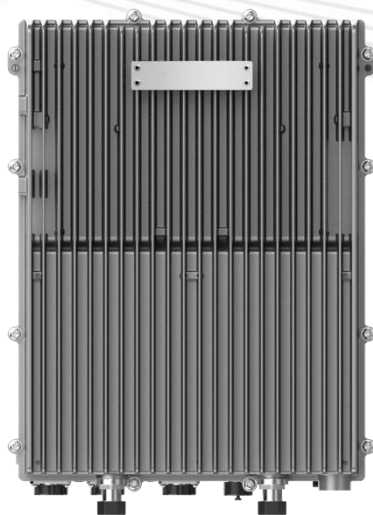


RU2431 User Manual



1. Installation and Connection

1.1 Equipment Shape and Interface

The overall appearance of the RRU is shown in Figure 1-1.



Figure 1-1 Overall Appearance

Front Panel is shown in Figure 1-2.

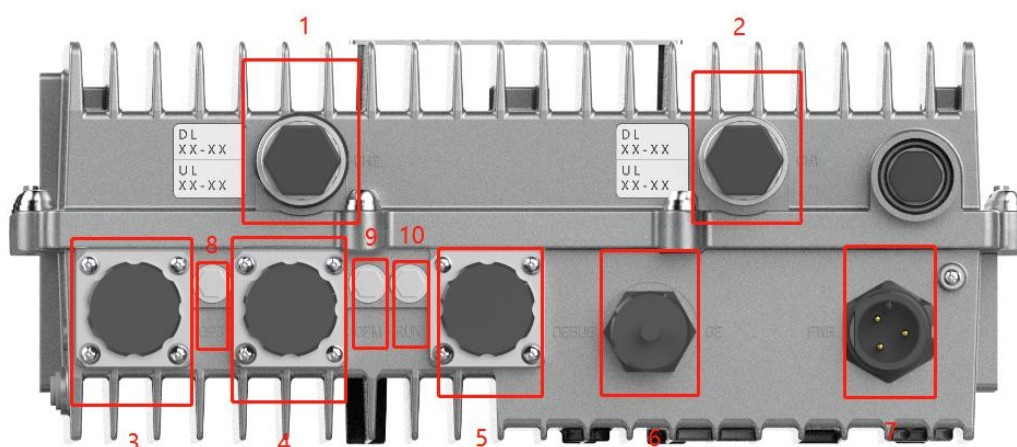


Figure 1-2 Front Panel

No.	Interface Name	Description
1	CH1	LTE RF output port 1
2	CH2	LTE RF output port 2
3	OPS	Optical Port_Slave
4	OPM	Optical Port_Master
5	DEBUG	Ethernet Debug Port

6	GE	Alarm Output Port
7	PWR	Power Connector
8	OPS	OPS Indicator
9	OPM	OPM Indicator
10	RUN	System Running Indicator

1.2 Installation Preparation

Before starting to install the RRU, the following conditions must be confirmed:

A computer with a 10/100/1000Base-TX adaptive fast Ethernet card and a network cable.

The IP address of the computer's Ethernet card is in the same network segment as the device configuration.

It is recommended to use a browser of Microsoft IE 6.0 or above.

1.3 Device Connection

The working connection of the RRU is shown in the Figure 1-3 below.

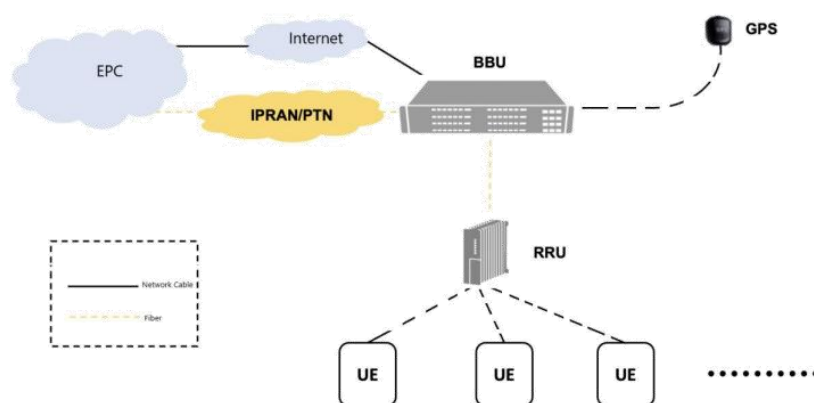


Figure 1-3 Device Connection Diagram

⚠ Place the GPS near a window with a clear view of the sky for better satellite identification.

1.4 Installation Rules

When installing the RRU, the following principles and precautions must be observed:

- The installation location of the equipment should meet the engineering design requirements.
- Install the equipment vertically on the wall to ensure the convenience and aesthetics of the installation. The unused outlet holes should be protected with corresponding plugs.

- Install the equipment in a place that is well ventilated, dry, and conducive to heat dissipation. Do not place it in or near a place with a heat source.
- Install the equipment in a place where there is no direct sunlight or less direct sunlight, such as a shaded place. Do not place at the smoke outlet pipe, or in a place where water passes through, such as a water pipe.
- Keep away from pollution sources and install the equipment at least 1km away from chemical plants and seaside salt lakes.
- The strength of the equipment installation should be able to withstand an earthquake of magnitude 8.

1.5 RRU Installation

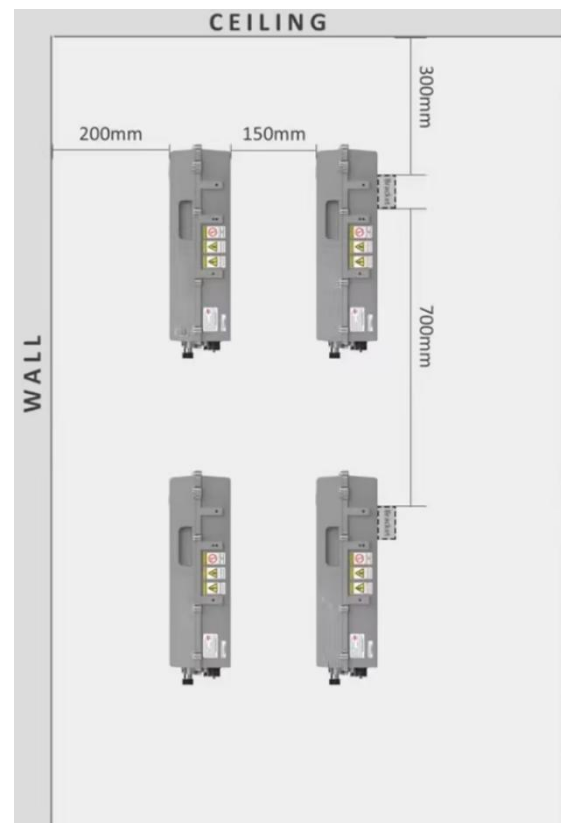
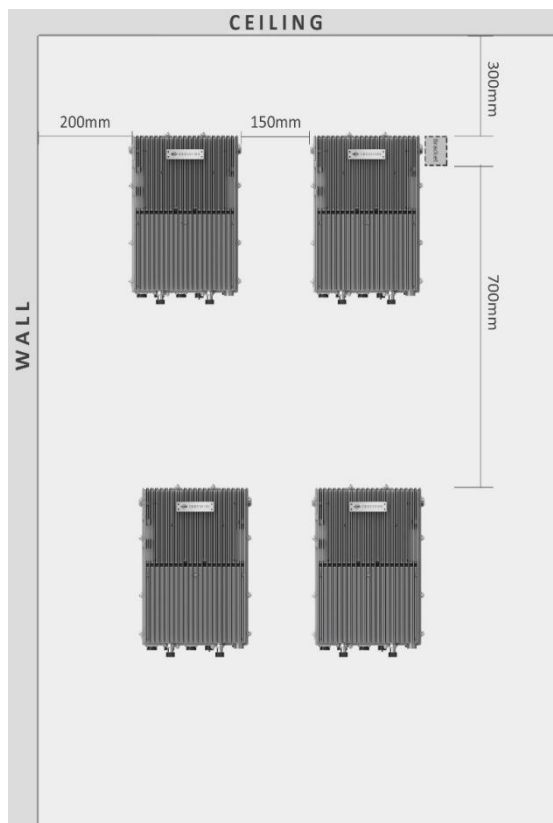
1.5.1 Installation Accessories

The installation accessories are shown in Table 1-1. Users can use a combination of different accessories according to the installation scenario.

① Nut M10		② Screw M6×14		③ Flat Washer M10		④ Spring Washer M10	
							
⑤ Handle				⑥ Expansion Bolt M10×90			
							
⑦ Optical Transceiver FTLX2071D327 Optical Transceiver FTLX2071D333		⑧ HPRU Mounting Bracket I		⑨ HPRU Mounting Bracket II			
							
⑩ AC Power Lead 2.5m							
							
⑪ Ground Wire 2m							
							

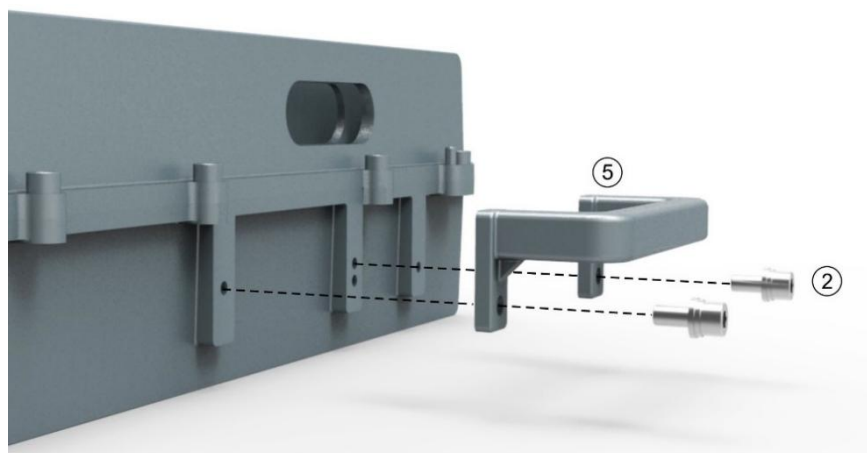
Table 1-1 List of Accessories

1.5.2 Installation Space

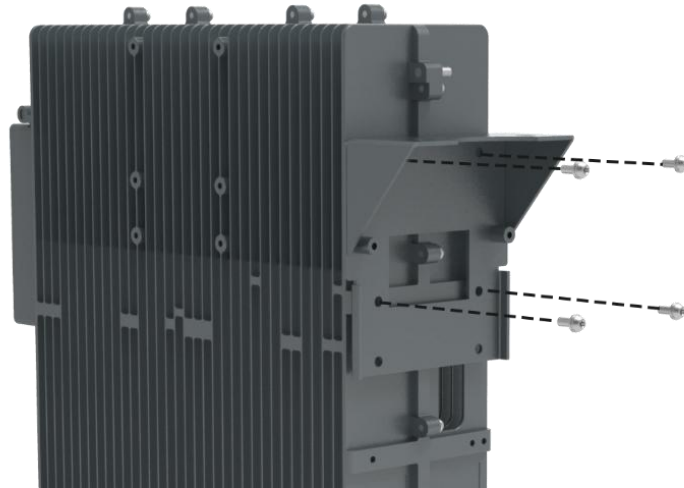


1.5.3 Wall Mounting (Back Against the Wall)

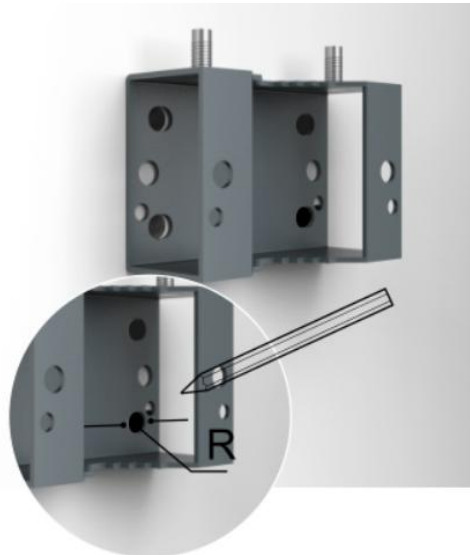
1. Attach the [5] Handle to the side of the device with [2] M6*14 Screws using the T5 wrench.



2. Fix the [8] Mounting Bracket I on the back of the device with [2] M6*14 Screws using the T5 wrench.



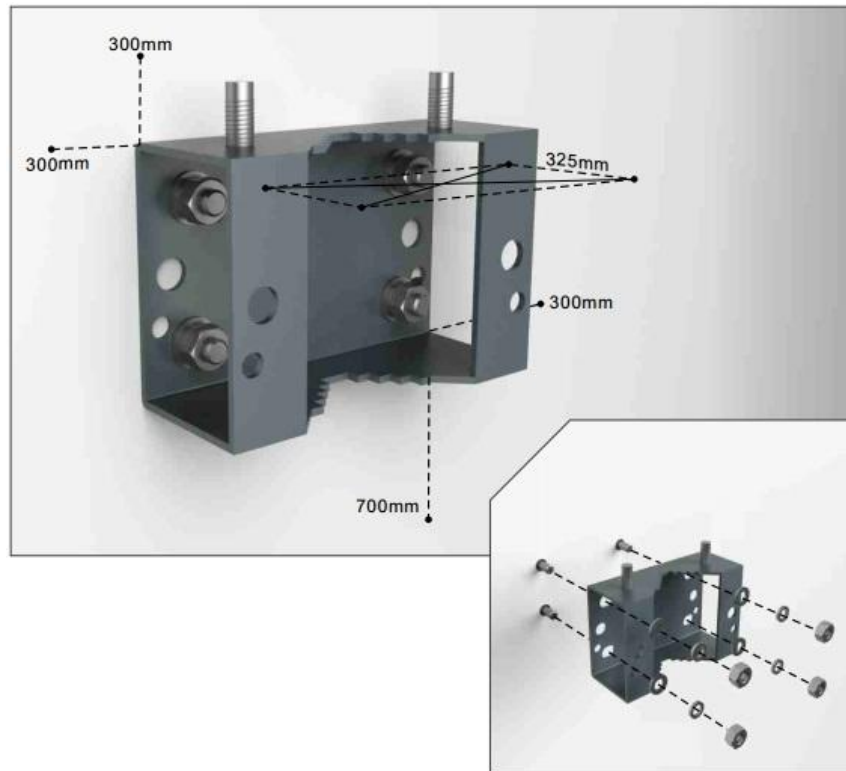
3. Put the [9] Mounting Bracket II on the wall and mark the position of the drilled holes.
Note: R=13mm.



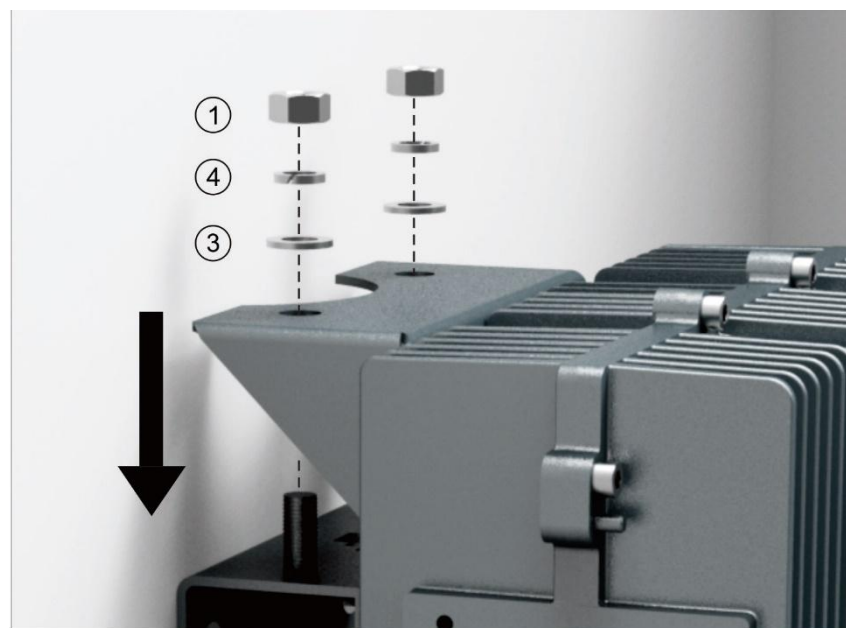
4. Drill 4 holes at the marked positions. Note: H=70mm



5. Use the hammer drill to fix the [6] Expansion Bolts to the wall.
Note: If you need to install multiple devices at the same time, you can use [9] Mounting Bracket II as a reference to control the distance of each device.



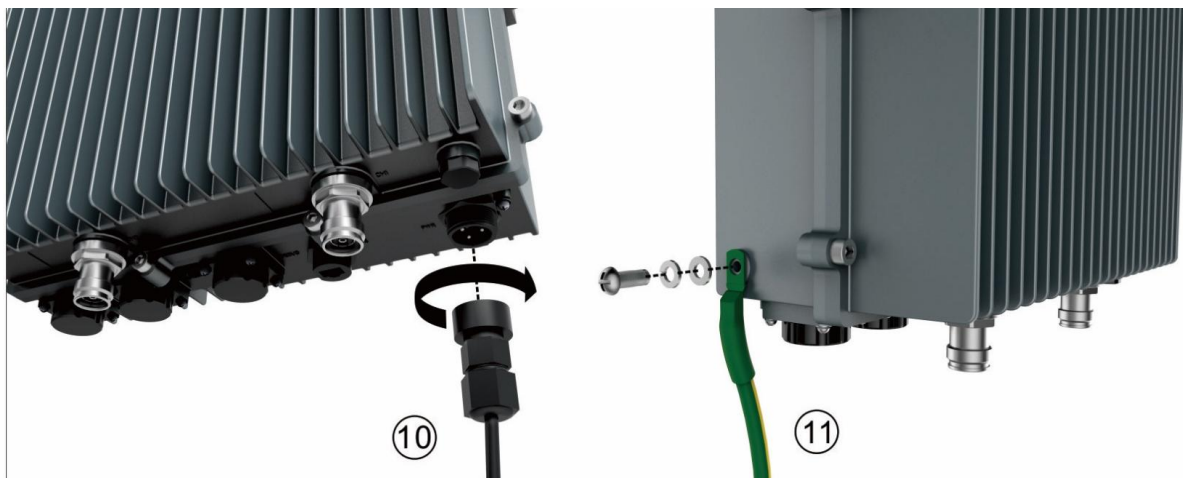
6. Hang the device vertically on the [9] Mounting Bracket II and fix it with [1] M10 Nuts, [3] M10 Flat Washers, and [4] M10 Spring Washers.



7. Connect the [8] Mounting Bracket I to [9] Mounting Bracket II by using [2] M6*14 Screws.



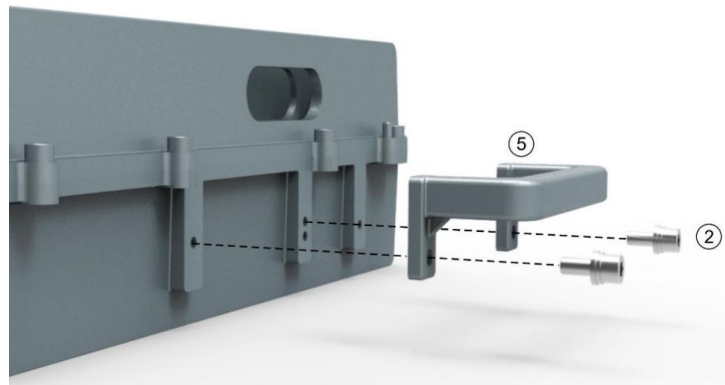
8. Connect and tighten the [10]Power Lead and [11] Ground Wire on the the device.



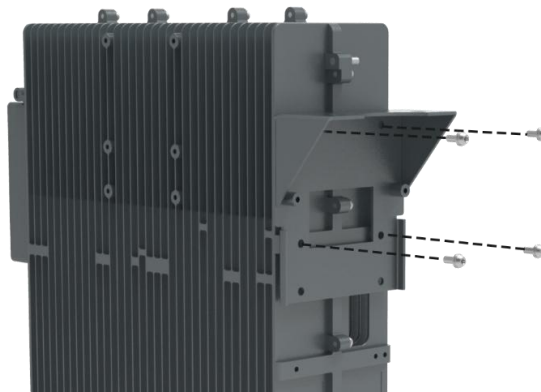
1.5.4 Wall Mounting (Side Mounting)

1. Attach the [5] Handle to the side of the device with [2] M6*14 Screws using the T5

wrench.

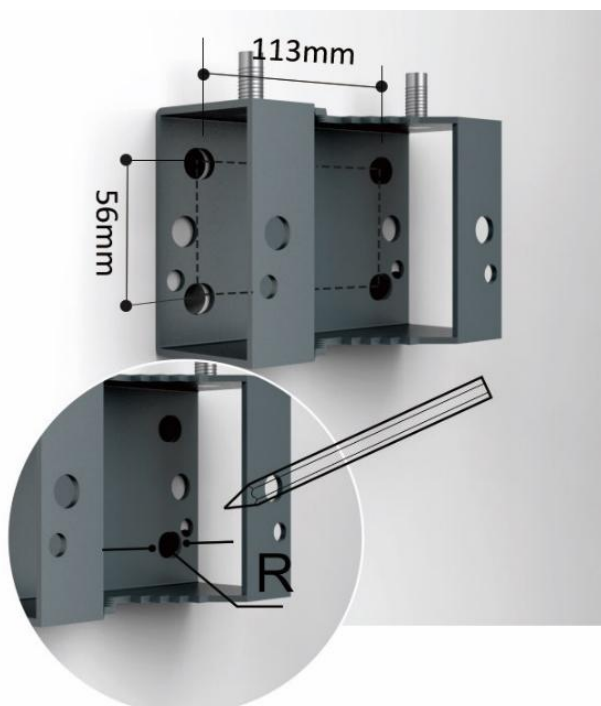


2. Fix the [8] Mounting Bracket I on the left of the device with [2] M6*14 Screws using the T5 wrench.

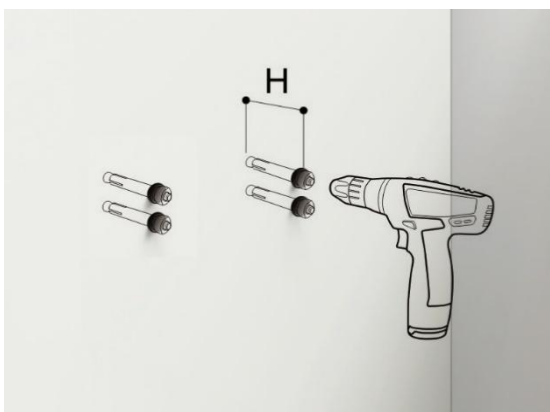


3. Put the [9] Mounting Bracket II on the wall and mark the position of the drilled holes.

Note: R=13mm.

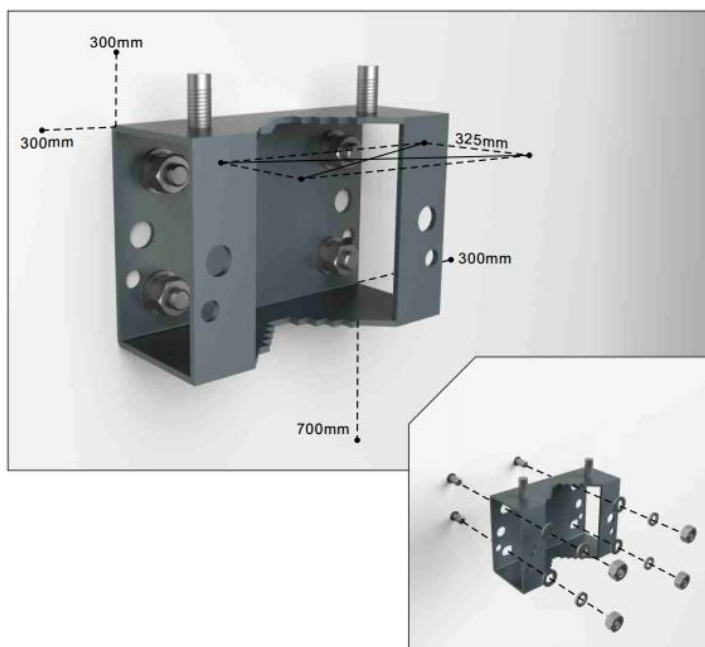


4. Drill 4 holes at the marked positions. Note: H=70mm

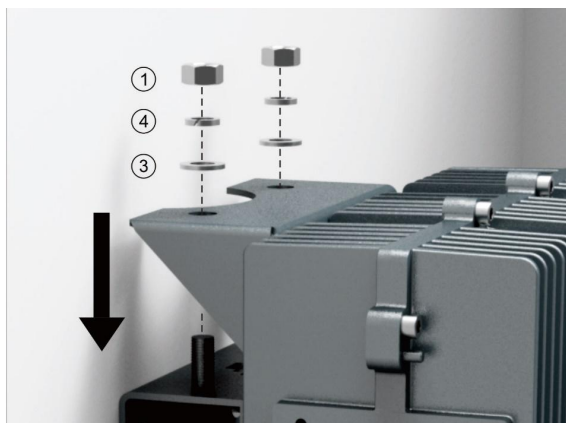


5. Use the hammer drill to fix the [6] Expansion Bolts to the wall.

Note: If you need to install multiple devices at the same time, you can use [9] Mounting Bracket II as a reference to control the distance of each device.



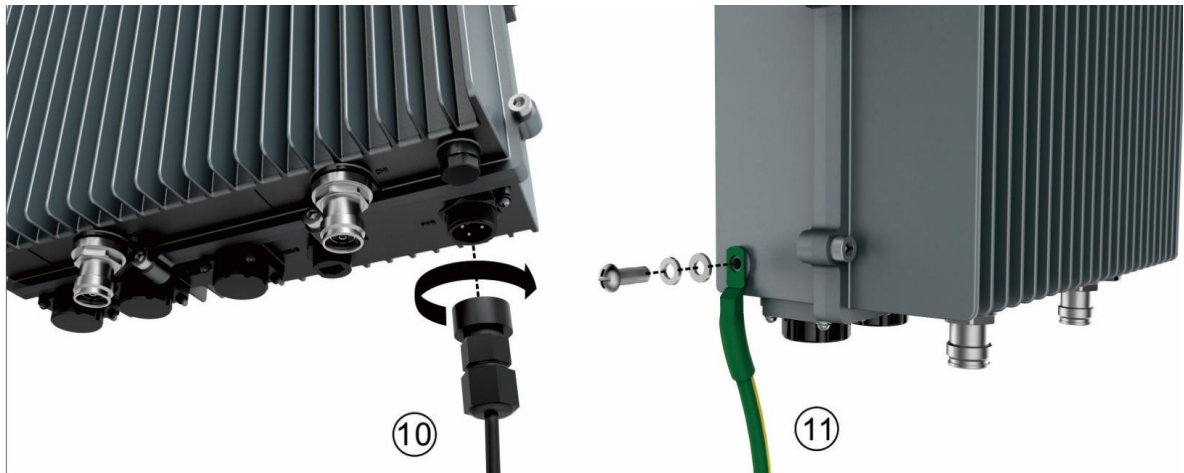
6. Hang the device vertically on the [9] Mounting Bracket II and fix it with [1] M10 Nuts, [3] M10 Flat Washers, and [4] M10 Spring Washers.



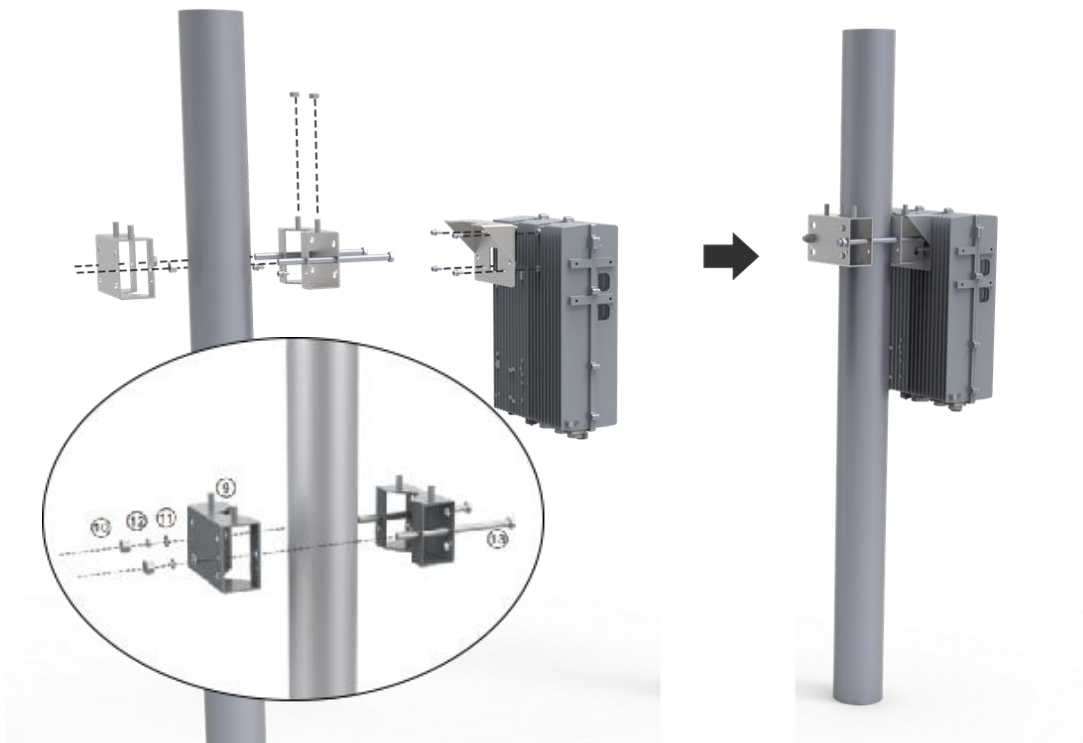
7. Connect the [8] Mounting Bracket I to [9] Mounting Bracket II by using [2] M6*14 Screws.



8. Connect and tighten the [10] Power Lead and [11] Ground Wire on the the device.



1.5.5 Pole Installation



2. RRU Network Configuration

2.1 Setting Up the Client Computer

Before logging in to the Web client, you must first set the IP address in the client computer to ensure that the client computer is connected to the RRU. Take Windows 10 as an example.

1. Click "Start > Control Panel" and click "Network and Internet" in the pop-up window.
2. Click "View network status and tasks" and click "Local Area Connection" in the pop-up window.
3. In the pop-up "Local Area Connection Status" dialog box, click "Properties", and then you will see the "Local Area Connection Properties" window.
4. Select "Internet Protocol Version 4 (TCP/IPv4)" and then click "Properties", you will see a pop-up window as shown in Figure 2-1.
5. Check "Use the following IP address" and enter the IP address, Subnet mask and default gateway, and click "OK".

IP address: 10.7.3.xxx (Recommended value is 100~199);

Subnet mask: 255.0.0.0;

Default gateway: Optional.

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

☐ Obtain an IP address automatically
☒ Use the following IP address:

IP address:
 Subnet mask:
 Default gateway:

☐ Obtain DNS server address automatically
☒ Use the following DNS server addresses:

Preferred DNS server:
 Alternate DNS server:

☐ Validate settings upon exit

Advanced...

OK Cancel

Figure 2-1 Setting Client IP Address

6. Perform ping 10.7.3.200 in a command line window to check the network connectivity between the client computer and the RRU.

2.2 Login Web Maintenance Page

Enter https://10.7.3.200 in the browser address bar to open the web client login page. 10.7.3.200 is the initial IP address of the WAN interface. Enter your username, password to login. The username and password are “admin”.

3. Parameters Configuration

3.1 Overview

Search

Engineering

Engineering / Carrier Configuration

Carrier									
Carrier	UL Centre Frequency (MHz)	DL Centre Frequency (MHz)	Bandwidth Select	DL Max Power (dBm)	UL enable	DL enable	UL Baseband Power (dBm)	DL Baseband Power (dBm)	
☐ Carrier 0	120	2110	20MHz	43	ENABLED	ENABLED	-100	-60	
☐ Carrier 1	120	2110	20MHz	43	ENABLED	ENABLED	-100	-60	
☐ Carrier 2	120	2110	20MHz	43	ENABLED	ENABLED	-100	-60	
☐ Carrier 3	120	2110	20MHz	43	ENABLED	ENABLED	-100	-60	

Module Info									
Module	Radio Info Check	UL Freq_low (MHz)	UL Freq_high (MHz)	DL Freq_low (MHz)	DL Freq_high (MHz)	Option1	Option2	Option3	Option4
☐ Module 1	Invalid	2575	2615	2575	2615	C0	Null	Null	Null
☐ Module 2	Invalid	2575	2615	2575	2615	C1	Null	Null	Null

General

Band Configuration Update

Update

3.2 Carrier Configuration

Modify the settings for Carrier 0, 1, 2 and 3 simultaneously.

Search Engineering x Engineering / Carrier Configuration

Carrier Configuration

Carrier	UL Centre Frequency (MHz)	DL Centre Frequency (MHz)	Bandwidth Select	DL Max Power (dBm)	UL enable	DL enable	UL Baseband Power (dBm)	DL Baseband Power (dBm)
Carrier 0	120	2110	20MHz	43	ENABLED	ENABLED	-100	-60
Carrier 1	120	2110	20MHz	43	ENABLED	ENABLED	-100	-60
Carrier 2	120	2110	20MHz	43	ENABLED	ENABLED	-100	-60
Carrier 3	120	2110	20MHz	43	ENABLED	ENABLED	-100	-60

Module Info

Module	Radio Info Check	UL Freq_low (MHz)	UL Freq_high (MHz)	DL Freq_low (MHz)	DL Freq_high (MHz)	Option1	Option2	Option3	Option4
Module 1	Invalid	2575	2615	2575	2615	C0	Null	Null	Null
Module 2	Invalid	2575	2615	2575	2615	C1	Null	Null	Null

General

Band Configuration Update Update

Search Engineering x Engineering / Carrier Configuration

Carrier Configuration

Carrier	UL Centre Frequency (MHz)	DL Centre Frequency (MHz)	Bandwidth Select	DL Max Power (dBm)	UL enable	DL enable	UL Baseband Power (dBm)	DL Baseband Power (dBm)
Carrier 0	120	2110	20MHz	43	ENABLED	ENABLED	-100	-60
Carrier 1	120	2110	20MHz	43	ENABLED	ENABLED	-100	-60
Carrier 2	120	2110	20MHz	43	ENABLED	ENABLED	-100	-60
Carrier 3	120	2110	20MHz	43	ENABLED	ENABLED	-100	-60

Module Info

Module	Radio Info Check	UL Freq_low (MHz)	UL Freq_high (MHz)	DL Freq_low (MHz)	DL Freq_high (MHz)	Option1	Option2	Option3	Option4
Module 1	Invalid	2575	2615	2575	2615	C0	Null	Null	Null
Module 2	Invalid	2575	2615	2575	2615	C1	Null	Null	Null

General

Band Configuration Update Update

Search Engineering x Engineering / Carrier Configuration

Carrier Configuration

Carrier	UL Centre Frequency (MHz)	DL Centre Frequency (MHz)	Bandwidth Select	DL Max Power (dBm)	UL enable	DL enable	UL Baseband Power (dBm)	DL Baseband Power (dBm)
Carrier 0	120	2110	20MHz	43	ENABLED	ENABLED	-100	-60
Carrier 1	120	2110	20MHz	43	ENABLED	ENABLED	-100	-60
Carrier 2	120	2110	20MHz	43	ENABLED	ENABLED	-100	-60
Carrier 3	120	2110	20MHz	43	ENABLED	ENABLED	-100	-60

Module Info

Module	Radio Info Check	UL Freq_low (MHz)	UL Freq_high (MHz)	DL Freq_low (MHz)	DL Freq_high (MHz)	Option1	Option2	Option3	Option4
Module 1	Invalid	2575	2615	2575	2615	C0	Null	Null	Null
Module 2	Invalid	2575	2615	2575	2615	C1	Null	Null	Null

General

Band Configuration Update Update

4. Parameters Inquiry

4.1 Uplink and Downlink Baseband Power Inquiry

Search Engineering x Engineering / System Info

System Info

Radio Module	UL Centre Freq (MHz)	DL Centre Freq (MHz)	UL Input-power (-75~-30dBm)	DL Output-power (20~43dBm)	VSWR	Serial Number
Radio Module 1	0	0	-138 Detection value below range	-7.1 Detection value below range	0 Detection value below range	YCO260010
Radio Module 2	0	0	-138 Detection value below range	-6.3 Detection value below range	0 Detection value below range	YCO260015

General

Device Temperature 28 °C

Open Load Detect Switch On

Baseband power

Module	UL Baseband Input-power (dBm)	DL Baseband Output-power (dBm)
Module 1	-100	-60
Module 2	-100	-60

4.2 Software Version Inquiry

The screenshot displays the 'Engineering Info' page. On the left is a sidebar with navigation links: Engineering, Alarms, Maintenance, Digital Info, Engineering (selected), File, and Software upgrade. The main content area is titled 'Engineering Info' and includes the following sections:

- Engineering Info:** Data Update Time: 2019-10-20 00:25:23; ARM CRC Check: 2CCC; HP-RU CRC Check: 3C9F; FPGA CRC Check: F68F; Configuration CRC Check: 0000.
- DPD Switch:** Two rows, each with a checked checkbox and a dropdown menu set to 'Enable'.
- Digital Panel Info:** Maximum Delay to Master Device: 0 us.
- OP Info:** A table with fiber-related parameters and their values.
- ALC Indication:** A table showing alarm status for OP-slave and OP-master.

Parameter	Value	Unit
BBU connection optical port	0	
Fiber Topology series	1	
Next stage fiber length	0	Km
Total fiber length of back-end cascade	0	Km
Uplink optical port CPRI synchronization status	●	
CPRI synchronization status of lower optical port	●	

Device	OP-slave CPRI Sync Alarm	OP-slave LOS Alarm	OP-slave CPRI Loss Sync Counter
OP-slave	●	●	0
OP-master	●	●	0

5. Version Upgrade

The screenshot displays the 'Software upgrade / Upgrade software version' page. The sidebar is the same as in the previous screenshot. The main content area shows a table of software files:

Filename	Modification Date	Size
IDAS_DRRU_R2111D_V2.0.4_CFD6_2021024.zip	2019-10-20 01:00	9298 KB
IDAS_DRRU_R2111D_V2.0.9_A5EE_20230209.zip	2019-10-20 19:31	10034 KB
IDAS_DRRU_R2111D_V2.0.13_SE99_20240226.zip	2019-10-25 03:08	11502 KB

At the bottom of the page, there are four buttons: Upload, Upgrade (highlighted with a red box), Delete, and Download.

Please take attention that changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation. This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 770cm between the radiator & your body.