



LoRaWan Setting Guide

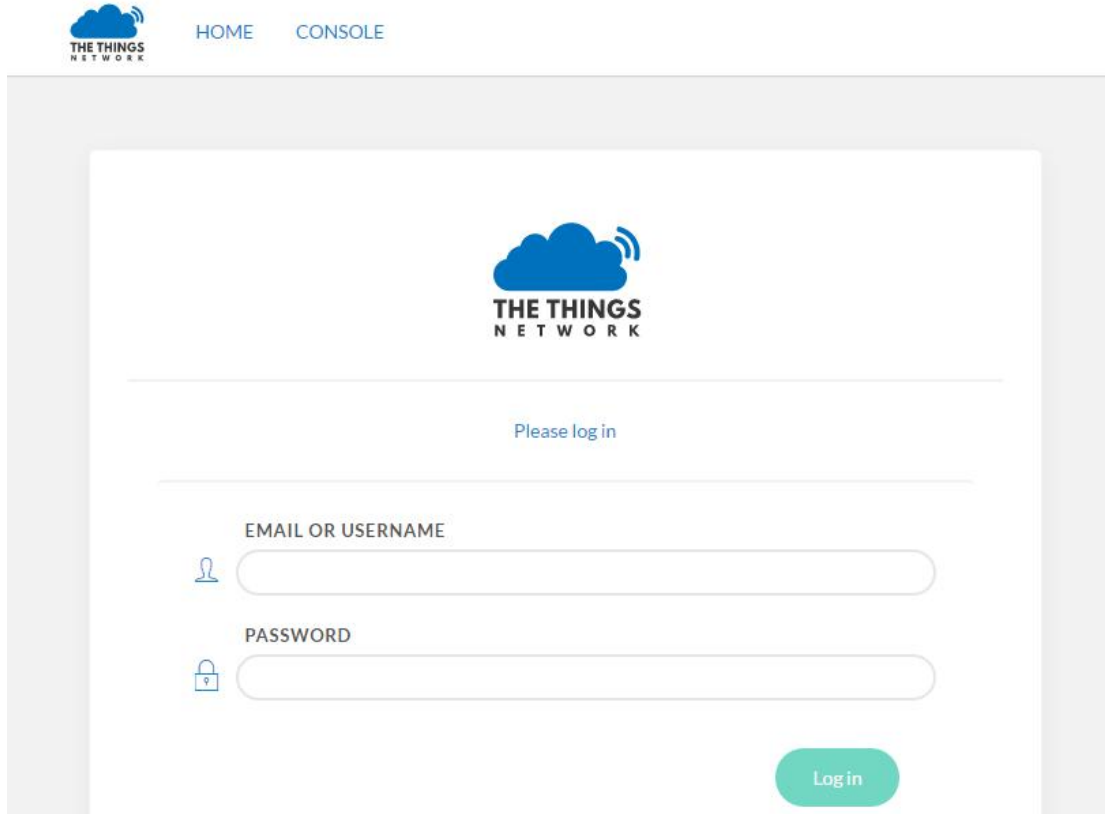
TTN server, LORA node, and LoRaWAN Gateway



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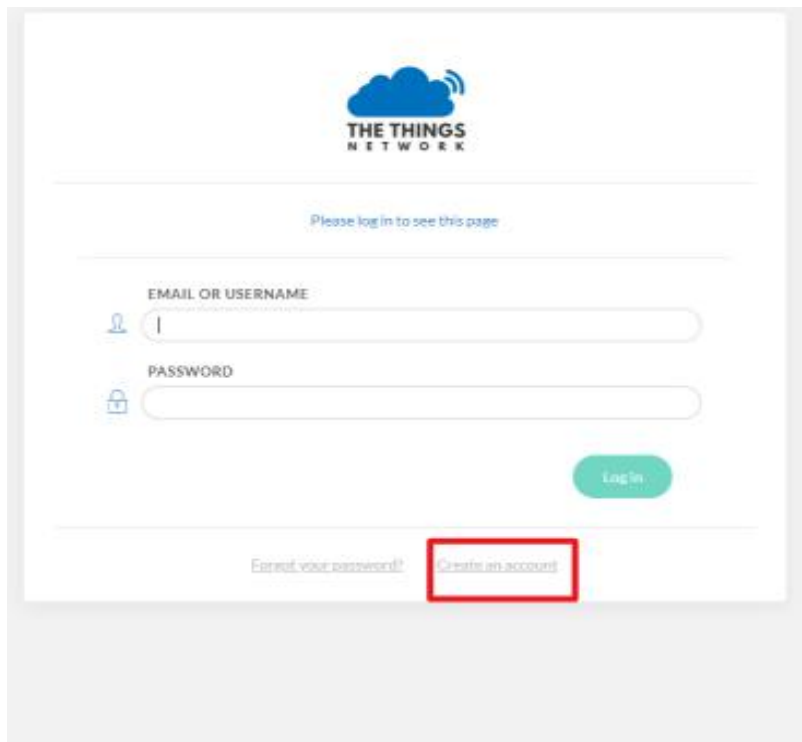
1. Register an account on the TTN server

1. Open your browser and enter <https://account.thethingsnetwork.org/users/login> to enter the page shown below.



The screenshot shows the TTN login page. At the top left is the EBYTE logo and the company name. Below it is the TTN logo. The page has a navigation bar with 'HOME' and 'CONSOLE' links. The main content area features the TTN logo, a 'Please log in' message, and two input fields: 'EMAIL OR USERNAME' and 'PASSWORD'. A green 'Log in' button is located at the bottom right of the login form.

2. Click 'Create an account' in the lower right corner of the web page, as shown in the red box



This screenshot shows the same TTN login page as the previous one, but with an additional link at the bottom: 'Forgot your password?'. The 'Create an account' link is highlighted with a red rectangular box.

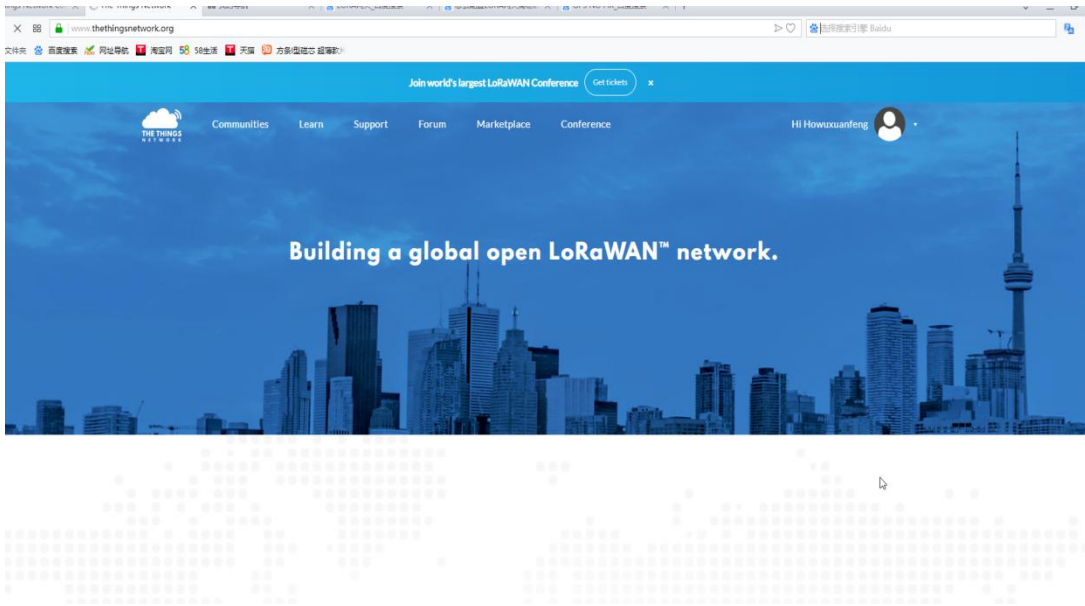
3. You will go to the following registration page. Enter the registered user name in the first box, enter the registered email address in the second box, and enter the registered user password in the third box. Finally click Create account.

The screenshot shows the registration page of The Things Network. The browser address bar displays 'account.thethingsnetwork.org/register'. The page has a header with 'THE THINGS NETWORK' logo and navigation links 'HOME' and 'CONSOLE'. The main content area is titled 'CREATE AN ACCOUNT' and includes the instruction 'Create an account for The Things Network and start exploring the world of Internet of Things with us.' Below this, there are three input fields: 'USERNAME' (with a note 'This will be your username -- pick a good one because you will not be able to change it.'), 'EMAIL ADDRESS' (with a note 'You will receive a confirmation email, as well as occasional account related emails. If this email address is managed by a third party (such as for corporate email addresses), this third party might block emails coming from The Things Network. This email address is not public.'), and 'PASSWORD' (with a note 'Use at least 6 characters.'). A red box highlights the 'Create account' button, which is labeled with the number 4. Red arrows point from Chinese labels to the input fields: '注册用户名' (1) to the username field, '注册邮箱' (2) to the email field, and '注册用户密码' (3) to the password field. Below the button, there is a link to 'Terms and Conditions' and a note 'By registering an account you agree to our Terms and Conditions.' A red text label '输入完成后点击' (Click after input is complete) is positioned below the button.

4. The webpage appears as shown to indicate successful registration, and your registration email will also receive a successful registration email from noreply@thethingsnetwork.org.

The screenshot shows the account page of The Things Network after successful registration. The browser address bar displays 'account.thethingsnetwork.org'. The page has a header with 'THE THINGS NETWORK' logo and navigation links 'HOME' and 'CONSOLE'. The main content area is titled 'Welcome back gpstest' and includes a large circular profile picture placeholder. Below the profile picture, there are three links: 'edit account', 'ttnctl access code', and 'request Slack invite'. Below these links, there is a section titled 'EMAIL VALIDATION' with the text 'Your email address has not been validated yet. You can use this account without doing so until 2018/12/11 下午4:45:41, but it will be suspended afterwards.' and a link 'Did not receive an email? Request another one'.

5. Click HOME in the upper left corner to enter the TTN server LORA welcome page as shown below.



6. The TTN account registration is completed.

2. LORA node and TTN server configuration

1. Equipment List:

One piece of micro USB interface cable;

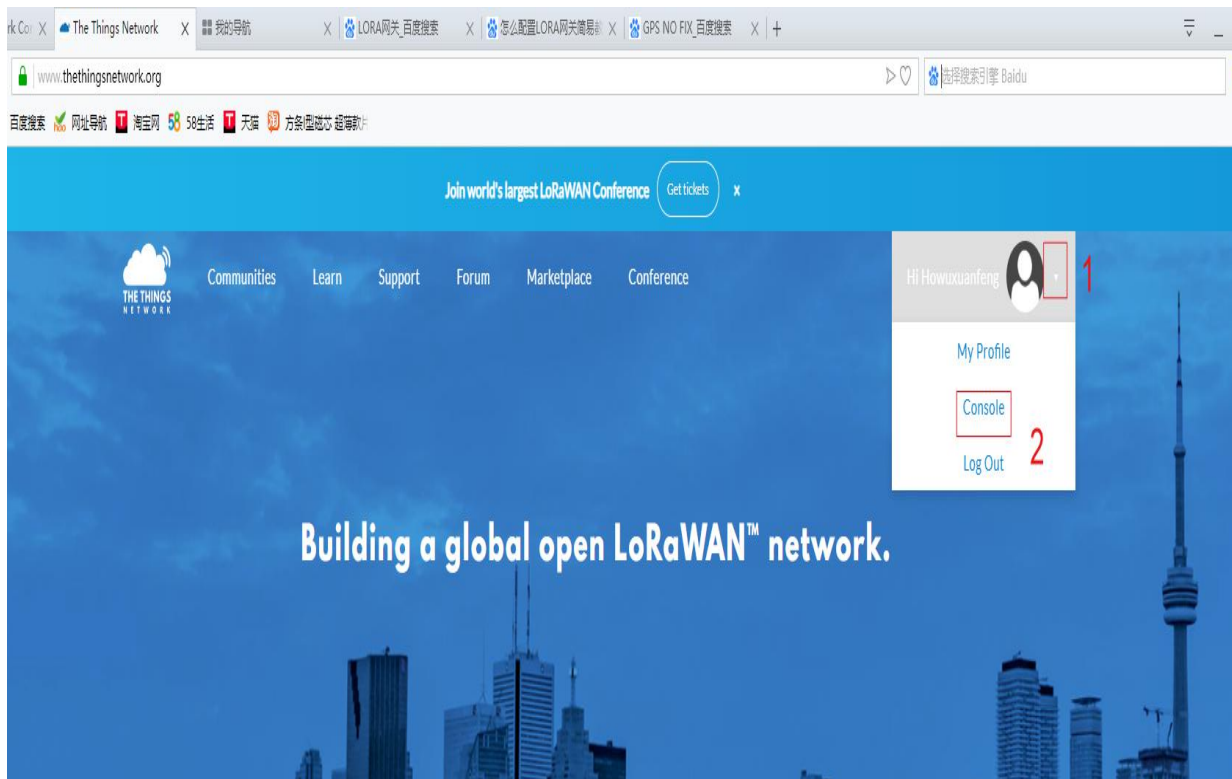
One piece of E78-470LN22S node;

PC and serial setting assistant software;

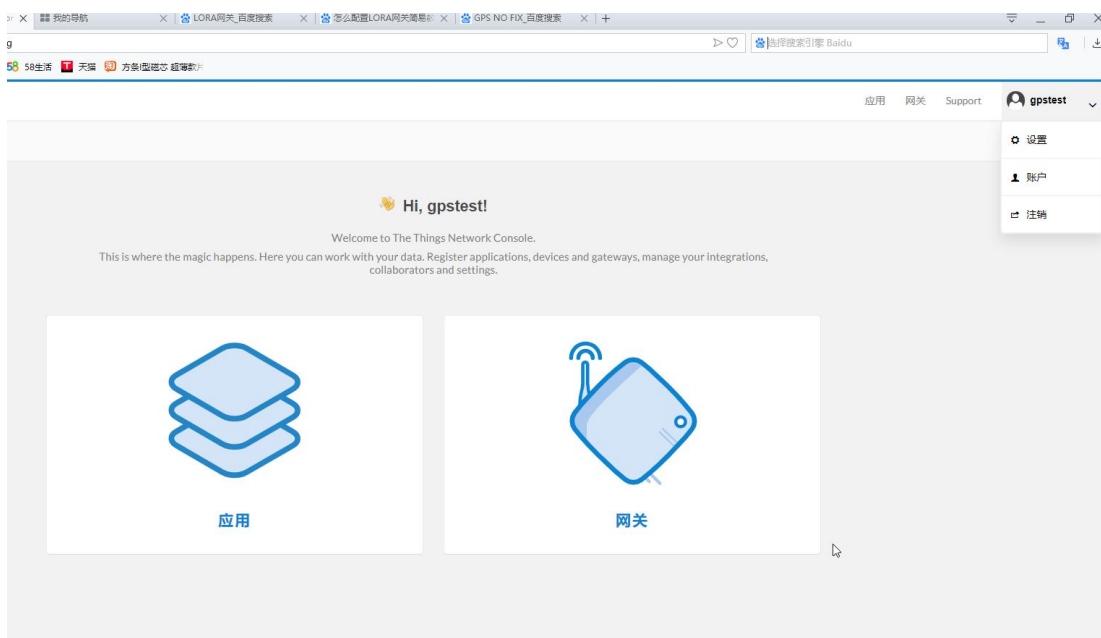
Connect the E78-470LN22S test board to the computer with a USB cable;

3. OTAA setting for TTA server node

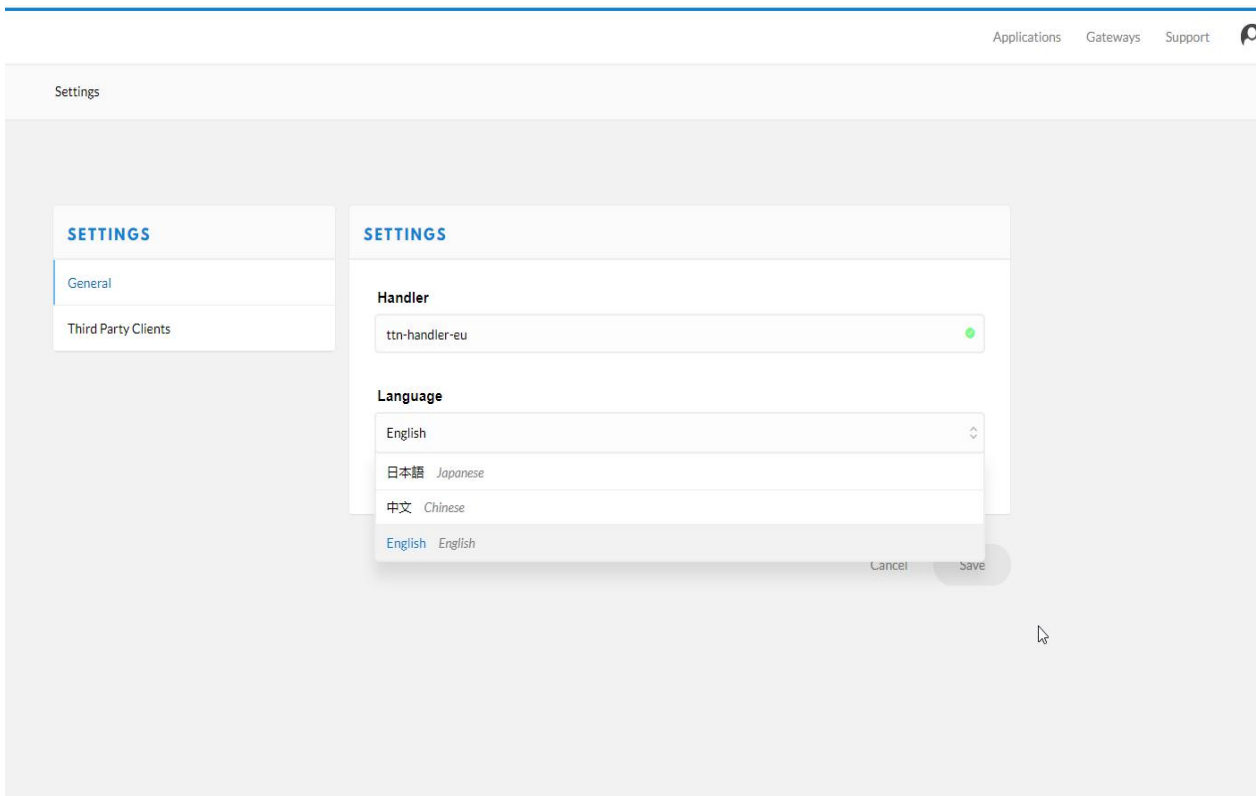
1. Enter the TTN homepage and click the upper right corner, as shown below.



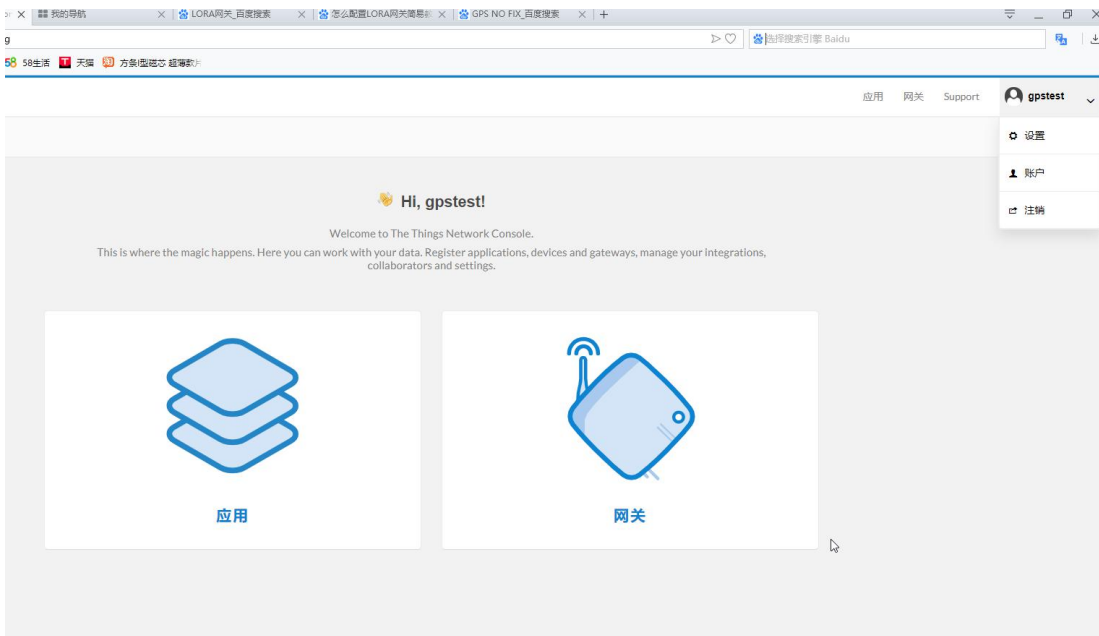
2. Enter the following interface to set the language and click the upper right corner, as shown below.



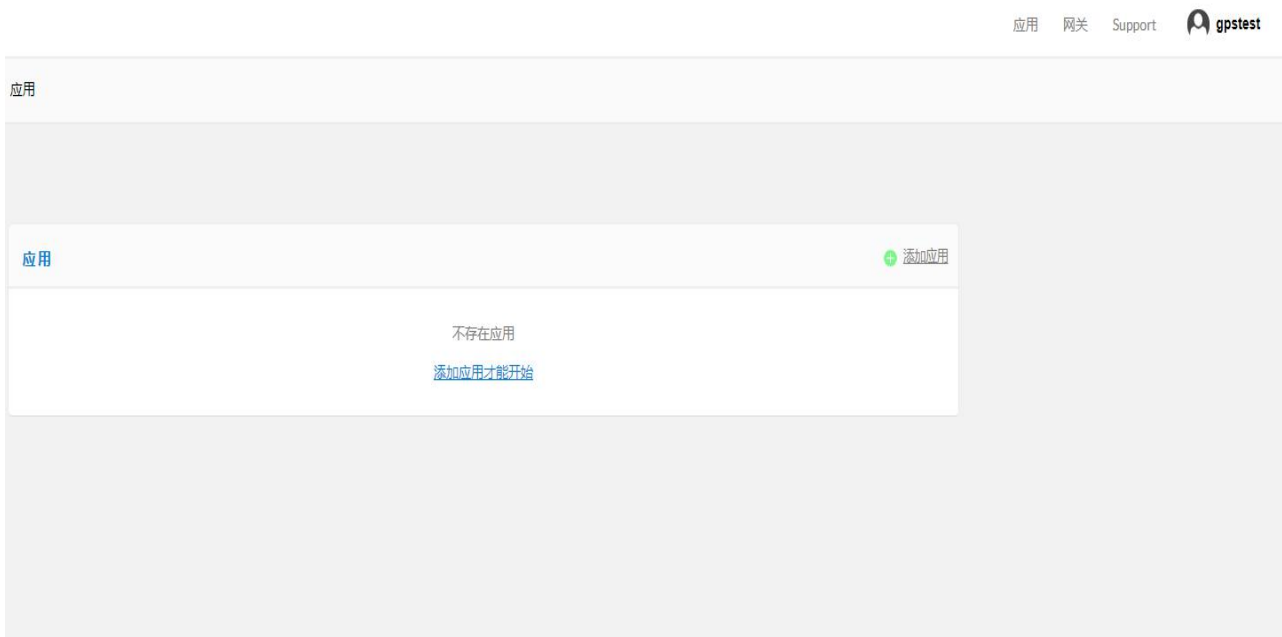
3.Language Choosing:



4.Back to the following page



5. Click to add application



6. As shown below:

Y EDITION

应用 > 添加应用

添加应用

1 小写字母加数字

应用ID

你的应用在网络上唯一的标识

应用ID must contain at least 2 characters

2 小写字母加数字

说明

人可读的新应用的说明文

应用EUI

一个应用EUI能方便得发布到网络区，你能在应用设置页中添加自己的EUI

处理程序注册

选择你想要注册应用的处理器

取消

3 添加应用

7. Enter the following page as shown below:

应用ID asr6501
描述 my_application
创建时间 21天前
句柄 tttn-handler-eu (当前句柄)

8. Enter the following page as shown below:

应用 > gpstest1631 > 设备

概述 设备 Payload Formats 集成 数据 设置

注册设备 大量导入设备

设备ID
这是这个设备在APP中的唯一标识，设备ID是不可变的
gpstest1631 1 与你注册设备ID相同

设备EUI
设备EUI是设备在网络中的唯一标识，可以在之后改变EUI
2 生成这个字段

APP密钥
App密钥是为了使设备在网络中的通信安全
3 生成这个字段

App EUI
70 B3 D5 7E D0 01 53 AF

4 取消 注册

9. Enter the following page as shown below:

应用ID	asr6501		
设备ID	0001004700200100		
激活方式	ABP		
设备EUI	<>	⇌	00 01 00 47 00 20 01 01
应用EUI	<>	⇌	70 B3 D5 7E D0 02 08 36
设备地址	<>	⇌	26 01 18 9B
网络会话密钥	<>	⇌
App会话密钥	<>	⇌
状态	● 4小时前		
上行帧	8	重置帧计数器	
下行帧	4		

40. The TTN Server Setting is Completed.

4.ABP Setting for TBP Server

Note: You can set ABP only after OTAA is activated.

Shown below:

The screenshot shows the INSOLE MMUNITY EDITION web interface. The browser address bar displays the URL: `ple.thethingsnetwork.org/applications/gptest163/devices/gptest163`. The page title is "设备概述" (Device Overview). The configuration details are as follows:

- 应用ID (Application ID): `gpstest163`
- 设备ID (Device ID): `gpstest163`
- 激活方法 (Activation Method): `OTAA`
- 设备EUI (Device EUI): `00 83 81 B9 D1 E2 90 74`
- 应用EUI (Application EUI): `70 83 D5 7E D0 01 52 EE`
- APP密钥 (APP Key): `.....`
- 设备地址 (Device Address): `26 01 23 63`
- 网络会话密钥 (Network Session Key): `.....`
- App会话密钥 (App Session Key): `.....`
- 状态 (Status): `ON` (34 seconds ago)
- 帧数上升 (Frame Count Up): `重置帧计数器` (Reset Frame Counter)
- 帧数下降 (Frame Count Down): `0`

Shown below:

gpstest163 > Settings

70 B3 D5 7E D0 01 52 EE

激活方法

OTAA ABP 1

设备地址

设备地址分配的网络服务器,并不是可定制的

网络会话密钥

生成网络会话密钥

App会话密钥

生成App会话密钥

帧计数器宽度

16 bit 32 bit

☒ 帧计数器检查

删除设备 取消 保存 2

The later settings are similar with thOTAA.

激活方法 OTA

设备EUI <> 00 83 81 B9 D1 E2 90 74

应用EUI <> 70 B3 D5 7E D0 01 52 EE

APP密钥 <>

设备地址 <> 26 01 28 25

网络会话密钥 <>

App会话密钥 <>

状态 17小时前

帧数上升 0 [重置框架计数器](#)

帧数下降 0

删除设备 取消 保存 2

5. The setting for TTN server and LoRaWAN Gateway.

Set the gateway domain name and port to the corresponding IP and port of the TTN server. Here is:

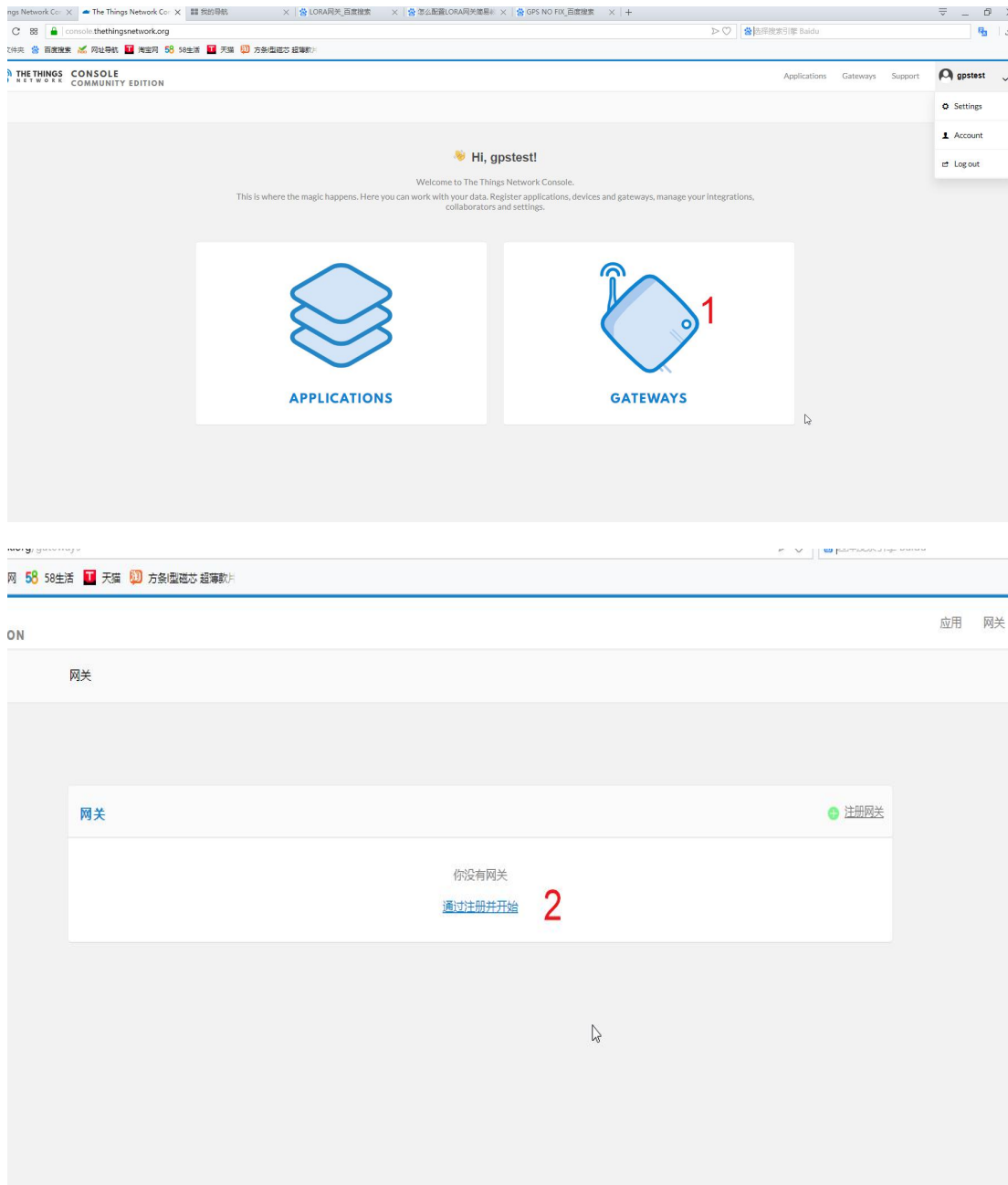
Domain name: ttn.opennetworkinfrastructure.org

IP: 86.119.29.227

Port: 1700

Protocol: UDP

TTN is configured from the server side, as shown below:



Setting details for server, as shown below

从LoRa模块读取的网关EUI

42 47 01 00 00 02 FD 网关ID 8 bytes

☒ 我正在使用传统的包转发器
如果您正在使用传统的Semtech packet forwarder作为包转发器, 请勾选此项。

描述 勾选
为您的网关添加一段描述

E890_Gateway

频段
这个网关将使用的频段 China 470-510mhz

China 470-510MHz

路由器
为您的网关选择一个将要连接的路由器, 为了减少时延, 请选择与您的网关位置较近的区域内的路由器。

ttn-router-eu 选择

定位
请选择您的网关所处的精确定位, 如不指定, 则将选用以下默认定位。您可以通过点击下方地图来设定网关定位。

+
- 

lat 30.70583431
lng 103.94464876
用户图标

After finishing, click "register gateway" under the webpage to complete the configuration.

THE THINGS NETWORK CONSOLE COMMUNITY EDITION

应用 网关 支持 Smart_huang

网关 > eui-42470100000002fc

网关ID eui-42470100000002fc

描述 ASR6501

所有者 Smart_huang 更改所有者

状态 未连接

频段 China 470-510MHz

路由器 switch-router

网关密钥                                    

After the above configuration is completed. The node and gateway information is configured. After power-on, you can see the corresponding status icon of the device on the TTN webpage indicator changes from gray to green: you can see the data of the gateway and the node respectively, and the gateway data is as follows:

网关 > eui-4247010000002fc > 通信量 beta

上行链路	下行链路	加网	0 bytes	×	暂停	清空记录
时间	频率	调制模式	编码率	传输速率	广播时间 (毫秒)	数量
▲ 15:05:59	470.7	loro	4/5	SF 9 BW 125	164.9	0 设备地址: 30 14 EF 5E 载荷大小: 14 bytes
▲ 15:05:54	471.3	loro	4/5	SF 9 BW 125	164.9	0 设备地址: 30 14 EF 5E 载荷大小: 14 bytes
▲ 15:00:23	470.3	loro	4/5	SF 9 BW 125	205.8	8 设备地址: 26 01 18 9B 载荷大小: 23 bytes
▲ 14:59:52	471.5	loro	4/5	SF 9 BW 125	205.8	7 设备地址: 26 01 18 9B 载荷大小: 23 bytes
▲ 14:58:48	471.5	loro	4/5	SF 9 BW 125	205.8	5 设备地址: 26 01 18 9B 载荷大小: 23 bytes
▲ 14:58:17	470.3	loro	4/5	SF 9 BW 125	205.8	4 设备地址: 26 01 18 9B 载荷大小: 23 bytes
▲ 14:57:58	471.5	loro	4/5	SF 9 BW 125	205.8	4 设备地址: 26 01 18 9B 载荷大小: 23 bytes
▲ 14:57:27	470.5	loro	4/5	SF 9 BW 125	205.8	2 设备地址: 26 01 18 9B 载荷大小: 23 bytes

The node data looks like this:

THE THINGS NETWORK CONSOLE COMMUNITY EDITION 应用 网关 支持

应用 > asr6501 > 设备 > 0001004700200100 > 数据

总览 数据 设

应用数据 暂停 清空记录

筛选 上行链路 下行链路 激活状态 应答 错误

时间	计数器	端口	
▲ 15:00:23	8	10	payload: 00 01 02 03 04 05 06 07 08 09
▲ 14:59:52	7	10	payload: 00 01 02 03 04 05 06 07 08 09
▲ 14:58:48	5	10	payload: 00 01 02 03 04 05 06 07 08 09

For specific node settings, please refer to the E78-400M22S manual.