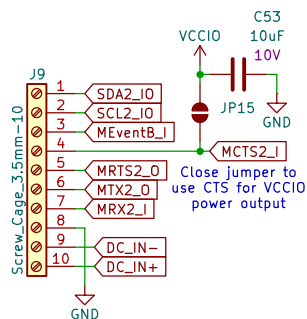
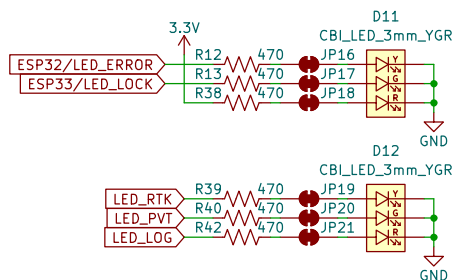


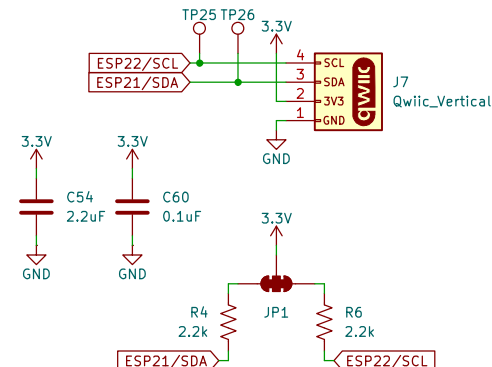
I/O Connector



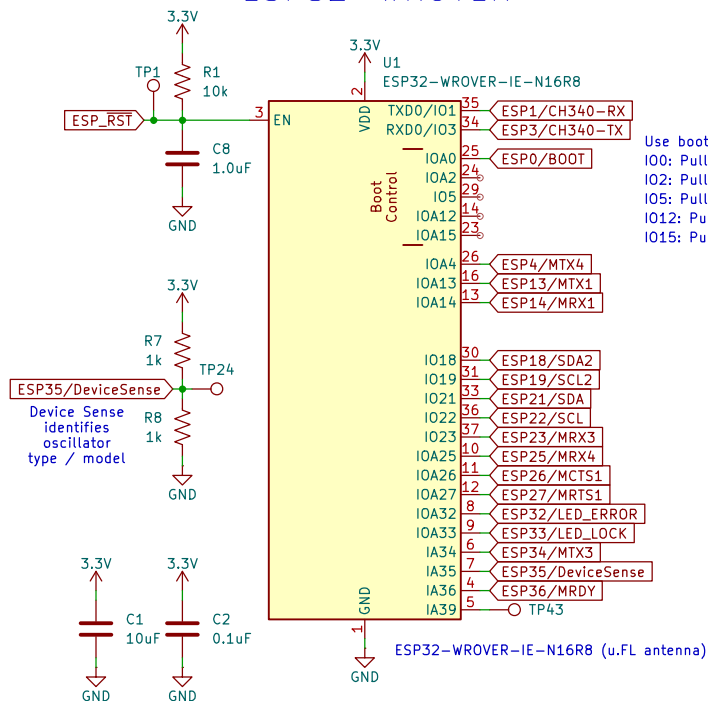
LEDs



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. TX0 debug active.

Power

File: Power.kicad_sch

USB

File: USB.kicad_sch

GNSS

File: GNSS.kicad_sch

Ethernet

File: Ethernet.kicad_sch

LevelShifting

File: LevelShifting.kicad_sch

LevelShifting_10MHz

File: LevelShifting_10MHz.kicad_sch



SPARKPNT

Designed by: P.C.

Sheet: /
 File: SparkFun_RTK_mosaic-T.kicad_sch

Title: GPSDO (mosaic-T, SiT5358)

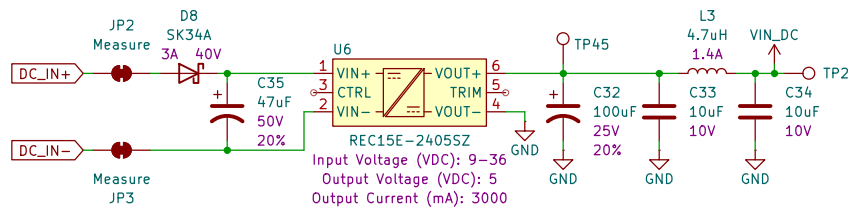
Size: USLetter Date: 2024-10-17

KiCad E.D.A. 8.0.5

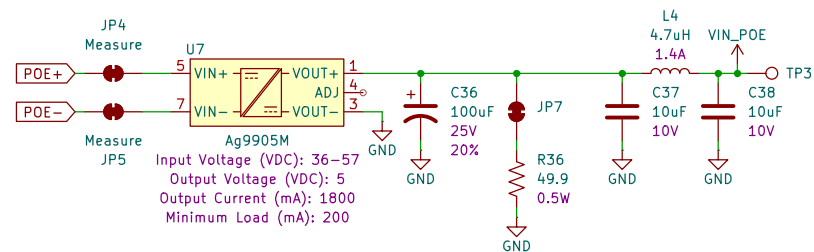
Rev: v10

Id: 1/7

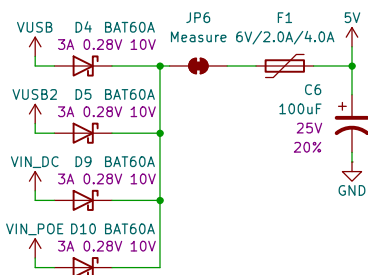
DC Power In



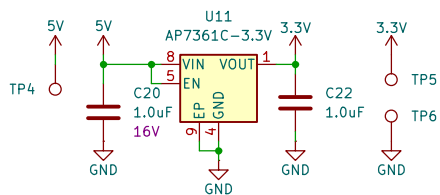
Power Over Ethernet



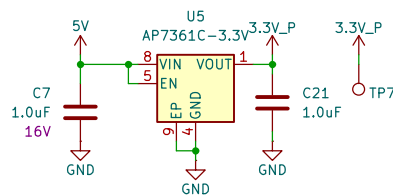
Power Mux



Main 3.3V



Peripheral 3.3V



Sheet: /Power/
 File: Power.kicad_sch

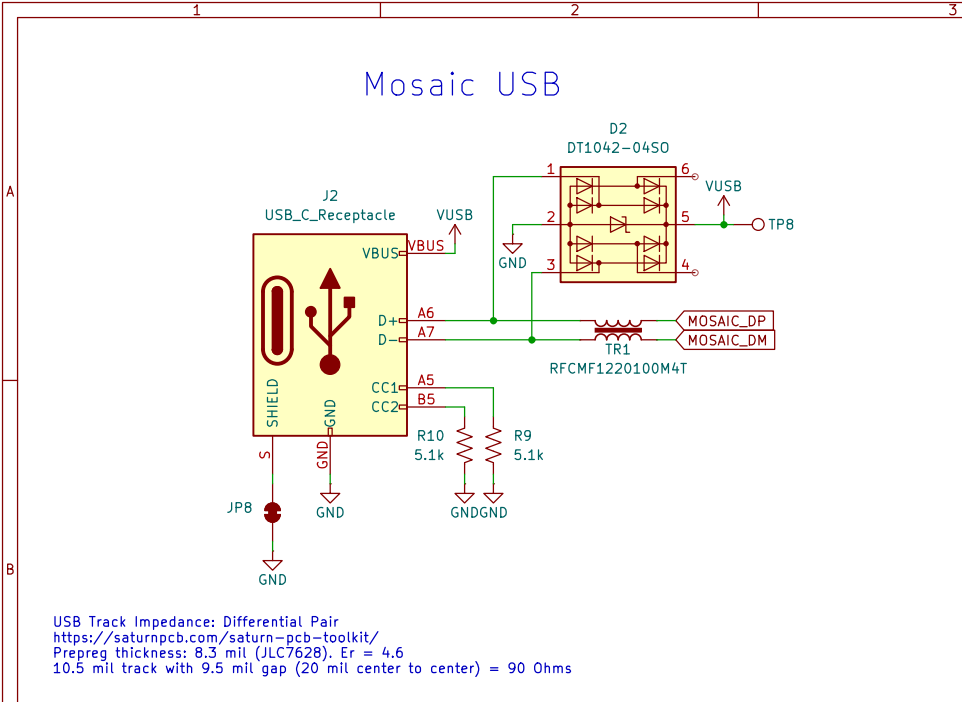
Title: Power

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

Rev:
 Id: 2/7

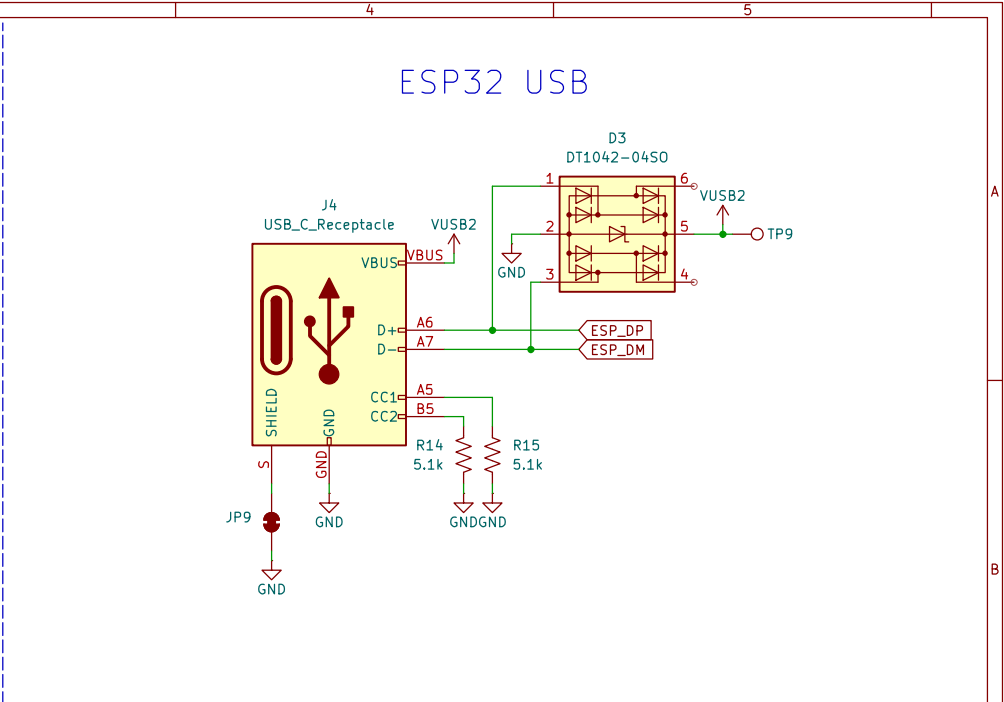
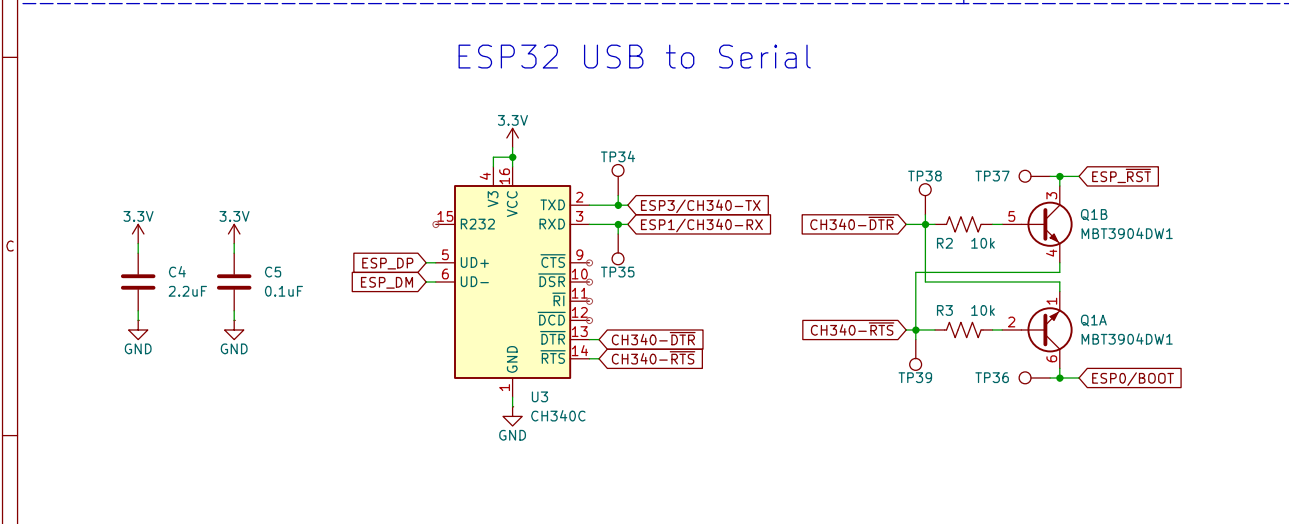
Mosaic USB

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



Mosaic USB

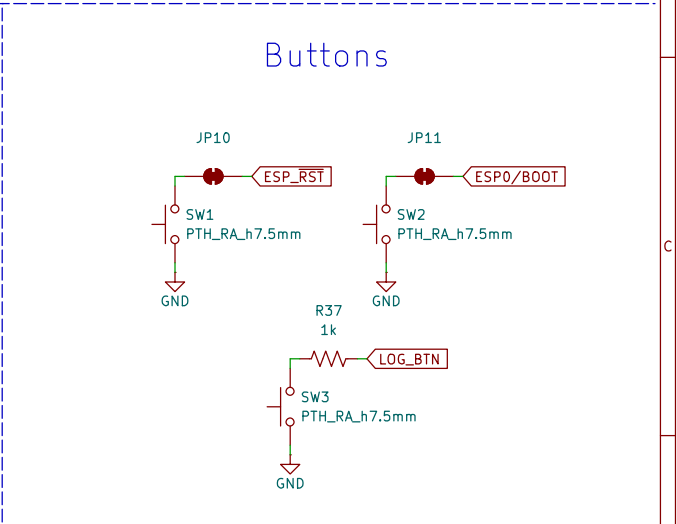
USB Track Impedance: Differential Pair
<https://saturnpcb.com/saturn-pcb-toolkit/>
Prepreg thickness: 8.3 mil (JLC7628). Er = 4.6
10.5 mil track with 9.5 mil gap (20 mil center to center) = 90 Ohms

[illegible][illegible]

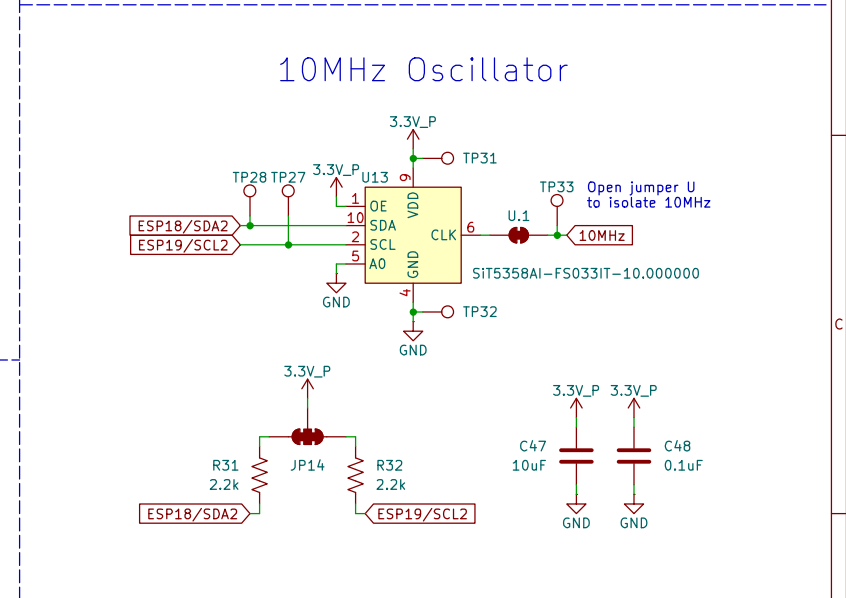
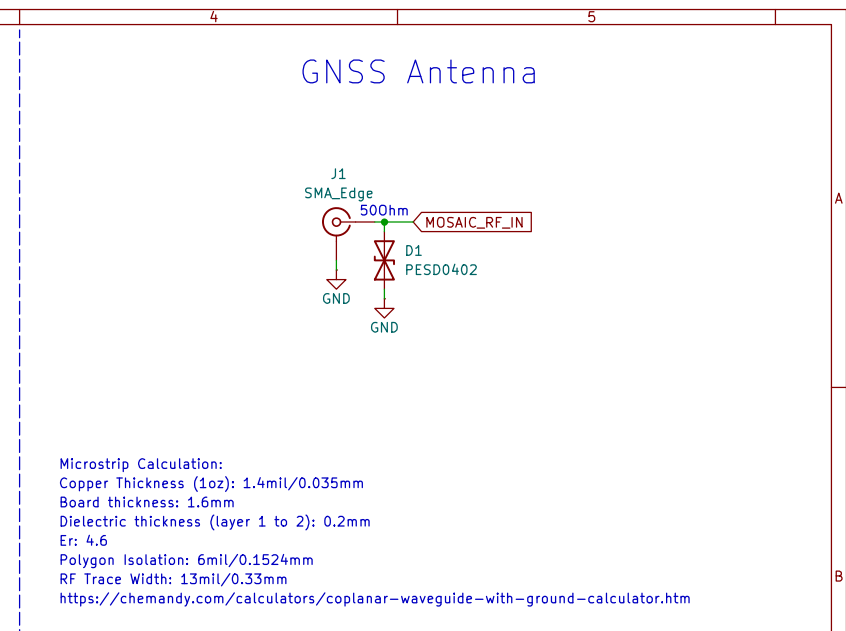
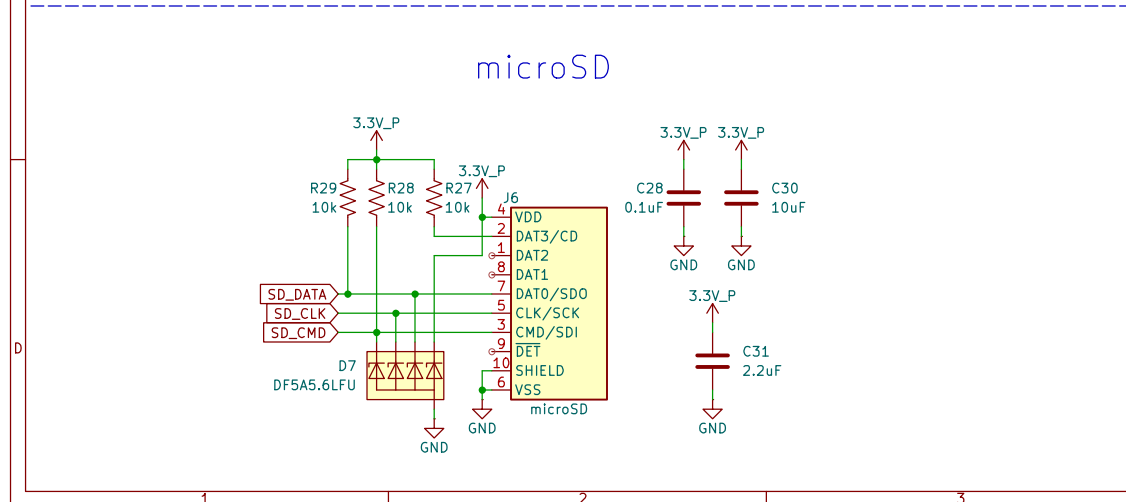
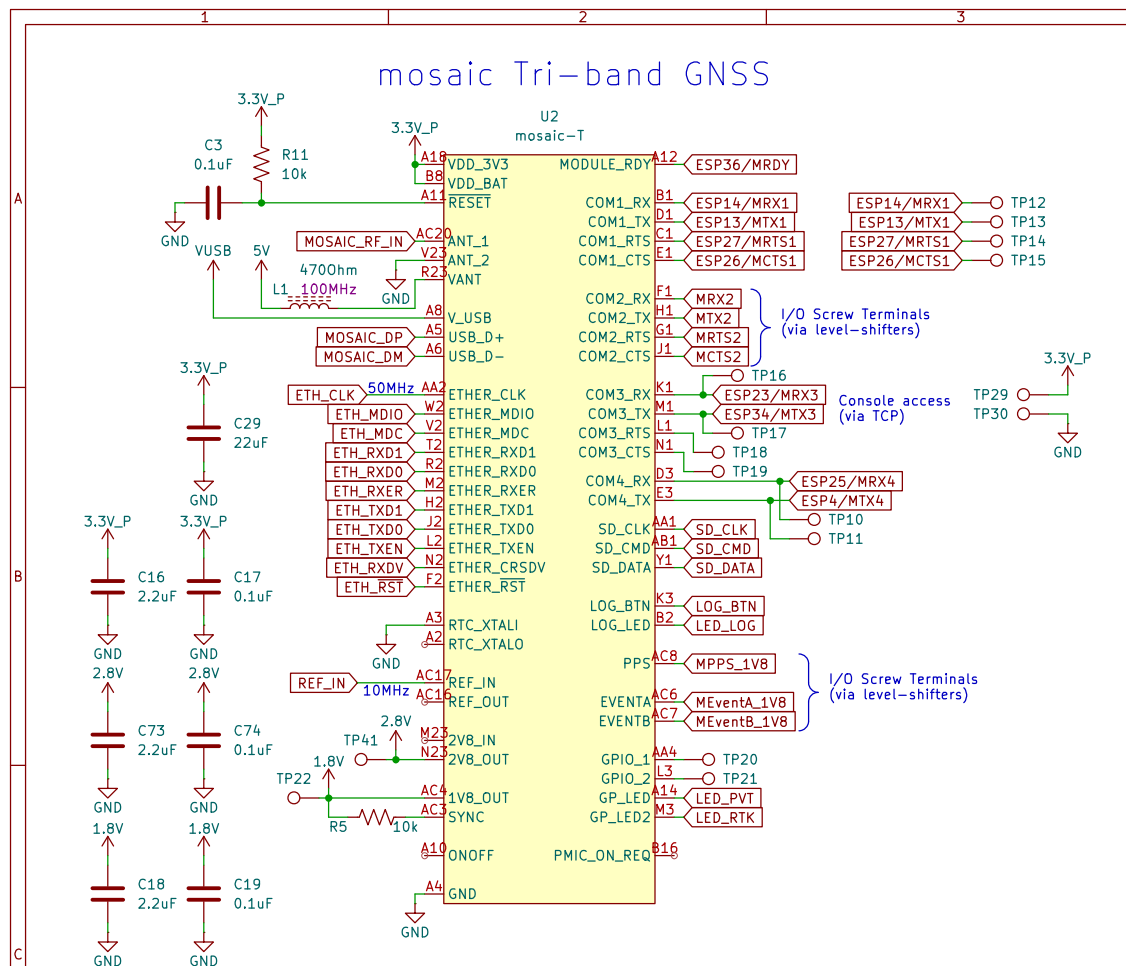
Buttons

The diagram illustrates the wiring for three push buttons (SW1, SW2, SW3) connected to microcontroller pins. Each button is connected to GND through a 7.5mm PTH_RA pin. A 1k resistor (R37) is connected between LOG_BTN and SW3.

- SW1:** Connected to JP10 (ESP_RST) and GND through a 7.5mm PTH_RA pin.
- SW2:** Connected to JP11 (ESP0/BOOT) and GND through a 7.5mm PTH_RA pin.
- SW3:** Connected to LOG_BTN and GND through a 7.5mm PTH_RA pin. A 1k resistor (R37) is connected between LOG_BTN and SW3.



Rev:
Id: 3/7



Sheet: /GNSS/
File: GNSS.kicad_sch

Title: GNSS

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

Rev:
Id: 4/7

Ethernet

The schematic illustrates the Ethernet interface circuit. It begins with a MagJack_PoE module (J5) connected to a 3.3V_P supply. The module's pins are connected to a network of resistors (R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R33, R34, R35) and capacitors (C9, C10, C11, C12, C13, C14, C15, C23, C25, C26, C27). The circuit includes a 4700hm 100MHz inductor (L2) and a 4.7k resistor (R33). The Ethernet PHY (U4, KSZ8041NL/I) is connected to the 3.3V_P supply and the network of components. The PHY's pins are connected to the 3.3V_P supply and the network of components. The circuit also includes a 50MHz clock source (ETH_CLK) and a 100pF capacitor (C15). The schematic is labeled with various component values and pin numbers, and includes a title block at the bottom right.

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:
KiCad E.D.A. 8.0.5	Rev: Id: 5/7

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

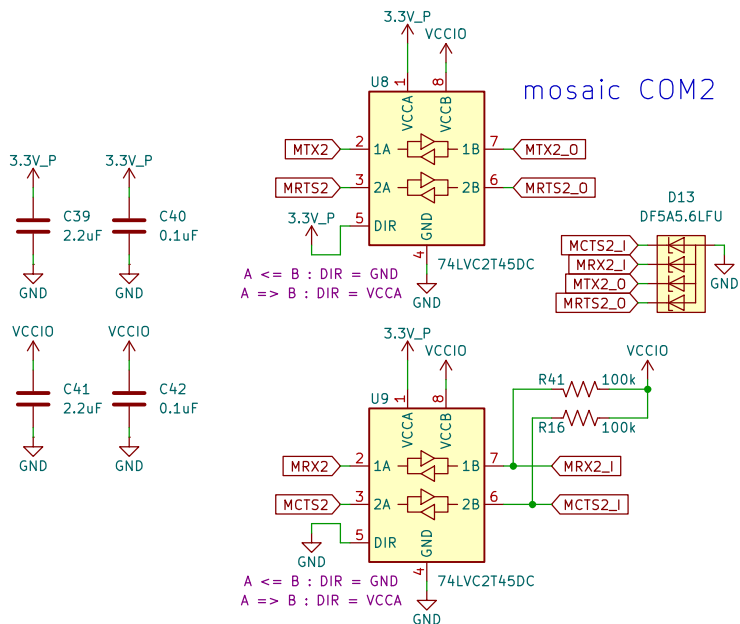
Sheet: /Ethernet/
File: Ethernet.kicad_sch

Title: Ethernet

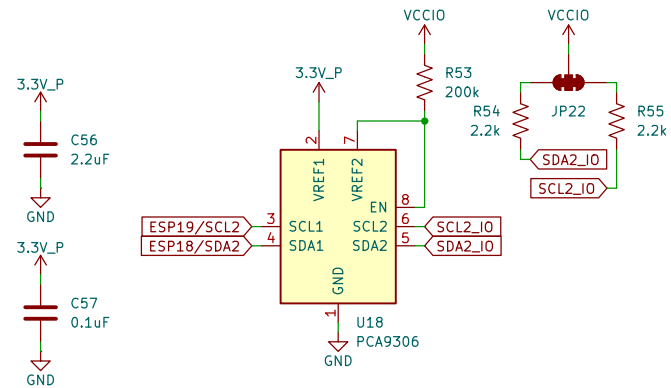
Size: USLetter	Date:
KiCad E.D.A. 8.0.5	

Rev:
Id: 5/7

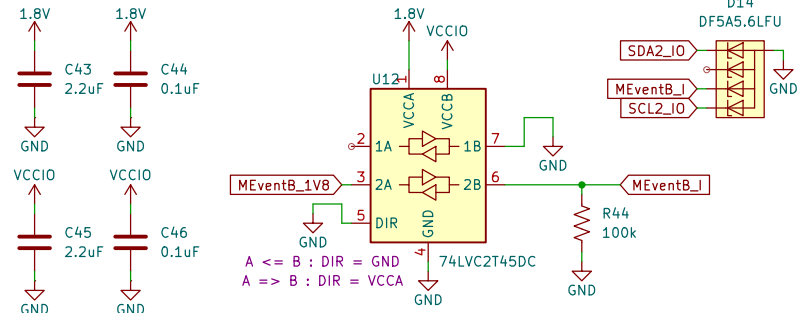
mosaic COM2



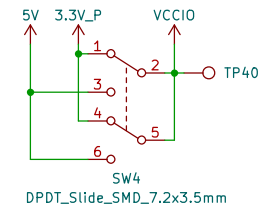
SDA2 SCL2



EventB In



VCCIO voltage selection



EventA In

For 2.8V input:
Open jumper J
Close jumper K

For 1.8V input:
Open jumper J
Close jumper L

PPS Out

For 2.8V output:
Open jumper M
Close jumper N

For 1.8V output:
Open jumper M
Close jumper P

Level-Shifting

Sheet: /LevelShifting/
File: LevelShifting.kicad_sch

Title: Level Shifting

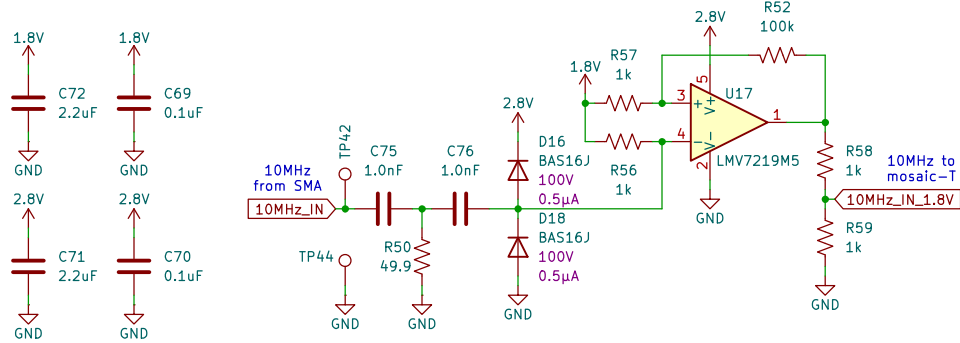
Size: USLetter Date:

KiCad E.D.A. 8.0.5

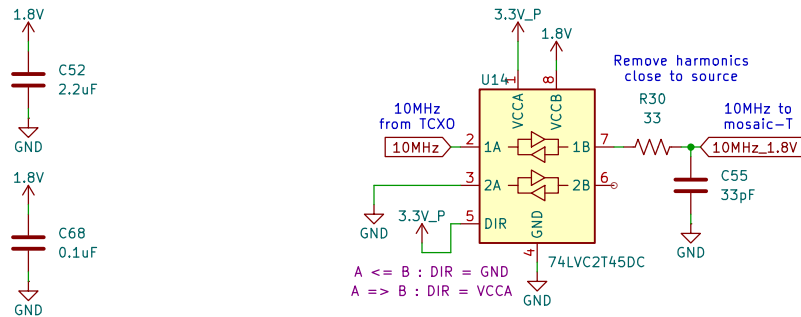
Rev:

Id: 6/7

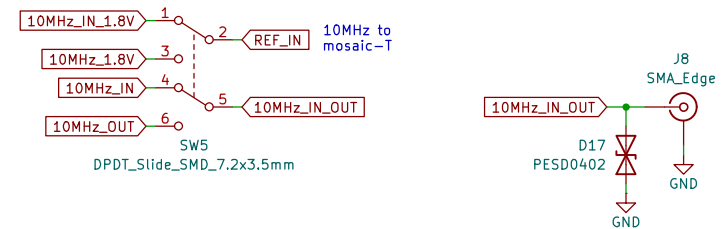
10MHz In



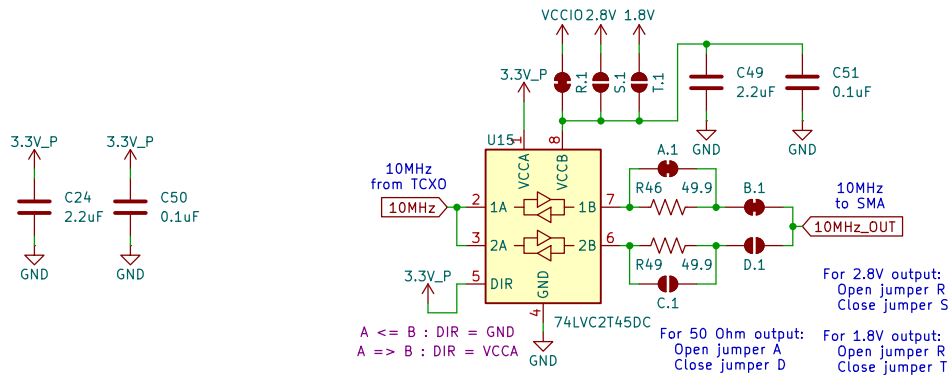
10MHz 1.8V for mosaic-T



10MHz In / Out



10MHz Out



Level-Shifting 10MHz

Sheet: /LevelShifting_10MHz/
File: LevelShifting_10MHz.kicad_sch

Title: Level Shifting 10MHz

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

Rev:
Id: 7/7