


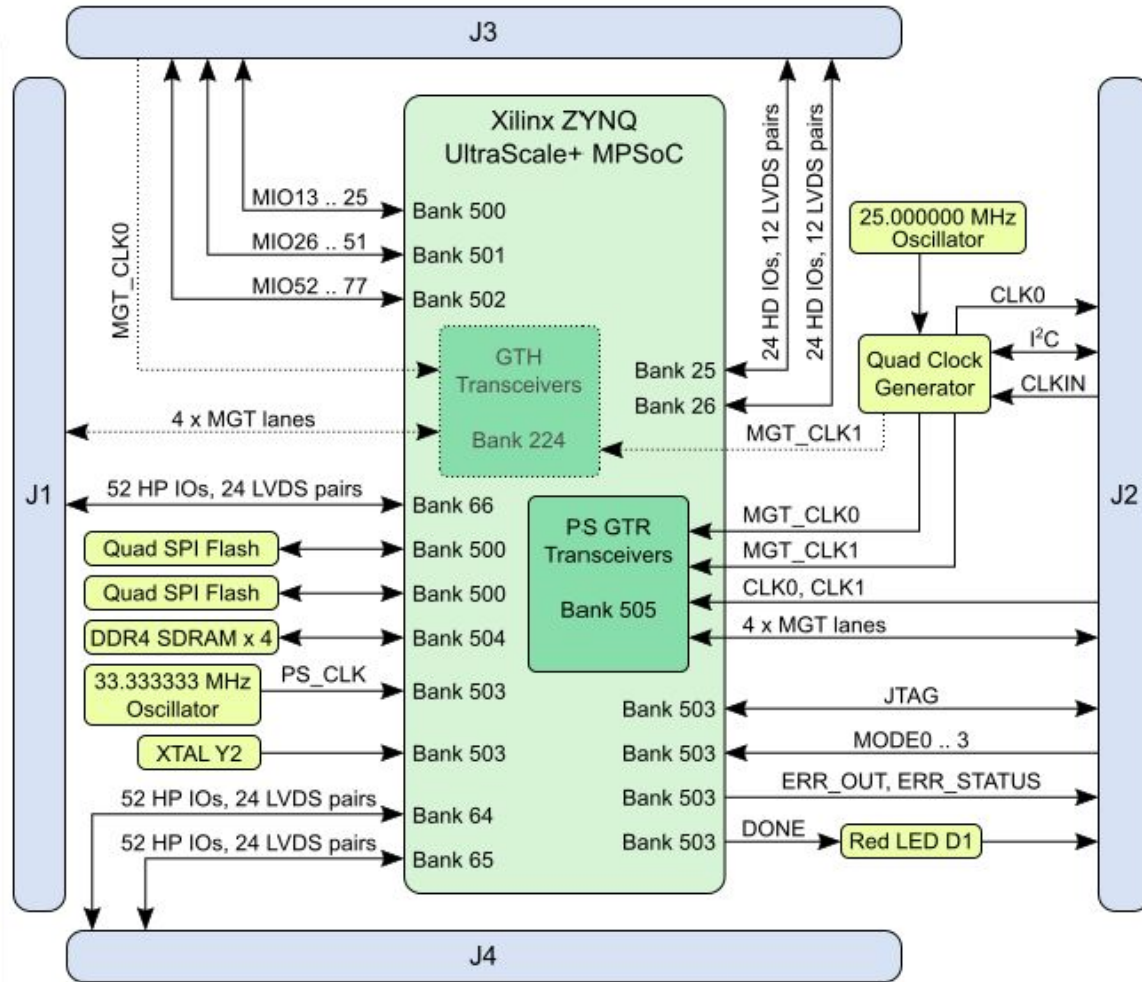
Regarding the usage of our schematics and alike documentation for Trenz module TE0813.


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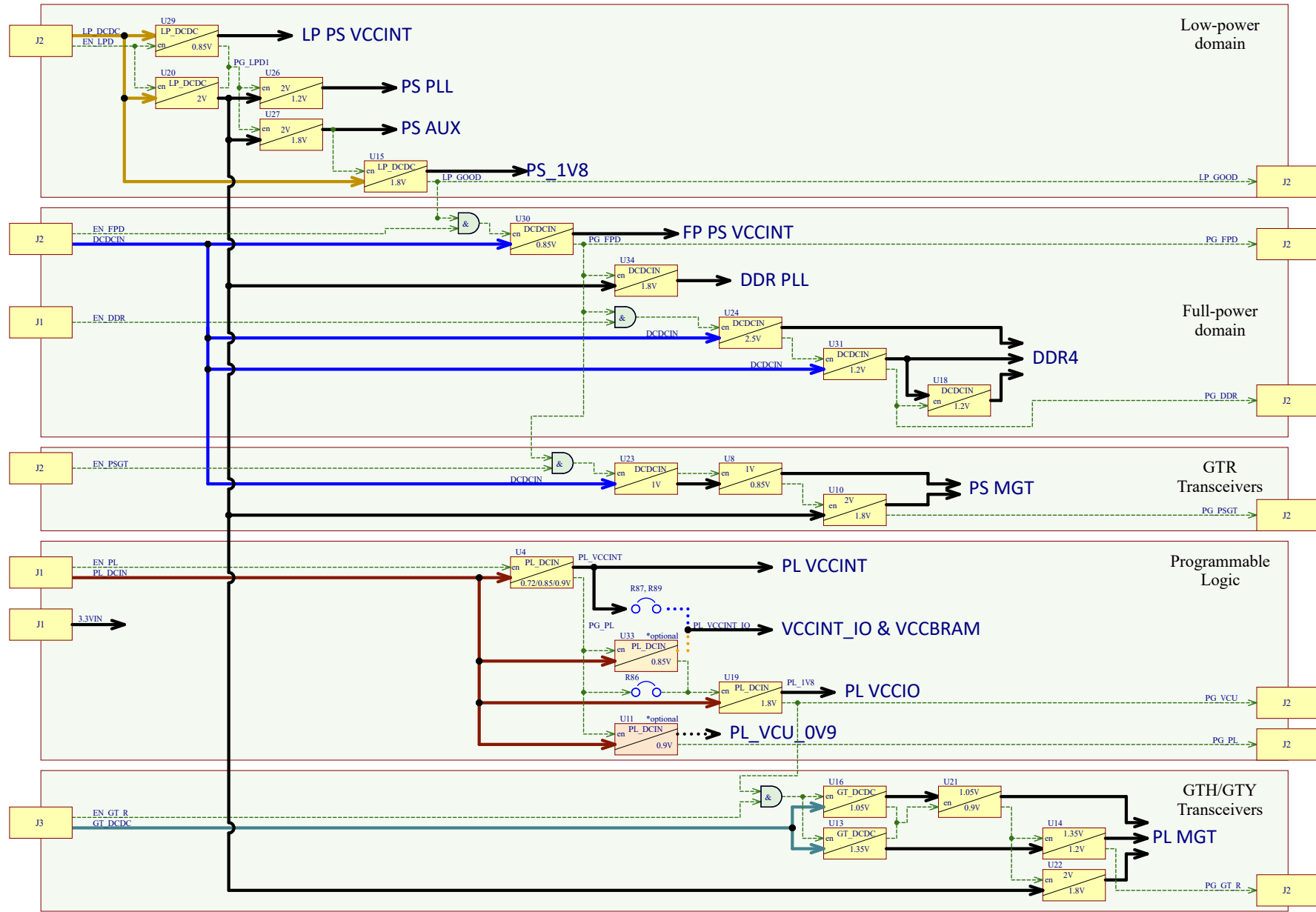
Schematics and other handouts serve for informational purposes only!

	Title: TE0813		
	A4	Number: TE0813 4GI21-A	Rev. 01
	Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 1 of 30
	Filename: Legal Notices Modules.SchDoc		

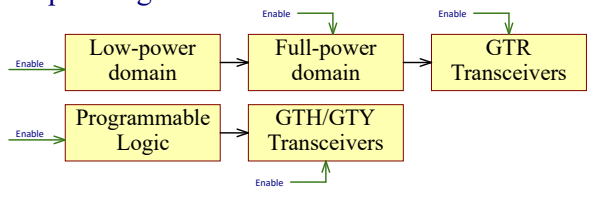
TE0813-01



		Title: Module TE0813 - System Overview	
		A4	Number: TE0813 4GI21-A
Date: 2021-08-16		Copyright: 2015 Trenz Electronic GmbH	
Filename: TE0813-Overview.SchDoc		Page 2 of 30	



Power-on sequencing:



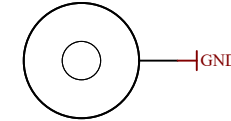
- EN_GT_R Net name
- Power bus
- Control signal
- Power bus in FPGA speedgrade -1/-2/-3 assembly variants
- Power bus in FPGA speedgrade -1L/-2L assembly variants (low power)
- Optional power converter
- Logic AND gate



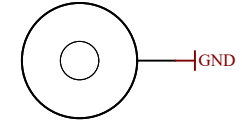
Title: TE0813 - Power Diagram		
A3	Number: TE0813 4G121-A	Rev. 01
Datum: 2021-01-19	Copyright: Trenz Electronic GmbH / TT	Page 3 of 30
Filename: Power_Diagram.SchDoc		

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	

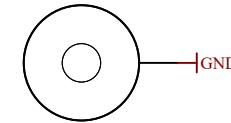
Special notes:



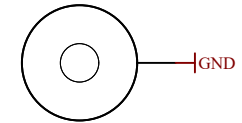
Mount.Hole 3.2mm für Unterlegscheibe



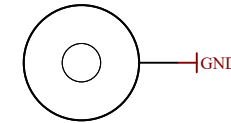
Mount.Hole 3.2mm für Unterlegscheibe



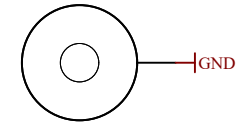
Mount.Hole 3.2mm für Unterlegscheibe



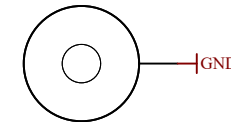
Mount.Hole 3.2mm für Unterlegscheibe



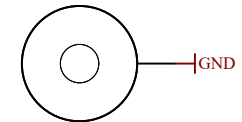
Mount.Hole 3.2mm für Unterlegscheibe



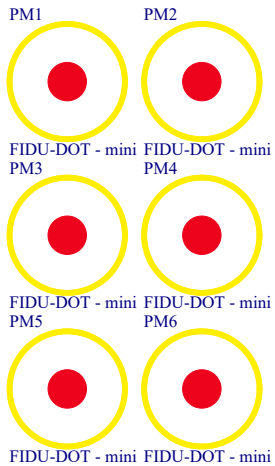
Mount.Hole 3.2mm für Unterlegscheibe



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	4GI21-A
Created by	ED
Modified by	ED
Modified at	2021-07-08
SVN Revision	12304 [Locally Modified]



Title: TE0813		
A4	Number: TE0813 4GI21-A	Rev. 01
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Filename: TE0813.SchDoc		

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A

A

B

B

C

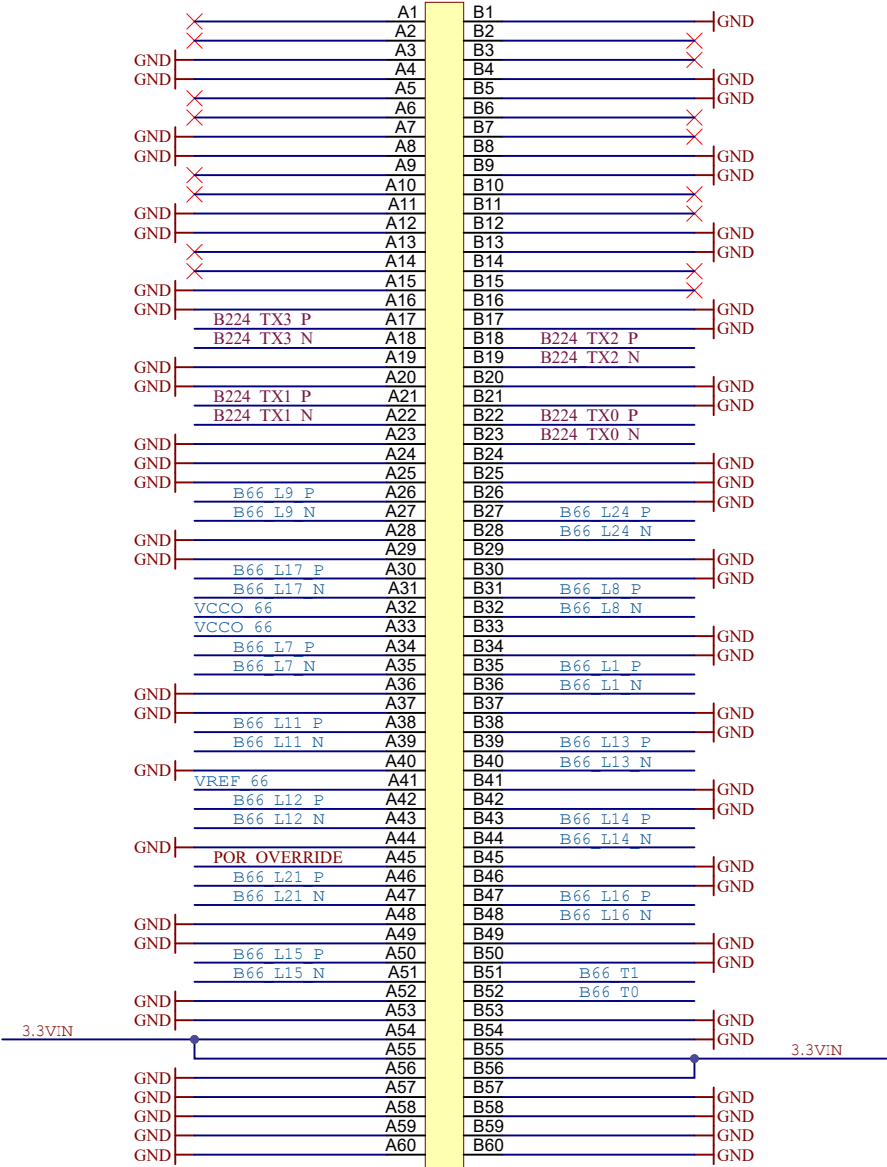
C

D

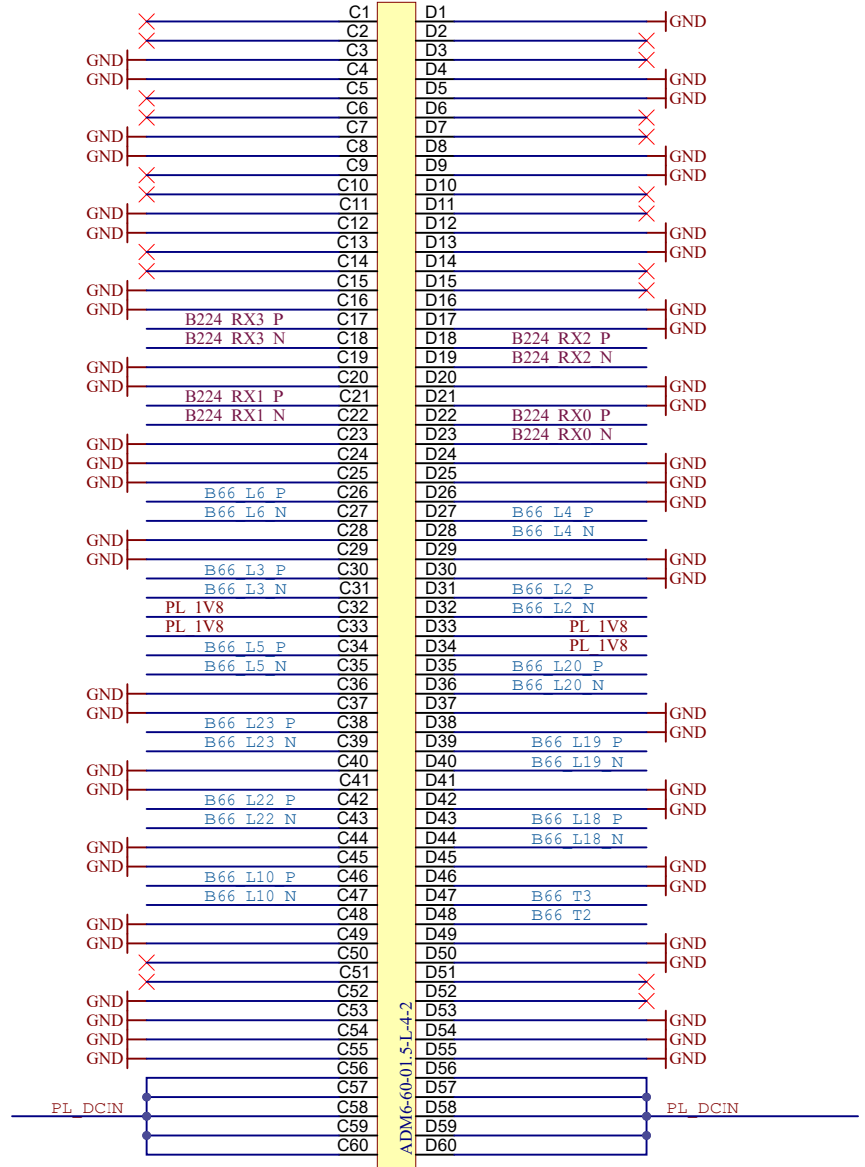
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JM1A

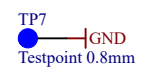
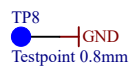
JM1B



ADM6-60-01.5-L-4-2



ADM6-60-01.5-L-4-2



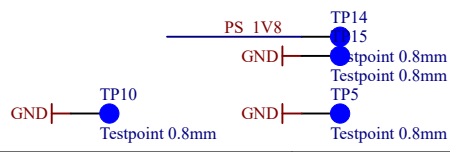
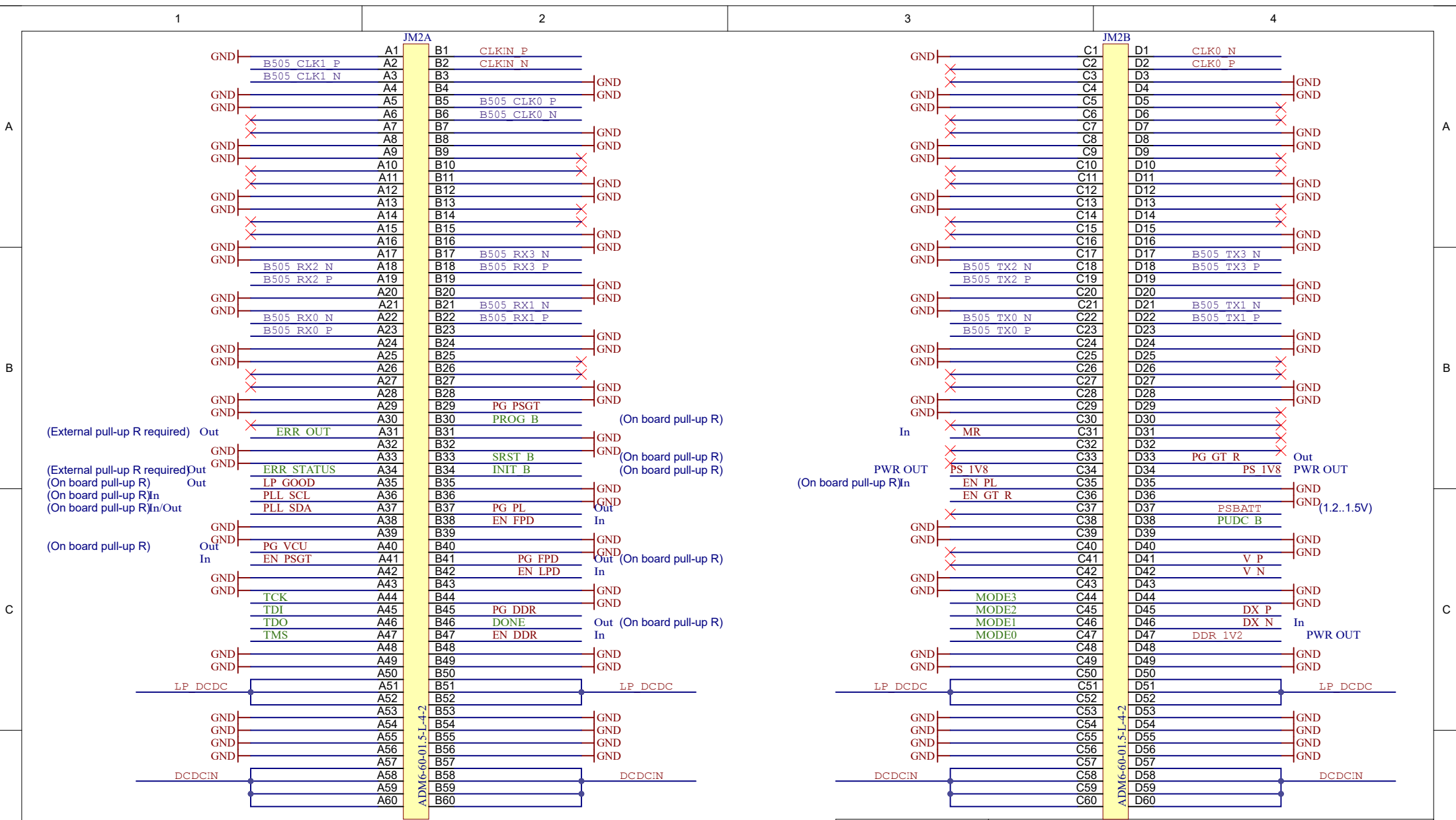
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A4	Number: TE0813 4GI21-A	Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 5 of 30
Filename: J1.SchDoc		

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Title: **TE0813 - Connector J2**

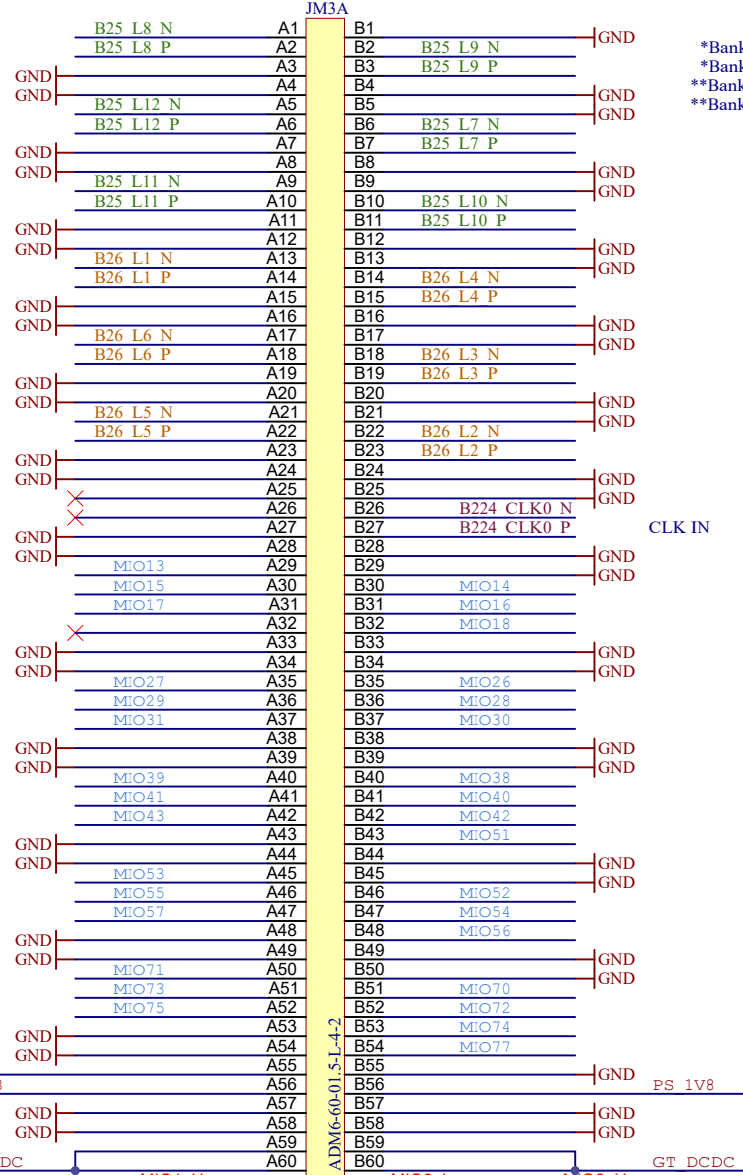
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Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 6 of 30
Filename: J2.SchDoc		

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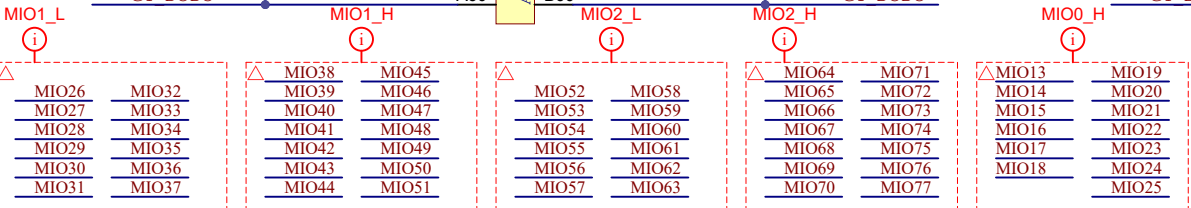
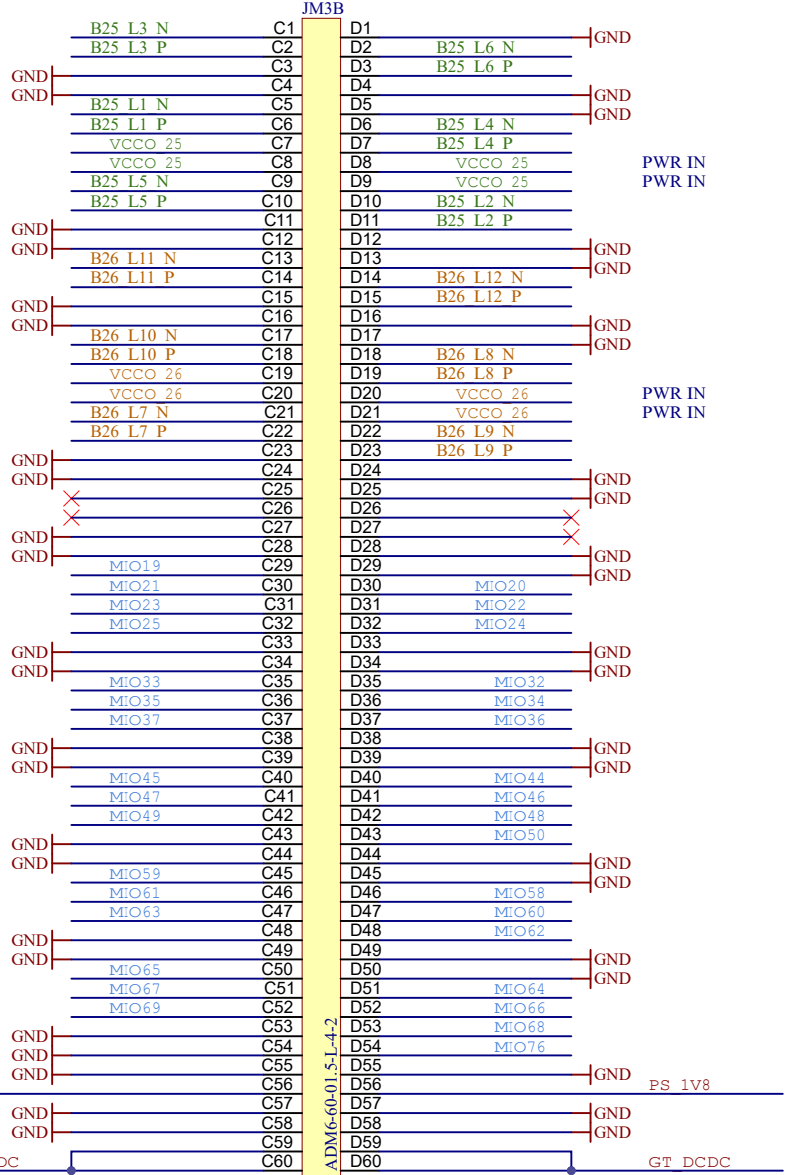
3

4



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

CLK IN



Title: TE0813 - Connector J3		
A4	Number: TE0813 4GI21-A	Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 7 of 30
Filename: J3.SchDoc		

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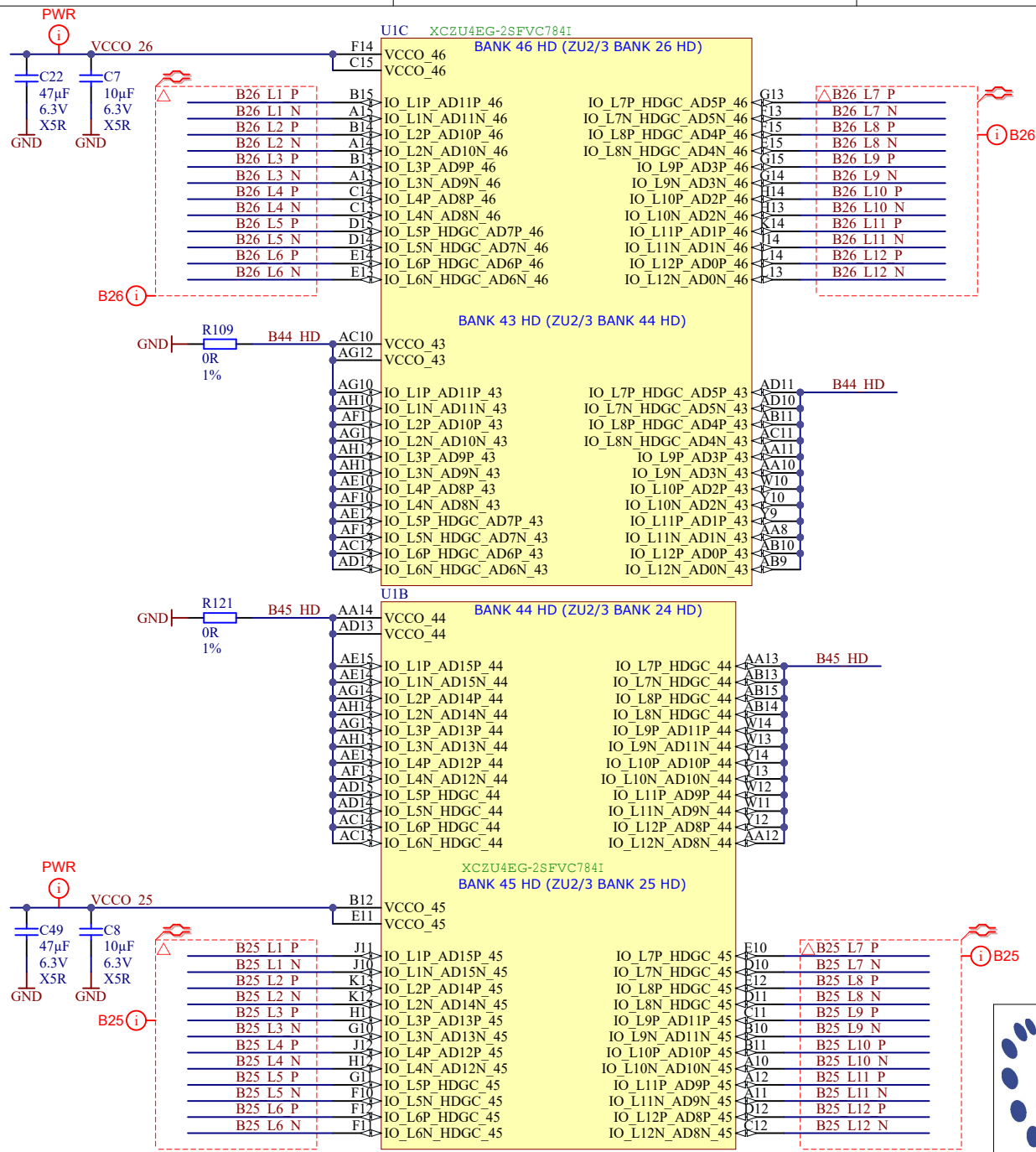
B

C

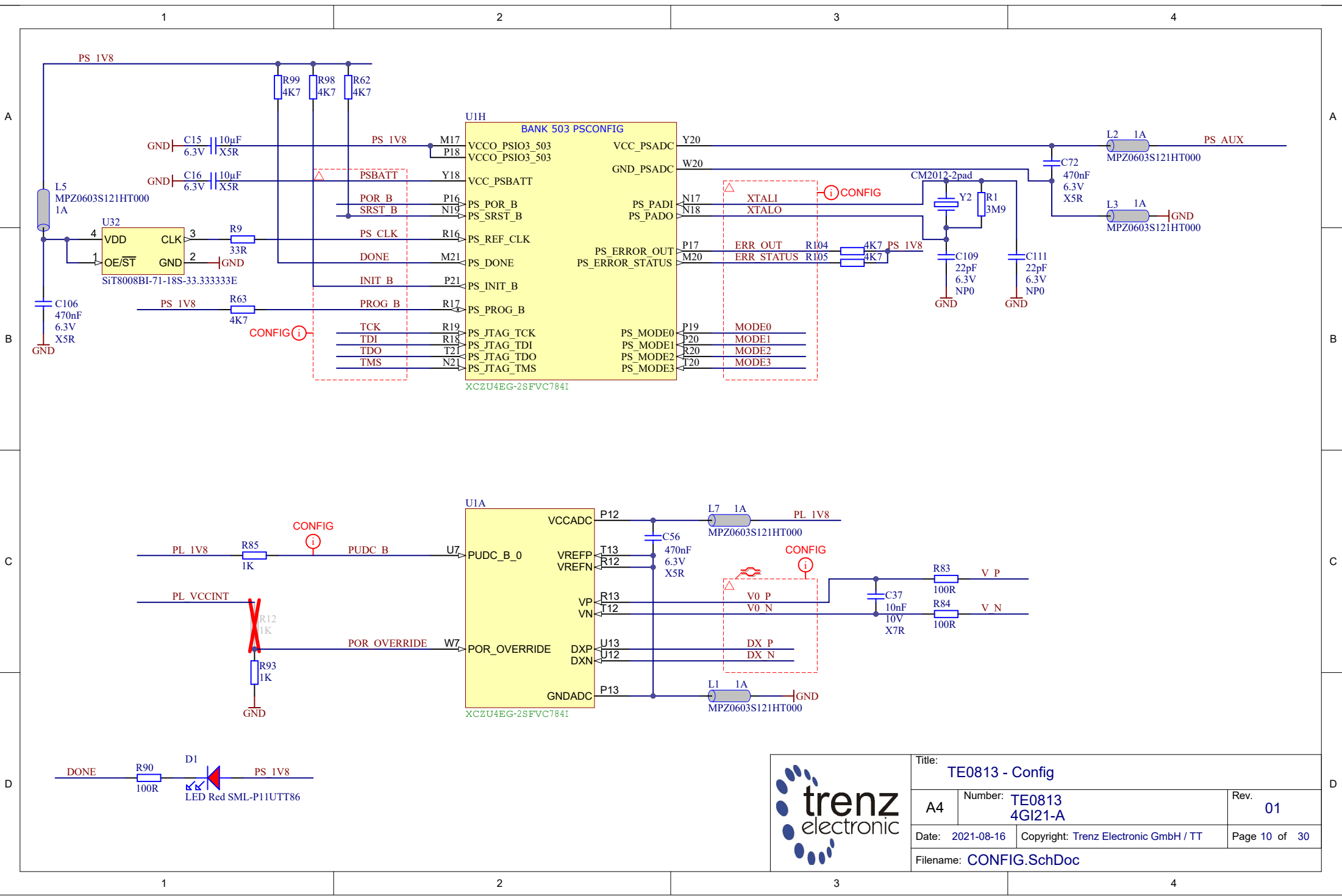
C

D

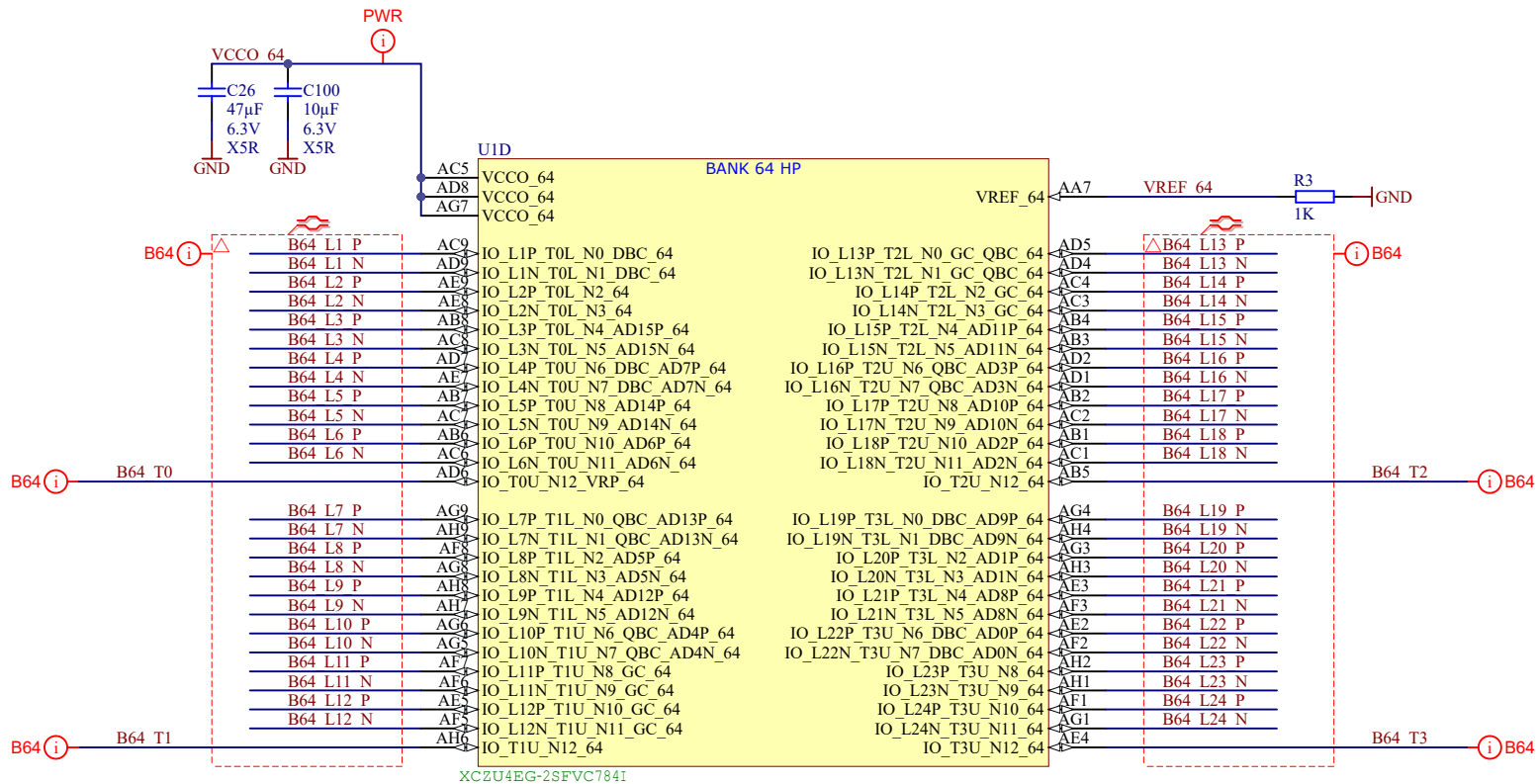
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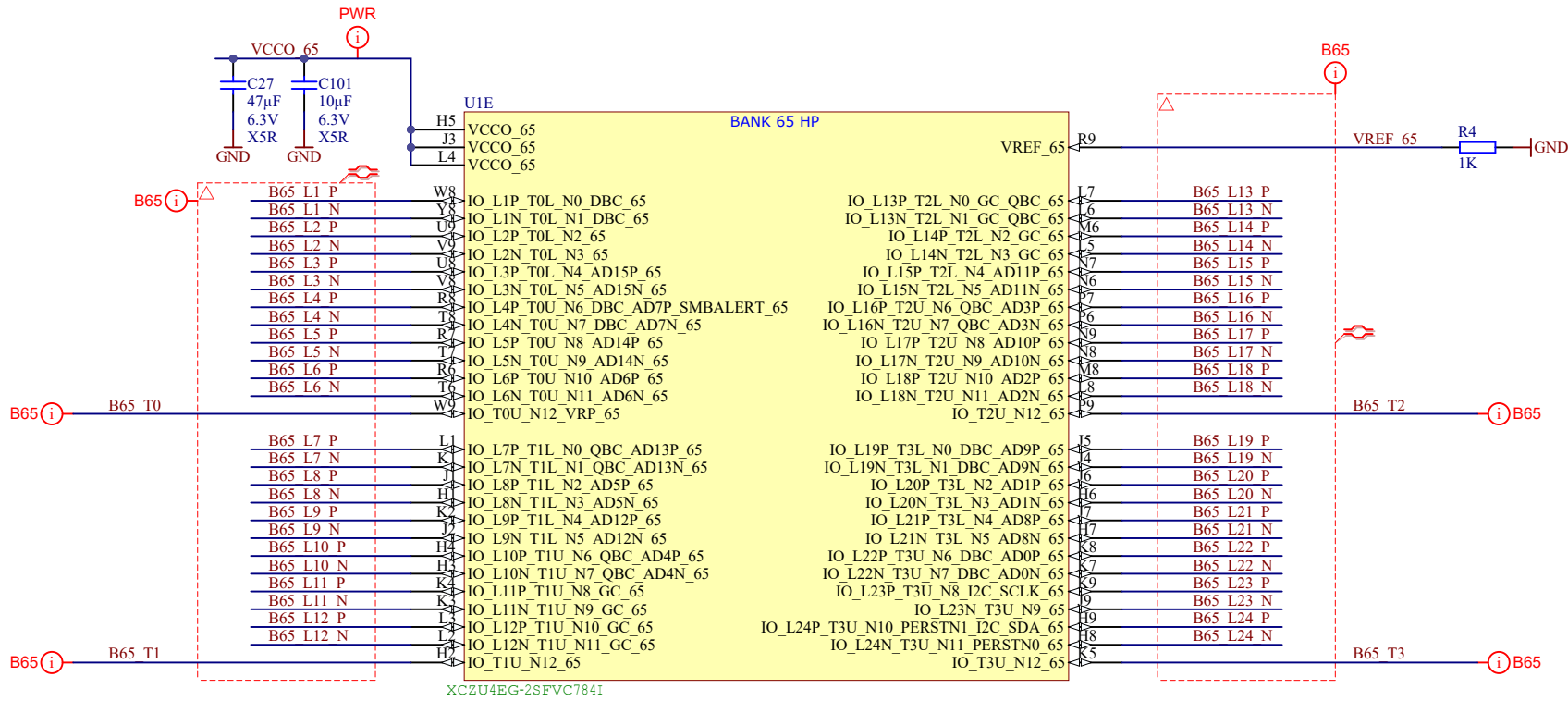
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A4	Number: TE0813 4GI21-A	Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 9 of 30
Filename: B_HD.SchDoc		



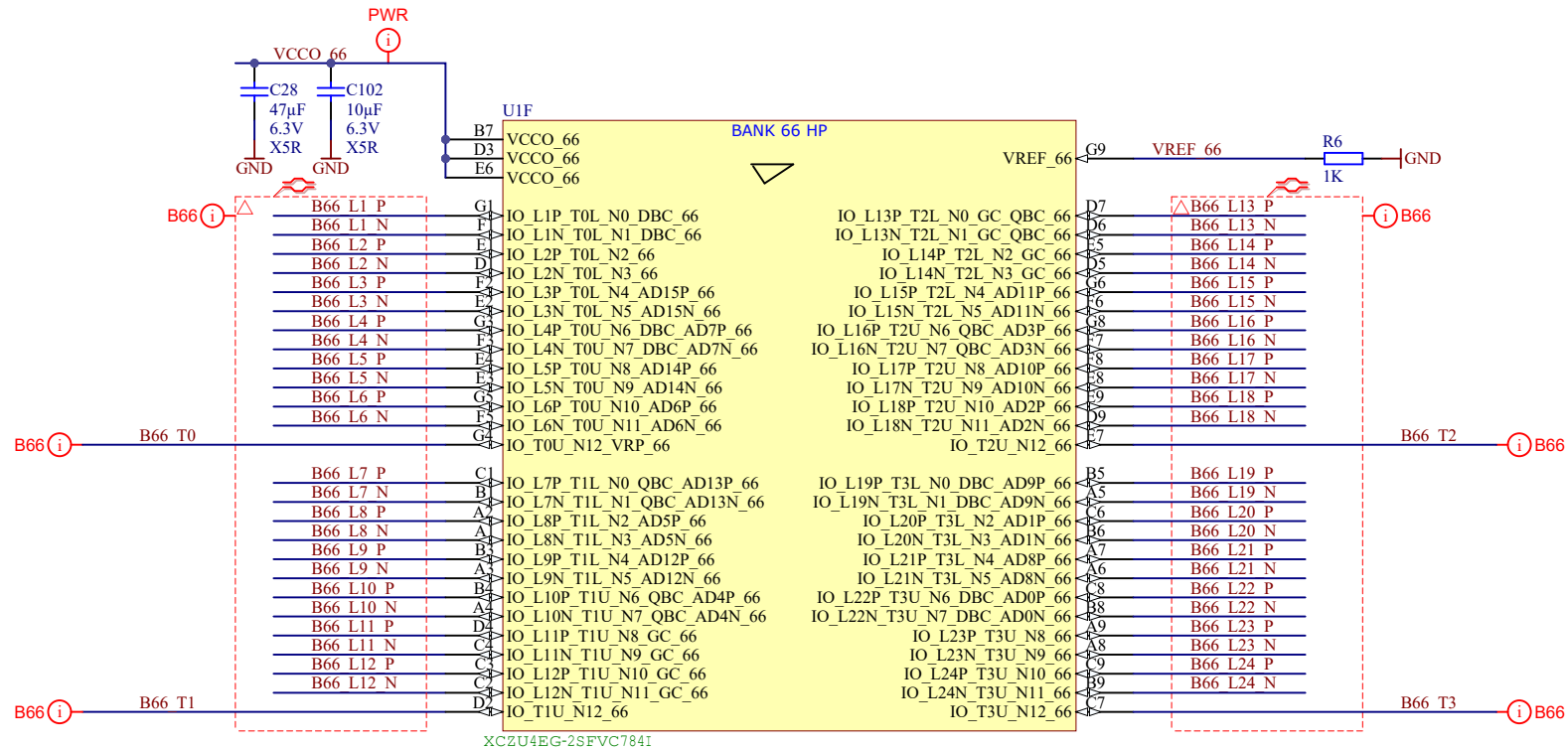

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Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 10 of 30
Filename: CONFIG.SchDoc		



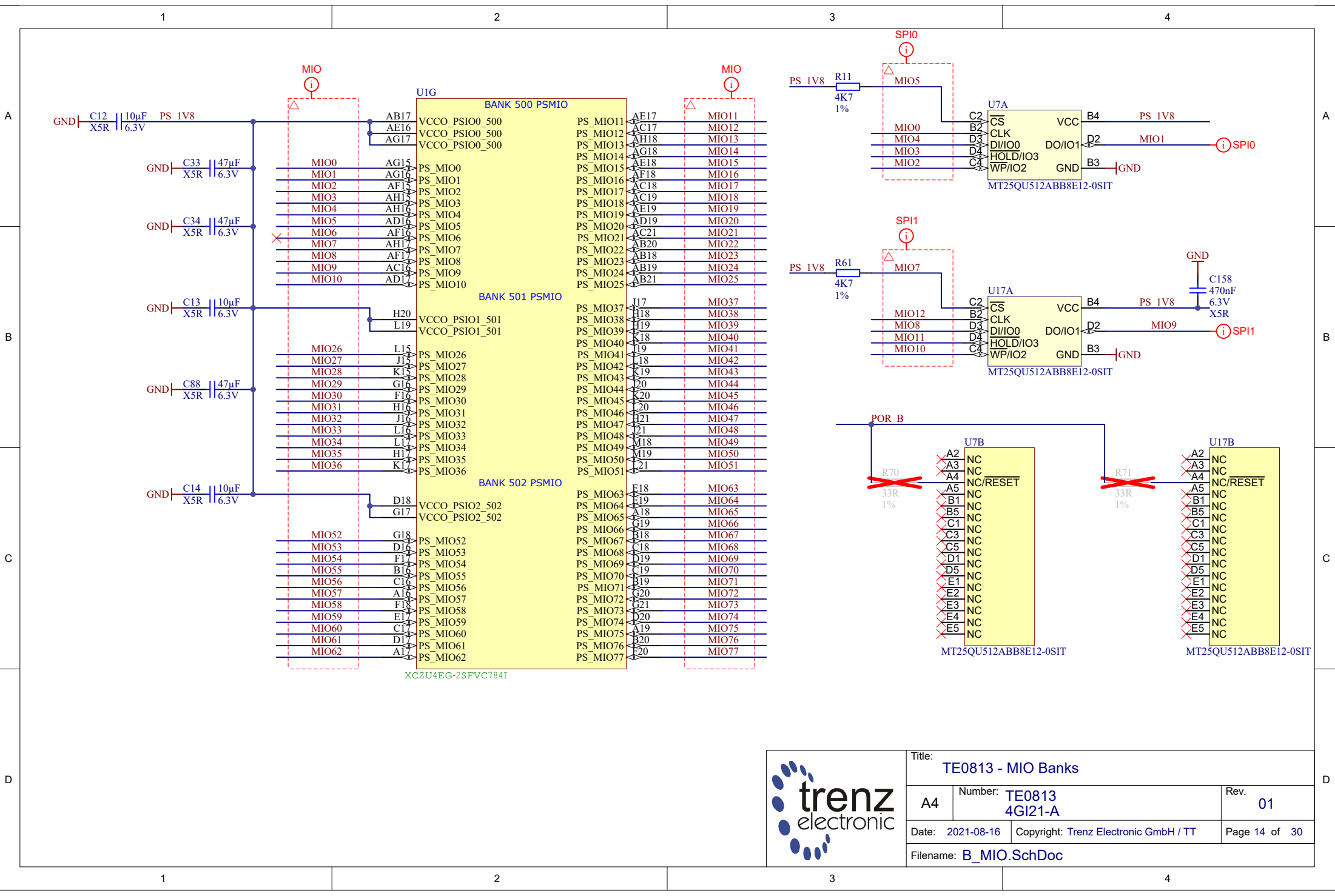
Title: TE0813 - B64		
A4	Number: TE0813 4GI21-A	Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 11 of 30
Filename: B64.SchDoc		




Title: TE0813 - B65		
A4	Number: TE0813 4GI21-A	Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 12 of 30
Filename: B65.SchDoc		

Title: TE0813 - B66		
A4	Number: TE0813 4GI21-A	Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 13 of 30
Filename: B66.SchDoc		



		Title: TE0813 - MIO Banks	
		A4	Number: TE0813 4GI21-A
Date: 2021-08-16		Copyright: Trenz Electronic GmbH / TT	
Date: 2021-08-16		Page 14 of 30	
Filename: B_MIO.SchDoc			

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A

B

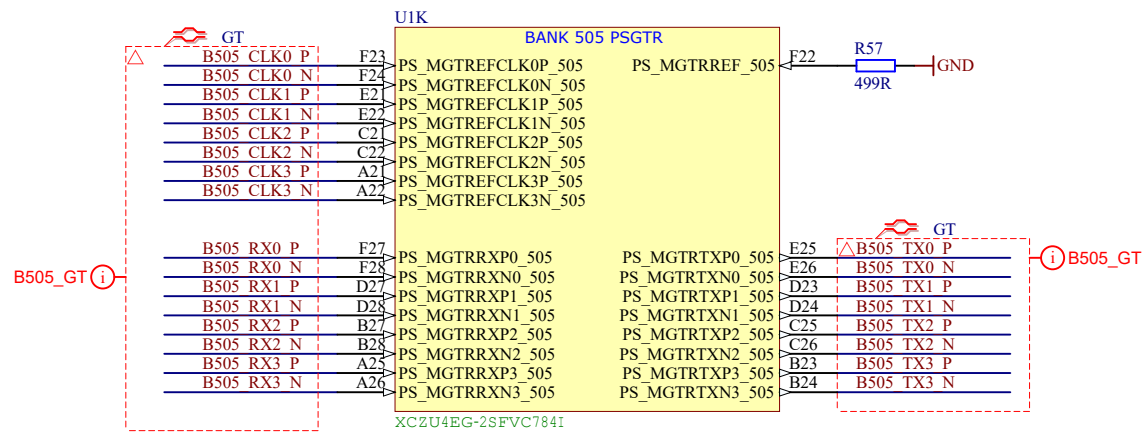
B

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C

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D



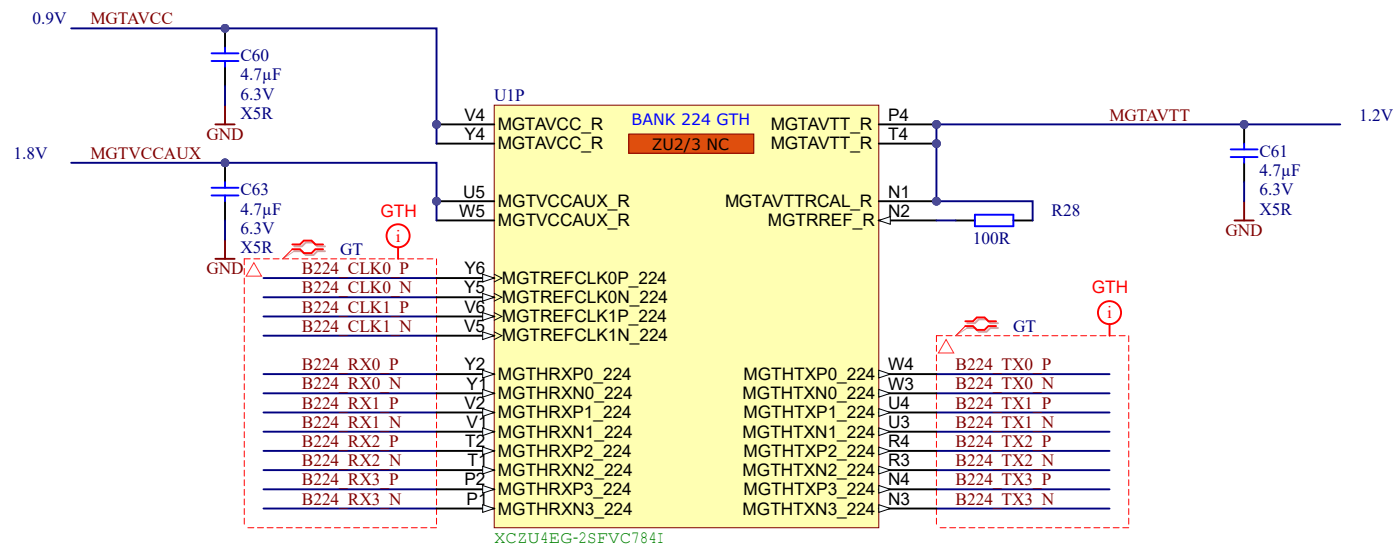
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	A4	Number: TE0813 4GI21-A
	Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT
	Filename: B_PS_GT.SchDoc	
	Rev. 01	Page 16 of 30


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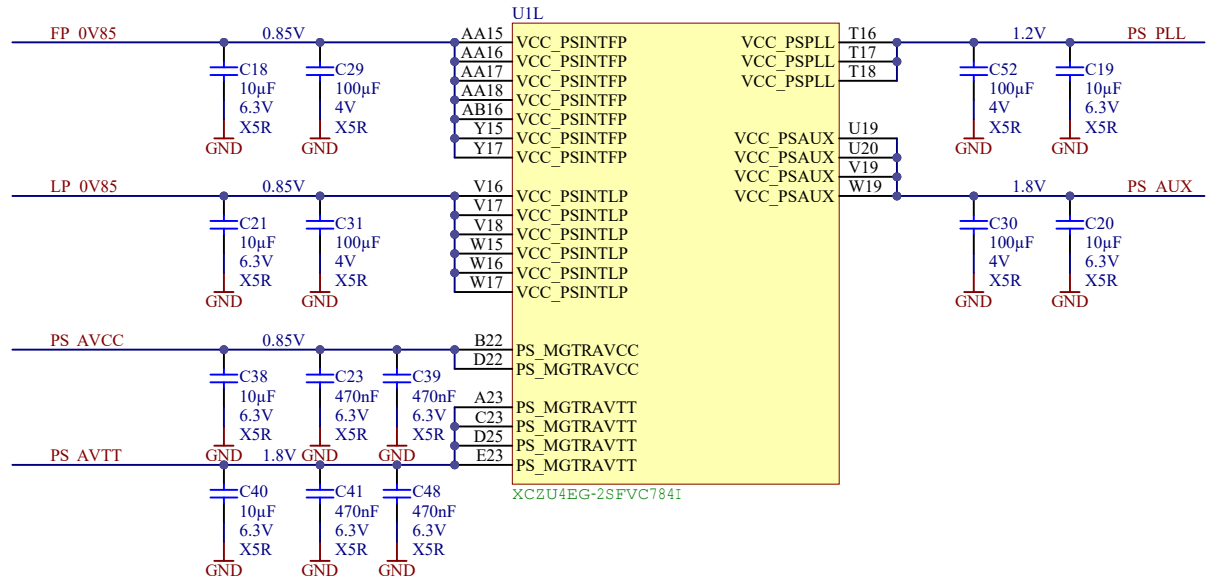
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		Title: TE0813 - B224GTH	
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Date: 2021-08-16		Copyright: Trenz Electronic GmbH / TT	
Date: 2021-08-16		Page 17 of 30	
Filename: B_GT.SchDoc			



		Title: TE0813 - ZU_PS_POWER	
		A4	Number: TE0813 4GI21-A
Date: 2021-08-16		Copyright: Trenz Electronic GmbH / TT	
Filename: ZU_PS_POWER.SchDoc		Page 18 of 30	

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A

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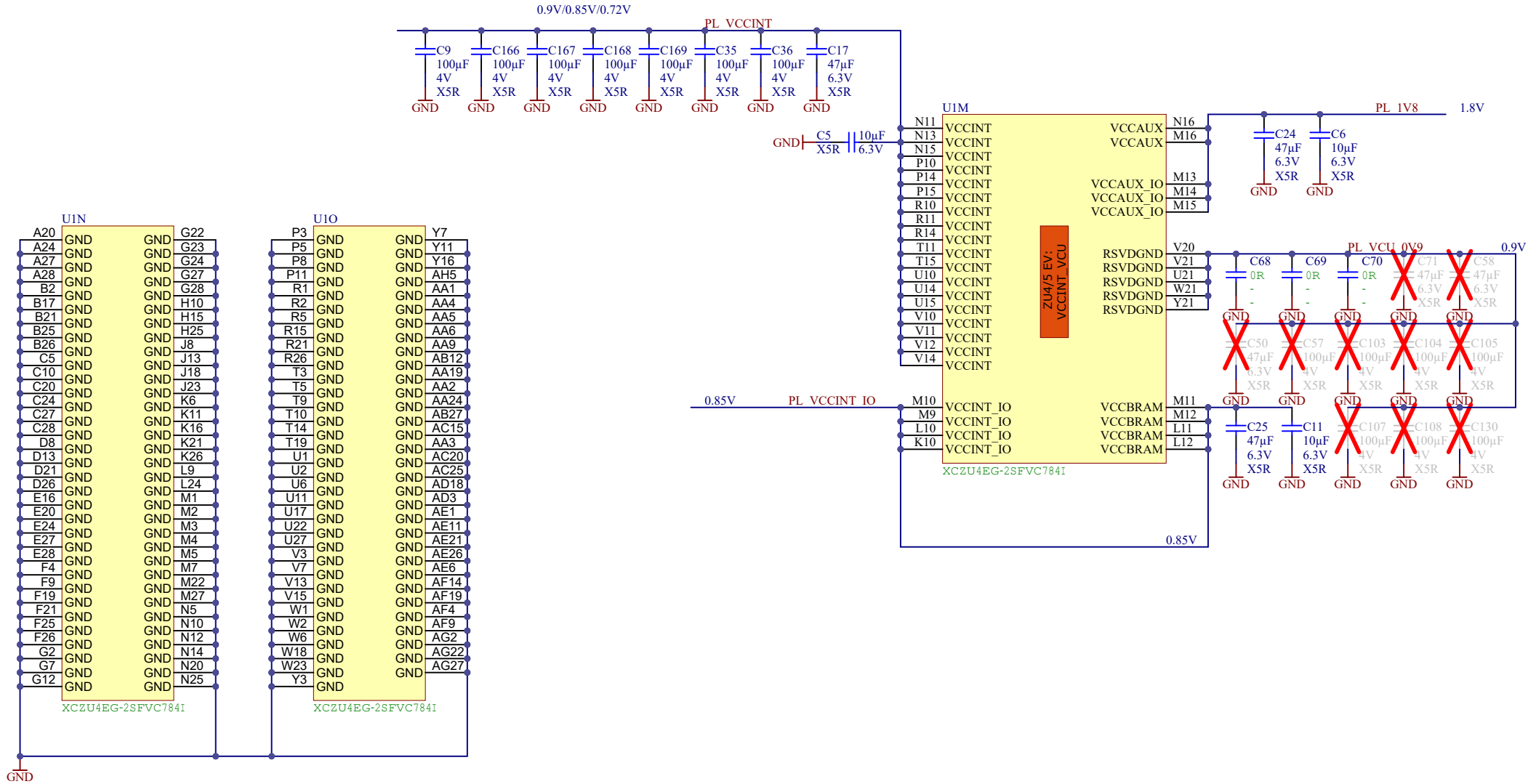
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C

D

D



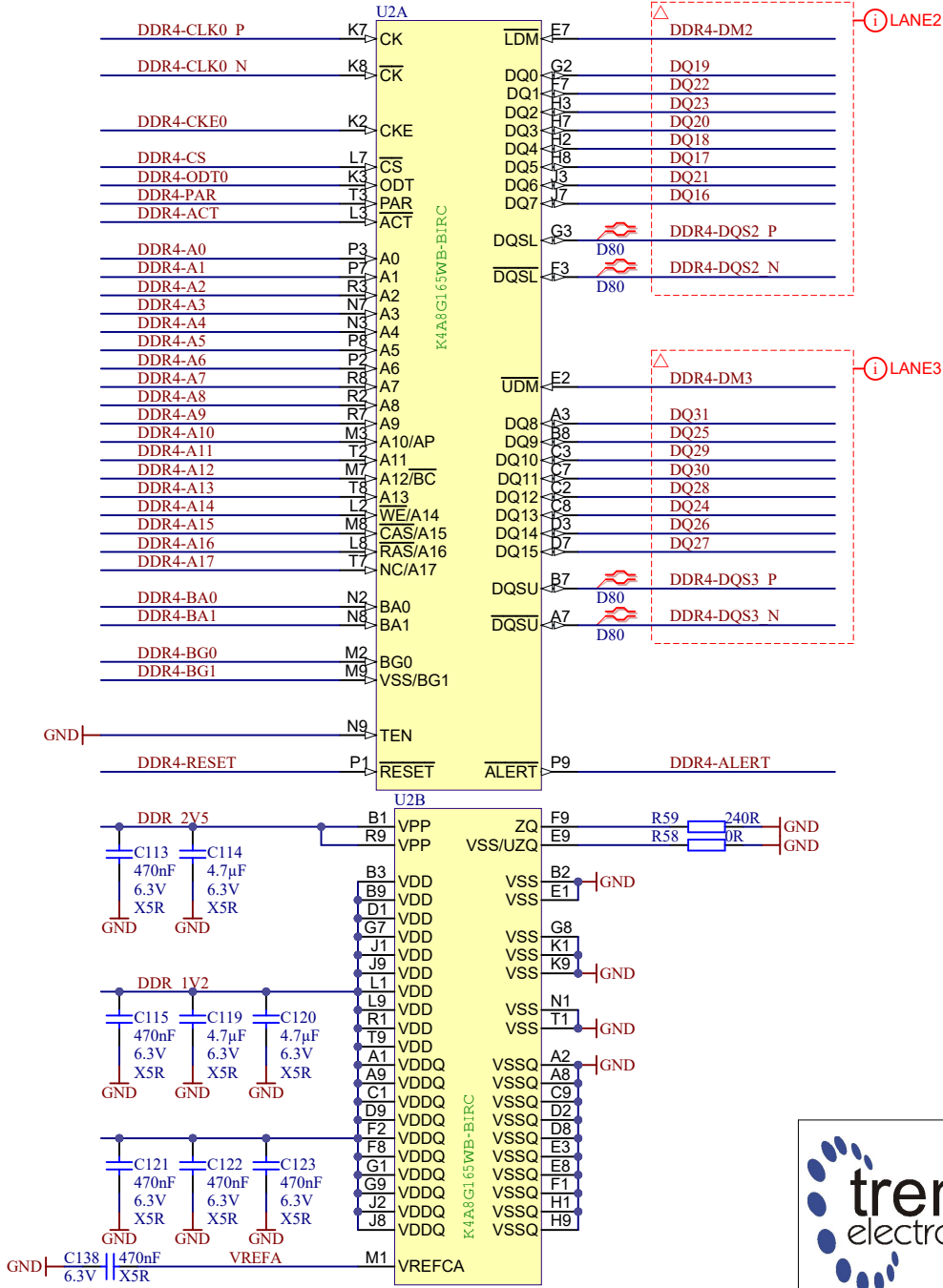
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	Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 19 of 30
	Filename: ZU_POWER.SchDoc		

1

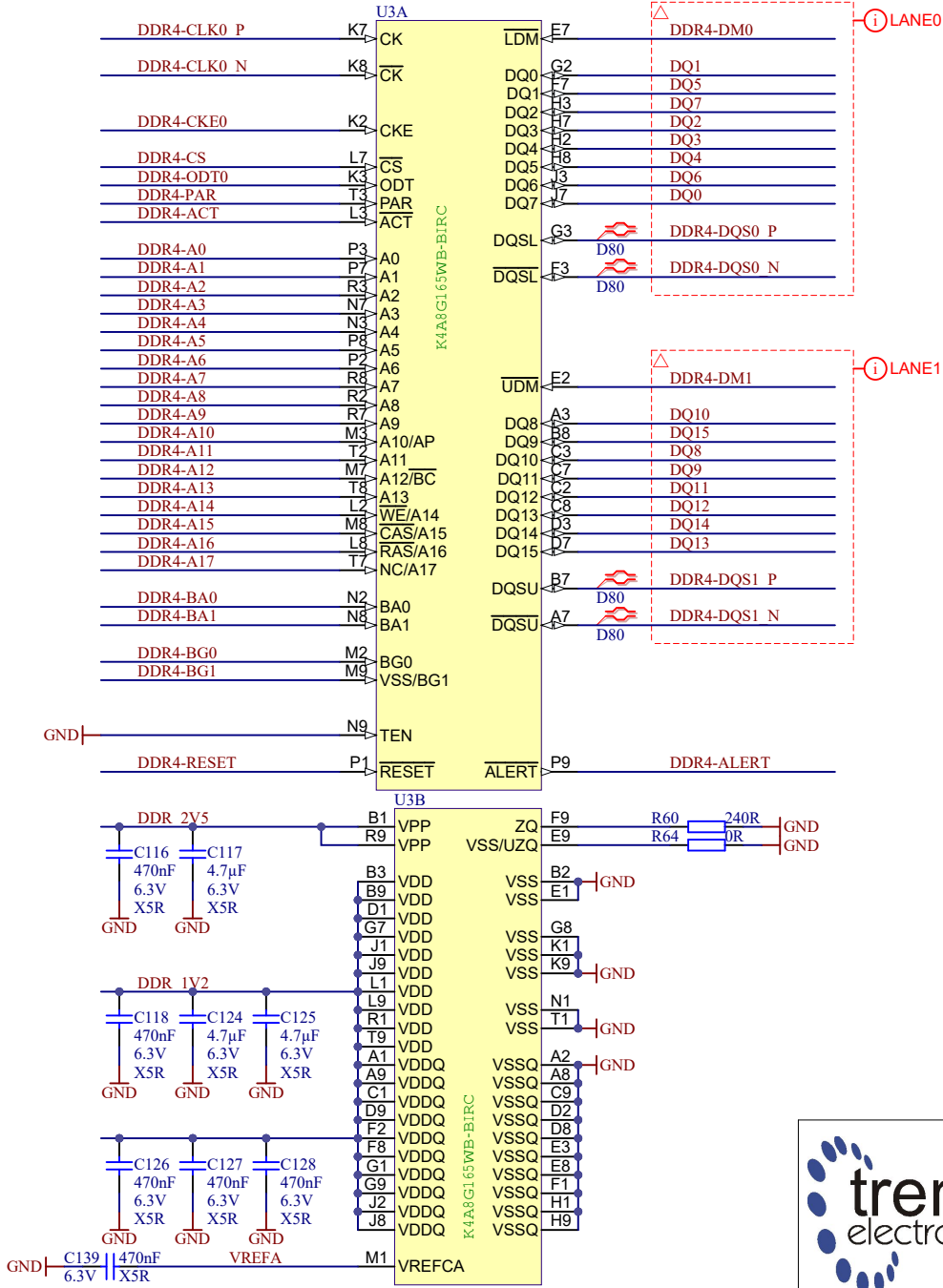

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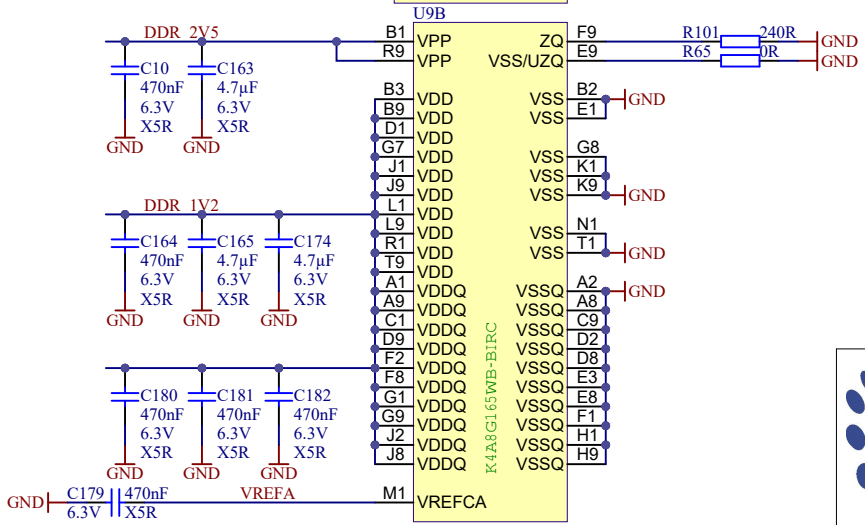
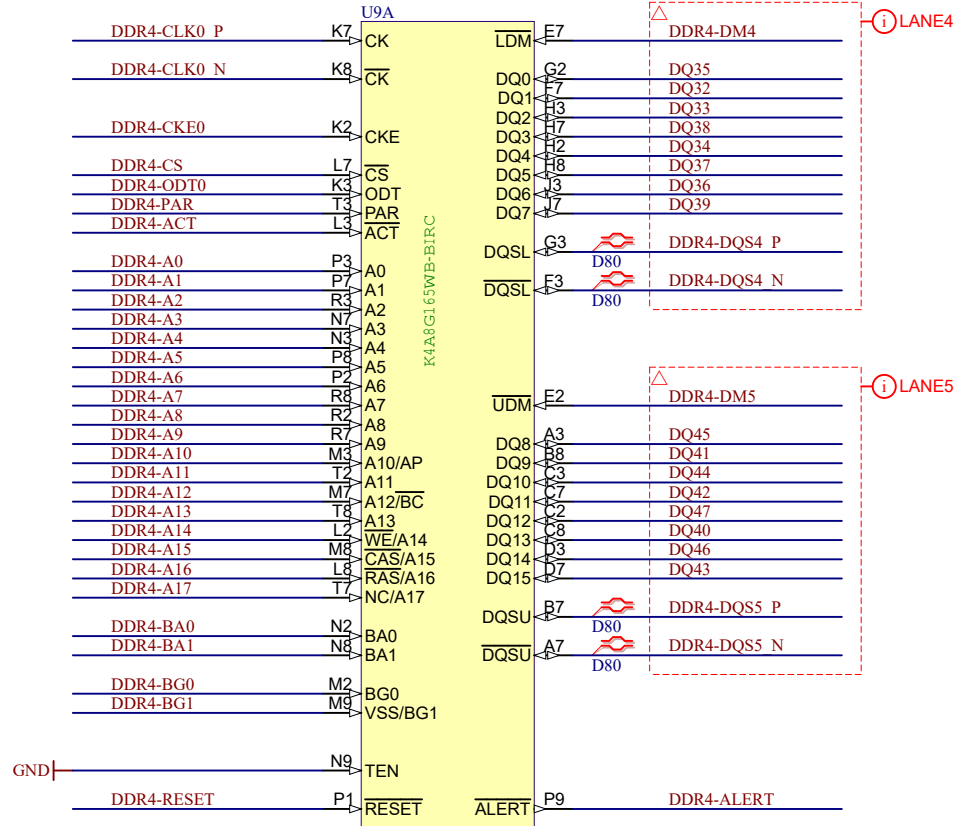
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Title: TE0813 - DDR4_1_RAM		
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Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 20 of 30
Filename: DDR4-RAM.SchDoc		

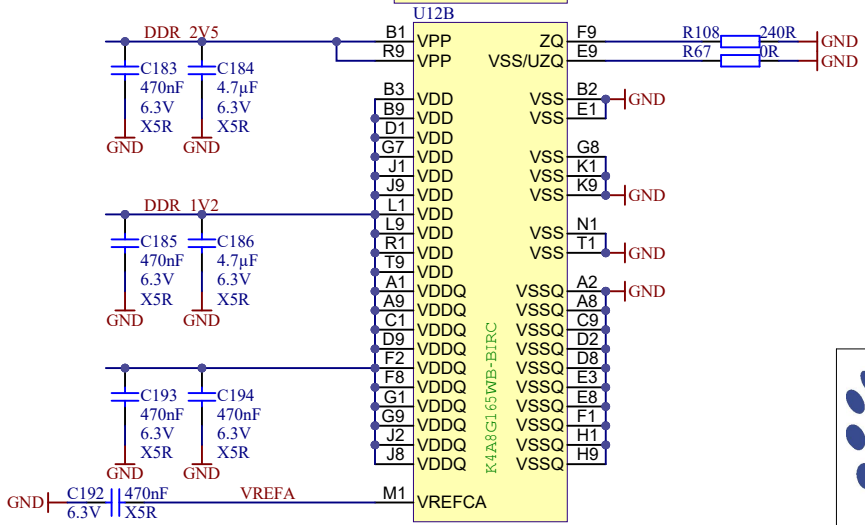
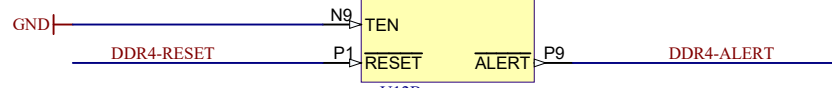
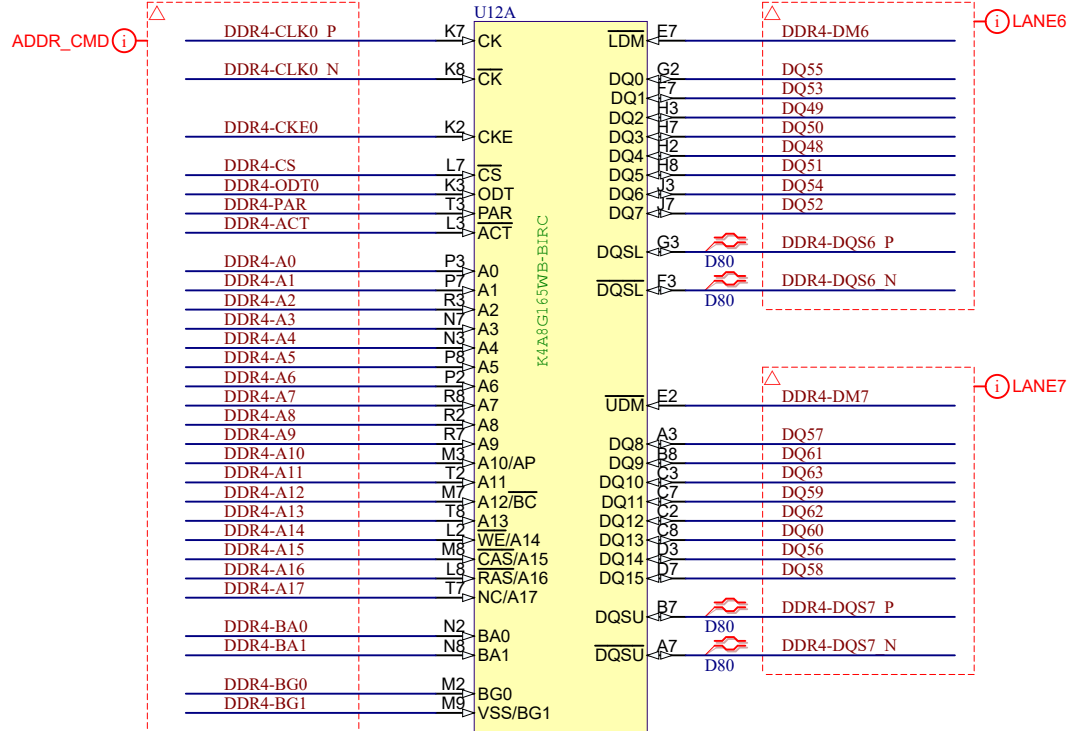



Title: TE0813 - DDR4_2_RAM		
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Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 21 of 30
Filename: DDR4-RAM_2.SchDoc		

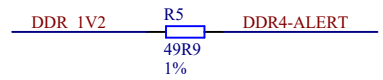
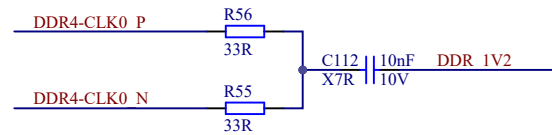
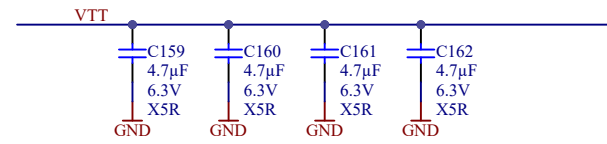
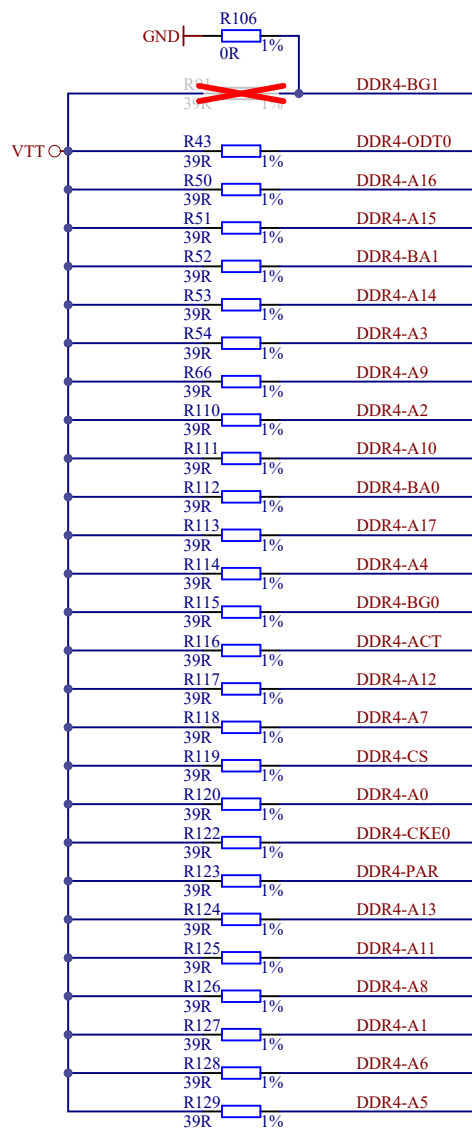


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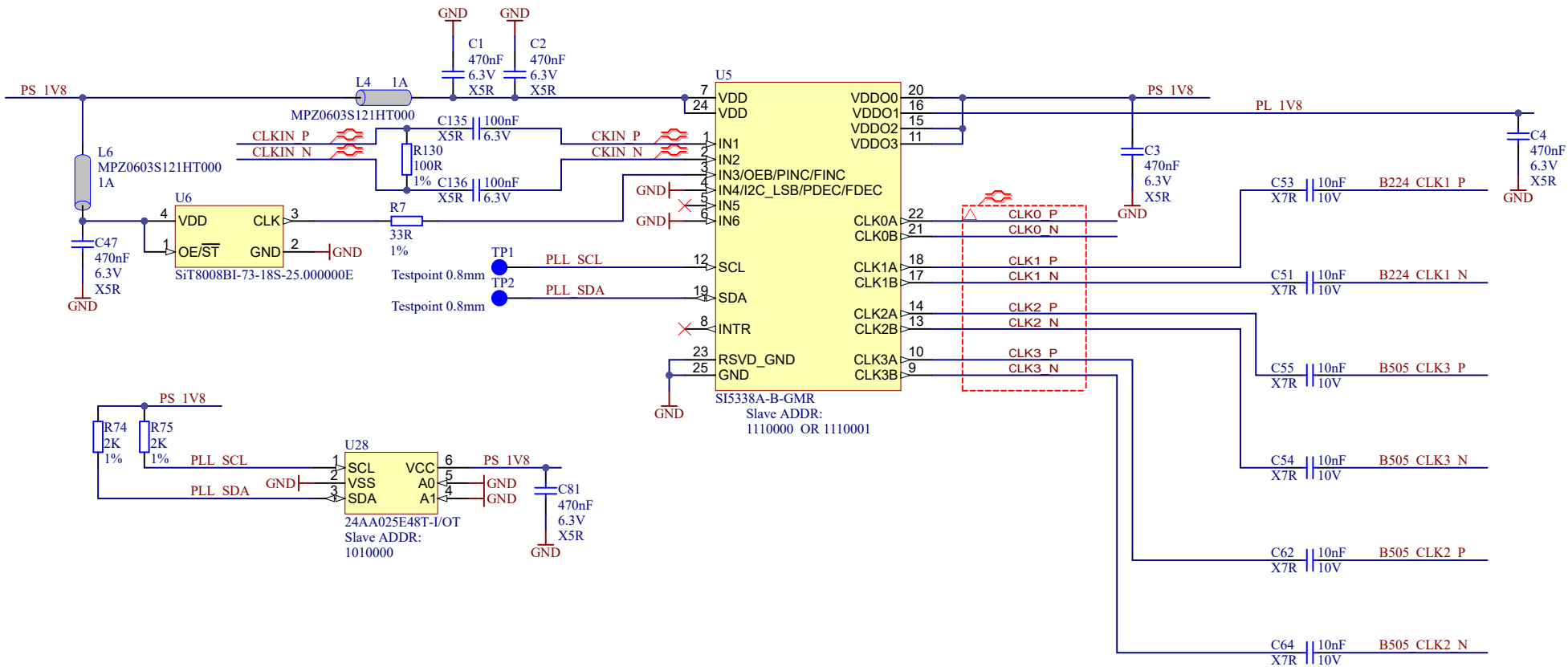
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Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 22 of 30
Filename: DDR4-RAM_3.SchDoc		




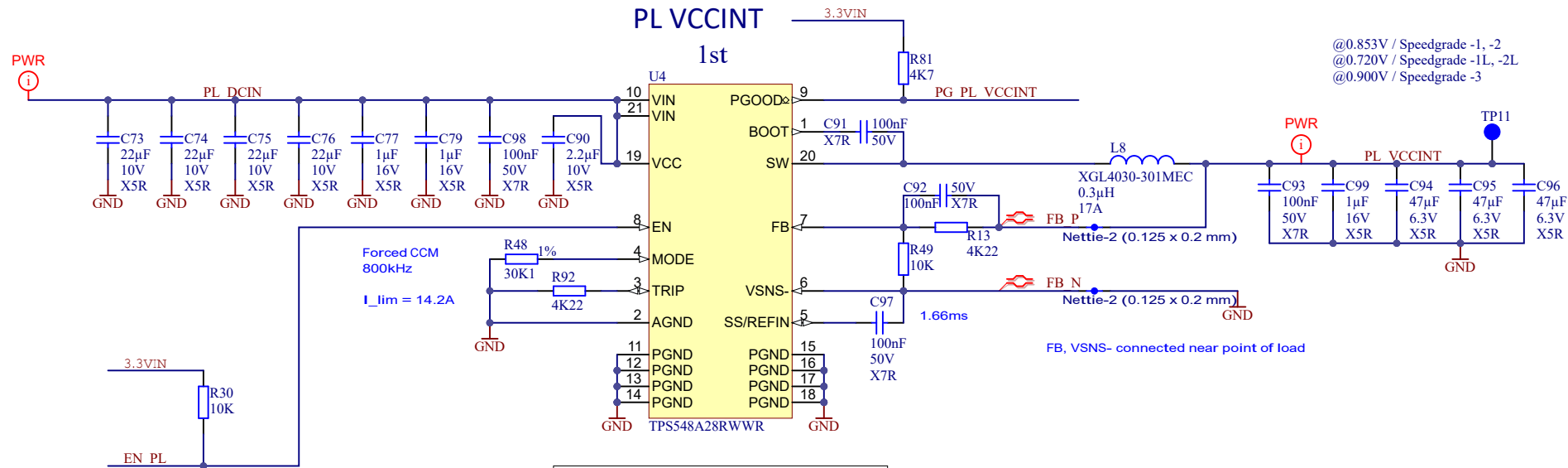
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A4	Number: TE0813 4GI21-A	Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 23 of 30
Filename: DDR4-RAM_4.SchDoc		



Title: TE0813 - DDR4_TERM		
A4	Number: TE0813 4GI21-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 4GI21-A
Date: 2021-08-16		Copyright: Trenz Electronic GmbH / TT		Page 25 of 30
Filename: Clock.SchDoc				



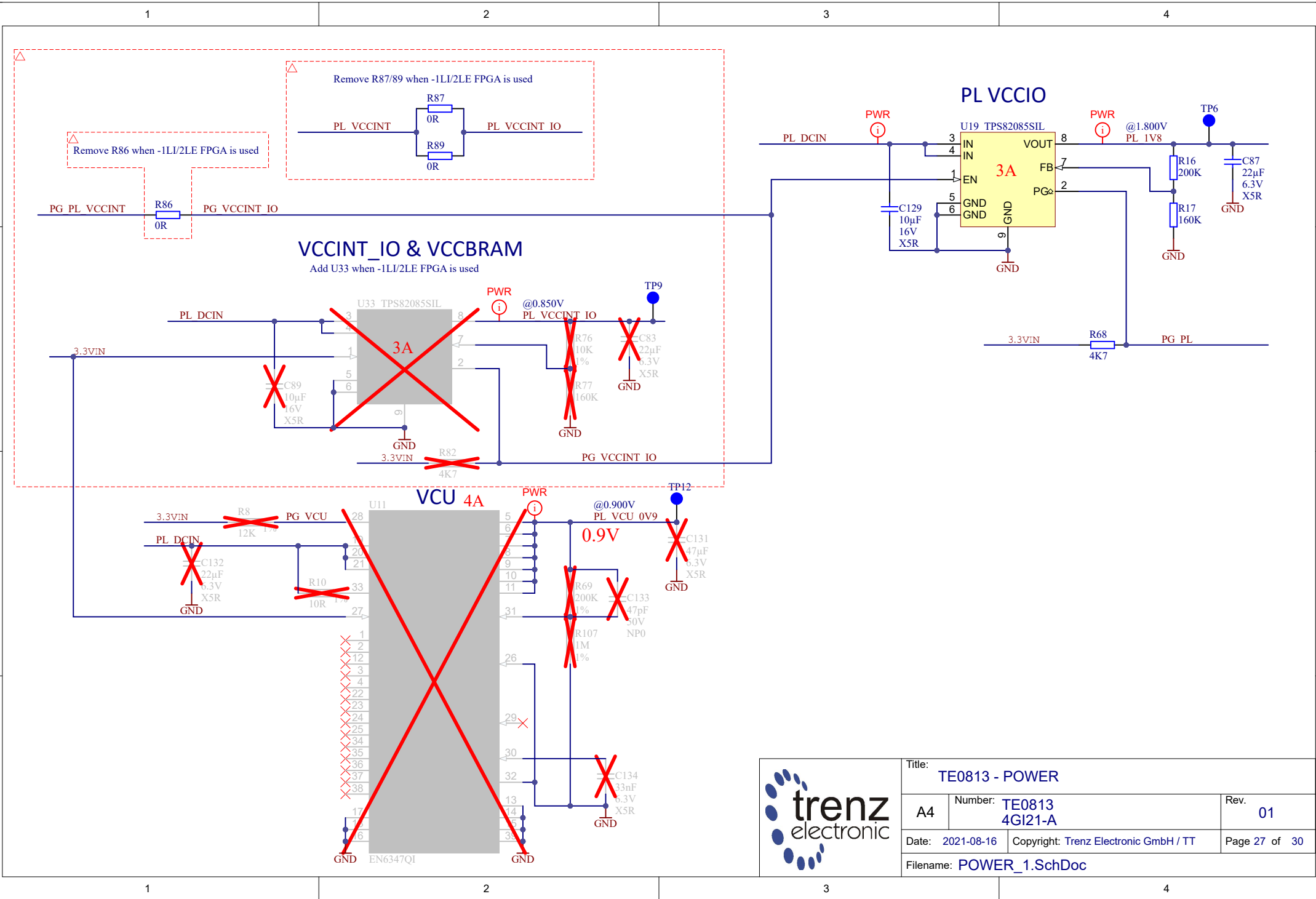
@0.853V / Speedgrade -1, -2
 @0.720V / Speedgrade -1L, -2L
 @0.900V / Speedgrade -3


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)

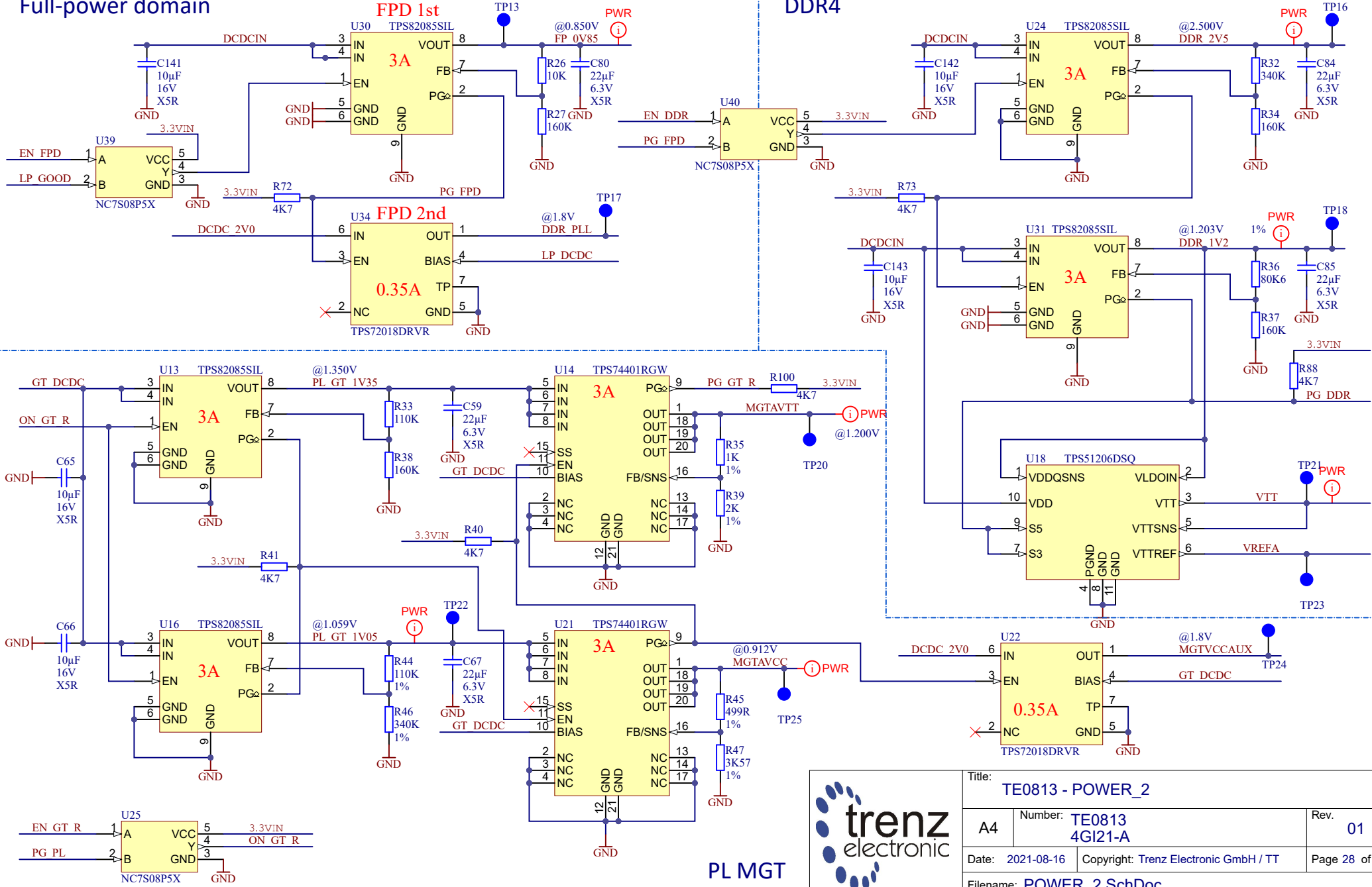
	Title: TE0813 - POWER		
	A4	Number: TE0813 4GI21-A	Rev. 01
	Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 26 of 30
	Filename: POWER.SchDoc		



			Title: TE0813 - POWER	
			A4	Number: TE0813 4G121-A
Date: 2021-08-16		Copyright: Trenz Electronic GmbH / TT		Page 27 of 30
Filename: POWER_1.SchDoc				

Full-power domain

DDR4



Title: TE0813 - POWER_2		
A4	Number: TE0813 4GI21-A	Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 28 of 30
Filename: POWER_2.SchDoc		

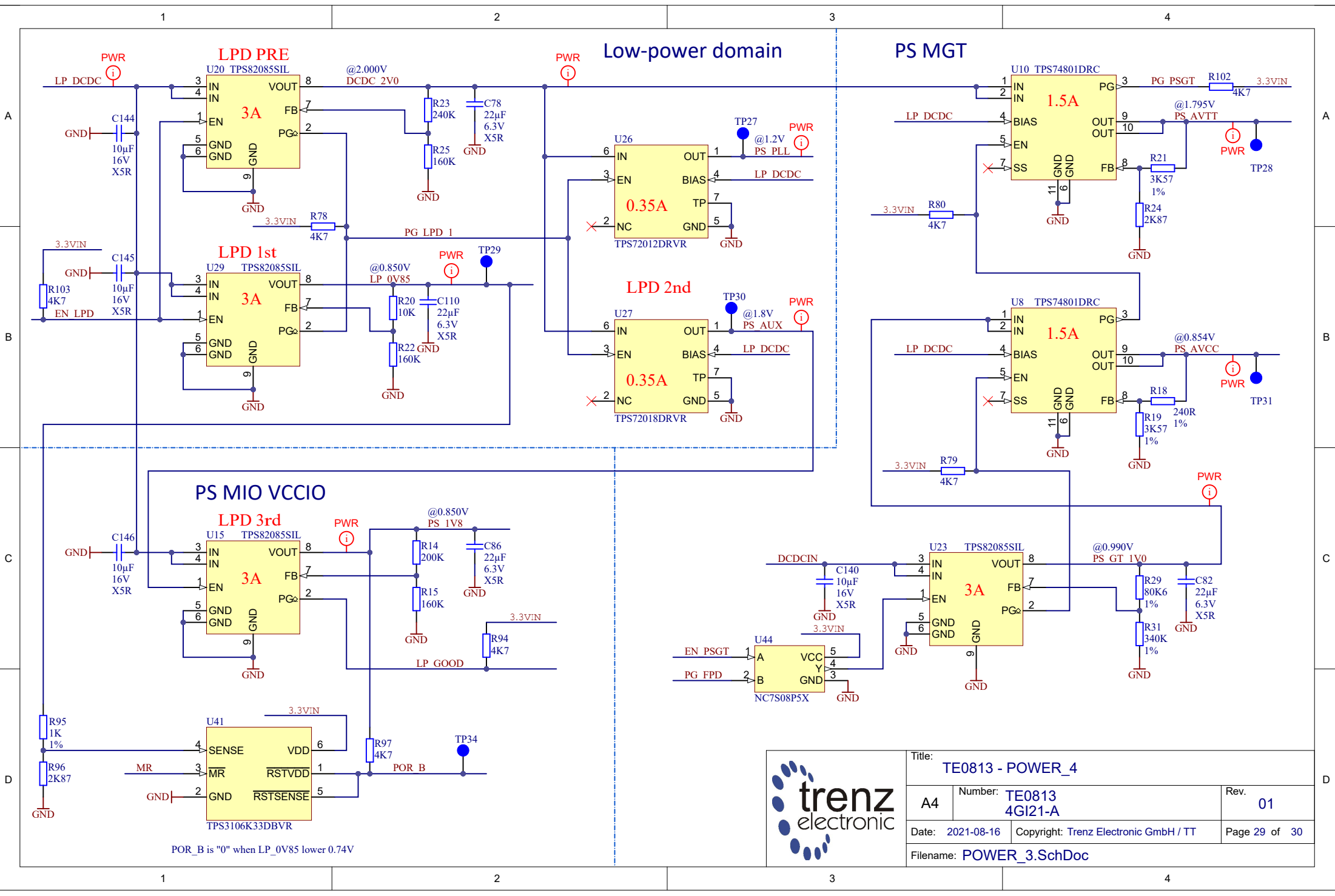
1

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PL MGT



POR_B is "0" when LP_0V85 lower 0.74V



Title: TE0813 - POWER_4		
A4	Number: TE0813 4GI21-A	Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 29 of 30
Filename: POWER_3.SchDoc		

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A

A

B

B


C

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D

D

REV	DATE	Description	
-01	2021-05	Initial revision	VT

	Title: TE0813 - Revision History		
	A4	Number: TE0813 4GI21-A	Rev. 01
	Date: 2021-07-26	Copyright: Trenz Electronic GmbH	Page 30 of 30
	Filename: Revision Changes.SchDoc		

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