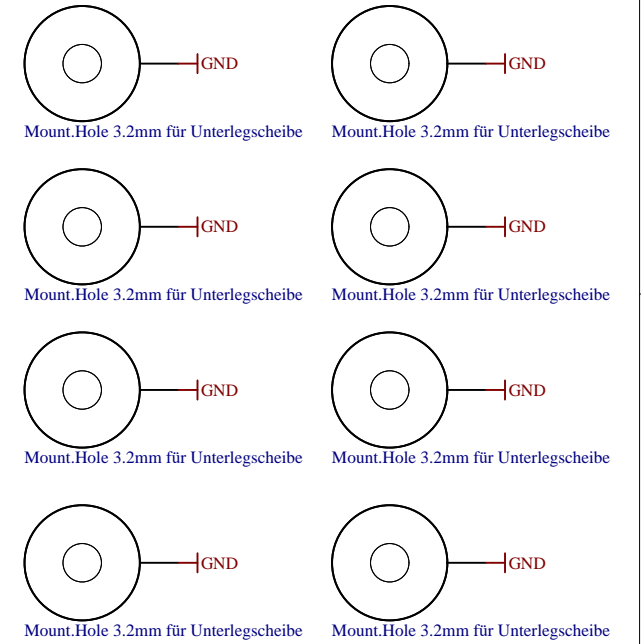
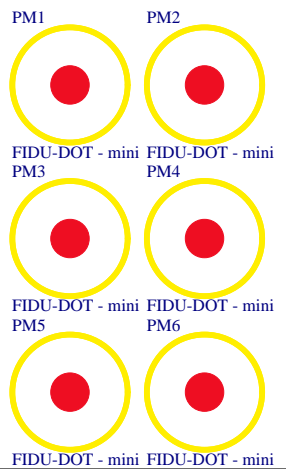


U_Clock Clock.SchDoc	U_ZU ZU.SchDoc
U_DDR4-RAM DDR4-RAM.SchDoc	U_USB-PHY USB-PHY.SchDoc
U_DDR4-RAM_2 DDR4-RAM_2.SchDoc	U_Ethernet Ethernet.SchDoc
U_DDR4-RAM_3 DDR4-RAM_3.SchDoc	U_B2B B2B.SchDoc
U_DDR4-RAM_4 DDR4-RAM_4.SchDoc	U_B2B_2 B2B_2.SchDoc
U_DDR4-TERM DDR4-TERM.SchDoc	PWR_Structure PWR_Structure.SchDoc
CPLD CPLD.SchDoc	



LOGO1
TE Logo PRINT Layer
LOGO PRINT

Serial
Serial
Serialnumber 6,3 x 6.3mm



Design drawn by: IG
Checked by: MR
Assembly variant: MXE21-A
Created by:
Modified by:
Modified at:



Title: TE0835		
A4	Number: TE0835 MXE21-A	Rev. 02
Date: 2020-06-10	Copyright: Trenz Electronic GmbH / TT	Page 1 of 34
Filename: TE0835.SchDoc		

1

2

3

4

A

A

HD
ZU_HD.SchDoc

MGT_L
ZU_MGT_L.SchDoc

ZU_B65_B66
ZU_B65_B66.SchDoc

MIO
ZU_MIO.SchDoc

PSDDR
ZU_PSDDR.SchDoc

ZU_PWR
ZU_PWR.SchDoc

ZU_PWR2
ZU_PWR2.SchDoc

ZU_PWR3
ZU_PWR3.SchDoc

ZU_ADC
ZU_ADC.SchDoc

ZU_DAC
ZU_DAC.SchDoc

ZU_CFG
ZU_CFG.SchDoc

ZU_PSMGT
ZU_PSMGT.SchDoc

B

B

C

C

D

D



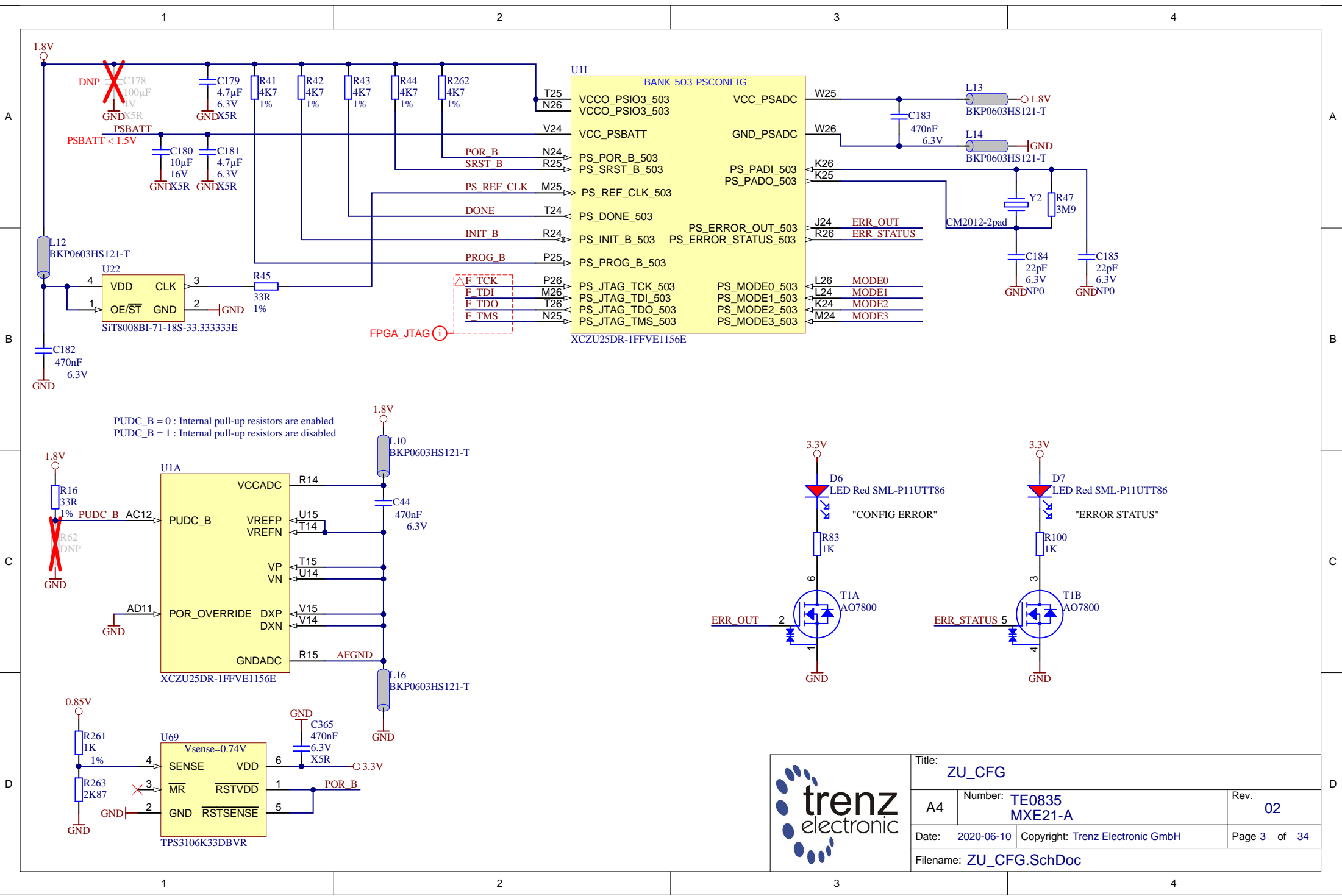
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A4	Number: TE0835 MXE21-A	Rev. 02
Date: 2020-06-10	Copyright: Trenz Electronic GmbH	Page 2 of 34
Filename: ZU.SchDoc		


1

2

3

4



			Title: ZU_CFG	
			A4	Number: TE0835 MXE21-A
Date: 2020-06-10		Copyright: Trenz Electronic GmbH		Page 3 of 34
Filename: ZU_CFG.SchDoc				

A

B

C

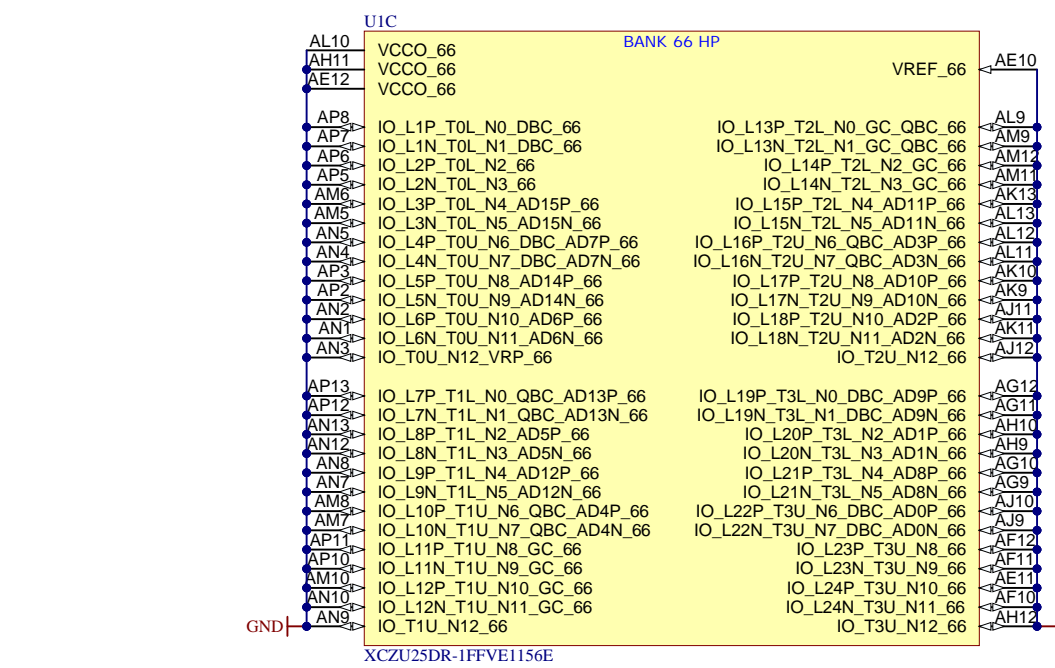
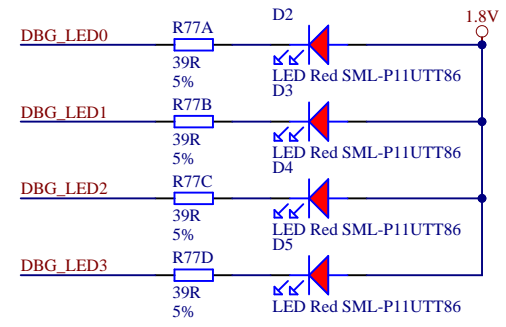
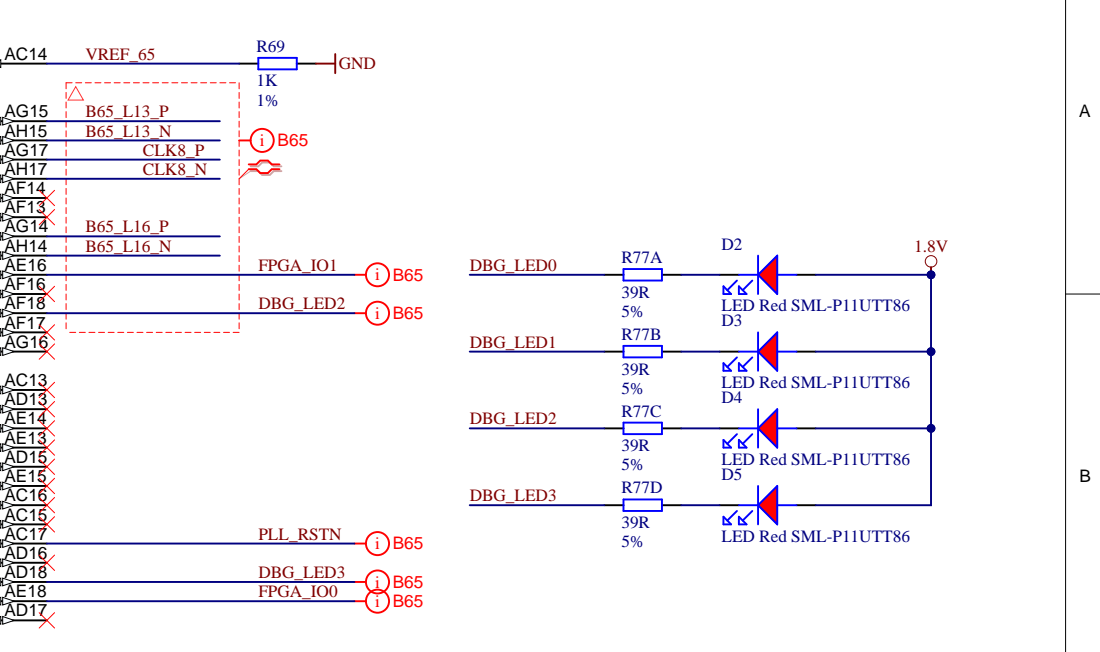
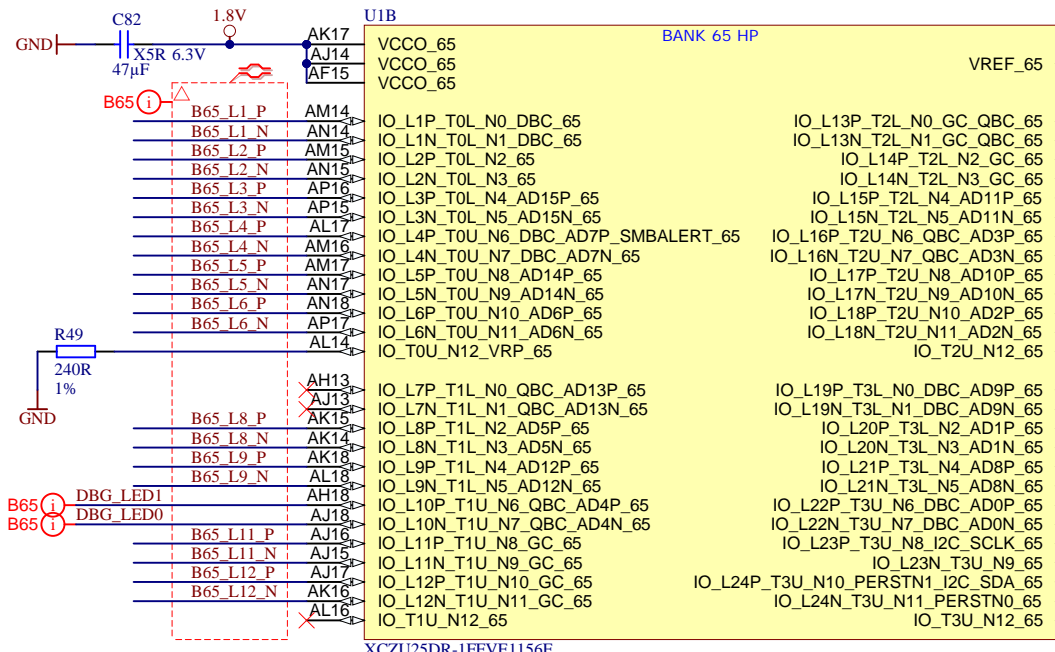
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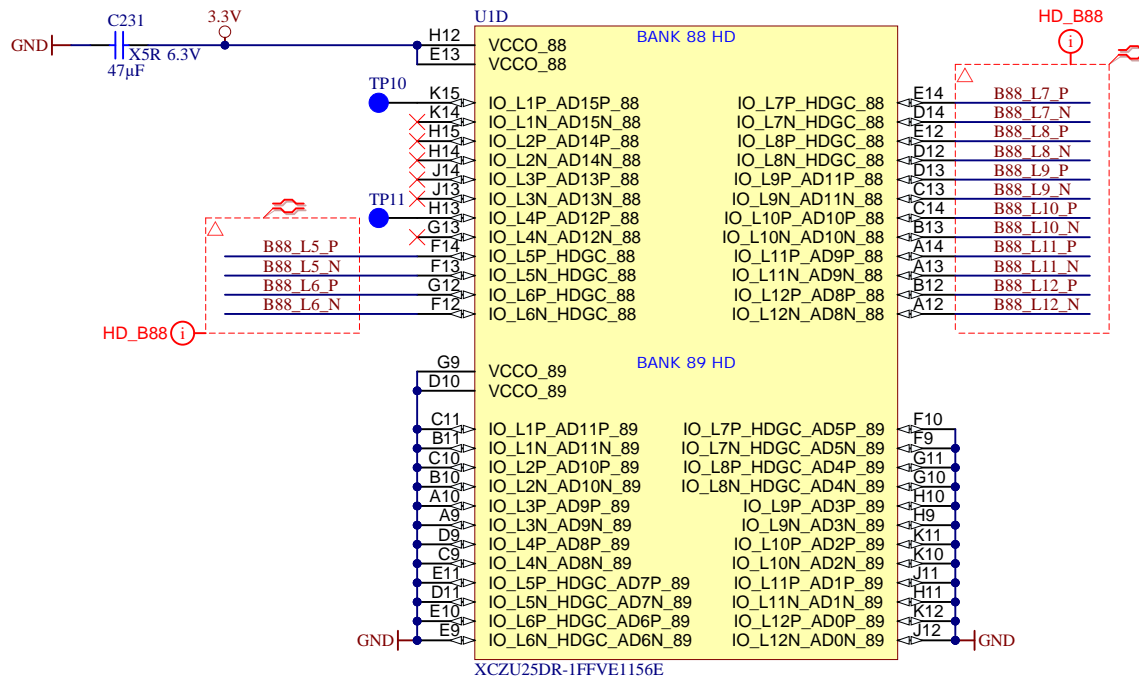
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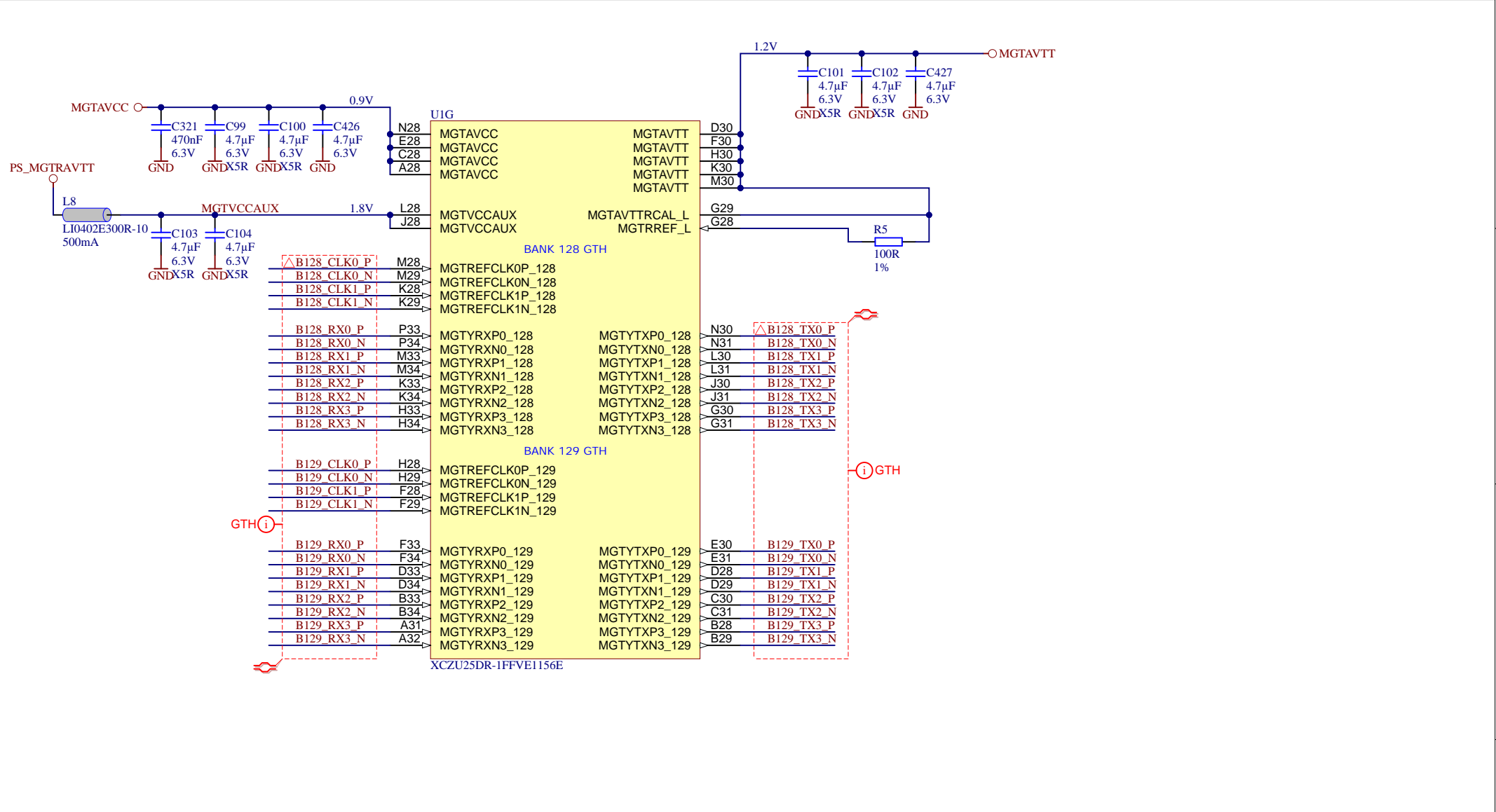
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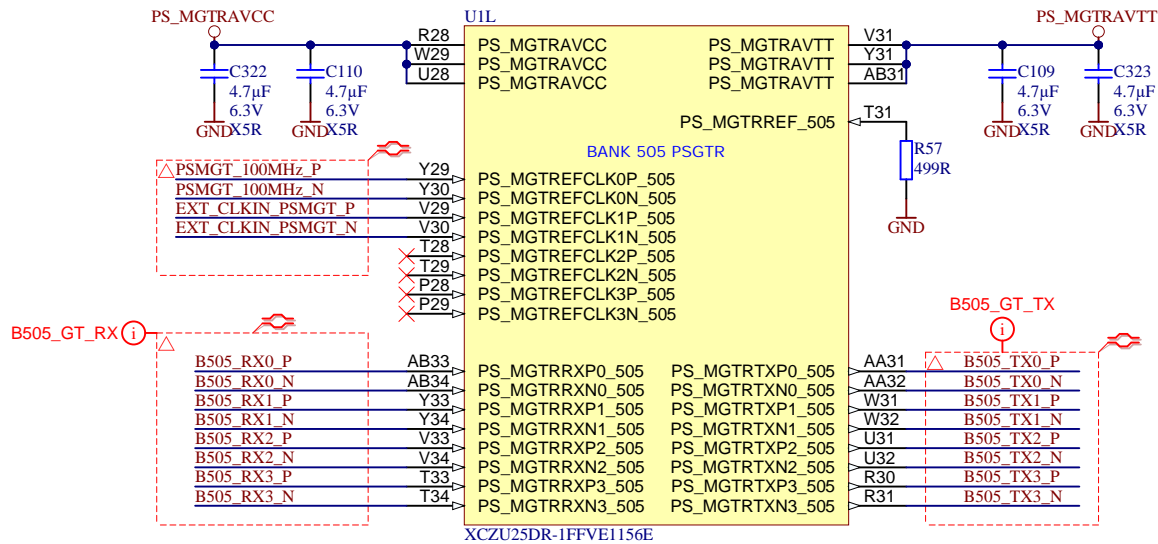
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A4	Number: TE0835 MXE21-A	Rev. 02
Date: 2020-06-10	Copyright: Trenz Electronic GmbH	Page 4 of 34
Filename: ZU_B65_B66.SchDoc		




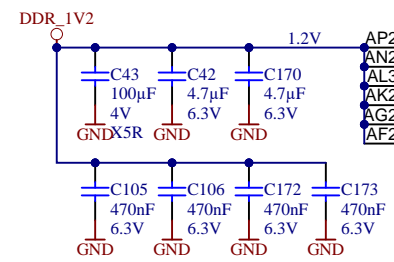
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Date: 2020-06-10	Copyright: Trenz Electronic GmbH	Page 5 of 34
Filename: ZU_HD.SchDoc		



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		A4	Number: TE0835 MXE21-A
Date: 2020-06-10		Copyright: Trenz Electronic GmbH	
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		Title: ZU_PSMGT	
		A4	Number: TE0835 MXE21-A
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Filename: ZU_PSMGT.SchDoc		Page 7 of 34	



UIJ

BANK 504 PSDDR

VCCO_PSDDR_504	PS_DDR_CK0_504
VCCO_PSDDR_504	PS_DDR_CK_N0_504
VCCO_PSDDR_504	PS_DDR_CKE0_504
VCCO_PSDDR_504	PS_DDR_CK1_504
VCCO_PSDDR_504	PS_DDR_CK_N1_504
VCCO_PSDDR_504	PS_DDR_CKE1_504
PS_DDR_A0_504	PS_DDR_A0_504
PS_DDR_A1_504	PS_DDR_A1_504
PS_DDR_A2_504	PS_DDR_A2_504
PS_DDR_A3_504	PS_DDR_A3_504
PS_DDR_A4_504	PS_DDR_A4_504
PS_DDR_A5_504	PS_DDR_A5_504
PS_DDR_A6_504	PS_DDR_A6_504
PS_DDR_A7_504	PS_DDR_A7_504
PS_DDR_A8_504	PS_DDR_A8_504
PS_DDR_A9_504	PS_DDR_A9_504
PS_DDR_A10_504	PS_DDR_A10_504
PS_DDR_A11_504	PS_DDR_A11_504
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PS_DDR_BA1_504	PS_DDR_BA1_504
PS_DDR_BG0_504	PS_DDR_BG0_504
PS_DDR_BG1_504	PS_DDR_BG1_504
PS_DDR_PARITY_504	PS_DDR_PARITY_504
PS_DDR_RAM_RST_N_504	PS_DDR_RAM_RST_N_504
PS_DDR_ACT_N_504	PS_DDR_ACT_N_504
PS_DDR_ALERT_N_504	PS_DDR_ALERT_N_504
PS_DDR_ZQ_504	PS_DDR_ZQ_504
PS_DDR_ODT0_504	PS_DDR_ODT0_504
PS_DDR_ODT1_504	PS_DDR_ODT1_504

XCZU25DR-1FFVE1156E

ADDR_CMD_CTRL

AN28	DDR4-CLK0_P
AP28	DDR4-CLK0_N
AP31	DDR4-CKE0
AL27	DDR4-A0
AM27	DDR4-A1
AK28	DDR4-A2
AN29	DDR4-A3
AP27	DDR4-A4
AP26	DDR4-A5
AN27	DDR4-A6
AN25	DDR4-A7
AK26	DDR4-A8
AJ26	DDR4-A9
AJ25	DDR4-A10
AL28	DDR4-A11
AM26	DDR4-A12
AL29	DDR4-A13
AM25	DDR4-A14
AM29	DDR4-A15
AL26	DDR4-A16
AH25	DDR4-A17
AG25	DDR4-A17
AN30	DDR4-CS
AM30	DDR4-CS
AG26	DDR4-BA0
AK28	DDR4-BA1
AJ27	DDR4-BG0
AJ28	DDR4-BG1
AG27	DDR4-PAR
AF27	DDR4-PAR
AH27	DDR4-ACT
AE26	DDR4-ACT
AF26	DDR4-ZQ
AP30	DDR4-ODT0
AM31	DDR4-ODT0



UIK

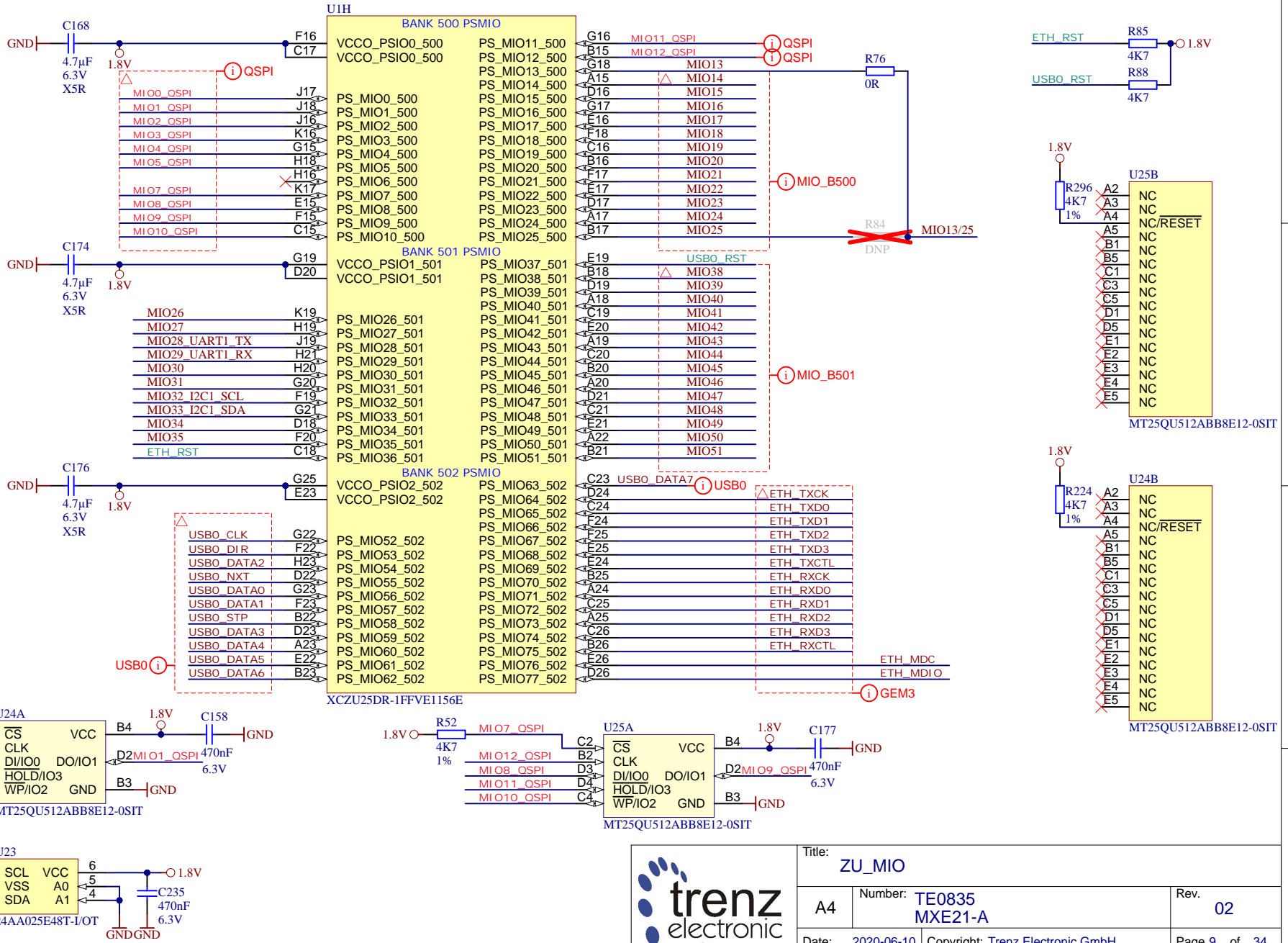
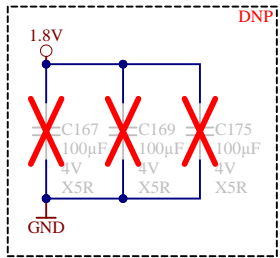
BANK 504 PSDDR

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DQ2	PS_DDR_DQ2_504
DQ3	PS_DDR_DQ3_504
DQ4	PS_DDR_DQ4_504
DQ5	PS_DDR_DQ5_504
DQ6	PS_DDR_DQ6_504
DQ7	PS_DDR_DQ7_504
DQ8	PS_DDR_DQ8_504
DQ9	PS_DDR_DQ9_504
DQ10	PS_DDR_DQ10_504
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DQ13	PS_DDR_DQ13_504
DQ14	PS_DDR_DQ14_504
DQ15	PS_DDR_DQ15_504
DQ16	PS_DDR_DQ16_504
DQ17	PS_DDR_DQ17_504
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DQ19	PS_DDR_DQ19_504
DQ20	PS_DDR_DQ20_504
DQ21	PS_DDR_DQ21_504
DQ22	PS_DDR_DQ22_504
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DQ24	PS_DDR_DQ24_504
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DQ26	PS_DDR_DQ26_504
DQ27	PS_DDR_DQ27_504
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DQ30	PS_DDR_DQ30_504
DQ31	PS_DDR_DQ31_504
PS_DDR_DQ32_504	PS_DDR_DQ32_504
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PS_DDR_DQ89_504	PS_DDR_DQ89_504
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XCZU25DR-1FFVE1156E



Title: ZU_PSDDR		
A4	Number: TE0835 MXE21-A	Rev. 02
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Filename: ZU_PSDDR.SchDoc		



Title: ZU_MIO		
A4	Number: TE0835 MXE21-A	Rev. 02
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Filename: ZU_MIO.SchDoc		

A

A

B

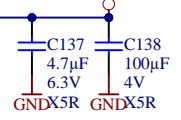
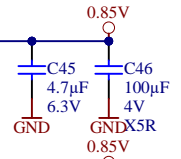
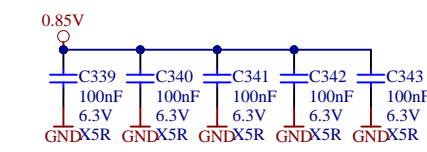
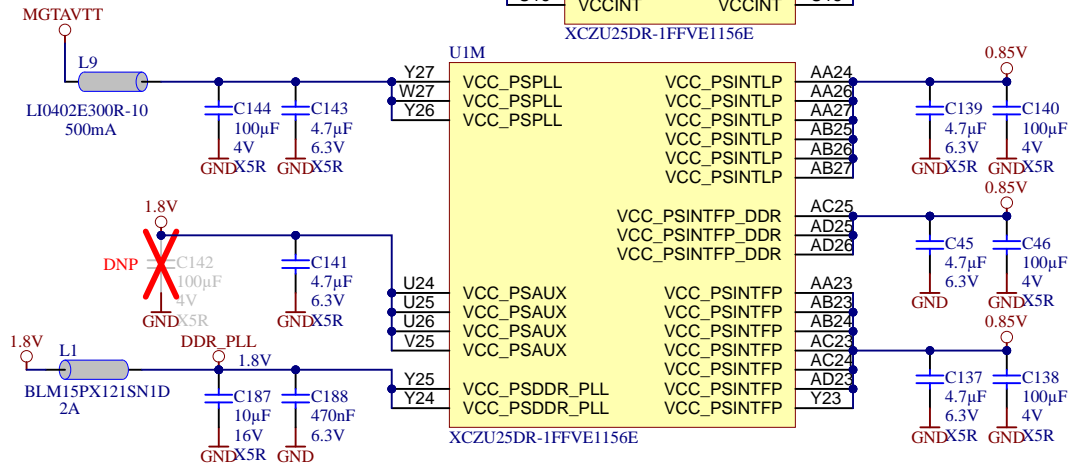
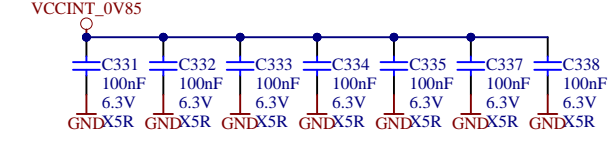
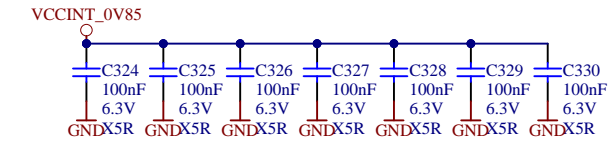
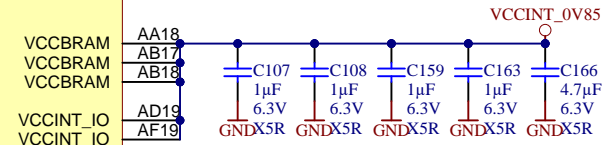
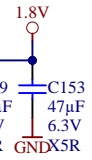
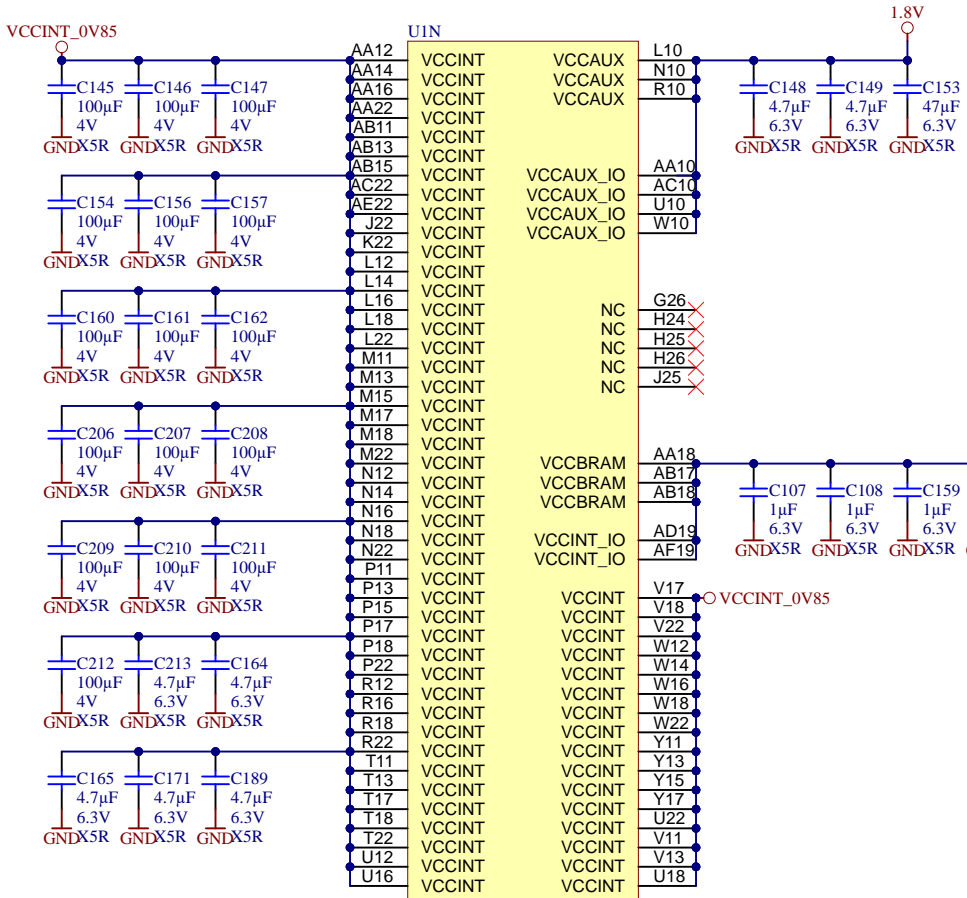
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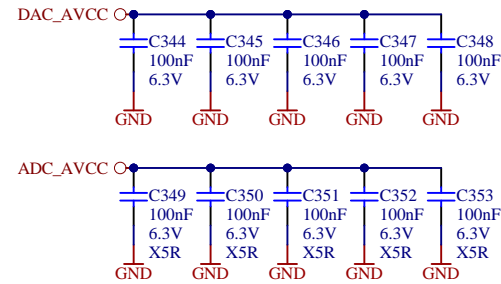
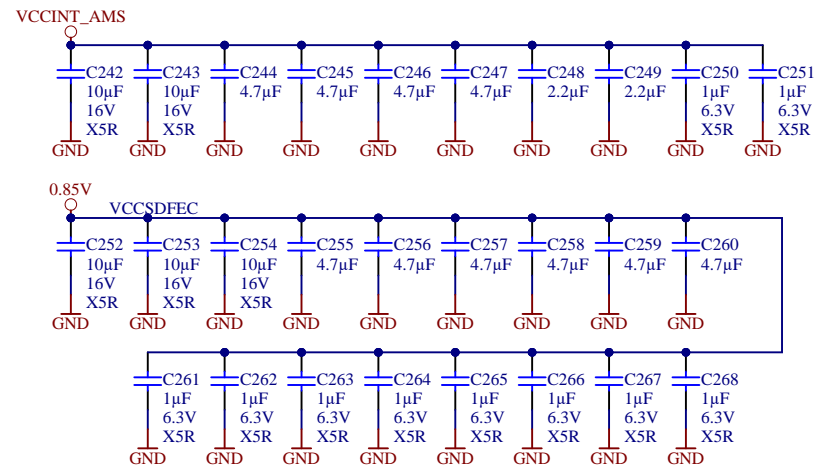
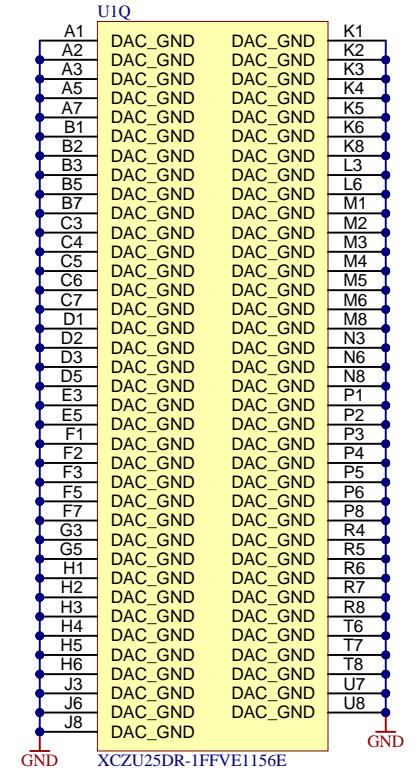
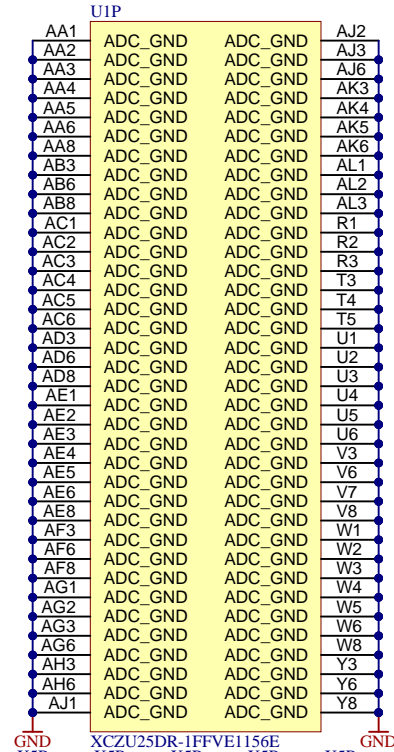
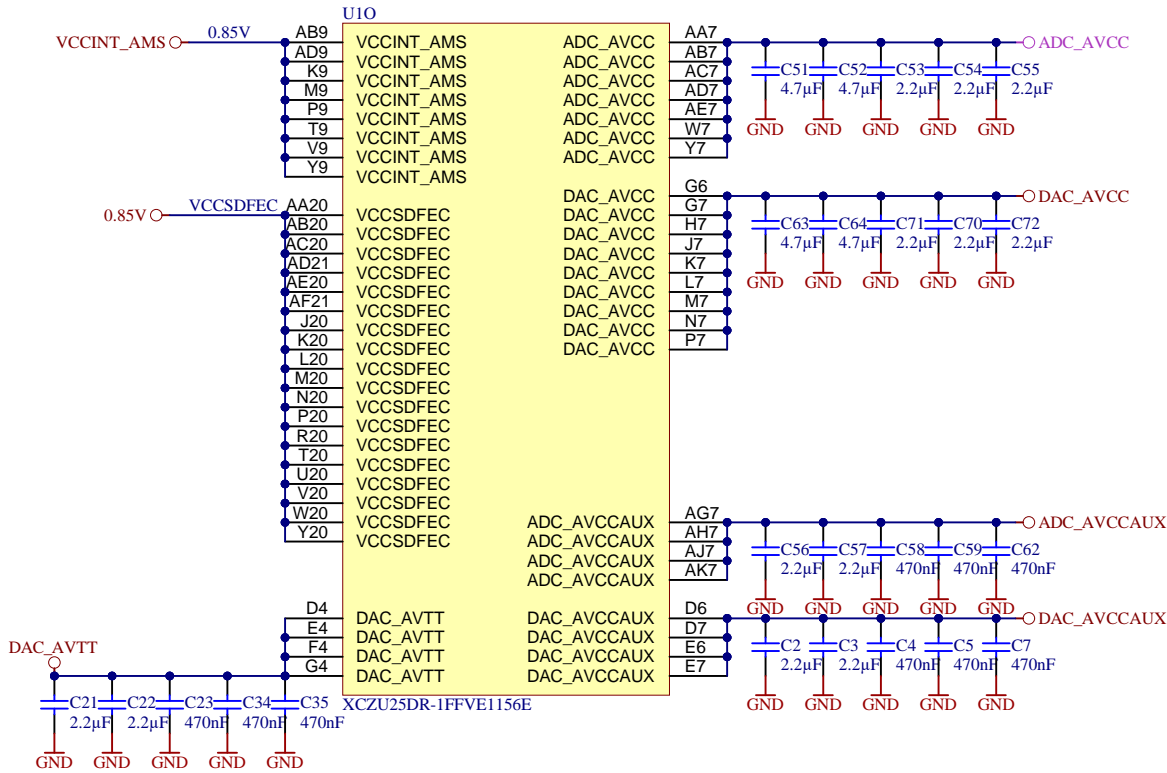
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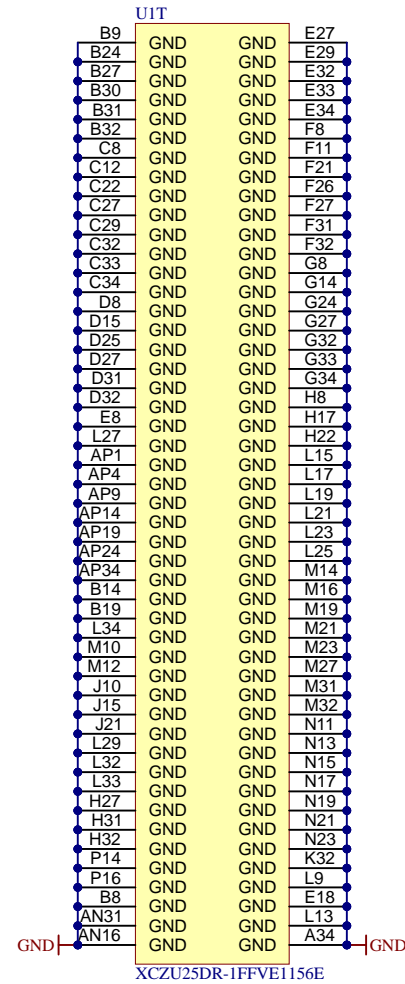
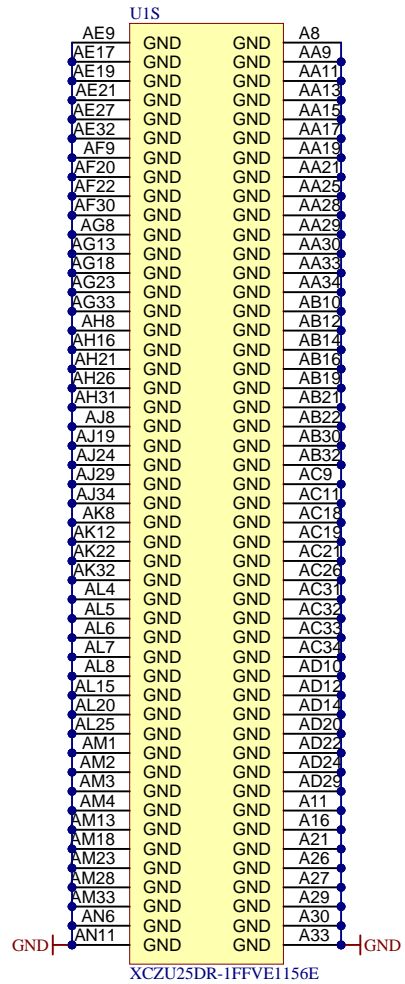
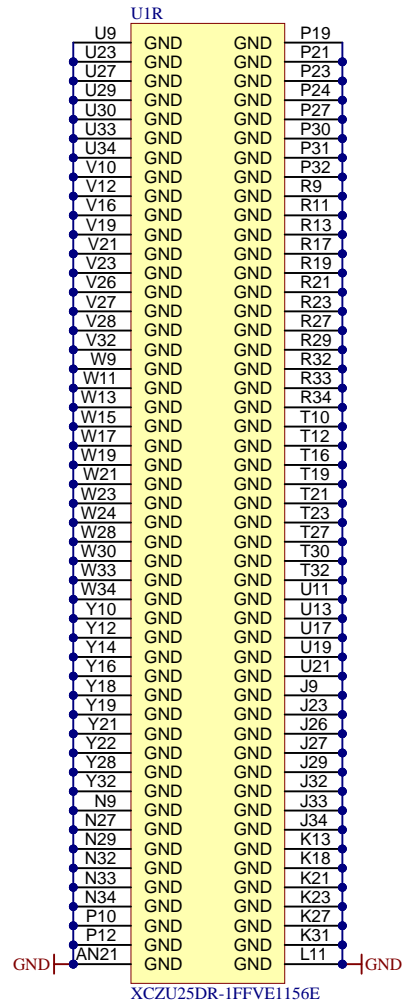
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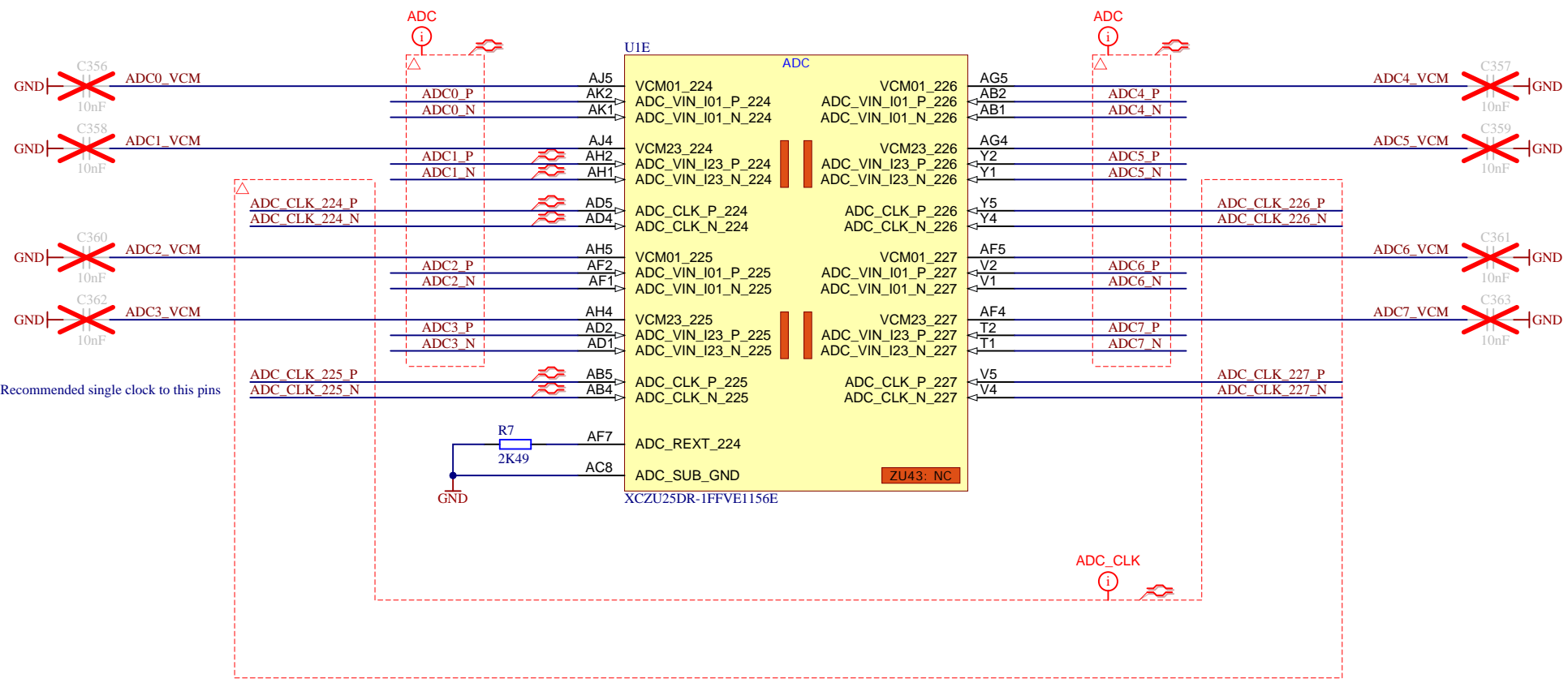
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A4	Number: TE0835 MXE21-A	Rev. 02
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Filename: ZU_PWR.SchDoc		



Title: ZU_PWR2		
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Filename: ZU_PWR2.SchDoc		

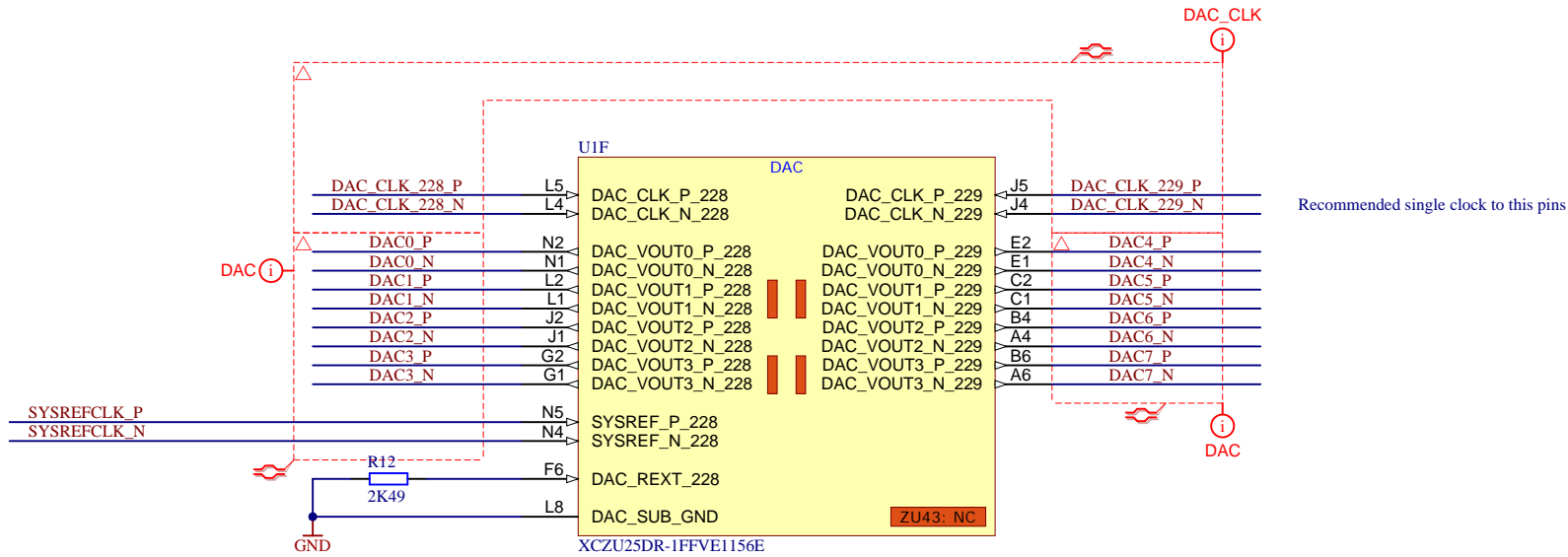


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Date: 2020-06-10	Copyright: Trenz Electronic GmbH	Page 12 of 34
Filename: ZU_PWR3.SchDoc		

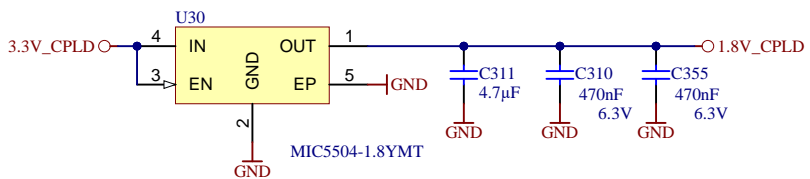
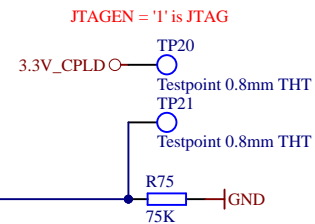
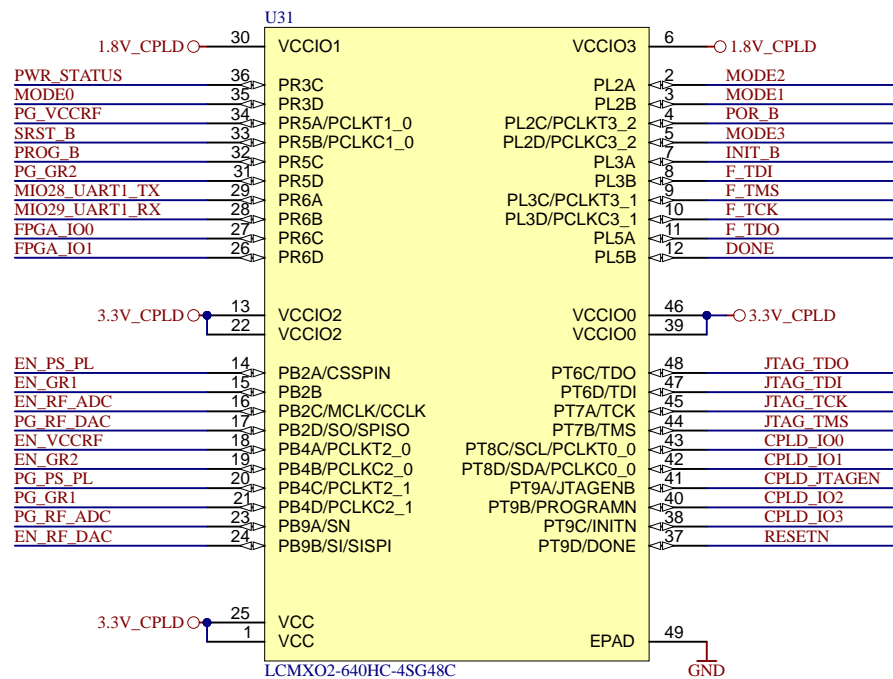
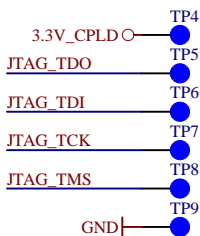
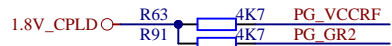
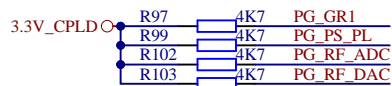
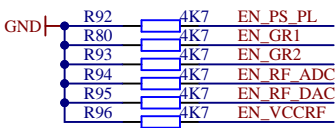
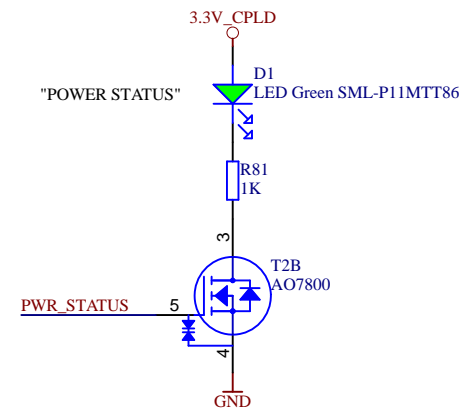
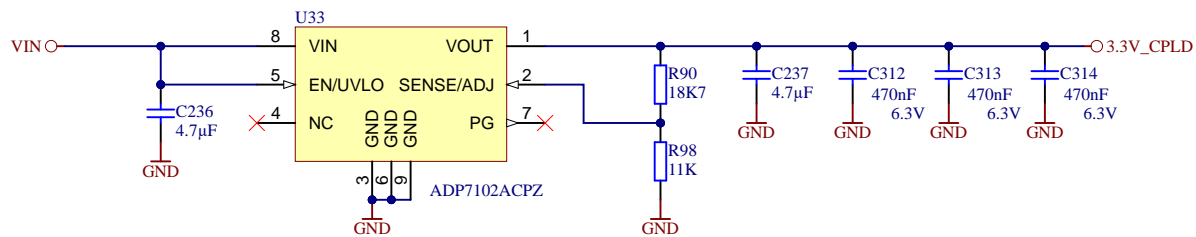


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	A4	Number: TE0835 MXE21-A
	Date: 2020-06-10	Copyright: Trenz Electronic GmbH
	Filename: ZU_ADC.SchDoc	

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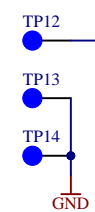


	Title: ZU_DAC		
	A4	Number: TE0835 MXE21-A	Rev. 02
	Date: 2020-06-10	Copyright: Trenz Electronic GmbH	
	Page 14 of 34		
Filename: ZU_DAC.SchDoc			

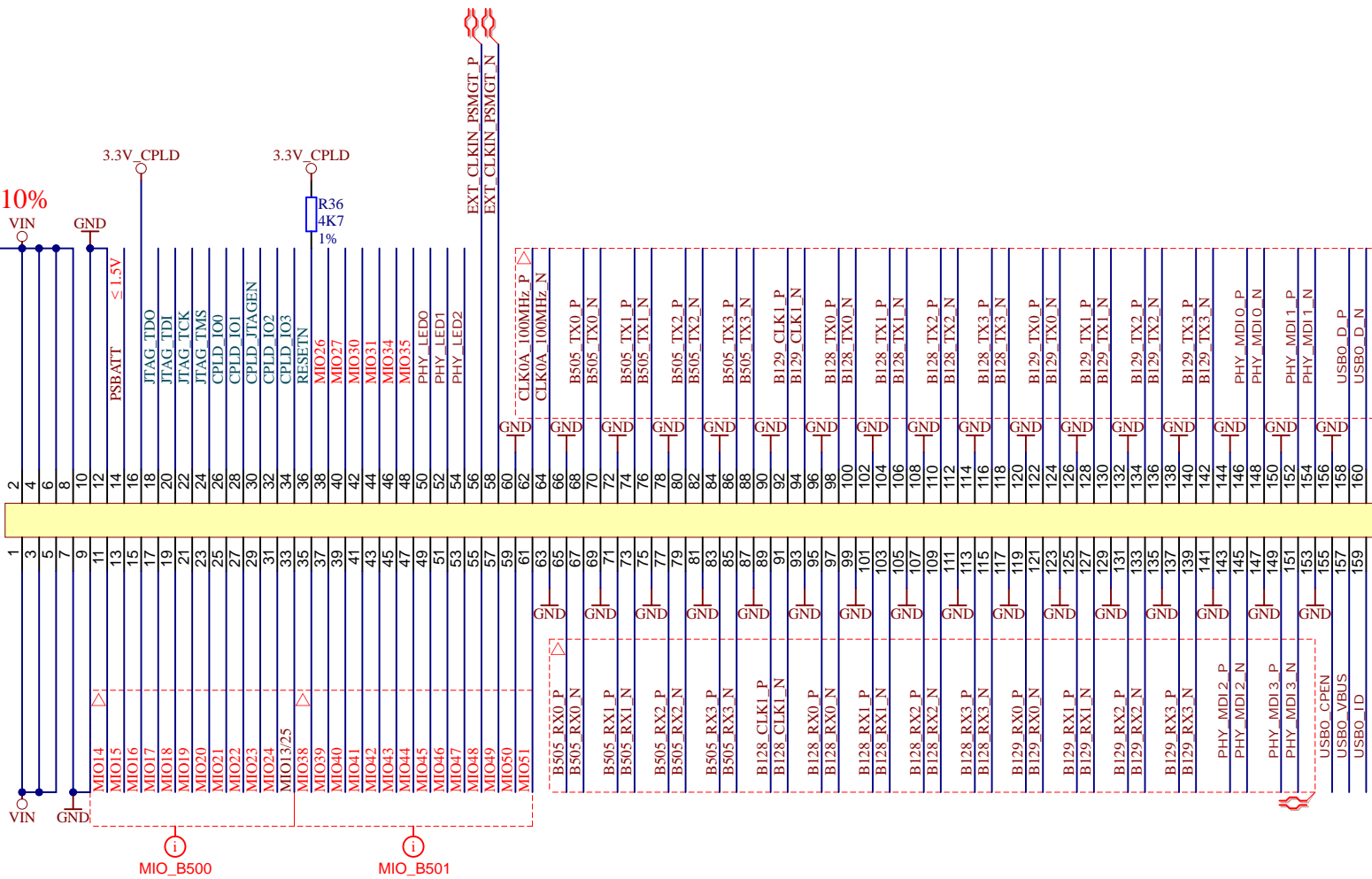


Title: CPLD		
A4	Number: TE0835 MXE21-A	Rev. 02
Date: 2020-06-10	Copyright: Trenz Electronic GmbH	Page 15 of 34
Filename: CPLD.SchDoc		

VIN=5V±10%



J1



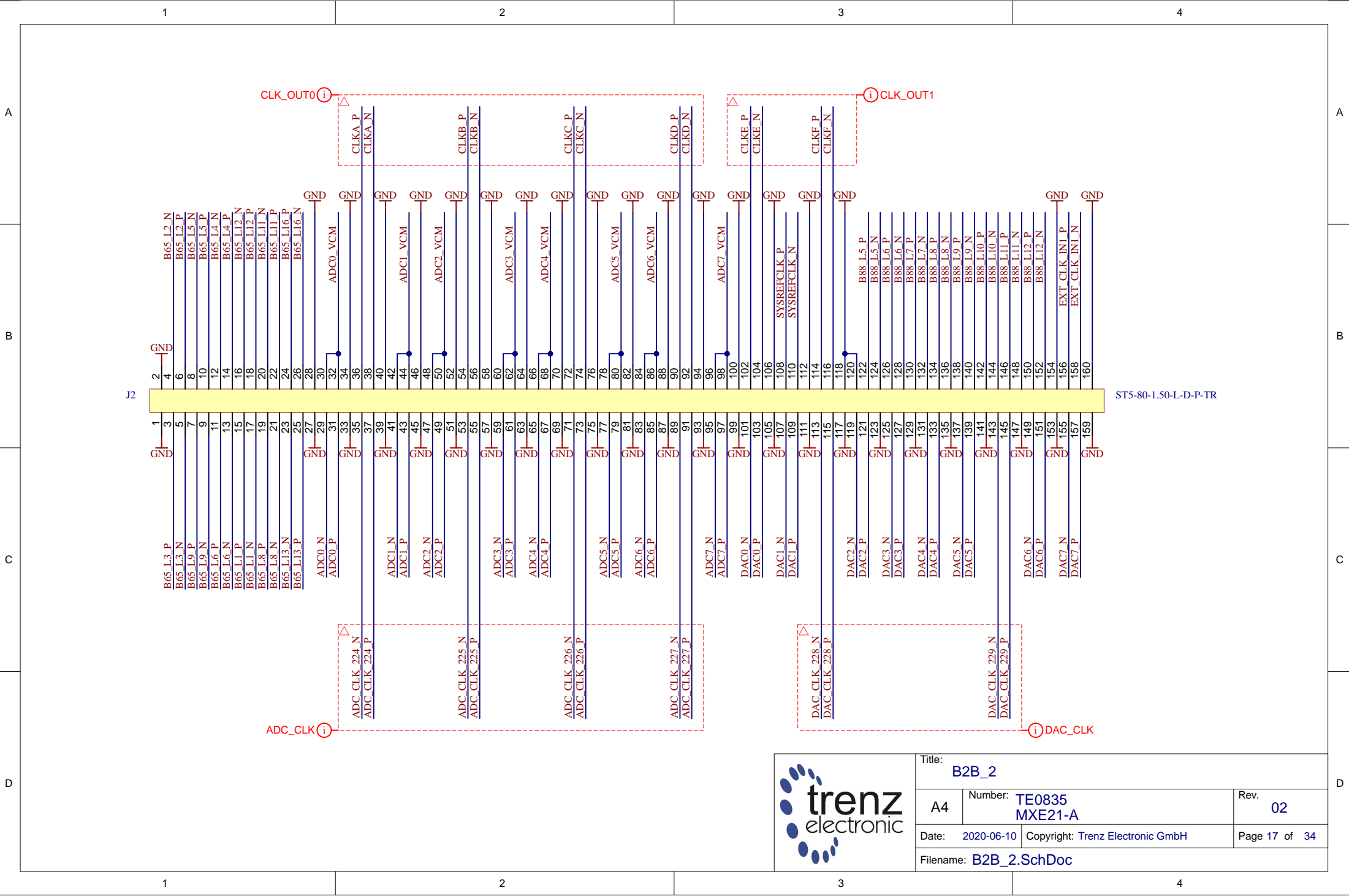
MIO_B500

MIO_B501


ST5-80-1.50-L-D-P-TR



Title: B2B		
A4	Number: TE0835 MXE21-A	Rev. 02
Date: 2020-06-10	Copyright: Trenz Electronic GmbH	
Filename: B2B.SchDoc		Page 16 of 34



ST5-80-1.50-L-D-P-TR



Title: B2B_2		
A4	Number: TE0835 MXE21-A	Rev. 02
Date: 2020-06-10	Copyright: Trenz Electronic GmbH	
Filename: B2B_2.SchDoc		

1

2

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4

A

A

B

B

C

C

D

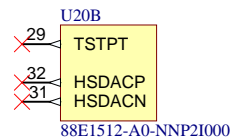
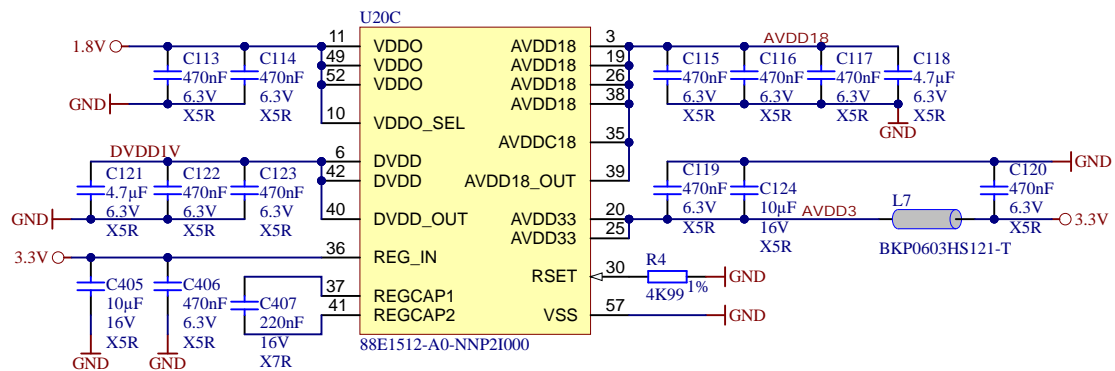
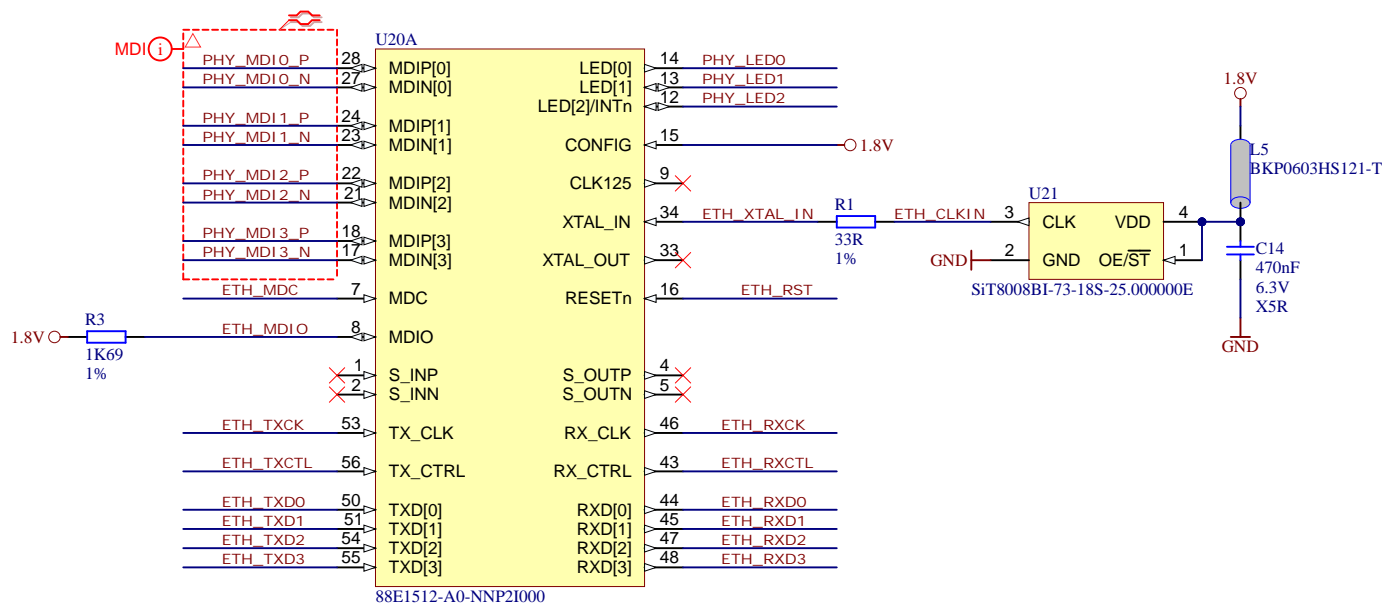
D

1

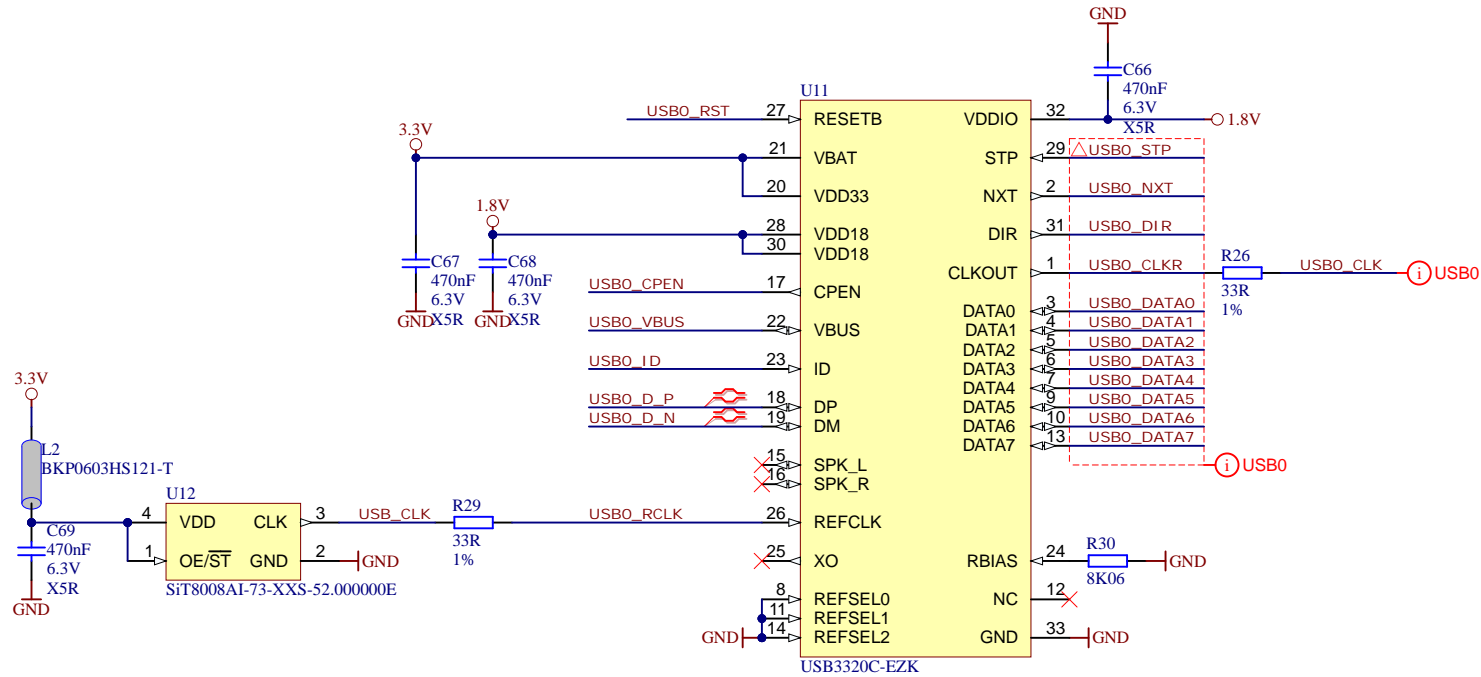
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3

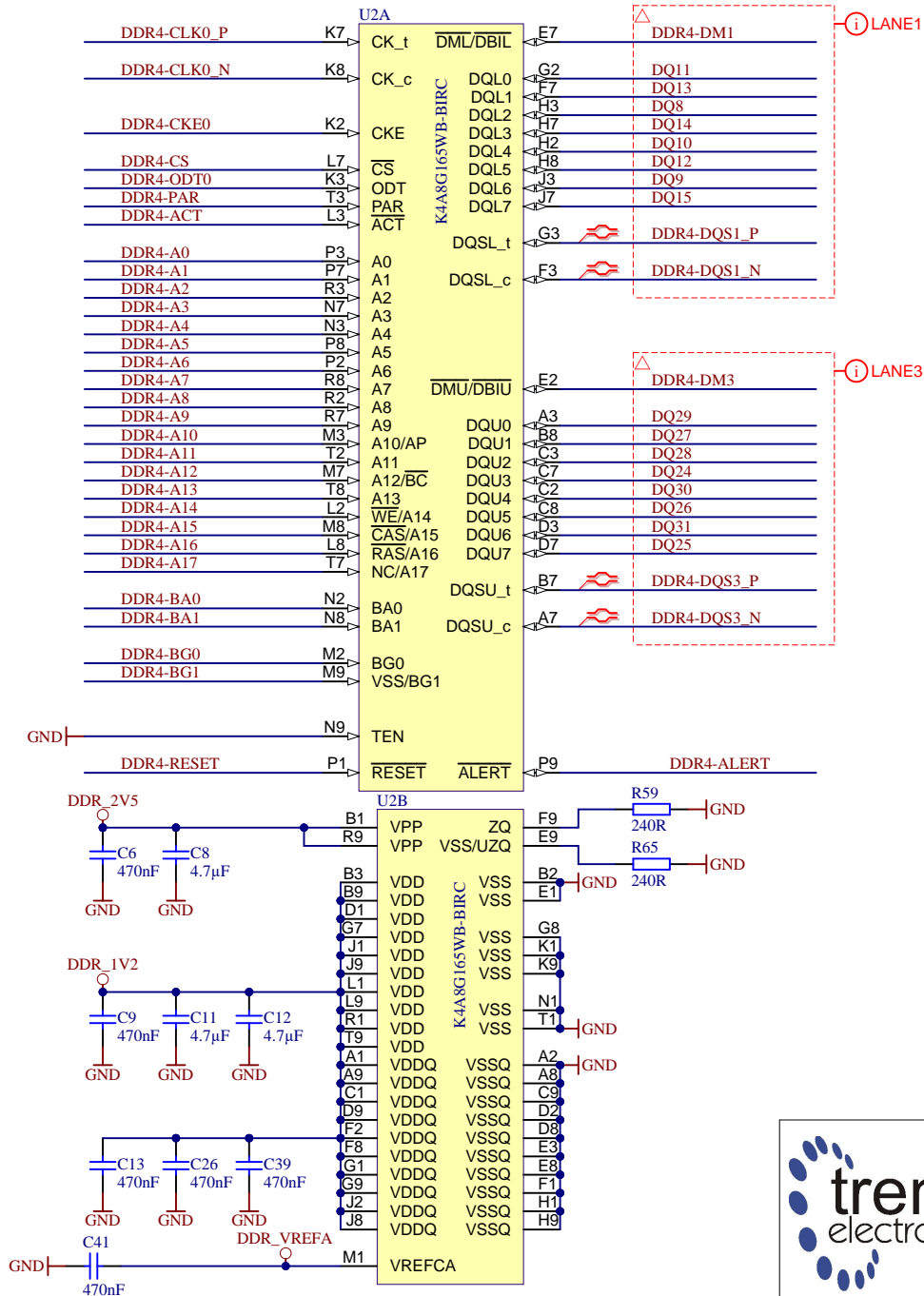
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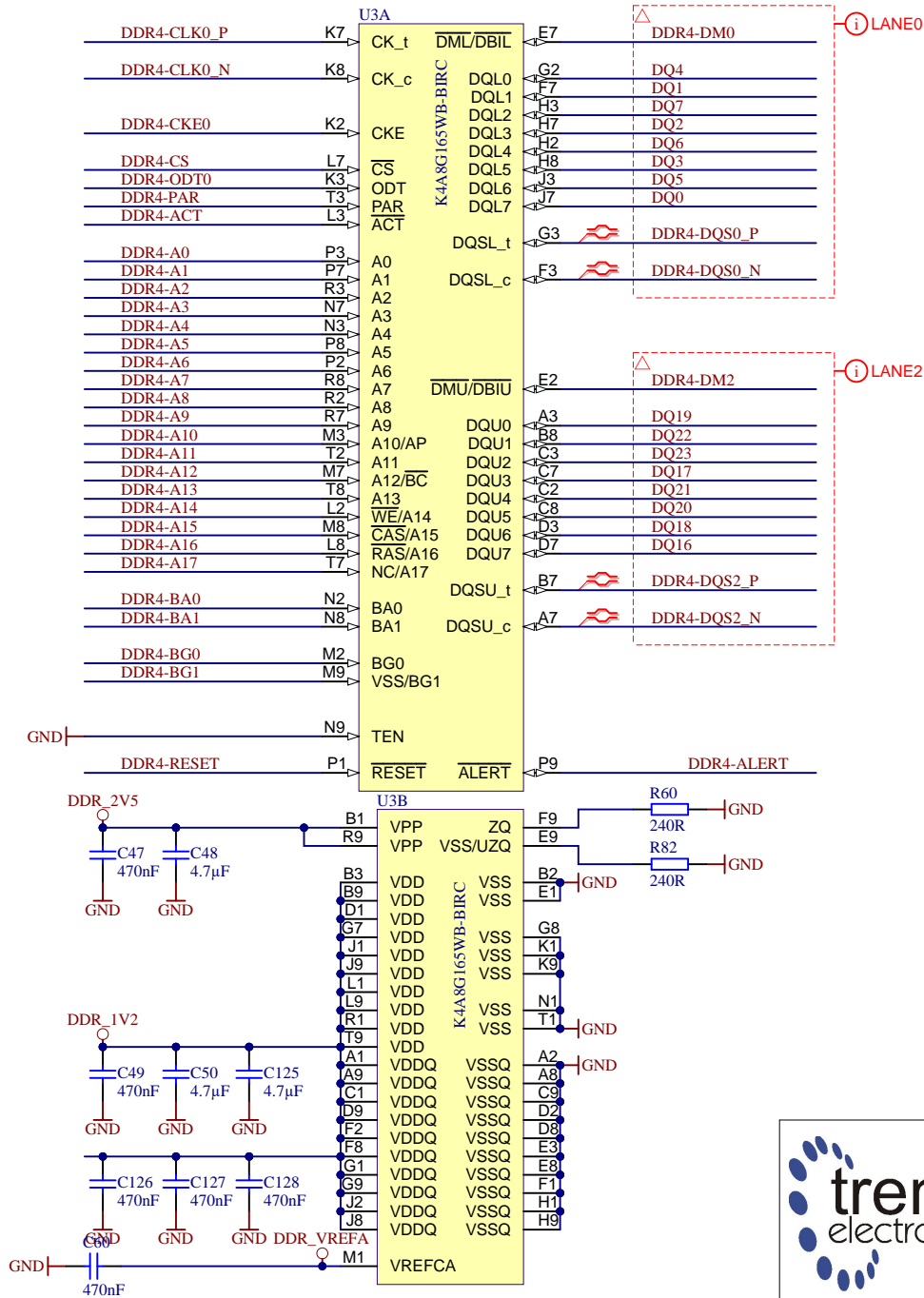
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A4	Number: TE0835 MXE21-A	Rev. 02
Date: 2020-06-10	Copyright: Trenz Electronic GmbH	Page 18 of 34
Filename: Ethernet.SchDoc		



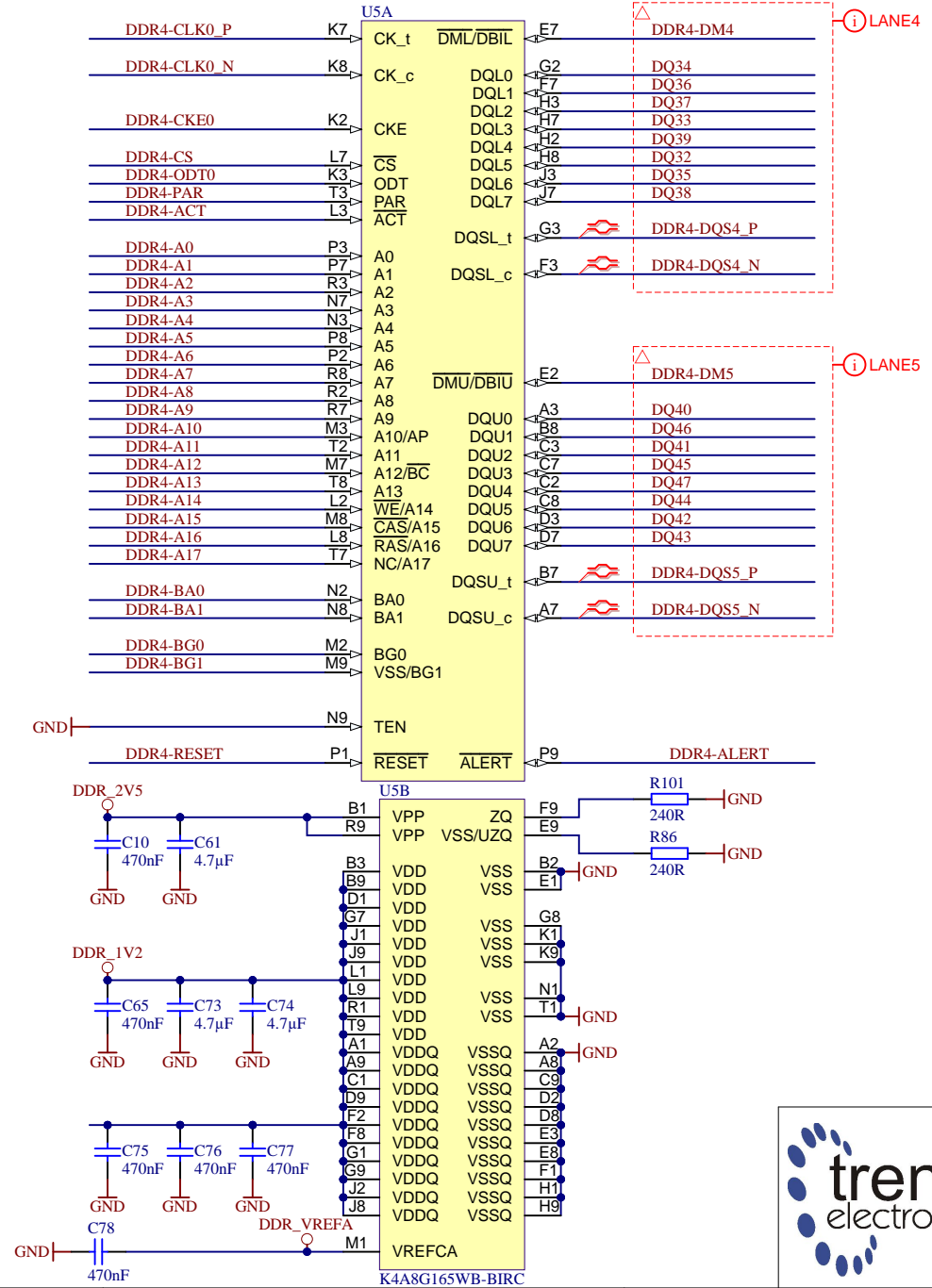
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			A4	Number: TE0835 MXE21-A
Date: 2020-06-10		Copyright: Trenz Electronic GmbH		Page 19 of 34
Filename: USB-PHY.SchDoc				



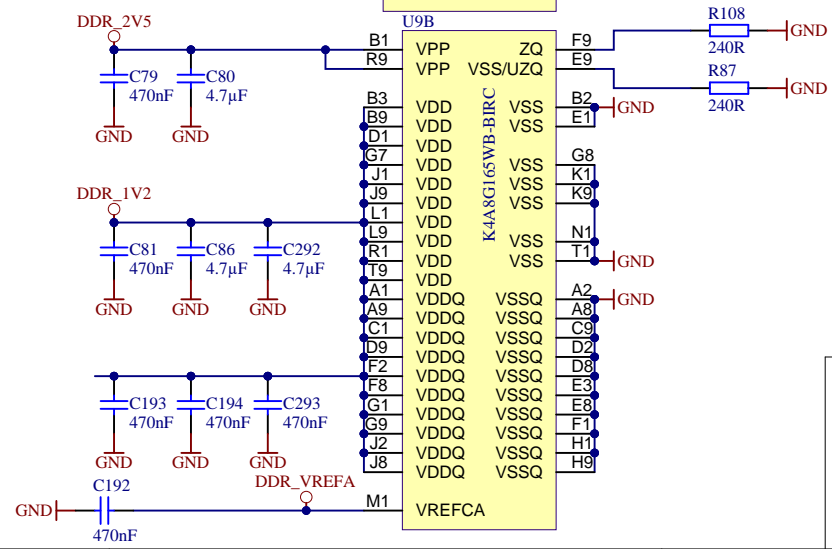
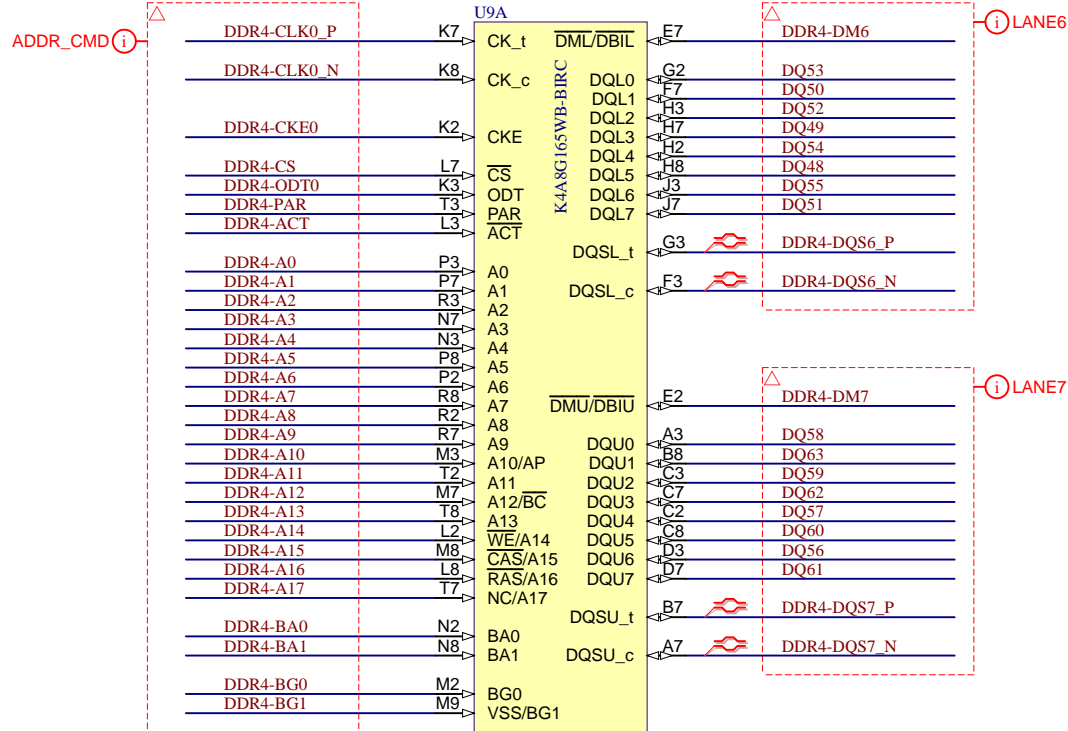
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A4	Number: TE0835 MXE21-A	Rev. 02
Date: 2020-06-10	Copyright: Trenz Electronic GmbH / TT	Page 20 of 34
Filename: DDR4-RAM.SchDoc		



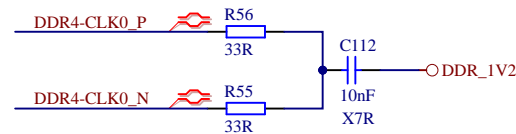
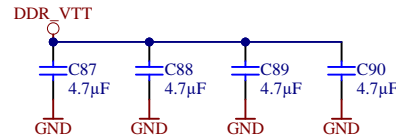
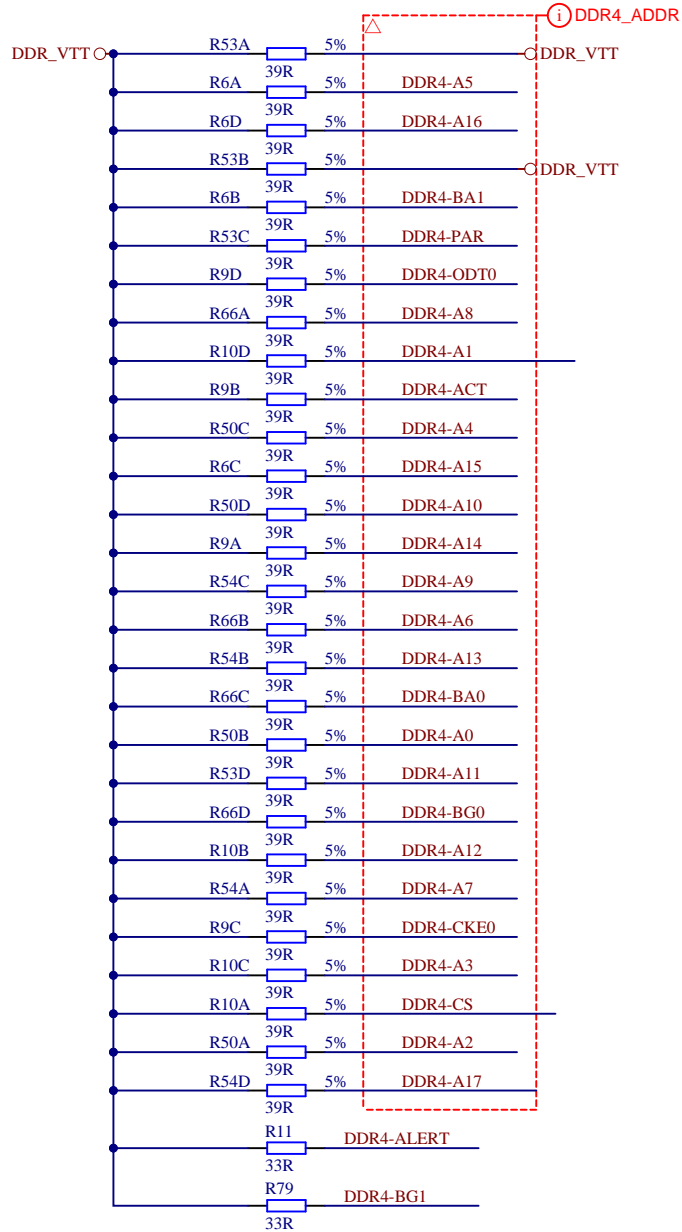
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Date: 2020-06-10	Copyright: Trenz Electronic GmbH / TT	Page 21 of 34
Filename: DDR4-RAM_2.SchDoc		



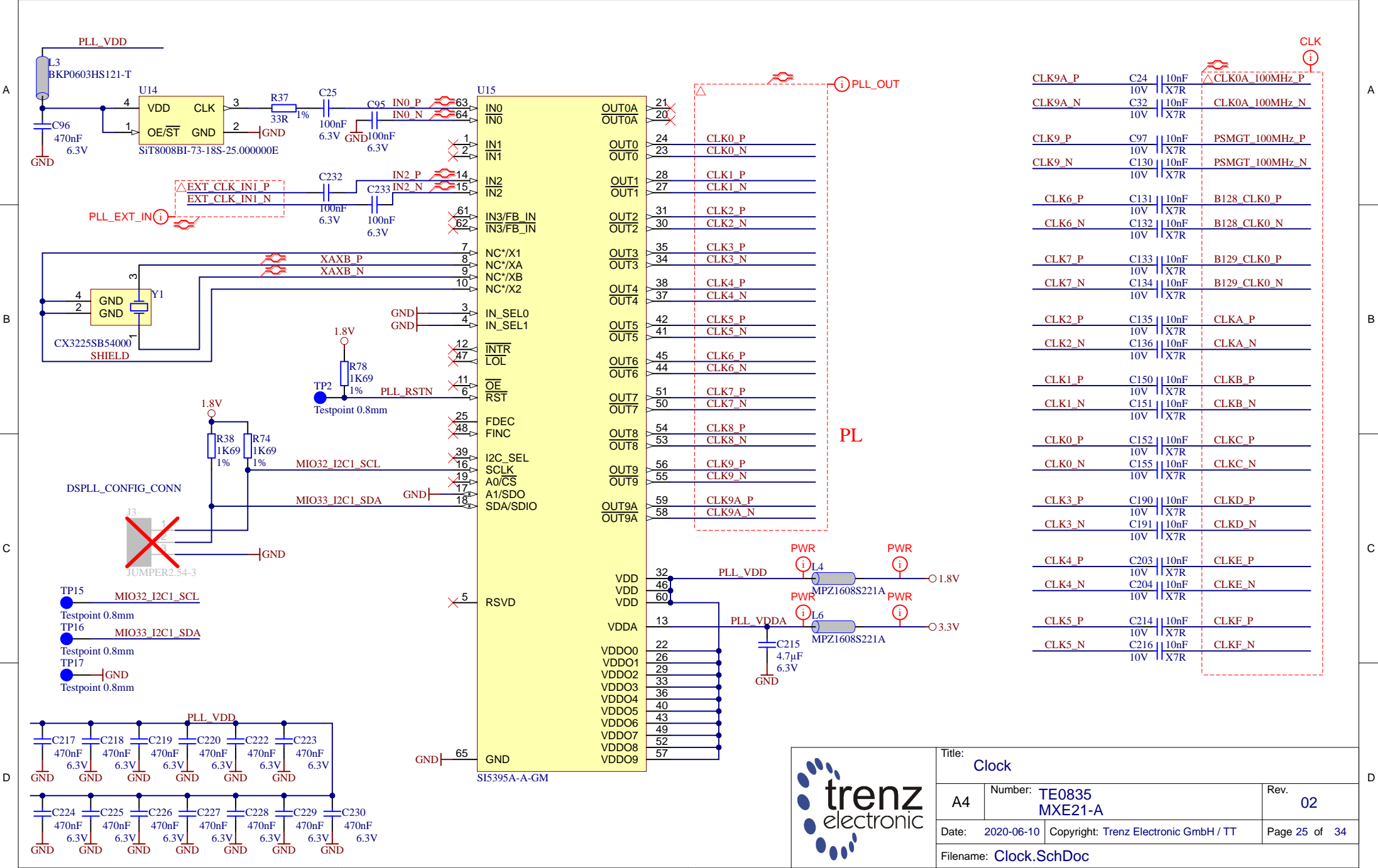
Title: DDR4-RAM_3		
A4	Number: TE0835 MXE21-A	Rev. 02
Date: 2020-06-10	Copyright: Trenz Electronic GmbH / TT	Page 22 of 34
Filename: DDR4-RAM_3.SchDoc		



Title: DDR4-RAM_4		
A4	Number: TE0835 MXE21-A	Rev. 02
Date: 2020-06-10	Copyright: Trenz Electronic GmbH / TT	Page 23 of 34
Filename: DDR4-RAM_4.SchDoc		



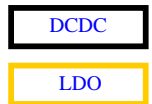
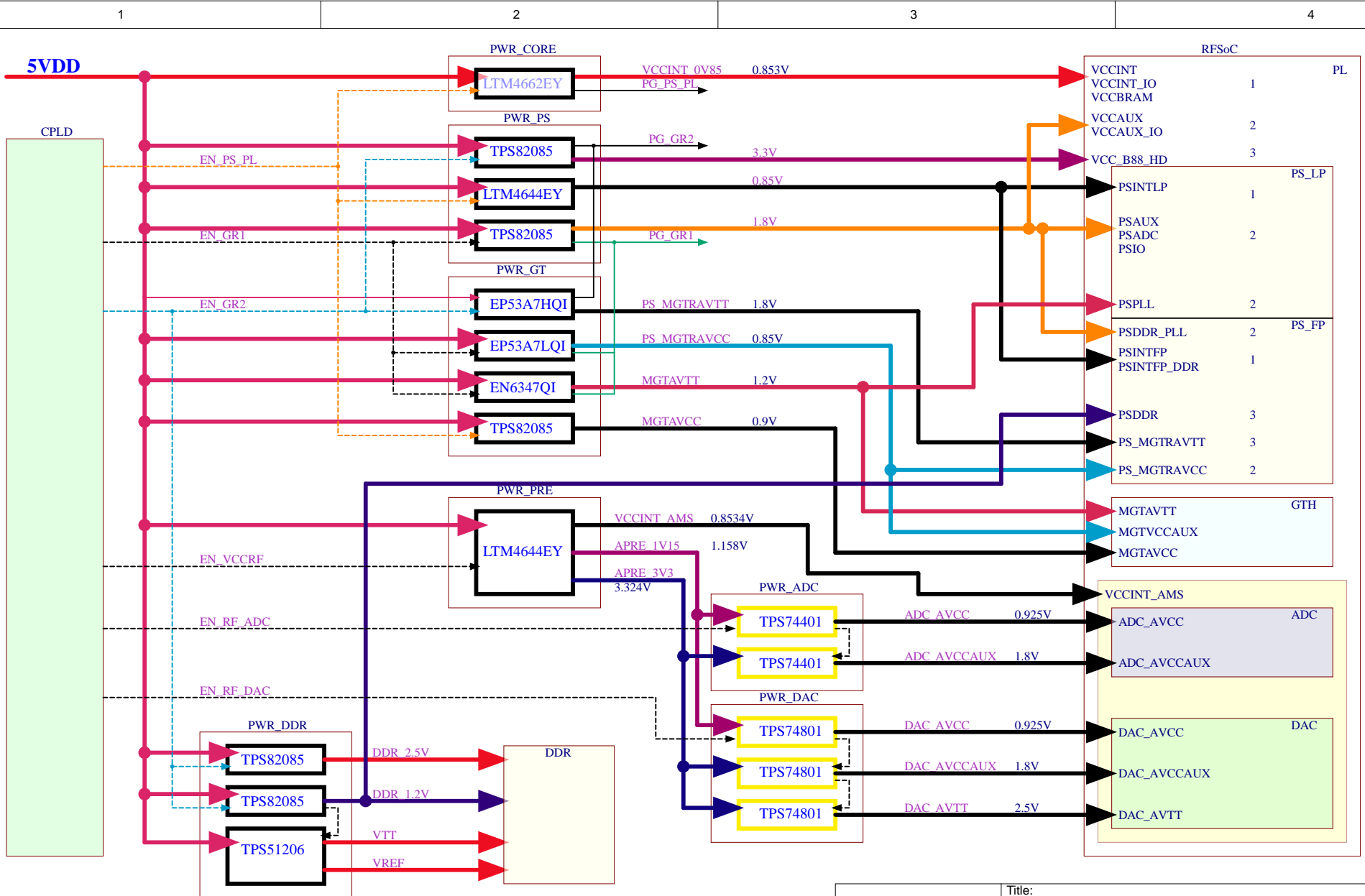
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A4	Number: TE0835 MXE21-A	Rev. 02
Date: 2020-06-10	Copyright: Trenz Electronic GmbH / TT	Page 24 of 34
Filename: DDR4-TERM.SchDoc		



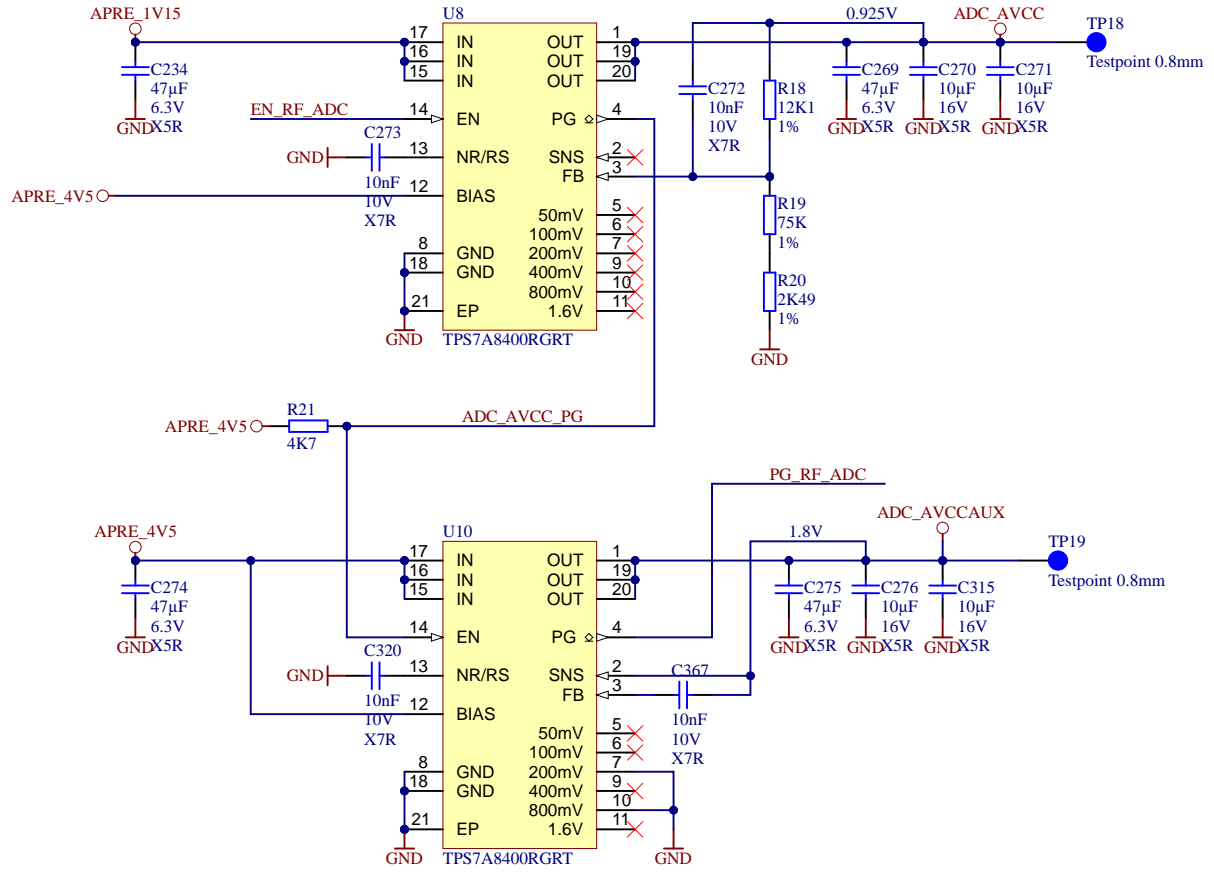

CLK9A_P	C24	10nF	CLK0A_100MHz_P
CLK9A_N	C32	10nF	CLK0A_100MHz_N
CLK9_P	C97	10nF	PSMGT_100MHz_P
CLK9_N	C130	10nF	PSMGT_100MHz_N
CLK6_P	C131	10nF	B128_CLK0_P
CLK6_N	C132	10nF	B128_CLK0_N
CLK7_P	C133	10nF	B129_CLK0_P
CLK7_N	C134	10nF	B129_CLK0_N
CLK2_P	C135	10nF	CLKA_P
CLK2_N	C136	10nF	CLKA_N
CLK1_P	C150	10nF	CLKB_P
CLK1_N	C151	10nF	CLKB_N
CLK0_P	C152	10nF	CLKC_P
CLK0_N	C155	10nF	CLKC_N
CLK3_P	C190	10nF	CLKD_P
CLK3_N	C191	10nF	CLKD_N
CLK4_P	C203	10nF	CLKE_P
CLK4_N	C204	10nF	CLKE_N
CLK5_P	C214	10nF	CLKF_P
CLK5_N	C216	10nF	CLKF_N



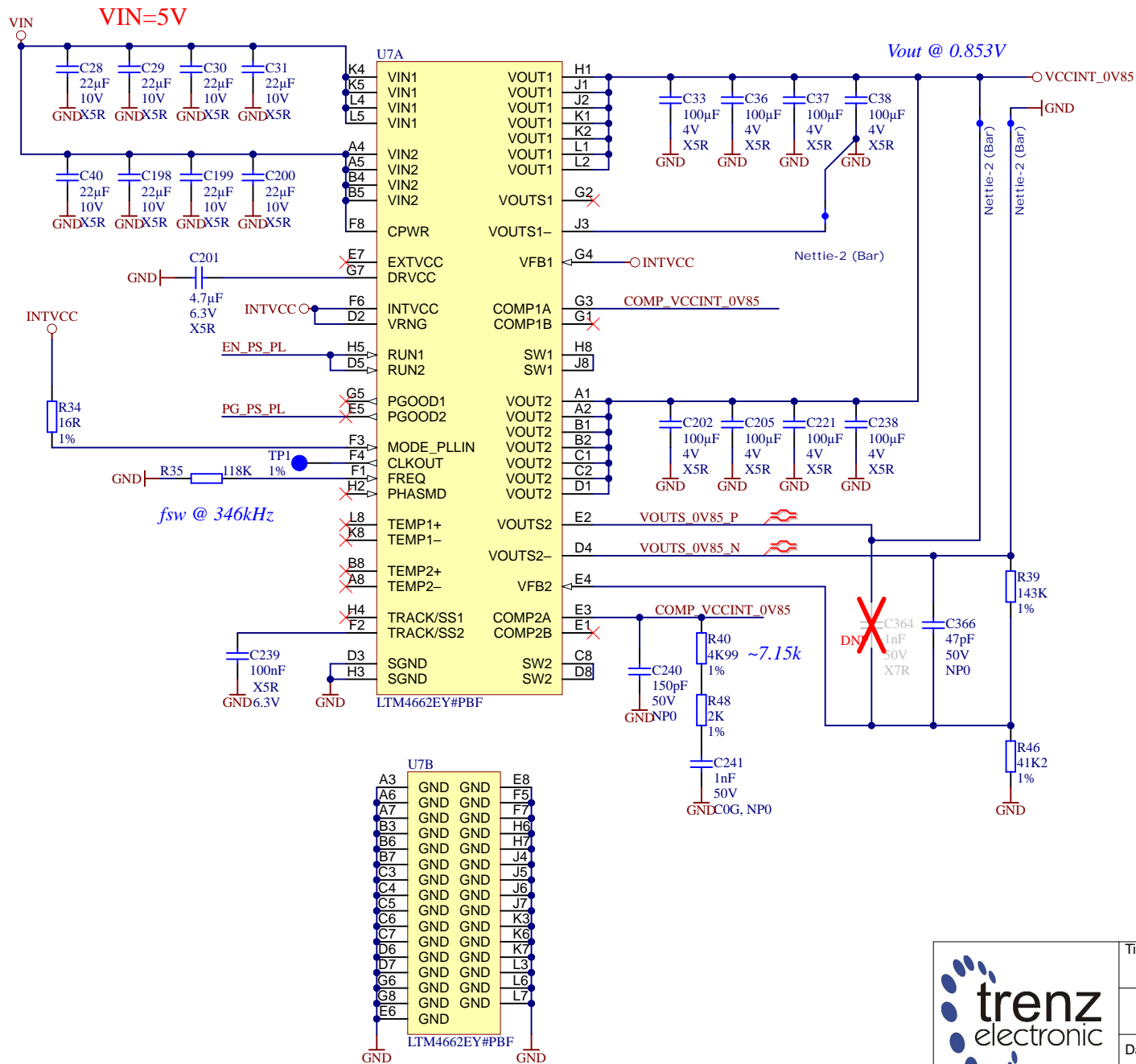
Title: Clock		
A4	Number: TE0835 MXE21-A	Rev. 02
Date: 2020-06-10	Copyright: Trenz Electronic GmbH / TT	Page 25 of 34
Filename: Clock.SchDoc		



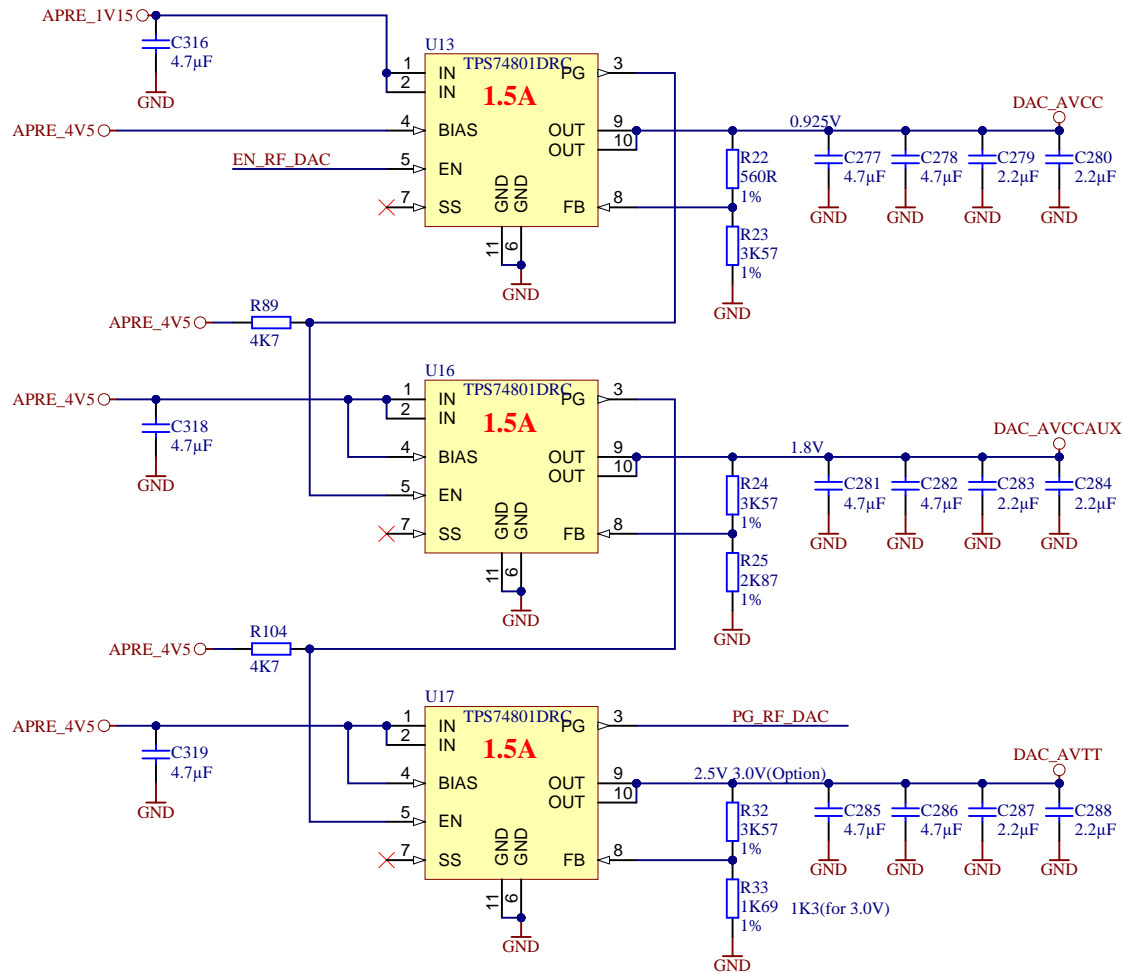
Title: PWR_Structure		
A4	Number: TE0835 MXE21-A	Rev. 02
Date: 2020-06-10	Copyright: Trenz Electronic GmbH	Page 26 of 34
Filename: PWR_Structure.SchDoc		





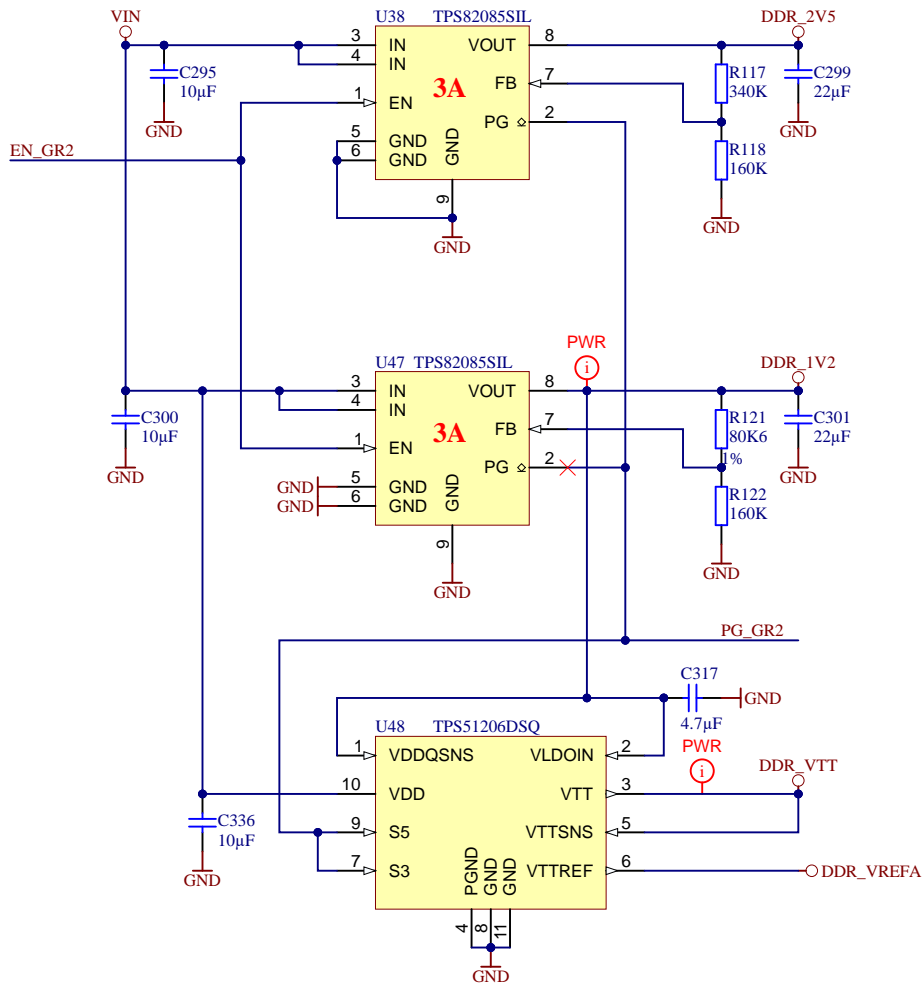
Title: PWR_ADC		
A4	Number: TE0835 MXE21-A	Rev. 02
Date: 2020-06-10	Copyright: Trenz Electronic GmbH	Page 27 of 34
Filename: PWR_ADC.SchDoc		




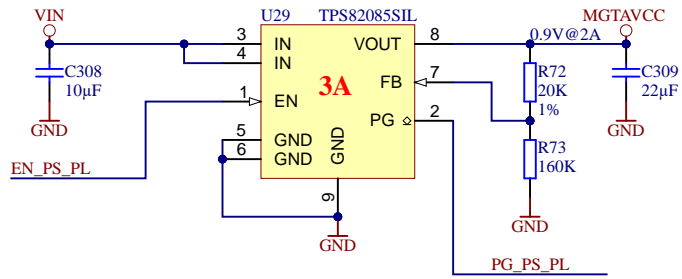
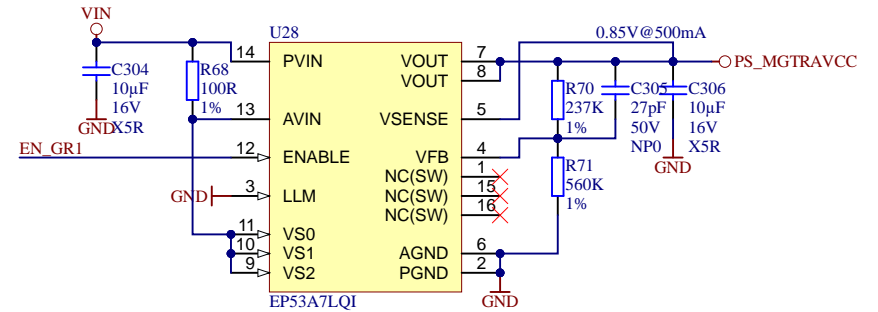
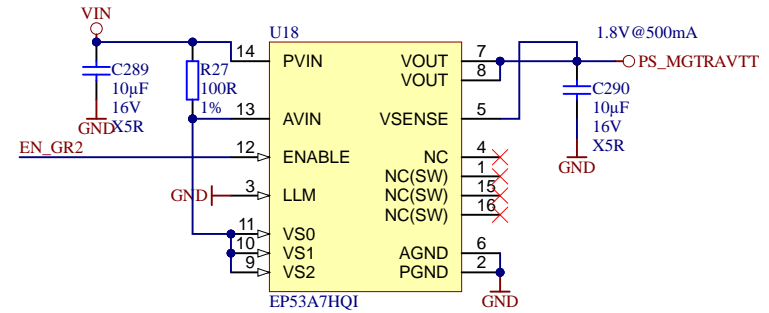
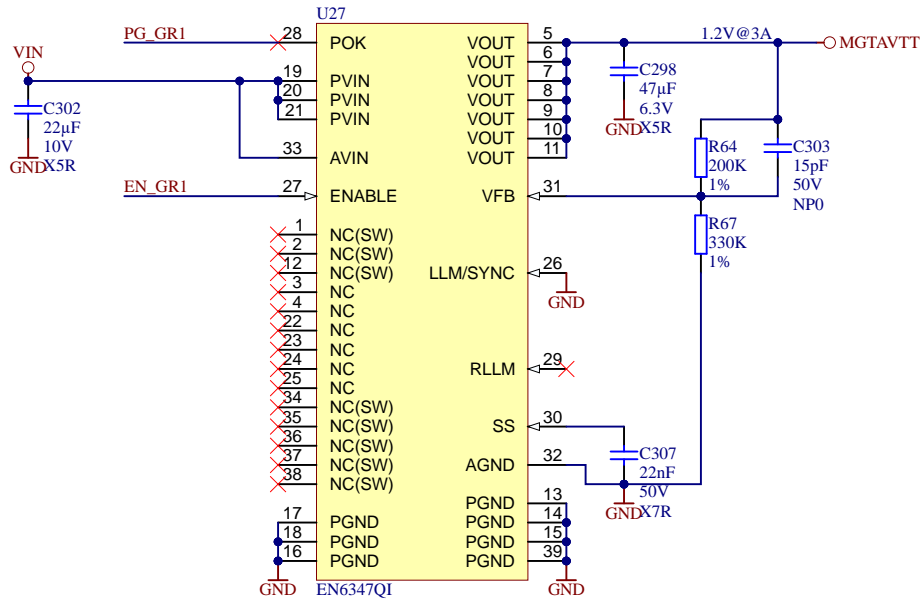
Title: PWR_CORE		
A4	Number: TE0835 MXE21-A	Rev. 02
Date: 2020-06-10	Copyright: Trenz Electronic GmbH	Page 28 of 34
Filename: PWR_CORE.SchDoc		



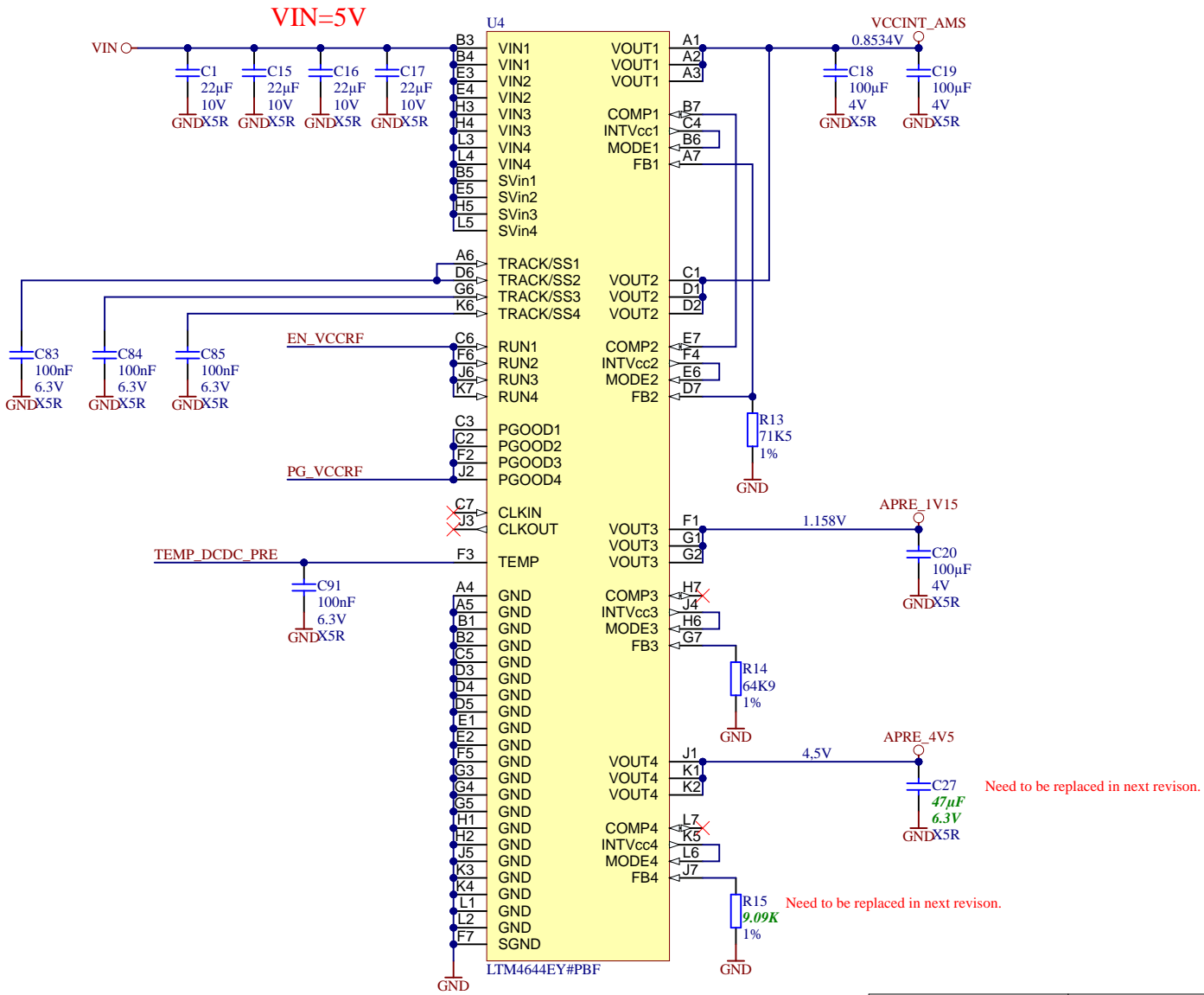
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Date: 2020-06-10		Copyright: Trenz Electronic GmbH	
Filename: PWR_DAC.SchDoc		Page 29 of 34	




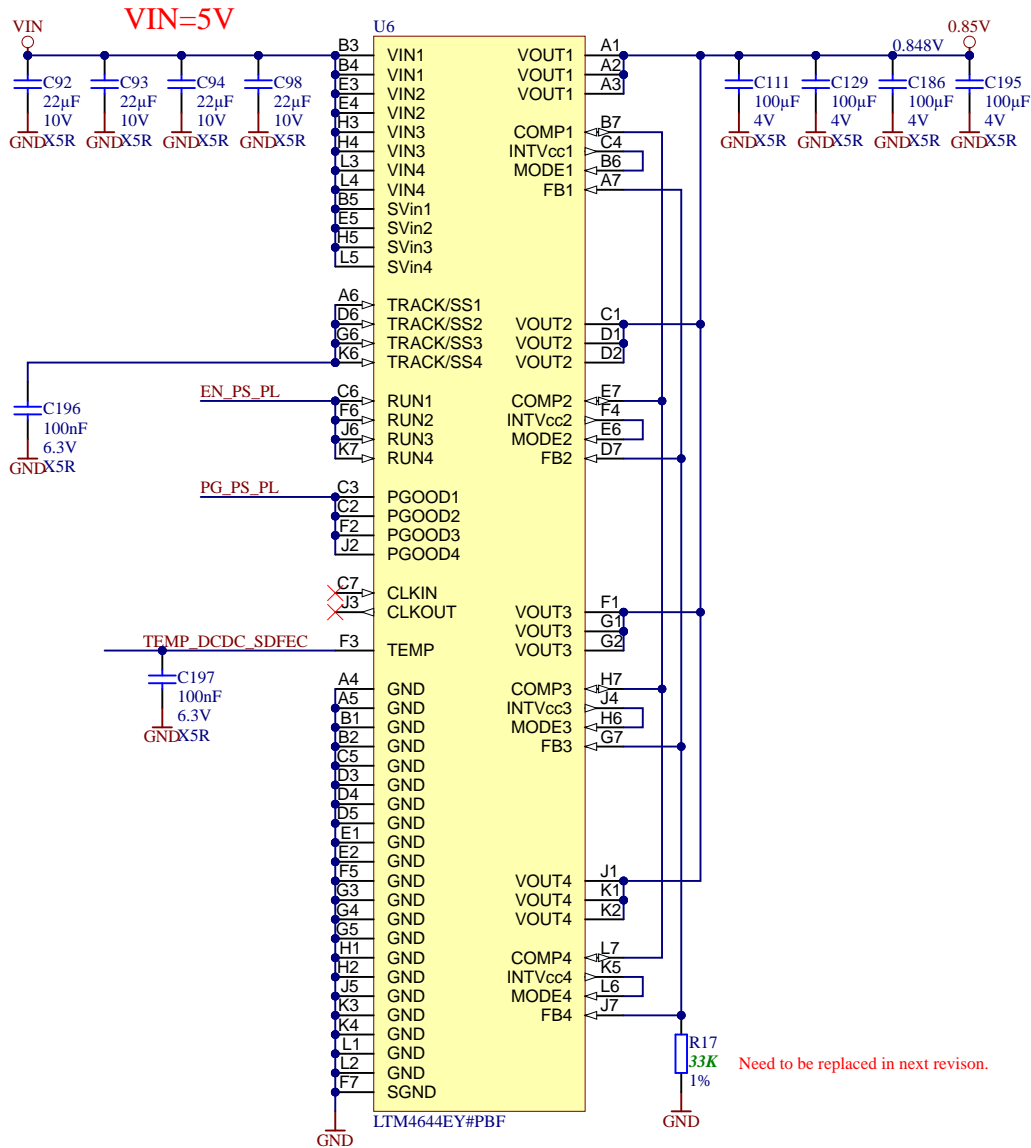
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		A4	Number: TE0835 MXE21-A
Date: 2020-06-10		Copyright: Trenz Electronic GmbH	
Filename: PWR_DDR.SchDoc		Page 30 of 34	



Title: PWR_GT		
A4	Number: TE0835 MXE21-A	Rev. 02
Date: 2020-06-10	Copyright: Trenz Electronic GmbH	Page 31 of 34
Filename: PWR_GT.SchDoc		

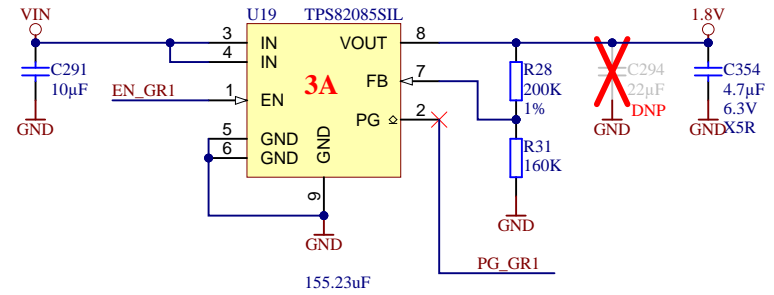


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Date: 2020-06-10		Copyright: Trenz Electronic GmbH		Page 32 of 34
Filename: PWR_PRE.SchDoc				

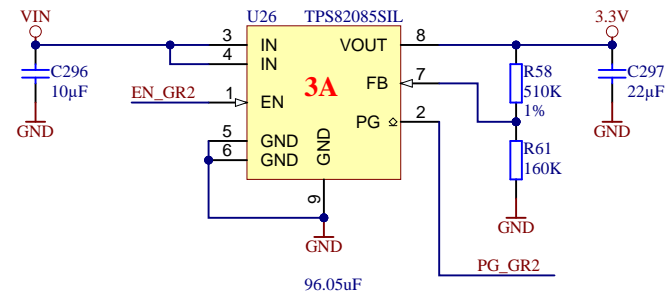


R17 33K 1% Need to be replaced in next revision.

Max C load < 150uF



Max C load < 150uF



Title: PWR_PS		
A4	Number: TE0835 MXE21-A	Rev. 02
Date: 2020-06-10	Copyright: Trenz Electronic GmbH	Page 33 of 34
Filename: PWR_PS.SchDoc		

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4

REVISION HISTORY

REV	Description	
-01	Initial revision	IG
-02	1. Added a VRP resistor on bank 65; 2. LDO U33 is changed on ADP7102ACPZ; 3. Signal FPGA IO0 is connected on AE18 pin of FPGA; 4. Signal DBG_LED3 is connected on AD18 pin of FPGA; 5. Signal MIO13_25 connected to J1 pin 33 instead MIO25. 6. Resistor R84 is removed; 7. LED D1 moved on edge of PCB; 8. Added THT testpoints J4 on CPLD_JTAGEN, R76 was removed; 9. Signals B49_XX_X are renamed in B88_XX_X; 10. C241 is changed on 1nF; 11. Length of CLK signals on RFADC and RFDAC are adjusted; 12. Wrong connection on U8 is fixed (PCB); 13. Wrong connection PGOOD1 pin of U7 is fixed; 14. R17 is changed from 35,5K to 33K for VCC_PL_PS correction.	IG
	15. APRE_3V3 ranamed to APRE_4V5, voltage of the power rail incised from 3.3V to 4,58V. 16. Resistor R15 is changed from 13,3K to 9,09K. AN: 24671->25969 17. Capasitor C27 is changed from 100uF x 4V to 47uF x 6,3V. AN: 28940->24718	IG

A

A

B


B

C

C

D

D

	Title: Revision_Changes	
	A4	Number: TE0835 MXE21-A
	Date: 2020-06-10	Rev. 02
	Copyright: Trenz Electronic GmbH	
Page 34 of 34		
Filename: Revision_Changes.SchDoc		

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4