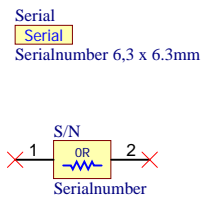
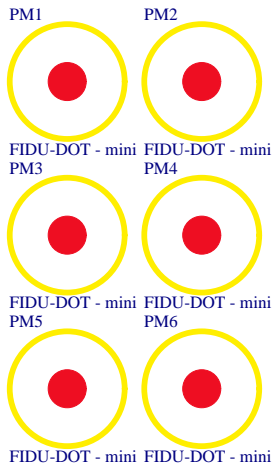
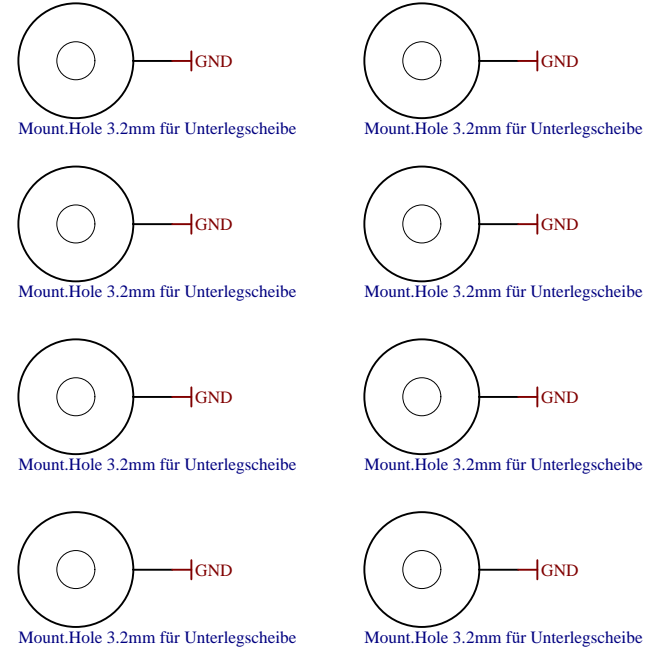


U_J1 J1.SchDoc	U_B_PS_GT B_PS_GT.SchDoc	U_DDR4-TERM DDR4-TERM.SchDoc
U_J2 J2.SchDoc	U_PS_DDR PS_DDR.SchDoc	U_ZU_POWER ZU_POWER.SchDoc
U_J3 J3.SchDoc	U_B_MIO B_MIO.SchDoc	U_ZU_PS_POWER ZU_PS_POWER.SchDoc
U_J4 J4.SchDoc	U_B_HD B_HD.SchDoc	U_POWER POWER.SchDoc
U_DDR4-TERM DDR4-TERM.SchDoc	U_Clock Clock.SchDoc	U_POWER_2 POWER_2.SchDoc
U_B64 B64.SchDoc	U_CONFIG CONFIG.SchDoc	
U_B65 B65.SchDoc	U_DDR4-RAM DDR4-RAM.SchDoc	U_POWER_4 POWER_4.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_DDR4-RAM_4 DDR4-RAM_4.SchDoc	

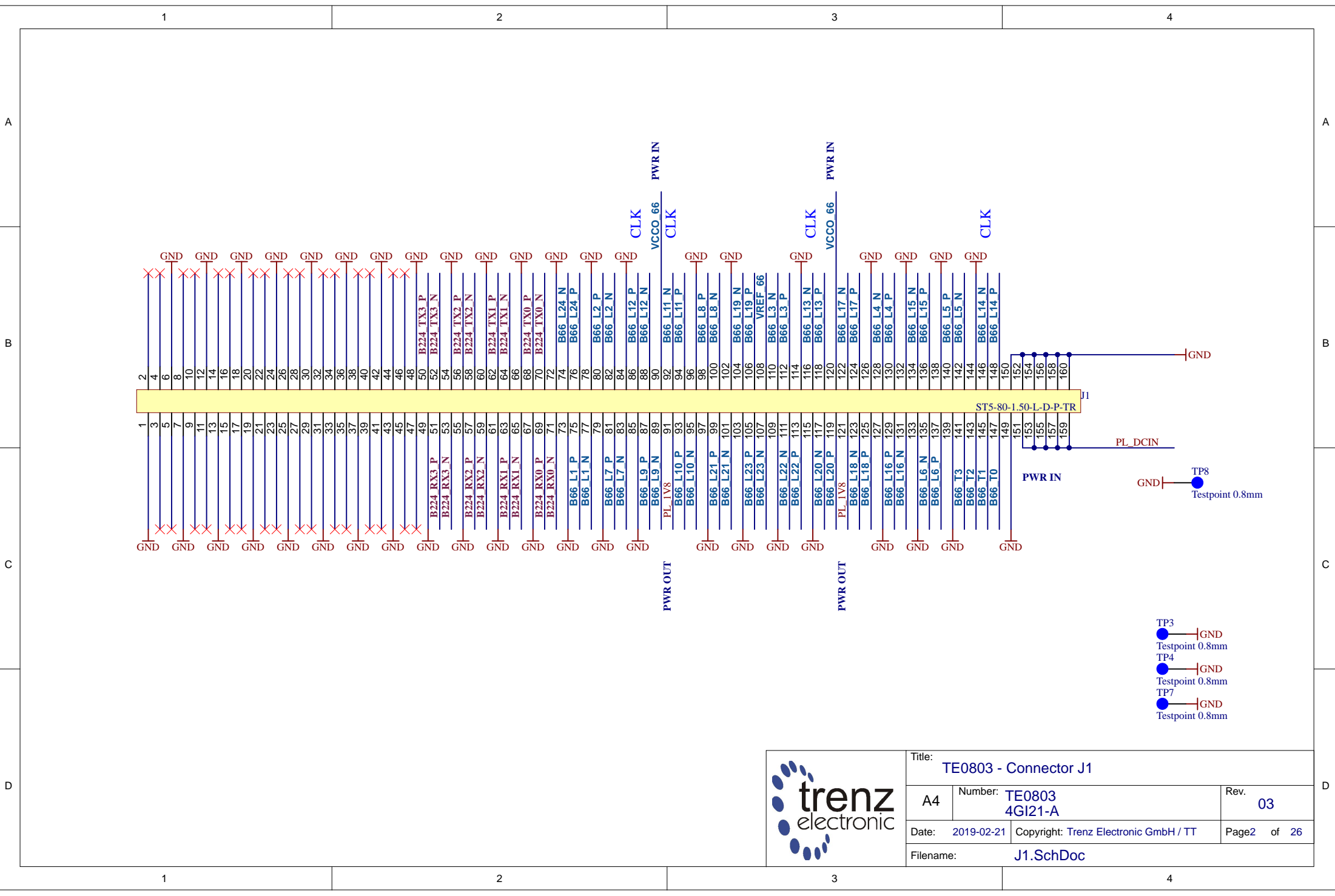
Special notes:



Assembly variant	4GI21-A
Created by	VY
Modified by	VY
Modified at	2020-02-12
SVN Revision	9100 [Locally Modified]



Title: TE0803		
A4	Number: TE0803 4GI21-A	Rev. 03
Date: 2019-02-21	Copyright: Trenz Electronic GmbH / TT	Page1 of 26
Filename: TE0803.SchDoc		



Title: TE0803 - Connector J1		
A4	Number: TE0803 4GI21-A	Rev. 03
Date: 2019-02-21	Copyright: Trenz Electronic GmbH / TT	Page2 of 26
Filename: J1.SchDoc		

1

2

3

4

A

A

B

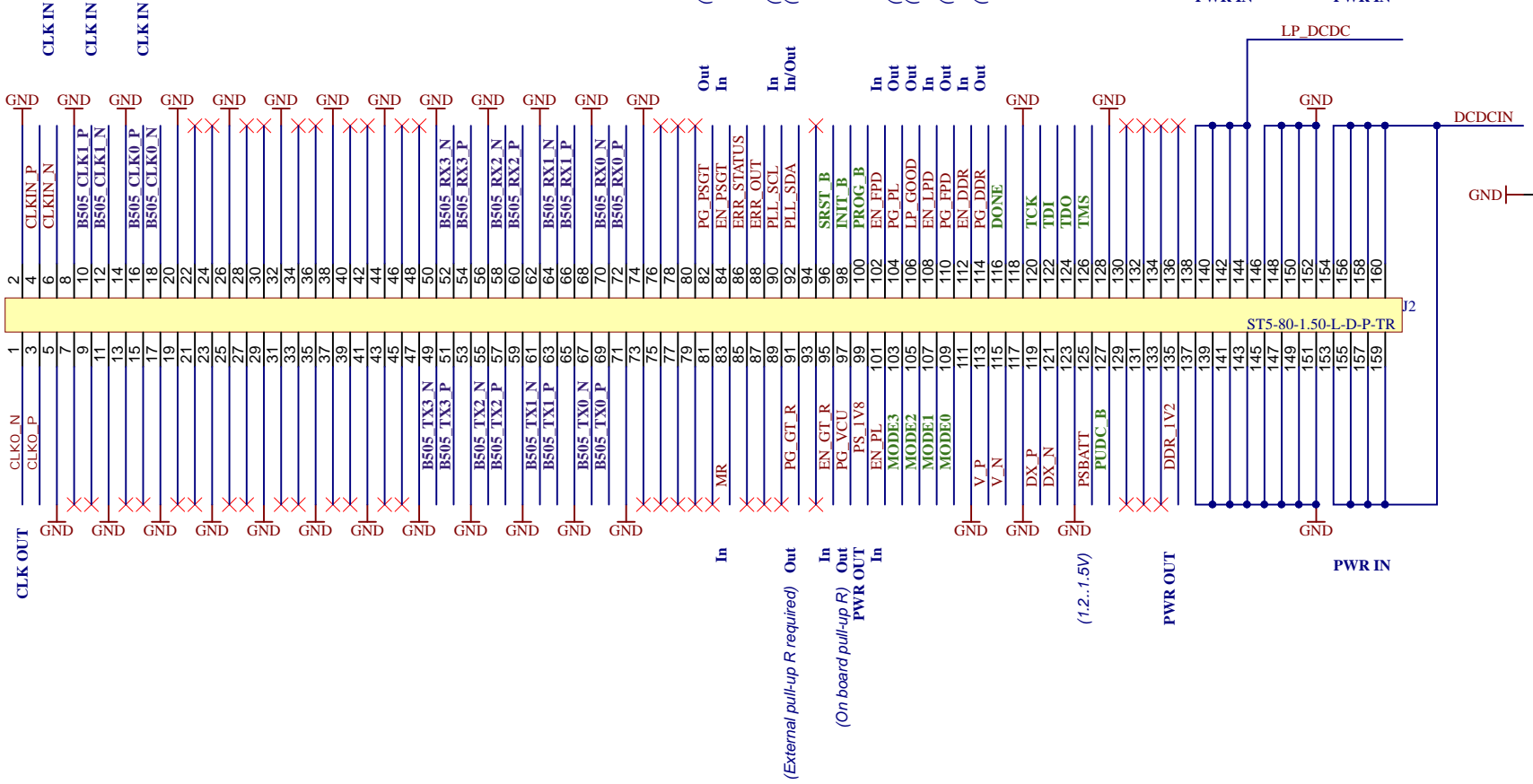
B


C

C

D

D



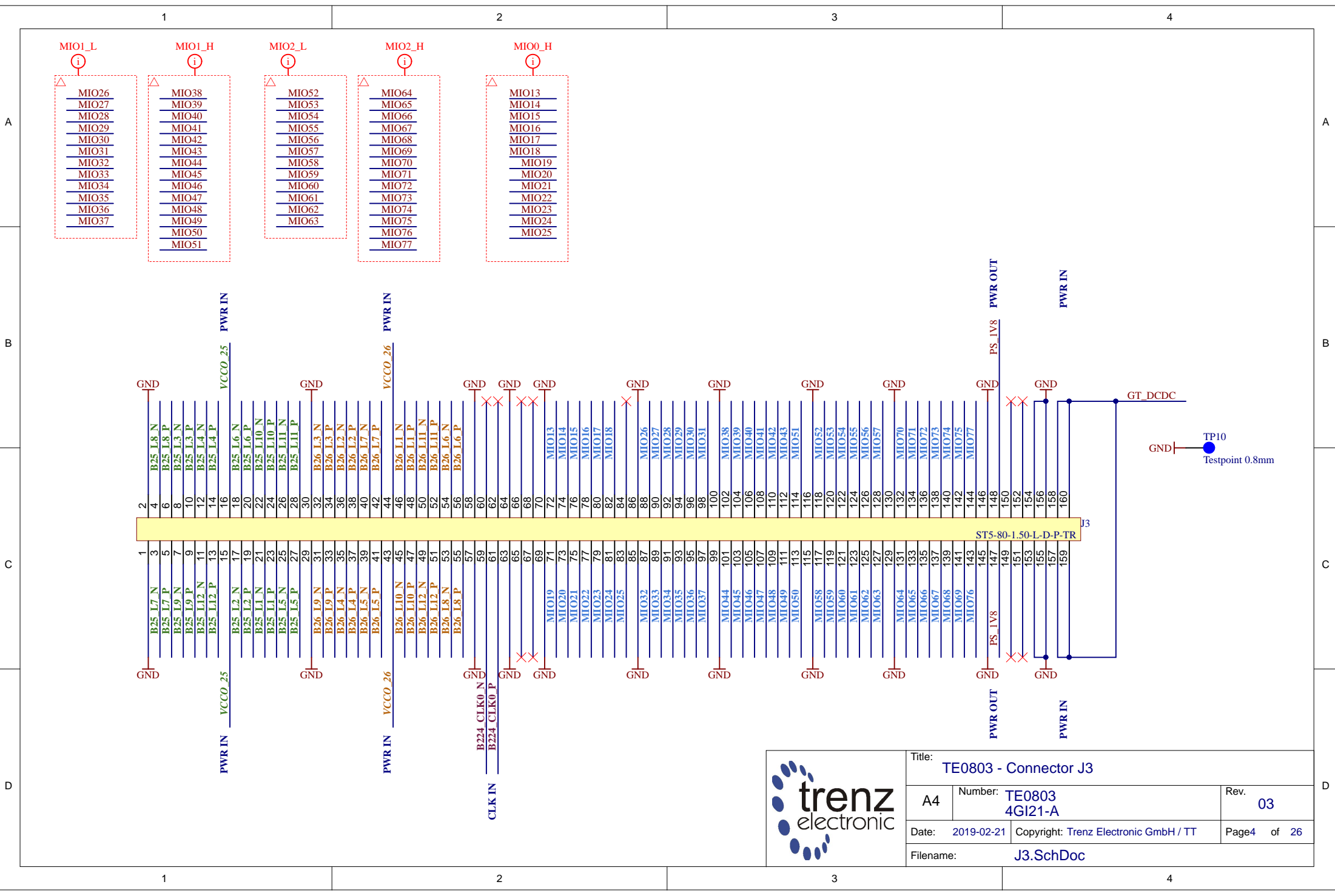

			Title: TE0803 - Connector J2	
			A4	Number: TE0803 4GI21-A
Date: 2019-02-21		Copyright: Trenz Electronic GmbH / TT		Page3 of 26
Filename: J2.SchDoc				

1

2

3

4

Title: TE0803 - Connector J3		
A4	Number: TE0803 4GI21-A	Rev. 03
Date: 2019-02-21	Copyright: Trenz Electronic GmbH / TT	Page4 of 26
Filename: J3.SchDoc		

1

2

3

4

A

A

B

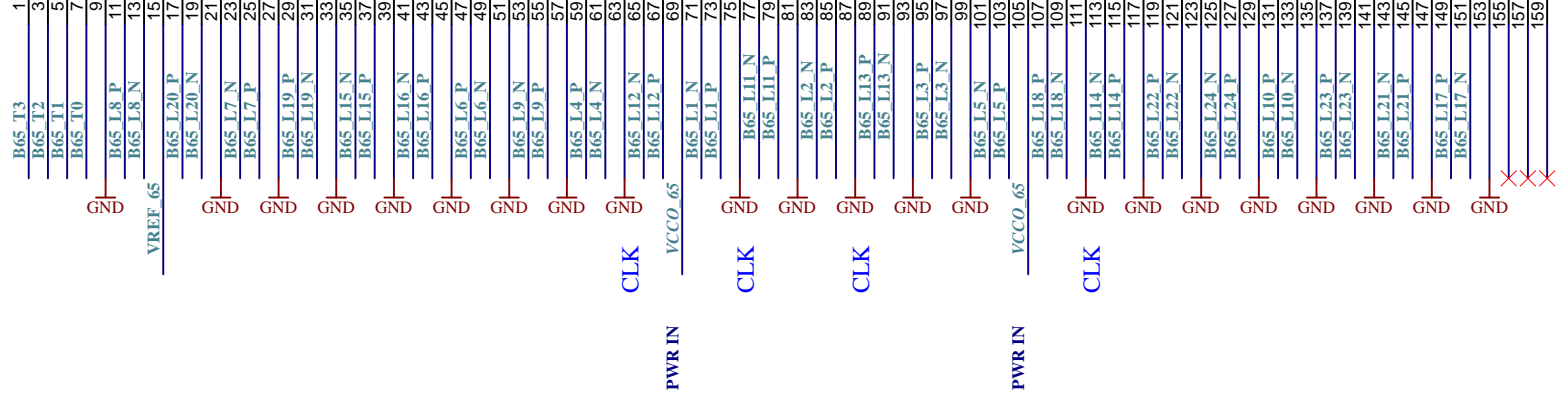
B

C

C

D

D




1

2

3

4



Title: TE0803 - Connector J4		
A4	Number: TE0803 4GI21-A	Rev. 03
Date: 2019-02-21	Copyright: Trenz Electronic GmbH / TT	Page5 of 26
Filename: J4.SchDoc		

1

2

3

4

A

A

B

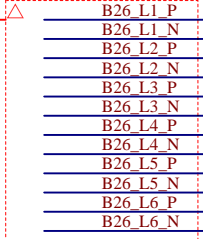
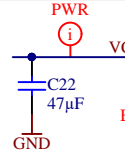
B

C

C

D

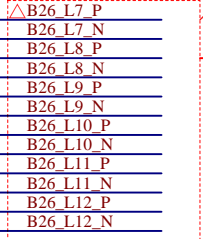
D



U1C XCZU4EG-2SFVC784I

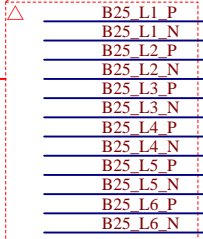
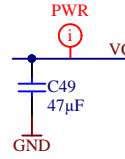
BANK 46 HD (ZU2/3 BANK 26 HD)

F14	VCCO_46		
C15	VCCO_46		
B15	IO_L1P_AD11P_46	IO_L7P_HDGC_AD5P_46	G13
A15	IO_L1N_AD11N_46	IO_L7N_HDGC_AD5N_46	F13
B14	IO_L2P_AD10P_46	IO_L8P_HDGC_AD4P_46	F15
A14	IO_L2N_AD10N_46	IO_L8N_HDGC_AD4N_46	E15
B13	IO_L3P_AD9P_46	IO_L9P_AD3P_46	G15
A13	IO_L3N_AD9N_46	IO_L9N_AD3N_46	G14
C14	IO_L4P_AD8P_46	IO_L10P_AD2P_46	H14
C13	IO_L4N_AD8N_46	IO_L10N_AD2N_46	H13
D15	IO_L5P_HDGC_AD7P_46	IO_L11P_AD1P_46	K14
D14	IO_L5N_HDGC_AD7N_46	IO_L11N_AD1N_46	J14
E14	IO_L6P_HDGC_AD6P_46	IO_L12P_AD0P_46	L14
E13	IO_L6N_HDGC_AD6N_46	IO_L12N_AD0N_46	L13



BANK 43 HD (ZU2/3 BANK 44 HD)

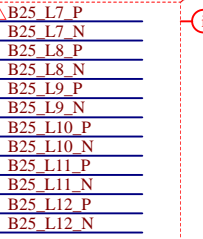
AC10	VCCO_43		
AG12	VCCO_43		
AG10	IO_L1P_AD11P_43	IO_L7P_HDGC_AD5P_43	AD11
AH10	IO_L1N_AD11N_43	IO_L7N_HDGC_AD5N_43	AD10
AF11	IO_L2P_AD10P_43	IO_L8P_HDGC_AD4P_43	AB11
AG11	IO_L2N_AD10N_43	IO_L8N_HDGC_AD4N_43	AC11
AH12	IO_L3P_AD9P_43	IO_L9P_AD3P_43	AA11
AH11	IO_L3N_AD9N_43	IO_L9N_AD3N_43	AA10
AE10	IO_L4P_AD8P_43	IO_L10P_AD2P_43	W10
AF10	IO_L4N_AD8N_43	IO_L10N_AD2N_43	Y10
AE12	IO_L5P_HDGC_AD7P_43	IO_L11P_AD1P_43	Y9
AF12	IO_L5N_HDGC_AD7N_43	IO_L11N_AD1N_43	AA8
AC13	IO_L6P_HDGC_AD6P_43	IO_L12P_AD0P_43	AB10
AD12	IO_L6N_HDGC_AD6N_43	IO_L12N_AD0N_43	AB9



U1B

BANK 44 HD (ZU2/3 BANK 24 HD)

AA14	VCCO_44		
AD13	VCCO_44		
AE15	IO_L1P_AD15P_44	IO_L7P_HDGC_44	AA13
AE14	IO_L1N_AD15N_44	IO_L7N_HDGC_44	AB13
AG14	IO_L2P_AD14P_44	IO_L8P_HDGC_44	AB15
AH14	IO_L2N_AD14N_44	IO_L8N_HDGC_44	AB14
AG13	IO_L3P_AD13P_44	IO_L9P_AD11P_44	W14
AH13	IO_L3N_AD13N_44	IO_L9N_AD11N_44	W13
AE13	IO_L4P_AD12P_44	IO_L10P_AD10P_44	Y14
AF13	IO_L4N_AD12N_44	IO_L10N_AD10N_44	Y13
AD15	IO_L5P_HDGC_44	IO_L11P_AD9P_44	W12
AD14	IO_L5N_HDGC_44	IO_L11N_AD9N_44	W11
AC14	IO_L6P_HDGC_44	IO_L12P_AD8P_44	Y12
AC13	IO_L6N_HDGC_44	IO_L12N_AD8N_44	AA12



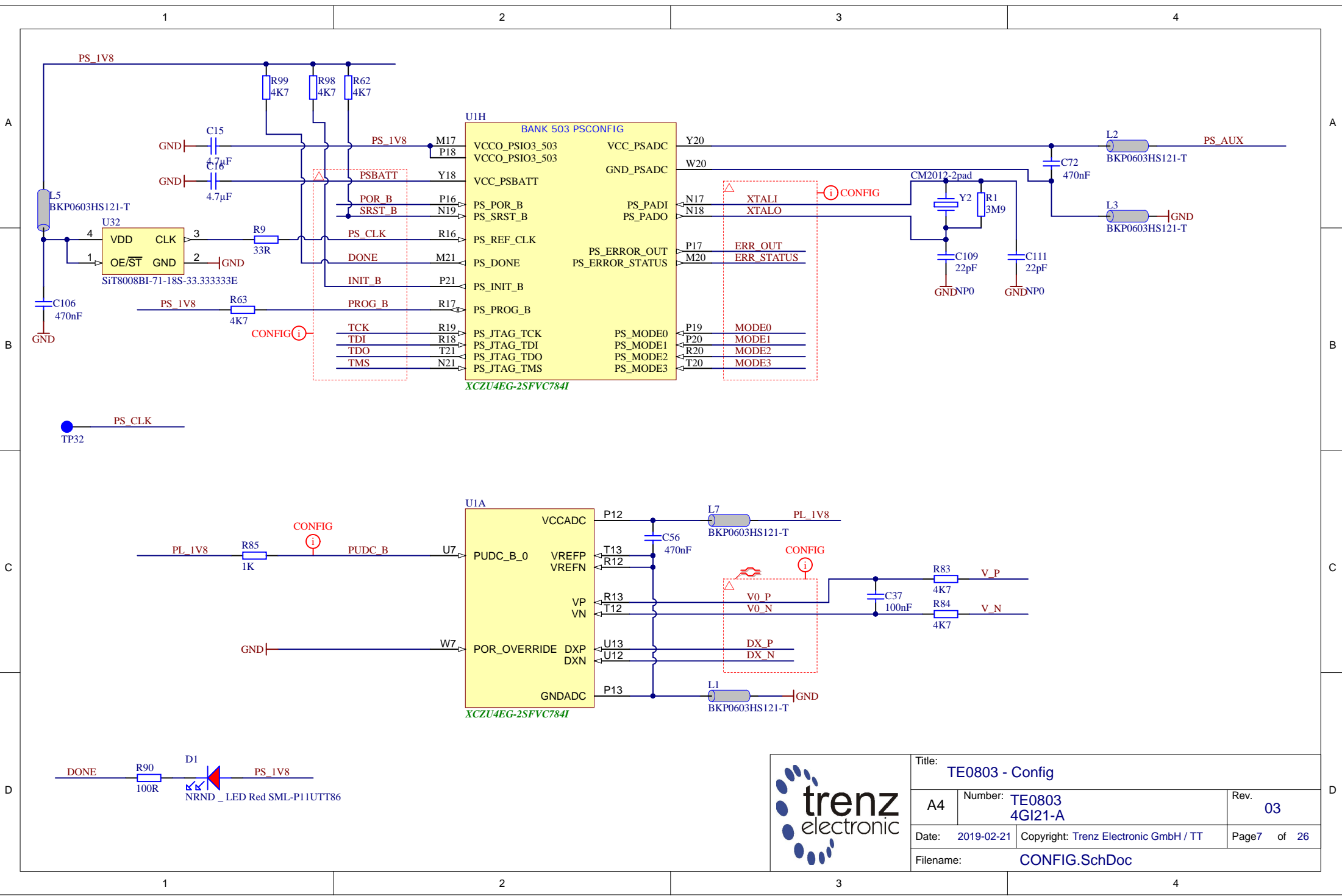
Title: TE0803 - HD Banks		
A4	Number: TE0803 4GI21-A	Rev. 03
Date: 2019-02-21	Copyright: Trenz Electronic GmbH / TT	Page6 of 26
Filename: B_HD.SchDoc		

1

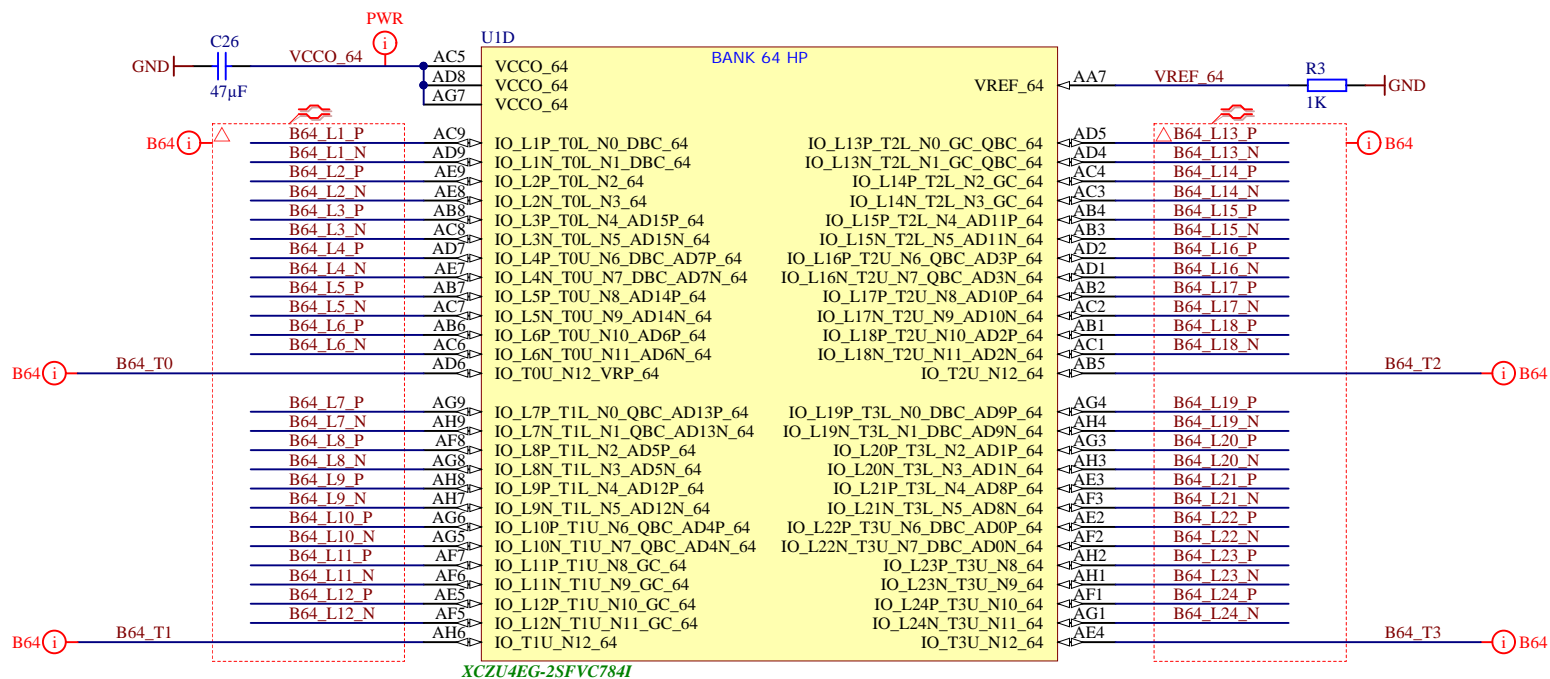
2

3

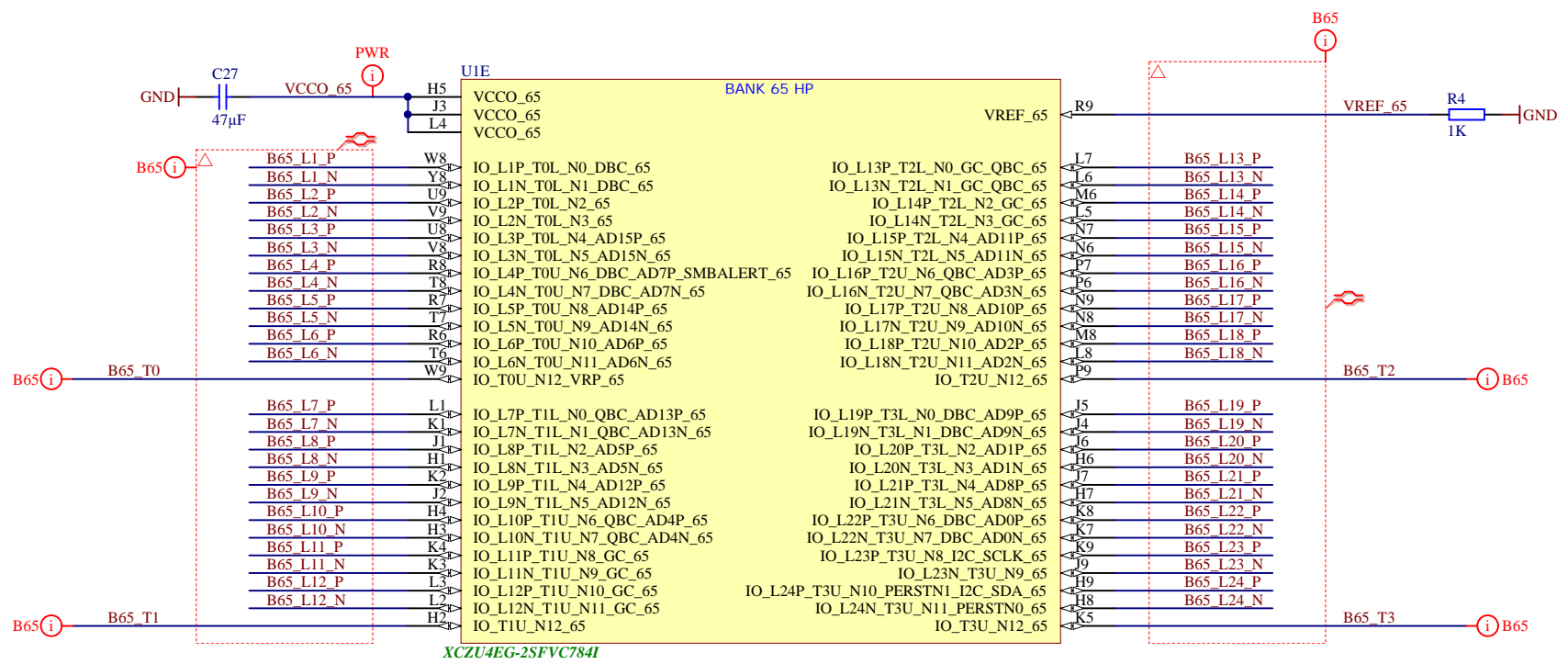
4



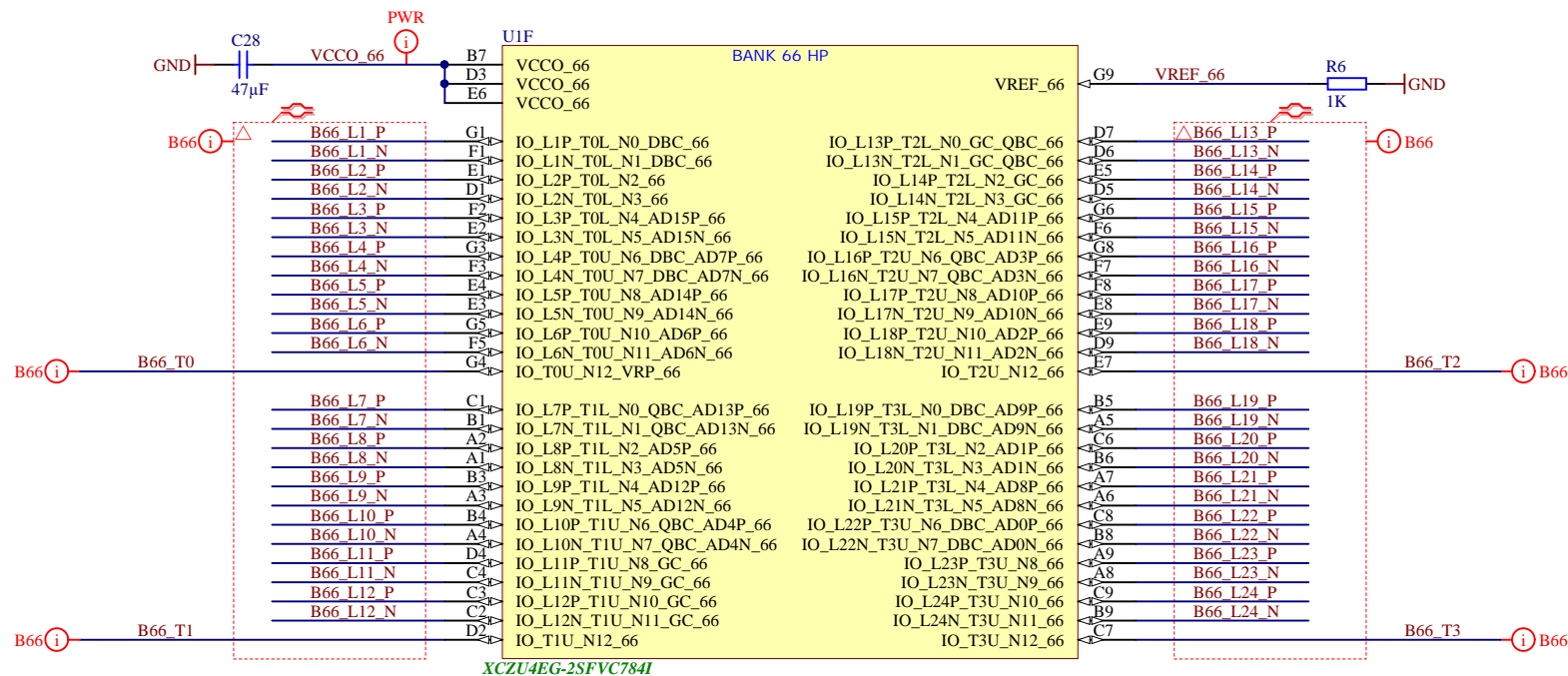
Title: TE0803 - Config		
A4	Number: TE0803 4GI21-A	Rev. 03
Date: 2019-02-21	Copyright: Trenz Electronic GmbH / TT	Page 7 of 26
Filename: CONFIG.SchDoc		



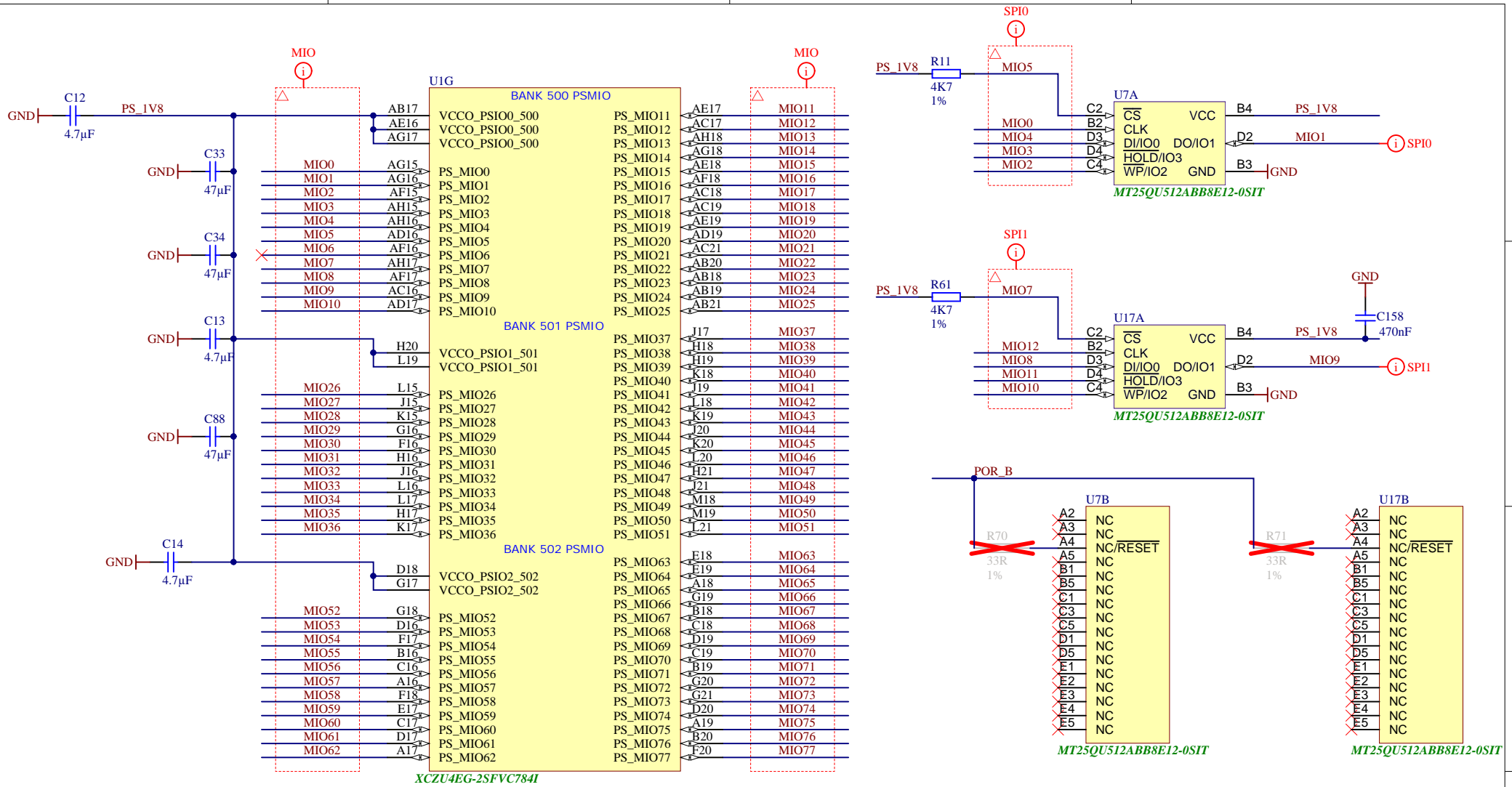
Title: TE0803 - B64		
A4	Number: TE0803 4GI21-A	Rev. 03
Date: 2019-02-21	Copyright: Trenz Electronic GmbH / TT	Page 8 of 26
Filename: B64.SchDoc		




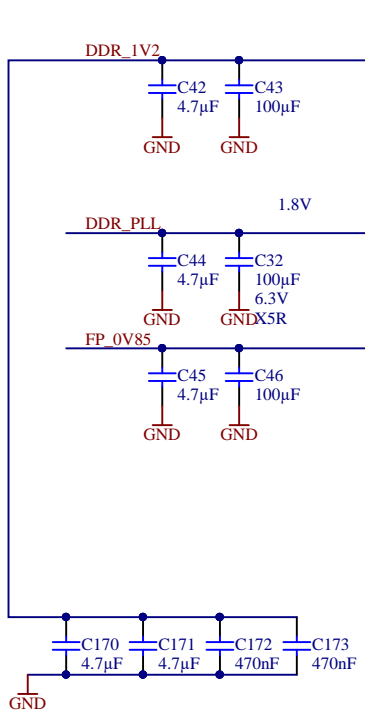
Title: TE0803 - B65		
A4	Number: TE0803 4GI21-A	Rev. 03
Date: 2019-02-21	Copyright: Trenz Electronic GmbH / TT	Page9 of 26
Filename: B65.SchDoc		



Title: TE0803 - B66		
A4	Number: TE0803 4GI21-A	Rev. 03
Date: 2019-02-21	Copyright: Trenz Electronic GmbH / TT	Page 10 of 26
Filename: B66.SchDoc		



			Title: TE0803 - MIO Banks	
			A4	Number: TE0803 4GI21-A
Date: 2019-02-21		Copyright: Trenz Electronic GmbH / TT		Page 11 of 26
Filename: B_MIO.SchDoc				



U11		BANK 504 PSDDR			
VCCO_PSDDR_504	PS_DDR_CK0	W25	DDR4-CLK0_P	D80	
VCCO_PSDDR_504	PS_DDR_CK_N0	W26	DDR4-CLK0_N	D80	
VCCO_PSDDR_504	PS_DDR_CKE0	V28	DDR4-CKE0		
VCCO_PSDDR_504	PS_DDR_CK1	Y24			×
VCCO_PSDDR_504	PS_DDR_CK_N1	Y25			×
VCCO_PSDDR_504	PS_DDR_CKE1	V27			×
VCC_PSDDR_PLL	PS_DDR_A0	W28	DDR4-A0		
VCC_PSDDR_PLL	PS_DDR_A1	Y28	DDR4-A1		
VCC_PSDDR_PLL	PS_DDR_A2	AB28	DDR4-A2		
VCC_PSDDR_PLL	PS_DDR_A3	AA28	DDR4-A3		
VCC_PSDDR_PLL	PS_DDR_A4	Y27	DDR4-A4		
VCC_PSINTRF_DDR	PS_DDR_A5	AA27	DDR4-A5		
VCC_PSINTRF_DDR	PS_DDR_A6	Y22	DDR4-A6		
VCC_PSINTRF_DDR	PS_DDR_A7	AA23	DDR4-A7		
VCC_PSINTRF_DDR	PS_DDR_A8	AA22	DDR4-A8		
VCC_PSINTRF_DDR	PS_DDR_A9	AB23	DDR4-A9		
VCC_PSINTRF_DDR	PS_DDR_A10	AA25	DDR4-A10		
VCC_PSINTRF_DDR	PS_DDR_A11	AA26	DDR4-A11		
VCC_PSINTRF_DDR	PS_DDR_A12	AB25	DDR4-A12		
VCC_PSINTRF_DDR	PS_DDR_A13	AB26	DDR4-A13		
VCC_PSINTRF_DDR	PS_DDR_A14	AB24	DDR4-A14		
VCC_PSINTRF_DDR	PS_DDR_A15	AC24	DDR4-A15		
VCC_PSINTRF_DDR	PS_DDR_A16	AC23	DDR4-A16		
VCC_PSINTRF_DDR	PS_DDR_A17	AC22	DDR4-A17		
PS_DDR_CS_N0	PS_DDR_CS_N1	W27	DDR4-CS		
PS_DDR_CS_N0	PS_DDR_CS_N1	V26			×
PS_DDR_BA0	PS_DDR_BA1	V23	DDR4-BA0		
PS_DDR_BA0	PS_DDR_BA1	W22	DDR4-BA1		
PS_DDR_BG0	PS_DDR_BG1	W24	DDR4-BG0		
PS_DDR_BG0	PS_DDR_BG1	V22	DDR4-BG1		
PS_DDR_PARITY	PS_DDR_RAM_RST_N	Y24	DDR4-PAR		
PS_DDR_RAM_RST_N	PS_DDR_ACT_N	U23	DDR4-RESET		
PS_DDR_ACT_N	PS_DDR_ALERT_N	Y23	DDR4-ACT		
PS_DDR_ALERT_N	PS_DDR_ZQ	U25	DDR4-ALERT		
PS_DDR_ZQ	PS_DDR_ODT0	U24		R2 240R	GND
PS_DDR_ODT0	PS_DDR_ODT1	U28	DDR4-ODT0		
PS_DDR_ODT1		U26			×

XCZU4EG-2SFVC784I

U1J		BANK 504 PSDDR			
DQ0	AD21	PS_DDR_DQ0	PS_DDR_DQ32	T22	DQ32
DQ1	AE20	PS_DDR_DQ1	PS_DDR_DQ33	R22	DQ33
DQ2	AD20	PS_DDR_DQ2	PS_DDR_DQ34	P22	DQ34
DQ3	AF20	PS_DDR_DQ3	PS_DDR_DQ35	N22	DQ35
DQ4	AH21	PS_DDR_DQ4	PS_DDR_DQ36	T23	DQ36
DQ5	AH20	PS_DDR_DQ5	PS_DDR_DQ37	P24	DQ37
DQ6	AH19	PS_DDR_DQ6	PS_DDR_DQ38	R24	DQ38
DQ7	AG19	PS_DDR_DQ7	PS_DDR_DQ39	N24	DQ39
DQ8	AF22	PS_DDR_DQ8	PS_DDR_DQ40	H24	DQ40
DQ9	AH22	PS_DDR_DQ9	PS_DDR_DQ41	J24	DQ41
DQ10	AE22	PS_DDR_DQ10	PS_DDR_DQ42	M24	DQ42
DQ11	AD22	PS_DDR_DQ11	PS_DDR_DQ43	K24	DQ43
DQ12	AH23	PS_DDR_DQ12	PS_DDR_DQ44	J22	DQ44
DQ13	AH24	PS_DDR_DQ13	PS_DDR_DQ45	H22	DQ45
DQ14	AE24	PS_DDR_DQ14	PS_DDR_DQ46	K22	DQ46
DQ15	AG24	PS_DDR_DQ15	PS_DDR_DQ47	J22	DQ47
DQ16	AC26	PS_DDR_DQ16	PS_DDR_DQ48	M25	DQ48
DQ17	AD26	PS_DDR_DQ17	PS_DDR_DQ49	M26	DQ49
DQ18	AD25	PS_DDR_DQ18	PS_DDR_DQ50	L25	DQ50
DQ19	AD24	PS_DDR_DQ19	PS_DDR_DQ51	L26	DQ51
DQ20	AG26	PS_DDR_DQ20	PS_DDR_DQ52	K28	DQ52
DQ21	AH25	PS_DDR_DQ21	PS_DDR_DQ53	L28	DQ53
DQ22	AH26	PS_DDR_DQ22	PS_DDR_DQ54	M28	DQ54
DQ23	AG25	PS_DDR_DQ23	PS_DDR_DQ55	N28	DQ55
DQ24	AH27	PS_DDR_DQ24	PS_DDR_DQ56	J28	DQ56
DQ25	AH28	PS_DDR_DQ25	PS_DDR_DQ57	K27	DQ57
DQ26	AF28	PS_DDR_DQ26	PS_DDR_DQ58	H28	DQ58
DQ27	AG28	PS_DDR_DQ27	PS_DDR_DQ59	H27	DQ59
DQ28	AC27	PS_DDR_DQ28	PS_DDR_DQ60	G26	DQ60
DQ29	AD27	PS_DDR_DQ29	PS_DDR_DQ61	G25	DQ61
DQ30	AD28	PS_DDR_DQ30	PS_DDR_DQ62	K25	DQ62
DQ31	AC28	PS_DDR_DQ31	PS_DDR_DQ63	J25	DQ63
			PS_DDR_DQ64	T28	
			PS_DDR_DQ65	R28	
DDR4-DQS0_P	AF21	PS_DDR_DQS_P0	PS_DDR_DQ66	P28	
DDR4-DQS0_N	AG21	PS_DDR_DQS_N0	PS_DDR_DQ67	P27	
DDR4-DQS1_P	AF23	PS_DDR_DQS_P1	PS_DDR_DQ68	P26	
DDR4-DQS1_N	AG23	PS_DDR_DQS_N1	PS_DDR_DQ69	R25	
DDR4-DQS2_P	AF25	PS_DDR_DQS_P2	PS_DDR_DQ70	P25	
DDR4-DQS2_N	AF26	PS_DDR_DQS_N2	PS_DDR_DQ71	T25	
DDR4-DQS3_P	AE27	PS_DDR_DQS_P3			
DDR4-DQS3_N	AF27	PS_DDR_DQS_N3			
DDR4-DQS4_P	N23	PS_DDR_DQS_P4			
DDR4-DQS4_N	M23	PS_DDR_DQS_N4	PS_DDR_DM0	AG20	DDR4-DM0
DDR4-DQS5_P	L23	PS_DDR_DQS_P5	PS_DDR_DM1	AE23	DDR4-DM1
DDR4-DQS5_N	K23	PS_DDR_DQS_N5	PS_DDR_DM2	AE25	DDR4-DM2
DDR4-DQS6_P	N26	PS_DDR_DQS_P6	PS_DDR_DM3	AE28	DDR4-DM3
DDR4-DQS6_N	N27	PS_DDR_DQS_N6	PS_DDR_DM4	R23	DDR4-DM4
DDR4-DQS7_P	J26	PS_DDR_DQS_P7	PS_DDR_DM5	H23	DDR4-DM5
DDR4-DQS7_N	J27	PS_DDR_DQS_N7	PS_DDR_DM6	L27	DDR4-DM6
	R27	PS_DDR_DQS_P8	PS_DDR_DM7	H26	DDR4-DM7
	T27	PS_DDR_DQS_N8	PS_DDR_DM8	T26	

XCZU4EG-2SFVC784I



Title: TE0803 - PS_DDR			
A4	Number: TE0803 4GI21-A	Rev. 03	
Date: 2019-02-21	Copyright: Trenz Electronic GmbH / TT		Page 12 of 26
Filename: PS_DDR.SchDoc			

1

2

3

4

A

A

B

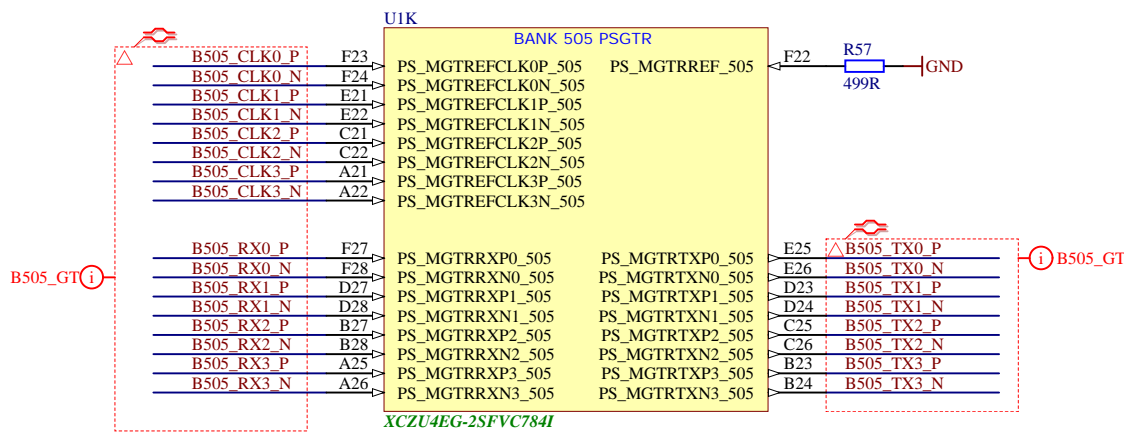
B

C

C

D

D



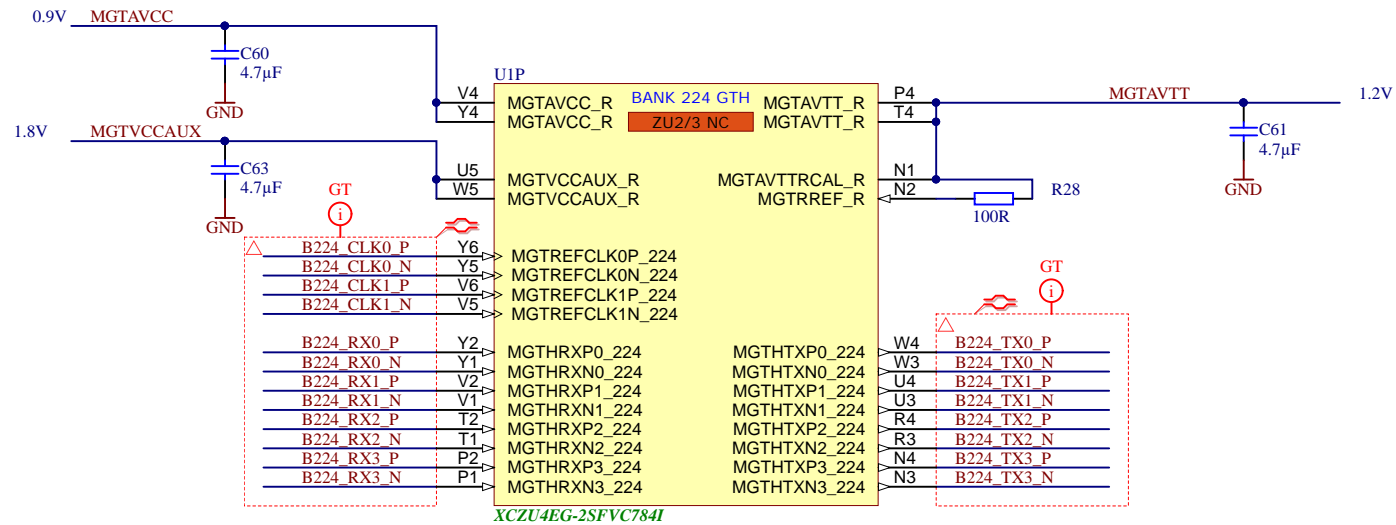
Title: TE0803 - PS_GT		
A4	Number: TE0803 4GI21-A	Rev. 03
Date: 2019-02-21	Copyright: Trenz Electronic GmbH / TT	Page 13 of 26
Filename: B_PS_GT.SchDoc		


1

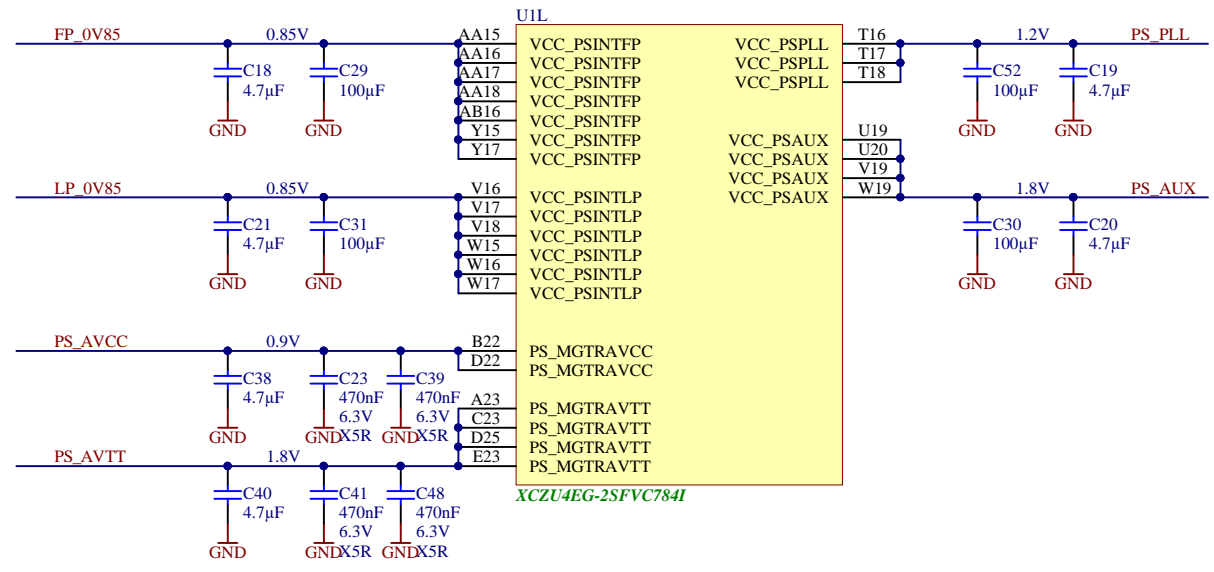
2


3

4



	Title: TE0803 - B224GTH		
	A4	Number: TE0803 4GI21-A	Rev. 03
	Date: 2019-02-21	Copyright: Trenz Electronic GmbH / TT	Page 14 of 26
	Filename: B_GT.SchDoc		



		Title: TE0803 - ZU_PS_POWER	
		A4	Number: TE0803 4GI21-A
Date: 2019-02-21		Copyright: Trenz Electronic GmbH / TT	
Date: 2019-02-21		Page 15 of 26	
Filename: ZU_PS_POWER.SchDoc			

1

2

3

4

A

A

B

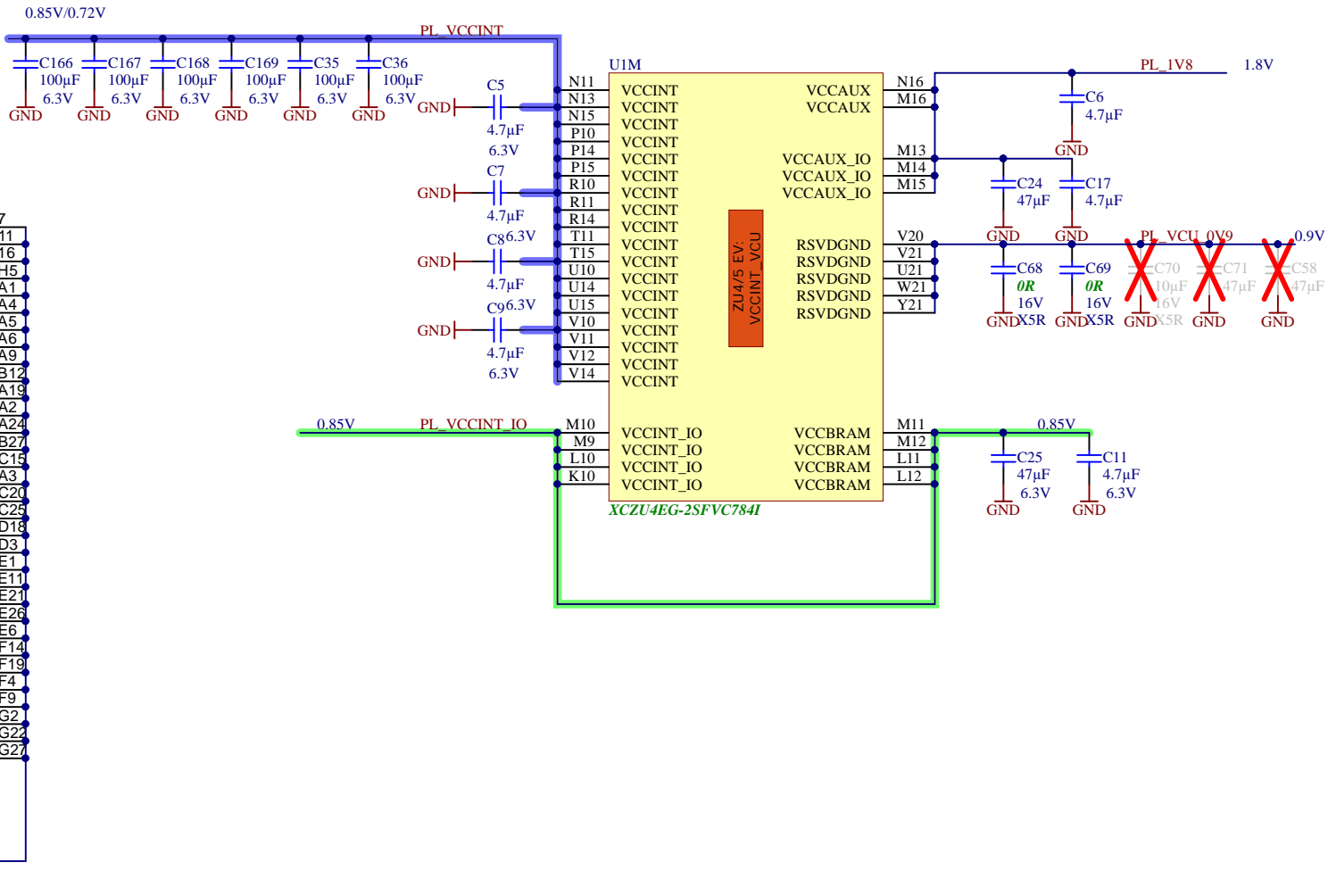
B

C

C

D

D



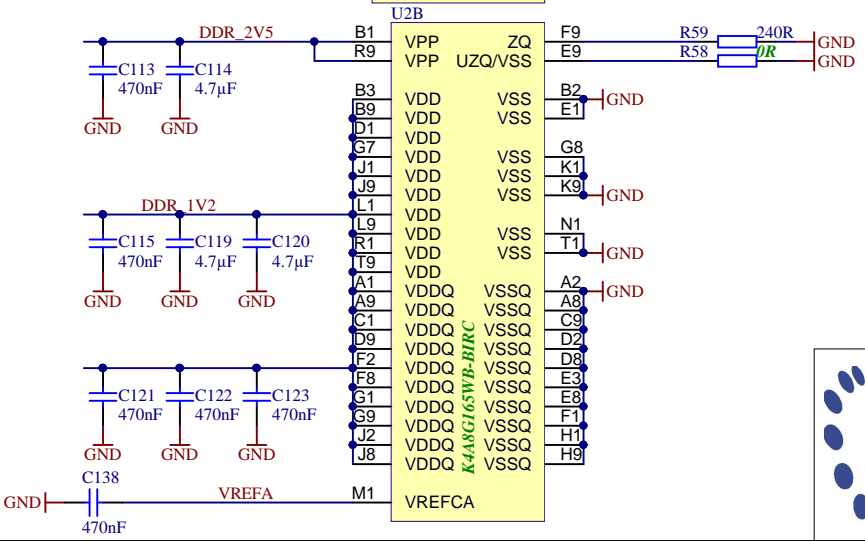
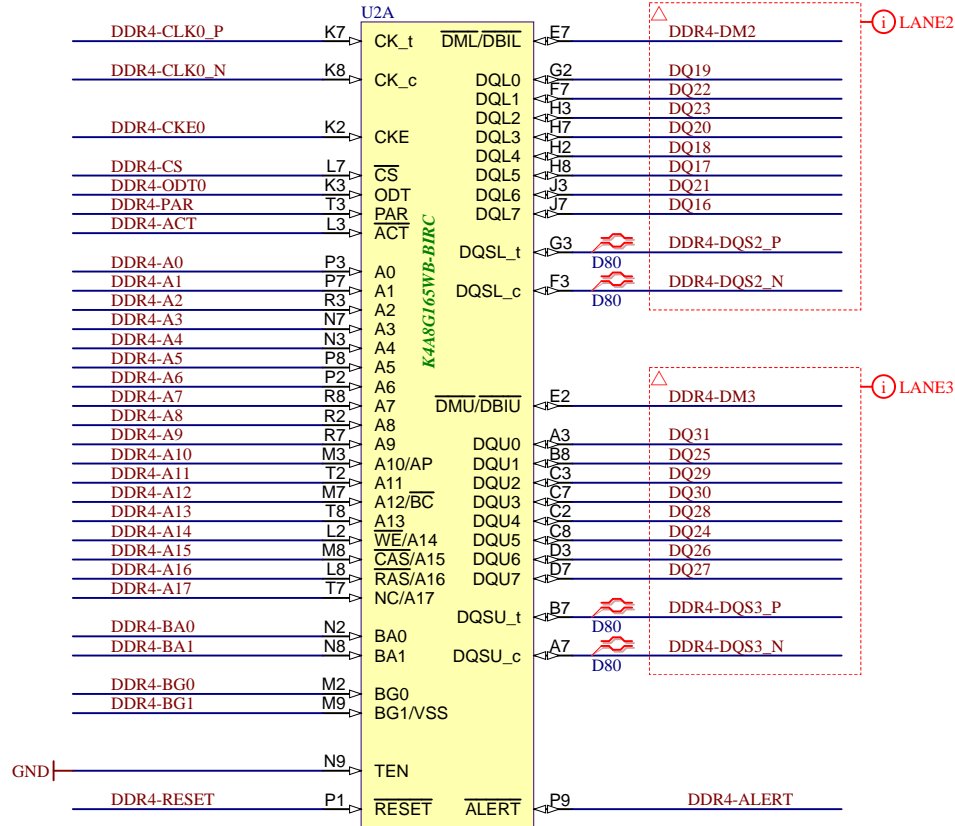
Title: TE0803 - ZU_POWER		
A4	Number: TE0803 4GI21-A	Rev. 03
Date: 2019-02-21	Copyright: Trenz Electronic GmbH / TT	Page 16 of 26
Filename: ZU_POWER.SchDoc		

1

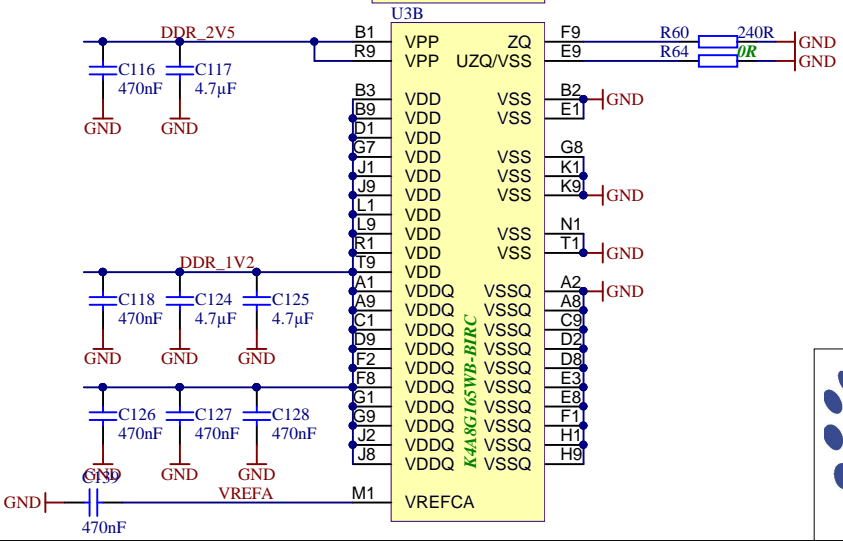
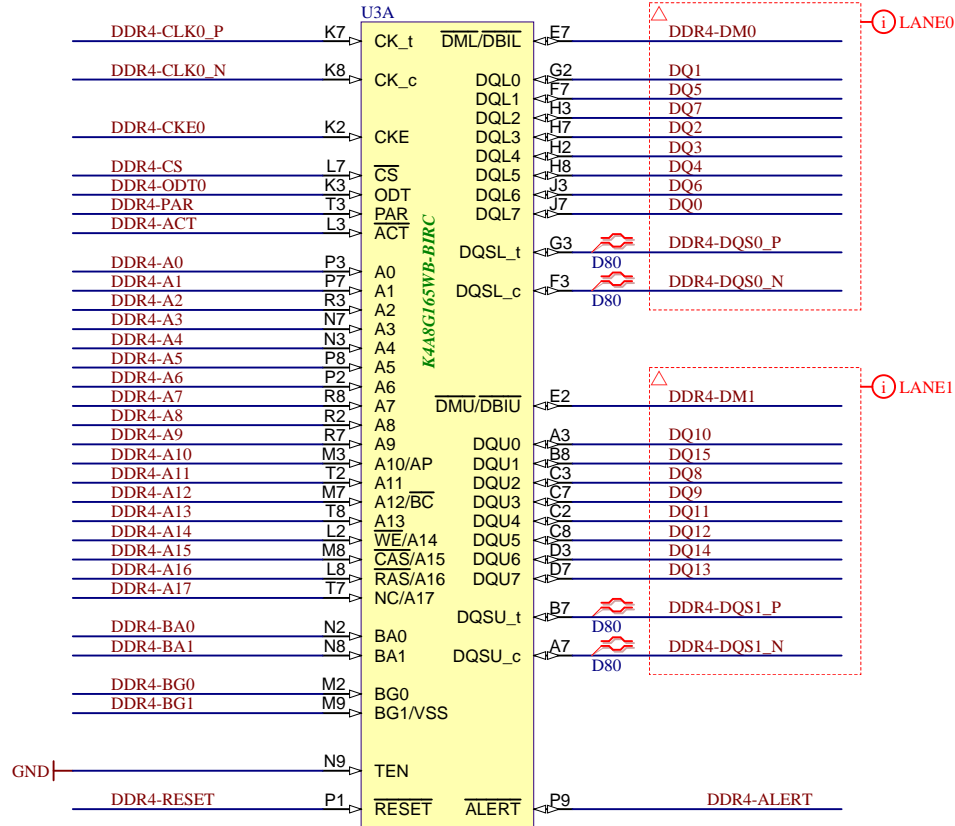

2

3

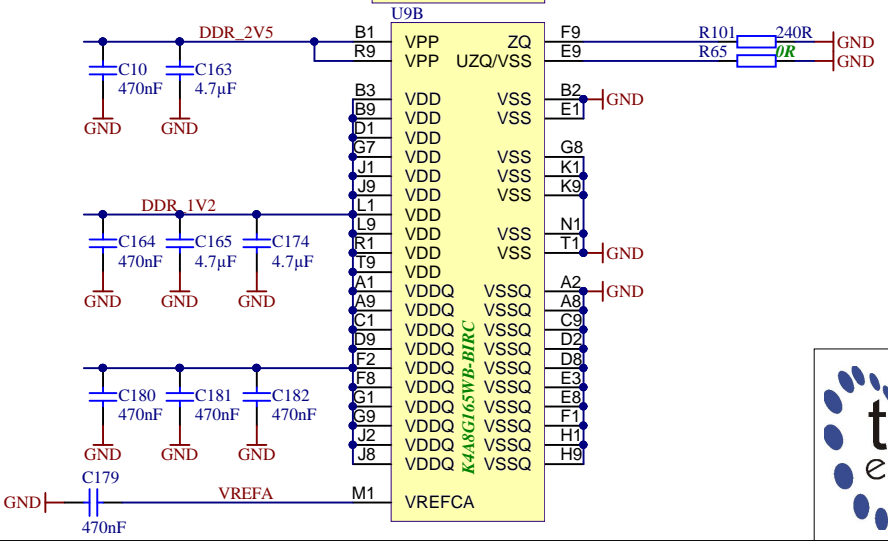
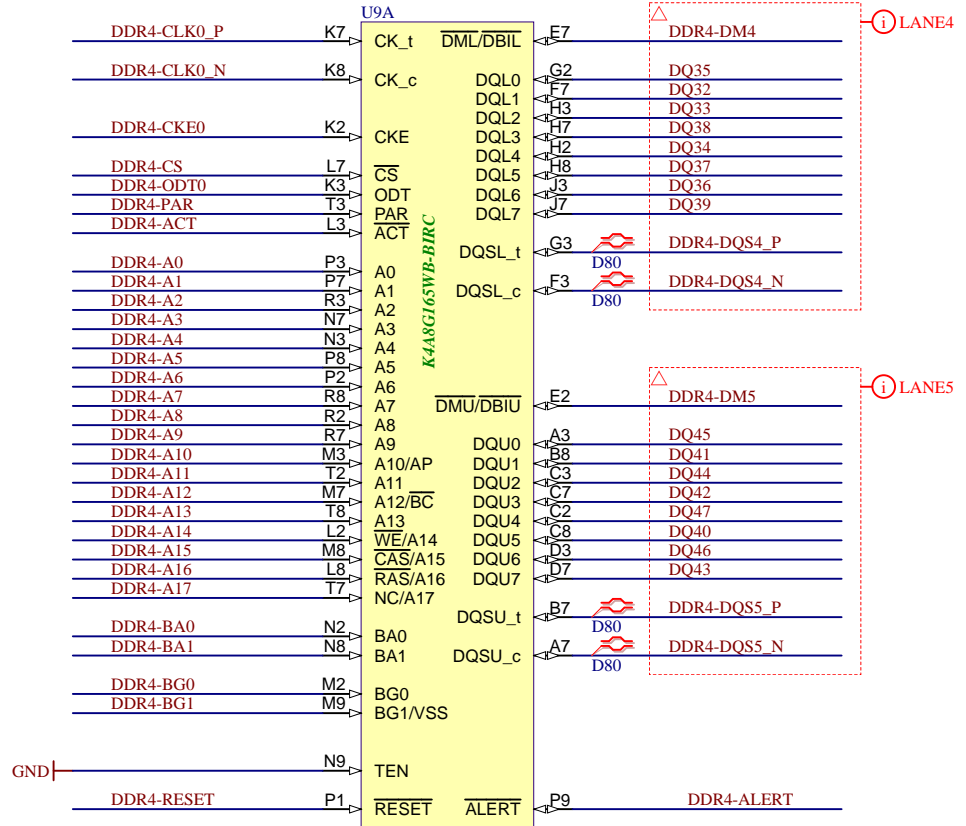
4



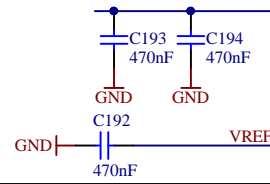
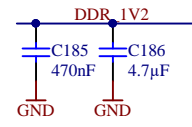
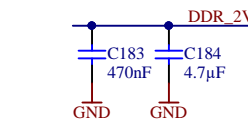
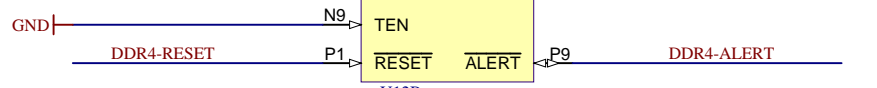
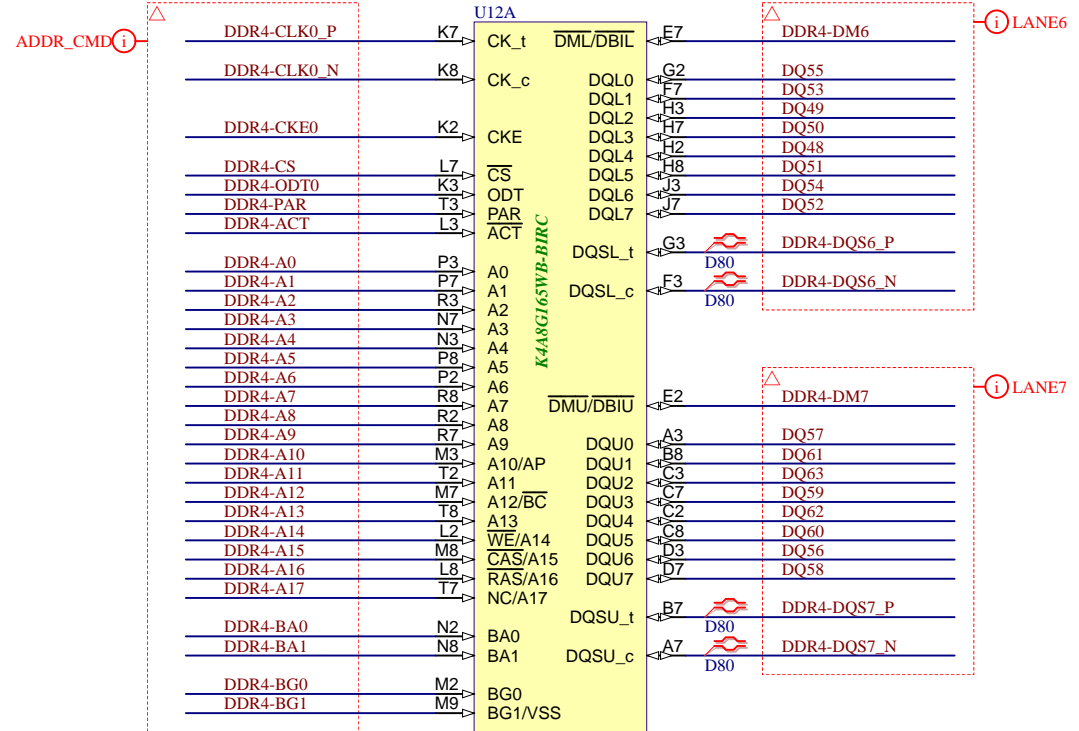
Title: TE0803 - DDR4_1_RAM		
A4	Number: TE0803 4GI21-A	Rev. 03
Date: 2019-02-21	Copyright: Trenz Electronic GmbH / TT	Page 17 of 26
Filename: DDR4-RAM.SchDoc		

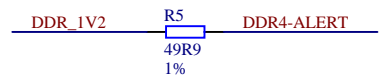
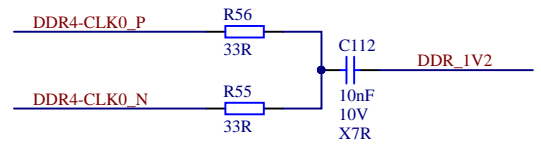
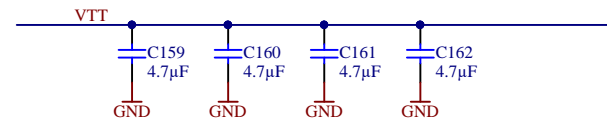
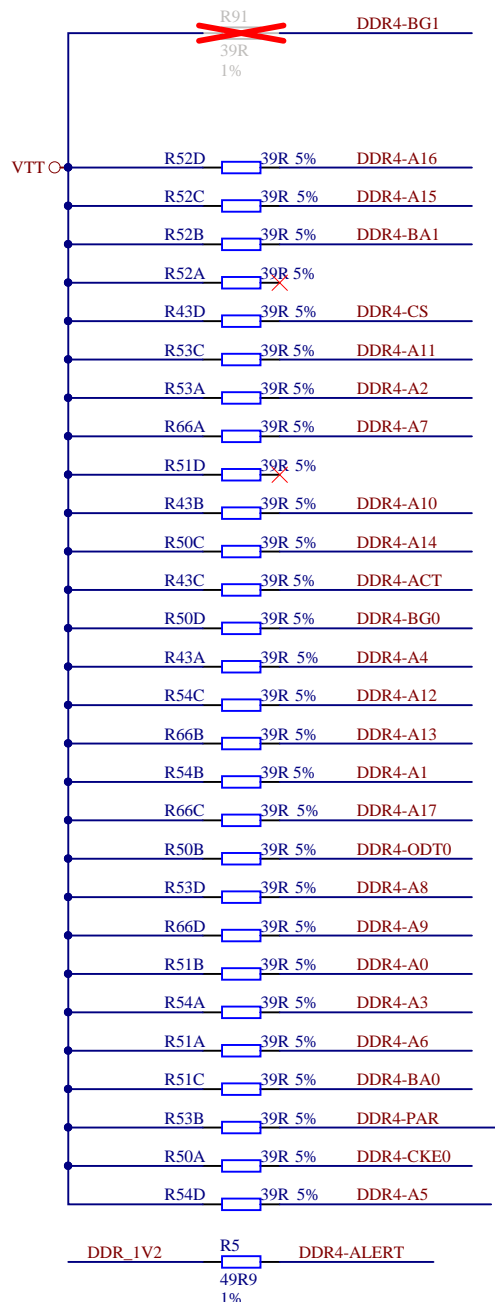
Title: TE0803 - DDR4_2_RAM		
A4	Number: TE0803 4GI21-A	Rev. 03
Date: 2019-02-21	Copyright: Trenz Electronic GmbH / TT	Page18 of 26
Filename: DDR4-RAM_2.SchDoc		



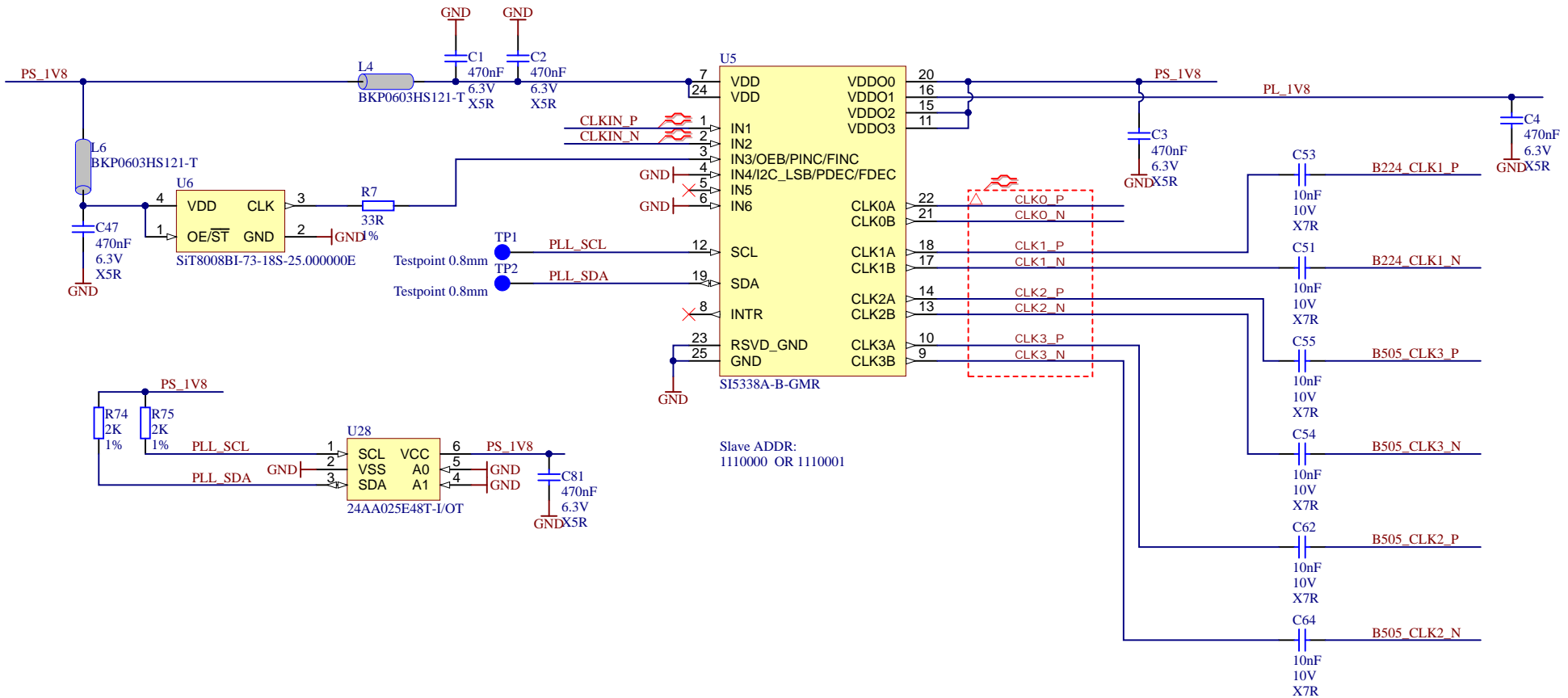
Title: TE0803 - DDR4_3_RAM		
A4	Number: TE0803 4GI21-A	Rev. 03
Date: 2019-02-21	Copyright: Trenz Electronic GmbH / TT	Page 19 of 26
Filename: DDR4-RAM_3.SchDoc		




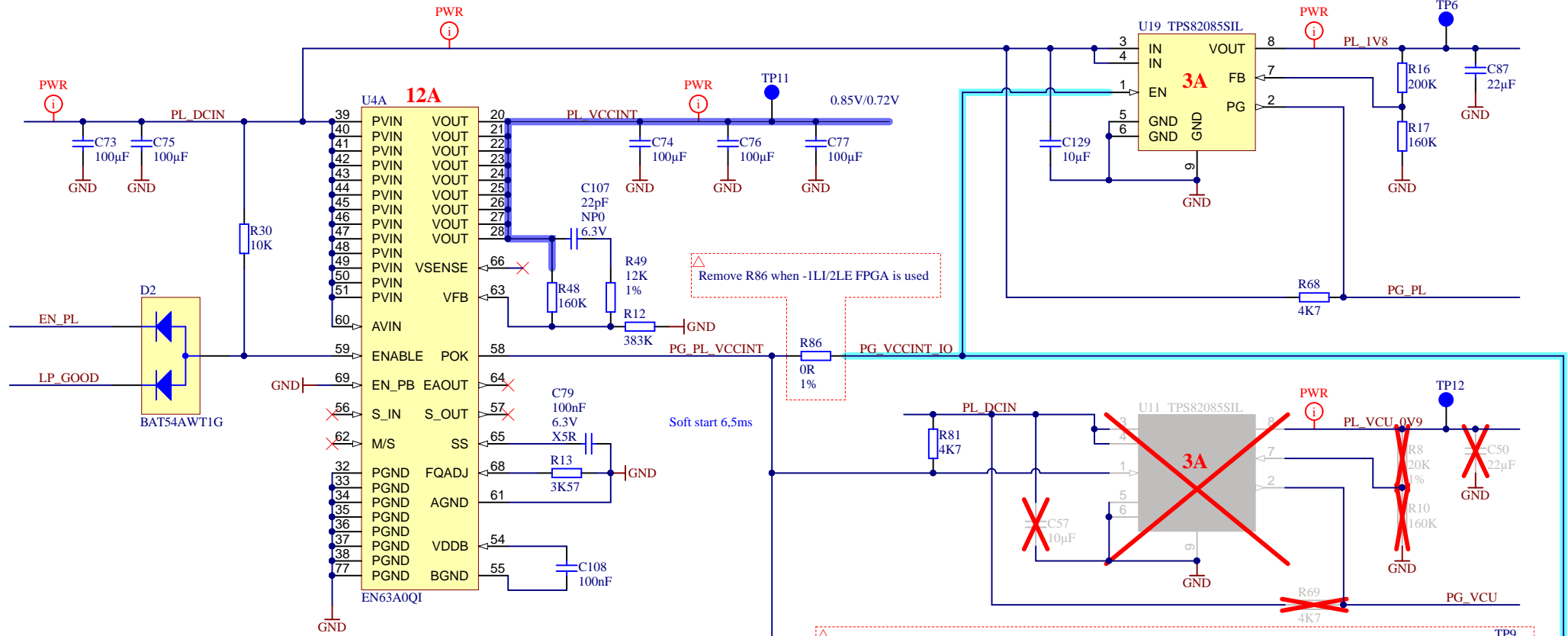
Title: TE0803 - DDR4_4_RAM		
A4	Number: TE0803 4GI21-A	Rev. 03
Date: 2019-02-21	Copyright: Trenz Electronic GmbH / TT	Page20 of 26
Filename: DDR4-RAM_4.SchDoc		



Title: TE0803 - DDR4_TERM		
A4	Number: TE0803 4GI21-A	Rev. 03
Date: 2019-02-21	Copyright: Trenz Electronic GmbH / TT	Page21 of 26
Filename: DDR4-TERM.SchDoc		



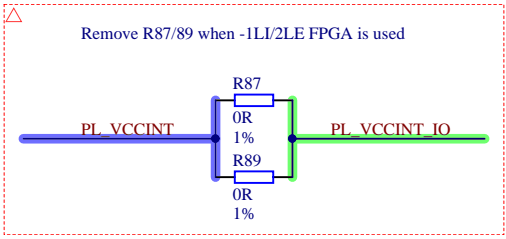
		Title: TE0803 - CLOCK	
		A4	Number: TE0803 4GI21-A
Date: 2019-02-21		Copyright: Trenz Electronic GmbH / TT	
Filename: Clock.SchDoc		Page 22 of 26	



U4B

1	NC	NC	17
2	NC	NC	18
3	NC	NC	19
4	NC	NC	29
5	NC	NC	30
6	NC	NC(SW)	31
7	NC	NC(SW)	52
8	NC	NC	53
9	NC	NC	67
10	NC	NC	70
11	NC	NC(SW)	71
12	NC	NC(SW)	72
13	NC	NC	73
14	NC	NC	74
15	NC	NC	75
16	NC	NC	76

EN63A0QI



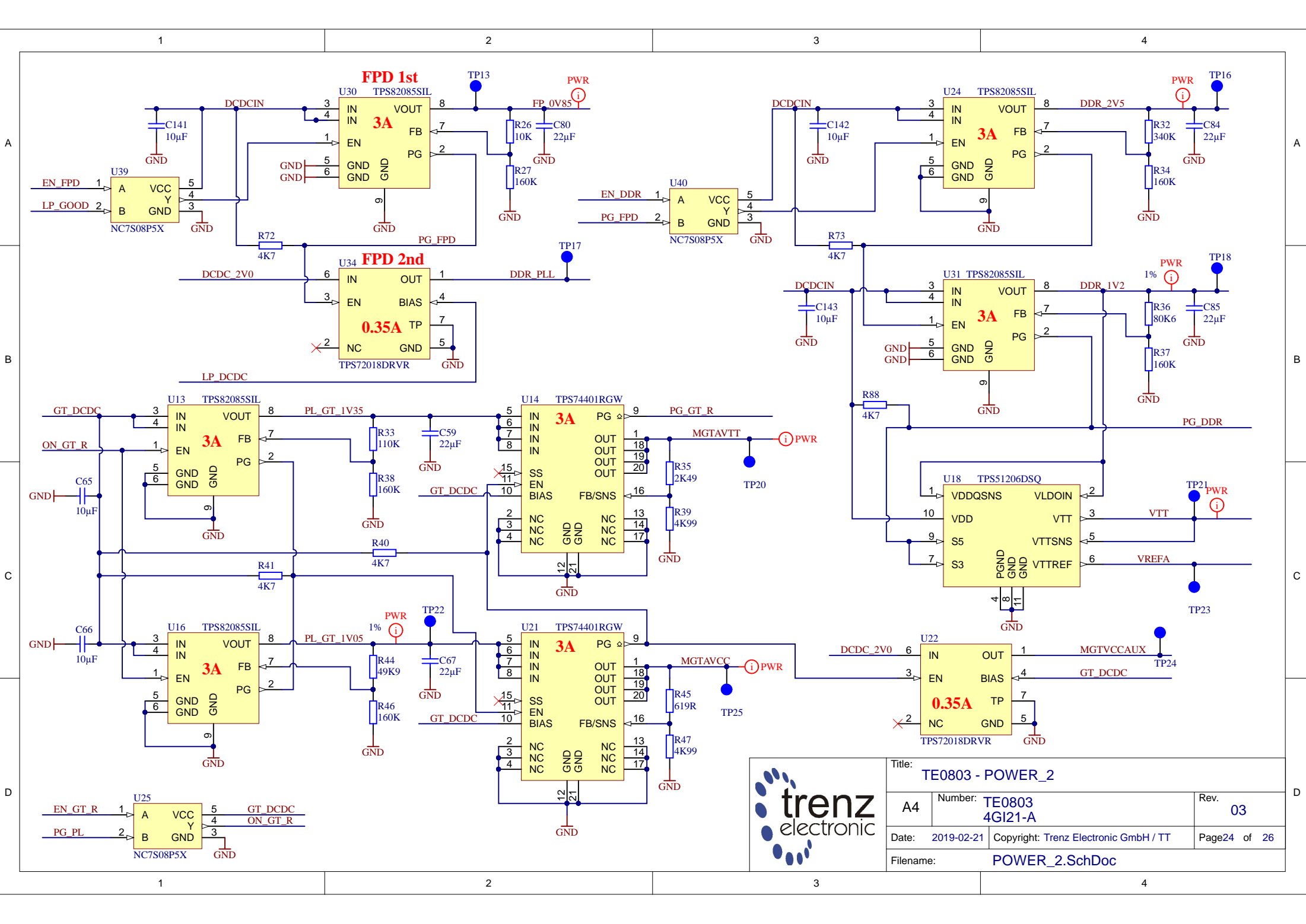
Soft start 6,5ms

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

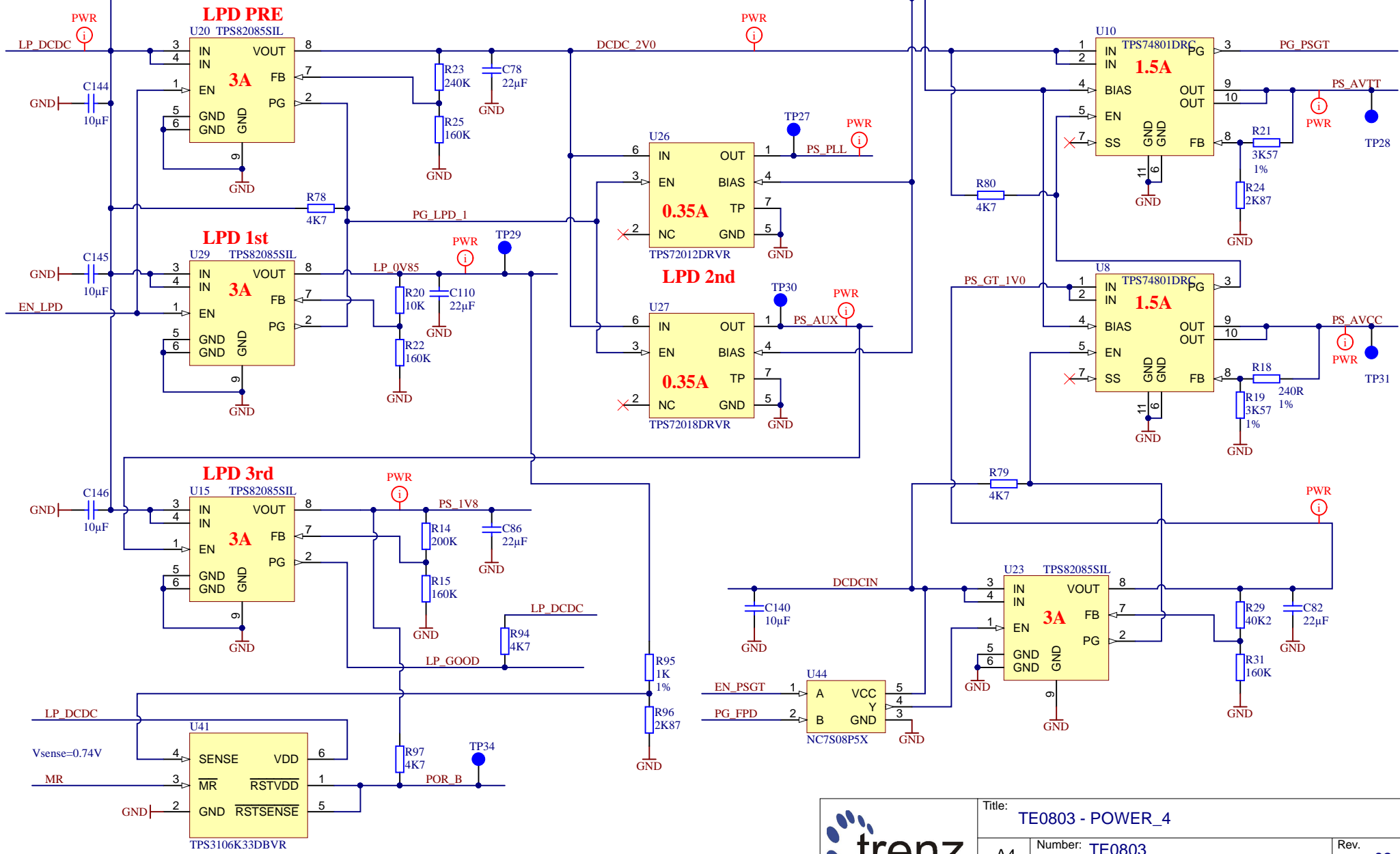
Add U33 when -1LI/2LE FPGA is used



Title: TE0803 - POWER		
A4	Number: TE0803 4GI21-A	Rev. 03
Date: 2019-02-21	Copyright: Trenz Electronic GmbH / TT	Page 23 of 26
Filename: POWER.SchDoc		



Title: TE0803 - POWER_2		
A4	Number: TE0803 4GI21-A	Rev. 03
Date: 2019-02-21	Copyright: Trenz Electronic GmbH / TT	Page24 of 26
Filename: POWER_2.SchDoc		



Title: TE0803 - POWER_4		
A4	Number: TE0803 4GI21-A	Rev. 03
Date: 2019-02-21	Copyright: Trenz Electronic GmbH / TT	Page 25 of 26
Filename: POWER_4.SchDoc		

1

2

3

4

CHANGES REV01a (20.11.2017):

- 1) VCU voltage set to 0.9V, R20 changed to 40K , PL_VCU_1V0 renamed to PL_VCU_0V9.

CHANGES REV02 (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

CHANGES REV03 (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

A

A

B


B

C

C

D

D

	Title: TE0803 - Changes list		
	A4	Number: TE0803 4GI21-A	Rev. 03
	Date: 2019-02-21	Copyright: Trenz Electronic GmbH	Page26 of 26
	Filename: Revision_Changes.SchDoc		

1

2

3

4