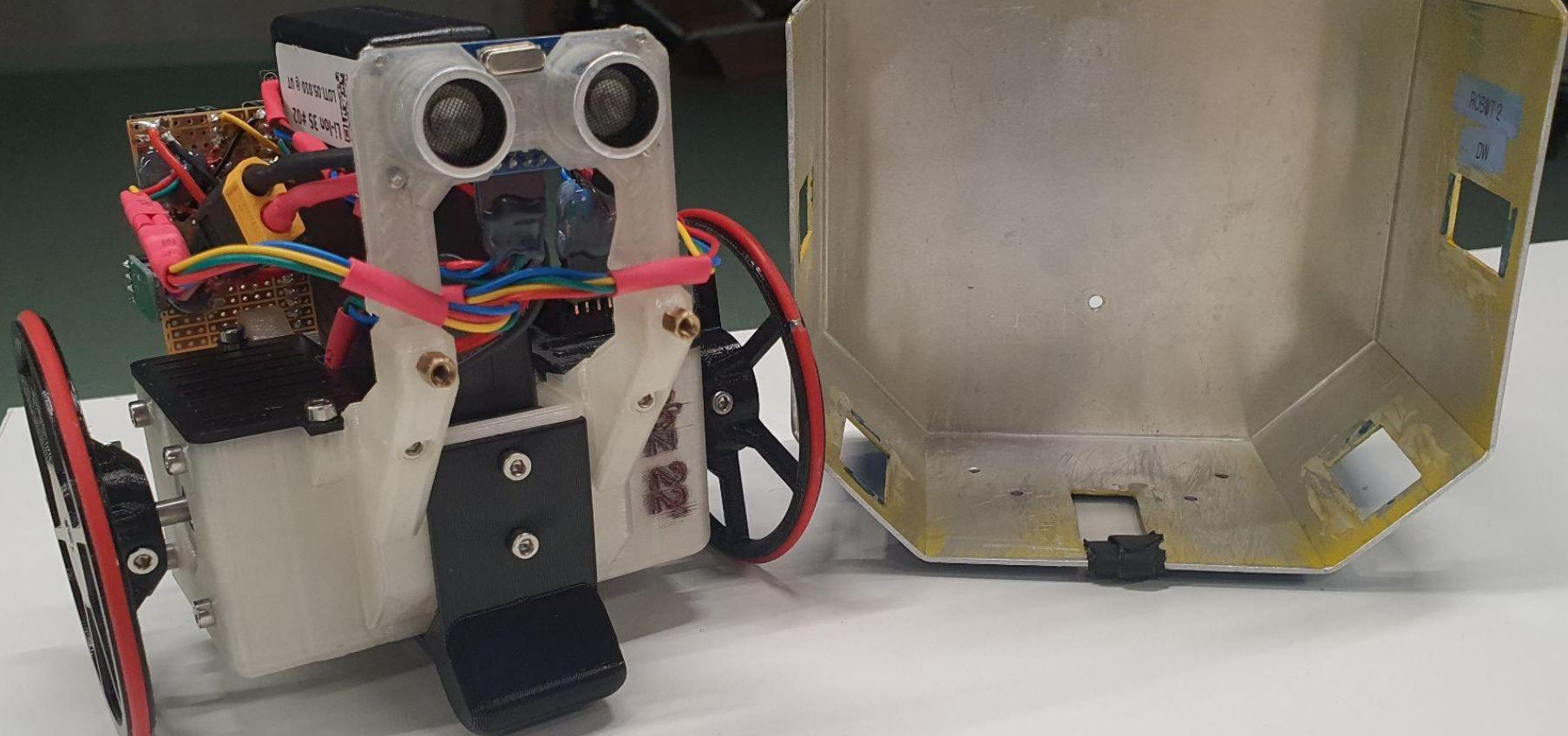
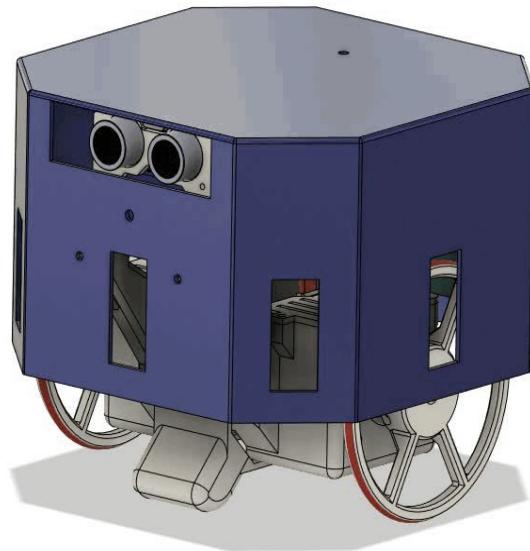
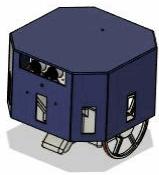




FINAL SPRINT REPORT

Matevž Zorec
17-06-2022





Robit Mk2

Done 🎉

63 cards

ORG

Presentation [2hrs]



ORG

Documentation [2hrs]



REFERENCE DESIGNS

FIRMWARE GUI

Movement Control [4hrs]



REFERENCE DESIGNS

FIRMWARE GUI

Basic Obstacle Avoidance [1.5hrs]



cards each column

20 | 5 | 0 | 0 | 62

cards start of sprint

28 (9 from previous sprint)

% progress on all of the cards of the sprint

100%

cards matching/over/under time estim.

met: 4

over: 4

under: 20

2 of the best cards? (cards on the dot)

US sensor integration [4hrs]

ESP32 Basic Movement Demo Sketch [2hrs]

2 of the worst cards?

ESP-32 fw demo from reference [5hrs] ...spent 19.5hrs!

Robit Mk2 Assy [5hrs] (CAD) ...spent only 2hrs!

time spent

<CAD, ECAD, FAB, ESP32, GUI, TEST>

TOTAL ~**78 hrs** out of planned 81hrs... within 5% of estim.; 68 hrs spent in final week

TOTAL @REP = 221hrs (8.5 ECTS)

Done 🎉

63 cards

ORG

Presentation [2hrs]



Jun 17

2



ORG

Documentation [2hrs]



Jun 17

2



REFERENCE DESIGNS

FIRMWARE

GUI

Movement Control [4hrs]



Jun 17

4



REFERENCE DESIGNS

FIRMWARE

GUI

Basic Obstacle Avoidance [1.5hrs]



Jun 17

4/5

1.5



REFERENCE DESIGNS

FIRMWARE

GUI

ESP32 SoftAP [1hrs]



Jun 17

1



cards each column

20 | 5 | 0 | 0 | 62

cards start of sprint

28 (9 from previous sprint)

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Next sprint?

ECAD

REFERENCE DESIGNS

PowerPath Circuit [6hrs]

⌚ Jul 1 ⏲ 0/6 ⌚ 6



ECAD

REFERENCE DESIGNS

PCB [6hrs]

⌚ Jul 1 ⏲ 0/6 ⌚ 6



FIRMWARE

Self-Balance [6hrs]

⌚ Jul 1 ⏲ 0/6 ⌚ 6



FIRMWARE

GUI

Leap Motion w/ Linux [6hrs]

⌚ Jul 1 ⏲ 0/6 ⌚ 6



Highlight of things learned

⇒ Trello Scrumban

ECAD:

- + KiCAD, Eagle, EasyEDA
- + Custom footprints
- + Layouts
- + Schematics
- + Stepper Control incl. Drivers
- + Proto Circuits experience
- + How to Search Online for parts
- + TME Component Supplier

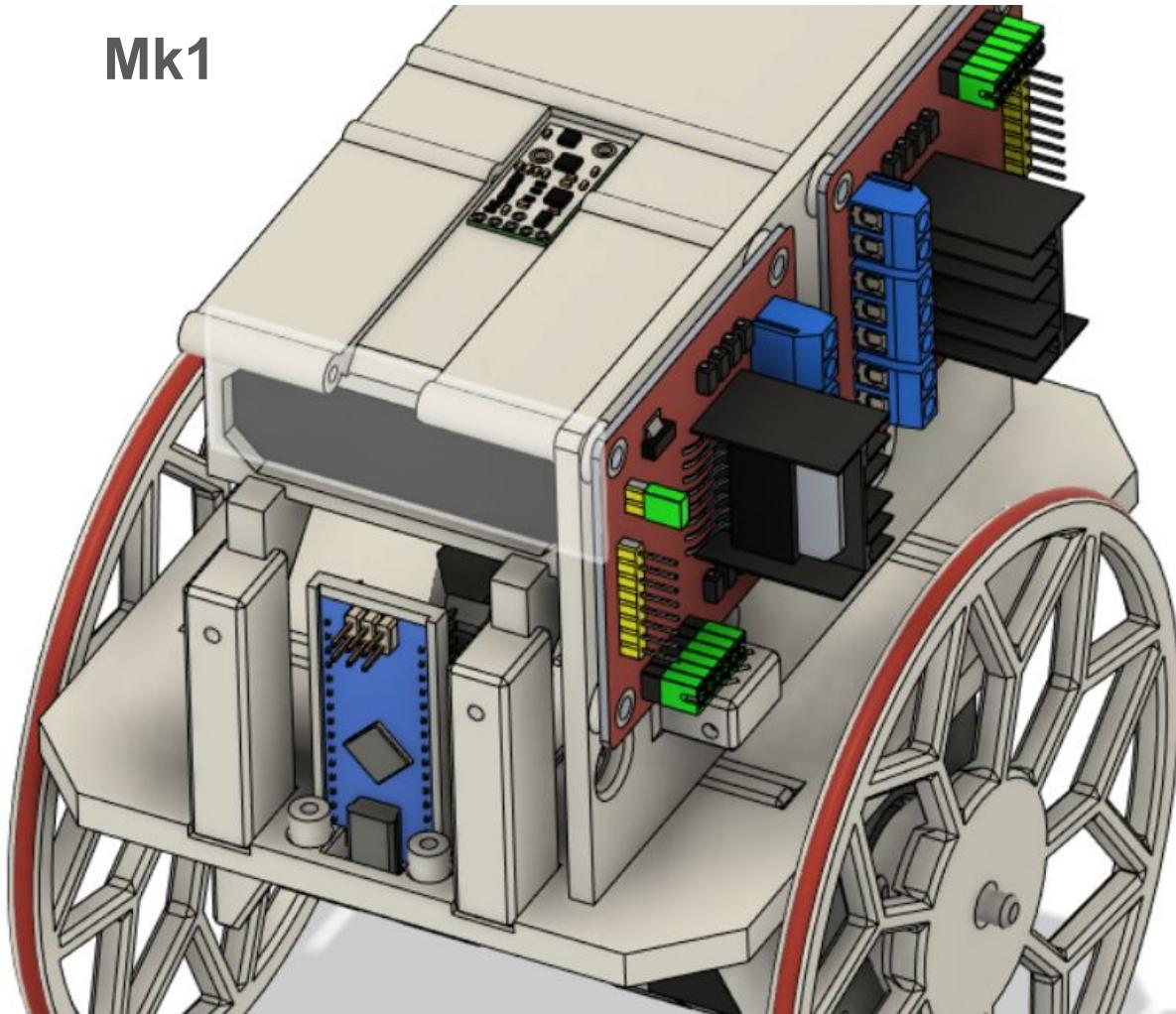
CAD:

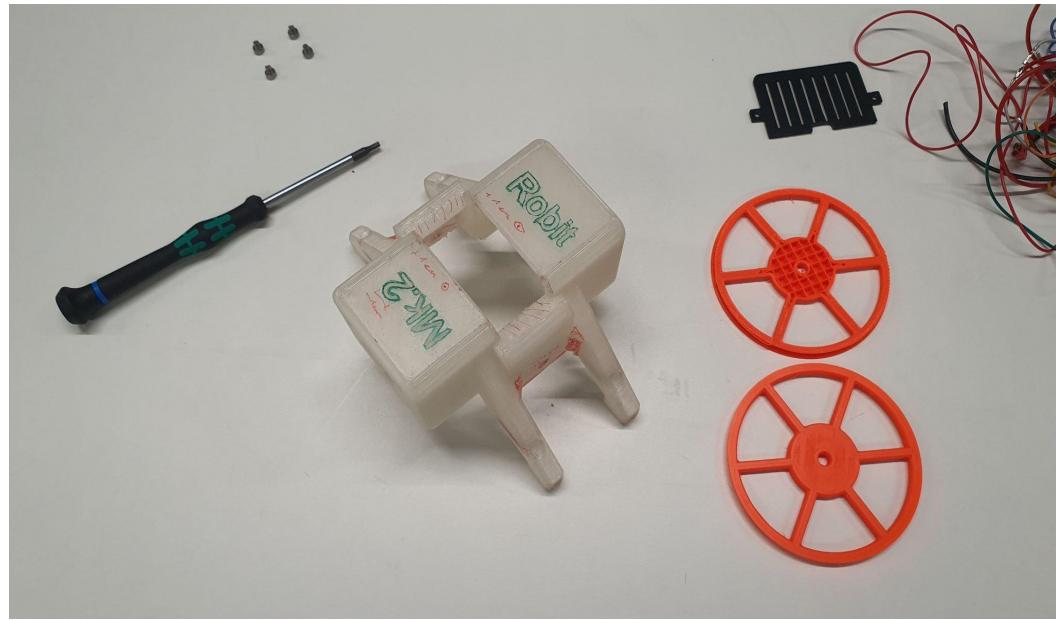
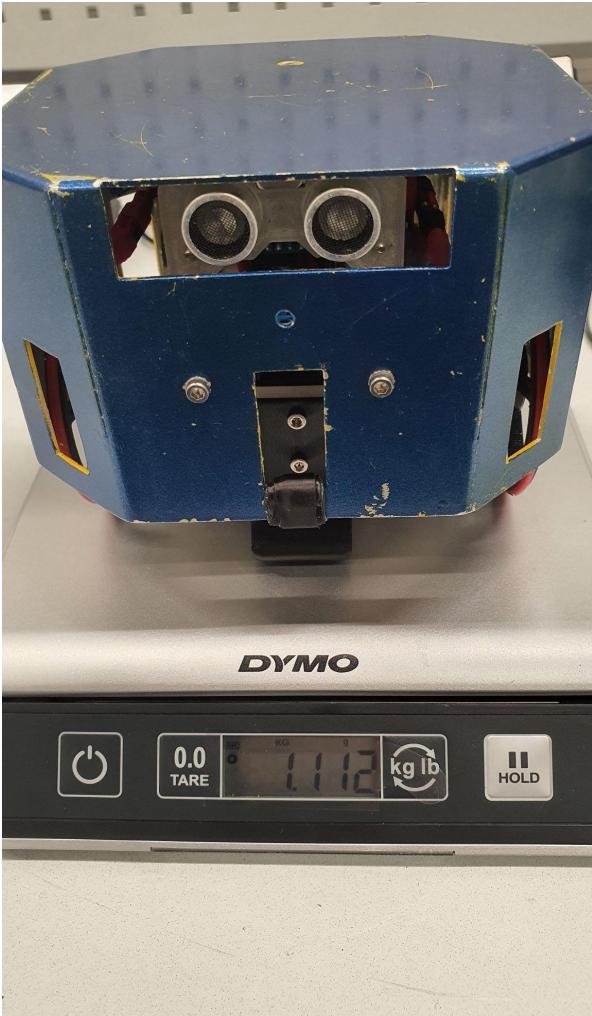
- + Different self balancing implementations
- + Inverted Pendulum Modeling/Simulation
- + PCB bracket design experience
- + F360 experience

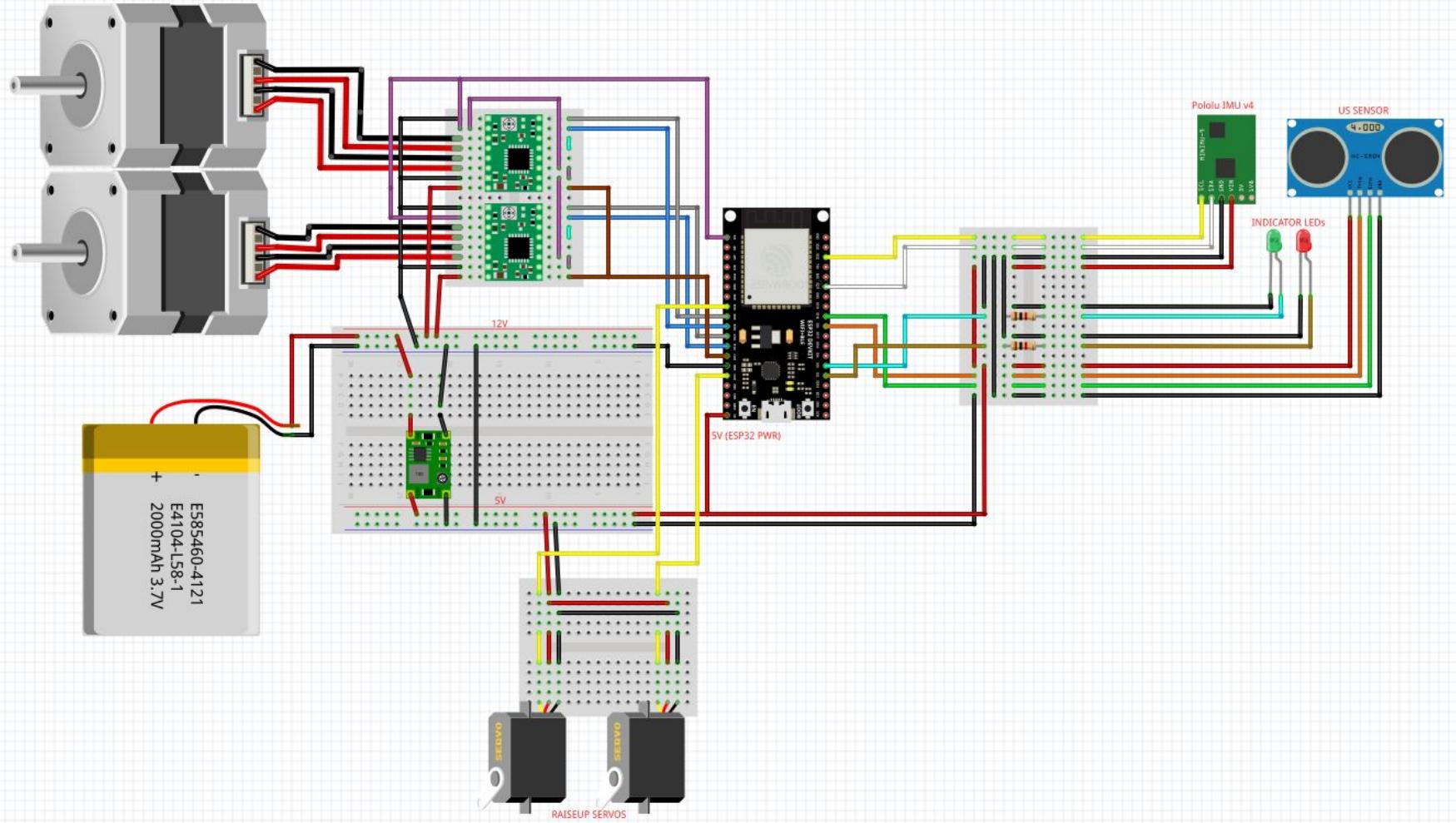
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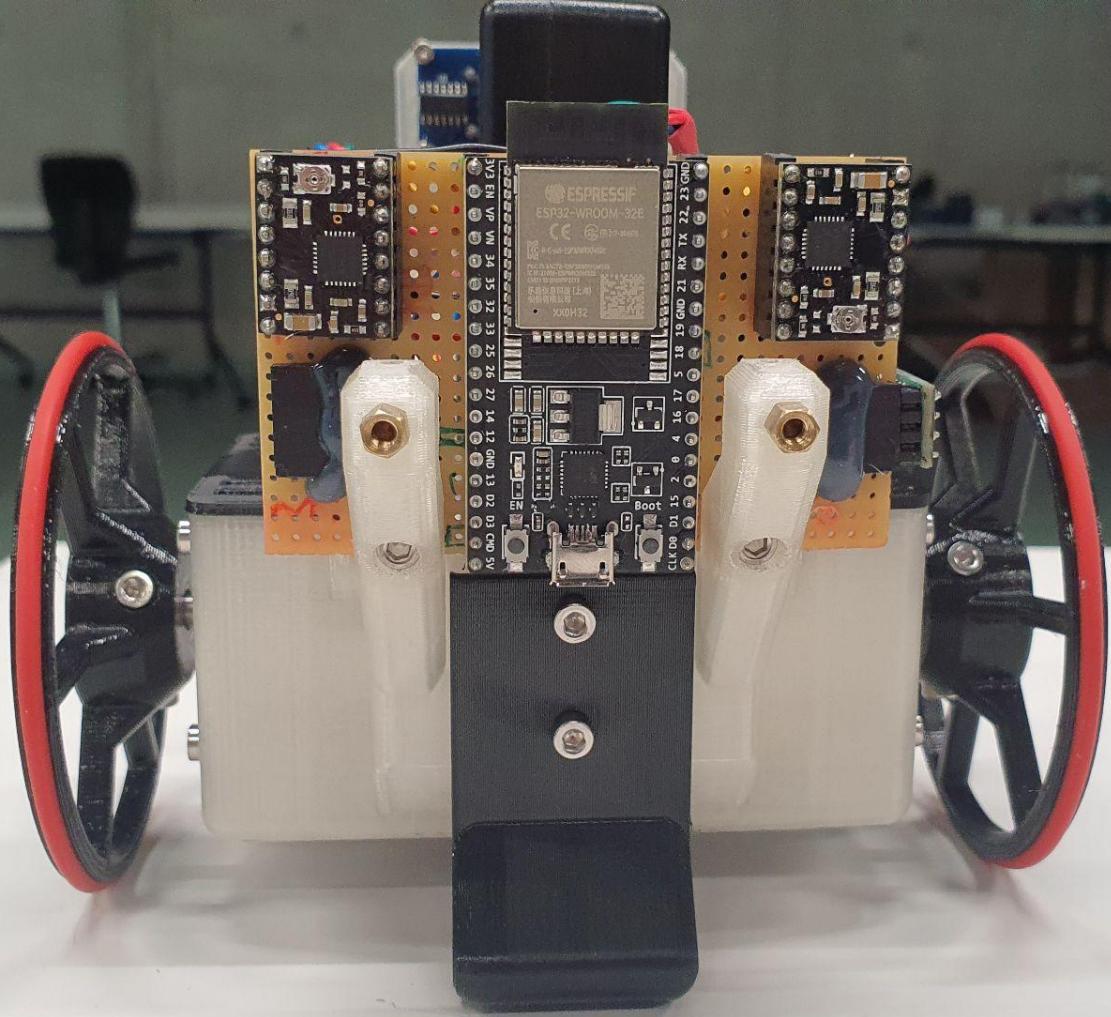
- + PI, PD, PID controllers
- + ESP32 ⇒ SPIFFS
- + ASyncWebServer
- + Arduino_JSON
- + AccelStepper
- + Pololu Open IMU
- + Pololu IMU v4
- + Deriving RPY from IMU

Mk1



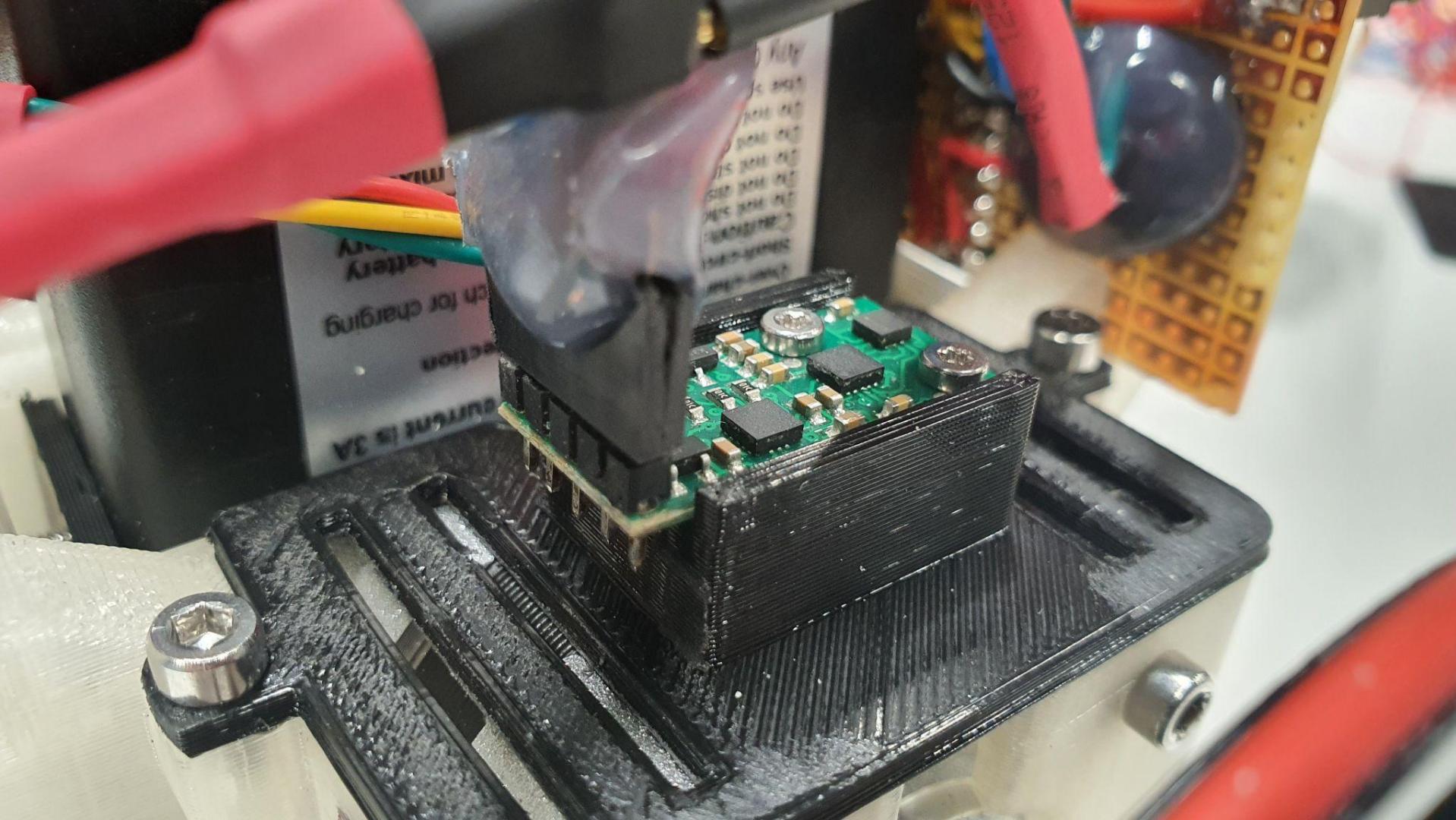


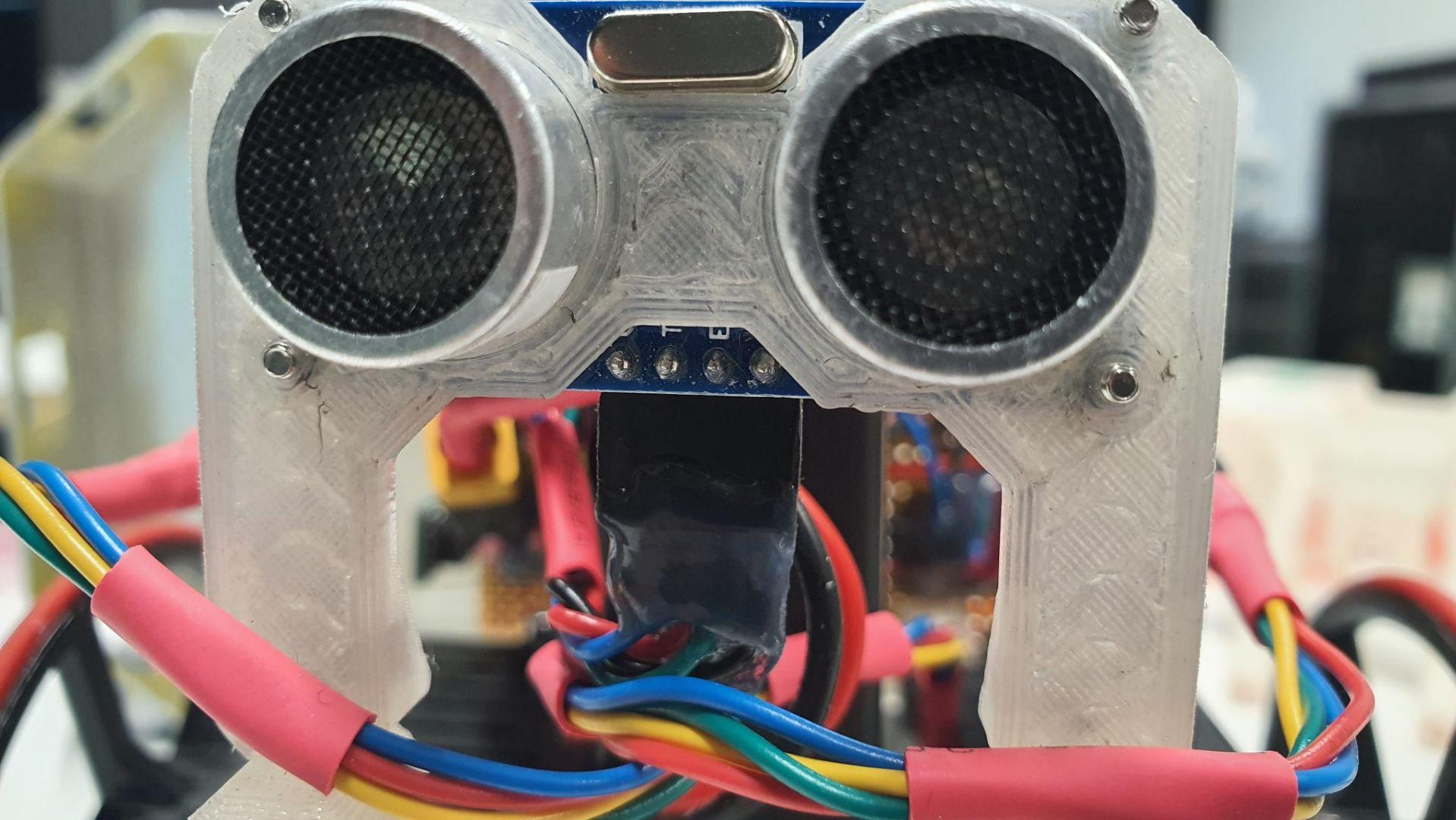


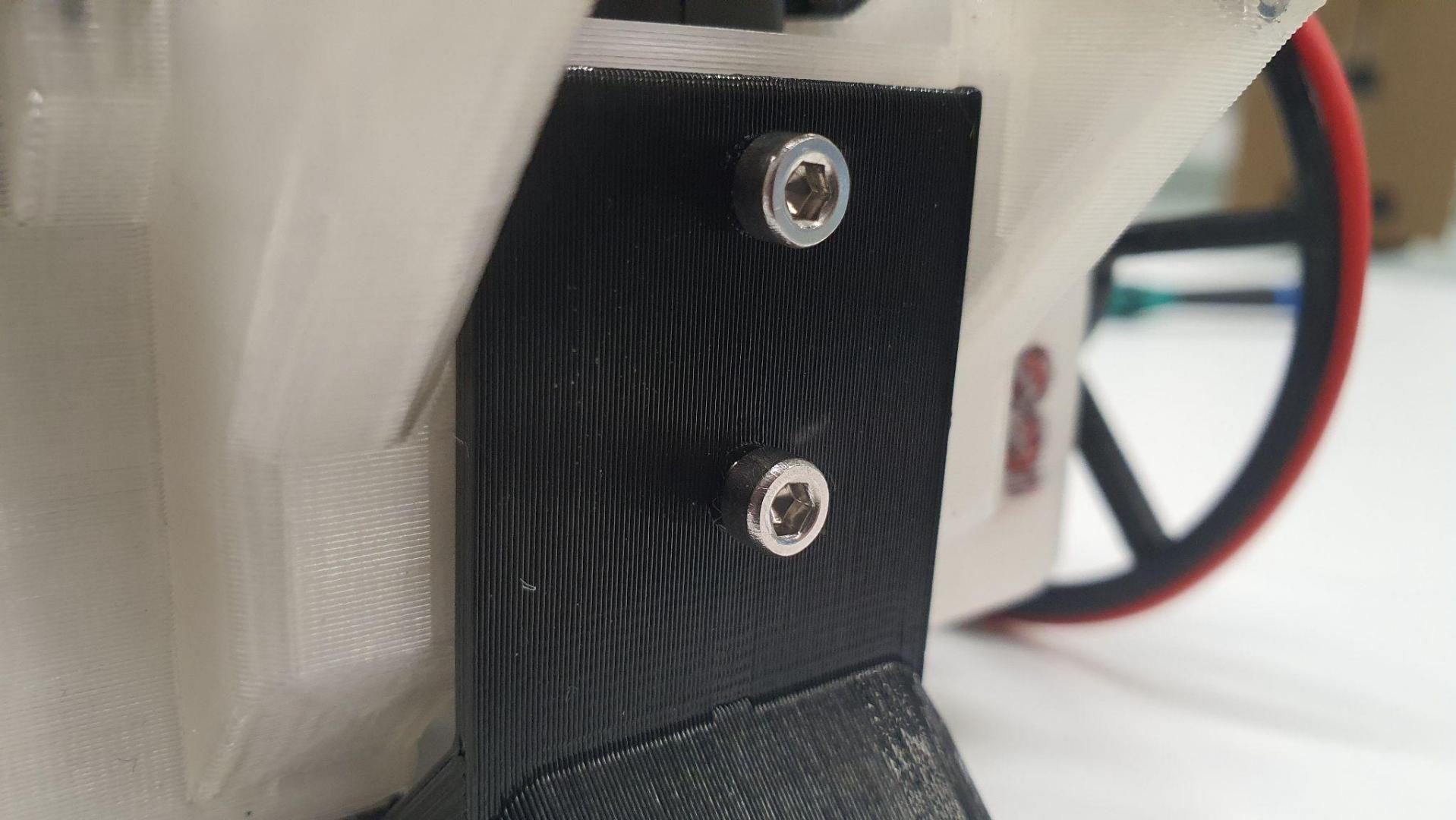


ROHS
CE FC
DISCOVER motor
SN:20200927

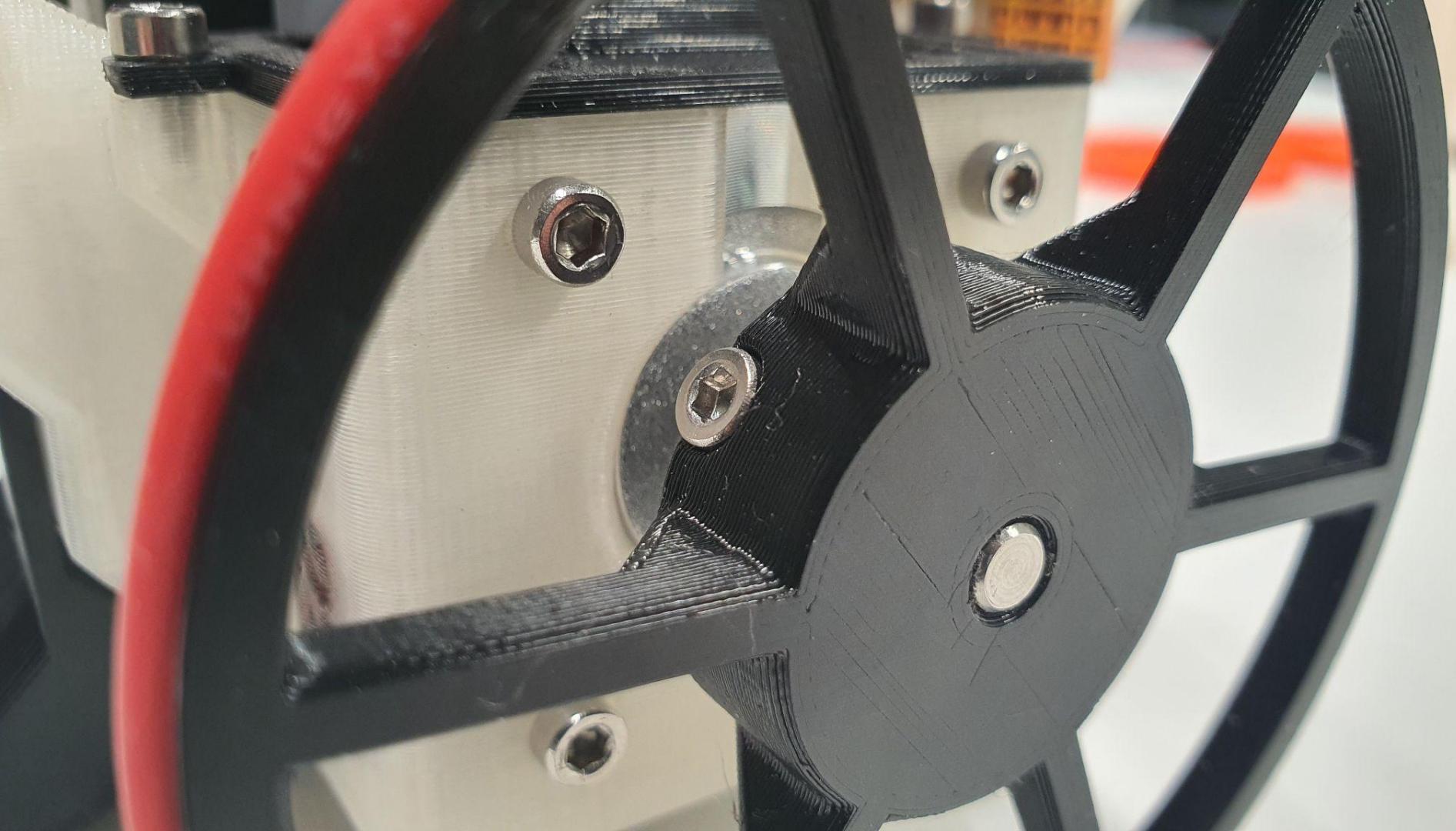
SND
Pole
SLP
RS/T
DIR
STEP





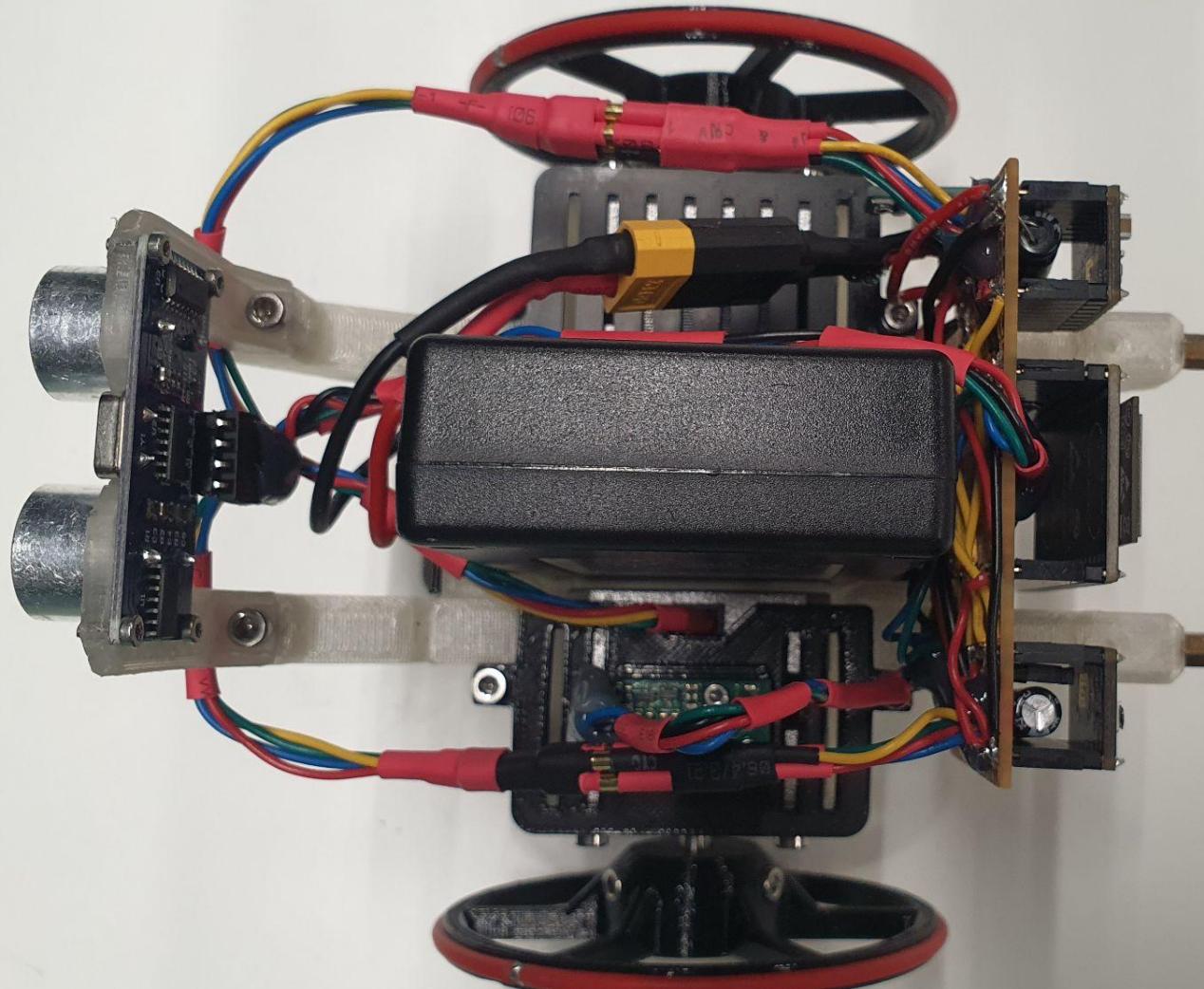


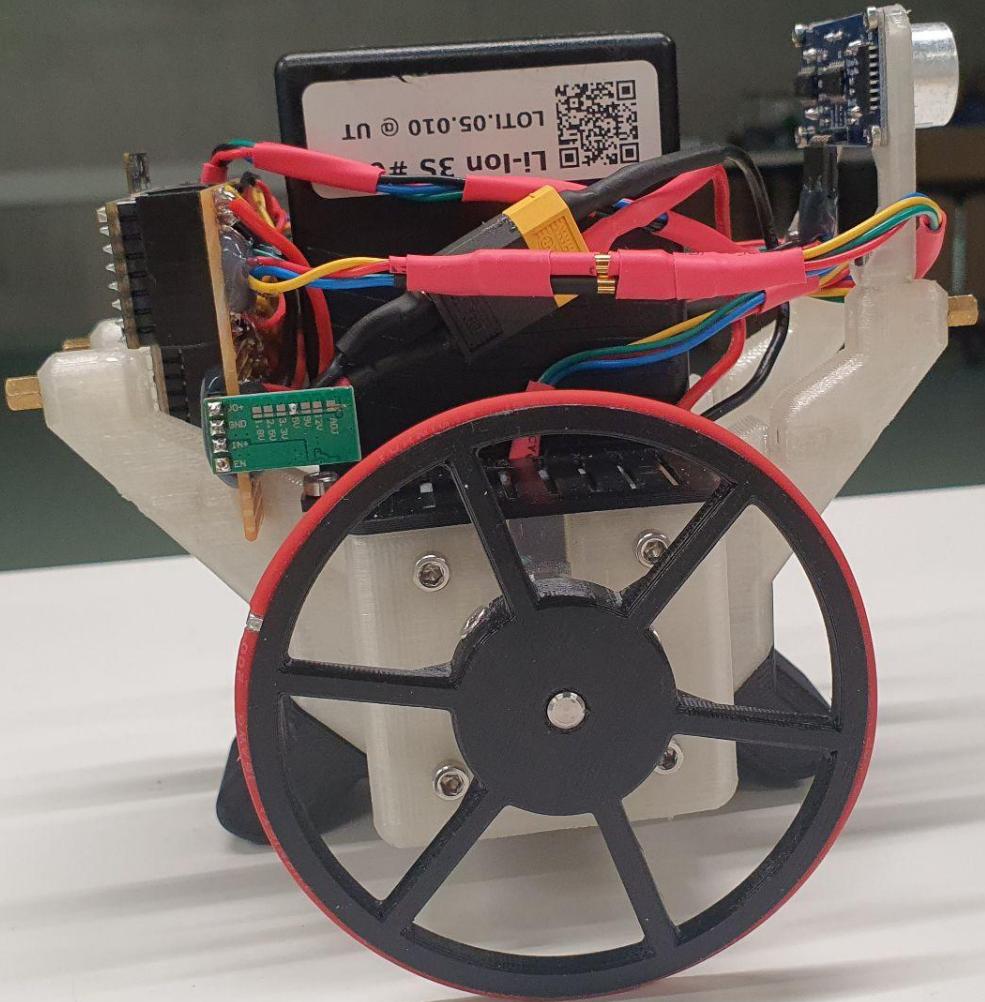
**BOSS
RS-2**

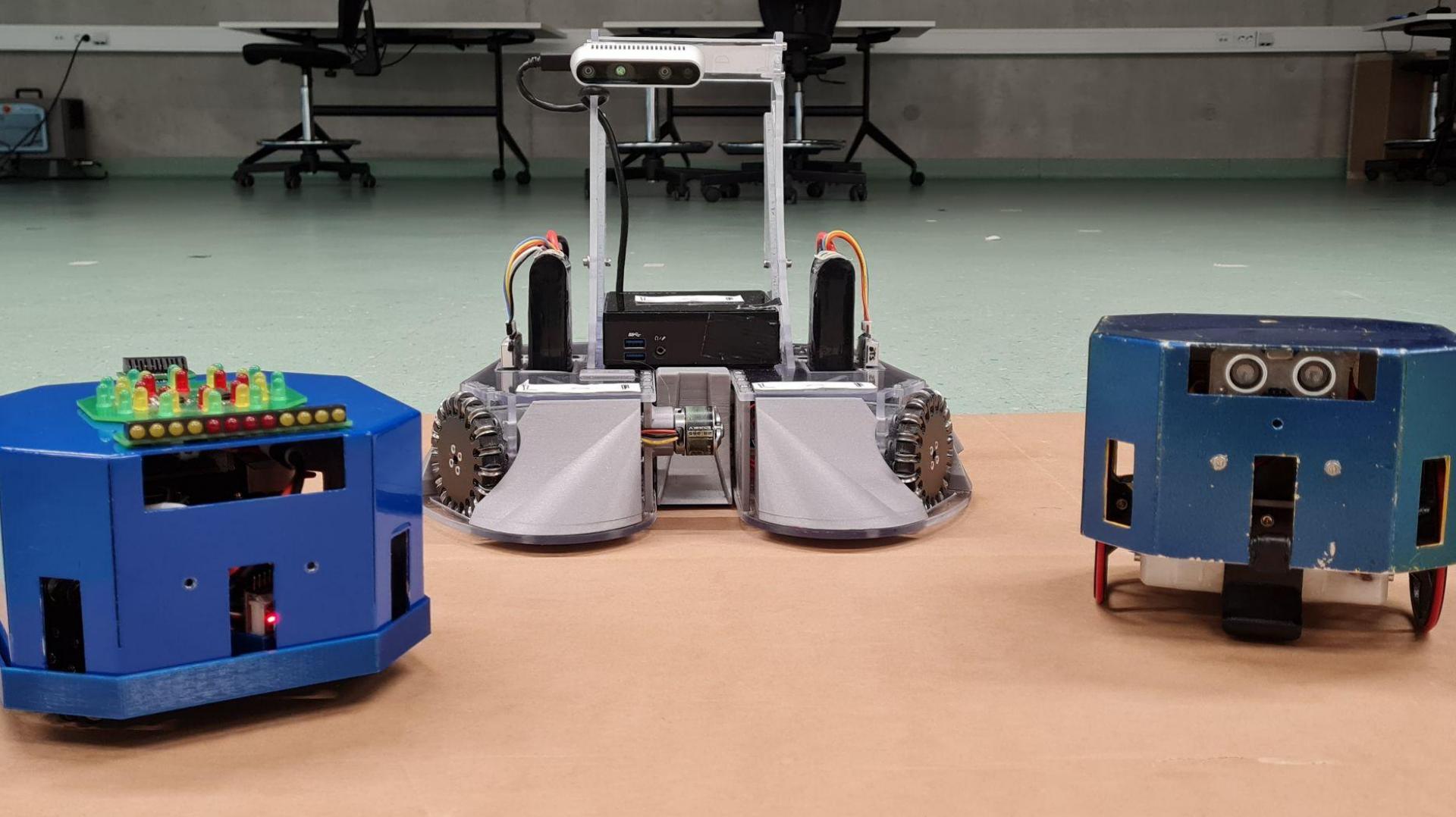


NOOBIE





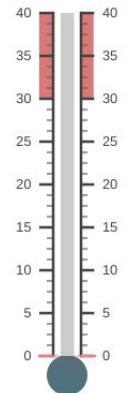
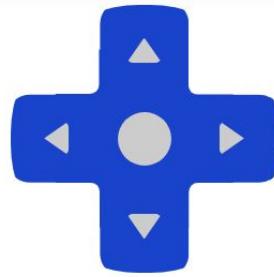




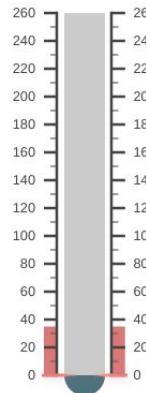
Slow

Normal

Fast



0.0



0.0