

XDS100 – Page 2

Connector Top – Page 4

Power – Page 6

Error Detection – Page 8

Status LEDs – Page 10

Isolation – Page 3

Connector Bottom – Page 5

MCU – Page 7

Analog Filter – Page 9

MCU GPIOs – Page 11

Components reference:

- 2XX –> Page 2
- 3XX –> Page 3
- 4XX –> Page 4
- 5XX –> Page 5
- 6XX –> Page 6
- 7XX –> Page 7
- 8XX –> Page 8
- 9XX –> Page 9
- 1XXX –> Page 10

https://github.com/upb-lea/LEA_control_board

PADERBORN UNIVERSITY DEPARTMENT OF POWER ELECTRONICS AND ELECTRICAL DRIVES

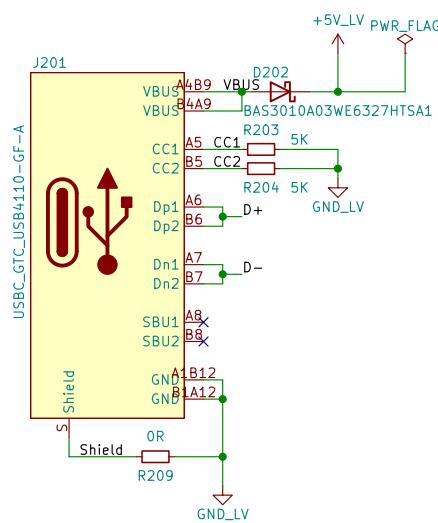
Sheet: /
File: Control_Board.kicad_sch

Title: LCB-CCB-01: Control Board

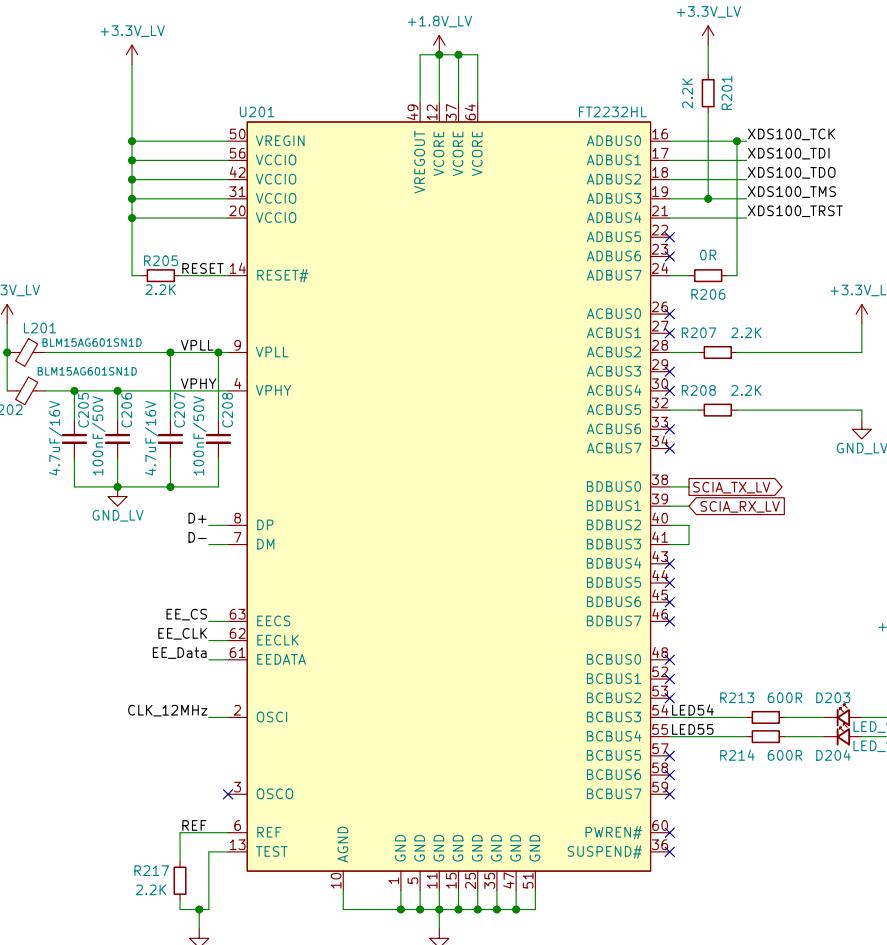
Size: A4 Date: 2022-03-17
KiCad E.D.A. kicad (6.0.2-0)

Rev: 0.1
Id: 1/11

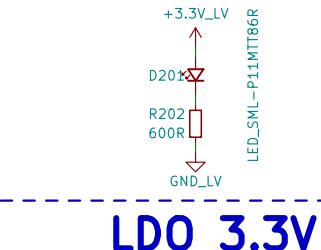
XDS100 USB-C Port



FTDI2232HL XDS100 MCU

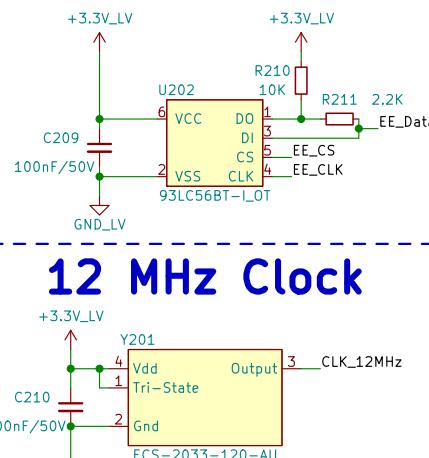


Power Status LED



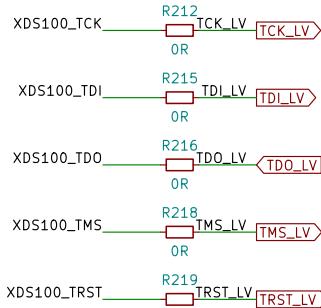
LDO 3.3V

EEPROM XDS100

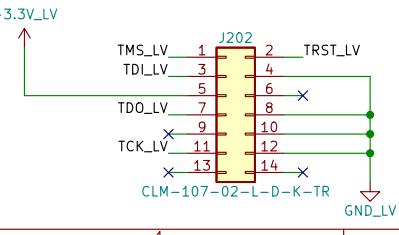


12 MHz Clock

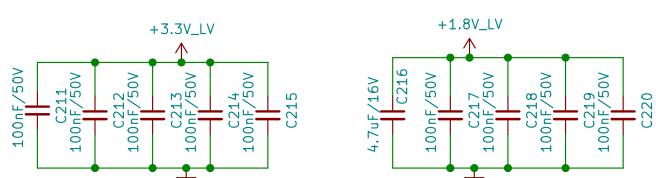
Disconnect XDS100



External Debugger



Decoupling Capacitors MCU FT2232HL



PADERBORN UNIVERSITY DEPARTMENT OF POWER ELECTRONICS AND ELECTRICAL DRIVES

Sheet: /XDS100 – Page 2/

File: Debugger.kicad_sch

Title: LCB-CCB-01: Control Board – Debugger XDS100 / JTAG

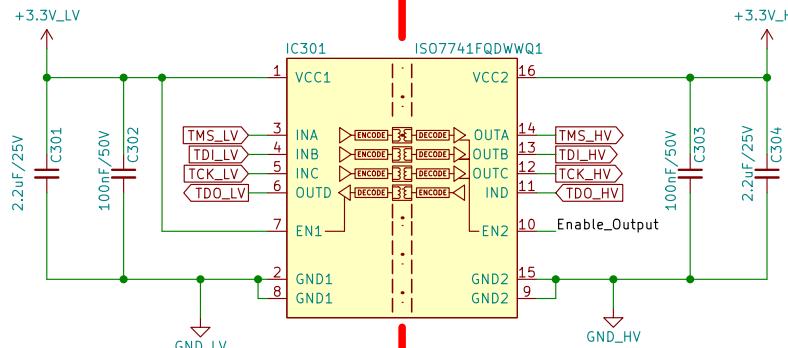
Size: A4 Date: 2022-03-17

KiCad E.D.A. kicad (6.0.2-0)

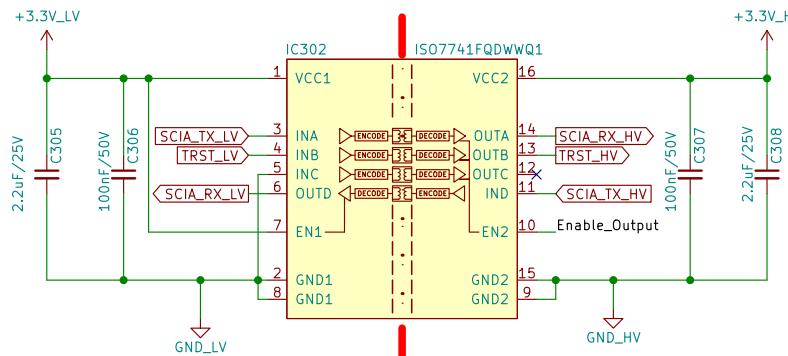
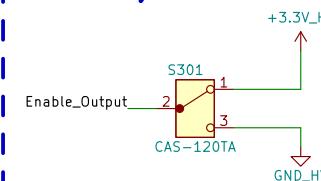
Rev: 0.1

Id: 2/11

JTAG and SCI ISOLATION



Enable/Disable Debugger



PADERBORN UNIVERSITY DEPARTMENT OF POWER ELECTRONICS AND ELECTRICAL DRIVES

Sheet: /Isolation – Page 3/

File: Isolation.kicad_sch

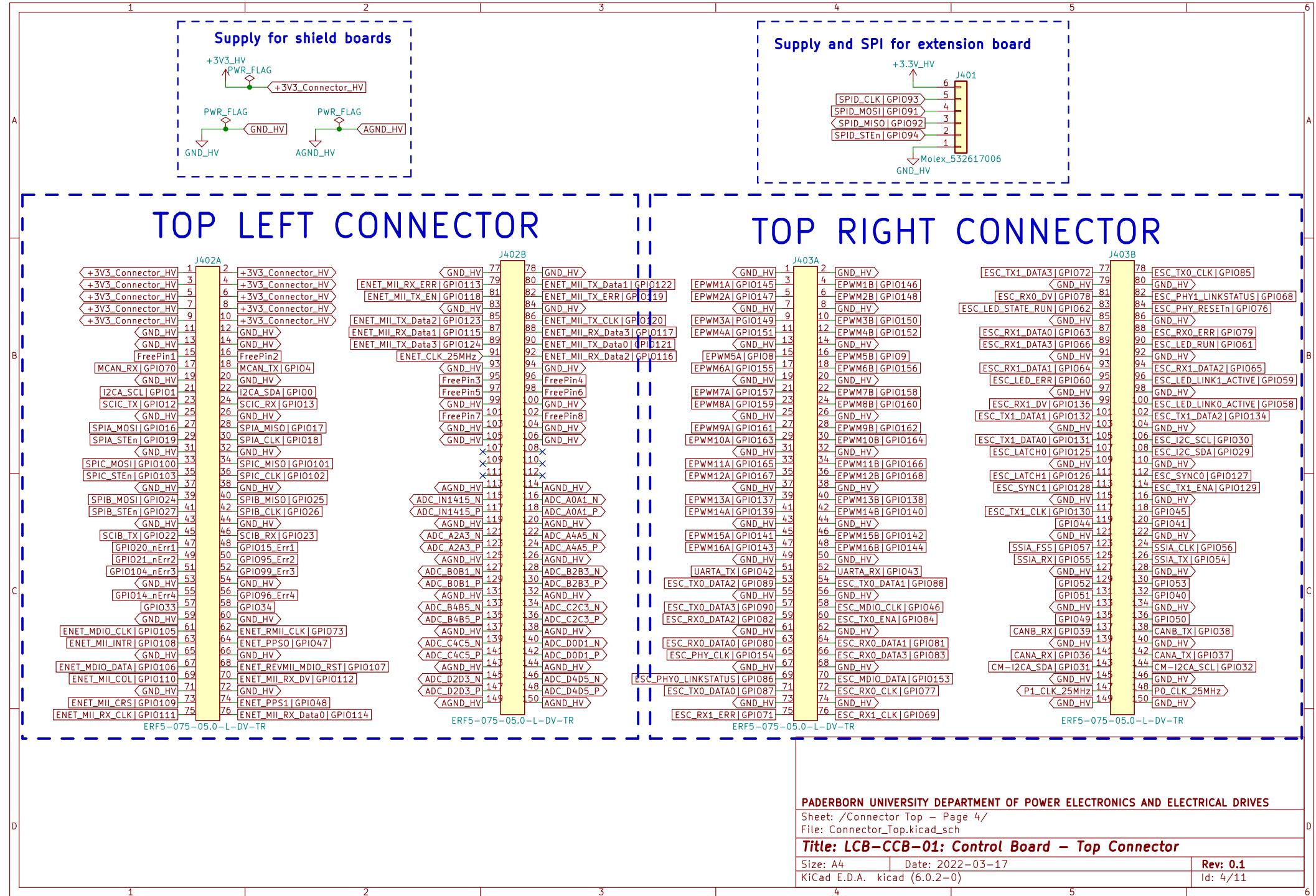
Title: LCB-CCB-01: Control Board – Isolation

Size: A4 Date: 2022-03-17

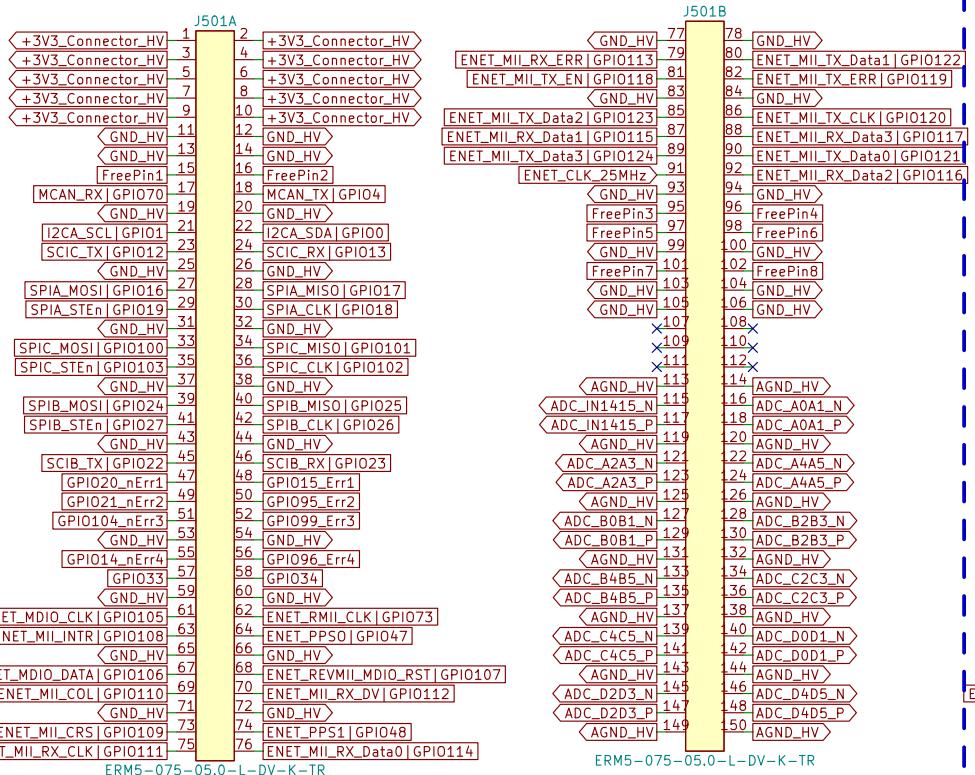
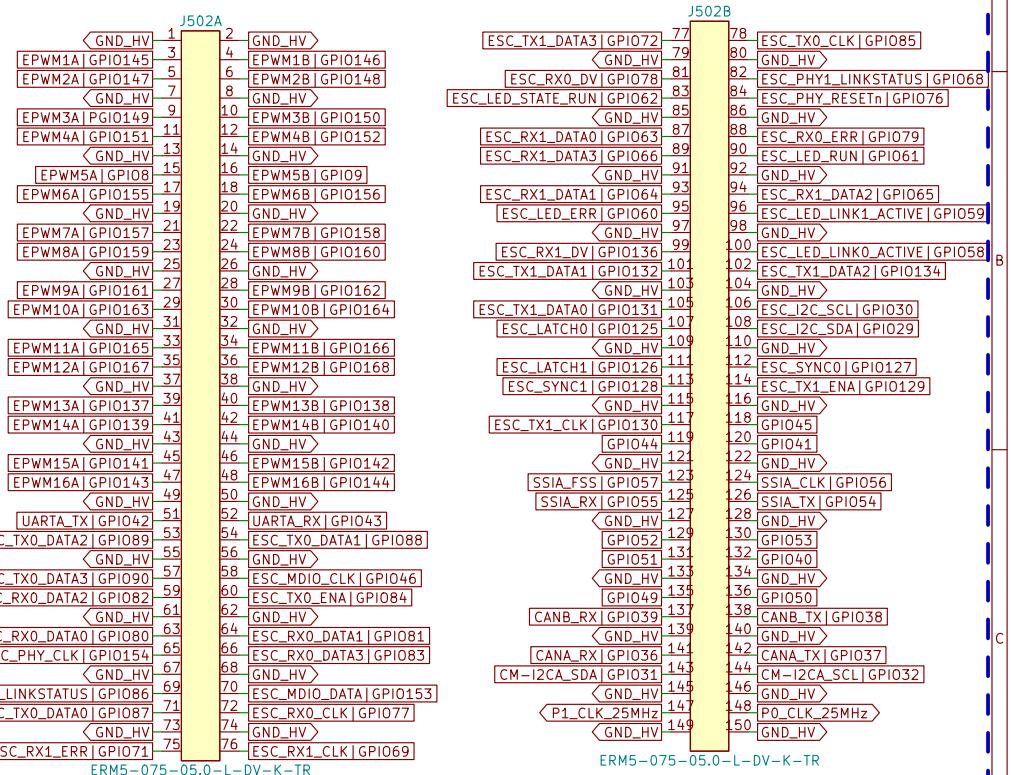
KiCad E.D.A. kicad (6.0.2-0)

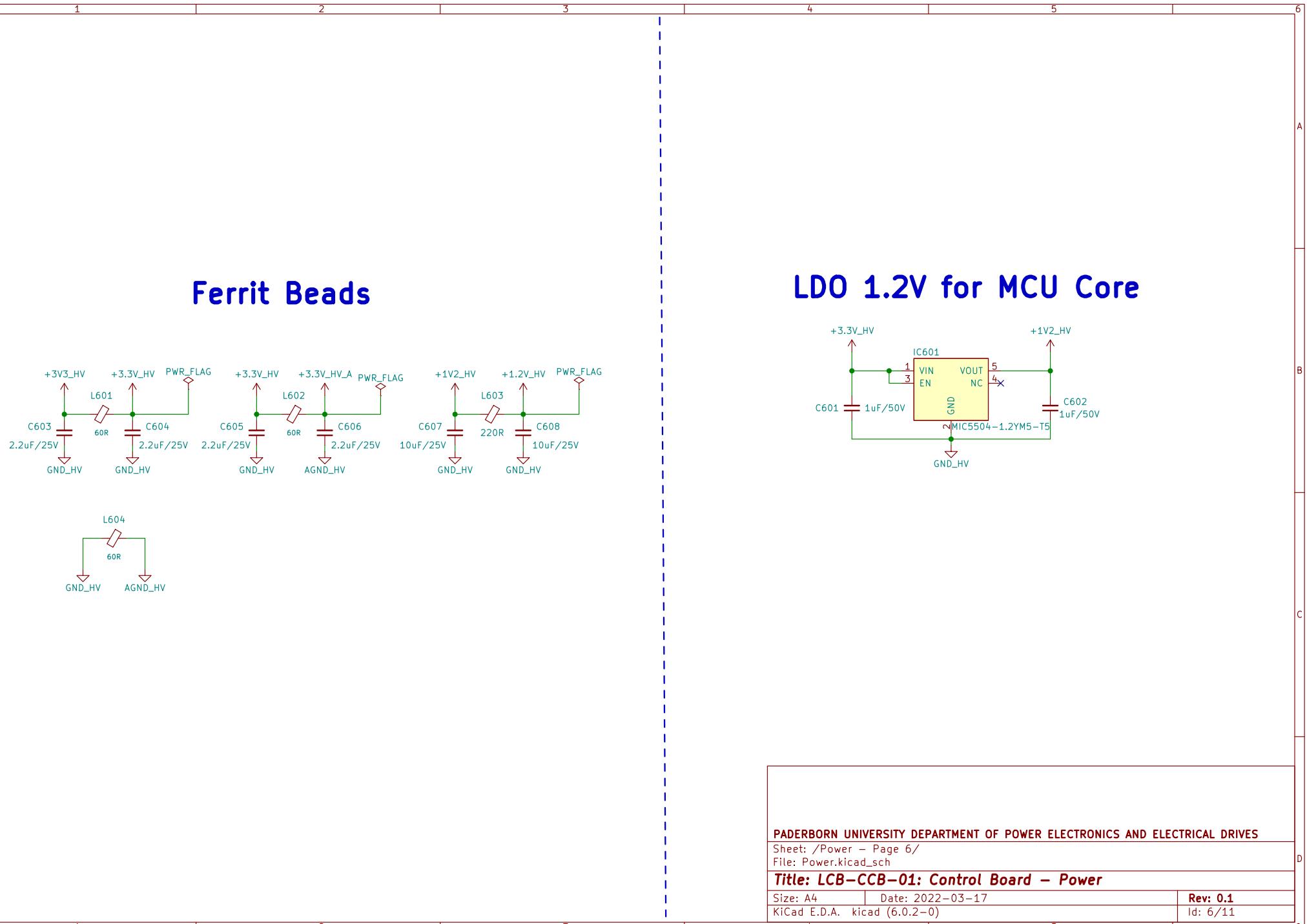
Rev: 0.1

Id: 3/11

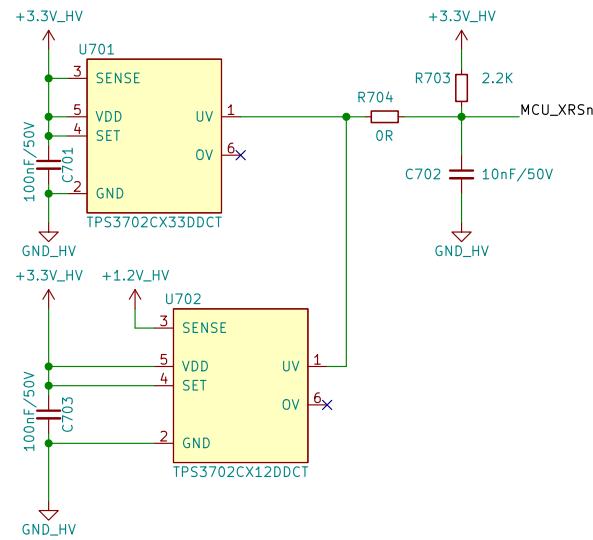


A

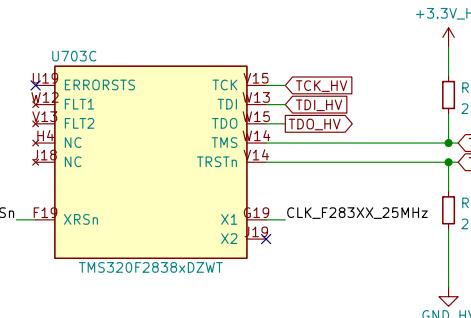
BOTTOM LEFT CONNECTOR**BOTTOM RIGHT CONNECTOR**



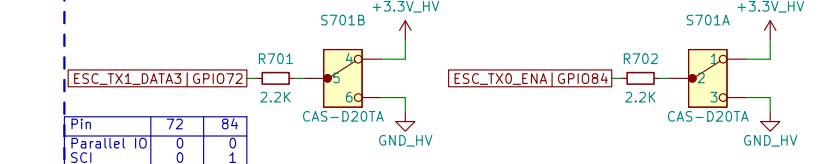
Power Supply Monitor



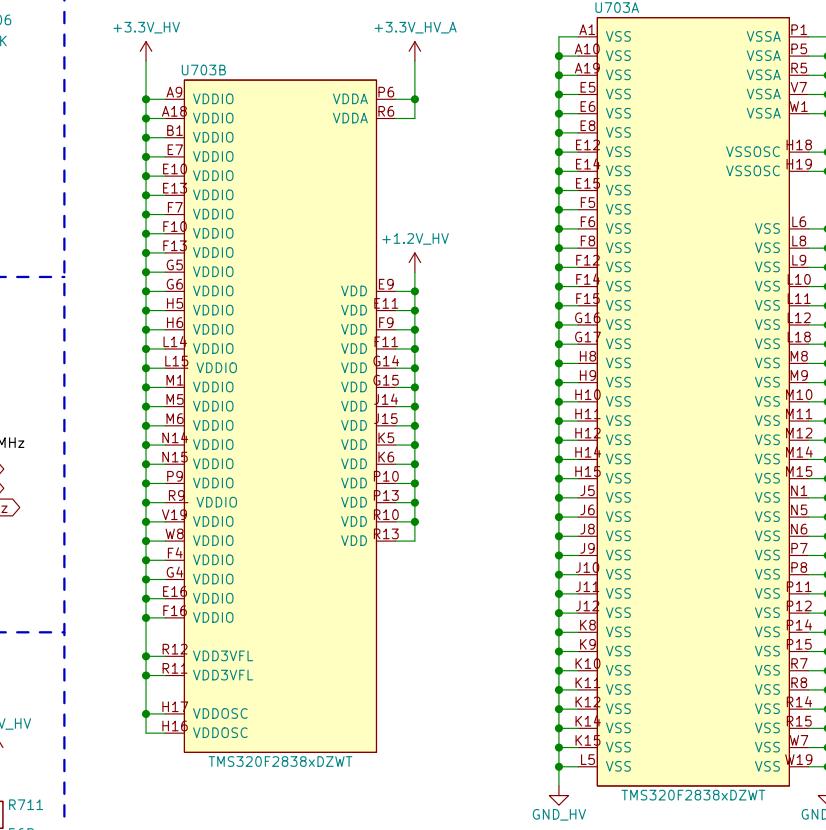
JTAG, CLK, Reset



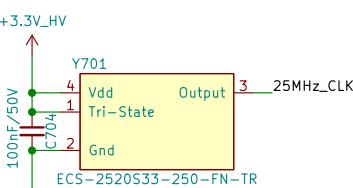
Boot Mode Pins



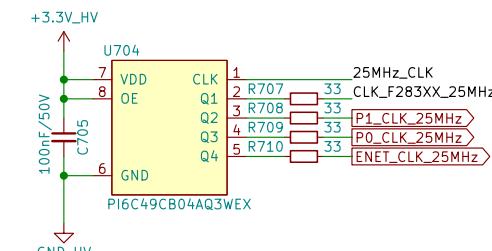
F2838x MCU Supply Pins



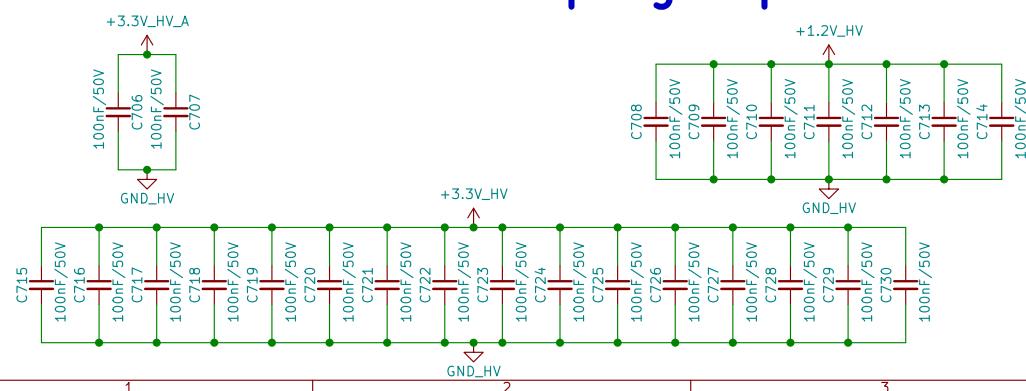
25MHz Clock



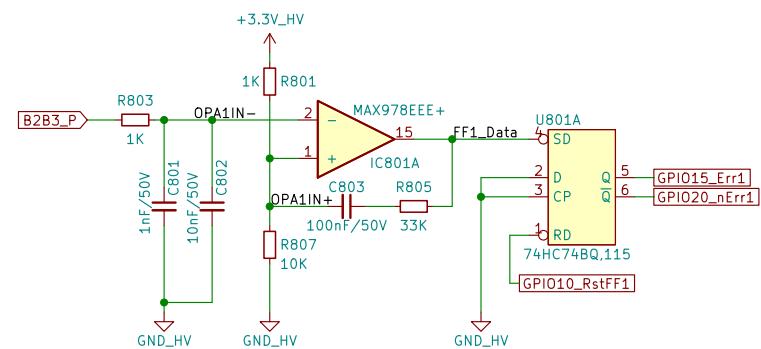
Clock Buffer



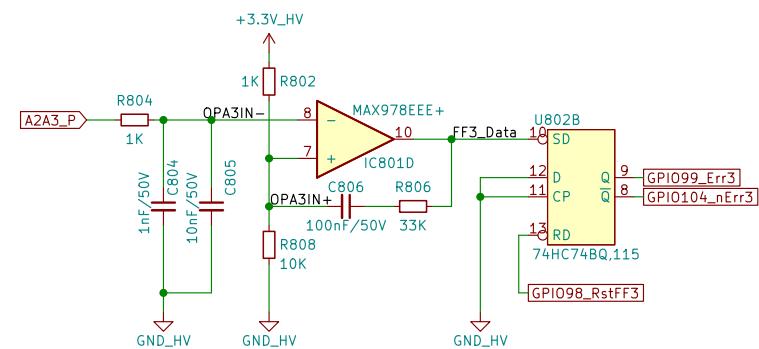
F2838x MCU Decoupling Capacitors



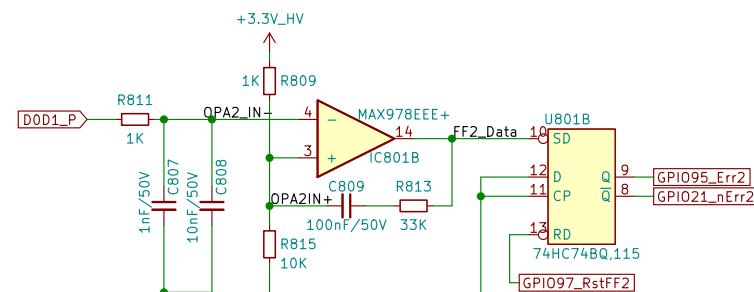
Error1 – B2B3P



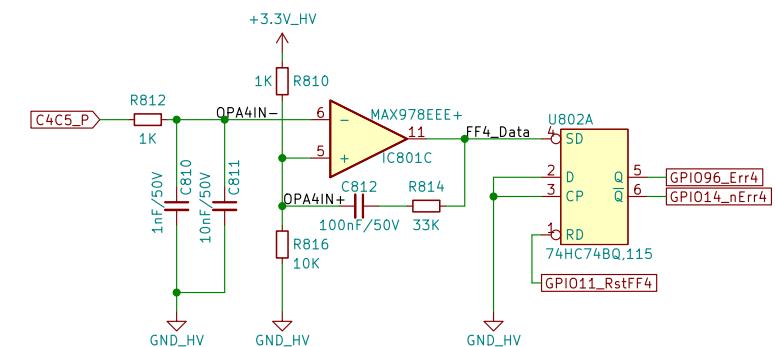
Error3 – A2A3



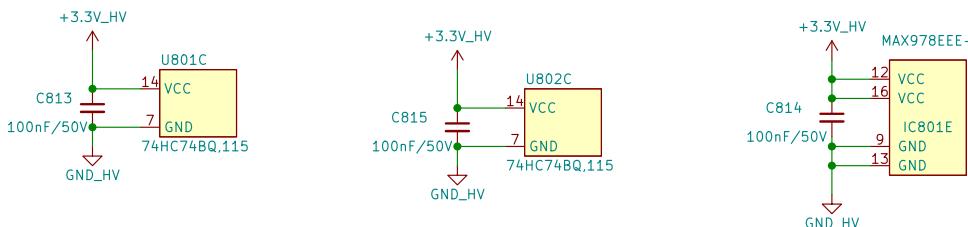
Error2 – DOD1



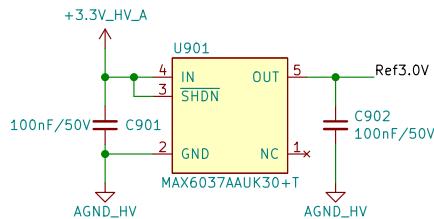
Error4 – C4C5



Power Supply



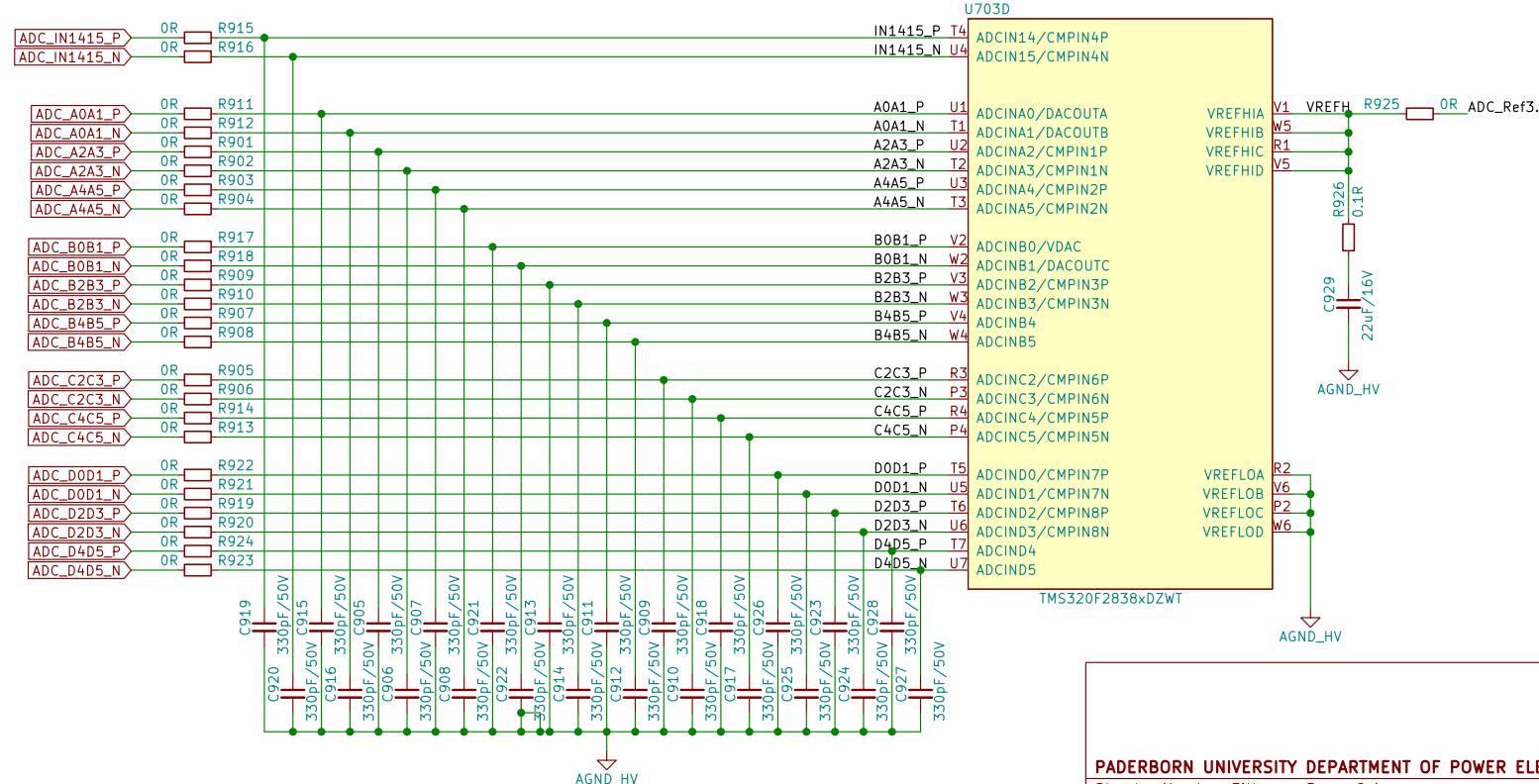
3V Referenz Voltage



3V Referenz Voltage Buffer



Analog Input Filter MCU F2838X



PADERBORN UNIVERSITY DEPARTMENT OF POWER ELECTRONICS AND ELECTRICAL DRIVES

Sheet: /Analog Filter – Page 9/

File: AnalogFilter.kicad_sch

Title: LCB-CCB-01: Control Board – Analog Filter

Size: A4 Date: 2022-03-17

KiCad E.D.A. kicad (6.0.2-0)

Rev: 0.1

Id: 9/11

A

A

B

B

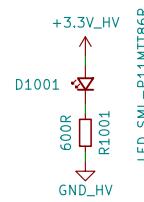
C

C

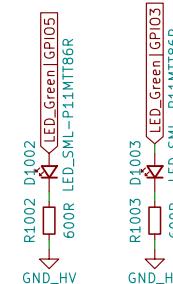
D

D

Power LED



Status LEDs



PADERBORN UNIVERSITY DEPARTMENT OF POWER ELECTRONICS AND ELECTRICAL DRIVES

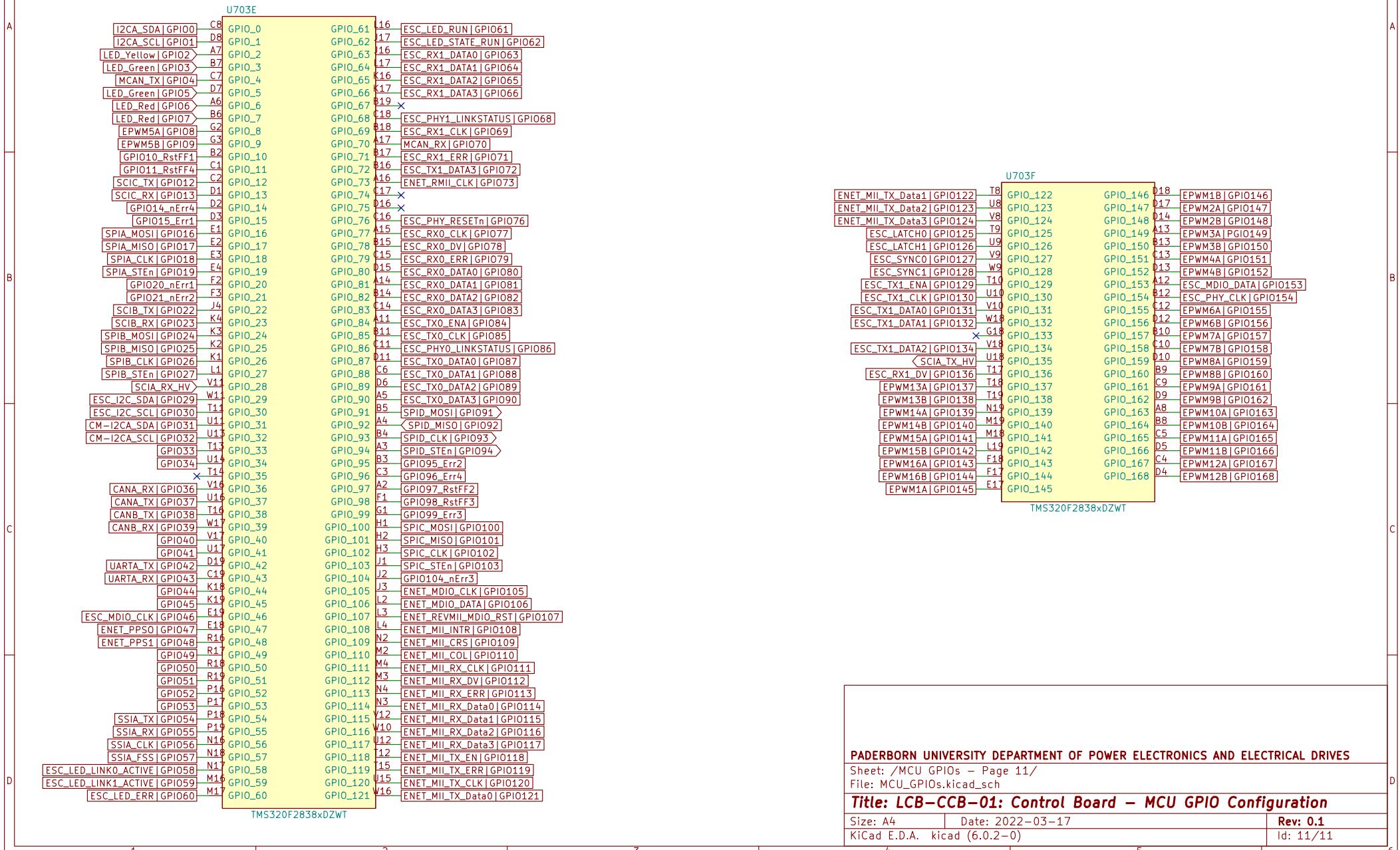
Sheet: /Status LEDs – Page 10/
File: LEDs.kicad_sch

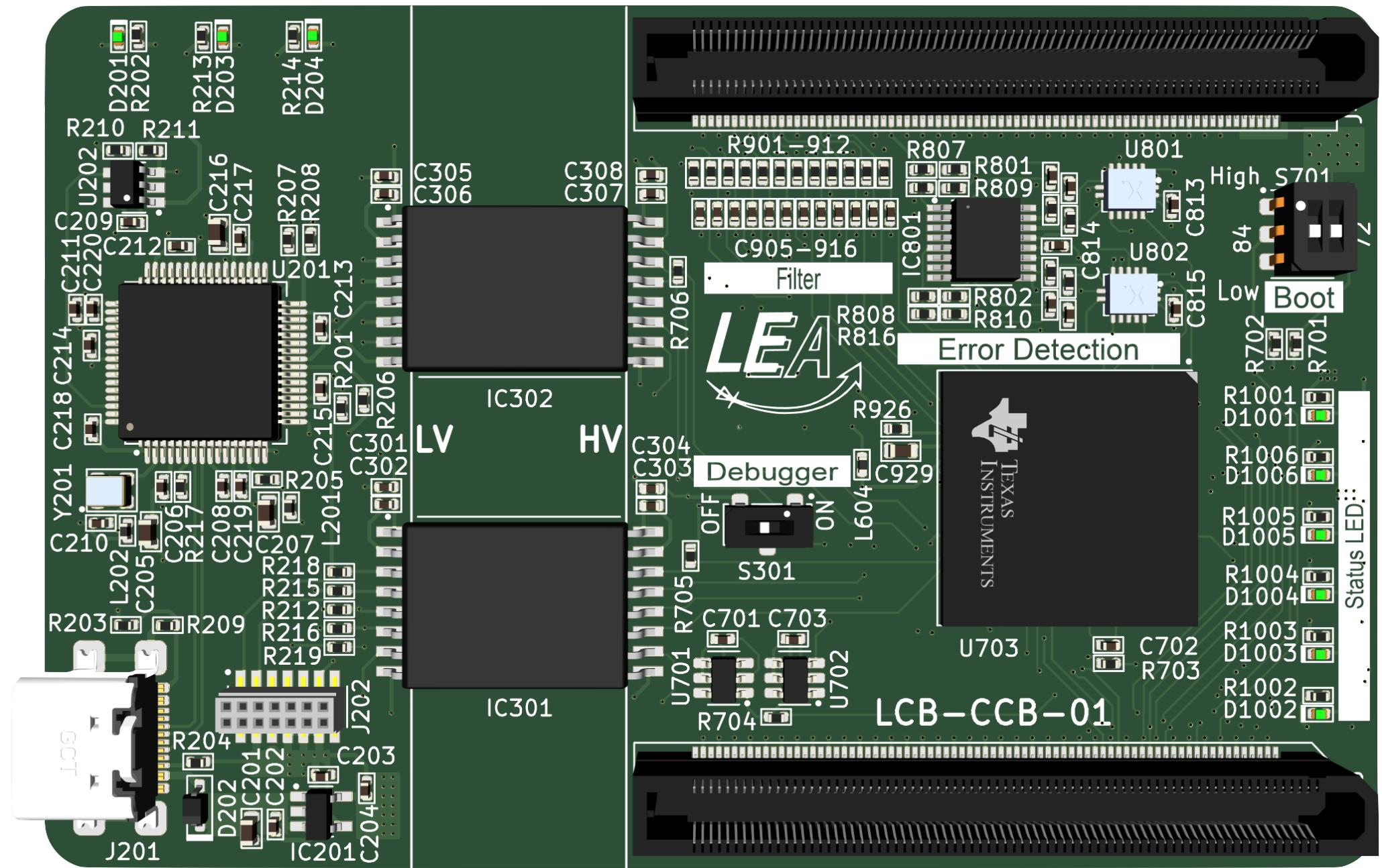
Title: LCB-CCB-01: Control Board – Status LEDs

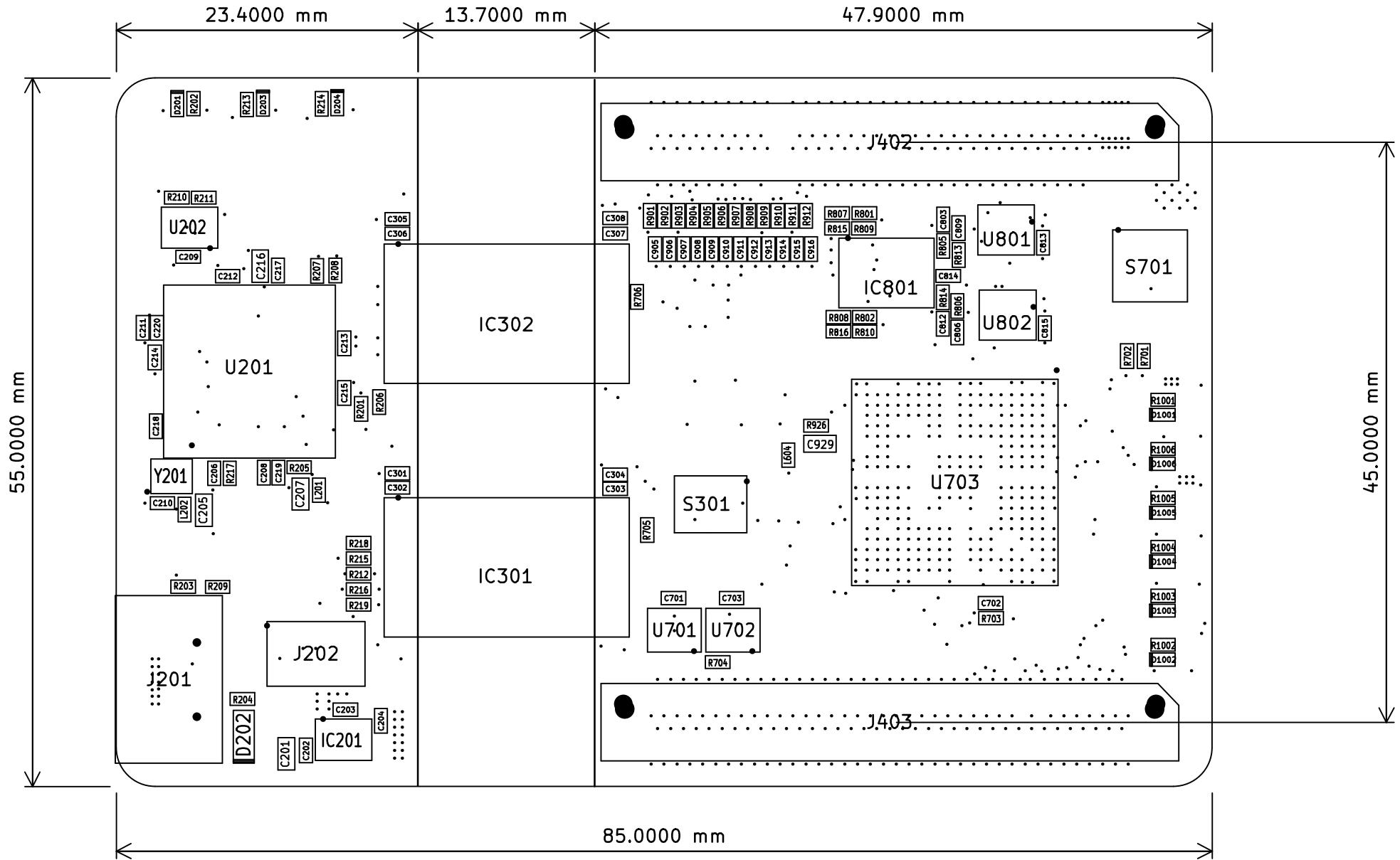
Size: A4	Date: 2022-03-17
KiCad E.D.A. kicad (6.0.2-0)	

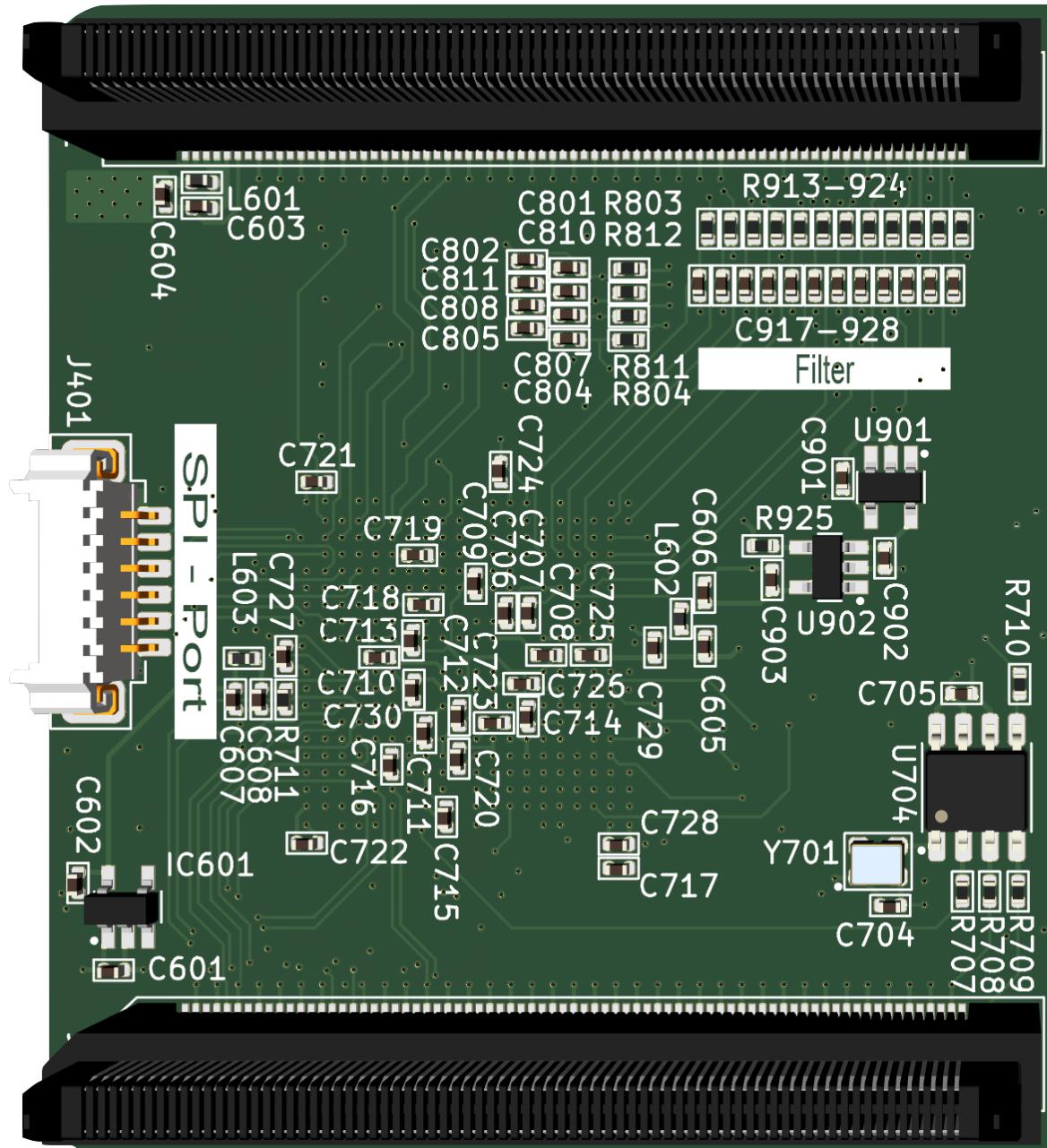
Rev: 0.1
Id: 10/11

F2838x MCU GPIO configuration









LCB-CCB-01
Mar 22

LEA
UPB



Designed by LEA in Paderborn

