

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

| 1. Packing Listg 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 | 6 |
| 3.2 Ethernet Cable & Power Cable Installation | 6 |
| 3.3 Antenna Installation | 7 |
| 3.4 Gateway Mounting | 7 |
| 4. Access the Web GUI of IOT-G65 | 9 |
| 4.1 Web Access via Ethernet Port | 9 |
| 5. Connect IOT-G65 to the Network | 11 |
| 5.1 Configure the WAN Connection | 11 |
| 5.2 Configure the Wi-Fi Connection | 12 |
| 5.3 Configure the Cellular Connection | 14 |
| 6. Packet Forwarder Configuration | 15 |
| 7. Network Server Configuration | 17 |
| 7.1 Connect IOT-G65 to Cloud | 17 |
| 7.2 Connect IOT-G65 to Other Platform | |

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.



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

2. Hardware Introduction

2.1 Overview

A. Front Panel

Δ



LED Area
 POWER: Power Indicator
 STATUS: System Indicator
 LoRa: LoRa Indicator
 Wi-Fi: Wi-Fi Indicator
 LTE: Cellular Indicator
 ETH: Ethernet Port Indicator
 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 | |
|--------|-----------------|--|--|--|
| | Dowor Status | Off | The power is switched off | |
| POWER | Power Status | On | The power is switched on | |
| STATUS | System Status | Blue Light | Static: the system is running properly | |
| 517105 | System Status | Red Light | The system goes wrong | |
| LoRa | LoDo Status | Off | Packet Forwarder mode is running off | |
| | LORA SIALUS | Blue Light Packet Forwarder mode is runnin | | |
| | Wi-Fi Status | Off | Wi-Fi is disabled | |
| VVI-FI | | Blue Light | Wi-Fi is enabled | |
| | | Off | SIM card is registering or fails to register | |
| | | OII | (or there are no SIM cards inserted) | |
| ITC | Collular Status | | Blinking slowly: SIM card has been registered and is | |
| LIC | Cellular Status | Plue Light | 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 |
| сти | Ethernet | Off | Disconnected |
| EIH | Port Status | Blue Light | Static: Connected |

2.4 Reset Button

| Function | Description | | | | | | | |
|----------|-----------------------------------|--|--|--|--|--|--|--|
| | STATUS LED | Action | | | | | | |
| | Static Blue | Press and hold the reset button for more than 5 seconds. | | | | | | |
| Reset | 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" \rightarrow "Network and Internet" \rightarrow "Network and Sharing Center", then click "Ethernet" (May have different names).

| Network and Sharing Center | | | | _ | Ш | | |
|--|--|---------------------------|---|---|---|---|--|
| > -> 🛧 🔽 « Network | and Internet > Network and Sharing Center | ~ | Ö Sea | arch Control Panel | | , | |
| Control Panel Home | View your basic network informa | ation and set u | ip conn | ections | | | |
| Change adapter settings | View your active networks | | | | | | |
| Change adapter settings Change advanced sharing settings | Yeastar5G Private network | Acce Hom Con | ss type: eGroup: nections: | type: Internet roup: Ready to create tions: and Wi-Fi (Yeastar5G) | | | |
| | ldentifying | Acce | Access type: No network access Connections: Ethernet | | | | |
| | Change your networking settings | (| | | | | |
| | Set up a new connection or netw Set up a broadband, dial-up, or 1 | rork /PN connection; c | Et | herne | t | | |
| | Troubleshoot problems | (| | | | | |
| | Diagnose and repair network pro | blems, or get trou | bleshooti | ng information. | | | |
| | | | | | | | |
| See also | | | | | | | |
| HomeGroup | | | | | | | |
| Infrared | | | | | | | |
| Internet Options | | | | | | | |
| Mindows Firewall | | | | | | | |

B. Go to "Properties" \rightarrow "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.

| nternet Protocol Version | 4 (TCP/IPv4) |) Prop | erties | | | |
|--|--|-------------------|--------------------|------------------|---------------------|------------------|
| General | | | | | | |
| You can get IP settings a this capability. Otherwise for the appropriate IP se | ssigned auto , you need to ttings. | matica o ask y | lly if y our ne | our ne etwork | twork su adminis | pports trator |
| O Obtain an IP addres | s automatica | lly | | | | |
| • Use the following IP | address: | | | | | |
| IP address: | | 192 | . 168 | . 23 | , 200 | |
| Subnet mask: | | 255 | . 255 | . 255 | . 0 | |
| Default gateway: | | 192 | . 168 | . 23 | . 150 | |
| Obtain DNS server | address autor | matical | ly | | | |
| • Use the following DI | NS server add | dresse | s: | | | |
| Preferred DNS server: | | 8 | . 8 | . 8 | . 8 | |
| Alternative DNS serve | r: | | ×. | э.) | • | 1 |
| Validate settings u | oon exit | | | Î | Advar | ced |

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.

| Change Password | |
|----------------------|---|
| Old Password | |
| New Password | |
| Confirm New Password | |
| | |
| | _ |
| Save Cancel | |

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

| LoRaWAN | | | | | | | | | | | 💄 admin 🔁 |
|------------------|---|-----------------------------------|----------------|---------------------------|-------------|-----------------------|-------------------|--------------|-----|-----------------------|---|
| | | | | | For your de | vice security, please | e change the defa | ult password | | | |
| | | Overview | Packet Forward | Cellular | Network | WLAN | VPN | Host List | | | Help — |
| | | Custom Inform | - | | | | | | | | Show the model name of router. |
| Packet Forwarder | | System morns | auon | | | | | | | | Region |
| Network Server | | Model | | ND65-L00E-915M-8 | EA | | | | | | Show the Region of router. |
| | | Region | | US915 | | | | | | | Show the serial number of router. |
| Network | • | Serial Number Firmware Version | n | 6221A4913139 60.0.0.33 | | | | | | | Firmware Version Show the current firmware version of router. |
| System | • | Hardware Versio | n | V1.1 | | | | | | | Hardware Version |
| | | Local Time | | 2021-01-29 12:00:1 | 2 Friday | | | | | | Show the current hardware version of router. |
| Maintenance | , | Uptime | | 00:15:59 | | | | | | | Local Time |
| | • | CPU Load | | 4% | | | | | | | Show the current local time of system. |
| | | RAM (Capacity/A | Available) | 512MB/189MB(36.9 | 91%) | | | | | | Show the information on how long the router has been running. |
| | | contro (departity | (rotaliance) | 0.0012.00(01.0477) | | | | | | | CPU Load |
| | | | | | | | | | | | Show the current CPU utilization of the router. |
| | | | | | | | | | | | RAM (Capacity/Available) Show the RAM capacity and the available RAM memory. |
| | | | | | | | | | | | eMMC (Capacity/Available) Show the eMMC capacity and the available eMMC memory. |
| | | | | | | | | | | | Manual Refresh |
| | | | | | | | | | | | Refresh the status information manually by clicking "Refresh" button. |
| | | | | | | | | | | | Auto-refresh |
| | | | | | | | | | Man | ual Refresh 👻 Refresh | When you select auto-refresh interval, status information will be refreshed |

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" \rightarrow "Interface" \rightarrow "Port" page to select the connection type and configure Ethernet port information.

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

| ort WLAN | Cellular Loopback | | |
|----------------------|-------------------|---------|-----------|
| - Port_1 | | | |
| Enable | | | |
| Port | eth 0 | | |
| Connection Type | Static IP | ~ | |
| IP Address | 192.168.23.64 | | |
| Netmask | 255.255.255.0 | | |
| Gateway | 192.168.23.1 | | |
| MTU | 1500 | | |
| Primary DNS Server | 8.8.8.8 | | |
| Secondary DNS Server | 114.114.114.114 | | |
| Enable NAT | | | |
| Multiple IP Address | | | |
| IP Add | ress | Netmask | Operation |
| | | | 0 |

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" \rightarrow "Network" to check Ethernet port status.

| | Overview | P | acket Forward | Cellular | Network | WLAN | VPN | Host List |
|---|----------|--------|---------------|---------------|---------------|--------------|---------|-----------|
| V | VAN | | | | | | | |
| | Port | Status | Туре | IP Address | Netmask | Gateway | DNS | Duration |
| | eth 0 | up | Static | 192.168.23.64 | 255.255.255.0 | 192.168.23.1 | 8.8.8.8 | 03h 12s |

5.2 Configure the Wi-Fi Connection

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

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

| Port | WLAN | | Cellular | Loo | pback | | | |
|--------|--------|---------|-----------------------|--------|-------------------|---------------|-----------|-----------------|
| < GoBa | ck | | | | | | | |
| | SSID | Channel | Signal | Cipher | BSSID | Security | Frequency | |
| | F0DCAF | Auto | -68dBm | Auto | 24:e1:24:f0:dc:af | No Encryption | 2437MHz | Join Network |
| | F0C422 | Auto | -6 <mark>4</mark> dBm | Auto | 24:e1:24:f0:c4:22 | No Encryption | 2437MHz | Join Network |
| | F0DE8C | Auto | -66dBm | Auto | 24:e1:24:f0:de:8c | No Encryption | 2462MHz | Join Network |

C. Type the correct key of Wi-Fi.

| Port | WLAN | Cellular | Loopback | | |
|--------------|------|-----------|-------------|---|------|
| WLAN | | | | | |
| Enable | | | | | |
| Work Mode | | Client | | ~ | Scan |
| SSID | | Gateway | _F12738 | | |
| BSSID | | 24:e1:24: | :f0:2c:4b | | |
| Encryption N | Mode | WPA-PS | SK/WPA2-PSK | ~ | |
| Cipher | | AES | | ~ | |
| Key | | ****** | | | |
| IP Setting | | | | | |
| Protocol | | DHCP C | Client | ~ | |

E. Go to "Status" \rightarrow "WLAN" to check Wi-Fi status. If it shows "Connected", it means gateway connects to Wi-Fi successfully.

| | Overview | Packet Forward | Cellular | Network | WLAN |
|----|-------------------|----------------|--------------|---------|------|
| 21 | WLAN Status | | | | |
| | Wireless Status | | Enabled | | |
| | MAC Address | | 24:e1:24:f1: | 27:38 | |
| | Interface Type | | AP | | |
| | SSID | | Gateway_F1 | 2738 | |
| | Channel | | Auto | | |
| | Encryption Type | | No Encryptic | n | |
| | Status | | Up | | |
| | IP Address | | 192.168.1.1 | | |
| | Netmask | | 255.255.255 | .0 | |
| | Connection Durati | on | 0 days, 00:3 | 0:06 | |
| | | | | | |

5.3 Configure the Cellular Connection

A. Go to "Network" \rightarrow "Interface" \rightarrow "Cellular" \rightarrow "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.

| Port | WLAN | Cellular | Loopback |
|---------------|---------|----------|----------|
| Cellular Se | tting | | |
| Enable | | | |
| Network Typ | e | Auto | ~ |
| APN | | | |
| Username | | | |
| Password | | | |
| Access Num | nber | | |
| PIN Code | | | |
| Authenticatio | on Type | Auto | ~ |
| Roaming | | | |
| SMS Center | | | |
| Connection | Setting | | |
| Enable NAT | | | |

D. Go to "Status" \rightarrow "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.

| Overview | Packet Forward | Cellular | Network | WLAN |
|-----------------|----------------|----------------------|---------|------|
| Modem | | | | |
| Status | | Ready | | |
| Model | | EC25 | | |
| Version | | EC25ECGAR06A07M | 1G | |
| Signal Level | | 23asu (-67dBm) | | |
| Register Status | | Registered (Home net | work) | |
| IMEI | | 860425047368939 | | |
| IMSI | | 460019425301842 | | |
| ICCID | | 898601178380099341 | 120 | |
| 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. 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" \rightarrow "General" page and click \pm to add a network server.

| Status | | General | Radios | Advanced | Custom | Traffic | |
|------------------|---|---------------------------|------------|-----------|---------|---------------------------------|---------------|
| Packet Forwarder | | General Setting | | | | | |
| Network Server | | Gateway EUI Gateway ID | 24E124FFFF | | | | |
| Network | × | Frequency-Sync | Disabled | <u> (</u> | • | | |
| System | × | Multi-Destination | | | | | |
| Maintenance | • | ID | | Enable | Туре | Server Address | Operatio n |
| | | 0 | | Enabled | | localhost | |
| APP | • | 1 | | Disabled | TTN | | 2X |
| | | 2 | | Disabled | Semtech | router.cn.thethings.net work | 2× |
| | | | | | | | E |

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.

| Туре | Semtech 🔻 | |
|----------------|-----------------------------|--|
| Server Address | router.eu.thethings.network | |
| Port Up | 1700 | |
| Port Down | 1700 | |

C. Go to "Packet Forwarder" \rightarrow "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)".

| General | Radios | Advanced | Custom | Traffic | | |
|--|---------|---|---|--------------------------------------|--|---|
| Antenna Type | | | 2 x Built-in AN | Т | ~ | |
| Radio Channel | Setting | | | | | |
| Supported Freq | uency | | CN470 | | ~ | |
| | | Name | | | Center Frequency/MHz | |
| | | Radio 0 | | | 472.3 | |
| | | Radio 1 | | | 472.9 | |
| Multi Channels | Setting | | | | | |
| | | | | | | |
| Enable | е | Index | Radio | | Frequency/MHz | L |
| Enable | e | Index 0 | Radio | ~ | Frequency/MHz 471.9 | 2 |
| Enabl 2 | e | Index 0 1 | Radio Radio 0 Radio 0 | ~ | Frequency/MHz 471.9 472.1 | |
| Enable C C | e | Index 0 1 2 | Radio 0 Radio 0 Radio 0 Radio 0 | * * * | Frequency/MHz 471.9 472.1 472.3 | |
| Enabl C C C | e | Index 0 1 2 3 | Radio 0 Radio 0 Radio 0 Radio 0 Radio 0 | * * * | Frequency/MHz 471.9 472.1 472.3 472.5 | |
| Enabl 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | e | Index 0 1 2 3 4 | Radio 0 Radio 0 Radio 0 Radio 0 Radio 0 Radio 1 | > > > > | Frequency/MHz 471.9 472.1 472.3 472.5 472.7 | |
| Enabl C C C C C C C C C | 8 | Index 0 1 2 3 4 5 | Radio 0 Radio 0 Radio 0 Radio 0 Radio 0 Radio 0 Radio 1 Radio 1 Radio 1 | > > > > > | Frequency/MH2 471.9 472.1 472.3 472.5 472.7 472.7 472.9 | |
| Enabl C C C C C C C C C C C C C C C C C C C | 8 | Index 0 1 2 3 4 5 6 | Radio Radio 0 Radio 0 Radio 0 Radio 0 Radio 1 Radio 1 Radio 1 Radio 1 | > > > > > > > > | Frequency/MH2 471.9 472.1 472.3 472.5 472.7 472.9 473.1 | |

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.

| GISTER GATEWAY | |
|--|-----------|
| ateway EUI | |
| ne EUI of the gateway as read from the LoRa module | |
| | |
| 24 ET 24 FF FE 3 3 3 3 3 3 4 5 5 | 8 bytes |
| 24 E1 24 FF FE 9 9 I'm using the legacy packet forwarder Select this if you are using the legacy <u>Semtech packet forwarder</u> . escription burnan-readable description of the gateway | ● 8 bytes |
| 24 E1 24 FF FE 24 E1 24 FF 24 | € 8 bytes |
| 24 E1 24 FF Fe 9 I'm using the legacy packet forwarder Select this if you are using the legacy <u>Samtech packet forwarder</u> . escription human-readable description of the gateway | € 8 bytes |

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

| (| General | Rad | lios Adva | inced | Custom | Traffic | | | |
|---|------------|-----------|-----------|-----------------------------|-----------|----------|----------|------|-------|
| T | affic Sett | ing | | | | | | | |
| | Stop | | Clear | | | | | | |
| | Rfch | Direction | Time | Ticks | Frequency | Datarate | Coderate | RSSI | SNR |
| | 1 | up | 11:52:38 | 317882157 1 | 865.985 | SF7BW125 | 4/5 | -91 | 5.0 |
| | 1 | up | 11:52:22 | 316226269 2 | 866.585 | SF7BW125 | 4/7 | -108 | -11.8 |
| | 0 | down | 17 | 311888813 1 | 865.0625 | SF7BW125 | 4/5 | 10 | æ |
| | 0 | up | 11:51:37 | <mark>311788813</mark> 1 | 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.

M 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" \rightarrow "General" page to click "enable".

| Status | | General | Radios | Advanced | Custom | Traffic | |
|------------------|---|---------------------------|-----------|-------------|-----------|----------------|-----------|
| Packet Forwarder | | General Setting | | | | | |
| Network Server | | Gateway EUI Gateway ID | 24E124FFF | Fruncento d |] | | |
| Network | Þ | Frequency-Sync | Disabled | • | | | |
| System | • | Multi-Destination | | | | | |
| Maintenance | Þ | I |) | Enable | Туре | Server Address | Operation |
| APP | • | | 1 | Enabled | Milesight | iocalhost | + |
| | | Save & Apply | | | | | |

B. Go to "Packet Forwarder" \rightarrow "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)".

| General | Radios | Advanced | Custom | Traffic | | |
|-----------------|---------|----------|-----------------|---------|----------------------|-----|
| Antenna Type | | | 2 x Built-in AN | Г | ~ | |
| Radio Channel | Setting | | | | | |
| Supported Frequ | uency | | CN470 | | ~ | |
| | | Name | | | Center Frequency/MHz | |
| | | Radio 0 | | | 472.3 | |
| | | Radio 1 | | | 472.9 | |
| Multi Channels | Setting | | | | | |
| Enable | e | Index | Radio | | Frequency/ | MHz |
| | | 0 | Radio 0 | ~ | 471.9 | |
| | | 1 | Radio 0 | ~ | 472.1 | |
| | | 2 | Radio 0 | ~ | 472.3 | |
| | | 3 | Radio 0 | ~ | 472.5 | |
| | | 4 | Radio 1 | ~ | 472.7 | |
| | | 5 | Radio 1 | ~ | 472.9 | |
| | | 6 | Radio 1 | ~ | 473.1 | |
| | | 7 | Radio 1 | ~ | 473.3 | |

C. Go to "Network Server" \rightarrow "General" page to enable the network server and Cloud mode.

| Status | | General | Applications | Profiles | Device | Packets |
|------------------|------|----------------------------|--------------|----------|----------|---------|
| Packet Forwarder | | General Settin | 9 | | | |
| Network Server | | Enable Milesight IoT Cl | e oud e | | | |
| Network | • | NetID | 010203 | | | |
| | | Join Delay | 5 | s | ec | |
| System | ۲ | RX1 Delay | 1 | 5 | ec | |
| reasonal United | - | Lease Time | 876000-0-0 | ł | nh-mm-ss | |
| Maintenance | | Log Level | info | • | | |
| (ALCONO) | 1000 | | | | | |

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

| 3 Dashboard | Add | Delete | Refresh | | | | | | Search | |
|----------------|--------|---------|------------|---------|------------|----------|----------|-------------------------------------|------------------|---------|
| My Devices | ■ Stat | tus | Name 🖨 | Model 🖨 | Partnumber | Serial N | Number 🖨 | Version 👙 | Update Time | Operati |
| b Gateway | | \odot | Add Device | | | | × | Firmware:80.0.0.62 Hardware:V1.1 | 2020-04-28 14:24 | 0 |
| Map | | | | | | | | Firmware:80.0.0.62 Hardware:V1.1 | 2020-04-10 14:33 | @ |
| Triggers | | | | SN | | | | | | |
| Event Center | | | | Name | | | | | | |
| Sharing Center | | | | | | | | | | |
| Device Groups | | | | | | | | | | |
| ζ Me | | | | | Cancel | Add | | | | |

E. The gateway is online.

| ② Dashboard | Add | Delete | Refresh | | | | | Search | | Q |
|-------------|-----|----------|---------|--------------------|--------------|-----------------|-------------------------------------|------------------|----------|-------|
| My Devices | | Status 💠 | Name | Model 🔷 | Partnumber 🝦 | Serial Number 🝦 | Version 🝦 | Update Time | Opera | ition |
| 🔛 Gateway | | \odot | 231 | 85-L00E- EU868 | L00E-EU868 | 62179 | Firmware:80.0.0.62 Hardware:V1.1 | 2020-04-28 14:24 | 0 | > |
| 🖄 Map | | | 23 | 85-L01CE- CN470 | L01CE-CN470 | 62179 | Firmware:80.0.0.62 Hardware:V1.1 | 2020-04-10 14:33 | ତ | > |
| in Triggers | | | | | | | | | | |

7.2 Connect IOT-G65 to Other Platform

A. Go to "Packet Forwarder" \rightarrow "General" page to click "enable".

| Status | General | Radios | Advanced | Custom | Traffic | |
|------------------|---------------------------|-----------|---------------------|-----------|----------------|-----------|
| Packet Forwarder | General Setting | | | | | |
| Network Server | Gateway EUI Gateway ID | 24E124FFF | 1000005 12002020 | | | |
| Network | Frequency-Sync | Disabled | | • | | |
| System 🕨 | Multi-Destination | | | | | |
| Maintonanco | ID | 11 | Enable | Туре | Server Address | Operation |
| | 0 | | Enabled | Milesight | localhost | |
| APP 🕨 | | | | | | + |
| | Save & Apply | | | | | |

B. Go to "Packet Forwarder" \rightarrow "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)".

| General | Radios | Advanced | Custom | Traffic | | | |
|----------------|-----------|----------|--------------|---------|----------------|---------------|--|
| Antenna Type | | | 2 x Built-in | n ANT | ~ | | |
| Radio Channe | Setting | | | | | | |
| Supported Freq | uency | | CN470 | | * | | |
| | | Name | | | Center Frequer | ncy/MHz | |
| | | Radio 0 | | | 472.3 | | |
| | | Radio 1 | | | 472.9 | | |
| Multi Channels | s Setting | | | | | | |
| Enabl | e | Index | R | adio | | Frequency/MHz | |
| | | 0 | Radio 0 | ~ | 471.9 | | |
| | | 1 | Radio 0 | ~ | 472.1 | | |
| | | 2 | Radio 0 | ~ | 472.3 | | |
| | | 3 | Radio 0 | ~ | 472.5 | | |
| | | 4 | Radio 1 | ~ | 472.7 | | |
| | | 5 | Radio 1 | ~ | 472.9 | | |
| | | 6 | Radio 1 | ~ | 473.1 | | |
| | | 7 | Radio 1 | ~ | 473.3 | | |

C. Go to "Network Server" \rightarrow "General" page to enable the network server mode.

| Status | | General | Applications | Profiles | Device | Packets |
|------------------|----|------------------------------|--------------|----------|----------|---------|
| Packet Forwarder | | General Setting | | | | |
| Network Server | | Enable Milesight IoT Clou | d 🔲 | | | |
| Network | ► | NetID | 010203 | | | |
| System | ۲ | RX1 Delay | 1 | | sec | |
| Maintenance | i. | Lease Time | 876000-0-0 | | hh-mm-ss | |
| | | Log Level | info | Ţ | | |

D. Go to "Network Server" \rightarrow "Application" to add a new application.

| Status | General | Applications | Profiles | Device | Packets |
|------------------|---------------|--------------|----------|--------|---------|
| Packet Forwarder | Applications | | | | |
| | Name | cloue | d | | |
| Network Server | Description | cloue | d | | |
| Network 🕨 | Payload Codec | Nor | e | • | |

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

| Туре | MQTT | • |
|----------------------|---------------|---|
| Ch-t | HTTP | |
| Status | MQTT HTTPS | |
| General | 4 | |
| Broker Address | | |
| Broker Port | | |
| Client ID | | |
| Olicitit | | |
| Connection Timeout/s | 30 | |

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

| | | General | Applications | Prof | iles | Device | Packet | s | |
|---|----------------|-----------------|--------------|-----------|-----------|--------|----------|---------------|--|
| | | Device Profiles | | | | | | | |
| | | Name | CI | assA-OTAA | | | | | |
| | | Max TXPower | 0 | | | | | | |
| | | Join Type | 0 | TAA | , | • | | | |
| | | Class Type | С | lass A | | • | | | |
| | | Advanced | | | | | | | |
| | | Save | Cancel | | | | | | |
| | General | Applications | Profiles | Device | Pack | ets | | | |
| 0 | evice Profiles | | | | | | | | |
| | | Name | Max TXPower | | Join Type | CI | ass Type | Operatio n | |
| | | ClassA-OTAA | 0 | | OTAA | | Class A | ℓ × | |
| | | ClassC-OTAA | 0 | | OTAA | | Class C | 2 × | |
| | | | | | | | | \pm | |

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

| General | Applications | Profiles | Device F | Packets | | |
|-------------|--------------|----------------------|---|-----------|-----------|-----------|
| Device | | | | | | |
| Add | Bulk Import | Delete All | | | Search | Q, |
| Device Name | Device EUI | Device-Profile | Application | Last Seen | Activated | Operation |
| | | No m | atching records found | | | |
| | | | | | | |
| | | | | | | |
| | Devi | ce Name | uc11 | | × | |
| | Desc | ription | a short description of your | node | | |
| | Devi | ce EUI | 000000000000000000000000000000000000000 | | | |
| | Devi | ce-Profile | ClassA-OTAA | Ŧ | | |
| | Appli | cation | cloud | • | | |
| | Fram | e-counter Validation | | | | |
| | Appli | cation Key | | | | |
| | Devi | ce Address | | | | |
| | Netw | ork Session Key | | | | |
| | Appli | cation Session Key | | | | |
| | Uplin | k Frame-counter | 0 | | | |
| | Down | nlink Frame-counter | 0 | | | |
| | | | | | | |
| | | | Save & Apply | | | |

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

| | | | | × |
|-------------|--------|--------|-------------------|---|
| Import File | Browse | Import | Template Download | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

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.

| 首 | 页 | | + | | | | | | |
|----|------------------|----------------|------------------|-------------|---------------|--------------|--------------|-------------------------|-----------|
| ≡ | 文件 ~ 🗐 わ 🛱 | छ ७ २ ⊽ | 开始插入 可 | 页面布局 公式 | 数据 审阅 | 视图 安全 | 开发工具 | 特色功能 文档 | 鋤手 Q 查找 |
| C |) ※ 剪切 凸 | 宋体 | - 11 - A* A | ⋮≡≡₌ | _ ÷≡ →≡ | | 常规 | | E I |
| 粘贴 | ▼ □ 复制 格式刷 | B <i>I</i> ⊻ ⊞ | - 🗷 - 🙆 - 🛆 - 🛇 | | ≣ 🖃 h≞ | 中* 自动换行 | ≆ * % 000 | .0+ :00 .00 :0- 条件格式 | * 表格样式* 3 |
| | | 0 | | L | | L | | 1 | |
| | C13 * | B tx | | | | | | | |
| | A | В | С | D | Е | F | G | Н | I |
| 1 | name | description | deveui | application | deviceprofile | appkey | devaddr | appskey | nwkskey |
| 2 | 24e1242191323266 | | 24e1242191323266 | cloud | ClassC-OTAA | 112233445566 | 778899aa1122 | 33445566 | |
| 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.

| | General A | pplications | Profiles | | Devid | ce | P | ackets | | |
|---|---|-------------|------------------------|------|-------------------|------|---------|--------|---------------------------|-----------|
| J | Send Data To Device | | | | | | | | | |
| | Device EU | I | Туре | | | | Payload | | Port | Confirmed |
| | 000000000000000000000000000000000000000 | | ASCII | • | | | | | | |
| ļ | Send Network Server | | | | | | | | | |
| | Clear | | | | | | | | Search | O, |
| | Device EUI | Frequency | Datarate | SNR | RSSI | Size | Fcnt | Туре | Time | Details |
| | 24e124126a146579 | 868300000 | SF7 <mark>BW125</mark> | 8.5 | <mark>-8</mark> 5 | 4 | 14 | UpUnc | 2020-04-28T15:09:25+08:00 | 0 |
| | 24e124126a146579 | 868300000 | SF7BW125 | 10.2 | -75 | 4 | 13 | UpUnc | 2020-04-28T15:04:25+08:00 | 0 |

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 | 2 | |
| Payload(b64) | A3cYAA== | |
| Payload(hex) | 03771800 | |
| MIC | f5acdeb2 | |