



Outdoor LoRaWAN[®] Hotspot

UG67

User Guide



Safety Precautions

Milesight will not shoulder responsibility for any loss or damage resulting from not following the instructions of this operating guide.

- The device must not be modeled in any way.
- Do not place the device close to objects with naked flames.
- Do not place the device where the temperature is below/above the operating range.
- Do not power on the device or connect it to other electrical devices when installing.
- Ensure all connectors are tightened for water protection when used outdoors.
- Check lightning protection when used outdoors.
- Do not connect or power the equipment using cables that have been damaged.

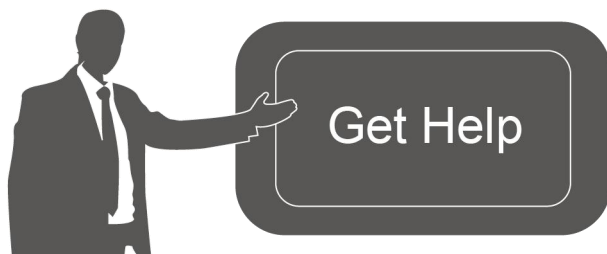
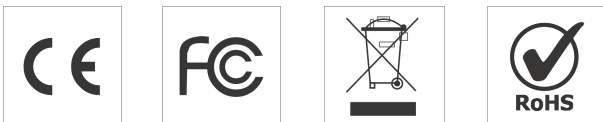
Related Documents

Document	Description
UG67 Datasheet	Datasheet for UG67 LoRaWAN® Hotspot.

The related documents are available on the Milesight website: <https://www.milesight-iot.com>

Declaration of Conformity

UG67 conforms with the essential requirements and other relevant provisions of the CE, FCC, and RoHS.



For assistance, please contact
Milesight technical support:
Email: iot.support@milesight.com
Tel: 86-592-5085280
Fax: 86-592-5023065

Revision History

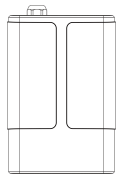
Date	Doc Version	Description
Oct. 31, 2021	V1.0	Initial version
Nov. 23, 2021	V1.1	QR Code Generate Update

Contents

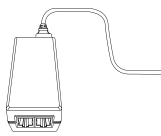
1. Packing List.....	4
2. Hardware Introduction.....	5
2.1 Overview.....	5
2.2 Dimensions.....	5
2.3 LED Indicators.....	5
2.4 Reset Button.....	6
2.5 DC Power Connector.....	6
3. Hardware Installation.....	7
3.1 SIM Card Installation.....	7
3.2 Antenna Installation.....	7
3.3 Ethernet Cable & Power Cable Installation.....	8
3.4 Power Supply.....	9
3.5 Hotspot Installation.....	9
3.5.1 Wall Mounting.....	9
3.5.2 Pole Mounting.....	10
4. Login the Web GUI.....	11
4.1 Wireless Access.....	11
4.2 Wired Access.....	13
5. Network Connection.....	15
5.1 Configure the Ethernet Connection.....	15
5.2 Configure the Wi-Fi Connection.....	15
5.3 Configure the Cellular Connection.....	17
6. Helium Hotspot Setup.....	19
7. Antenna and Frequency Configuration.....	22

1. Packing List

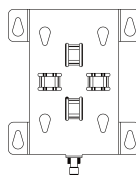
Before you begin to install the UG67 LoRaWAN® hotspot, please check the package contents to verify that you have received the items below.



1 × UG67 Hotspot



1 × PoE Injector



1 × Mounting Bracket



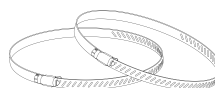
4 × Wall Mounting Kits



1 × Cable Gland



1 × SIM Dust Cover



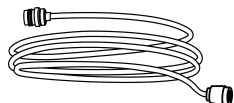
2 × Hose Clamps



1 × DC Power Cable



2 × LoRa Antennas



1 × Antenna Coaxial
Cable (1m)



1 × Antenna Clamp Kit



1 × Quick Start Guide

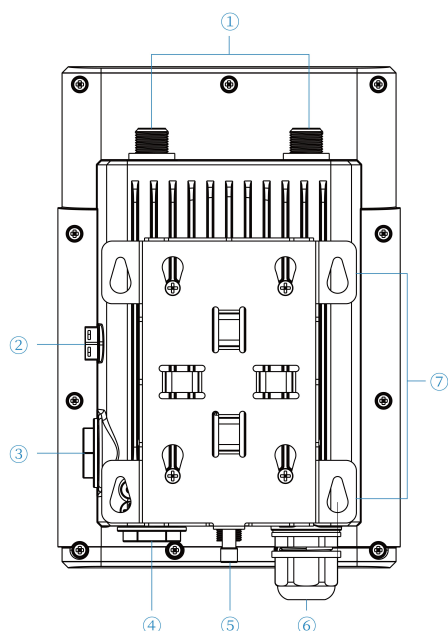


1 × Warranty Card

! If any of the above items is missing or damaged, please contact your sales representative.

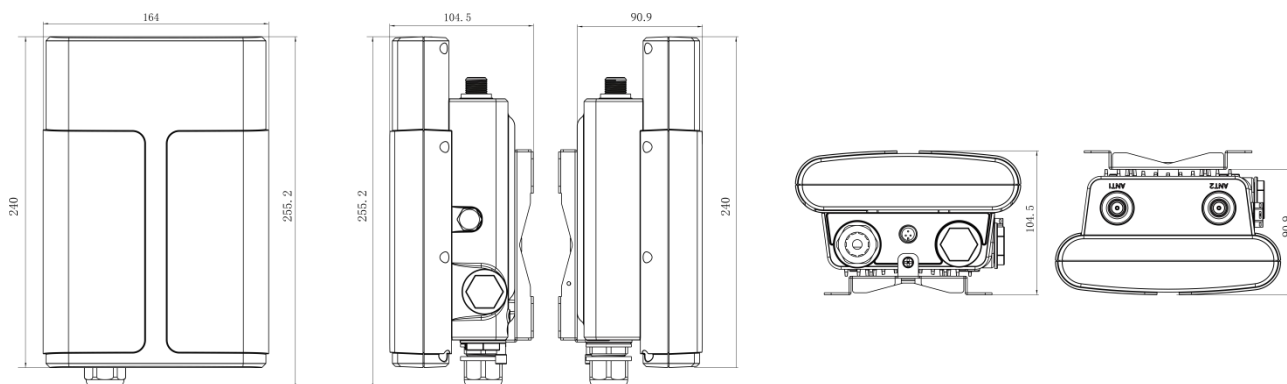
2. Hardware Introduction

2.1 Overview



- ① LoRa Antenna Connector
- ② Vent Plug
- ③ SIM Slot
- ④ LED Area & Type-C Port & Reset Button
- SYS: System Indicator
- LoRa: LoRa Indicator
- LTE: Cellular Indicator
- ⑤ DC Power Connector (Solar Connector)
- ⑥ Ethernet Port (PoE)
- ⑦ Mounting Bracket

2.2 Dimensions (mm)



2.3 LED Indicators

LED	Indication	Status	Description
SYS	System Status	Green Light	Static: the system is running properly
		Red Light	The system goes wrong
LoRa	LoRa Status	Off	Packet Forwarder mode is running off
		Green Light	Packet Forwarder mode is running well
LTE	Cellular Status	Off	SIM card is registering or fails to register (or there are no SIM cards inserted)
		Green Light	Blinking slowly: SIM card has been registered and is ready for dial-up

			Blinking rapidly: SIM card has been registered and is dialing up now
			Static: SIM card has been registered and dialed up successfully

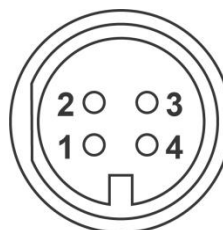
2.4 Reset Button

Function	Description	
	SYS LED	Action
Reset	Static Green	Press and hold the reset button for more than 5 seconds.
	Static Green → Rapidly Blinking	Release the button and wait.
	Off → Static Green	The hotspot resets to factory default.

2.5 DC Power Connector

UG67 supports 12 VDC or solar supply via M12 connector.

Pin	Color	Description
1	Black	GND
2	White	Reserved
3	Yellow	Reserved
4	Red	+12V



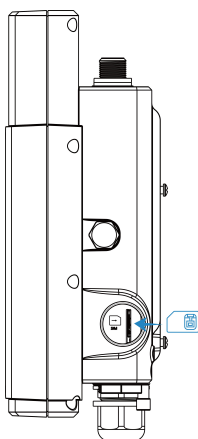
3. Hardware Installation

3.1 SIM Card Installation

- Insert the SIM card into the device according to the direction icon on the device. If you need to take out the SIM card, press into the SIM card and it will pop up automatically.
- Tighten the SIM dust cover with a wrench to prevent water into the device.

Note:

- Ensure the gateway is cellular version when purchase.
- If you need to take out the SIM card, press into the SIM card and it will pop up automatically.
- UG67 does not support hot-plugging (also called hot swapping). please turn off the power before inserting or taking off cards.

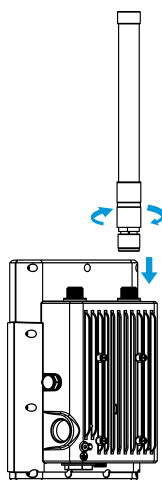


3.2 Antenna Installation

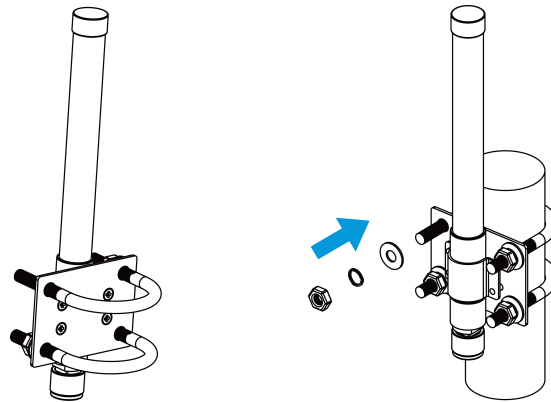
UG67 supports multiple LoRa antenna types. After installation, please select the corresponding installation type in web GUI. It's suggested to select double antenna mode for better Helium network coverage.

Internal Antenna Mode: keep hotspot positive outwards to ensure a good signal.

Signal Antenna Mode: the external antenna must be installed on the ANT1 connector.

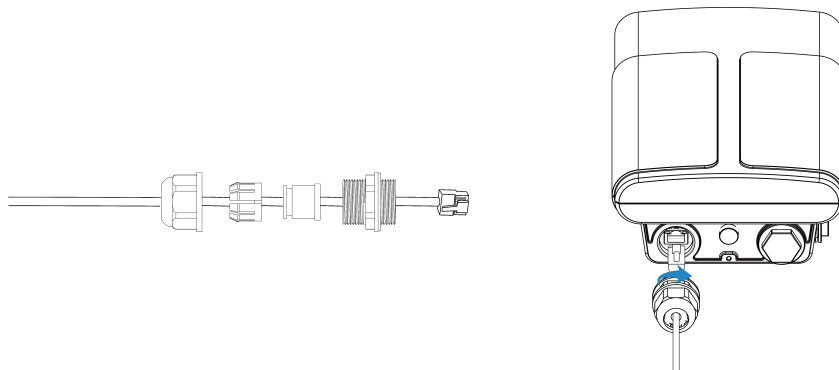


Double Antenna Mode: it's suggested to add a coaxial cable between one of antenna connectors (ANT1 is recommended) and LoRa antenna to ensure better performance. After installation, the LoRa antenna can be fixed to a pole via antenna clamp kit. Pass this LoRa antenna through the antenna clamp and fix it with 4 screws, then wrap the U-bolt around a pole and fix the clamp with nuts and other accessories.

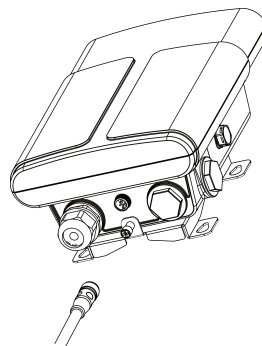


3.3 Ethernet Cable & Power Cable Installation

Pass the Ethernet cable through the cable gland and rotate the cable gland to the hotspot, then tighten the cable gland with a wrench.

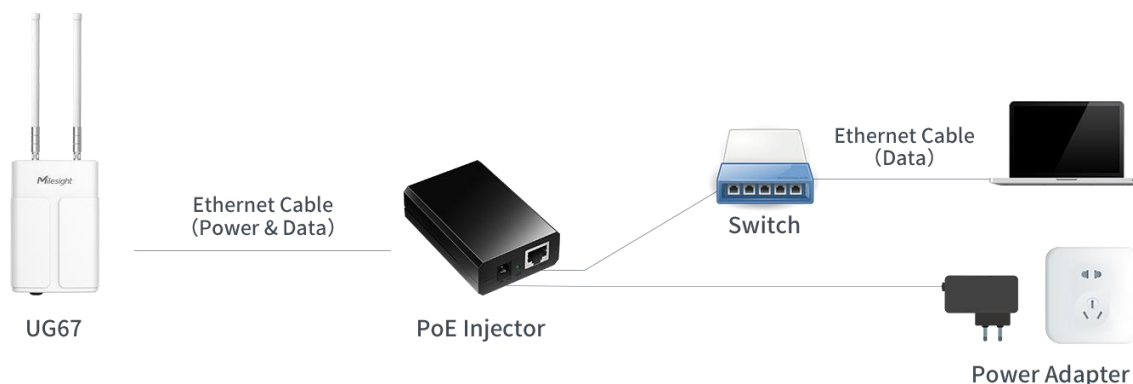


For DC or solar power supply, remove the protective cap of the power connector and rotate the DC power cable into the power connector.



3.4 Power Supply

UG67 can be powered by 802.3af standard PoE or 12VDC. If there is not PoE switch, please use a PoE injector to power on the UG67 as below:



3.5 Hotspot Installation

UG67 can be mounted to a wall or a pole. Before you start, make sure that your SIM card has been inserted, your antennas have been attached and all cables have been installed.

Note: Do not connect the device to the power supply or other devices when installing.

3.5.1 Wall Mounting

Preparation: mounting bracket (with a screw), wall plugs, wall mounting screws and other required tools.

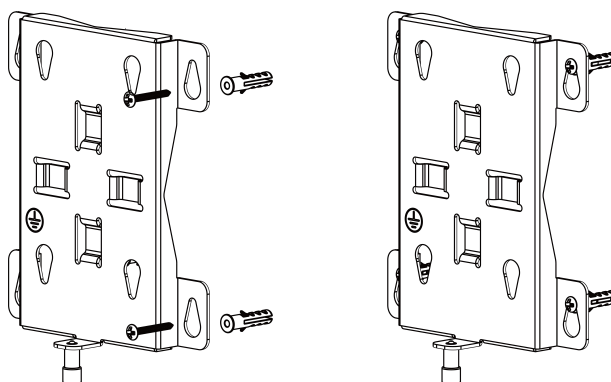
A. Align the mounting bracket horizontally to the desired position on the wall, use a marker pen to mark four mounting holes on the wall, and then remove the mounting bracket from the wall.

Note: The connecting lines of adjacent points are at right angles.

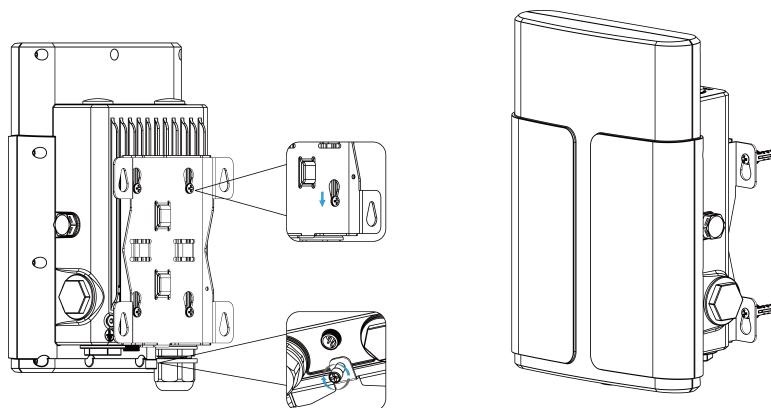
B. Drill four holes with a depth of 32 mm by using your drill with a 6 mm drill bit on the positions you marked previously on the wall.

C. Insert four wall plugs into the holes respectively.

D. Mount the mounting bracket horizontally to the wall by fixing the wall mounting screws into the wall plugs.



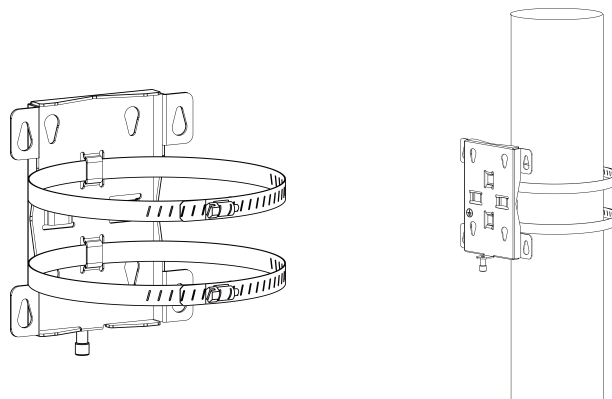
E. Hang the device to the mounting bracket via bracket mounting screws on the back of the device, then screw the bracket screw to the bottom of the device.



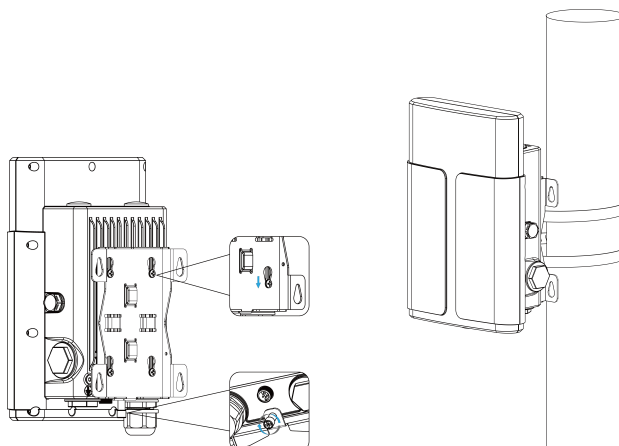
3.5.2 Pole Mounting

Preparation: mounting bracket (with a screw), hose clamp and other required tools.

- Loosen the hose clamp by turning the locking mechanism counter-clockwise.
- Straighten out the hose clamp and slide it through the rectangular rings in the mounting bracket, wrap the hose clamp around the pole.
- Use a screwdriver to tighten the locking mechanism by turning it clockwise.



D. Hang the device to the mounting bracket via bracket mounting screws on the back of the device, then screw the bracket screw to the bottom of the device.



4. Login the Web GUI

UG67 provides a web-based configuration interface for management. If this is the first time you configure the hotspot, please use the default settings below:

ETH IP Address: **192.168.23.150**

Wi-Fi IP Address: **192.168.1.1**

Wi-Fi SSID: **Gateway_*******

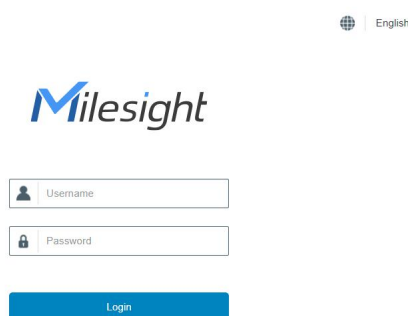
Username: **admin**

Password: **password**

4.1 Wireless Access

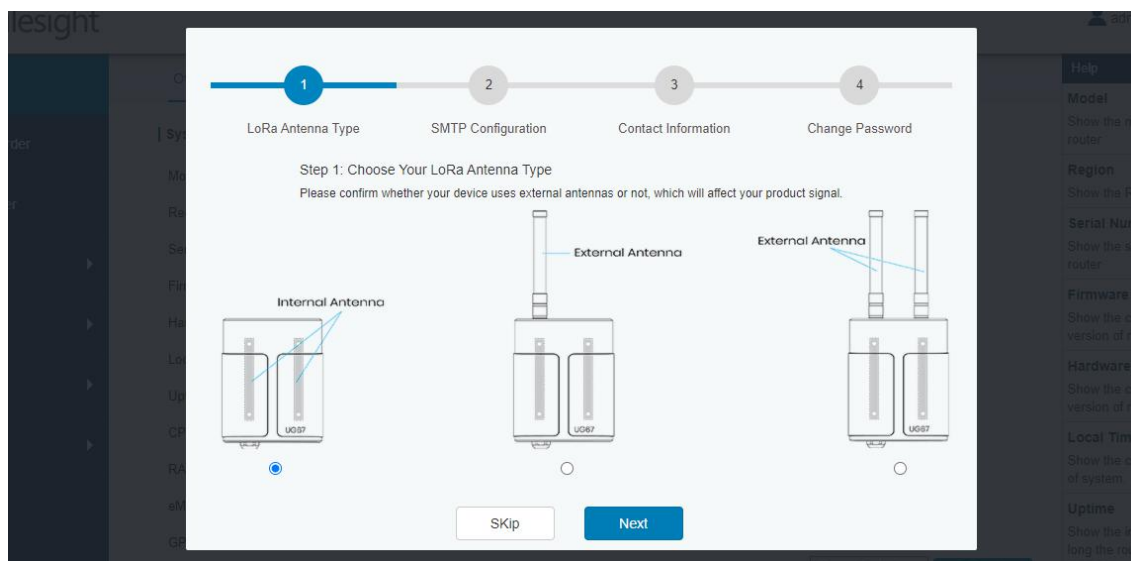
A. Enable wireless network connection on your computer and search for access point **"Gateway_*****"** to connect it.

B. Open a web browser on your PC (Chrome is recommended) and type in the IP address **192.168.1.1** to access the web GUI, enter the username and password, click "Login".



If you enter the username or password incorrectly more than 5 times, the login page will be locked for 10 minutes.

C. After logging, select the correct antenna type according to your antenna installation and change the default password following the guide.



After the guide completed, you can view system information and perform more advanced settings.

System Information	Value
Model	UG65-L00E-470M-EA-H32
Region	CN470
Serial Number	6819B4300645
Firmware Version	61.0.0.36
Hardware Version	V1.3
Local Time	2021-11-18 10:31:08 Thursday
Uptime	13:10:05
CPU Load	9%
RAM (Capacity/Available)	2048MB/629MB(30.71%)
eMMC (Capacity/Available)	27.9G/14.5G(52.03%)



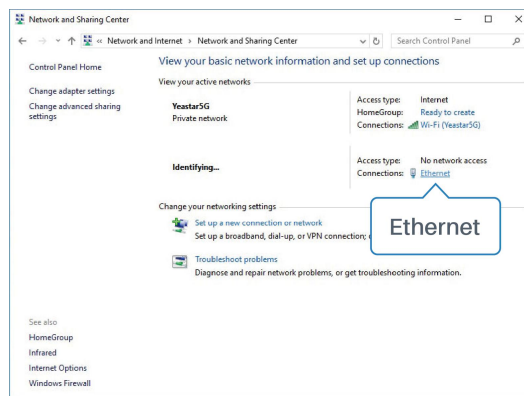
Please disable WLAN feature or add password after you completed all hotspot settings!

WLAN Settings	Value
Enable	<input checked="" type="checkbox"/>
Work Mode	AP
SSID Broadcast	<input checked="" type="checkbox"/>
AP Isolation	<input type="checkbox"/>
Radio Type	802.11n(2.4GHz)
Channel	Auto
SSID	Gateway_F1B4D0
BSSID	24:e1:24:f1:b4:d0
Encryption Mode	WPA2-PSK
Cipher	Auto
Key

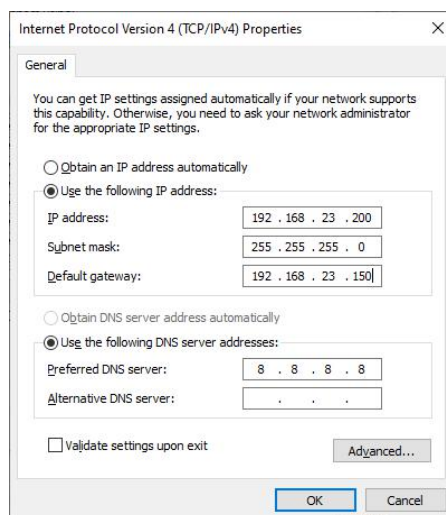
4.2 Wired Access

Connect PC to UG67 ETH port through PoE injector. The following steps are based on Windows 10 operating system for your reference.

A. Go to “Control Panel” → “Network and Internet” → “Network and Sharing Center”, then click “Ethernet” (May have different names).



B. Go to “Properties” → “Internet Protocol Version 4(TCP/IPv4)” and select “Use the following IP address”, then assign a static IP manually within the same subnet of the hotspot.

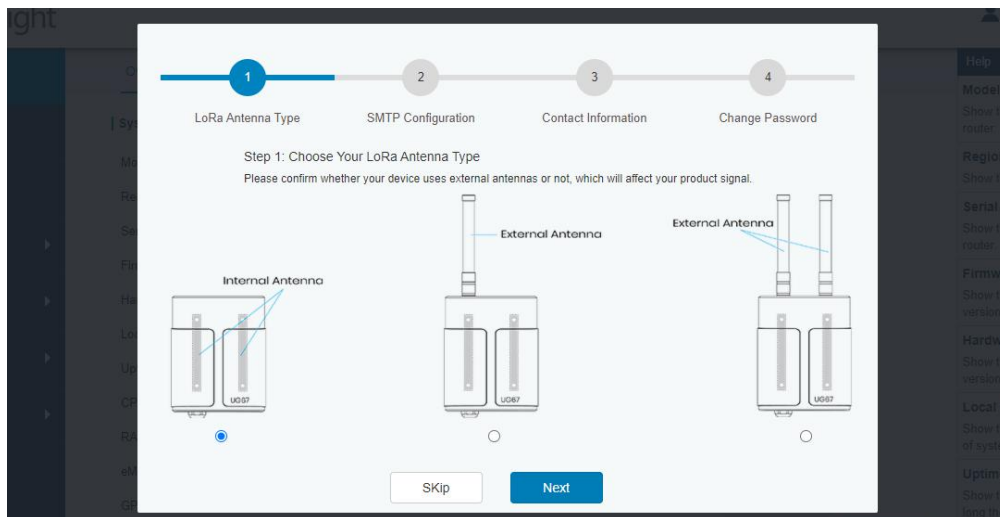


C. Open a web browser on your PC (Chrome is recommended) and type in the IP address **192.168.23.150** to access the web GUI, enter the username and password, click “Login”.



If you enter the username or password incorrectly more than 5 times, the login page will be locked for 10 minutes.

D. After logging, select the correct antenna type according to your antenna installation and change the default password following the guide.



After the guide completed, you can view system information and perform more advanced settings.

Status	Overview	Cellular	Network	WLAN	VPN	Host List
Packet Forwarder	System Information					
Network Server	Model	UG65-L00E-470M-EA-H32				
Network	Region	CN470				
System	Serial Number	6819B4300645				
Maintenance	Firmware Version	61.0.0.36				
APP	Hardware Version	V1.3				
	Local Time	2021-11-18 10:31:08 Thursday				
	Uptime	13:10:05				
	CPU Load	9%				
	RAM (Capacity/Available)	2048MB/629MB(30.71%)				
	eMMC (Capacity/Available)	27.9G/14.5G(52.03%)				

5. Network Connection

This section explains how to connect the hotspot to the network via WAN connection, Wi-Fi or cellular.

5.1 Configure the Ethernet Connection

A. Go to “Network” → “Interface” → “Port” page to select the connection type and configure Ethernet port information, click “Save & Apply” for changes to take effect.

Port_1

Port: eth 0

Connection Type: Static IP

IP Address: 192.168.22.112

Netmask: 255.255.255.0

Gateway: 192.168.22.1

MTU: 1500

Primary DNS Server: 8.8.8.8

Secondary DNS Server: 114.114.114.114

Enable NAT:

Multiple IP Address

IP Address	Netmask	Operation
		+

B. Connect Ethernet port of hotspot to network devices like router or modem via PoE injector or switch.

C. Log in the web GUI via the newly assigned Ethernet port IP address and check the network connection.

Port	Status	Type	IP Address	Netmask	Gateway	DNS	Duration
eth 0	up	Static	192.168.22.112	255.255.255.0	192.168.22.1	8.8.8.8	1days.02h 34m 22s

5.2 Configure the Wi-Fi Connection

A. Go to “Network” → “Interface” → “WLAN” and select “Client” mode.

B. Click “Scan” to search for a Wi-Fi access point. Select the available one and click “Join Network”.

Port	WLAN	Cellular	Loopback				
< GoBack							
SSID	Channel	Signal	Cipher	BSSID	Security	Frequency	
AAA	Auto	-61dBm	AES	24:e1:24:f0:c4:13	WPA-PSK/WPA2-PSK	2412MHz	Join Network

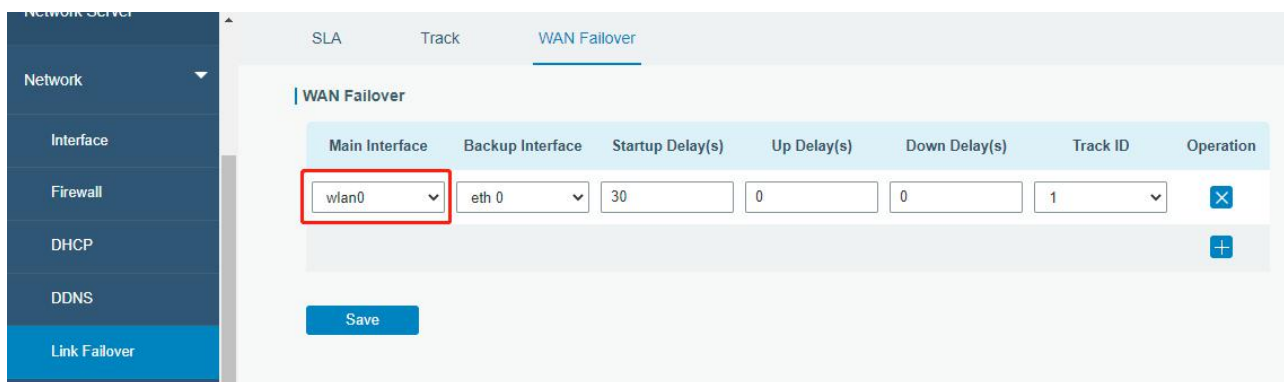
C. Type the key of Wi-Fi.

Port	WLAN	Cellular	Loopback
WLAN			
Enable	<input checked="" type="checkbox"/>		
Work Mode	Client		Scan
SSID	AAA		
BSSID	24:e1:24:f0:c4:13		
Encryption Mode	WPA-PSK/WPA2-PSK		
Cipher	AES		
Key		
IP Setting			
Protocol	DHCP Client		

D. Go to "Status" → "WLAN" to check Wi-Fi status. If it shows "Connected", it means that the hotspot has connected to Wi-Fi successfully.

Overview	Packet Forward	Cellular	Network	WLAN
WLAN Status				
Wireless Status	Enabled			
MAC Address	24:e1:24:f0:de:14			
Interface Type	Client			
SSID	AAA			
Channel	Auto			
Encryption Type	WPA-PSK/WPA2-PSK			
Cipher	AES			
Status	Connected			
IP Address	192.168.1.145			
Netmask	255.255.255.0			
Connection Duration	0 days, 02:44:45			

E. Go to "Network" → "Failover" → "WAN Failover" to switch the wlan0 as main interface, then gateway can use the Wi-Fi to access the Internet.



5.3 Configure the Cellular Connection

This feature only works when your gateway is cellular version.

- Go to "Network" → "Interface" → "Cellular" → "Cellular Setting" page to enable cellular settings.
- Choose relevant network type and fill in SIM card information like APN or PIN code, click "Save" and "Apply" for changes to take effect.

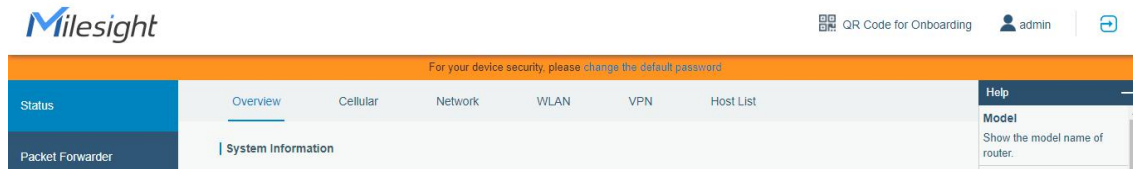
Port	WLAN	Cellular	Loopback
Cellular Setting			
Enable		<input checked="" type="checkbox"/>	
Network Type		Auto	
APN		<input type="text"/>	
Username		<input type="text"/>	
Password		<input type="text"/>	
Access Number		<input type="text"/>	
PIN Code		<input type="text"/>	
Authentication Type		Auto	
Roaming		<input checked="" type="checkbox"/>	

- Go to "Status" → "Cellular" page to view the status of the cellular connection. If it shows "Connected", it means the SIM has dialed up successfully. On the other hand, you can check the status of the LTE indicator. If it keeps on light statically, it means SIM has dialed up successfully.

Overview	Packet Forward	Cellular	Network	WLAN
Modem				
Status		Ready		
Model		EC25		
Version		EC25ECGAR06A07M1G		
Signal Level		23asu (-67dBm)		
Register Status		Registered (Home network)		
IMEI		860425047368939		
IMSI		460019425301842		
ICCID		89860117838009934120		
ISP		CHN-UNICOM		
Network Type		LTE		
PLMN ID				
LAC		5922		
Cell ID		340db83		
Network				
Status		Connected		
IP Address		10.132.132.59		
Netmask		255.255.255.240		
Gateway		10.132.132.60		

6. Helium Hotspot Setup

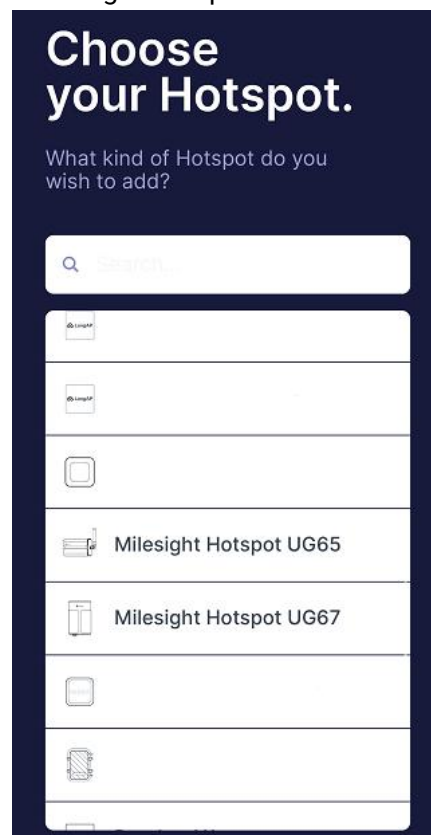
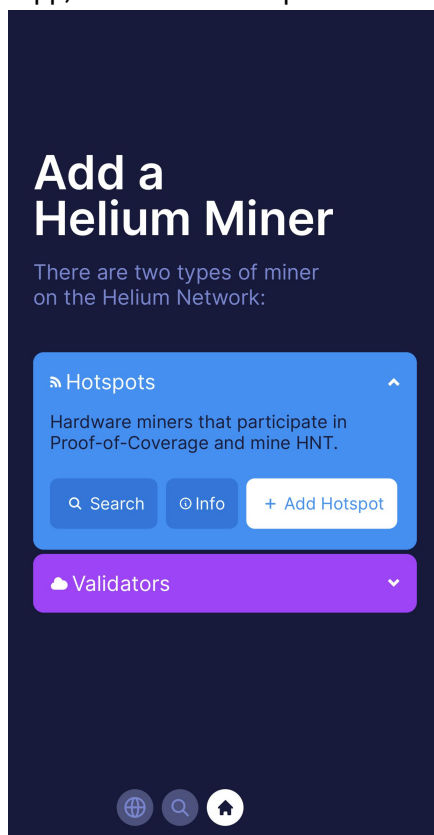
- Download Helium App from Google Play or Apple App Store and create a Helium Wallet.
- Log in the web GUI, click “QR Code for Onboarding” at the top right corner.



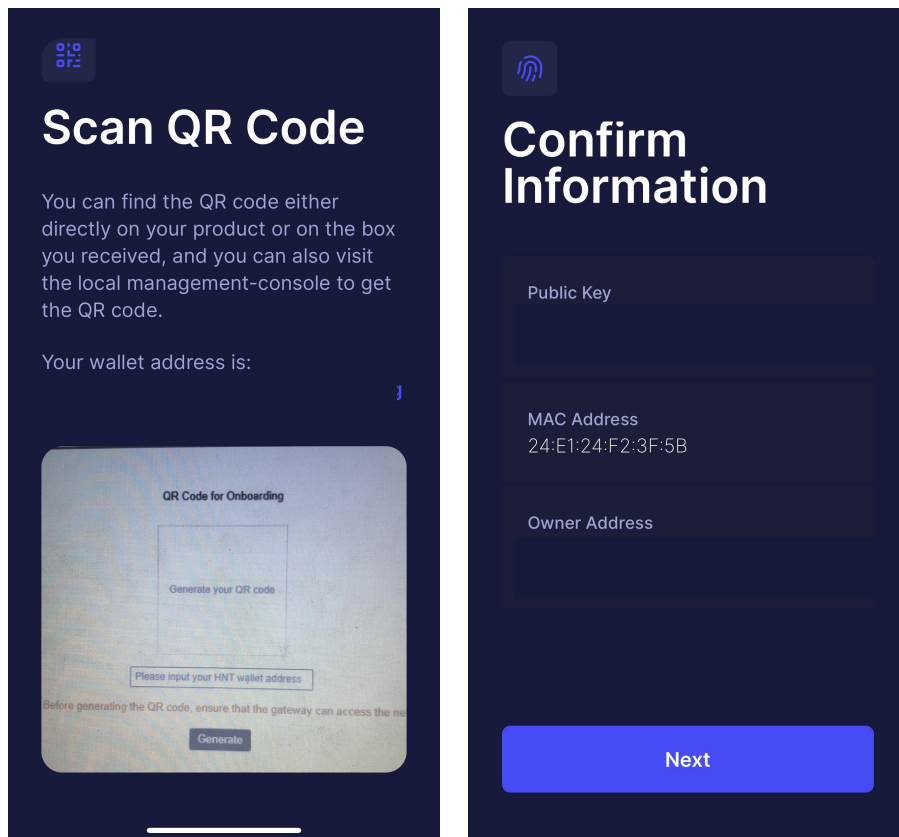
- Fill in the wallet address in hotspot web GUI and click “Generate” to generate the QR code.



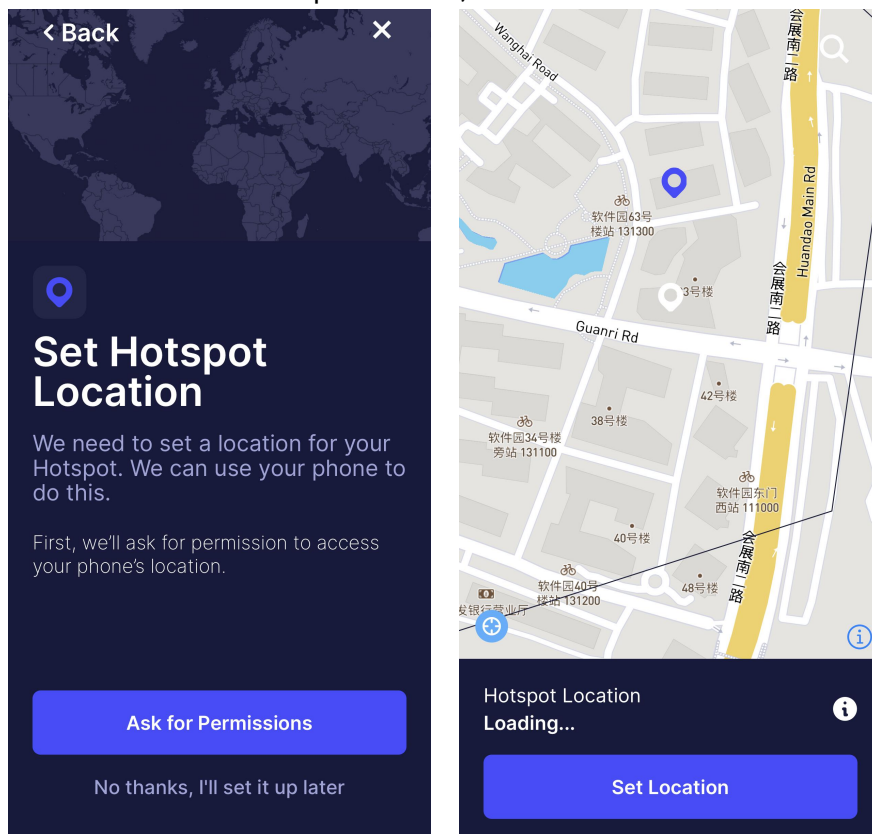
- Open Helium App, click “+Add Hotspot” and choose “Milesight Hotspot UG67” from the list.



E. Scan the QR code on the hotspot login web GUI, then App will get the hotspot information. Click "Next".



F. Click "Ask for Permissions" to set hotspot location, then click "Set Location".



G. Set hotspot antenna gain and height according to your external antenna type, it's 5dBi by default. Click "Next" and "Register Hotspot". This registration requires \$10 and it's already paid by Milesight.

Antenna Setup
Submit antenna and height details for your Hotspot.

Milesight Hotspot (5dBi) ▾

TX / RX Gain 5.0 dBi

Height (meters) 0

Next

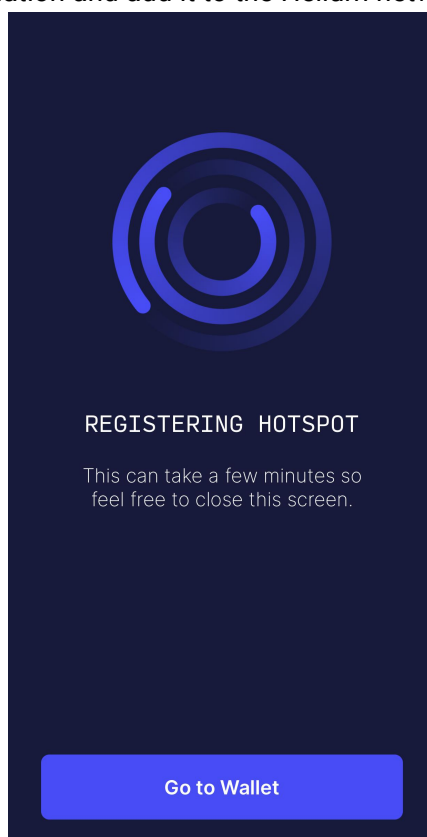
Location Fee
Your Location Fee (\$10) has been prepaid.
Confirm the location selected is correct and register your Hotspot.

Loading...

TX / RX Gain: 1 dBi
Height: 0 meters

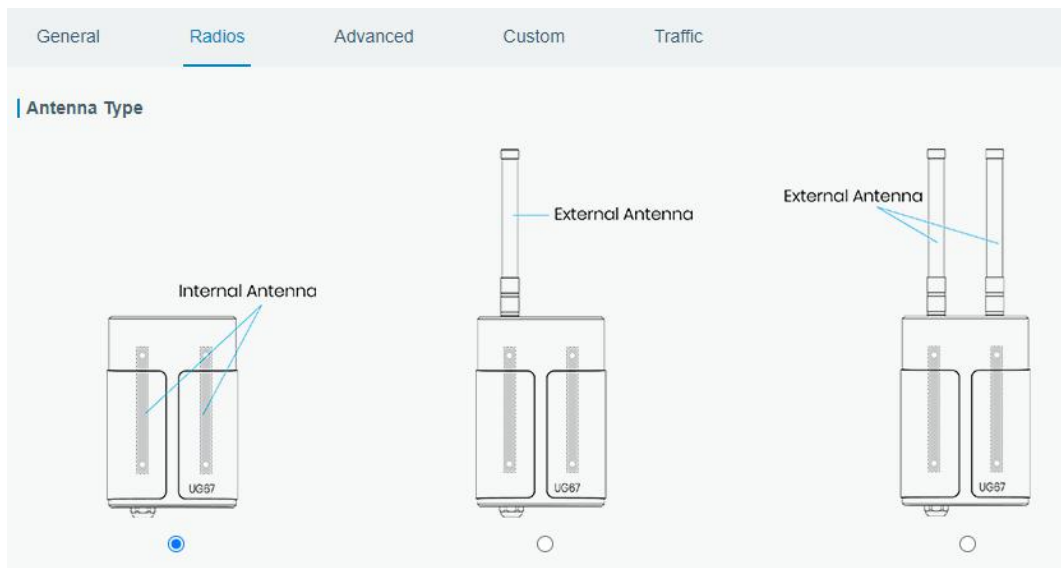
Register Hotspot

H. It will submit all hotspot information and add it to the Helium network.



7. Antenna and Frequency Configuration

A. Go to “Packet Forwarder” → “Radio” page to configure the correct antenna type according to your antenna installation mode.



B. Center frequency and channels can also be configured here. Usually the channels should be the same as LoRaWAN® nodes and network server.

Region

Name	Center Frequency/MHz
Radio 0	<input type="text" value="904.3"/>
Radio 1	<input type="text" value="905.0"/>

Multi Channels Setting

Enable	Index	Radio	Frequency/MHz
<input checked="" type="checkbox"/>	0	Radio 0	<input type="text" value="903.9"/>
<input checked="" type="checkbox"/>	1	Radio 0	<input type="text" value="904.1"/>
<input checked="" type="checkbox"/>	2	Radio 0	<input type="text" value="904.3"/>
<input checked="" type="checkbox"/>	3	Radio 0	<input type="text" value="904.5"/>
<input checked="" type="checkbox"/>	4	Radio 1	<input type="text" value="904.7"/>
<input checked="" type="checkbox"/>	5	Radio 1	<input type="text" value="904.9"/>
<input checked="" type="checkbox"/>	6	Radio 1	<input type="text" value="905.1"/>
<input checked="" type="checkbox"/>	7	Radio 1	<input type="text" value="905.3"/>

[END]