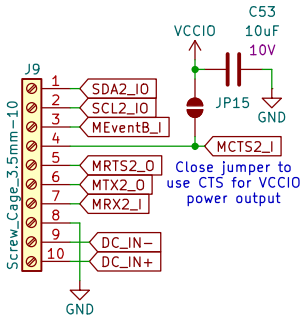
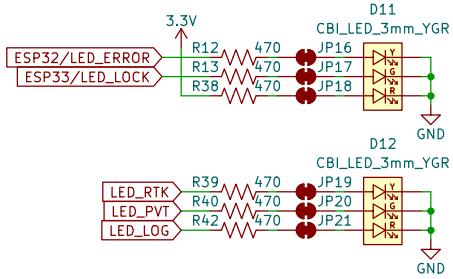
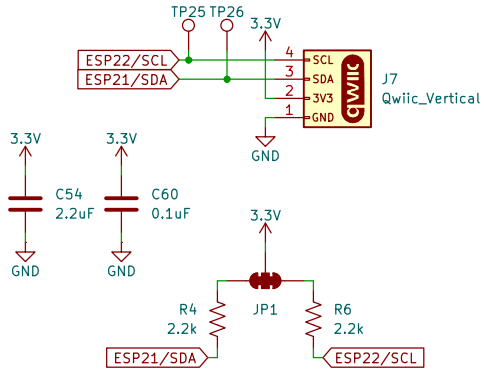
I/O Connector



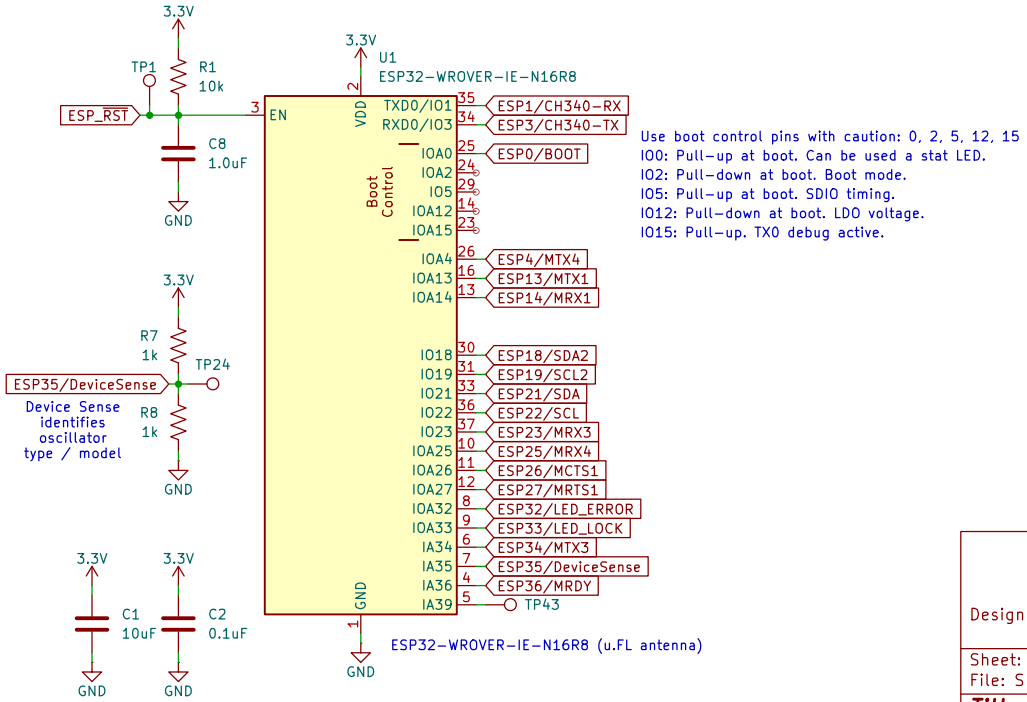
LEDs



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

Level_Shifting_10MHz
File: Level_Shifting_10MHz.kicad_sch

open source hardware

Designed by: P.C.

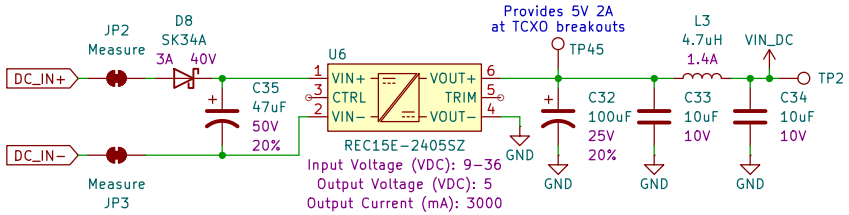
SPARKPNT

Sheet: /
File: SparkPNT_GPSDO.kicad_sch

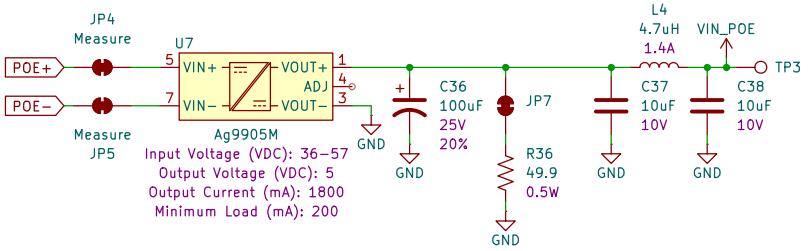
Title: GPSDO (mosaic-T, SiT5358)

Size: USLetter	Date: 2024-10-24	**Rev: v10**
KiCad E.D.A. 8.0.5		Id: 1/7

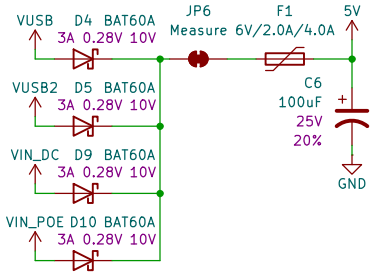
DC Power In



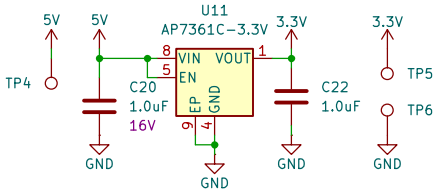
Power Over Ethernet



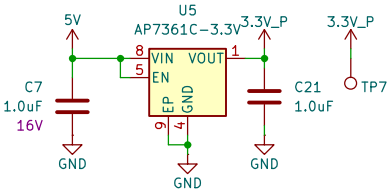
Power Mux



Main 3.3V

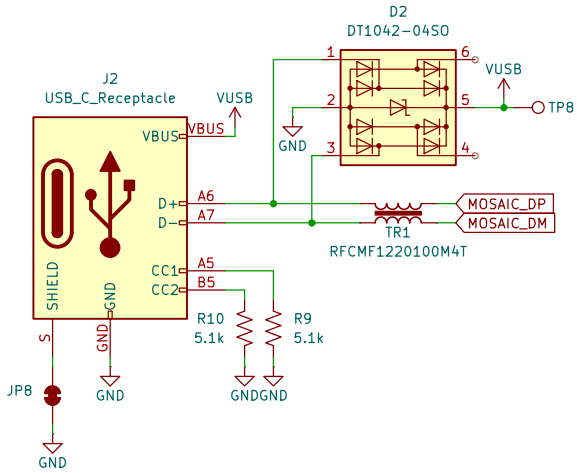


Peripheral 3.3V



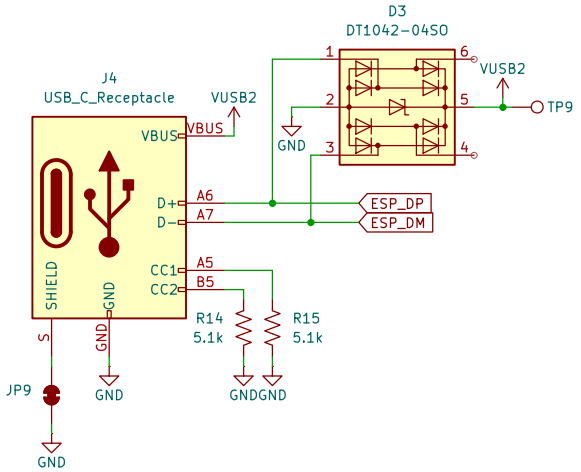
Sheet: /Power/	
File: Power.kicad_sch	
Title: Power	
Size: USLetter | Date:	**Rev:**
KiCad E.D.A. 8.0.5	Id: 2/7

Mosaic USB

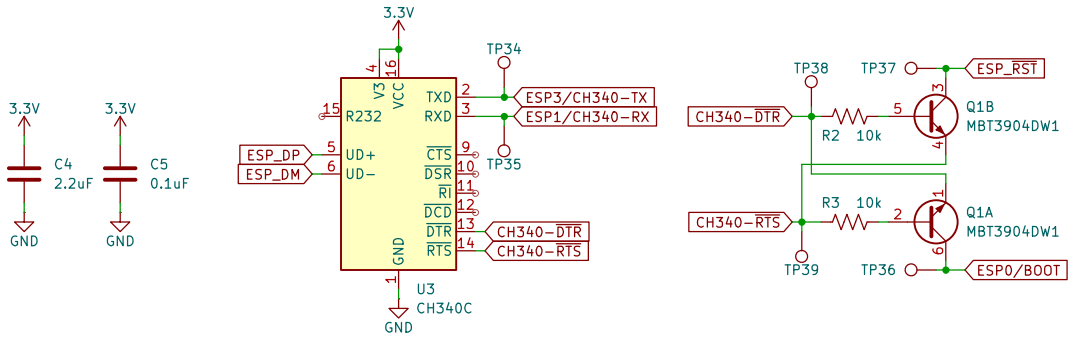


USB Track Impedance: Differential Pair
https://saturnpcb.com/saturn-pcb-toolkit/
Prepreg thickness: 8.3 mil (JLC7628). Er = 4.6
10.5 mil track with 9.5 mil gap (20 mil center to center) = 90 Ohms

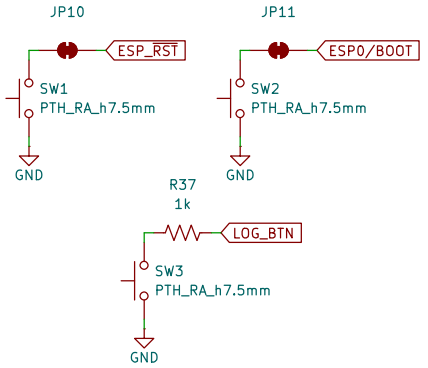
ESP32 USB



ESP32 USB to Serial



Buttons



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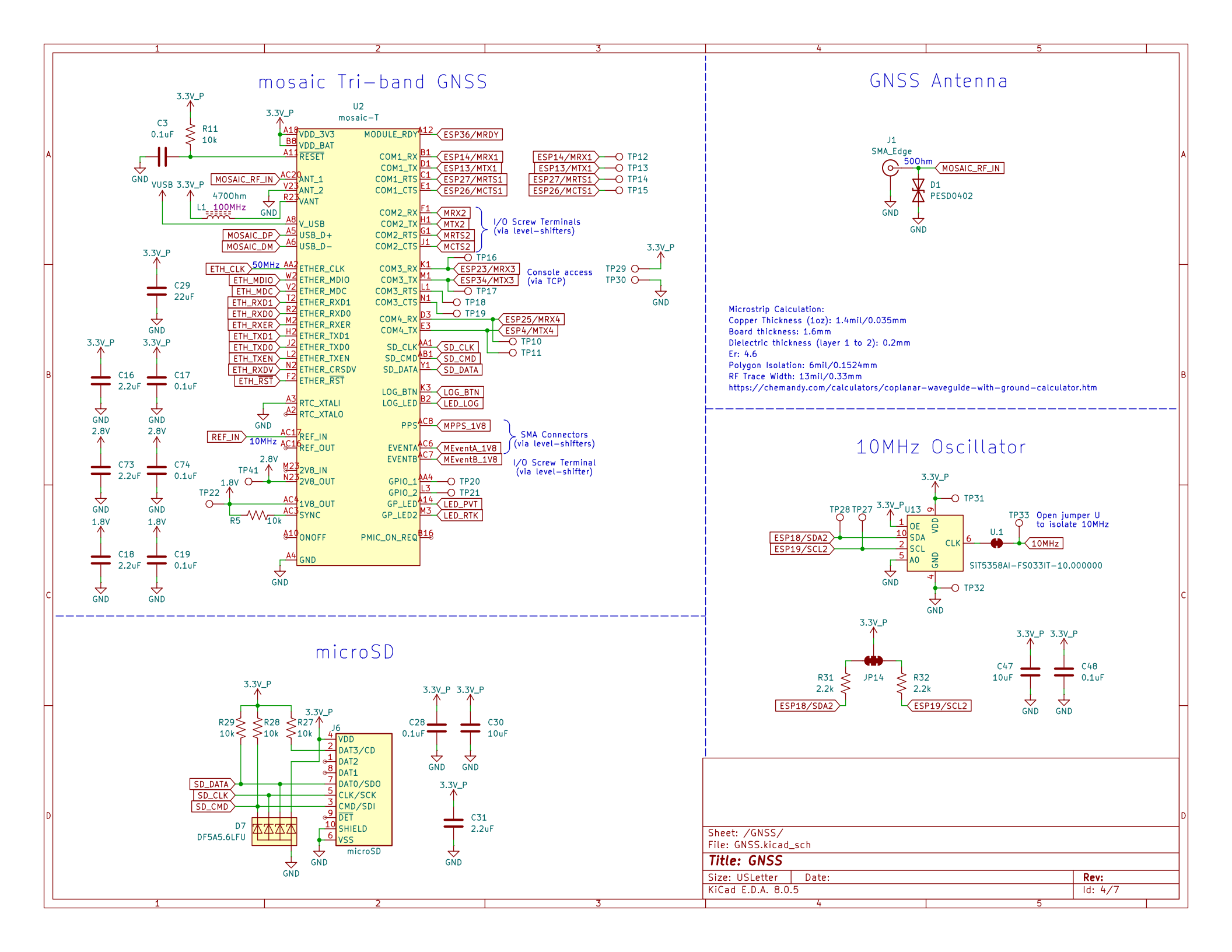
Title: USB	
Size: USLetter	Date:
KiCad E.D.A. 8.0.5	Id: 3/7

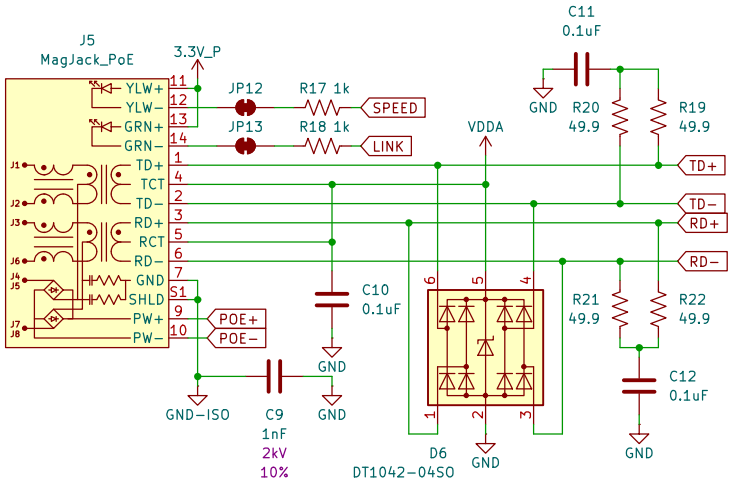


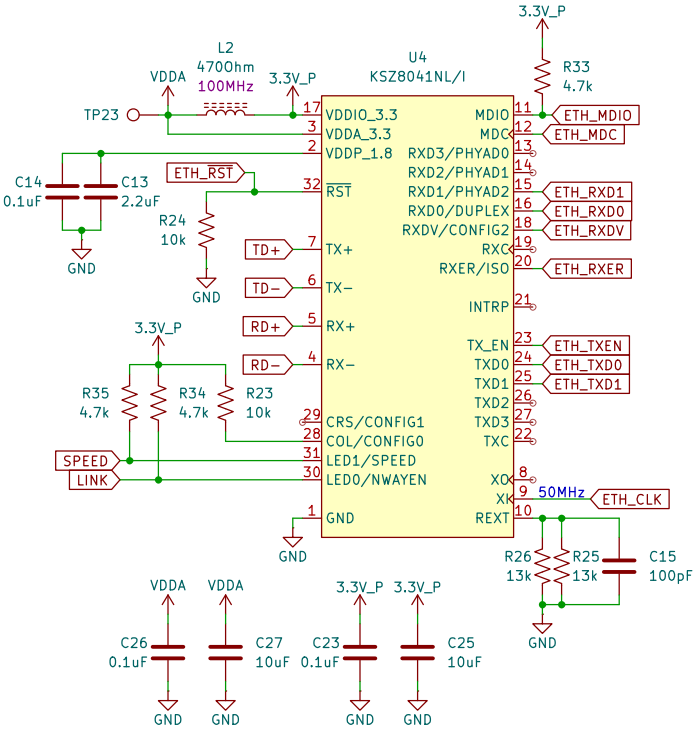
Sheet: /GNSS/
File: GNSS.kicad_sch

Title: GNSS

Size: USLetter	Date:	Rev:
KiCad E.D.A. 8.0.5		Id: 4/7

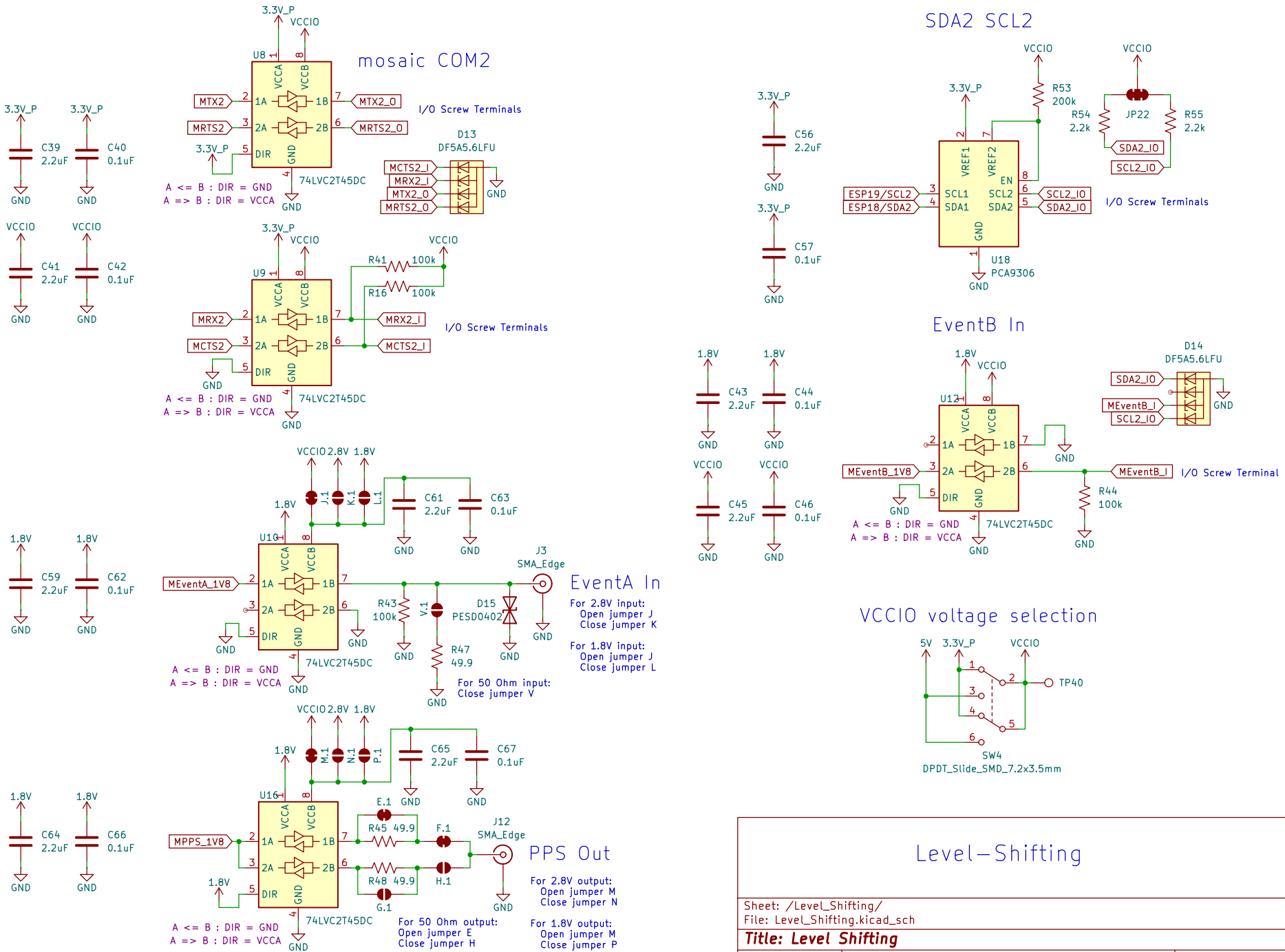
Ethernet



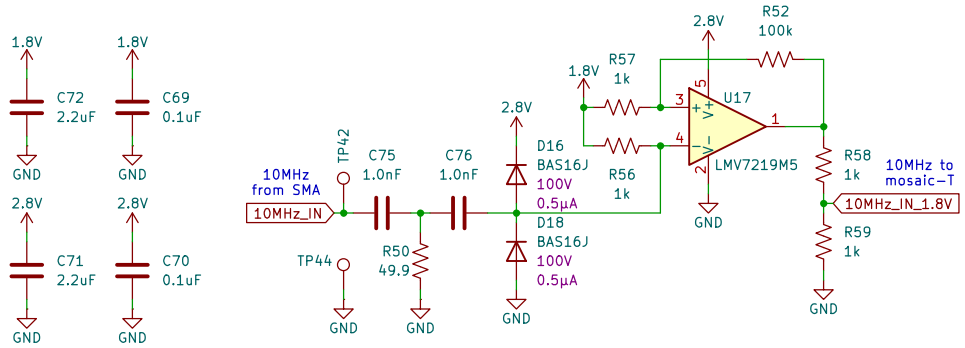


Ethernet Track Impedance: Differential Pair
https://saturnpcb.com/saturn-pcb-toolkit/
Prepreg thickness: 8.3 mil (JLC7628). Er = 4.6
9.0 mil track with 11.0 mil gap (20 mil center to center) = 100 Ohms
Each pair should match in length to better than 0.5mm

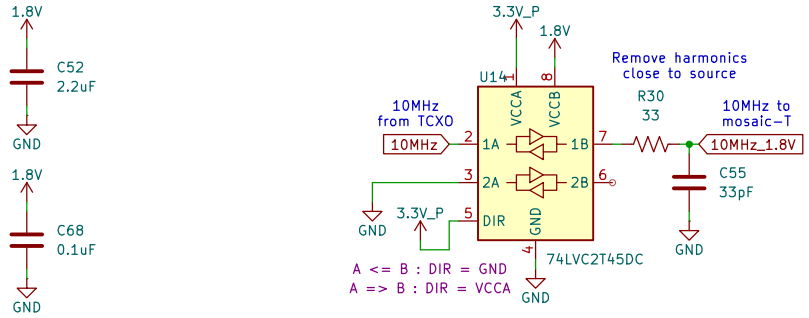
Sheet: /Ethernet/		
File: Ethernet.kicad_sch		
Title: Ethernet		
Size: USLetter	Date:	**Rev:**
KiCad E.D.A. 8.0.5		Id: 5/7


mosaic COM2
I/O Screw Terminals
74LVC2T45DC
A <= B : DIR = GND
A => B : DIR = VCCA
SDA2 SCL2
I/O Screw Terminals
U18
PCA9306
EventB In
I/O Screw Terminal
EventA In
For 2.8V input:
Open jumper J
Close jumper K
For 1.8V input:
Open jumper J
Close jumper L
For 50 Ohm input:
Close jumper V
PPS Out
For 2.8V output:
Open jumper M
Close jumper N
For 1.8V output:
Open jumper M
Close jumper P
For 50 Ohm output:
Open jumper E
Close jumper H
VCCIO voltage selection
SW4
DPDT_Slide_SMD_7.2x3.5mm
Level-Shifting
Sheet: /Level_Shifting/
File: Level_Shifting.kicad_sch
Title: Level Shifting
Size: USLetter
Date:
Rev:
KiCad E.D.A. 8.0.5
Id: 6/7

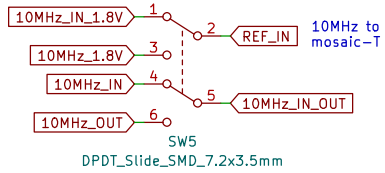
10MHz In
Input impedance: 50Ω
Detection level: −14dBm
Max supported level: +12dBm

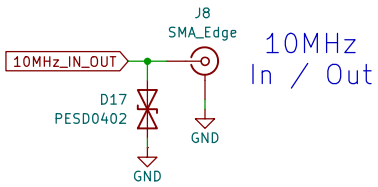


10MHz 1.8V for mosaic−T

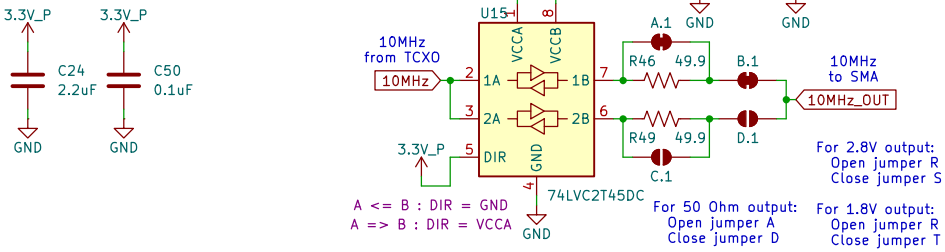


10MHz In / Out





10MHz Out



Level−Shifting 10MHz

Sheet: /Level_Shifting_10MHz/
File: Level_Shifting_10MHz.kicad_sch

Title: Level Shifting 10MHz

Size: USLetter	Date:	Rev:
KiCad E.D.A. 8.0.5		Id: 7/7