ThinkNode Gateway usage description

一、Description

ThinkNode LoRaWAN Gateway is a standard LoRaWAN® gateway that supports connection to different web servers. It supports global LoRaWAN® frequency programs from 865 MHz to 923 MHz and can be used for a wide range of LoRaWAN® applications such as smart buildings, environmental monitoring systems, precision agriculture, and more. With its wide coverage and strong signal output capability, it is an ideal gateway for building LoRaWAN® networks.

二、Feature

(1) Support for multiple LoRaWAN® network servers: compatible with multiple LNSS, such as AWS, TTN, ChirpStack, etc., through the Packet Forwarder/BasicsTM Station mode.

(2) Built-in LoRaWAN network server: provides a fast and reliable solution for launching LoRaWAN networks.

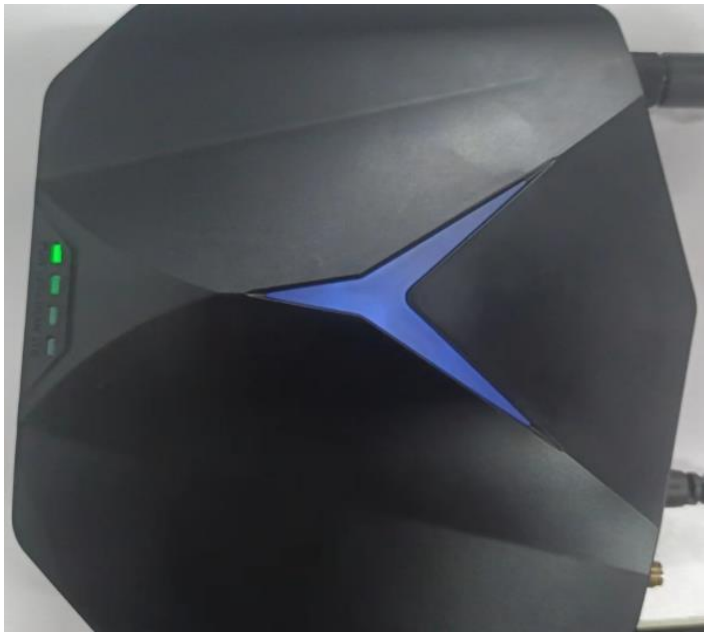
(3) Large range coverage and strong signal: LoRaWAN® coverage range of up to 10km and strong signal, allowing users to send extremely long distance data at low data rates.

(4) Excellent and stable performance: using mature MT7628 hardware solutions and Semtech SX1302 baseband remote chips. It supports cellular (optional), Wi-Fi and Ethernet Internet connectivity.

三、Quick use

1. Lora antenna installation and DC12 power access, Lora antenna has frequency bands, such as 868MHZ,915MHZ, different frequency bands of Lora gateway please install the corresponding frequency band antenna, the physical wiring diagram is as follows:

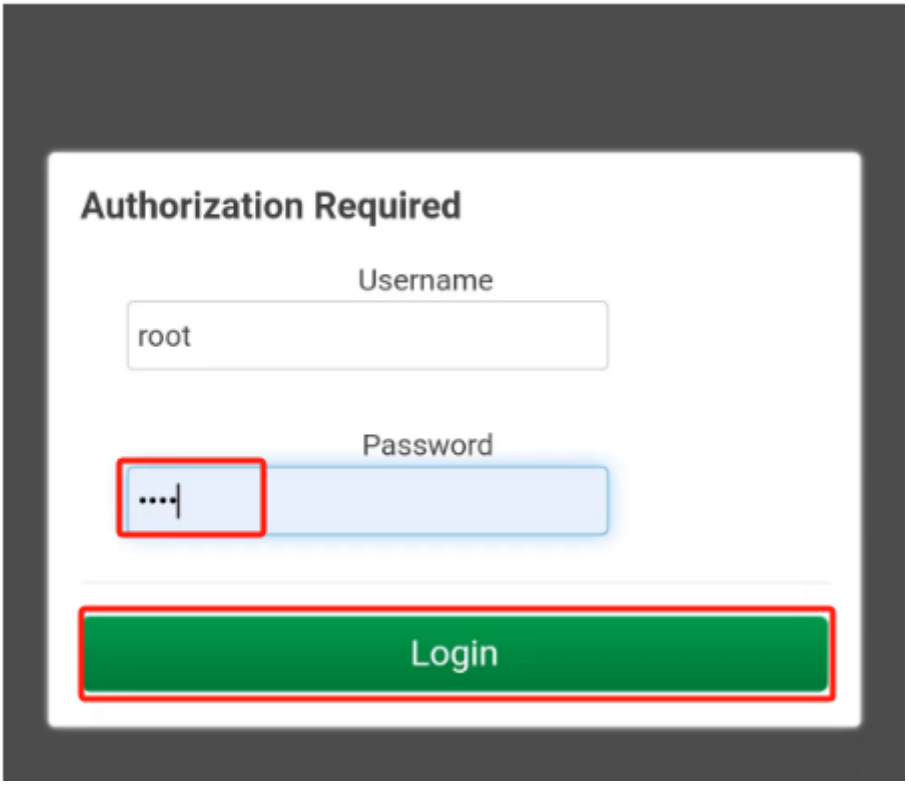
2. After the power supply is connected, hold down the setting button on the side of the gateway for 5S and wait until the gateway enters the configuration mode. When the blue indicator on the gateway slowly blinks, the gateway enters the setting state.



3. Enter the configuration mode, connect to the gateway AP, and log in to the Luci network configuration page Connect to the gateway using a mobile phone or computer/laptop with a wireless port AP- "HeilNet_ONE_******".

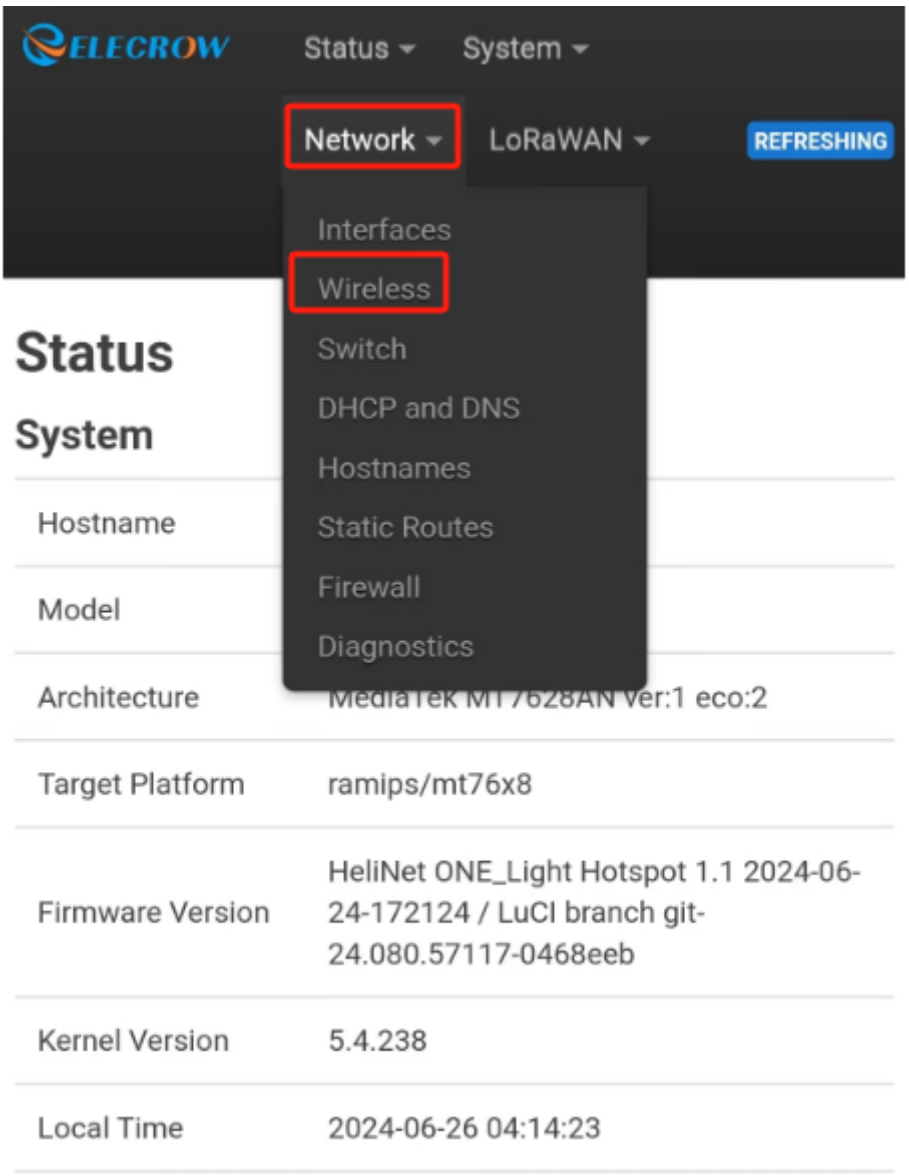
Open the browser and enter 192.168.1.1, click the URL, and enter the password root to log in to

the Luci network configuration page Password:root

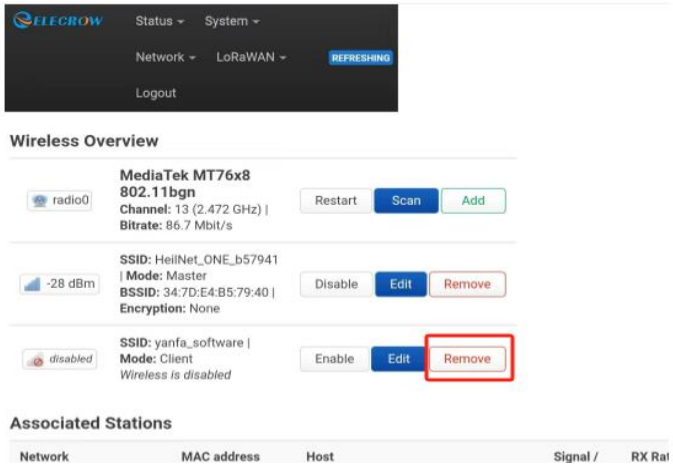


3-1. After entering the Luci interface, start to configure the network of the gateway network. There are three network configuration modes, including ETH, Wifi and LTE(4G)

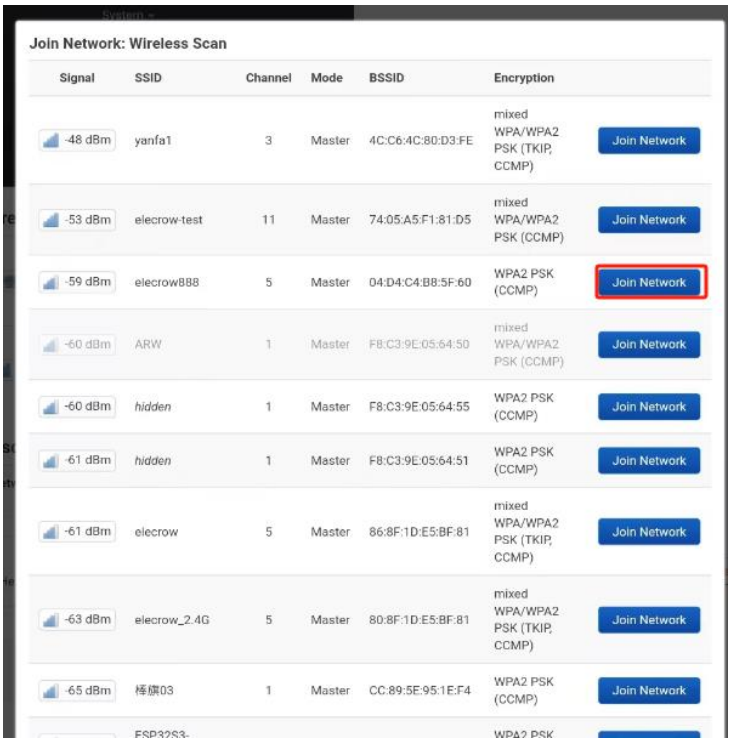
On the screen, tap Network and select Wireless

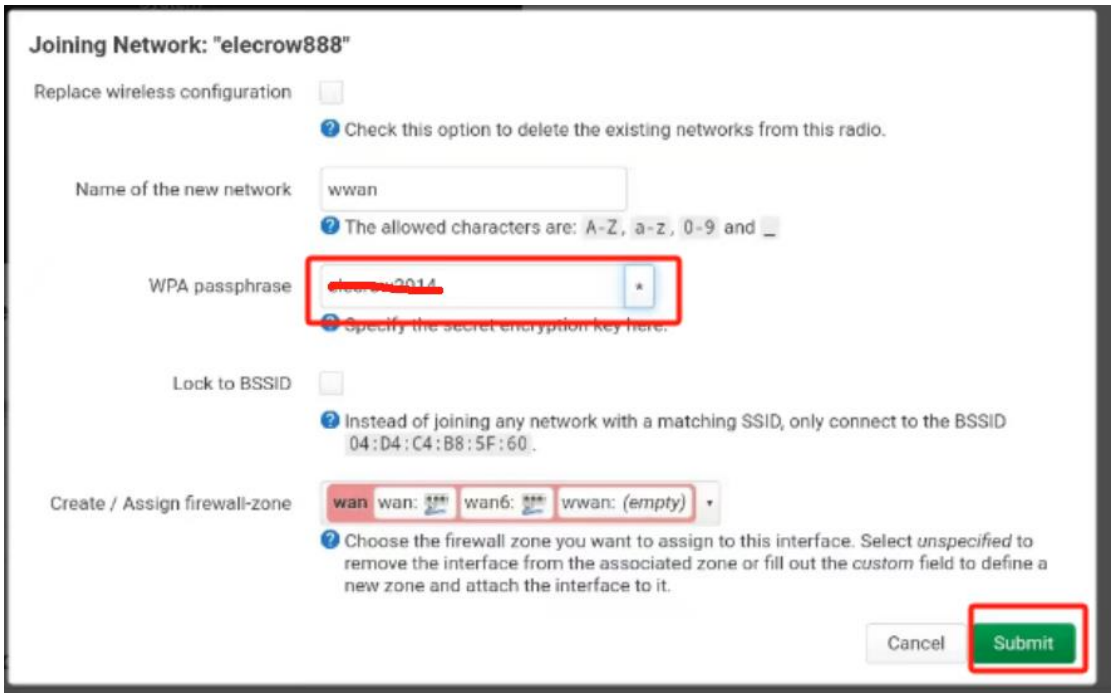


Click Remove to remove the old WiFi hotspot

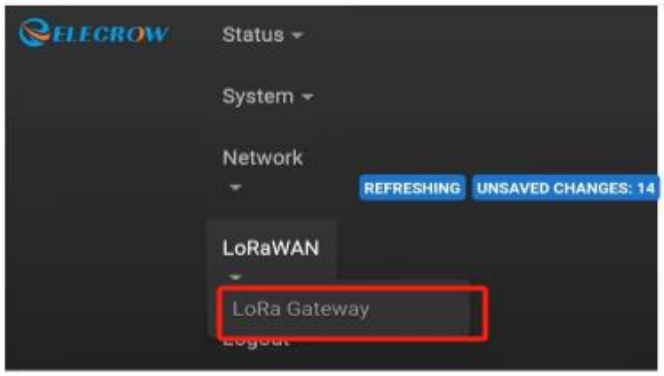


Click Scan, select a new WiFi hotspot, click Join Network, enter the WiFi password, and save!

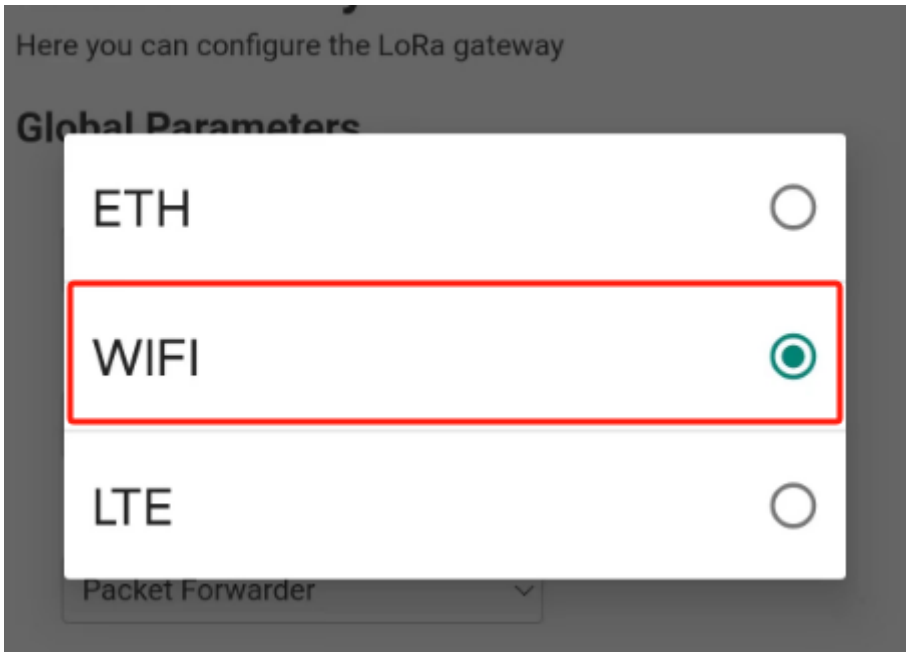




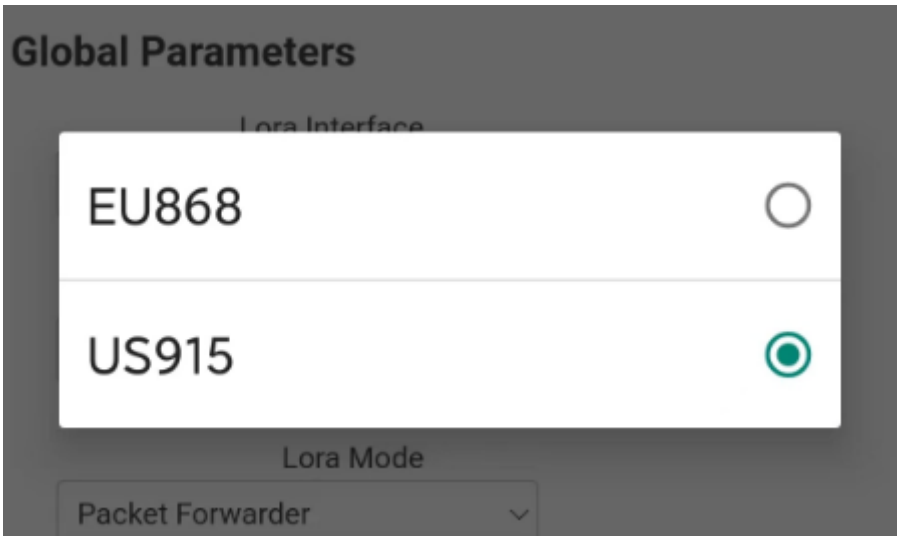
Return to the Luci Start screen and select LoRa Gateway from the LoRaWAN drop-down menu to enter the gateway configuration screen



Select Wifi,

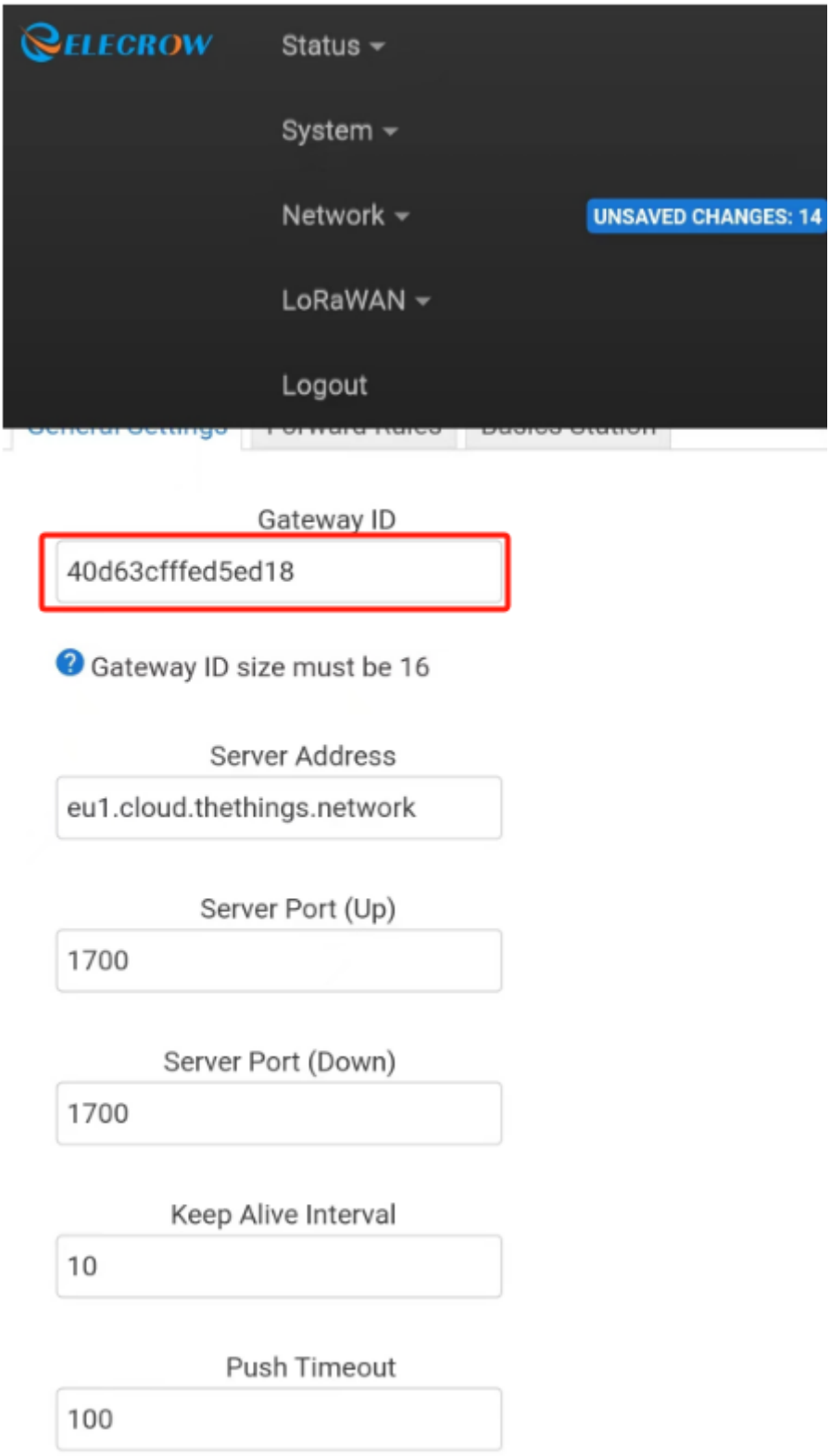


Select the LoRa gateway frequency band according to the selected LoRa gateway of the product



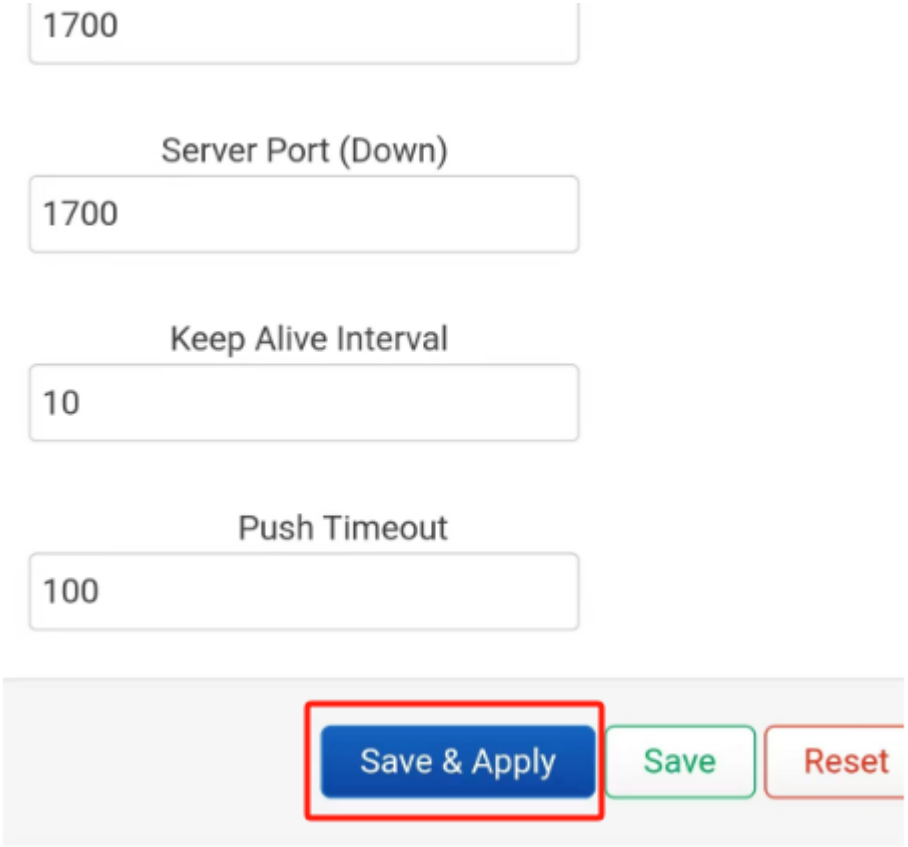
Gateway ID, The gateway is automatically generated. You can log in to the TTN website to check whether the production gateway is online

Website link: https://eu1.cloud.thethings.network



Use the default Settings for other Settings.

Click Save&Apply, then exit the Luci website and wait for the gateway to restart!

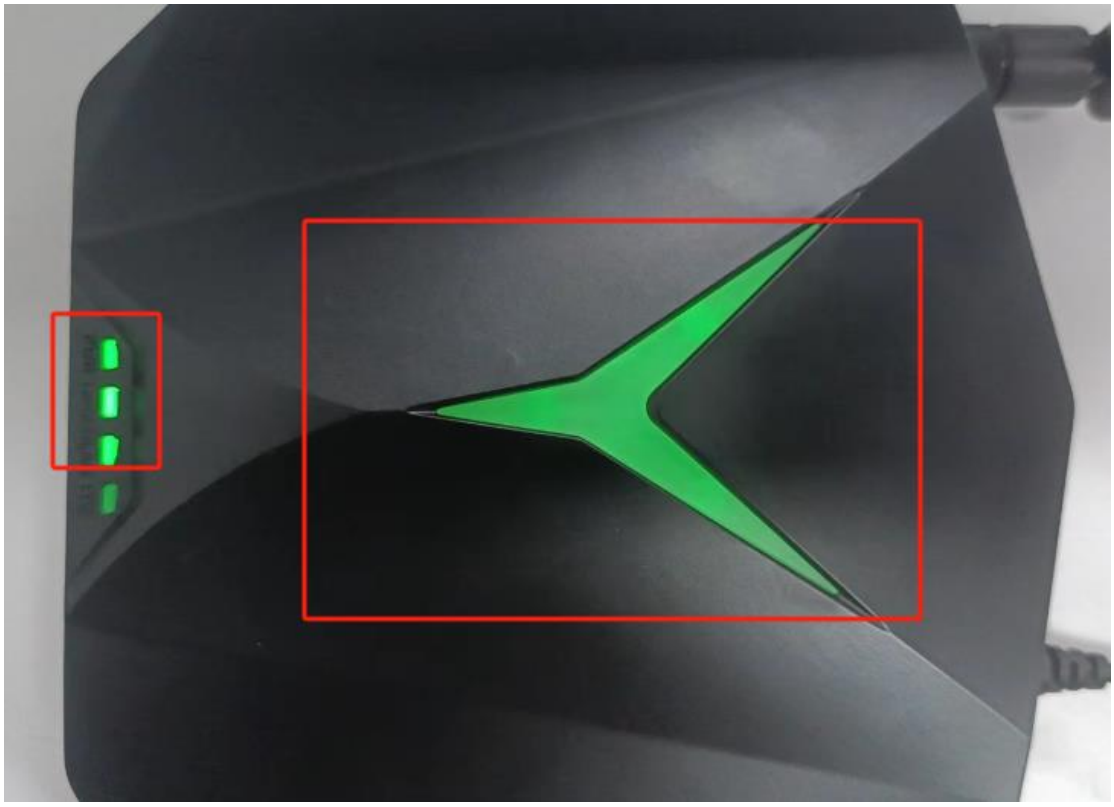


Press the setting button on the side of the gateway twice to restart the gateway quickly! When the green indicator of WLAN and LORA on the gateway is on, and the status indicator in the middle is steady green, the gateway network is configured successfully and the gateway is running normally!

Settings

Press the setup button twice in a row

Gateway normal operation LED light status, WLAN,LORA indicator, the middle big status light green on!

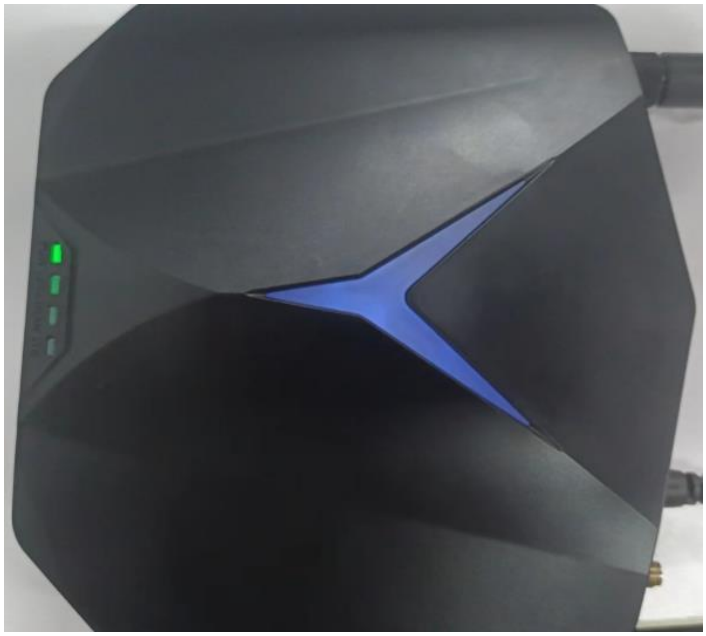


3-2 .Configuring Gateway ETH Networking

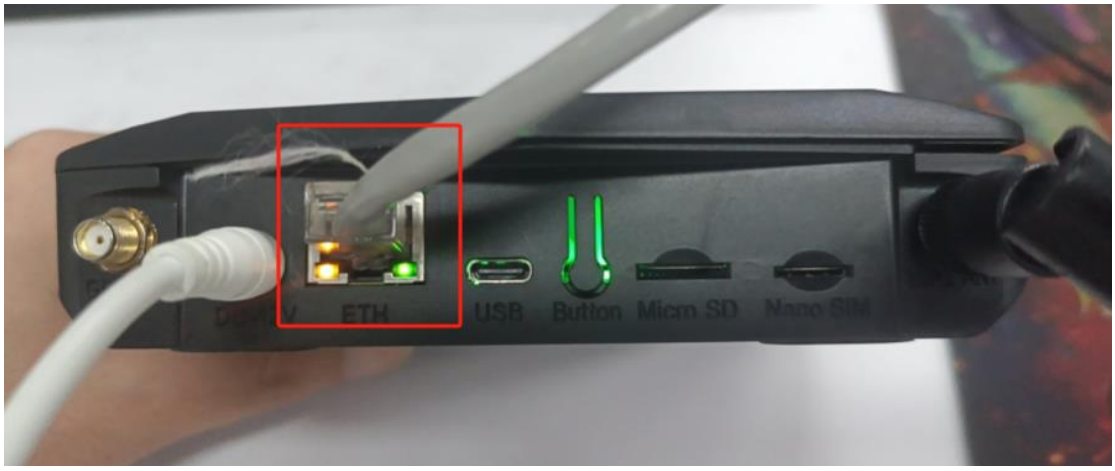
You need to use a Network cable to connect to the network port on the side of the gateway, and then hold down the setting button for 5S. After connecting to the AP, log in to the Luci interface. Since WIFI network is not used, you do not need to enter the network to set WIFI. Direct LoRa Gateway from the LoRaWAN drop-down menu on the initial screen to access the gateway configuration screen, select ETH networking mode, save the Settings, exit Luci, and wait for the gateway to restart.

Hold down the setting button for 5S

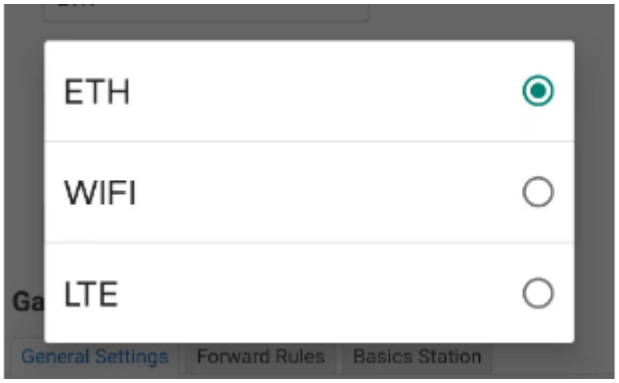
The gateway enters the configuration state



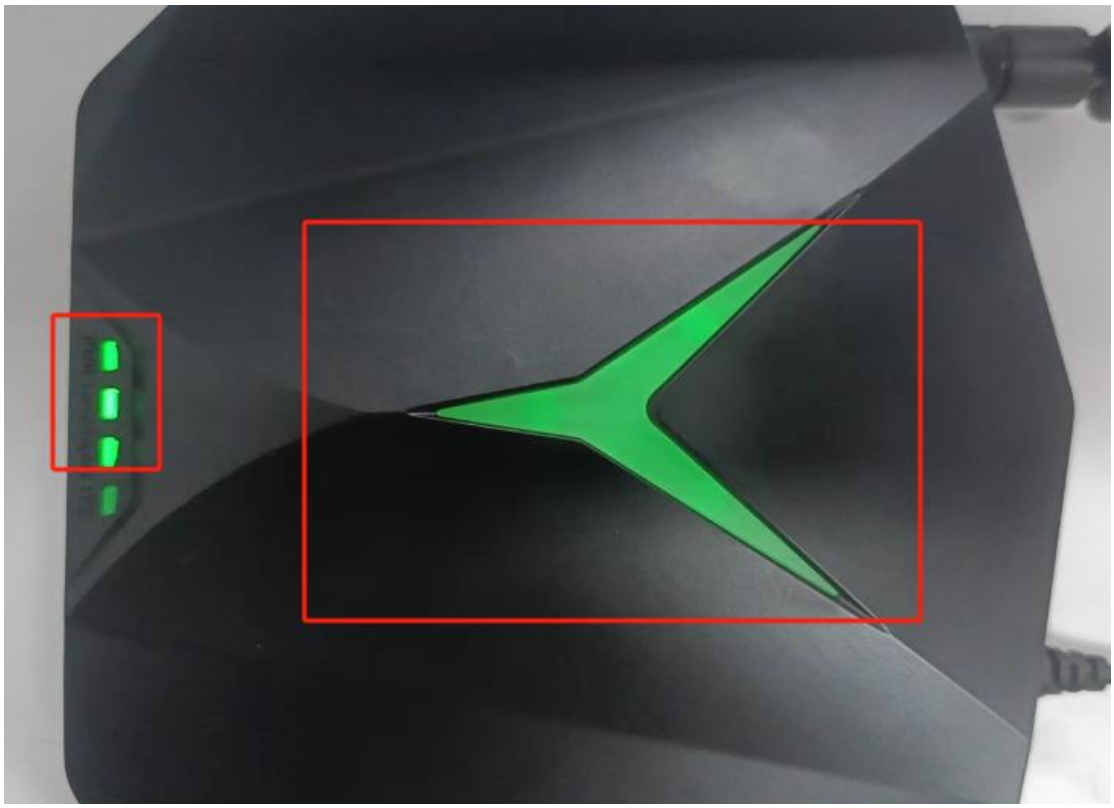
Access network cable



Log in to the Luci page, select LoRa Gateway from the LoRaWAN drop-down list, go to the gateway configuration page, and select ETH networking mode



Click Save&Apply, then exit the Luci website and wait for the gateway to restart! After restart, the WLAN,LORA indicator, and the middle big status light are green on! The gateway is running properly!

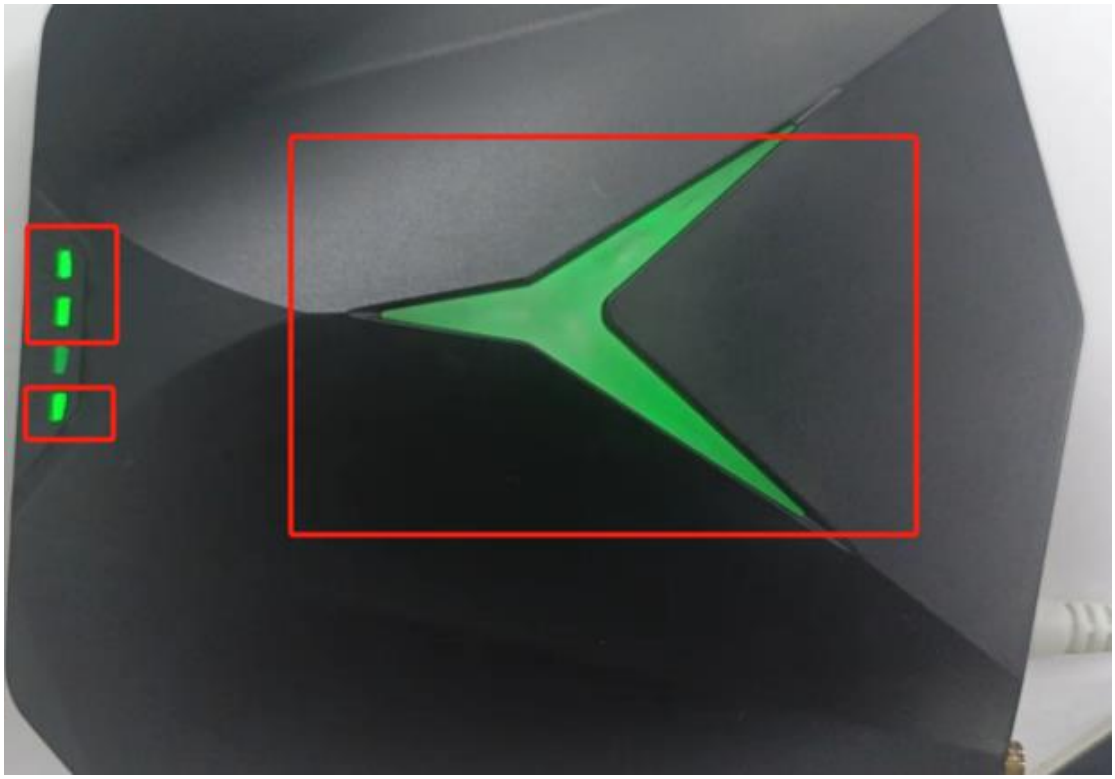


3-3 .Gateway LTE(4G) networking configuration

When using a 4G network, insert the SIM-4G phone card into the SIM card slot on the side of the gateway

Refer to 3-1,3-2 configuration steps, LoRa Gateway in the LoRaWAN drop-down menu on the initial Luci screen to access the gateway configuration screen, select the LTE networking mode, save the Settings, exit Luci, and wait for the gateway to restart!

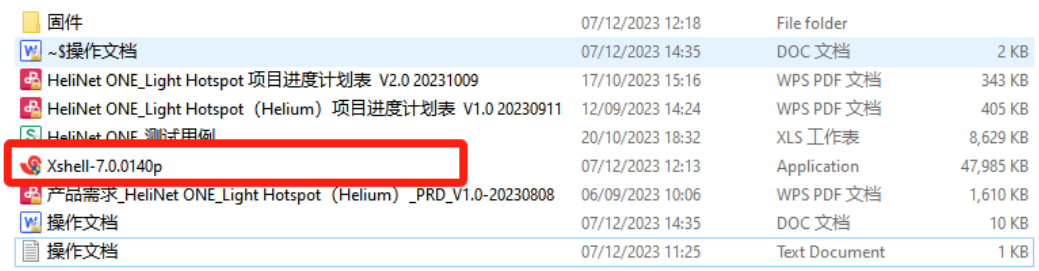
When the gateway uses 4G network, under normal operation, the LTE indicator on the gateway blinks, the LORA indicator is constant, and the status indicator is steady on!



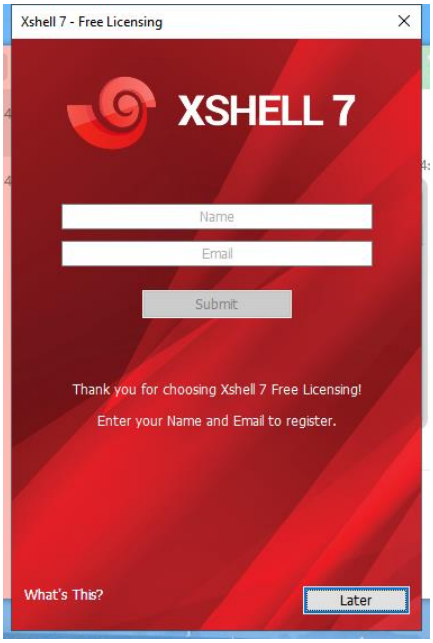
4.Use of Bluetooth function, Bluetooth function is connected to the mobile APP through Bluetooth, the purpose is to use the mobile APP configuration, because the mobile APP is not good at present, only do a simple instructions!

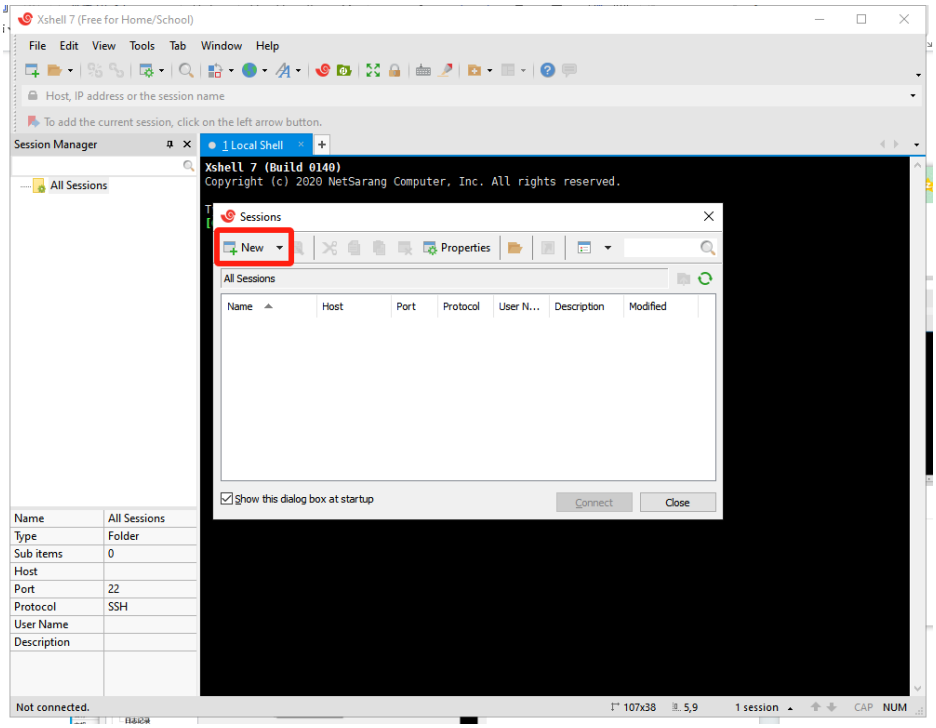
Here you need to install an Xshell-7.0 software tool

Install the burn program

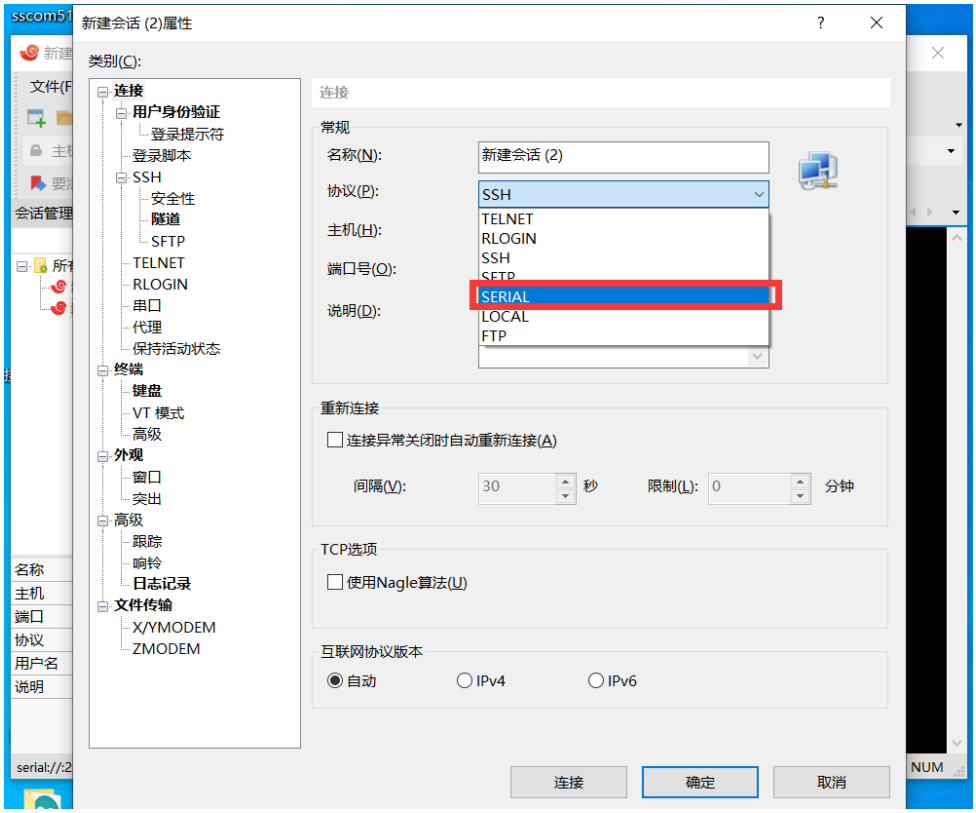


After successful installation, enter the program. Click the upper right corner to close the following interface to enter the program, and click New



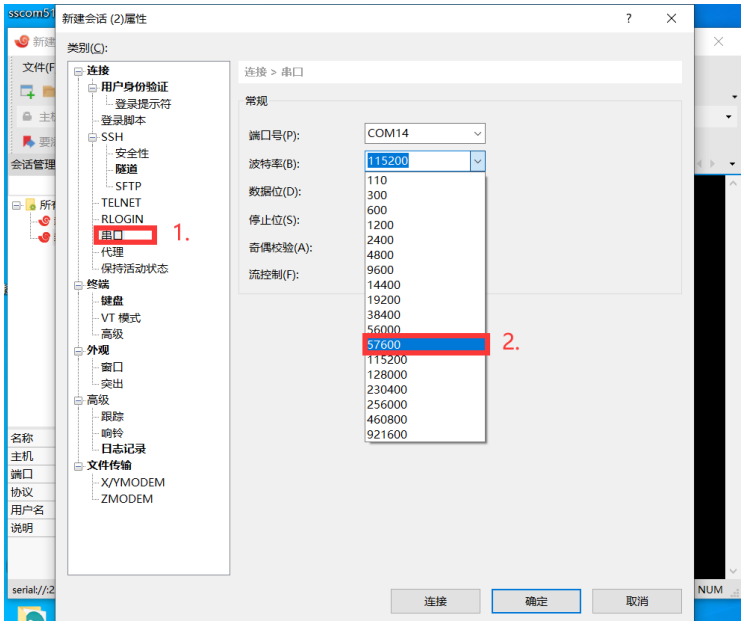


The selection protocol is:SERIAL

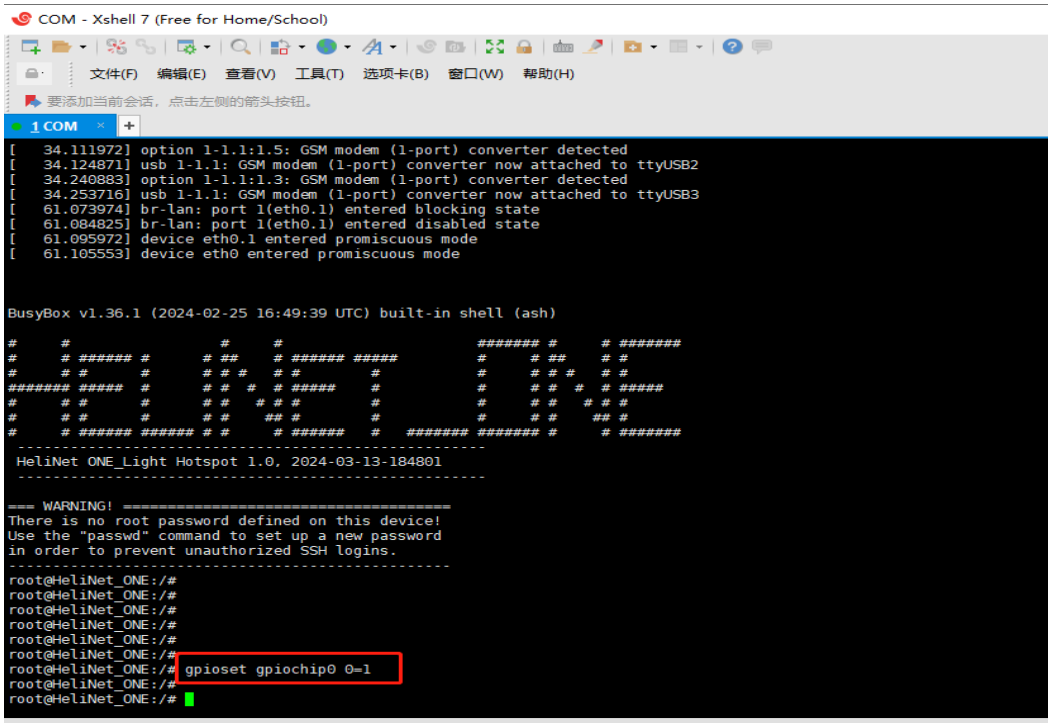


After connecting the gateway to the computer using a TYPE-C USB cable

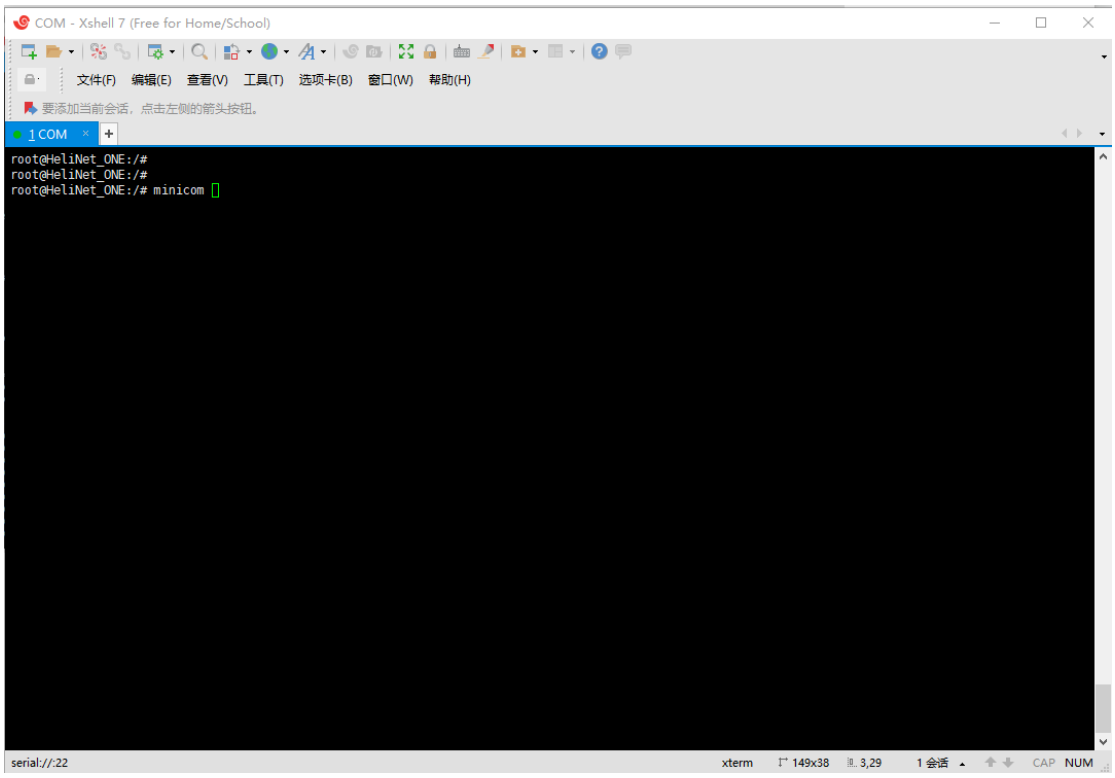
Select：Serial port，Baud rate selection：57600.click-OK

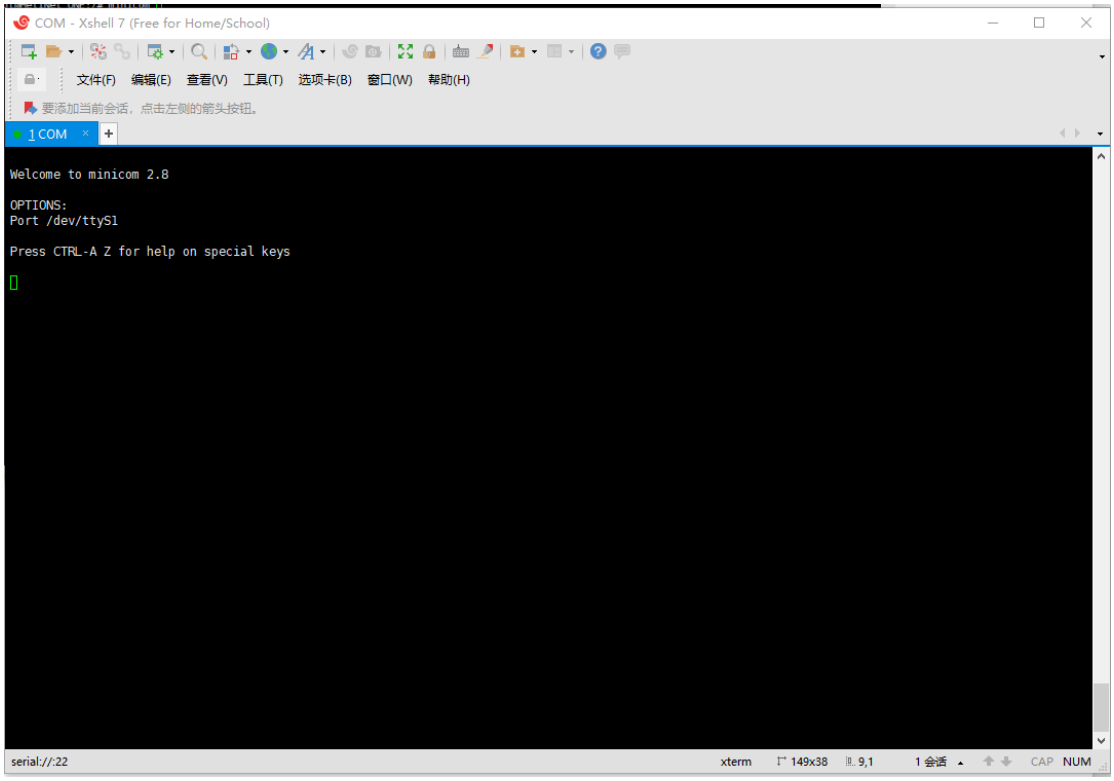


Enable Bluetooth power supply：Terminal command line input gpioset gpiochip0 0=1 ， The Bluetooth name appears after successful power supply



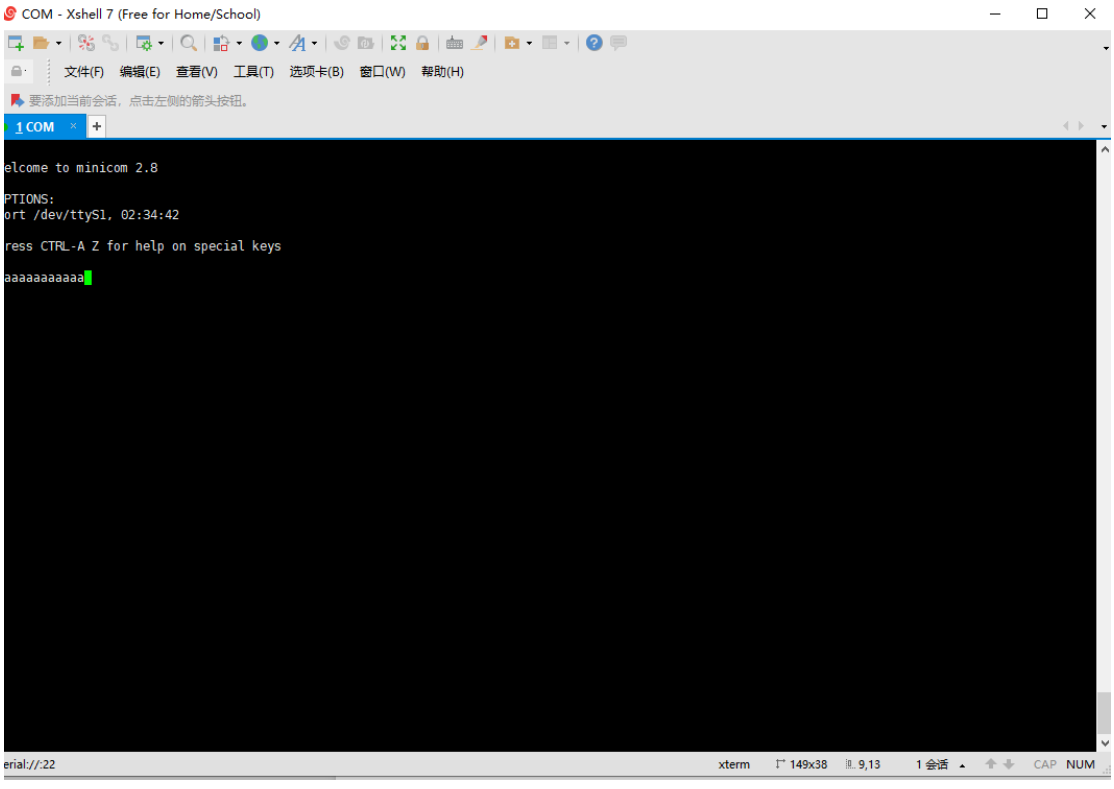
input:minicom,Access monitor

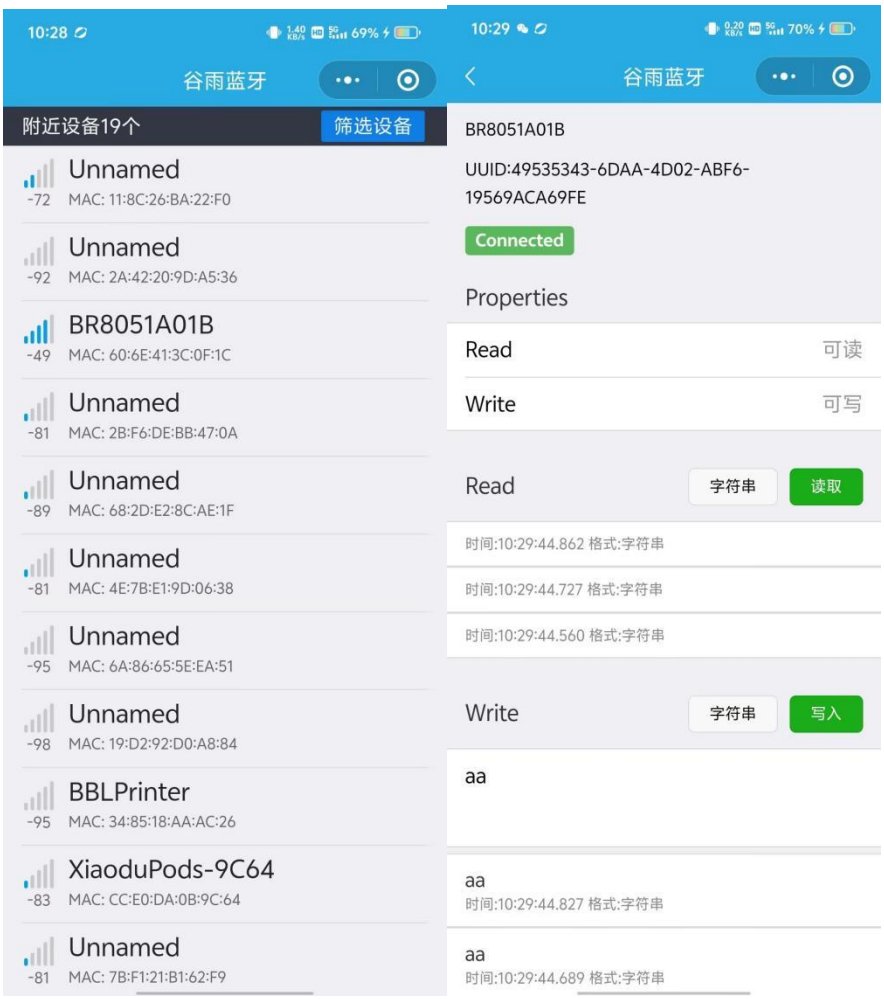




Press it on the keyboard：Ctrl + A ， Then press S to exit

Below is a screenshot of the monitored data





Wechat mini program search Guyu Bluetooth, search BR8051A01B, click Connect, select general view.Write a character test to see if the terminal is listening to data.

FCC Warnning:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection againstharmful interference in a residential installation. This equipment generates, uses and can radiateradio frequency energy and, if not installed and used in accordance with the instructions, maycause harmful interference to radio communications. However, there is no guarantee thatinterference will not occur in a particular installation. If this equipment does cause harmfulinterference to radio or television reception, which can be determined by turning the equipmentoff and on, the user is encouraged to try to correct the interference by one or more of thefollowing measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this 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.

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 and your body.