The control box allows the BQAP to be controlled and monitored over MQTT (the protocol which the service io.adafruit uses, that is a good server to use).

It has a thing called the watchdog in it. Beware this makes connecting over the repl a bit more complicated, you have to connect before the 5 seconds are up after first boot.

You need to get an api key from io.adafruit or similar, and a username.

You need the ssid and password, put it in the persistent\_vars.json file, you can edit it with any text editor. The file is machine readable, don’t mess it up, only change what’s inside the quotes.

The electrical schematic I’ll draw and get up in a minute. It’s very simple but it helps to know which pins are which.

The control box is currently powered with 5 volts from the b-g431-esc1 board. It has a regulator output for this purpose, this is common on moto drivers.

It is not particularly well tested yet but I did take it for a spin and poke and leave it running, changed everything I could think of and things seem to work without problems now.

I recommend screw terminal connectors for the wires at least, pluggable 3.81mm screw terminal connectors are good.

The cad files for the control box are in the main BQAP file, the geometry is in the main file there located in the right place. I will export stl files another time, perhaps, there is the step file there if you can’t access the fusion file.

Make sure you don’t forget the diode on the power input. That could lead to issues that could damage the usb port of a pc. Usb ports are supposed to be able to handle that kind of thing without the damage propagating to the rest of the computer, but they don’t always do that.