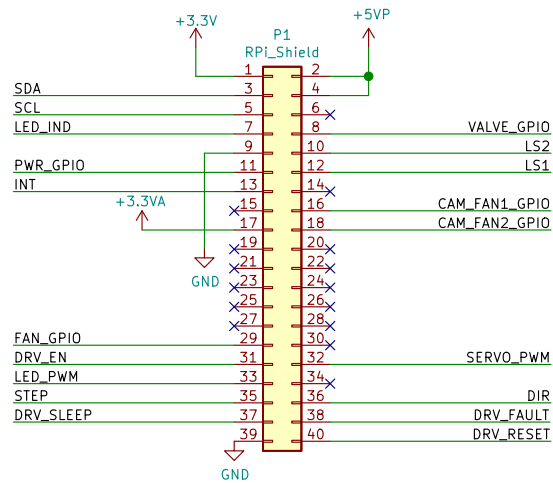


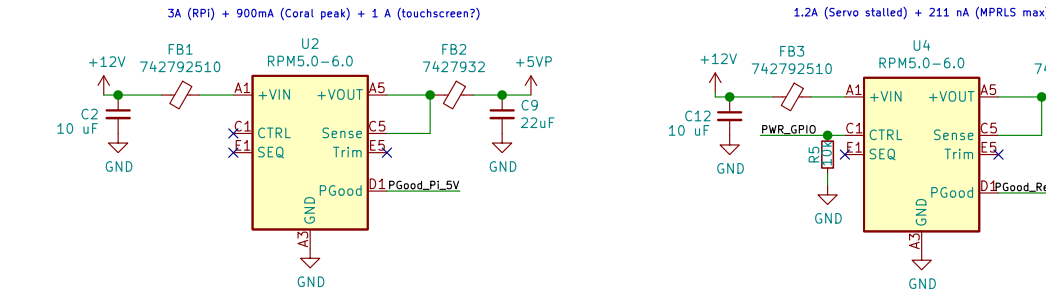
RPi GPIO

Use male-female headers, w/ male side up



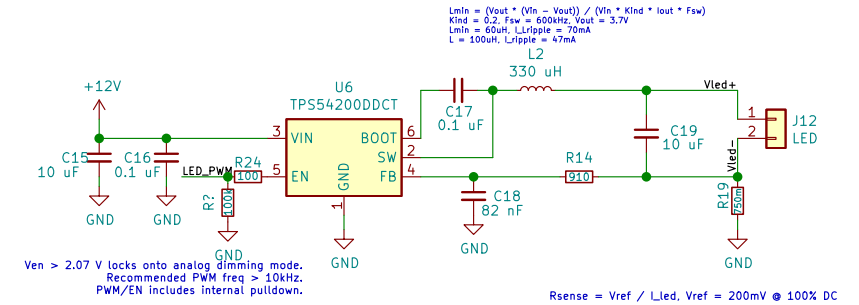
Power

Powered directly off 12V: 120mA (Fan), 0.4A (Motor)



LED Driver

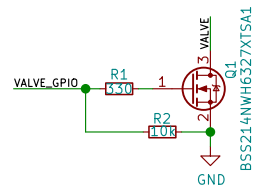
Vf,typ = 3.5V, If,typ = 500mA (run at 250mA)



Pneumatic Control

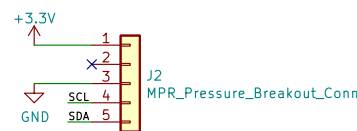
Pressure sensor breakout board will be mounted separately from the PCB.

Valve Switch



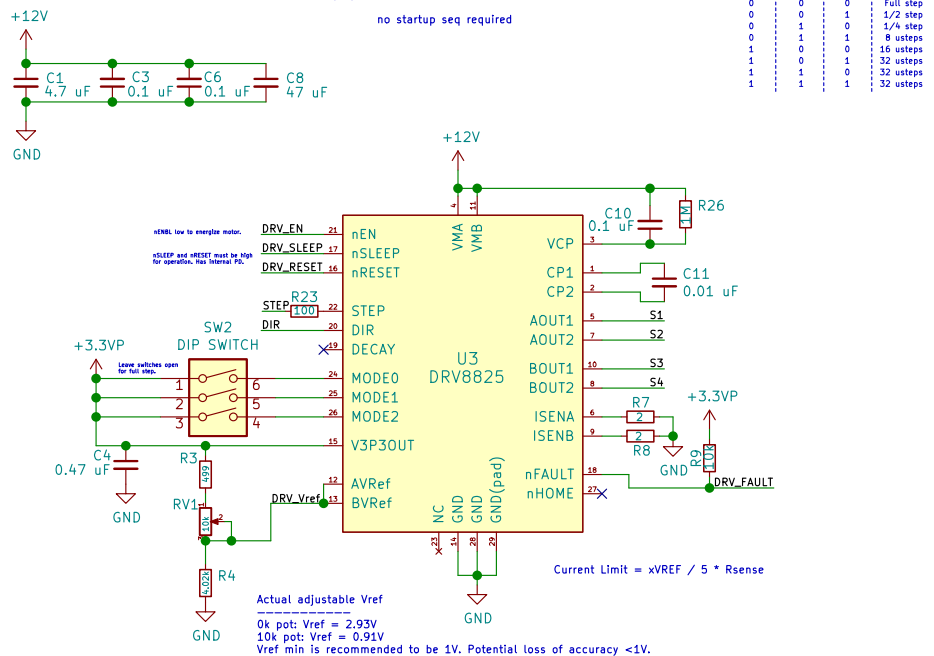
Pressure Sensor Breakout Board

I2C addr = 0x18 (unchangeable)



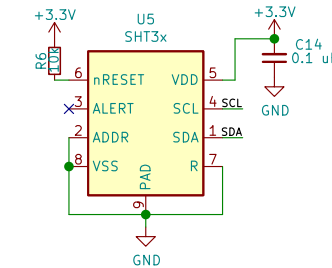
Stepper Motor Control

no startup seq required



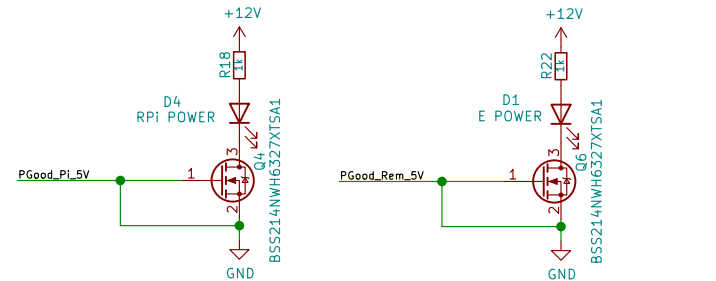
Temp/Humidity Sensor

I2C addr = 0x44

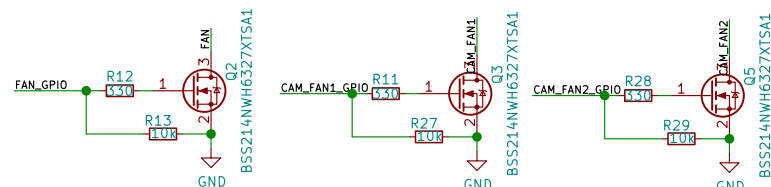


Peripherals

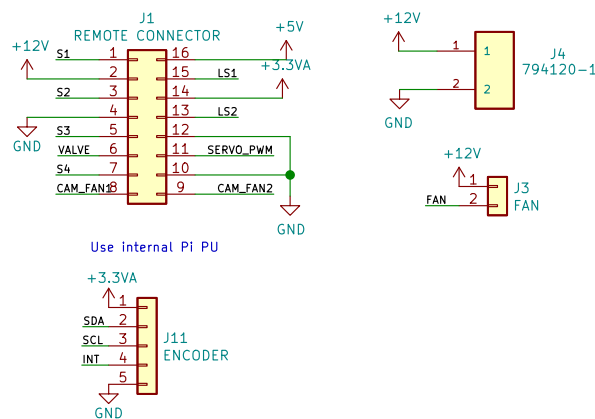
Vf = 2.15V, If (ideal) = approx. 20mA
LED Indicators



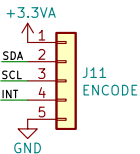
Fan



Shield Connectors

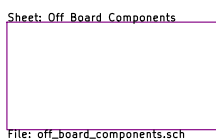


Use internal Pi PU

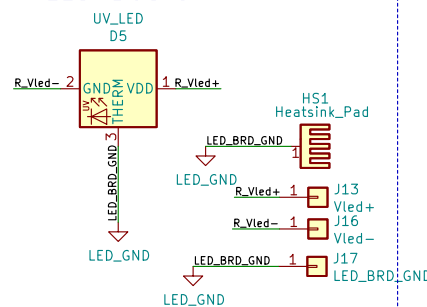


Off Board Components

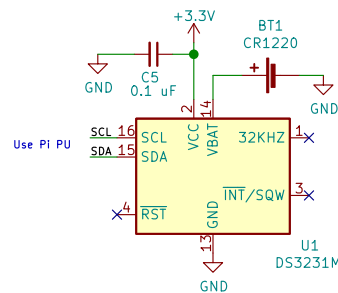
Sheet with components that are mounted off board, but connect to the PCB.



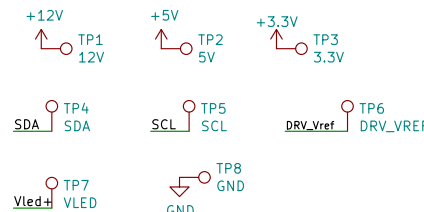
LED Board



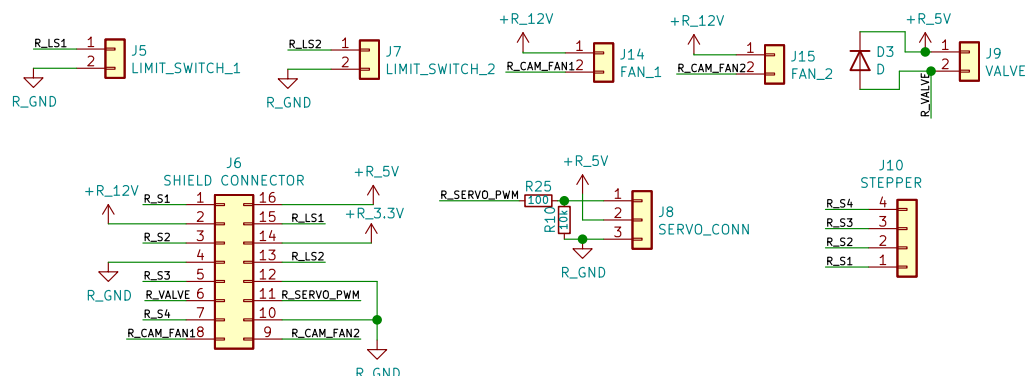
Real Time Clock



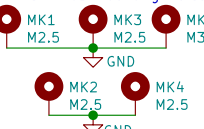
Test Points



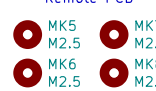
Remote Board



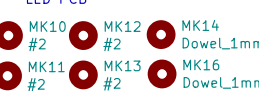
Main PCB Mounting Holes



Remote PCB



LED PCB



PN: 5-0005, 5-0006
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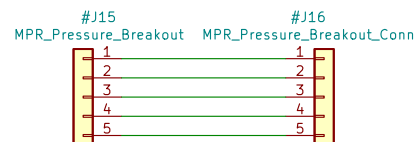
Sheet: /
File: ulc-mm.sch

Title: Label Free Malaria Scope

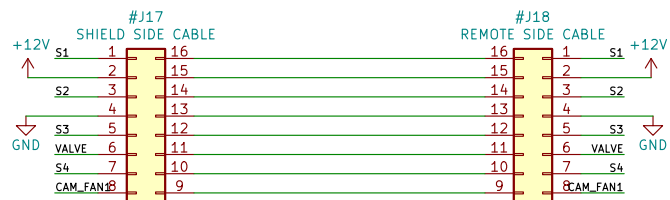
Size: A3 Date: 2021-09-14
KiCad E.D.A. kicad (5.1.10-1-10_14)

Rev: A
Id: 1/2

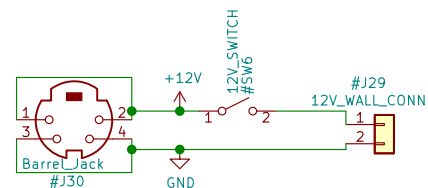
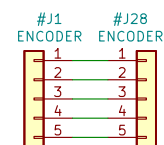
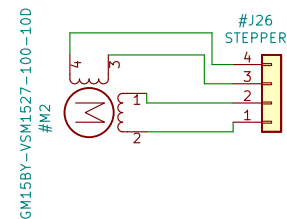
Main Board Components



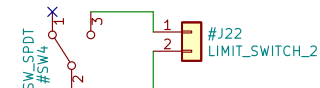
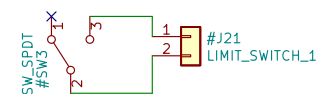
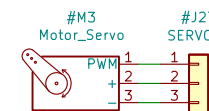
Board to board cable assembly. Female-female IDC headers on a ribbon cable.



Remote Board Components



Servo comes with female headers, but we may need to replace it w/ the proper mating component for the male headers so that there is a good friction lock.



PN: 5-005

Bioengineering Platform

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Sheet: /Off Board Components/

File: off_board_components.sch

Title: Off Board Components

Size: A4

Date: 2021-09-21

Rev: A

KiCad E.D.A. kicad (5.1.10-1-10_14)

Id: 2/2