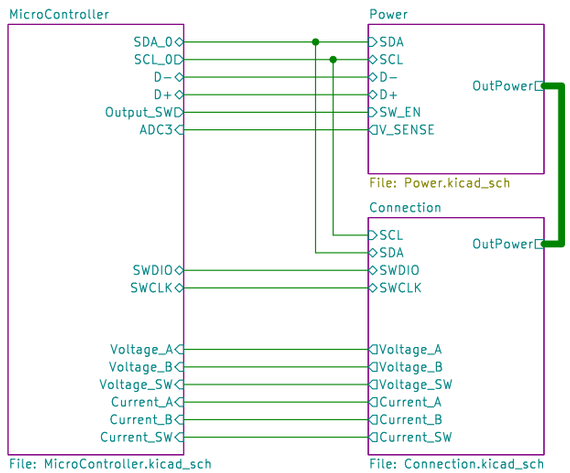

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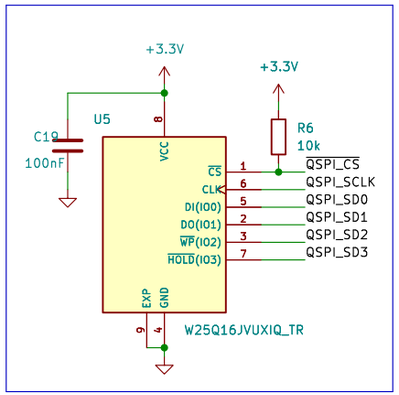
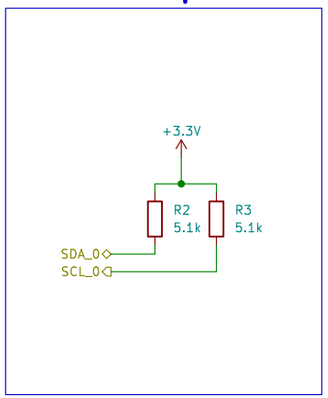
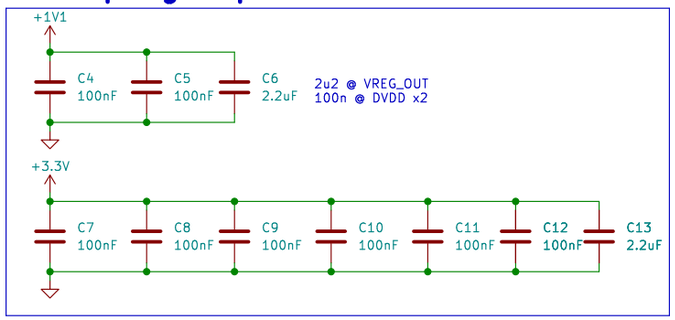
SPI Flash



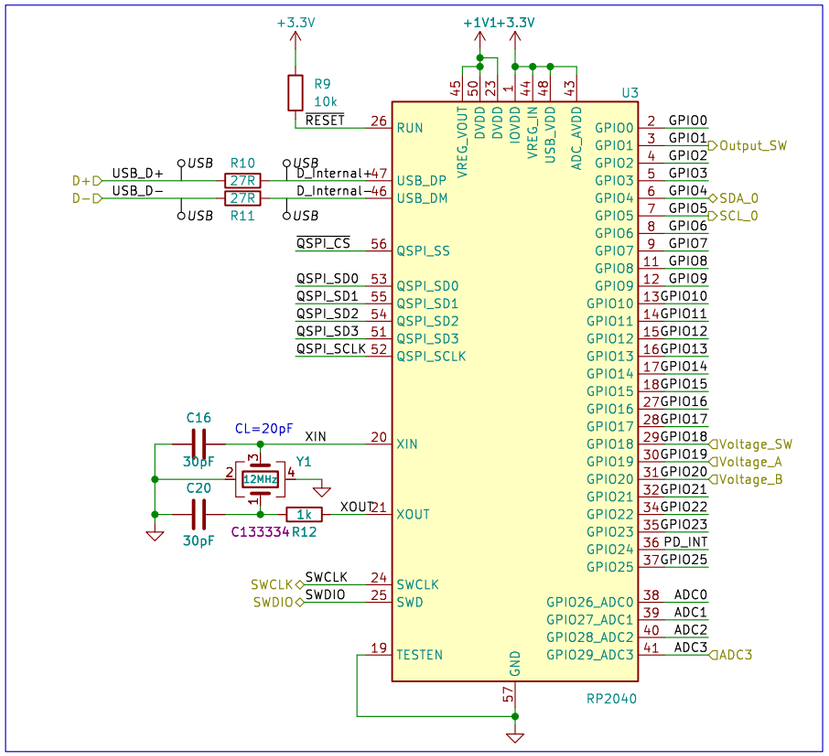
I2C Pull-up



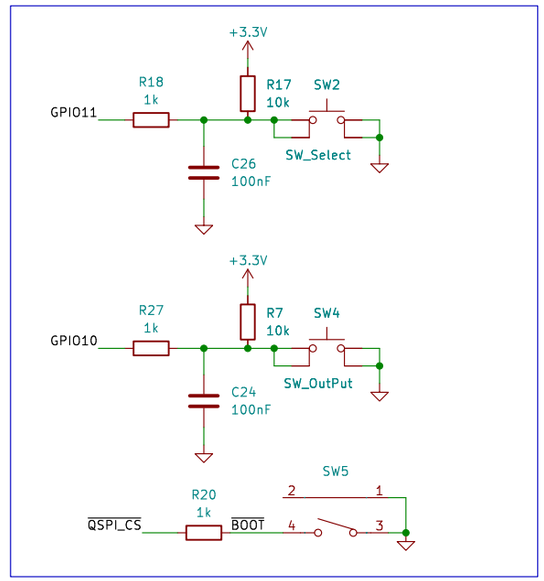
Decoupling Caps uC



MicroController



Switches



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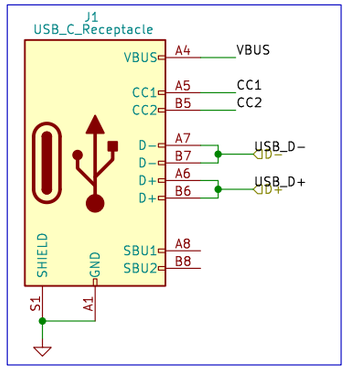
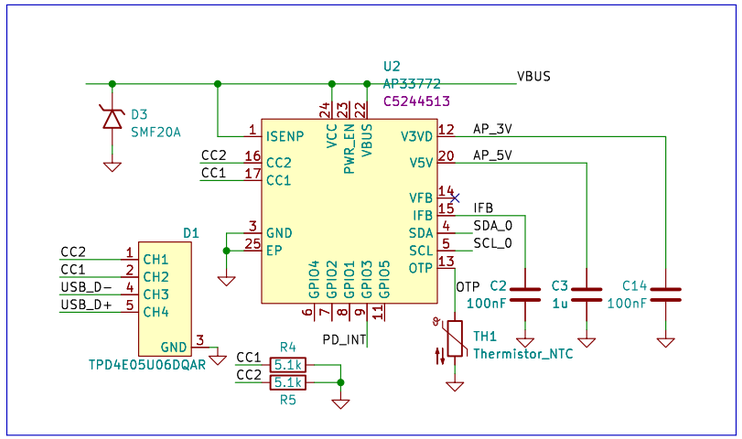
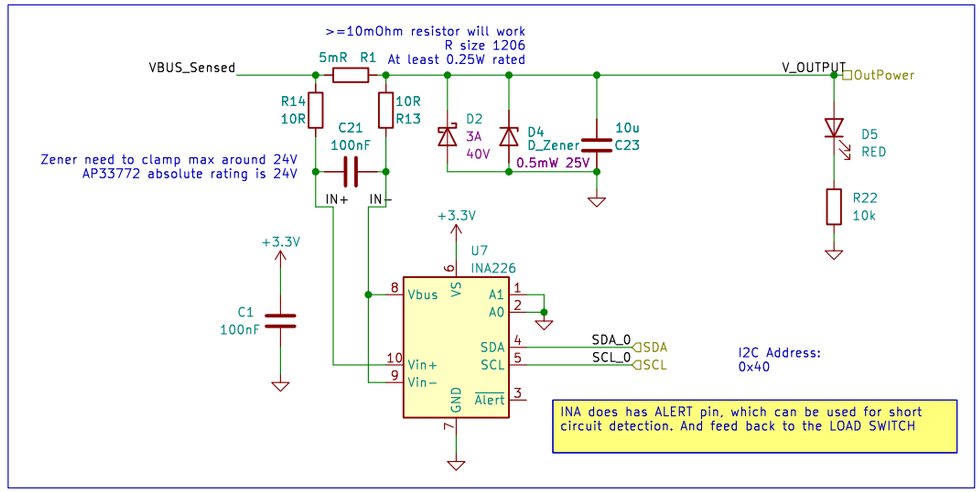
USB-C Connector



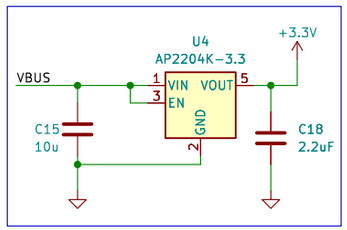
USB PD Controller



Current Sensor



LDO 3.3V

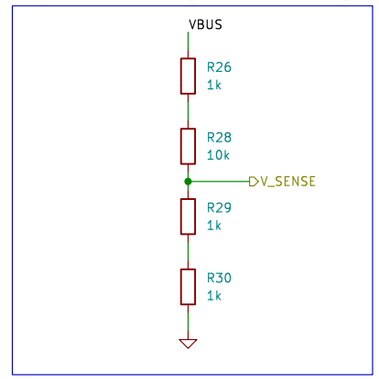


VBUS and GND resitance sensing at boot up has been considered
However, low curent draw is hard to detect with INA219
High current draw will make it hard to sense just 0.166ohm on VBUS

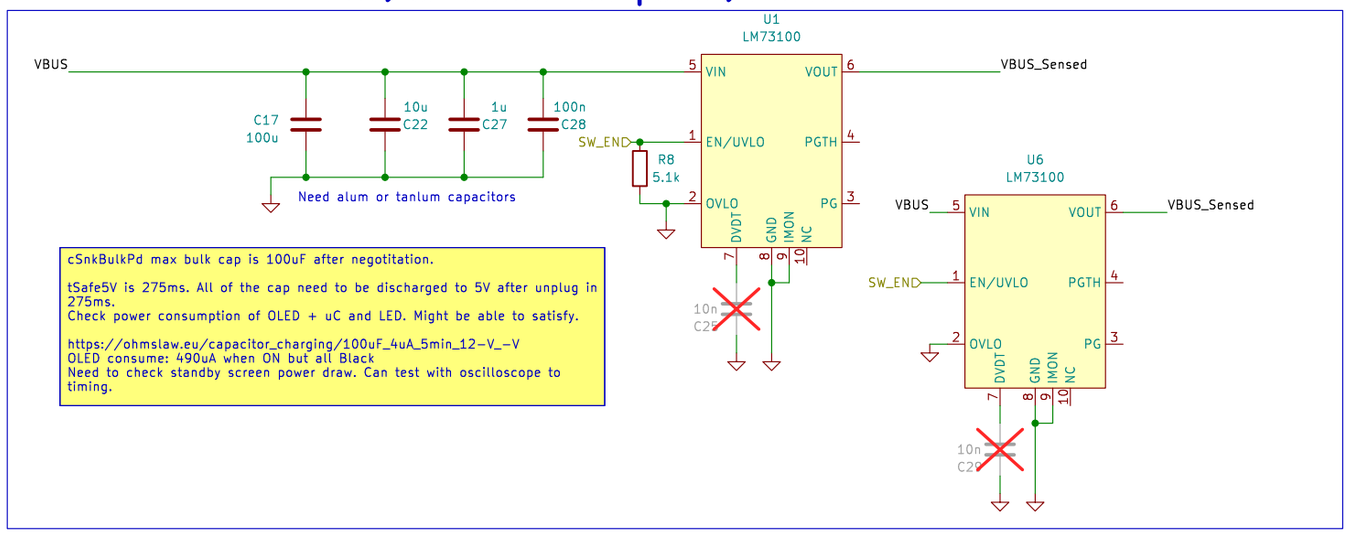
Spec for USB C 3A: VBUS < 0.166Ohm, GND < 0.0833Ohm

Device will suffer bad voltage drop when pulling high current at low voltage

Input Voltage Sensing



23V, 5A switch for power, 28mOhm



cSnkBulkPd max bulk cap is 100uF after negotitation.

tSafe5V is 275ms. All of the cap need to be discharged to 5V after unplug in 275ms.
Check power consumption of OLED + uC and LED. Might be able to satisfy.

https://ohmslaw.eu/capacitor_charging/100uF_4uA_5min_12-V_-V
OLED consume: 490uA when ON but all Black
Need to check standby screen power draw. Can test with oscilloscope to timing.

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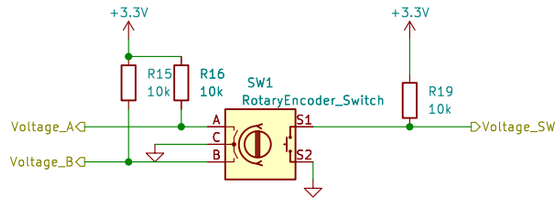
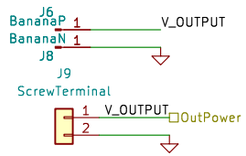
OLED_Pins

Rotary Encoder



Output Connectors



Mounting Holes

Programming

Output connector consideration:
+ Banana Jack –> Standard for power supply
+ Screw terminal 3.5mm, 5mm pitch both introduce gap in the case and result in dust
+ Terminal block plug–in
+ XT60 –> Doable
+ XT30 –> Doable
+ DC barrel jack – Tend to rated up to only 2A, fire hazard.

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