Meshtastic devices

Project Overview

1. Meshtastic devices can help explorers stay connected in remote mountainous areas where there is no mobile phone signal, share location, send emergency distress signals, etc.

2. In some small communities or remote villages, Meshtastic mesh networks can be built to meet local communication needs, such as notification and emergency warning in the community.

3. In the event of damage to traditional communication infrastructure caused by natural disasters (such as earthquakes, floods, etc.), Meshtastic equipment can be quickly deployed to establish an emergency communication network to provide a means of communication for rescuers and affected people.

Equipment specifications

1. Hardware specifications

1. Hardware device type: wireless communication equipment, GPS positioning sensor

2. Dimensions and weight: length 4.8cm, width 1.3cm, height 0.9cm

3. Power requirements: 180mAh battery

4. Processor and memory: 32-bit ARM Cortex-M4F processor, 256KB RAM (random access memory) and 1MB Flash (flash memory).

5. Communication interface: LoRa wireless communication

6. Sensor characteristics: diversified data collection, perception of location information, low power operation, high sensitivity and accuracy, good compatibility.

7. Actuator characteristics: remote control capability, fast response, reliability and stability.

User Interface Specifications (Applications)

1. Interface layout

1. Function menu: for adding devices to connect devices

2. Contact management: Each contact displays information such as name, node address, etc., which is convenient for users to quickly select contacts to send messages

3. Map view: The Mesh app interface provides a map view option, which can display the geographical location of each node on the map

2. Interactive functions

1. Text messages: Users can send and receive text messages to facilitate simple text communication, such as communicating routes, plans and other information between teammates during outdoor adventures.

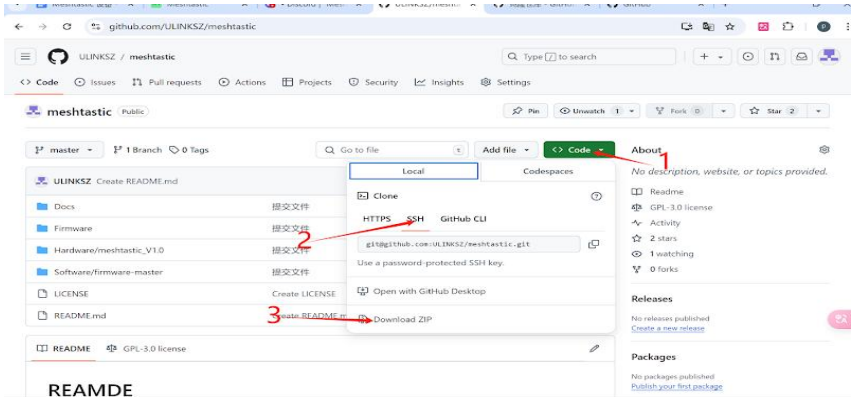
2. Custom message format: Users can define the message format according to their own needs, which enhances the flexibility and applicability of the function and meets the special requirements for message content and format in different scenarios.

3. The device is integrated with a GPS module, which can transmit the location information of the device in real time. This is useful for outdoor activities, emergency rescue, and other scenarios, where team members can quickly understand each other's location for gathering, rescue, or collaborative action.

Use the specification configuration to burn in

1. Download Visual Studio Code and download Platformio as an extension

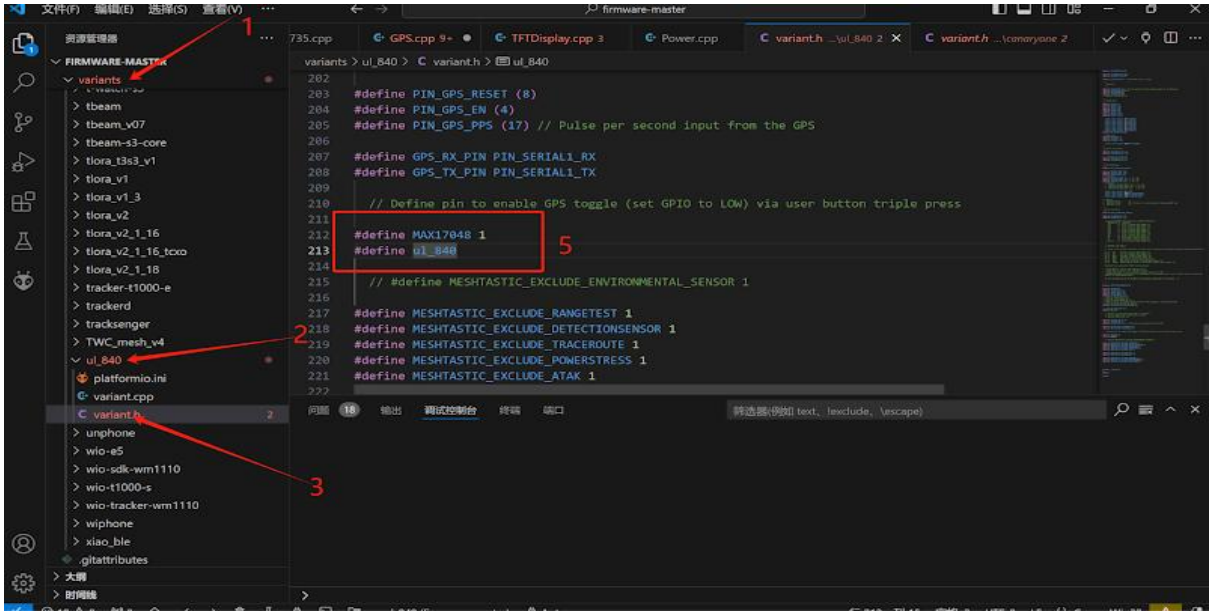
2. Download the meshtastic-master archive in GitHub and decompress it



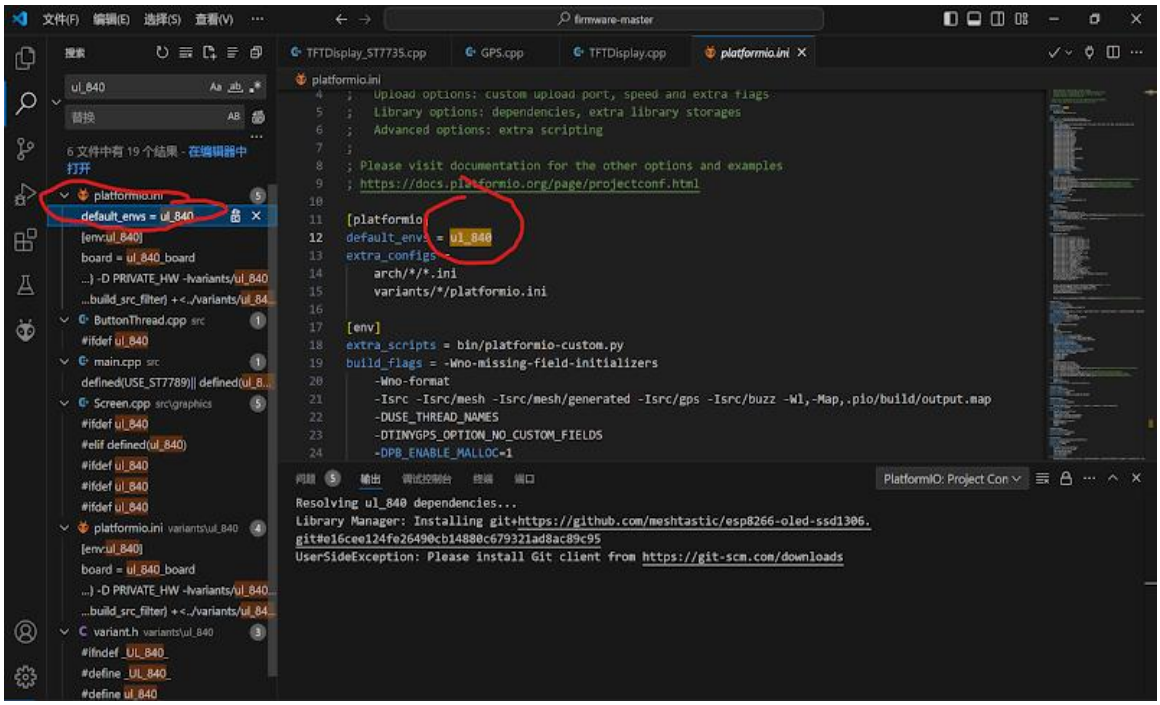
https://github.com/ULINKSZ/meshtastic

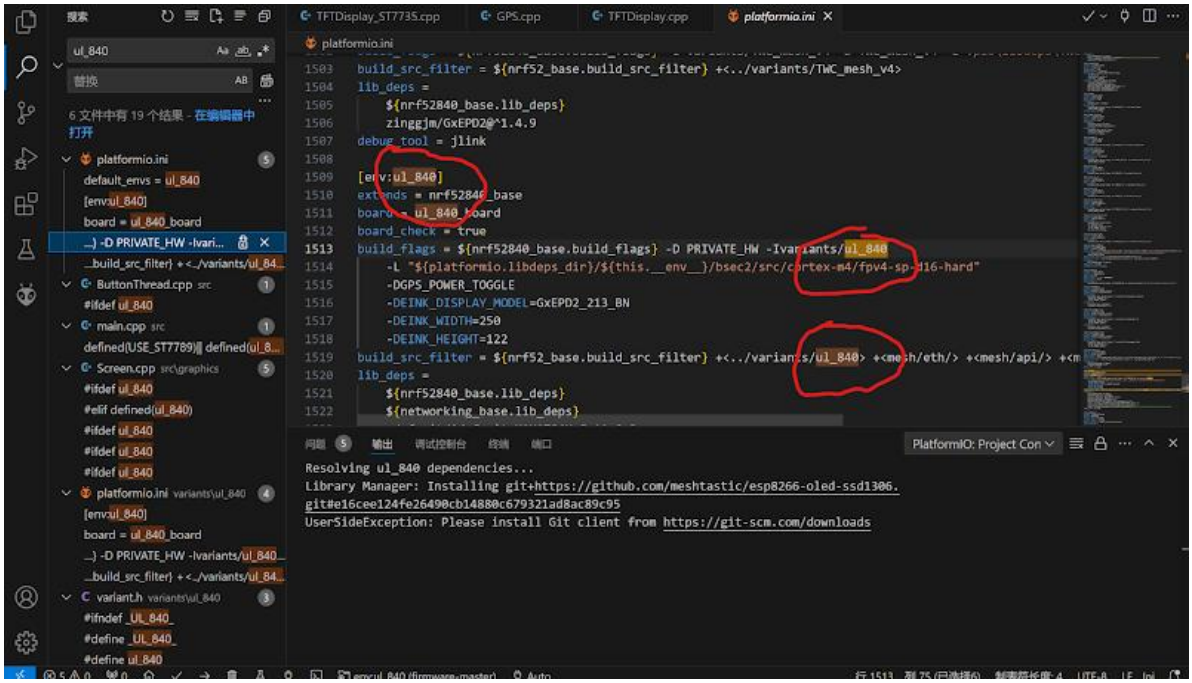
3. Open the firmware-master folder with Visual Studio Code

4. Open

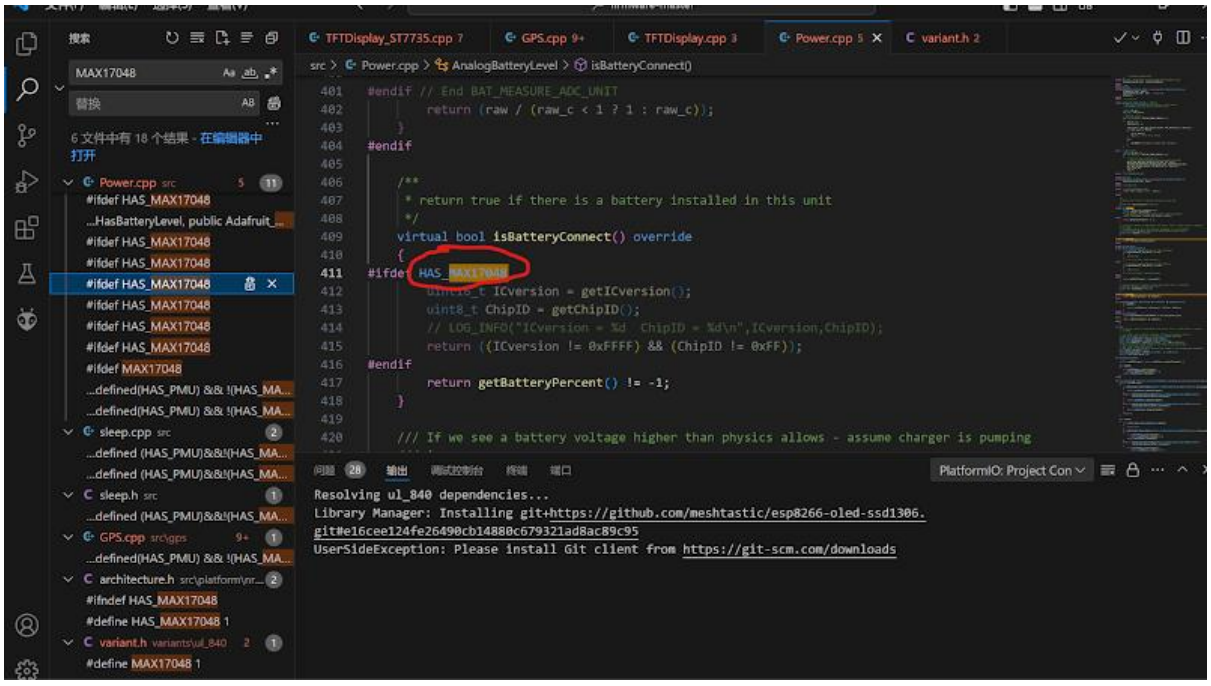


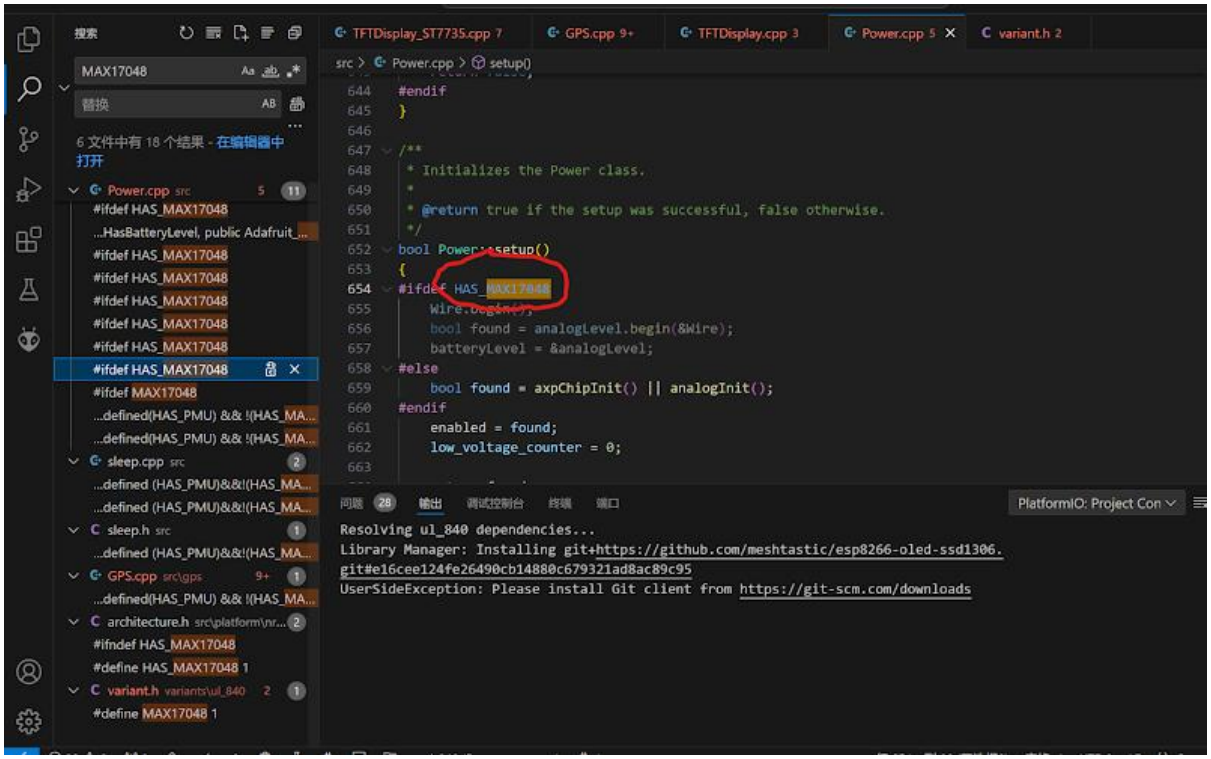
5. Modify ul_840 (mainly the screen part)



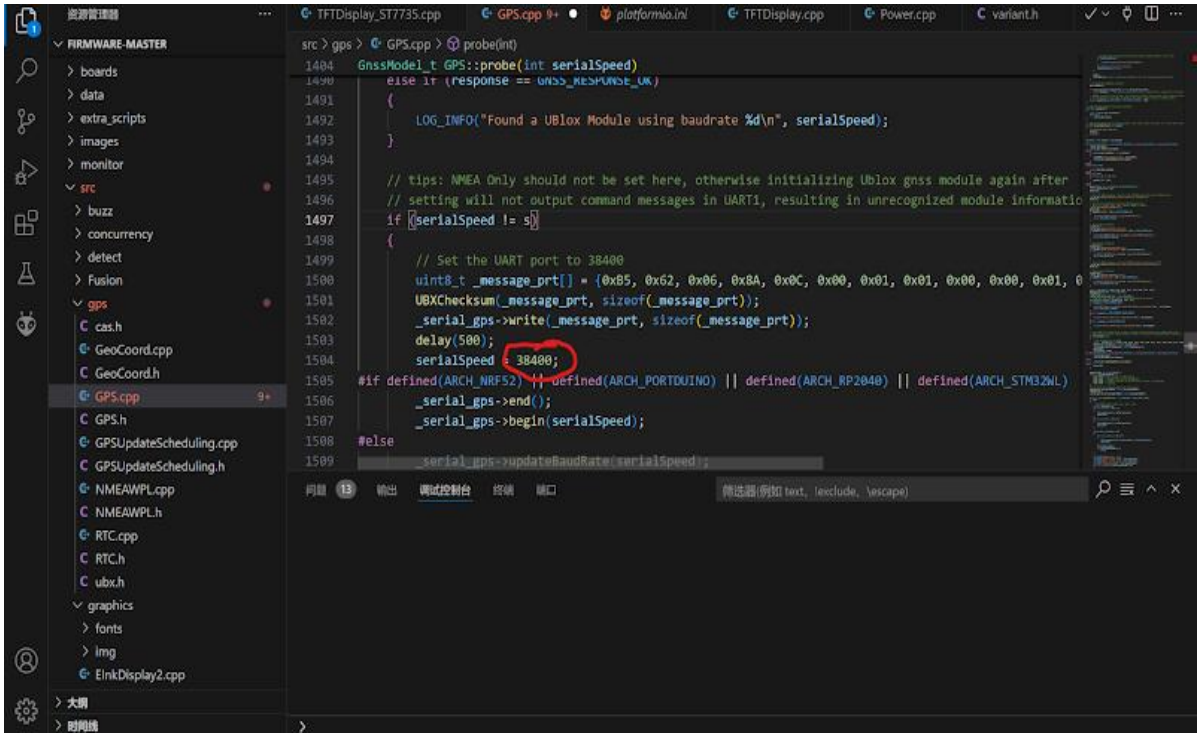


6. Modify MAX17048 (read coulomb meter)

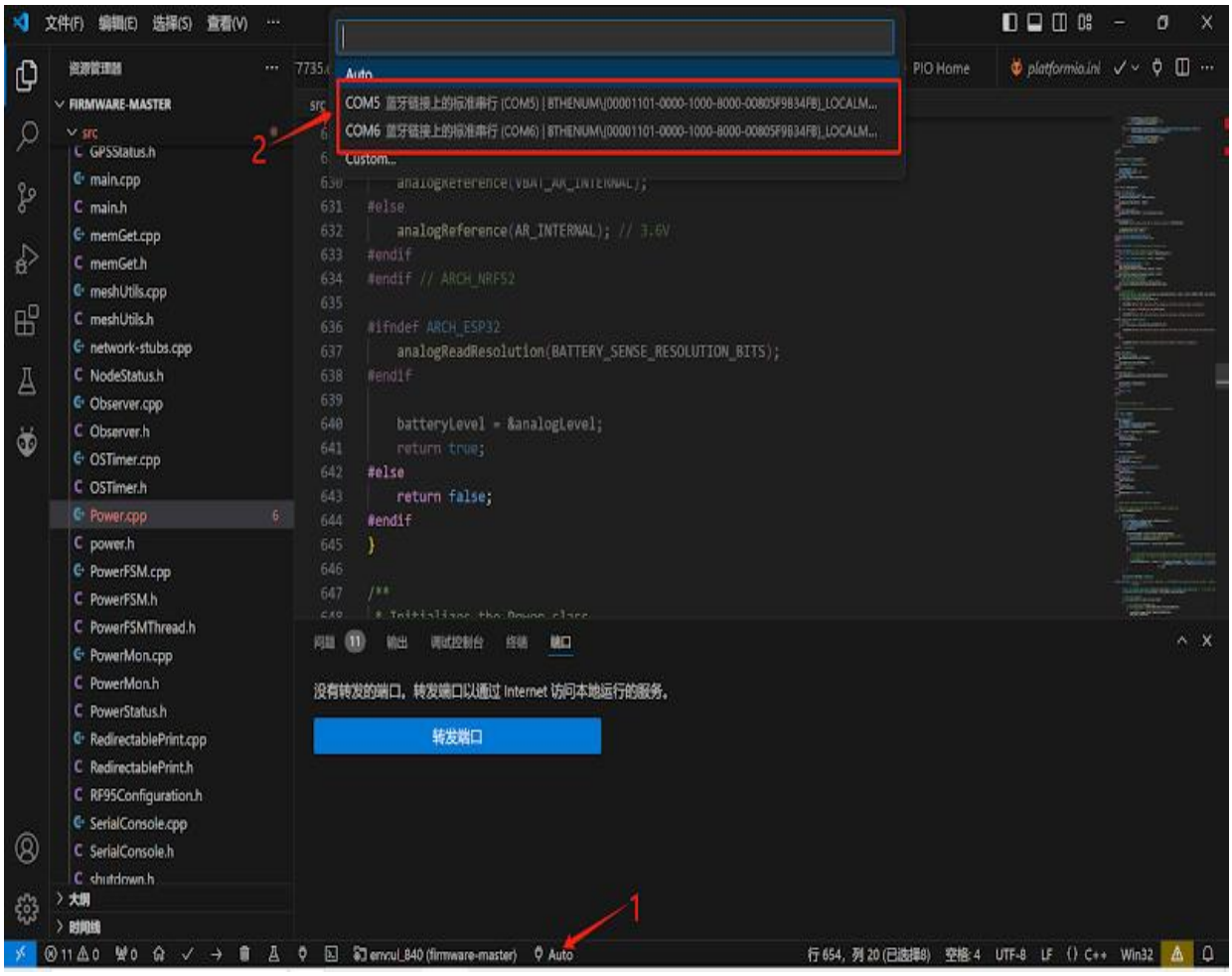




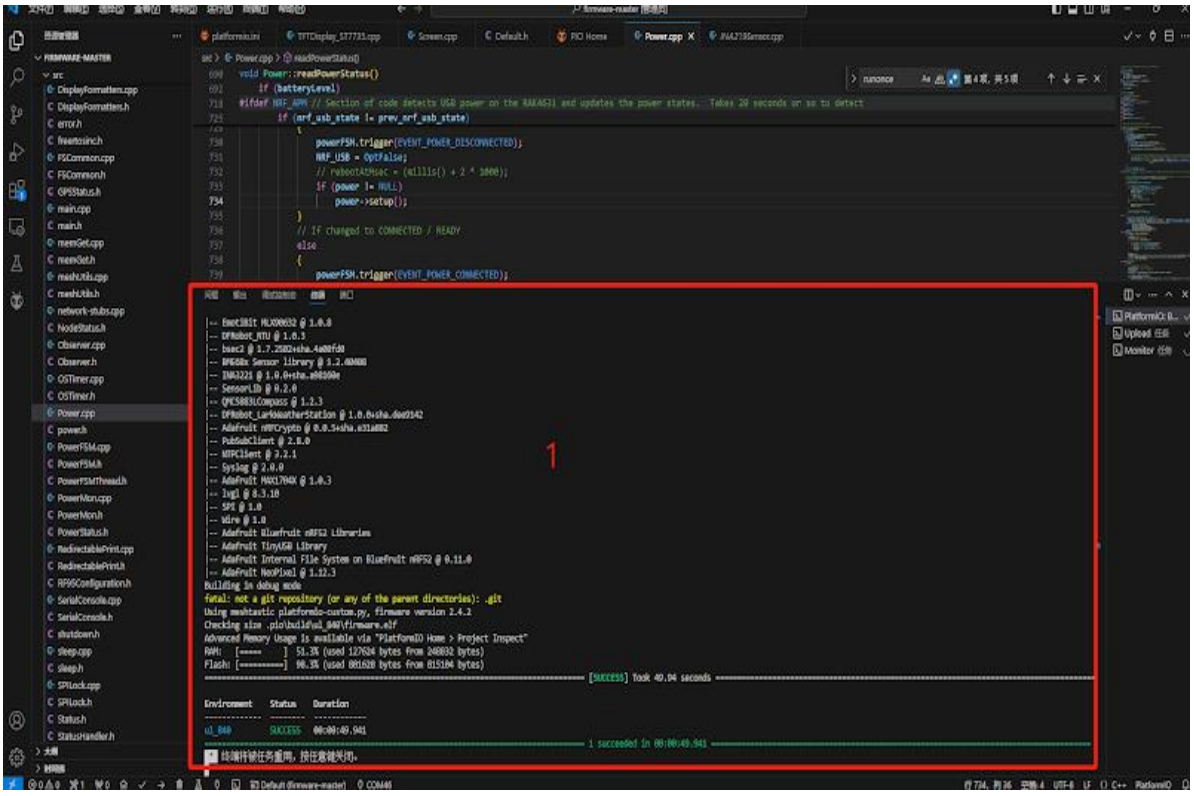
7. Modify GPS baud rate (open source code with M10S, only need to modify baud rate, and initialization code)



8. Configure the serial port



9. Click √ to compile 1 compilation successfully, compile correctly, click the arrow to burn in 2 burn successfully.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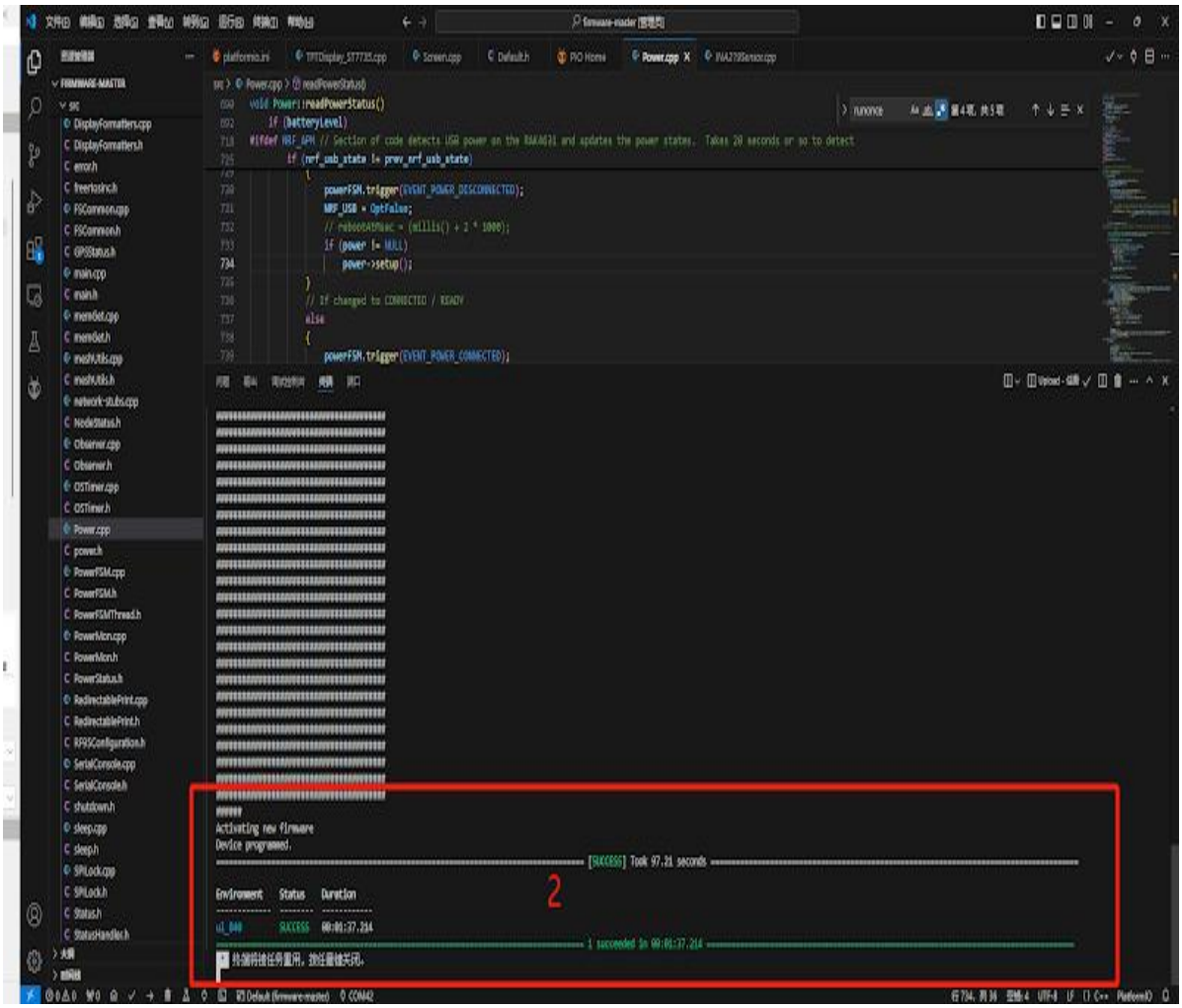
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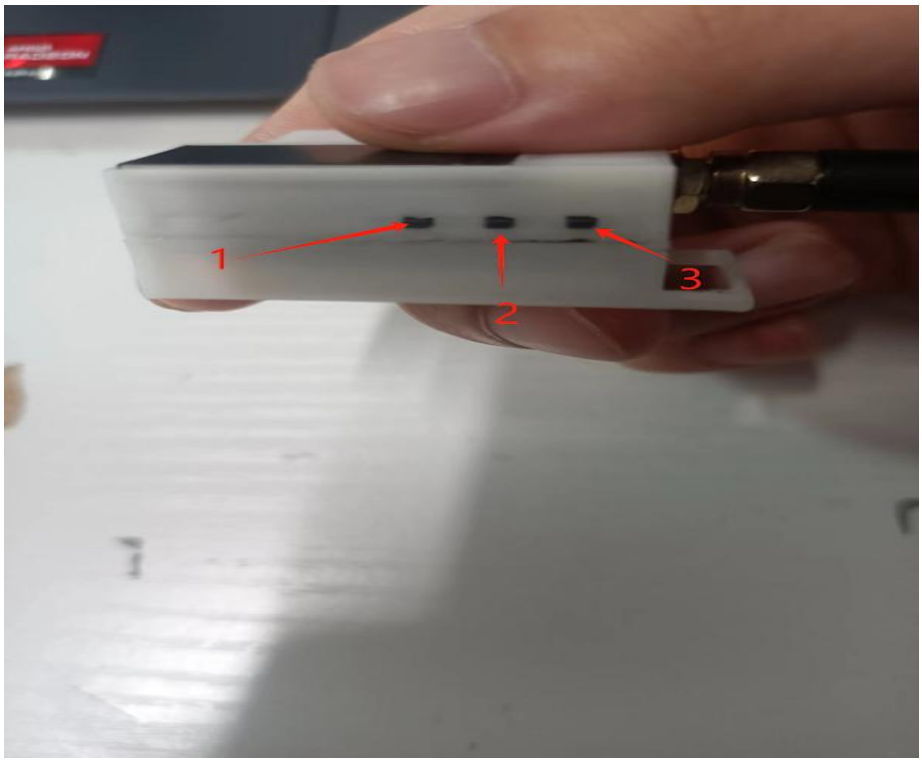
button to use

1. Power off to the left and power on to the right

2. Stand-alone 1 switches the upper and lower navigation bars, stand-alone 2 enters the navigation bar, and stand-alone 3 restarts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