

Note 1.1: Possible alternative IFR5305PbF, SPD30P06P or other with similar or lower input capacitance

Note 1.2: WE 7447709330, WE 7443551331, Coilcraft MSS1210-333, Coilcraft XAL1510-333, Vishay IHL4040DZER470M11, etc.

Note 1.3: Use 240K for 30 VAC main transformer

Note 1.4: Install 0R only if 100% Duty cycle feature is not needed (do not mount Q3 in that case)

Note 1.5: Use R020 for 0-3.12 A or R015 for 0-4.16 A range

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More info at <http://www.envox.hr/eez>

Repository: <https://github.com/eez-open>



SMPS power pre-regulator with 100% duty cycle

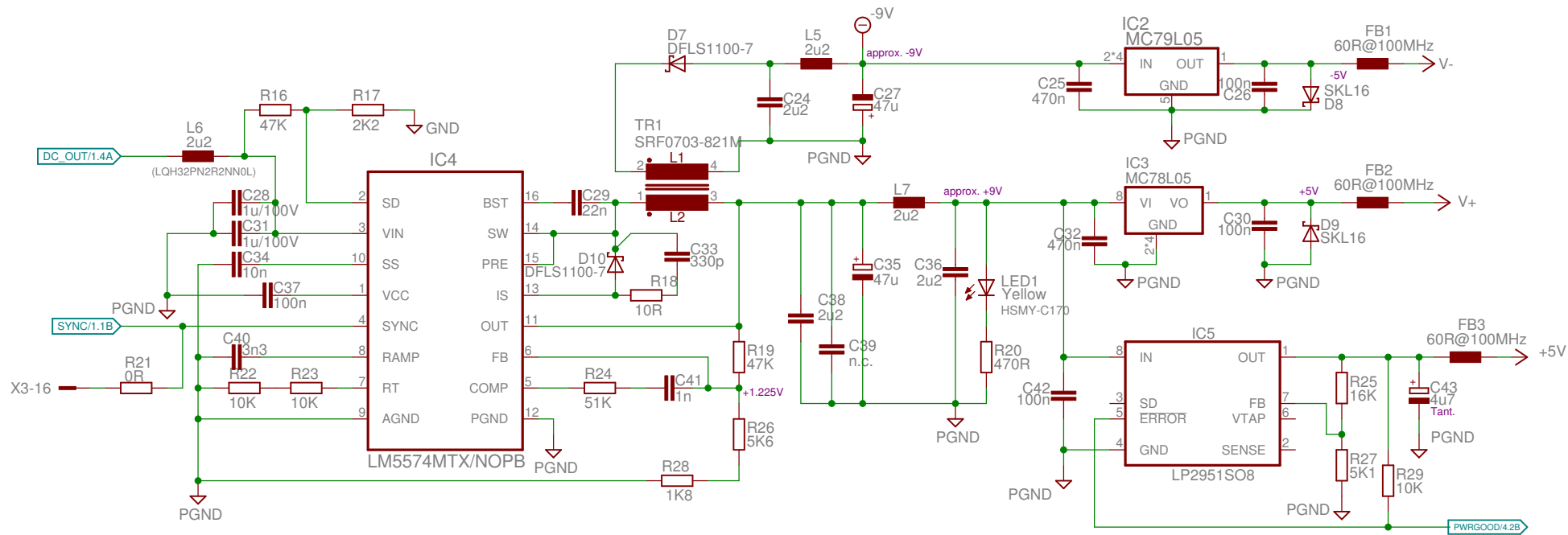
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Bias power supply with SMPS pre-regulator

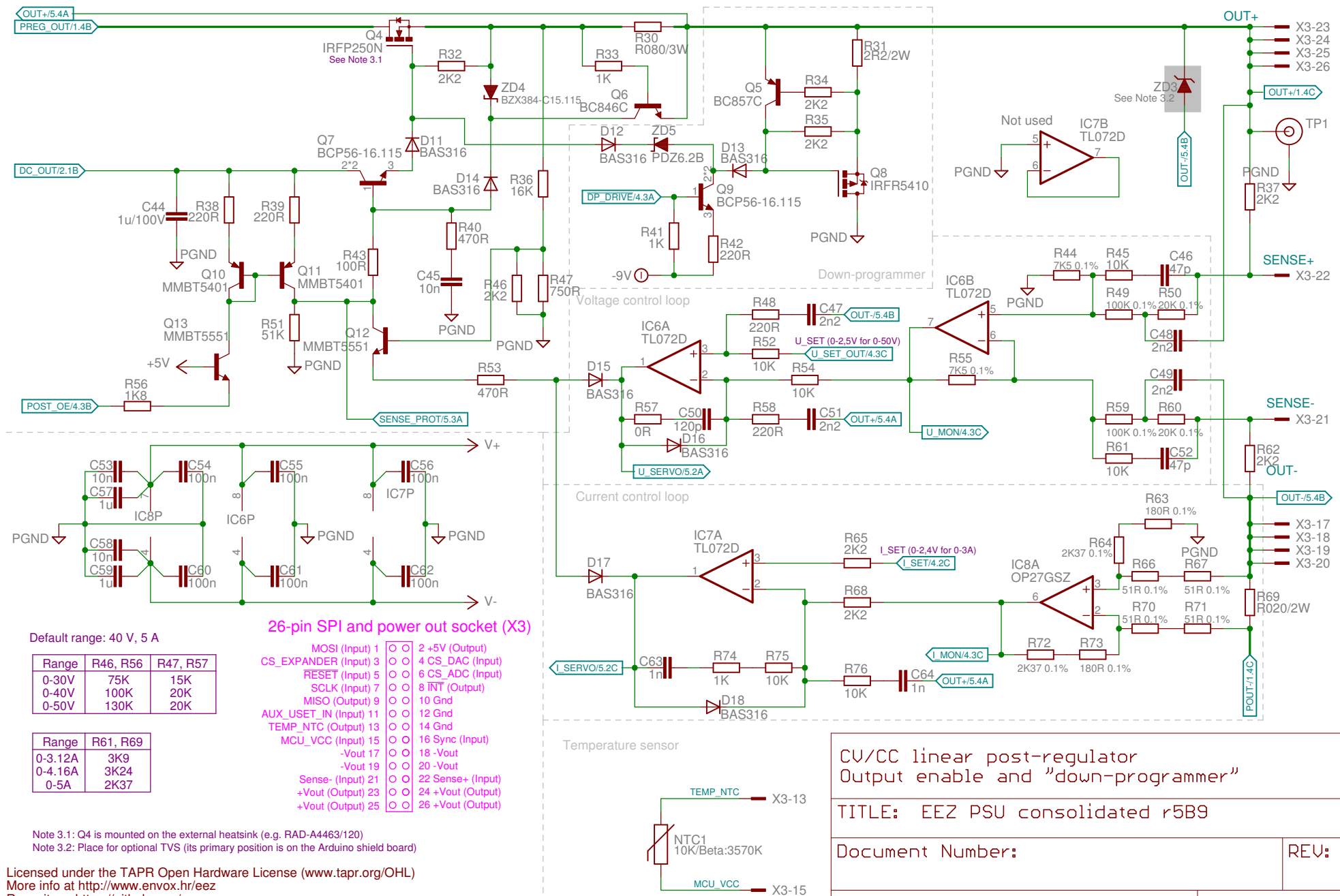
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Digital control (SPI)

SSW-113-02-T-D-RA

X3-9

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

PGND

PGND

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PGND

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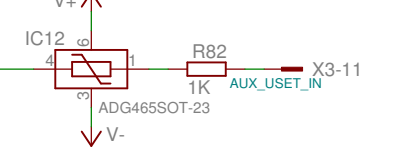
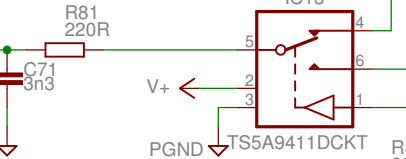
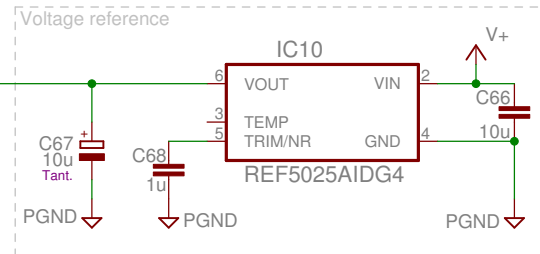
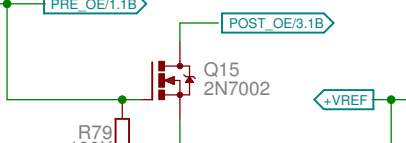
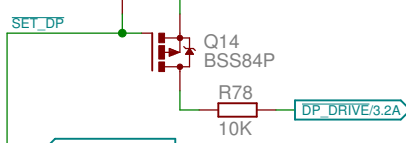
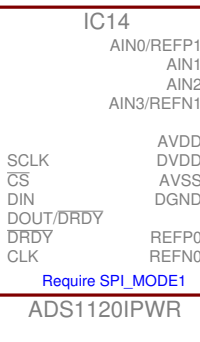
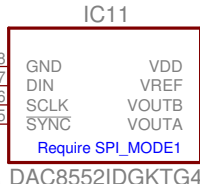
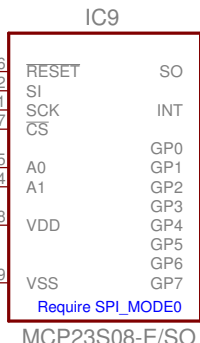
PGND

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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

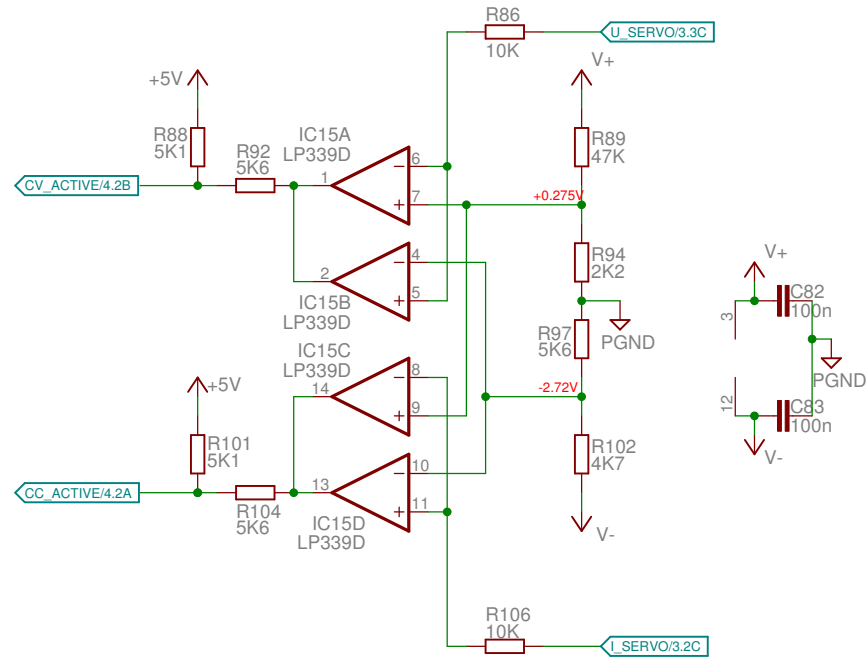
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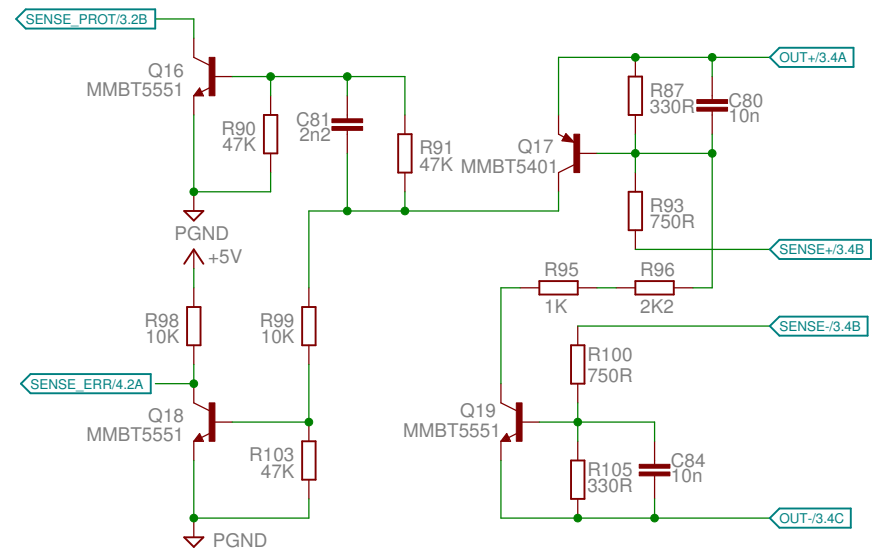
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Constant Voltage (CV) and Constant Current (CC) mode indicator



Remote sense reverse polarity detection



CC/CV indicators, Sense error detection

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LED Link (Input) 1	○
LED Act (Input) 2	○
Shield 3	○
RX+ (Output) 4	○
RX- (Output) 5	○
TX+ (Input) 6	○
TX- (Input) 7	○
+3.3V (Input) 8	○

22-23-2031

VIN/6.2B

X6-1

X6-2

X5-6

AUX_FAN_CTRL

R127 100R

R128 47K

GND

D20 SKL16

L10 470u

C97 100u

Q22 IRLL014N

C98 47n

R129 1K

+5V

R130 5K6

R131 10K

X5-5

AUX_FAN_SENSE

3.3V logic level output

D21 BAS316

X6-3

GND

3-pin connector X6

Fan+ (Red) 1

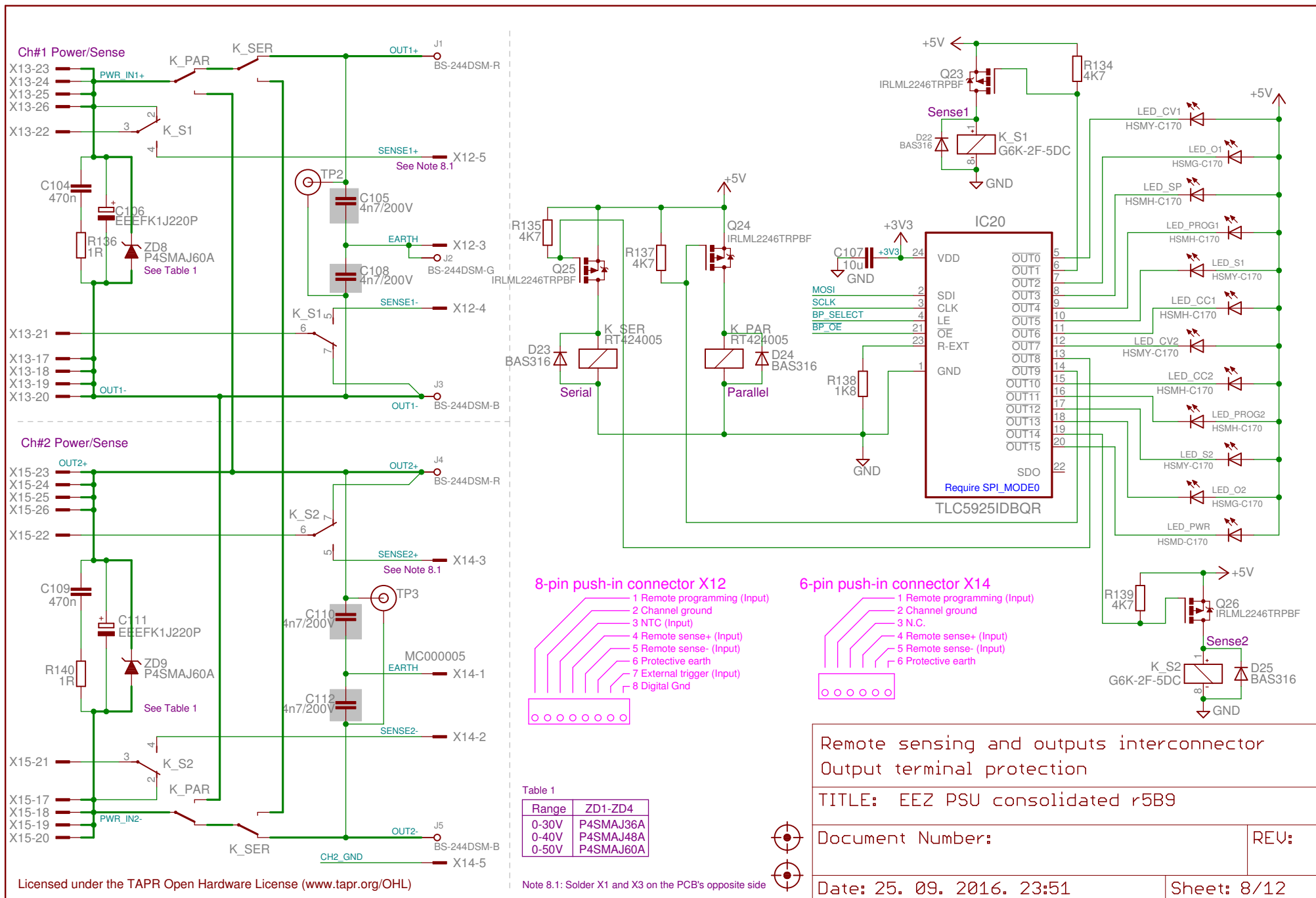
Fan- (Black) 2

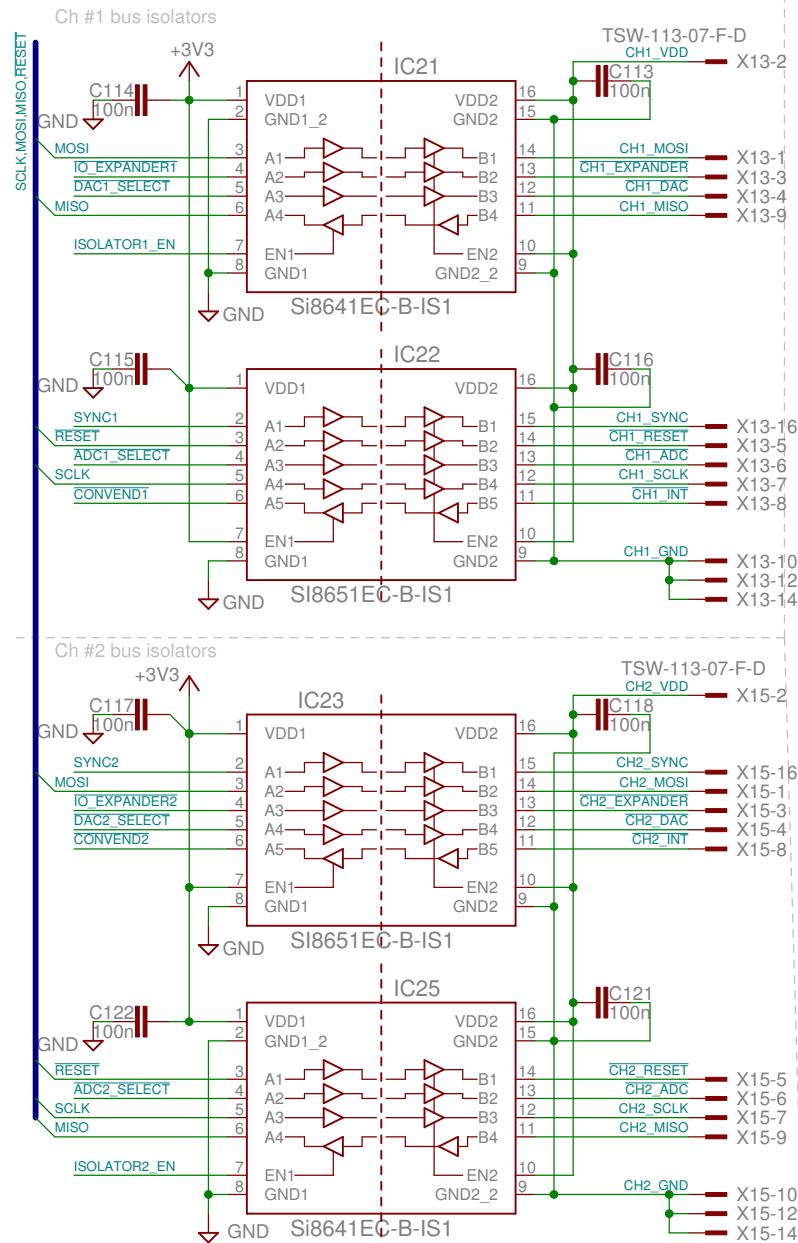
Fan sense (Yellow) 3

X9 X10

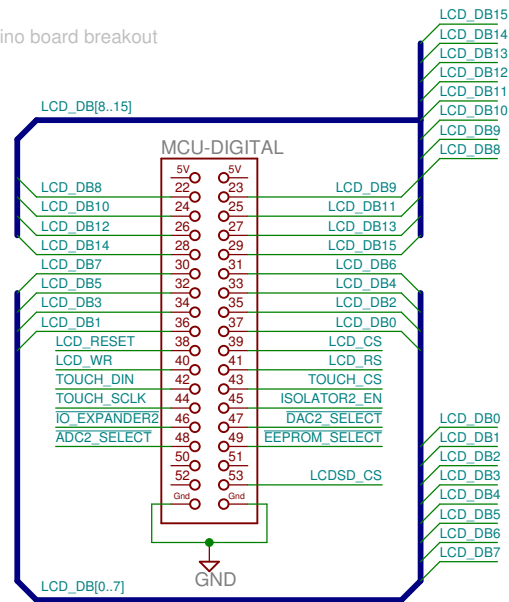
Vcc 1	<input type="radio"/>
Data- 2	<input type="radio"/>
Data+ 3	<input type="radio"/>
Gnd 4	<input type="radio"/>
Shield 5	<input type="radio"/>

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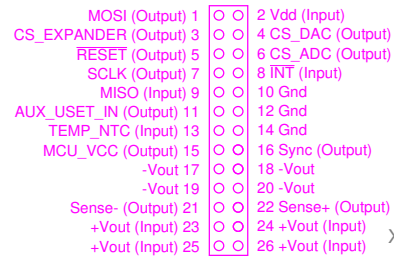




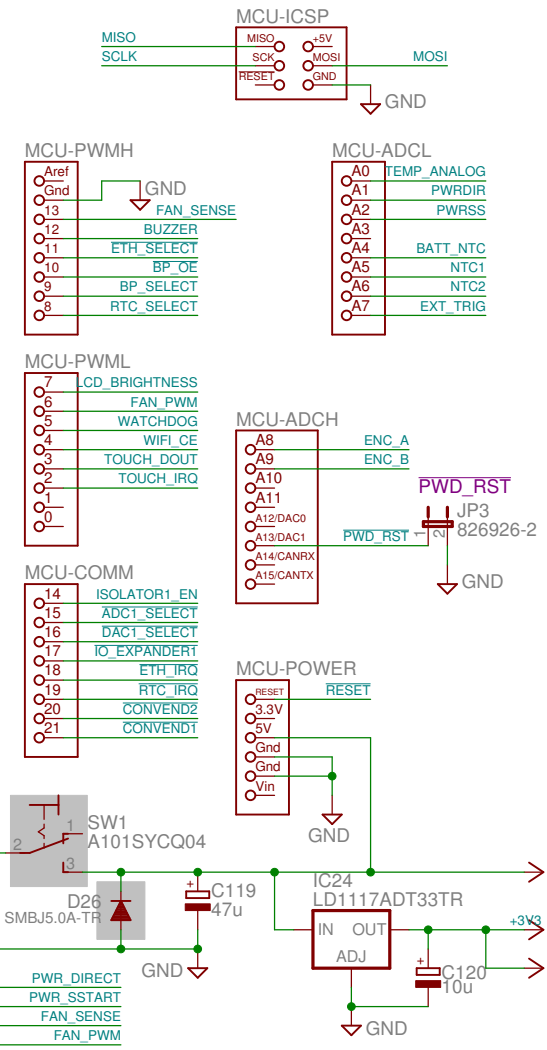
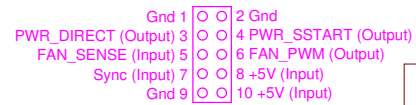
Arduino board breakout



26-pin SPI and power out socket (X13, X15)



10-pin IDC connector X16



I/O isolators for communication with post-regulator PCB, Arduino breakout

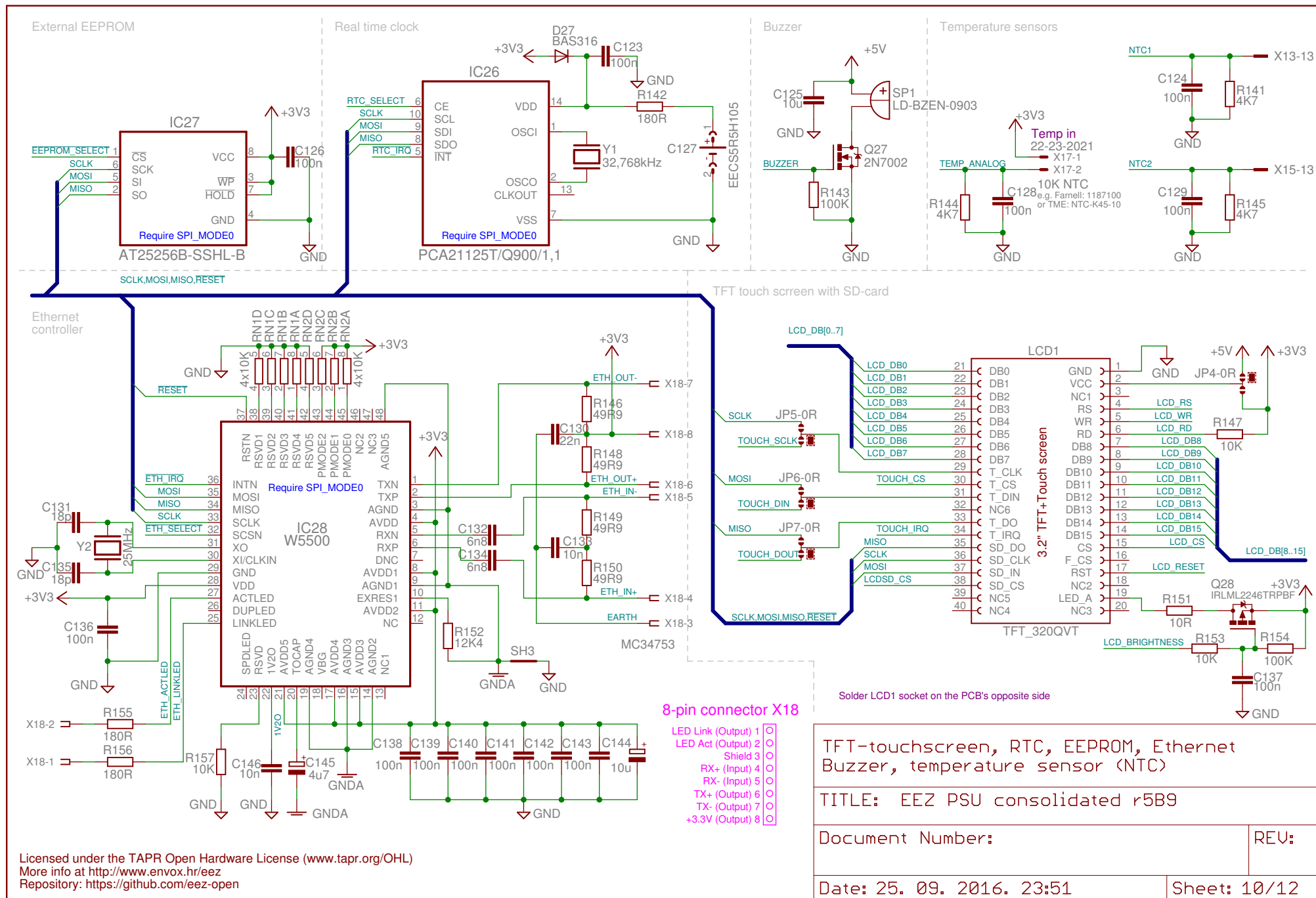
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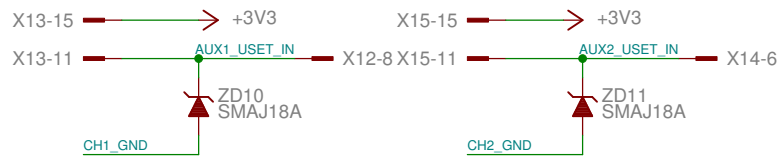
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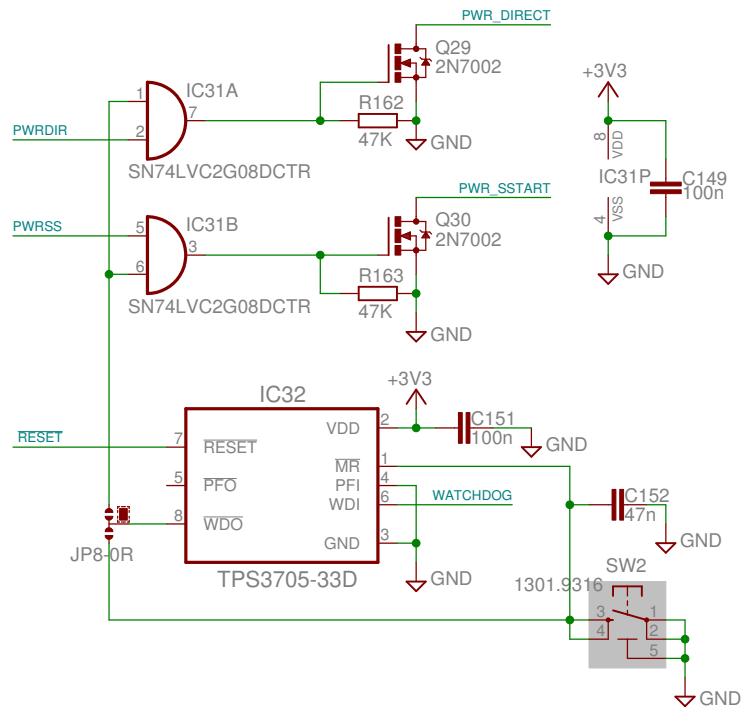
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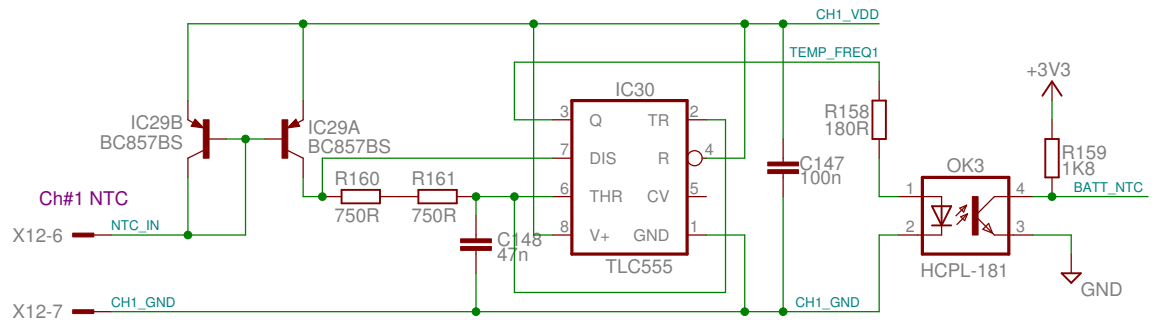
Remote programming inputs



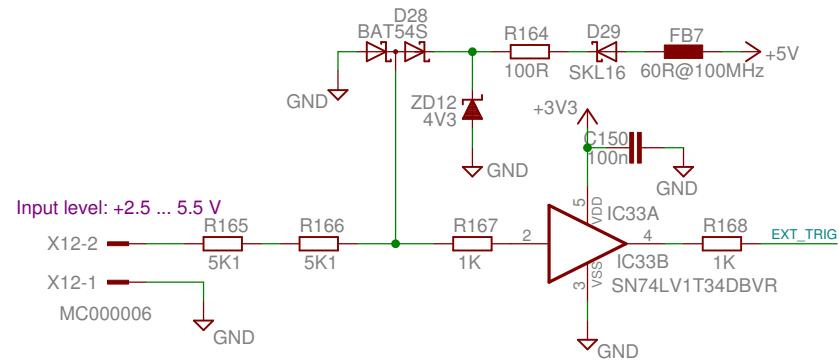
Power-on reset generator and power control



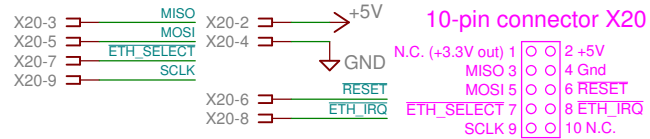
Channel 1 V/F converter for battery NTC (optional)



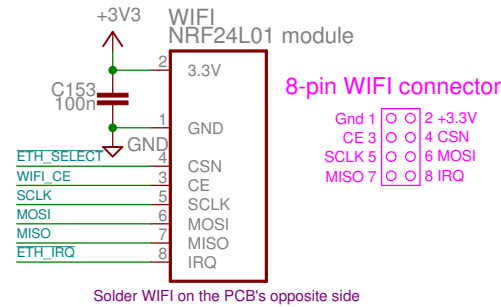
External trigger protection and level shifter/buffer



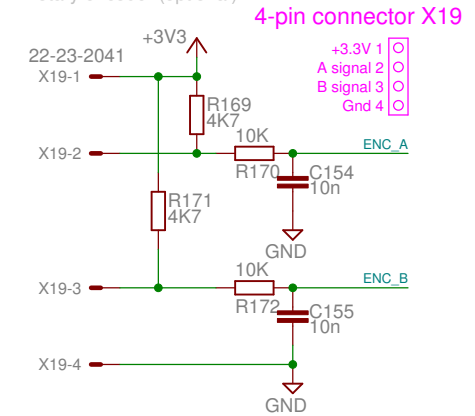
Optional Ethernet module connector



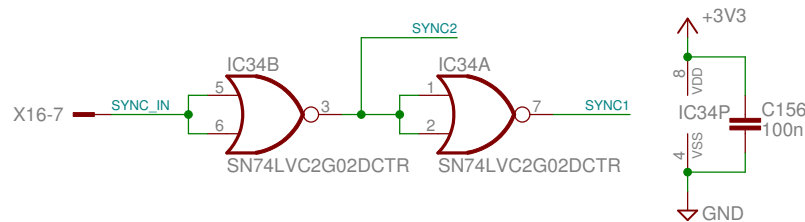
Optional Wifi module connector



Rotary encoder (optional)



Master sync signal phase shifting



Optional ethernet, Wifi and encoder
Power boards SMPS sync

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