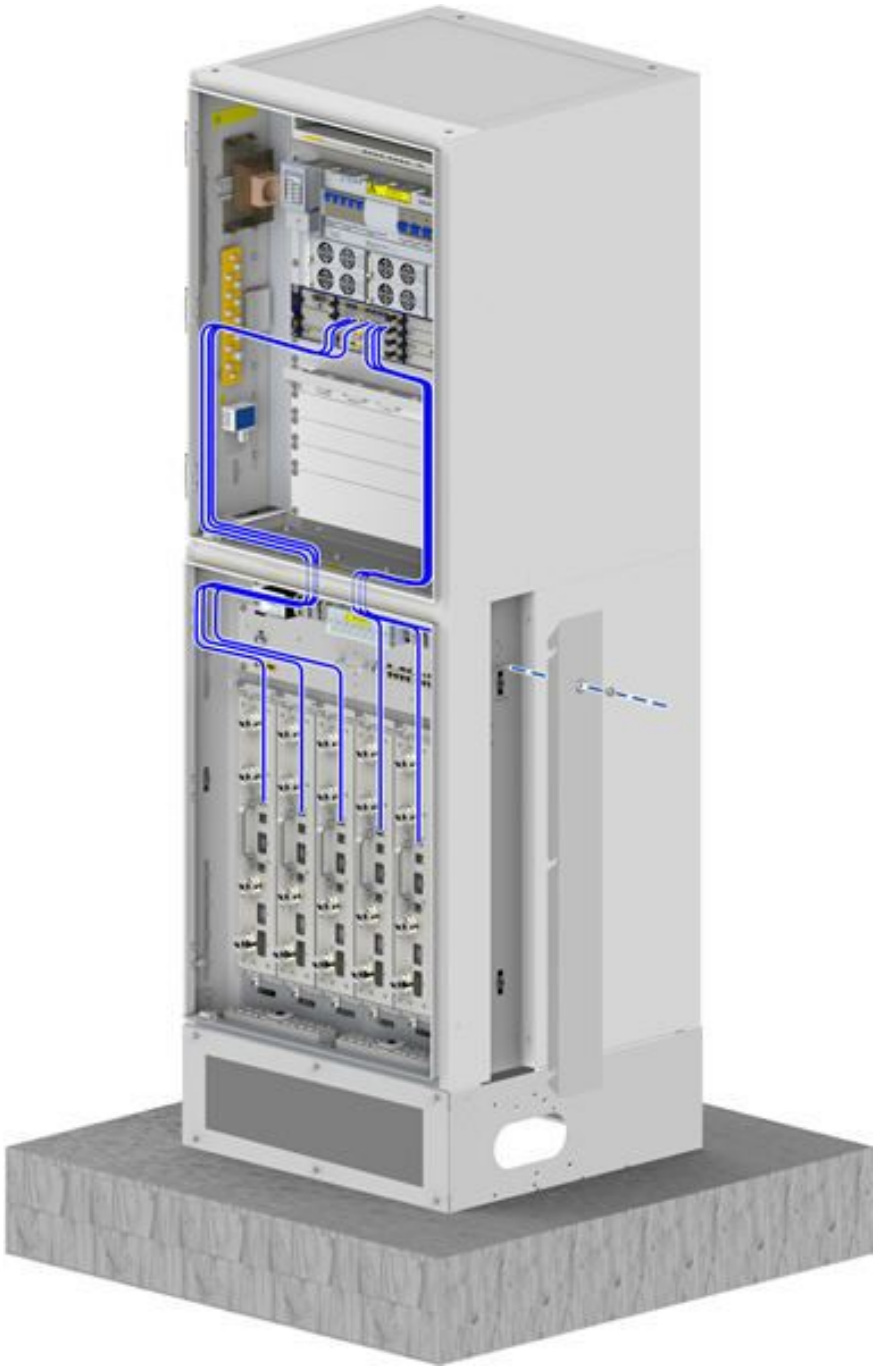
### Prerequisite

The ESD wrist strap must be worn.

### Steps

1. Paste temporary labels at both ends of the SFR cable, and mark 0-5 to set up one-to-one mapping with interfaces TX0RX0 to TX5RX5 of BBU and six TX/RX interfaces of RSU.
2. Insert one end of the SFP cable to a TX/RX interface of RSU.
3. Route the SFP cable along the routing trough and cabinet sides to the FS module of BBU. The SFP cables connecting to the RSUs in slots 1 to 3 on the RC8910A cabinet go through the left cable-through holes and those SFP cables go through the right apertures if connecting to slots 4 to 6 on the RC8910A cabinet, see Figure 7-31.

**Figure 7-31 SFP Cable Layout**



4. Insert SFP cables into the interfaces TX0RX0 to TX5RX5 of the BBU FS board in accordance with the markings 0–5.
5. Bundle the SFP cables.
6. Remove the temporary labels and paste engineering labels.

**– End of Steps –**

# 7.7.2 Installing Outdoor Fibers (Optional)

This procedure describes how to connect the optical fiber between the baseband cabinet and the remote RRU. When the ZXSDR BS8900A connects RRUs, outdoor fibers need to be installed.

If the baseband cabinet and RF cabinet are installed in parallel or the distance between the cabinets is long, outdoor fibers are required to connect the BBU and RSU.

### Prerequisite

The ESD wrist strap must be worn.

### Steps

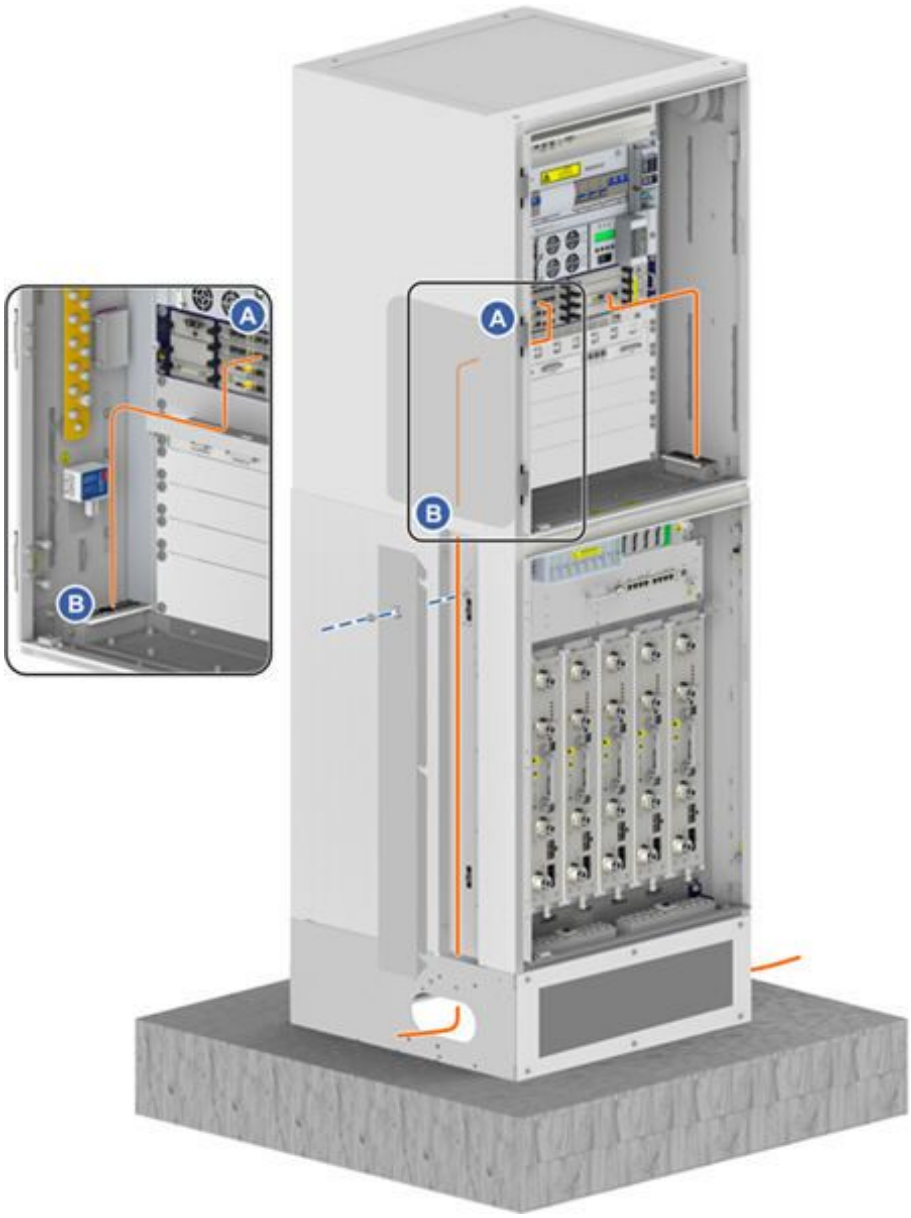
1. Paste temporary labels.

   Paste corresponding temporary labels at both ends of the optical fiber. If there are more than one optical fiber to be installed, the labels must be different.

2. Lay out the optical fiber.

   Route the outdoor fiber through the base, along the left or right cable tray of the lower cabinet, through the waterproof module of the baseband cabinet, and to near the TX/RX interface of the BPL/FS board in the BBU. For the cable route, see Figure 7-32.

**Figure 7-32 Routing Outdoor Fibers**




3. Insert the fiber connector into the optical module of the BPL/FS board.
4. Bundle the optical fiber.

   The optical fiber must be bundled along the cable tray at the side of the cabinet. You must follow the specifications when bundling the optical fiber.
5. Paste engineering labels on the optical fiber.
   Remove the temporary labels and paste engineering labels on the optical fiber.

**Caution!**

Protect an optical fiber with the winding tube when routing the optical fiber inside the cabinet. Protect an optical fiber with the corrugated pipe when routing the optical fiber outside the cabinet.

**– End of Steps –**

## 7.7.3 Installing the GPS Feeder

This procedure describes how to connect the GPS antenna to the GPS lightning arrester by using a GPS feeder.

The GPS jumper wire connecting the GPS lightning arrester to the BBU is installed before delivery. You need to connect the GPS antenna to the GPS lightning arrester in the BC8910A cabinet.

### Prerequisite

The ESD wrist strap must be worn.

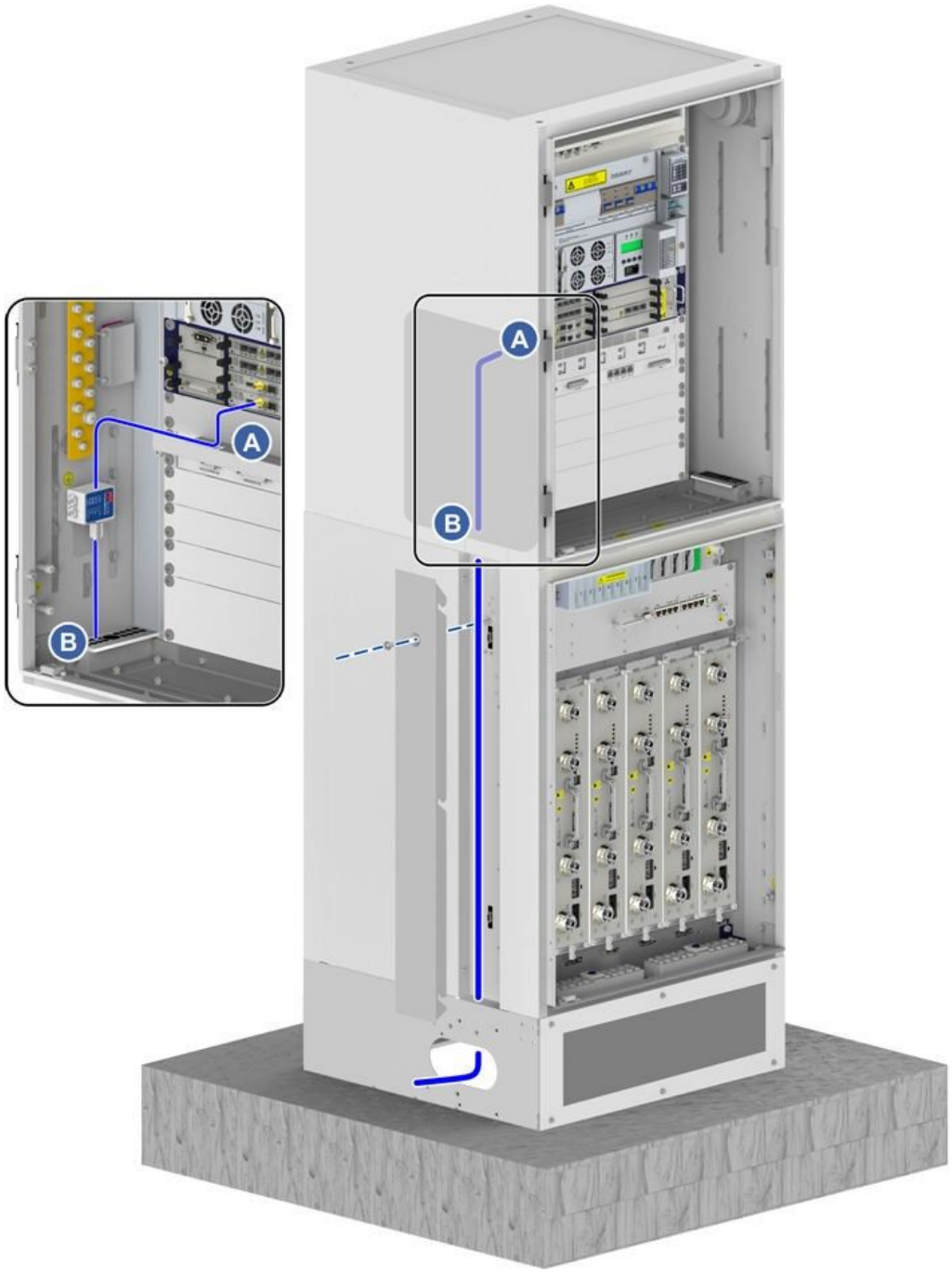
### Context

On the GPS lightning arrester, prepare the connector for connecting the GPS feeder and the N-type interface of the lightning arrester before the GPS feeder is connected.

### Steps

1. Route the GPS feeder cable along the left cable trough of the RF cabinet and through the waterproof module at the left bottom of the RF cabinet, and then connect the cable to the GPS lightning arrester, see Figure 7-33.

**Figure 7-33 Routing the GPS Feeder Cable**




**Note:**

A proper aperture must be selected by cable diameter for leading the GPS feeder through the waterproof module.

2. Connect the GPS feeder cable to the N-type port on the GPS lightning arrester, and tighten the connector.

   The GPS feeder between the GPS lightning arrester and the **REF** interface of the CC board in the BBU is installed before delivery. You must ensure that the cable is connected securely.

3. Connect the other end of the GPS feeder to the GPS antenna.

**Note:**

If the GPS antenna is installed at the top of the ZXSDR BS8900A cabinet, you route the GPS feeder along the edge of the cabinet and bundle the cable to the cable tray. For details, refer to Chapter 6 Installing the GPS Antenna (Optional).

**– End of Steps –**

## 7.7.4 Installing Antenna Feeder Jumpers

This procedure describes how to install the antenna feeder jumper wires.

### Prerequisite

The ESD wrist strap must be worn.

### Context

The RC8910A cabinet supports six RSUs in full configuration. Among them, three 1T2R RSUs are installed in slots 1 to 3 and the other three 2T4R RSUs in slots 4 to 6.

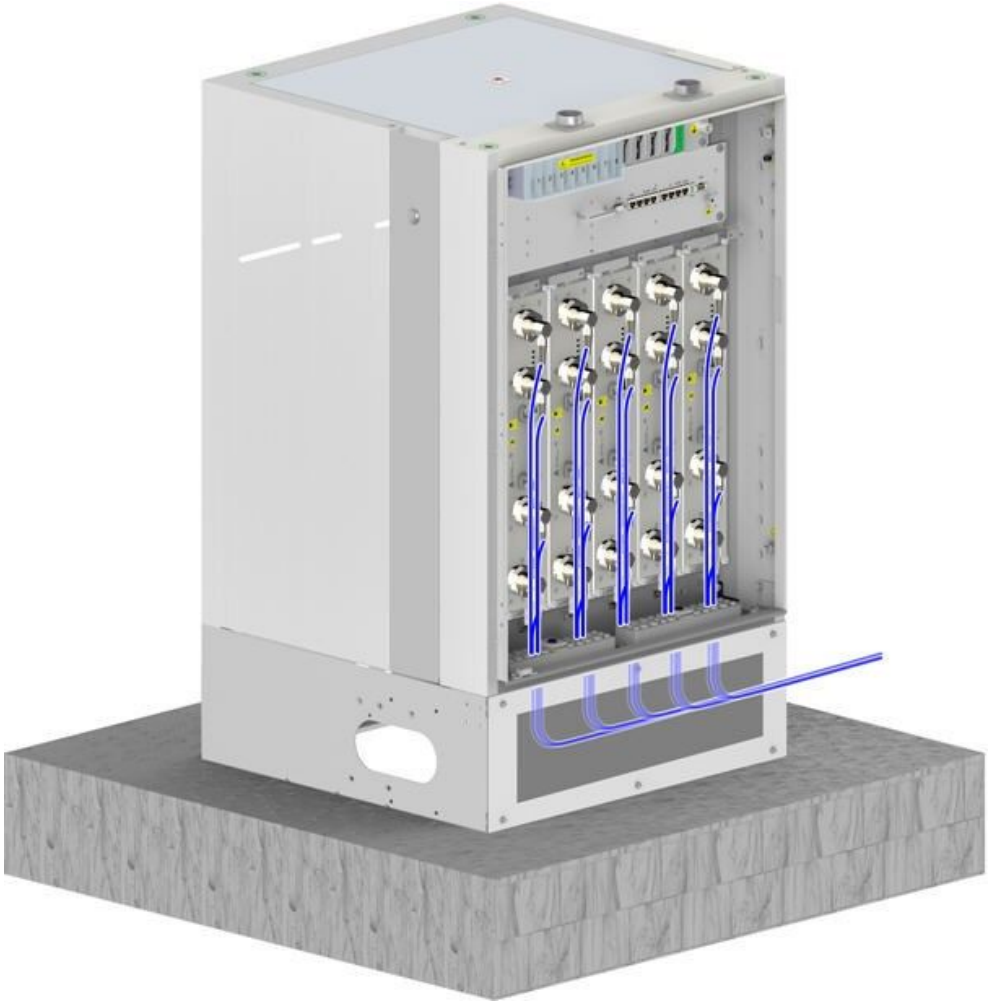
- The antenna feeder jumpers for the three 1T2R RSUs go through the waterproof module on the left.
- The antenna feeder jumpers for the three 2T4R RSUs go through the waterproof module on the right.

Remove the front baffle of the base before the RC8910A jumpers are installed and reset the front baffle after all jumpers are installed.

### Steps

1. Route the antenna feeder jumper through the cable-through and waterproof module at the bottom of the RF cabinet to the ANT interface of the RSU, see Figure 7-34.

**Figure 7-34 RF Jumper Layout**



2. Connect the antenna feeder jumpers to ANT1 to ANT4 interfaces of the RSU from right to left.

   If only 1T2R RSU is used, connect the antenna feeder jumpers to the ANT1 (TX1/RX1A) interface and ANT2 (RX1B) interface (high-carrier interface).

3. Wear the waterproof rubber plug after every two antenna feeder jumpers are installed.
4. Insert the horizontal and longitudinal slide blocks and use the hexagon ring wrench to fasten them.

**Caution!**

Clamp the waterproof rubber plug tightly and ensure that the unused cable-through holes wear the plug.

5. The antenna feeder jumpers go out from the base. The cables between the cabinets must be protected with protective tubes, without any exposed part of the cables and the openings at two ends of these cables must be sealed.
6. Connect the other end of the antenna feeder jumper to the antenna feeder.
7. Repeat the preceding steps to install other RSU-related jumpers.

**– End of Steps –**

## 7.7.5 Installing the AISG Cable (Optional)

An AISG cable between the RF module and an RET antenna is used to transmit the signals to or from the RET antenna.

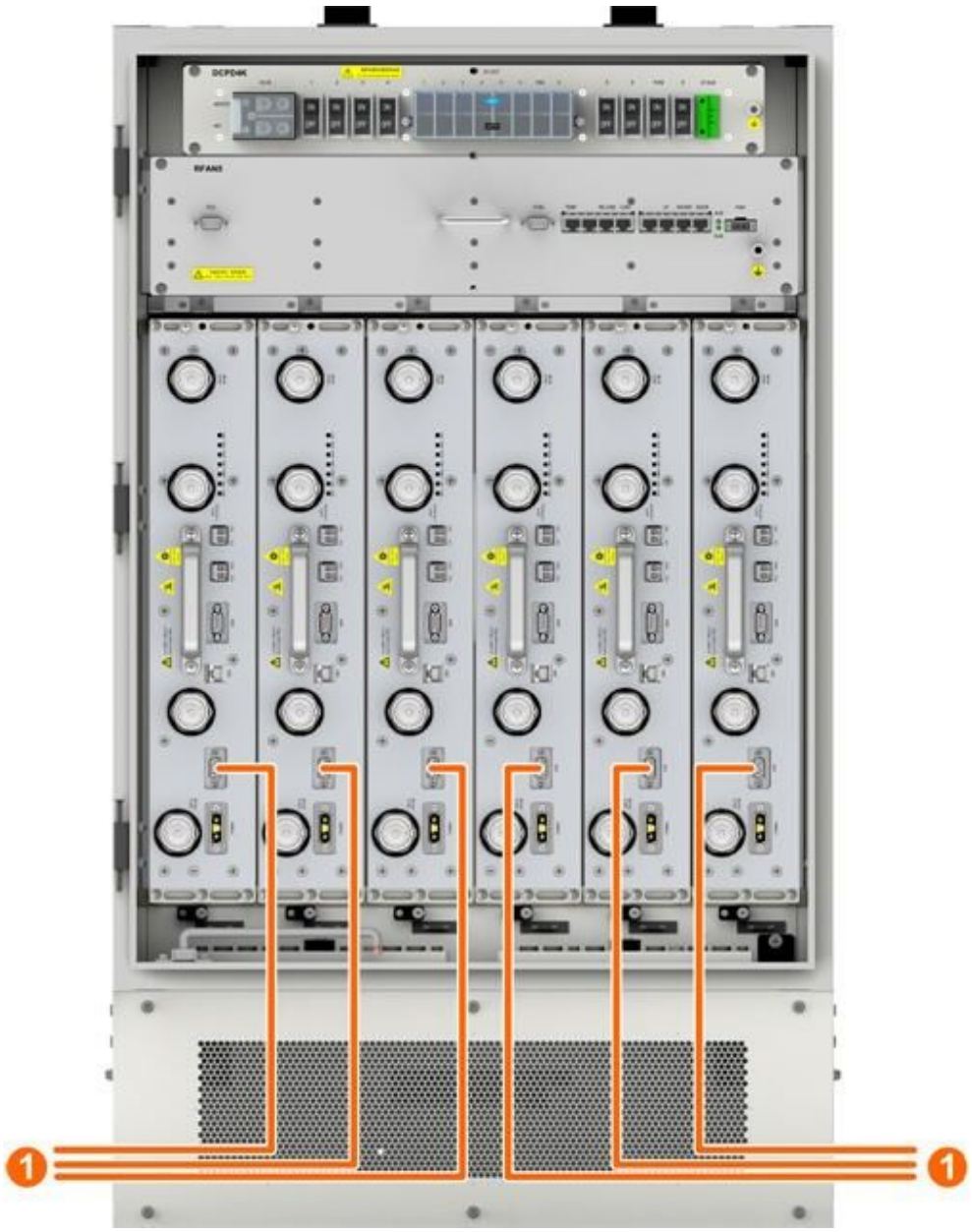
### Prerequisite

The ESD wrist strap must be worn.

### Steps

1. Route the AISG cable outward the cabinet through the waterproof module at the bottom of the cabinet to near the AISG interface of the RET antenna, see Figure 7-35.

**Figure 7-35 Routing the AISG Cable**




1. AISG cable

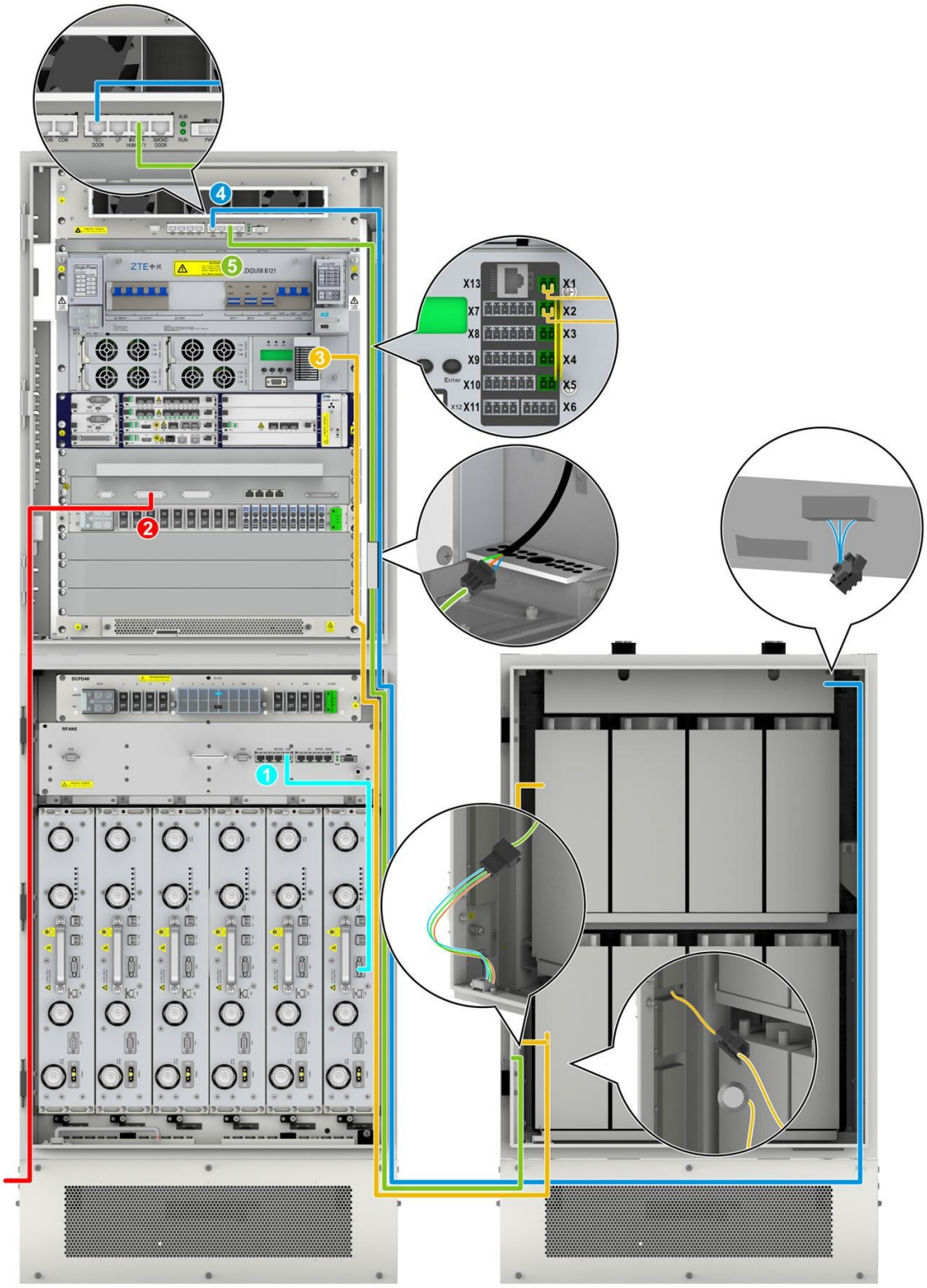
2. Connect one end of the AISG cable to the RSU, and connect the other end of the AISG cable to the AISG interface to the RET antenna.

**– End of Steps –**

# 7.8 Monitoring Cable Installation

Figure 7-36 shows the monitoring cable routing of the ZXSDR BS8900A.

**Figure 7-36 ZXSDR BS8900A Monitoring Cable Routing**




1. RSU monitoring cable
2. External dry contact cable of the baseband subrack
3. Battery temperature monitoring cable of the PC8910A cabinet
4. Door access monitoring cable of the PC8910A cabinet
5. Water level monitoring cable of the PC8910A cabinet

# 7.8.1 Installing the RSU Monitoring Cable

This procedure describes how to connect the RSU monitoring cable.

If multiple RSU modules need to be monitored, the RSU monitoring cable can be connected to any of them.

### Prerequisite

The ESD wrist strap must be worn.

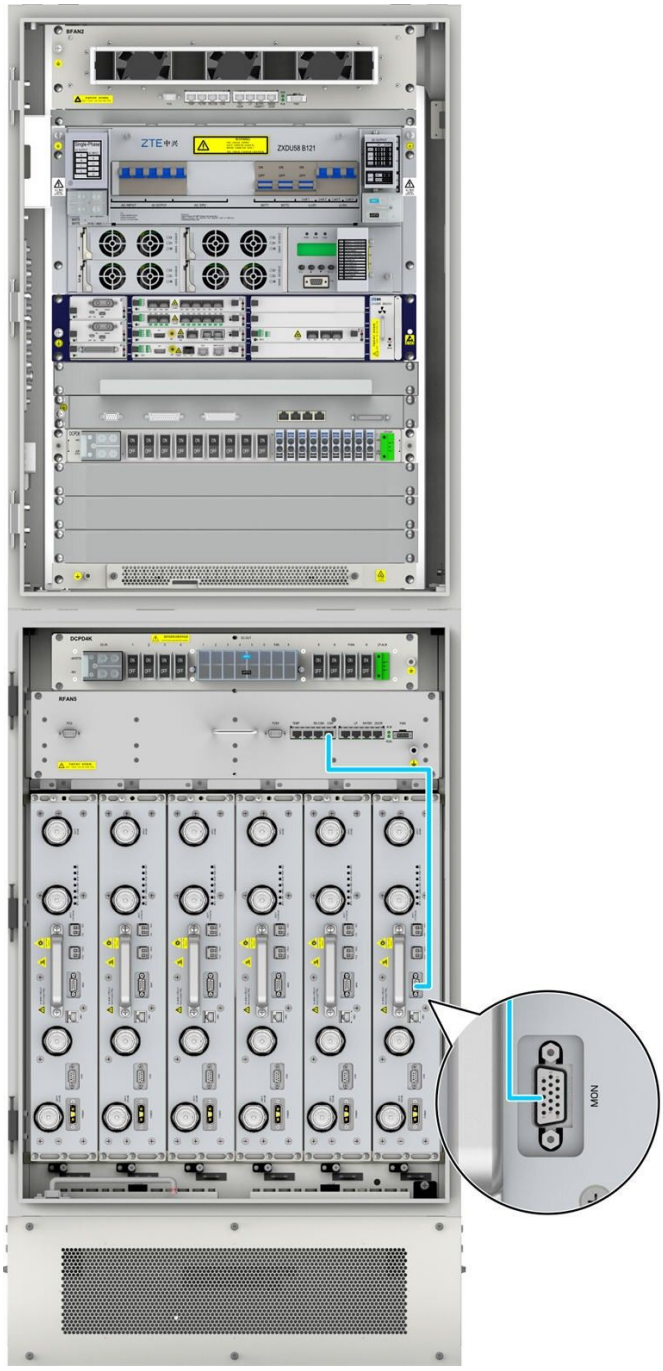
### Context

The RSU monitoring cable of the RC8910A cabinet is routed to the right side of the RC8910A cabinet before delivery. After the RSU module is installed, you need to insert the terminal of the RSU monitoring cable to the MON (monitoring) interface of the RSU module.

### Steps

1. Connect one end of the RSU monitoring cable to the MON (monitoring) interface of the RSU module and tighten the screws, see Figure 7-37.

**Figure 7-37 RSU Monitoring Cable Routing**




The other end of the RSU monitoring cable is connected to the **COM** port of the fan subrack. This end is connected before delivery.

2. Bundle the RSU monitoring cable.

**– End of Steps –**

## 7.8.2 Installing Dry-Contact Cables Externally Provided by the Baseband Cabinet

This procedure describes how to connect the dry contact monitoring cable from the external monitoring device to the BBU.

The day-contact input and output cable uses a balanced twisted-pair cable, connecting the ZXSDR BS8900A and the external monitoring system. This cable inputs dry-contact signals from external devices or outputs dry-contact signals of this device.

If the ZXSDR BS8900A is connected to external monitoring devices through dry-contact cables, an LPU subrack must be installed. The external dry-contact signals must go through the LPU first, and then to the BBU. Furthermore, RS232 and RS485 monitoring cables are also connected to the LPU. The external dry-contact signals, RS232 monitoring signals, and RS485 monitoring signals are transmitted to the BBU through the LPU and the SA cable between the LPU and BBU.

**Note:**

- The RS232 cable and RS485 cable of the ZXSDR BS8900A are connected to the power subrack and fan subrack of the baseband cabinet. No RS232/RS485 interface is left for external devices.
- The SA monitoring cable between the LPU and BBU is installed before delivery.

### Prerequisite

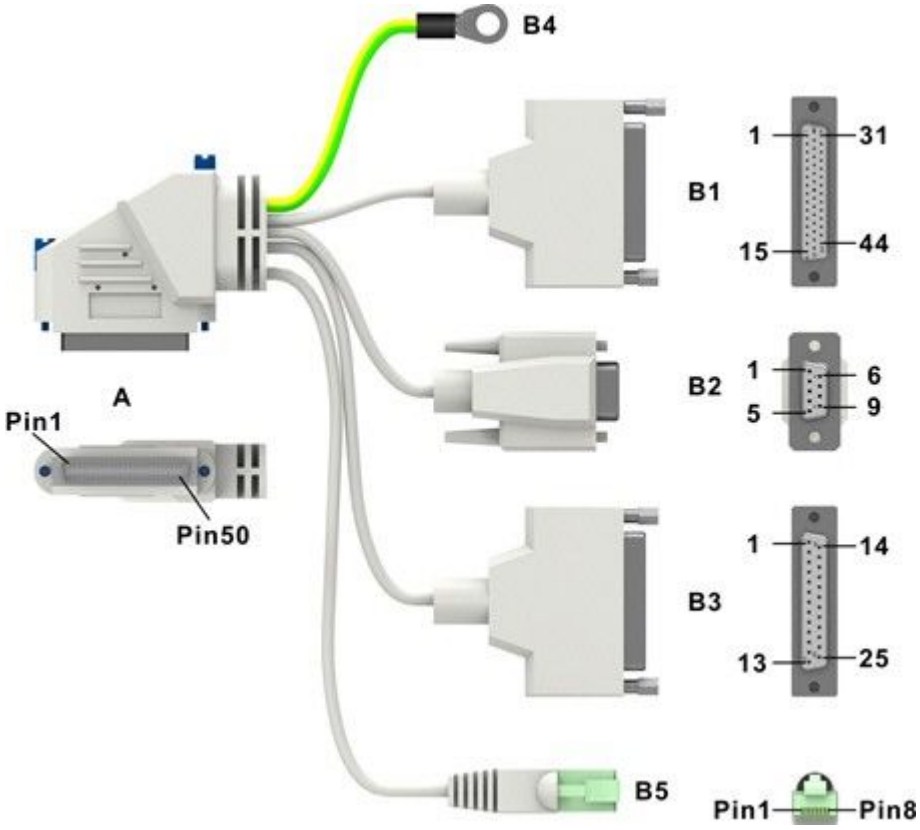
- The ESD wrist strap must be worn.
- Relevant monitoring equipment is installed.

### Context

If the ZXSDR BS8900A does not need dry-contact/FE lightning protection, that is; external dry-contact cables are not connected and the S1 interface is not an electrical interface, no LPU subrack is required.

The RS232 and RS485 monitoring cables are directly connected to the corresponding interface of the SA board. For an overview of the SA monitoring cable, see Figure 7-38.

**Figure 7-38 SA Monitoring Cable**

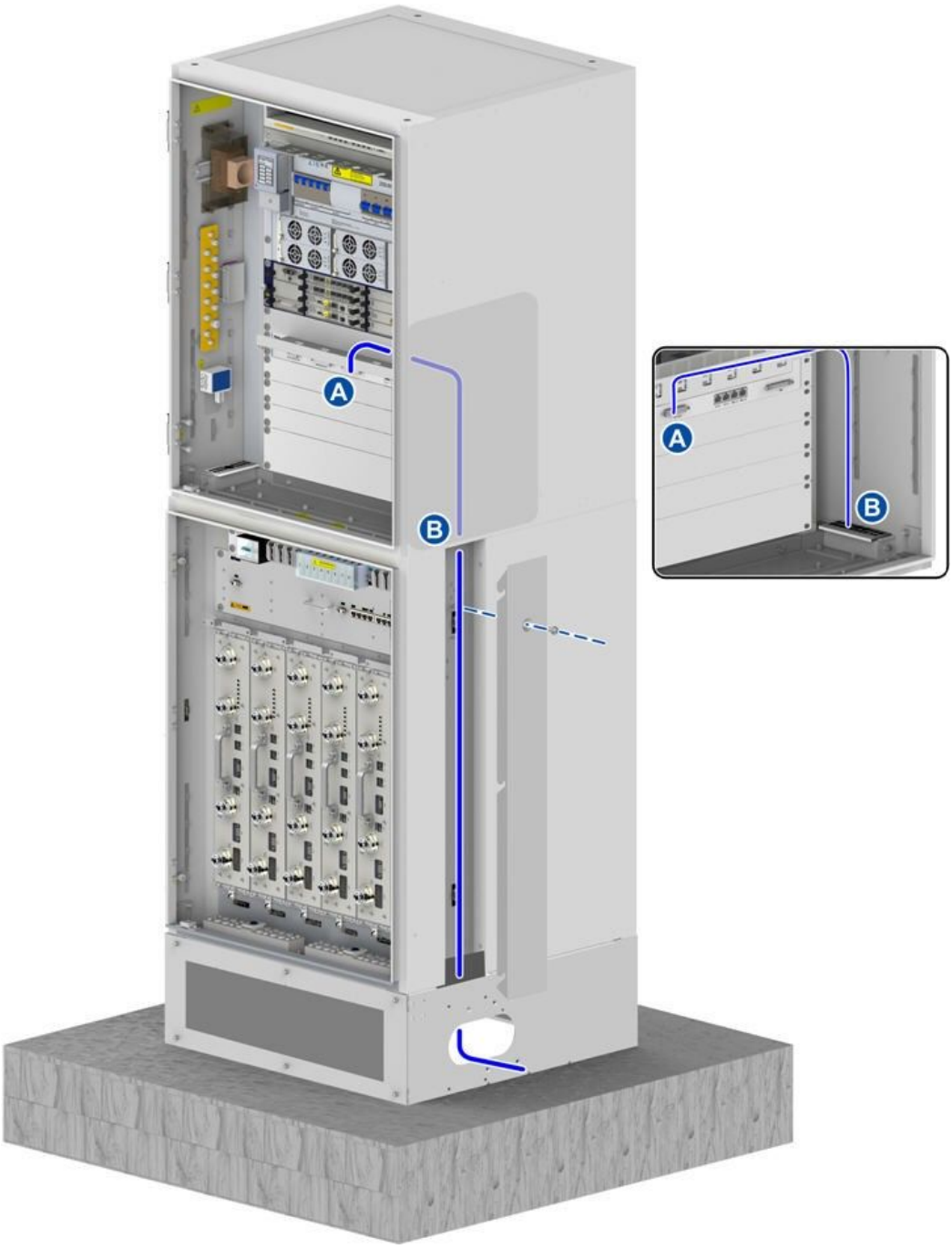



1. End A is for connection to the SA board.
2. End B1 is for connection to an E1/T1 cable (this interface is not used for LTE)
3. End B2 is for connection to an RS232 cable.
4. End B3 is for connection to a dry-contact cable.
5. End B4 is for connection to the grounding point of the BBU.
6. End B5 is for connection to an RS485 cable.

## Steps

1. Paste labels in accordance with the terminals and wire sequence of the dry contact cable.
2. Route the dry contact cable from the external monitoring device to the right cable trough of the RC8910A cabinet through the base, thread the cable through the waterproof module at the right bottom of the BC8910A cabinet into the BC8910A cabinet, and then to the **MON_IN/OUT_GO** port of the LPU. For the routing of the external MON cable, see Figure 7-39.

**Figure 7-39 External MON Cable Routing**




3. Connect the cable to the **MON_IN/OUT_GO** port of the LPU.

**Note:**

The following three cables connecting the LPU and devices in the baseband cabinet are installed before delivery. You must ensure that the cables are connected securely.

- SA monitoring cable from the **BBU** interface of the LPU to the SA board in the BBU
- RS232 cable from the **RS232/RS485_EM** interface of the LPU to the DB9 interface at the lower right of the power subrack of the baseband cabinet
- RS485 cable from the **RS232/RS485_EM** interface of the LPU to the **COM** interface of the fan subrack of the baseband cabinet

4. Connect end B of the dry contact cable to the monitoring device in accordance with the wire sequence.

**– End of Steps –**

## 7.8.3 Connecting a Battery Temperature Monitoring Cable for the PC8910A Cabinet

This procedure describes how to connect the battery temperature monitoring cable for the B121 PDM. The temperature monitoring cables connections of the B201 is similar to that of the B121 PDM.

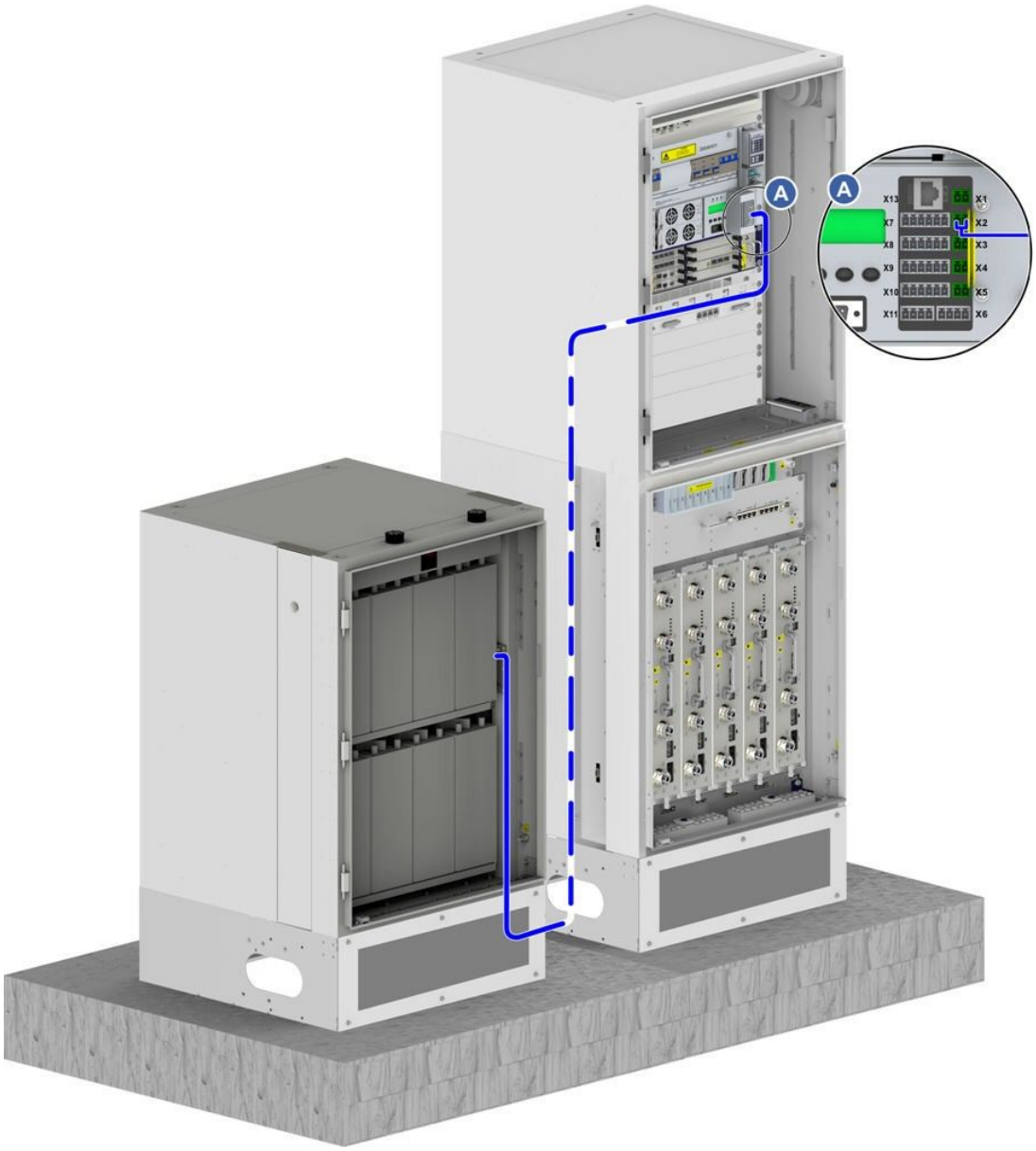
### Prerequisite

The ESD wrist strap must be worn.

### Steps

1. Route one end of the battery temperature monitoring cable to the monitoring unit of the B121 PDM of the BC8910A cabinet. Thread the cable through the left bottom waterproof module of the BC8910A cabinet and the left cable trough of the RC8910A cabinet, and then route the cable in to the PC8910A cabinet through the base, see Figure 7-40.

**Figure 7-40 PC8910A Battery Temperature Monitoring Cable Routing**




**Note:**

- The cable-through hole caps should be kept at original positions.
- The cable outside the cabinet should be harnesses with cable sheaths.

2. Remove the temperature probe paper on the battery temperature monitoring cable of the PC8910A cabinet and paste the paper to the outside of the battery.
3. Remove the two screws on the protective plate of the B121 monitoring ports, and connect the temperature monitoring cable to the **X1** and **X2** ports on the B121 PDM, see Figure 7-40.

The temperature monitoring cable connections of the B201 PDMs are similar to that of the B121 PDM. Connect the cables in accordance with the instruction on the protection plate.

4. Bundle the cables.

**– End of Steps –**

## 7.8.4 Installing a Door Access Monitoring Cable for the PC8910A Cabinet

This procedure describes how to connect the door access monitoring door for a PC8910A cabinet.

### Prerequisite

The ESD wrist strap must be worn.

### Steps

1. Connect one end of the door access monitoring cable to the door access sensor.
2. Thread the door access monitoring cable through the right cable-through hole of the PC8910A cabinet and then thread it through the cabinet base, route the cable along the right cable trough of the RC8910A cabinet and the right waterproof module of the BC8910A cabinet, see Figure 7-41 and Figure 7-42.

**Figure 7-41 Door Access Monitoring Cable of the Air-Ventilated PC8910A Cabinet**

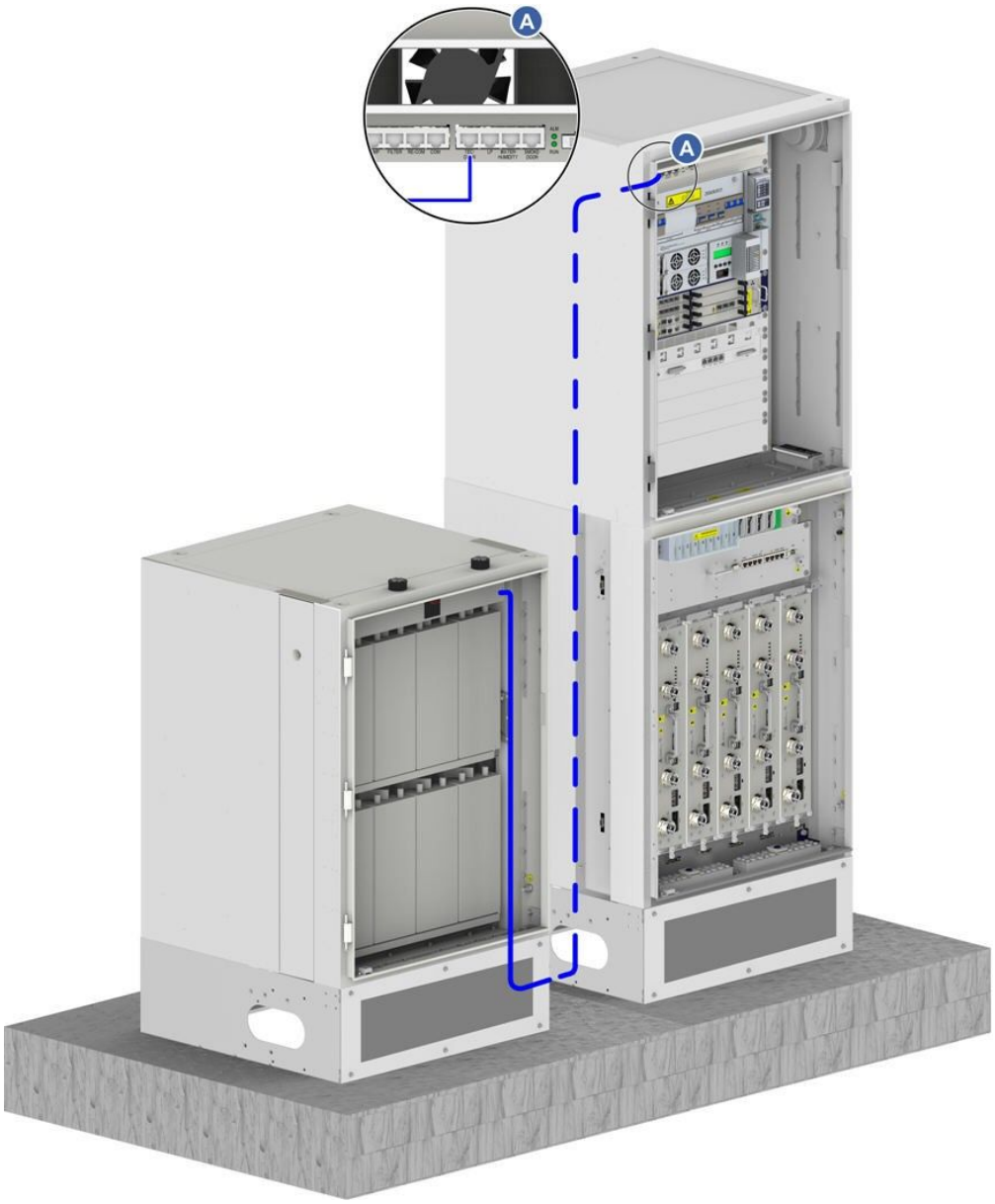
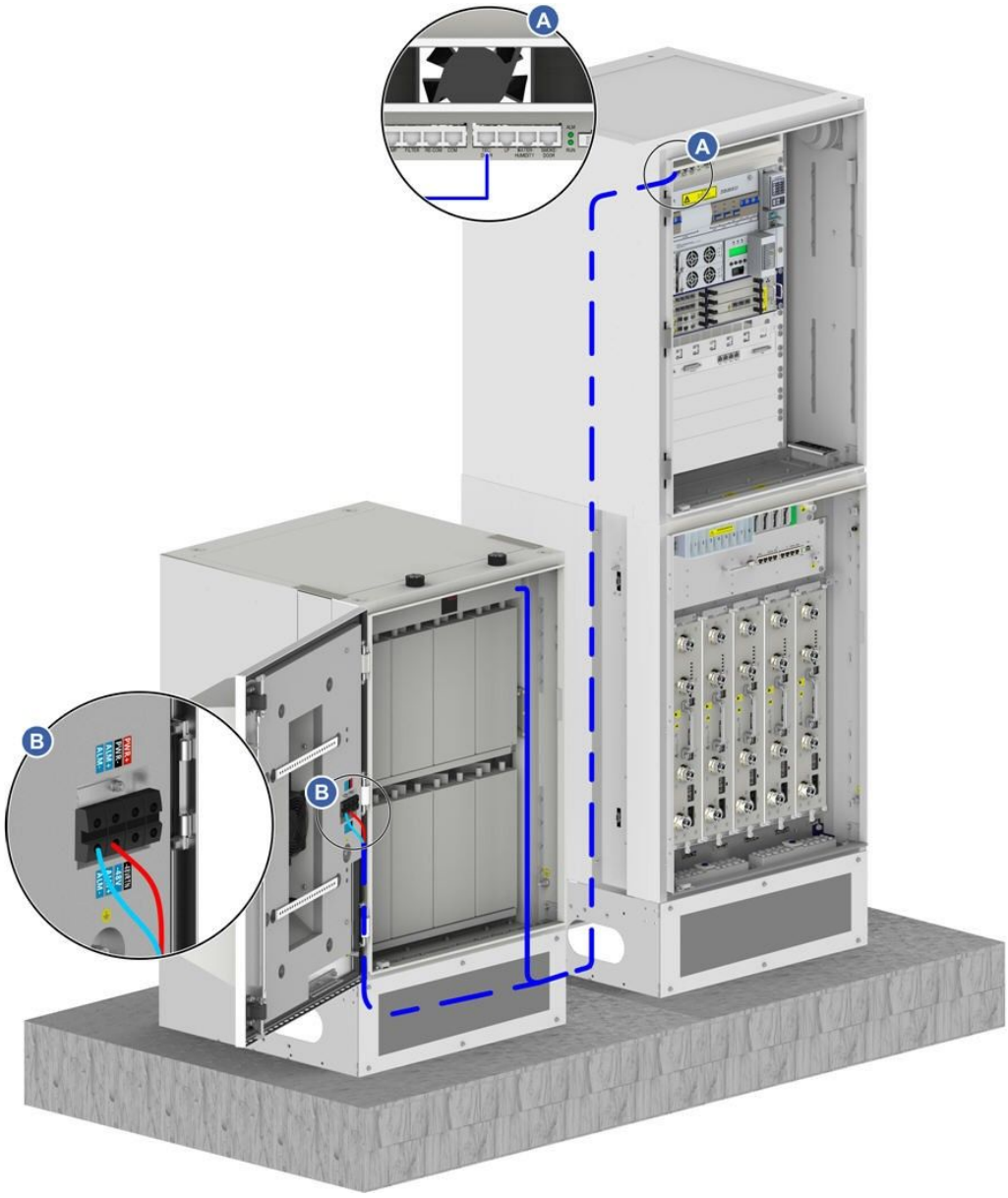


**Figure 7-42 Door Access Monitoring Cable of the Thermoelectric Cooling PC8910A Cabinet**




3. Connect the cable to the **TEC/DOOR** port on the fan subrack of the BC8910A cabinet.
4. Bundle this cable.

**– End of Steps –**

## 7.8.5 Installing the Water Level Monitoring Cable of a PC8910A Cabinet

This procedure describes how to connect the water level monitoring cable of a PC8910A cabinet.

### Steps

1. Disconnect the water level monitoring cable of the BC8910A cabinet from the joint at the right bottom corner of the cabinet, and then connect the cable to the extension cable for monitoring water level.

   The water level monitoring cable of the BC8910A cabinet is the cable connected to the **WATER/HUMIDITY** port.

2. Thread the extension cable through the right waterproof module of the BC8910A cabinet, route the cable along the right trough of the RC8910A cabinet into the cabinet base, and then route the cable to the PC8910A cabinet, see Figure 7-43.

**Figure 7-43 Water Level Monitoring Cable of a PC8910A Cabinet**

3. Connect the extension cable to the detector in the PC8910A cabinet.

4. Bind the cable.

**– End of Steps –**

# 7.9 Waterproof Module Installation

Cable should be routed through the corresponding cable-through of the waterproof module. After the cables are laid out, the waterproof module must be installed to protect the cabinet from water.

## 7.9.1 Installing the Waterproof Module for the BC8910A Cabinet

The external cables are routed into the BC cabinet through the waterproof module. The waterproof module waterproofs and seals the cables that enter the cabinet.

### Steps

1. Remove the metal baffle and waterproof rubber plug, lead all the required cables through the cable–through hole, and install these cables properly.
2. Reseat the waterproof rubber plug after selecting the proper cable-through hole in accordance with the cable diameter, see Figure 7-44.

**Figure 7-44 Fastening Through Proper Holes**


**– End of Steps –**

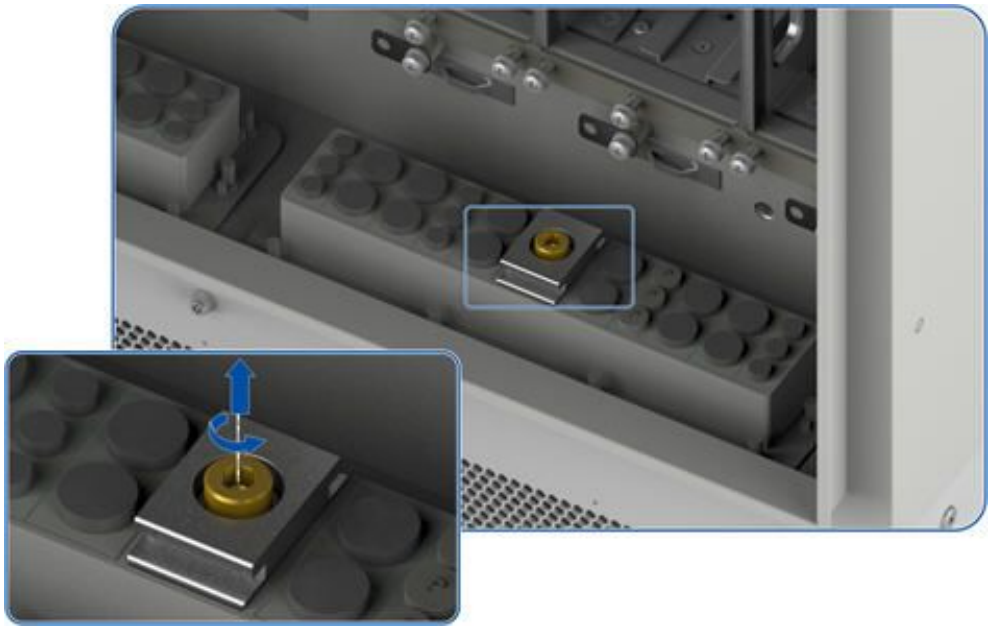
## 7.9.2 Installing the Waterproof Module for the RC8910A Cabinet

The waterproof module waterproofs and seals the cables that enter the RC8910A cabinet.

### Steps

1. Remove the screws on the side of the longitudinal slide block to remove the waterproof module, see Figure 7-45.

**Figure 7-45 Removing the Waterproof Module**



2. Lead all the required cables through the cabling aperture and install them properly.
3. Wear the proper waterproof plugs properly after selecting the proper hole diameter.
4. Insert the horizontal and longitudinal slide blocks and use the hexagon ring wrench to fasten them.

**Caution!**

Clamp the waterproof rubber plug tightly and ensure that the unused cabling aperture wears the plug.

**– End of Steps –**

# 7.10 Installing the Air Filter

After all the cables of the ZXSDR BS8900A are laid out, the air filter should be installed in the base of the floor-mounted cabinet to prevent the cabinet from dust.

### Steps

1. Insert the air filter into the cabinet base, use a wrench to fasten the six anti-theft screws on the front panel of the base, and fix the front panel, see Figure 7-46.

**Figure 7-46 Installing the Air Filter**

**– End of Steps –**

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# Chapter 8
# Post-Installation Check

**Table of Contents**



## 8.1 Cabinet Installation Check

| Item | Check |
|---|---|
| Cabinet overview | Verify that the surface of the cabinet is intact, for example, the bottom of the cabinet, the gap between stacked cabinets, and the gap between the cabinet and the base. If the cabinet has damage, scratches, or paint stripping, the cabinet must be repaired to avoid corrosion. |
| Cabinet installation | All bolts and screws in the cabinets, including the baseband cabinet, RF cabinet, and other auxiliary cabinet, are tightened. |
| | All cabinets are horizontally laid and vertical to the concrete base. The horizontal and vertical errors are within the allowed range. |
| | The spacing between cabinets and the space reserved for cabinet maintenance meet the space requirements. |
| | All cabinets, including the (baseband cabinet, RF cabinet, and other auxiliary cabinet, are properly secured without shake. |
| | The top cover of the cabinet is secured. |
| | All seams between two stacked cabinets, including the seams around fastening screws, are sealed with glue seals. |
| | The red cap of the smoke sensor is removed. |
| | In the stacked cabinet installation, the protective grounding cable is connected from the baseband cabinet to the RF cabinet, and the fastening bolt is secured. |
| | The inside and outside of the cabinet are clean. |
| | The sliding covers for the cable outlets on the top and bottom of the cabinet are installed in proper positions. |
| Insulation between the cabinet and the earth | The cabinets, including the baseband cabinet, RF cabinet, and other auxiliary cabinet are insulated from the earth (< 3.5 mA). A multimeter can be used to verify the insulation. |

# 8.2 Module Installation Check

| Module | Check |
|---|---|
| Power distribution subrack | All power distribution subracks are properly installed. |
| RSU | The RSU is properly installed and secured with fastening screws. |
| | The power wires are firmly connected to appropriate power terminals of the RSU. |
| | The monitoring cable is firmly connected to the MON interface on the fist RSU from right to left. |
| | The grounding plate is firmly connected to the RSU. |
| eBBU | The eBBU is installed in a 2U slot with ventilation vents above or under the slot. |
| | The eBBU is secured with all bolts fastened. |
| | The green-yellow grounding wire is firmly connected to the ground terminal. |
| | The special power cable is firmly connected to the eBBU. |
| LPU | The LPU is secured with all bolts fastened. |
| | The green-yellow grounding wire is firmly connected to the ground terminal. |

# 8.3 Cable Installation Check

| Item | Check |
|---|---|
| Power wires and grounding wires | The power wires and grounding wires are properly laid and bound at the required spacing. |
| | The external AC power wires, which are used in the case of AC power supply, are properly connected to corresponding power terminals, and secured with fastened screws. |
| | The power cables are fixed and bound through the cable trough inside the cabinets. |
| | The -48 V power wire and -48 V GND wire, which are used in the case of DC power supply, are firmly connected to the PM2 terminal and the PM2 GND terminal. |
| | The protective grounding wire is firmly connected to the grounding strap. |
| Batteries and cables in the RF cabinet | All cables in the cabinet are properly routed and laid. |
| | The red power wire is firmly connected to the positive terminal of the battery, and the blue power wire is firmly connected to the negative terminal of the battery. |
| | The monitoring cable is stuck on the surface of the battery with one end firmly connected to the corresponding interface of the power distribution module. |
| | The heaters (if installed) are properly installed with power wires correctly connected. |

| Item | Check |
|---|---|
| SA cable | The SA cable is firmly connected to the SA interface of the eBBU. |
| | The grounding wire of the SA cable is firmly connected to the ground terminal of the eBBU. |
| | The other end of the SA cable is firmly connected to the eBBU interface on the LPU module. |
| RF jumpers | The RF jumpers are firmly connected to corresponding ANT interfaces. |
| Optical fiber cables | All optical fiber cables are properly routed and laid. |
| | The optical fiber cable between the eBBU and the RSU is properly connected. |
| RS232 monitoring cable | One end of the RS232 cable is firmly connected to the RS232/485 interface on the LPU, and the other end is firmly connected to the X22 interface. |
| Transmission cables | The FE cables, which are used in the case of IP transmission, are properly and firmly connected. One FE cable is connected to the ETH_0 port of the LPU. One end (RJ45 connector) of the other FE cable is connected to the eBBU_A0 port on the LPU, and the other end (RJ45 connector) is connected to the ETH0 port on the CC board. |
| Cable routing specification | No cable is suspended in the air. |
| | The cables are routed properly and bundled with proper intervals. The excess tail of each cable tie is cut off with a smooth cutting surface. |
| | The surface of each cable is clean and free of the engineering marks. The sheath insulation layer of the cable is not damaged or scratched. |

# 8.4 Other Checks

| Item | Check |
|---|---|
| ESD wrist strap | The ESD wrist strap is connected to the jack on the right of the cabinet. |
| Labels | Dedicated ZTE labels are used. |
| | Labels should face the same direction; that is, the outbound side of a label faces upwards or faces the operation maintenance side for easy reading. |
| | The contents about cabinet row and column on the labels meet the requirements of the engineering design documents. ZTE devices in the equipment room are installed in a proper order. |
| | In battery and power distribution cabinets, the labels on the circuit breakers for ZTE devices are properly pasted. |
| | In battery and power distribution cabinets, the circuit breakers for ZTE devices are marked with the directions using normative labels. |

| Item | Check |
|---|---|
| | Both ends of all the cables such as the power cable, grounding cable, transmission cable, and jumpers are pasted with labels. No labels are pasted on the grounding cables of the cabinet door and side panel. The labels are written neatly, and are pasted in the same positions. The labels are pasted 200 mm away from the connectors. |
| | The labels (if required) on modules must be written neatly and pasted properly. |
| On-Site environment | No waste material, such as scrap of cable ties or cables, is left in the cabinets. The front, back, and side doors are clean. The inside and outside of the cabinets are clean. |
| | No useless material is placed in the equipment room. The materials in the equipment room are placed properly. The operating floor and raised floor are clean. |
| | The ground under the raised floor near the cable trough and cabinet bottom is clean. No excessive engineering material such as cable tie, thread, and desiccant is left. All the cables are properly routed. |

# Chapter 9
# Powering on the Cabinet

ZXSDR BS8900A, through the power unit in the baseband cabinet, outputs AC/DC power to each subrack.

### Prerequisite

- The power cable and the grounding cable are connected to the cabinet.
- The power cable and the grounding cable are installed inside the cabinet.
- The subracks and modules inside the cabinet are installed.
- The multimeter is available.

### Steps

1. Properly wear ESD wrist strap, and enable the ESD wrist strap to be grounded reliably (anti-static sockets on the cabinet).
2. Set all power switches of the power distribution subrack to OFF.
3. Set the switch of the multimeter to the resistance type, measure the power input terminal of the power distribution subrack in the cabinet with the multimeter, to ensure that the power is proper and not short-circuited.
4. Set the multimeter switch to the voltage type, and measure the DC output terminal with the multimeter, to ensure that the output voltage is the rated voltage.
5. Set the power switch of the fan subrack to the status ON, and ensure that the fan operates properly.
6. Set the switch of the power subrack to the status ON, and observe the panel indicator to ensure that the power module operates properly.
7. Set the power switch that corresponds to the shelf (eBBU, RSU) on the power distribution subrack to the status ON, and observe the panel indicator to ensure that the power supply of subrack is proper.
8. Check whether the power cable of subrack, module slot, or the module itself is faulty if the indicator on the module operates improperly. Contact ZTE engineers for help if the indicator of the module is still in the OFF status after replacing the module and ensuring that the power cable is proper.
9. Perform steps 7 and 8 again.

**– End of Steps –**

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# Chapter 10
# Closure

After installation, perform the following operations:

- Put tools in order.

  Put the tools used during the installation back in right positions.

- Collect unexpected materials.

  Collect unexpected materials and hand them over to the customer.

- Remove waste materials.

  Remove waste materials and clean the environment.

- Complete the installation report.

  Complete the installation report and submit the installation report to the person in charge.

  If the site is operating properly, notify the operation and maintenance engineers that the installation is completed.

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# Figures

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# Tables

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# Glossary

**AISG**
- Antenna Interface Standards Group

**BBU**
- Base Band Unit

**GPS**
- Global Positioning System

**LPU**
- Line Lightning Protection Unit

**PDM**
- Power Distribution Module

**RF**
- Radio Frequency

**RRU**
- Remote Radio Unit

**RSU**
- RF System Unit

**SA**
- Site Alarm