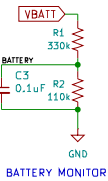
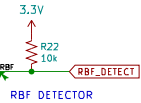
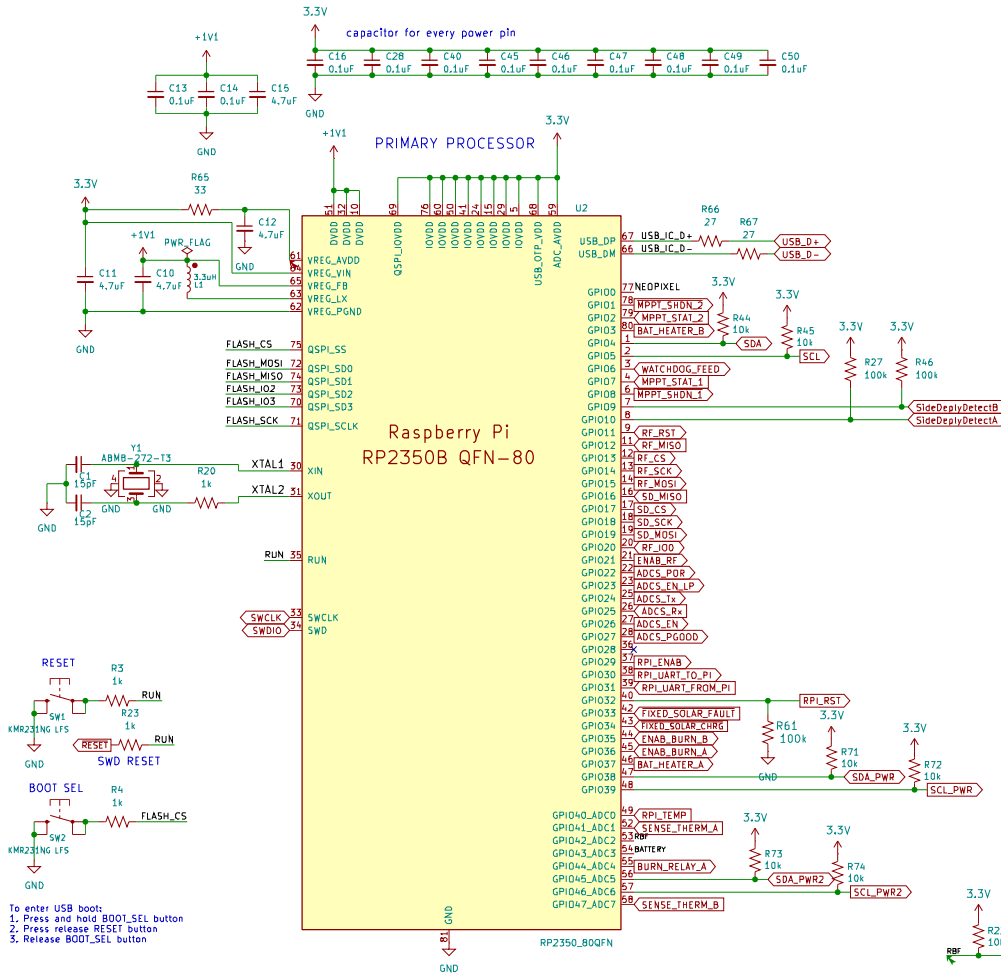
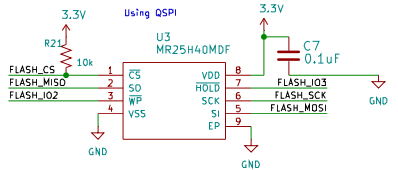
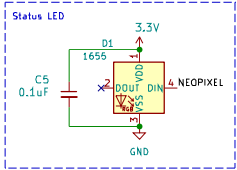


1	2	3	4	5	6
A					
B	<div>Avionics</div> <div></div> <div>File: Avionics.kicad_sch</div>	<div>Connectors</div> <div></div> <div>File: Connectors.kicad_sch</div>	<div>Power</div> <div></div> <div>File: Power.kicad_sch</div>	<div>Burn Wires</div> <div></div> <div>File: Burn_Wires.kicad_sch</div>	<div>RF</div> <div></div> <div>file: RF_and_GPS.kicad_sch</div>
C	<div>Watchdog</div> <div></div> <div>File: watchdog.kicad_sch</div>				
D	<div><div><div>Ethan Brinser</div><div>Stanford Student Space Initiative</div><div>Sheet: /</div><div>File: mainboard.kicad_sch</div><div><div>Title: PyCubed Mainboard</div><div><div>Size: A4</div><div>Date: 2024-11-24</div><div>Rev: v06c</div></div><div>KiCad E.D.A. 8.0.4</div><div>Id: 1/7</div></div></div><div><div>PyCubed</div></div></div>				
	1	2	3	4	5

TODO:

- Check RF module for wakeup pins



NOTE: Components labeled "do not install" (DNI) are not populated by default

Avionics

Ethan Brinser
Stanford Student Space Initiative
Sheet: /Ayionics/
File: Ayionics.kicad_sch

Title: PyCubed Mainboard

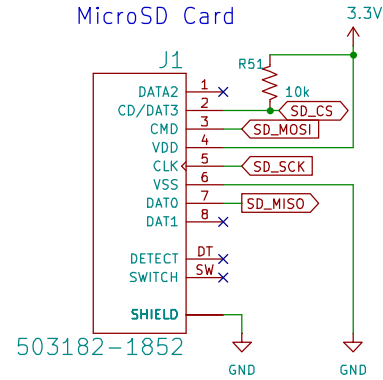
Size: USLedger	Date: 2024-11-24
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Kicad E.D.A. 8.0.4

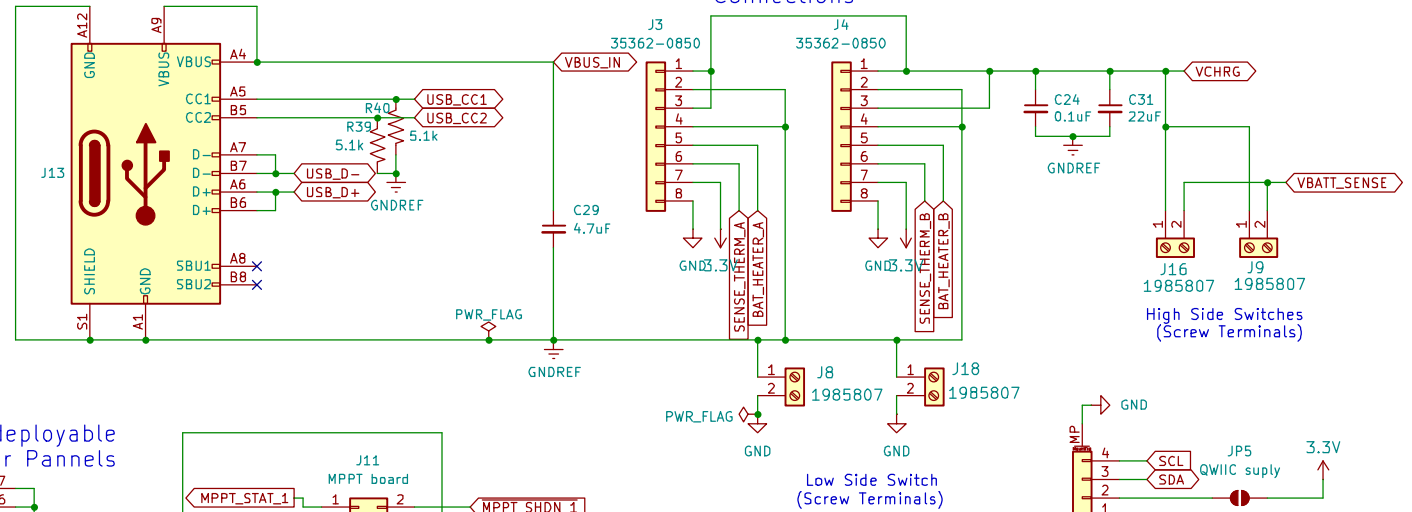
Rev: v06c
Id: 2/7

Power Connectors: USB-C Power Delivery to 2S Li-ion Battery

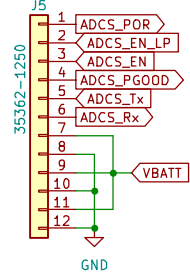
MicroSD Card



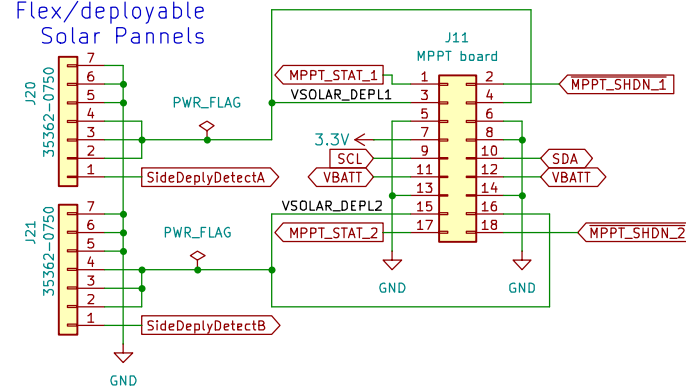
Battery Connections



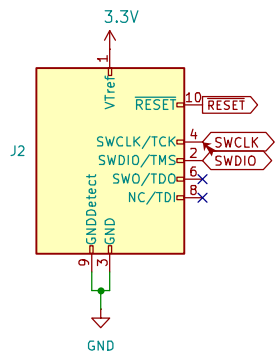
ADCS



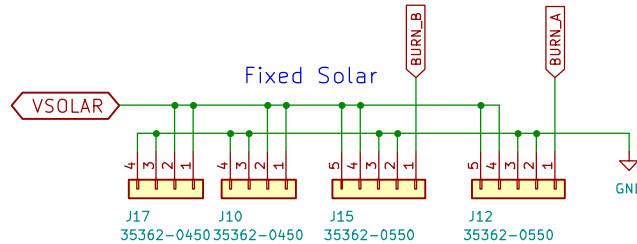
Flex/deployable Solar Panels



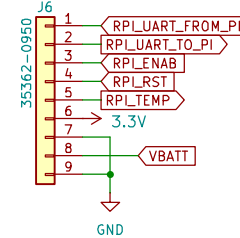
SWD



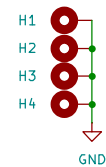
Fixed Solar



RPI



Mounting Holes



NOTE: Components labeled "do not install" (DNI) are not populated by default

Connectors

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Stanford Student Space Initiative

Sheet: /Connectors/

File: Connectors.kicad_sch

Title: **PyCubed Mainboard**

Size: A4

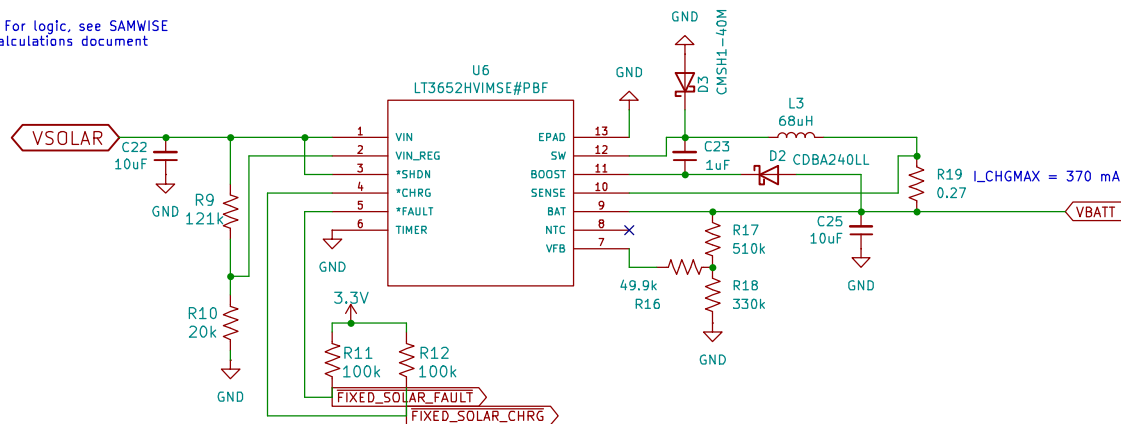
Date: 2024-11-24

Rev: v06c

KiCad E.D.A. 8.0.4

Id: 1/7

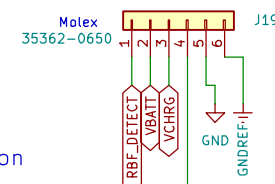
V_FPPT = 19.035. For logic, see SAMWISE
X panel LT3652 Calculations document
in Google Drive



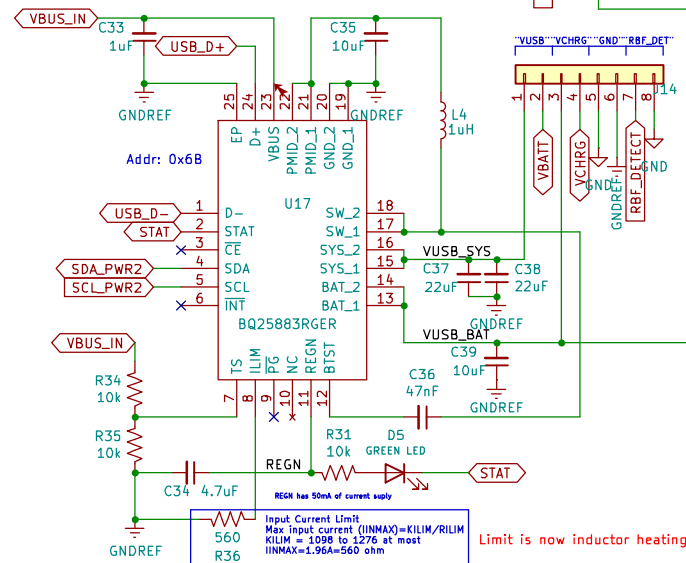
RBF Jumpers

RBF jumpers features:

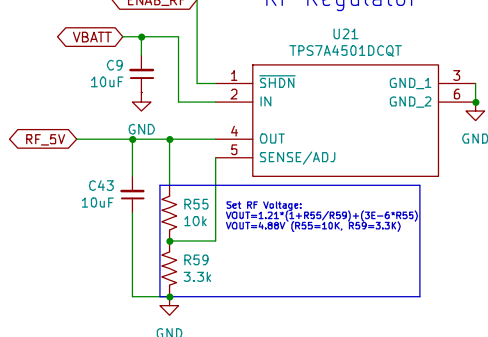
- Turn on system:
 - "GND" bypasses ground switch. On J19 short 5 & 6. On J14 short 5 & 6
 - "VCC" bypasses power switch. On J19 short 2 & 3. On J14 short 4 & 5 or (3 & 4 and 5 & 6)
 - "VUSB" enables USB charging. On J19 short 3 & 4. On J14 short 5 & 6
 - "RFB_DET" tells RP2350 status of RBF connector. On J19 short 1 & 5. On J14 short 1 & 2
- RBF_DET should only be removed once in launch pod
All jumpers should be removed prior to flight



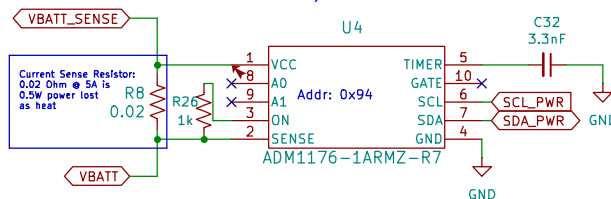
USB (Boost) Charging for 2-cell Li-Ion



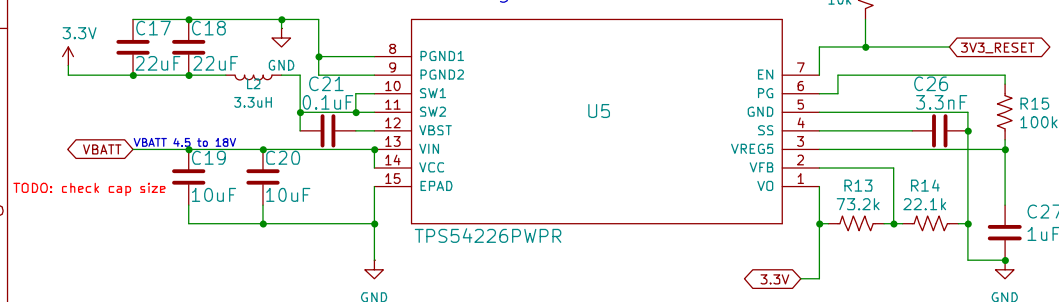
RF Regulator



Battery Power Monitor



Regulator - 3.3V OUT



NOTE: Components labeled "do not install" (DNI) are not populated by default

Power

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Stanford Student Space Initiative

Sheet: /Power/

File: Power.kicad_sch

Title: PyCubed Mainboard

Size: A4

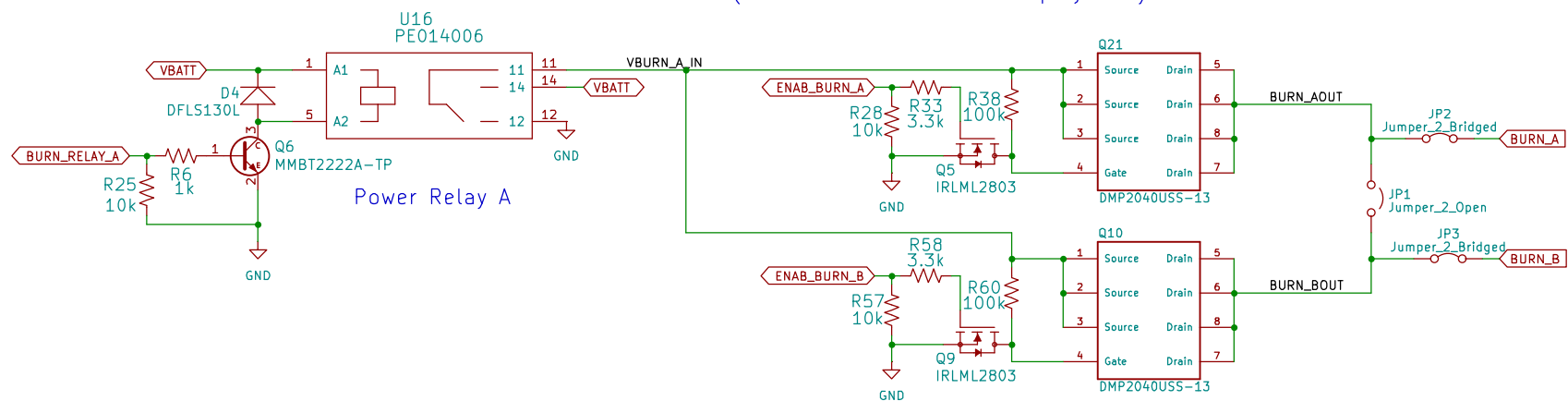
Date: 2024-11-24

Rev: v06c

KiCad E.D.A. 8.0.4

Id: 5/7

Burn Wire Control (Antenna and Flex Solar Deployment)



NOTE: Components labeled "do not install" (DNI) are not populated by default

Burn Wires

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Sheet: /Burn Wires/

File: Burn_Wires.kicad_sch

Title: PyCubed Mainboard

Size: A4

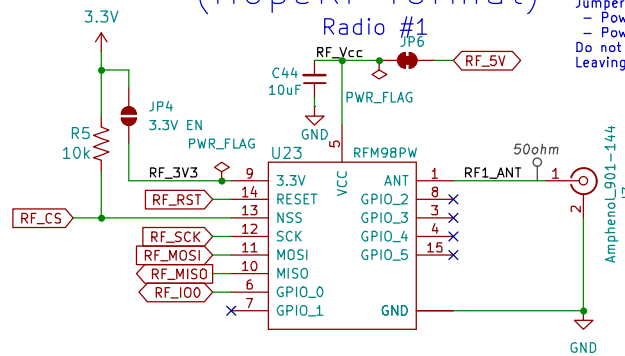
Date: 2024-11-24

Rev: v06c

KiCad E.D.A. 8.0.4

Id: 1/7

Modular Radio (HopeRF format)



Jumpers for power select:

- Power from 5V LDO (default), short JP6, open JP4, lower power supply noise and power control
- Power from 3.3V switcher, open JP6, short JP4, higher efficiency but always on

Do not short both JP4 and JP6 at the same time
Leaving both JP4 and JP6 leaves the radio unpowered

NOTE: Components labeled "do not install" (DNI) are not populated by default

Radio, GPS, Payloads

Ethan Brinser

Stanford Student Space Initiative

Sheet: /RF/

File: RF_and_GPS.kicad_sch

Title: PyCubed Mainboard

Size: A4

Date: 2024-11-24

Rev: v06c

KiCad E.D.A. 8.0.4

Id: 1/7