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_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_DDR4-RAM_2
DDR4-RAM_2.SchDoc

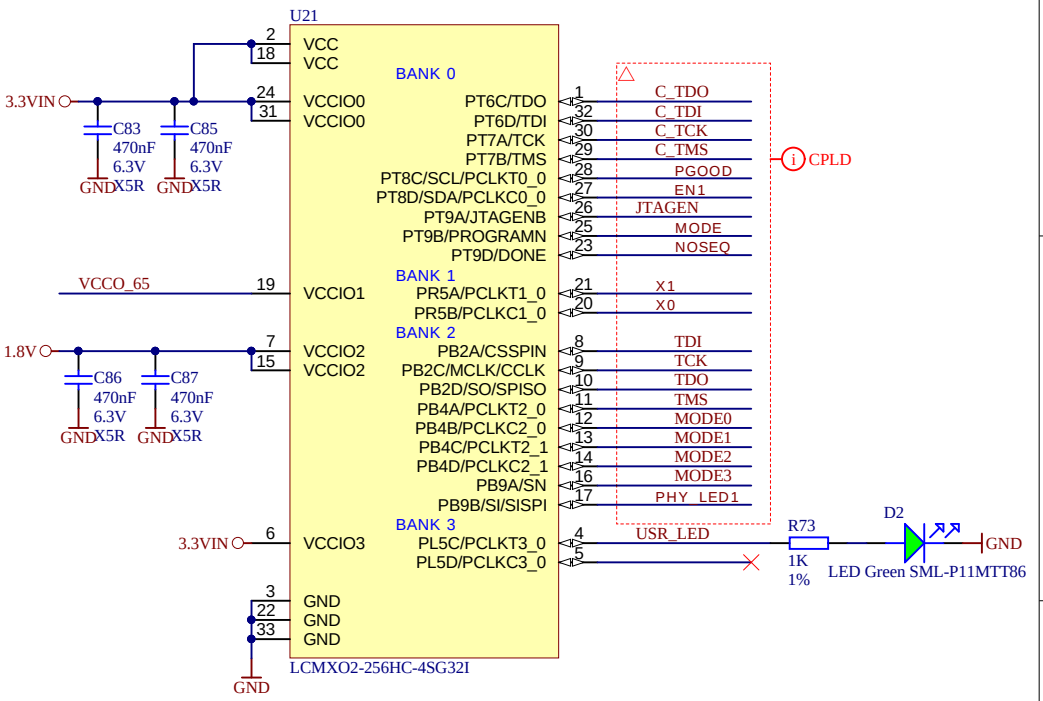
U_DDR4-RAM
DDR4-RAM.SchDoc

U_POWER
POWER.SchDoc

U_POWER_1
POWER_1.SchDoc

Serial
Serial
Serialnumber 6,3 x 6.3mm

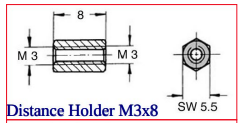
S/N
GND 1 0R 2 GND
Serialnumber



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

Screw M3x4
Screw M3x4
Screw M3x4
Screw M3x4



Distance Holder M3x8
Distance Holder M3x8
Distance Holder M3x8
Distance Holder M3x8

Screw M3x6
Screw M3x6
Screw M3x6
Screw M3x6

Assembly variant	02CG-1EA
Created by	VariantCreatedBy
Modified by	VariantModifiedBy
Modified at	VariantDateModification
SVN Revision	8646

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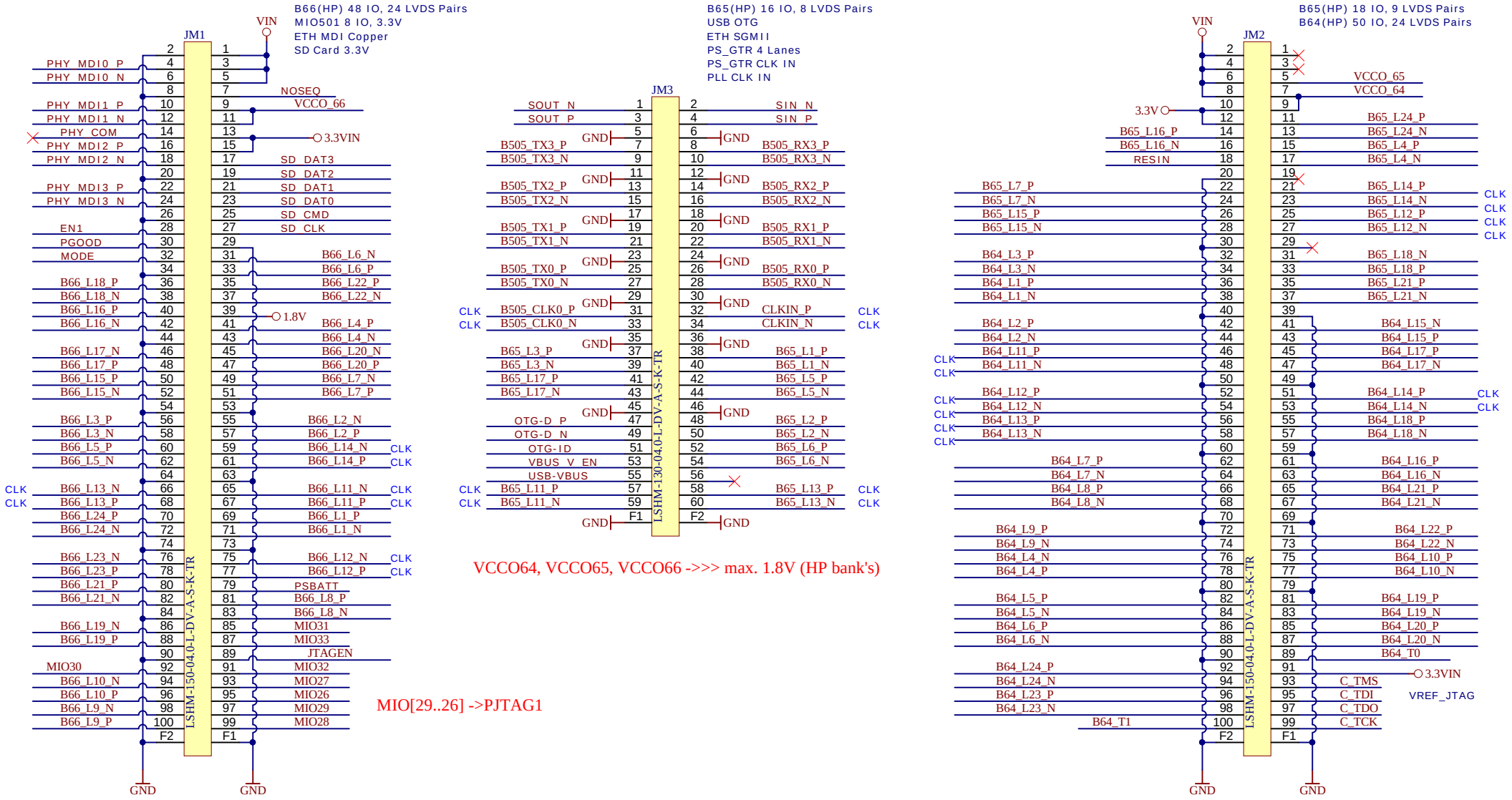
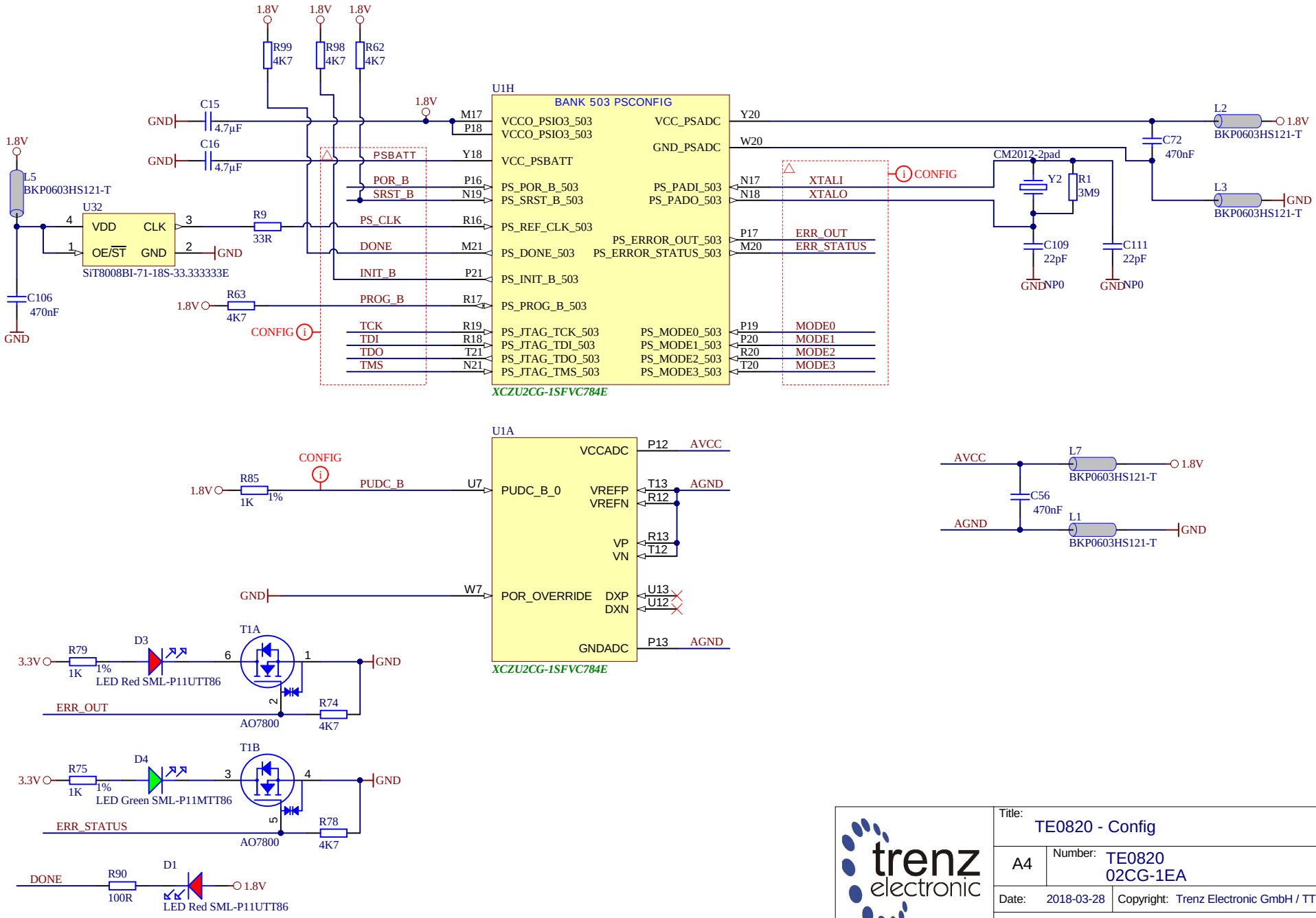
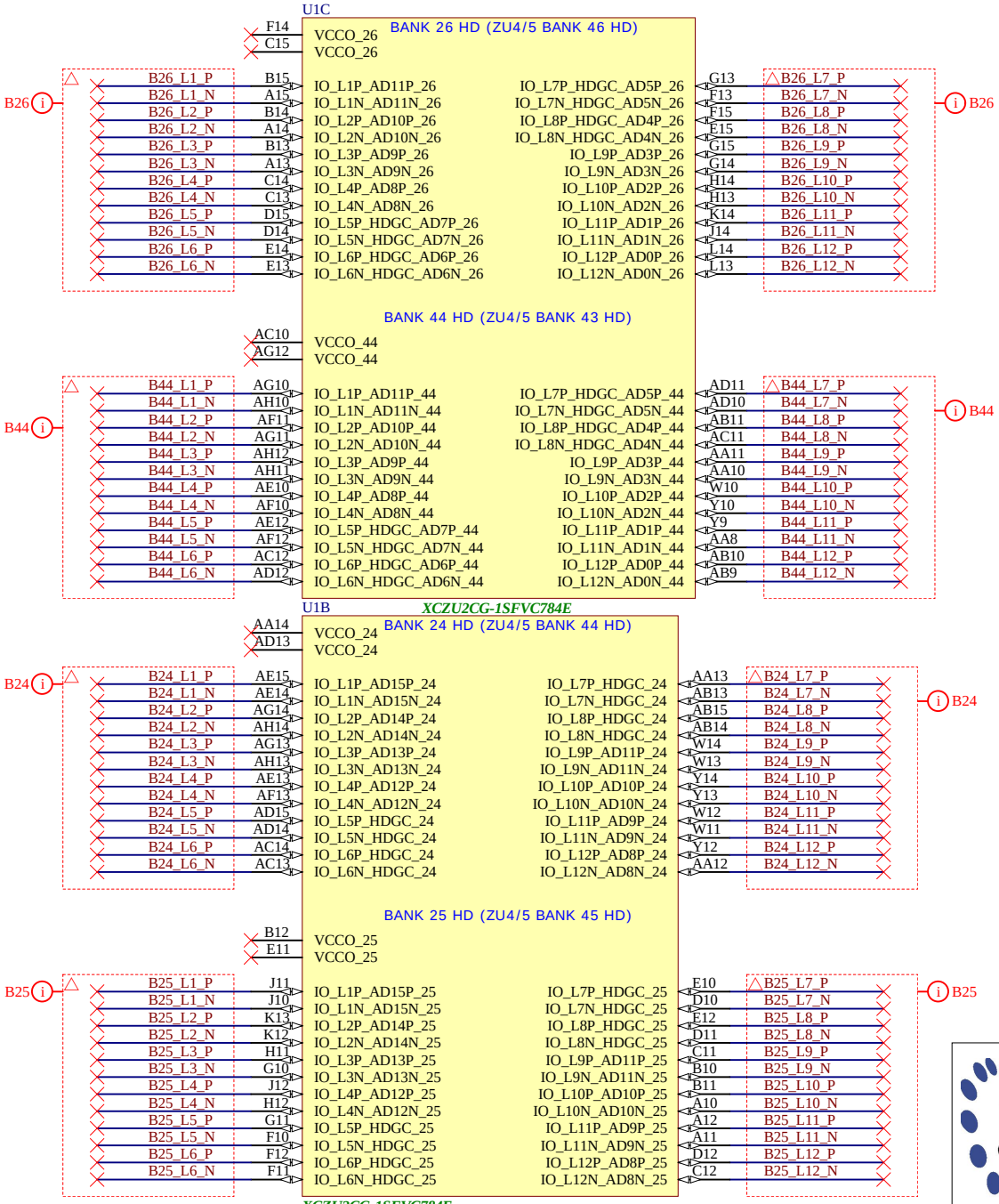
Title: TE0820		
A4	Number: TE0820 02CG-1EA	Rev. 03
Date: 2018-03-28	Copyright: 2015 Trenz Electronic GmbH	Page 1 of 21
Filename: TE0820.SchDoc		



trenz electronic	Title: TE0820 - B2B Connectors		
A4	Number: TE0820 02CG-1EA		Rev. 03
Date: 2018-03-28	Copyright: 2015 Trenz Electronic GmbH		Page 2 of 21
Filename: B2B-Connectors.SchDoc			



trenz electronic	Title: TE0820 - Config		
	A4	Number: TE0820 02CG-1EA	Rev. 03
	Date: 2018-03-28	Copyright: Trenz Electronic GmbH / TT	Page 3 of 21
	Filename: CONFIG.SchDoc		



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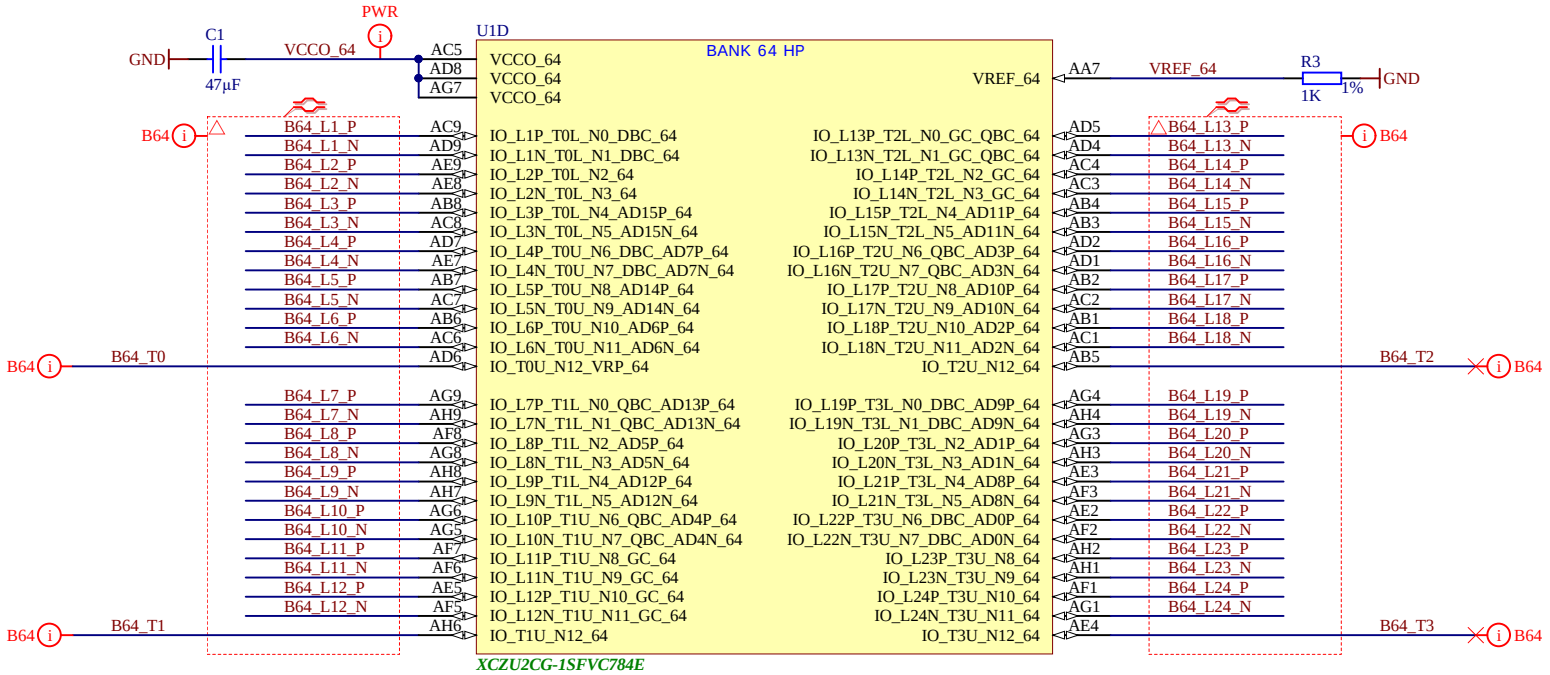
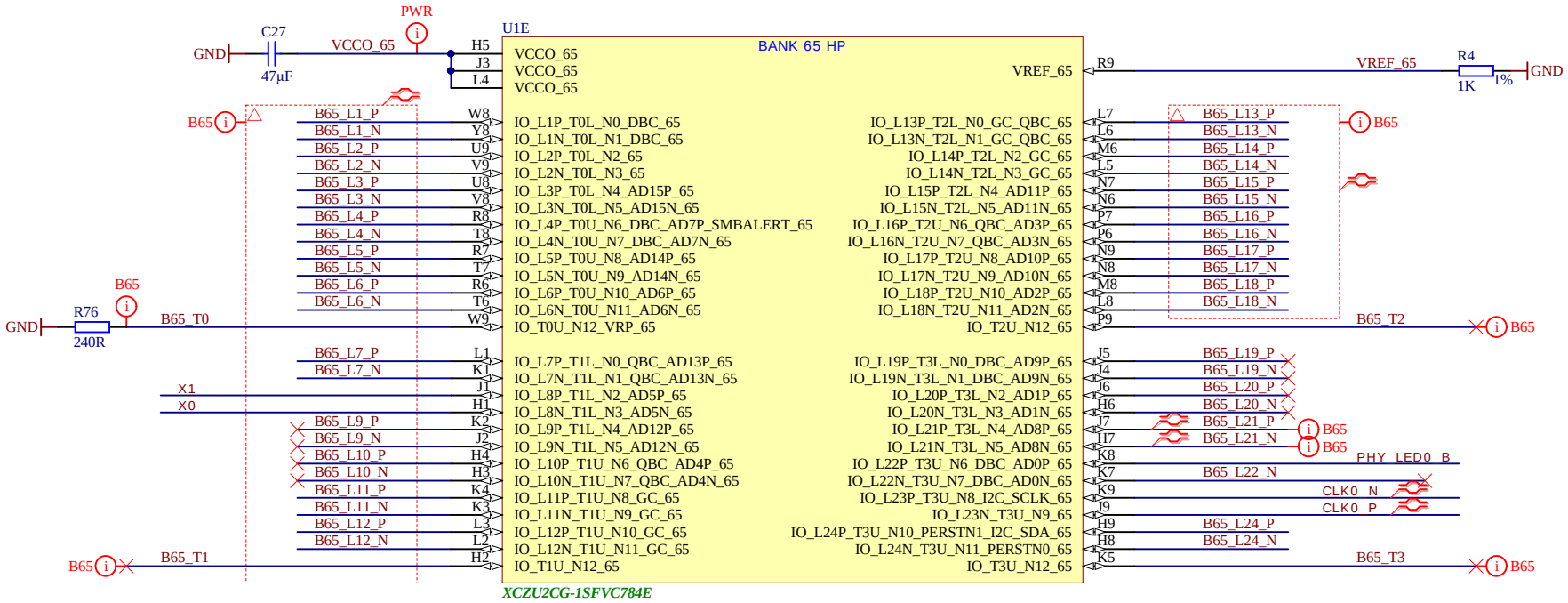
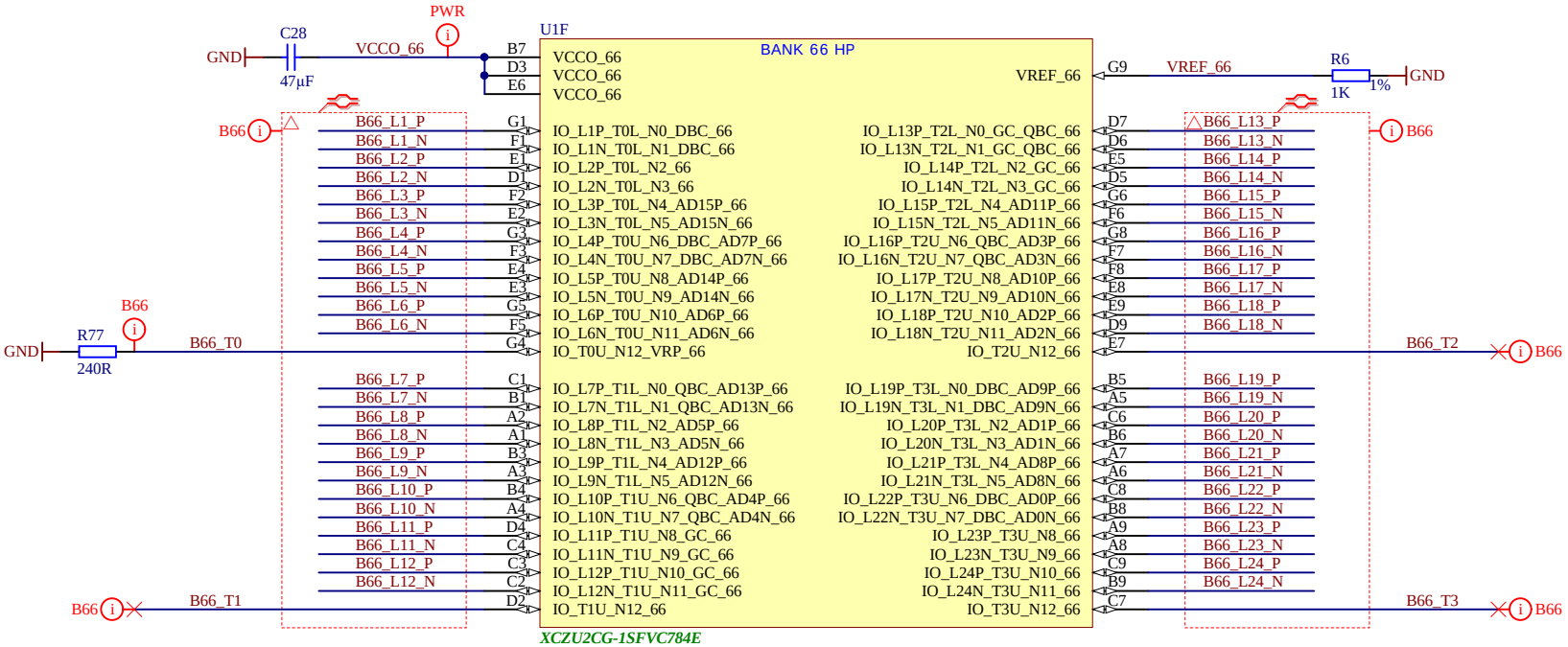
Title: TE0820 - HD Banks			
A4	Number: TE0820 02CG-1EA		Rev. 03
Date: 2018-03-28	Copyright: Trenz Electronic GmbH / TT		Page 4 of 21
Filename: B_HD.SchDoc			



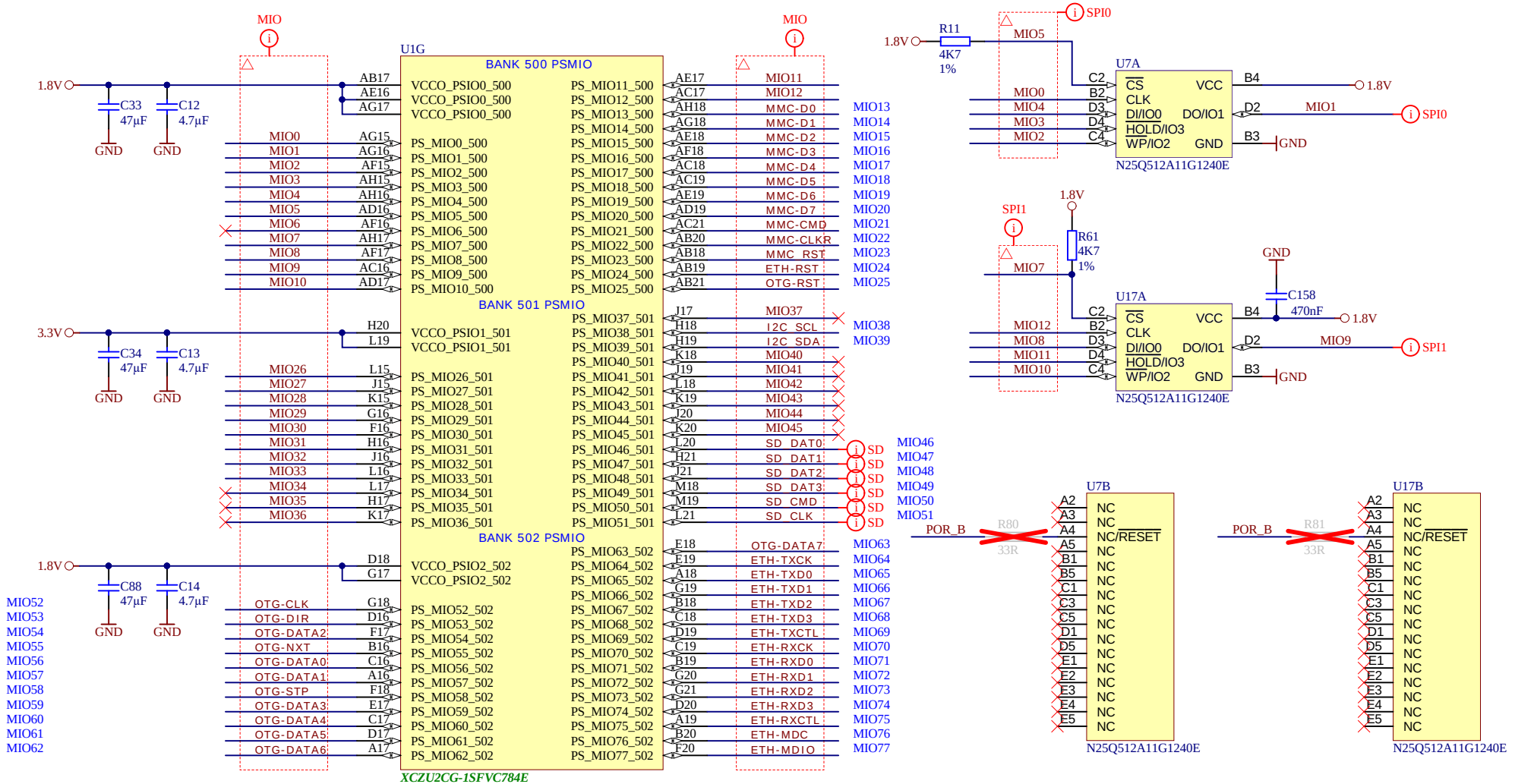
trenz electronic	Title: TE0820 - B64		
A4	Number: TE0820 02CG-1EA		Rev. 03
Date: 2018-03-28	Copyright: Trenz Electronic GmbH / TT		Page 5 of 21
Filename: B64.SchDoc			



trenz electronic	Title: TE0820 - B65		
	A4	Number: TE0820 02CG-1EA	Rev. 03
	Date: 2018-03-28	Copyright: Trenz Electronic GmbH / TT	Page 6 of 21
	Filename: B65.SchDoc		



Title: TE0820 - B66			
A4	Number: TE0820 02CG-1EA		Rev. 03
Date: 2018-03-28	Copyright: Trenz Electronic GmbH / TT		Page 7 of 21
Filename: B66.SchDoc			


U1G
BANK 500 PSMIO
BANK 501 PSMIO
BANK 502 PSMIO
XCZU2CG-1SFVC784E
1.8V
3.3V
C33 47µF
C12 4.7µF
C34 47µF
C13 4.7µF
C88 47µF
C14 4.7µF
GND
MIO
SPI0
SPI1
SD
R11 4K7 1%
R61 4K7 1%
U7A
U17A
N25Q512A11G1240E
C158 470nF
R80 33R
R81 33R
POR_B
U7B
U17B
NC/RESET
Title: TE0820 - MIO Banks
A4
Number: TE0820 02CG-1EA
Rev. 03
Date: 2018-03-28
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Filename: B_MIO.SchDoc
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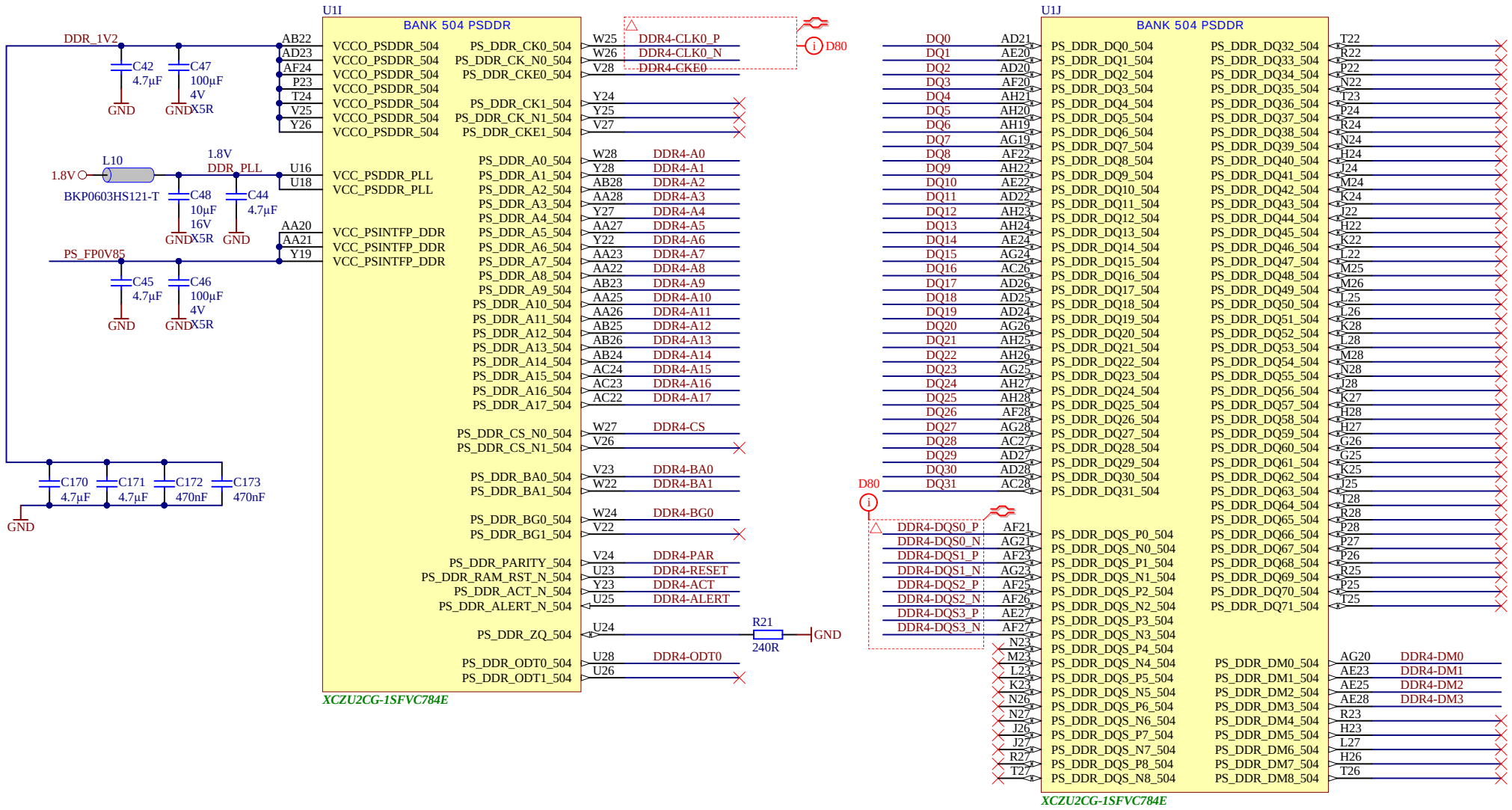
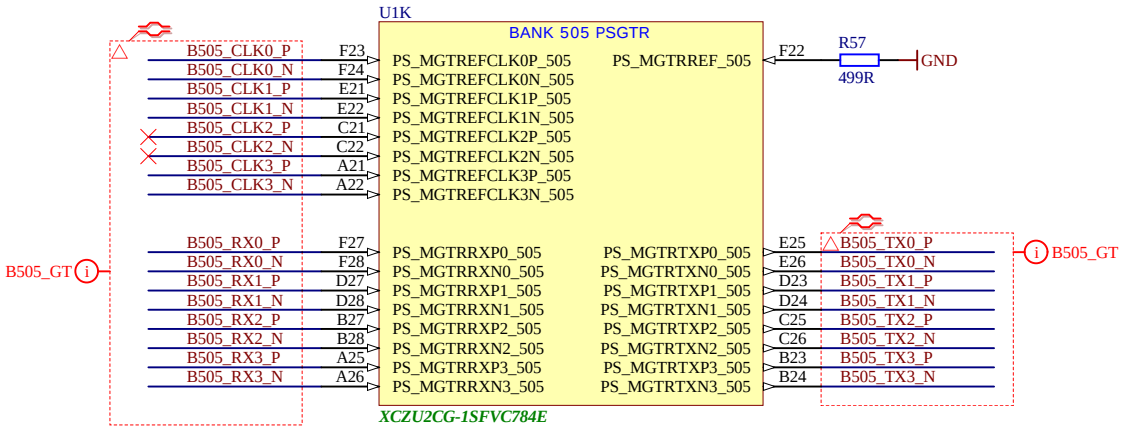
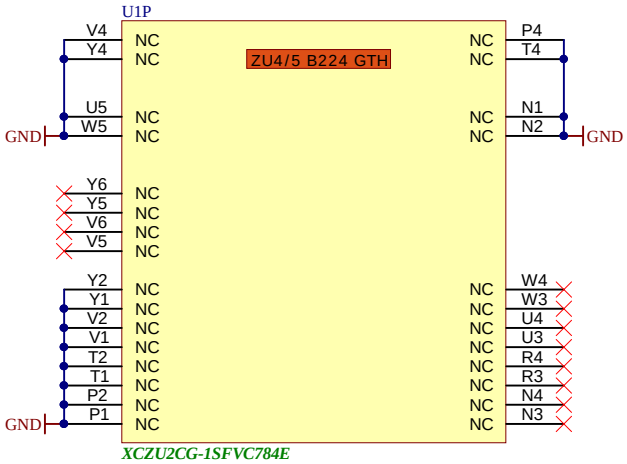


Title: TE0820 - PS_DDR			
A4	Number: TE0820 02CG-1EA		Rev. 03
Date: 2018-03-28	Copyright: Trenz Electronic GmbH / TT		Page 9 of 21
Filename: PS_DDR.SchDoc			





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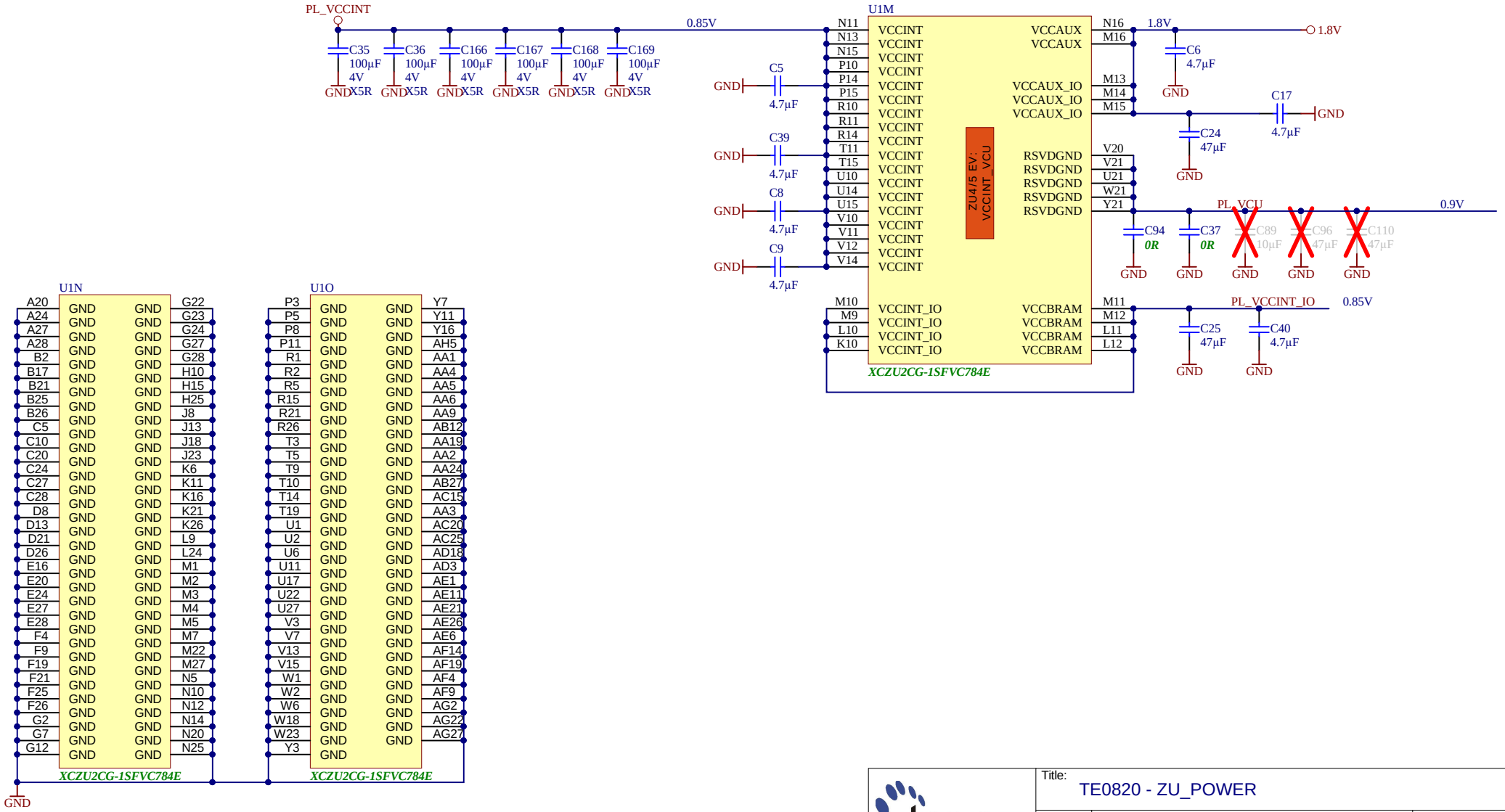
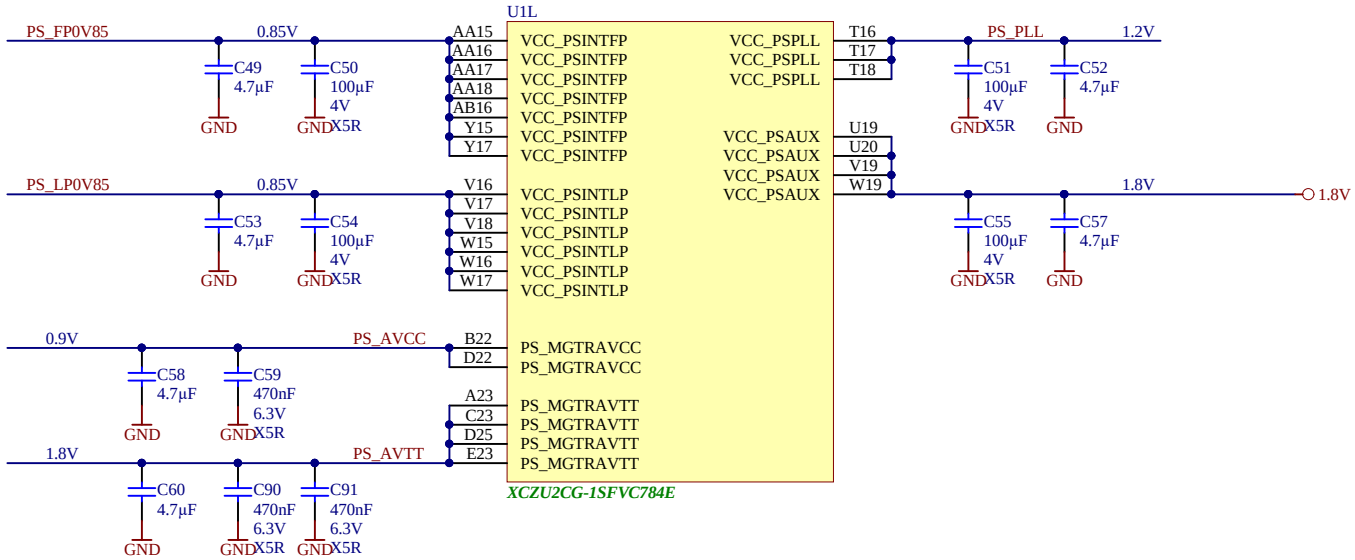
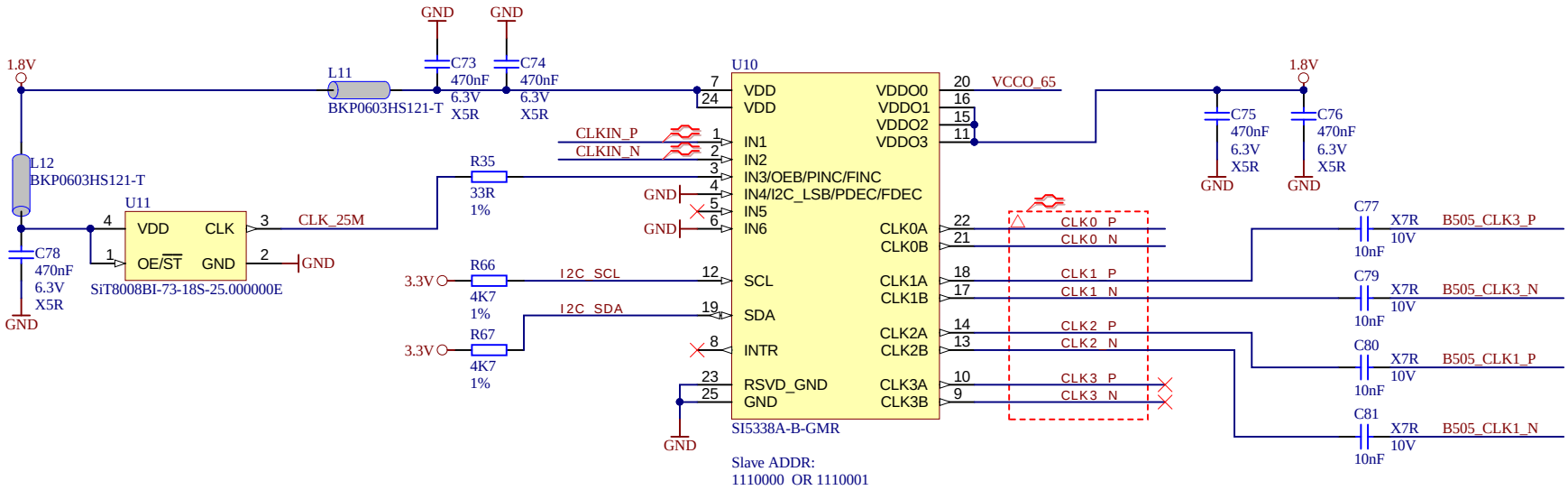
Title: TE0820 - PS_GT			
A4	Number: TE0820 02CG-1EA		Rev. 03
Date: 2018-03-28	Copyright: Trenz Electronic GmbH / TT		Page 10 of 21
Filename: B_PS_GT.SchDoc			



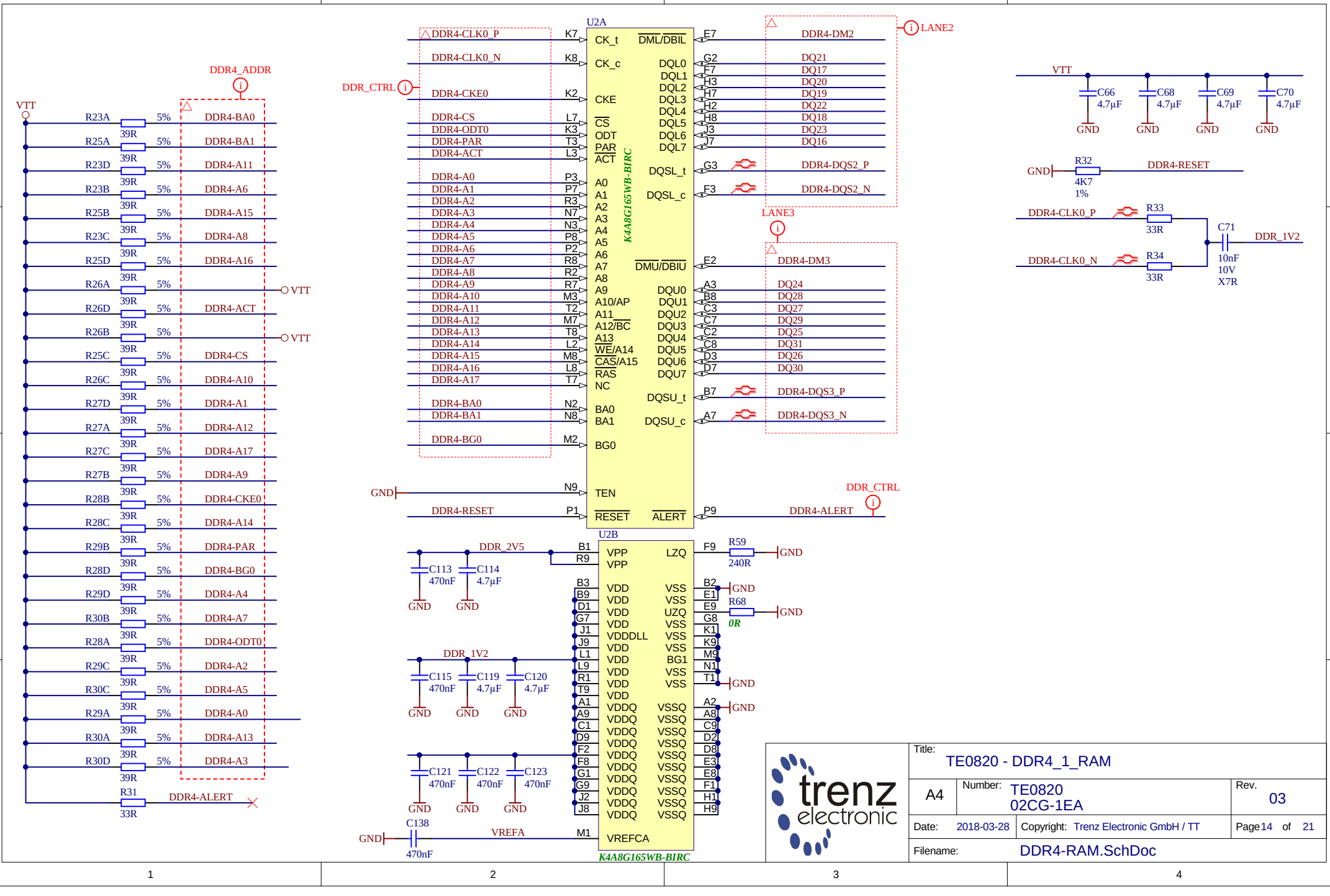
Title: TE0820 - ZU_POWER		
A4	Number: TE0820 02CG-1EA	Rev. 03
Date: 2018-03-28	Copyright: Trenz Electronic GmbH / TT	Page 11 of 21
Filename: ZU_POWER.SchDoc		

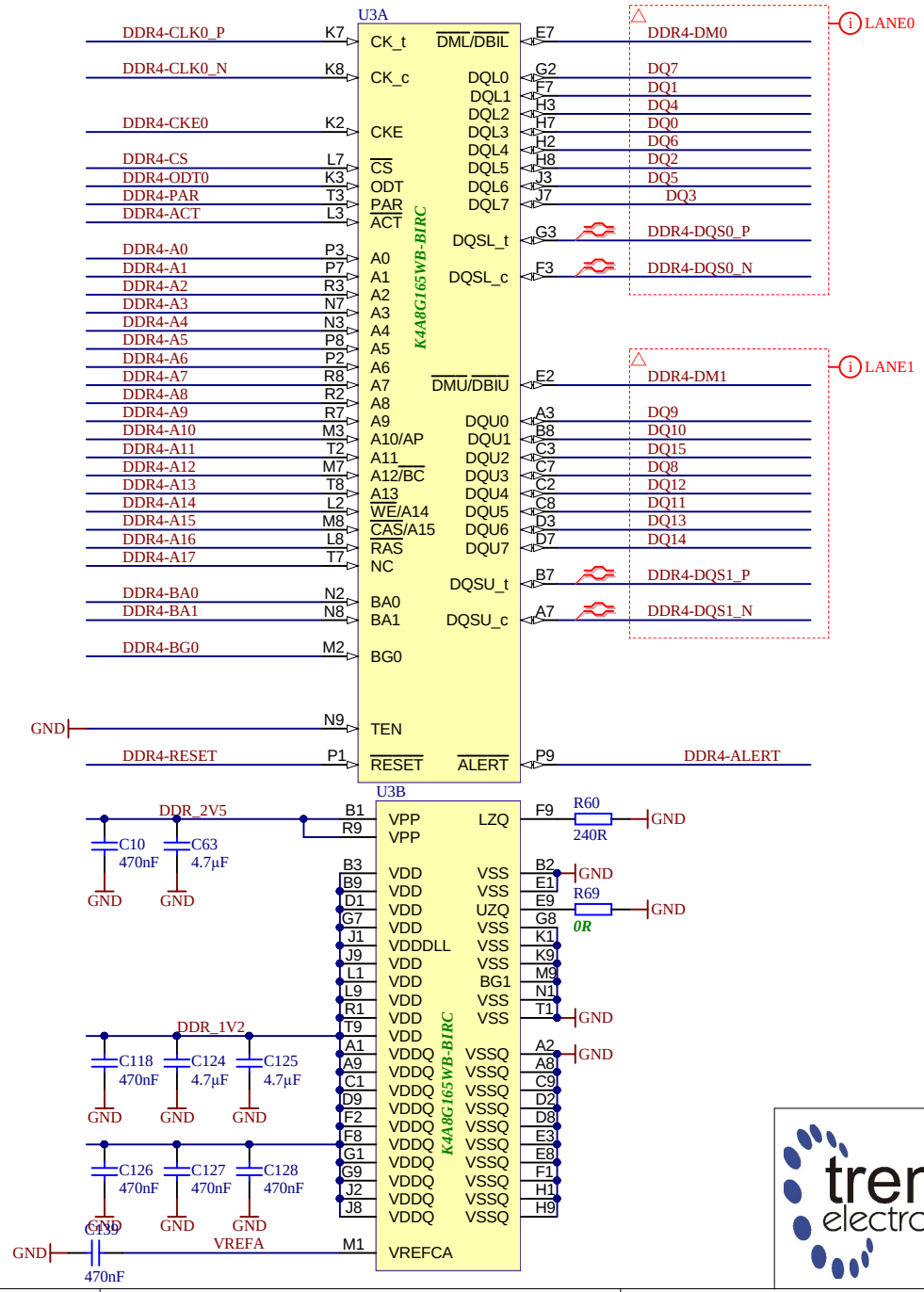


trenz electronic	Title: TE0820 - ZU_PS_POWER		
	A4	Number: TE0820 02CG-1EA	Rev. 03
	Date: 2018-03-28	Copyright: Trenz Electronic GmbH / TT	Page 12 of 21
	Filename: ZU_PS_POWER.SchDoc		

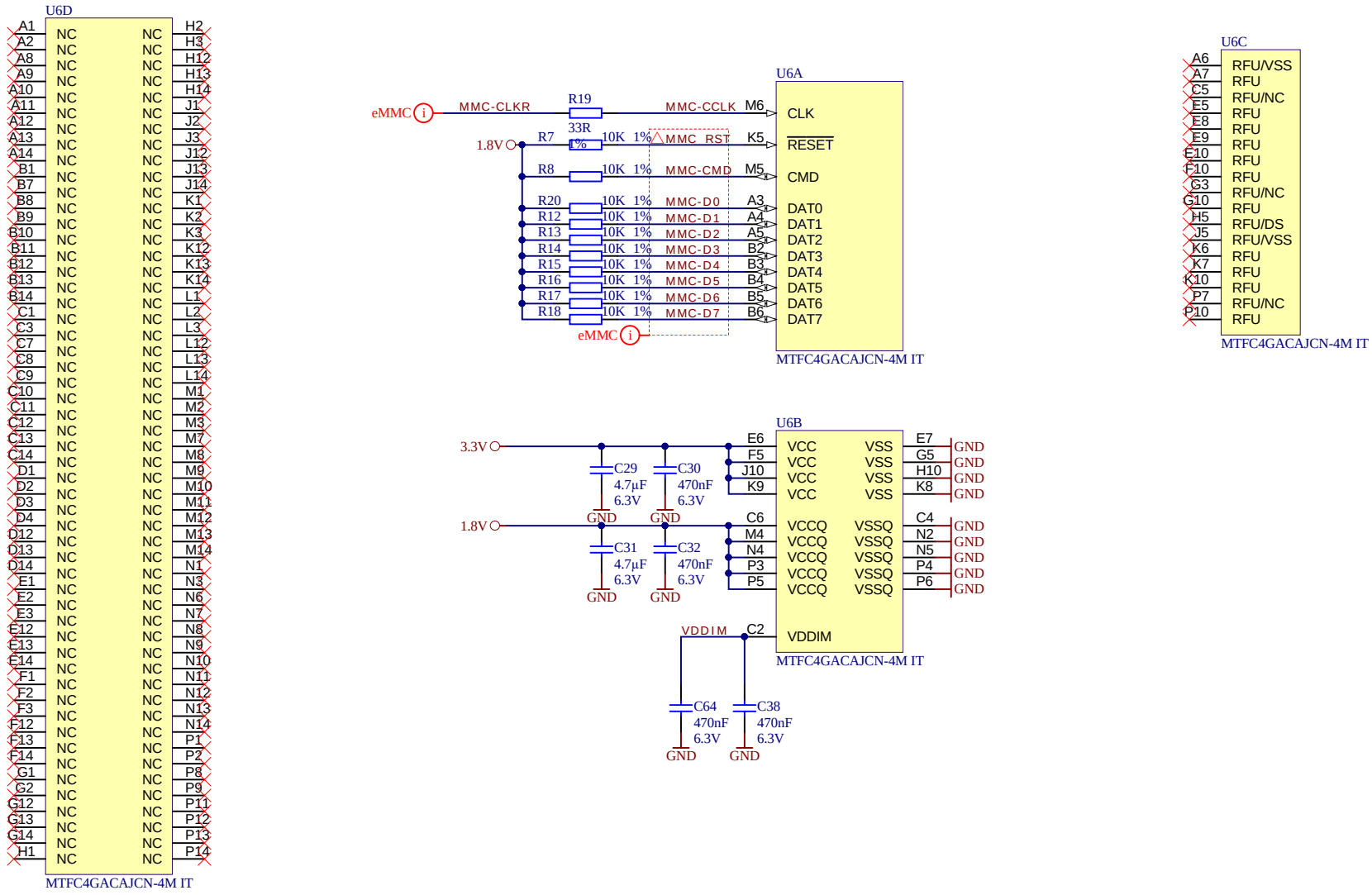


trenz electronic	Title: TE0820 - CLK		
A4	Number: TE0820 02CG-1EA		Rev. 03
Date: 2018-03-28	Copyright: 2015 Trenz Electronic GmbH		Page 13 of 21
Filename: CLK.SchDoc			

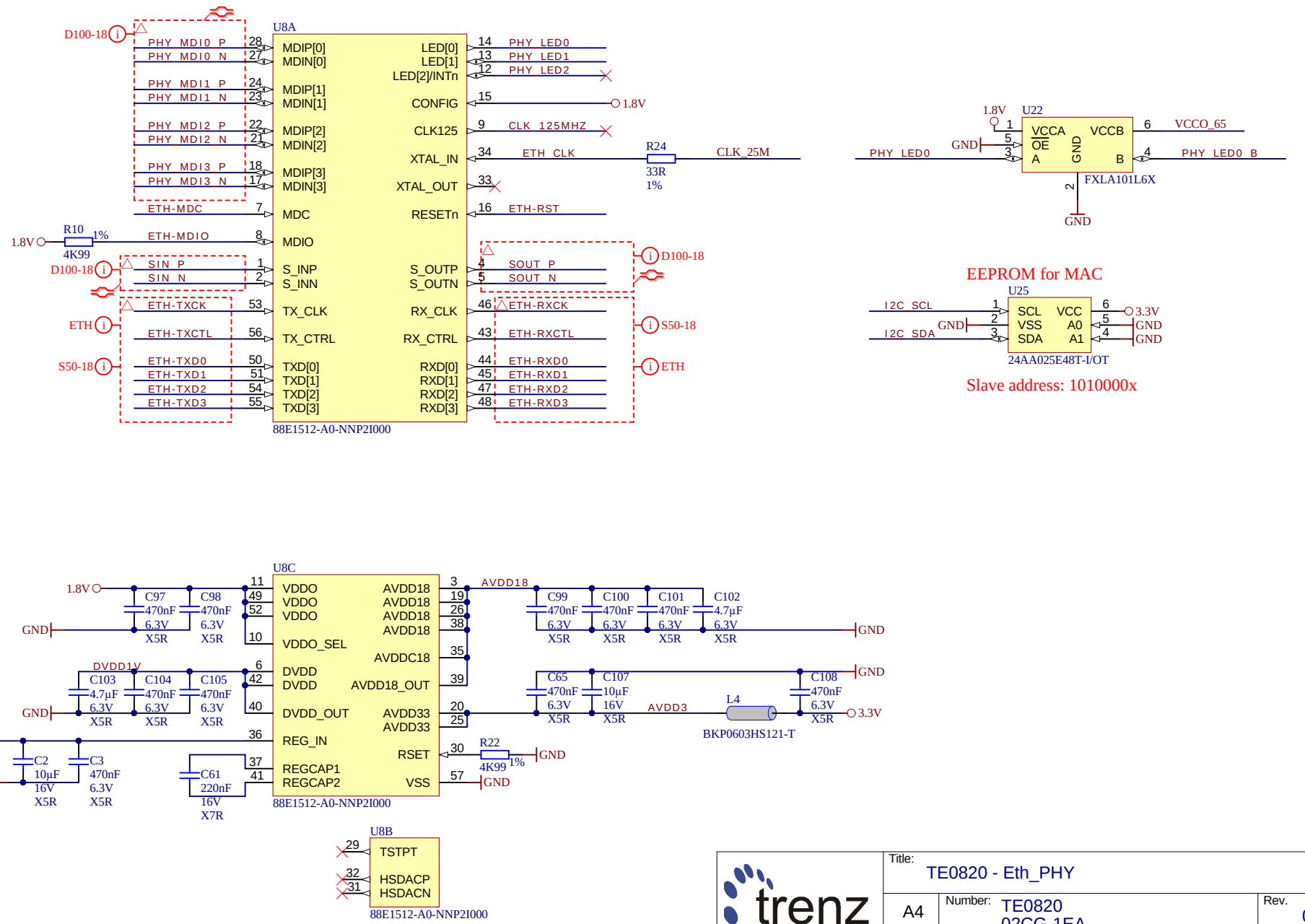

DDR4_ADDR
VTT
R23A 39R 5% DDR4-BA0
R25A 39R 5% DDR4-BA1
R23D 39R 5% DDR4-A11
R23B 39R 5% DDR4-A6
R25B 39R 5% DDR4-A15
R23C 39R 5% DDR4-A8
R25D 39R 5% DDR4-A16
R26A 39R 5% VTT
R26D 39R 5% DDR4-ACT
R26B 39R 5% VTT
R25C 39R 5% DDR4-CS
R26C 39R 5% DDR4-A10
R27D 39R 5% DDR4-A1
R27A 39R 5% DDR4-A12
R27C 39R 5% DDR4-A17
R27B 39R 5% DDR4-A9
R28B 39R 5% DDR4-CKE0
R28C 39R 5% DDR4-A14
R29B 39R 5% DDR4-PAR
R28D 39R 5% DDR4-BG0
R29D 39R 5% DDR4-A4
R30B 39R 5% DDR4-A7
R28A 39R 5% DDR4-ODT0
R29C 39R 5% DDR4-A2
R30C 39R 5% DDR4-A5
R29A 39R 5% DDR4-A0
R30A 39R 5% DDR4-A13
R30D 39R 5% DDR4-A3
R31 33R DDR4-ALERT
U2A
DDR4-CLK0_P K7 CK_t
DDR4-CLK0_N K8 CK_c
DDR_CTRL
DDR4-CKE0 K2 CKE
DDR4-CS L7 CS
DDR4-ODT0 K3 ODT
DDR4-PAR T3 PAR
DDR4-ACT L3 ACT
DDR4-A0 P3 A0
DDR4-A1 P7 A1
DDR4-A2 R3 A2
DDR4-A3 N7 A3
DDR4-A4 N3 A4
DDR4-A5 P8 A5
DDR4-A6 P2 A6
DDR4-A7 R8 A7
DDR4-A8 R2 A8
DDR4-A9 R7 A9
DDR4-A10 M3 A10/AP
DDR4-A11 T2 A11
DDR4-A12 M7 A12/BC
DDR4-A13 T8 A13
DDR4-A14 L2 WE/A14
DDR4-A15 M8 CAS/A15
DDR4-A16 L8 RAS
DDR4-A17 T7 NC
DDR4-BA0 N2 BA0
DDR4-BA1 N8 BA1
DDR4-BG0 M2 BG0
GND N9 TEN
DDR4-RESET P1 RESET
K4A8G165WB-BIRC
DML/DBIL E7 DDR4-DM2
DQL0 G2 DQ21
DQL1 F7 DQ17
DQL2 H3 DQ20
DQL3 H7 DQ19
DQL4 H2 DQ22
DQL5 H8 DQ18
DQL6 J3 DQ23
DQL7 J7 DQ16
DQSL_t G3 DDR4-DQS2_P
DQSL_c F3 DDR4-DQS2_N
LANE2
LANE3
DMU/DBIU E2 DDR4-DM3
DQU0 A3 DQ24
DQU1 B8 DQ28
DQU2 C3 DQ27
DQU3 C7 DQ29
DQU4 C2 DQ25
DQU5 C8 DQ31
DQU6 D3 DQ26
DQU7 D7 DQ30
DQSU_t B7 DDR4-DQS3_P
DQSU_c A7 DDR4-DQS3_N
ALERT P9 DDR4-ALERT
DDR_CTRL
U2B
DDR_2V5
C113 470nF
C114 4.7µF
B1 VPP
R9 VPP
LZQ F9 R59 240R GND
B3 VDD
B9 VDD
D1 VDD
G7 VDD
J1 VDD
J9 VDD
L1 VDD
L9 VDD
R1 VDD
T9 VDD
A1 VDDQ
A9 VDDQ
C1 VDDQ
D9 VDDQ
F2 VDDQ
F8 VDDQ
G1 VDDQ
G9 VDDQ
J2 VDDQ
J8 VDDQ
VDDDLL
VSS B2 GND
VSS E1 GND
VSS E9
UZQ G8 R68 0R GND
VSS K1
VSS K9
VSS M9
BG1 N1
VSS T1 GND
VSSQ A2 GND
VSSQ A8
VSSQ C9
VSSQ D2
VSSQ D8
VSSQ E3
VSSQ E8
VSSQ F1
VSSQ H1
VSSQ H9
DDR_1V2
C115 470nF
C119 4.7µF
C120 4.7µF
C121 470nF
C122 470nF
C123 470nF
C138 470nF
VREFA M1
VREFCA
K4A8G165WB-BIRC
VTT
C66 4.7µF
C68 4.7µF
C69 4.7µF
C70 4.7µF
GND
R32 4K7 1%
DDR4-RESET
DDR4-CLK0_P R33 33R
DDR4-CLK0_N R34 33R
C71 10nF 10V X7R
DDR_1V2
trenz electronic
Title: TE0820 - DDR4_1_RAM
A4
Number: TE0820 02CG-1EA
Rev. 03
Date: 2018-03-28
Copyright: Trenz Electronic GmbH / TT
Page 14 of 21
Filename: DDR4-RAM.SchDoc



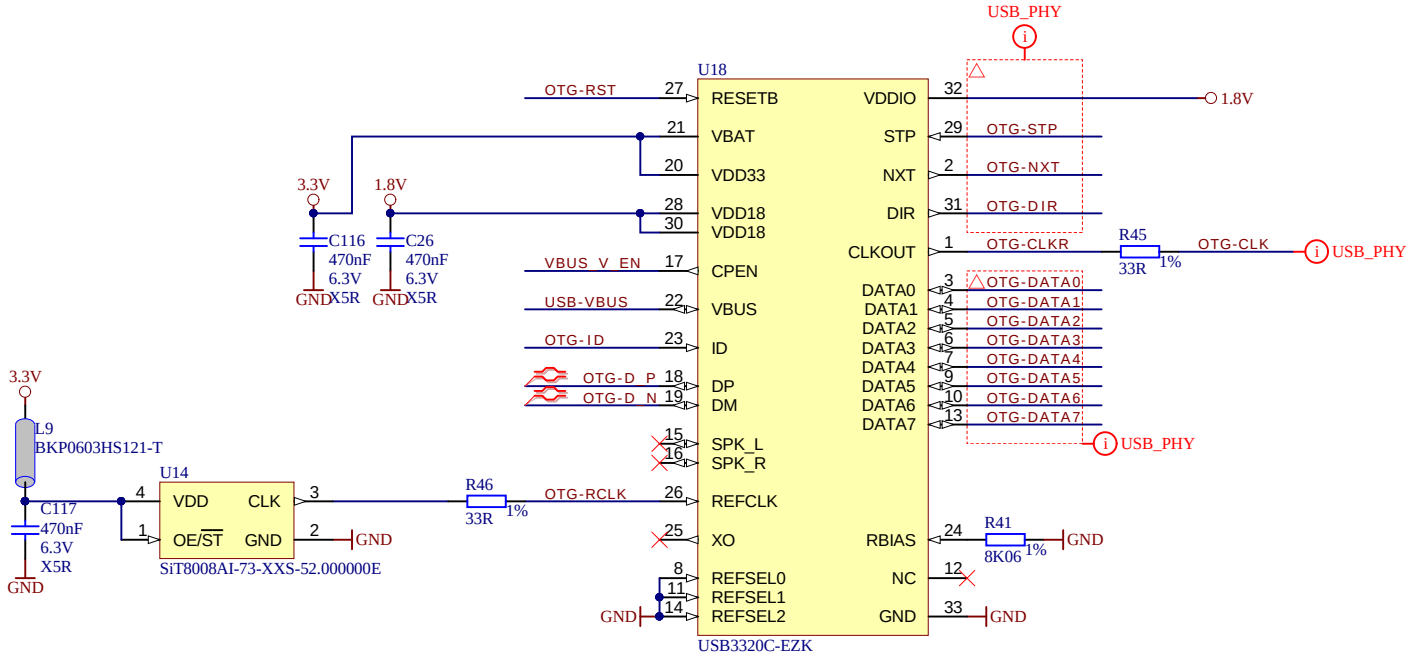
Title:	TE0820 - DDR4_2_RAM		
A4	Number: TE0820 02CG-1EA		Rev. 03
Date: 2018-03-28	Copyright: Trenz Electronic GmbH / TT		Page 15 of 21
Filename:	DDR4-RAM_2.SchDoc		



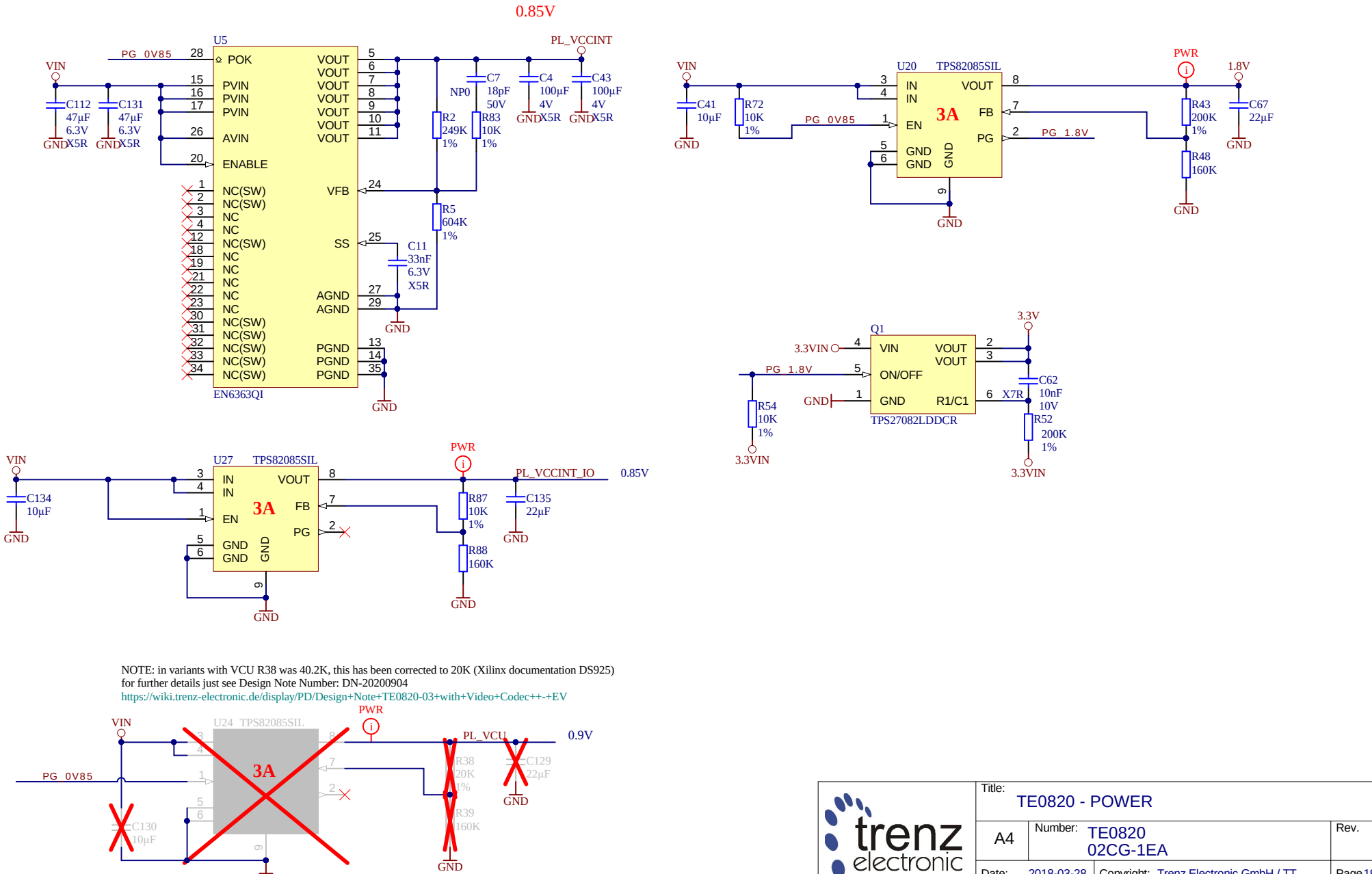
trenz electronic	Title: TE0820 - eMMC		
A4	Number: TE0820 02CG-1EA		Rev. 03
Date: 2018-03-28	Copyright: Trenz Electronic GmbH / TT		Page 16 of 21
Filename: eMMC.SchDoc			



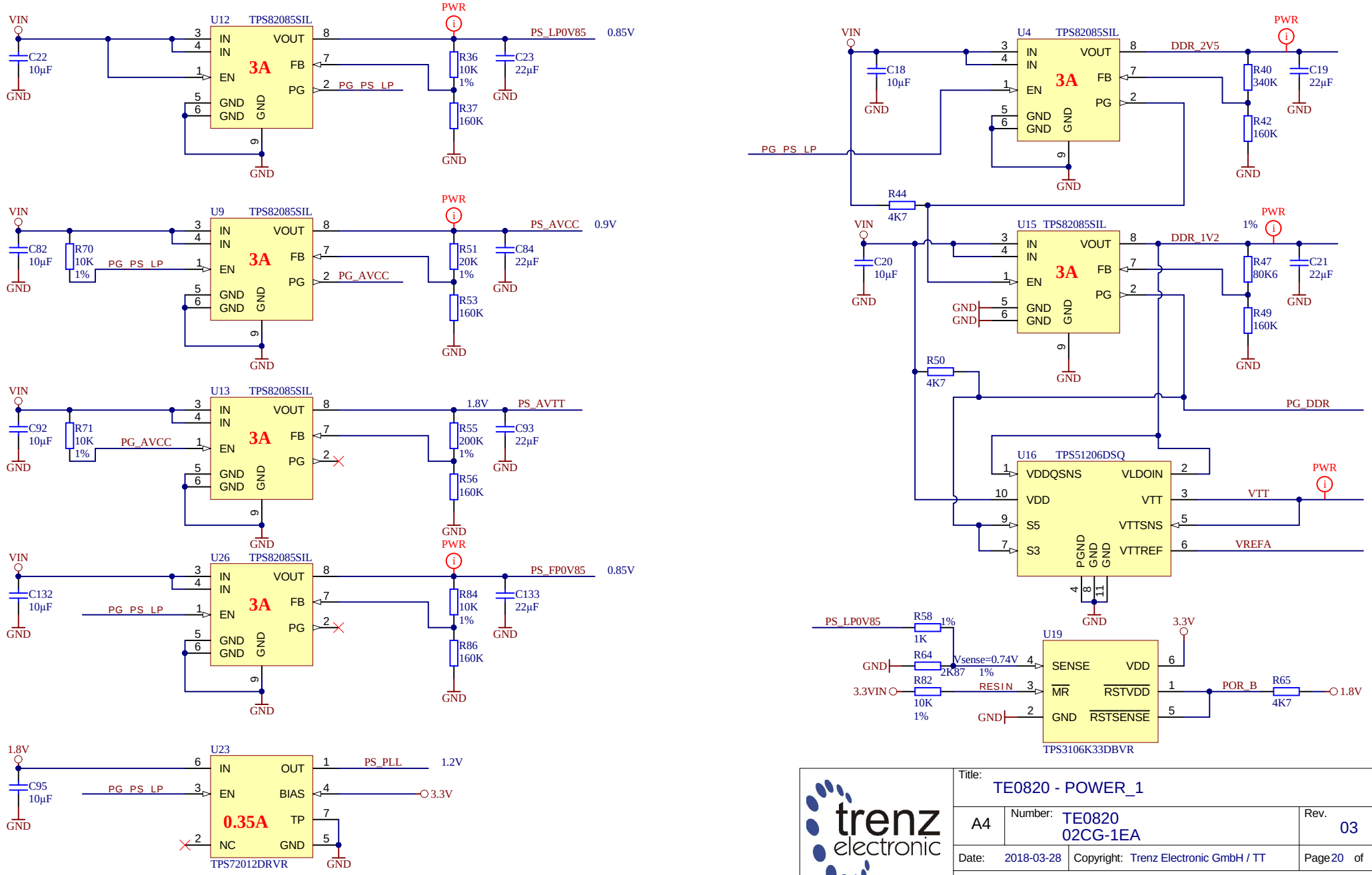
Title: TE0820 - Eth_PHY			
A4	Number: TE0820 02CG-1EA		Rev. 03
Date: 2018-03-28	Copyright: 2015 Trenz Electronic GmbH		Page 17 of 21
Filename: ETH-PHY.SchDoc			



Title: TE0820 - USB_PHY			
A4	Number: TE0820 02CG-1EA		Rev. 03
Date: 2018-03-28	Copyright: 2015 Trenz Electronic GmbH		Page 18 of 21
Filename: USB-PHY.SchDoc			



trenz electronic	Title: TE0820 - POWER		
	A4	Number: TE0820 02CG-1EA	Rev. 03
	Date: 2018-03-28	Copyright: Trenz Electronic GmbH / TT	Page 19 of 21
	Filename: POWER.SchDoc		



Title: TE0820 - POWER_1			
A4	Number: TE0820 02CG-1EA		Rev. 03
Date: 2018-03-28	Copyright: Trenz Electronic GmbH / TT		Page 20 of 21
Filename: POWER_1.SchDoc			

CHANGES REV01 to REV02
---
1) Added MAC EEPROM (slave address:)
2) LIB components update
3) Fixed SD Card connection
4) Fixed sense connection from DCDC
5) Made correct power connection for VCU (removed DCDC, added resistors and caps like as Xilinx recommended)
6) Added resistors for variants (ZU+ with/without VCU)
7) Added termination resistors (240R) to VRP pins fro all HP-banks

CHANGES REV02 to REV03
---
1) Fixed VCU connection: add additional DCDC (0.9V)
2) LIB components update
3) Change package 1K resistors (0402 -> 0201)
4) Added LEDs (1x user LED, 1x LED for ERR_STATUS, 1xLED for ERR_OUT)
5) Change obsolete 2xSPI Flash (256MBit) -> 2xSPI Flash (512MBit)
6) Added additional DCDCs (PL_VCCINT_IO, PS_FP0V85)
7) Changed DCDC (U5) 6A (optional 4A)

Design Note Number: DN-20200904 (https://wiki.trenz-electronic.de/display/PD/Design+Note+TE0820-03+with+Video+Codec++-+EV)
The internal supply voltage for the video codec unit (VCU) is set via Resistors R38 and R39. For the above mentioned affected SoMs R38 is set to 40.2 kOhm resulting in a PL_VCU voltage of 1.0V. This is above the recommended operation specification.
Up to the issue date of this design note no adverse effects have been reported. For all serial numbers not mentioned under affected products R38 is 20 kOhm resulting in xilinx recommended 0.9V internal VCU voltage.
If your product is affected and revision is required please contact sales@trenz-electronic.de (subject = DN-20200904) for further instructions.

trenz electronic	Title: TE0820 - Revision Changes		
A4	Number: TE0820 02CG-1EA		Rev. 03
Date: 2018-03-28	Copyright: Trenz Electronic GmbH / TT		Page 21 of 21
Filename: Revision Changes.SchDoc			