



Semi-industrial LoRaWAN[®] Hotspot

UG65

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.
- Check lightning and water protection when used outdoors.
- Do not connect or power the equipment using cables that have been damaged.

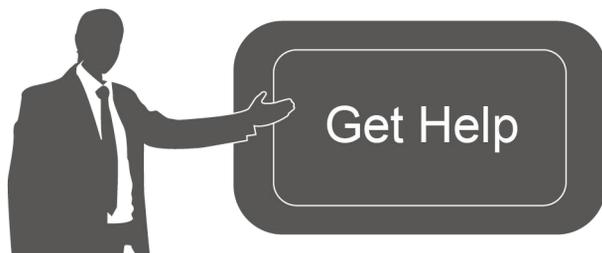
Related Documents

Document	Description
UG65 Datasheet	Datasheet for UG65 LoRaWAN® Hotspot.

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

Declaration of Conformity

UG65 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

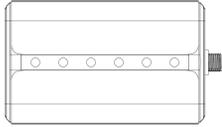
Date	Doc Version	Description
Oct. 12, 2021	V1.0	Initial version
Nov. 23, 2021	V1.1	QR Code Generate Update
Feb. 23, 2022	V1.2	1. Log in web GUI update 2. Add Helium section
July 29, 2022	V1.3	1. Delete Helium Sync page, add Hotspot page 2. Update Helium App contents 3. Add 1.3m antenna accessory and installation guide
Nov. 9, 2022	V1.4	Delete Ethernet cable

Contents

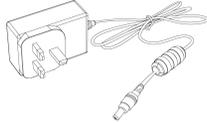
1. Packing List	4
2. Hardware Introduction	4
2.1 Overview	4
2.2 Dimensions (mm)	5
2.3 LED Indicators	5
2.4 Reset Button	6
3. Hardware Installation	6
3.1 SIM Card Installation (Cellular Version Only)	6
3.2 Ethernet Cable & Power Cable Installation	6
3.3 Antenna Installation	7
3.4 Hotspot Installation	7
3.4.1 Wall Mounting	7
3.4.2 Pole Mounting	8
4. Login the Web GUI	9
4.1 Wireless Access	9
4.2 Wired Access	10
5. Network Connection	13
5.1 Configure the Ethernet Connection	13
5.2 Configure the Wi-Fi Connection	13
5.3 Configure the Cellular Connection (Cellular Version Only)	15
6. Helium Hotspot Setup	16
7. Helium Advanced Setting	20
7.1 Hotspot	20
7.2 Onboarding	21
7.3 Operation	21
8. Packet Forwarder Configuration	23
9. Network Server Configuration	24
9.1 Connect UG65 to Milesight IoT Cloud	24
9.2 Connect UG65 to MQTT/HTTP Server	26

1. Packing List

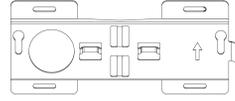
Before you begin to install the UG65 LoRaWAN® hotspot, please check the package contents to verify that you have received the items below.



1 × UG65



1 × DC Jack Power
Adapter



1 × Mounting Bracket



Bracket Fixing Screws



4 × Wall Mounting Kits



1 × 18 cm LoRaWAN®
Antenna



1 × Quick Start Guide



1 × Warranty Card



1 × LoRaWAN®
Fiber-Glass Antenna Kit
(Optional)

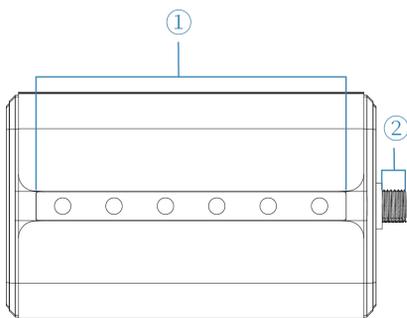


If any of the above items is missing or damaged, please contact your sales representative.

2. Hardware Introduction

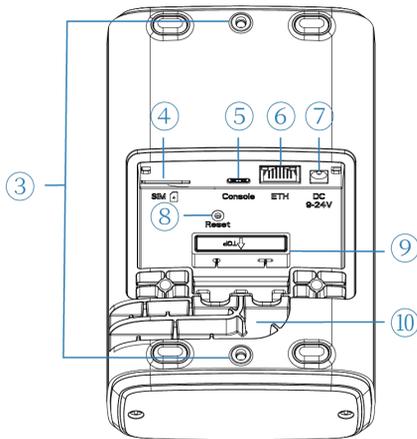
2.1 Overview

A. Front Panel



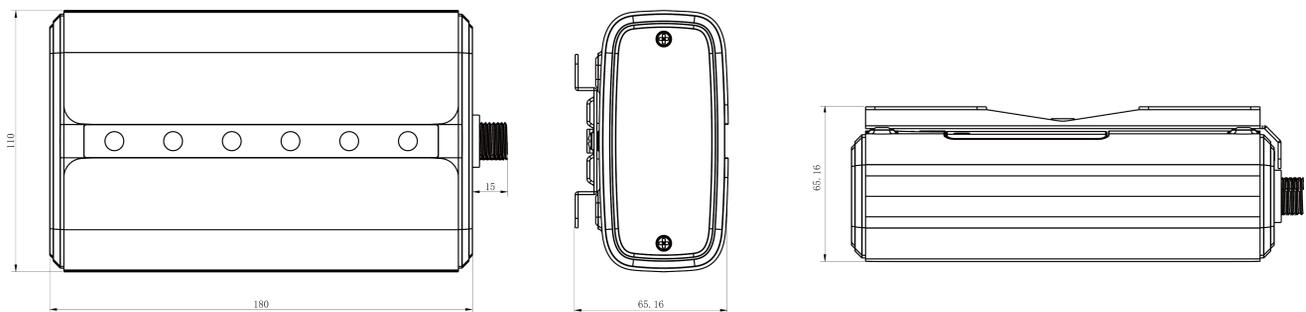
- ① LED Area
 - POWER: Power Indicator
 - STATUS: System Indicator
 - LoRa: LoRa Indicator
 - Wi-Fi: Wi-Fi Indicator
 - LTE: Cellular Indicator
 - ETH: Ethernet Port Indicator
- ② LoRaWAN® Antenna Connector

B. Rear Panel



- ③ Bracket Mounting Screws
- ④ SIM Slot
- ⑤ Type-C Port
- ⑥ Ethernet Port (PoE)
- ⑦ Power Connector
- ⑧ Reset Button
- ⑨ Waterproof Silicone
- ⑩ Cable Groove

2.2 Dimensions (mm)



2.3 LED Indicators

LED	Indication	Status	Description
POWER	Power Status	Off	The power is switched off
		On	The power is switched on
STATUS	System Status	Blue Light	Static: the system is running properly
		Red Light	The system goes wrong
LoRa	LoRa Status	Off	Packet Forwarder mode is running off
		Blue Light	Packet Forwarder mode is running well
Wi-Fi	Wi-Fi Status	Off	Wi-Fi is disabled
		Blue Light	Wi-Fi is enabled
LTE	Cellular Status	Off	SIM card is registering or fails to register (or there are no SIM cards inserted)
		Blue 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
ETH	Ethernet Port Status	Off	Disconnected
		Blue Light	Static: Connected

2.4 Reset Button

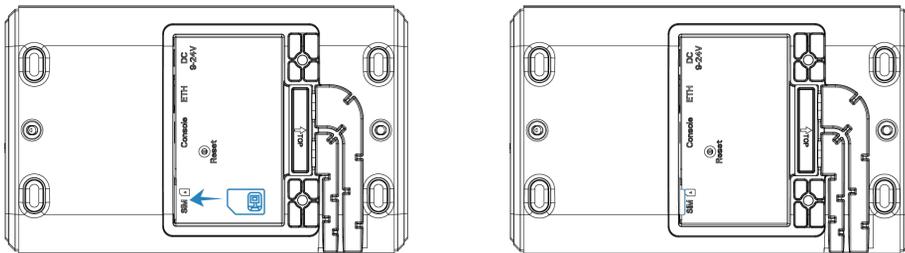
Function	Description	
	STATUS LED	Action
Reset	Static Blue	Press and hold the reset button for more than 5 seconds.
	Static Blue → Rapidly Blinking	Release the button and wait.
	Off → Static Blue	The hotspot resets to factory default.

3. Hardware Installation

3.1 SIM Card Installation (Cellular Version Only)

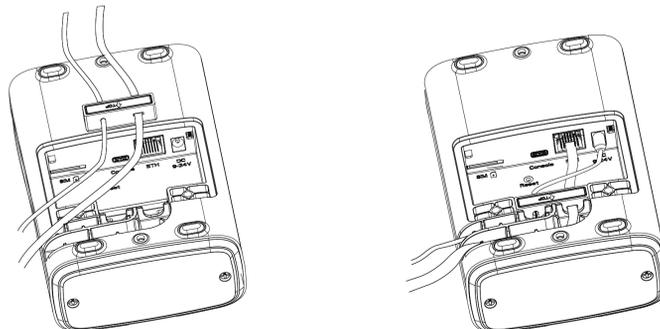
- Use a screwdriver to open the protective cover on the back panel of UG65.
- Insert the SIM card into the device according to the direction icon on the device. If you need to take out the SIM card, press into the SIM card and it will pop up automatically.

Note: Only when the PN on the device label includes “-LXXX” supports cellular.



3.2 Ethernet Cable & Power Cable Installation

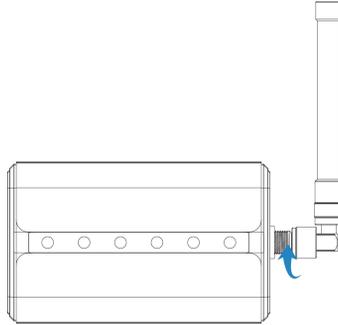
- Connect the Ethernet cable and power cable to corresponding interfaces.
- Pass two cables through the waterproof silicone and slide into the grooves.
- Screw the protective cover back to the device.



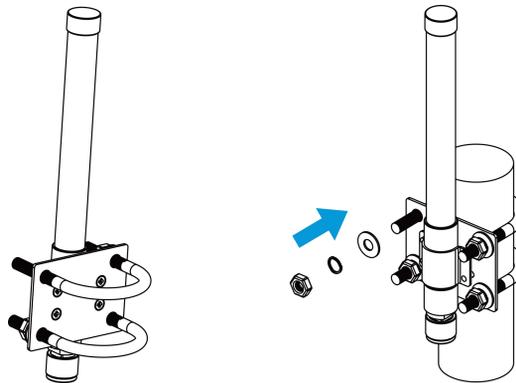
UG65 can also be powered by an 802.3af standard PoE injector or other PoE device. If both are connected, DC power is preferred.

3.3 Antenna Installation

The antenna should be installed vertically always on a site with a good signal. If you select embedded antenna mode, do not let the front panel of products faces to walls.



If you use 1.3m high gain antenna kit, fix the LoRa antenna to a pole via antenna clamp kit: pass the 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. After installation, connect the antenna to gateway antenna connector via the coaxial cable.



3.4 Hotspot Installation

UG65 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.

3.4.1 Wall Mounting

Preparation: mounting bracket, bracket fixing screws, wall plugs, wall mounting screws and other required tools.

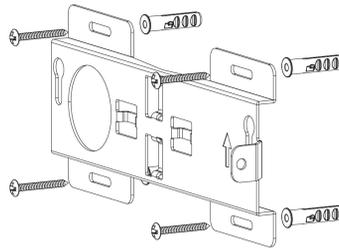
A. Align the mounting bracket horizontally to the desired position on the wall, use a marker pen to mark four mounting holes on the wall, and then remove the mounting bracket from the wall.

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

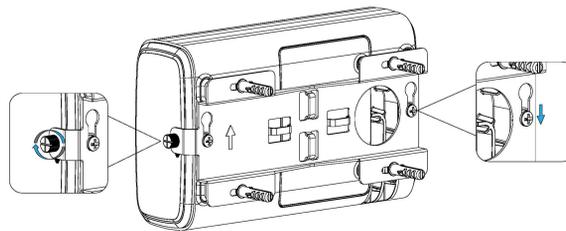
B. Drill four holes with a depth of 32 mm by using your drill with a 6 mm drill bit on the positions you marked previously on the wall.

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.



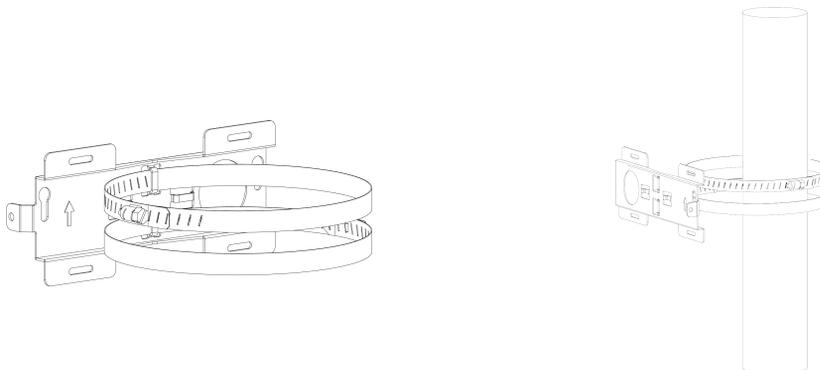
E. Screw the bracket fixing screws to the back panel of the device, then hang the device to the mounting bracket on the wall.



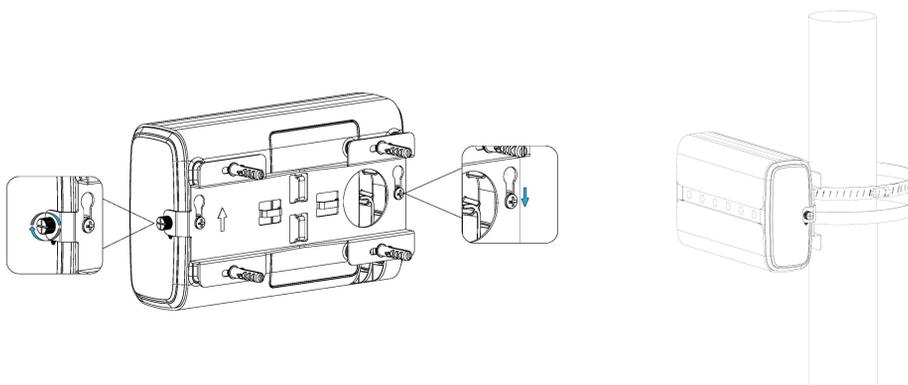
3.4.2 Pole Mounting

Preparation: mounting bracket, bracket fixing screws, 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. Screw the bracket fixing screws to the back panel of the device, then hang the device to the mounting bracket on the pole.



4. Login the Web GUI

UG65 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_*******

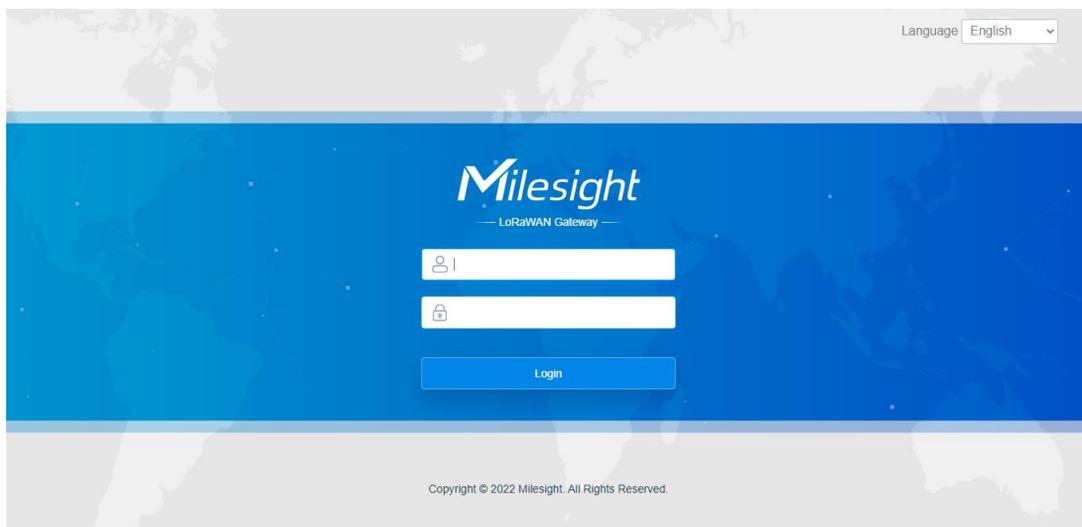
Username: **admin**

Password: **password**

4.1 Wireless Access

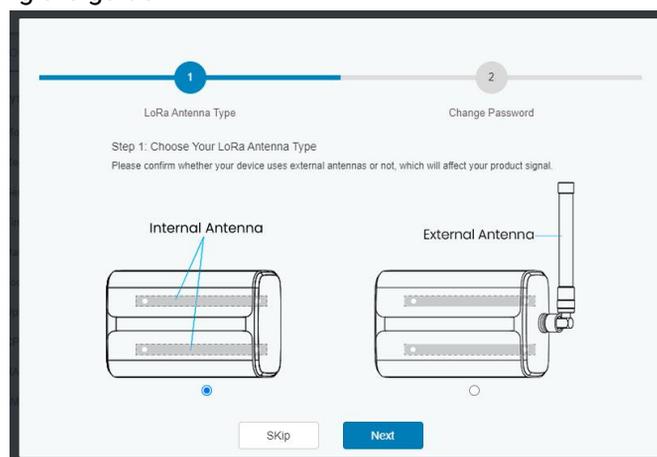
A. Enable wireless network connection on your computer and search for access point "**Gateway_*******" to connect it.

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.

The screenshot shows the Milesight web interface. At the top, there is a navigation bar with the Milesight logo, a QR code for onboarding, and a user profile for 'admin'. Below the navigation bar, there is a warning message: "For your device security, please change the default password". The main content area is divided into several tabs: Overview, Cellular, Network, WLAN, VPN, and Host List. The 'Overview' tab is selected, displaying 'System Information' in a table format. The table lists various system parameters and their values. On the right side, there is a 'Help' sidebar with links to various system information items. At the bottom right of the table, there are 'Manual Refresh' and 'Refresh' buttons.

Parameter	Value
Model	UG65-L00E-470M-H32
Region	CN470
Serial Number	6221B2358176
Firmware Version	61.1.0.8-a2
Hardware Version	V1.0
Local Time	2022-07-29 14:14:27 Friday
Uptime	21:58:10
CPU Load	4%
RAM (Available/Capacity)	1.6GB/2.0GB (80.96%)
eMMC (Available/Capacity)	26.0GB/29.0GB (89.80%)
CPU Temperature	53.0°C



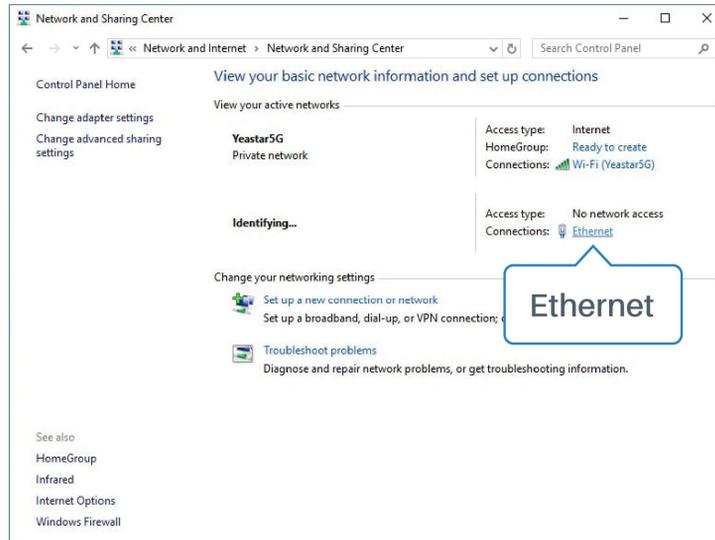
Disable WLAN feature or add password after you completed all hotspot settings!

The screenshot shows the Milesight web interface with the 'WLAN' settings page. The left sidebar is expanded to show 'Interface' settings. The main content area is titled 'WLAN' and contains several configuration options. The 'Enable' checkbox is checked. The 'Work Mode' is set to 'AP'. The 'SSID Broadcast' checkbox is checked. The 'AP Isolation' checkbox is unchecked. The 'Radio Type' is set to '802.11n(2.4GHz)'. The 'Channel' is set to 'Auto'. The 'SSID' is 'Gateway_F1B4D0'. The 'BSSID' is '24:e1:24:f1:b4:d0'. The 'Encryption Mode' is 'WPA2-PSK'. The 'Cipher' is 'Auto'. The 'Key' field is masked with asterisks.

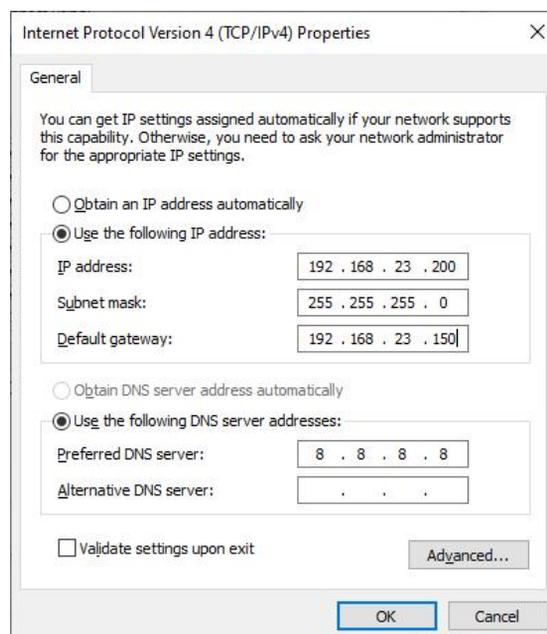
4.2 Wired Access

Connect PC to UG65 ETH port directly. 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).



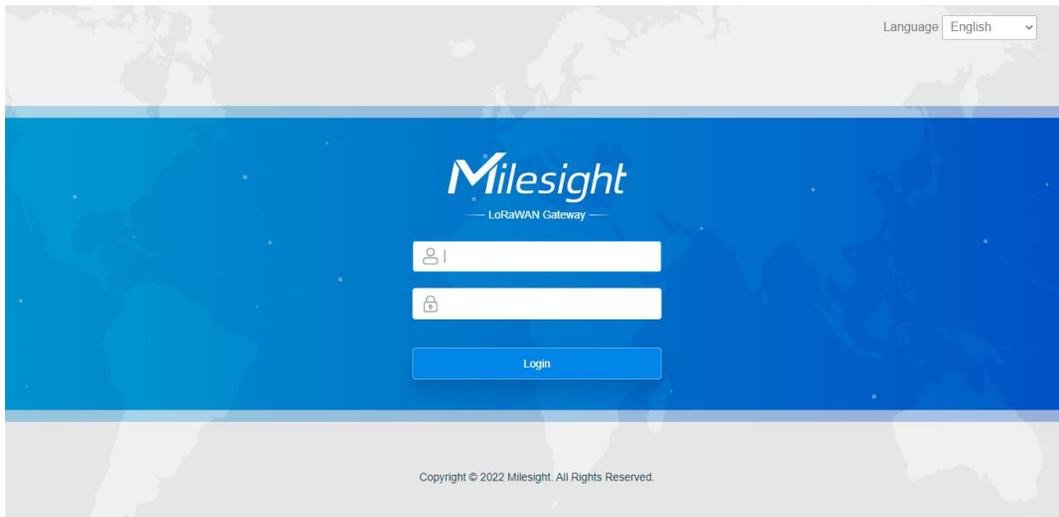
B. Go to “Properties” → “Internet Protocol Version 4 (TCP/IPv4)” and select “Use the following IP address”, then assign a static IP manually within the same subnet of the hotspot.



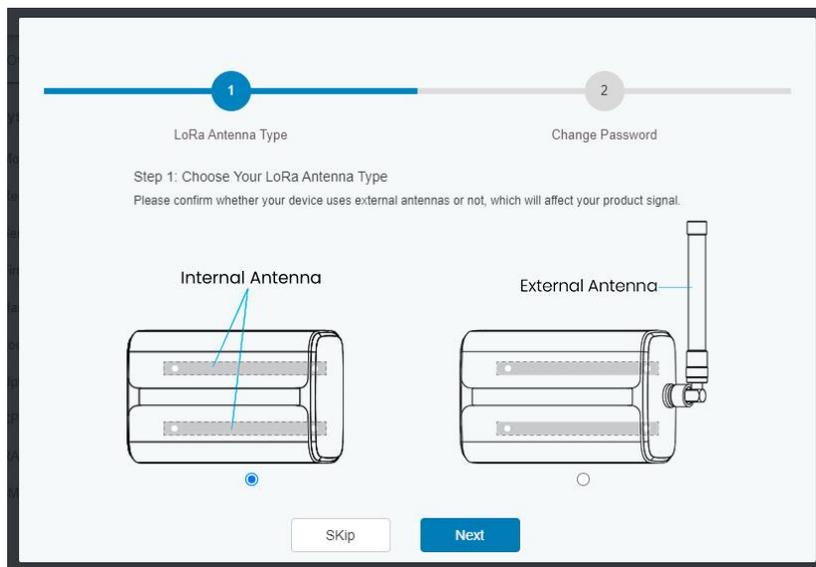
C. Open a web browser on your PC (Chrome is recommended) and type in the IP address **192.168.23.150** to access the web GUI, enter the username and password, click “Login”.



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.

System Information	Value
Model	UG65-L00E-470M-H32
Region	CN470
Serial Number	6221B2358176
Firmware Version	61.1.0.8-a2
Hardware Version	V1.0
Local Time	2022-07-29 14:14:27 Friday
Uptime	21:58:10
CPU Load	4%
RAM (Available/Capacity)	1.6GB/2.0GB (80.96%)
eMMC (Available/Capacity)	26.0GB/29.0GB (89.80%)
CPU Temperature	53.0°C

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.

The screenshot shows the 'Port' configuration page with the following settings:

Field	Value
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	<input checked="" type="checkbox"/>

B. Connect Ethernet port of hotspot to network devices like router or modem.

C. Log in the web GUI via the newly assigned IP address and go to “Status” → “Network” to check Ethernet port status.

The screenshot shows the 'Network' status page with the following WAN connection details:

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”.

Note: please do use [wired access](#) method to access the web GUI of hotspot, or you will fail to configure Wi-Fi setting.

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.

Main Interface	Backup Interface	Startup Delay(s)	Up Delay(s)	Down Delay(s)	Track ID	Operation
wlan0	eth 0	30	0	0	1	<input type="checkbox"/>
						<input type="checkbox"/>

5.3 Configure the Cellular Connection (Cellular Version Only)

- 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			
Username			
Password			
Access Number			
PIN Code			
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.

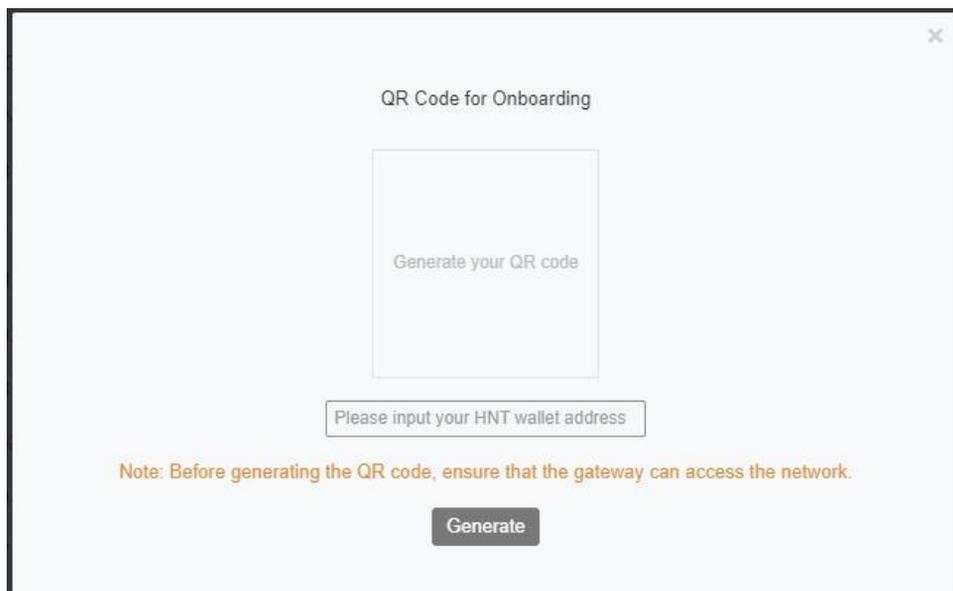
Overview	Packet Forward	Cellular	Network	WLAN
Modem				
Status	Ready			
Model	EC25			
Version	EC25ECGAR06A07M1G			
Signal Level	23asu (-67dBm)			
Register Status	Registered (Home network)			
IMEI	860425047368939			
IMSI	460019425301842			
ICCID	89860117838009934120			
ISP	CHN-UNICOM			
Network Type	LTE			
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

A. Log in the web GUI, click “QR Code for Onboarding” at the top right corner or go to “Helium” → “Onboarding” page.

The screenshot shows the Milesight web GUI. At the top right, there is a button labeled "QR Code for Onboarding" with a QR code icon. Below the header, there is a navigation menu on the left with "Onboarding" selected. The main content area is titled "QR Code for Onboarding" and contains a form with a text input field for "Helium Wallet Address" and a "Generate" button. Below the form, there is a note: "Note: Ensure that the Internet access is available." The right sidebar contains a "Help" section with "QR Code for Onboarding" and "Hotspot Events" links.

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



C. Download the **"M-Hotspot"** App from Google Play or Apple App Store and open the App to link your Helium wallet. When linking to the Helium wallet page, it's suggested to use Chrome browser to open the page.



Welcome to Helium

Play Hotspot, earn Helium, a new cryptocurrency, and participate in building People's Network.

Sign In

Click to link Helium Wallet.

D. Open "M-Hotspot" App, click "+Add Hotspot" and choose the hotspot from the list.



Add a Milesight Hotspot

Add Hotspot

Transfer Hotspot

After adding a Hotspot, you can view your account on the [Helium Explorer](#).



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

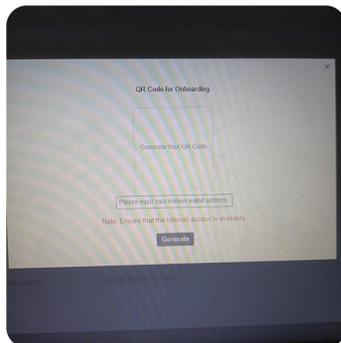
< Back ×



Scan QR Code

You can find the QR code either directly on your product or on the box you received, and you can also visit the local management-console to get the QR code.

Your wallet address is:



< Back ×



Confirm Information

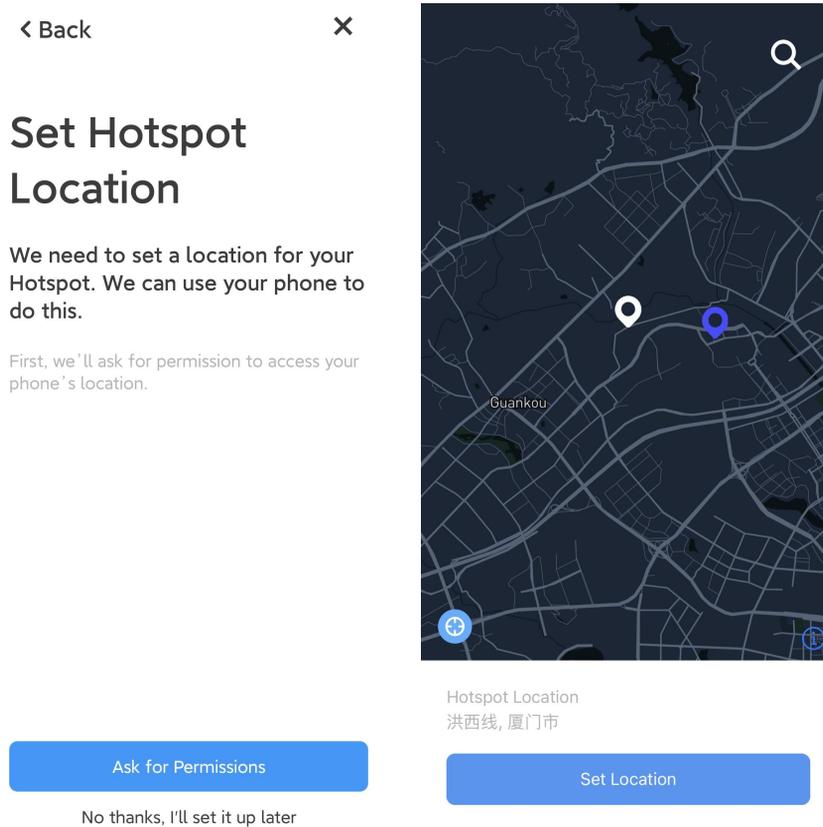
Public Key

MAC Address
24:E1:24:F2:3E:AA

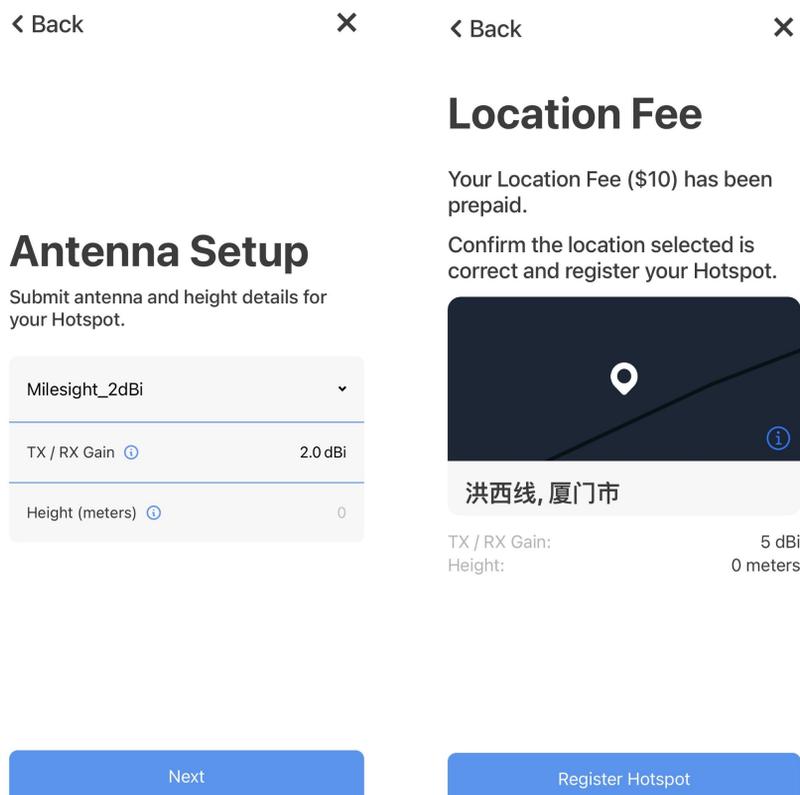
Owner Address

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 2dBi by default. Click “Next” and “Register Hotspot”. This registration requires \$10 and it's already prepaid by Milesight.



H. When registering, it will skip to Helium App page, click "I Confirm" to update the info and add your hotspot to the Helium network.

REGISTERING HOTSPOT



Cancel

Update Location?

Hotspot Name:

Cheerful Cobalt Badger

Location:

8c41a0b76c90dff

Gain

50

Elevation

0

Owner:

Maker

M-Hotspot

Cancel

I Confirm

7. Helium Advanced Setting

Milesight UG65 Helium hotspot provides options to get Helium process status and control.

7.1 Hotspot

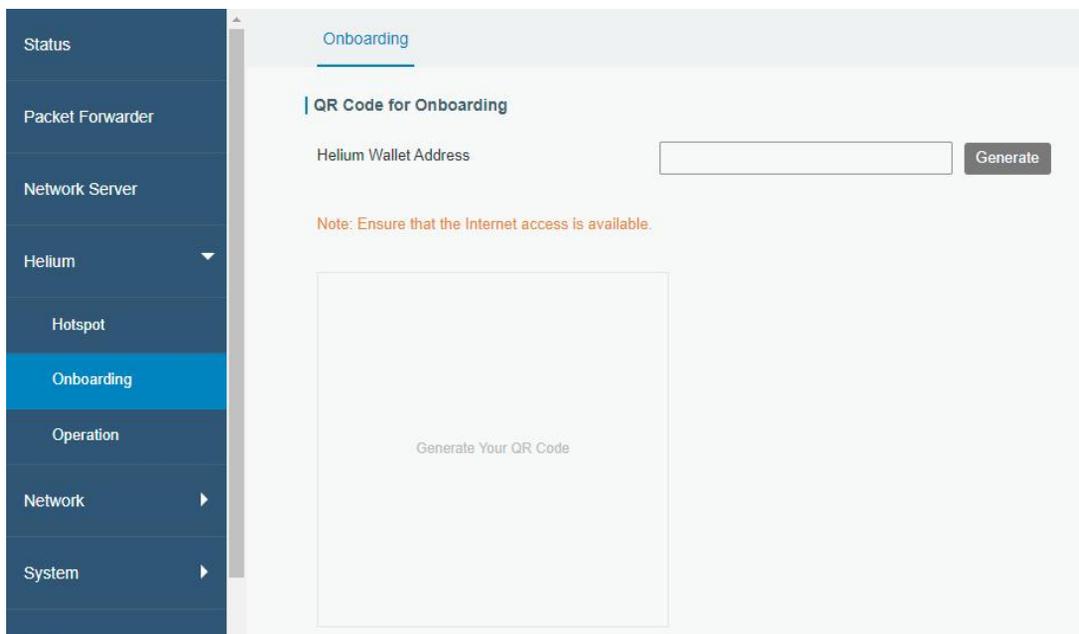
This page is used for displaying the basic information of onboarding hotspot.

Status	Status	
Packet Forwarder	Hotspot Name	cheerful-cobalt-badger
Network Server	Network Status	Online
Helium	Validator	1.12.4 (1454297)
Hotspot	Owner	13bKkGS6iASivVtrUWbcQcpzGVTfuGR1yU1BFut5kRn5fwWYb4R
Onboarding	Public IP Address	103.84.136.171
Operation		

Item	Description
Hotspot Name	A unique identifier for the onboarded hotspot in the Helium network.
Network Status	Show the status of hotspot connections to the Internet.
Validator	Show the version and block height of the validator which the device is connected.
Owner	Show the wallet address this hotspot binds to, and the refresh frequency is once a day.
Public IP Address	Show the network export IP address of the hotspot.

7.2 Onboarding

This page is used for generating QR code for onboarding and check hotspot events. You can also click the button on the top right corner to generate the QR code.



Item	Description
QR Code for Onboarding	Type the wallet address, then click "Generate" to generate the QR code for hotspot onboarding. Before generate, ensure the hotspot can access the Internet.
Hotspot Events	Click "View" to check hotspot transaction status and information. Including onboard and transfer hotspot.

7.3 Operation

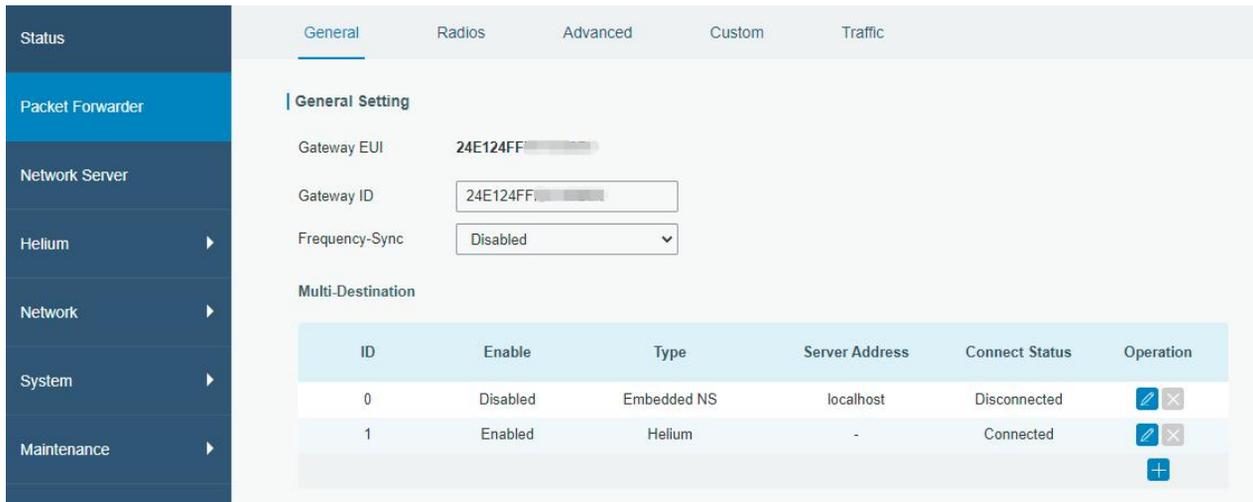
This page is used for setting Helium upgrade interval and operate the Helium process.

Operation	
Item	Description
Automatic Upgrade	
Helium Version	Show the current hotspot Helium program version.
Helium Profiles	Show the current used Helium profile version.
Enable	When enabled, the hotspot will check and upgrade the Helium version and profile automatically.
Upgrade Schedule	Set the time interval of checking Helium version. If there is a newer version, the hotspot will update the version automatically. Range: 1-168 hours.
Helium Log	
Download	Download the Helium logs containing the Helium progress running status, configuration changes, and so on.
Helium Reboot	
Reboot	Reboot the Helium progress.
Helium Reset	
Reset	Reset the Helium progress and block data, then download the latest Helium progress automatically.

8. Packet Forwarder Configuration

UG65 has installed multiple packet forwarders including Semtech, Chirpstack-Generic MQTT broker, etc.

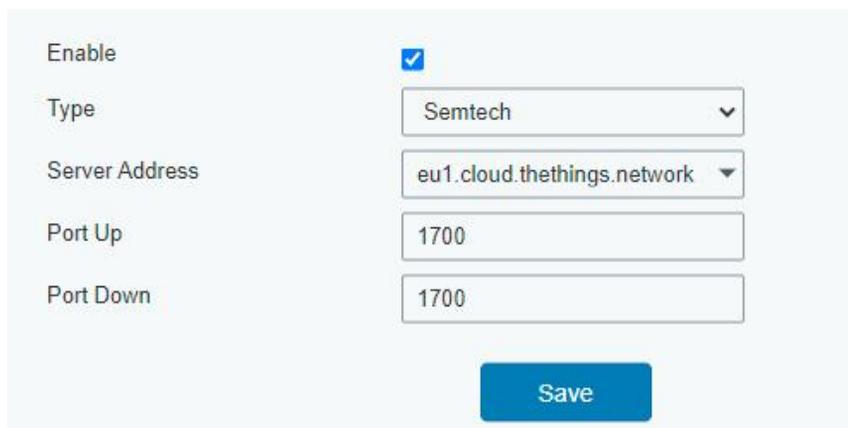
A. Go to “Packet Forwarder” → “General” page and click  to add a network server.



ID	Enable	Type	Server Address	Connect Status	Operation
0	Disabled	Embedded NS	localhost	Disconnected	 
1	Enabled	Helium	-	Connected	 

B. Fill in the server information and enable this server. If Helium is enabled, you can enable Semtech, Chirpstack type package forwarder or remote Embedded NS at the same time.

Note: when you add any NS or modify the NS setting and click “Save & Apply”, the Helium program will reboot and disconnect for dozens of seconds.



Enable
 Type
 Server Address
 Port Up
 Port Down

C. Go to “Packet Forwarder” → “Radio” page to configure antenna type, center frequency and channels. The channels of the gateway and network server need to be the same.

Region US915

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"/>

D. Add the hotspot to the network server page. For more details about the network server configuration please refer to network server guide or [Milesight IoT Support portal](#).

E. After connected, you can check connection status here.

Status

Packet Forwarder

Network Server

Helium

Network

System

Maintenance

APP

General Radios Advanced Custom Traffic

General Setting

Gateway EUI 24E124FF

Gateway ID

Frequency-Sync Disabled ▼

Multi-Destination

ID	Enable	Type	Server Address	Connect Status	Operation
0	Enabled	Embedded NS	localhost	Connected	✎ ✕
1	Enabled	Helium	-	Disconnected	✎ ✕
2	Enabled	Semtech	eu1.cloud.thethings.network	Connected	✎ ✕

[+](#)

9. Network Server Configuration

UG65 can work as network server and transmit data to Milesight IoT Cloud or other platform via MQTT/HTTP/HTTPS.

9.1 Connect UG65 to Milesight IoT Cloud

A. Go to "Packet Forwarder" → "General" page to enable the embedded network server.

Note: when you enable and click "Save & Apply", the Helium program will reboot and disconnect for dozens of seconds.

The screenshot shows the 'General Setting' page for the 'Packet Forwarder' configuration. The 'Gateway EUI' is 24E124FF. The 'Gateway ID' is 24E124FF. The 'Frequency-Sync' is set to 'Disabled'. Under 'Multi-Destination', there is a table with the following data:

ID	Enable	Type	Server Address	Connect Status	Operation
0	Enabled	Embedded NS	localhost	Connected	Edit Delete
1	Enabled	Helium	-	Connected	Edit Delete

B. Go to “Packet Forwarder” → “Radio” page to select the antenna type, center frequency and channels. The channels of the gateway and nodes need to be the same.

The screenshot shows the 'Radio' configuration page. The 'Region' is set to 'US915'. There are two radio entries:

Name	Center Frequency/MHz
Radio 0	904.3
Radio 1	905.0

Below this is the 'Multi Channels Setting' table:

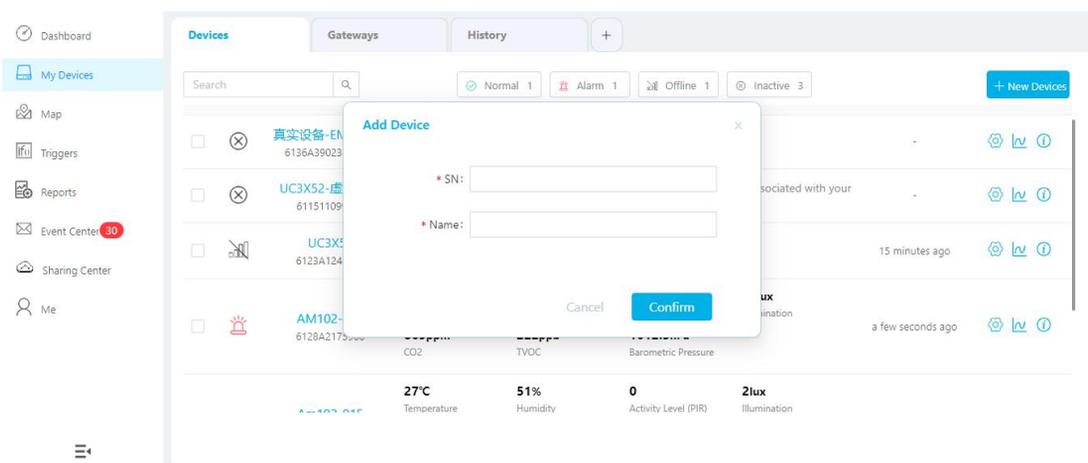
Enable	Index	Radio	Frequency/MHz
<input checked="" type="checkbox"/>	0	Radio 0	903.9
<input checked="" type="checkbox"/>	1	Radio 0	904.1
<input checked="" type="checkbox"/>	2	Radio 0	904.3
<input checked="" type="checkbox"/>	3	Radio 0	904.5
<input checked="" type="checkbox"/>	4	Radio 1	904.7
<input checked=""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

C. Go to “Network Server” → “General” page to enable the network server and “Milesight IoT Cloud” mode.

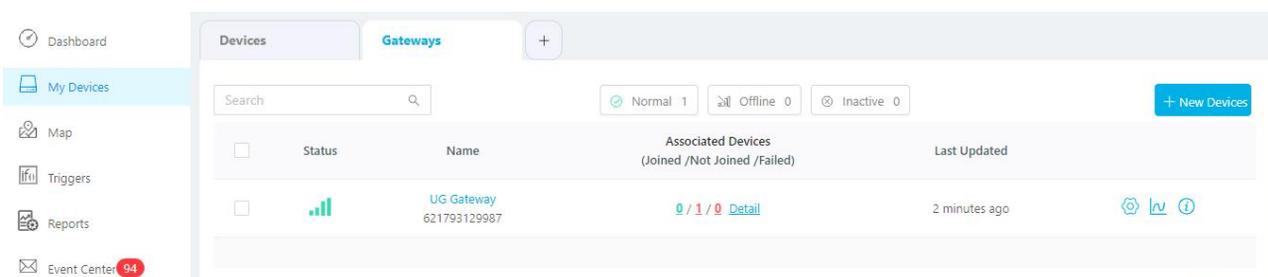
The screenshot shows the 'General Setting' page for the 'Network Server' configuration. The 'Enable' checkbox is checked. The 'Cloud Mode' dropdown is set to 'Milesight IoT Cloud'. The 'NetID' is 010203. The 'Join Delay' is 5 seconds.

D. Log in the Milesight IoT Cloud. Then go to “My Devices” page and click “+New Devices” to add

hotspot to Milesight IoT Cloud via SN. Gateway will be added under “Gateways” menu.



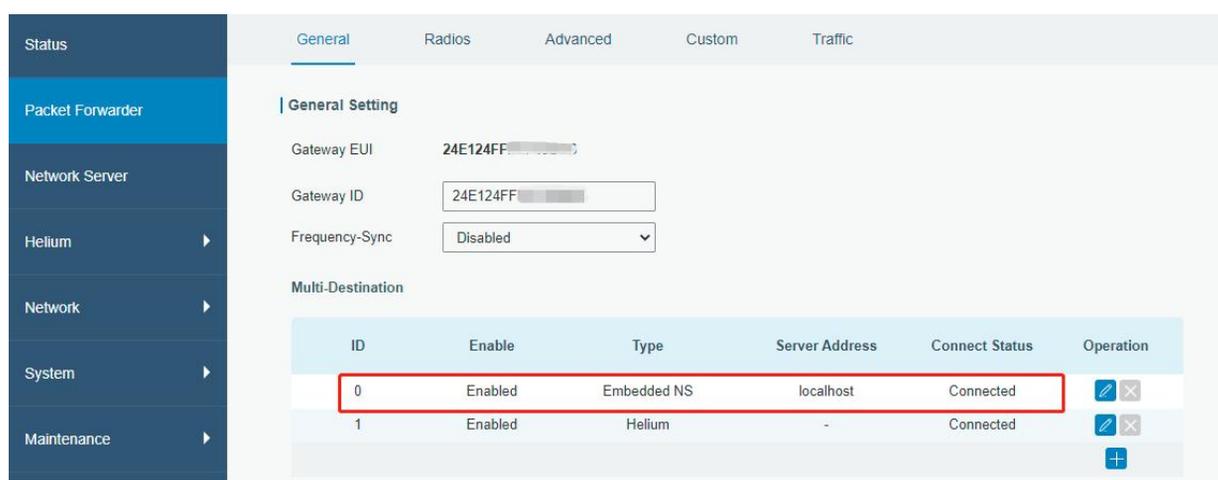
E. The hotspot is online on Milesight IoT Cloud.



9.2 Connect UG65 to MQTT/HTTP Server

A. Go to “Packet Forwarder” → “General” page to enable the embedded network server.

Note: when you add any NS or modify the NS setting and click “Save & Apply”, the Helium program will reboot and disconnect for dozens of seconds.



B. Go to “Packet Forwarder” → “Radio” page to select the antenna type, center frequency and channels. The channels of the gateway and nodes need to be the same.

Region US915

Name	Center Frequency/MHz
Radio 0	904.3
Radio 1	905.0

Multi Channels Setting

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

C. Go to “Network Server” → “General” page to enable the network server mode.

Status	General	Applications	Profiles	Device
Packet Forwarder	General Setting			
Network Server	Enable <input checked="" type="checkbox"/>	Cloud Mode <input type="checkbox"/>		
Helium	NetID	010203		
Network	Join Delay	5 sec		
System	RX1 Delay	1 sec		
	Lease Time	8760-0-0 hh-mm-ss		
	Log Level	info		

D. Go to “Network Server”→“Application” to add a new application.

General	Applications	Profiles	Device
Applications			
Name	cloud		
Description	cloud		
Payload Codec	None		

After saving the application, you can select HTTP, HTTPS or MQTT protocol and fill in correspond server information to send data to another server.

Data Transmission

Type

Status

General

Broker Address

Broker Port

Client ID

Connection Timeout/s

Keep Alive Interval/s

E. Go to “Profiles” page to add a new profile for the device.

General Applications **Profiles** Device

Device Profiles

Name

Max TXPower

Join Type

Class Type Class A Class B Class C

Advanced

F. Go to “Device” page and click “Add” to add LoRaWAN® node devices.

General Applications Profiles **Device** Gateways Packets

Device

Device Name	Device EUI	Device-Profile	Application	Last Seen	Activated	Operation
No matching records found						

Device Name: uc11
 Description: a short description of your node
 Device EUI: 0000000000000000
 Device-Profile: ClassA-OTAA
 Application: cloud
 Frame-counter Validation:
 Application Key:
 Device Address:
 Network Session Key:
 Application Session Key:
 Uplink Frame-counter: 0
 Downlink Frame-counter: 0
 Save & Apply

You can also click “Bulk Import” if you want to add all nodes at once.

Import File **Browse** **Import** **Template Download**

Click “Template Download” to download template file and add device information to this file. Application and device profile should be the same as you created on web page.

	A	B	C	D	E	F	G	H	I
1	name	description	deveui	application	deviceprofile	appkey	devaddr	appskey	nwkskey
2	24e1242191323266		24e1242191323266	cloud	ClassC-OTAA	112233445566778899aa112233445566			
3									
4									
5									

Import this file to add bulks of devices.

G. Go to “Packets” page to check the packets from LoRaWAN® node devices. The type starts from “Up” means uplinks and “Dn” means downlinks.

Network Server

Clear

Device EUI	Frequency	Datarate	SNR	RSSI	Size	Fcnt	Type	Time	Details
24e124126a146579	868300000	SF7BW125	8.5	-85	4	14	UpUnc	2020-04-28T15:09:25+08:00	!
24e124126a146579	868300000	SF7BW125	10.2	-75	4	13	UpUnc	2020-04-28T15:04:25+08:00	!

Click “Details” to check the properties and payload contents of packets.

Packets Details	
Fcnt	14
Port	85
Modulation	LORA
Bandwidth	125
SpreadFactor	7
Bitrate	0
CodeRate	4/5
SNR	8.5
RSSI	-85
Power	-
Payload(b64)	A3cYAA==
Payload(hex)	03771800
MIC	f5acdeb2

[END]