



# UG85 LoRaWAN Gateway

## Quick Start Guide



# Welcome

Thank you for choosing Ursalink UG85 LoRaWAN Gateway.

This guide teaches you how to install the UG85 and how to log in the web GUI to configure the device. Once you complete the installation, refer to the Ursalink UG85 User Guide for instructions on how to perform configurations on the device.

## Related Documents

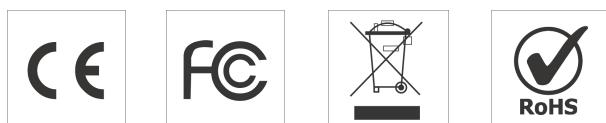
This Quick Start Guide only explains the installation of Ursalink UG85 LoRaWAN Gateway. For more functionality and advanced settings, please refer to the relevant documents as below.

Document	Description
Ursalink UG85 Datasheet	Datasheet for the Ursalink UG85 LoRaWAN Gateway.
Ursalink UG85 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 Ursalink website: <http://www.ursalink.com>.

## Declaration of Conformity

UG85 is in conformity with the essential requirements and other relevant provisions of the CE, FCC, and RoHS.



For assistance, please contact  
Ursalink technical support:  
Email: support@ursalink.com  
Tel: 86-592-5023060  
Fax: 86-592-5023065

## 1. Packing List

Before you begin to install the UG85 LoRaWAN Gateway, please check the package contents to verify that you have received the items below.

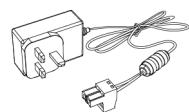
### 1.1 Package Contents



1 × UG85



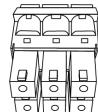
1 × Ethernet Cable



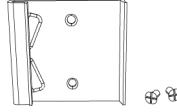
1 × Power Adapter



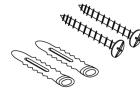
1 × Stubby LoRa  
Antenna



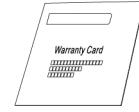
1 × 6-Pin Pluggable  
Terminal



1 × DIN Rail Kit



4 × Setscrews



1 × Warranty Card



1 × GPS Antenna  
(Optional)



1 × Magnetic Cellular  
Antenna (Optional)



1 × Stubby Wi-Fi  
Antenna (Optional)



1 × Stubby Cellular  
Antenna (Optional)

**Note:** If UG85 support cellular function, stubby cellular antenna is default choice.

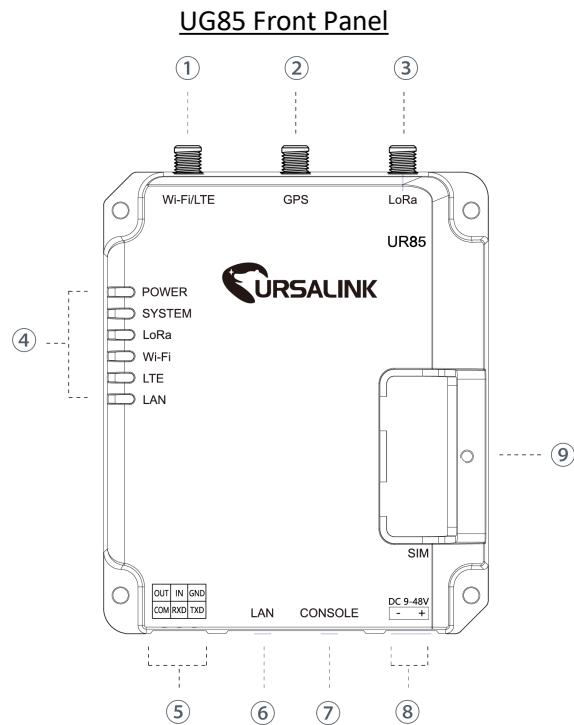


If any of the above items is missing or damaged, please contact your Ursalink sales representative.

## 2. Hardware Introduction

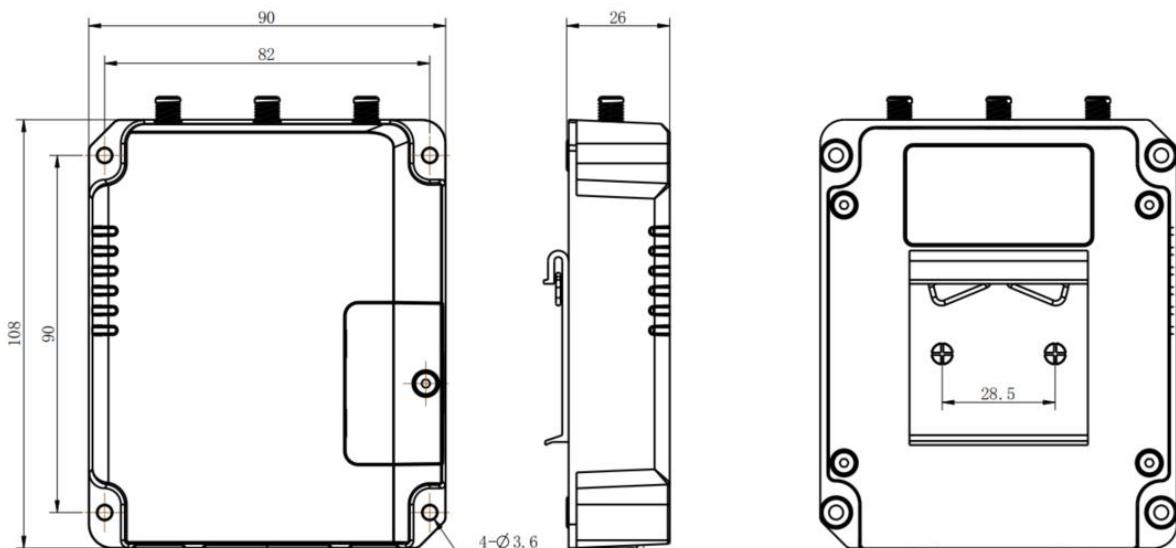
### 2.1 Overview

#### A. Front Panel

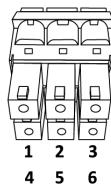


- ① WIFI/LTE Antenna
- ② GPS Antenna
- ③ LoRa Antenna
- ④ LED Indicator Area
  - POWER: Power Indicator
  - SYSTEM: Status Indicator
  - LORA: LoRa Indicator
  - WIFI: WIFI Indicator
  - LTE: Cellular Status Indicator
  - LAN: Ethernet Port Status Indicator
- ⑤ Serial Port & I/O
- ⑥ Ethernet WAN/LAN Port
- ⑦ Console Port
- ⑧ Power Connector
- ⑨ SIM and Reset Button Holder

### 2.2 Dimensions (mm)



## 2.3 Pinouts



PIN	RS232	DI	DO	Description
1	---	---	OUT	Digital Output
2	---	IN	---	Digital Input
3	GND	---	---	Ground
4	---	COM	COM	Common Ground
5	RXD	---	---	Receive Data
6	TXD	---	---	Transmit Data

V+ V-



PIN	Description
11	Positive
12	Negative

## 2.4 LED Indicators

LED	Indication	Status	Description
POWER	Power Status	On	The power is switched on
		Off	The power is switched off
SYSTEM	System Status	Green Light	Static: Start-up
			Blinking slowly: the system is running properly
		Red Light	The system goes wrong
LoRa	LoRa Status	Green Light	Packet Forwarder mode is running well.
		Off	Packet Forwarder mode is running off.
WIFI	WIFI Status	Green Light	WIFI is connected
		Off	WIFI is disconnected
LTE	Cellular Status	Off	SIM1 or SIM2 is registering or fails to register (or there are no SIM cards inserted)
		Green Light	Blinking slowly: SIM1 or SIM2 has been registered and is ready for dial-up
			Blinking rapidly: SIM1 or SIM2 has been registered and is dialing up now
			Static: SIM1 or SIM2 has been registered and dialed up successfully
LAN	Ethernet Port Status	Off	Disconnected
		Green Light	Blinking: Transmitting data
			Static: Connected

## 2.5 Reset Button

Function	Description	
	SYSTEM LED	Action
Reboot	Blinking	Press and hold the reset button for about 5-15 seconds.
	Static Green	Release the button and wait for system to reboot.
Reset	Blinking	Press and hold the reset button for more than 15 seconds.
	Static Green → Rapidly Blinking	Release the button and wait.
	Off → Blinking	The gateway is now reset to factory default.

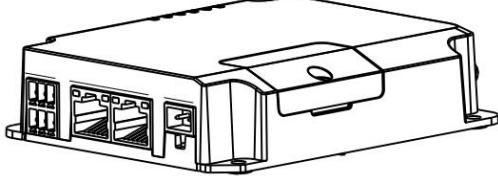
### 3. Hardware Installation

#### Environmental Requirements

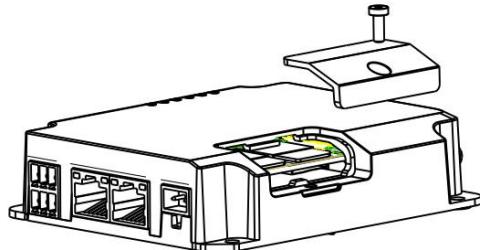
- Power Input: 9-48 VDC
- Power Consumption: Typical 3.3W (Max 6.4 W)
- Operating Temperature: -40°C to 70°C (-40°F -158°F)
- Relative Humidity: 0% to 95% (non-condensing) at 25°C/77°F

#### 3.1 SIM Card Installation

A. Unscrew the cover of the SIM card then take it off.



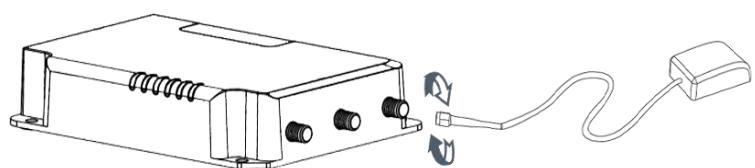
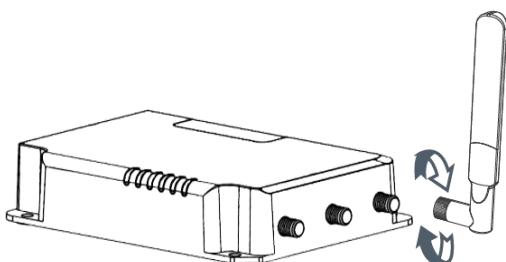
B. Put SIM card into the slot and screw it up.



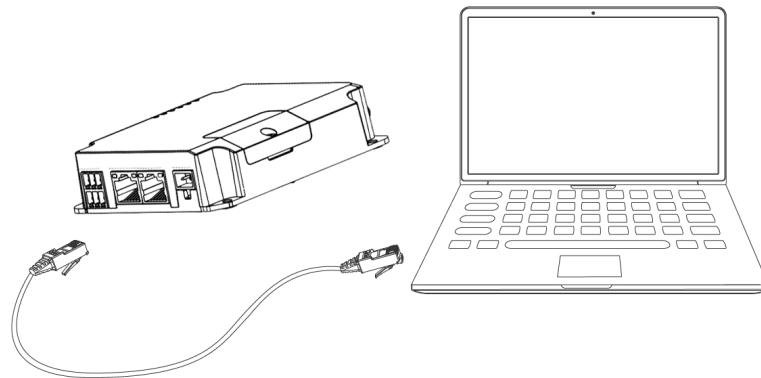
#### 3.2 Antenna Installation

Rotate the antenna into the antenna connector accordingly.

The external antenna should be installed vertically always on a site with a good cellular signal.



### 3.3 Connect the UG85 to a Computer



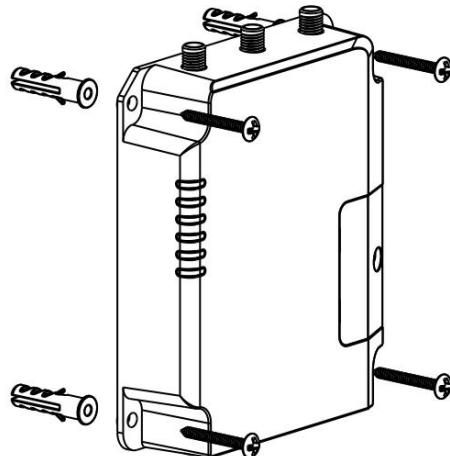
### 3.4 Mount the gateway

The gateway can be placed on a desktop or mounted to a wall or a DIN rail.

#### 3.4.1 Wall Mounting (Measured in mm)

Use 4 pcs of M3 × 6 flat head Phillips screws to fix the gateway on the wall.

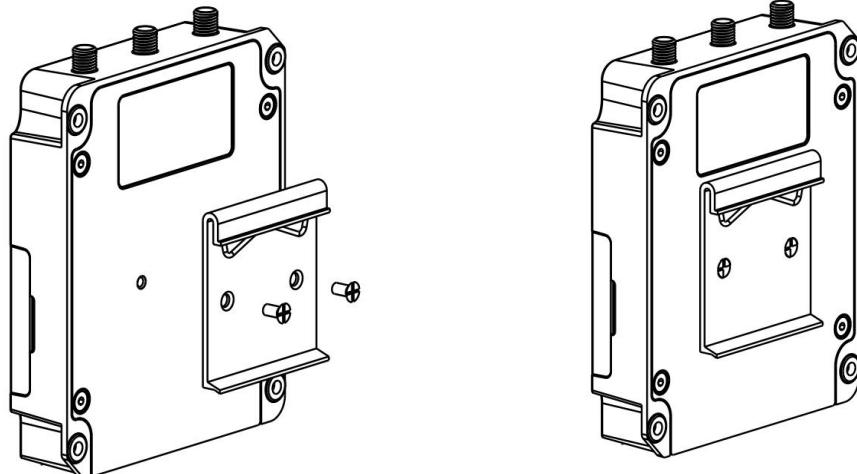
 Recommended torque for mounting is 1.0 N·m, and the maximum allowed is 1.2 N·m.



#### 3.4.2 DIN Rail Mounting (Measured in mm)

Use 2 pieces of M3 × 6 flat head Phillips screws to fix the DIN rail to the gateway, and then hang the DIN rail on the mounting bracket. It is necessary to choose a standard bracket.

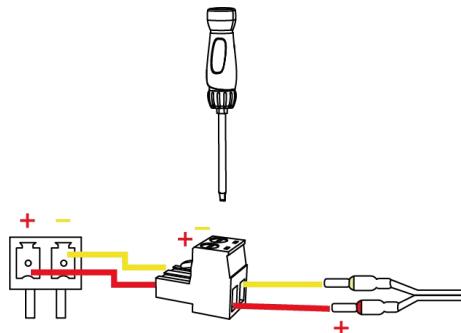
 Recommended torque for mounting is 1.0 N·m, and the maximum allowed is 1.2 N·m.



### 3.5 Power Supply Installation

A. Take out the terminal from the gateway and unscrew the bolt on terminal.

B. Screw down the bolt after inserting power cable into the terminal.



Connecting the Power Cable

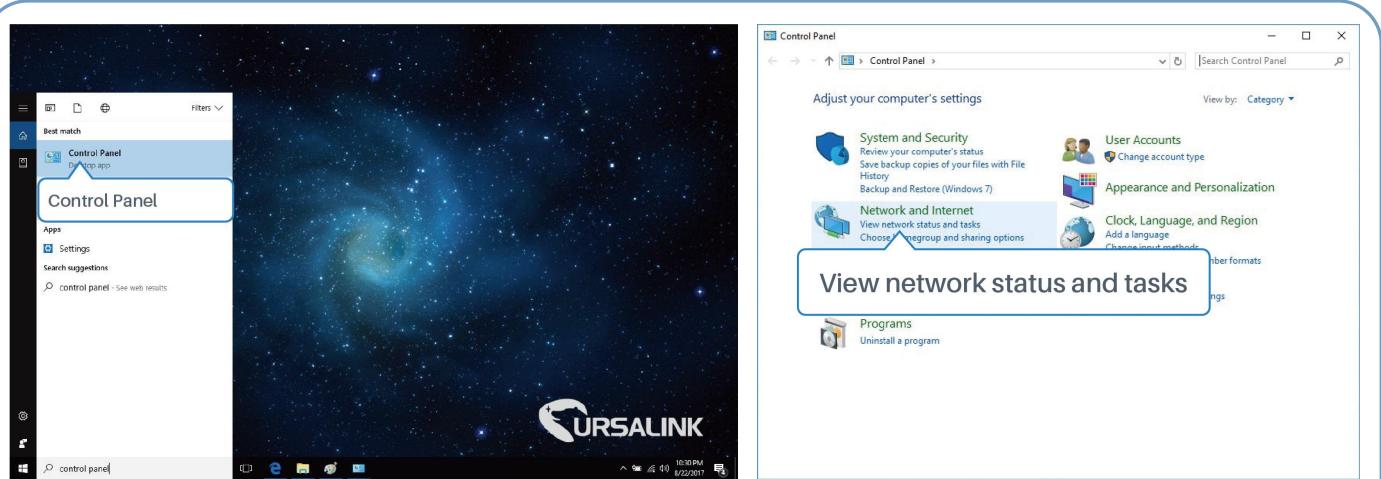
Color	Polarity
Red	+
Yellow	-

**⚠ If you insert wires into the reverse holes, the gateway will not start and you must switch the wires into the correct holes.**

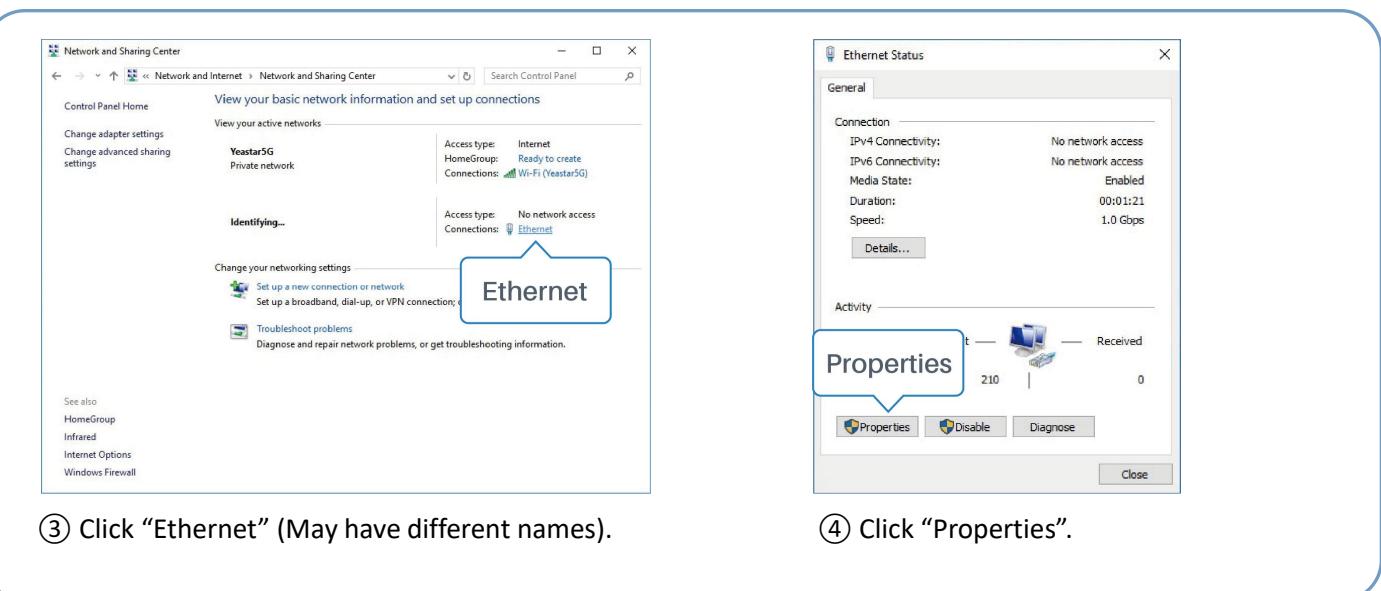
## Getting Started

### 4. PC Configuration for UG85 Web GUI

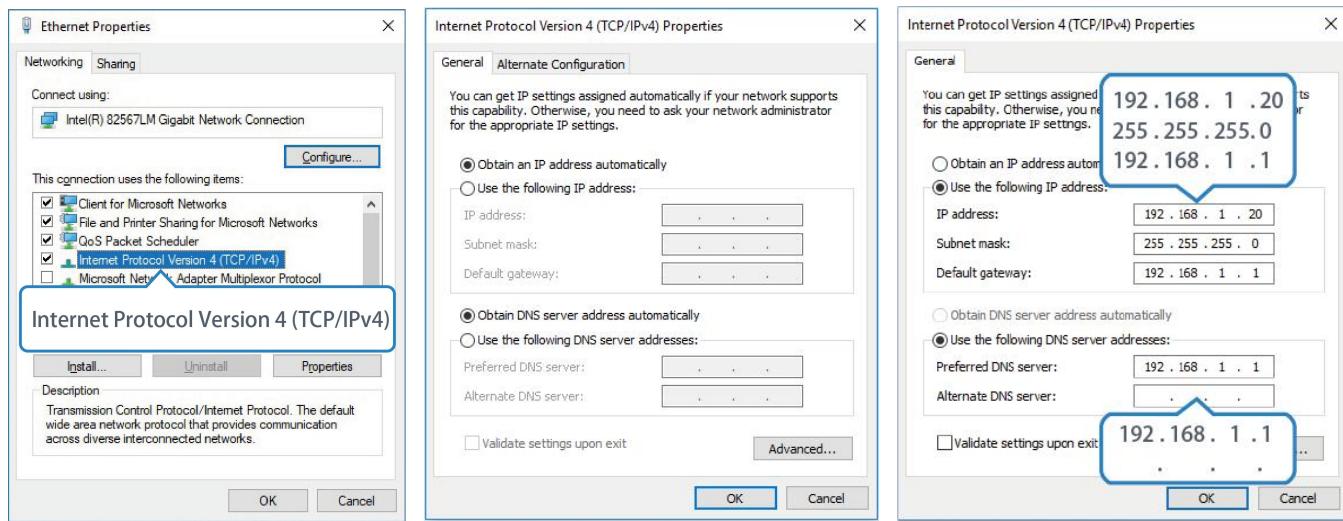
Please connect PC to LAN port of UG85 directly. PC can obtain an IP address, or you can configure a static IP address manually. The following steps are based on Windows 10 operating system for your reference.



- ① Click “Search Box” to search “Control Panel” on the Windows 10 taskbar.
- ② Click “Control Panel” to open it, and then click “View network status and tasks”.



- ③ Click “Ethernet” (May have different names).
- ④ Click “Properties”.



**⑤ Double Click “Internet Protocol Version 4 (TCP/IPv4)” to configure IP address and DNS server.**

**⑥ Method 1: click “Obtain an IP address automatically”;**

**Method 2: click “Use the following IP address” to assign a static IP manually within the same subnet of the gateway.**

(Note: Remember to click “OK” to finish configuration.)

## 5. Access to UG85 Web GUI for Cellular Connection

This chapter explains how to log in UG85 Web GUI, and connect the gateway to cellular network.

Ursalink UG85 provides web-based configuration interface for management. If this is the first time you configure the gateway, please use the default settings below:

IP Address: **192.168.1.1**

Username: **admin**

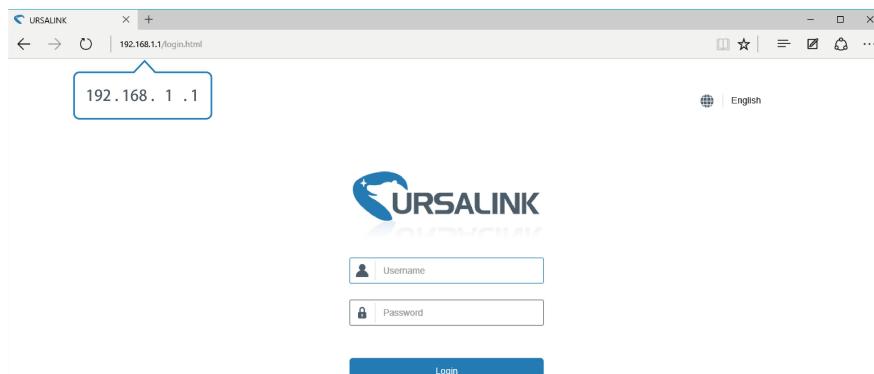
Password: **password**

### 5.1 Log in the Gateway



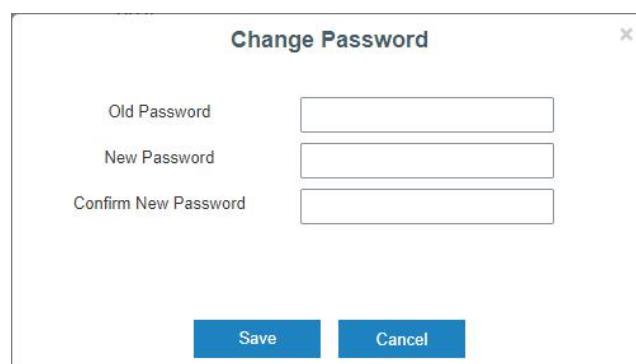
**Make sure your PC is connected to the same network as shown in [Section 4](#).**

- Open a Web browser on your PC (Chrome and IE are recommended), type in the IP address, and press Enter on your keyboard.
- Enter the username and password, click “Login”.



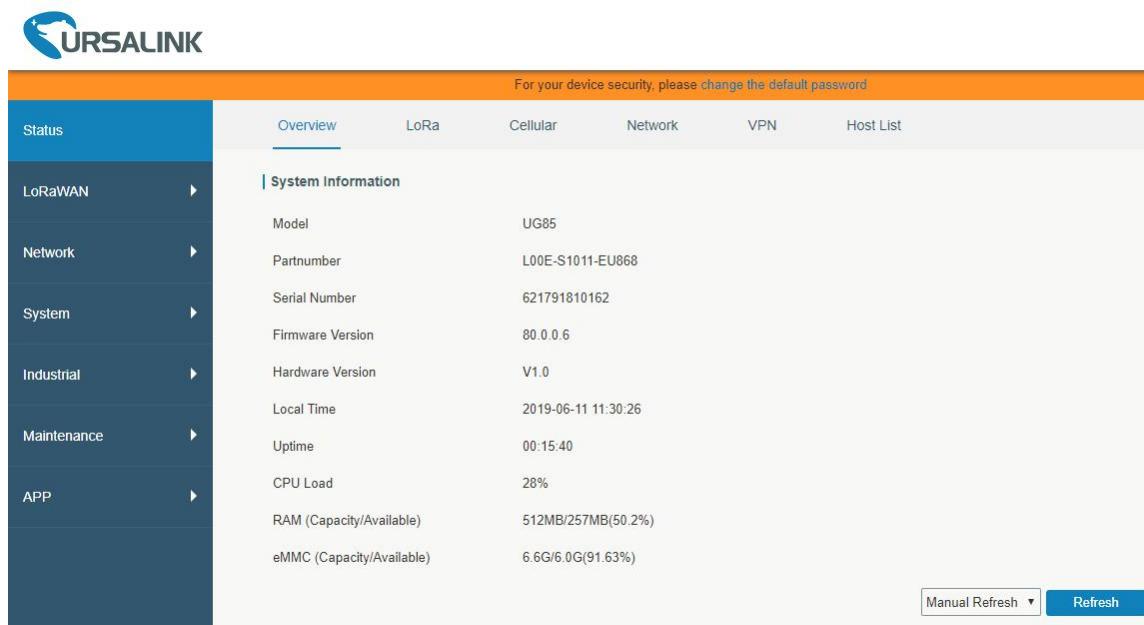
**If you enter the username or password incorrectly more than 5 times, the login page will be locked for 10 minutes.**

- When you log in with the default username and password, you will be asked to modify the 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	<input type="text"/>
New Password	<input type="text"/>
Confirm New Password	<input type="text"/>
<input type="button" value="Save"/> <input type="button" value="Cancel"/>	

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



The screenshot shows the Ursalink UG85 Web GUI. The top navigation bar has tabs for Overview, LoRa, Cellular, Network, VPN, and Host List. The Overview tab is selected. A message at the top right says "For your device security, please change the default password". The left sidebar has categories: Status, LoRaWAN, Network, System, Industrial, Maintenance, and APP. The main content area is titled "System Information" and lists various device details:

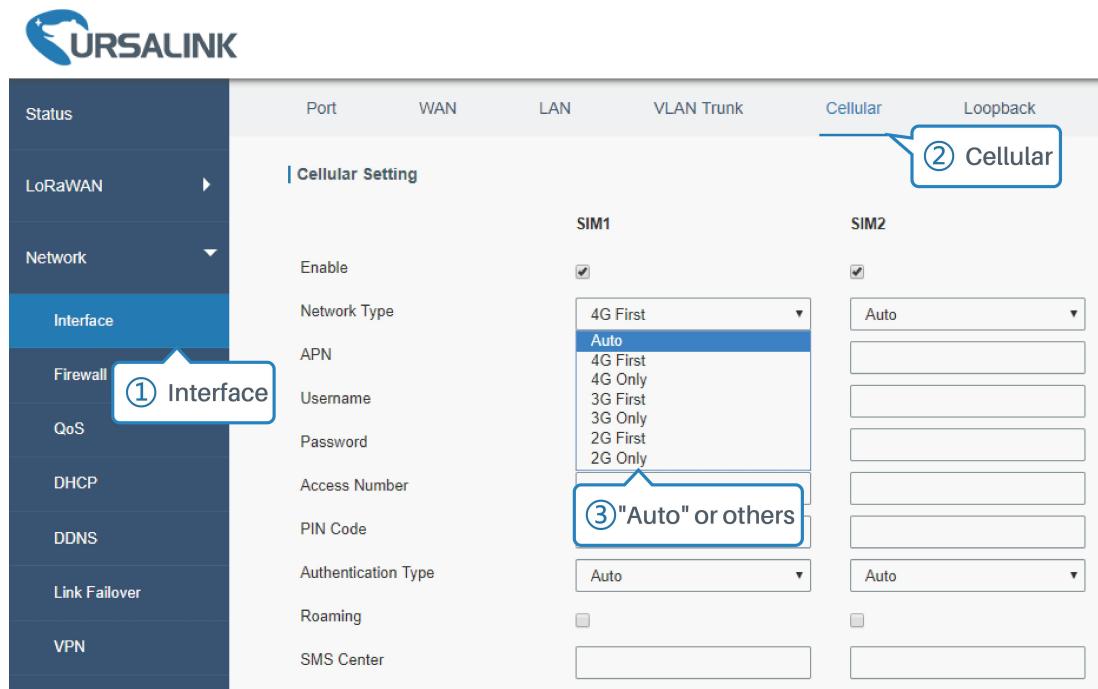
Model	UG85
Partnumber	L00E-S1011-EU868
Serial Number	621791810162
Firmware Version	80.0.0.6
Hardware Version	V1.0
Local Time	2019-06-11 11:30:26
Uptime	00:15:40
CPU Load	28%
RAM (Capacity/Available)	512MB/257MB(50.2%)
eMMC (Capacity/Available)	6.6G/6.0G(91.63%)

At the bottom right are buttons for "Manual Refresh" and "Refresh".

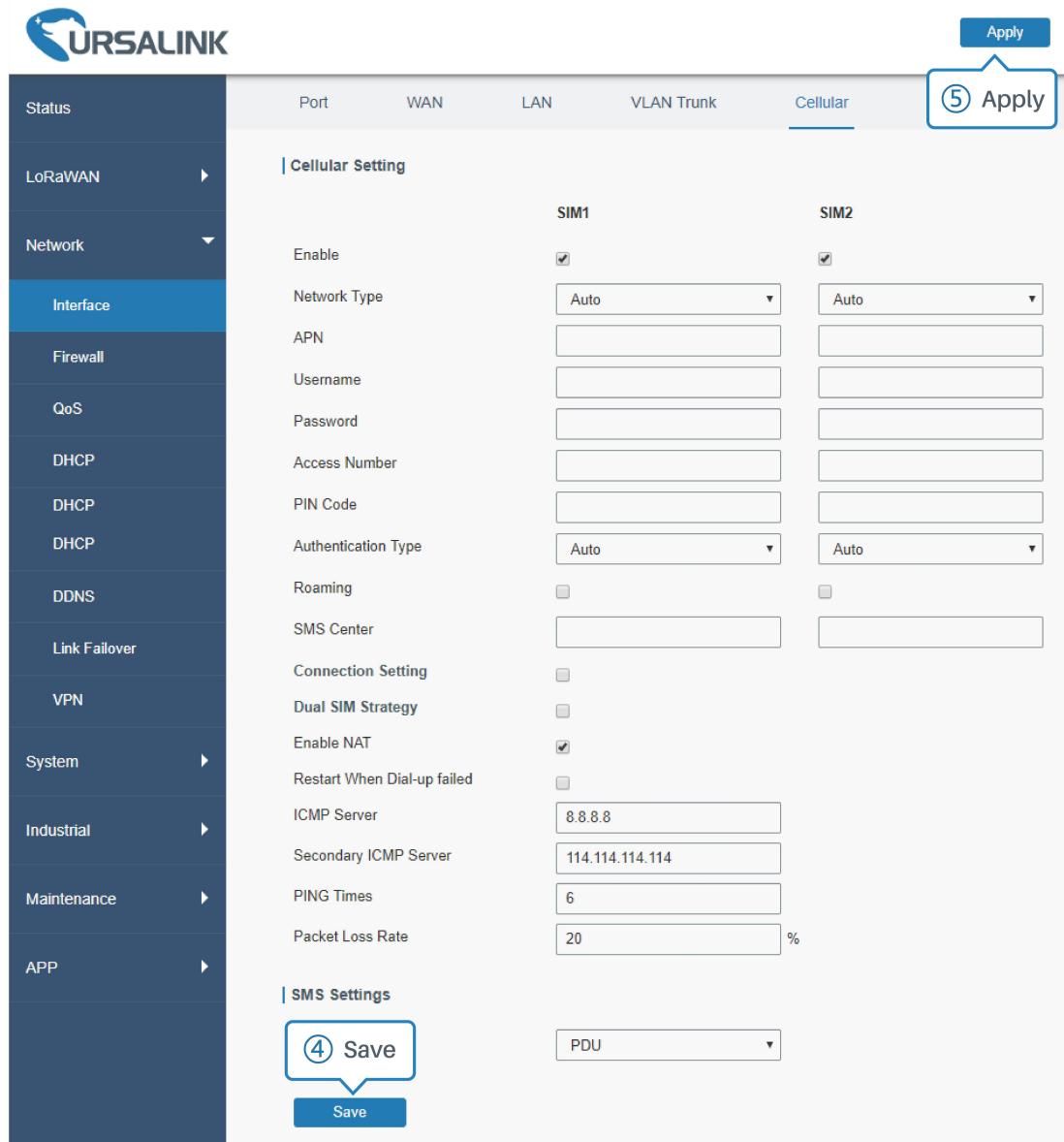
## 5.2 Configure the Cellular Connection

Take inserting SIM card into SIM1 slot as an example; please refer to the following detailed operations.

- Click “Network” → “Interface” → “Cellular” → “Cellular Setting” to configure the cellular info.
- Enable SIM1.
- Choose relevant network type. “Auto”, “4G First”, “4G Only”, “3G First”, “3G Only”, “2G First” and “2G Only” are optional.
- Click “Save” and “Apply” for configuration to take effect.



The screenshot shows the Ursalink UG85 Web GUI. The left sidebar is expanded to show "Interface" (marked with ①). The main content area is titled "Cellular Setting". It shows two SIM slots: SIM1 and SIM2. Under SIM1, the "Network Type" dropdown is open, showing options: Auto, 4G First, 4G Only, 3G First, 3G Only, 2G First, and 2G Only. The "Auto" option is selected. A callout ③ points to the "Auto" or other options in the dropdown. Other settings shown include APN, Username, Password, Access Number, PIN Code, Authentication Type (set to Auto), Roaming (unchecked), and SMS Center. Under SIM2, the "Network Type" dropdown is set to "Auto".



Status		Port	WAN	LAN	VLAN Trunk	Cellular																																																														
LoRaWAN		<b>Cellular Setting</b> <table border="1"> <tr> <td colspan="2"></td> <th>SIM1</th> <th>SIM2</th> </tr> <tr> <td>Enable</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Network Type</td> <td>Auto</td> <td>Auto</td> </tr> <tr> <td>APN</td> <td></td> <td></td> </tr> <tr> <td>Username</td> <td></td> <td></td> </tr> <tr> <td>Password</td> <td></td> <td></td> </tr> <tr> <td>Access Number</td> <td></td> <td></td> </tr> <tr> <td>PIN Code</td> <td></td> <td></td> </tr> <tr> <td>Authentication Type</td> <td>Auto</td> <td>Auto</td> </tr> <tr> <td>Roaming</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>SMS Center</td> <td></td> <td></td> </tr> <tr> <td>Connection Setting</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Dual SIM Strategy</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Enable NAT</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Restart When Dial-up failed</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>ICMP Server</td> <td>8.8.8.8</td> <td></td> </tr> <tr> <td>Secondary ICMP Server</td> <td>114.114.114.114</td> <td></td> </tr> <tr> <td>PING Times</td> <td>6</td> <td></td> </tr> <tr> <td>Packet Loss Rate</td> <td>20</td> <td>%</td> </tr> </table> <b>SMS Settings</b> <table border="1"> <tr> <td><b>④ Save</b></td> <td>PDU</td> </tr> <tr> <td><b>Save</b></td> <td></td> </tr> </table>							SIM1	SIM2	Enable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Network Type	Auto	Auto	APN			Username			Password			Access Number			PIN Code			Authentication Type	Auto	Auto	Roaming	<input type="checkbox"/>	<input type="checkbox"/>	SMS Center			Connection Setting	<input type="checkbox"/>	<input type="checkbox"/>	Dual SIM Strategy	<input type="checkbox"/>	<input type="checkbox"/>	Enable NAT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Restart When Dial-up failed	<input type="checkbox"/>	<input type="checkbox"/>	ICMP Server	8.8.8.8		Secondary ICMP Server	114.114.114.114		PING Times	6		Packet Loss Rate	20	%	<b>④ Save</b>	PDU	<b>Save</b>	
		SIM1	SIM2																																																																	
Enable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																																																																		
Network Type	Auto	Auto																																																																		
APN																																																																				
Username																																																																				
Password																																																																				
Access Number																																																																				
PIN Code																																																																				
Authentication Type	Auto	Auto																																																																		
Roaming	<input type="checkbox"/>	<input type="checkbox"/>																																																																		
SMS Center																																																																				
Connection Setting	<input type="checkbox"/>	<input type="checkbox"/>																																																																		
Dual SIM Strategy	<input type="checkbox"/>	<input type="checkbox"/>																																																																		
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<b>④ Save</b>	PDU																																																																			
<b>Save</b>																																																																				

If you select “Auto”, the gateway will obtain ISP information from SIM card to set APN, Username, and Password automatically. This option will take effect when the SIM card is issued from a well-known ISP.

If you select “4G First” or “4G Only”, you can click “Save” to complete the configuration directly.

If you select “3G First”, “3G Only”, “2G First” or “2G Only”, you should manually configure APN, Username, Password, and Access Number.

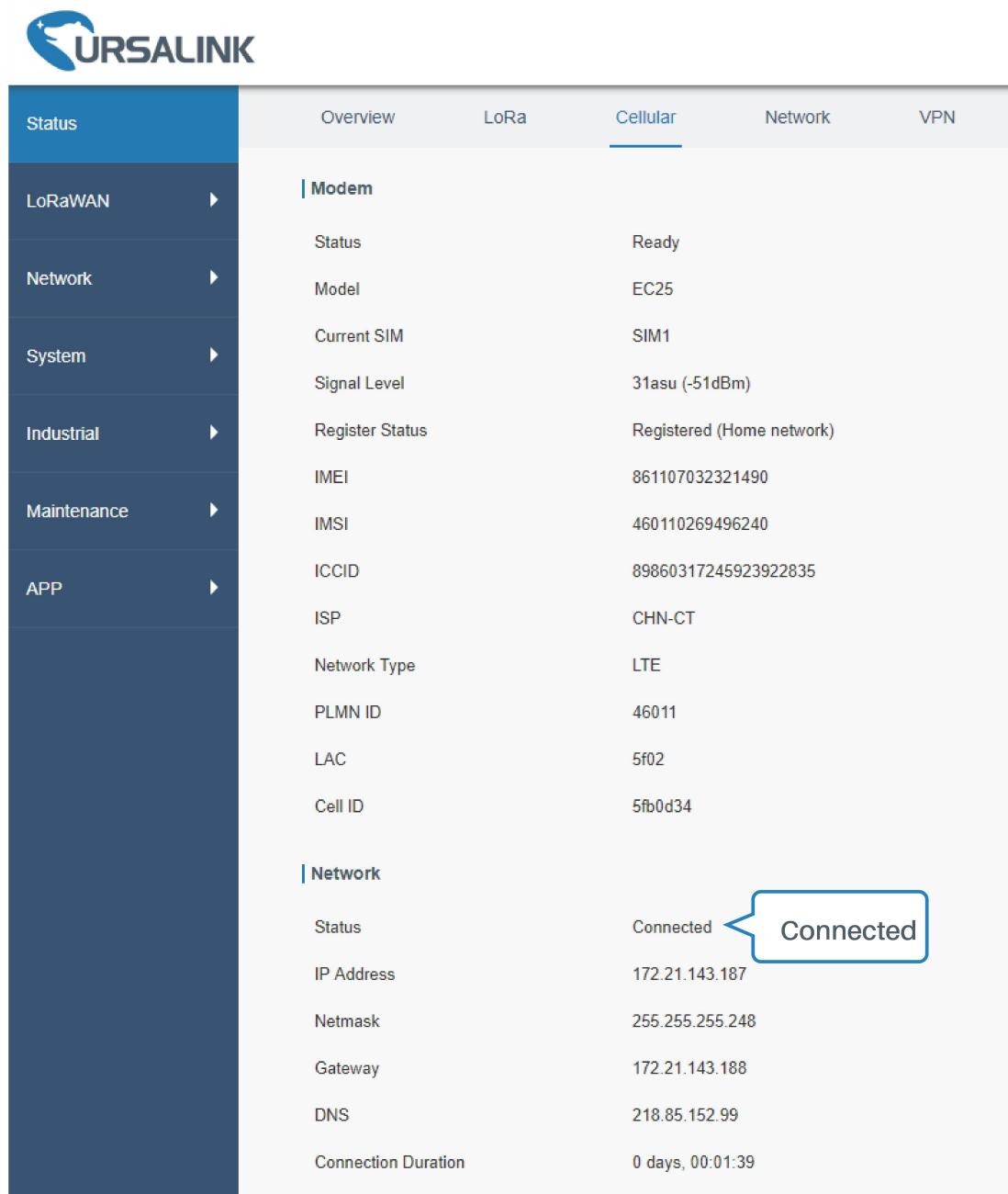
UG85 have two cellular interfaces, named SIM1 & SIM2. Only one cellular interface is active at one time. If both cellular interfaces are enabled, SIM1 interface takes precedence by default.

## 5.3 Check the Cellular Connection Status

### 5.3.1 Check the Cellular Connection Status by Web GUI of Router

Click “Status” → “Cellular” to view the status of the cellular connection. If it shows “Connected”, it means

SIM1 has dialed up successfully.



The screenshot shows the Ursalink UG85 web interface with the 'Cellular' tab selected. The left sidebar lists categories: LoRaWAN, Network, System, Industrial, Maintenance, and APP. The main content area displays cellular connection details under the 'Modem' and 'Network' sections. A callout bubble highlights the 'Connected' status under 'Status' in the 'Network' section.

	Overview	LoRa	<b>Cellular</b>	Network	VPN
<b>Modem</b>					
Status	Ready				
Model	EC25				
Current SIM	SIM1				
Signal Level	31asu (-51dBm)				
Register Status	Registered (Home network)				
IMEI	861107032321490				
IMSI	460110269496240				
ICCID	89860317245923922835				
ISP	CHN-CT				
Network Type	LTE				
PLMN ID	46011				
LAC	5f02				
Cell ID	5fb0d34				
<b>Network</b>					
Status	Connected				
IP Address	172.21.143.187				
Netmask	255.255.255.248				
Gateway	172.21.143.188				
DNS	218.85.152.99				
Connection Duration	0 days, 00:01:39				

### 5.3.2 Check the Cellular Connection Status by Hardware

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.

## 5.4 Check if Network Works Properly by Browser on PC

Open your preferred browser on PC, then type any available web address into address bar and see if it is able to visit Internet via UG85.

## 6. Packet Forwarder Testing

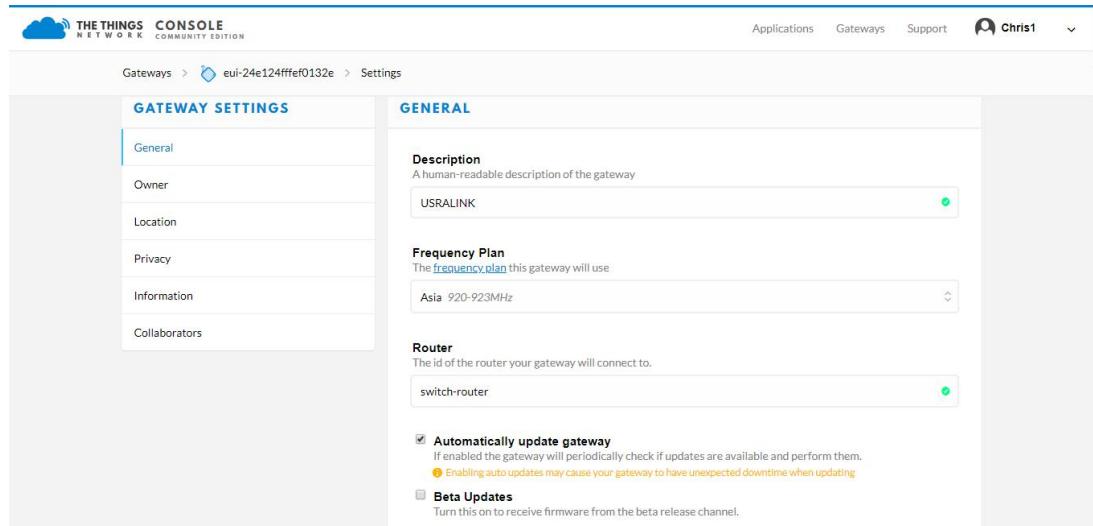
### 6.1 Node Parameters

<b>Channel Plan</b>	<b>AS923</b>
<b>Frequency</b>	<b>923.4MHZ, 923.2MHZ</b>
<b>Join Type</b>	<b>OTAA</b>
<b>Device EUI</b>	<b>60C5A8FFF0003F9</b>
<b>Application EUI</b>	<b>70B3D57ED0007AC2</b>
<b>App Key</b>	<b>328F2A3F5BA8D0B236459CF06D0512B5</b>

### 6.2 Configure The Things Network

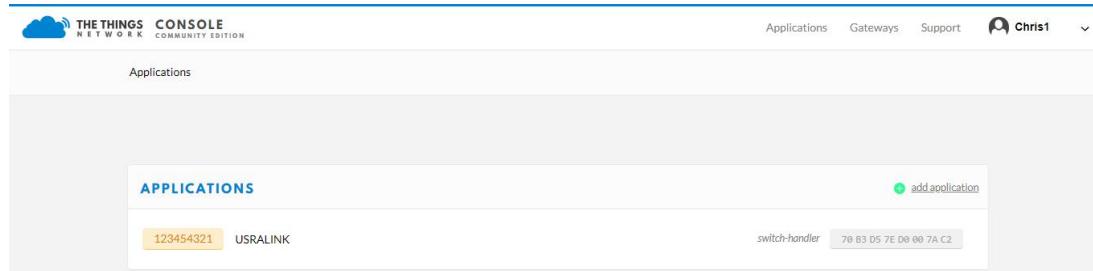
#### A. Gateway Configuration

<b>Gateway EUI</b>	<b>24E124FFFFE0132E</b>
<b>Frequency Plan</b>	<b>Asia 920-923MHz</b>
<b>Server ID</b>	<b>Switch-router (ttn.opennetworkinfrastructure.org)</b>

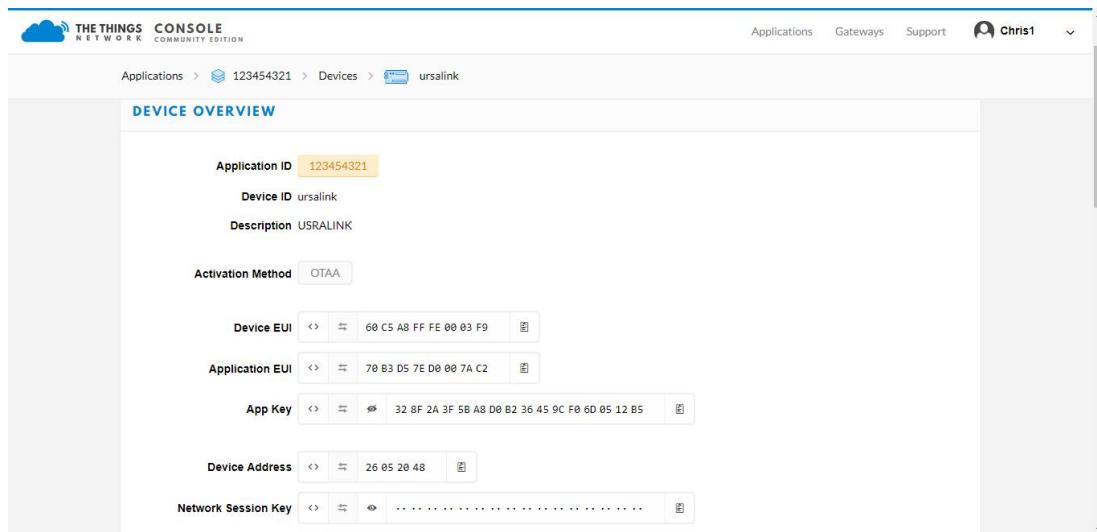


The screenshot shows the 'THE THINGS NETWORK CONSOLE' interface. In the top navigation bar, there are links for Applications, Gateways, and Support, along with a user profile for 'Chris1'. The main area shows a list of gateways, with one gateway selected ('eui-24e124ffffe0132e'). Below the list, there are two tabs: 'GATEWAY SETTINGS' and 'GENERAL'. The 'GENERAL' tab is active. It contains fields for 'Description' (set to 'USRALINK'), 'Frequency Plan' (set to 'Asia 920-923MHz'), and 'Router' (set to 'switch-router'). There are also checkboxes for 'Automatically update gateway' (checked) and 'Beta Updates'.

#### B. Applications Configuration



The screenshot shows the 'THE THINGS NETWORK CONSOLE' interface. In the top navigation bar, there are links for Applications, Gateways, and Support, along with a user profile for 'Chris1'. The main area shows a list of applications. One application is listed under the 'APPLICATIONS' tab: 'USRALINK'. To the right of the application name, there is a 'switch-handler' endpoint and a device ID: '70 B3 D5 7E D0 00 7A C2'. There is also a button labeled 'add application'.



**DEVICE OVERVIEW**

Application ID: 123454321

Device ID: ursalink

Description: USRALINK

Activation Method: OTAA

Device EUI: 60 C5 A8 FF FE 00 03 F9

Application EUI: 70 B3 D5 7E D0 00 7A C2

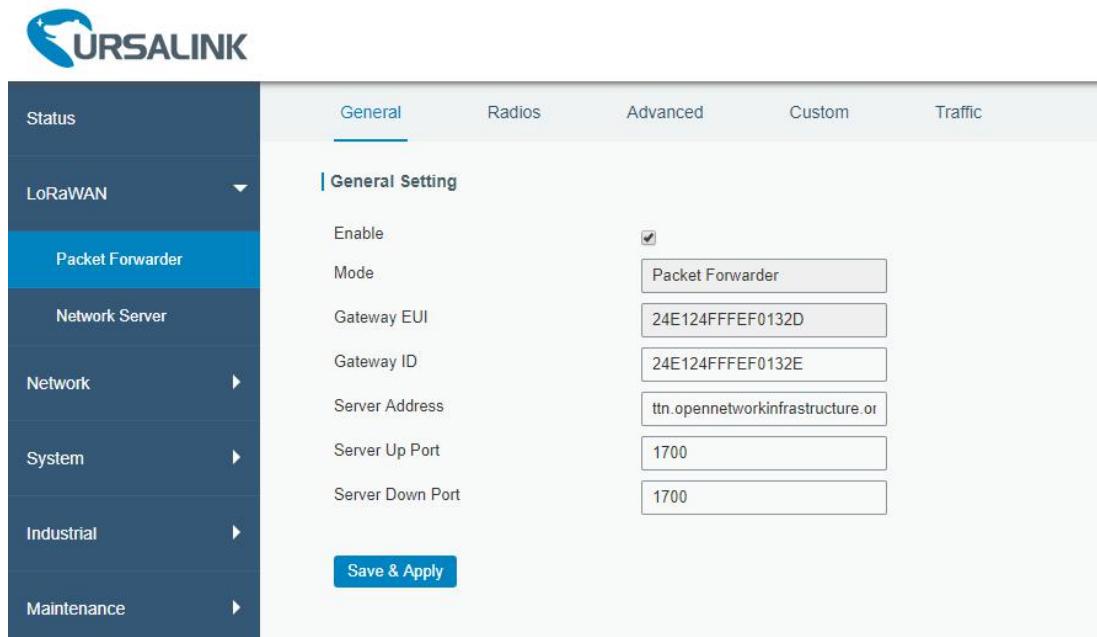
App Key: 32 8F 2A 3F 5B A8 D8 B2 36 45 9C F0 6D 05 12 B5

Device Address: 26 05 20 48

Network Session Key: ...

## 6.3 Packet Forwarder Configuration

- A. Click “LoRaWAN” → “Packet Forwarder” → “General” to configure the general setting.



Status

LoRaWAN

Packet Forwarder

Network Server

Network

System

Industrial

Maintenance

General

Radios

Advanced

Custom

Traffic

**General Setting**

Enable:

Mode: **Packet Forwarder**

Gateway EUI: 24E124FFFFE0132D

Gateway ID: 24E124FFFFE0132E

Server Address: ttn.opennetworkinfrastructure.or

Server Up Port: 1700

Server Down Port: 1700

**Save & Apply**

- B. Click “Radios” to configure the center frequency and channels.

The screenshot shows the 'Radios' tab selected in the top navigation bar. On the left, a sidebar menu includes 'Status', 'LoRaWAN', 'Packet Forwarder' (which is currently selected), 'Network Server', 'Network', 'System', 'Industrial', 'Maintenance', and 'APP'. The main content area has two sections: 'Radio Channel Setting' and 'Multi Channels Setting'. In 'Radio Channel Setting', there is a dropdown for 'Supported Frequency' set to 'AS923' and a table with two rows: 'Radio 0' at 923.6 MHz and 'Radio 1' at 922.6 MHz. In 'Multi Channels Setting', there is a table with 8 rows, each representing a channel index from 0 to 7. Each row has columns for 'Enable' (checkbox), 'Index' (number), 'Radio' (dropdown), and 'Frequency/MHz' (text input). The frequencies listed are 923.2, 923.4, 923.6, 922.2, 922.4, 922.6, 922.8, and 923.0.

C. Click "Traffic" to view the data communication of UG85.

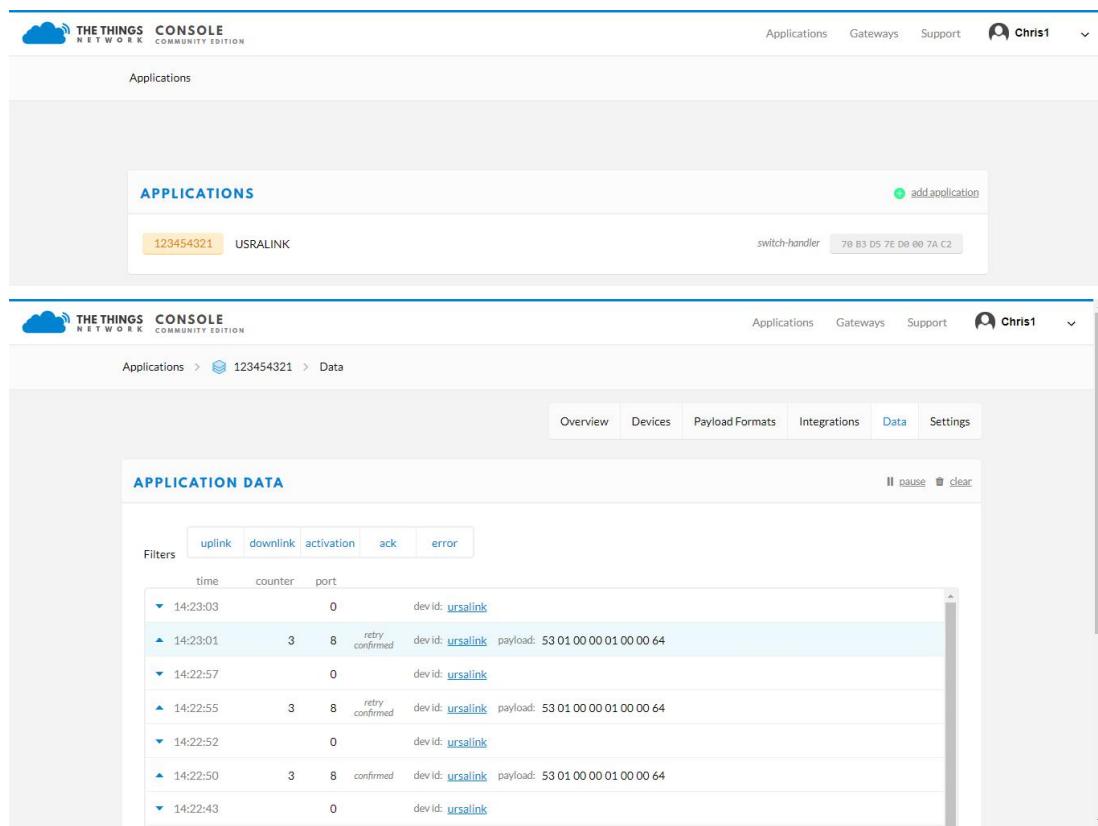
The screenshot shows the 'Traffic' tab selected in the top navigation bar. The sidebar menu is identical to the previous screenshot. The main content area shows a table titled 'Traffic Setting' with columns: Rfch, Direction, Time, Ticks, Frequency, Datarate, Coderate, RSSI, and SNR. There are 10 rows of data listed, showing various transmission parameters for different channels and times.

## 6.4 Check Data Transmission on The Things Network

A. Click "Gateways", you can check the Gateways status.

The screenshot shows the 'Gateways' page of The Things Network Console. At the top, there are buttons for 'Stop' and 'Clear'. Below is a table with columns: Rfch, Direction, Time, Ticks, Frequency, Datarate, Coderate, RSSI, and SNR. The table contains 10 rows of gateway data. At the bottom right, there is a button labeled 'register gateway'.

B. Click "Applications" and select the Applications, then go to "Data", you can find the data from the Node.



The screenshot shows two panels of the The Things Network Console interface.

**Top Panel:** Applications > 123454321 > Data. The "Data" tab is selected. The "APPLICATION DATA" section displays a table of messages. The table has columns: time, counter, port, dev id, and payload. The data is as follows:

time	counter	port	dev id	payload
14:23:03	0		ursalink	
14:23:01	3	8	retry confirmed	dev id: ursalink payload: 53 01 00 00 01 00 00 64
14:22:57	0		ursalink	
14:22:55	3	8	retry confirmed	dev id: ursalink payload: 53 01 00 00 01 00 00 64
14:22:52	0		ursalink	
14:22:50	3	8	confirmed	dev id: ursalink payload: 53 01 00 00 01 00 00 64
14:22:43	0		ursalink	

## 7. Network Server Testing

Note that only gateway with activated built-in Network Server version supports this function.

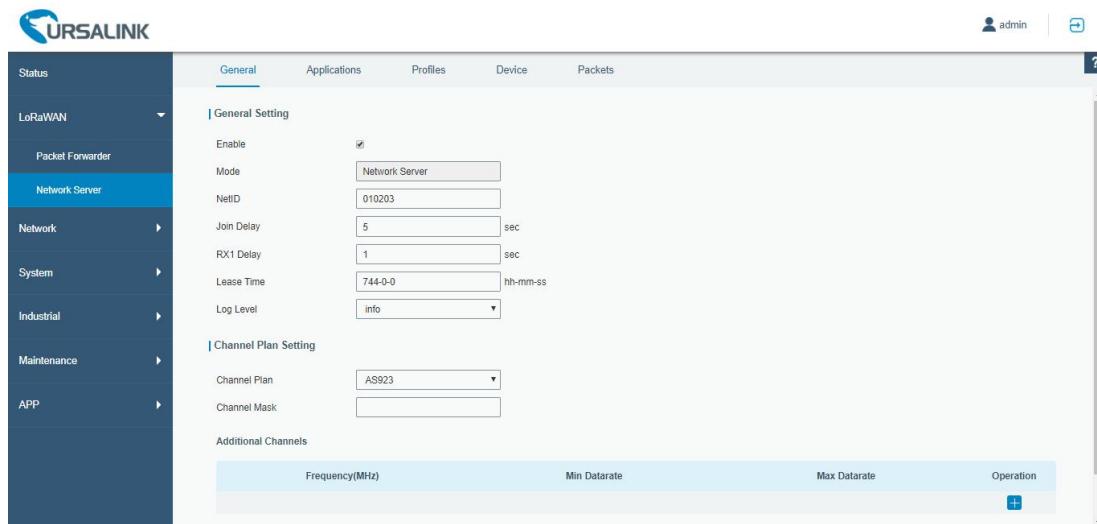
### 7.1 Node Parameters

<b>Channel Plan</b>	<b>AS923</b>
<b>Frequency</b>	<b>923.4MHZ, 923.2MHZ</b>
<b>Join Type</b>	<b>OTAA</b>
<b>Device EUI</b>	<b>60C5A8FFFFE0003F9</b>
<b>Application EUI</b>	<b>70B3D57ED0007AC2</b>
<b>App Key</b>	<b>1A98A25536993A882154B81551F18A76</b>

### 7.2 Network Server Configuration

A. Click “LoRaWAN” → “Network Server” → “General” to configure the general setting.

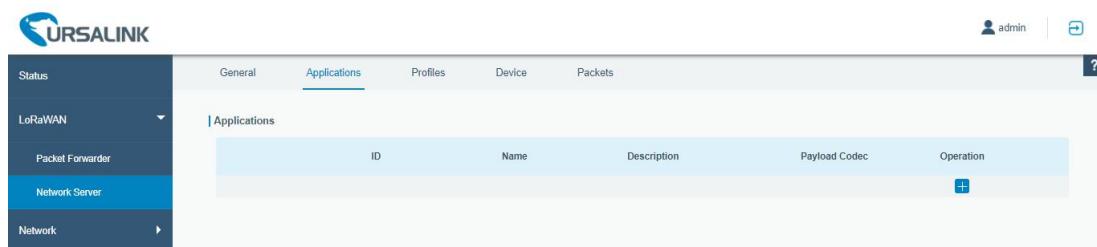
Note that the channel plan of the nodes and network server need to be the same.



The screenshot shows the Ursalink web interface with the following navigation path: Status > LoRaWAN > Network Server > General. The General tab is selected. The configuration includes:

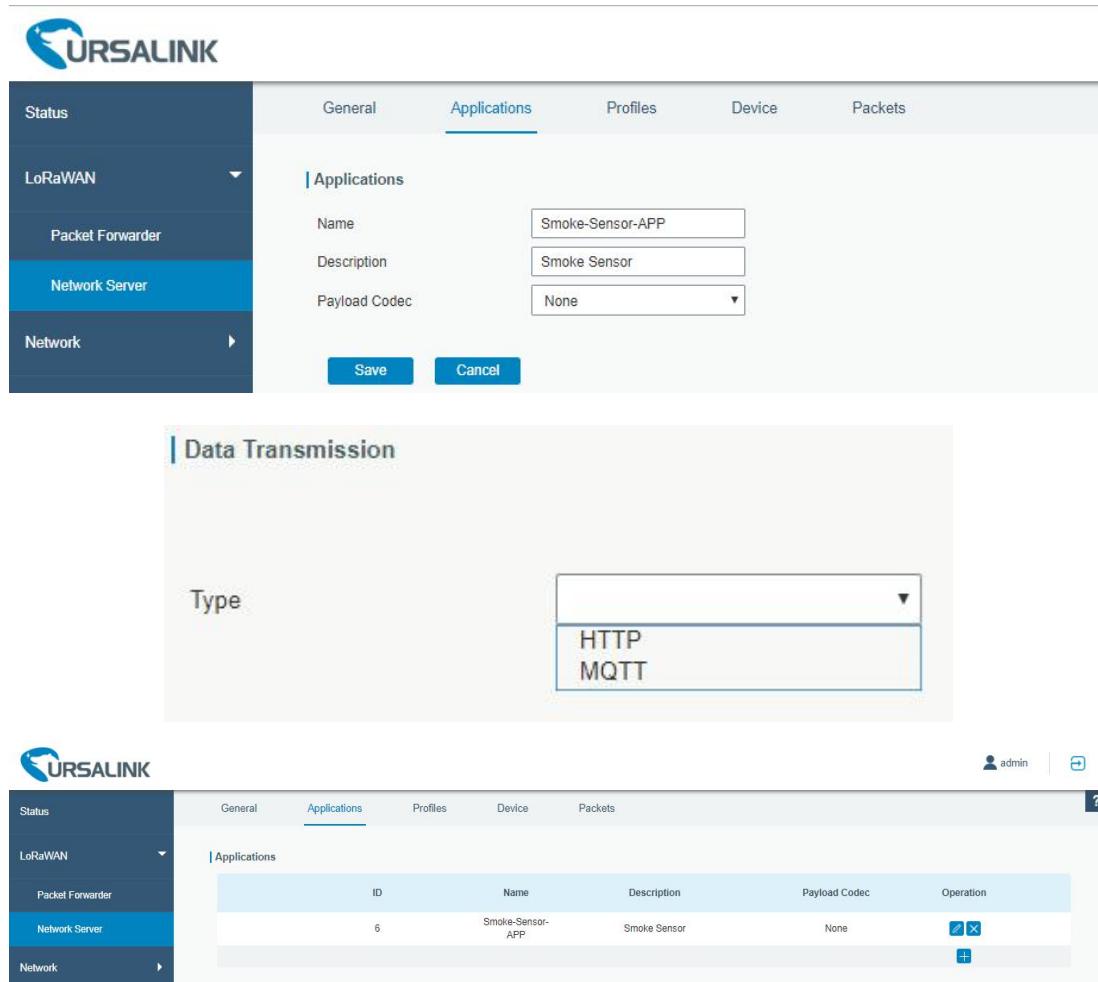
- General Setting:**
  - Enable: checked
  - Mode: Network Server
  - NetID: 010203
  - Join Delay: 5 sec
  - RX1 Delay: 1 sec
  - Lease Time: 744-0-0 hh-mm-ss
  - Log Level: info
- Channel Plan Setting:**
  - Channel Plan: AS923
  - Channel Mask: (empty)
- Additional Channels:** A table with columns Frequency(MHz), Min Datarate, Max Datarate, and Operation. One row is present with a plus sign (+) in the Operation column.

B. Add a new Application and choose HTTP or MQTT protocol to send data to another server.



The screenshot shows the Ursalink web interface with the following navigation path: Status > LoRaWAN > Network Server > Applications tab. The Applications tab is selected. The configuration includes:

- Applications:** A table with columns ID, Name, Description, Payload Codec, and Operation. One row is present with a plus sign (+) in the Operation column.



The screenshot shows two main sections of the Ursalink UG85 web interface.

**Top Section (Applications):**

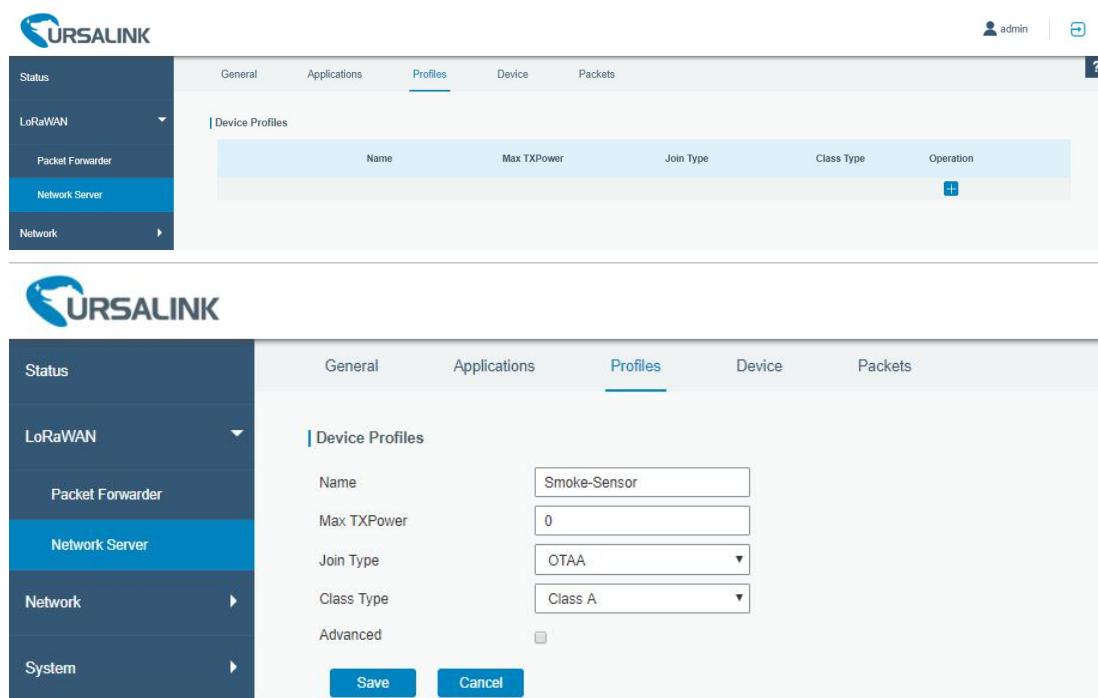
- Left sidebar: Status, LoRaWAN (selected), Packet Forwarder, Network Server, Network.
- Header tabs: General, Applications (selected), Profiles, Device, Packets.
- Form fields for a new application:
 

Name:	Smoke-Sensor-APP
Description:	Smoke Sensor
Payload Codec:	None
- Buttons: Save, Cancel.

**Bottom Section (Data Transmission):**

- Form field: Type (dropdown menu showing "HTTP" and "MQTT").

### C. Add a new Profiles for the device.



The screenshot shows two main sections of the Ursalink UG85 web interface.

**Top Section (Profiles):**

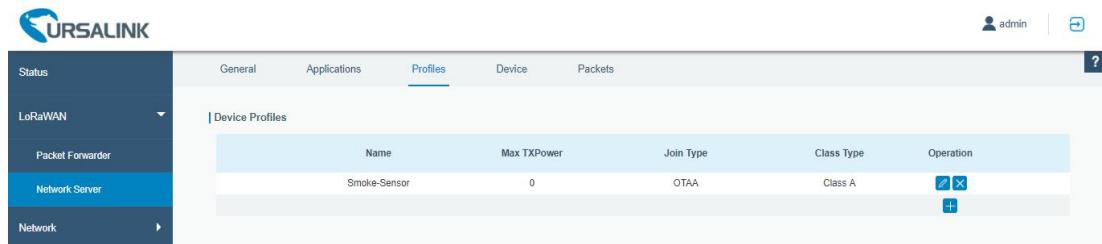
- Left sidebar: Status, LoRaWAN (selected), Packet Forwarder, Network Server, Network.
- Header tabs: General, Applications, Profiles (selected), Device, Packets.
- Table of existing profiles:
 

ID	Name	Description	Payload Codec	Operation
6	Smoke-Sensor-APP	Smoke Sensor	None	<input checked="" type="checkbox"/> <input type="checkbox"/>
- Buttons: + (add new profile).

**Bottom Section (Device Profiles):**

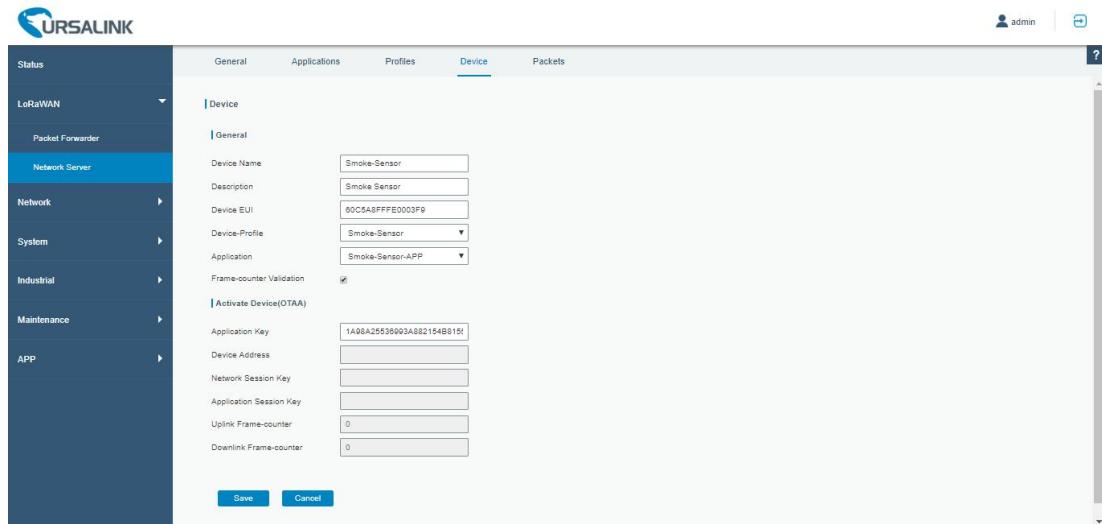
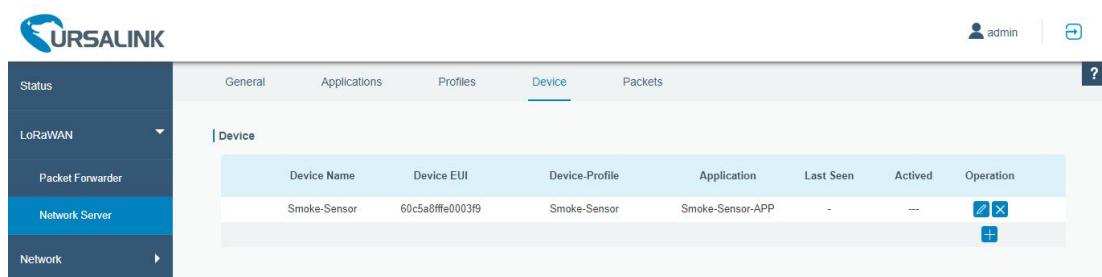
- Left sidebar: Status, LoRaWAN (selected), Packet Forwarder, Network Server, Network, System.
- Header tabs: General, Applications, Profiles (selected), Device, Packets.
- Form fields for a new device profile:
 

Name:	Smoke-Sensor
Max TXPower:	0
Join Type:	OTAA
Class Type:	Class A
Advanced:	<input type="checkbox"/>
- Buttons: Save, Cancel.



Name	Max TXPower	Join Type	Class Type	Operation
Smoke-Sensor	0	OTAA	Class A	

#### D. Add device

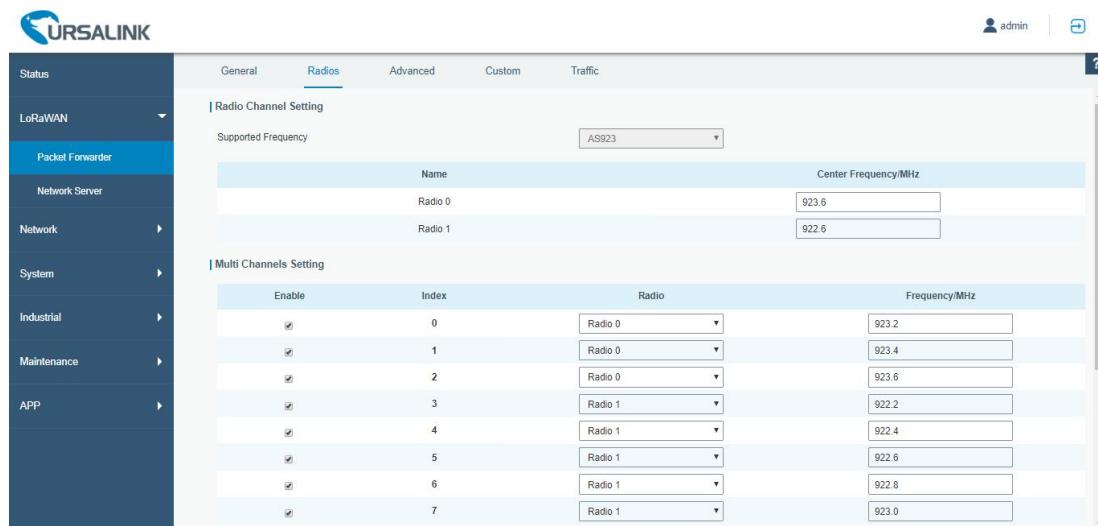



Device Name	Device EUI	Device-Profile	Application	Last Seen	Activated	Operation
Smoke-Sensor	60c5a8fffe0003f9	Smoke-Sensor	Smoke-Sensor-APP	-	---	

### 7.3 Package Forwarder Configuration

Click “LoRaWAN” → “Packet Forwarder” → “Radios” to configure the center frequency and channels

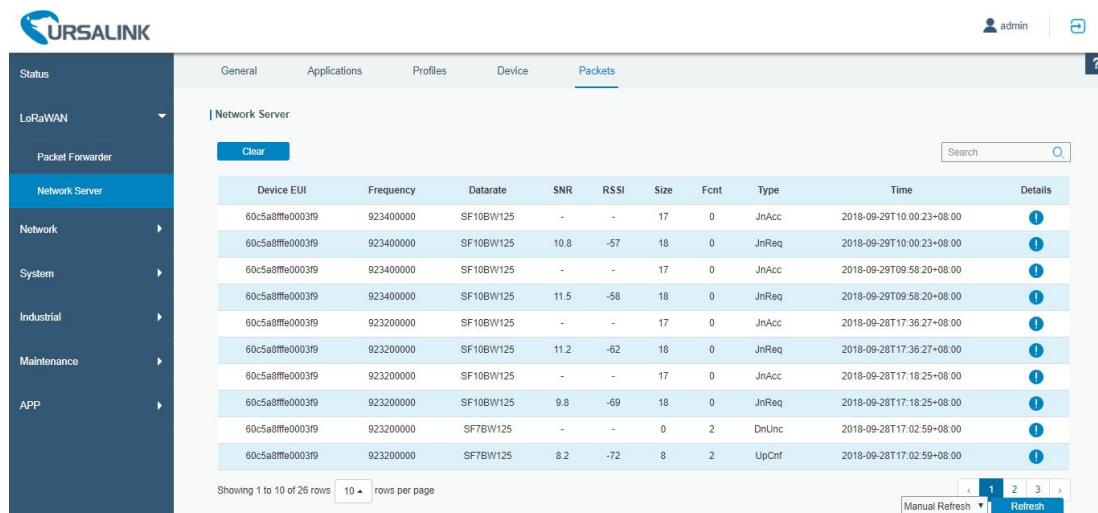
**Note** that node frequency needs to be included in the channels frequency.



The screenshot shows the "Radios" tab selected in the navigation bar. Under "Radio Channel Setting", there is a dropdown for "Supported Frequency" set to "AS923". A table lists two radios: Radio 0 at 923.6 MHz and Radio 1 at 922.6 MHz. Under "Multi Channels Setting", a table lists eight channels (Index 0-7) with their respective radios and frequencies: Radio 0 at 923.2, 923.4, 923.6, 922.2, 922.4, 922.6, 922.8, and Radio 1 at 923.0 MHz.

## 7.4 Check the Packets

Click “LoRaWAN” → “Network Server” → “Packets” to check the packets from the node on network server.



The screenshot shows the "Packets" tab selected in the navigation bar. Under "Network Server", a table lists 26 rows of packet data. The columns include Device EUI, Frequency, Datarate, SNR, RSSI, Size, Fcnt, Type, Time, and Details. The table shows various types of messages like JnAcc, JnReq, and UpCnf, with times ranging from 2018-09-29T10:00:23+08:00 to 2018-09-28T17:36:27+08:00.

**[END]**