

Bias power supply with SMPS pre-regulator

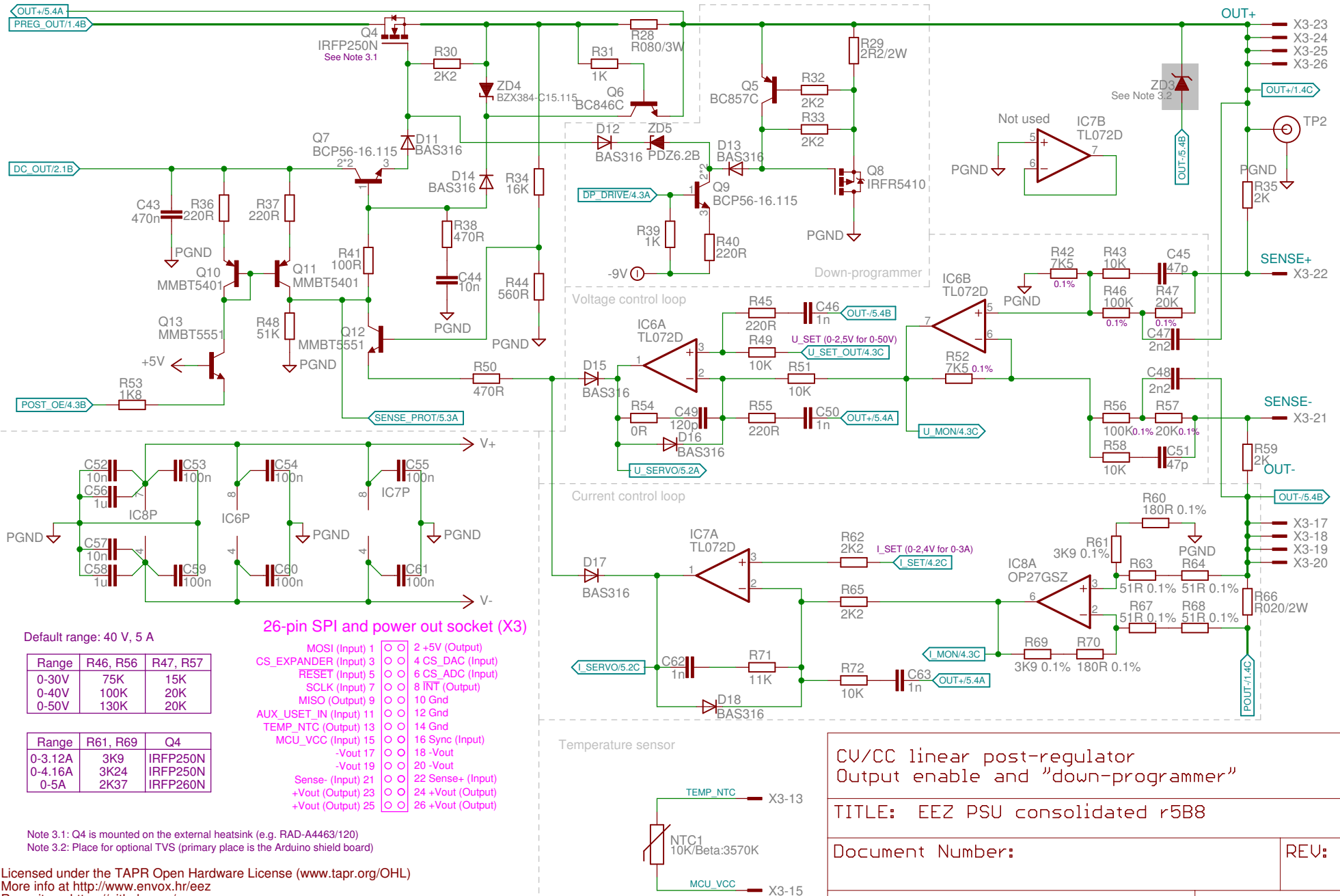
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Note 3.1: Q4 is mounted on the external heatsink (e.g. RAD-A4463/120)  
Note 3.2: Place for optional TVS (primary place is the Arduino shield board)

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More info at <http://www.envox.hr/eez>  
Repository: <https://github.com/eez-open>

# Digital control (SPI)

SSW-113-02-T-D-RA

X3-9 PS\_MISO

X3-5 PS\_RESET

X3-1 PS\_MOSI

X3-7 PS\_SCLK

X3-3 CS\_EXPANDER

+5V

X3-2

X3-10

X3-12

X3-14

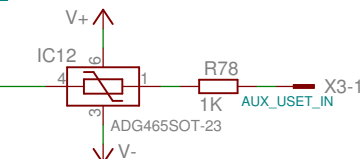
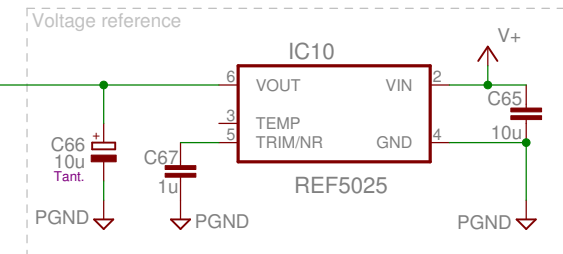
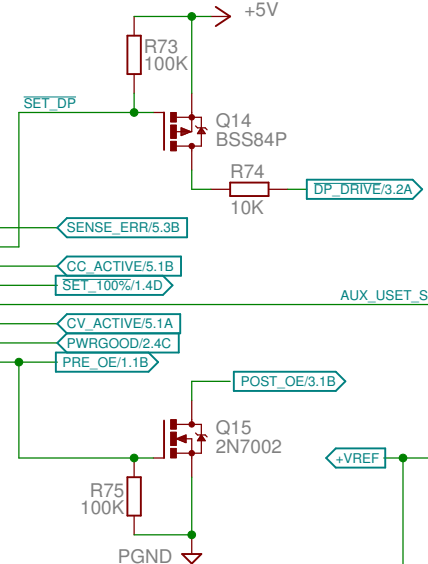
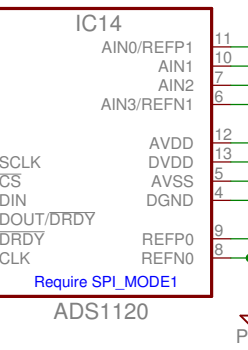
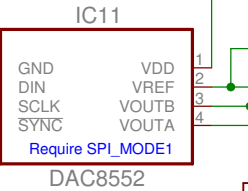
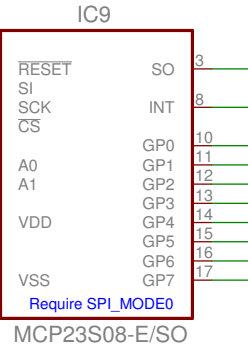
PGND

X3-8 INT

JP2-0R

X3-4 CS\_DAC

X3-6 CS\_ADC



I/O Expander		
Bit	Function	Direction
0	Sense error	Output
1	Down programmer disable	Output
2	CC	Input
3	Set 100% duty cycle	Output
4	Remote programming	Output
5	CV	Input
6	Power good	Input
7	Output enable	Output

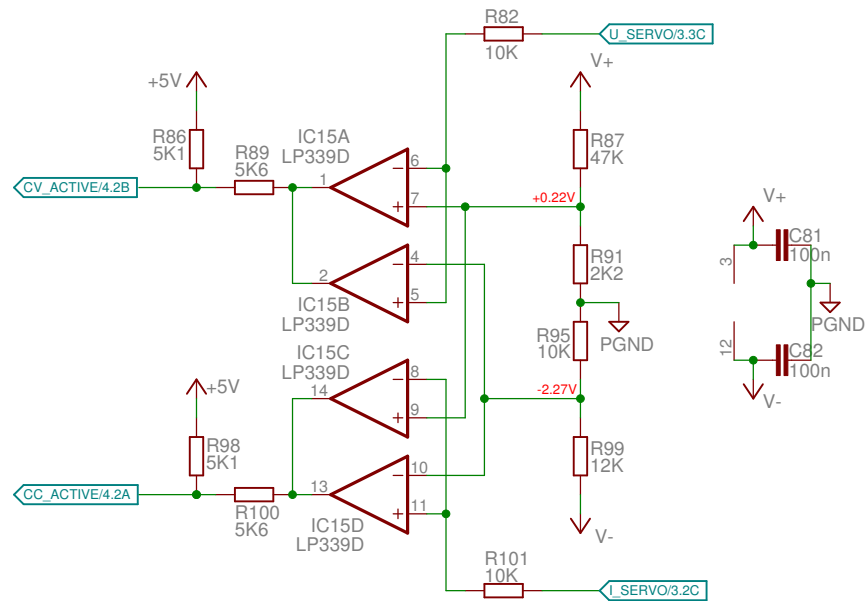
SPI I/O expander, DAC, ADC, Voltage reference  
Remote programming

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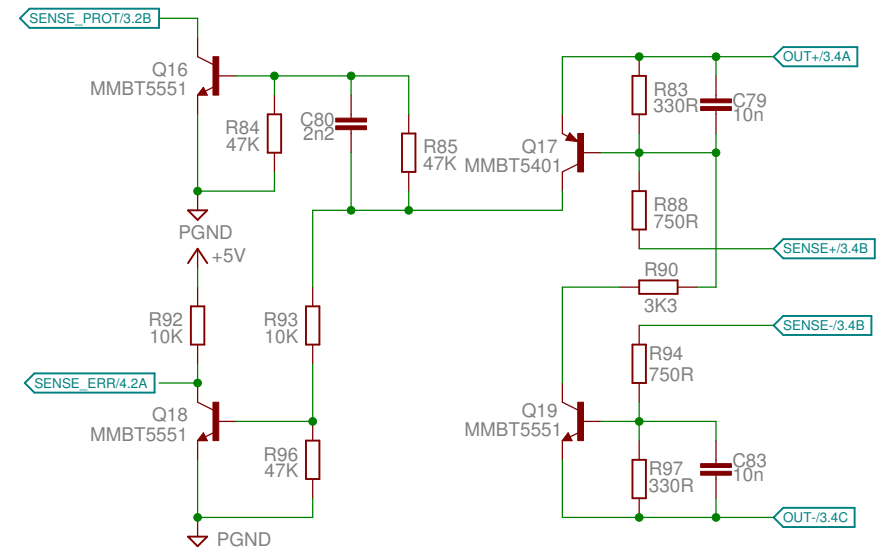
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Constant Voltage (CV) and Constant Current (CC) mode indicator



Remote sense reverse polarity detection



CC/CV indicators, Sense error detection

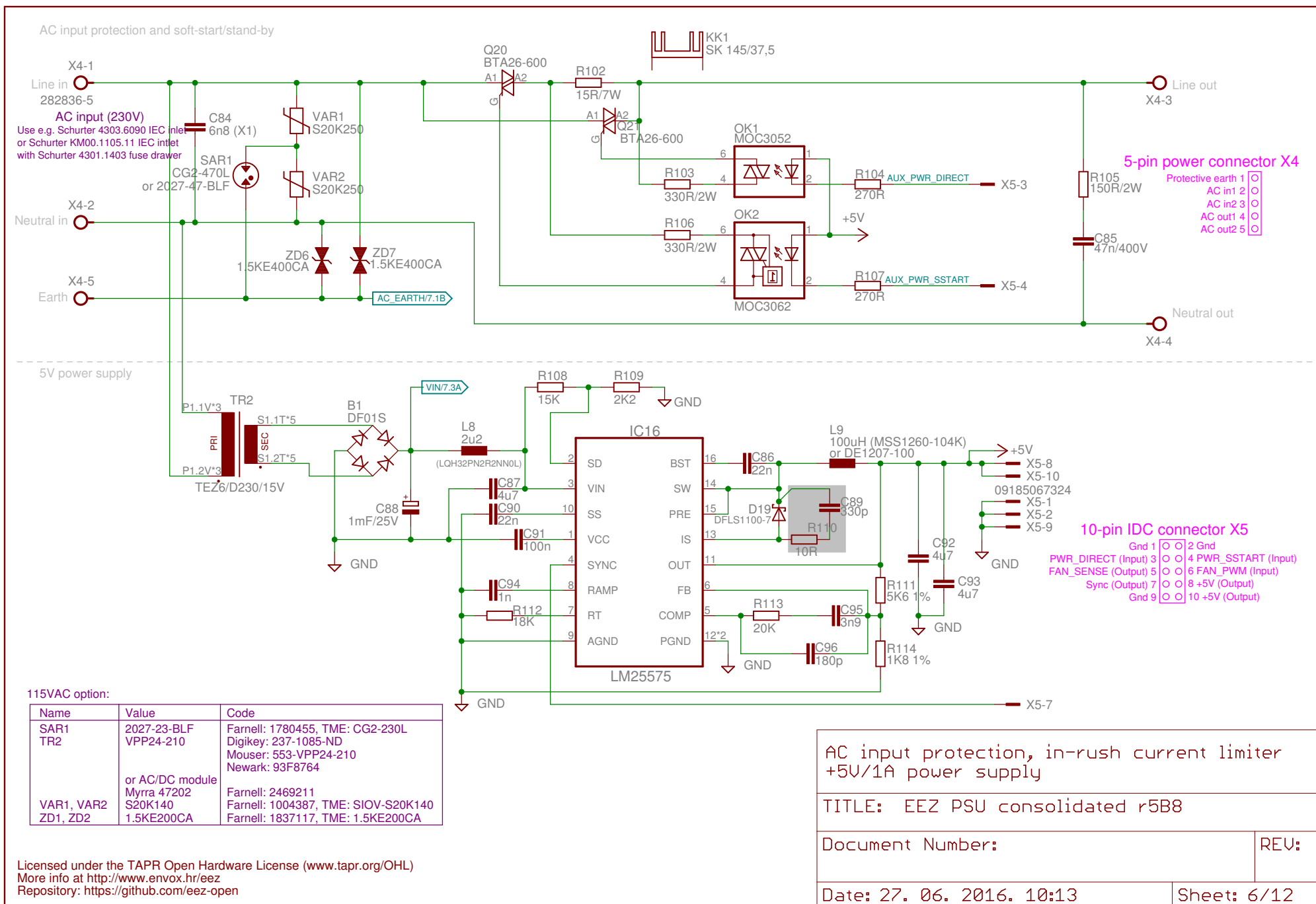
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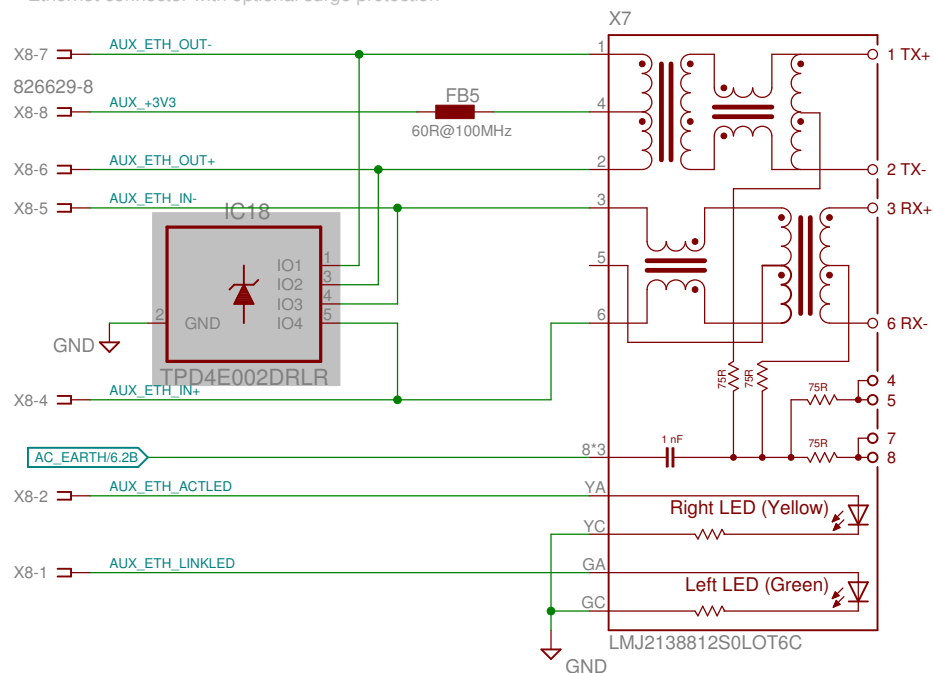
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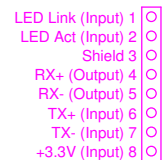
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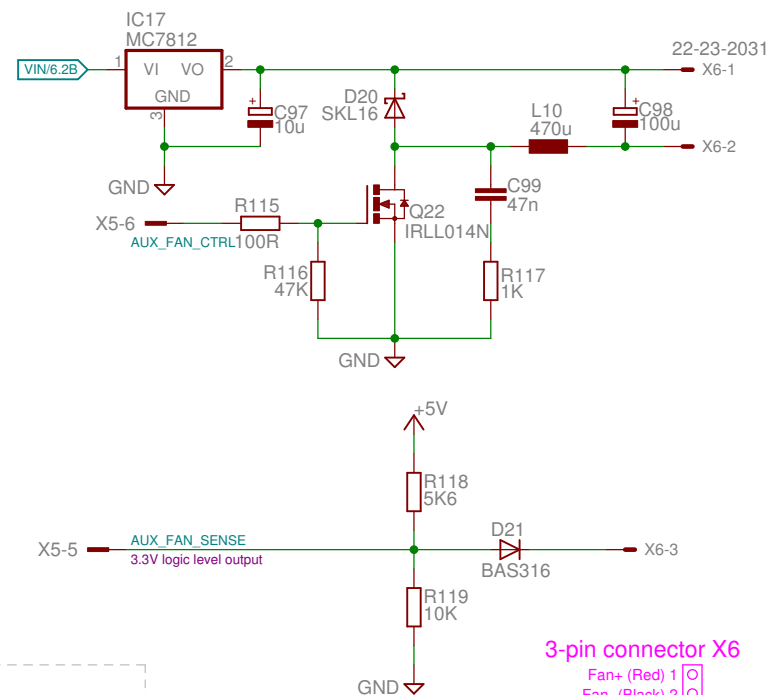
# Ethernet connector with optional surge protection



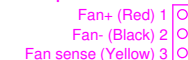
## 8-pin connector X8



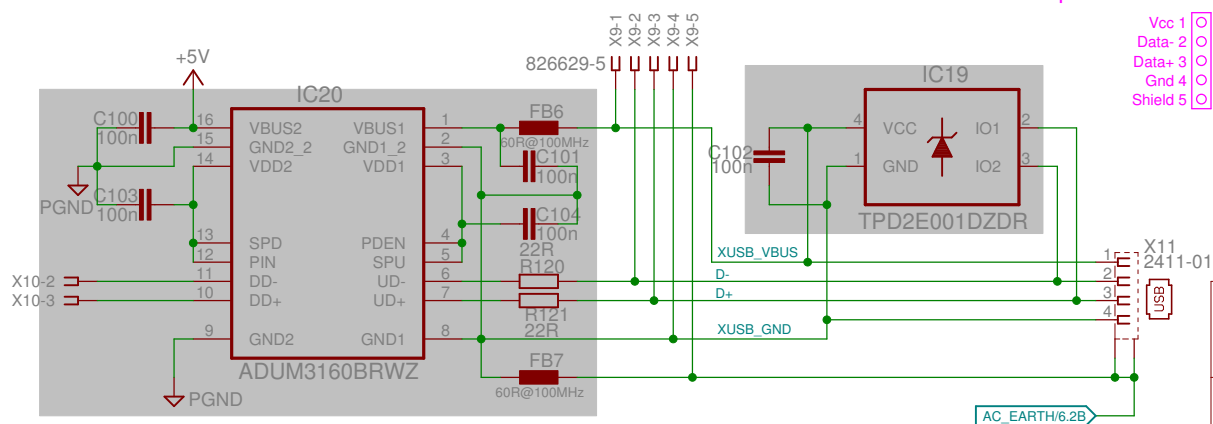
# 12VDC fan control



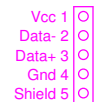
## 3-pin connector X6



# USB connector with optional isolator and surge protection



## 5-pin connector X9, X10



Note 7.1: Mount X4 and X8 on the opposite (top) side of the PCB. Use 14 mm (e.g. Bossard B3X14/BN3320) for enclosure with 3 mm rear panel

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Ethernet and USB PCB connectors  
 12VDC fan driver (max. 300 mA)

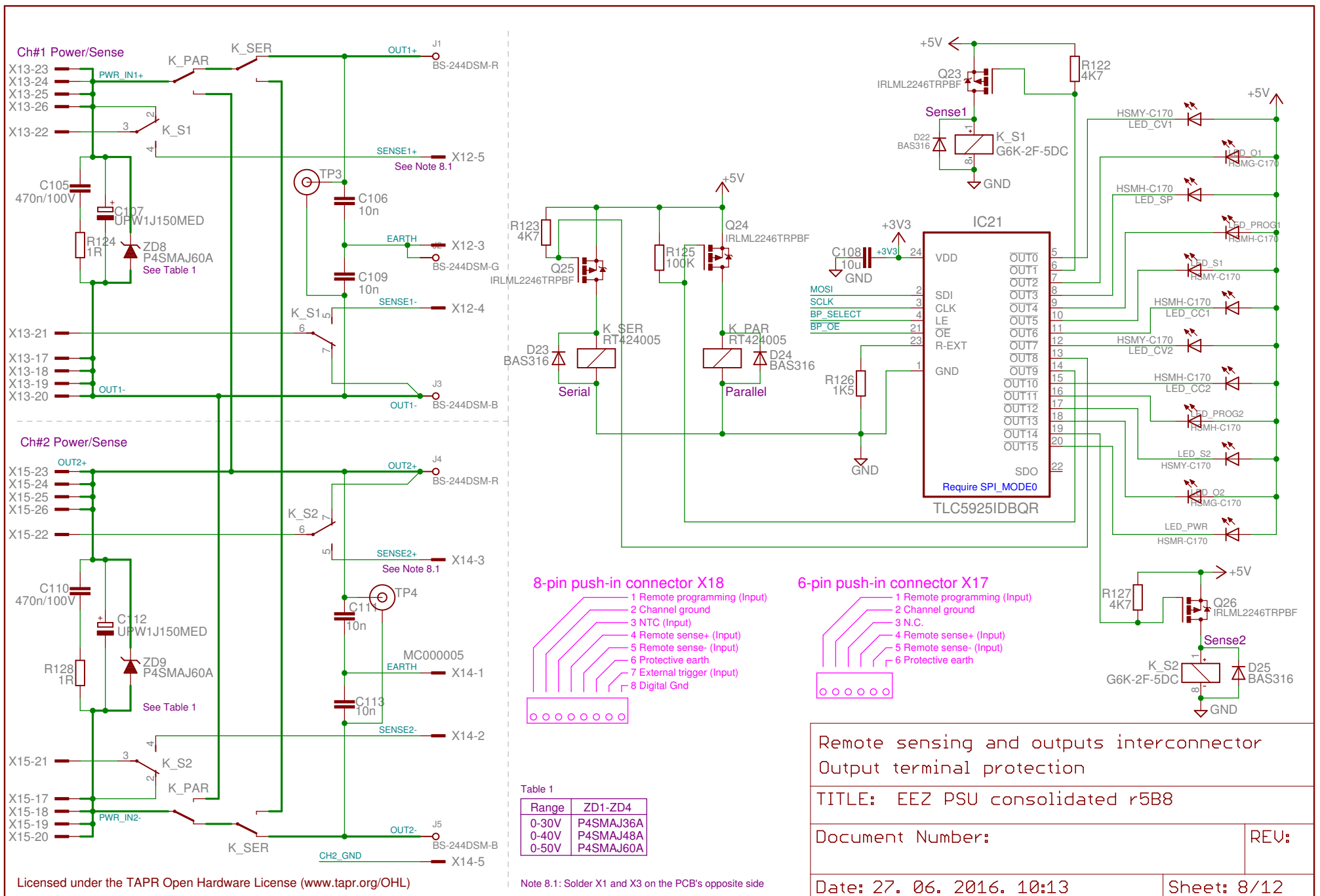
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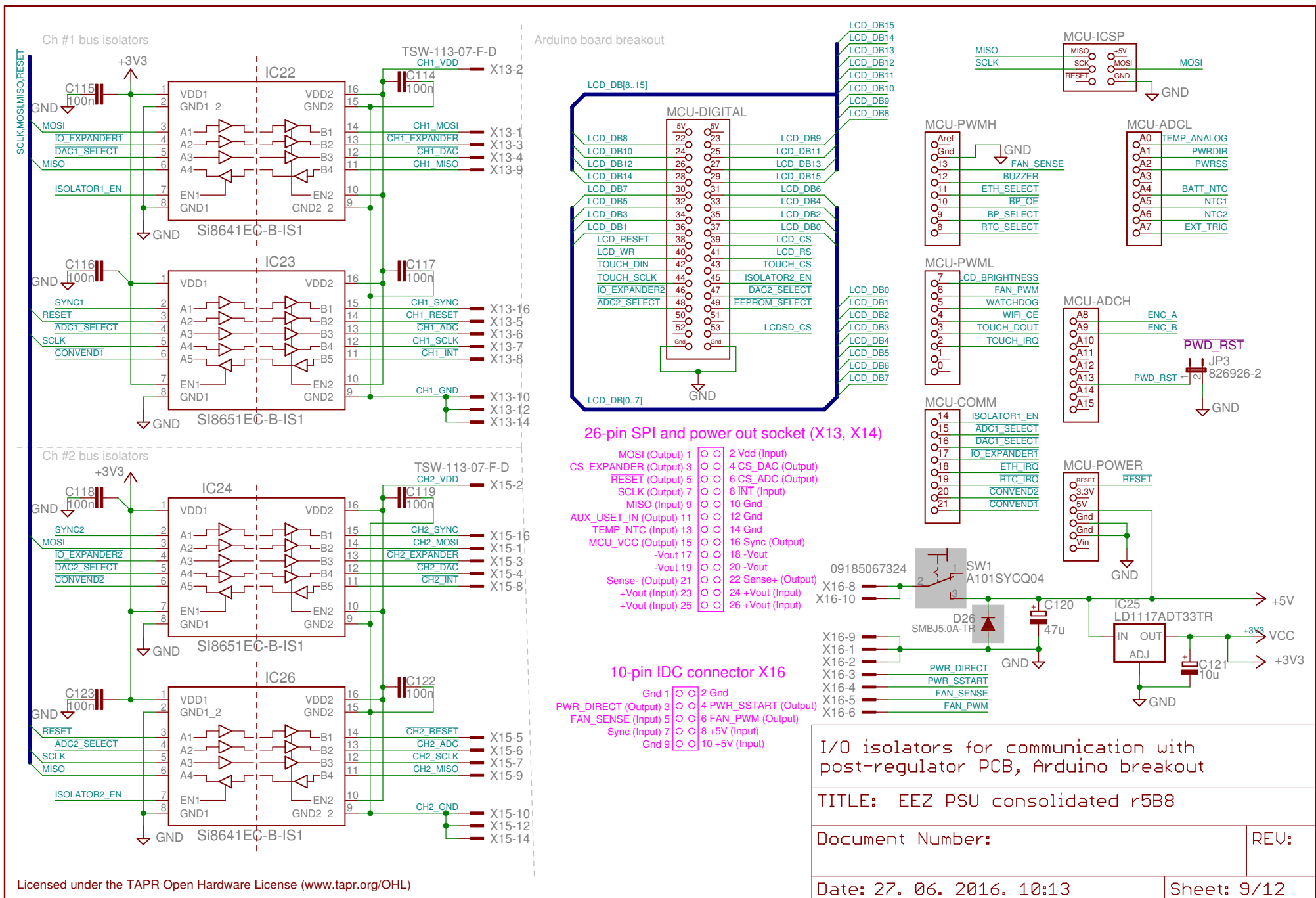
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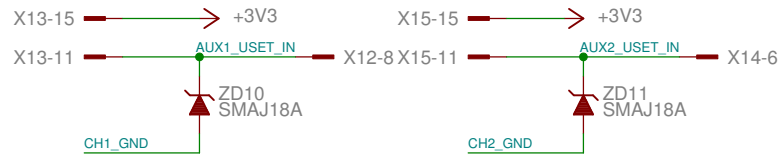




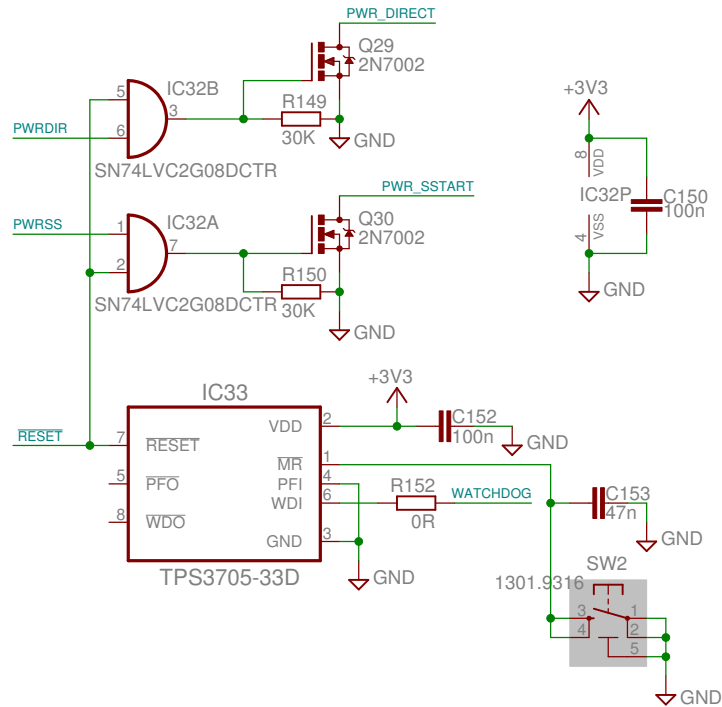




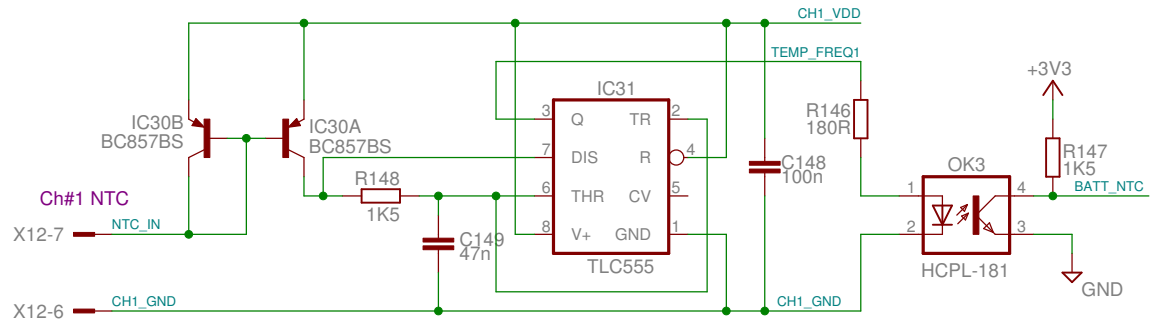
# Remote programming inputs



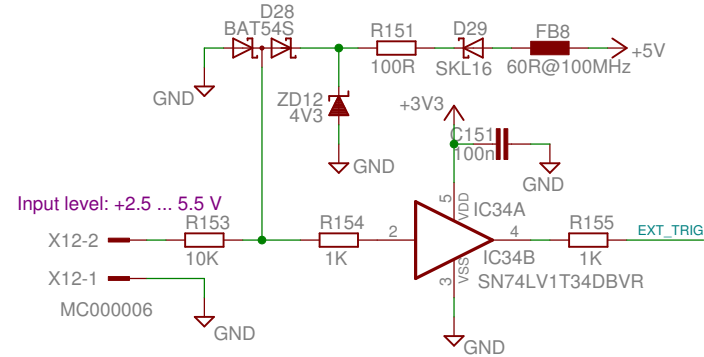
# Power-on reset generator and power control



# Channel 1 V/F converter for battery NTC (optional)



# External trigger protection and level shifter/buffer



LED CC/CV indicators, Reset control,  
Optional Ethernet module connector, External trigger,  
V/F converter for battery NTC (optional), Encoder (optional)

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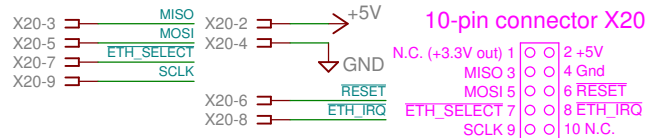
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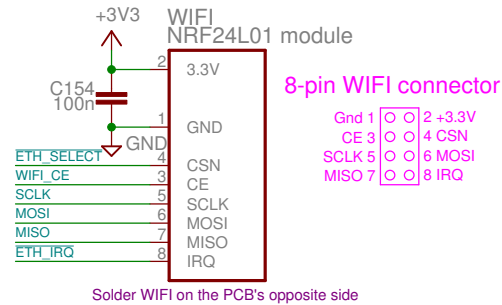
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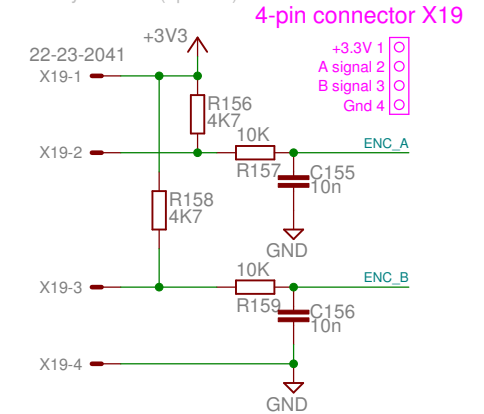
### Optional Ethernet module connector



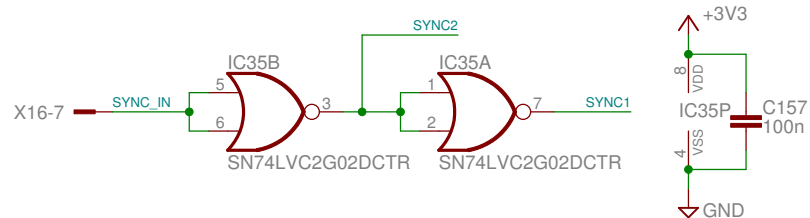
### Optional Wifi module connector



### Rotary encoder (optional)



### Master sync signal phase shifting



Optional ethernet, Wifi and encoder  
Power boards SMPS sync

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