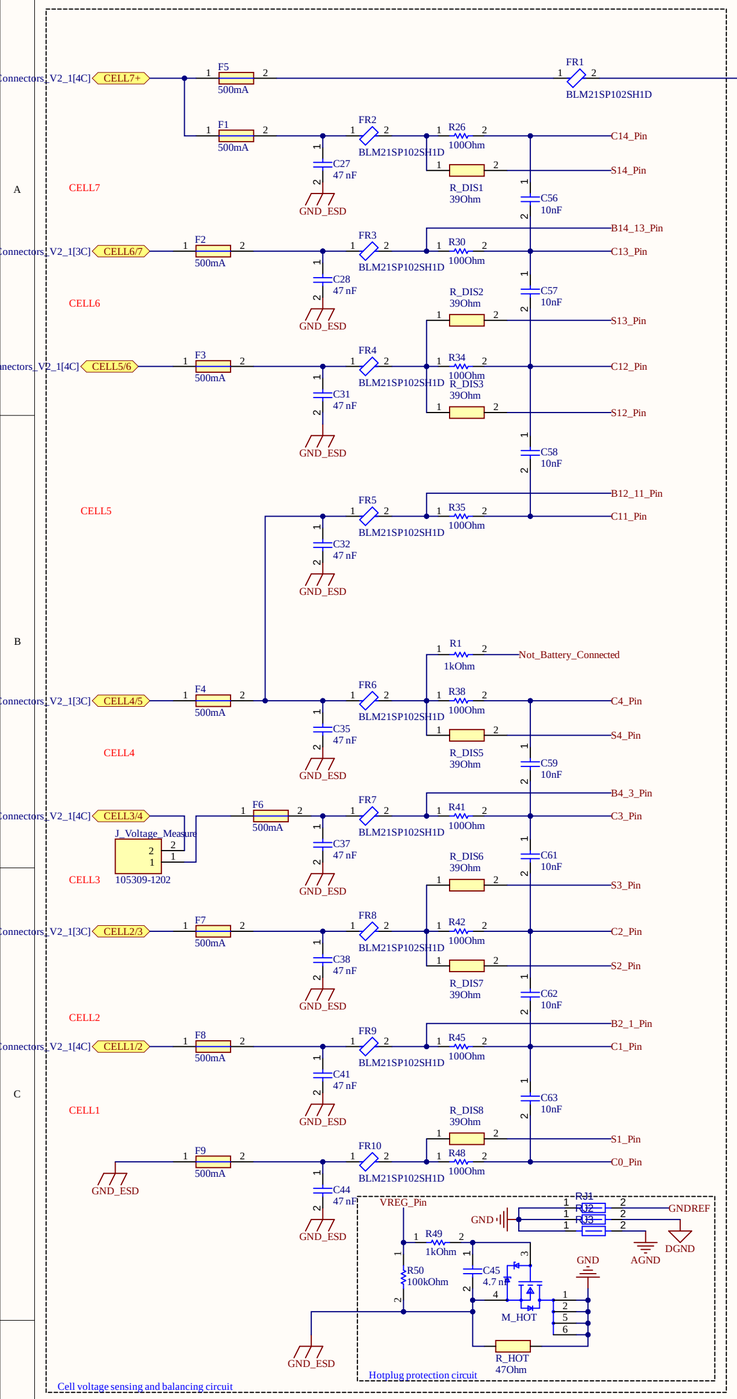
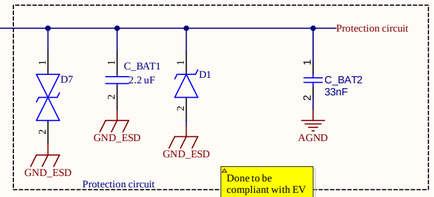
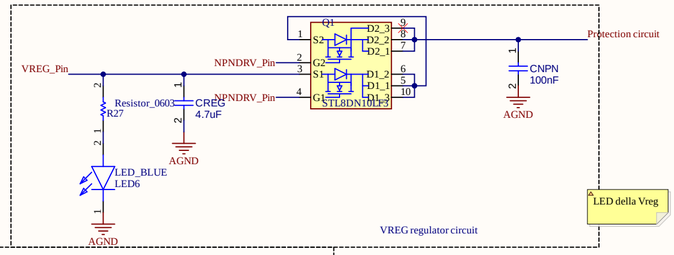
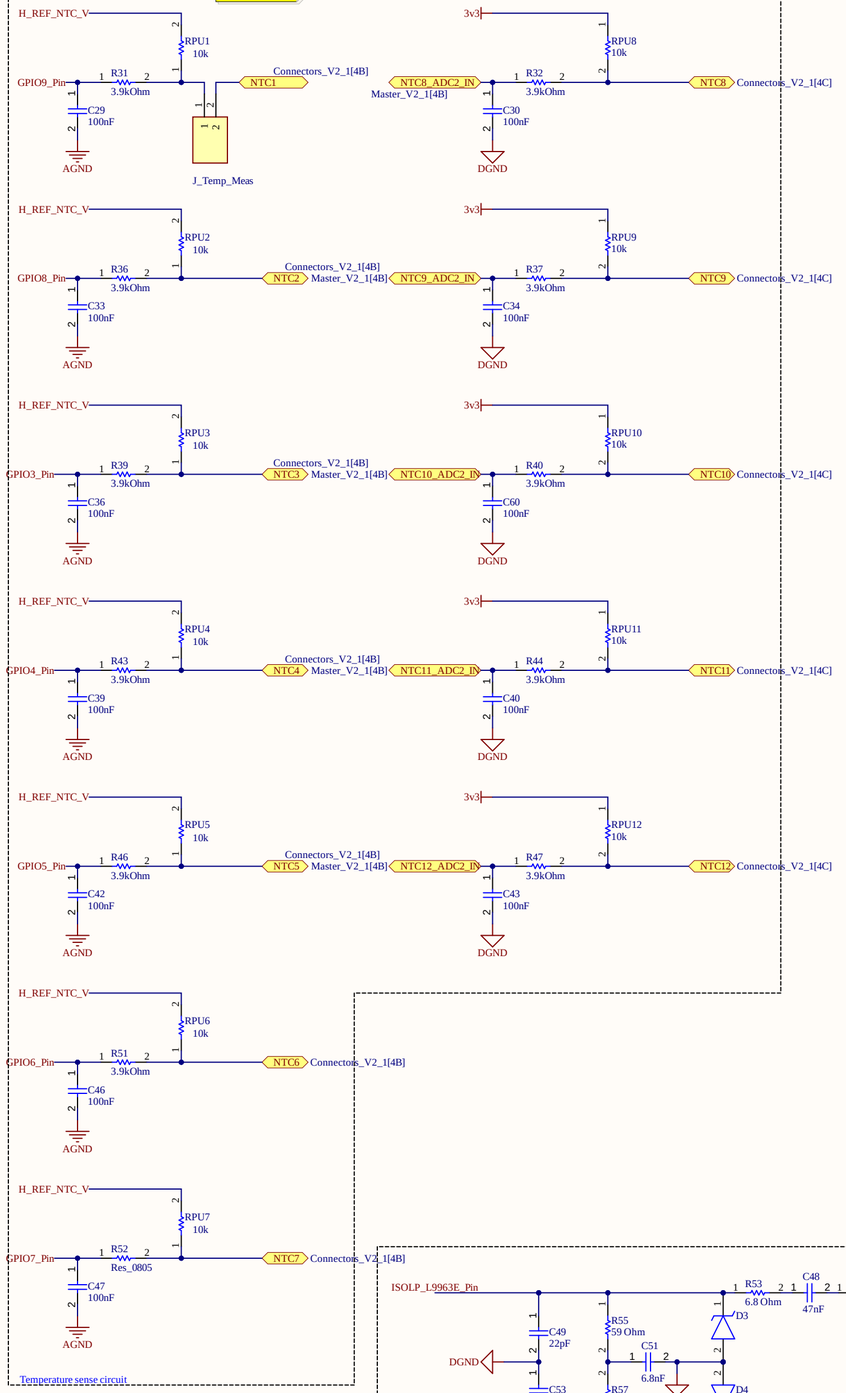
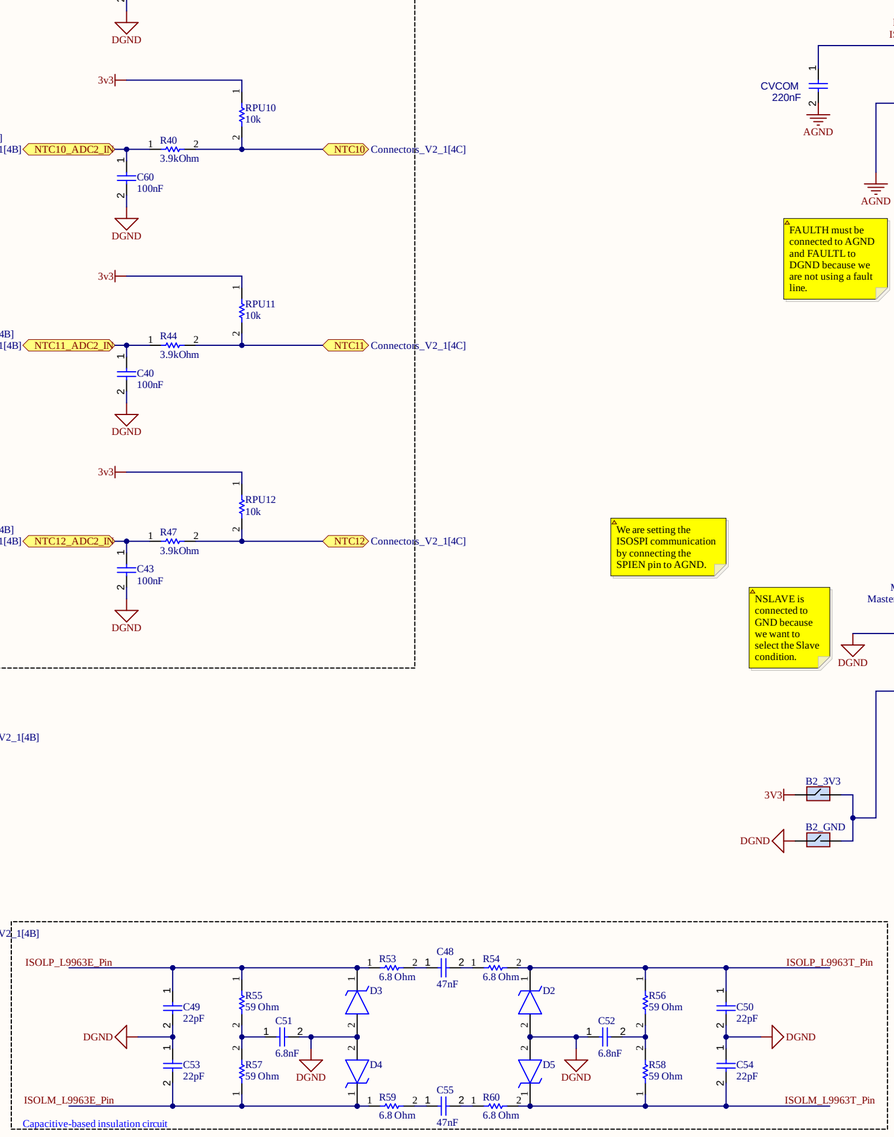


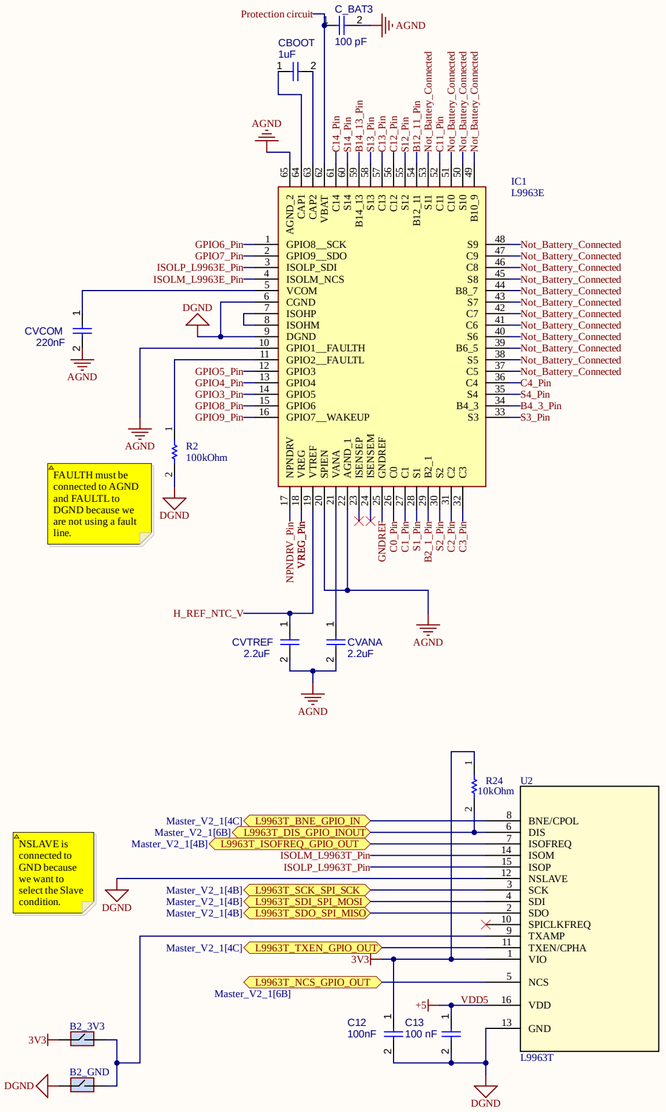






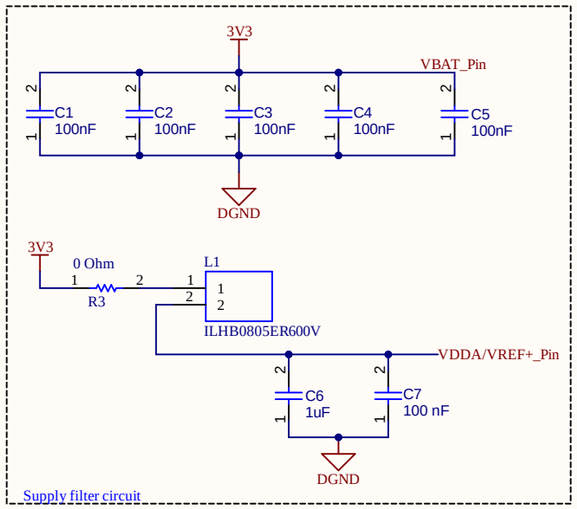


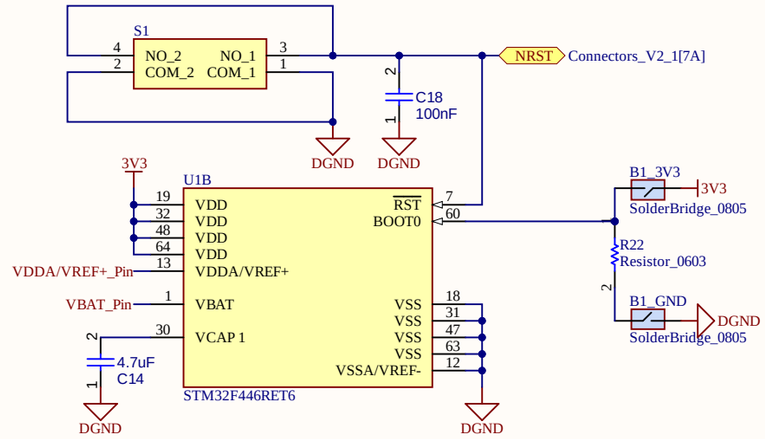
In order to increase measurement precision, connection of the NTC to AGND through an additional PCB connector.

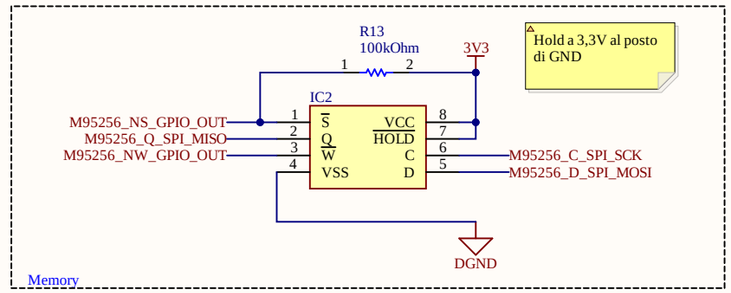


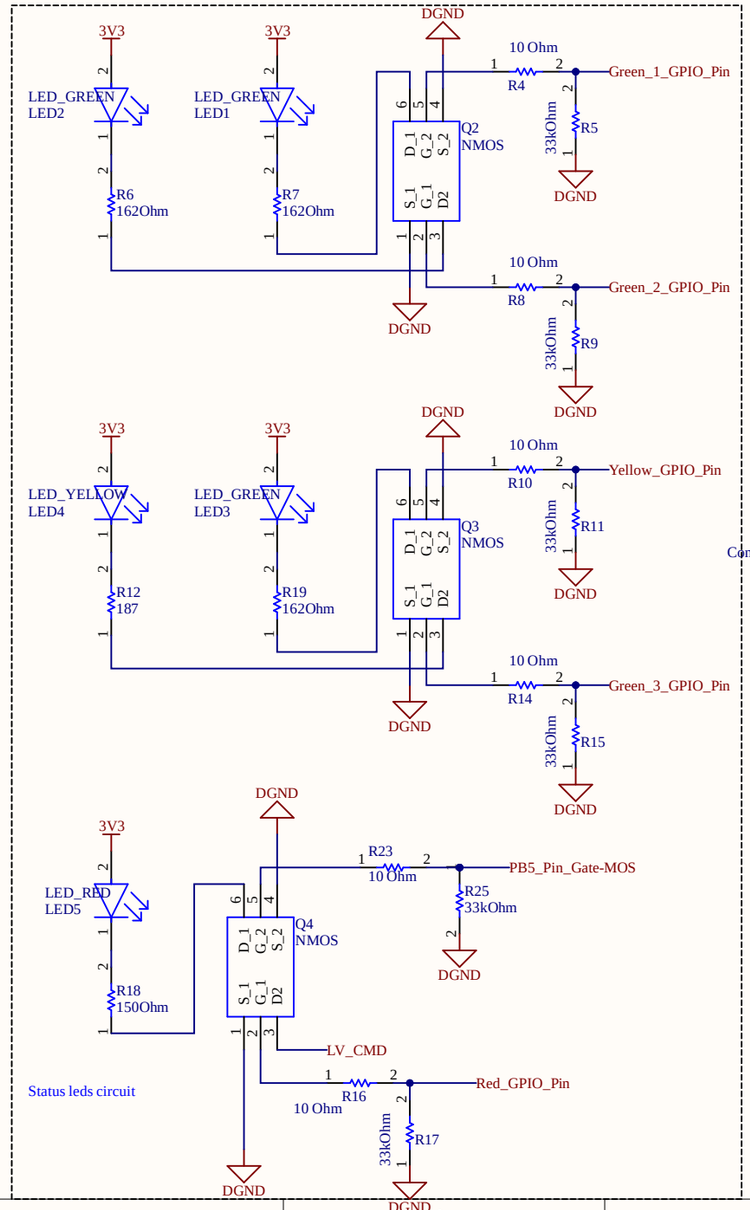
We are setting the ISOSPI communication by connecting the SPIEN pin to AGND.

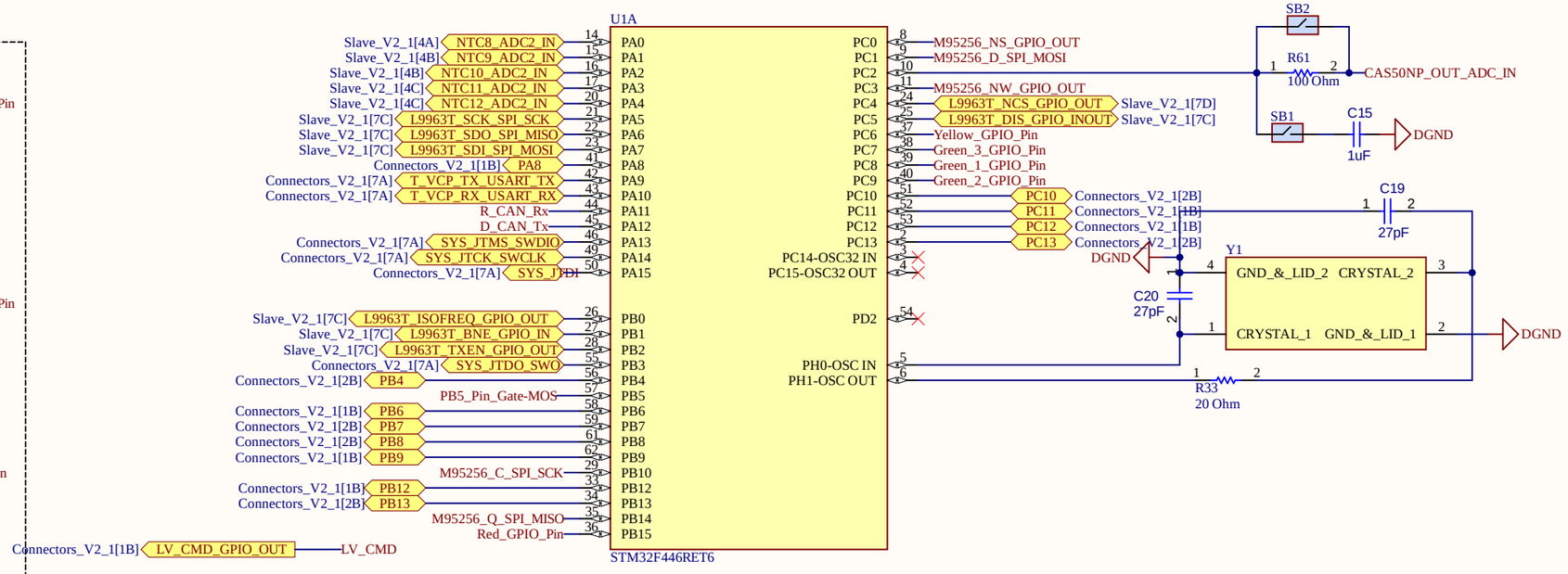
NSLAVE is connected to GND because we want to select the Slave condition.

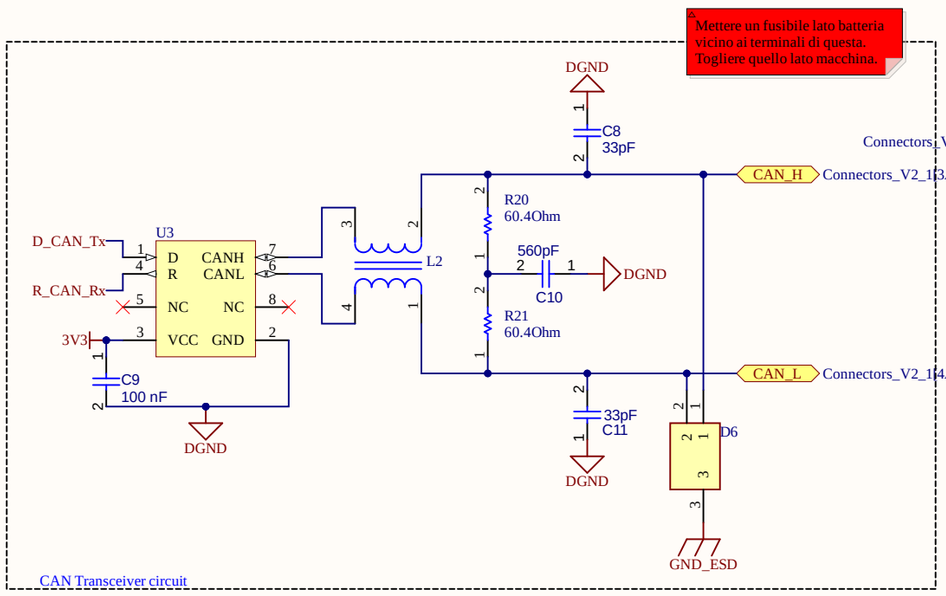


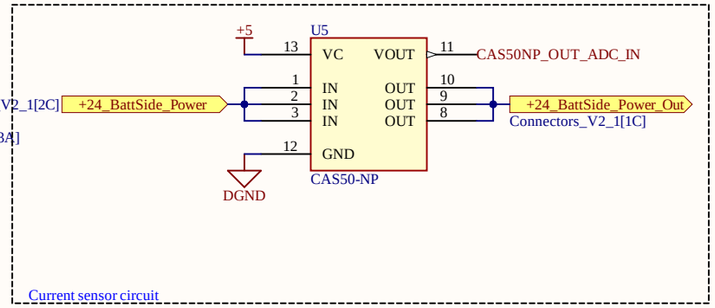












Per la PCB:
Il sensore di corrente è riferito a DGND ma la pista in uscita dovrà essere sopra una striscia di AGND.

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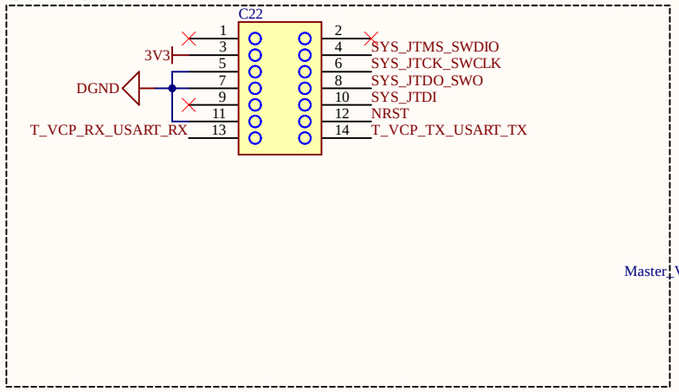
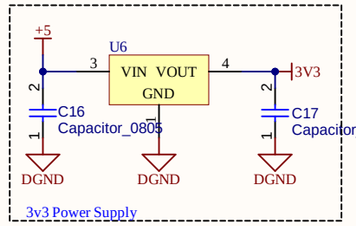
Connectors

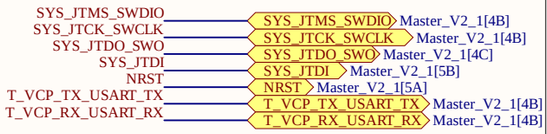


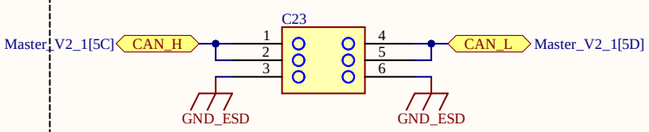
Per la PCB:
-Sul lato sinistro della scheda vanno i connettori con i segnali di CAN (J9).
-Sul lato destro i connettori con: i segnali di potenza, l'alimentazione e per il controllo del relay (J8, J10, J11 e J14).

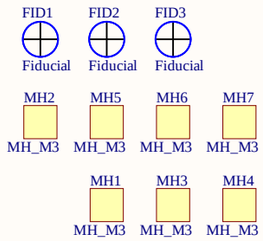
Motivazione: per avere un cablaggio migliore (fili più corti).

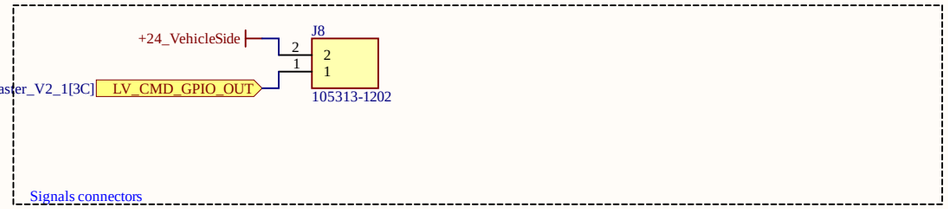


3v3 Power Supply

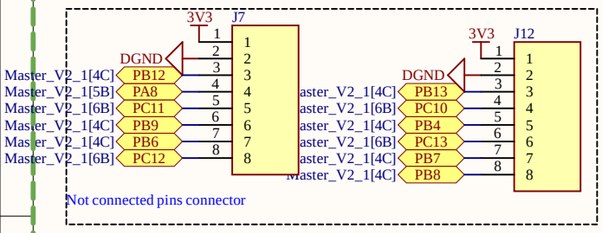




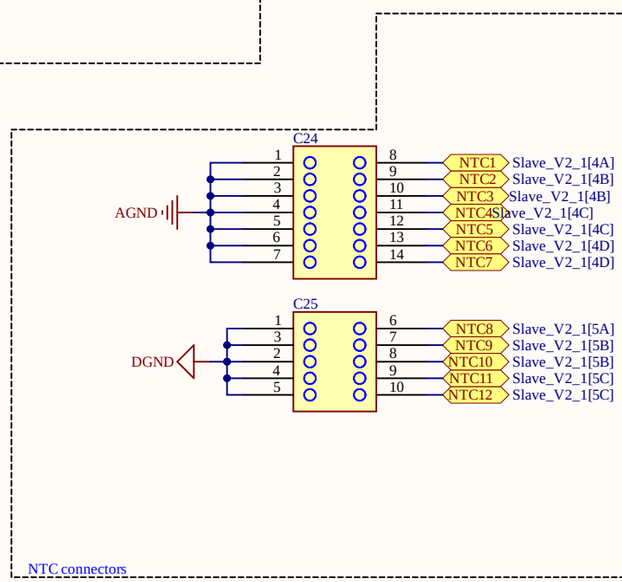




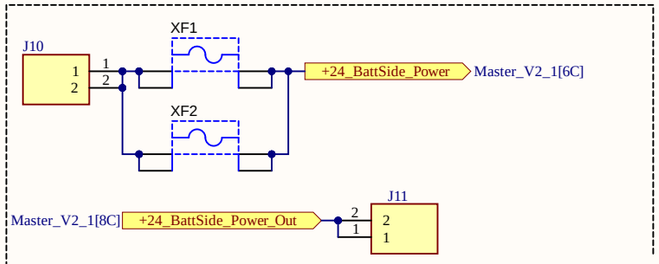
Signals connectors



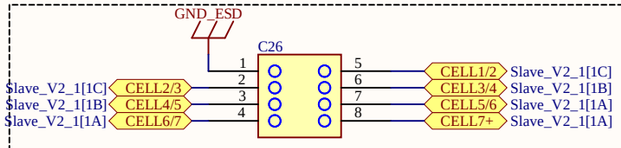
Not connected pins connector



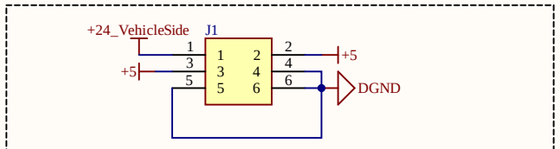
NTC connectors



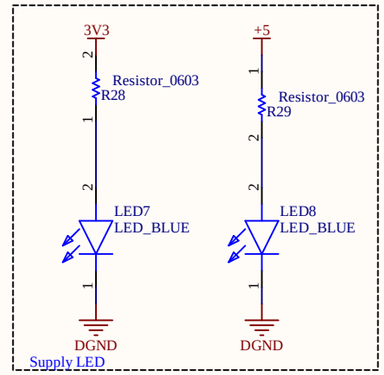
Power connectors



Cell measuring connectors



Supply connector circuit



Supply LED

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BMS LV V2 Modification (PCB):
1. LED Position modified. All GPIO Controlled LEDs are in order. LEDs Silkscreen modified and clarified
2. Increased silkscreen Text Height and Thickness
3. Removed PCB in front of 90° Signal connectors
4. Improved Thermal Design of Balancing Resistors and 9963e Thermal Pad

BMS LV V2 Modification (schematics):
1. Added 3V3 LED, 5V LED, Slave supply LED
2. JTAG Connector from 10 Pin to 14 Pin. Removed connector for USART
3. Added connector for Slave 9963e Supply (before from +24V Power Connector)
4. Added Fuse for Slave 9963e supply
5. Addedd +5V overvoltage Protection
6. EEPROM Hold Pin to 3V3, to make it work properly

BMS LV V3 Modification (PCB):

BMS LV V3 Modification (schematics):
1. C11_Pin net connected to C11 pin
2. Hotplug protection circuit connected directly to GND_ESD
3. Inverted can_tx and can_rx
4. (TODO) buffer in output al current sensor

Modification 11.2023
1. Removed capacitor C21, to allow the current sensor work.
2. Reviewed the Temprature Sense Circuit. No need to change the circuit for NTC.

Title	BMS_LV	
Size: A4	Number	Revision: V2.1
Date: 7/06/2024		Sheet of
File: Comments_V2_1.SchDoc		Drawn By: