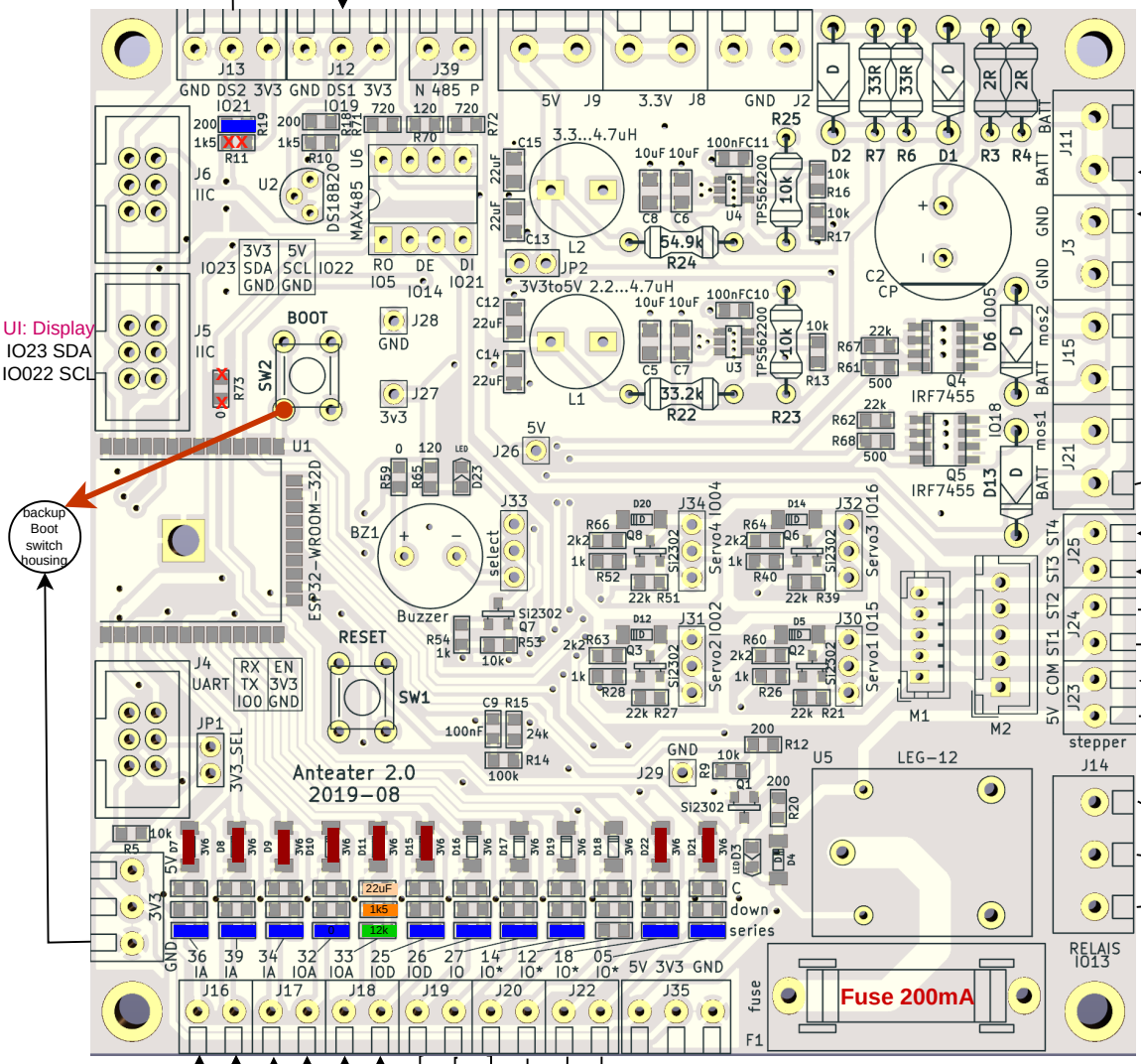
Connection plan pcb armchair-V2

21.08.2023

gpio19: driver box
ds18b20 temp sensors
(drivers, motors)

gpio21: **FREE**



cable configuration

control-box => driver-box

Oelflex 12x0.5

gn: GND
~~01: 5V~~
01: 3V3

02: bridge-left A
03: bridge-left B
04: bridge-left PWM

05: bridge-right A
06: bridge-right B
07: bridge-right PWM

08: current-sensor left
09: current-sensor right

10: fan 12v from relay
11: ds18b20 owb

control-box => UI-arm

D-Sub 9 pin

green: GND
red: 3V3

brown: Joystick X
purple: Joystick Y

yellow: encoder A
blue: encoder B
black: encoder switch

gray: display SDA
orange: display SDC

Joystick pinout

JST connector 5 pin
(pins stick order left to right)

red: VCC (3V3)
orange: GND
brown: X (analog 0-3V)
white: n.c.
black: Y (analog 0-3V)

Legend pcb

- 0 Ohm Resistor
- 1.5k Ohm Resistor
- 3v3 Z-Diode
- 12k Ohm Resistor
- 1k5 Ohm Resistor

[xxx] Conflicting Component
xx nopop

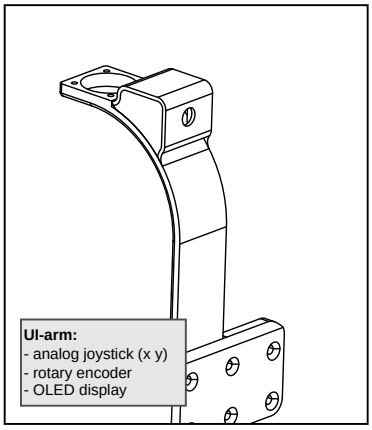
Wiring-plan

Li-ion Battery
Samsung INR18650-35E 3500mAh 3,7V
7S 15P
150A BMS

120A connector

Main power switch

charging port (50A connector)



UI-arm:
- analog joystick (x y)
- rotary encoder
- OLED display

Fusebox

50A connector

armchair:
control box for electric-adjustment

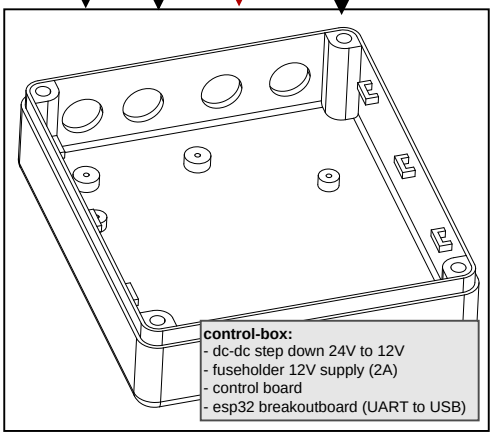
2x 2.5mm2
24V (2A fuse)

4x 2.5mm2
- 2x gnd
- 1x 24V (40A fuse)
- 1x 24V (40A fuse)

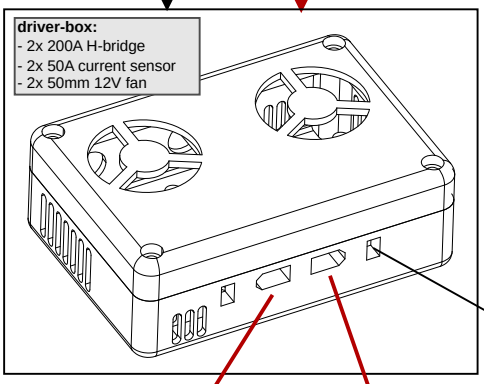
USB Cable
(firmware upload)

9 pin sub-d connector

12x 0.5mm2



control-box:
- dc-dc step down 24V to 12V
- fuseholder 12V supply (2A)
- control board
- esp32 breakoutboard (UART to USB)



driver-box:
- 2x 200A H-bridge
- 2x 50A current sensor
- 2x 50mm 12V fan

ds18b20 sensor
motor
red: 3V3
black: GND
yellow: owb

Motor left
Motor right
straight: negative
angular: positive

Note: inverted direction of right motor
already accounted in the driver box
-> motors with connectors are interchangeable

Driver overview