Week 5 Progress Report

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Tasks Completed

- [Issue #140]() : Review LoRa Module connections
- SD card module connection
- Fabrication of new PCB
- Visited PAUSTI

ESP32 pinout

Studied the ESP32-S GPIOs and their common applications

Some pins can't be used as digital output pins, these pins are 6,7,8,9,10,11,34,35,36 and 39
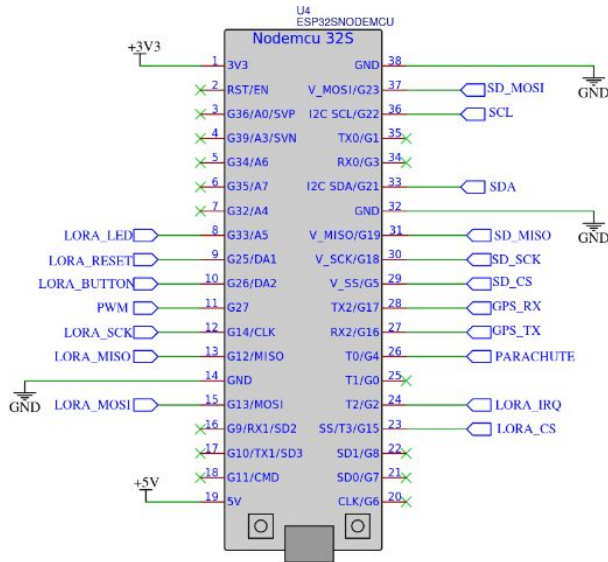
All GPIOs can be used as hardware interrupt pins

ESP32-S has:

i. 18 ADC interfaces
ii. 4 SPI interfaces
iii. 3 UART interfaces (only UART 0 and UART 1 are available for use)
iv. 2 I2C interfaces
v. 2 DAC interfaces
vi. 16 PMW interfaces
vii. 2 I2S interfaces
viii. 10 capacitive sensing GPIOs

LoRa module connection

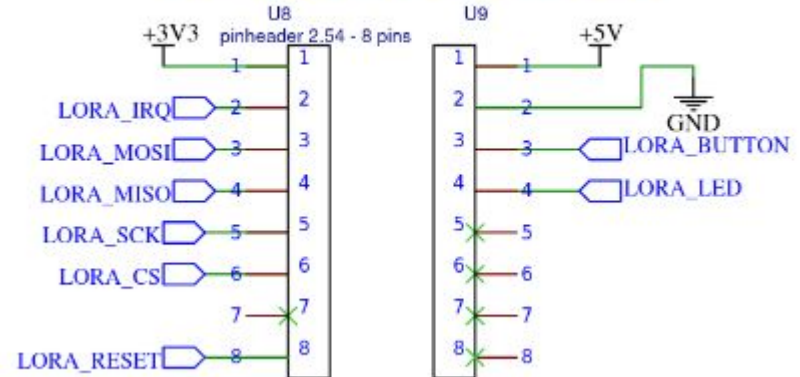HSPI (SPI2) configuration used

MOSI -> 13, MISO -> 12, CLK -> 14, CS ->15

NODE MCU
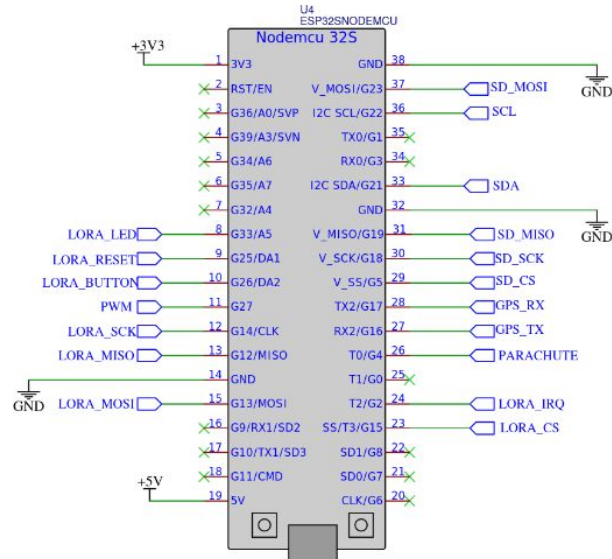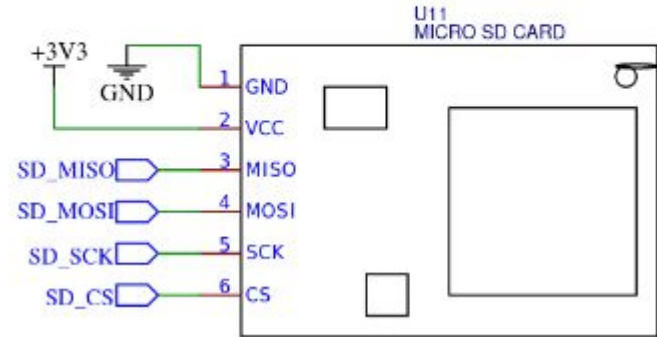
SD card module connection

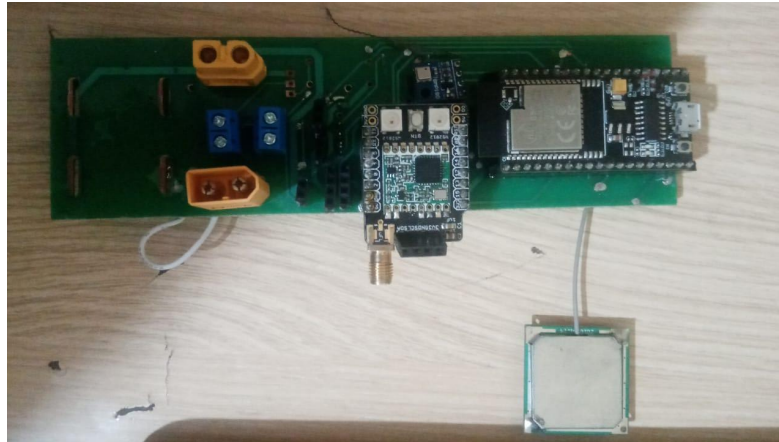VSPI (SP12) configuration used

MOSI -> 23, MISO -> 19, CLK -> 18, CS -> 5

Fabrication of new PCB

We fabricated a double-sided PCB at Gear Box.

The PCB had a lot of continuity issues. Some are yet to be resolved

Visited PAUSTI

We visited PAUSTI to find out what antenna testing equipment they have

The Electronics Lab has 2 VNAs and a Spectral analyzer which we will use to fabricate our antenna

They also have PCB fabrication equipment of upto 8 layers