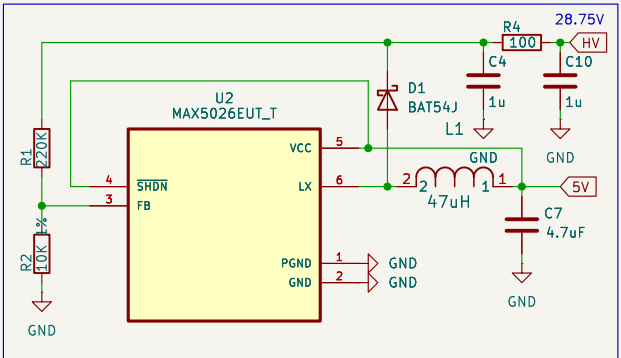


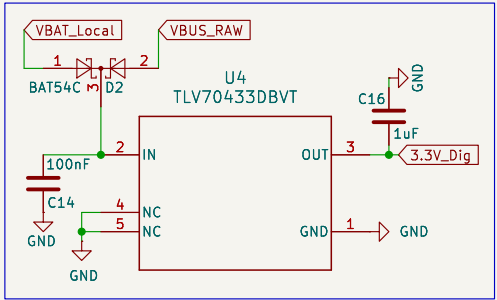
DC-DC Booster

Takes the VCC line, and increases the voltage to +32.5V.
This HV line is used to provide the reverse bias to the SiPM. The SiPM sees 30V difference, as virtual ground is 2.5V



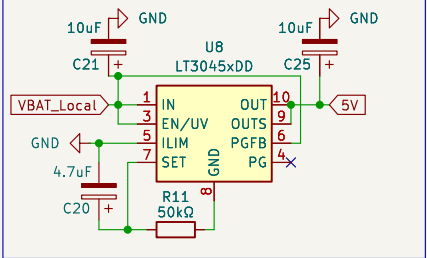
+3v3

Takes the battery line and regulates the voltage to 3.3v for the logic electronics



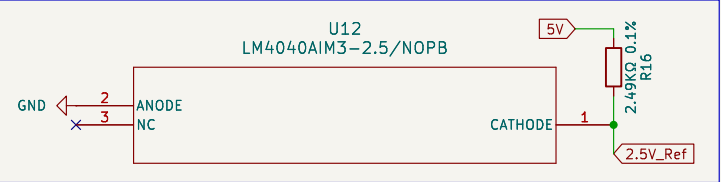
+5V

This creates the 5V supply that we use for the reference for the TIA



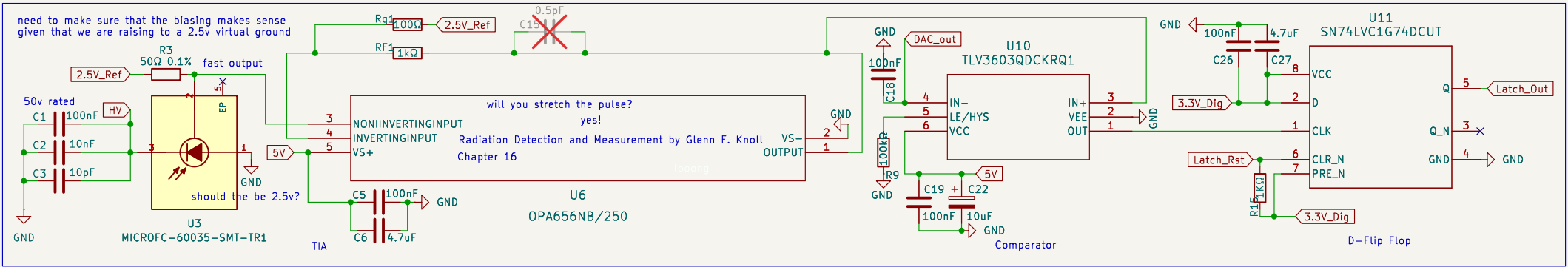
Virtual Ground Reference

Takes the 5V line and creates a 2.5V reference to detect dips when current pulses hit opp amp, using a shunt regulator



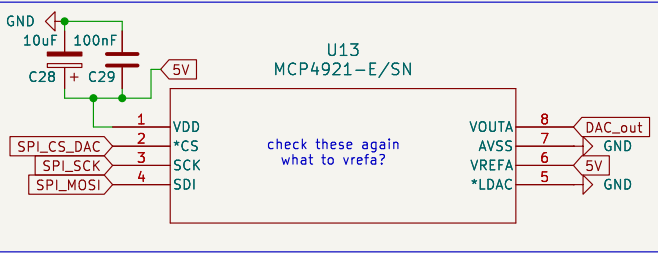
Readout

Amplifies, detects and registers the current pulse from the SiPM



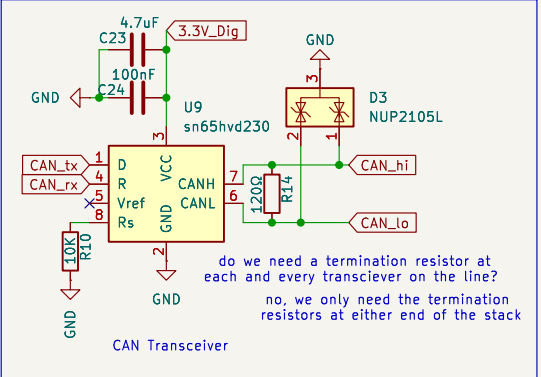
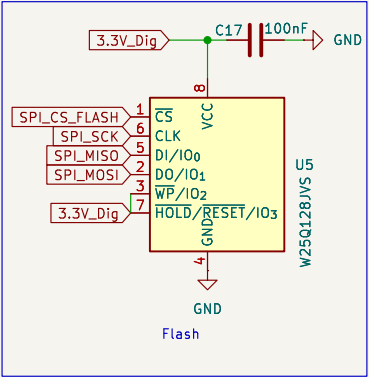
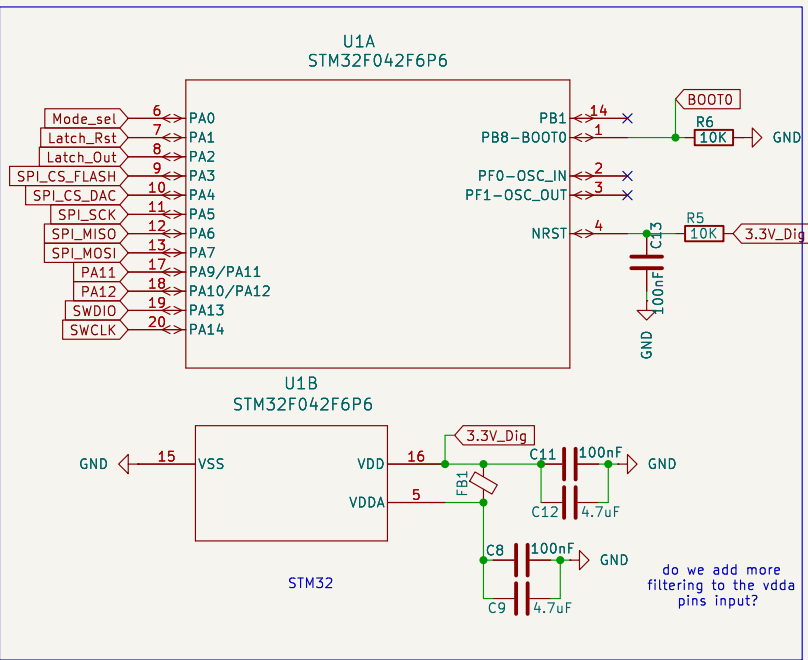
DAC

Sets a stable voltage reference for the comparator



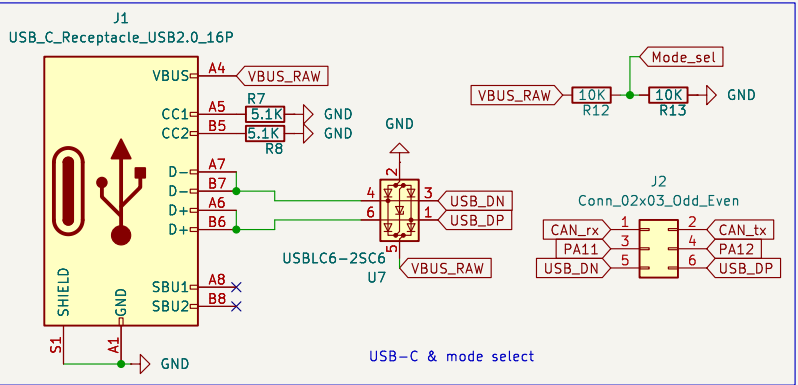
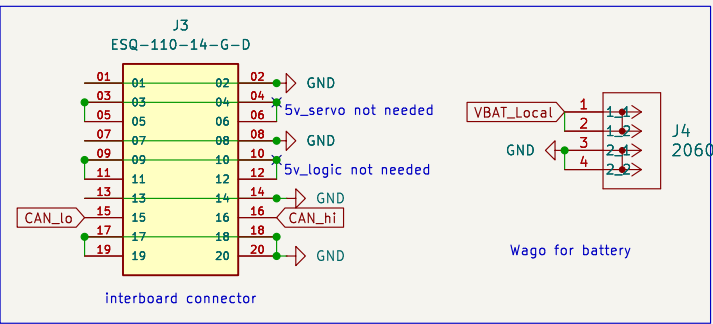
Logging

STM32 mcu, nand flash, can transceiver, together operate the sensor, catch the pulses and log the data



Connectors

read it again



The Fix: The "Sidecar" or "Extended" Layout.
Make the PCB 50mm x 70mm (or 65mm).
Zone A (50x50): Dedicated purely to the SiPM and the Scintillator sitting on top.
Zone B (The Extra 15-20mm strip): This is where you put the 20-pin Header, the USB-C port, the Wago, and the Mounting Holes.

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