


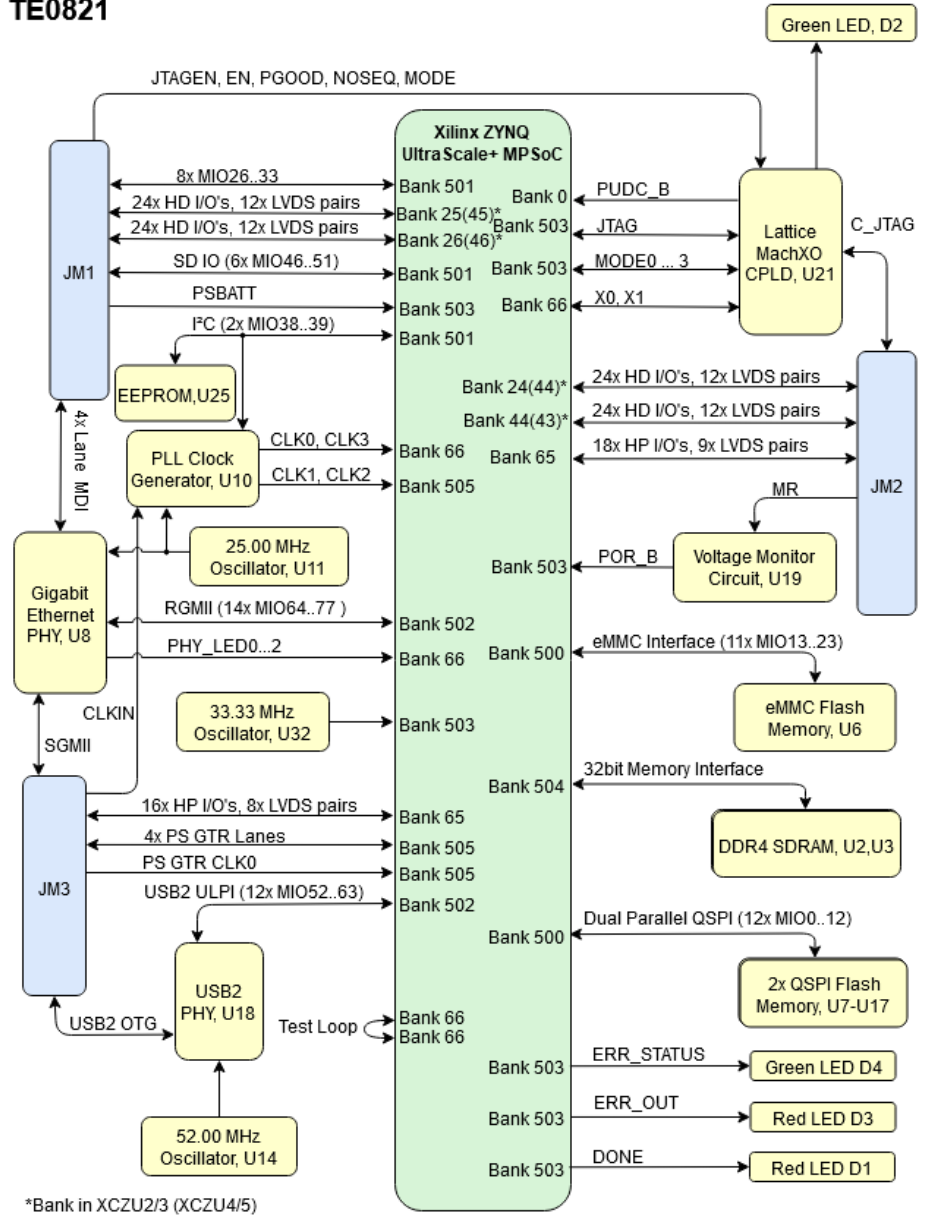
Regarding the usage of our schematics and alike documentation for Trenz module TE0821.

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Schematics and other handouts serve for informational purposes only!

	Title: <b>Module TE0821</b>		
	A4	Number: <b>TE0821 3BI21FA</b>	Rev. <b>01</b>
	Date: <b>14.08.2020</b>	Copyright: <b>Trenz Electronic GmbH / TT</b>	Page <b>1</b> of <b>24</b>
	Filename: <b>Legal Notices Modules.SchDoc</b>		

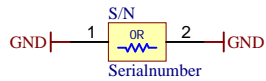
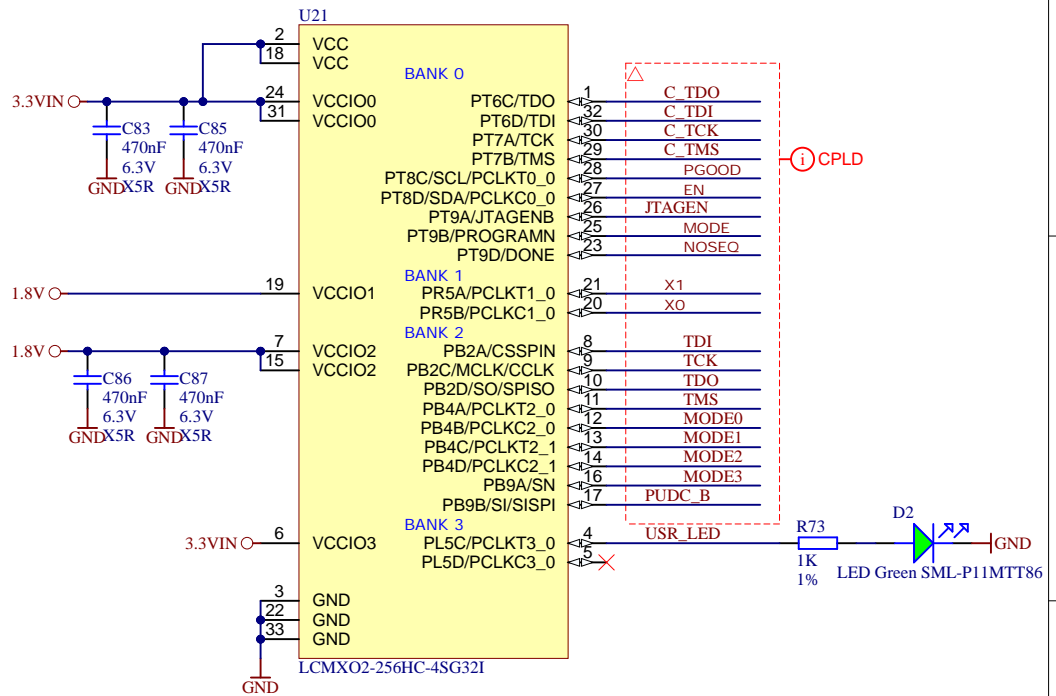
**TE0821**



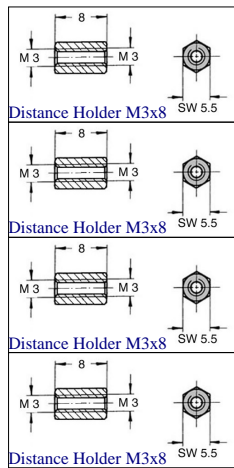
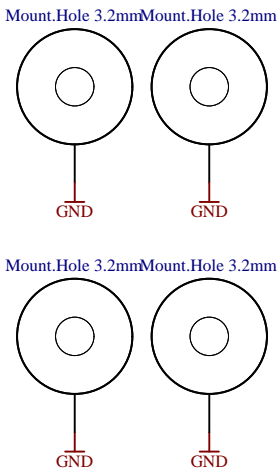
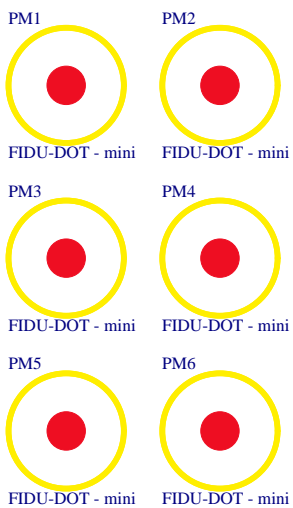
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	A4	Number: <b>TE0821 3BI21FA</b>	Rev. <b>01</b>
	Date: <b>18.01.2022</b>	Copyright: 2015 Trenz Electronic GmbH	Page 2 of 24
	Filename: <b>TE0821-Overview.SchDoc</b>		

U_USB-PHY USB-PHY.SchDoc
U_ETH-PHY ETH-PHY.SchDoc
U_B_HD B_HD.SchDoc
U_B64 B64.SchDoc
U_B65 B65.SchDoc
U_B66 B66.SchDoc
U_CONFIG CONFIG.SchDoc
U_B_MIO B_MIO.SchDoc
U_B_PS_GT B_PS_GT.SchDoc
U_CLK CLK.SchDoc
U_Overview TE0821-Overview.SchDoc
U_LN Legal Notices Modules.SchDoc

U_B2B-Connectors B2B-Connectors.SchDoc
U_B2B-Connectors_2 B2B-Connectors_2.SchDoc
U_eMMC eMMC.SchDoc
U_PS_DDR PS_DDR.SchDoc
U_ZU_POWER ZU_POWER.SchDoc
U_ZU_PS_POWER ZU_PS_POWER.SchDoc
U_DDR4-RAM_2 DDR4-RAM_2.SchDoc
U_DDR4-RAM DDR4-RAM.SchDoc
U_POWER POWER.SchDoc
U_POWER_1 POWER_1.SchDoc
U_Revision_changes Revision Changes.SchDoc



Serial  
Serialnumber  
Serialnumber 6,3 x 6,3mm

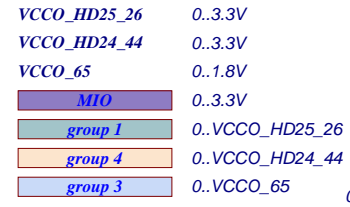
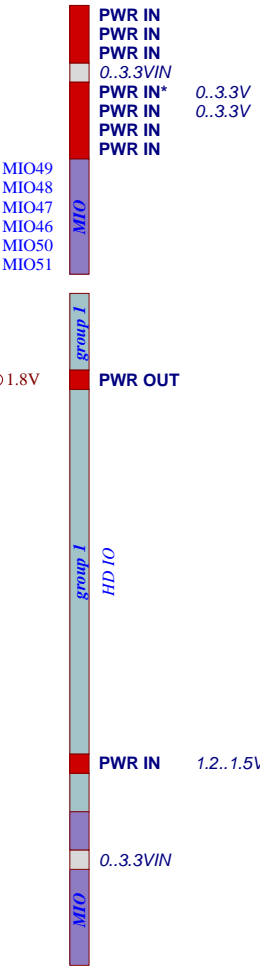
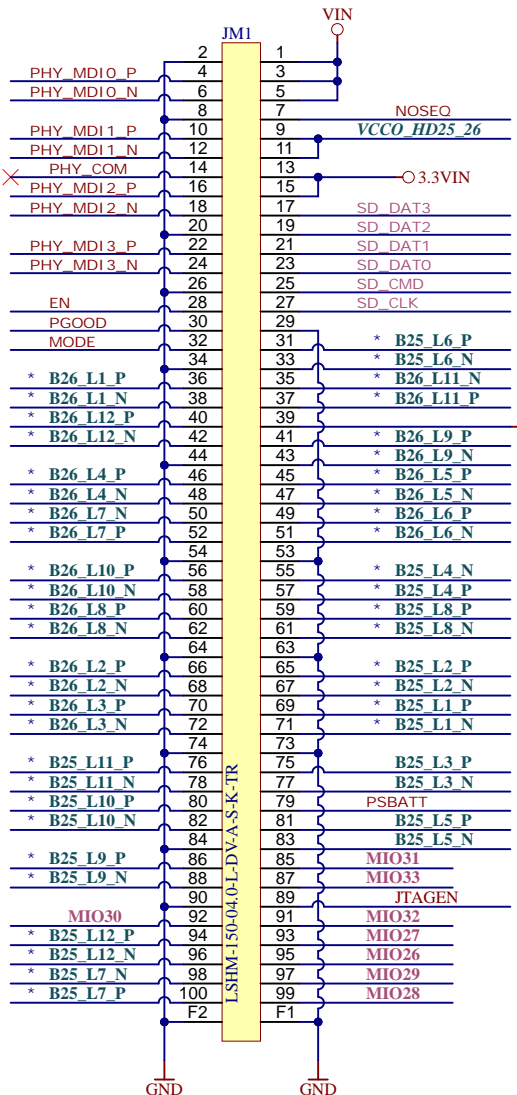


Special notes:

*Component RC0201FR-0710KL removed*

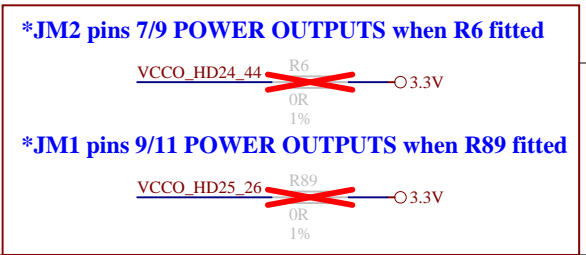
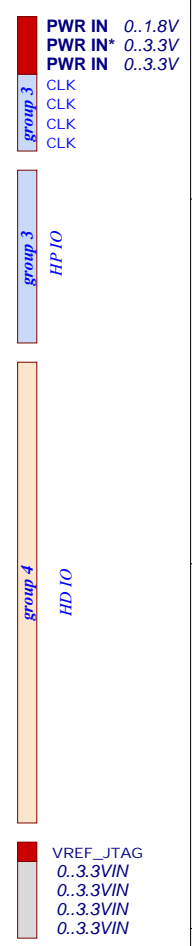
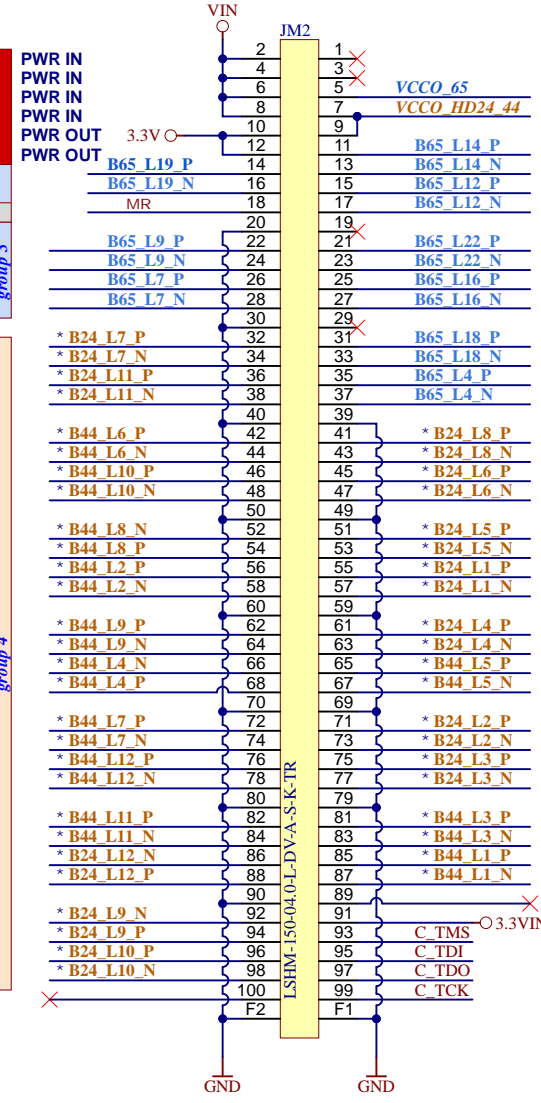


Title: <b>Module TE0821</b>		
A4	Number: <b>TE0821 3BI21FA</b>	Rev. <b>01</b>
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Filename: <b>TE0821.SchDoc</b>		



B24(HD) 24 IO, 12 LVDS Pairs  
 B25(HD) 24 IO, 12 LVDS Pairs  
 B26(HD) 24 IO, 12 LVDS Pairs  
 B44(HD) 24 IO, 12 LVDS Pairs  
 B65(HP) 34 IO, 17 LVDS Pairs  
 MIO501 8 IO, 3.3V  
 MIO501 6 IO, SD Card Ready, 3.3V  
 ETH MDI Copper

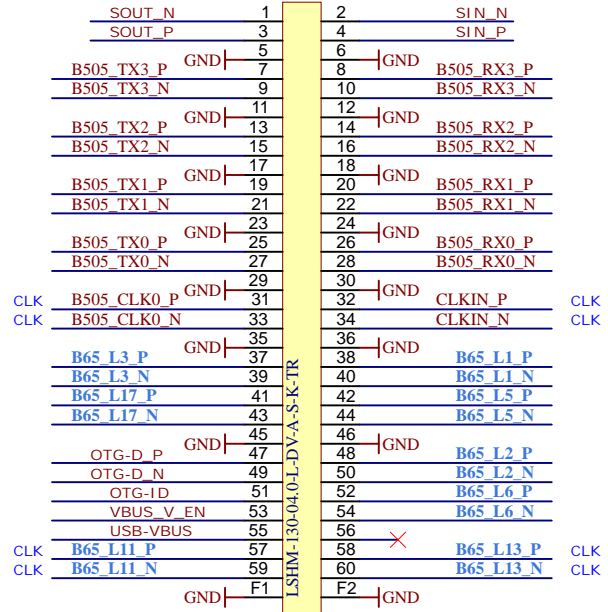
Net names are given for XCZU2/3 FPGA  
 \* Bank 44 is Bank 43 in XCZU4/5  
 \* Bank 24 is Bank 44 in XCZU4/5  
 \* Bank 25 is Bank 45 in XCZU4/5  
 \* Bank 26 is Bank 46 in XCZU4/5



Title: Module TE0821 - B2B Connectors		
A4	Number: TE0821 3BI21FA	Rev. 01
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Filename: B2B-Connectors.SchDoc		

USB OTG  
 ETH SGMII  
 PS\_GTR 4 Lanes  
 PS\_GTR CLK IN  
 PLL CLK IN

JM3



HP IO  
 group 3  
 USB  
 HP IO

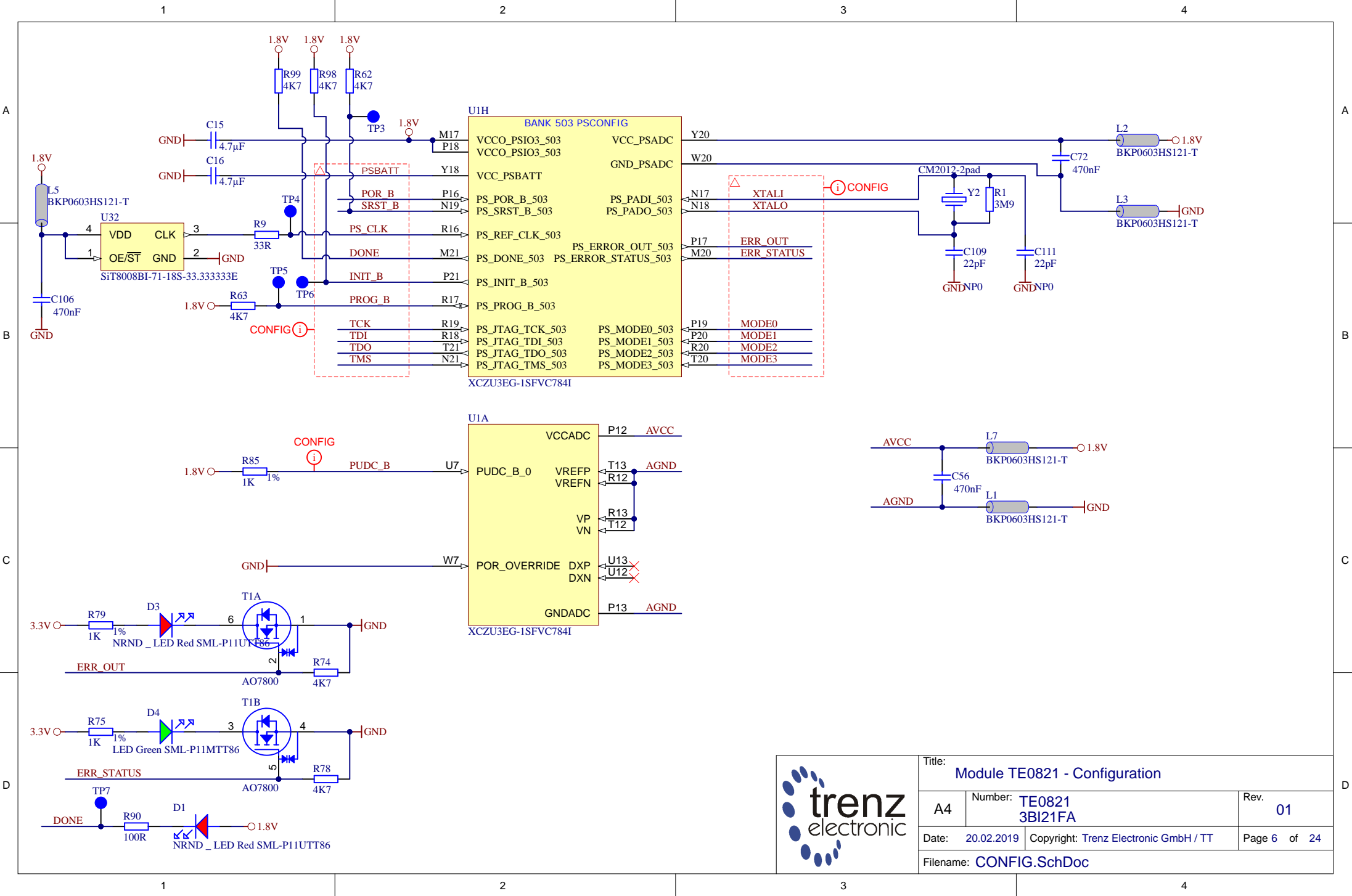
group 3  
 group 3  
 group 3

X

X



Title: Module TE0821 - B2B Connectors		
A4	Number: TE0821 3BI21FA	Rev. 01
Date: 20.02.2019	Copyright: 2015 Trenz Electronic GmbH	Page 5 of 24
Filename: B2B-Connectors_2.SchDoc		



Title: <b>Module TE0821 - Configuration</b>		
A4	Number: <b>TE0821 3BI21FA</b>	Rev. <b>01</b>
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Filename: <b>CONFIG.SchDoc</b>		



A

A

B

B

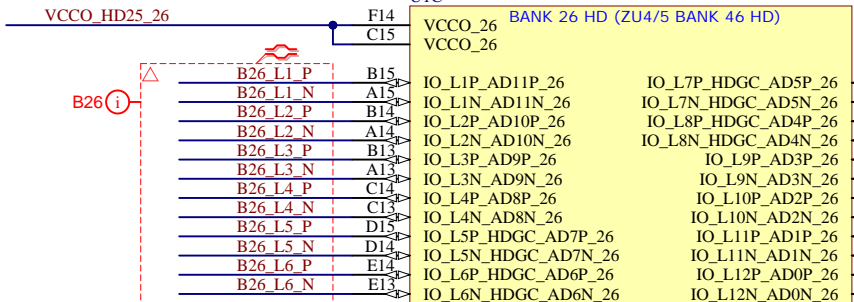
C

C

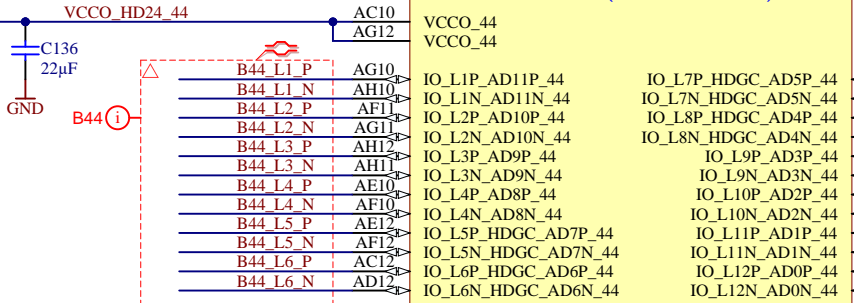
D

D

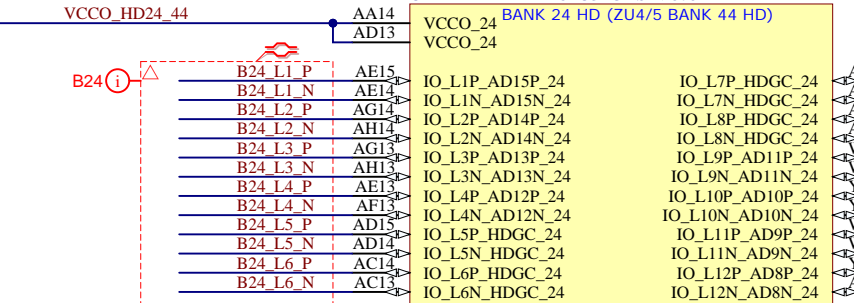
UIC



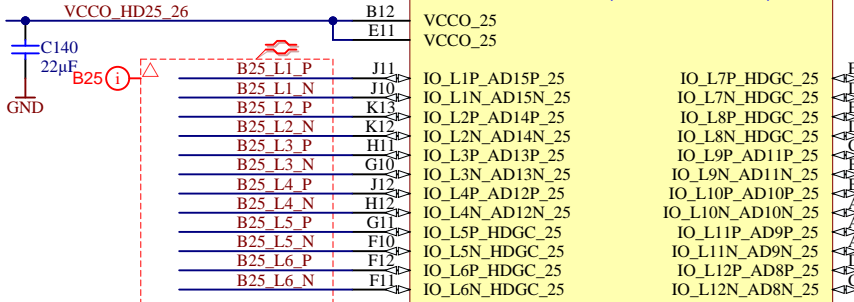
BANK 44 HD (ZU4/5 BANK 43 HD)



UIB XCZU3EG-1SFVC784I



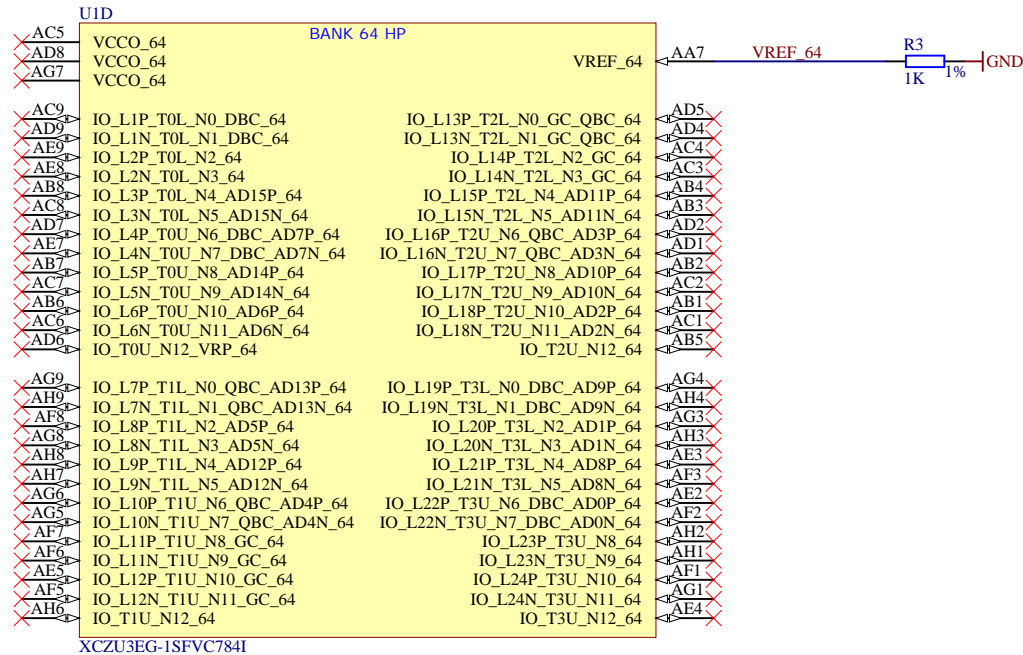

BANK 25 HD (ZU4/5 BANK 45 HD)



XCZU3EG-1SFVC784I

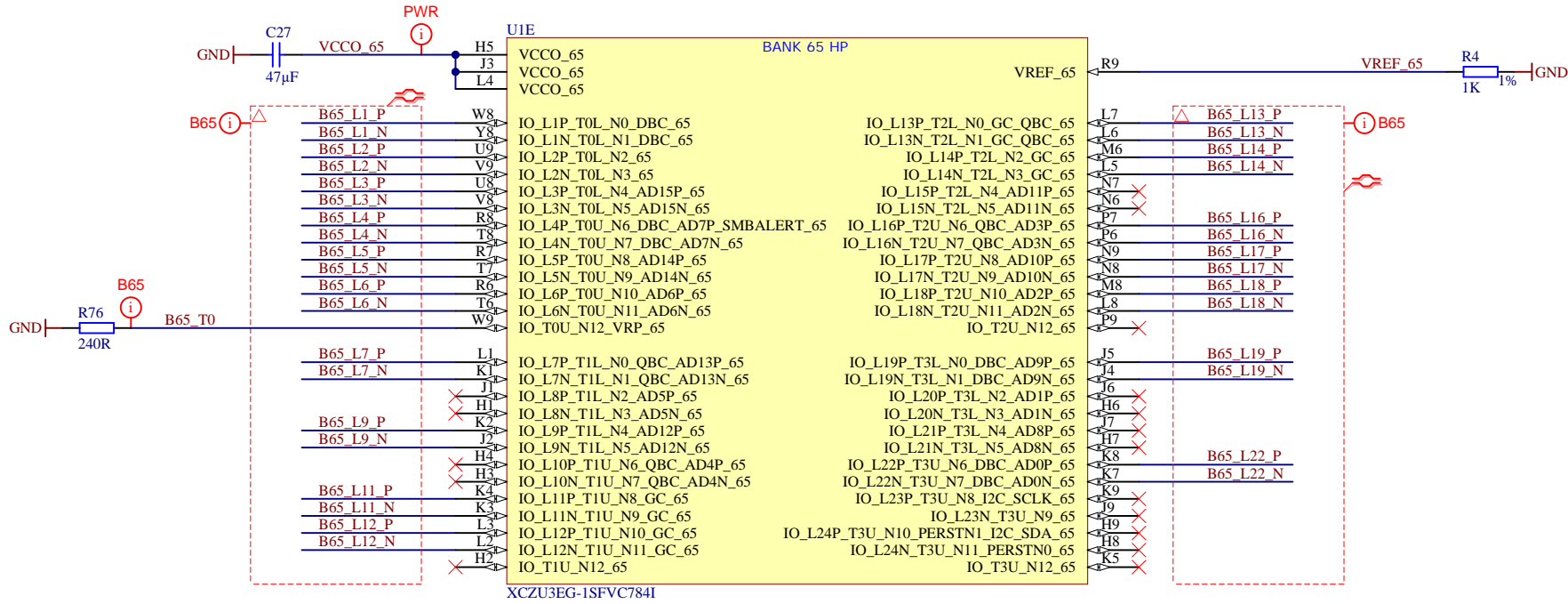


Title: Module TE0821 - HD Banks		
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Date: 20.02.2019	Copyright: Trenz Electronic GmbH / TT	Page 7 of 24
Filename: B_HD.SchDoc		

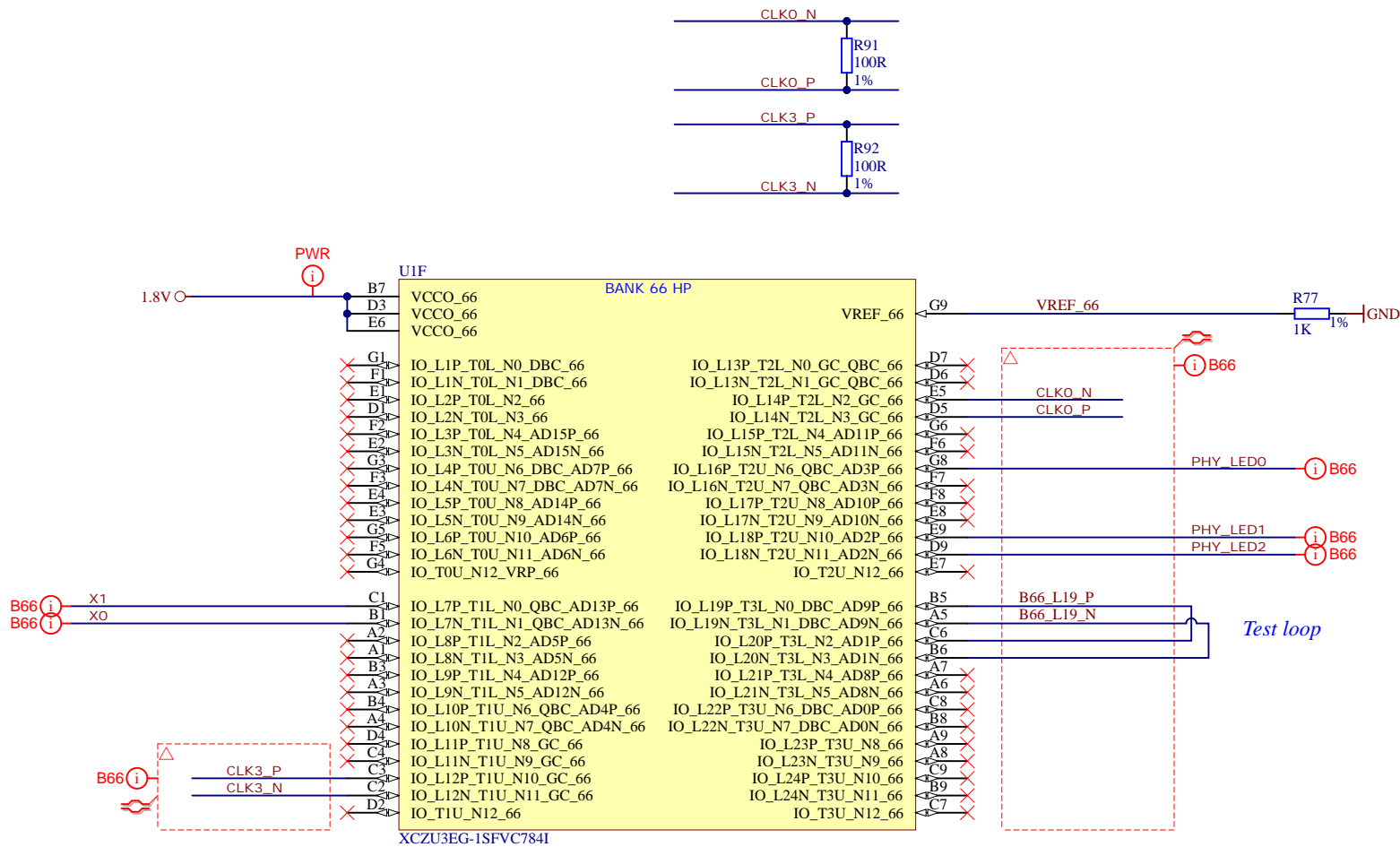



Title: <b>Module TE0821 - B64</b>		
A4	Number: <b>TE0821 3BI21FA</b>	Rev. <b>01</b>
Date: <b>20.02.2019</b>	Copyright: <b>Trenz Electronic GmbH / TT</b>	Page <b>8</b> of <b>24</b>
Filename: <b>B64.SchDoc</b>		

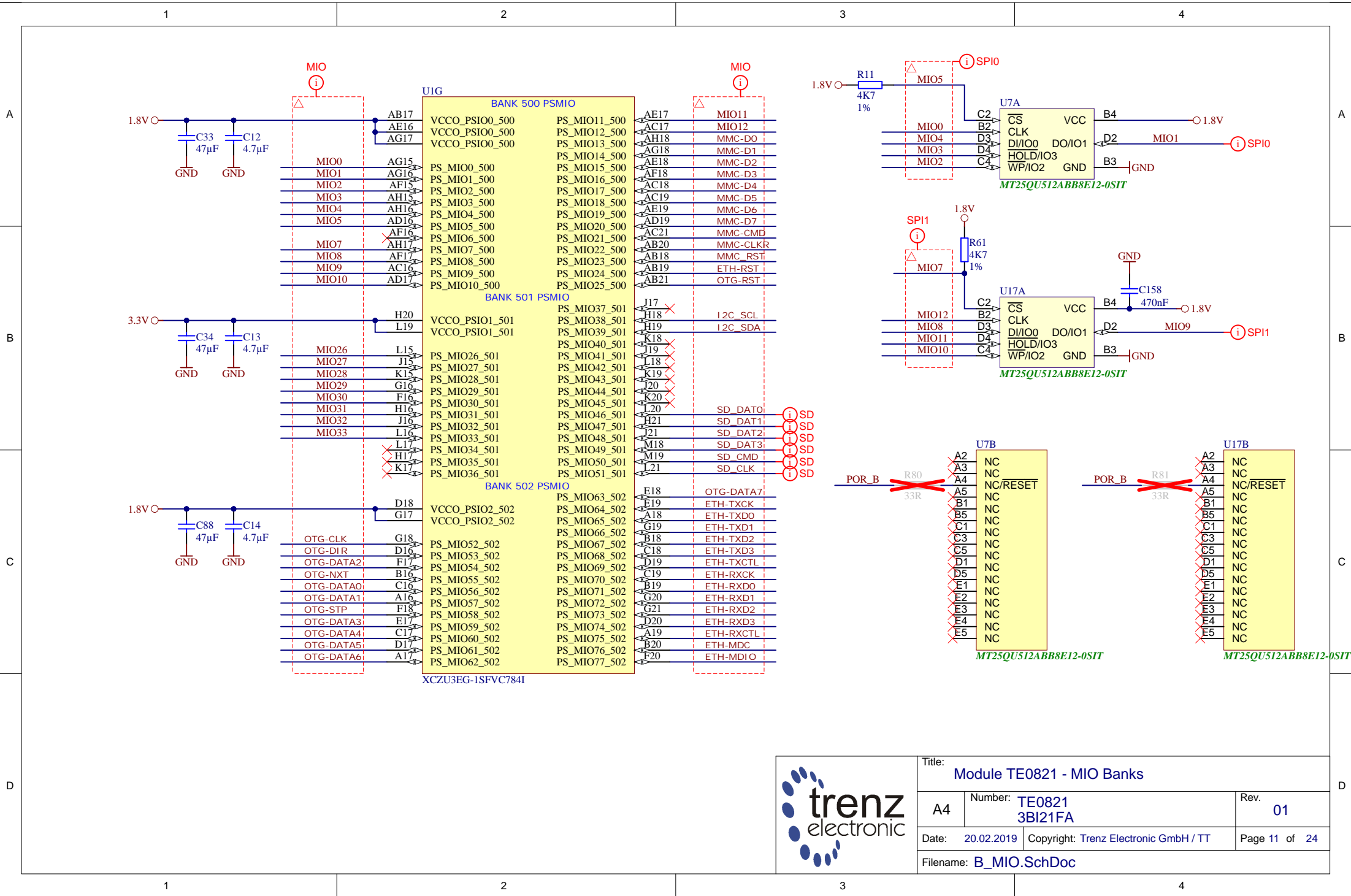




Title: <b>Module TE0821 - B65</b>		
A4	Number: <b>TE0821 3BI21FA</b>	Rev. <b>01</b>
Date: <b>20.02.2019</b>	Copyright: <b>Trenz Electronic GmbH / TT</b>	Page <b>9</b> of <b>24</b>
Filename: <b>B65.SchDoc</b>		



Title: <b>Module TE0821 - B66</b>		
A4	Number: <b>TE0821 3BI21FA</b>	Rev. <b>01</b>
Date: <b>20.02.2019</b>	Copyright: <b>Trenz Electronic GmbH / TT</b>	Page <b>10</b> of <b>24</b>
Filename: <b>B66.SchDoc</b>		



			Title: <b>Module TE0821 - MIO Banks</b>	
			A4	Number: <b>TE0821 3BI21FA</b>
Date: <b>20.02.2019</b>		Copyright: <b>Trenz Electronic GmbH / TT</b>		Page <b>11</b> of <b>24</b>
Filename: <b>B_MIO.SchDoc</b>				

A

B

C

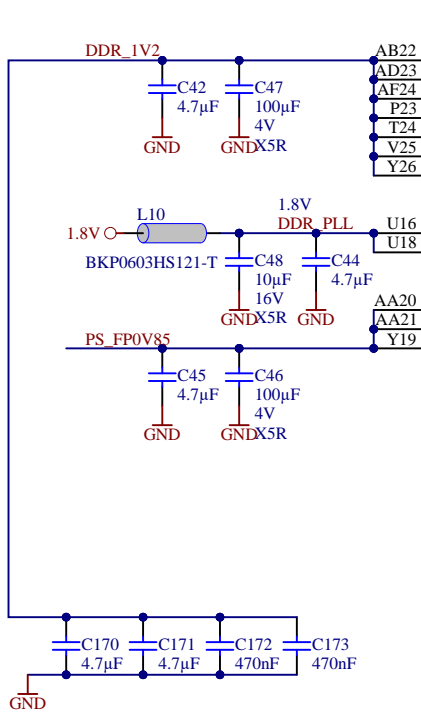
D

A

B

C

D



**UII**

**BANK 504 PSDDR**

VCCO_PSDDR_504	PS_DDR_CK0_504	W25	DDR4-CLK0 P	
VCCO_PSDDR_504	PS_DDR_CK_N0_504	W26	DDR4-CLK0 N	
VCCO_PSDDR_504	PS_DDR_CKE0_504	V28	DDR4-CKE0	
VCCO_PSDDR_504	PS_DDR_CK1_504	Y24		×
VCCO_PSDDR_504	PS_DDR_CK_N1_504	Y25		×
VCCO_PSDDR_504	PS_DDR_CKE1_504	V27		×
VCC_PSDDR_PLL	PS_DDR_A0_504	W28	DDR4-A0	
VCC_PSDDR_PLL	PS_DDR_A1_504	Y28	DDR4-A1	
VCC_PSDDR_PLL	PS_DDR_A2_504	AB28	DDR4-A2	
VCC_PSDDR_PLL	PS_DDR_A3_504	AA28	DDR4-A3	
VCC_PSDDR_PLL	PS_DDR_A4_504	Y27	DDR4-A4	
VCC_PSINTFP_DDR	PS_DDR_A5_504	AA27	DDR4-A5	
VCC_PSINTFP_DDR	PS_DDR_A6_504	Y22	DDR4-A6	
VCC_PSINTFP_DDR	PS_DDR_A7_504	AA23	DDR4-A7	
VCC_PSINTFP_DDR	PS_DDR_A8_504	AA22	DDR4-A8	
VCC_PSINTFP_DDR	PS_DDR_A9_504	AB23	DDR4-A9	
VCC_PSINTFP_DDR	PS_DDR_A10_504	AA25	DDR4-A10	
VCC_PSINTFP_DDR	PS_DDR_A11_504	AA26	DDR4-A11	
VCC_PSINTFP_DDR	PS_DDR_A12_504	AB25	DDR4-A12	
VCC_PSINTFP_DDR	PS_DDR_A13_504	AB26	DDR4-A13	
VCC_PSINTFP_DDR	PS_DDR_A14_504	AB24	DDR4-A14	
VCC_PSINTFP_DDR	PS_DDR_A15_504	AC24	DDR4-A15	
VCC_PSINTFP_DDR	PS_DDR_A16_504	AC23	DDR4-A16	
VCC_PSINTFP_DDR	PS_DDR_A17_504	AC22	DDR4-A17	
PS_DDR_CS_N0_504		W27	DDR4-CS	
PS_DDR_CS_N1_504		V26		×
PS_DDR_BA0_504		V23	DDR4-BA0	
PS_DDR_BA1_504		W22	DDR4-BA1	
PS_DDR_BG0_504		W24	DDR4-BG0	
PS_DDR_BG1_504		V22	DDR4-BG1	
PS_DDR_PARITY_504		V24	DDR4-PAR	
PS_DDR_RAM_RST_N_504		U23	DDR4-RESET	
PS_DDR_ACT_N_504		Y23	DDR4-ACT	
PS_DDR_ALERT_N_504		U25	DDR4-ALERT	
PS_DDR_ZQ_504		U24		240R
PS_DDR_ODT0_504		U28	DDR4-ODT0	
PS_DDR_ODT1_504		U26		×

XCZU3EG-1SFVC784I

**UIJ**

**BANK 504 PSDDR**

DQ0	AD21	PS_DDR_DQ0_504	PS_DDR_DQ32_504	T22	
DQ1	AE20	PS_DDR_DQ1_504	PS_DDR_DQ33_504	R22	×
DQ2	AD20	PS_DDR_DQ2_504	PS_DDR_DQ34_504	P22	×
DQ3	AF20	PS_DDR_DQ3_504	PS_DDR_DQ35_504	N22	×
DQ4	AH21	PS_DDR_DQ4_504	PS_DDR_DQ36_504	T23	×
DQ5	AH20	PS_DDR_DQ5_504	PS_DDR_DQ37_504	P24	×
DQ6	AH19	PS_DDR_DQ6_504	PS_DDR_DQ38_504	R24	×
DQ7	AG19	PS_DDR_DQ7_504	PS_DDR_DQ39_504	N24	×
DQ8	AF22	PS_DDR_DQ8_504	PS_DDR_DQ40_504	H24	×
DQ9	AH22	PS_DDR_DQ9_504	PS_DDR_DQ41_504	J24	×
DQ10	AE22	PS_DDR_DQ10_504	PS_DDR_DQ42_504	M24	×
DQ11	AD23	PS_DDR_DQ11_504	PS_DDR_DQ43_504	K24	×
DQ12	AH23	PS_DDR_DQ12_504	PS_DDR_DQ44_504	J22	×
DQ13	AH24	PS_DDR_DQ13_504	PS_DDR_DQ45_504	H22	×
DQ14	AE24	PS_DDR_DQ14_504	PS_DDR_DQ46_504	K22	×
DQ15	AG24	PS_DDR_DQ15_504	PS_DDR_DQ47_504	J22	×
DQ16	AC26	PS_DDR_DQ16_504	PS_DDR_DQ48_504	M25	×
DQ17	AD26	PS_DDR_DQ17_504	PS_DDR_DQ49_504	M26	×
DQ18	AD25	PS_DDR_DQ18_504	PS_DDR_DQ50_504	L25	×
DQ19	AD24	PS_DDR_DQ19_504	PS_DDR_DQ51_504	L26	×
DQ20	AG26	PS_DDR_DQ20_504	PS_DDR_DQ52_504	K28	×
DQ21	AH25	PS_DDR_DQ21_504	PS_DDR_DQ53_504	L28	×
DQ22	AH26	PS_DDR_DQ22_504	PS_DDR_DQ54_504	M28	×
DQ23	AG25	PS_DDR_DQ23_504	PS_DDR_DQ55_504	N28	×
DQ24	AH27	PS_DDR_DQ24_504	PS_DDR_DQ56_504	J28	×
DQ25	AH28	PS_DDR_DQ25_504	PS_DDR_DQ57_504	K27	×
DQ26	AF28	PS_DDR_DQ26_504	PS_DDR_DQ58_504	H28	×
DQ27	AG28	PS_DDR_DQ27_504	PS_DDR_DQ59_504	H27	×
DQ28	AC27	PS_DDR_DQ28_504	PS_DDR_DQ60_504	G26	×
DQ29	AD27	PS_DDR_DQ29_504	PS_DDR_DQ61_504	G25	×
DQ30	AD28	PS_DDR_DQ30_504	PS_DDR_DQ62_504	K25	×
DQ31	AC28	PS_DDR_DQ31_504	PS_DDR_DQ63_504	J25	×
		PS_DDR_DQ64_504	PS_DDR_DQ64_504	T28	×
		PS_DDR_DQ65_504	PS_DDR_DQ65_504	R28	×
DDR4-DQS0 P	AF21	PS_DDR_DQS_P0_504	PS_DDR_DQ66_504	P28	×
DDR4-DQS0 N	AG21	PS_DDR_DQS_N0_504	PS_DDR_DQ67_504	P27	×
DDR4-DQS1 P	AF23	PS_DDR_DQS_P1_504	PS_DDR_DQ68_504	P26	×
DDR4-DQS1 N	AG23	PS_DDR_DQS_N1_504	PS_DDR_DQ69_504	R25	×
DDR4-DQS2 P	AF25	PS_DDR_DQS_P2_504	PS_DDR_DQ70_504	P25	×
DDR4-DQS2 N	AF26	PS_DDR_DQS_N2_504	PS_DDR_DQ71_504	T25	×
DDR4-DQS3 P	AE27	PS_DDR_DQS_P3_504			
DDR4-DQS3 N	AE27	PS_DDR_DQS_N3_504			
	N23	PS_DDR_DQS_P4_504			
	M23	PS_DDR_DQS_N4_504	PS_DDR_DM0_504	AG20	DDR4-DM0
	L23	PS_DDR_DQS_P5_504	PS_DDR_DM1_504	AE23	DDR4-DM1
	K23	PS_DDR_DQS_N5_504	PS_DDR_DM2_504	AE25	DDR4-DM2
	N26	PS_DDR_DQS_P6_504	PS_DDR_DM3_504	AE28	DDR4-DM3
	N27	PS_DDR_DQS_N6_504	PS_DDR_DM4_504	R23	
	J26	PS_DDR_DQS_P7_504	PS_DDR_DM5_504	H23	
	J27	PS_DDR_DQS_N7_504	PS_DDR_DM6_504	L27	
	R27	PS_DDR_DQS_P8_504	PS_DDR_DM7_504	H26	
	T27	PS_DDR_DQS_N8_504	PS_DDR_DM8_504	T26	

XCZU3EG-1SFVC784I



Title: <b>Module TE0821 - PS DDR</b>		
A4	Number: <b>TE0821 3BI21FA</b>	Rev. <b>01</b>
Date: <b>20.02.2019</b>	Copyright: <b>Trenz Electronic GmbH / TT</b>	Page <b>12</b> of <b>24</b>
Filename: <b>PS_DDR.SchDoc</b>		

1

2

3

4

A

A

B

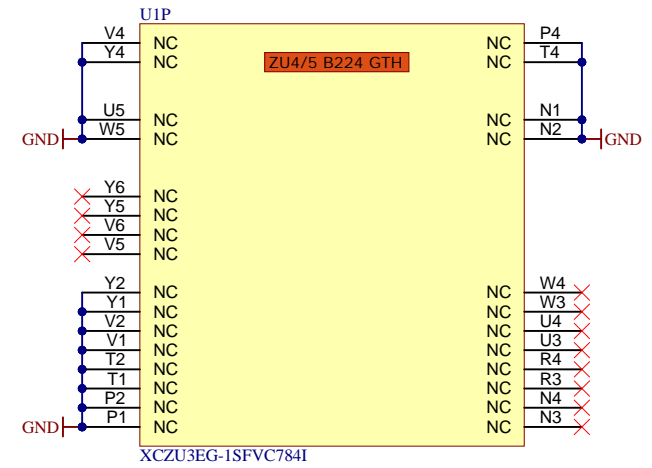
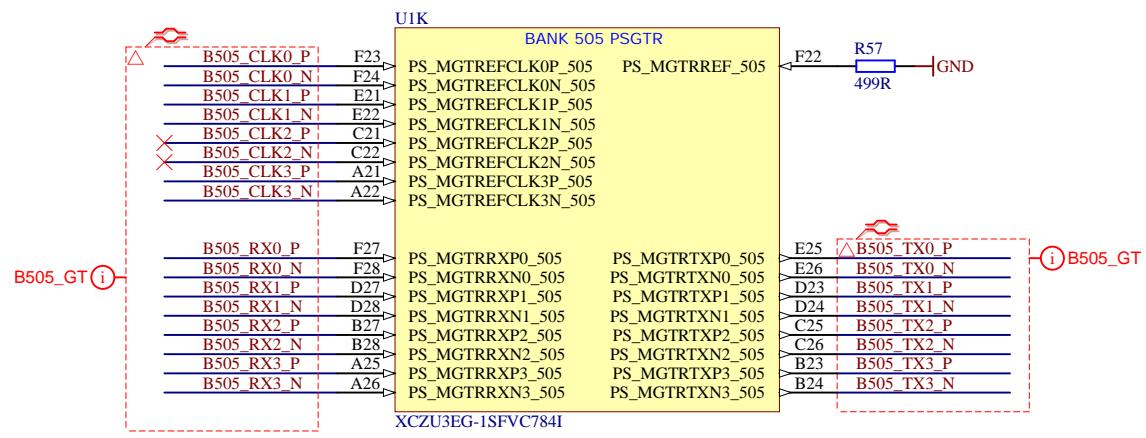
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C

C

D

D



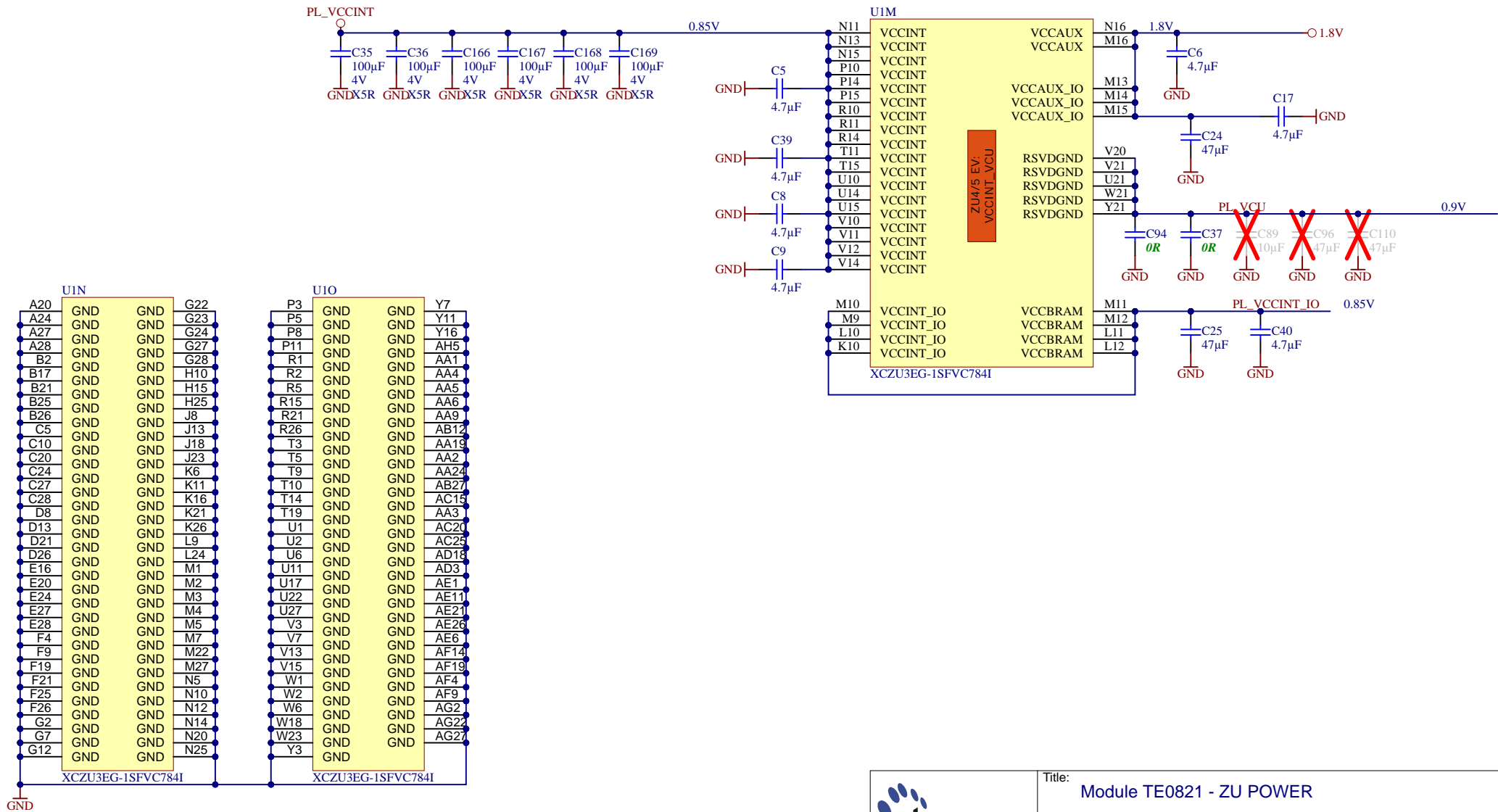
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	A4	Number: <b>TE0821 3BI21FA</b>	Rev. <b>01</b>
	Date: <b>20.02.2019</b>	Copyright: <b>Trenz Electronic GmbH / TT</b>	Page <b>13</b> of <b>24</b>
	Filename: <b>B_PS_GT.SchDoc</b>		

1

2

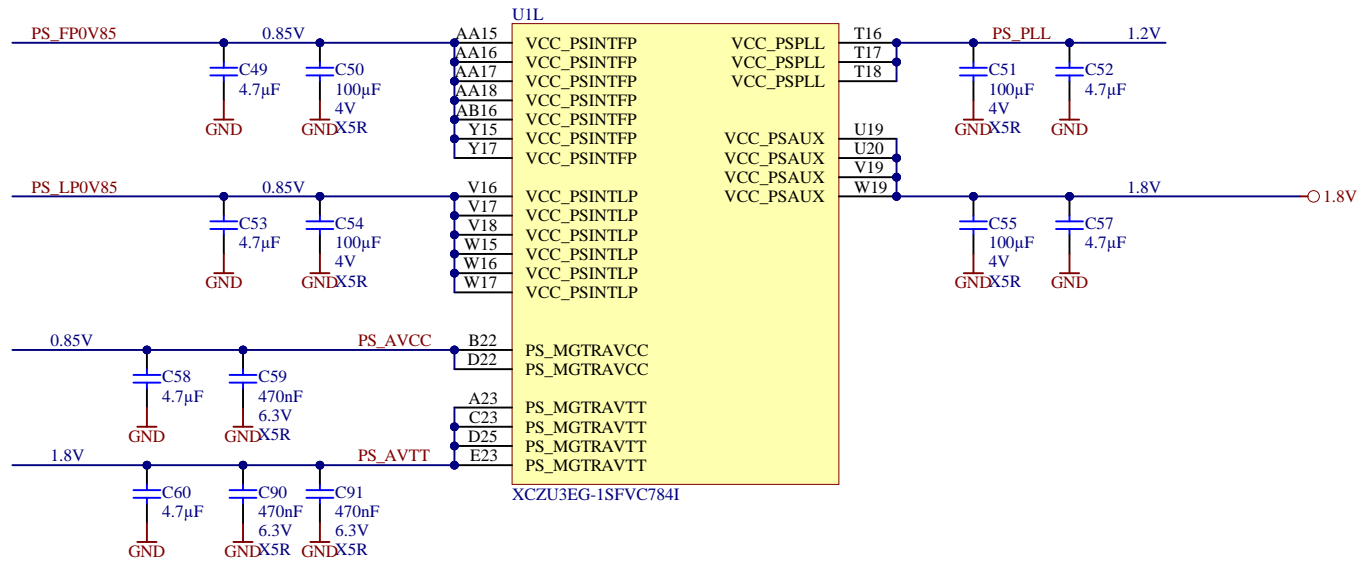
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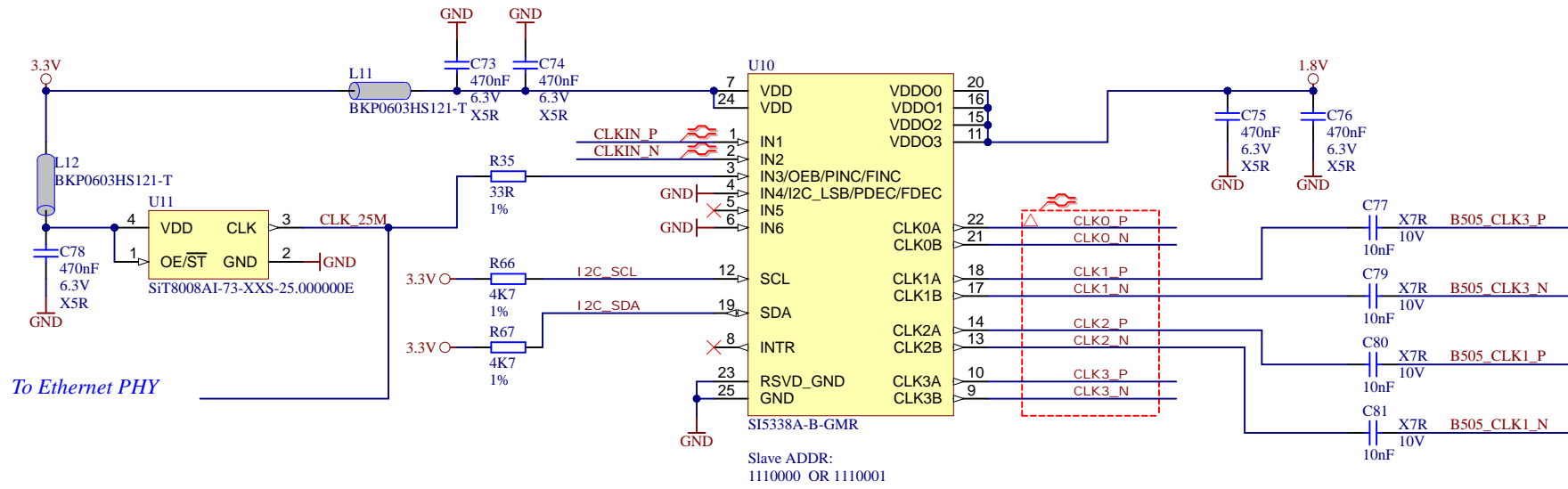


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A4	Number: <b>TE0821 3BI21FA</b>	Rev. <b>01</b>
Date: <b>20.02.2019</b>	Copyright: <b>Trenz Electronic GmbH / TT</b>	Page <b>14</b> of <b>24</b>
Filename: <b>ZU_POWER.SchDoc</b>		






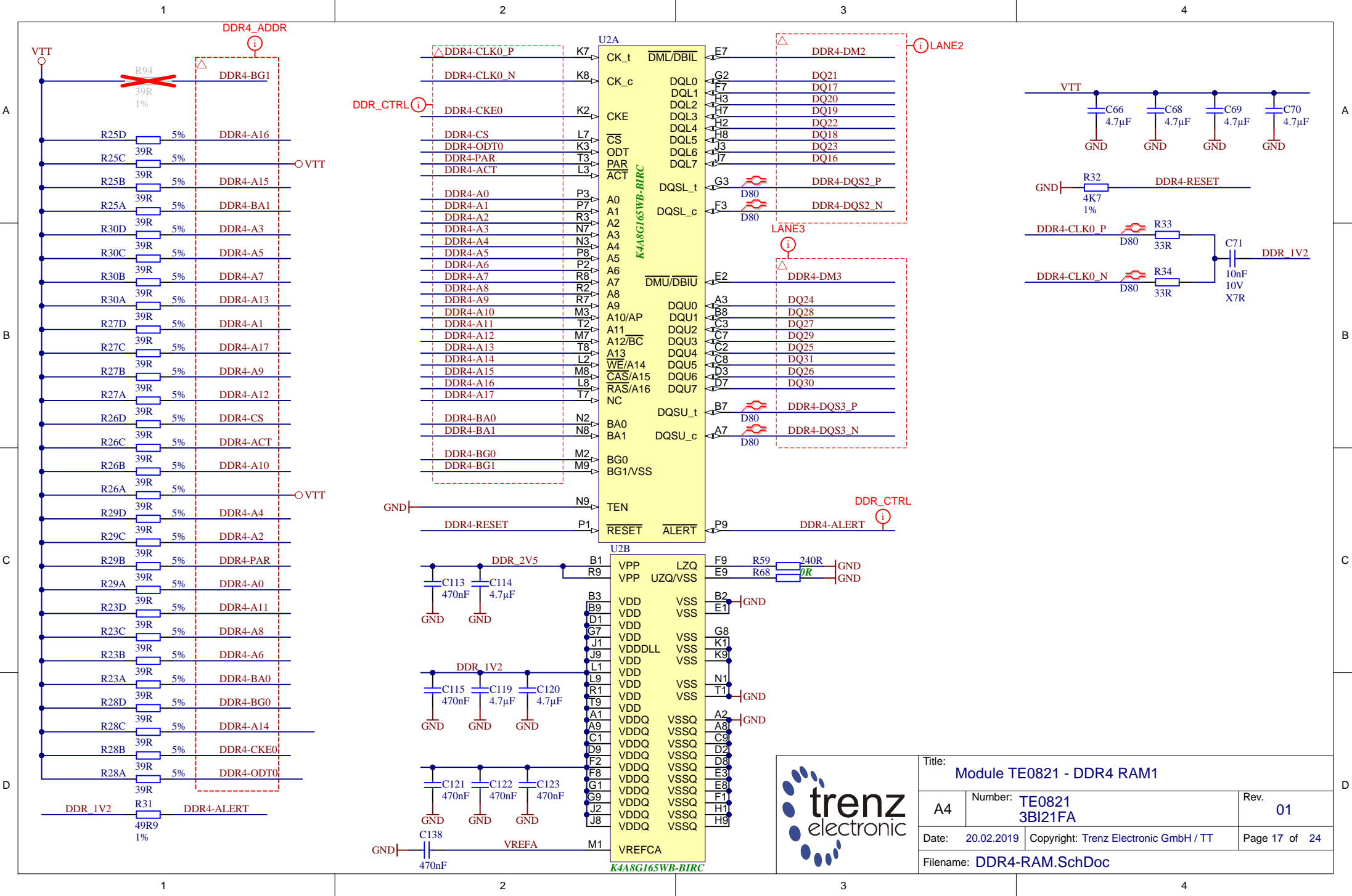
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Date: <b>20.02.2019</b>	Copyright: <b>Trenz Electronic GmbH / TT</b>	Page <b>15</b> of <b>24</b>
Filename: <b>ZU_PS_POWER.SchDoc</b>		



To Ethernet PHY

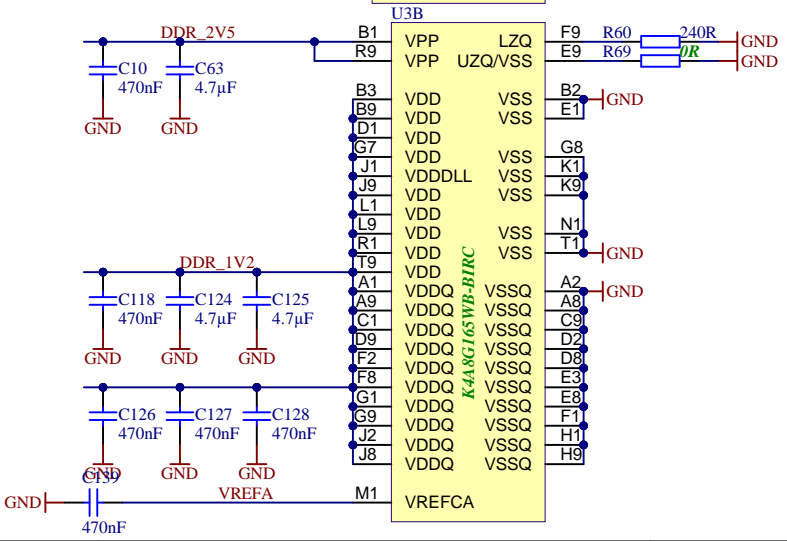
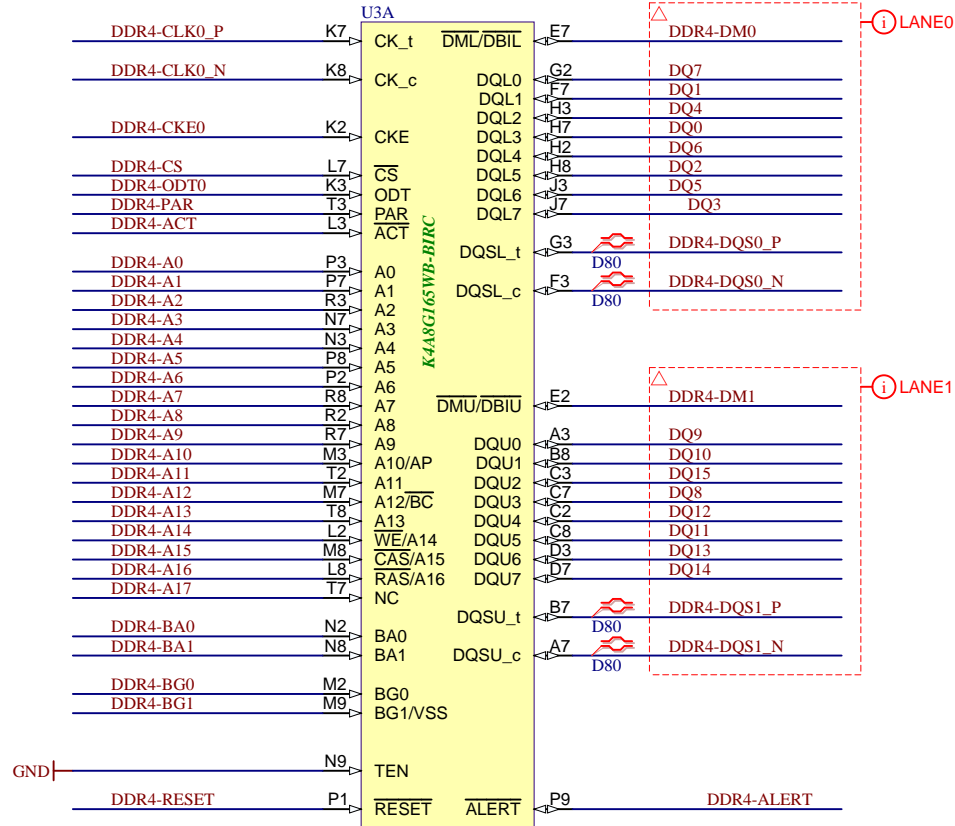
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1110000 OR 1110001

		Title: Module TE0821 - CLK	
		A4	Number: TE0821 3BI21FA
Date: 20.02.2019		Copyright: 2015 Trenz Electronic GmbH	
Filename: CLK.SchDoc		Page 16 of 24	

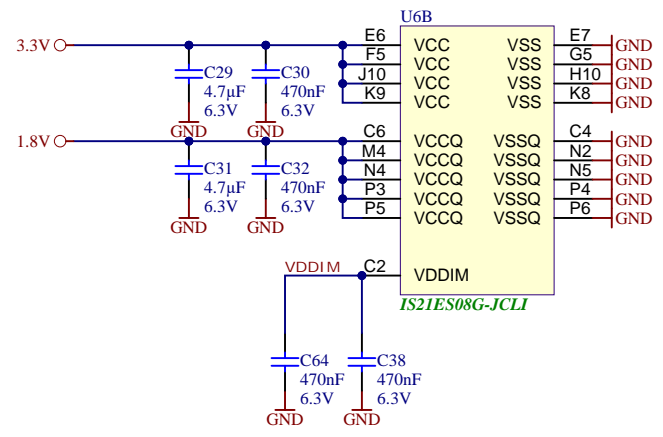
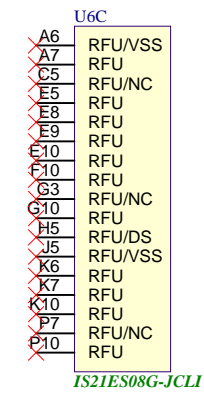
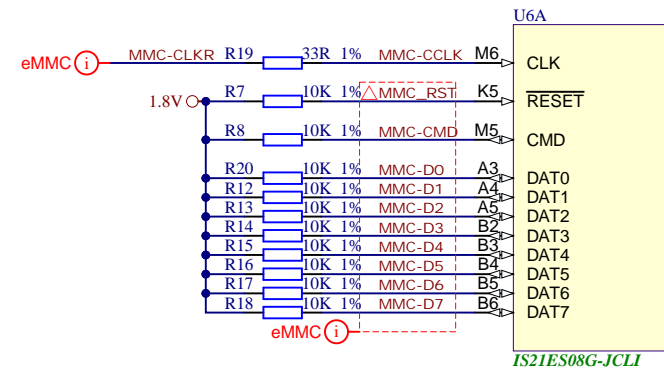
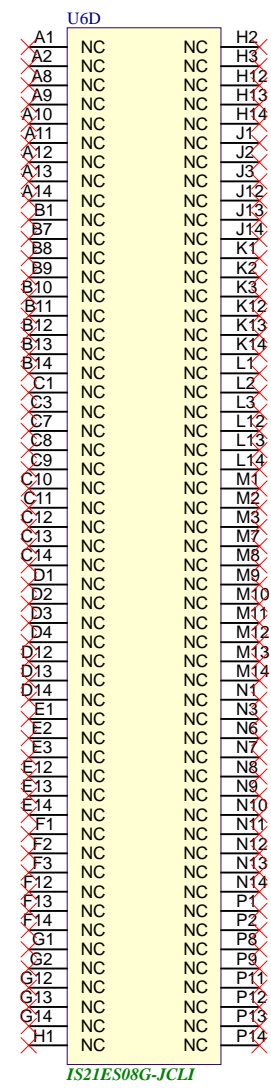



Title: <b>Module TE0821 - DDR4 RAM1</b>		
A4	Number: <b>TE0821 3BI21FA</b>	Rev. <b>01</b>
Date: <b>20.02.2019</b>	Copyright: <b>Trenz Electronic GmbH / TT</b>	Page <b>17</b> of <b>24</b>
Filename: <b>DDR4-RAM.SchDoc</b>		

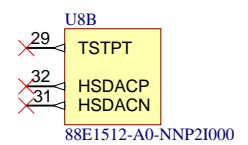
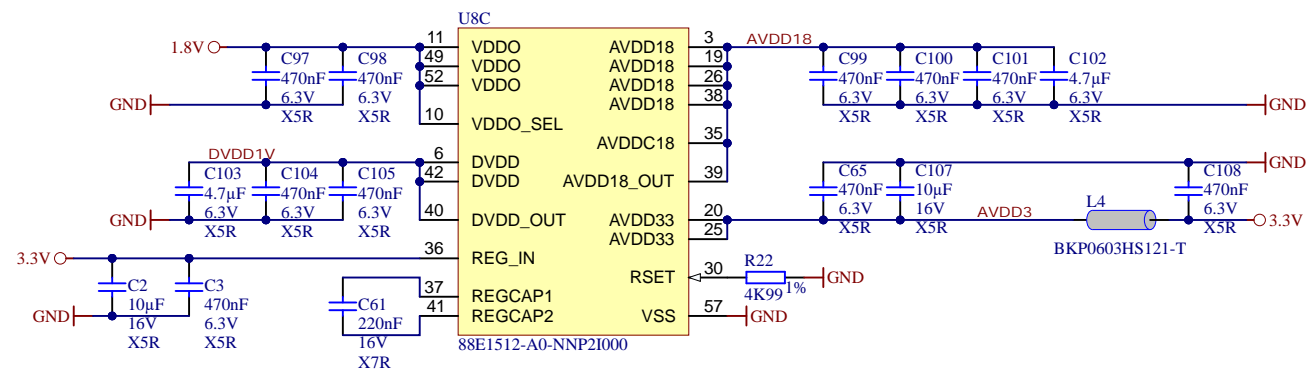
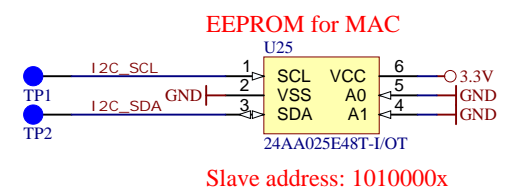
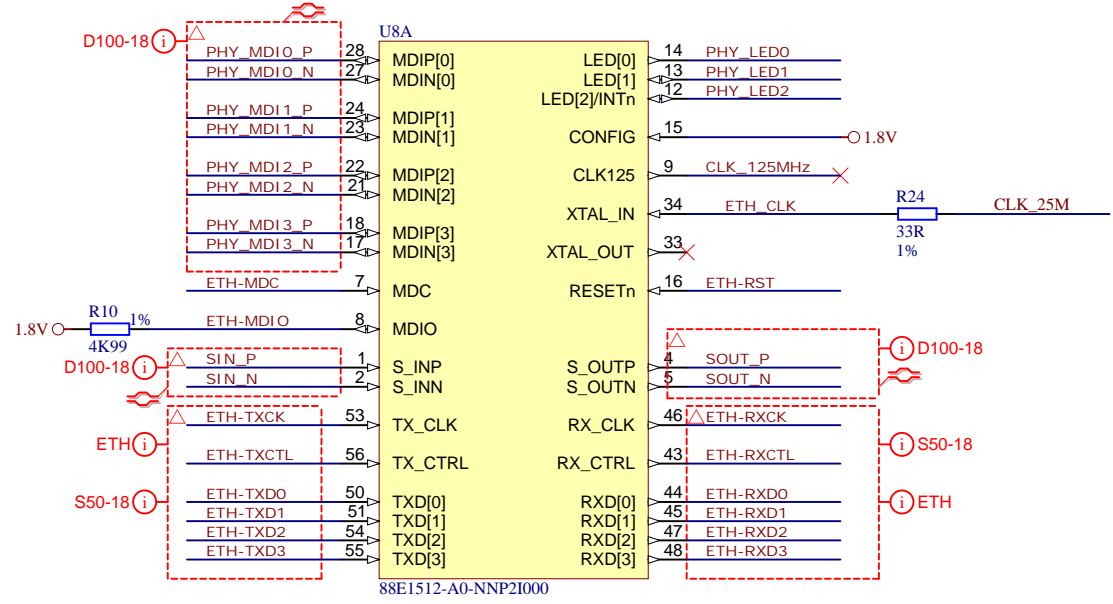




Title: Module TE0821 - DDR4 RAM2		
A4	Number: TE0821 3BI21FA	Rev. 01
Date: 20.02.2019	Copyright: Trenz Electronic GmbH / TT	Page 18 of 24
Filename: DDR4-RAM_2.SchDoc		

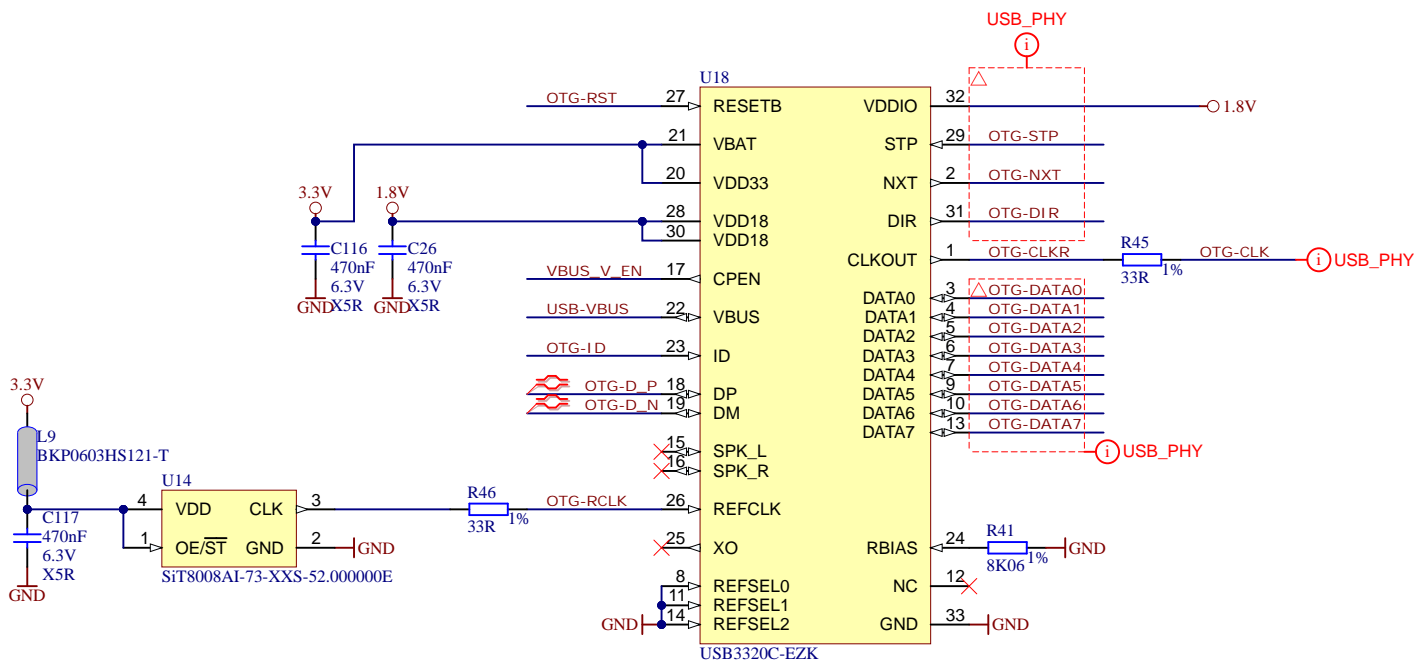




Title: <b>Module TE0821 - eMMC</b>		
A4	Number: <b>TE0821 3BI21FA</b>	Rev. <b>01</b>
Date: <b>20.02.2019</b>	Copyright: <b>Trenz Electronic GmbH / TT</b>	Page <b>19</b> of <b>24</b>
Filename: <b>eMMC.SchDoc</b>		

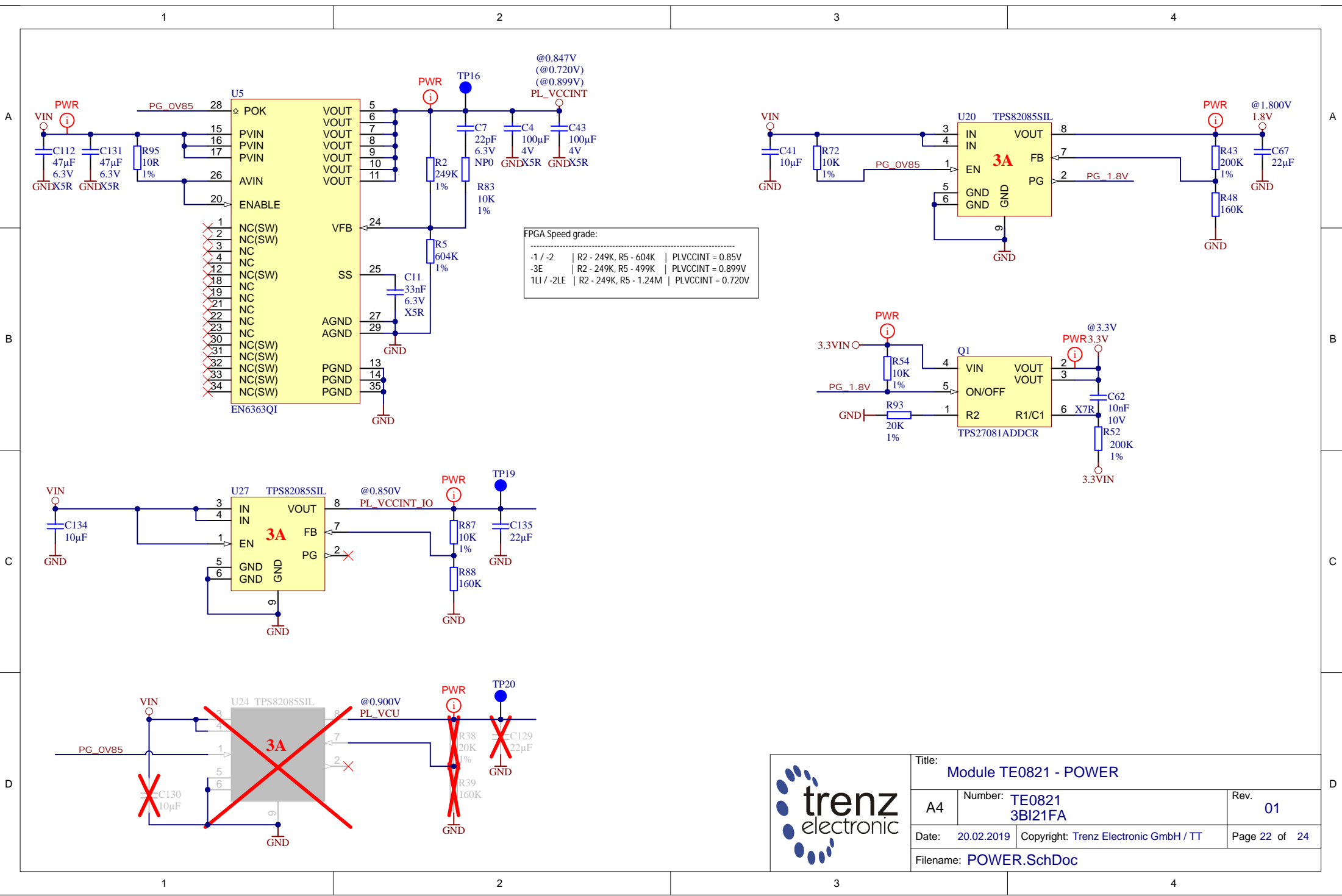



Title: <b>Module TE0821 - Ethernet PHY</b>		
A4	Number: <b>TE0821 3BI21FA</b>	Rev. <b>01</b>
Date: <b>20.02.2019</b>	Copyright: 2015 Trenz Electronic GmbH	Page 20 of 24
Filename: <b>ETH-PHY.SchDoc</b>		

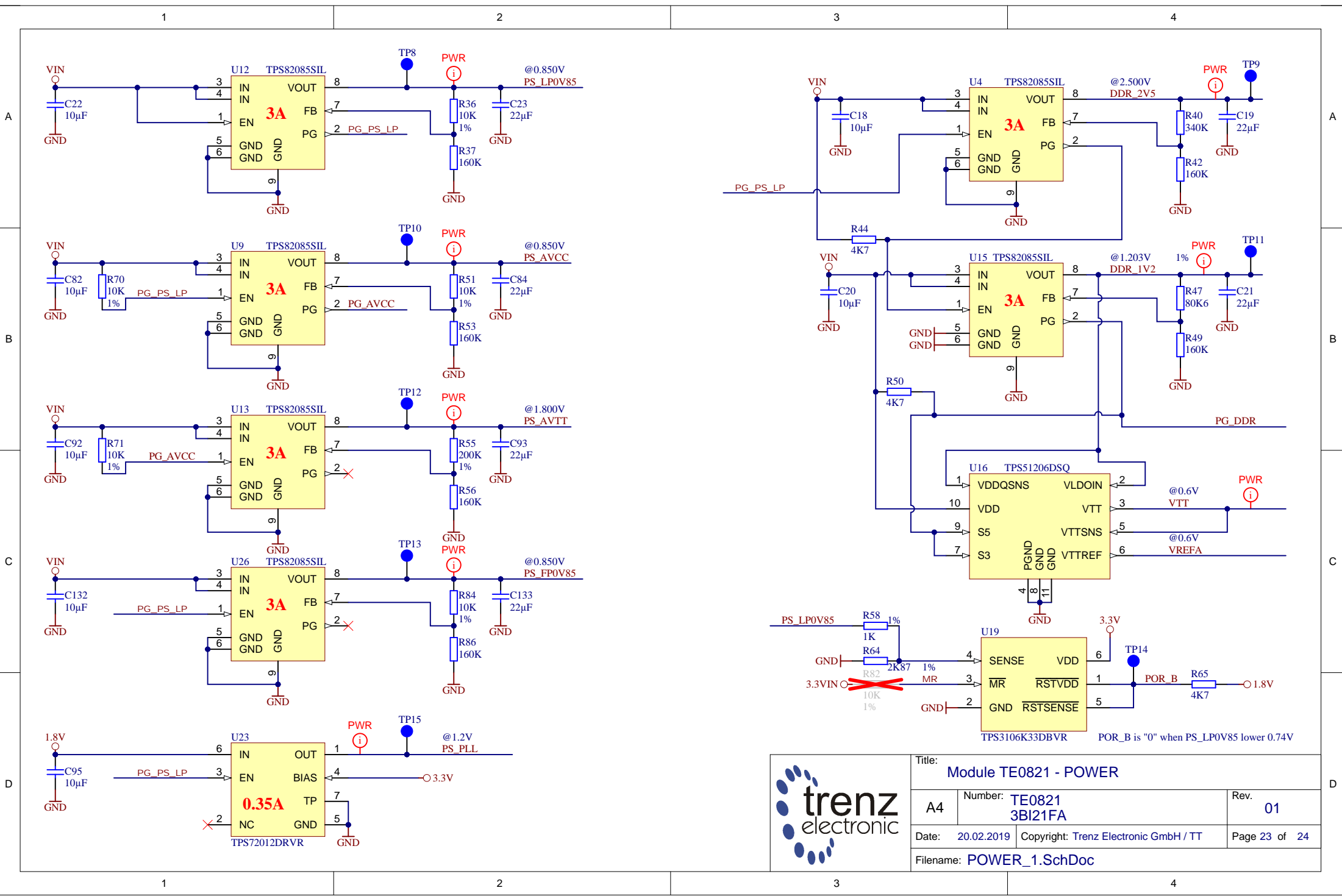




	Title: <b>Module TE0821 - USB PHY</b>		
	A4	Number: <b>TE0821 3BI21FA</b>	Rev. <b>01</b>
	Date: <b>20.02.2019</b>	Copyright: <b>2015 Trenz Electronic GmbH</b>	Page <b>21</b> of <b>24</b>
	Filename: <b>USB-PHY.SchDoc</b>		

Title: <b>Module TE0821 - POWER</b>		
A4	Number: <b>TE0821 3BI21FA</b>	Rev. <b>01</b>
Date: <b>20.02.2019</b>	Copyright: <b>Trenz Electronic GmbH / TT</b>	Page <b>22</b> of <b>24</b>
Filename: <b>POWER.SchDoc</b>		



Title: <b>Module TE0821 - POWER</b>		
A4	Number: <b>TE0821 3BI21FA</b>	Rev. <b>01</b>
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Filename: <b>POWER_1.SchDoc</b>		Page 23 of 24

POR\_B is "0" when PS\_LP0V85 lower 0.74V

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Revision 01a (01.07.2020):

1. VY: R38 value was changed to 20K (was: 40K2) to set VCU 0.9V

Revision 01b (29.10.2020):

1. VY: Updated Block diagram

(07.02.2024):  
2. OT: R82 set to not fitted

A

A

B


B

C

C

D

D

	Title: <b>Module TE0821 - Revision Changes</b>		
	A4	Number: <b>TE0821 3BI21FA</b>	Rev. <b>01</b>
	Date: <b>20.02.2019</b>	Copyright: <b>Trenz Electronic GmbH / TT</b>	Page <b>24</b> of <b>24</b>
	Filename: <b>Revision Changes.SchDoc</b>		

1

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