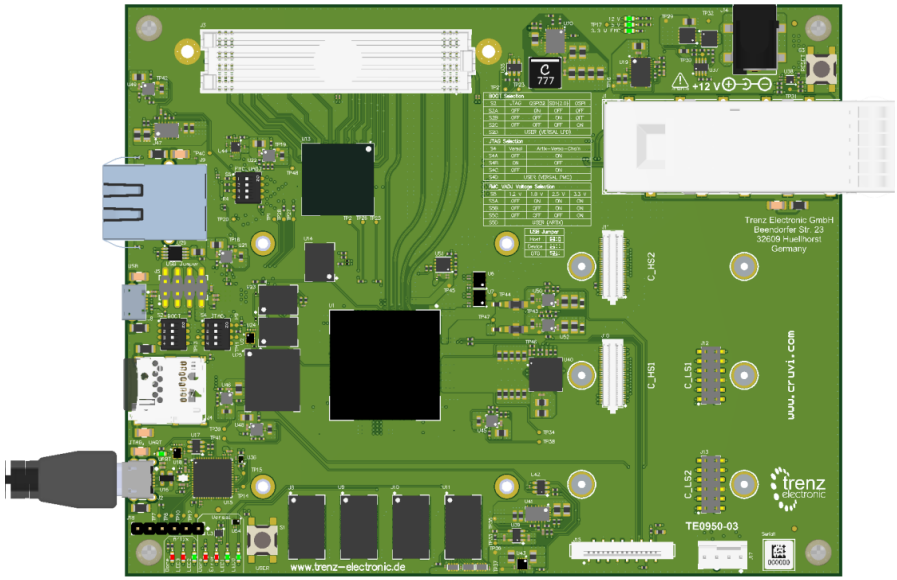

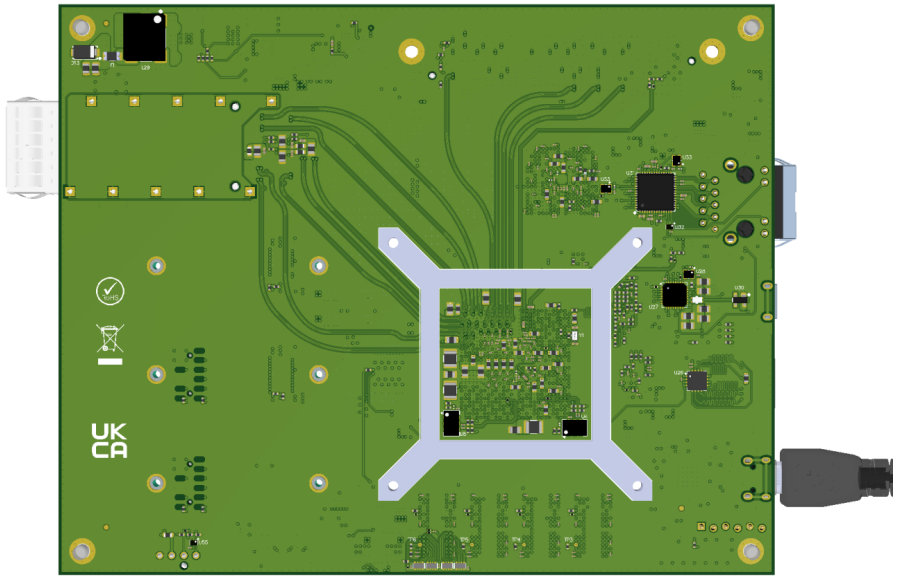

Regarding the usage of our schematics and alike documentation for Trenz module TE0950.

Project is protected under copyright and we strongly and strictly prohibit the reverse engineering or recreation, even if the design is just adapted or modified. TE0950 is protected under such right and in case of plagiarism we will have to do anything necessary in order to protect our assets.

Schematics and other handouts serve for informational purposes only!

Drawn by	MR
Checked by	ED
Assembly variant	EGBE22A
Created by	MR
Modified by	MR
Modified at	2023-12-19

Title: Legal Notices

A4	Number: TE0950 EGBE22A	Rev. 03
Date: 12.01.2024	Copyright: Trenz Electronic GmbH	Page 1 of 39
Filename: Legal Notices TE0950.SchDoc		

REV	Description	
-01	Initial revision	MR
-02	1. Inverted card detect (pullup-> pulldown) 2. Increased number of capacitors on VTT (C388,C389) 3. Added 1K pullup on FAULTn_12V (R5) 4. Added 4-pin connector J17 for FAN and correspoding circuit. PWM and TACHO connected to ARTIX 5. VERSAL JTAG connection corrected 6. Added CRUVI Connector description on silkscreen 7. Changed polarity for CSI2-CAM diff pairs 8. Update from library 9. Changed R266 to 12K and added R281 10. Changed enable 3V3 after 5V0 (R99), Pullup on PG_5V0 connected to 5V0 rail. 11. Replaced C256 (2,2µF) by 2x 1µF 12. Set R131 and R132 to not fitted (2023-08-18)	MR
-03	1. Added OSPI compatibility, renamed sheet (QSPI_SD_eMMcC -> SD_eMMcC) and added sheet QSPI_OSPI. Added boot mode "OSPI" selectable via dip S2C, former connection (User PMC MIO27) moved to S4D. 2. Added D12 and pull-up R170 for correct reset levels, set R131 and R132 to assembled 3. Added Pin header J18 for direct JTAG access 4. Moved V_L22 diff. pair to clock capable pins on Atrix 5. Small improvements of MGT routing, added anti-pads, optimized VIAs, increased clearance. 6. Versal changed from Engeniering Sample to production (pre-production for ES9749) chips 7. Replaced U20 by IR3899A DCDC 8. Removed U34 (I2C levelshifter for former U20) 9. Added Common mode chock L29, Fuse F1, C288, C289 and D13 to 12V input rail. 10. Moved PM1, PM2, PM5, PM6 11. Silkscreen dip switch description: - added OSPI boot mode, - S4D is user dip switch connected to Versal PMC (MIO27) 12. Updated all components from lib (2024-02-15) 13. Set ZigZag Placeholder for JTAG (J18) to not fitted to make it more clear that there is no header fitted 14. Updated AMD Versal (U1) Schematic Symbol	MR MR

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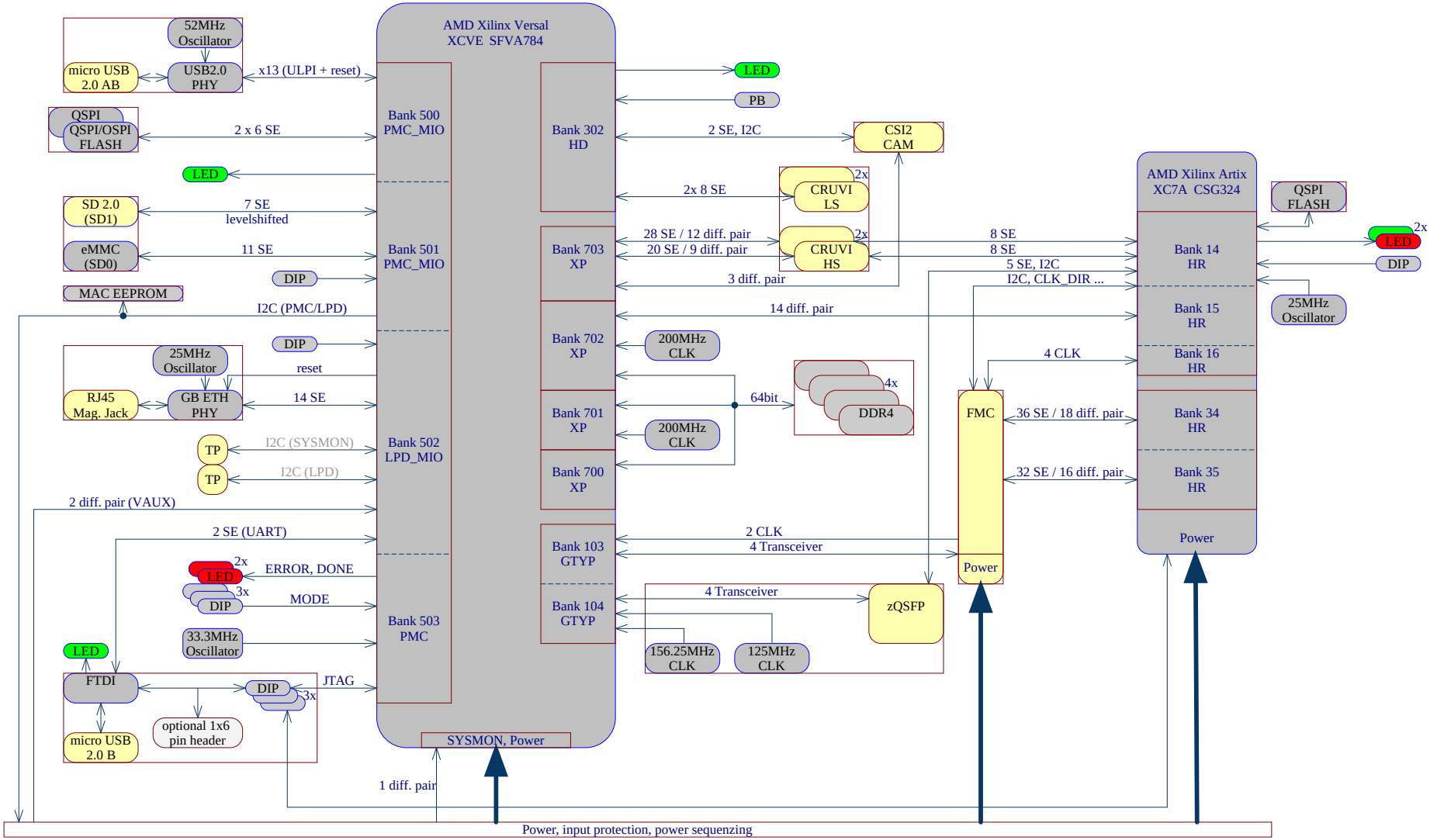
Title: Revision History		
A4	Number: TE0950 EGBE22A	Rev. 03
Date: 15.02.2024	Copyright: Trenz Electronic GmbH	Page 2 of 39
Filename: Revision Changes.SchDoc		



Special notes:

Versal XCVE2302-1LSESFVA784-ES9749 is a preproduction die.
No changes to production chips (without ES number) are expected.

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Title: System Overview		
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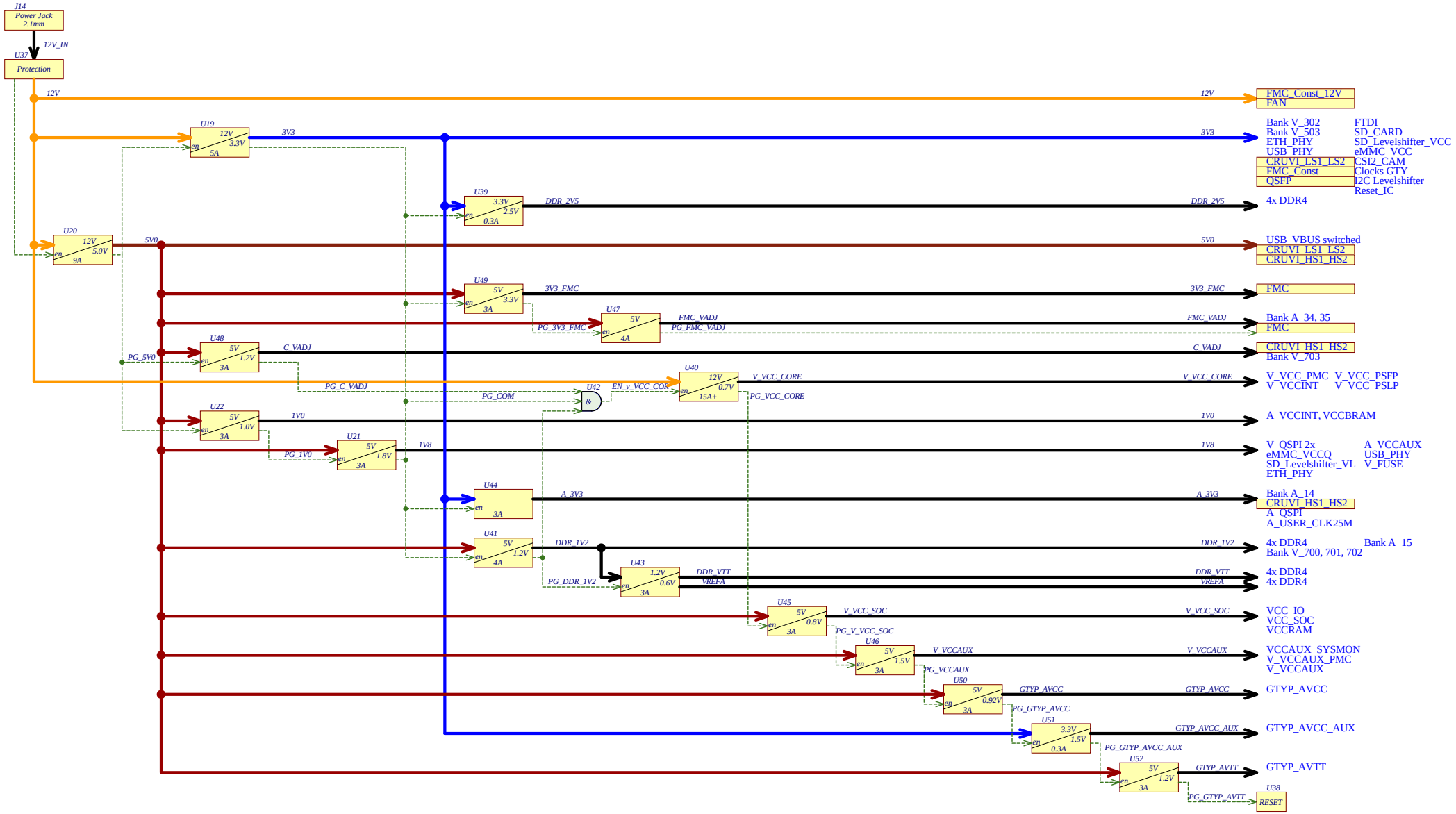
Date: 17.01.2024	Copyright: Trenz Electronic GmbH	Page 3 of 39
Filename: Overview.SchDoc		



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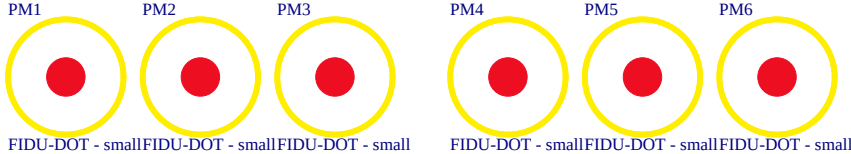
Title: Power Diagram		
A3	Nummer: TE0950 EGBE22A	Rev. 03
Datum: 2023-12-19	Copyright:Trenz Electronic GmbH	Page 4 of 39
Filename: Power_Diagram.SchDoc		

PM1 PM2 PM3 PM4 PM5 PM6



FIDU-DOT - small FIDU-DOT - small FIDU-DOT - small FIDU-DOT - small FIDU-DOT - small FIDU-DOT - small

MECH1

TE Address Overlay

LOGO ADDRESS

LOGO1

TE Logo PRINT Layer

LOGO PRINT

Serial1

Serial

Serialnumber 6,3 x 6.3mm

I2C Addresses:

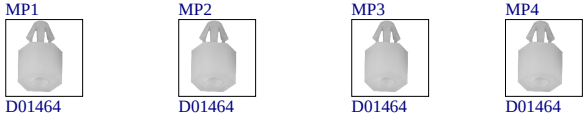
Device	Bus	Address	Note
24AA025E48	PMC_I2C	1010000 50H	EEPROM for MAC with user area

Supported Voltage Ranges:

Power Rail	Direction	Range	Tolerance	Description	Note
12V_IN	IN	12V	+/-5%	Board Power	-
5V0	OUT	5.0V	+/-3%	CRUVI LS and HS 5V	Shared with onboard 5V supplies and with further switch (U29) for rail USB_VBUS_SUP via jumper (J5) connectable to USB (J8).
3V3	OUT	3.3V	+/-3%	QSFP, CRUVI LS 3.3V, CSI-2 CAM	Shared with VERSAL VCCO Bank 302 and onboard peripherals.
C_VADJ	OUT	1.2V	+/-3%	CRUVI HS IO	Shared with VERSAL VCCIO XPIO Bank 703.
A_3V3	OUT	3.3V	+/-3%	CRUVI HS 3.3V	Shared with ARTIX VCCIO Bank 14 and onboard peripherals.
12V	OUT	12V	+/-5%	FMC	Derived from 12V_IN after input protection. Shared with onboard peripherals.
3V3_FMC	OUT	3.3V	+/-3%	FMC	-
FMC_VADJ	OUT	1.2V - 3.3V	+/-3%	FMC	Selectable by dip settings.

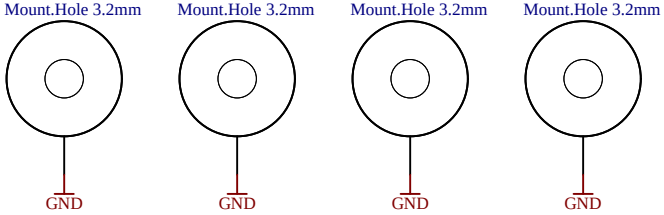
Versal XCVE2302-1LSESFVA784-ES9749 is a preproduction die.
No changes to production chips (without ES number) are expected.

MP1 MP2 MP3 MP4



D01464 D01464 D01464 D01464

Mount.Hole 3.2mm Mount.Hole 3.2mm Mount.Hole 3.2mm Mount.Hole 3.2mm



GND GND GND GND

CE1

CE Logo on Top Overlay

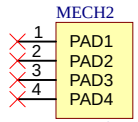
CE-TOPOVERLAY

UKCA1

UKCA Logo on Top Overlay

UKCA-TOPOVERLAY

MECH2



SNAP for rPGA988B

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Title: TEB0850		
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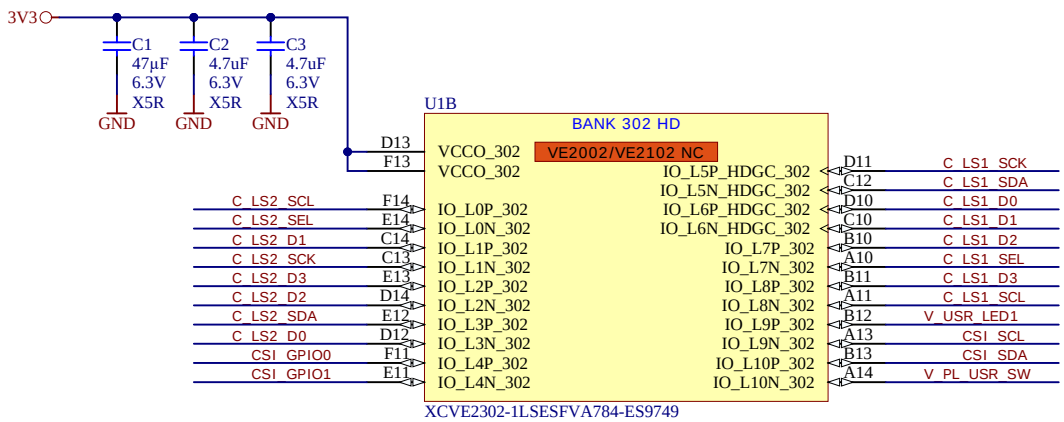
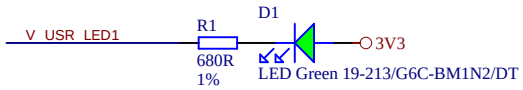
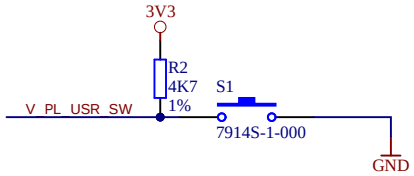
Date: 12.01.2024	Copyright: Trenz Electronic GmbH	Page 5 of 39
Filename: TE0950.SchDoc		







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Date: 15.02.2024	Copyright: Trenz Electronic GmbH		Page 6 of 39
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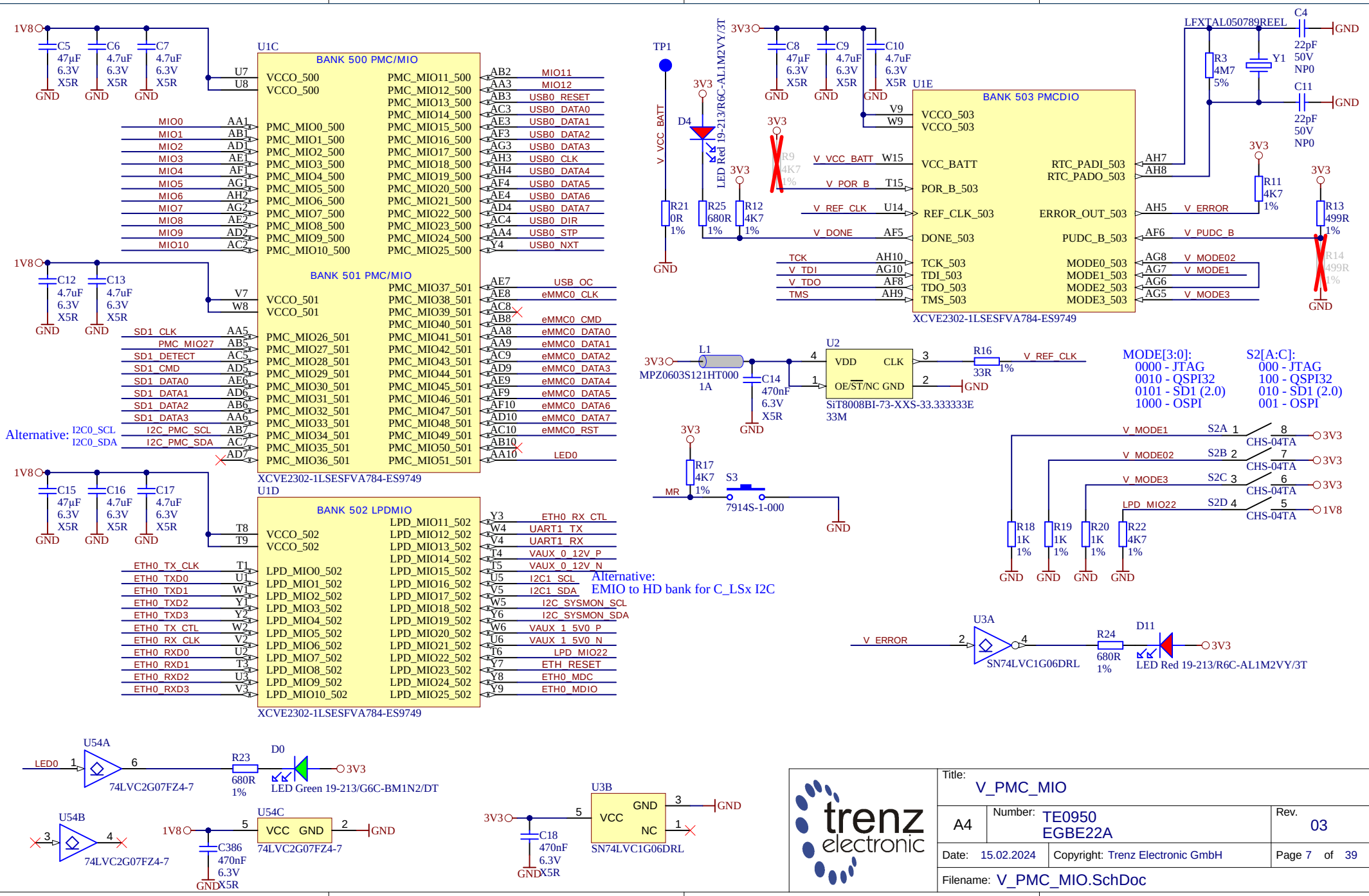

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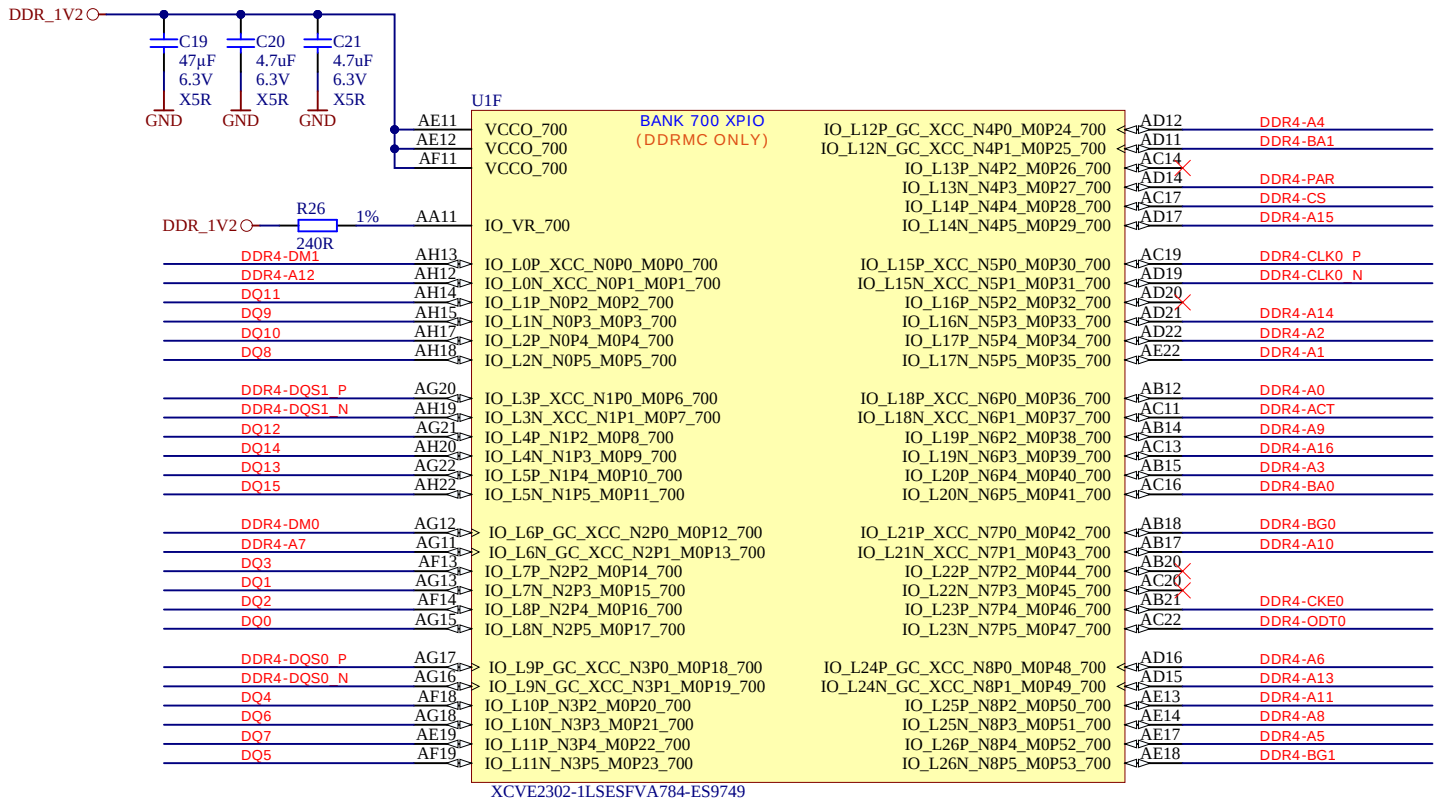
	Rev. 03
Date: 15.02.2024	Copyright: Trenz Electronic GmbH
	Page 7 of 39
Filename:	V_PMC_MIO.SchDoc



trenz electronic	Title: V_XPIO_700		
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Date: 2024-02-15	Copyright: Trenz Electronic GmbH		Page 8 of 39
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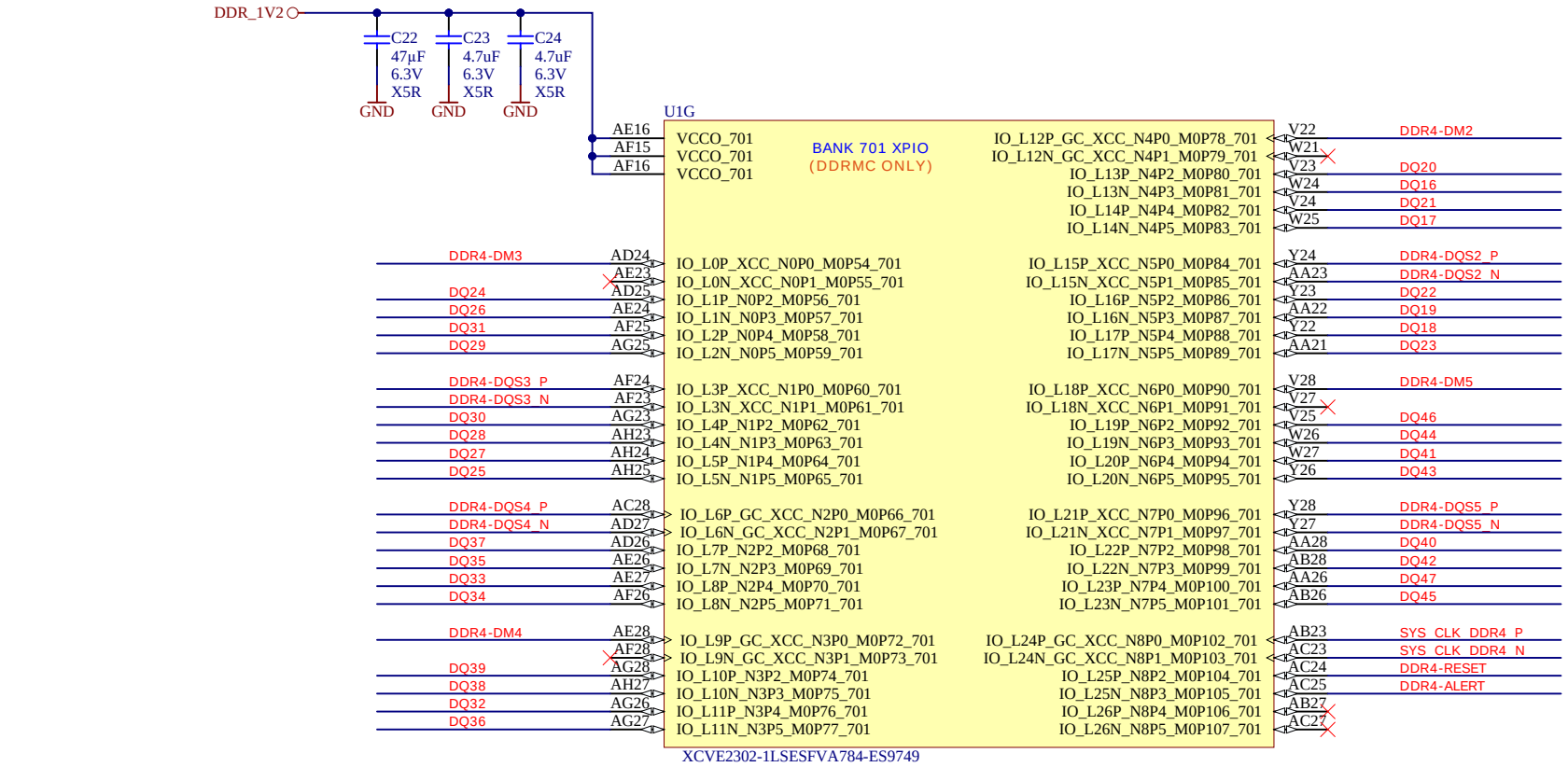

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Date: 2024-02-15	Copyright: Trenz Electronic GmbH		Page 9 of 39
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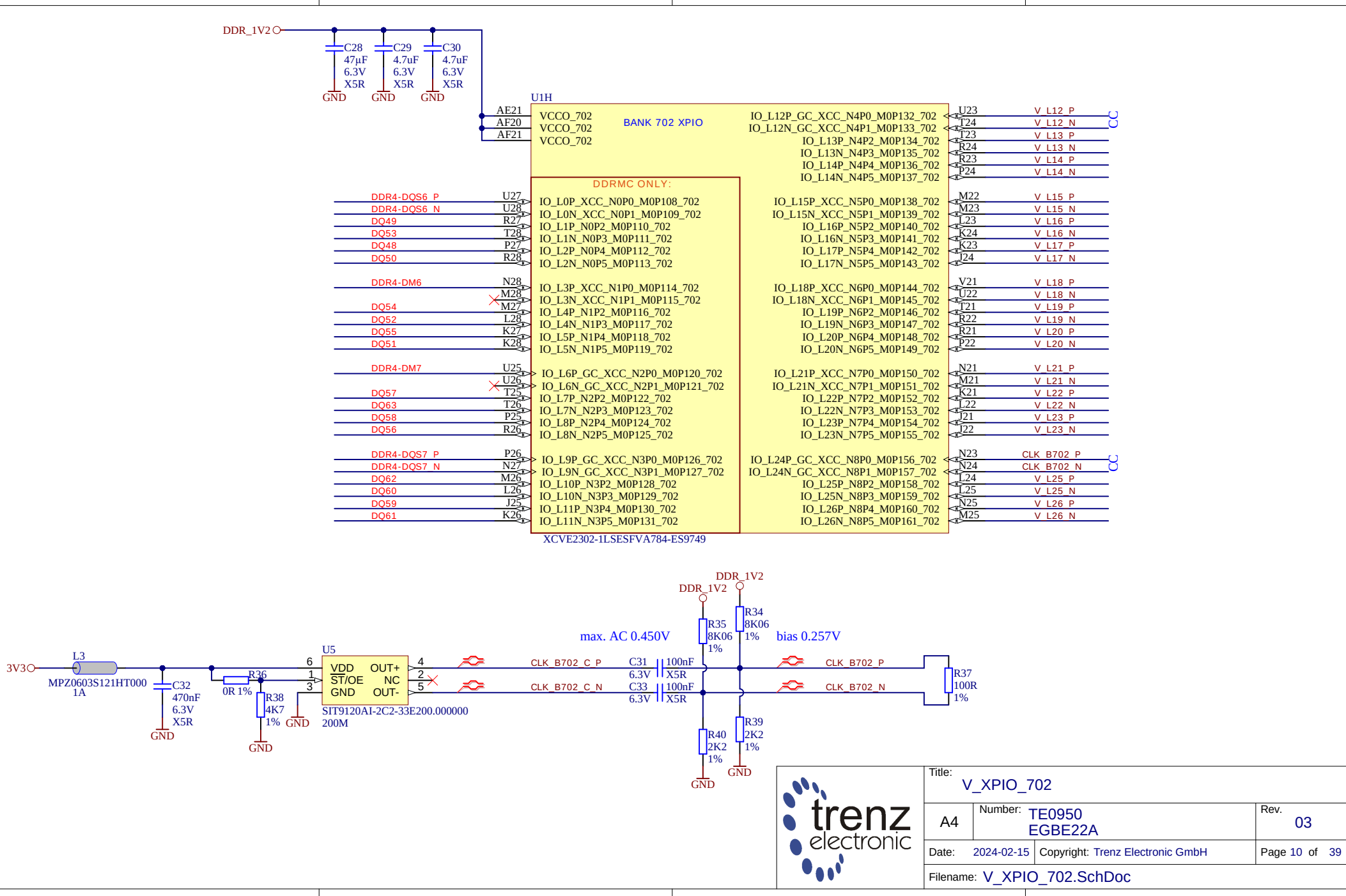

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Date: 2024-02-15	Copyright: Trenz Electronic GmbH		Page 10 of 39
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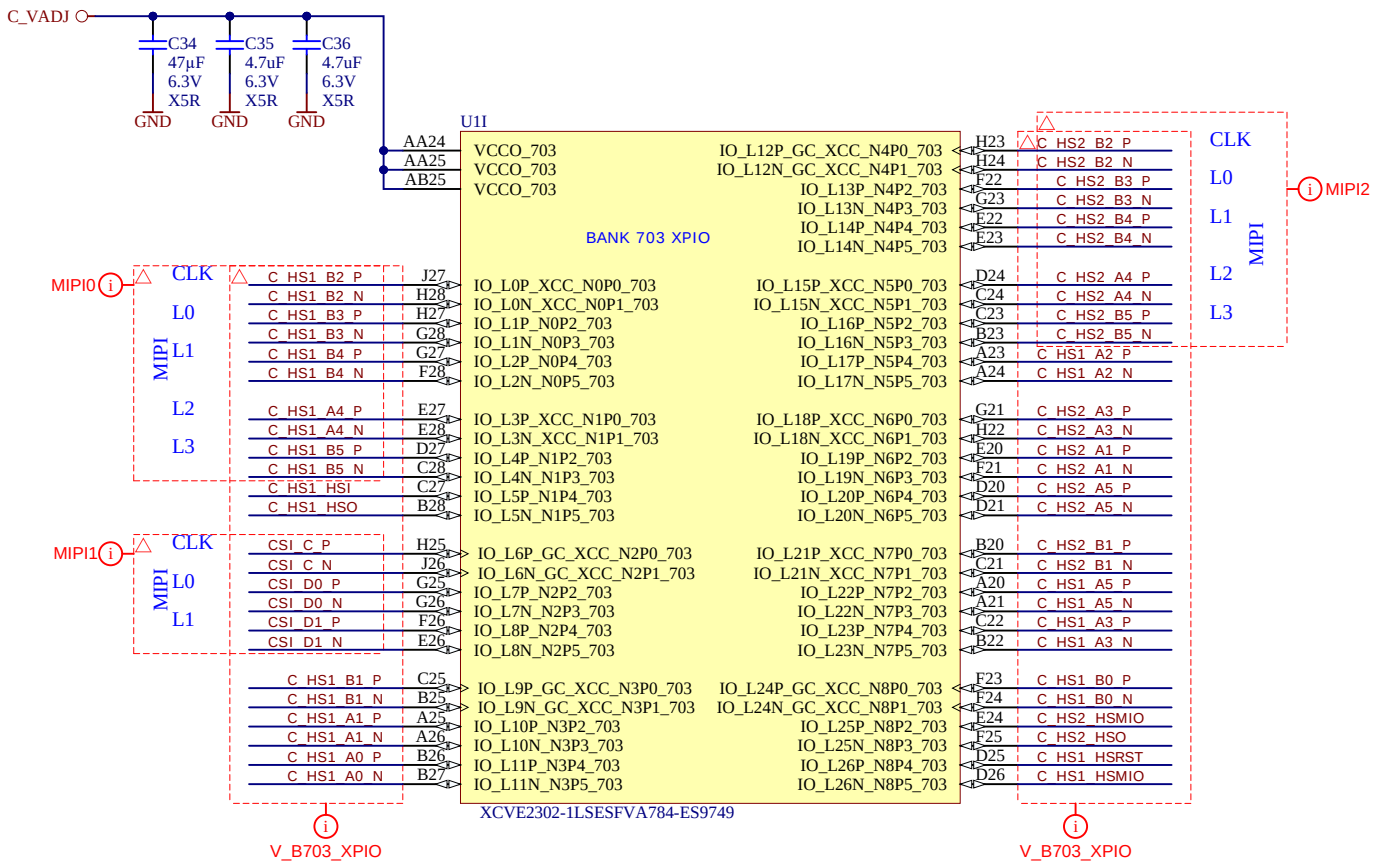

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Date: 2024-02-15	Copyright: Trenz Electronic GmbH		Page 11 of 39
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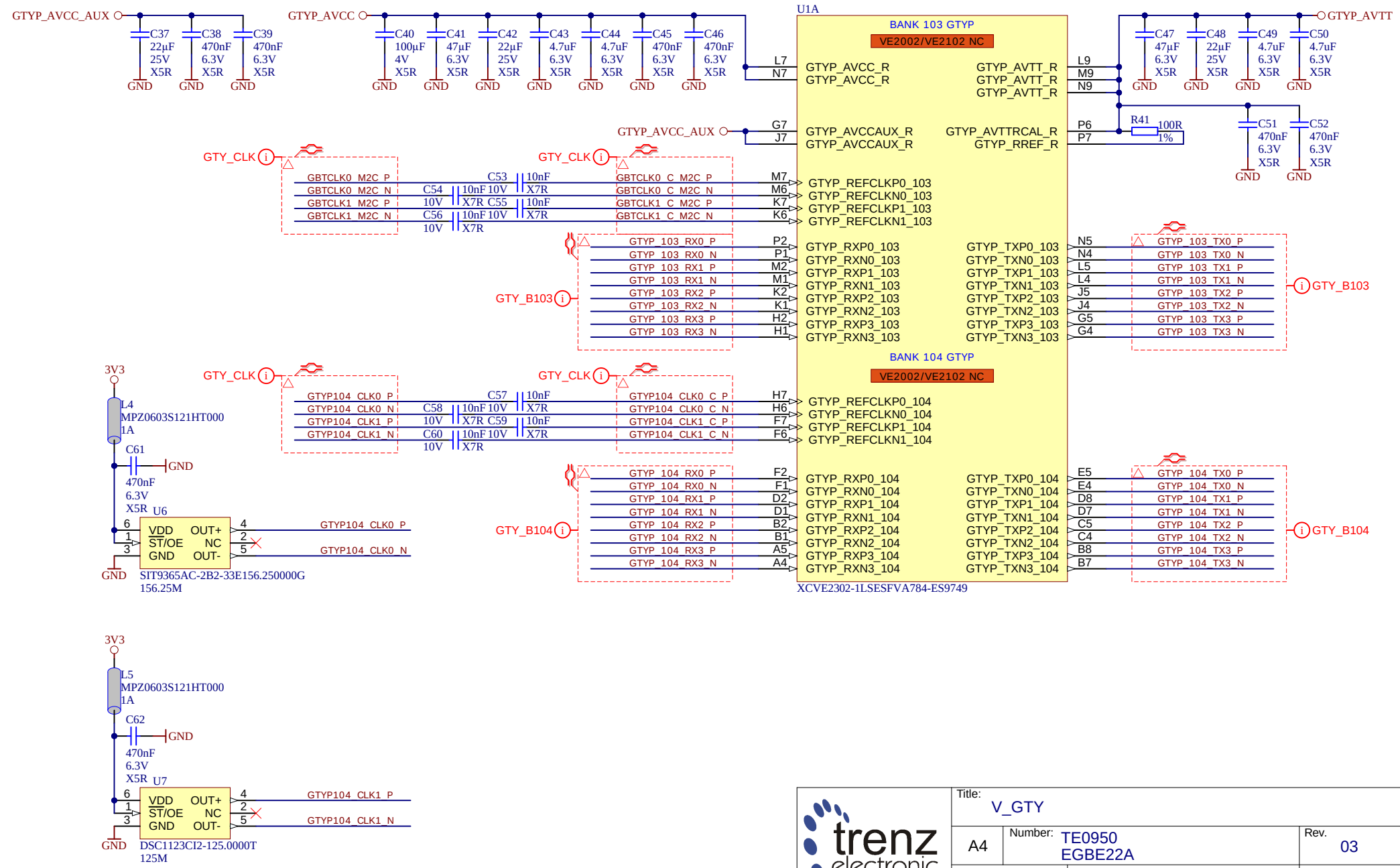

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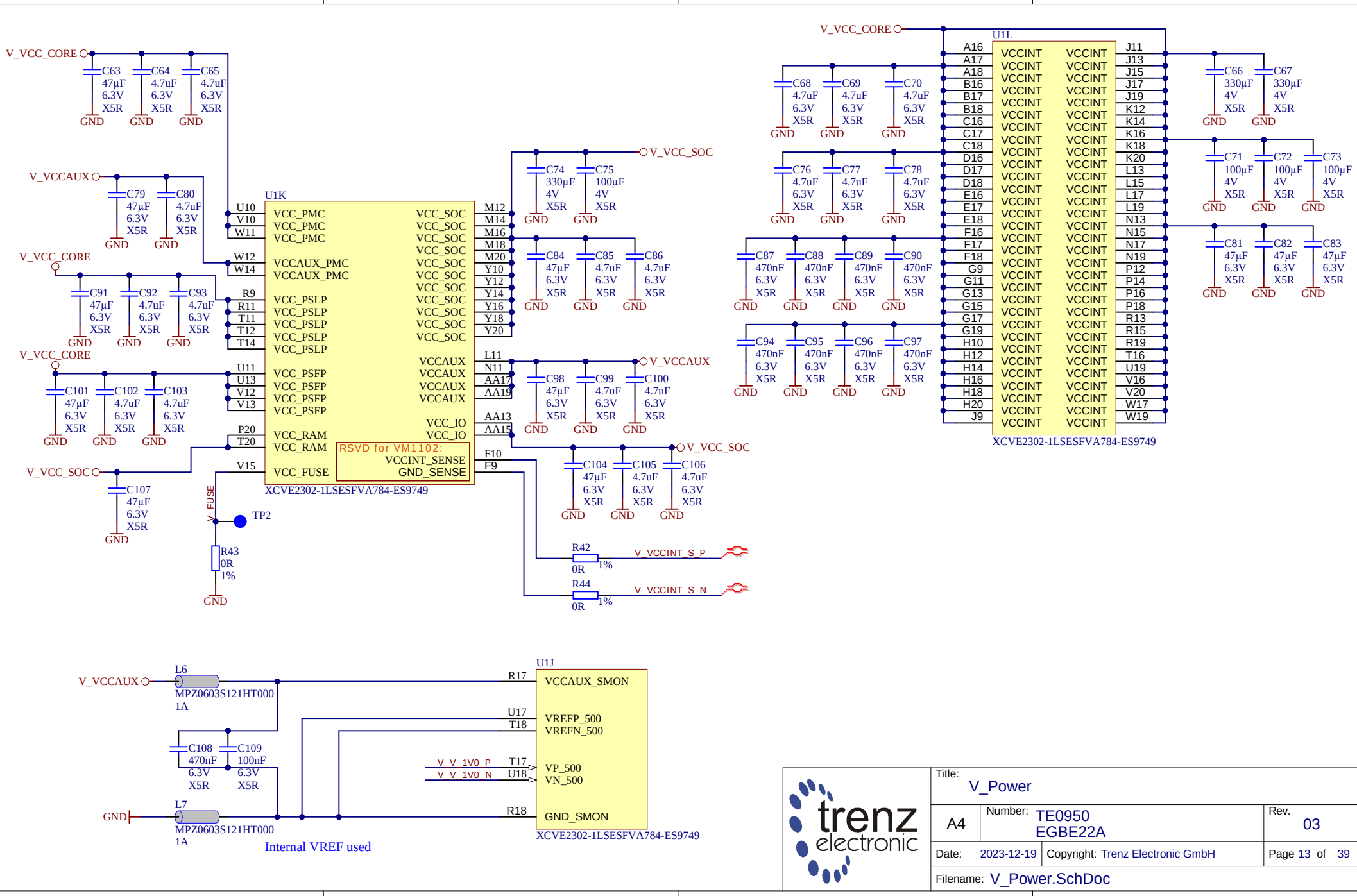
Date: 2023-12-19	Copyright: Trenz Electronic GmbH		Page 12 of 39
Filename: V_GTYP.SchDoc			



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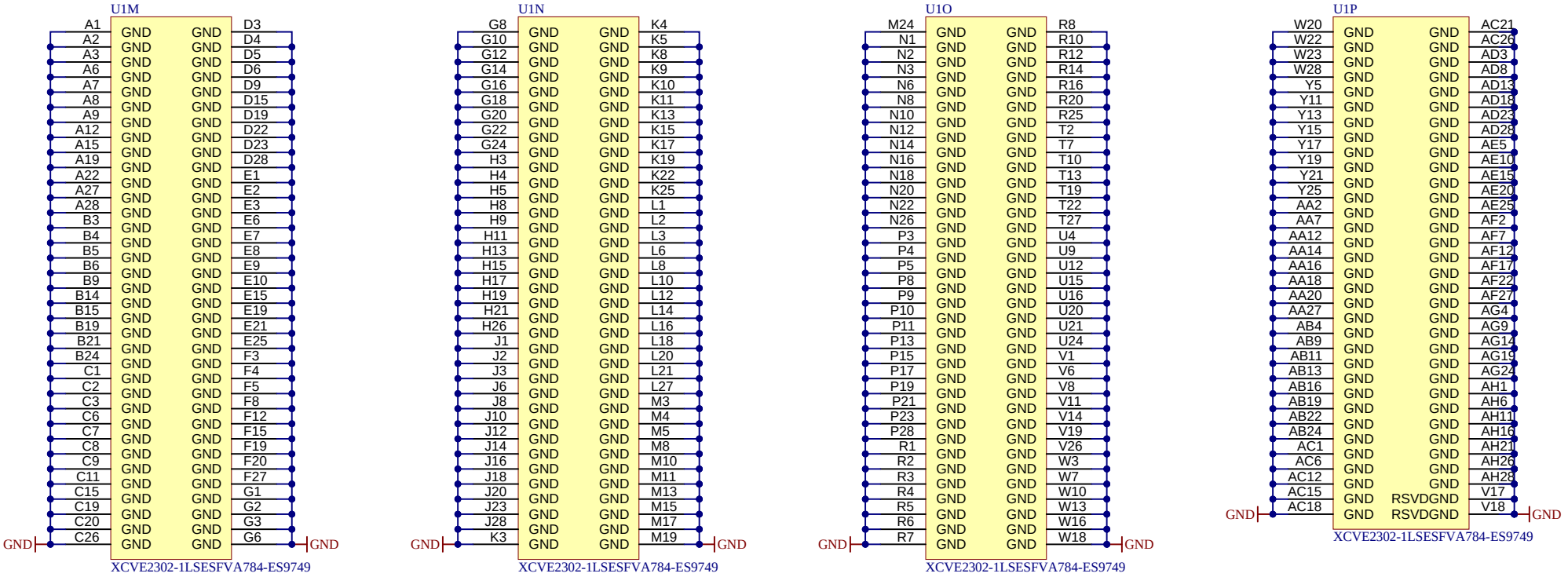
	Date: 2023-12-19	Copyright: Trenz Electronic GmbH	Page 13 of 39
	Filename: V_Power.SchDoc		



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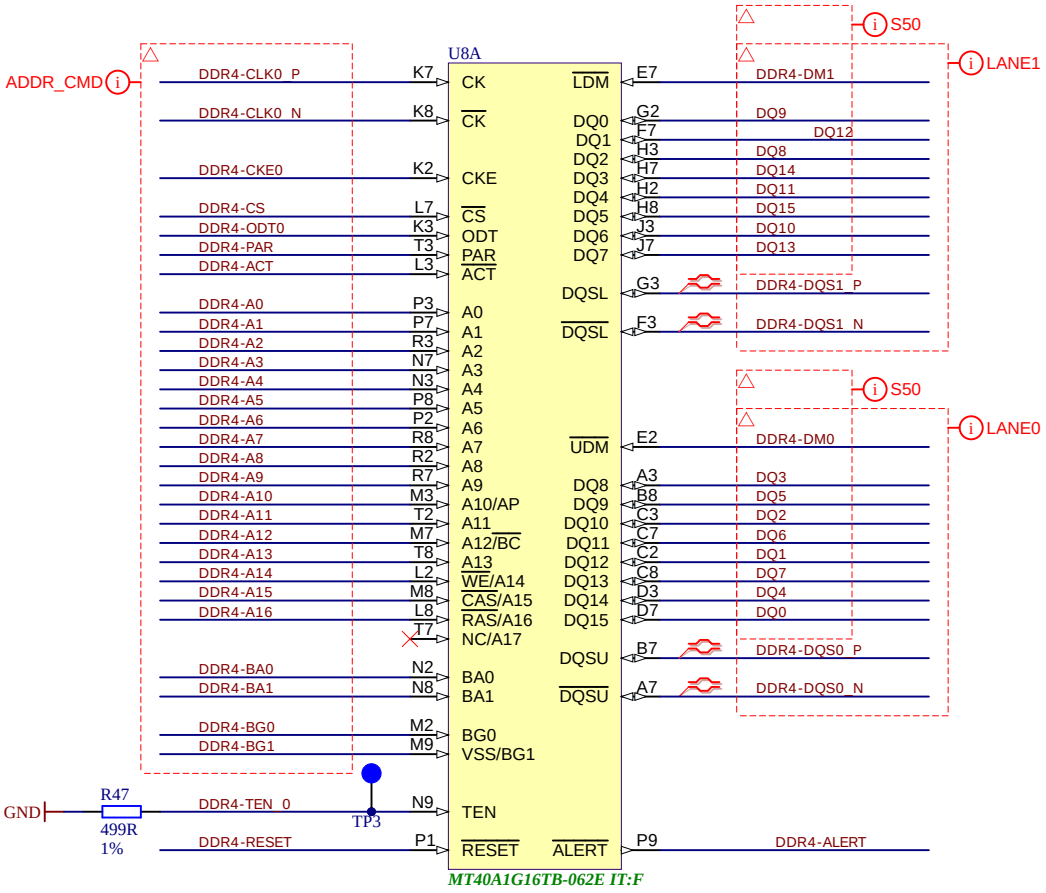
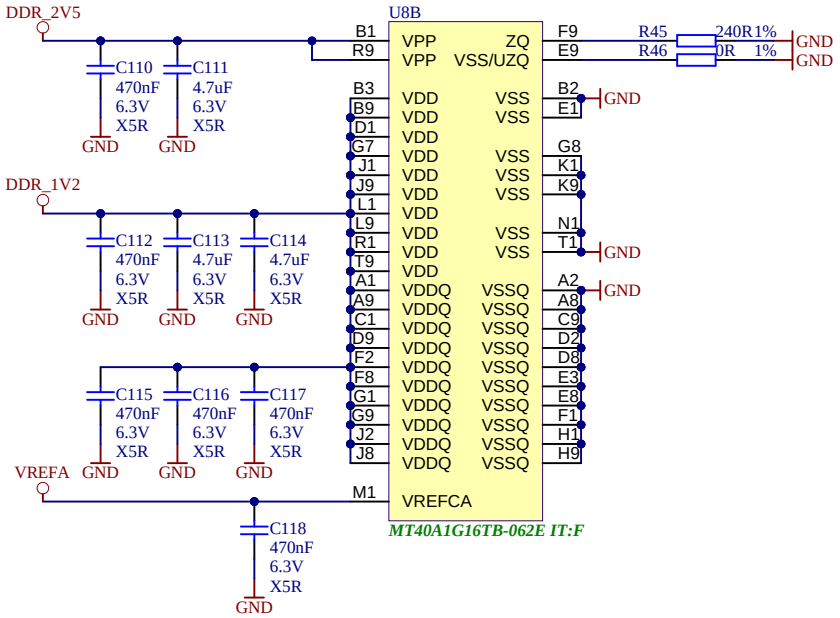
Date: 2023-12-19	Copyright: Trenz Electronic GmbH	Page 14 of 39
Filename: V_GND.SchDoc		





DDR4_2.SchDoc

DDR4_3.SchDoc

DDR4_4.SchDoc

DDR4_TERM.SchDoc

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Title: DDR4_1			
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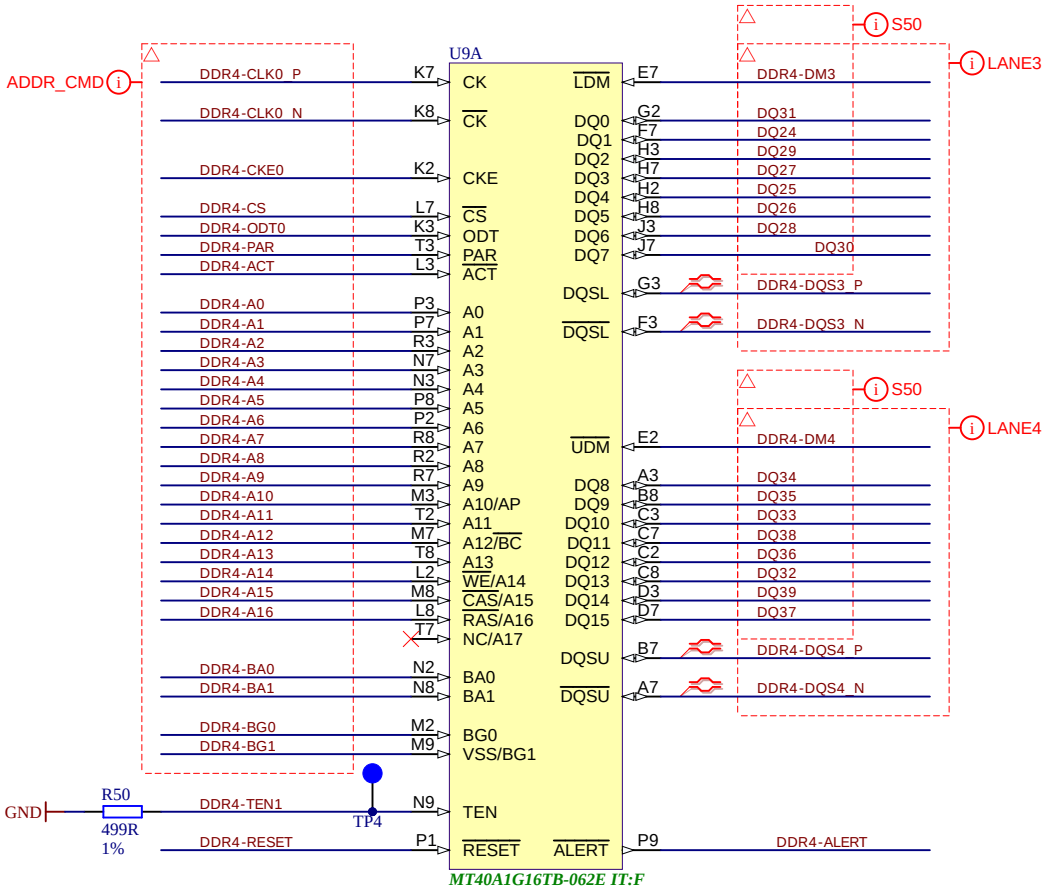
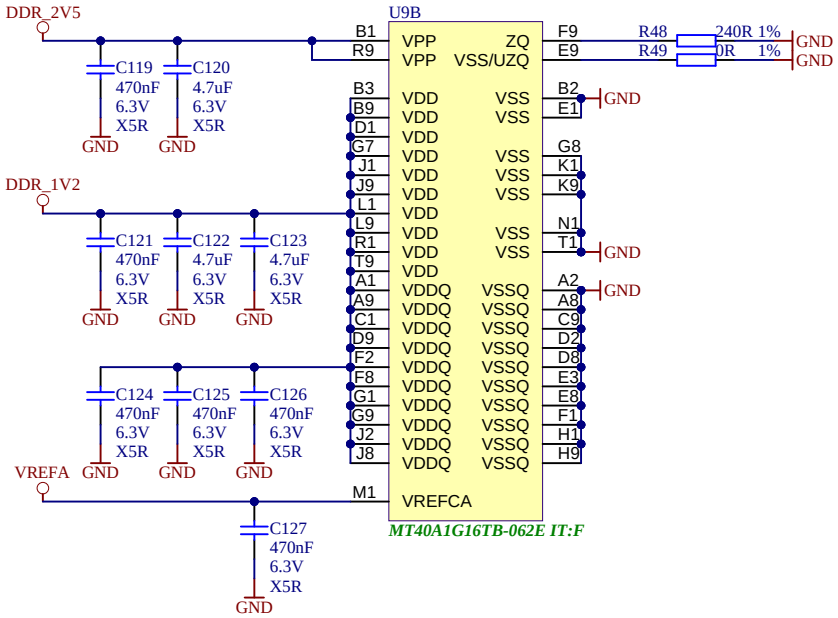
Date: 2023-12-19	Copyright: Trenz Electronic GmbH		Page 15 of 39
Filename: DDR4_1.SchDoc			





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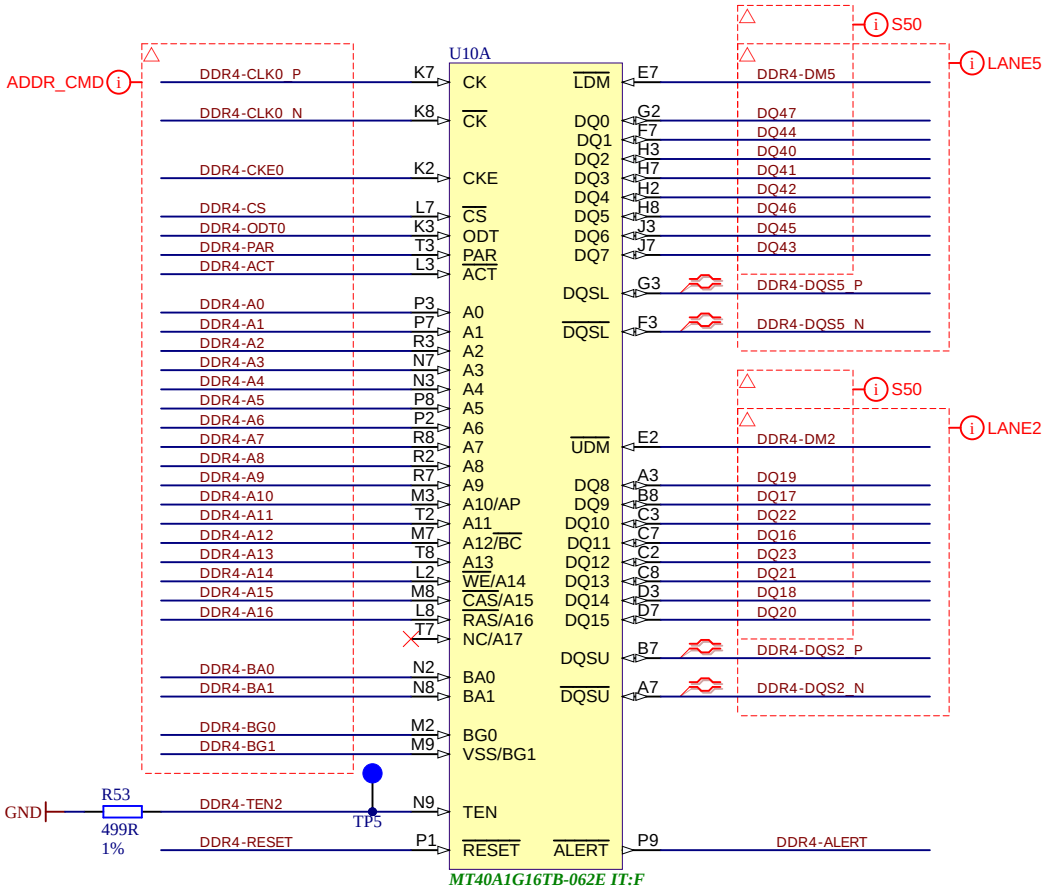
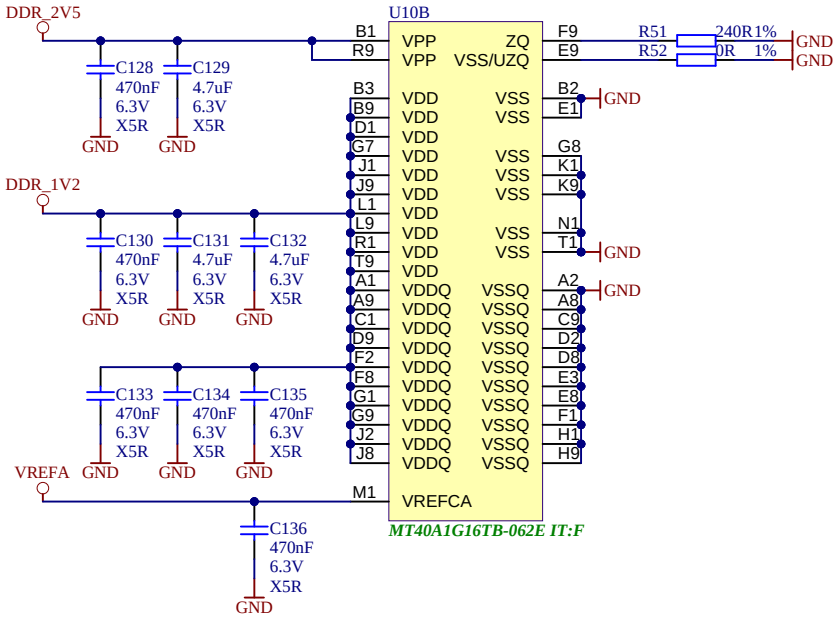
Date: 2023-12-19	Copyright: Trenz Electronic GmbH		Page 16 of 39
Filename: DDR4_2.SchDoc			





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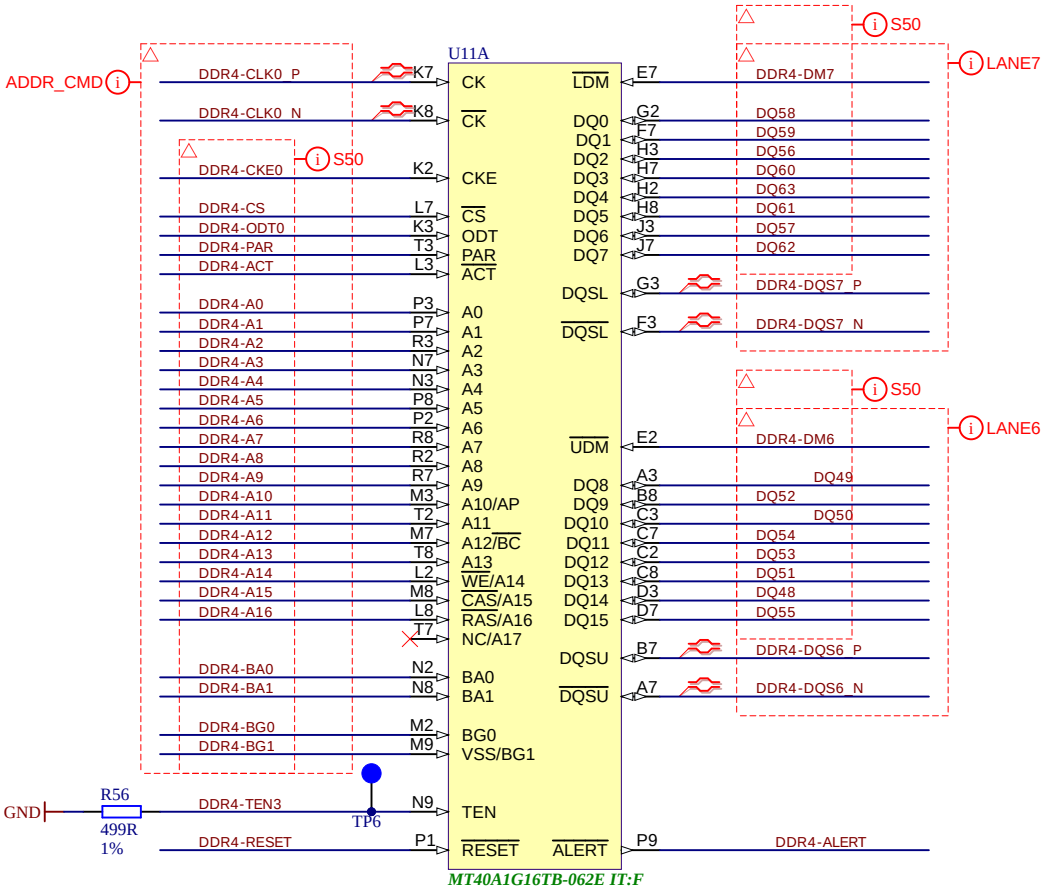
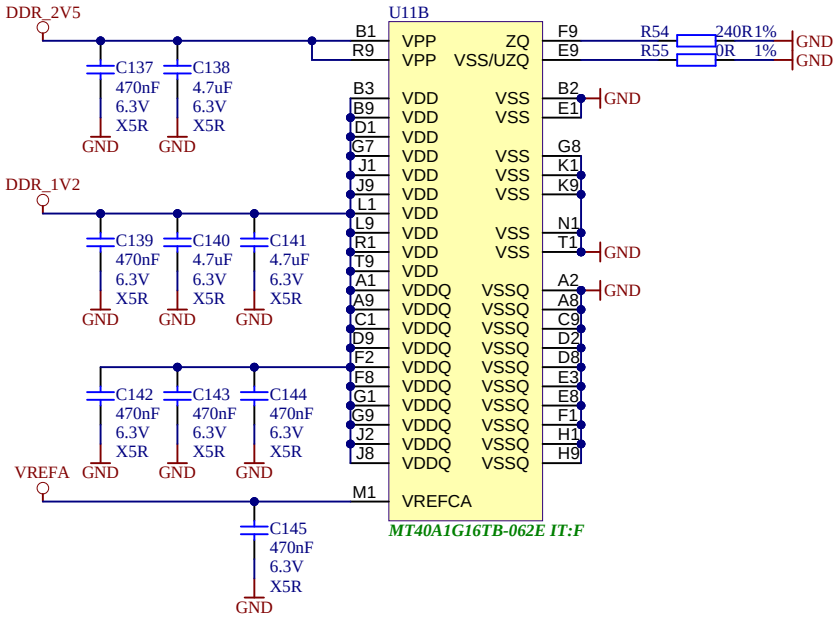
Date: 2023-12-19	Copyright: Trenz Electronic GmbH		Page 17 of 39
Filename: DDR4_3.SchDoc			





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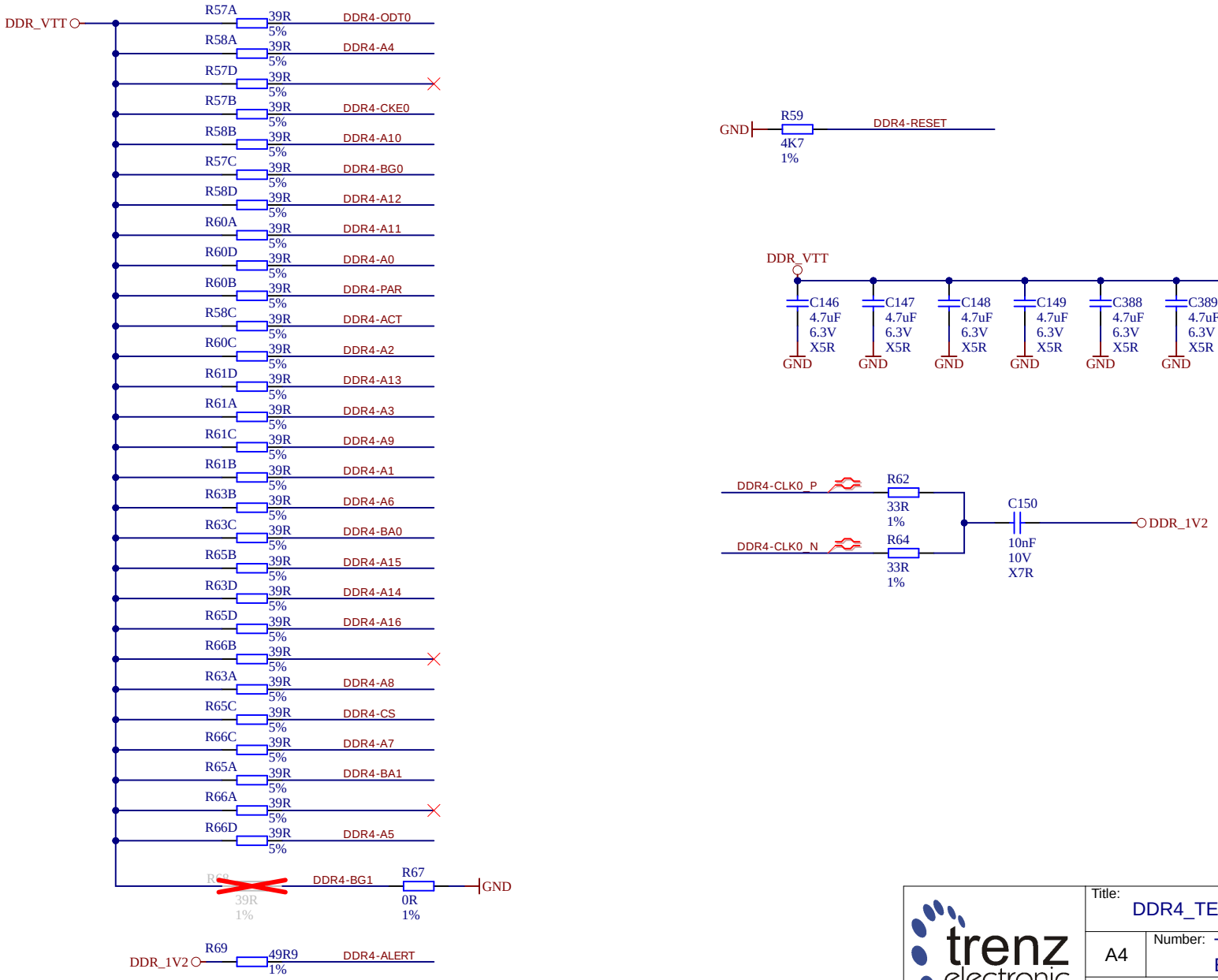
Date: 2023-12-19	Copyright: Trenz Electronic GmbH		Page 18 of 39
Filename: DDR4_4.SchDoc			



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Title: DDR4_TERM		
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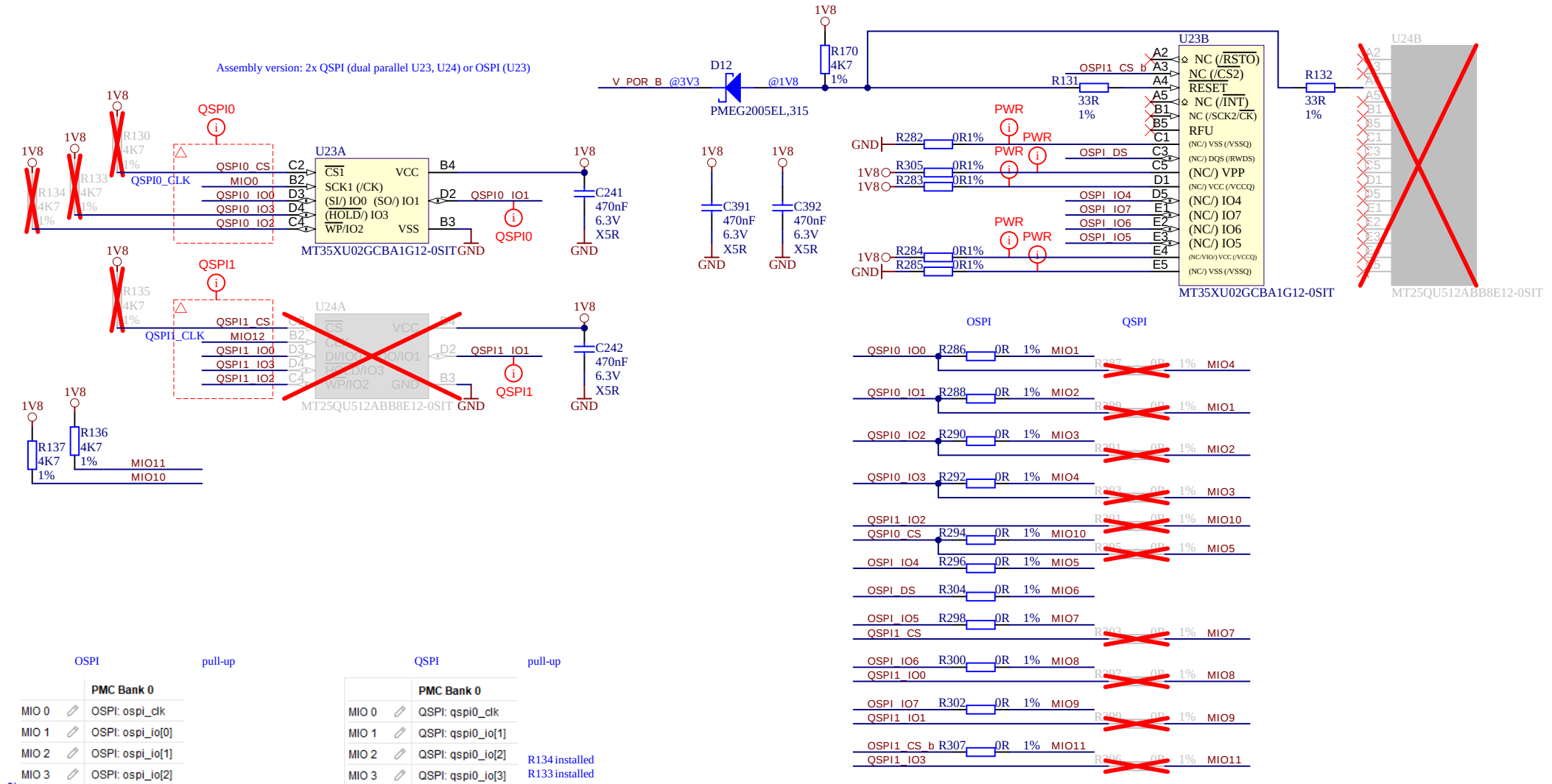
Date: 2023-12-19	Copyright: Trenz Electronic GmbH	Page 19 of 39
Filename: DDR4_TERM.SchDoc		



OSPI — pull-up

	PMC Bank 0	
MIO 0	OSPI: ospi_clk	
MIO 1	OSPI: ospi_io[0]	
MIO 2	OSPI: ospi_io[1]	
MIO 3	OSPI: ospi_io[2]	
MIO 4	OSPI: ospi_io[3]	
MIO 5	OSPI: ospi_io[4]	
MIO 6	OSPI: ospi_ds	
MIO 7	OSPI: ospi_io[5]	
MIO 8	OSPI: ospi_io[6]	
MIO 9	OSPI: ospi_io[7]	
MIO 10	OSPI: ospi0_cs_b	R137 installed
MIO 11	OSPI: ospi1_cs_b	R136 installed
MIO 12		

QSPI — pull-up

	PMC Bank 0	
MIO 0	QSPI: qspi0_clk	
MIO 1	QSPI: qspi0_io[1]	
MIO 2	QSPI: qspi0_io[2]	R134 installed
MIO 3	QSPI: qspi0_io[3]	R133 installed
MIO 4	QSPI: qspi0_io[0]	
MIO 5	QSPI: qspi0_cs_b	R130 installed
MIO 6	Reserved	
MIO 7	QSPI: qspi1_cs_b	R135 installed
MIO 8	QSPI: qspi1_io[0]	
MIO 9	QSPI: qspi1_io[1]	
MIO 10	QSPI: qspi1_io[2]	R137 installed
MIO 11	QSPI: qspi1_io[3]	R136 installed
MIO 12	QSPI: qspi1_clk	

AMD Vivado 2022.2

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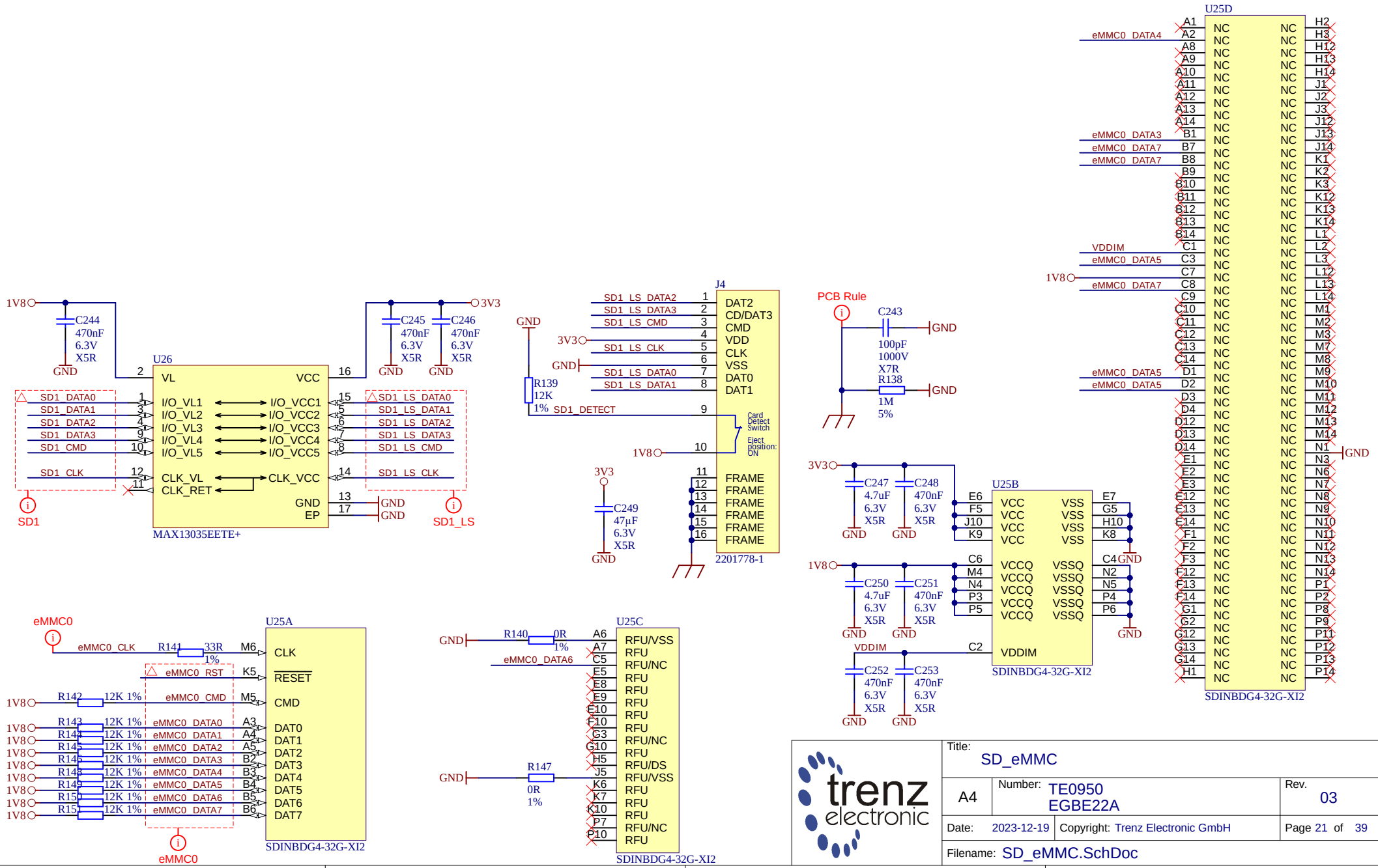
Title: QSPI_OSPIS			
A4	Number: TE0950 EGBE22A		Rev. 03
Date: 2023-12-19	Copyright: Trenz Electronic GmbH		Page 20 of 39
Filename: QSPI_OSPI.SchDoc			


U26
MAX13035EETE+
SD1
SD1_LS
J4
2201778-1
U25A
SDINBDG4-32G-XI2
eMMC0
U25C
SDINBDG4-32G-XI2
U25B
SDINBDG4-32G-XI2
U25D
SDINBDG4-32G-XI2
PCB Rule
Title: SD_eMMC
A4
Number: TE0950 EGBE22A
Rev. 03
Date: 2023-12-19
Copyright: Trenz Electronic GmbH
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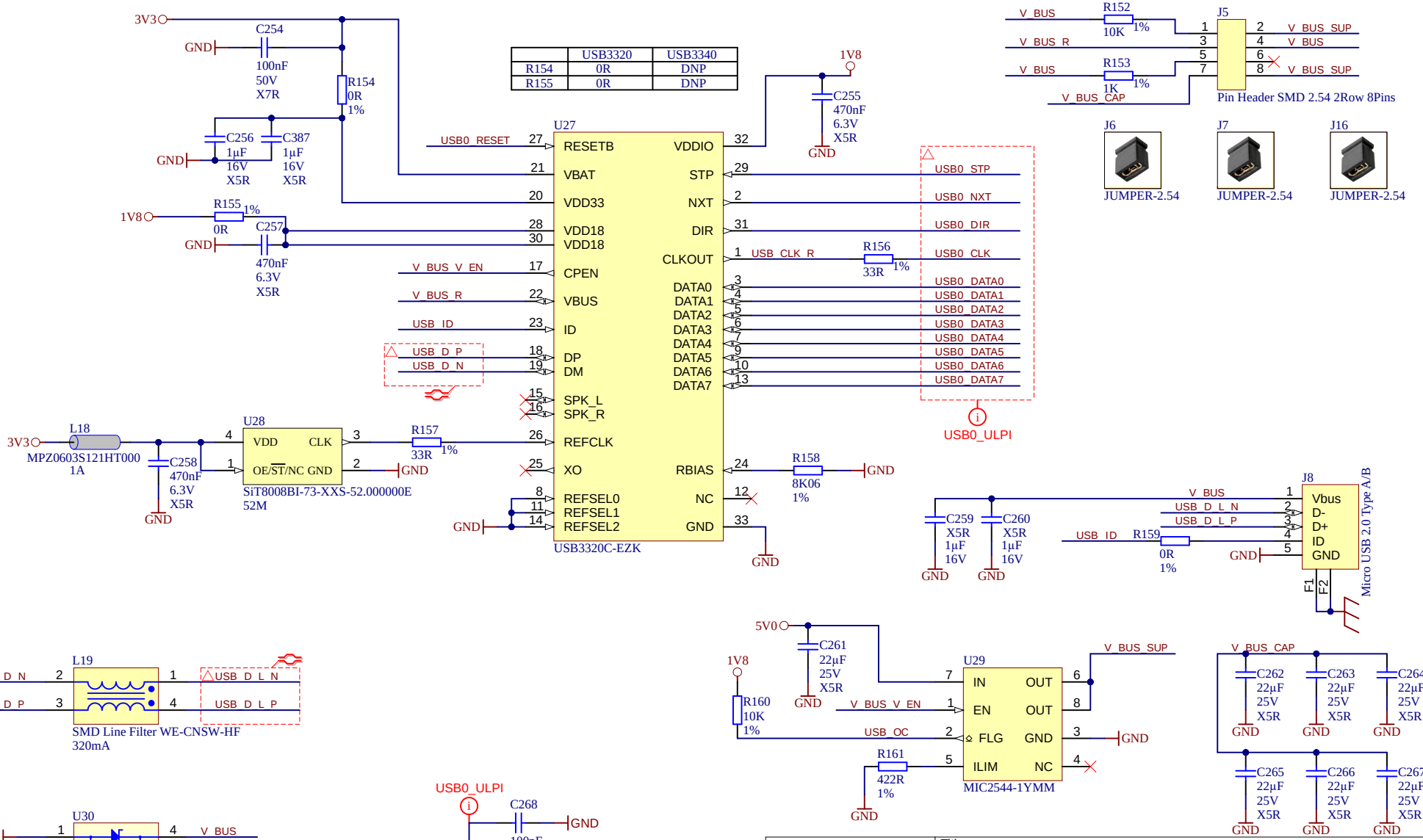
Filename: SD_eMMC.SchDoc



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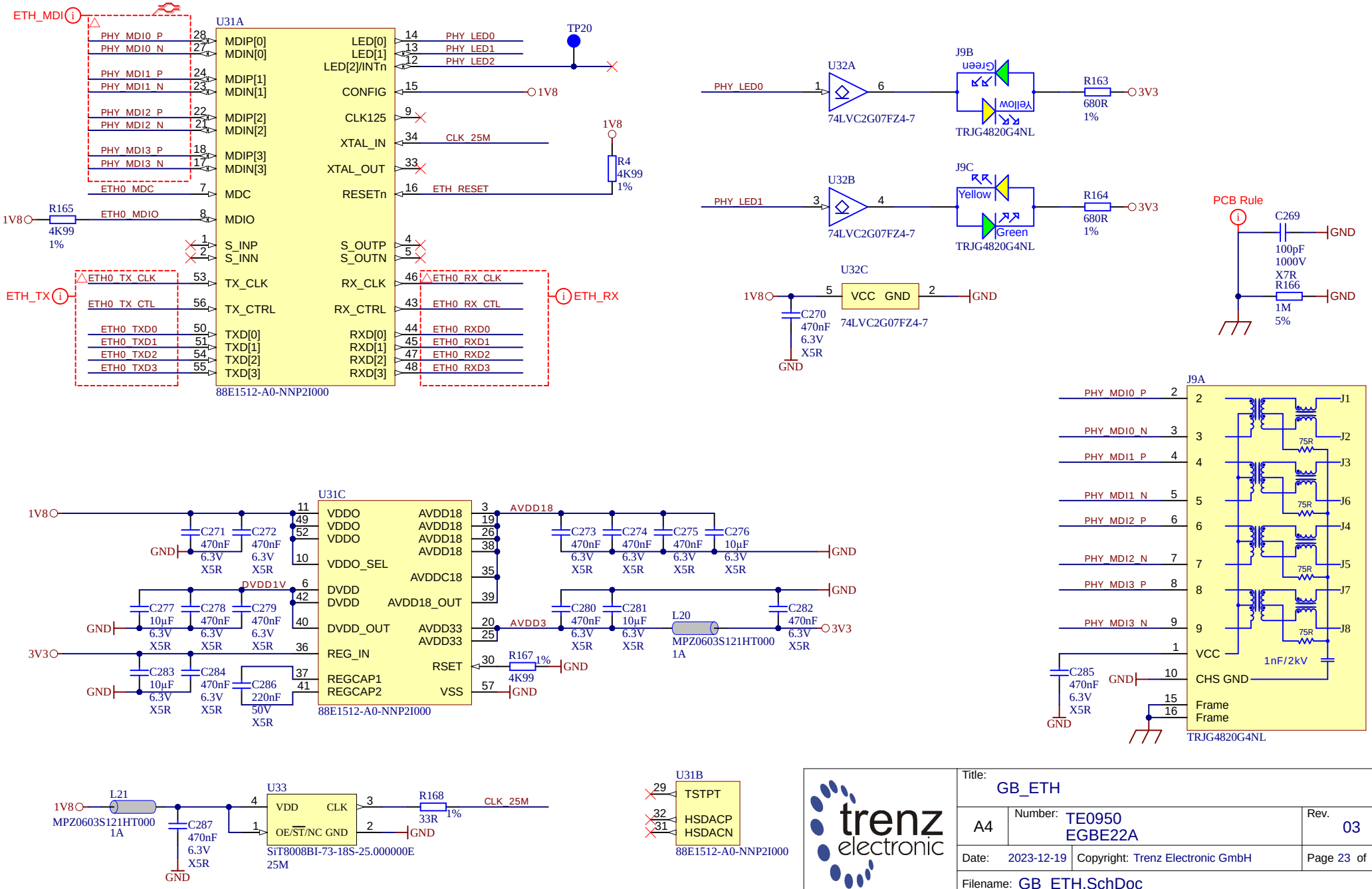
Date: 2023-12-19	Copyright: Trenz Electronic GmbH — Page 22 of 39
Filename:	USB2.SchDoc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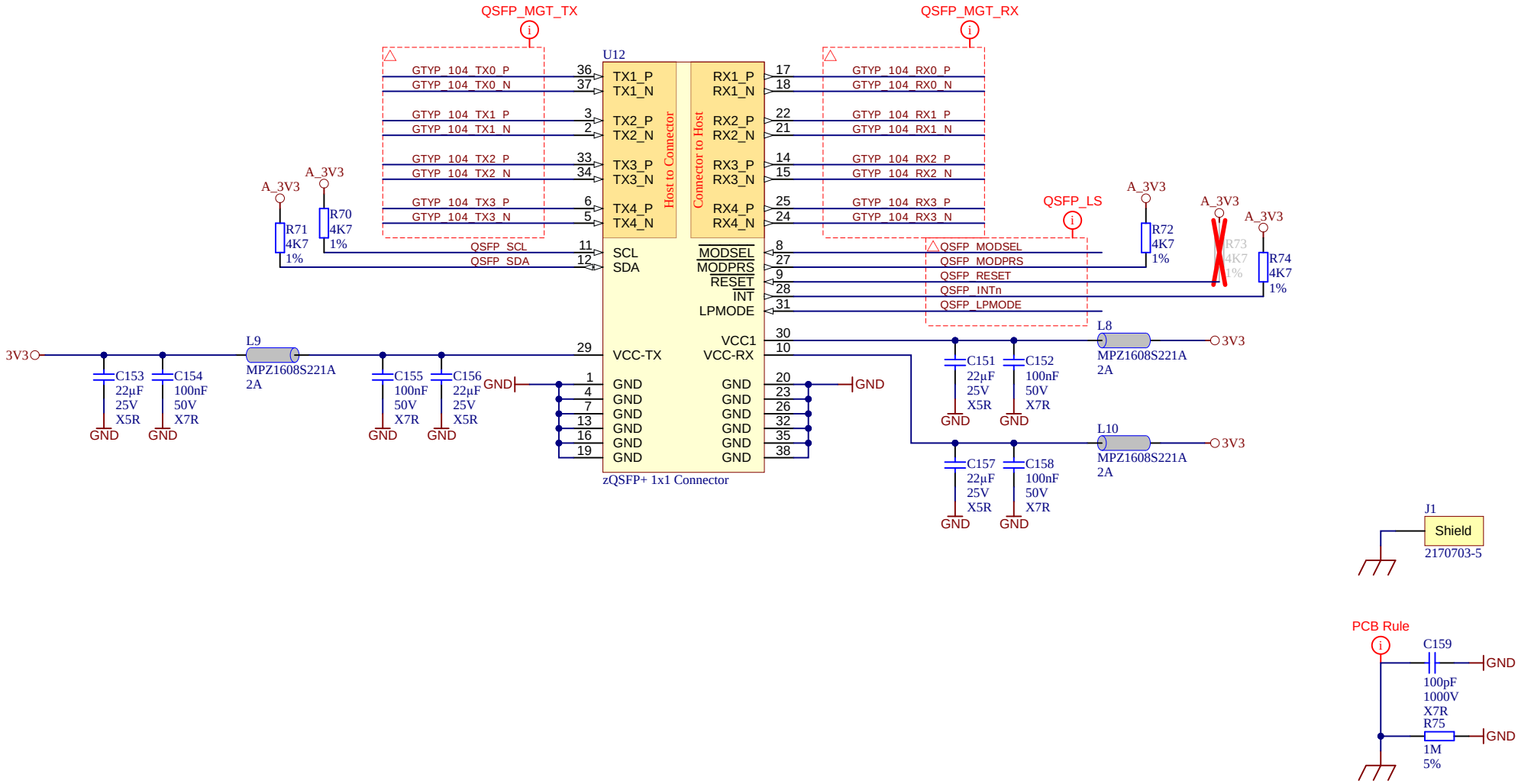
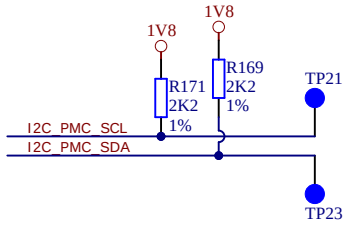
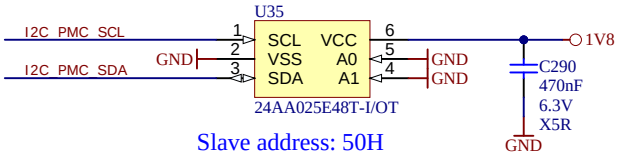
U31A
PHY_MDI0_P
PHY_MDI0_N
PHY_MDI1_P
PHY_MDI1_N
PHY_MDI2_P
PHY_MDI2_N
PHY_MDI3_P
PHY_MDI3_N
MDIP[0]
MDIN[0]
MDIP[1]
MDIN[1]
MDIP[2]
MDIN[2]
MDIP[3]
MDIN[3]
ETH0_MDC
MDC
ETH0_MDIO
MDIO
S_INP
S_INN
ETH_TX
ETH0_TX_CLK
ETH0_TX_CTL
ETH0_TXD0
ETH0_TXD1
ETH0_TXD2
ETH0_TXD3
TX_CLK
TX_CTRL
TXD[0]
TXD[1]
TXD[2]
TXD[3]
LED[0]
LED[1]
LED[2]/INTn
CONFIG
CLK125
XTAL_IN
XTAL_OUT
RESETn
S_OUTP
S_OUTN
RX_CLK
RX_CTRL
RXD[0]
RXD[1]
RXD[2]
RXD[3]
PHY_LED0
PHY_LED1
PHY_LED2
1V8
CLK_25M
ETH_RESET
ETH0_RX_CLK
ETH0_RX_CTL
ETH0_RXD0
ETH0_RXD1
ETH0_RXD2
ETH0_RXD3
ETH_RX
TP20
R165
4K99
1%
R4
4K99
1%
88E1512-A0-NNP2I000
U32A
U32B
U32C
74LVC2G07FZ4-7
VCC GND
J9B
J9C
Green
Yellow
TRJG4820G4NL
R163
R164
680R
1%
3V3
GND
C270
470nF
6.3V
X5R
PCB Rule
C269
100pF
1000V
X7R
R166
1M
5%
U31C
VDDO
VDDO_SEL
DVDD
DVDD_OUT
REG_IN
REGCAP1
REGCAP2
AVDD18
AVDD18_OUT
AVDDC18
AVDD33
RSET
VSS
DVDD1V
AVDD3
C271
C272
C273
C274
C275
C276
C277
C278
C279
C280
C281
C282
C283
C284
C286
220nF
50V
X5R
10µF
L20
MPZ0603S121HT000
1A
R167
J9A
VCC
CHS GND
Frame
1nF/2kV
C285
U33
SiT8008BI-73-18S-25.000000E
25M
R168
33R
U31B
TSTPT
HSDACP
HSDACN
Title: GB_ETH
A4
Number: TE0950
EGBE22A
Rev. 03
Date: 2023-12-19
Copyright: Trenz Electronic GmbH
Page 23 of 39
Filename: GB_ETH.SchDoc
trenz electronic



trenz electronic	Title: QSFP		
A4	Number: TE0950 EGBE22A		Rev. 03
Date: 2023-12-19	Copyright: Trenz Electronic GmbH		Page 24 of 39
Filename: QSFP.SchDoc			



EEPROM for MAC



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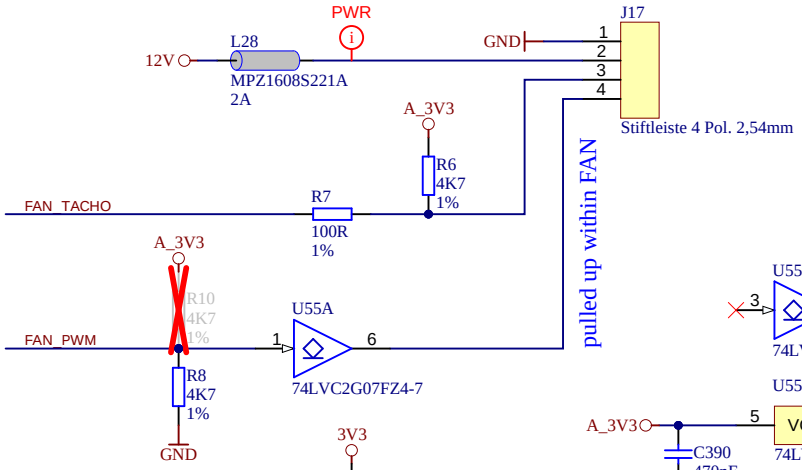

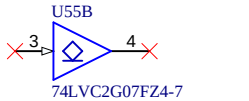

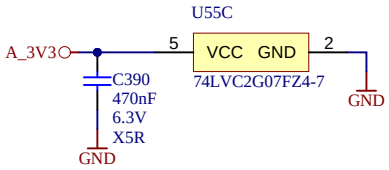

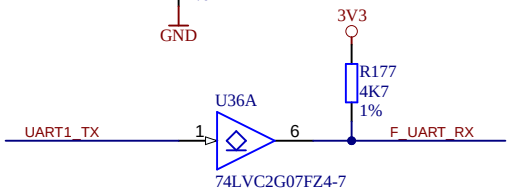

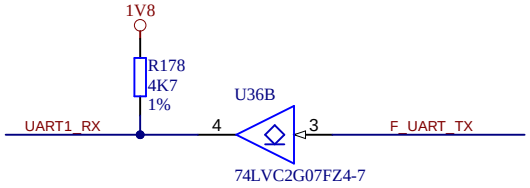

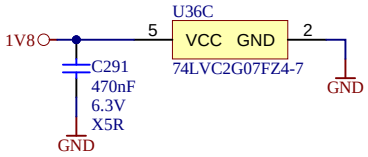

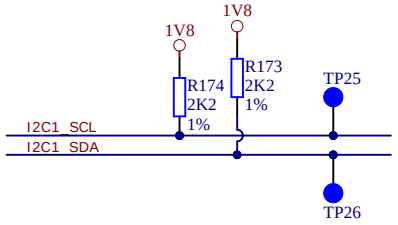

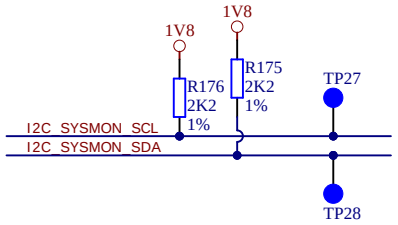

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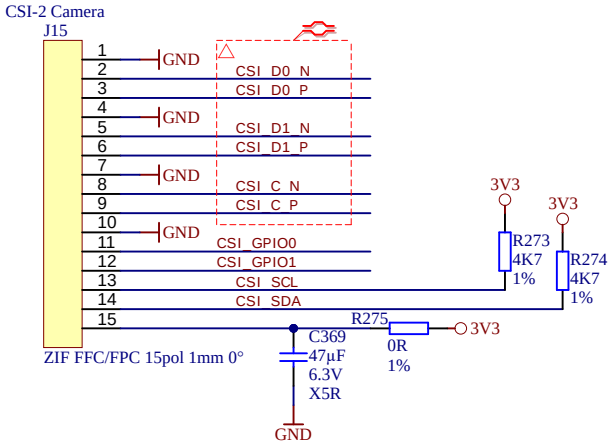
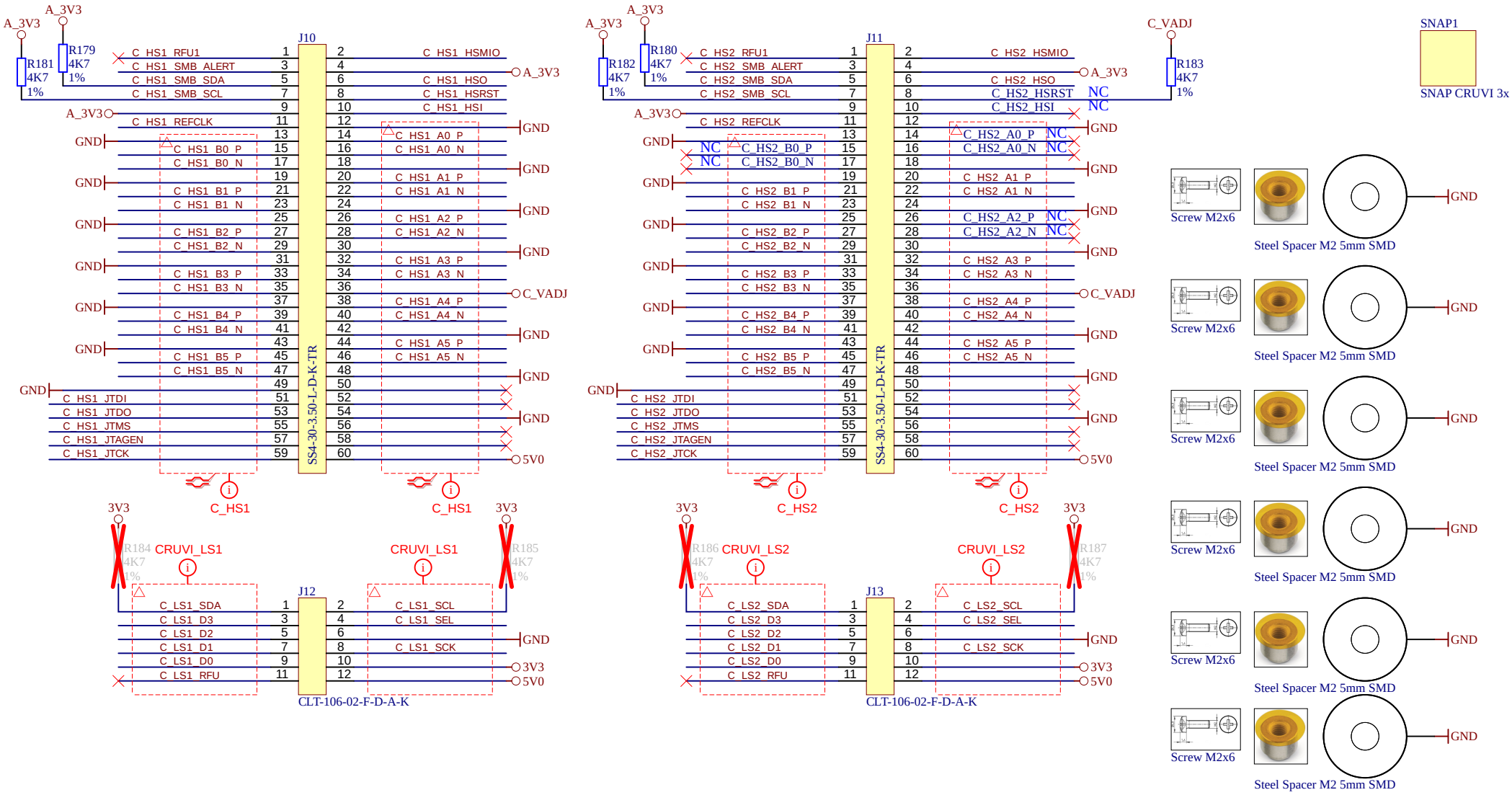
Title: I2C			
A4	Number: TE0950 EGBE22A		Rev. 03
Date: 2023-12-19	Copyright: Trenz Electronic GmbH		Page 25 of 39
Filename: I2C.SchDoc			



trenz electronic	Title: CSI2_CAM		
A4	Number: TE0950 EGBE22A		Rev. 03
Date: 2023-12-19	Copyright: Trenz Electronic GmbH		Page 26 of 39
Filename: CSI2_CAM.SchDoc			



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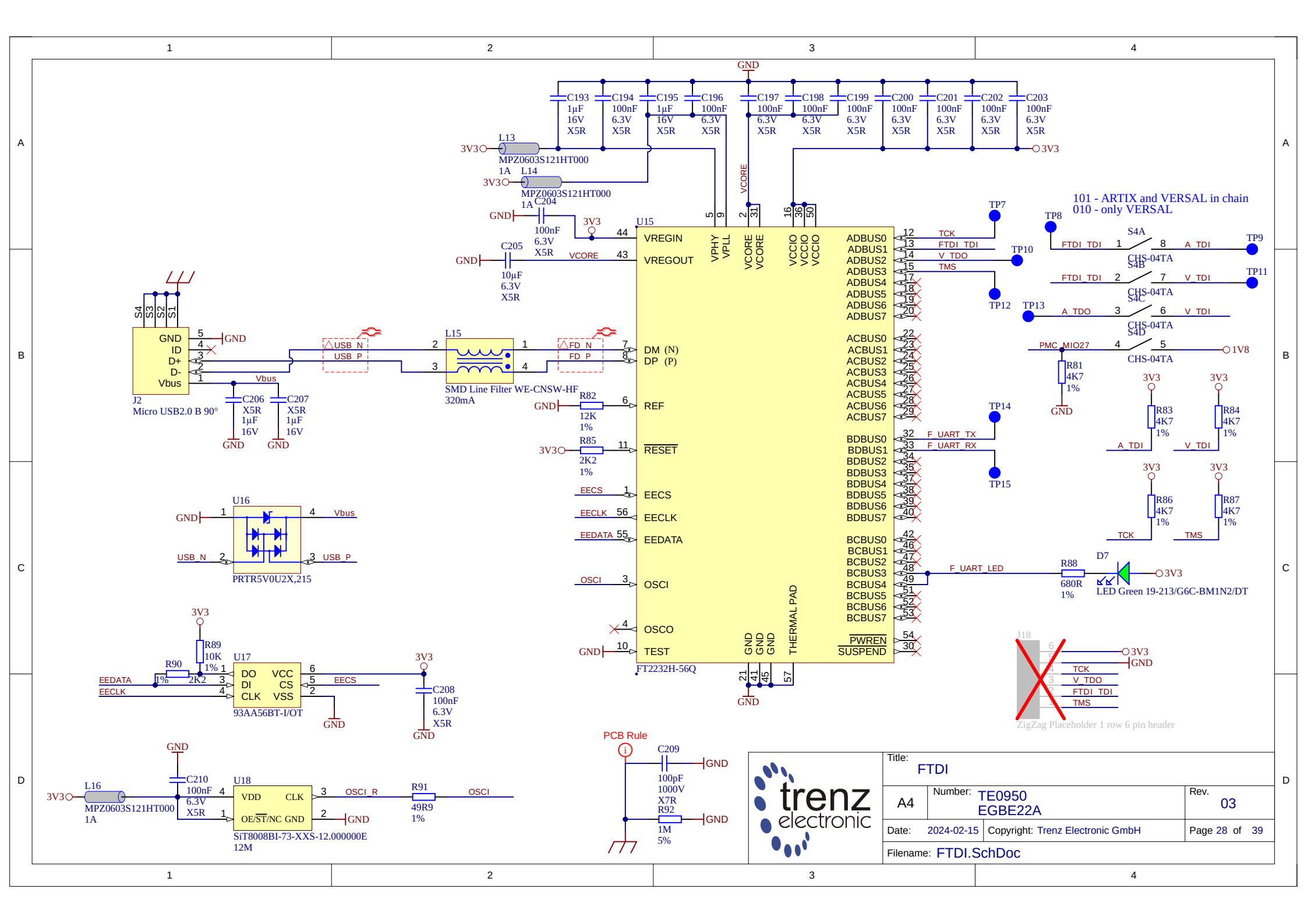
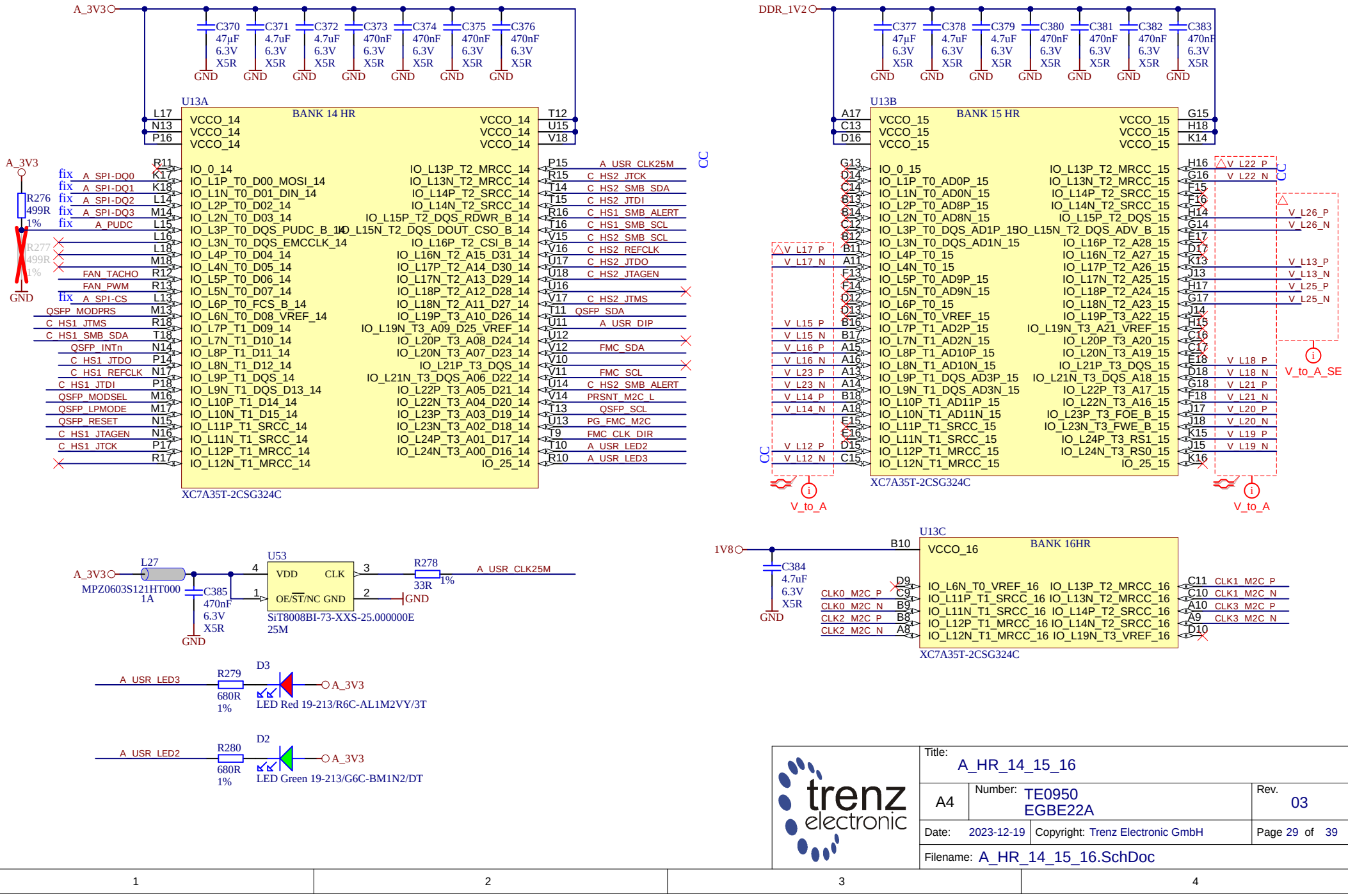
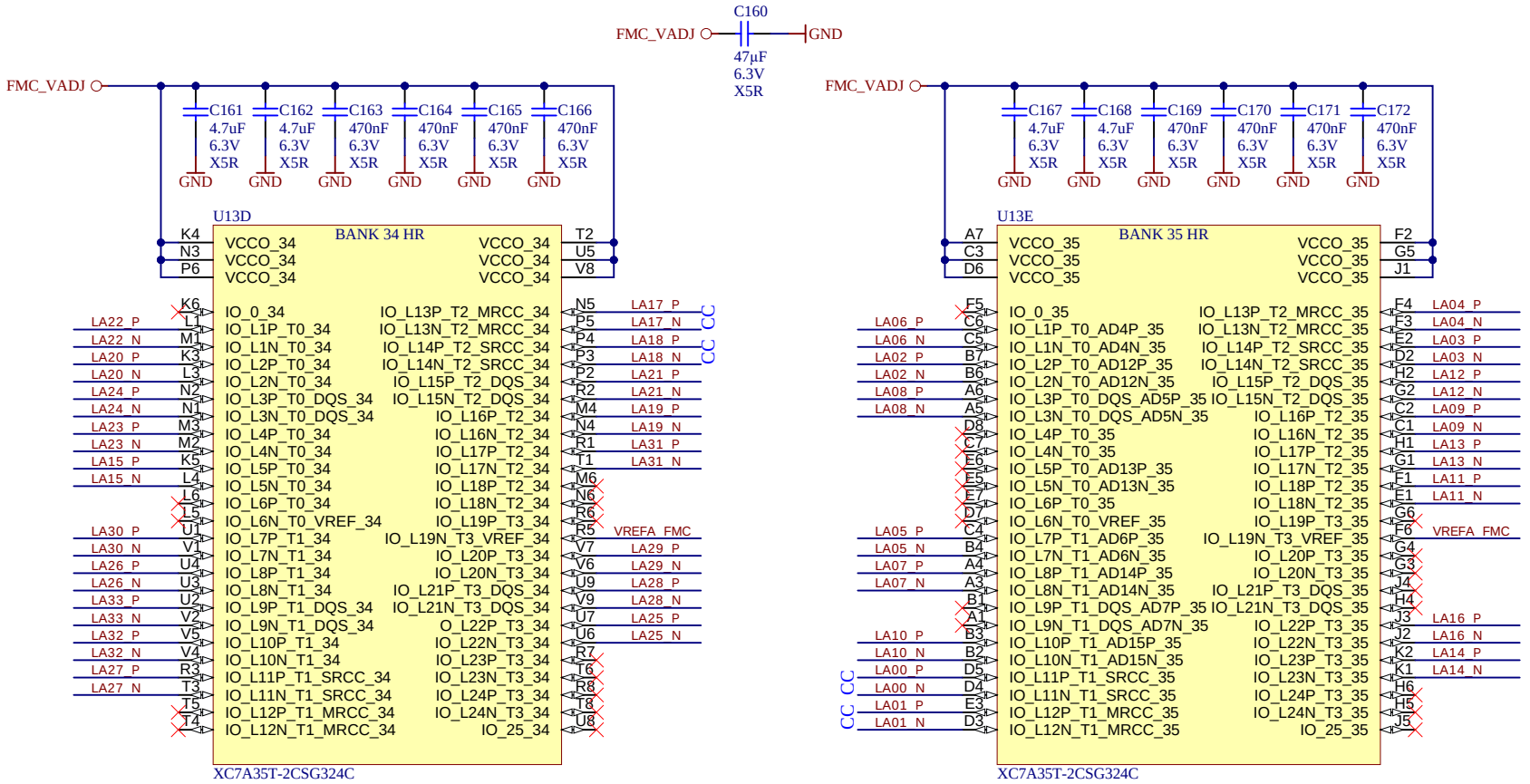
Date: 2023-12-19	Copyright: Trenz Electronic GmbH		Page 27 of 39
Filename: CRUVI.SchDoc			


GND
C193 1µF 16V X5R
C194 100nF 6.3V X5R
C195 1µF 16V X5R
C196 100nF 6.3V X5R
C197 100nF 6.3V X5R
C198 100nF 6.3V X5R
C199 100nF 6.3V X5R
C200 100nF 6.3V X5R
C201 100nF 6.3V X5R
C202 100nF 6.3V X5R
C203 100nF 6.3V X5R
3V3
L13
MPZ0603S121HT000
1A
L14
MPZ0603S121HT000
1A
C204 100nF 6.3V X5R
C205 10µF 6.3V X5R
VCORE
U15
VREGIN
VREGOUT
VPHY
VPLL
VCORE
VCCIO
DM (N)
DP (P)
REF
RESET
EECS
EECLK
EEDATA
OSCI
OSCO
TEST
THERMAL PAD
PWREN
SUSPEND
ADBUS0
ADBUS1
ADBUS2
ADBUS3
ADBUS4
ADBUS5
ADBUS6
ADBUS7
ACBUS0
ACBUS1
ACBUS2
ACBUS3
ACBUS4
ACBUS5
ACBUS6
ACBUS7
BDBUS0
BDBUS1
BDBUS2
BDBUS3
BDBUS4
BDBUS5
BDBUS6
BDBUS7
BCBUS0
BCBUS1
BCBUS2
BCBUS3
BCBUS4
BCBUS5
BCBUS6
BCBUS7
FT2232H-56Q
TCK
FTDI_TDI
V_TDO
TMS
F_UART_TX
F_UART_RX
F_UART_LED
TP7
TP8
TP9
TP10
TP11
TP12
TP13
TP14
TP15
101 - ARTIX and VERSAL in chain
010 - only VERSAL
S4A
S4B
S4C
S4D
CHS-04TA
A_TDI
V_TDI
A_TDO
PMC_MIO27
1V8
R81 4K7 1%
R82 12K 1%
R83 4K7 1%
R84 4K7 1%
R85 2K2 1%
R86 4K7 1%
R87 4K7 1%
R88 680R 1%
D7
LED Green 19-213/G6C-BM1N2/DT
J2
Micro USB2.0 B 90°
GND
ID
D+
D-
Vbus
USB_N
USB_P
L15
SMD Line Filter WE-CNSW-HF
320mA
FD_N
FD_P
C206 X5R 1µF 16V
C207 X5R 1µF 16V
U16
PRTR5V0U2X,215
R89 10K 1%
R90 2K2 1%
U17
DO
DI
CLK
CS
VCC
VSS
93AA56BT-I/OT
C208 100nF 6.3V X5R
L16
MPZ0603S121HT000
1A
C210 100nF 6.3V X5R
U18
VDD
CLK
OE/ST/NC
GND
SiT8008BI-73-XXS-12.000000E
12M
OSCI_R
R91 49R9 1%
PCB Rule
C209 100pF 1000V X7R
R92 1M 5%
J18
ZigZag Placeholder 1 row 6 pin header
trenz electronic
Title: FTDI
A4
Number: TE0950 EGBE22A
Rev. 03
Date: 2024-02-15
Copyright: Trenz Electronic GmbH
Page 28 of 39
Filename: FTDI.SchDoc


A_3V3
C370 47µF 6.3V X5R
C371 4.7uF 6.3V X5R
C372 4.7uF 6.3V X5R
C373 470nF 6.3V X5R
C374 470nF 6.3V X5R
C375 470nF 6.3V X5R
C376 470nF 6.3V X5R
GND
U13A
BANK 14 HR
VCCO_14
IO_0_14
IO_L1P_T0_D00_MOSI_14
IO_L1N_T0_D01_DIN_14
IO_L2P_T0_D02_14
IO_L2N_T0_D03_14
IO_L3P_T0_DQS_PUDC_B_14
IO_L3N_T0_DQS_EMCCLK_14
IO_L4P_T0_D04_14
IO_L4N_T0_D05_14
IO_L5P_T0_D06_14
IO_L5N_T0_D07_14
IO_L6P_T0_FCS_B_14
IO_L6N_T0_D08_VREF_14
IO_L7P_T1_D09_14
IO_L7N_T1_D10_14
IO_L8P_T1_D11_14
IO_L8N_T1_D12_14
IO_L9P_T1_DQS_14
IO_L9N_T1_DQS_D13_14
IO_L10P_T1_D14_14
IO_L10N_T1_D15_14
IO_L11P_T1_SRCC_14
IO_L11N_T1_SRCC_14
IO_L12P_T1_MRCC_14
IO_L12N_T1_MRCC_14
IO_L13P_T2_MRCC_14
IO_L13N_T2_MRCC_14
IO_L14P_T2_SRCC_14
IO_L14N_T2_SRCC_14
IO_L15P_T2_DQS_RDWR_B_14
IO_L15N_T2_DQS_DOUT_CSO_B_14
IO_L16P_T2_CSI_B_14
IO_L16N_T2_A15_D31_14
IO_L17P_T2_A14_D30_14
IO_L17N_T2_A13_D29_14
IO_L18P_T2_A12_D28_14
IO_L18N_T2_A11_D27_14
IO_L19P_T3_A10_D26_14
IO_L19N_T3_A09_D25_VREF_14
IO_L20P_T3_A08_D24_14
IO_L20N_T3_A07_D23_14
IO_L21P_T3_DQS_14
IO_L21N_T3_DQS_A06_D22_14
IO_L22P_T3_A05_D21_14
IO_L22N_T3_A04_D20_14
IO_L23P_T3_A03_D19_14
IO_L23N_T3_A02_D18_14
IO_L24P_T3_A01_D17_14
IO_L24N_T3_A00_D16_14
IO_25_14
VCCO_14
XC7A35T-2CSG324C
A_SPI-DQ0
A_SPI-DQ1
A_SPI-DQ2
A_SPI-DQ3
A_PUDC
FAN_TACHO
FAN_PWM
A_SPI-CS
QSFP_MODPRS
C_HS1_JTMS
C_HS1_SMB_SDA
QSFP_INTn
C_HS1_JTDO
C_HS1_REFCLK
C_HS1_JTDI
QSFP_MODSEL
QSFP_LPMODE
QSFP_RESET
C_HS1_JTAGEN
C_HS1_JTCK
A_USR_CLK25M
C_HS2_JTCK
C_HS2_SMB_SDA
C_HS2_JTDI
C_HS1_SMB_ALERT
C_HS1_SMB_SCL
C_HS2_SMB_SCL
C_HS2_REFCLK
C_HS2_JTDO
C_HS2_JTAGEN
C_HS2_JTMS
QSFP_SDA
A_USR_DIP
FMC_SDA
FMC_SCL
C_HS2_SMB_ALERT
PRSNT_M2C_L
QSFP_SCL
PG_FMC_M2C
FMC_CLK_DIR
A_USR_LED2
A_USR_LED3
R276 499R 1%
R277 499R 1%
fix
CC
DDR_1V2
C377 47µF 6.3V X5R
C378 4.7uF 6.3V X5R
C379 4.7uF 6.3V X5R
C380 470nF 6.3V X5R
C381 470nF 6.3V X5R
C382 470nF 6.3V X5R
C383 470nF 6.3V X5R
U13B
BANK 15 HR
VCCO_15
IO_0_15
IO_L1P_T0_AD0P_15
IO_L1N_T0_AD0N_15
IO_L2P_T0_AD8P_15
IO_L2N_T0_AD8N_15
IO_L3P_T0_DQS_AD1P_15
IO_L3N_T0_DQS_AD1N_15
IO_L4P_T0_15
IO_L4N_T0_15
IO_L5P_T0_AD9P_15
IO_L5N_T0_AD9N_15
IO_L6P_T0_15
IO_L6N_T0_VREF_15
IO_L7P_T1_AD2P_15
IO_L7N_T1_AD2N_15
IO_L8P_T1_AD10P_15
IO_L8N_T1_AD10N_15
IO_L9P_T1_DQS_AD3P_15
IO_L9N_T1_DQS_AD3N_15
IO_L10P_T1_AD11P_15
IO_L10N_T1_AD11N_15
IO_L11P_T1_SRCC_15
IO_L11N_T1_SRCC_15
IO_L12P_T1_MRCC_15
IO_L12N_T1_MRCC_15
IO_L13P_T2_MRCC_15
IO_L13N_T2_MRCC_15
IO_L14P_T2_SRCC_15
IO_L14N_T2_SRCC_15
IO_L15P_T2_DQS_15
IO_L15N_T2_DQS_ADV_B_15
IO_L16P_T2_A28_15
IO_L16N_T2_A27_15
IO_L17P_T2_A26_15
IO_L17N_T2_A25_15
IO_L18P_T2_A24_15
IO_L18N_T2_A23_15
IO_L19P_T3_A22_15
IO_L19N_T3_A21_VREF_15
IO_L20P_T3_A20_15
IO_L20N_T3_A19_15
IO_L21P_T3_DQS_15
IO_L21N_T3_DQS_A18_15
IO_L22P_T3_A17_15
IO_L22N_T3_A16_15
IO_L23P_T3_FOE_B_15
IO_L23N_T3_FWE_B_15
IO_L24P_T3_RS1_15
IO_L24N_T3_RS0_15
IO_25_15
VCCO_15
XC7A35T-2CSG324C
V_L17_P
V_L17_N
V_L15_P
V_L15_N
V_L16_P
V_L16_N
V_L23_P
V_L23_N
V_L14_P
V_L14_N
V_L12_P
V_L12_N
V_to_A
V_L22_P
V_L22_N
V_L26_P
V_L26_N
V_L13_P
V_L13_N
V_L25_P
V_L25_N
V_L18_P
V_L18_N
V_L21_P
V_L21_N
V_L20_P
V_L20_N
V_L19_P
V_L19_N
V_to_A_SE
L27
MPZ0603S121HT000 1A
C385 470nF 6.3V X5R
U53
VDD
CLK
OE/ST/NC
GND
SiT8008BI-73-XXS-25.000000E 25M
R278 33R 1%
R279 680R 1%
R280 680R 1%
D3
D2
LED Red 19-213/R6C-AL1M2VY/3T
LED Green 19-213/G6C-BM1N2/DT
1V8
C384 4.7uF 6.3V X5R
U13C
BANK 16HR
VCCO_16
IO_L6N_T0_VREF_16
IO_L11P_T1_SRCC_16
IO_L11N_T1_SRCC_16
IO_L12P_T1_MRCC_16
IO_L12N_T1_MRCC_16
IO_L13P_T2_MRCC_16
IO_L13N_T2_MRCC_16
IO_L14P_T2_SRCC_16
IO_L14N_T2_SRCC_16
IO_L19N_T3_VREF_16
CLK0_M2C_P
CLK0_M2C_N
CLK2_M2C_P
CLK2_M2C_N
CLK1_M2C_P
CLK1_M2C_N
CLK3_M2C_P
CLK3_M2C_N
XC7A35T-2CSG324C
Title: A_HR_14_15_16
A4
Number: TE0950 EGBE22A
Rev. 03
Date: 2023-12-19
Copyright: Trenz Electronic GmbH
Page 29 of 39
Filename: A_HR_14_15_16.SchDoc
trenz electronic



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Title: A_HR_34_35			
A4	Number: TE0950 EGBE22A		Rev. 03
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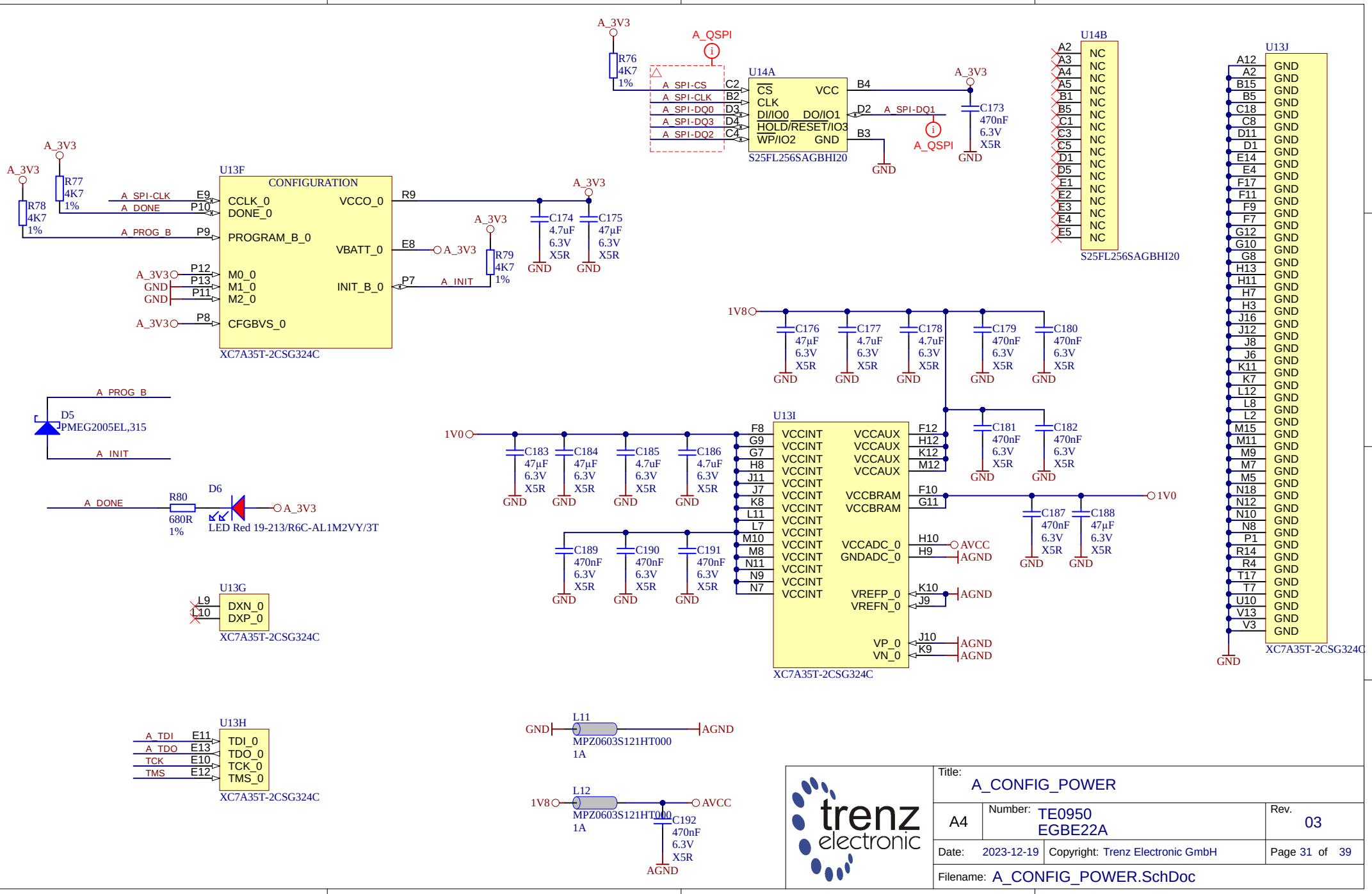
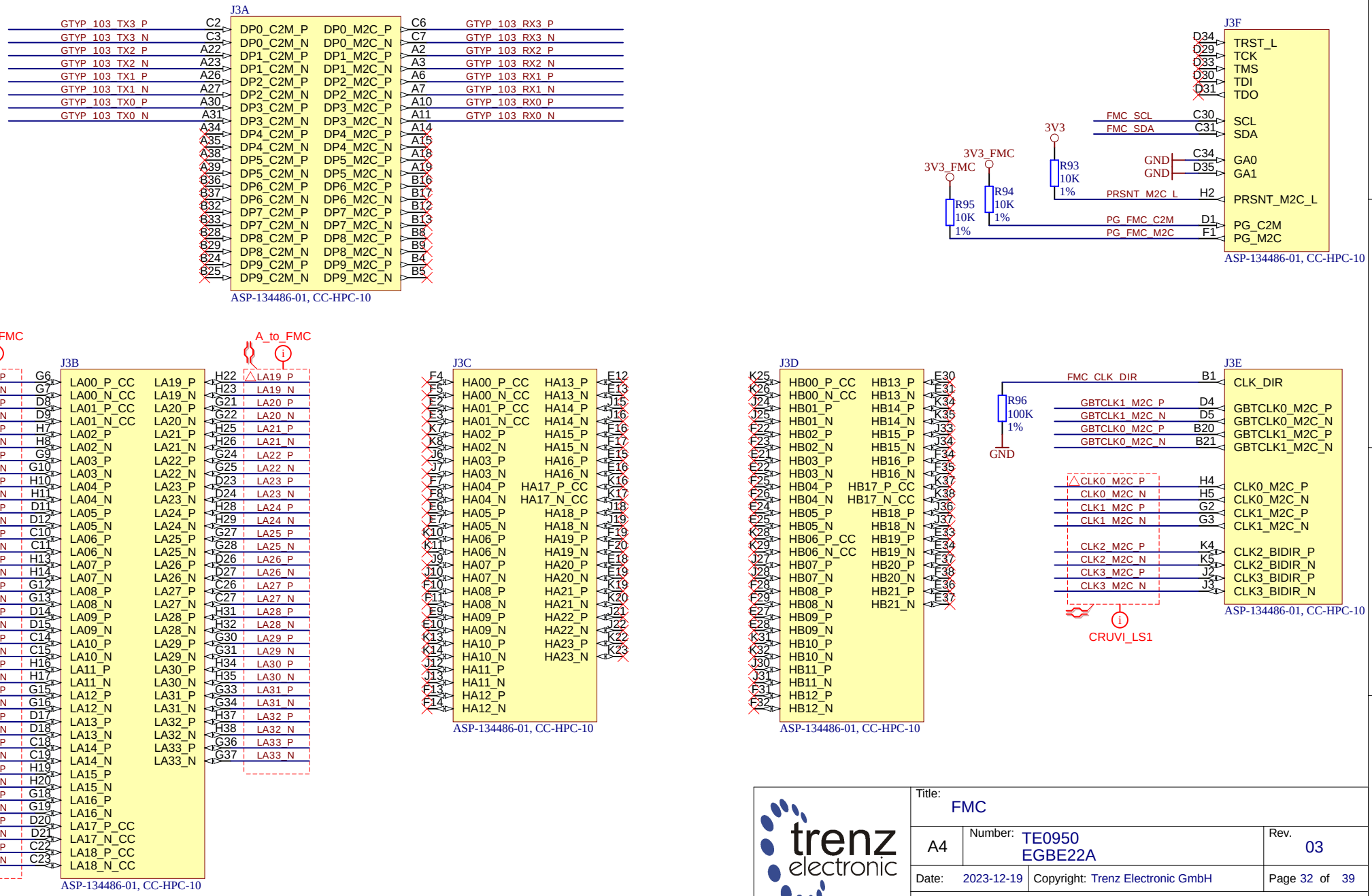
Filename: A_HR_34_35.SchDoc			



trenz electronic	Title: A_CONFIG_POWER		
A4	Number: TE0950 EGBE22A		Rev. 03
Date: 2023-12-19	Copyright: Trenz Electronic GmbH		Page 31 of 39
Filename: A_CONFIG_POWER.SchDoc			


J3A
GTYP_103_TX3_P
GTYP_103_TX3_N
GTYP_103_TX2_P
GTYP_103_TX2_N
GTYP_103_TX1_P
GTYP_103_TX1_N
GTYP_103_TX0_P
GTYP_103_TX0_N
DP0_C2M_P
DP0_C2M_N
DP1_C2M_P
DP1_C2M_N
DP2_C2M_P
DP2_C2M_N
DP3_C2M_P
DP3_C2M_N
DP4_C2M_P
DP4_C2M_N
DP5_C2M_P
DP5_C2M_N
DP6_C2M_P
DP6_C2M_N
DP7_C2M_P
DP7_C2M_N
DP8_C2M_P
DP8_C2M_N
DP9_C2M_P
DP9_C2M_N
DP0_M2C_P
DP0_M2C_N
DP1_M2C_P
DP1_M2C_N
DP2_M2C_P
DP2_M2C_N
DP3_M2C_P
DP3_M2C_N
DP4_M2C_P
DP4_M2C_N
DP5_M2C_P
DP5_M2C_N
DP6_M2C_P
DP6_M2C_N
DP7_M2C_P
DP7_M2C_N
DP8_M2C_P
DP8_M2C_N
DP9_M2C_P
DP9_M2C_N
GTYP_103_RX3_P
GTYP_103_RX3_N
GTYP_103_RX2_P
GTYP_103_RX2_N
GTYP_103_RX1_P
GTYP_103_RX1_N
GTYP_103_RX0_P
GTYP_103_RX0_N
ASP-134486-01, CC-HPC-10
J3F
TRST_L
TCK
TMS
TDI
TDO
SCL
SDA
GA0
GA1
PRSNT_M2C_L
PG_C2M
PG_M2C
FMC_SCL
FMC_SDA
3V3
3V3_FMC
R93
10K
1%
R94
10K
1%
R95
10K
1%
GND
ASP-134486-01, CC-HPC-10
A_to_FMC
J3B
LA00_P_CC
LA00_N_CC
LA01_P_CC
LA01_N_CC
LA02_P
LA02_N
LA03_P
LA03_N
LA04_P
LA04_N
LA05_P
LA05_N
LA06_P
LA06_N
LA07_P
LA07_N
LA08_P
LA08_N
LA09_P
LA09_N
LA10_P
LA10_N
LA11_P
LA11_N
LA12_P
LA12_N
LA13_P
LA13_N
LA14_P
LA14_N
LA15_P
LA15_N
LA16_P
LA16_N
LA17_P_CC
LA17_N_CC
LA18_P_CC
LA18_N_CC
LA19_P
LA19_N
LA20_P
LA20_N
LA21_P
LA21_N
LA22_P
LA22_N
LA23_P
LA23_N
LA24_P
LA24_N
LA25_P
LA25_N
LA26_P
LA26_N
LA27_P
LA27_N
LA28_P
LA28_N
LA29_P
LA29_N
LA30_P
LA30_N
LA31_P
LA31_N
LA32_P
LA32_N
LA33_P
LA33_N
ASP-134486-01, CC-HPC-10
J3C
HA00_P_CC
HA00_N_CC
HA01_P_CC
HA01_N_CC
HA02_P
HA02_N
HA03_P
HA03_N
HA04_P
HA04_N
HA05_P
HA05_N
HA06_P
HA06_N
HA07_P
HA07_N
HA08_P
HA08_N
HA09_P
HA09_N
HA10_P
HA10_N
HA11_P
HA11_N
HA12_P
HA12_N
HA13_P
HA13_N
HA14_P
HA14_N
HA15_P
HA15_N
HA16_P
HA16_N
HA17_P_CC
HA17_N_CC
HA18_P
HA18_N
HA19_P
HA19_N
HA20_P
HA20_N
HA21_P
HA21_N
HA22_P
HA22_N
HA23_P
HA23_N
ASP-134486-01, CC-HPC-10
J3D
HB00_P_CC
HB00_N_CC
HB01_P
HB01_N
HB02_P
HB02_N
HB03_P
HB03_N
HB04_P
HB04_N
HB05_P
HB05_N
HB06_P_CC
HB06_N_CC
HB07_P
HB07_N
HB08_P
HB08_N
HB09_P
HB09_N
HB10_P
HB10_N
HB11_P
HB11_N
HB12_P
HB12_N
HB13_P
HB13_N
HB14_P
HB14_N
HB15_P
HB15_N
HB16_P
HB16_N
HB17_P_CC
HB17_N_CC
HB18_P
HB18_N
HB19_P
HB19_N
HB20_P
HB20_N
HB21_P
HB21_N
ASP-134486-01, CC-HPC-10
J3E
CLK_DIR
GBTCLK1_M2C_P
GBTCLK1_M2C_N
GBTCLK0_M2C_P
GBTCLK0_M2C_N
CLK0_M2C_P
CLK0_M2C_N
CLK1_M2C_P
CLK1_M2C_N
CLK2_M2C_P
CLK2_M2C_N
CLK3_M2C_P
CLK3_M2C_N
CLK0_M2C_P
CLK0_M2C_N
CLK1_M2C_P
CLK1_M2C_N
CLK2_BIDIR_P
CLK2_BIDIR_N
CLK3_BIDIR_P
CLK3_BIDIR_N
FMC_CLK_DIR
R96
100K
1%
GND
CRUVI_LS1
ASP-134486-01, CC-HPC-10
trenz electronic
Title: FMC
A4
Number: TE0950 EGBE22A
Rev. 03
Date: 2023-12-19
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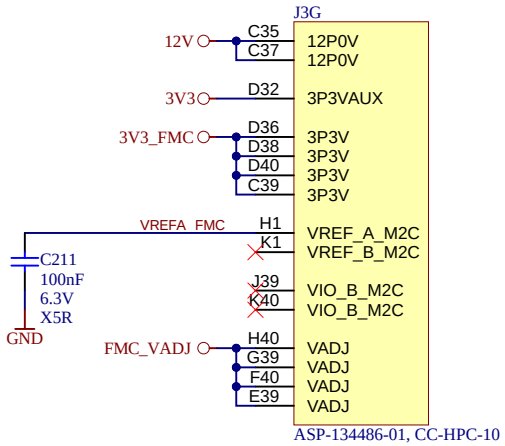
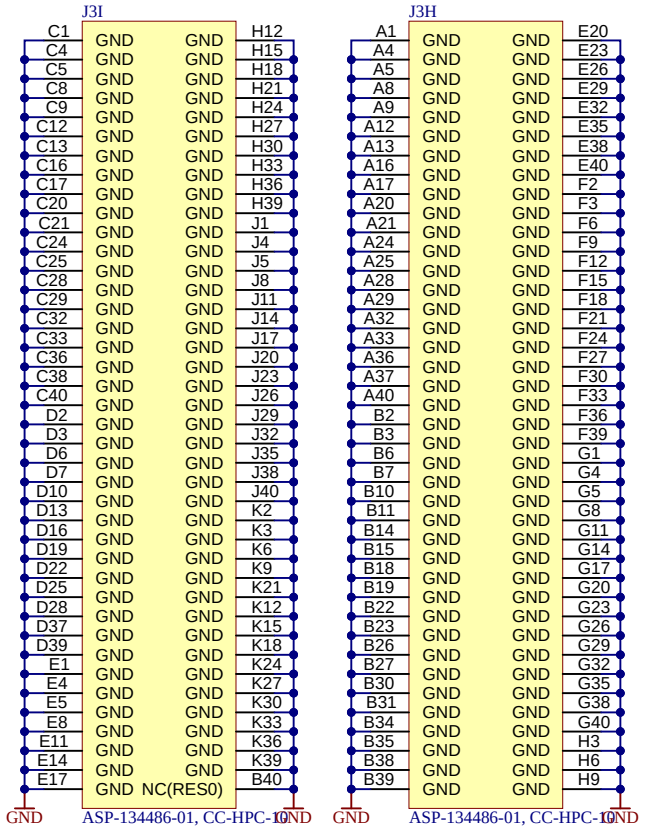
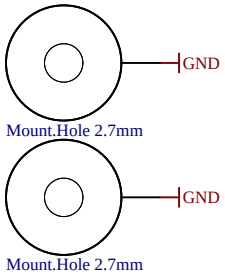
Filename: FMC.SchDoc







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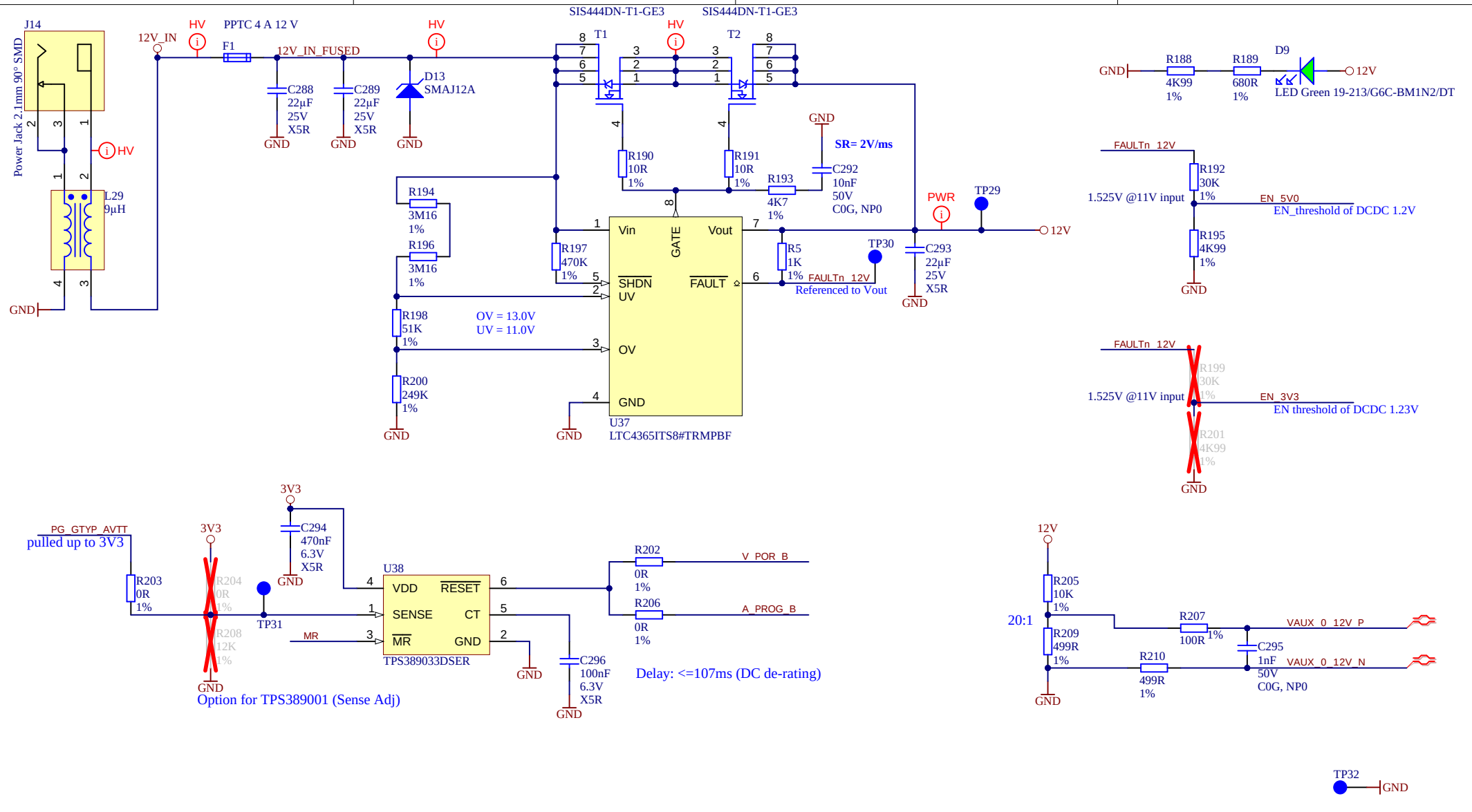
Date: 2023-12-19	Copyright: Trenz Electronic GmbH		Page 33 of 39
Filename: FMC_Power.SchDoc			



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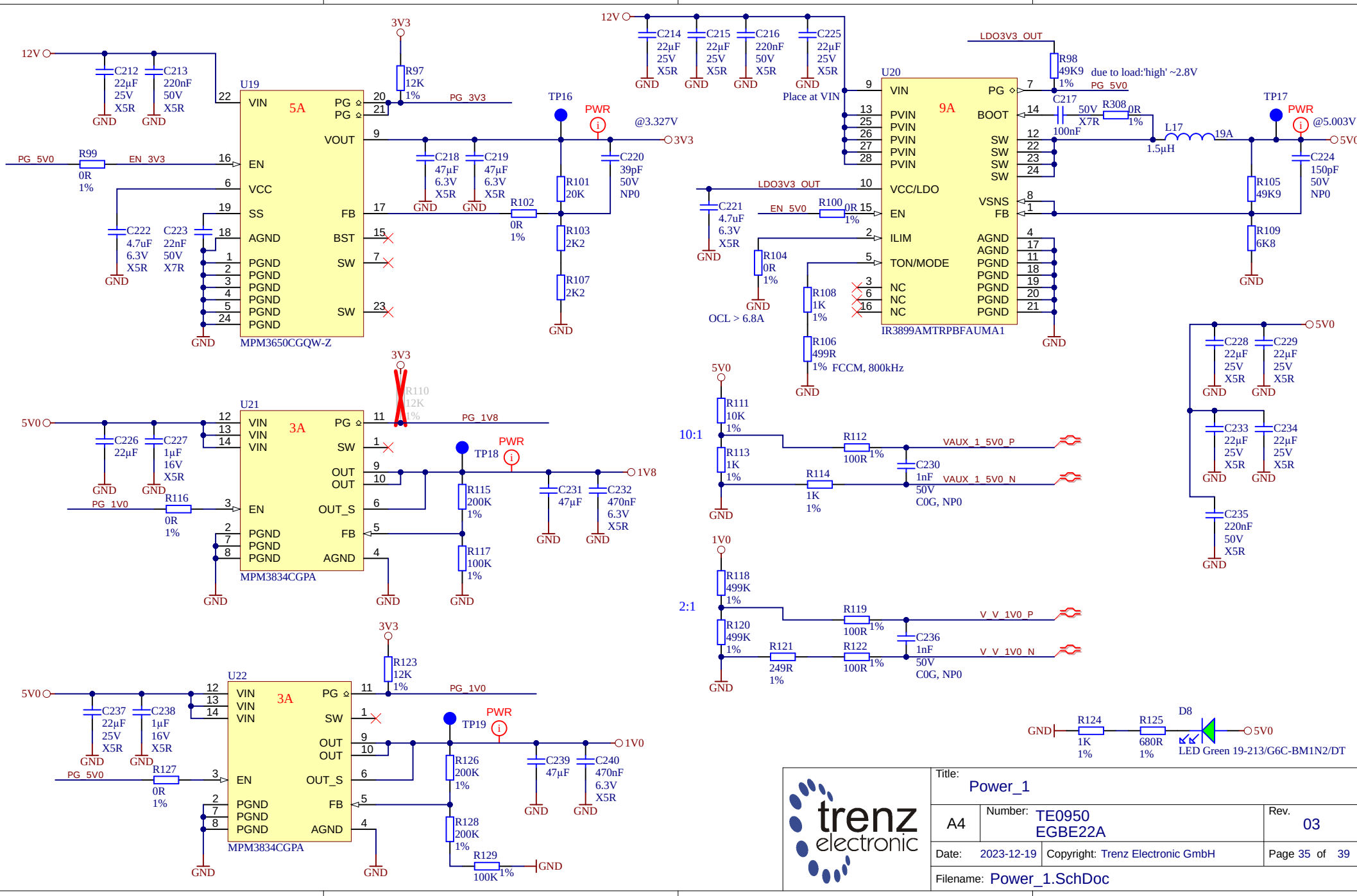
Date: 2023-12-19	Copyright: Trenz Electronic GmbH		Page 34 of 39
Filename: Power_0.SchDoc			



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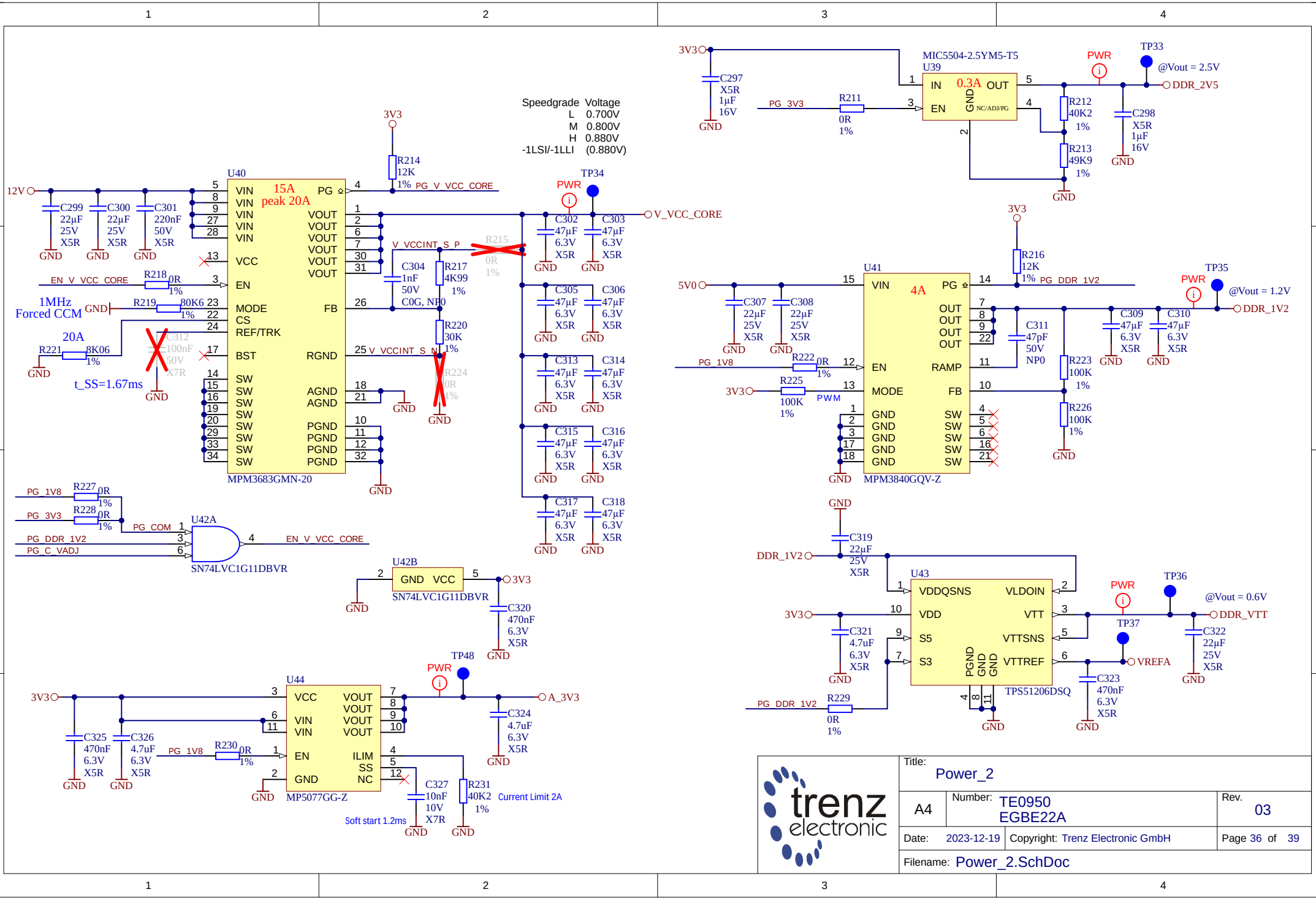
Filename: Power_1.SchDoc			


Speedgrade Voltage
L 0.700V
M 0.800V
H 0.880V
-1LSI/-1LLI (0.880V)
U40
MPM3683GMN-20
15A
peak 20A
1MHz
Forced CCM
20A
t_SS=1.67ms
V_VCCINT_S_P
V_VCCINT_S_N
V_VCC_CORE
EN_V_VCC_CORE
PG_V_VCC_CORE
U42A
SN74LVC1G11DBVR
U42B
SN74LVC1G11DBVR
U44
MP5077GG-Z
Current Limit 2A
Soft start 1.2ms
A_3V3
U39
MIC5504-2.5YM5-T5
0.3A
PG_3V3
DDR_2V5
@Vout = 2.5V
U41
MPM3840GQV-Z
4A
PG_DDR_1V2
DDR_1V2
@Vout = 1.2V
PG_1V8
PWM
U43
TPS51206DSQ
DDR_VTT
@Vout = 0.6V
VREFA
PG_COM
PG_C_VADJ
TP33
TP34
TP35
TP36
TP37
TP48
PWR
Title: Power_2
A4
Number: TE0950 EGBE22A
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Filename: Power_2.SchDoc
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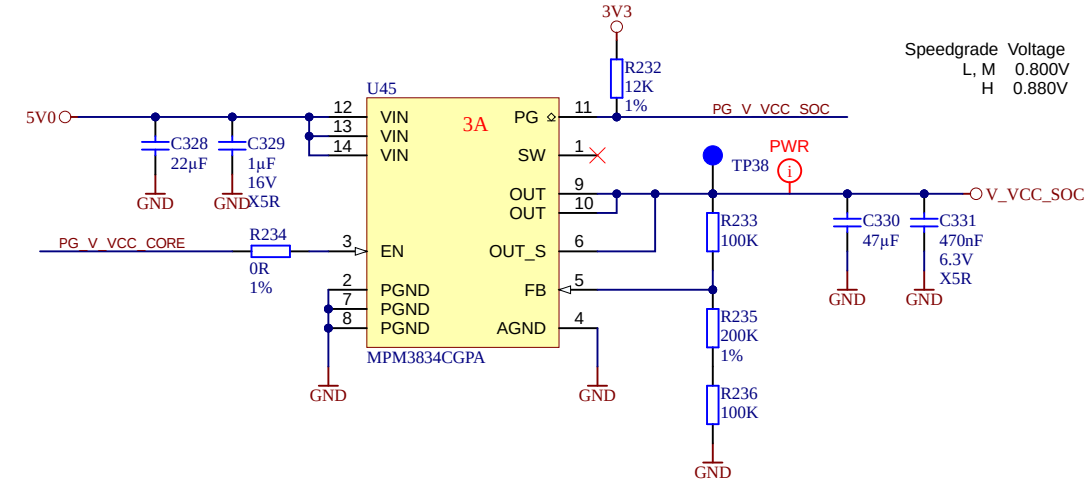
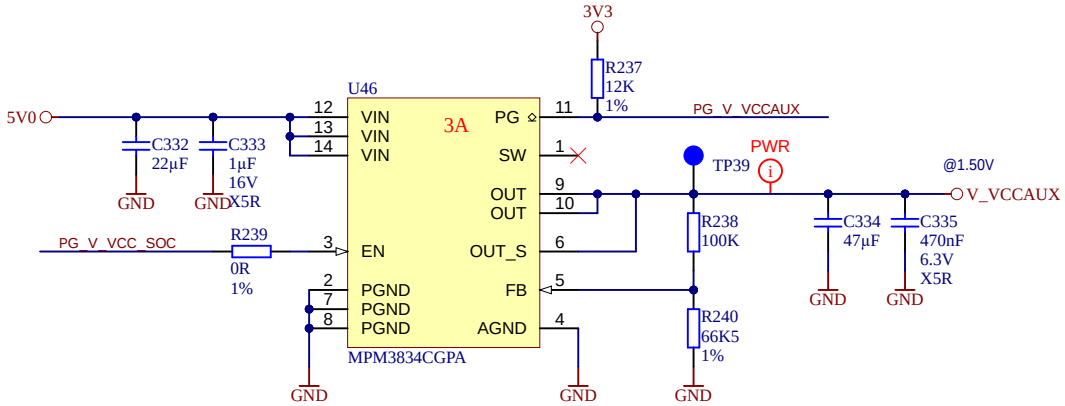


Speedgrade Voltage
L, M 0.800V
H 0.880V



trenz electronic	Title: Power_3		
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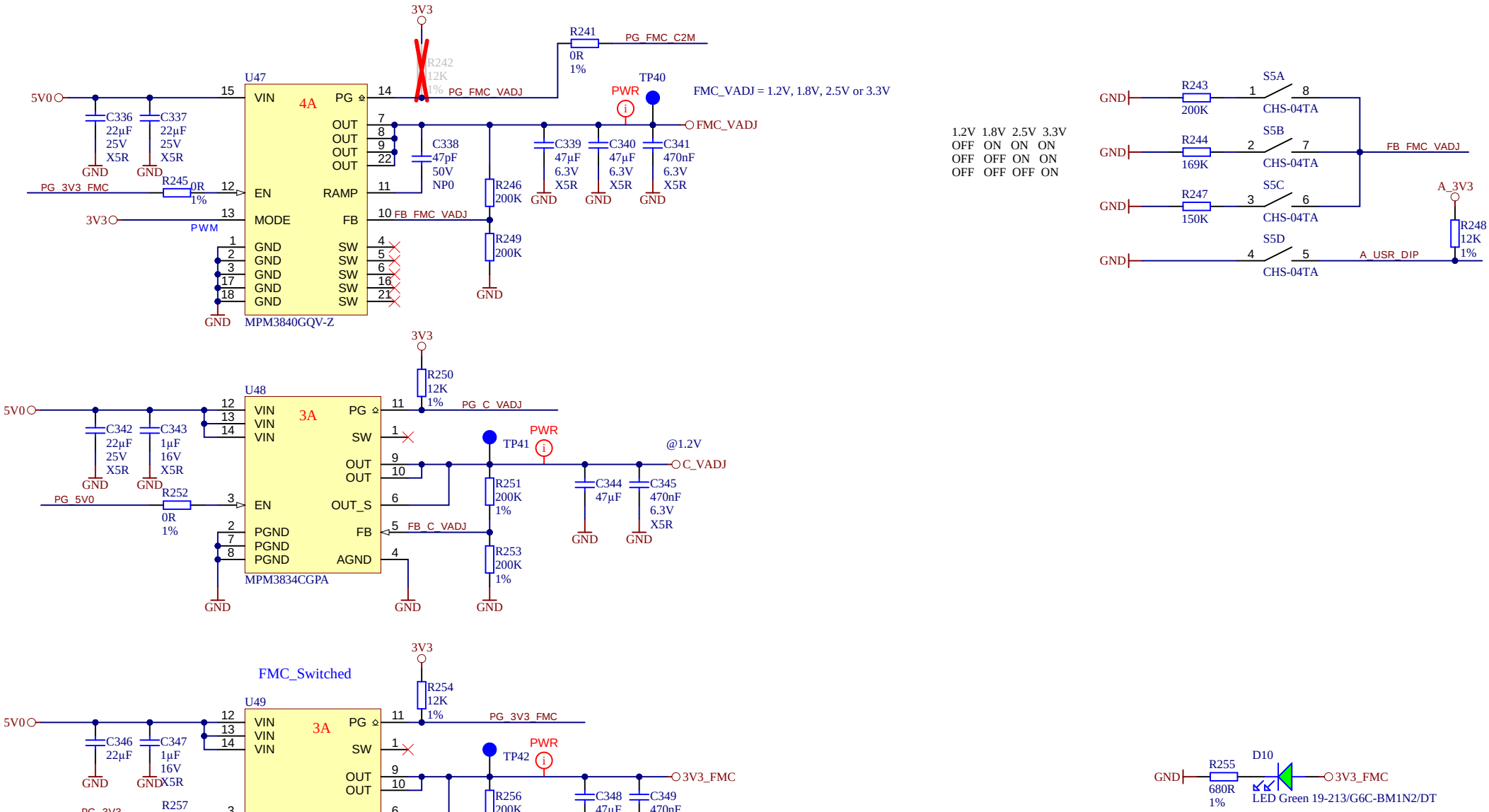
	Filename: Power_3.SchDoc		



trenz electronic	Title: Power_4		
	A4	Number: TE0950 EGBE22A	Rev. 03
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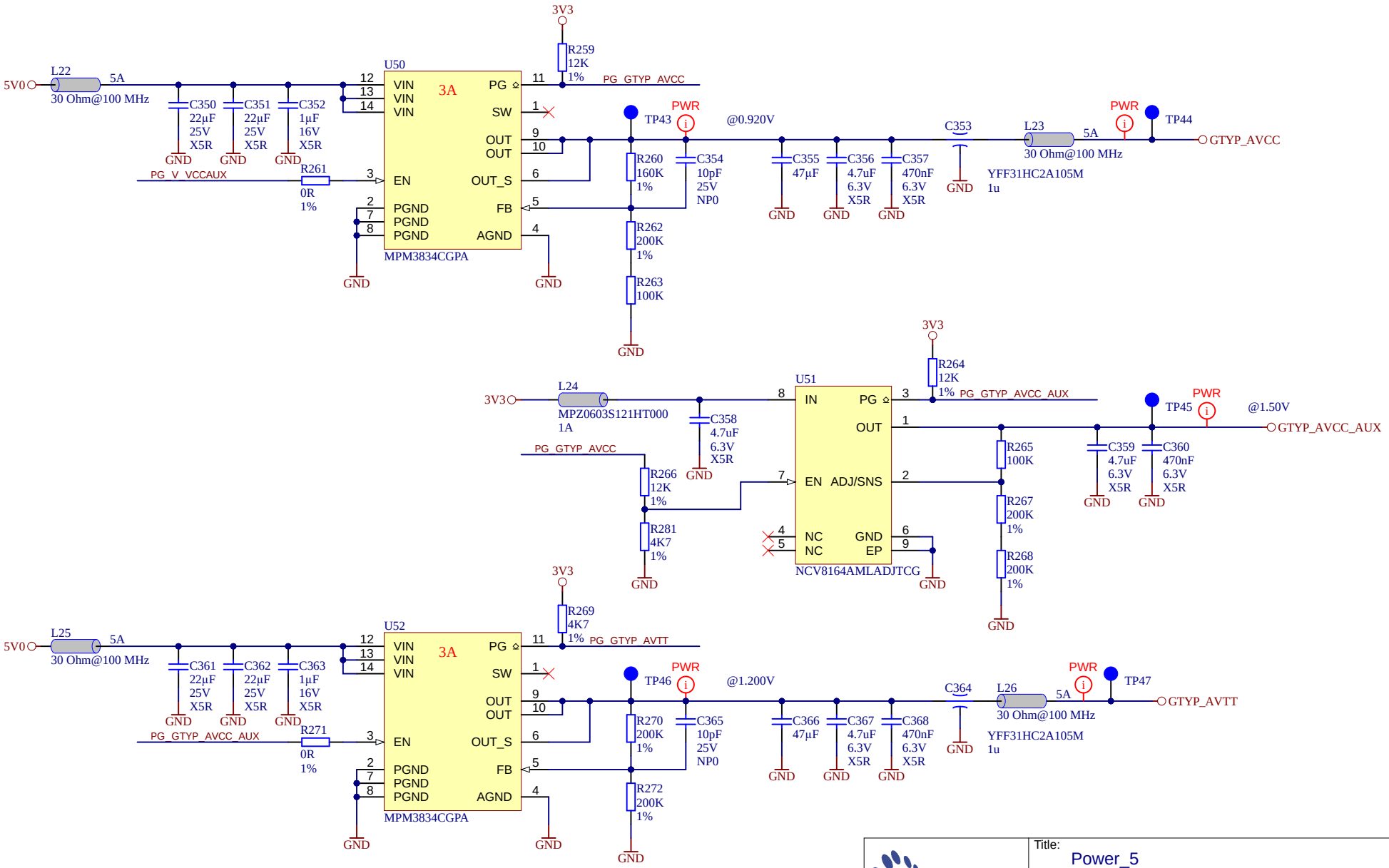
	Filename: Power_4.SchDoc		



trenz electronic	Title: Power_5		
	A4	Number: TE0950 EGBE22A	Rev. 03
	Date: 2023-12-19	Copyright: Trenz Electronic GmbH	Page 39 of 39
	Filename: Power_5.SchDoc		