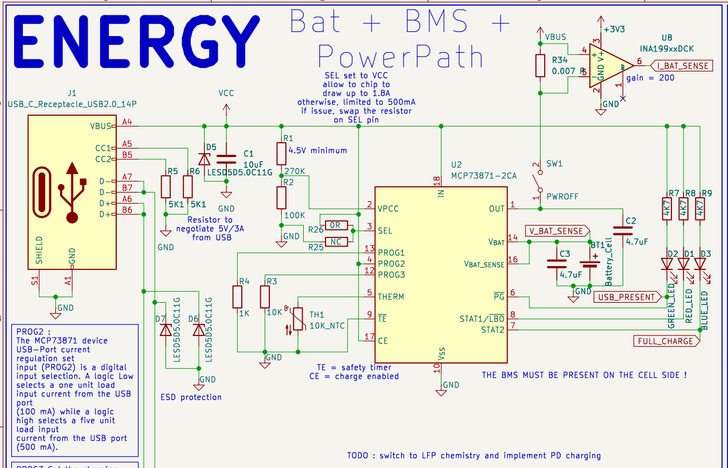
# ENERGY

## Bat + BMS + PowerPath




PROG2 :
The MCP73871 device USB-Port current regulation set input (PROG2) is a digital input selection. A logic Low selects a one unit load input current from the USB port (100 mA) while a logic high selects a five unit load input current from the USB port (500 mA).

PROG3 Set the charging termination current threshold
Itresh = 1000V/R_prog3
1000V/10'000 = 100mA

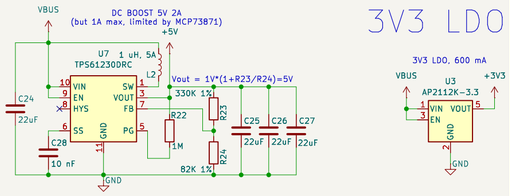
acceptable range :
200mA-10mA

This affect cell lifetime, current should be as big as possible to make the cell last as long as possible

PROG1 Set the charging current
Itresh = 1000V/R_prog1
1000V/1'000 = 1000mA
This is limited by battery capacity,
slow charge relative to capacity
to extend lifetime of the cell

TODO : switch to LFP chemistry and implement PD charging

## 5V Boost

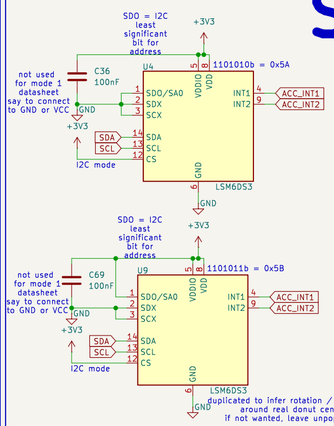



## 3V3 LDO

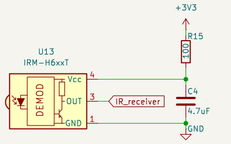



# SENSORS

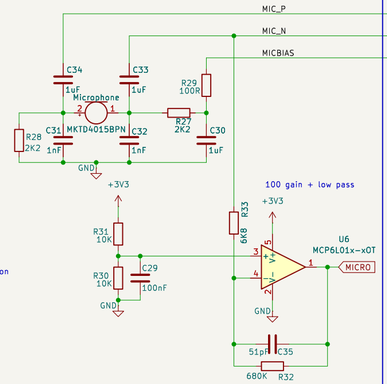
## 6 AXIS IMU



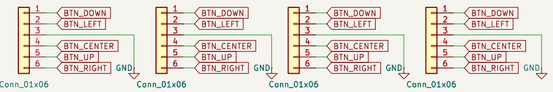

## IR Remote Receiver




## Microphone



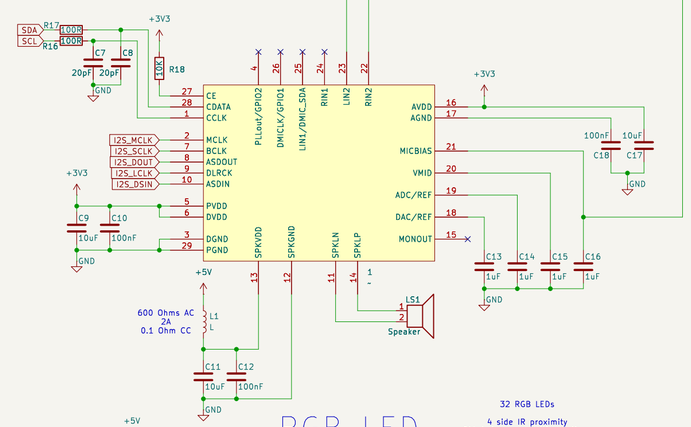

## Capacitive Buttons




## IR Proximity sensor

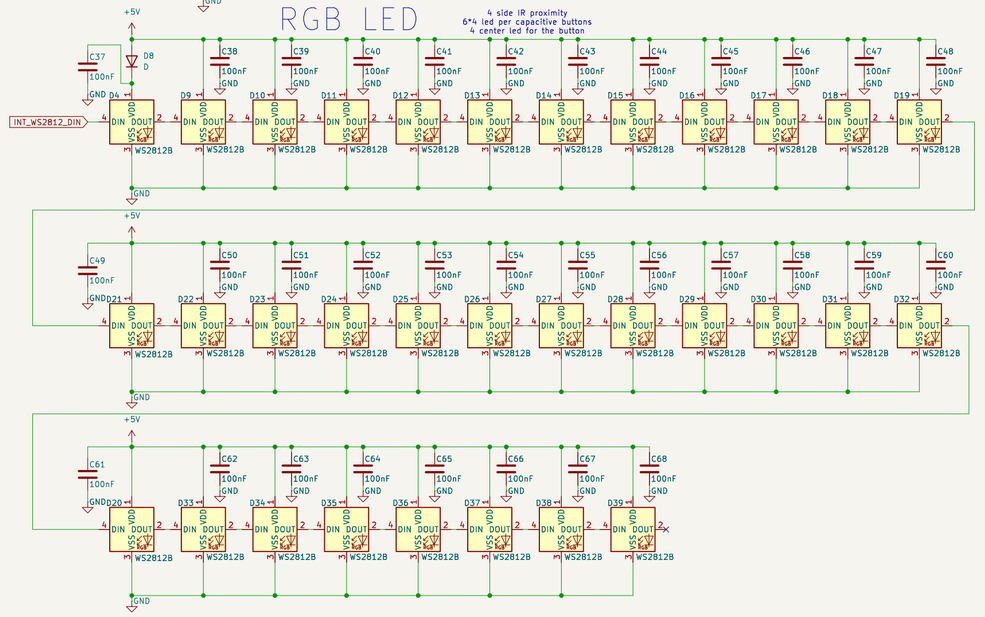
# ACTUATOR

## AUDIO SPEAKER



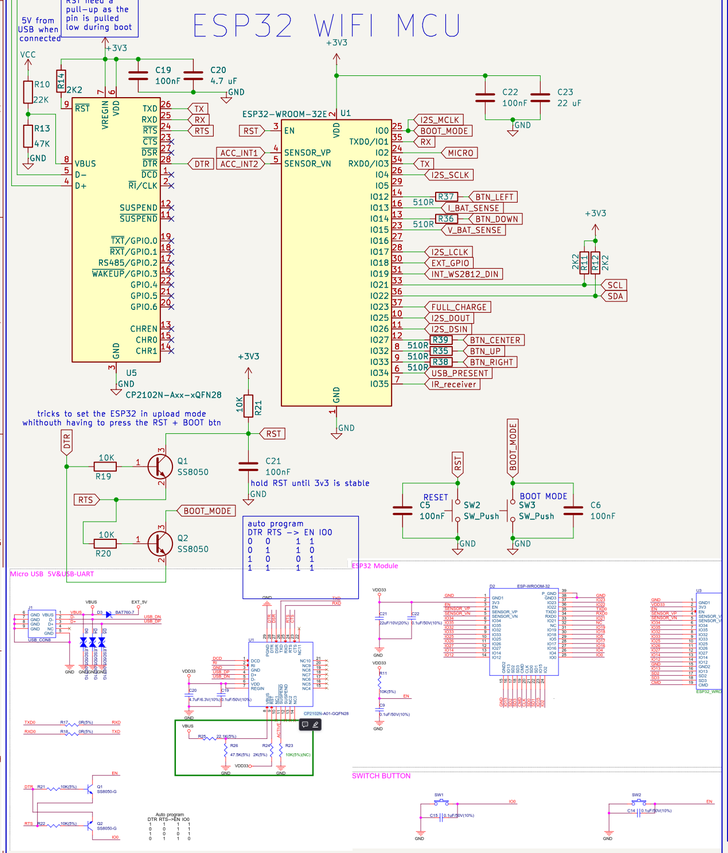

## RGB LED

32 RGB LEDs
4 side IR proximity
6*4 led per capacitive buttons
4 center led for the button




# COMPUTE

## ESP32 WIFI MCU




Micro USB 5V&USB-UART



ESP32 Module



SWITCH BUTTON



# On the daughterboard

Color Sensor (over I2C)

pin to break out :

GND
VBUS (1.8A max)
5V (1A max)
EXT_GPIO WS2812 IO / analog in
SCL
SDA
CHECK REGULATOR
CURRENT LIMIT NOTE

# On the daughterboard

Motors / H-bridge / servo / more LED

use

SX1509
PCA9685

they work over I2C and can be paired to an H bridge

| | | |
|---|---|---|
| Sheet: / File: Sthymuli-motherboard.kicad_sch | | |
| **Title:** | | |
| Size: A2 | Date: | **Rev:** |
| KiCad E.D.A. 9.0.7 | | Id: 1/1 |