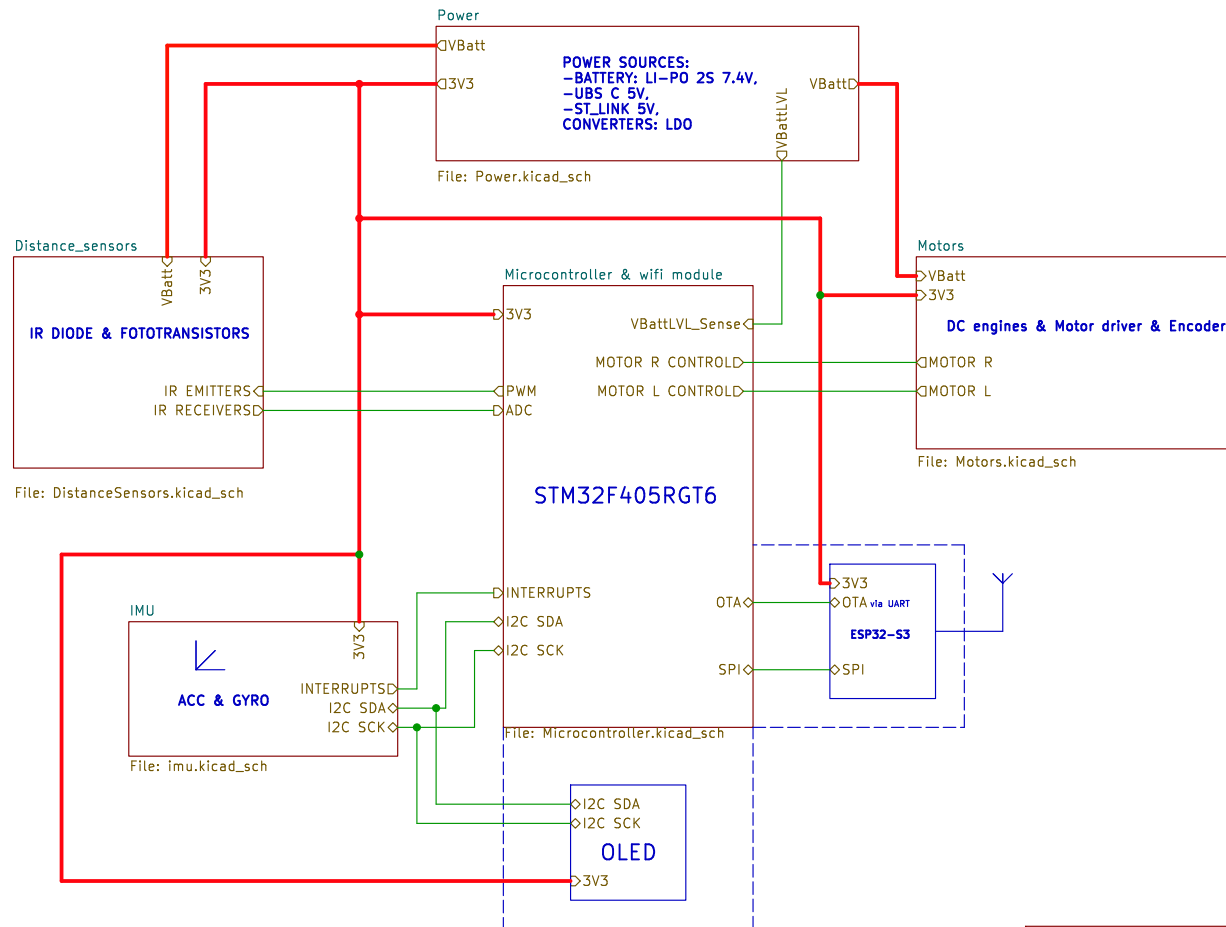
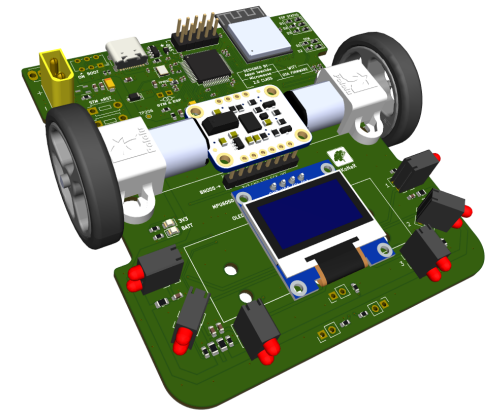


[1] Micromouse – Top level Schematic



KoNaR

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

$V_{gs} = 12V$
 $V_{ds} = 30V$
 $I_d = 4A$

Q201 PMOS

D204 BATT_LED

R203 10k

R205 82k

R206 51k

R207 2k2

C202 100n

C203 1u

C205 10u Tantalum

C206 10n

BATTERY_LEVEL

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

H201 MountingHole

H202 MountingHole

H203 MountingHole

H204 MountingHole

J202

USB_C_Receptacle_USB2.0

VBUS

A4

CC1 A5

CC2 B5

D- A7

D+ B7

D+ A6

D+ B6

SHIELD

SBU1 AB

SBU2 BB

A1

GND

R201 5k1

R202 5k1

Up to 1.5A

DN

DP

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

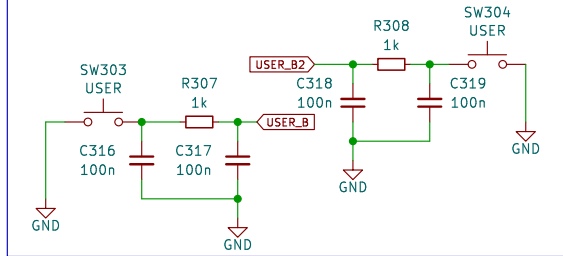
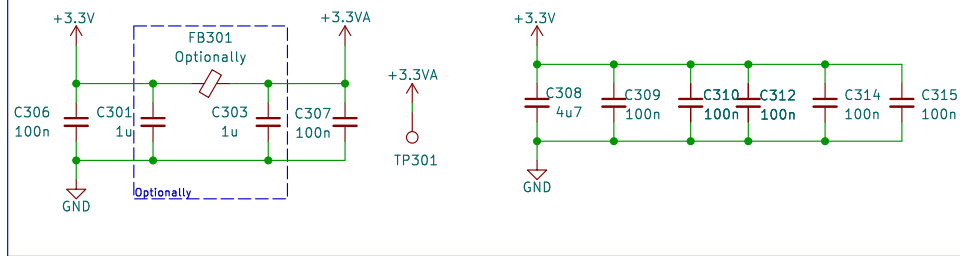
Current measurment
for microcontroller's section

Sheet: /Power/
File: Power.kicad_sch

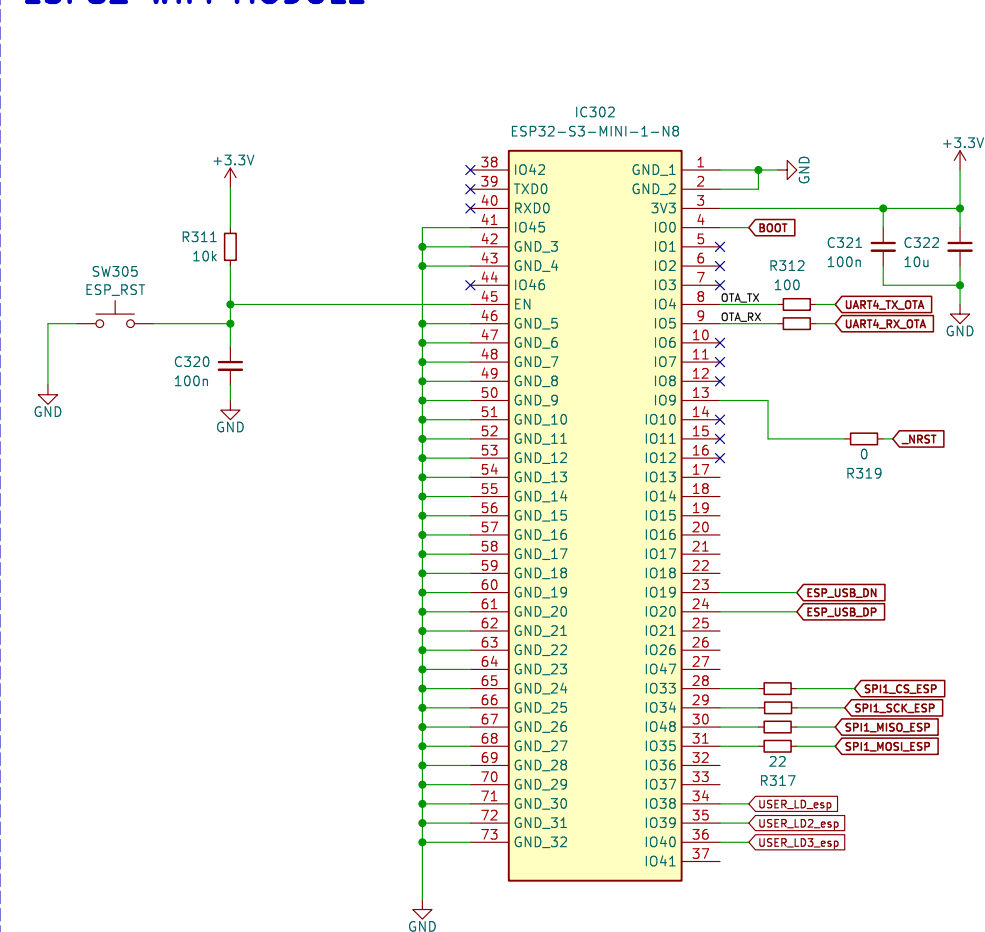
Size: User	Date:
KiCad E.D.A. kicad 7.0.8	

Rev:
Id: 2/6

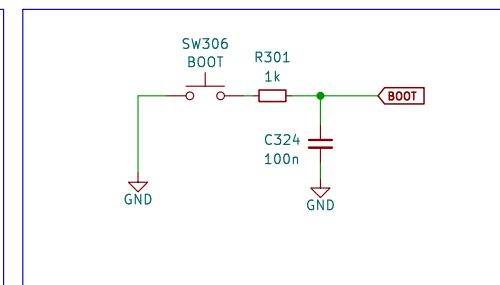
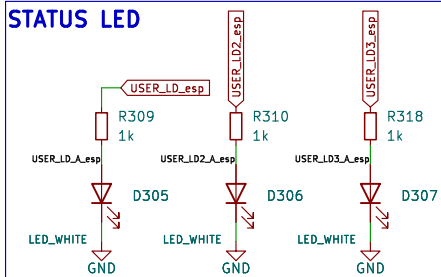
[3] Microcontroller & WIFI module



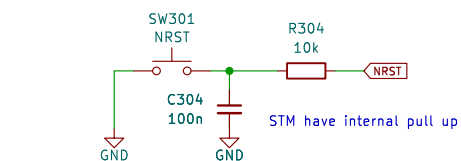
ESP32 WIFI MODULE



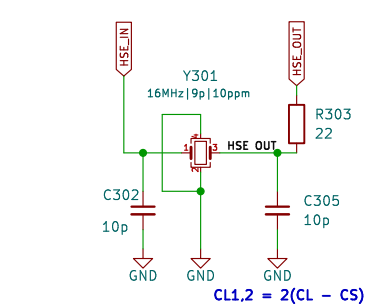
STATUS LED



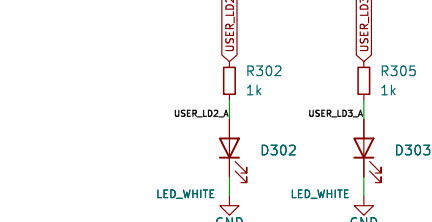
nRST



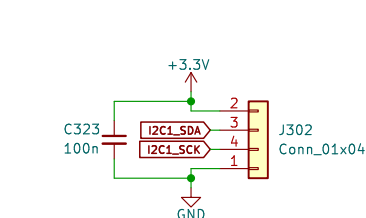
HSE



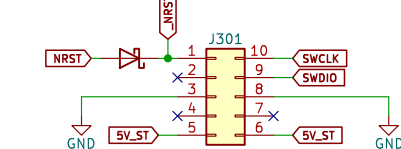
STATUS LED



OLED



SWD



Drawn by: Adam Iwachów

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

Title:

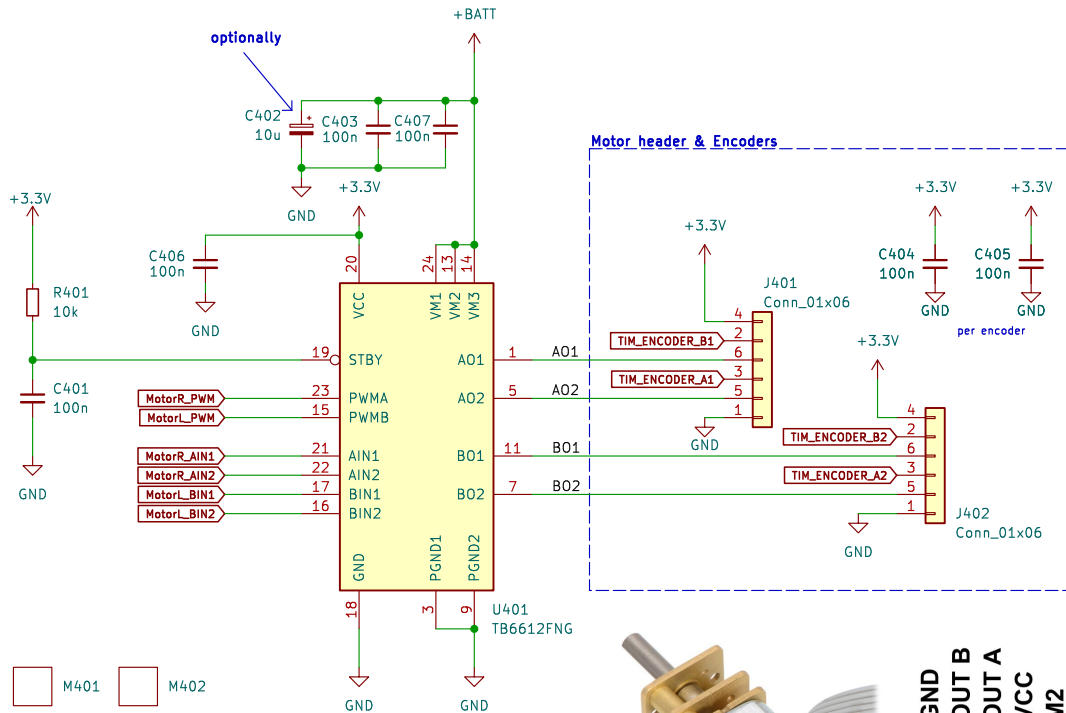
Size: A3

Date:

Rev:

KiCad E.D.A. kicad 7.0.8

[4] MOTORS DRIVER



M401

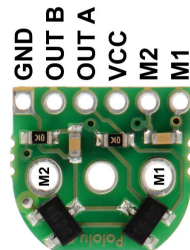
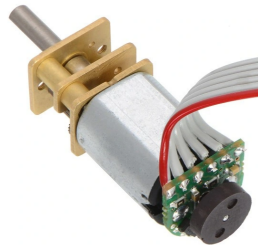
M402

H401 MountingHole

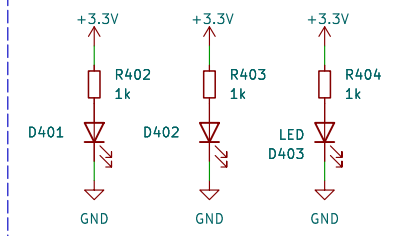
H402 MountingHole

H403 MountingHole

H404 MountingHole



For sliding



Drawn by: Adam Iwachów

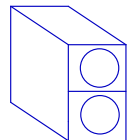
Sheet: /Motors/
File: Motors.kicad_sch

Title:

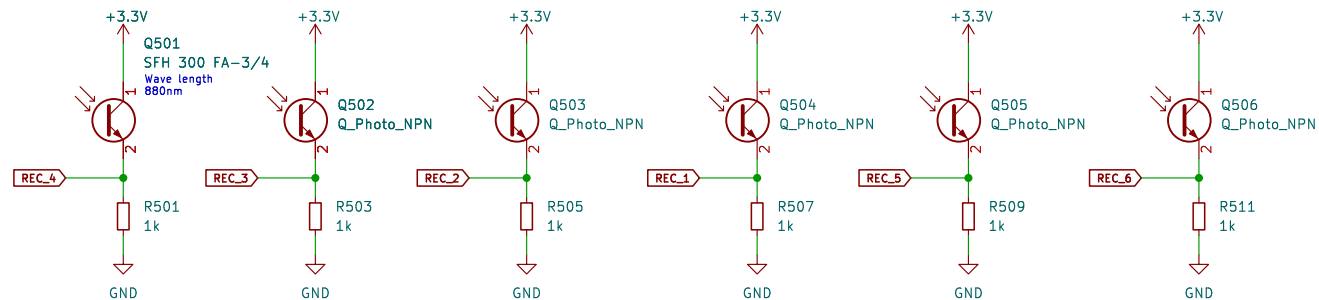
Size: User Date:
KiCad E.D.A. kicad 7.0.8

Rev:
Id: 4/6

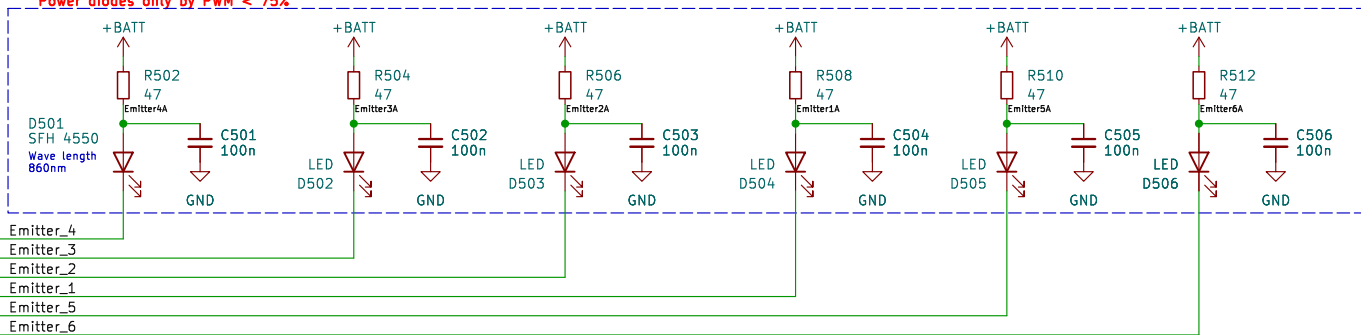
[5] IR RECEIVERS & EMITTERS



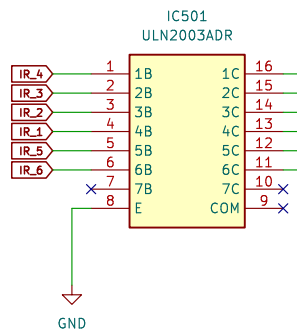
IR & Photo placed
in one case



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

Date:

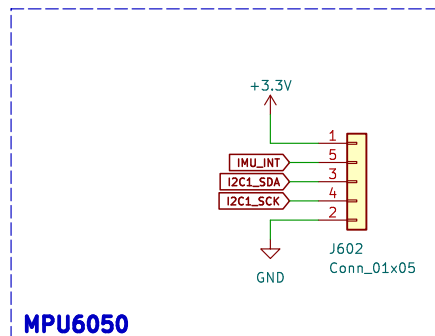
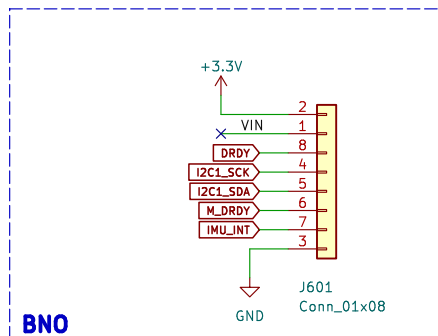
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Rev:

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
KiCad E.D.A. kicad 7.0.8

Date:

Rev:

Id: 6/6