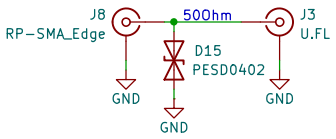
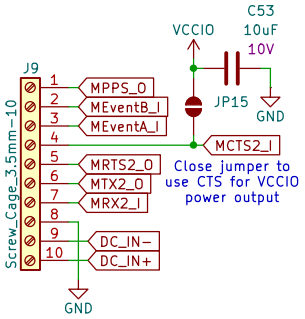
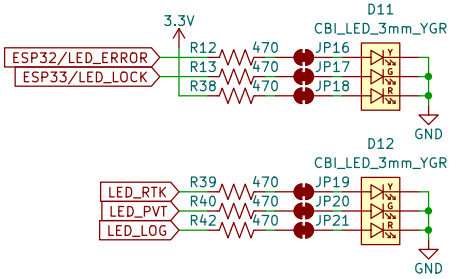
ESP32 RF



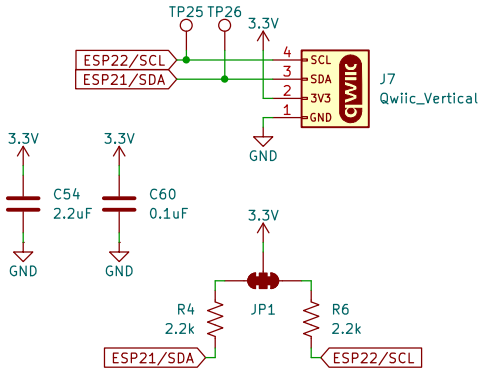
I/O Connector



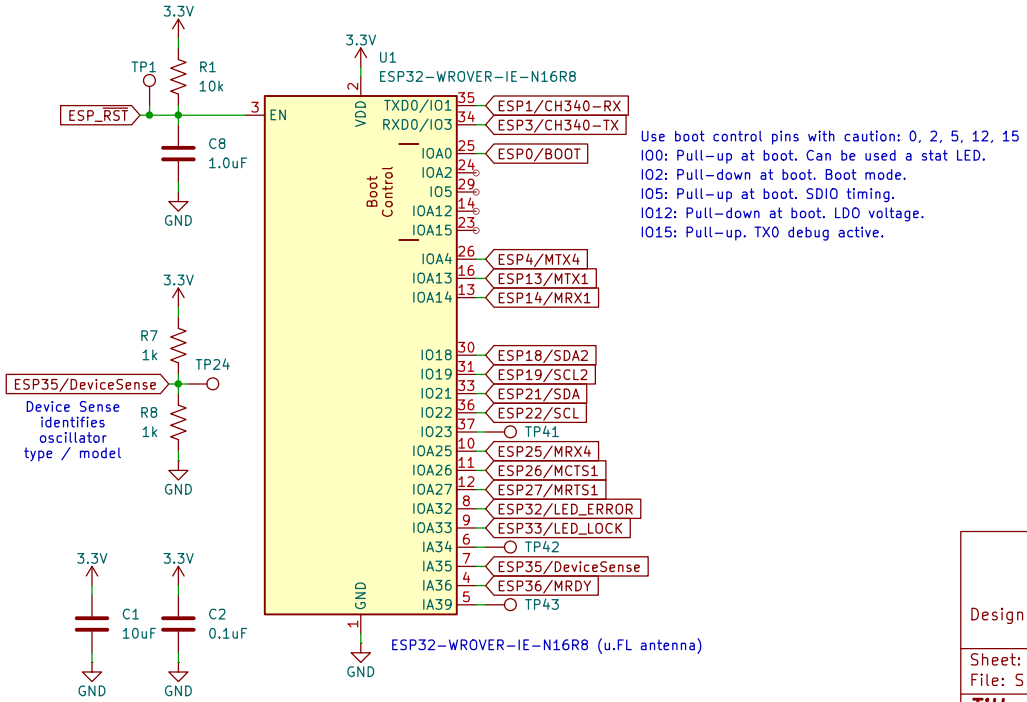
LEDs



Qwiic I²C (for OLED)



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. TXO debug active.

Power
File: Power.kicad_sch

USB
File: USB.kicad_sch

GNSS
File: GNSS.kicad_sch

Ethernet
File: Ethernet.kicad_sch

Level_Shifting
File: Level_Shifting.kicad_sch

open source hardware

Designed by: P.C.

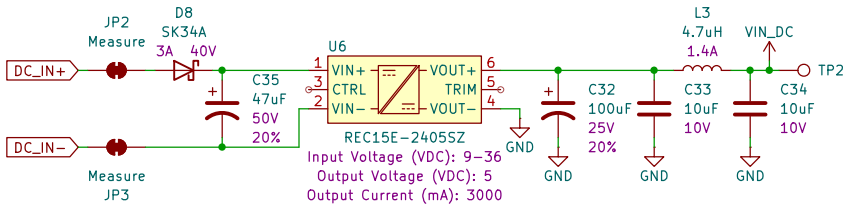
sparkfun

Sheet: /
File: SparkFun_RTK_mosaic-T.kicad_sch

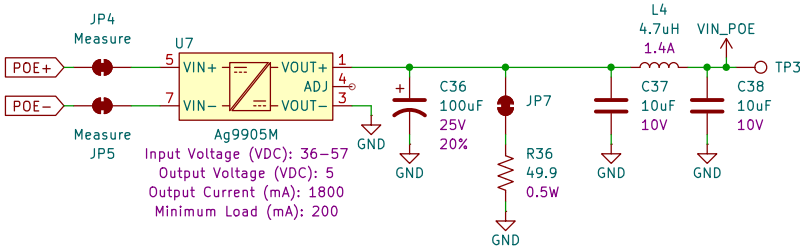
Title: RTK mosaic-T

Size: USLetter	Date: 2024-07-26	**Rev: v01**
KiCad E.D.A. 8.0.3		Id: 1/6

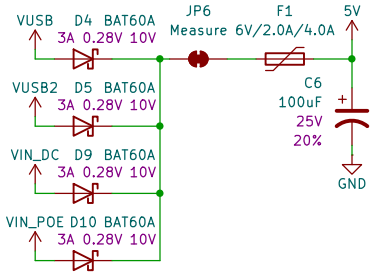
DC Power In



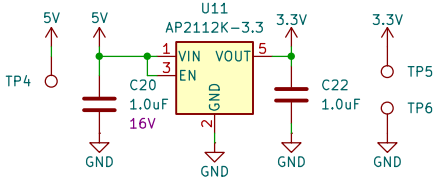
Power Over Ethernet



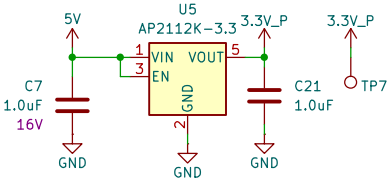
Power Mux



Main 3.3V



Peripheral 3.3V



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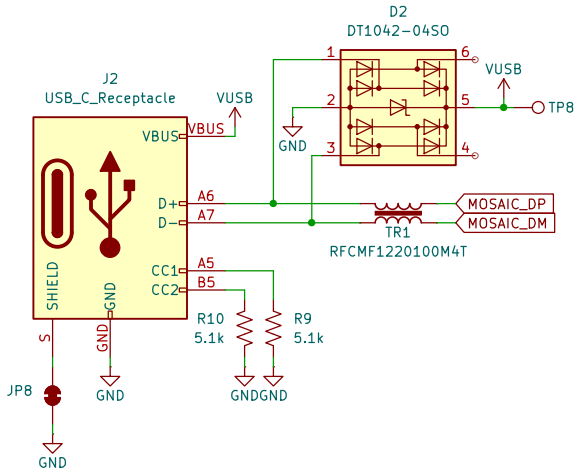
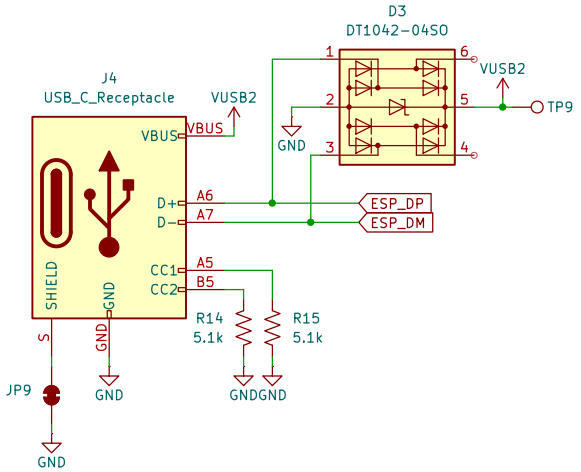
Size: USLetter | Date:	**Rev:**
KiCad E.D.A. 8.0.3	Id: 2/6

Mosaic USB

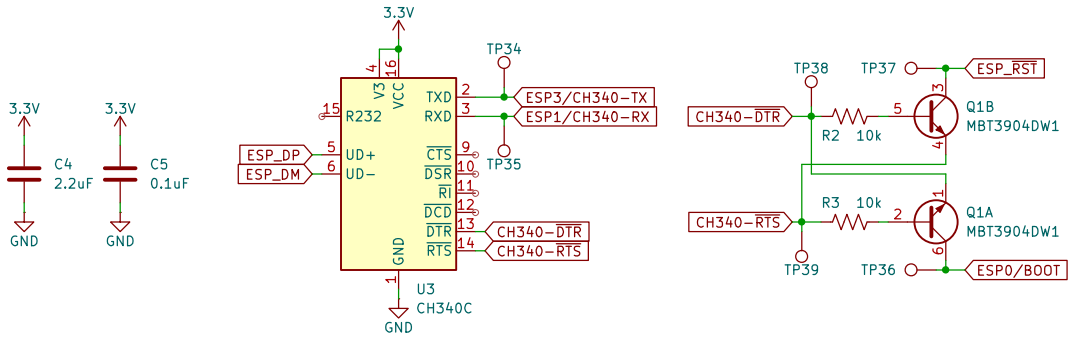


USB Track Impedance: Differential Pair
https://saturnpcb.com/saturn-pcb-toolkit/
Prepreg thickness: 8.3 mil (JLC7628). Er = 4.6
10.5 mil track with 9.5 mil gap (20 mil center to center) = 90 Ohms

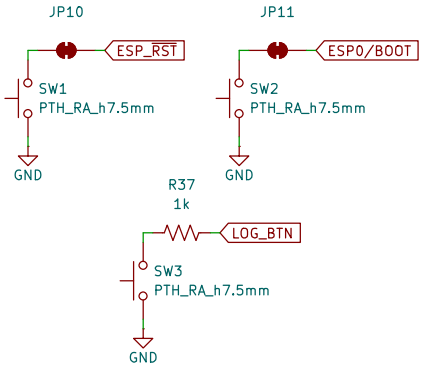
ESP32 USB



ESP32 USB to Serial



Buttons



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File: USB.kicad_sch	
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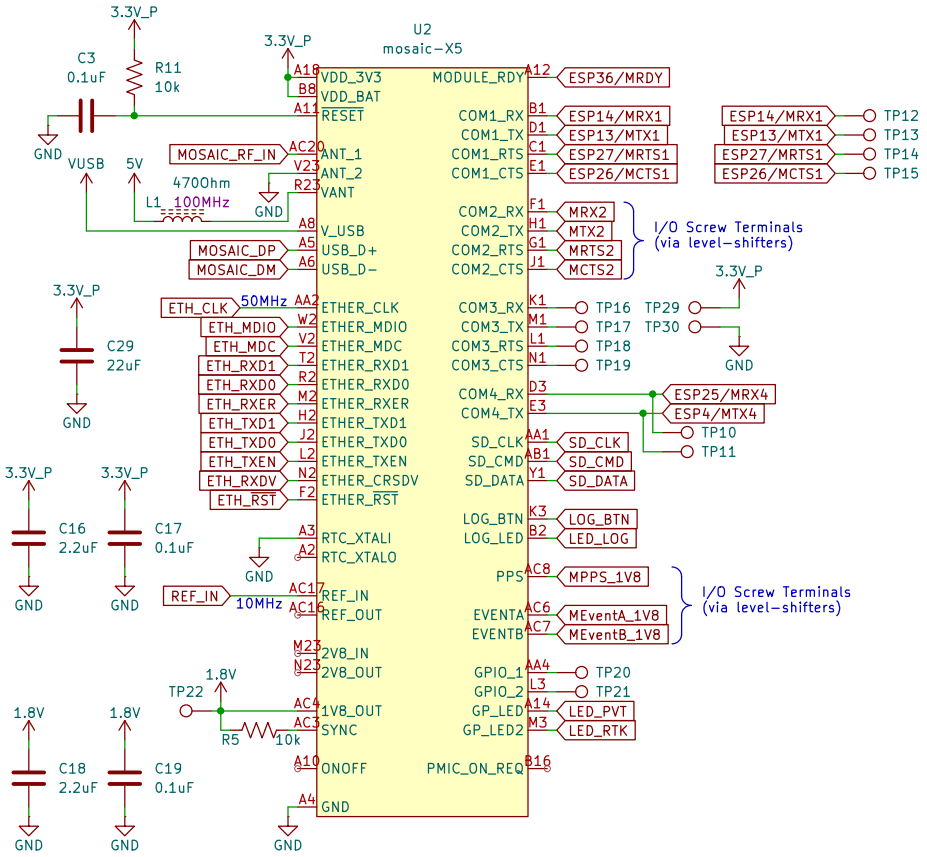
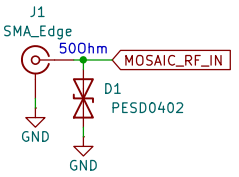
Size: USLetter	Date:
KiCad E.D.A. 8.0.3	Id: 3/6

mosaic Tri-band GNSS

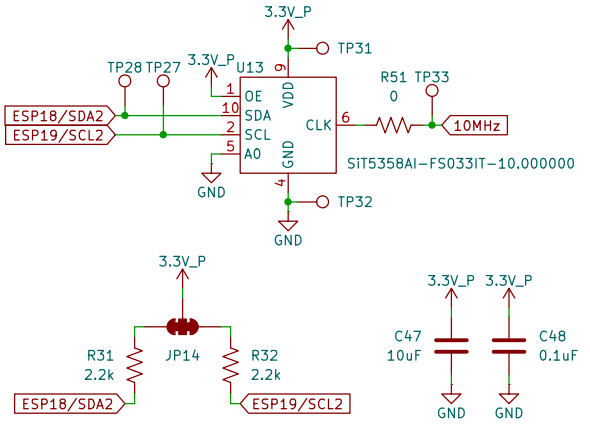


GNSS Antenna

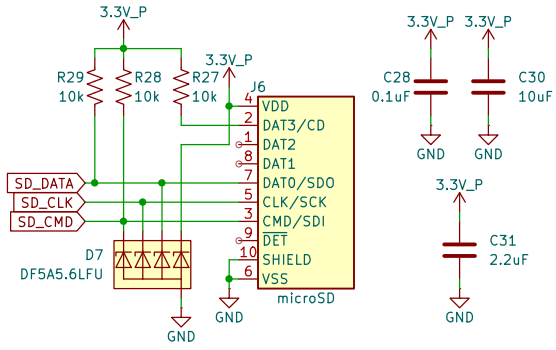


Microstrip Calculation:
Copper Thickness (1oz): 1.4mil/0.035mm
Board thickness: 1.6mm
Dielectric thickness (layer 1 to 2): 0.2mm
Er: 4.6
Polygon Isolation: 6mil/0.1524mm
RF Trace Width: 13mil/0.33mm
https://chemandy.com/calculators/coplanar-waveguide-with-ground-calculator.htm

10MHz Oscillator



microSD



Sheet: /GNSS/
File: GNSS.kicad_sch

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Size: USLetter	Date:	**Rev:**
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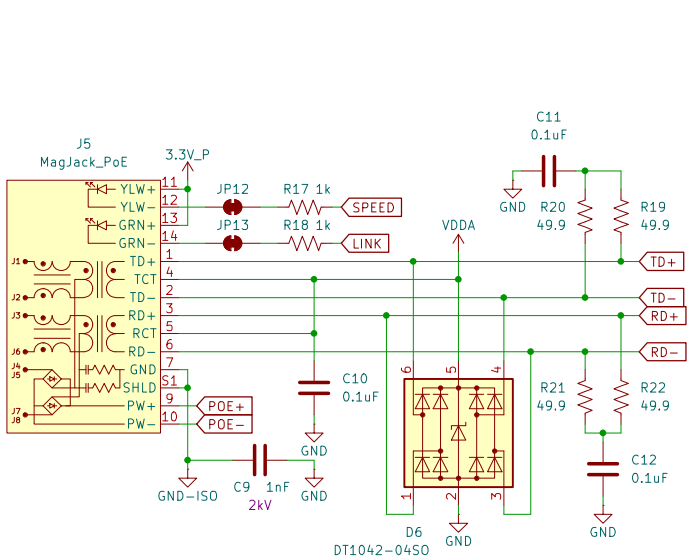
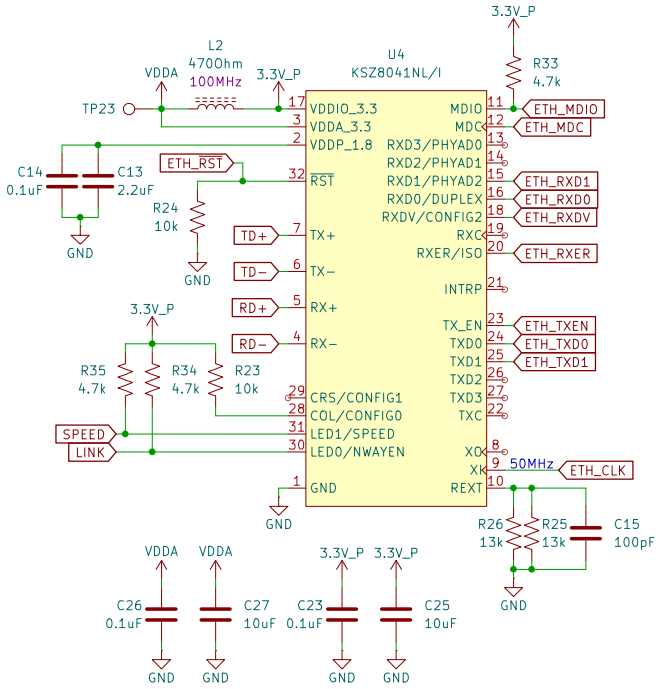
Ethernet

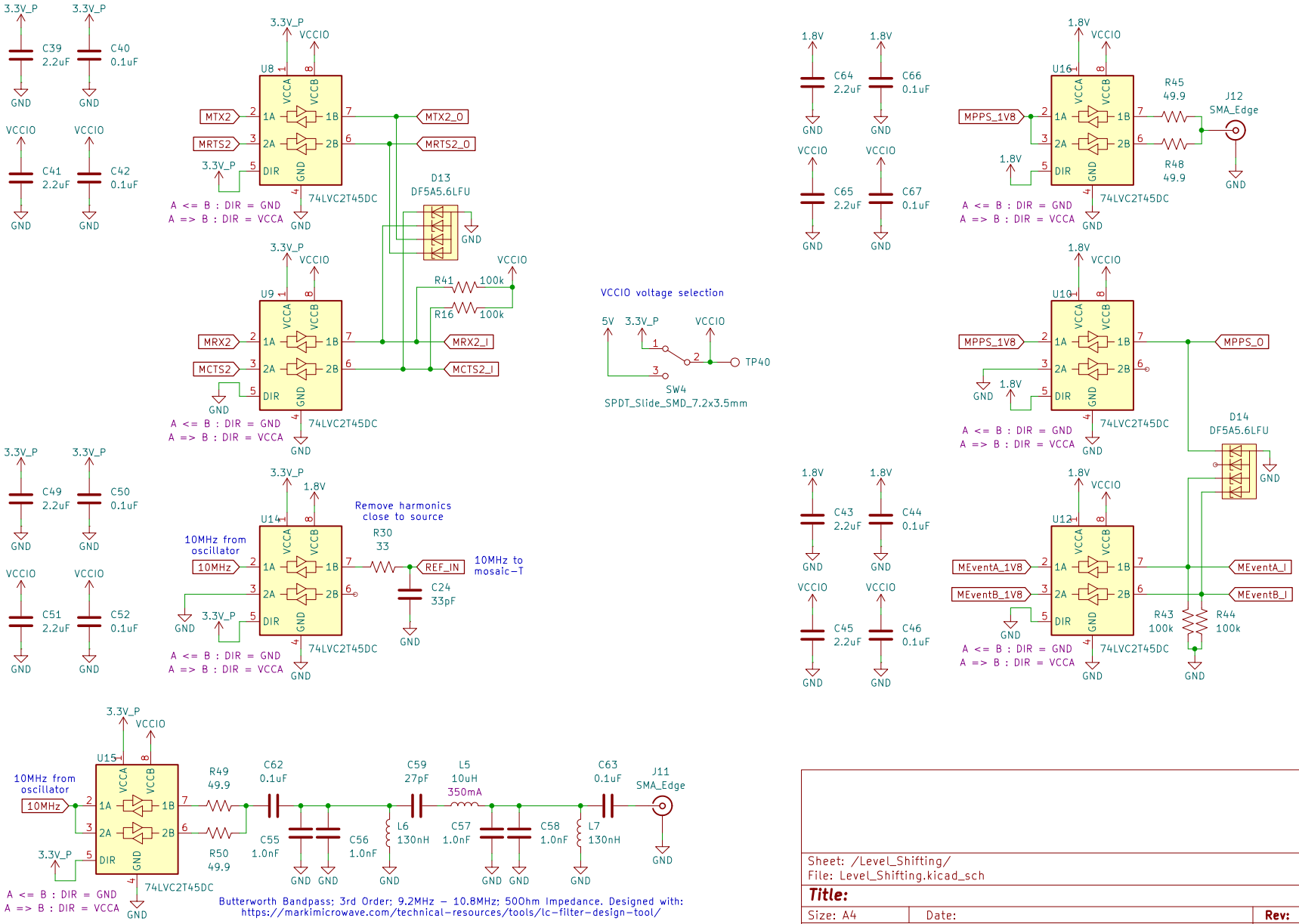




Ethernet Track Impedance: Differential Pair
https://saturnpcb.com/saturn-pcb-toolkit/
Prepreg thickness: 8.3 mil (JLC7628). Er = 4.6
9.0 mil track with 11.0 mil gap (20 mil center to center) = 100 Ohms
Each pair should match in length to better than 0.5mm

Sheet: /Ethernet/		
File: Ethernet.kicad_sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. 8.0.3		Id: 5/6

Level-Shifting



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Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. 8.0.3		Id: 6/6