

L2 Requirements

1. Power

- a. The CubeSat shall source more power than consumed by the system as a whole
- b. The CubeSat shall contain solar panels that can safely charge the CubeSat's battery
- c. The CubeSat shall maintain the battery in safe voltage and temperature windows
- d. The CubeSat shall have the minimum sized battery to power all operational modes
- e. The CubeSat shall generate all necessary voltage rails for powering features
- f. The CubeSat shall enable and disable individual power consuming elements of the CubeSat

2. Software

- a. The CubeSat software shall employ redundant software practices
- b. The CubeSat shall have fault-tolerance software with autonomous error detection and recovery mechanisms
- c. The CubeSat shall implement a software watchdog

3. Hardware

- a. All components within the CubeSat shall remain securely fixed in place during launch, ejection, and operation
- b. The CubeSat shall have backup hardware that can work individually away from the main hardware
- c. The CubeSat shall be able to operate within all specified temperature ranges
- d. The CubeSat shall implement a hardware watchdog
- e. The CubeSat shall implement all required avionics

Interfaces

Mechanical	Comms/Ops	Vision	GNC
<ul style="list-style-type: none">• Solar Panel Sizing and Count• Battery Spaceclaim• RBF and Deployment Switch• PCB Mounting and Spaceclaim• Wire Harnessing• Sensor Spaceclaims• Mass and CG Budgets• Thermal Budgets	<ul style="list-style-type: none">• Power requirements for comms components• Board design for Radio module• Flight software integration• Type of data/amount of data sent & received	<ul style="list-style-type: none">• Separate camera capture board that stores images before passing them over to the Jetson (so that we can be more efficient and use batch processing)• Decide on camera quantity• Determine compute power required for models	<ul style="list-style-type: none">• Calculations running on the PyCubed board• Magnetorquers for orientation• RTC for tracking image timing• Orbit Determination Running on payload board, separate from main board