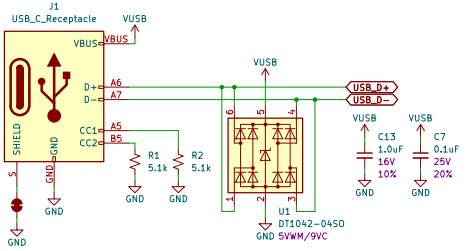
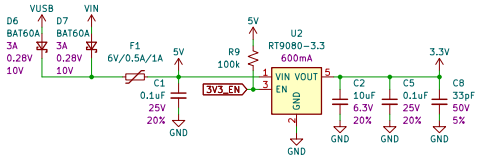
USB

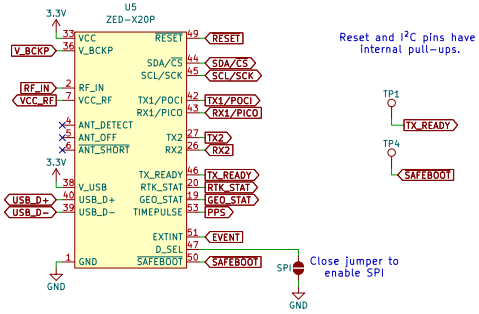


USB Track Impedance: Coplanar Differential Pair @ 90Ω
https://jlcpcb.com/pcb-impedance-calculator
Board Thickness: 1.6mm, Layers: 4, Er: 4.4 (7628 Prepreg)
Dielectric Thickness (Layer 1 to 2): 8.28mil/0.21mm (JLC7628)
Copper Thickness (1oz outer / 0.5oz inner): 1.38mil/0.035mm
Polygon Isolation: 7mil/0.1778mm
Trace Spacing: 8mil/0.2032mm
Trace Width: 10.3mil/0.2616mm

Power



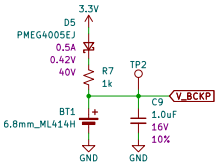
ZED-X20P GNSS Receiver



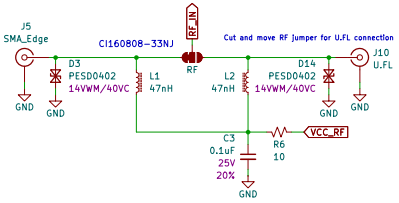
7-bit unshifted I²C address: 0x42

I²C Connectors

Battery Backup

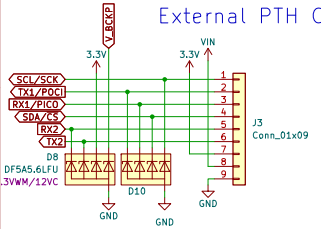


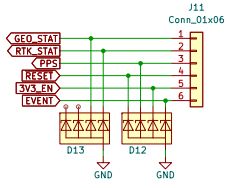
Antenna Connector



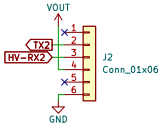
Microstrip (Coplanar Single Ended) 50Ω Calculation:
https://jlcpcb.com/pcb-impedance-calculator
Board thickness: 1.6mm, Layers: 4, Er: 4.4 (7628 Prepreg)
Dielectric Thickness (Layer 1 to 2): 8.28mil/0.210mm (JLC7628)
Copper Thickness (1oz outer / 0.5oz inner): 1.38mil/0.035mm
Polygon Isolation: 7mil/0.1778mm
Trace Width: 11.1mil/0.2819mm

External PTH Connectors

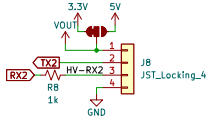


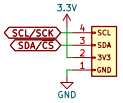


BlueSMiRF



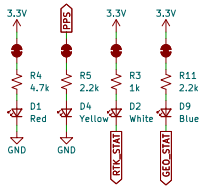
Locking JST





Generally speaking the ports are used as follows:
USB – Configure in and NMEA output
UART1 – Configure in and NMEA output to embedded system
UART2 – RTCM correction input and NMEA output over Bluetooth
But Configure/NMEA/RTCM can flow through any port

LEDs



open source hardware

sparkfun

Designed by: N. Seidle	
SparkFun Electronics	
Sheet: /	
File: SparkFun_GNSS_ZED-X20P.kicad_sch	
Title: ZED-X20P Allband GNSS Receiver Breakout	
Size: USLedger | Date: 2025-04-01	Rev: v10
KiCad E.D.A. 9.0.2	Id: 1/1