# WEEK 1 PROGRESS REPORT

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ENE221-0109/2017

# Getting Familiar with avionics system

The avionics system consists of:

- ESP32-S MCU
- BMP sensor
- MPU sensor

Telemetry involves recording and sending the sensor readings to the ground station

The groundstation is a second ESP32-S MCU

# Telemetry

Telemetry data is sent from rocket to ground station over WiFi

ESP 32 has inbuilt WiFi capability IEEE 802 b/g/n operating at 2.4 GHz

An onboard SD card module to telemetry data during flight as redundancy

# ESP 32 WiFi (from datasheet)

| Parameter | Condition | Min | Typical | Max | Unit |
|---|---|---|---|---|---|
| Operating frequency range [note1] | - | 2412 | - | 2462 | MHz |
| RF Power | | 802.11b:26dBm<br>802.11g:25.42dBm<br>802.11n20:25.48dBm<br>802.11n40:25.78dBm | | | dBm |
| Sensitivity | 11b, 1 Mbps | - | −98 | - | dBm |
| | 11b, 11 Mbps | - | −89 | - | dBm |
| | 11g, 6 Mbps | - | −92 | - | dBm |
| | 11g, 54 Mbps | - | −74 | - | dBm |
| | 11n, HT20, MCS0 | - | −91 | - | dBm |
| | 11n, HT20, MCS7 | - | −71 | - | dBm |
| | 11n, HT40, MCS0 | - | −89 | - | dBm |
| | 11n, HT40, MCS7 | - | −69 | - | dBm |
| Adjacent channel rejection | 11g, 6 Mbps | - | 31 | - | dB |
| | 11g, 54 Mbps | - | 14 | - | dB |
| | 11n, HT20, MCS0 | - | 31 | - | dB |
| | 11n, HT20, MCS7 | - | 13 | - | dB |

# Challenges

Some concepts were totally new to me, but am slowly getting the hang of it