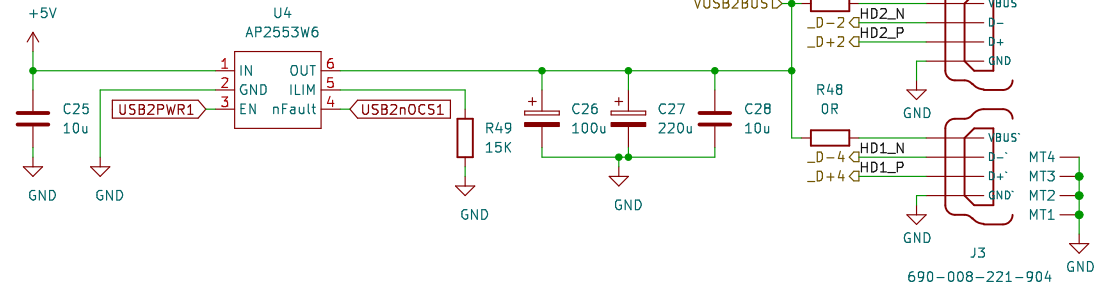
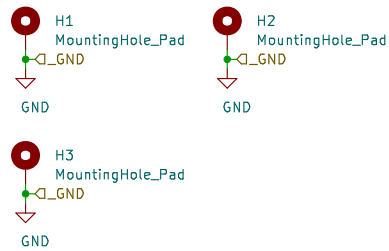
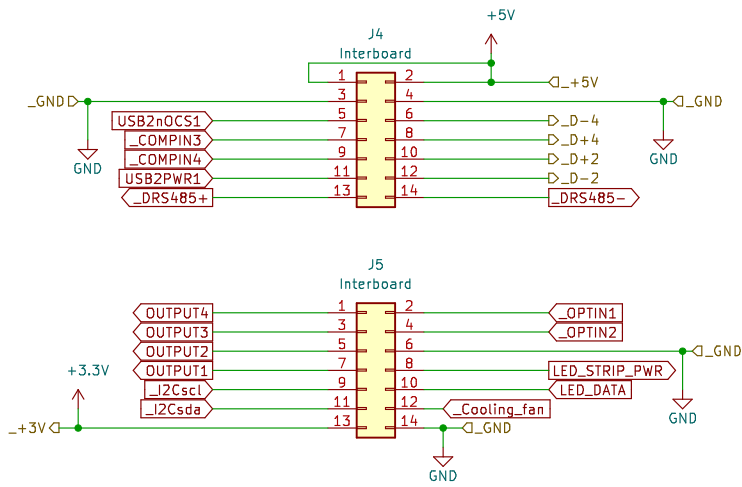
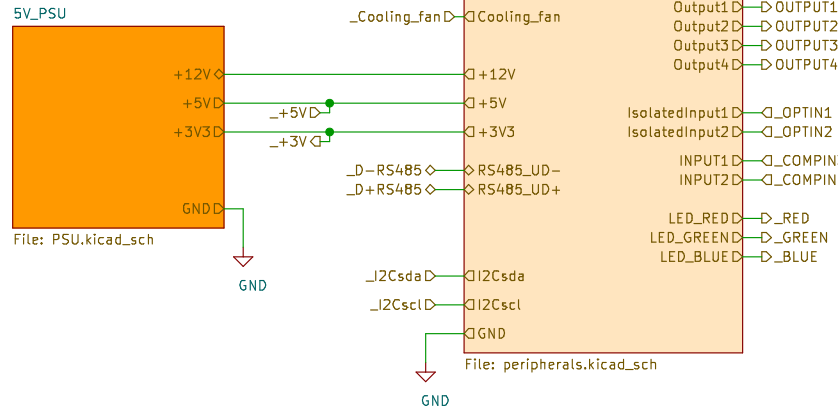
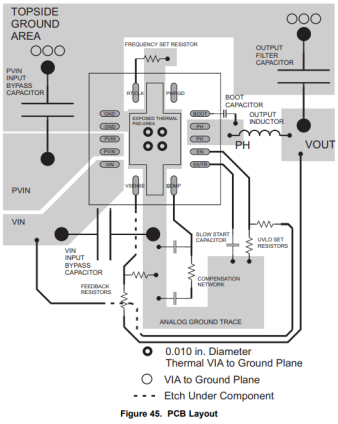


Utility Control Unit Utilityboard

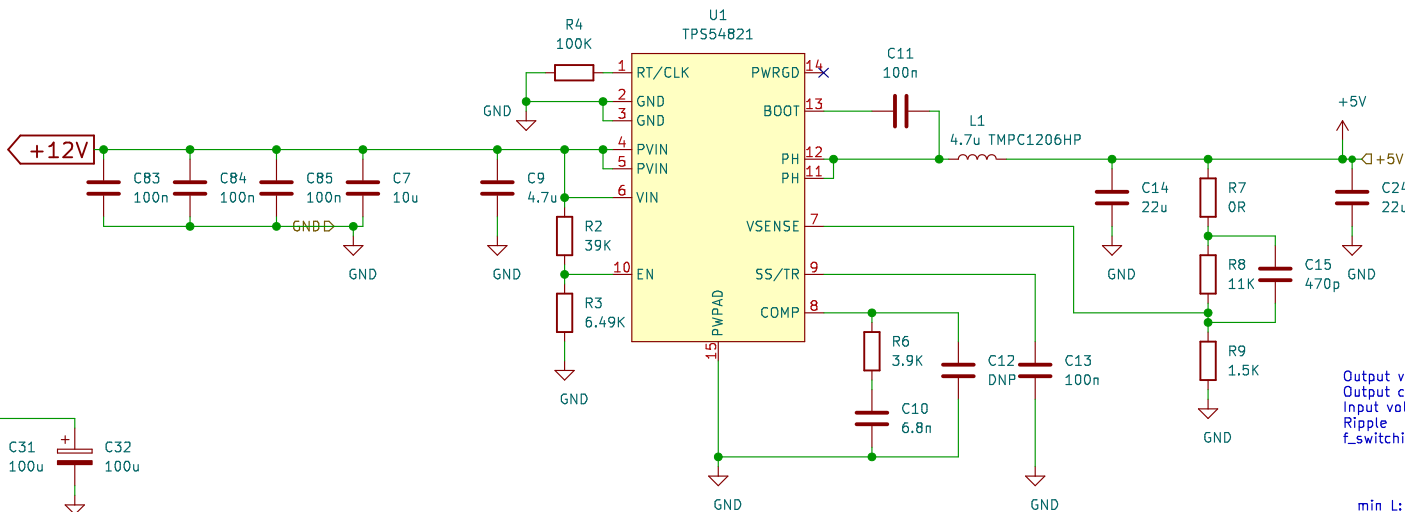


Hendrik-Jan Kuijt & Bauke Spoelstra	
Sheet: /	
File: utilboard.kicad_sch	
Title: Utilityboard overview	
Size: A4	Date:
KiCad E.D.A. kicad 6.0.4-6f826c9f35-116-ubuntu20.04.1	Rev: 0.1
	Id: 1/3

10.2 Layout Example

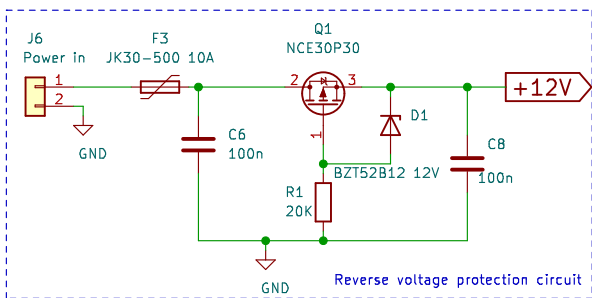
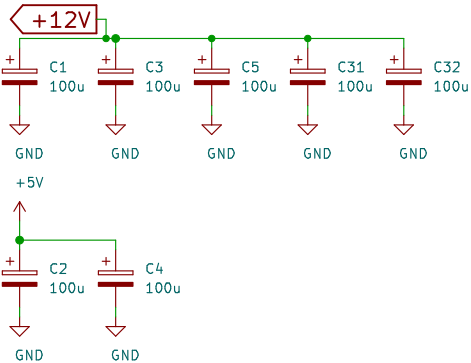


12V to 5V step-down converter



TPS54821 spreadsheet: <https://docs.google.com/spreadsheets/d/1GVXWRzoznQ3wXli0nzFJJSqjqZMDvAfcQGtnKoLrYA/edit?usp=sharing>

Bulk capacitance



Hendrik-Jan Kuljt

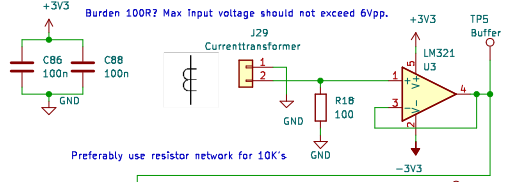
Sheet: /5V_PSU/
 File: PSU.kicad_sch

Title: Utilityboard 5V power supply

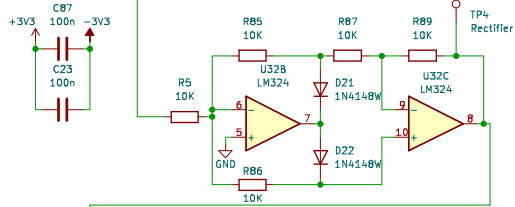
Size: A4 Date: KiCad E.D.A. kicad 6.0.4-6f826c9f35-116-ubuntu20.04.1

Rev: 0.1
 Id: 2/3

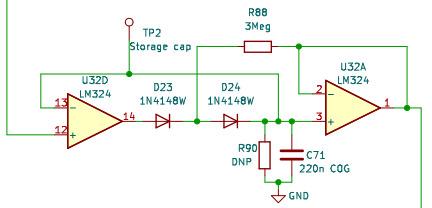
Current transformer



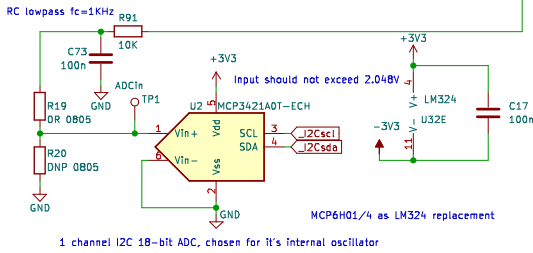
Current transformer buffer



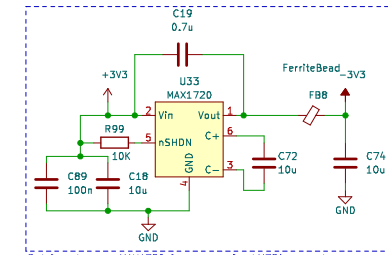
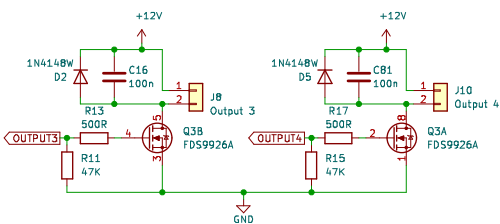
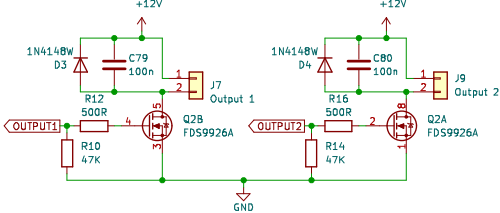
Dropless rectifier



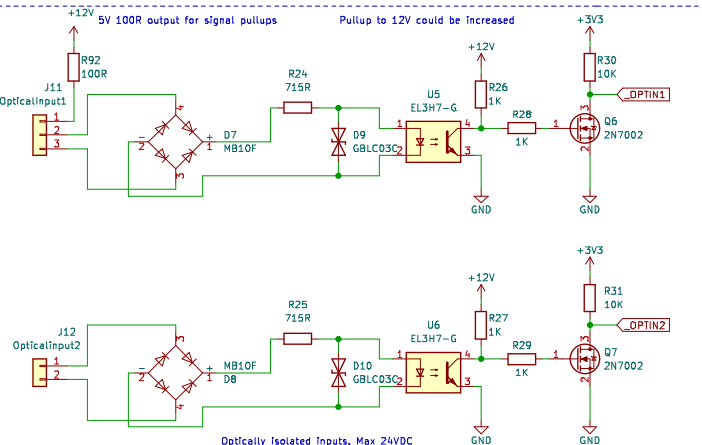
Peak detector



4A outputs (Can be used for switching relays)

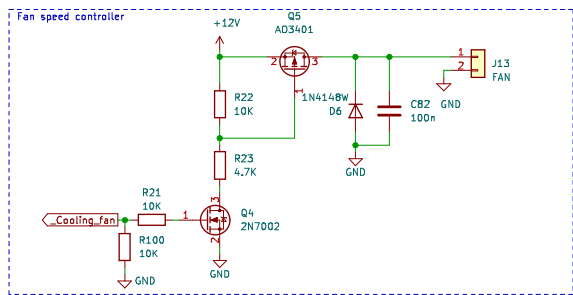


Polyfuse to save MAX1720 from excessive LM324 currents

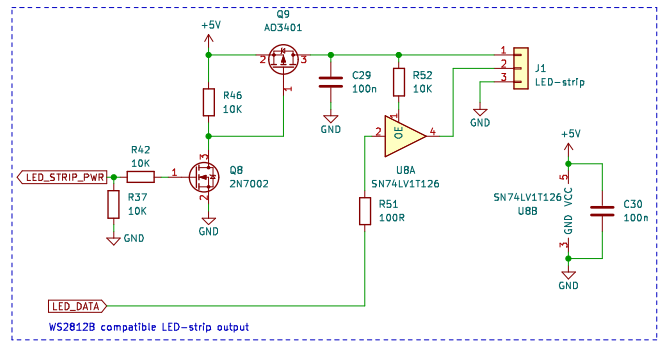


Optically Isolated Inputs. Max 24VDC

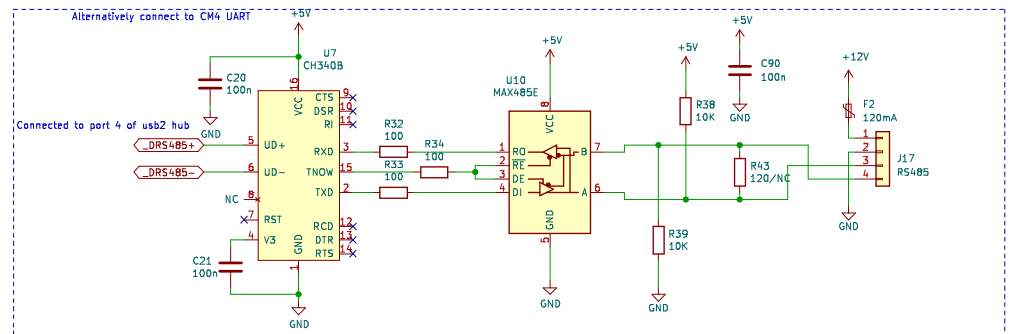
Peripherals



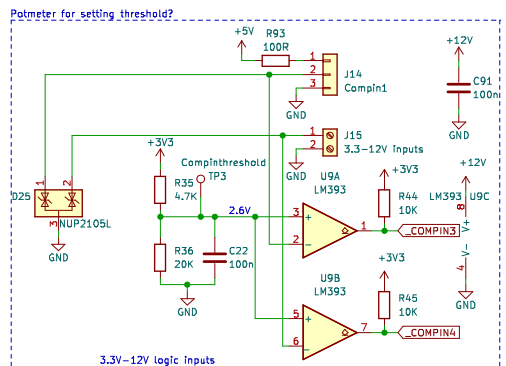
Fan speed controller



WS2812B compatible LED-strip output



Alternatively connect to CH4 UART



Potmeter for setting threshold?