

# **BTS3900 GSM Quick Installation Guide**

## **V300R008\_02**

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## Installation Tools



Long measuring tape



Phillips screwdriver (M3~M6)



Flat-head screwdriver (M3~M6)



Wrench



Socket wrench



Percussion drill



ESD wrist strap



Vacuum cleaner



Cable peeler



Torque wrench



Marking pen



Level bar



Claw hammer



RJ-45 crimping pliers



Multimeter



Power cable crimping pliers

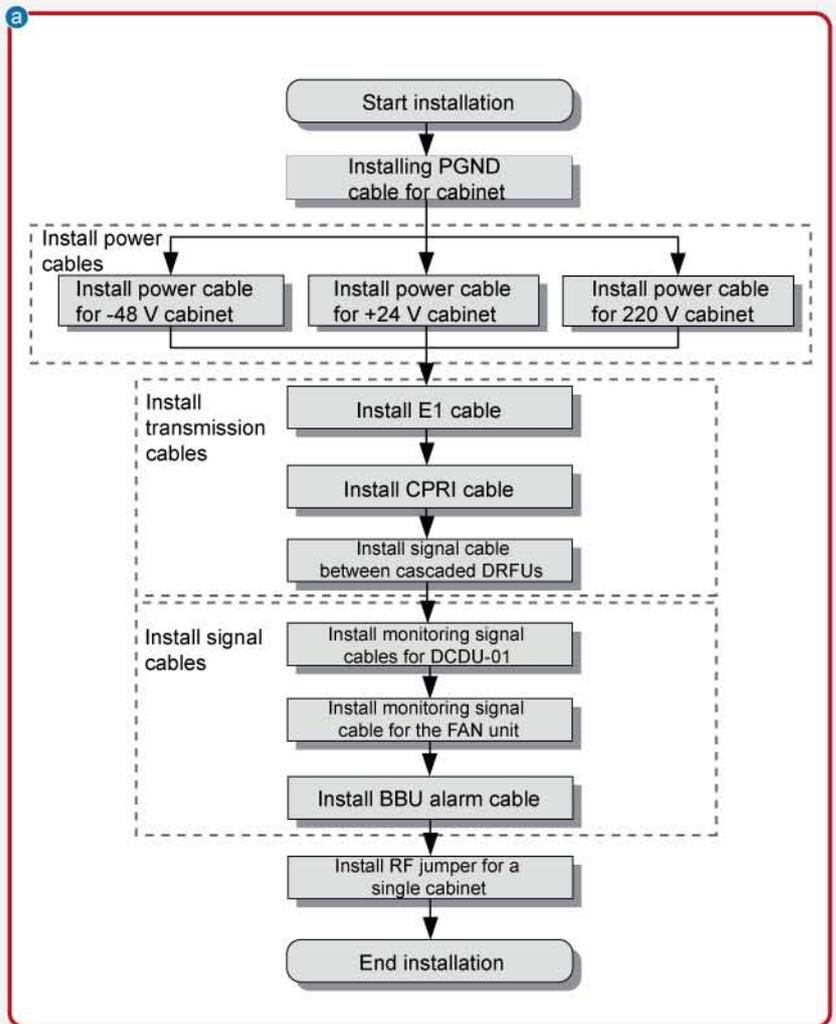
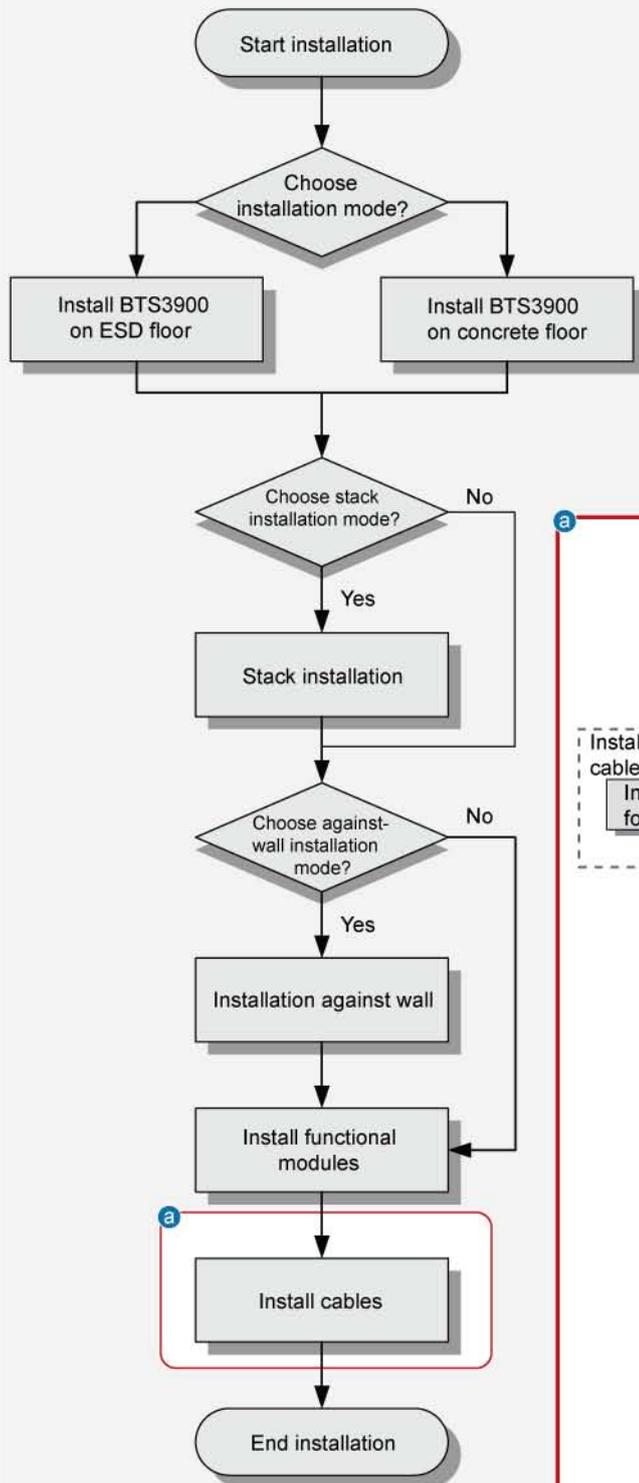


Wire cutter



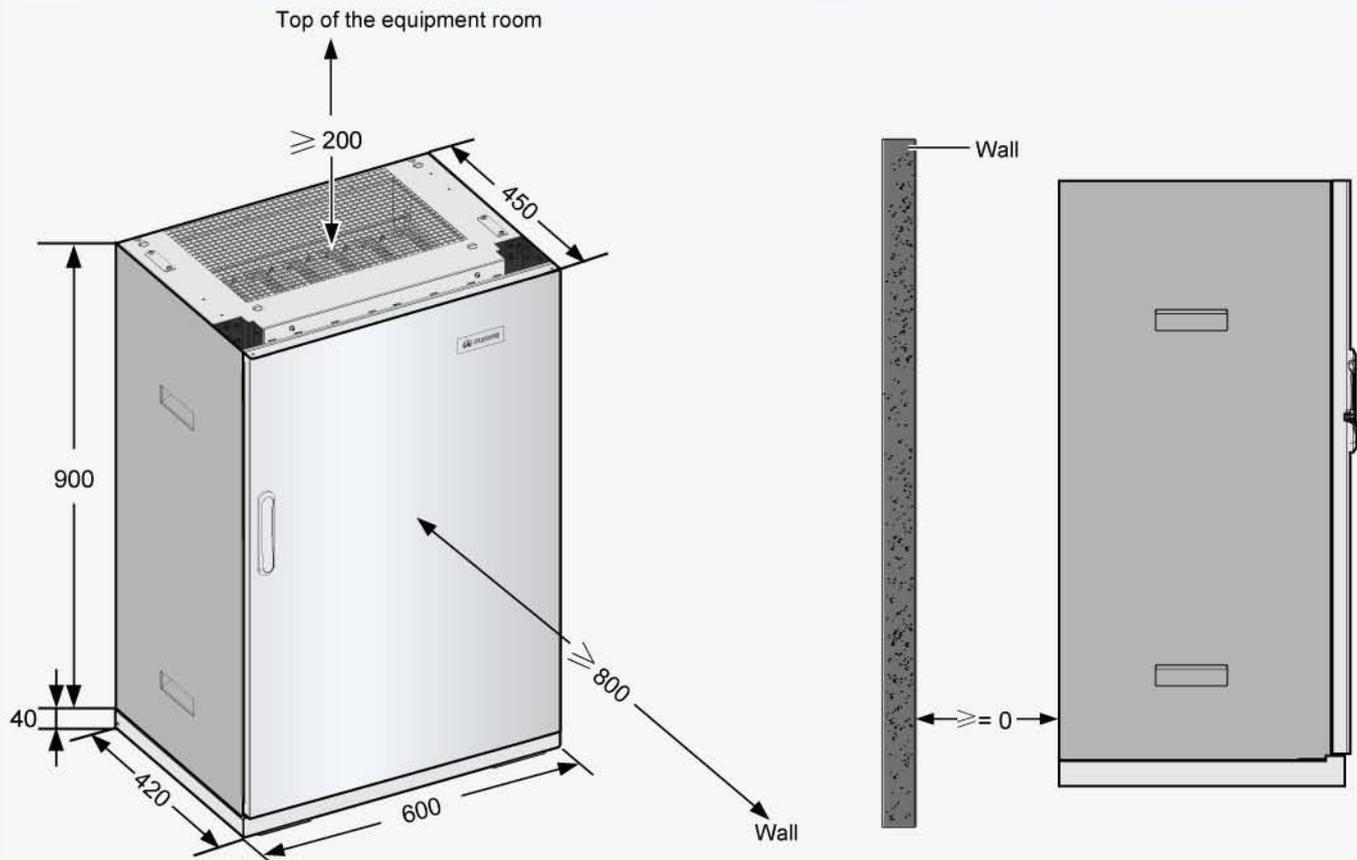
ESD gloves

## 1 Flow Chart



# Determining the Installation Position of the BTS3900

## 1 Space Requirements of the BTS3900 (Unit: mm)

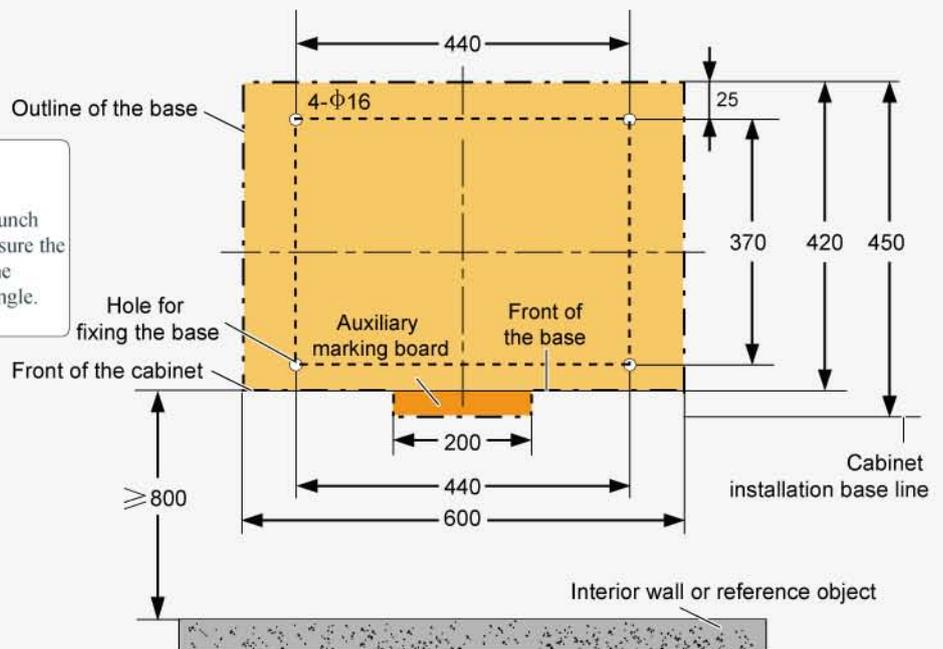


## Installing the Cabinet on the Concrete Floor

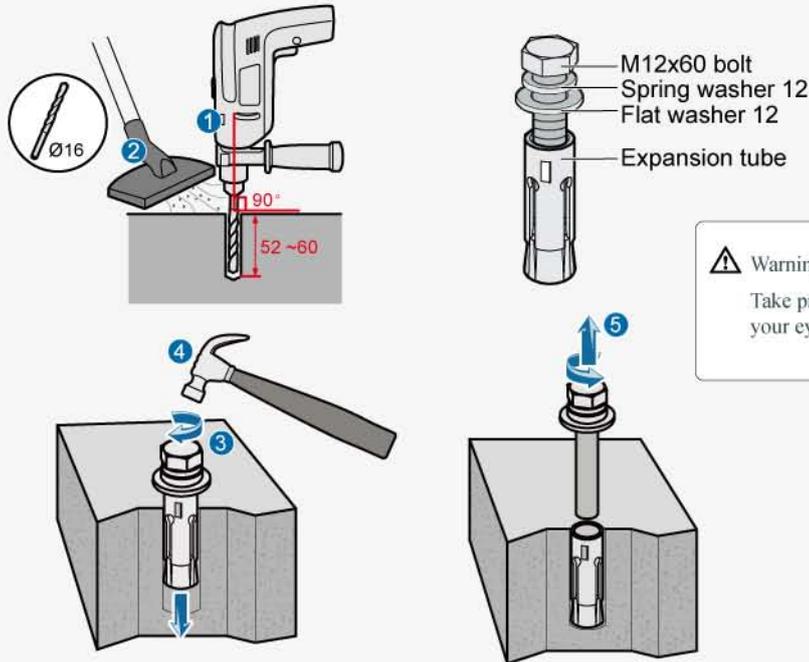
### 1 Determining the Position for Installing the Cabinet (Unit: mm)

#### 😊 Tips

Move the base away and use a chisel to punch a pit. Use the long measuring tape to measure the distance between the holes. Ensure that the four holes serve as the vertices of a rectangle.



## 2 Drilling Holes at the Anchor Points and Installing the Expansion Bolt Assembly



### Warning

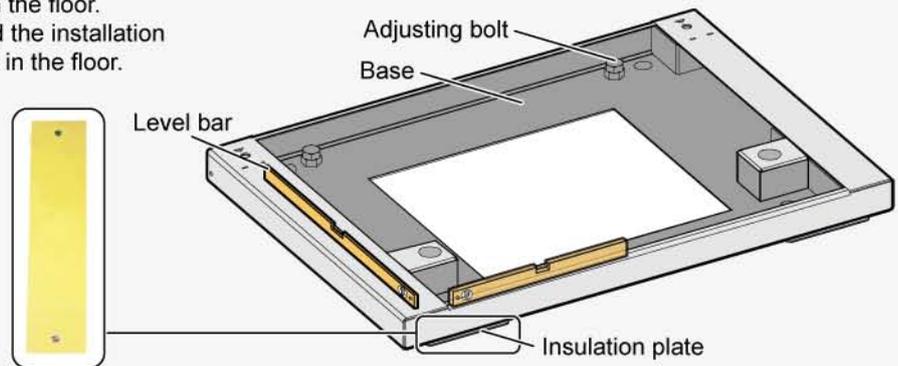
Take proper measures when drilling holes in case the flying dust hurt your eyes or you inhale the dust.

## 3 Installing and Leveling the Base

### a Installing and Leveling the Base

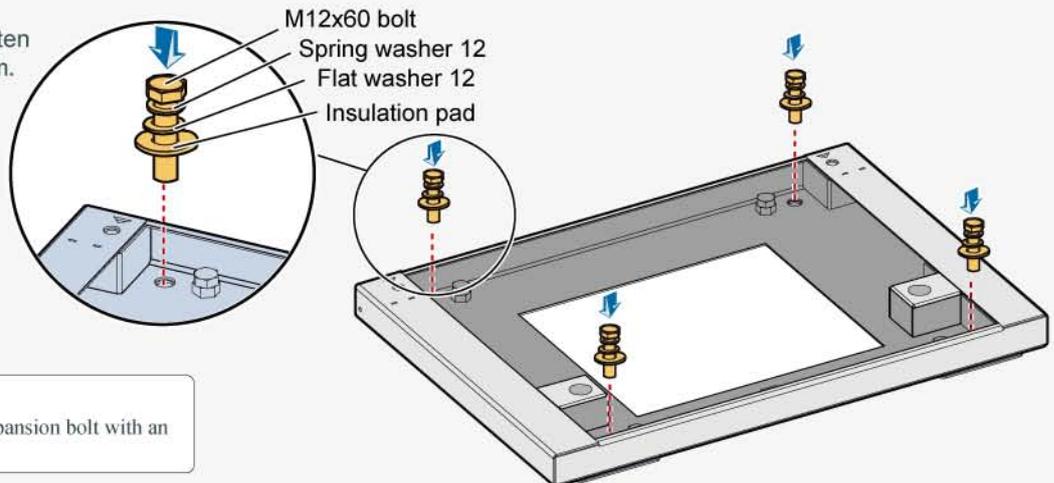
Place the insulation plate and the base on the floor. Align the installation holes in the base and the installation holes in the insulation plate with the holes in the floor. Slightly tighten the bolts.

Use a level bar to measure the levelness of the base. If the base is not level, adjust it by adjusting the screws of the base.



### b Installing the Base

Use a torque wrench to tighten the expansion bolt to 45 N·m.



Tips  
Remember to cover the expansion bolt with an insulation pad.

## 4 Installing the Installation Block on the Base



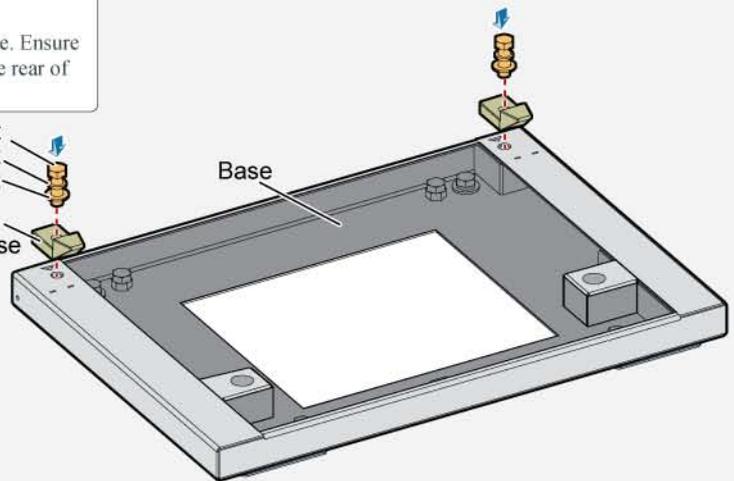
### Tips

Align the installation block with the installation holes in the base. Ensure that the rear of the installation block is at the same surface as the rear of the base.

Use a torque wrench to tighten the expansion bolt to 45 N·m.



M12x35 bolt  
Spring washer 12  
Flat washer 12  
Installation block on the base



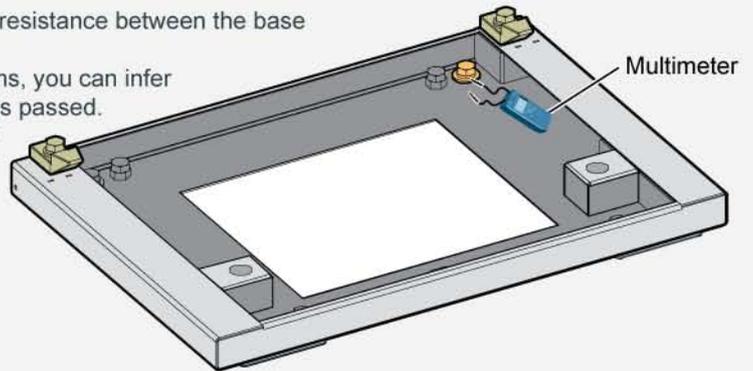
## 5 Testing the Insulation Between the Base and the Expansion Bolt

Set a multimeter to the megohm position. Measure the resistance between the base and the expansion bolt.

If the resistance is greater than or equal to five megohms, you can infer that the base is insulated from the ground and the test is passed.

If the resistance is smaller than five megohms, you can infer that the base is not insulated from the ground.

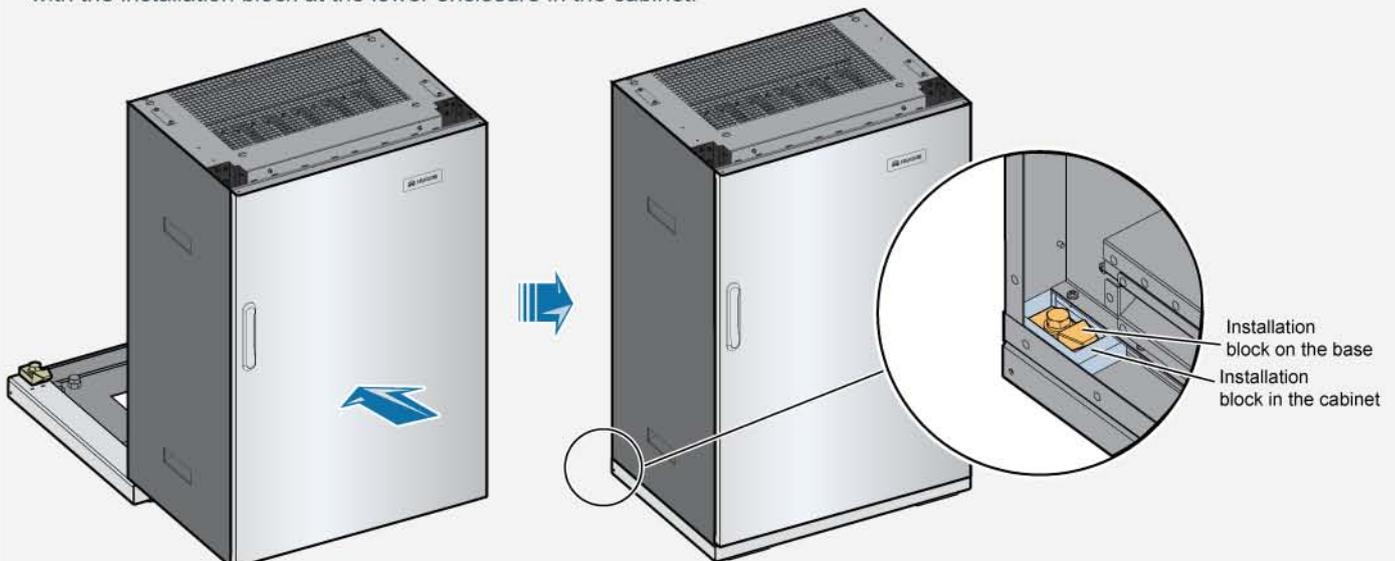
Take proper measures to insulate the base from the ground.



## 6 Installing the Cabinet

### a Complete Contact of the Cabinet with the Installation Block

Lift the cabinet onto the base. Then, push the cabinet so that the installation block on the base is in complete contact with the installation block at the lower enclosure in the cabinet.



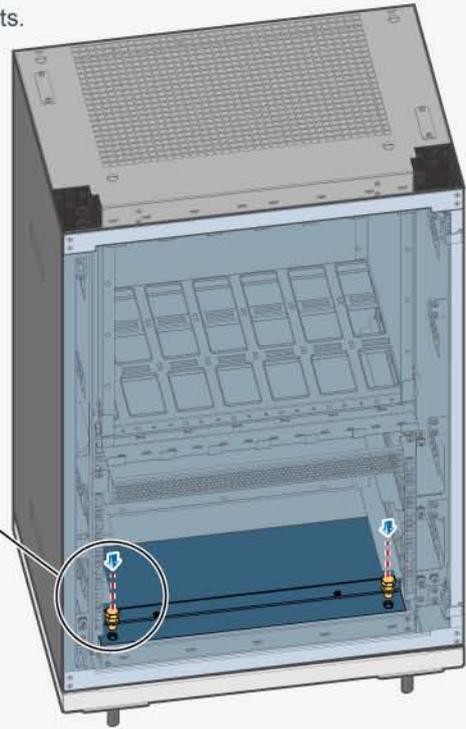
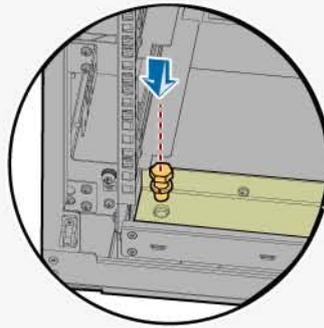
## b Fastening the Cabinet to the Base

At the front of the cabinet, fasten the cabinet to the base by using M12x25 bolts. Then, use a torque wrench to tighten the bolts to 45 N·m.



### Note

If the cabinet is installed with the power subrack before delivery, you should remove the beam of the lower enclosure from the cabinet before tightening the bolts.



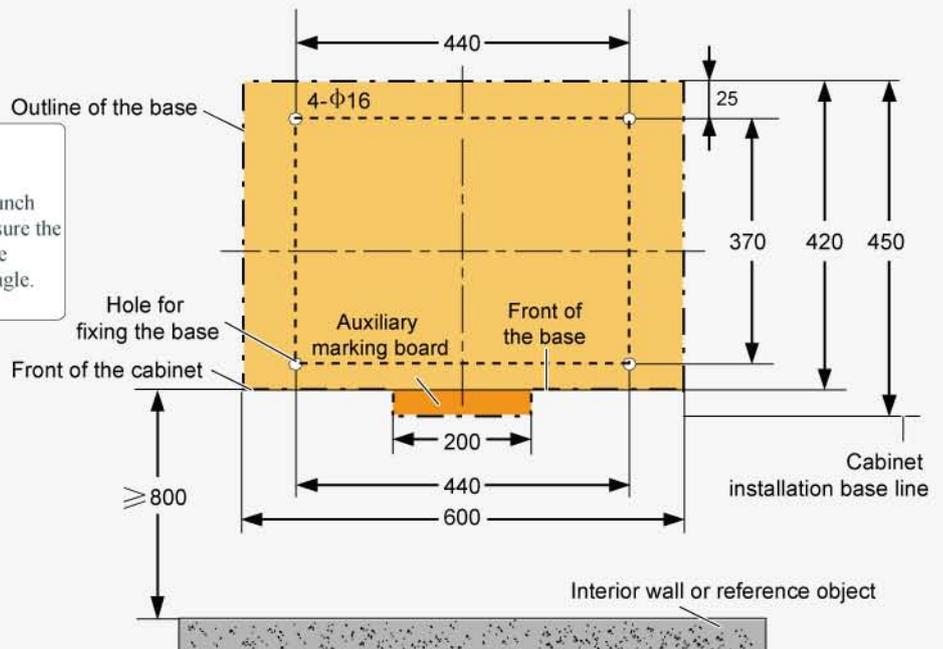
## Installing the Cabinet on the ESD Floor

### 1 Determining the Installation Position and Drilling Holes

#### a Determining the Position for Installing the Cabinet on the ESD Floor(Unit: mm)

### Tips

Move the base away and use a chisel to punch a pit. Use the long measuring tape to measure the distance between the holes. Ensure that the four holes serve as the vertices of a rectangle.

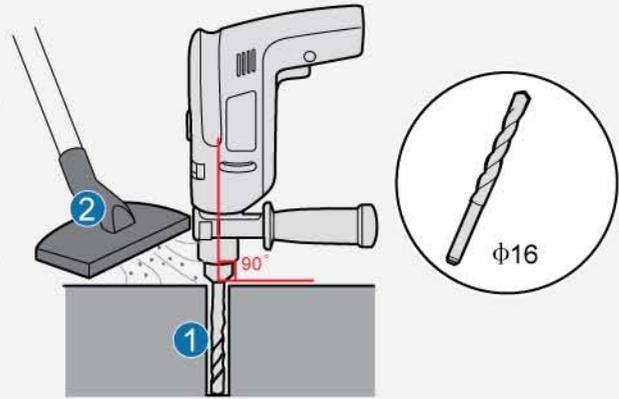


## b Drilling Holes on the ESD Floor

Use a percussion drill with a  $\Phi 16$  drill bit to drill holes at the anchor points. The holes should penetrate the ESD floor.

### ⚠ Warning

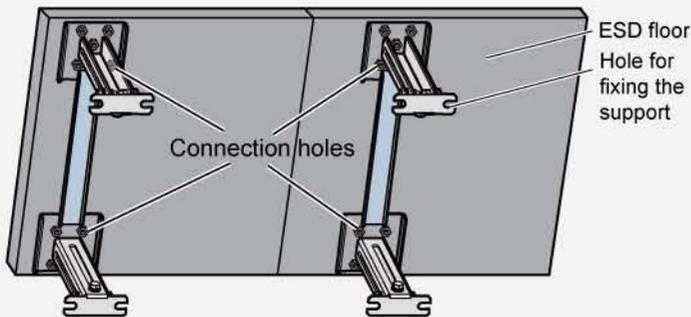
Take proper measures when drilling holes in case the flying dust hurt your eyes or you inhale the dust.



## 2 Determining the Position for Installing the Support

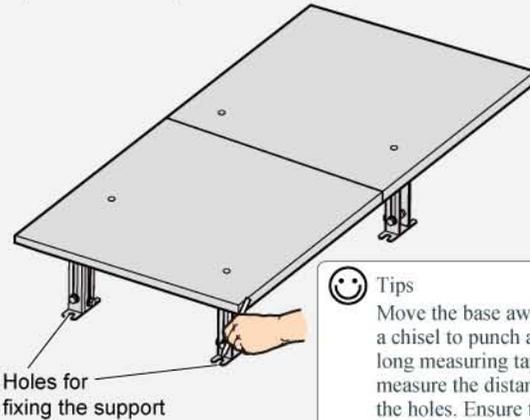
### a Arranging the Support

Place the support under the ESD floor, and use bolts to secure the ESD floor with the support temporarily.



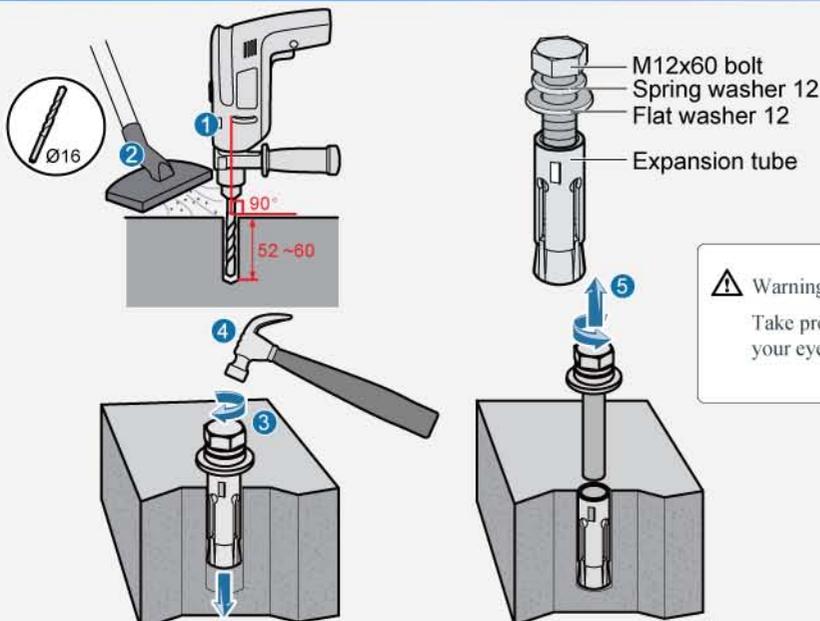
### b Determining the Position for Drilling Holes on the Concrete Floor

Based on the installation holes in the support, mark the position for expansion bolt holes in the concrete floor.



😊 Tips  
Move the base away and use a chisel to punch a pit. Use the long measuring tape to measure the distance between the holes. Ensure that the four holes serve as the vertices of a rectangle.

## 3 Drilling Holes at the Anchor Points and Installing the Expansion Bolt Assembly



### ⚠ Warning

Take proper measures when drilling holes in case the flying dust hurt your eyes or you inhale the dust.

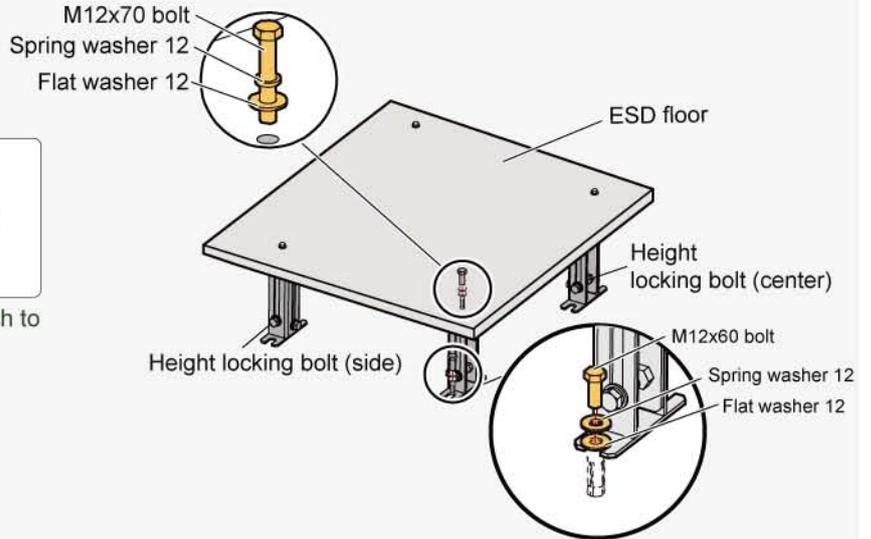
## 4 Fastening the Support

Adjust the support to a specified height, and adjust the height locking bolt to prevent the support from falling. Align the installation holes in the support with those in the floor.

### Warning

Tighten the height locking bolts on the support from the center to the side.

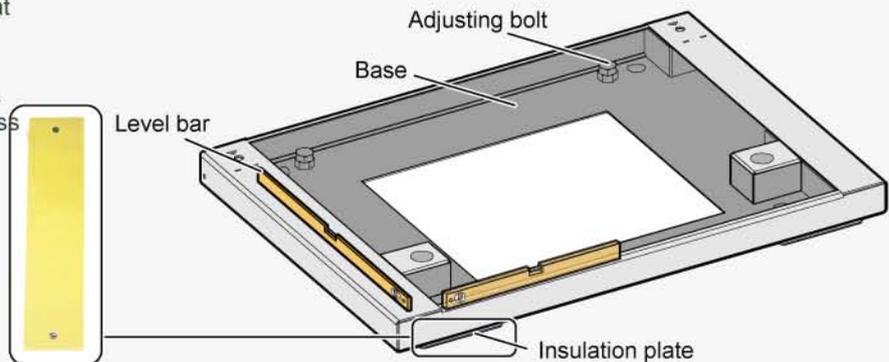
After the bolts are installed, use a torque wrench to tighten them to 45 N·m.



## 5 Installing and Leveling the Base

### a Measuring the Levelness of the Base

Remove the four bolts and washers that connect the ESD floor to the support. Place the insulation plate and base on the ESD floor. Slightly tighten the bolts. Use a level bar to measure the levelness of the base. If the base is not level, adjust it by adjusting the screws of the base.

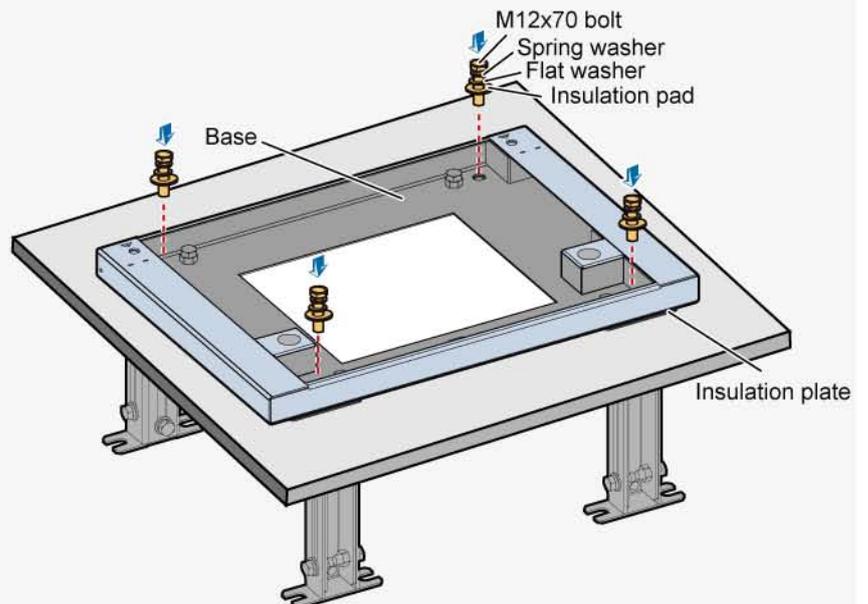


### b Installing the Base



**Tips**  
If the insulation pad and the expansion bolt are not placed together, you should cover the expansion bolt with an insulation pad.

Use a torque wrench to tighten the bolt to 45 N·m.



## 6 Installing the Installation Block on the Base



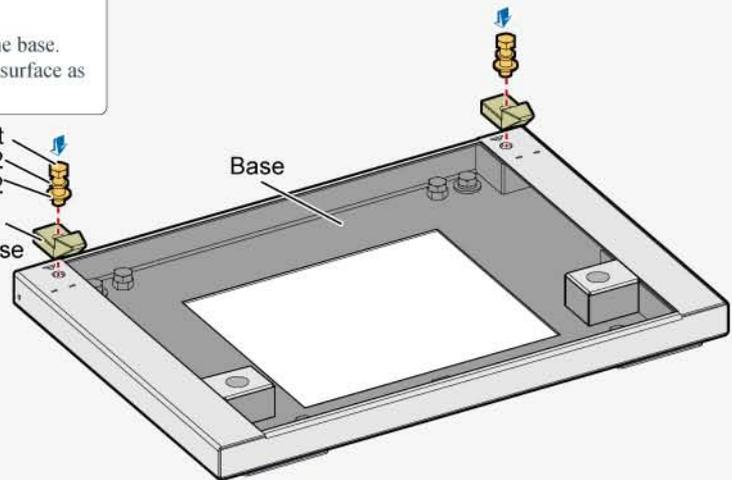
### Tips

Align the installation block with the installation holes in the base.  
Ensure that the rear of the installation block is at the same surface as the rear of the base.

Use a torque wrench to tighten the expansion bolt to 45 N·m.



M12x35 bolt  
Spring washer 12  
Flat washer 12  
Installation block on the base



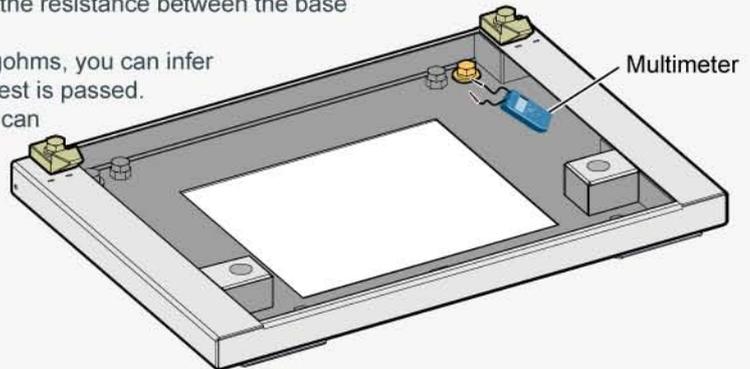
## 7 Testing the Insulation Between the Base and the Expansion Bolt

Set a multimeter to the megohm position. Measure the resistance between the base and the expansion bolt.

If the resistance is greater than or equal to five megohms, you can infer that the base is insulated from the ground and the test is passed.

If the resistance is smaller than five megohms, you can infer that the base is not insulated from the ground.

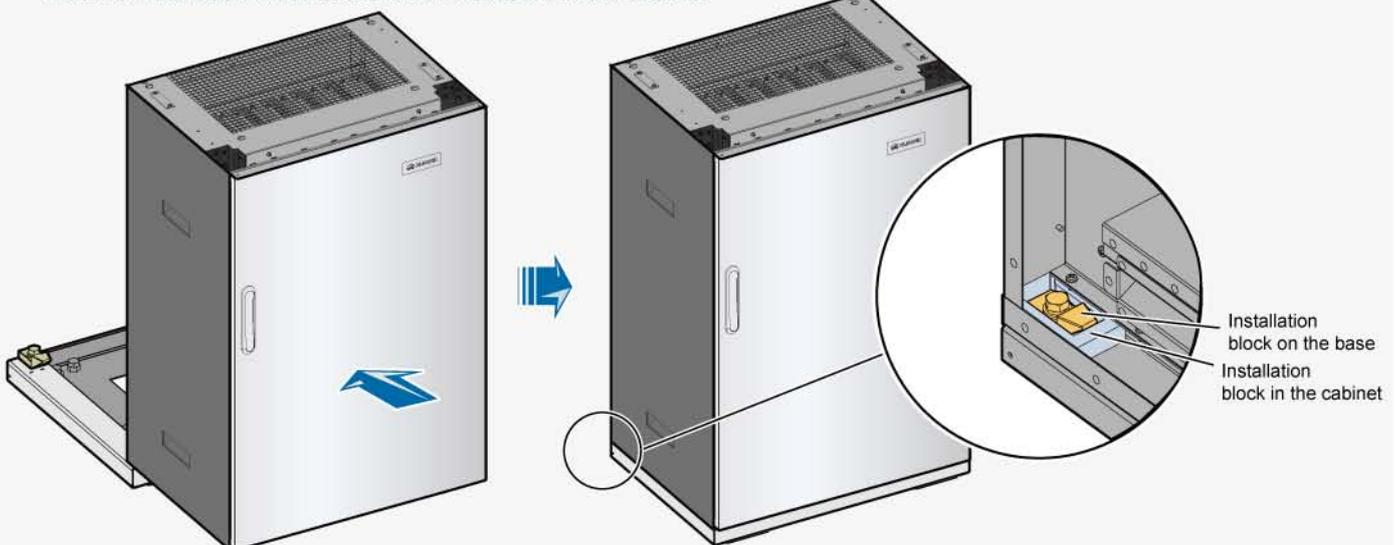
Take proper measures to insulate the base from the ground.



## 8 Installing the Cabinet

### a Complete Contact of the Cabinet with the Installation Block

Lift the cabinet onto the base. Then, push the cabinet so that the installation block on the base is in complete contact with the installation block at the lower enclosure in the cabinet.



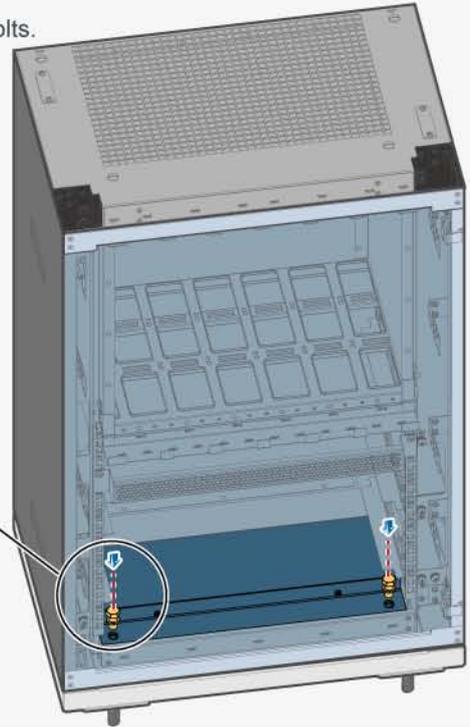
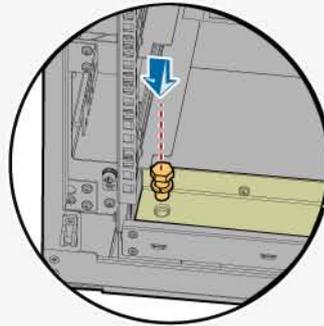
## b Fastening the Cabinet to the Base

At the front of the cabinet, fasten the cabinet to the base by using M12x25 bolts. Then, use a torque wrench to tighten the bolts to 45 N·m.



### Note

If the cabinet is installed with the power subrack before delivery, you should remove the beam of the lower enclosure from the cabinet before tightening the bolts.



## Installing the Cabinets in Stack Mode

### 1 Installing a Single Cabinet



Install the lower cabinet by referring to “Installing the Cabinet on the Concrete Floor” and “Installing the Cabinet on the ESD Floor.”

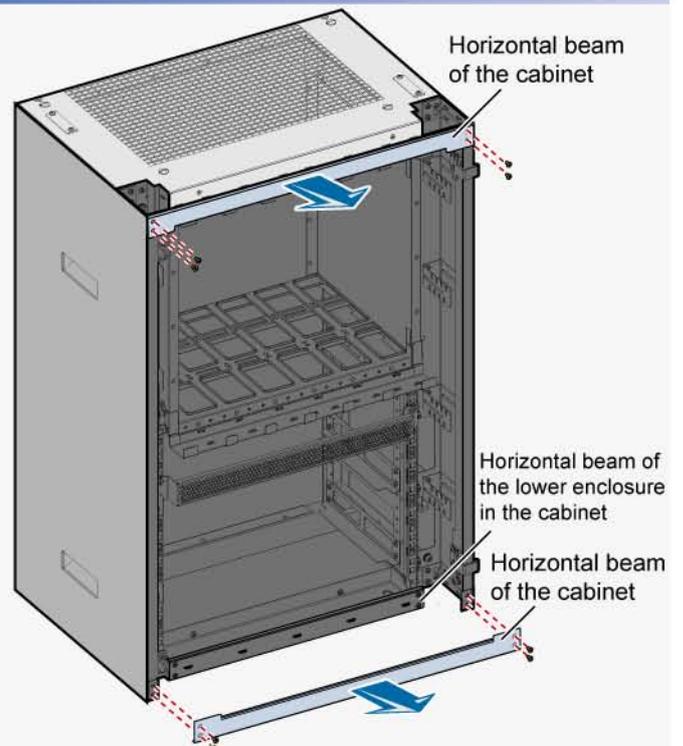
### 2

### Removing the Upper and Lower Horizontal Beams from the Upper Cabinet

#### Note

For a newly deployed BTS, you should remove the horizontal beam of the lower enclosure in the lower cabinet if the lower cabinet is configured with the power subrack. In other cases, you need not remove the horizontal beam of the lower enclosure in the lower cabinet. You need not remove the horizontal beam of the lower enclosure in the upper cabinet.

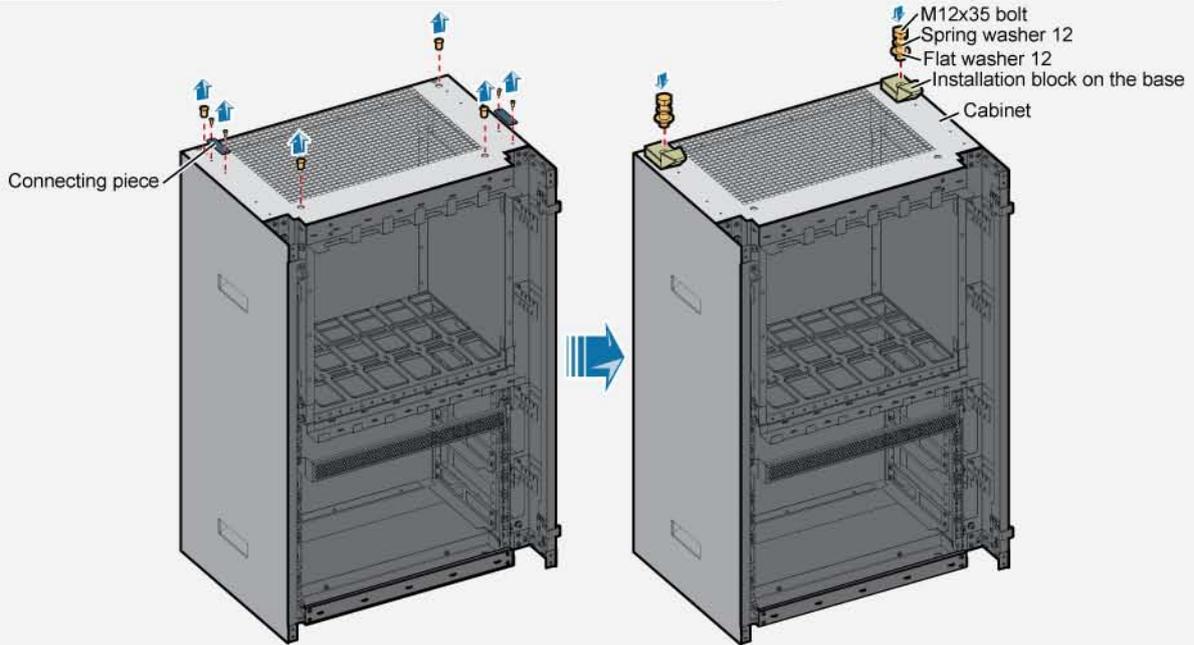
When stacking the cabinets for capacity expansion, you should remove the upper and lower horizontal beams of the upper cabinet. In other cases, you need not remove the beams of the cabinet.



### 3 Removing the Fillers and Connecting Pieces from the Top of the Lower Cabinet and Installing the Installation Block on the Base

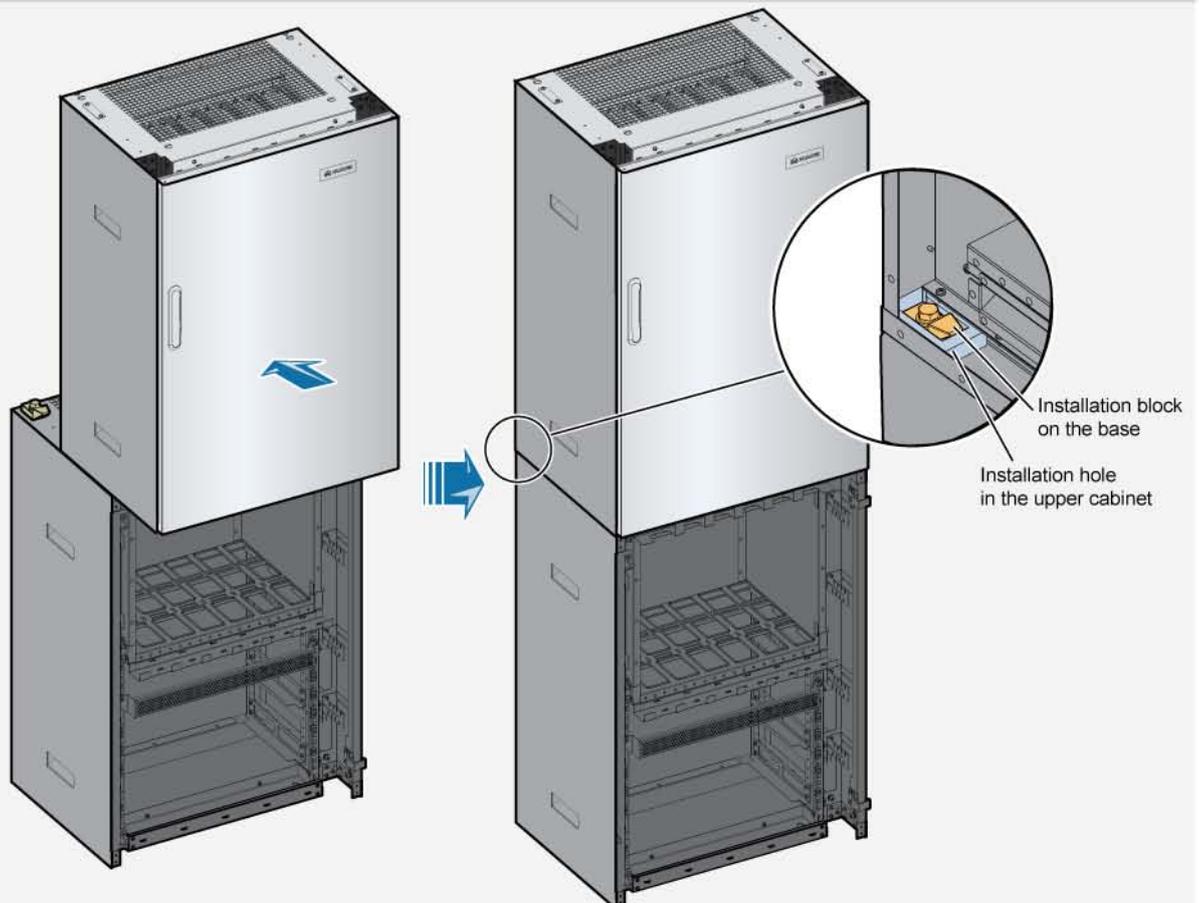
**Note**

The installation blocks are delivered with the base. You must use the installation blocks in the packing case for the base to install the cabinet.



### 4 Installing the Upper Cabinet in Stack Mode

#### a Installing the Upper Cabinet in Stack Mode for a Newly Deployed BTS



## b Installing the Upper Cabinet in Stack Mode for Capacity Expansion

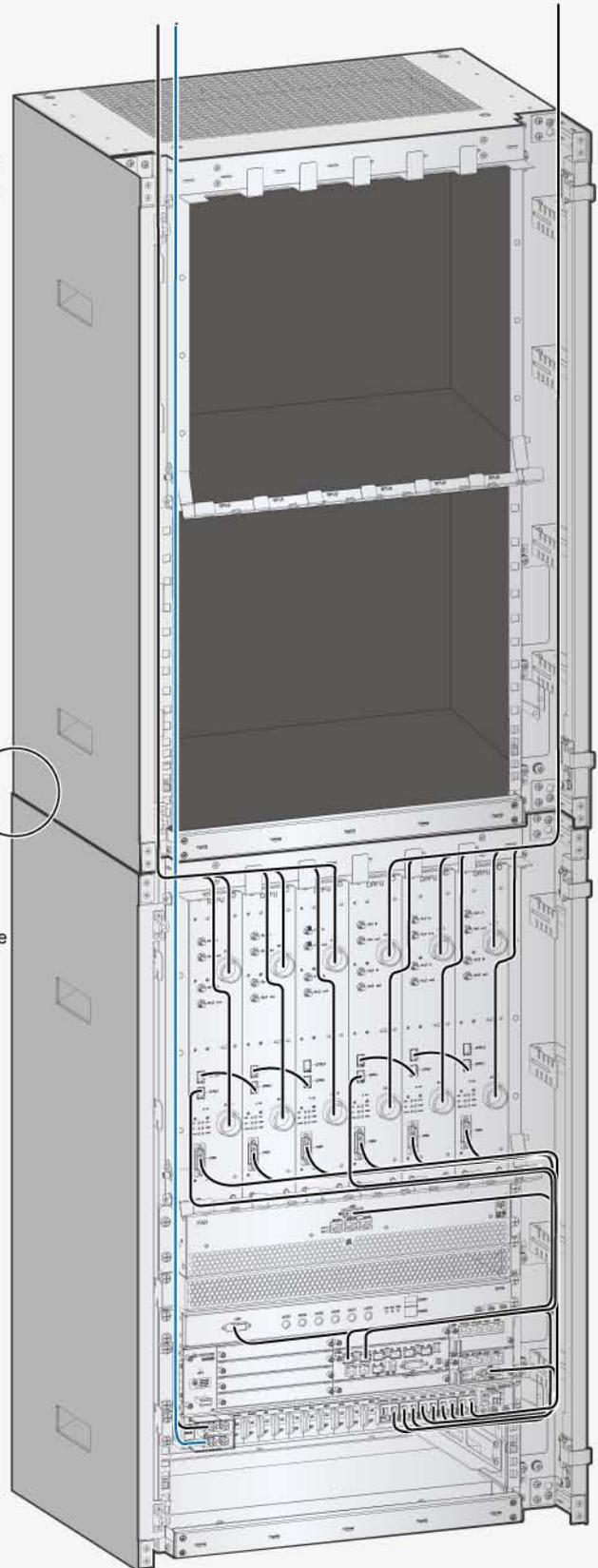
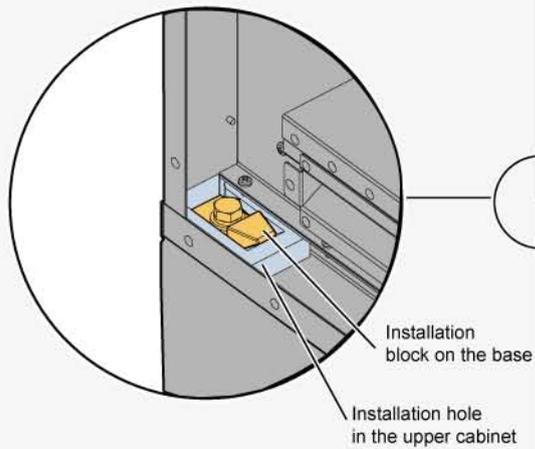
### Note

Before installing the upper cabinet in stack mode for capacity expansion, you should remove the front door of the upper cabinet.

Push the upper cabinet so that the installation block in the lower cabinet is in complete contact with the installation block in the upper cabinet.

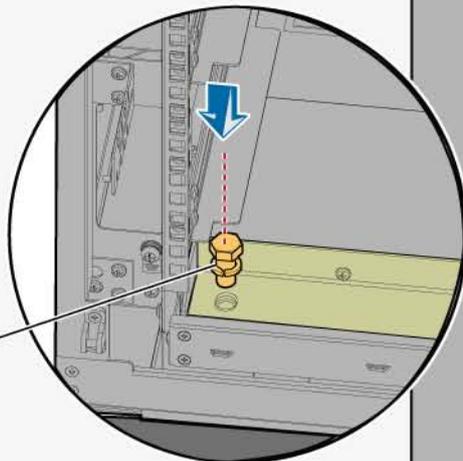
### Tips:

When installing the front door of the cabinet, you should align the two pins of the door with the installation holes on the right of the cabinet.

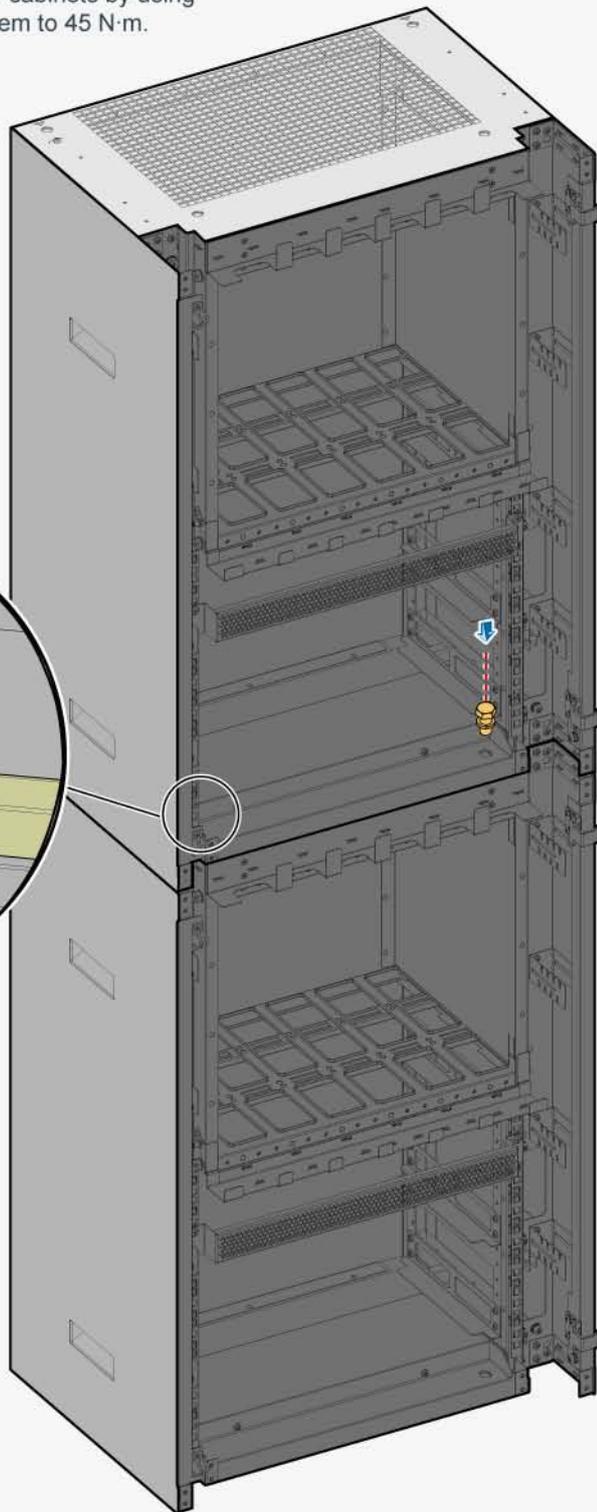


## 5 Fastening the Upper and Lower Cabinets

At the front of the cabinets, fasten the upper and lower cabinets by using M12x25 bolts. Then, use a torque wrench to tighten them to 45 N·m.



Connection bolt



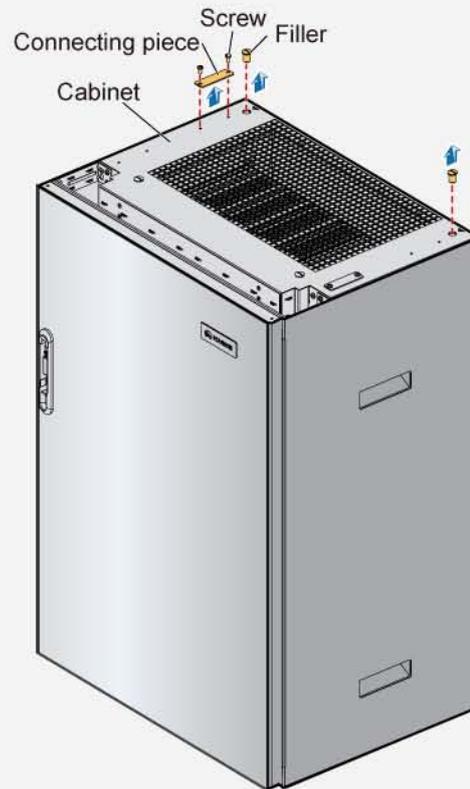
## Installing the Cabinet Against the Wall

### 1 Installing the Cabinet



Install the cabinet by referring to “Installing the Cabinet on the Concrete Floor”, “Installing the Cabinet on the ESD Floor”, and “Installing the Cabinets in Stack Mode.”

## 2 Removing the Connecting Pieces and Fillers from the Top of the Cabinet

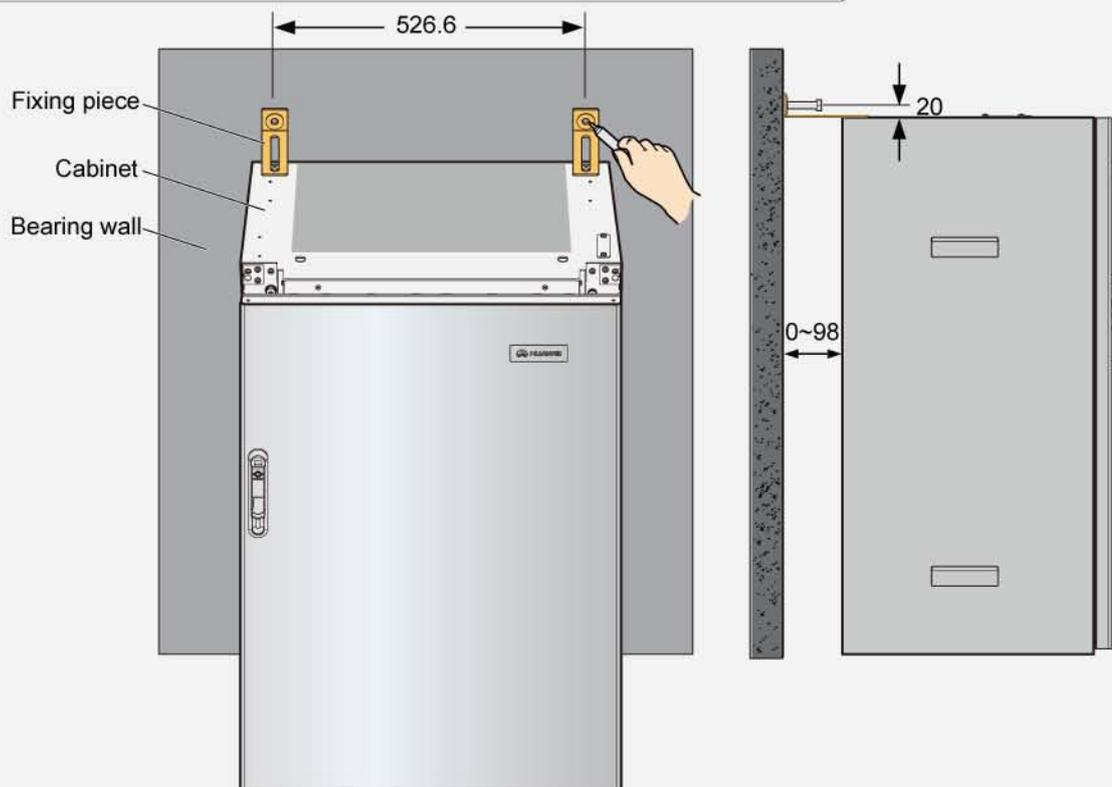


## 3 Determining the Positions for Installing the Expansion Bolt Assemblies (Unit: mm)

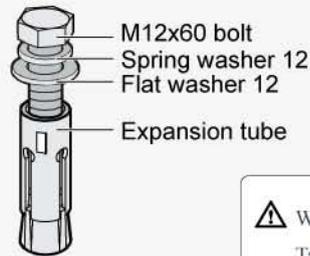
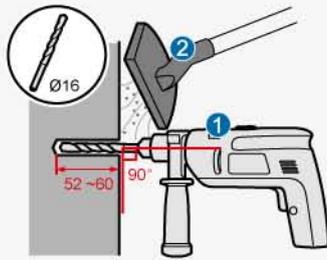


Tips

Move the fixing pieces away and use a chisel to punch a pit. Use the long measuring tape to measure the distance between the holes. Ensure that the four holes serve as the vertices of a rectangle.

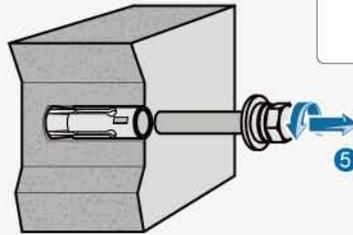
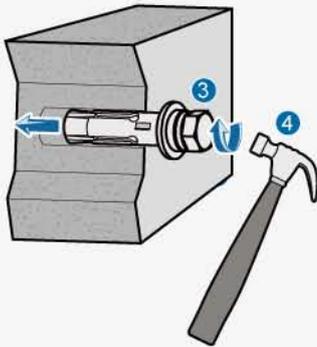


## 4 Drilling Holes at the Anchor Points and Installing the Expansion Bolt Assembly



### ⚠ Warning

Take proper measures when drilling holes in case the flying dust hurt your eyes or you inhale the dust.



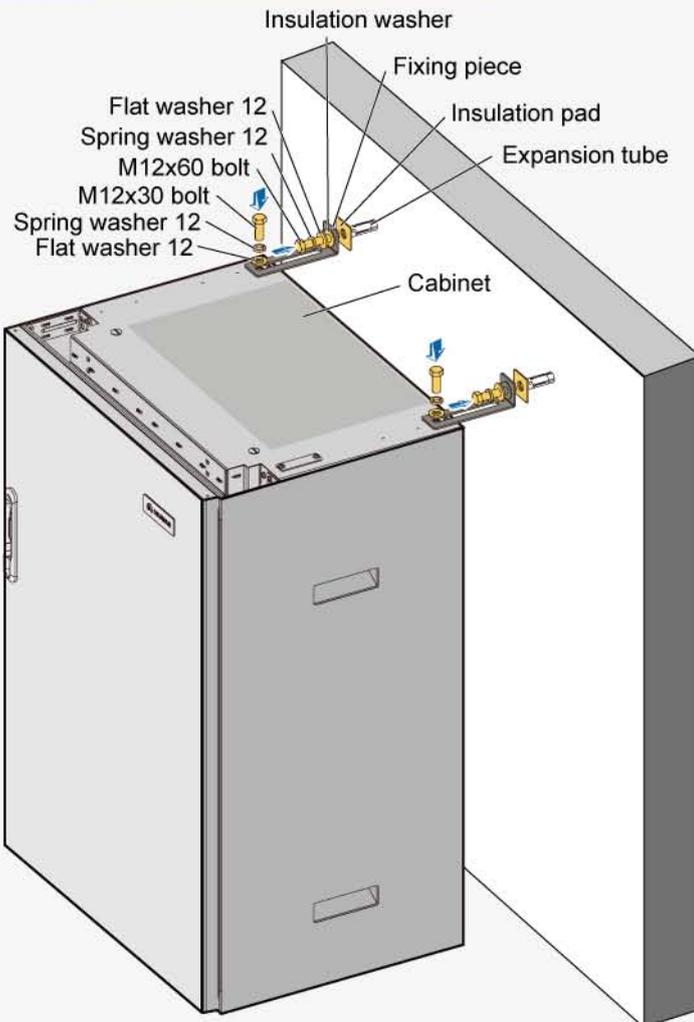
## 5 Tightening the Fixing Pieces



### Tips

Remember to cover the expansion bolt with an insulating pad.

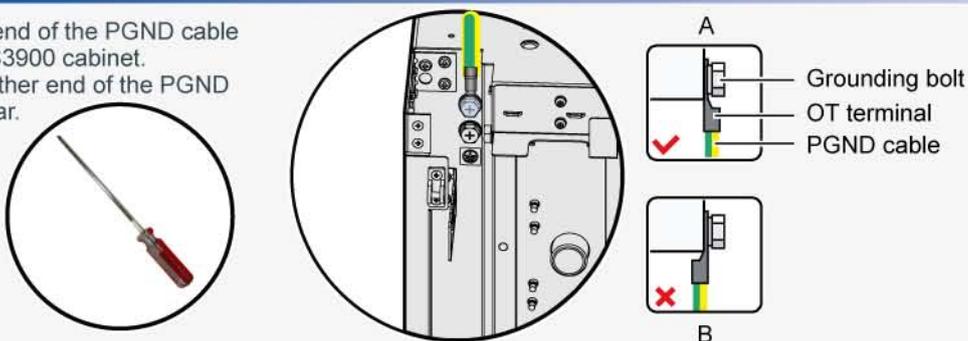
Use a torque wrench to tighten each bolt to 45 N · m.



# Installing the PGND Cables

## 1 Installing the External PGND Cable

Connect the OT terminal at one end of the PGND cable to the grounding point of the BTS3900 cabinet. Connect the OT terminal at the other end of the PGND cable to the nearest grounding bar. Use the Phillips screwdriver to tighten the screws.

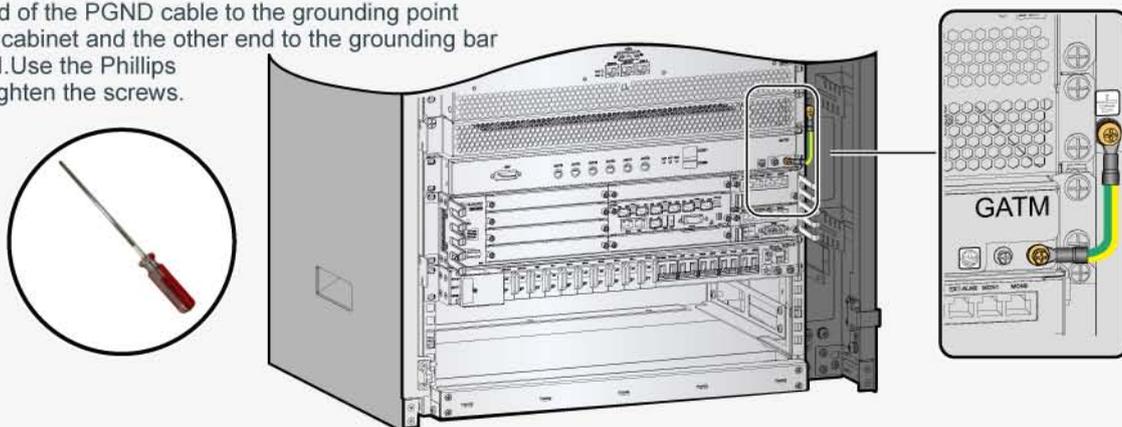


## 2 Installing the PGND Cable of the GATM (Optional)

### Note

If the GATM is configured, you should install the PGND cable of the GATM.

Connect one end of the PGND cable to the grounding point of the BTS3900 cabinet and the other end to the grounding bar under the GATM. Use the Phillips screwdriver to tighten the screws.

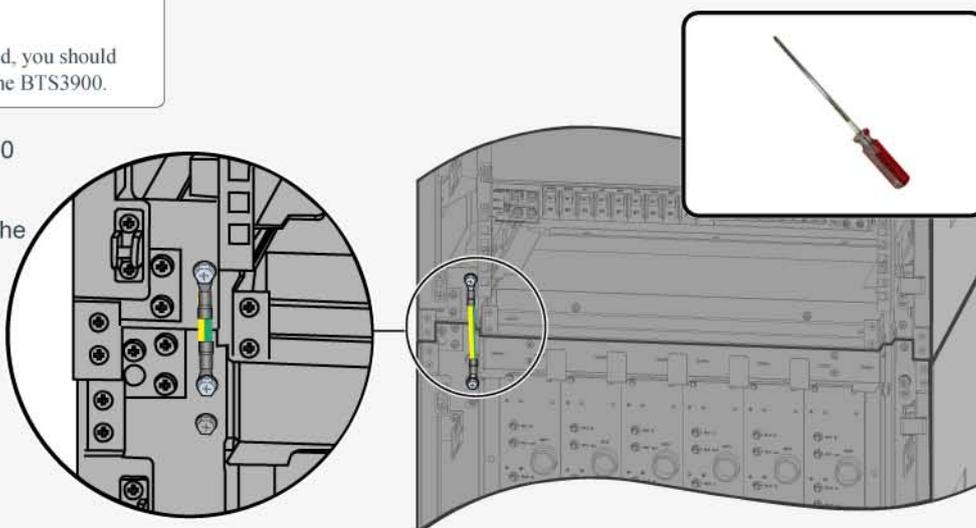


## 3 Installing the Equipotential Cable of the BTS3900 (Optional)

### Note

Only when the cabinets are stacked, you should install the equipotential cable of the BTS3900.

Connect one end of the BTS3900 equipotential cable to the left grounding point of the lower BTS3900 cabinet, and connect the other end of the cable to the left grounding point of the upper BTS3900 cabinet.



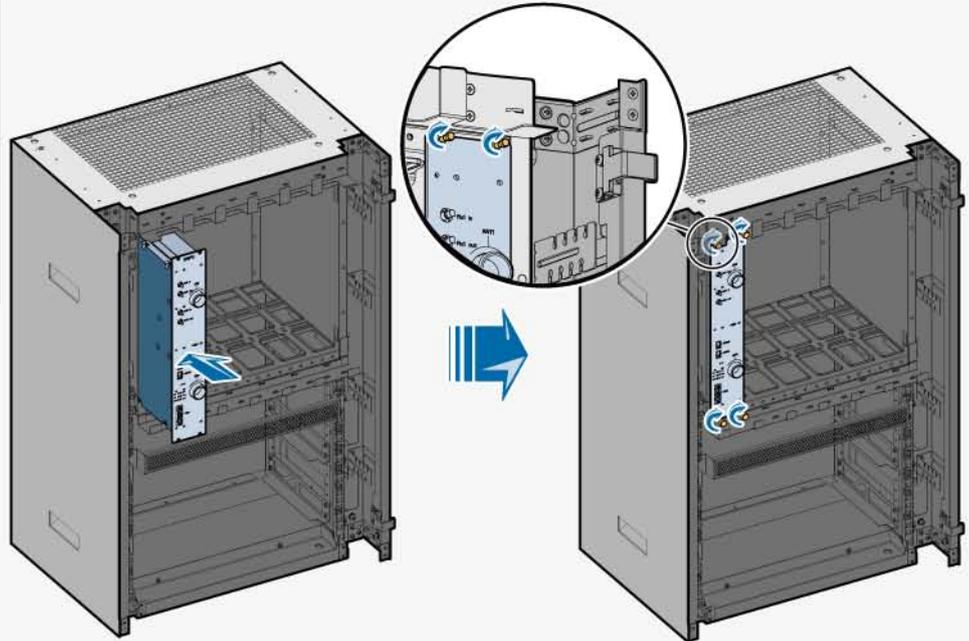
# Installing the Components of the BTS3900

## 1 Installing the DRFU

Hold the upper part of the panel with one hand and support the module with the other to place the module into the guide rail. In the four corners of the panel, use a cross screwdriver to tighten the four captive screws so that the module is fastened in the subrack.

### Notes

The standard handle, which is bound in the cable trough of the cabinet, is used to pull out the DRFU for maintenance. Store the standard handle properly. After the maintenance is complete, bind the standard handle to the original position in the cabinet.



## 2 Installing the BBU3900

Before installing the BBU, you should set the DIP switches on the GTMU and UELP. The GTMU has five DIP switches. Four of them are used and S3 is reserved. Each DIP switch has four bits. The UELP has one DIP switch, which is used to set the impedance on the E1/T1 port.

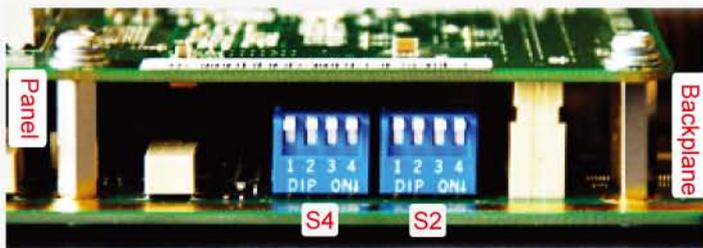
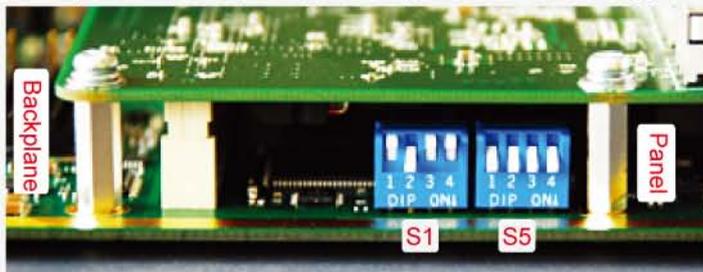
Board	DIP Switch	DIP Status				Description
		1	2	3	4	
GTMU	S1	ON	ON	OFF	OFF	75-ohm E1 mode
		OFF	ON	OFF	OFF	120-ohm E1 mode
	S2	ON	ON	ON	ON	unbalanced mode
		OFF	OFF	OFF	OFF	balanced mode
UEL P	S1	ON	ON	ON	ON	unbalanced mode
		OFF	OFF	OFF	OFF	balanced mode

In 75-ohm E1 mode, all bits of S2 are set to OFF by default (balanced mode). Only when the four E1s for receiving links become faulty, all bits of S2 are set to ON (unbalanced mode) to clear the link errors. In 120-ohm E1 mode, all bits of S2 keep OFF without additional settings.

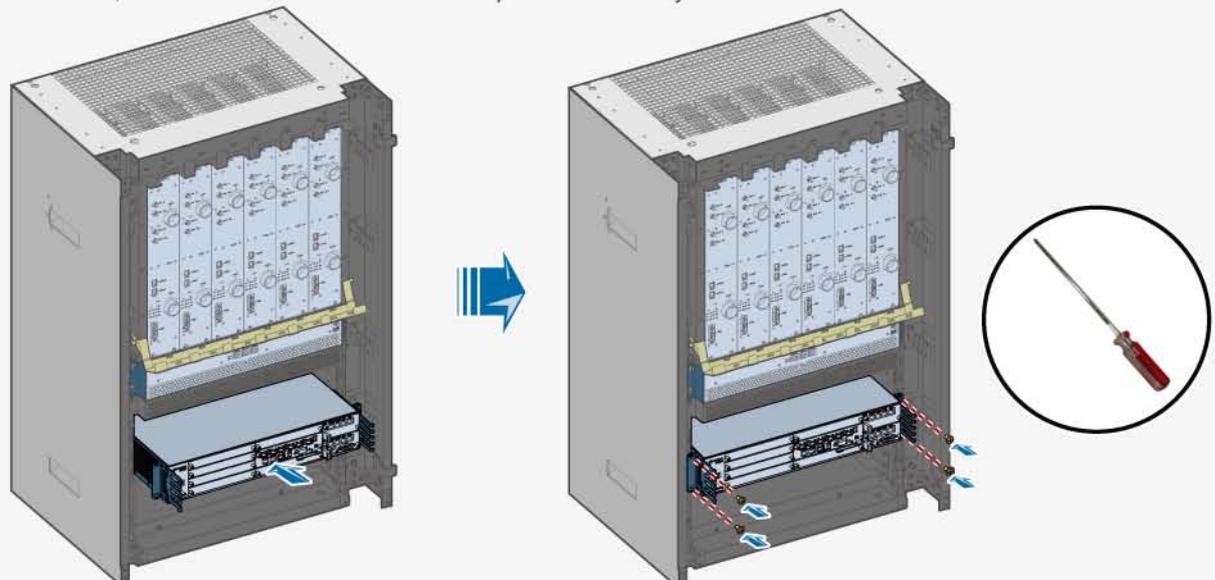
Whether to enable the Abis bypass function depends on the actual requirements. The DIP switches S4 and S5 on the GTMU are used to set whether to enable the Abis bypass function.

Board	DIP Switch	DIP Status				Description
		1	2	3	4	
GTMU	S4	ON	ON	ON	ON	The E1 link can be bypassed.
		OFF	OFF	OFF	OFF	The E1 link cannot be bypassed.
	S5	ON	ON	ON	ON	The E1 link cannot be bypassed.
		OFF	ON	ON	OFF	The E1 link of the Level 1 cascaded BTS can be bypassed.
		ON	OFF	ON	OFF	The E1 link of the Level 2 cascaded BTS can be bypassed.
		OFF	OFF	ON	OFF	The E1 link of the Level 3 cascaded BTS can be bypassed.
		ON	ON	OFF	OFF	The E1 link of the Level 4 cascaded BTS can be bypassed.
		OFF	ON	OFF	OFF	The E1 link of the Level 5 cascaded BTS can be bypassed.

The DIP switches on the GTMU should be set as follows if you require the following configurations: 120 Ω (balanced mode), E1 cable not grounded, and Abis bypass function not enabled.

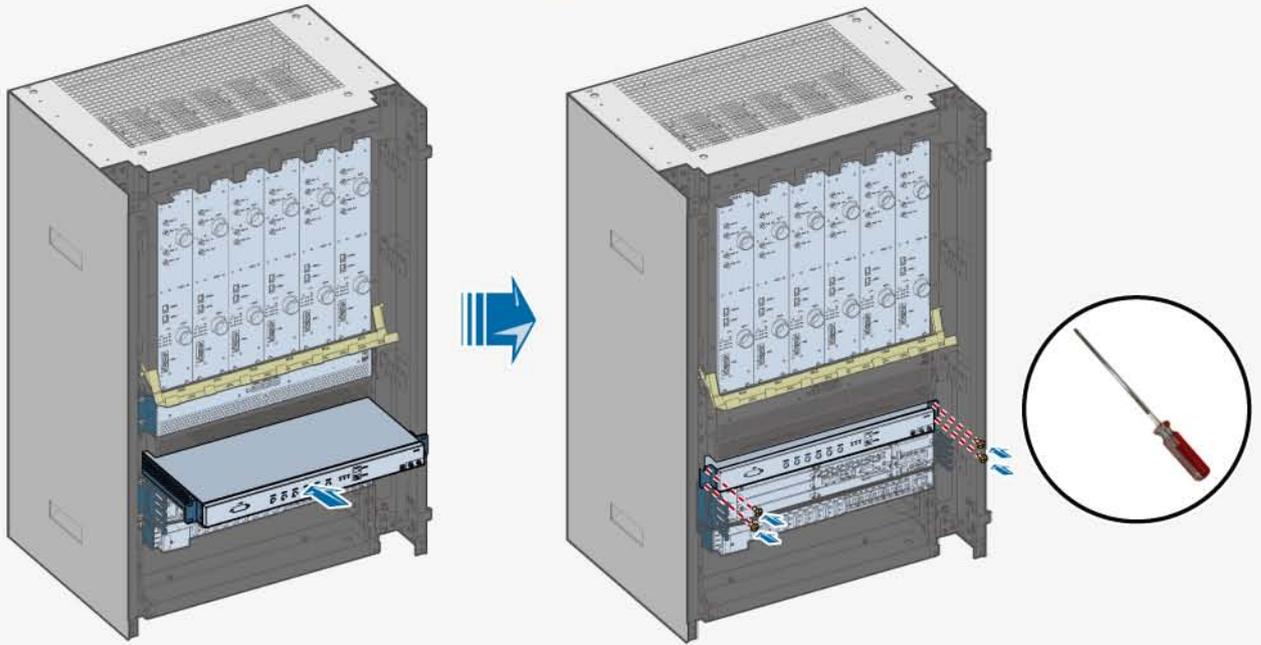


Hold the BBU with both hands and align the holes in each hanger with the corresponding mounting holes in the cabinet. Then, slowly push the BBU along the guide rail. Thread each of the four screws through the hanger and mounting hole in the cabinet. Then, use the cross screwdriver to tighten the screws so that the BBU is fastened in the cabinet. In the case of a -48 V DC cabinet, the BBU should be installed in the position 3 U away from the FAN unit. In the case of a +24 V DC or 220 V AC cabinet, the BBU should be installed in the position 2 U away from the FAN unit.



### 3 Installing the GATM (Optional)

If the BTS is required to support the RET antenna, you should install the GATM. In the case of a -48 V DC cabinet, the GATM should be installed in the position 2 U away from the FAN unit. In the case of a +24 V DC or 220 V AC cabinet, the GATM should be installed outside the cabinet. Align the holes on each hanger with the corresponding mounting holes on the cabinet. Then, slide the GATM into the BTS3900 cabinet. On both sides of the module, use a Phillips screwdriver to tighten the four screws so that the module is fixed in the subrack.

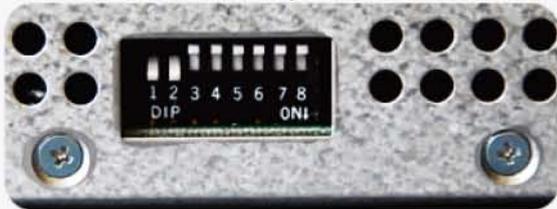


### 4 Installing the PMU/PSU (Optional)

In the case of a +24 V DC cabinet, you should install the PSU (DC/DC). In the case of a 220 V AC cabinet, you should install the PMU and PSU (AC/DC).

#### a Loosening the Screws on the Panel

DIP bits 1 and 2 on the rear panel of the PMU are set to ON, and the other six DIP bits are set to OFF.



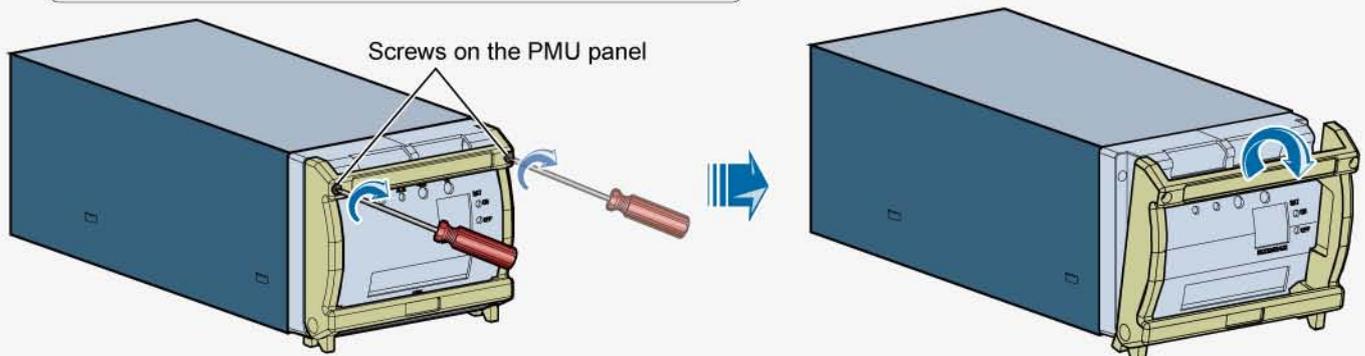
#### Note

If two PMUs are configured and the ports for monitoring the PMUs are logically on the same bus, bit 3 of the DIP switch on the second PMU should be set to ON and the other bits should be set to OFF. If the ports for monitoring the PMUs are logically on different buses, the settings of the DIP switches on the two PMUs can be the same.

On the PMU/PSU panel, loosen the two screws to unfold the handle.

#### Note

The following figure shows the screws on the PMU panel. The positions of the screws on the PSU panel are the same as those on the PMU panel.



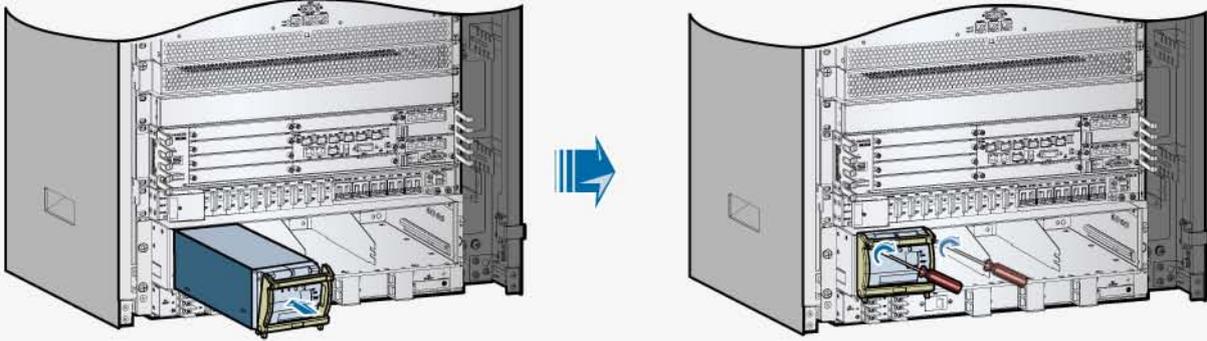
## b Pushing the Module into the Subrack

Slide the PMU/PSU forward along the guide rail until you feel resisting force. Fold the handle, and then tighten the two screws on the panel.

### Note

The 220 V AC cabinet can be configured with a maximum of one PMU and three PSUs. The +24 V DC cabinet can be configured with a maximum of four PSUs.

Install the other PMU and PSUs from the left to the right.



## Installing the Power Cables

### 1 List of Power Cables

BOM Code	Cable Name	Installation Position	Appearance
-	BTS3900 input power cable (-48 V)	One end is connected to the external power supply device.the power input terminal block on the DCDCU-01, with the blue wire to NEG(-) terminal and the black wire to the RTN(+) terminal.	
-	BTS3900 input power cable (+24 V)	One end is connected to the external power supply device.The other end is connected to the wiring unit (+24 V) of the power subrack, with the red wire to the + terminal and the black wire to the - terminal.	

BOM Code	Cable Name	Installation Position	Appearance
Blue wire: 04150057 Black wire: 04150056	Power cable between the PSU (AC/DC) and the DCDU	One end is connected to the DCDU-01 panel, with the blue wire to the NEG(-) terminal and the black wire to the RTN(+) terminal. The other end is connected to the wiring unit (220 V) of the power subrack, with the blue wire to the Load2(-) and Load1(-) terminal and the black wire to the RTN(+) terminal.	
04150065	Power cable between the DCDU and the BBU	One end is connected to the BBU power socket on the DCDU-01 panel. The other end is connected to the PWR port on the UPEU panel in the BBU.	
04150029/ 04150030	Power cable between the DCDU and the DRFU	One end is connected to the RFU power socket on the DCDU-01 panel. The other end is connected to the PWR port on the DRFU panel.	
04150030	Power cable between the DCDU and the GATM	One end is connected to the SPARE1 power socket on the DCDU-01 panel. The other end is connected to the -48V port on the GATM panel.	
04150029	Power cable between the DCDU and the FAN unit	One end is connected to the FAN power socket on the DCDU-01 panel. The other end is connected to the -48V port on the panel of the FAN unit.	
Blue wire: 04150057 Black wire: 04150056	Power cable between the PSU (DC/DC) and the DCDU	One end is connected to the DCDU-01 panel, with the blue wire to the NEG(-) terminal and the black wire to the RTN(+) terminal. The other end is connected to the wiring unit (+24 V) of the power subrack, with the blue wire to the Load terminal and the black wire to the RTN terminal.	
-	BTS3900 input power cable (220 V)	One end is connected to the external power supply device. The other end is connected to the L and N wiring posts of the wiring unit (220 V) of the power subrack.	

## 2 Installing the Power Cables for a Single Cabinet

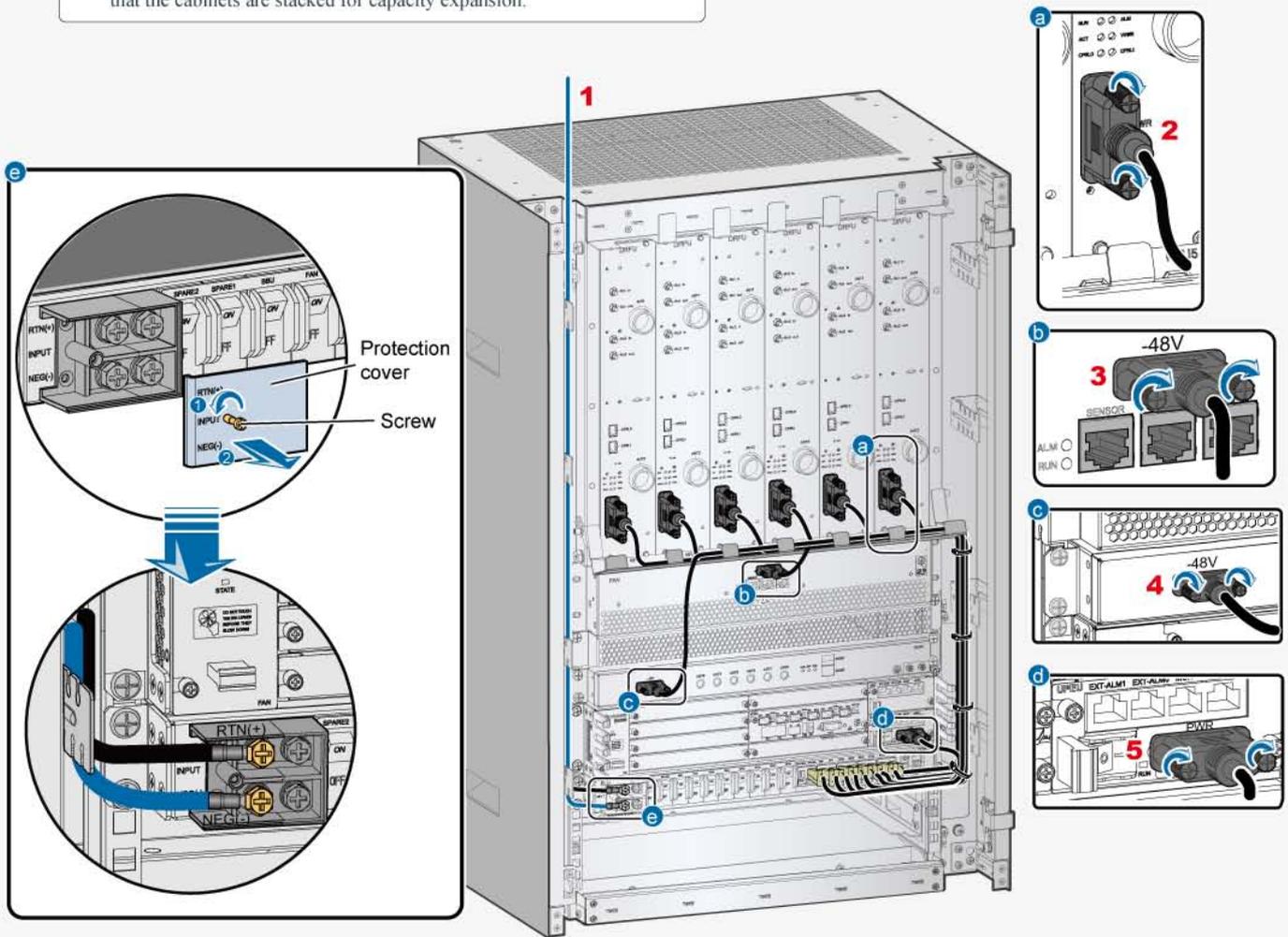
### a Installing the Power Cables for a -48 V Cabinet

You are advised to install the power cables in the following sequence: the BTS3900 input power cable, and then the power cables between the DCDU-01 and the modules in the cabinet.

In the case of the -48 V DC input, the maximum input current is 70 A. Therefore, a circuit breaker with the rated current ranging from 70 A to 100 A (80 A recommended) is required for MCB protection on the previous power supply device.

#### Note

When cutting the BTS3900 input power cable (-48 V), you should leave extra length of the cable for ease of cabling on the upper cabinet in case that the cabinets are stacked for capacity expansion.



(1) BTS3900 input power cable (-48 V)

(2) Power cable between the DCDU and the DRFU

(3) Power cable between the DCDU and the FAN unit

(4) Power cable between the DCDU and the GATM

(5) Power cable between the DCDU and the BBU

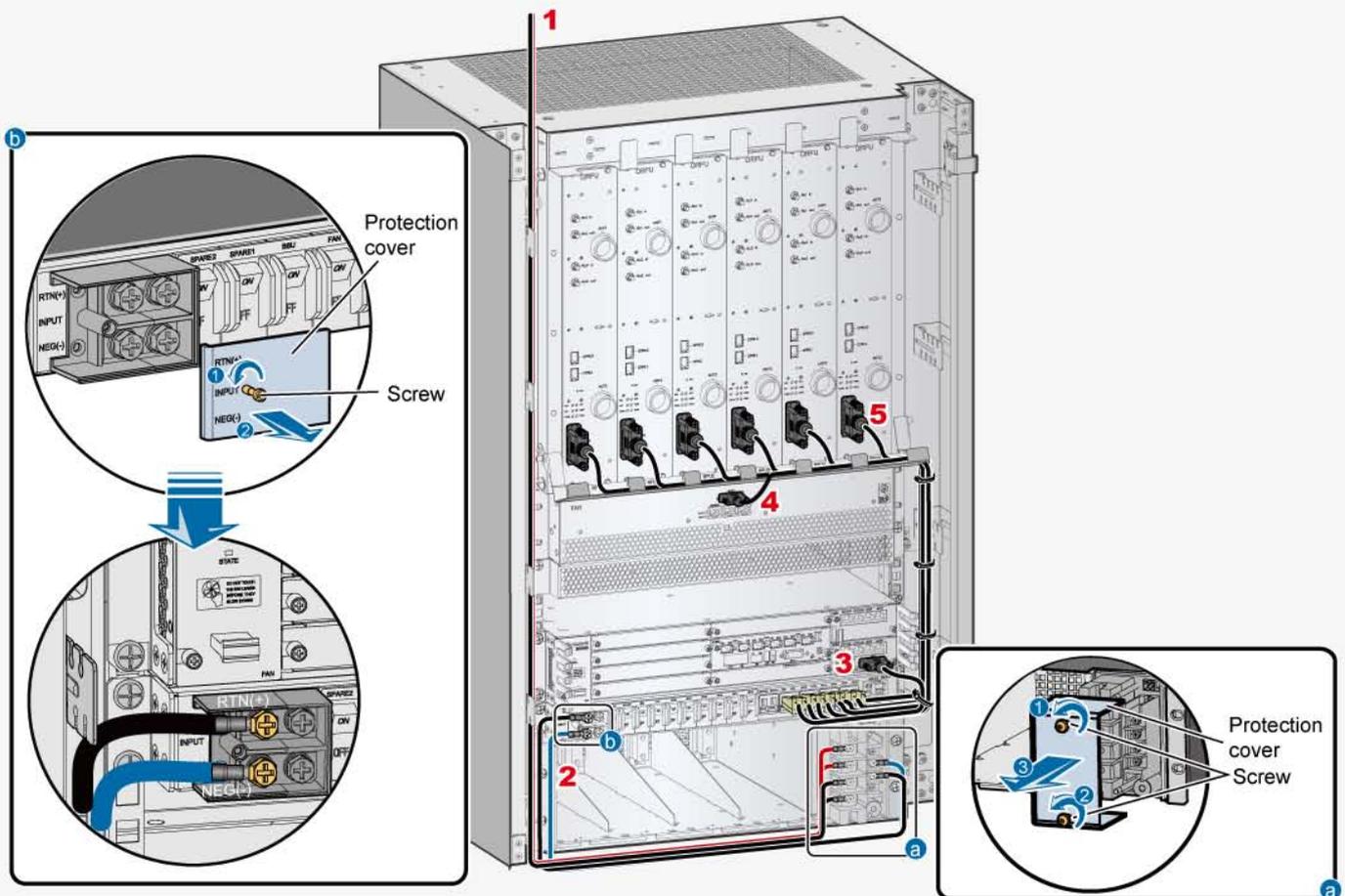
## b Installing the Power Cables for a +24 V DC Cabinet

You are advised to install the power cables in the following sequence: the BTS3900 input power cable, and then the power cable between the wiring unit and the DCDU-01, and finally the power cables between the DCDU-01 and the modules in the cabinet.

In the case of the +24 V DC input, the maximum input current is 140 A. Therefore, two pyromagnetic circuit breakers with the rated current ranging from 70 A to 100 A (80 A recommended) are required for MCB protection on the previous power supply device. Alternatively, you can use fuses in parallel connection.

### Note

When cutting the BTS3900 input power cable (+24 V), you should leave extra length of the cable for ease of cabling on the upper cabinet in case that the cabinets are stacked for capacity expansion.



(1) BTS3900 input power cable (+24 V)	(2) Power cable between the PSU (DC/DC) and the DCDU
(3) Power cable between the DCDU and the BBU	(4) Power cable between the DCDU and the FAN unit
(5) Power cable between the DCDU and the DRFU	

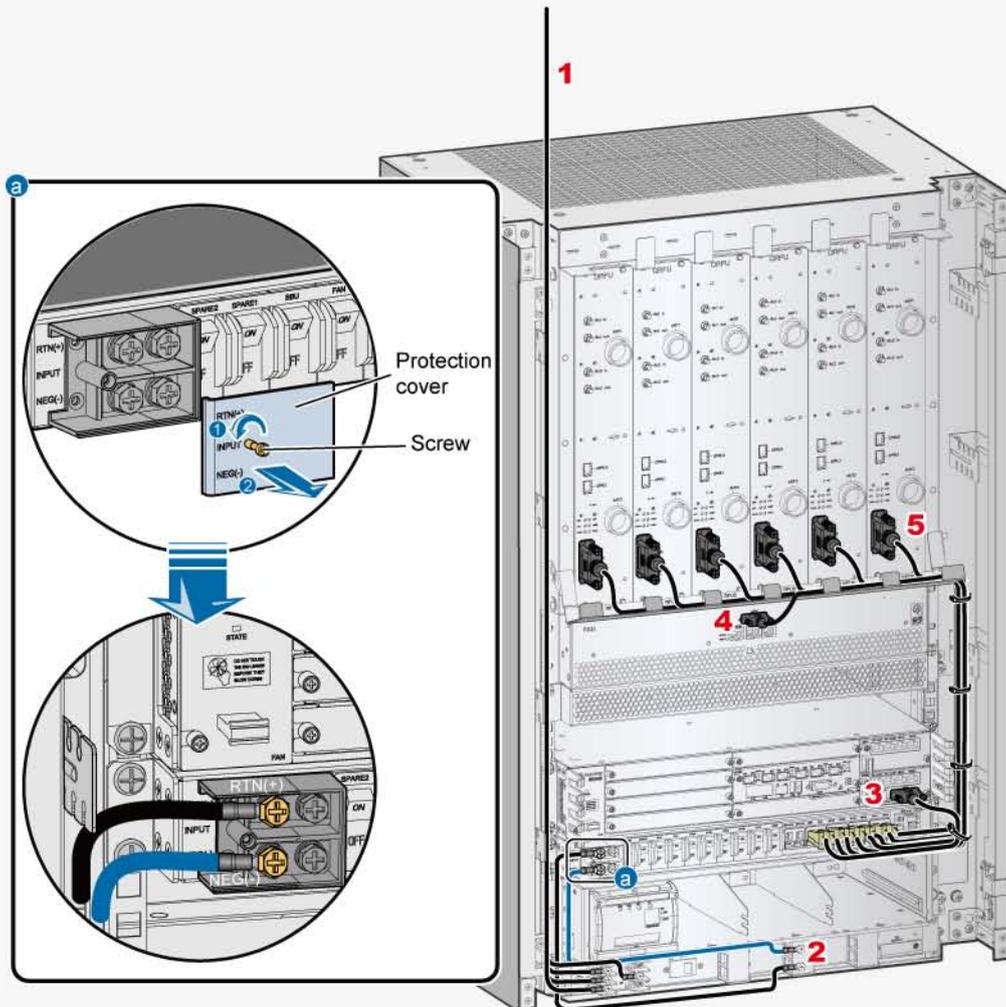
## C Installing the Power Cables for a 220 V AC Cabinet

You are advised to install the power cables in the following sequence: the BTS3900 input power cable, and then the power cable between the wiring unit and the DCDU-01, and finally the power cables between the DCDU-01 and the modules in the cabinet.

Connection of Power Cables	Maximum Input Current	MCB Minimum Configuration
220 V single-phase input	20A(L)	30A
	20A(N)	
220 V 3-phase input	10A(L1/L2/L3)	16A
	10A(N)	

### Note

When cutting the BTS3900 input power cable (220 V), you should leave extra length of the cable for ease of cabling on the upper cabinet in case that the cabinets are stacked for capacity expansion.



(1) BTS3900 input power cable (220 V)

(2) Power cable between the PSU (AC/DC) and the DCDU

(3) Power cable between the DCDU and the BBU

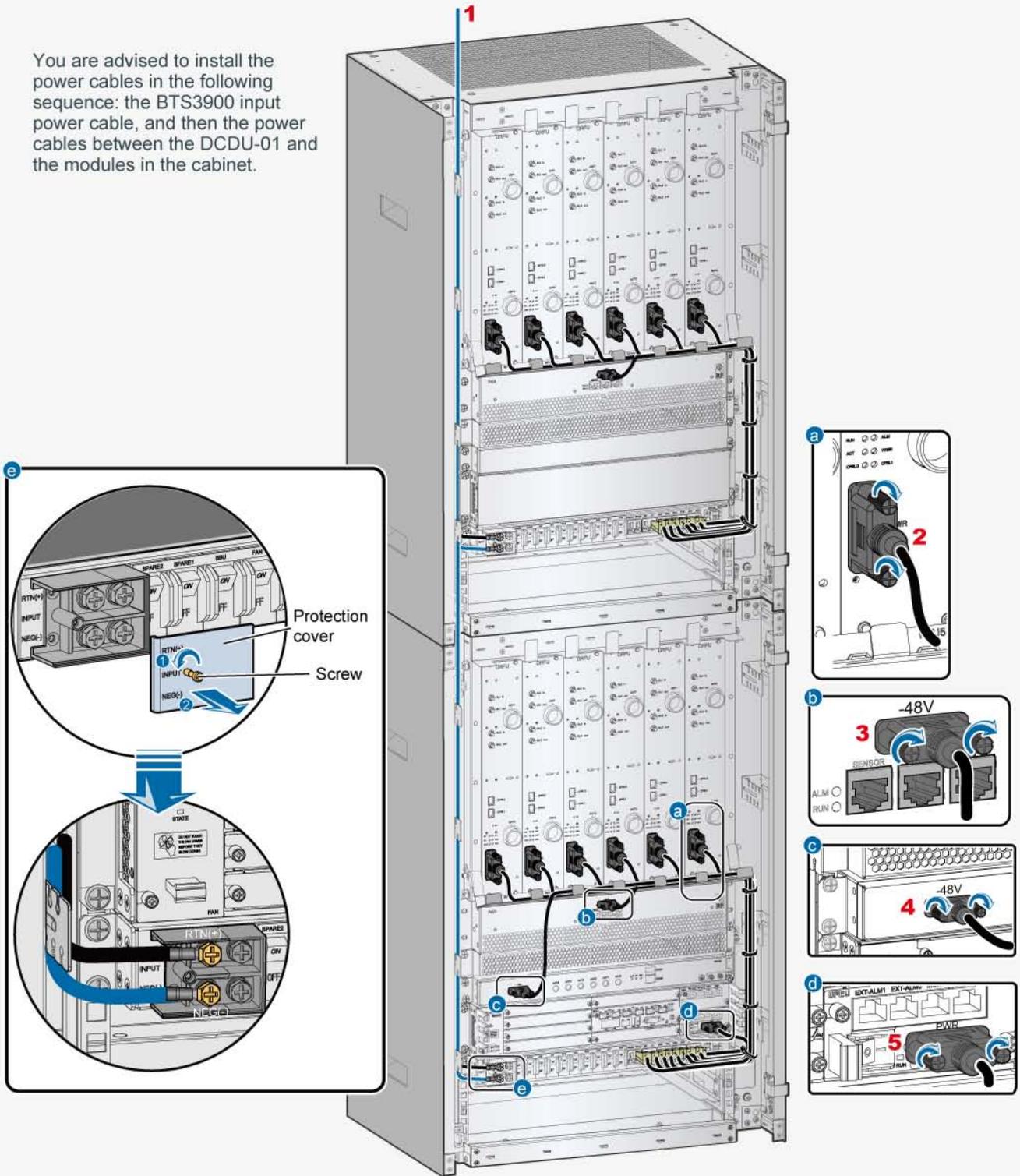
(4) Power cable between the DCDU and the FAN unit

(5) Power cable between the DCDU and the DRFU

# 3 Installing the Power Cables for the Stacked Cabinets

## a Installing the Power Cables for Two Stacked -48 V Cabinets

You are advised to install the power cables in the following sequence: the BTS3900 input power cable, and then the power cables between the DCDU-01 and the modules in the cabinet.



(1) BTS3900 input power cable (-48 V)

(2) Power cable between the DCDU and the DRFU

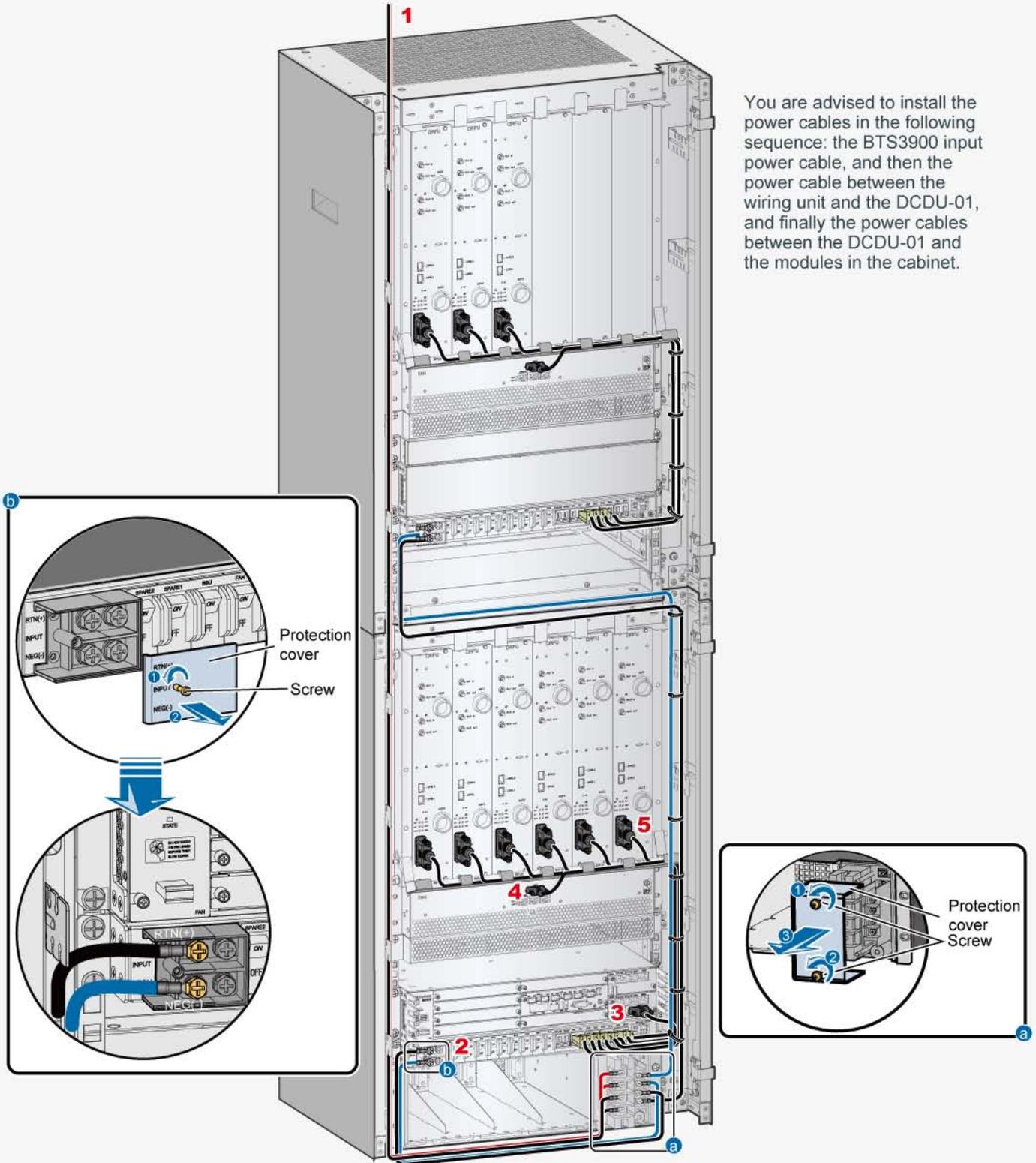
(3) Power cable between the DCDU and the FAN unit

(4) Power cable between the DCDU and the GATM

(5) Power cable between the DCDU and the BBU

## b Installing the Power Cables for the Stacked +24 V DC and -48 V DC Cabinets

You are advised to install the power cables in the following sequence: the BTS3900 input power cable, and then the power cable between the wiring unit and the DCDU-01, and finally the power cables between the DCDU-01 and the modules in the cabinet.



(1) BTS3900 input power cable (+24 V)

(2) Power cable between the PSU (DC/DC) and the DCDU

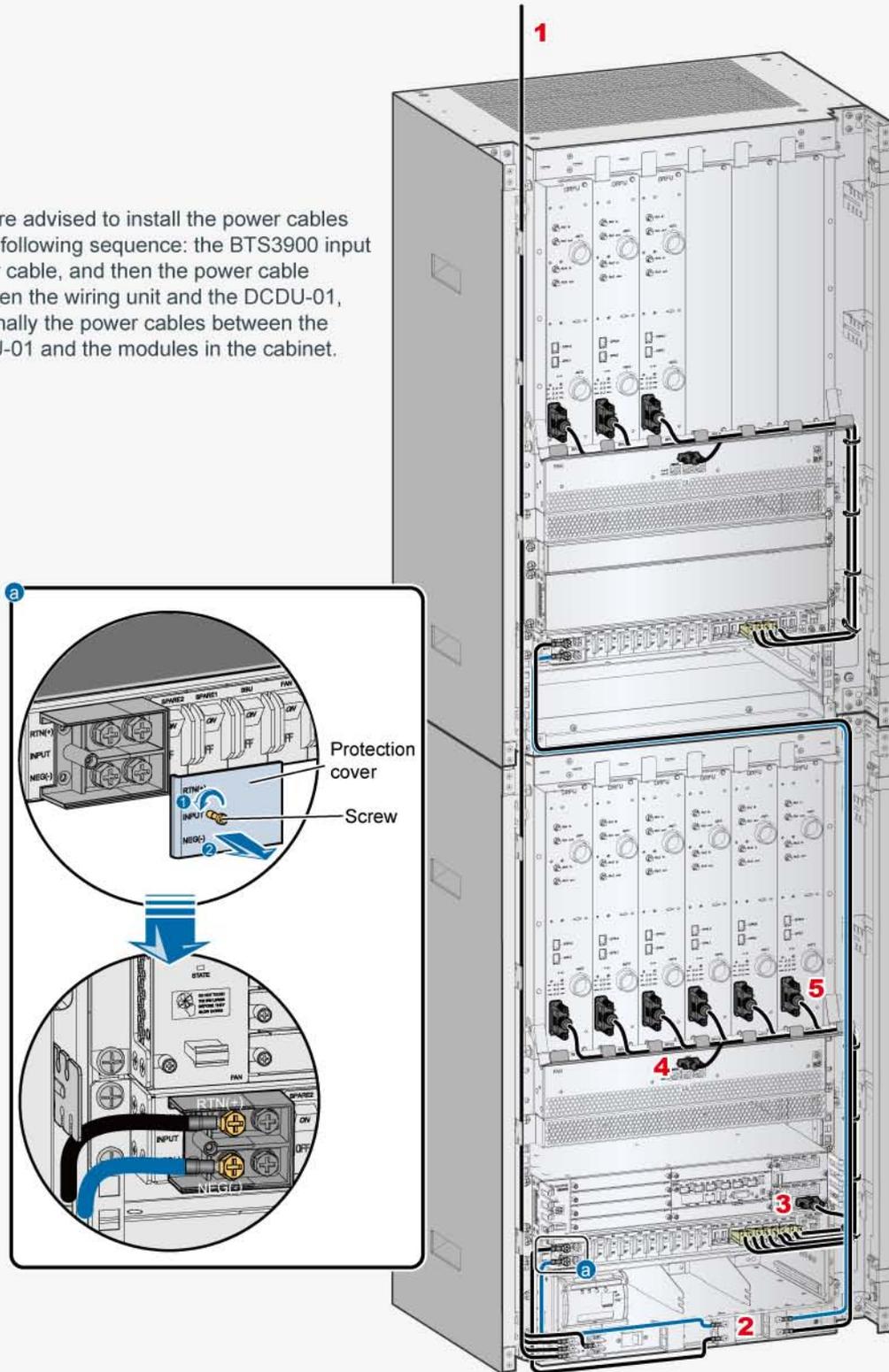
(3) Power cable between the DCDU and the BBU

(4) Power cable between the DCDU and the FAN unit

(5) Power cable between the DCDU and the DRFU

## C Installing the Power Cables for the Stacked 220 V AC and -48 V DC Cabinets

You are advised to install the power cables in the following sequence: the BTS3900 input power cable, and then the power cable between the wiring unit and the DCDU-01, and finally the power cables between the DCDU-01 and the modules in the cabinet.

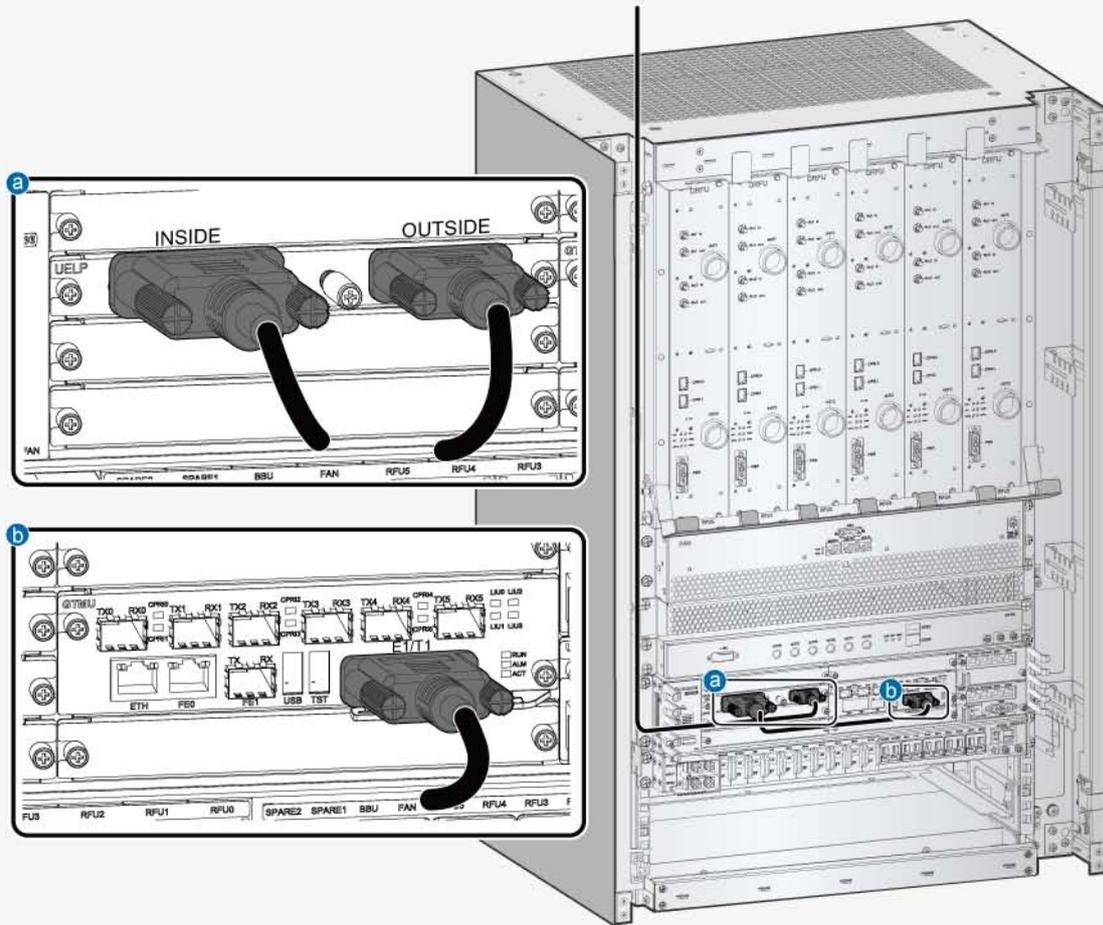


(1) BTS3900 input power cable (220 V)	(2) Power cable between the PSU (AC/DC) and the DCDU
(3) Power cable between the DCDU and the BBU	(4) Power cable between the DCDU and the FAN unit
(5) Power cable between the DCDU and the DRFU	

# Installing the Transmission Cables

## 1 Installing the E1 Cable and E1 Surge Protection Transfer Cable

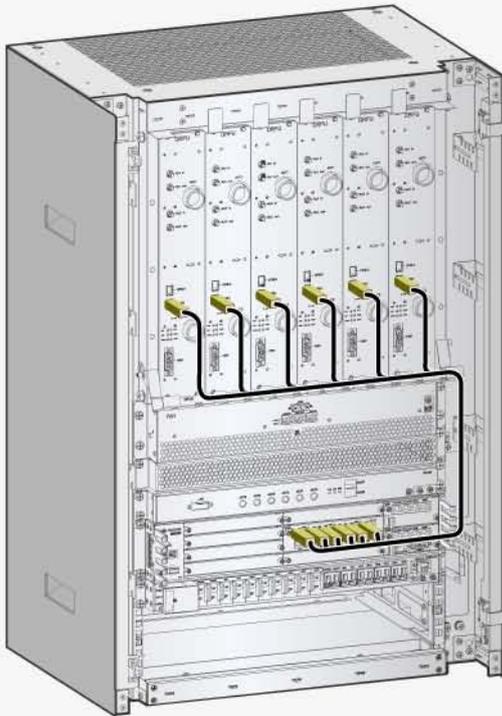
If...	Then...
UELP is configured,	Insert the DB26 male connector of the E1 cable into the OUTSIDE port on the UELP and tighten the screws. Then, install the E1 surge protection transfer cable.
UELP is not configured,	Insert the DB26 male connector of the E1 cable into the E1/T1 port on the GTMU and tighten the screws. In this case, installing the E1 surge protection transfer cable is not required.



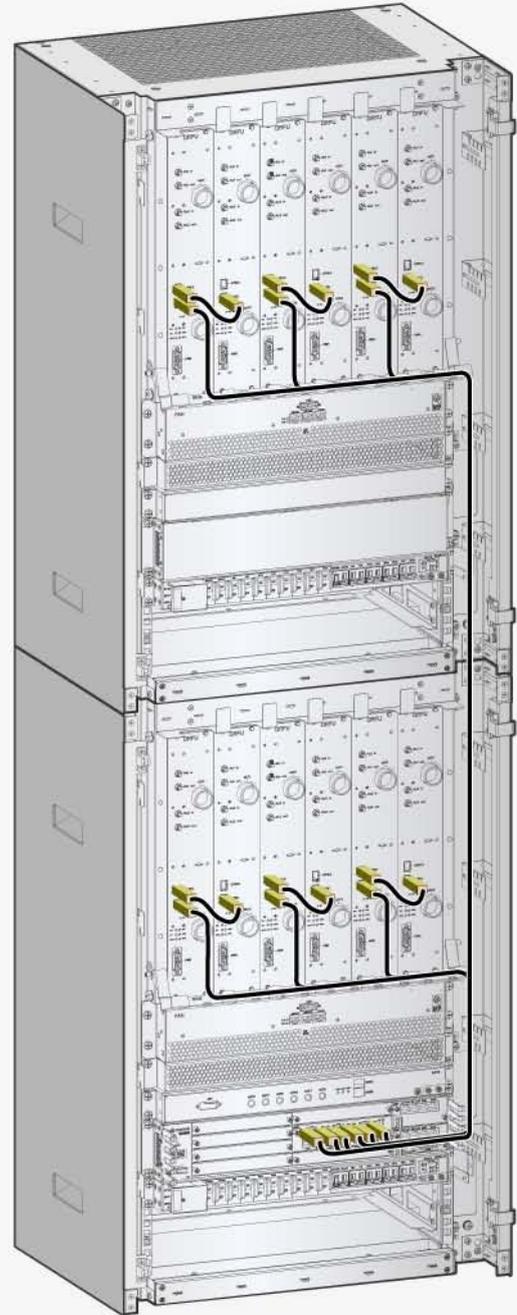
BOM Code	Cable Name	Installation Position	Appearance
-	E1 cable	One end is connected to the OUTSIDE port on the UELP or the E1/T1 port on the GTMU. The other end is connected to the corresponding auxiliary equipment.	
04070027	E1 surge protection transfer cable	One end is connected to the INSIDE port on the UELP. The other end is connected to the E1/T1 port on the GTMU.	

## 2 Installing the CPRI Cable and the Signal Cable Between the Cascaded DRFUs

When installing the CPRI cable for a single cabinet or for stacked cabinets, route the cable along the cable trough on the right of cabinet and bind the cable to the cable trough.



Connections of the CPRI cable for a single cabinet

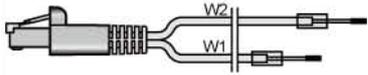


Connections of the CPRI cable and signal cable between cascaded DRFUs for stacked cabinets

BOM Code	Cable Name	Installation Position	Appearance
04050097	CPRI cable	One end is connected to one of the ports CPRI0 through CPRI5 on the GTMU panel in the BBU. The other end is connected to the CPRI1 port on the DRFU panel.	
04050099/ 04050100	Signal cable between the cascaded DRFUs	One end is connected to the CPRI0 port on the panel of the upper-level DRFU. The other end is connected to the CPRI1 port on panel of the lower-level DRFU.	

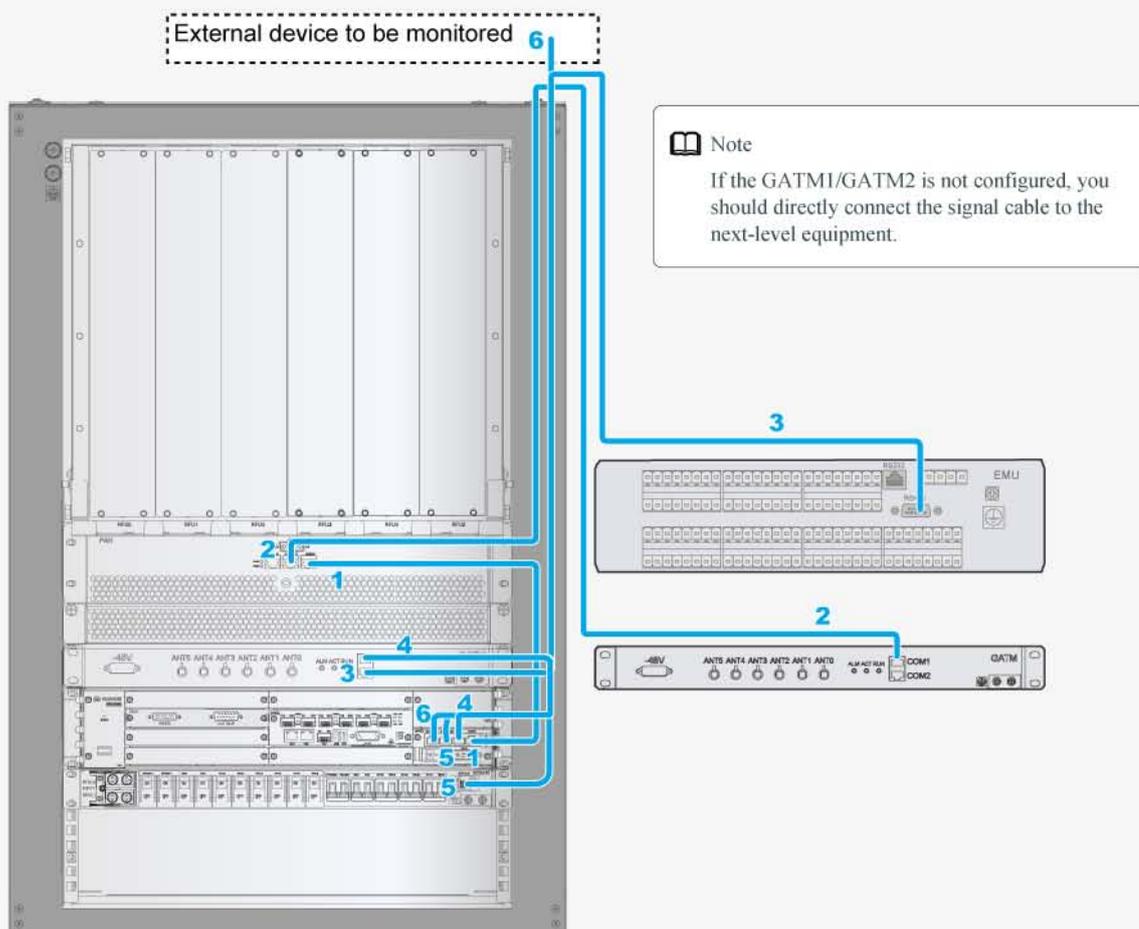
## Installing the Monitoring Signal Cables

### 1 List of Monitoring Signal Cables

BOM Code	Cable Name	Appearance
04070025	Monitoring signal cable for the FAN unit	
04070025	Monitoring signal cable for the GATM	
04080038	Monitoring signal cable for the EMU	
04080032	Monitoring signal cables for the DCDU-01	
04046100	BBU alarm cable	
04070025	In-position signal cable for the PSU (DC/DC)	
04070023	Monitoring signal cable for the PMU	
04070026	Signal cable between the cascaded FAN units	

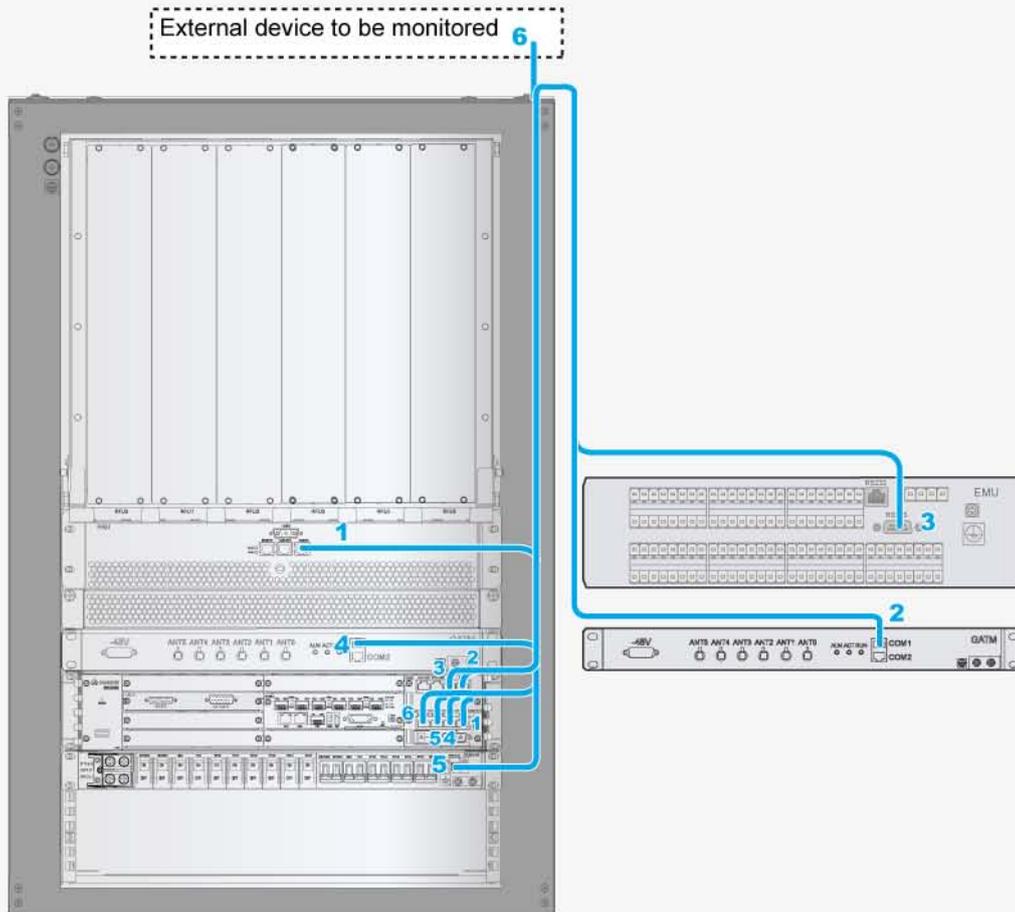
## 2 Install the Monitoring Signal Cables for a Single Cabinet

a If the -48 V DC cabinet is configured with one UPEU, refer to the following information



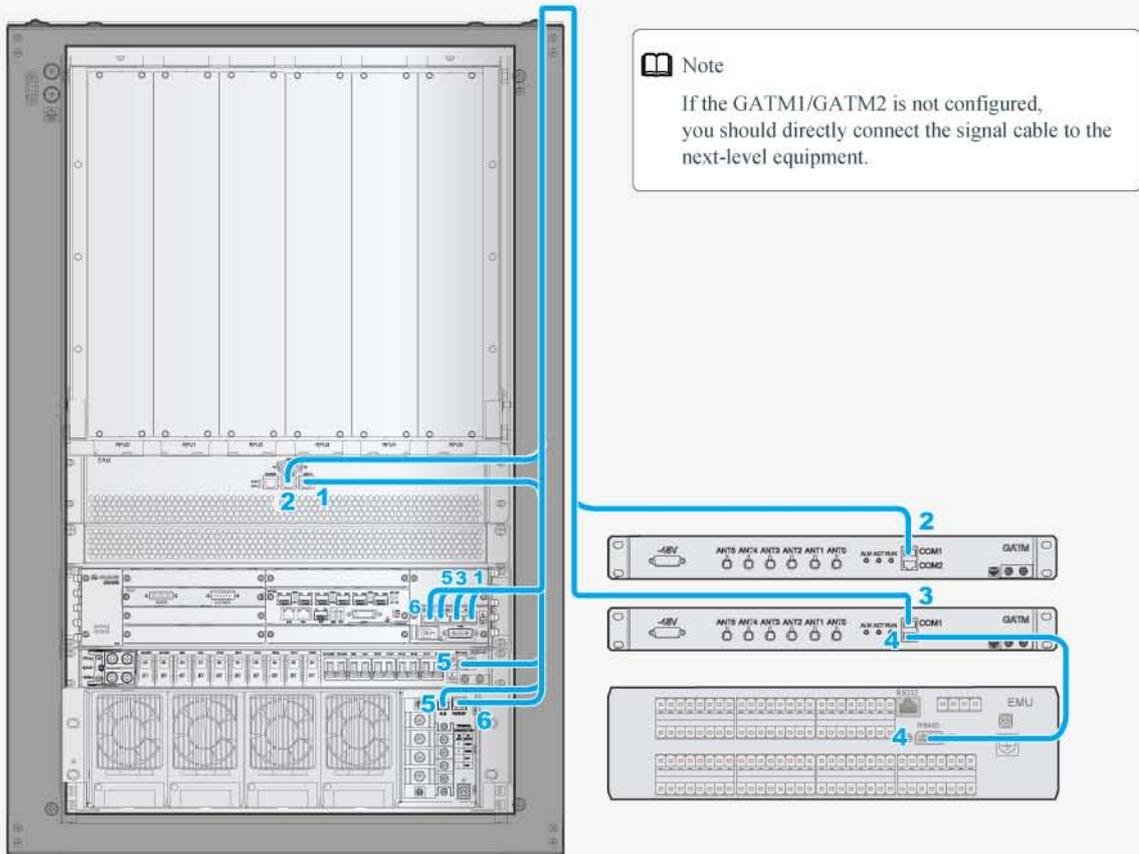
SN	Cable Name	Installation Position
1	Monitoring signal cable for the FAN unit	One end is connected to the COM IN port on the panel of the FAN unit. The other end is connected to the MON0 port on the UPEU panel.
2	Monitoring signal cable for the GATM	One end is connected to the COM OUT port on the panel of the FAN unit and the other end to the COM1 port on the GATM panel.
3	Monitoring signal cable for the EMU	The DB9 connector is inserted into the RS485 port on the EMU panel. The RJ45 connector is inserted into the COM2 port on the GATM1 panel.
4	Monitoring signal cable for the GATM	One end is connected to the COM1 port on the GATM panel and the other end to the MON1 port on the UPEU.
5	Monitoring signal cables for the DCDU-01	One end is connected to the SPD ALM port on the DCDU-01 panel and the other end to the EXT-ALM0 port on the UPEU panel.
6	BBU alarm cable	One end is connected to the EXT-ALM1 port on the UPEU panel and the other end to the external alarm device.

**b** If the -48 V DC cabinet is configured with one UPEU and one UEIU, refer to the following information



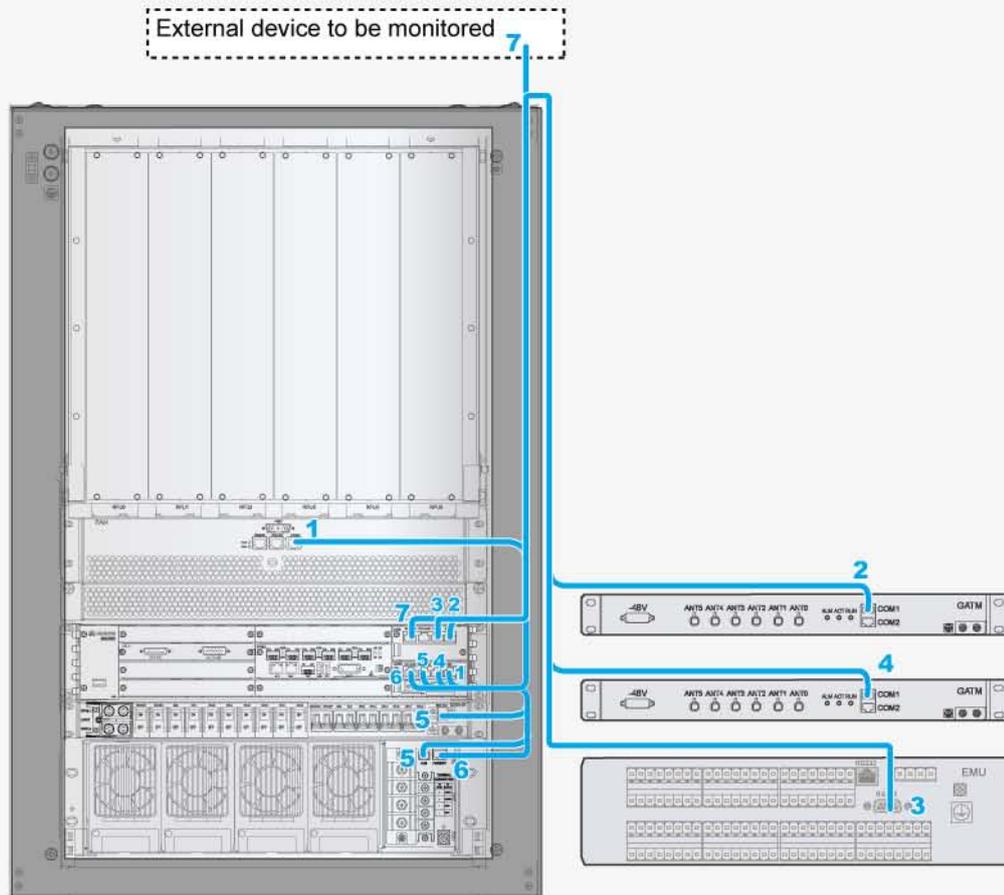
SN	Cable Name	Installation Position
1	Monitoring signal cable for the FAN unit	One end is connected to the COM IN port on the panel of the FAN unit. The other end is connected to the MON0 port on the UPEU panel.
2	Monitoring signal cable for the GATM	One end is connected to the MON0 port on the UEIU panel and the other end to the COM1 port on the GATM panel.
3	Monitoring signal cable for the EMU	The DB9 connector is inserted into the RS485 port on the EMU panel. The RJ45 connector is inserted into the MON1 port on the UEIU panel.
4	Monitoring signal cable for the GATM	One end is connected to the COM1 port on the GATM panel and the other end to the MON1 port on the UPEU panel.
5	Monitoring signal cables for the DCDU-01	One end is connected to the SPD ALM port on the DCDU-01 panel and the other end to the EXT-ALM0 port on the UPEU panel.
6	BBU alarm cable	One end is connected to the EXT-ALM1 port on the UPEU panel and the other end to the external alarm device.

**C** If the +24 V DC cabinet is configured with one UPEU, refer to the following information



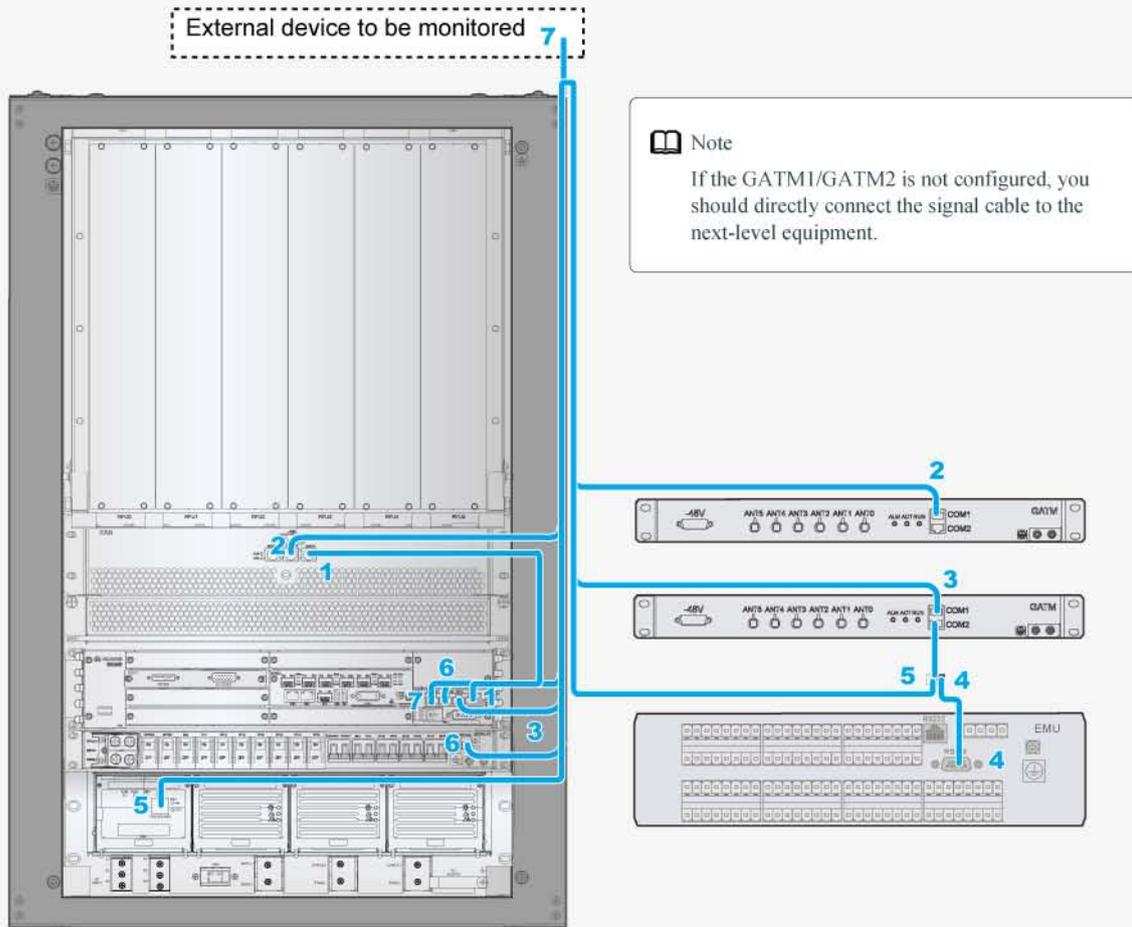
SN	Cable Name	Installation Position
1	Monitoring signal cable for the FAN unit	One end is connected to the COM IN port on the panel of the FAN unit. The other end is connected to the MON0 port on the UPEU panel.
2	Monitoring signal cable for the GATM	One end is connected to the COM OUT port on the panel of the FAN unit and the other end to the COM1 port on the GATM panel.
3	Monitoring signal cable for the GATM	One end is connected to the COM1 port on the GATM panel and the other end to the MON1 port on the UPEU panel.
4	Monitoring signal cable for the EMU	The DB9 connector is inserted into the RS485 port on the EMU panel. The RJ45 connector is inserted into the COM2 port on the GATM1 panel.
5	Monitoring signal cables for the DCDU-01	One end is connected to the EXT-ALM0 port on the UPEU panel. At the other end, pins 1 and 2 are connected to the SPD ALM port on the DCDU-01 panel, and pins 3 and 6 are connected to the ALM port on the wiring unit of the PSU(DC/DC).
6	In-position signal cable for the PSU (DC/DC)	One end is connected to the EXT-ALM1 port on the UPEU panel and the other end to the PRESENT port on the PSU (DC/DC) wiring unit.

**d** If the +24 V DC cabinet is configured with one UPEU and one UEIU, refer to the following information

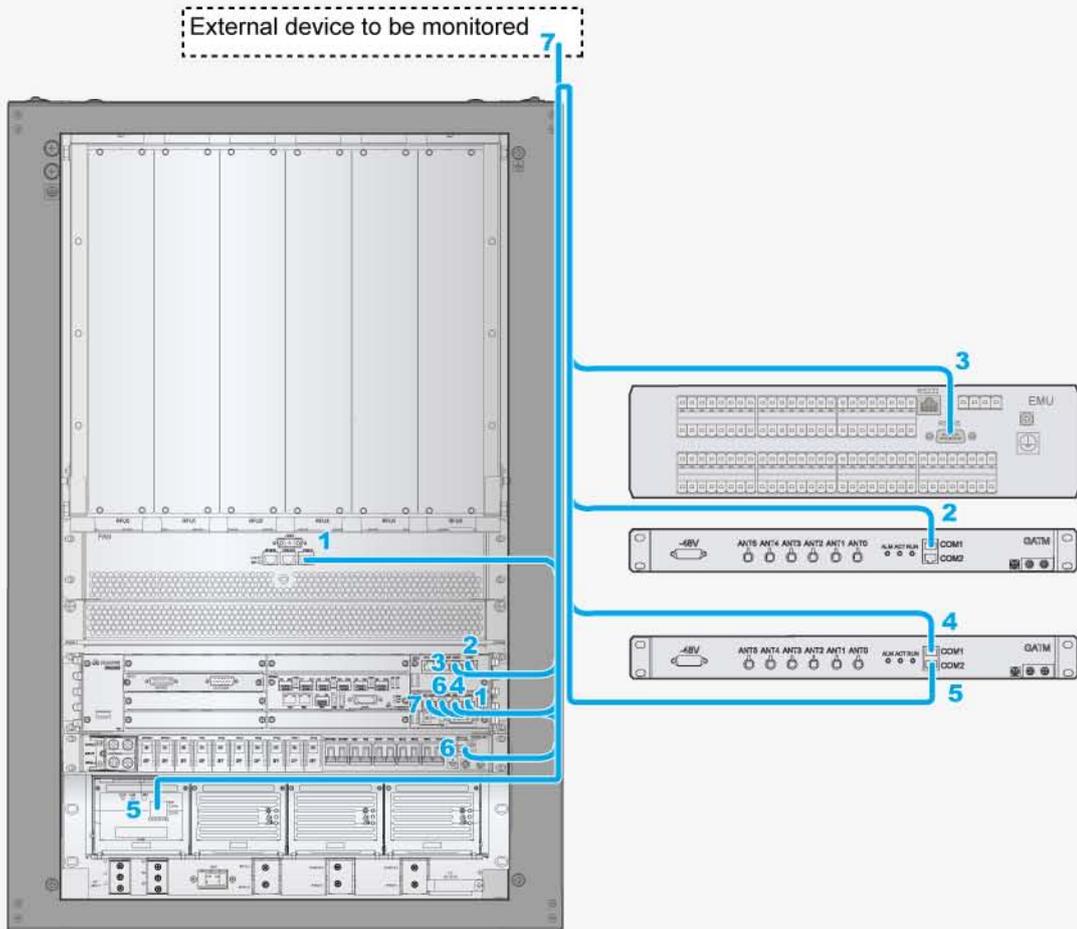


SN	Cable Name	Installation Position
1	Monitoring signal cable for the FAN unit	One end is connected to the COM IN port on the panel of the FAN unit. The other end is connected to the MON0 port on the UPEU panel.
2	Monitoring signal cable for the GATM	One end is connected to the MON0 port on the UEIU panel and the other end to the COM1 port on the GATM panel.
3	Monitoring signal cable for the EMU	The DB9 connector is inserted into the RS485 port on the EMU panel. The RJ45 connector is inserted into the MON1 port on the UEIU panel.
4	Monitoring signal cable for the GATM	One end is connected to the COM1 port on the GATM panel and the other end to the MON1 port on the UPEU panel.
5	Monitoring signal cables for the DCDCU-01	One end is connected to the EXT-ALM0 port on the UPEU panel. At the other end, pins 1 and 2 are connected to the SPD ALM port on the DCDCU-01 panel, and pins 3 and 6 are connected to the ALM port on the wiring unit of the PSU(DC/DC).
6	In-position signal cable for the PSU (DC/DC)	One end is connected to the EXT-ALM1 port on the UPEU panel and the other end to the PRESENT port on the PSU (DC/DC) wiring unit.
7	BBU alarm cable	One end is connected to the EXT-ALM1 port on the UEIU panel and the other end to the external alarm device.

**e If the 220 V AC cabinet is configured with one UPEU, refer to the following information**



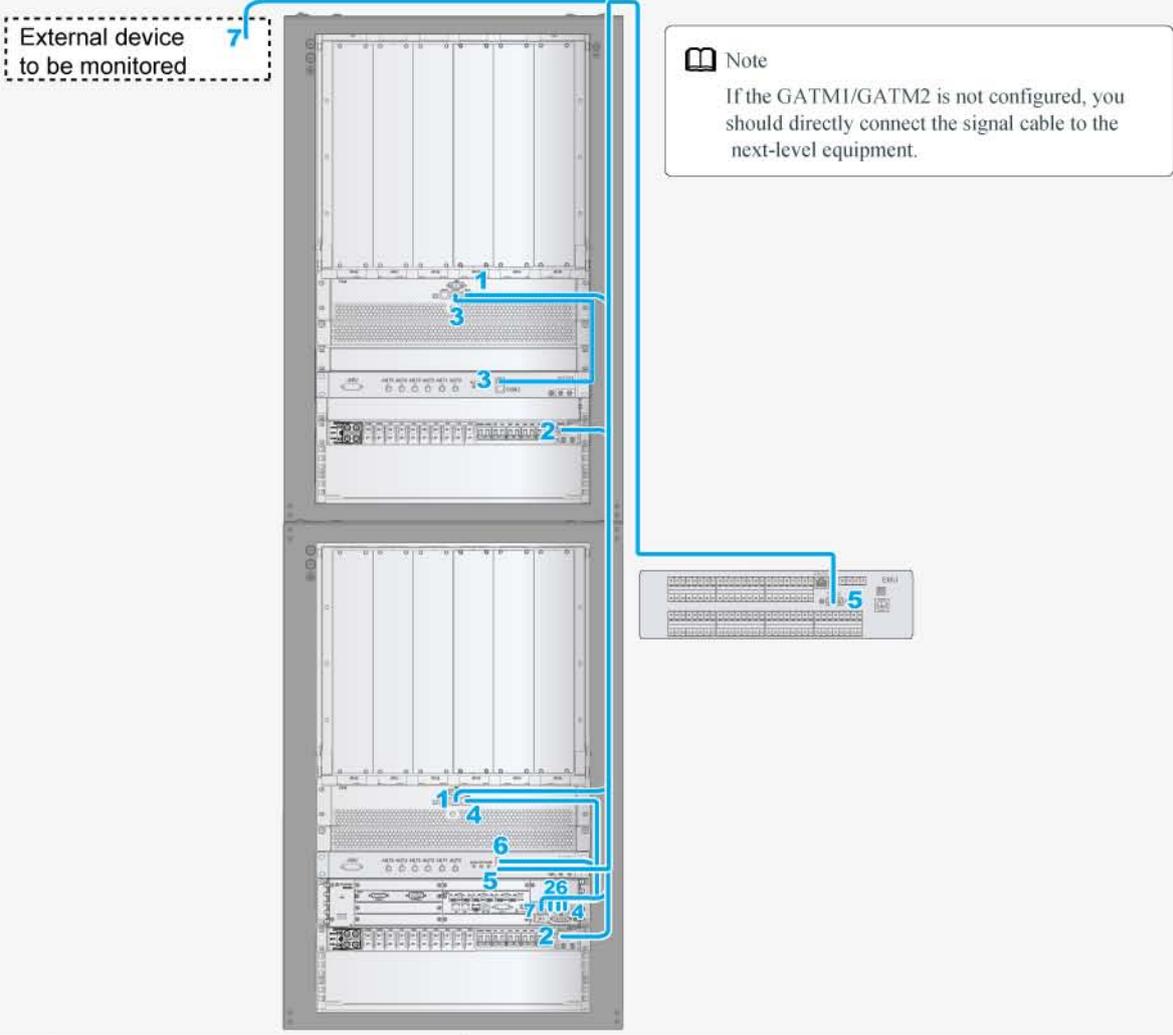
SN	Cable Name	Installation Position
1	Monitoring signal cable for the FAN unit	One end is connected to the COM IN port on the panel of the FAN unit. The other end is connected to the MON0 port on the UPEU panel.
2	Monitoring signal cable for the GATM	One end is connected to the COM OUT port on the panel of the FAN unit and the other end to the COM1 port on the GATM1 panel.
3	Monitoring signal cable for the GATM	One end is connected to the MON1 port on the UPEU panel and the other end to the COM1 port on the GATM1 panel.
4	Monitoring signal cable for the EMU	The DB9 connector at one end is inserted into the RS485 port on the EMU panel. At the other end, the cable is cut off and split before being inserted into the COM2 port on the GATM1 panel.
5	Monitoring signal cable for the PMU	One end is connected to the RS232/RS422 port on the PMU panel. At the other end, the cable is cut off and split before being connected to the COM2 port on the GATM1 panel.
6	Monitoring signal cables for the DCDU-01	One end is connected to the EXT-ALM0 port on the UPEU panel. At the other end, pins 1 and 2 are connected to the SPD ALM port on the DCDU-01 panel.
7	BBU alarm cable	One end is connected to the EXT-ALM1 port on the UPEU panel and the other end to the external alarm device.



SN	Cable Name	Installation Position
1	Monitoring signal cable for the FAN unit	One end is connected to the COM IN port on the panel of the FAN unit. The other end is connected to the MON0 port on the UPEU panel.
2	Monitoring signal cable for the GATM	One end is connected to the MON0 port on the UEIU panel and the other end to the COM1 port on the GATM panel.
3	Monitoring signal cable for the EMU	The DB9 connector is inserted into the RS485 port on the EMU panel. The RJ45 connector is inserted into the MON1 port on the UEIU panel.
4	Monitoring signal cable for the GATM	One end is connected to the MON1 port on the UPEU panel and the other end to the COM1 port on the GATM panel.
5	Monitoring signal cable for the PMU	One end is connected to the RS232/RS422 port on the PMU panel and the other end to the COM2 port on the GATM1 panel.
6	Monitoring signal cables for the DCDU-01	One end is connected to the EXT-ALM0 port on the UPEU panel. At the other end, pins 1 and 2 are connected to the SPD ALM port on the DCDU-01 panel.
7	BBU alarm cable	One end is connected to the EXT-ALM1 port on the UPEU panel and the other end to the external alarm device.

### 3 Installing the Monitoring Signal Cables for Stacked Cabinets

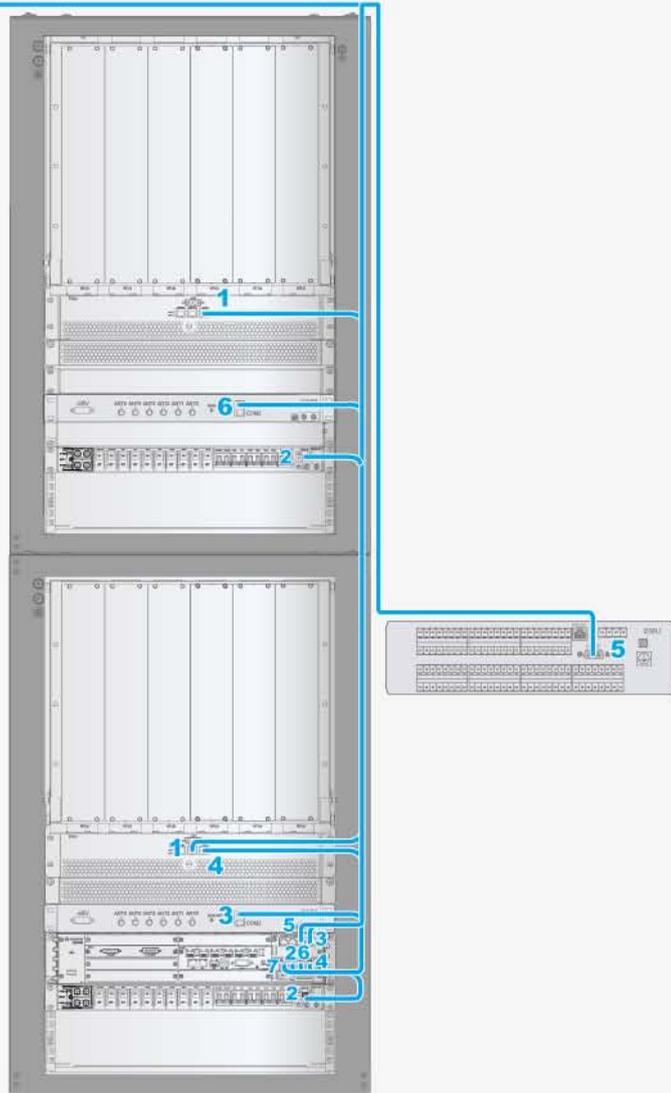
**a** If two -48 V DC cabinets are stacked and only one UPEU is installed, refer to the following information



SN	Cable Name	Installation Position
1	Signal cable between the cascaded FAN units	One end is connected to the COM IN port on the panel of the FAN unit in the upper cabinet. The other end is connected to the COM OUT port on the panel of the FAN unit in the lower cabinet.
2	Monitoring signal cables for the DCDU-01	One end is connected to the EXT-ALM0 port on the UPEU panel. At the other end, pins 1 and 2 are connected to the SPD ALM port on the DCDU-01 panel in the lower cabinet, and pins 7 and 8 are interconnected to the bare wire through the interconnection terminal and then connected to the SPD ALM port on the DCDU-01 panel in the upper cabinet.
3	Monitoring signal cable for the GATM	One end is connected to the COM OUT port on the panel of the FAN unit in the upper cabinet and the other end to the COM1 port on the GATM panel.
4	Monitoring signal cable for the FAN unit	One end is connected to the COM IN port on the panel of the FAN unit in the lower cabinet. The other end is connected to the MON0 port on the UPEU panel.
5	Monitoring signal cable for the EMU	The DB9 connector is inserted into the RS485 port on the EMU panel. The RJ45 connector is inserted into the COM2 port on the GATM1 panel.
6	Monitoring signal cable for the GATM	One end is connected to the MON1 port on the UPEU panel and the other end to the COM1 port on the GATM panel.
7	BBU alarm cable	One end is connected to the EXT-ALM1 port on the UPEU panel and the other end to the external alarm device.

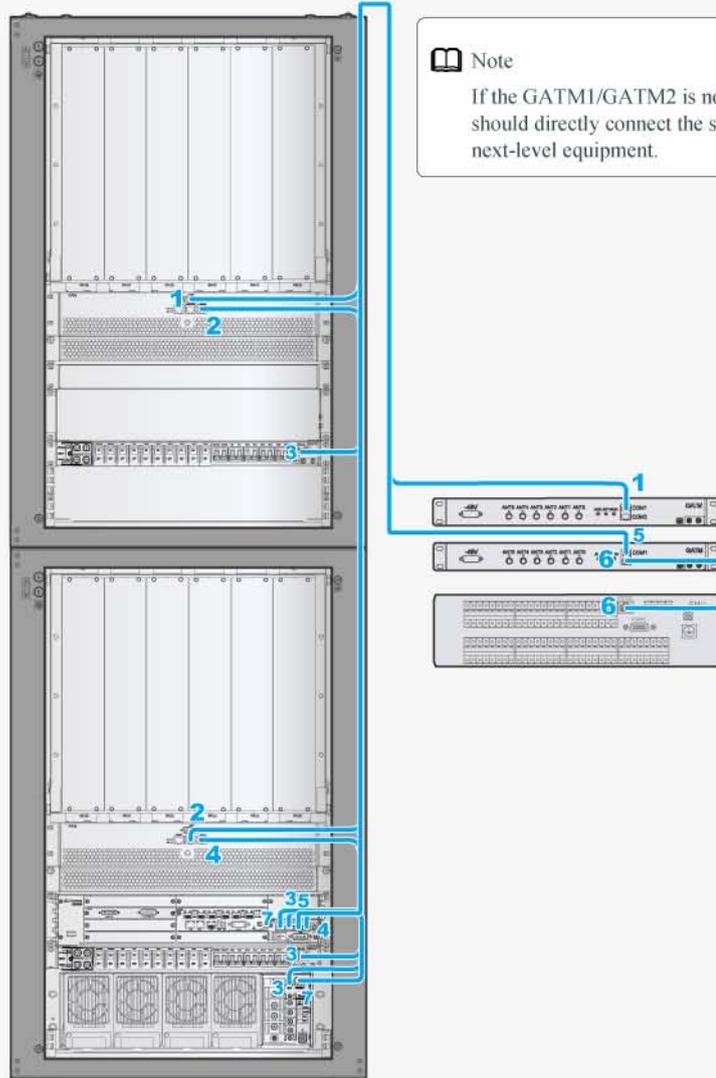
**b** If two -48 V DC cabinets are stacked and if the BBU is configured with one UPEU and one UEIU, refer to the following information

External device to be monitored 7



SN	Cable Name	Installation Position
1	Signal cable between the cascaded FAN units	One end is connected to the COM IN port on the panel of the FAN unit in the upper cabinet. The other end is connected to the COM OUT port on the panel of the FAN unit in the lower cabinet.
2	Monitoring signal cables for the DCDU-01	One end is connected to the EXT-ALM0 port on the UPEU panel. At the other end, pins 1 and 2 are connected to the SPD ALM port on the DCDU-01 panel in the lower cabinet, and pins 7 and 8 are interconnected to the bare wire through the interconnection terminal and then connected to the SPD ALM port on the DCDU-01 panel in the upper cabinet.
3	Monitoring signal cable for the GATM	One end is connected to the MON0 port on the UEIU panel and the other end to the COM1 port on the GATM panel.
4	Monitoring signal cable for the FAN unit	One end is connected to the COM IN port on the panel of the FAN unit in the lower cabinet. The other end is connected to the MON0 port on the UPEU panel.
5	Monitoring signal cable for the EMU	The DB9 connector is inserted into the RS485 port on the EMUA panel. The RJ45 connector is inserted into the MON1 port on the UEIU panel.
6	Monitoring signal cable for the GATM	One end is connected to the MON1 port on the UPEU panel and the other end to the COM1 port on the GATM panel.
7	BBU alarm cable	One end is connected to the EXT-ALM1 port on the UPEU panel and the other end to the external alarm device.

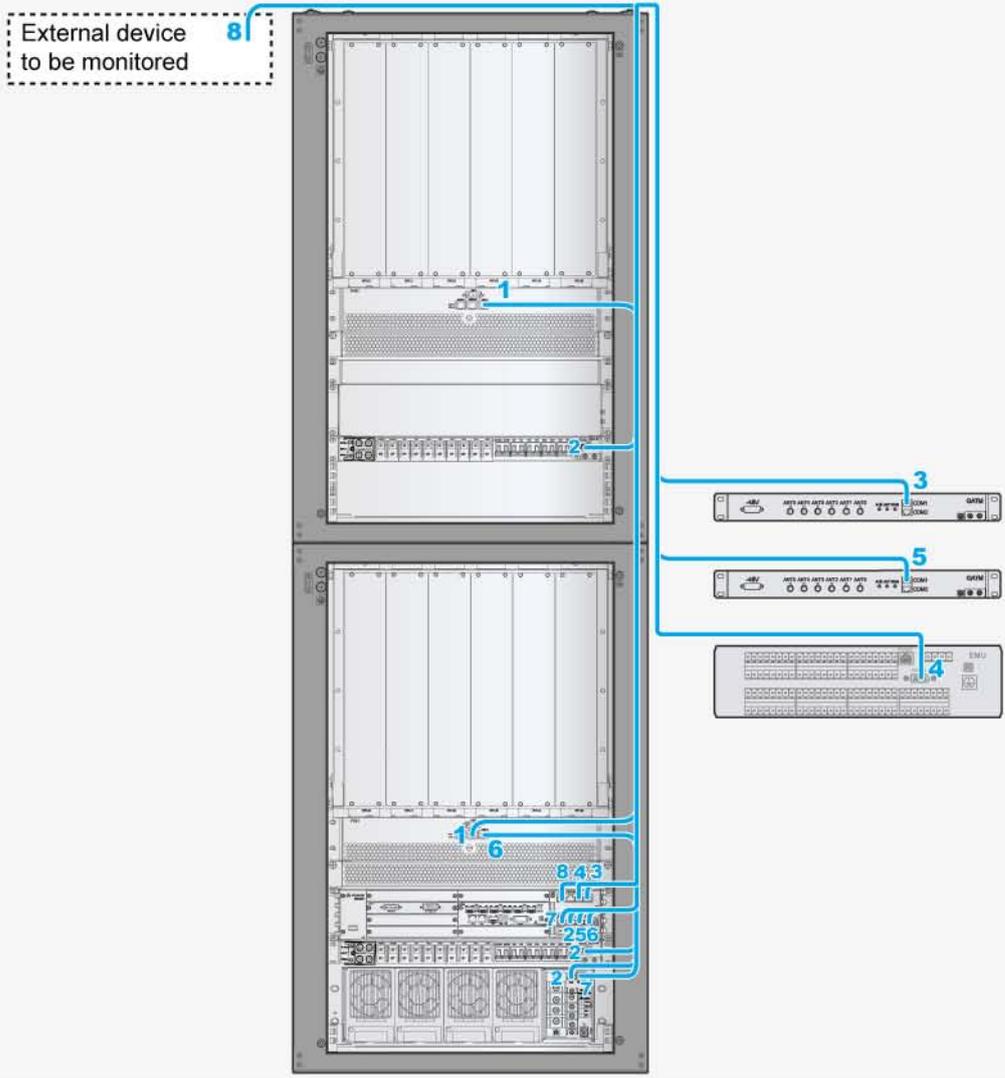
**C If a +24 V DC cabinet and a -48 V DC cabinet are stacked and if the BBU is configured with one UPEU, refer to the following information**



**Note**  
If the GATM1/GATM2 is not configured, you should directly connect the signal cable to the next-level equipment.

SN	Cable Name	Installation Position
1	Monitoring signal cable for the GATM	One end is connected to the COM OUT port on the panel of the FAN unit in the upper cabinet and the other end to the COM1 port on the GATM panel.
2	Signal cable between the cascaded FAN units	One end is connected to the COM IN port on the panel of the FAN unit in the upper cabinet. The other end is connected to the COM OUT port on the panel of the FAN unit in the lower cabinet.
3	Monitoring signal cables for the DCDU-01	One end is connected to the EXT-ALM0 port on the UPEU panel. At the other end, pins 1 and 2 are connected to the SPD ALM port on the DCDU-01 panel in the lower cabinet, and pins 7 and 8 are interconnected to the bare wire through the interconnection terminal and then connected to the SPD ALM port on the DCDU-01 panel in the upper cabinet, and pins 3 and 6 are connected to the ALM port on the PSU (DC/DC) wiring unit.
4	Monitoring signal cable for the FAN uni	One end is connected to the COM IN port on the panel of the FAN unit in the lower cabinet. The other end is connected to the MON0 port on the UPEU panel.
5	Monitoring signal cable for the GATM	One end is connected to the MON1 port on the UPEU panel and the other end to the COM1 port on the GATM panel.
6	Monitoring signal cable for the EMU	The DB9 connector is inserted into the RS485 port on the EMU panel. The RJ45 connector is inserted into the COM2 port on the GATM1 panel.
7	In-position signal cable for the PSU (DC/DC)	One end is connected to the EXT-ALM1 port on the UPEU panel and the other end to the PRESENT port on the PSU (DC/DC) wiring unit.

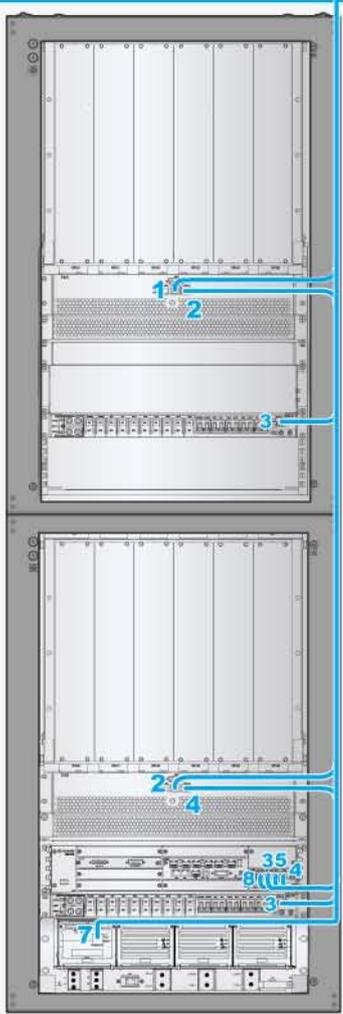
**d** If a +24 V DC cabinet and a -48 V DC cabinet are stacked and if the BBU is configured with one UPEU and one UEIU, refer to the following information



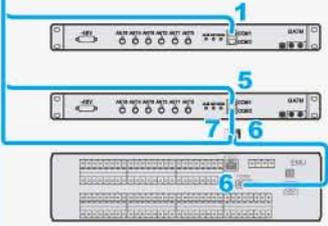
SN	Cable Name	Installation Position
1	Signal cable between the cascaded FAN units	One end is connected to the COM IN port on the panel of the FAN unit in the upper cabinet. The other end is connected to the COM OUT port on the panel of the FAN unit in the lower cabinet.
2	Monitoring signal cables for the DCDU-01	One end is connected to the EXT-ALM0 port on the UPEU panel. At the other end, pins 1 and 2 are connected to the SPD ALM port on the DCDU-01 panel in the lower cabinet, and pins 7 and 8 are interconnected to the barewire through the interconnection terminal and then connected to the SPD ALM port on the DCDU-01 panel in the upper cabinet, and pins 3 and 6 are connected to the ALM port on the PSU (DC/DC) wiring unit.
3	Monitoring signal cable for the GATM	One end is connected to the MON0 port on the UEIU panel and the other end to the COM1 port on the GATM panel.
4	Monitoring signal cable for the EMU	The DB9 connector is inserted into the RS485 port on the EMU panel. The RJ45 connector is inserted into the MON1 port on the UEIU panel.
5	Monitoring signal cable for the GATM	One end is connected to the MON1 port on the UPEU panel and the other end to the COM1 port on the GATM panel.
6	Monitoring signal cable for the FAN unit	One end is connected to the COM IN port on the panel of the FAN unit in the lower cabinet. The other end is connected to the MON0 port on the UPEU panel.
7	In-position signal cable for the PSU (DC/DC)	One end is connected to the EXT-ALM1 port on the UPEU panel and the other end to the PRESENT port on the PSU(DC/DC) wiring unit.
8	BBU alarm cable	One end is connected to the EXT-ALM1 port on the UEIU panel and the other end to the external alarm device.

**e If a 220 V AC cabinet and a -48 V DC cabinet are stacked and if the BBU is configured with one UPEU, refer to the following information**

External device to be monitored 8

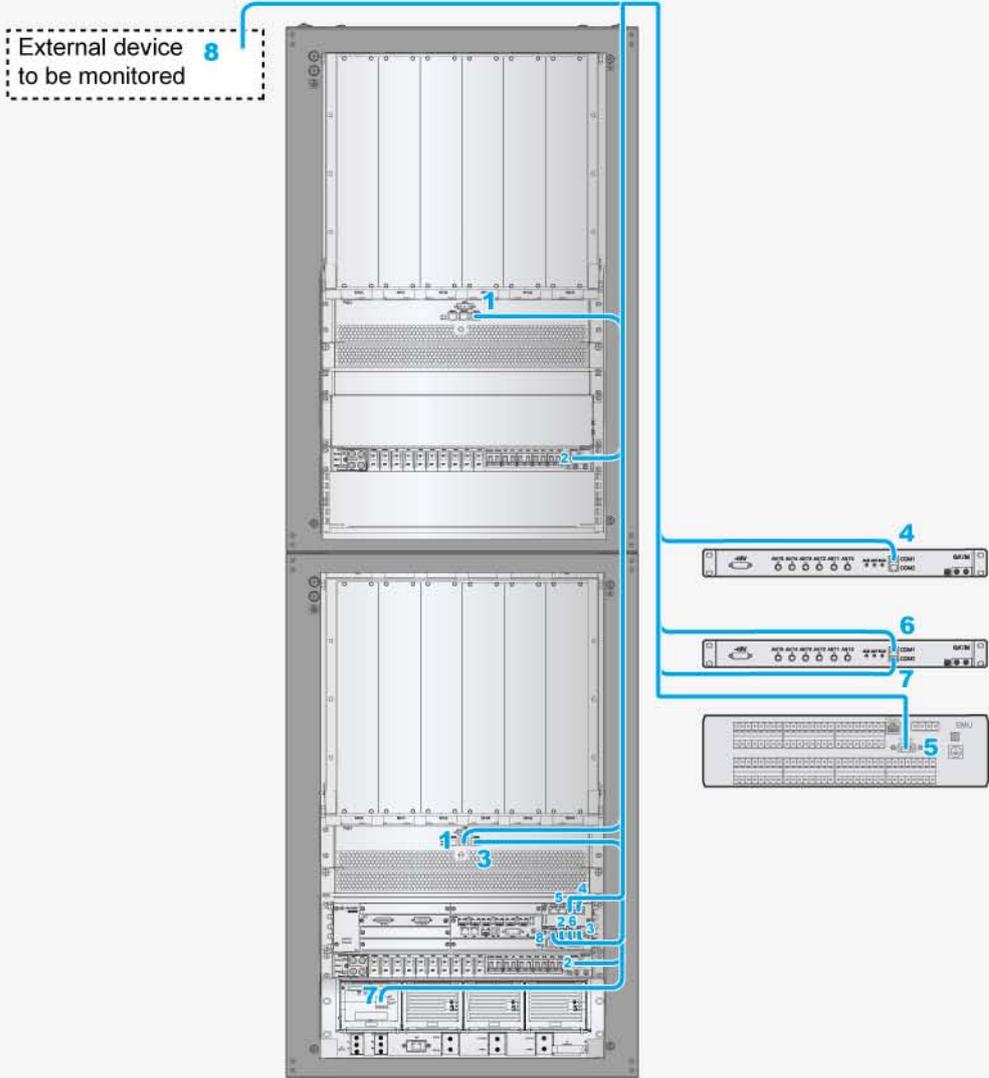


**Note**  
If the GATM1/GATM2 is not configured, you should directly connect the signal cable to the next-level equipment.



SN	Cable Name	Installation Position
1	Monitoring signal cable for the GATM	One end is connected to the COM OUT port on the panel of the FAN unit in the upper cabinet and the other end to the COM1 port on the GATM panel.
2	Signal cable between the cascaded FAN units	One end is connected to the COM IN port on the panel of the FAN unit in the upper cabinet. The other end is connected to the COM OUT port on the panel of the FAN unit in the lower cabinet.
3	Monitoring signal cables for the DCDCU-01	One end is connected to the EXT-ALM0 port on the UPEU panel. At the other end, pins 1 and 2 are connected to the SPD ALM port on the DCDCU-01 panel in the lower cabinet, and pins 7 and 8 are interconnected to the bare wire through the interconnection terminal and then connected to the SPD ALM port on the DCDCU-01 panel in the upper cabinet.
4	Monitoring signal cable for the FAN unit	One end is connected to the COM IN port on the panel of the FAN unit in the lower cabinet. The other end is connected to the MON0 port on the UPEU panel.
5	Monitoring signal cable for the GATM	One end is connected to the MON1 port on the UPEU panel and the other end to the COM1 port on the GATM panel.
6	Monitoring signal cable for the EMU	The DB9 connector at one end is inserted into the RS485 port on the EMUA panel. At the other end, the cable is cut off and split before being inserted into the COM2 port on the GATM1 panel through the interconnection terminal.
7	Monitoring signal cable for the PMU	One end is connected to the RS232/RS422 port on the PMU panel. At the other end, the cable is cut off and split before being connected to the COM2 port on the GATM1 panel through the interconnection terminal.
8	BBU alarm cable	One end is connected to the EXT-ALM1 port on the UPEU panel and the other end to the external alarm device.

**f** If a 220 V AC cabinet and a -48 V DC cabinet are stacked and if the BBU is configured with one UPEU and one UEIU, refer to the following information



SN	Cable Name	Installation Position
1	Signal cable between the cascaded FAN units	One end is connected to the COM IN port on the panel of the FAN unit in the upper cabinet. The other end is connected to the COM OUT port on the panel of the FAN unit in the lower cabinet.
2	Monitoring signal cables for the DCDU-01	One end is connected to the EXT-ALM0 port on the UPEU panel. At the other end, pins 1 and 2 are connected to the SPD ALM port on the DCDU-01 panel in the lower cabinet, and pins 7 and 8 are interconnected to the bare wire through the interconnection terminal and then connected to the SPD ALM port on the DCDU-01 panel in the upper cabinet.
3	Monitoring signal cable for the FAN unit	One end is connected to the COM IN port on the panel of the FAN unit in the lower cabinet. The other end is connected to the MON0 port on the UPEU panel.
4	Monitoring signal cable for the GATM	One end is connected to the MON0 port on the UEIU panel and the other end to the COM1 port on the GATM panel.
5	Monitoring signal cable for the EMU	The DB9 connector is inserted into the RS485 port on the EMU panel. The RJ45 connector is inserted into the MON1 port on the UEIU panel.
6	Monitoring signal cable for the GATM	One end is connected to the MON1 port on the UPEU panel and the other end to the COM1 port on the GATM panel.
7	Monitoring signal cable for the PMU	One end is connected to the COM2 port on the GATM1 panel and the other end to the RS232/RS422 port on the PMU panel.
8	BBU alarm cable	One end is connected to the EXT-ALM1 port on the UPEU panel and the other end to the external alarm device.

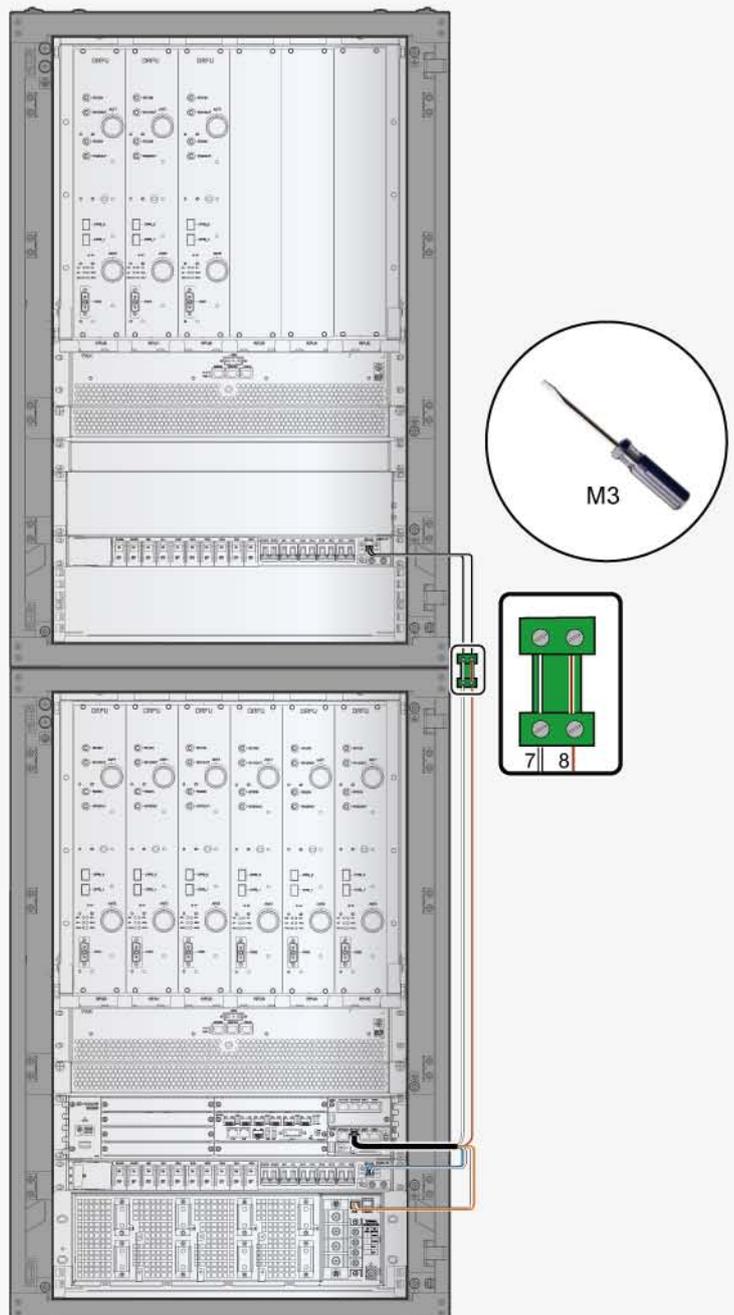
## 4 Example for Installing the Signal Cables

### a Installing the Monitoring Signal Cable for the DCDU-01 in the Scenario of Stacked +24 V DC and -48 V DC Cabinets

Pin assignment of the monitoring signal cable for the DCDU-01 (04080032)

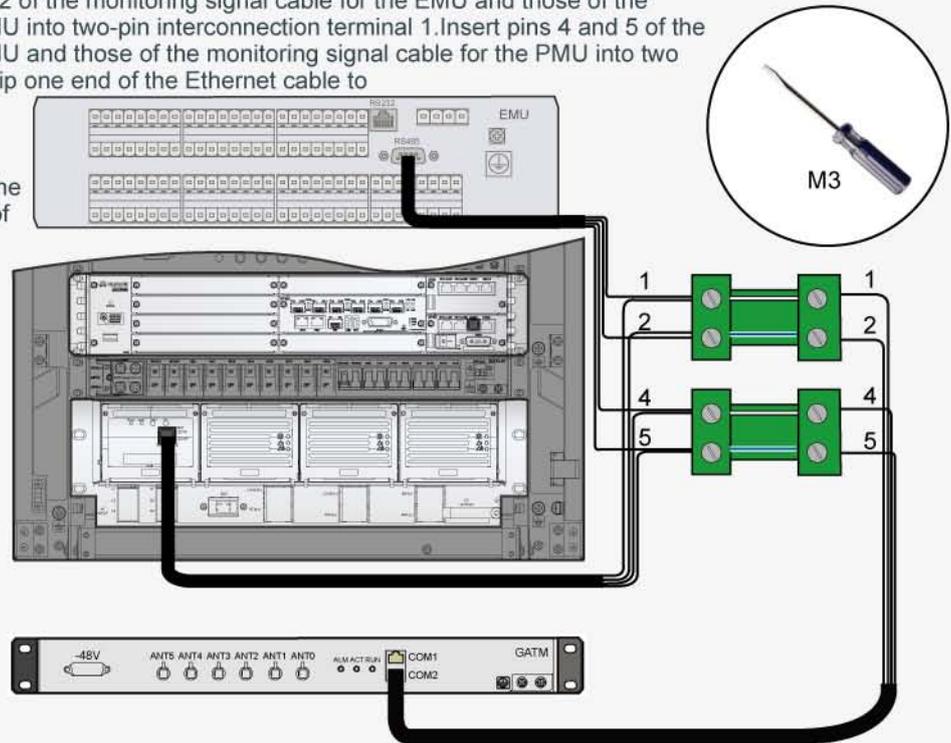
Pin at the X2 End (Cable Split)	Pin at the X1 End	Color	Description
W1	2	Blue	Twisted pair
	1	White	
	6	Orange	Twisted pair
3	White		
W2	4	Blue	Twisted pair
	5	White	
	8	Orange	Twisted pair
	7	White	

Insert the RJ45 connector at one end of monitoring signal cable into the EXT-ALM0 port on the UPEU panel in the BBU. Insert pins 2 and 1 (blue/white) in W1 into the SPD ALM port on the panel of the DCDU-01 in the lower cabinet. Strip W1 of the monitoring signal cable to expose pins 6 and 3 (orange/white). Insert pins 6 and 3 (orange/white) in W1 into the ALM port on the PSU wiring unit in the lower cabinet. Insert pins 8 and 7 (orange/white) in W2 into the interconnection terminal. Insert one end of the bare wire (04080036) into the interconnection terminal. Insert the other end of the bare wire into the SPD ALM port on the panel of the DCDU-01 in the upper cabinet. Bind the interconnection terminal along the cable trough on the right of the cabinet.



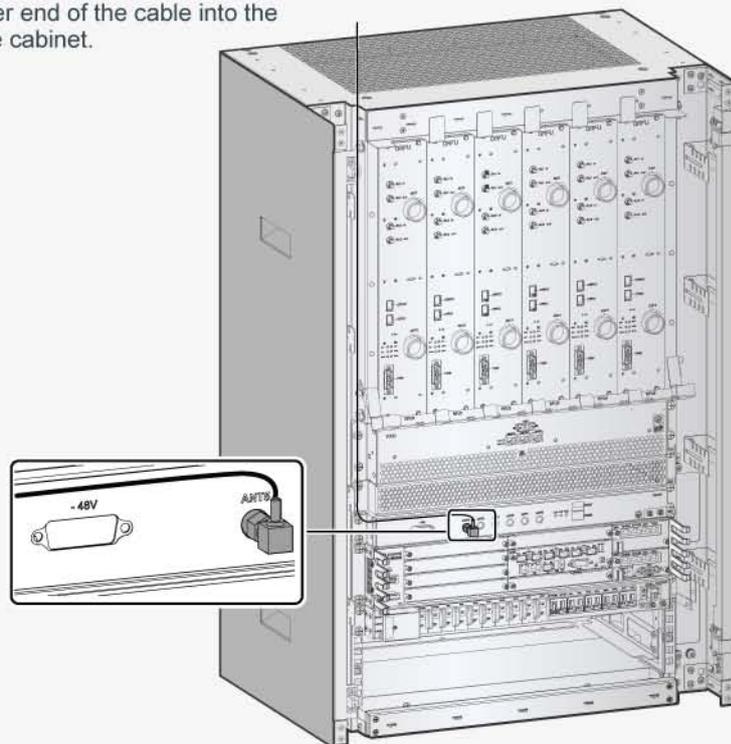
## b Installing the Monitoring Signal Cable for the PMU/EMU in the Cable Split Scenario

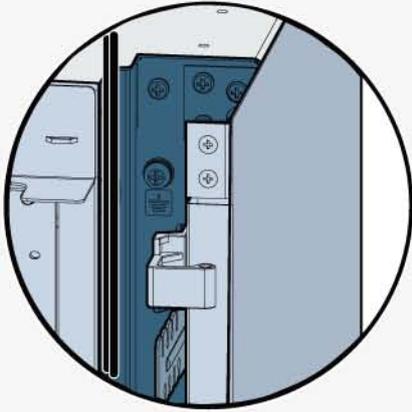
Insert the DB9 male connector at one end of the monitoring signal cable for the EMU into the RS485 port on the EMU, and then tighten the screws. Insert the RJ45 connector at one end of the monitoring signal cable for the PMU into the RS232/RS422 port on the PMU panel. Strip the other end of the monitoring signal cables for the EMU and PMU to expose the pins. Insert pins 1 and 2 of the monitoring signal cable for the EMU and those of the monitoring signal cable for the PMU into two-pin interconnection terminal 1. Insert pins 4 and 5 of the monitoring signal cable for the EMU and those of the monitoring signal cable for the PMU into two-pin interconnection terminal 2. Strip one end of the Ethernet cable to expose the pins. Insert pins 1 and 2 into interconnection terminal 1, and pins 4 and 5 into interconnection terminal 2. Insert the RJ45 connector at the other end of the Ethernet cable into the COM2 port on the GATM1 panel.



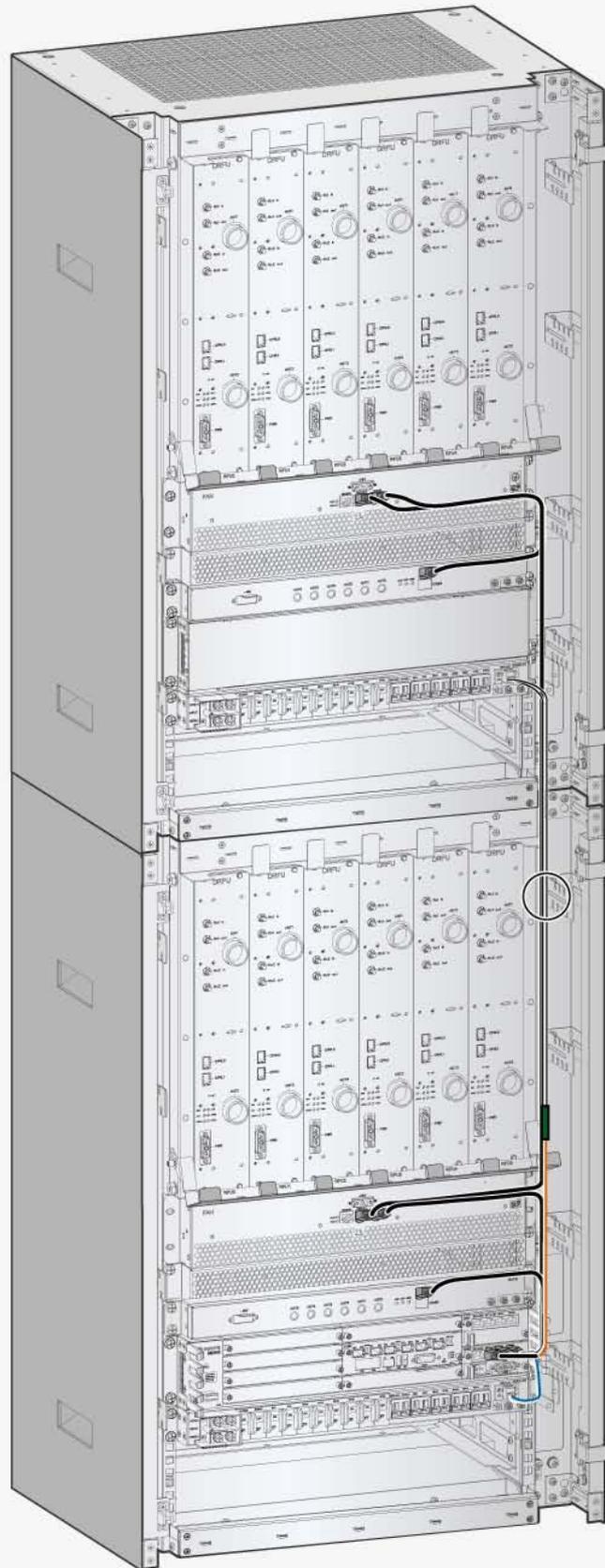
## C Installing the RET Control Signal Cable

Insert the SMA elbow male connector at one end of the cable into the ANT port on the GATM panel in the cabinet. Insert the SMA male connector at the other end of the cable into the SMA port on the Bias-Tee at the top of the cabinet.





Cabling mode



# Installing the RF Signal Cables

## 1 Installing the RF Jumper

**Note**

If a single cabinet is installed, the RF jumpers are routed along the left and right cable troughs. If two cabinets are stacked, the RF jumpers in the lower cabinet are routed along the left and right cable troughs, and the RF jumpers in the upper cabinet are routed in front of the DRFU panels.

When installing jumpers for the upper cabinet during the stack of cabinets for capacity expansion, you should remove the upper and lower horizontal beams of the upper cabinet.

After the jumpers are installed, reinstall the horizontal beams. In other cases, you need not remove the horizontal beams of the cabinet.

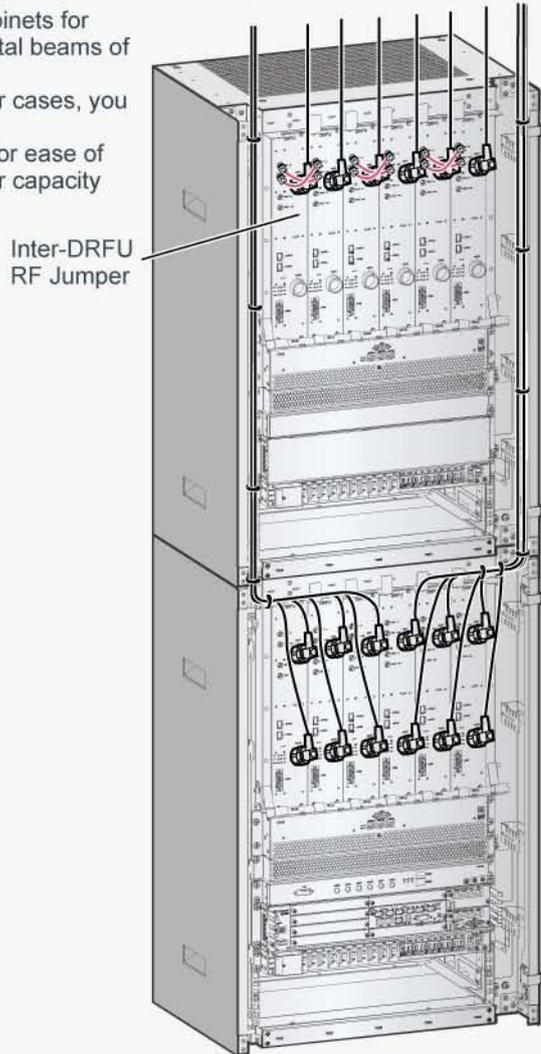
When cutting the RF jumper, you should leave 30 cm of the jumper for ease of cabling on the upper cabinet in case that the cabinets are stacked for capacity expansion.

Use a single-ended wrench to fix the DIN connector and tighten the connector to 27 N m.

Bending radius of the jumper: 1/2-inch jumper (soft) > 50 mm;  
1/2-inch jumper (common) > 127 mm.



Connections of RF jumpers for a single cabinet

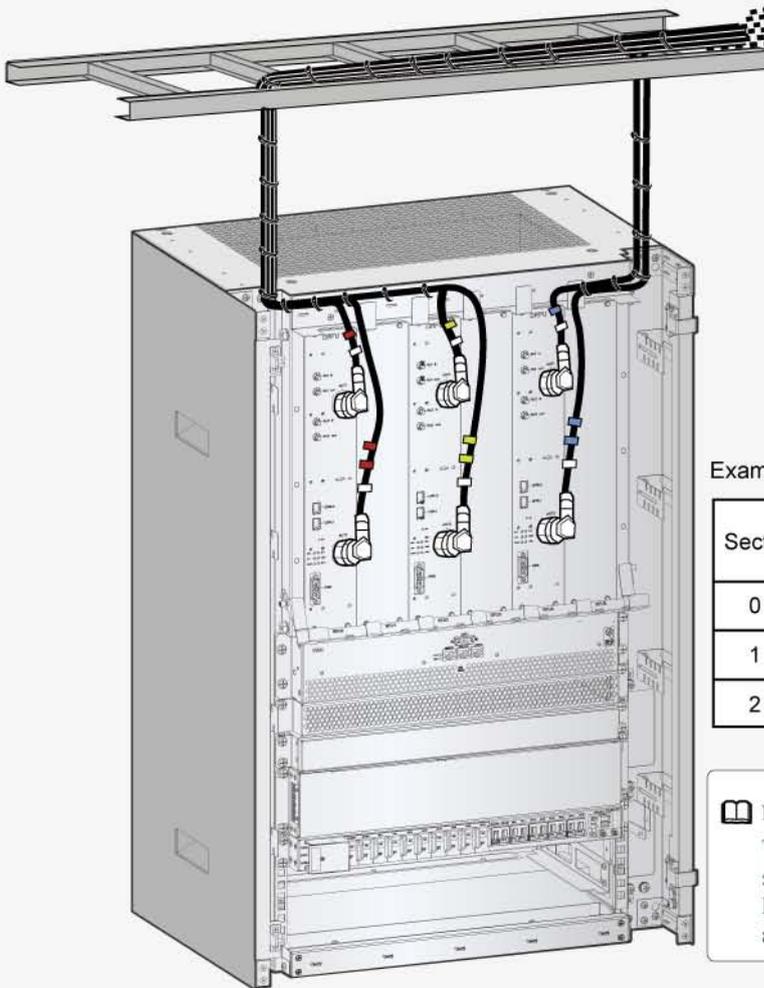
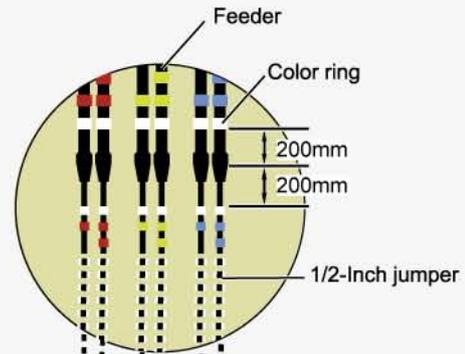


Connections of RF jumpers for stacked cabinets

BOM Code	Cable Name	Installation Position	Appearance
-	RF Jumper	One end of the jumper is connected to the jumper connector on the feeder side. The DIN connector of the jumper is inserted into the ANT port on the DRFU panel.	
99040SAR/ 99040SAS	Inter-DRFU RF signal cable	One end is connected to the RX IN port on the panel of one DRFU and the other end to the RX OUT port on the panel of the other DRFU.	

## 2 Attaching Color Rings

- 1 Route the 1/2-inch jumper along the cable rack.
- 2 Attach color rings to the both ends of the jumper. The following takes the S2/2/2 configuration as an example.
- 3 Connect the DIN connector of the jumper to the antenna port on the DRFU.



Example of Attaching Color Rings:

Sector	Configuration of Color Ring	
	Main	Diversity
0	Red, two + White, one	Red, one + White, one
1	Yellow, two + White, one	Yellow, one + White, one
2	Blue, two + White, one	Blue, one + White, one

**Note**

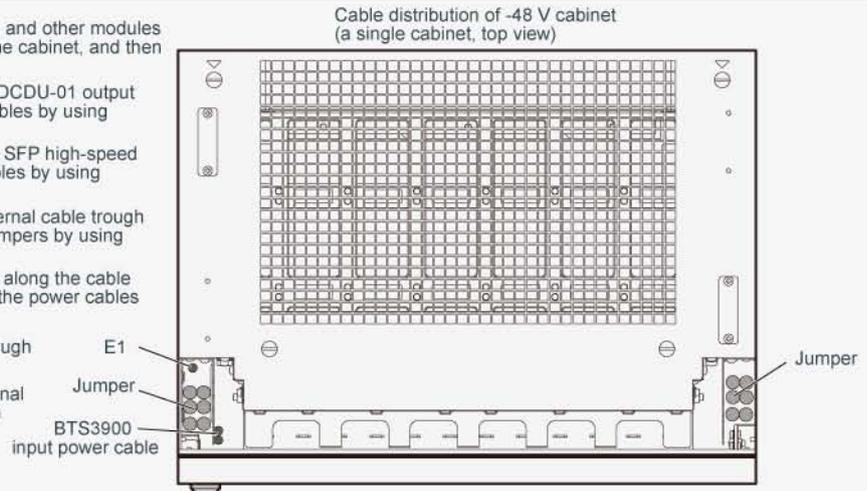
The rules of attaching color rings are subject to the local standards. The color rings should face the same direction. Each color ring should be wrapped for two or three layers and the upper layer should cover the lower one.

# Routing the BTS3900 Cables

## 1 Routing the Cables for a Single Cabinet

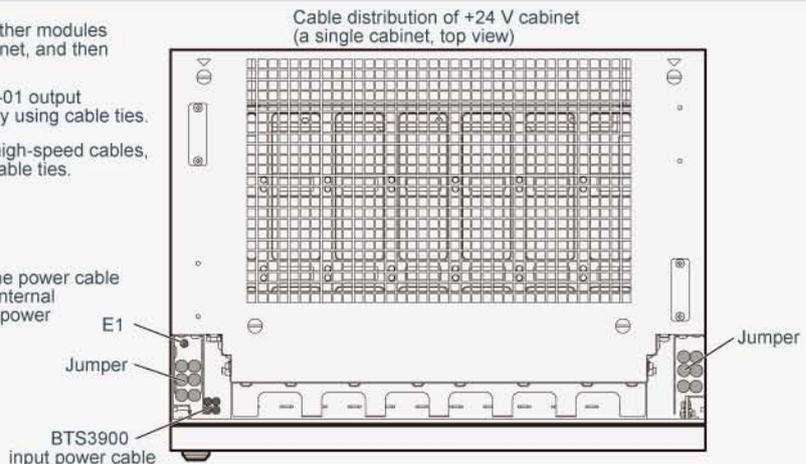
### a Routing the Cables for a Single -48 V DC Cabinet

- 1 Route the power cables between the DCDU-01 and other modules along the internal cable trough on the right of the cabinet, and then bind the power cables by using cable ties.
- 2 Route the SFP high-speed cables close to the DCDU-01 output power cables, and then bind the high-speed cables by using cable ties.
- 3 Route the monitoring signal cables close to the SFP high-speed cables, and then bind the monitoring signal cables by using cable ties.
- 4 Lead the six jumpers on the right along the external cable trough on the right of the cabinet, and then bind the jumpers by using cable ties.
- 5 Route the BTS3900 input power cables (-48 V) along the cable trough on the left of the cabinet, and then bind the power cables by using cable ties.
- 6 Route the E1 cable along the external cable trough on the left of the cabinet.
- 7 Lead the six jumpers on the left along the external cable trough on the left of the cabinet, and then bind the jumpers by using cable ties.



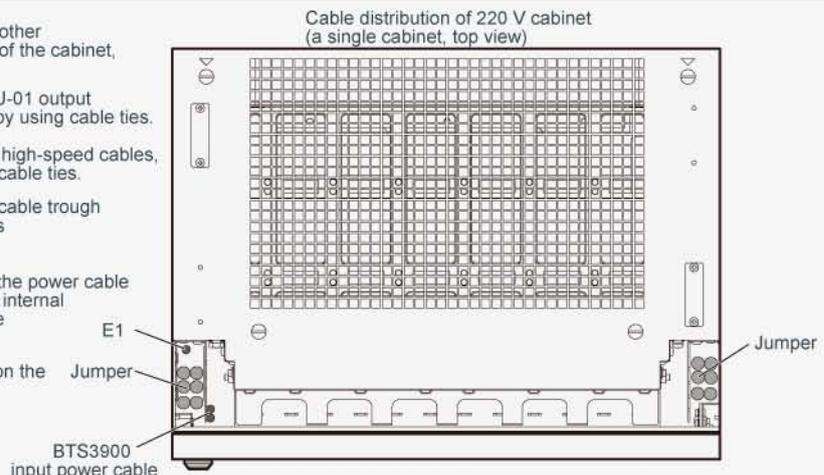
### b Routing the Cables for a Single +24 V DC Cabinet

- 1 Route the power cables between the DCDU-01 and other modules along the internal cable trough on the right of the cabinet, and then bind the power cables by using cable ties.
- 2 Route the SFP high-speed cables close to the DCDU-01 output power cables, and then bind the high-speed cables by using cable ties.
- 3 Route the monitoring signal cables close to the SFP high-speed cables, and then bind the monitoring signal cables by using cable ties.
- 4 Lead the six jumpers on the right along the external cable trough on the right of the cabinet, and then bind the jumpers by using cable ties.
- 5 Route the BTS3900 input power cable (+24 V), and the power cable between the PSU (DC/DC) and the DCDU along the internal cable trough on the left of the cabinet. Then, bind the power cables by using cable ties.
- 6 Route the E1 cable along the external cable trough on the left of the cabinet.
- 7 Lead the six jumpers on the left along the external cable trough on the left of the cabinet, and then bind the jumpers by using cable ties.



### c Routing the Cables for a Single 220 V AC Cabinet

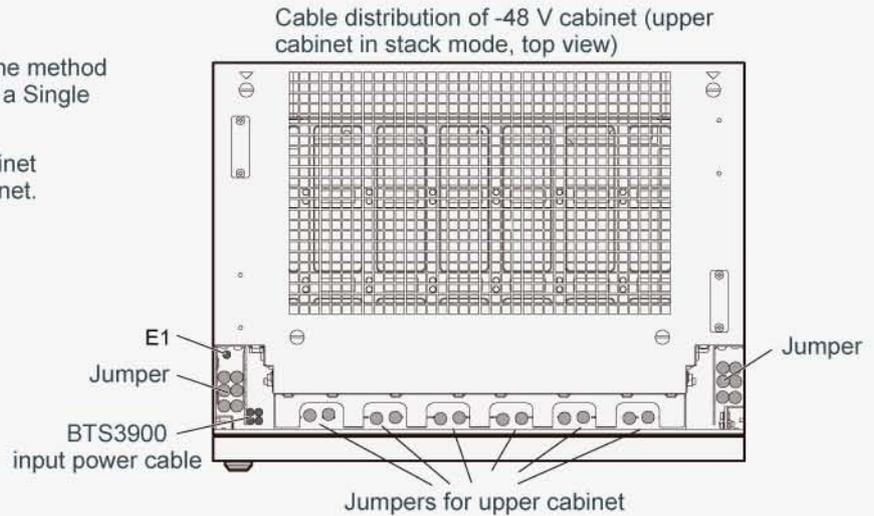
- 1 Route the power cables between the DCDU-01 and other modules along the internal cable trough on the right of the cabinet, and then bind the power cables by using cable ties.
- 2 Route the SFP high-speed cables close to the DCDU-01 output power cables, and then bind the high-speed cables by using cable ties.
- 3 Route the monitoring signal cables close to the SFP high-speed cables, and then bind the monitoring signal cables by using cable ties.
- 4 Lead the six jumpers on the right along the external cable trough on the right of the cabinet, and then bind the jumpers by using cable ties.
- 5 Route the BTS3900 input power cable (220 V), and the power cable between the PSU (AC/DC) and the DCDU along the internal cable trough on the left of the cabinet. Then, bind the power cables by using cable ties.
- 6 Route the E1 cable along the external cable trough on the left of the cabinet.
- 7 Lead the six jumpers on the left along the external cable trough on the left of the cabinet, and then bind the jumpers by using cable ties.



## 2 Routing the BTS3900 Cables for Stacked Cabinets

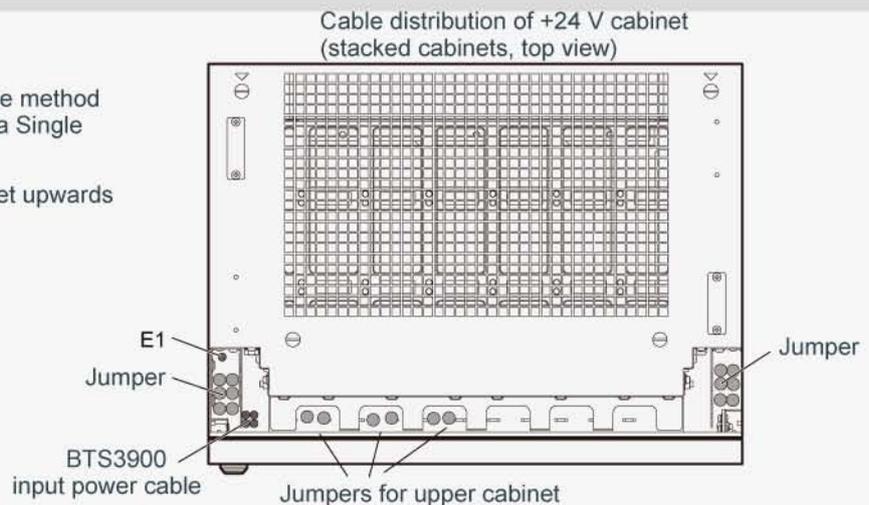
### a Routing the Cables When Two -48 V DC Cabinets Are Stacked

- 1 Route and bind the cables by using the method mentioned in "Routing the Cables for a Single -48 V DC Cabinet."
- 2 Lead the 12 feeders in the upper cabinet upwards until they are out of the cabinet.



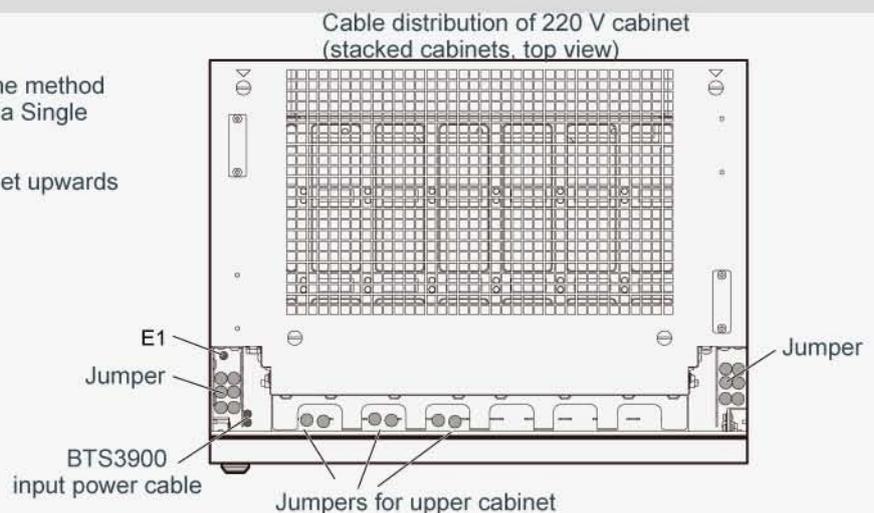
### b Routing the Cables When a +24 V DC Cabinet and a -48 V DC Cabinet Are Stacked

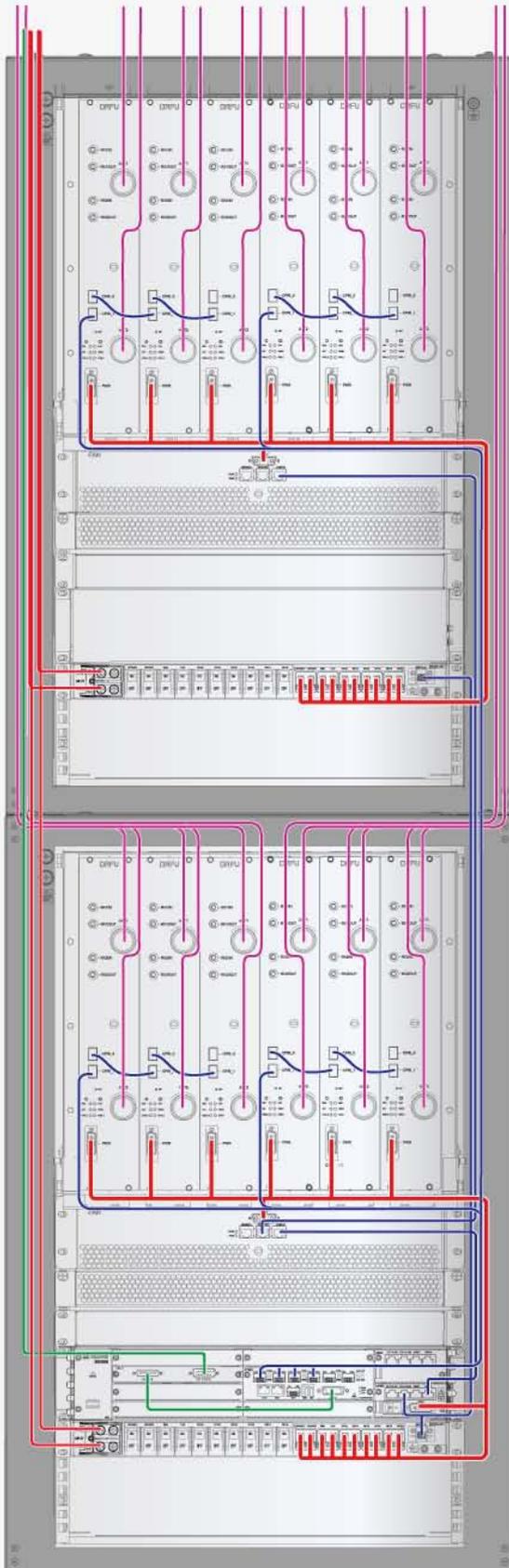
- 1 Route and bind the cables by using the method mentioned in "Routing the Cables for a Single +24 V DC Cabinet."
- 2 Lead the 6 feeders in the upper cabinet upwards until they are out of the cabinet.



### c Routing the Cables When a 220 V AC Cabinet and a -48 V DC Cabinet Are Stacked

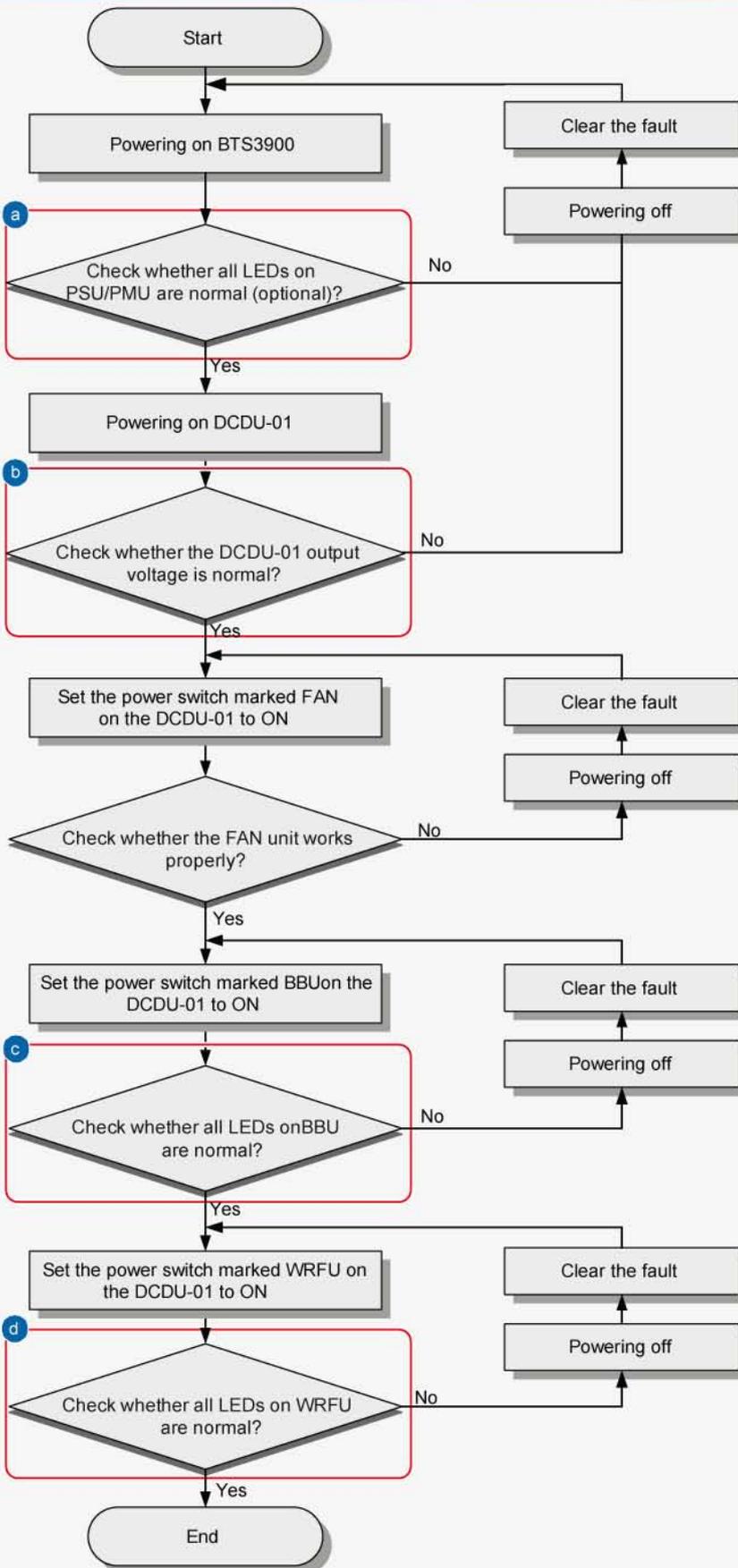
- 1 Route and bind the cables by using the method mentioned in "Routing the Cables for a Single 220 V AC Cabinet."
- 2 Lead the 6 feeders in the upper cabinet upwards until they are out of the cabinet.





- E1 cable and E1 surge protection transfer cable
- Power cable
- Signal cable
- RF cable

## 1 Checking the Power-On Status of the BTS3900 Cabinet



**a**

The normal status of each LED on PMU is as follows:

- RUN LED: 0.25s ON, 0.25s OFF
- ALM LED: OFF steady

The normal status of each LED on PSU is as follows:

- Power input LED: ON steady
- Protection LED: OFF steady
- Fault LED: OFF steady

**b**

The voltage of the DCDU-01 output from -38.4 V to -57 V DC is allowed.

**c**

The normal status of each LED on GTMU is as follows:

- RUN LED : flashed at 0.5 Hz (1s ON, 1s OFF)
- ALM LED: OFF steady
- ACT LED: ON steady

The normal status of each LED on UBFA is as follows:

- STATE LED: flashed at 0.5 Hz (1s ON, 1s OFF)

The normal status of each LED on UPEU is as follows:

- RUN LED: ON steady

**d**

The normal status of each LED on DRFU is as follows:

- RUN LED: flashed at 0.5 Hz (1s ON, 1s OFF)

## Service and Support

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