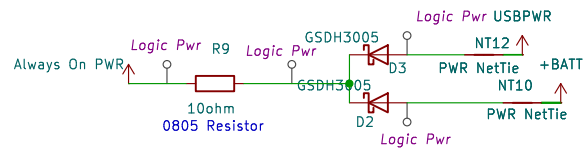
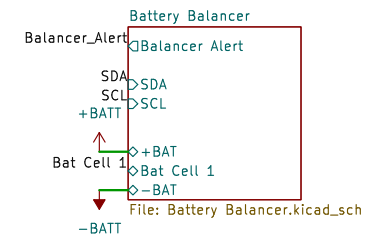
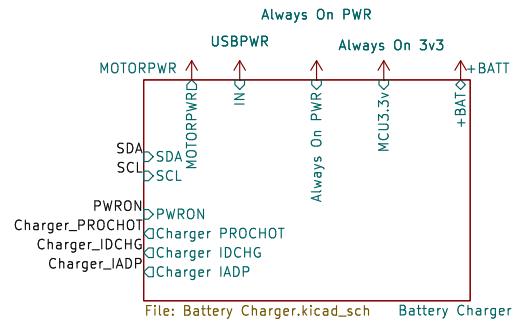
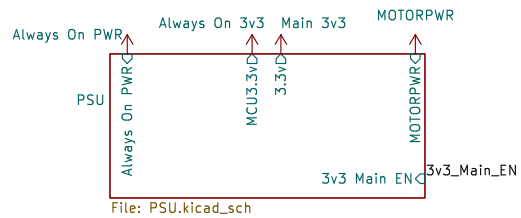
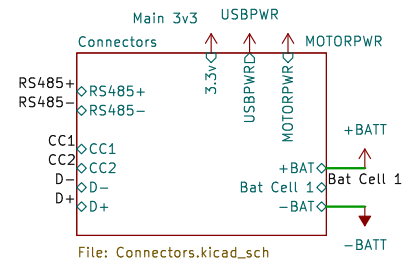
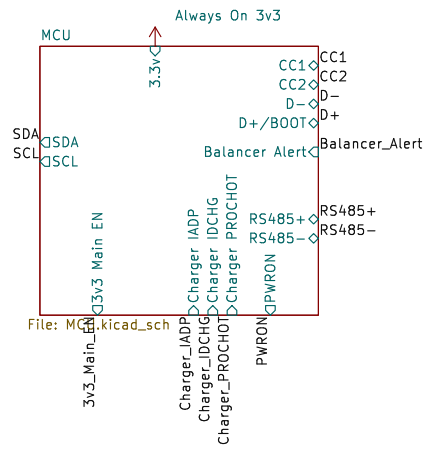


All capacitors (in my current setup) are Ceramic and X5r according to datasheet recommendations. All low power capacitors should be rated for 6.3v, while high power should be 16v



I might want to find a better diode for blocking current, but 0.01ma leakage doesn't seem bad

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Author: Asher Edwards

Sheet: /

File: 2s 40A PSU and charger.kicad_sch

Title: CACKLE 2s 40A PSU & Charger

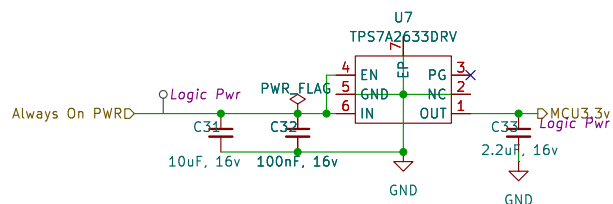
Size: A4

Date: 2025-11-17

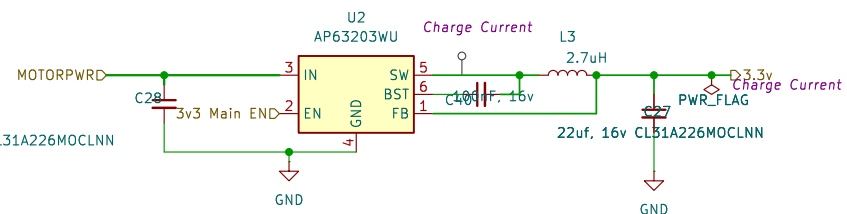
KiCad E.D.A. 9.0.6

Rev: V1.1

Id: 1/6



Onboard MCU 3.3v Supply, 100mA



Main 3.3v Supply, 2A

Inductor calculation: $L = \frac{(V_{IN} - V_{OUT}) \cdot (I_{LOAD} + \Delta I_L)}{\Delta I_L \cdot f_{sw}}$

Peak Inductance: $L_{PEAK} = L_{LOAD} + (\Delta I_L / 2)$

Inputs:
Delta_IL 35% of max current 2
amps: 0.7,
f_sw: 1.1mhz
V_IN: 9v

Values:
2.7uH value
2.35+ A peak current
<100mO resistance

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Author: Asher Edwards

Sheet: /PSU/

File: PSU.kicad_sch

Title: CACKLE 2s 40A PSU & Charger

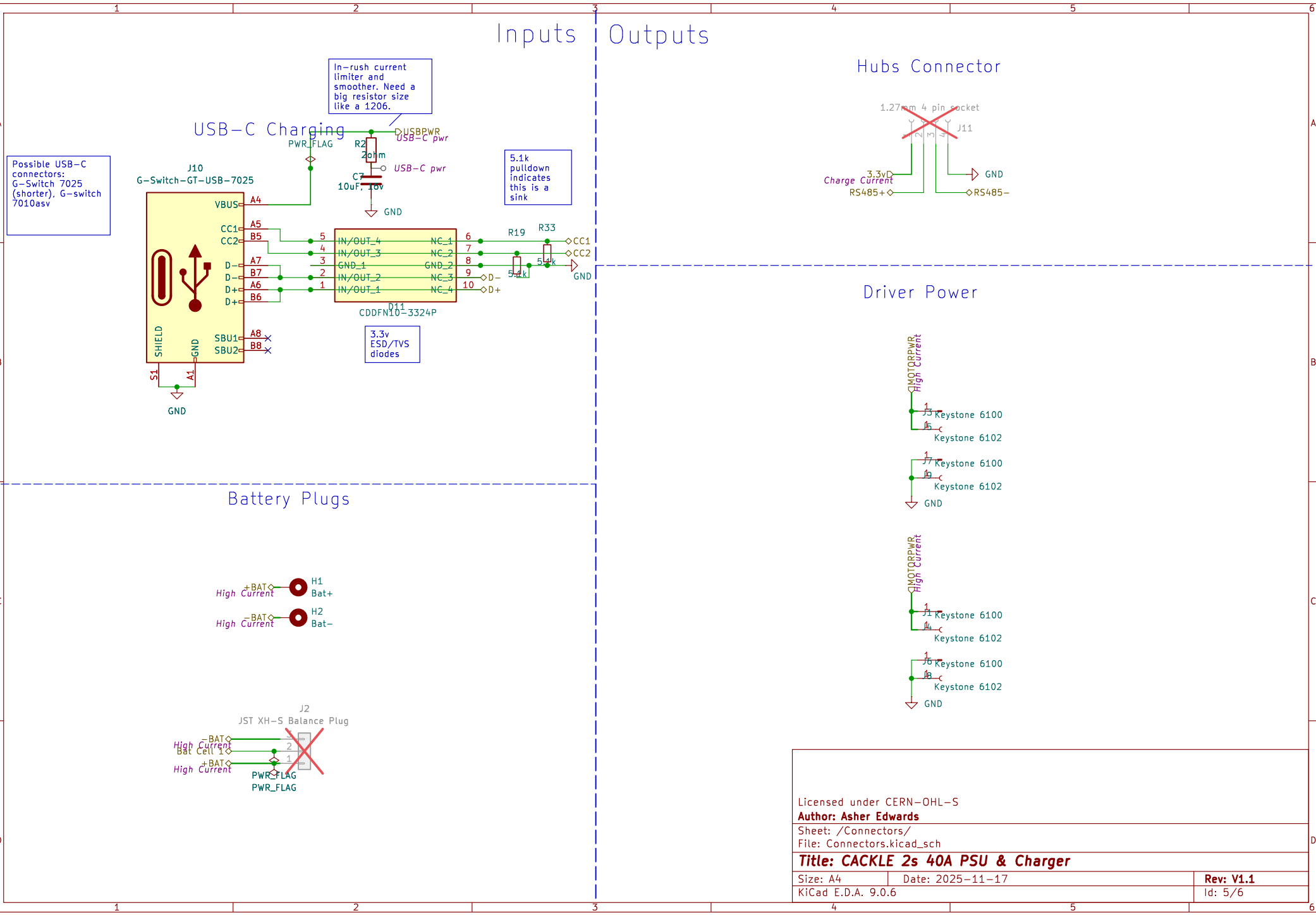
Size: A4 Date: 2025-11-17

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Rev: V1.1

Id: 2/6





1.27mm 4 pin socket

J11

3.3V

Charge Current

RS485+

RS485-

GND

Id: 5/6

