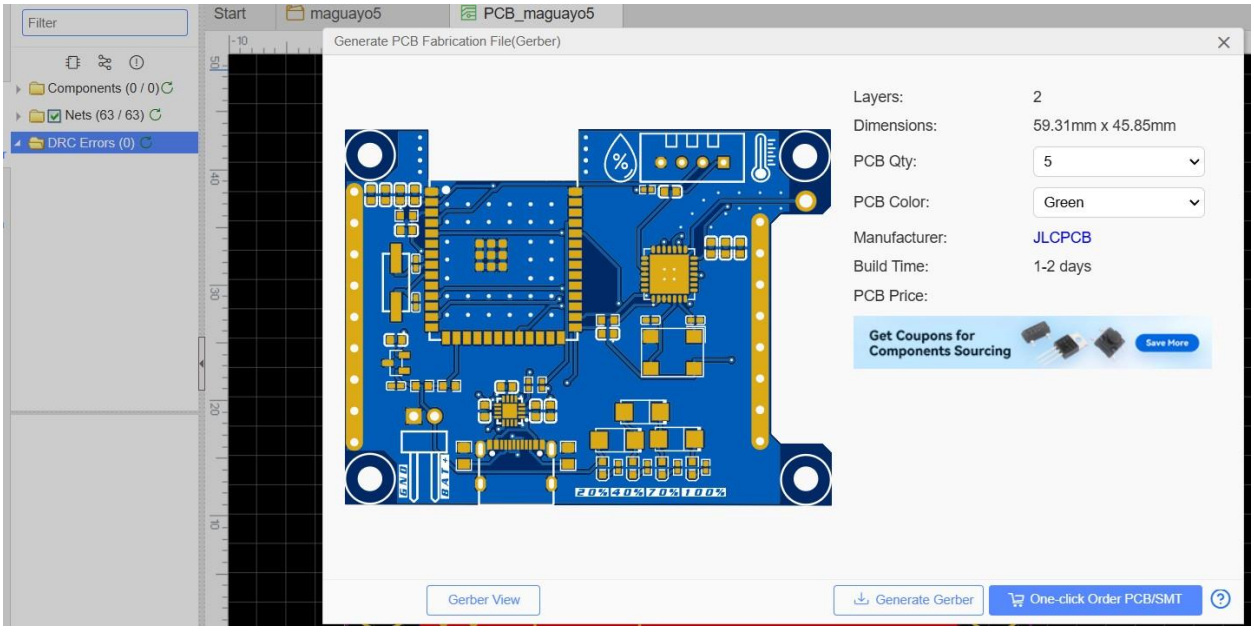
Info report

Introduction

Here I will present the info about the PCB.

ZIP File

In the zip file you will find the fabrication files and different photos of the PCB including the gerber photo that shows that the PCB has 0 DRC errors and all NETs are connected.



PCB

Functionality

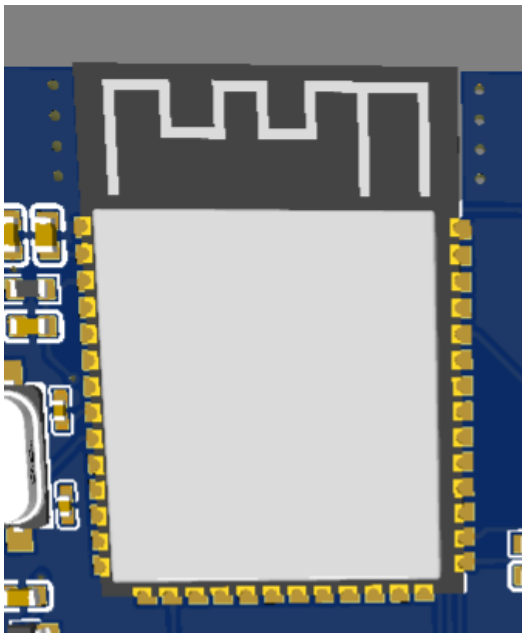
The PCB has a DHT11 sensor, a ESP32, a LoRa chip and other component.

The PCB can read the temperature and humidity and send it through LoRa module.

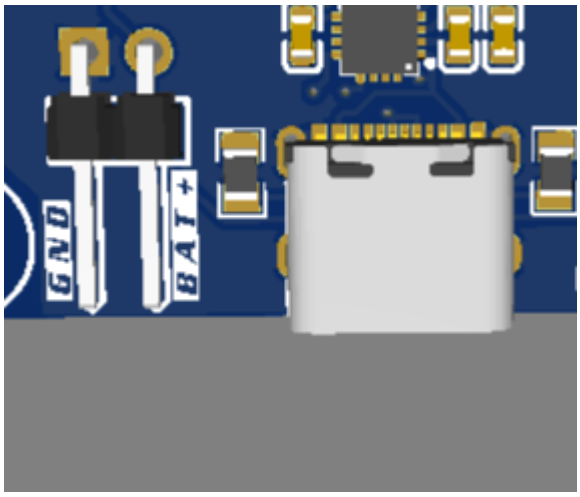
Layout

Here is the DHT11 sesnor:

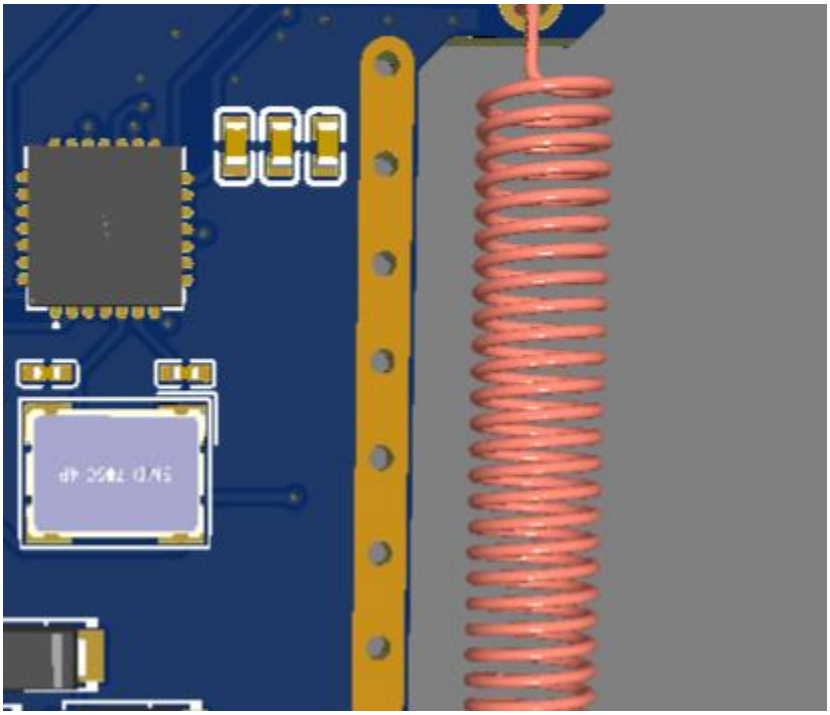
Here is the ESP32 MCU that has an antenna integrated:



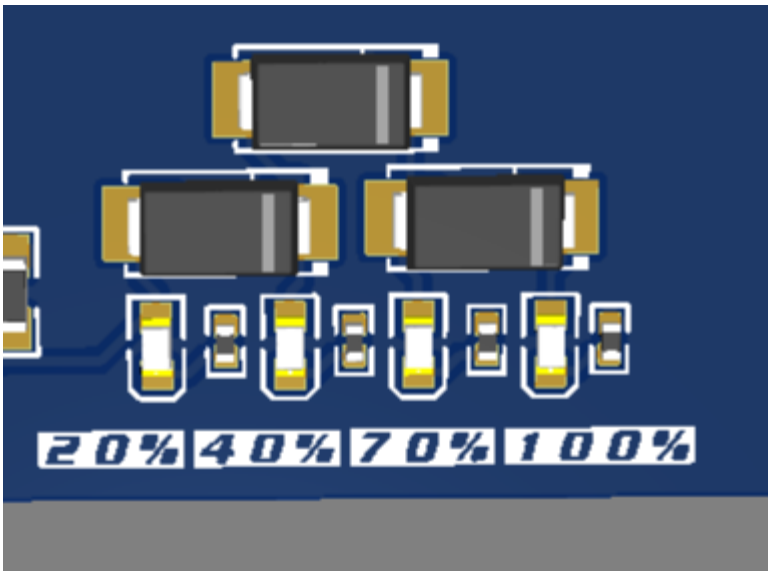
On the bottom left side of the PCB I placed the battery connector (3.7V Li-Po battery) and the USB C connector for MCU programming.



On the right side I placed the LoRa module and the antenna for it:

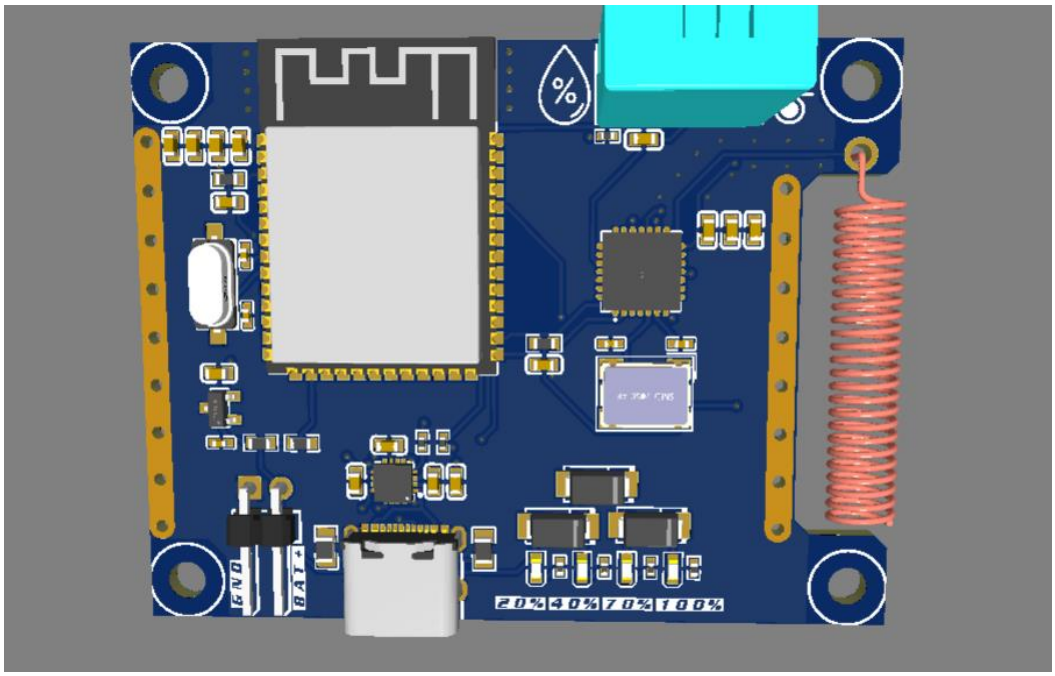


On the bottom side I placed 4 LEDs that show how much battery has left.

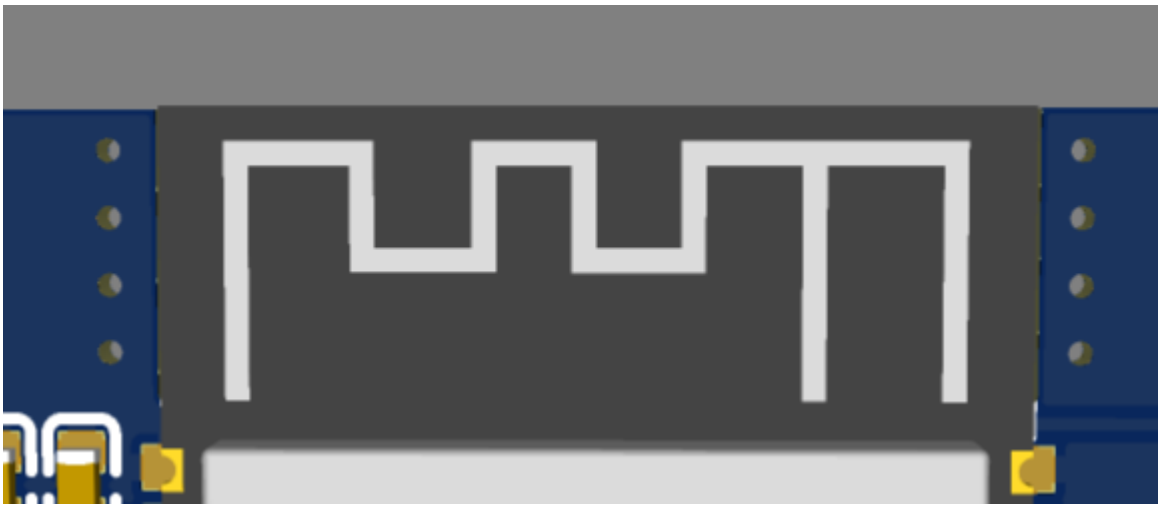


You can see here the battery remaining and also you can read the voltage from the GPIO46 of the MCU, so, you can send it through the LoRa.

On the right and left edges of the PCB I placed exposed grounded copper traces that assures the EMI protection and EMC of the PCB.

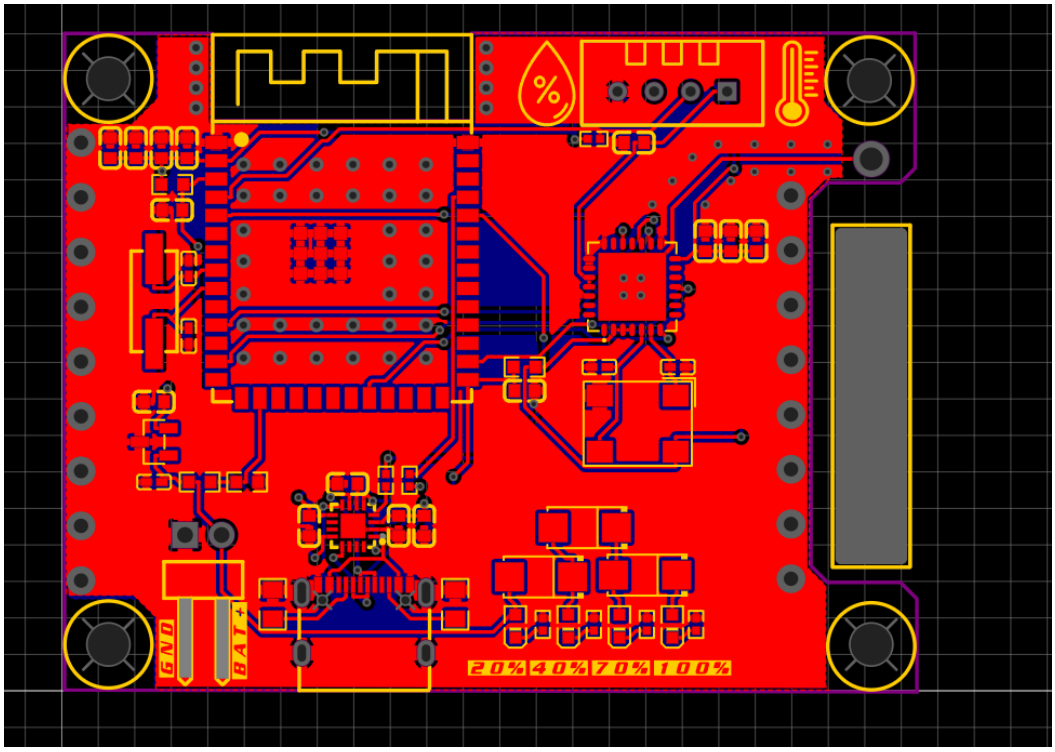


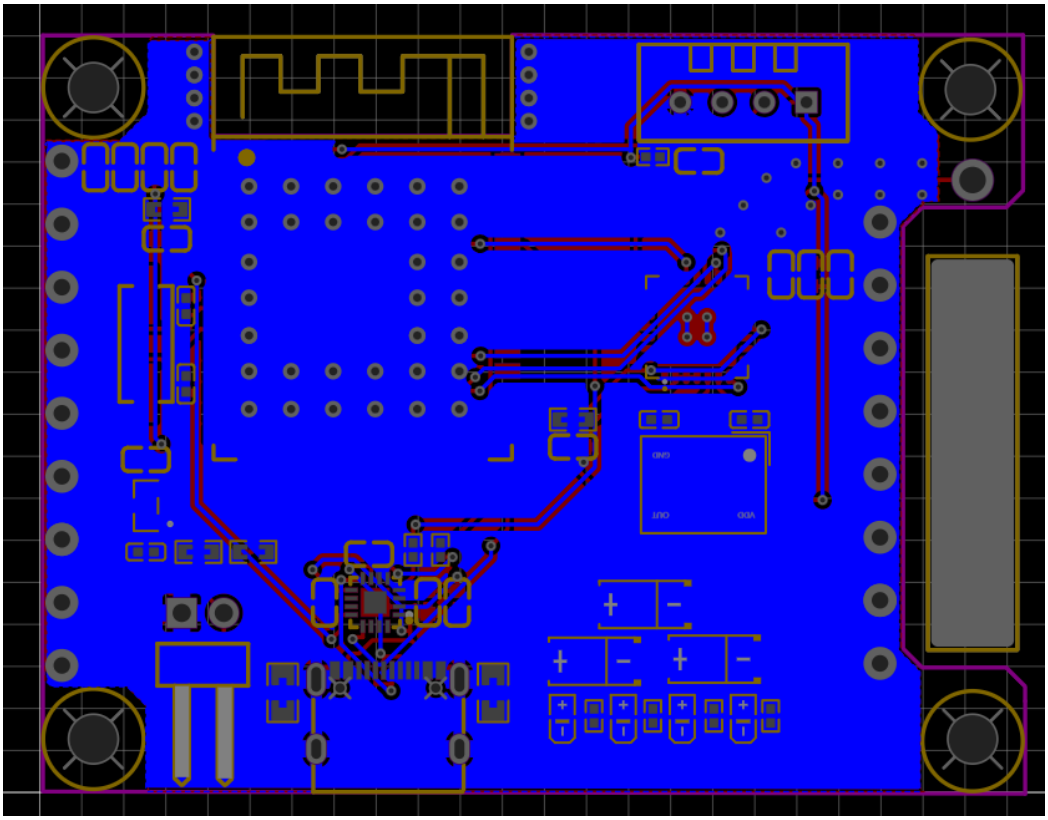
I placed protection vias near the antenna of the ESP23 too:



The trace for the LoRa antenna is protected too:

The PCB has top and bottom ground planes for better signal and better components fix:





I placed 4 mounting holes in each corner of the PCB.

When programming, please check the schematic so you will know where are the pins from the MCU connected.