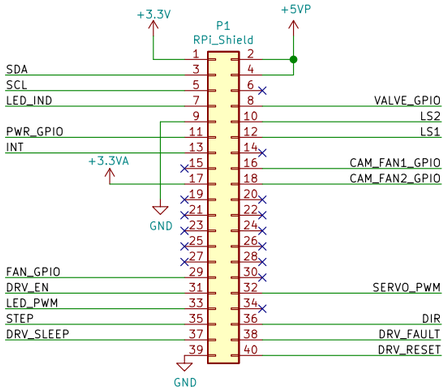
RPi GPIO

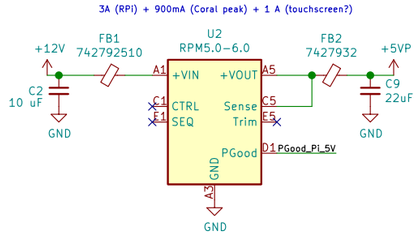
Use male-female headers, w/ male side up



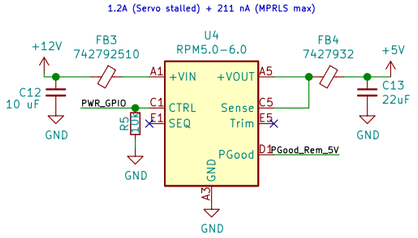
Power

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

3A (RPi) + 900mA (Coral peak) + 1 A (touchscreen?)

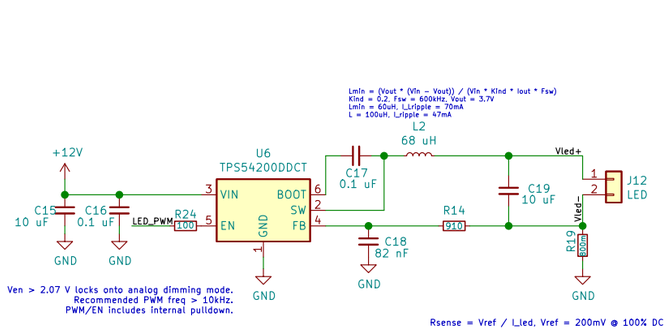


1.2A (Servo stalled) + 211 nA (MPRLS max)



LED Driver

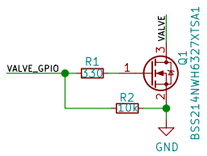
Vf,typ = 3.5V, If,typ = 500mA (run at 250mA)



Pneumatic Control

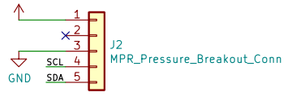
Pressure sensor breakout board will be mounted separately from the PCB.

Valve Switch



Pressure Sensor Breakout Board

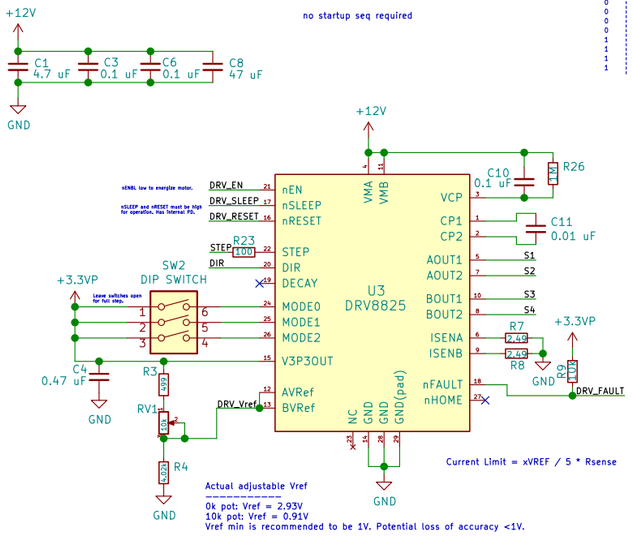
I2C addr = 0x18 (unchangeable)



Stepper Motor Control

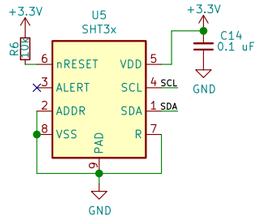
no startup seq required

MODE2	MODE1	MODE0	STEP MODE
0	0	0	Full step
0	0	1	1/2 step
0	1	0	1/4 step
0	1	1	8 usteps
1	0	0	16 usteps
1	0	1	32 usteps
1	1	0	32 usteps
1	1	1	32 usteps



Temp/Humidity Sensor

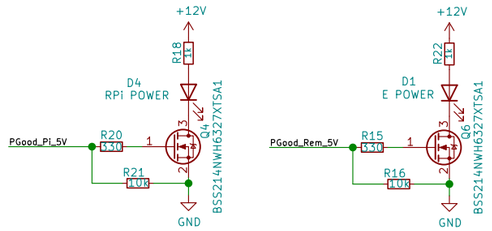
I2C addr = 0x44



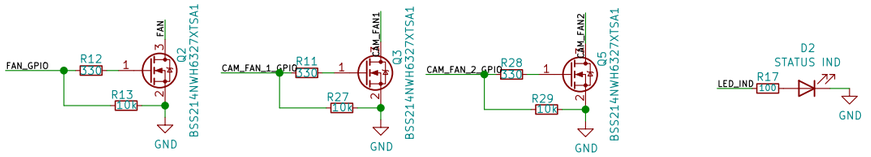
Peripherals

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

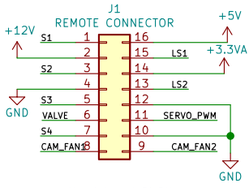
LED Indicators



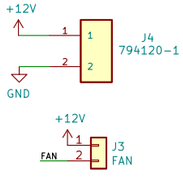
Fan

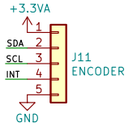


Shield Connectors

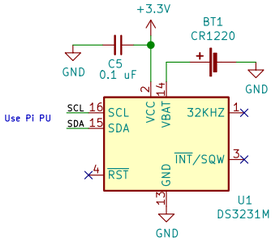


Use internal Pi PU

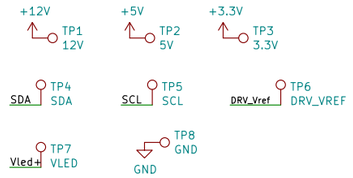




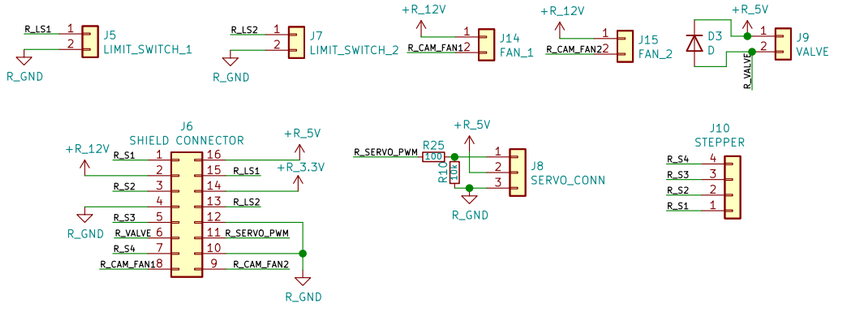
Real Time Clock



Test Points



Remote Board



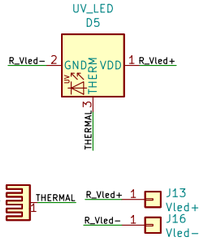
Off Board Components

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

Sheet: Off Board Components

File: off_board_components.sch

LED Board



Main PCB Mounting Holes

- MK1 M2.5
- MK2 M2.5
- MK3 M2.5
- MK4 M2.5
- MK9 M3

Remote PCB

- MK5 M2.5
- MK6 M2.5
- MK7 M2.5
- MK8 M2.5

LED PCB

- MK10 #2
- MK11 #2
- MK12 #2
- MK13 #2
- MK14 Dowel_1mm
- MK15 Dowel_1mm
- MK16 Dowel_1mm

PN: 5-0005, 5-0006

Bioengineering Platform

Chan Zuckerberg Biohub

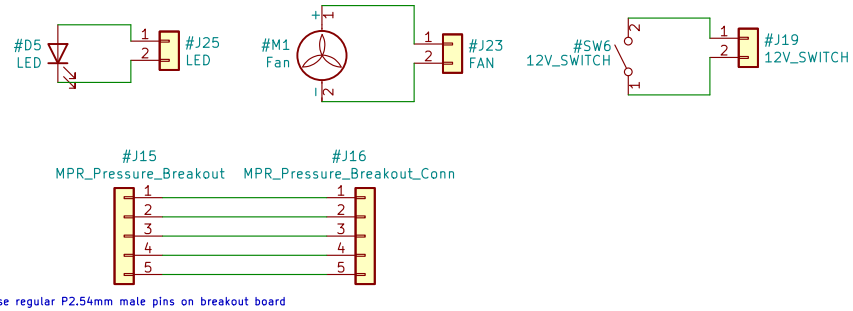
Sheet: /

File: ulc-mm.sch

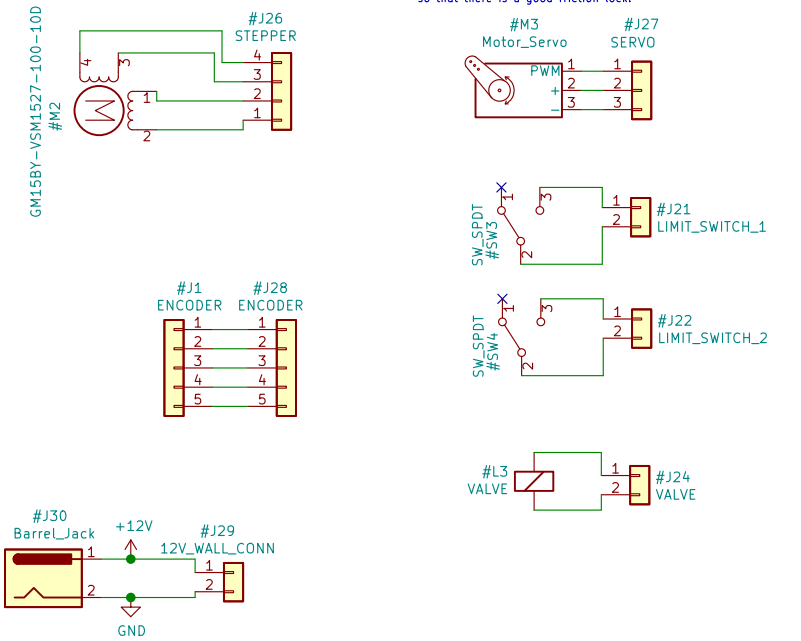
Title: Label Free Malaria Scope

Size: A3	Date: 2021-09-14	**Rev: A**
KiCad E.D.A. kicad (5.1.10-1-10_14)		Id: 1/2

Main Board Components



Remote Board Components



PN: 5-005		
Bioengineering Platform		
Chan Zuckerberg Biohub		
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