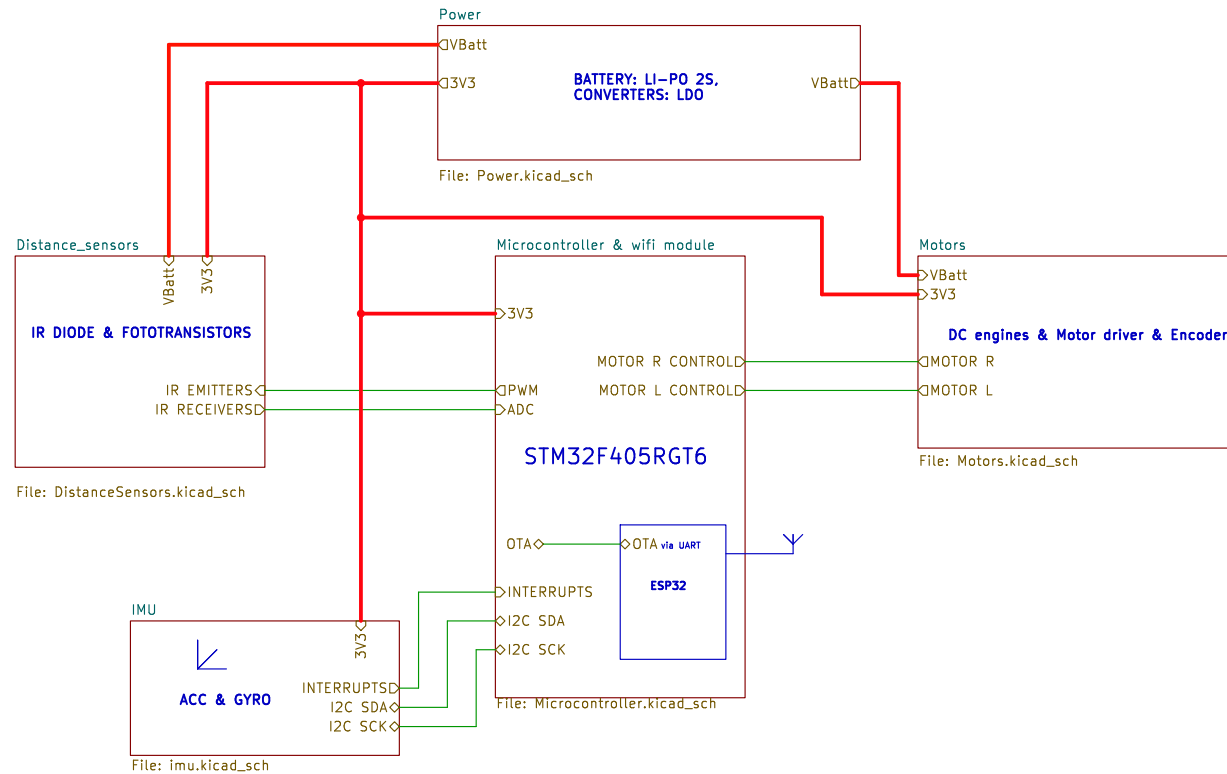
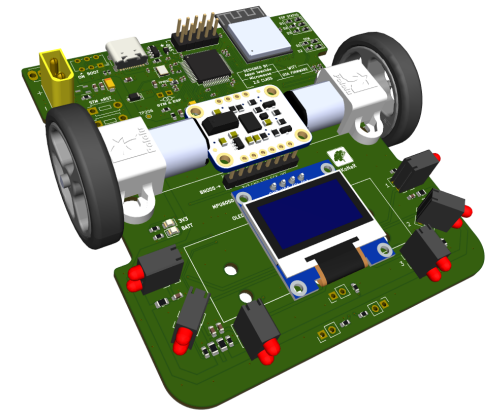


[1] Micromouse – Top level Schematic



Schematics drawn by: Adam Iwachów

Sheet: /
File: Micromouse.kicad_sch

Title:

Size: A4
KiCad E.D.A. kicad 7.0.8

Date:

Rev:
Id: 1/6

There are 3 possible ways to power board

1. via USB
2. via ST-LINK
3. via BATTERY

Reverse protection

Vgs = 12V
Vds = 30V
Id = 4A

J201 XT30

8V_BATT

SW201 SW_SPDT

Q201 PMOS

D204 BATT_LED

R203 10k

C202 100n

C203 1u

C205 10u Tantalum

R205 82k

R206 51k

C206 10n

BATTERY_LEVEL

BATT_LED

+BATT

GND

H201 MountingHole

H202 MountingHole

H203 MountingHole

H204 MountingHole

Vbatt = 8V => BatteryLEVEL = 3V
Vbatt = 7V => BatteryLEVEL = 2.625V

[illegible]

The schematic diagram illustrates the power supply section. A red line labeled '+BATT' with an upward arrow represents the battery connection. A green line labeled 'LD0_VIN' represents the output to the LD0 module. A red line labeled '5V_ST' with a rightward arrow represents the output to the ST module. Three diodes are shown: D201 (green) is connected between the green line and the red line; D202 (green) is connected between the red line and the +BATT line; D203 (red) is connected between the red line and the 5V_ST line. The text 'From Battery' is placed near the +BATT line, and 'From ST-LINK' is placed near the 5V_ST line. A blue dashed box encloses the entire circuit.

MAX 1A

TP202

U202
LD1117S33R

+3.3V

3 VI V0 2

GND 1

C207 1u

C208 4u7

1k R208

D205 3V3_LED

GND

If USB or ST-LINK is plugged and at the same time Vbatt is provide, Vbus and ST-5V are blocked

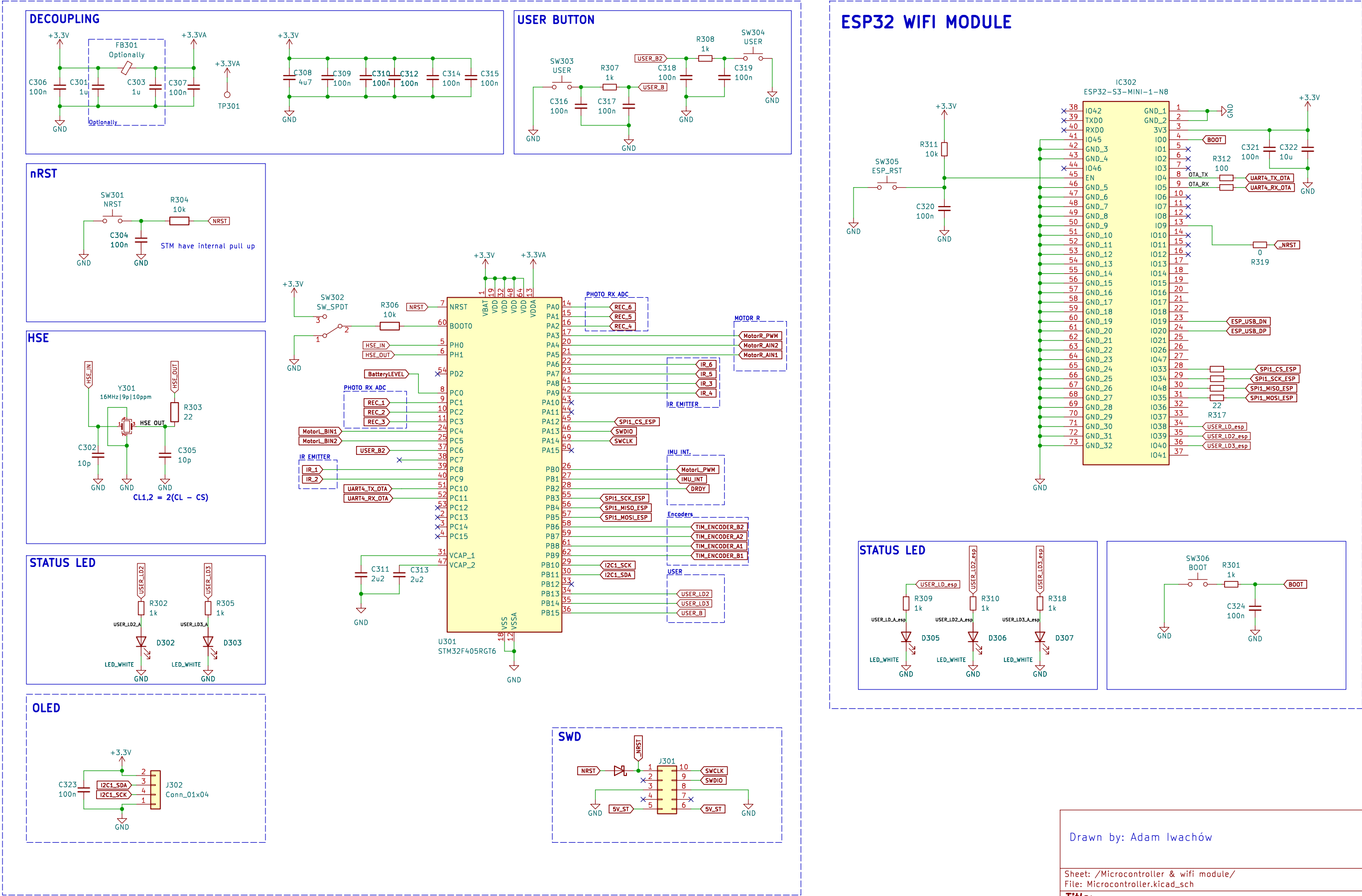
Current measurment
for microcontroller's section

Sheet: /Power/
File: Power.kicad_sch

| | |
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| Size: User | Date: |
| KiCad E.D.A. kicad 7.0.8 | |

Rev:
Id: 2/6

[3] Microcontroller & WIFI module



Drawn by: Adam Iwachów

Sheet: /Microcontroller & wifi module/
File: Microcontroller.kicad_sch

Title:

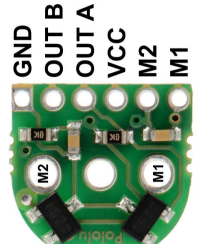
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KiCad E.D.A. kicad 7.0.8

Date:

Rev:

Id: 3/6

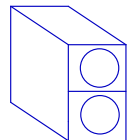
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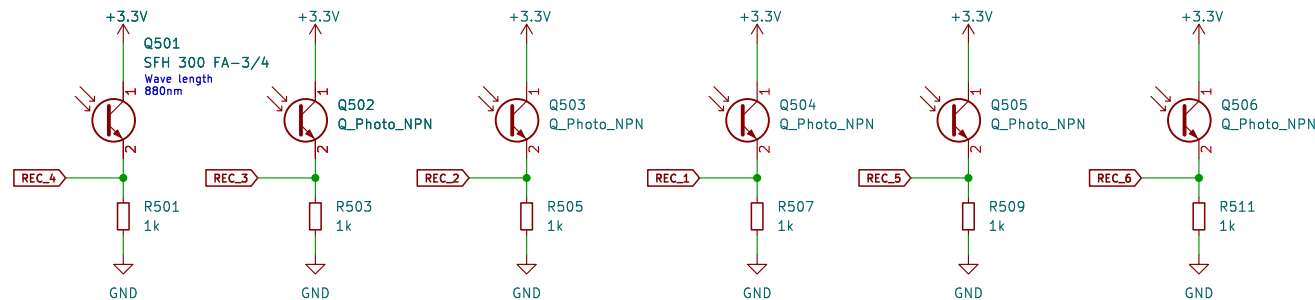
Title:

Rev:
Id: 4/6

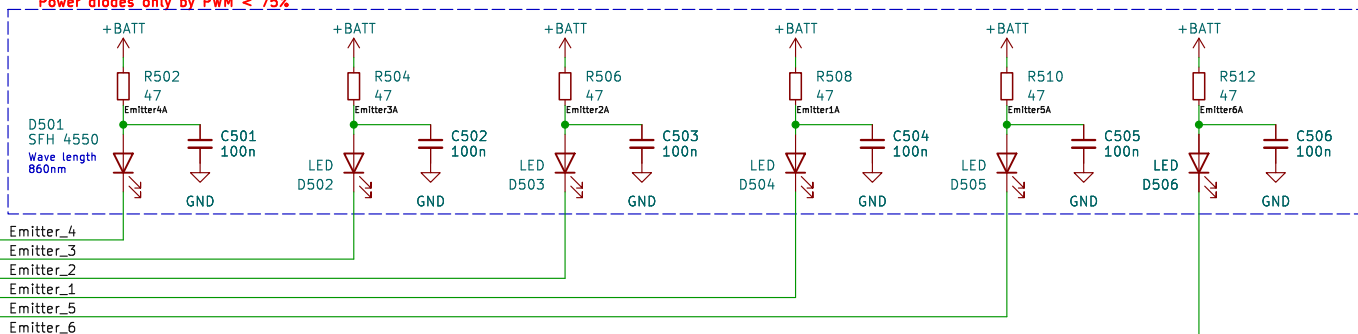
[5] IR RECEIVERS & EMITTERS



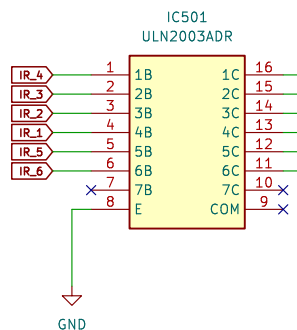
IR & Photo placed
in one case



Diode max dc current = 100mA
 $I_d = 6.5V / 47\Omega = 0.14A$
Power diodes only by PWM < 75%



Darlington array



up to 500mA per channel

IMPORTANT Note*
IR DIODES ARE POWERED ONLY IF VBATT IS PLUGED IN

Drawn by: Adam Iwachów

Sheet: /Distance_sensors/
 File: DistanceSensors.kicad_sch

Title:

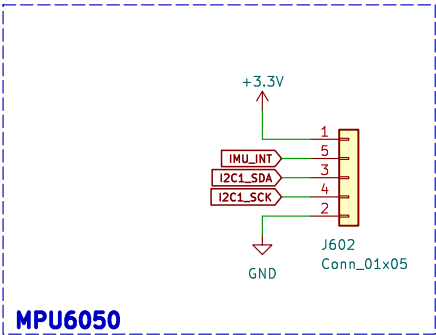
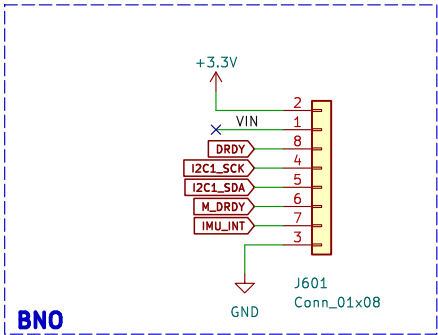
Size: A4
 KiCad E.D.A. kicad 7.0.8

Date:

Rev:
 Id: 5/6

[6] Accelerometer & gyroscope

Note*
There are two possible imu's modules to choose
Each of them have internal I2C pull ups



Drawn by: Adam Iwachów

| | | |
|-------------------------------------|-------|---------|
| Sheet: /IMU/ File: imu.kicad_sch | | |
| Title: | | |
| Size: A5 | Date: | Rev: |
| KiCad E.D.A. kicad 7.0.8 | | Id: 6/6 |