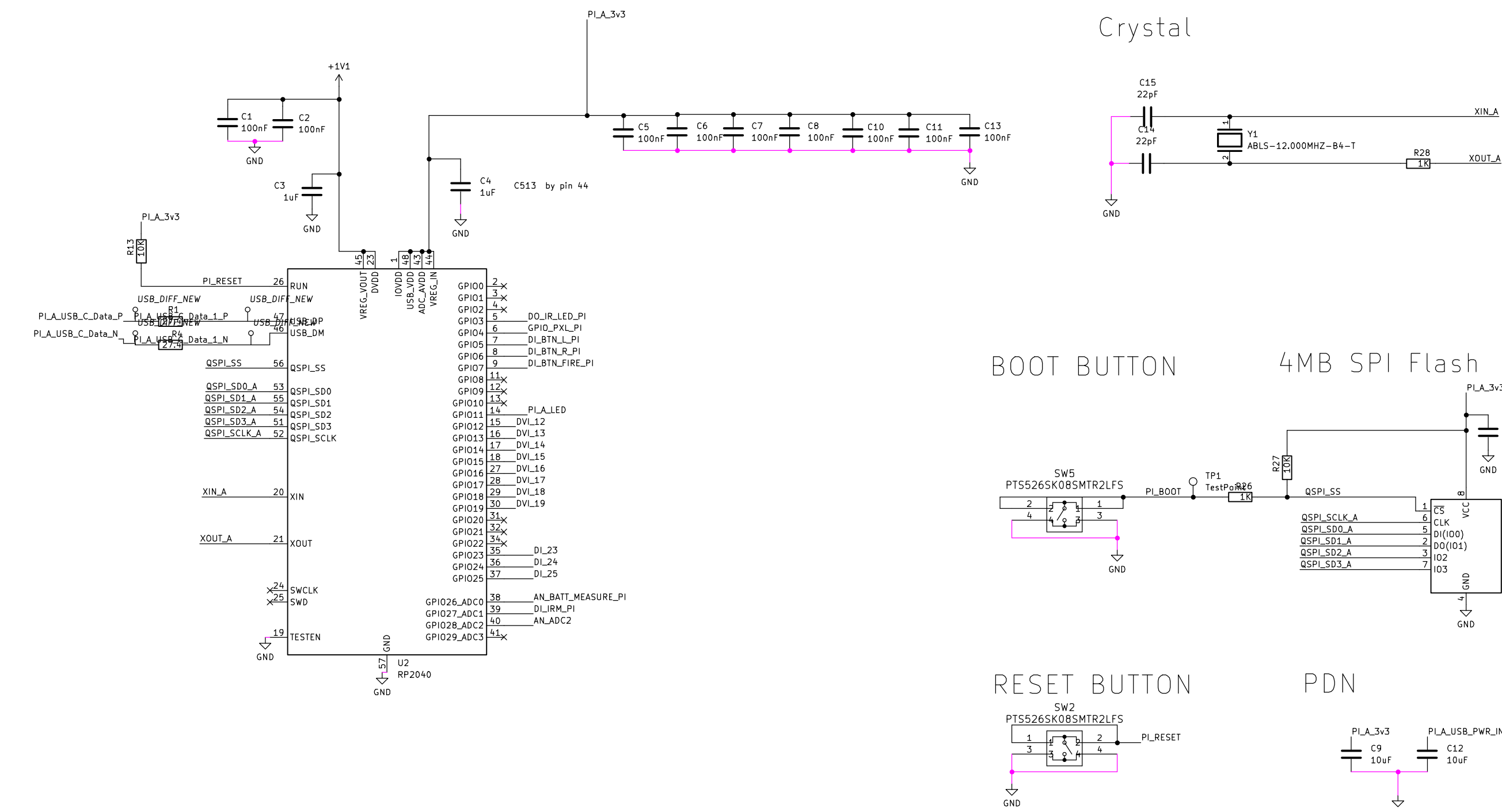
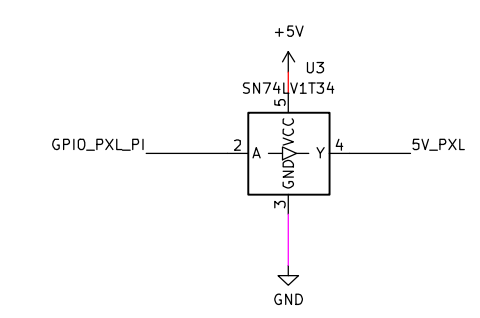


## RP2040 – MAIN CPU

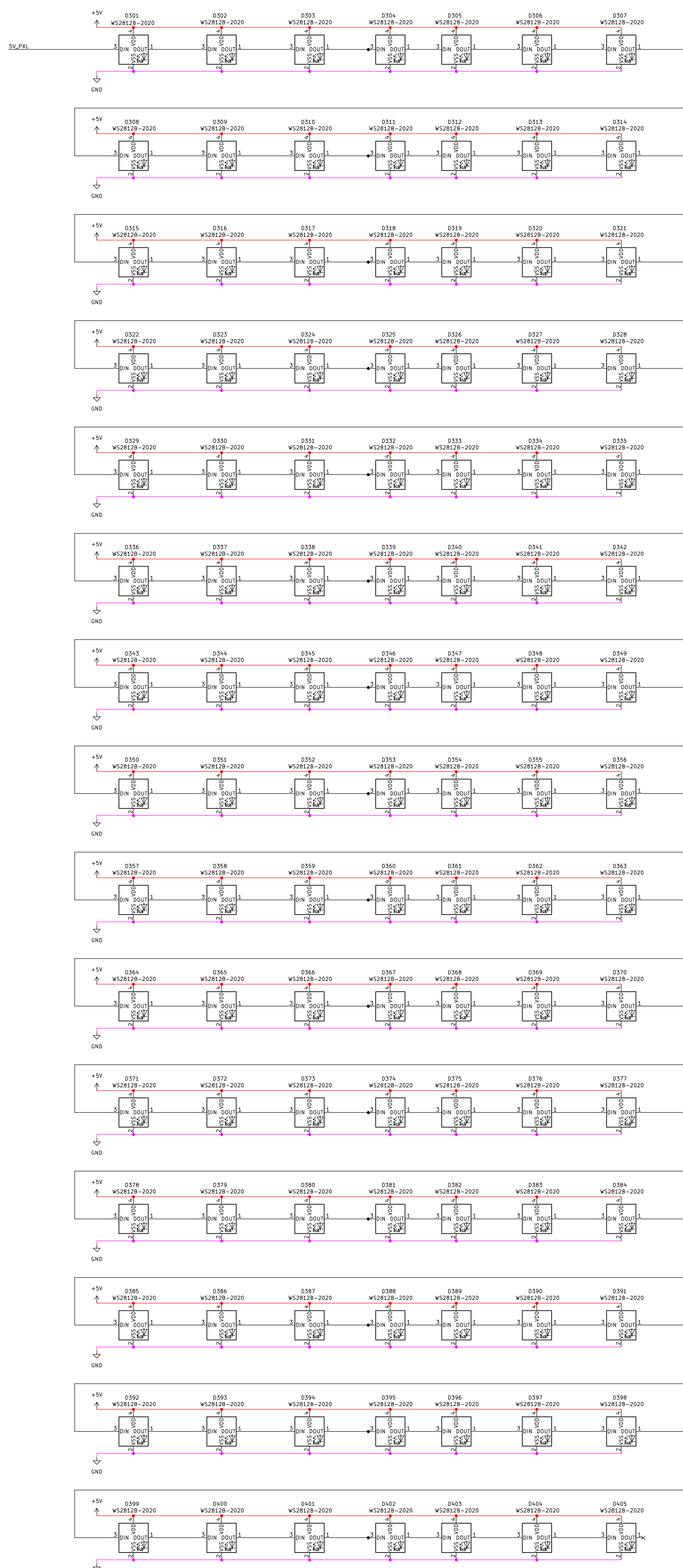
RP2040 MCU  
BASED ON RASPBERRY PI RP2040 MINIMAL DESIGN EXAMPLE  
<https://datasheets.raspberrypi.com/rp2040/Minimal-KiCAD.zip>



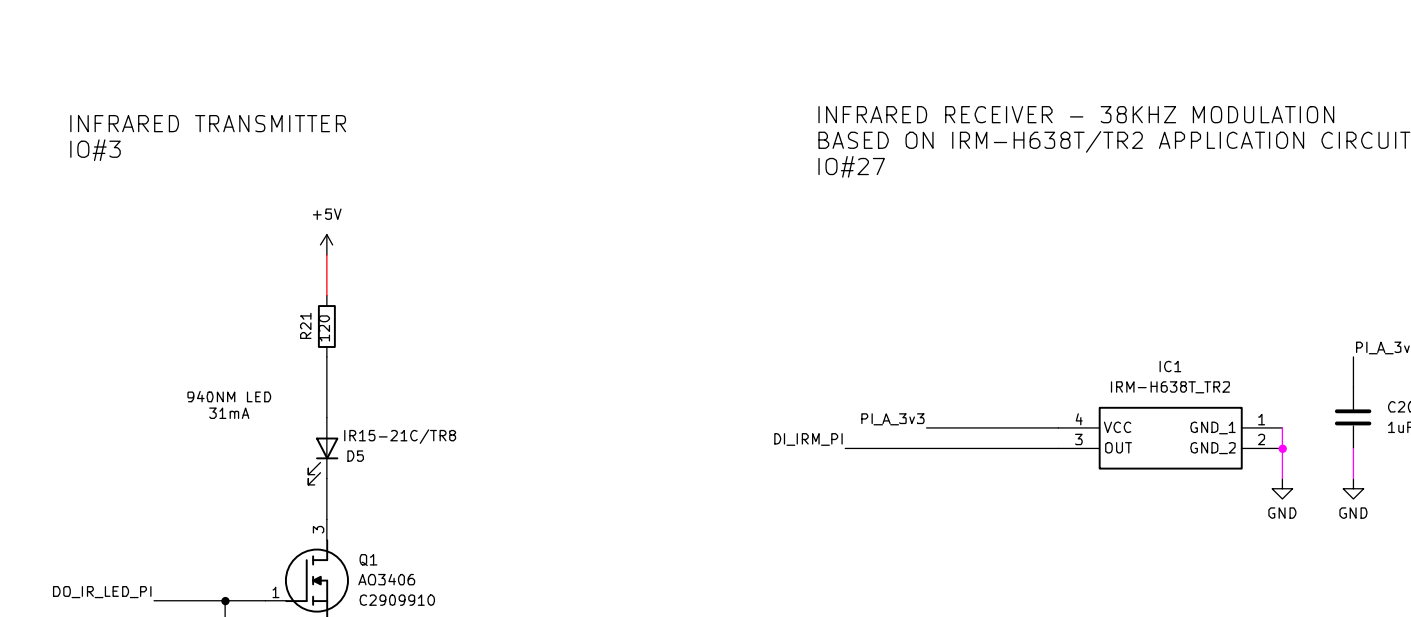
## LEVEL SHIFT FOR PIXEL DATA



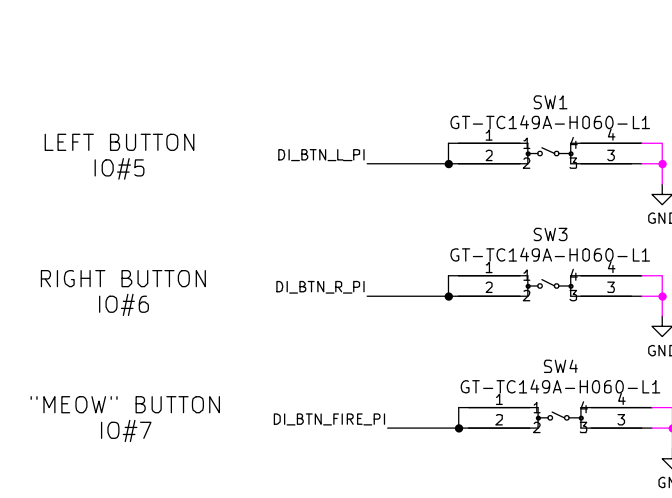
## LED PIXEL ARRAY IO#4 – 15 Columns of 7



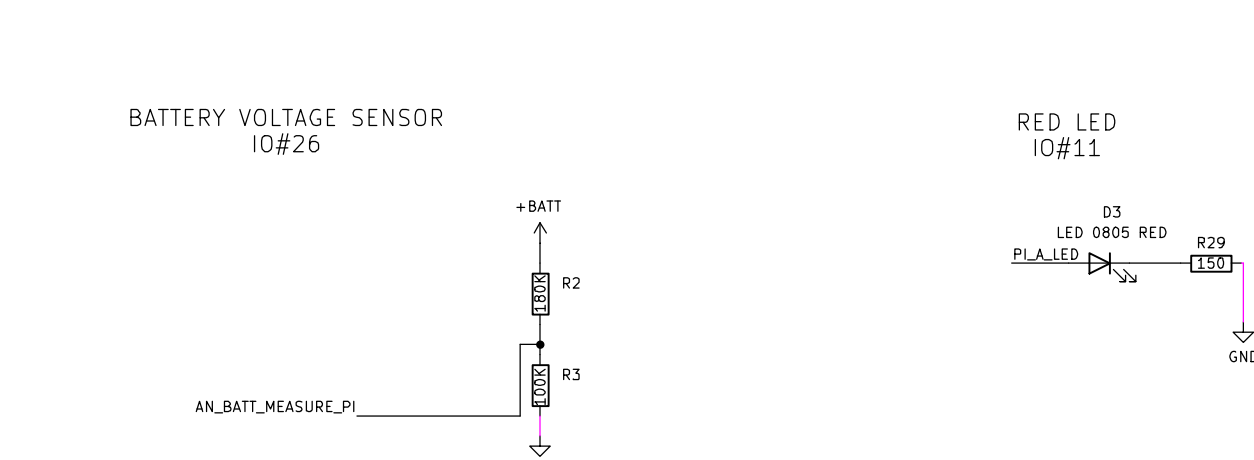
## INFRARED TRANSCIEVER



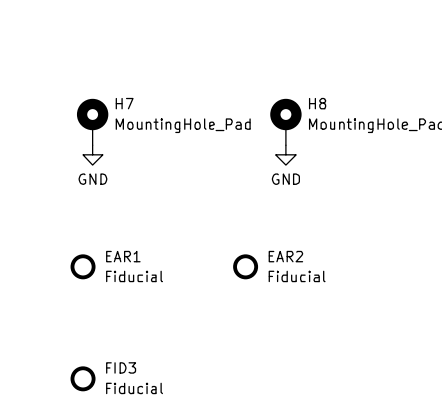
## BUTTONS



## MISC PERHIPERALS

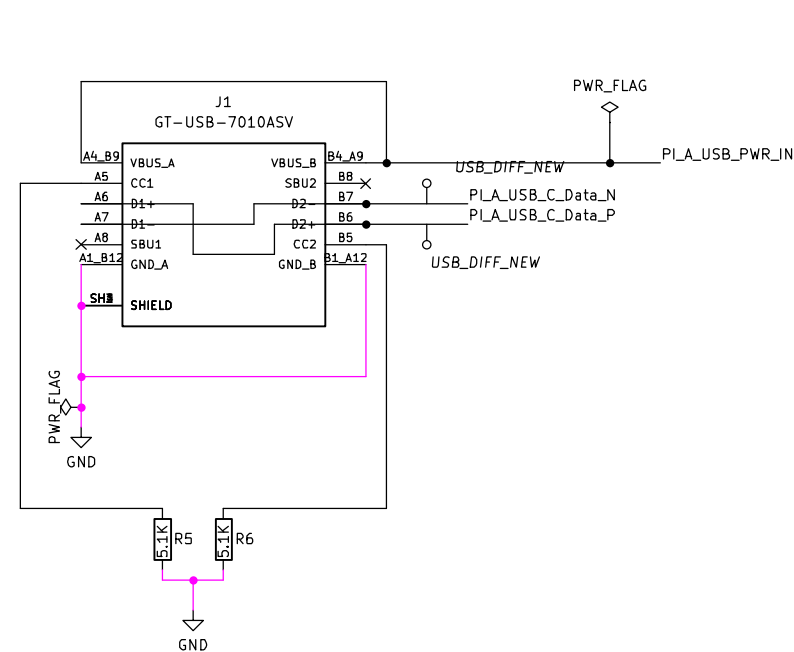


## MECHANICAL / FABRICATION



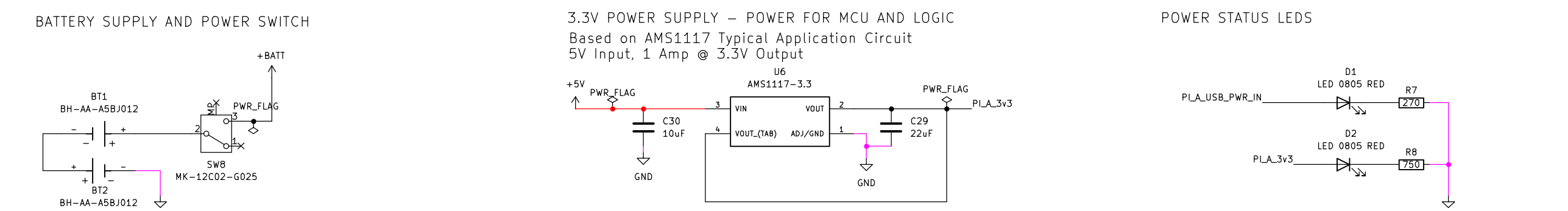
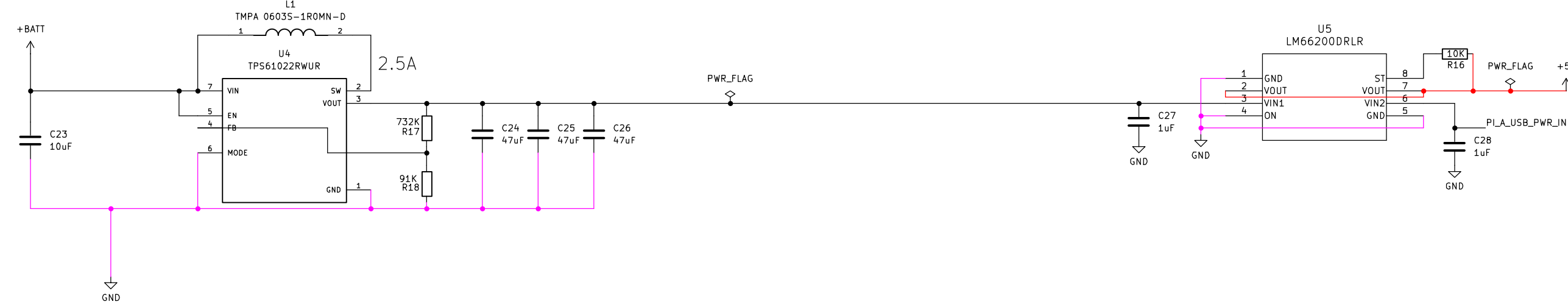
## USB TYPE C CONNECTOR

CC Resistors configured for 3A @ 5V



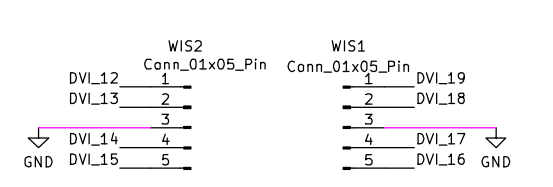
## POWER SUPPLY

BUCK/BOOST – CONVERT BATTERY VOLTAGE TO 5V FOR LEDs  
Based on Texas Instruments WEBENCH design  
2-3V Input, 2.5 Amp @ 5V Output, Efficiency: 88%

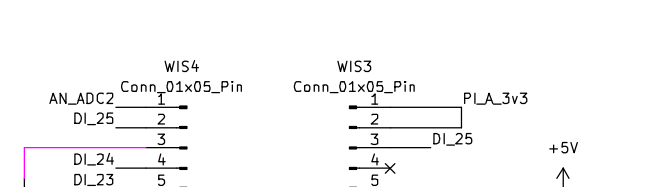


## EXPANSION HEADERS

SPARKLING DVI HEADER  
MATES WITH ADAPTRUIT DVI SOCK PART 5957  
<https://www.adaptruit.com/product/5957>



EXPANSION WHISKER  
MATES WITH CUSTOM EXPANSION WHISKER BOARDS



SAD BOGE  
ALLOWS SAD ADDONS TO MATE WITH  
WHISKER HEADER PIN 2 AND 3  
(See Figure 1)

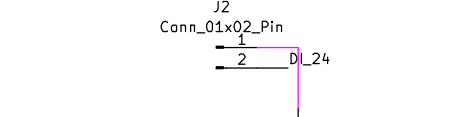


FIGURE 1. SAD PORT LAYOUT  
(PINOUT VIEWED FROM TOP)

