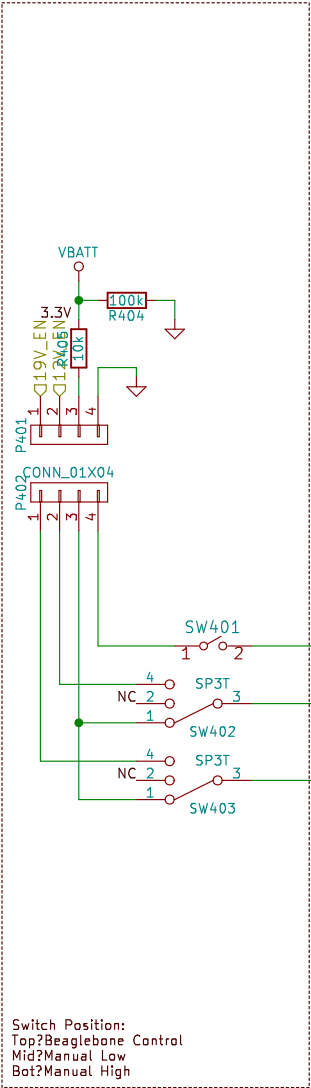
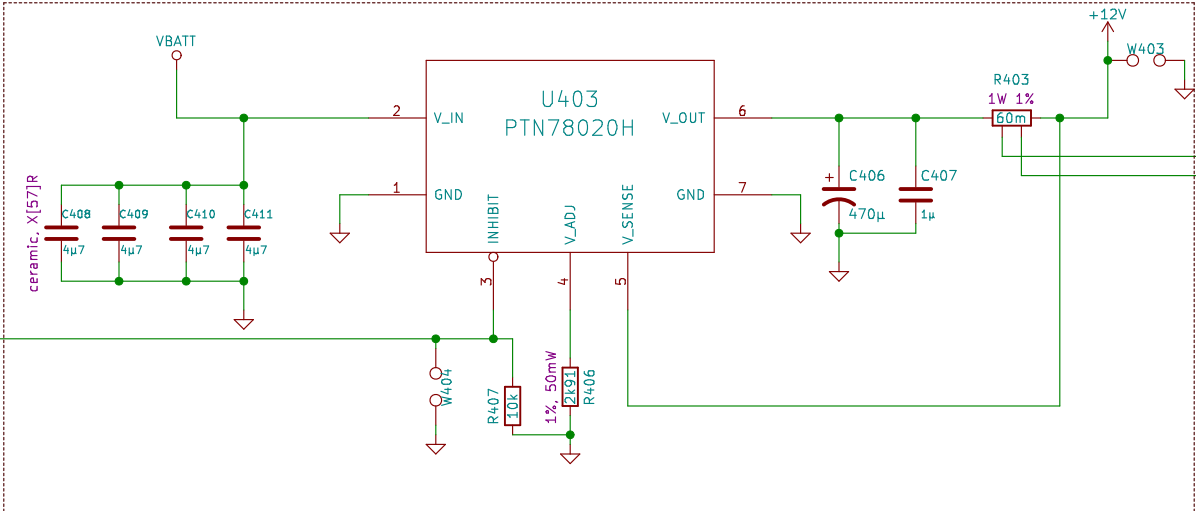


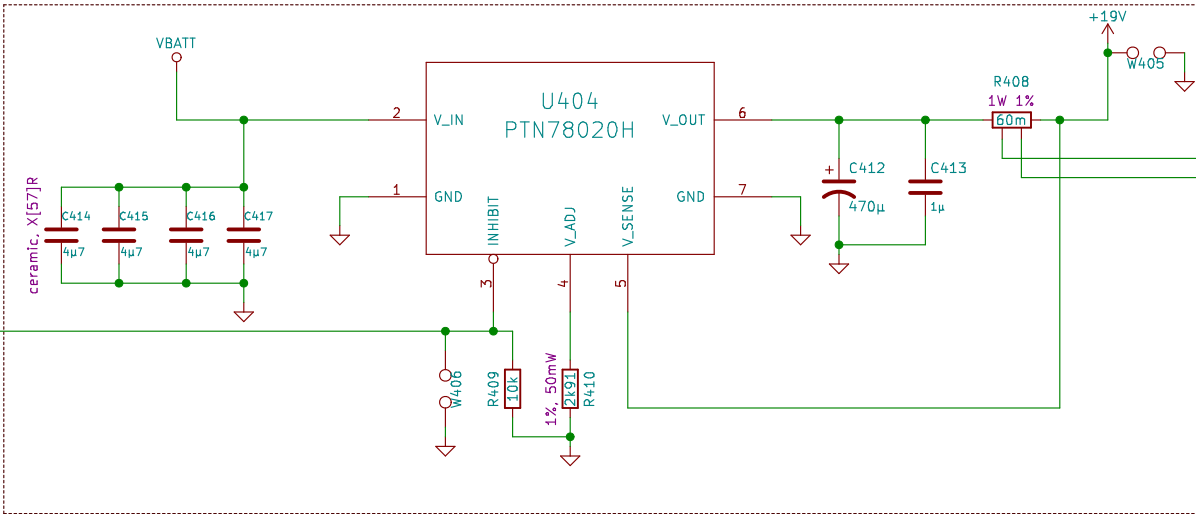
+5V DC Rail



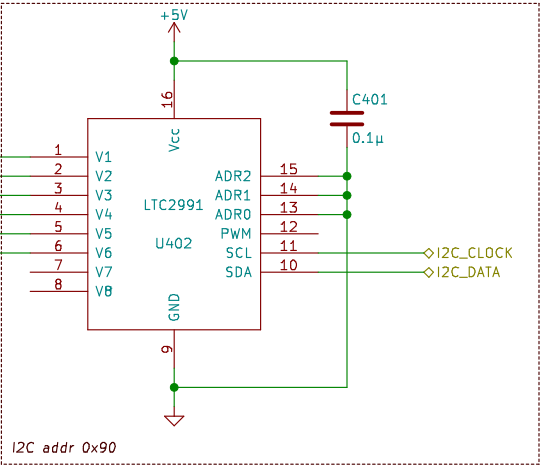
Inhibit Control



+12V DC Rail



+19V DC Rail



Voltage, Current, & Temp Sense

Current Sense Resistors
full-scale voltage = 0.300 V
 $R_{sense_max} = 0.300 / I_{max}$
1 A = 300mΩ
3 A = 100mΩ
5 A = 60mΩ
10 A = 30mΩ

- NB:
1. V_sense should connect as close as possible to the largest load on the given power rail.
 2. Place Rset resistors as close to package pins as possible.
 3. Ceramic (Cin) capacitors should be located within 0.5 in of the input pins.
 4. We may need heat sinks on the converters. The datasheet indicates a range of 2W to 5W of power dissipation given our specs.
 5. Pay attention to the datasheet's recommendations regarding capacitor selection.

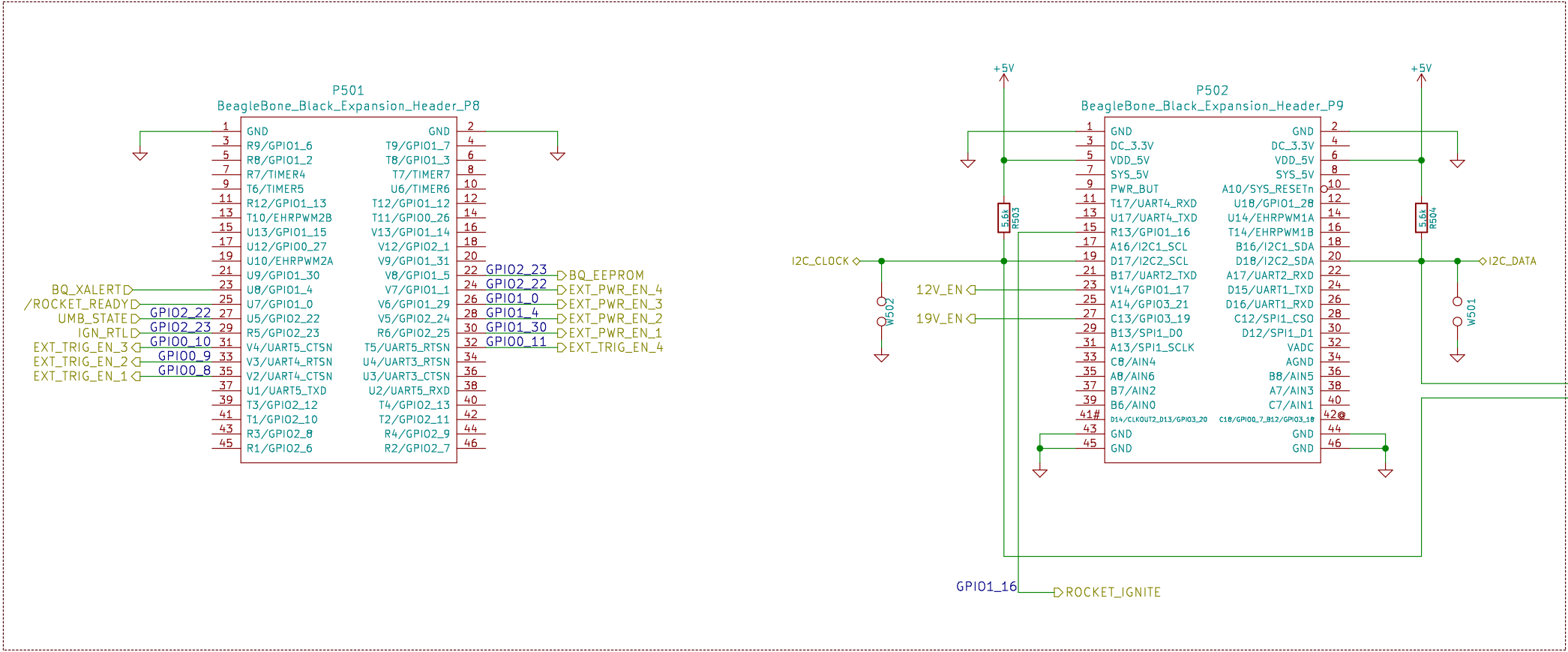
- TODO:
- * jumpers on all INHIBIT pins.
 - * Values for converter enable pull-down resistors. Don't exceed the BB's low source max.!
 - * Capacitor values are minimums. Consider increasing these. Consult datasheet for more info.

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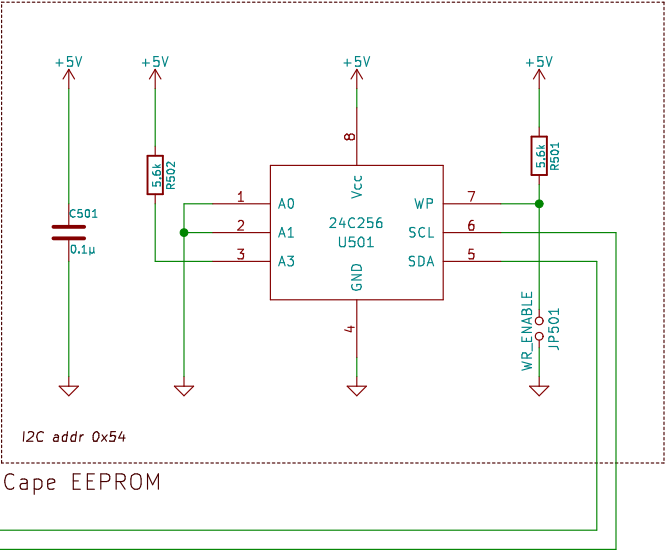
Sheet: /DC-DC Converters/
File: dcdc_converter.sch

Title: LTC3 DC-DC Converters

Size: B	Date: 2016-04-16	Rev: A
KiCad E.D.A.	kiCad 0.201604152103+669244ubuntu16.04.1-product	Id: 4/8



BeagleBone Expansion Headers

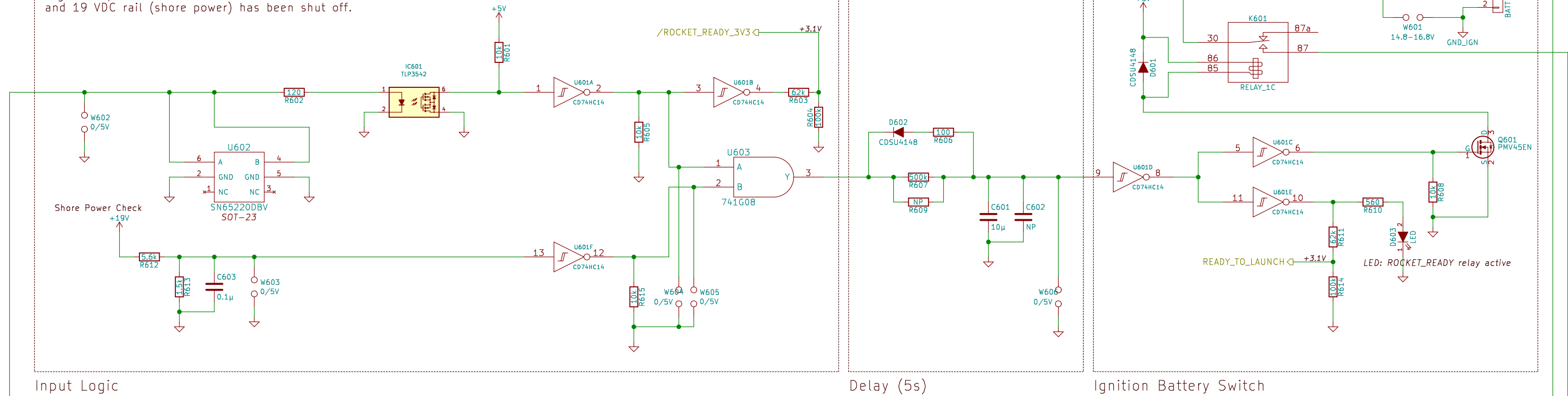


Cape EEPROM

I2C Devices			
ADDR	Part	Type	Location
0x10	U203	BQ77PL900	B/PM
0x54	U501	EEPROM	BBB
0x90	U402	LTC2991	DC-DC
0x98	U203	LTC2990	Power In
0x9A	U301	LTC2990	B/PM

NOTES:
* Do NOT change ROCKET_IGNITE, pin default reset state is High-Z w/ pulldown resistor. Other pins can be configured in EEPROM at boot time.
* All I2C devices on LTC3 are slaves. The BBB is the only master so the LTC will not need arbitration.

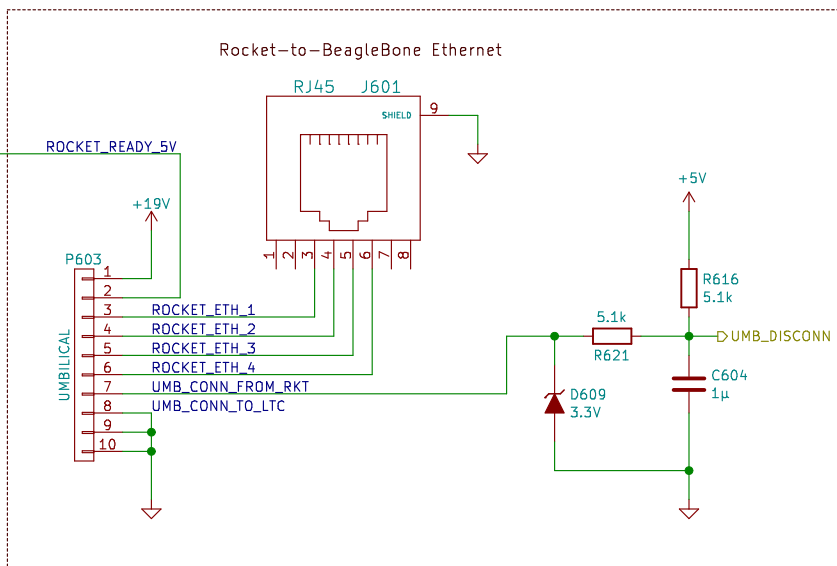
Ignition battery pack disconnected until flight computer has asserted ROCKET_READY and 19 VDC rail (shore power) has been shut off.



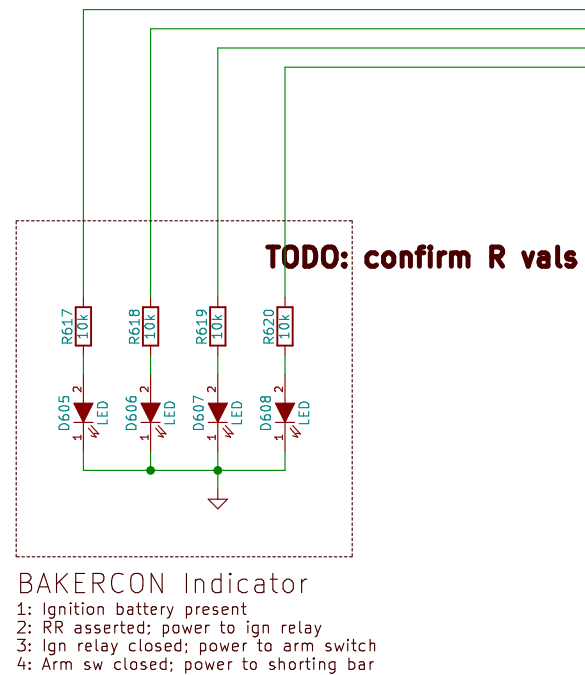
Input Logic

Delay (5s)

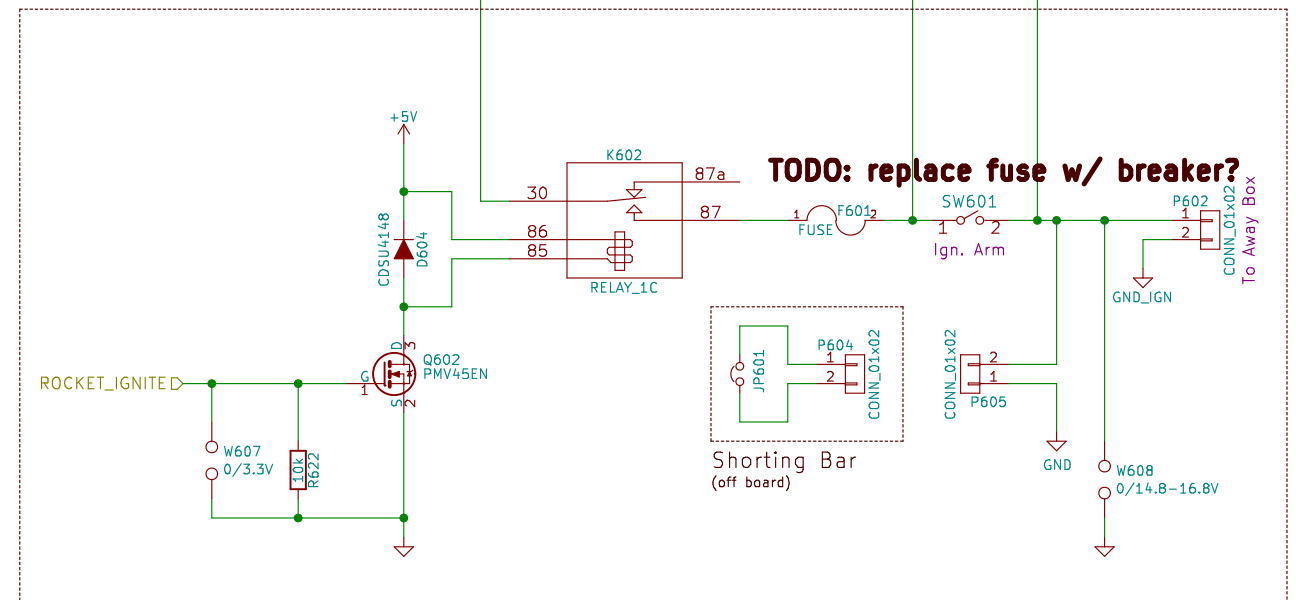
Ignition Battery Switch



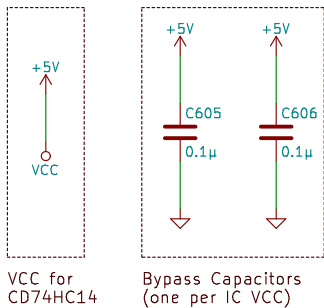
Rocket Umbilical



BAKERCON Indicator
1: Ignition battery present
2: RR asserted; power to ign relay
3: Ign relay closed; power to arm switch
4: Arm sw closed; power to shorting bar



Ignition Switch



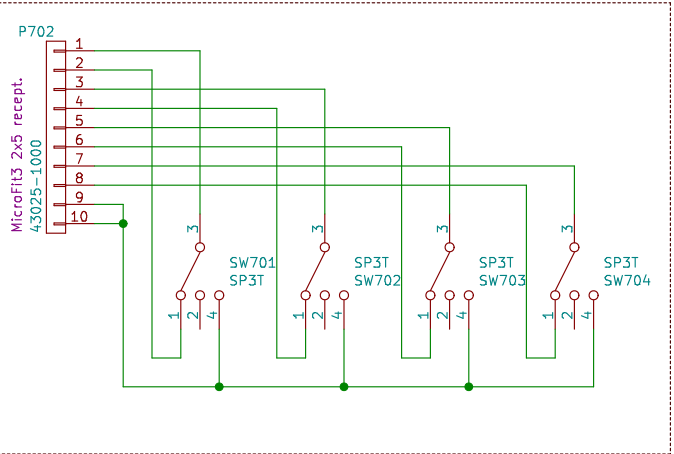
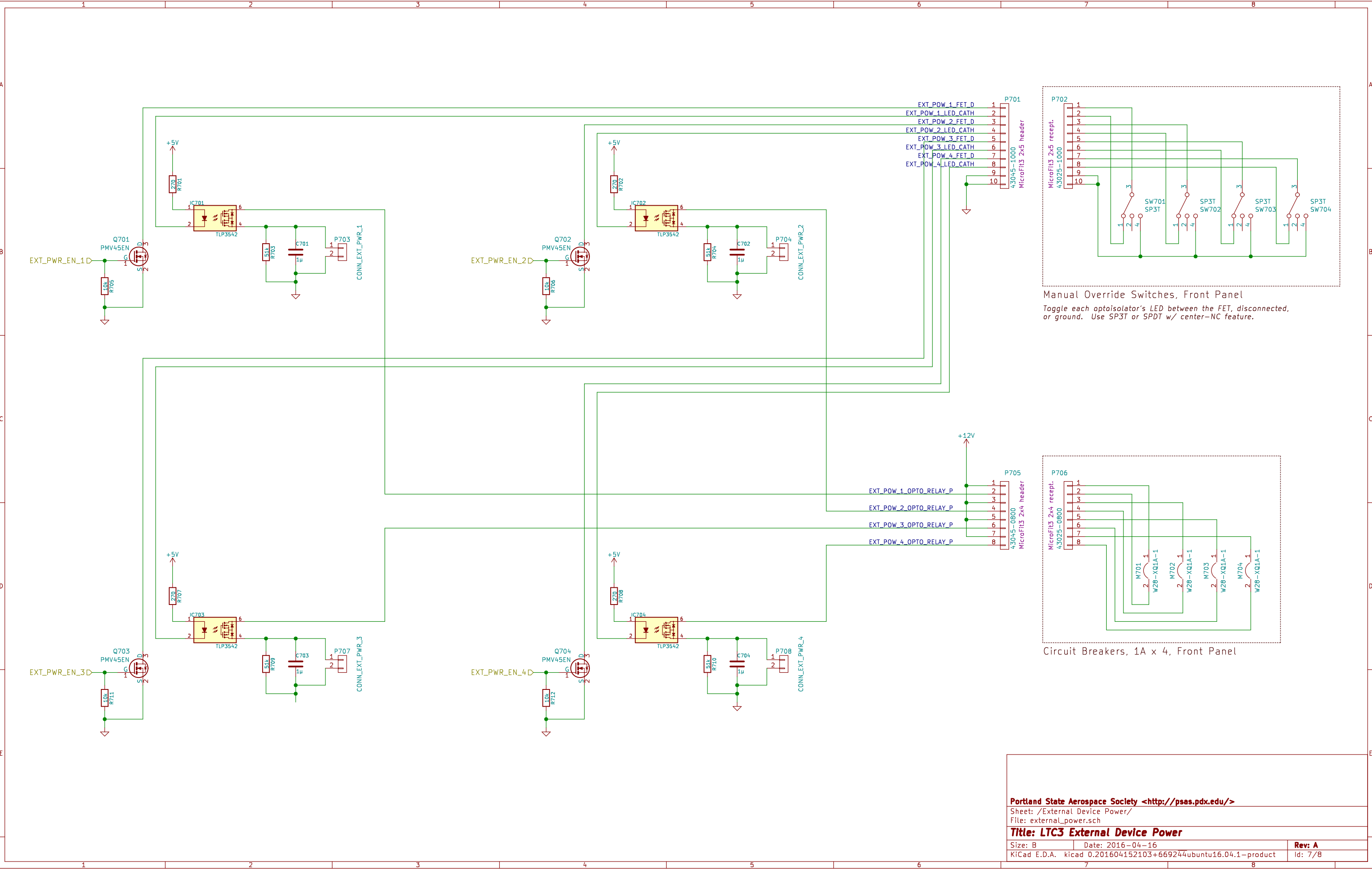
VCC for CD74HC14

Bypass Capacitors (one per IC VCC)

Portland State Aerospace Society <<http://psas.pdx.edu/>>
Sheet: /Rocket Umbilical & Ignition Control/
File: rocket_interface.sch

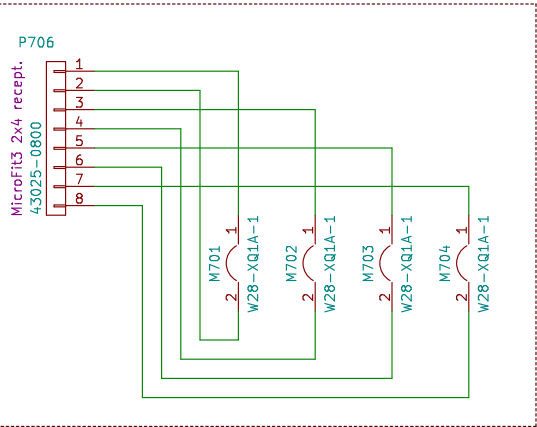
Title: LTC3 Rocket Umbilical & Ignition Control

Size: B	Date: 2016-04-16	Rev: A
KiCad E.D.A. kicad 0.201604152103+669244ubuntu16.04.1-product		Id: 6/8

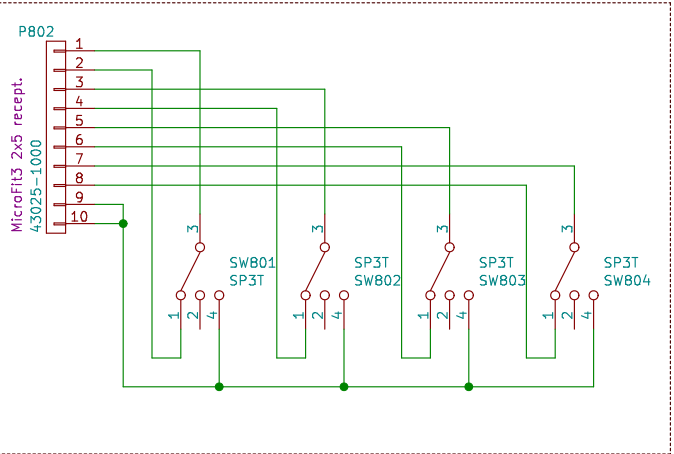
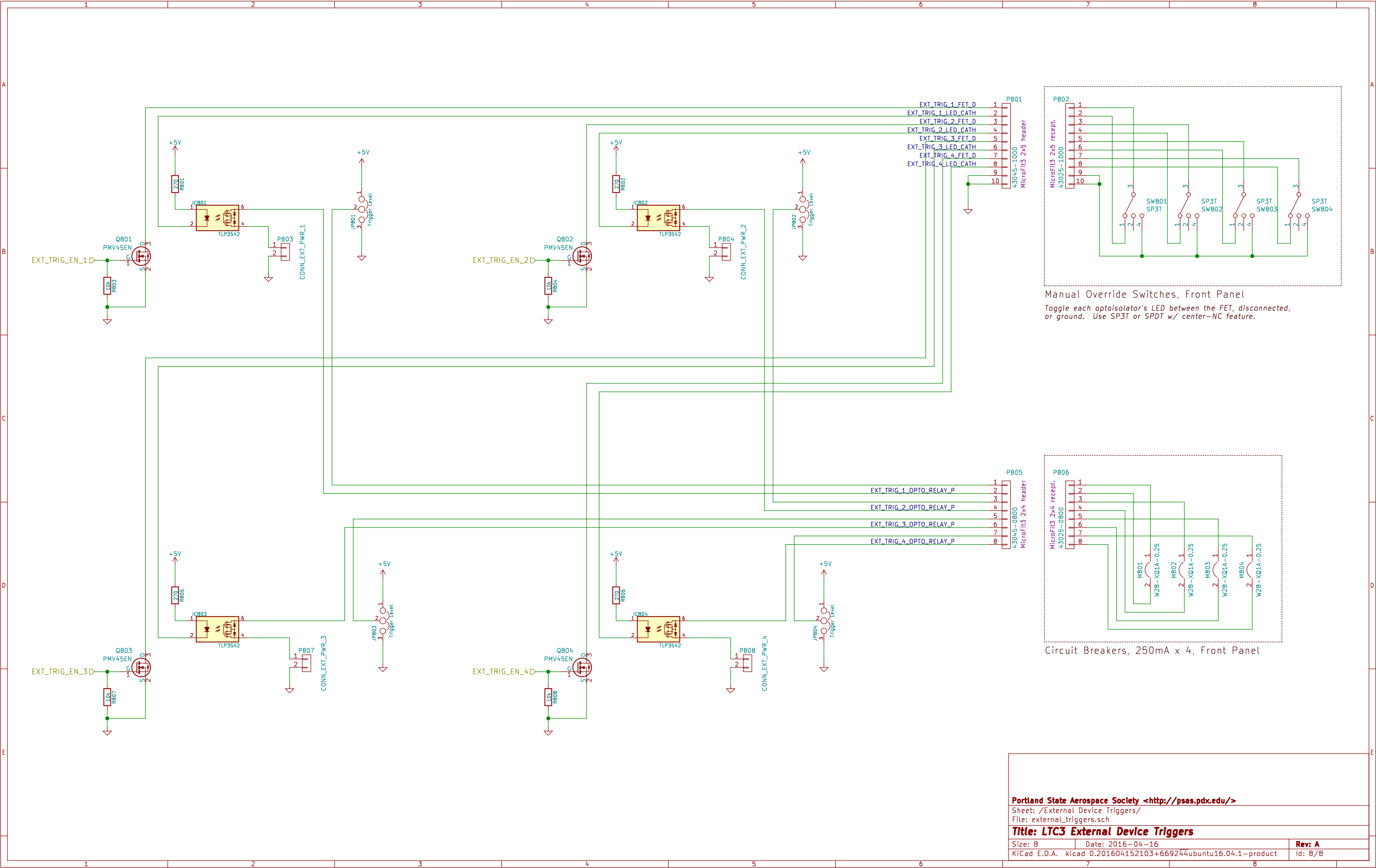


Manual Override Switches, Front Panel

Toggle each optoisolator's LED between the FET, disconnected, or ground. Use SP3T or SPDT w/ center-NC feature.

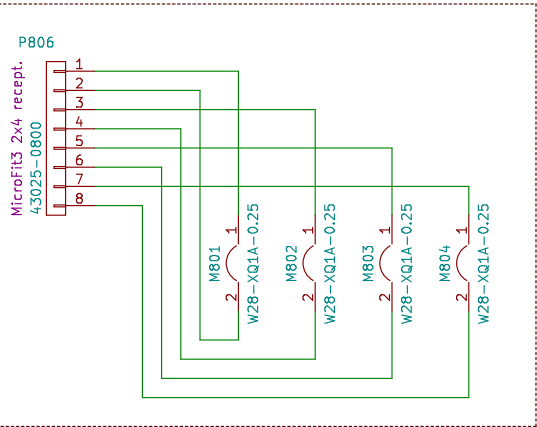


Circuit Breakers, 1A x 4, Front Panel



Manual Override Switches, Front Panel

Toggle each optoisolator's LED between the FET, disconnected, or ground. Use SP3T or SPDT w/ center-NC feature.



Circuit Breakers, 250mA x 4, Front Panel