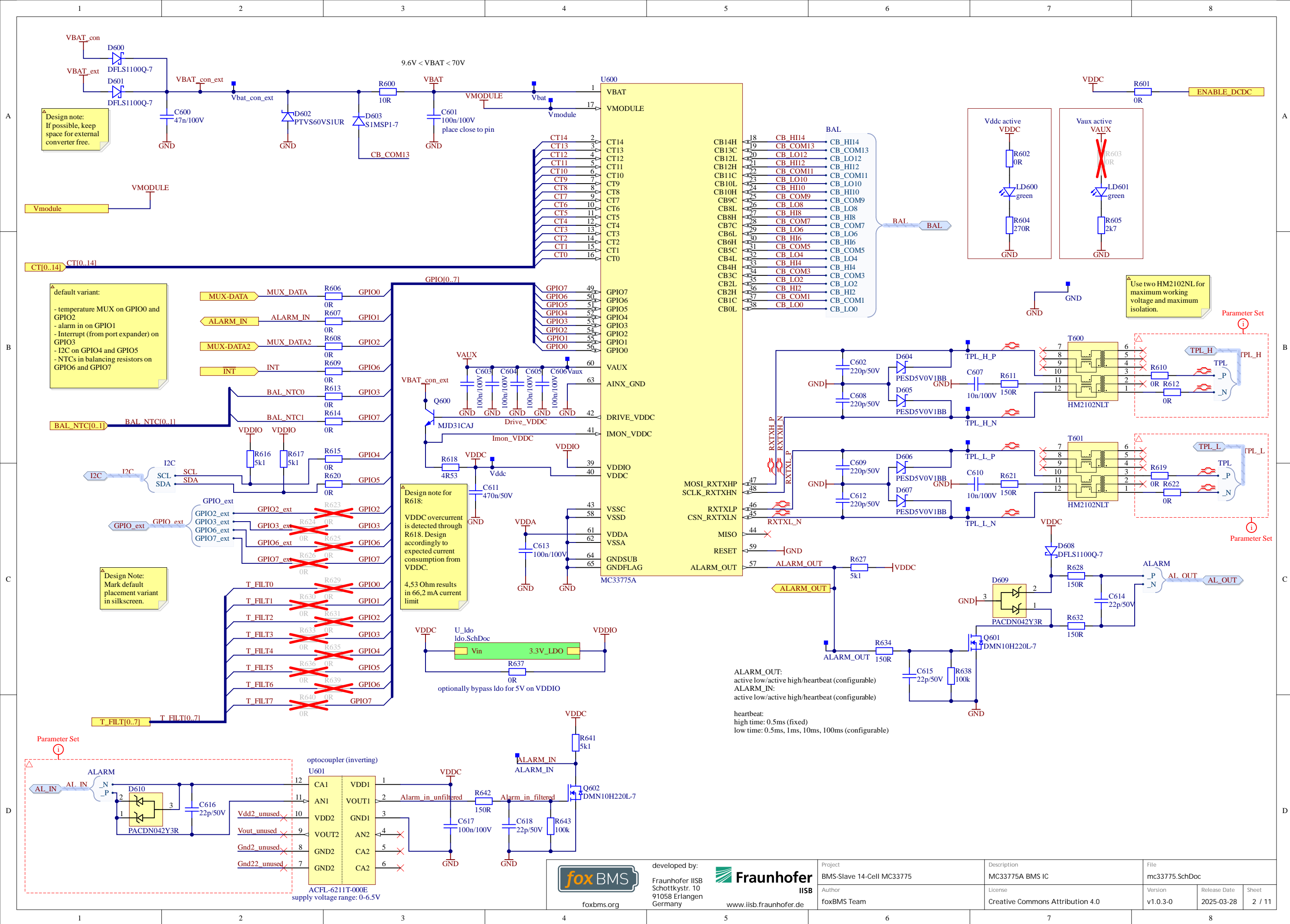
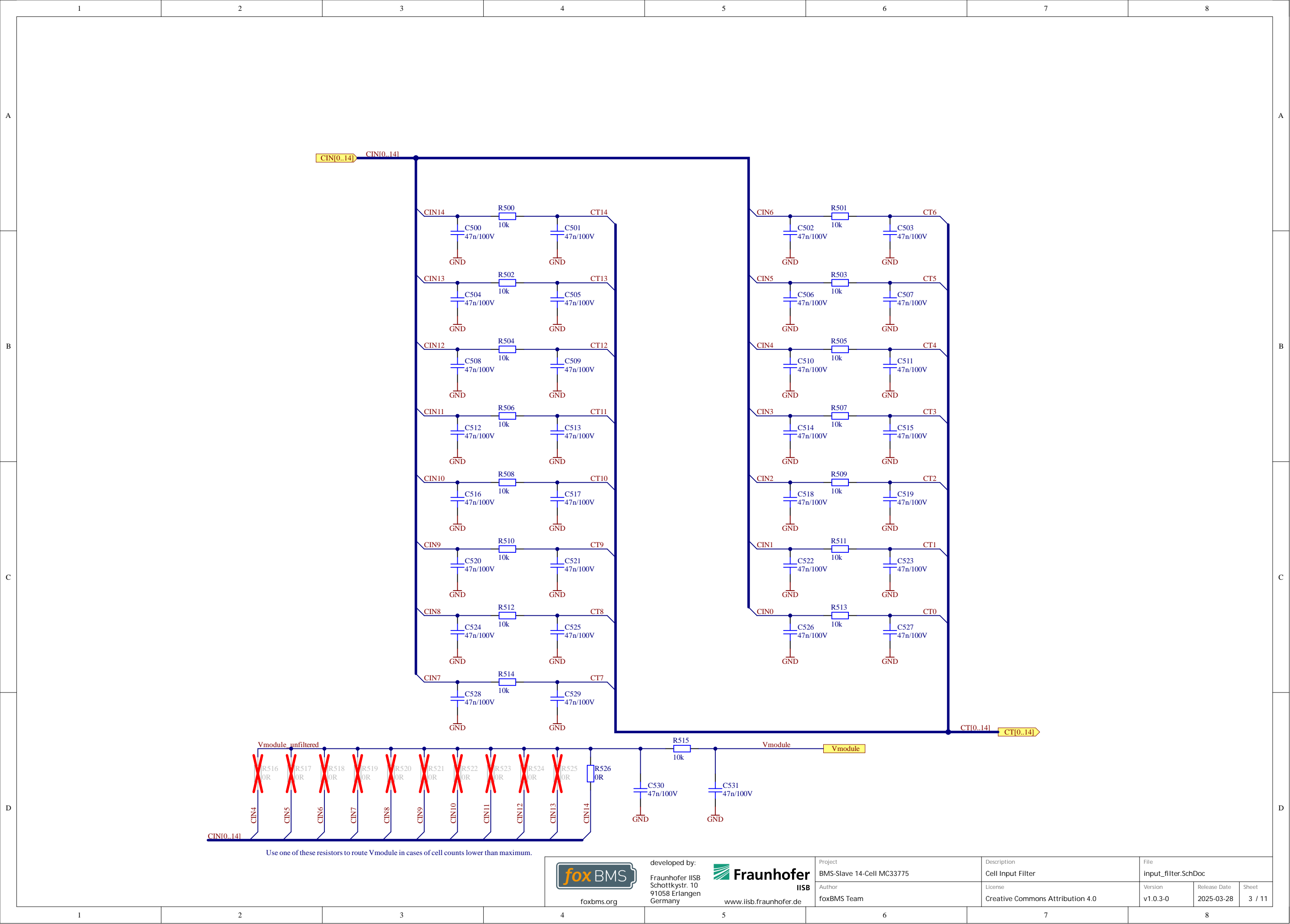


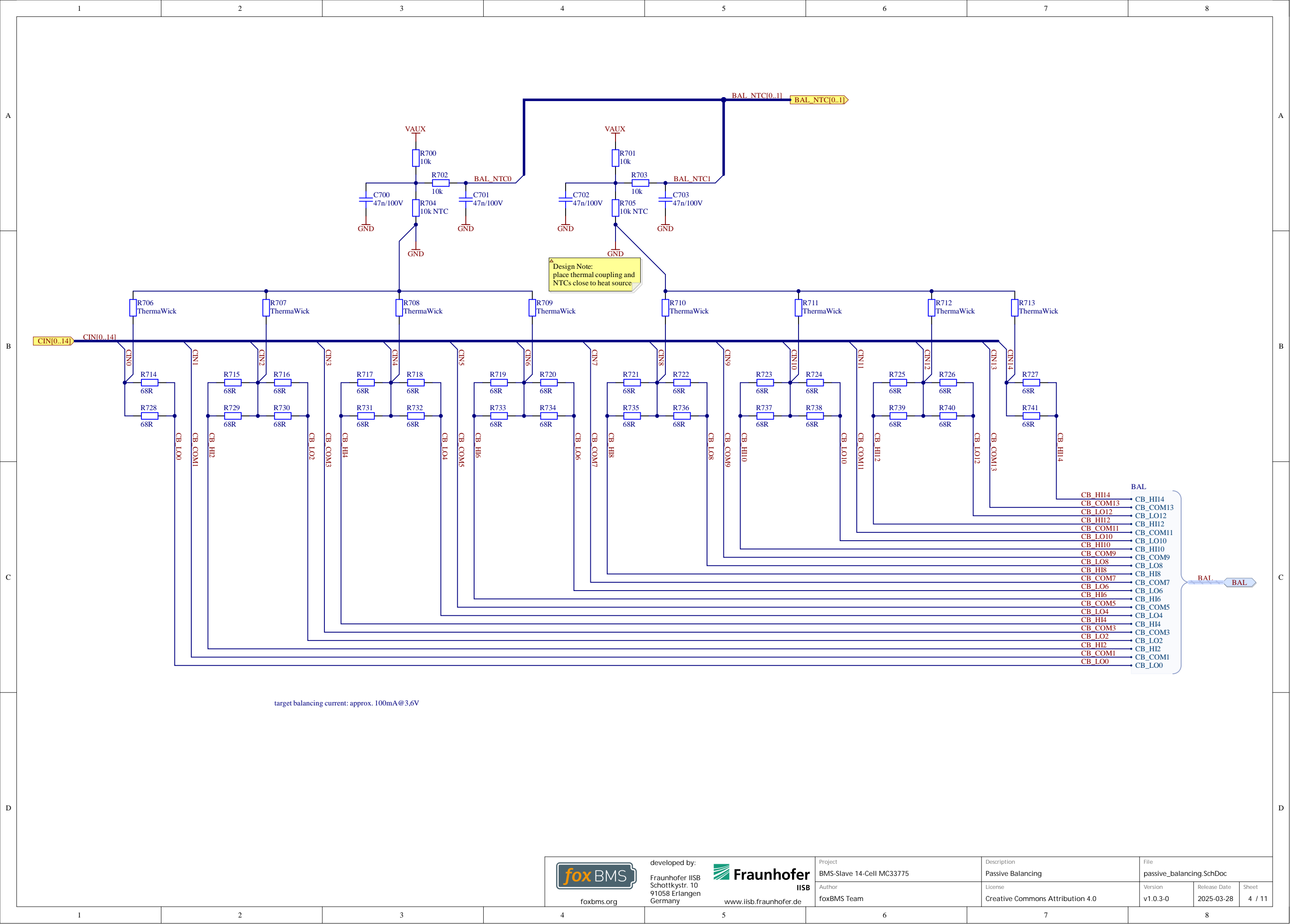
Rationale for creepage and clearance distances

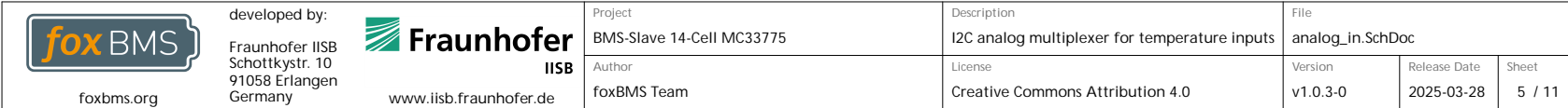
- * according to DIN EN 60664-1 (VDE 0110-1):2008-01
- * working voltage up to 1600Vdc
- * functional isolation for 1600Vdc
- * assume "Verschmutzungsgrad 2" and "Isolierstoffklasse 3b"
- * creepage distance: 16.0mm (table F.4)
- * design note: set creepage distance rule between net classes in PCB design
- * assumptions for clearance: 3600V (based on requirements for transient overvoltage), homogenous field: 1.1mm (table F.7)
- * design note: set clearances to net classes in PCB design

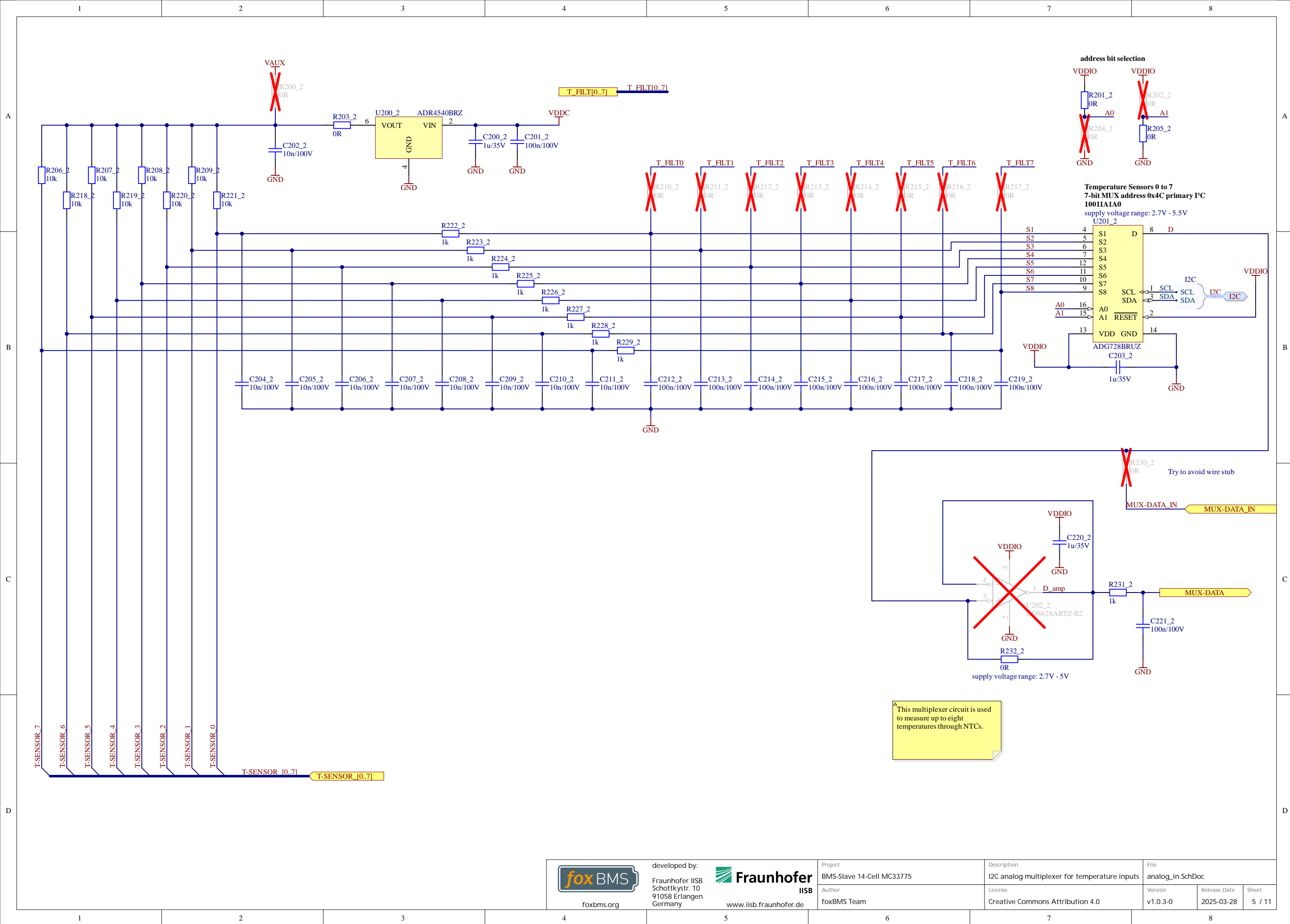
* take care with the mounting points: The spacing around them (6.05mm) is designed for a working voltage of 605Vdc at "Verschmutzungsgrad 2" and "Isolierstoffklasse 3b" or a working voltage of 1600Vdc at a "Verschmutzungsgrad 1" and "Isolierstoffklasse 3b". Consider potential connections to chassis when mounting the board and critically assess the situation.





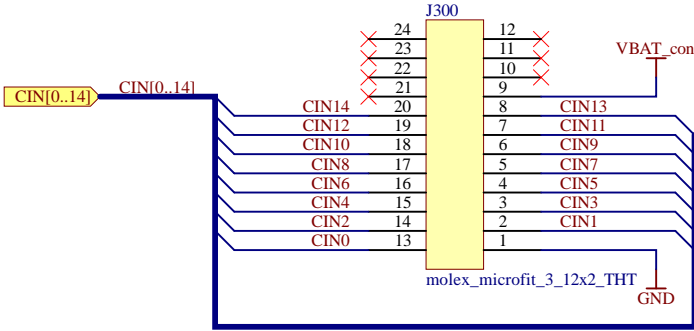




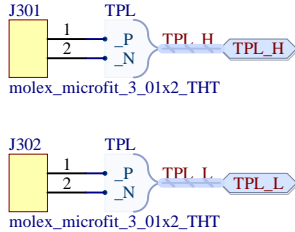


A

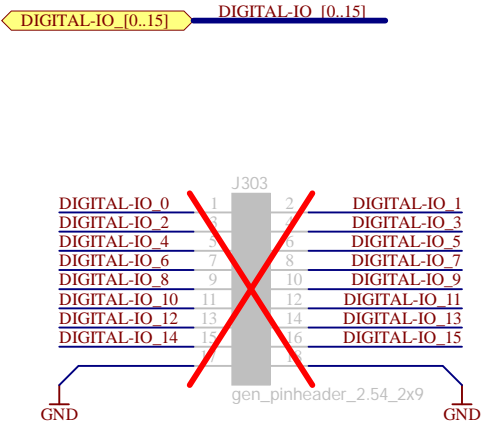
Battery cell connector



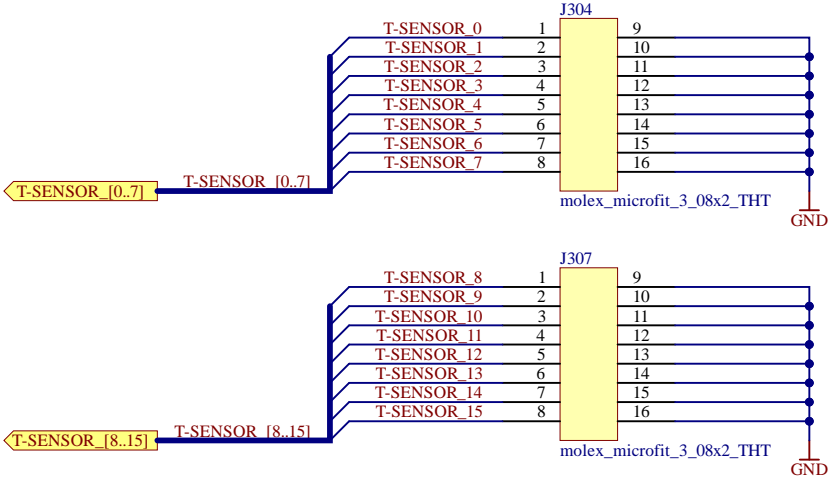
TPL communication connectors



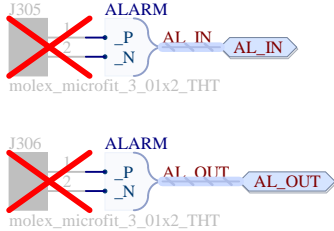
GPIO extension



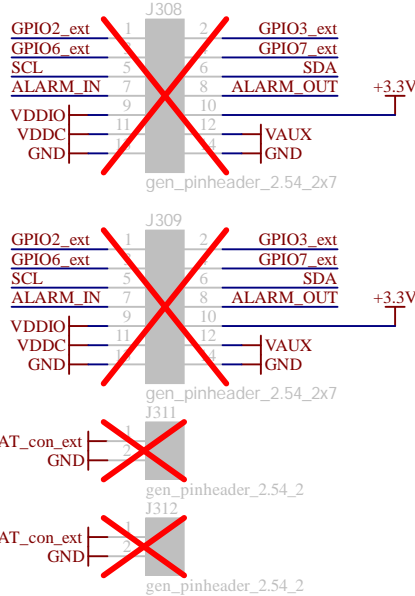
Temperature sensor connector



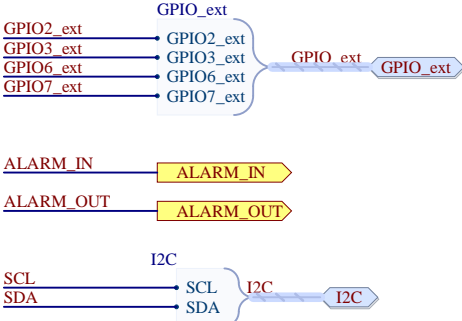
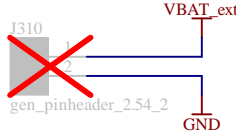
Alarm communication connectors



Extension connectors



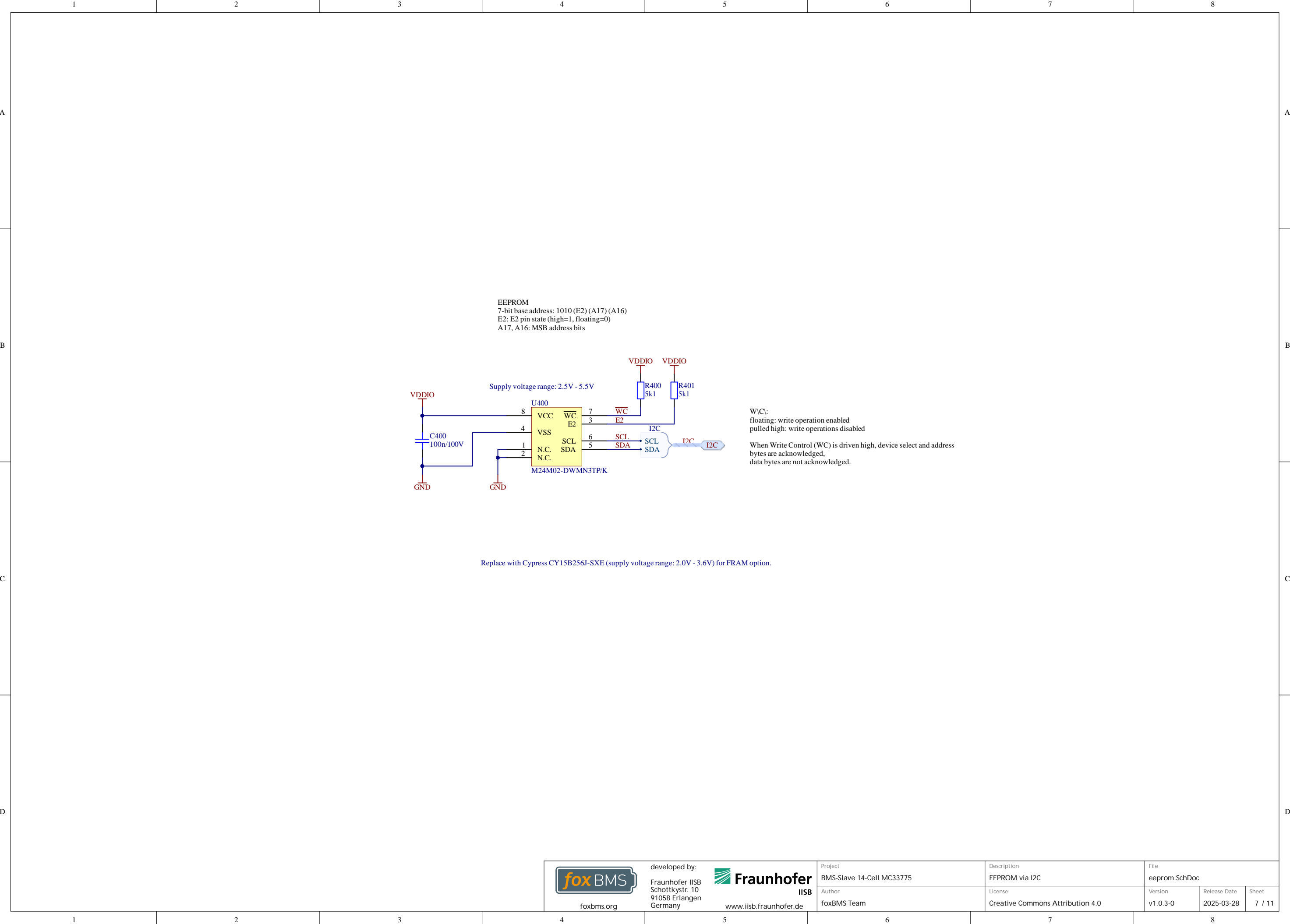
External supply connector

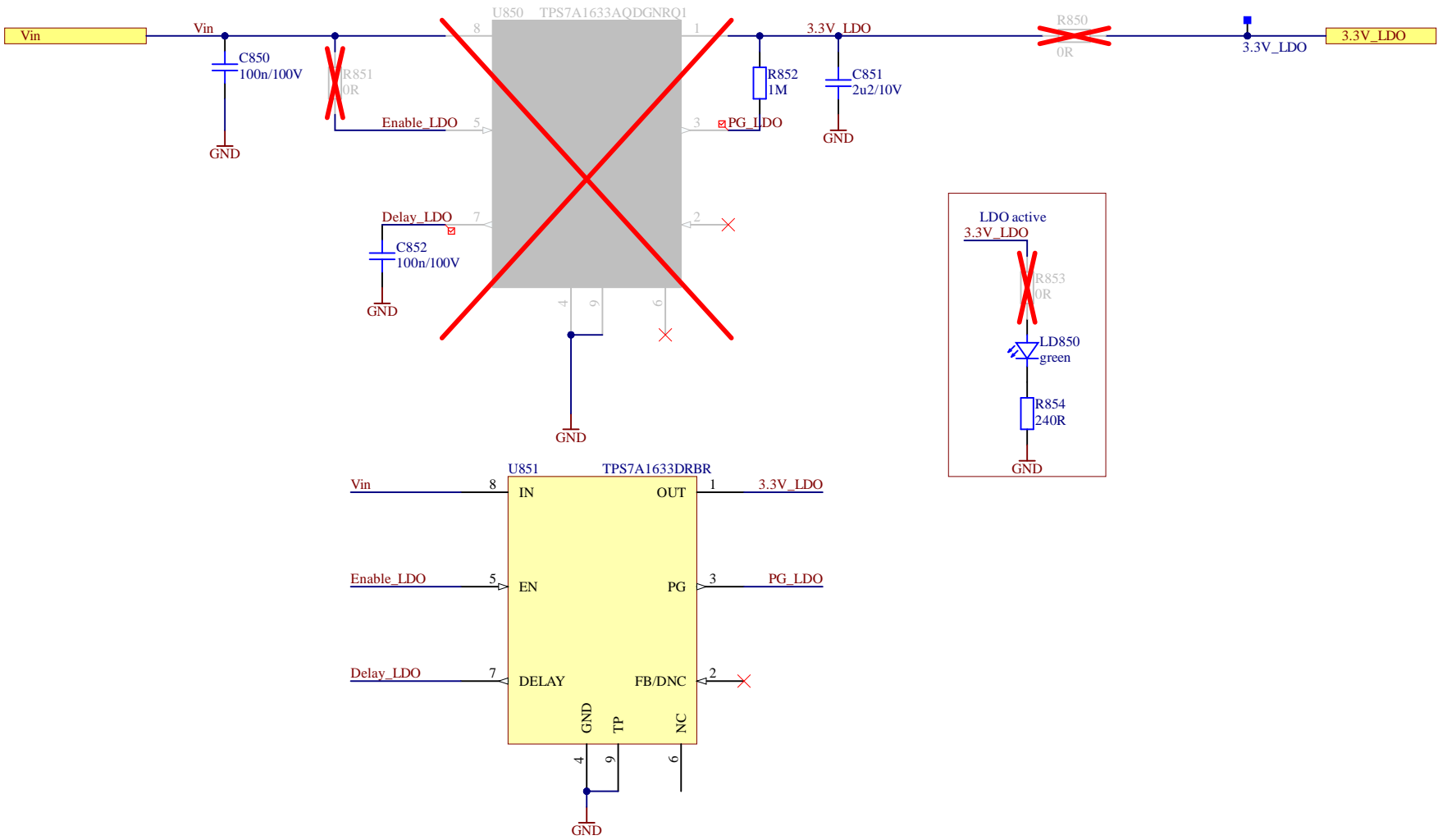


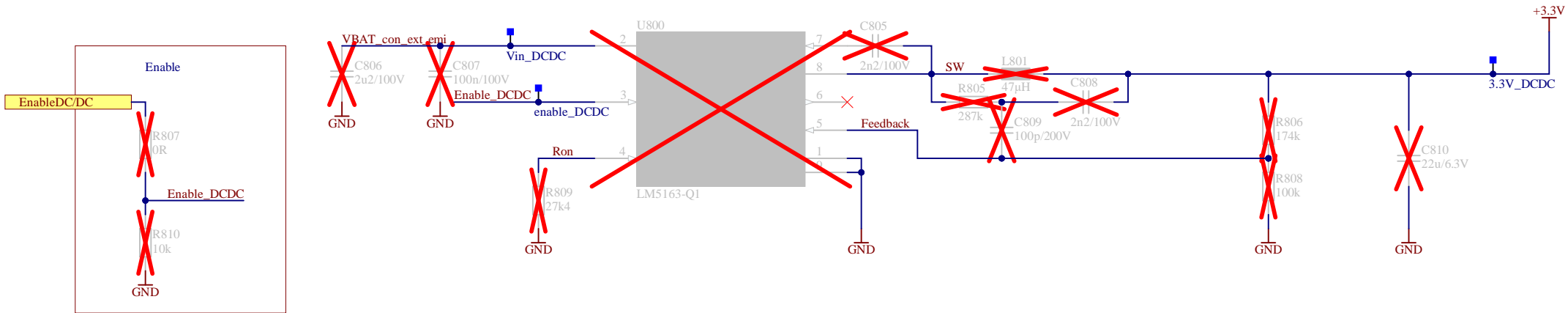
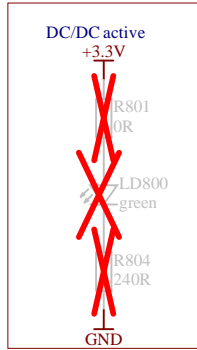
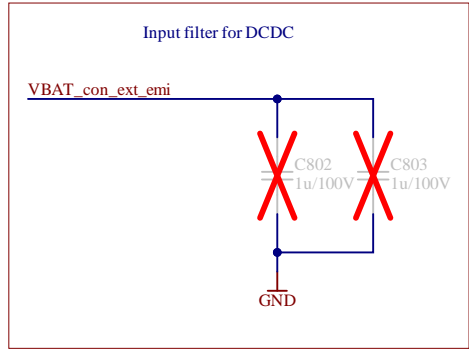
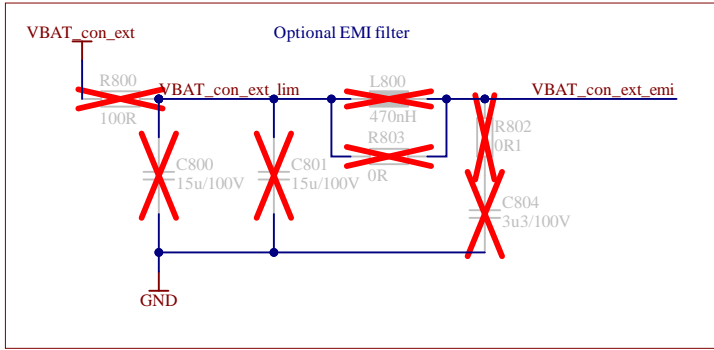
B

C

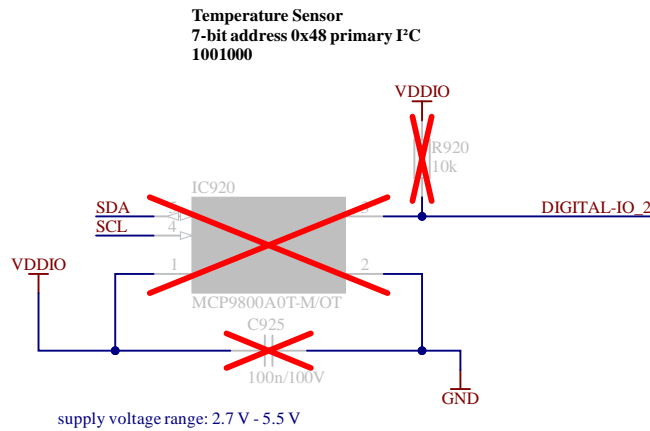
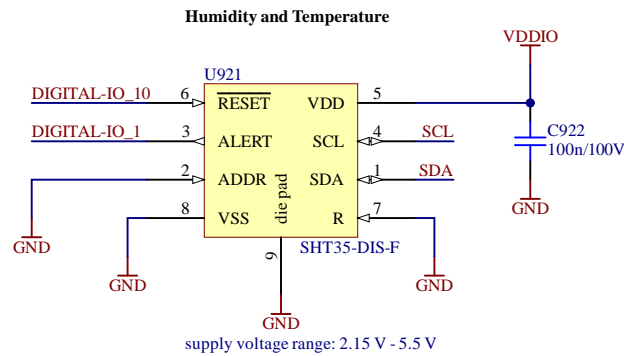
D



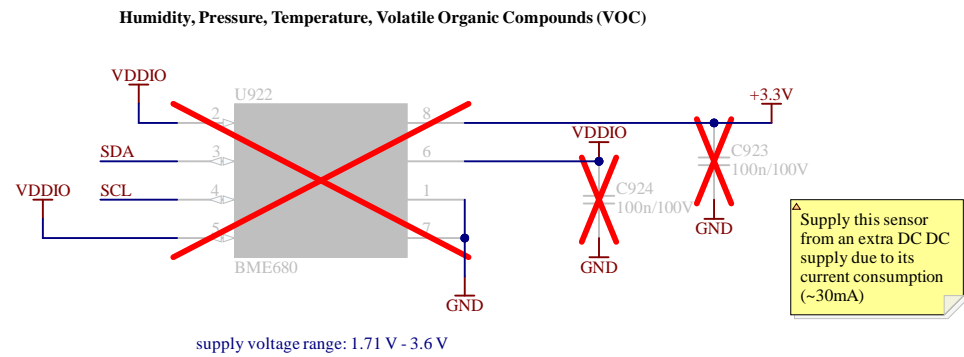
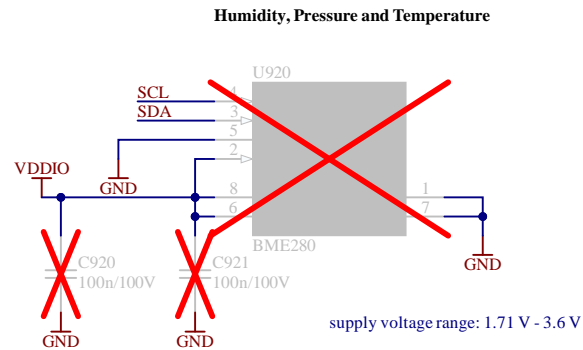




The DC/DC converter is used for applications where larger currents than the LDO can supply are needed.



Temperature Sensor MCP9800 is qualified AEC-Q100



PC addresses

Analog MUX bank0: 1001100
Analog MUX bank0: 1001101
port expander: 0100000

M24M02-A125: 101xxxx
CY15B256J-SXE: 1010xxx

SHT35: 1000100
MCP9800A0T: 1001000
BME280: 1110110
BME680: 1110111

±0.5°C (typ.) at +25°C
±1°C (max.) from -10°C to +85°C
±2°C (max.) from -10°C to +125°C
±3°C (max.) from -55°C to +125°C

Attention: use -A0T Type (I2C address conflict otherwise)!

Alert temperature can be configured via I2C



foxbms.org

developed by:

Fraunhofer IISB
Schottkystr. 10
91058 Erlangen
Germany



www.iisb.fraunhofer.de

Project

BMS-Slave 14-Cell MC33775

Author

foxBMS Team

Description

Environmental Sensors

License

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sensors.SchDoc

Version

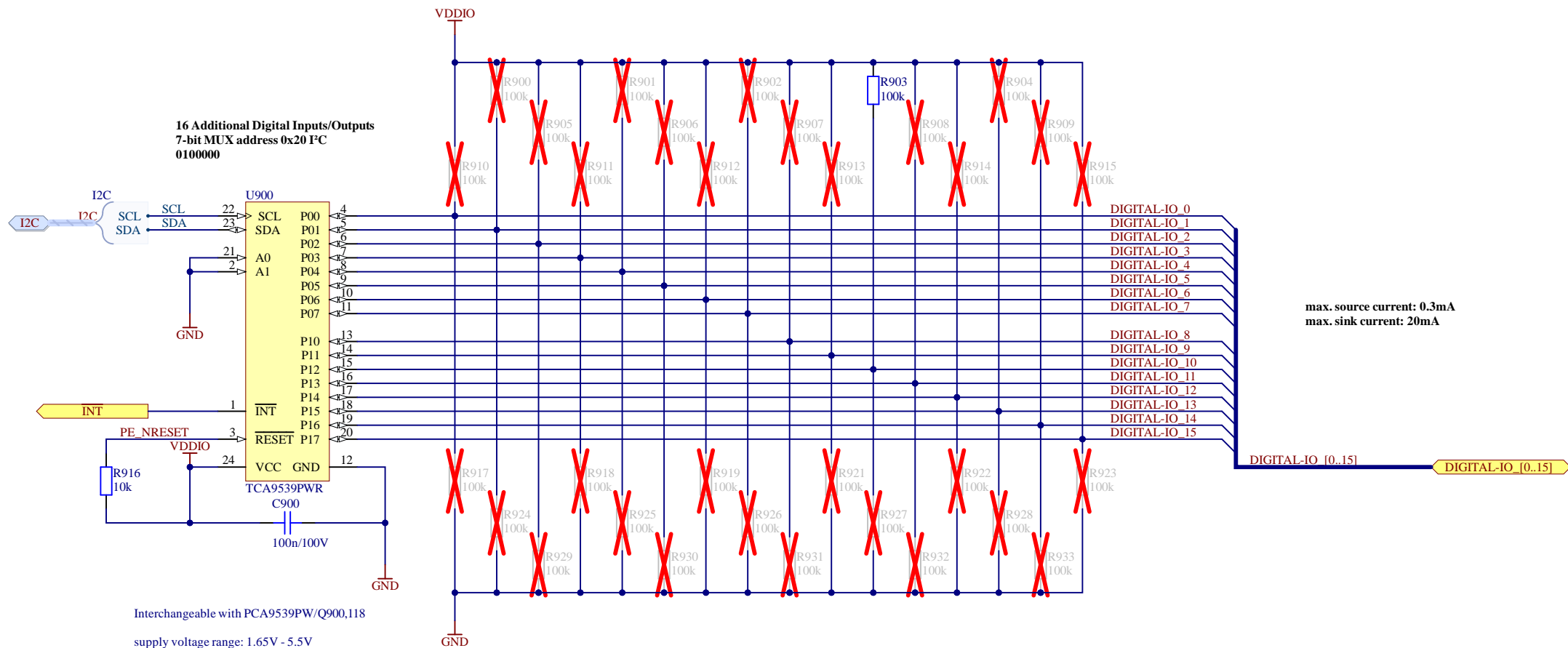
v1.0.3-0

Release Date

2025-03-28

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developed by:

Fraunhofer IISB
Schottkystr. 10
91058 Erlangen
Germany



Fraunhofer
IISB

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Project

BMS-Slave 14-Cell MC33775

Author

foxBMS Team

Description

Digital Inputs/Outputs

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Version

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Release Date

2025-03-28

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