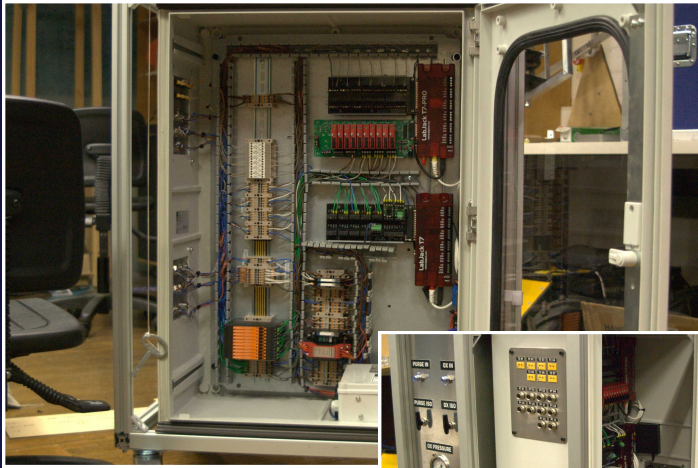


# Recently Completed Projects for ARES Rocketry

Lachlan Power



## Data Acquisition & Control Cabinet

For static testing and fuelling of our hybrid motor. Proposed, drafted and wired this cabinet, though the other members of propulsion were incredible with design and parts procurement.

- 7 thermocouples
- 12 pressure transducers
- 4 load cells
- 10 solenoid valve actuators
- 1 ignition/e-match output

Weidmuller, Rittal, Pacific Automation and Labjack sponsors; equivalent cost of the cabinet ~\$18,000

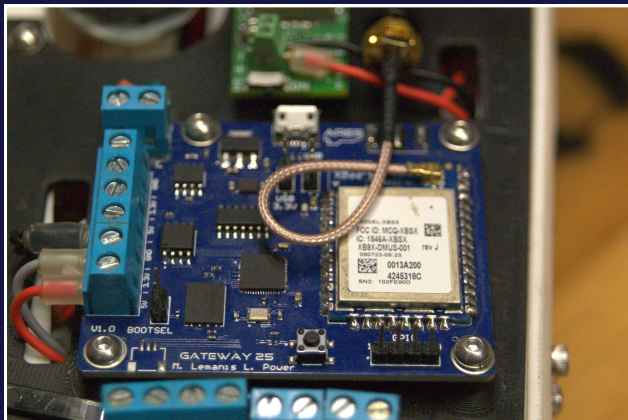
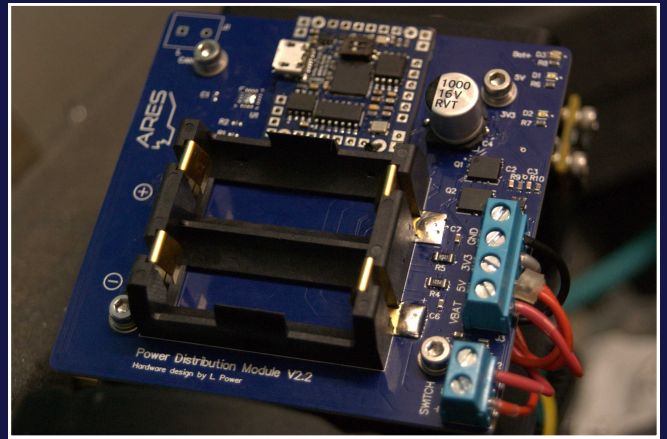


## Power Distribution Module + CAN Stamp Module

For battery power distribution in the avionics bay and airbrakes bay of our rocket.

- 5V and 3.3V switching regulators (underside)
- Current and voltage measurement
- Overvoltage and undercurrent protection

Instead of repeatedly re-routing and reflowing our CAN & RP2040 setup, I designed a small stand-alone module to be placed on any board that requires CAN communication.



## Gateway 25

The primary communications board with our ground station equipment.

Wireless communication - 900MHz XBee Module.  
Wired communication - CAN-FD signals processed with an RP2040 microcontroller.

We successfully received live telemetry from this board last flight.

Alongside helping out at every launch and meeting, and making sure members feel comfortable and included!

Tech Talk - L. Power

## What is an avionic?

A quick run down of the things you'll see us with on launch day



Featured on the ARES instagram (middle of the shot)

A recent talk I gave at a full team meeting