

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

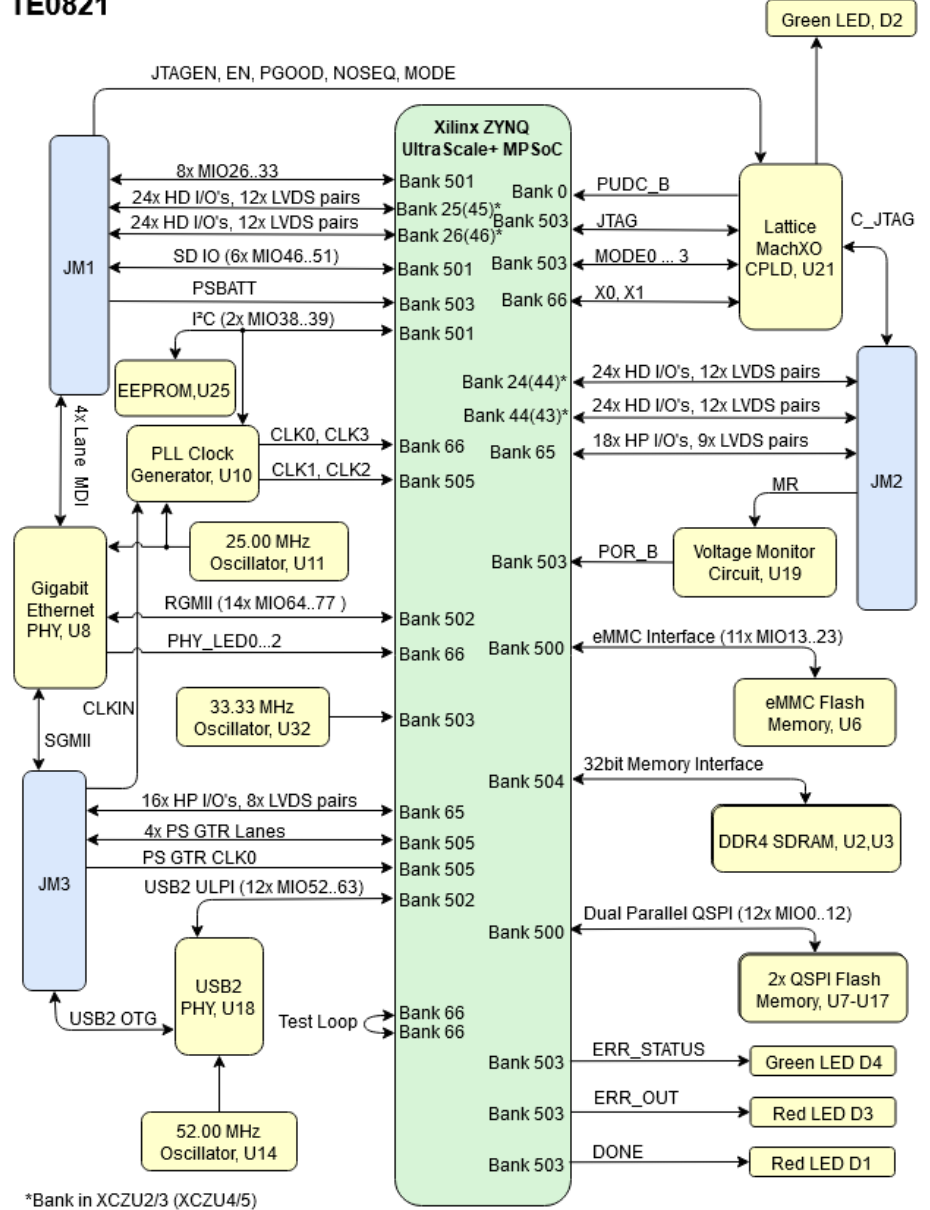
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Schematics and other handouts serve for informational purposes only!



Title: Module TE0821		
A4	Number: TE0821 3AE21MAZ	Rev. 01
Date: 14.08.2020	Copyright: Trenz Electronic GmbH / TT	Page 1 of 24
Filename: Legal Notices Modules.SchDoc		

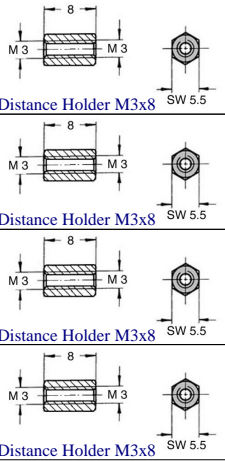
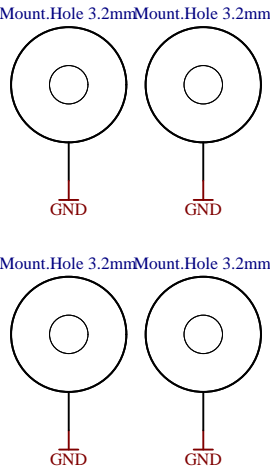
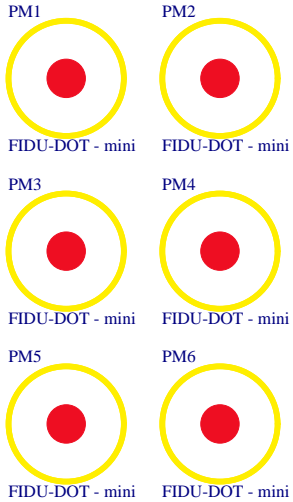
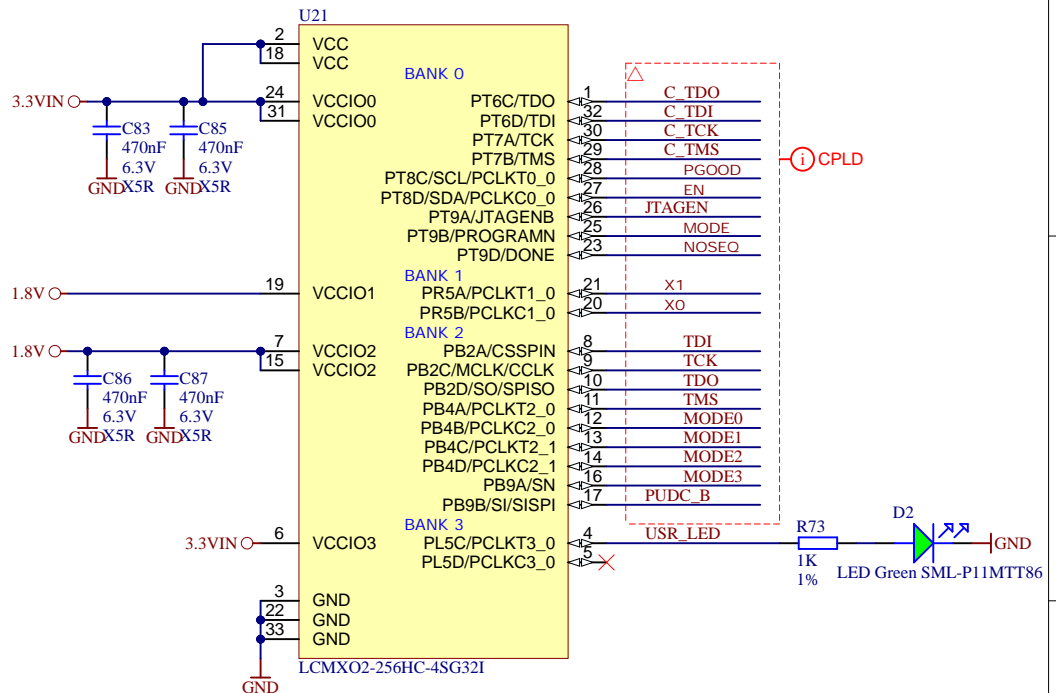
TE0821



		Title: Module TE0821 - System Overview	
		A4	Number: TE0821 3AE21MAZ
Date: 18.01.2022		Copyright: 2015 Trenz Electronic GmbH	
Filename: TE0821-Overview.SchDoc		Page 2 of 24	

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



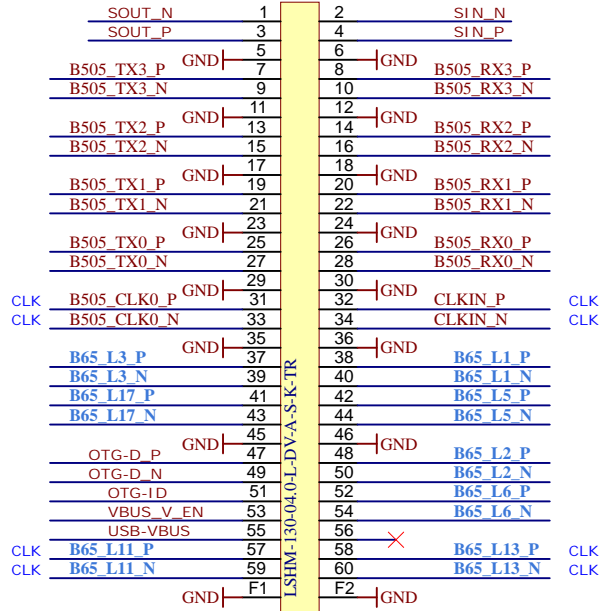
Special notes:
Component RC0201FR-0710KL removed



Title: Module TE0821		
A4	Number: TE0821 3AE21MAZ	Rev. 01
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USB OTG
 ETH SGMII
 PS_GTR 4 Lanes
 PS_GTR CLK IN
 PLL CLK IN


JM3



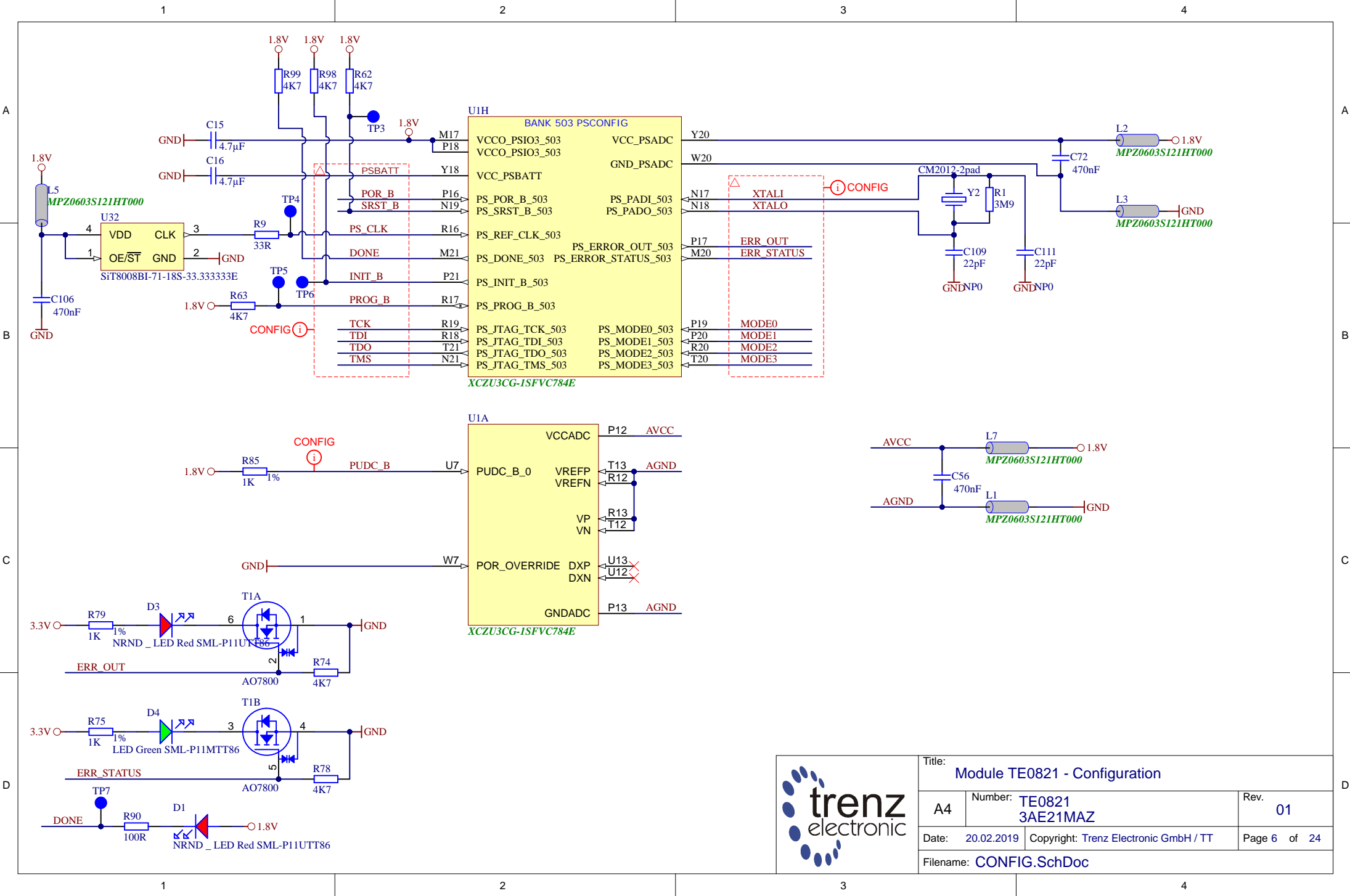
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HP IO
 group 3
 USB
 HP IO

group 3
 group 3
 group 3

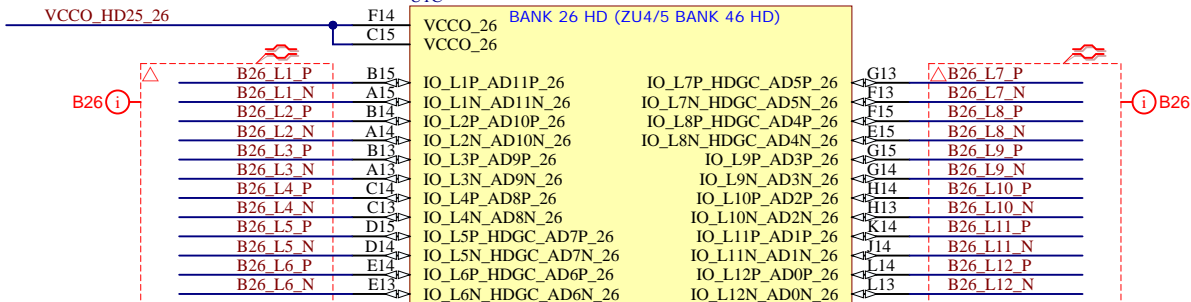


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Date: 20.02.2019	Copyright: 2015 Trenz Electronic GmbH	Page 5 of 24
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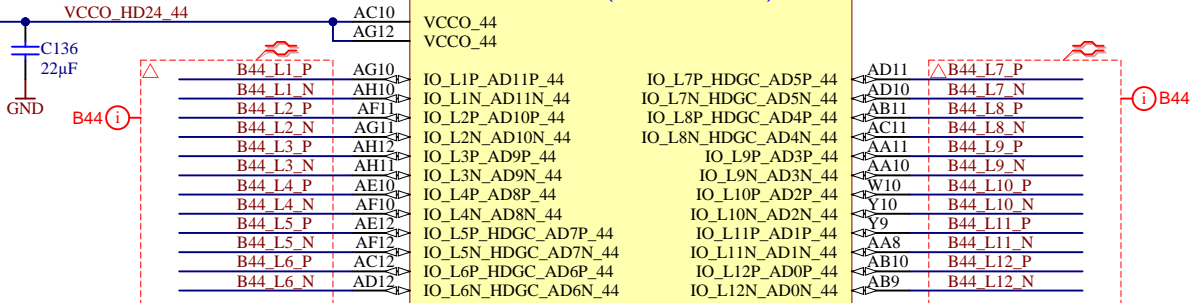


Title: Module TE0821 - Configuration		
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Date: 20.02.2019	Copyright: Trenz Electronic GmbH / TT	Page 6 of 24
Filename: CONFIG.SchDoc		

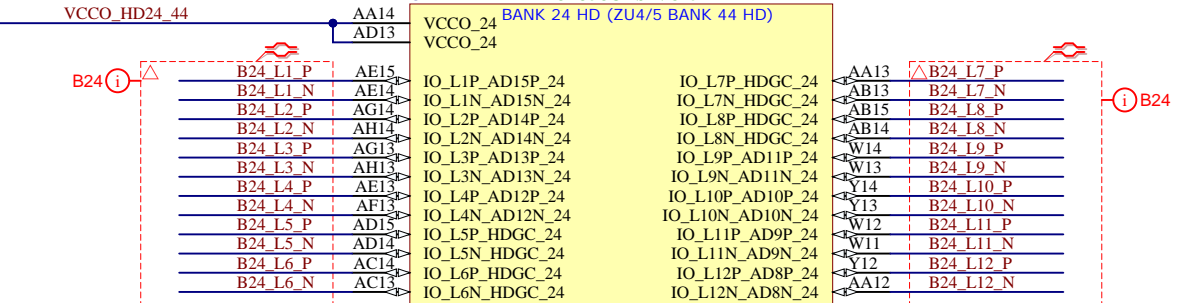
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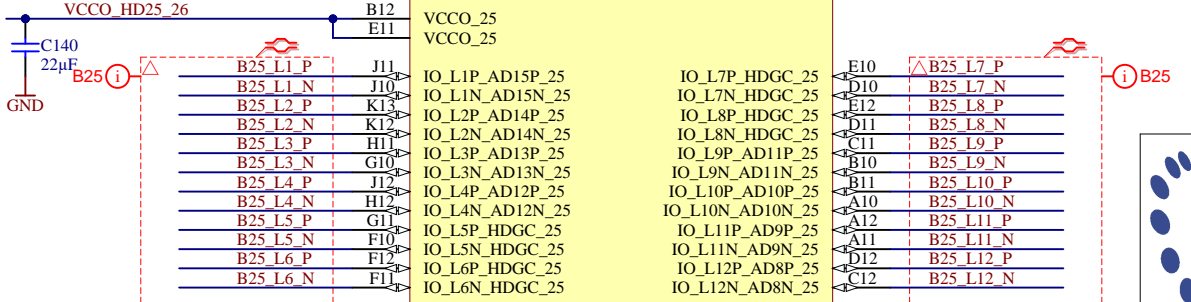
BANK 44 HD (ZU4/5 BANK 43 HD)



UIB **XCZU3CG-1SFVC784E**



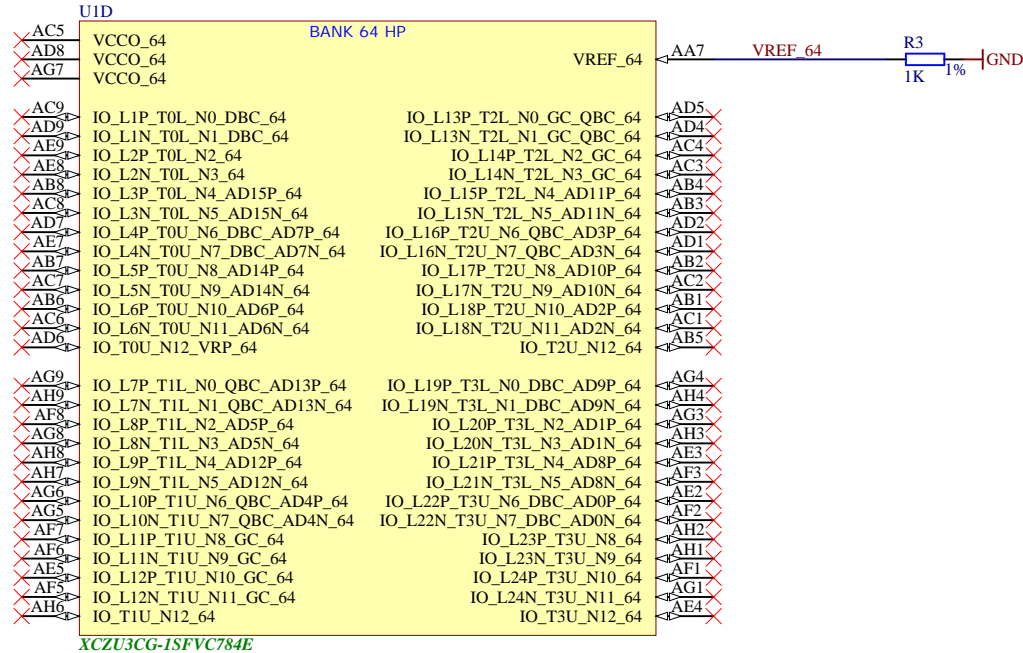
BANK 25 HD (ZU4/5 BANK 45 HD)



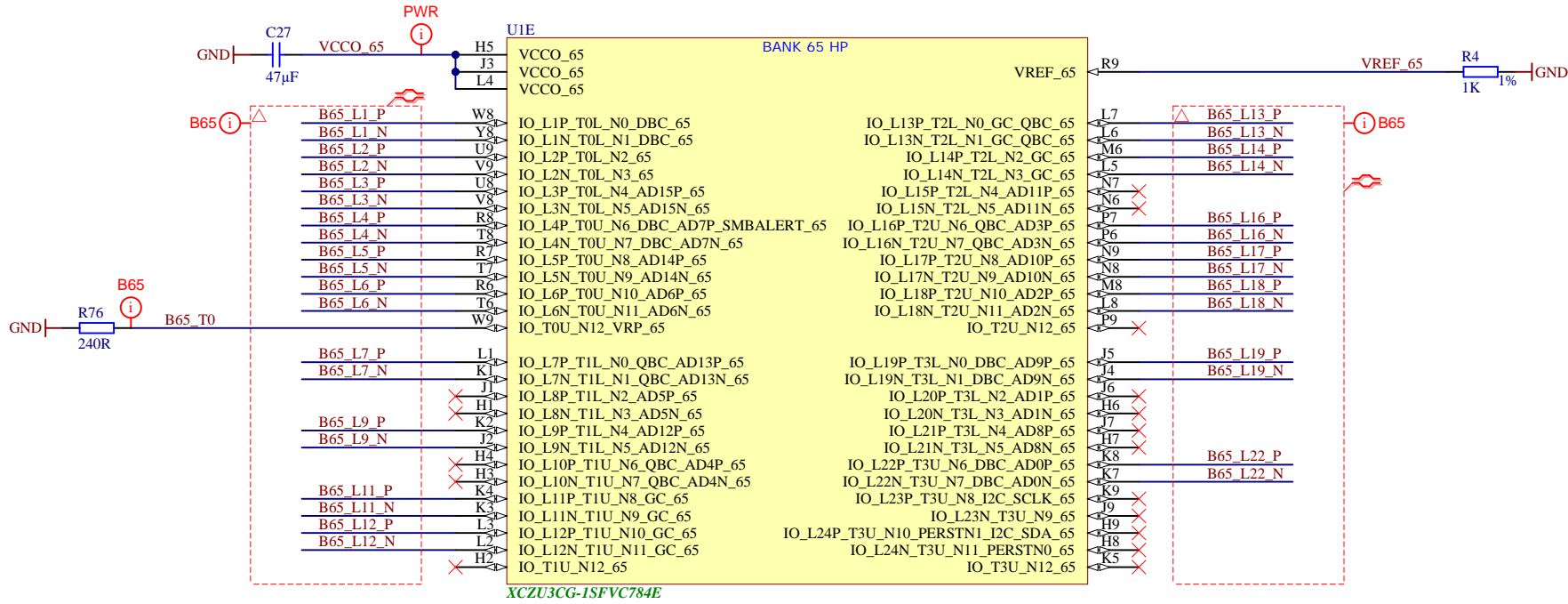
XCZU3CG-1SFVC784E



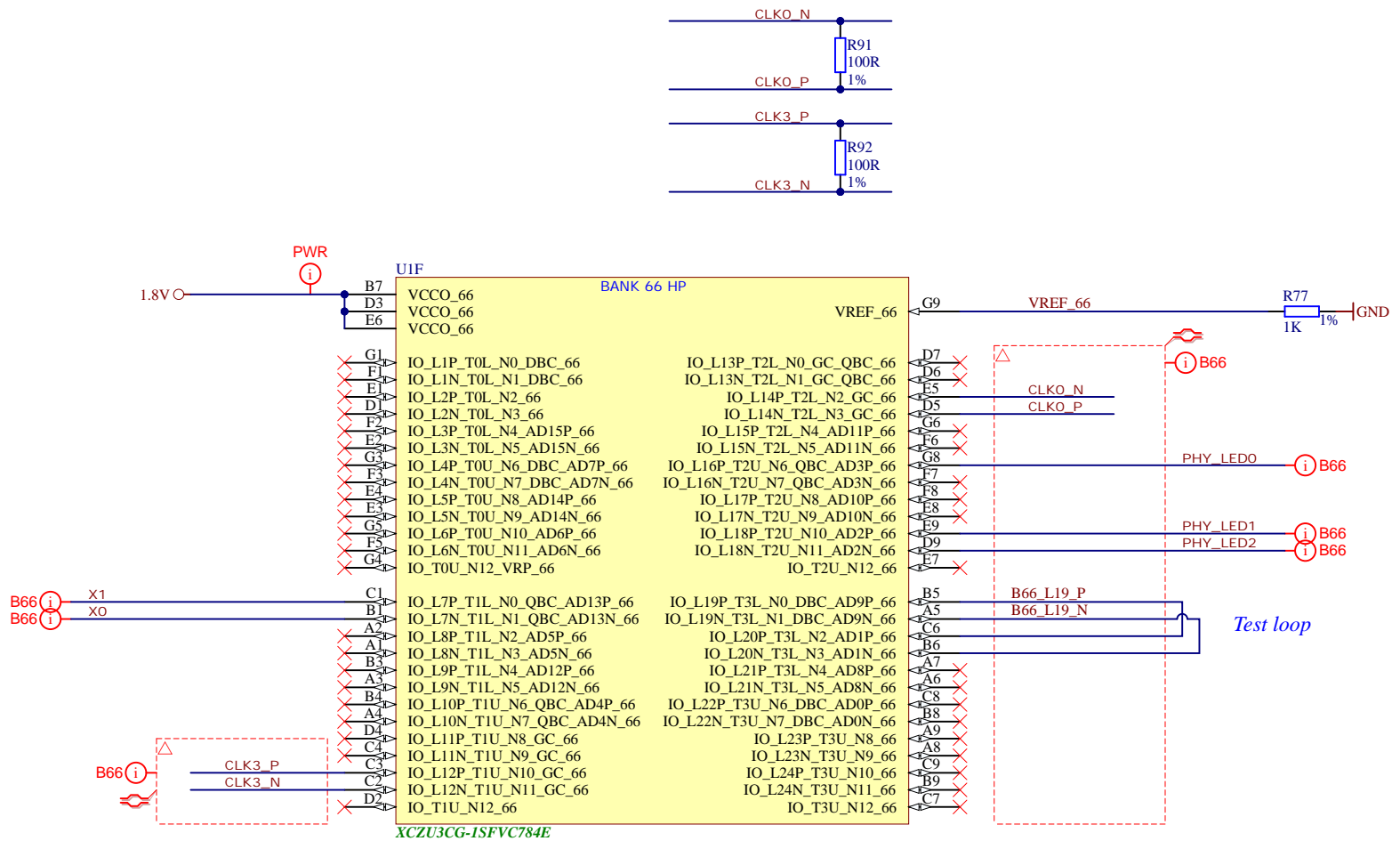
Title: Module TE0821 - HD Banks		
A4	Number: TE0821 3AE21MAZ	Rev. 01
Date: 20.02.2019	Copyright: Trenz Electronic GmbH / TT	Page 7 of 24
Filename: B_HD.SchDoc		



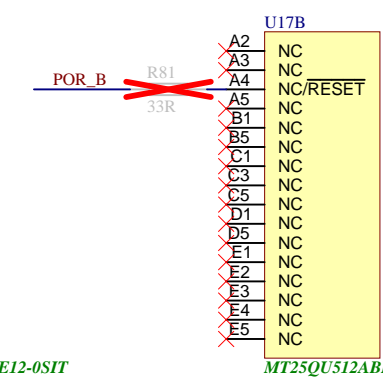
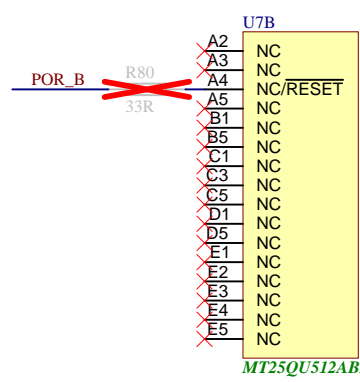
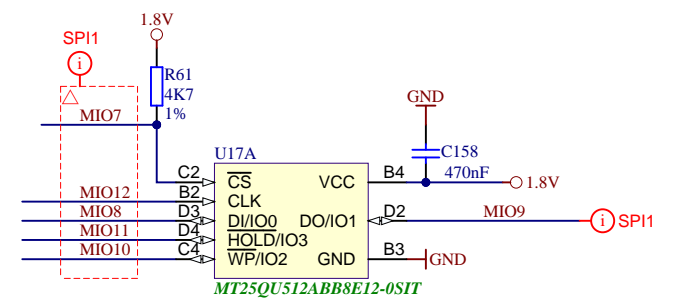
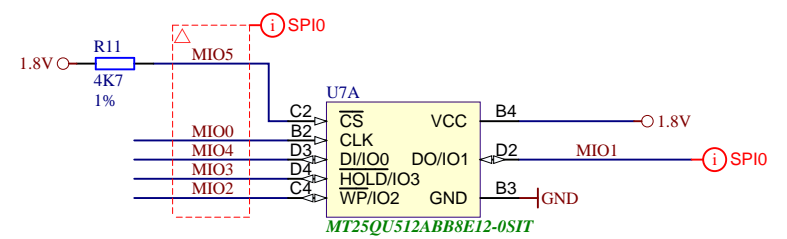
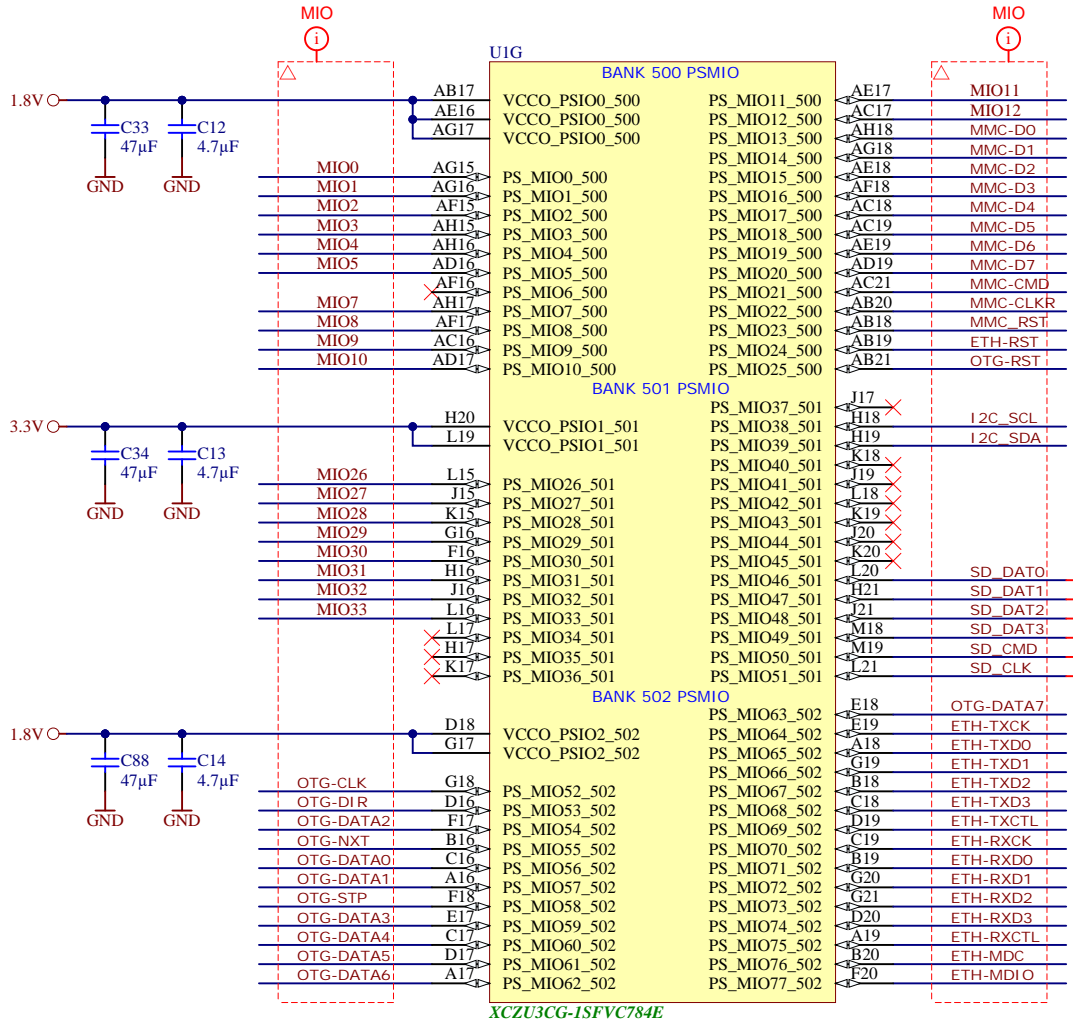
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A4	Number: TE0821 3AE21MAZ	Rev. 01
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Filename: B64.SchDoc		



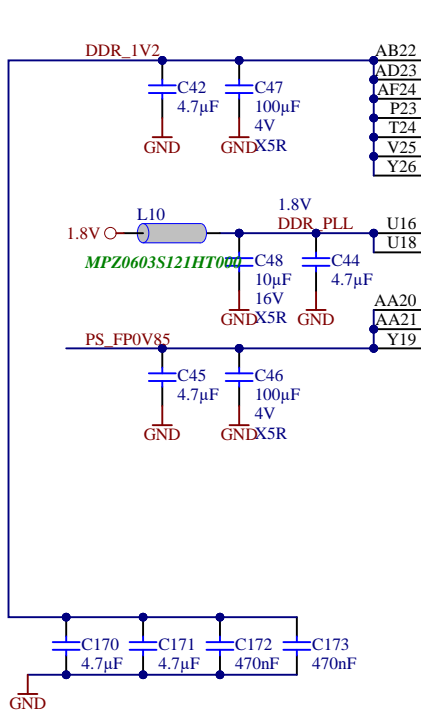
Title: Module TE0821 - B65		
A4	Number: TE0821 3AE21MAZ	Rev. 01
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Filename: B65.SchDoc		



Title: Module TE0821 - B66		
A4	Number: TE0821 3AE21MAZ	Rev. 01
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				Title: Module TE0821 - MIO Banks	
				A4	Number: TE0821 3AE21MAZ
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U11

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_PSDDR_PLL	PS_DDR_A5_504	AA27	DDR4-A5
VCC_PSDDR_PLL	PS_DDR_A6_504	Y22	DDR4-A6
VCC_PSDDR_PLL	PS_DDR_A7_504	AA23	DDR4-A7
VCC_PSDDR_PLL	PS_DDR_A8_504	AA22	DDR4-A8
VCC_PSDDR_PLL	PS_DDR_A9_504	AB23	DDR4-A9
VCC_PSDDR_PLL	PS_DDR_A10_504	AA25	DDR4-A10
VCC_PSDDR_PLL	PS_DDR_A11_504	AA26	DDR4-A11
VCC_PSDDR_PLL	PS_DDR_A12_504	AB25	DDR4-A12
VCC_PSDDR_PLL	PS_DDR_A13_504	AB26	DDR4-A13
VCC_PSDDR_PLL	PS_DDR_A14_504	AB24	DDR4-A14
VCC_PSDDR_PLL	PS_DDR_A15_504	AC24	DDR4-A15
VCC_PSDDR_PLL	PS_DDR_A16_504	AC23	DDR4-A16
VCC_PSDDR_PLL	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	
PS_DDR_ODT0_504		U28	DDR4-ODT0
PS_DDR_ODT1_504		U26	

XCZU3CG-1SFVC784E

U1J

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
DDR4-DQS0 P	AF21	PS_DDR_DQS_P0_504	PS_DDR_DQ64_504	T28
DDR4-DQS0 N	AG21	PS_DDR_DQS_N0_504	PS_DDR_DQ65_504	R28
DDR4-DQS1 P	AF23	PS_DDR_DQS_P1_504	PS_DDR_DQ66_504	P28
DDR4-DQS1 N	AG23	PS_DDR_DQS_N1_504	PS_DDR_DQ67_504	P27
DDR4-DQS2 P	AF25	PS_DDR_DQS_P2_504	PS_DDR_DQ68_504	P26
DDR4-DQS2 N	AF26	PS_DDR_DQS_N2_504	PS_DDR_DQ69_504	R25
DDR4-DQS3 P	AE27	PS_DDR_DQS_P3_504	PS_DDR_DQ70_504	P25
DDR4-DQS3 N	AE27	PS_DDR_DQS_N3_504	PS_DDR_DQ71_504	T25
	N23	PS_DDR_DQS_P4_504		
	M23	PS_DDR_DQS_N4_504	PS_DDR_DM0_504	AG20
	L23	PS_DDR_DQS_P5_504	PS_DDR_DM1_504	AE23
	K23	PS_DDR_DQS_N5_504	PS_DDR_DM2_504	AE25
	N26	PS_DDR_DQS_P6_504	PS_DDR_DM3_504	AE28
	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

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Title: Module TE0821 - PS DDR			
A4	Number: TE0821 3AE21MAZ	Rev. 01	
Date: 20.02.2019	Copyright: Trenz Electronic GmbH / TT	Page 12 of 24	
Filename: PS_DDR.SchDoc			

1

2

3

4

A

A

B

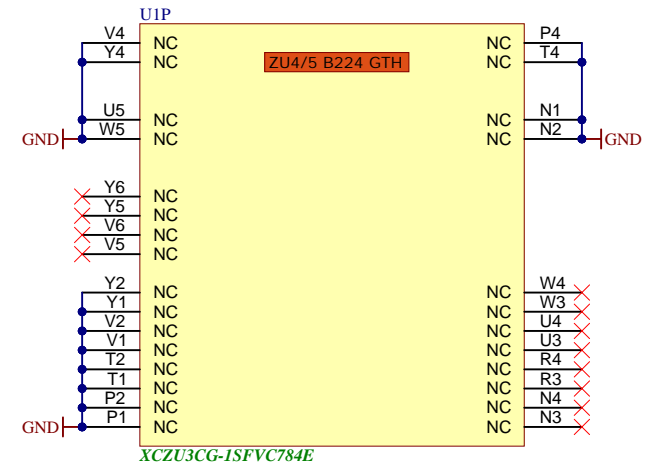
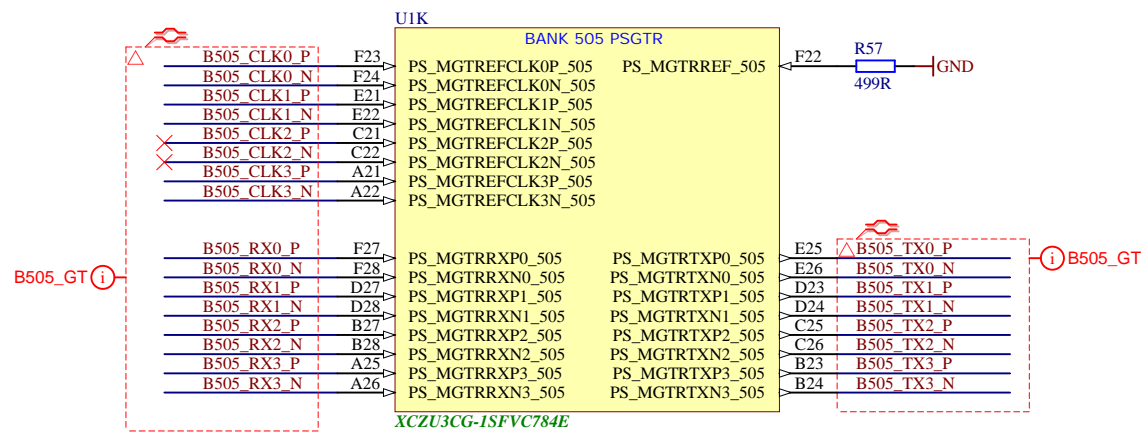
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C

C

D

D



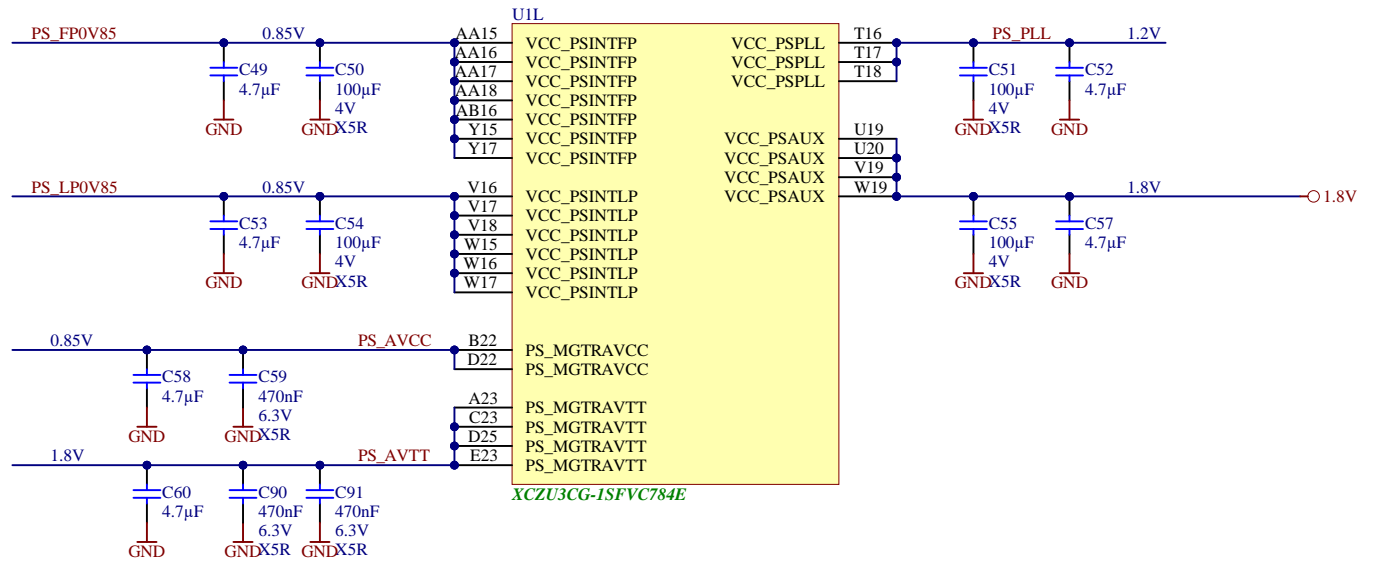
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	A4	Number: TE0821 3AE21MAZ	Rev. 01
	Date: 20.02.2019	Copyright: Trenz Electronic GmbH / TT	
	Filename: B_PS_GT.SchDoc		Page 13 of 24

1

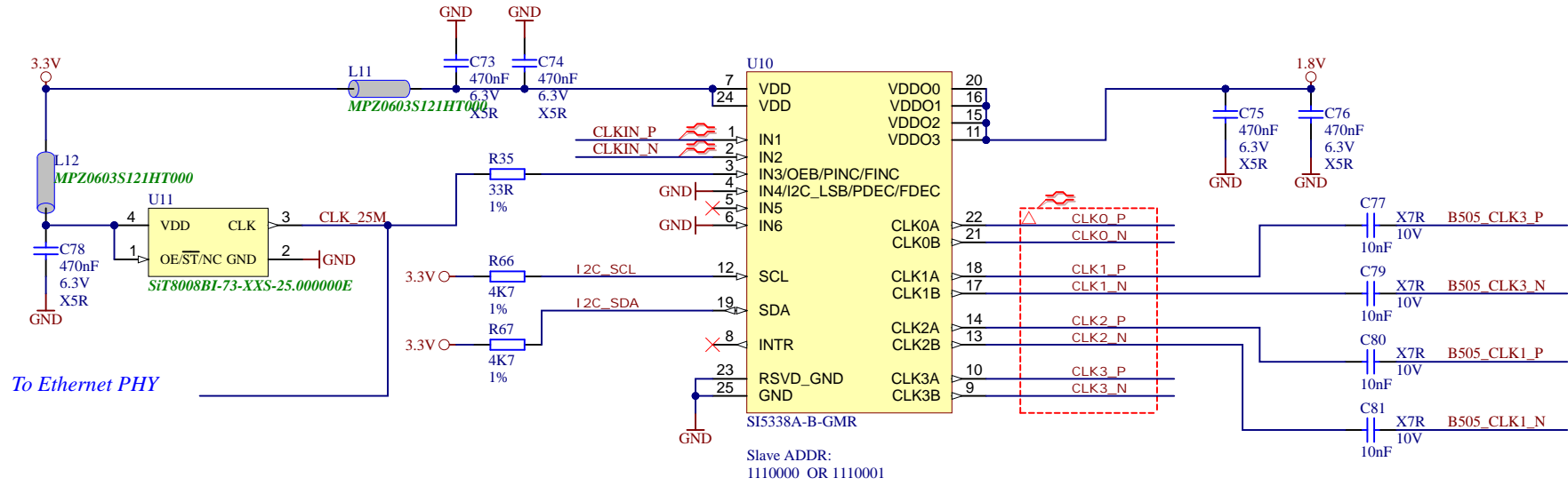
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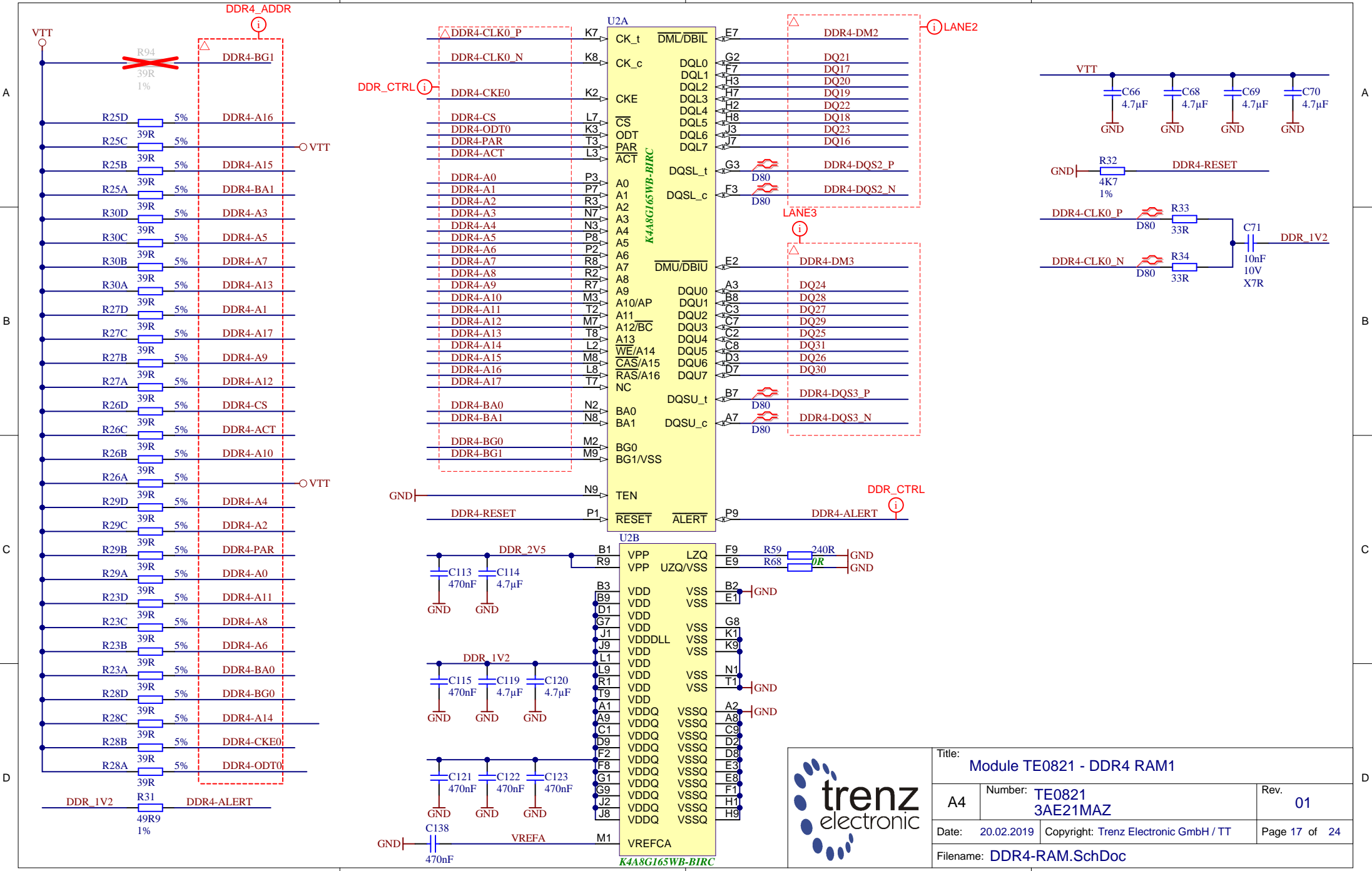


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Date: 20.02.2019	Copyright: Trenz Electronic GmbH / TT	Page 15 of 24
Filename: ZU_PS_POWER.SchDoc		

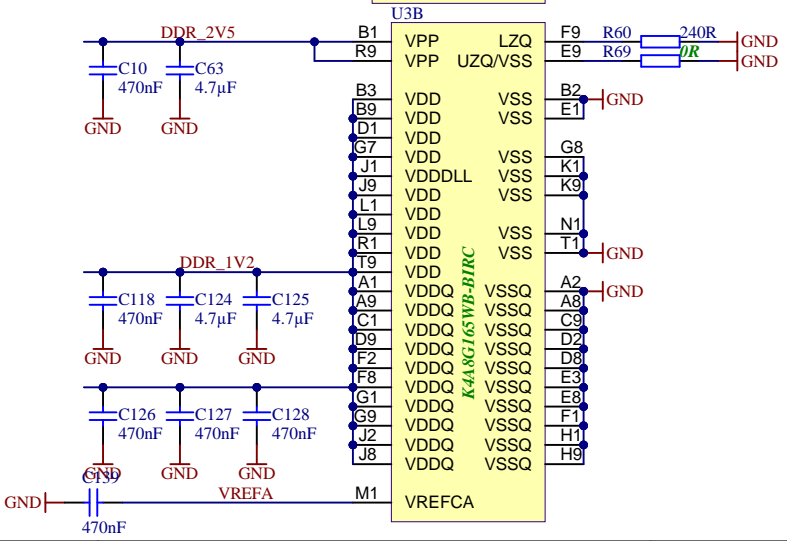
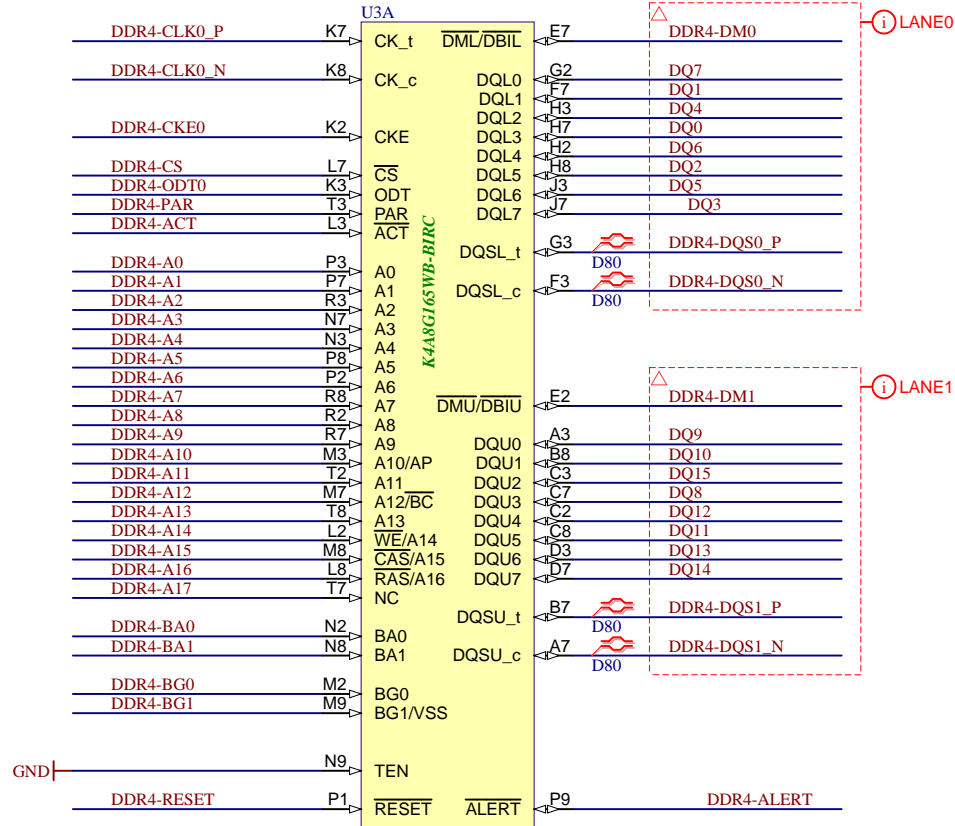


To Ethernet PHY

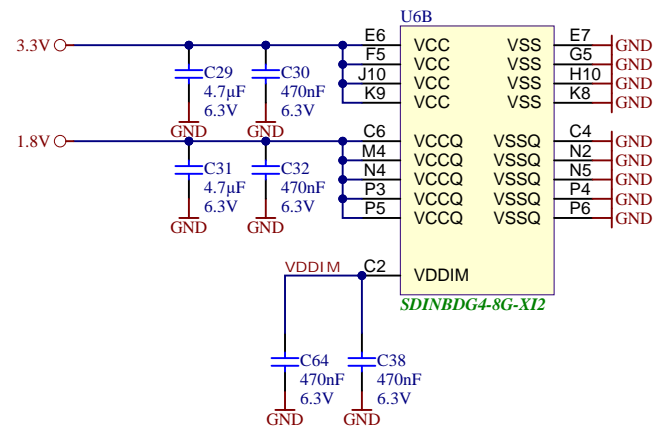
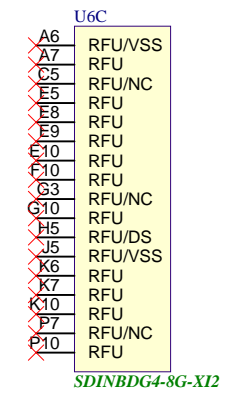
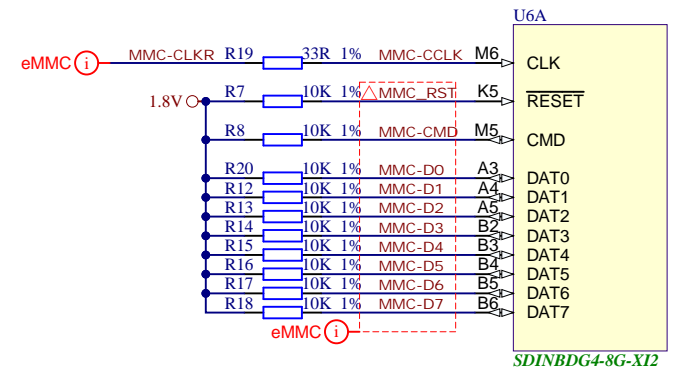
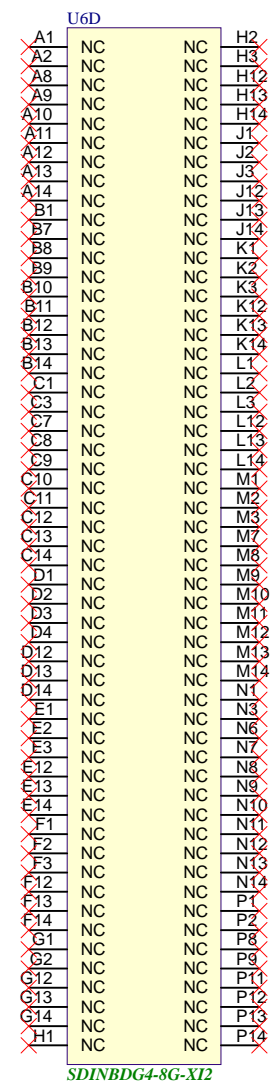
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Date: 20.02.2019		Copyright: 2015 Trenz Electronic GmbH	
Filename: CLK.SchDoc		Page 16 of 24	



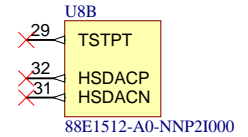
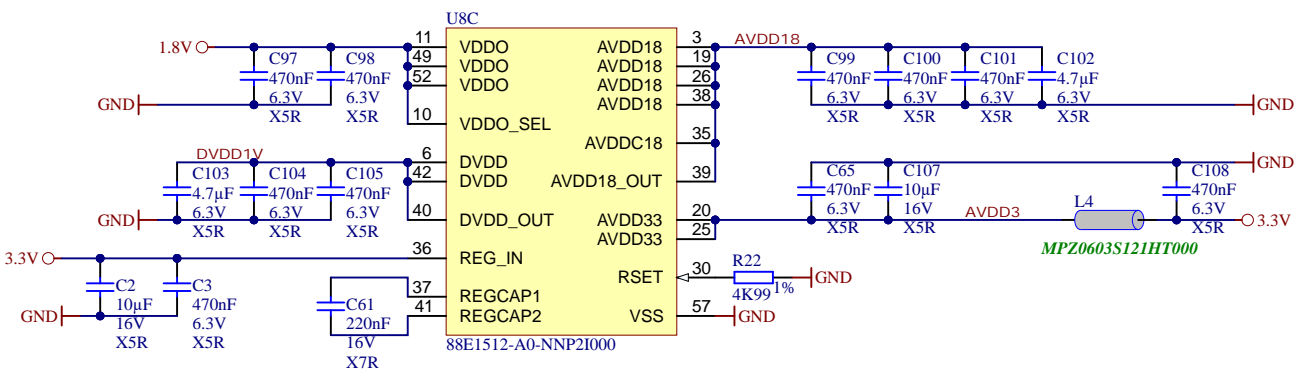
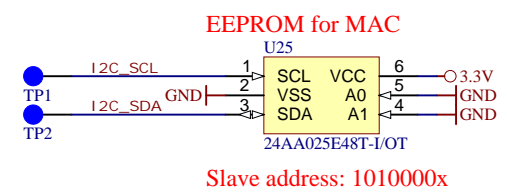
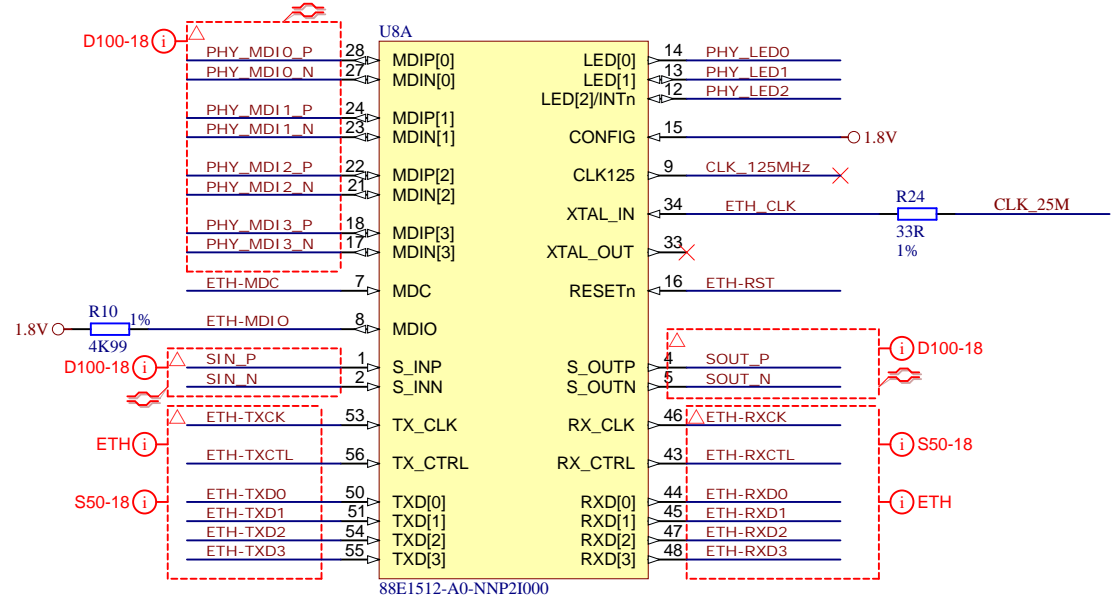
Title: Module TE0821 - DDR4 RAM1		
A4	Number: TE0821 3AE21MAZ	Rev. 01
Date: 20.02.2019	Copyright: Trenz Electronic GmbH / TT	Page 17 of 24
Filename: DDR4-RAM.SchDoc		



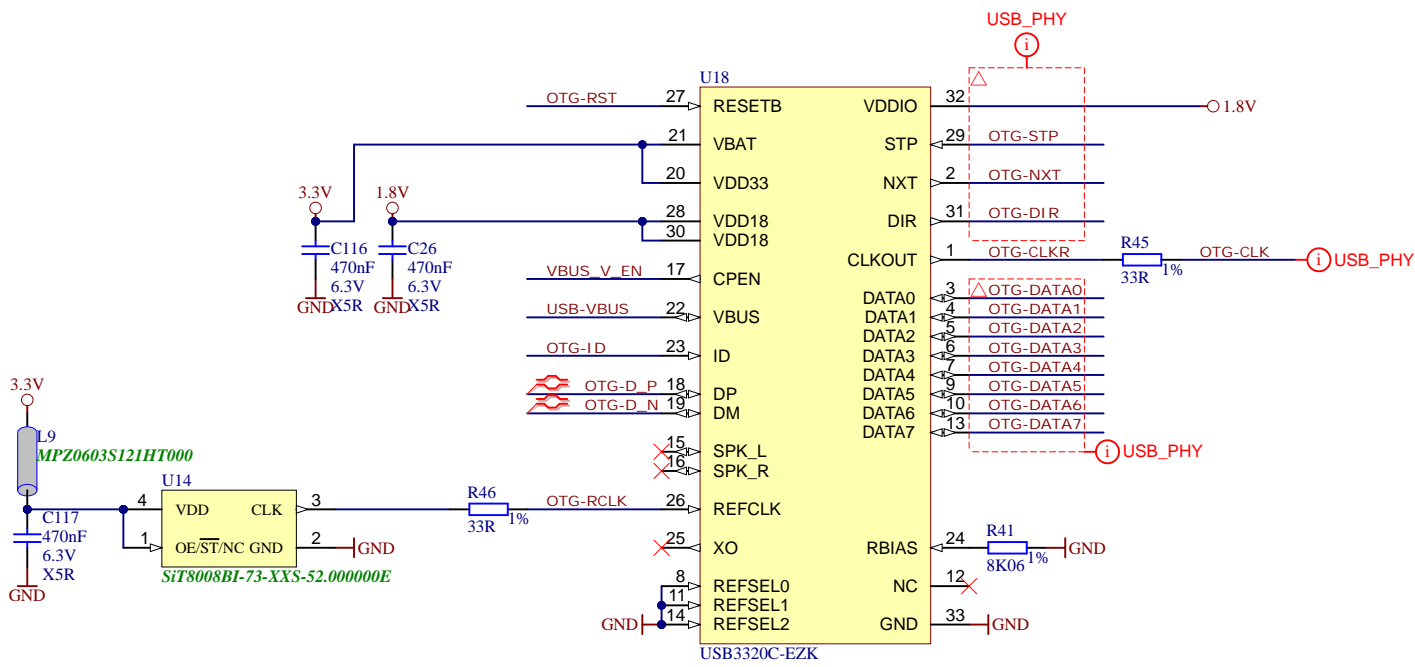
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Date: 20.02.2019	Copyright: Trenz Electronic GmbH / TT	Page 18 of 24
Filename: DDR4-RAM_2.SchDoc		




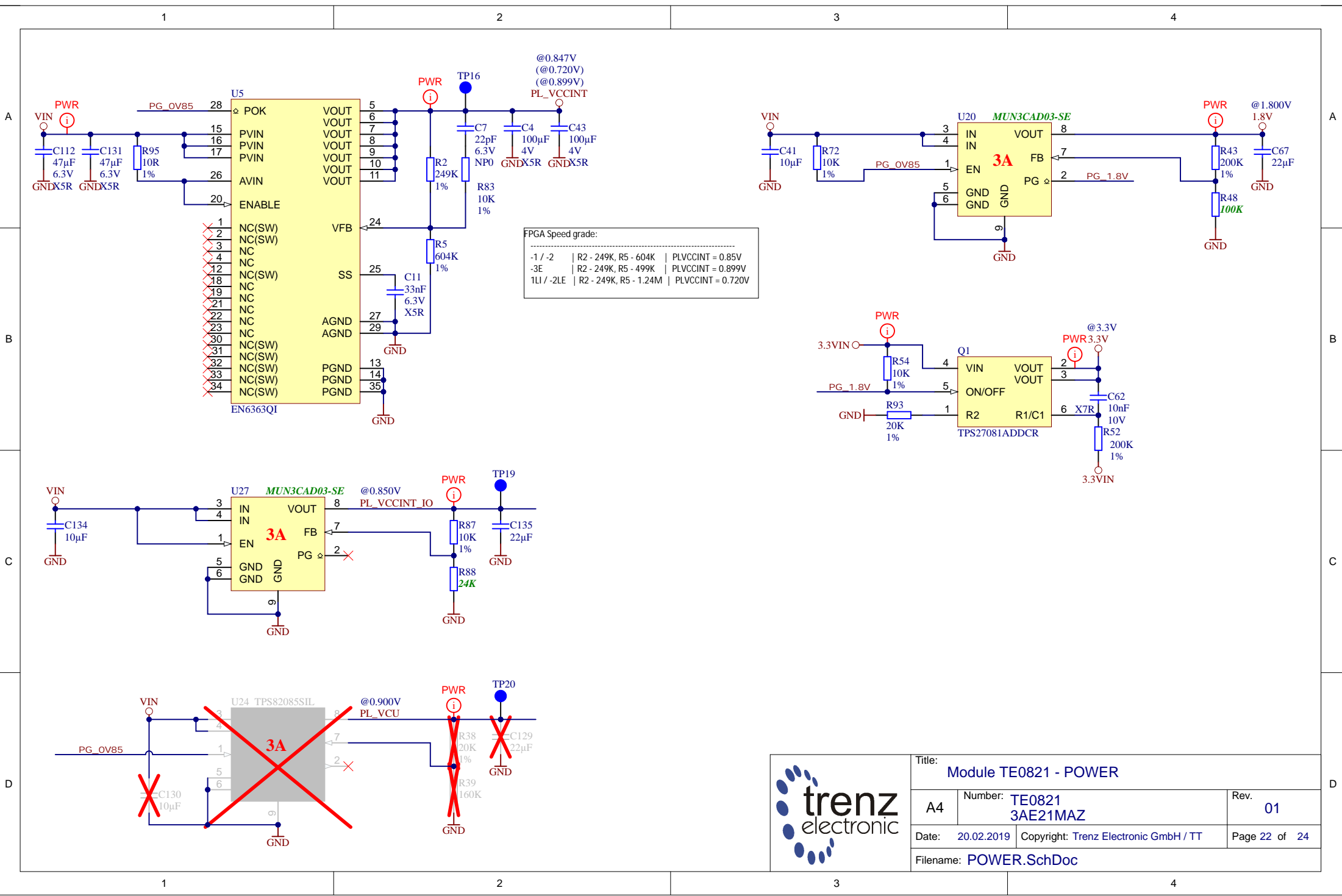
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	A4	Number: TE0821 3AE21MAZ	Rev. 01
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Title: Module TE0821 - Ethernet PHY		
A4	Number: TE0821 3AE21MAZ	Rev. 01
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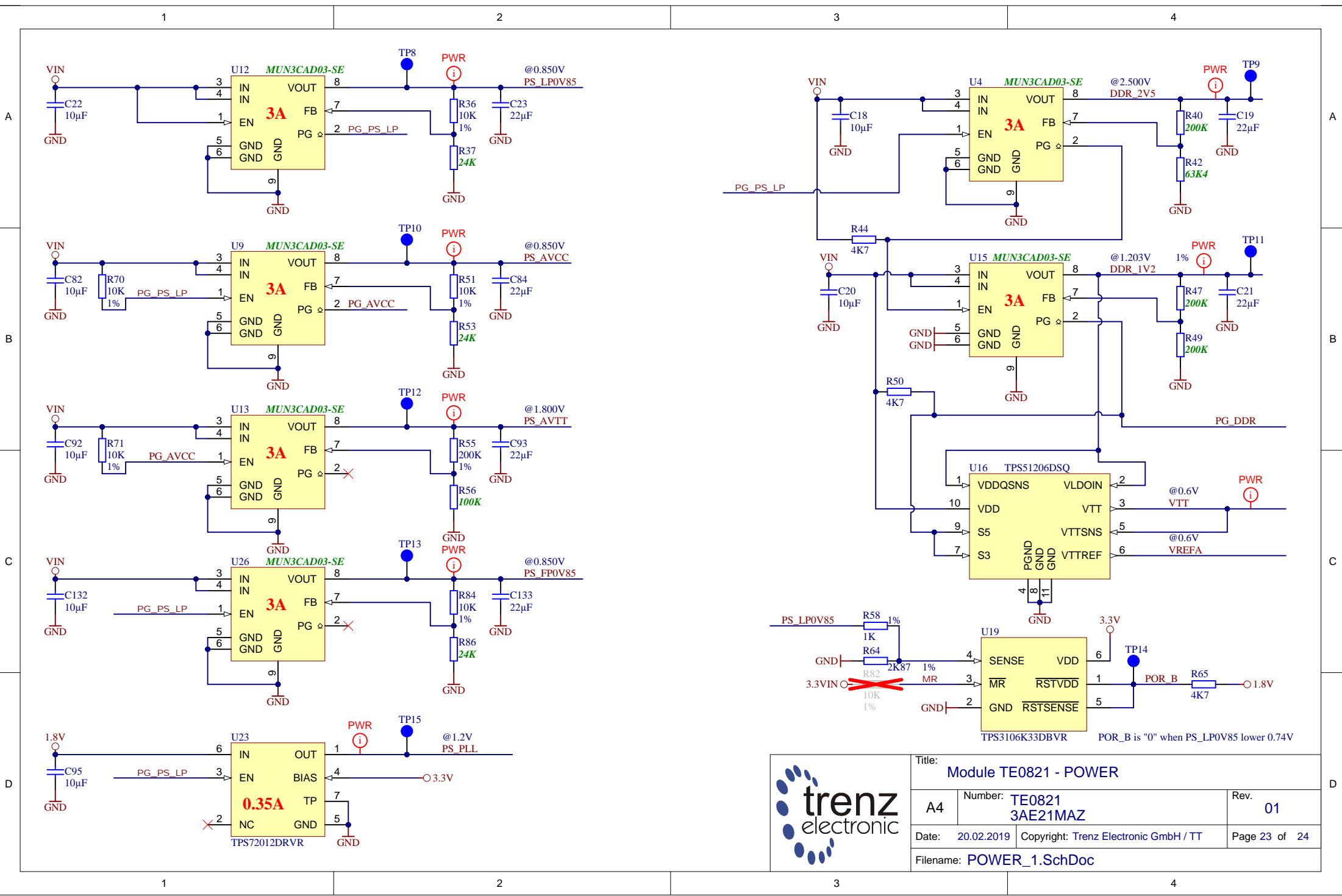



			Title: Module TE0821 - USB PHY	
			A4	Number: TE0821 3AE21MAZ
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Title: Module TE0821 - POWER		
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			Title: Module TE0821 - POWER	
			A4	Number: TE0821 3AE21MAZ Date: 20.02.2019 Copyright: Trenz Electronic GmbH / TT Filename: POWER_1.SchDoc

POR_B is "0" when PS_LP0V85 lower 0.74V

1

2

3

4

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: Module TE0821 - Revision Changes		
	A4	Number: TE0821 3AE21MAZ	Rev. 01
	Date: 20.02.2019	Copyright: Trenz Electronic GmbH / TT	Page 24 of 24
	Filename: Revision Changes.SchDoc		

1

2

3

4