GW5000Gateway Operation Guide

V1.0

2017/06/09

Gateway Operation Guide

Catalog

Chapter 1 Gateway Peripheral Port Connection

1.1 SIM Card install

Refer to《GW5000 Installation Guide》，Gateway Shutdown Status Open the front cover of the gateway with a hexagon screwdriver (as shown)
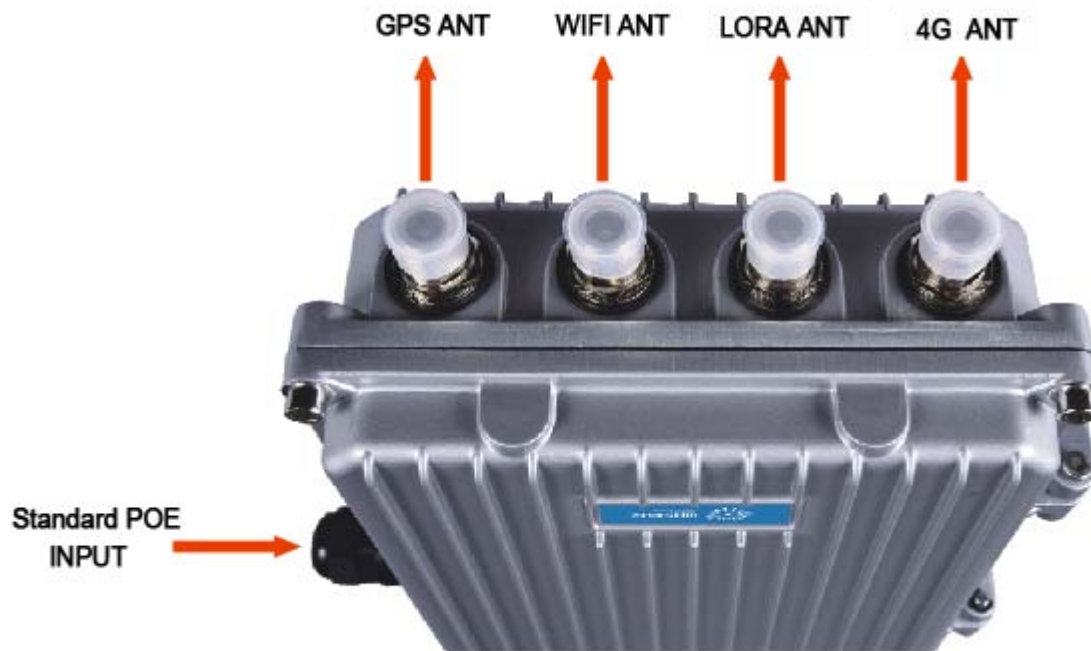

Will prepare the 4G SIM card (Unicom / Telecom / Mobile optional one) chip out, the gap inserted into the SIM card seat.

1.2 Antenna Installation

The antenna is erected on the triangular bracket, the antenna is facing up, from left to right, GPS antenna, Wifi antenna, 4G antenna,LoRa antenna, the antenna will be fixed to the corresponding interface.
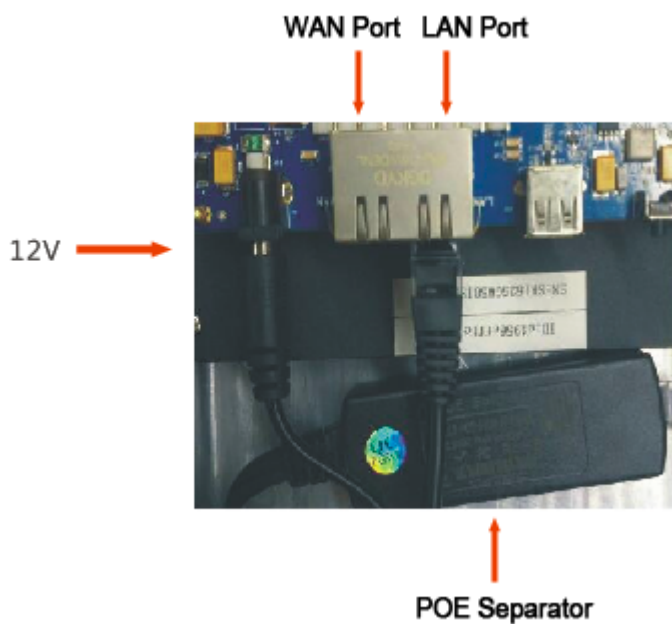
As shown below:

The other end of the network cable needs to be connected to POE switch or POE power supply.

1.3 Gateway to internet

The POE splitter wiring in the gateway is shown below：
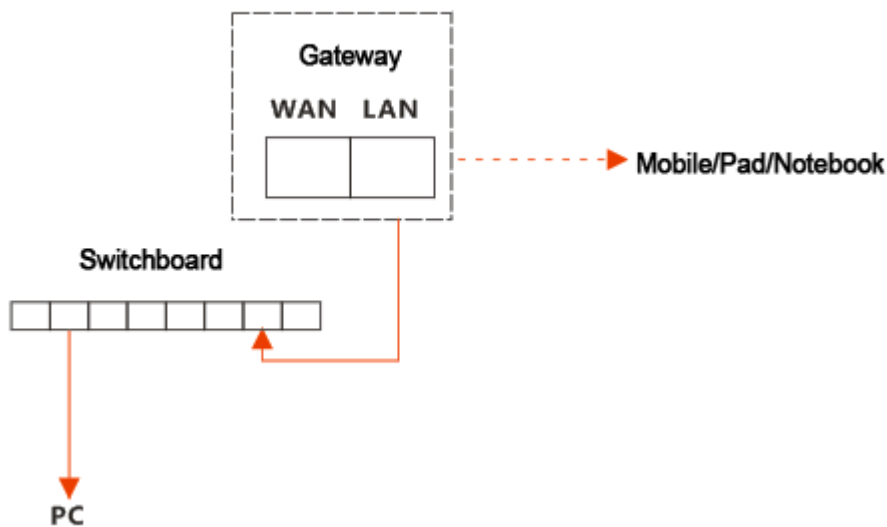

POE separators are separated into 12V power supply and network cable.

12V power supply to the mainboard.

Network cable according to the Internet way to insert: the use of 4G Internet access, network cable cannot be inserted; use the Internet routing, insert WAN port.

1.3.1 4G to the internet

The diagram is as follows：\

Gateway LAN port factory default IP: 192.168.3.1, the default DHCP automatically assigned IP address.

Gateway access to the WIFI antenna, mobile phones, tablet, notebook can get gateway hot spots, through the hot point automatically get the gateway assigned IP address.Mobile phone, tablet, notebook input gateway IP, enter the gateway interface settings parameters.

If the gateway is not connected to the WIFI antenna, the computer can directly access the LAN port, or through the switch to access the LAN port. In the computer input gateway IP, enter the gateway interface to set parameters. The switch cascade does not exceed five levels.

1.3.2 Routing way to the Internet

Separator cable access WAN port,diagram is as follows:
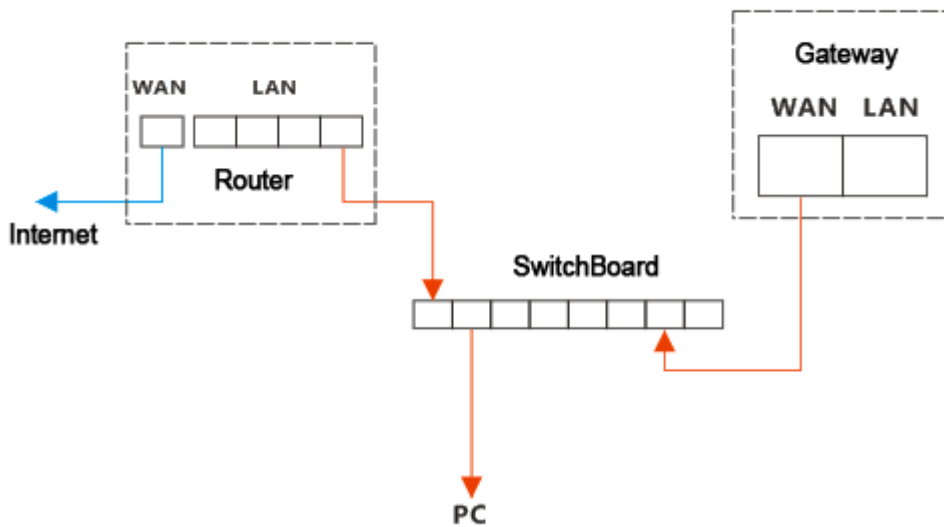
Description:

Gateway access to the router must be on the external network, the router is best to open the DHCP function, so that the gatewayautomatically obtain IP. If DHCP is not enabled or network security is required, assign a fixed IP to the gateway. Then, in the gateway "Interface" interface, manually modify the assigned IP address.

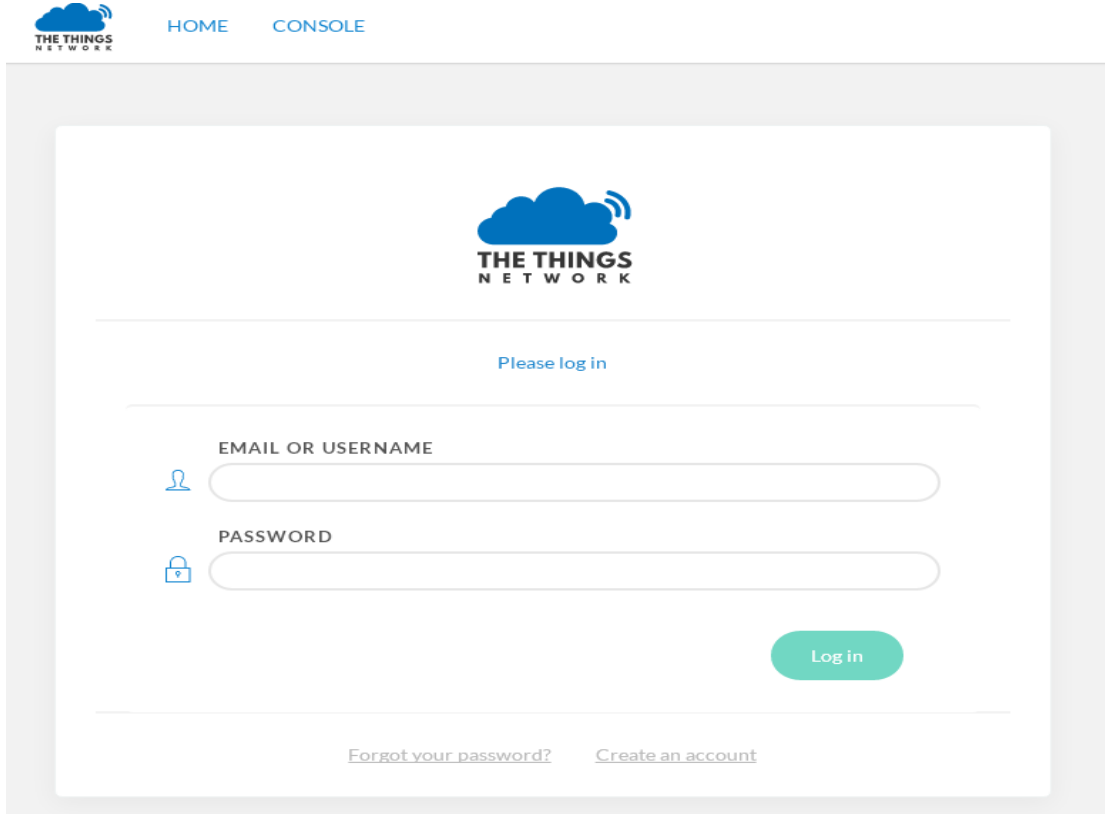# Chapter 2 Configuration Gateway (Cloud Platform)

2.1 Enter TTN website

Using Google browser, enter https://www.thethingsnetwork.org/，as

below：

2.2 Register account

Click the "LOGIN" mark in the upper right corner as the above picture shows, input "account name" and "password" according to the tips, then click "Login".

2.3 LOGIN

After successful registration, enter the login interface, as below:

2.4 CONSOLE

Click the mark "CONSOLE" (refer to the above picture), as the bellowing interface:
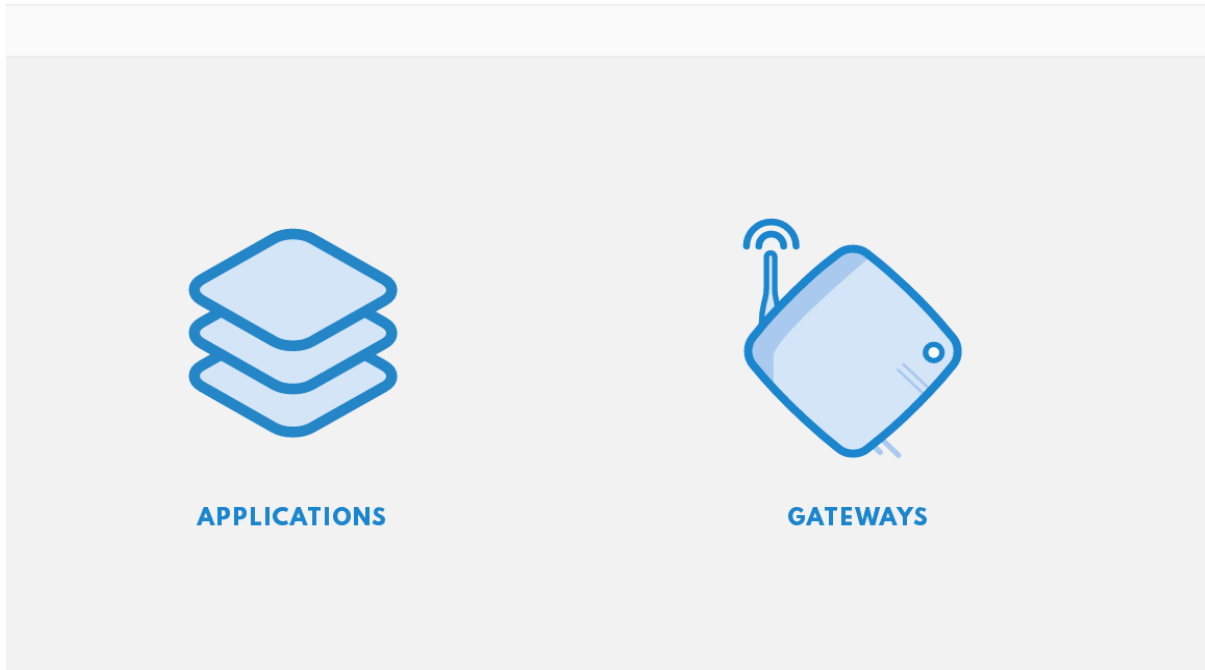
2.5 Register Gateway（e.g. 915MHZ）

1) Click the mark "GATEWAYS" (refer to the above picture), enter

"register gateway" interface

2) Click "**register gateway**", finish filling in the blanks as the arrow points

show

Gateway Operation Guide

Gateways > Register gateway

REGISTER GATEWAY

Protocol
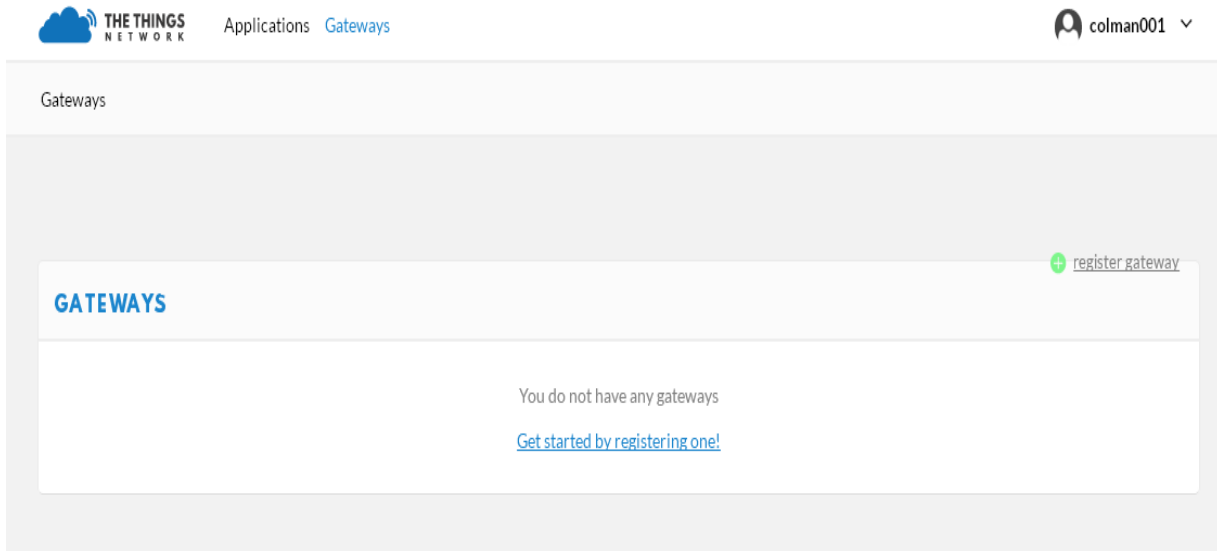Use **gateway connector** if you want to set up an authenticated gateway, use **packet forwarder** to connect via a packet forwarder. Which one should I choose?

| gateway connector | packet forwarder |

Gateway EUI
The EUI of the gateway as read from the LoRa module

0 bytes

Description
A human-readable description of the gateway

Frequency Plan
The frequency plan this gateway will use

no selection

Shenzhen Winext Technology Co. Ltd.10

唯传科技
WINEXT
TECHNOLOGY
THE THINGS
N E T W O R K

Applications   Gateways

colman001 ⌄

Gateways > 🏷 eui-0002e4956e4eee91

Overview | Traffic | Settings

GATEWAY OVERVIEW   ⚙ settings

Gateway ID   eui-0002e4956e4eee91

Description   91 gateway

Owner   colman001

Status   ○ not connected

Frequency Plan   United States *915MHz*

Router

Gateway Key   👁 •• ▲▼ base64 📋

Last Seen   ❓

Received Messages   ❓

Transmitted Messages   ❓

INFORMATION   ✏ edit info

Brand   ❓

Model   ❓

Antenna   ❓

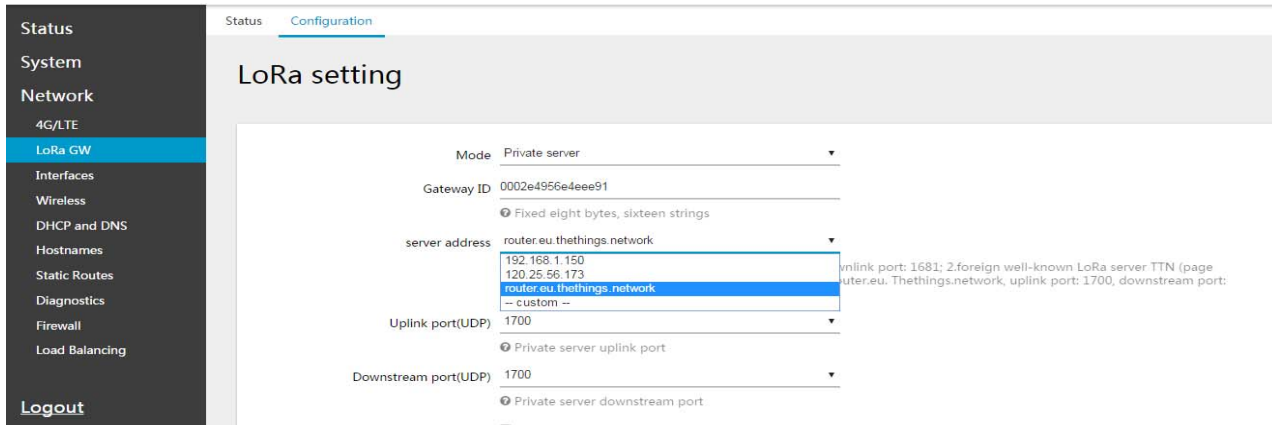## LOCATION   ✏ edit location
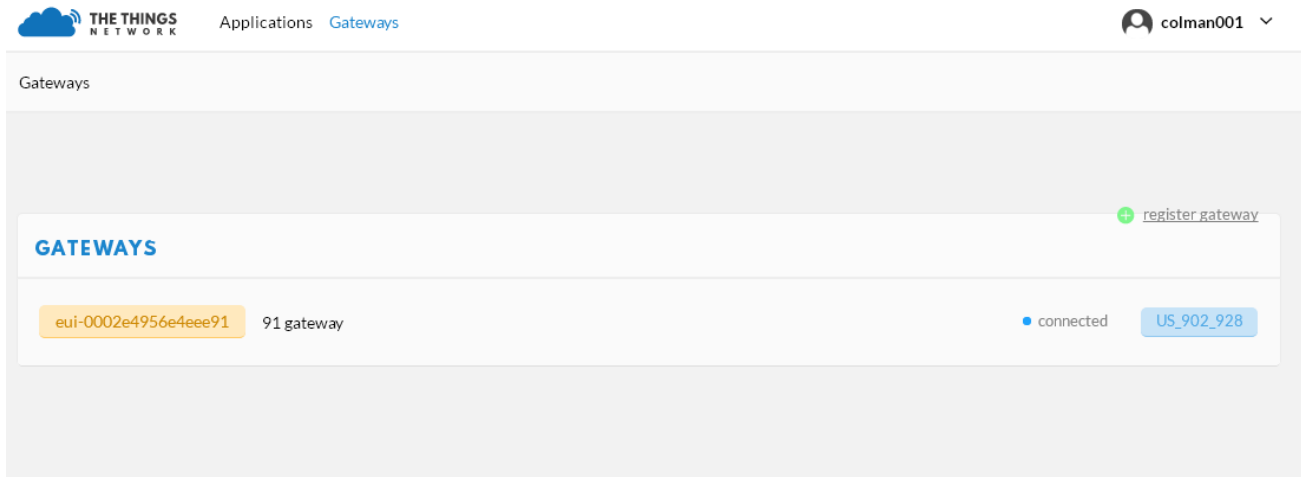
Antenna Placement   outdoor

Altitude   ❓

＋

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no location set
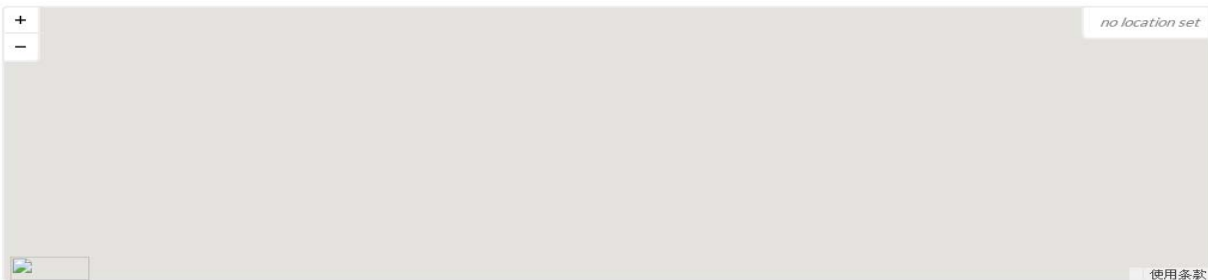
使用条款

PRIVACY   ✏ edit privacy

Status   👁 public

Location   👁 public

Owner   👁 public

Refer to "Gateway User Manual", **192.168.3.1** modify IP to

"router.eu.thethings.network", show as below:

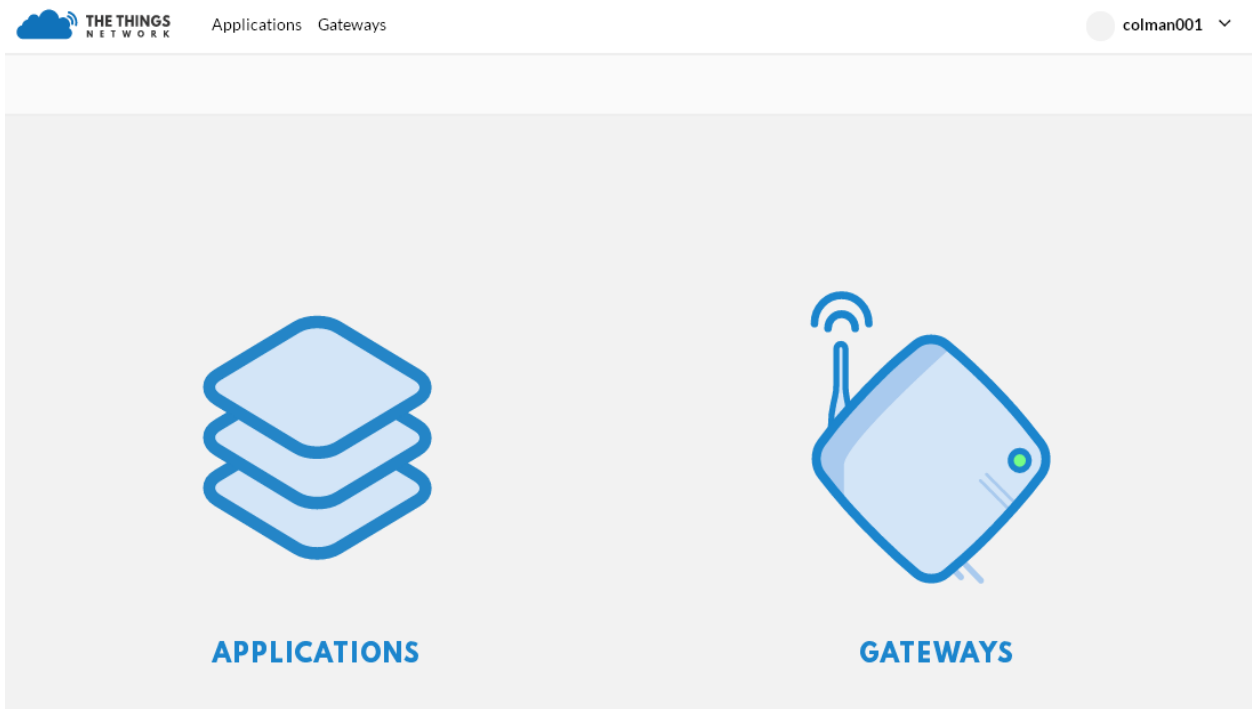Gateway get successful connection by TTN, show as below:
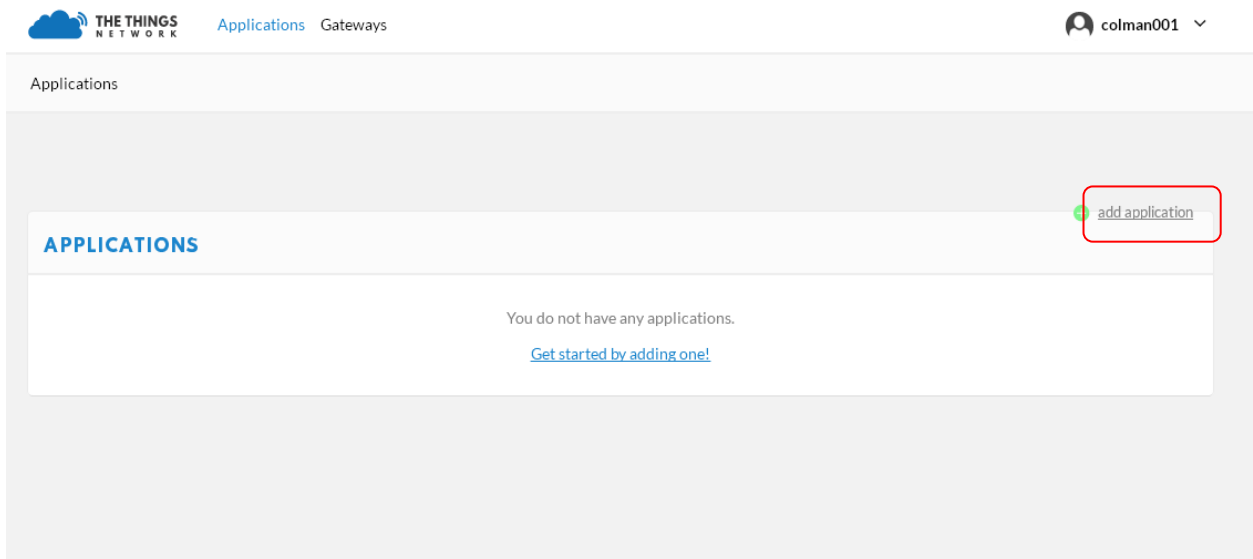

Chapter 3Add Node Applications

3.1Add node

Click the triangular arrow mark behind the user mark, choose "CONSOLE" and enter, show as below:

Click "**APPLICATIONS**"，then enter the below interface:

Click the upper right corner "**add application**", enter the interface of adding node, fill in the node information according to the red arrows show, click "**add application**" mark (red arrow shows)

Adding applications succeed, show as below:
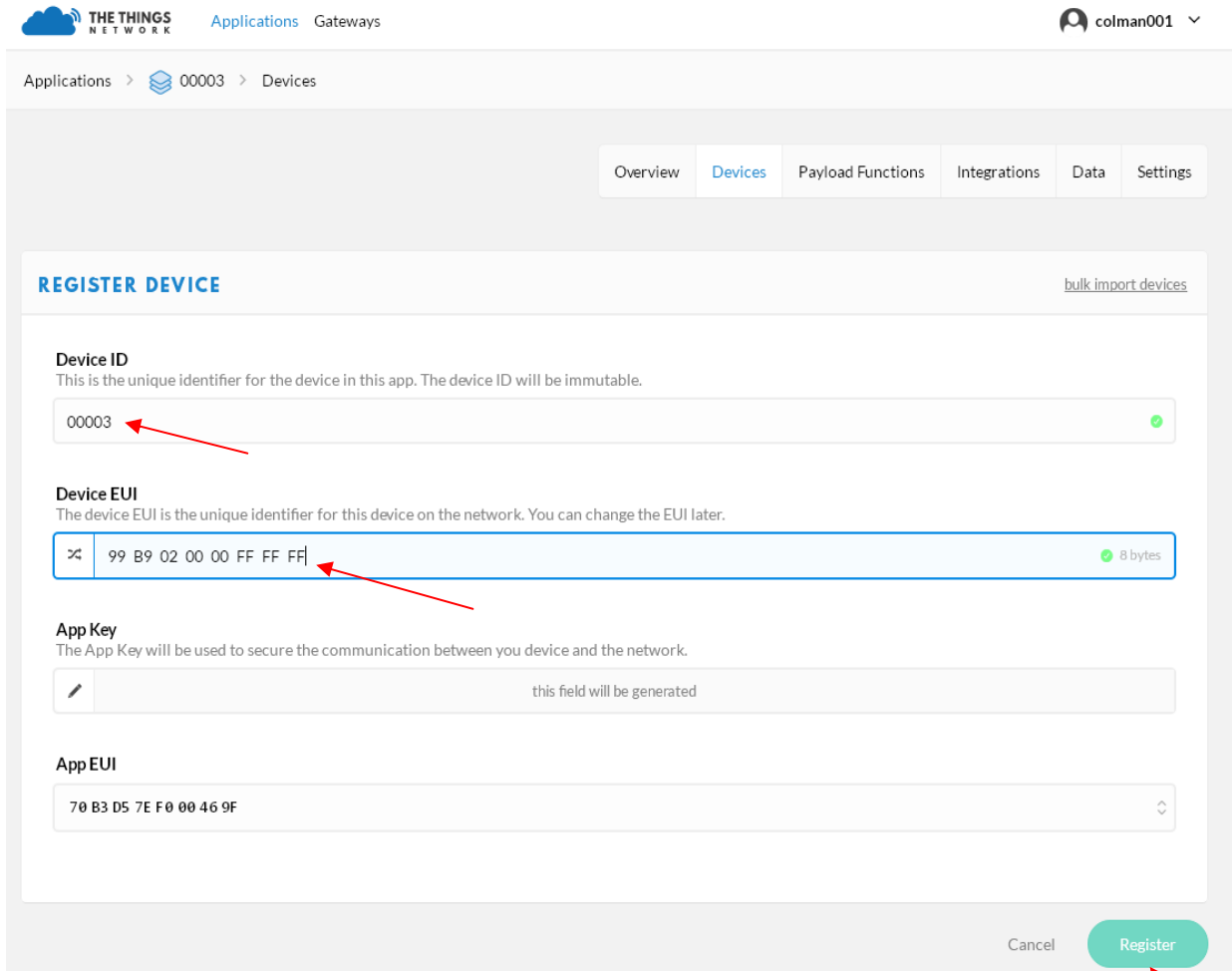
3.2 Register node

Click the left mark of "**registered devices**", enter the below interface:
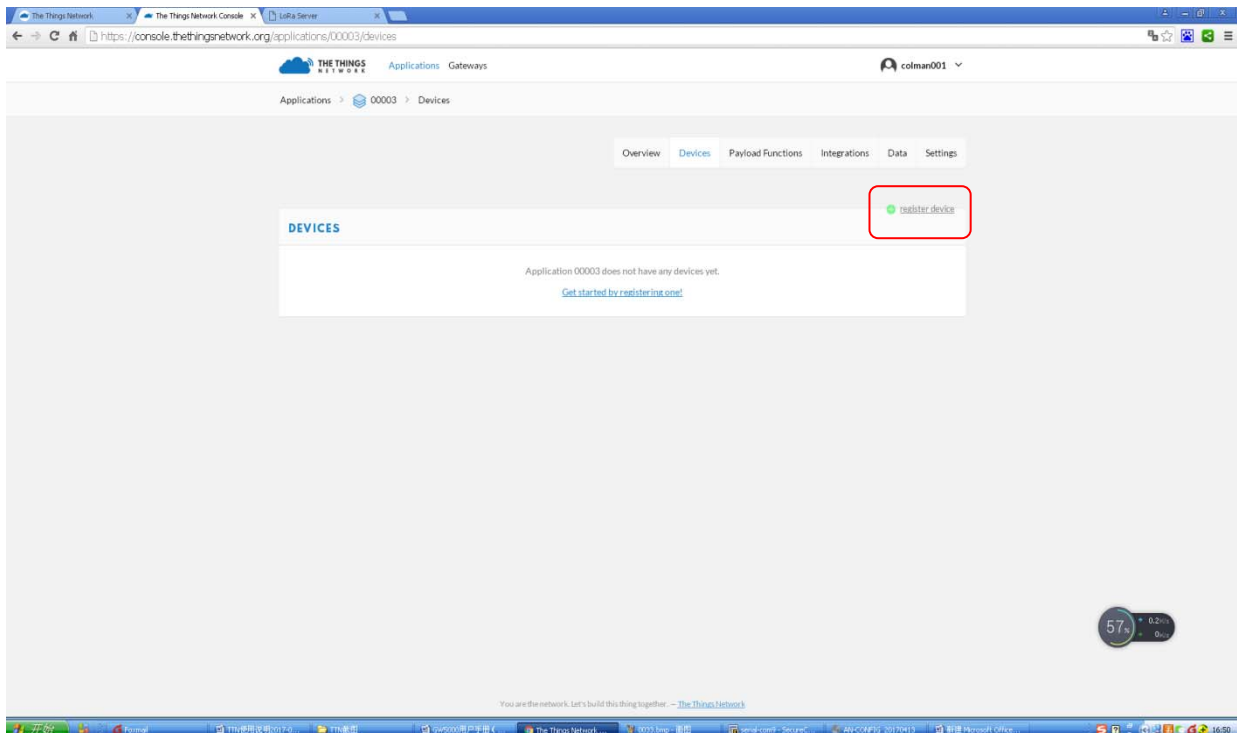
Click the mark "**register device**" (the upper right corner), enter the

interface of registering device:

Fill in the blank as the red arrows show, clink "Register"，enter to the below

interface:

DEVICE OVERVIEW

Application ID 00003

Device ID 00003

Activation Method OTAA

Device EUI `< >` 99 B9 02 00 00 FF FF FF hex

Application EUI `< >` 70 B3 D5 7E F0 00 46 9F hex

App Key `< >` · hex

Status ● never seen

Frames up 0 reset frame counters

Frames down 0

DOWNLINK

Scheduling

replace | first | last

FPort

1

☐ Confirmed

Payload

bytes | fields

● 0 bytes

Send

SIMULATE UPLINK

FPort

1

Payload

● 0 bytes

Send

EXAMPLE CODE

```
1  const char *appEui = "70B3D57EF000469F";
2  const char *appKey = "113BB4023451FFC3280059EB3E29CFD3";
```

Click the left and right arrows behind "Device EUI" and "Application EUI", shift to "lsb"

3.3 Configuration node(by serial ports tools)

3.3.1 By USB-to-TTL cable, connect the nodes as below:

Node pin   serial port cable

VIN   positive

GND   negative

UART1_TX   sending end

UART1_RX   receiving end

MODE_SET   mode end

3.3.2 MODE_SET connect the high level，connect the nodes with PC by serial

port cable, power on
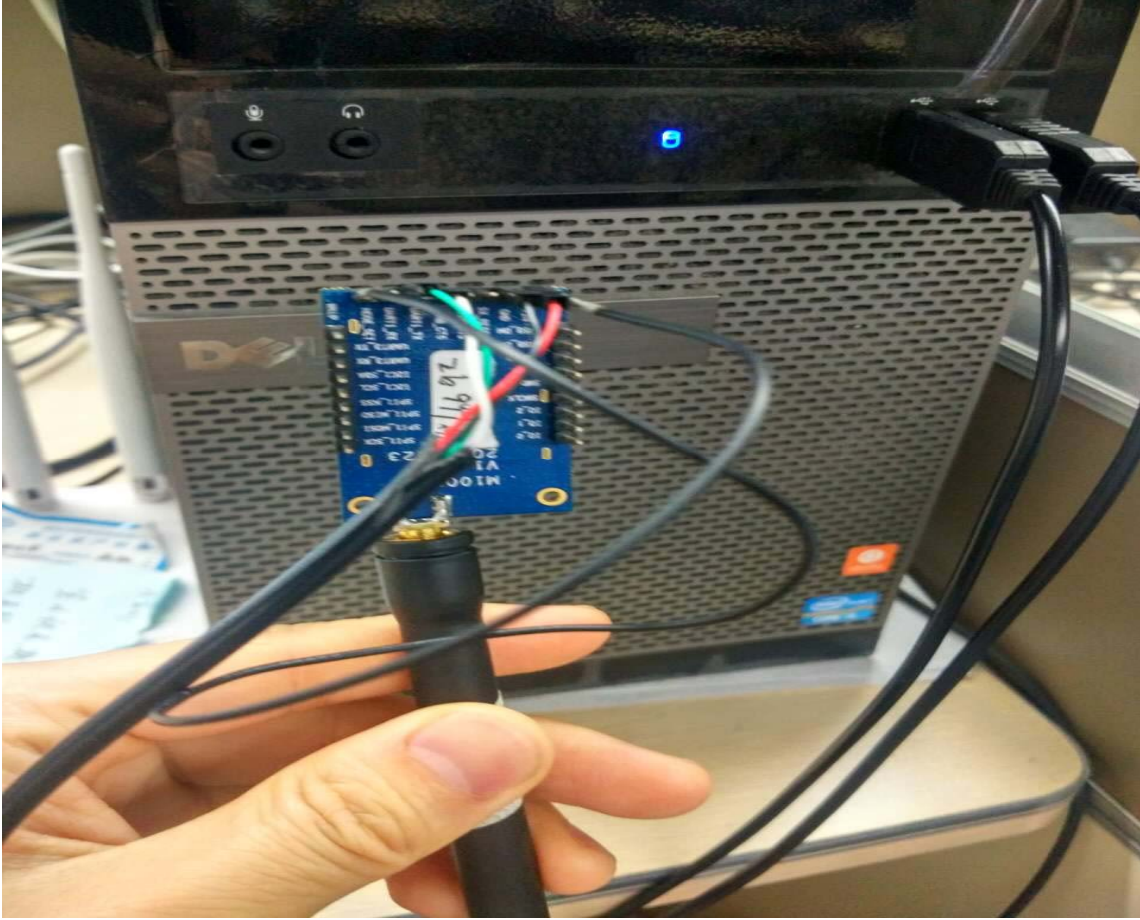
3.3.3 Start the serial port tool "AN-CONFIG", click "search"，choose the

corresponding port and frequency band, then click "read".

Click "Read", the part as the right arrows show should be filled in according to the sequence as the left arrows show, the part in the red square area is with the fixed address, after the completion of the configuration, click "Write" to save.

Enter the page of translation.

Check the gateway forwarding data:

Chapter 4 Common problem

4.1 The gateway cannot be bound

1.Check whether the gateway is bound by other users, if bound, need to "192.168.3.1" under the original account to unbind,Then the new account is bound

2.Enter the "user status" column to view, "activation status", "login information" must be the same user

4.2 GPSCannot be properly positioned

Enter gateway 192.168.3.1 interface：

1. View the status of the location information, there is that GPS can be positioned

2. View the time synchronization information;

GPS good words, synchronization should be within 5 seconds, the figure has been 1481181742 seconds did not sync GPS.

If the GPS does not have the positioning information, re-insert the GPS antenna, or reposition the empty area, or update the GPS antenna.

4.3 Node cannot access the network

1.Check that the gateway is working properly

2.Check if the node has electricity

3.The node is powered on again

4.4 Background cannot add / remove nodes

Check whether the gateway is online, only the gateway normal online circumstances, in the "gateway details" to add / remove nodes

Technical Parameters：

1. GW5000 Performance parameters

Master	Master	Industrial gradeCPU
	Memory	16 MB SPI Flash / 64 MB DDR2 RAM
Radio Parameter	WIFI standard	2.4GHz WIFI，support IEEE 802.11b/g/n
	GPS	ActiveGPS，@ 1575.42Mhz
	LORA	902MHz~928MHz @ LORA
	3G	Band 2/Band 4/Band 5
	4G	Band 2/Band 4/Band 12
	RX Sensitivity	Max:-148 dBm @ LORA; -95dBm @ WIFI;
	Antenna style	IPEX to N，Antennas are external N head
Hardware parameters	Network Interface	1LAN 1WAN 1WIFI 14G Module
	Supply voltage	POEPower supply 12V input
	Working current	Power ON：<48V/140mA Turn on GPS&4G：<48V/370mA Max current ：<48V/400mA
	Local storage	Built-in 32GB memory card
	Operating temperature	Operating temperature-20℃ ~85℃
	Storage environment	Storage temperature-40℃ ~ 125℃ Humidity10% -90%RH No condensation
Structure parameter	Size	110*202*204mm
	Installation method	Bracket screw fixed installation

2. GW5000Antenna parameters

S/N	Type	Band	Port	Anteena gain	SWR	Mark
1	WIFI	2.4GHz	N-type male head	1dBiOmnidirectiona antenna	<1.5	Certification:FCC/CE
2	ActiveGPS	1575.42Mhz	N-type male head	ANT 3.5dB Gain>28dB	<2.0	Power support:3V/5V Certification:FCC/CE
3	3G 4G	Band2/4/5 Band2/4/12	N-type male head	2dBi	<1.8	Certification:FCC/CE
4	LORA	902-928MhZ	N-type male head	1dBi		Certification:FCC/CE

Example of product assembly

● **Product Assembly Sample**

1,Open the GW5000 Inner hexagon spanner

2, After opening, insert the prepared SIM data traffic card, as shown in Figure

3,Tighten the screws, check the gap

4, Before assembling FRP antenna, insert the heat shrinkable sleeve

5, Insert the FRP antenna into the 4G/WIFI/GPS interface and check whether the connection is tightened

6, The LORA feeder connected to the LORA interface, after installation, the FRP antenna on the heat shrinkable tube heating, and then wrapped with high temperature adhesive

7, As shown, unscrew the RJ45 waterproof head

8, Insert the cable into the RJ45 hole as shown

9, Tighten the screw and fix the cable to complete the installation of the whole product

Installation diagram

Gateway router installation

Schematic by WINEXT technology recommend users to install the installation, if you encounter environmental factors, does not affect the use of the premise, you can modify the installation mode, we provide two kinds of installation, Please purchase your own.

This antenna is a LORA antenna
Prohibit horizontally

Scheme B

LORA antenna

Erecting pole,
Users according to the size
of the U frame to choose

POE power supply port

aperture:
60mm

FCC Caution

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) This device must accept any interference received, including interference that may cause undesired operation.

Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.