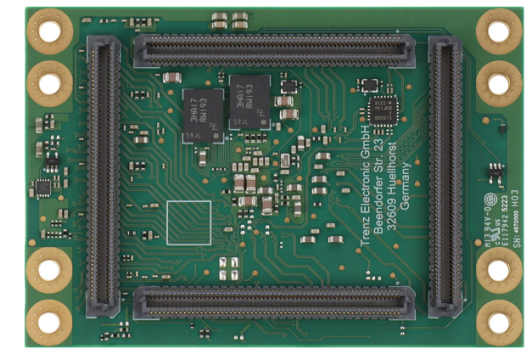
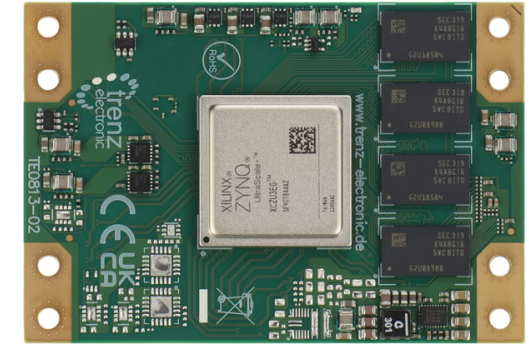
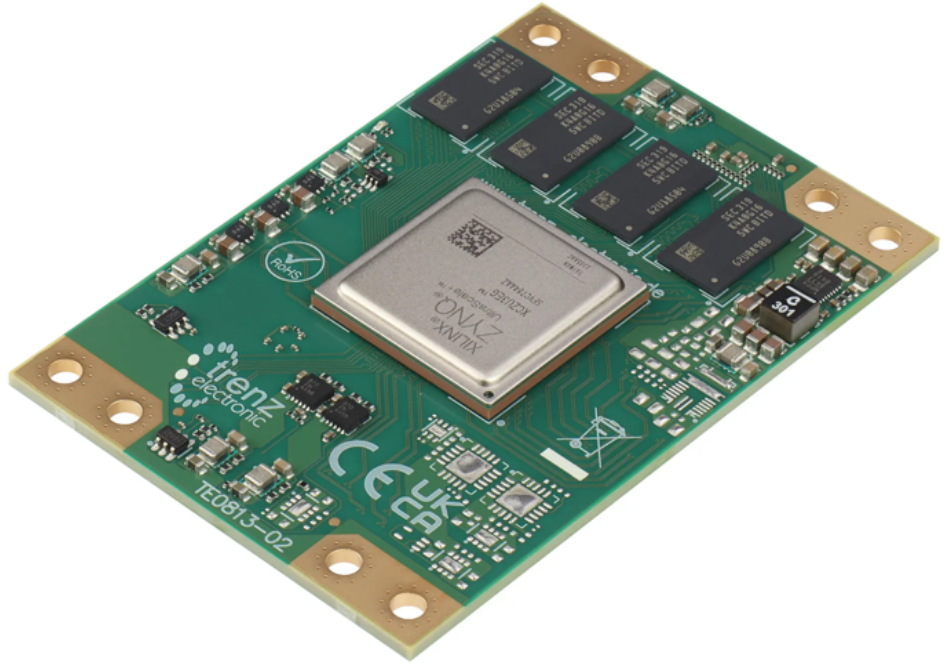




Regarding the usage of our schematics and alike documentation for Trenz module TE0813.

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.

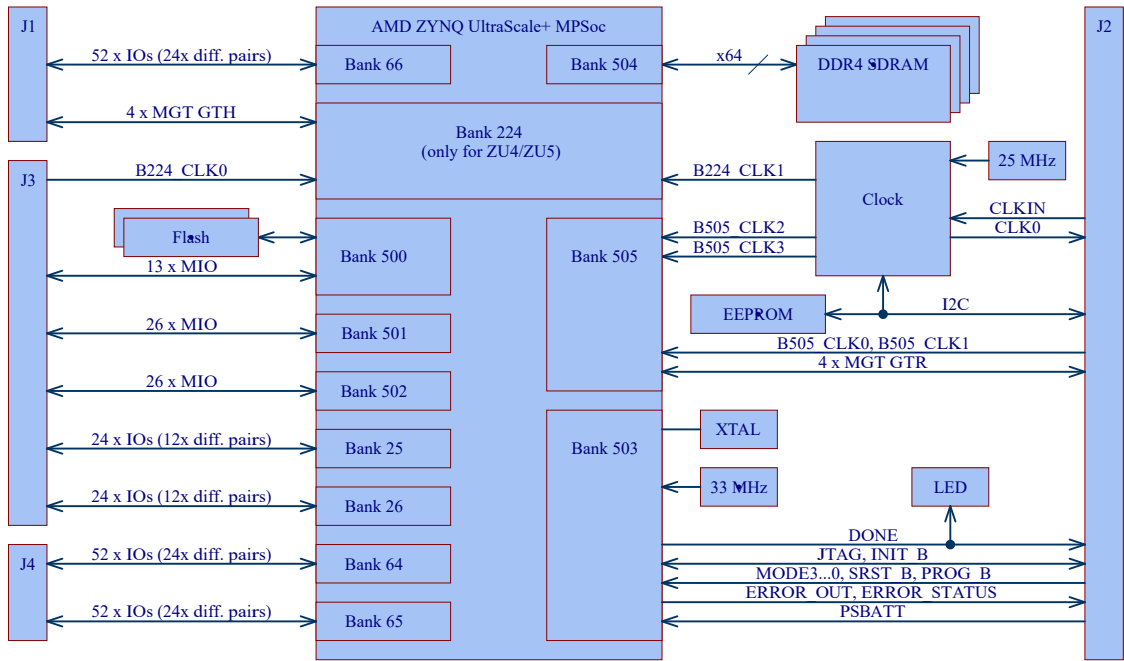
TE0813 is protected under such right and in case of plagiarism we will have to do anything necessary in order to protect our assets.

Schematics and other handouts serve for informational purposes only!

Drawn by	ED
Checked by	MR
Assembly variant	5DE71-A
Created by	ED
Modified by	ED
Modified at	2023-05-17



Title: TE0813 - Legal Notices		
A4	Number: TE0813 5DE71-A	Rev. 02
Date: 04.05.2026	Copyright: Trenz Electronic GmbH	Page 1 of 30
Filename: Legal Notices Modules.SchDoc		



Supported Voltage Ranges:

Power Rail	Direction	Range	Tolerance	Description	Note
3.3VIN	IN	3.3V	+/- 5 %	Micromodule Power	Management voltage rail, supplied by power rail
PL_DCIN	IN	3.3V	+/- 5 %	Micromodule Power	Programmable Logic, supplied by power rail
LP_DCDC	IN	3.3V	+/- 3 %	Micromodule Power	Low-Power Domain, supplied by power rail
GT_DCDC	IN	3.3V	+/- 3 %	Micromodule Power	GTH Transceiver, supplied by power rail
DCDCIN	IN	3.3V	+/- 5 %	Micromodule Power	Full-Power Domain and GTR, supplied by power rail
VCCO_64	IN	1.0 V - 1.8 V	+/- 3 %	HP IO Bank 64	Supplied by external power rail via B2B connector
VCCO_65	IN	1.0 V - 1.8 V	+/- 3 %	HP IO Bank 65	Supplied by external power rail via B2B connector
VCCO_66	IN	1.0 V - 1.8 V	+/- 3 %	HP IO Bank 66	Supplied by external power rail via B2B connector
VCCO_25	IN	1.2 V - 3.3 V	+/- 3 %	HD IO Bank 25	Supplied by external power rail via B2B connector
VCCO_26	IN	1.2 V - 3.3 V	+/- 3 %	HD IO Bank 26	Supplied by external power rail via B2B connector
PSBATT	IN	1.2 V - 1.5 V	-	RTC / BBRAM	Supplied by external power rail via B2B connector
PL_1V8	OUT	1.8 V	+/- 3 %	Power for Carrier	Micromodule: Programmable Logic
PS_1V8	OUT	1.8 V	+/- 3 %	Power for Carrier	Micromodule: Processing System
DDR_1V2	OUT	1.2 V	+/- 3 %	Power for Carrier	Micromodule: PS DDR I/O Supply

I2C Address:

Device	I2C ADDR	Note
PLL U5	0x70	-
EEPROM U28	0x50	-

TE0813	DDR4+TERM	ZU_PS_POWER	ZU_POWER
POWER	POWER_1	POWER_2	POWER_3



Title:TE0813 - System Overview

A4

Number:TE08135DE71-A

Rev.02

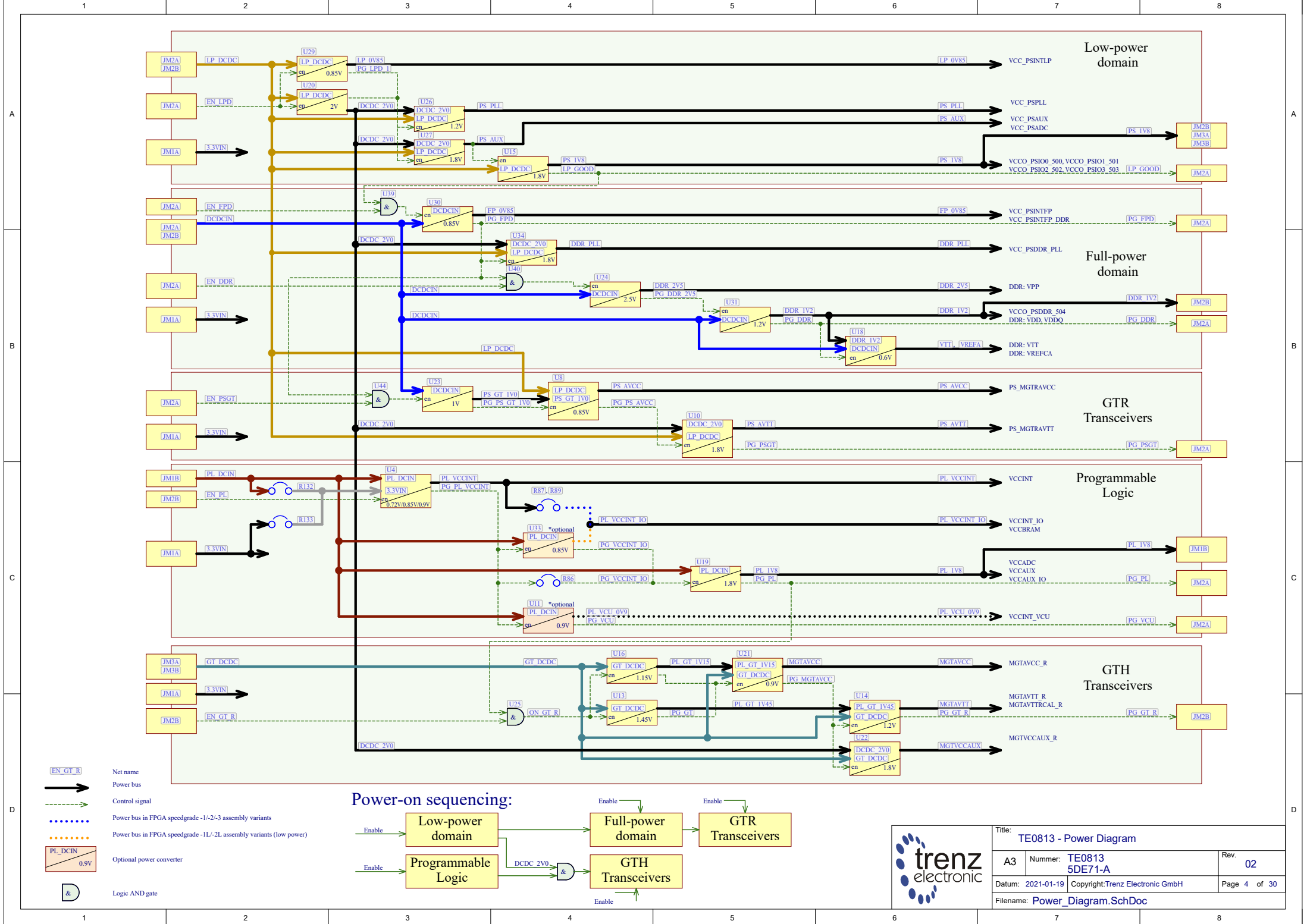
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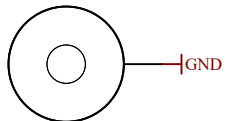
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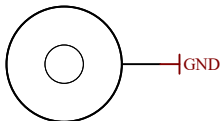
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D	trenz electronic <table><tr><td colspan="3">Title: TE0813 - Revision History</td></tr><tr><td>A4</td><td>Number: TE0813 5DE71-A</td><td>Rev. 02</td></tr><tr><td>Date: 06.01.2026</td><td>Copyright: Trenz Electronic GmbH</td><td>Page 3 of 30</td></tr><tr><td colspan="3">Filename: Revision Changes.SchDoc</td></tr></table>						Title: TE0813 - Revision History			A4	Number: TE0813 5DE71-A	Rev. 02	Date: 06.01.2026	Copyright: Trenz Electronic GmbH	Page 3 of 30	Filename: Revision Changes.SchDoc			D						
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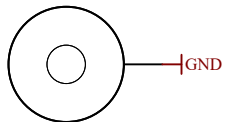
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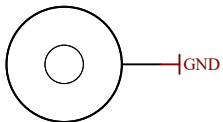
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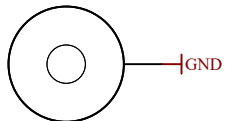
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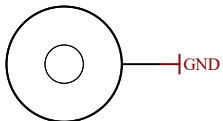
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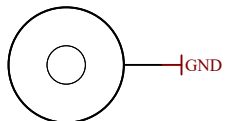
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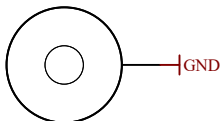
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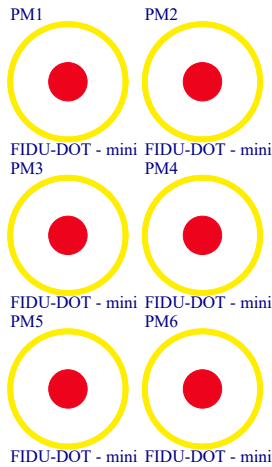
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Mount.Hole 3.2mm für Unterlegscheibe



Mount.Hole 3.2mm für Unterlegscheibe



UKCA1

UKCA Logo on Top Overlay

UKCA-TOPOVERLAY

CE1

CE Logo on Top Overlay

CE-TOPOVERLAY

MECH1

TE Address Overlay

LOGO ADDRESS

LOGO1

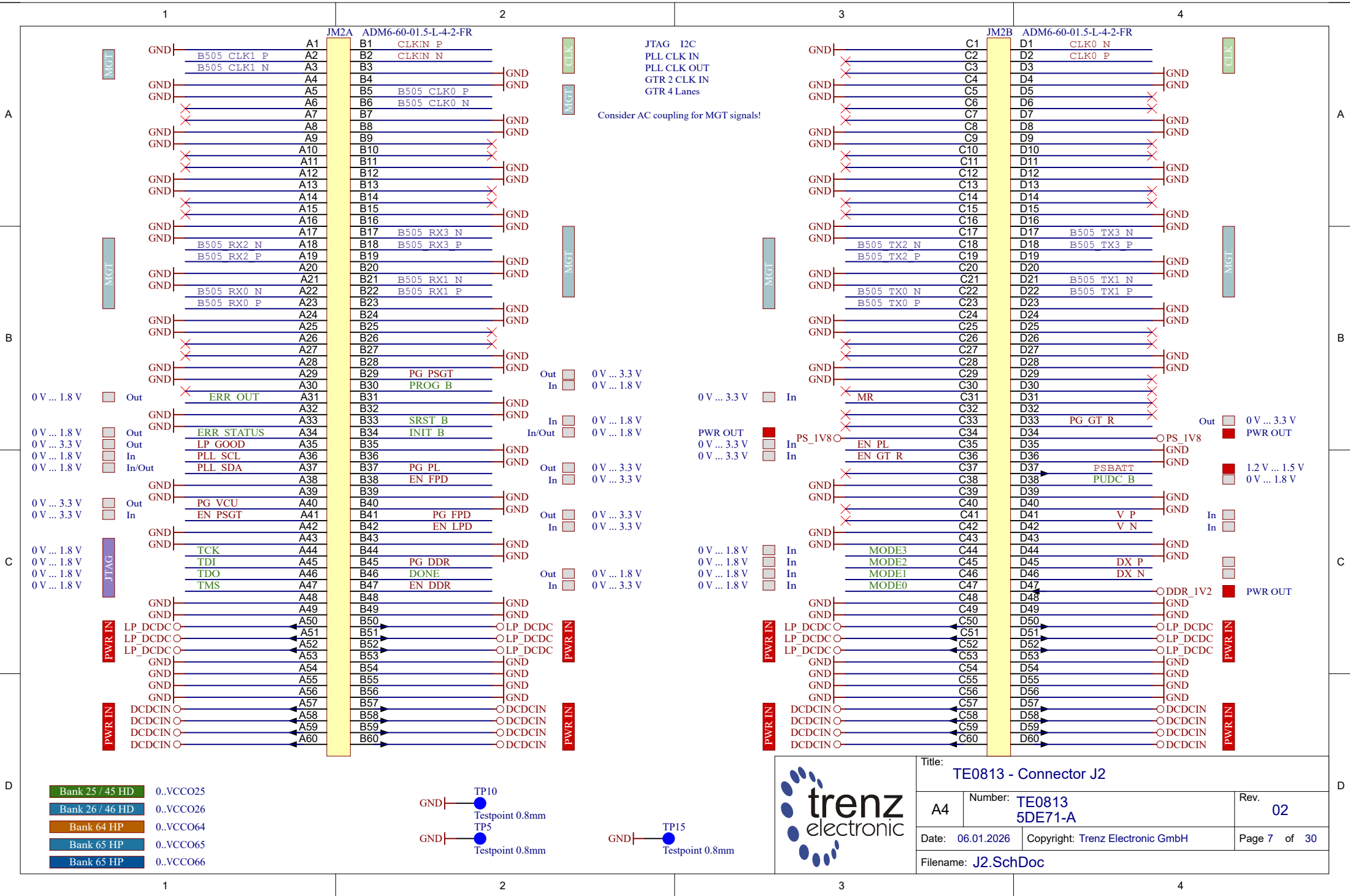
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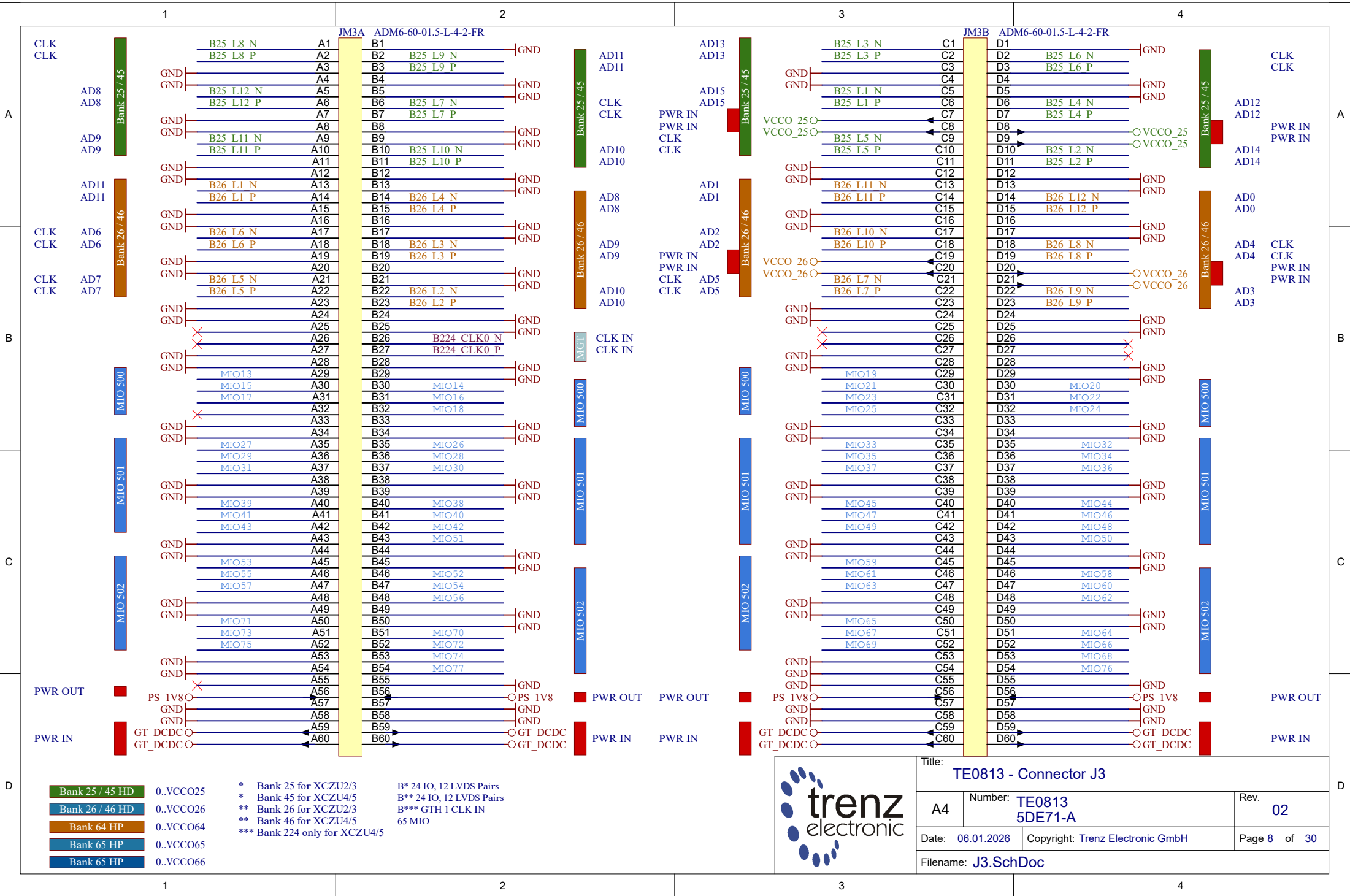
LOGO PRINT

Serial
Serial
Serialnumber 6,3 x 6.3mm



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A4	Number: TE0813 5DE71-A	Rev. 02
Date: 06.01.2026	Copyright: Trenz Electronic GmbH	Page 5 of 30
Filename: TE0813.SchDoc		





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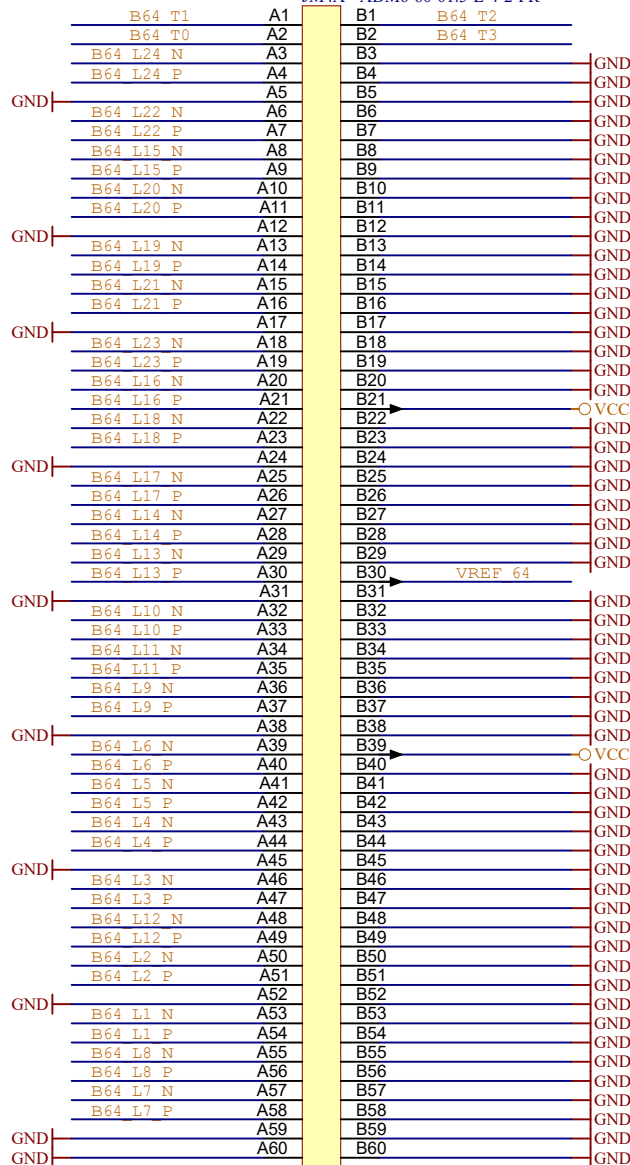
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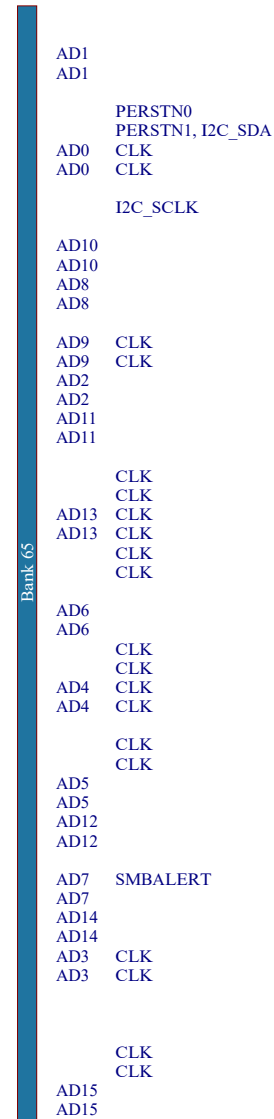
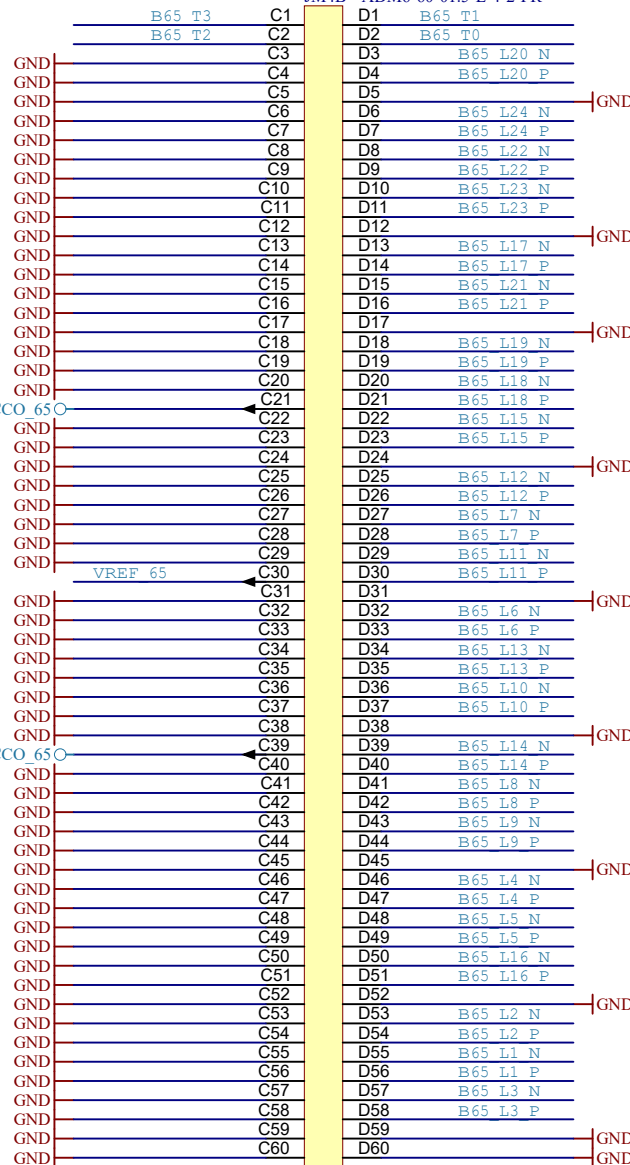
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Bank 64
B64 52 IO, 24 LVDS Pairs
B64 52 IO, 24 LVDS Pairs

Bank 65



JM4B ADM6-60-01.5-L-4-2-FR



Bank 25 / 45 HD	0..VCCO25
Bank 26 / 46 HD	0..VCCO26
Bank 64 HP	0..VCCO64
Bank 65 HP	0..VCCO65
Bank 65 HP	0..VCCO66



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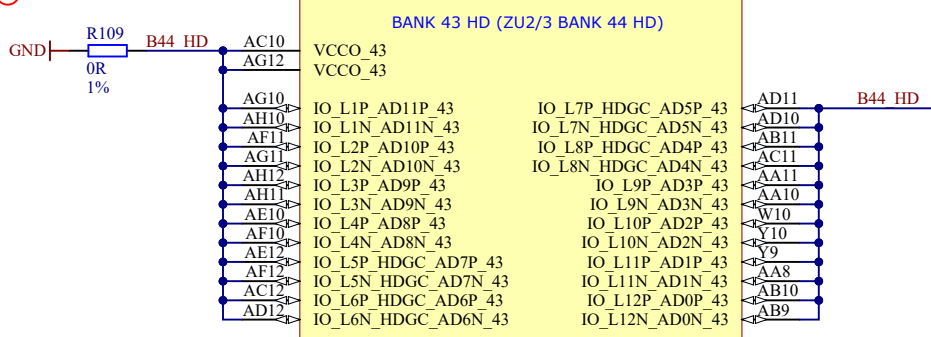
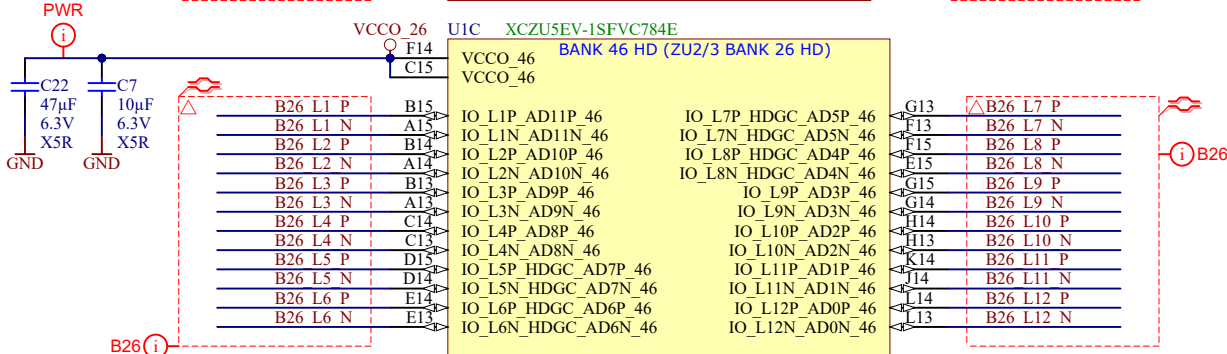
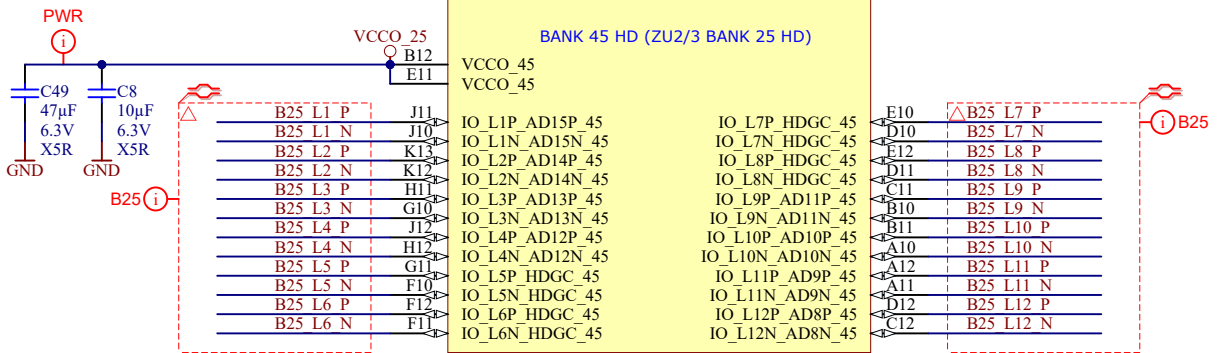
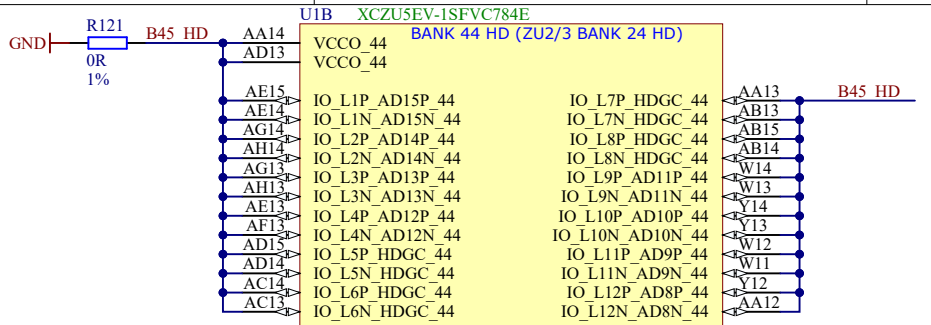
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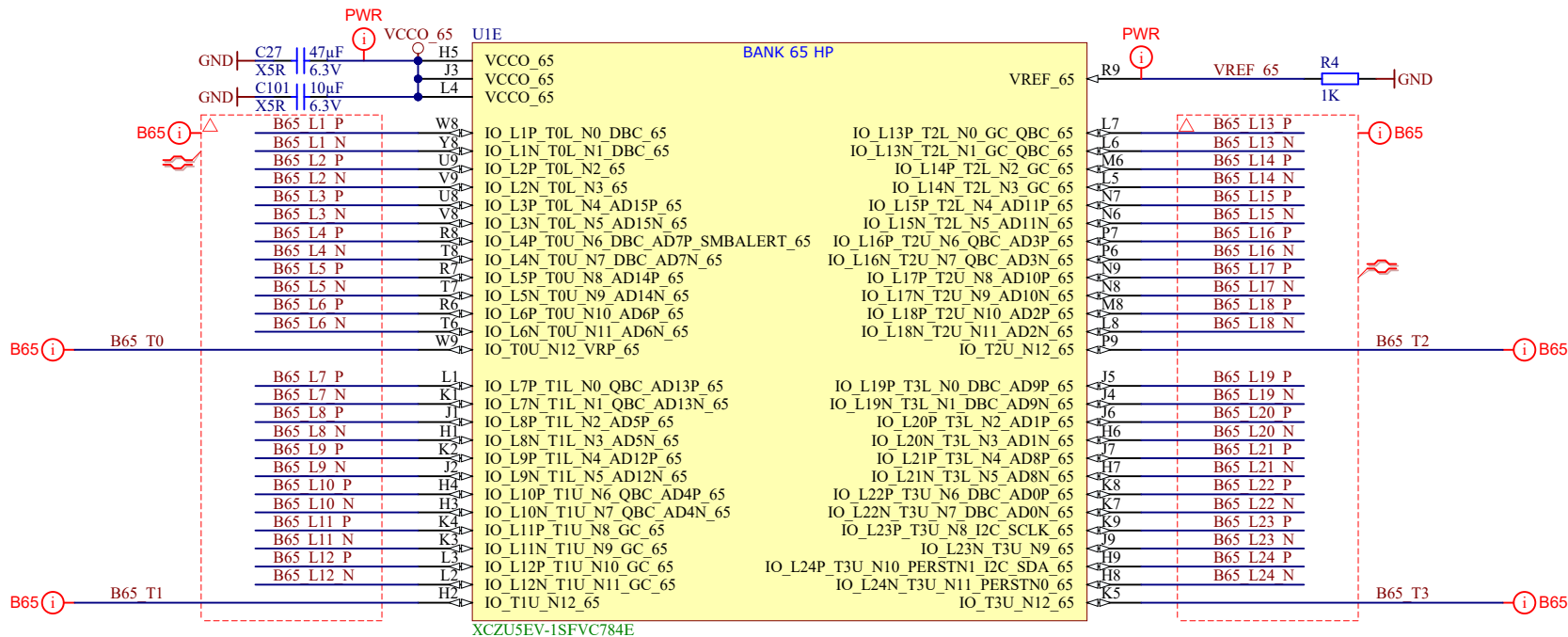
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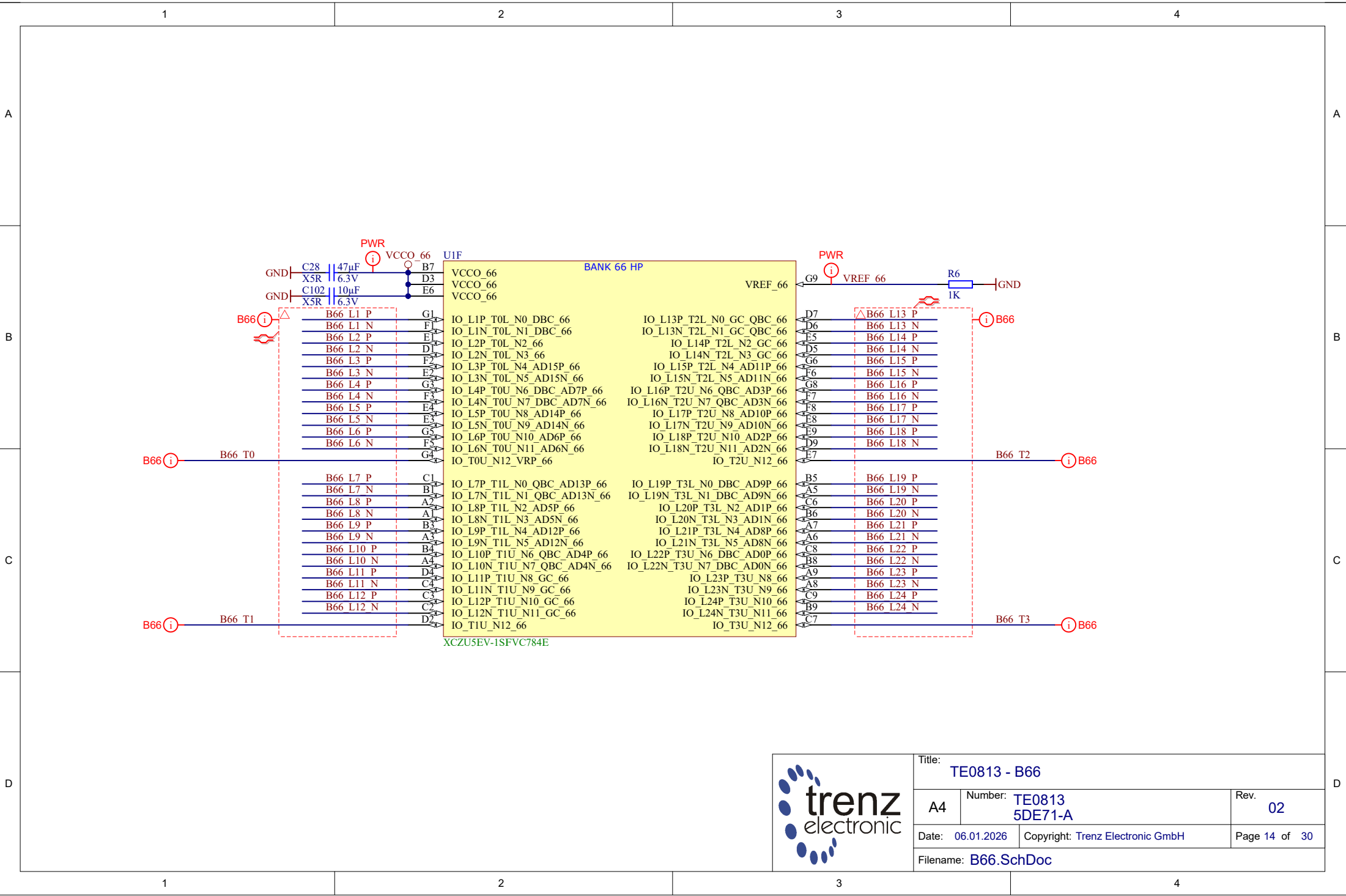
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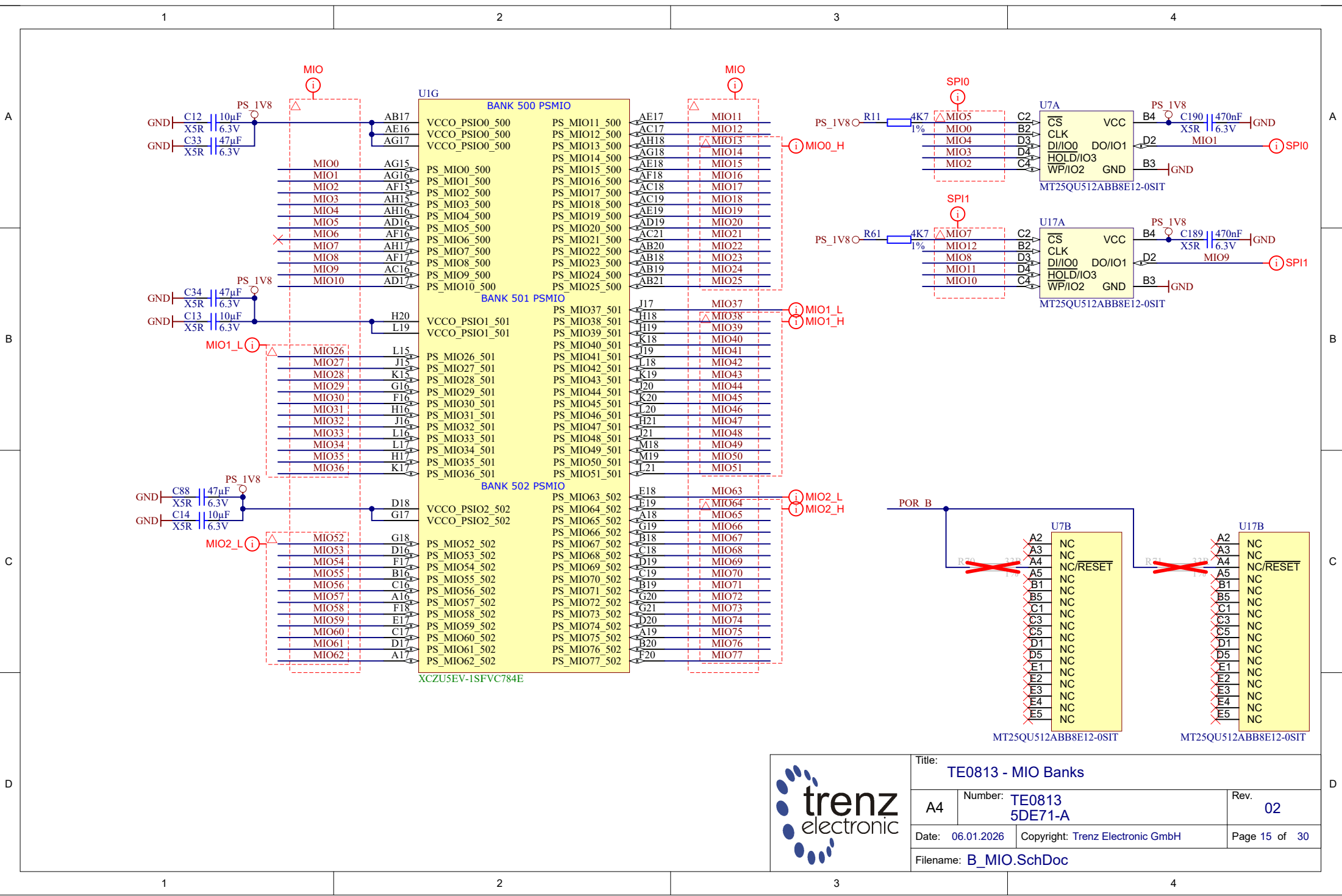
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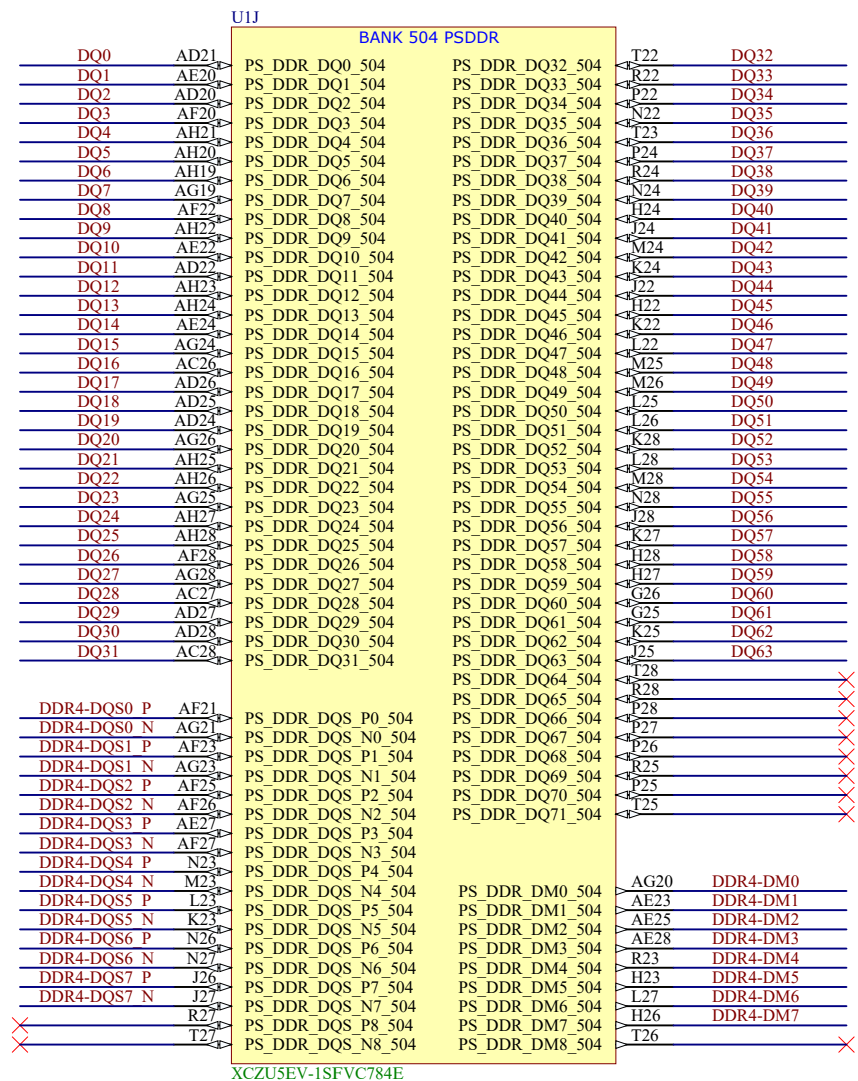
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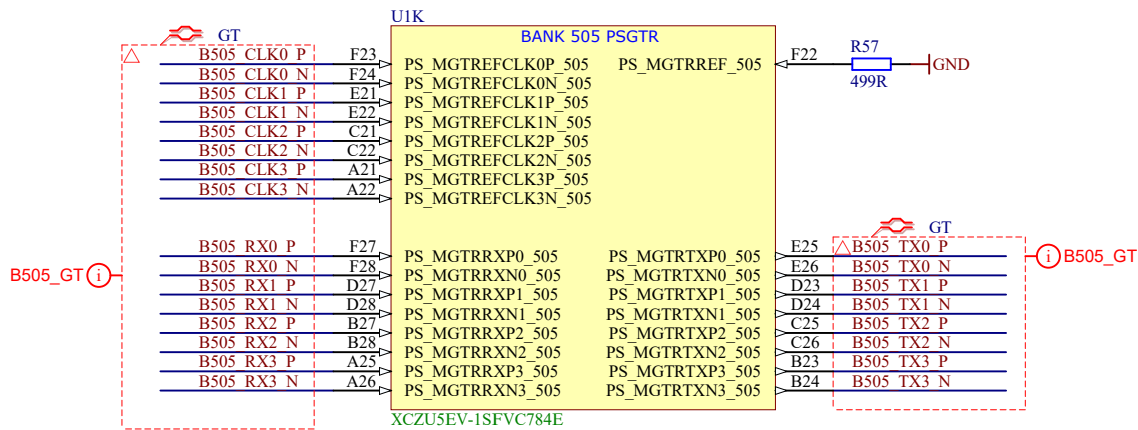




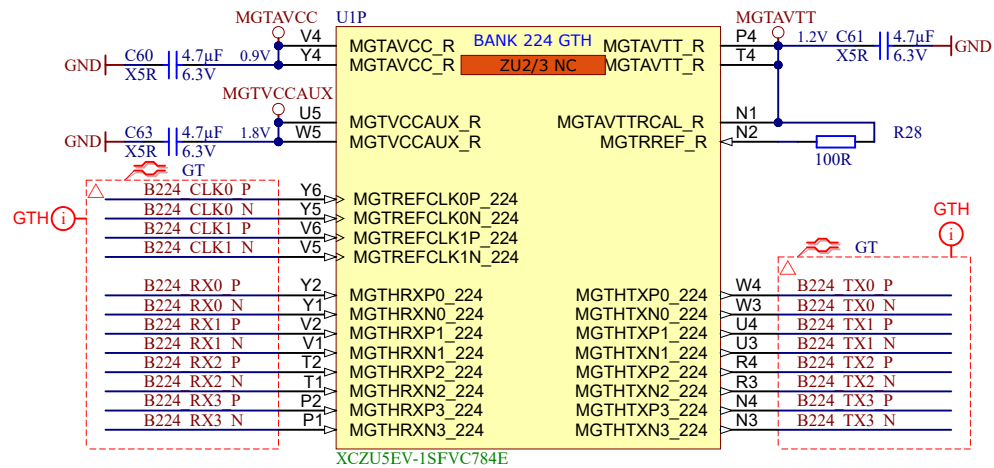
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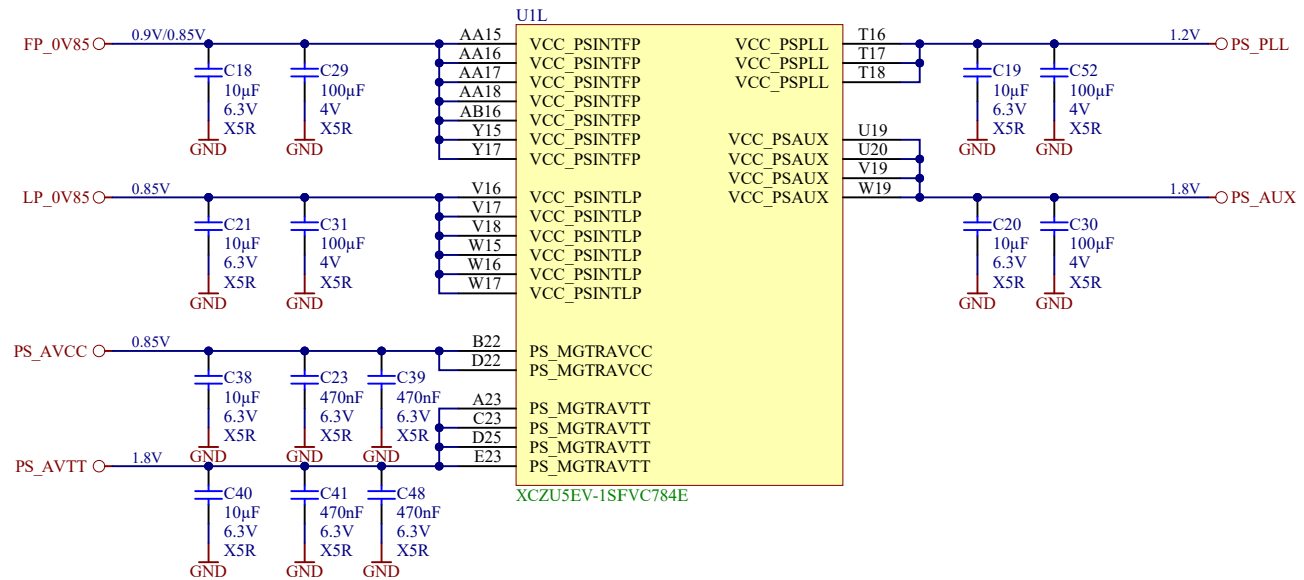
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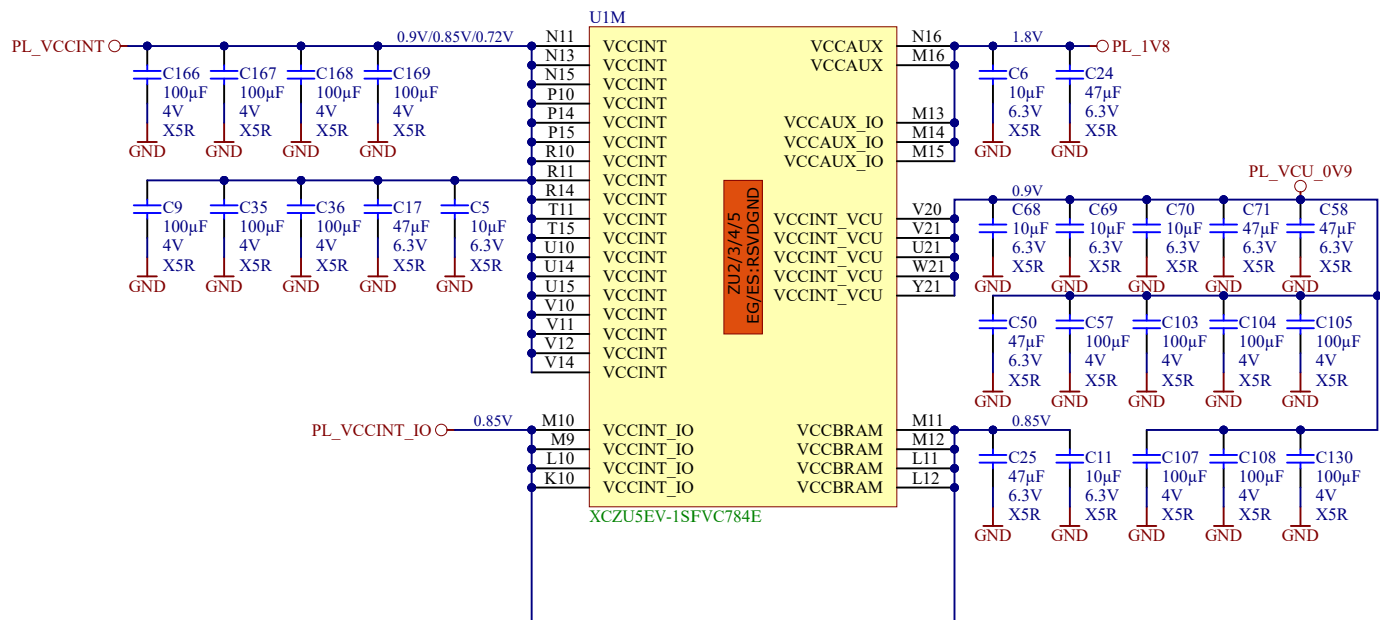
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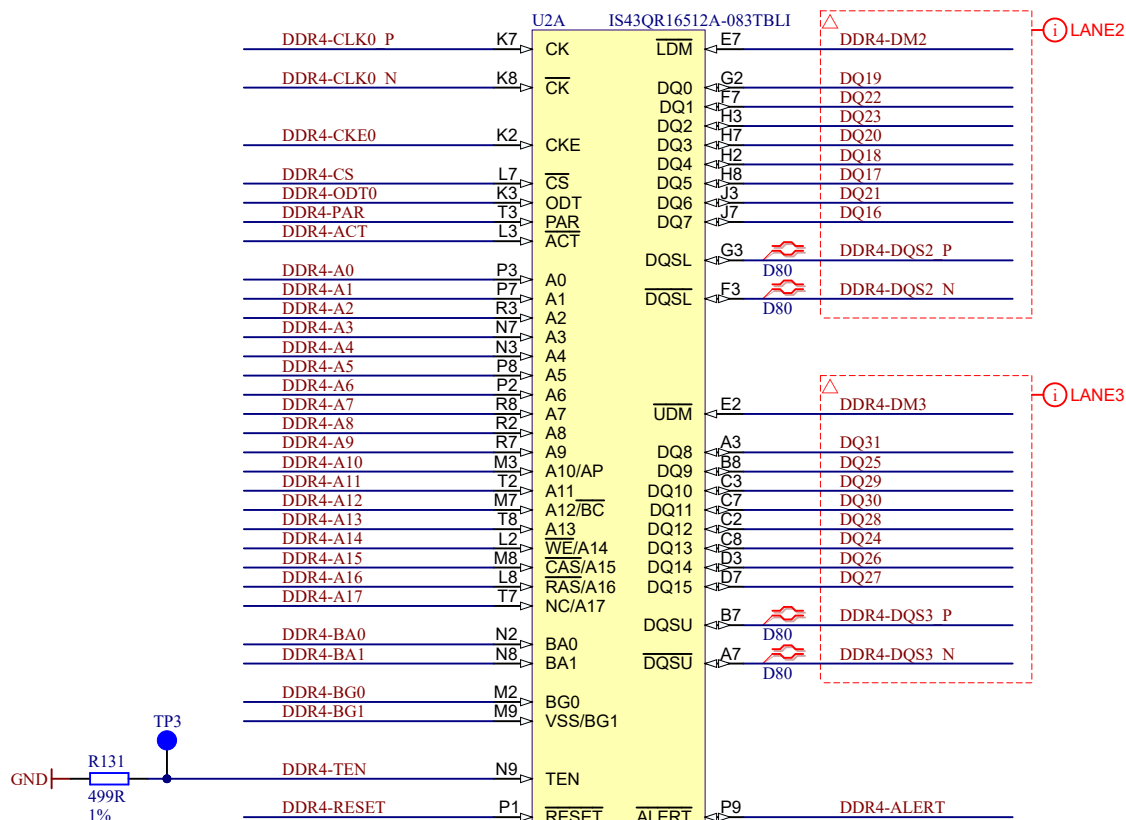
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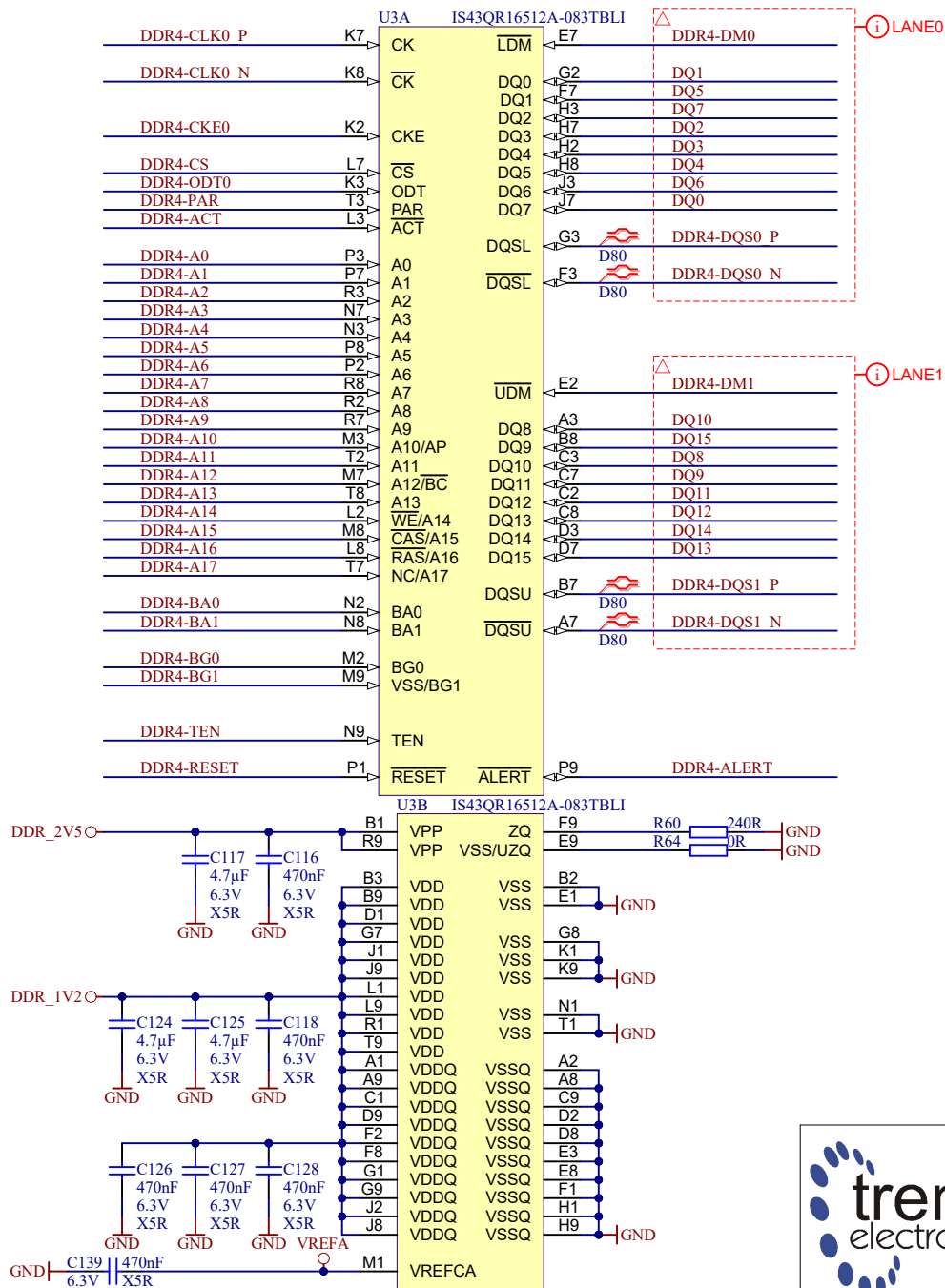
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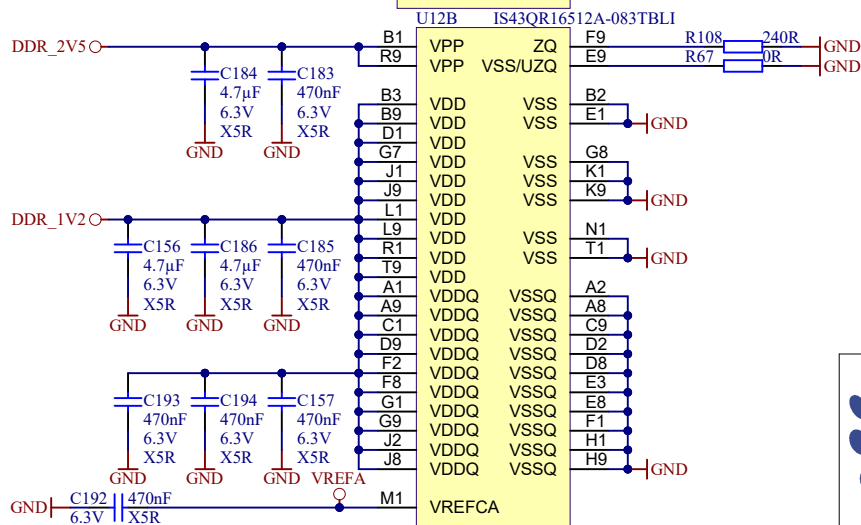
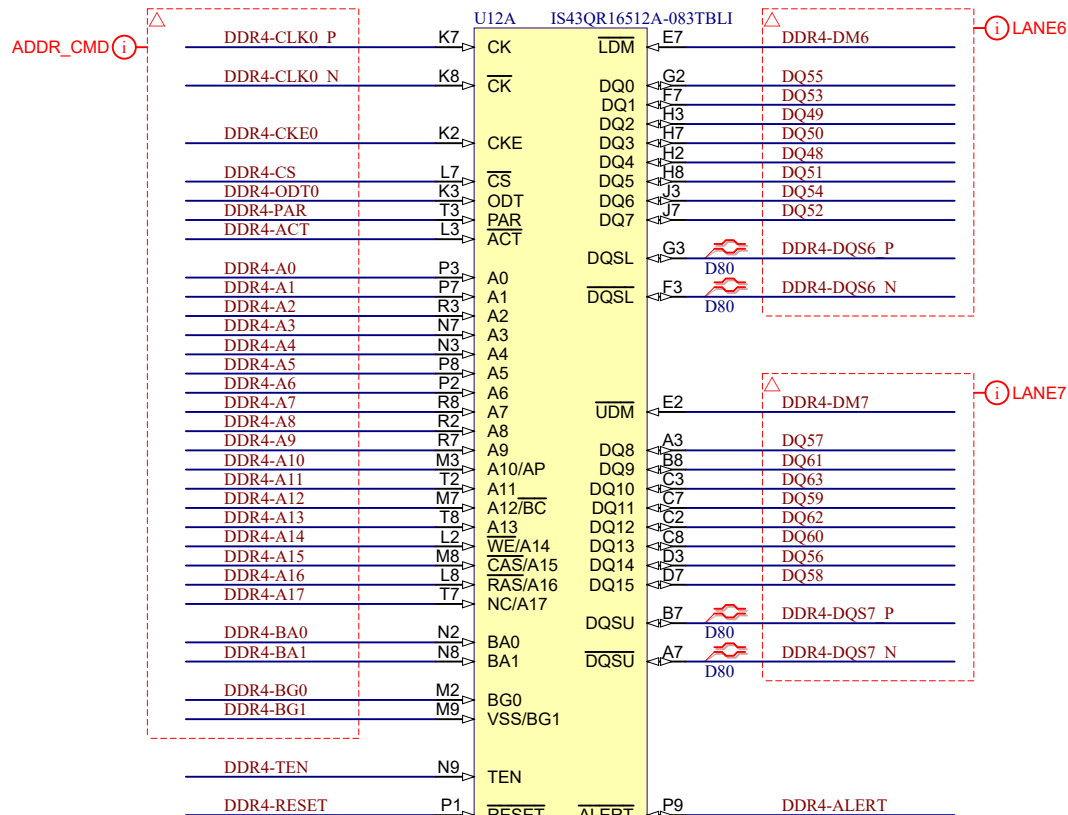
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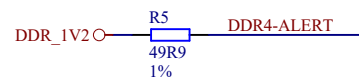
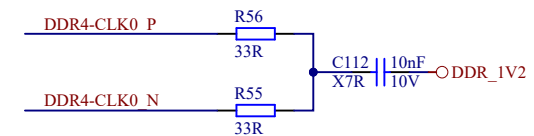
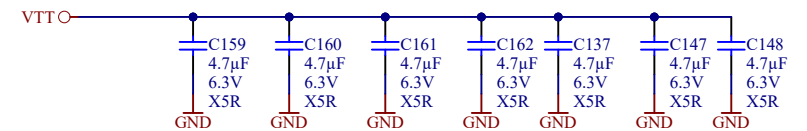
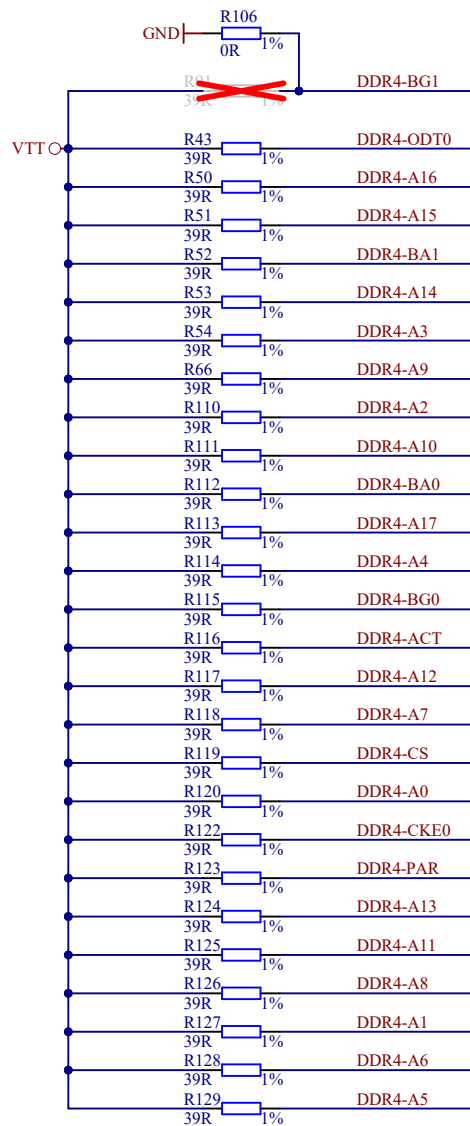
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A4	Number: TE0813 5DE71-A	Rev. 02
Date: 06.01.2026	Copyright: Trenz Electronic GmbH	Page 24 of 30
Filename: DDR4-RAM_4.SchDoc		

1

2

3

4

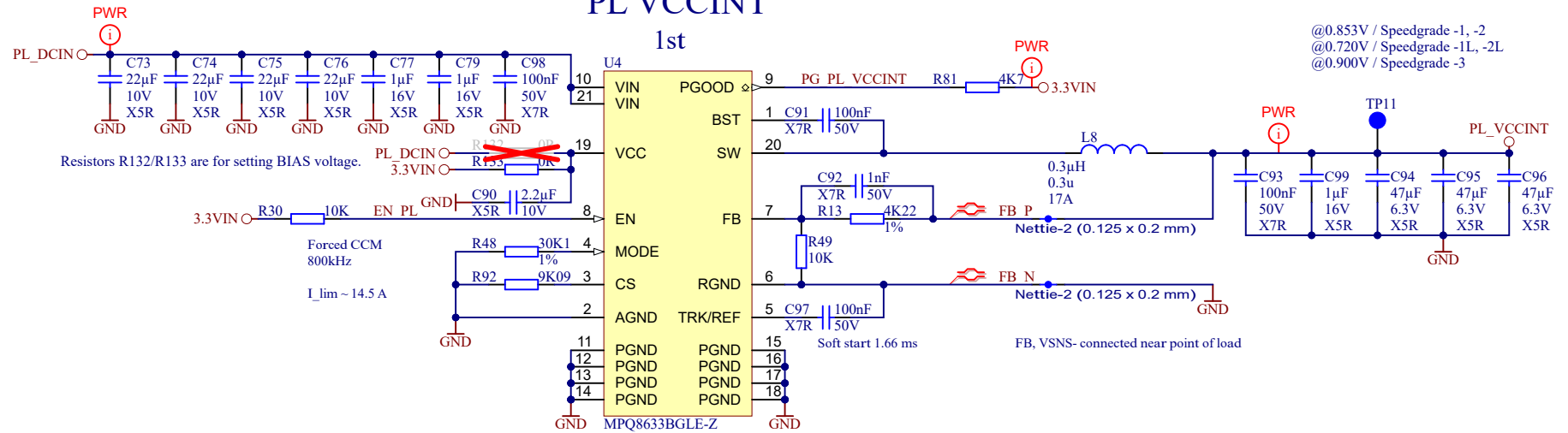


	Title: TE0813 - DDR4_TERM		
	A4	Number: TE0813 5DE71-A	Rev. 02
	Date: 06.01.2026	Copyright: Trenz Electronic GmbH	Page 25 of 30
	Filename: DDR4-TERM.SchDoc		

U4 can be TPS548A28RWW or MPQ8633BGLE-Z which is up to Trenz Electronic GmbH.

PL VCCINT

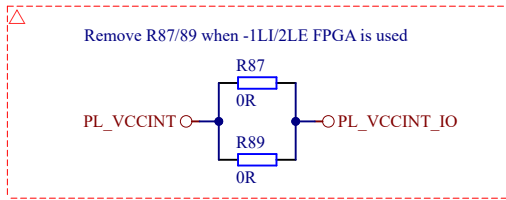
1st



FPGA Speedgrade	R13	R49	PL_VCCINT
-1LI	2 kOhm	10 kOhm	0.720 V
-2LE	2 kOhm	10 kOhm	0.720 V
-1	4.22 kOhm	10 kOhm	0.853 V
-2	4.22 kOhm	10 kOhm	0.853 V
-3E	10 kOhm	20 kOhm	0.900 V

U4 pin compatible with
 -- TPS548B28 (20A)
 -- TPS548A28 (15A)
 -- TPS54JA20 (12A)

		Title: TE0813 - POWER_1	
		A4	Number: TE0813 5DE71-A
Date: 06.01.2026	Copyright: Trenz Electronic GmbH	Page 27 of 30	Rev. 02
Filename: POWER.SchDoc			

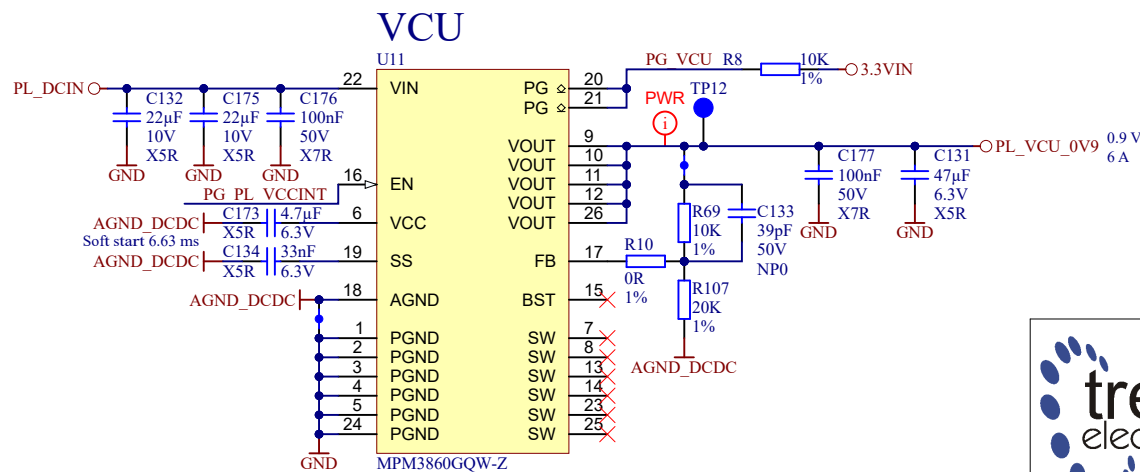
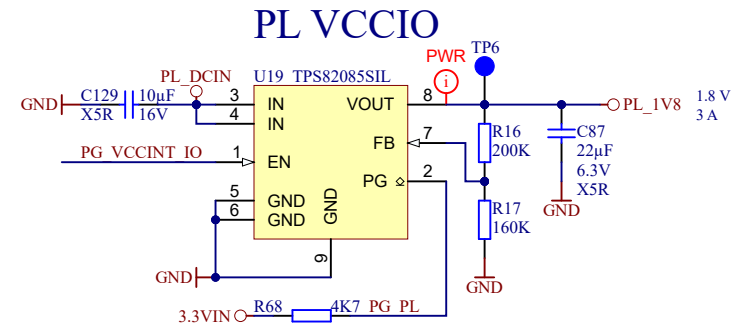
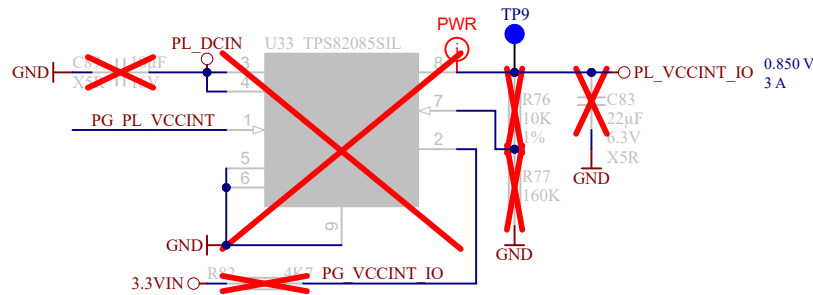


Remove R86 when -1LI/2LE FPGA is used



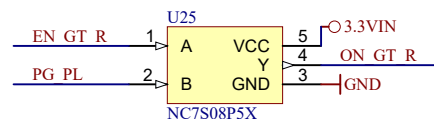
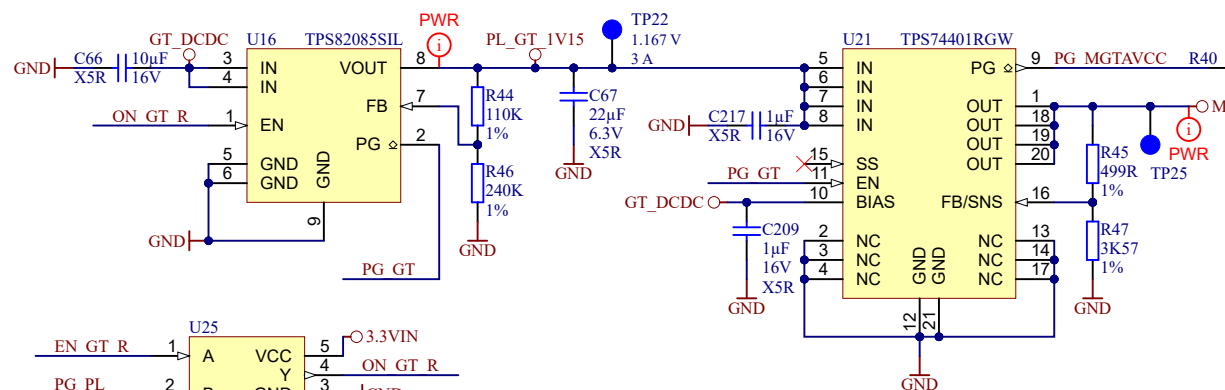
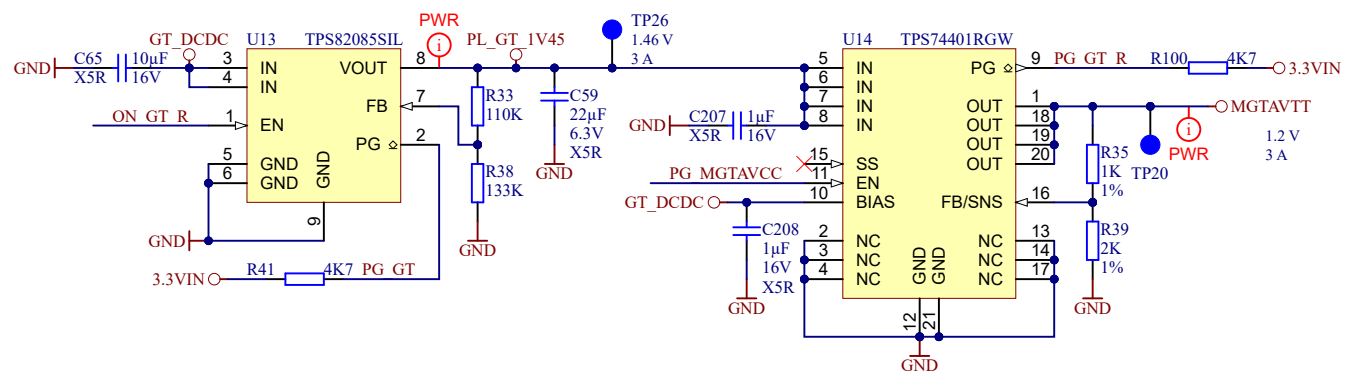
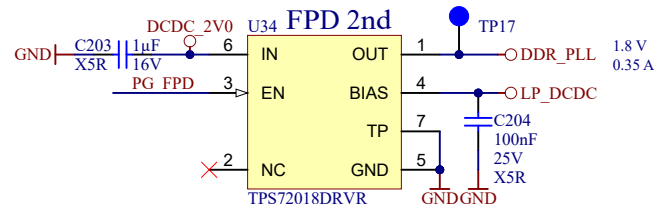
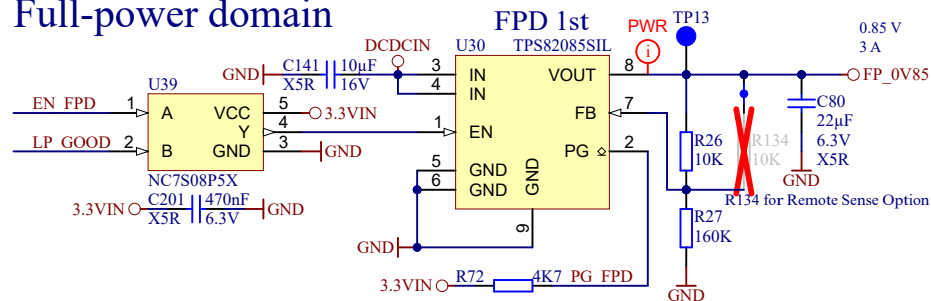
VCCINT_IO & VCCBRAM

Add U33 when -1LI/2LE FPGA is used

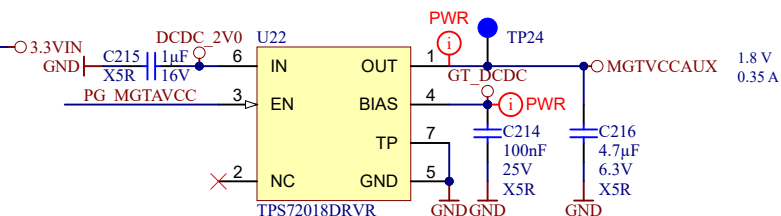
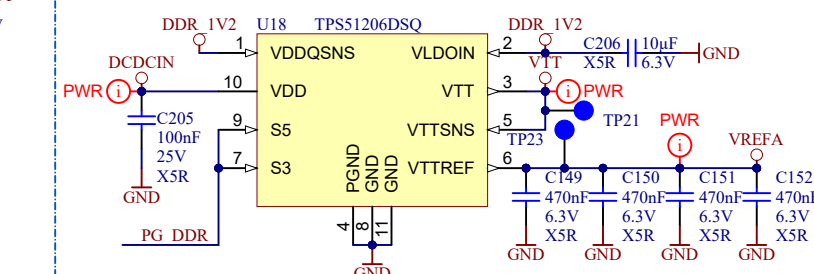
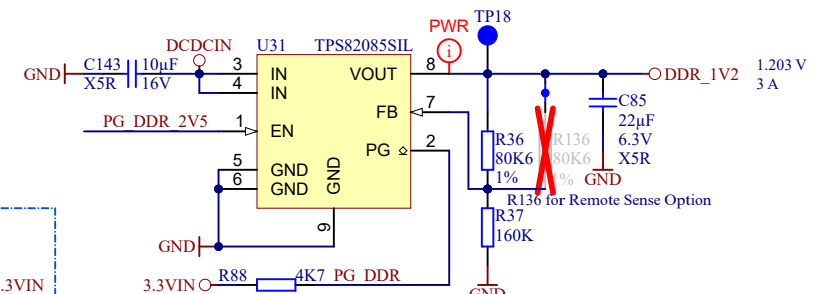
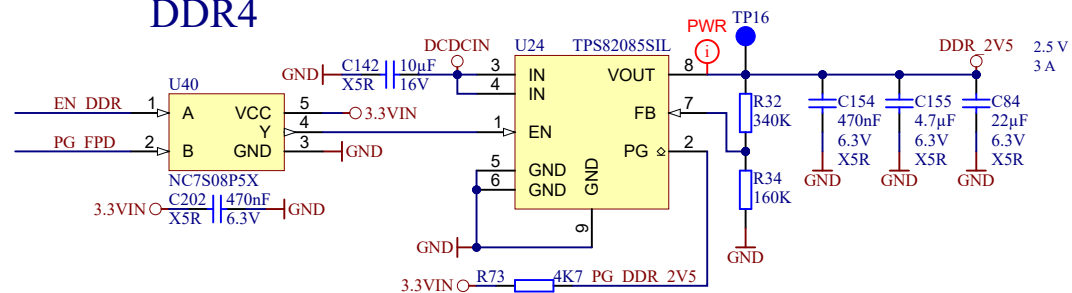


Title: TE0813 - POWER_2		
A4	Number: TE0813 5DE71-A	Rev. 02
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Filename: POWER_1.SchDoc		

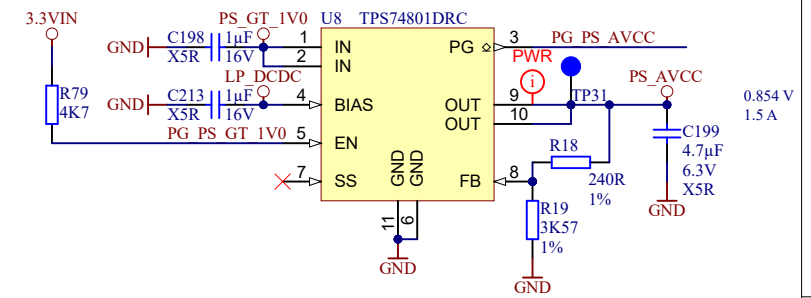
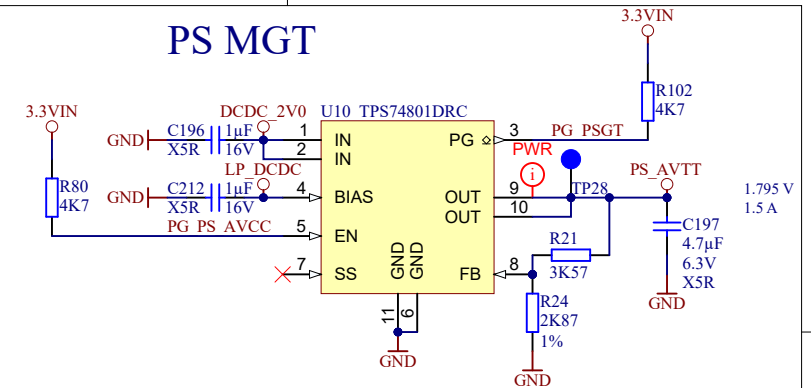
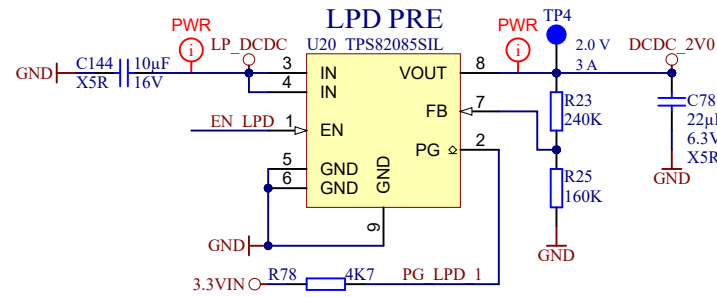
Full-power domain



DDR4



Title: TE0813 - POWER_3		
A4	Number: TE0813 5DE71-A	Rev. 02
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Filename: POWER_2.SchDoc		



The schematic diagram illustrates the power supply section of the TPS3106K33DBVR. It features two main integrated circuits: the LPD 3rd (TPS82085SIL) and the U41 (TPS3106K33DBVR).

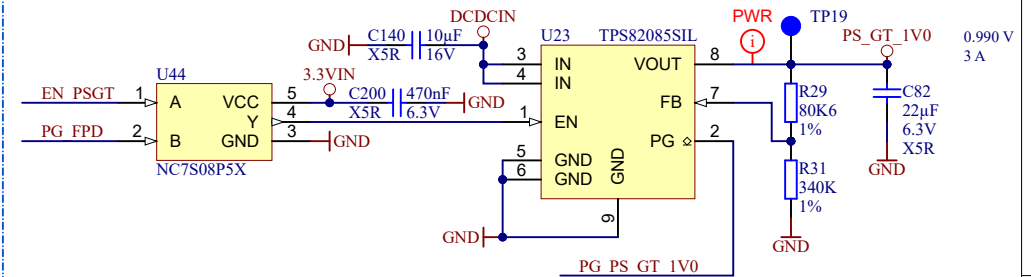
LPD 3rd (TPS82085SIL) Buck Converter:

- Inputs:** PS_AUX, PS_1V8 (1.8V, 3A), and PWR.
- Outputs:** 3.3VIN.
- Components:** C146 (10μF), C86 (22μF, 6.3V, X5R), R14 (200K), R15 (160K), R94 (4K7).
- Pin Connections:** IN, IN, FB, PG, GND, GND, GND, GND, GND.

U41 (TPS3106K33DBVR) Voltage Monitor:

- Inputs:** 3.3VIN, PMEG2005EL,315, and GND.
- Outputs:** TP34 and PS_1V8.
- Components:** R95 (1K), R96 (2K87, 1%), R97 (4K7), C178 (470nF, 6.3V, X5R).
- Pin Connections:** SENSE, VDD, MR, RSTVDD, GND, RSTSENSE.

The diagram also shows various other components and connections, including a diode D2, a MOSFET M1, and a resistor R99 (10K).



Net Name	Voltage Rail	Low Detect
LP_0V85	0.85 V	0.743 V
3.3VIN	3.3 V	2.941 V



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Filename: POWER 3.SchDoc

Rev. 02

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