


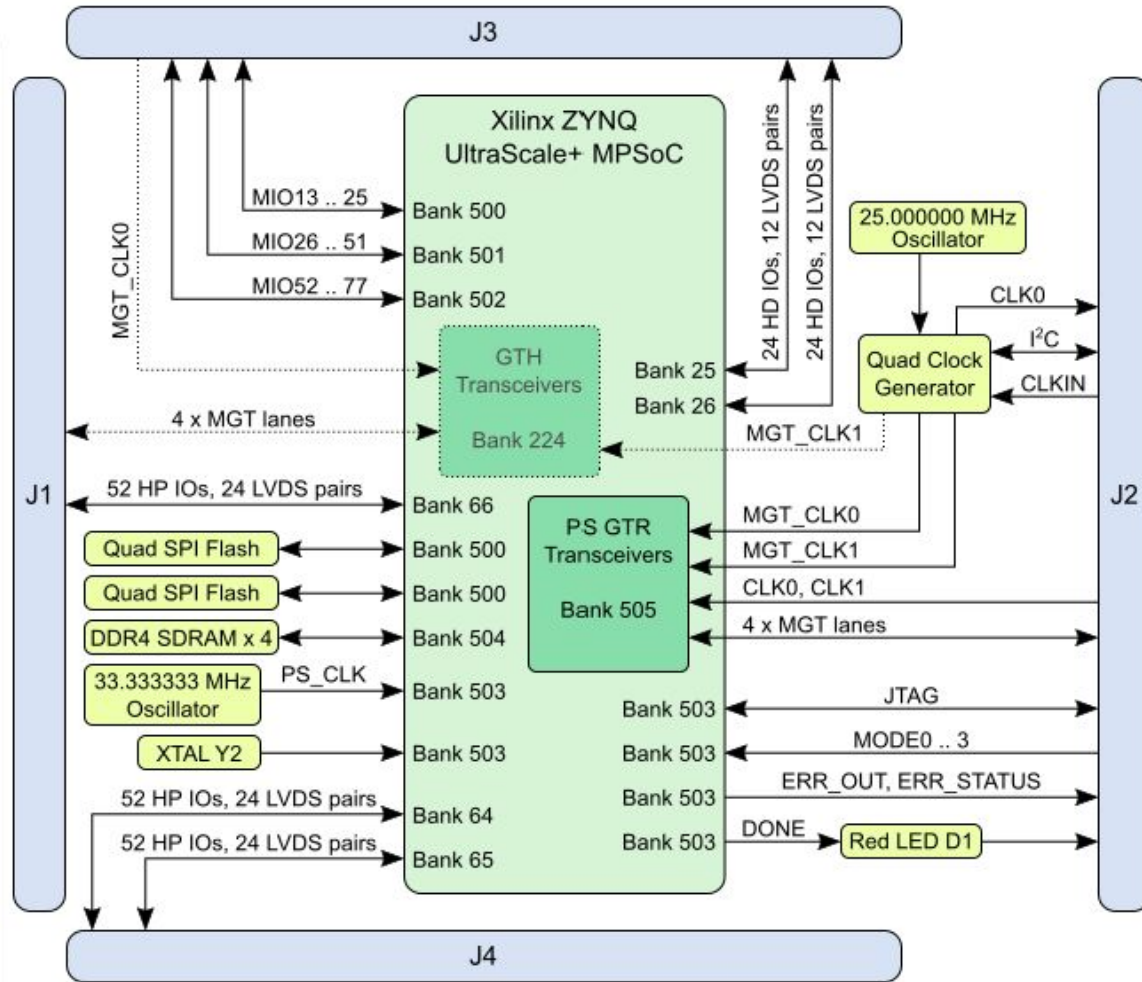
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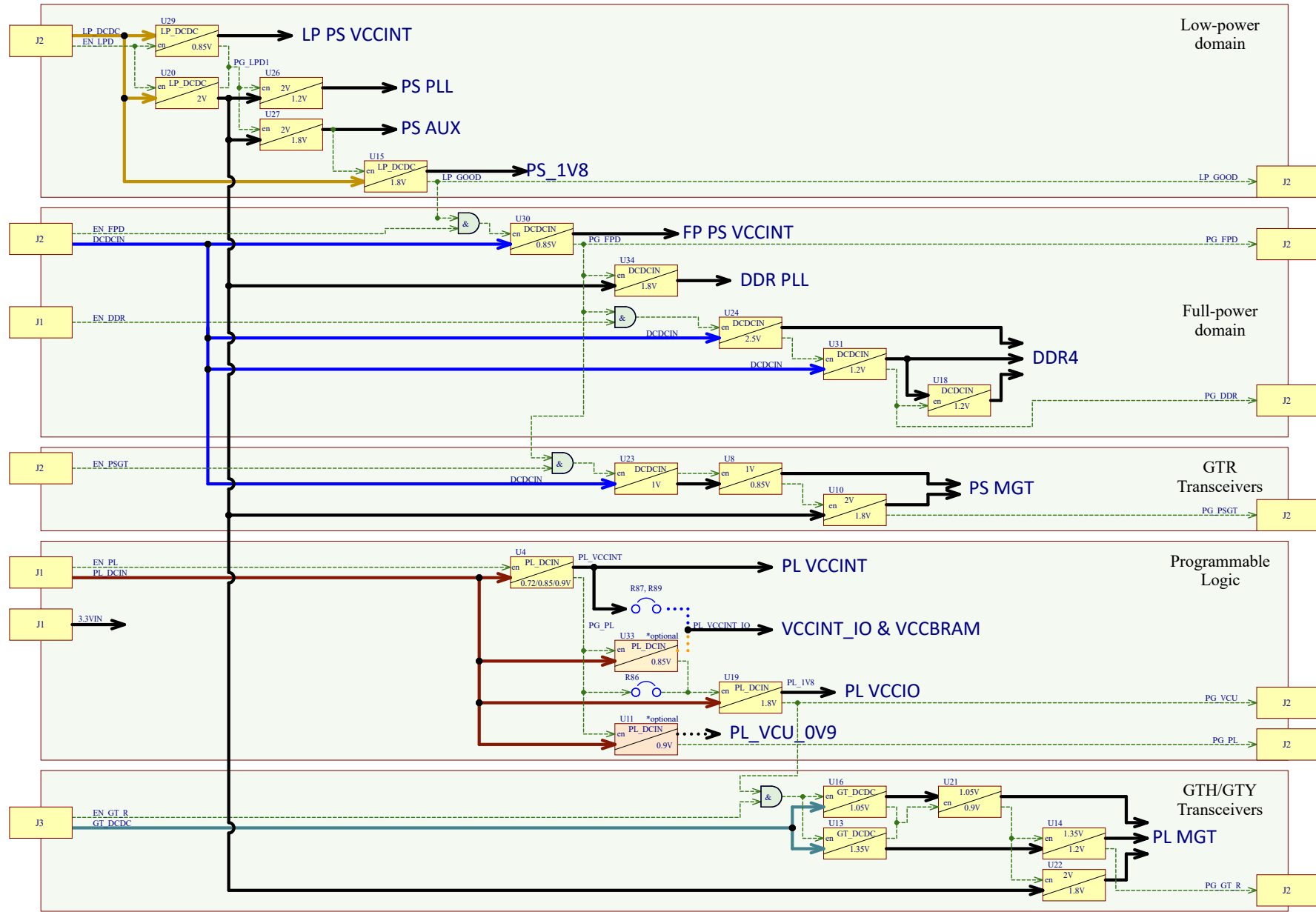
Schematics and other handouts serve for informational purposes only!

	Title: <b>TE0813</b>		Rev. <b>01</b>
	A4	Number: <b>TE0813 3BI21-A</b>	
	Date: <b>2021-08-16</b>	Copyright: <b>Trenz Electronic GmbH / TT</b>	Page <b>1</b> of <b>30</b>
	Filename: <b>Legal Notices Modules.SchDoc</b>		

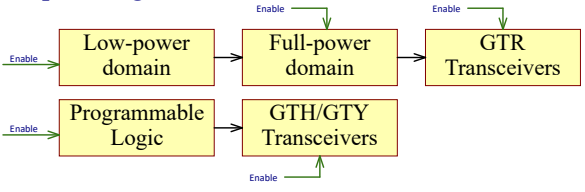
# TE0813-01



		Title: <b>Module TE0813 - System Overview</b>	
		A4	Number: <b>TE0813 3BI21-A</b>
Date: 2021-08-16		Copyright: 2015 Trenz Electronic GmbH	
Filename: <b>TE0813-Overview.SchDoc</b>		Page 2 of 30	



Power-on sequencing:



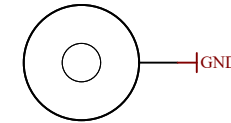
- EN\_GT\_R Net name
- Power bus
- Control signal
- Power bus in FPGA speedgrade -1/-2/-3 assembly variants
- Power bus in FPGA speedgrade -1L/-2L assembly variants (low power)
- Optional power converter
- Logic AND gate



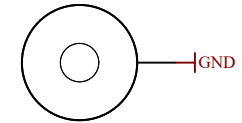
Title: TE0813 - Power Diagram		
A3	Number: TE0813 3BI21-A	Rev. 01
Datum: 2021-01-19	Copyright: Trenz Electronic GmbH / TT	Page 3 of 30
Filename: Power_Diagram.SchDoc		

U_J1 J1.SchDoc	U_B_PS_GT B_PS_GT.SchDoc	U_LN Legal Notices Modules.SchDoc
U_J2 J2.SchDoc	U_PS_DDR PS_DDR.SchDoc	U_ZU_POWER ZU_POWER.SchDoc
U_J3 J3.SchDoc	U_B_MIO B_MIO.SchDoc	U_ZU_PS_POWER ZU_PS_POWER.SchDoc
U_J4 J4.SchDoc	U_B_HD B_HD.SchDoc	U_POWER POWER.SchDoc
U_DDR4-TERM DDR4-TERM.SchDoc	U_Clock Clock.SchDoc	U_POWER_1 POWER_1.SchDoc
U_B64 B64.SchDoc	U_CONFIG CONFIG.SchDoc	U_POWER_2 POWER_2.SchDoc
U_B65 B65.SchDoc	U_DDR4-RAM DDR4-RAM.SchDoc	U_POWER_4 POWER_3.SchDoc
U_B66 B66.SchDoc	U_DDR4-RAM_2 DDR4-RAM_2.SchDoc	U_REV_CH Revision Changes.SchDoc
U_B_GT B_GT.SchDoc	U_DDR4-RAM_3 DDR4-RAM_3.SchDoc	U_OVERVIEW TE0813-Overview.SchDoc
U_PD Power_Diagram.SchDoc	U_DDR4-RAM_4 DDR4-RAM_4.SchDoc	

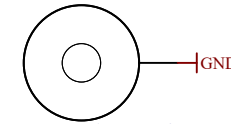
Special notes:



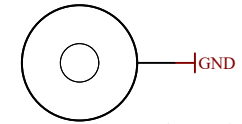
Mount.Hole 3.2mm für Unterlegscheibe



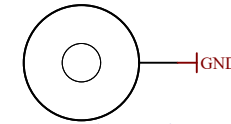
Mount.Hole 3.2mm für Unterlegscheibe



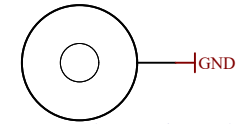
Mount.Hole 3.2mm für Unterlegscheibe



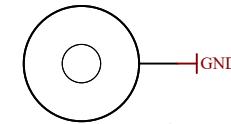
Mount.Hole 3.2mm für Unterlegscheibe



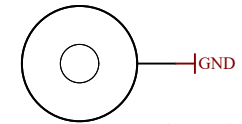
Mount.Hole 3.2mm für Unterlegscheibe



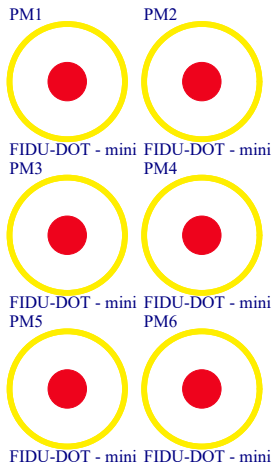
Mount.Hole 3.2mm für Unterlegscheibe



Mount.Hole 3.2mm für Unterlegscheibe



Mount.Hole 3.2mm für Unterlegscheibe



MECH1

TE Address Overlay

LOGO ADDRESS


LOGO1

TE Logo PRINT Layer

LOGO PRINT

Serial  
Serial  
Serialnumber 6,3 x 6.3mm

Assembly variant	3BI21-A
Created by	ED
Modified by	ED
Modified at	2021-07-08
SVN Revision	12304 [Locally Modified]

			Title: TE0813	
			A4	Number: TE0813 3BI21-A
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Filename: TE0813.SchDoc				

1

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A

A

B

B

C

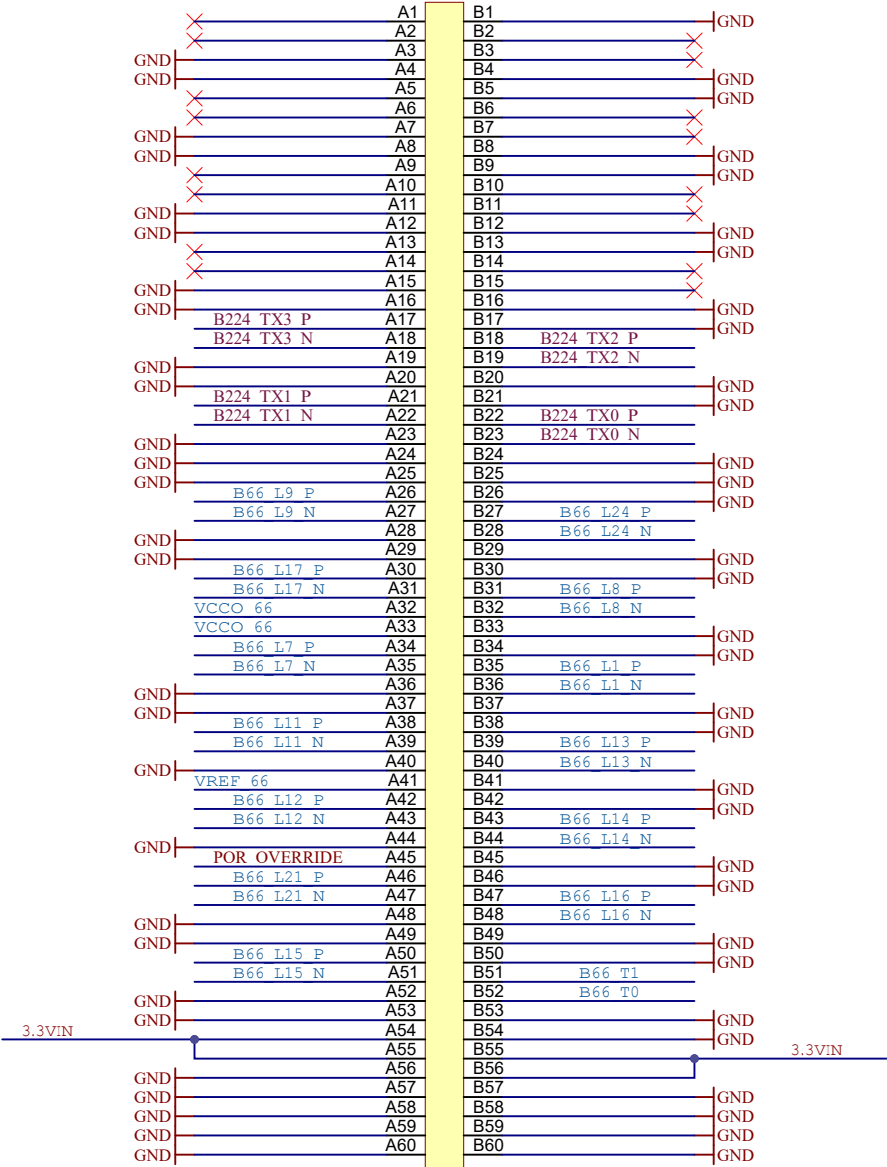
C

D

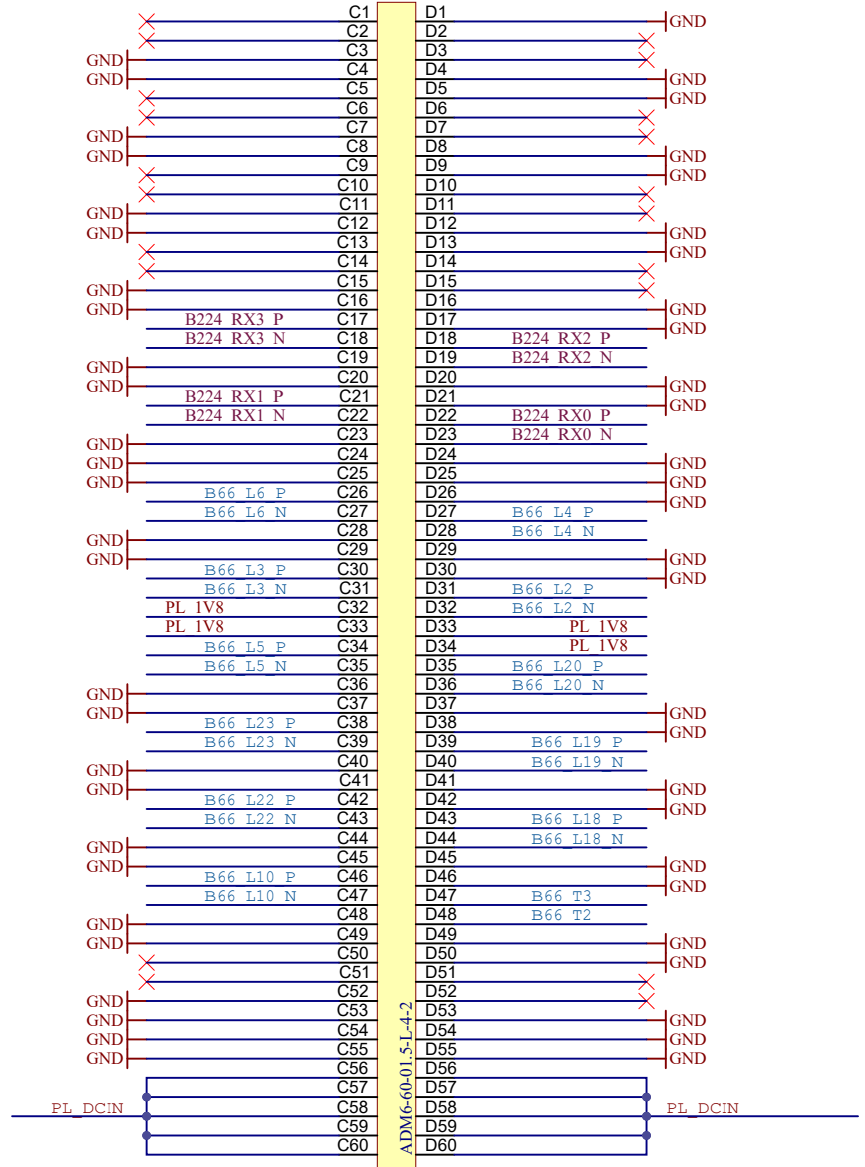
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JM1A

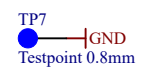
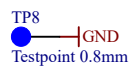
JM1B



ADM6-60-01.5-L-4-2



ADM6-60-01.5-L-4-2



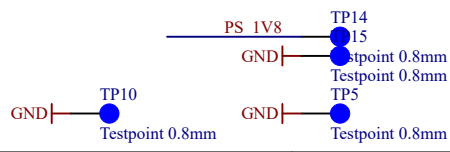
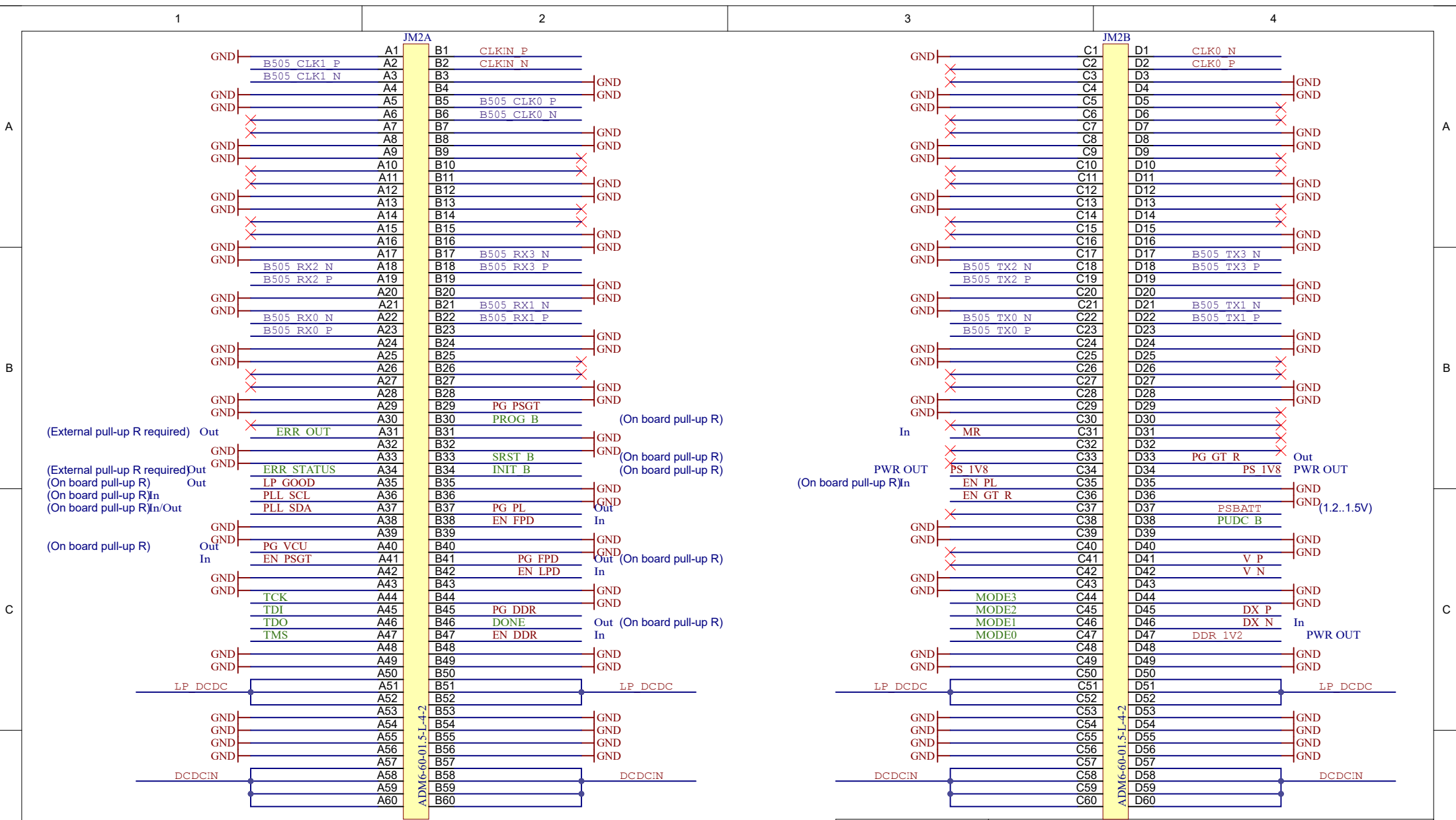
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A4	Number: TE0813 3BI21-A	Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 5 of 30
Filename: J1.SchDoc		

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Title: TE0813 - Connector J2

A4	Number: TE0813 3BI21-A	Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 6 of 30
Filename: J2.SchDoc		

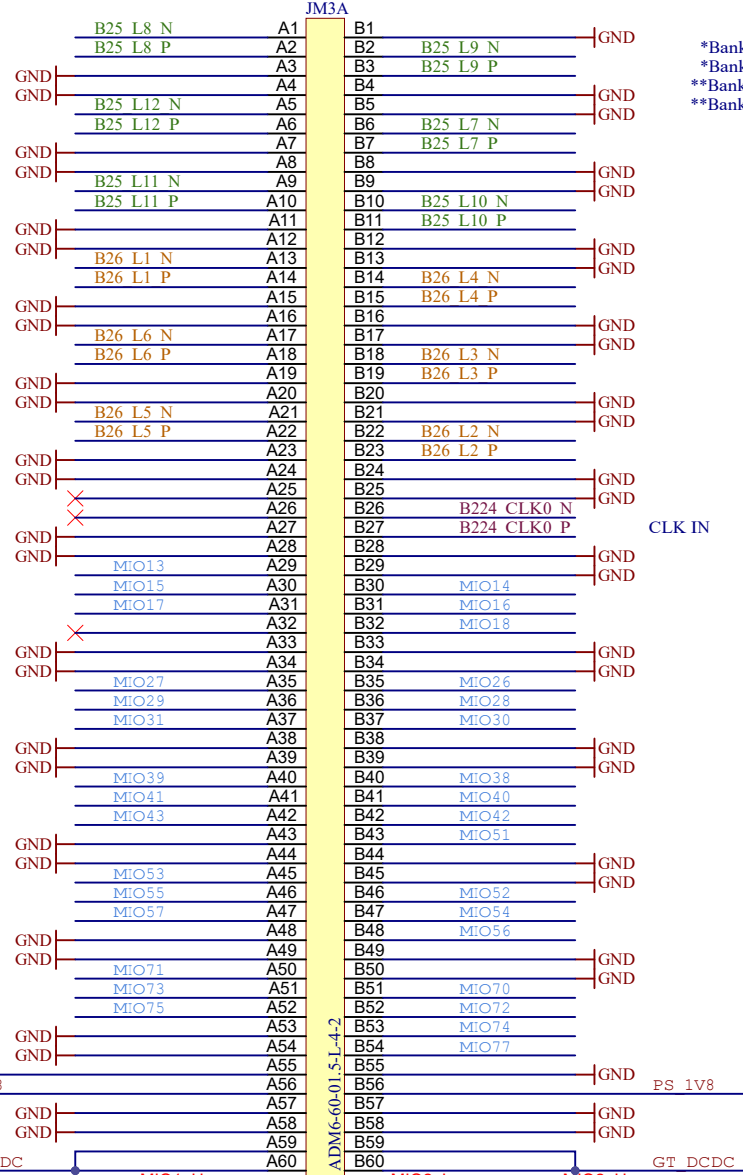


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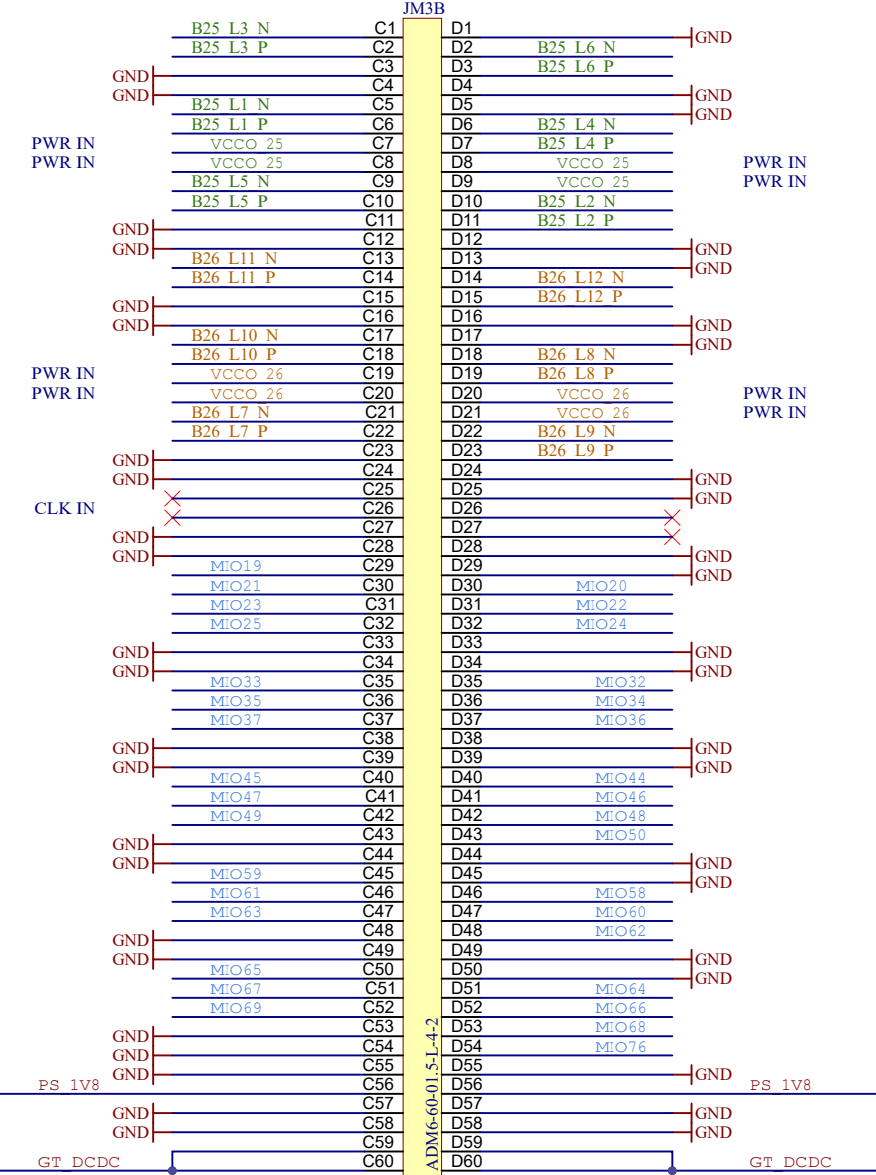
\*Bank 25 for XCZU2/3  
 \*Bank 45 for XCZU4/6  
 \*\*Bank 26 for XCZU2/3  
 \*\*Bank 46 for XCZU4/5

CLK IN

PS 1V8

GT DCDC

JM3B



PWR IN  
PWR IN

PWR IN  
PWR IN

CLK IN

PS 1V8

GT DCDC

ADP6-60-01.5-L-4-2

MIO1_L	MIO1_H	MIO2_L	MIO2_H	MIO0_H
MIO26	MIO32	MIO38	MIO45	MIO13
MIO27	MIO33	MIO39	MIO46	MIO14
MIO28	MIO34	MIO40	MIO47	MIO15
MIO29	MIO35	MIO41	MIO48	MIO16
MIO30	MIO36	MIO42	MIO49	MIO17
MIO31	MIO37	MIO43	MIO50	MIO18
MIO52	MIO58	MIO64	MIO71	MIO19
MIO53	MIO59	MIO65	MIO72	MIO20
MIO54	MIO60	MIO66	MIO73	MIO21
MIO55	MIO61	MIO67	MIO74	MIO22
MIO56	MIO62	MIO68	MIO75	MIO23
MIO57	MIO63	MIO69	MIO76	MIO24
		MIO70	MIO77	MIO25



Title: TE0813 - Connector J3		
A4	Number: TE0813 3BI21-A	Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 7 of 30
Filename: J3.SchDoc		

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A

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B

C

C

D

D

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A

A

B

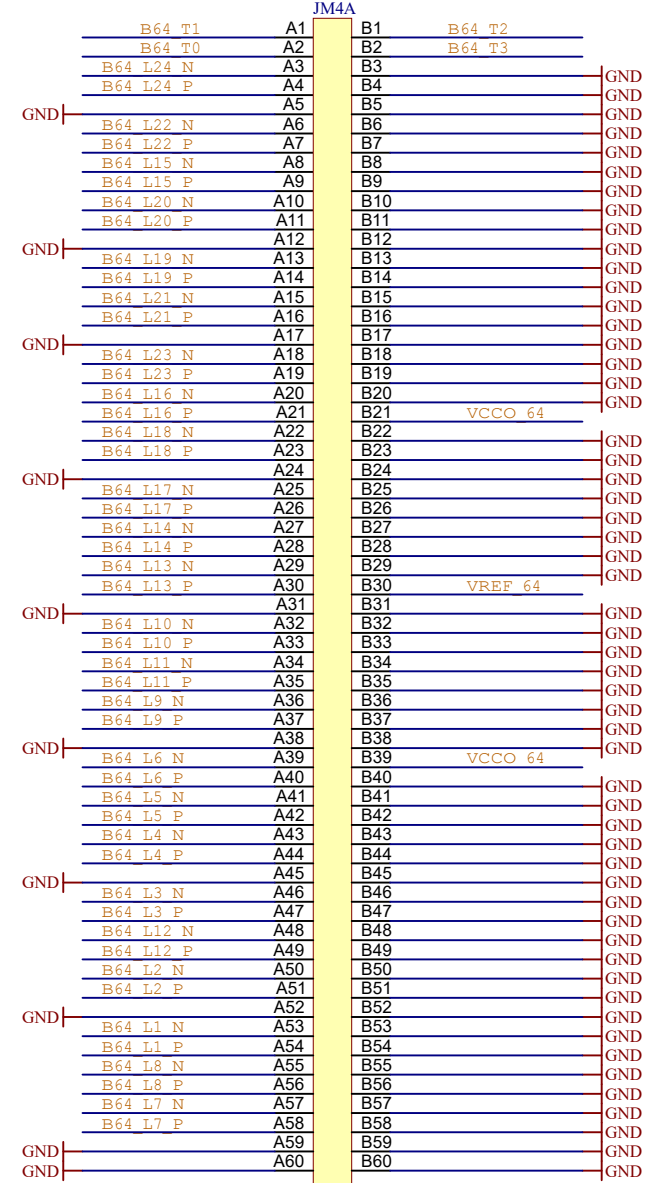
B

C

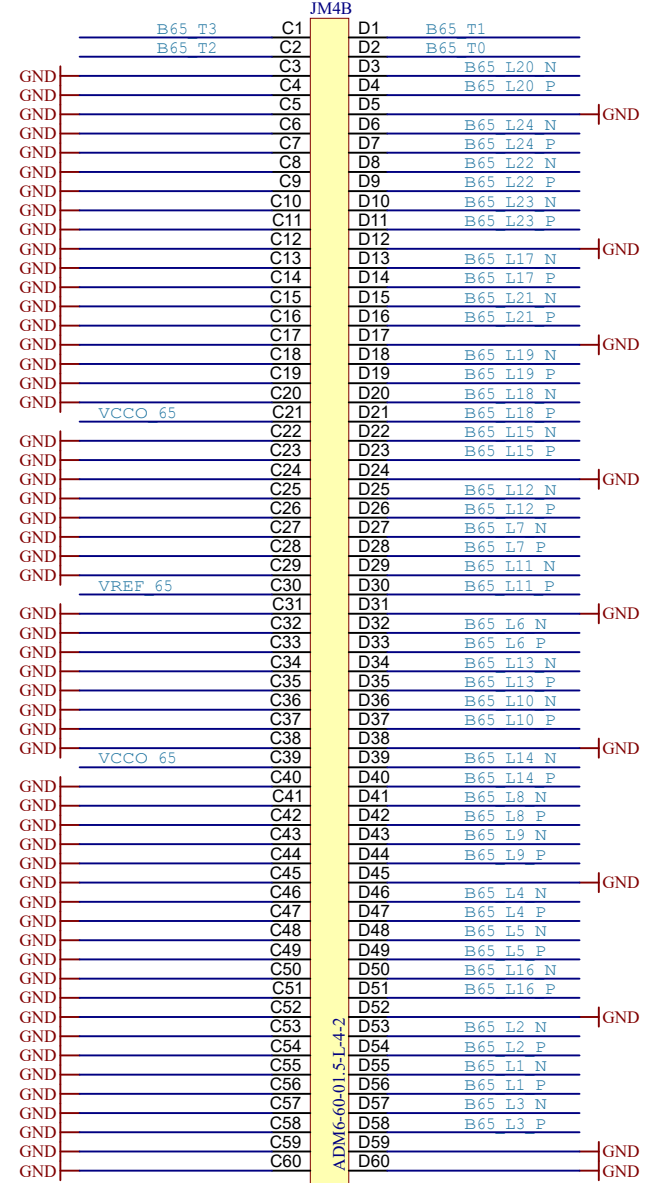
C

D

D



ADM6-60-01.5-L-4-2



ADM6-60-01.5-L-4-2



Title: <b>TE0813 - Connector J4</b>		
A4	Number: <b>TE0813 3BI21-A</b>	Rev. <b>01</b>
Date: <b>2021-08-16</b>	Copyright: <b>Trenz Electronic GmbH / TT</b>	Page <b>8</b> of <b>30</b>
Filename: <b>J4.SchDoc</b>		

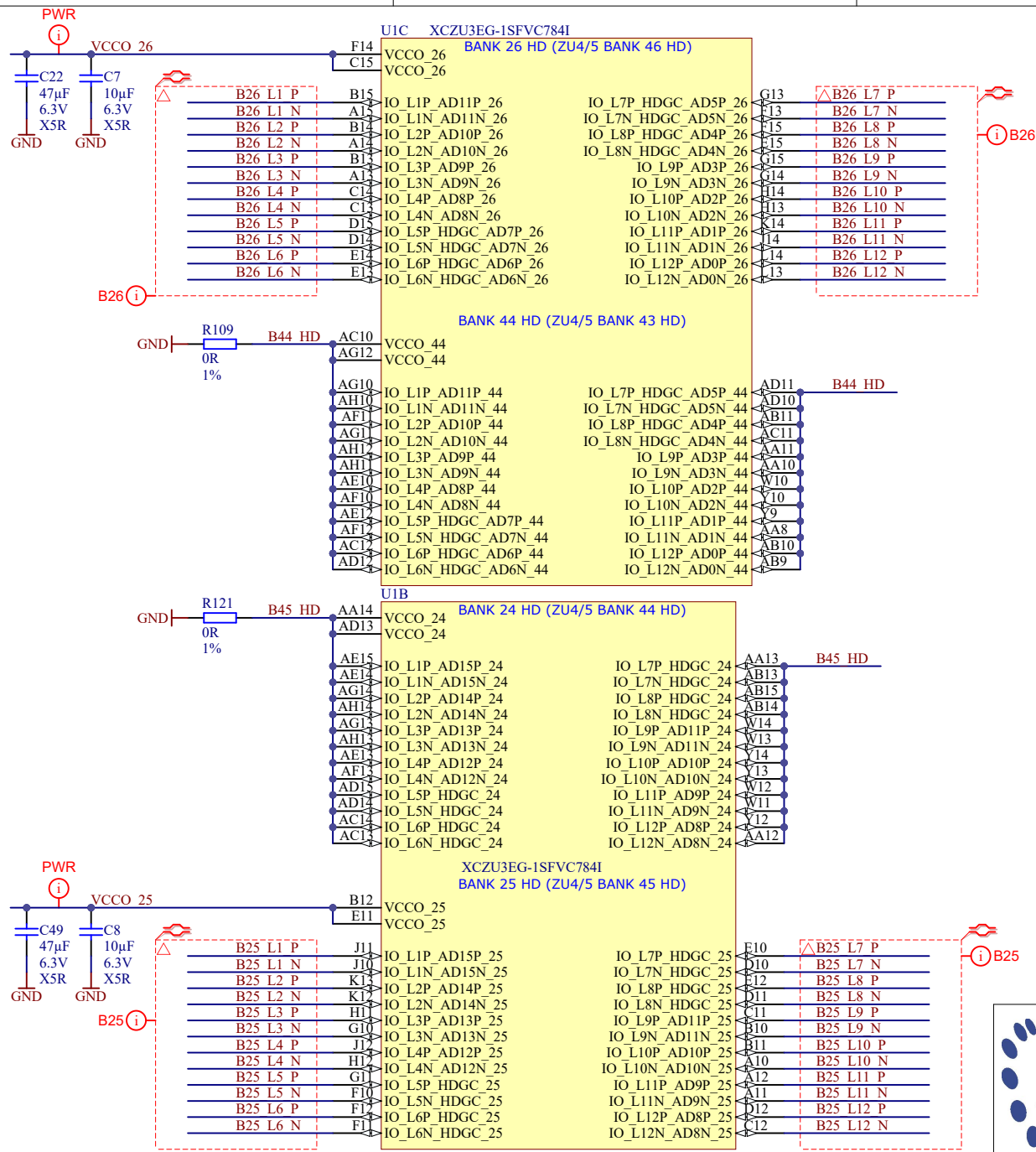
1

2

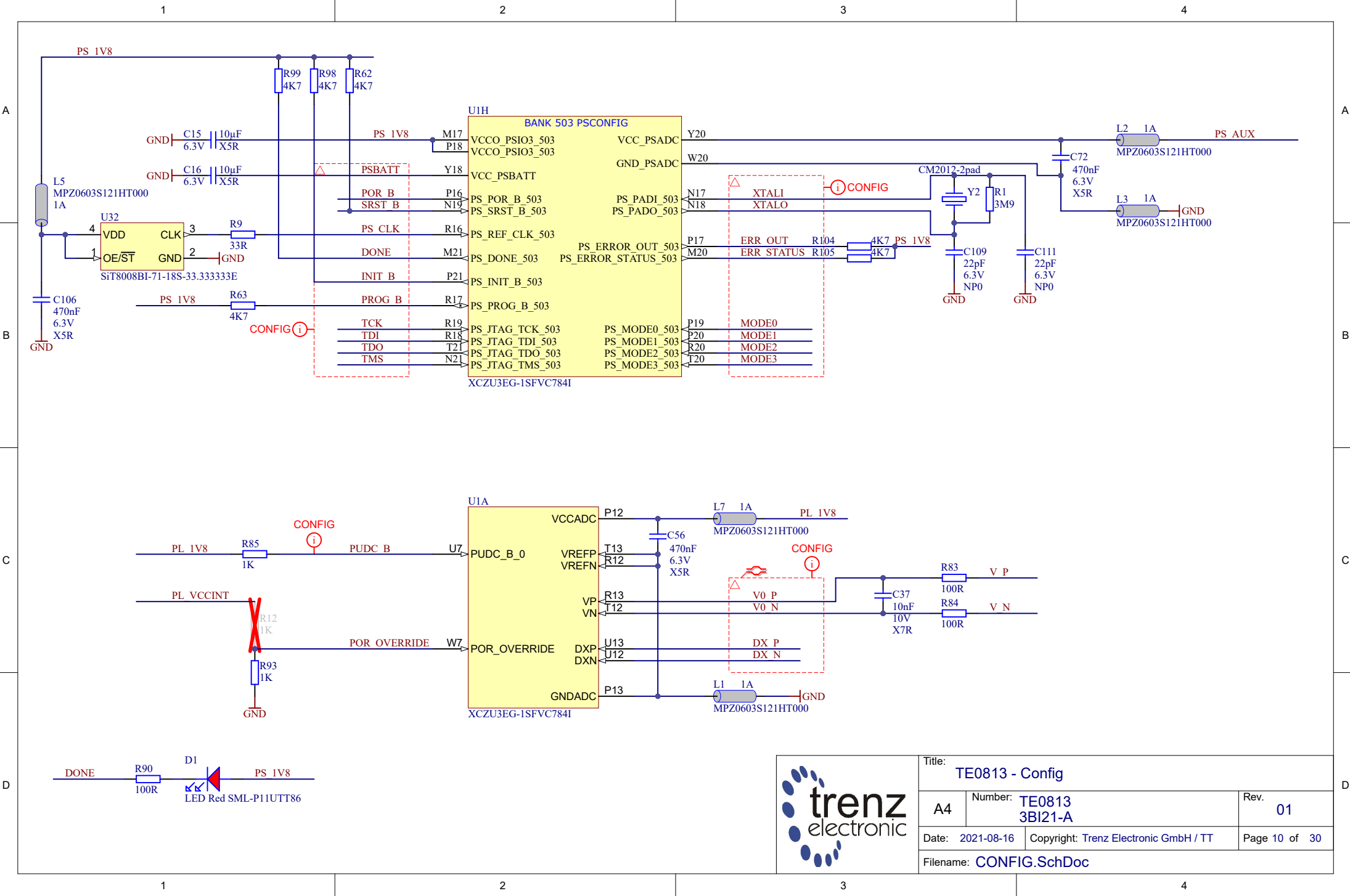
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4

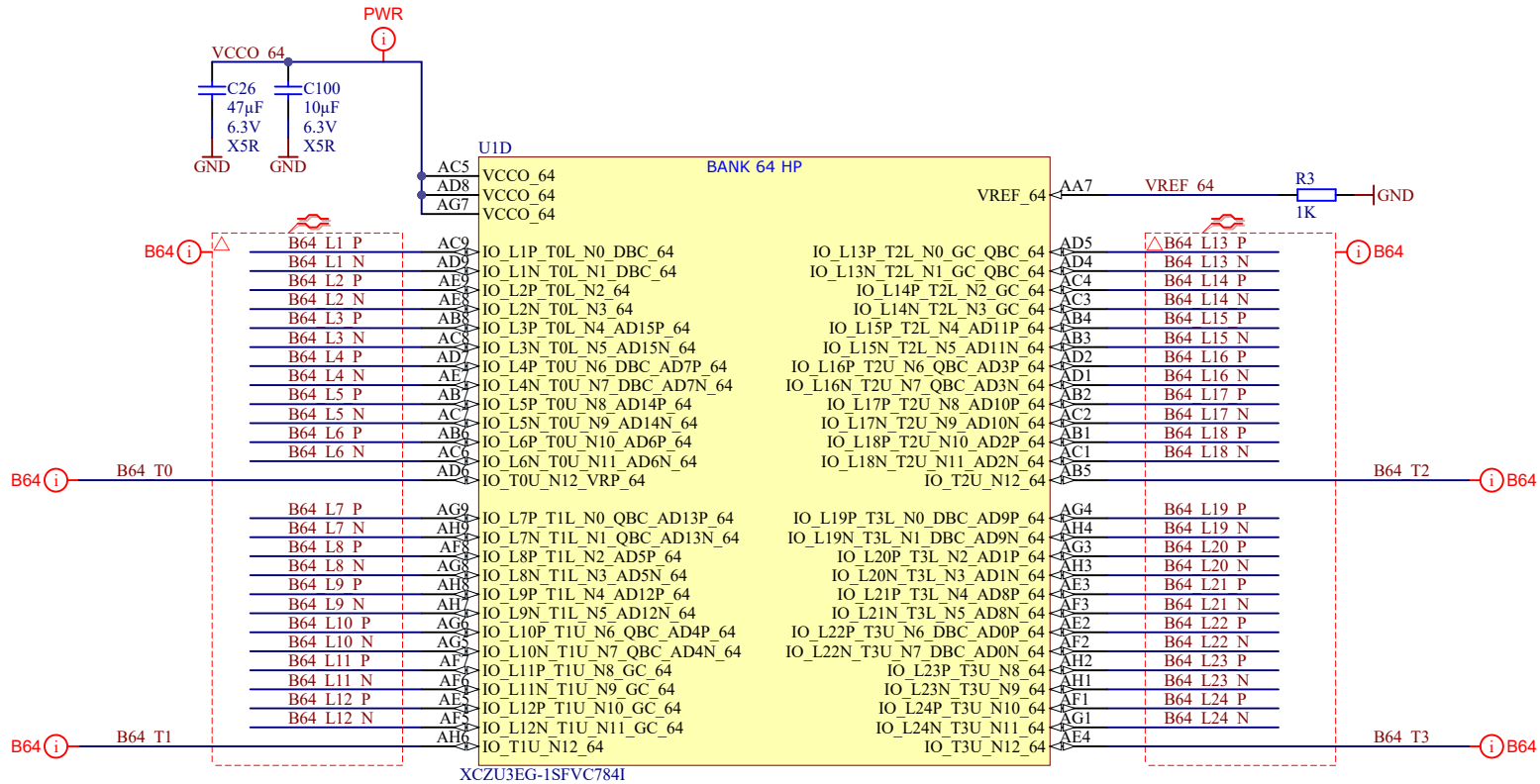




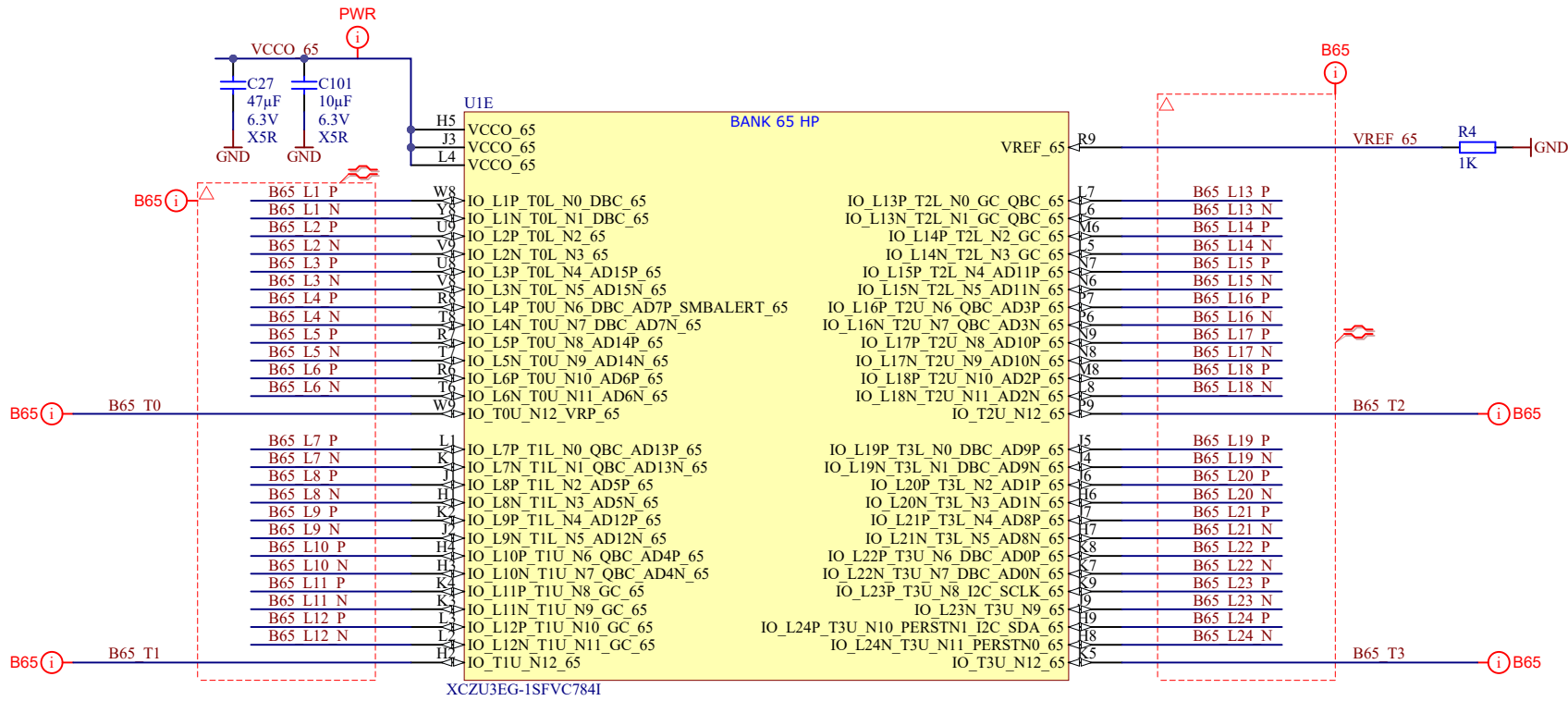
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A4	Number: <b>TE0813 3BI21-A</b>	Rev. <b>01</b>
Date: <b>2021-08-16</b>	Copyright: <b>Trenz Electronic GmbH / TT</b>	Page <b>9</b> of <b>30</b>
Filename: <b>B_HD.SchDoc</b>		



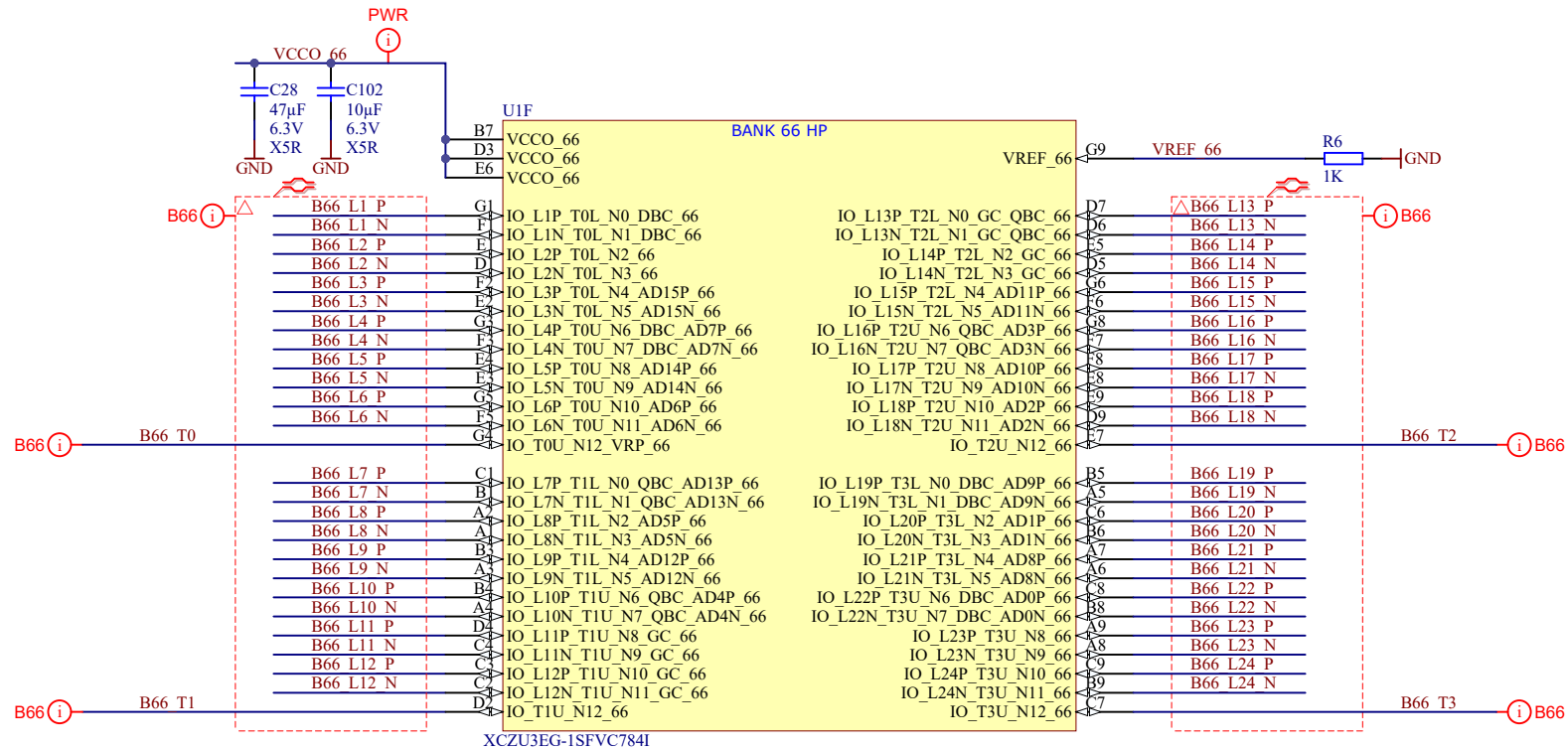

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Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 10 of 30
Filename: CONFIG.SchDoc		



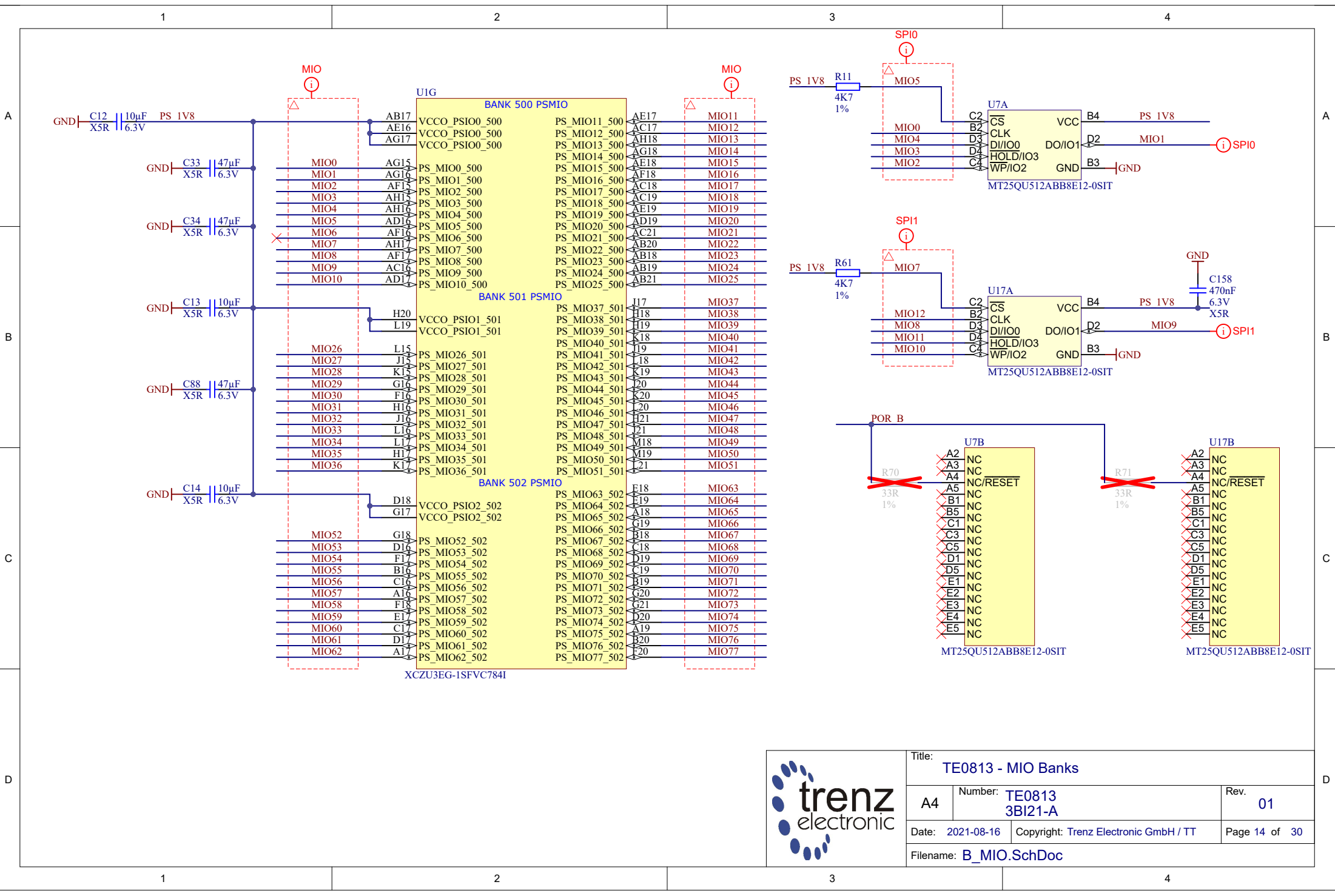
Title: TE0813 - B64		
A4	Number: TE0813 3BI21-A	Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 11 of 30
Filename: B64.SchDoc		



Title: TE0813 - B65		
A4	Number: TE0813 3BI21-A	Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 12 of 30
Filename: B65.SchDoc		

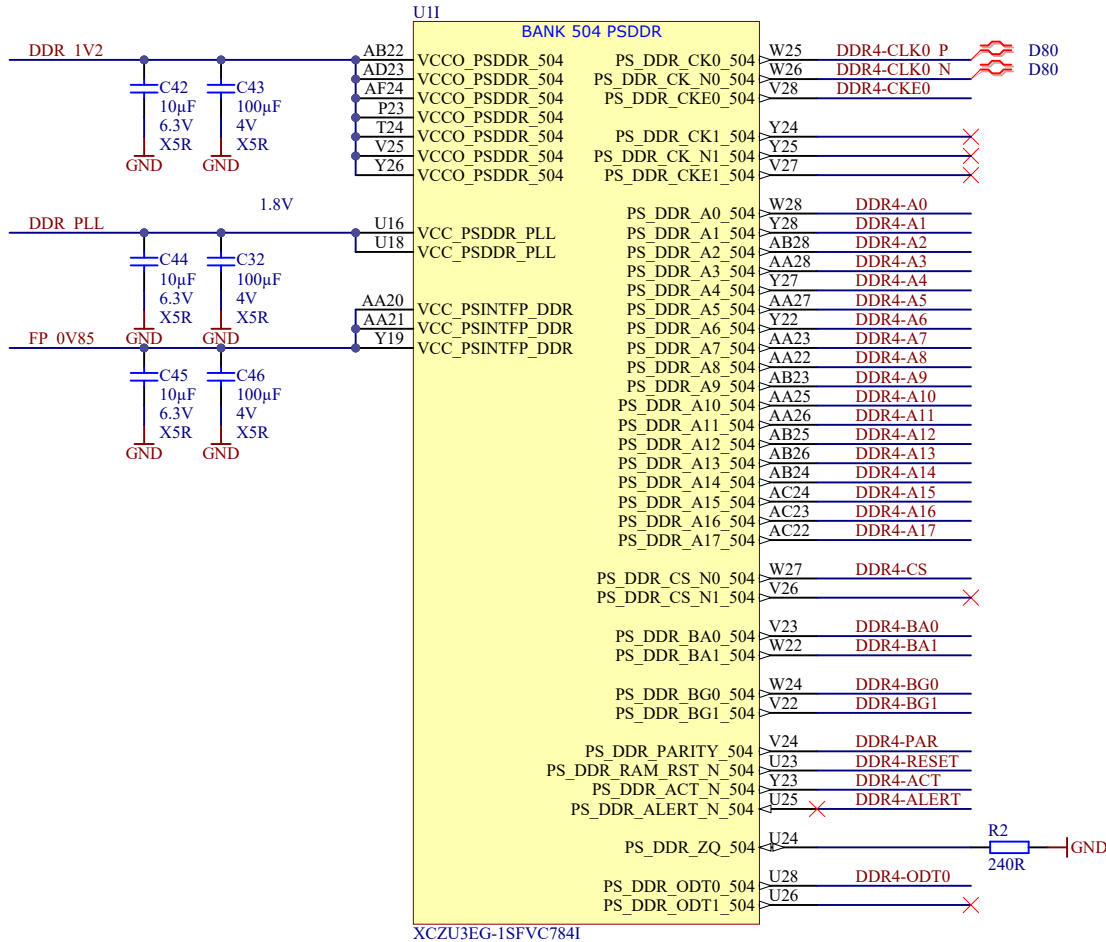
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Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 13 of 30
Filename: B66.SchDoc		



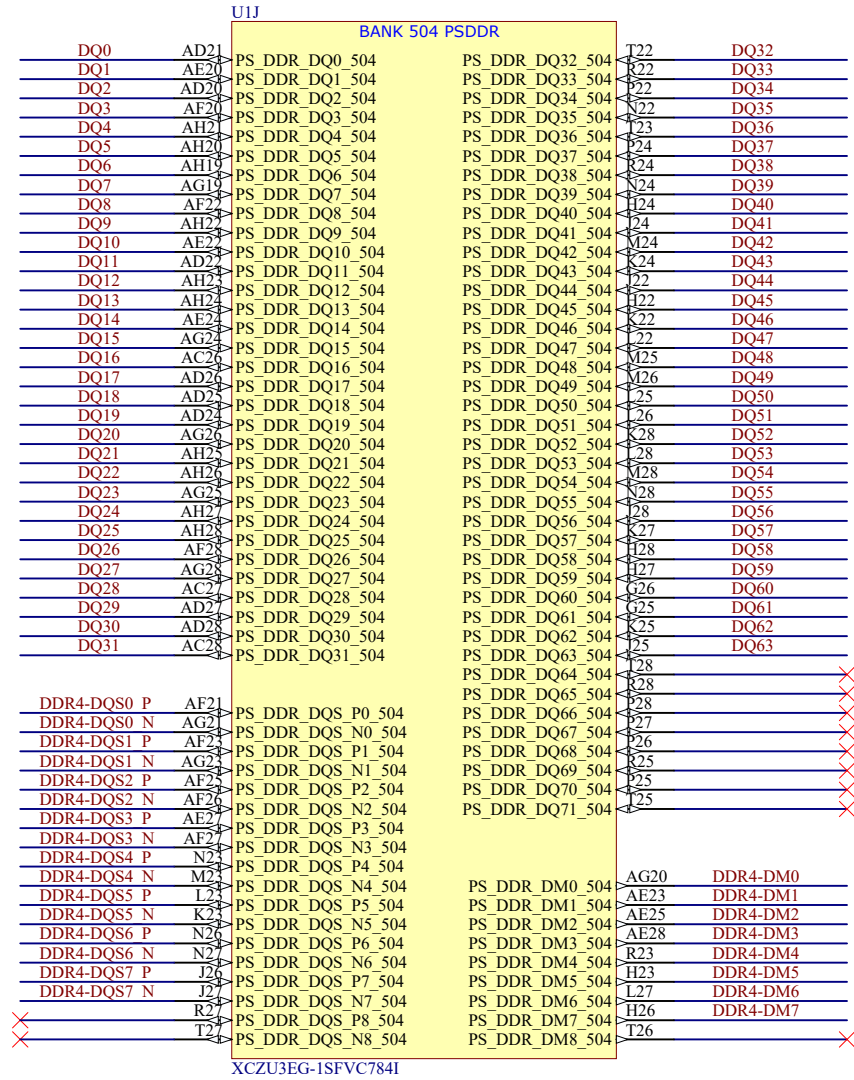
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	A4	Number: <b>TE0813 3BI21-A</b>
	Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT
	Filename: <b>B_MIO.SchDoc</b>	

Rev. **01**  
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XCZU3EG-1SFVC784I



XCZU3EG-1SFVC784I



Title: TE0813 - PS_DDR		
A4	Number: TE0813 3BI21-A	Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 15 of 30
Filename: PS_DDR.SchDoc		

1

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A

A

B

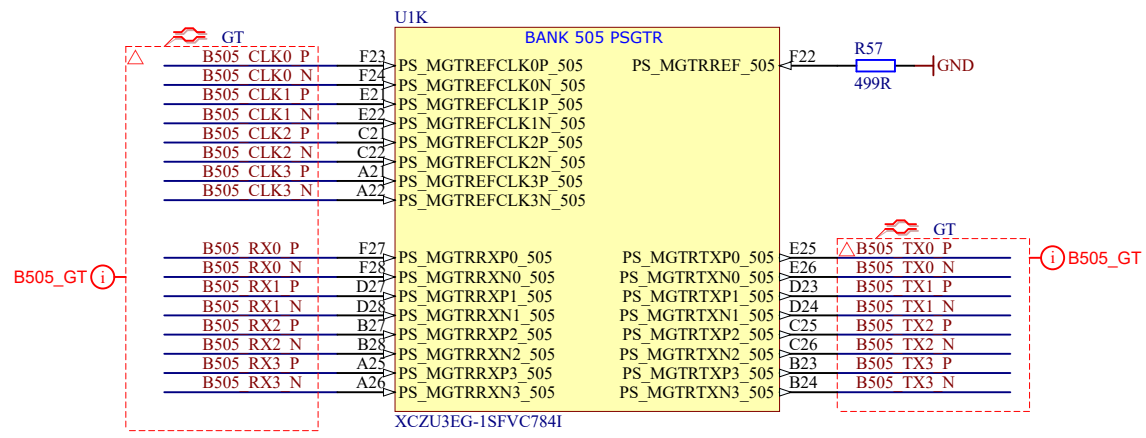
B

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C

D

D



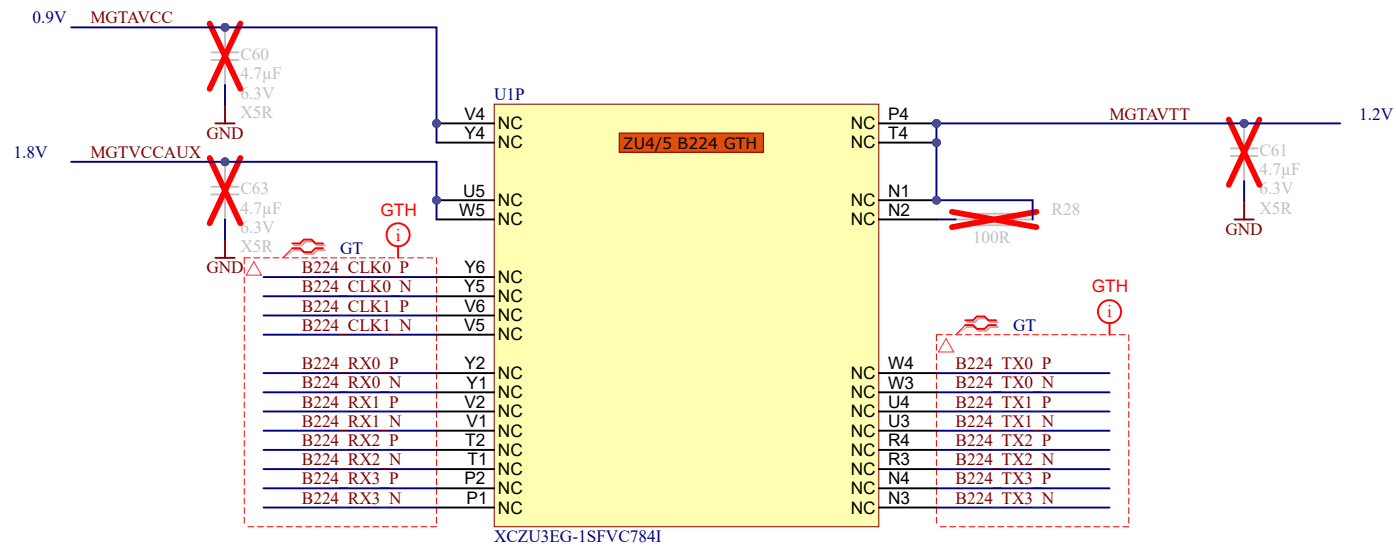
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	A4	Number: TE0813 3BI21-A
	Date: 2021-08-16	Rev. 01
	Copyright: Trenz Electronic GmbH / TT	
Date: 2021-08-16		Page 16 of 30
Filename: B_PS_GT.SchDoc		


1

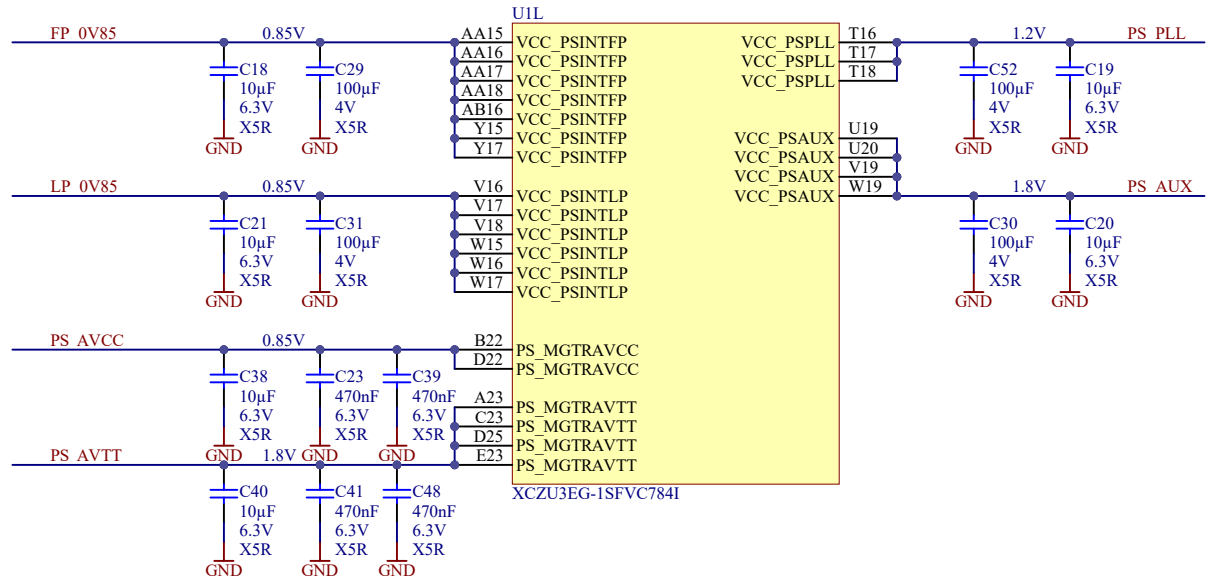
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	A4	Number: TE0813 3BI21-A	Rev. 01
	Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 17 of 30
	Filename: B_GT.SchDoc		



		Title: TE0813 - ZU_PS_POWER	
		A4	Number: TE0813 3BI21-A
Date: 2021-08-16		Copyright: Trenz Electronic GmbH / TT	
Filename: ZU_PS_POWER.SchDoc		Page 18 of 30	

1

2

3

4

A

A

B

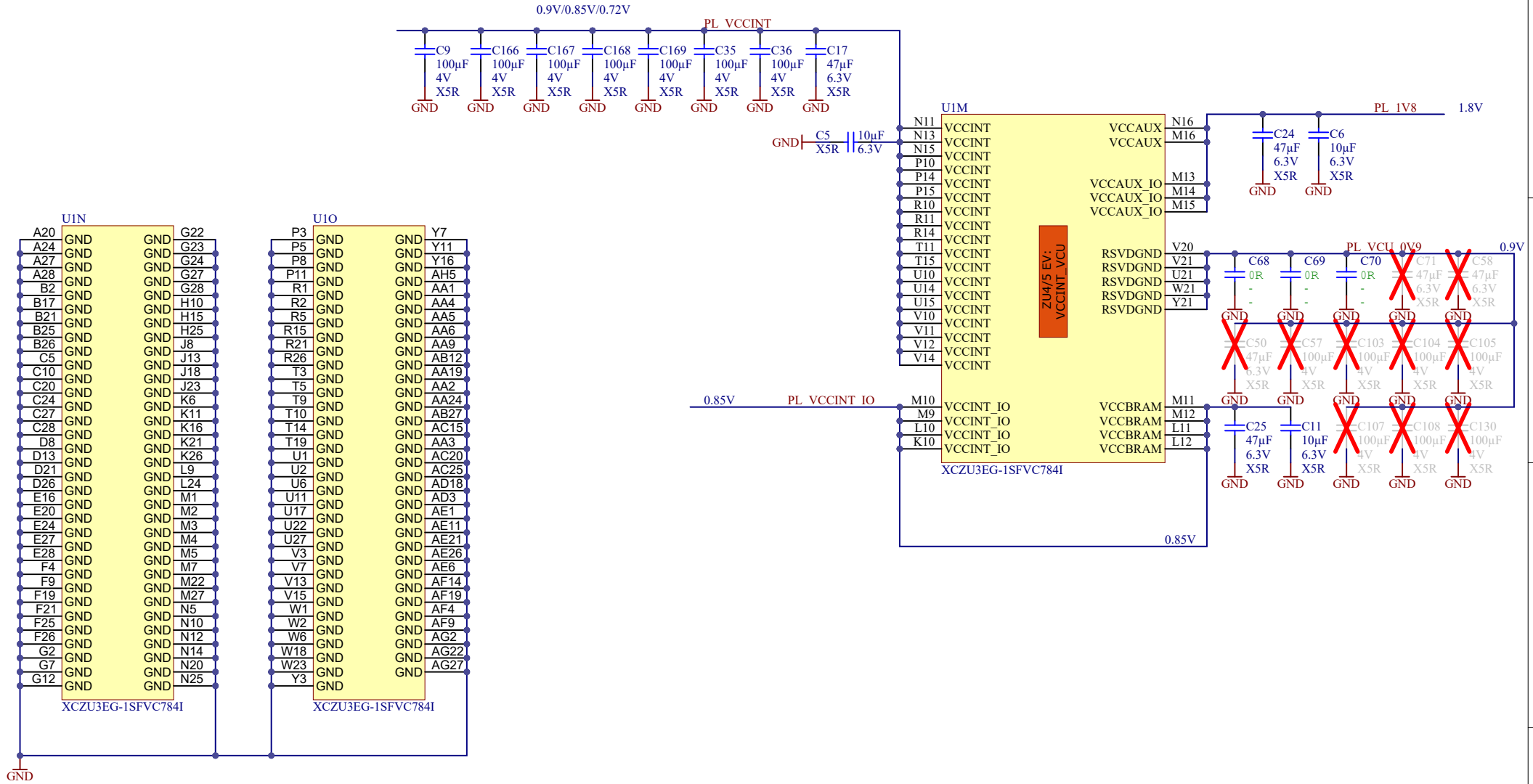
B

C

C

D

D



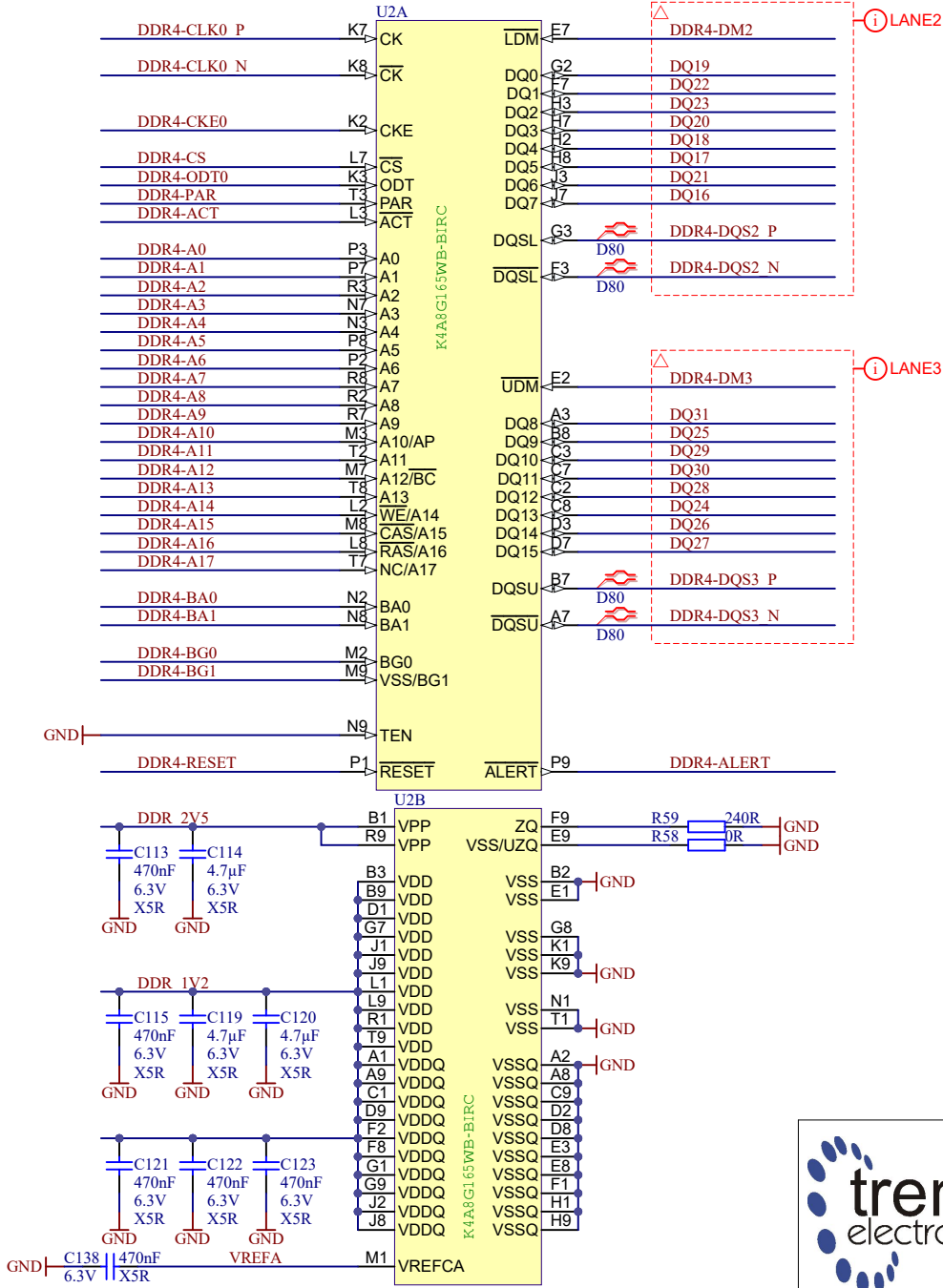
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	Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT
	Rev. 01	
Date: 2021-08-16		Page 19 of 30
Filename: ZU_POWER.SchDoc		

1

2

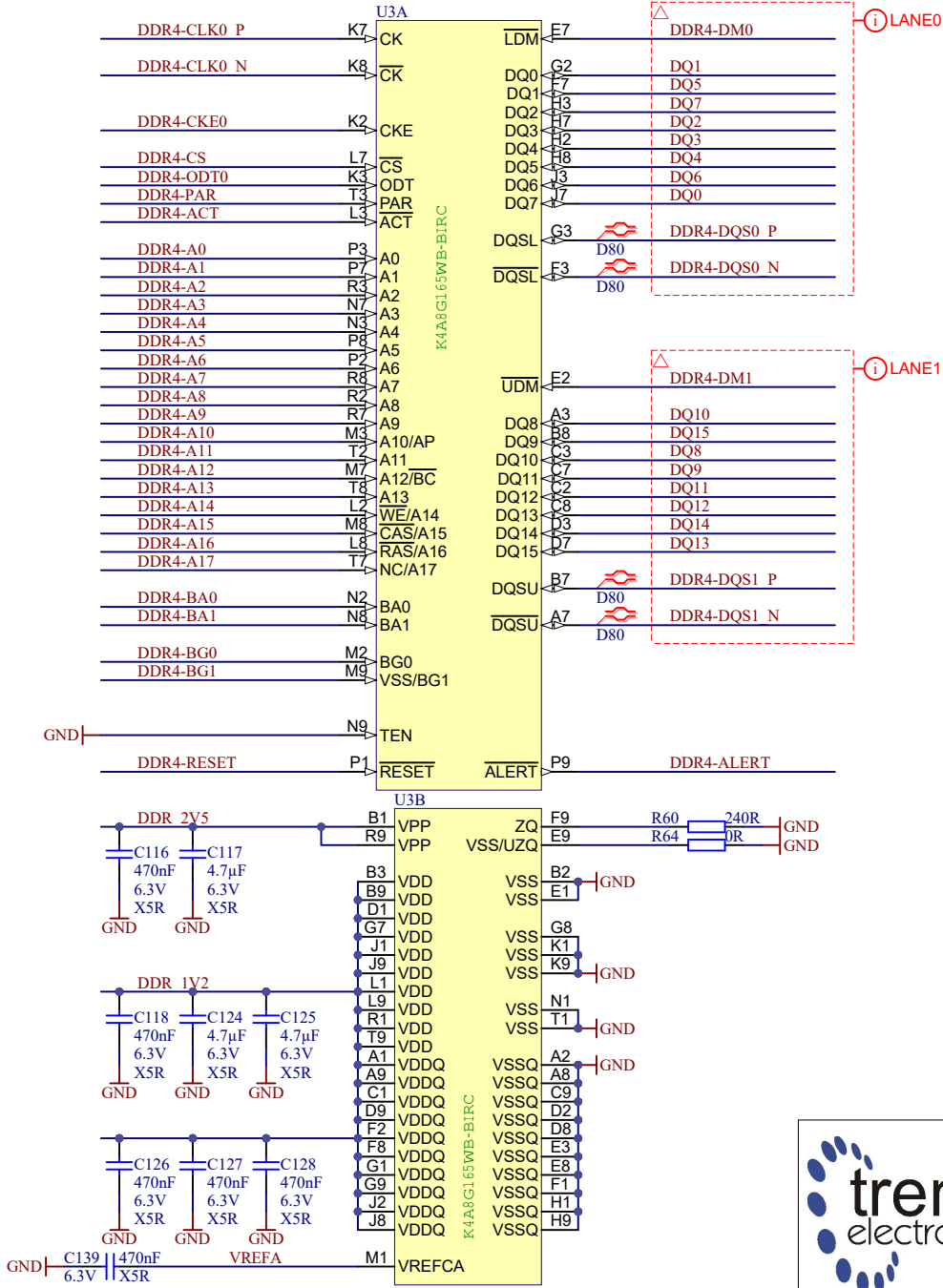
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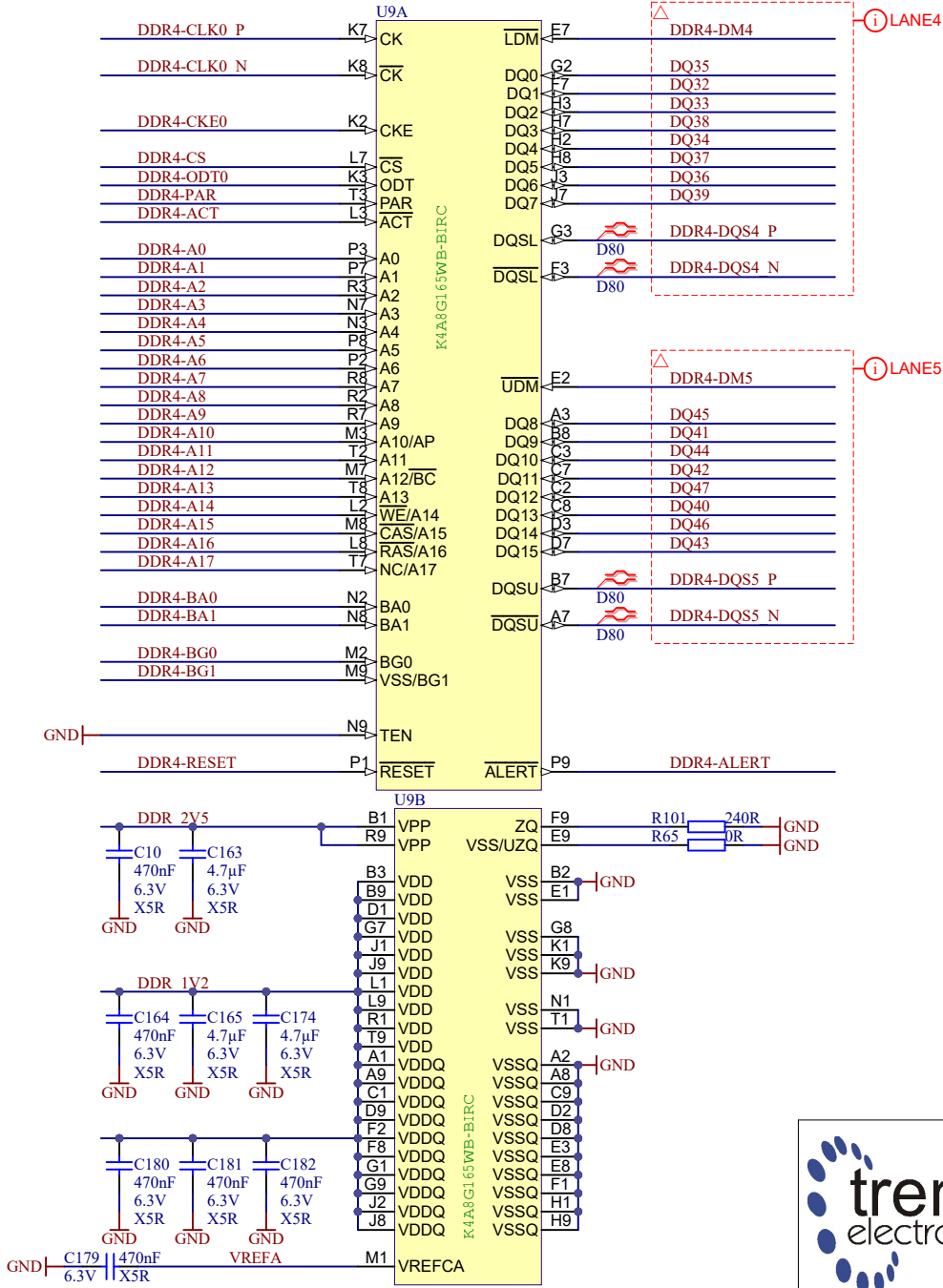


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A4	Number: TE0813 3BI21-A	Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 20 of 30
Filename: DDR4-RAM.SchDoc		

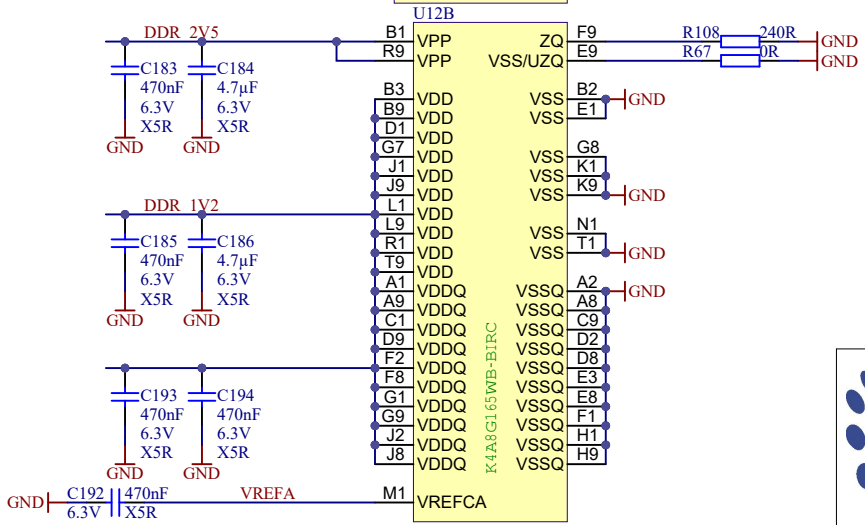
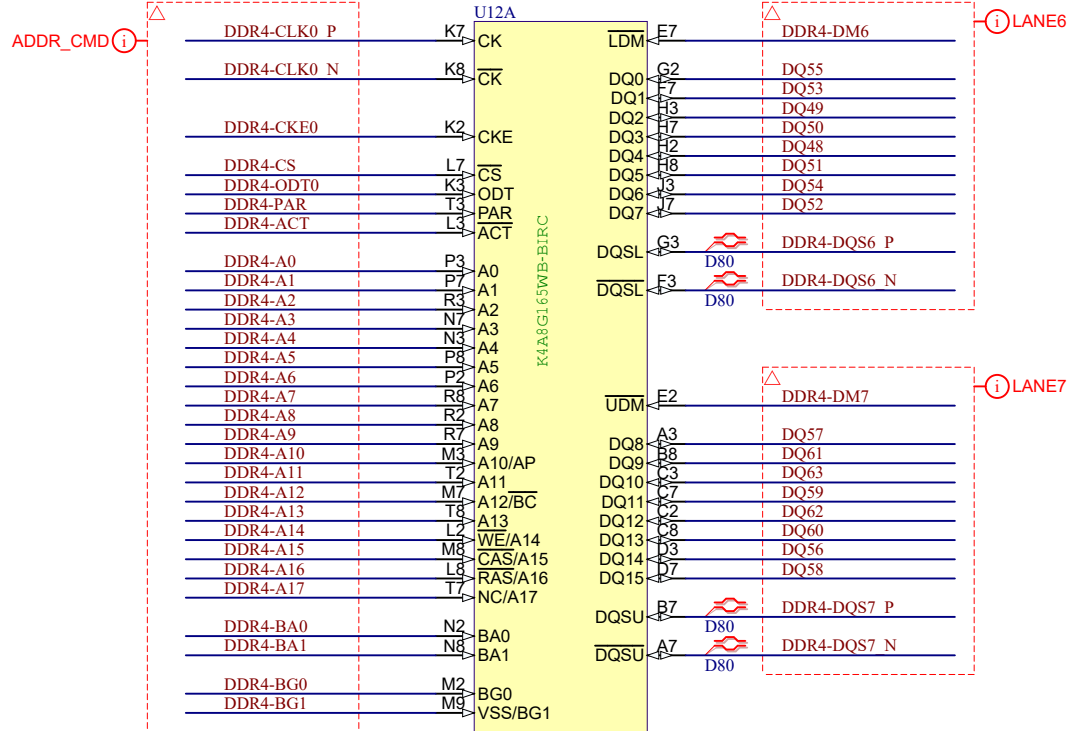




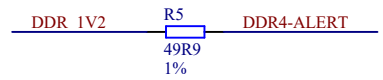
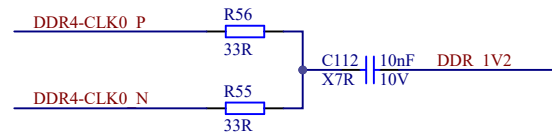
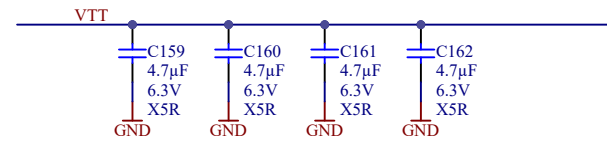
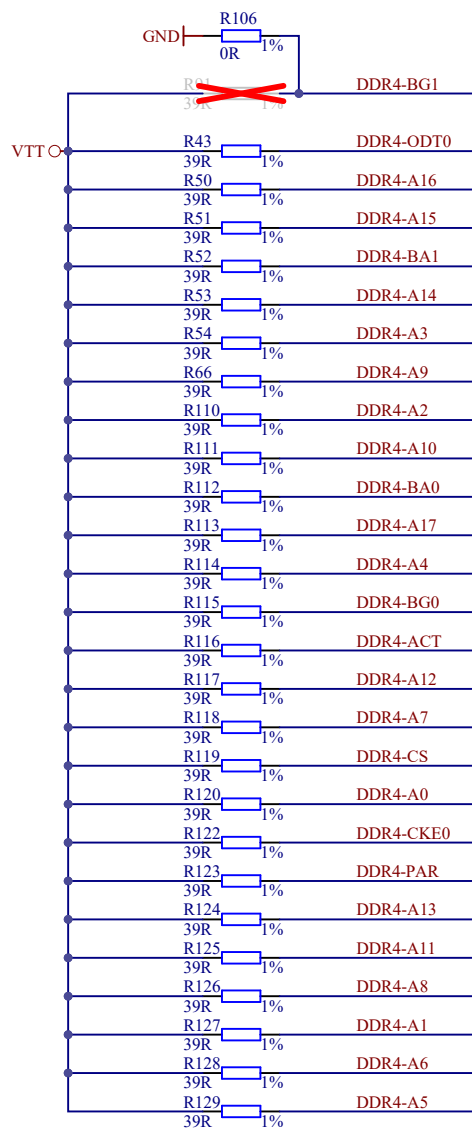
Title: TE0813 - DDR4_2_RAM		
A4	Number: TE0813 3BI21-A	Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 21 of 30
Filename: DDR4-RAM_2.SchDoc		



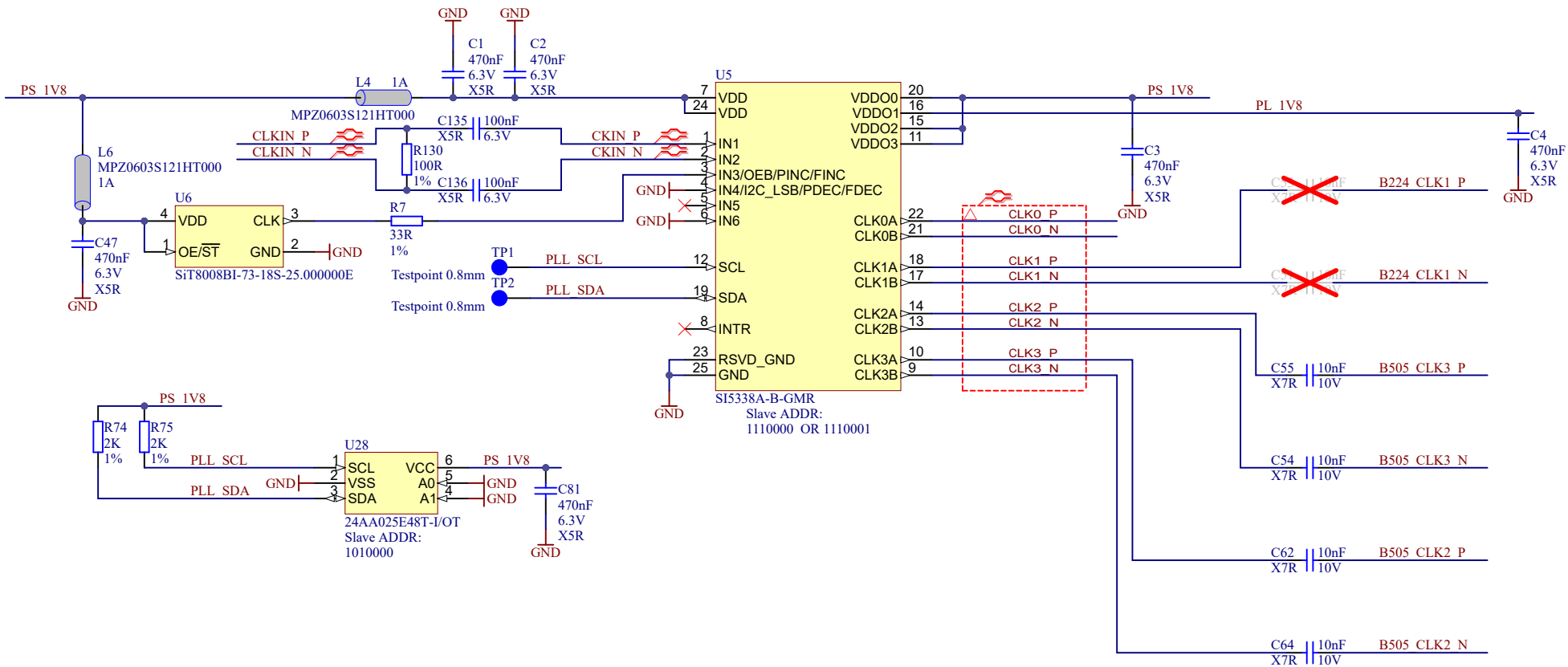
Title: TE0813 - DDR4_3_RAM		
A4	Number: TE0813 3BI21-A	Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 22 of 30
Filename: DDR4-RAM_3.SchDoc		




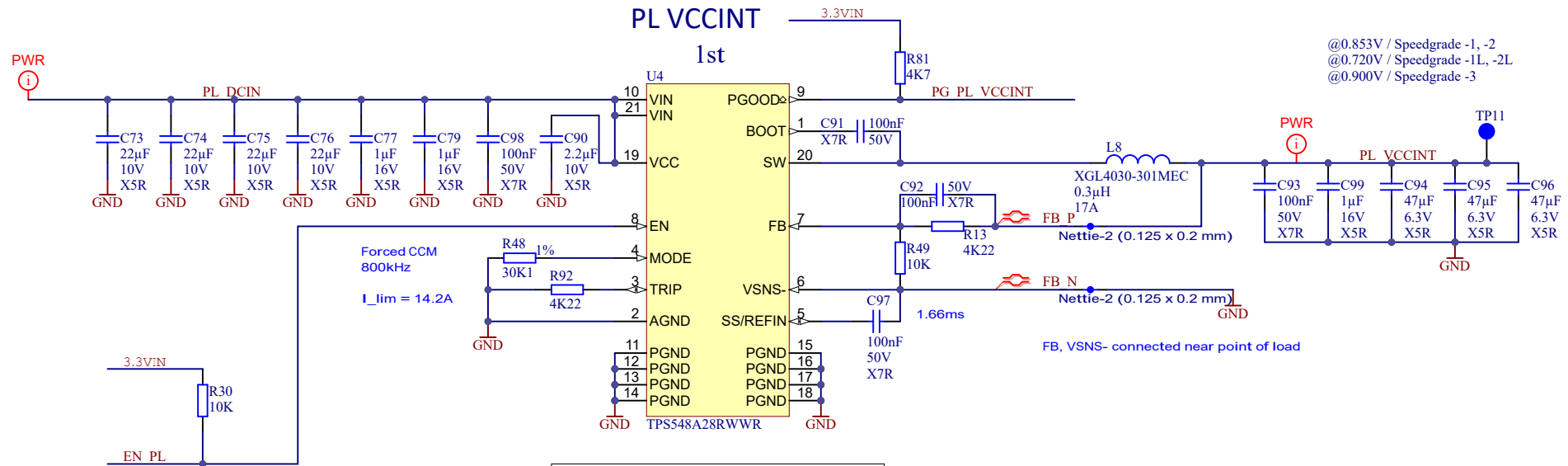
Title: TE0813 - DDR4_4_RAM		
A4	Number: TE0813 3BI21-A	Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 23 of 30
Filename: DDR4-RAM_4.SchDoc		



Title: TE0813 - DDR4_TERM		
A4	Number: TE0813 3BI21-A	Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 24 of 30
Filename: DDR4-TERM.SchDoc		



		Title: TE0813 - CLOCK	
		A4	Number: TE0813 3BI21-A
Date: 2021-08-16		Copyright: Trenz Electronic GmbH / TT	
Filename: Clock.SchDoc		Page 25 of 30	



@0.853V / Speedgrade -1, -2  
 @0.720V / Speedgrade -1L, -2L  
 @0.900V / Speedgrade -3

FPGA Speed grade:

-1L1 / -2LE	R13 - 2K, R49 - 10K	PL_VCCINT = 0.720V
-1 / -2	R13 - 4K22, R49 - 10K	PL_VCCINT = 0.853V
-3E	R13 - 10K, R49 - 20K	PL_VCCINT = 0.900V

U4 pin compatible with  
 -- TPS548B28 (20A)  
 -- TPS54JA20 (12A)

	Title: TE0813 - POWER	
	A4	Number: TE0813 3BI21-A
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1

2

3

4

A

A

B

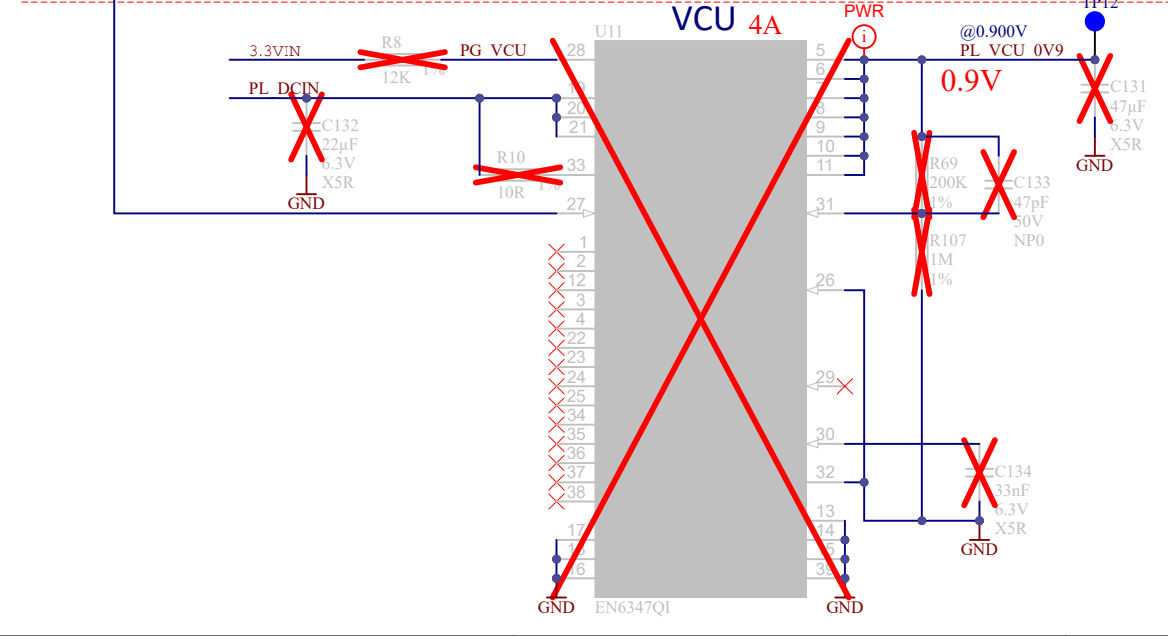
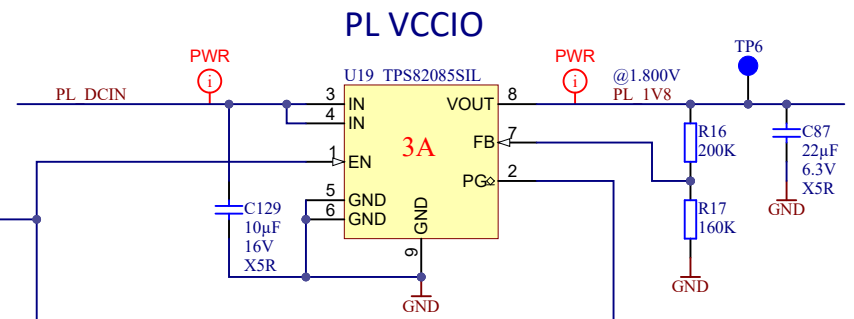
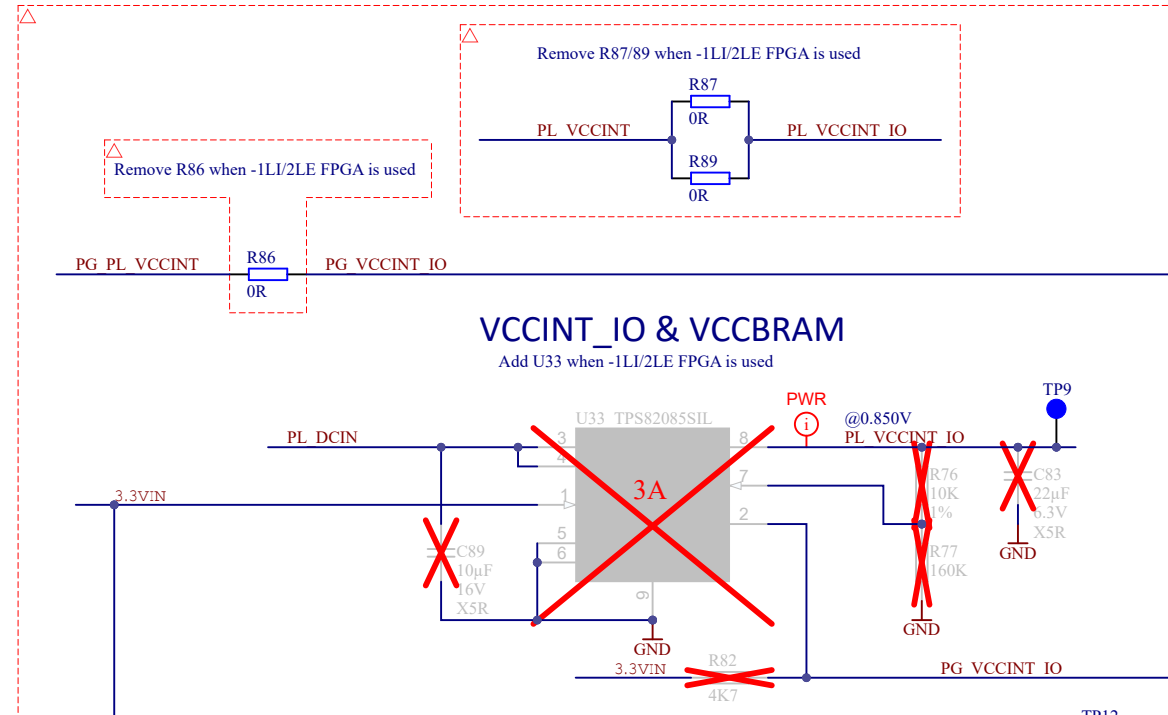
B

C

C

D

D



Title: TE0813 - POWER		
A4	Number: TE0813 3BI21-A	Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 27 of 30
Filename: POWER_1.SchDoc		

1

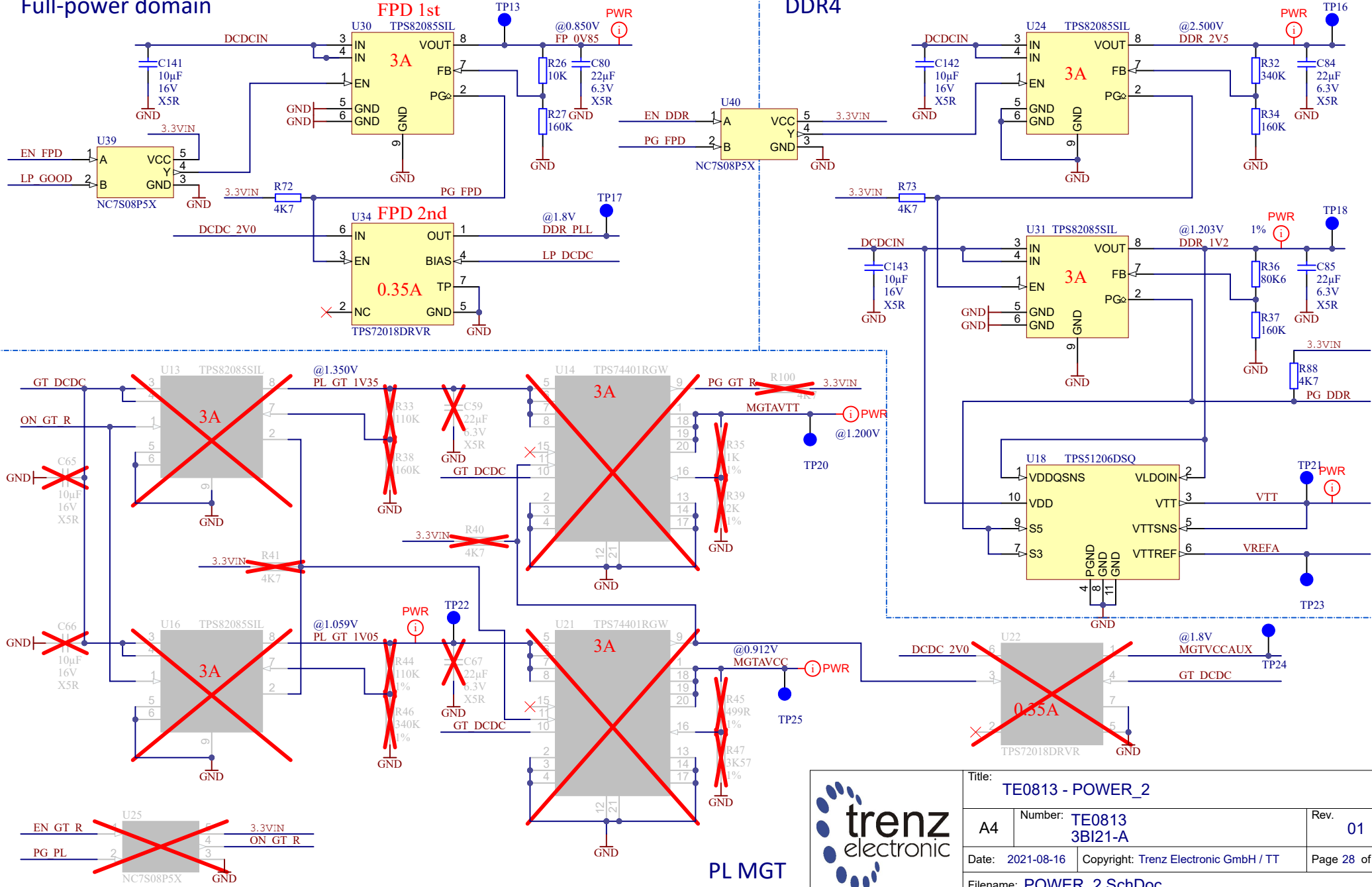
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3

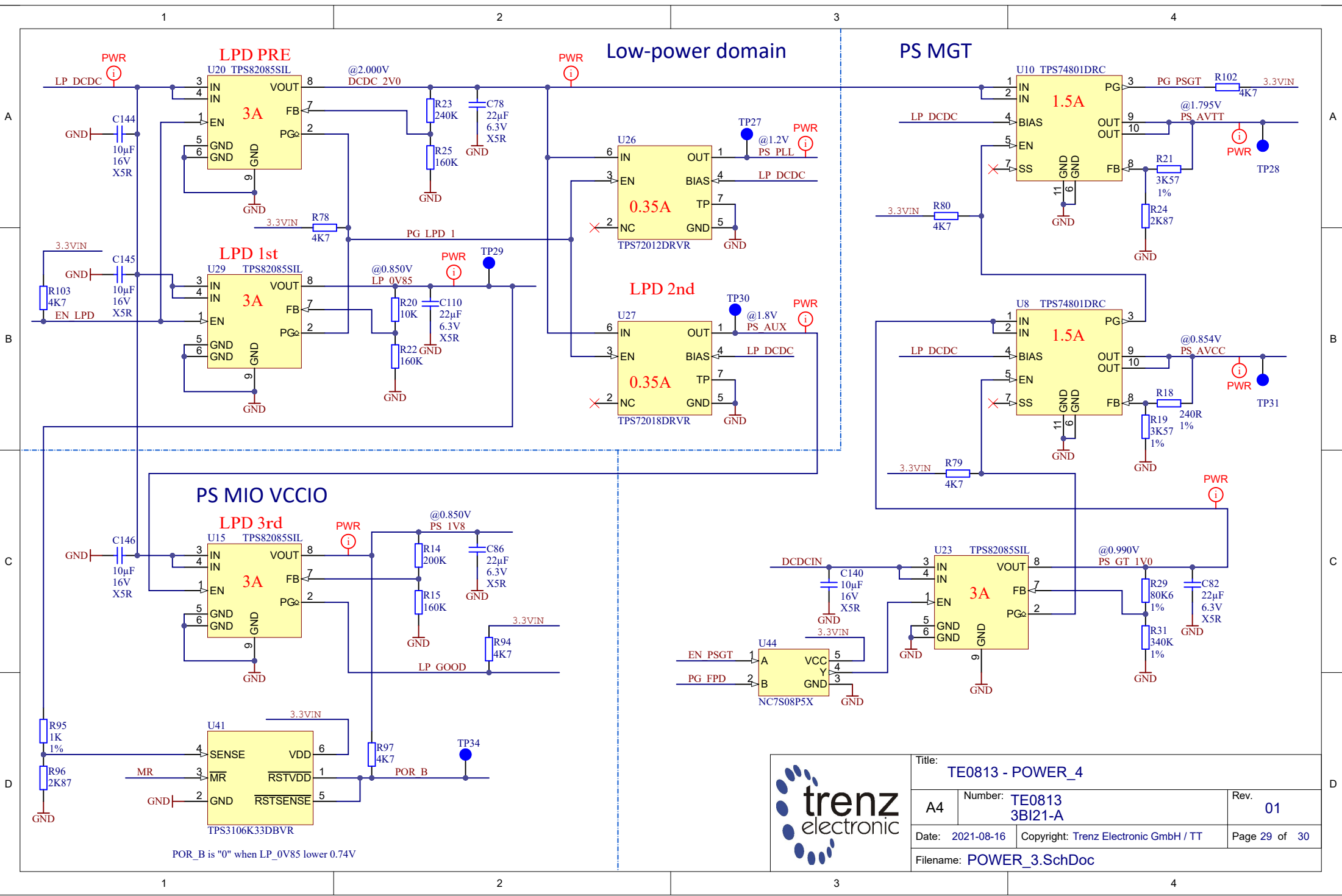
4

# Full-power domain

# DDR4



Title: <b>TE0813 - POWER_2</b>		
A4	Number: <b>TE0813 3BI21-A</b>	Rev. <b>01</b>
Date: <b>2021-08-16</b>	Copyright: <b>Trenz Electronic GmbH / TT</b>	Page <b>28</b> of <b>30</b>
Filename: <b>POWER_2.SchDoc</b>		



POR\_B is "0" when LP\_0V85 lower 0.74V



Title: TE0813 - POWER_4		
A4	Number: TE0813 3BI21-A	Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 29 of 30
Filename: POWER_3.SchDoc		

1

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A

A

B

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REV	DATE	Description	
-01	2021-05	Initial revision	VT

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