



**5G NR Small Cell
SCU2060/SCU2070
User Guide**

ASKEY COMPUTER CORPORATION
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Revision History

Version	Date	Description
A	November 2023	Initial release (Based on SW Version nsc2.1_sa.012.6ga.4026)
B	June 2024	Add SCU2070 Model
C	August	Add radio warning message

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Security Information

For the safety of installation engineers and to protect the equipment from damage, please read all safety warnings carefully. If you have any questions about these warnings, please contact the Askey support team before installing or powering up the base station.

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Chapter 1 Introduction

1.1 Brief Introduction

This user guide introduces the ASKEY's SCU2060/SCU2070 is a customer driven small cell that supports 5G Sub-6GHz, and can provide enterprise-level outdoor coverage of 5G Sub6 with 5W TX power. Meeting the demand for enterprise-level outdoor connectivity, it is an ideal and powerful solution to deliver a superior network access experience. This super and compact small cell has integrated 5G baseband, radio and antenna into a single product, which helps break installation barriers. The SCU2060/SCU2070 Small Cell is part of the carrier-grade, end-to-end Askey Small Cells solution that is definitely suitable for various scenarios, such as smart factories, smart transportation, smart city, lampposts etc.



Figure 1. Askey 5G NR Outdoor Small Cell SCU2060/SCU2070

1.2 Specification

Table 1. SCU2060/SCU2070 General Specification

Item	Description	
	SCU2060	SCU2070
Model Name	NR xCell 60156CW	NR xCell 60156BW
Band	N79	N78
Bandwidth	N79: 100MHz	N78: 100MHz
Max. TX Power	37dBm / port	
Coverage	LOS 500m for common usage (Directional Antenna)	
Antenna	External 2x2 MIMO	
EIRP	52dBm (Directional Antenna) 45dBm (Omni antenna)	50dBm (Directional Antenna) 44dBm (Omni antenna)
LED	1 LED	
Backhaul	10G SFP+/2.5G WAN	
Power Supply	AC90~264V	
Power Consumption	<100 W	
Active Users	Up to 64UE	
Data Rates	700+ Mbps/180+ Mbps (DDDSU)	
Installation	Wall/Pole mount	
IP Grade	IP65	
Dimensions	W321 x H231 x D135mm	
Weight	<10kG	
Operating Temperature	-40°C ~ 55°C	
Operating Humidity	90% maximum, non-condensing	

Warning: To lower the radio influence to the human body, please keep a safe distance (**Minimum 2 meters**) between SCU2060/SCU2070 and the people around.

1.3 What's in the Box

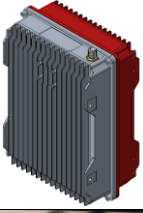




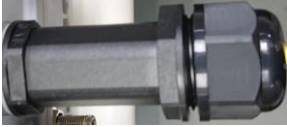
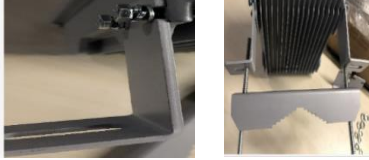

The Askey SCU2060/SCU2070 box contains:

- SCU2060/SCU2070 base station
- Outdoor GPS Antenna
- PSU
- Omni Antennas
- Base station handle
- Waterproof casing

The following optional items are available:

- Mounting Accessories (Optional)
- Directional Antenna (Optional)

Table 2. List of Items in the Box

Items	Qty	Description	Picture
1. Askey Small Cell SCU2060/SCU2070	1	The Askey 5G NR outdoor small cell SCU2060/SCU2070. Please check the label to make sure you have received the correct base station	
2. PSU	1	When you receive the SCU2060/SCU2070, the PSU and power cable is integrated in the device	
3. Outdoor GPS Antenna	1	When you receive the SCU2060/SCU2070, the GPS antenna is attached.	
4. Omni Antenna	2	2 Omni antennas at the bottom of the base station, N-head connector	
5. Base station handle	1	Vertical span handle (Including screws and nuts)	
6. Waterproof casing	1	Waterproof casing	
7. Mounting Accessories (Optional)	1	Optional, 2 types for wall mount and pole mount	
8. Directional Antenna (Optional)	1	Directional Antenna	

1.4 IO interfaces and Connections

This section will guide you through the interfaces and functions of SCU2060/SCU2070.

1.4.1 IO Interface Outside

SCU2060/SCU2070 has a single multicolored LED used to indicate the device connectivity status.

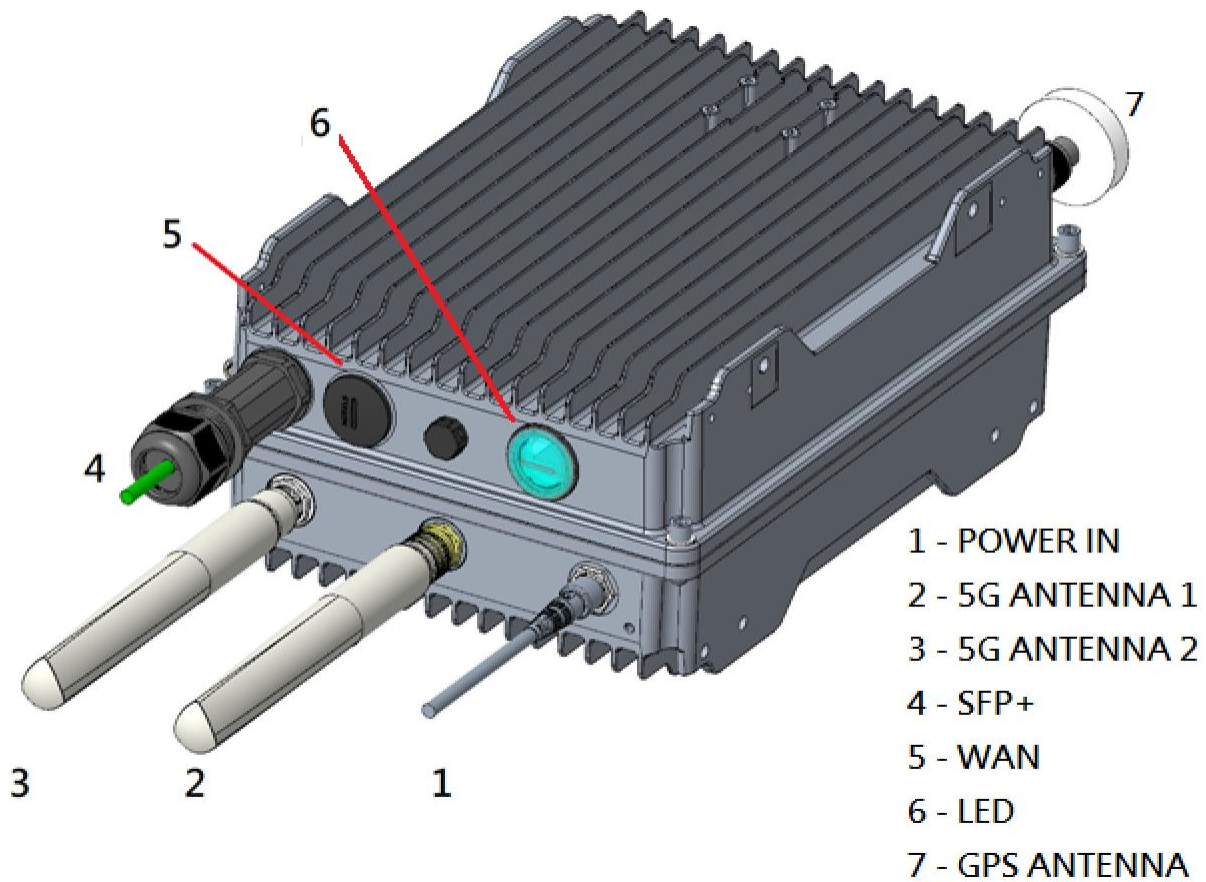


Figure 2. IO Interfaces Outside (Default mode)

Table 3. SCU2060/SCU2070 IO Interface

Item	Description
POWER IN	The Power IN port is used to power SCU2060/SCU2070 when connected to POWER supply.
5G ANT1	ANT1 for 5G antenna connection
5G ANT2	ANT2 for 5G antenna connection
WAN/SFP+	This port is used for Ethernet cable or fiber. It allows you to connect an Ethernet cable/fiber to establish communication between SCU2060/SCU2070 and switch/router.
GPS	The GPS antenna port provides access to an interface for the external GPS antenna cable.
LED	One LED is designed to show the status of SCU2060/SCU2070. Please refer to the details of LED status in Table 4.

Chapter 2 Setup

2.1 Setup Procedure

This part outlines the procedures needed to set up SCU2060/SCU2070.

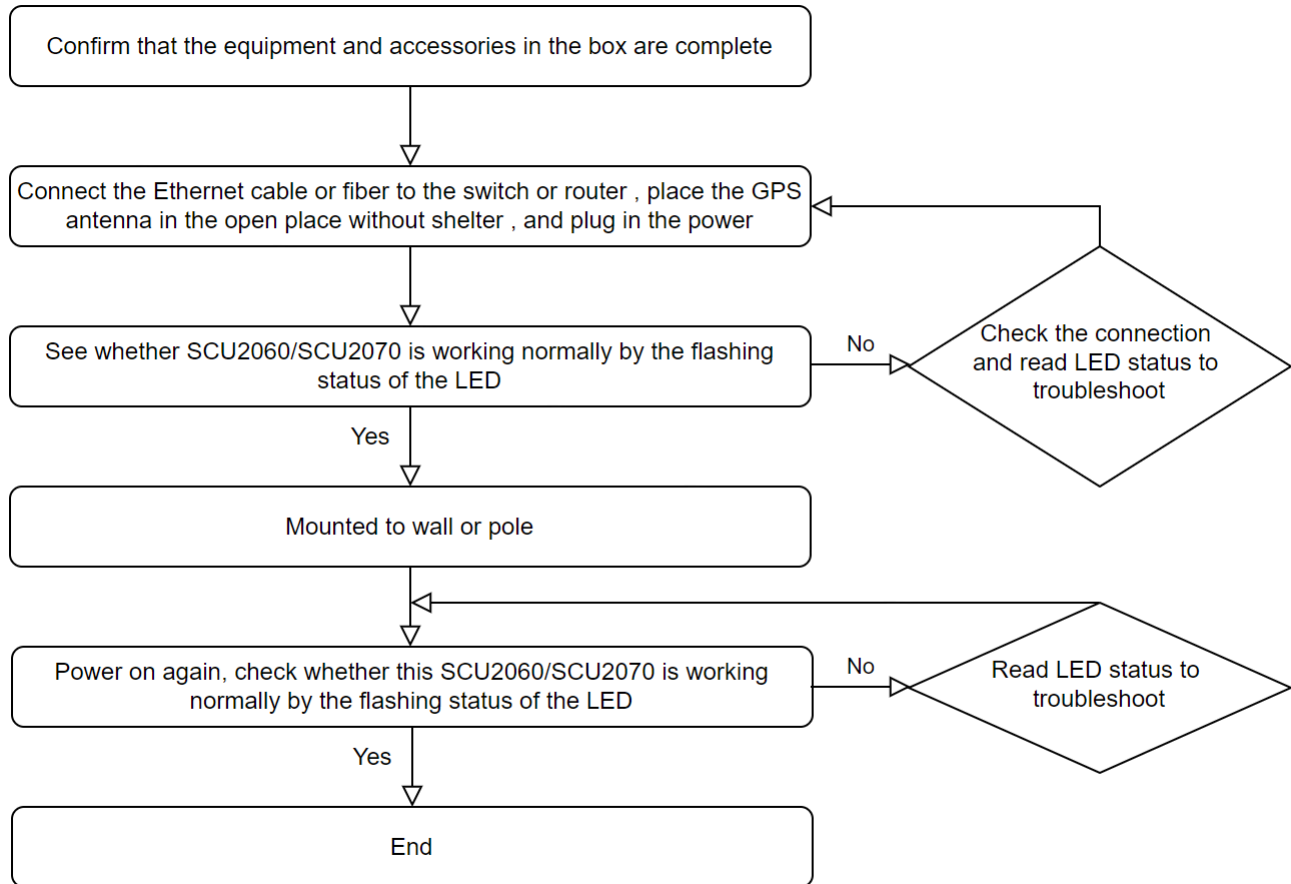


Figure 3. Setup Procedure

2.2 Cable Connection

Connect the Ethernet cable or fiber, power cable and GPS antenna correctly.

Noted:

- If using fiber transmission. SFP+ module and fiber are needed. The highest operating temperature specification of 10G SFP+ module must be workable at minimum 85°C.

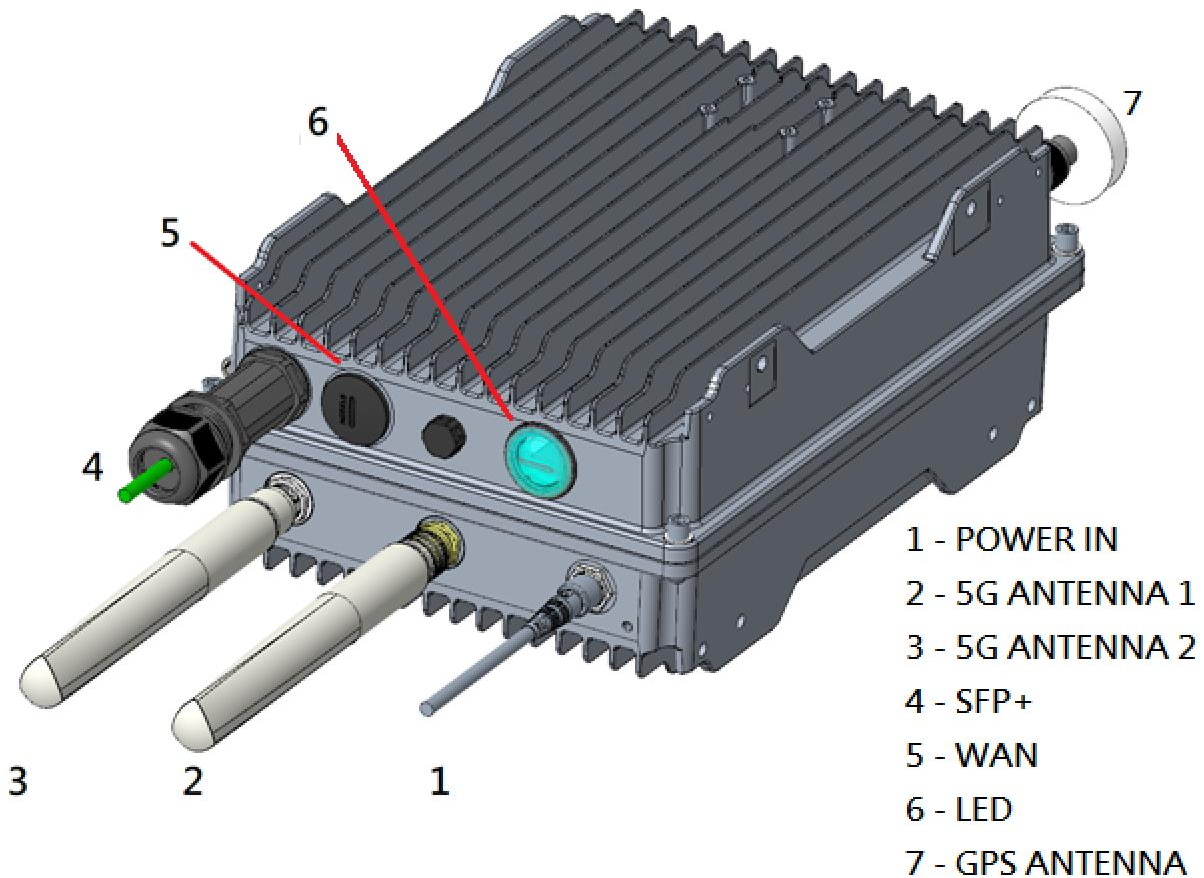


Figure 4. Cable Connection (Default mode)

2.3 LED Status

After all the connections are connected and the SCU2060/SCU2070 is powered on, please check the status of LED on the device. The LED will flash according to the LED description provided in the table below.

If the SCU2060/SCU2070 is operating as expected, continue to Section 2.4. If the SCU2060/SCU2070 is not functioning properly and you have to carefully check all steps.

For the details of each LED status, please refer to the LED status table in a separate document released together with this user guide.

2.3.1 GPS Alarm Trigger Scenario

If SCU2060/SCU2070 loses GPS signal, SCU2060/SCU2070 will trigger an alarm, if being connected to the OAM system (ex. Askey AMP), and enters holdover state. Please find the details in the below procedure flow.

For the details of each alarm, please refer to the alarm table in a separate document released together with this user guide.

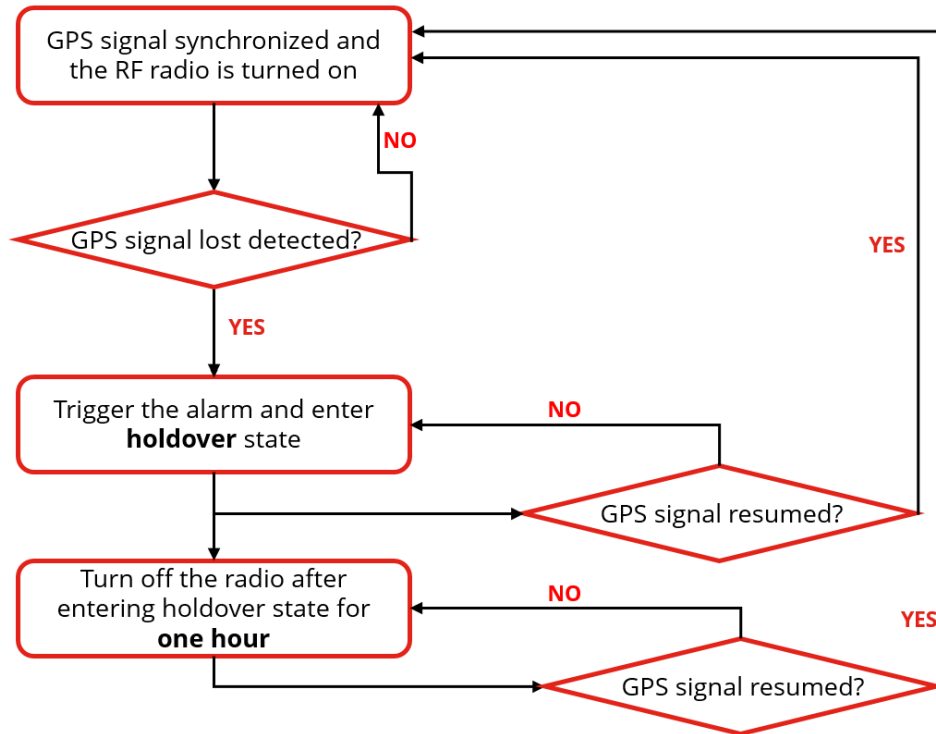


Figure 5. GPS Alarm Trigger Scenario

2.4 Installation

Avoid installing the base station in areas where extreme temperatures, harmful gases, voltage instability, loud noise, flames, explosives or electromagnetic interference may exist (for example: near large radar stations, substations).

The SCU2060/SCU2070 base station, GPS antenna, external antenna and RJ45 connection port must be protected from lightning strikes. The base station has 1 grounding screws located on the bottom of the unit. The grounding screw must be connected to a reliable outdoor grounding point using a yellow-green grounding wire, and the terminals must be treated against rust using anti-rust paint, anti-oxidation coating, grease or similar solutions.

There are mainly 2 ways for SCU2060/SCU2070 installation - wall mount and pole mount. This section will guide you through all the installation ways for SCU2060/SCU2070.

2.4.1 Install the Handle

Use screws to secure the handle to the right side of the SCU2060/SCU2070.

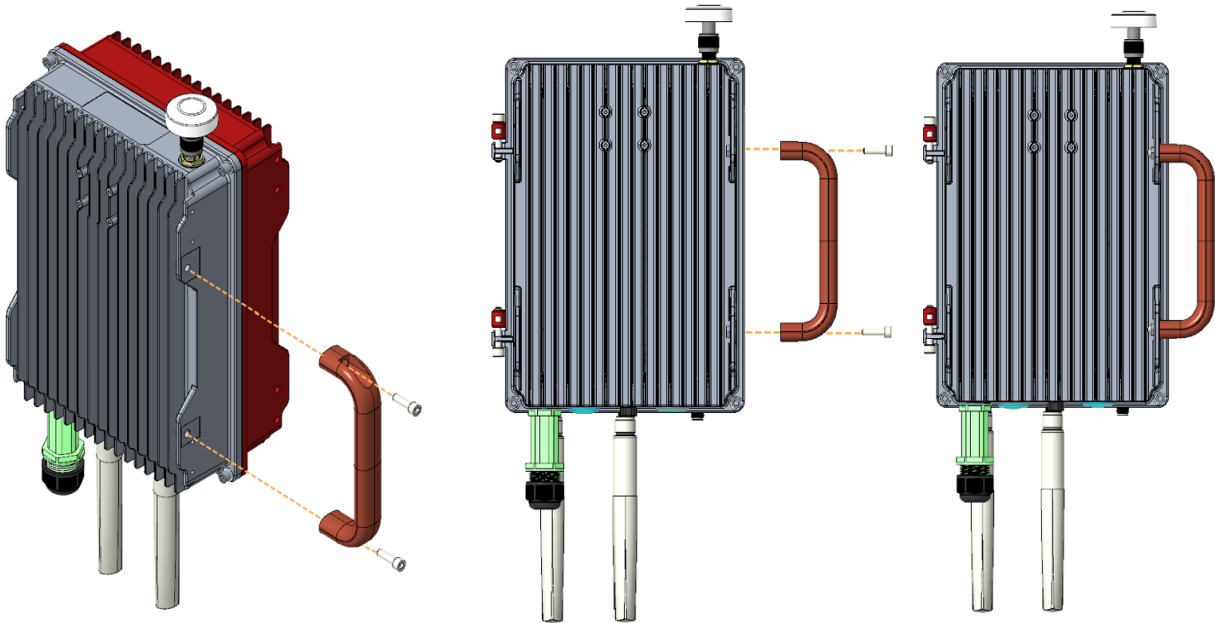


Figure 6. Handle installation diagram

2.4.2 Install the Antenna

Install the antenna at the corresponding position of the SCU2060/SCU2070.

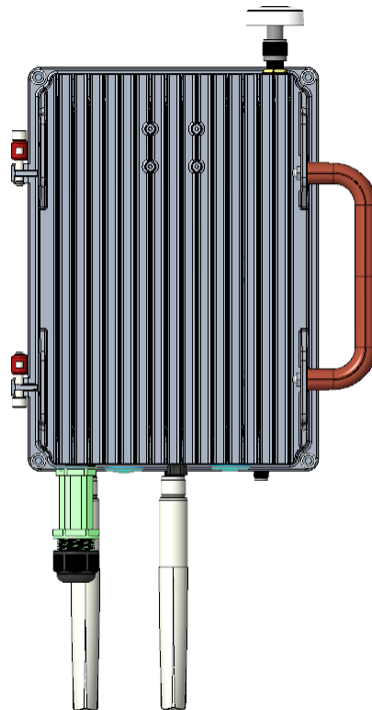


Figure 7. Antenna installation diagram

2.4.3 Connect the Power Cable and Ethernet Cable

- Connect the power cable to the AC port of the base station.



Figure 8. Power cable installation diagram

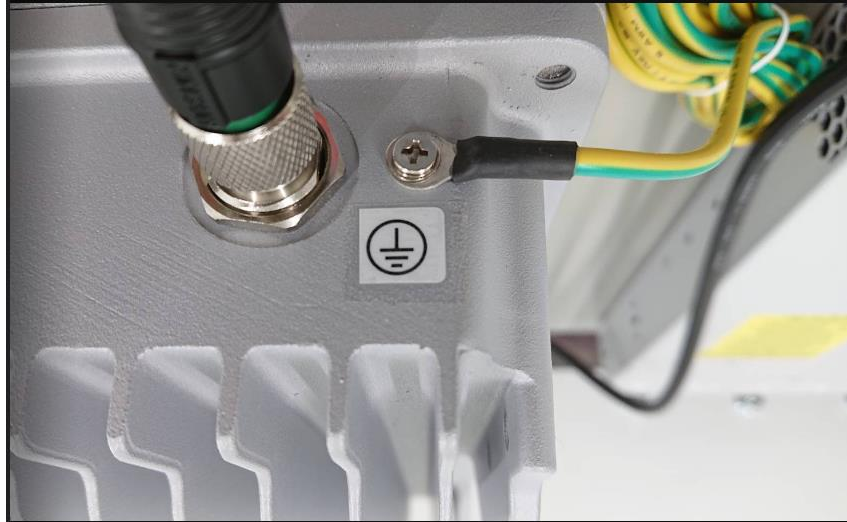
- Connect Ethernet cable.
Connect the Ethernet cable to the waterproof casing to achieve the outdoor waterproof function of the network cable.



Figure 9. Network cable installation diagram

2.4.4 Grounding and Lightning Protection

- Unscrew the ground screw and connect one end of the ground wire to the ground screw on the base station.
- Connect the other end of the ground wire to a reliable outdoor ground point.



2.4.5 Check the LED indicator light

- After all components are connected, power on the base station. After waiting a few minutes, check the LED on the underside of the device. These will flash according to the LED instructions provided in Table 4.
- After checking that all connections are secure and the base station is operating as expected, continue with Section 2.5. If the base station is not operating properly and you have carefully checked all steps, please contact Askey technical support before proceeding to Section 2.5.

2.4.6 Wall Mount

Before installing the base station on an exterior wall, make sure the wall can support at least 4 times the weight of the base station. (Weight of SCU2060/SCU2070 is about 10kg)

Installation steps,

Step 1,

- Check whether the wall mounting accessories are complete.

Table 4. Wall Mount Bracket Kit Package

S/N	Item	Qty.
①	M10*60 expansion screw	4
②	right-angle bracket	4
③	M6*20 hexagonal screws	8

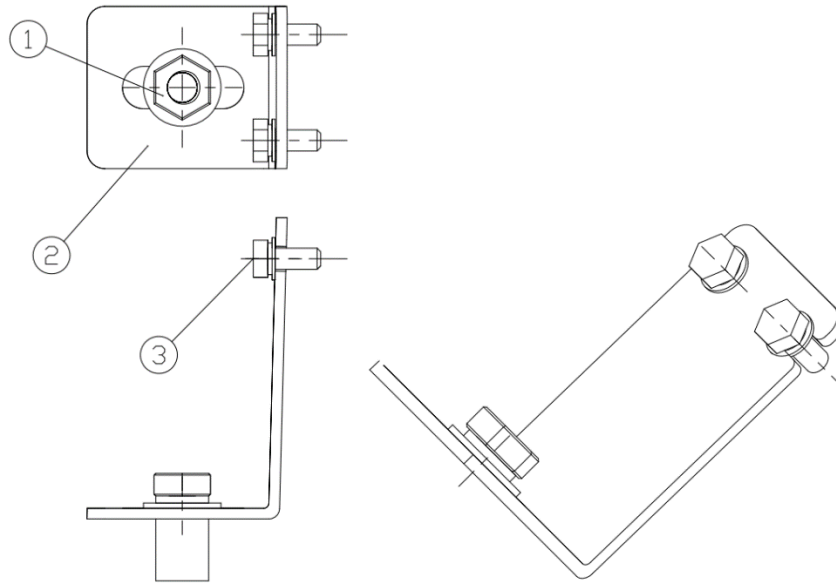


Figure 10. Schematic diagram of wall mounting accessories

Step 2,

- Use M6*20 hexagonal screws to fix the right-angle bracket to the base station.

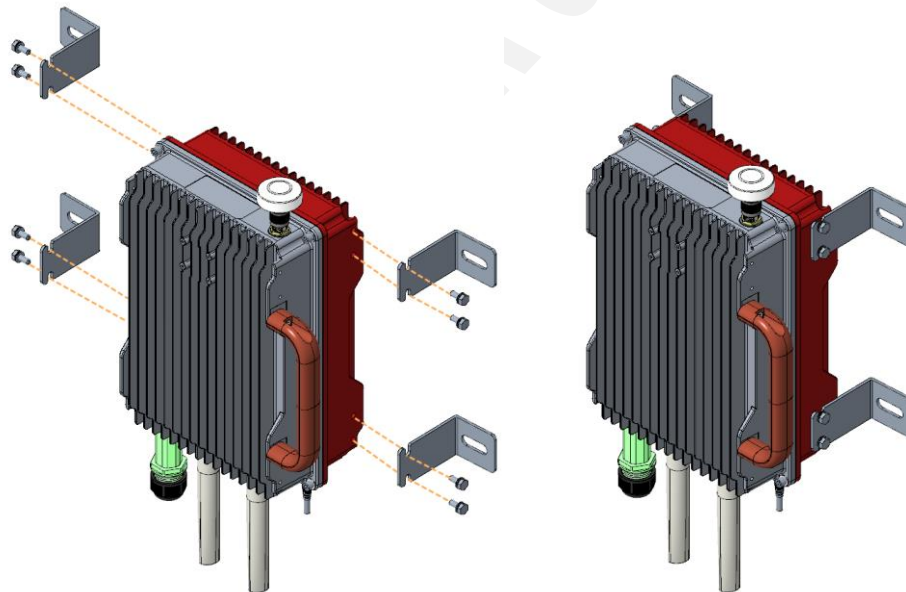


Figure 11. Wall mounting bracket installation diagram

Step 3,

- Place the base plate on the wall where it will be installed and mark the drilling locations.

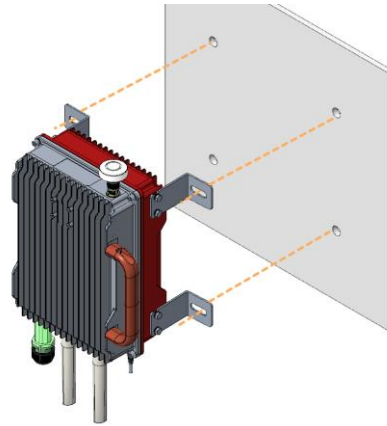


Figure 12. Mark drilling locations on the wall

Step 4,

- Drill four holes at the marked positions on the wall, and then use M10*60 expansion screws to fix the base station to the wall.

2.4.7 Pole Mount

Remove the power cable, grounding wire, and Ethernet cable (if the site has a fixed network connection).

Before installing the base station on the pole, check to make sure the diameter of the pole is within the range of 165 mm to 210 mm.

Installation steps,

Step 1,

- Check whether the pole bracket installation accessories are complete.

Table 5. Pole Mount Bracket Kit Package

S/N	Item	Qty.
①	I-shaped pole bracket mounting plate 1	2
②	I-shaped pole bracket mounting plate 2	2
③	M10*100 fully threaded screw rods	4
④	M6*20 hexagonal screws	8
⑤	M10 nut	8

⑥	M10 adapter nut	4
⑦	M10*200 fully threaded screw	4
⑧	Right-angle bracket	4

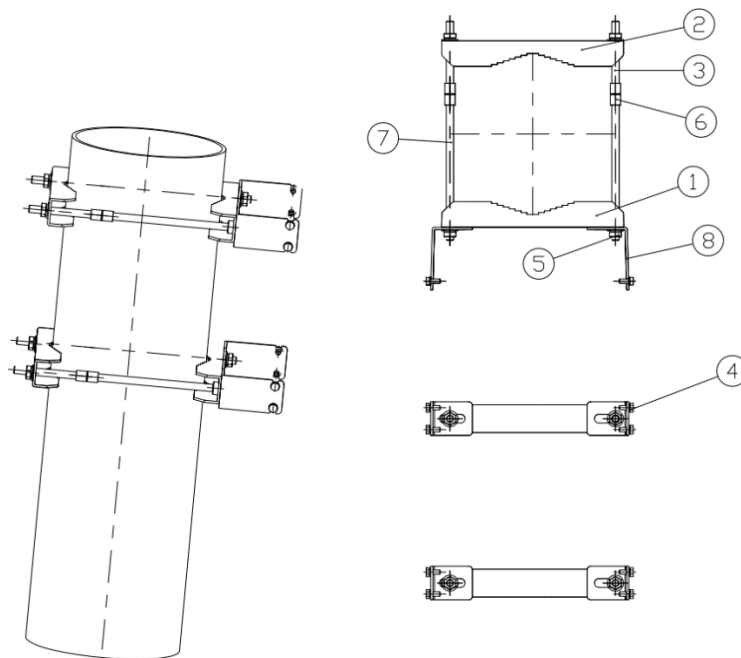


Figure 13. Schematic diagram of pole mounting accessories

Step 2,

- Use a wrench to assemble the I-shaped pole bracket mounting plates 1 and 2, fully threaded screw rods, screws and nuts, and install them on the pole and lock them.

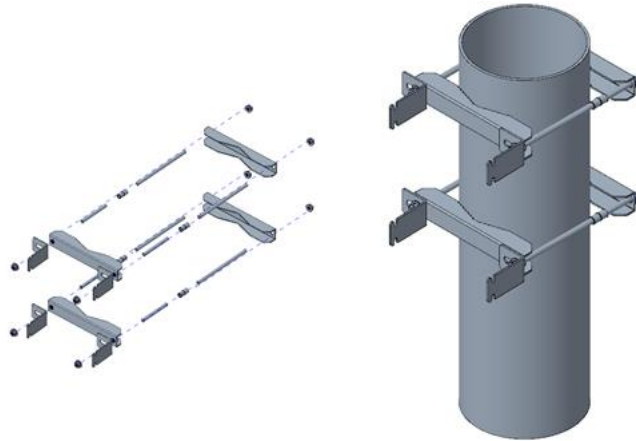


Figure 14. Pole mounting bracket installation diagram

Step 3,

- Fix the base station to the pole bracket with screws and lock.

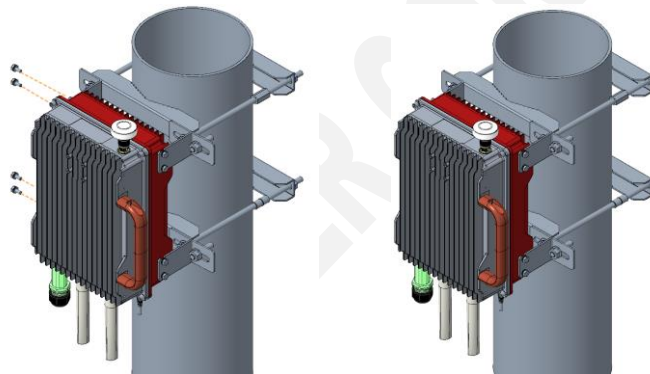


Figure 15. Schematic diagram of base station installation on pole

2.5 Route the Cables

After finishing the installation, please connect various cables to the SCU2060/SCU2070 according to Section 2.2, and route the cables in a standard way to keep them looking good. Power on the SCU2060/SCU2070 again, and check the SCU2060/SCU2070 work properly by the status of LED.