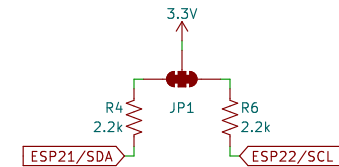
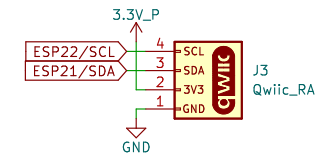
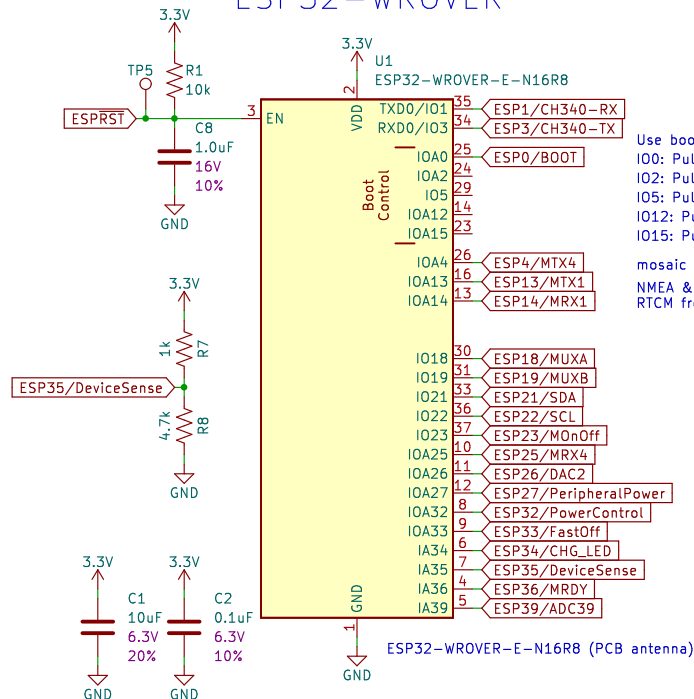


## Qwiic I<sup>2</sup>C



## ESP32-WROVER



Use boot control pins with caution: 0, 2, 5, 12, 15  
 I00: Pull-up at boot. Can be used a stat LED.  
 I02: Pull-down at boot. Boot mode.  
 I05: Pull-up at boot. SDIO timing.  
 I012: Pull-down at boot. LDO voltage.  
 I015: Pull-up. TX0 debug active.

mosaic L\_Band (SPARTN) for PPL  
 NMEA & RTCM from mosaic for Bluetooth and PPL  
 RTCM from PPL

GNSS

File: GNSS.kicad\_sch

USB

File: USB.kicad\_sch

Power

File: Power.kicad\_sch

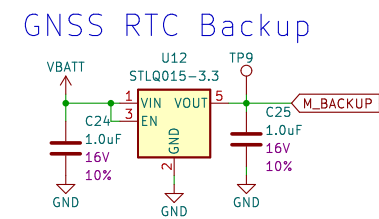
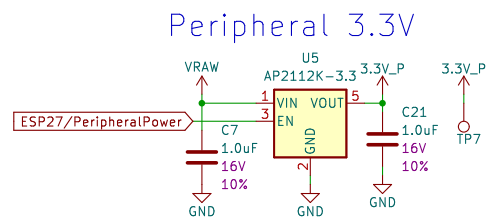
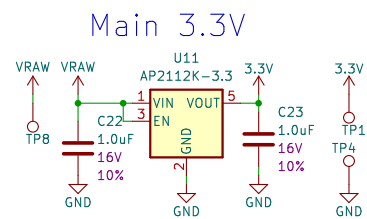
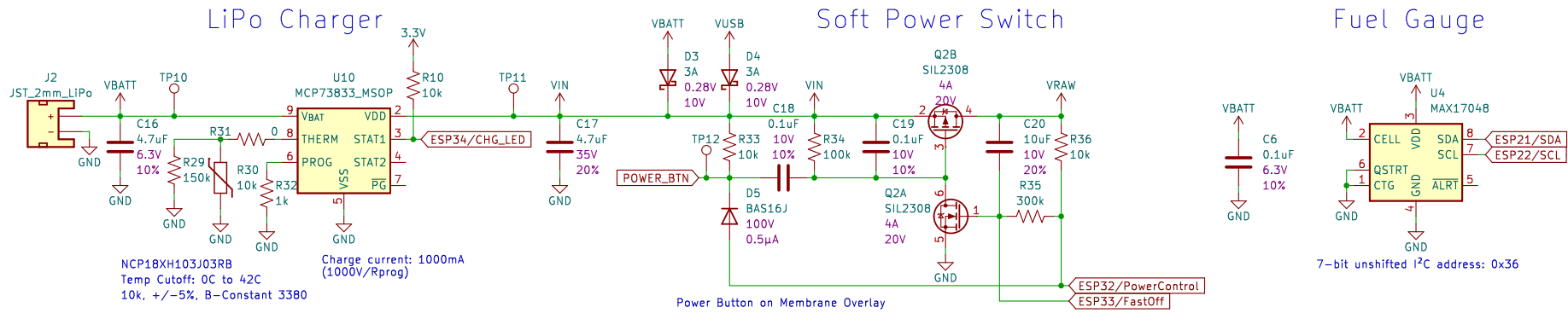


open source  
hardware

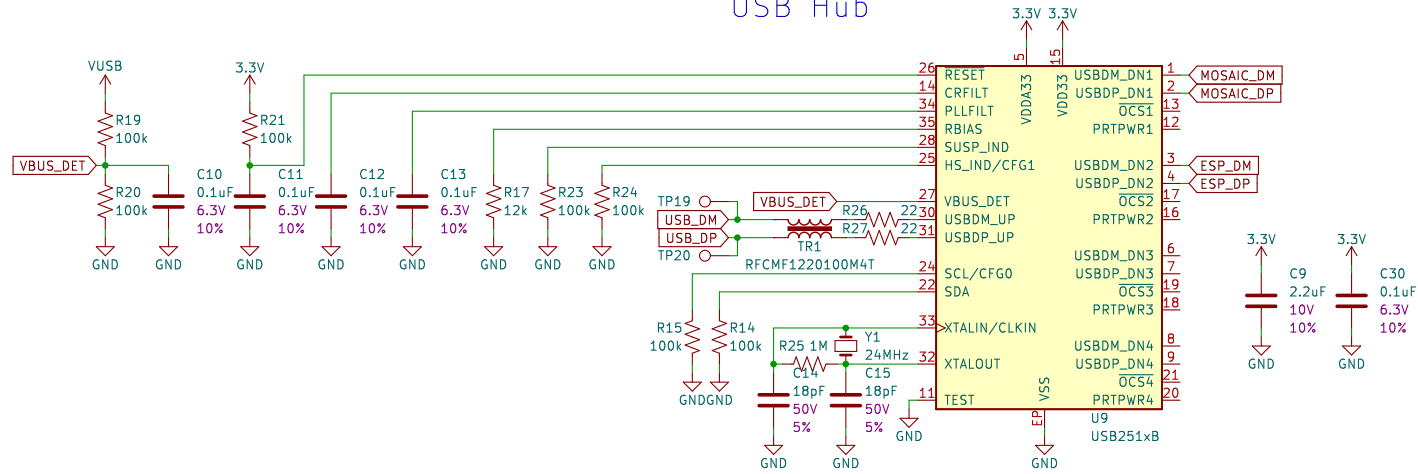
sparkfun



Ordering Instructions

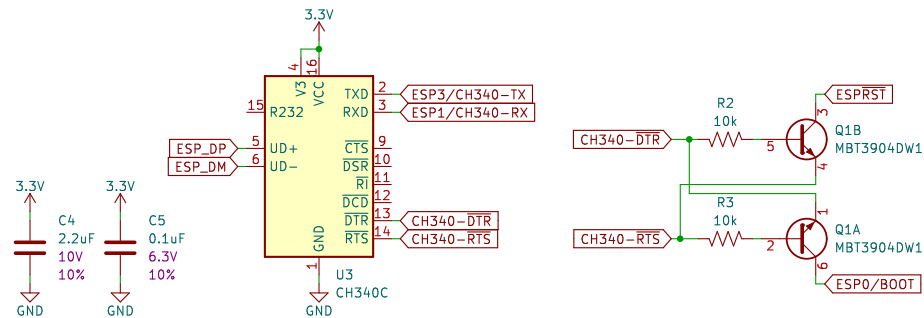


## USB Hub

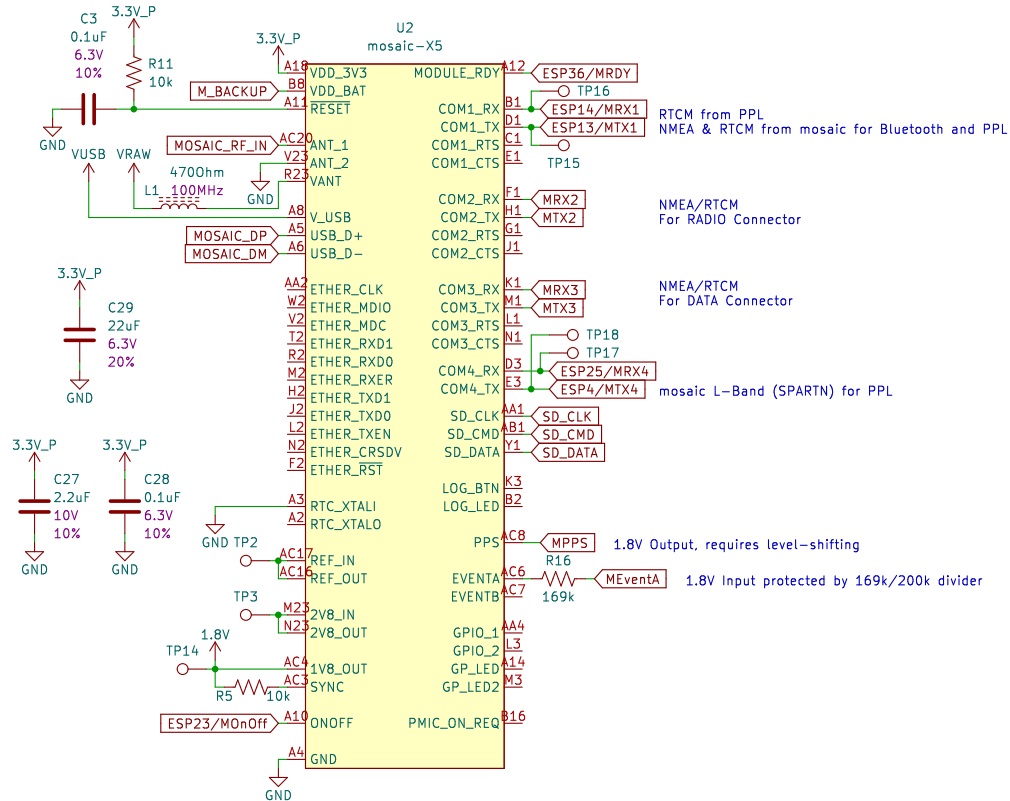


7-bit unshifted I<sup>2</sup>C address: 0x2C

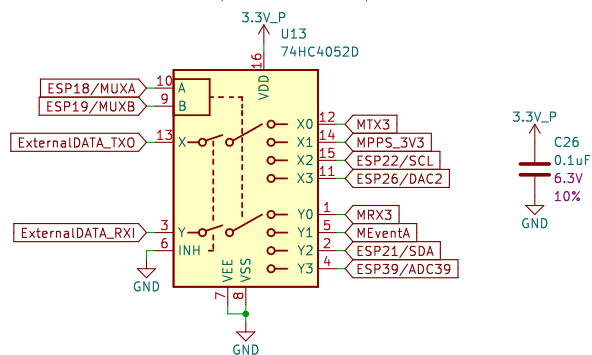
## ESP32 USB to Serial



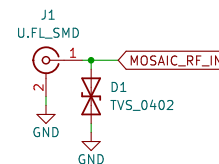
mosaic Tri-band GNSS



## Data Output Multiplexer



## GNSS Antenna



Microstrip Calculation:  
Copper Thickness (1oz): 1.4mil/0.035mm  
Board thickness: 1.6mm  
Dielectric thickness (layer 1 to 2): 0.2mm  
Er: 4.6  
Polygon Isolation: 6mil/0.1524mm  
RF Trace Width: 13mil/0.33mm  
<https://chemandy.com/calculators/coplanar-waveguide-with-ground-calculator.htm>

## PPS Level-Shifting

