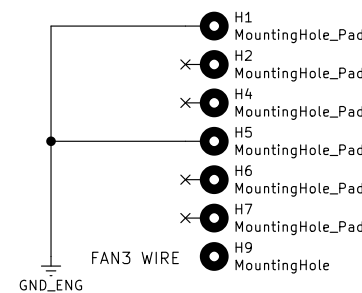


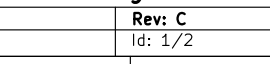
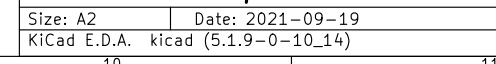
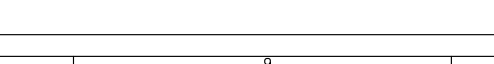
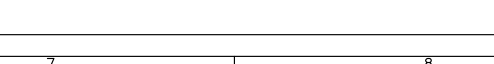
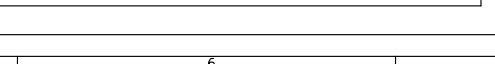
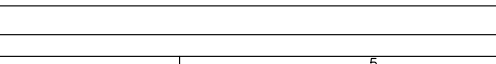
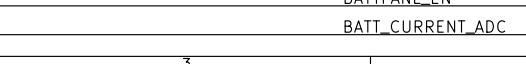
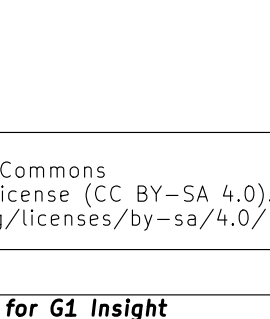
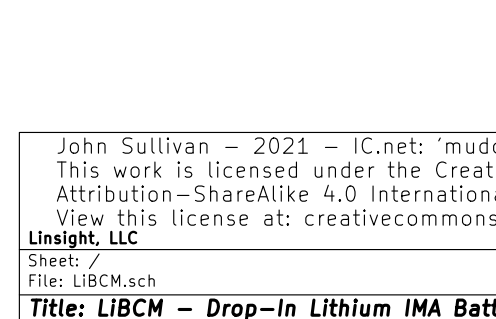
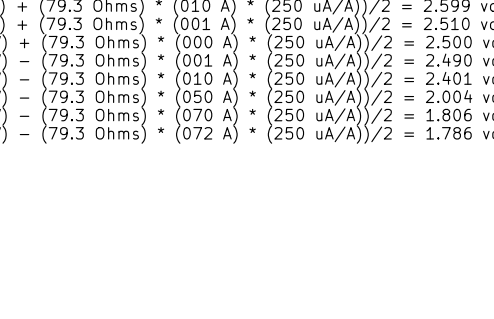
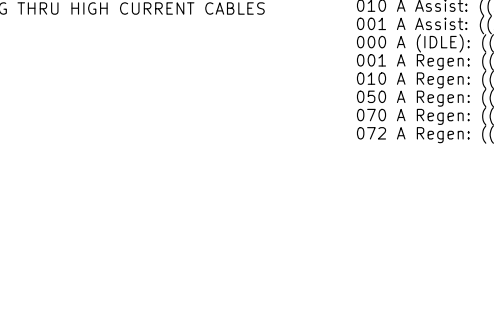
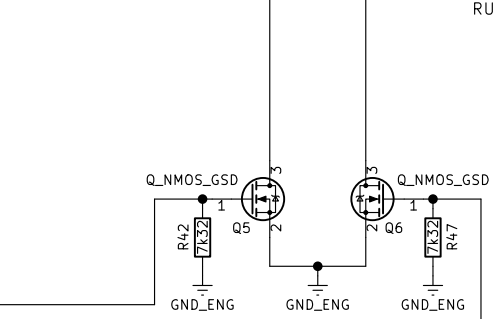
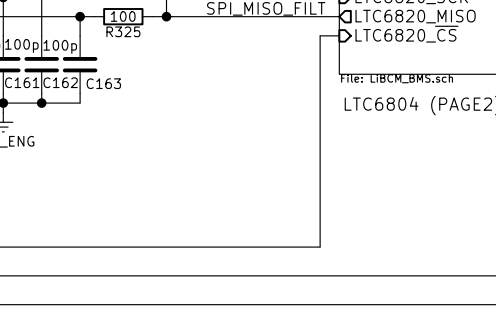
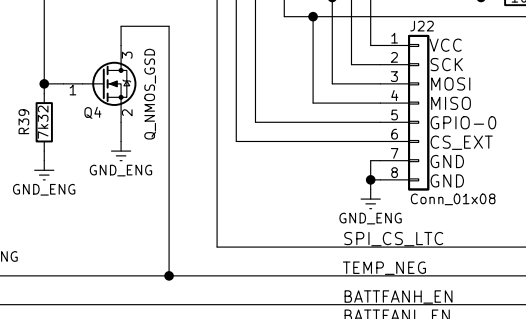
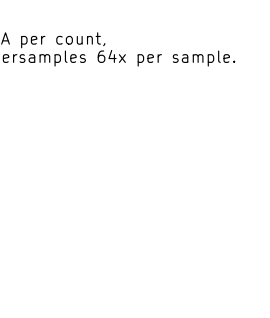
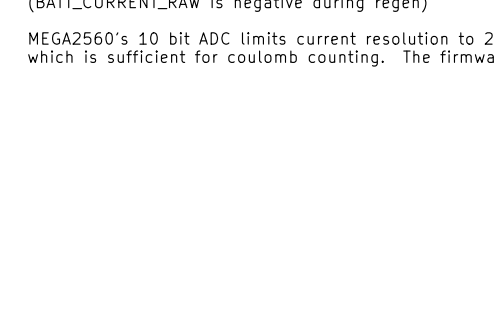
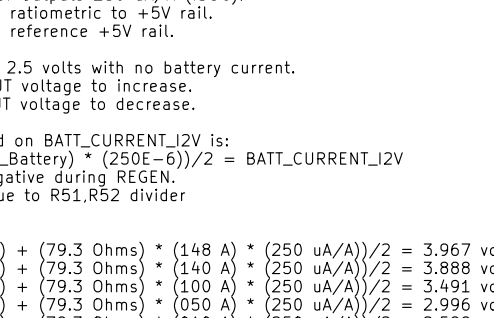
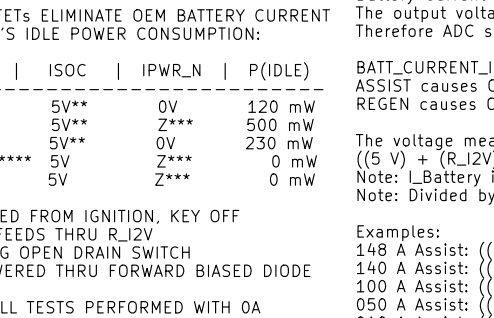
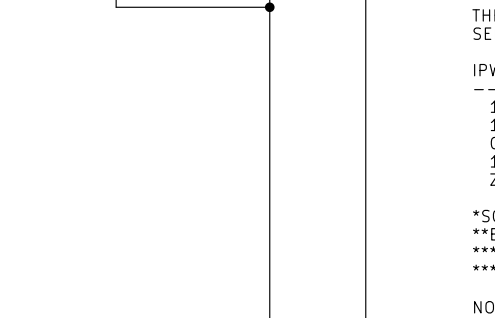
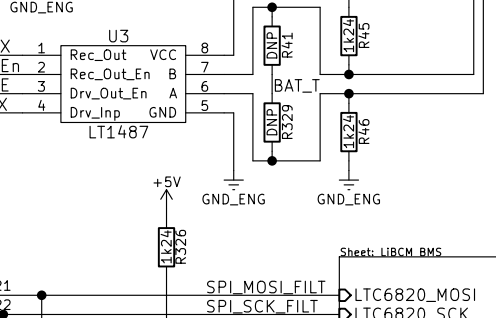
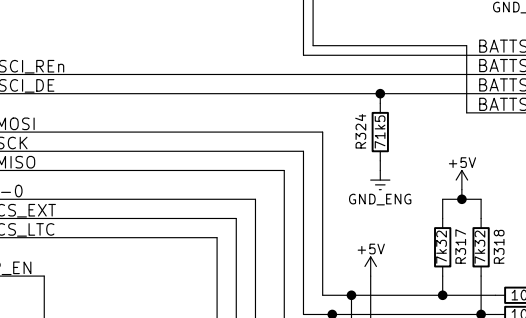
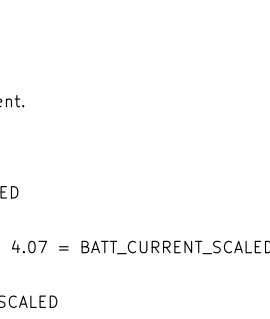
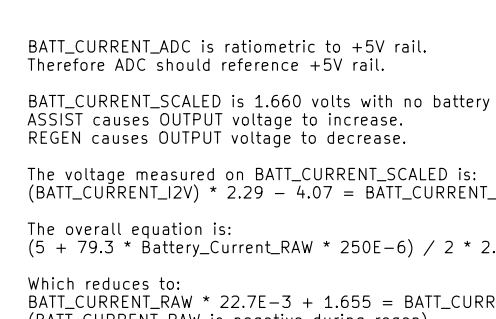
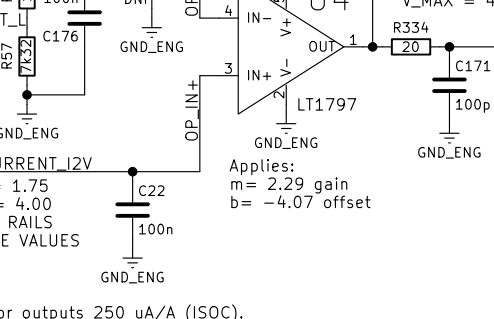
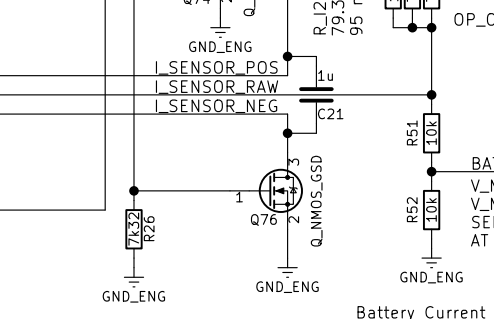
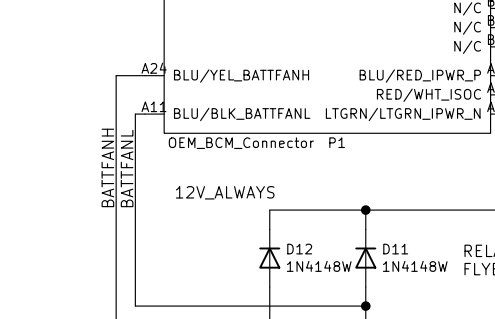
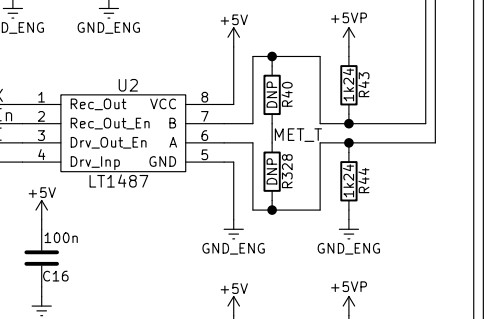
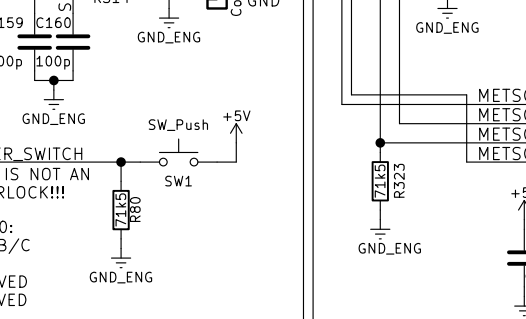
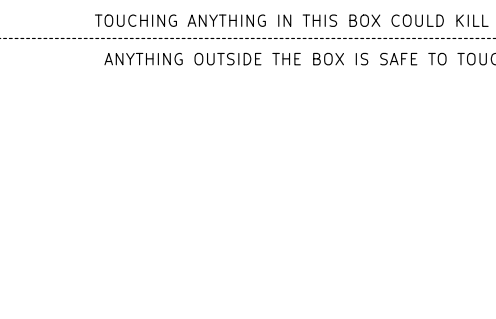
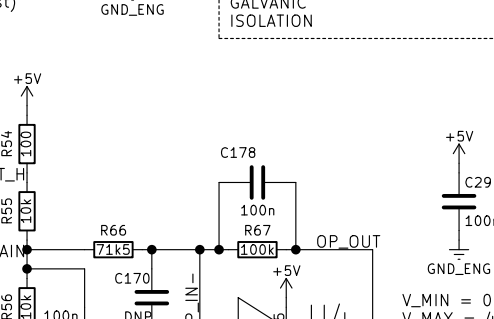
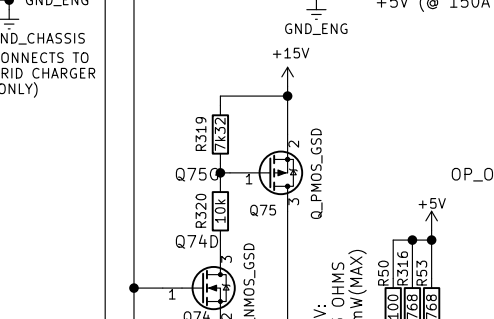
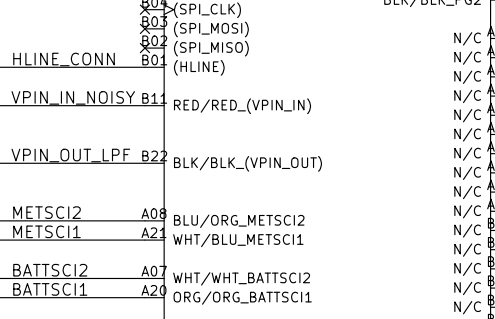
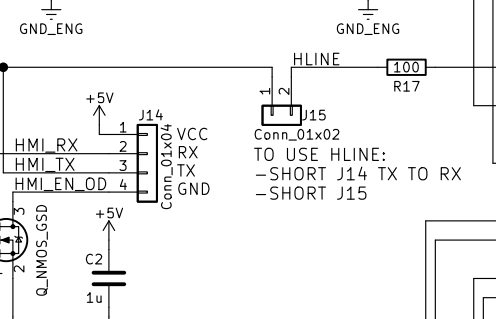
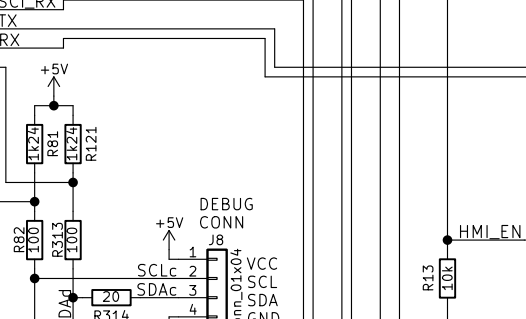
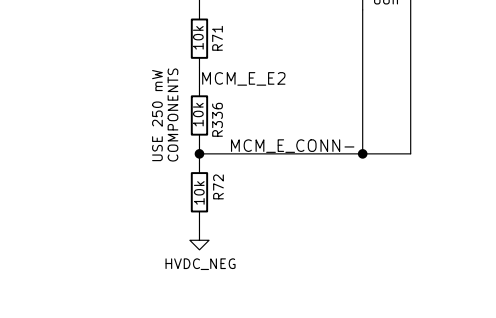
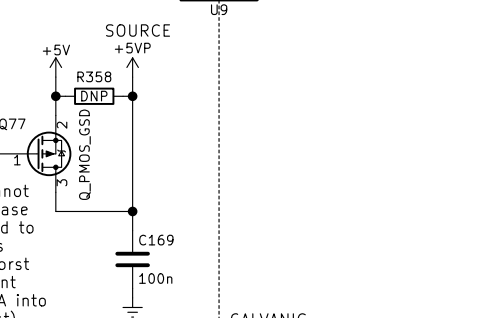
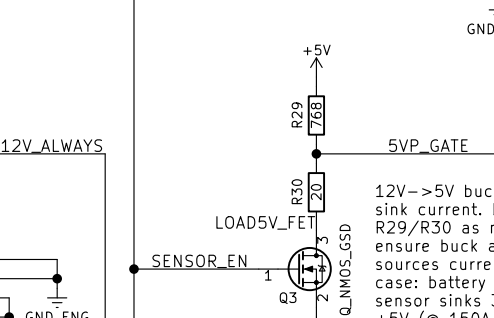
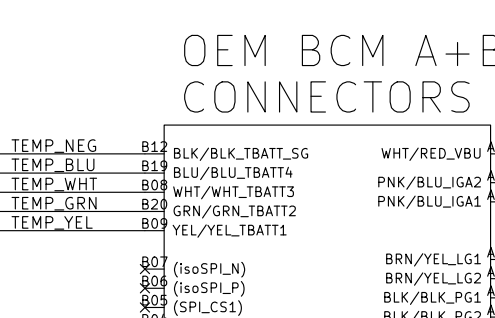
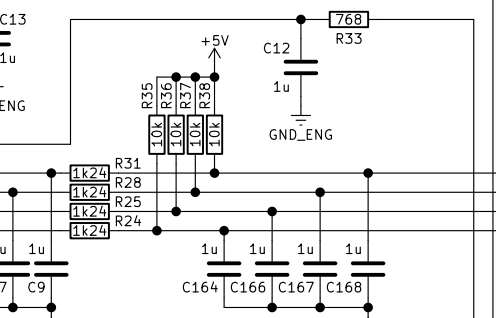
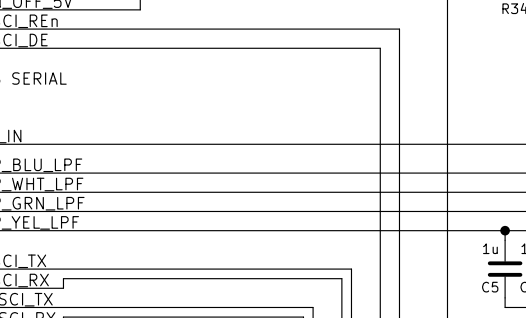
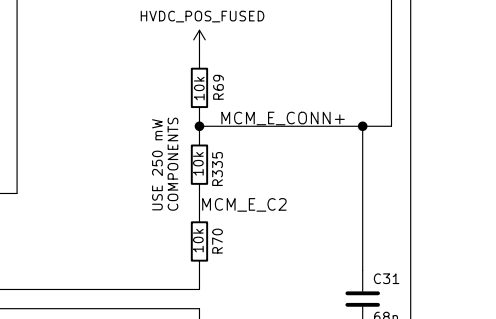
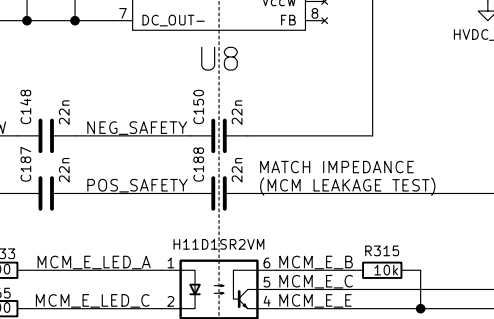
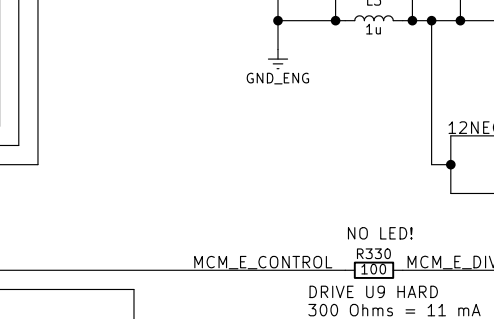
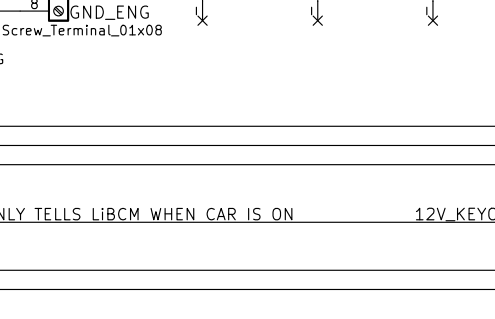
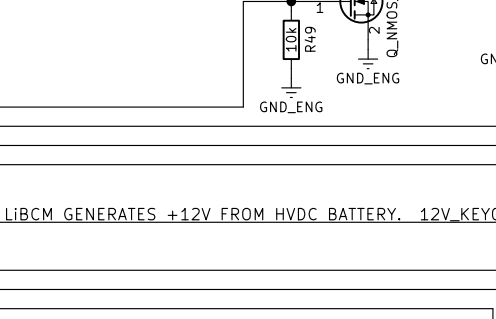
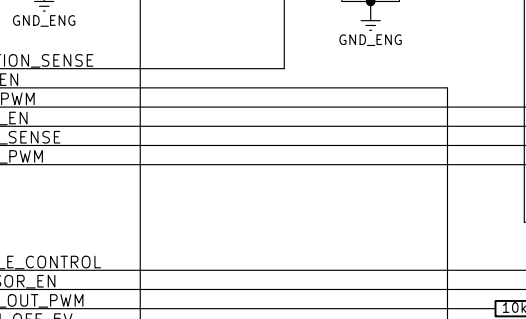
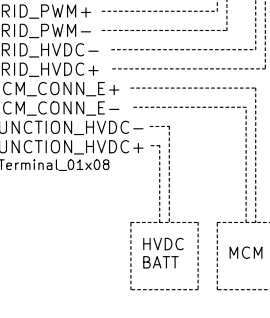
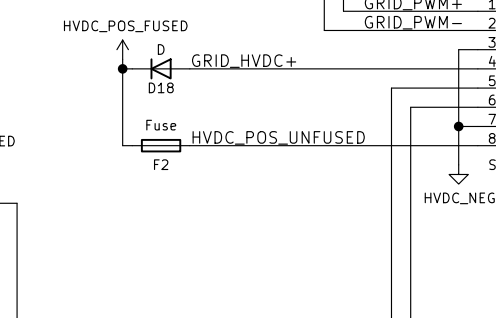
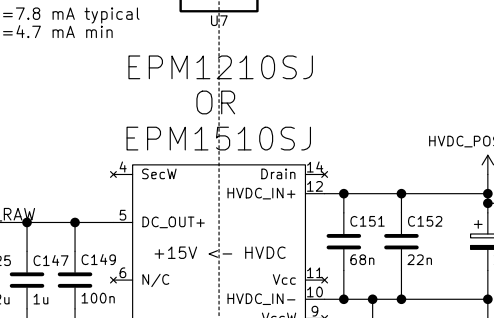
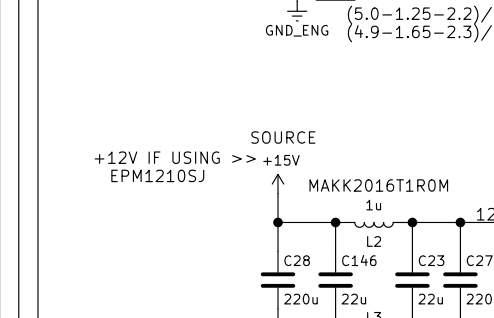
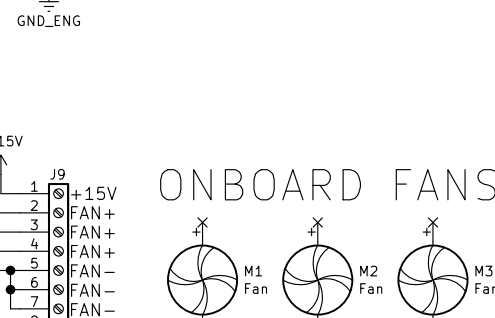
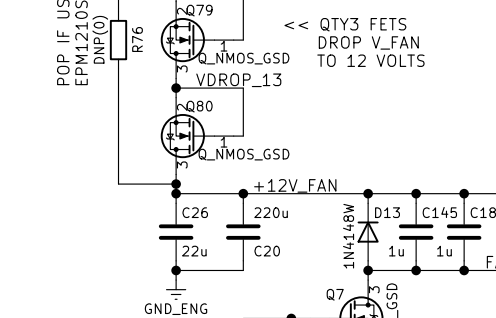
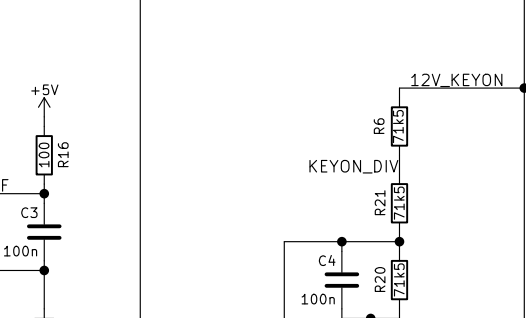
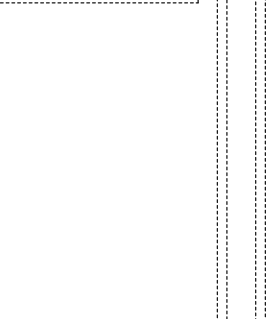
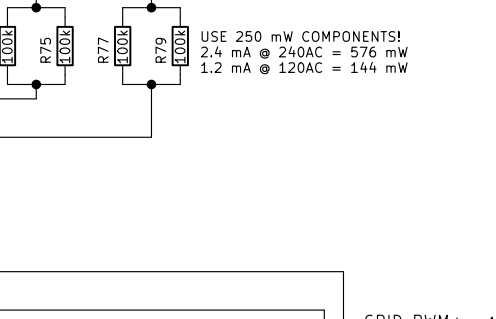
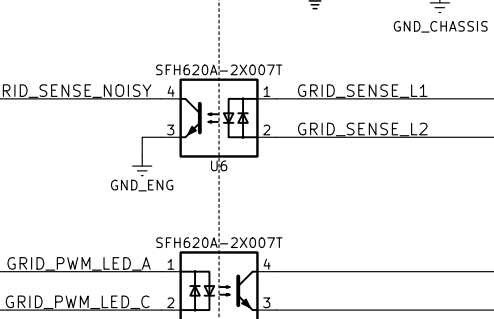
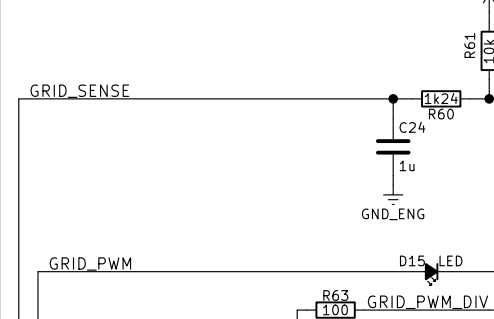
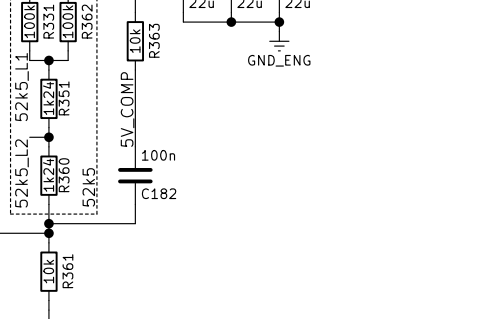
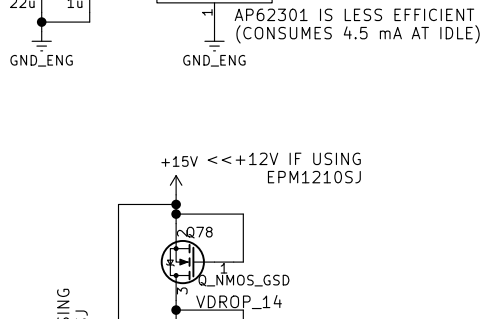
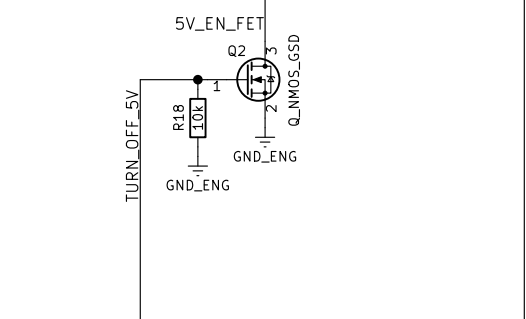
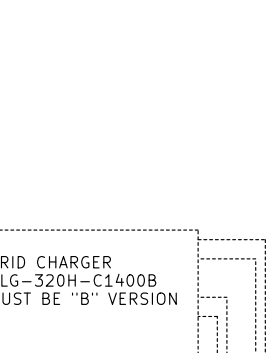
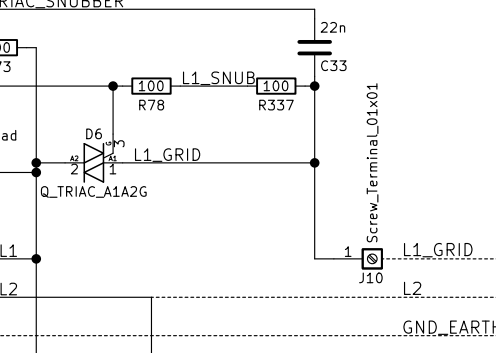
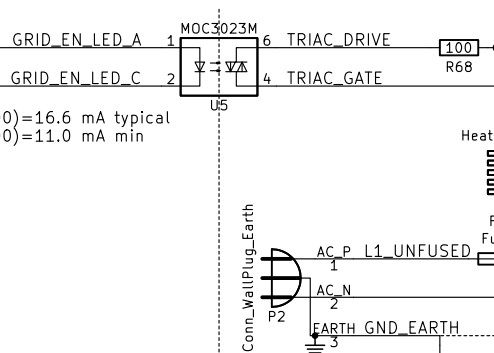
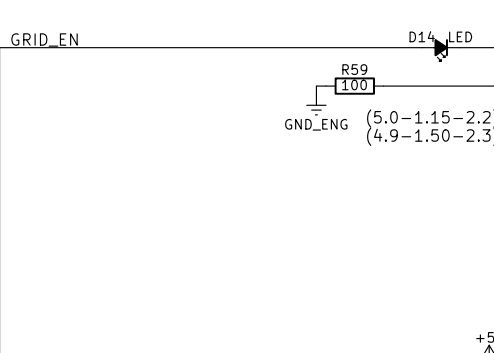
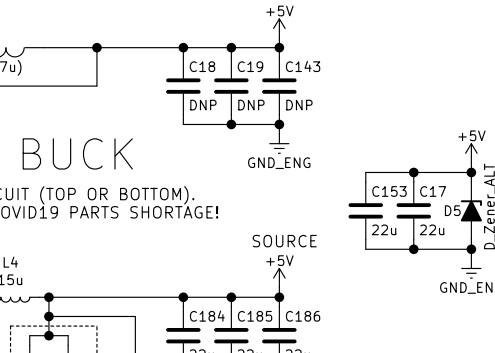
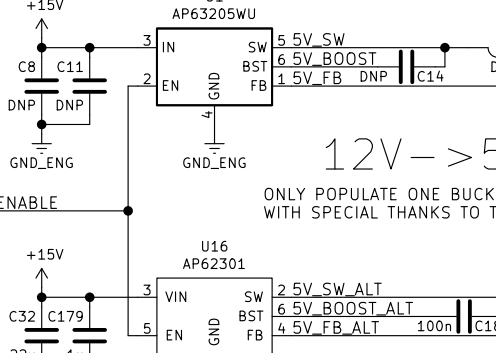
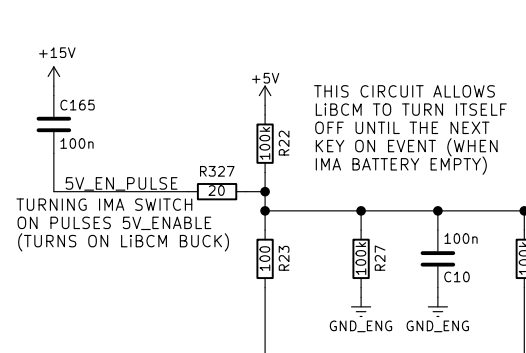
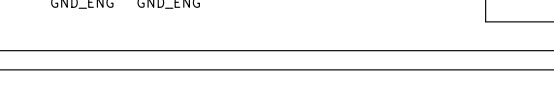
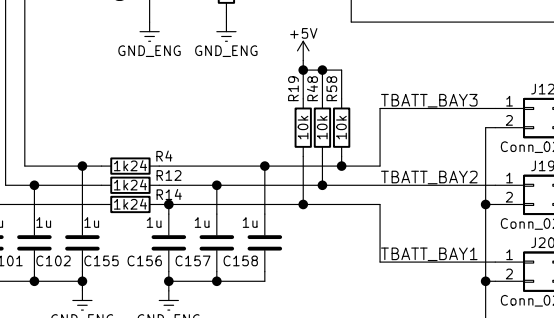
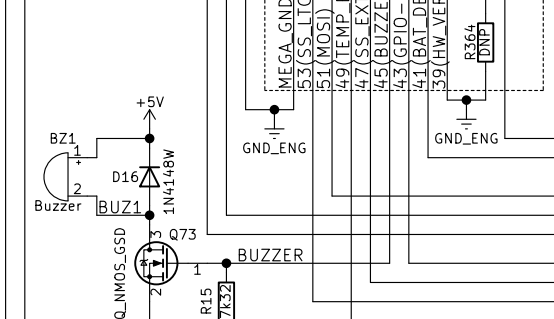
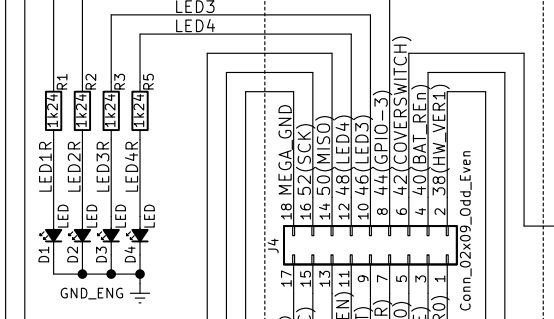
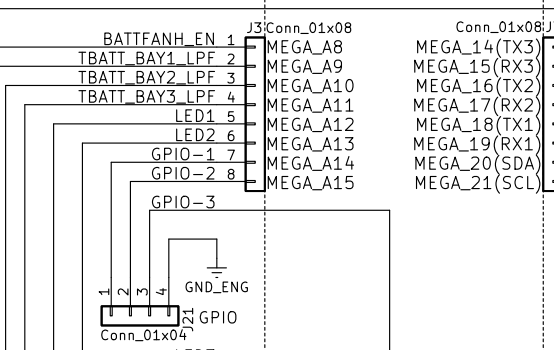
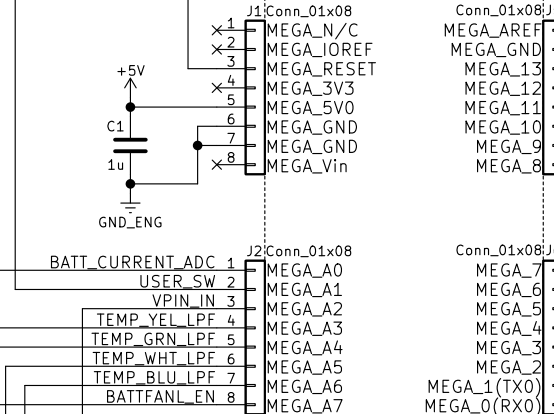
MOUNTING HOLES



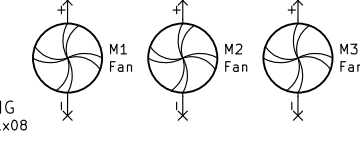
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USB CANNOT UPDATE FIRMWARE
NO RESET ON USB ENUMERATION

OPEN:
USB FIRMWARE UPDATES ALLOWED
USB ENUMERATION RESETS MEGA

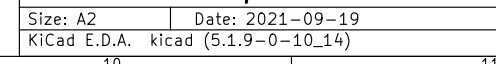
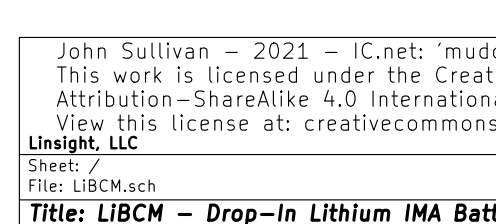
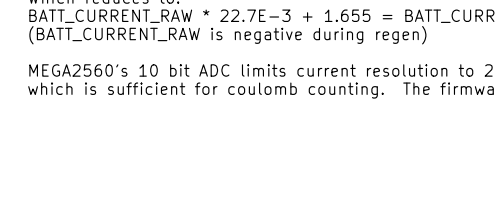
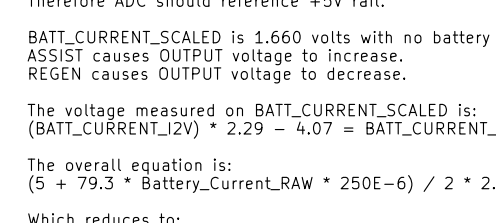
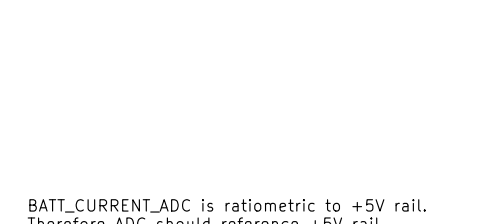
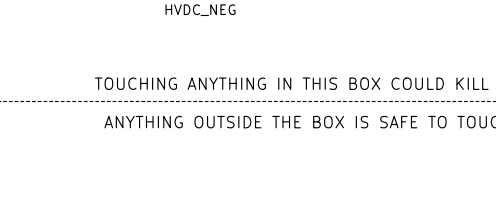
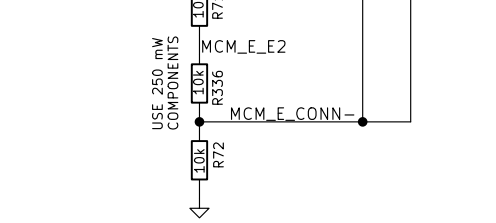
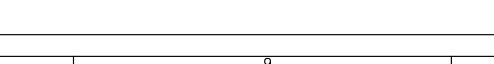
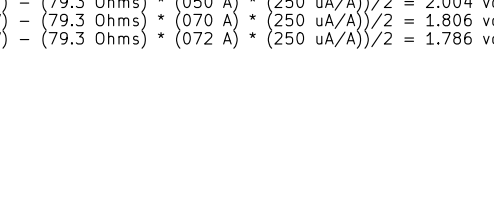
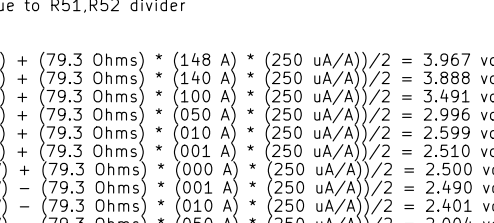
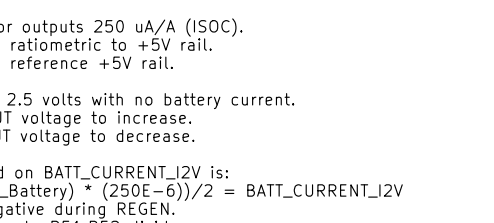
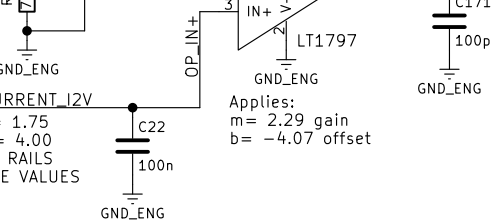
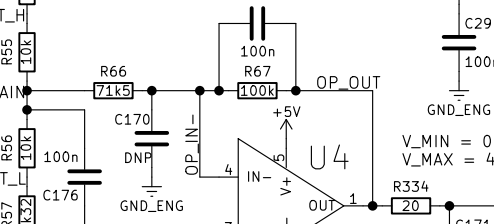
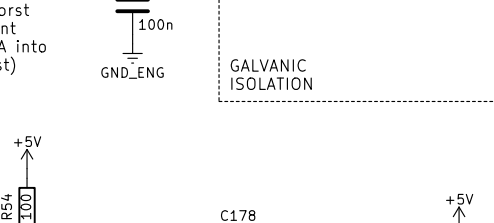
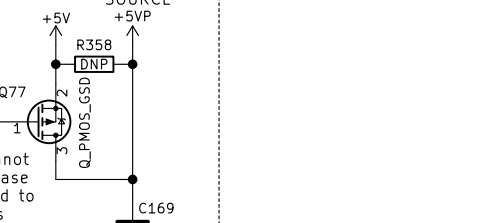
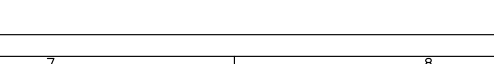
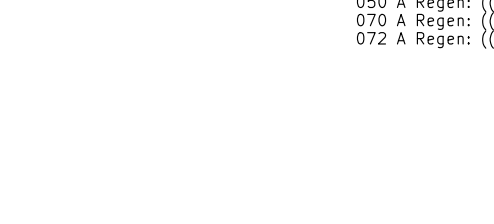
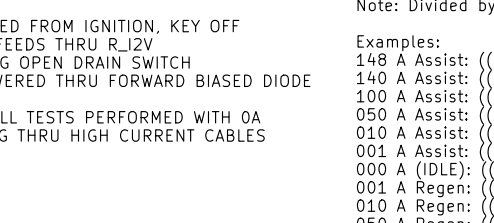
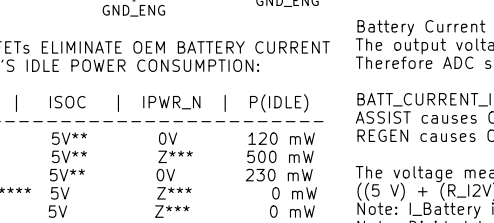
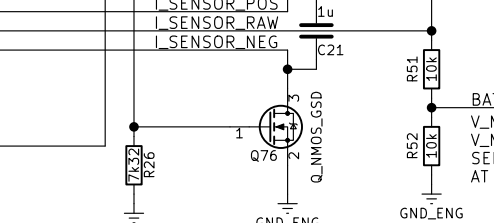
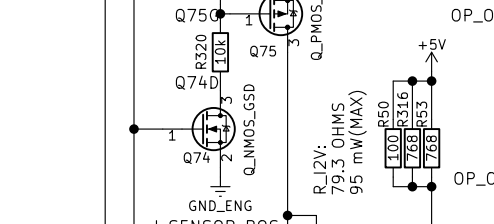
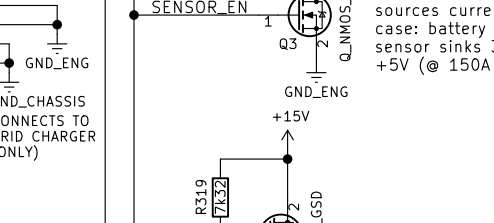
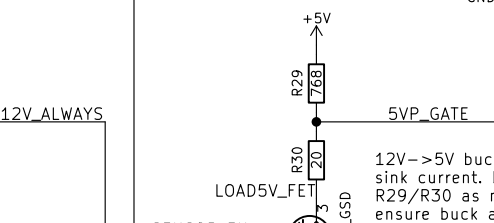
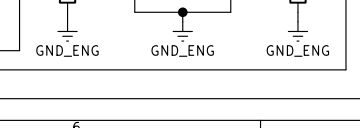
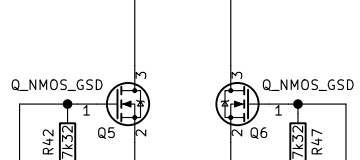
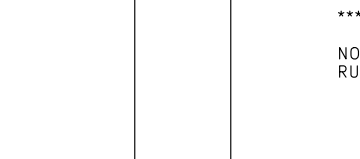
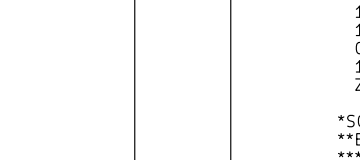
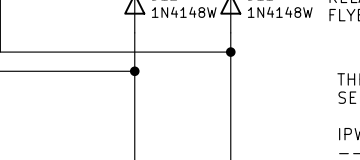
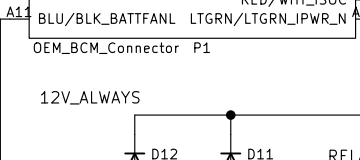
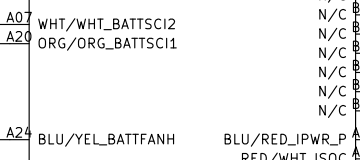
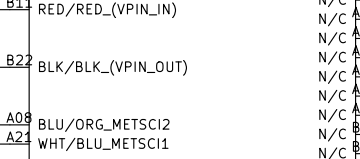
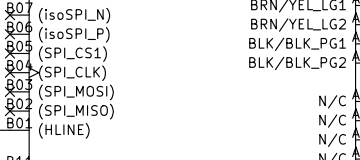
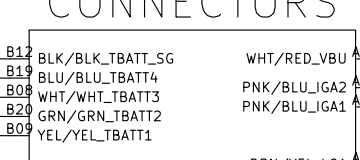
ARDUINO MEGA2560



ONBOARD FANS



OEM BCM A+B CONNECTORS



BATT_CURRENT_ADC is ratiometric to +5V rail. Therefore ADC should reference +5V rail.

BATT_CURRENT_SCALED is 1.660 volts with no battery current. ASSIST causes OUTPUT voltage to increase. REGEN causes OUTPUT voltage to decrease.

The voltage measured on BATT_CURRENT_SCALED is:
(BATT_CURRENT_12V) * 2.29 - 4.07 = BATT_CURRENT_SCALED

The overall equation is:
(5 + 79.3 * Battery_Current_RAW * 250E-6) / 2 * 2.29 - 4.07 = BATT_CURRENT_SCALED

Which reduces to:
BATT_CURRENT_RAW * 22.7E-3 + 1.655 = BATT_CURRENT_SCALED
(BATT_CURRENT_RAW is negative during regen).

MEGA2560's 10 bit ADC limits current resolution to 215 mA per count, which is sufficient for coulomb counting. The firmware oversamples 64x per sample.

