U_J1
J1.SchDoc

U_J2
J2.SchDoc

U_J3
J3.SchDoc

U_J4
J4.SchDoc

U_DDR4-TERM
DDR4-TERM.SchDoc

U_B64
B64.SchDoc

U_B65
B65.SchDoc

U_B66
B66.SchDoc

U_B_GT
B_GT.SchDoc

U_B_GT_2
B_GT_2.SchDoc

U_B_PS_GT
B_PS_GT.SchDoc

U_PS_DDR
PS_DDR.SchDoc

U_B_MIO
B_MIO.SchDoc

U_B_HD
B_HD.SchDoc

U_Clock
Clock.SchDoc

U_CONFIG
CONFIG.SchDoc

U_DDR4-RAM
DDR4-RAM.SchDoc

U_DDR4-RAM_2
DDR4-RAM_2.SchDoc

U_DDR4-RAM_3
DDR4-RAM_3.SchDoc

U_DDR4-RAM_4
DDR4-RAM_4.SchDoc

U_DDR4-TERM
DDR4-TERM.SchDoc

U_ZU_POWER
ZU_POWER.SchDoc

U_ZU_PS_POWER
ZU_PS_POWER.SchDoc

U_POWER
POWER.SchDoc

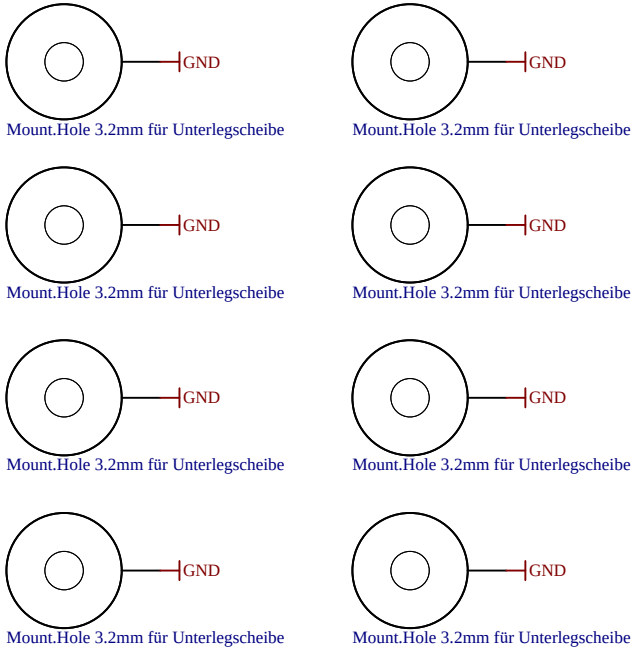
U_POWER_2
POWER_2.SchDoc

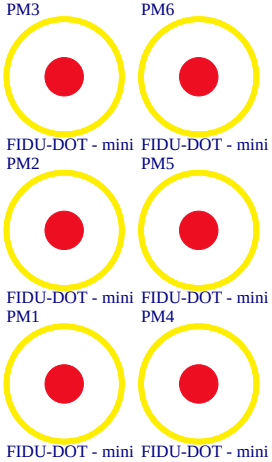
U_POWER_3.
POWER_3.SchDoc

U_POWER_4
POWER_4.SchDoc

U_RC
Revision_Changes.SchDoc

Special notes:





Serial1
Serialnumber 6,3 x 6.3mm

Serial2
Serial
Serialnumber 6,3 x 6.3mm
AD only

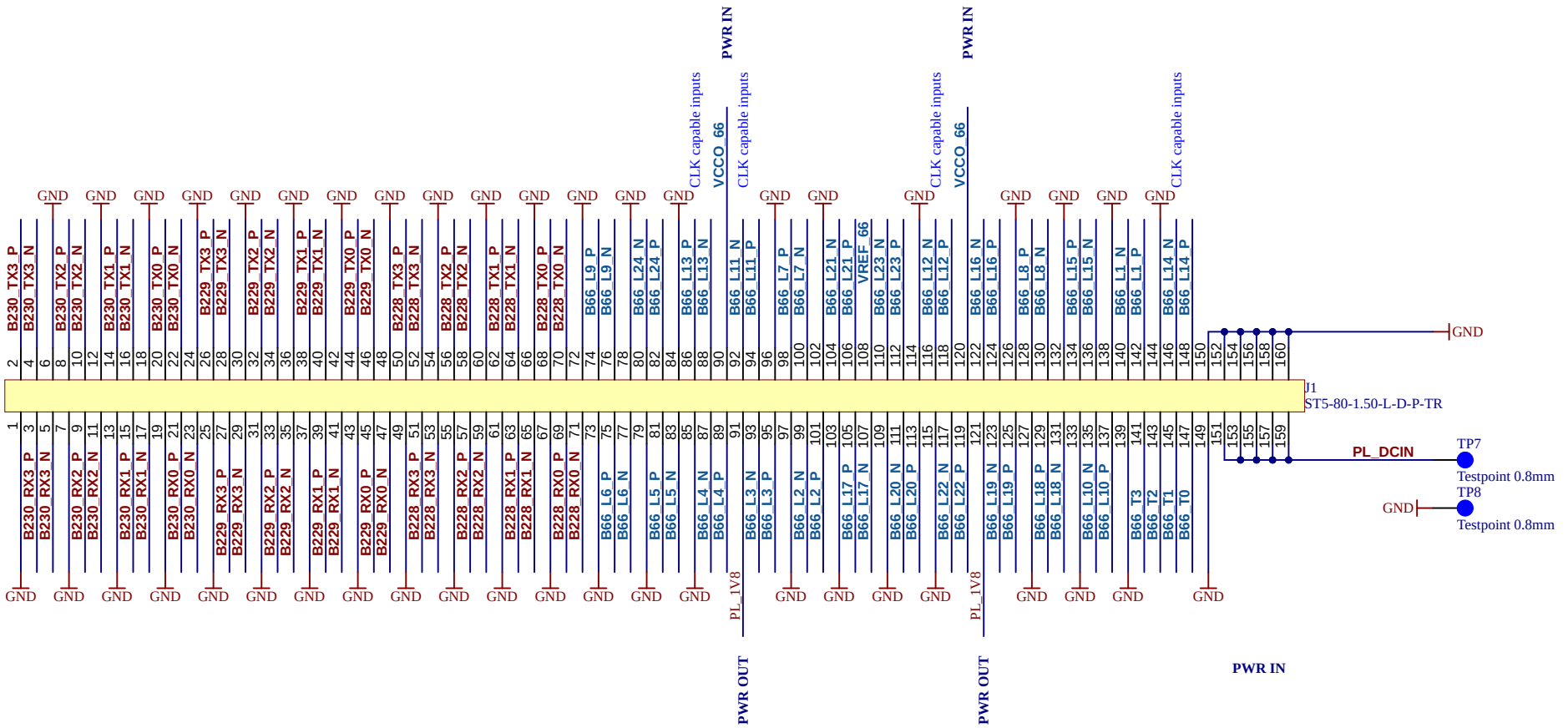
MECH1
TE Address Overlay
LOGO ADDRESS

LOGO1
TE Logo PRINT Layer
LOGO PRINT

Design drawn by:	VY
Checked by:	MR
Assembly variant:	9GI21-E
Created by:	MR
Modified by:	MR
Modified at:	2024-05-08

trenz electronic

Title: TE0808		
A4	Number: TE0808 9GI21-E	Rev. 05
Date: 2020-04-02	Copyright: Trenz Electronic GmbH / TT	Page 1 of 28
Filename: TE0808.SchDoc		



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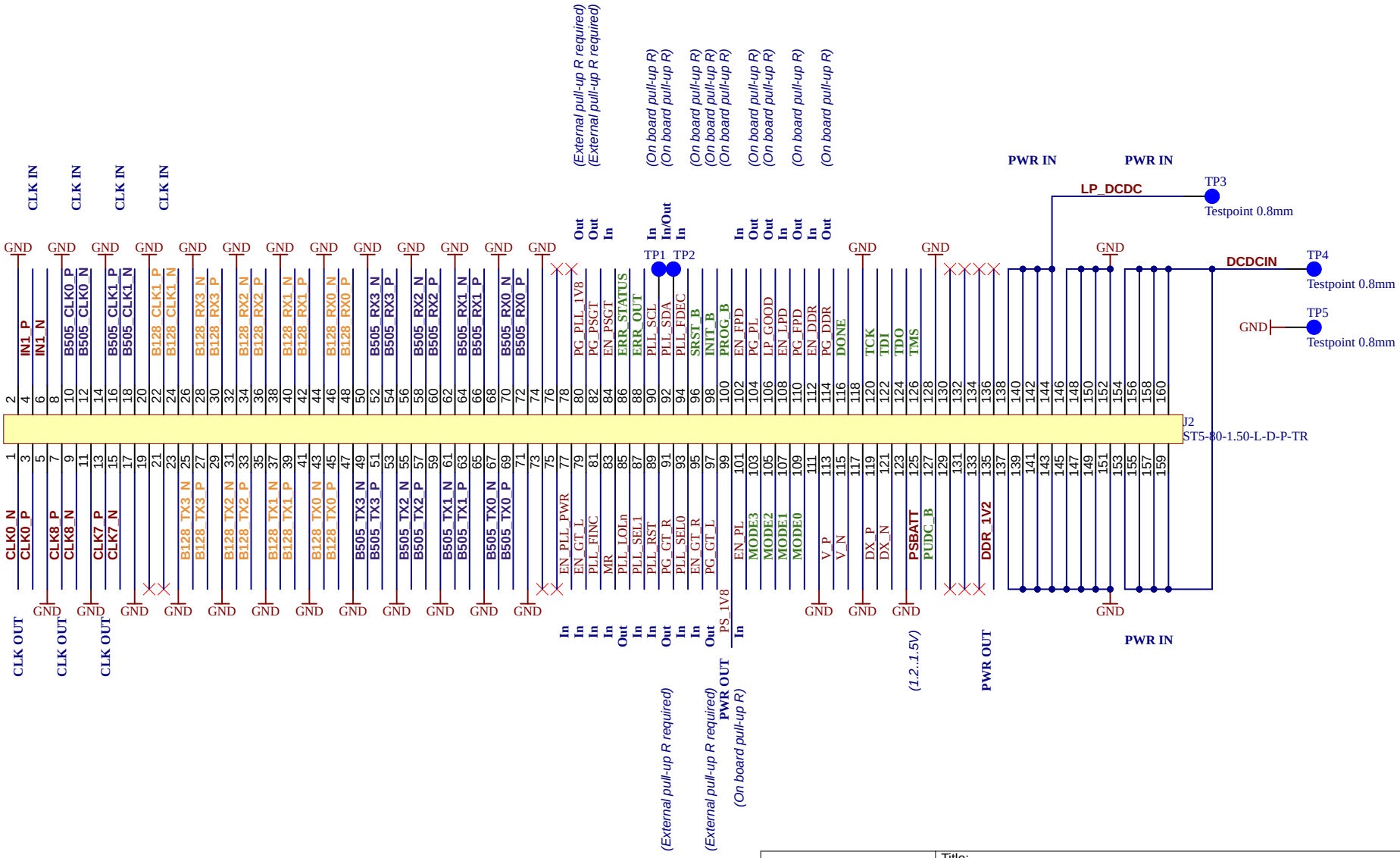
Date: 2020-04-02	Copyright: Trenz Electronic GmbH / TT		Page 2 of 28
Filename: J1.SchDoc			



trenz electronic

Title: TE0808 - Connector J2		
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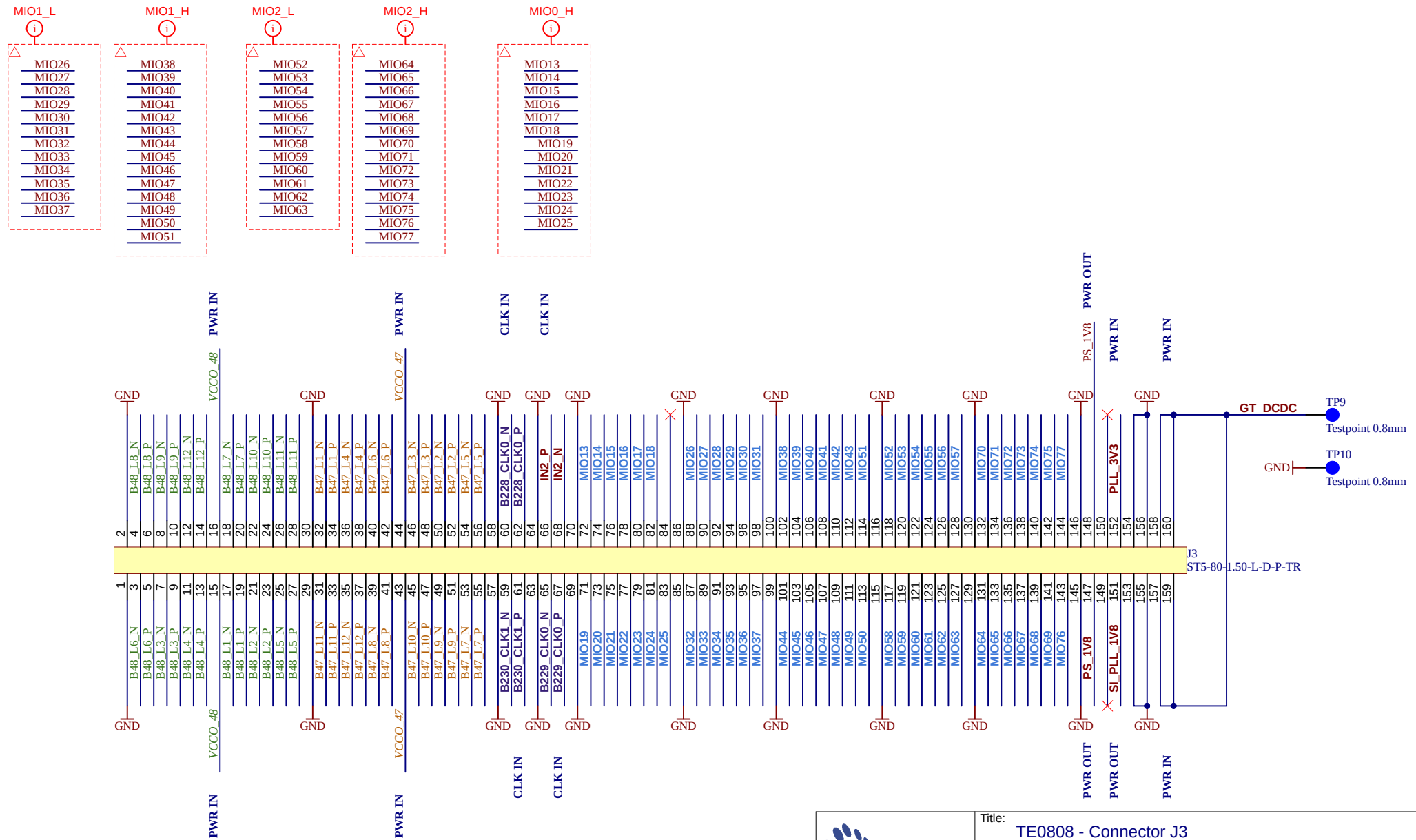
Date: 2020-04-02	Copyright: Trenz Electronic GmbH / TT	Page 3 of 28
Filename: J2.SchDoc		



trenz electronic

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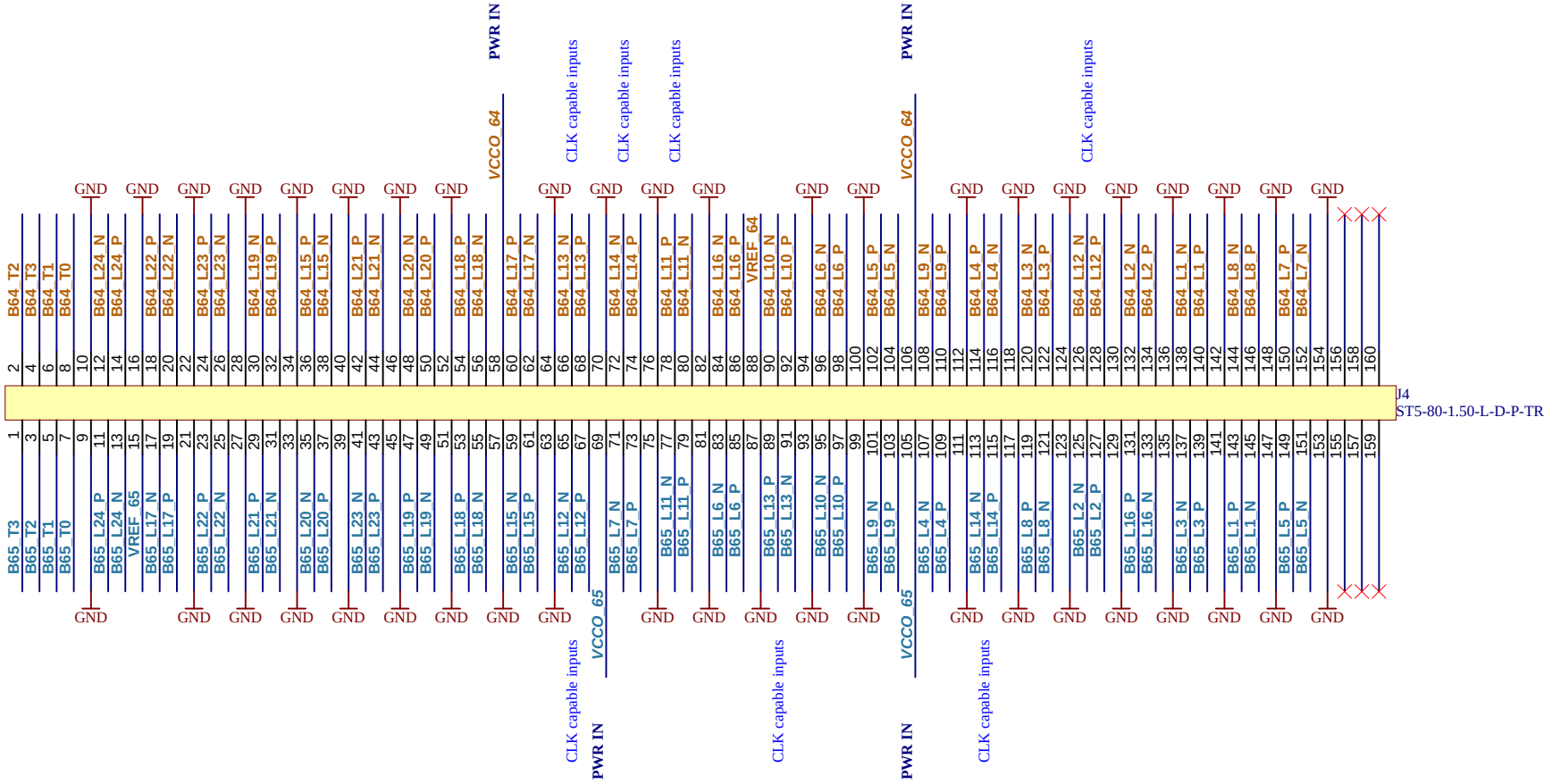
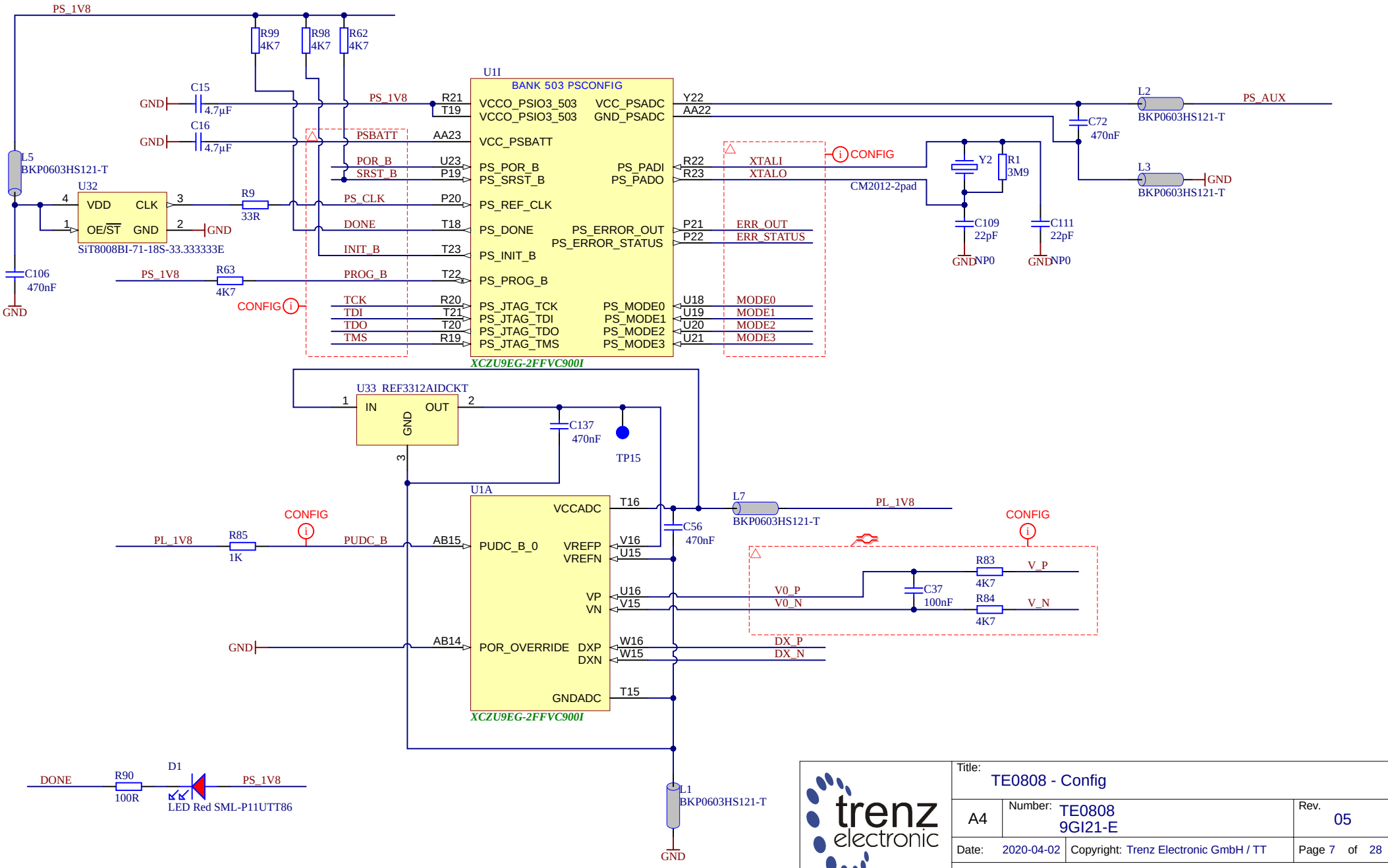
Date: 2020-04-02	Copyright: Trenz Electronic GmbH / TT		Page 4 of 28
Filename: J3.SchDoc			



trenz electronic	Title: TE0808 - Connector J4		
A4	Number: TE0808 9GI21-E		Rev. 05
Date: 2020-04-02	Copyright: Trenz Electronic GmbH / TT		Page 5 of 28
Filename: J4.SchDoc			

trenz electronic	Title: TE0808 - B47HD and B48HD		
A4	Number: TE0808 9GI21-E		Rev. 05
Date: 2020-04-02	Copyright: Trenz Electronic GmbH / TT		Page 6 of 28
Filename: B_HD.SchDoc			



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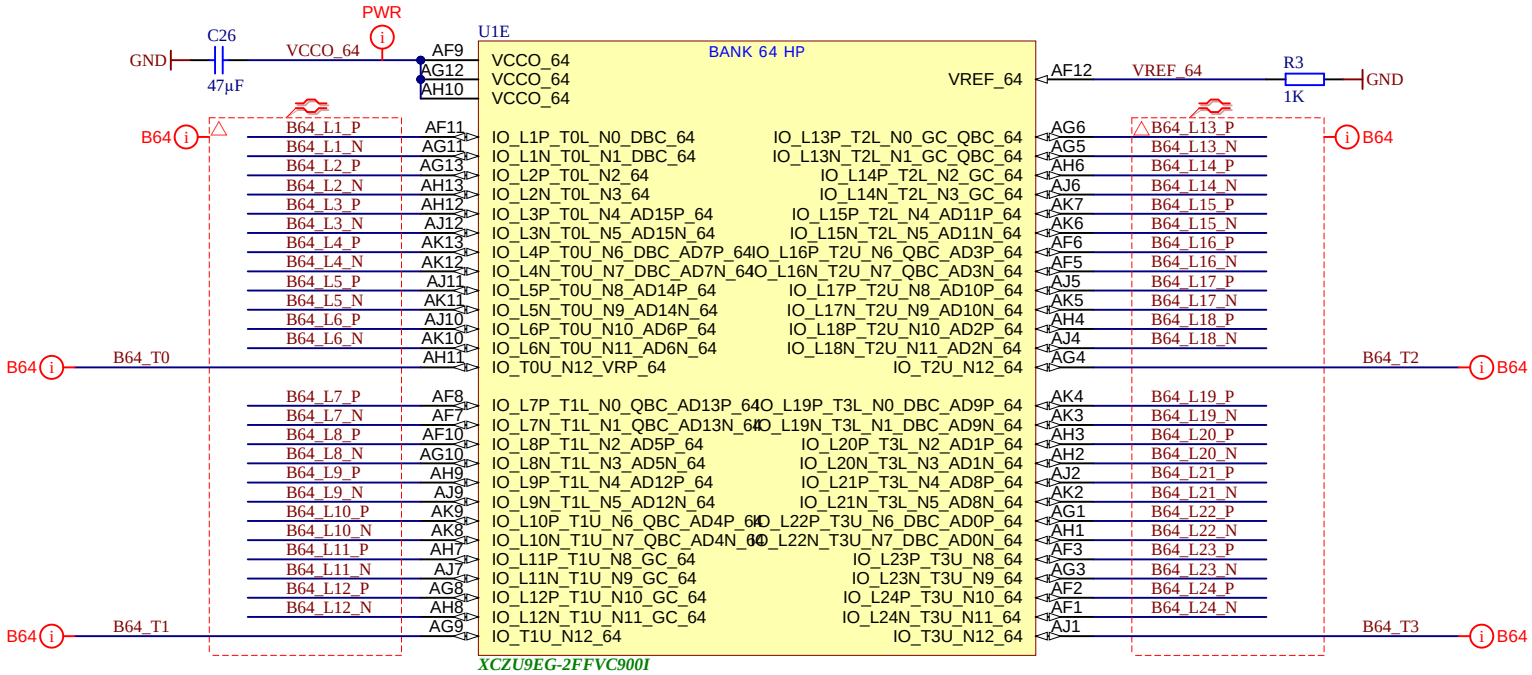
Date: 2020-04-02	Copyright: Trenz Electronic GmbH / TT		Page 7 of 28
Filename: CONFIG.SchDoc			



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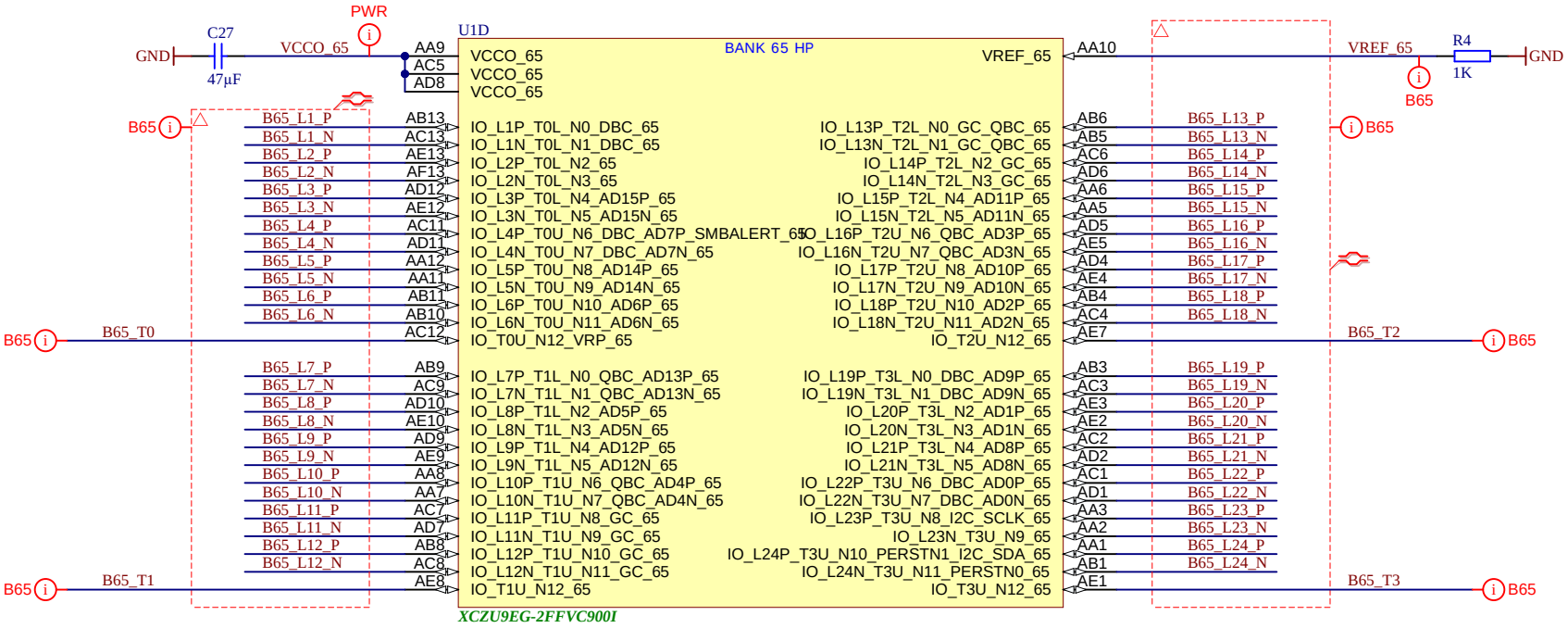
Date: 2020-04-02	Copyright: Trenz Electronic GmbH / TT		Page 8 of 28
Filename: B64.SchDoc			



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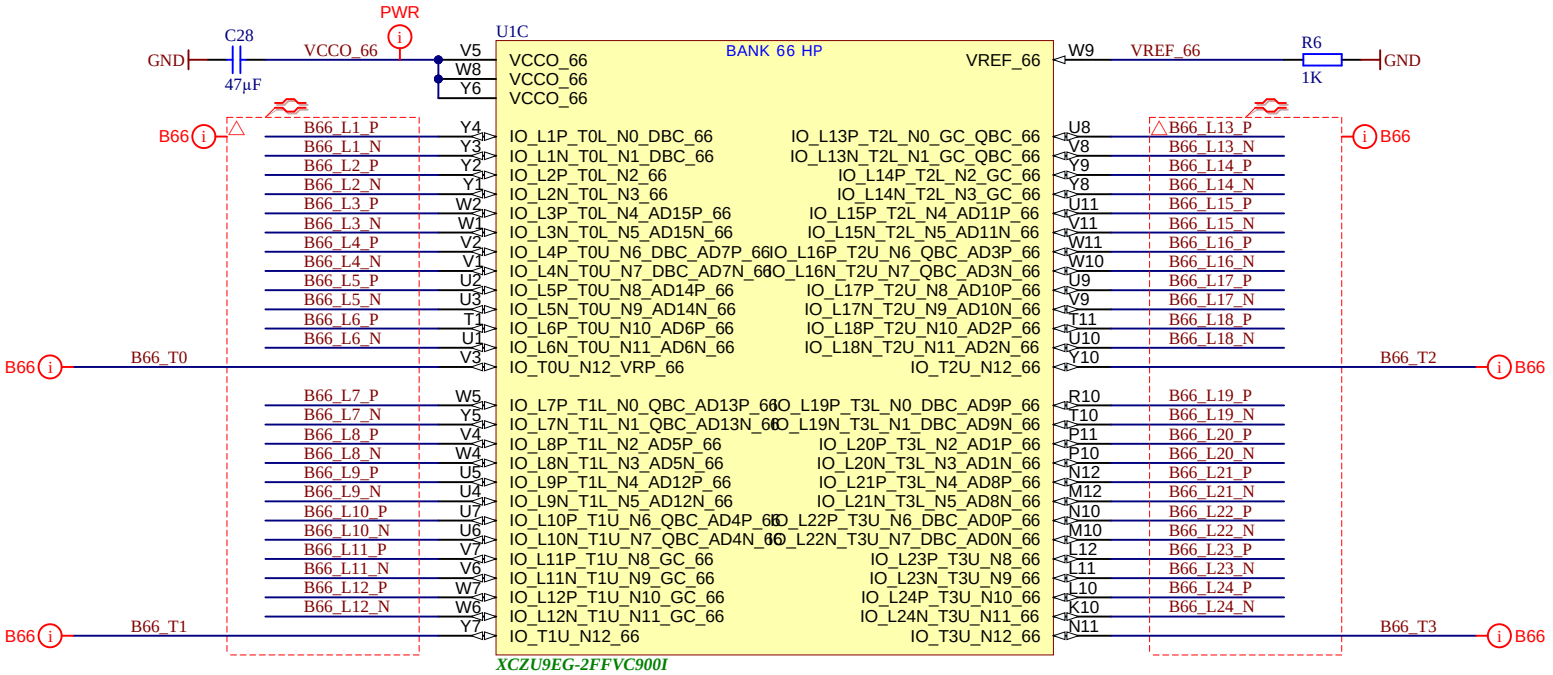
Date: 2020-04-02	Copyright: Trenz Electronic GmbH / TT		Page 9 of 28
Filename: B65.SchDoc			



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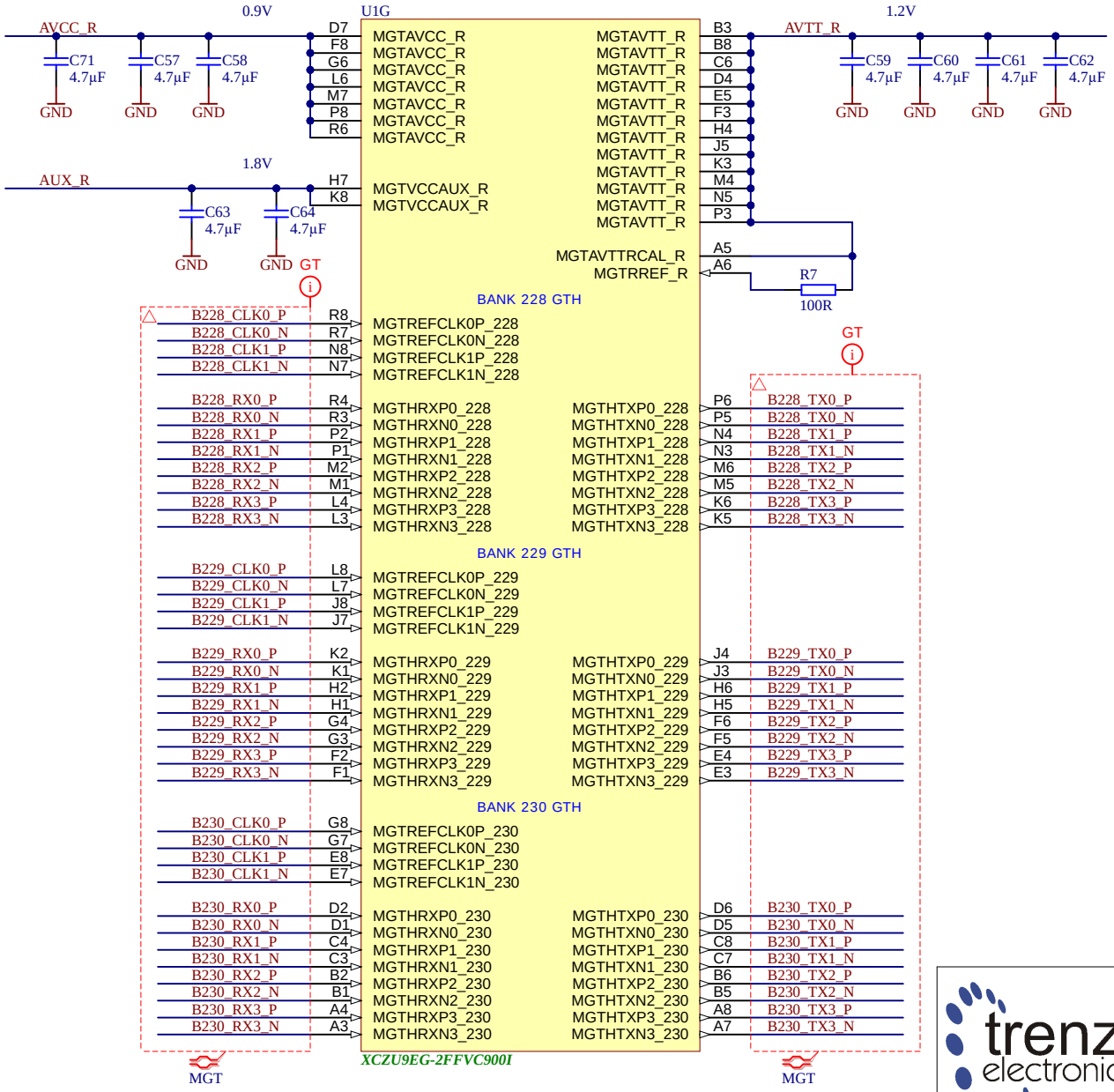
Date: 2020-04-02	Copyright: Trenz Electronic GmbH / TT		Page 10 of 28
Filename: B66.SchDoc			



trenz electronic

Title: TE0808 - B228GTH_B229GTH_B230GTH			
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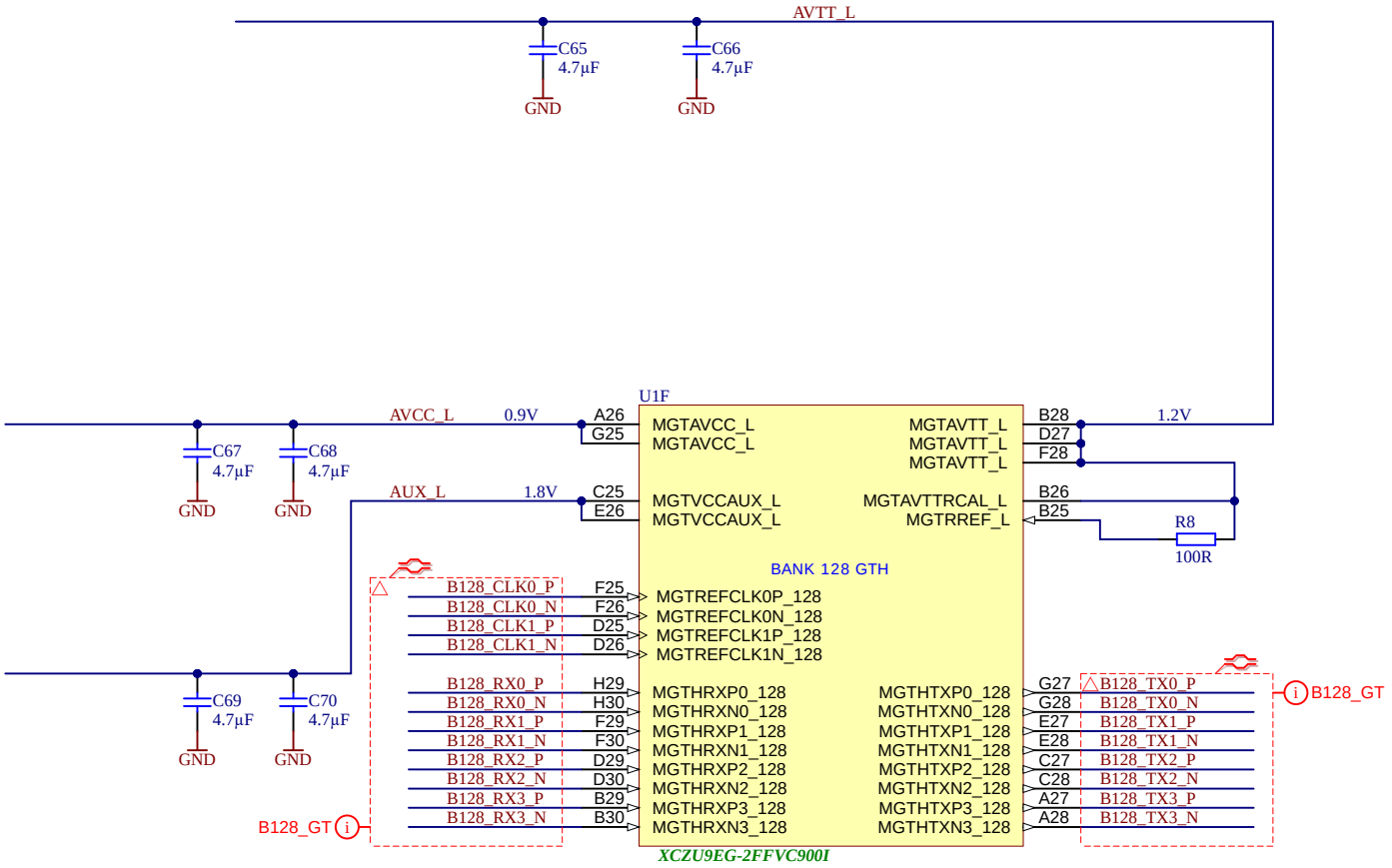
Date: 2020-04-02	Copyright: Trenz Electronic GmbH / TT		Page 11 of 28
Filename: B_GT.SchDoc			



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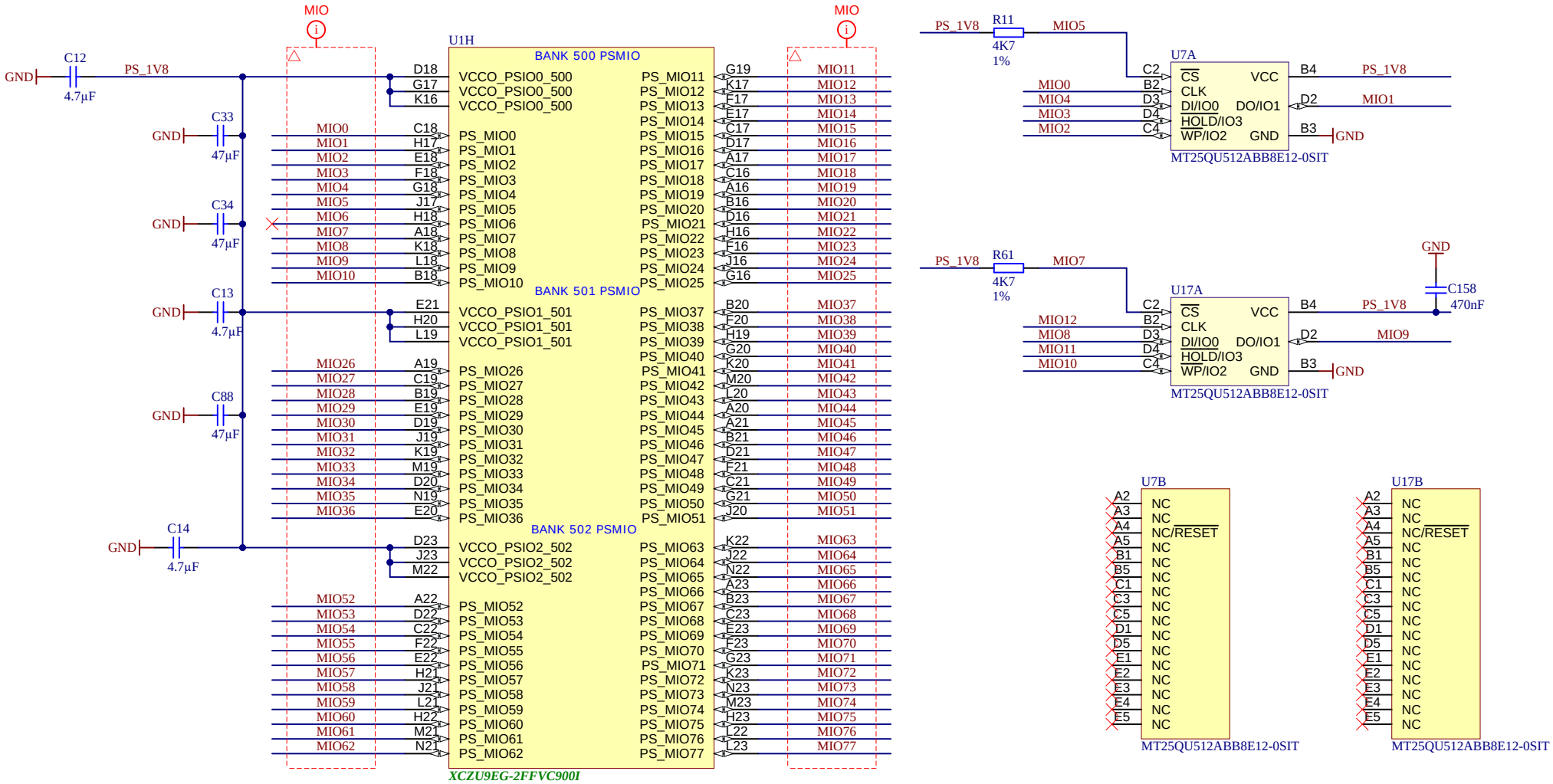
Date: 2020-04-02	Copyright: Trenz Electronic GmbH / TT		Page 12 of 28
Filename: B_GT_2.SchDoc			



trenz electronic	Title: TE0808 - MIO Banks		
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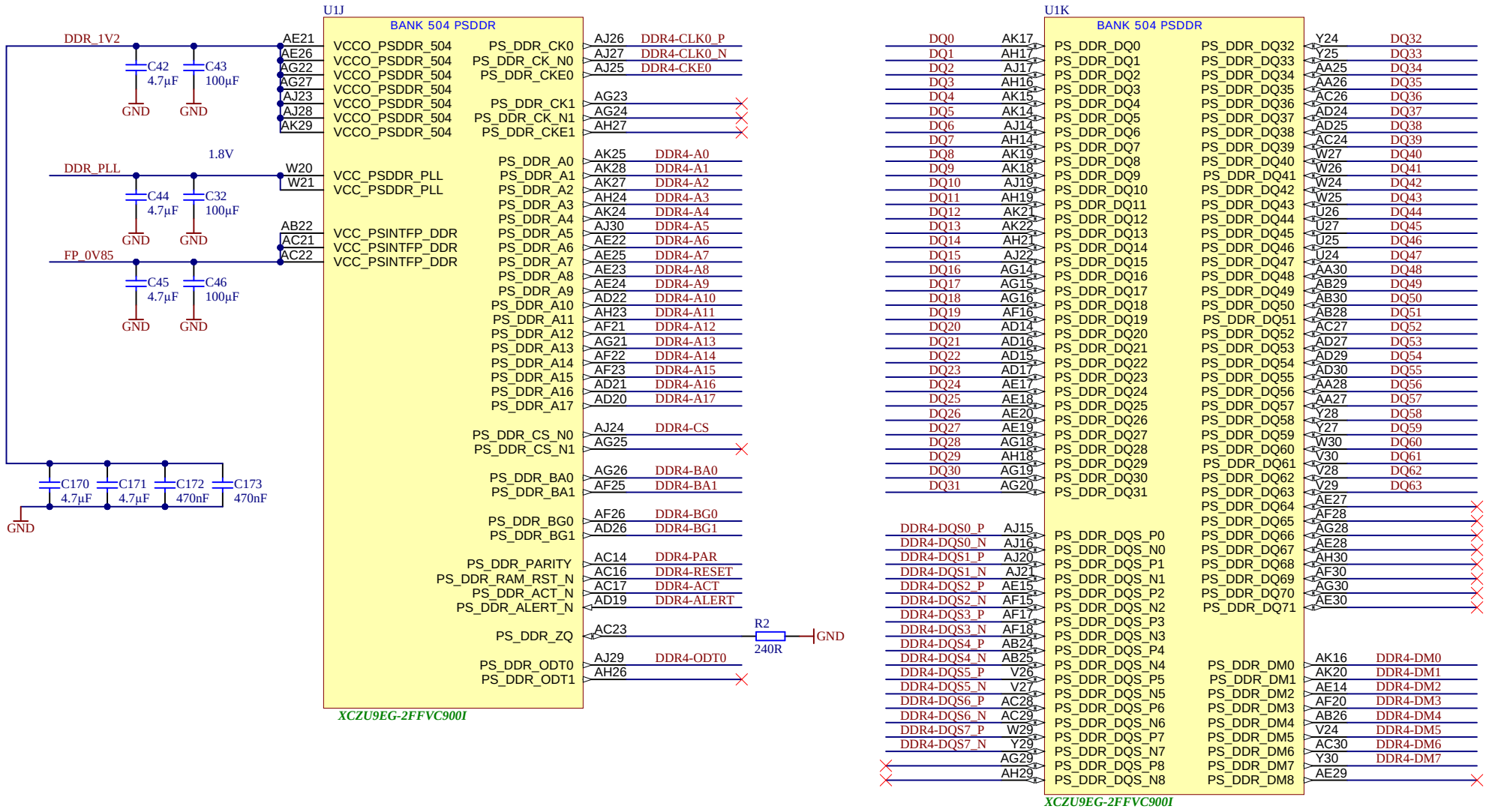
Date: 2020-04-02	Copyright: Trenz Electronic GmbH / TT		Page 13 of 28
Filename: B_MIO.SchDoc			



trenz electronic

Title: TE0808 - PS_DDR		
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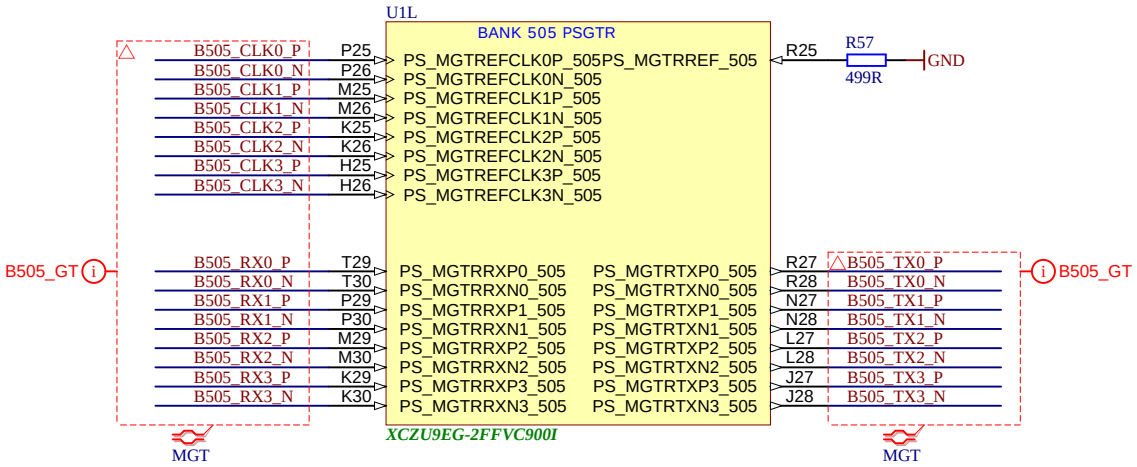
Date: 2020-04-02	Copyright: Trenz Electronic GmbH / TT	Page 14 of 28
Filename: PS_DDR.SchDoc		



Title: TE0808 - PS_GT			
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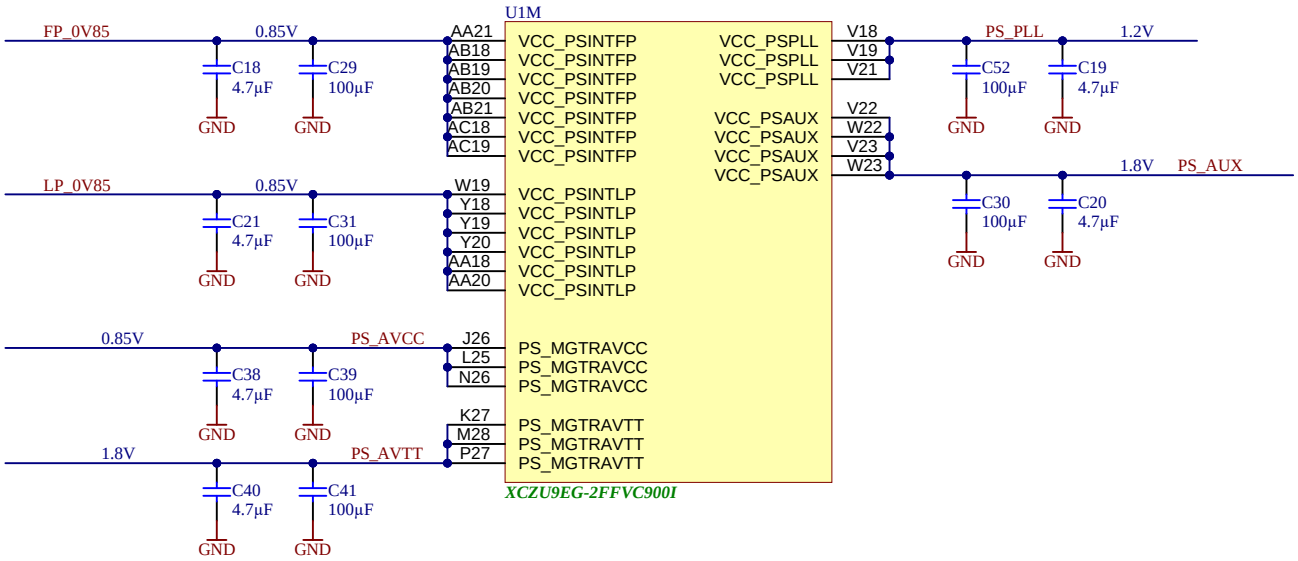
Date: 2020-04-02	Copyright: Trenz Electronic GmbH / TT		Page 15 of 28
Filename: B_PS_GT.SchDoc			



trenz electronic	Title: TE0808 - ZU_PS_POWER		
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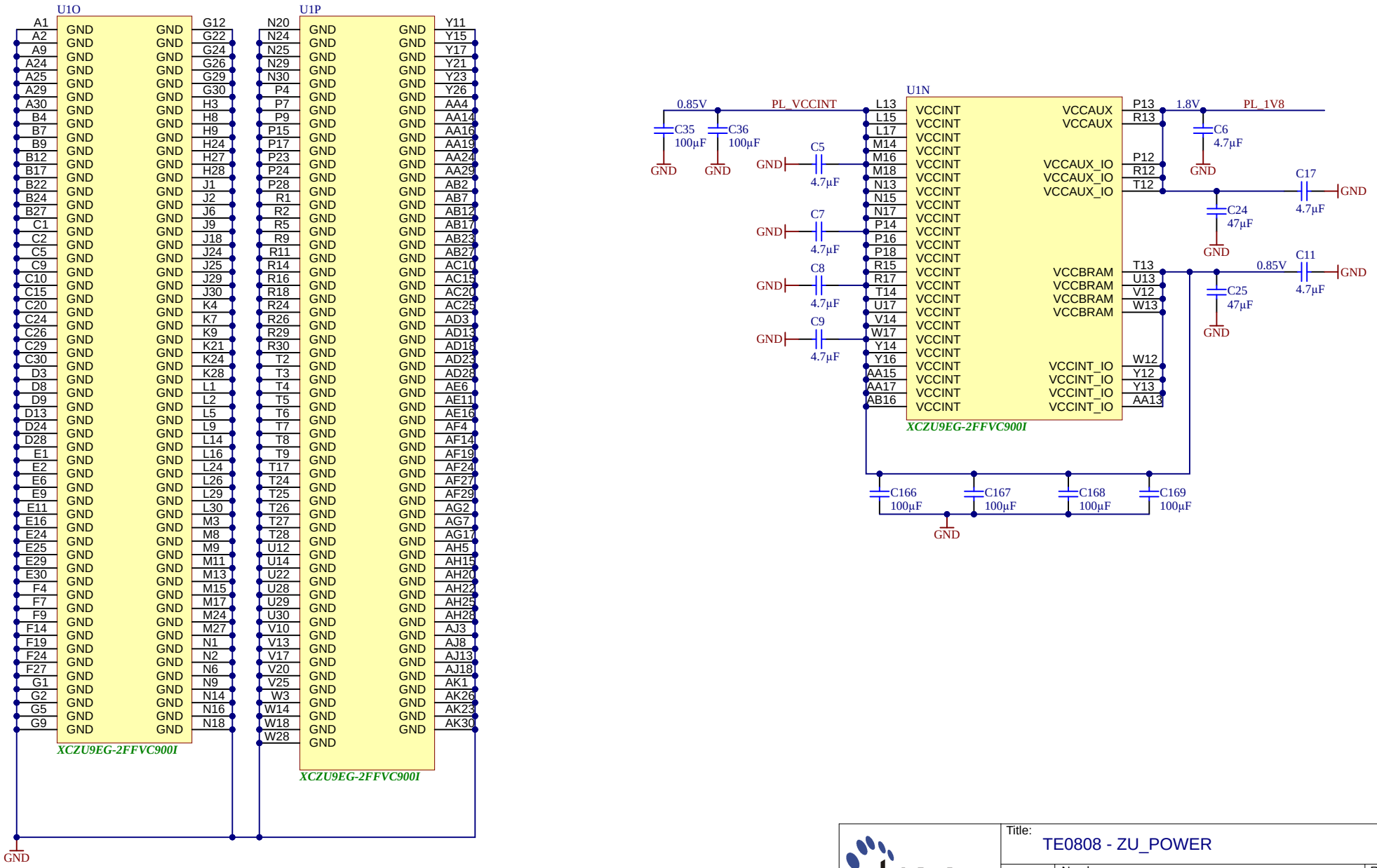
Date: 2020-04-02	Copyright: Trenz Electronic GmbH / TT		Page 16 of 28
Filename: ZU_PS_POWER.SchDoc			



Title: TE0808 - ZU_POWER			
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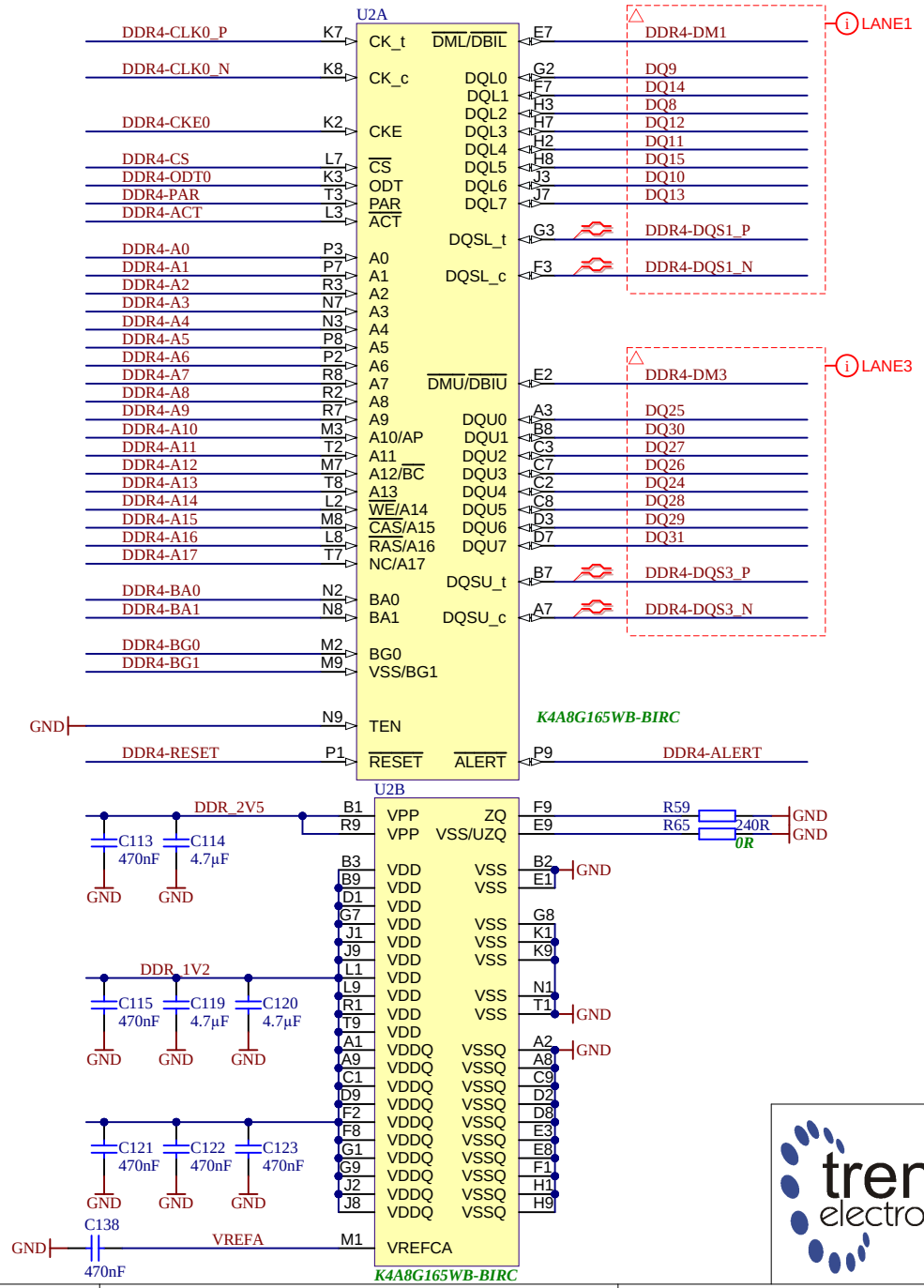
Date: 2020-04-02	Copyright: Trenz Electronic GmbH / TT		Page 17 of 28
Filename: ZU_POWER.SchDoc			



trenz electronic

Title: TE0808 - DDR4_1_RAM			
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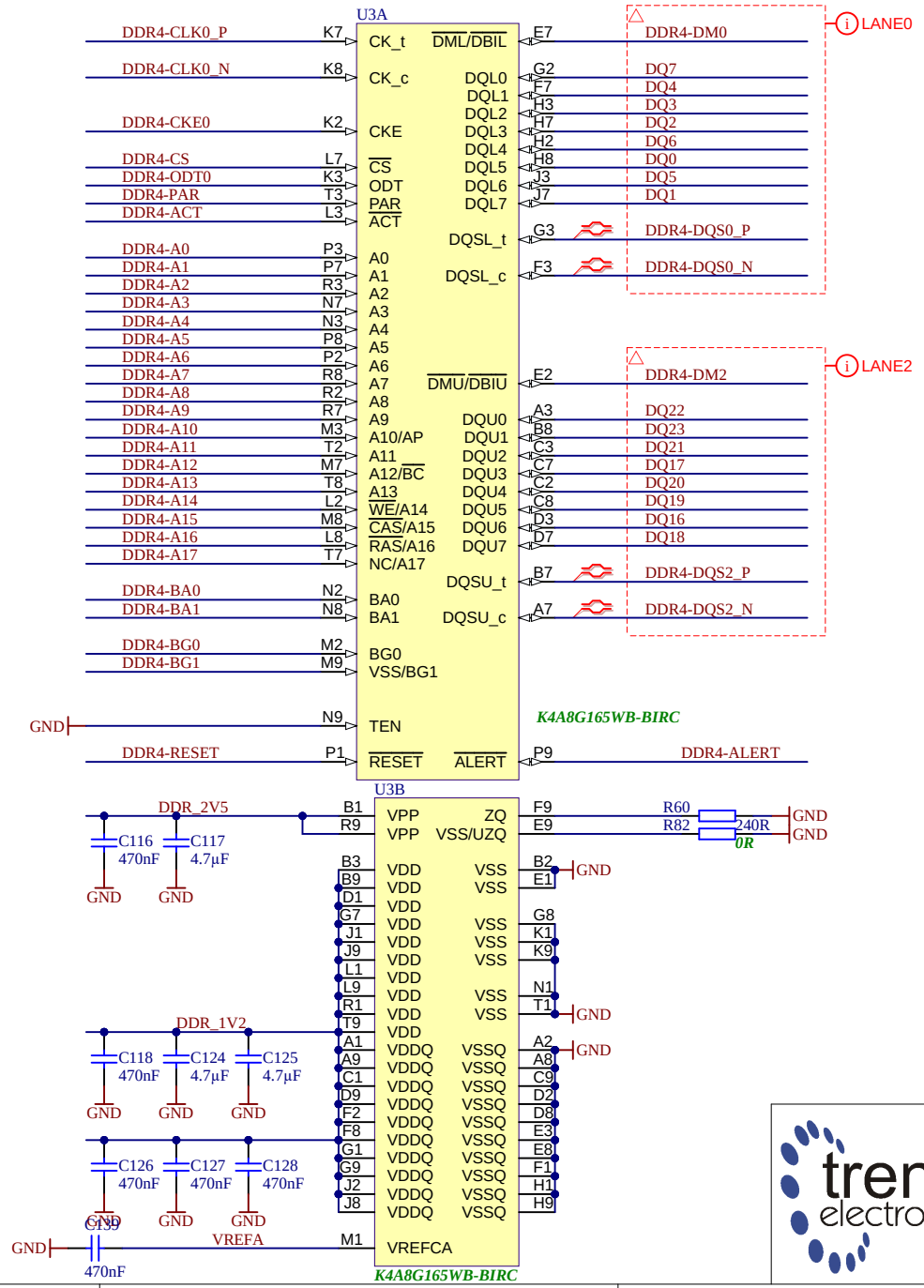
Date: 2020-04-02	Copyright: Trenz Electronic GmbH / TT		Page 18 of 28
Filename: DDR4-RAM.SchDoc			



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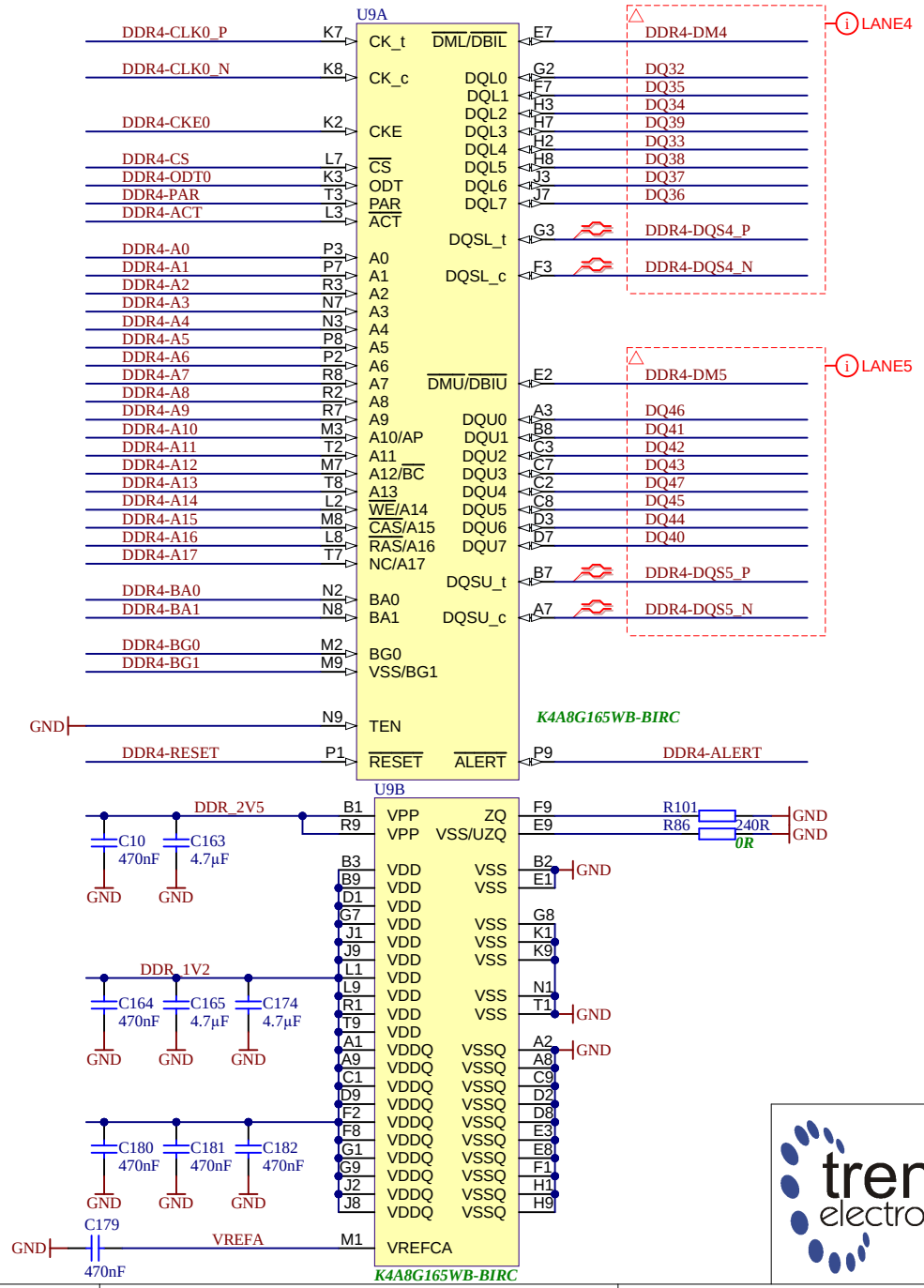
	Date: 2020-04-02	Copyright: Trenz Electronic GmbH / TT	Page 19 of 28
	Filename: DDR4-RAM_2.SchDoc		



trenz electronic	Title: TE0808 - DDR4_3_RAM		
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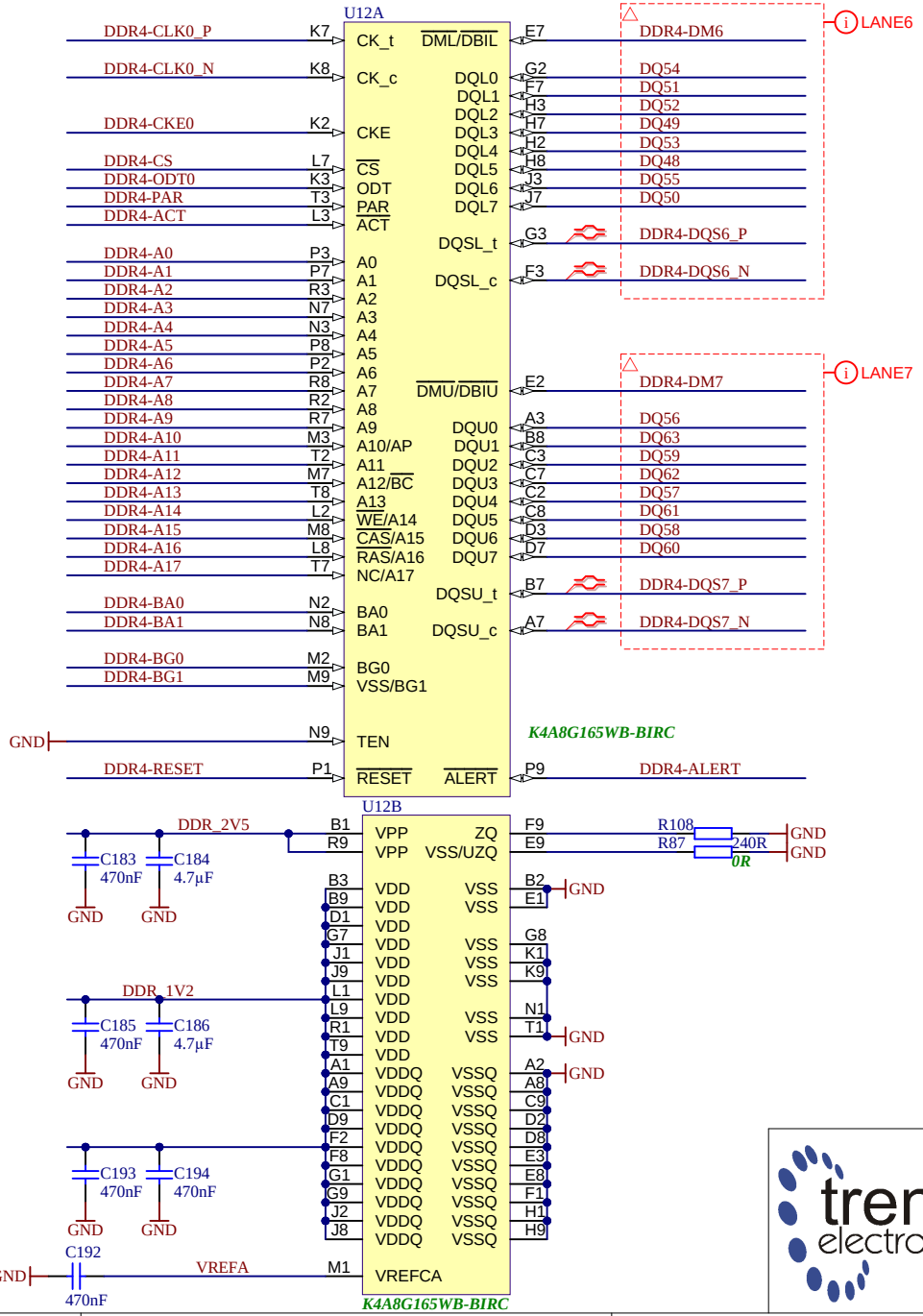
	Date: 2020-04-02	Copyright: Trenz Electronic GmbH / TT	Page 20 of 28
	Filename: DDR4-RAM_3.SchDoc		



trenz electronic	Title: TE0808 - DDR4_4_RAM		
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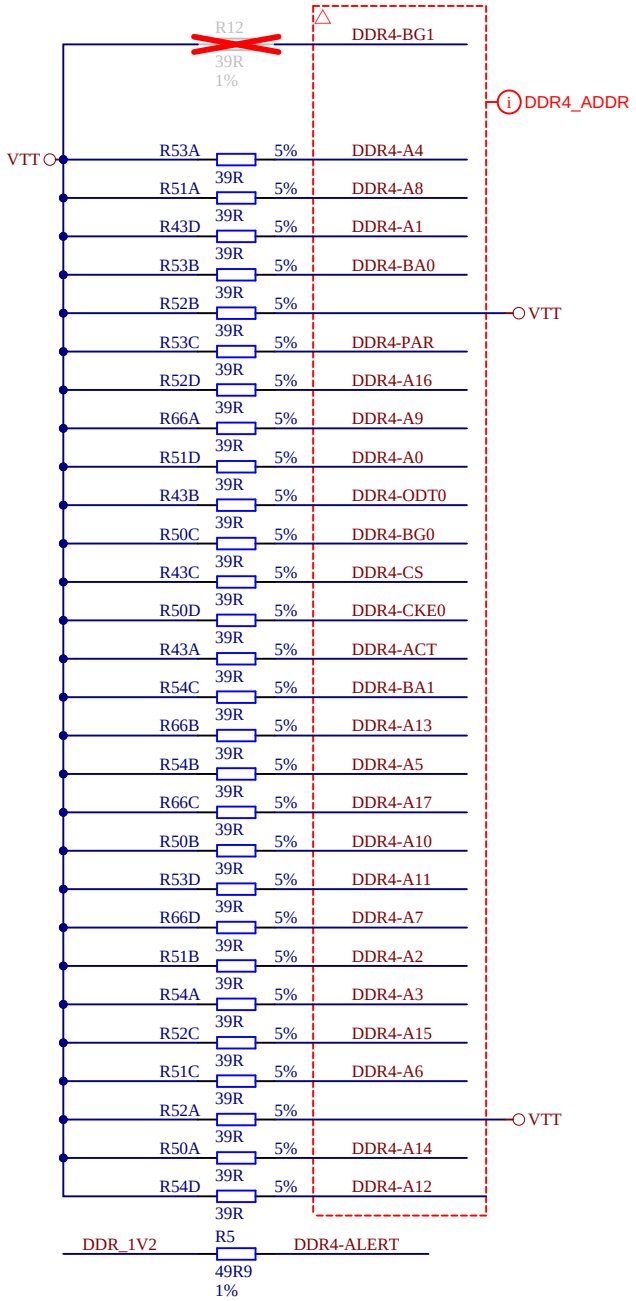
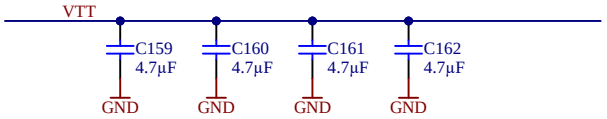
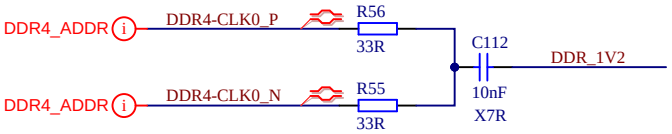
	Date: 2020-04-02	Copyright: Trenz Electronic GmbH / TT	Page 21 of 28
	Filename: DDR4-RAM_4.SchDoc		







Title: TE0808 - DDR4_TERM			
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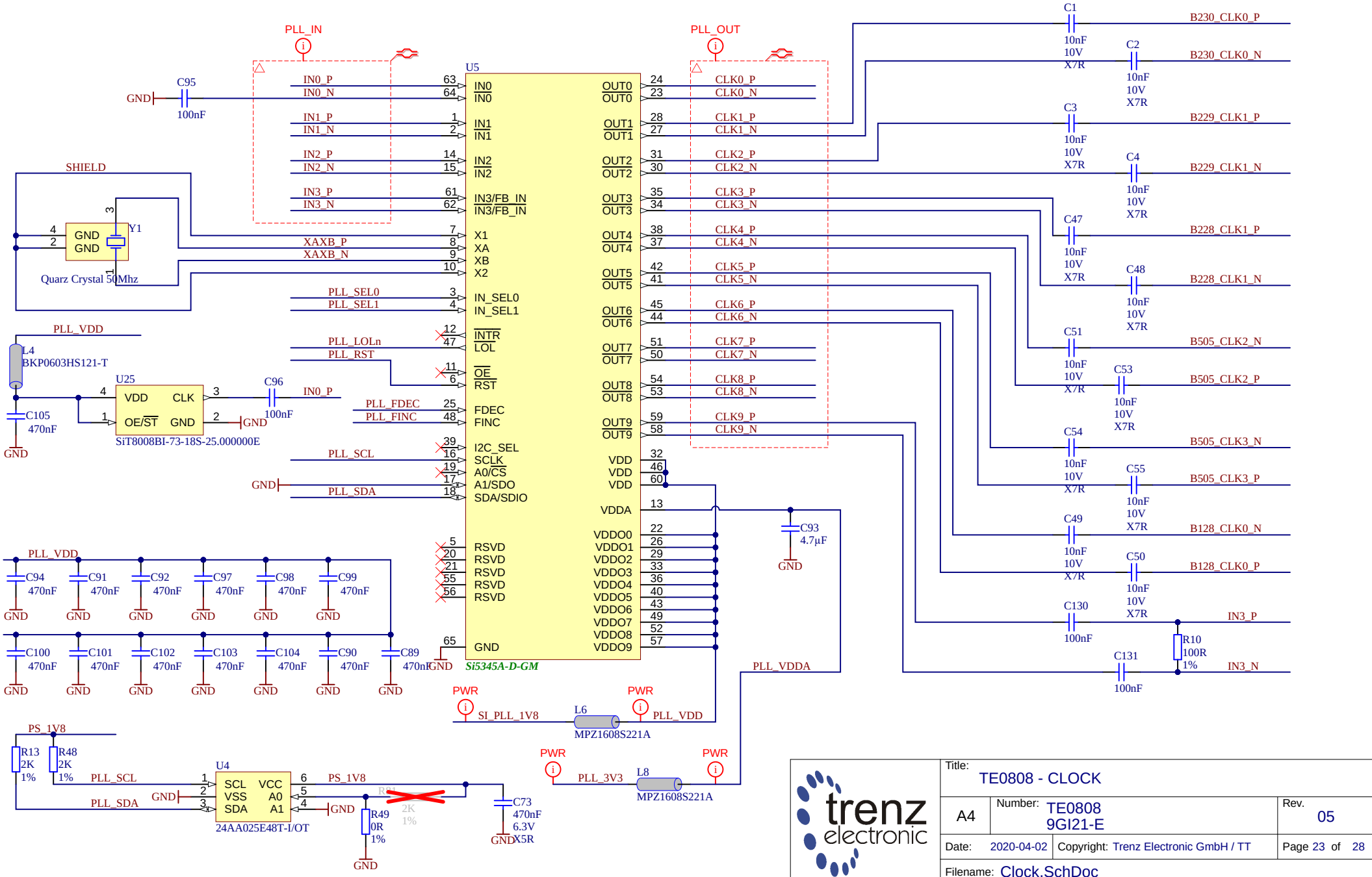
Date: 2020-04-02	Copyright: Trenz Electronic GmbH / TT		Page 22 of 28
Filename: DDR4-TERM.SchDoc			



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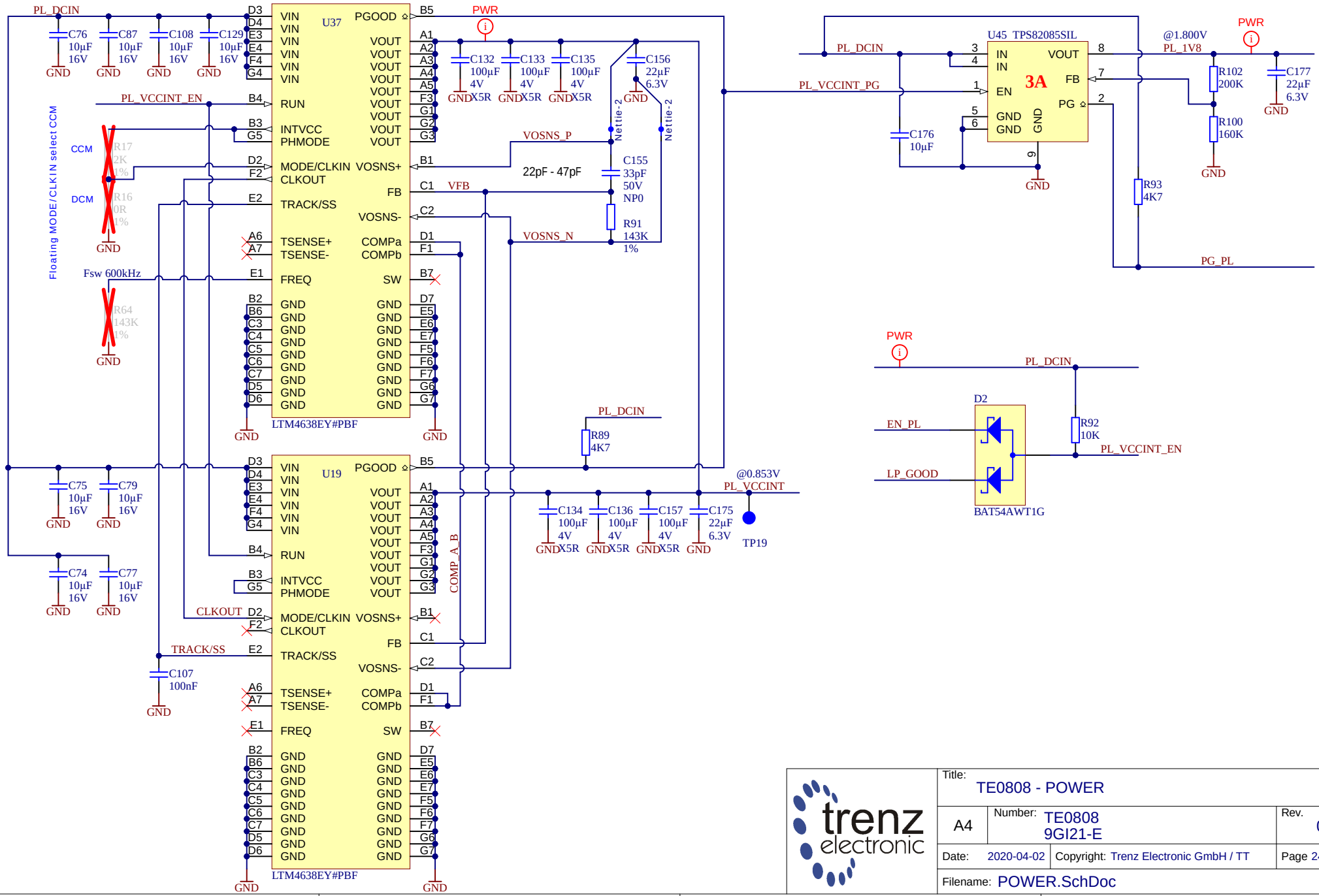
Date: 2020-04-02	Copyright: Trenz Electronic GmbH / TT		Page 23 of 28
Filename: Clock.SchDoc			



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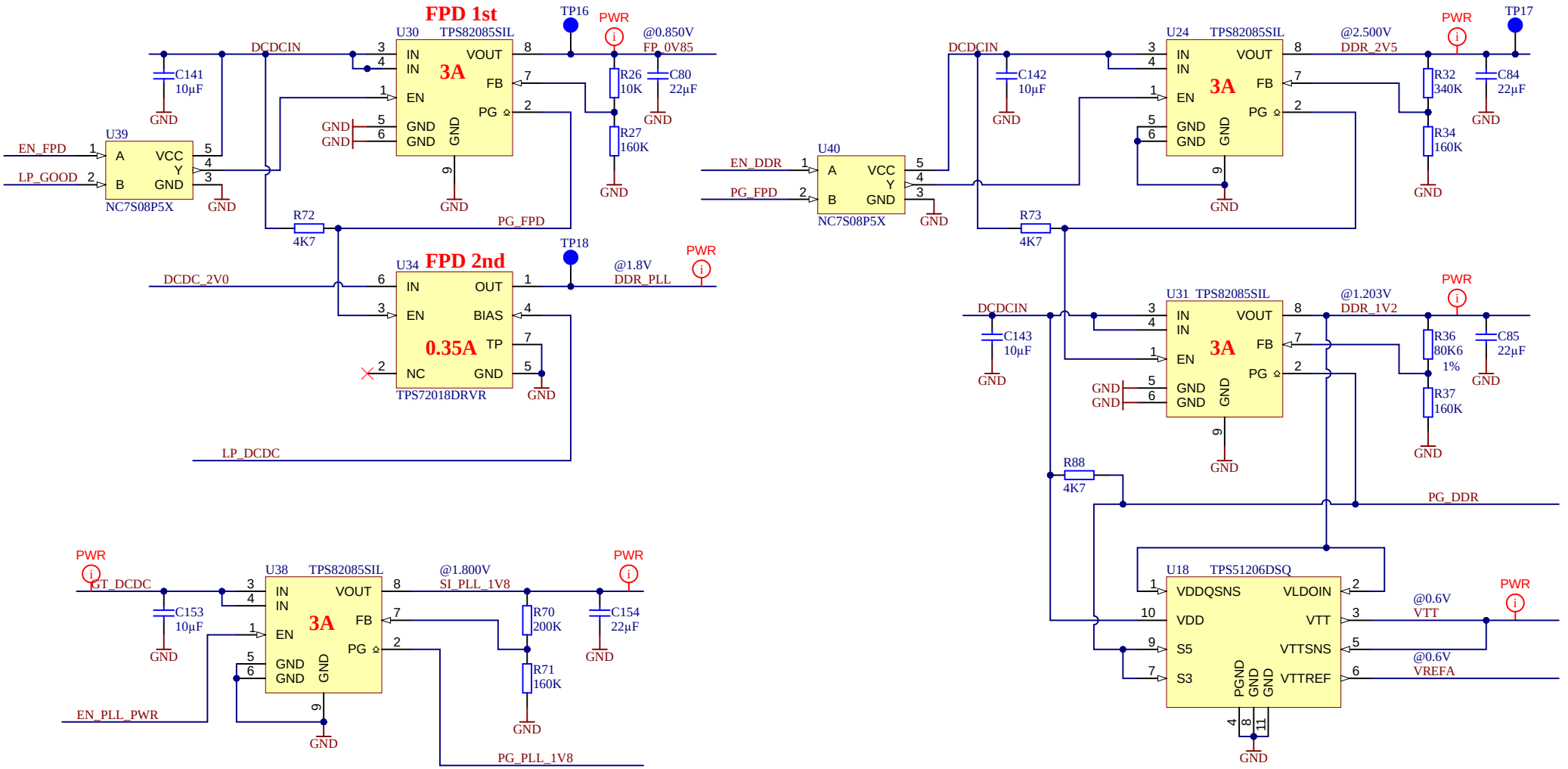
Date: 2020-04-02	Copyright: Trenz Electronic GmbH / TT		Page 24 of 28
Filename: POWER.SchDoc			



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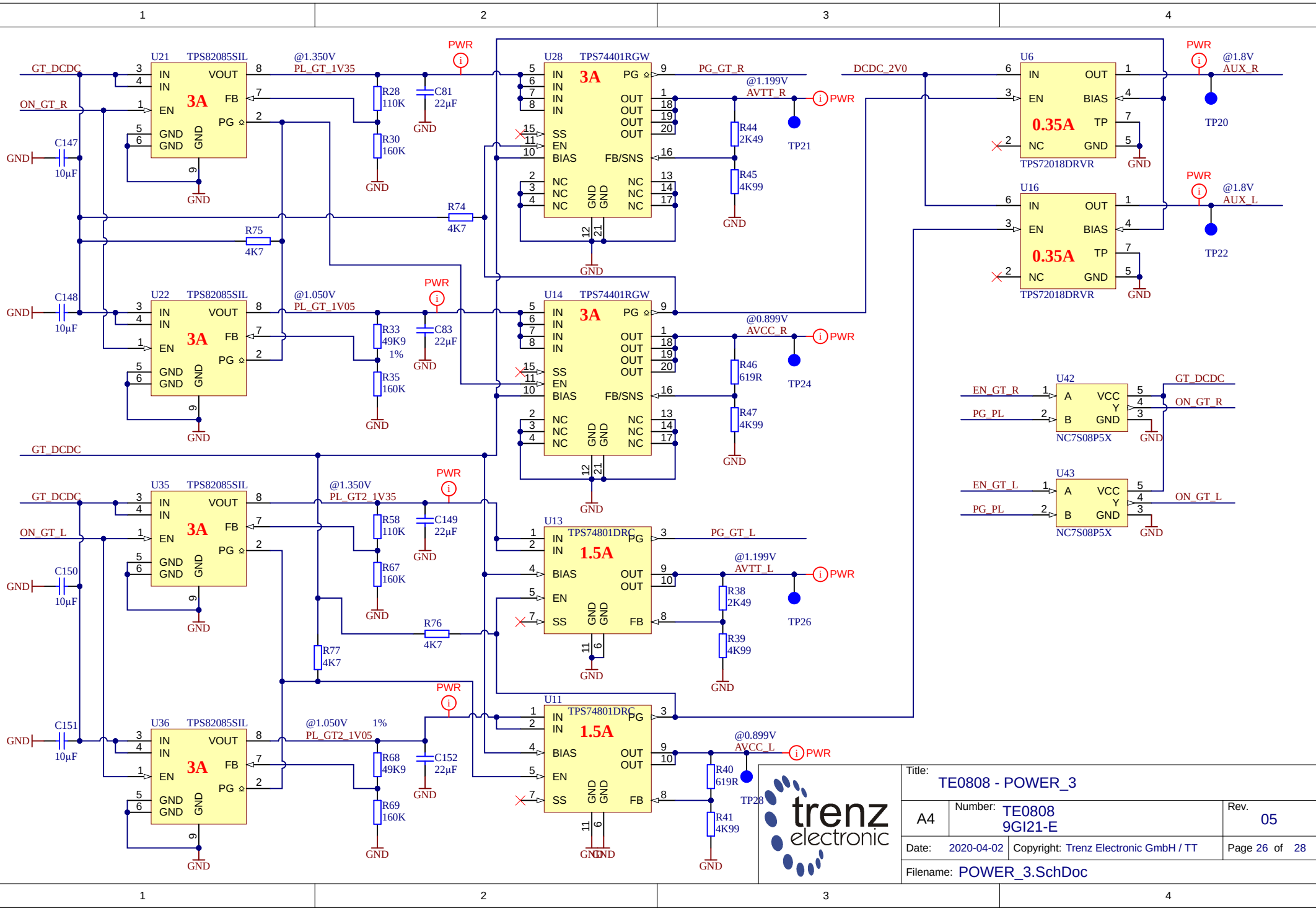
Date: 2020-04-02	Copyright: Trenz Electronic GmbH / TT		Page 25 of 28
Filename: POWER_2.SchDoc			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U11 TPS74801DRC
U6 TPS72018DRVR
U16 TPS72018DRVR
U42 NC7S08P5X
U43 NC7S08P5X
3A
1.5A
0.35A
GT_DCDC
ON_GT_R
ON_GT_L
PG_PL
DCDC_2V0
@1.350V
PL_GT_1V35
@1.050V
PL_GT_1V05
PL_GT2_1V35
PL_GT2_1V05
@1.199V
AVTT_R
AVTT_L
@0.899V
AVCC_R
AVCC_L
@1.8V
AUX_R
AUX_L
PG_GT_R
PG_GT_L
PWR
GND
TP20
TP21
TP22
TP24
TP26
TP28
R28 110K
R30 160K
R33 49K9 1%
R35 160K
R58 110K
R67 160K
R68 49K9
R69 160K
R74 4K7
R75 4K7
R76 4K7
R77 4K7
R44 2K49
R45 4K99
R46 619R
R47 4K99
R38 2K49
R39 4K99
R40 619R
R41 4K99
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C83 22µF
C149 22µF
C152 22µF
C147 10µF
C148 10µF
C150 10µF
C151 10µF
Title: TE0808 - POWER_3
A4
Number: TE0808 9GI21-E
Rev. 05
Date: 2020-04-02
Copyright: Trenz Electronic GmbH / TT
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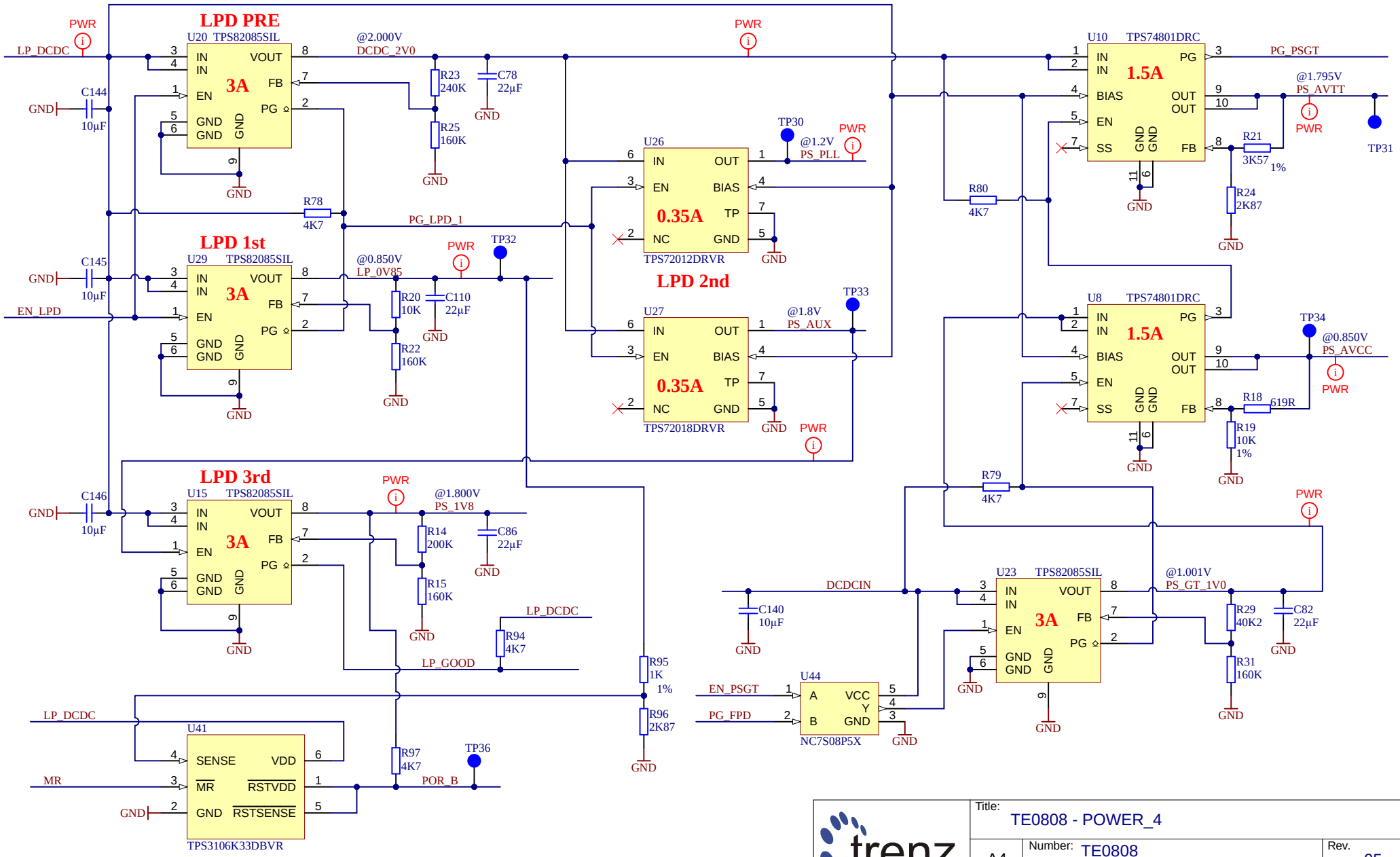
Filename: POWER_3.SchDoc
trenz electronic



trenz electronic	Title: TE0808 - POWER_4		
A4	Number: TE0808 9GI21-E		Rev. 05
Date: 2020-04-02	Copyright: Trenz Electronic GmbH / TT		Page 27 of 28
Filename: POWER_4.SchDoc			

Revision 04:
---
1. Added resistors R65,R82,R86,R87 (240R) for each DDR4-chip for supporting DDP DDR4 chips
2. Full library update

Revision 04a (09.06.2020):
1. VY: R19 value was changed to 10K (was: 4K99) to set PS_MGTRAVCC 0.85V

Revision 05:
---
1. VY: revised PL_VCCINT power supply. PCB: revised routing and components placement;
2. VY: added signal BG1 for DDP DDR4 IC. Added support of new packages. PCB: revised routing and components placement;
3. VY: R5 pulled up to 1.2V. R5 value changed to 49.9R;
4. VY: added test points;
5. VY: added MAC EEPROM U48. I2C bus PLL_SCL/SDA. Added pull up resistor to I2C bus;
6. VY: PCB - revised FPGA location. Package placed 1.5mm closer to connector J3;
7. VY: PCB - updated silckscreen. Added company address, CE and WEEE symbols;
8. VY: PCB - updated signal trace lengths.

29.11.2022
9. Chnaged note near J2.97 and net PG_GT_L from "On board pull-up R" to "External pull-up R Required"

trenz electronic	Title: TE0808 - Changes list		
	A4	Number: TE0808 9GI21-E	Rev. 05
	Date: 2020-04-02	Copyright: Trenz Electronic GmbH	Page 28 of 28
	Filename: Revision_Changes.SchDoc		