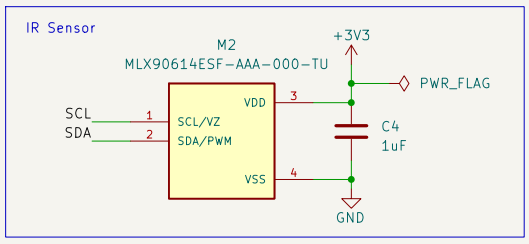
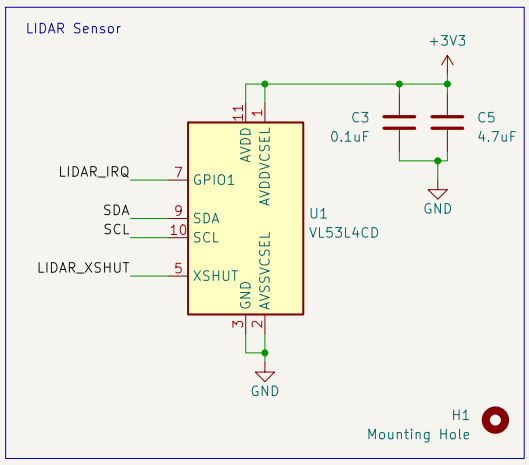
PERIPHERALS

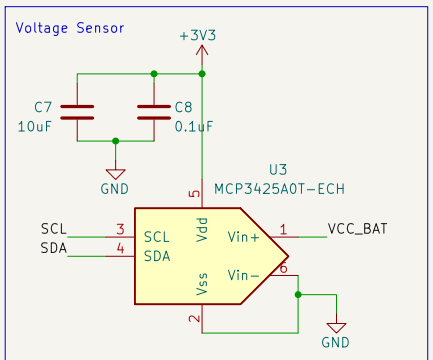
IR Sensor



LIDAR Sensor



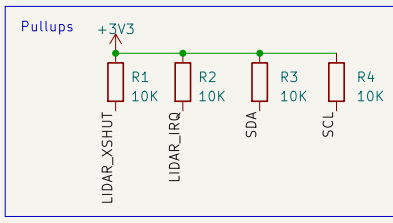
Voltage Sensor



forums.adafruit.com/viewtopic.php?f=8&t=190833

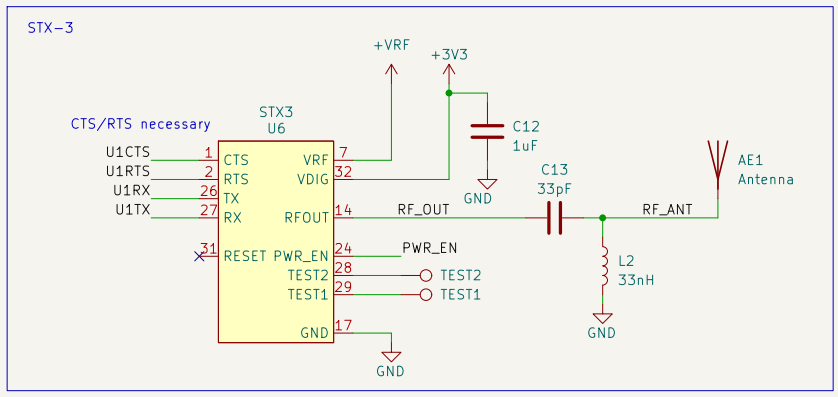
Still use an external ADC because ESP32 ADC impedence is bad, which would require a relatively high-dissapation divider.

Pullups

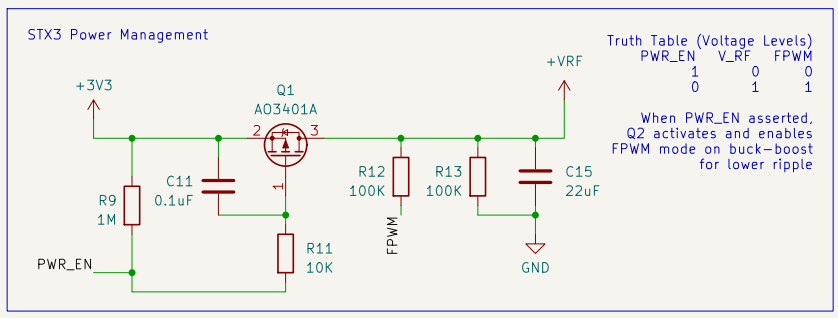


SATELLITE TRANSMITTER

STX-3

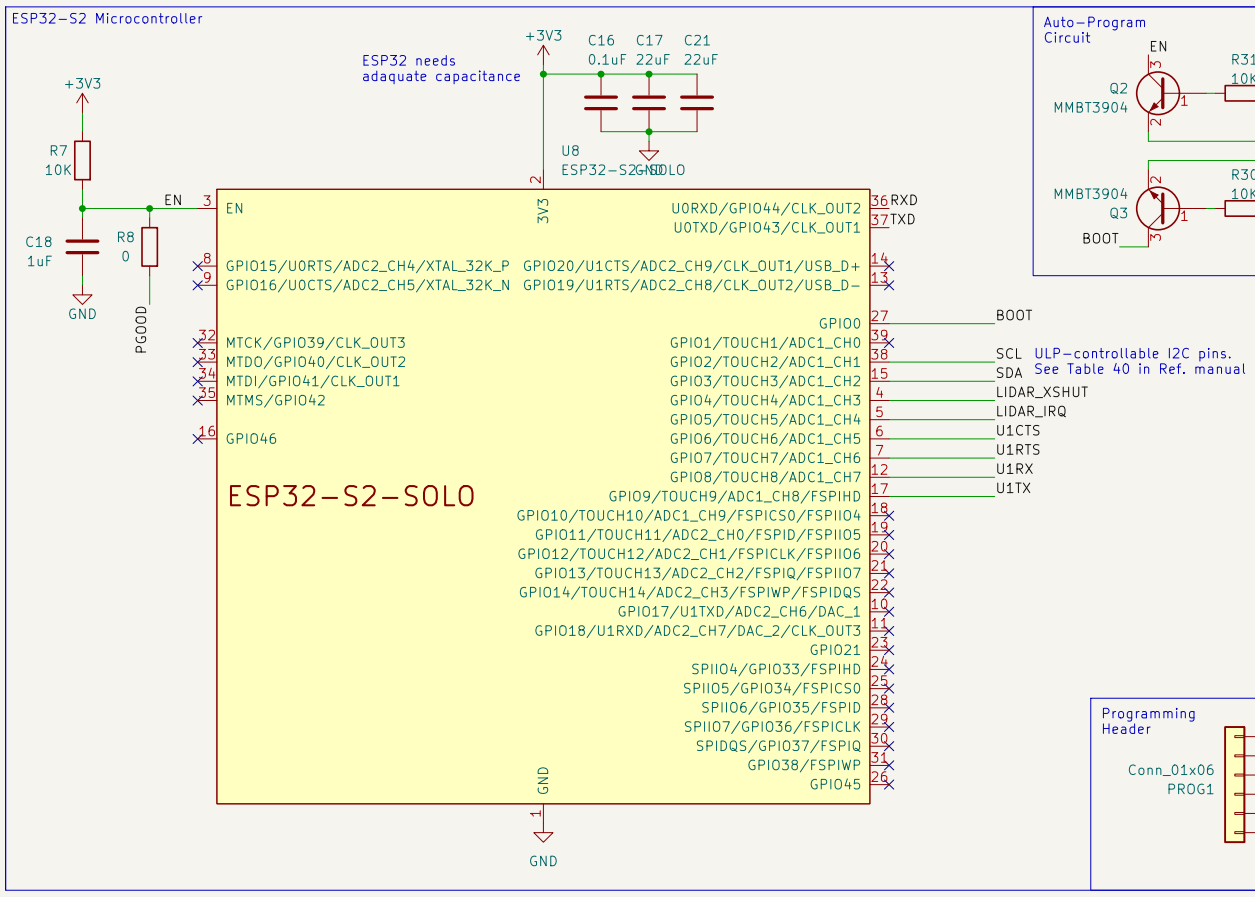


STX3 Power Management



PROCESSOR

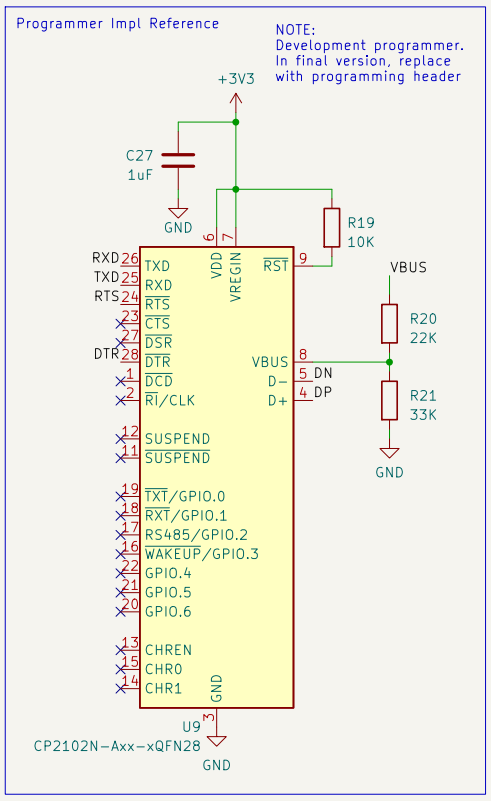
ESP32-S2 Microcontroller



Auto-Program Circuit

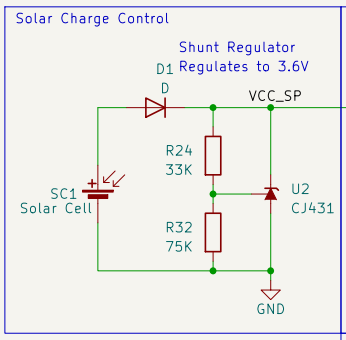
Programming Header

Programmer Impl Reference

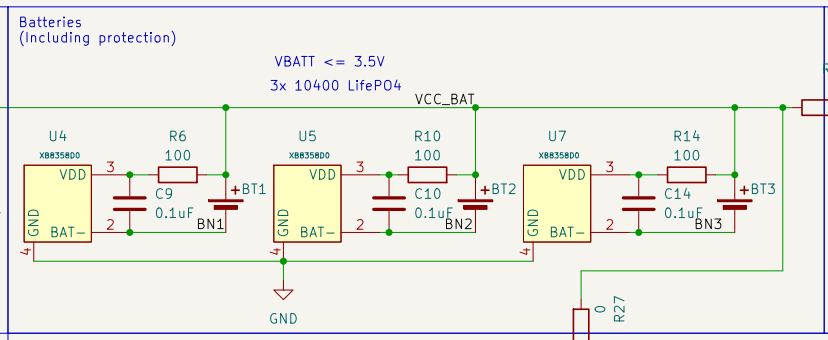


POWER

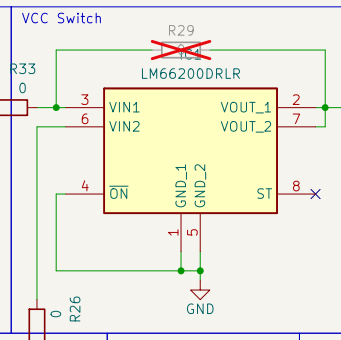
Solar Charge Control



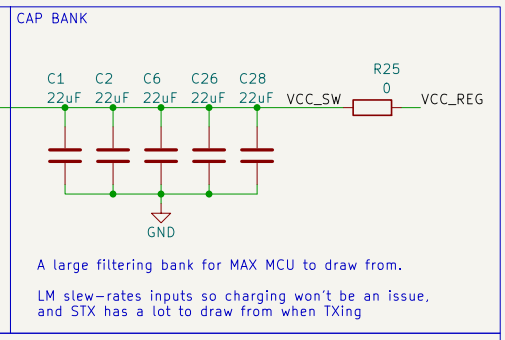
Batteries (Including protection)



VCC Switch



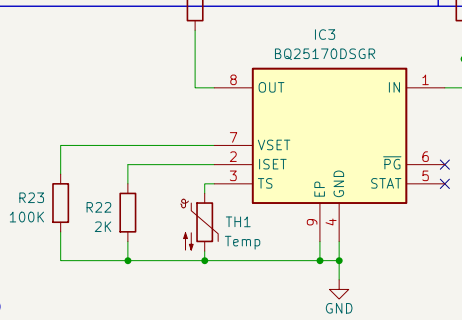
CAP BANK



A large filtering bank for MAX MCU to draw from.

LM slew-rates inputs so charging won't be an issue, and STX has a lot to draw from when TXing

USB Charger

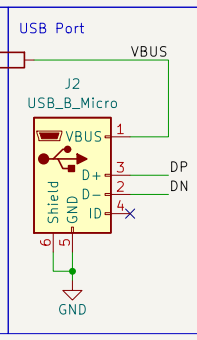


NOTE:
VCC SWITCH,
USB CHARGER,
USB PORT

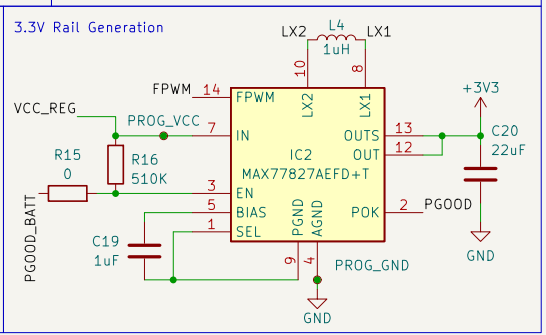
are for blocks for the development prototype. They should be removed in or unpopulated any production version.

Charges to 3.5V
(Shouldn't be interfered with by shunt regulator)

USB Port



3.3V Rail Generation



Uncertainty about MAX77827 PSM 100mV pk-pk ripple in PSM:
- Technically violates STX3's 50mV ripple requirement, but it probably won't be an issue when only powering the digital rail.
- On RF power-up, MAX is switched to FPWM mode which reduces ripple.

Functional prototype of sensor to monitor the an Afridev hand pump.
Author: Juan Luna

Sheet: /
File: afridev_sensor.kicad_sch

Title: Monitoring Sensor for Afridev Hand Pump

Size: A3	Date: 2023-05-02	**Rev: 1.0**
KiCad E.D.A. kicad 7.0.6		Id: 1/1