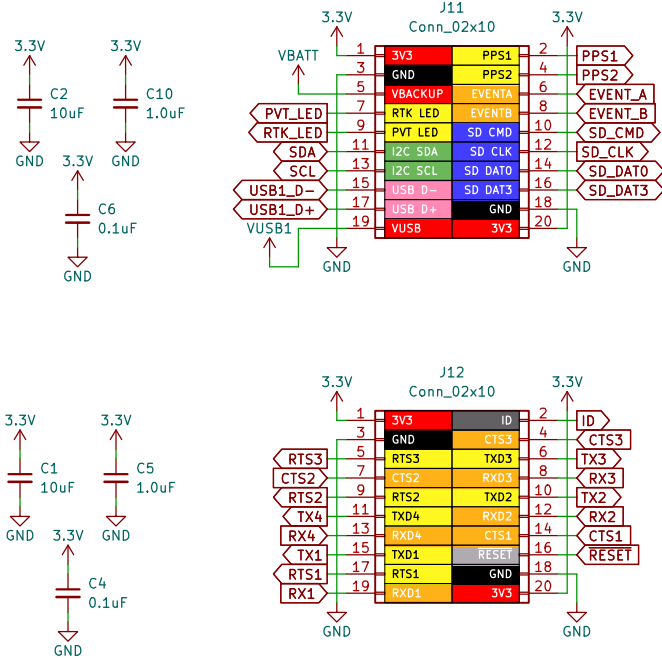
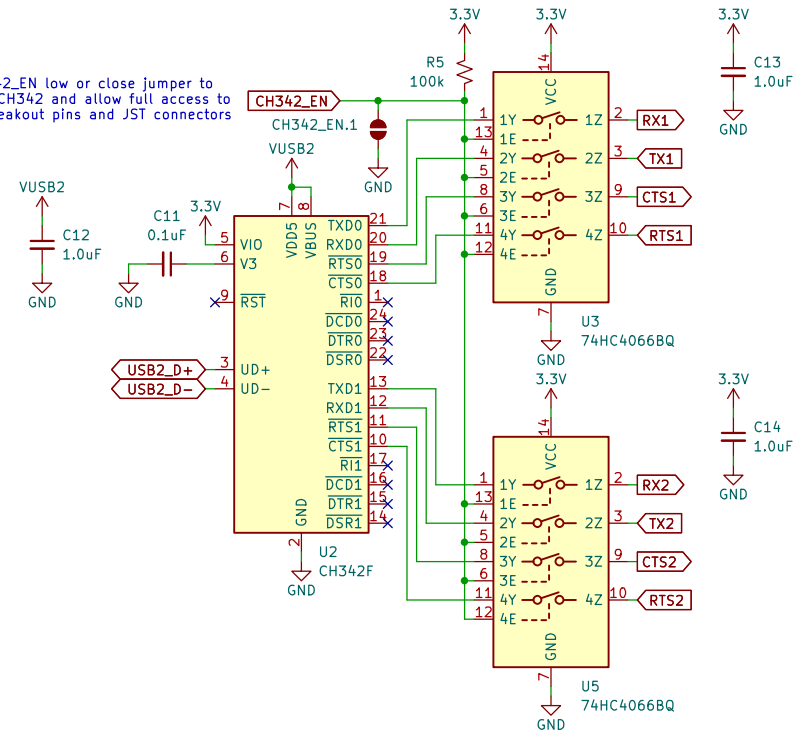


## Flex GNSS Module



## 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



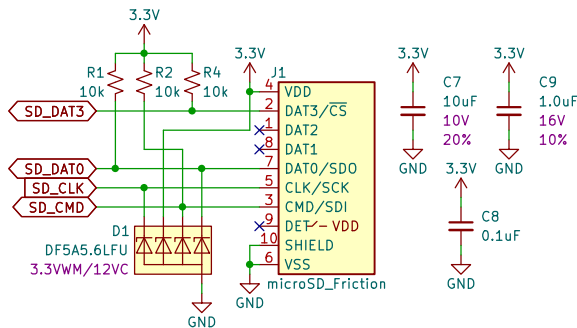
Connectors

File: Connectors.kicad\_sch

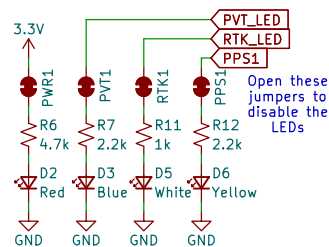
Power

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**

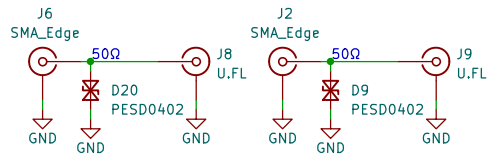
Size: USLetter Date: 2025-04-03

KiCad E.D.A. 9.0.1

**Rev: v01**

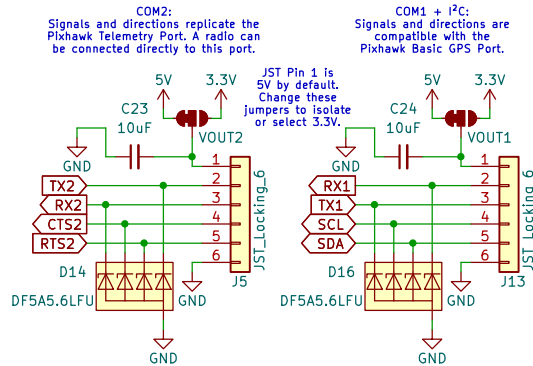
Id: 1/3

## GNSS Antennas



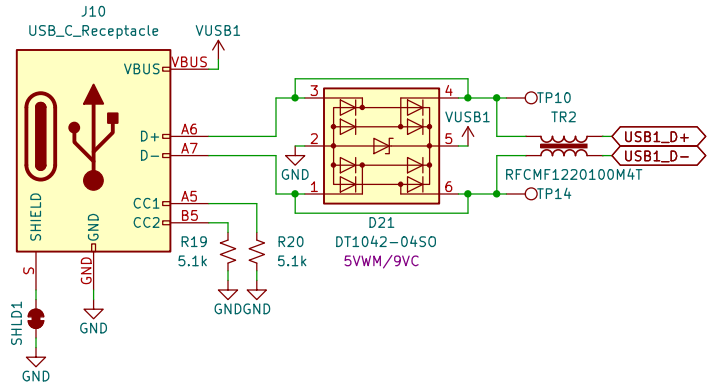
Microstrip (Coplanar Single Ended) 50Ω Calculation:  
<https://jlcpcb.com/pcb-impedance-calculator>  
 Board thickness: 1.6mm. Layers: 4. Er: 4.4 (7628 Prepreg)  
 Dielectric Thickness (Layer 1 to 2): 8.28mil/0.2104mm (JLC7628)  
 Copper Thickness (1oz outer / 0.5oz inner): 1.38mil/0.035mm  
 Polygon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

## 6-pin JST GH Connectors

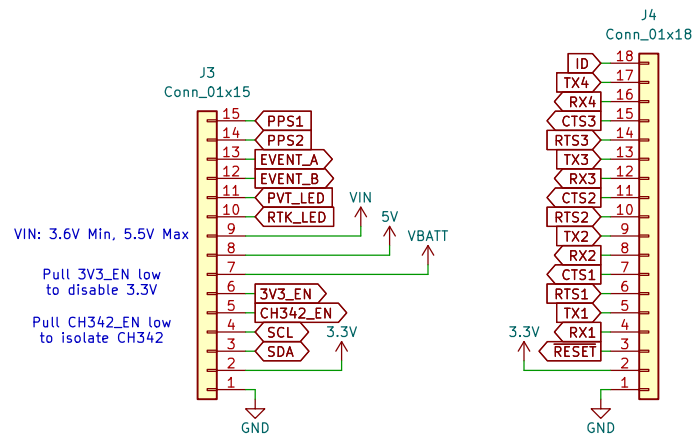


## USB1

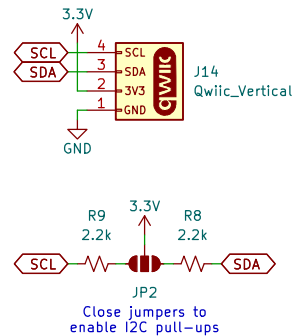
GNSS USB



## Breakouts

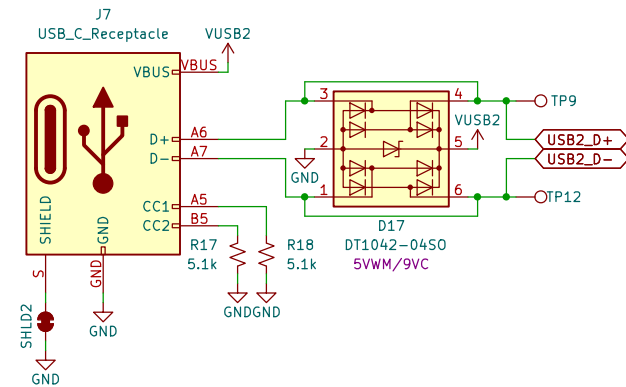


## Qwiic

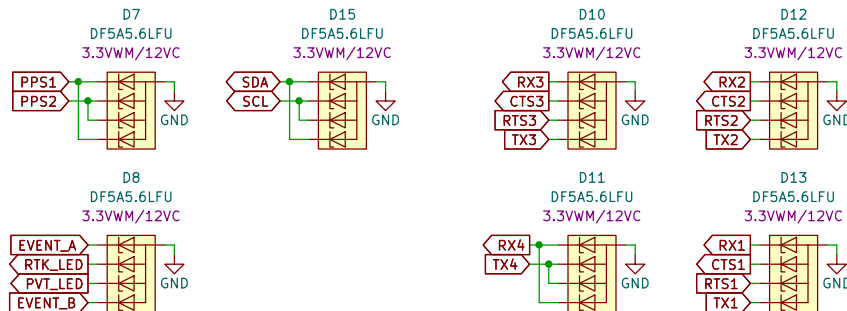


## USB2

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

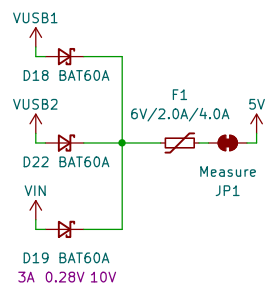
Sheet: /Connectors/  
 File: Connectors.kicad\_sch

**Title: SparkFun GNSS Flex Breakout – Connectors**

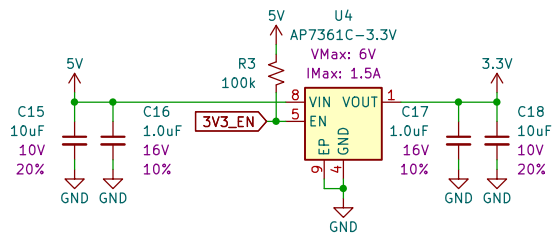
Size: USLetter Date:  
 KiCad E.D.A. 9.0.1

Rev:  
 Id: 2/3

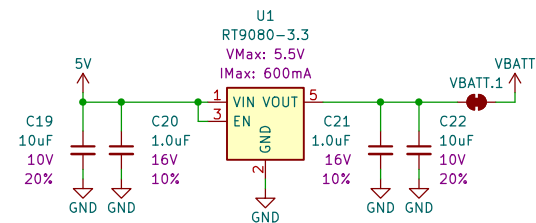
## Power Mux



## 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