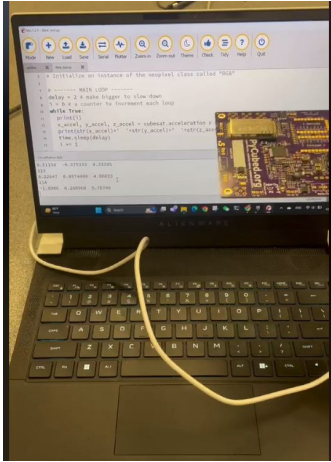


# Avionics Week 5 16/18-873F23



Collecting IMU data:

<https://drive.google.com/file/d/1Q1CBaLEFpnNZ1WbjKNR-YIwaFHF0KiW/view?usp=sharing>

## Blockers

- 

## Requirements

- Mechanical: Need to know internal layout of cameras so we can adjust board designs

## Weekly Results

- 2 more PyCubed assembled and powered successfully
- Basic example codes tested - NeoPixel, IMU

## Next week

- FPrime onboarding, run FPrime on PyCubed
- Start development of Solar Cell/ Magnetic torque coil board.
- Start development of battery board.

## Interfaces

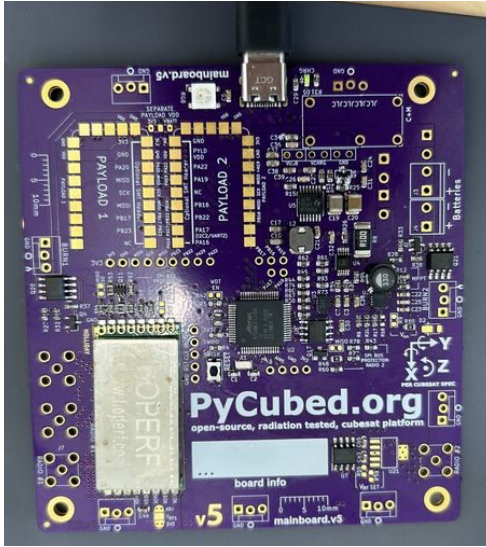
**Vision:** Software support for interfacing with cameras using Jetson

**GNC:** F' meeting

**Ops:** F' & RFM meeting

**Mech:** Internal layout, deployables, solar cells

# Avionics Week 4 16/18-873F23



## Blockers

- Camera selection for hardware development

## Requirements

- Actual compute module power consumption

## Weekly Results

- First PyCubed assembled and powered successfully
- Updates to power budget

## Next week

- Initial interfaces test on PyCubed module.
- Build 2 more PyCubed boards.
- Start designing Camera/ Solar and magnetic torque coil boards.
- Evaluate off the shelf/ design the Carrier Board for Jetson compute Module.

## Interfaces

**Vision:** Communication interface with ML module and control module

**GNC:** Meeting about software stack

**Ops:** Meeting about software stack

**Mech:** Fitting all six cameras with telephoto lens inside the CubeSat (PCB outline and arrangement)

# Avionics Week 3 16/18-873F23

## Block Diagram V1.1

## Blockers

- Waiting for the PyCubed board to arrive
- Parts selections for more accurate power budget estimation

## Weekly Results

- Created initial estimated Power Budget for major components
- Created more Fleshed Out Block Diagram
- Did initial Research on PyCubed Software Stack and F Prime Flight Software
- Started Designing the Drivers for Magnetic Torque Coils

## Next week

- Select software stack - CircuitPython or F Prime
- Talk with GNC Team about dividing Software Work
- Build pycubed boards for initial integration testing.

## Interfaces

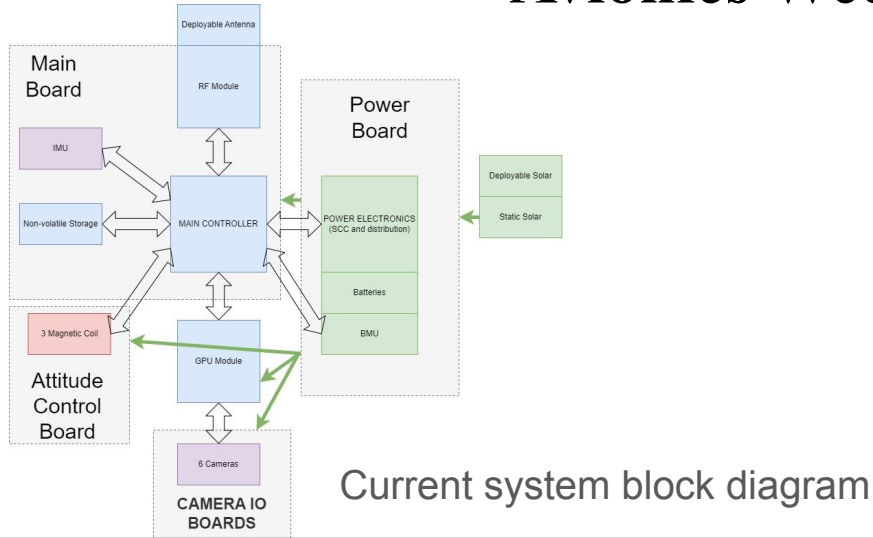
**Vision:** Compute module(s?) and camera selection

**GNC:** Division of software work, torque coil specifications

**Ops:** Develop command and data list for transmission

**Mech:** None

# Avionics Week 2 16/18-873F23



## Blockers

- None

## Requirements

- Camera and Processor specs from vision team
- IMU and Coil requirements from GNC team

## Weekly Results

- Created block system level diagram
- Discussed with all other teams about primary requirements
- Updated requirements

## Next week

- Get PyCube board running and run simple interface code with available sensors or other boards
- Solar estimation to determine whether we need deployable panels
- Power source and drain calculations with burst usage availability

## Interfaces

### Vision

- Camera and Processor Specs
- # of cameras and duty cycle

### GNC

- Power consumption of magnetic torque coils
- Orbit estimation for determining solar power, comm time

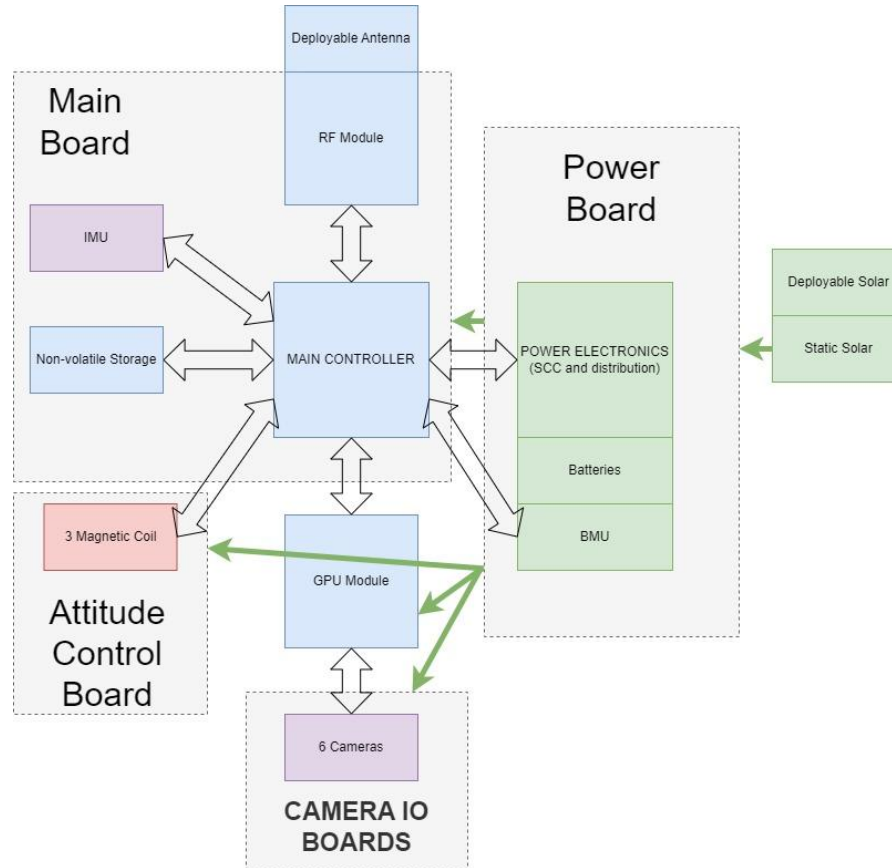
### Ops

- Data input and output
- Detailed power consumption for RF Module

### Mech

- Board dimensions and mounting options
- Deployable Switches

# Hardware Block Diagram



# Avionics Week X 16/18-873F23

Blockers



Weekly Results:

Interfaces

Vision

GNC

Ops

Mech

Next week: