Outdoor LoRaWAN® Gateway

UG67

Quick Start 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 device 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

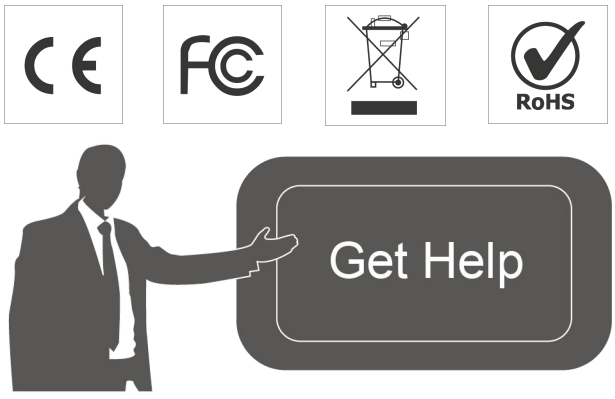
This Quick Start Guide only explains the installation of Milesight UG67 LoRaWAN® Gateway. For more functionality and advanced settings, please refer to the relevant documents as below.

Document	Description
UG67 Datasheet	Datasheet for UG67 LoRaWAN® Gateway.
UG67 User Guide	Users can refer to the guide for instruction on how to log in the web GUI, and how to configure all the settings.

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

Declaration of Conformity

UG67 is in conformity with the essential requirements and other relevant provisions of the CE, FCC, and RoHS.



For assistance, please contact
Milesight technical support:
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Tel: 86-592-5085280
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Address: Building C09, Software Park III, Xiamen 361024, China

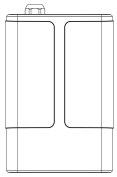
Revision History

Date	Doc Version	Description
October 30, 2020	V1.0	Initial version
May 6, 2021	V1.1	Delete optional mark of LoRa antennas, add DC pinouts
July 29, 2021	V1.2	Add antenna accessories and installation method
Oct. 31, 2022	V 1.3	1. Delete Ethernet cable 2. Web GUI pictures update

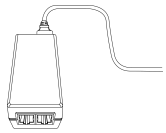
Contents

1. Packing List

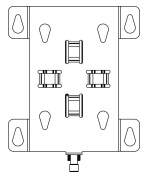
Before you begin to install the UG67 LoRaWAN® Gateway, please check the package contents to verify that you have received the items below.



1 × UG67



1 × PoE Injector

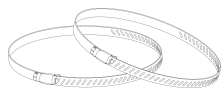


1 × Mounting Bracket

4 × Wall Mounting Kits

1 × RJ45 Cable Gland

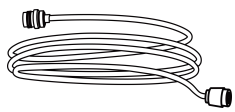
1 × SIM Dust Cover



2 × Hose Clamps

1 × M12 DC Power Cable

2 × LoRaWAN® Antennas (60 cm)



1 × Antenna Coaxial Cable (1m)

1 × Antenna Clamp Kit

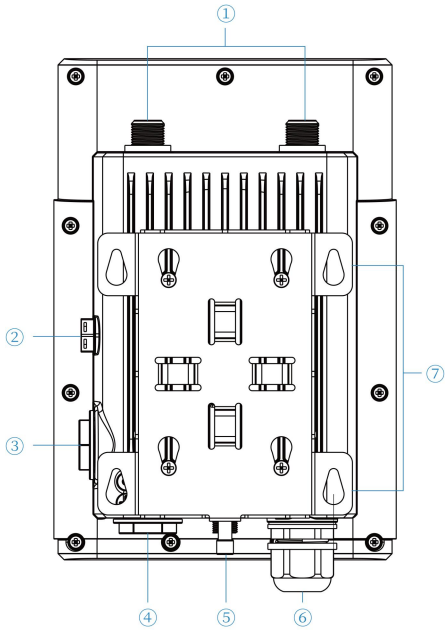
1 × Quick Start Guide

1 × Warranty Card

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

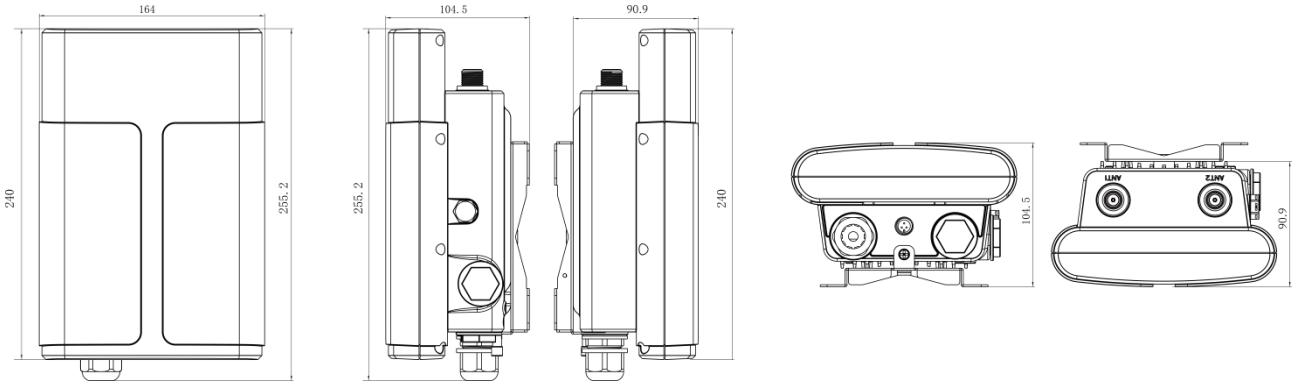
2. Hardware Introduction

2.1 Overview



① LoRaWAN® 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	Packet Forwarder 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

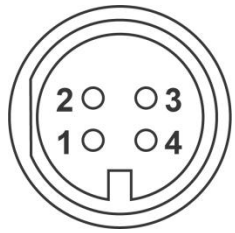
2.4 Reset Button

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 gateway resets to factory default.

2.5 DC Power Connector

UG67 supports 12 VDC or solar supply via M12 connector.

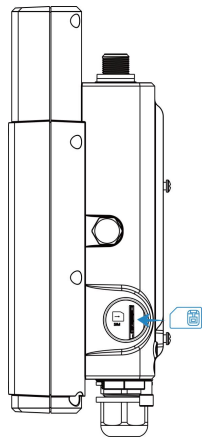
Pin	Color	Description
1	Black	GND
2	White	Reserved
3	Yellow	Reserved
4	Red	+12V



3. Hardware Installation

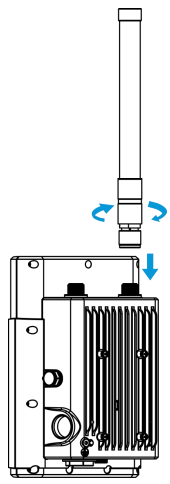
3.1 SIM Card Installation

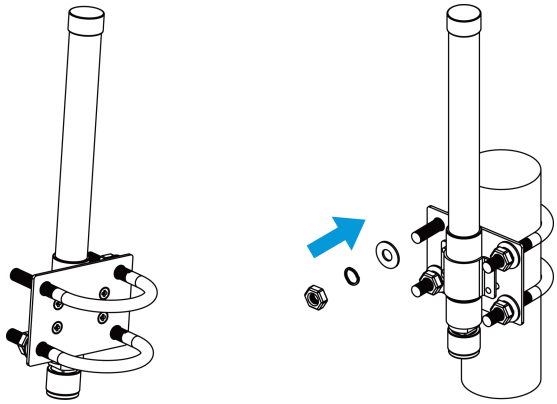
A. Insert the SIM card into the device according to the direction icon on the device. If you need to take out the SIM card, press into the SIM card and it will pop up automatically.
B. Tighten the SIM dust cover with wrench to prevent water into the device.



3.2 Antenna Installation

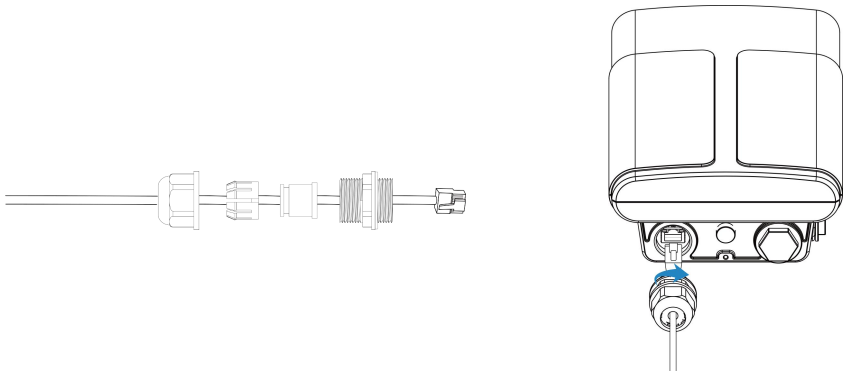
UG67 supports multiple LoRaWAN® antenna types. After installation, please select the corresponding installation type in web GUI.
Internal Antenna Mode: keep gateway positive outwards to ensure good signal.
Single or Double Antenna Mode: pass one LoRaWAN® antenna through the antenna clamp and fix it with 4 screws, then wrap the U-bolt around a pole and fix the clamp with nuts and other accessories. After installation, connect this antenna to gateway antenna **ANT1** connector via the coaxial cable. For double antenna mode, please connect another antenna to ANT2 connector directly.
Note: do not install this antenna to gateway directly if there is strong wind on the scene.



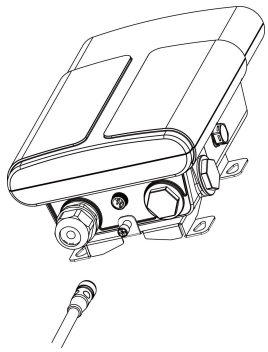


3.3 Ethernet Cable & Power Cable Installation

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

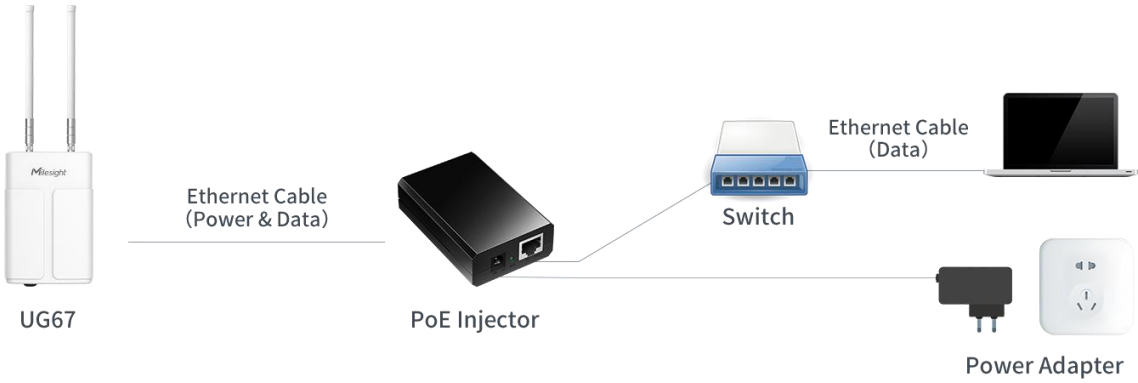


For DC or solar power supply, remove the protective cap of power connector and rotate the DC power cable into the power connector.



3.4 Power Supply

UG67 can be powered by 802.3af standard PoE or 12VDC. Please follow the picture to provide power supply via PoE injector:



3.5 Gateway 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 device to 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.

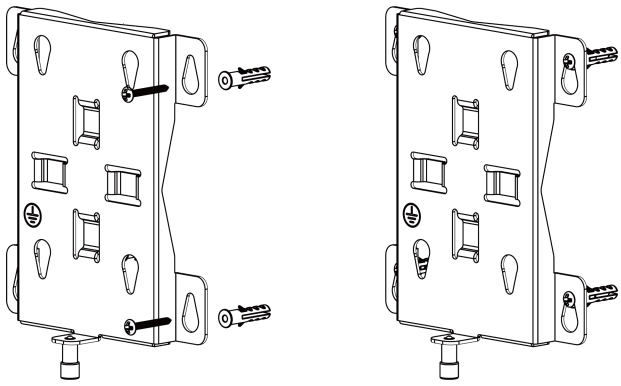
A. Align the mounting bracket horizontally to the desired position on the wall, use a marker pen to mark four mounting holes on the wall, and then remove the mounting bracket from the wall.

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

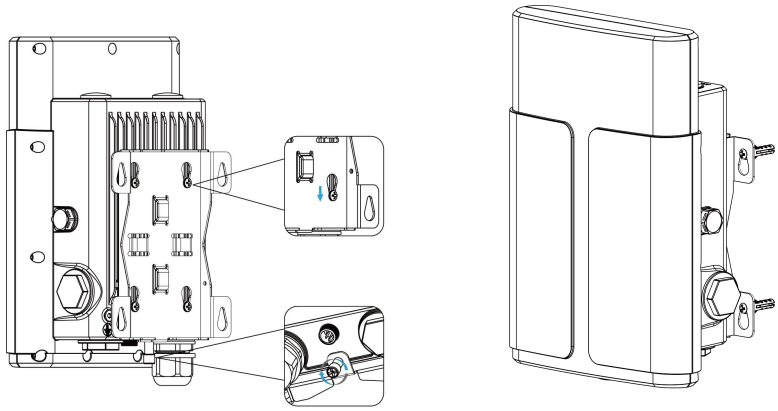
B. Drill four holes with a depth of 32 mm by using your drill with a 6 mm drill bit on the positions you marked previously on the wall.

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 device, then screw the bracket screw to the bottom of the device.



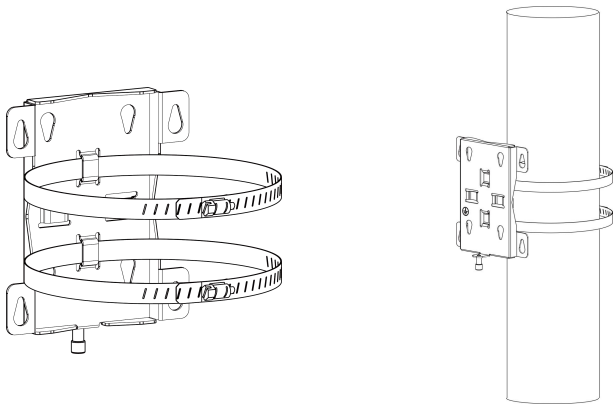
3.5.2 Pole Mounting

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

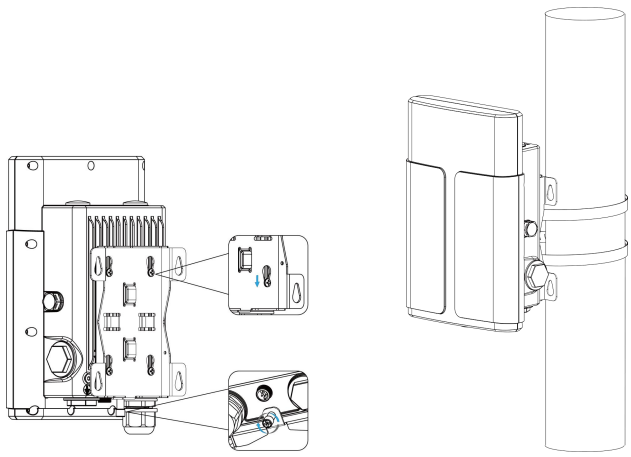
A. Loosen the hose clamp by turning the locking mechanism counter-clockwise.

B. Straighten out the hose clamp and slide it through the rectangular rings in the mounting bracket, wrap the hose clamp around the pole.

C. 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 device, then screw the bracket screw to the bottom of the device.



4. Login the Web GUI

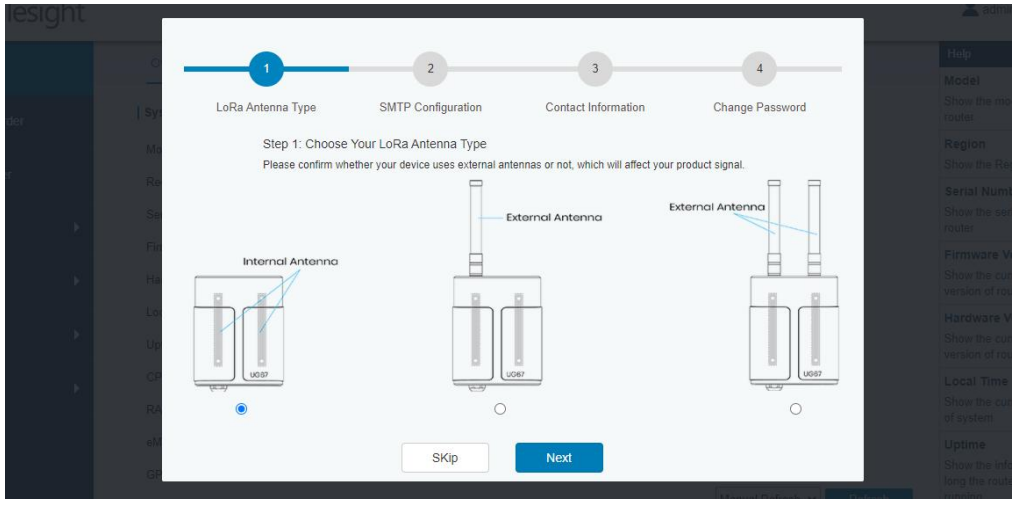
UG67 provides web-based configuration interface for management. If this is the first time you configure the gateway, please use the default settings below:
Username: **admin**
Password: **password**

4.1 Wireless Access

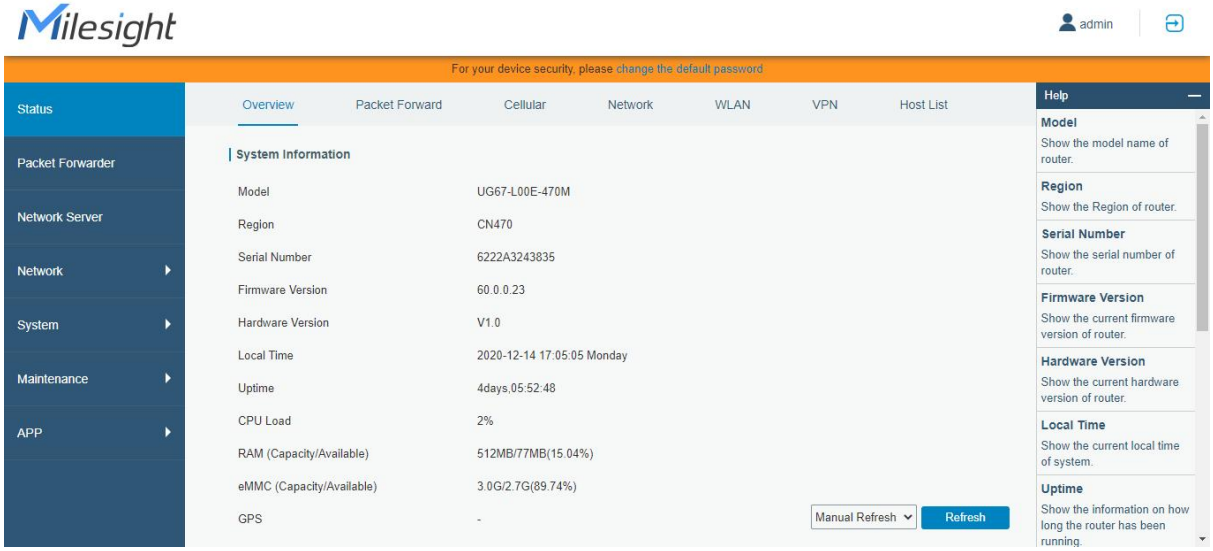
A. Enable Wireless Network Connection on your computer and search for access point “Gateway_******” to connect it.
B. Open a Web browser on your PC (Chrome is recommended) and type in the IP address **192.168.1.1** to access the web GUI, enter the username and password, click “Login”.

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

D. After logging the web GUI, follow the guide to complete the basic configurations. It’s suggested that you change the password for the sake of security.



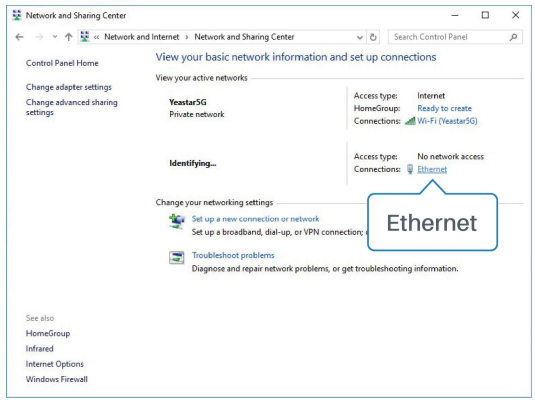
E. You can view system information and perform configuration of the gateway.



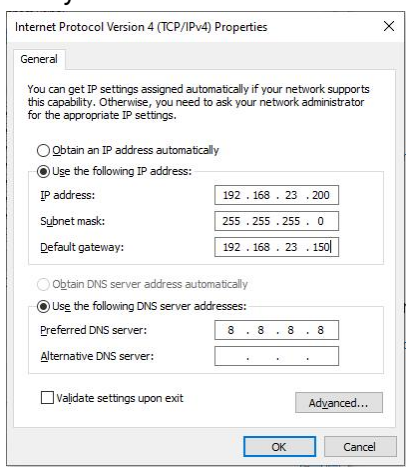
4.2 Wired Access

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).



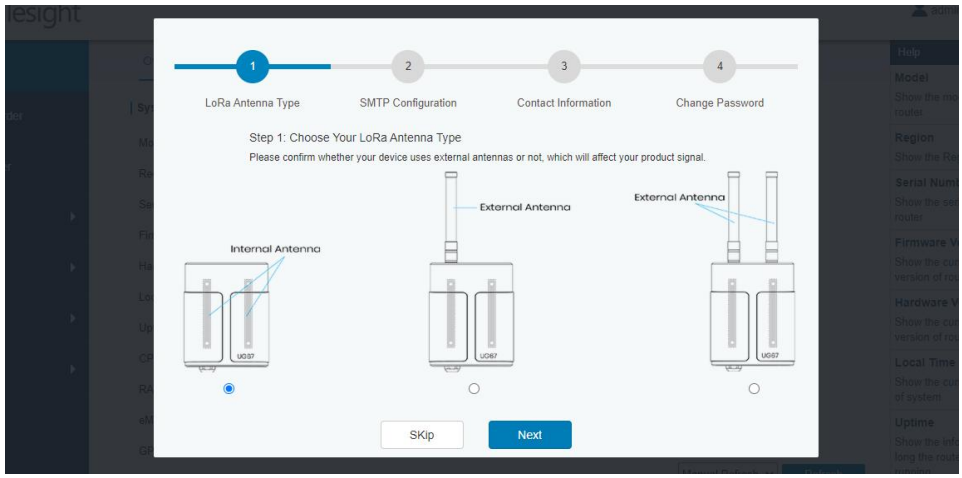
B. Go to "Properties" → "Internet Protocol Version 4(TCP/IPv4) "and select "Use the following IP address", then assign a static IP manually within the same subnet of the gateway.



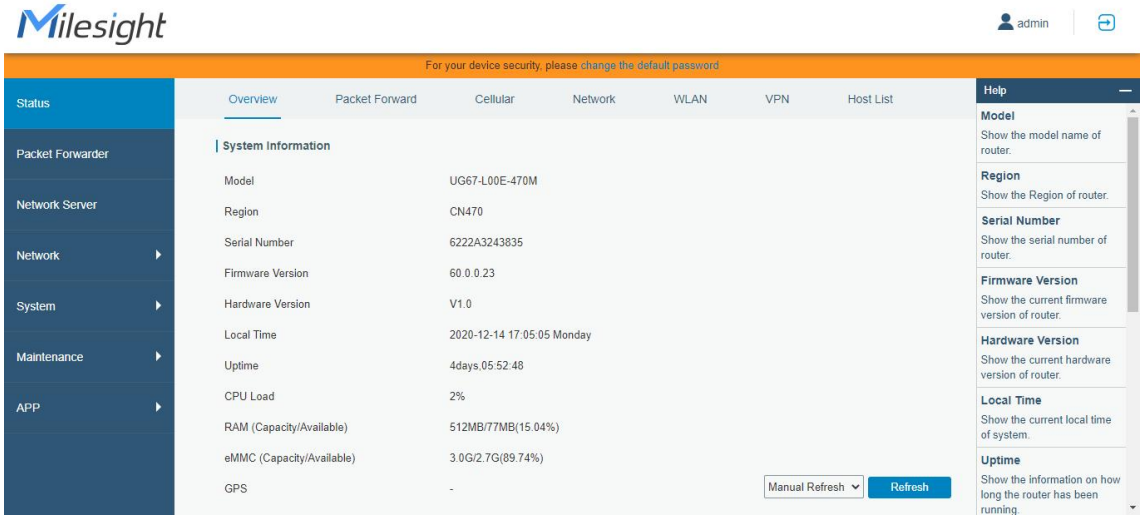
C. Open a Web browser on your PC (Chrome is recommended) and type in the IP address 192.168.23.1 50 to access the web GUI, enter the username and password, click “Login”.

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

E. After logging the web GUI, follow the guide to complete the basic configurations. You can also skip the instructions. It’s suggested that you change the password for the sake of security.



F. After guide complete, you can view system information and perform configuration of the gateway.

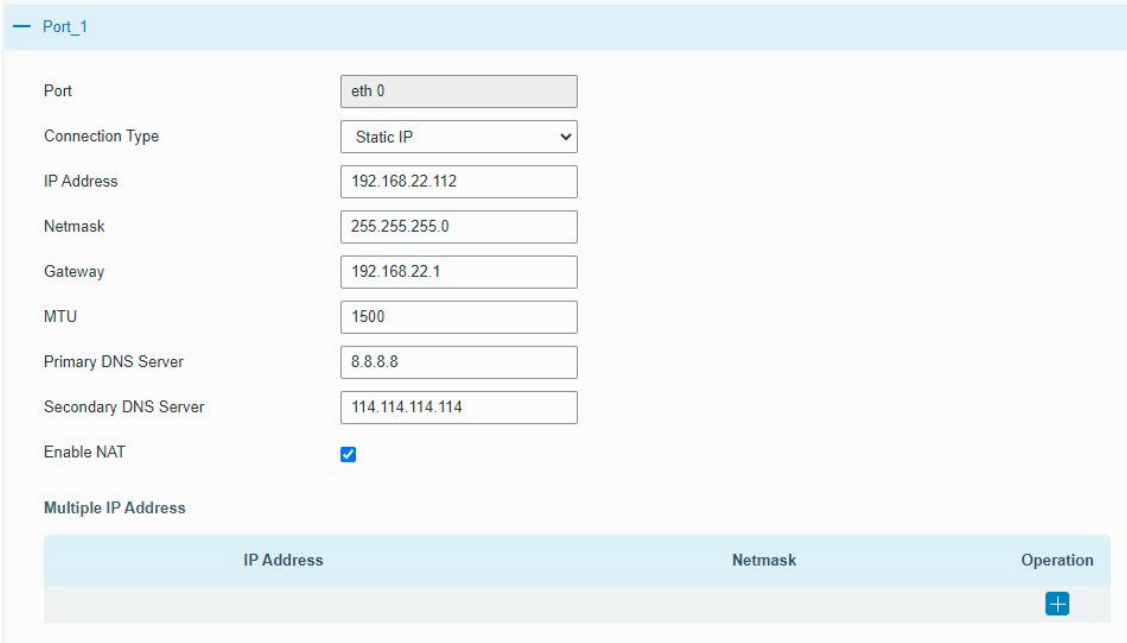


5. Network Connection

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

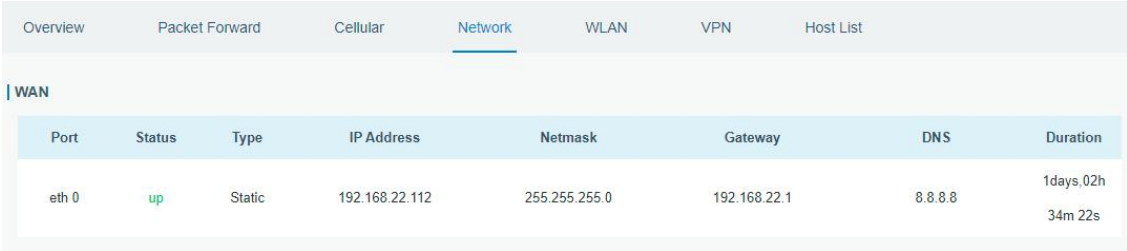
5.1 Configure the Ethernet Connection

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.



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

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

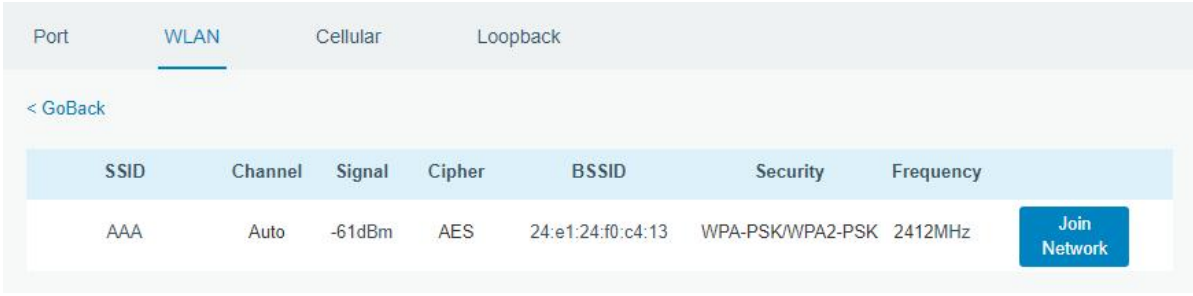


5.2 Configure the Wi-Fi Connection

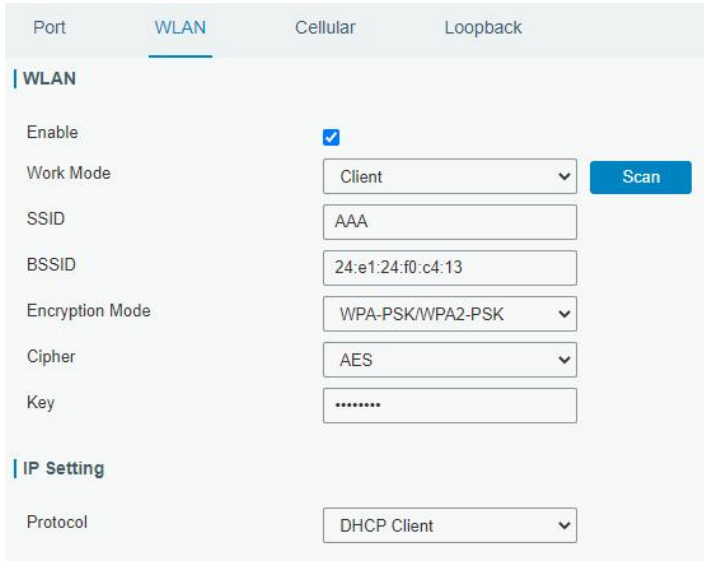
A. Go to "Network" → "Interface" → "WLAN" and select "Client" mode.

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

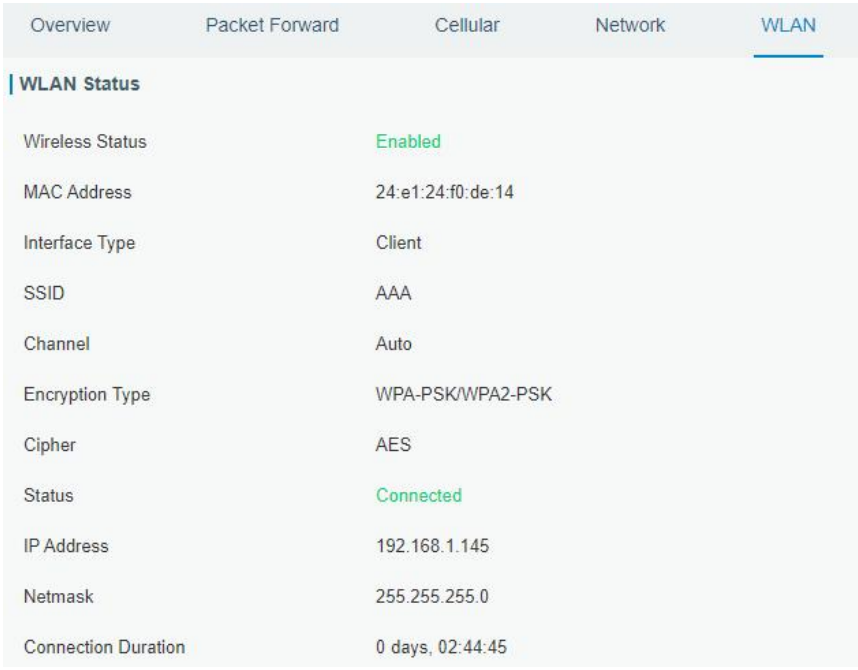
Note: please do use wired access method to access the web GUI, or you will fail to configure Wi-Fi setting.



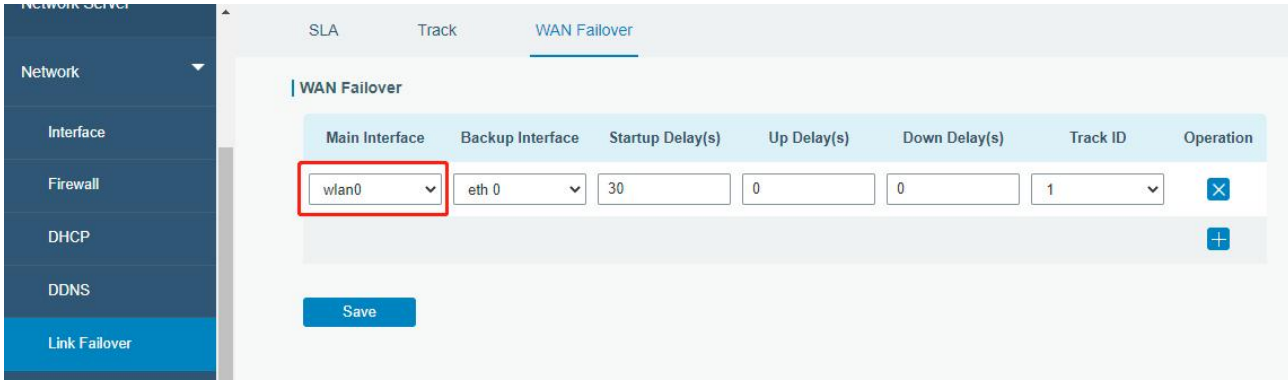
C. Type the key of Wi-Fi.



D. Go to “Status”→”WLAN” to check Wi-Fi status. If it shows “Connected”, it means gateway connects to Wi-Fi successfully.

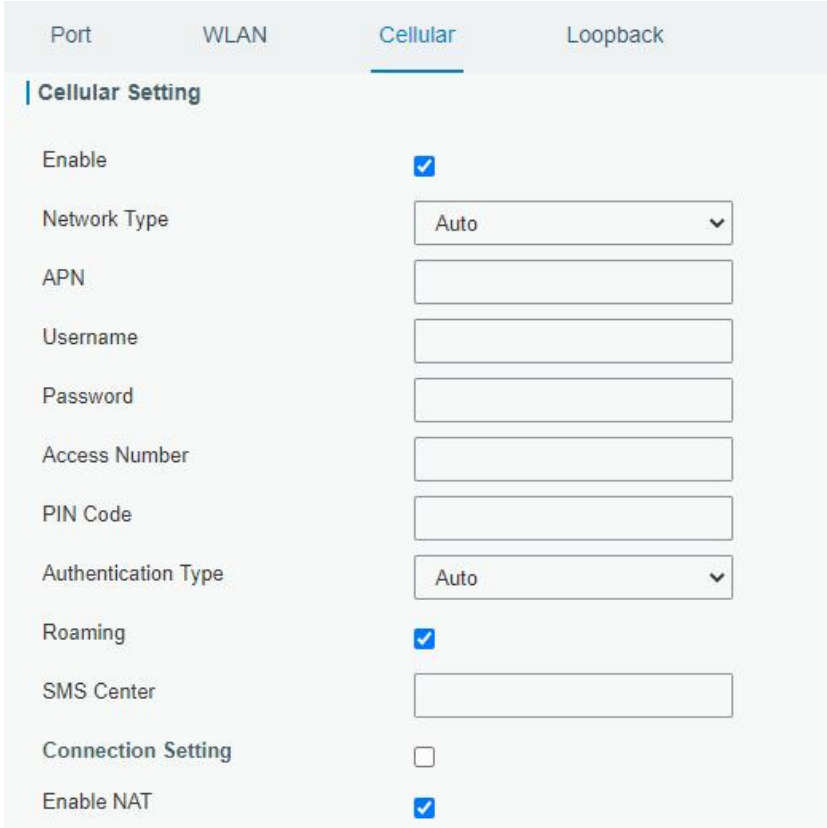


E. Go to “Network” → ”Failover” → ”WAN Failover” to switch the wlan0 as main interface, then gateway can use the Wi-Fi to access the Internet.



5.3 Configure the Cellular Connection

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



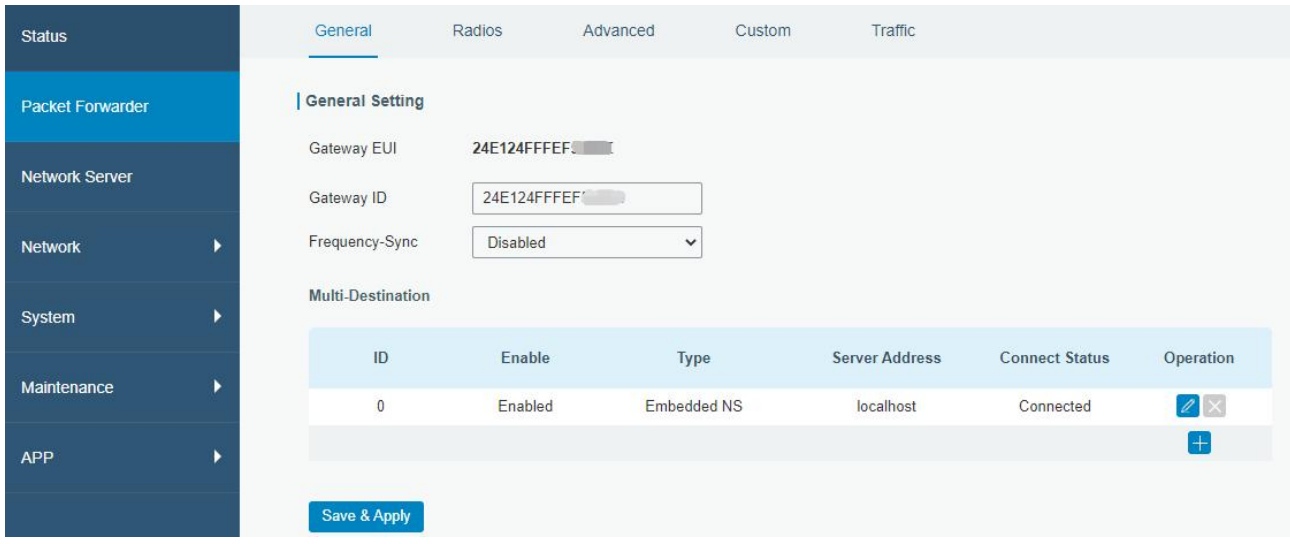
D. Go to “Status” → “Cellular” page to view the status of the cellular connection. If it shows “Connected”, it means the SIM has dialed up successfully. On the other hand, you can check the status of LTE indicator. If it keeps on light statically, it means SIM has dialed up successfully.

6. Packet Forwarder Configuration

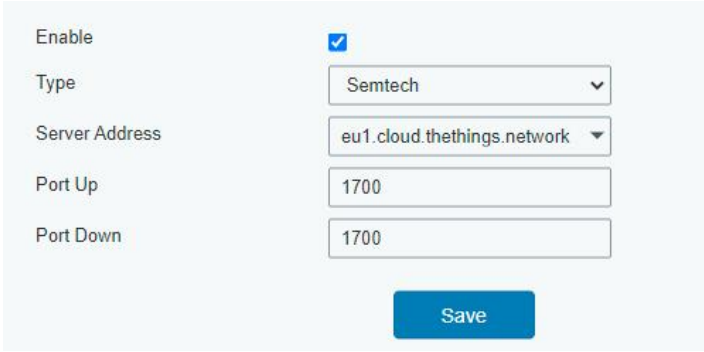
UG67 has installed multiple packet forwarders including Semtech, Chirpstack-Generic MQTT broker, etc. This section explains how to connect the gateway to network servers.

Make sure the gateway connects to the network as shown in Section 5.

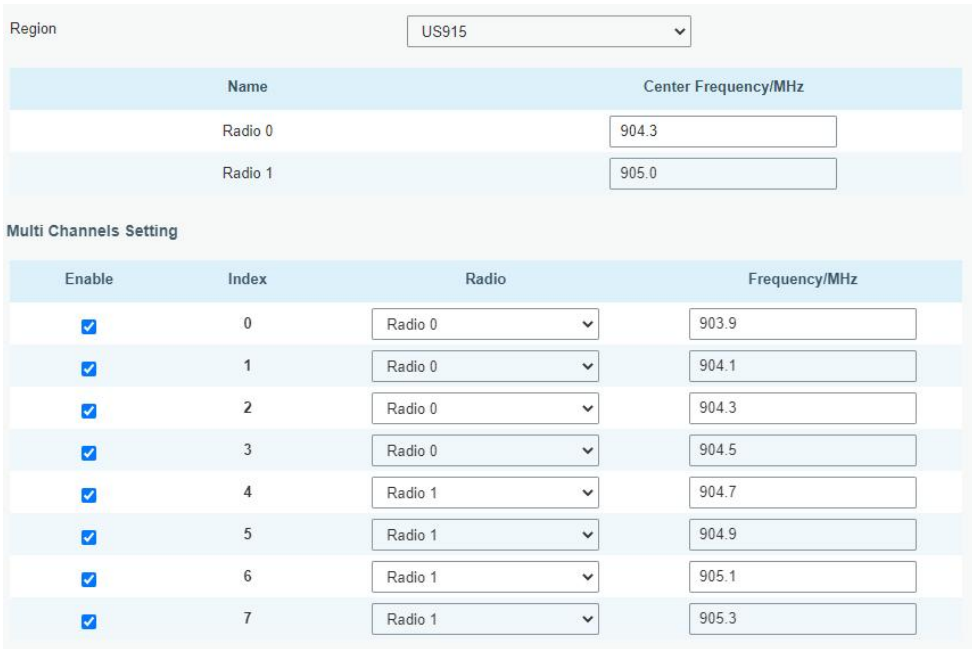
A. Go to "Packet Forwarder" → "General" page and click to add a network server.



B. Fill in the server information and enable this server.

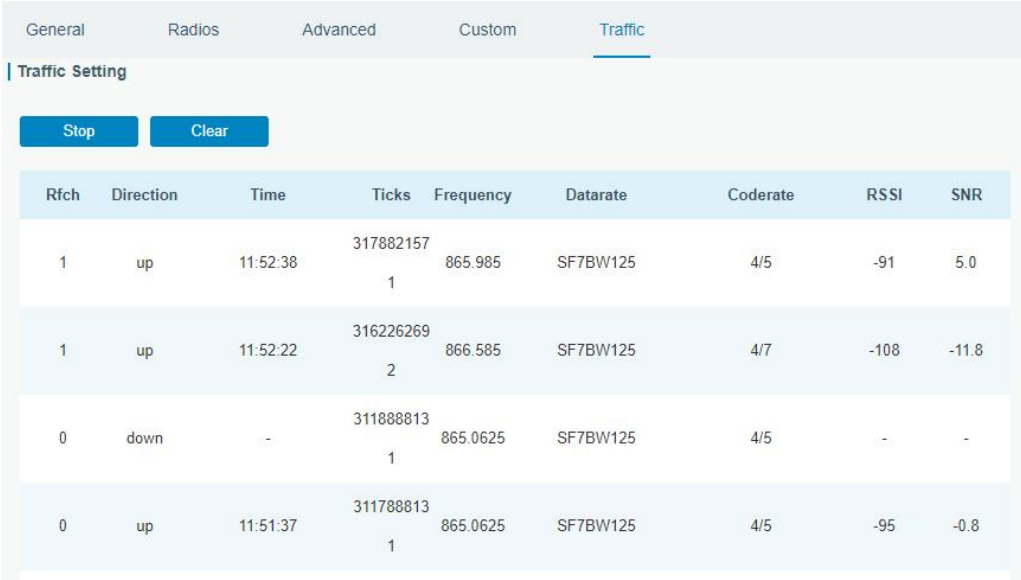


C. Go to “Packet Forwarder” → “Radio” page to configure antenna type, center frequency and channels. The channels of the gateway and network server need to be the same.



D. Add the gateway on network server page. For more details about the network server connection please refer to Milesight IoT Support portal.

E. Go to “Traffic” page to view the data communication of UG67.



Rfch	Direction	Time	Ticks	Frequency	Datarate	Coderate	RSSI	SNR
1	up	11:52:38	3178821571	865.985	SF7BW125	4/5	-91	5.0
1	up	11:52:22	3162262692	866.585	SF7BW125	4/7	-108	-11.8
0	down	-	3118888131	865.0625	SF7BW125	4/5	-	-
0	up	11:51:37	3117888131	865.0625	SF7BW125	4/5	-95	-0.8

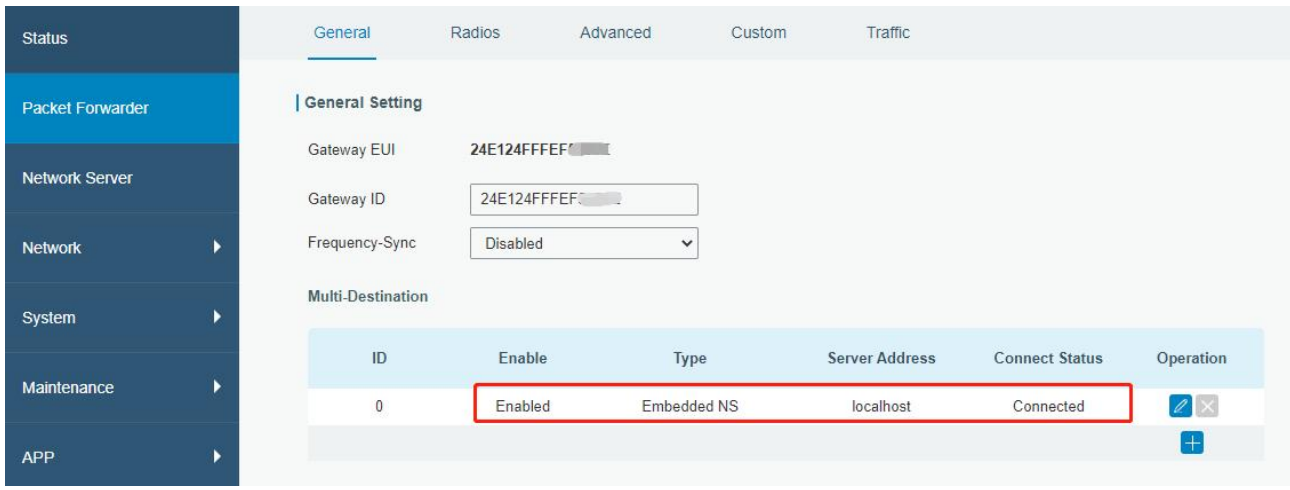
7. Network Server Configuration

UG67 can work as network server and transmit data to Milesight IoT Cloud or other platform via MQTT/HTTP/HTTPS.

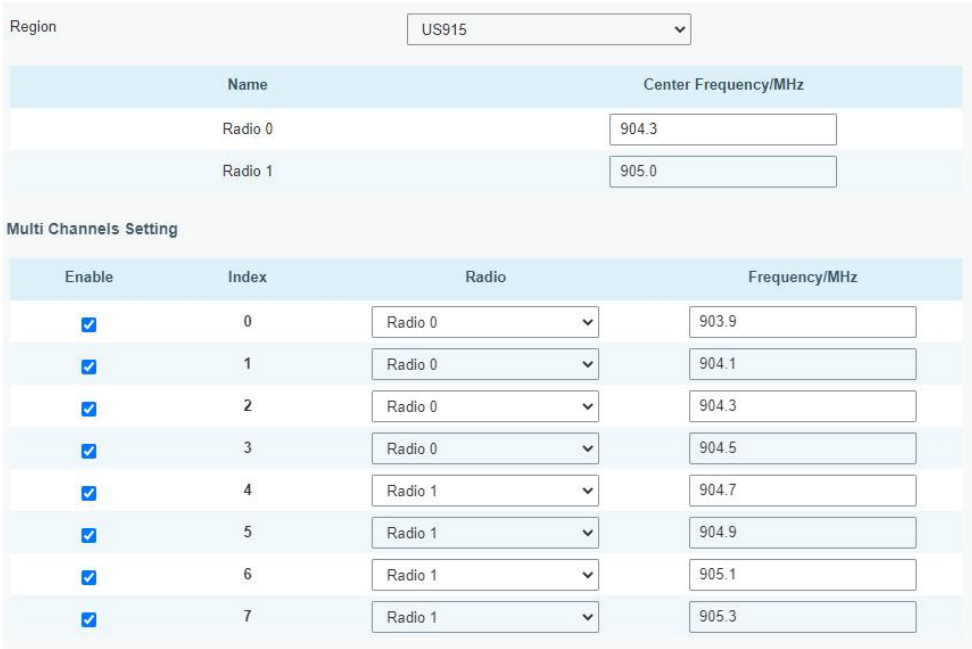
Make sure the gateway connects to the network as shown in Section 5.

7.1 Connect UG67 to Milesight IoT Cloud

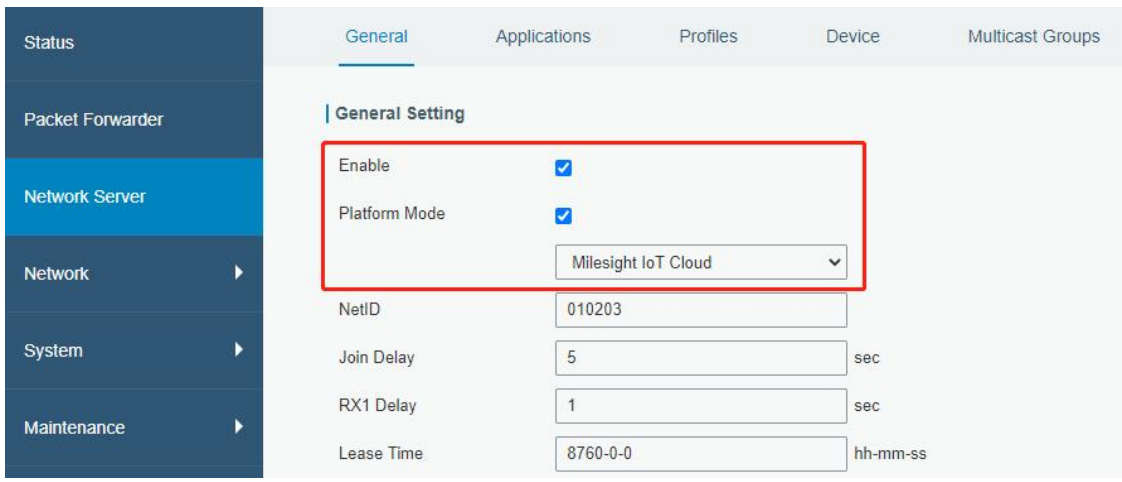
A. Go to “Packet Forwarder” → “General” page to enable the embedded network server.



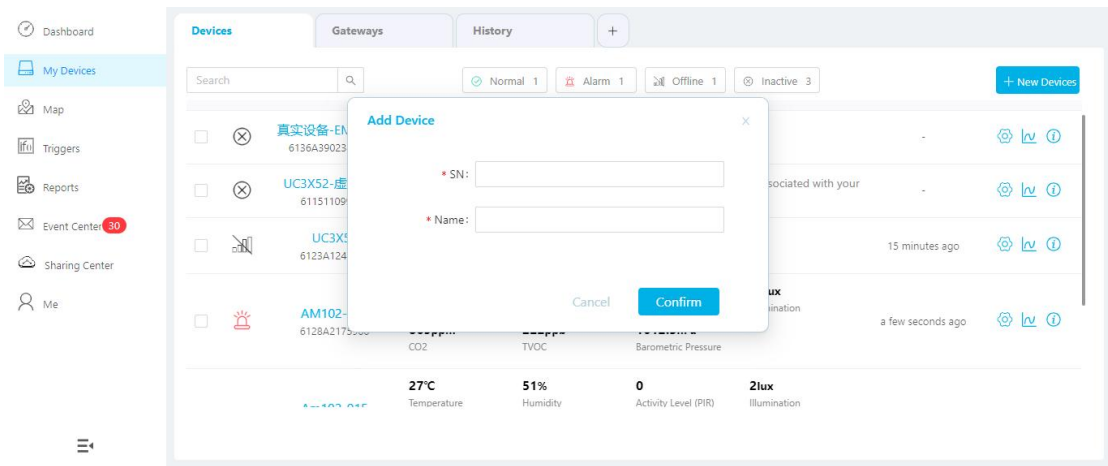
B. Go to “Packet Forwarder” → “Radio” page to select the antenna type, center frequency and channels. The channels of the gateway and nodes need to be the same.



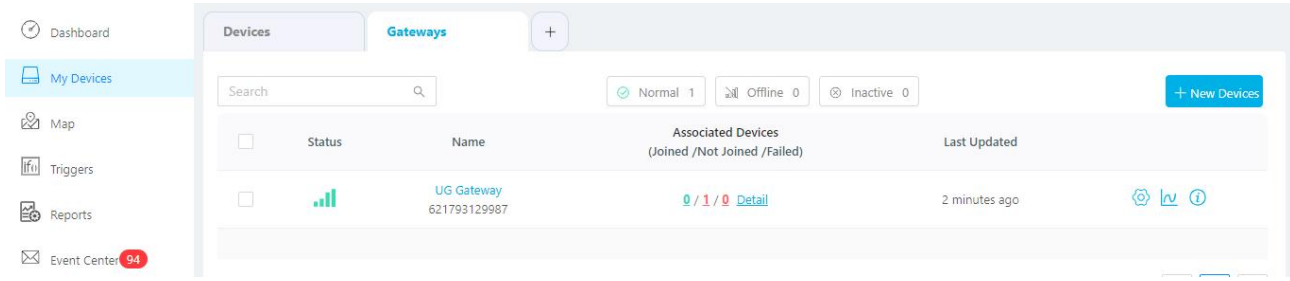
C. Go to "Network Server" → "General" page to enable the network server and "Milesight IoT Cloud" mode.



D. Log in the Milesight IoT Cloud. Then go to "My Devices" page and click "+New Devices" to add gateway to Milesight IoT Cloud via SN. Gateway will be added under "Gateways" menu.

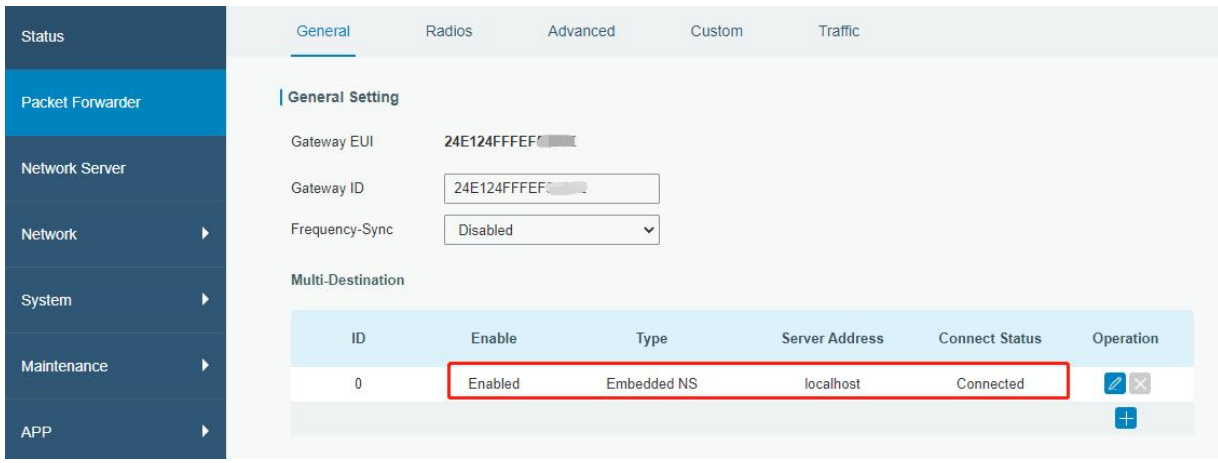


E. The gateway is online on Milesight IoT Cloud.

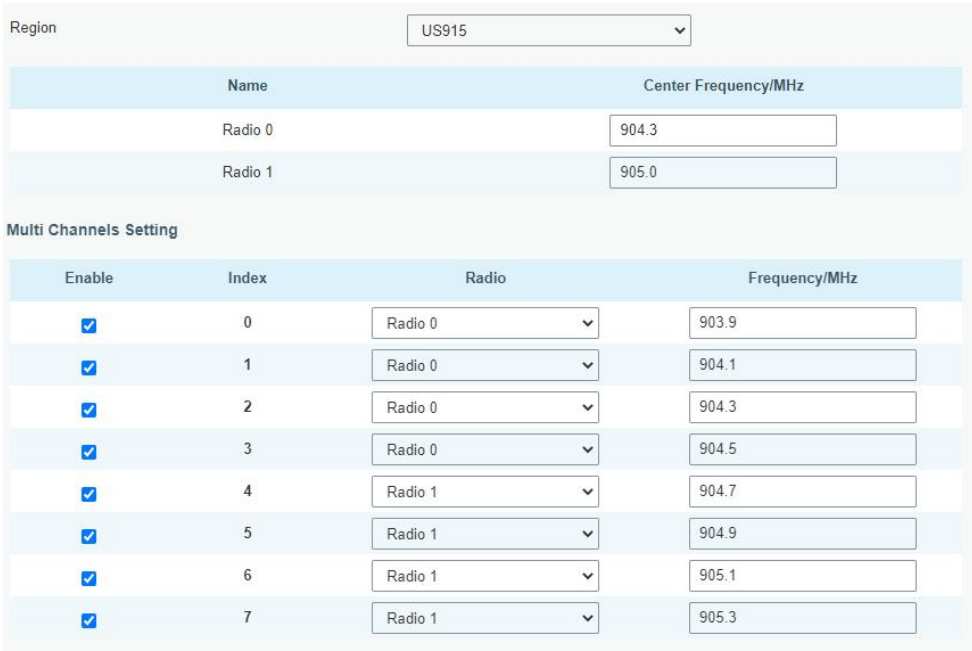


7.2 Connect UG67 to MQTT/HTTP Server

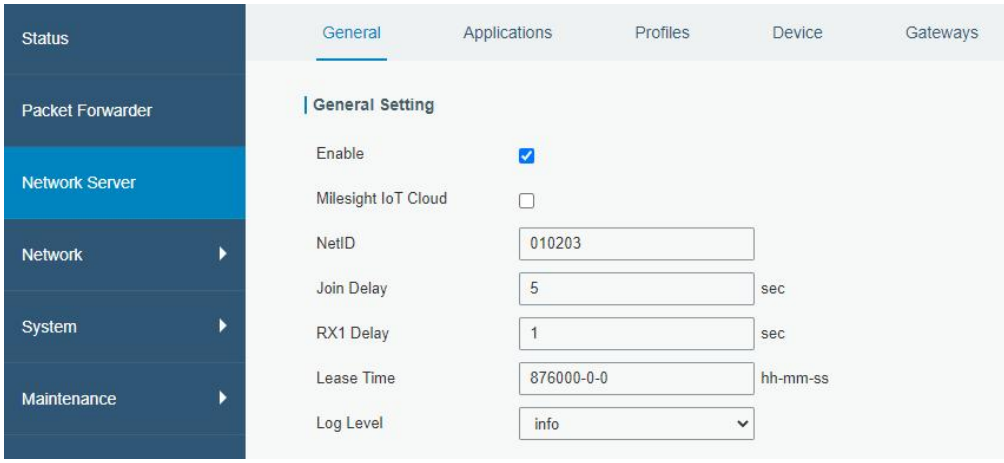
A. Go to “Packet Forwarder” → “General” page to enable the embedded network server.



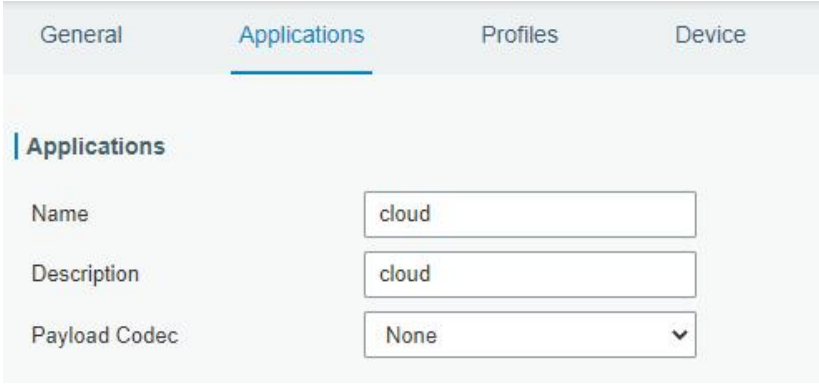
B. Go to “Packet Forwarder” → “Radio” page to select the antenna type, center frequency and channels. The channels of the gateway and nodes need to be the same.



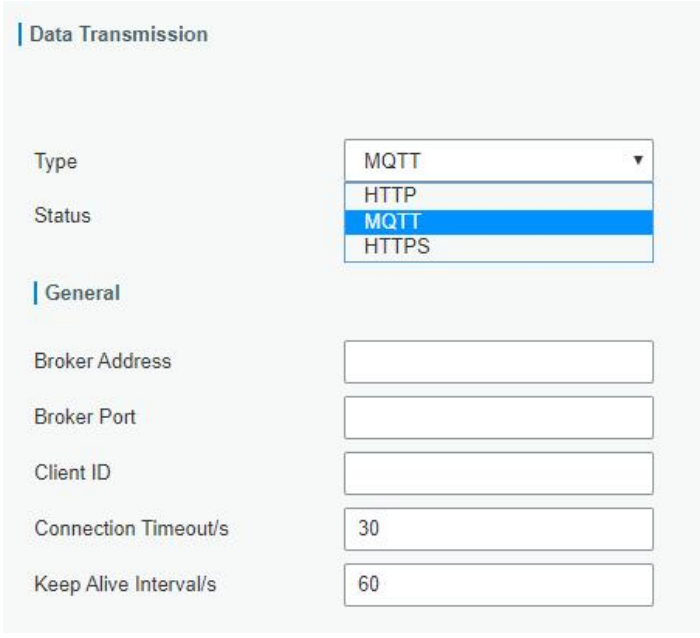
C. Go to “Network Server” → “General” page to enable the network server mode.



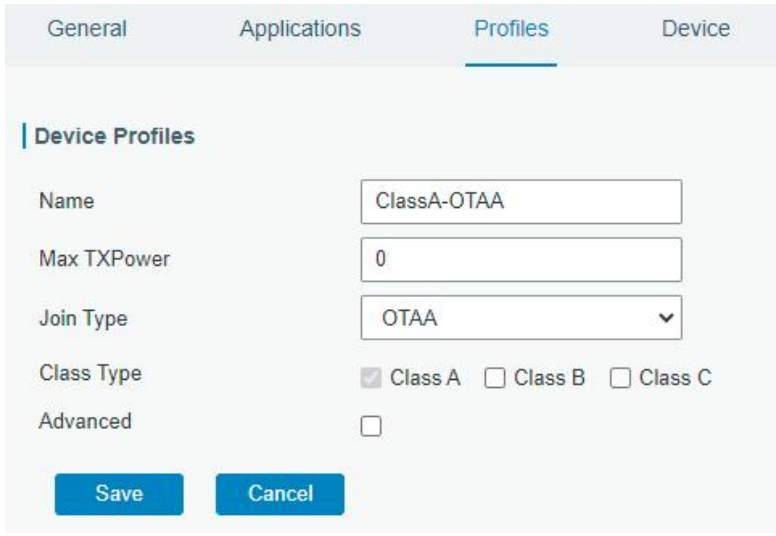
D. Go to “Network Server”→”Application” to add a new application.



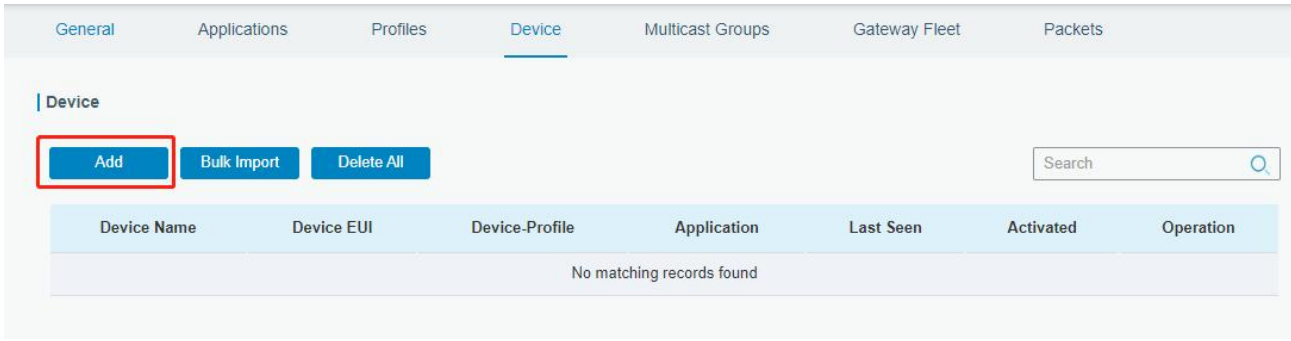
After saving the application, you can select HTTP, HTTPS or MQTT protocol and fill in correspond server information to send data to another server.

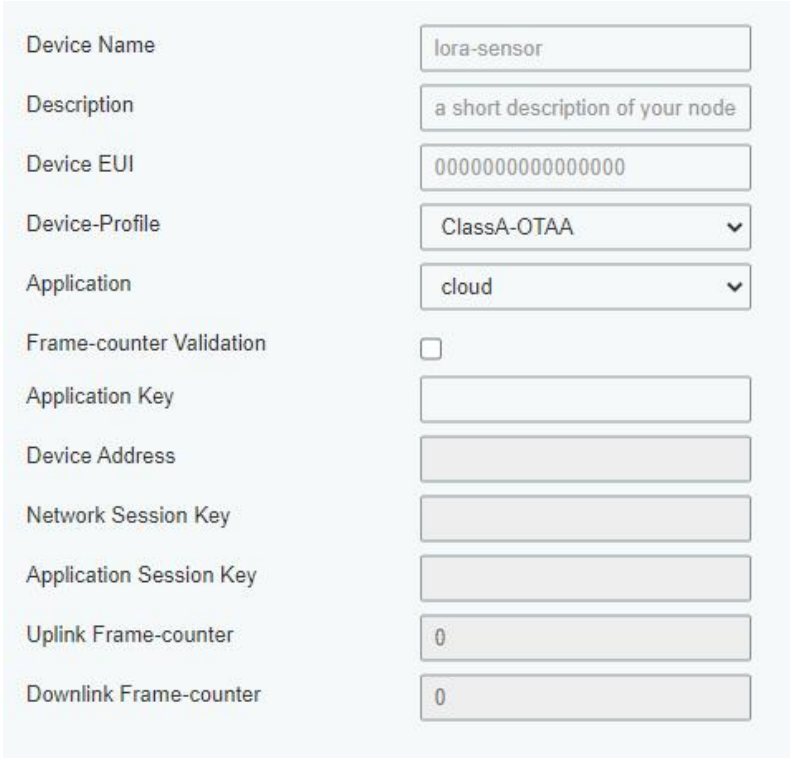


E. Go to “Profiles” page to add a new profile for the device.



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





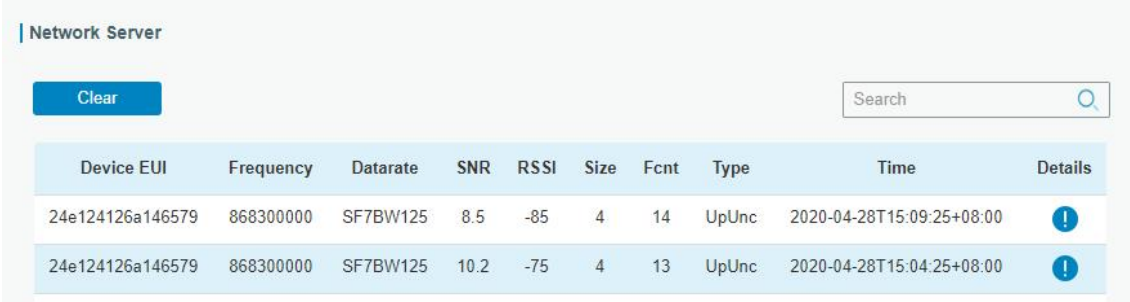
You can also click “Bulk Import” if you want to add many nodes all at once.

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.

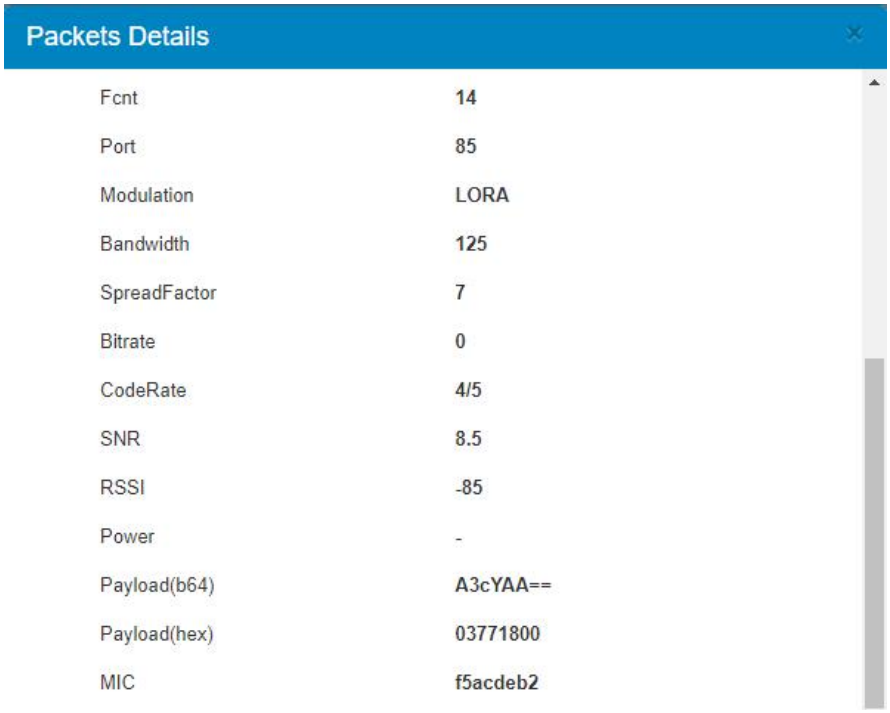
	A	B	C	D	E	F	G	H	I
1	name	description	deveui	application	deviceprofile	appkey	devaddr	appskey	nwkskey
2	24e1242191323266		24e1242191323266	cloud	ClassC-OTAA	11223344556778899aa112233445566			
3									
4									
5									

Import this file to add bulks of devices.

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



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



[END]