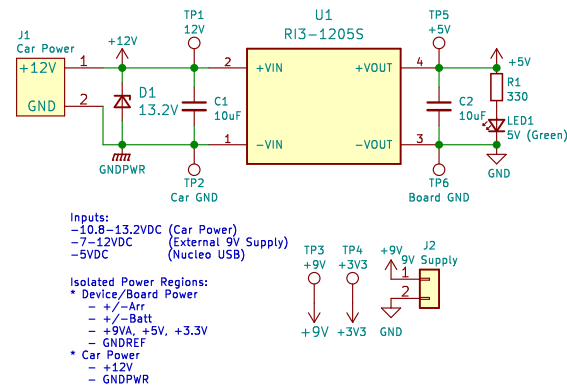
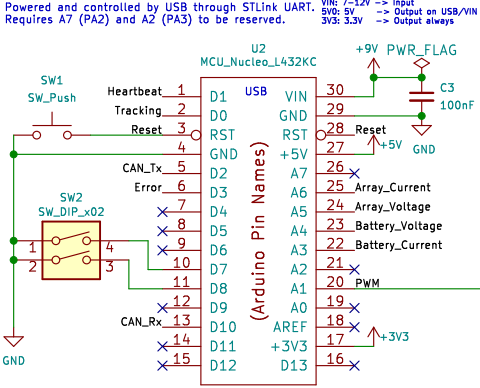


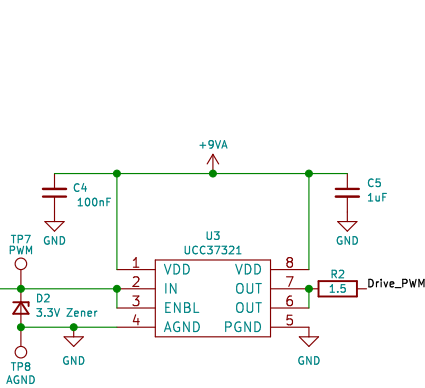
Power Regulation



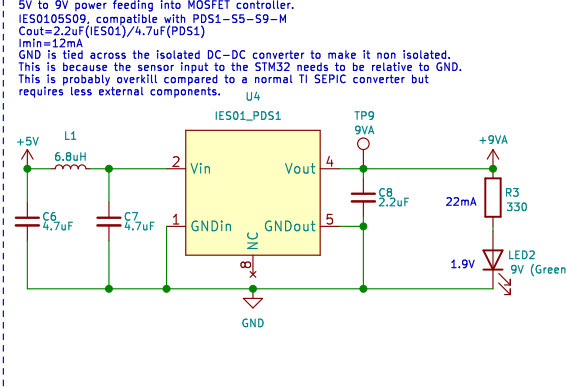
Nucleo Connections



PWM Gate Driver



DC-DC Converter



v3.2.0

- Schematic:
- Reannotated all component labels and reverted rescued schematic symbols.
 - Rearranged schematic and cleaned up component positioning.
 - Created Array.lib for array-relevant schematic symbols.
 - Swapped out zener diodes going into the uC from 3.6V to 3.9V.
 - Updated the LEDs and resistors for Xx_live indicators.
 - Added Error indicator LED.
 - Shifted pins for voltage/current sensors to accommodate STLink UART2.
 - Added fuse on the array side.
 - Added unity gain filter to voltage sensors.
 - Errata: swapped 0.22uF and 10uF capacitors on CAN circuit to correct positions.

Layout:

- Moved MPPT-PrimaryPCB.pretty for custom footprints.
- Specified that board should be 2oz copper/ft.
- Re-specified snubber circuit footprints.
- Comprehensive redesign of layout.

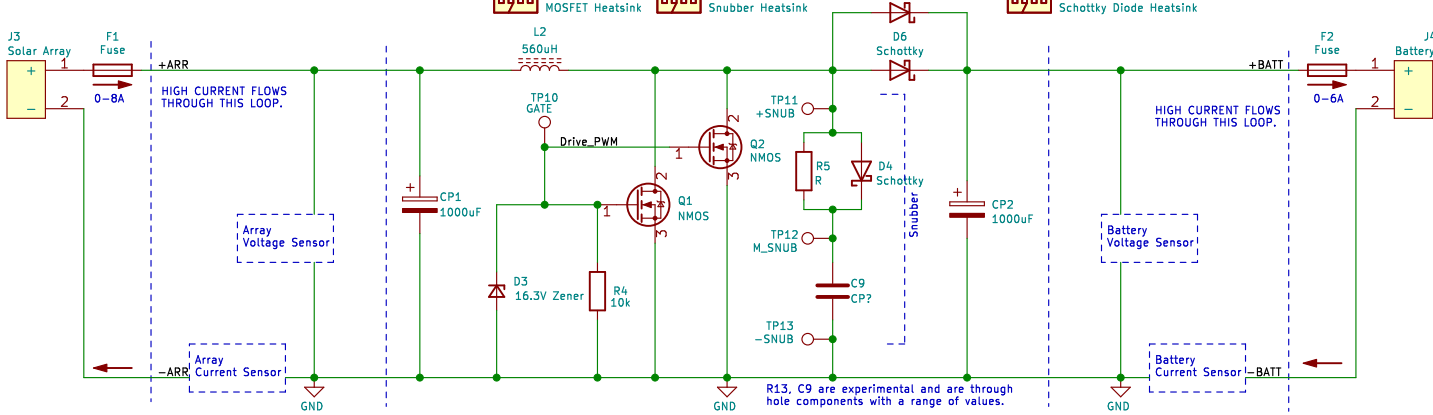
v3.3.0

- Schematic:
- BOM consolidated to JLCPCB.
 - BOM merged into schematic component fields.
 - Removed RC filters from voltage sensors.
 - Replaced MAX chip with LM358.
 - Downshifted 3.9V zeners to 3.3V.
 - Removed general purpose switching diodes.

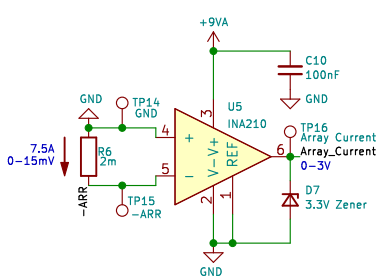
Layout:

- Moved footprints from MPPT-PrimaryPCB.pretty to Footprints.
- Dropped copper weight down to 1oz/ft.
- Places JLCPCB passives on same side.
- Reduced power path area.
- Moved sensor paths away from high power current path.
- Stitching vias and secondary GND plane for thermal and EMI improvement.

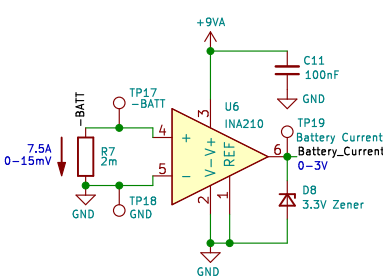
DC-DC Boost Converter



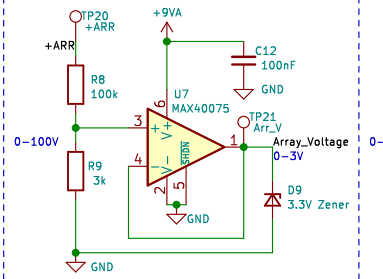
Array Current Sensor



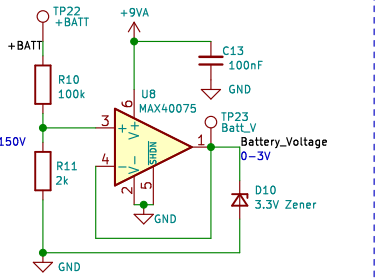
Battery Current Sensor



Array Voltage Sensor

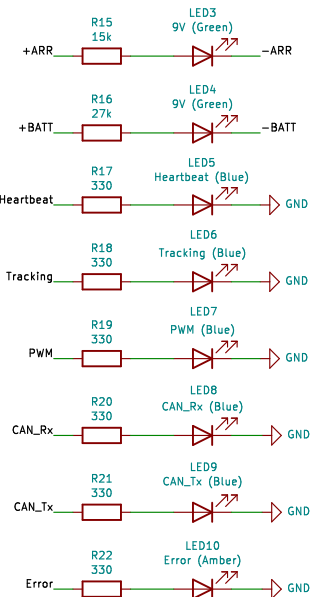


Battery Voltage Sensor

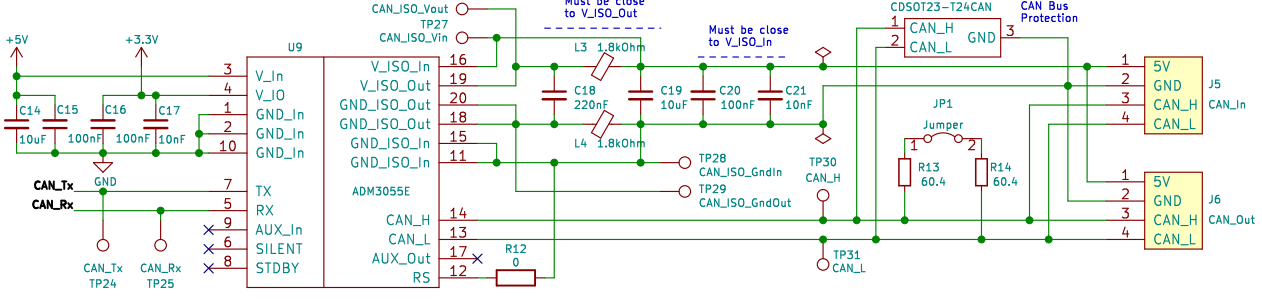


LEDs

Status LEDs for at-a-glance information



CAN



- H1 Top Left Mounting Hole
- H2 Top Right Mounting Hole
- H3 Bottom Left Mounting Hole
- H4 Bottom Right Mounting Hole

Gary Hallock
Matthew Yu
Longhorn Racing Solar
Sheet: /
File: MPPT.kicad_sch

Title: Sunscatter

Size: A3 Date: 2022-02-10
KiCad E.D.A. kicad (6.0.1)

Rev: 3.3.0
Id: 1/1