TODO:
- Add 2x quadrature encoder inputs + PWM with 5V power.
- Change SL right angle to vertical headers.

Molex 70543-0036 J101 DC_IN
Molex 70543-0036 J102 BATT
GND

File: power-supply.kicad_sch
4/6
Power Supply
+V_DC
+V_BAT

RP2350 Datasheet

File: board-id.kicad_sch
5/6
Board ID
ID0
ID1
4mA @ 3.3V

File: encoder-inputs.kicad_sch
6/6
Encoder Inputs
ENC0_AD
ENC0_BD
ENC0_PWMD
ENC1_AD
ENC1_BD
ENC1_PWMD
ENC2_AD
ENC2_BD
ENC2_PWMD

File: joystick-inputs.kicad_sch
3/6
Joystick Inputs
ADC3/ADC2_SELD
ADC0D
ADC1D
ADC2D
75mA @ 3.3VA

File: button-input.kicad_sch
2/6
Button Inputs
SCKD
MISOD
LOADD
32mA max @ 3.3V

+3V3
R101 1.50k-1%-0805
C101 0.1uF-25V-10%-0805
GND
+5V
+3V3
39 VSYS
40 VBUS
36 3V3

A101 RaspberryPi_Pico2
30 RESET
37 3V3_EN
1 ENC0_A
2 ENC0_B
4 ID0
5 ID1
6 ENC0_PWM
7 ENC1_A
9 ENC1_B
10 ENC1_PWM
11 ENC2_A
12 ENC2_B
14 BUTTON_SCK
15 ENC2_PWM
16 BUTTON_MISO
17 BUTTON_LD
21 ADC3/ADC2
35 ADC_VREF
31 X0_ADC
32 Y0_ADC
34 XY1_ADC
22 CAN_IRQ
24 CAN_RX_IRQ
25 SPI0_MOSI
26 SPI0_MISO
27 SPI0_CS
29 SPI0_SCK
19 CAN_TX_IRQ
20 XCVR_STBY
33 AGND
GND
GNDA
35mA @ 3.3V

C103 0.1uF-25V-10%-0805
U102 MCP2518FDT-H/SL
11 SDI
12 SDO
13 CS
10 SCK
4 INT
9 INT0/GPIO0/XSTBY
8 INT1/GPIO1
5 OSC2
6 OSC1
14 VDD
7 VSS
1 TXCAN
2 RXCAN
3 SOF
20mA @ 3.3V

U101 4.0 MHz
1 EN
3 OUT
4 +Vs
2 GND
7mA @ 3.3V
C102 0.1uF-25V-10%-0805

TR1/TR2
CANTX
CANRX

C104 0.1uF-25V-10%-0805
C105 0.1uF-25V-10%-0805
U103 MCP2558FD
1 TXD
4 RXD
8 S
5 Vio
3 Vdd
2 Vss
7 CANH
6 CANL
70mA max @ 5V
30mA avg

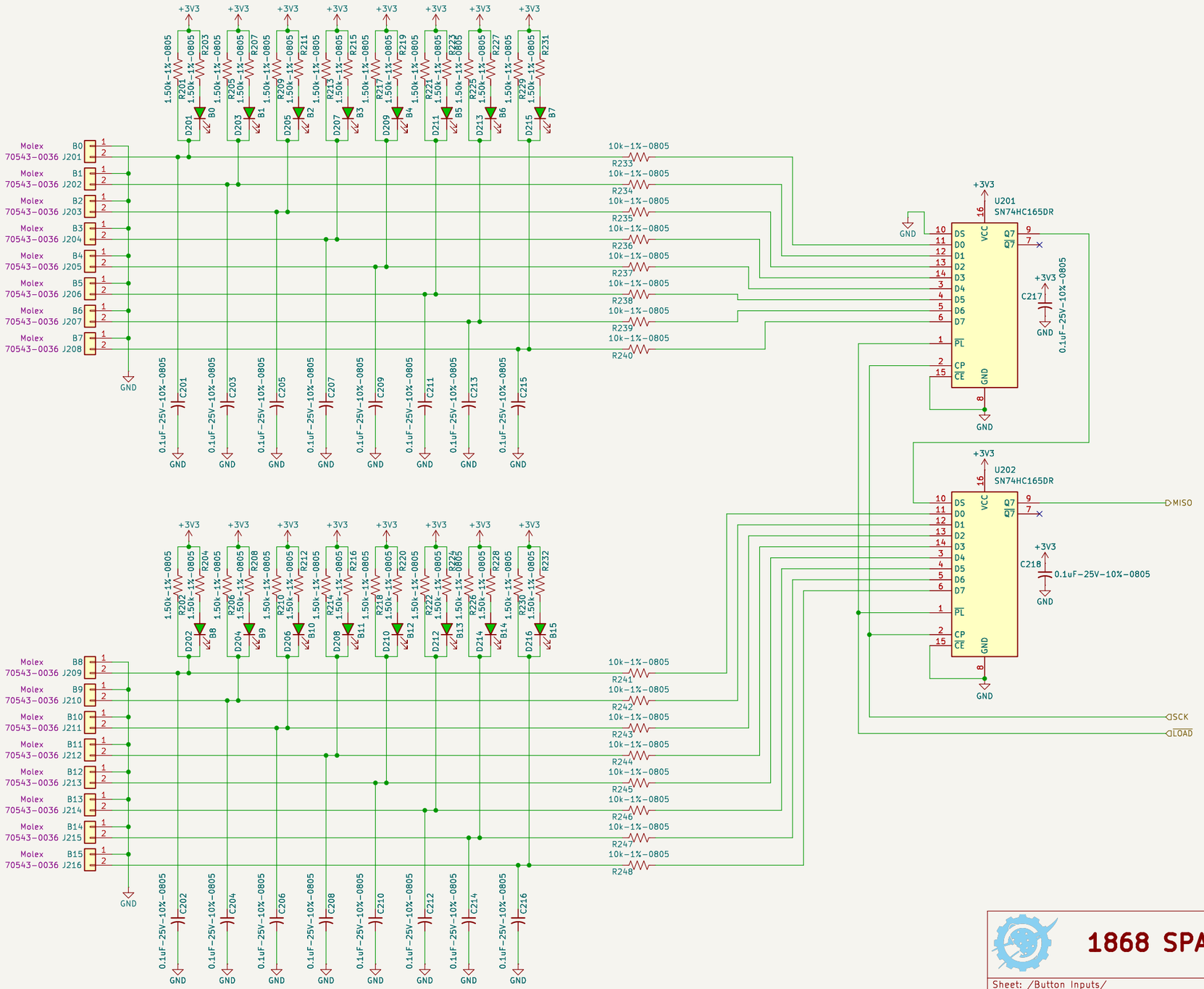
CAN_L 1
CAN_H 2
CAN Molex J103 70543-0036
CAN Molex J104 70543-0036

H101 MountingHole
H102 MountingHole
H103 MountingHole
H104 MountingHole

FID101 Fiducial
FID102 Fiducial
FID103 Fiducial
FID104 Fiducial
FID105 Fiducial
FID106 Fiducial

1868 SPACE COOKIES

Sheet: /
File: Pico-ButtonBoard-v1.kicad_sch
Title: Pico Button Board
Size: B | Date: 2025-12-25 | **Rev: 1**
KiCad E.D.A. 9.0.6 | Id: 1/6

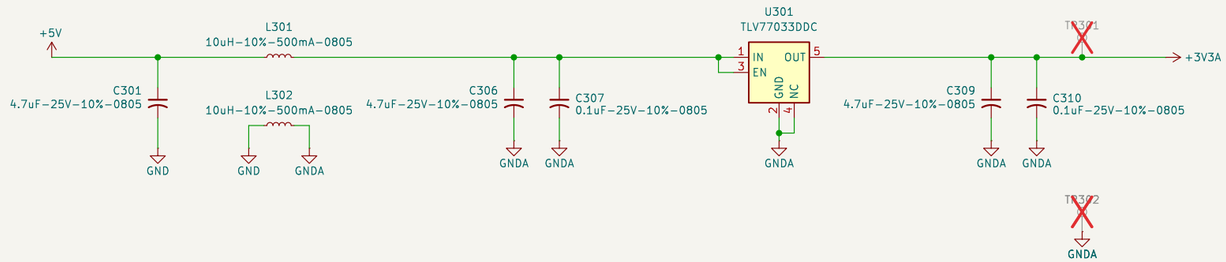


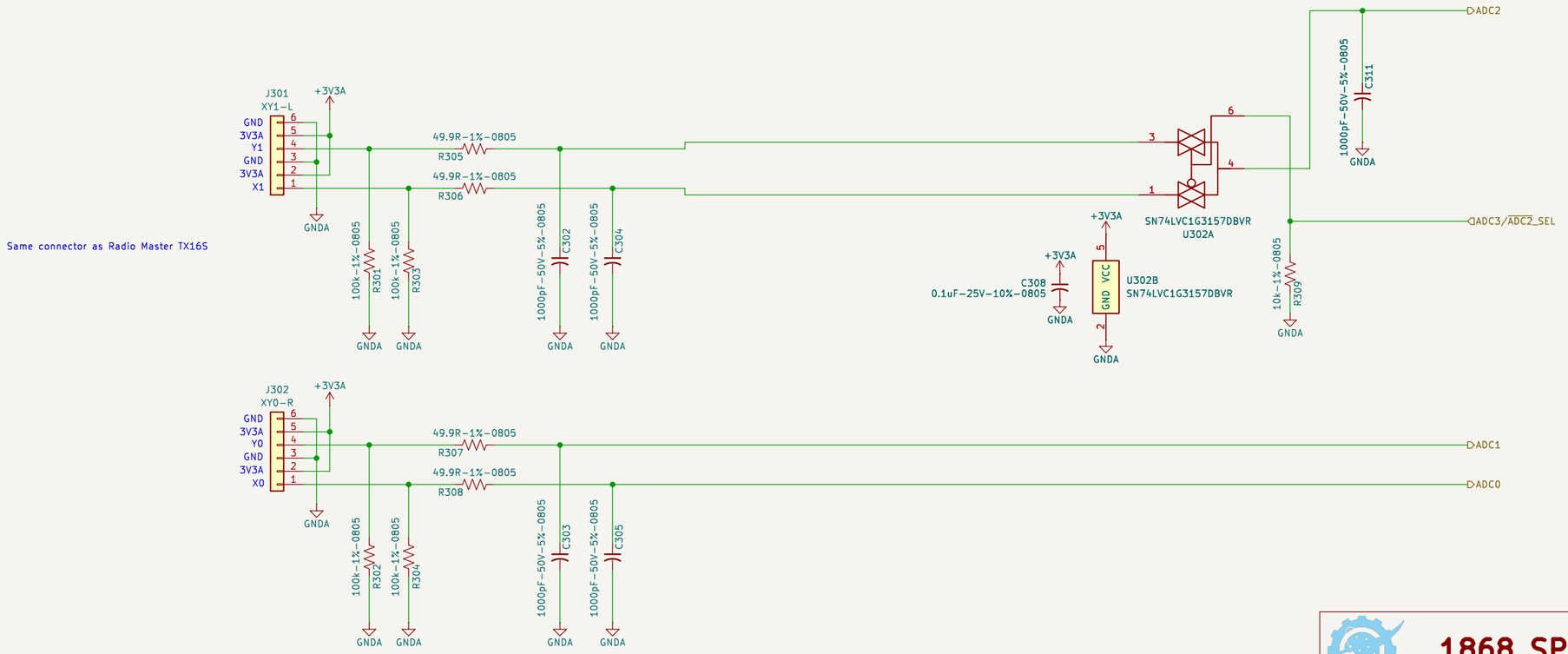
1868 SPACE COOKIES

Sheet: /Button Inputs/
File: button-input.kicad_sch

Title: Pico Button Board

Size: B	Date: 2025-12-25	**Rev: 1**
KiCad E.D.A. 9.0.6		Id: 2/6





Same connector as Radio Master TX16S

1868 SPACE COOKIES

Sheet: /Joystick Inputs/
File: joystick-inputs.kicad_sch

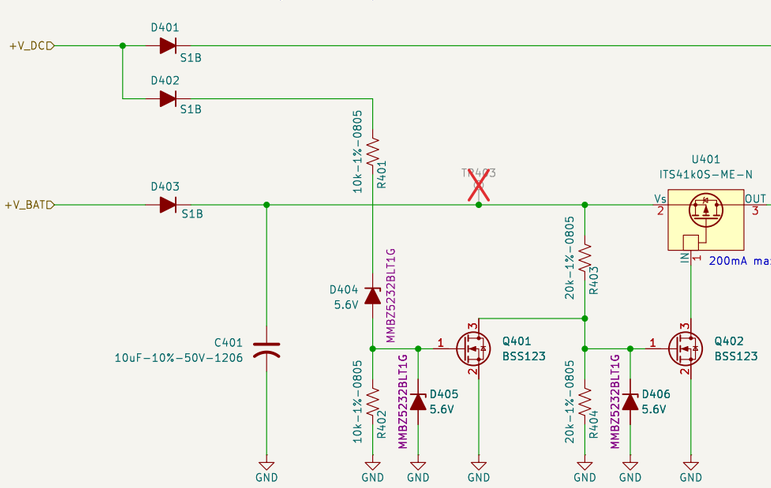
Title: Pico Button Board

Size: B	Date: 2025-12-25	**Rev: 1**
KiCad E.D.A. 9.0.6		Id: 3/6

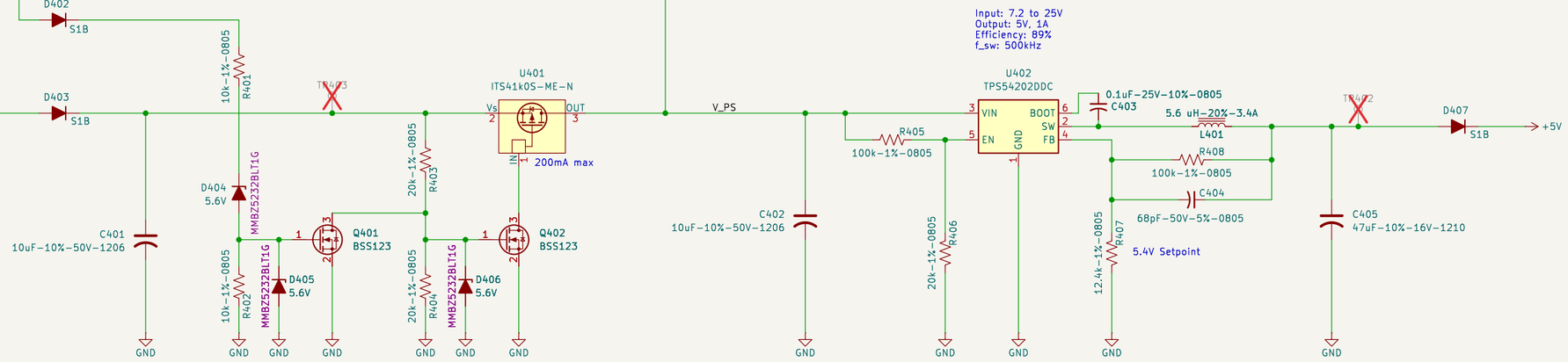
Power supply input range: 8V – 30V
– Allows use of M12 and M18 Milwaukee battery packs.

– Input power can be sourced from either a Milwaukee battery pack an AC power adapter.
– Voltage of the battery pack may be higher than the AC adapter.
– The battery pack is disabled from supplying power whenever the AC adapter is greater than 9V.
– All inputs are protected from reverse polarity

Battery Backup

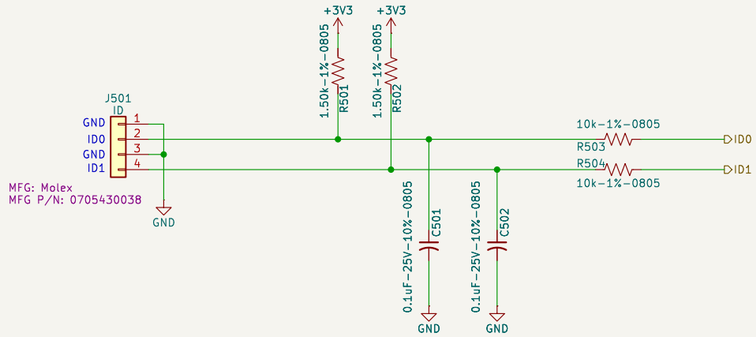


5V Power Supply



TPS54202-DCDC-Analysis

1868 SPACE COOKIES		
Sheet: /Power Supply/ File: power-supply.kicad_sch		
Title: Pico Button Board		
Size: B	Date: 2025-12-25	**Rev: 1**
KiCad E.D.A. 9.0.6		Id: 4/6

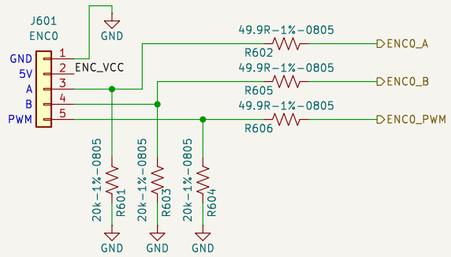


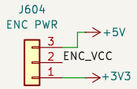
1868 SPACE COOKIES

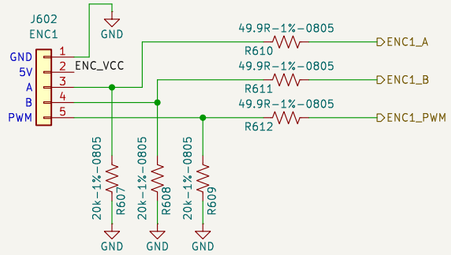
Sheet: /Board ID/
File: board-id.kicad_sch

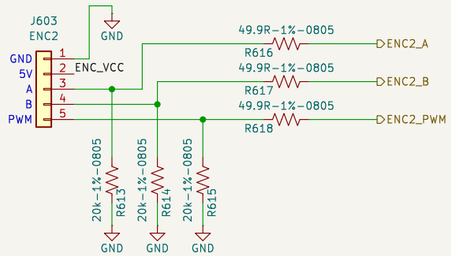
Title: Pico Button Board

Size: B	Date: 2025-12-25	**Rev: 1**
KiCad E.D.A. 9.0.6		Id: 5/6









1868 SPACE COOKIES

Sheet: /Encoder Inputs/
File: encoder-inputs.kicad_sch

Title: Pico Button Board

Size: B	Date: 2025-12-25	**Rev: 1**
KiCad E.D.A. 9.0.6		Id: 6/6