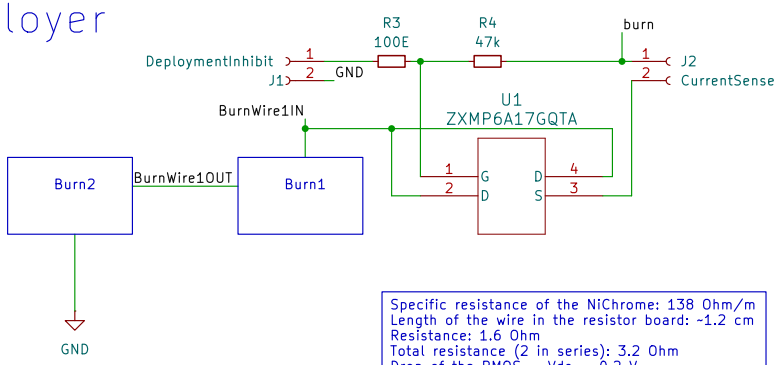
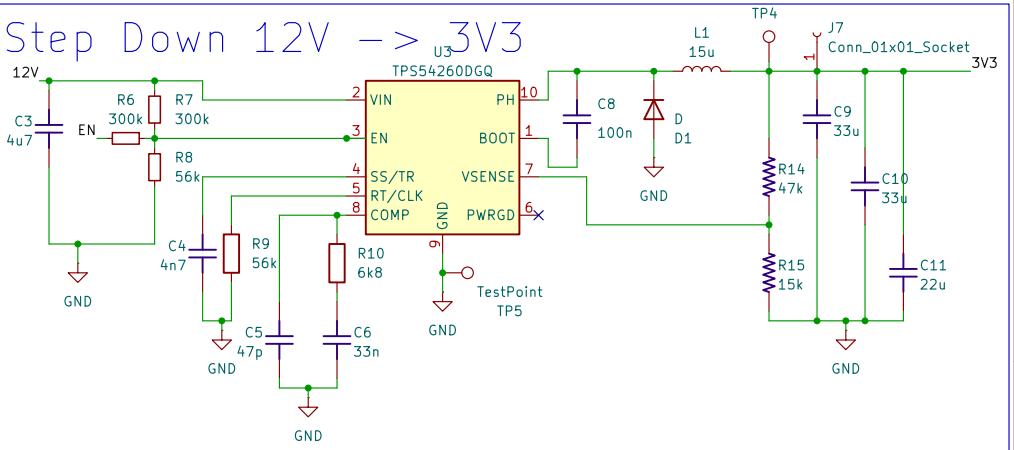
Deployer



Specific resistance of the NiChrome: 138 Ohm/m
Length of the wire in the resistor board: ~1.2 cm
Resistance: 1.6 Ohm
Total resistance (2 in series): 3.2 Ohm
Drop of the PMOS = Vds = 0.2 V
I = (3.3V – 0.2V)/3.2 Ohm = 980 mA

Step Down 12V -> 3V3



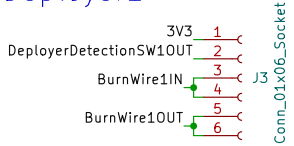
- Unlike last design, here the voltage regulator is followed by the current limiter
- With this design, the current limiter will limit the current at a safe programmable limit
- A single connector for the deployment switch is given, we can connect 3 mechanical switches in series in the worst case
- Other inhibitors are power from the power board and EN signal from the OBC

Connectors

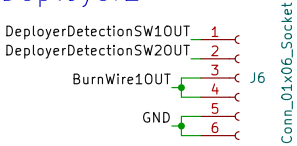
Multiple pins for burn and ground signals are included in the deployer as solder can get weak during launch.

Board connector

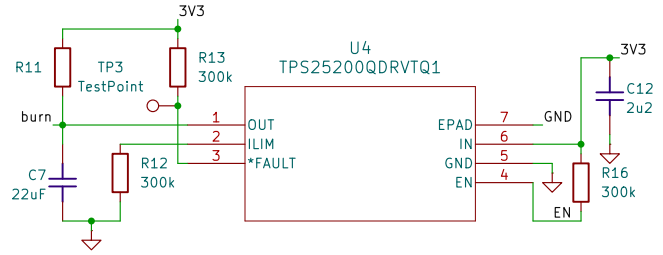
Deployer1



Deployer2



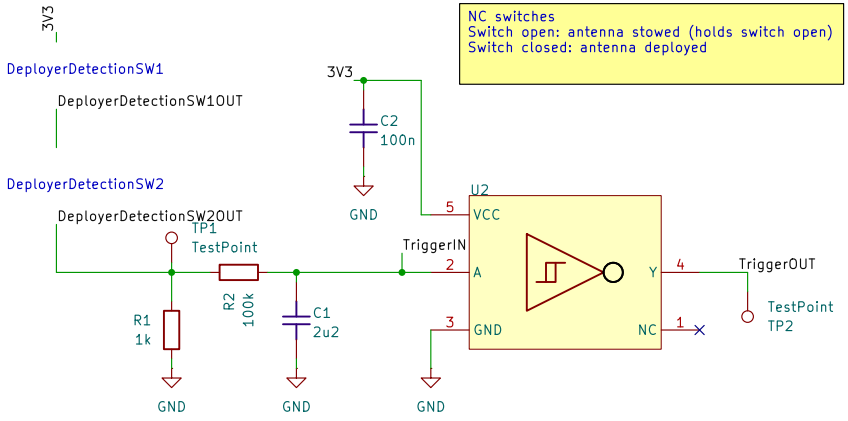
Current Limiter



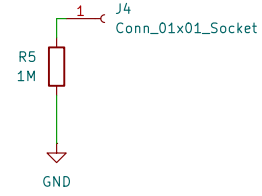
Current limiter is necessary to ensure repeatability in the curren consumption of the nichrome, can be shorted 3V3 and burn can be shorted via R13 to simplify the design

Detection switches

NC switches
Switch open: antenna stowed (holds switch open)
Switch closed: antenna deployed



Antenna Bleeder



Additional components requried

- Ferrite core: 2661480002
- Resistor board
  - SAJ1 action switches: Deployment detection switches
  - Metallitc connector to wrap around the nichrome wire with

H1 MountingHole
H2 MountingHole
H3 MountingHole
H4 MountingHole

Student Satellite Program

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