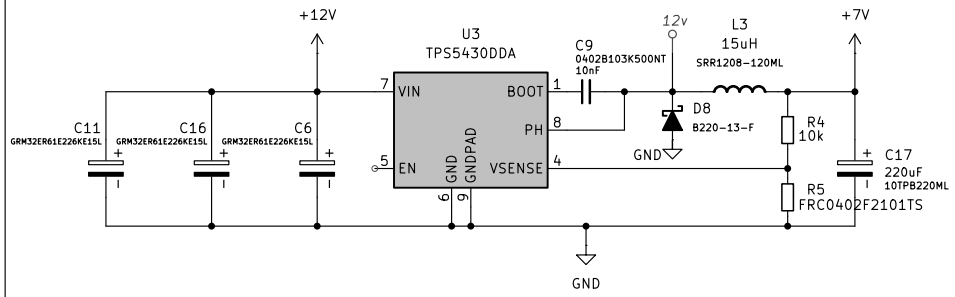
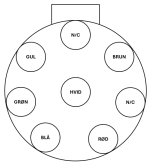
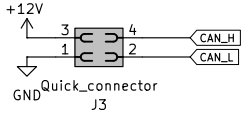
PSU 12v to 7v

An small switch mode buck converter that can supply up to 3A.



Quick Release connection





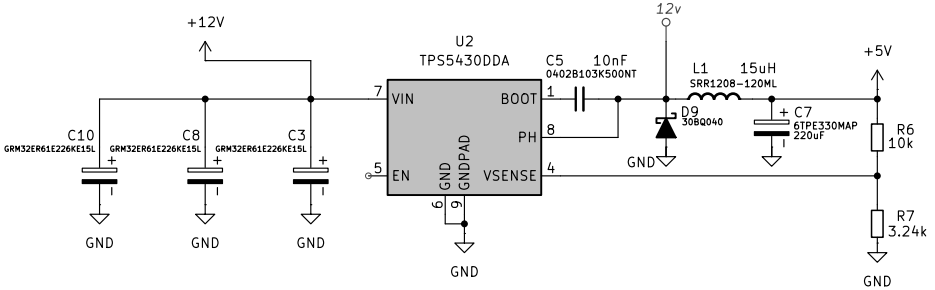
CAN_bus
File: CAN_BUS.kicad_sch

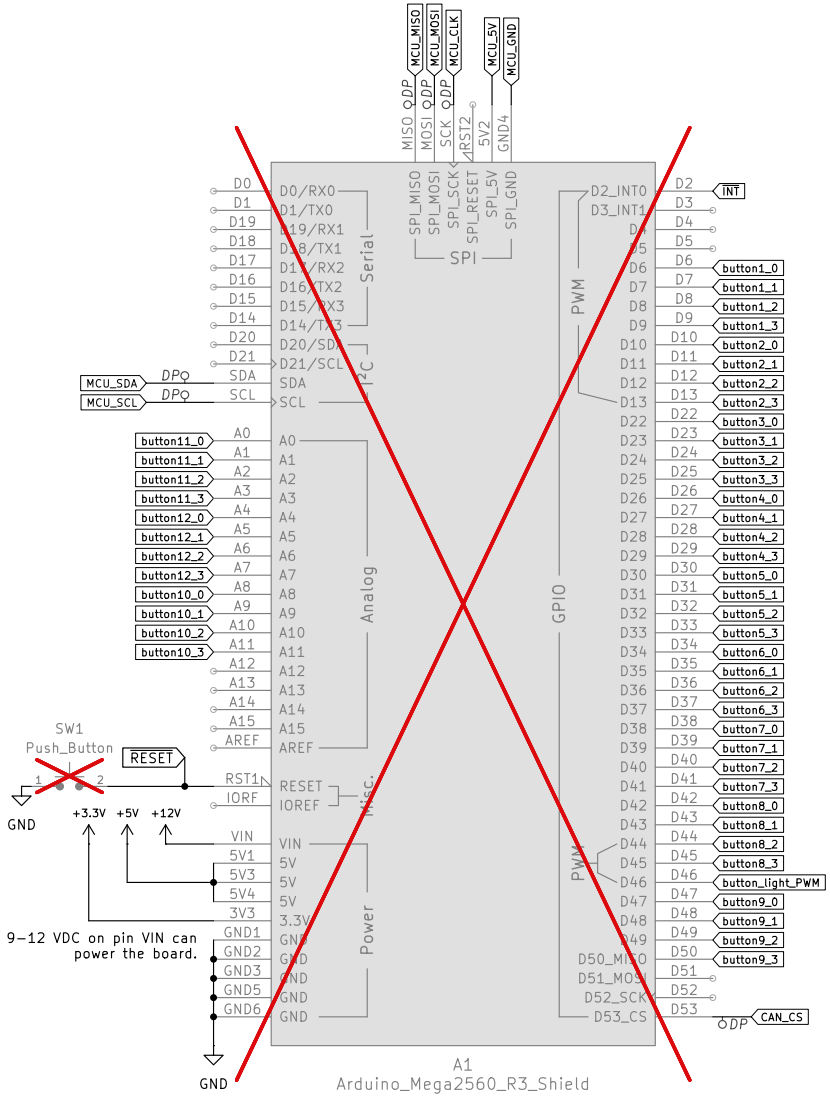
LED and Buttons
File: LED.kicad_sch

Gyroscope
File: gyroschope.kicad_sch

PSU 12v to 5v

An effective switch mode buck converter that can supply up to 3A.





PCB for Solar Car steering wheel
12 input connectors that is capable of 4 buttons, 3 LEDs, or a mix.
integrated CAN receiver and transceiver
Gyroscope
Integrated switch mode PSU
etc.

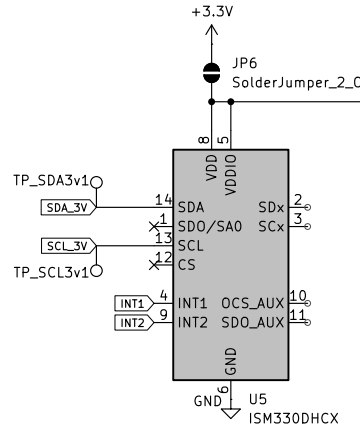
DTU ROAST

Sheet: /
File: steering_pcb.kicad_sch

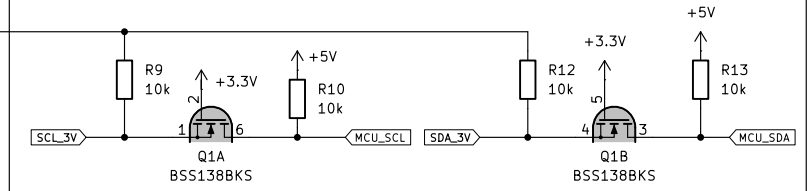
Title: Rat PCB

Size: A4	Date: 2025-01-21	**Rev: 1**
KiCad E.D.A. 8.0.8		Id: 1/4

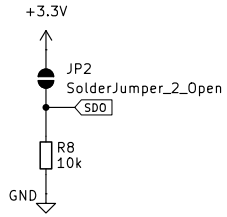
Gyroscope Chip



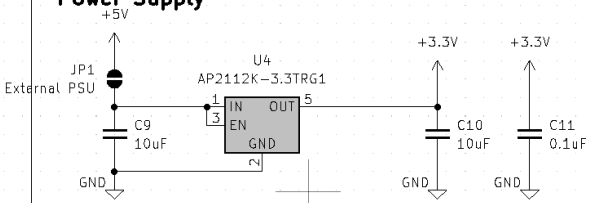
i2c pullup and shift



I2C Address pin. Pulling this pin high or bridging the solder jumper on the back will change the I2C address from 0x6A to 0x6B



Power Supply



Reference:
https://learn.adafruit.com/lsm6dsox-and-ism330dhc-6-dof-imu?view=all
credits to adafruit

DTU ROAST

Sheet: /Gyroscope/
File: gyroschope.kicad_sch

Title: Rat PCB

Size: A4	Date: 2025-01-21	**Rev: 1**
KiCad E.D.A. 8.0.8		Id: 2/4

5. LED Specifications: (LED Without resistor)

Color	VF(v) Min.	VF(v) MAX.	IF(Typ.)
White	2.8	3.7	20mA
Red	1.7	2.5	20mA
yellow	1.7	2.5	20mA
Blue	2.8	3.7	20mA
Green	2.8	3.7	20mA
Orange (Amber)	1.7	2.5	20mA

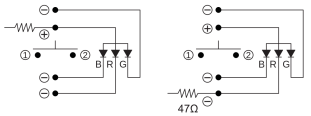
Suitable current-limiting resistor

By burning LEDs

Blue and Green works fine at 3.3v
Red works fine at 3.3V with 47Ω resistor

For red LED
(3v-2.3v)/15mA = 47Ω
(5v-2.3v)/15mA = 180Ω
(7v-2.3v)/15mA = 313Ω

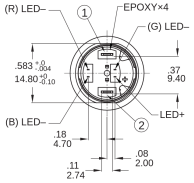
For green and blue at higher voltages
(5v-3.3v)/15mA = 113Ω
(7v-3.3v)/15mA = 246Ω

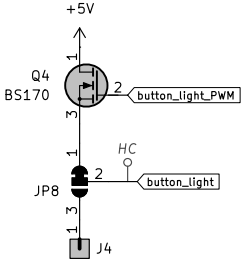


For 6V/12V/24V For 3V

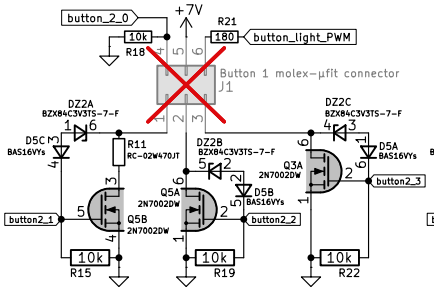
Resistance (About LED Voltage)	
0V	Without Resistance
3V	LED input 3 VDC,47Ω ※Red/Yellow/Orange LED type only
6V	LED input 6 VDC,180Ω
12V	LED input 12 VDC,470Ω
24V	LED input 24 VDC,1000Ω

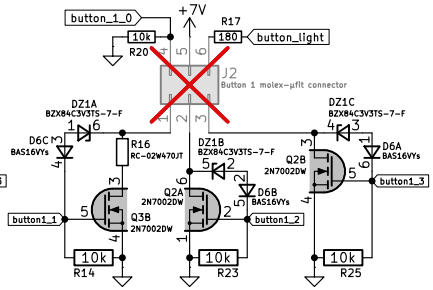
※ ohms value of resistance tolerance: ±5%





Transistor for turning on LEDs
The 2N7002 requires a Vgs of around 2-4V to turn on fully



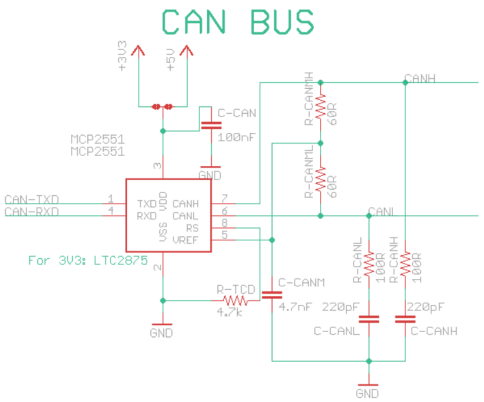


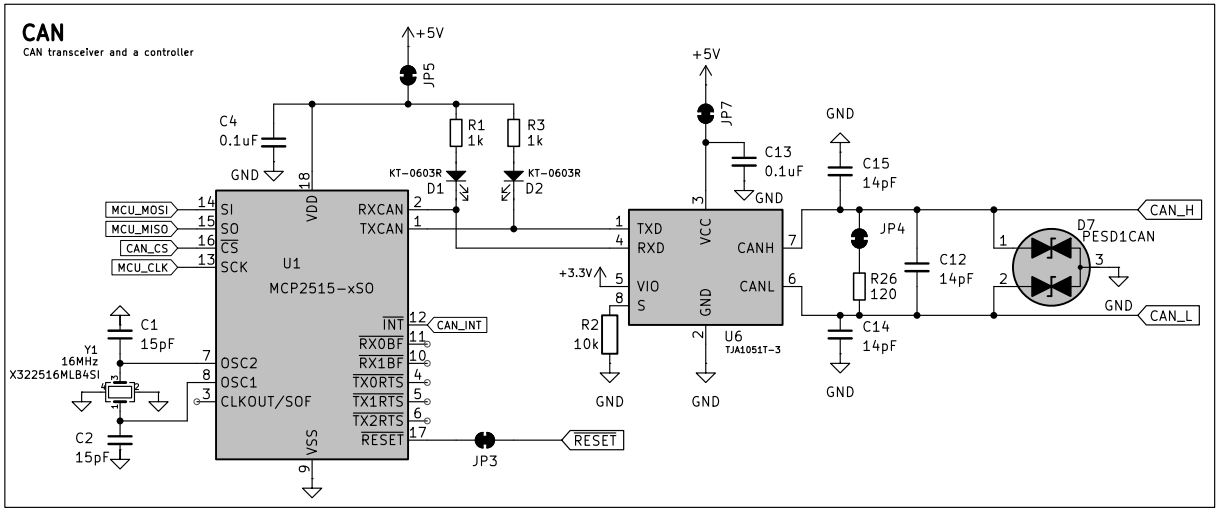
DTU ROAST

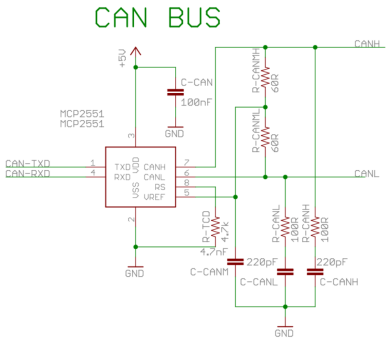
Sheet: /LED and Buttons/
File: LED.kicad_sch

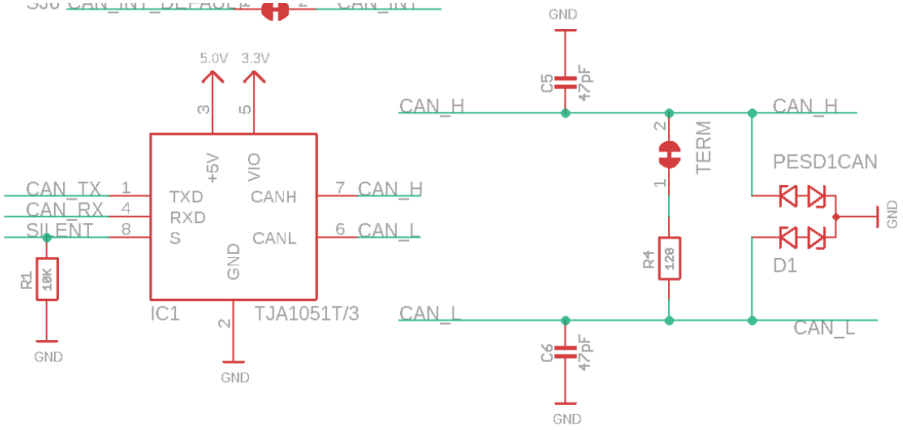
Title: Rat PCB

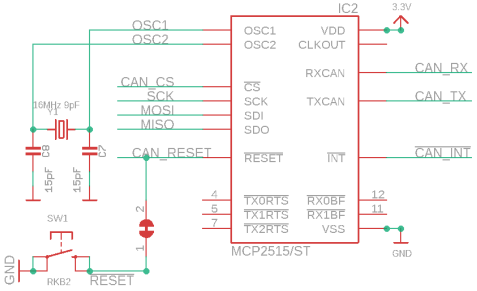
Size: A4	Date: 2025-01-21	**Rev: 1**
KiCad E.D.A. 8.0.8		Id: 3/4











Inspiration from:
https://learn.adafruit.com/adafruit-can-pal

DTU ROAST

Sheet: /CAN_bus/
File: CAN_BUS.kicad_sch

Title: Rat PCB

Size: A4	Date: 2025-01-21	**Rev: 1**
KiCad E.D.A. 8.0.8		Id: 4/4