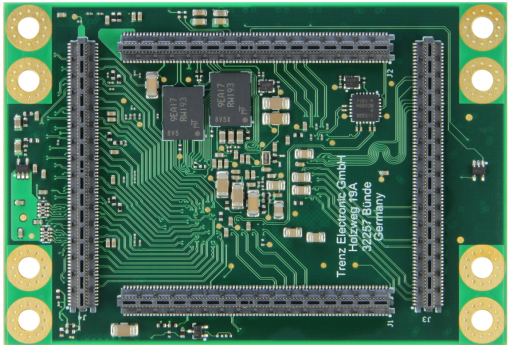
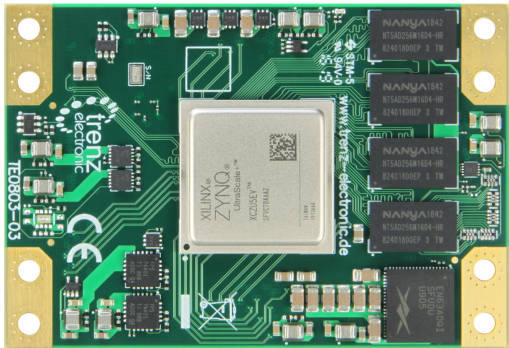


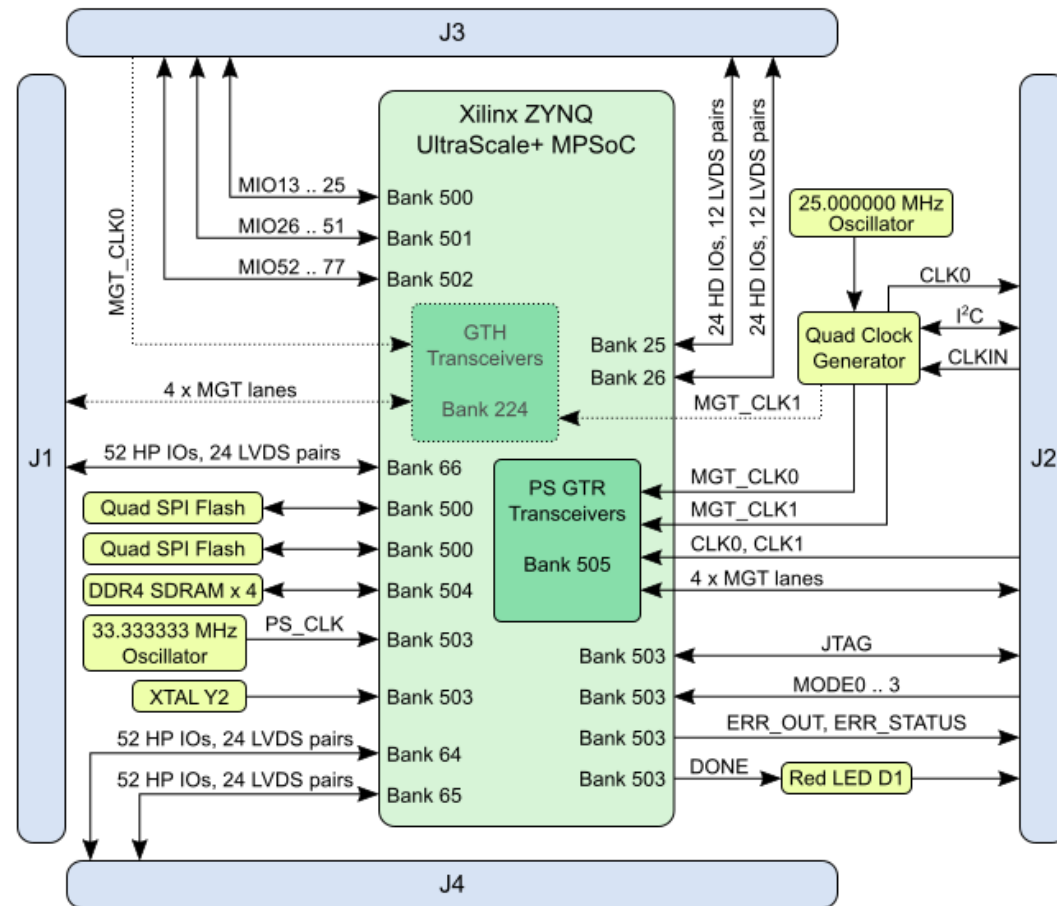


Regarding the usage of our schematics and alike documentation for Trenz module TE0803.

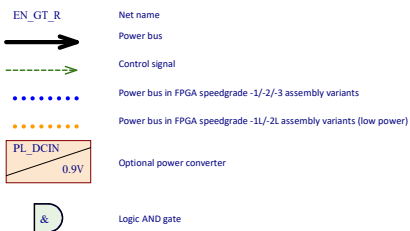
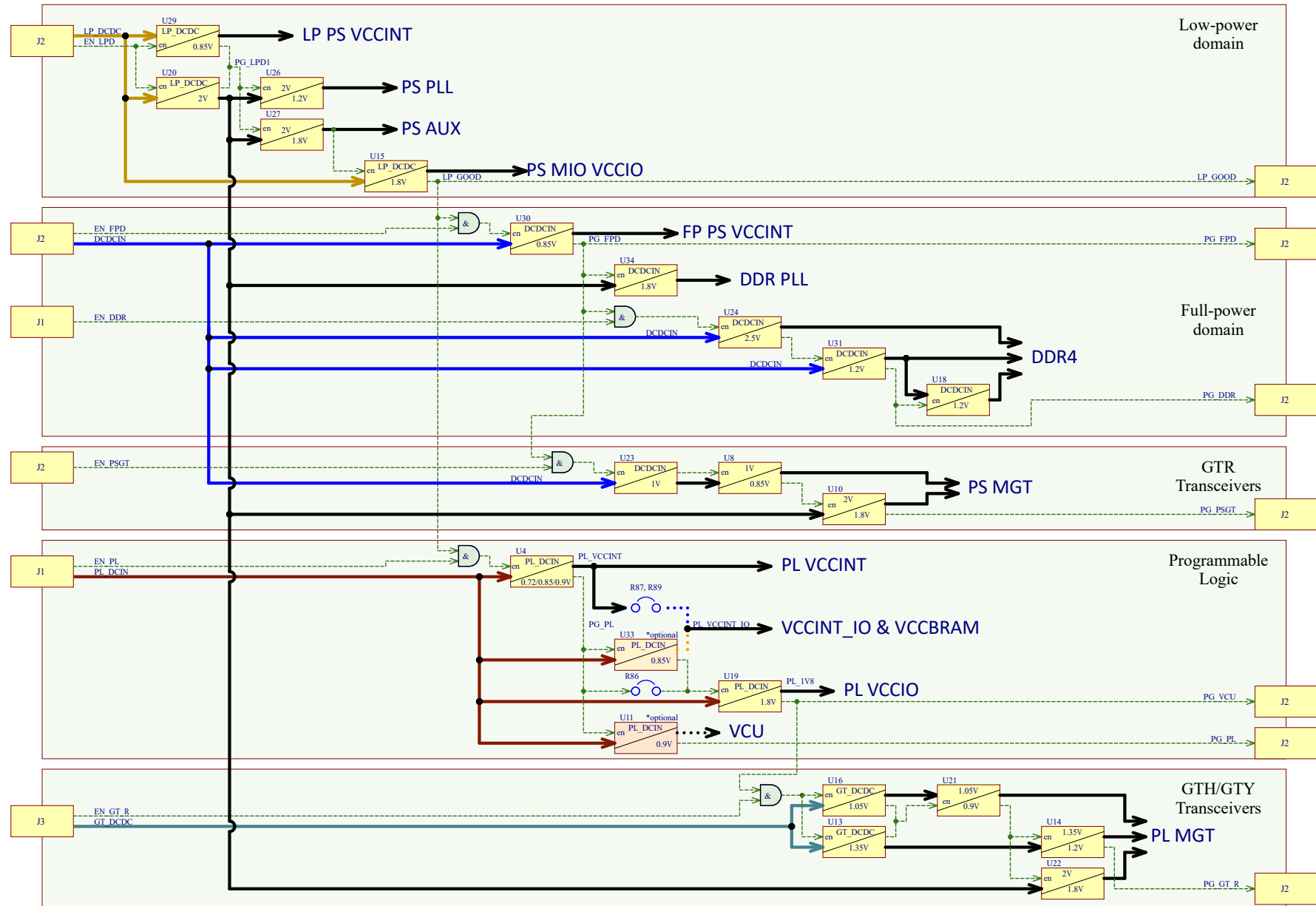
Project is protected under copyright and we strongly and strictly prohibit the reverse engineering or recreation, even if the design is just adapted or modified. TE0803 is protected under such right and in case of plagiarism we will have to do anything necessary in order to protect our assets.

Schematics and other handouts serve for informational purposes only!

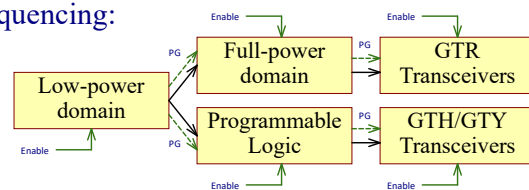
	Title: TE0803		
	A4	Number: TE0803 4DE11-A	Rev. 04
	Date: 2021-01-19	Copyright: Trenz Electronic GmbH / TT	Page 1 of 30
	Filename: Legal Notices Modules.SchDoc		



Title: TE0803 - System Overview		
A4	Number: TE0803 4DE11-A	Rev. 04
Date: 2021-01-19	Copyright: 2015 Trenz Electronic GmbH	Page 2 of 30
Filename: TE0803-Overview.SchDoc		



Power-on sequencing:

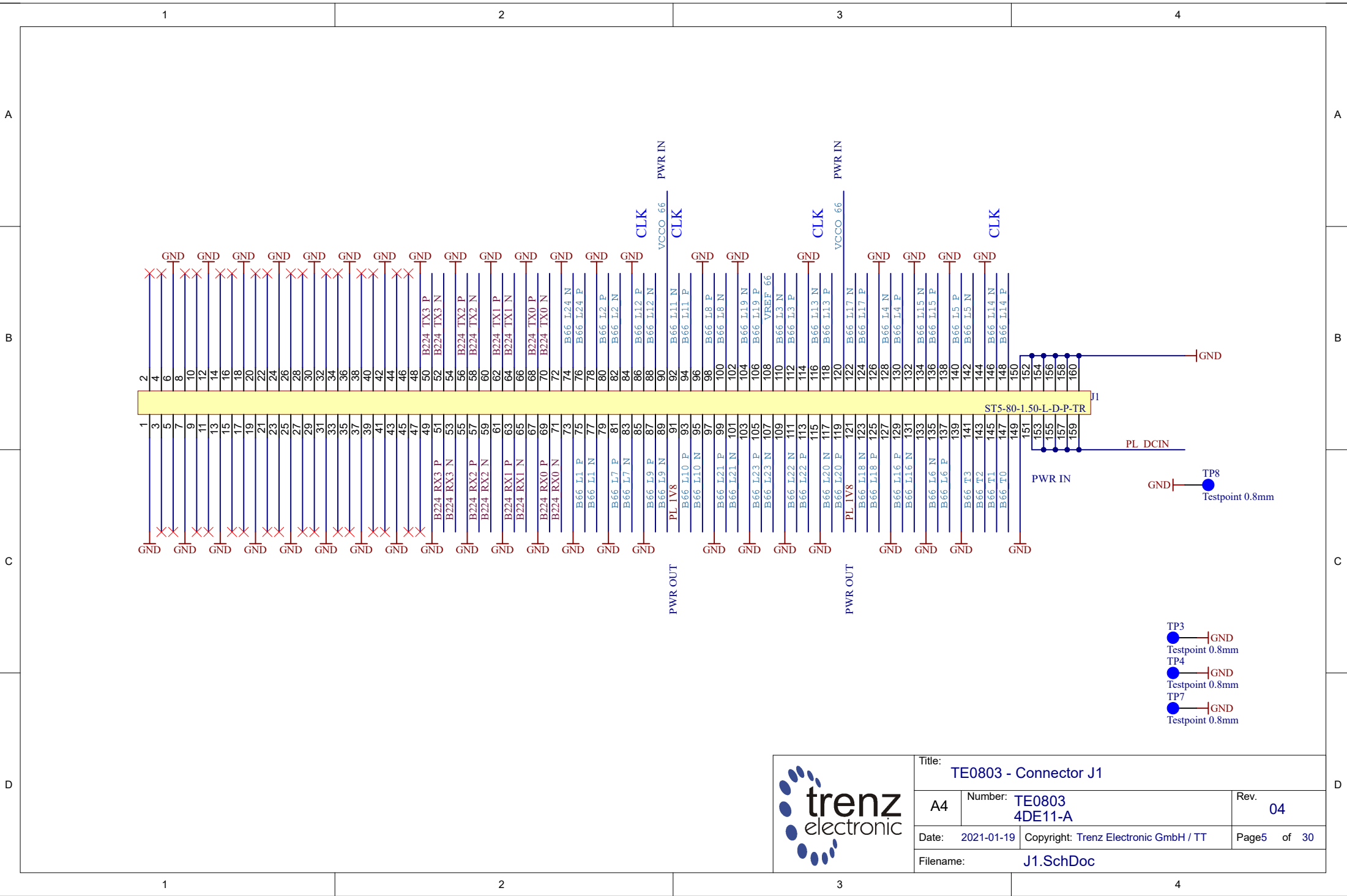


Title: TE0803 - Power Diagram		
A3	Number: TE0803 4DE11-A	Rev. 04
Datum: 2021-01-19	Copyright: Trenz Electronic GmbH / TT	Page 3 of 30
Filename: Power_Diagram.SchDoc		



Title: TE0803		
A4	Number: TE0803 4DE11-A	Rev. 04
Date: 2021-01-19	Copyright: Trenz Electronic GmbH / TT	Page4 of 30
Filename: TE0803.SchDoc		

Assembly variant	4DE11-A
Created by	
Modified by	
Modified at	
SVN Revision	15880



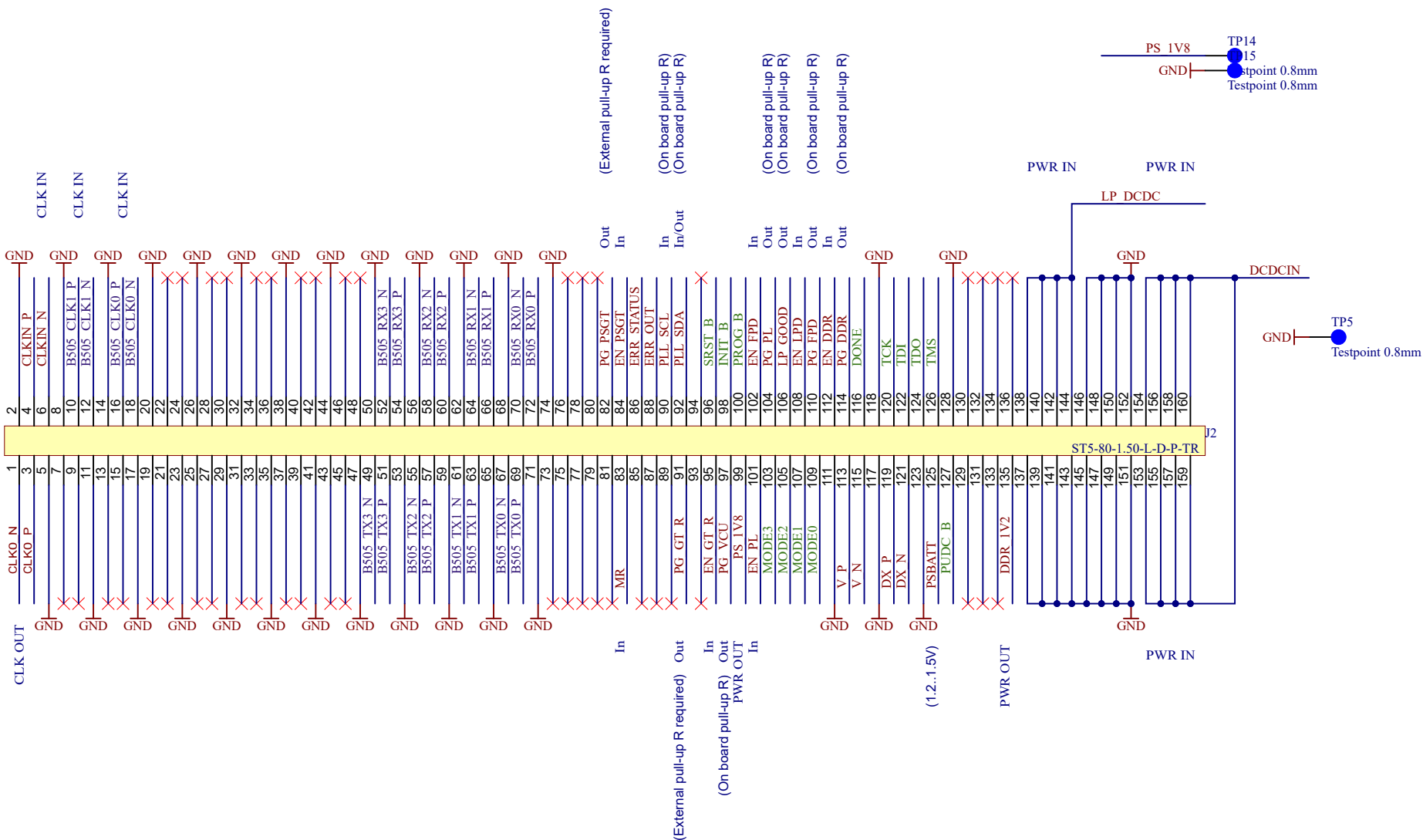
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	Date: 2021-01-19	Copyright: Trenz Electronic GmbH / TT	Page5 of 30
	Filename: J1.SchDoc		

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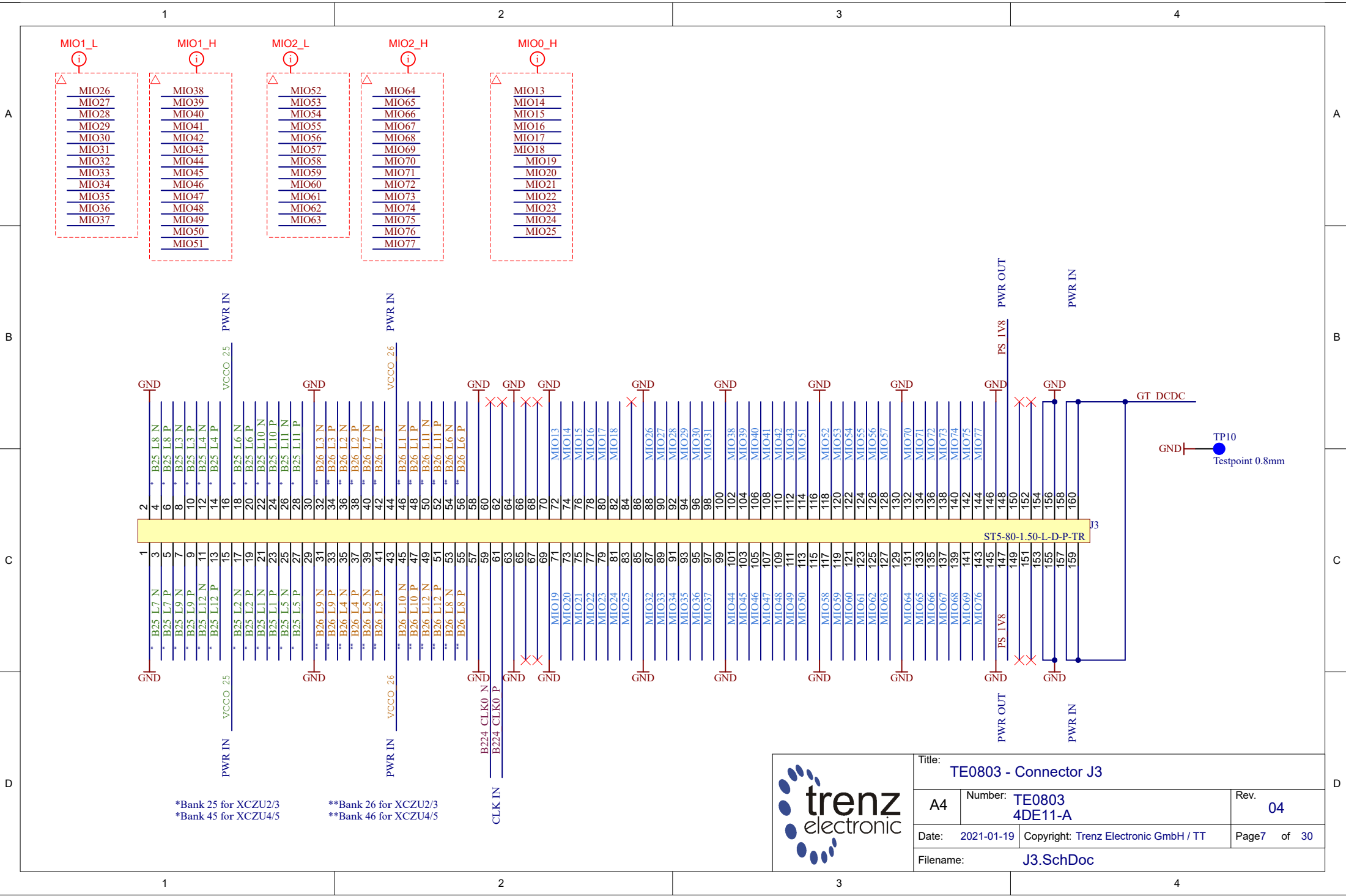
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Date: 2021-01-19	Copyright: Trenz Electronic GmbH / TT	Page 6 of 30
Filename: J2.SchDoc		

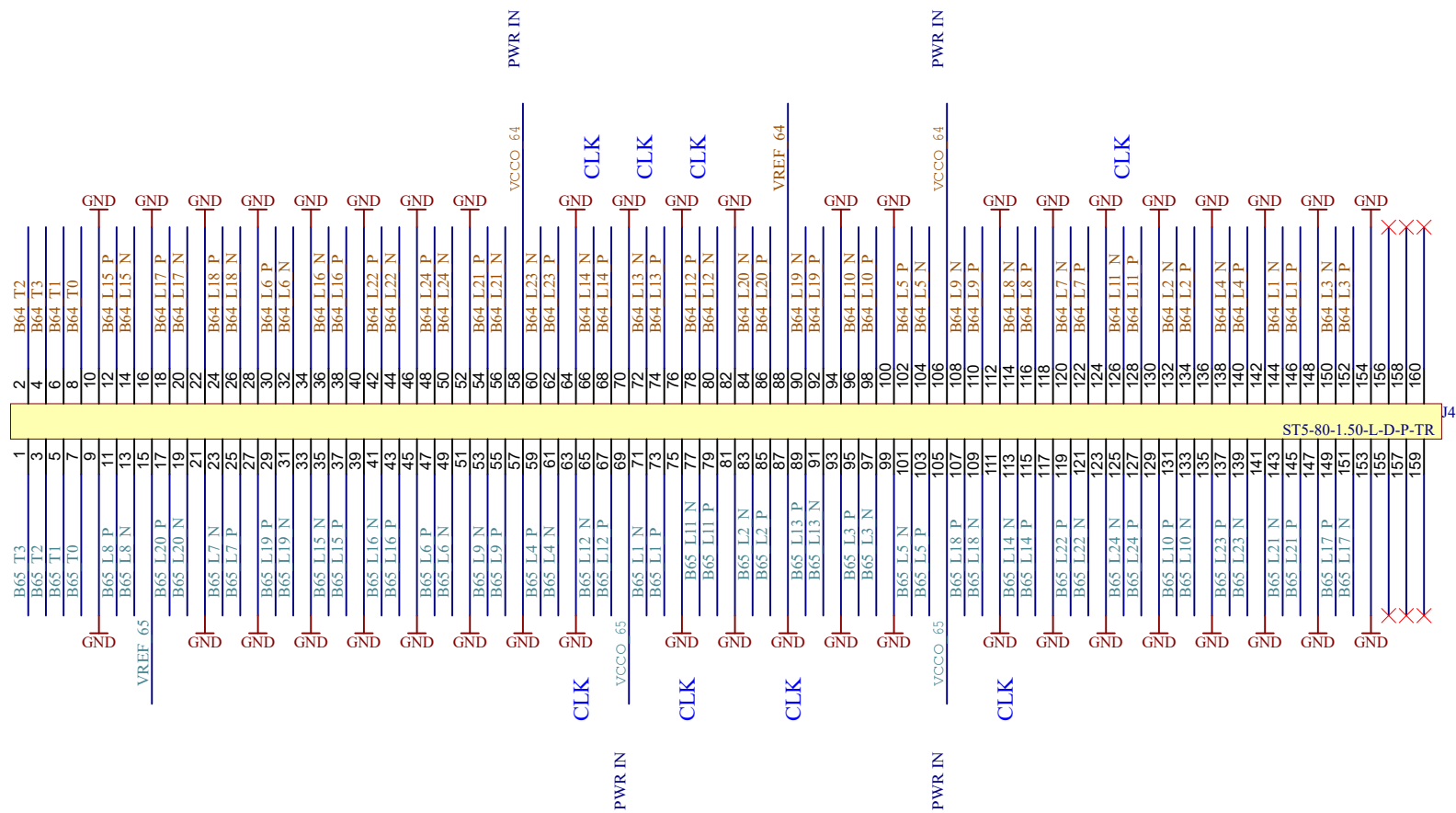
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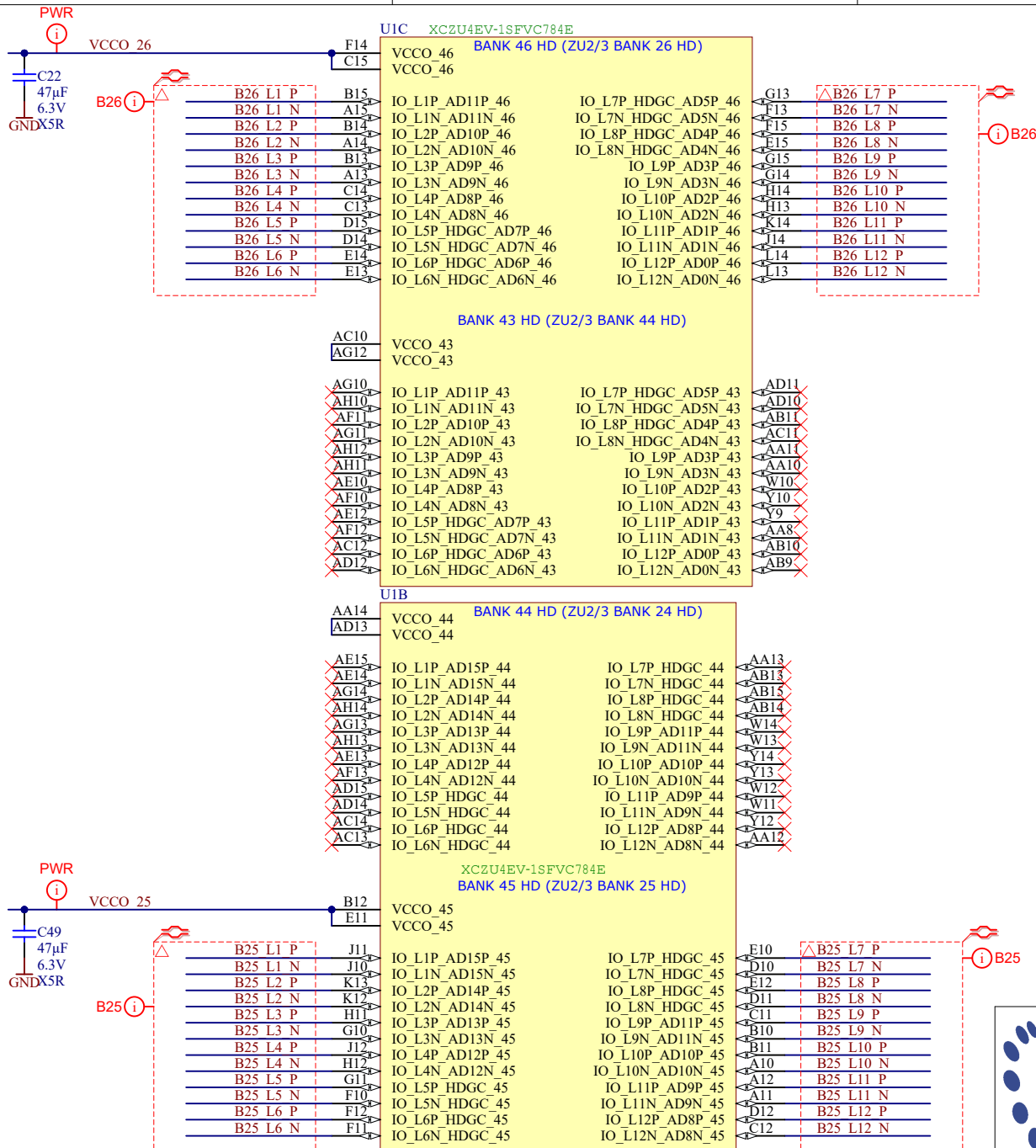
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Date: 2021-01-19	Copyright: Trenz Electronic GmbH / TT	Page 8 of 30
Filename: J4.SchDoc		

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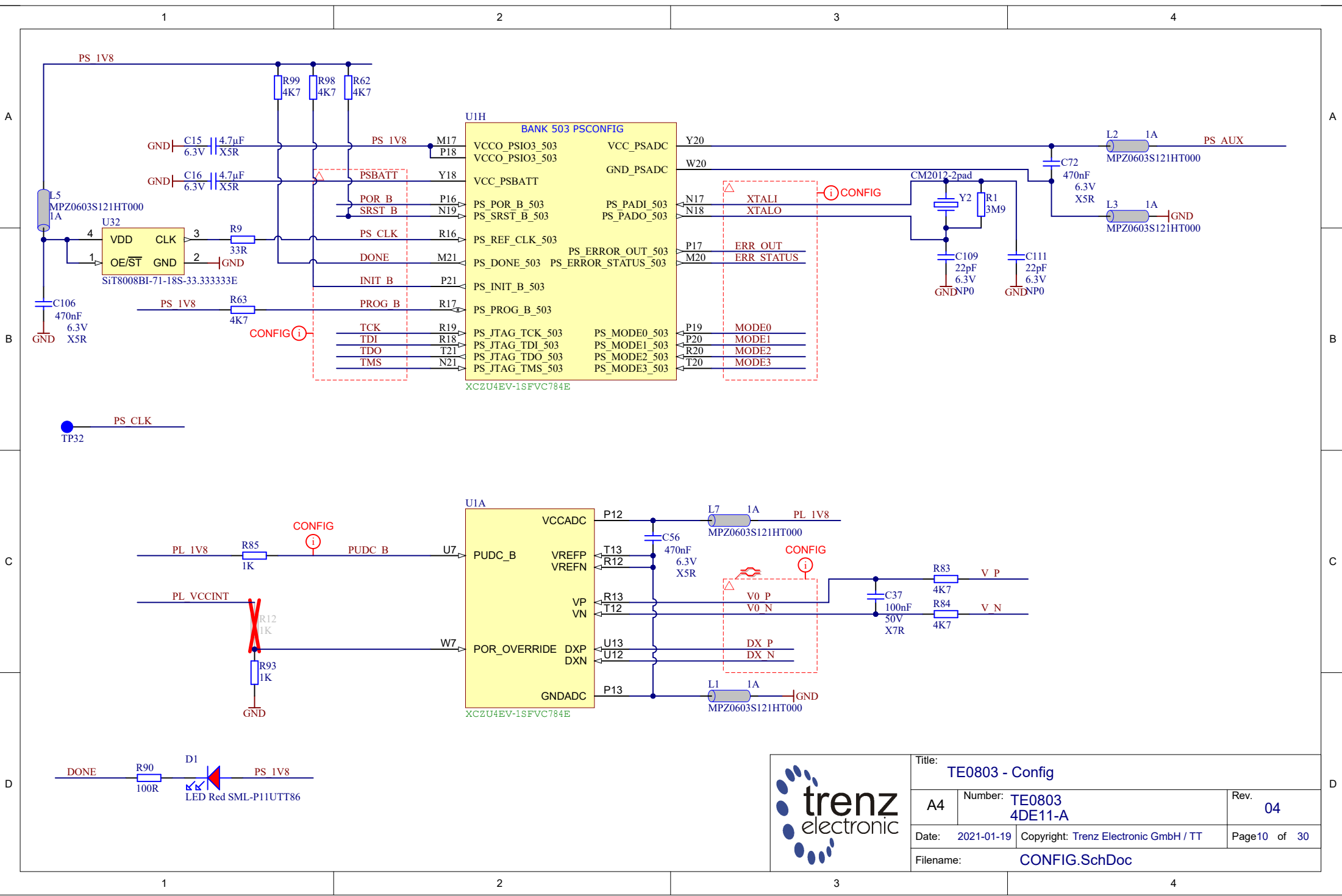
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A4	Number: TE0803 4DE11-A	Rev. 04	
Date: 2021-01-19	Copyright: Trenz Electronic GmbH / TT		Page9 of 30
Filename: B_HD.SchDoc			

1

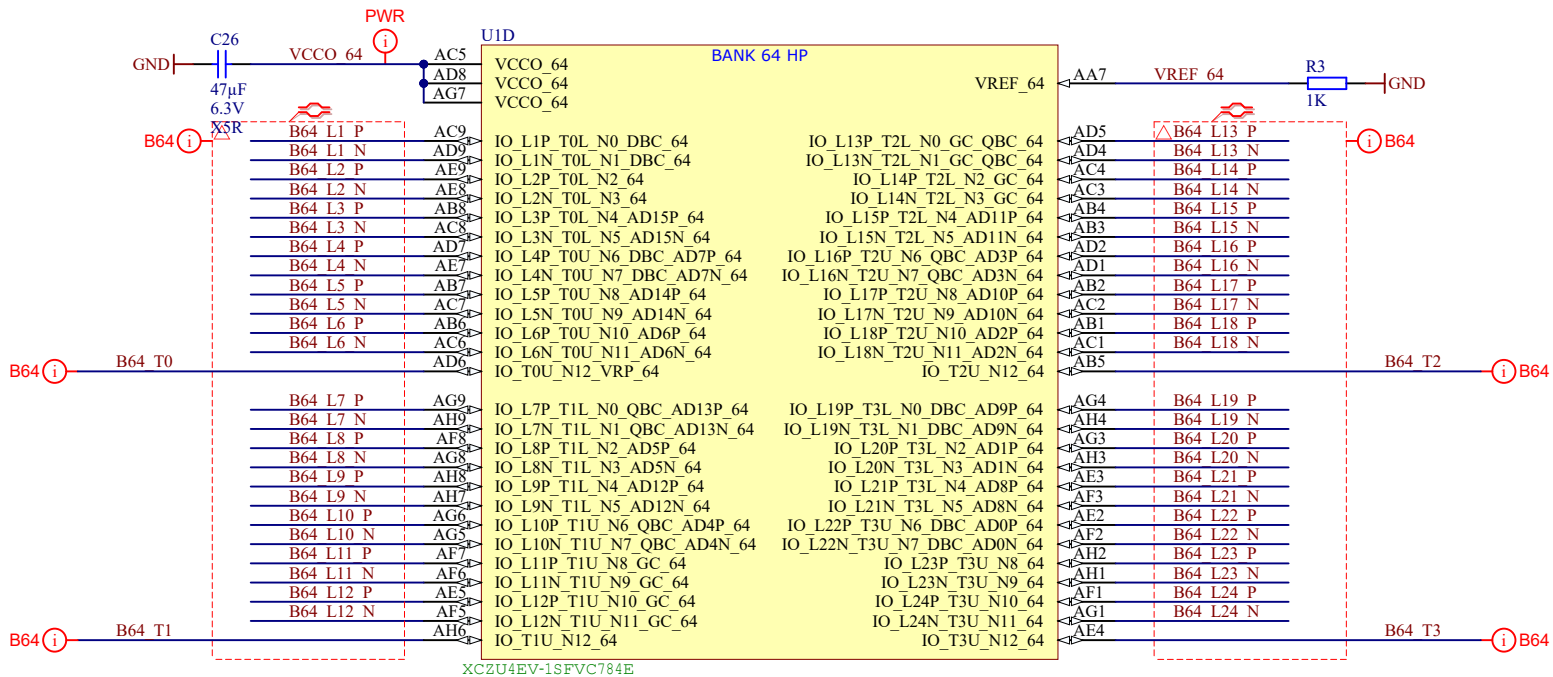
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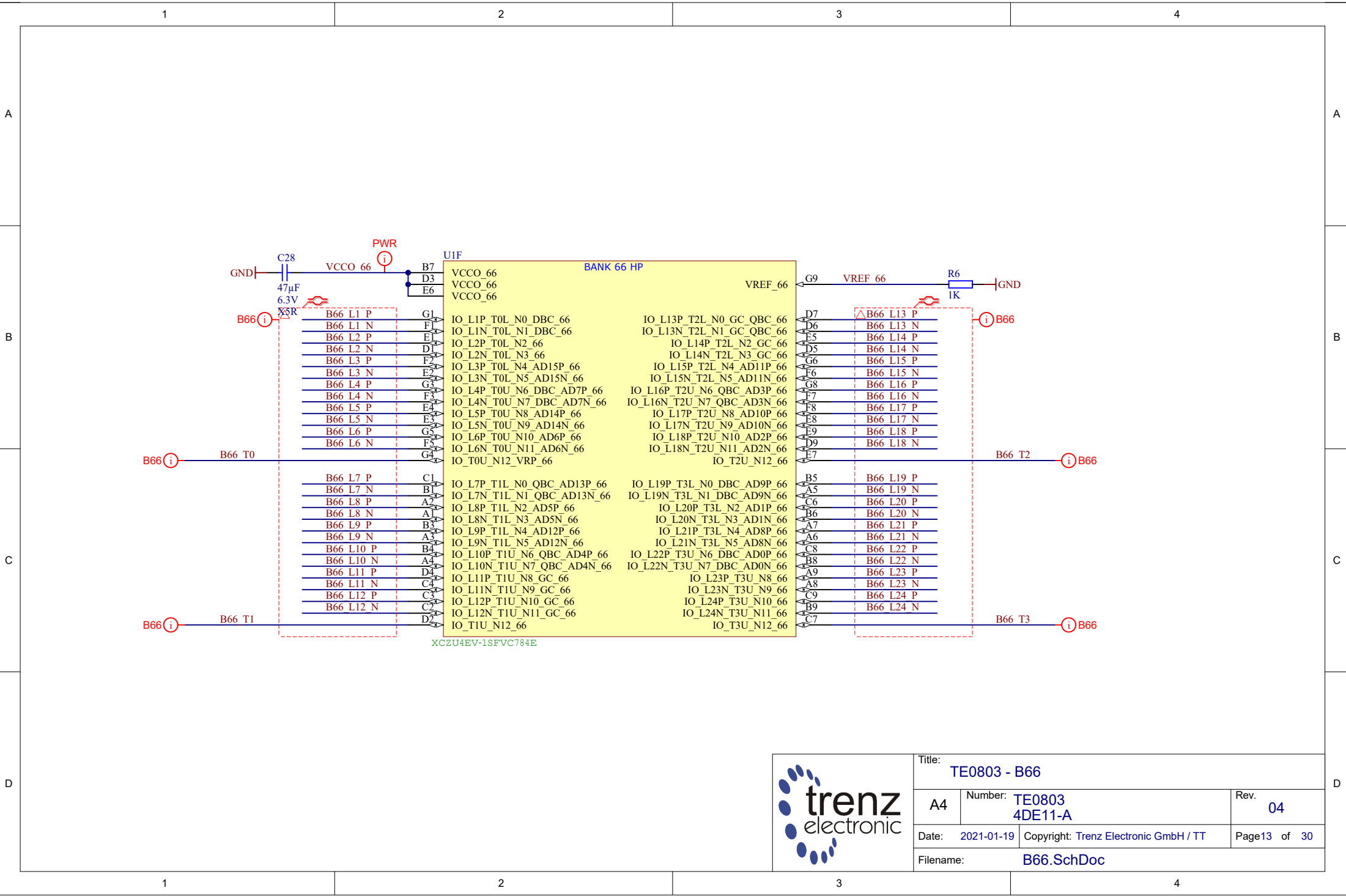
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Title: TE0803 - Config			
A4	Number: TE0803 4DE11-A	Rev. 04	
Date: 2021-01-19	Copyright: Trenz Electronic GmbH / TT		Page10 of 30
Filename: CONFIG.SchDoc			



	Title: TE0803 - B64		
	A4	Number: TE0803 4DE11-A	Rev. 04
	Date: 2021-01-19	Copyright: Trenz Electronic GmbH / TT	Page11 of 30
	Filename: B64.SchDoc		





Title:TE0803 - B66

A4

Number:TE0803
4DE11-A

Rev.04

Date:2021-01-19

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Page13 of 30

Filename:B66.SchDoc

A

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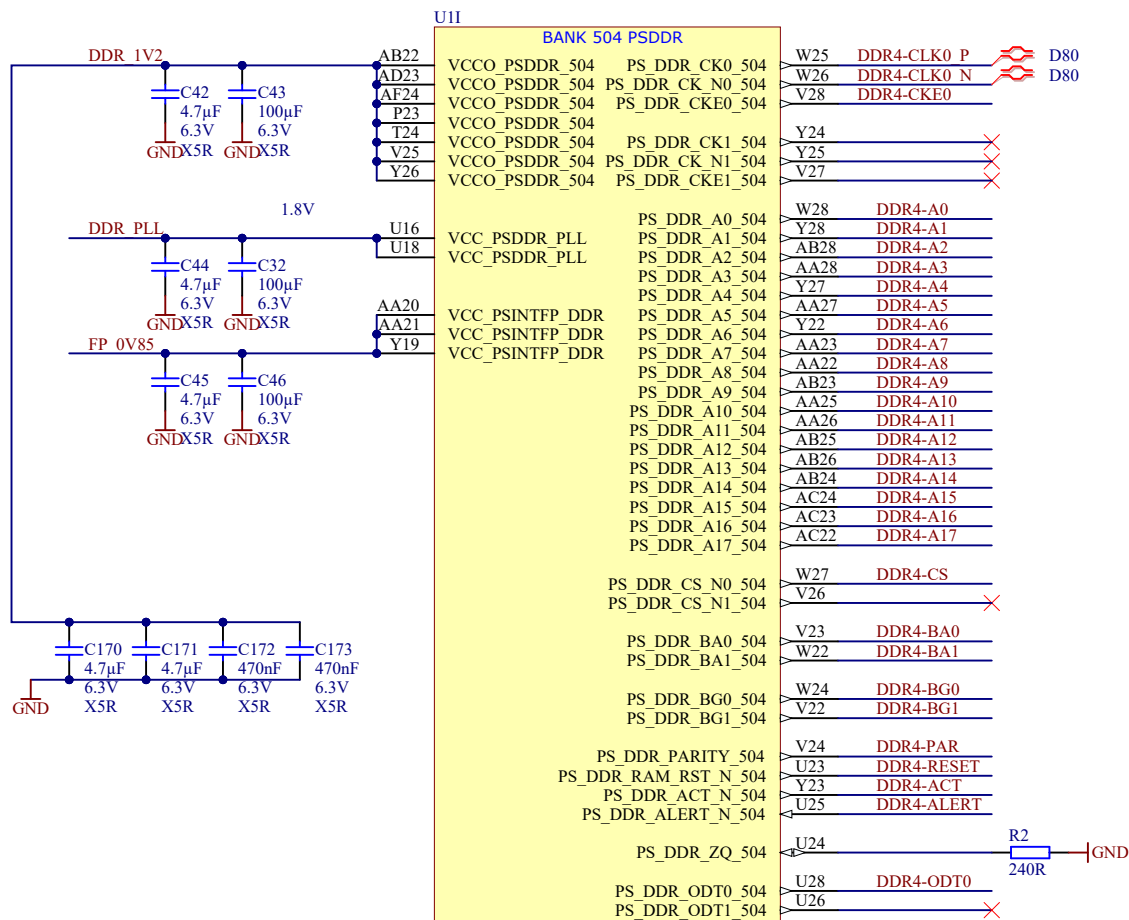
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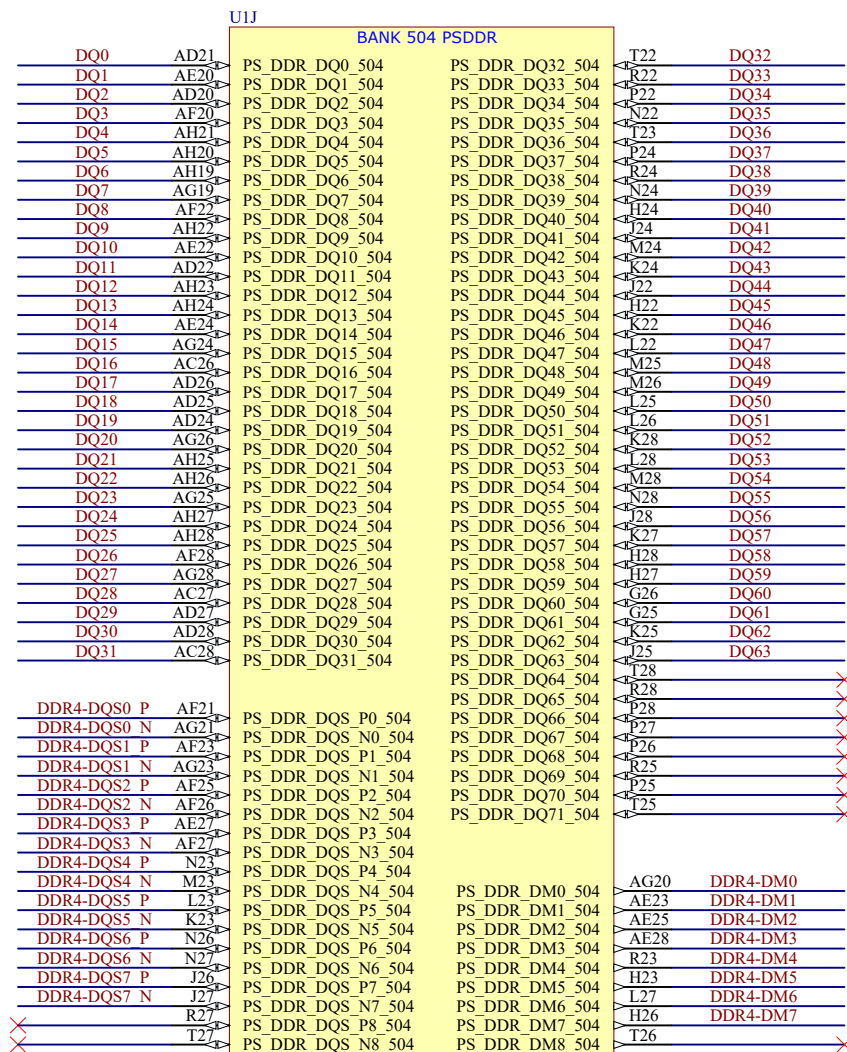
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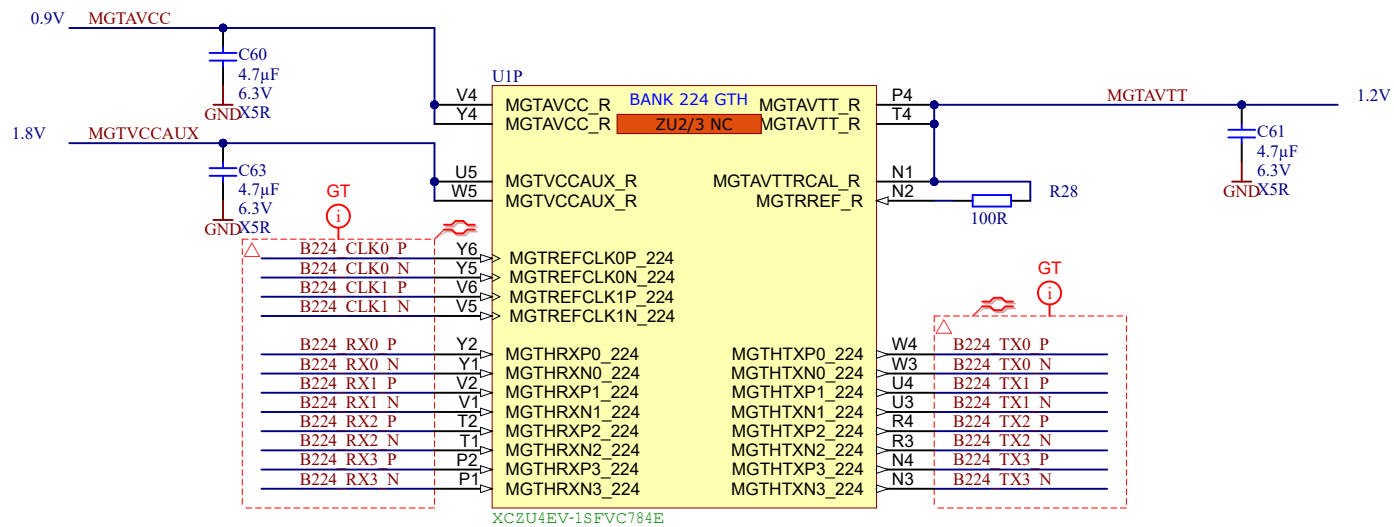
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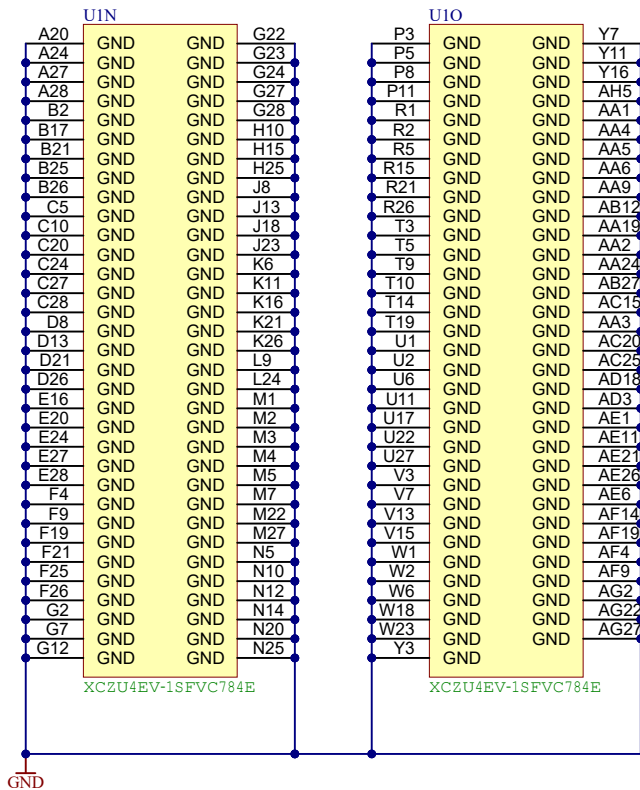
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Title: TE0803 - PS_DDR			
A4	Number: TE0803 4DE11-A		Rev. 04
Date: 2021-01-19	Copyright: Trenz Electronic GmbH / TT		Page15 of 30
Filename: PS_DDR.SchDoc			



		Title: TE0803 - B224GTH	
		A4	Rev. 04
Date: 2021-01-19	Copyright: Trenz Electronic GmbH / TT	Number: TE0803 4DE11-A	Page 17 of 30
Filename: B_GT.SchDoc			



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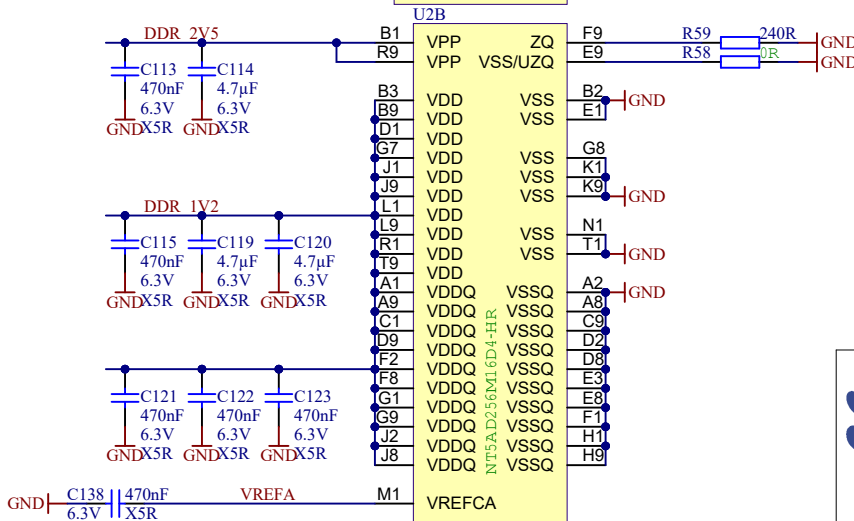
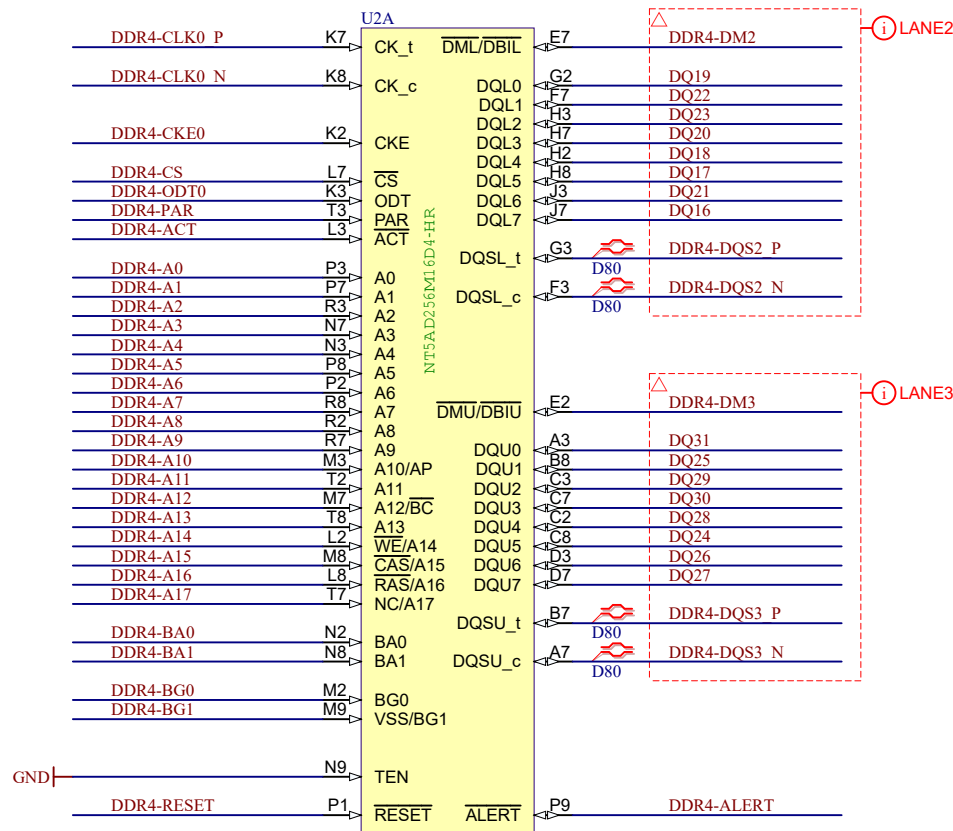
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Title: TE0803 - DDR4_1_RAM		
A4	Number: TE0803 4DE11-A	Rev. 04
Date: 2021-01-19	Copyright: Trenz Electronic GmbH / TT	Page20 of 30
Filename: DDR4-RAM.SchDoc		

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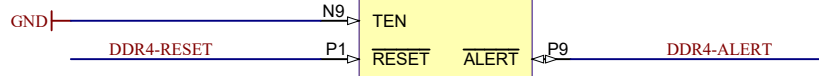
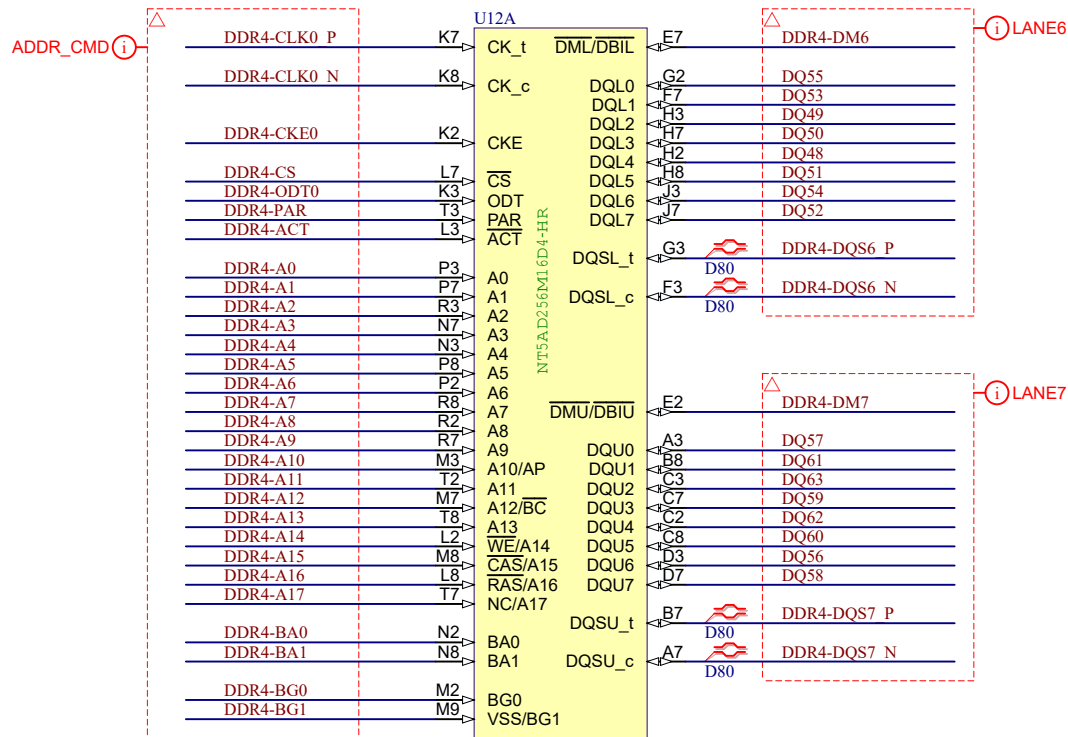
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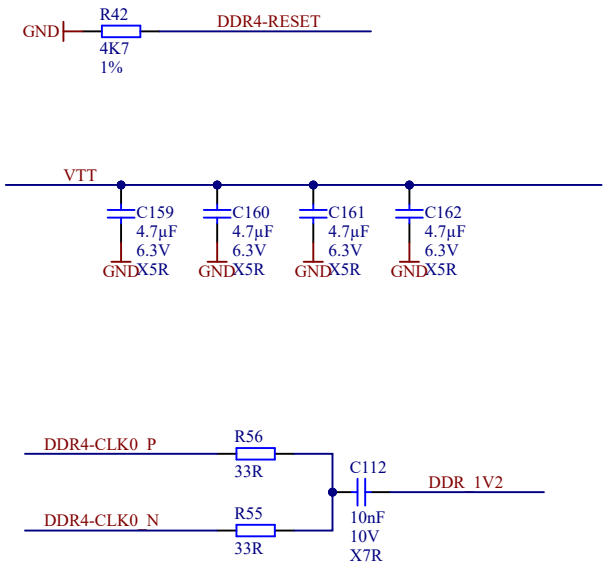
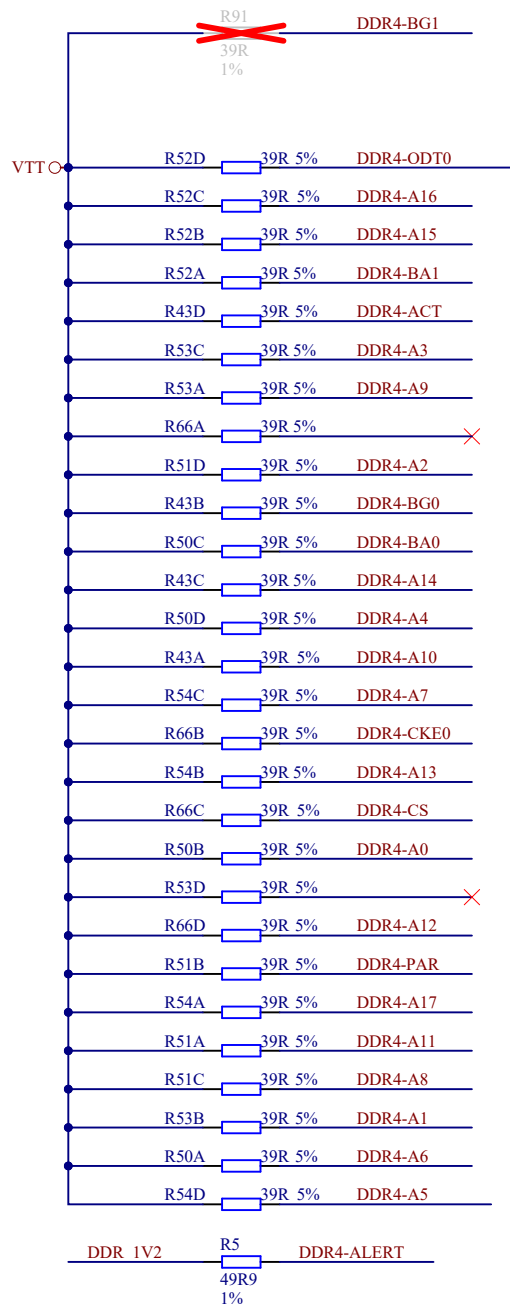
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A4	Number: TE0803 4DE11-A	Rev. 04
Date: 2021-01-19	Copyright: Trenz Electronic GmbH / TT	Page23 of 30
Filename: DDR4-RAM_4.SchDoc		

1

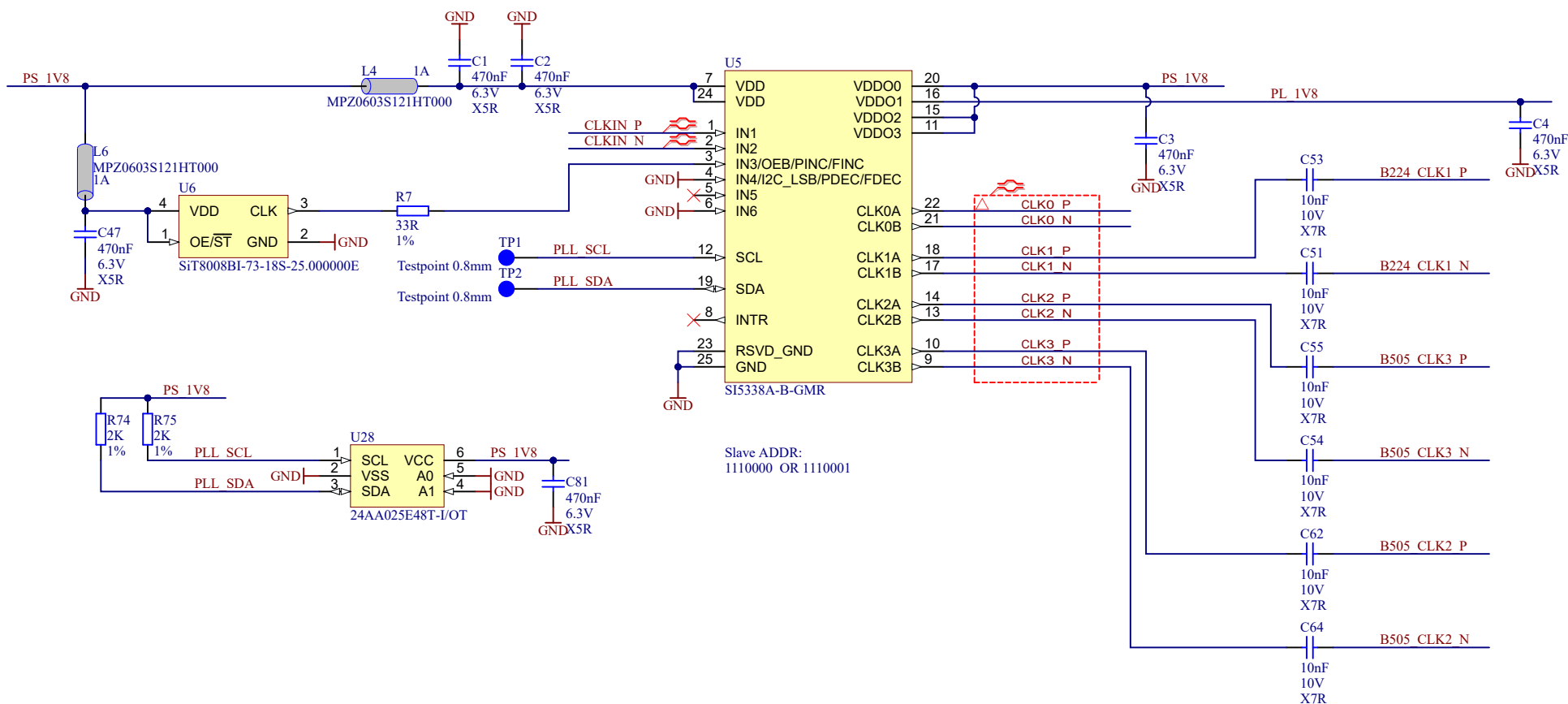
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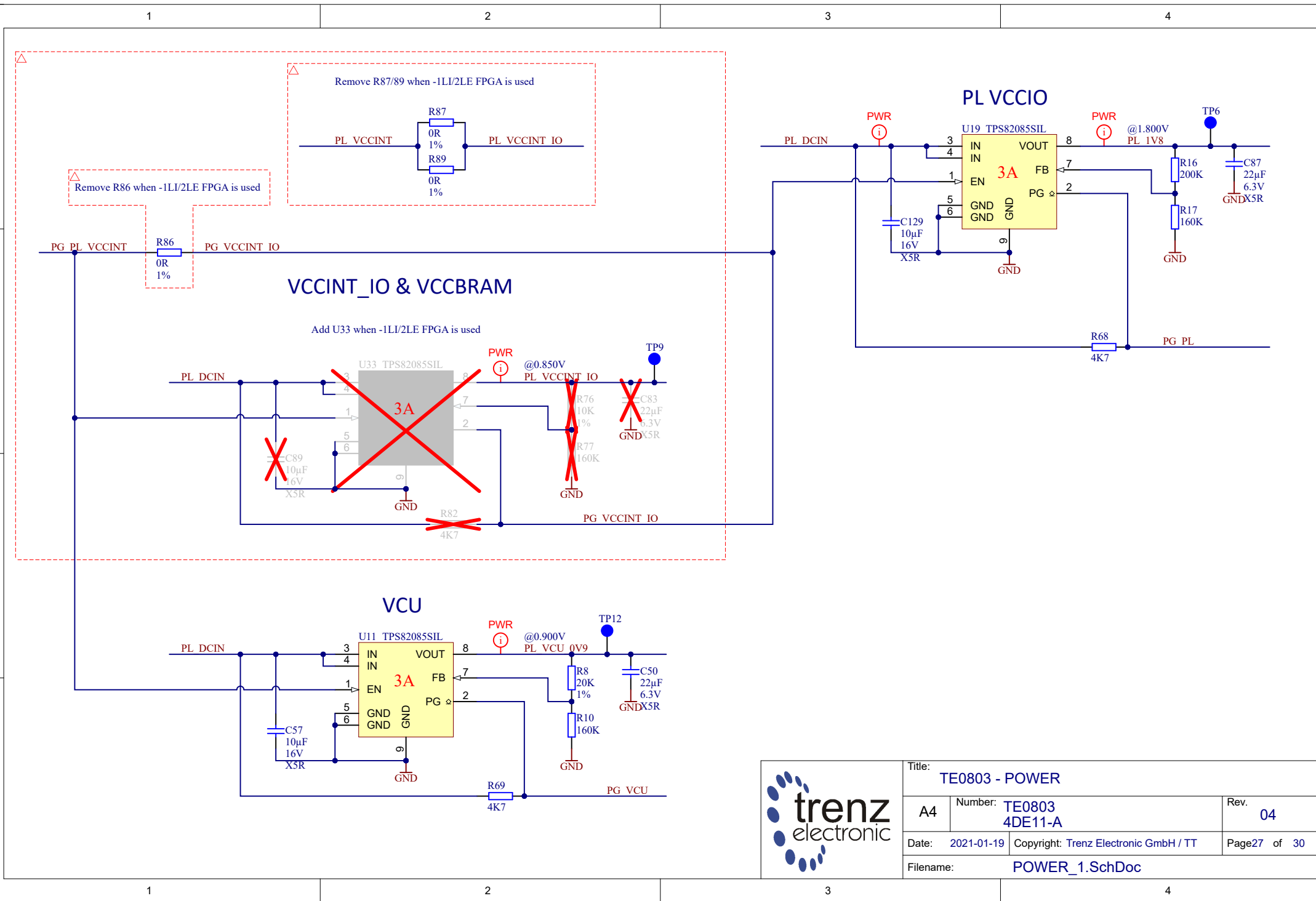
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		Title: TE0803 - DDR4_TERM		
		A4	Number: TE0803 4DE11-A	Rev. 04
		Date: 2021-01-19	Copyright: Trenz Electronic GmbH / TT	Page24 of 30
		Filename: DDR4-TERM.SchDoc		



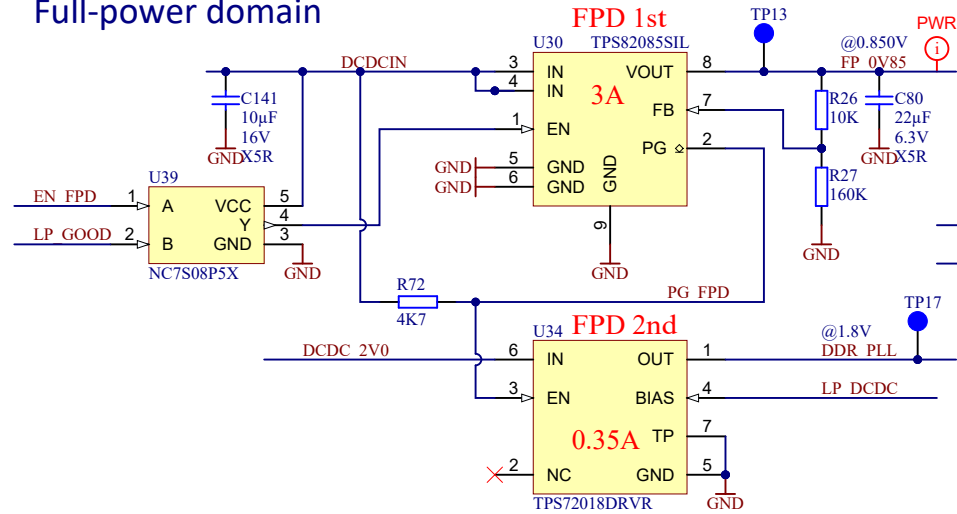
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	Date: 2021-01-19	Copyright: Trenz Electronic GmbH / TT	Page25 of 30
	Filename: Clock.SchDoc		



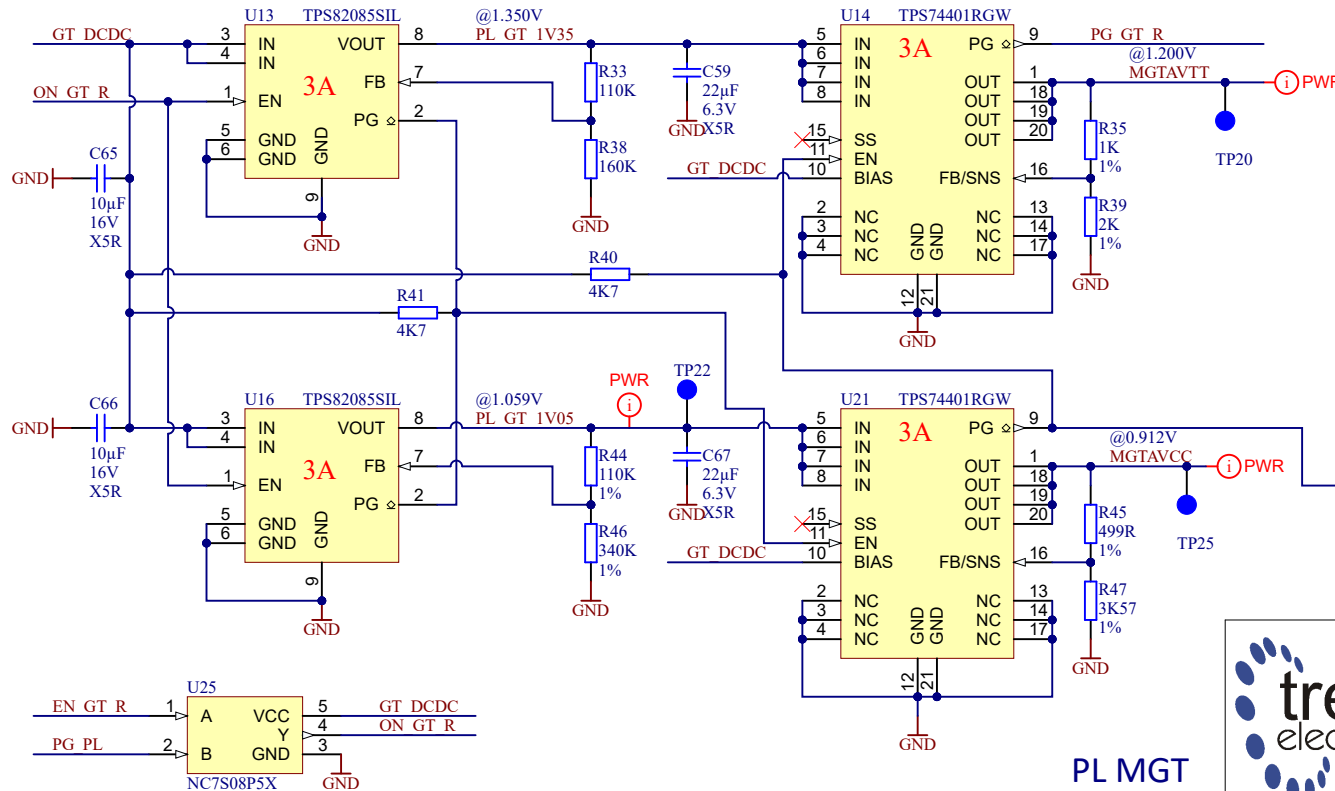
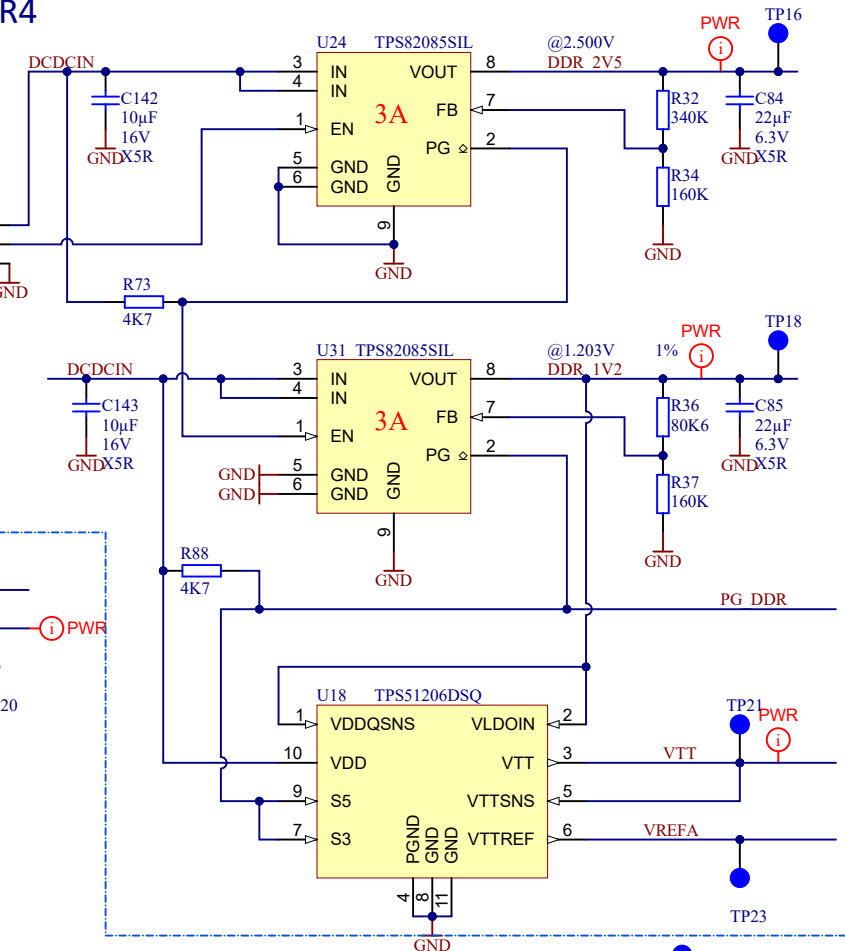


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A4	Number:	TE0803 4DE11-A	Rev. 04
Date:	2021-01-19	Copyright: Trenz Electronic GmbH / TT	Page27 of 30
Filename:		POWER_1.SchDoc	

Full-power domain



DDR4



Title: TE0803 - POWER_2		
A4	Number: TE0803 4DE11-A	Rev. 04
Date: 2021-01-19	Copyright: Trenz Electronic GmbH / TT	Page 28 of 30
Filename: POWER_2.SchDoc		

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A

REV	DATE	Description	
-01		Initial revision	VT
-01a	20.11.2017	1. VCU voltage set to 0.9V, R20 changed to 40K , PL_VCU_1V0 renamed to PL_VCU_0V9.	VT
-02	20.06.2018	1. Added LDO to DDR_PLL 2. All differential pairs wath length matched with tollerance 0.1mm (excluding package delays) 3. Added MAC EEPROM U28 4. VPS_MGTRAVCC set to 0.85V 5. Added pull-up resistors R68,R69	VT
-03	21.02.2019	1. Added support of DDP DDR4 2. Added support of Low power FPGA (-L1/L2). 3. Revised testpoints 4. Revised J1-J4 connectors net label style	VY
-04	15.12.2020	1. Revised PL_VCCINT power supply. EN63A0QI replaced by TPS548A28RWWR. PCB: revised routing and components placement; 2. Added support of wide SDRAM DDR4 packages. PCB: revised routing and components placement; 3. Added option to select POR_OVERRIDE level (R12 and R93) 4. VCCO pins if unused Bank 44 connected together. Same for unused Bank 24 (UG583 recomendation) 5. PCB: updated signal trace lengths. 6. PCB: updated silkscreen. Added company address, CE and WEEE symbols; 7. PCB: added module orientation rectangle painer 8. Changed resistors value of R29, R31, R35, R39, R44-R47 (BOM optimization) 9. Removed traceability part (Obsolete component)	VY
-04	23.02.2022	10. Changed capacitor C92 for all variants from 100 nF to 1 nF.	ED
-04	08.06.2023	11. U4 can be either TPS548A28RWWR or MPQ8633BGLE-Z which is up to Trenz Electronic GmbH.	VY
-04	23.05.2025	12. L1 - L7 ferrit beads BKP0603HS121-T (EOL) replaced by MPZ0603S121HT000 for all variants.	VG

B

C

D



Title: TE0803 - Revision History

A4

Number: TE0803
4DE11-A

Rev. 04

Date: 2021-01-19

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Drawn by: VY

Filename: Revision Changes.SchDoc