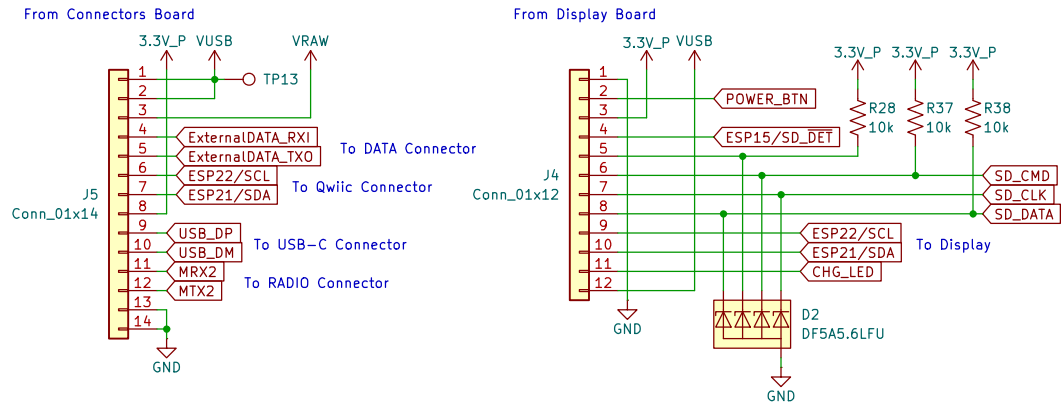
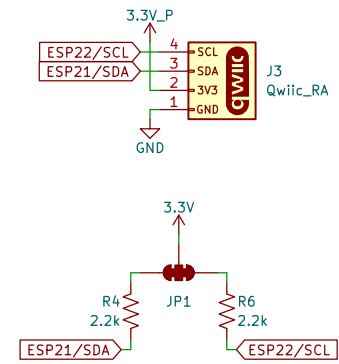


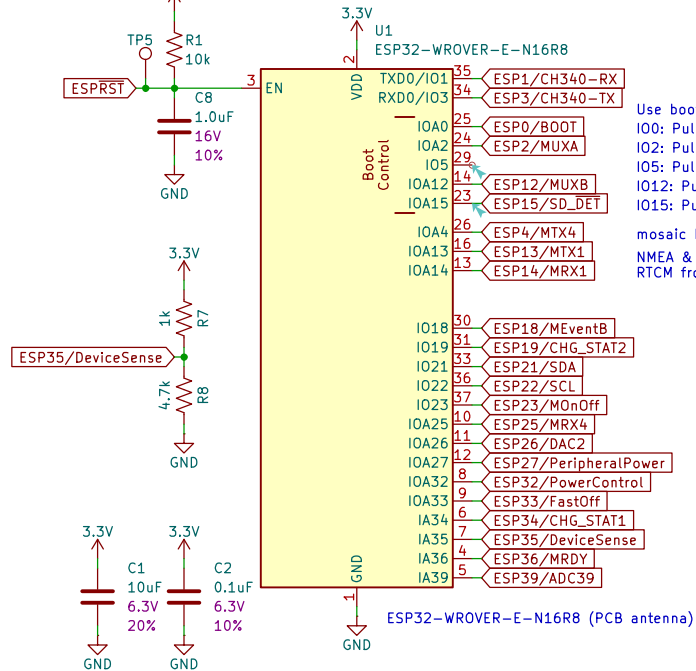
# Connectors



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



# ESP32-WROVER



Use boot control pins with caution: 0, 2, 5, 12, 15  
 IO0: Pull-up at boot. Can be used a stat LED.  
 IO2: Pull-down at boot. Boot mode.  
 IO5: Pull-up at boot. SDIO timing.  
 IO12: Pull-down at boot. LDO voltage.  
 IO15: 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



Designed by: N.S. & P.C.

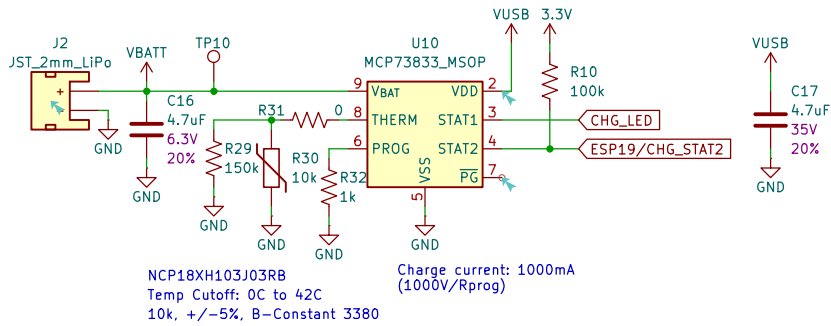
Sheet: /  
 File: SparkFun\_RTK\_Facet\_mosaic.kicad\_sch

**Title: RTK Facet mosaic L-Band**

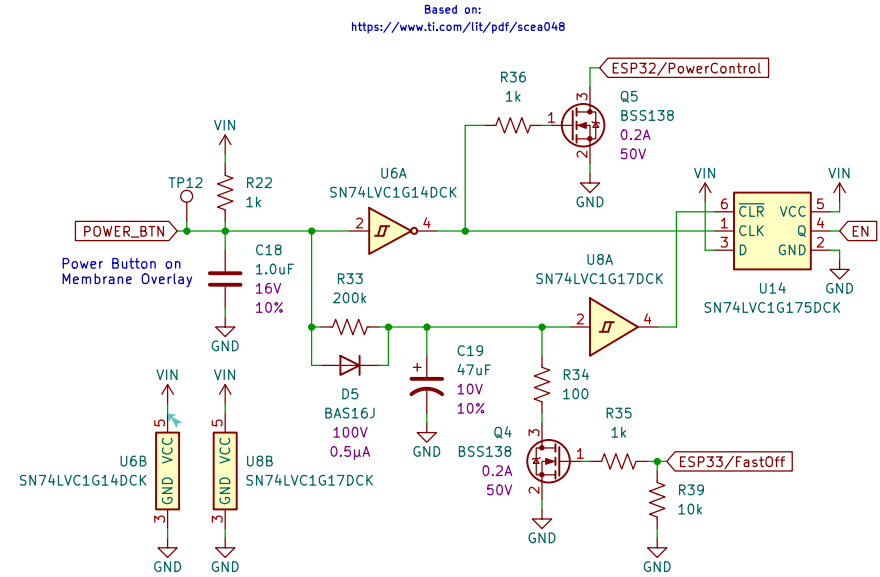
Size: USLetter Date: 2024-10-07  
 KiCad E.D.A. 8.0.5

Rev: v1.2  
 Id: 1/4

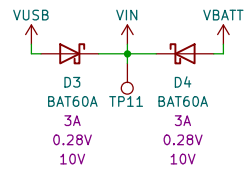
## LiPo Charger



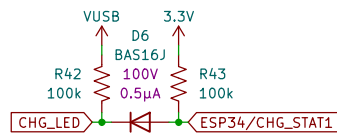
## Soft Power Switch



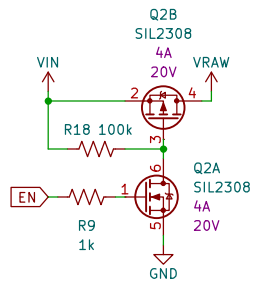
## Power Mux



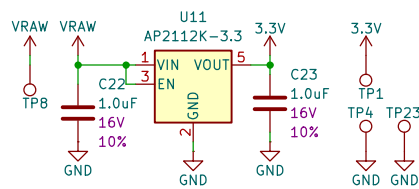
## Charger Status



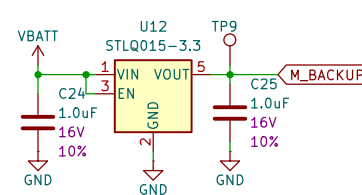
## High Side Switch



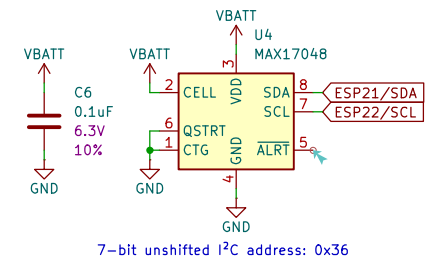
## Main 3.3V



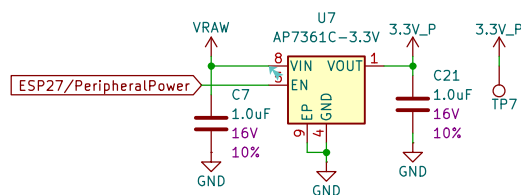
## GNSS RTC Backup



## Fuel Gauge



## Peripheral 3.3V



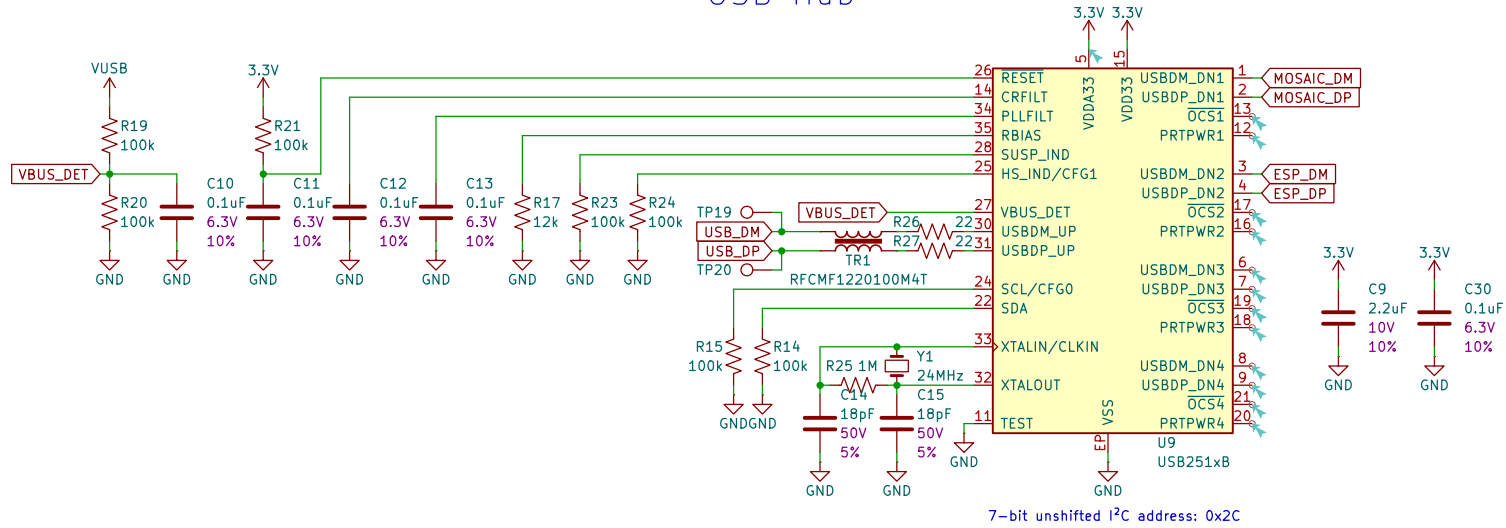
Sheet: /Power/  
File: Power.kicad\_sch

**Title: Power**

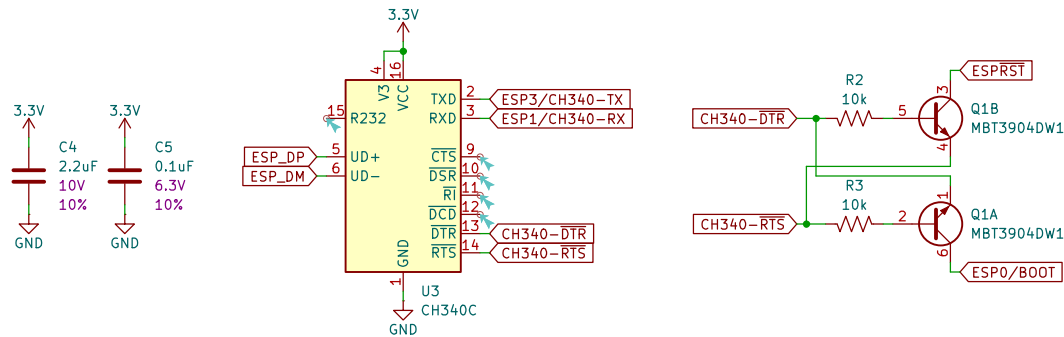
Size: USLetter Date:  
KiCad E.D.A. 8.0.5

Rev:  
Id: 2/4

## USB Hub



## ESP32 USB to Serial



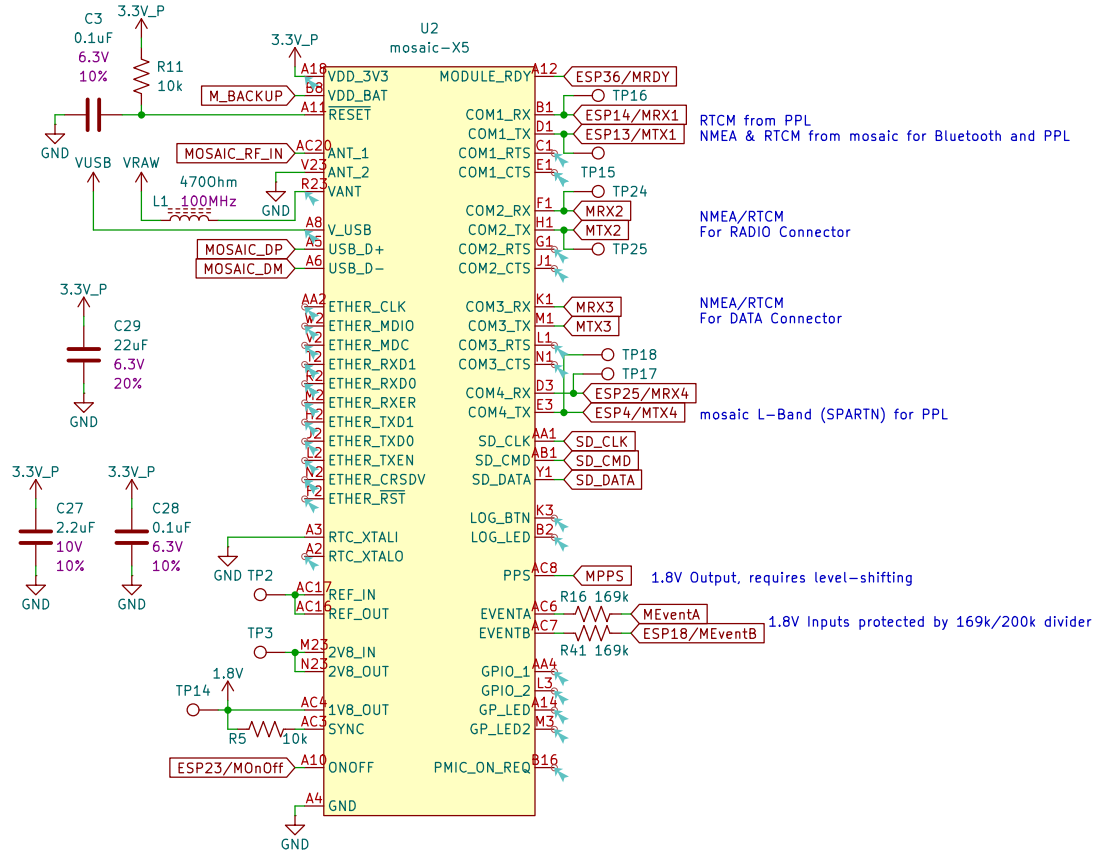
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File: USB.kicad\_sch

**Title: USB**

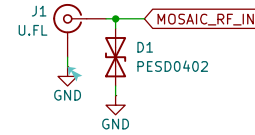
Size: USLetter Date:  
KiCad E.D.A. 8.0.5

Rev:  
Id: 3/4

# mosaic Tri-band GNSS

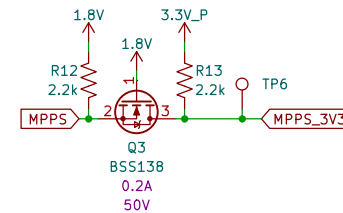


## GNSS Antenna

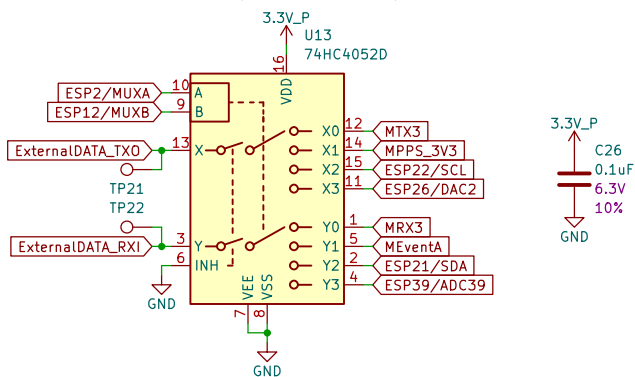


Microstrip Calculation:  
 Copper Thickness (1oz): 1.4mil/0.035mm  
 Board thickness: 1.6mm  
 Dielectric thickness (layer 1 to 2): 0.2mm  
 Er: 4.6  
 Polygon Isolation: 6mil/0.1524mm  
 RF Trace Width: 13mil/0.33mm  
<https://chemandy.com/calculators/coplanar-waveguide-with-ground-calculator.htm>

## PPS Level-Shifting



## Data Output Multiplexer



Sheet: /GNSS/	
File: GNSS.kicad_sch	
<b>Title: GNSS</b>	
Size: USLetter	Date:
KiCad E.D.A. 8.0.5	Rev: 4/4