**CubeSat Power Management System**

Systems:

* Power Management Board

P31us (Gomspace)

* General Features:
* Optimized for 7 solar cells in series (or 4-solar cell string panels)
* 2 regulated power buses: [3.3V@5A](mailto:3.3V@5A) and 5V@4A (selectable)
* configured to operate with 4 3.7 V batteries in series. NO onboard batteries.

Needs to be connected to a BP-X.

* Battery is protec6ted against too low and too high voltages.
* Self-locking switches
* MPPT microcontroller capabilities:

Measures/Logs:

* Four Temperatures
* Current into and out of photovoltaic power converters. (power in and out of solar panels).
* Battery voltage
* Photovoltaic input voltage for each input converter
* Total voltage into the output bus converter
* Current out of all power output channels.
* Number of *latch-up* event detected for each power output channel.

Enabled User Controls:

* Switching on/off state of bus outputs
* switch on/off MPPT
* set/read parameters

(should all be parameters that need to be communicated to the flight computer).

* 4 Operative modes:

(1) Critical: Vcritical = 13.2 V

(2) Safe: Vsafe = 14.4 V

(3) Normal: Vnormal = 14.8 V

(4) Full: Vmax = 16.6 V

* Batteries

BPx (Gomspace)

* General Features:
* Utilizes 18650 lithium ion cells
* Can be configured for nominal voltages up to 28.8 V
* Several configurations ranging from 21.8Wh(3.3Ah) – 154Wh(20.8)
* Number of cells can be either 6, 8, 12, or 16
* Power consumption = 4mA. Off current = 15uA
* Short circuit protection
* Programmable controls
* Solar Panels