

Nakuja Internship

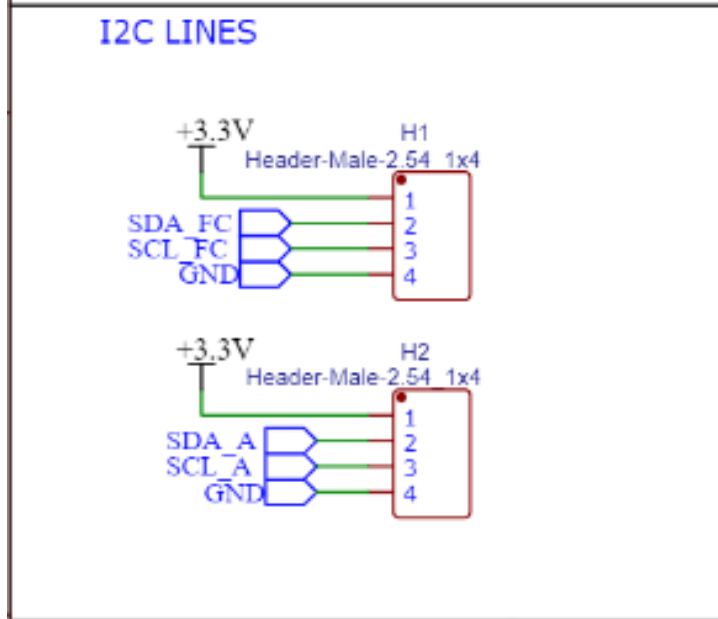
Avionics Progress report

Edwin Mwiti  
Junn Hope

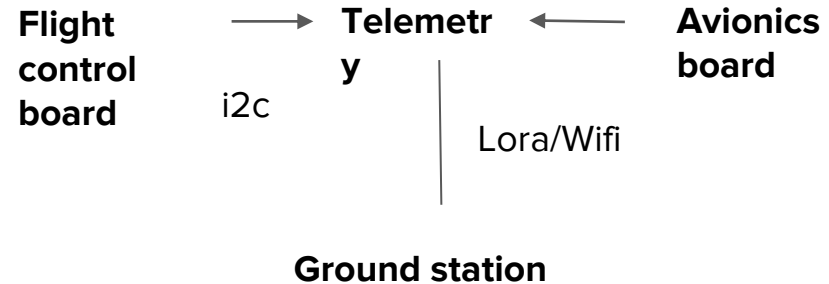
# Tasks completed last week

- [#Issue 4] : Getting acquainted with Avionics and Telemetry resources
- Onboarding and task planning
- Flight computer 2 review

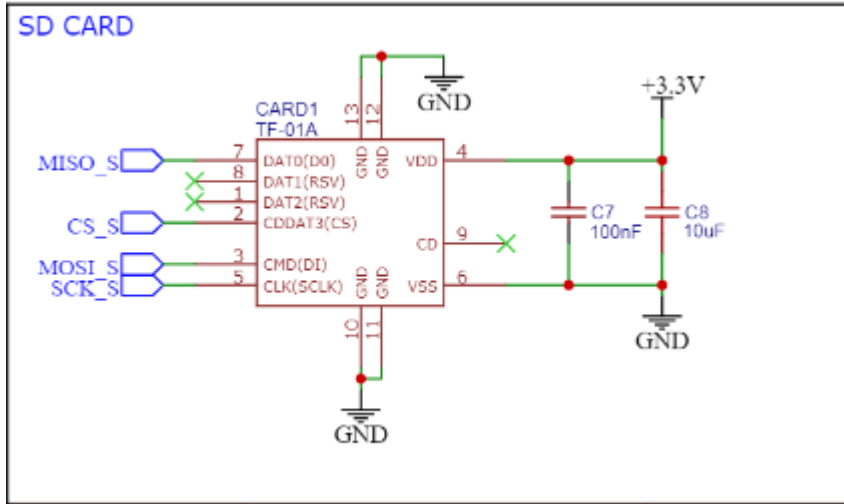
# COMMUNICATION CHANNELS



- I2C Communication
- Avionics board
- Flight control board

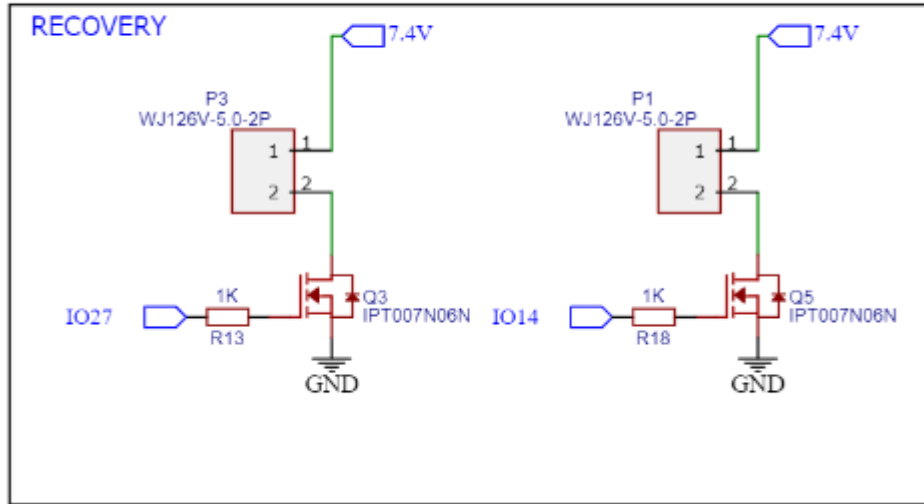


# STORAGE



- SD CARD MODULE
- Post flight analysis data
- velocity
  - acceleration
  - gyroscope(orientation)
  - altitude data

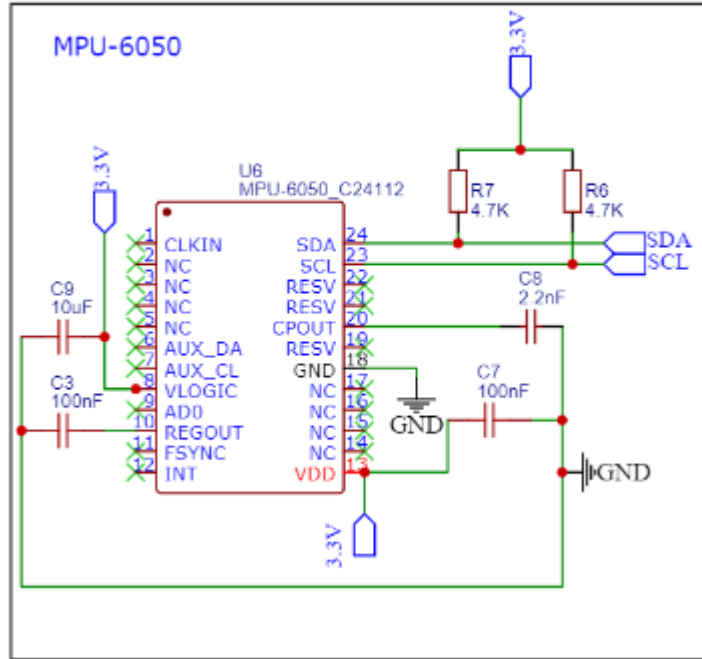
# Flight recovery



Flight recovery system:

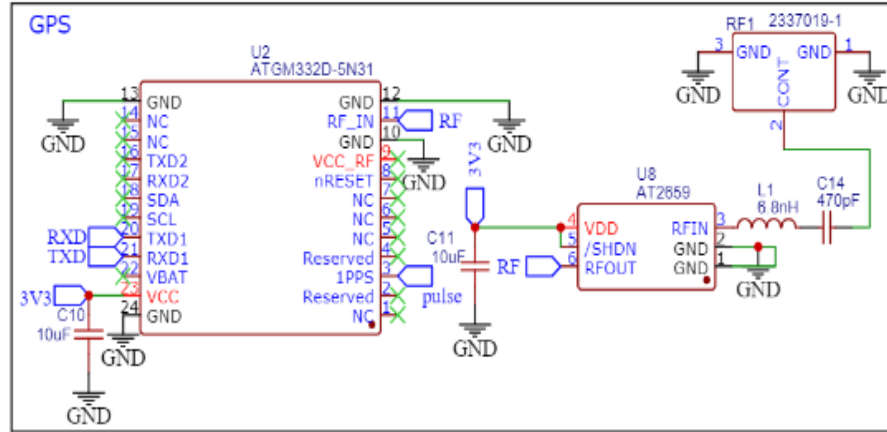
- Parachute deployment  
esp32 ~ 140mA  
mosfet ~ 2A

# Motion Tracking(MPU6050)



- Flight motion tracking:  
Gyroscope  
Accelerometer

# Flight Navigation



## GPS System

- Transmit real-time location data to ground station
- For recovery

# Tasks in this week

- [#Issue 1] : Research on data transmission (lora vs wifi)  
parameters: 1km > upload speed 272.16 kbps
- [#Issue 2] : Research on ground station  
parameters: 1km > download speed 1000 kbps
- [#Issue 3] : Research on ground station dashboard-Grafana
- [#Issue 30]: Research on camera module



## Timeline

Month	Intern week	Tasks
Jan	Week 1	Onboarding Getting acquainted with avionics and telemetry resources
	Week 2	Research on ground station & ground station dashboard Research on camera module Research on Data transmission
	Week 3	Avionics bay design Launch pad design
Feb	Week 4	Research on apogee detection logic Improve Kalman filter performance
	Week 5	Program Avionics and Telemetry boards
	Week 6	Test the boards
	Week 7	Testing and launch of N2