



RRU3804

V100

User Guide

Issue	01
Date	2007-11-29
Part Number	31018637

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Contents

About This Document.....	1
1 Safety Information.....	1-1
1.1 Safety Precautions.....	1-1
1.2 Electricity Safety.....	1-3
1.3 Inflammable Environment.....	1-5
1.4 Battery.....	1-6
1.5 Radiation.....	1-8
1.6 Working at Heights.....	1-9
1.7 Mechanical Safety.....	1-11
1.8 Others.....	1-13
2 RRU3804 and SRXU Hardware.....	2-1
2.1 RRU3804 Equipment.....	2-2
2.1.1 DBS3800 Product Family.....	2-2
2.1.2 Appearance of the RRU3804.....	2-5
2.1.3 LEDs on the RRU3804.....	2-6
2.1.4 Ports on the RRU3804.....	2-7
2.1.5 Panels of the RRU3804.....	2-8
2.1.6 Engineering Specifications of the RRU3804.....	2-10
2.2 SRXU Equipment.....	2-11
2.2.1 Appearance of the SRXU.....	2-11
2.2.2 LEDs on the SRXU.....	2-12
2.2.3 Ports on the SRXU.....	2-13
2.2.4 Panels of the SRXU.....	2-14
2.2.5 Engineering Specifications of the SRXU.....	2-15
2.3 RRU3804 Cables.....	2-15
2.3.1 PGND Cable of the RRU3804.....	2-16
2.3.2 Power Cable of the RRU3804.....	2-17
2.3.3 AISG Multi-Wire Cable of the RRU3804/SRXU.....	2-18
2.3.4 AISG Extension Cable of the RRU3804/SRXU.....	2-19
2.3.5 BBU3806-RRU/SRXU CPRI Optical Cable.....	2-20
2.3.6 BBU3806C-RRU/SRXU CPRI Optical Cable.....	2-21
2.3.7 RF Jumper of the RRU3804/SRXU.....	2-23

2.3.8 Boolean/RS485 Input Cable of the RRU3804.....	2-25
2.4 SRXU Cables.....	2-27
2.4.1 PGND Cable of the SRXU.....	2-27
2.4.2 Power Cable of the SRXU.....	2-28
2.4.3 AISG Multi-Wire Cable of the RRU3804/SRXU.....	2-28
2.4.4 AISG Extension Cable of the RRU3804/SRXU.....	2-29
2.4.5 BBU3806-RRU/SRXU CPRI Optical Cable.....	2-30
2.4.6 RF Jumper of the RRU3804/SRXU.....	2-32
3 Installing RRU3804 and SRXU Hardware.....	3-1
3.1 Information About the Installation.....	3-3
3.1.1 Installation Modes of the RRU3804 and SRXU.....	3-3
3.1.2 Space Requirements of the RRU3804 and SRXU.....	3-6
3.2 Procedure for Installing the RRU3804 and SRXU.....	3-10
3.3 Preparing for DBS3800 Installation.....	3-11
3.3.1 Unpacking the DBS3800.....	3-12
3.3.2 Tools and Instruments for DBS3800 Installation.....	3-13
3.4 Installing the RRU3804 on the Ground or Rooftop.....	3-14
3.4.1 Installing a Single RRU3804.....	3-14
3.4.2 Installing Two RRU3804s.....	3-25
3.4.3 Installing Three RRU3804s.....	3-39
3.5 Installing the RRU3804 on the Tower.....	3-57
3.5.1 Assembling the Parts of the RRU3804.....	3-57
3.5.2 Lifting the Assembled RRU3804.....	3-61
3.5.3 Installing the Assembled RRU3804 on the Tower.....	3-62
3.6 Installing the SRXU.....	3-65
3.6.1 Installing the SRXU on a Single RRU3804.....	3-66
3.6.2 Installing the SRXUs on the Two RRU3804s.....	3-69
3.6.3 Installing the SRXUs on the Three RRU3804s.....	3-74
3.7 Installing RRU3804 and SRXU Cables.....	3-78
3.7.1 Cabling Specifications for the NodeB.....	3-78
3.7.2 Connections of RRU3804 and SRXU Cables.....	3-80
3.7.3 Installing the PGND Cable of the RRU3804/SRXU.....	3-84
3.7.4 Installing the -48 V DC Power Cable of the RRU3804/SRXU.....	3-85
3.7.5 Installing the RF Jumper of the RRU3804/SRXU.....	3-92
3.7.6 Installing the AISG Multi-Wire Cable of the RRU3804/SRXU.....	3-94
3.7.7 Installing the AISG Extension Cable of the RRU3804/SRXU.....	3-94
3.7.8 Installing the Boolean/RS485 Input Cable of the RRU3804.....	3-94
3.7.9 Opening and Closing the Cover Plate of the RRU3804 Cabling Cavity.....	3-96
3.7.10 Opening and Closing the Cover Plate of the SRXU Cabling Cavity.....	3-99
3.8 Checking RRU3804 and SRXU Hardware Installation.....	3-101
3.8.1 Checking the Power-On Status of the RRU3804 and SRXU.....	3-102
3.8.2 Checklist for RRU3804 and SRXU Hardware Installation.....	3-103

3.8.3 Checklist for Field Cleanliness of RRU3804 and SRXU Installation.....	3-105
3.9 Installing the Housing of the RRU3804 and SRXU.....	3-105
4 Maintaining RRU3804 and SRXU Hardware.....	4-1
4.1 Equipment Maintenance Items for the DBS3800.....	4-2
4.2 Powering On/Off the RRU3804/SRXU.....	4-2
4.2.1 Powering on the RRU3804/SRXU.....	4-2
4.2.2 Powering off the RRU3804/SRXU.....	4-4
4.3 Replacing an RRU3804.....	4-4
4.4 Replacing an SRXU.....	4-6
4.5 Replacing RRU3804 and SRXU Cables.....	4-7
4.5.1 Replacing the CPRI Optical Cable.....	4-7
4.5.2 Replacing the RF Jumper of the RRU/SRXU.....	4-8
4.5.3 Replacing the AISG Multi-Wire Cable of the RRU/SRXU.....	4-10
4.5.4 Replacing the AISG Extension Cable of the RRU/SRXU.....	4-11
Index.....	i-1

Figures

Figure 1-1 Wearing an ESD wrist strap.....	1-5
Figure 1-2 Lifting a weight.....	1-10
Figure 1-3 Slant angle.....	1-11
Figure 1-4 One meter higher than the eave.....	1-11
Figure 2-1 Function modules of the DBS3800.....	2-2
Figure 2-2 RRU3804.....	2-5
Figure 2-3 Panels of the RRU3804.....	2-9
Figure 2-4 SRXU.....	2-12
Figure 2-5 Panels of the SRXU.....	2-14
Figure 2-6 PGND cable.....	2-16
Figure 2-7 2-hole terminal.....	2-16
Figure 2-8 –48 V DC power cable.....	2-17
Figure 2-9 AISG multi-wire cable.....	2-18
Figure 2-10 AISG extension cable.....	2-19
Figure 2-11 CPRI optical cable.....	2-20
Figure 2-12 Connecting the CPRI optical cable in 1 x 1 configuration (no TX diversity).....	2-21
Figure 2-13 Connecting the CPRI optical cable in 3 x 1 configuration (no TX diversity).....	2-21
Figure 2-14 CPRI optical cable.....	2-22
Figure 2-15 Connecting the CPRI optical cable in 1 x 1 configuration (no TX diversity).....	2-22
Figure 2-16 Connecting the CPRI optical cable in 3 x 1 configuration (no TX diversity).....	2-23
Figure 2-17 Antenna jumper.....	2-23
Figure 2-18 Interconnect jumper.....	2-24
Figure 2-19 Boolean/RS485 input cable.....	2-26
Figure 2-20 PGND cable.....	2-27
Figure 2-21 2-hole terminal.....	2-28
Figure 2-22 DC power cable.....	2-28
Figure 2-23 AISG multi-wire cable.....	2-29
Figure 2-24 AISG extension cable.....	2-30
Figure 2-25 CPRI optical cable.....	2-31
Figure 2-26 Connecting the CPRI optical cable in 1 x 1 configuration (no TX diversity).....	2-31
Figure 2-27 Connecting the CPRI optical cable in 3 x 1 configuration (no TX diversity).....	2-32
Figure 2-28 Antenna jumper.....	2-32
Figure 2-29 Interconnect jumper.....	2-33

Figure 3-1 Installation modes of one RRU3804.....	3-3
Figure 3-2 Installation modes of one RRU3804 with one SRXU.....	3-4
Figure 3-3 Installation modes of two RRU3804s.....	3-4
Figure 3-4 Installation modes of two RRU3804s with two SRXUs.....	3-5
Figure 3-5 Installation modes of three RRU3804s.....	3-5
Figure 3-6 Installation modes of three RRU3804s with three SRXUs.....	3-6
Figure 3-7 Recommended space requirements of one RRU3804 with and without the SRXU (unit: mm).....	3-7
Figure 3-8 Minimal space requirements of one RRU3804 with and without the SRXU (unit: mm).....	3-8
Figure 3-9 Space requirements of two combined RRU3804s (unit: mm)	3-8
Figure 3-10 Recommended space requirements of multiple RRU3804s with and without the SRXUs (unit: mm)	3-9
Figure 3-11 Minimal space requirements of multiple RRU3804s with and without the SRXUs (unit: mm)....	3-10
Figure 3-12 Mounting the upper fixture assembly.....	3-15
Figure 3-13 Measuring L1 and L2.....	3-16
Figure 3-14 Holes in the multi-purpose attachment plate.....	3-16
Figure 3-15 Securing the multi-purpose attachment plate on the mounting plate.....	3-17
Figure 3-16 Installing the third pole fixture.....	3-17
Figure 3-17 Installing the mounting plate.....	3-18
Figure 3-18 Mounting the lower fixture assembly.....	3-19
Figure 3-19 Determining the anchor points.....	3-20
Figure 3-20 Drilling holes and installing the expansion bolt assembly	3-20
Figure 3-21 Securing the mounting plate.....	3-21
Figure 3-22 One RRU3804 in ordinary mode and the other in reverse mode.....	3-22
Figure 3-23 Securing the attachment plate.....	3-23
Figure 3-24 Installing the module.....	3-24
Figure 3-25 Securing the module.....	3-25
Figure 3-26 Holes in the multi-purpose attachment plate.....	3-26
Figure 3-27 Securing the multi-purpose attachment plate at the bottom of the second mounting plate.....	3-26
Figure 3-28 Installing the second mounting plate.....	3-27
Figure 3-29 Securing the second mounting plate on the first one.....	3-28
Figure 3-30 Installing the second mounting plate.....	3-29
Figure 3-31 Securing the second mounting plate.....	3-29
Figure 3-32 Holes in the multi-purpose attachment plate.....	3-30
Figure 3-33 Securing the multi-purpose attachment plate at the bottom of the second mounting plate.....	3-30
Figure 3-34 Installing the second mounting plate.....	3-31
Figure 3-35 Securing the second mounting plate on the first one.....	3-32
Figure 3-36 Removing the plastic housing.....	3-33
Figure 3-37 Installing the module in reverse mode in the housing.....	3-34
Figure 3-38 Securing the attachment plate on the module in reverse mode.....	3-34
Figure 3-39 Installing the first module.....	3-35
Figure 3-40 Securing the first module.....	3-36
Figure 3-41 Securing the attachment plate on the module in ordinary mode.....	3-37
Figure 3-42 Installing the second module.....	3-37

Figure 3-43 Securing the second module.....	3-38
Figure 3-44 Rear-mounted RRU3804s with the cabling cavities on the same side.....	3-39
Figure 3-45 Top view of the three modules using the side-mounted installation method.....	3-40
Figure 3-46 Top view of the three modules using the hybrid installation method.....	3-40
Figure 3-47 Holes in the multi-purpose attachment plate.....	3-41
Figure 3-48 Securing the multi-purpose attachment plate at the bottom of the second mounting plate.....	3-41
Figure 3-49 Installing the second mounting plate.....	3-42
Figure 3-50 Securing the second mounting plate on the first one.....	3-43
Figure 3-51 Installing the third mounting plate.....	3-44
Figure 3-52 Securing the third mounting plate on the first one.....	3-45
Figure 3-53 Holes in the multi-purpose attachment plate.....	3-45
Figure 3-54 Securing the multi-purpose attachment plate at the bottom of the second mounting plate.....	3-46
Figure 3-55 Installing the second mounting plate.....	3-46
Figure 3-56 Securing the second mounting plate on the first one.....	3-47
Figure 3-57 Installing the third mounting plate.....	3-48
Figure 3-58 Securing the third mounting plate on the first one.....	3-49
Figure 3-59 Securing the attachment plate on the first module.....	3-50
Figure 3-60 Installing the first module.....	3-51
Figure 3-61 Securing the first module.....	3-52
Figure 3-62 Removing the plastic housing.....	3-52
Figure 3-63 Installing the module in reverse mode in the housing.....	3-53
Figure 3-64 Securing the attachment plate on the module in reverse mode.....	3-53
Figure 3-65 Installing the second module.....	3-54
Figure 3-66 Securing the second module.....	3-55
Figure 3-67 Installing the third module.....	3-56
Figure 3-68 Securing the third module.....	3-57
Figure 3-69 Securing the attachment plate.....	3-58
Figure 3-70 Holes in the multi-purpose attachment plate.....	3-58
Figure 3-71 Securing the multi-purpose attachment plate.....	3-59
Figure 3-72 Installing a pole fixture.....	3-59
Figure 3-73 Assembling the module and mounting plate.....	3-60
Figure 3-74 Securing the module and mounting plate.....	3-61
Figure 3-75 Assembled RRU3804 tied with the rope.....	3-61
Figure 3-76 Mounting the upper fixture assembly.....	3-62
Figure 3-77 Measuring L1 and L2.....	3-63
Figure 3-78 Installing the assembled RRU3804.....	3-64
Figure 3-79 Mounting the lower fixture assembly.....	3-65
Figure 3-80 SRXU installed on the single RRU3804.....	3-66
Figure 3-81 Removing the plastic housing.....	3-67
Figure 3-82 Securing the connecting boards.....	3-67
Figure 3-83 Securing the attachment plate on the SRXU.....	3-68
Figure 3-84 Installing the SRXU.....	3-68

Figure 3-85 Securing the SRXU.....	3-69
Figure 3-86 SRXUs installed on the two RRU3804s.....	3-70
Figure 3-87 Removing the plastic housings.....	3-70
Figure 3-88 Securing the connecting boards on the RRU3804 module in ordinary mode.....	3-71
Figure 3-89 Securing the attachment plate on the first SRXU.....	3-71
Figure 3-90 Installing the first SRXU.....	3-72
Figure 3-91 Securing the first SRXU.....	3-73
Figure 3-92 Removing the plastic housings.....	3-73
Figure 3-93 SRXUs installed on the two rear-mounted RRU3804s.....	3-74
Figure 3-94 SRXUs installed on the three RRU3804s.....	3-75
Figure 3-95 Removing the plastic housings.....	3-75
Figure 3-96 Securing the connecting boards.....	3-76
Figure 3-97 Installing the third SRXU.....	3-77
Figure 3-98 Securing the third SRXU.....	3-77
Figure 3-99 Cable connections of one RRU3804 without the SRXU.....	3-81
Figure 3-100 Cable connections of one RRU3804 with the SRXU.....	3-82
Figure 3-101 Cable connections of multiple RRU3804s without the SRXUs.....	3-83
Figure 3-102 Cable connections of multiple RRU3804s with the SRXUs.....	3-83
Figure 3-103 Connecting the PGND cable (1).....	3-84
Figure 3-104 Connecting the PGND cable (2).....	3-85
Figure 3-105 Connecting the OT terminal.....	3-85
Figure 3-106 Power cable with two OT terminals.....	3-86
Figure 3-107 Determining lengths of power cable for different operation.....	3-86
Figure 3-108 Stripping the cable.....	3-87
Figure 3-109 Two OT terminals on the power cable.....	3-87
Figure 3-110 Removing the jacket from the power cable.....	3-88
Figure 3-111 Cable troughs in the cabling cavity.....	3-88
Figure 3-112 Opening the cover.....	3-89
Figure 3-113 Twisting the shielding layer into one strand.....	3-90
Figure 3-114 Crimping the shielding layer and the PGND cable.....	3-91
Figure 3-115 Power cable with the heat-shrinkable tube.....	3-91
Figure 3-116 Waterproofed joints.....	3-93
Figure 3-117 Cable troughs in the cabling cavity.....	3-95
Figure 3-118 Loosening the six captive screws.....	3-97
Figure 3-119 Opening the cover plate.....	3-97
Figure 3-120 Tightening the screws.....	3-98
Figure 3-121 Loosening the six captive screws.....	3-99
Figure 3-122 Opening the cover plate.....	3-100
Figure 3-123 Tightening the screws.....	3-101
Figure 3-124 Installing the housing.....	3-106
Figure 3-125 Securing the housing.....	3-106

Tables

Table 2-1 LEDs on the RRU3804.....	2-6
Table 2-2 Power supply port on the RRU3804.....	2-7
Table 2-3 Transmission ports on the RRU3804.....	2-7
Table 2-4 Alarm port on the RRU3804.....	2-7
Table 2-5 Specifications for the alarm port on the RRU3804.....	2-8
Table 2-6 Other ports on the RRU3804.....	2-8
Table 2-7 Ports and LEDs on the panels of the RRU3804.....	2-10
Table 2-8 Power input to the RRU3804.....	2-11
Table 2-9 LEDs on the SRXU.....	2-12
Table 2-10 Power supply ports on the SRXU.....	2-13
Table 2-11 Transmission ports on the SRXU.....	2-13
Table 2-12 Other ports on the SRXU.....	2-13
Table 2-13 Ports and LEDs on the panels of the SRXU.....	2-15
Table 2-14 Pin assignment for the wires of the –48 V DC power cable (North American Standard).....	2-17
Table 2-15 Pin assignment for the wires of the –48 V DC power cable (European Standard).....	2-17
Table 2-16 Pin assignment for the wires of the AISG multi-wire cable.....	2-18
Table 2-17 Pin assignment for the wires of the AISG extension cable.....	2-19
Table 2-18 Pin assignment for the fiber tails.....	2-20
Table 2-19 Pin assignment for the fiber tails of the CRPI optical cable.....	2-22
Table 2-20 RF jumper connections of the RRU3804.....	2-24
Table 2-21 Pin assignment for the wires of the Boolean/RS485 input cable.....	2-26
Table 2-22 Pin assignment for the wires of the DC power cable.....	2-28
Table 2-23 Pin assignment for the wires of the AISG multi-wire cable.....	2-29
Table 2-24 Pin assignment for the wires of the AISG extension cable.....	2-30
Table 2-25 Pin assignment for the fiber tails.....	2-31
Table 3-1 Tools and instruments.....	3-13
Table 3-2 Connecting the antenna jumper to the appropriate RF port.....	3-92
Table 3-3 Checklist for equipment installation.....	3-103
Table 3-4 Checklist for the power cable and PGND cable connections.....	3-104
Table 3-5 Checklist for signal cable connections.....	3-104
Table 3-6 Checklist for field cleanliness.....	3-105
Table 4-1 Equipment maintenance items for the DBS3800.....	4-2
Table 4-2 LEDs on the RRU3804.....	4-3

Table 4-3 LEDs on the SRXU.....4-3

About This Document

Purpose

This document describes the RRU3804 hardware and provides instructions in hardware installation, cable connections, hardware installation check, and hardware maintenance.

Product Version

The following table lists the product version related to this document.

Product Name	Product Version
RRU3804	V100R009

Intended Audience

This document is intended for:

- NodeB installers
- System engineers
- Site maintainers

Change History

For changes in the document, refer to *Changes in RRU3804 User Guide*.

Organization

[1 Safety Information](#)

[2 RRU3804 and SRXU Hardware](#)

This describes the RRU3804 equipment, SRXU equipment, and related cables.

[3 Installing RRU3804 and SRXU Hardware](#)

This describes how to install the hardware, route the cables, and check the hardware installation of the RRU3804 and SRXU.






[4 Maintaining RRU3804 and SRXU Hardware](#)

After the RRU3804 and SRXU are deployed, accepted, and put into use, routine maintenance is performed to ensure the functionality of the modules.

Conventions

1. Symbol Conventions

The following symbols may be found in this document. They are defined as follows

Symbol	Description
 DANGER	Indicates a hazard with a high level of risk that, if not avoided, will result in death or serious injury.
 WARNING	Indicates a hazard with a medium or low level of risk which, if not avoided, could result in minor or moderate injury.
 CAUTION	Indicates a potentially hazardous situation that, if not avoided, could cause equipment damage, data loss, and performance degradation, or unexpected results.
 TIP	Indicates a tip that may help you solve a problem or save your time.
 NOTE	Provides additional information to emphasize or supplement important points of the main text.

2. General Conventions

Convention	Description
Times New Roman	Normal paragraphs are in Times New Roman.
Boldface	Names of files, directories, folders, and users are in boldface . For example, log in as user root .
<i>Italic</i>	Book titles are in <i>italics</i> .
Courier New	Terminal display is in Courier New.

3. Command Conventions

Convention	Description
Boldface	The keywords of a command line are in boldface .
<i>Italic</i>	Command arguments are in <i>italics</i> .
[]	Items (keywords or arguments) in square brackets [] are optional.

Convention	Description
{ x y ... }	Alternative items are grouped in braces and separated by vertical bars. One is selected.
[x y ...]	Optional alternative items are grouped in square brackets and separated by vertical bars. One or none is selected.
{ x y ... } *	Alternative items are grouped in braces and separated by vertical bars. A minimum of one or a maximum of all can be selected.
[x y ...] *	Alternative items are grouped in braces and separated by vertical bars. A minimum of zero or a maximum of all can be selected.

4. GUI Conventions

Convention	Description
Boldface	Buttons, menus, parameters, tabs, window, and dialog titles are in boldface . For example, click OK .
>	Multi-level menus are in boldface and separated by the ">" signs. For example, choose File > Create > Folder .

5. Keyboard Operation

Convention	Description
Key	Press the key. For example, press Enter and press Tab .
Key1+Key2	Press the keys concurrently. For example, pressing Ctrl+Alt+A means the three keys should be pressed concurrently.
Key1,Key2	Press the keys in turn. For example, pressing Alt,A means the two keys should be pressed in turn.

6. Mouse Operation

Action	Description
Click	Select and release the primary mouse button without moving the pointer.
Double-click	Press the primary mouse button twice continuously and quickly without moving the pointer.
Drag	Press and hold the primary mouse button and move the pointer to a certain position.

1 Safety Information

1.1 Safety Precautions

This section describes certain safety precautions. Read and follow these safety precautions before installing, operating, and maintaining Huawei devices. This manual can also help to choose the measurement device and testing device.

Following All Safety Precautions

Before any operation, read the instructions and precautions in this document carefully to minimize the possibility of accidents.

The Danger, Caution, and Note items in the documents do not cover all the safety precautions that must be followed. They only provide the generic safety precautions for operations.

Symbols



DANGER

This symbol indicates that casualty or serious accident may occur if you ignore the safety instruction.



CAUTION

This symbol indicates that serious or major injury may occur if you ignore the safety instruction.



NOTE

This symbol indicates that the operation may be easier if you pay attention to the safety instruction.

Complying with the Local Safety Regulations

When operating the device, comply with the local safety regulations. The safety precautions provided in the documents are supplementary. You must comply with the local safety regulations.

General Installation Requirements

The personnel in charge of installation and maintenance must be trained and master the correct operating methods and safety precautions before beginning work.

The rules for installing and maintaining the device are as follows:

- Only the trained and qualified personnel can install, operate and maintain the device.
- Only the qualified specialists are allowed to remove the safety facilities, and repair the device.
- Any replacement of the device or part of the device (including the software) or any change made to the device must be performed by qualified or authorized personnel of Huawei.
- Any fault or error that might cause safety problems must be reported immediately to the personnel in charge.

Grounding Requirements

The following requirements are applicable to the device to be grounded:

- Ground the device before installation and remove the ground cable after uninstallation.
- Do not operate the device in the absence of a ground conductor. Do not damage the ground conductor.
- The unit (or system) must be permanently connected to the protection ground before operation. Check the electrical connection of the device before operation and ensure that the device is reliably grounded.

Safety of Personnel

Ensure the following:

- When lightning strikes, do not operate the device and cables.
- When lightning strikes, unplug the AC power connector. Do not use the fixed terminal or touch the terminal or antenna connector.



NOTE

The previous two requirements are suitable for the wireless fixed terminal.

- To prevent electric shock, do not connect safety extra-low voltage (SELV) circuits to telecommunication network voltage (TNV) circuits.
- To prevent laser radiation from injuring your eyes, never look into the optical fiber outlet with unaided eyes.
- To prevent electric shock and burns, wear the electrostatic discharge (ESD) clothing, gloves and wrist strap, and remove conductors such as jewelry and watch before operation.

Device Safety

- Before operation, the device must be secured on the floor or other fixed objects, such as the walls and the mounting racks.
- Do not block ventilation openings while the system is running.
- When installing the panel, tighten the screw with the tool.

1.2 Electricity Safety

High Voltage



DANGER

- The high voltage power supply provides power for running the system. Direct contact with the high voltage power supply or contact through damp objects may result in fatal danger.
- Non-standard and improper high voltage operations may result in fire and electric shock.

-
- The personnel who install the AC facility must be qualified to perform operations on high voltage and AC power supply facilities.
 - When installing the AC power supply facility, follow the local safety regulations.
 - When operating the AC power supply facility, follow the local safety regulations.
 - When operating the high voltage and AC power supply facilities, use the specific tools instead of common tools.
 - When the operation is performed in a damp environment, ensure that water is kept off the device. If the cabinet is damp or wet, shut down the power supply immediately.

Thunderstorm

The following requirements are suitable only for the wireless base station or the device with an antenna or GPS antenna.



DANGER

In a thunderstorm, do not perform operations on high voltage and AC power supply facilities or on a steel tower and mast.

High Electrical Leakage



CAUTION

Ground the device before powering on the device. Otherwise, the personnel and device are in danger.

If the "high electrical leakage" flag is stuck to the power terminal of the device, you must ground the device before powering it on.

Power Cable



CAUTION

Do not install and remove the power cable with a live line. Transient contact between the core of the power cable and the conductor may generate electric arc or spark, which may cause fire or eye injury.

-
- Before installing or removing the power cable, turn off the power switch.
 - Before connecting the power cable, ensure that the power cable and label comply with the requirements of the actual installation.

Fuse



CAUTION

To ensure that the system runs safely, when a fuse blows, replace it with a fuse of the same type and specifications.

Electrostatic Discharge



CAUTION

The static electricity generated by the human body may damage the electrostatic sensitive components on the circuit board, such as the large-scale integrated circuit (LIC).

In the following situations, the human body generates a static electromagnetic field:

- Movement of body parts
- Clothes friction
- Friction between shoes and the ground

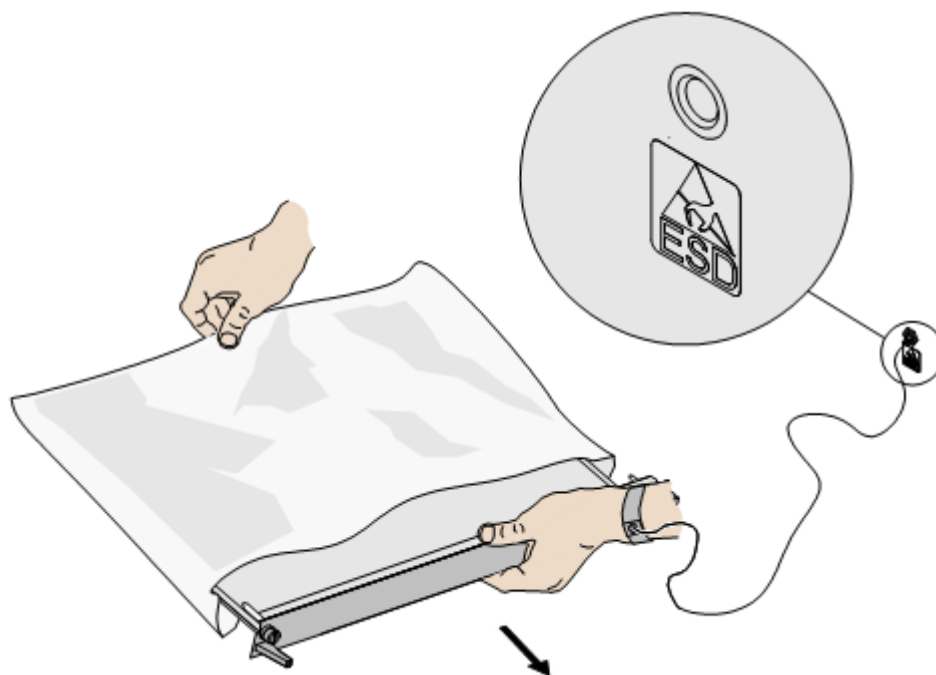
- Holding plastic in hand

The static electromagnetic field will remain within the human body for a long time.

Before contacting the device, plug boards, circuit boards, and application specific integrated circuits (ASICs), wear a grounded ESD wrist strap. It can prevent the sensitive components from being damaged by the static electricity in the human body.

Figure 1-1 shows how to wear an ESD wrist strap.

Figure 1-1 Wearing an ESD wrist strap



 **NOTE**

For the GSM dual density base station, you need not wear an ESD wrist strap.

1.3 Inflammable Environment



DANGER

Do not place the device in the environment that has inflammable and explosive air or fog.
Do not perform any operation in this environment.

Any operation of the electrical device in the inflammable environment causes danger.

1.4 Battery

Storage Battery



DANGER

Before handling the storage battery, read the safety precautions for the handling and connection of the storage battery.

Incorrect operation of storage batteries may cause danger. During operation, ensure the following:

- Prevent any short-circuit.
- Prevent the electrolyte from overflowing and leakage.

Electrolyte overflow may damage the device. It will corrode the metal parts and the circuit boards, and ultimately damage the device and cause short-circuit of the circuit boards.

General Operations

Before installing and maintaining the storage battery, ensure the following:

- Use special insulation tools.
- Use eye protection devices and operate with care.
- Wear rubber gloves and an apron in case of an electrolyte overflow.
- Always keep the battery upright when moving. Do not place the battery upside down or tilt it.

Short-Circuit



DANGER

Short-circuit of the battery may cause injury. Although the voltage of a battery is low, high transient current generated by short-circuit will release a surge of power.

Keep metal objects away from the battery to prevent short circuit. If they have to be used, disconnect the battery in use before performing any other operation.

Harmful Gas



CAUTION

- Do not use unsealed lead-acid storage batteries, because the gas emitted from it may result in fire or device corrosion.
- Lay the storage battery horizontally and fix it properly.

The lead-acid storage battery in use will emit flammable gas. Therefore, store it in a place with good ventilation and take precautions against fire.

High Temperature



CAUTION

High temperature may result in distortion, damage, and electrolyte overflow of the battery.

When the temperature of the battery exceeds 60°C, check whether there is acid overflow. If acid overflow occurs, handle the acid immediately.

Acid



CAUTION

If the acid overflows, it should be absorbed and neutralized immediately.

When handling a leaky battery, protect against the possible damage caused by the acid. Use the following materials to absorb and neutralize acid spills:

- Sodium bicarbonate (baking soda): NaHCO_3
- Sodium carbonate (soda): Na_2CO_3

Antacids must be used according to the instructions provided by the battery manufacturer.

Lithium Battery



CAUTION

There is danger of explosion if the battery is incorrectly replaced.

-
- Replace the lithium battery with the same or equivalent type recommended by the manufacturer.

- Dispose of the used battery according to the instructions provided by the manufacturer.
- Do not dispose of the lithium battery in fire.

1.5 Radiation

Electromagnetic Field Exposure



CAUTION

High power radio-frequency signals are harmful to human body.

Before installing or maintaining an antenna on a steel tower or mast with a large number of transmitter antennas, the operator should coordinate with all parties to ensure that the transmitter antennas are shut down.

The base transceiver station (BTS) has RF radiation (radiation hazard). Suggestions for the installation and operation of BTSs are given in the following section. Operators are also required to comply with the related local regulations on erecting BTSs.

- The antenna should be located in an area that is inaccessible to the public where the RF radiation exceeds the stipulated value.
- If the areas where RF radiation exceeds the stipulated value are accessible to workers, ensure that workers know where these areas are. They can shut down the transmitters before entering these areas. Such areas may not exist; but if they exist, the areas must be within a range of less than 10 m around the antennas.
- Each forbidden zone should be indicated by a physical barrier and striking sign to warn the public or workers.

Laser



CAUTION

When handling optical fibers, do not stand close to, or look into the optical fiber outlet with unaided eyes.

Laser transceivers or transmitters are used in the optical transmission system and associated test tools. Because the laser that is transmitted through the optical fiber produces a small beam of light, it has a very high power density and is invisible to human eyes. If a beam of light enters the eye, the retina may be damaged.

Normally, staring into the end of an unterminated optical fiber or broken optical fiber with the unaided eyes from a distance of more than 150 mm (6 inches) will not cause eye injury. Eyes may, however, be damaged if an optical tool such as a microscope, magnifying glass or eye loupe is used to stare into the bare optical fiber end.

Read the following guidelines to prevent laser radiation:

- Only the trained and authorized personnel can perform the operation.
- Wear a pair of eye-protective glasses when you are handling lasers or optical fibers.
- Ensure that the optical source is switched off before disconnecting optical fiber connectors.
- Never look into the end of an exposed optical fiber or an open connector if you cannot ensure that the optical source is switched off.
- To ensure that the optical source is switched off, use an optical power meter.
- Before opening the front door of an optical transmission system, ensure that you are not exposed to laser radiation.
- Never use an optical tool such as a microscope, a magnifying glass, or an eye loupe to look into the optical fiber connector or end.

Read the following instructions before handling optical fibers:

- Only the trained personnel can cut and splice optical fibers.
- Before cutting or splicing an optical fiber, ensure that the optical fiber is disconnected from the optical source. After disconnecting the optical fiber, use protecting caps to protect all the optical connectors.

1.6 Working at Heights



CAUTION

When working at heights, ensure that the objects do not fall.

When working at heights, ensure that the following requirements must be met:

- The personnel who work at heights must be trained.
- The operating machines and tools should be carried and handled safely to prevent them from falling.
- Safety measures, such as wearing a helmet and a safety belt, should be taken.
- In cold regions, warm clothes should be worn before working at heights.
- Ensure that the lifting appliances are well prepared for working at heights.

Lifting Weights



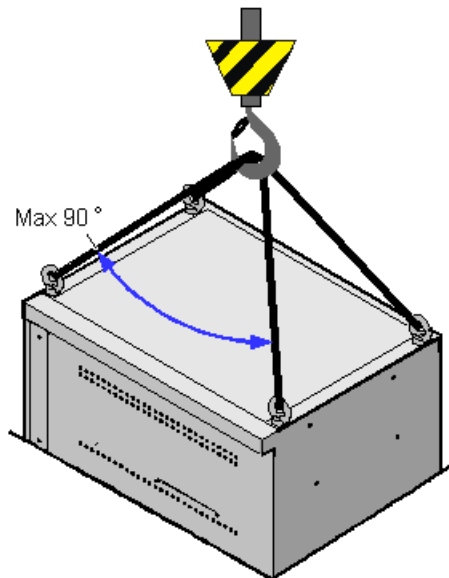
CAUTION

Do not access the areas under the arm of the crane and the goods in suspension when lifting weights.

- Ensure that the operators have been trained and qualified.
- Check the weight lifting tools and ensure that they are intact.

- Lift the weight only when the weight lifting tools are firmly mounted onto the weight-bearing object or the wall.
- Use a concise instruction to prevent incorrect operation.
- The angle between the two cables should be less than or equal to 90° in the lifting of weights (See [Figure 1-2](#)).

Figure 1-2 Lifting a weight



Safety Guide on Ladder Use

Checking the Ladder

- Check the ladder before using it. Check the maximum weight that the ladder can support.
- Never overload the ladder.

Placing the Ladder

- The slant angle is preferred to be 75° . The slant can be measured with the angle square or with arms, as shown in [Figure 1-3](#). When using a ladder, place the wider end of the ladder on the ground and take protective measures on the base of the ladder against slippage. Place the ladder on a stable ground.

When climbing the ladder, ensure the following:

- The gravity of the body does not shift from the edge of the ladder.
- Keep balance on the ladder before performing any operation.
- Do not climb higher than the fourth highest step of the ladder.

If you tend to climb to the roof, the length of the ladder should be at least one meter higher than the eave, as shown in [Figure 1-4](#).

Figure 1-3 Slant angle

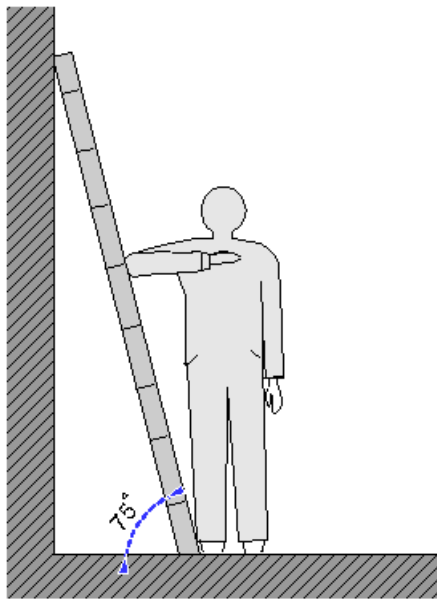
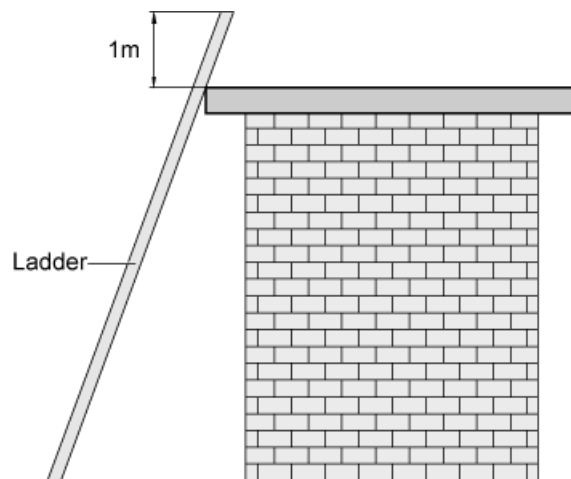


Figure 1-4 One meter higher than the eave



1.7 Mechanical Safety

Drilling



CAUTION

Do not drill on the cabinet without permission. Inappropriate drilling on the cabinet may damage the electromagnetic shielding and internal cables. Metal shavings from the drilling may result in a short-circuit of the circuit board if they get into the cabinet.

- Before drilling a hole on the cabinet, remove the cables from the cabinet.

- During the drilling, wear blinkers to protect your eyes.
- During the drilling, wear the protective gloves.
- Prevent the metal shavings from getting into the cabinet. After drilling, clean the metal shavings in time.

Handling Sharp Objects



CAUTION

When carrying the device by hand, wear the protective gloves to prevent injury by sharp objects.

Handling Fans

- When replacing a component, place the component, screw, and tool at a safe place to prevent them from falling into the running fan.
- When replacing the ambient equipment around the fan, do not place the finger or board into the running fan until the fan is switched off and stops running.

Moving Heavy Objects

Wear the protective gloves when moving heavy objects.



CAUTION

- Be careful when moving heavy objects.
 - When moving the chassis outwards, be aware about the unfixed or heavy objects on the chassis to prevent injury.
-
- Two persons should be available to move a chassis; one person must not move a heavy chassis. When moving a chassis, keep your back straight and move stably to prevent a sprain.
 - When moving or lifting a chassis, hold the handle or bottom of the chassis. Do not hold the handle of the installed modules in the chassis, such as the power module, fan module, or board.

1.8 Others

Inserting and Removing a Board



CAUTION

When inserting a board, wear the ESD wrist strap or gloves. Insert the board gently to prevent any bent pins on the backplane.

-
- Insert the board along the guide rail.
 - Avoid contact of one board with another to prevent short-circuit or damage.
 - Do not remove the active board before powering off.
 - When holding a board in hand, do not touch the board circuit, components, connectors, or connection slots.

Bundling Signal Cables



CAUTION

Bundle the signal cables separately from the strong current cables or high voltage cables.

Cabling Requirements

At a very low temperature, movement of the cable may damage the plastic skin of the cable. To ensure the construction safety, comply with the following requirements:

- When installing cables, ensure that the environment temperature is above 0°C.
- If cables are stored in the place below 0°C, move the cables into a place at a room temperature and store the cables for more than 24 hours before installation.
- Move the cables with care, especially at a low temperature. Do not drop the cables directly from the vehicle.

2 RRU3804 and SRXU Hardware

About This Chapter

This describes the RRU3804 equipment, SRXU equipment, and related cables.

[2.1 RRU3804 Equipment](#)

The RRU3804 is an outdoor remote radio unit. The RRU3804 that is connected to the SRXU supports 4-way RX diversity.

[2.2 SRXU Equipment](#)

The SRXU is an extended RF interface module that provides two RX channels for RF signals.

[2.3 RRU3804 Cables](#)

The RRU3804 cables include the PGND cable, power cable, AISG multi-wire cable, AISG extension cable, CPRI optical cable, RF jumper, and Boolean input cable.

[2.4 SRXU Cables](#)

The SRXU cables include the PGND cable, power cable, AISG multi-wire cable, AISG extension cable, CPRI optical cable, and RF jumper.

2.1 RRU3804 Equipment

The RRU3804 is an outdoor remote radio unit. The RRU3804 that is connected to the SRXU supports 4-way RX diversity.

The RRU3804 has the following functions:

- The RRU3804 receives RF signals from the antenna system, down-converts the signals to IF signals, and then transmits them to the BBU or the macro NodeB after amplification, analog-to-digital conversion, digital down-conversion, matched filtering, and Digital Automatic Gain Control (DAGC).
- The RRU3804 receives downlink baseband signals from the BBU or the macro NodeB, forwards data from its cascaded RRU3804, performs filtering and digital-to-analog conversion, and up-converts RF signals to the transmitting frequency band.
- The RRU3804 multiplexes RX and TX signals over RF channels and filters the RX signals and TX signals. This enables the RX signals and TX signals to share the same antenna path.

2.1.1 DBS3800 Product Family

This describes the function modules and auxiliary facilities in the DBS3800 product family.

2.1.2 Appearance of the RRU3804

The RRU3804 features a modular structure with its ports at the module bottom and on the cabling cavity.

2.1.3 LEDs on the RRU3804

The LEDs, on the LED panel of the RRU3804, indicate the running status of the RRU3804.

2.1.4 Ports on the RRU3804

The ports on the RRU3804 consist of grounding ports, power supply ports, transmission ports, alarm ports, and other ports.

2.1.5 Panels of the RRU3804

The RRU3804 has a bottom panel, a cabling cavity panel, and an LED panel.

2.1.6 Engineering Specifications of the RRU3804

This describes the engineering specifications for the RRU3804.

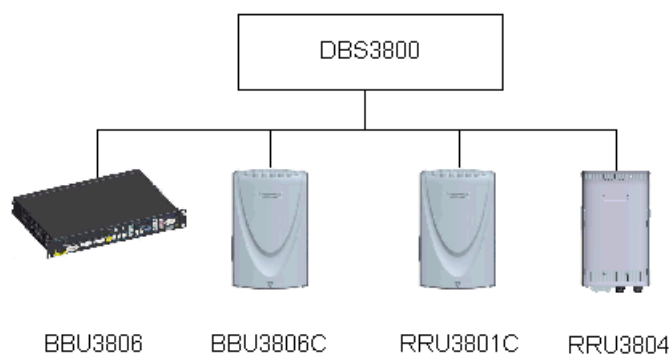
2.1.1 DBS3800 Product Family

This describes the function modules and auxiliary facilities in the DBS3800 product family.

Function Modules of the DBS3800

The BBU3806, BBU3806C, RRU3801C, and RRU3804 are referred to as the function modules of the DBS3800.

Figure 2-1 Function modules of the DBS3800



Function Module	Description
BBU3806	Indoor baseband unit that processes baseband signals
BBU3806C	Outdoor baseband unit that processes baseband signals
RRU3801C	Outdoor remote radio unit. It receives and transmits RF signals and then transmits the processed signals to the BBU3806 or BBU3806C.
RRU3804	Outdoor remote radio unit. The RRU3804 that is connected to the SRXU supports 4-way RX diversity.

The BBU3806, BBU3806C, and RRU3801C can be combined into a BTS3803 or BTS3803C.

- BTS3803: consists of one BBU3806, one RRU3801C, and the power system, which processes RF and baseband signals and applies to indoor environment.
- BTS3803C: consists of one BBU3806C and one to three RRU3801Cs, which processes RF and baseband signals and applies to outdoor environment.

Auxiliary Facilities of the DBS3800

Auxiliary Facility	Description
APM30	<p>Auxiliary power backup system for outdoor application. The APM30 provides the following functions:</p> <ul style="list-style-type: none"> • –48 V DC power output • Temperature control • 2 U or 7 U space for your devices, depending on the configuration of batteries <p>For details on the functions of the APM30, refer to the <i>APM30 User Guide</i>.</p>
APM100	<p>Auxiliary power backup system for outdoor application. The APM100 provides the following functions:</p> <ul style="list-style-type: none"> • –48 V DC power output • A maximum of 60 A output • 4 U space for your devices <p>For details on the functions of the APM100, refer to the <i>APM100 User Guide</i>.</p>

Auxiliary Facility	Description
AFB	<p>Auxiliary facility box for outdoor application. The AFB provides the following functions:</p> <ul style="list-style-type: none"> ● Four AC power outputs and four DC power outputs ● AC surge protection ● Temperature control ● Alarm reporting ● 5 U space for your devices <p>For details on the functions of the AFB, refer to the <i>AFB User Guide</i>.</p>
OFB	<p>Outdoor facility box for DC power distribution and transmission. The OFB provides the following functions:</p> <ul style="list-style-type: none"> ● 11 U space for your devices ● Heat dissipation ● Alarm reporting <p>For details on the functions of the OFB, refer to the <i>OFB User Guide</i>.</p>
SPD40R	<p>Outdoor AC surge protection device. The SPD40R provides the following functions:</p> <ul style="list-style-type: none"> ● AC surge protection ● Four AC power inputs ● Remote fault alarm reporting ● Local fault alarm reporting <p>For details on the functions of the SPD40R, refer to the <i>SPD40R User Guide</i>.</p>
DPD32-1-6	<p>Indoor facility for DC power distribution. The DPD32-1-6 provides the following functions:</p> <ul style="list-style-type: none"> ● One DC power input at a maximum current of 32 A ● Six DC power outputs <p>For details on the functions of the DPD32-1-6, refer to the <i>DPD32-1-6 User Guide</i>.</p>
EMUA	<p>Environment monitoring unit. The EMUA provides the following functions:</p> <ul style="list-style-type: none"> ● Environment monitoring ● Intrusion monitoring ● Power distribution monitoring <p>For details on the functions of the EMUA, refer to the <i>EMUA User Guide</i>.</p>

Auxiliary Facility	Description
Surge Protection Box for Coaxial (SPBC)	A small box for indoor application, which provides surge protection for the coaxial cables of the BBU3806. For details on the functions of the SPBC, refer to SPBC .
Surge Protection Box for Twisted-Pair (SPBT)	The surge protection unit in the SPBT is optional. <ul style="list-style-type: none"> • The SPBT without the surge protection unit works as a Digital Distribution Frame (DDF). • The SPBT with the surge protection unit provides surge protection for twisted pair cables. For details on the functions of the SPBT, refer to SPBT .
Signal Lightning Protection Unit (SLPU)	The SLPU protects the E1/T1 signals and Ethernet signals over the BBU3806 from lightning surge. For details on the functions of the SLPU, refer to SLPU .
DDF	The DDF is used for the E1/T1 cable connections between the BBU3806 and the transmission device. According to installation positions, the DDF falls into two types, namely external DDF and built-in DDF. For details on the functions of the DDF, refer to Built-in DDF .

2.1.2 Appearance of the RRU3804

The RRU3804 features a modular structure with its ports at the module bottom and on the cabling cavity.

Figure 2-2 shows the RRU3804. On the left is a front view of the RRU3804 without the housing, in the middle is a side view of the RRU3804 without the housing, and on the right is a front view of the RRU3804 housing.

Figure 2-2 RRU3804



2.1.3 LEDs on the RRU3804

The LEDs, on the LED panel of the RRU3804, indicate the running status of the RRU3804.

For the positions of the LEDs on the RRU3804, refer to [2.1.5 Panels of the RRU3804](#).

[Table 2-1](#) describes the LEDs and their status.

Table 2-1 LEDs on the RRU3804

Label	Color	Status	Description
RUN	Green	ON	The module has power input, yet the module is faulty.
		OFF	The module has no power input or is reporting alarms.
		1s ON, 1s OFF	The module is operational.
		0.5s ON, 0.5s OFF	Software is being loaded to the module.
ALM	Red	ON	The module is reporting alarms (excluding VSWR-related alarms).
		OFF	The module is operational.
TX_ACT	Green	ON	The module is running.
		OFF	No specific meaning
VSWR	Red	ON	VSWR-related alarms are reported.
		OFF	No VSWR-related alarm is reported.
CPRI_W	Red/green	ON (green)	The CPRI link is normal.
		ON (red)	The optical module receives local alarms related to LOS.
		0.5s ON, 0.5s OFF (red)	The CPRI link is out of lock.
		OFF	The optical module is not in position or is powered off.
CPRI_E	Red/green	ON (green)	The CPRI link is normal.
		ON (red)	The optical module receives local alarms related to LOS.
		0.5s ON, 0.5s OFF (red)	The CPRI link is out of lock.

Label	Color	Status	Description
		OFF	The optical module is not in position or is powered off.

2.1.4 Ports on the RRU3804

The ports on the RRU3804 consist of grounding ports, power supply ports, transmission ports, alarm ports, and other ports.

Grounding Ports

The RRU3804 has four grounding bolts at the bottom.

Power Supply Ports

Table 2-2 Power supply port on the RRU3804

Application	Port	Quantity	Connector Type
Power supply	-48 V DC power supply	1	OT terminal

Transmission Ports

Table 2-3 Transmission ports on the RRU3804

Port	Quantity	Data Rate	Connector Type
Optical ports	2	1.25 Gbit/s	ESFP socket

Alarms Ports

Table 2-4 Alarm port on the RRU3804

Application	Port	Quantity	Connector Type
Alarms	2-channel dry contact alarms, 1-channel RS485 signals	1	DB15

Table 2-5 Specifications for the alarm port on the RRU3804

Item	Specification
Closed resistance	< 0.2 kilohms
Open resistance	> 51 kilohms

Other Ports

Table 2-6 Other ports on the RRU3804

Application	Port	Quantity	Connector Type
RET antenna/power input to the SRXU	-	1	DB9, waterproof
RF	Main TX/RX	1	DIN, round, and waterproof
	RX diversity	1	DIN, round, and waterproof
	Interconnection between combined cabinets	1	2W2

2.1.5 Panels of the RRU3804

The RRU3804 has a bottom panel, a cabling cavity panel, and an LED panel.

[Figure 2-3](#) shows the panels of the RRU3804.

Figure 2-3 Panels of the RRU3804

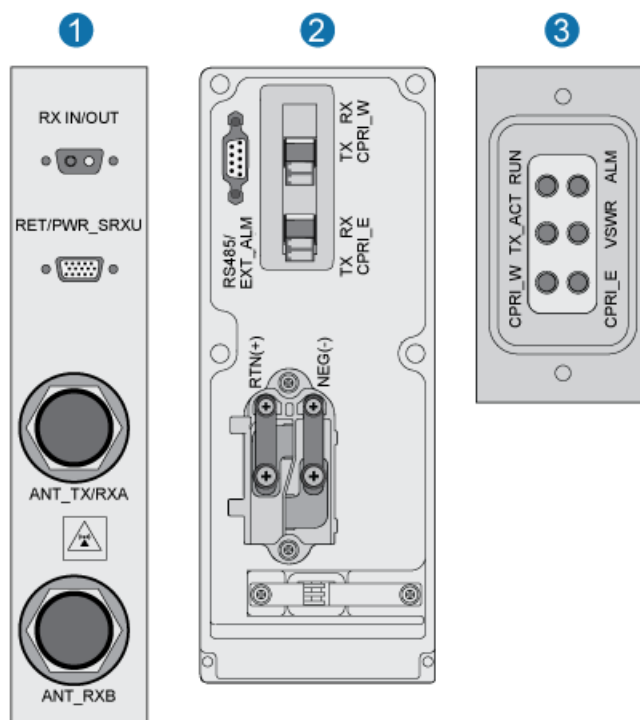
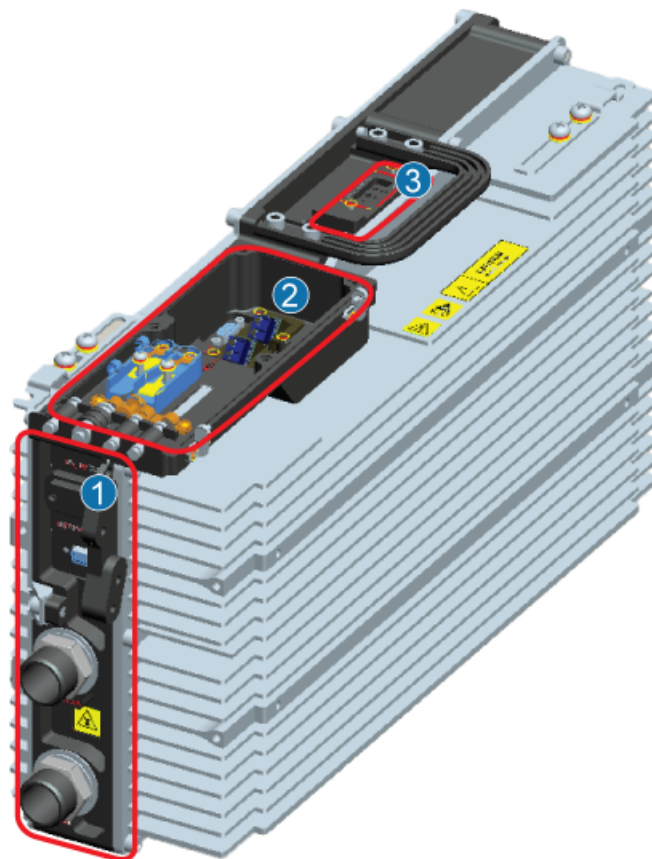


Table 2-7 describes the ports and LEDs on the panels of the RRU3804.

Table 2-7 Ports and LEDs on the panels of the RRU3804

Item	Label	Description
Ports at the bottom	RX_IN/OUT	Port for interconnection between combined cabinets
	RET/PWR_SRXU	Port for the RET antenna or power output to the SRXU
	ANT_TX/RXA	Port for main TX/RX diversity
	ANT_RXB	Port for diversity reception
Ports on the cabling cavity	RS485/EXT_ALM	Port for alarms
	CPRI_E	Optical ports
	CPRI_W	
	RTN(+)	Ports for power supply
	NEG(-)	
	PGND	Grounding bolt
LEDs	RUN	For details, refer to 2.1.3 LEDs on the RRU3804 .
	ALM	
	TX_ACT	
	VSWR	
	CPRI_W	
	CPRI_E	

2.1.6 Engineering Specifications of the RRU3804

This describes the engineering specifications for the RRU3804.

Dimensions

The dimensions of the RRU3804 (including the mounting plate and housing) are 280 mm x 155 mm x 488 mm (W x D x H).

Weight

The weight of the RRU3804 is 17 kg at most.

Power Input

Table 2-8 Power input to the RRU3804

Rated Voltage	Operating Voltage Range	Remarks
-48 V DC	-37 V DC to -60 V DC	-

Power Consumption

The maximum power consumption of the RRU3804 is 280 W.

2.2 SRXU Equipment

The SRXU is an extended RF interface module that provides two RX channels for RF signals.

The SRXU receives RF signals from the antenna system, down-converts the signals to IF signals, and then transmits them to the RRU3804 after amplification, analog-to-digital conversion, digital down-conversion, matched filtering, and DAGC. The RRU3804 forwards the signals to the BBU or the macro NodeB.

2.2.1 Appearance of the SRXU

The SRXU features a modular structure with its ports at the module bottom and on the cabling cavity.

2.2.2 LEDs on the SRXU

The LEDs, on the LED panel of the SRXU, indicate the running status of the SRXU.

2.2.3 Ports on the SRXU

The ports on the SRXU consist of grounding ports, power supply ports, transmission ports, and other ports.

2.2.4 Panels of the SRXU

The SRXU has a bottom panel, a cabling cavity panel, and an LED panel.

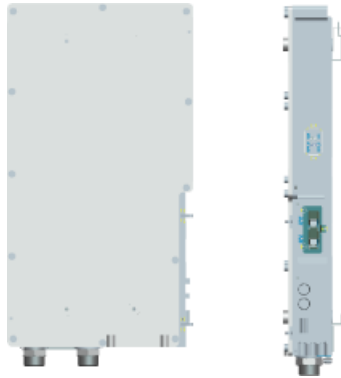
2.2.5 Engineering Specifications of the SRXU

This describes the engineering specifications of the SRXU.

2.2.1 Appearance of the SRXU

The SRXU features a modular structure with its ports at the module bottom and on the cabling cavity.

Figure 2-4 shows the SRXU. On the left is a front view of the SRXU, and on the right is a side view of the SRXU.

Figure 2-4 SRXU

2.2.2 LEDs on the SRXU

The LEDs, on the LED panel of the SRXU, indicate the running status of the SRXU.

For the positions of the LEDs on the SRXU, refer to [2.2.4 Panels of the SRXU](#).

[Table 2-9](#) describes the LEDs and their status.

Table 2-9 LEDs on the SRXU

Label	Color	Status	Description
RUN	Green	ON	The module has power input, yet the module is faulty.
		OFF	The module has no power input, or the module is faulty.
		1s ON, 1s OFF	The module is operational.
		0.5s ON, 0.5s OFF	Software is being loaded to the module.
ALM	Red	ON	The module is reporting alarms.
		OFF	The module is operational.
CPRI_W	Red/green	ON (green)	The CPRI link is normal.
		ON (red)	The optical module receives local alarms related to LOS.
		0.5s ON, 0.5s OFF (red)	The CPRI link is out of lock.
		OFF	The optical module is not in position or is powered off.
CPRI_E	Red/green	ON (green)	The CPRI link is normal.
		ON (red)	The optical module receives local alarms related to LOS.

Label	Color	Status	Description
		0.5s ON, 0.5s OFF (red)	The CPRI link is out of lock.
		OFF	The optical module is not in position or is powered off.

2.2.3 Ports on the SRXU

The ports on the SRXU consist of grounding ports, power supply ports, transmission ports, and other ports.

Grounding Ports

The SRXU has two grounding bolts at the bottom.

Power Supply Ports

Table 2-10 Power supply ports on the SRXU

Application	Port	Quantity	Connector Type
Power supply	DC power from the RRU3804	1	DB9, waterproof

Transmission Ports

Table 2-11 Transmission ports on the SRXU

Port	Quantity	Data Rate	Connector Type
Optical port	2	1.25 Gbit/s	ESFP socket

Other Ports

Table 2-12 Other ports on the SRXU

Application	Port	Quantity	Connector Type
RET antenna	-	1	DB9, waterproof
RF	Main TX/RX	1	DIN, round, and waterproof
	RX diversity	1	DIN, round, and waterproof

Application	Port	Quantity	Connector Type
	Interconnection between combined cabinets	1	2W2

2.2.4 Panels of the SRXU

The SRXU has a bottom panel, a cabling cavity panel, and an LED panel.

Figure 2-5 shows the panels of the SRXU.

Figure 2-5 Panels of the SRXU

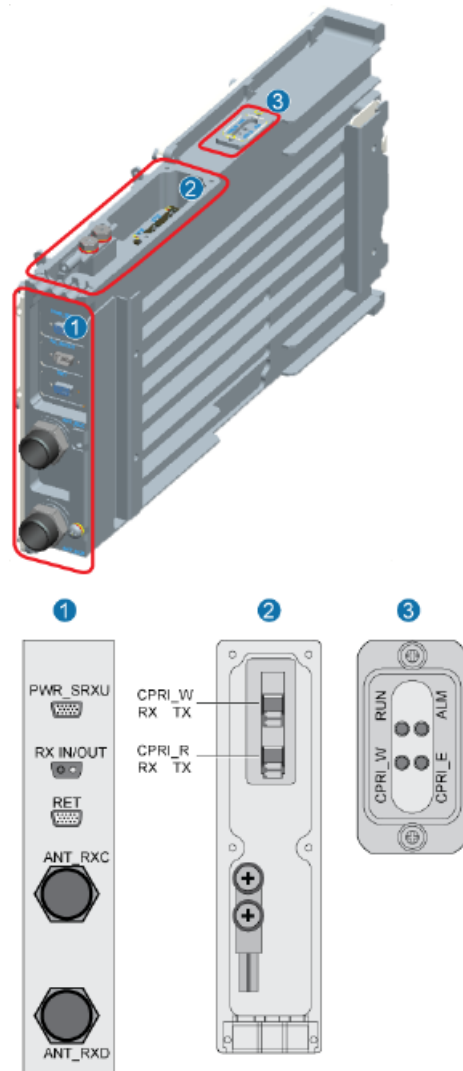


Table 2-13 describes the ports and LEDs on the panels of the SRXU.

Table 2-13 Ports and LEDs on the panels of the SRXU

Item	Label	Description
Ports at the bottom	PWR_SRXU	Socket for power supply
	ANT_RXC	Port for diversity reception
	ANT_RXD	Port for diversity reception
	RX_IN/OUT	Port for interconnection between combined cabinets
	RET	Port for the RET antenna
Ports on the cabling cavity	CPRI_E	Optical ports
	CPRI_W	
LEDs	RUN	For details, refer to 2.1.3 LEDs on the RRU3804 .
	ALM	
	CPRI_W	
	CPRI_E	

2.2.5 Engineering Specifications of the SRXU

This describes the engineering specifications of the SRXU.

Dimensions

The dimensions of the SRXU are 260 mm x 60 mm x 480 mm (W x D x H).

Weight

The weight of the SRXU is 6 kg at most.

Power Consumption

The maximum power consumption of the SRXU is 30 W.

2.3 RRU3804 Cables

The RRU3804 cables include the PGND cable, power cable, AISG multi-wire cable, AISG extension cable, CPRI optical cable, RF jumper, and Boolean input cable.

2.3.1 PGND Cable of the RRU3804

The PGND cable ensures the grounding of the RRU3804.

2.3.2 Power Cable of the RRU3804

The RRU3804 uses a shielded –48 V DC power cable. The cable feeds external –48 V DC power to the RRU3804.

2.3.3 AISG Multi-Wire Cable of the RRU3804/SRXU

The five-meter-long AISG multi-wire cable connects the RRU3804/SRXU to the Remote Control Unit (RCU). If both RRU3804 and SRXU are installed, the AISG multi-wire cable only connects the SRXU and the RCU. This cable is optional.

2.3.4 AISG Extension Cable of the RRU3804/SRXU

When the distance between the RCU and the RRU3804/SRXU is longer than 5 m, the AISG multi-wire cable is not long enough to cover the distance and the AISG extension cable is used. The AISG extension cable is 15 m long.

2.3.5 BBU3806-RRU/SRXU CPRI Optical Cable

The CPRI optical cable transmits CPRI signals between BBU3806 and RRU3801C, between BBU3806 and RRU3804, and between RRU3804 and SRXU.

2.3.6 BBU3806C-RRU/SRXU CPRI Optical Cable

The CPRI optical cable transmits CPRI signals between BBU3806C and RRU3801C, between BBU3806C and RRU3804, and between RRU3804 and SRXU.

2.3.7 RF Jumper of the RRU3804/SRXU

The RF jumper of the RRU3804/SRXU is of two types: antenna jumper and interconnect jumper. The interconnect jumper is optional, depending on the site configuration.

2.3.8 Boolean/RS485 Input Cable of the RRU3804

The cable transmits the 2-channel Boolean alarm signals and 1-channel RS485 signals from external devices to the RRU3804. Thus, the external signals are monitored.

2.3.1 PGND Cable of the RRU3804

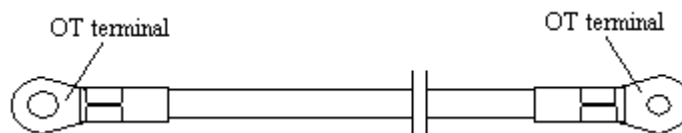
The PGND cable ensures the grounding of the RRU3804.

Appearance

The green and yellow PGND cable is a single cable with a cross-sectional area of 16 mm². Both ends of the cable are OT terminals. If you prepare the cable by yourself, it is recommended to use a copper-based cable with a minimum cross-sectional area of 16 mm².

Figure 2-6 shows the PGND cable.

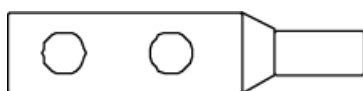
Figure 2-6 PGND cable



Both ends of the PGND cable need to be made into OT terminals on site. You can determine the color of the cable and whether to use 2-hole terminals according to local standards.

Figure 2-7 shows the 2-hole terminal.

Figure 2-7 2-hole terminal



Installation Position

One end of the PGND cable is connected to the grounding bolt on the RRU3804, and the other end is connected to the nearest grounding bar.

2.3.2 Power Cable of the RRU3804

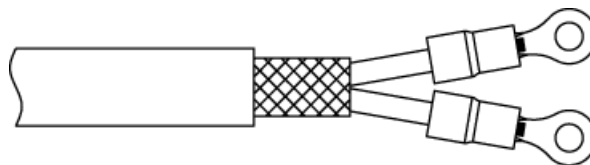
The RRU3804 uses a shielded –48 V DC power cable. The cable feeds external –48 V DC power to the RRU3804.

Appearance

One end of the cable is two OT terminals, and the other end is bare, as shown in [Figure 2-8](#).

The OT terminals need to be made on site.

Figure 2-8 –48 V DC power cable



Pin Assignment

The –48 V DC cable is a 2-wire cable. [Table 2-14](#) and [Table 2-15](#) describe the pin assignment for the wires of the –48 V DC power cable.

Table 2-14 Pin assignment for the wires of the –48 V DC power cable (North American Standard)

Wire Type	Wire Color
NEG	Blue
RTN	Black

Table 2-15 Pin assignment for the wires of the –48 V DC power cable (European Standard)

Wire Type	Wire Color
NEG	Blue
RTN	Brown

Installation Position

At one end of the cable, the OT terminal on the blue wire is connected to the NEG(-) port on the cabling cavity of the RRU3804, and the OT terminal on the black or brown wire is connected to the RTN(+) port on the cabling cavity of the RRU3804.

At the other end of the cable, a proper terminal is made depending on field requirements and is then connected to the power supply on site.

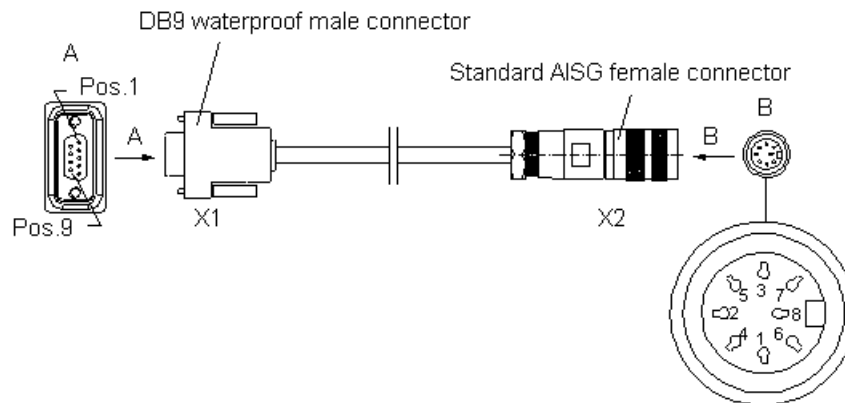
2.3.3 AISG Multi-Wire Cable of the RRU3804/SRXU

The five-meter-long AISG multi-wire cable connects the RRU3804/SRXU to the Remote Control Unit (RCU). If both RRU3804 and SRXU are installed, the AISG multi-wire cable only connects the SRXU and the RCU. This cable is optional.

Appearance

One end of the AISG multi-wire cable is a waterproof DB9 connector, and the other end is a standard AISG female connector, as shown in [Figure 2-9](#).

Figure 2-9 AISG multi-wire cable



Pin Assignment

[Table 2-16](#) describes the pin assignment for the wires of the AISG multi-wire cable.

Table 2-16 Pin assignment for the wires of the AISG multi-wire cable

X1 End	X2 End	Wire Type	Remarks
X1.1	X2.1	Twisted pair	+12 V
X1.7	X2.7	Twisted pair	DC-GND
X1.9			AISG_Switch
X1.3	X2.3	Twisted pair	RS485 -
X1.5	X2.5		RS485 +

Installation Position

If only the RRU3804 is installed, the waterproof DB9 connector is linked to the RET/PWR_SRXU port at the bottom of the RRU3804, and the standard AISG female connector is linked to the corresponding connector on the RCU or to the AISG extension cable.

If both the RRU3804 and the SRXU are installed, the waterproof DB9 connector is linked to the RET port at the bottom of the SRXU, and the standard AISG female connector is linked to the corresponding connector on the RCU or to the AISG extension cable.

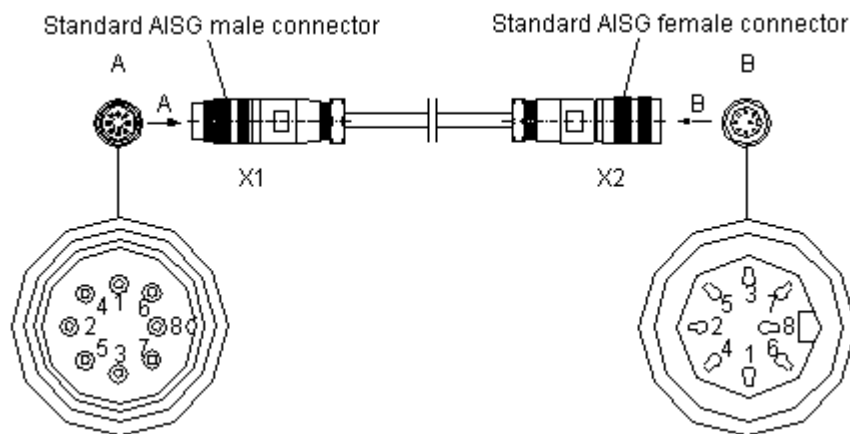
2.3.4 AISG Extension Cable of the RRU3804/SRXU

When the distance between the RCU and the RRU3804/SRXU is longer than 5 m, the AISG multi-wire cable is not long enough to cover the distance and the AISG extension cable is used. The AISG extension cable is 15 m long.

Appearance

One end of the AISG extension cable is a standard AISG male connector, and the other end is a standard AISG female connector, as shown in [Figure 2-10](#).

Figure 2-10 AISG extension cable



Pin Assignment

[Table 2-17](#) describes the pin assignment for the wires of the AISG extension cable.

Table 2-17 Pin assignment for the wires of the AISG extension cable

X1 End	X2 End	Wire Color	Wire Type	Remarks
X1.1	X2.1	White/blue	Twisted pair	+12 V
		Blue		
X1.7	X2.7	White/orange	Twisted pair	DC Return A
		Orange		
X1.3	X2.3	White/green	Twisted pair	RS485 B
X1.5	X2.5	Green		RS485 A
X1.6	X2.6	White/brown	Twisted pair	+24 V
		Brown		

Installation Position

The AISG female connector is linked to the corresponding connector on the RCU, and the AISG male connector is linked to the AISG female connector of the AISG multi-wire cable.

2.3.5 BBU3806-RRU/SRXU CPRI Optical Cable

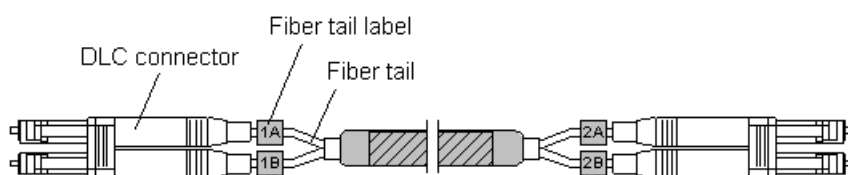
The CPRI optical cable transmits CPRI signals between BBU3806 and RRU3801C, between BBU3806 and RRU3804, and between RRU3804 and SRXU.

Appearance

The CPRI optical cable is a multi-mode 2-wire cable with DLC connectors at both ends.

[Figure 2-11](#) shows the CPRI optical cable.

Figure 2-11 CPRI optical cable



Pin Assignment

[Table 2-18](#) describes the pin assignment for the fiber tails.

Table 2-18 Pin assignment for the fiber tails

Label	Color	Connect to...
1A	Orange	RX port on the RRU
1B	Gray	TX port on the RRU
2A	Orange	TX port on the BBU3806
2B	Gray	RX port on the BBU3806

Connections of BBU3806-RRU CPRI Optical Cable in Typical Configurations

The connections of the CPRI optical cable between the BBU3806 and the RRU depend on specific networking modes.

[Figure 2-12](#) and [Figure 2-13](#) show the connections of the optical cable between the BBU3806 and the RRU in two typical configurations.

Figure 2-12 Connecting the CPRI optical cable in 1 x 1 configuration (no TX diversity)

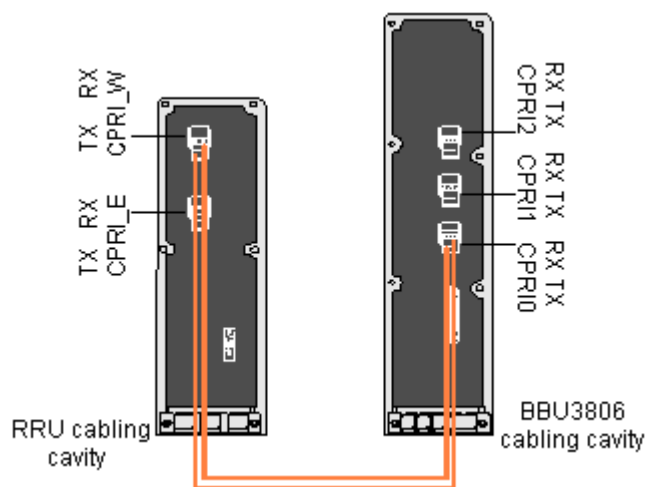
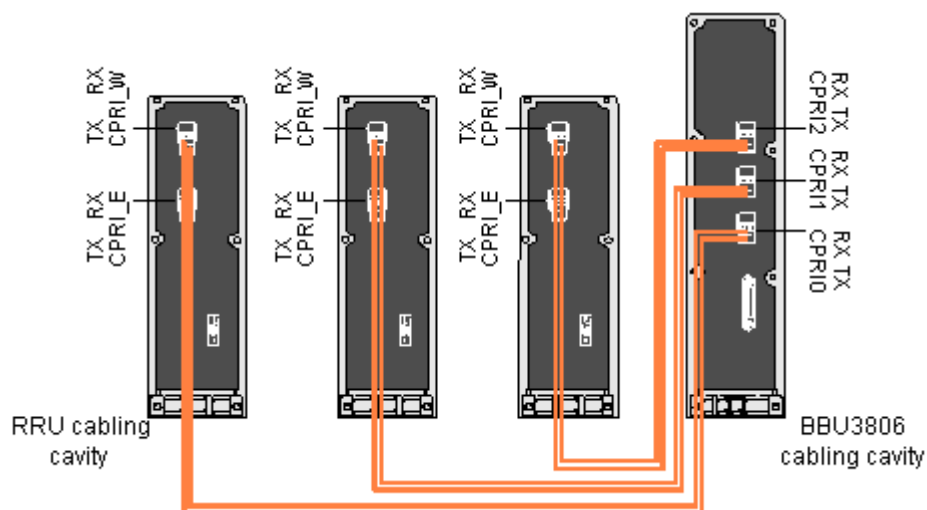


Figure 2-13 Connecting the CPRI optical cable in 3 x 1 configuration (no TX diversity)



CAUTION

To connect the optical cable, adhere to the following rules:

- The TX port on the BBU3806 is connected to the RX port on the RRU.
- The RX port on the BBU3806 is connected to the TX port on the RRU.

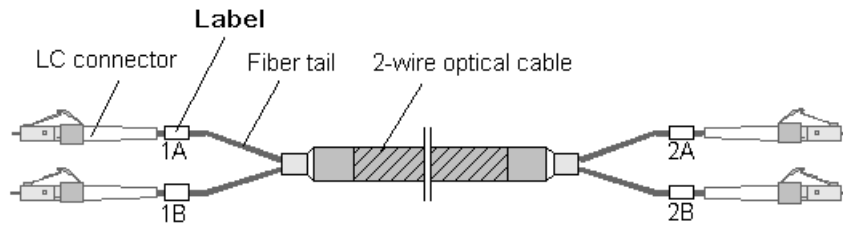
2.3.6 BBU3806C-RRU/SRXU CPRI Optical Cable

The CPRI optical cable transmits CPRI signals between BBU3806C and RRU3801C, between BBU3806C and RRU3804, and between RRU3804 and SRXU.

Appearance

The CPRI optical cable is a multi-mode 2-wire cable with LC connectors at both ends. [Figure 2-14](#) shows the CPRI optical cable.

Figure 2-14 CPRI optical cable



Pin Assignment

Table 2-19 describes the pin assignment for the fiber tails of the CRPI optical cable. These connections are recommended.

Table 2-19 Pin assignment for the fiber tails of the CRPI optical cable

Label	Connect to...
1A	TX port on the BBU3806C
1B	RX port on the BBU3806C
2A	RX port on the RRU or SRXU
2B	TX port on the RRU or SRXU

Connections of BBU3806C-RRU CRPI Optical Cable in Typical Configurations

The connections of the CPRI optical cable between the BBU3806C and the RRU depend on specific networking modes.

Figure 2-15 and **Figure 2-16** show the connections of the optical cable between the BBU3806C and the RRU in two typical configurations.

Figure 2-15 Connecting the CPRI optical cable in 1 x 1 configuration (no TX diversity)

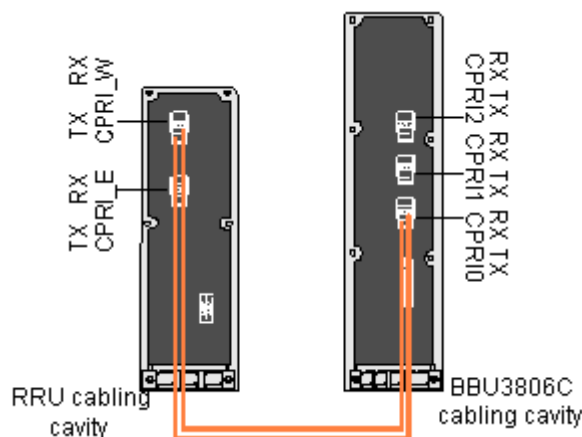
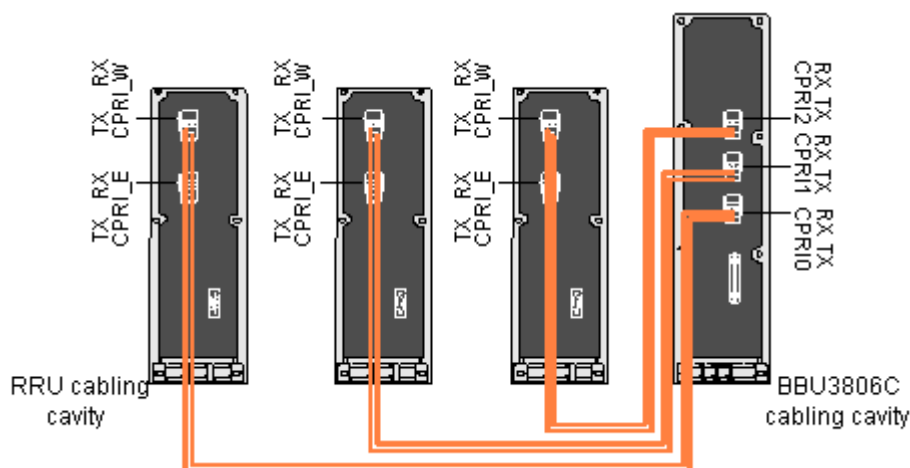


Figure 2-16 Connecting the CPRI optical cable in 3 x 1 configuration (no TX diversity)



CAUTION

To connect the optical cable, adhere to the following rules:

- The TX port on the BBU3806C is connected to the RX port on the RRU.
- The RX port on the BBU3806C is connected to the TX port on the RRU.

2.3.7 RF Jumper of the RRU3804/SRXU

The RF jumper of the RRU3804/SRXU is of two types: antenna jumper and interconnect jumper. The interconnect jumper is optional, depending on the site configuration.

2.3.7.1 Antenna Jumper of the RRU3804/SRXU

The antenna jumper transmits and receives RF signals.

2.3.7.2 Interconnect Jumper of the RRU3804/SRXU

The interconnect jumper transmits RF signals between two RRU3804s/SRXUs.

2.3.7.3 RF Cable Connections of the RRU3804

One end of the RF jumper is connected to the RF ports on the RRU3804 and the other end to the feeder. Which RF port to use depends on the networking modes.

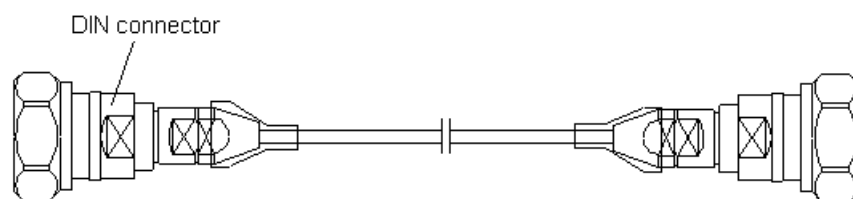
Antenna Jumper of the RRU3804/SRXU

The antenna jumper transmits and receives RF signals.

Appearance

Both ends of the antenna jumper have DIN connectors, as shown in [Figure 2-17](#).

Figure 2-17 Antenna jumper



Installation Position

The antenna jumper with indefinite length is selected according to the distance between the antenna and the RRU3804/SRXU. Connectors are made on site.

- When the distance between the antenna and the RRU3804/SRXU is shorter than 14 m, the RRU3804/SRXU is directly connected to the antenna through the antenna jumper.
- When the distance between the antenna and the RRU3804/SRXU is longer than 14 m, the antenna jumper should be shorter than 2 m. If you prepare the jumper by yourself, it is recommended that the antenna jumper be 2 m long at most. Ensure that the antenna jumper is connected to the feeder before being connected to the RRU3804/SRXU and the antenna.

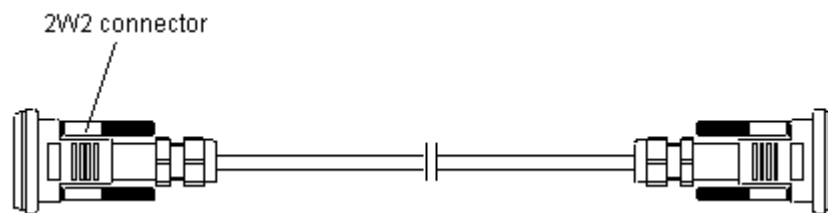
Interconnect Jumper of the RRU3804/SRXU

The interconnect jumper transmits RF signals between two RRU3804s/SRXUs.

Appearance

The interconnect jumper is 2 m long, and both ends have 2W2 connectors, as shown in [Figure 2-18](#).

Figure 2-18 Interconnect jumper



Installation Position

The 2W2 connectors at the two ends of the interconnect jumper are linked to the ports labeled RX_IN/OUT on two RRU3804s/SRXUs respectively.

RF Cable Connections of the RRU3804

One end of the RF jumper is connected to the RF ports on the RRU3804 and the other end to the feeder. Which RF port to use depends on the networking modes.

[Table 2-20](#) describes the connections of the RF jumpers in different RRU3804 networking modes.

Table 2-20 RF jumper connections of the RRU3804

Typical Networking Mode	Antenna Type and Quantity of RRU3804s	Cable Connection
1 x 1 in no TX diversity mode	<ul style="list-style-type: none"> • One RRU3804 • One dual polarization antenna 	<ul style="list-style-type: none"> • Two antenna jumpers • The DIN connectors of the two antenna jumpers are linked to the ANT_TX/

Typical Networking Mode	Antenna Type and Quantity of RRU3804s	Cable Connection
1 x 2 in no TX diversity mode		RXA and ANT_RXB ports at the bottom of the RRU3804.
2 x 1 in no TX diversity mode	<ul style="list-style-type: none"> • Two RRU3804s • Two dual polarization antennas 	<ul style="list-style-type: none"> • Four antenna jumpers • The DIN connectors of the four antenna jumpers are linked to the ANT_TX/RXA ports and ANT_RXB ports on RRU3804 0 and RRU3804 1.
2 x 2 in no TX diversity mode		
1 x 1 in TX diversity mode	<ul style="list-style-type: none"> • Two RRU3804s • One dual polarization antenna 	<ul style="list-style-type: none"> • Two antenna jumpers and one interconnect jumper • The DIN connectors of the two antenna jumpers are linked to the ANT_TX/RXA ports on RRU3804 0 and RRU3804 1. • The interconnect jumper is connected to the RX_IN/OUT ports on RRU3804 0 and RRU3804 1 that are combined.
1 x 2 in TX diversity mode		
3 x 1 in no TX diversity mode	<ul style="list-style-type: none"> • Three RRU3804s • Three dual polarization antennas 	<ul style="list-style-type: none"> • Six antenna jumpers • The DIN connectors of the six antenna jumpers are linked to the ANT_TX/RXA ports and ANT_RXB ports on RRU3804 0, RRU3804 1, and RRU3804 2.
3 x 2 in no TX diversity mode		
4-way RX diversity	<ul style="list-style-type: none"> • One RRU3804 • One SRXU 	<ul style="list-style-type: none"> • Two antenna jumpers and one DC power cable • The DIN connectors of the two antenna jumpers are linked to the ANT_RXC and ANT_RXD ports at the bottom of the SRXU. • One end of the DC power cable is connected to the RET/PWR_SRXU port at the bottom of the RRU3804, and the other end is connected to the PWR_SRXU socket at the bottom of the SRXU.

2.3.8 Boolean/RS485 Input Cable of the RRU3804

The cable transmits the 2-channel Boolean alarm signals and 1-channel RS485 signals from external devices to the RRU3804. Thus, the external signals are monitored.

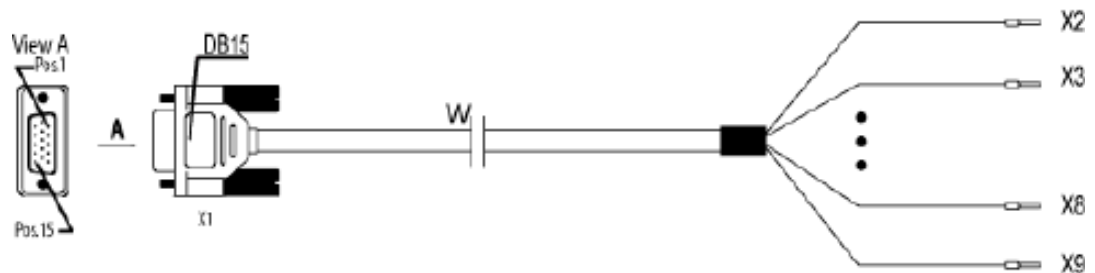
Appearance

One end of the cable has a DB15 female connector, and the other end has eight cord end terminals, as shown in [Figure 2-19](#).

NOTE

If the cord end terminals of the cable do not match the ports on the external devices, cut off the cord end terminals and make proper terminals on site.

Figure 2-19 Boolean/RS485 input cable



Pin Assignment

The cable can transmit 2-channel Boolean alarm signals and 1-channel RS485 signals. [Table 2-21](#) describes the pin assignment for the wires of the Boolean/RS485 input cable.

Table 2-21 Pin assignment for the wires of the Boolean/RS485 input cable

X1 End	Cord End Terminal	Wire Color	Wire Type	Label
X1.2	X2	White/blue	Twisted pair	SWITCH_INPUT0+
X1.3	X3	Blue		GND
X1.6	X4	White/orange	Twisted pair	SWITCH_INPUT1+
X1.7	X5	Orange		GND
X1.10	X6	White/green	Twisted pair	RS485_TX-
X1.11	X7	Green		RS485_TX+
X1.13	X8	White/brown	Twisted pair	RS485_RX-
X1.14	X9	Brown		RS485_RX+

Installation Position

The DB15 male connector is linked to the RS485/EXT_ALM port on the cabling cavity of the RRU3804, and the other end of the cable is connected to the ports for Boolean alarm signals on the external device.

2.4 SRXU Cables

The SRXU cables include the PGND cable, power cable, AISG multi-wire cable, AISG extension cable, CPRI optical cable, and RF jumper.

2.4.1 PGND Cable of the SRXU

The PGND cable ensures the grounding of the SRXU.

2.4.2 Power Cable of the SRXU

The SRXU uses a shielded DC power cable. The cable feeds power from the RRU3804 to the SRXU.

2.4.3 AISG Multi-Wire Cable of the RRU3804/SRXU

The five-meter-long AISG multi-wire cable connects the RRU3804/SRXU to the Remote Control Unit (RCU). If both RRU3804 and SRXU are installed, the AISG multi-wire cable only connects the SRXU and the RCU. This cable is optional.

2.4.4 AISG Extension Cable of the RRU3804/SRXU

When the distance between the RCU and the RRU3804/SRXU is longer than 5 m, the AISG multi-wire cable is not long enough to cover the distance and the AISG extension cable is used. The AISG extension cable is 15 m long.

2.4.5 BBU3806-RRU/SRXU CPRI Optical Cable

The CPRI optical cable transmits CPRI signals between BBU3806 and RRU3801C, between BBU3806 and RRU3804, and between RRU3804 and SRXU.

2.4.6 RF Jumper of the RRU3804/SRXU

The RF jumper of the RRU3804/SRXU is of two types: antenna jumper and interconnect jumper. The interconnect jumper is optional, depending on the site configuration.

2.4.1 PGND Cable of the SRXU

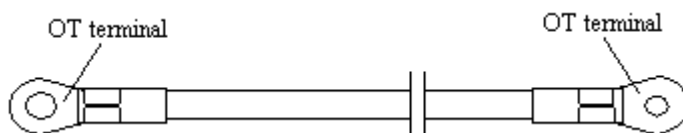
The PGND cable ensures the grounding of the SRXU.

Appearance

The green and yellow PGND cable is a single cable with a cross-sectional area of 16 mm². Both ends of the cable are OT terminals.

Figure 2-20 shows the PGND cable.

Figure 2-20 PGND cable



Both ends of the PGND cable need to be made into OT terminals on site. You can determine the color of the cable and whether to use 2-hole terminals according to local standards.

Figure 2-21 shows the 2-hole terminal.

Figure 2-21 2-hole terminal

Installation Position

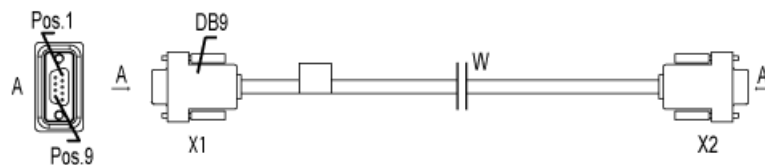
One end of the PGND cable is connected to the grounding bolt on the SRXU, and the other end is connected to the grounding bolt on the RRU3804.

2.4.2 Power Cable of the SRXU

The SRXU uses a shielded DC power cable. The cable feeds power from the RRU3804 to the SRXU.

Appearance

Both ends of the cable are waterproof DB9 connectors, as shown in [Figure 2-22](#).

Figure 2-22 DC power cable

Pin Assignment

[Table 2-22](#) describes the pin assignment for the wires of the DC power cable.

Table 2-22 Pin assignment for the wires of the DC power cable

X1 End	X2 End	Wire Color	Wire Type	Remarks
X1.6	X2.6	White/blue	Twisted pair	DC power cable
		Blue		
X1.7	X2.7	White/orange	Twisted pair	GND
		Orange		

Installation Position

One end of the DC power cable is connected to the RET/PWR_SRXU port at the bottom of the RRU3804, and the other end is connected to the PWR_SRXU socket at the bottom of the SRXU.

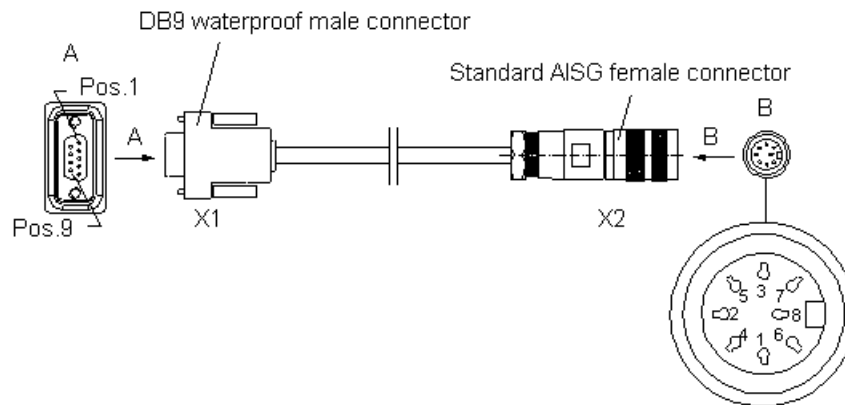
2.4.3 AISG Multi-Wire Cable of the RRU3804/SRXU

The five-meter-long AISG multi-wire cable connects the RRU3804/SRXU to the Remote Control Unit (RCU). If both RRU3804 and SRXU are installed, the AISG multi-wire cable only connects the SRXU and the RCU. This cable is optional.

Appearance

One end of the AISG multi-wire cable is a waterproof DB9 connector, and the other end is a standard AISG female connector, as shown in [Figure 2-23](#).

Figure 2-23 AISG multi-wire cable



Pin Assignment

[Table 2-23](#) describes the pin assignment for the wires of the AISG multi-wire cable.

Table 2-23 Pin assignment for the wires of the AISG multi-wire cable

X1 End	X2 End	Wire Type	Remarks
X1.1	X2.1	Twisted pair	+12 V
X1.7	X2.7	Twisted pair	DC-GND
X1.9			AISG_Switch
X1.3	X2.3	Twisted pair	RS485 -
X1.5	X2.5		RS485 +

Installation Position

If only the RRU3804 is installed, the waterproof DB9 connector is linked to the RET/PWR_SRXU port at the bottom of the RRU3804, and the standard AISG female connector is linked to the corresponding connector on the RCU or to the AISG extension cable.

If both the RRU3804 and the SRXU are installed, the waterproof DB9 connector is linked to the RET port at the bottom of the SRXU, and the standard AISG female connector is linked to the corresponding connector on the RCU or to the AISG extension cable.

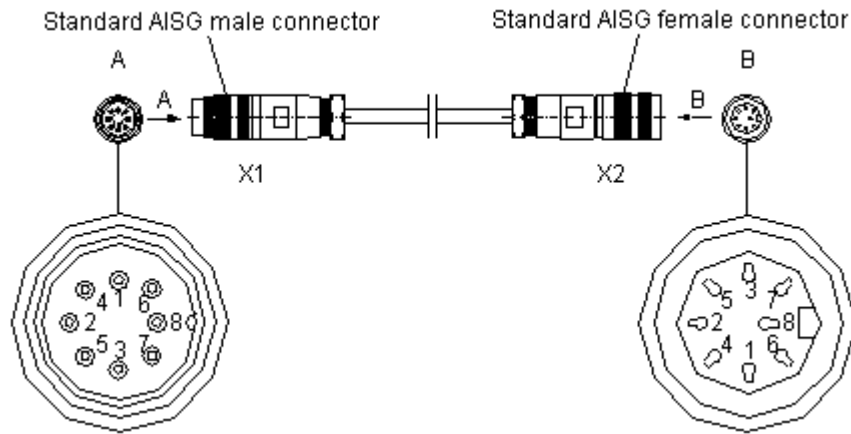
2.4.4 AISG Extension Cable of the RRU3804/SRXU

When the distance between the RCU and the RRU3804/SRXU is longer than 5 m, the AISG multi-wire cable is not long enough to cover the distance and the AISG extension cable is used. The AISG extension cable is 15 m long.

Appearance

One end of the AISG extension cable is a standard AISG male connector, and the other end is a standard AISG female connector, as shown in [Figure 2-24](#).

Figure 2-24 AISG extension cable



Pin Assignment

[Table 2-24](#) describes the pin assignment for the wires of the AISG extension cable.

Table 2-24 Pin assignment for the wires of the AISG extension cable

X1 End	X2 End	Wire Color	Wire Type	Remarks
X1.1	X2.1	White/blue	Twisted pair	+12 V
		Blue		
X1.7	X2.7	White/orange	Twisted pair	DC Return A
		Orange		
X1.3	X2.3	White/green	Twisted pair	RS485 B
X1.5	X2.5	Green		RS485 A
X1.6	X2.6	White/brown	Twisted pair	+24 V
		Brown		

Installation Position

The AISG female connector is linked to the corresponding connector on the RCU, and the AISG male connector is linked to the AISG female connector of the AISG multi-wire cable.

2.4.5 BBU3806-RRU/SRXU CPRI Optical Cable

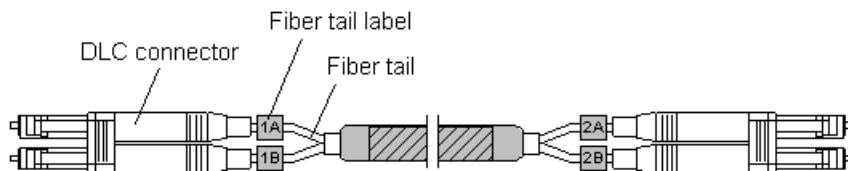
The CPRI optical cable transmits CPRI signals between BBU3806 and RRU3801C, between BBU3806 and RRU3804, and between RRU3804 and SRXU.

Appearance

The CPRI optical cable is a multi-mode 2-wire cable with DLC connectors at both ends.

Figure 2-25 shows the CPRI optical cable.

Figure 2-25 CPRI optical cable



Pin Assignment

Table 2-25 describes the pin assignment for the fiber tails.

Table 2-25 Pin assignment for the fiber tails

Label	Color	Connect to...
1A	Orange	RX port on the RRU
1B	Gray	TX port on the RRU
2A	Orange	TX port on the BBU3806
2B	Gray	RX port on the BBU3806

Connections of BBU3806-RRU CPRI Optical Cable in Typical Configurations

The connections of the CPRI optical cable between the BBU3806 and the RRU depend on specific networking modes.

Figure 2-26 and **Figure 2-27** show the connections of the optical cable between the BBU3806 and the RRU in two typical configurations.

Figure 2-26 Connecting the CPRI optical cable in 1 x 1 configuration (no TX diversity)

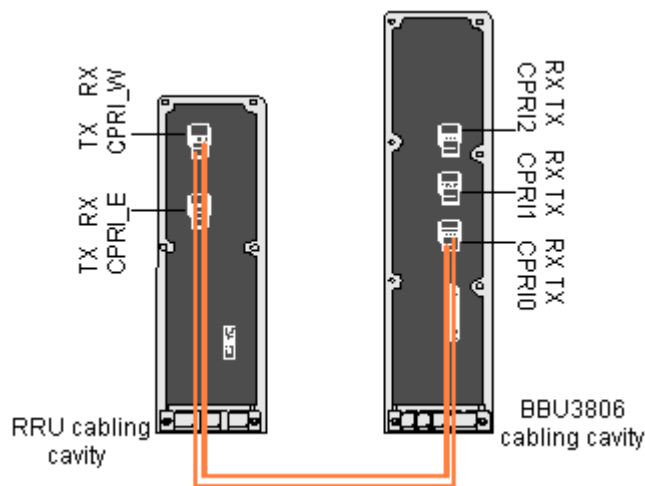
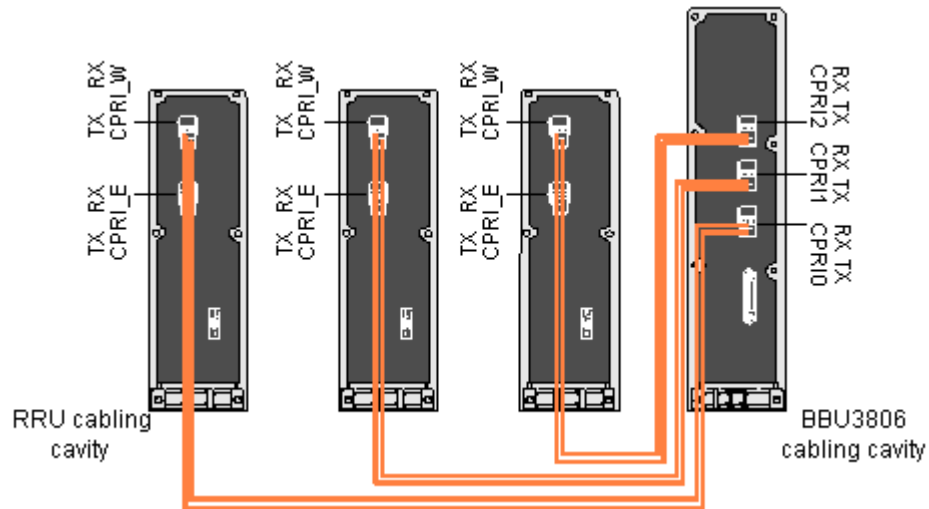


Figure 2-27 Connecting the CPRI optical cable in 3 x 1 configuration (no TX diversity)**CAUTION**

To connect the optical cable, adhere to the following rules:

- The TX port on the BBU3806 is connected to the RX port on the RRU.
- The RX port on the BBU3806 is connected to the TX port on the RRU.

2.4.6 RF Jumper of the RRU3804/SRXU

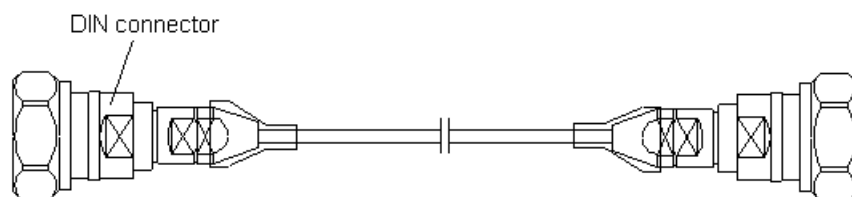
The RF jumper of the RRU3804/SRXU is of two types: antenna jumper and interconnect jumper. The interconnect jumper is optional, depending on the site configuration.

Antenna Jumper of the RRU3804/SRXU

The antenna jumper transmits and receives RF signals.

Appearance

Both ends of the antenna jumper have DIN connectors, as shown in [Figure 2-28](#).

Figure 2-28 Antenna jumper

Installation Position

The antenna jumper with indefinite length is selected according to the distance between the antenna and the RRU3804/SRXU. Connectors are made on site.

- When the distance between the antenna and the RRU3804/SRXU is shorter than 14 m, the RRU3804/SRXU is directly connected to the antenna through the antenna jumper.
- When the distance between the antenna and the RRU3804/SRXU is longer than 14 m, the antenna jumper should be shorter than 2 m. If you prepare the jumper by yourself, it is recommended that the antenna jumper be 2 m long at most. Ensure that the antenna jumper is connected to the feeder before being connected to the RRU3804/SRXU and the antenna.

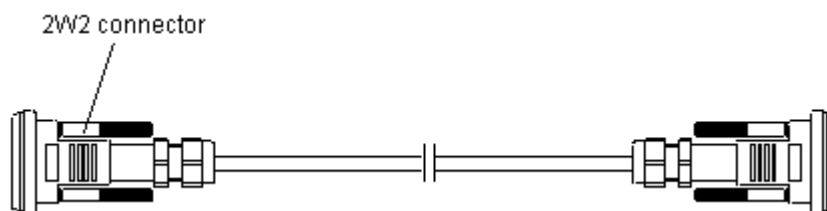
Interconnect Jumper of the RRU3804/SRXU

The interconnect jumper transmits RF signals between two RRU3804s/SRXUs.

Appearance

The interconnect jumper is 2 m long, and both ends have 2W2 connectors, as shown in [Figure 2-29](#).

Figure 2-29 Interconnect jumper



Installation Position

The 2W2 connectors at the two ends of the interconnect jumper are linked to the ports labeled RX_IN/OUT on two RRU3804s/SRXUs respectively.

3 Installing RRU3804 and SRXU Hardware

About This Chapter

This describes how to install the hardware, route the cables, and check the hardware installation of the RRU3804 and SRXU.

[3.1 Information About the Installation](#)

This describes the installation modes and space requirements of the RRU3804 and SRXU.

[3.2 Procedure for Installing the RRU3804 and SRXU](#)

The procedure for installing the RRU3804 and SRXU varies with the installation scenarios. The procedure involves making preparations, installing the RRU3804 and SRXU, connecting related cables, checking the hardware installation, and installing the housing of the RRU3804 and SRXU.

[3.3 Preparing for DBS3800 Installation](#)

Before installing the DBS3800, acquaint yourself with the type, quantity, and installation position of the equipment to be installed. Then unpack the DBS3800 and prepare tools and instruments for the installation.

[3.4 Installing the RRU3804 on the Ground or Rooftop](#)

When the RRU3804 needs to be installed on the ground or rooftop, it supports one-module, two-module centralized, and three-module centralized installation modes.

[3.5 Installing the RRU3804 on the Tower](#)

Before installing the RRU3804 on the tower, you need to assemble the parts and then lift them up to the tower.

[3.6 Installing the SRXU](#)

This describes how to install the SRXU on the RRU3804 in one-module, two-module centralized, or three-module centralized installation mode.

[3.7 Installing RRU3804 and SRXU Cables](#)

This describes how to install the cables of the RRU3804 and SRXU, remove and install the cover plate of the RRU3804 or SRXU cabling cavity.

[3.8 Checking RRU3804 and SRXU Hardware Installation](#)

This describes how to check the power-on status, hardware installation, and field cleanliness for the RRU3804 and SRXU.

3.9 Installing the Housing of the RRU3804 and SRXU

After the SRXU is fixed to the RRU3804, install the housing after checking the hardware installation.

3.1 Information About the Installation

This describes the installation modes and space requirements of the RRU3804 and SRXU.

3.1.1 Installation Modes of the RRU3804 and SRXU

The RRU3804 supports one-module, two-module centralized, and three-module centralized installation modes. It can be mounted on a metal pole or wall. The SRXU can be fixed to the RRU3804 as required. The quantity of the SRXUs is the same as that of the RRU3804s.

3.1.2 Space Requirements of the RRU3804 and SRXU

In different installation modes, the RRU3804 and SRXU have the minimal space requirements for cabling and OM. Based on the engineering practice, Huawei offers the recommended space requirements.

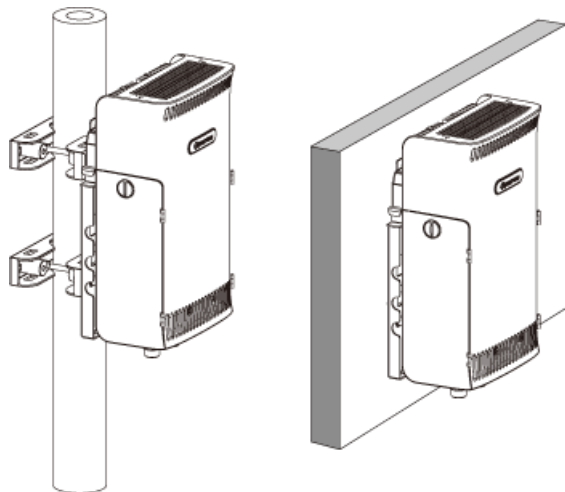
3.1.1 Installation Modes of the RRU3804 and SRXU

The RRU3804 supports one-module, two-module centralized, and three-module centralized installation modes. It can be mounted on a metal pole or wall. The SRXU can be fixed to the RRU3804 as required. The quantity of the SRXUs is the same as that of the RRU3804s.

Installation Modes of One RRU3804

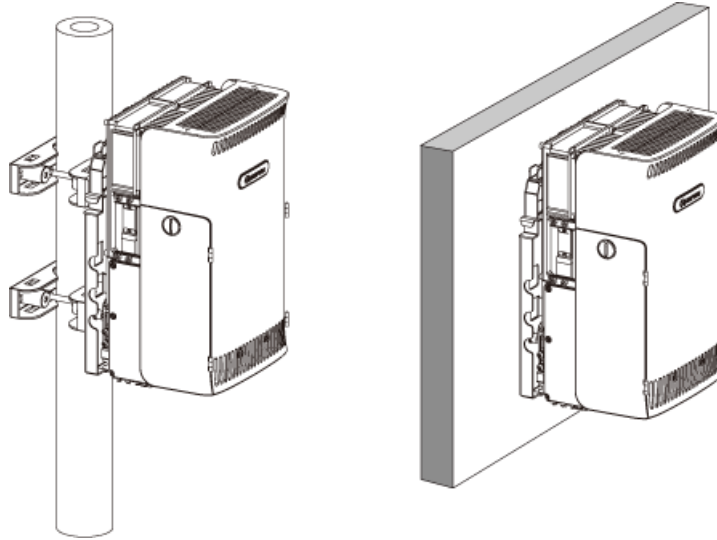
Figure 3-1 shows the installation modes of one RRU3804.

Figure 3-1 Installation modes of one RRU3804



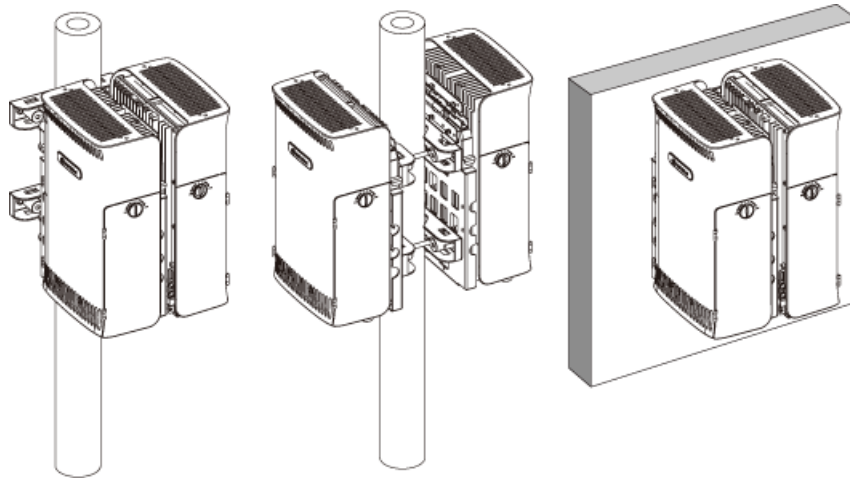
Installation Modes of One RRU3804 with One SRXU

Figure 3-2 shows the installation modes of one RRU3804 with one SRXU.

Figure 3-2 Installation modes of one RRU3804 with one SRXU

Installation Modes of Two RRU3804s

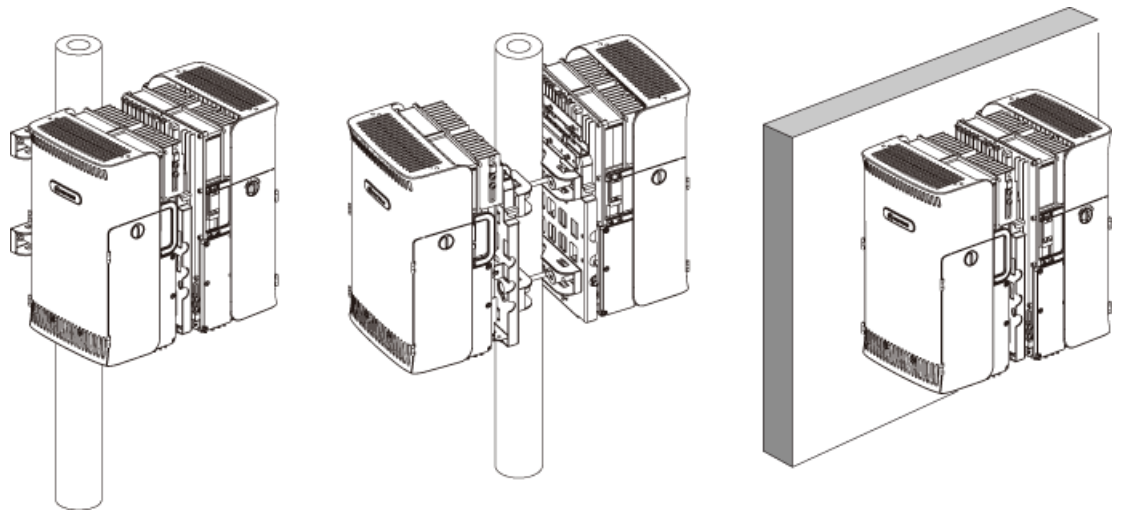
Figure 3-3 shows the installation modes of two RRU3804s.

Figure 3-3 Installation modes of two RRU3804s

Installation Modes of Two RRU3804s with Two SRXUs

Figure 3-4 shows the installation modes of two RRU3804s with two SRXUs.

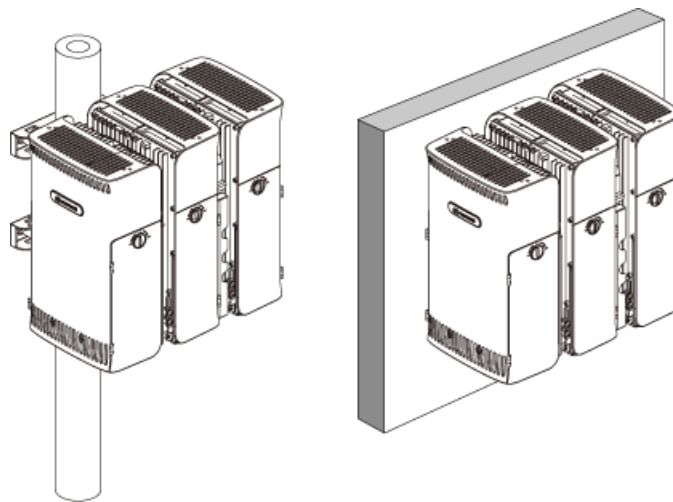
Figure 3-4 Installation modes of two RRU3804s with two SRXUs



Installation Modes of Three RRU3804s

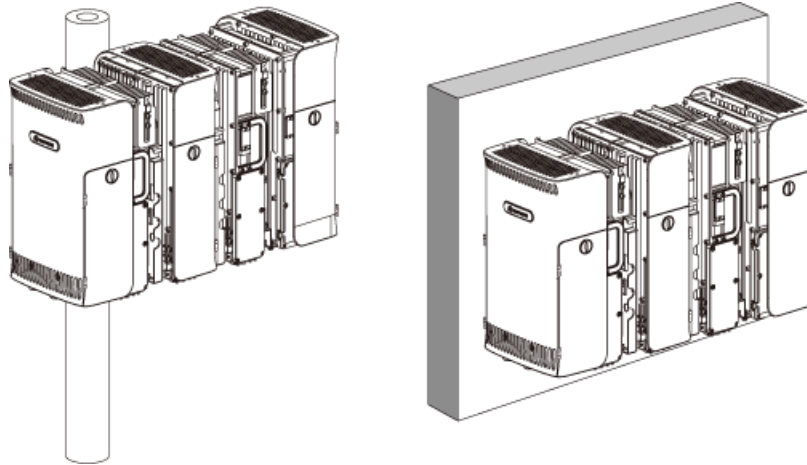
Figure 3-5 shows the installation modes of three RRU3804s.

Figure 3-5 Installation modes of three RRU3804s



Installation Modes of Three RRU3804s with Three SRXUs

Figure 3-6 shows the installation modes of three RRU3804s with three SRXUs.

Figure 3-6 Installation modes of three RRU3804s with three SRXUs**NOTE**

The RRU3804 can also be installed in an indoor centralized rack. For details about how to install the RRU3804 in the indoor centralized rack, refer to the *Indoor Centralized Rack Installation Guide*.

3.1.2 Space Requirements of the RRU3804 and SRXU

In different installation modes, the RRU3804 and SRXU have the minimal space requirements for cabling and OM. Based on the engineering practice, Huawei offers the recommended space requirements.

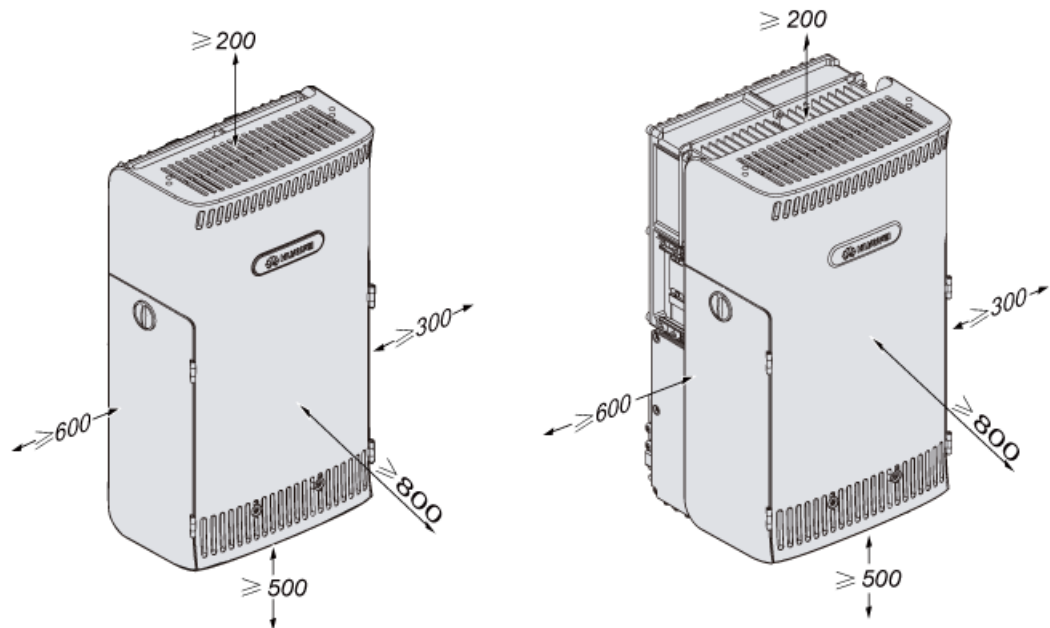
NOTE

The following figures related to the space requirements assume that the cabling cavities are on the left side of the RRU3804 and SRXU. If the RRU3804 and SRXU are installed with the cabling cavities on the right, the horizontal space requirements are opposite to what are shown in the figures.

Space Requirements of One RRU3804 with and Without the SRXU

Figure 3-7 shows the recommended space requirements of one RRU3804 with and without the SRXU.

Figure 3-7 Recommended space requirements of one RRU3804 with and without the SRXU (unit: mm)

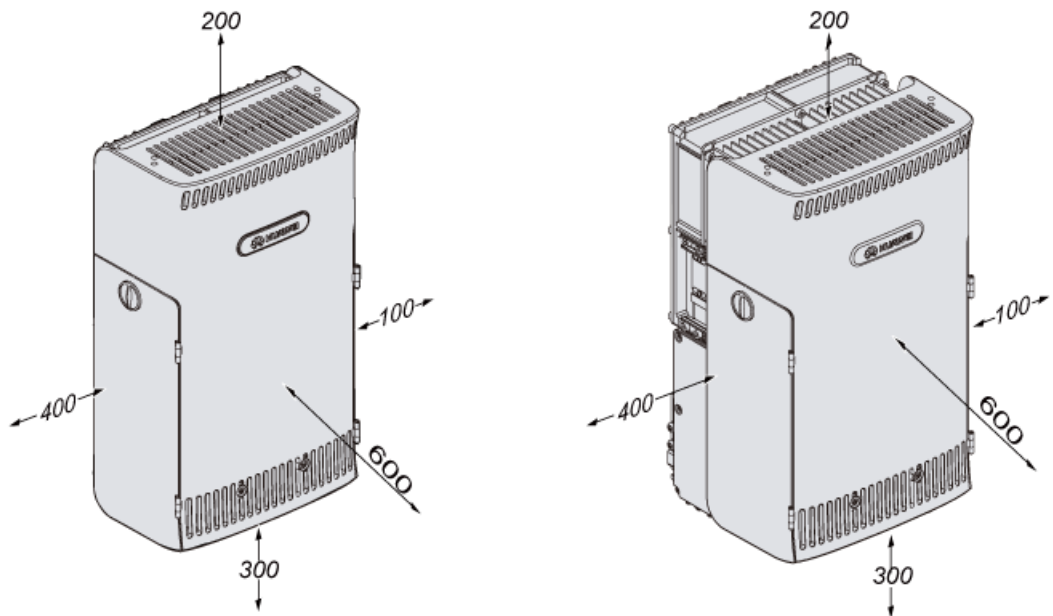


The recommended space around the equipment is as follows:

- At least 500 mm under the equipment for cabling. It is recommended that the space is 1,200 mm between the bottom and the ground for easy maintenance.
- At least 800 mm in front of the equipment for maintenance.
- At least 200 mm above the equipment for maintenance.
- At least 600 mm on the left of the equipment for maintenance.
- At least 300 mm on the right of the equipment for maintenance.
- Regardless of whether the SRXU is fixed to the RRU3804, the space requirements are the same.

Figure 3-8 shows the minimal space requirements of one RRU3804 with and without the SRXU.

Figure 3-8 Minimal space requirements of one RRU3804 with and without the SRXU (unit: mm)

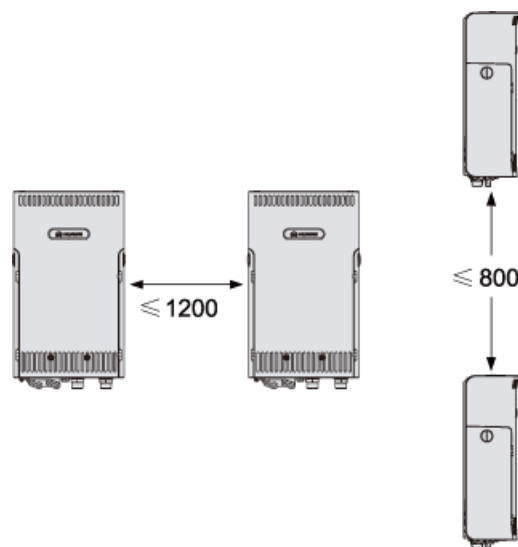


The minimal space around the equipment is as follows:

- 300 mm under the equipment for cabling. It is recommended that the space is 1,200 mm between the bottom and the ground for easy maintenance.
- 600 mm in front of the equipment for maintenance.
- 200 mm above the equipment for maintenance.
- 400 mm on the left of the equipment for maintenance.
- 100 mm on the right of the equipment for maintenance.

When two RRU3804s need to be combined, the space between the two RRU3804s should stay within the range shown in [Figure 3-9](#).

Figure 3-9 Space requirements of two combined RRU3804s (unit: mm)



The space between the two RRU3804s is as follows:

- When two RRU3804s are installed horizontally, the space is 1,200 mm at most.
- When two RRU3804s are installed vertically, the space is 800 mm at most.

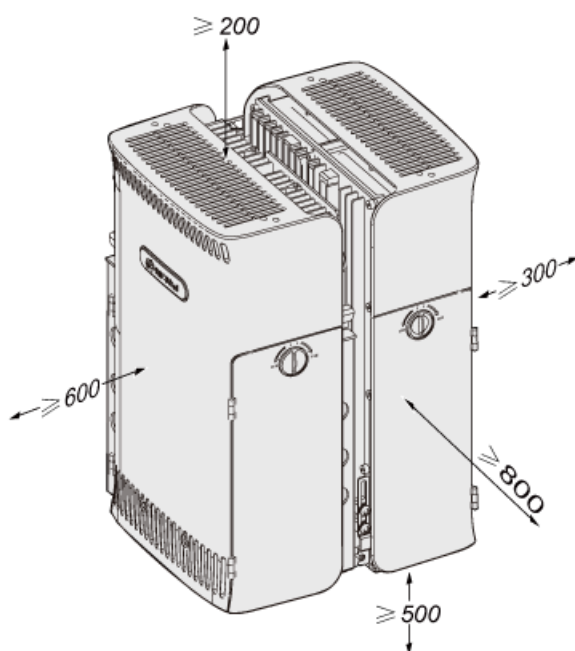
 **NOTE**

The space requirements of two combined SRXUs are the same as those of two combined RRU3804s.

Space Requirements of Multiple RRU3804s with and Without the SRXUs

Figure 3-10 shows the recommended space requirements of multiple RRU3804s with and without the SRXUs.

Figure 3-10 Recommended space requirements of multiple RRU3804s with and without the SRXUs (unit: mm)

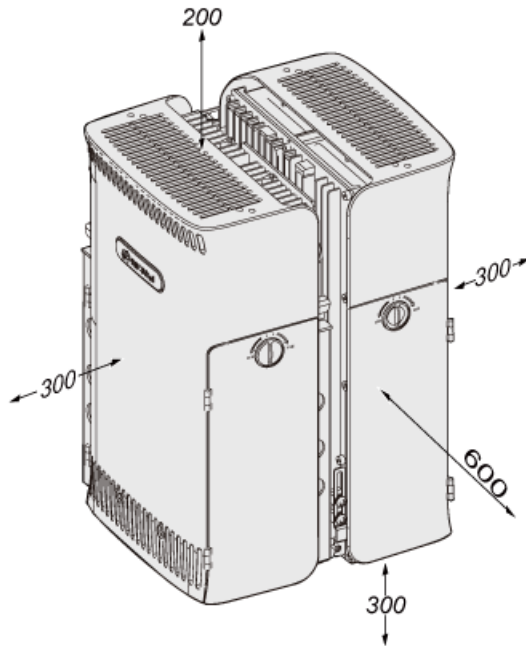


The recommended space around the equipment is as follows:

- At least 500 mm under the equipment for cabling. It is recommended that the space is 1,200 mm between the bottom and the ground for easy maintenance.
- At least 800 mm in front of the equipment for maintenance.
- At least 200 mm above the equipment for maintenance.
- At least 600 mm on the left of the equipment for maintenance.
- At least 300 mm on the right of the equipment for maintenance.
- Regardless of whether the SRXUs are fixed to the RRU3804s, the space requirements are the same.
- Regardless of whether the RRU3804s are in two-module or three-module centralized installation mode, the space requirements are the same.

Figure 3-11 shows the minimal space requirements of multiple RRU3804s with and without the SRXUs.

Figure 3-11 Minimal space requirements of multiple RRU3804s with and without the SRXUs (unit: mm)



The minimal space around the equipment is as follows:

- 300 mm under the equipment for cabling. It is recommended that the space is 1,200 mm between the bottom and the ground for easy maintenance.
- 600 mm in front of the equipment for maintenance.
- 200 mm above the equipment for maintenance.
- 300 mm on the left of the equipment for maintenance.
- 300 mm on the right of the equipment for maintenance.

3.2 Procedure for Installing the RRU3804 and SRXU

The procedure for installing the RRU3804 and SRXU varies with the installation scenarios. The procedure involves making preparations, installing the RRU3804 and SRXU, connecting related cables, checking the hardware installation, and installing the housing of the RRU3804 and SRXU.

Context



CAUTION

After the NodeB is installed, it must be powered on within 48 hours.

 **NOTE**

Contact Huawei engineers for confirmation if:

- You choose to prepare the devices, cables, and connectors by yourself.
- You need to shorten the cable of a specified length.

Procedure

Step 1 Unpack the RRU3804 and SRXU, check the items in the package, and have tools and instruments ready. For details, refer to [3.3 Preparing for DBS3800 Installation](#).

Step 2 Install the RRU3804. The installation mode of the RRU3804 varies with the installation scenarios.

- [3.4 Installing the RRU3804 on the Ground or Rooftop](#)

Condition	Action
Only one RRU3804 needs to be installed.	Go to 3.4.1 Installing a Single RRU3804 .
Two RRU3804s need to be installed.	Go to 3.4.2 Installing Two RRU3804s .
Three RRU3804s need to be installed.	Go to 3.4.3 Installing Three RRU3804s .

- [3.5 Installing the RRU3804 on the Tower](#)

Step 3 Check whether the SRXU needs to be installed. Perform the next step accordingly.

Condition	Action
The SRXU needs to be installed.	Go to Step 4 .
The SRXU does not need to be installed.	Go to Step 5 .

Step 4 Install the SRXU. For details, refer to [3.6 Installing the SRXU](#).

Step 5 Install RRU3804 and SRXU cables. For details, refer to [3.7 Installing RRU3804 and SRXU Cables](#).

Step 6 Check RRU3804 and SRXU hardware installation. For details, refer to [3.8 Checking RRU3804 and SRXU Hardware Installation](#).

Step 7 Install the housing of the RRU3804 and SRXU. For details, refer to [3.9 Installing the Housing of the RRU3804 and SRXU](#).

---End

3.3 Preparing for DBS3800 Installation

Before installing the DBS3800, acquaint yourself with the type, quantity, and installation position of the equipment to be installed. Then unpack the DBS3800 and prepare tools and instruments for the installation.

[3.3.1 Unpacking the DBS3800](#)

This describes how to unpack the DBS3800 and check the items in the package.

3.3.2 Tools and Instruments for DBS3800 Installation

This describes general tools, special tools, and instruments required for the DBS3800 installation.

3.3.1 Unpacking the DBS3800

This describes how to unpack the DBS3800 and check the items in the package.

Context

NOTE

When transporting, moving, or installing the equipment, components, or parts, you must:

- Prevent them from colliding with doors, walls, shelves, or other objects.
- Avoid touching the uncoated metal surface of the equipment, components, or parts with sweat-soaked or dirty gloves.

Procedure

Step 1 Check the quantity of components inside the carton according to the carton label.

If...	Then...
The quantity matches the carton label,	Go to Step 2 .
The quantity does not match the carton label,	Find the cause and contact Huawei local office.

Step 2 Check whether the packing case is in good condition.

If...	Then...
The packing case is in good condition,	Go to Step 3 .
The packing case is damaged or soaked,	Find the cause and contact Huawei local office.

Step 3 Open the packing case. Check the shipped components according to the *Packing List*, and then perform the next step according to the check result.

If...	Then...
The shipped components match the <i>Packing List</i> ,	Sign the <i>Packing List</i> together with the customer.
There is any short shipment, wrong shipment, or equipment damage.	Fill in the <i>Cargo Problems Report</i> .



CAUTION

- To protect the equipment and to find out the cause in the case of goods damage, store the equipment and the unpacked cases and materials inside the equipment room.
- Take photos of the storage environment, rusted or corroded devices, and packing cases and materials, and then file the photos.

---End

3.3.2 Tools and Instruments for DBS3800 Installation

This describes general tools, special tools, and instruments required for the DBS3800 installation.

Table 3-1 lists the tools and instruments necessary for the DBS3800 installation.

Table 3-1 Tools and instruments

General Tools	Measuring tools	Long tape, 50 m ribbon tape, 5 m measuring tape, 400 mm level bar, level instrument
	Marking tools	Marking pen, ink fountain, pencil
	Drilling tools	Percussion drill with matching bits of $\Phi 6$, $\Phi 8$, $\Phi 10$, $\Phi 12$, $\Phi 14$, and $\Phi 16$, cleaner
	Fastening tools	Straight screwdrivers (M3 to M6) Cross screwdrivers (M3 to M6) Adjustable wrench Socket wrenches (M6, M8, M10, M12, M14, M17, M19) Double offset ring wrenches (M6, M8, M10, M12, M14, M17, M19) Combination wrenches (M17 and M19) Long-arm wrench
	Pliers	Sharp nose pliers, diagonal pliers, pincer pliers, electric hand drill, file, handsaw, crowbar, rubber hammer, claw hammer
	Auxiliary tools	Brush, tweezers, paper knife, bellows, plumb, soldering iron, solder wires, fork, ladder, heat blower, solder absorber, insulating tape
Special Tools	An earth resistance meter, ESD wrist strap, a pair of ESD gloves, cable peeler, clamping pliers, a feeder cutter, a pair of crimping pliers for SMB, RJ-45 crimping pliers, wire punchdown tool, wire cutter, a non-conductive screwdriver, safety knife, peeler for 75-ohm coaxial cables, a pair of connector crimping pliers for 75-ohm coaxial cables, a pair of multi-purpose crimping pliers	

Instruments	Multimeter, 500 V megohmmeter (for insulation resistance), BER tester, optical power meter
-------------	--

 **NOTE**

The instruments must be checked and certified.

3.4 Installing the RRU3804 on the Ground or Rooftop

When the RRU3804 needs to be installed on the ground or rooftop, it supports one-module, two-module centralized, and three-module centralized installation modes.

3.4.1 Installing a Single RRU3804

This describes how to install a single RRU3804 module and its mounting plate. The single RRU3804 can be installed on a metal pole or wall.

3.4.2 Installing Two RRU3804s

This describes how to install two RRU3804 modules and their mounting plates. The two RRU3804s can be installed on a metal pole or wall.

3.4.3 Installing Three RRU3804s

This describes how to install three RRU3804 modules and their mounting plates. The three RRU3804s can be installed on a metal pole or wall.

3.4.1 Installing a Single RRU3804

This describes how to install a single RRU3804 module and its mounting plate. The single RRU3804 can be installed on a metal pole or wall.

Procedure

Step 1 Install the mounting plate of the RRU3804. The operation varies with the installation mode.

Condition	Action
The RRU3804 needs to be installed on a metal pole.	Install the mounting plate of the single RRU3804 on the metal pole.
The RRU3804 needs to be installed on a wall.	Install the mounting plate of the single RRU3804 on the wall.

Step 2 Install the single RRU3804 module. For details, refer to [3.4.1.3 Installing the Single RRU3804 Module](#).

---End

Installing the Mounting Plate of the Single RRU3804 on the Metal Pole

This describes how to install the mounting plate on the metal pole.

Prerequisite

The metal pole is ready and the pole diameter stays within the range of 60 mm to 114 mm.

Procedure

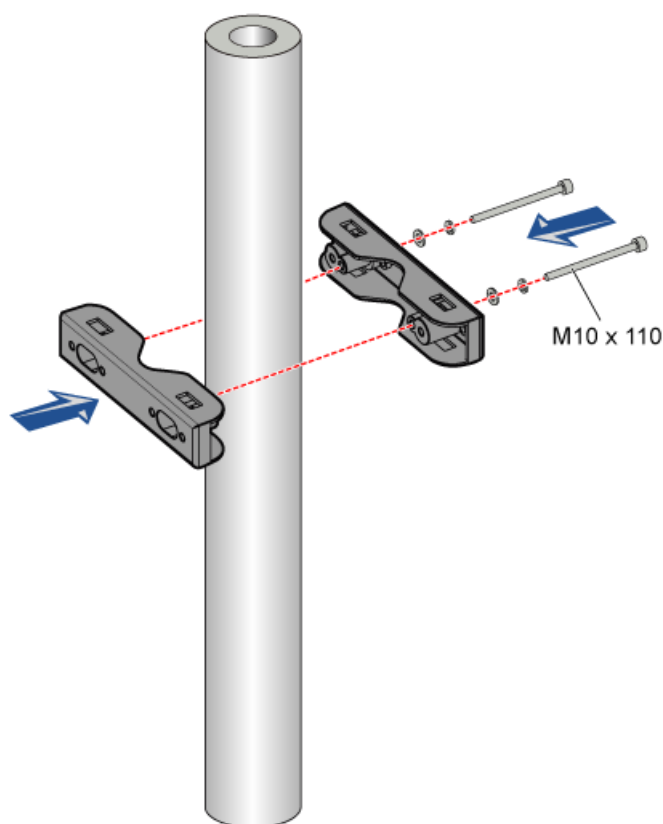
- Step 1** Determine the position of the mounting plate by referring to the engineering design and [3.1.2 Space Requirements of the RRU3804 and SRXU](#).

 **NOTE**

The upper fixture assembly should be 1,200 mm to 1,600 mm above the ground or rooftop.

- Step 2** Mount the upper fixture assembly on the metal pole. Ensure that the four ends of the fixture assembly are on the same plane, as shown in [Figure 3-12](#).

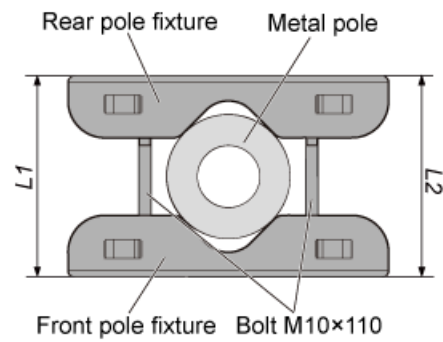
Figure 3-12 Mounting the upper fixture assembly



- Step 3** Use the level bar to check whether the four ends of the fixture assembly are on the same plane. Use the tape measure to check whether the two pole fixtures are parallel.

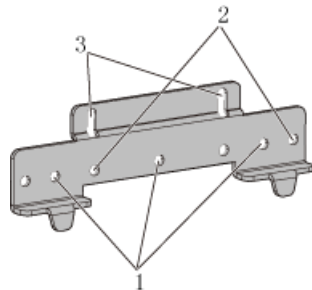
 **NOTE**

If the difference between L1 and L2, as shown in [Figure 3-13](#), is beyond ± 1 mm, the two pole fixtures are not parallel.

Figure 3-13 Measuring L1 and L2

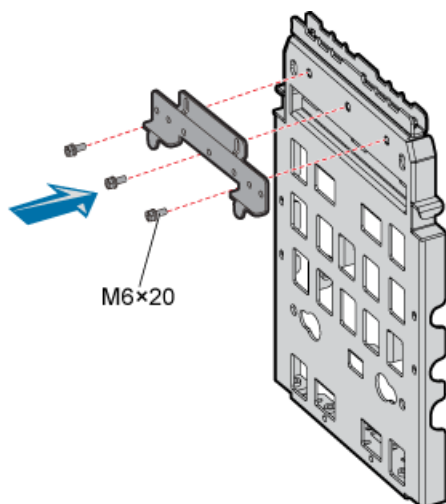
Condition	Action
The pole fixtures are neither horizontal nor parallel.	Go to Step 2 to adjust the fixture assembly.
The pole fixtures are horizontal and parallel.	Go to Step 4 .

Step 4 Use the holes numbered 1 in [Figure 3-14](#).

Figure 3-14 Holes in the multi-purpose attachment plate

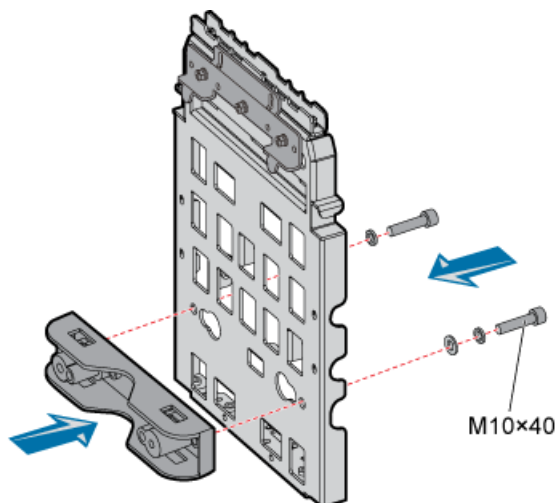
Step 5 Use three screws M6 x 20 to secure the multi-purpose attachment plate on the mounting plate, as shown in [Figure 3-15](#).

Figure 3-15 Securing the multi-purpose attachment plate on the mounting plate

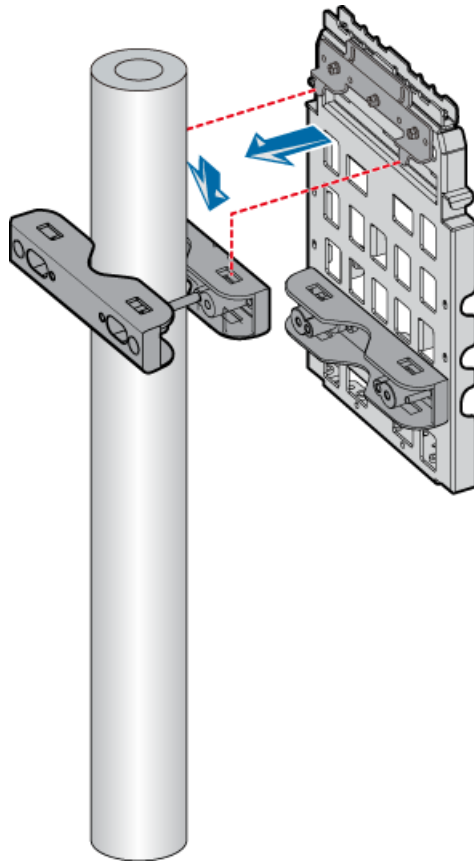


Step 6 Install the third pole fixture on the mounting plate at the lower part of its back by fastening two bolts M10 x 40, as shown in **Figure 3-16**.

Figure 3-16 Installing the third pole fixture

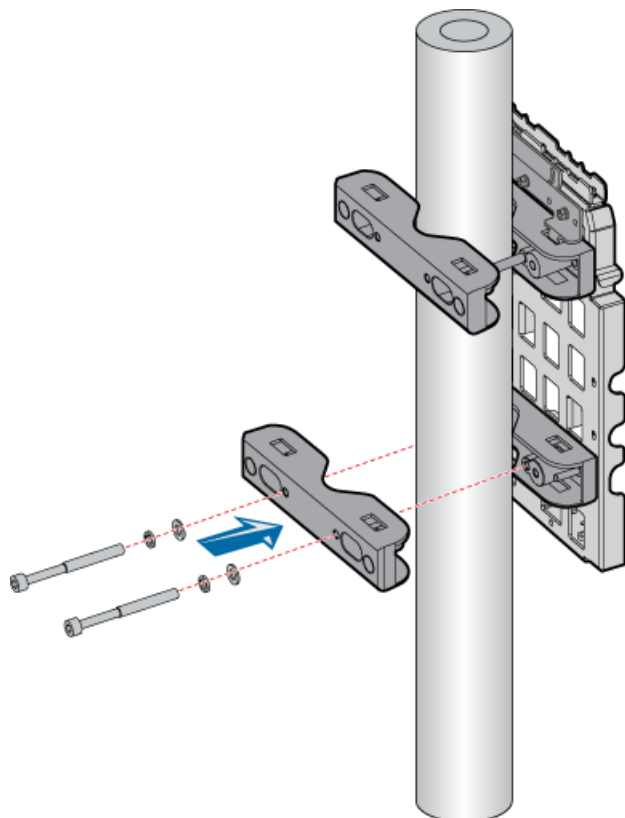


Step 7 Install the mounting plate by fitting the tabs on the mounting plate into the anchor slots in the pole fixture, as shown in **Figure 3-17**.

Figure 3-17 Installing the mounting plate

Step 8 Mount the fourth pole fixture to the metal pole by fastening two bolts M10 x 110 between the third and the fourth pole fixtures, as shown in [Figure 3-18](#).

Figure 3-18 Mounting the lower fixture assembly



----End

Installing the Mounting Plate of the Single RRU3804 on the Wall

This describes how to install the mounting plate on the wall.

Procedure

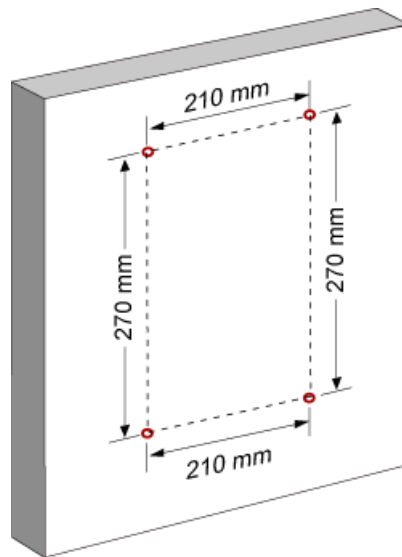
Step 1 Determine the position of the mounting plate.

1. Determine the position of the mounting plate by referring to the engineering design and [3.1.2 Space Requirements of the RRU3804 and SRXU](#).

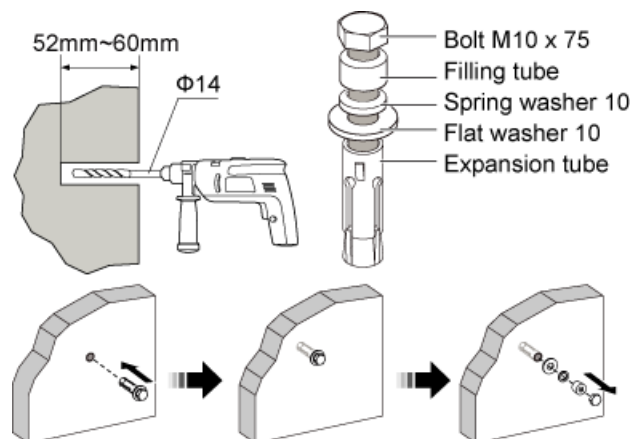
 **NOTE**

The mounting plate should be 1,200 mm to 1,600 mm above the ground or rooftop.

2. Place the mounting plate against the wall, and then use the marking pen to mark the four anchor points. You can also mark the anchor points by referring to the inter-hole distance shown in [Figure 3-19](#).

Figure 3-19 Determining the anchor points

Step 2 Drill holes on the anchor points and install the expansion bolt assembly, as shown in [Figure 3-20](#).

Figure 3-20 Drilling holes and installing the expansion bolt assembly

1. Use the percussion drill with a $\Phi 14$ bit to drill four holes at the anchor points.

**CAUTION**

Protect yourself when drilling holes in the wall. Flying dust may hurt your eyes or you may inhale the dust.

**NOTE**

The drilled holes must be 52 mm to 60 mm deep.

2. After the holes are drilled, use the cleaner to clean the dust both inside and around the holes. If the inter-hole distance is too long or too short, locate and drill holes again.

3. Screw the expansion bolt slightly and put it into the hole. Hammer the assembly until the expansion tube is completely buried into the hole.
4. Remove the bolt M10 x 75, filling tube, spring washer 10, and flat washer 10 in turn.

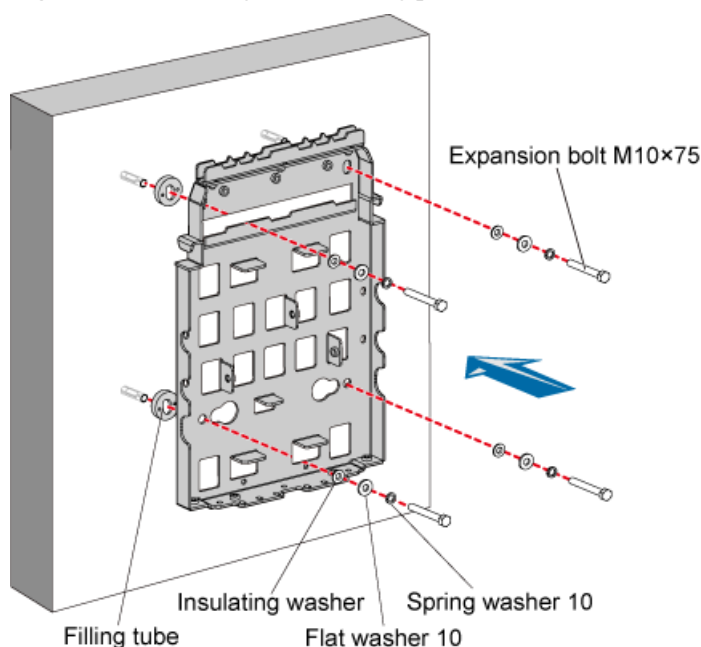


CAUTION

- After disassembling the expansion bolt assembly, ensure that the top of the expansion tube is completely buried into the wall. If it is not completely buried, the mounting plate cannot be steady on the wall.

Step 3 Secure the mounting plate, as shown in [Figure 3-21](#).

Figure 3-21 Securing the mounting plate



1. Place the mounting plate against the wall, and then align the mounting plate with the four marked anchor points.
2. Lead each bolt M10 x 75 through the spring washer 10, flat washer 10, and insulating washer in turn. Put each bolt into the expansion tube through the hole in the wall.
3. Use the wrench to fix the mounting plate to the wall by tightening the bolts clockwise.

---End

Installing the Single RRU3804 Module

This describes how to install the RRU3804 module on a metal pole. The procedures for installing the module in pole or wall installation mode are the same.

Prerequisite

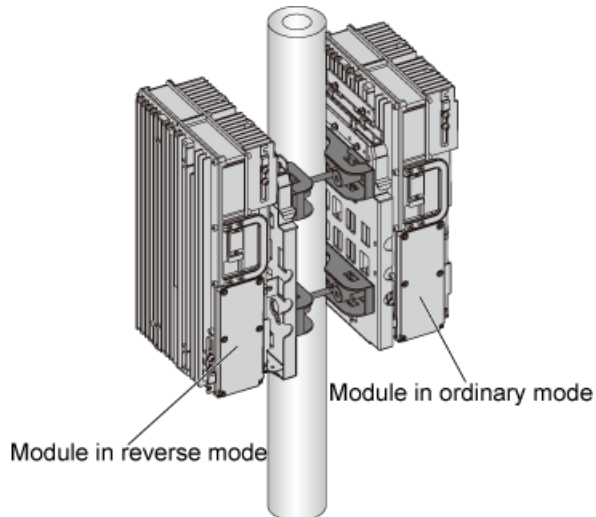
- The RRU3804 mounting plate is installed.

- If the RRU3804 needs to be installed on a metal pole, the PGND cable of the metal pole is connected.

Context

The RRU3804 module can be installed in either ordinary mode or reverse mode. In reverse mode, the front side of the RRU3804 is fixed to the mounting plate. [Figure 3-22](#) shows two RRU3804s with one in ordinary mode and the other in reverse mode.

Figure 3-22 One RRU3804 in ordinary mode and the other in reverse mode



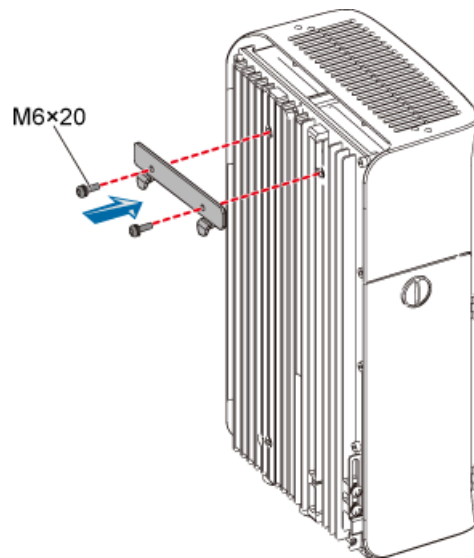
NOTE

- Before installation, the plastic housing of the RRU3804 is already fixed to the module. The previous figure omits the plastic housing for a better illustration of ordinary and reverse modes.
- Before delivery, the plastic housing of the RRU3804 is fixed in the assumption that the RRU3804 needs to be installed in ordinary mode. If you want to install the RRU3804 in reverse mode, remove the plastic housing first.

Procedure

- Step 1** Use two screws M6 x 20 to secure the attachment plate on the module, as shown in [Figure 3-23](#).

Figure 3-23 Securing the attachment plate

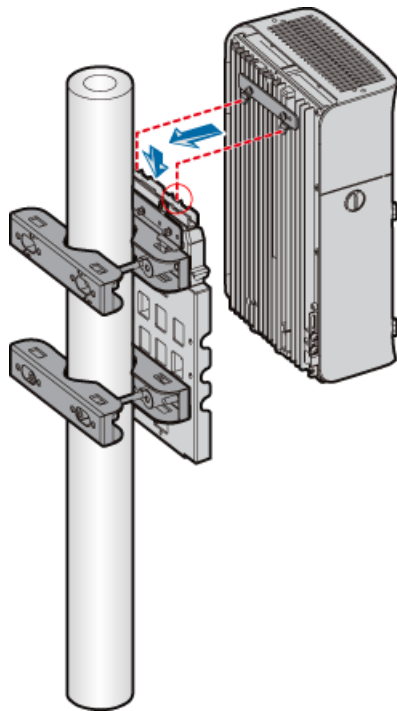


CAUTION

When installing the attachment plate, protect the plastic housing from being scratched.

- If you find that the plastic housing is put face down when unpacking the RRU3804, install the attachment plate before taking out the RRU3804.
- If you find that the plastic housing is put face up, lay cardboards or packing bags on the ground. Then, take out the RRU3804 and install the attachment plate.

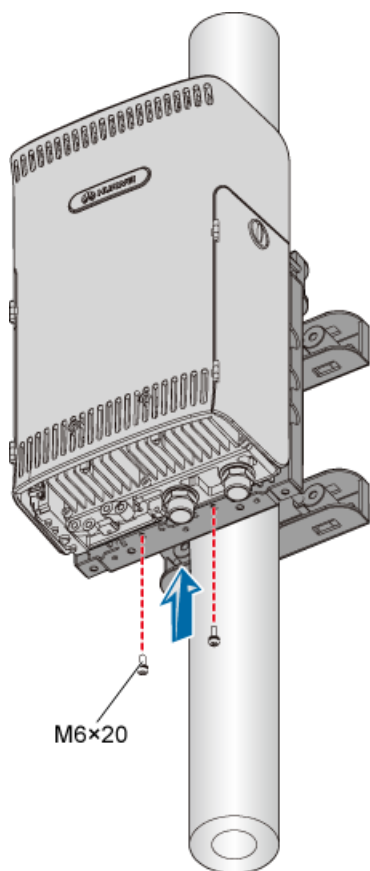
Step 2 Fit the tabs on the attachment plate into the anchor slots of the mounting plate, as shown in [Figure 3-24](#).

Figure 3-24 Installing the module**CAUTION**

The tabs on the attachment plate must be fitted into the middle pair of anchor slots in the mounting plate.

- Step 3** Lead two screws M6 x 20 through the holes in the bottom of the module. Then, secure the module on the mounting plate, as shown in [Figure 3-25](#).

Figure 3-25 Securing the module



---End

3.4.2 Installing Two RRU3804s

This describes how to install two RRU3804 modules and their mounting plates. The two RRU3804s can be installed on a metal pole or wall.

Procedure

Step 1 Install the mounting plate of the RRU3804. The operation varies with the installation mode.

Condition	Action
The RRU3804 needs to be installed on a metal pole.	Install the mounting plates of the two RRU3804s on the metal pole .
The RRU3804 needs to be installed on a wall.	Install the mounting plates of the two RRU3804s on the wall .

Step 2 Install the two RRU3804 modules. For details, refer to [3.4.2.3 Installing the Two RRU3804 Modules](#).

---End

Installing the Mounting Plates of the Two RRU3804s on the Metal Pole

This describes how to install the mounting plates on the metal pole.

Prerequisite

The metal pole is ready and the pole diameter stays within the range of 60 mm to 114 mm.

Context

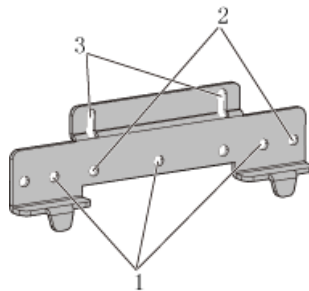
You can install the two RRU3804s on the metal pole by using the following methods. Select a proper method depending on the field requirements.

- [Side-mounted installation](#)
- [Rear-mounted installation](#)

Procedure

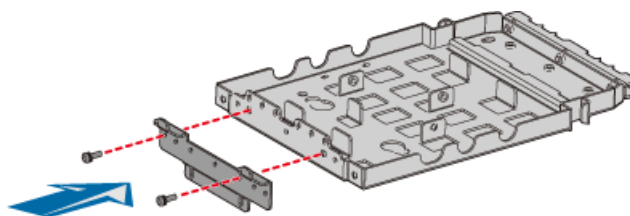
- Side-mounted installation
 1. Install the first mounting plate by referring to [3.4.1.1 Installing the Mounting Plate of the Single RRU3804 on the Metal Pole](#).
 2. Use the holes numbered 2 in [Figure 3-26](#).

Figure 3-26 Holes in the multi-purpose attachment plate



3. Use two screws M6 x 20 to secure the multi-purpose attachment plate at the bottom of the second mounting plate, as shown in [Figure 3-27](#).

Figure 3-27 Securing the multi-purpose attachment plate at the bottom of the second mounting plate



4. Fit the tab on the left of the second mounting plate into the anchor slot in the first mounting plate, as shown in [Figure 3-28](#).