Nakuja Project

Edwin Mwiti Progress Report

Avionics

Tasks this week

- [#]Avionics bay design
- [#34]Programming the flight computer
- [#77] ESP Wi-Fi range test

[#]Avionics Bay Design

- Avionics bay design is still a work in progress
- Because of changes in PCB dimensions, additional battery requirements and the power management PCB that needs to be factored in

[#34]Programming the flight computer

- I have been coming up with the flight logic for the rocket.
- Flight software for N3 is being refactored from N2.
- Additional functionality includes modularization, addition of data transmission functions and a single apogee detection function

[#77] ESP Wi-Fi range test

- Using a Yagi-Uda directional antenna, we tested the maximum range data can be sent without loss using Wi-Fi from an ESP32 on a line of sight
- We found out that at 300m, the data packet transmission rate reduced considerably.
- The RSSI value of the Wi-Fi kept on decreasing as the distance increased.
- RSSI values ranged from -50 to -92.

Improvements to be made

- Have an aluminum patch antenna onboard the rocket for transmitting

- Activate the LR Mode on ESP32. Though this will reduce the speed of transmission considerably

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