



ZXSDR R8854

Macro Radio Remote Unit

Hardware Installation

Version: 1.0

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Revision History

Revision No.	Revision Date	Revision Reason
R1.3	2018-01-03	<ul style="list-style-type: none">● Updated the way to bundle the RRU in 2.2 Precautions for Device Hoisting.● Updated the following sections: 4 RRU Installation, 4.1 Installing an RRU on a Wall, 4.2 Installing a Single RRU on a Pole, 4.3 Installing Two RRUs on a Pole, 4.5 Installing an RRU on a Gantry, 4.6 Installing an RRU on a L-shape Support.● Added new section: 4.4 Installing a Single RRU in Pole Hoop-Mounted Mode.
R1.2	2016-07-30	Added scald protection information in Section 2.3 Installation Precautions
R1.1	2016-06-20	<ul style="list-style-type: none">● Updated “5.2 Installing Antenna Feeder Cables”● Updated “5.5 Installing the DC Power Input Cable”● Added “Appendix A Installing the DC Junction Box”
R1.0	2016-04-06	First edition

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Contents

About This Manual	I
Chapter 1 Installation Flow.....	1-1
Chapter 2 Installation Preparations	2-1
2.1 Precautions for Device Transport.....	2-1
2.2 Precautions for Device Hoisting.....	2-1
2.3 Installation Precautions.....	2-4
2.4 Instruments and Meters List.....	2-6
2.5 Installation Space Requirement.....	2-7
Chapter 3 Unpacking and Inspection	3-1
Chapter 4 RRU Installation	4-1
4.1 Installing an RRU on a Wall	4-5
4.2 Installing a Single RRU on a Pole	4-11
4.3 Installing Two RRUs on a Pole	4-17
4.4 Installing a Single RRU in Pole Hoop-Mounted Mode.....	4-22
4.5 Installing an RRU on a Gantry.....	4-27
4.6 Installing an RRU on a L-shape Support	4-32
Chapter 5 Cable Installation	5-1
5.1 Installing the Protective Grounding Cable.....	5-3
5.2 Installing Antenna Feeder Cables.....	5-5
5.3 Installing a Monitoring Cable	5-7
5.4 Installing the AISG Cable	5-8
5.5 Installing the DC Power Input Cable	5-10
5.6 Installing an Optical Fiber Cable	5-15
5.7 Unused Interface Protection.....	5-18
Chapter 6 Post-Installation Check	6-1
Chapter 7 Power-on Inspection.....	7-1
Chapter 8 Closure.....	8-1
Chapter 9 Installing the DC Junction Box.....	9-1
Chapter 10 Waterproofing Outdoor Connectors	10-1
Chapter 11 Installing a Gantry.....	11-1
Chapter 12 Labeling Specifications.....	12-1

Figures..... I
Tables V
Glossary VII

About This Manual

Purpose

This manual describes how to install the ZXSDR R8854.

Intended Audience

This manual is intended for:

- Installation engineers
- Maintenance engineers

What Is in This Manual

This manual contains the following chapters.

Chapter 1, Installation Flow	Describes the installation flow of the ZXSDR R8854.
Chapter 2, Installation Preparations	Describes preparations before equipment installation.
Chapter 3, Unpacking and Inspection	Describes precautions about equipment unpacking and inspection.
Chapter 4, RRU Installation	Describes how to install the ZXSDR R8854.
Chapter 5, Cable Installation	Describes how to install external cables for the ZXSDR R8854.
Chapter 6, Post-Installation Check	Describes how to inspect hardware installation.
Chapter 7, Power-on Inspection	Describes how to inspect the operation of the ZXSDR R8854 after the ZXSDR R8854 is powered on.
Chapter 8, Closure	Describes the operations that need to be implemented after all hardware components are installed.
Chapter 9, Installing the DC Junction Box	Describes how to install the DC junction box.
Chapter 10, Waterproofing Outdoor Connectors	Describes the procedure for connecting and waterproofing the outdoor connectors.
Chapter 11, Installing a Gantry	Describes how to install a gantry.
Chapter 12, Labeling Specifications	Describes how to correctly use outdoor and indoor labels.

Conventions

This manual uses the following conventions.

<i>Italics</i>	Variables in commands. It may also refer to other related manuals and documents.
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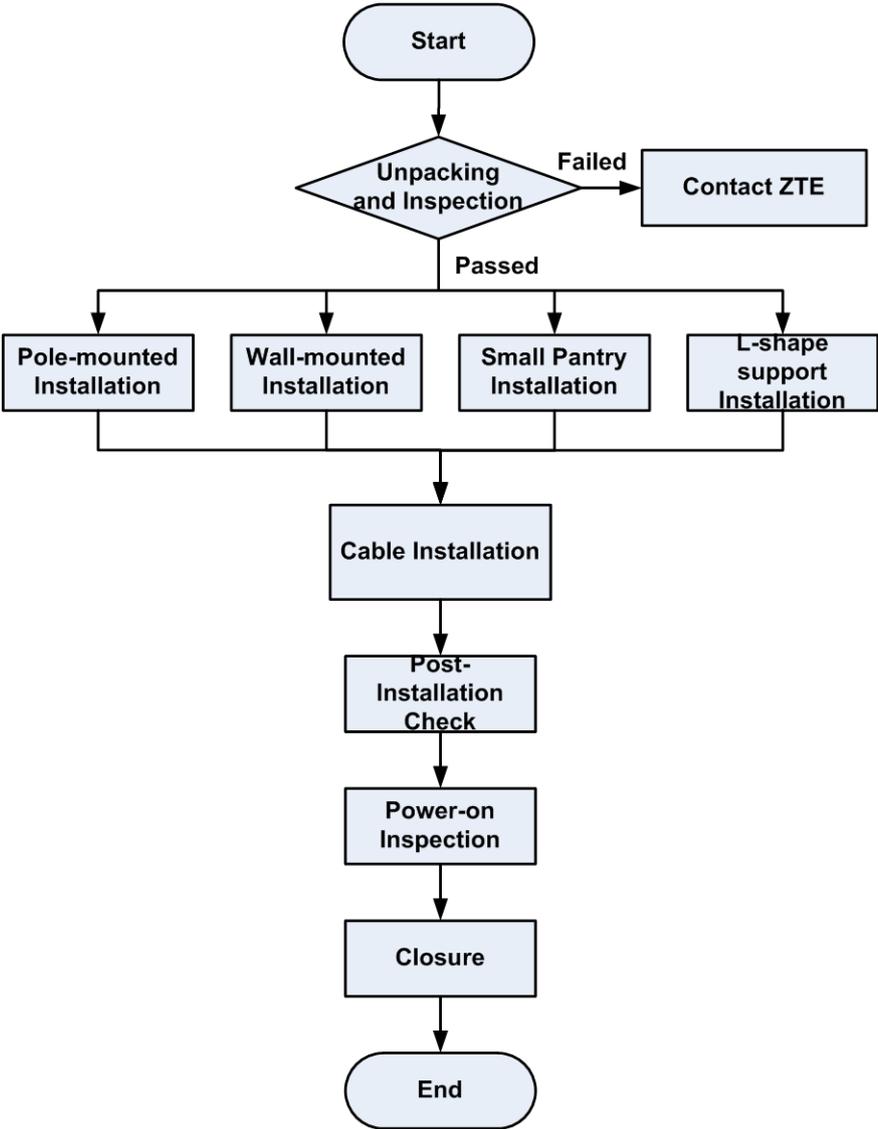
Bold	Menus, menu options, function names, input fields, option button names, check boxes, drop-down lists, dialog box names, window names, parameters, and commands.
Constant width	Text that you type, program codes, filenames, directory names, and function names.
[]	Optional parameters.
{ }	Mandatory parameters.
	Separates individual parameters in a series of parameters.
	Danger: indicates an imminently hazardous situation. Failure to comply will result in death or serious personal injury.
	Warning: indicates a potentially hazardous situation. Failure to comply can result in death or serious personal injury.
	Caution: indicates a potentially hazardous situation. Failure to comply can result in moderate or minor personal injury.
	Notice: indicates equipment or environment safety information. Failure to comply can result in equipment damage, data loss, equipment performance degradation, environmental contamination, or other unpredictable results.
	Note: provides additional information about a topic.

Chapter 1

Installation Flow

For the installation flow of the ZXSDR R8854, see [Figure 1-1](#).

Figure 1-1 ZXSDR R8854 Installation Flow



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Chapter 2

Installation Preparations

Before installing the ZXSDR R8854, installation engineers should check the installation environment and deliver an *Environment Acceptance Report*.

Installation parts, tools, and instruments should be available before installation.



Caution!

The ZXSDR R8854 must be powered on within 24 hours after it is unpacked.

The power-off duration of the ZXSDR R8854 must not be greater than 24 hours during maintenance.

Table of Contents

Precautions for Device Transport	2-1
Precautions for Device Hoisting.....	2-1
Installation Precautions	2-4
Instruments and Meters List	2-6
Installation Space Requirement.....	2-7

2.1 Precautions for Device Transport

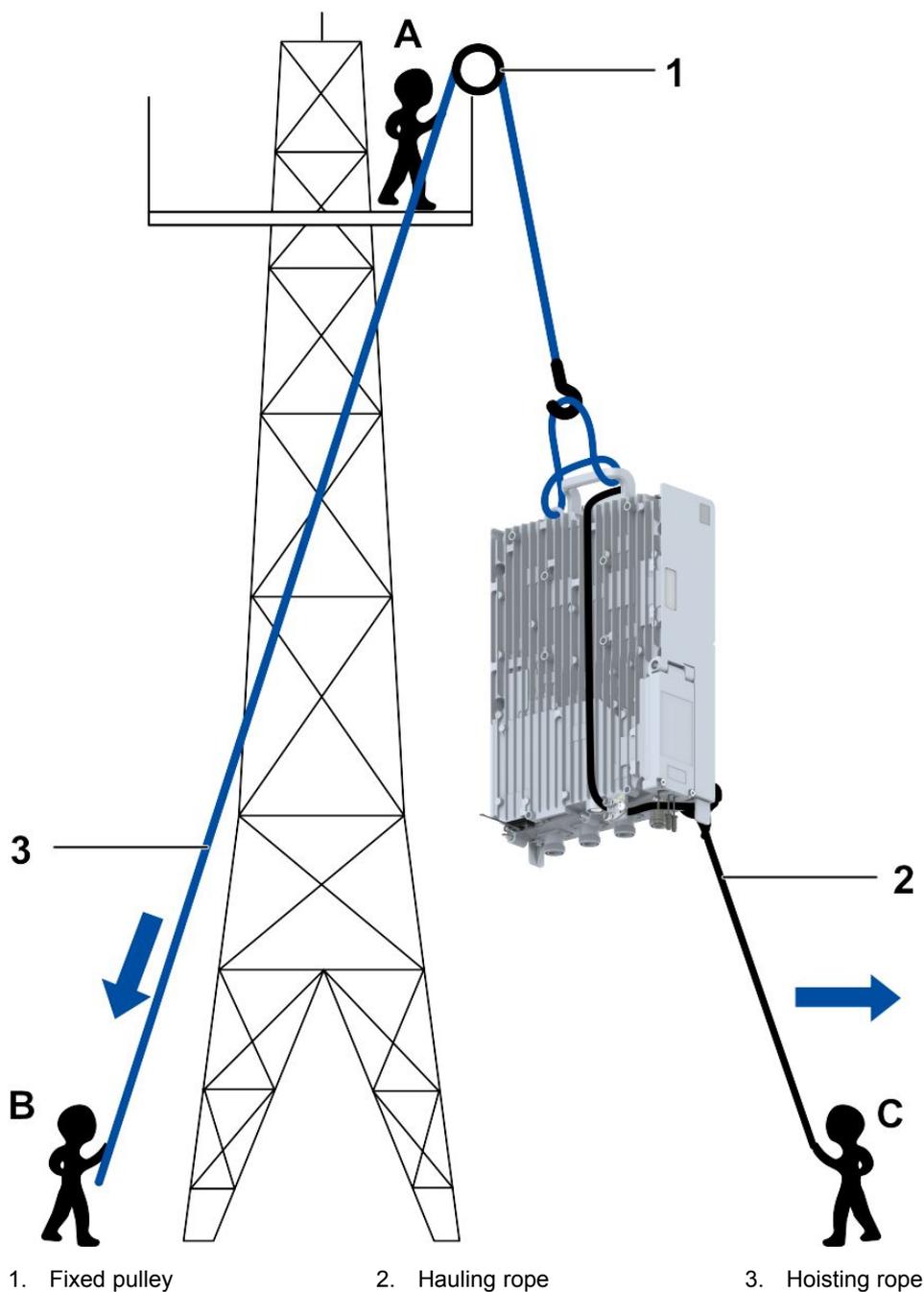
- A device must be transported with the outer packing container to protect the device from scratches.
- After the packing container is removed on site, the device must be protected when you move or store it. For example, when a device is stored temporarily, cushioning materials must be put under the bottom of the device to avoid direct contact with the ground and surrounding objects.
- When you transport a device, cushioning materials such as foamed plastic and paperboard must be used to protect the device from scratches. When you lift a device up, the device must be dragged properly to avoid collision with other objects.

2.2 Precautions for Device Hoisting

The information provided is used for reference when it is necessary to hoist the [RRU](#).

1. Installer A on the tower secures the fixed pulley to the tower, and passes the hoisting rope through the fixed pulley down to the ground, see [Figure 2-1](#).

Figure 2-1 Device Hoisting

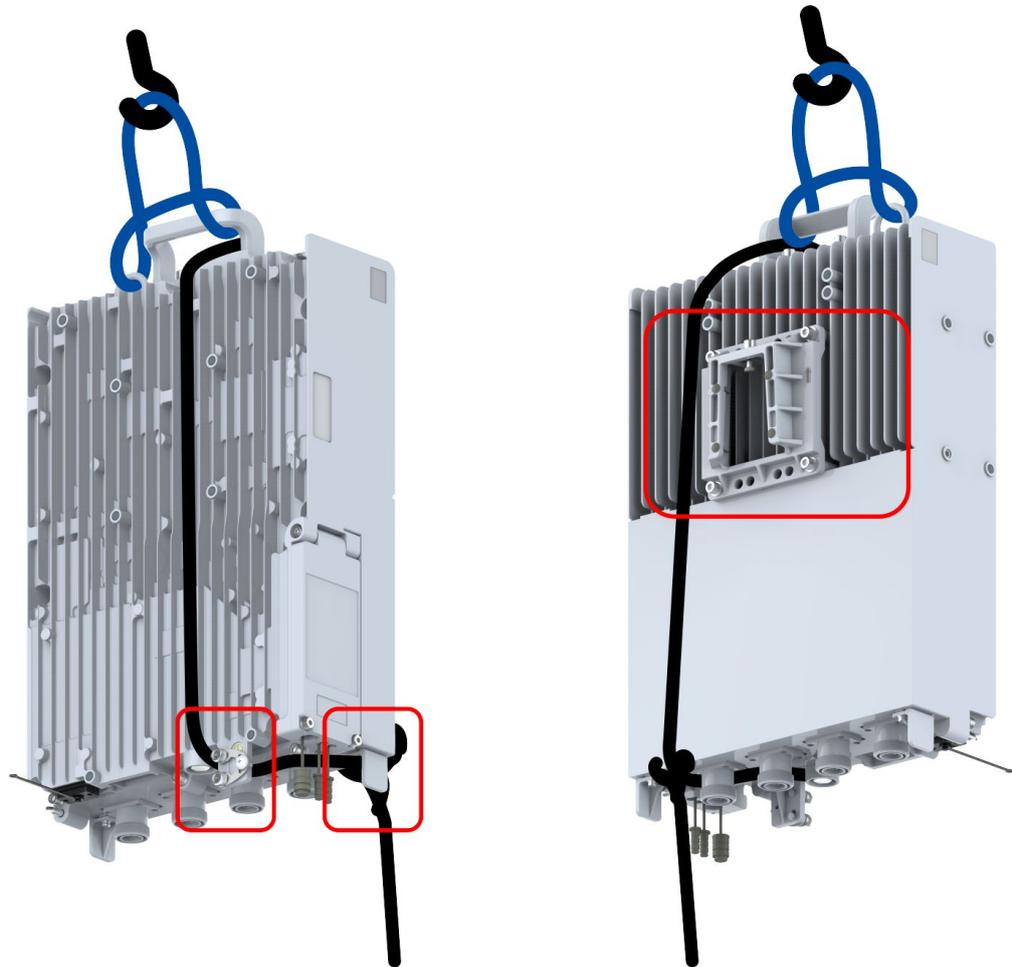


 **Caution!**

Installer A on the tower cannot loosen the fixed rope until he confirms that the device is securely placed on the tower platform.

- 2. Installer C on the ground binds the RRU tightly, see Figure 2-2.

Figure 2-2 Binds the RRU

 **Note:**

Pass the hoisting rope through the handle and hoisting hole.

Pass the hauling rope through the handle on the top of the RRU, avoiding the RRU mounting bracket, and get the rope stuck between the grounding point and the protection block at the bottom of the RRU. Bundle the RRU with the rope between the grounding point and the protection block at the bottom of the RRU, ensuring that the RRU is bundled firmly.

3. Installer B on the ground drags the hoisting rope downwards. At the same time, installer C pulls the hauling rope outwards to protect the device from colliding with the tower when the device reaches the mounting platform, see Figure 2-1.
4. Lift the properly-packed engineering materials used for tower mounting onto the tower in the manner mentioned above.

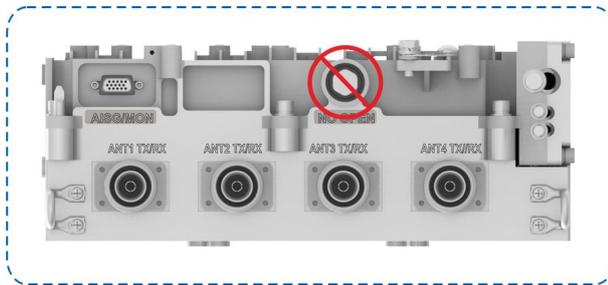
**Caution!**

Never lift the engineering materials by binding them directly to the hoisting rope.

2.3 Installation Precautions

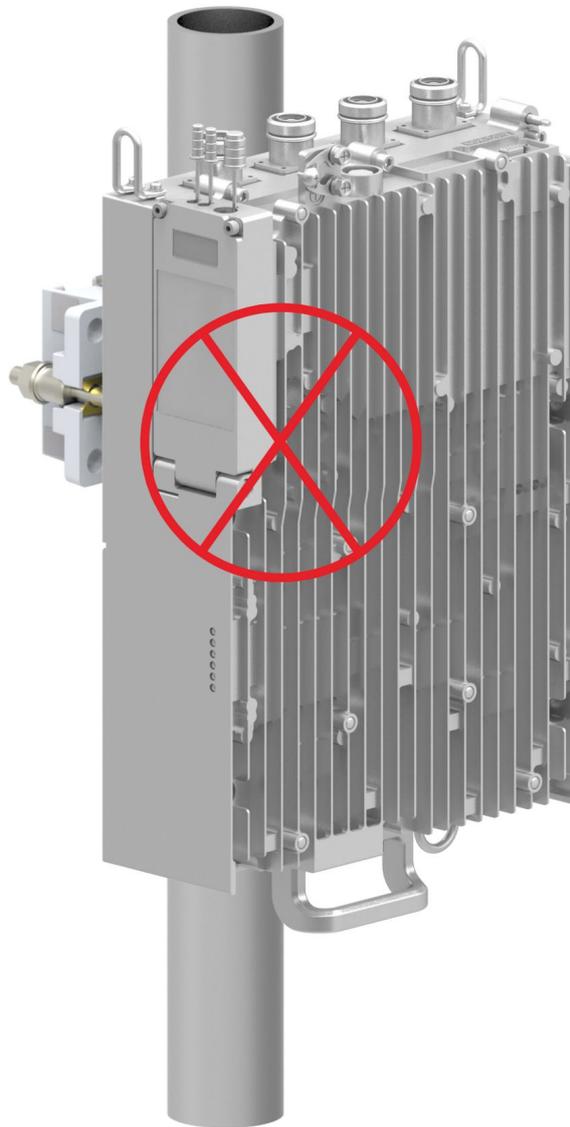
1. Do not open the equipment's airtight part, see [Figure 2-3](#).

Figure 2-3 Do Not Open the Airtight Part



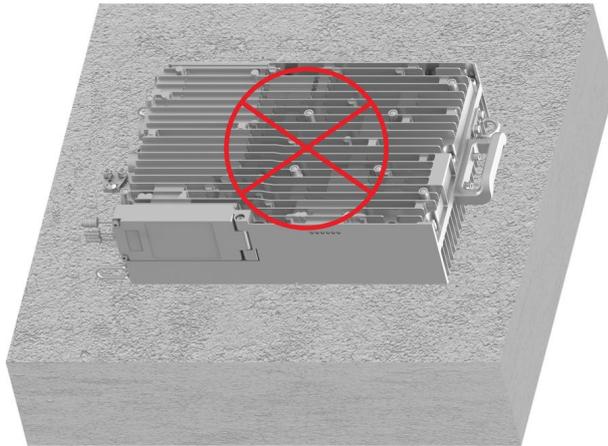
2. The RRU box has a layer of rustproof paint that protects it from being scratched during transportation and installation.
3. Do not install any port upwards, see [Figure 2-4](#).

Figure 2-4 Do Not Install Any Port Upwards



4. Do not use the horizontal installation mode, see [Figure 2-5](#).

Figure 2-5 Do Not Install the RRU Horizontally



5. The device must be installed in a special area where protection measures are taken and only maintenance personnel under the control of the responsible unit can enter.
6. Before maintaining the device, power off the device to cool it down. The device cannot be operated until the case temperature is below 70 °C to avoid scald.



Note:

The duration for cooling the device down after power-off cannot be longer than the maintenance time. The duration for waiting for the cooldown should be determined through testing.

2.4 Instruments and Meters List

Table 2-1 lists the instruments and meters required for installing the ZXSDR R8854.

Table 2-1 Instruments and Meters List

Item	List
General-purpose instruments	Measuring and ruling instruments: 5 m steel tape, 1 m ruler, gradienter, marker, drilling template
	Drilling instruments: Electric percussion drill (auxiliary drill bits) and vacuum cleaner
	Tightening instruments: Cross screwdrivers (M3–M6), Allen key (M5–M6), adjustable wrench (M10), and torque wrench
	Small instruments: Snipe-nose pliers, diagonal pliers, vices, file, hacksaw, and hydraulic pressure pliers

Item	List
	Auxiliary instruments: Chain wheel, Ladder, Rope, scissors, slip-proof gloves, safety helmet, connector card, paintbrush, and hot air blower
Special-purpose instruments	Multi-functional crimping pliers and feeder connector knife
Meters	Digital multimeter, VSWR tester, earth resistance tester, base station tester, compass, field strength tester (for special purpose), and spectrum analyzer (for special purpose)

2.5 Installation Space Requirement

Figure 2-6 shows the recommended space for installing ZXSDR R8854.

Figure 2-6 Recommended Space for Installing ZXSDR R8854 (in mm)

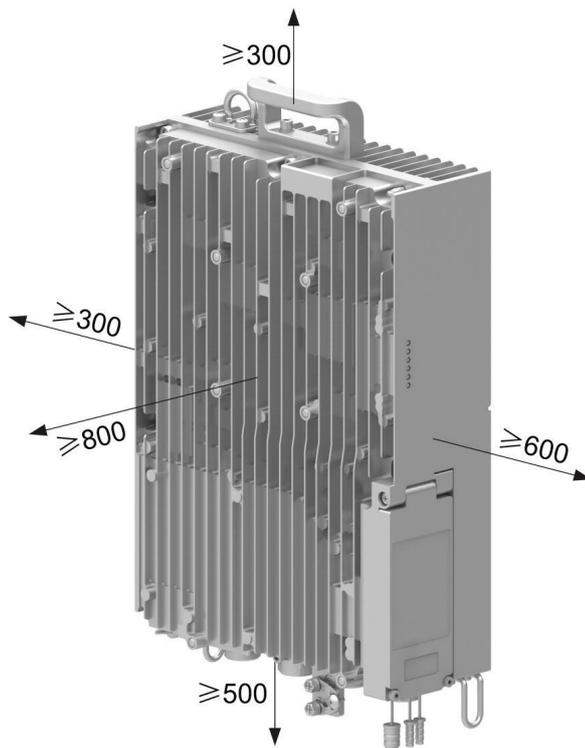
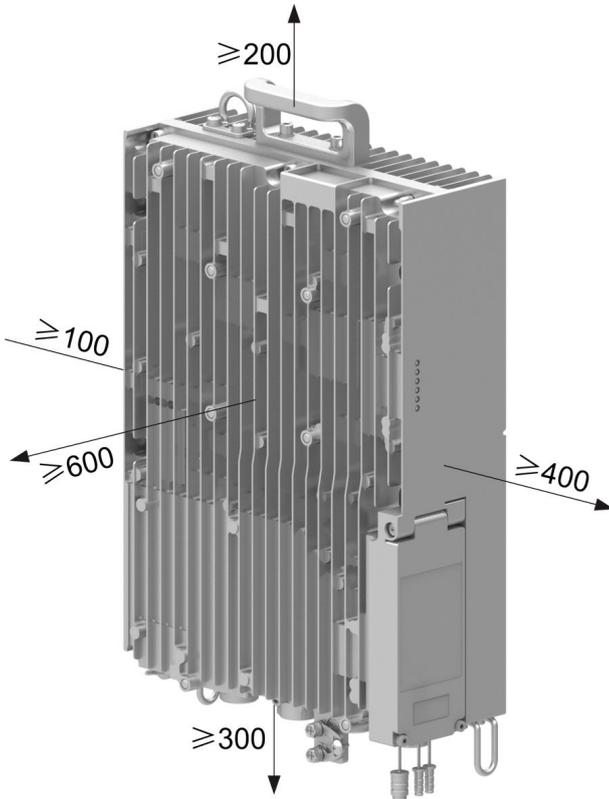


Figure 2-7 shows the minimum space for installing ZXSDR R8854.

Figure 2-7 Minimum Space for Installing ZXSDR R8854 (in mm)



Chapter 3

Unpacking and Inspection

Counting Goods

- Verify that the packaging boxes are intact. If any damage is found, contact the transport company immediately.
- Unpack the boxes and verify that the goods are consistent with the inspection checklist.
- Verify that the chassis is in good condition without scratches, peeling paint, blisters, or stains.
- Verify that the accessories required for the installation are correct and complete.

Equipment Handover

After the examination of goods, the engineering supervisor and the operator's representative should sign the *Unpacking Acceptance Report*. The *Unpacking Acceptance Report* is made in duplicate, and kept by both parties. The engineering supervisor must send the *Unpacking Acceptance Report* back to the representative office within seven days for archiving.

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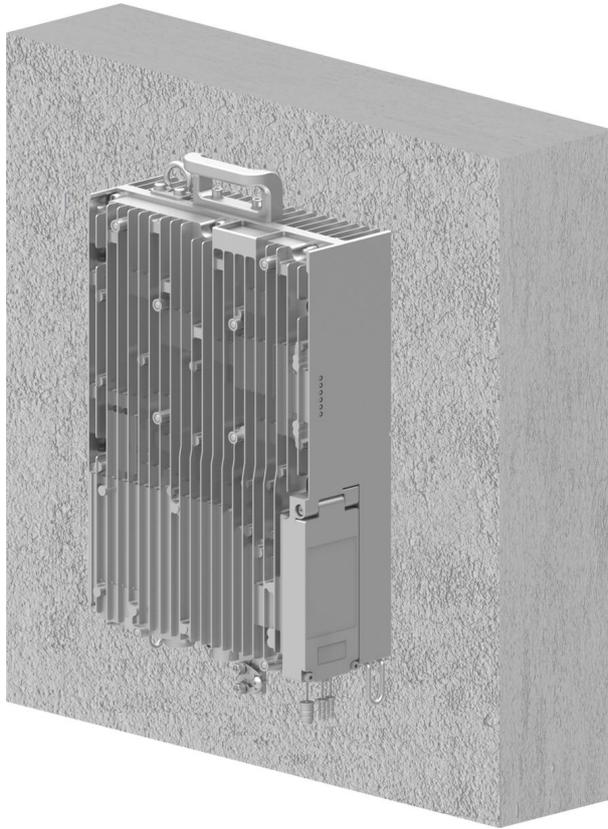
Chapter 4

RRU Installation

The ZXSDR R8854 can be installed in the following ways:

- Wall-mounted installation, see [Figure 4-1](#).

Figure 4-1 Wall-Mounted Installation



- Pole-mounted installation, see [Figure 4-2](#), [Figure 4-3](#) and [Figure 4-4](#).

Figure 4-2 Pole-Mounted Installation of a Single RRU

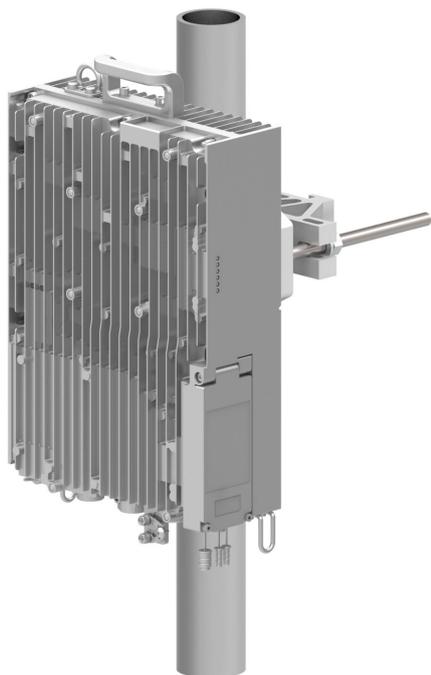


Figure 4-3 Pole-Mounted Installation of Two RRUs

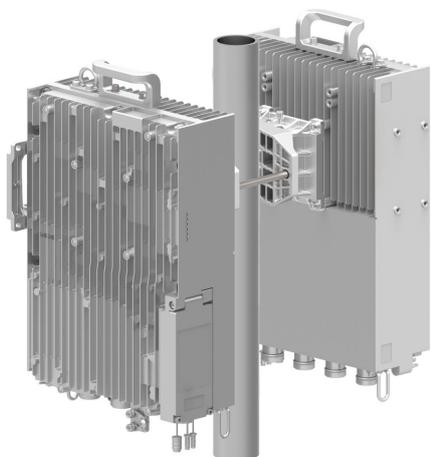
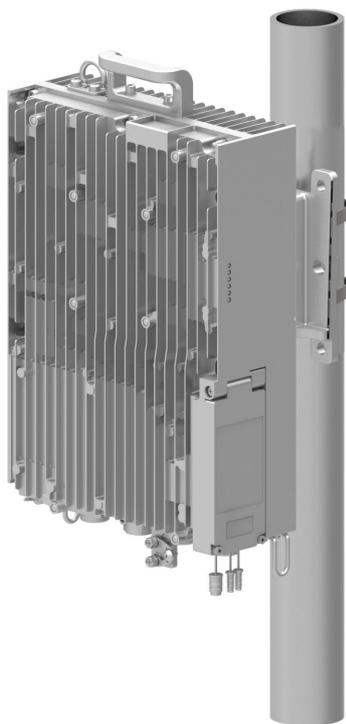
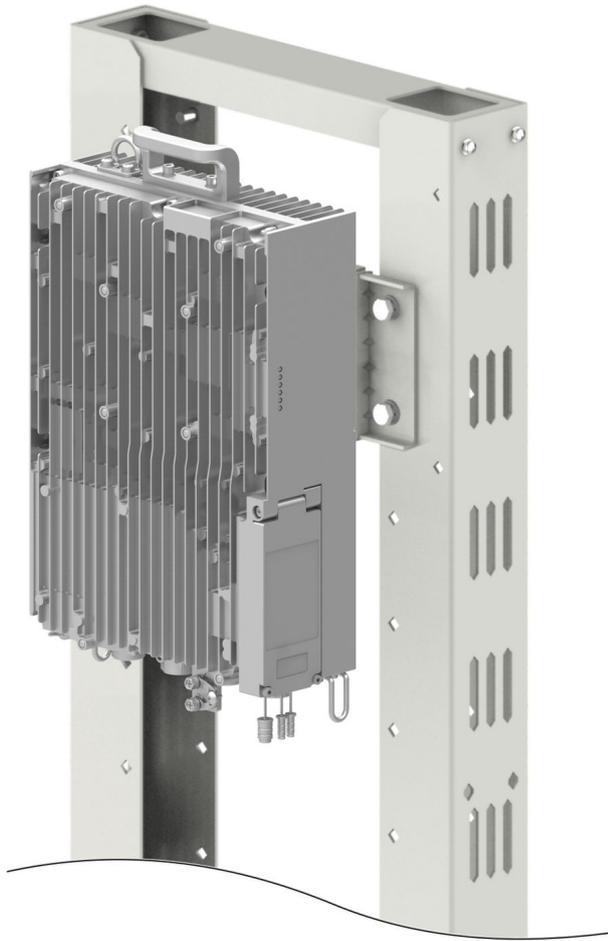


Figure 4-4 Pole Hoop-Mounted Installation of a Single RRU



- Gantry-mounted installation, see [Figure 4-5](#).

Figure 4-5 Gantry-Mounted Installation

- L-shape support installation, see [Figure 4-6](#).

Figure 4-6 L-shape Support Installation

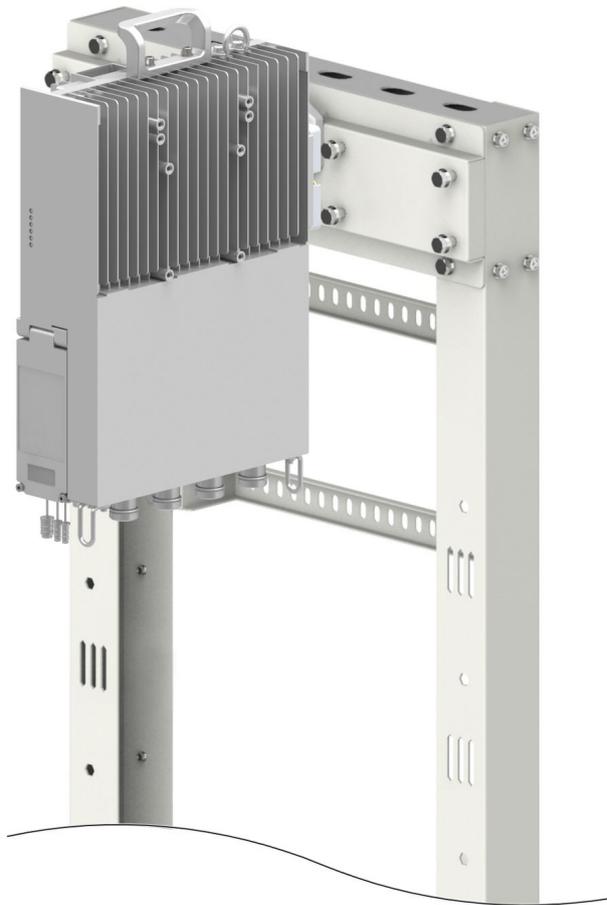


Table of Contents

Installing an RRU on a Wall.....	4-5
Installing a Single RRU on a Pole.....	4-11
Installing Two RRUs on a Pole	4-17
Installing a Single RRU in Pole Hoop-Mounted Mode	4-22
Installing an RRU on a Gantry	4-27
Installing an RRU on a L-shape Support.....	4-32

4.1 Installing an RRU on a Wall

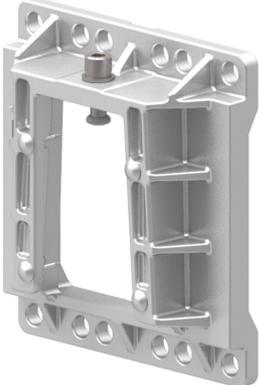
An RRU can be installed on a wall when used indoors, outdoors, or in a high-speed rail scenario.

This procedure describes how to install the ZXSDR R8854 on a wall.

Context

For a description of the accessories used for installing an RRU on a wall, refer to [Table 4-1](#).

Table 4-1 Accessories for Wall-Mounted Installation

Name	External View
Fixing clamp	
RRU support	

Steps

Drilling a Hole

1. Mark the hole positions on the wall with a drilling template, see [Figure 4-7](#).

Figure 4-7 Installation Positions of Expansion Bolts



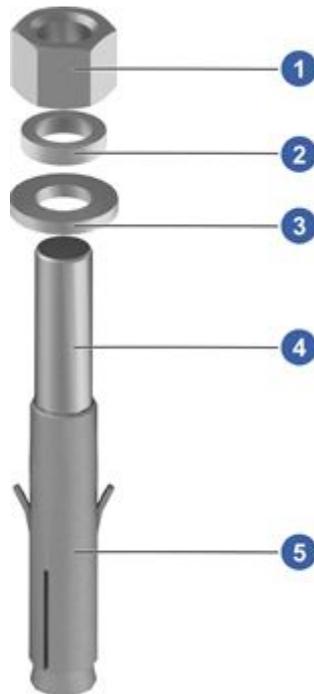
2. Drill an 80 mm-deep hole in the marked position with a $\phi 12$ drill bit. Make sure that the hole is vertical to the wall and remove dust with a vacuum cleaner during drilling.

Installing an Expansion Bolt

3. Install an expansion bolt, see Figure 4-9.

Figure 4-8 shows an external view of an expansion bolt.

Figure 4-8 External View of an Expansion Bolt

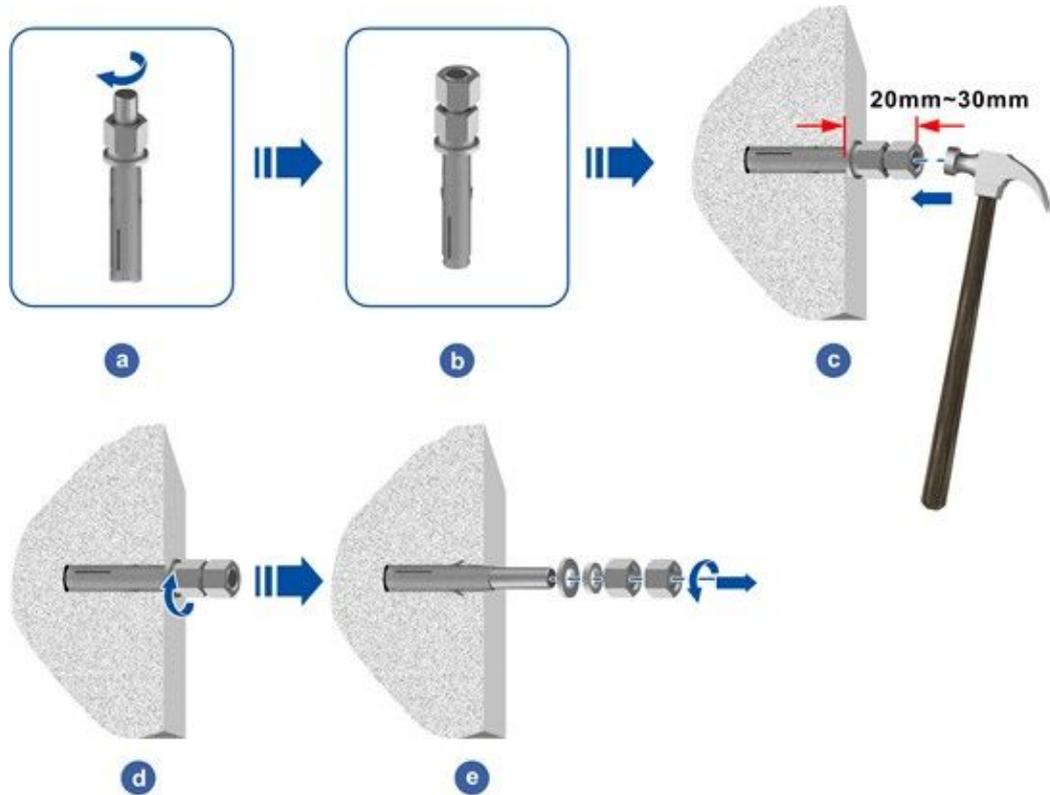


1. Nut
2. Spring washer

3. Flat washer
4. Bolt

5. Expansion tube

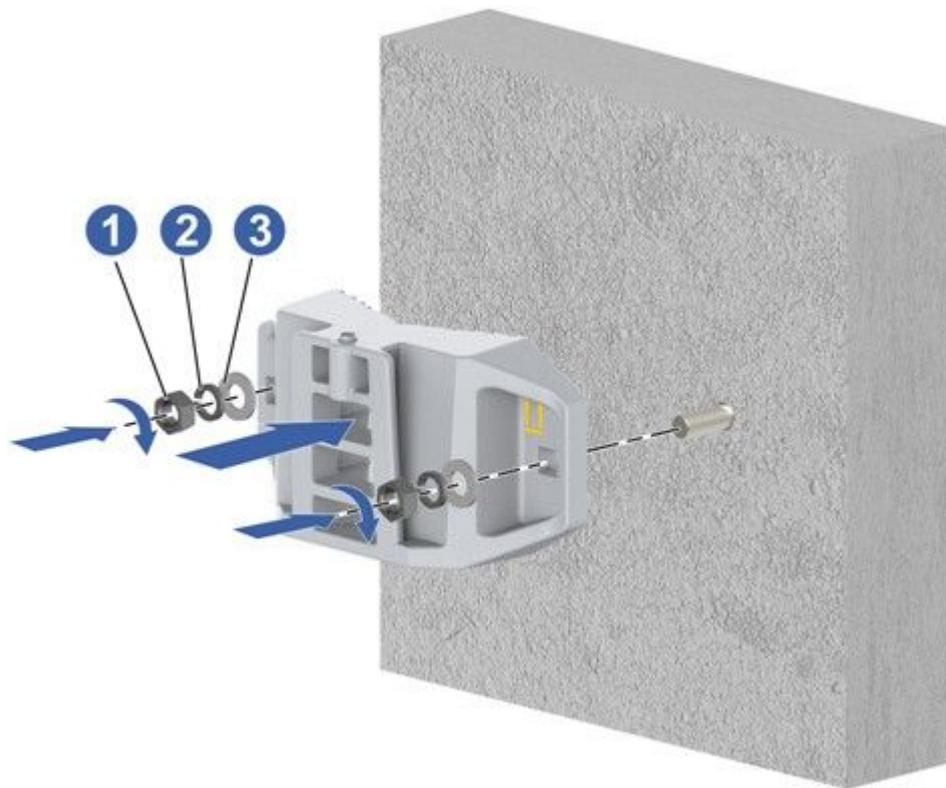
Figure 4-9 Installing an Expansion Bolt



Step	Description
a	Slightly turn the expansion bolt clockwise to prevent it from moving freely.
b	Before hammering the expansion bolt with a claw hammer, take a nut with the same specifications as the nut of this expansion bolt and turn the nut until the top of nut is flush with that of the expansion bolt to avoid damaging the thread during hammering.
c	Hammer the expansion bolt into the installation hole with a claw hammer.
d	Fasten the nut near the expansion tube clockwise to allow the expansion bolt to fully expand.
e	Loosen the nut counterclockwise and remove the nut, spring washer, and flat washer in turn for use during subsequent installation.

Installing the Fixing Clamp

- Secure the fixing clamp to the wall with a torque of 40 N•m, with the nuts, spring washers, and flat washers removed from the expansion bolts, see Figure 4-10.

Figure 4-10 Securing the Fixing Clamp

1. Nut

2. Spring washer

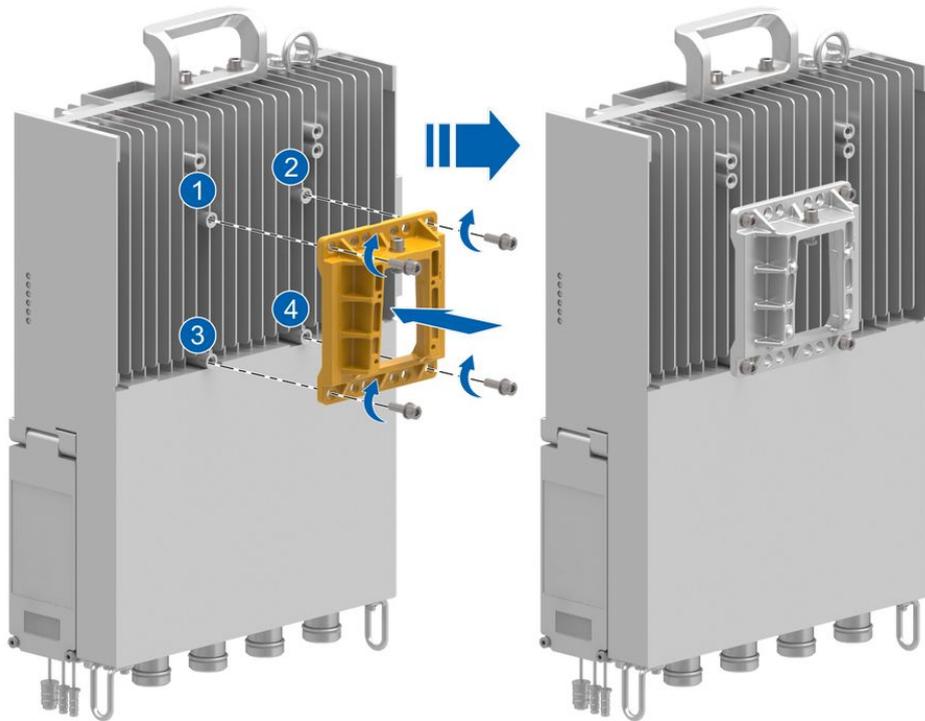
3. Flat washer

**Note:**

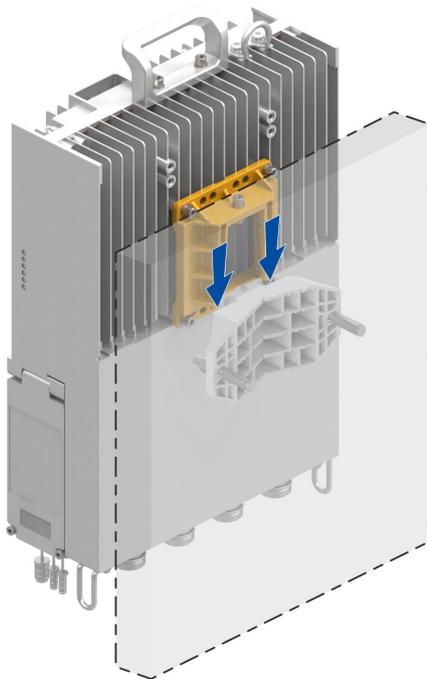
The yellow arrow on the fixing clamp should point upwards during installation.

Securing the RRU

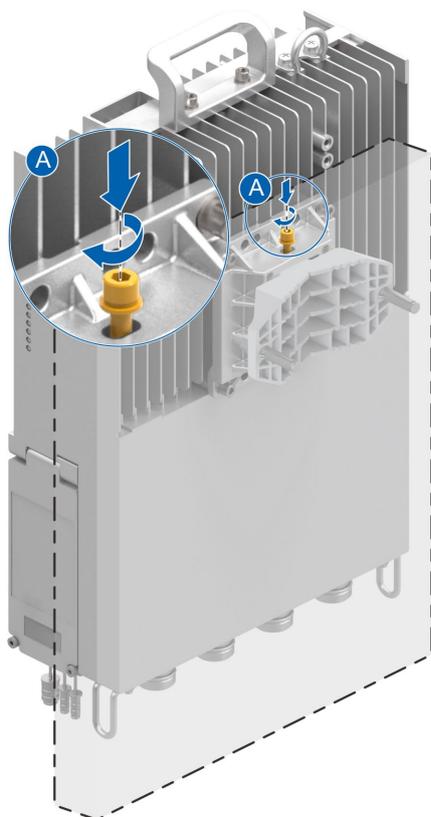
5. Fix the RRU support to the back of the RRU with four M6 screws with a torque of 8 N•m, see [Figure 4-11](#).

Figure 4-11 Installing the RRU Support

6. Install the RRU support to the fixing clamp, see [Figure 4-12](#).

Figure 4-12 Installing the RRU Support to the Fixing Clamp

7. Tighten the captive screw on the top of the RRU support with an M6 Allen hex wrench, see [Figure 4-13](#).

Figure 4-13 Securing the RRU

– End of Steps –

4.2 Installing a Single RRU on a Pole

A single RRU can be installed on a round pole ($\varnothing 40\text{--}120\text{ mm}$), a channel steel pole ($\varnothing 60\text{--}100\text{ mm}$), or an angle steel pole ($\varnothing 63\text{--}100\text{ mm}$).

The following description and procedure are based on round pole-mounted installation. [Figure 4-14](#) and [Figure 4-15](#) show channel steel pole-mounted installation and angle steel pole-mounted installation respectively.

Figure 4-14 Channel Steel Pole-Mounted Installation

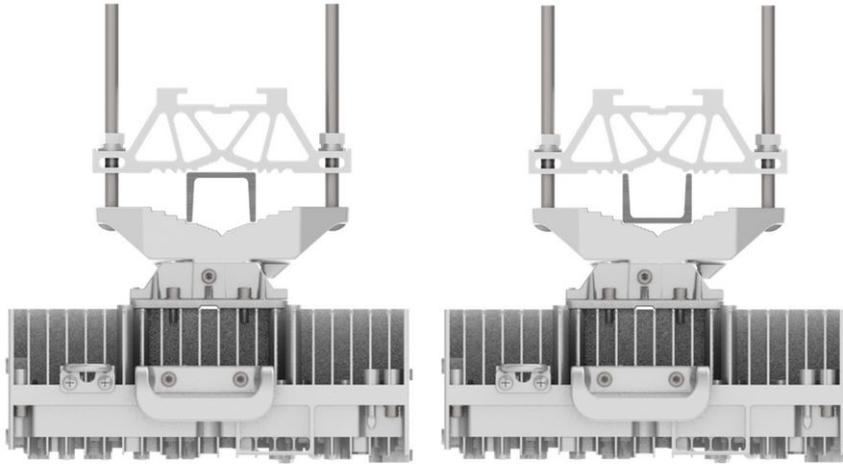
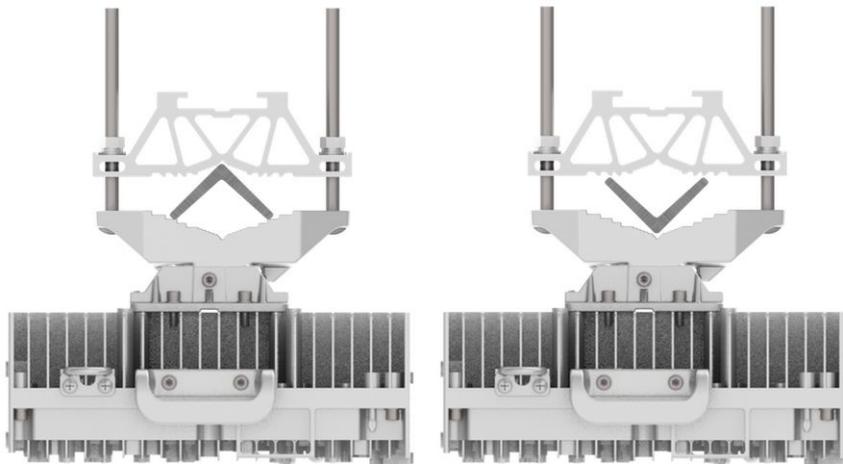


Figure 4-15 Angle Steel Pole-Mounted Installation

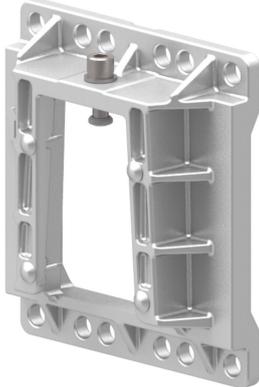


Context

For a description of the accessories used for installing a single RRU on a pole, refer to [Table 4-2](#).

Table 4-2 Accessories for Single-RRU Pole-Mounted Installation

Name	External View
Pole component (pole-mounted mode of a single RRU)	

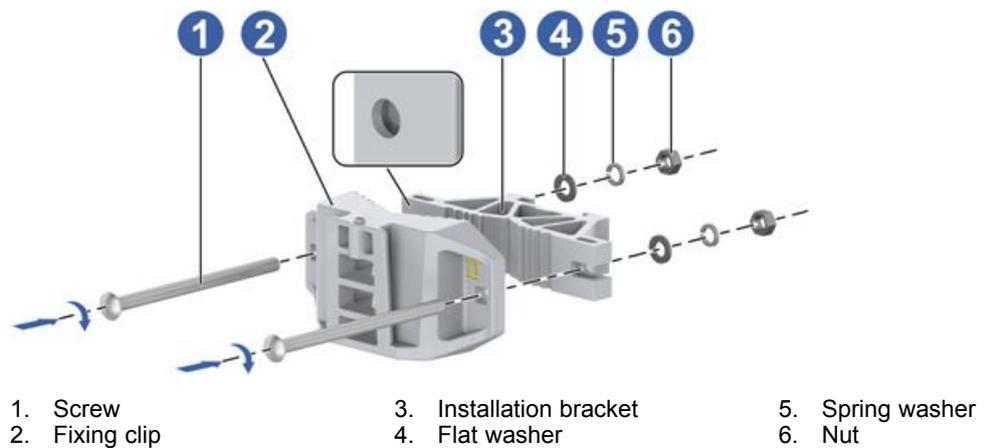
Name	External View
RRU support	

Steps

Fixing the Pole Mount Assembly

1. Insert an M10 screw through the installation hole on the one side of the fixing clip, and install the flat washer, spring washer, and nut on the other side of the hole, see [Figure 4-16](#).

Figure 4-16 Assembling the Pole Mount Assembly



2. Assemble the pole component to the pole through the U-shape open side of the installation bracket, and then install the screw into the U-shape slot, see [Figure 4-17](#).

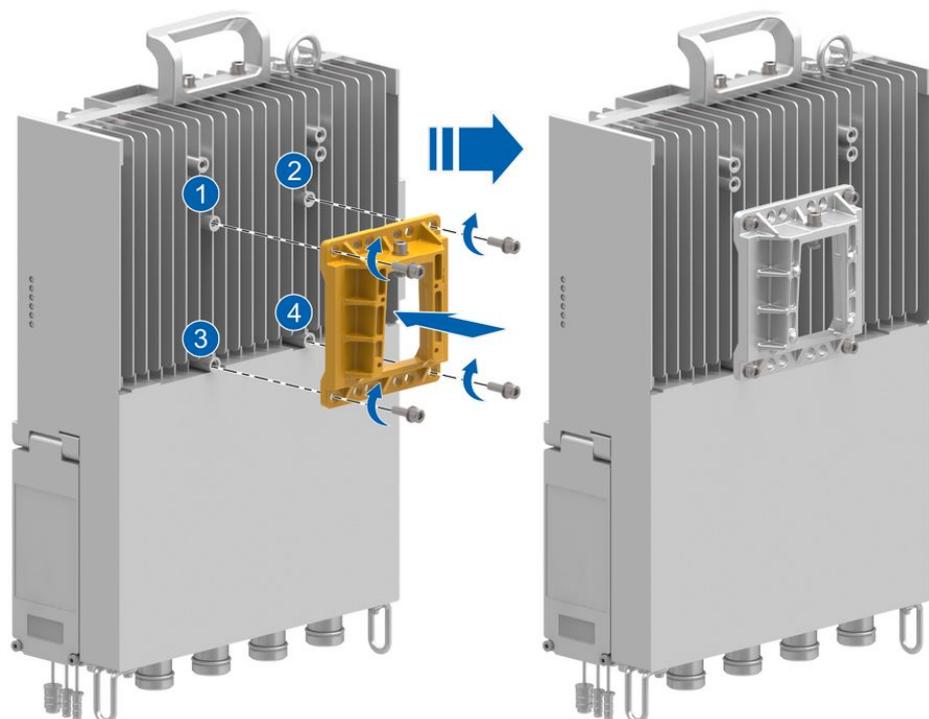
Figure 4-17 Installing the Pole Mount Assembly (1)**Note:**

When installing the fixing clip, ensure that the yellow arrow of the fixing clip is upward.

3. Tighten the nuts on both sides of the pole component with an adjustable wrench to fix the pole component on the pole, see [Figure 4-18](#).

Figure 4-18 Installing the Pole Mount Assembly (2)**Installing the RRU Support**

4. Fix the RRU support to the back of the RRU with four M6 screws with a torque of 8 N•m, see Figure 4-19.

Figure 4-19 Installing the RRU Support**Securing the RRU**

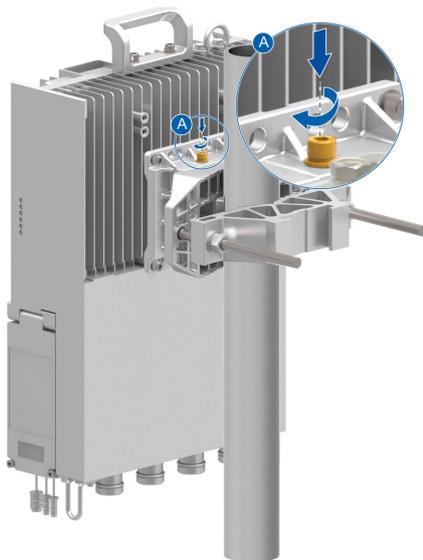
5. Mount the ZXSDR R8854 to the pole component along the rail of the fixing clip, see [Figure 4-20](#).

Figure 4-20 Installing the RRU on the Pole Mount Assembly



6. Tighten the captive screw on the RRU support with an M6 inner-hexagon wrench to fix the ZXSDR R8854, see [Figure 4-21](#).

Figure 4-21 Securing the RRU



– End of Steps –

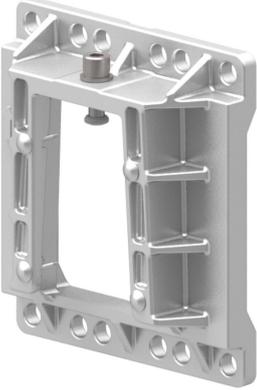
4.3 Installing Two RRUs on a Pole

This procedure describes how to install two RRUs on a pole. The procedure for installing two RRUs on a pole is similar to that for installing a single one.

Context

For a description of the accessories used for installing two RRUs on a pole, refer to [Table 4-3](#).

Table 4-3 Accessories for Two-RRU Pole-Mounted Installation

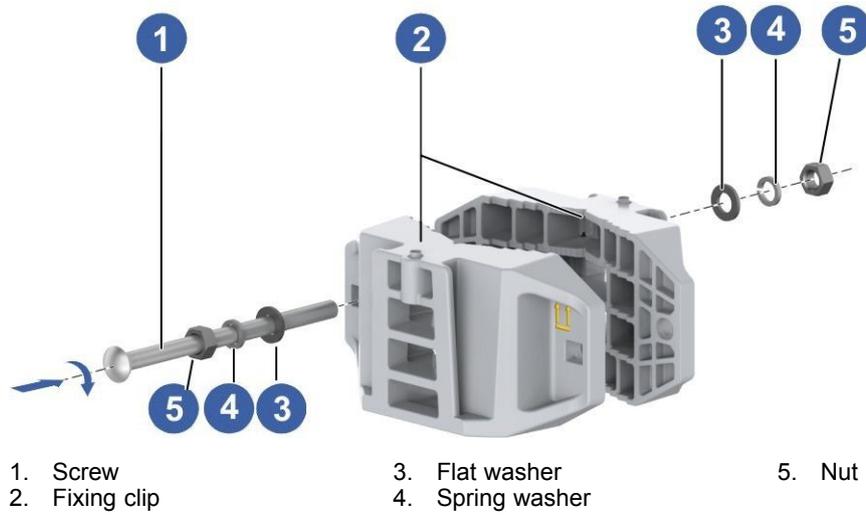
Name	External View
Pole component (pole-mounted mode of two RRUs)	
RRU support	

Steps

Fixing the Pole Mount Assembly

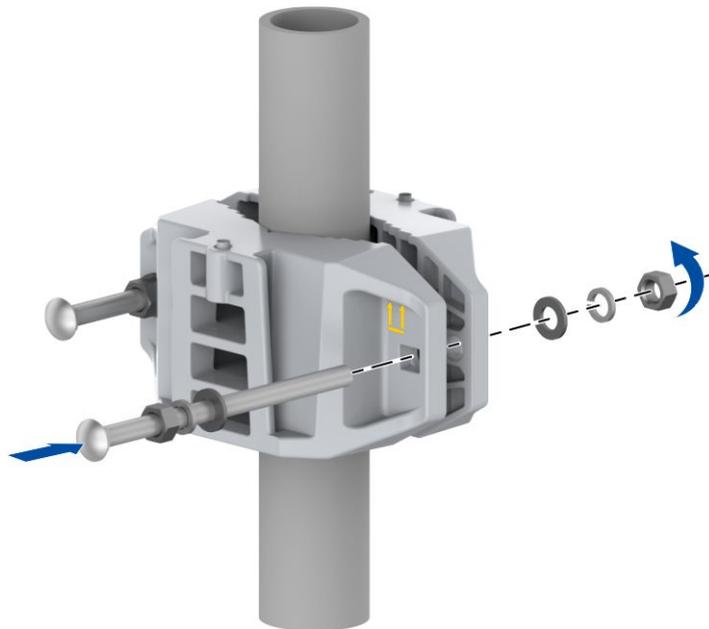
1. Insert an M10 screw through the installation hole on the one side of the fixing clip, and install the plat washer, spring washer, and nut on the other side of the hole, see [Figure 4-22](#).

Figure 4-22 Assembling the Pole Component

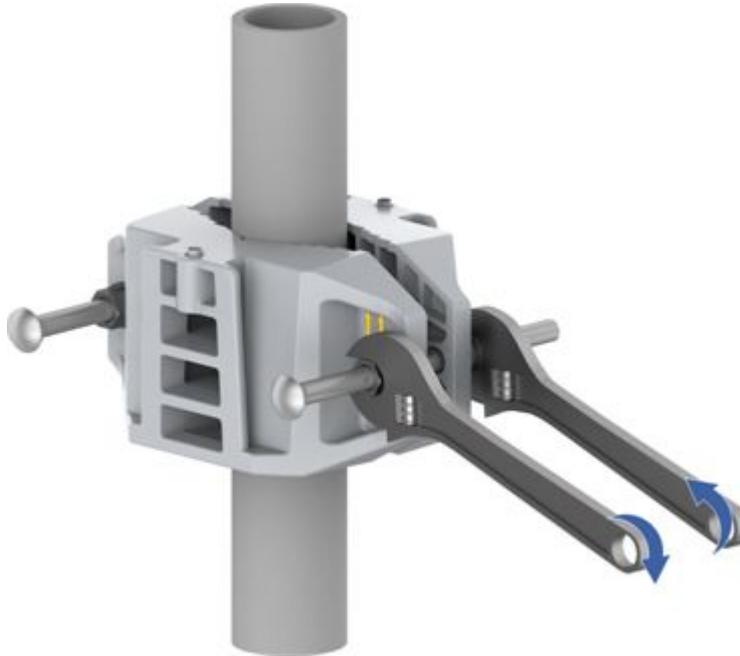


2. Assemble the pole component to the pole, and install the screw on the other side of the fixing clip, see [Figure 4-23](#).

Figure 4-23 Installing the Pole Component (1)



3. Tighten the nuts on both sides of the pole component with an adjustable wrench with a torque of 40 N m to fix the pole component on the pole, see [Figure 4-24](#).

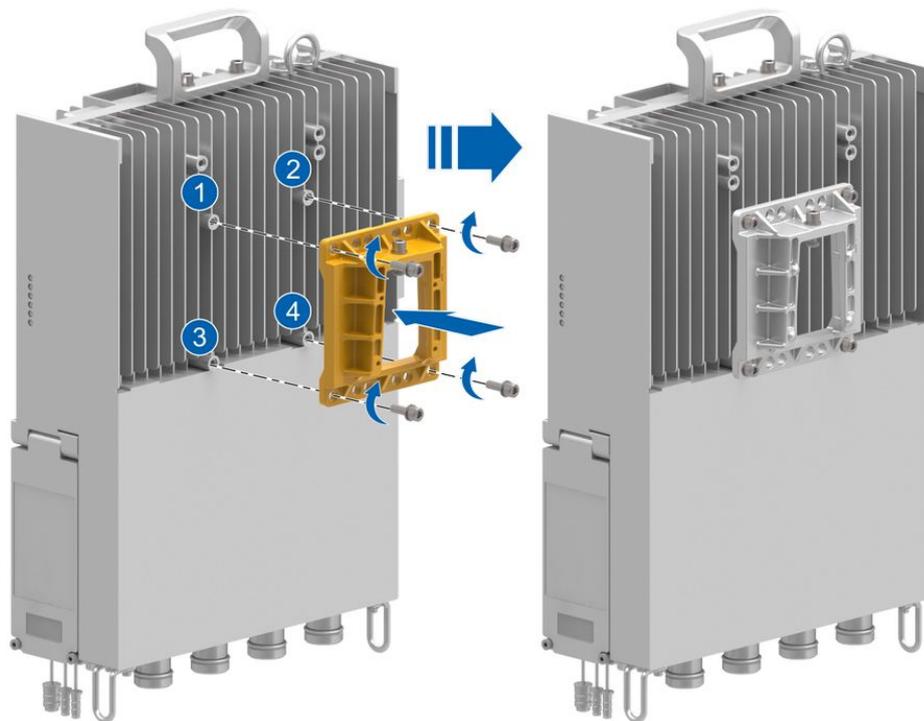
Figure 4-24 Installing the Pole Component (2)

Note:

When tightening the nuts, you need to adjust the position of the screws and ensure that the exposed lengths of the screws on both sides of the fixing clip are the same. Otherwise, RRU installation may be affected.

Installing the RRU Support

4. Fix the RRU support to the back of the RRU with four M6 screws with a torque of 8 N•m, see [Figure 4-25](#).

Figure 4-25 Installing the RRU Support**Securing the RRUs**

5. Install the two RRUs on the pole mount assembly along the guide rails on the fixing clamps respectively, see [Figure 4-26](#).

Figure 4-26 Installing the RRUs on the Pole Mount Assembly



6. Tighten the captive screws on the top of all the RRU supports with an M6 Allen hex wrench respectively, see [Figure 4-27](#).

Figure 4-27 Securing the RRUs



– End of Steps –

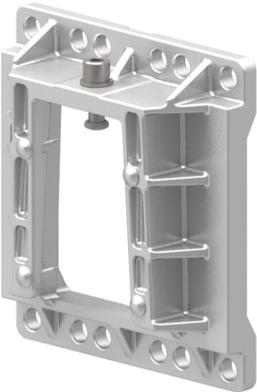
4.4 Installing a Single RRU in Pole Hoop-Mounted Mode

This procedure describes how to install the ZXSDR R8854 through pole hoops. This installation mode is applicable to the pole with the diameter of 120 mm-380 mm.

Context

For the required installation accessories of pole hoop-mounted mode, refer to [Table 4-4](#).

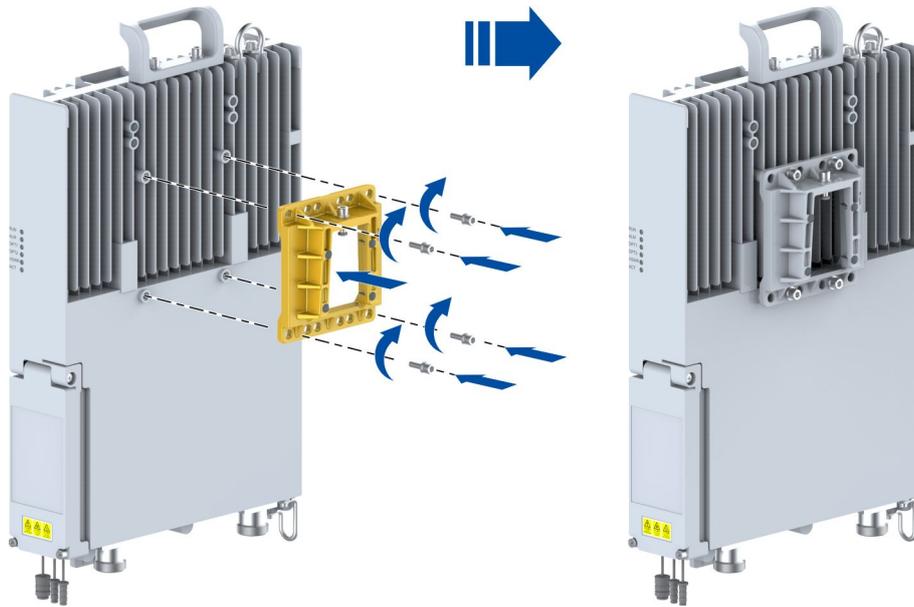
Table 4-4 Installation Accessories of Pole Hoop-Mounted Installation Mode of a Single RRU

Accessory	Overview
Fixing clip	
Pole hoop	
ZXSDR R8854 support	

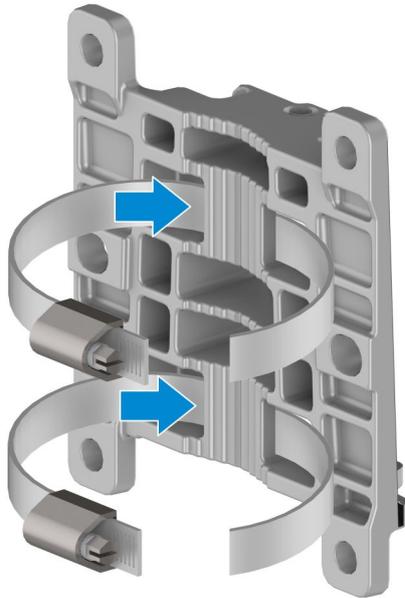
Steps

1. Install the RRU support to the rear panel of the ZXSDR R8854 with four M6 screws, see [Figure 4-28](#).

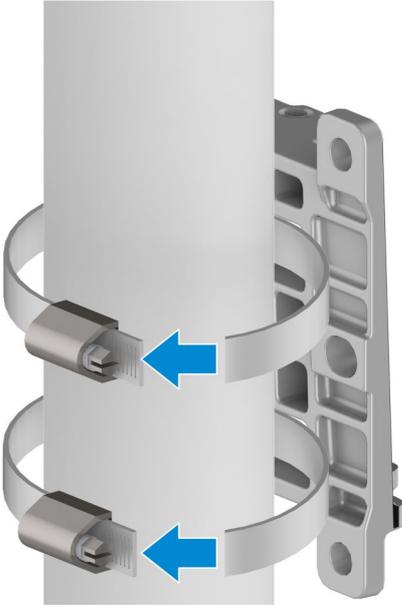
Figure 4-28 Installing the RRU Support



2. Install the fixing clip to the pole, see [Figure 4-29](#).
 - a. Install pole hoops to the fixing clip.



- b. Fix the fixing clip on the pole through the pole hoops.



c. Tighten the screws on the pole hoops.

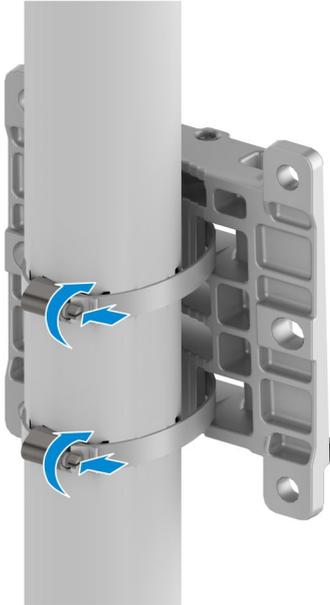


Figure 4-29 Installing the Fixing Clip to the Pole

3. Mount the ZXSDR R8854 to the fixing clip on the pole along the rail of the fixing clip, see [Figure 4-30](#).

Figure 4-30 Mounting the ZXSDR R8854

4. Tighten the captive screw on the RRU support with an M6 inner-hexagon wrench to fix the ZXSDR R8854, see [Figure 4-31](#).

Figure 4-31 Tightening the Captive Screw



– End of Steps –

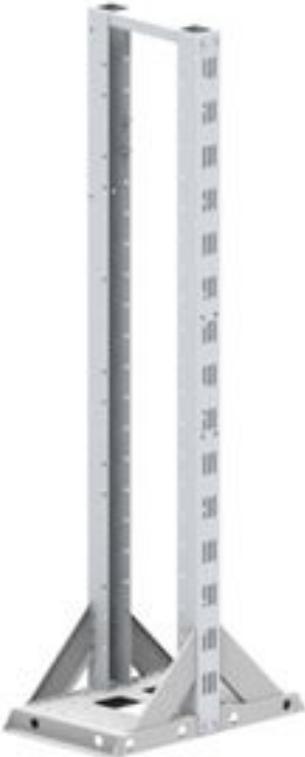
4.5 Installing an RRU on a Gantry

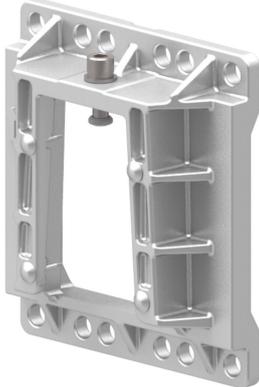
This procedure describes how to install an [RRU](#) on a gantry.

Context

For a description of the accessories used for installing an RRU on a gantry, refer to [Table 4-5](#).

Table 4-5 Accessories for Gantry-Mounted Installation

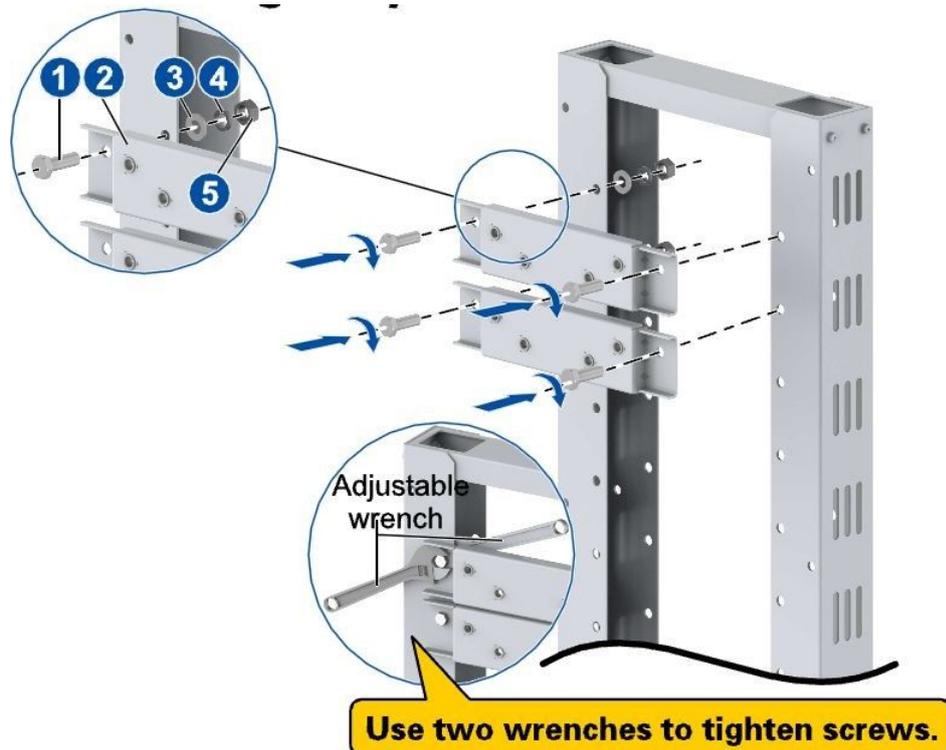
Name	External View
Gantry	
Fixing clamp	
Adapter plate	

Name	External View
RRU support	

Steps

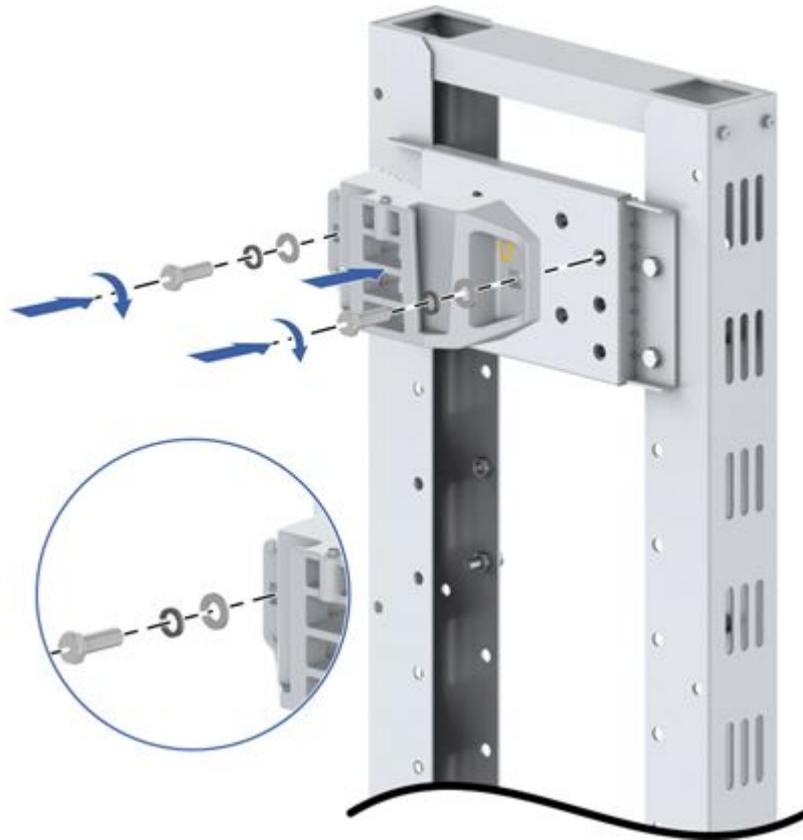
1. Fix the adapter plate to the gantry with four M8 bolts and nuts with a torque of 20 N•m, see [Figure 4-32](#).

Figure 4-32 Installing the Adapter Plate

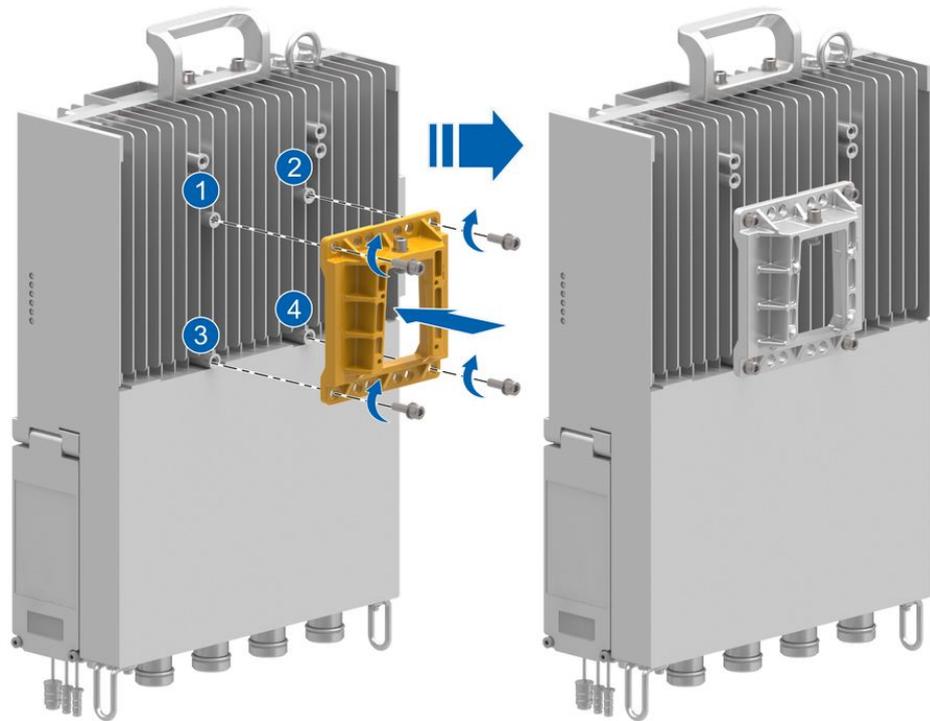


- | | | |
|------------------|------------------|--------|
| 1. Bolt | 3. Flat washer | 5. Nut |
| 2. Adapter plate | 4. Spring washer | |

2. Secure the fixing clamp to the adapter plate with four M10 bolts and nuts with a torque of 40 N•m, see [Figure 4-33](#).

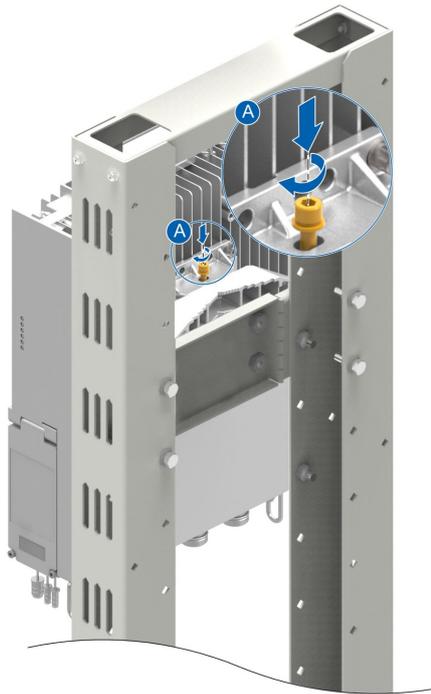
Figure 4-33 Securing the Fixing Clamp

3. Fix the RRU support to the back of the RRU with four M6 screws with a torque of 8 N•m, see [Figure 4-34](#).

Figure 4-34 Installing the RRU Support

4. Install the RRU on the gantry along the guide rail of the fixing clamp and tighten the captive screw on the top of the RRU support with an M6 Allen hex wrench, see [Figure 4-35](#).

Figure 4-35 Installing the RRU on the Gantry



– End of Steps –

4.6 Installing an RRU on a L-shape Support

This procedure describes how to install an [RRU](#) on a L-shape support.

Context

For a description of the accessories used for installing an RRU on a L-shape support, refer to [Table 4-6](#).

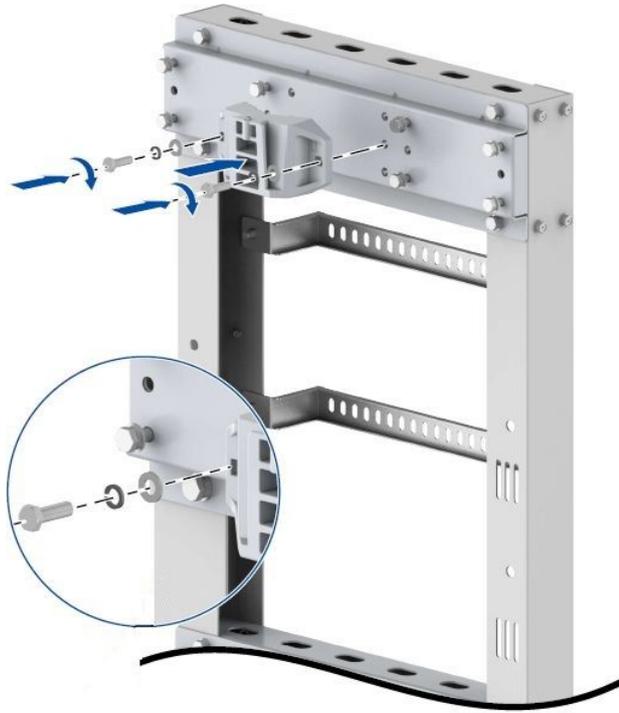
Table 4-6 Accessories for L-shape Support Installation

Name	External View
L-shape support	
Fixing clamp	
RRU support	

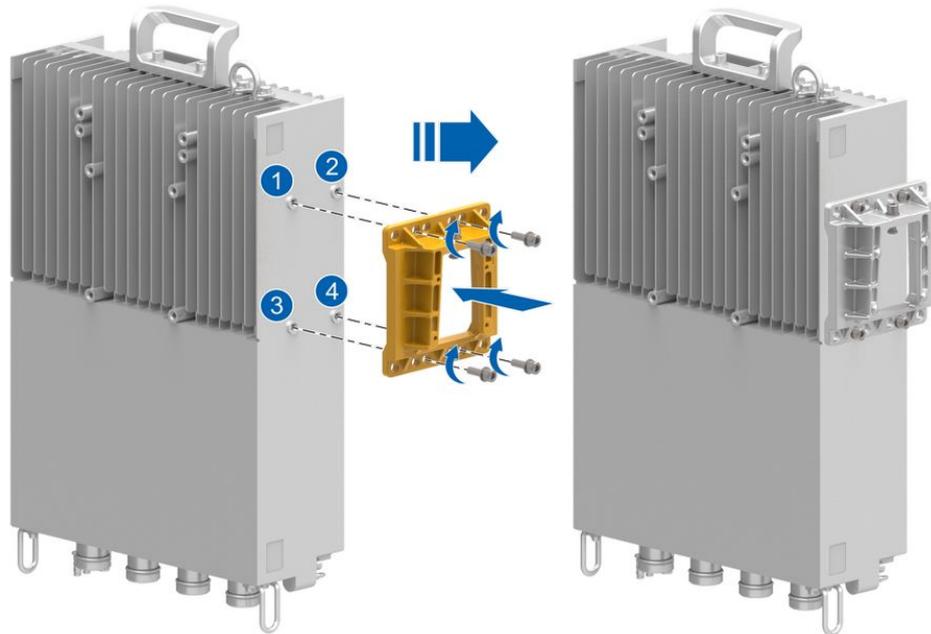
Steps

1. Secure the fixing clamp to the adapter plate with four M10 bolts and nuts with a torque of 40 N•m, see [Figure 4-36](#).

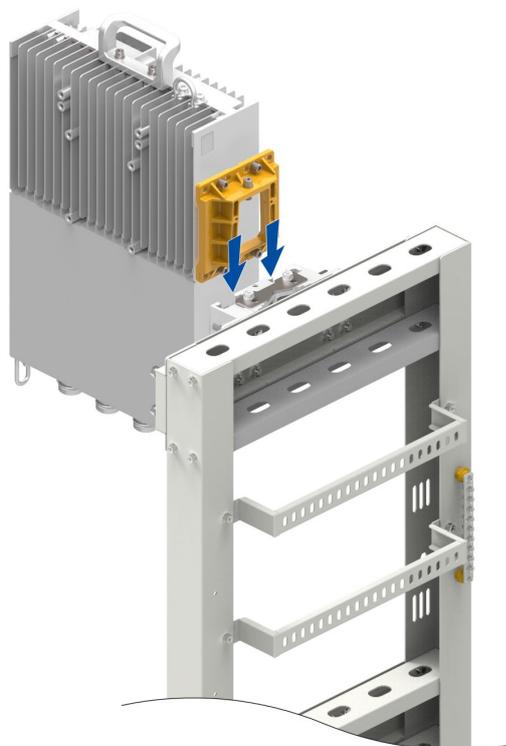
Figure 4-36 Securing the Fixing Clamp

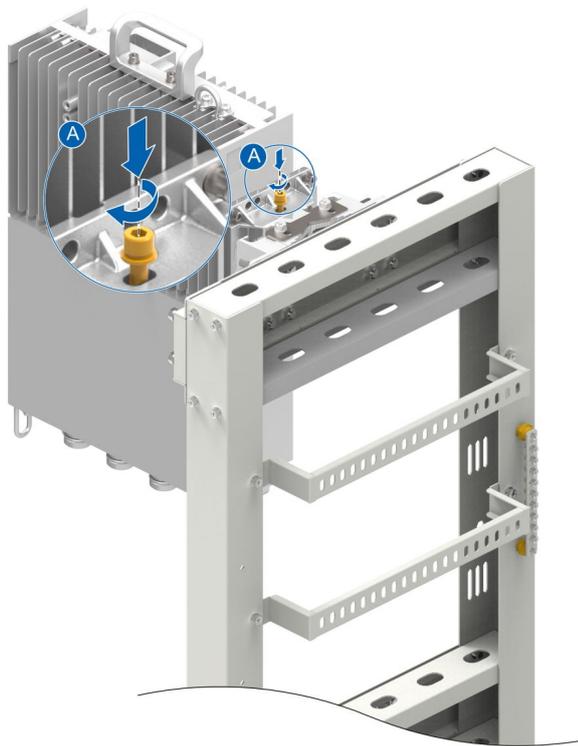


2. Fix the RRU support to the back of the RRU with four M6 screws with a torque of 8 N•m, see [Figure 4-37](#).

Figure 4-37 Installing the RRU Support

3. Install the RRU on the L-shape support along the guide rail of the fixing clamp and tighten the captive screw on the top of the RRU support with an M6 Allen hex wrench, see [Figure 4-38](#).

Figure 4-38 Installing the RRU on the L-shape Support



– End of Steps –

Chapter 5

Cable Installation

Cable List

Item		Local Equipment	Interconnected Equipment
Grounding Cable	External View		
	Connector Type	OT terminal	OT terminal
	Interconnected Port	Local grounding terminal of RRU	Grounding bar
DC Power Cable	External View		
	Connector Type	Tubular terminal	Cold-pressed terminal
	Interconnected Port	Local power terminal of RRU, made on site.	Used to connect DCPD, made on site.
Optical Cable	External View		
	Connector Type	DLC, LC	DLC, FC×2, LC, SC
	Interconnected Port (RRU-BBU)	Cable's RRU end connected to the OPT1	Cable's BBU end connected to the BBU
	External View		
	Connector Type	DLC, LC	DLC, LC
	Interconnected Port (RRU-RRU)	The OPT2 port of the upper-layer RRU	The OPT1 port of the lower-layer RRU
RF Cable	External View		
	Connector Type	DIN-type male connector	DIN-type male connector
	Interconnected Port	ANT port	Antenna's RF port

Item		Local Equipment	Interconnected Equipment
AISG Cable	External View		
	Connector Type	DB15 connector	AISG connector
	Interconnected Port	Local AISG/MON port of RRU	RCU's AISG port of the tunable antenna
MON Cable	External View		
	Connector Type	DB15 connector	Naked cables
	Interconnected Port	Local AISG/MON port of RRU	External monitoring device

Cable Connection Diagram

Figure 5-1 Cable Connection Diagram

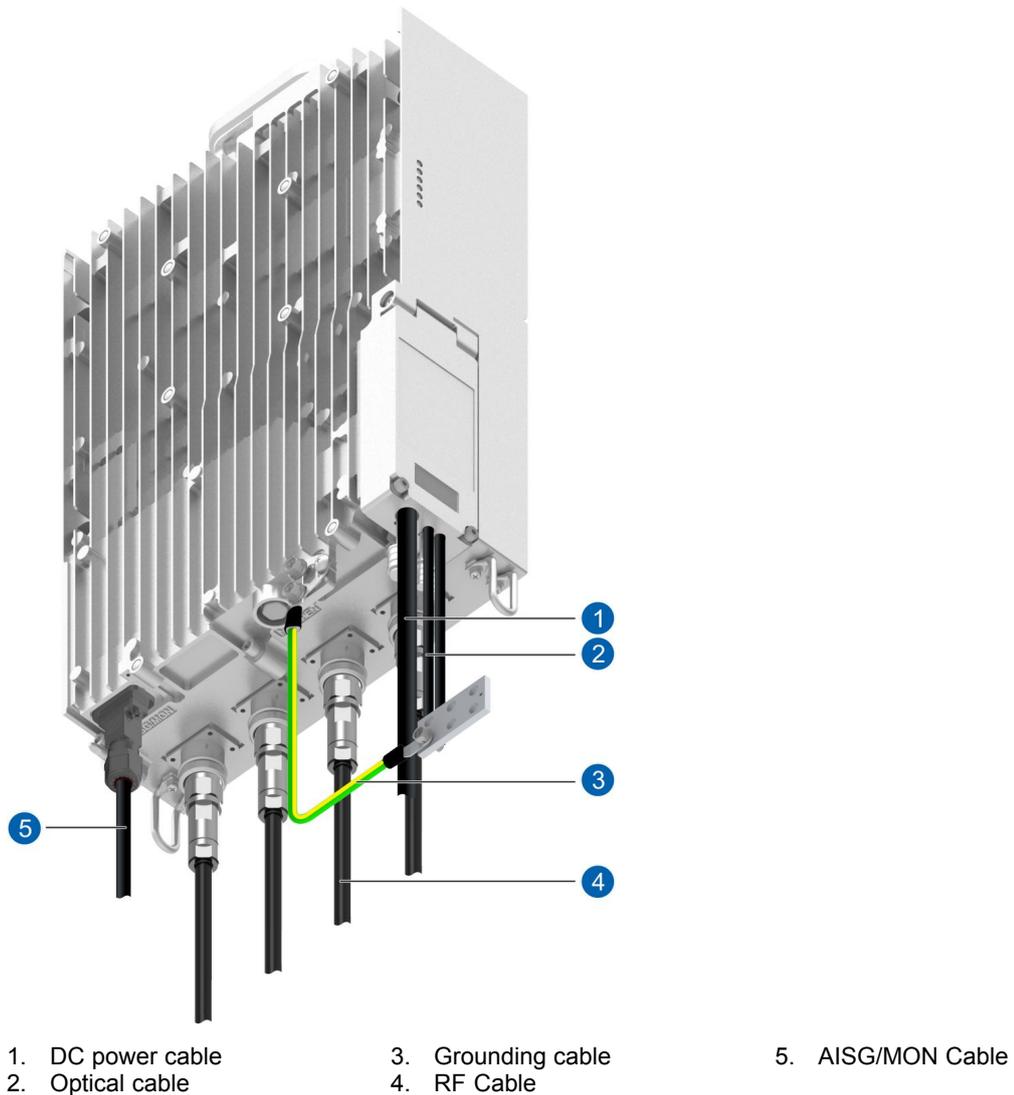


Table of Contents

Installing the Protective Grounding Cable5-3
 Installing Antenna Feeder Cables5-5
 Installing a Monitoring Cable5-7
 Installing the AISG Cable5-8
 Installing the DC Power Input Cable5-10
 Installing an Optical Fiber Cable5-15
 Unused Interface Protection5-18

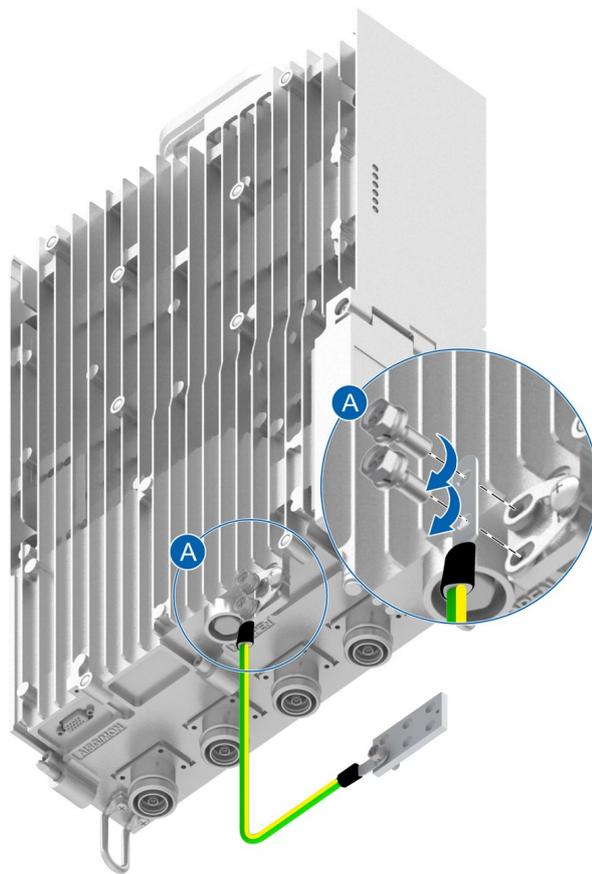
5.1 Installing the Protective Grounding Cable

This procedure describes how to install the protective grounding cable. The protective grounding cable is a copper-core cable with a cross-sectional area of 16 mm².

Steps

1. Route the protective grounding cable from the indoor or outdoor grounding busbar to the RRU.
2. Crimp an OT terminal at the RRU end of the protective grounding cable.
3. Fix one end of the protective grounding cable to the grounding screw at the bottom of the ZXSDR R8854, see [Figure 5-2](#).

Figure 5-2 Connecting the Protective Grounding Cable to the Grounding Busbar (Directly)



Note:

About 30 cm of the cable should droop freely before the cable is routed to the pole or cable tray.

4. Remove the rust on the grounding busbar and crimp an OT terminal at the other end of the protective grounding cable.
5. Connect the other end of the protective grounding cable to the grounding busbar and fix it to a bolt, see [Figure 5-2](#).

6. Bundle and label the cable.
7. Apply antirust paint around the grounding bolts on the grounding busbar.

– End of Steps –

5.2 Installing Antenna Feeder Cables

This procedure describes how to install an antenna feeder cable.

There are two types of antenna feeder cables, antenna feeders and jumpers. The distance between the RRU and the antenna determines how to install an antenna feeder cable. For details, refer to [Table 5-1](#).

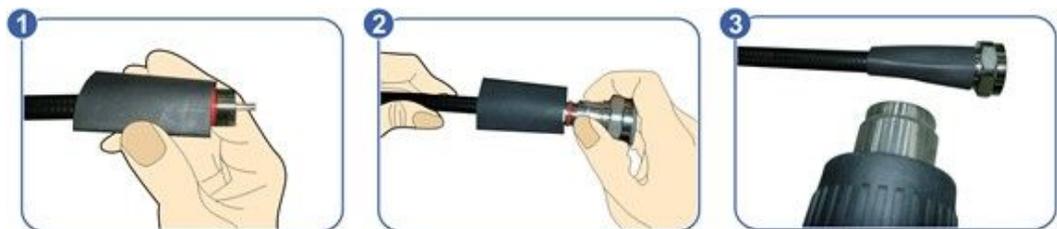
Table 5-1 Antenna Feeder Cable Installation

If...	Then...
The distance between the base station and the antenna is less than five meters	A feeder jumper is used.
The distance between the base station and the antenna is greater than five meters and less than 20 meters	A 1/2" feeder is used.

Steps

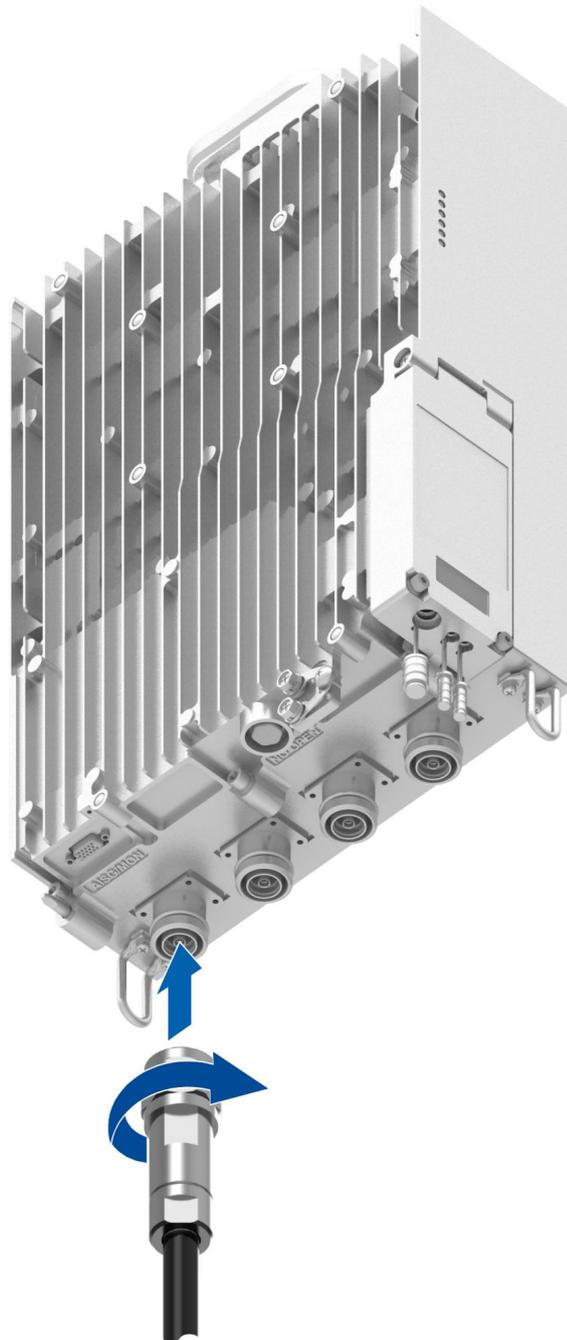
1. (Optional) Install a heat-shrink sleeve on the feeder connector if a feeder connector needs to be made on site, see [Figure 5-3](#).

Figure 5-3 Making a Feeder Connector



If the distance between the base station and the antenna is greater than five meters, both feeders and jumpers are used for connection. In this case, feeder connectors should be made on site.

2. Connect the feeder cable to the antenna feeder interface on the RRU chassis, see [Figure 5-4](#).

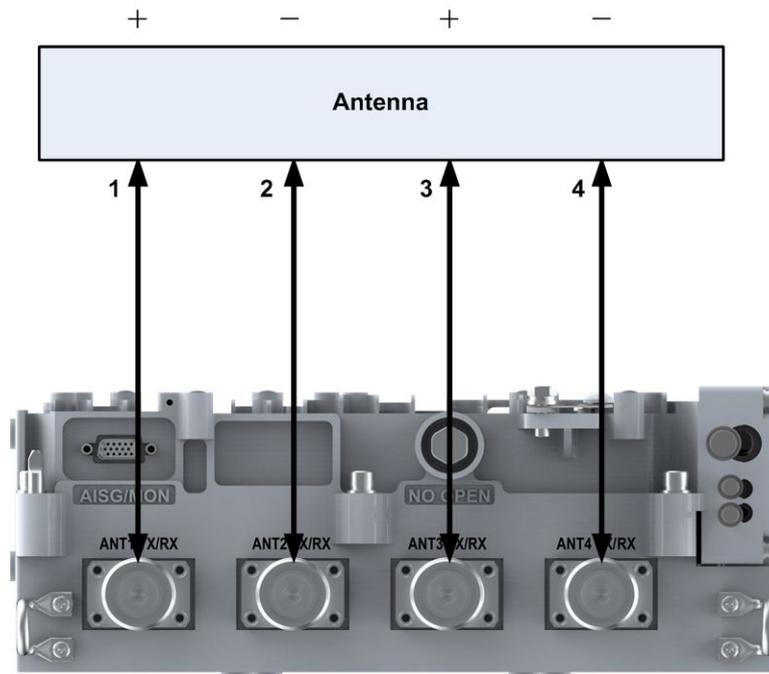
Figure 5-4 Installing Antenna Feeder Cables

3. Fasten the feeder connector clockwise with a adjustable wrench.
4. Protect the cable connectors against water. For details, refer to [Chapter 10 Waterproofing Outdoor Connectors](#).
5. Lay the antenna feeder cable on the antenna side and bind it with black cable ties.

The feeder should be laid vertically at least 200 mm from the lower edge of the device when it is led out from the bottom of the RRU chassis. It should not be bent. The minimum bending radius of the feeder should not be less than 20 times the feeder's radius. It is prohibited to coil the feeder.

6. Connect the other end of the feeder to the ANT interface on the antenna. Take waterproof measures.
7. Label the feeder cable with plastic.
8. Repeat steps 1 through 7 to install other feeder cables, see [Figure 5-5](#).

Figure 5-5 ZXSDR R8854 Antenna Feeder Connection Diagram



– End of Steps –

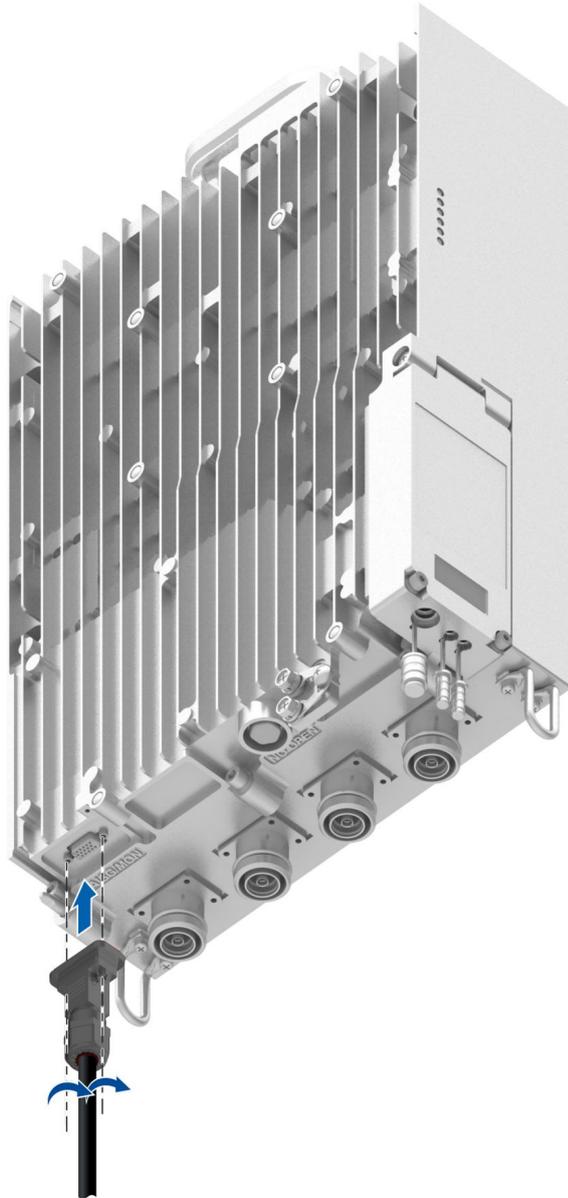
5.3 Installing a Monitoring Cable

This procedure describes how to install a monitoring ([MON](#)) cable.

A monitoring cable is used to connect the dry contact interface of an external monitoring device.

Steps

1. Connect one end of the monitoring cable to the AISG/MON interface at the bottom of the ZXSDR R8854 chassis, see [Figure 5-6](#).

Figure 5-6 Installing a Monitoring Cable

2. Connect the other end of the monitoring cable to the dry contact interface of the external monitoring device.
3. Bundle and label the cable.

– End of Steps –

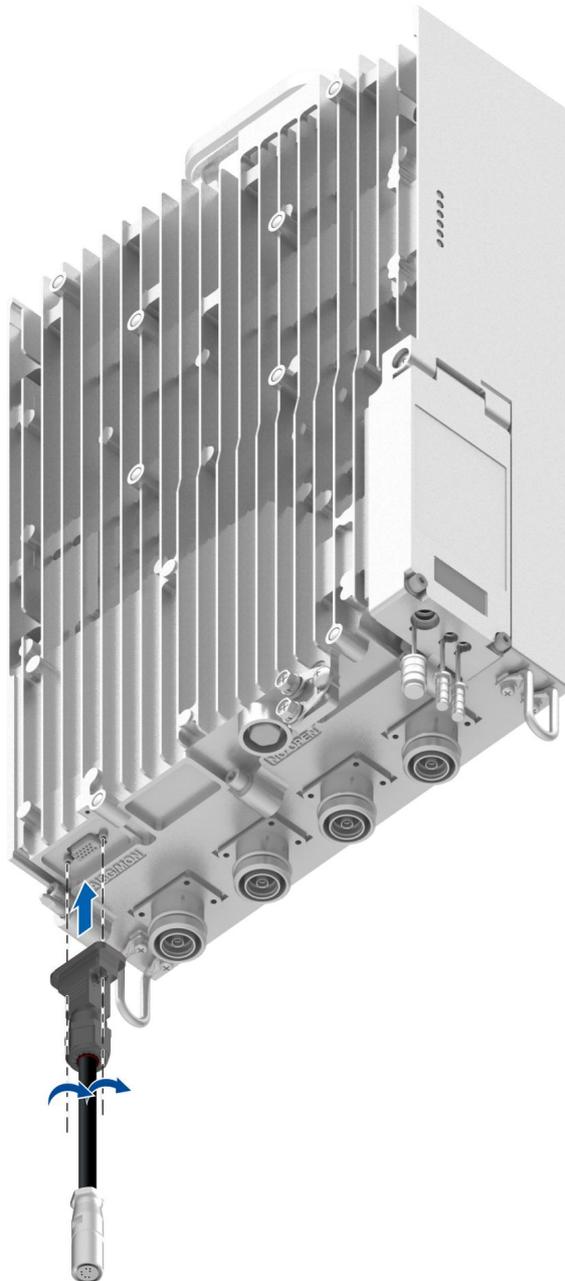
5.4 Installing the AISG Cable

An [AISG](#) cable between the RF module and an RET antenna is used to transmit the signals to or from the RET antenna.

Steps

1. Connect one end of the AISG interface cable to the AISG/MON port on the ZXSDR R8854, see Figure 5-7.

Figure 5-7 Installing the AISG Cable



2. Connect the other end to the AISG port on the RET antenna.
3. Bundle and label the cable.

– End of Steps –

5.5 Installing the DC Power Input Cable

This procedure describes how to install the DC power input cable.

Context

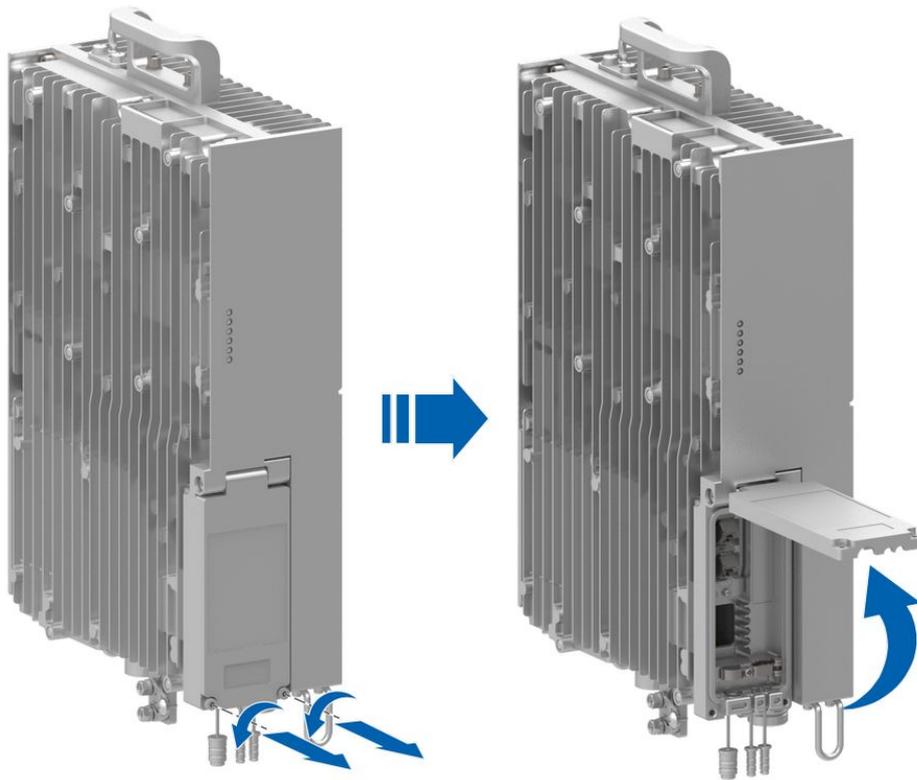
The ZXSDR R8854 DC power connector supports power cables with the sectional area of 4 mm² or 6 mm². If the power cable with the sectional area of 10 mm² or 16 mm² must be used because the distance between the ZXSDR R8854 and an external power supply is too long, a DC junction box (ODCPD1) is needed to connect the power cable to that with the section area of 4 mm² or 6 mm². For how to install the DC junction box (ODCPD1), refer to [Chapter 9 Installing the DC Junction Box](#).

Steps

Open the maintenance window

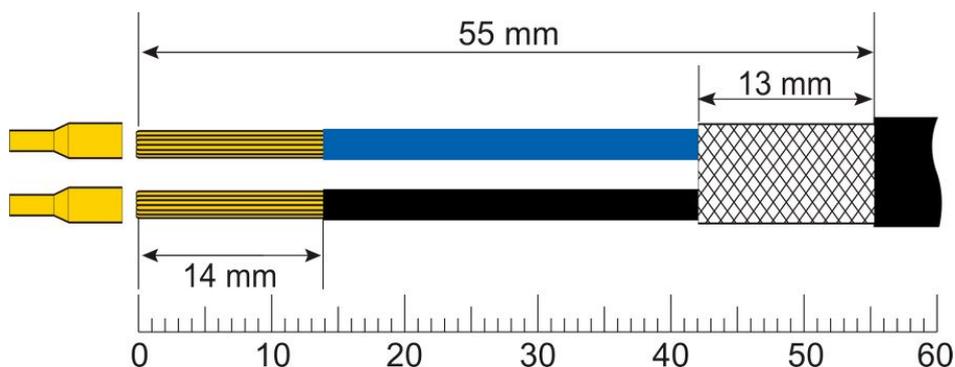
1. Open the maintenance window at the side of the ZXSDR R8854, see [Figure 5-8](#).

Figure 5-8 Open the maintenance window

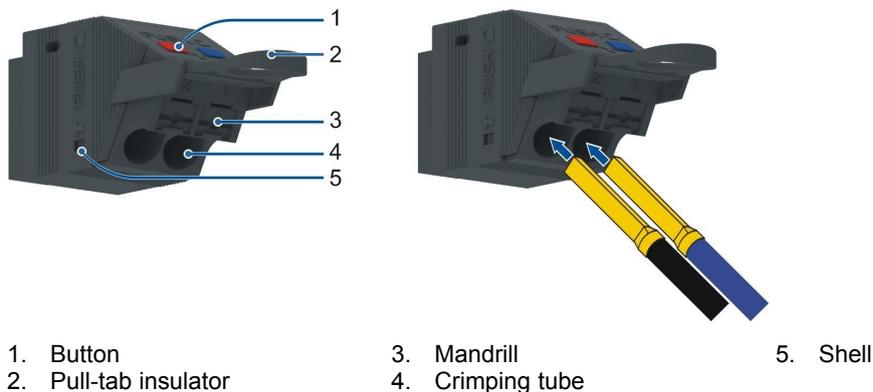


Making the Power Cable Connector

2. Follow the maintenance window diagram to tailor the naked shielding layer, child cables, and naked copper cores. Sheathe the tailored cooper cores with tubular terminals and use the crimping pliers to crimp these tubular terminals, see [Figure 5-9](#).

Figure 5-9 Wire stripping the power cable

3. Pass the tubular terminal round the trimmed bare copper core and crimp the tubular terminal with the crimping pliers.
4. Confirm the polarity of the power connector's socket connected to the power cable.
5. Use the screwdriver to press the mandrill until it cannot rebound and stuff the tubular terminals into the crimping tube, see [Figure 5-10](#). It is required that the leading ends of conductors be completely inserted and have a close contact with the inner bottom of the connector's plug.

Figure 5-10 Insert the crimped tubular terminal

1. Button
2. Pull-tab insulator

3. Mandrill
4. Crimping tube

5. Shell



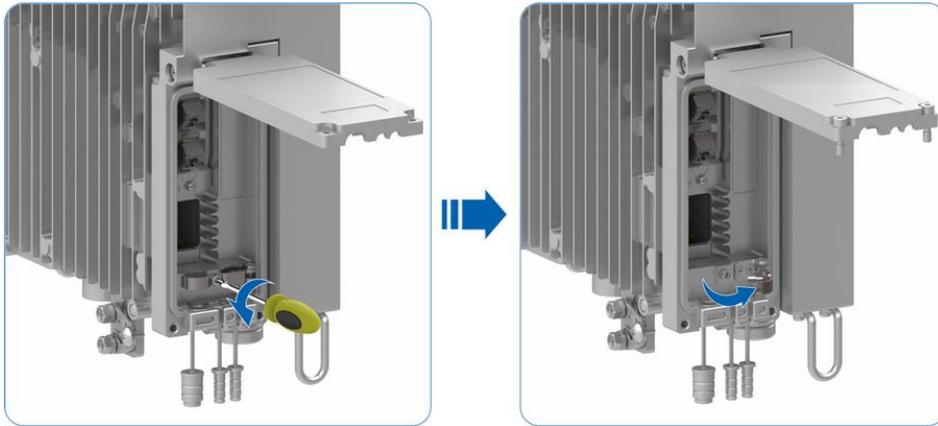
Standard assembly requires that tubular terminals cannot be pushed forward any more.

6. Press the red and blue buttons (you may use tools like screwdriver but are not allowed to use heavy tools like hammer, or the plug may be managed). The mandrill ejects automatically. If you pull the conductor with your hand but it does not fall down, it indicates the conductor is installed securely.

Connecting Power Cable on the RRU

7. In the maintenance window, use the cross screwdriver to unscrew the crimping clip and remove the waterproof plug, see [Figure 5-11](#).

Figure 5-11 Unscrew the crimping clip



8. Insert the conductor plug into the power port inside the maintenance window, see [Figure 5-12](#). Push the plug forward until you hear the sound of "click". If you shake the plug shell but it does not loosen or fall down (you are not allowed to pull the plug's pull-tab at this time), it indicates that the plug is installed securely and locked closely.

Figure 5-12 Insert the power cable



9. Use the crimping clip to crimp the naked part of the shielding layer, secure the power cable at the original waterproof plug, and ensure that the naked part has a close contact with the crimping clip.

**Note:**

The top edge of the power cable's black outer sheath shall align with the bottom edge of the crimping clip and shall not be lower than the top edge of the card slot.

10. Wrap the power cable along the pole or cable tray and use black ties to bundle and secure it.

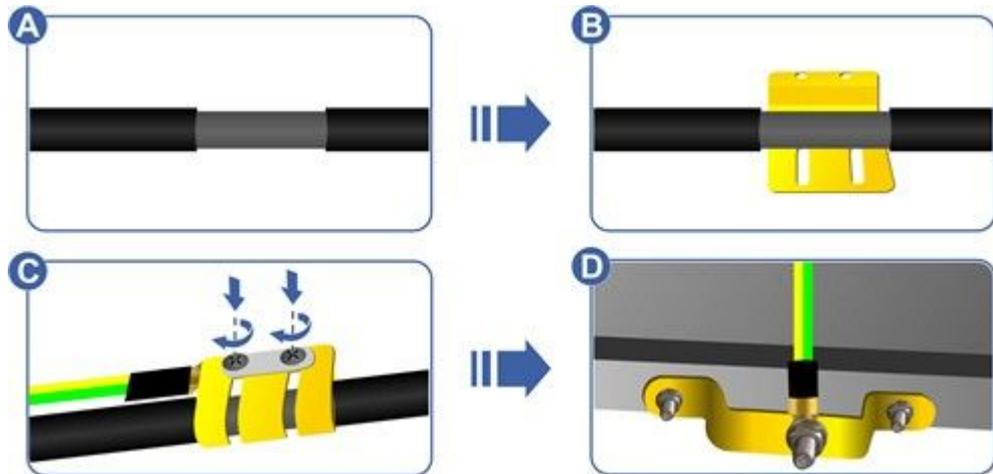
If the DC Junction Box (ODCPD1) is equipped, refer to [Chapter 9 Installing the DC Junction Box](#).

Earthing the Power Cable

11. Connect the power cable to the grounding busbar through a grounding kit based on the location of the baseband cabinet connected to the other end of the power cable, see [Figure 5-13](#).

If...	Then...
The baseband cabinet is installed outdoors	Connect the power cable to the outdoor grounding busbar through the grounding kit before the cable is led into the cable inlet hole of the outdoor cabinet.
The baseband cabinet is installed indoors	<p>Connect the power cable to the grounding busbar through the grounding kit before the cable is led into the room and near the feeder window.</p> <ul style="list-style-type: none"> ● Protect the grounding kit against water with the "1+3+3" solution if the power cable is earthed before being led into the feeder window, refer to Chapter 10 Waterproofing Outdoor Connectors. ● Wind the grounding kit with two layers of insulating tape if the power cable is earthed after being led into the feeder window. The grounding cable is connected to the outdoor grounding busbar.

Figure 5-13 Connecting the Power Cable to the Grounding Kit



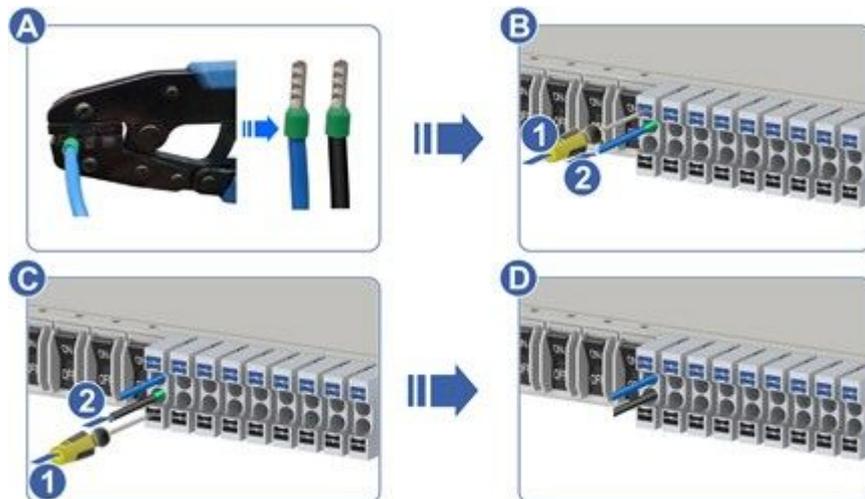
Note:

When a grounding kit is used, the angle between the grounding cable and the power cable cannot be upward or be greater than 15 degrees. If the grounding kit is away from the feeder window, the grounding cable should be routed toward the feeder window along the downward direction of the power cable.

Connecting the Power cable of the Power Supply Equipment

12. Use a tubular terminal to make the connector of the AC power cable at the BBU side, and then connect the AC power cable to the DC output port of the DCPD, see [Figure 5-14](#).

Figure 5-14 Connecting the Power Cable to the DCPD



When you make the connector of the DC power cable, cut off the exposed shielded layer after stripping off the cable end and bind the connector with a heat shrink tube or insulating tape.

- Label the power cable at both ends.

– End of Steps –

5.6 Installing an Optical Fiber Cable

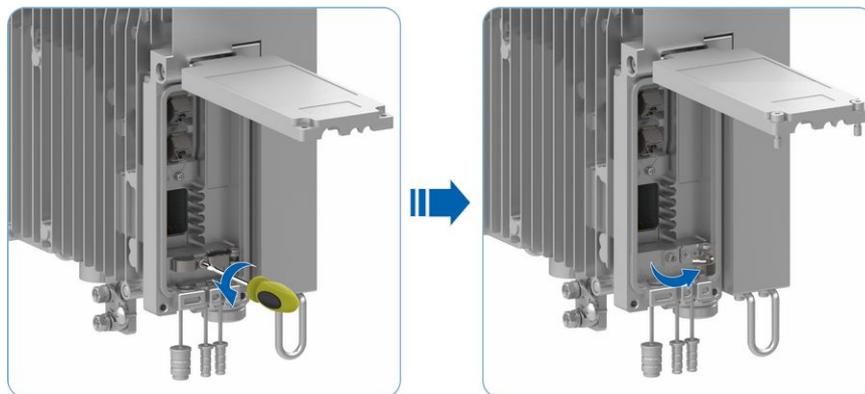
This procedure describes how to install an optical fiber cable.

Steps

Installing Optical Fiber

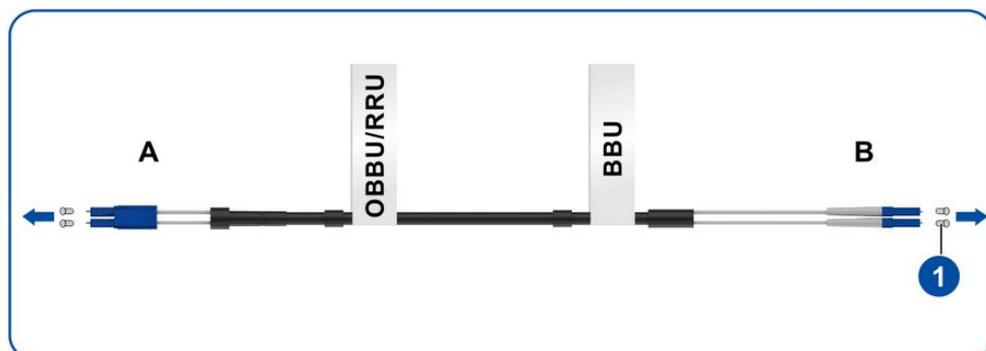
- Open the crimping clip at the left side of the maintenance window, see [Figure 5-15](#).

Figure 5-15 Open the crimping clip



- Remove the cable tie at one end of the corrugated pipe marked as "RRU" by using the diagonal pliers.
- Remove the white dust cap of the optical cable connector, see [Figure 5-16](#).

Figure 5-16 Remove the white dust cap



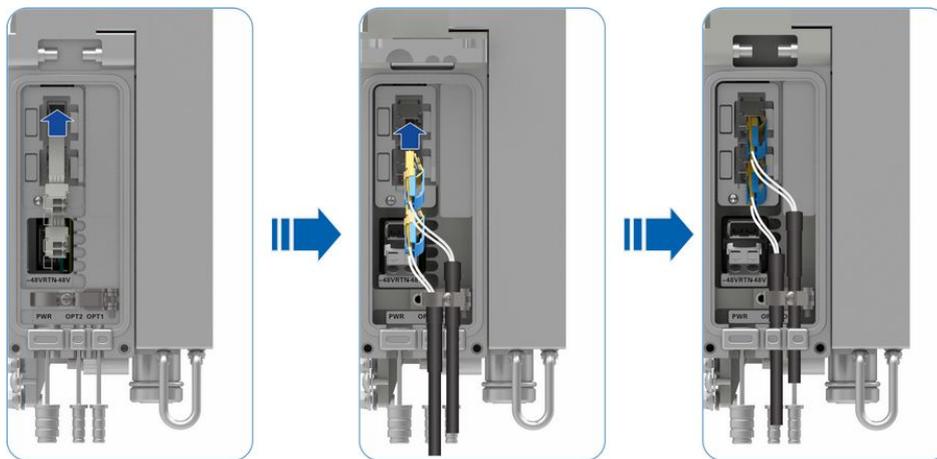
- White dust cap

**Note:**

Do not remove the dust cap during the storage, transportation, and routing before installation.

4. Insert the optical module into the ports OPT1 and OPT2 of the RRU. Align the connector with the optical interface module, and insert it. When you hear the sound of "bang", it indicates that the optical cable connector is installed properly, see [Figure 5-17](#).

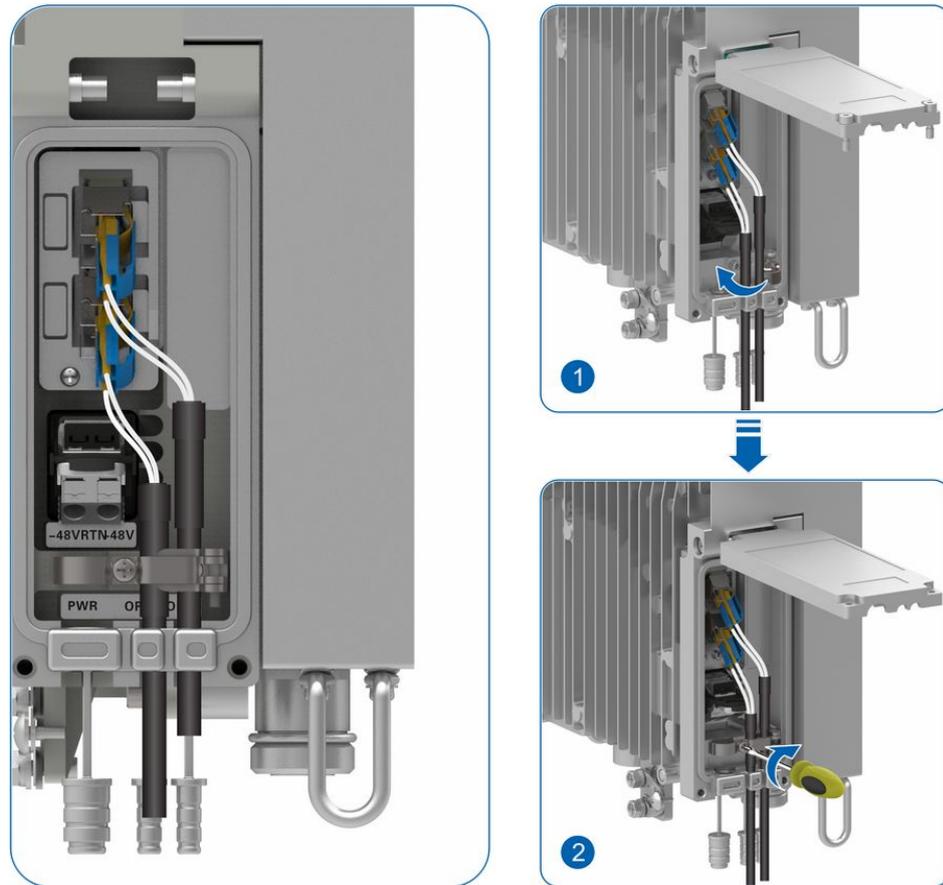
Figure 5-17 Insert the optical cable

**Note:**

In the case of cascaded connection with RRUs, use an optical fiber for cascading connection to connect the OPT2 port of upper-level RRU and the OPT1 port of lower-level RRU.

5. Secure the optical cable at the crimping clip in the wiring cavity, see [Figure 5-18](#).
In the case of one optical cable, install it to the outgoing slot at the right side and use a waterproof rubber plug to block the other slot.

Figure 5-18 Secure the optical cable



Note:

In the maintenance window, there shall be a certain arc between the optical cable connector and the optical cable. The bending radius shall be larger than 40 mm.

6. Bundle and fix the optical fiber cable.

The outdoor optical fiber cable should be laid vertically at least 200 mm from the lower edge of the device when it is led out from the bottom of the RRU chassis. The optical fiber cable should not be bent. The optical fiber cable is then fixed onto the pole or cable tray. Coil the excess part of the optical fiber cable in a diameter of 300 mm to 400 mm and then bind the fiber coil to an appropriate position (for example, the wire spool on the BBU) with black cable ties.

7. Remove the cable tie at one end of the corrugated pipe marked as "BBU" by using the diagonal pliers and install it to the optical junction box or BBU.

8. Hang the plastic label of optical cable.

Close the maintenance window

-
- Put the remaining waterproof plugs back to their original positions after installing all power cables and fibers. Close the panel of maintenance window and install the screws securely to avoid water penetration.
-

**Caution!**

The screws must be fastened to prevent water intrusion.

– End of Steps –

5.7 Unused Interface Protection

After installing all cables, you need to protect all unused interfaces on the ZXSDR R8854.

Steps

- Check an unused interface.

Check whether an unused interface is covered with a dustproof cap. If not, cover it with a dustproof cap.

- Waterproof a dustproof cap.

Wrap it with a black double-layer ultraviolet-proof tape: the first layer from top down, the second layer from bottom up according to the direction of tightening the interface. Make sure that the wrapped tape is flush with the lower surface of the cap. Tighten the edge of the tape with a cable tie.

– End of Steps –