LINOVISION

IOT-G65 LoRaWAN Gateway

Quick Start Guide

Hangzhou Linovision Co., Ltd.

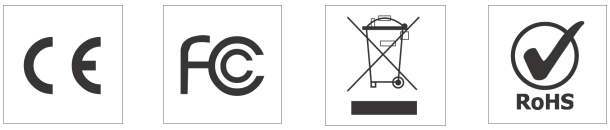
Welcome

Thank you for choosing IOT-G65 LoRaWAN Gateway.

This guide teaches you how to install the IOT-G65 and how to log in the web GUI to configure the device.

Declaration of Conformity

IOT-G65 is in conformity with the essential requirements and other relevant provisions of the CE, FCC, and RoHS.

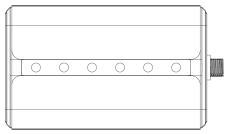


For assistance, please contact
Linovision technical support:
Email: sales@linovision.com
Tel: 86-571-8670 8175
Website:www.linovision.com

CONTENT

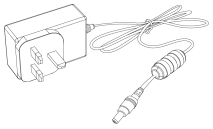
1. Packing List

Before you begin to install the IOT-G65 LoRaWAN Gateway, please check the package contents to verify that you have received the items below.

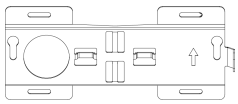


1 × IOT-G65

1 × Ethernet Cable

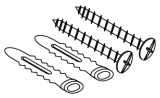


1 × DC Jack Power Adapter

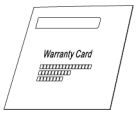


1 × Mounting Bracket

Bracket Fixing Screws &Grounding Screw



Wall Mounting Kits



1 × Warranty Card

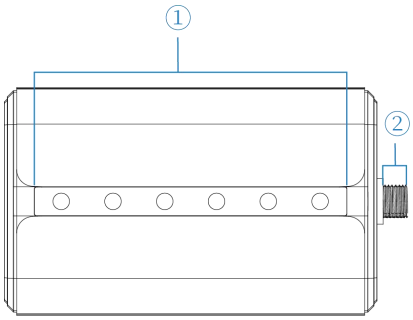
1 × LoRa Antenna (Optional)

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

2. Hardware Introduction

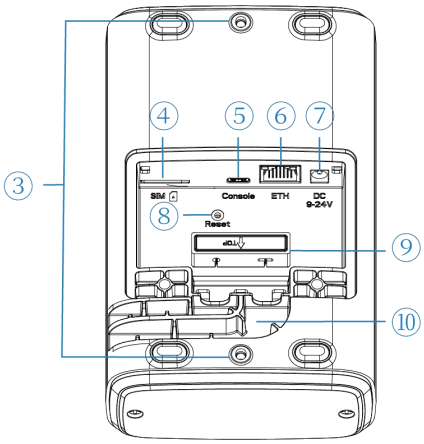
2.1 Overview

A. Front Panel



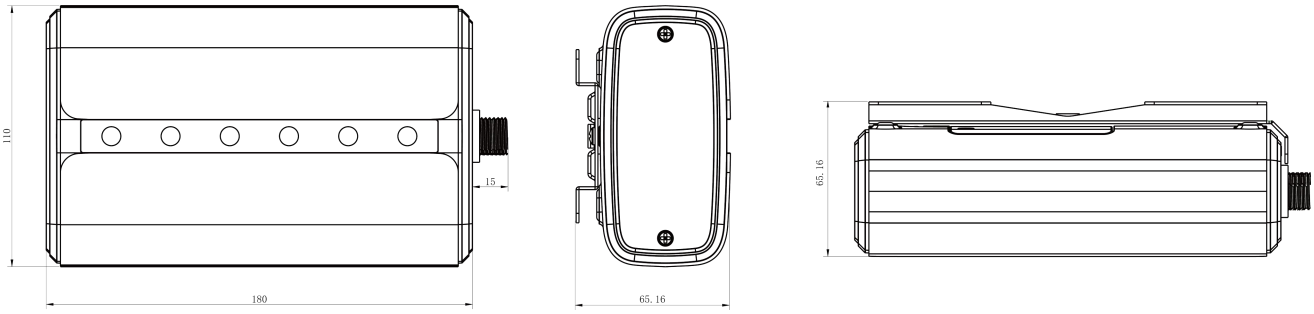
① LED Area
POWER: Power Indicator
STATUS: System Indicator
LoRa: LoRa Indicator
Wi-Fi: Wi-Fi Indicator
LTE: Cellular Indicator
ETH: Ethernet Port Indicator
② LoRa Antenna Connector
(only for external antenna version)

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

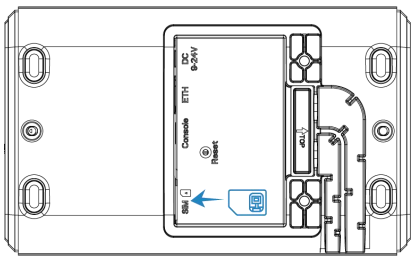
Function	Description	
	STATUS LED	Action
Reset	Static Blue	Press and hold the reset button for more than 5 seconds.
	Static Blue → Rapidly Blinking	Release the button and wait.
	Off → Static Blue	The gateway resets to factory default.

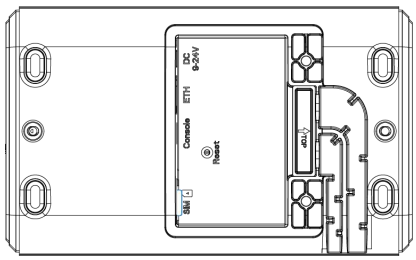
3. Hardware Installation

3.1 SIM Card Installation

IOT-G65 does not support hot plugging, please turncut off the power before you insert or take off cards.

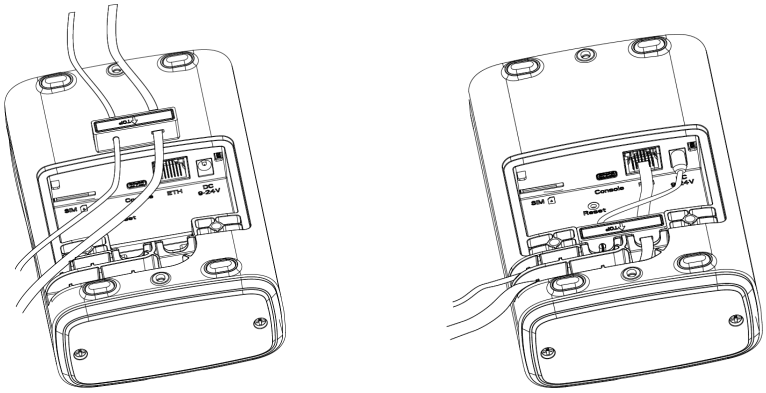
A. Use screwdriver to Open the protective cover on the back panel of IOT-G65 via screwdriver.
B. Push Insert the SIM card into the device according to the direction the icon on the device.
Note: If you need to take out the SIM card, press into the SIM card and it will pop up automatically.





3.2 Ethernet Cable & Power Cable Installation

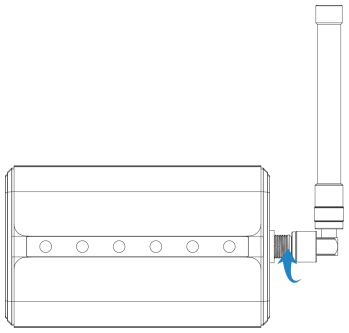
A. Connect the Ethernet cable and power cable to corresponding interfaces.
B. Pass two cables through the waterproof silicone and slid into the grooves.
C. Screw the protective cover back to the device.



IOT-G65 also supports 802.3af standard PoE and can be powered by PoE switch or PoE adapter. When connecting, Ethernet cable of IOT-G65 device side should be installed first, otherwise,or PoE devices or gateway may be damaged.

3.3 Antenna Installation

For external antenna version, rotate the antenna into the antenna connector accordingly. The external antenna should be installed vertically always on a site with a good signal.



3.4 Gateway Mounting

The gateway can be mounted to a wall or a pole. Please complete all software configurations before installation.

3.4.1 Wall Mounting

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

1. Before you start, make sure that your SIM card has been inserted, your antennas have been attached and that all cables have been installed.

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

2. 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.

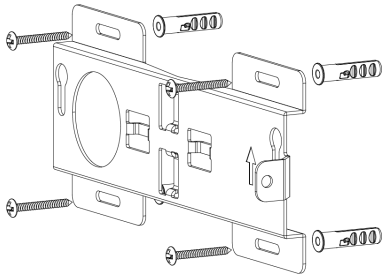
Note: The connecting lines of adjacent points are at right angles.

3. Drill four holes with a depth of 32 mm by using your drill with a 6 mm drill bit on the

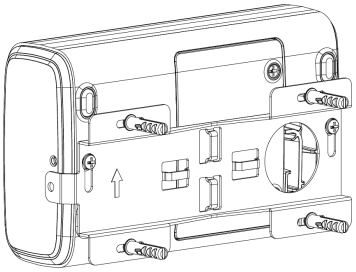
positions you marked previously on the wall.

4. Insert four wall plugs into the holes respectively.

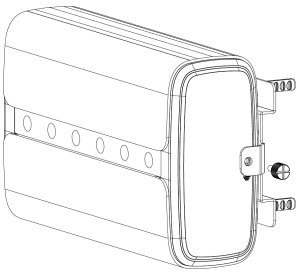
5. Mount the mounting bracket horizontally to the wall by fixing the wall mounting screws into the wall plugs.

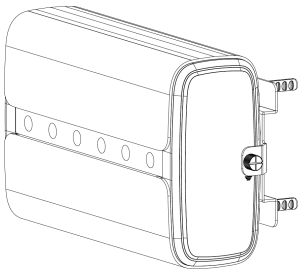


6. Screw the bracket fixing screws to the back panel of device, then hang the device to the mounting bracket on the wall.



7. Screw the grounding screw to fix IOT-G65 to the mounting bracket.





3.4.2 Pole Mounting

Preparation: mounting bracket, bracket fixing screws, hose clamp and other required tools.

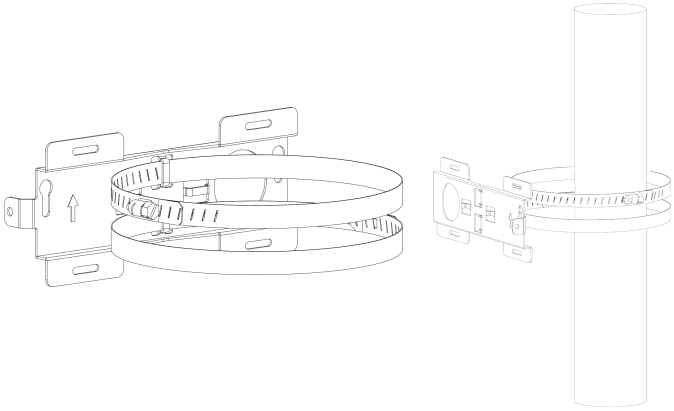
1. Before you start, make sure that your SIM card has been inserted, your antennas have been attached and that all cables have been installed.

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

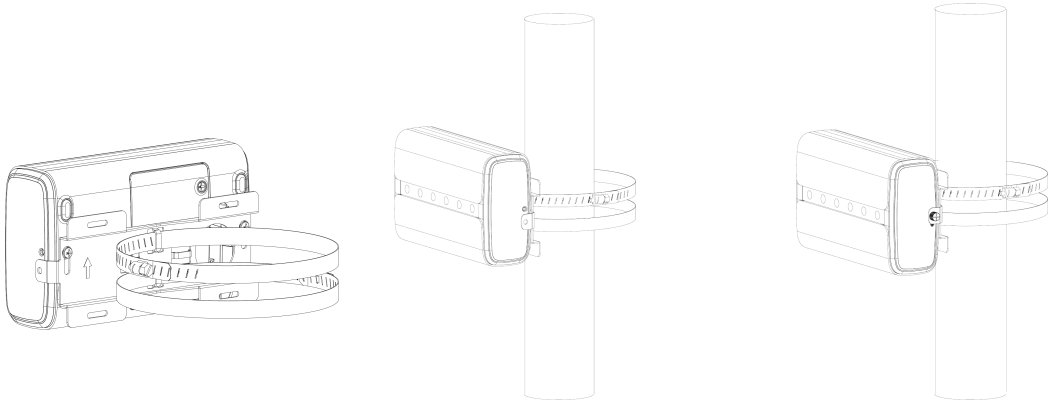
2.Loosen the hose clamp by turning the locking mechanism counter-clockwise.

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

4.Use a screwdriver to tighten the locking mechanism by turning it clockwise.



5. Screw the bracket fixing screws to the back panel of device, then hang the device to the mounting bracket on the pole.
6. Screw the grounding screw to fix IOT-G65 to the mounting bracket.

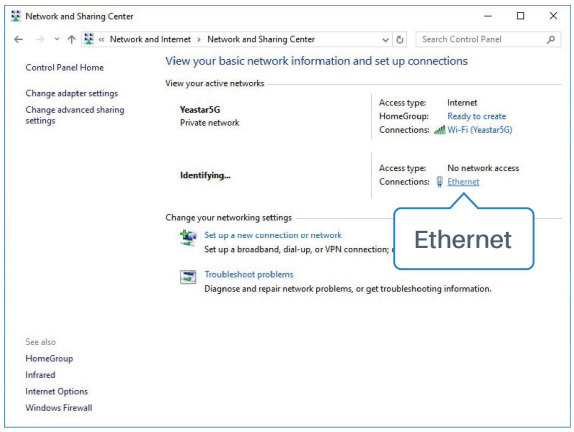


4. Access the Web GUI of IOT-G65

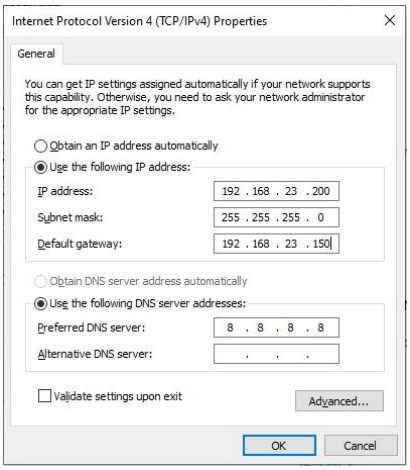
IOT-G65 provides web-based configuration interface for management. If this is the first time you configure the gateway, please use the default settings below:
ETH IP Address: **192.168.23.150**
Wi-Fi IP Address**: 192.168.1.1**
Username: **admin**
Password: **password**

4.1 Web Access via Ethernet Port

Connect PC to IOT-G65 ETH port directly or through PoE adapter. 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).

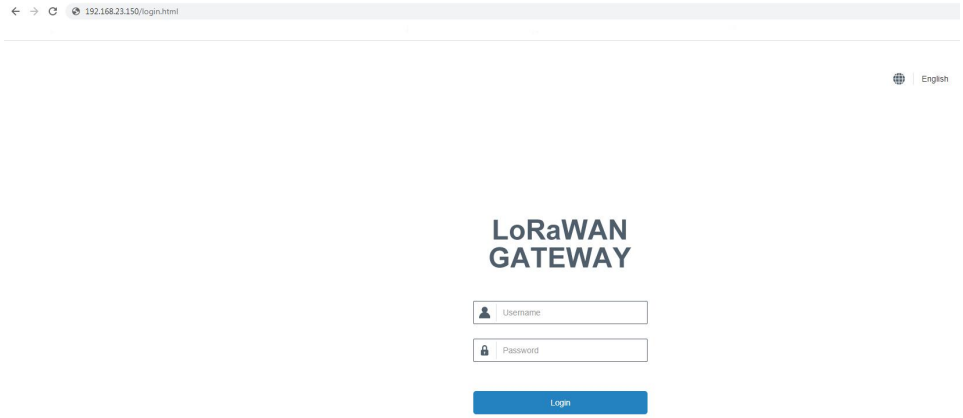


B. Go to “Properties” → “Internet Protocol Version 4(TCP/IPv4) ”and select “Use the following IP address”, then assign a static IP manually within the same subnet of the gateway.



C. Open a Web browser on your PC (Chrome is recommended) and type in the IP address 192.168.1.1 to access the web GUI.

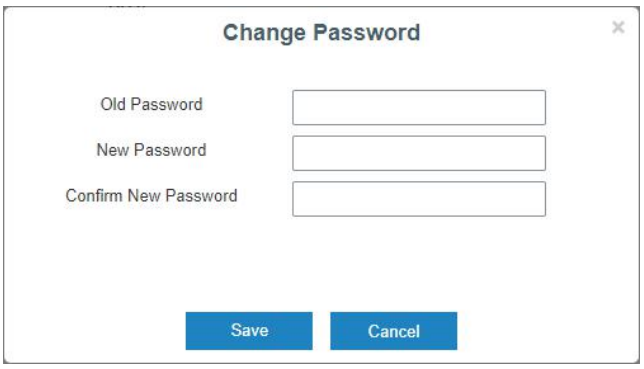
D. Enter the username and password, click “Login”.



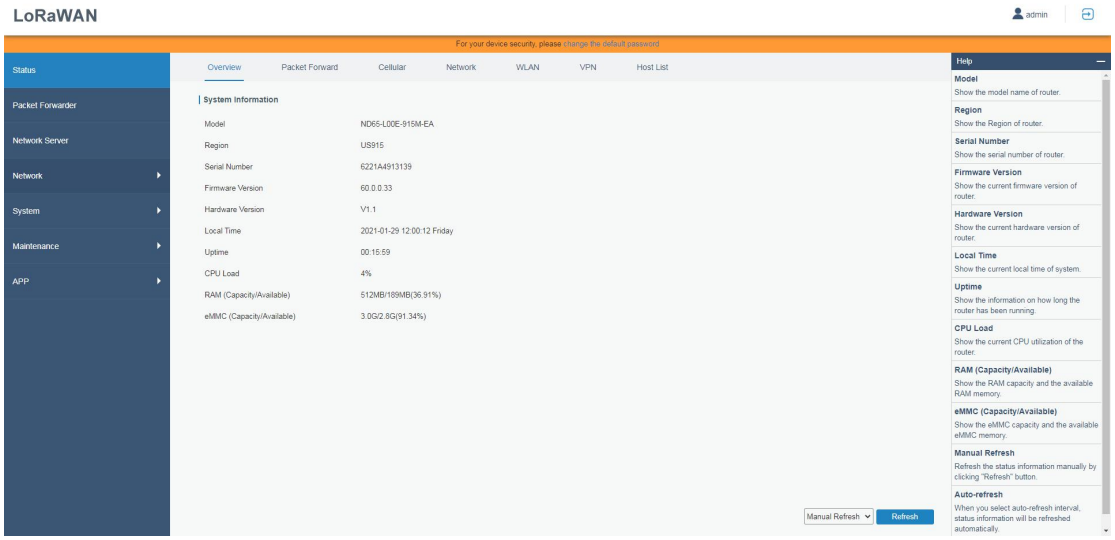
If you enter the username or password incorrectly more than 5 times, the login page will be locked for 10 minutes.

E. When you log in with the default username and password, you will be asked to change

password. It’s suggested that you change the password for the sake of security. Click “Cancel” button if you want to modify it later.



F. After you log in the Web GUI, you can view system information and perform configuration of the gateway.



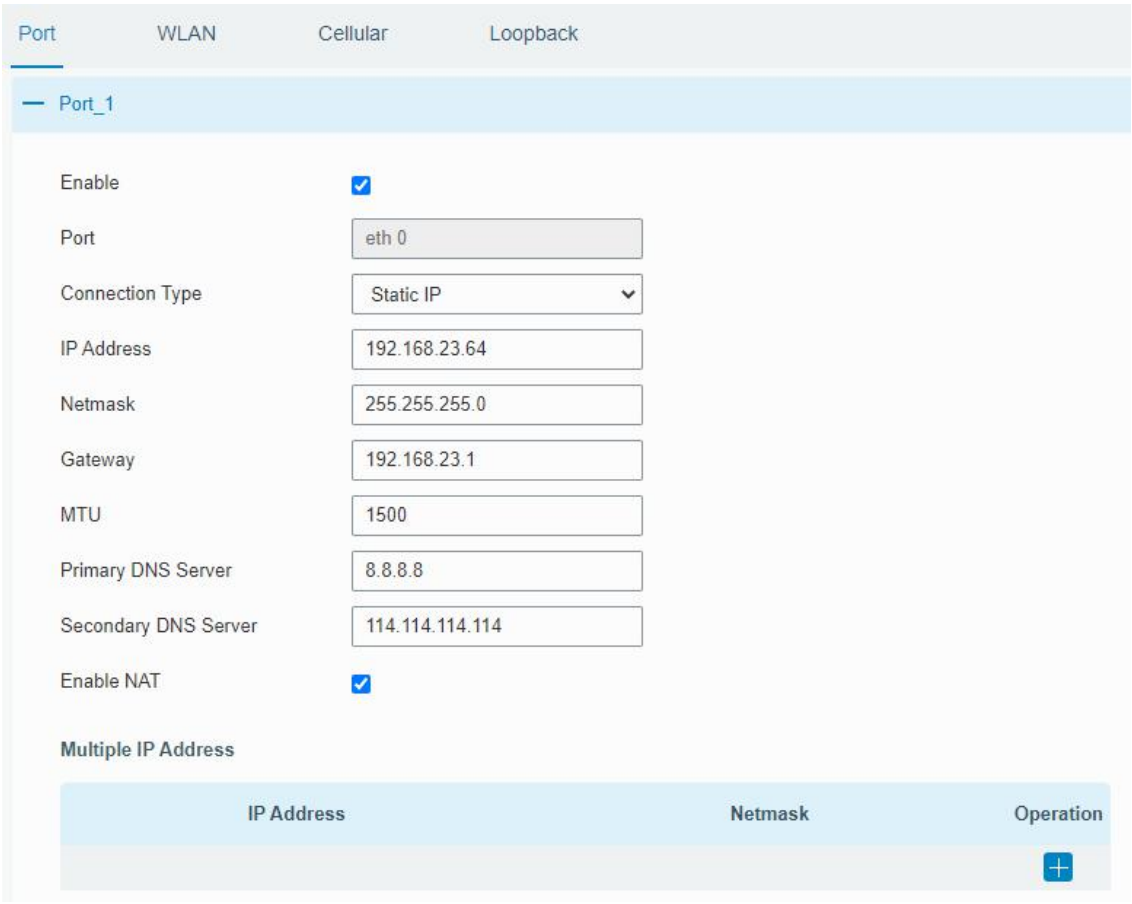
5. Connect IOT-G65 to the Network

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

5.1 Configure the WAN Connection

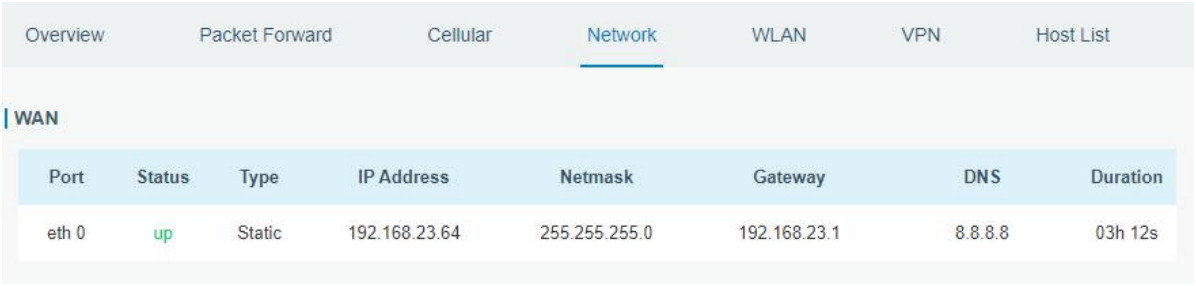
A. Go to “Network”→ “Interface” → “Port” page to select the connection type and configure Ethernet port information.

B. Click “Save & Apply” for configuration changes to take effect.



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

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

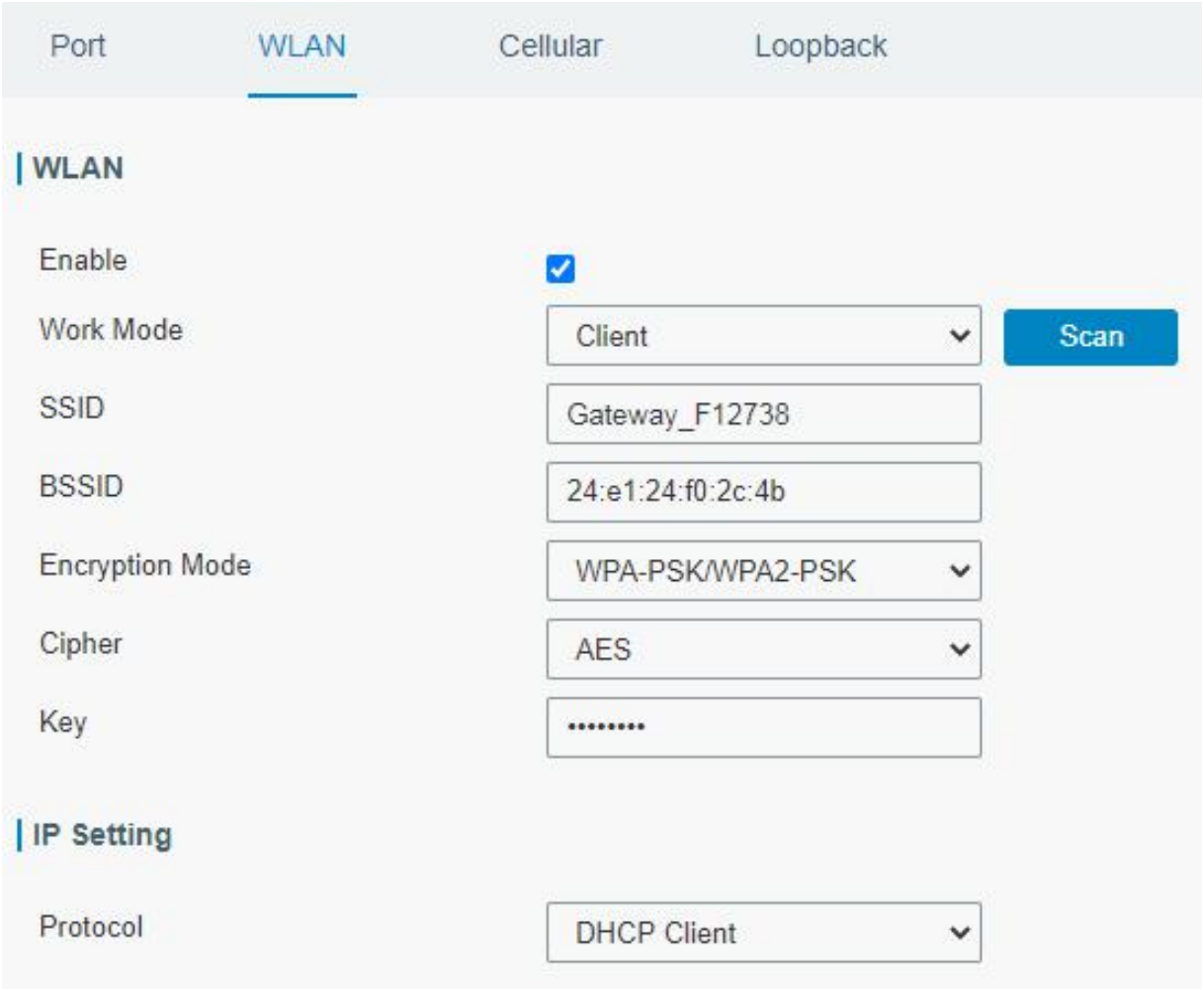


5.2 Configure the Wi-Fi Connection

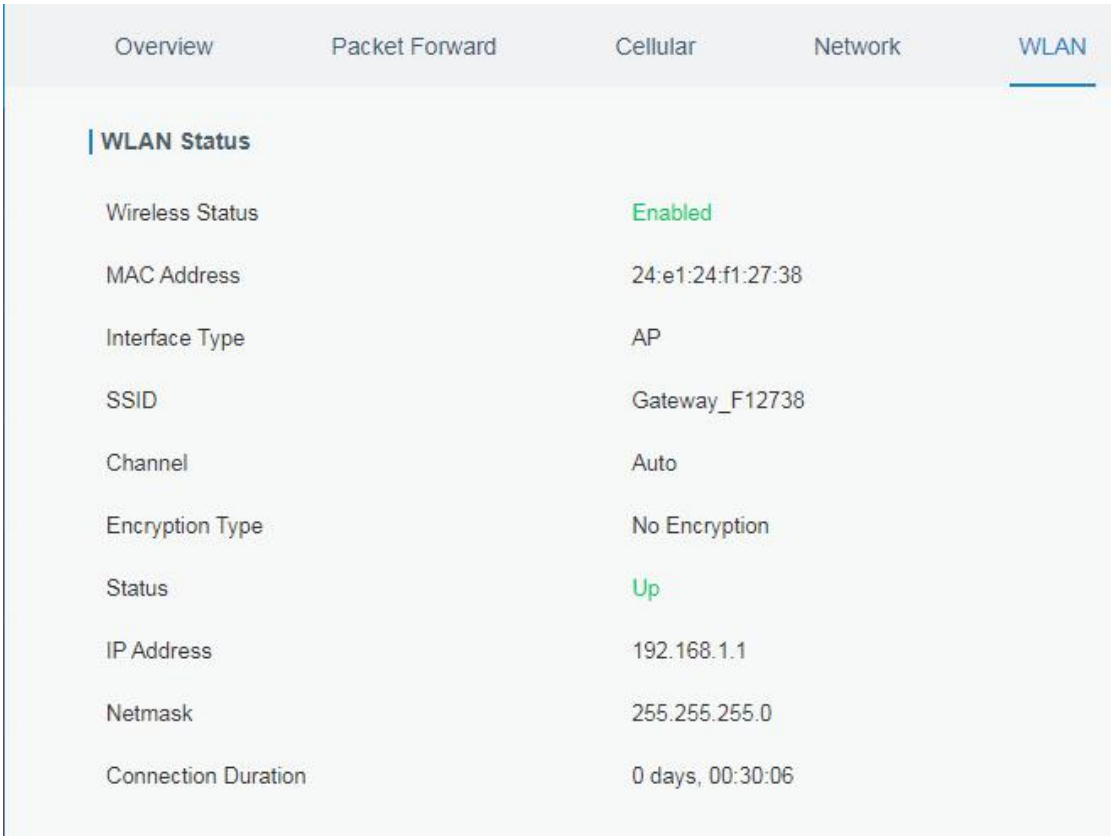
A. Go to “Network” → “Interface” → “WLAN” and select “Client” mode.

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

C. Type the correct key of Wi-Fi.



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

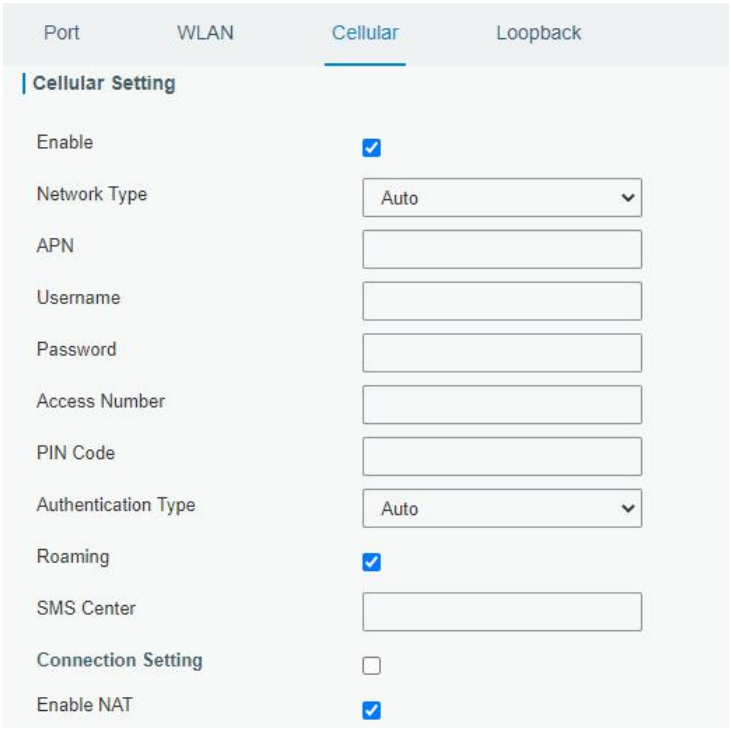


5.3 Configure the Cellular Connection

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.

C. Click “Save” and “Apply” for configuration changes to take effect.



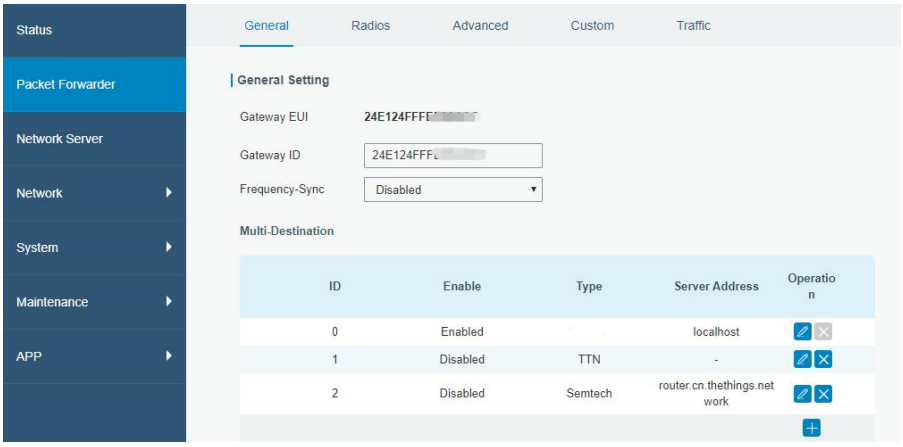
D. Go to “Status” → “Cellular” page to view the status of the cellular connection. If it shows “Connected”, it means the SIM has dialed up successfully. On the other hand, you can check the status of LTE indicator. If it keeps on green light statically, it means SIM has dialed up successfully.

6. Packet Forwarder Configuration

IOT-G65 has embedded multiple packet forwarders like TTN and Chirpstack.This section explains how to connect the gateway to third-party network servers

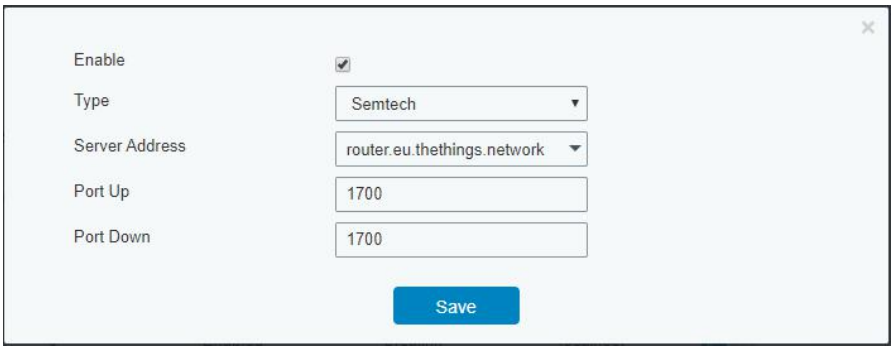
Make sure the gateway connects to the network as shown in Chapter Section 5.

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



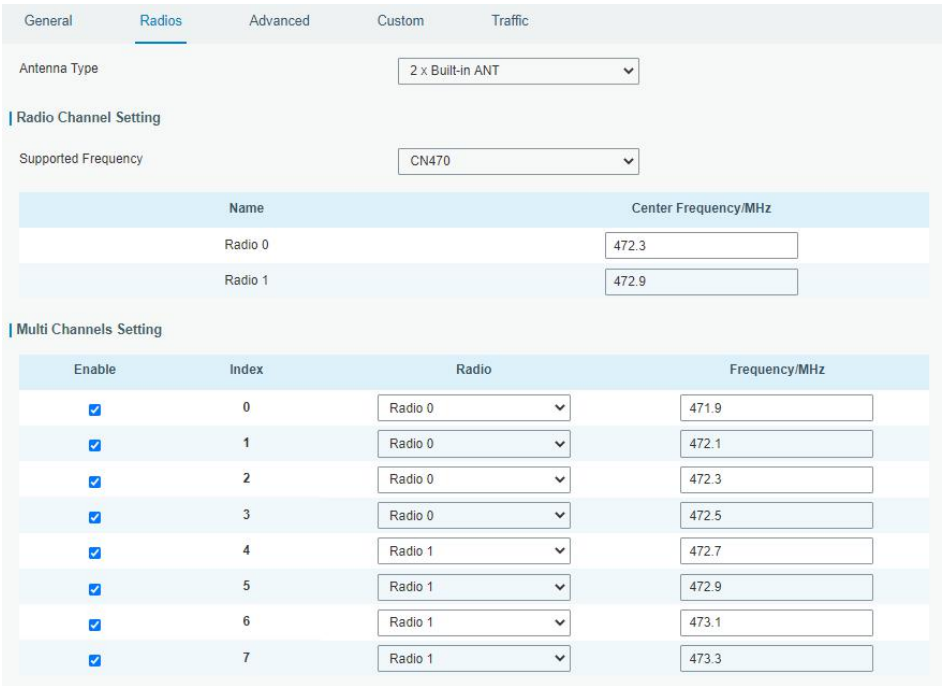
B. Fill in the server information and enable this server.

Note： When you select anyone of TTN or Chirpstack, other servers are not allow to enable.

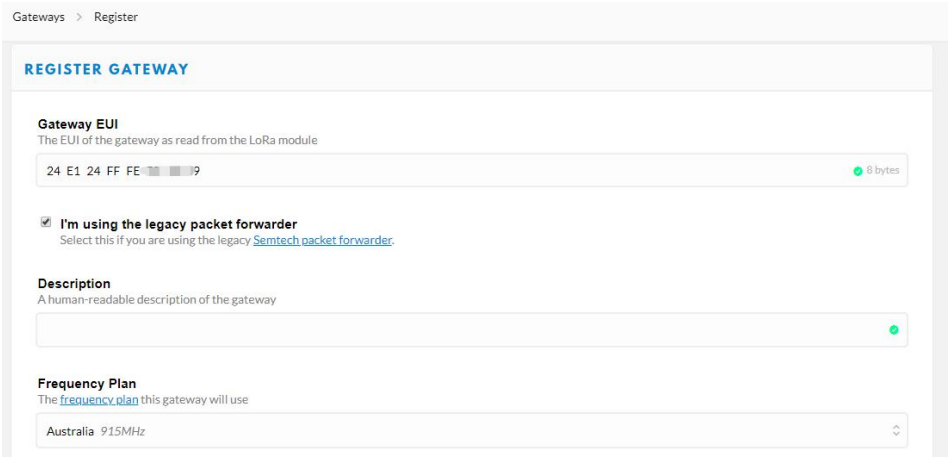


C. Go to “Packet Forwarder” → “Radio” page to configure antenna transmission type, center frequency and channels. The channels of the gateway and network server need to be the same.

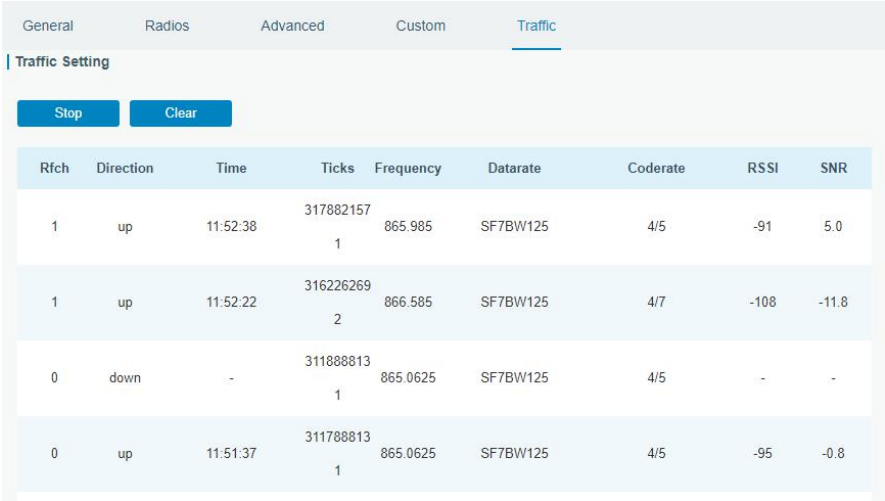
Note: for built-in antenna models, please select “2 × Built-in ANT”; for external antenna models, please select “Ext ANT(TX+RX)+ Built-in ANT(RX)”.



D. Add the gateway on network server page. Take TTN for example, type and save the gateway EUI and other information when you connect it via Semtech packet forwarder. After you add the gateway, TTN will show connection status.



E. Go to “Traffic” page to view the data communication of IOT-G65.



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

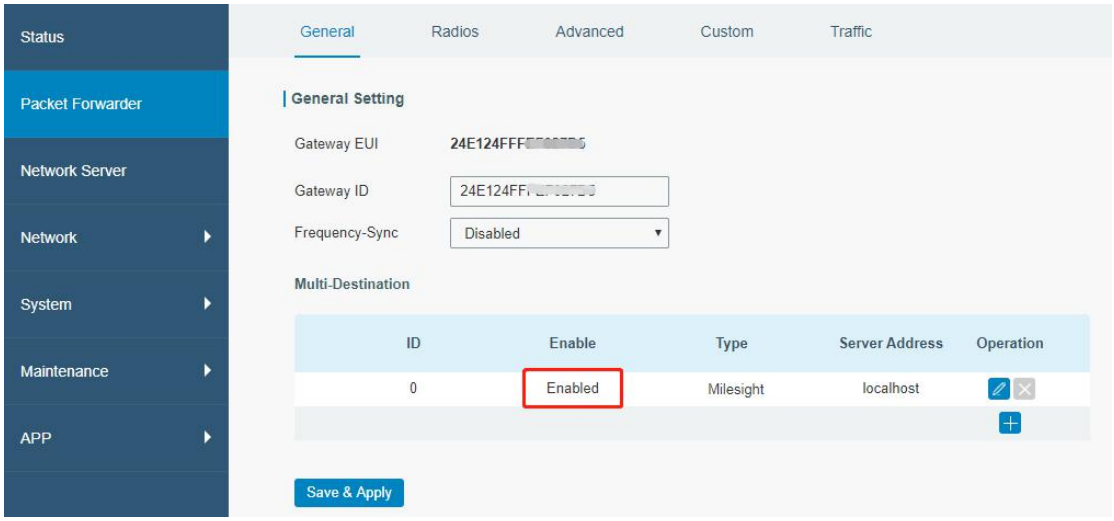
7. Network Server Configuration

IOT-G65 can work as network server and transmit data to Cloud or other platform via MQTT/HTTP/HTTPS.

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

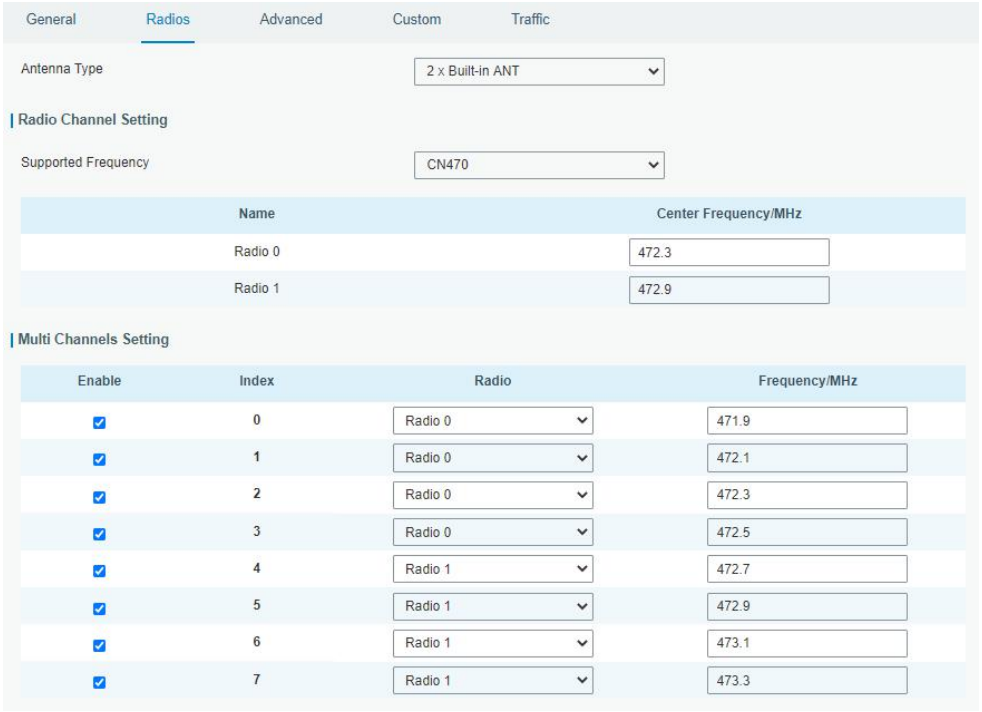
7.1 Connect IOT-G65 to Cloud

A. Go to “Packet Forwarder” → “General” page to click “enable”.

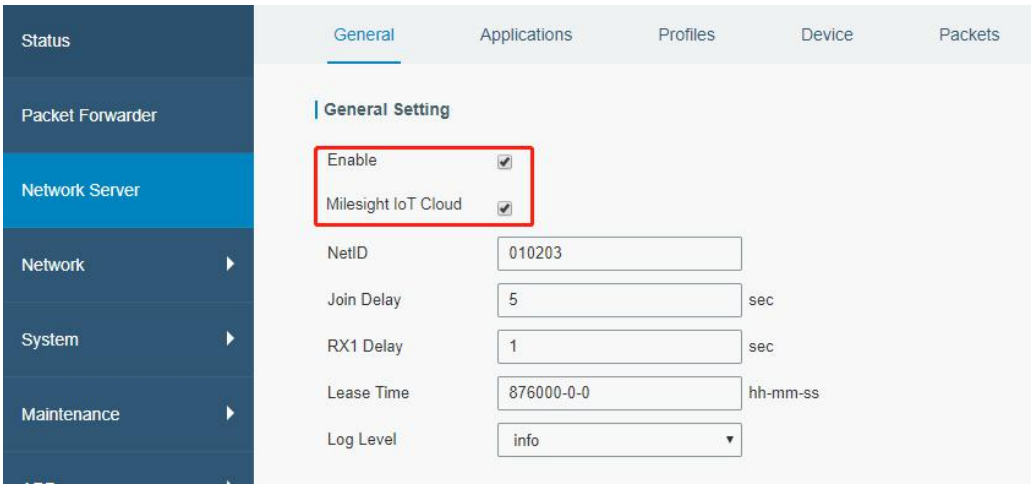


B. Go to “Packet Forwarder” → “Radio” page to select the antenna transmission type, center frequency and channels. The channels of the gateway and LoRaWAN nodes need to be the same.

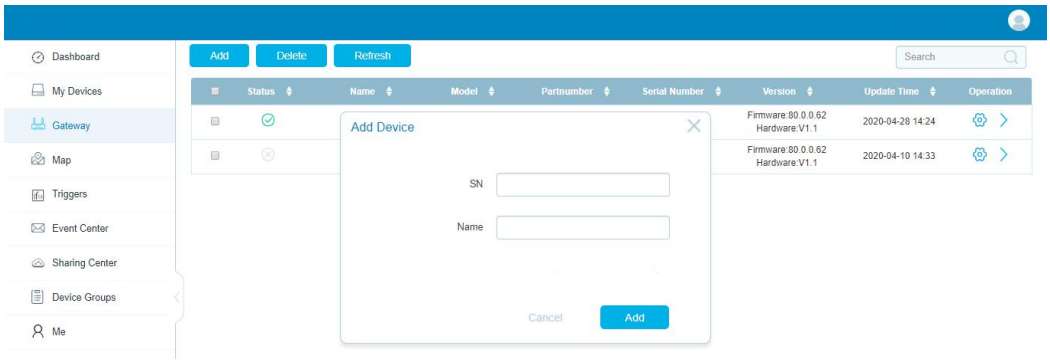
Note: For built-in antenna models, please select “2 × Built-in ANT”; for external antenna models, please select “Ext ANT(TX+RX)+ Built-in ANT(RX)”.



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



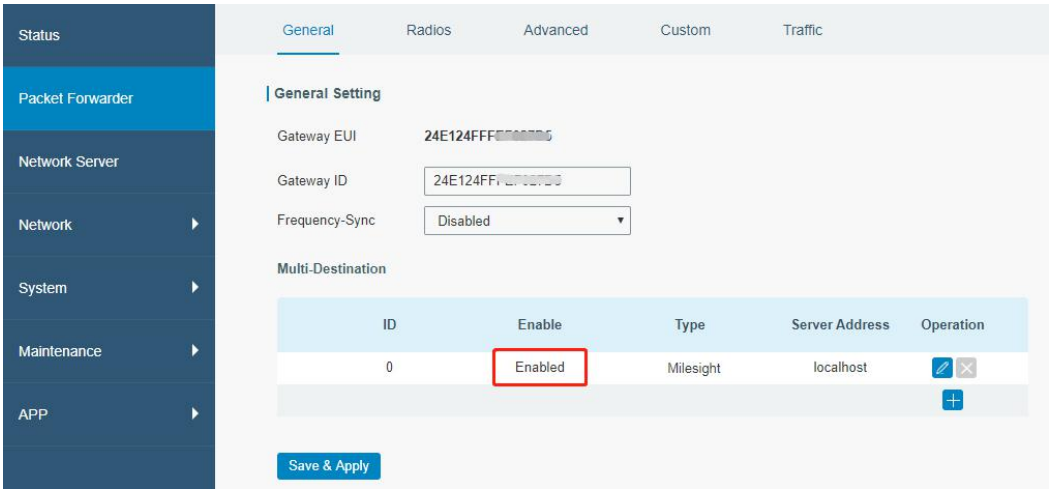
D. Go to “Gateway” page and click “Add” to add a gateway.



E. The gateway is online.

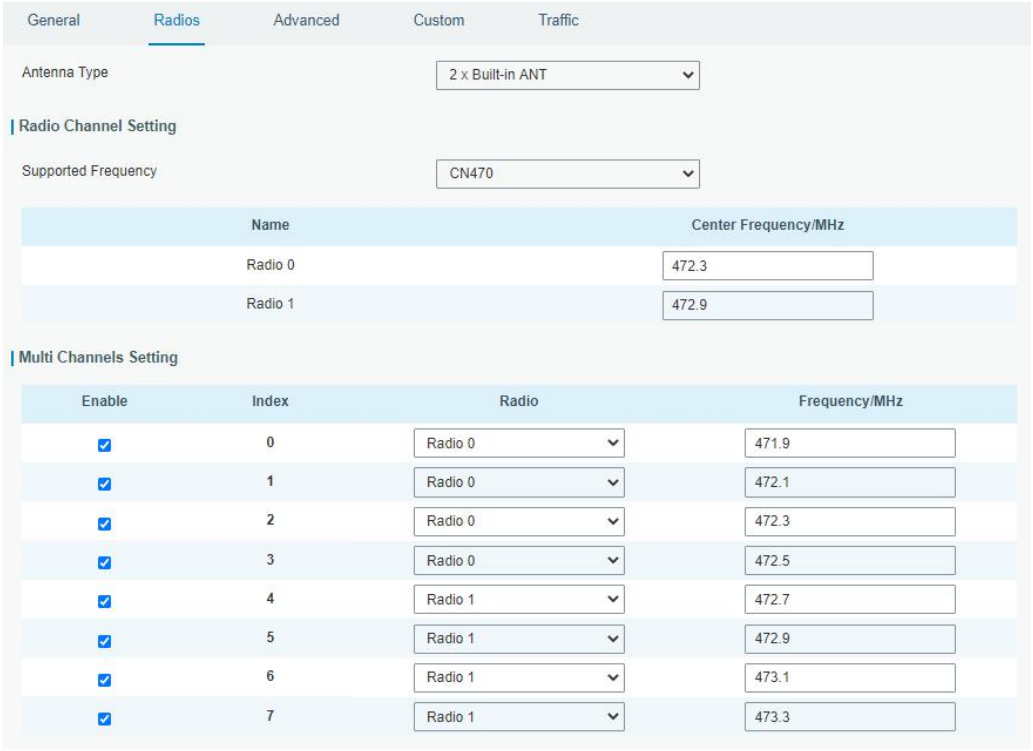
7.2 Connect IOT-G65 to Other Platform

A. Go to “Packet Forwarder” → “General” page to click “enable”.

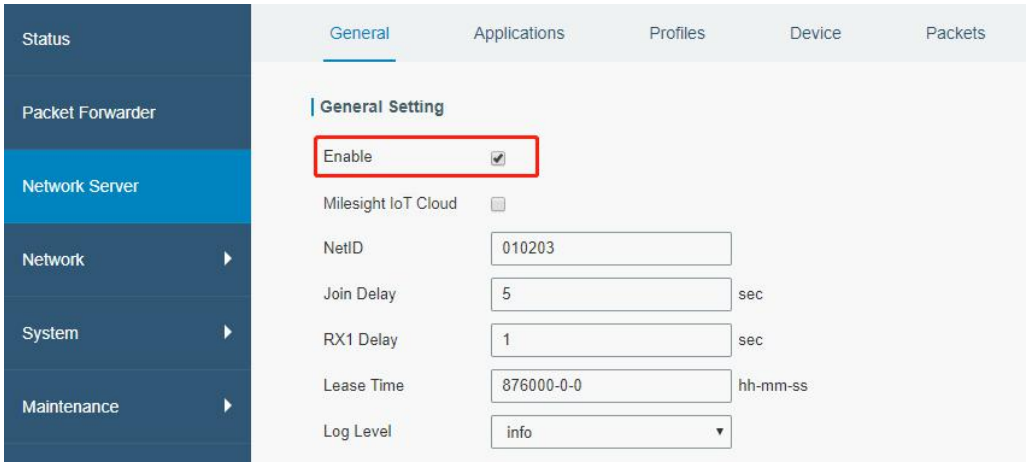


B. Go to “Packet Forwarder” → “Radio” page to select the antenna transmission type, center frequency and channels. The channels of the gateway and LoRaWAN nodes need to be the same.

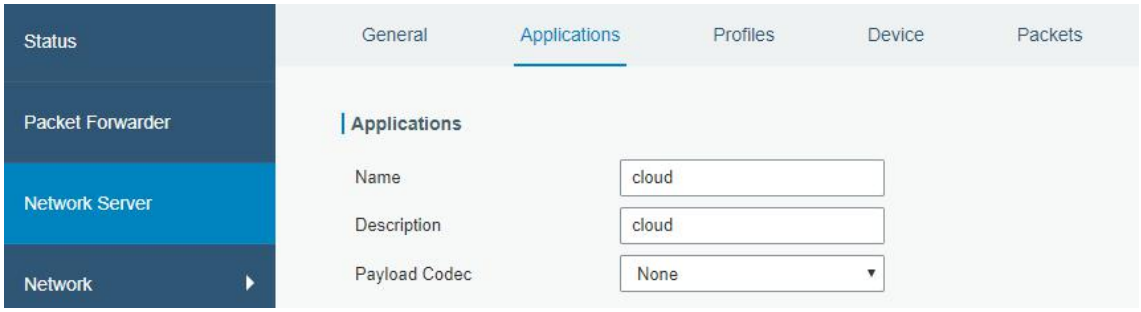
Note: for built-in antenna models, please select “2 × Built-in ANT”; for external antenna models, please select “Ext ANT(TX+RX)+ Built-in ANT(RX)”.



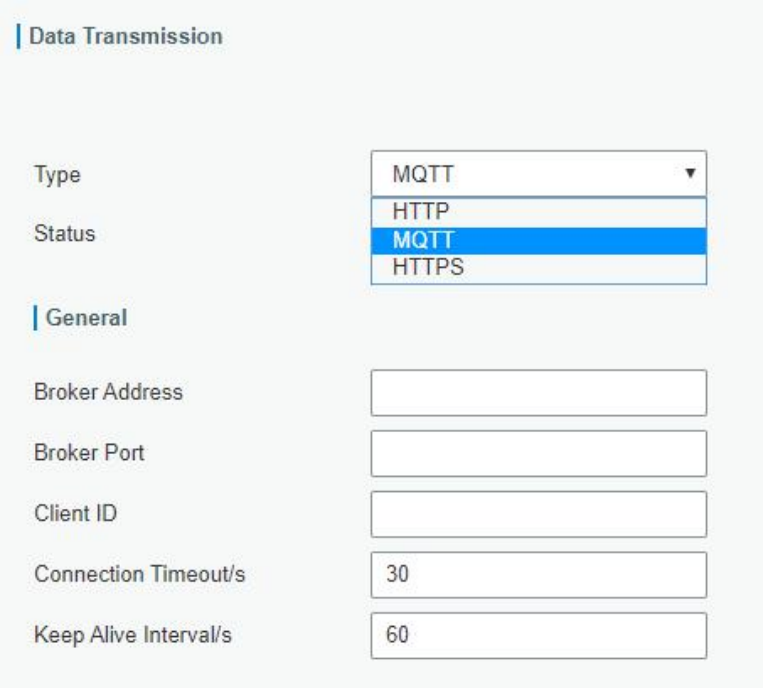
C. Go to “Network Server” → “General” page to enable the network server mode.



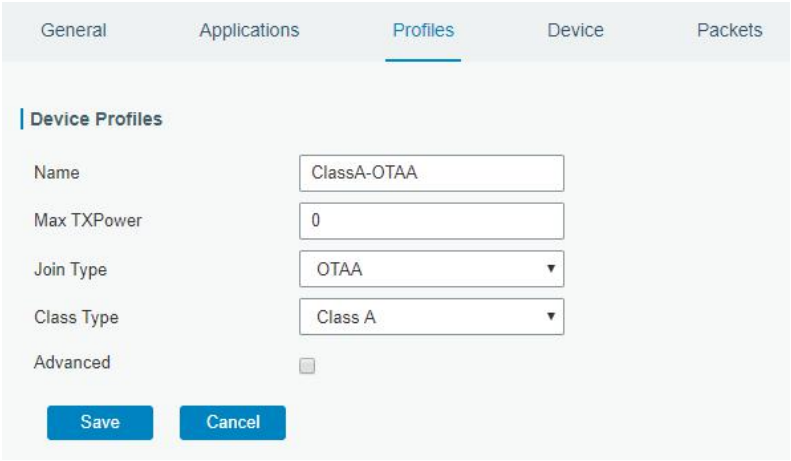
D. Go to “Network Server”→”Application” to add a new application.

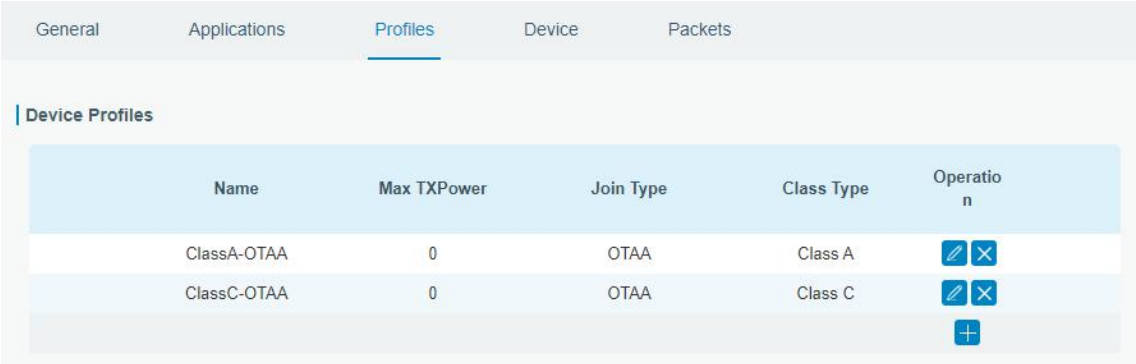


After saving the application, you can select HTTP, HTTPS or MQTT protocol and fill in correspond server information to send data to another server.

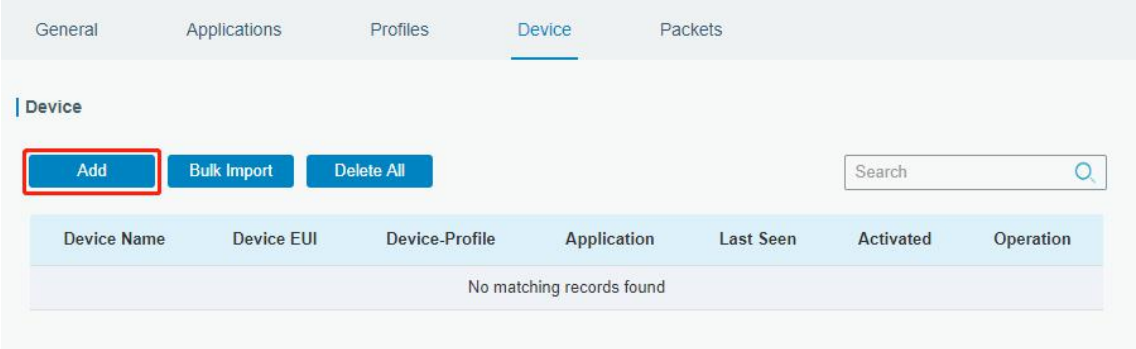


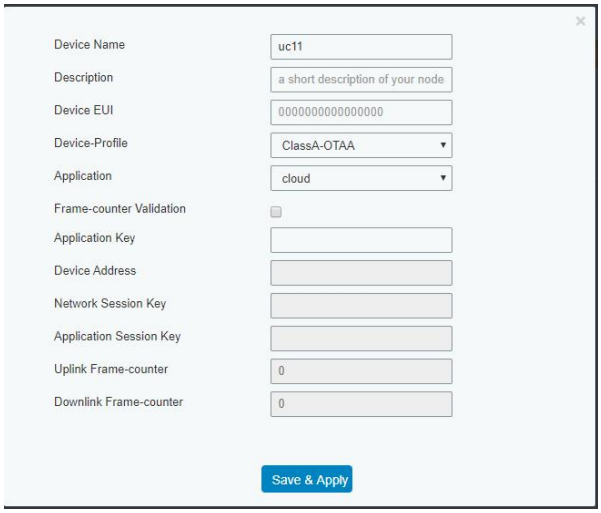
E. Go to “Profiles” page to add a new profile for the device.





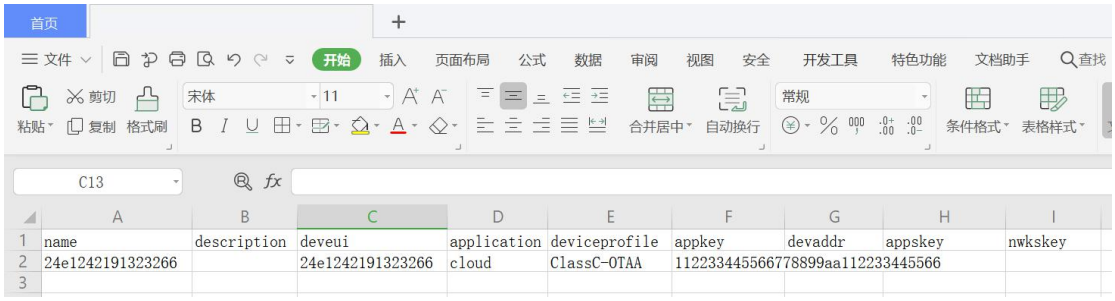
F. Go to “Device” page and click “Add” to add LoRaWAN node devices.





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

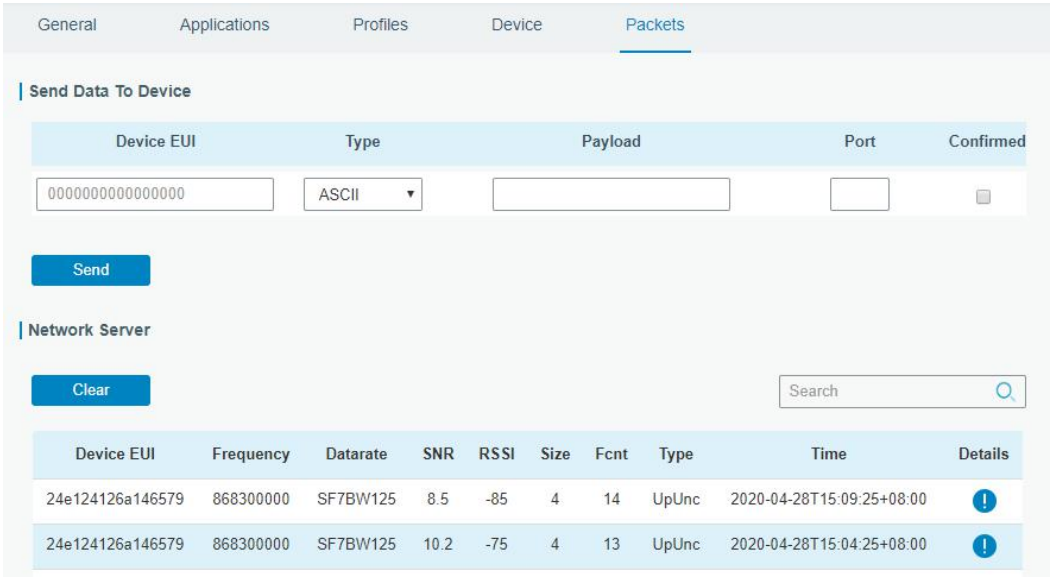
Click “Template Download” to download template file and add LoRaWAN device information to this file. Application and device profile should be the same as you created on web page.



	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									

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.