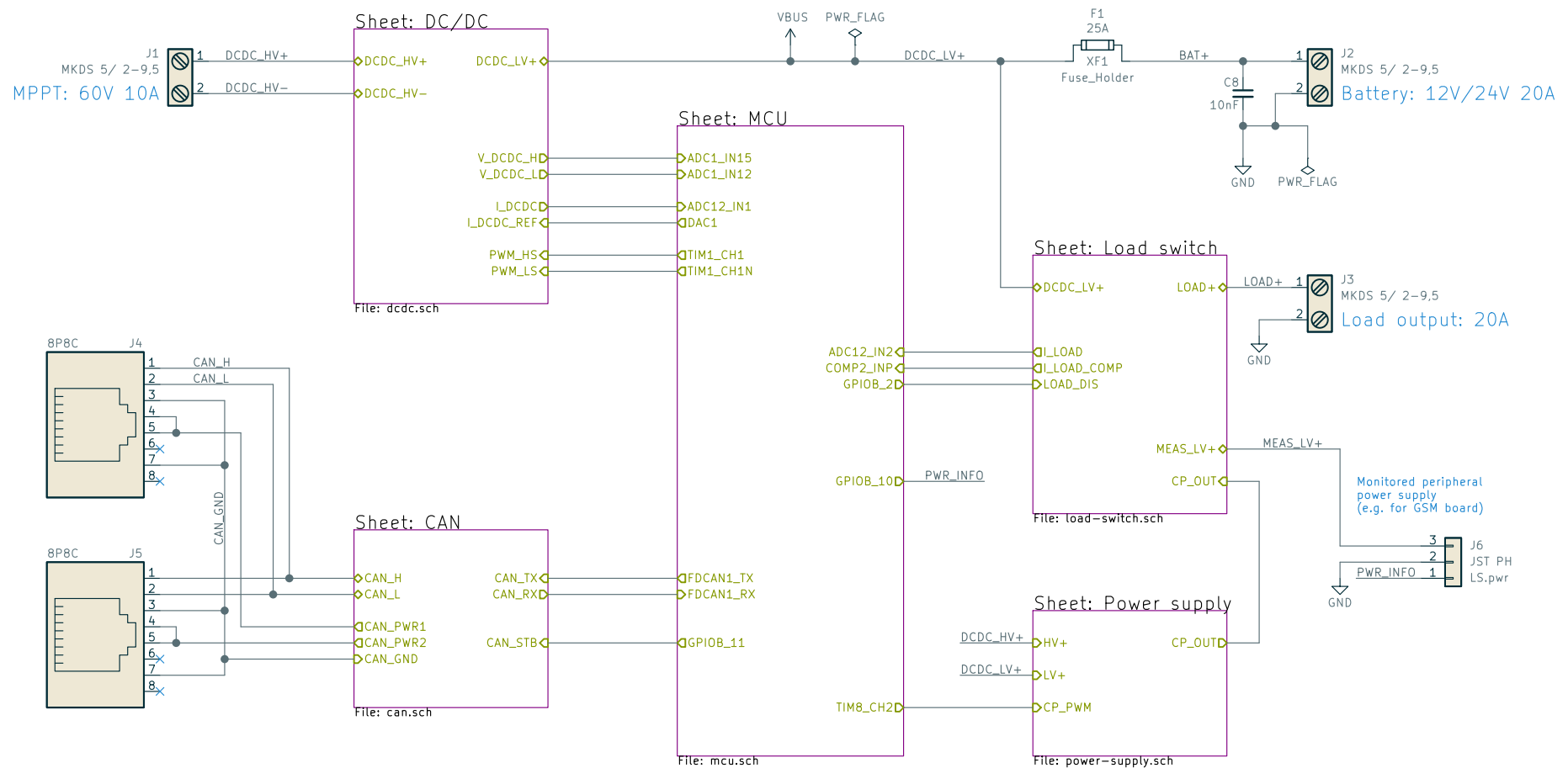


MPPT charge controller with HS load switch and CAN



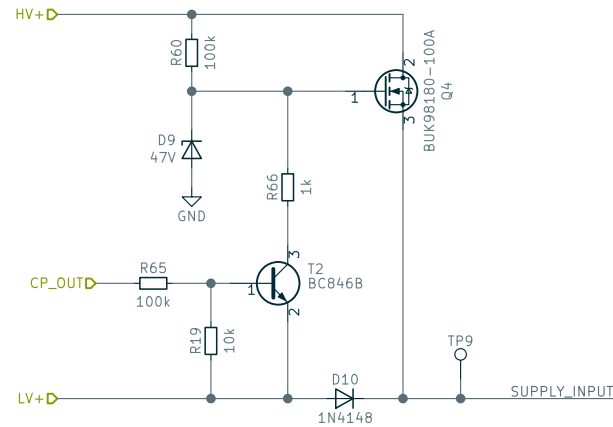
MPPT 2420 HC

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Website: <https://libre.solar>



Sheet: /
File: mppt-2420-hc.sch
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Supply rail selection

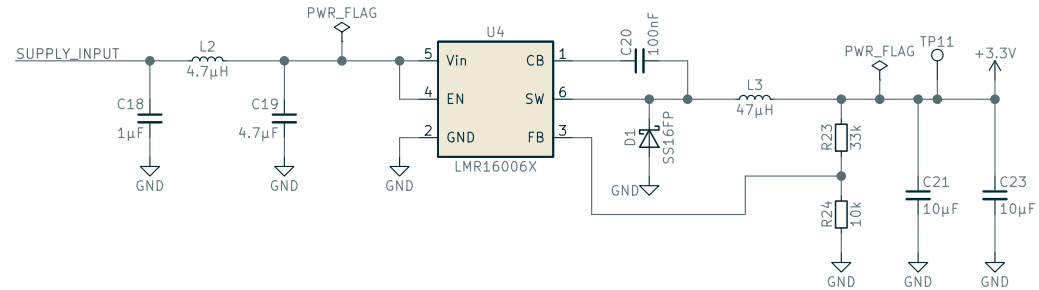


Some applications (e.g. Li-ion batteries) require an internal power supply from the high voltage side (e.g. solar panel input).

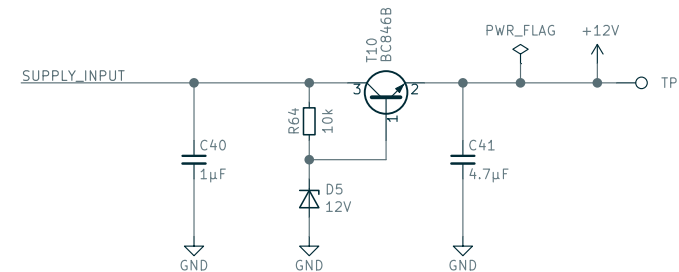
The source follower with Q4 limits the supply input below 60V.

T2 selects LV+ as supply to increase efficiency as soon as the charge pump is on.

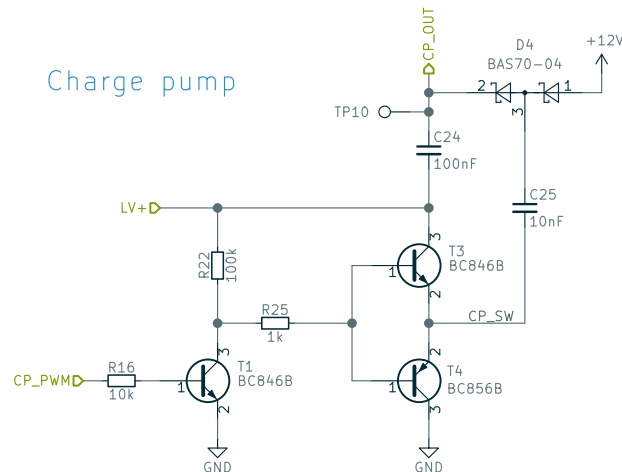
HV/LV side to 3.3V (SMPS)



12V MOSFET driver supply voltage (emitter follower)



Charge pump



If not stated otherwise, all MLCC 50V X7R

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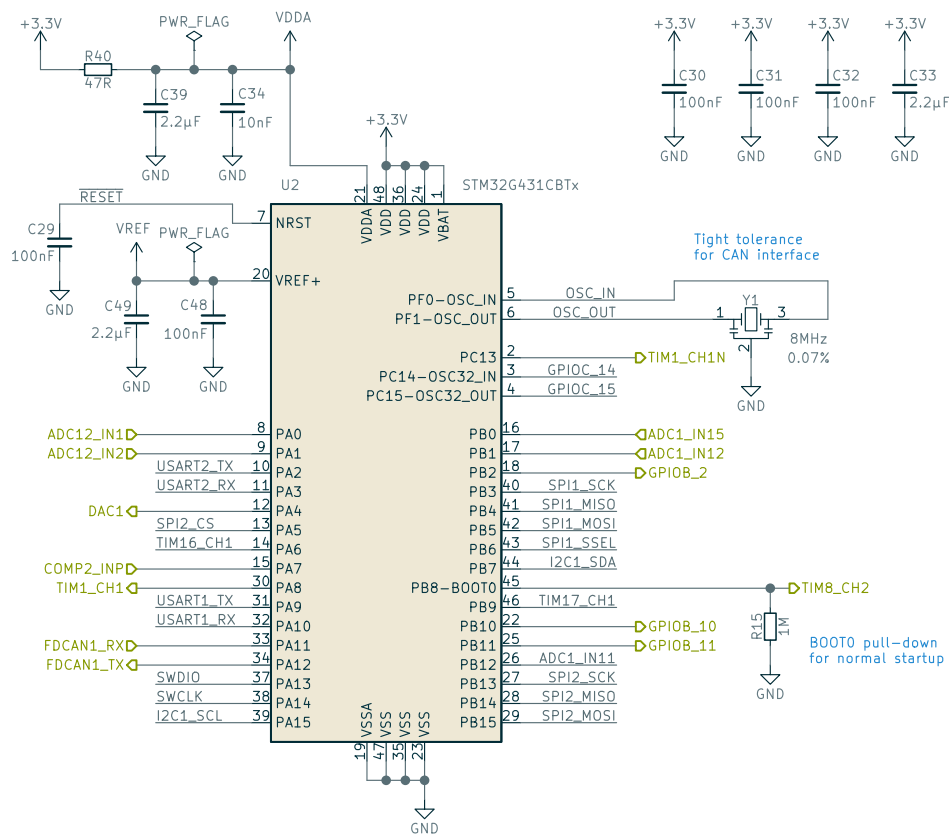
Size: A4 Date: 2021-01-06

Rev: 0.2.2

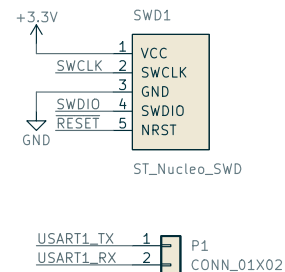
KiCad E.D.A. kicad 5.1.8

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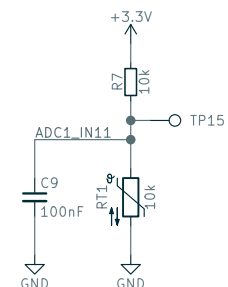
MCU STM32G431



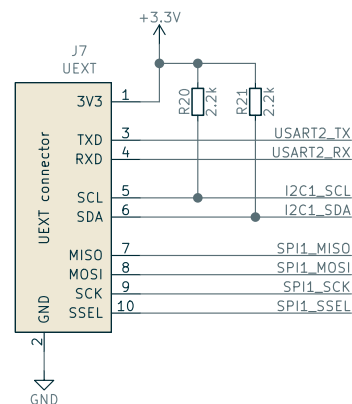
STM Nucleo SWD and USART



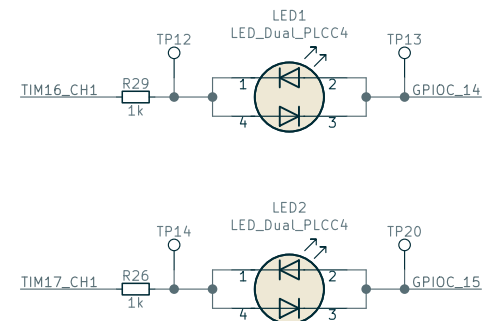
Internal temperature



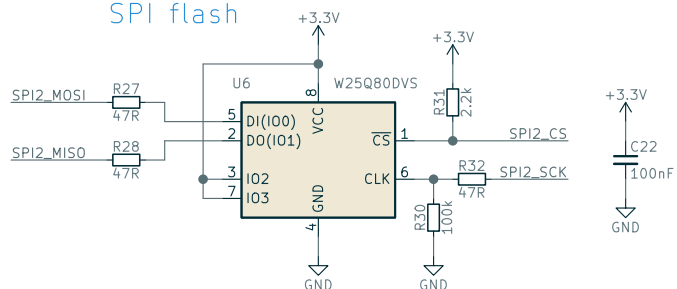
UEXT



Status LEDs



SPI flash



If not stated otherwise, all MLCC 50V X7R

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File: mcu.sch

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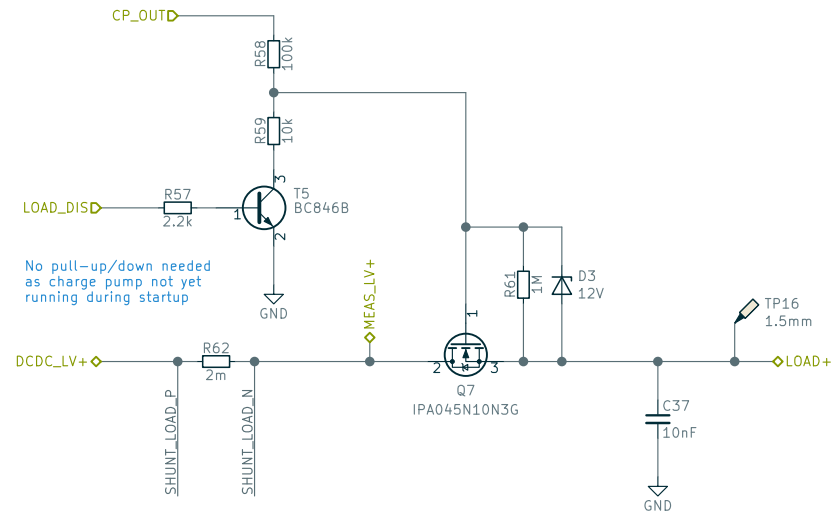
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Rev: 0.2.2

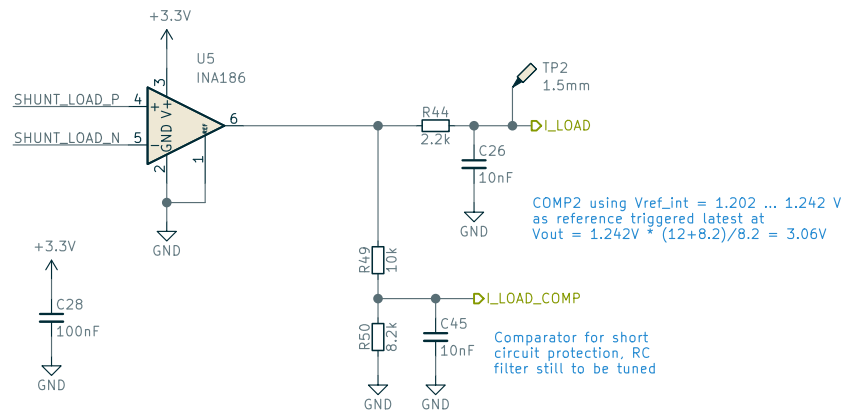
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High-side load switch



Load current monitoring



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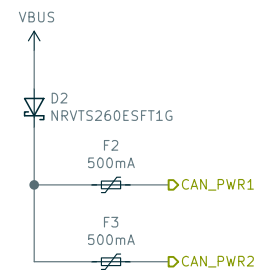
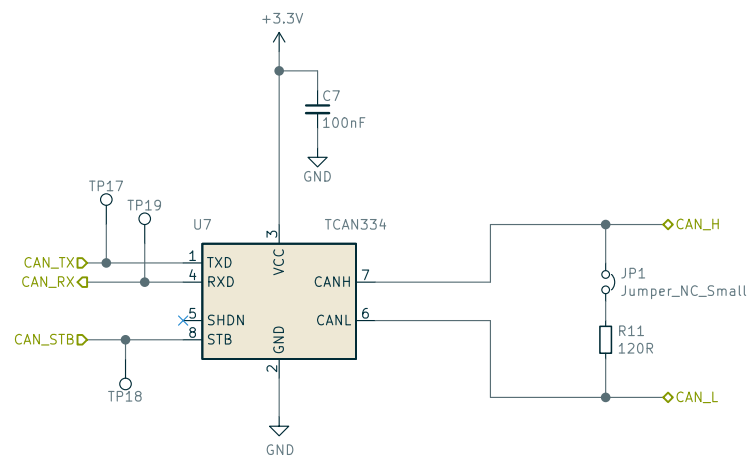
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If not stated otherwise,
all MLCC 50V X7R



CAN bus power supply
 - 10V-32V
 - 600 mA (like PoE)

Diodes necessary to prevent
 separate GND loops.

Polyfuse to prevent
 over-current in daisy-chained
 bus with multiple sources and
 sinks.

MPPT 2420 HC		 LIBRESOLAR
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