

Note 1.1: Possible alternative AUFR5305, SUD19P06-60, SPD30P06P or other with similar or lower input capacitance
 Note 1.2: WE 7447709330, WE 7443551331, Coilcraft MSS1210-333, Coilcraft XAL1510-333, Vishay IHLP4040DZER470M11, etc.
 Note 1.3: Use 240K for 30 VAC main transformer
 Note 1.4: Install 0R only if 100% Duty cycle feature for Low Ripple mode is not needed
 Note 1.5: Use R020 for 0-3.12 A or R015 for 0-4.16 A range
 Note 1.6: Replace ZD1 and C3, C5, C6 if Vin is above 50 V

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



SMPS power pre-regulator with 100% duty cycle

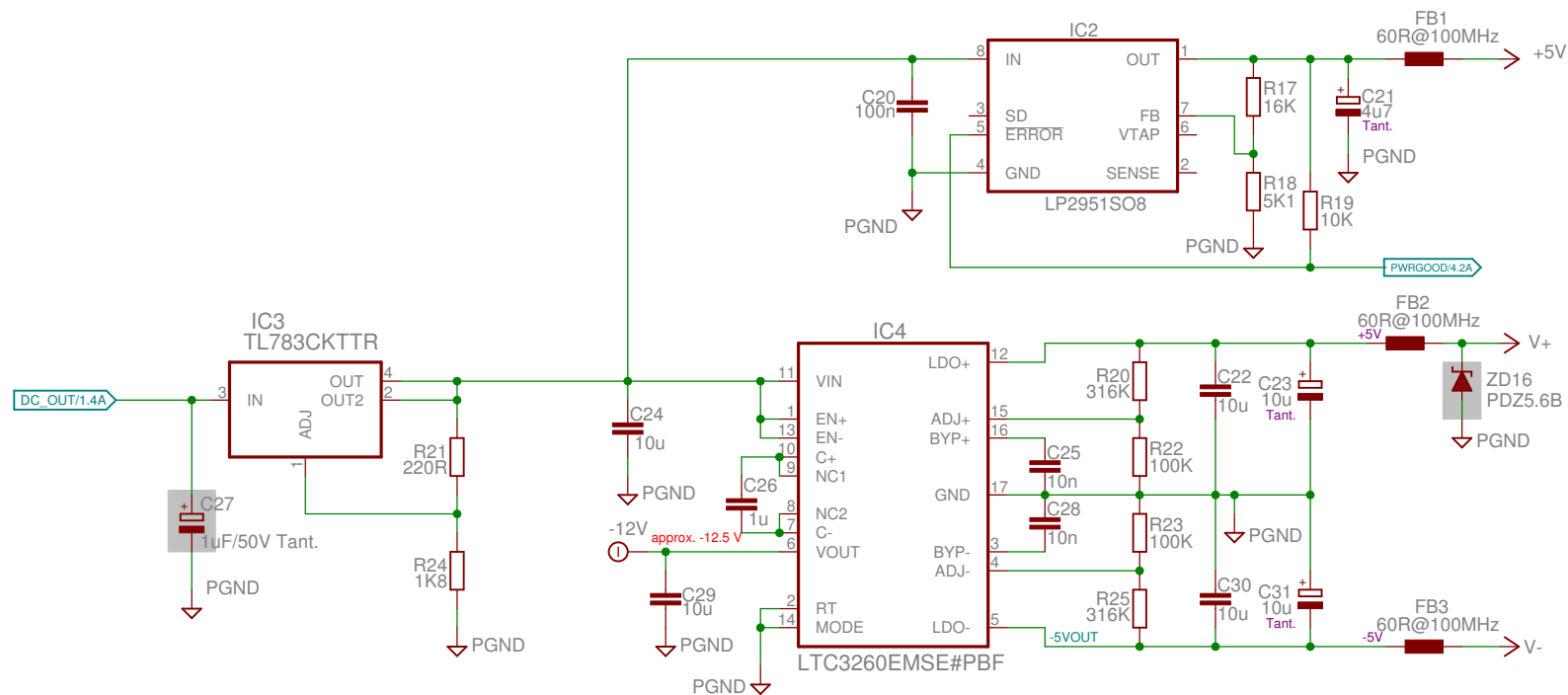
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Bias power supply (+/-5V, +5V, -12V)
 Powergood signal

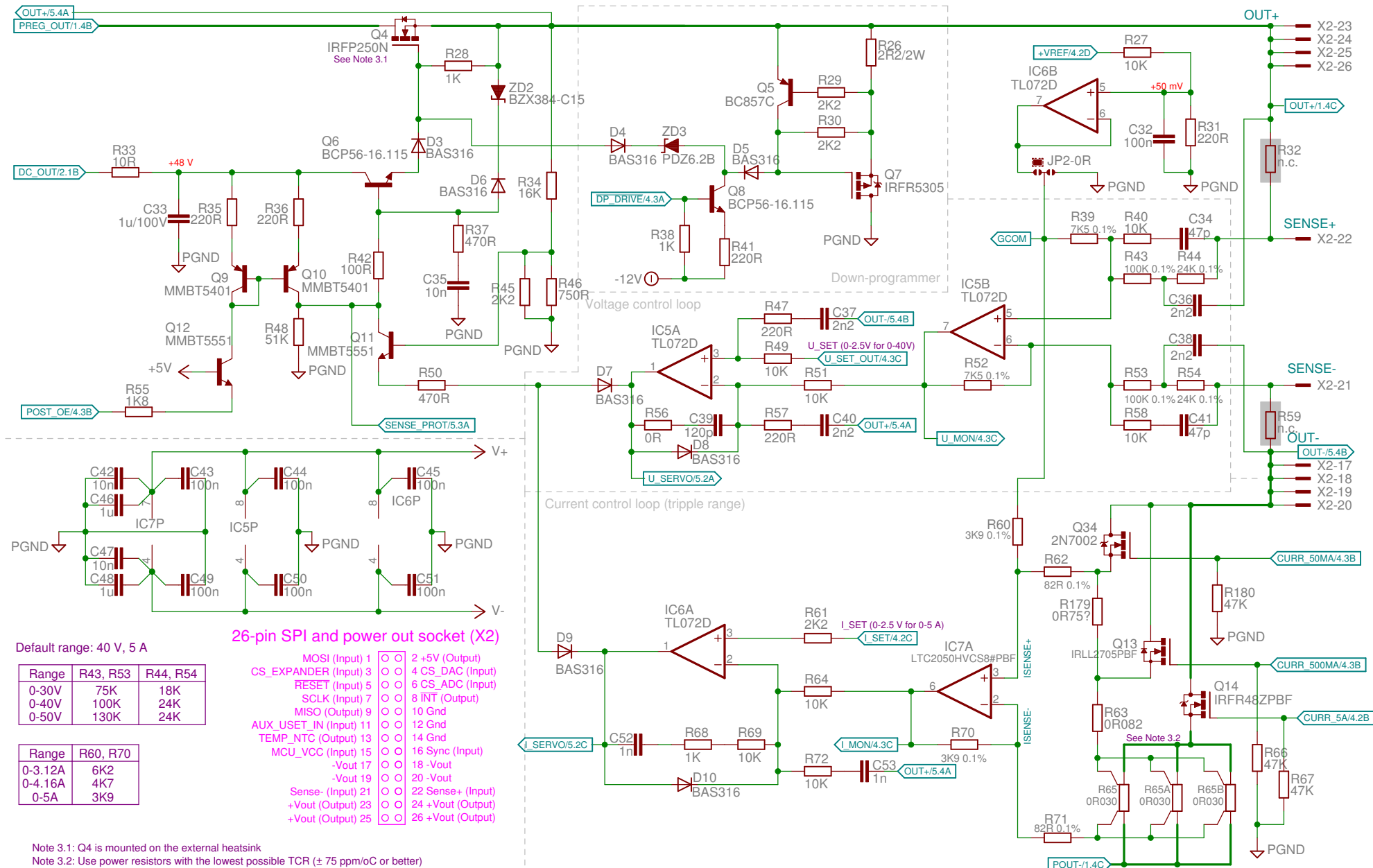
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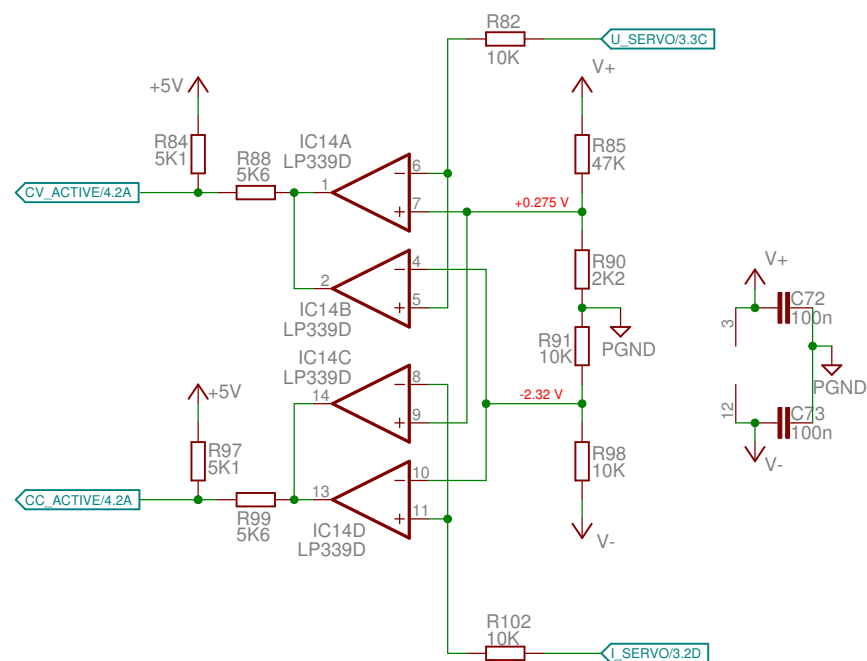
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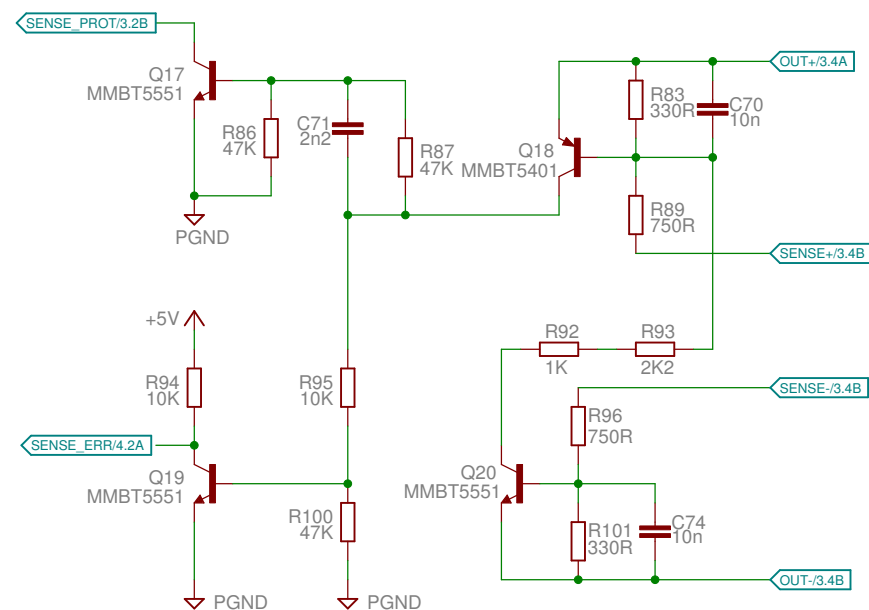
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Constant Voltage (CV) and Constant Current (CC) mode indicator



Remote sense reverse polarity detection



CC/CV indicators, Sense error detection

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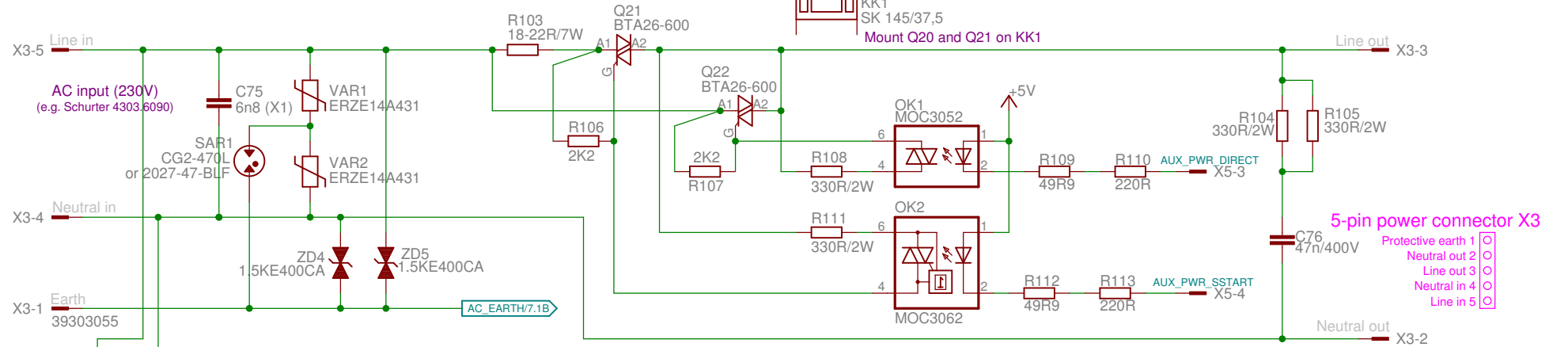
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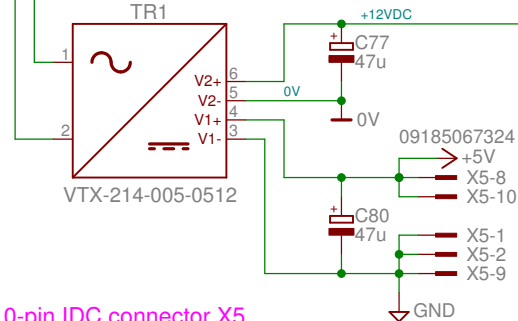
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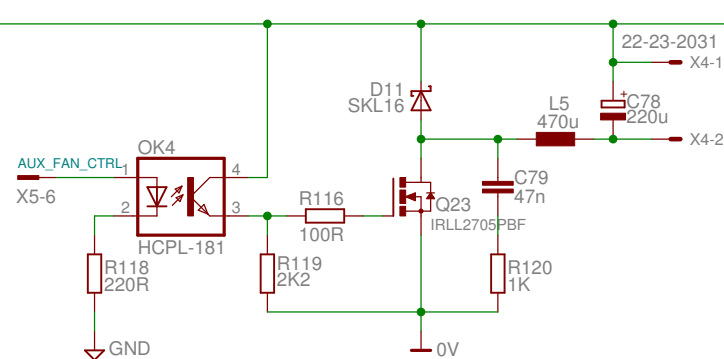
AC input protection and soft-start/stand-by



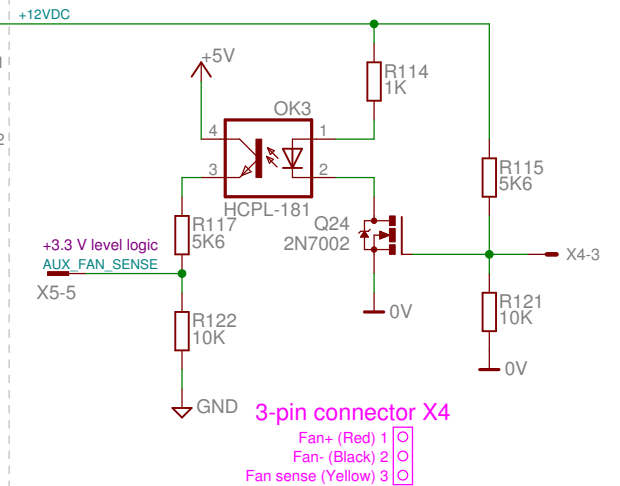
+5 V, +12 V power supply (max. 5W)



+12VDC fan control



Fan sense (tacho out)



115VAC option:

Name	Value	Code
SAR1	2027-23-BLF	Farnell: 1780455, TME: CG2-230L
TR2	VPP24-210	Digikey: 237-1085-ND Mouser: 553-VPP24-210 Newark: 93F8764
VAR1, VAR2	or AC/DC module Myrra 47202	Farnell: 2469211
ZD1, ZD2	S20K140	Farnell: 1004387, TME: SIOV-S20K140
	1.5KE200CA	Farnell: 1837117, TME: 1.5KE200CA

AC input protection, in-rush current limiter
+5V/+12V 5W power supply, fan control

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8-pin connector X8

- 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

Amphenol: LMJ2138812S0LOT6C or WE: 74990101210

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The schematic diagram illustrates the power supply and signal conditioning circuit for the CTB9300/3A + CTB92VG/3S module. The circuit is powered by a 5V supply and includes a diode bridge (D12, ZD6), a relay (K_DOUT), a MOSFET (Q25), and a resistor (R123). The output is connected to the CTB9300/3A + CTB92VG/3S module via a 3-pin connector (X6) with contacts 1, 2, and 3.

Key components and connections include:

- Power Supply:** 5V supply connected to the circuit.
- Diode Bridge:** D12 (BAS316) and ZD6 (SMAJ18A) form a diode bridge.
- Relay:** K_DOUT (RT424005) is used for signal conditioning.
- MOSFET:** Q25 (2N7002) is used for switching.
- Resistor:** R123 (100K) is used for signal conditioning.
- 3-pin Connector (X6):**
 - NO contact 1
 - Common 2
 - NC contact 3
- Output:** The circuit output is connected to the CTB9300/3A + CTB92VG/3S module.

USB speed JP9, JP10

USB speed	JP9, JP10
High	1-2
Low	2-3

5-pin connectors

- Vcc 1
- Data- 2
- Data+ 3
- Gnd 4
- Shield 5

AC_EARTH/6.2B

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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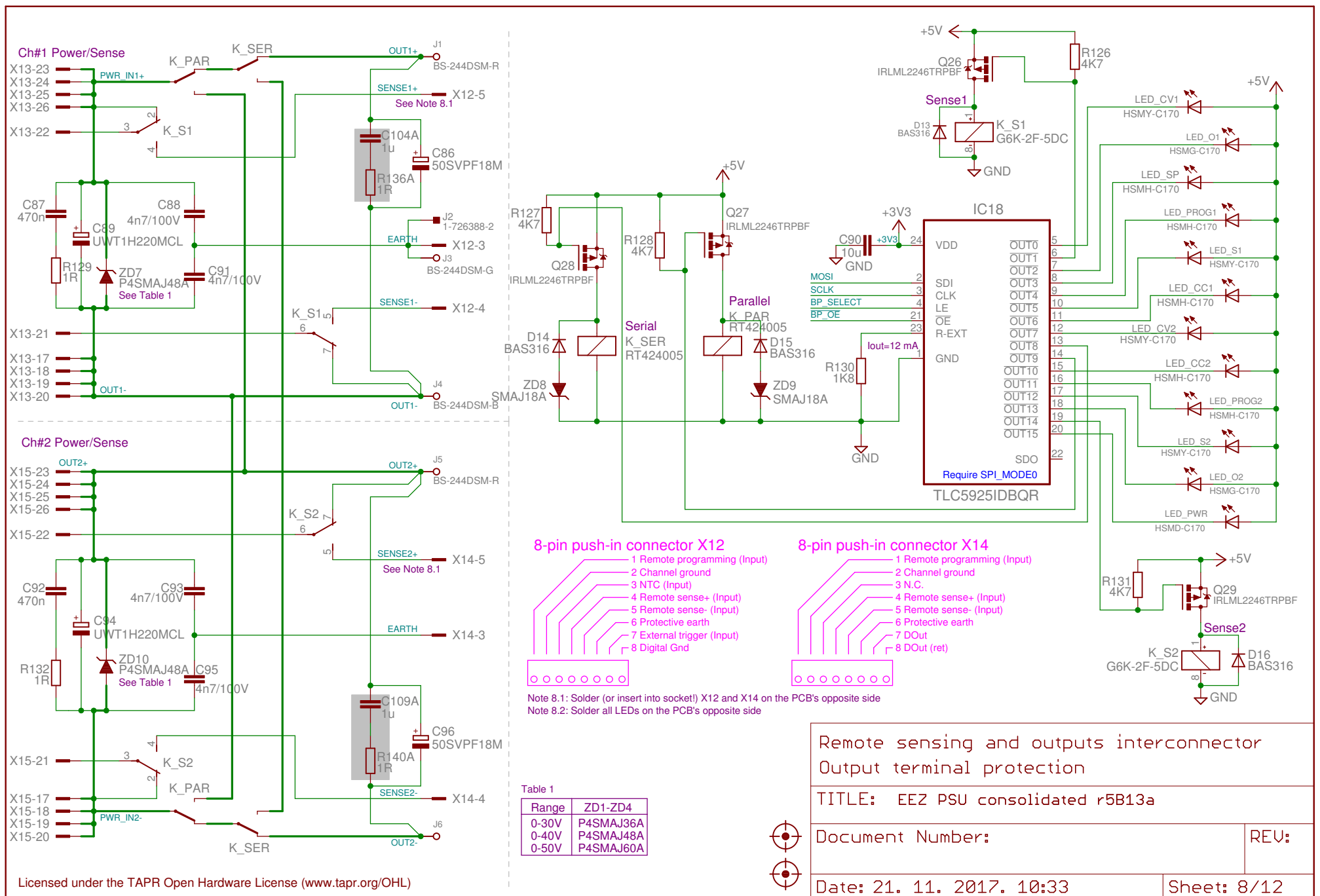
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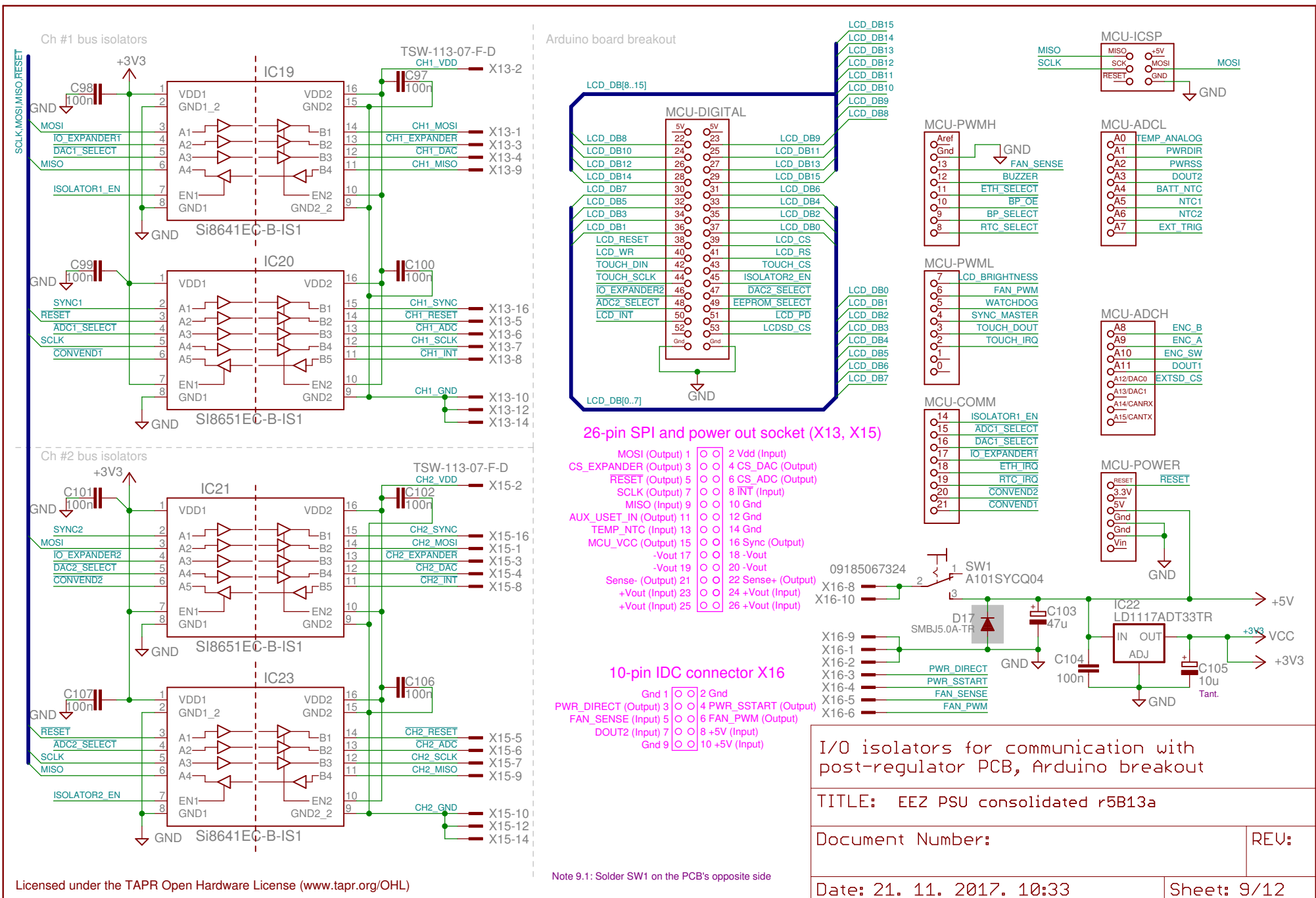
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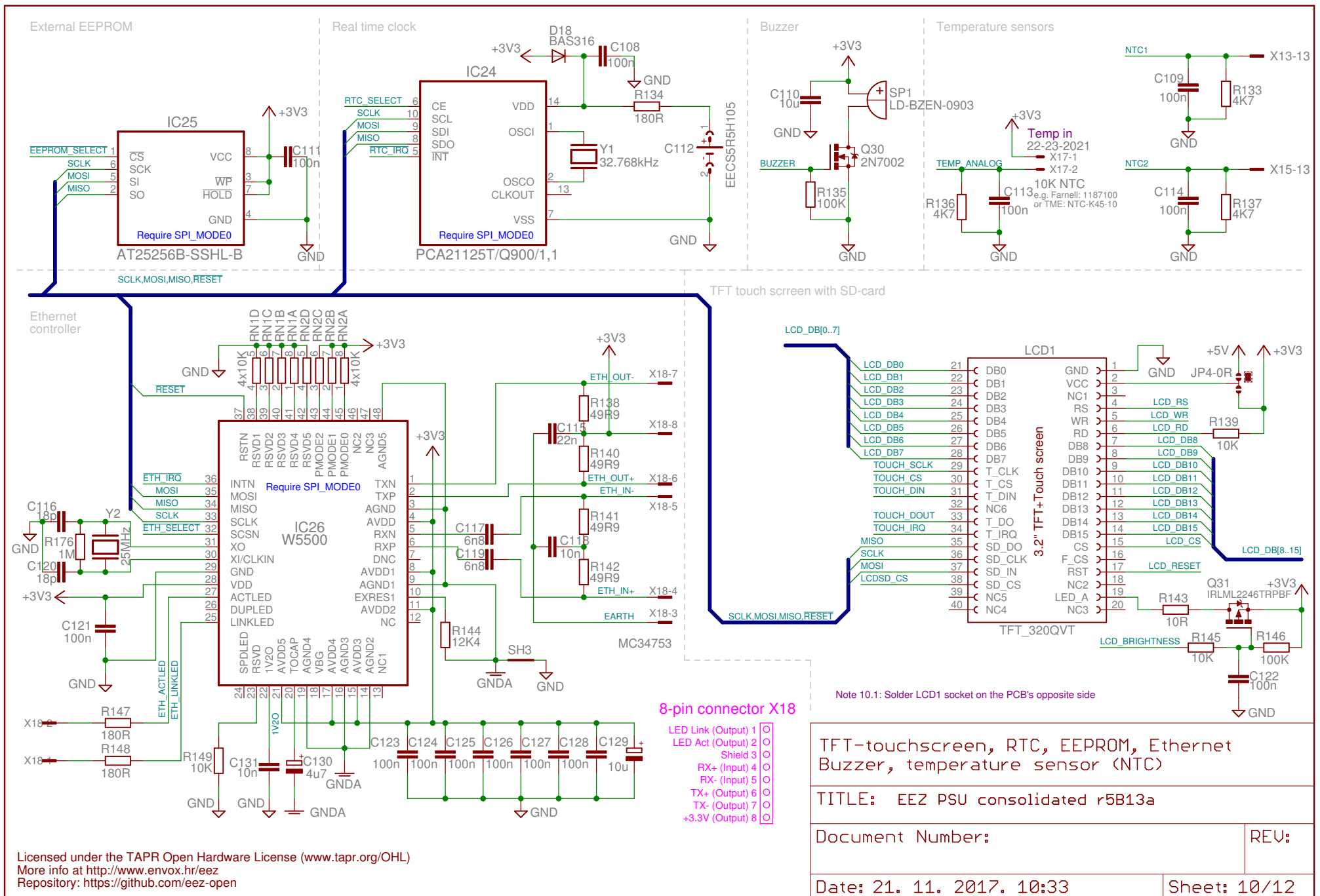
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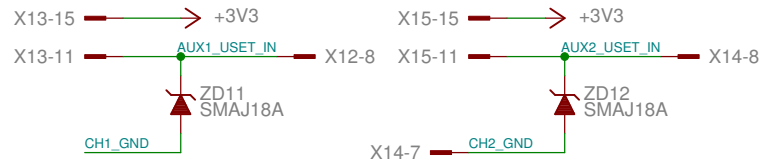
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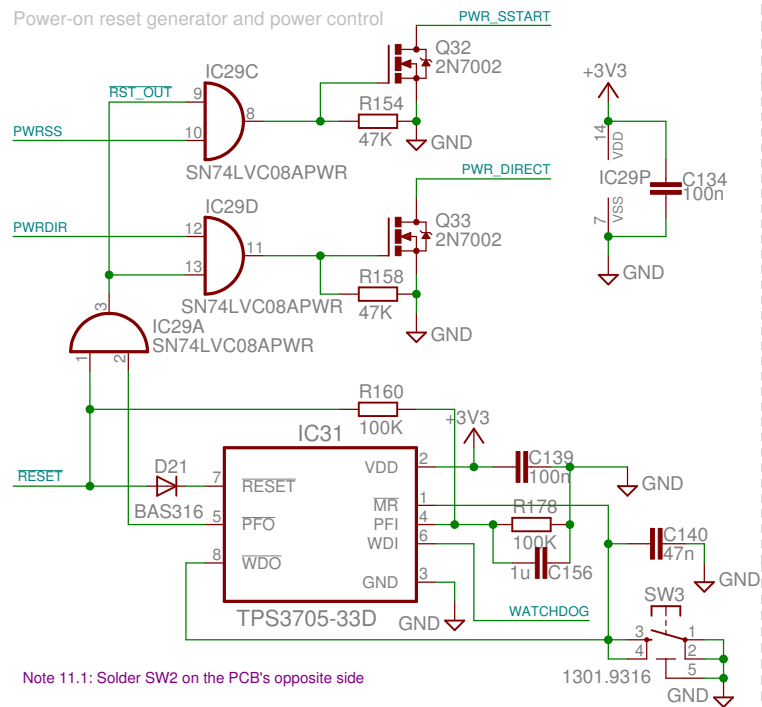




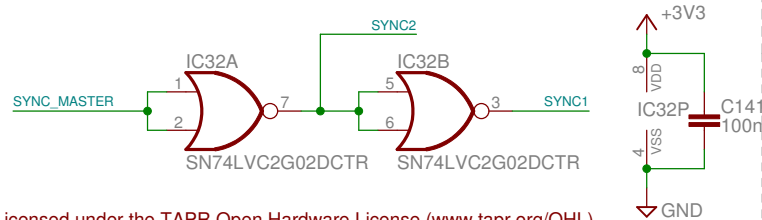
Remote programming inputs



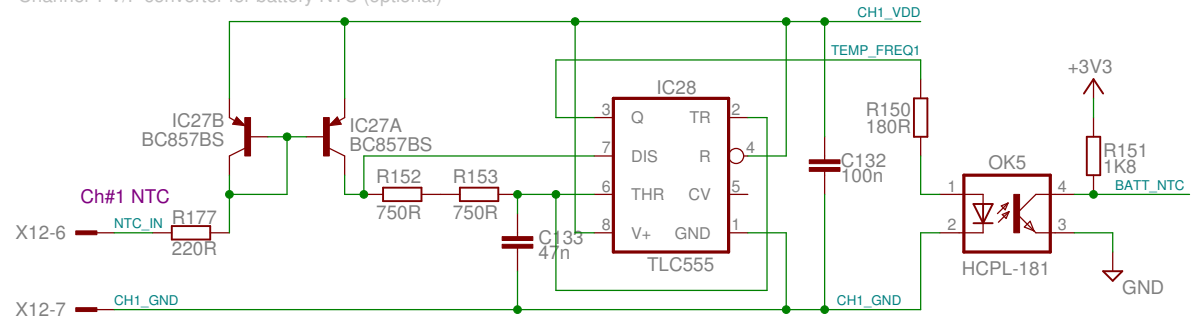
Power-on reset generator and power control



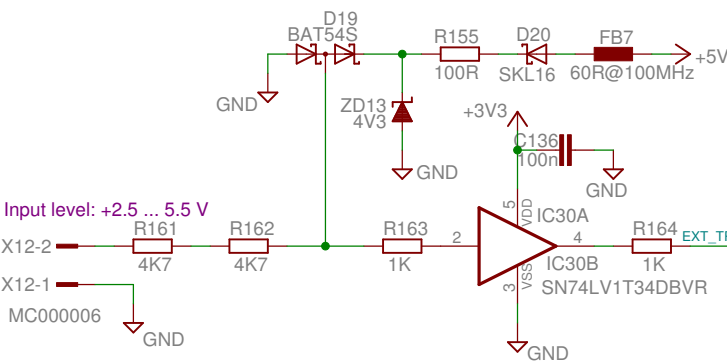
Master sync signal phase shifting



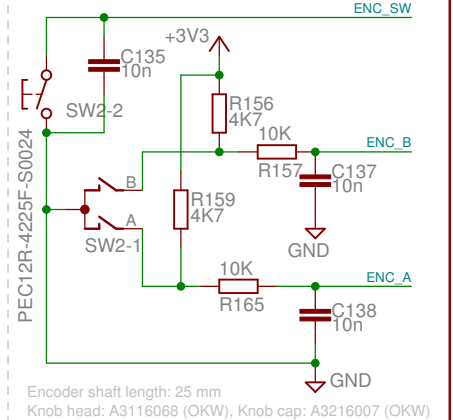
Channel 1 V/F converter for battery NTC (optional)



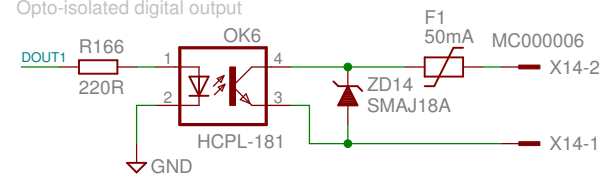
External trigger protection and level shifter/buffer



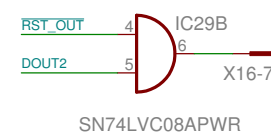
Rotary encoder



Opto-isolated digital output



DOUT2 driver



Reset control, soft-start driver, encoder
U/F converter for battery NTC, External trigger

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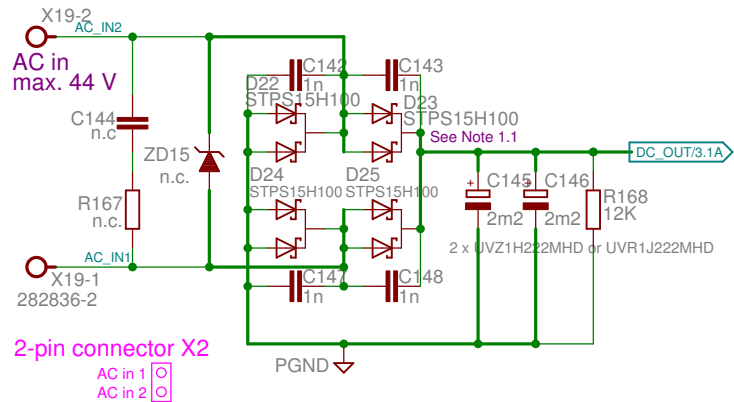
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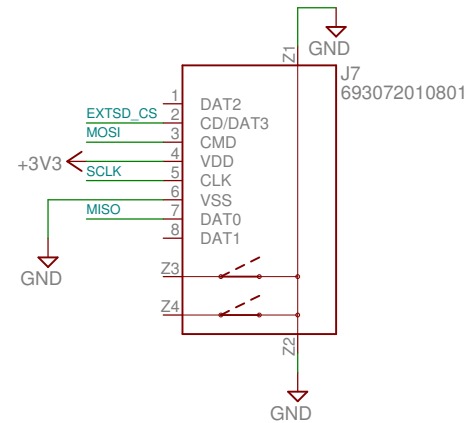
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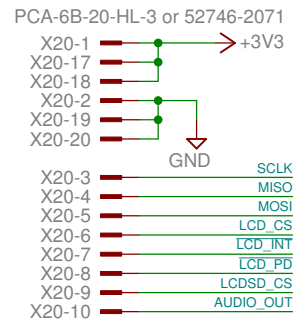
AC input option



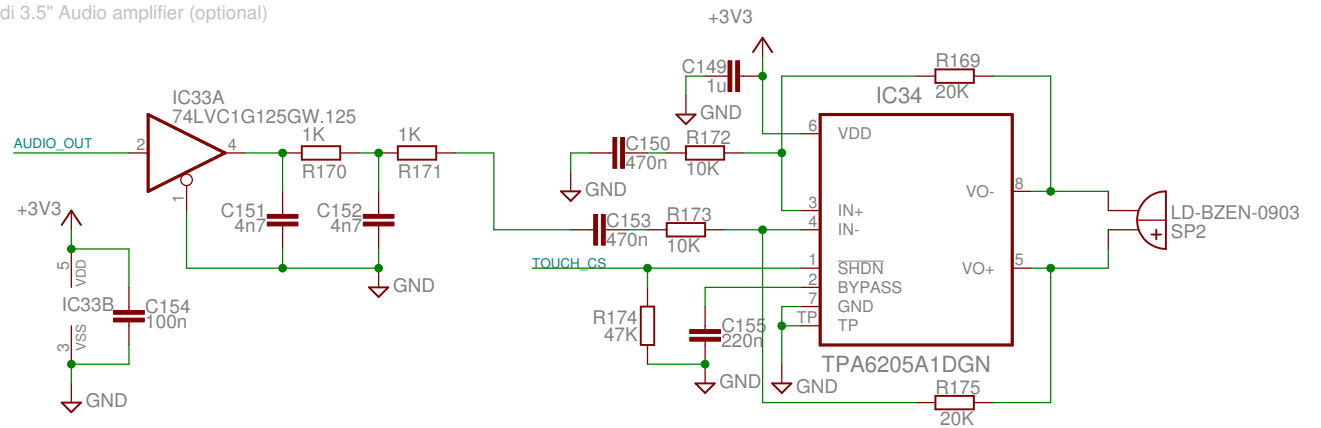
Micro SD card (optional)



Riverdi 3.5" LCD (optional)



Riverdi 3.5" Audio amplifier (optional)



Optional sections: AC input, 20-pin 3.5" TFT display
Audio amplifier for 3.5" TFT display, Micro SD card

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