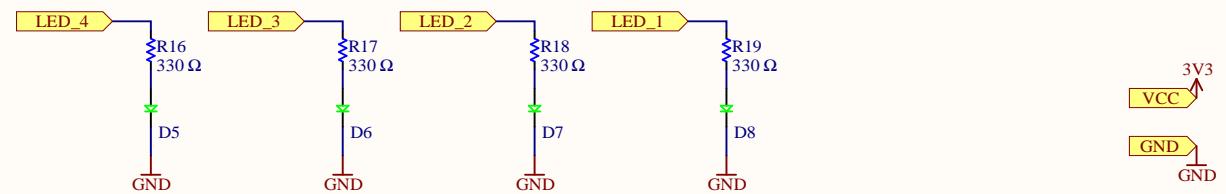


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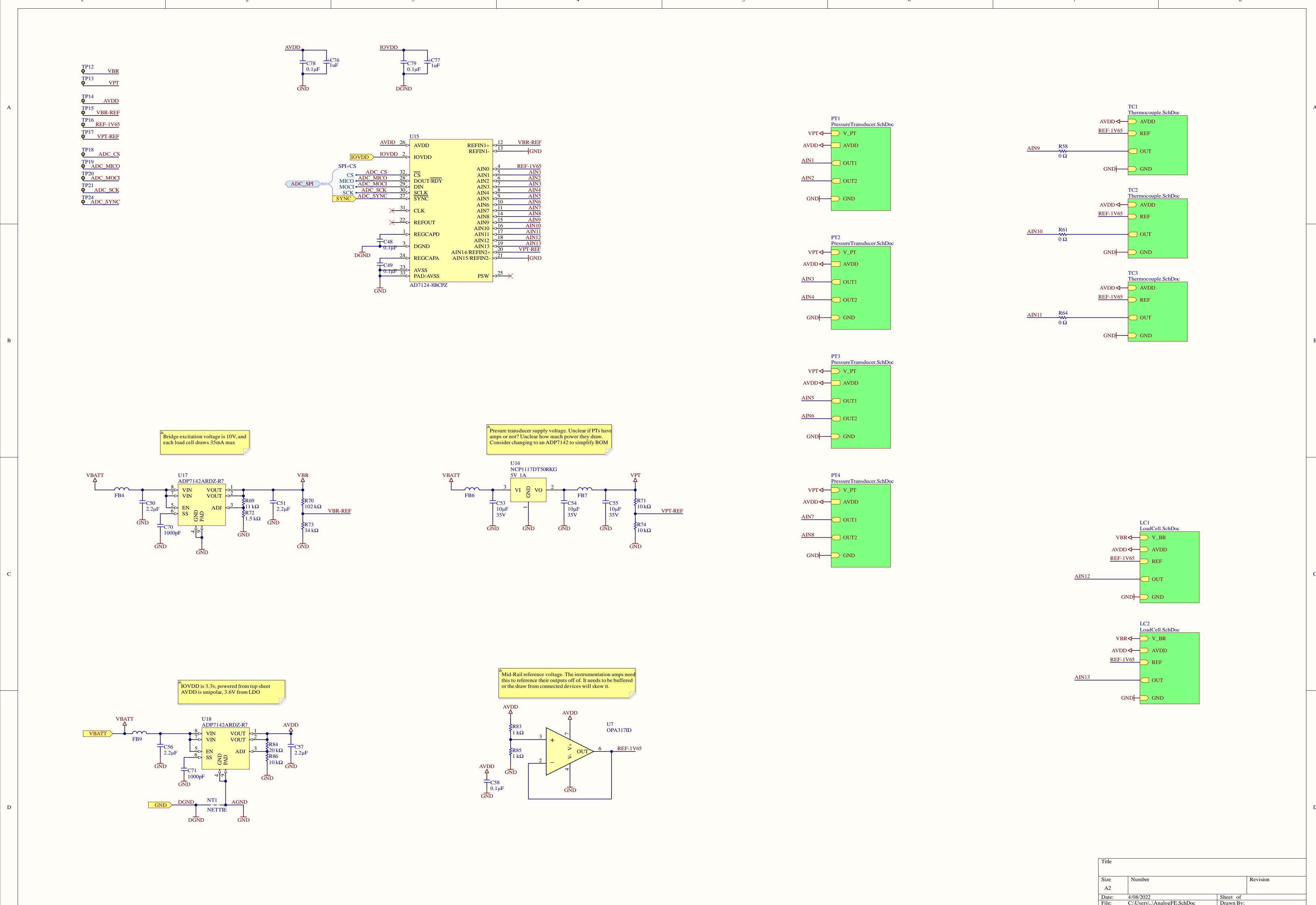
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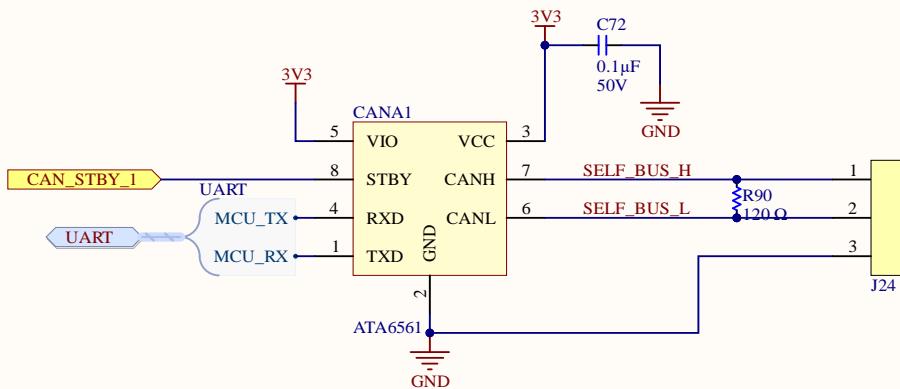
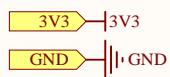
D

D

 STANFORD STUDENT SPACE INITIATIVE <small>ssi.stanford.edu</small>	PROJECT	Quail
	SHEET	Blinks and Boops
	ENGINEER	Tim Vrakas
	ENGINEER	
	REVIEWER	
Powered By Altium	REVISION	3.0
	REVIEWED ON	
	Sheet 8 of 8	



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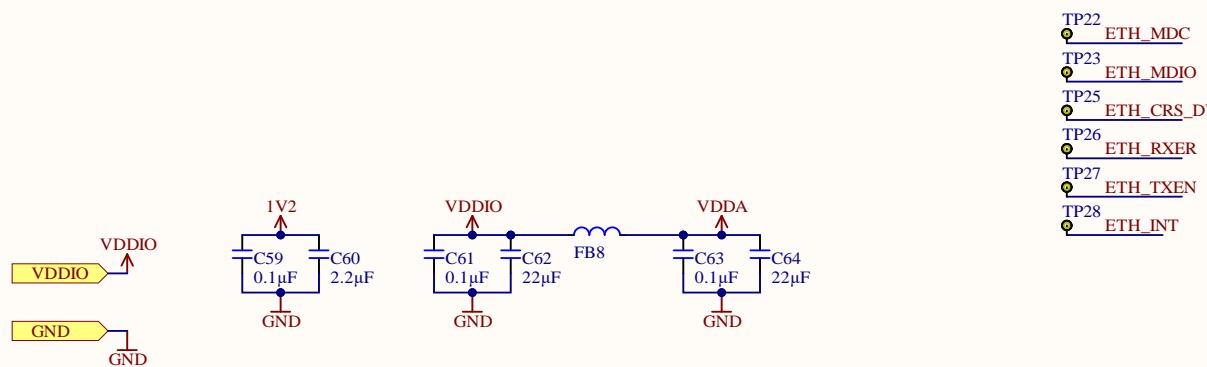
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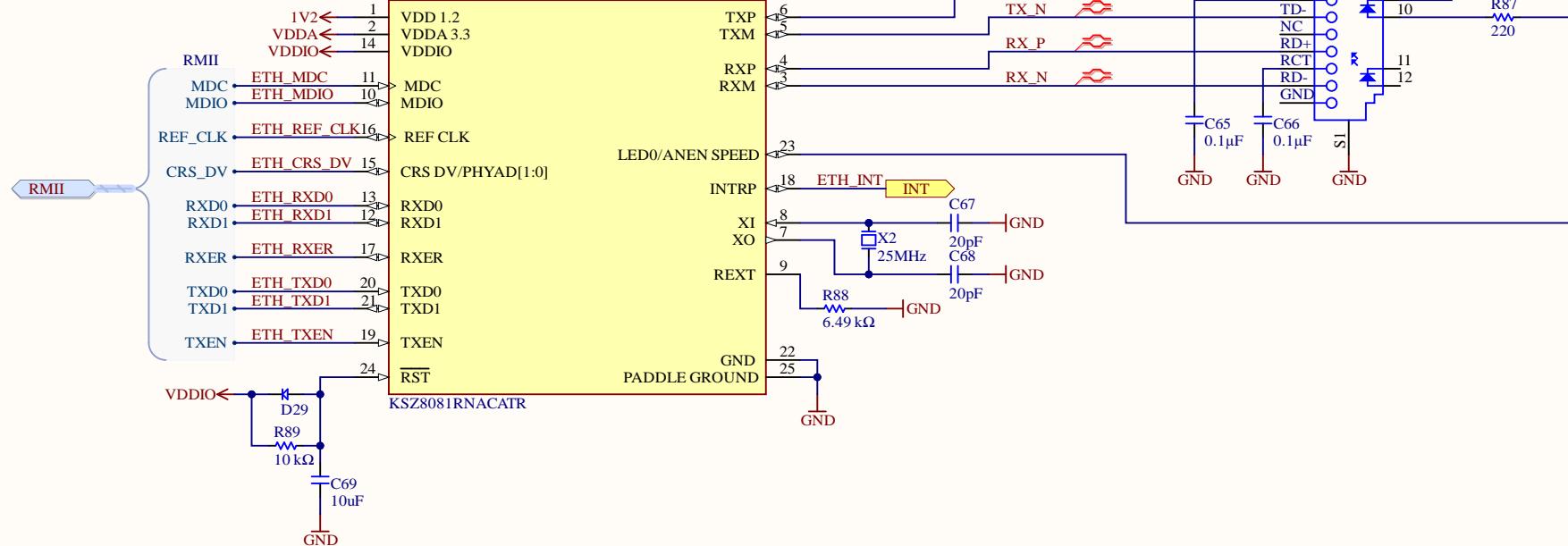
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TP22 ETH_MDC
TP23 ETH_MDIO
TP25 ETH_CRS_DV
TP26 ETH_RXER
TP27 ETH_TXEN
TP28 ETH_INT

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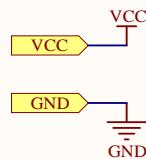


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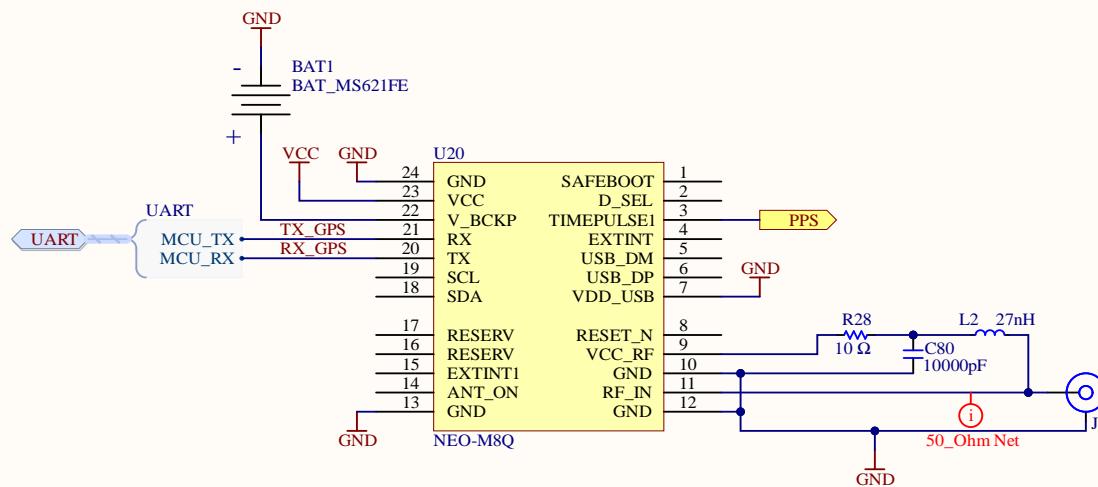
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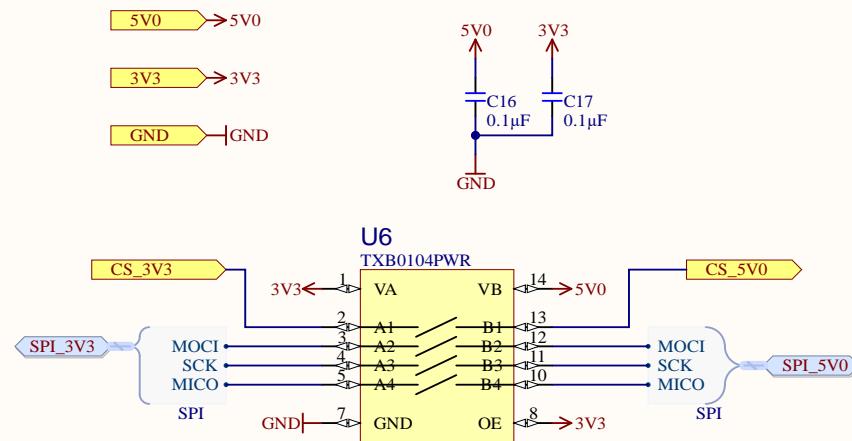
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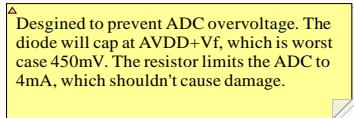
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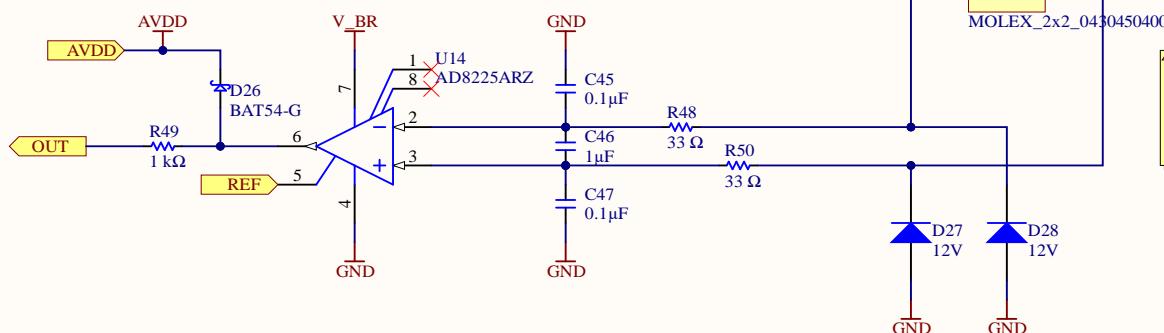
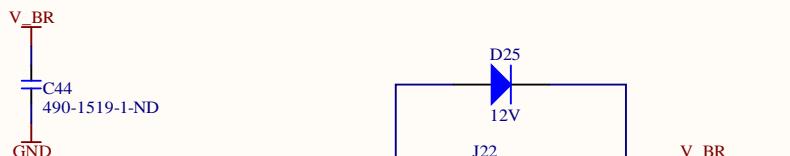
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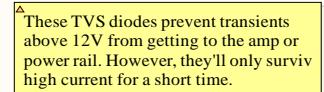
Level Shifters

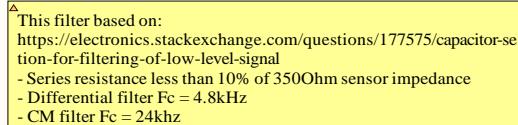
The Squib Drivers operates using 5V logic, the MCU (SAMD51) uses 3.3V so the SPI interface between them needs to be converted



 ▲ Designed to prevent ADC overvoltage. The diode will cap at AVDD+Vf, which is worst case 450mV. The resistor limits the ADC to 4mA, which shouldn't cause damage.



 ▲ These TVS diodes prevent transients above 12V from getting to the amp or power rail. However, they'll only survive high current for a short time.

 ▲ This filter based on:
<https://electronics.stackexchange.com/questions/177575/capacitor-selection-for-filtering-of-low-level-signal>
- Series resistance less than 10% of 350Ω sensor impedance
- Differential filter Fc = 4.8kHz
- CM filter Fc = 24khz

It may need to be adjusted to suit a wider variety of load cells. Also, we might need better caps that don't have voltage derating

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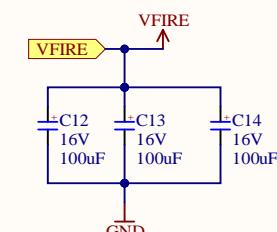
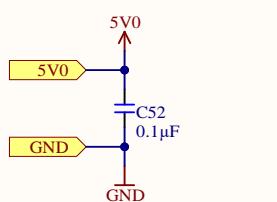
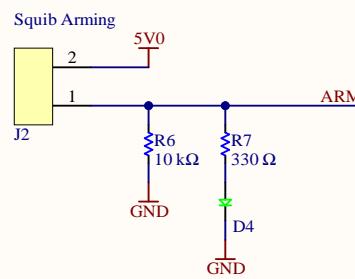
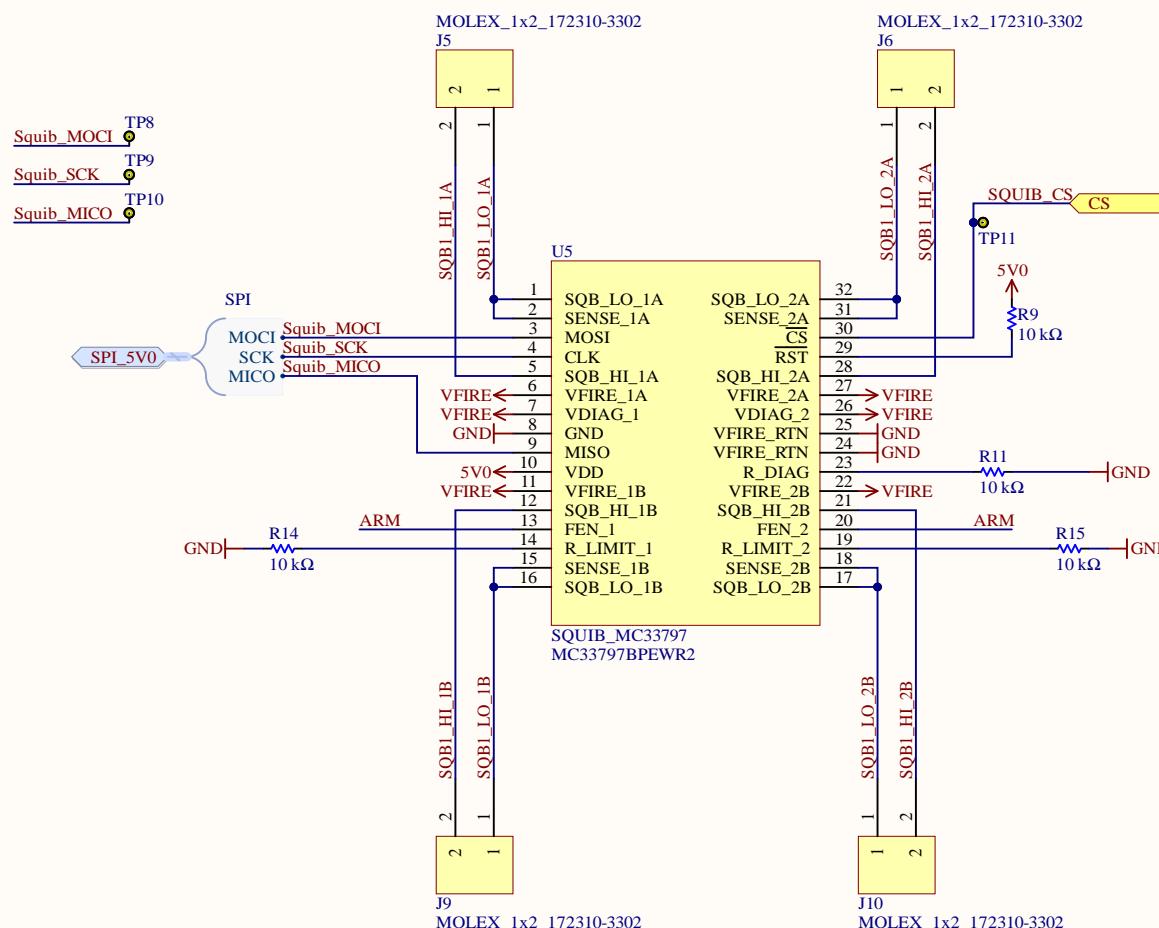
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Squib Drivers

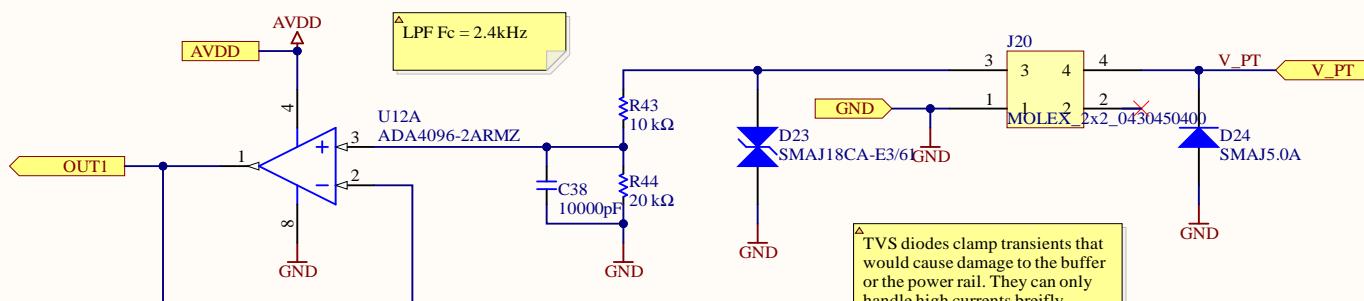
Pin 2 is Lo and Pin 1 is High on all connectors

R Limit Calc: Ematch R=2ohm, wire is around 2-5ohm depending on length.
Recomended current is around 1 A
RSet = 10k sets limit to 1.4A

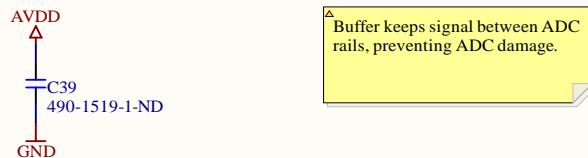


 STANFORD STUDENT SPACE INITIATIVE <small>ssi.stanford.edu</small>	PROJECT	Quail
	SHEET	Squibs
	ENGINEER	Tim Vrakas
	ENGINEER	
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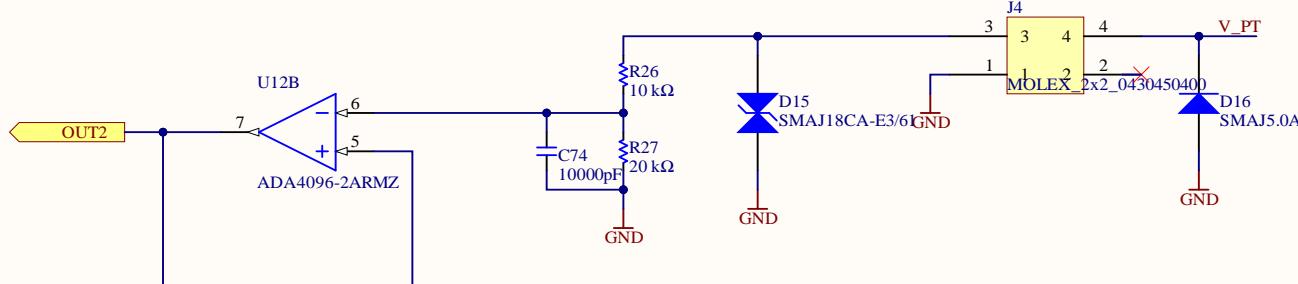
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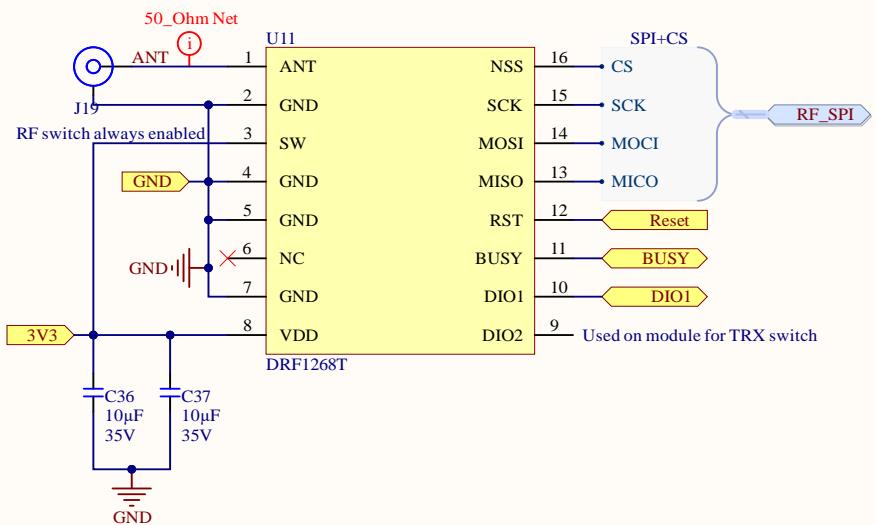
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Radio Module

TODO

Swap Out with DRF Module

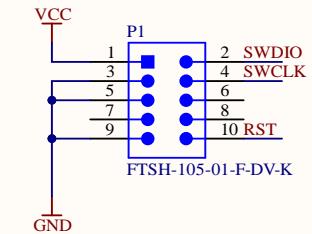
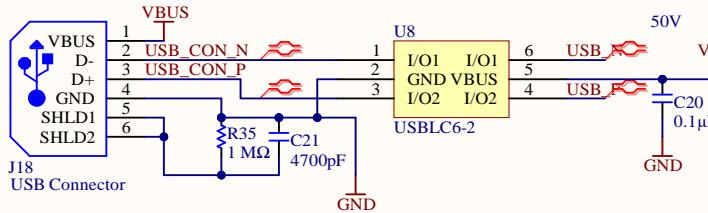
Radio for wireless communications
Dorji DRF1268T being used
Mainly on Tims Recomendation



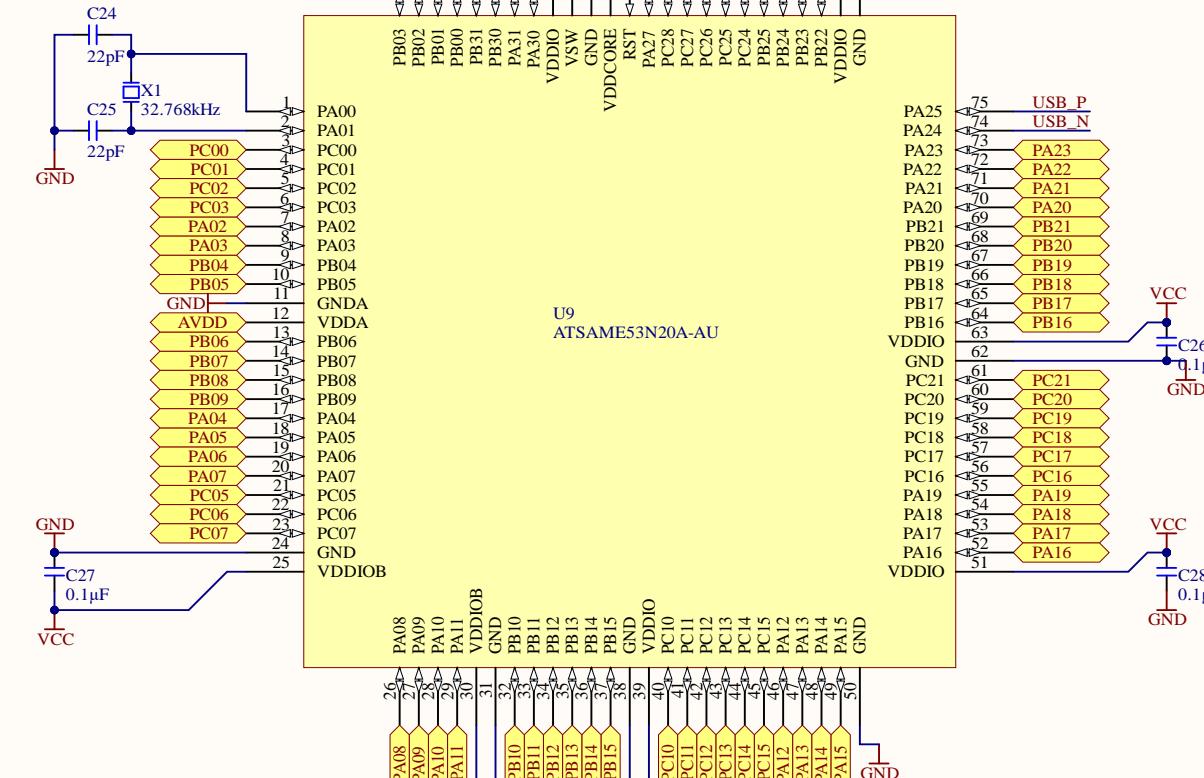
▲ (G)FSK/4(G)FSK/LoRa Modulation
433Mhz transceiver
Max.22dBm output power
-147dBm sensitivity
Standard SPI interface
Low RX current: 5.7 mA
Automatic RF sense and CAD monitor
Data Rate:<300 kbps
Standby current:<1uA
Supply voltage: 3.3V

	PROJECT	Quail
	SHEET	*
	ENGINEER	Tim Vrakas
	ENGINEER	
Powered By Altium	REVISION	3.0
	Sheet * of *	REVIEWED ON

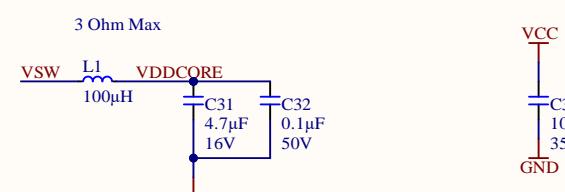
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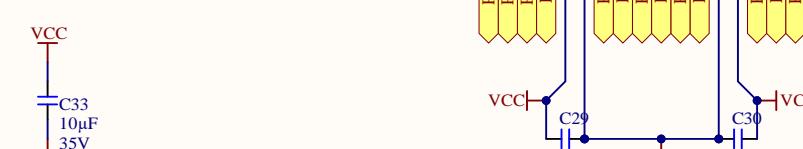
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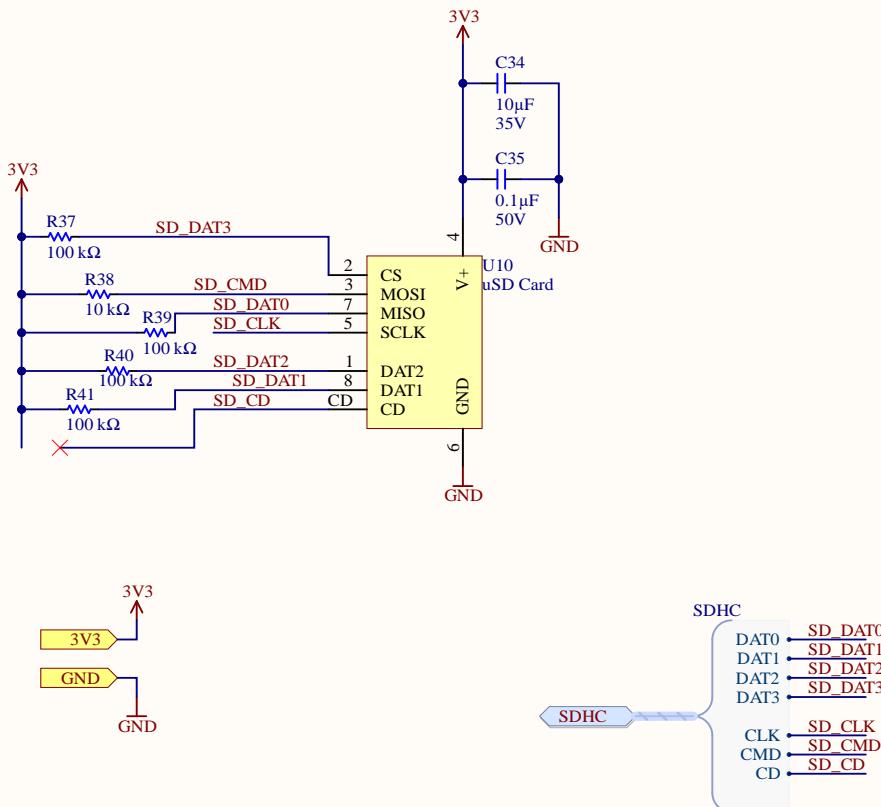
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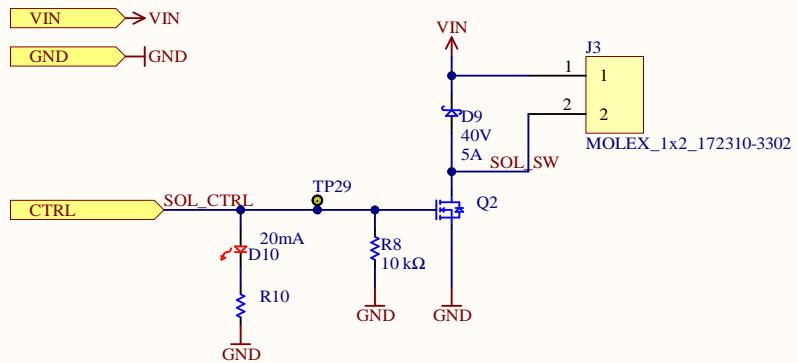
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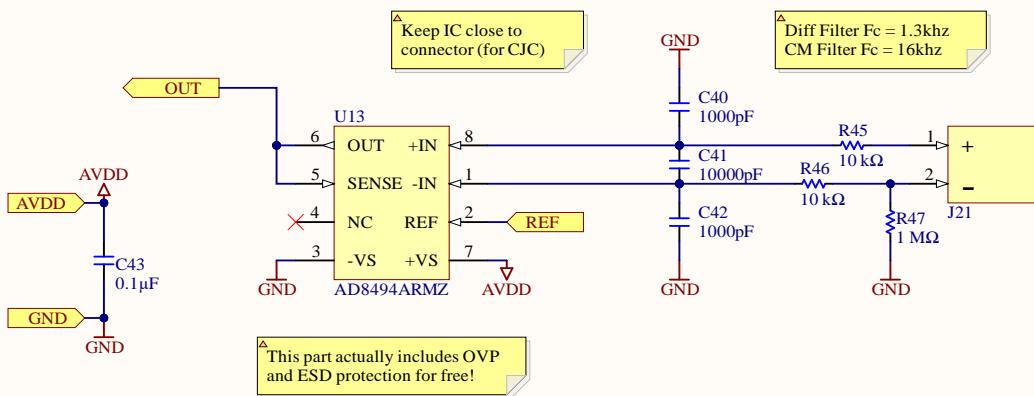
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