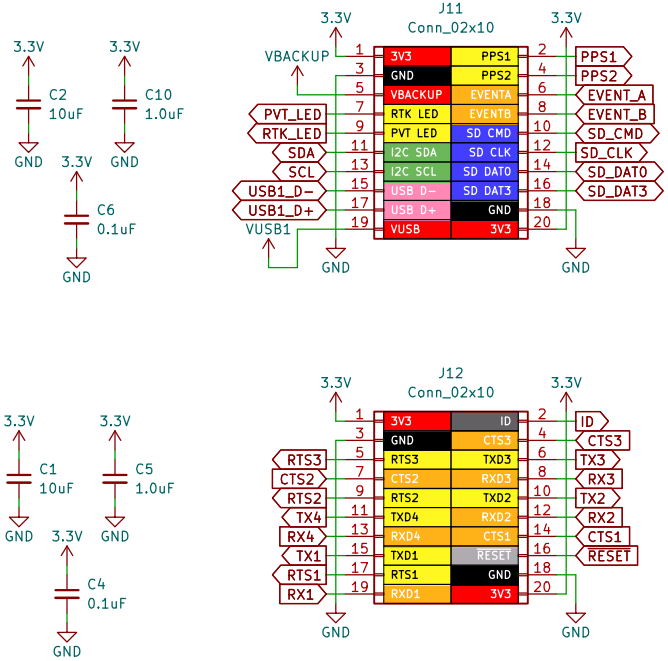
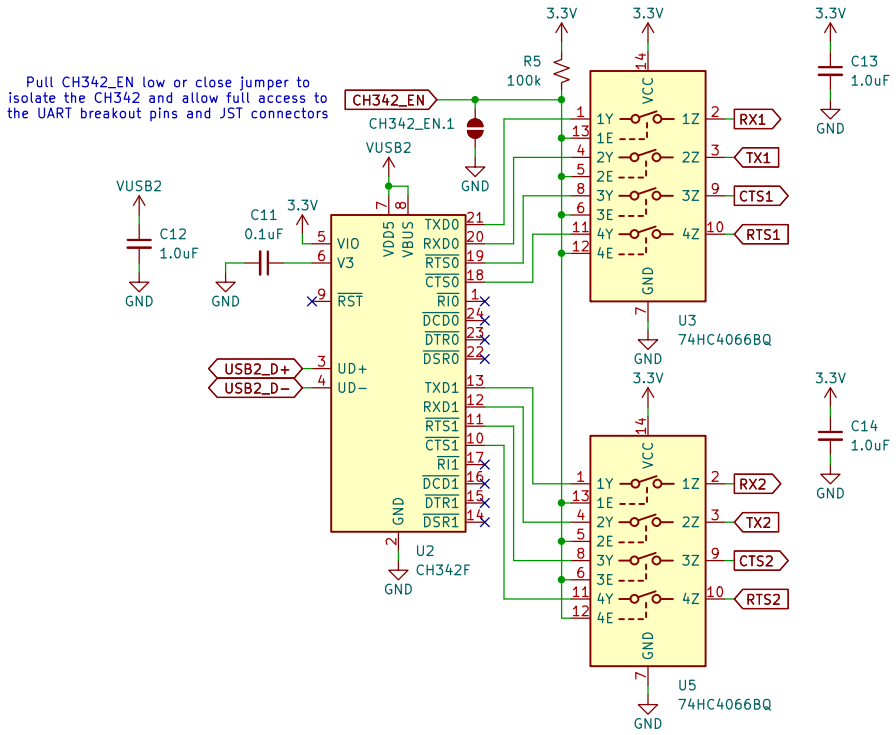
GNSS Flex Module



Power +	GNSS Out
Power GND	GNSS In
I²C	microSD
USB	ID (0–3.3V)
RMII	Aux

Legend: GNSS Flex

USB to UART – CH342



Connectors

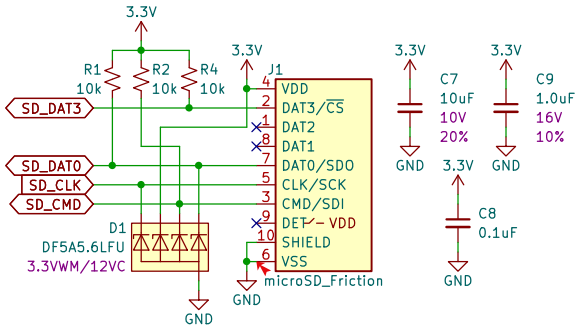
File: Connectors.kicad_sch

Power

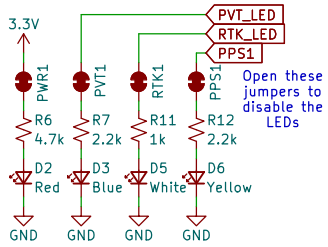
File: Power.kicad_sch

microSD

for mosaic-X5/T/H



LEDs



Designed by: P.C.

SparkFun Electronics

Sheet: /

File: SparkFun_GNSS_Flex_Breakout.kicad_sch

Title: SparkFun GNSS Flex Breakout

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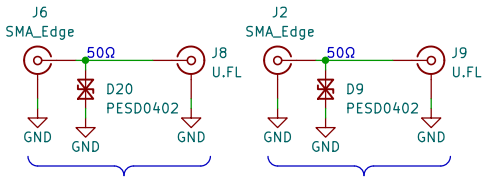
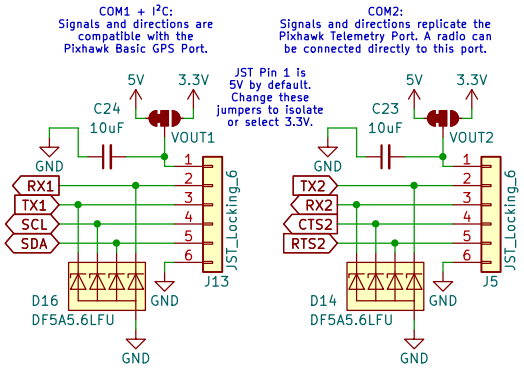
GNSS Antennas



Note: the antenna GNDs are isolated from each other and the other board GNDs. Antenna GND is connected through the u.FL cables only – to avoid ground loops.

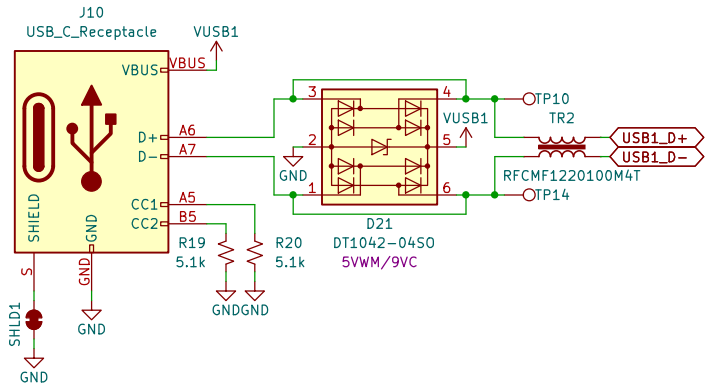
Microstrip (Coplanar Single Ended) 50Ω Calculation:
https://jlcpcb.com/pcb-impedance-calculator
Board thickness: 1.6mm. Layers: 4. Er: 4.4 (7628 Prepreg)
Dielectric Thickness (Layer 1 to 2): 8.28mil/0.2104mm (JLC7628)
Copper Thickness (1oz outer / 0.5oz inner): 1.38mil/0.035mm
Polygon Isolation: 7mil/0.1778mm
Trace Width: 11.1mil/0.2819mm

6-pin JST GH Connectors

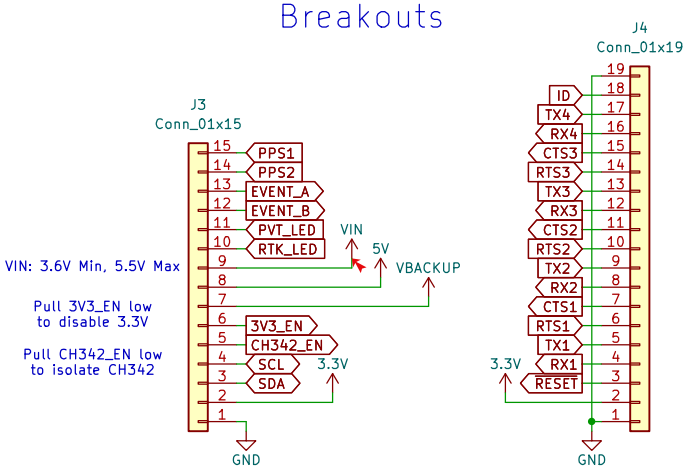


USB1

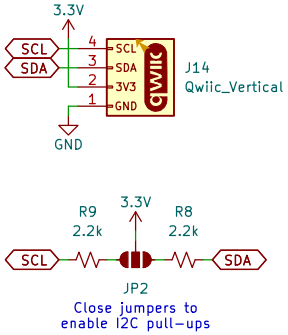
GNSS USB



Breakouts

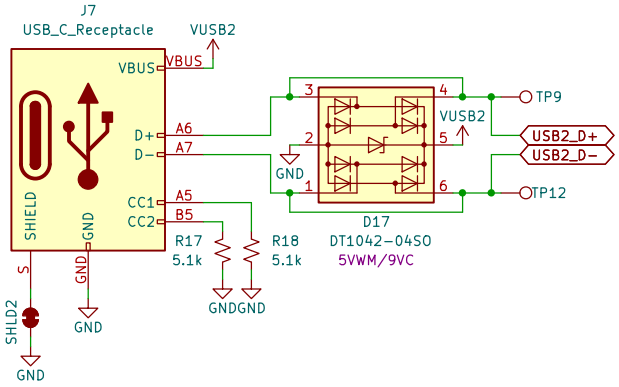


Qwiic



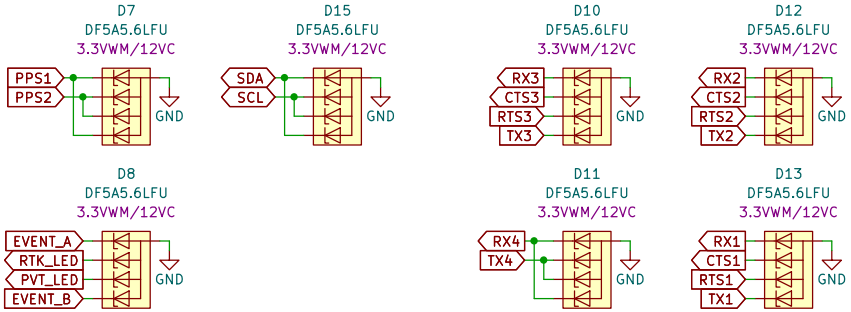
USB2

CH342 UART



USB Track Impedance: Coplanar Differential Pair @ 90Ω
https://jlcpcb.com/pcb-impedance-calculator
Board Thickness: 1.6mm. Layers: 4. Er: 4.4 (7628 Prepreg)
Dielectric Thickness (Layer 1 to 2): 8.28mil/0.21mm (JLC7628)
Copper Thickness (1oz outer / 0.5oz inner): 1.38mil/0.035mm
Polygon Isolation: 7mil/0.1778mm
Trace Spacing: 9.07mil/0.2304mm
Trace Width: 10.93mil/0.2776mm
Trace center-to-center: 20.0mil/0.508mm

ESD Protection



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Title: SparkFun GNSS Flex Breakout – Connectors

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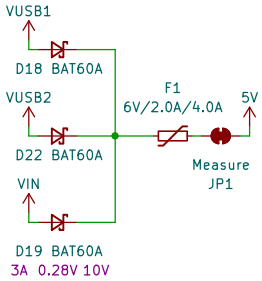
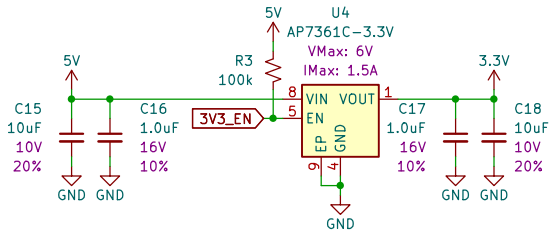
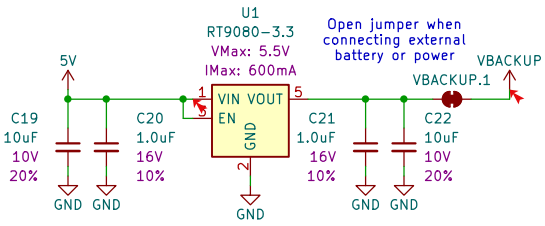
Power Mux



Voltage Regulation – AP7361C-3.3V



Voltage Regulation – RT9080-3.3



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Size: USLetter | Date:	**Rev:**
KiCad E.D.A. 9.0.1	Id: 3/3