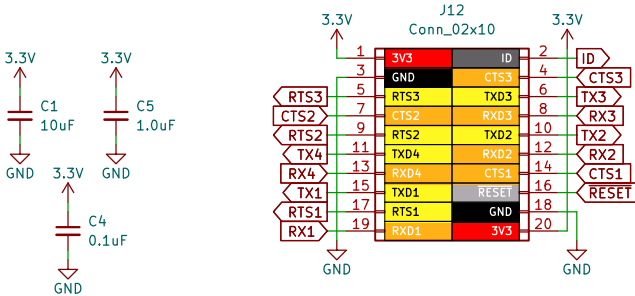
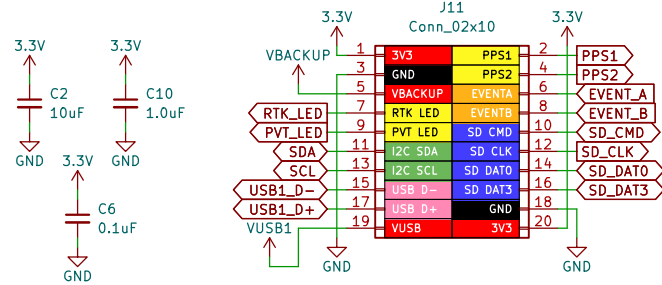


GNSS Flex Module

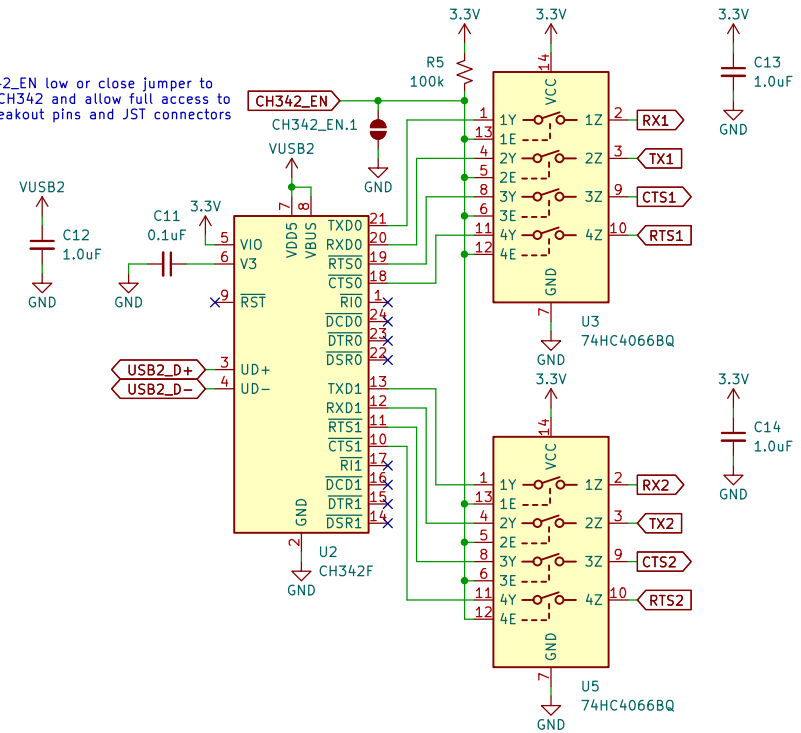


Power +	GNSS Out
Power GND	GNSS In
PC	microSD
USB	ID (0-3.3V)
RMII	Aux

Legend: GNSS Flex

USB to UART – CH342

Pull CH342_EN low or close jumper to isolate the CH342 and allow full access to the UART breakout pins and JST connectors



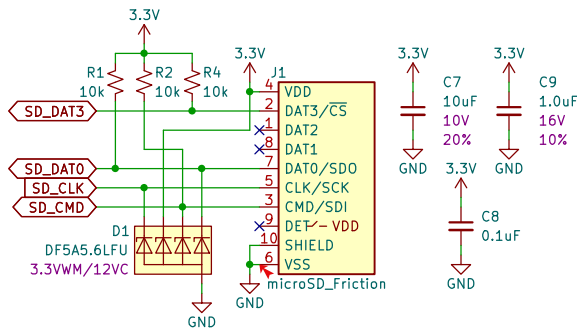
Connectors

File: Connectors.kicad_sch

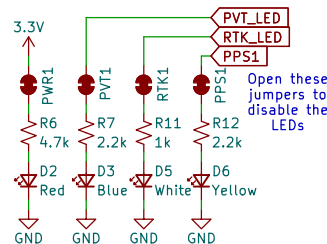
Power

File: Power.kicad_sch

microSD for mosaic-X5/T/H



LEDs



sparkfun

open source
hardware

Designed by: P.C.

SparkFun Electronics

Sheet: /

File: SparkFun_GNSS_Flex_Breakout.kicad_sch

Title: SparkFun GNSS Flex Breakout

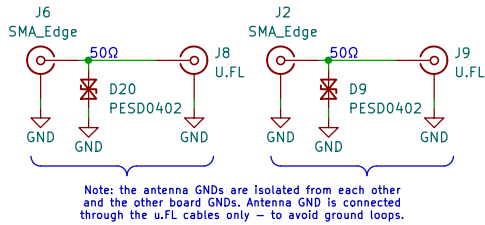
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KiCad E.D.A. 9.0.1

Rev: v10

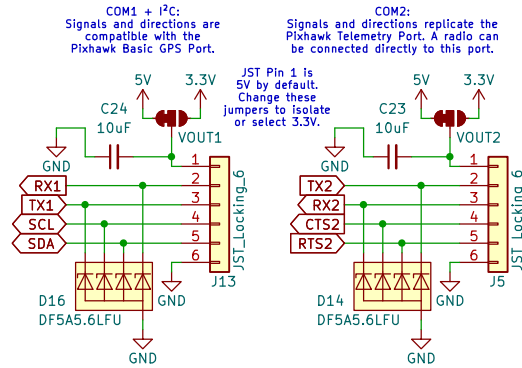
Id: 1/3

GNSS Antennas



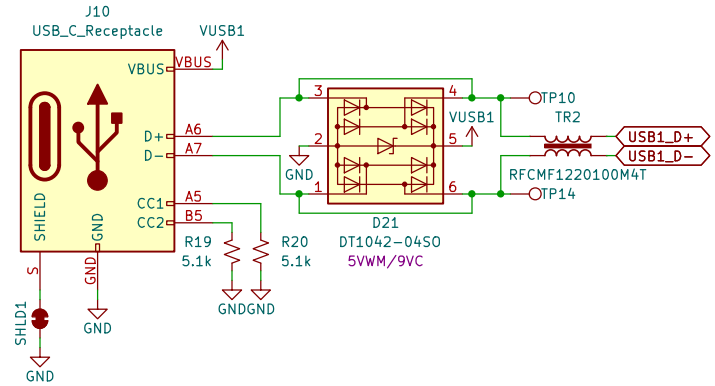
Microstrip (Coplanar Single Ended) 50Ω Calculation:
<https://jlcpcb.com/pcb-impedance-calculator>
 Board thickness: 1.6mm. Layers: 4. Er: 4.4 (7628 Prepreg)
 Dielectric Thickness (Layer 1 to 2): 8.28mil/0.2104mm (JLC7628)
 Copper Thickness (1oz outer / 0.5oz inner): 1.38mil/0.035mm
 Polygon Isolation: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

6-pin JST GH Connectors

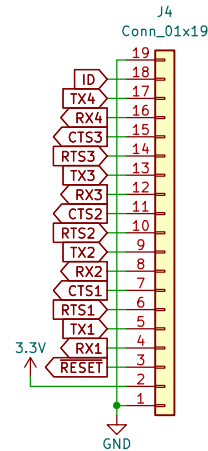
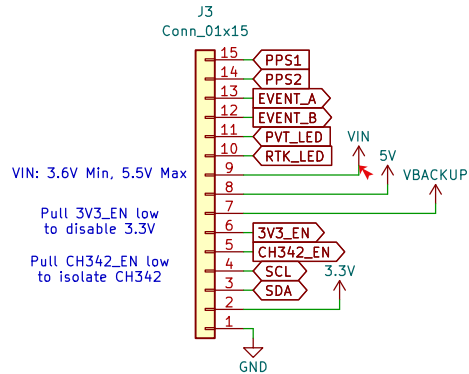


USB1

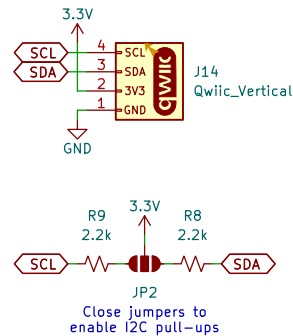
GNSS USB



Breakouts

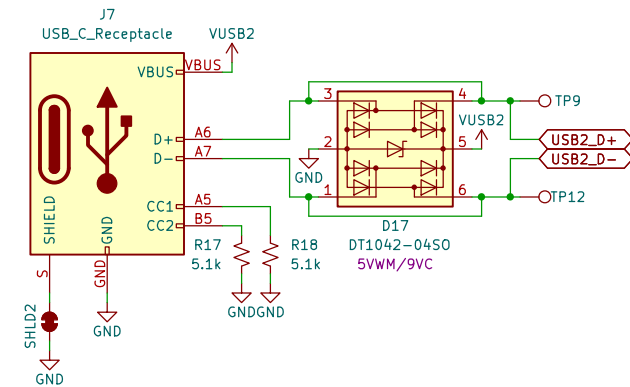


Qwiic

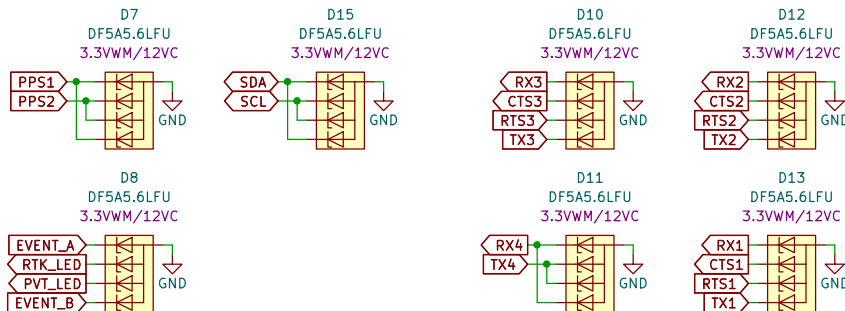


USB2

CH342 UART



ESD Protection



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

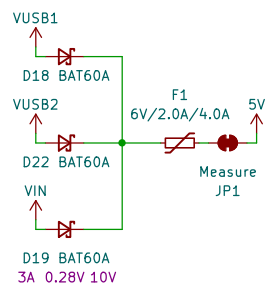
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 File: Connectors.kicad_sch

Title: SparkFun GNSS Flex Breakout – Connectors

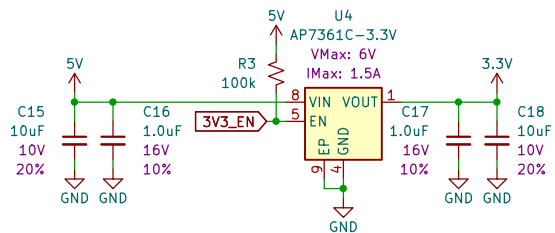
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Rev:
 Id: 2/3

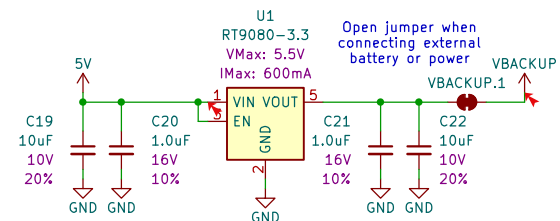
Power Mux



Voltage Regulation – AP7361C–3.3V



Voltage Regulation – RT9080–3.3



Sheet: /Power/
File: Power.kicad_sch

Title: SparkFun GNSS Flex Breakout – Power

Size: USLetter Date:

KiCad E.D.A. 9.0.1

Rev:

Id: 3/3