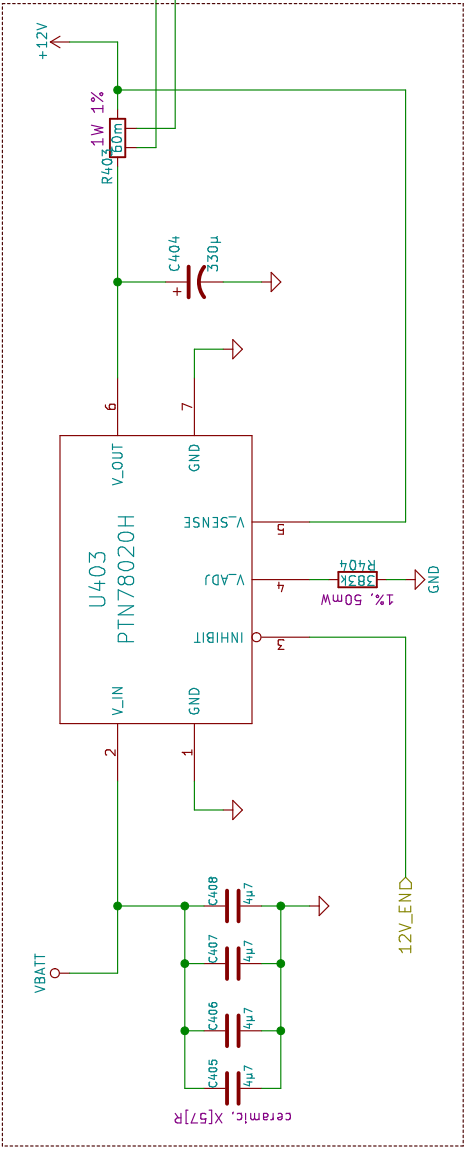
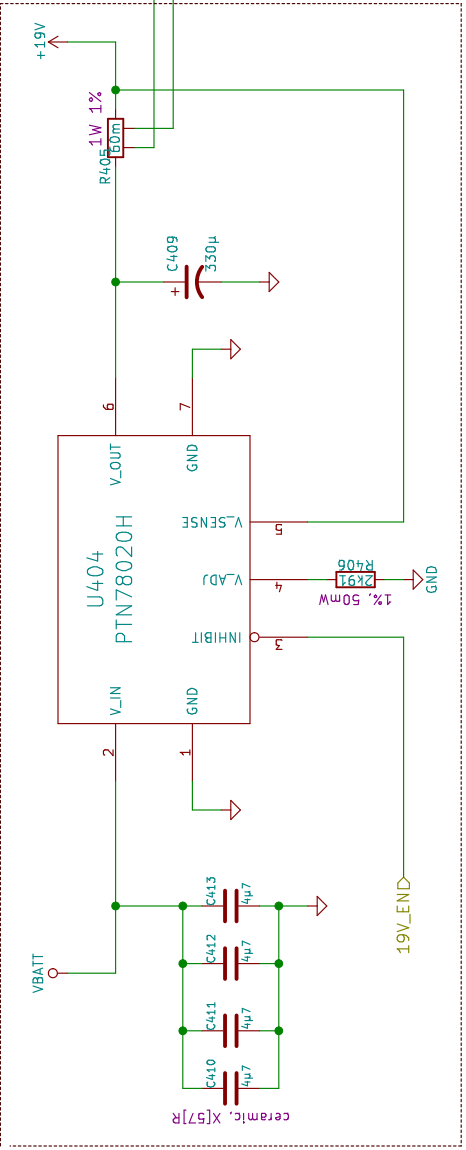


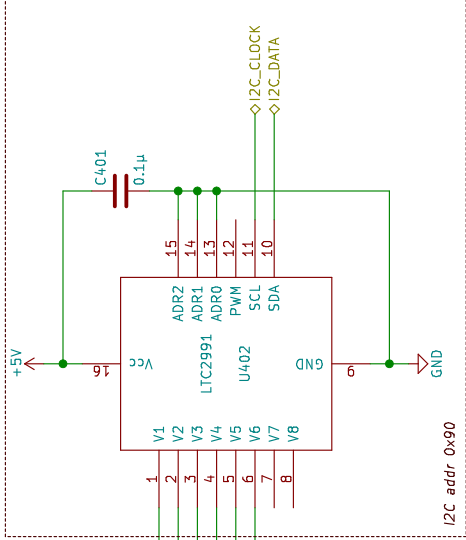
+5V DC Rail



+12V DC Rail



+19V DC Rail



Voltage, Current, & Temp Sense

Current Sense Resistors  
full-scale voltage = 0.300 V  
R\_sense\_max = 0.300/Imax  
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:

- \* Capacitor values are minimums. Consider increasing these. Consult datasheet for more info.

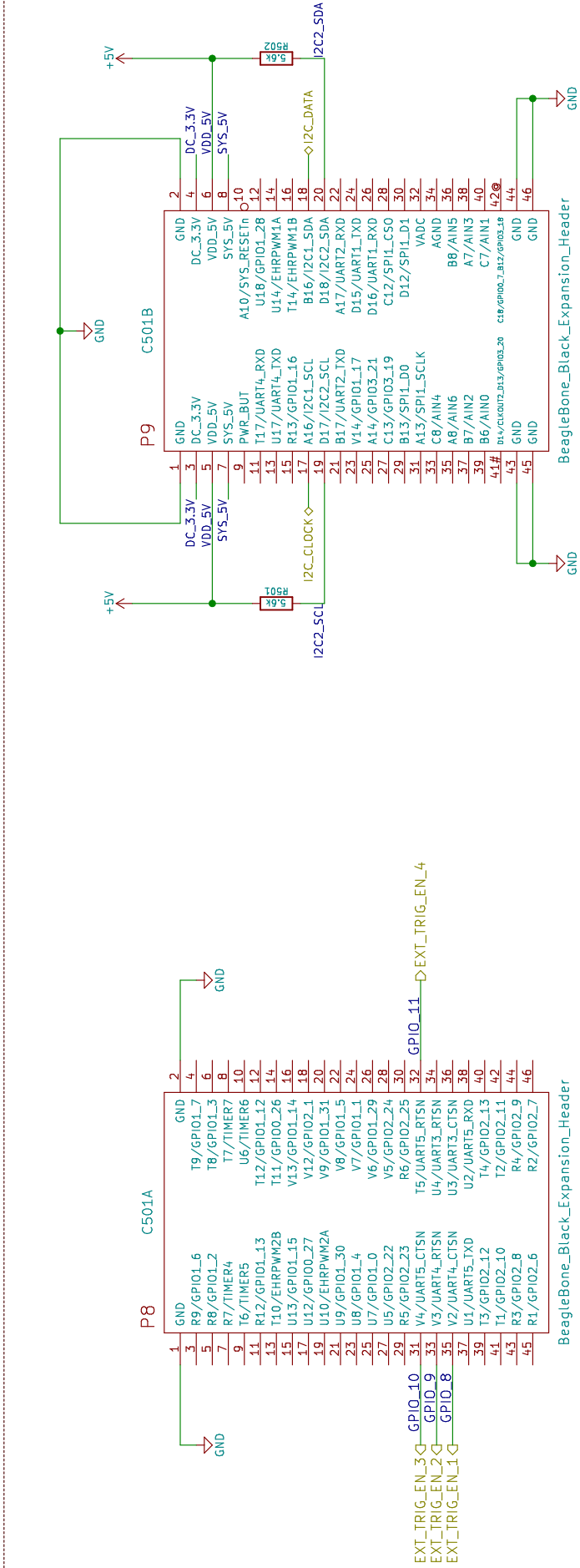
Portland State Aerospace Society <<http://psas.pdx.edu/>>

Sheet: /DC-DC Converters/  
File: dcdc\_converter.sch

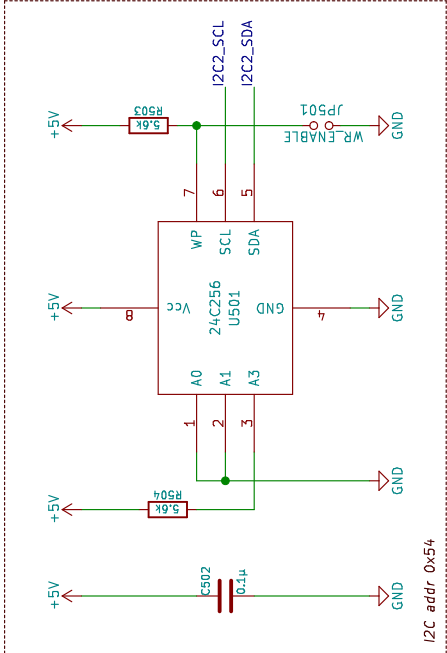
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Size: B Date: 2015-12-15  
KiCad E.D.A. kicad 4.0.0rc1a=stable

Rev: A  
Id: 4/7



## BeagleBone Expansion Headers



# Cape EEPROM

**TODO:** connect these labels to BBB GPIO pins.

```

ROCKET_READY<
EXT_PWR_EN_1
EXT_PWR_EN_2
EXT_PWR_EN_3
EXT_PWR_EN_4
BQ_XALERT<

```

- ▷ 5V\_EN
- ▷ 12V\_EN
- ▷ 19V\_EN
- ▷ BQ\_EEPROM

TODO:

- \* Pick GPIO for rocket-ready signal.
- \* Buffer btw rocket-ready signal and BB, ign. board, etc?
- \* Umbilical connection state
- \* Ignition fuse state

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Sheet: /BeagleBone Black Cape/

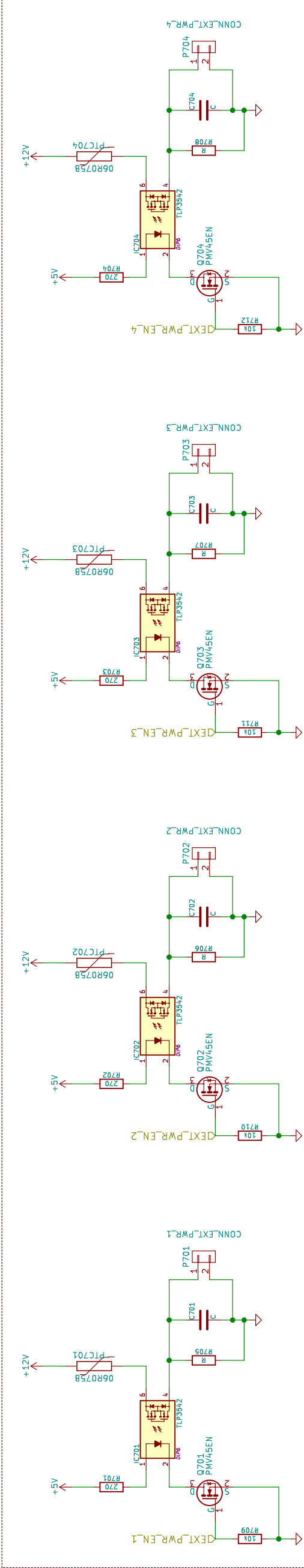
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Size: B	Date: 2015-12-15
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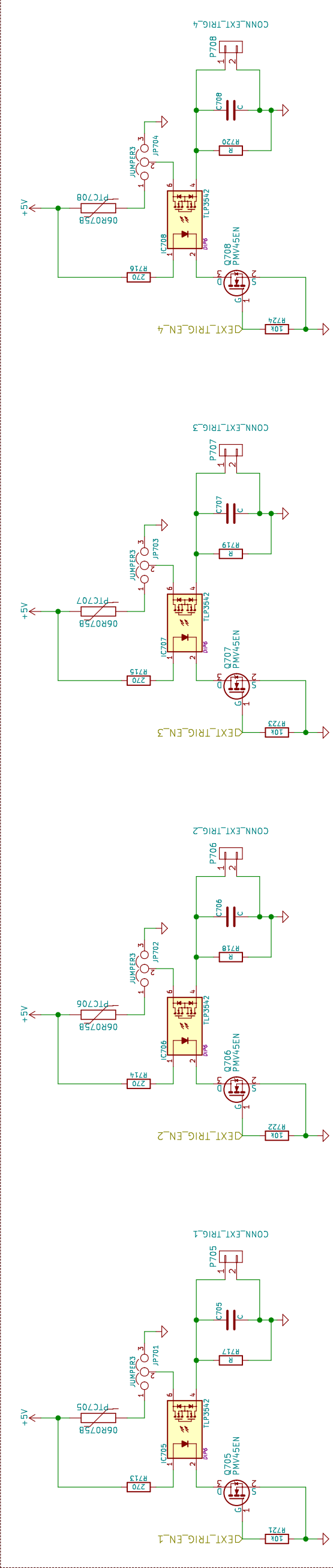
Id: 5/7

Id: 5/7





External Device Power



External Device Triggers

TODO:  
\* Determine values for bleeder resistor  
and filter capacitor on each output connector.  
\* Pick new PolyFuses, 0.5–1.0A max.