

Overall System Mission

- normalized difference vegetation index sensing
- multispectral imaging capabilities
- image transmission

Technical Goals

- low-cost
- ease-of-manufacturing
- cubesat standard compliant
- sustainable power strategy
- COTS parts
- redundancy

Inspirations from:

- Manuel (build a cubesat)
- RG sat

Subsystems

- EPS
- Avionics / ADLS
- Communications
- Payload \rightarrow main board

EPS

- Input from solar cells ✓
- MPPT to maximise input to charger ✓
- Voltage regulation ✓
- Multiple power rails ✓
- degree of redundancy ✓
- Watchdog for issues ✓
- Battery charging ✓
- telemetry I2C bus ✓
- inibits ✓
- overcharge \rightarrow overcurrent handling ✓
- temperature control ✓
- reverse current protection on solar cells ✓
- low power MCU

EPS Block Diagram

