

RECOVERY TEAM



WEEK X PROGRESS REPORT

THIS WEEKS ACTIVITIES

- Drilling of PCB
- Soldering components
- Testing flight computer and PDB
- 3D printing of the ejection system components
- Determining the sample rate & data acquisition

Gantt chart

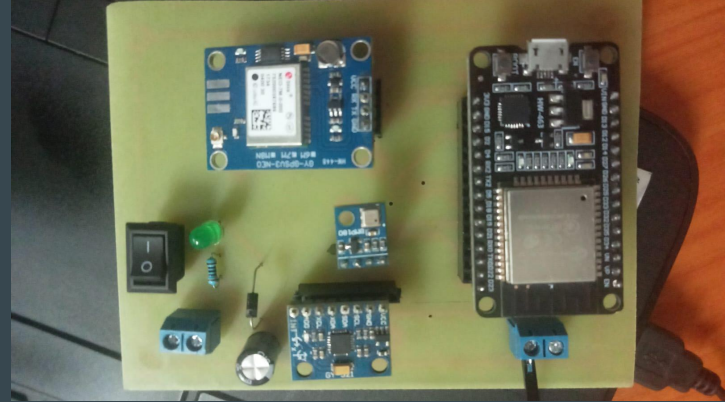
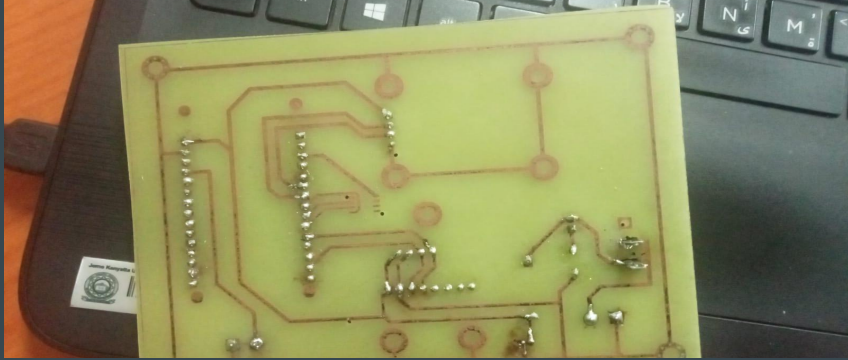
Display Week: 10						3-Jul-23						
						3	4	5	6	7	8	9
TASK	ASSIGNED TO	PROGRESS	START DATE	END DATE	DURATION	M	T	W	T	F	S	S
Introduction	N/A	100%	2-May-23	5-May-23	3							
Change the piston cylinder to steel	E/T	100%	8-May-23	12-May-23	4							
Implement the OTA updates to the system	V/C/B	100%	15-May-23	19-May-23	4							
Rectifying the code for the piston test	S/B	100%	17-May-23	19-May-23	2							
Design the Mechanism for holding the flight computer	B/E	40%	12-Jun-23	14-Jun-23	2							
Design and fabrication of the ejection cap	B/E	70%	22-May-23	30-Jun-23	39							
Determine the amount of crimson powder to be used	E/T	50%	22-May-23	7-Jul-23	46							
Design and fabricate the PCB for the flight computer	P/C	95%	9-Jun-23	1-Jul-23	22							
Design the mechanism to hold the piston in the rocket	B/E	90%	5-Jun-23	30-Jun-23	25							
Test the ejection system with the nose cone		10%	28-Jun-23	5-Jul-23	7							
Test how to log data from the flash memory		10%	1-Jul-23	7-Jul-23	6							
Research the best time to eject the parachute	V/T	70%	22-May-23	9-Jul-23	48							
Test the flight computer		50%	7-Jul-23	12-Jul-23	5							
Test the communication system		0%	4-Jul-23	7-Jul-23	3							
Video transmission from the rocket		20%	23-Jun-23	5-Jul-23	12							

KEY:
B-Barbara
E-Erick
T-Tonny
P-Patrick
C-Catherine

3d printing



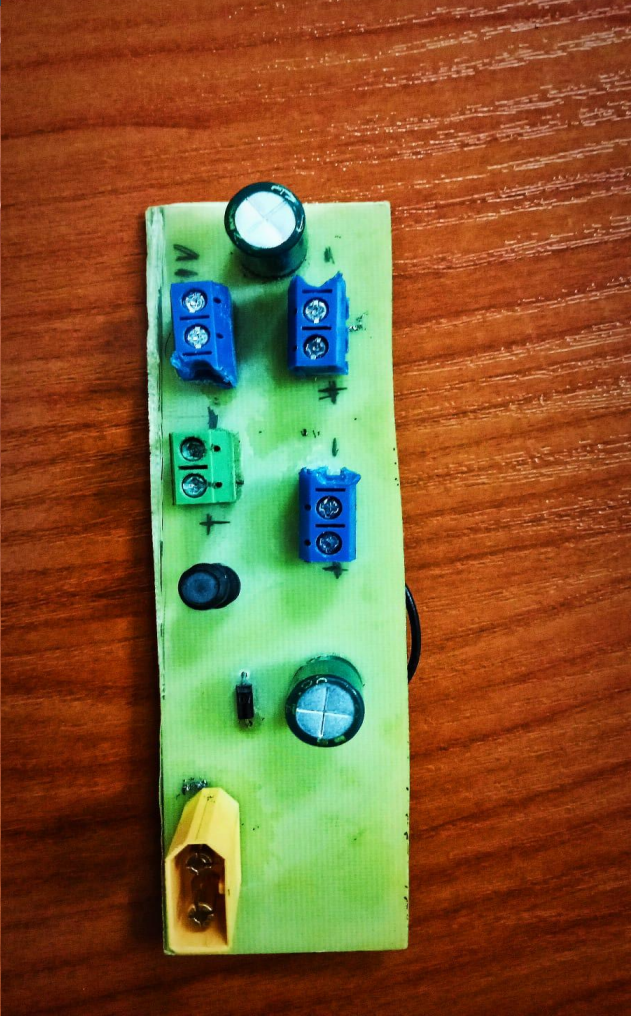
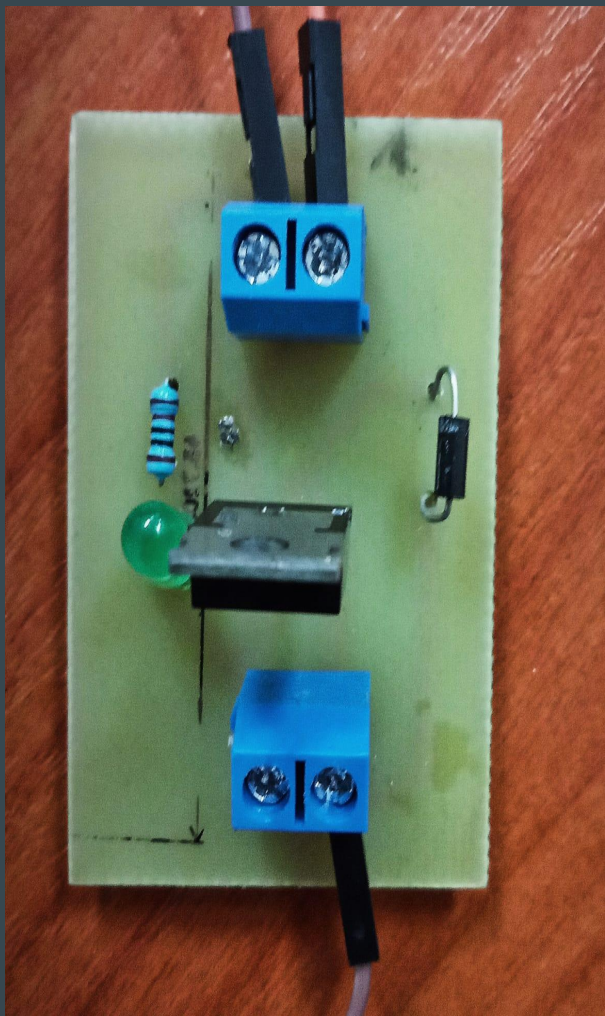
Soldering of components to flight computer



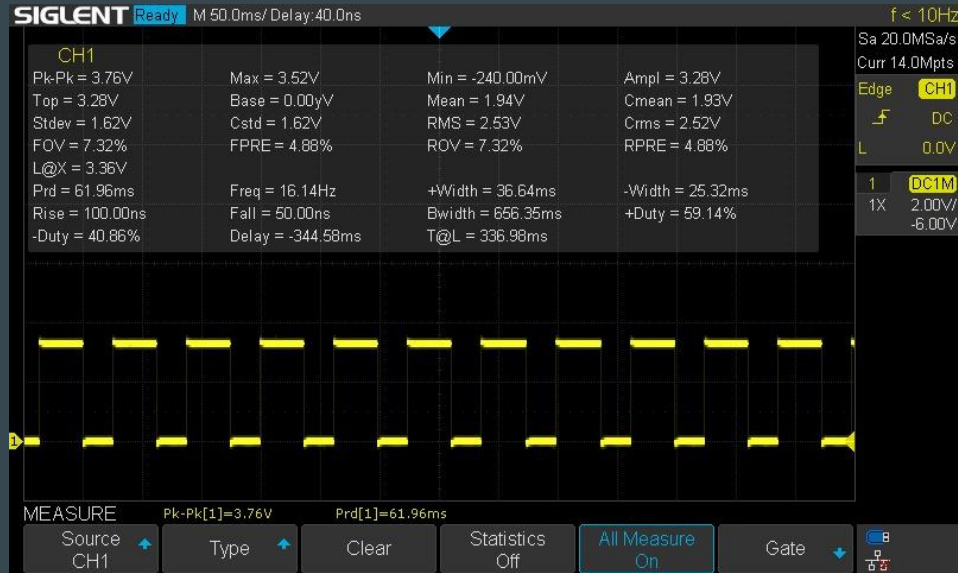
Testing of PDB and flight computer



- Acquired pcb schematics made by previous batch
- Uploading code and testing working of the sensors on the pcb and nichrome wire ignition to be done next week

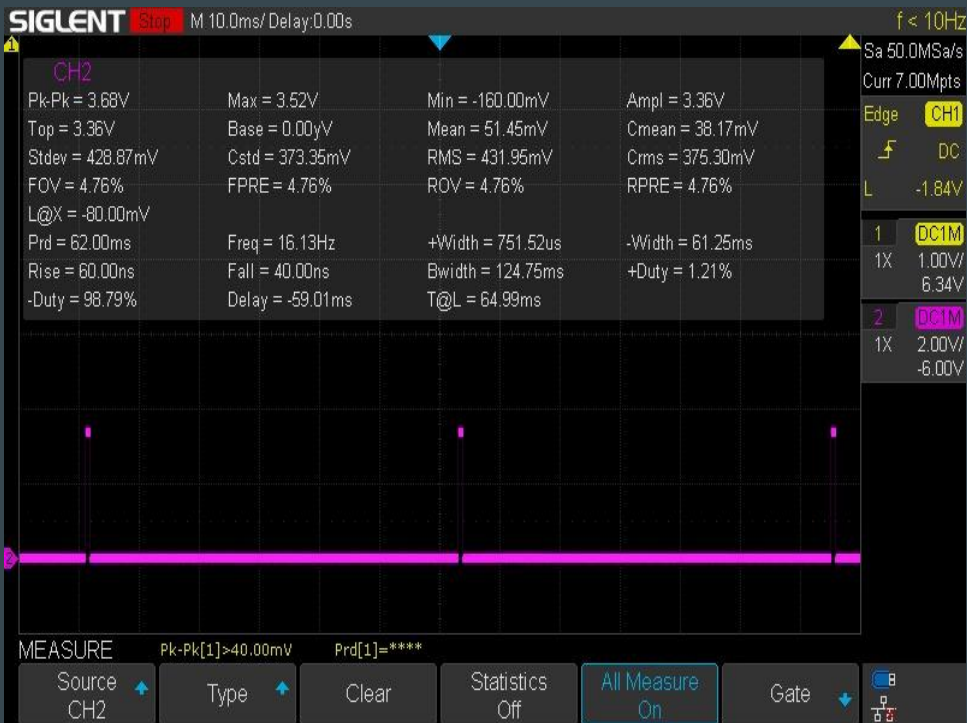


Sample rate - data acquisition



- Data acquisition from the three sensors
- 36.64ms for the code to be executed.
- Positive duty cycle 59.14%

BMP and MPU PRINTING



- Time taken for readings to be printed on serial monitor- 751.52 us
- Duty cycle- 1.21%

GPS PRINTING



- Positive duty cycle 70.62%
- Positive width 143.32 us

KALMAN FILTER



- Positive width -872.42ns
- Positive duty cycle 77.87%
- Almost instantaneously filtering of values by the kalman filter

ALL 4 CHANNELS



- Execution of the whole code

Challenges

- Components being taken without communication

Next week's task

1. Designing the mechanism to hold the flight computer during the drone test
2. Test the ejection system with the nose cone/ determine the amount of crimson powder to be used
3. Finalize on video transmission from the rocket
4. Test the range of the communication system