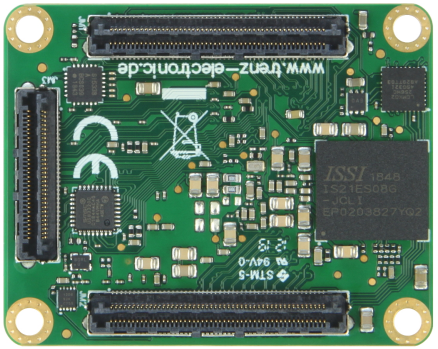
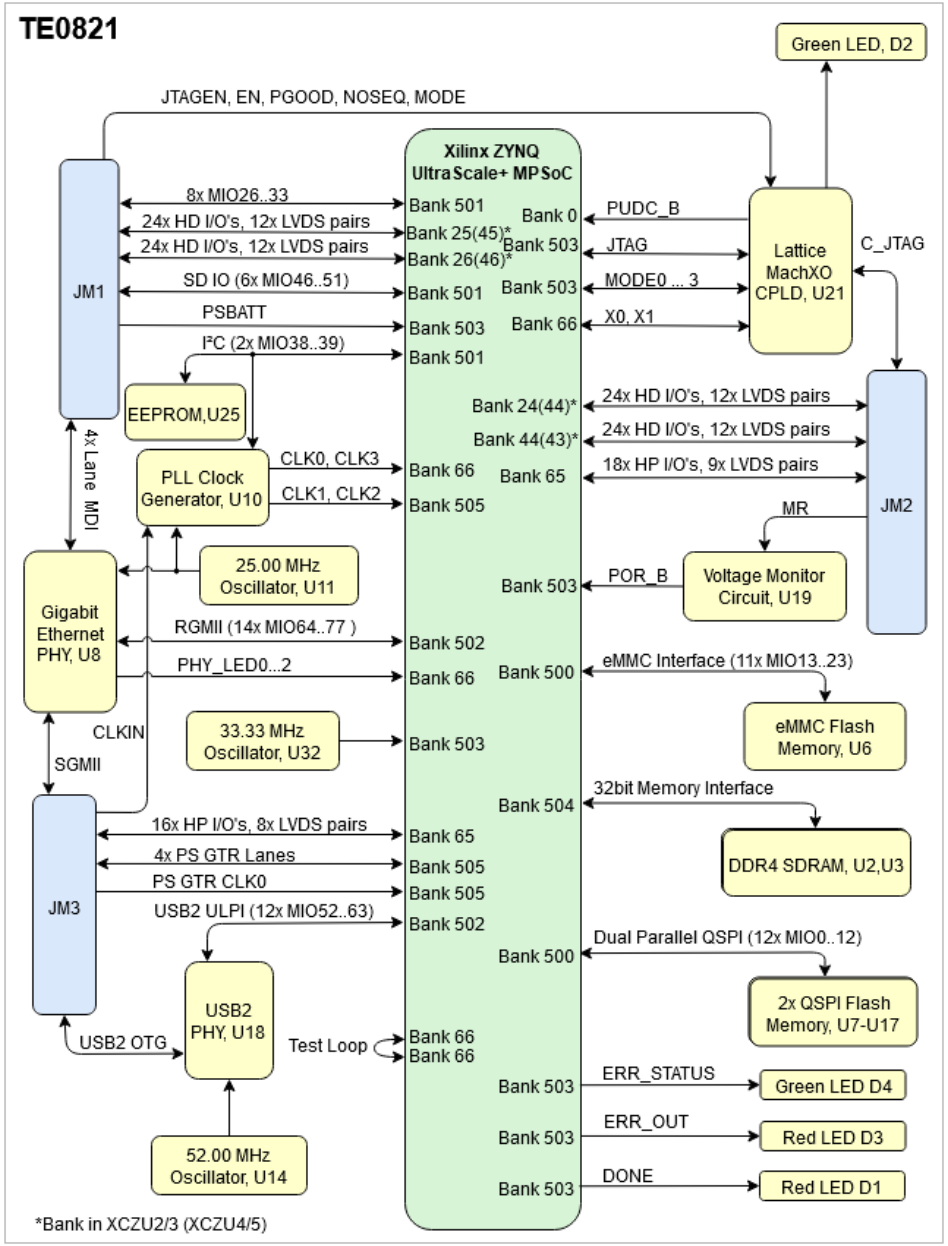


Regarding the usage of our schematics and alike documentation for Trenz module TE0821.

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. TE0821is 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!

trenz electronic	Title: Module TE0821		
	A4	Number: TE0821 2AE31KA	Rev. 01
	Date: 14.08.2020	Copyright: Trenz Electronic GmbH / TT	Page 1 of 24
	Filename: Legal Notices Modules.SchDoc		



trenz electronic	Title: Module TE0821 - System Overview		
	A4	Number: TE0821 2AE31KA	Rev. 01
	Date: 18.01.2022	Copyright: 2015 Trenz Electronic GmbH	Page 2 of 24
	Filename: TE0821-Overview.SchDoc		

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

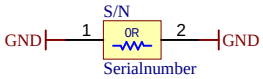
U_DDR4-RAM_2
DDR4-RAM_2.SchDoc

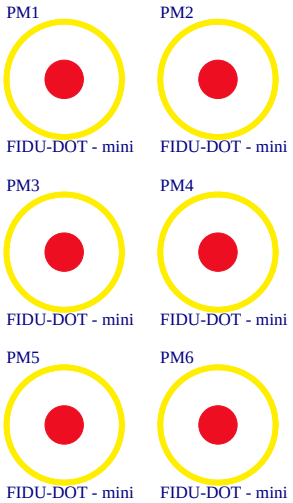
U_DDR4-RAM
DDR4-RAM.SchDoc

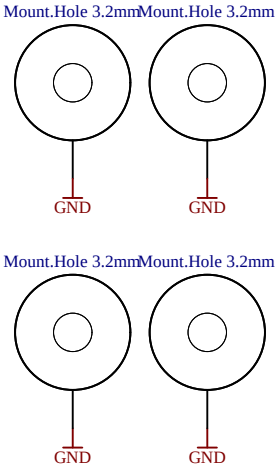
U_POWER
POWER.SchDoc

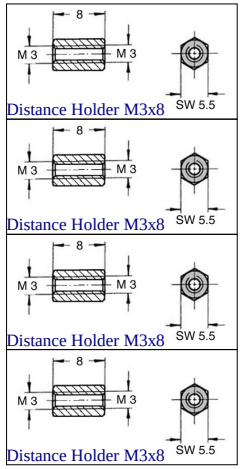
U_POWER_1
POWER_1.SchDoc

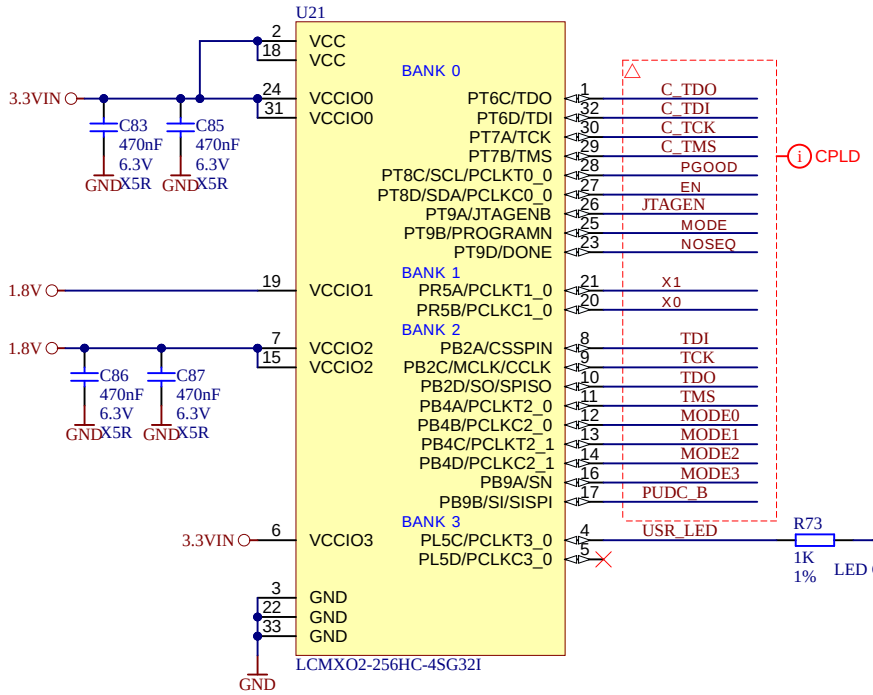
U_Revision_changes
Revision Changes.SchDoc









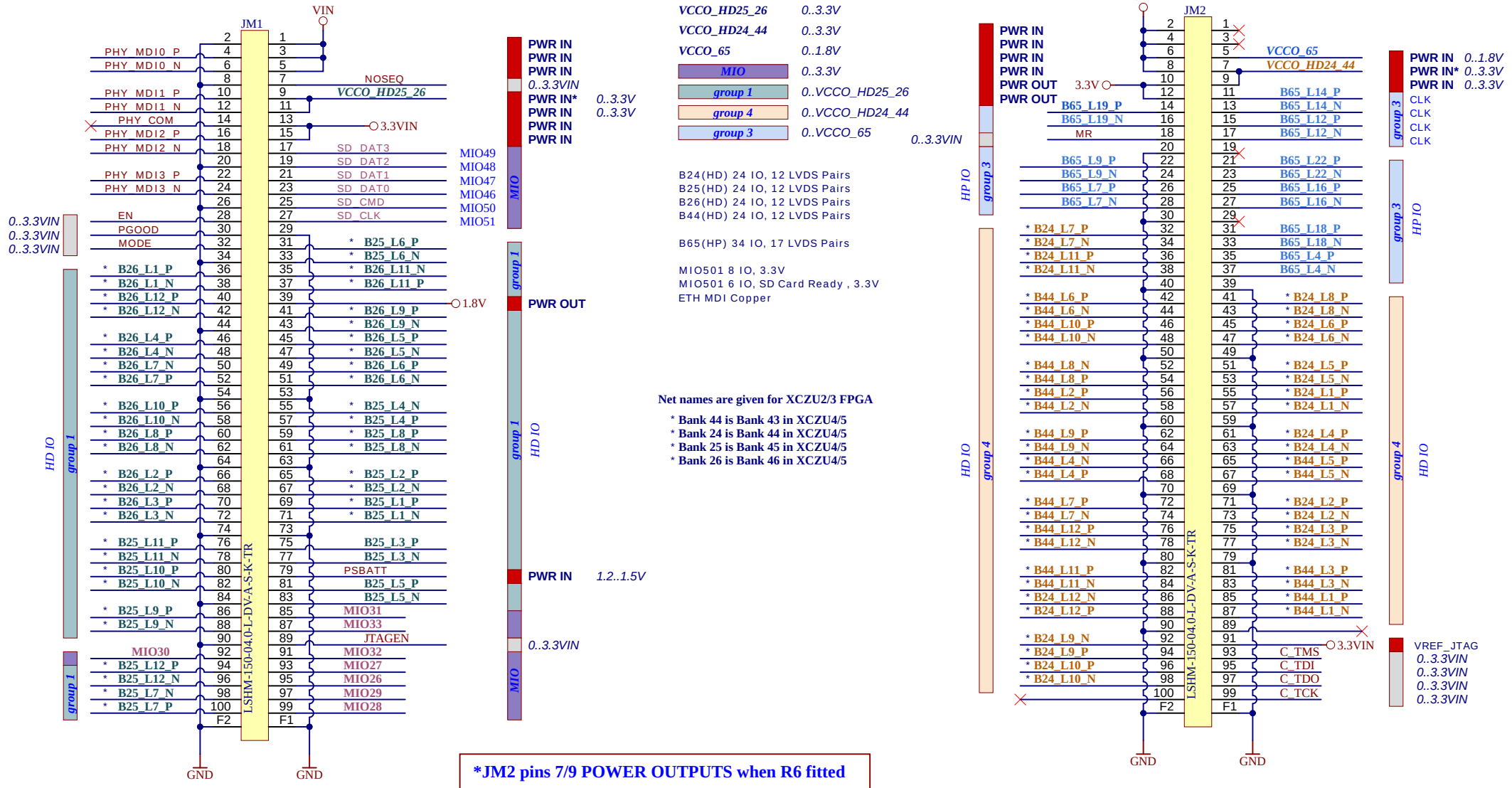


Special notes:

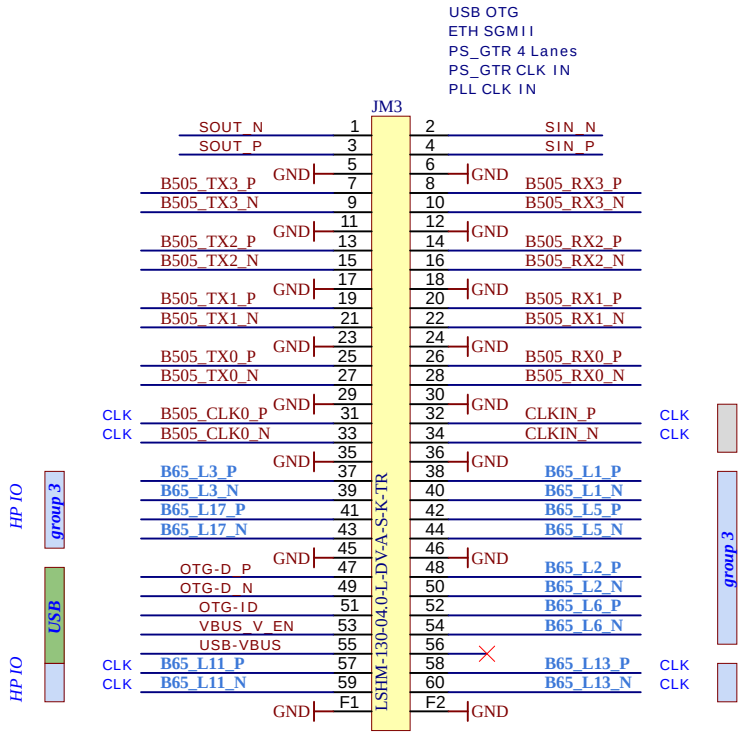
Component RC0201FR-0710KL removed

trenz electronic

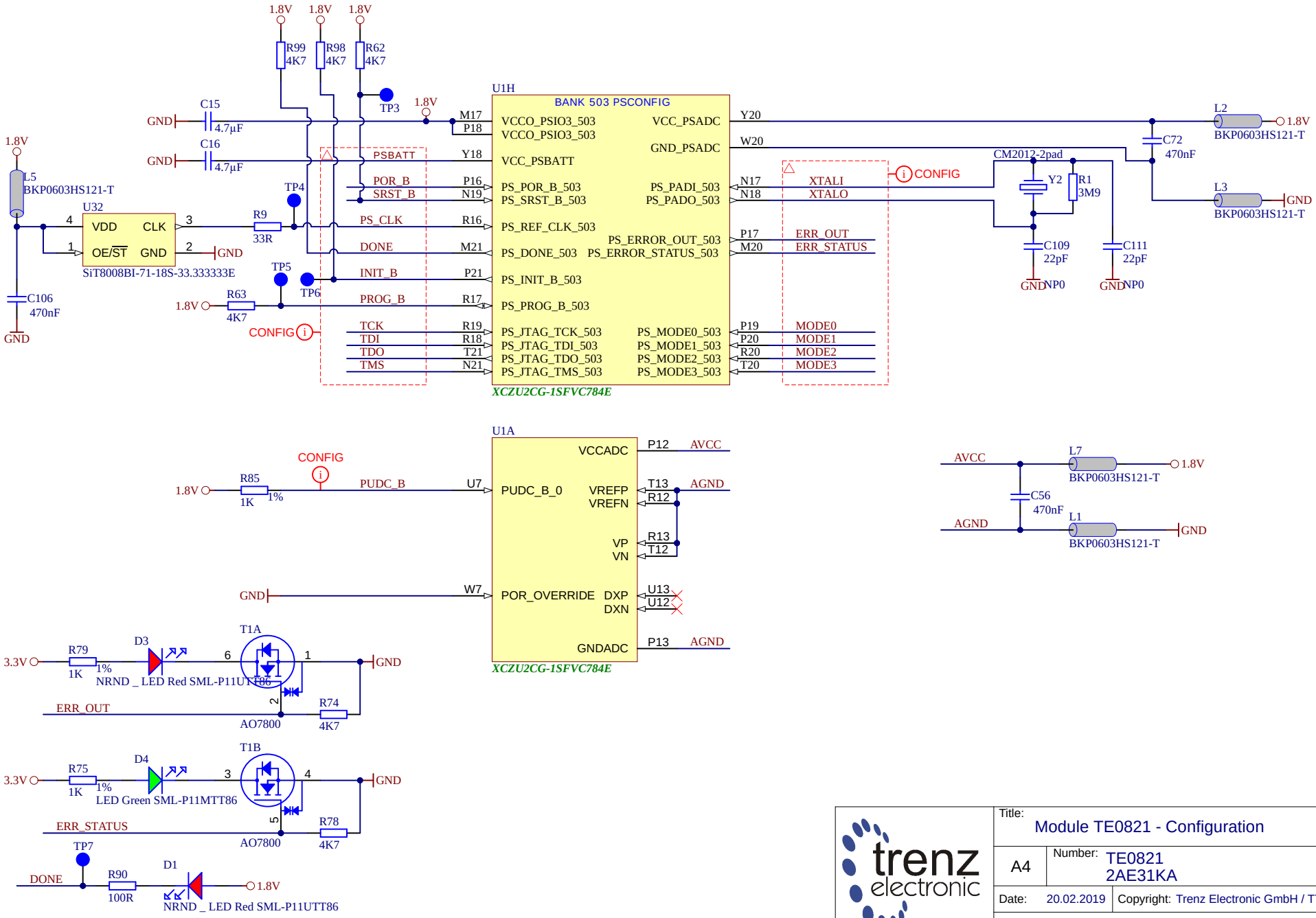
Title: Module TE0821			
A4	Number: TE0821 2AE31KA		Rev. 01
Date: 20.02.2019	Copyright: 2015 Trenz Electronic GmbH		Page 3 of 24
Filename: TE0821.SchDoc			



Title: Module TE0821 - B2B Connectors			
A4	Number: TE0821 2AE31KA		Rev. 01
Date: 04.07.2019	Copyright: 2015 Trenz Electronic GmbH		Page 4 of 24
Filename: B2B-Connectors.SchDoc			

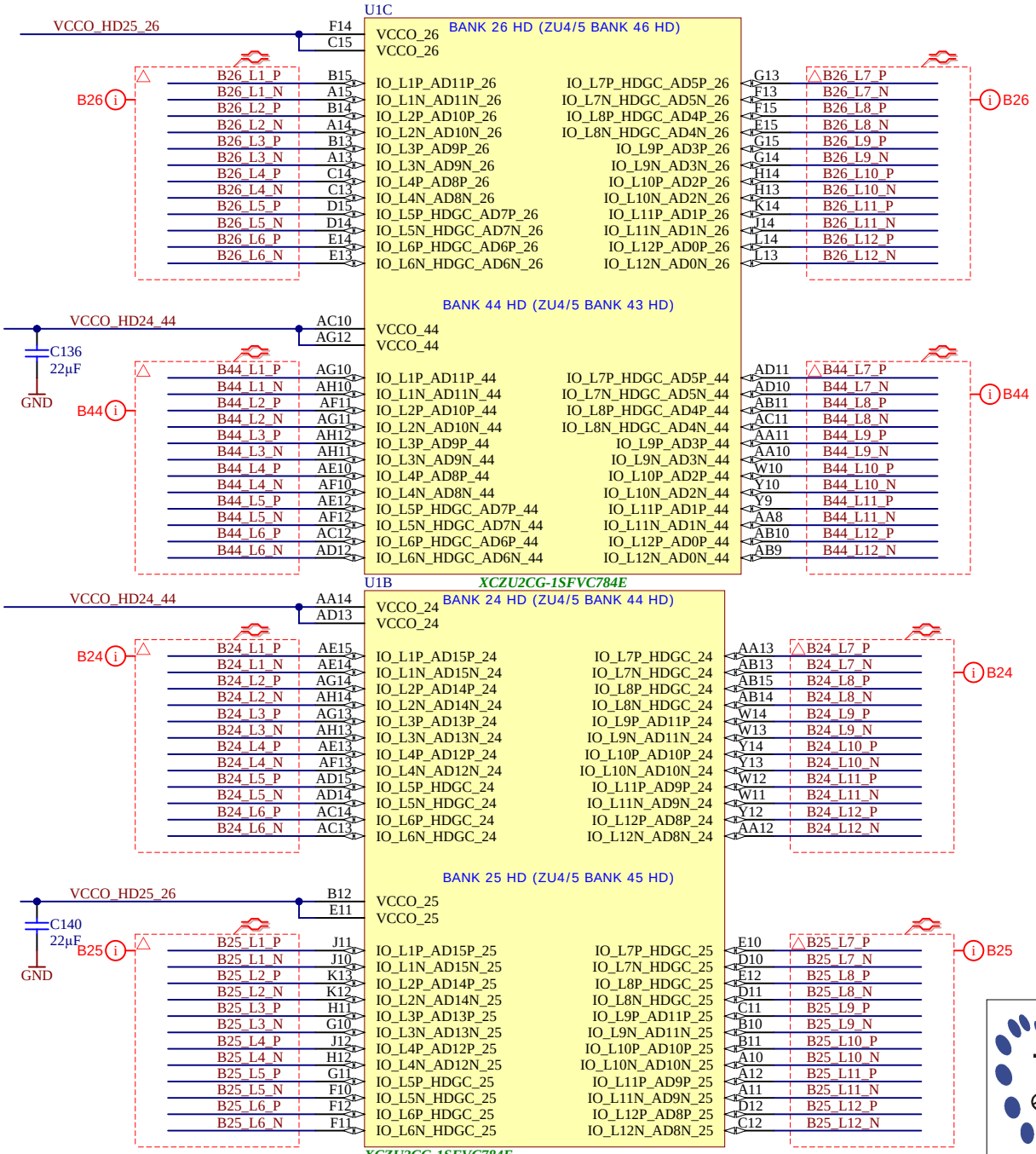


trenz electronic	Title: Module TE0821 - B2B Connectors	
A4	Number: TE0821 2AE31KA	Rev. 01
Date: 20.02.2019	Copyright: 2015 Trenz Electronic GmbH	Page 5 of 24
Filename: B2B-Connectors_2.SchDoc		



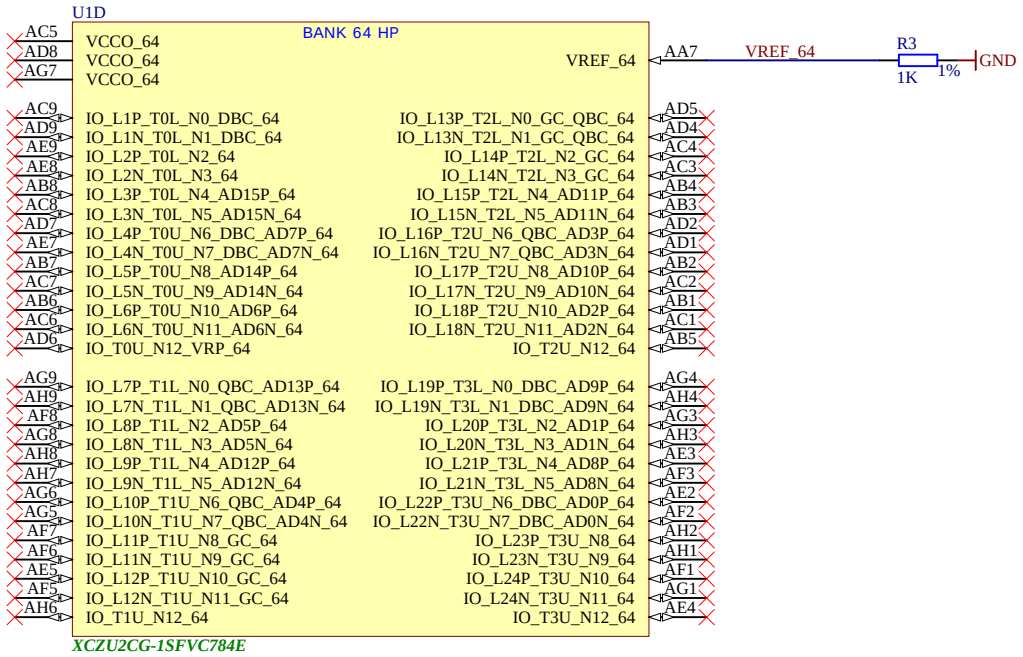
trenz electronic

Title: Module TE0821 - Configuration			
A4	Number: TE0821 2AE31KA		Rev. 01
Date: 20.02.2019	Copyright: Trenz Electronic GmbH / TT		Page 6 of 24
Filename: CONFIG.SchDoc			

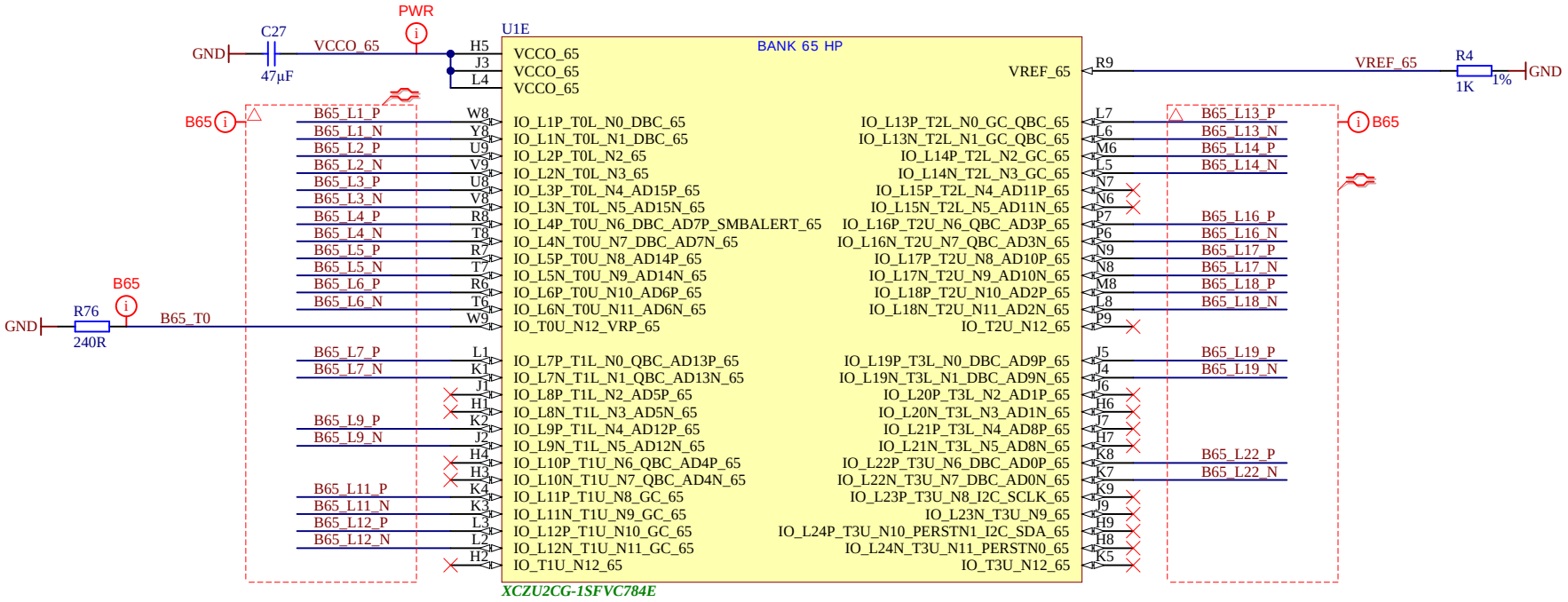


trenz electronic

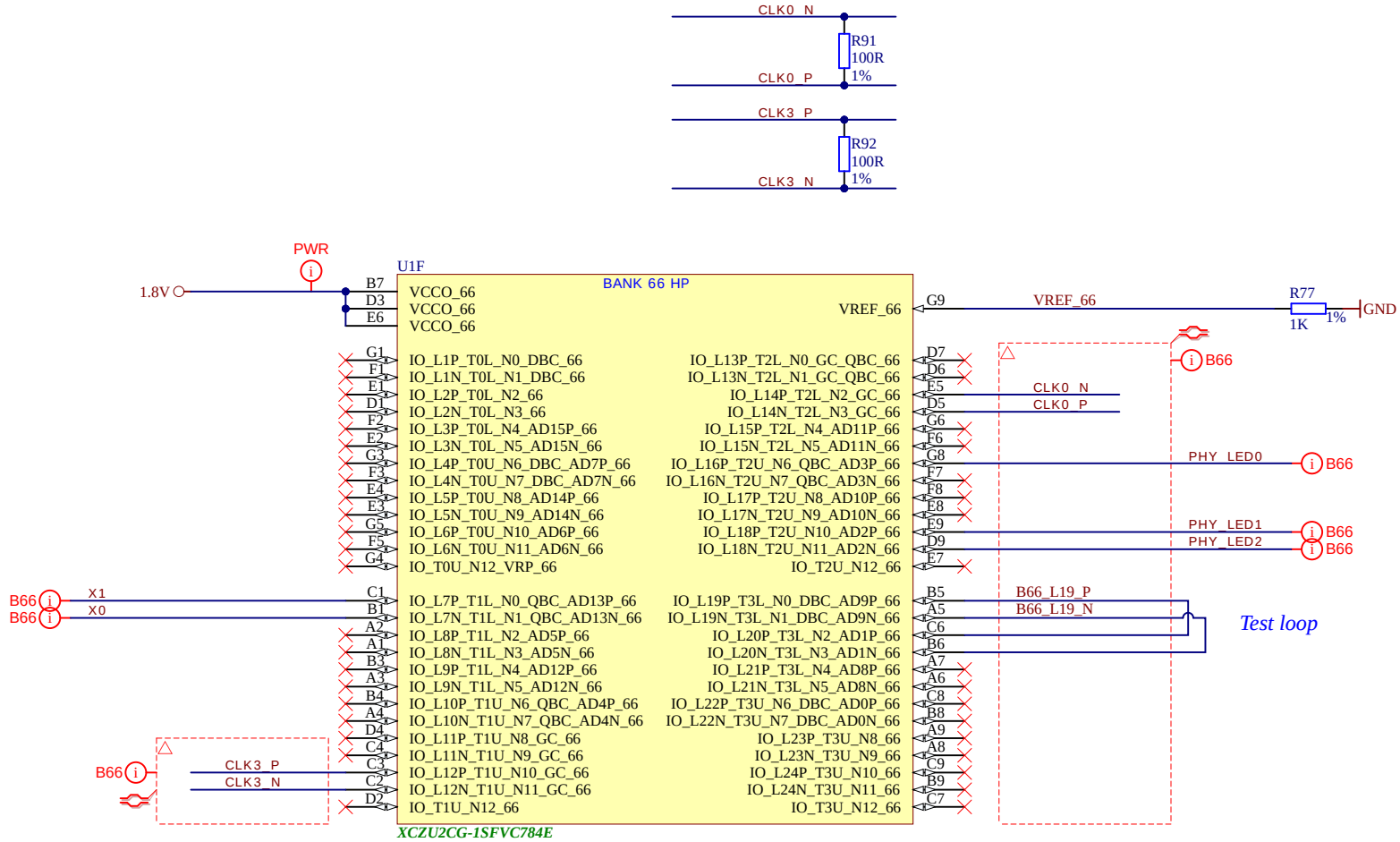
Title: Module TE0821 - HD Banks			
A4	Number: TE0821 2AE31KA		Rev. 01
Date: 20.02.2019	Copyright: Trenz Electronic GmbH / TT		Page 7 of 24
Filename: B_HD.SchDoc			



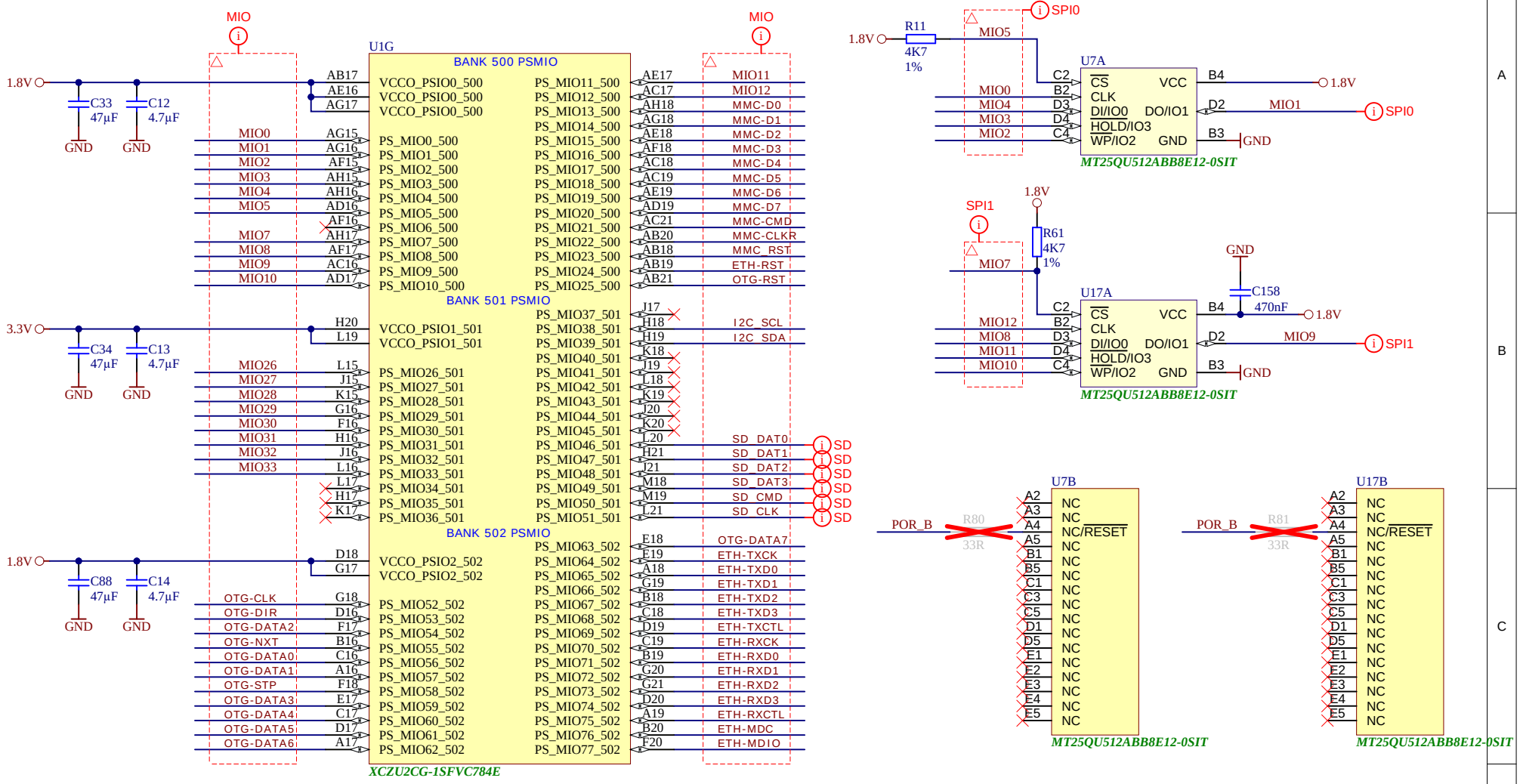
trenz electronic	Title: Module TE0821 - B64		
A4	Number: TE0821 2AE31KA		Rev. 01
Date: 20.02.2019	Copyright: Trenz Electronic GmbH / TT		Page 8 of 24
Filename: B64.SchDoc			



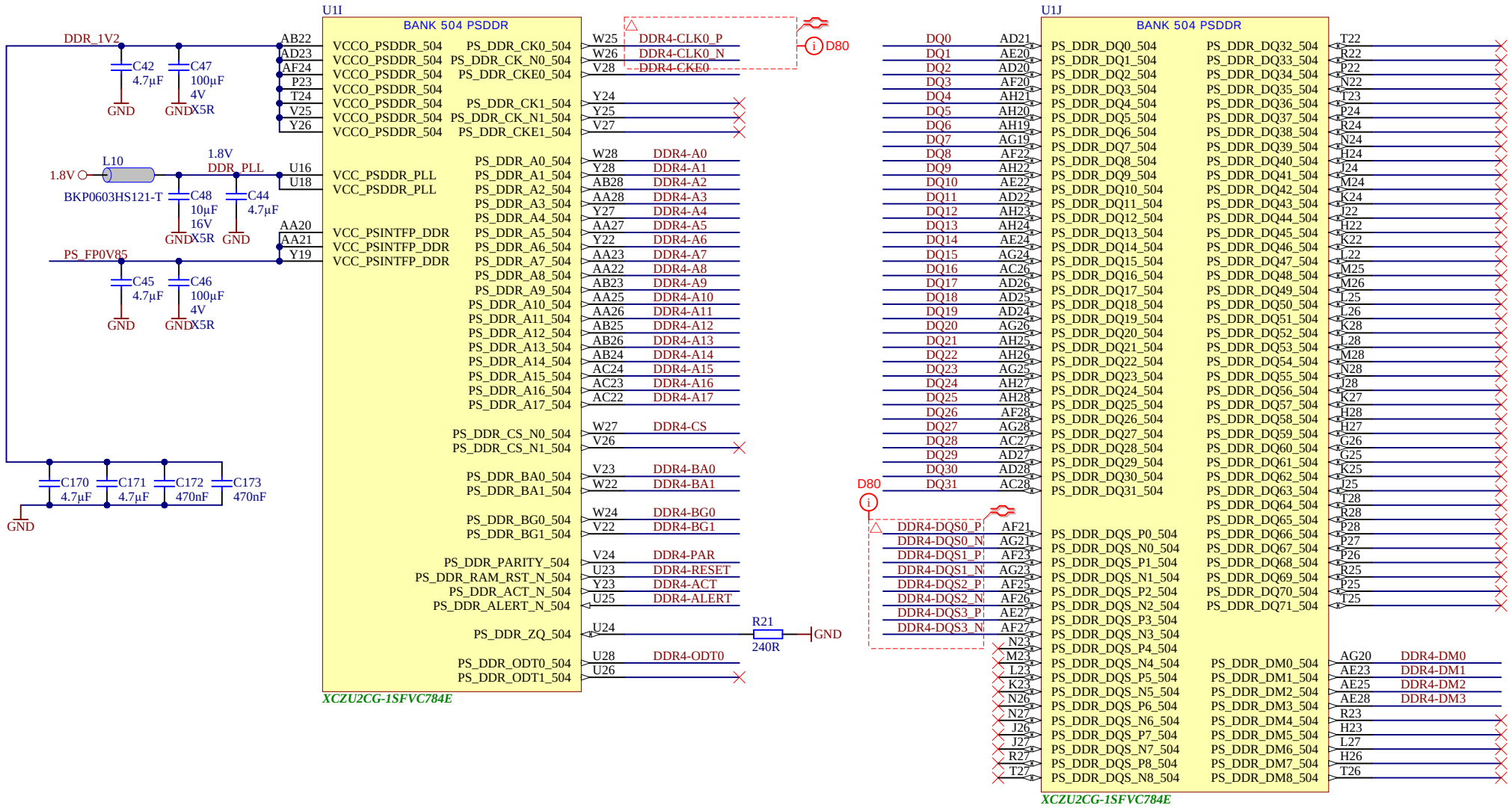
trenz electronic	Title: Module TE0821 - B65		
A4	Number: TE0821 2AE31KA		Rev. 01
Date: 20.02.2019	Copyright: Trenz Electronic GmbH / TT		Page 9 of 24
Filename: B65.SchDoc			



trenz electronic	Title: Module TE0821 - B66		
A4	Number: TE0821 2AE31KA		Rev. 01
Date: 20.02.2019	Copyright: Trenz Electronic GmbH / TT		Page 10 of 24
Filename: B66.SchDoc			

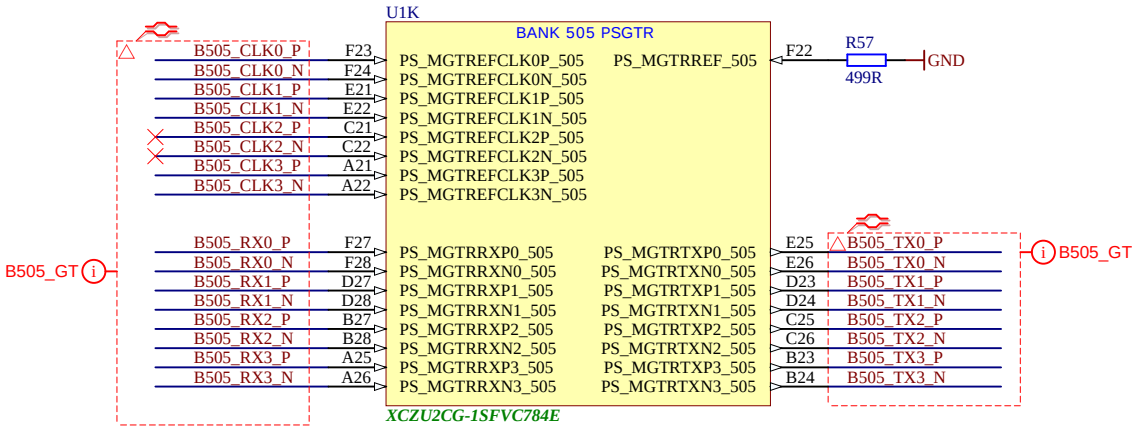


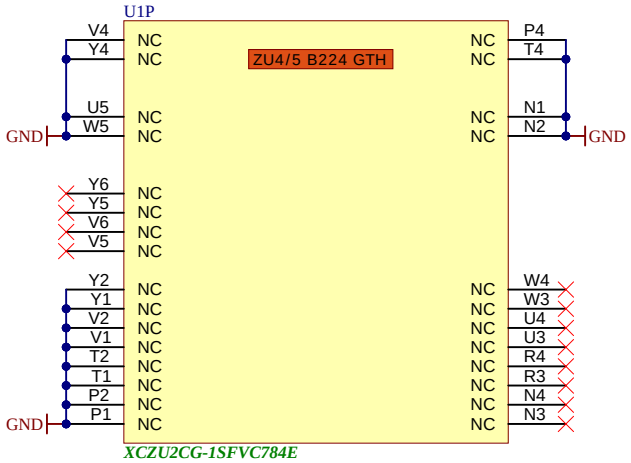
trenz electronic	Title: Module TE0821 - MIO Banks		
A4	Number: TE0821 2AE31KA		Rev. 01
Date: 20.02.2019	Copyright: Trenz Electronic GmbH / TT		Page 11 of 24
Filename: B_MIO.SchDoc			



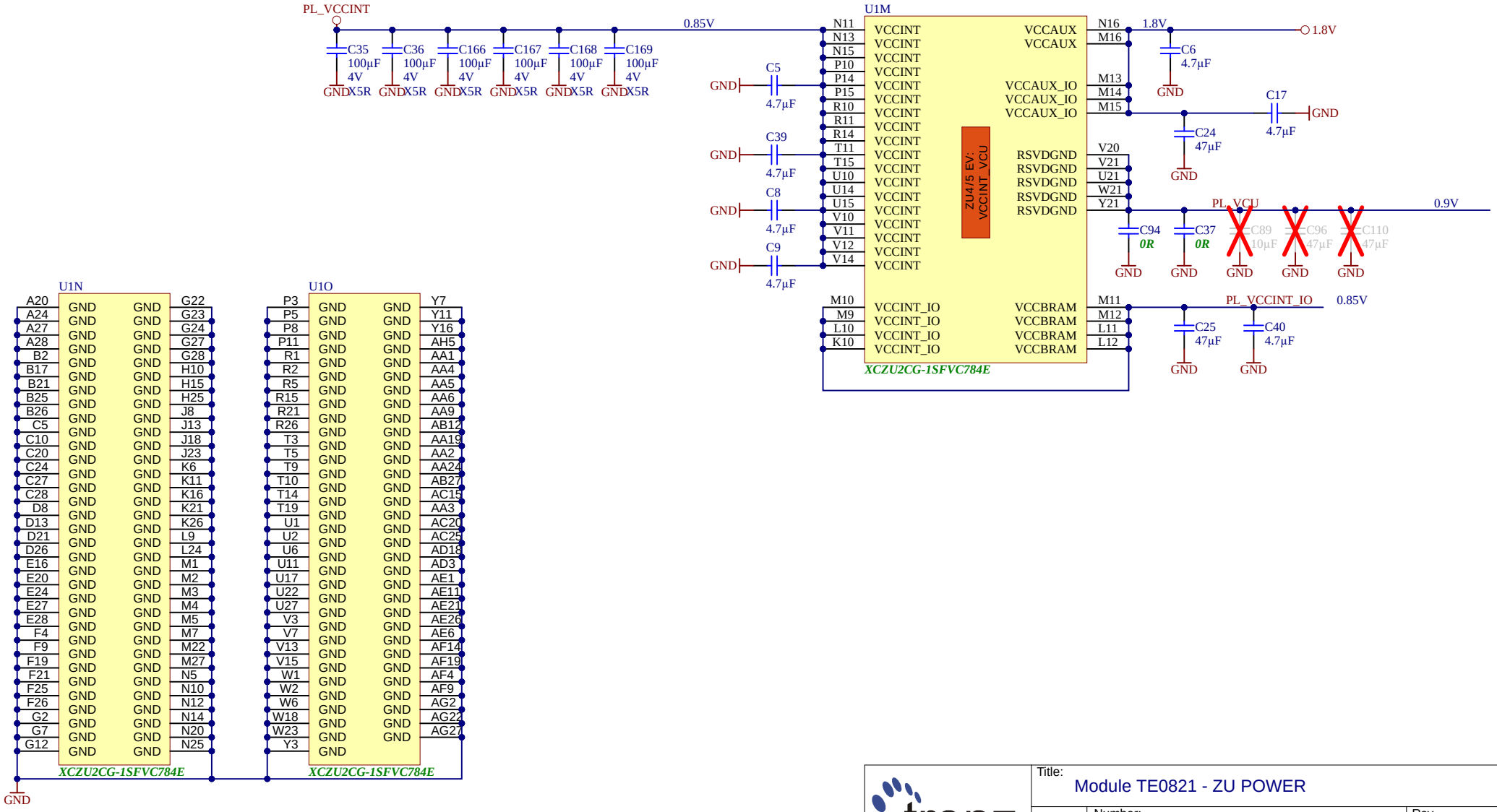
trenz electronic

Title: Module TE0821 - PS DDR			
A4	Number: TE0821 2AE31KA		Rev. 01
Date: 20.02.2019	Copyright: Trenz Electronic GmbH / TT		Page 12 of 24
Filename: PS_DDR.SchDoc			

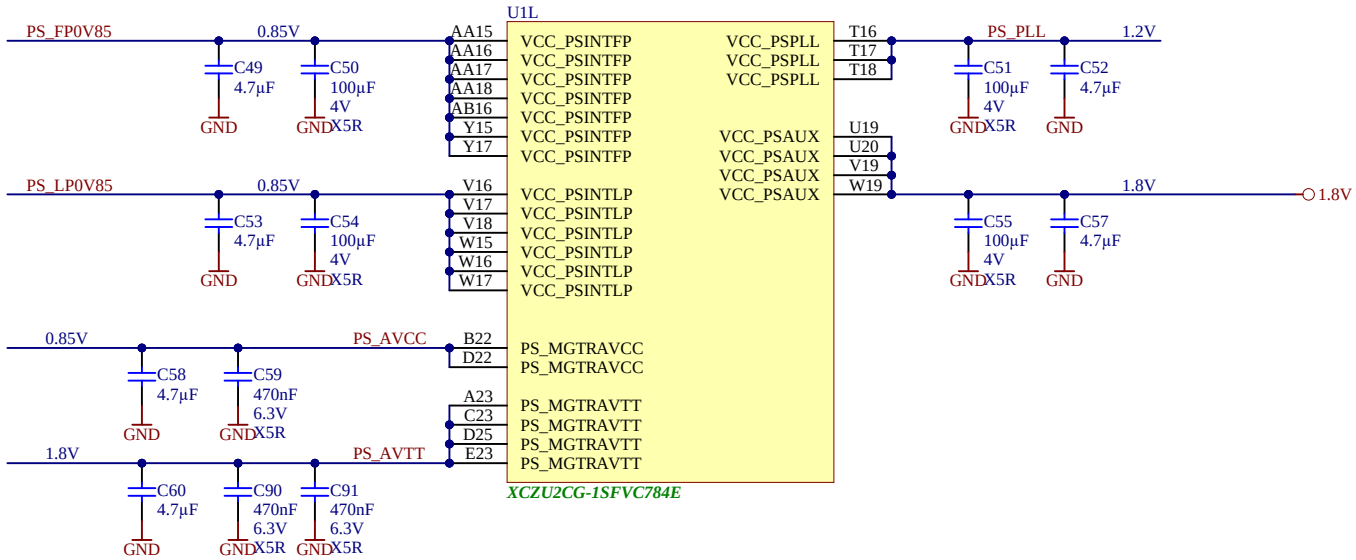




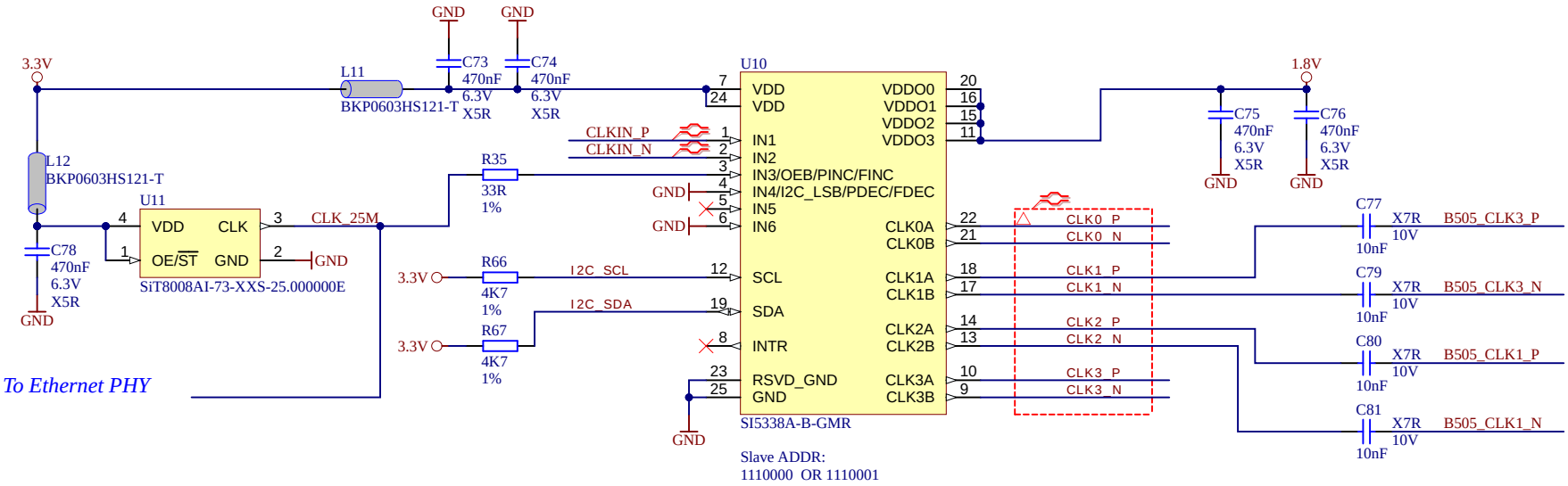
Title: Module TE0821 - PS MGT			
A4	Number: TE0821 2AE31KA		Rev. 01
Date: 20.02.2019	Copyright: Trenz Electronic GmbH / TT		Page 13 of 24
Filename: B_PS_GT.SchDoc			



Title: Module TE0821 - ZU POWER		
A4	Number: TE0821 2AE31KA	Rev. 01
Date: 20.02.2019	Copyright: Trenz Electronic GmbH / TT	Page 14 of 24
Filename: ZU_POWER.SchDoc		

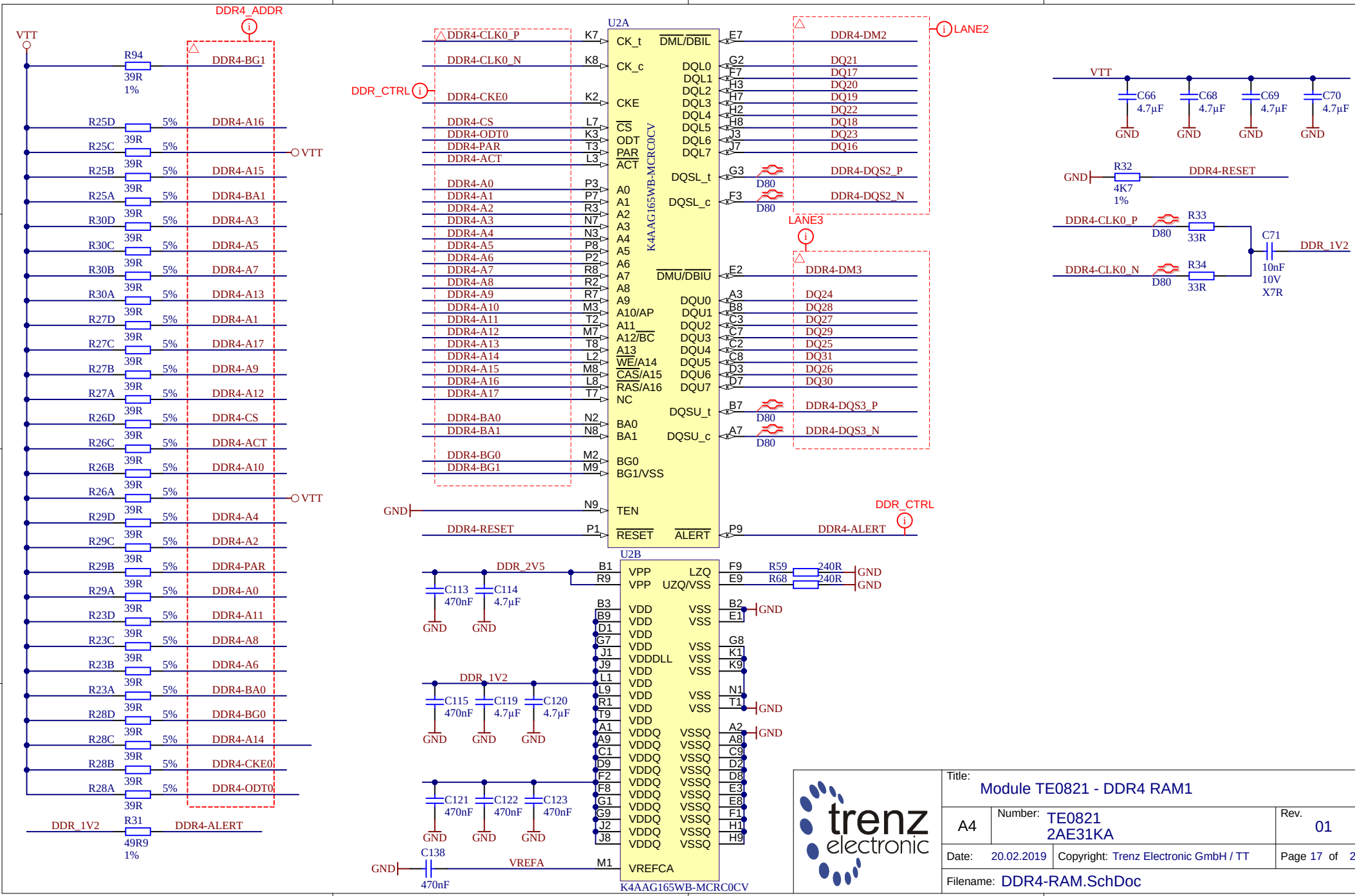


trenz electronic	Title: Module TE0821 - ZU PS POWER	
A4	Number: TE0821 2AE31KA	Rev. 01
Date: 20.02.2019	Copyright: Trenz Electronic GmbH / TT	Page 15 of 24
Filename: ZU_PS_POWER.SchDoc		

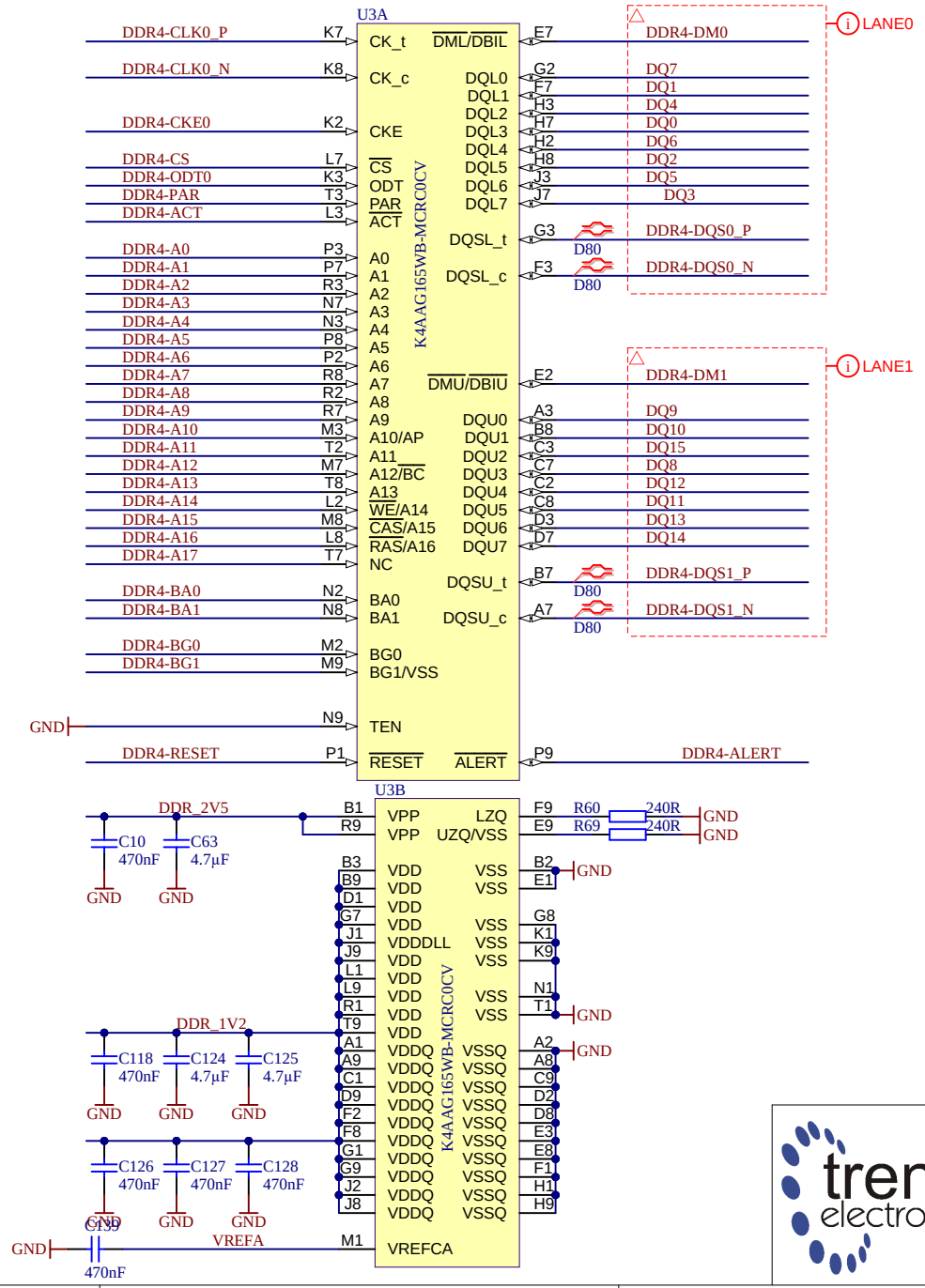


trenz electronic

Title: Module TE0821 - CLK		
A4	Number: TE0821 2AE31KA	Rev. 01
Date: 20.02.2019	Copyright: 2015 Trenz Electronic GmbH	Page 16 of 24
Filename: CLK.SchDoc		

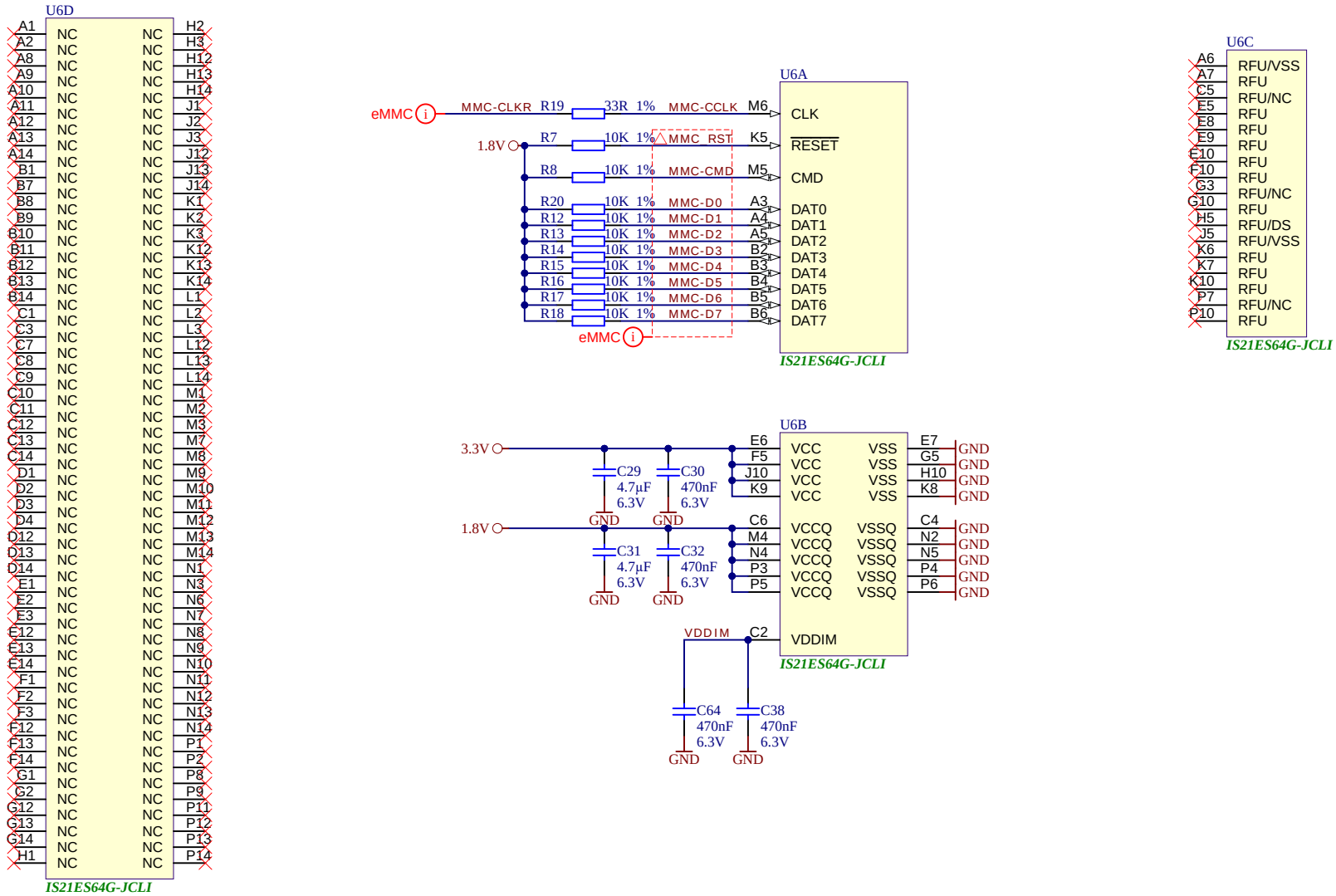


Title: Module TE0821 - DDR4 RAM1			
A4	Number: TE0821 2AE31KA		Rev. 01
Date: 20.02.2019	Copyright: Trenz Electronic GmbH / TT		Page 17 of 24
Filename: DDR4-RAM.SchDoc			

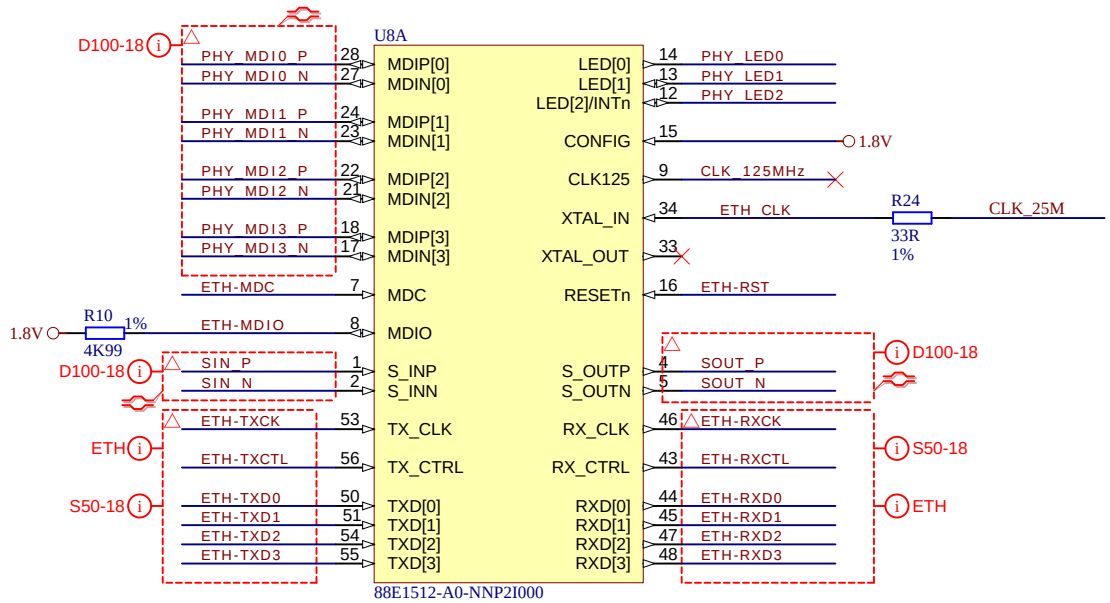


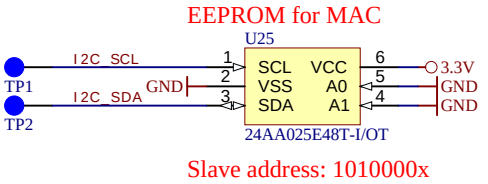
trenz electronic

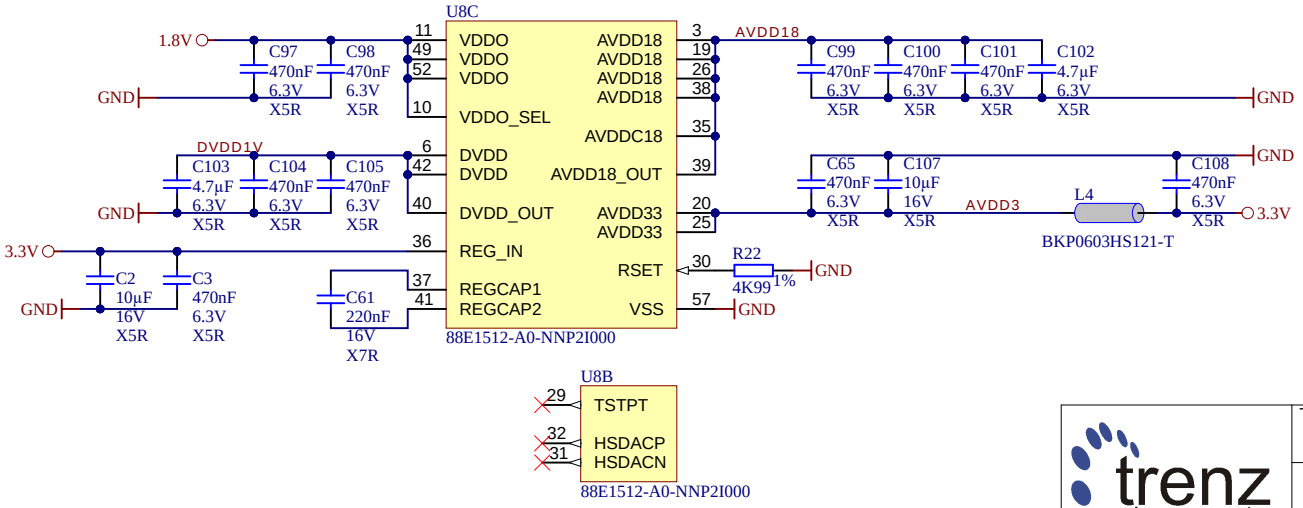
Title: Module TE0821 - DDR4 RAM2			
A4	Number: TE0821 2AE31KA		Rev. 01
Date: 20.02.2019	Copyright: Trenz Electronic GmbH / TT		Page 18 of 24
Filename: DDR4-RAM_2.SchDoc			



Title: Module TE0821 - eMMC		
A4	Number: TE0821 2AE31KA	Rev. 01
Date: 20.02.2019	Copyright: Trenz Electronic GmbH / TT	Page 19 of 24
Filename: eMMC.SchDoc		

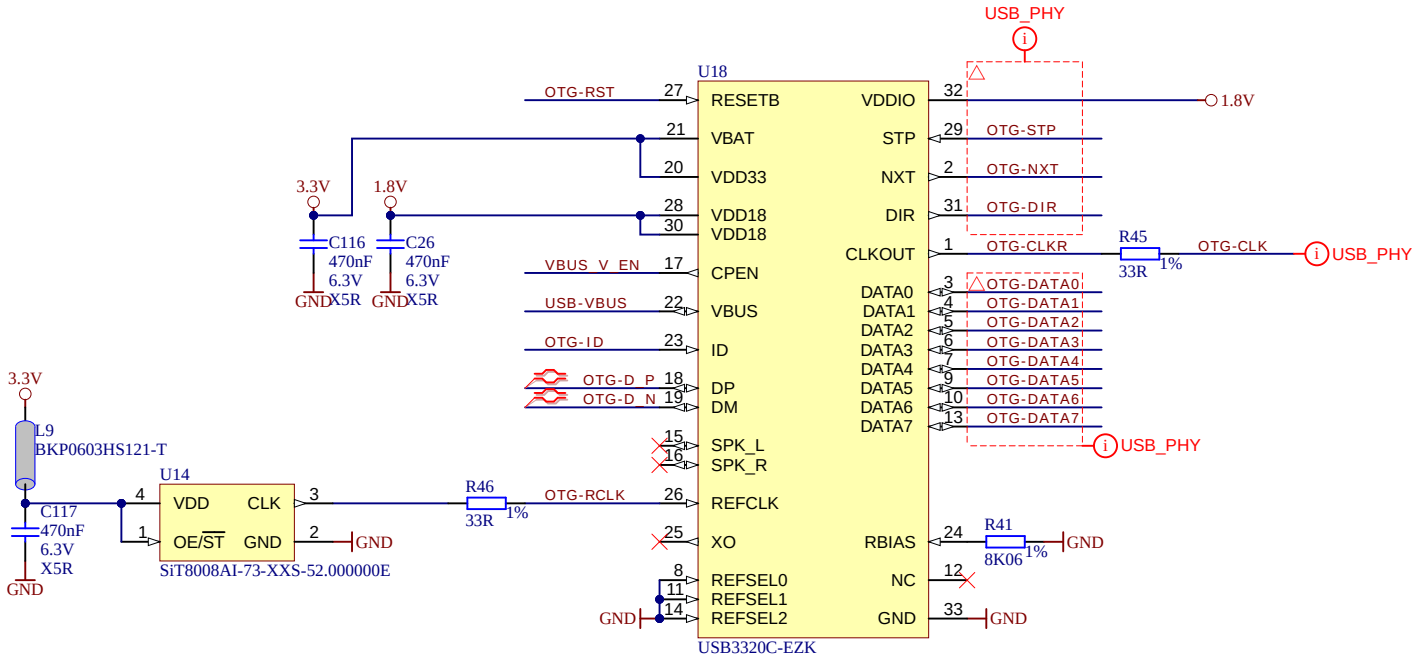




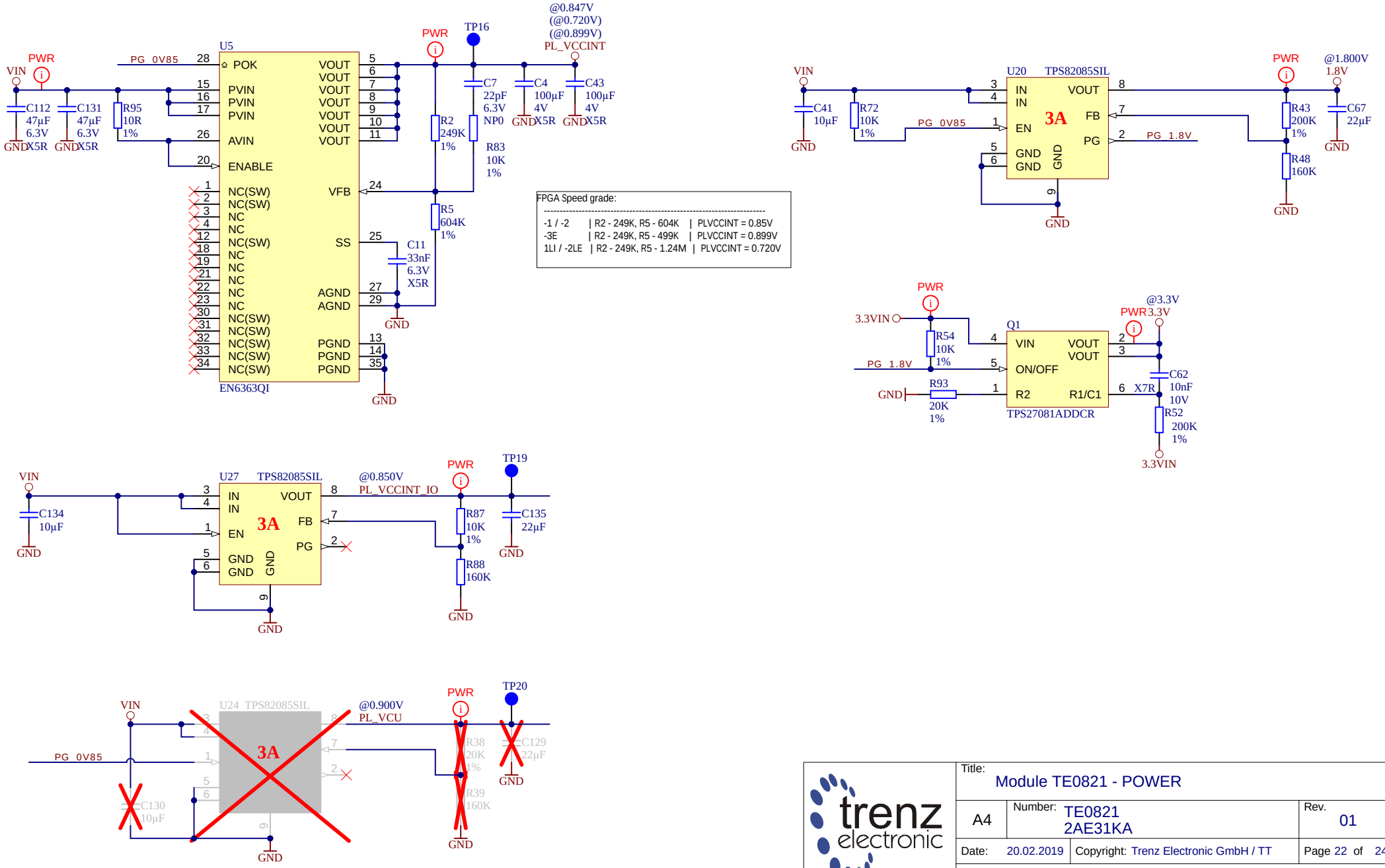


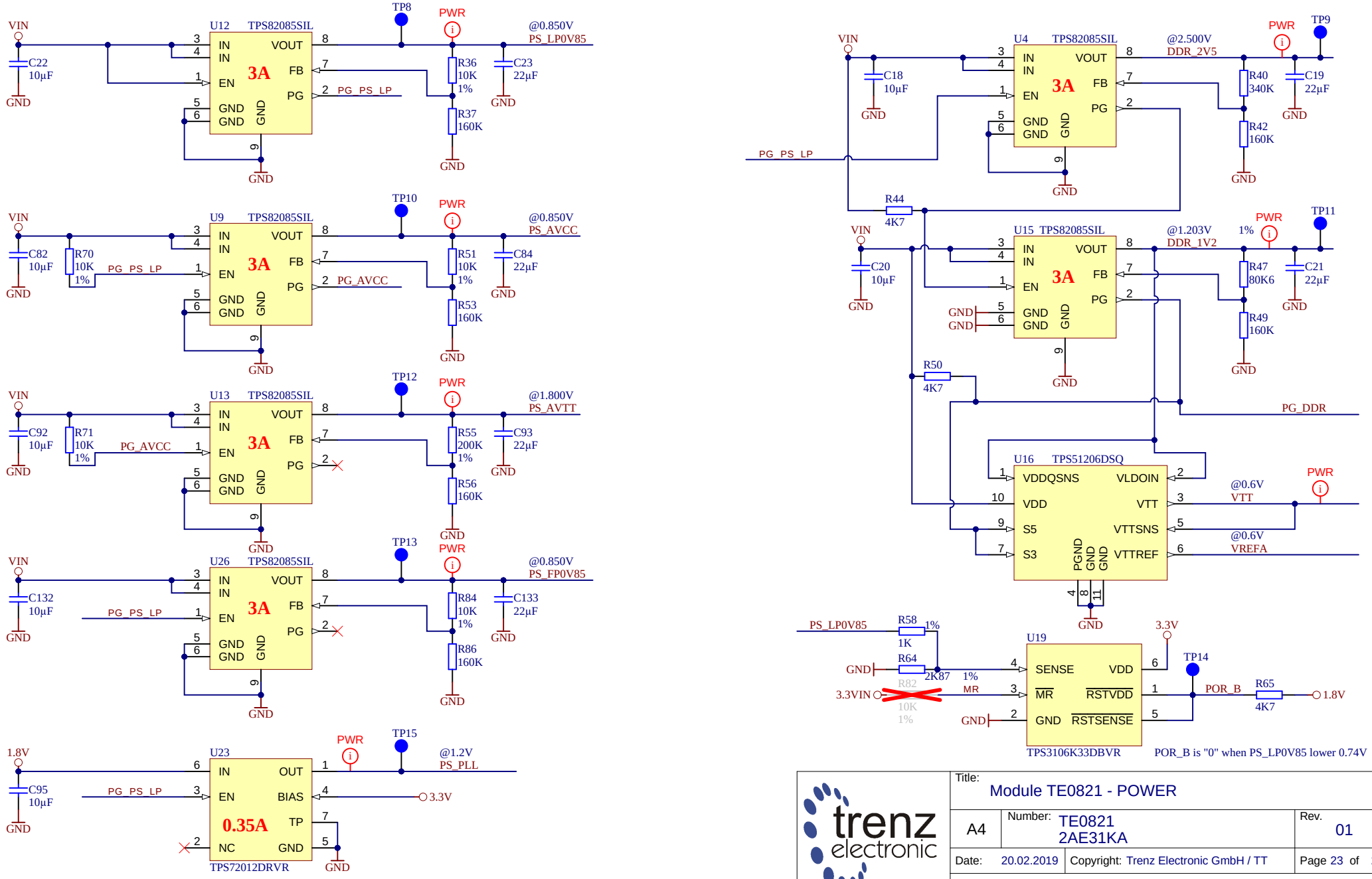
trenz electronic

Title: Module TE0821 - Ethernet PHY		
A4	Number: TE0821 2AE31KA	Rev. 01
Date: 20.02.2019	Copyright: 2015 Trenz Electronic GmbH	Page 20 of 24
Filename: ETH-PHY.SchDoc		



trenz electronic	Title: Module TE0821 - USB PHY		
	A4	Number: TE0821 2AE31KA	Rev. 01
	Date: 20.02.2019	Copyright: 2015 Trenz Electronic GmbH	Page 21 of 24
	Filename: USB-PHY.SchDoc		


U5
EN6363QI
PG_0V85
PWR
VIN
TP16
@0.847V
(@0.720V)
(@0.899V)
PL_VCCINT
C112 47µF 6.3V X5R
C131 47µF 6.3V X5R
R95 10R 1%
R2 249K 1%
R83 10K 1%
C7 22pF 6.3V NP0
C4 100µF 4V X5R
C43 100µF 4V X5R
R5 604K 1%
C11 33nF 6.3V X5R
GND
FPGA Speed grade:
-1 / -2 | R2 - 249K, R5 - 604K | PLVCCINT = 0.85V
-3E | R2 - 249K, R5 - 499K | PLVCCINT = 0.899V
1LI / -2LE | R2 - 249K, R5 - 1.24M | PLVCCINT = 0.720V
U20 TPS82085SIL
3A
C41 10µF
R72 10K 1%
R43 200K 1%
R48 160K
C67 22µF
@1.800V
1.8V
PG_1.8V
Q1
TPS27081ADDCR
3.3VIN
R54 10K 1%
R93 20K 1%
C62 10nF 10V X7R
R52 200K 1%
@3.3V
U27 TPS82085SIL
C134 10µF
R87 10K 1%
R88 160K
C135 22µF
TP19
@0.850V
PL_VCCINT_IO
U24 TPS82085SIL
C130 10µF
R38 20K 1%
R39 160K
C129 22µF
TP20
@0.900V
PL_VCU
Module TE0821 - POWER
A4
Number: TE0821 2AE31KA
Rev. 01
Date: 20.02.2019
Copyright: Trenz Electronic GmbH / TT
Page 22 of 24
Filename: POWER.SchDoc



trenz electronic	Title: Module TE0821 - POWER		
A4	Number: TE0821 2AE31KA		Rev. 01
Date: 20.02.2019	Copyright: Trenz Electronic GmbH / TT		Page 23 of 24
Filename: POWER_1.SchDoc			

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

trenz electronic	Title: Module TE0821 - Revision Changes		
	A4	Number: TE0821 2AE31KA	Rev. 01
	Date: 20.02.2019	Copyright: Trenz Electronic GmbH / TT	Page 24 of 24
	Filename: Revision Changes.SchDoc		