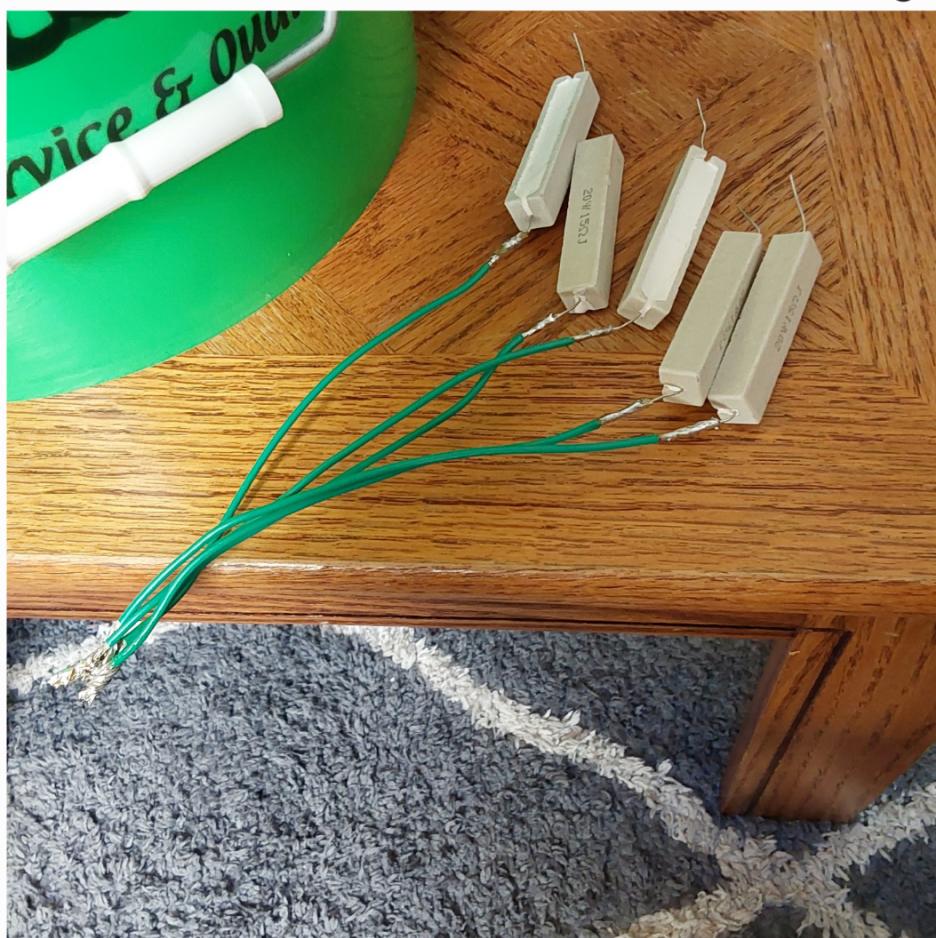


This week(11\_6) ii conducted testing of the 12V power adapter to gage its current draw. I purchased concrete resistors which have a max 20W rating.



These are soldered to wire to make them usable.  
Using this testing plan we monitored current draw

```
File Edit View

Testing plan:
voltage read: 12.31 +- 0.1V

simulating 1A, 3A, and 5.5A load

12/1A = 12ohms 12W to dissipate
12/3A = 4ohms 36 W to dissipate
12/5.5A = 2.182 ohms 66W to dissipate

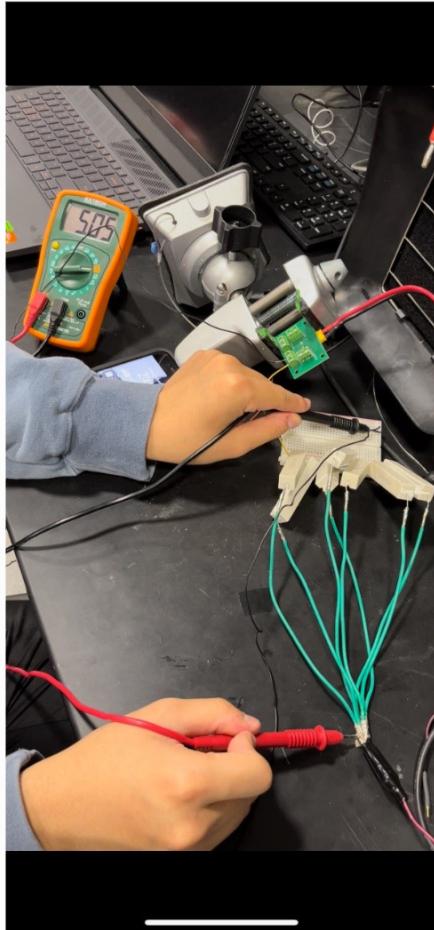
Using 7 cement resistors 15 ohms 20W in parallel 15/7 = 2.14: 12/2.14 =
7 resistors in parallel 12/2.14 = 5.6A

4 resistors in parallel: 3.75ohms->12/3.75ohms = 3.2A tested for 3A
2 resistor in parallel: 7.5 ohms -> 12/7.5 1.6A testing for 1A
Capacitor_THT:CP_Radial_D8.0mm_P5.00mm

Ln 12, Col 25 520 characters

2024 12:53 PM
```

I wanted to test this since the power supply has short protection and cut off when I tried shorting the leads, so I want to see if it can draw near the rating.



This was a testing setup when testing at 7 resistors in parallel. This was also a test of the power distribution board to see if it will fuse or break.

Connected to the wall we kept adding resistors in parallel to test with a max of 7.

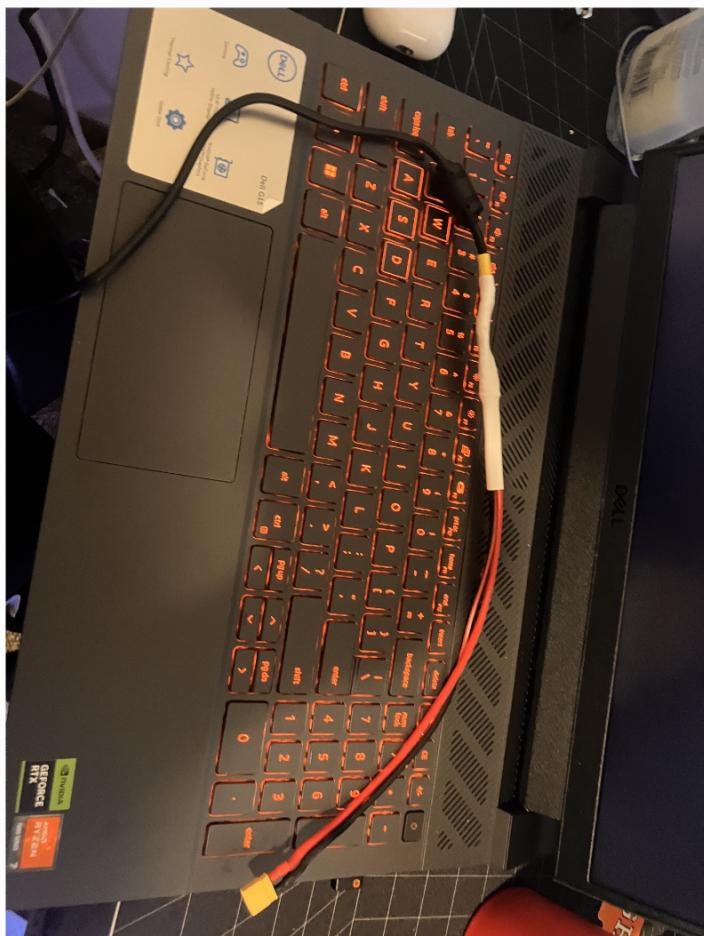
	Resistors(20 ohm Combined Ohm	Theoretical A	Real A
10	1	15	0.8
11	2	7.5	1.6
12	3	5	2.4
13	5	3	4
14	7	2.14	5.6
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			

The amperage draw is less than the predicted. This may be due to resistor heating and the power supply itself. While the amperage draw is less than the max draw of all devices running it the same time. We won't ever be in that situation with writing the firmware. Since we know that the amperage draw is consistent enough we can say that the power supply passes

The power distribution board also stayed cool and didn't fail from the test as well. Validating it

11/4

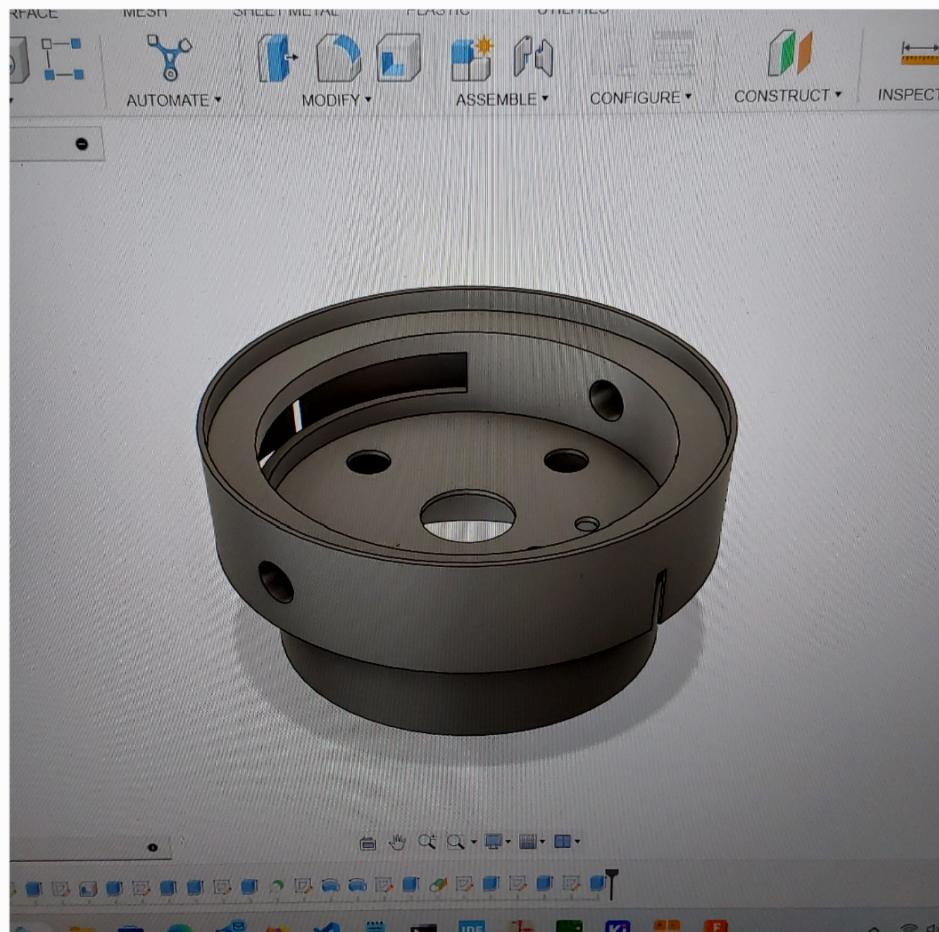
Power adapter was modified to a XT30 connector to be rated for high amperage draw. This was done with heat shrink and equipment from SCD



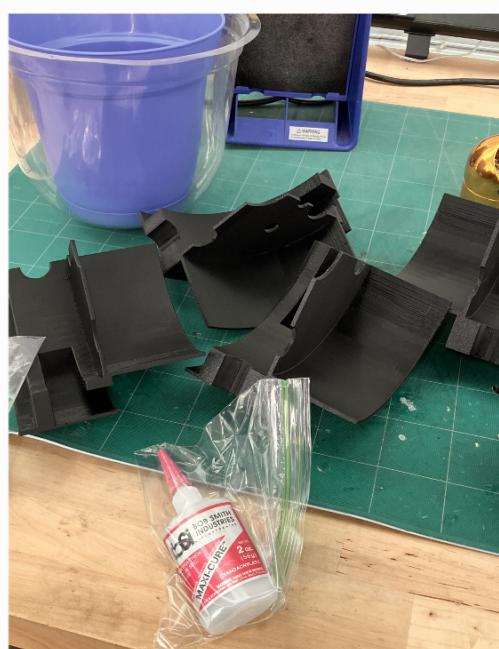
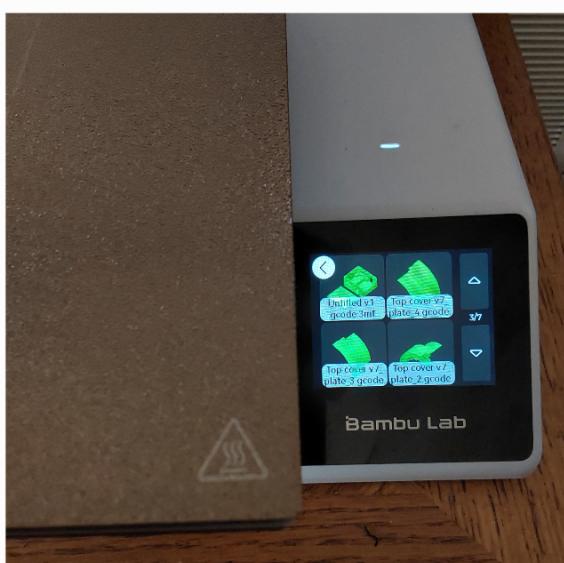
This was a fairly simple modification and tested to be outputting 12V

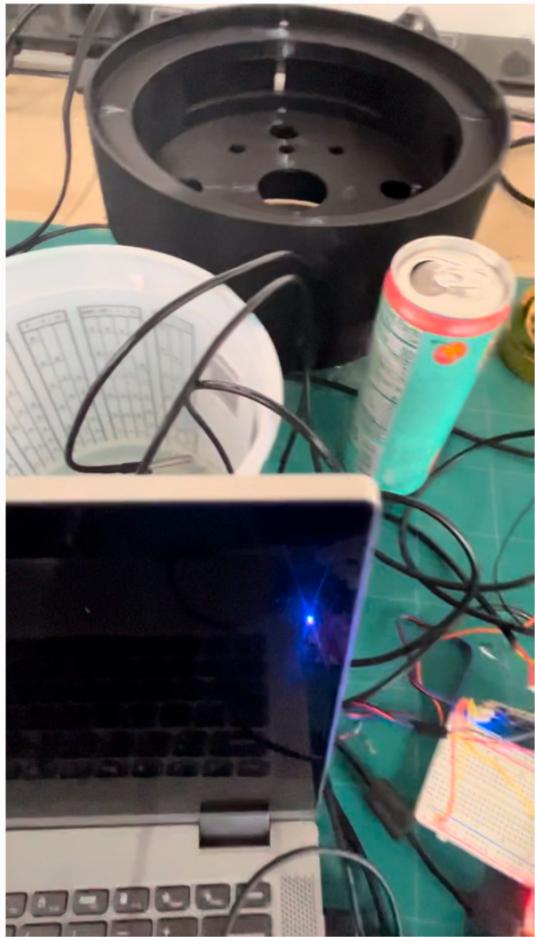
11/7

Printed the first large assembly connecting the dome with the pot this is roughly 10in in diameter. This was derived from the design doc design with more holes for tubing



This needed to be broken up into 4 parts since it can't fit in my 3d printer and took 1 day to print all the parts. Below shows the 4 segments that were printed





This is the completed module drying in the back since I used a glue to combine the pieces together. This glue up was done on 11/8.