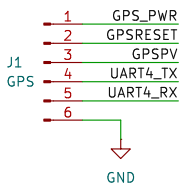
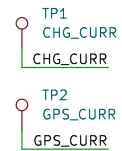
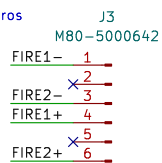


GPS connector

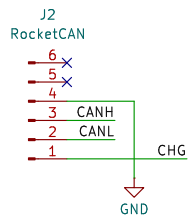


NovaTel Interface Connector

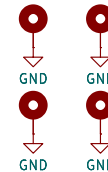
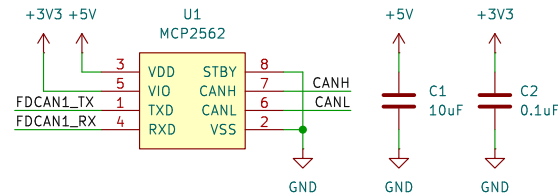
To Pyros



CAN connector



CAN Transceiver



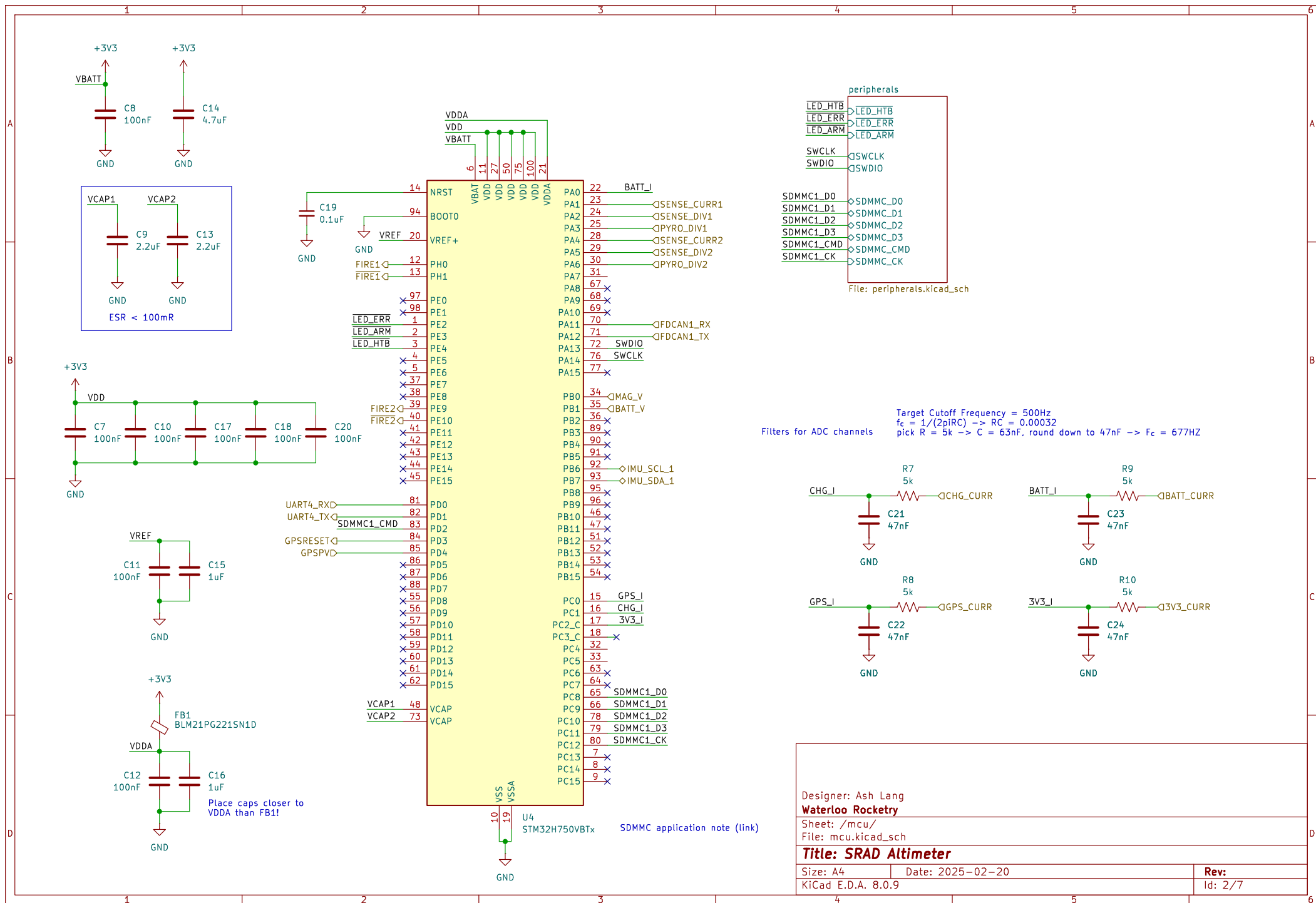
Designer: Ash Lang
Waterloo Rocketry

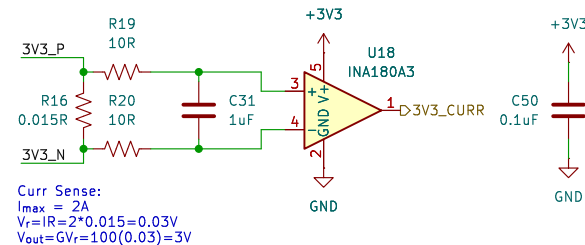
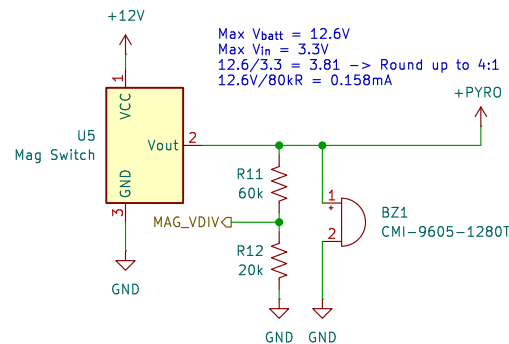
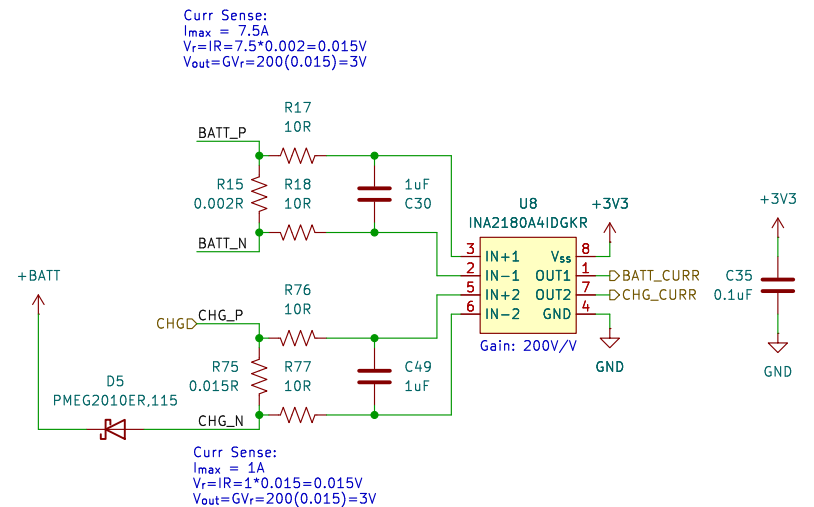
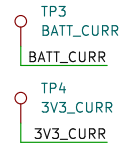
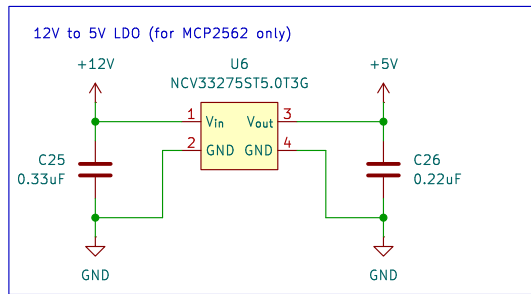
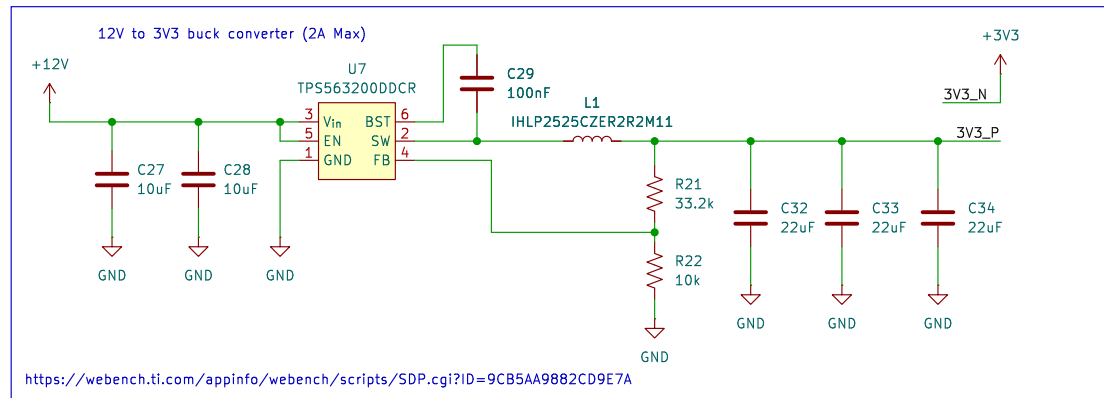
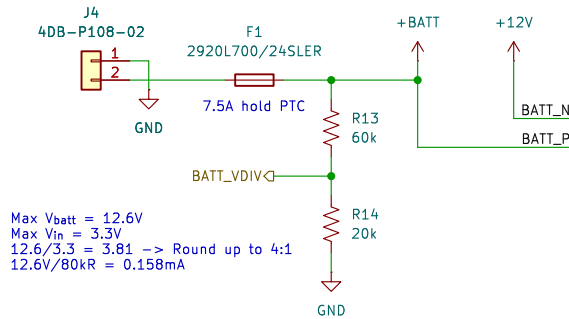
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Title: SRAD Altimeter

Size: A4 Date: 2025-02-20
KiCad E.D.A. 8.0.9

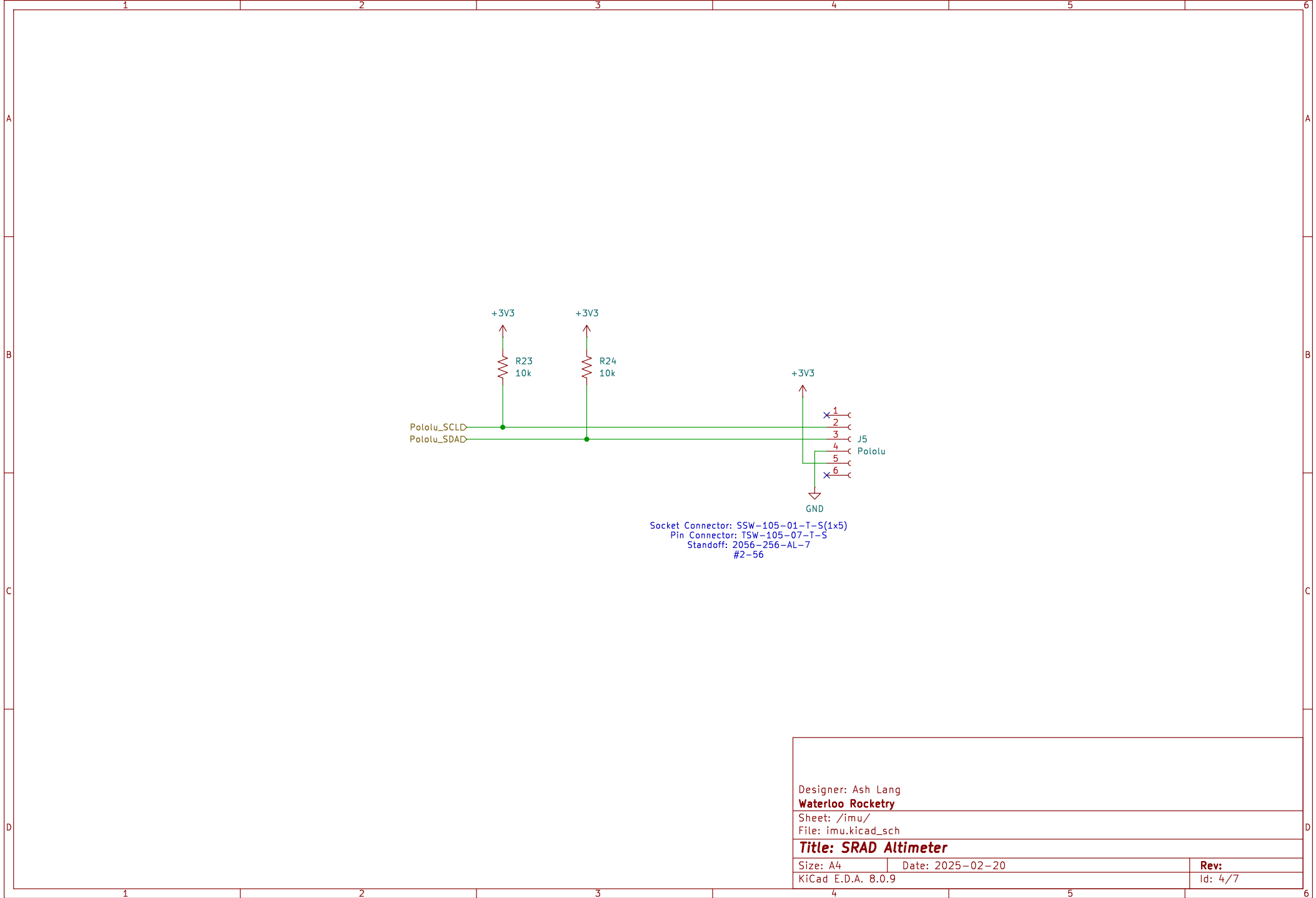
Rev: 1.0
Id: 1/7

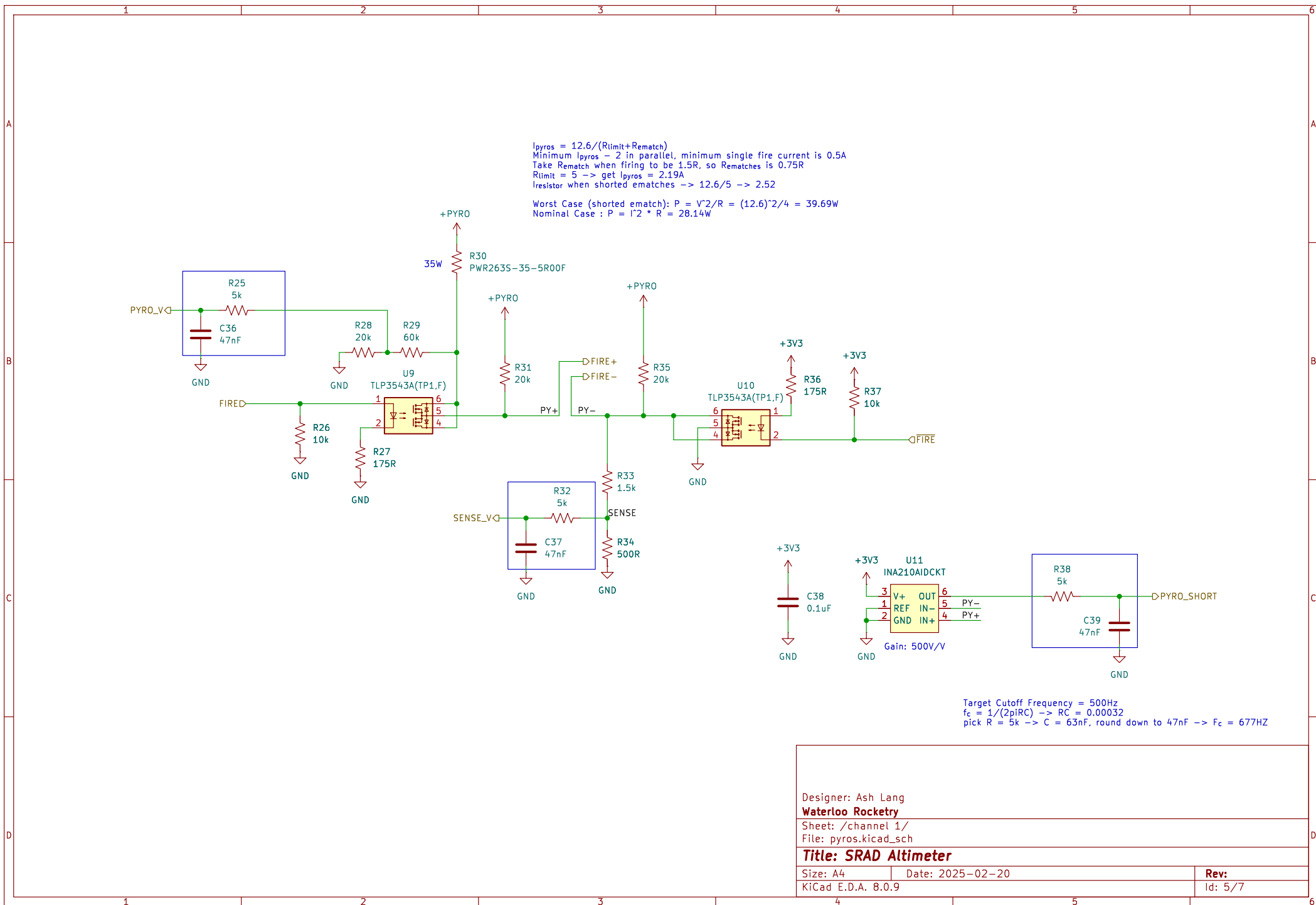


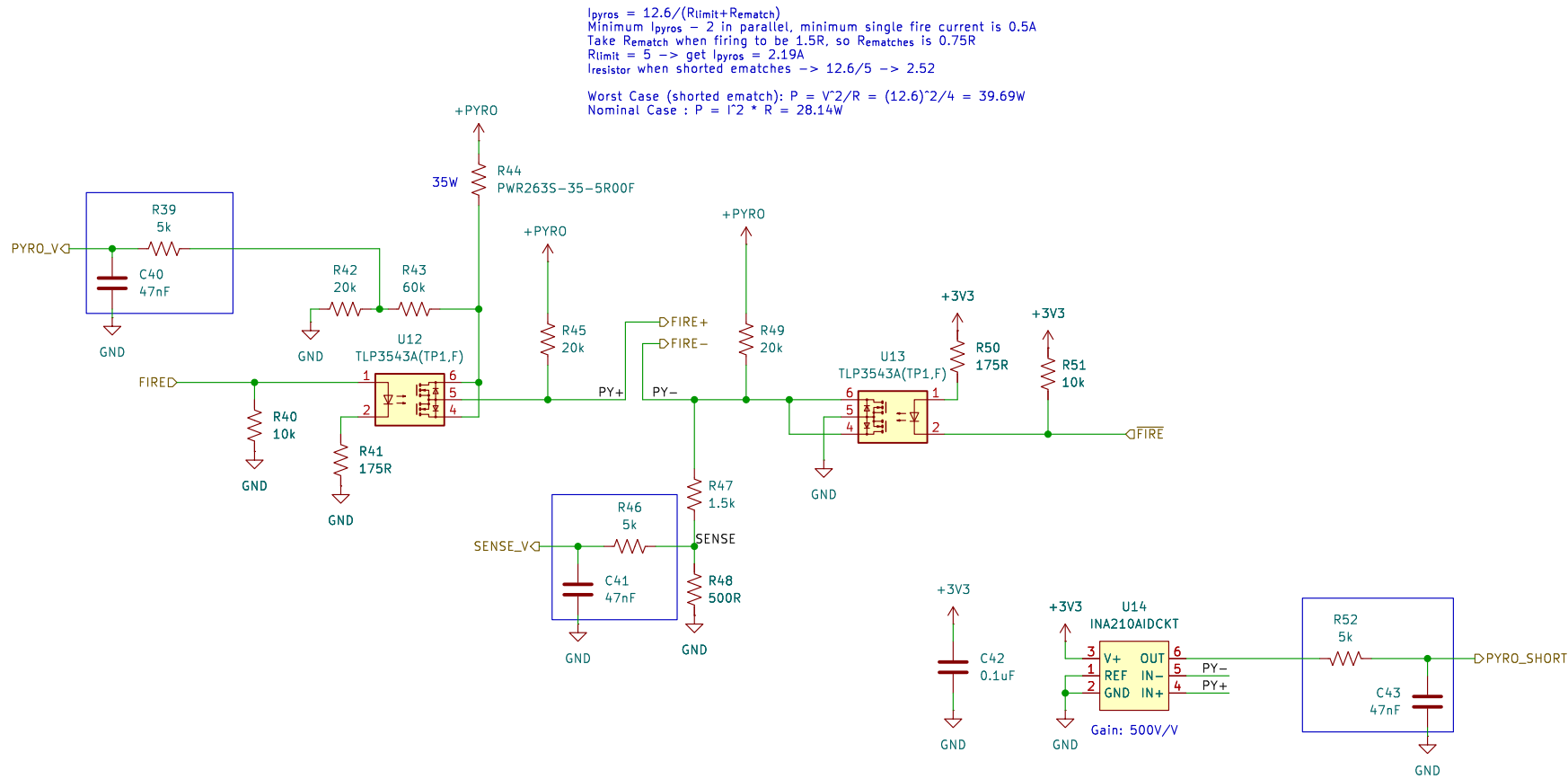


Designer: Ash Lang	
Waterloo Rocketry	
Sheet: /power/	
File: power.kicad_sch	
Title: SRAD Altimeter	
Size: A4	Date: 2025-02-20
KiCad E.D.A. 8.0.9	Rev: Id: 3/7

Keep BZ1 away from mag switch and current sensing lines







$I_{pyros} = 12.6 / (R_{limit} + R_{ematch})$
 Minimum I_{pyros} - 2 in parallel, minimum single fire current is 0.5A
 Take R_{ematch} when firing to be 1.5R, so $R_{ematches}$ is 0.75R
 $R_{limit} = 5 \rightarrow$ get $I_{pyros} = 2.19A$
 Resistor when shorted ematches $\rightarrow 12.6/5 \rightarrow 2.52$
 Worst Case (shorted ematch): $P = V^2/R = (12.6)^2/4 = 39.69W$
 Nominal Case : $P = I^2 * R = 28.14W$

Target Cutoff Frequency = 500Hz
 $f_c = 1/(2\pi RC) \rightarrow RC = 0.00032$
 pick $R = 5k \rightarrow C = 63nF$, round down to 47nF $\rightarrow F_c = 677HZ$

Designer: Ash Lang		
Waterloo Rocketry		
Sheet: /channel 2/		
File: pyros.kicad_sch		
Title: SRAD Altimeter		
Size: A4	Date: 2025-02-20	Rev:
KiCad E.D.A. 8.0.9	Id: 6/7	

