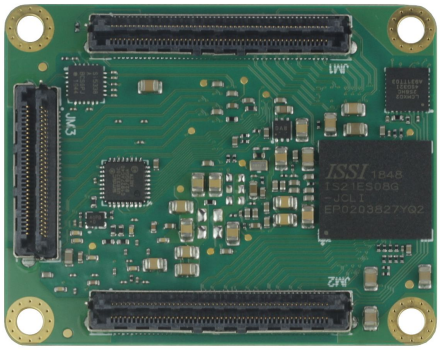
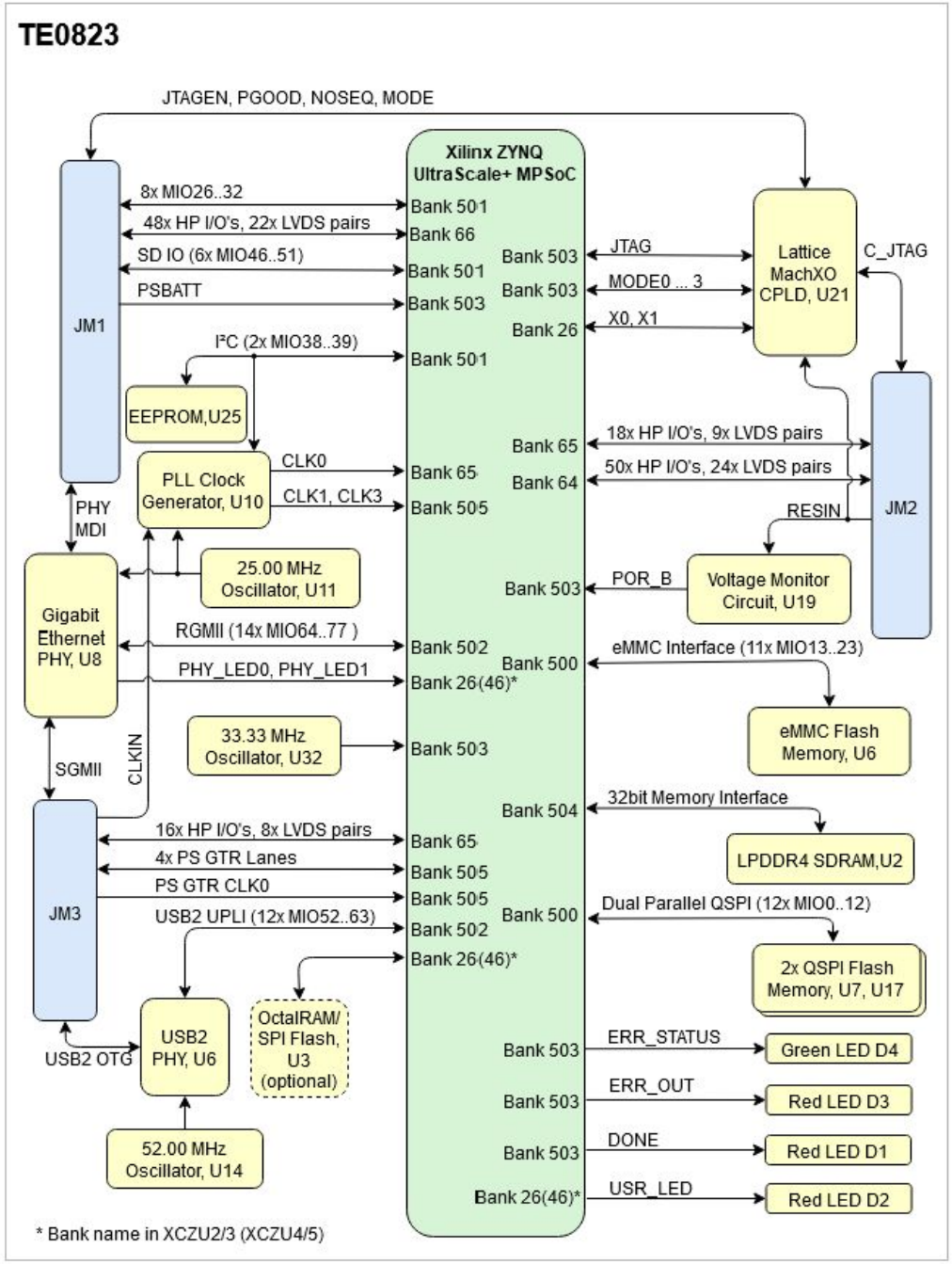


Regarding the usage of our schematics and alike documentation for Trenz module TE0823.

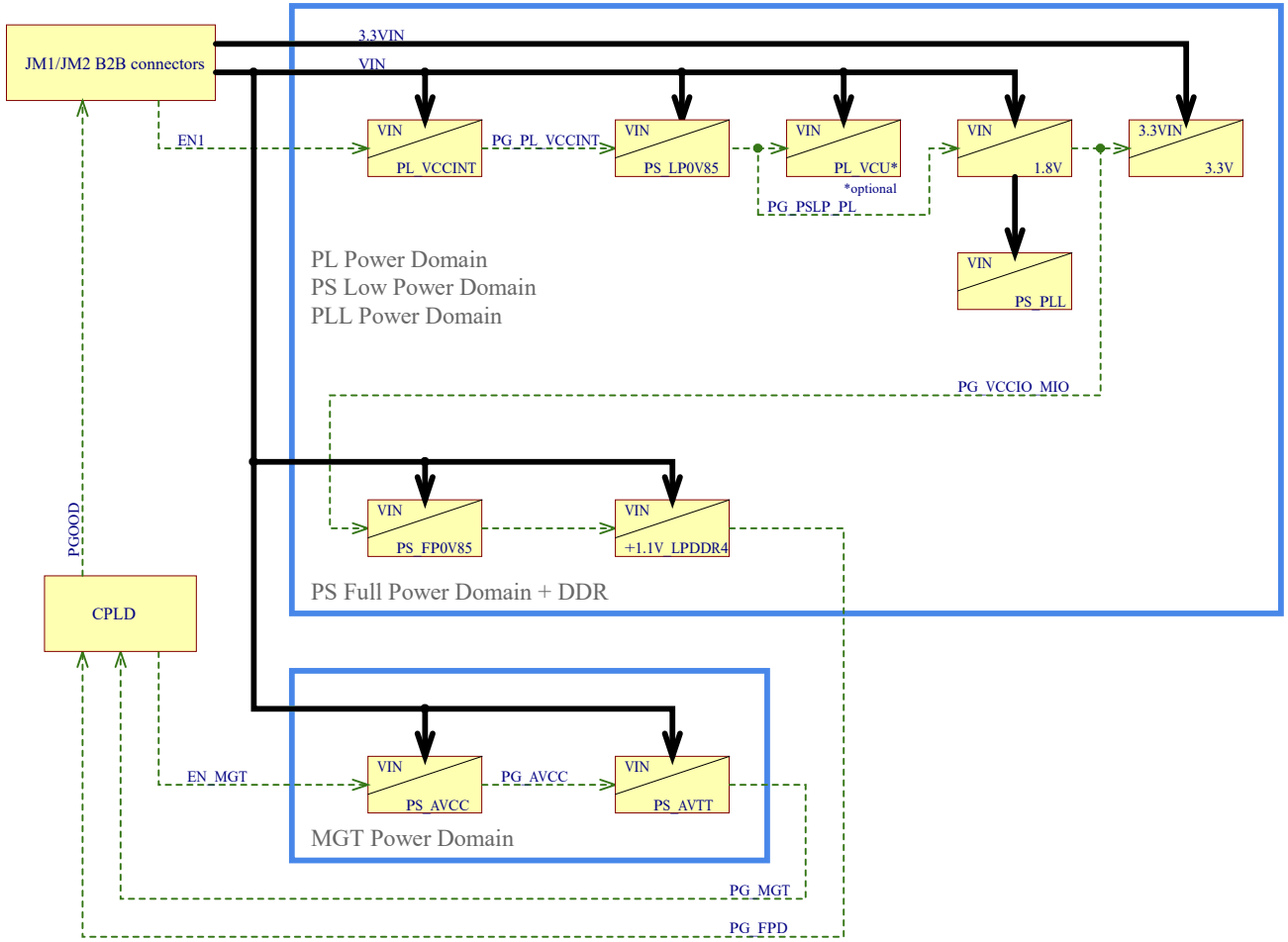
Project is protected under copyright and we strongly and strictly prohibit the reverse engineering or recreation, even if the design is just adapted or modified. TE0823 is protected under such right and in case of plagiarism we will have to do anything necessary in order to protect our assets.

Schematics and other handouts serve for informational purposes only!

trenz electronic	Title: TE0823 - Legal notices		
	A4	Number: TE0823 [No Variations]	Rev. 01
	Date: 2020-10-29	Copyright: Trenz Electronic GmbH / TT	Page 1 of 25
	Filename: Legal Notices Modules.SchDoc		



trenz electronic	Title: TE0823 - System Overview		
	A4	Number: TE0823 [No Variations]	Rev. 01
	Date: 2020-10-29	Copyright: Trenz Electronic GmbH	Page 2 of 25
	Drawn by: VY	Filename: TE0823-Overview.SchDoc	



trenz electronic	Title: TE0823 - Power Overview		
	A4	Number: TE0823 [No Variations]	Rev. 01
	Date: 2020-10-29	Copyright: Trenz Electronic GmbH	Page 3 of 25
	Drawn by: VY	Filename: TE0823-Power-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_Revision_Changes
Revision Changes.SchDoc

U_POV
TE0823-Power-Overview.SchDoc

U_B2B-Connectors
B2B-Connectors.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_LPDDR4
LPDDR4.SchDoc

U_POWER
POWER.SchDoc

U_POWER_1
POWER_1.SchDoc

U_HyperRAM
HyperRAM.SchDoc

U_Overview
TE0823-Overview.SchDoc

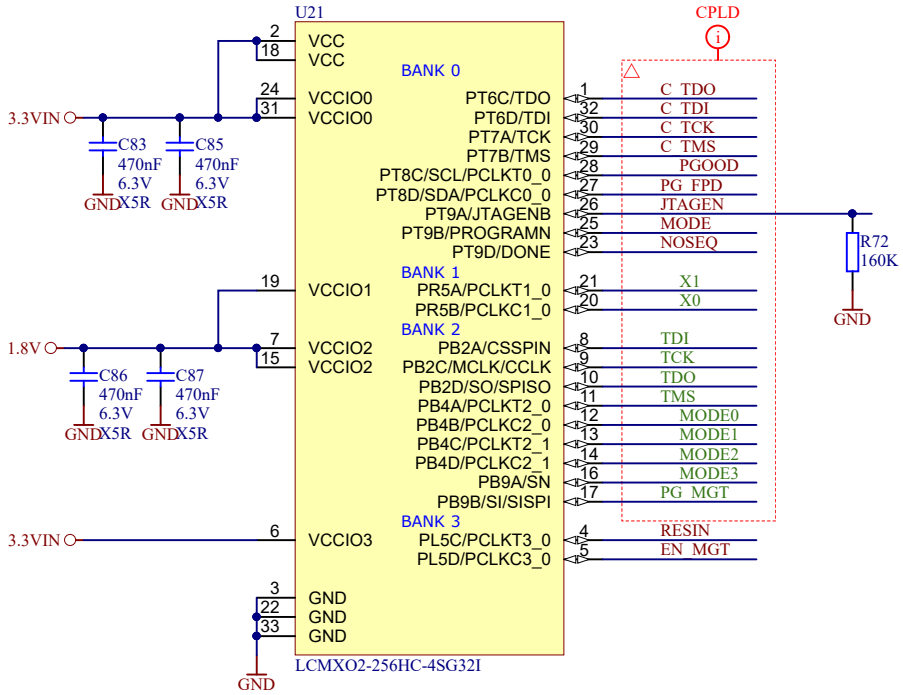
U_B2B-Connectors_2
B2B-Connectors_2.SchDoc

U_LN
Legal Notices Modules.SchDoc

S/N
GND 1 0R 2 GND
Serialnumber

Serial
Serial
Serialnumber 6,3 x 6.3mm

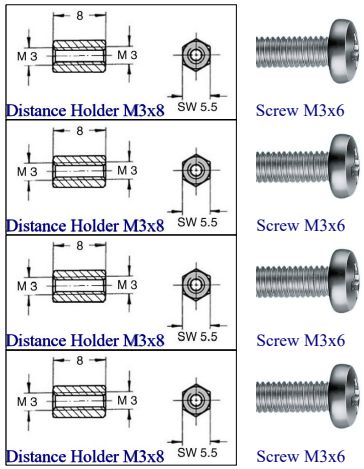
I2C-Address	Component
0x50	24AA025E48T-I/OT
0x70	SI5338A-B-GMR
0x..	PS MIO



PM1 FIDU-DOT - mini
PM2 FIDU-DOT - mini
PM3 FIDU-DOT - mini
PM4 FIDU-DOT - mini
PM5 FIDU-DOT - mini
PM6 FIDU-DOT - mini

Mount.Hole 3.2mm GND
Mount.Hole 3.2mm GND
Mount.Hole 3.2mm GND
Mount.Hole 3.2mm GND

Screw M3x4
Screw M3x4
Screw M3x4
Screw M3x4



Screw M3x6
Screw M3x6
Screw M3x6
Screw M3x6

Assembly variant	[No Variations]
Created by	
Modified by	
Modified at	
SVN Revision	8870 [Locally Modified]

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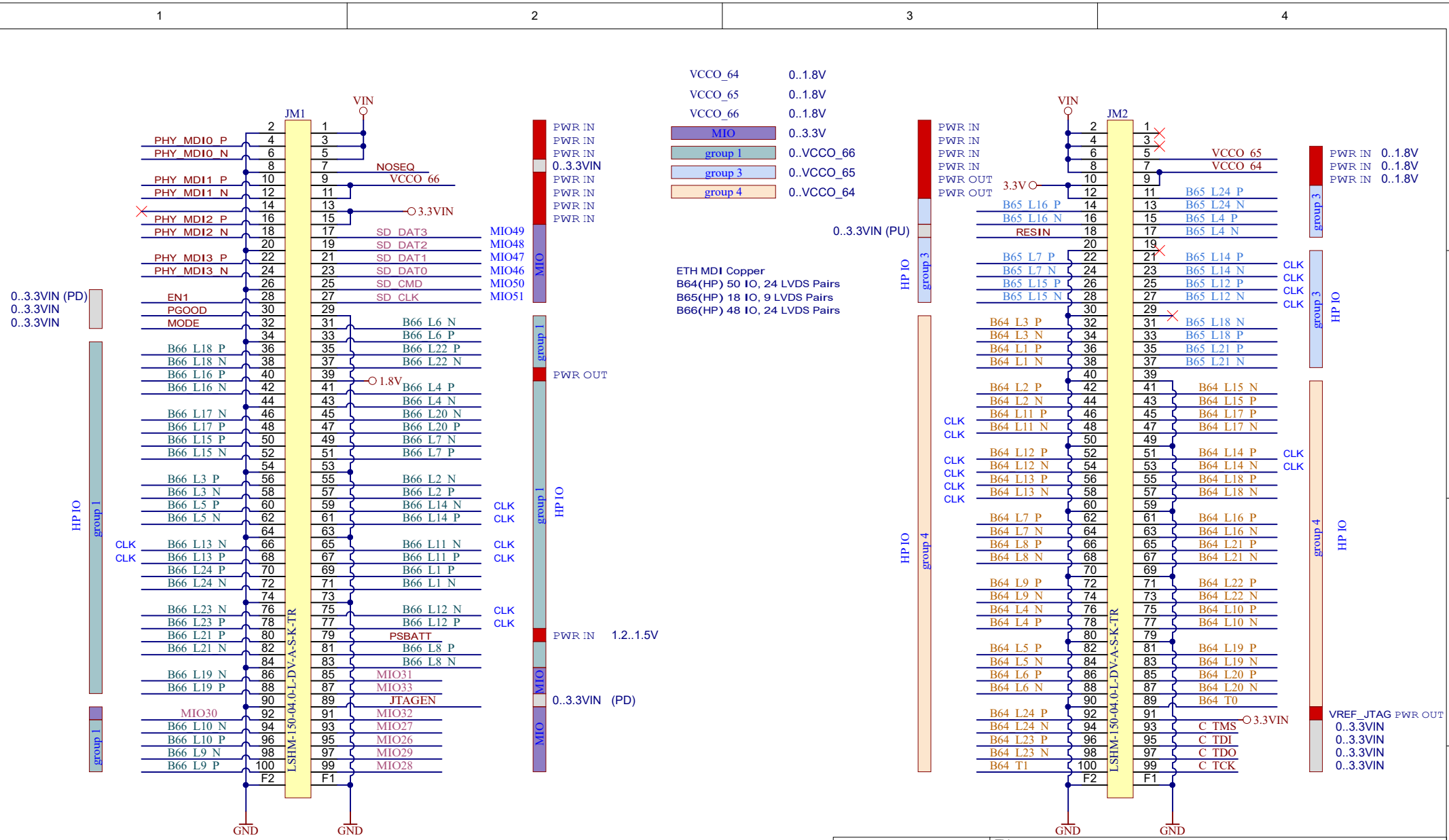
Title: TE0823 - System controller		
A4	Number: TE0823 [No Variations]	Rev. 01
Date: 2019-10-02	Copyright: Trenz Electronic GmbH	Page 4 of 25
Drawn by: VY	Filename: TE0823.SchDoc	



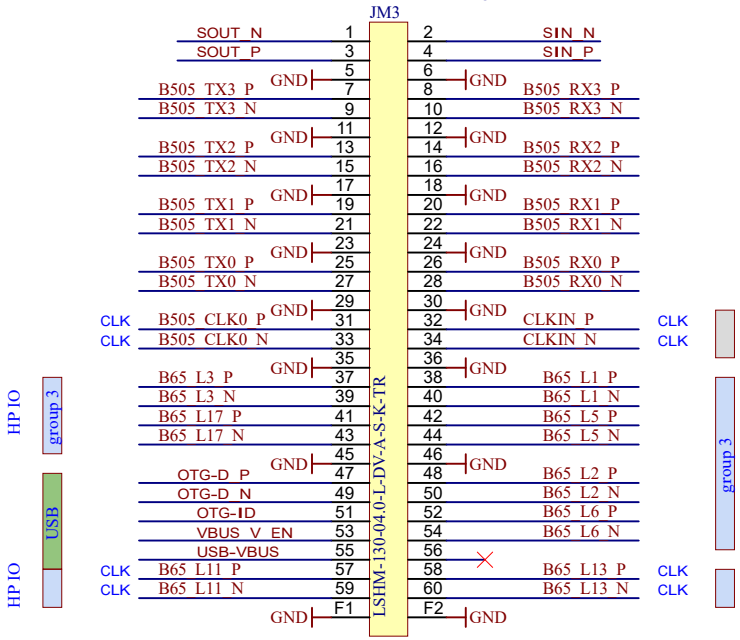
PU - On board pull-up resistor

PD - On board pull-down resistor

trenz electronic	Title: TE0823 - B2B Connectors		
A4	Number: TE0823 [No Variations]		Rev. 01
Date: 2019-10-02	Copyright: Trenz Electronic GmbH		Page 5 of 25
Drawn by: VY	Filename: B2B-Connectors.SchDoc		

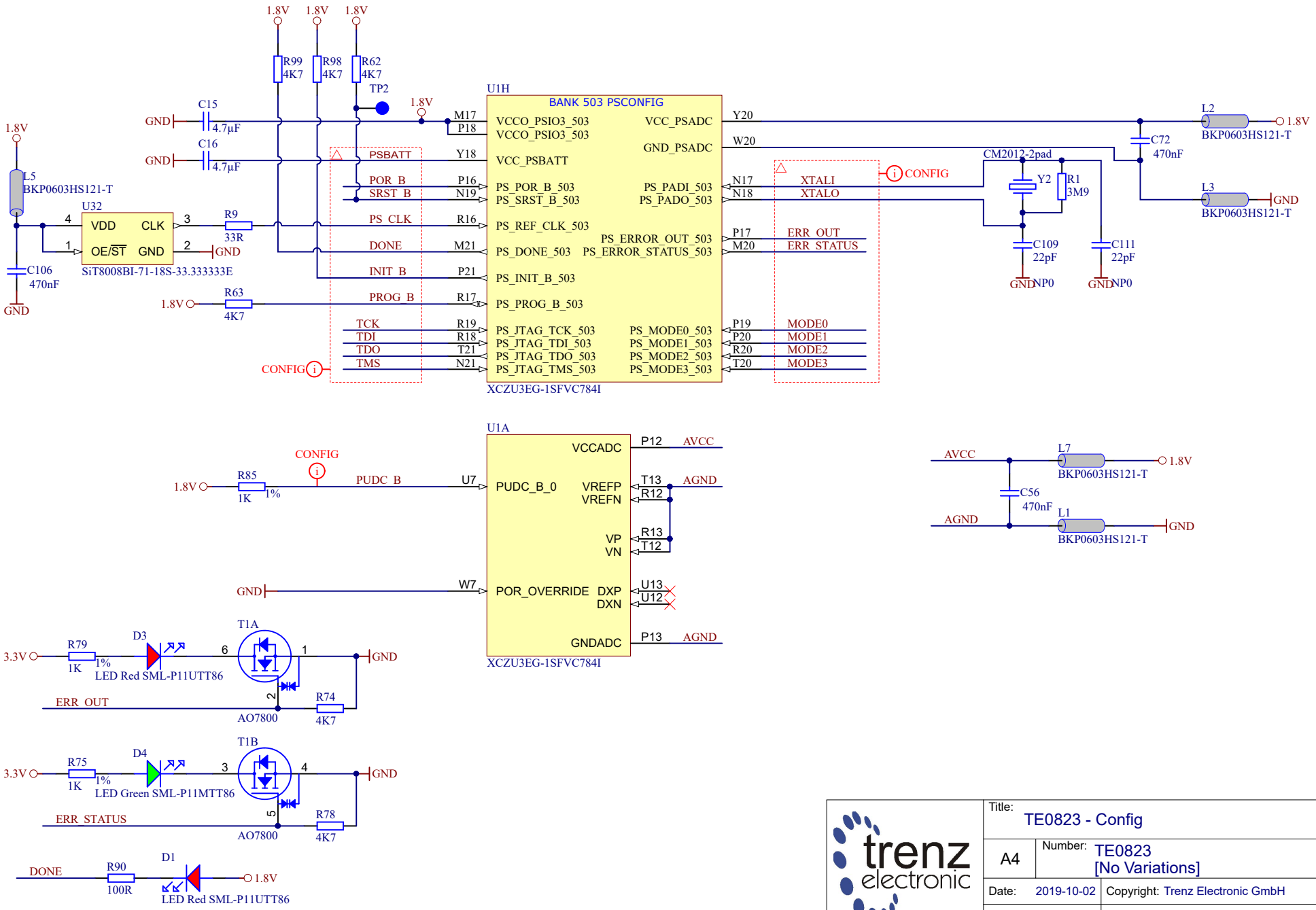
B65(HP) 16 IO, 8 LVDS Pairs
USB OTG
ETH SGMII
PS_GTR 4 Lanes
PS_GTR CLK IN
PLL CLK IN

group 3 0..VCCO_65



VCCO64, VCCO65, VCCO66 ->>> max. 1.8V (HP bank's)

trenz electronic	Title: TE0823 - B2B Connectors		
A4	Number: TE0823 [No Variations]		Rev. 01
Date: 2019-10-02	Copyright: Trenz Electronic GmbH		Page 6 of 25
Drawn by: VY	Filename: B2B-Connectors_2.SchDoc		



Title: TE0823 - Config			
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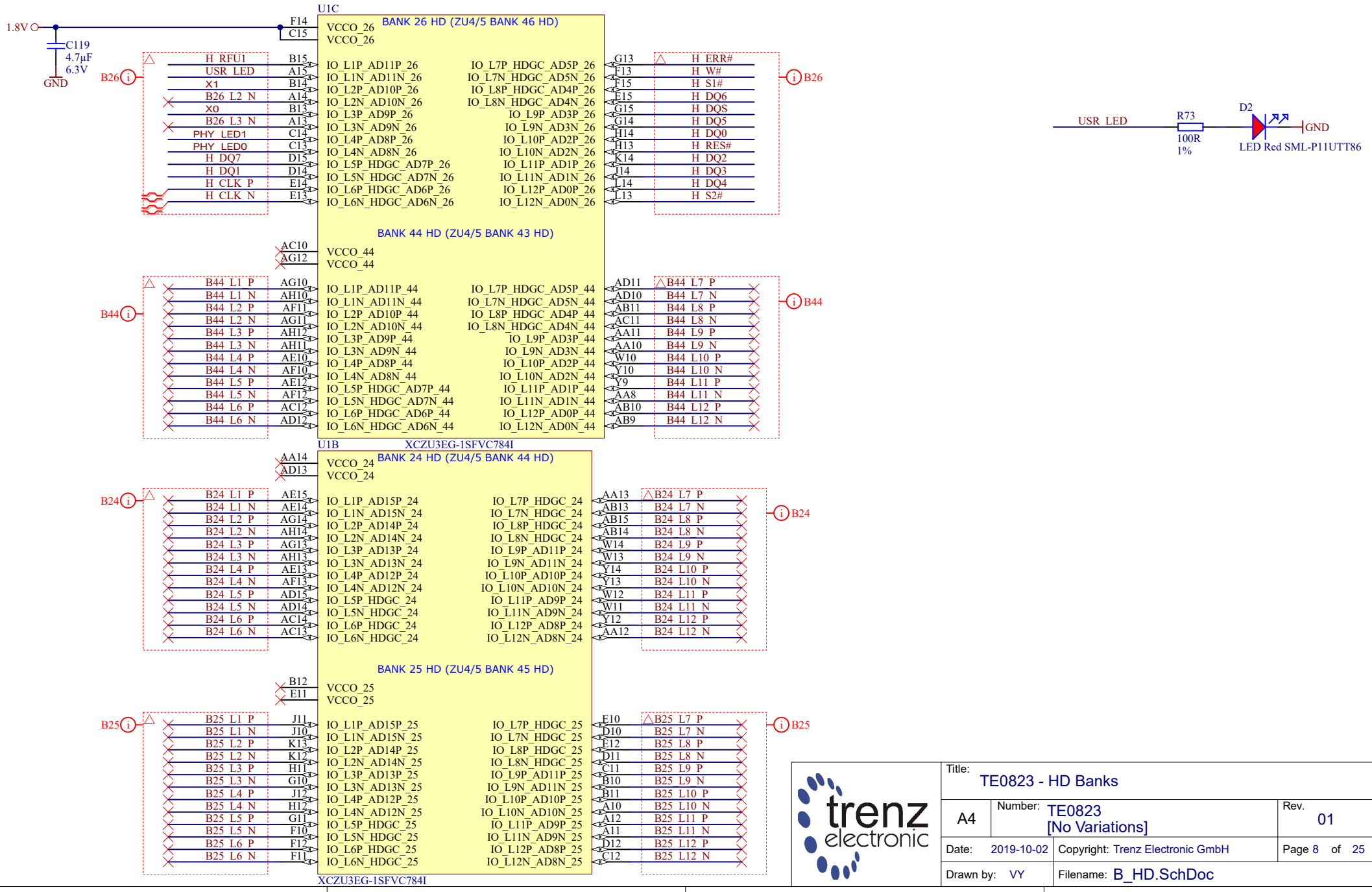
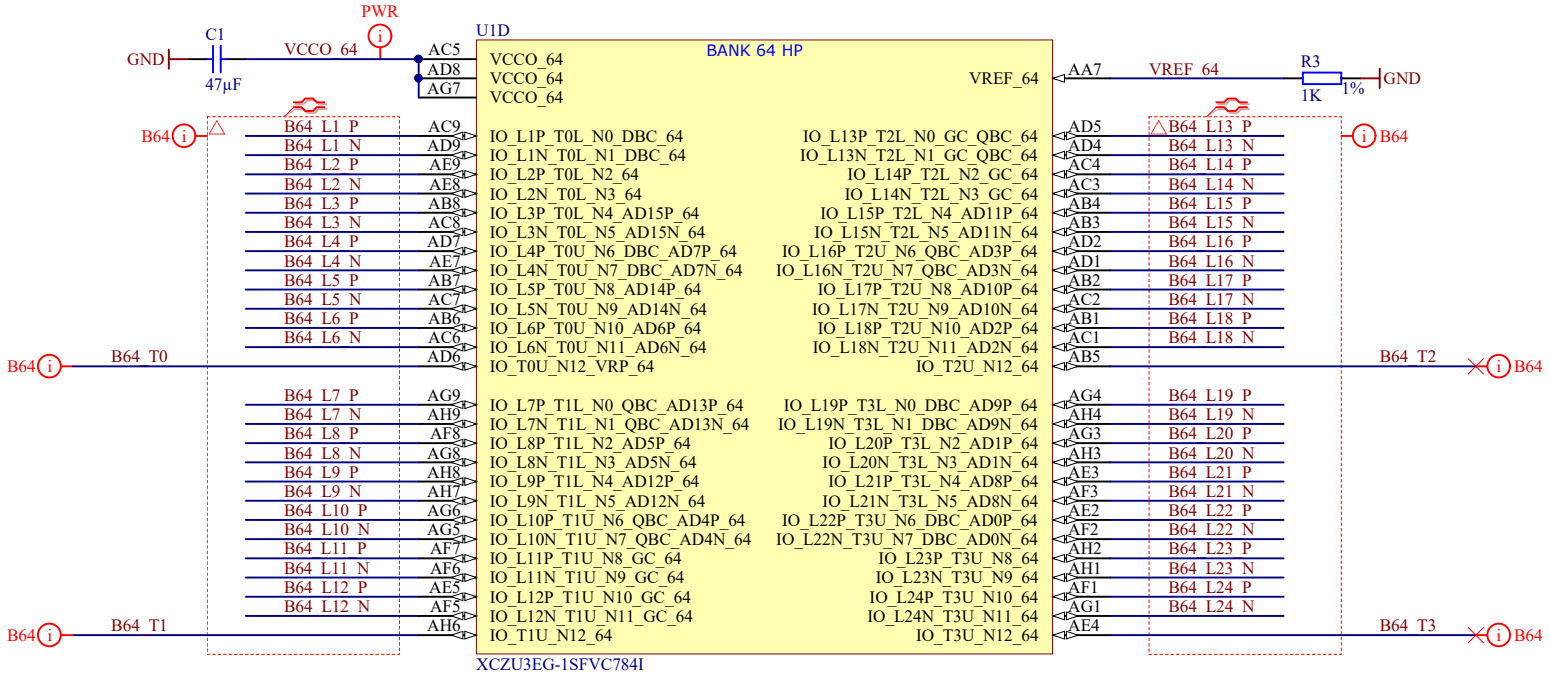
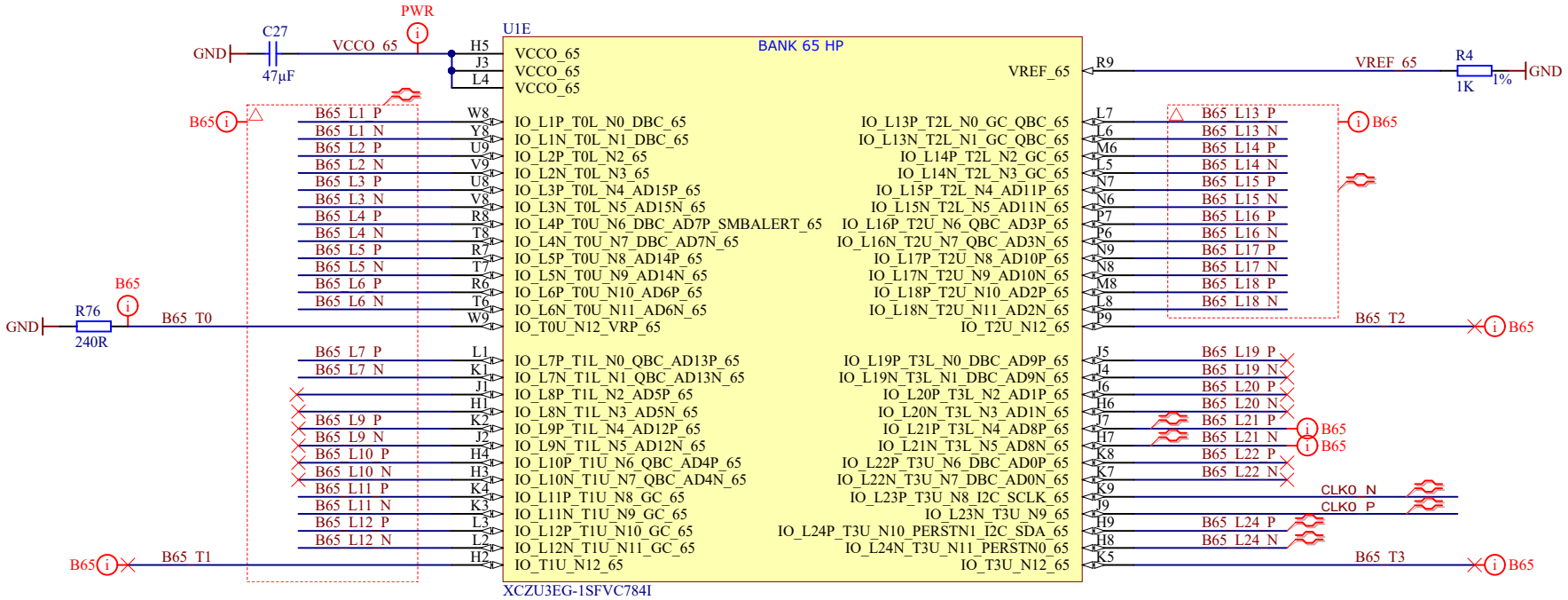
Date: 2019-10-02	Copyright: Trenz Electronic GmbH		Page 7 of 25
Drawn by: VY	Filename: CONFIG.SchDoc		



Title: TE0823 - HD Banks			
A4	Number: TE0823 [No Variations]		Rev. 01
Date: 2019-10-02	Copyright: Trenz Electronic GmbH		Page 8 of 25
Drawn by: VY	Filename: B_HD.SchDoc		



trenz electronic	Title: TE0823 - B64		
A4	Number: TE0823 [No Variations]		Rev. 01
Date: 2019-10-02	Copyright: Trenz Electronic GmbH		Page 9 of 25
Drawn by: VY	Filename: B64.SchDoc		



trenz electronic	Title: TE0823 - B65		
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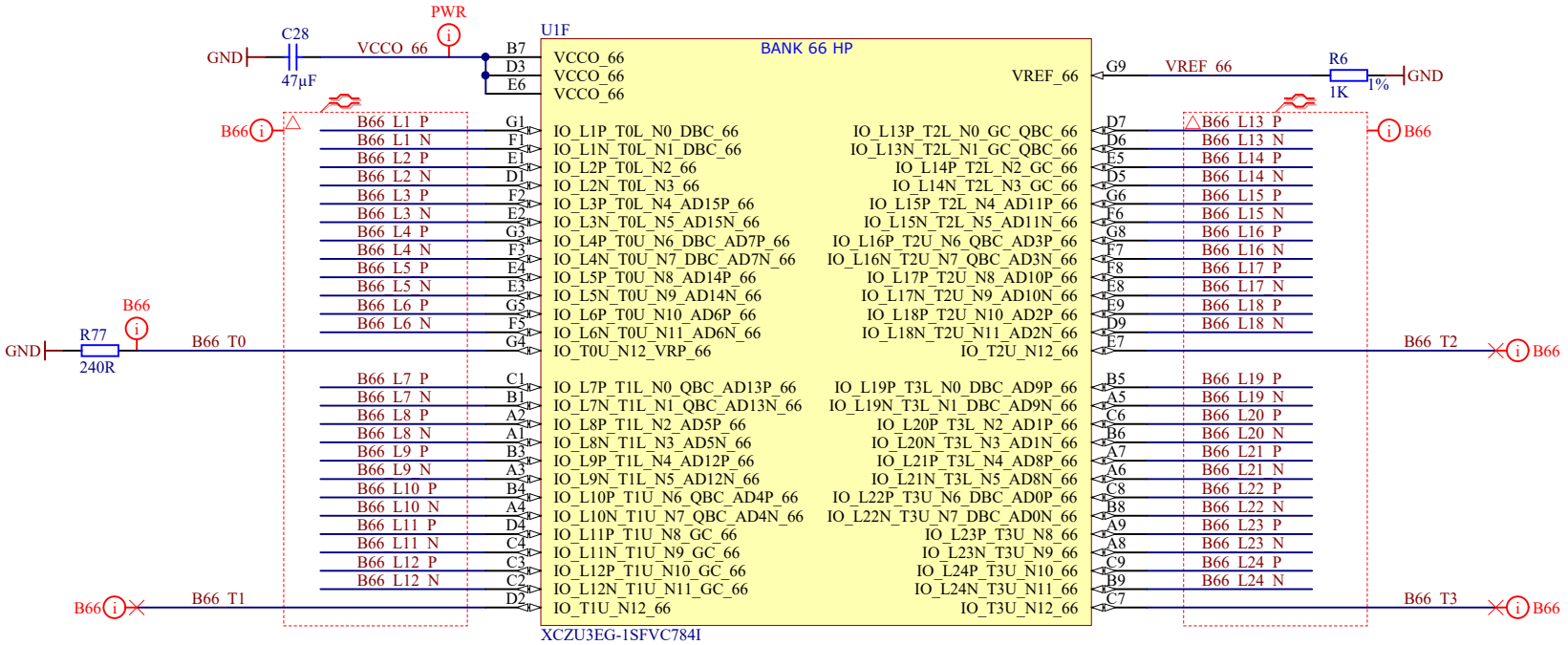
Date: 2019-10-02	Copyright: Trenz Electronic GmbH		Page 10 of 25
Drawn by: VY	Filename: B65.SchDoc		



trenz electronic	Title: TE0823 - B66		
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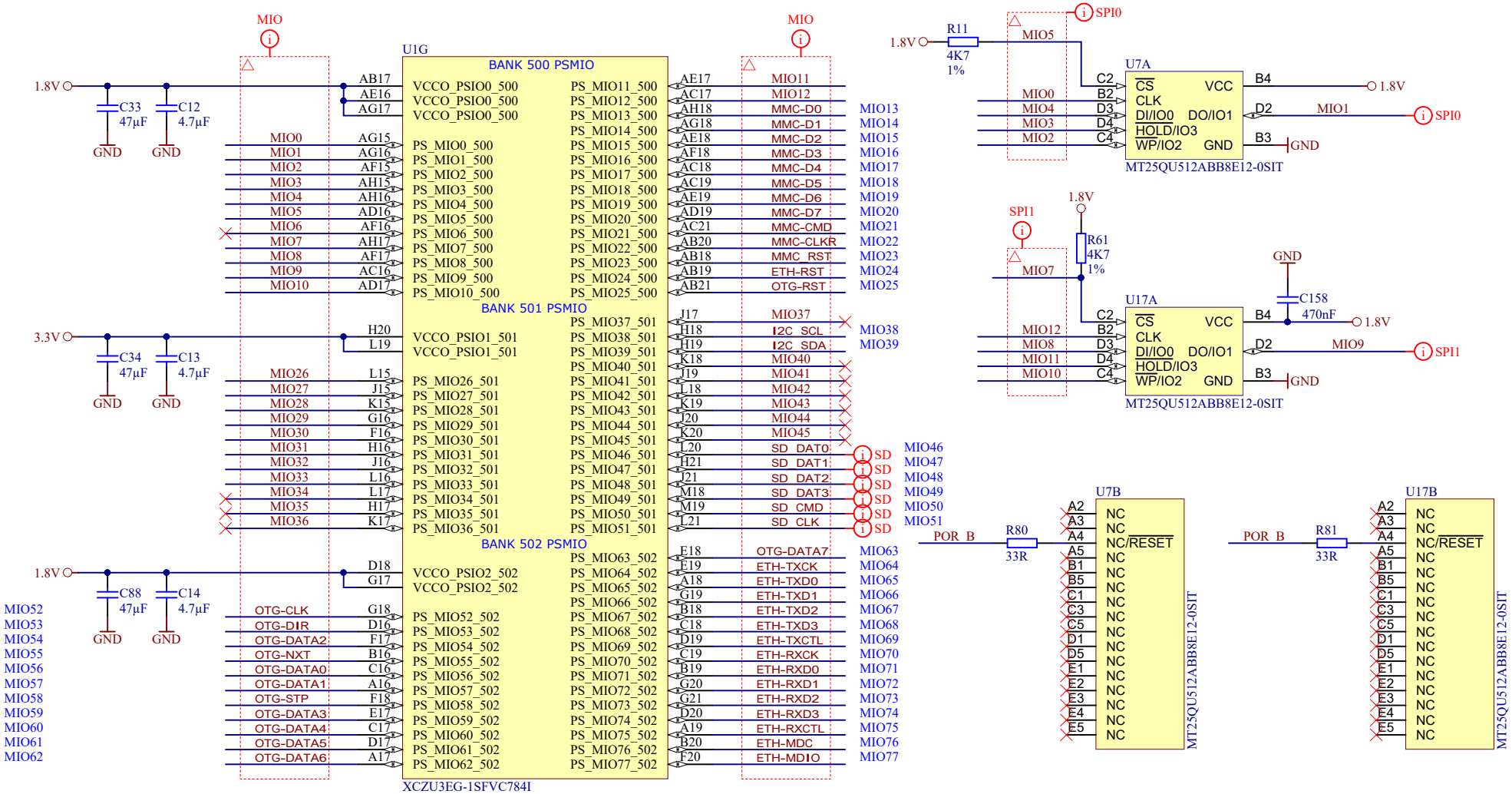
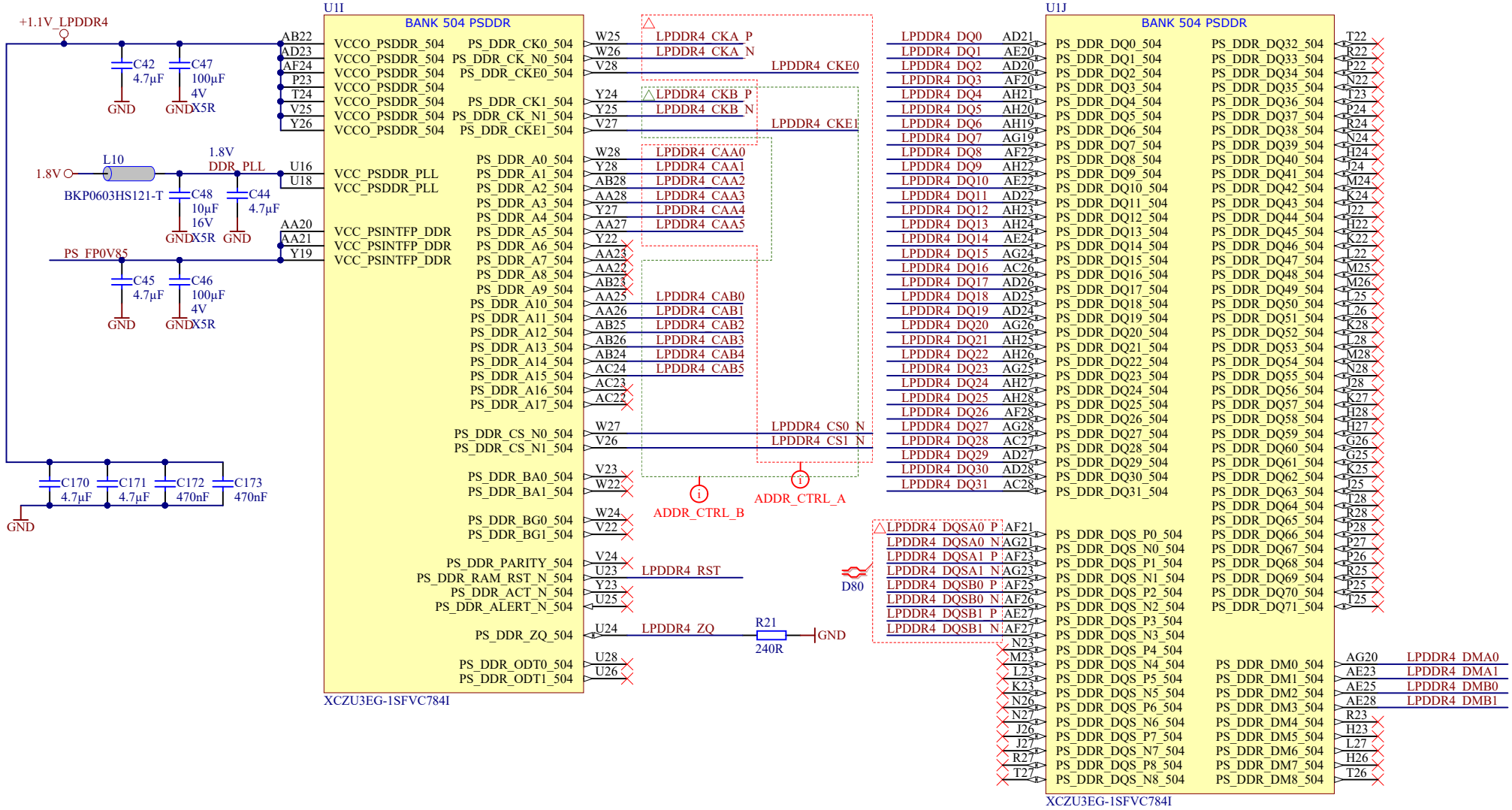
	Date: 2019-10-02	Copyright: Trenz Electronic GmbH	Page 11 of 25
	Drawn by: VY	Filename: B66.SchDoc	



trenz electronic	Title: TE0823 - MIO Banks		
A4	Number: TE0823 [No Variations]		Rev. 01
Date: 2019-10-02	Copyright: Trenz Electronic GmbH		Page 12 of 25
Drawn by: VY	Filename: B_MIO.SchDoc		



Title: TE0823 - PS_DDR			
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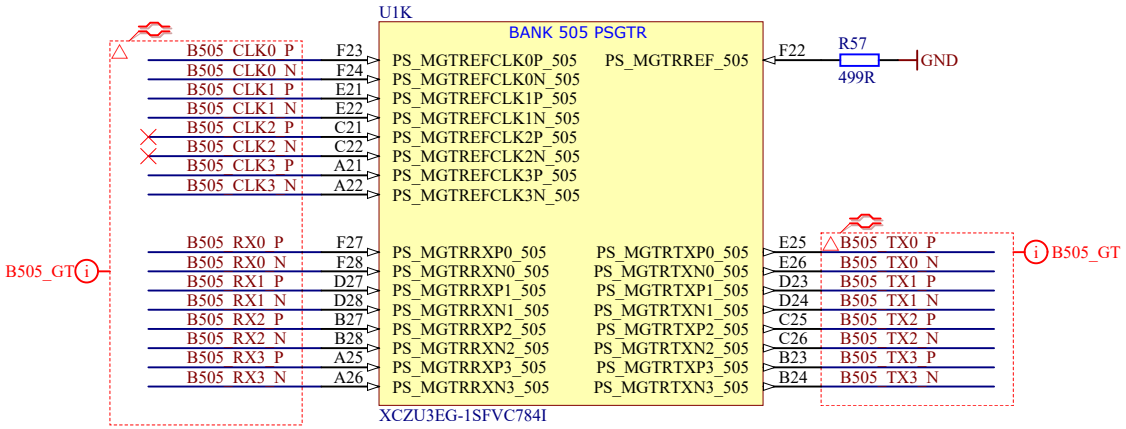
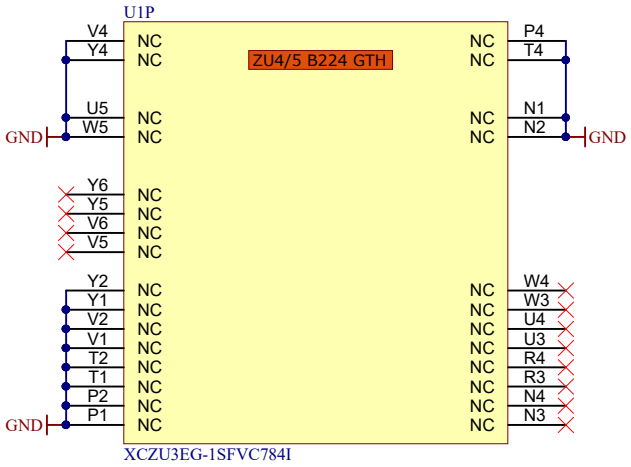
Date: 2019-10-02	Copyright: Trenz Electronic GmbH		Page 13 of 25
Drawn by: VY	Filename: PS_DDR.SchDoc		





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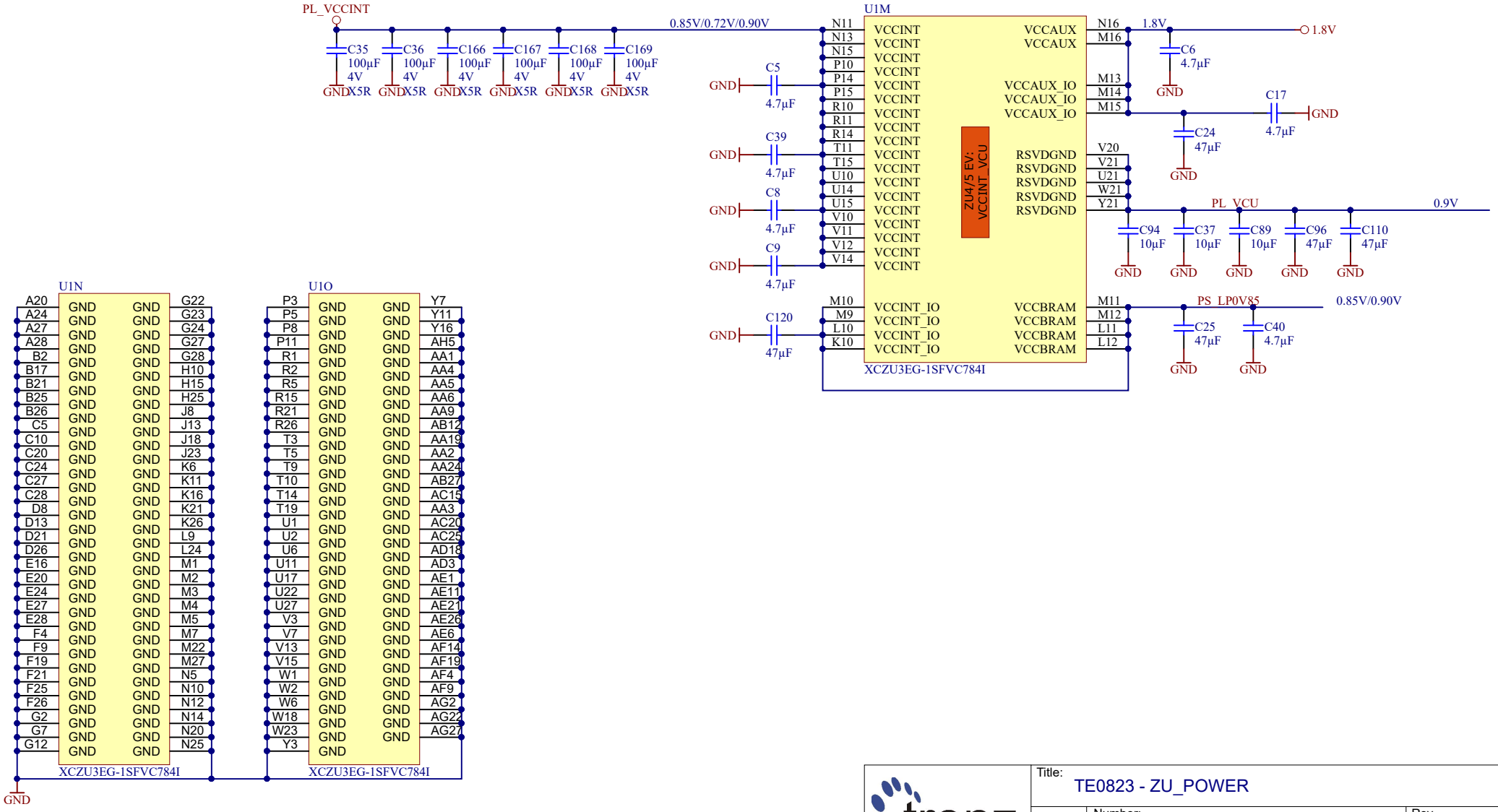
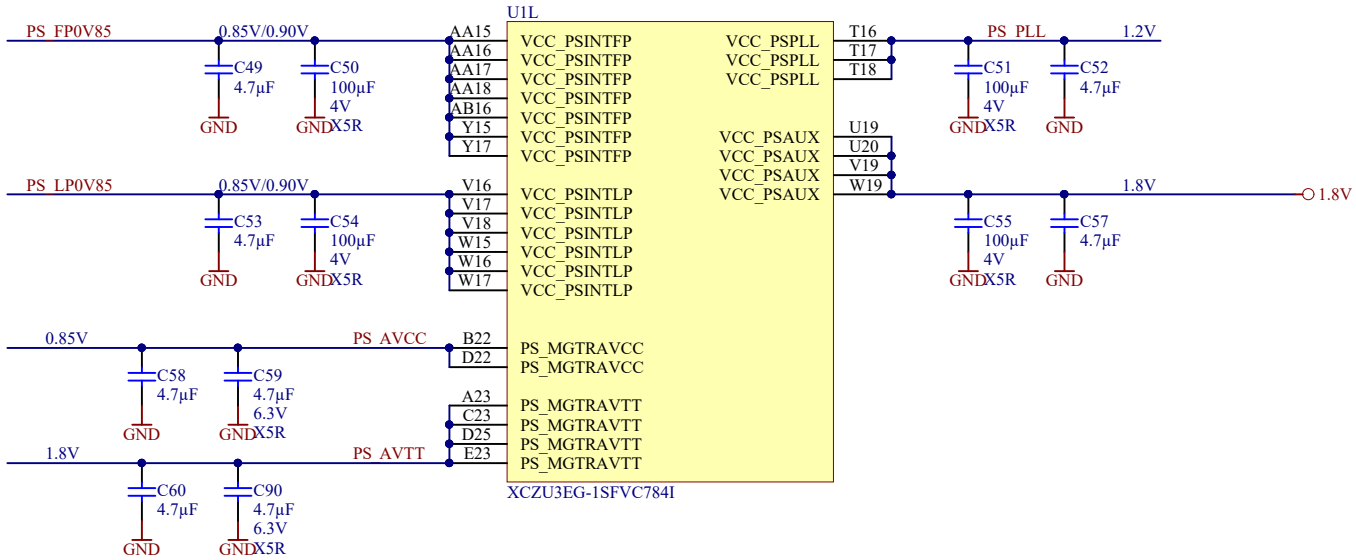
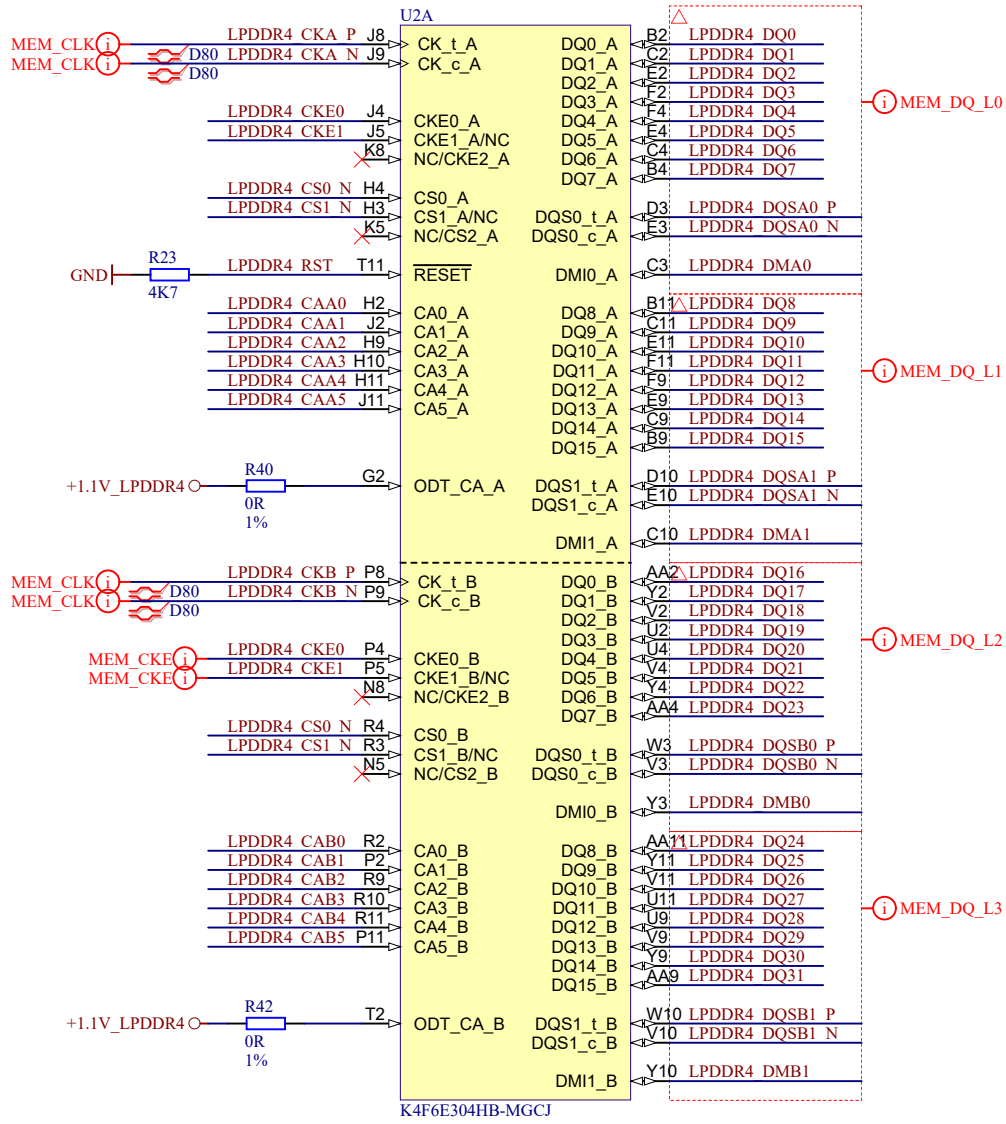
Title: TE0823 - PS_GT			
A4	Number: TE0823 [No Variations]		Rev. 01
Date: 2019-10-02	Copyright: Trenz Electronic GmbH		Page 14 of 25
Drawn by: VY	Filename: B_PS_GT.SchDoc		

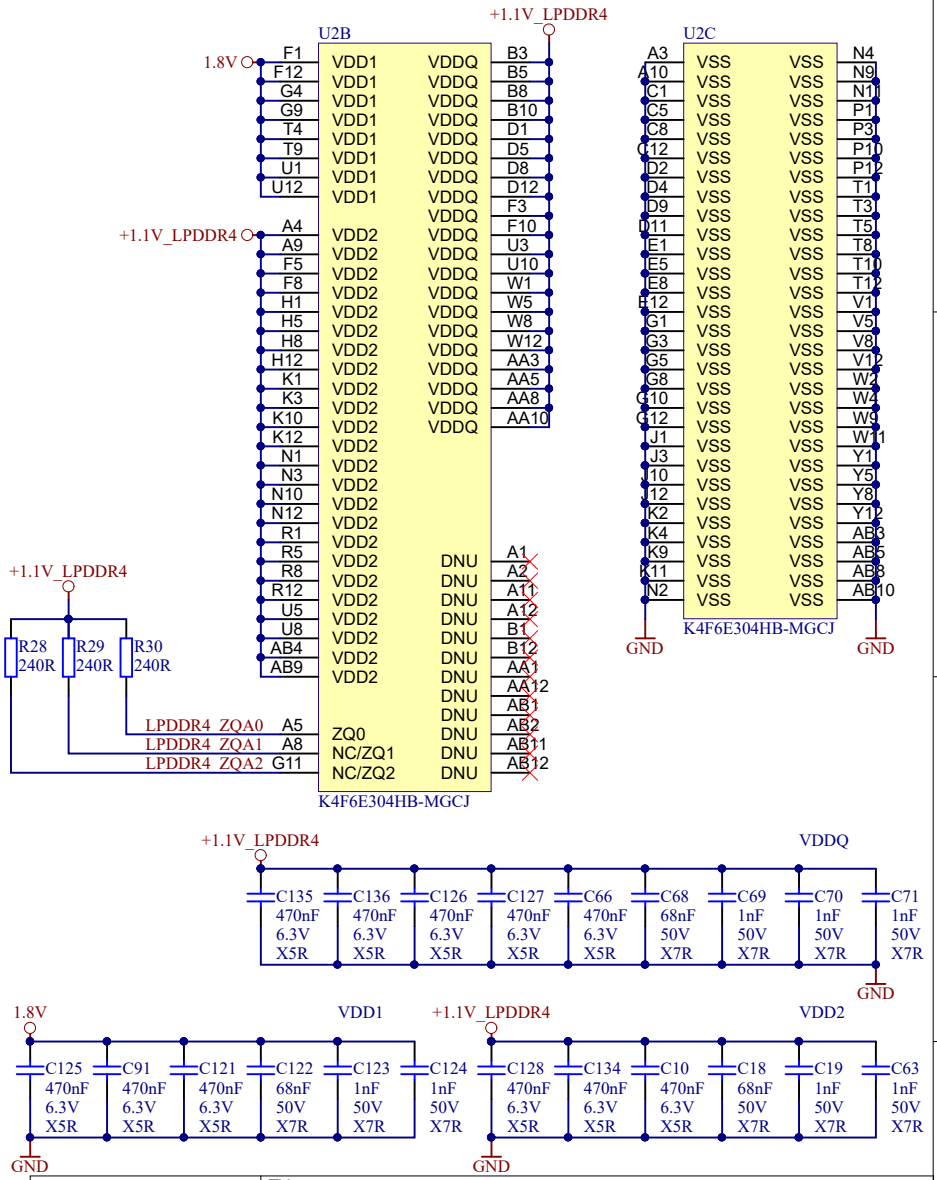


trenz electronic	Title: TE0823 - ZU_POWER		
A4	Number: TE0823 [No Variations]		Rev. 01
Date: 2019-10-02	Copyright: Trenz Electronic GmbH		Page 15 of 25
Drawn by: VY	Filename: ZU_POWER.SchDoc		



trenz electronic	Title: TE0823 - ZU_PS_POWER		
A4	Number: TE0823 [No Variations]		Rev. 01
Date: 2019-10-02	Copyright: Trenz Electronic GmbH		Page 16 of 25
Drawn by: VY	Filename: ZU_PS_POWER.SchDoc		





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Title: TE0823 - LPDDR4			
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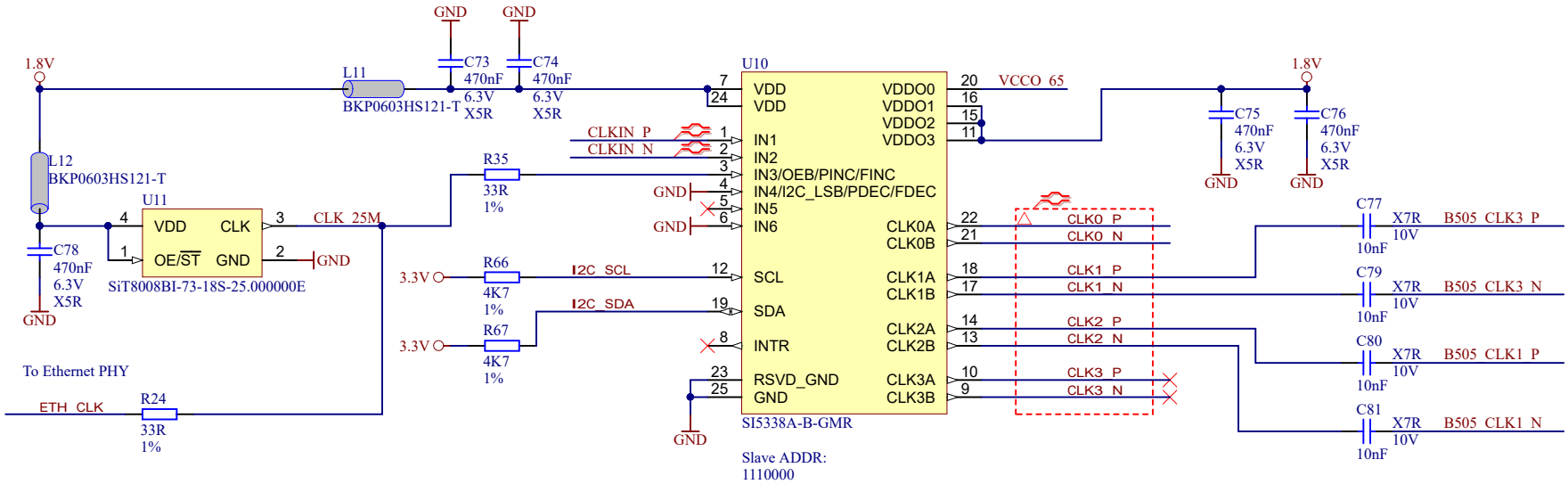
Date: 2019-10-02	Copyright: Trenz Electronic GmbH		Page 17 of 25
Drawn by: VY	Filename: LPDDR4.SchDoc		



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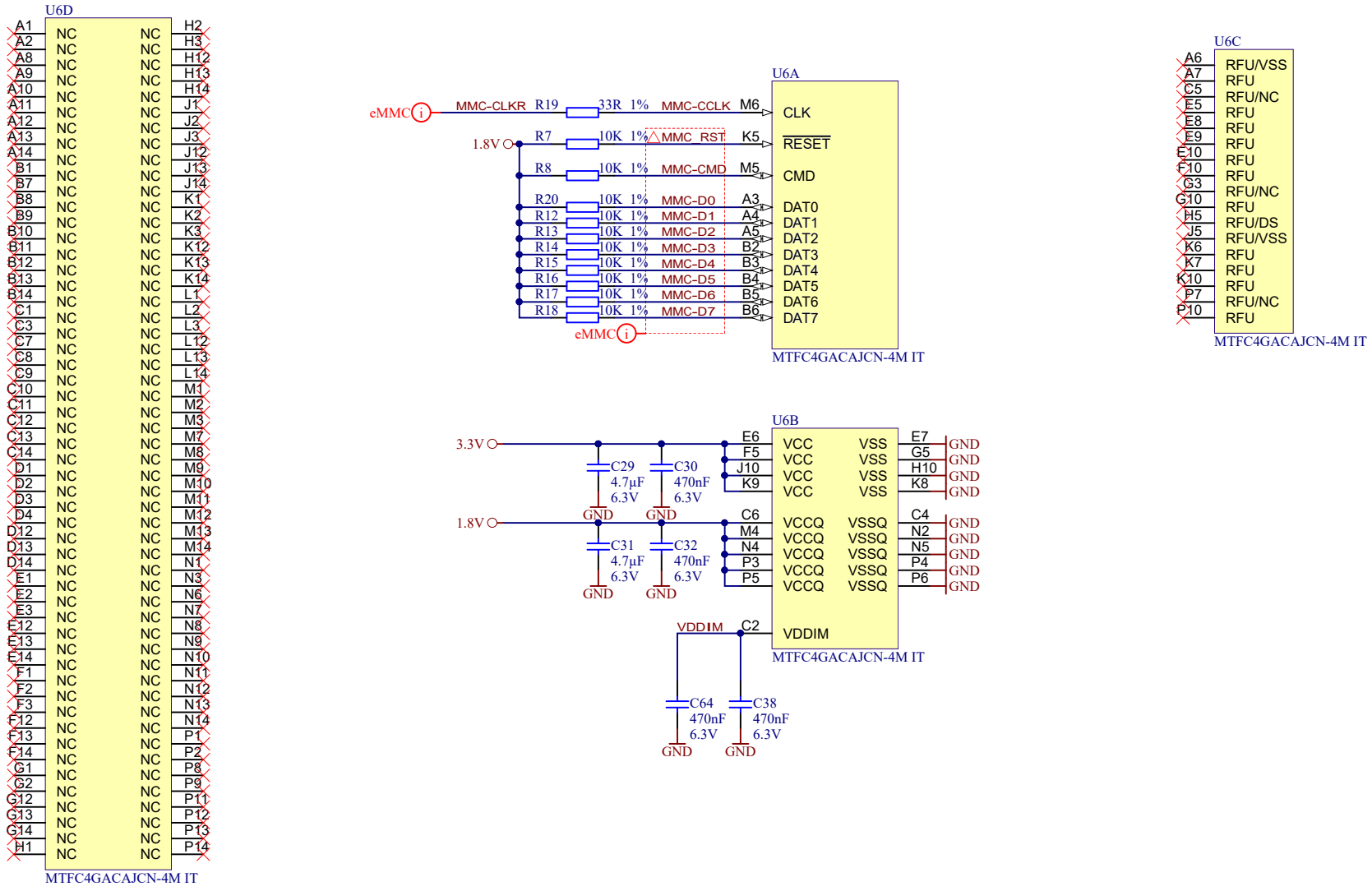
Date: 2019-10-02	Copyright: Trenz Electronic GmbH		Page 18 of 25
Drawn by: VY	Filename: CLK.SchDoc		



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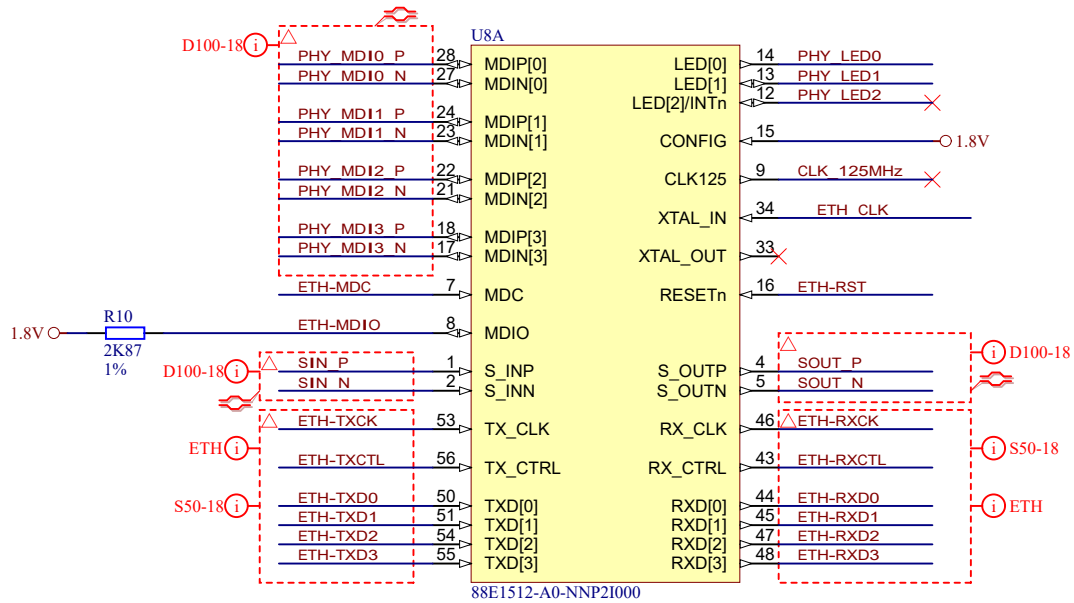
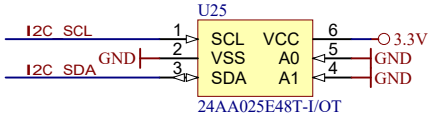
Date: 2019-10-02	Copyright: Trenz Electronic GmbH	Page 19 of 25
Drawn by: VY	Filename: eMMC.SchDoc	



EEPROM for MAC



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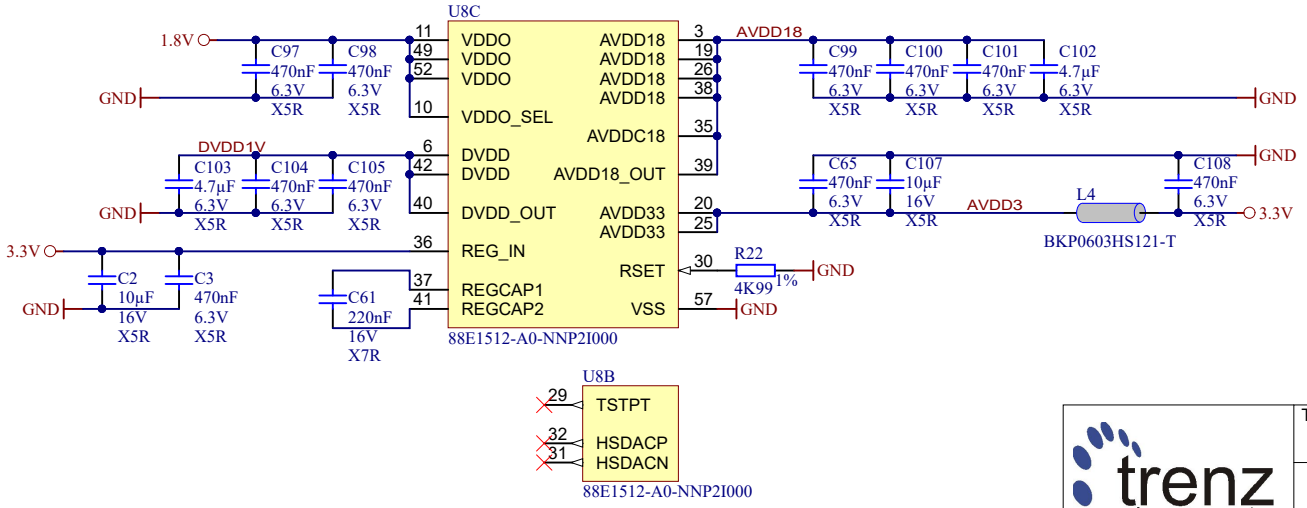

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Title: TE0823 - Ethernet PHY			
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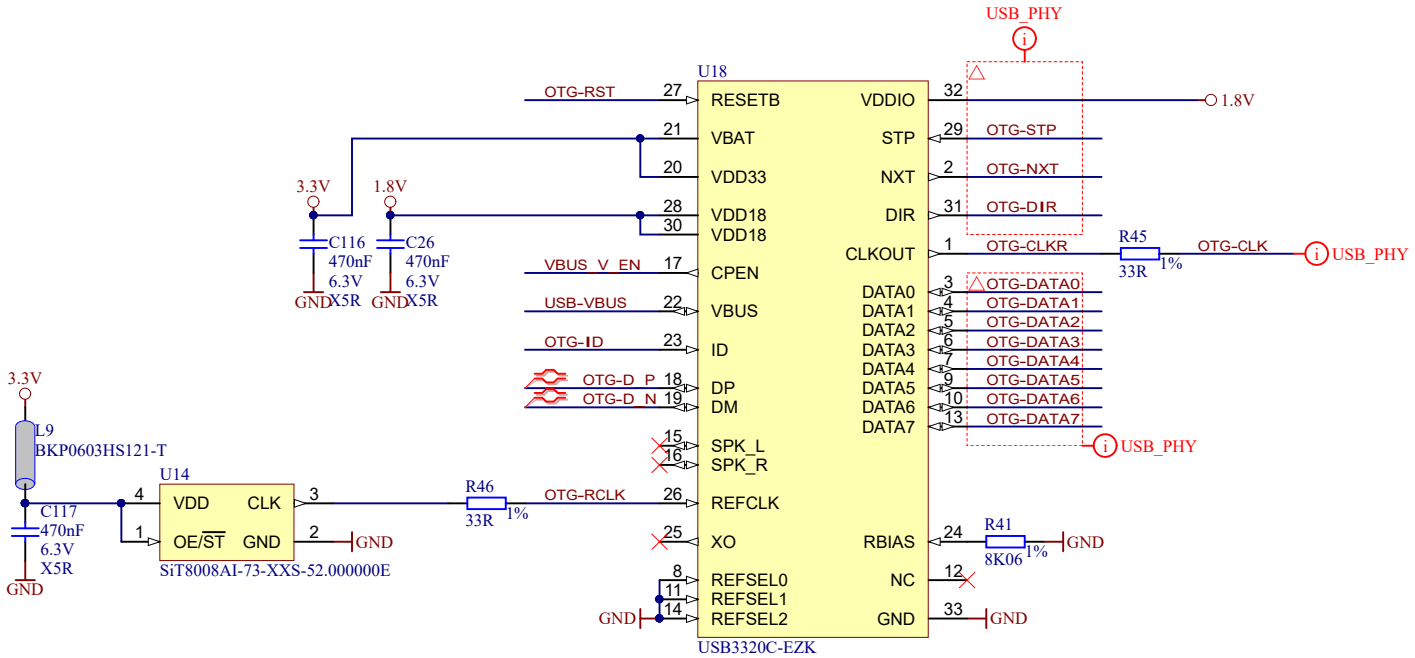
Date: 2019-10-02	Copyright: Trenz Electronic GmbH		Page 20 of 25
Drawn by: VY	Filename: ETH-PHY.SchDoc		



Title: TE0823 - USB2.0 PHY			
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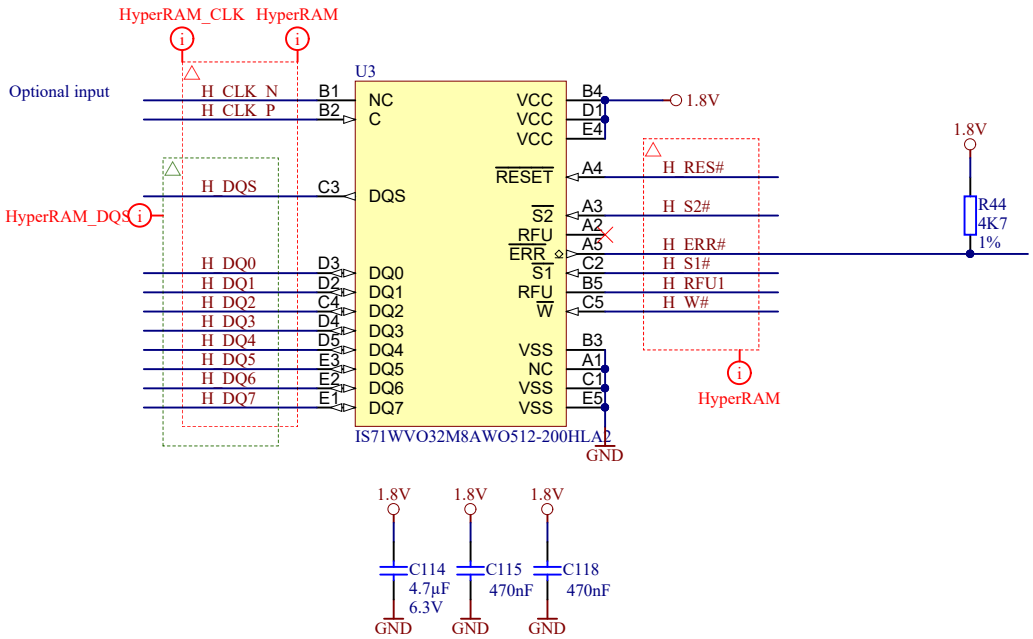
Date: 2019-10-02	Copyright: Trenz Electronic GmbH		Page 21 of 25
Drawn by: VY	Filename: USB-PHY.SchDoc		



Title: TE0823 - HyperRAM/HyperFLASH			
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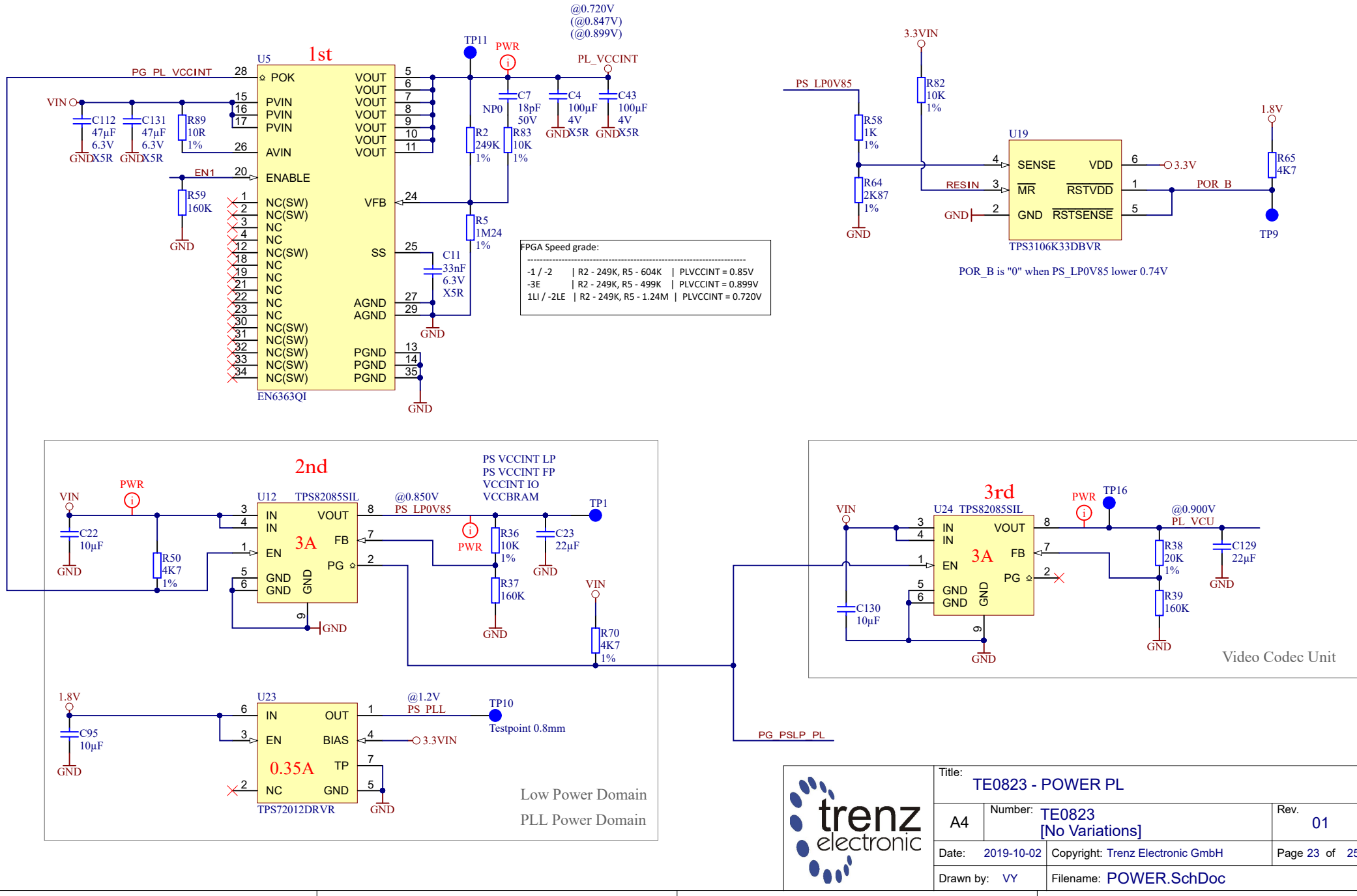
Date: 2019-10-02	Copyright: Trenz Electronic GmbH		Page 22 of 25
Drawn by: VY	Filename: HyperRAM.SchDoc		


1st
U5
EN6363QI
PG_PL_VCCINT
VIN
EN1
PWR
TP11
PL_VCCINT
@0.720V
(@0.847V)
(@0.899V)
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
3.3VIN
PS_LP0V85
U19
TPS3106K33DBVR
POR_B
TP9
POR_B is "0" when PS_LP0V85 lower 0.74V
2nd
U12 TPS82085SIL
3A
@0.850V
PS_LP0V85
PS VCCINT LP
PS VCCINT FP
VCCINT IO
VCCBRAM
TP1
U23
TPS72012DRVR
0.35A
@1.2V
PS_PLL
TP10
Testpoint 0.8mm
Low Power Domain
PLL Power Domain
PG_PSLP_PL
3rd
U24 TPS82085SIL
3A
TP16
@0.900V
PL_VCU
Video Codec Unit
trenz electronic
Title: TE0823 - POWER PL
A4
Number: TE0823 [No Variations]
Rev. 01
Date: 2019-10-02
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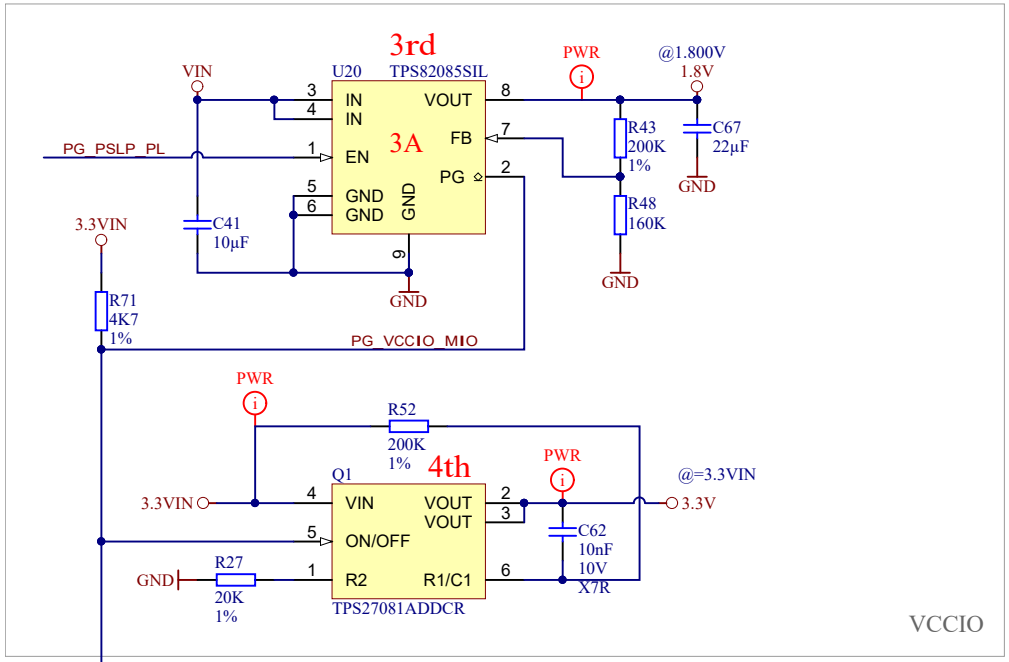
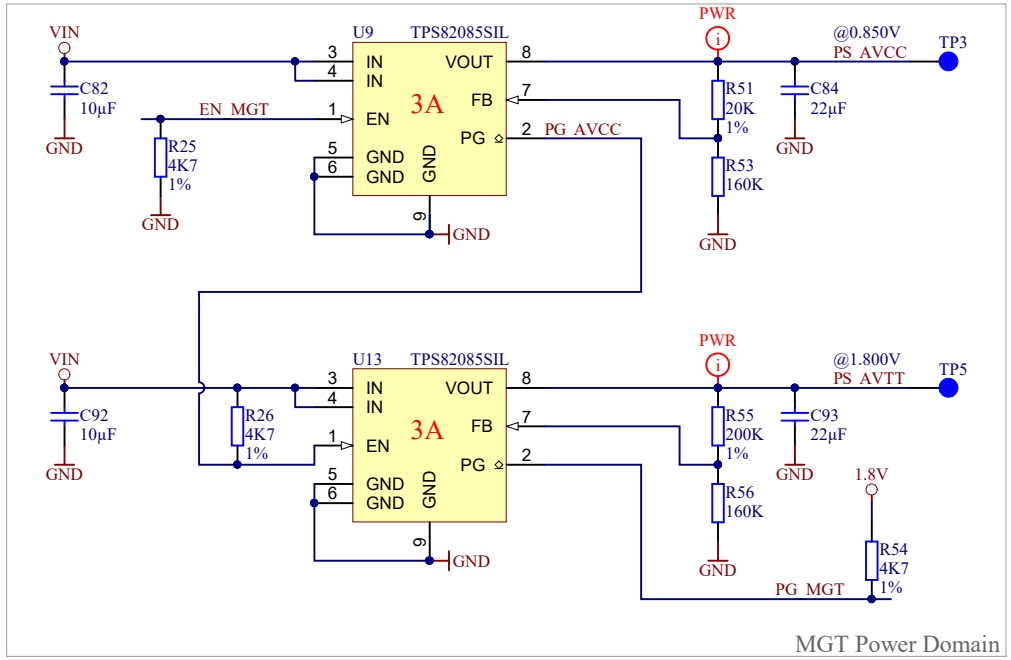
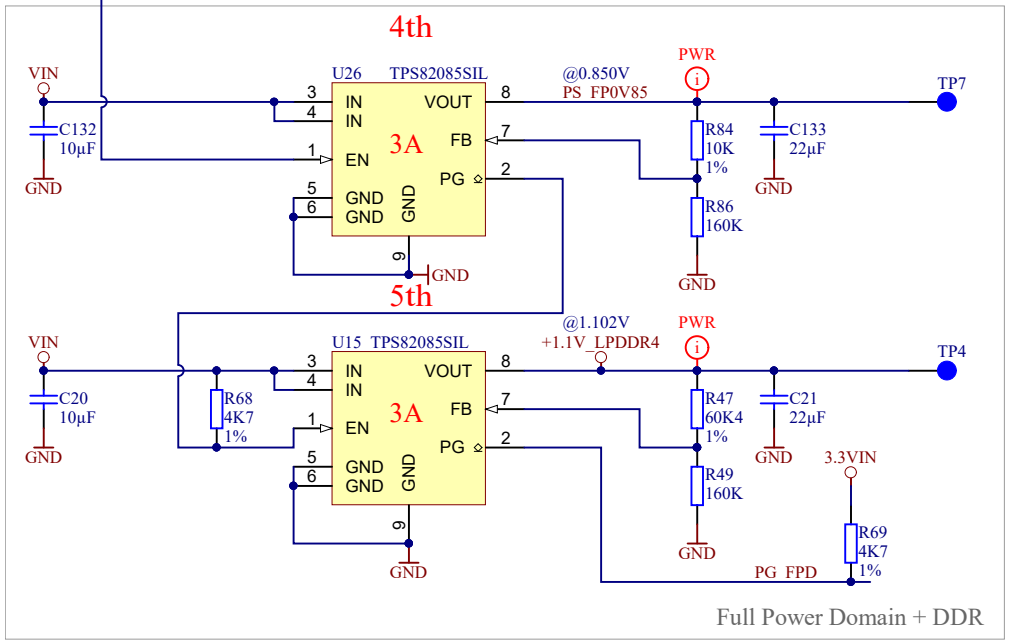
Drawn by: VY
Filename: POWER.SchDoc







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Title: TE0823 - POWER PS_DDR			
A4	Number: TE0823 [No Variations]		Rev. 01
Date: 2019-10-02	Copyright: Trenz Electronic GmbH		Page 24 of 25
Drawn by: VY	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: added block diagram
2. VY: added page "Legal notices"
3. VY: R51 value was changed to 10K (was: 20K) to set PS_VCU 0.85V

trenz electronic	Title: TE0823 - Revision Changes List		
	A4	Number: TE0823 [No Variations]	Rev. 01
	Date: 2019-10-02	Copyright: Trenz Electronic GmbH	Page 25 of 25
	Drawn by: VY	Filename: Revision Changes.SchDoc	