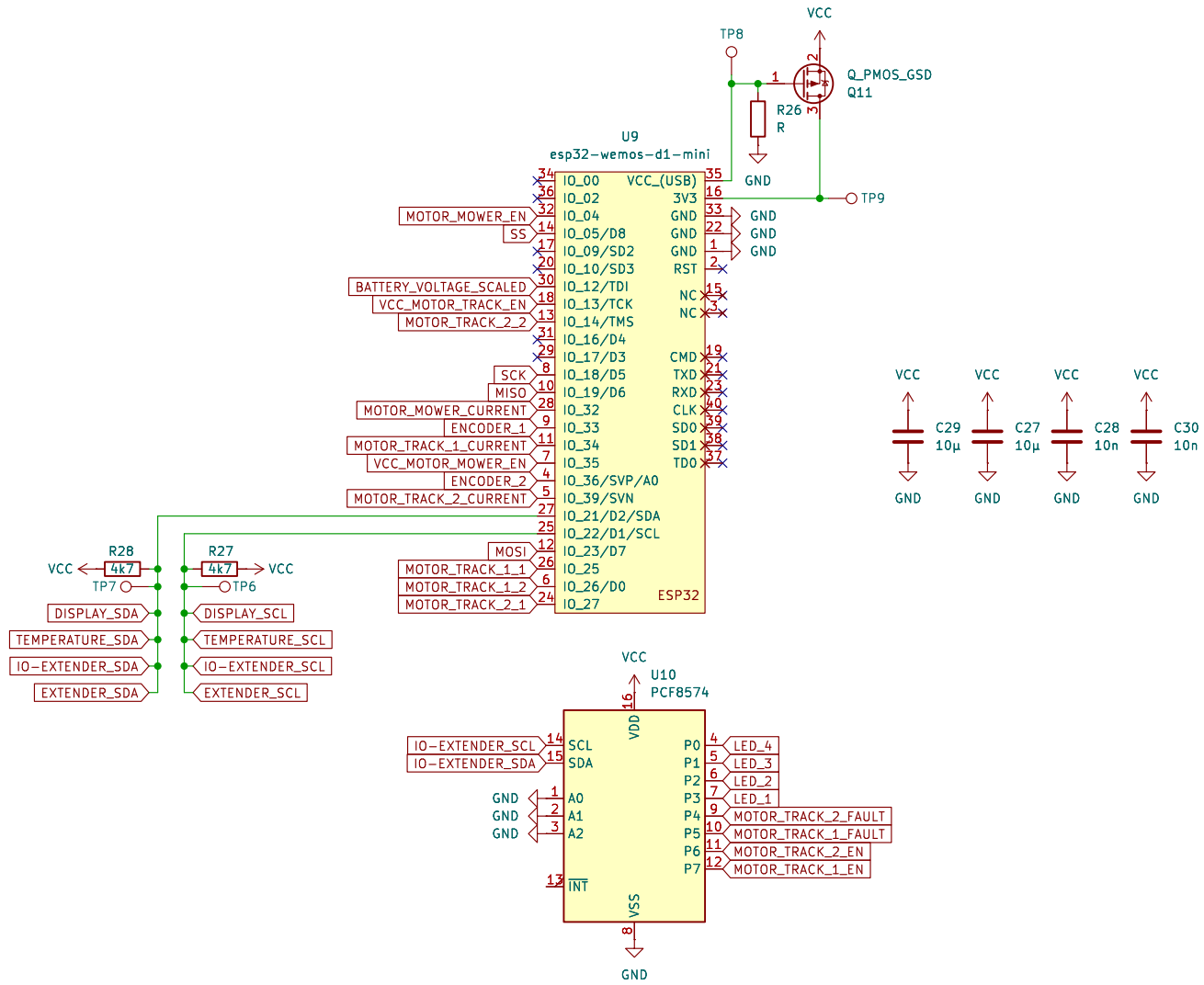

test_points

File: test_points.kicad_sch

power

File: power.kicad_sch

motor_control

File: motor_control.kicad_sch

peripherals

File: peripherals.kicad_sch

Sheet: /

File: tank_mower_controller_V1.kicad_sch

Title:

Size: A4	Date: 2024-10-11	**Rev: V0.2**
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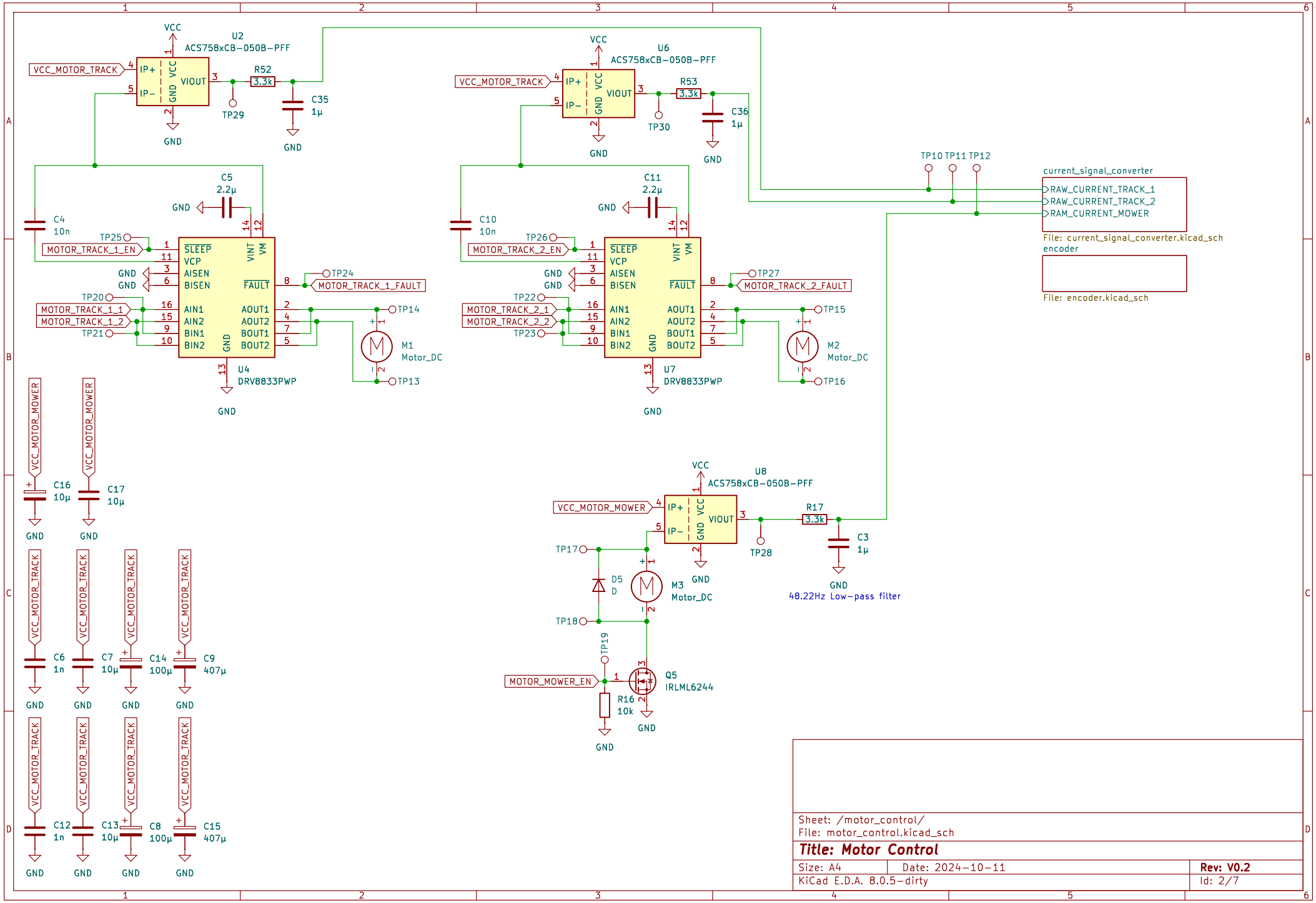

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File: motor_control.kicad_sch	
Title: Motor Control	
Size: A4	Date: 2024-10-11
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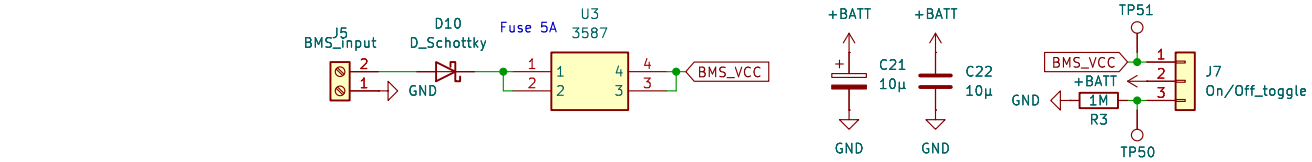
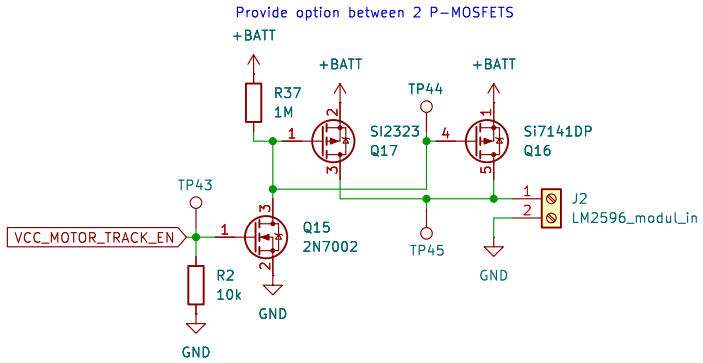
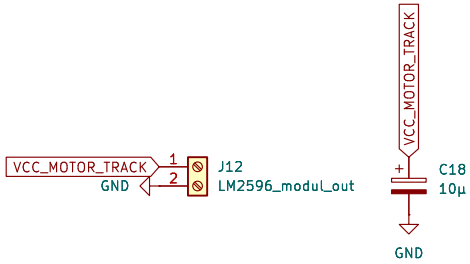
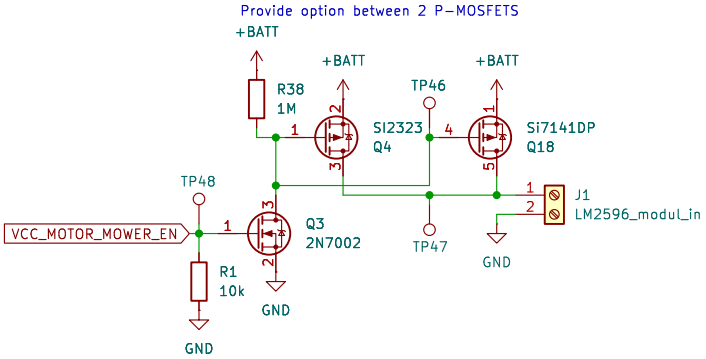
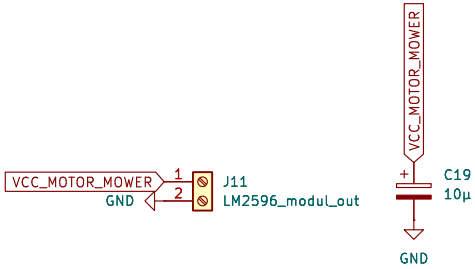






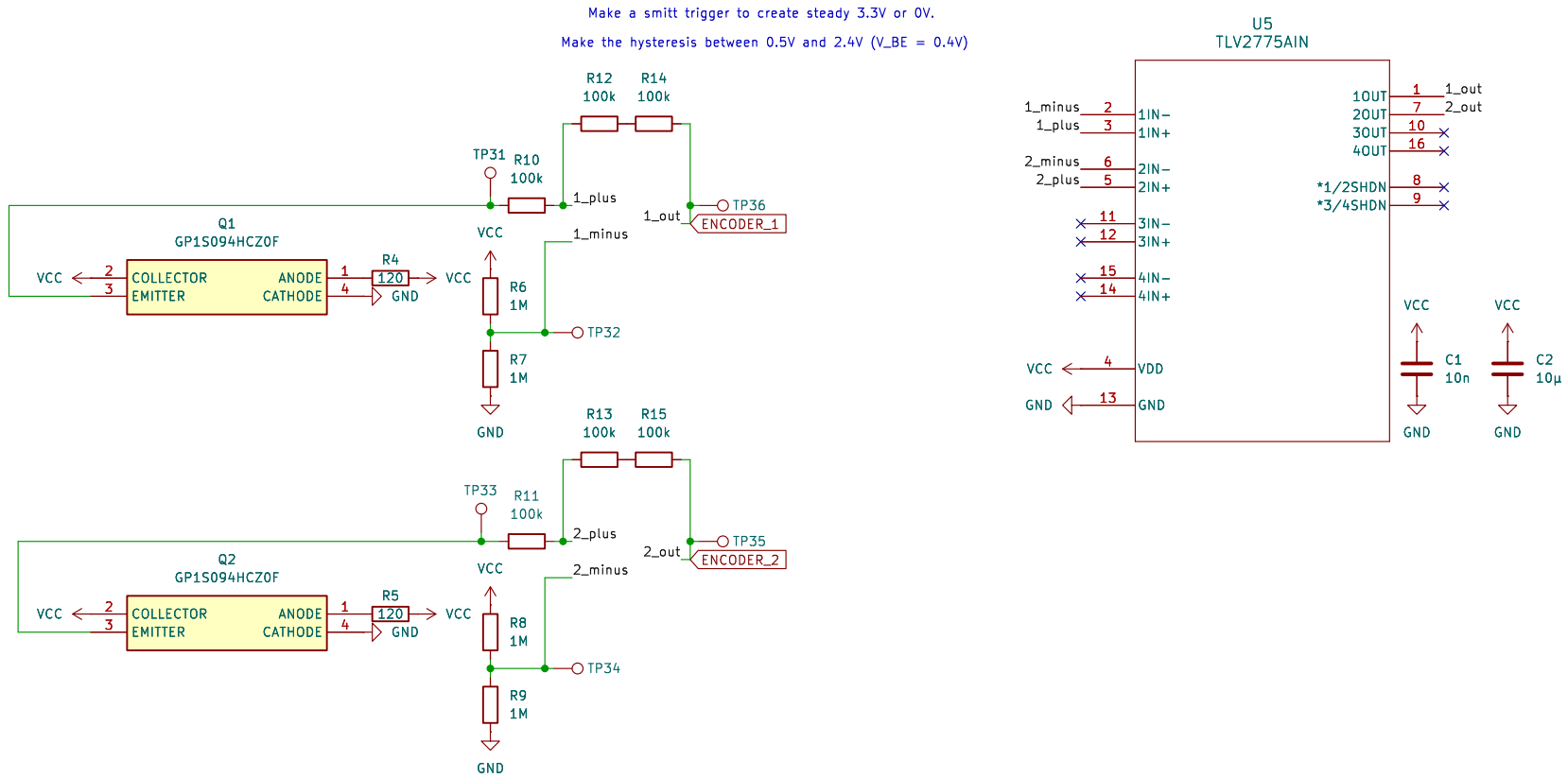




Sheet: /power/
File: power.kicad_sch

Title:

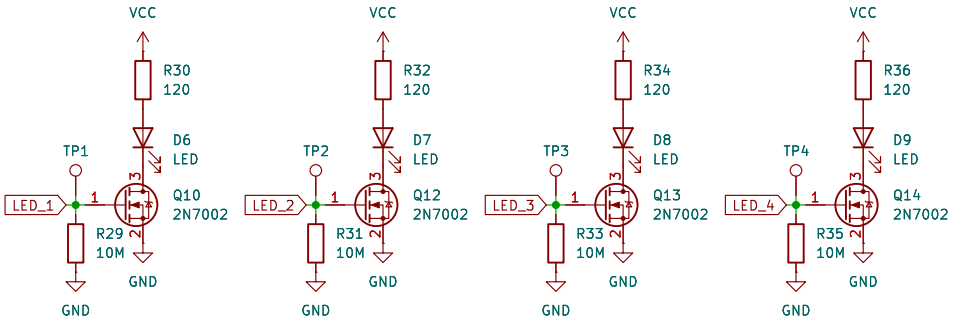
Size: A4	Date: 2024-10-11	**Rev: V0.2**
KiCad E.D.A. 8.0.5-dirty		Id: 3/7

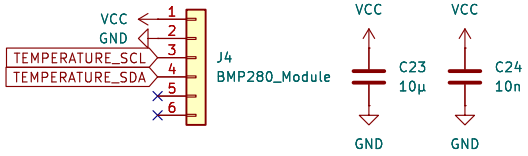


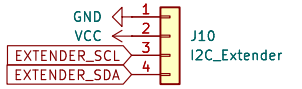
Sheet: /motor_control/encoder/
File: encoder.kicad_sch

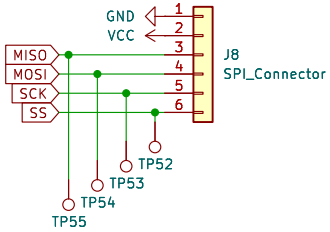
Title:

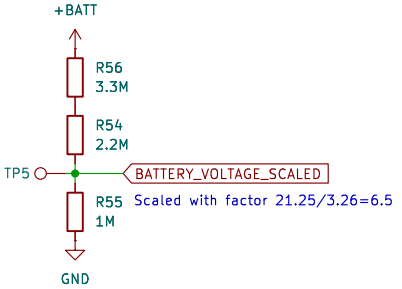
Size: A4	Date: 2024-10-11	**Rev: V0.2**
KiCad E.D.A. 8.0.5-dirty		Id: 4/7







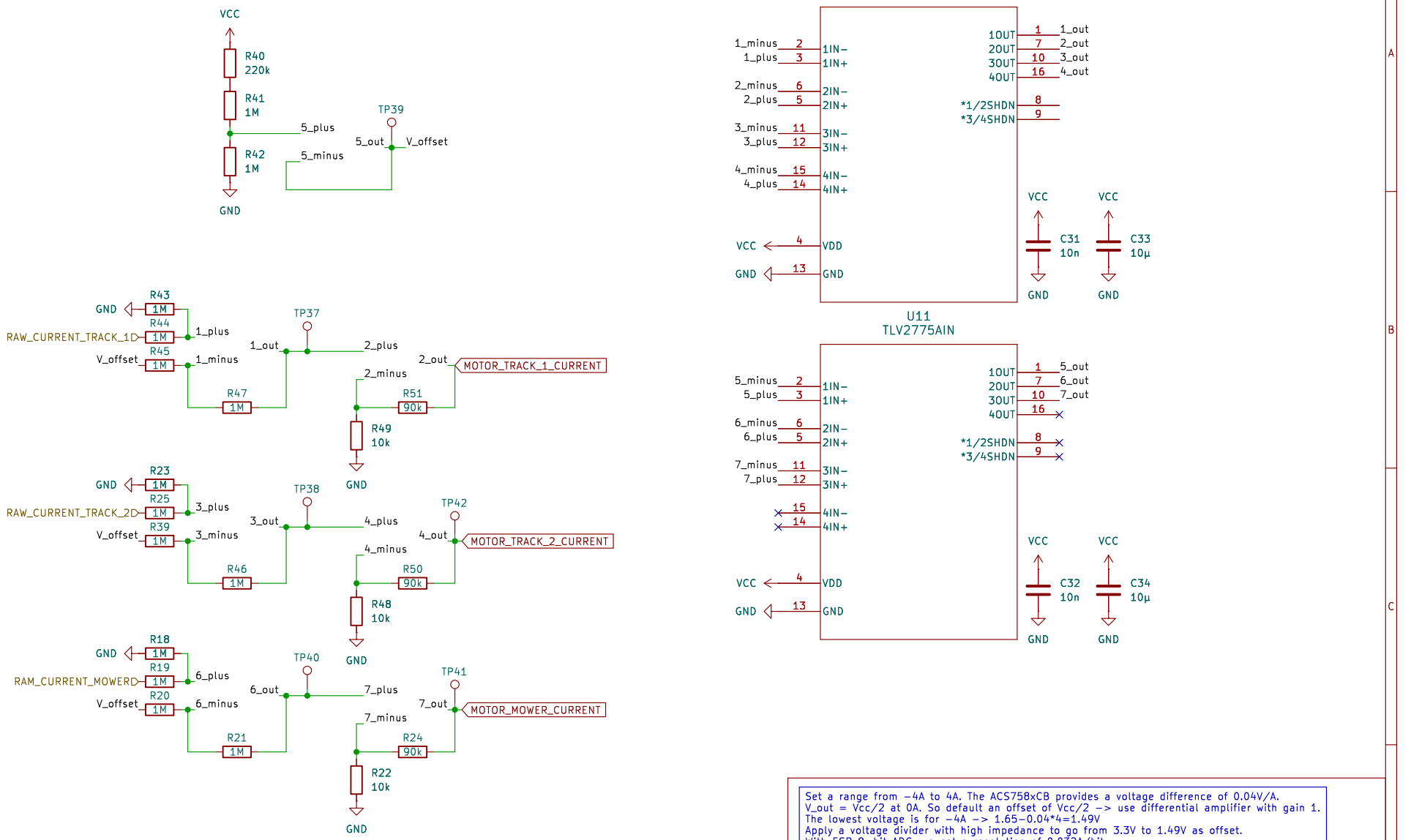




Sheet: /peripherals/
File: peripherals.kicad_sch

Title:

Size: A4	Date: 2024-10-11	**Rev: V0.2**
KiCad E.D.A. 8.0.5-dirty		Id: 5/7


VCC
R40
220k
R41
1M
5_plus
TP39
5_out
V_offset
R42
1M
5_minus
GND
U1
TLV2775AIN
1_minus
1_plus
2_minus
2_plus
3_minus
3_plus
4_minus
4_plus
1IN−
1IN+
2IN−
2IN+
3IN−
3IN+
4IN−
4IN+
VDD
GND
1OUT
2OUT
3OUT
4OUT
1_out
2_out
3_out
4_out
*1/2SHDN
*3/4SHDN
C31
10n
C33
10µ
U11
TLV2775AIN
5_minus
5_plus
6_minus
6_plus
7_minus
7_plus
5_out
6_out
7_out
C32
10n
C34
10µ
R43
1M
R44
1M
R45
1M
RAW_CURRENT_TRACK_1D
V_offset
1_plus
1_minus
TP37
1_out
2_plus
2_minus
2_out
MOTOR_TRACK_1_CURRENT
R47
1M
R51
90k
R49
10k
R23
1M
R25
1M
R39
1M
RAW_CURRENT_TRACK_2D
V_offset
3_plus
3_minus
TP38
3_out
4_plus
4_minus
TP42
4_out
MOTOR_TRACK_2_CURRENT
R46
1M
R50
90k
R48
10k
R18
1M
R19
1M
R20
1M
RAM_CURRENT_MOWERD
V_offset
6_plus
6_minus
TP40
6_out
7_plus
7_minus
TP41
7_out
MOTOR_MOWER_CURRENT
R21
1M
R24
90k
R22
10k
Set a range from −4A to 4A. The ACS758xCB provides a voltage difference of 0.04V/A.
V_out = Vcc/2 at 0A. So default an offset of Vcc/2 -> use differential amplifier with gain 1.
The lowest voltage is for −4A -> 1.65−0.04*4=1.49V
Apply a voltage divider with high impedance to go from 3.3V to 1.49V as offset.
With ESP 8−bit ADC, we get a resolution of 0.032A/bit
Sheet: /motor_control/current_signal_converter/
File: current_signal_converter.kicad_sch
Title:
Size: A4
Date: 2024−10−11
Rev: V0.2
KiCad E.D.A. 8.0.5−dirty
Id: 6/7

Sheet: /test_points/
File: test_points.kicad_sch

Title:

Size: A4	Date: 2024-10-11	**Rev: V0.2**
KiCad E.D.A. 8.0.5-dirty		Id: 7/7