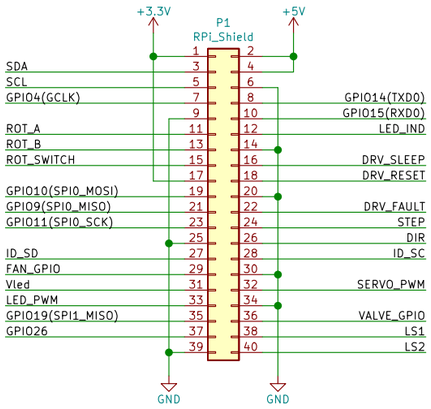
RPi GPIO

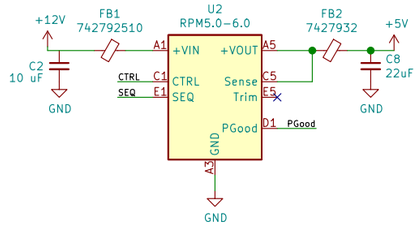
Use male-female headers, w/ male side up



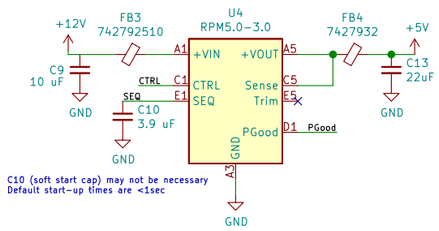
Power

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

3A (RPi) + 900mA (Coral peak) + 1 A (touchscreen?) + 211 nA (MPRLS max)
PWR plane

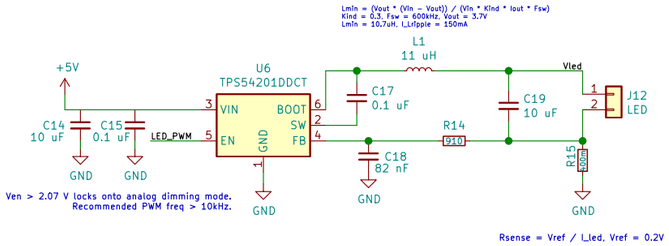


1.2A (Servo stalled) + 700mA (LED max)
Traces directly to components

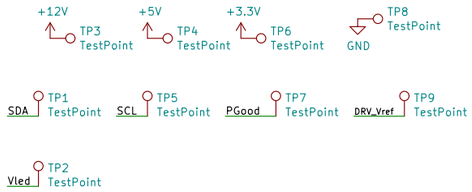


LED Driver

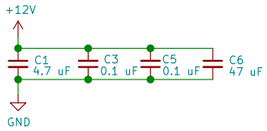
Vf,typ = 3.5V, If,typ = 500mA



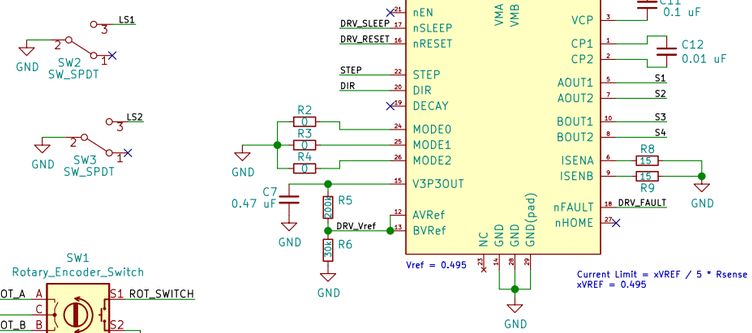
Test Points



Stepper Motor Control



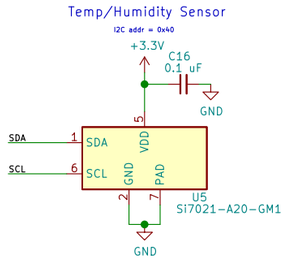
MODE2	MODE1	MODE0	STEP MODE
0	0	0	Full step
0	0	1	1/2 step
0	1	0	1/4 step
0	1	1	8 usteps
1	0	0	16 usteps
1	0	1	32 usteps
1	1	0	32 usteps
1	1	1	32 usteps



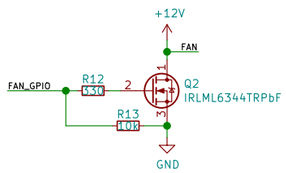
Peripherals

Temp/Humidity Sensor

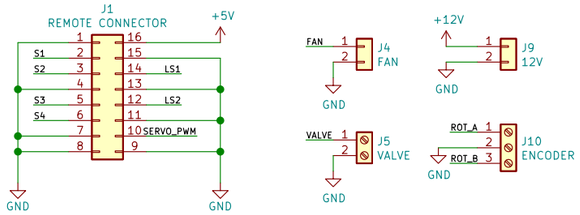
I2C addr = 0x40



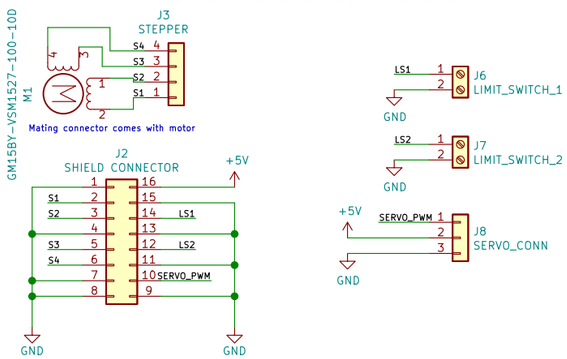
Fan



Shield Connectors

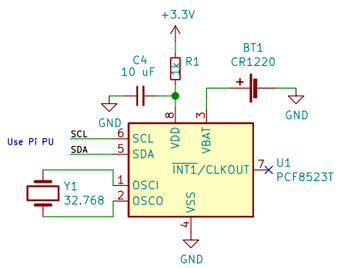


Remote Board Connectors



Real Time Clock

I2C addr = 0x68



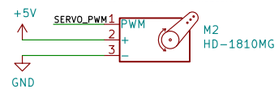
Mounting Holes

Pneumatic Control

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

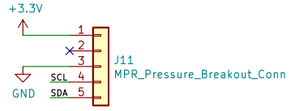
Servo Connector

Servo comes with female headers

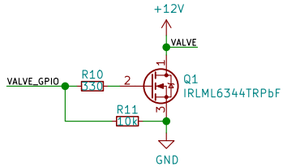


Pressure Sensor Breakout Board

I2C addr = 0x18 (unchangeable)



Valve Switch



ID_SD and ID_SC PINS:
These pins are reserved for HAT ID EEPROM.

At boot time this I2C interface will be interrogated to look for an EEPROM that identifes the attached board and allows automagic setup of the GPIOs (and optionally, Linux drivers).

DO NOT USE these pins for anything other than attaching an I2C ID EEPROM. Leave unconnected if ID EEPROM not required.

Bioengineering Platform
Chan Zuckerberg Biohub

Sheet: /
File: ulc-mm.sch

Title: ULC Malaria Scope

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