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

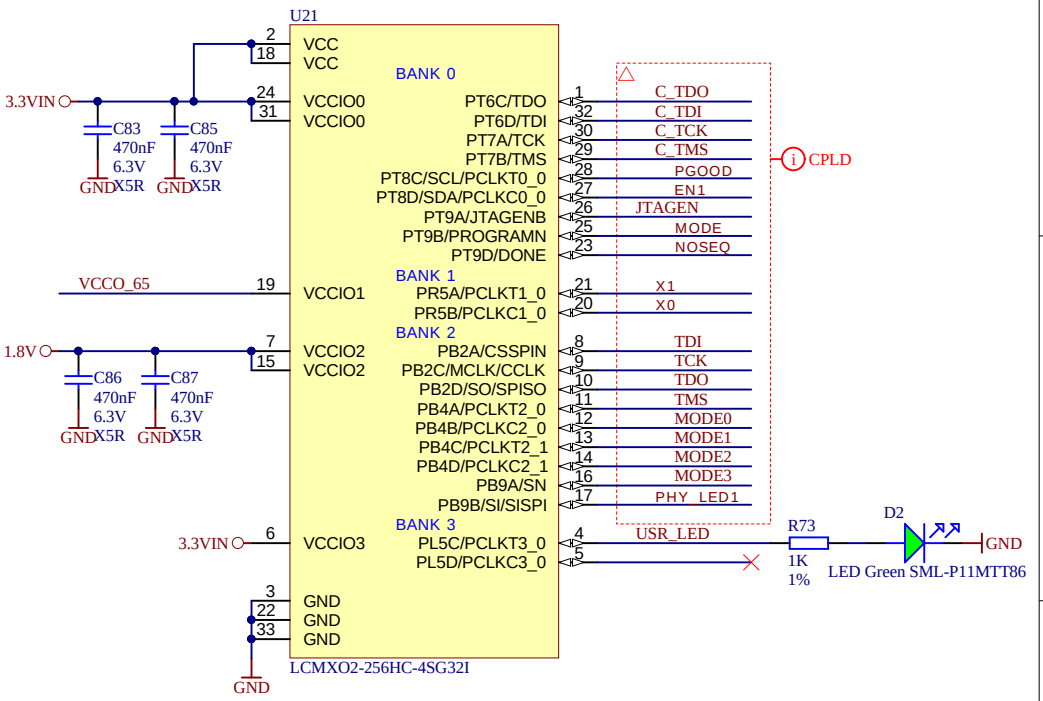
U_DDR4-RAM
DDR4-RAM.SchDoc

U_POWER
POWER.SchDoc

U_POWER_1
POWER_1.SchDoc

Serial
Serial
Serialnumber 6,3 x 6.3mm

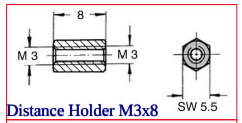
S/N
GND 1 0R 2 GND
Serialnumber



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	04CG-1EA
Created by	VariantCreatedBy
Modified by	VariantModifiedBy
Modified at	VariantDateModification
SVN Revision	8646

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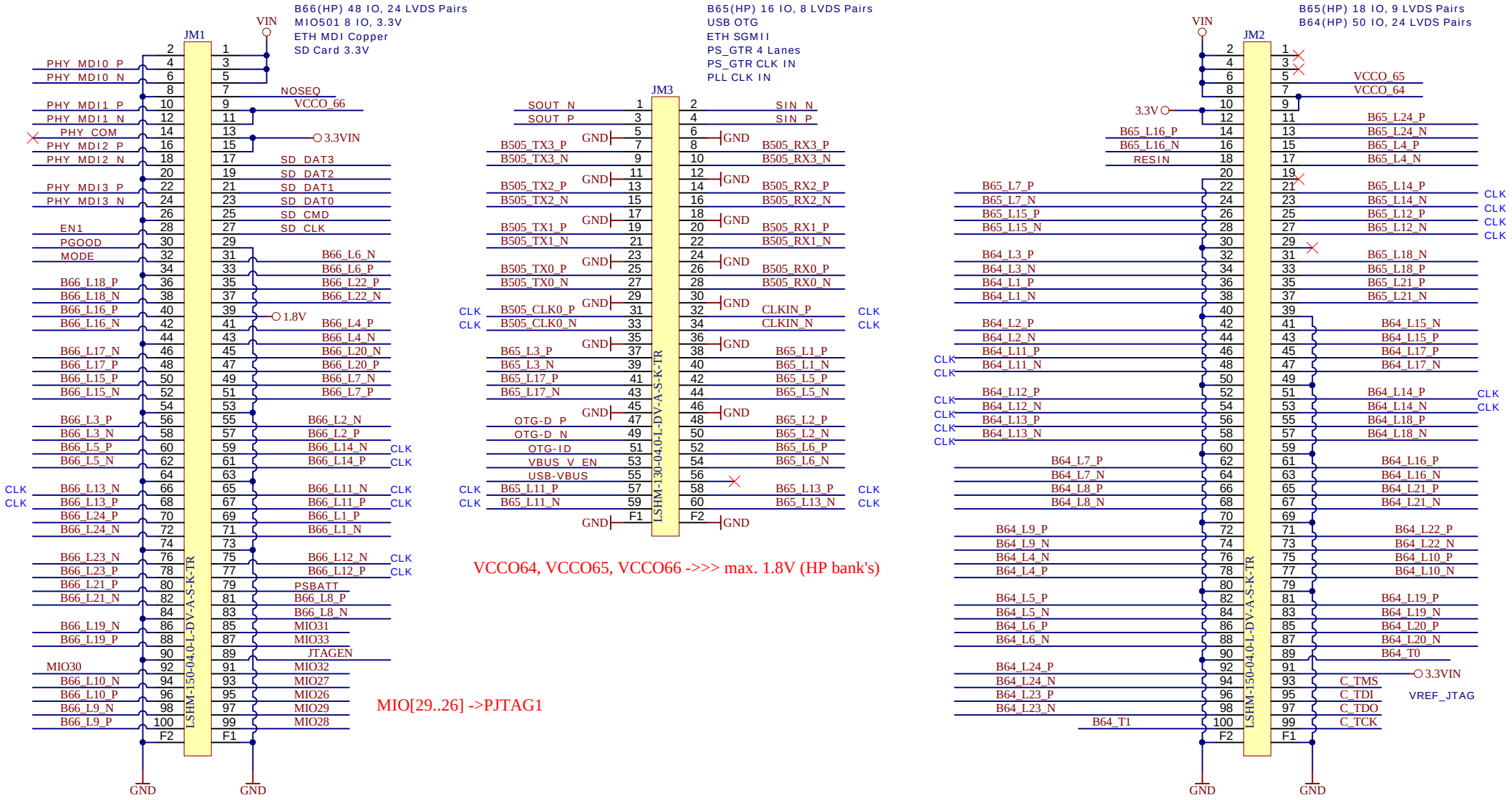
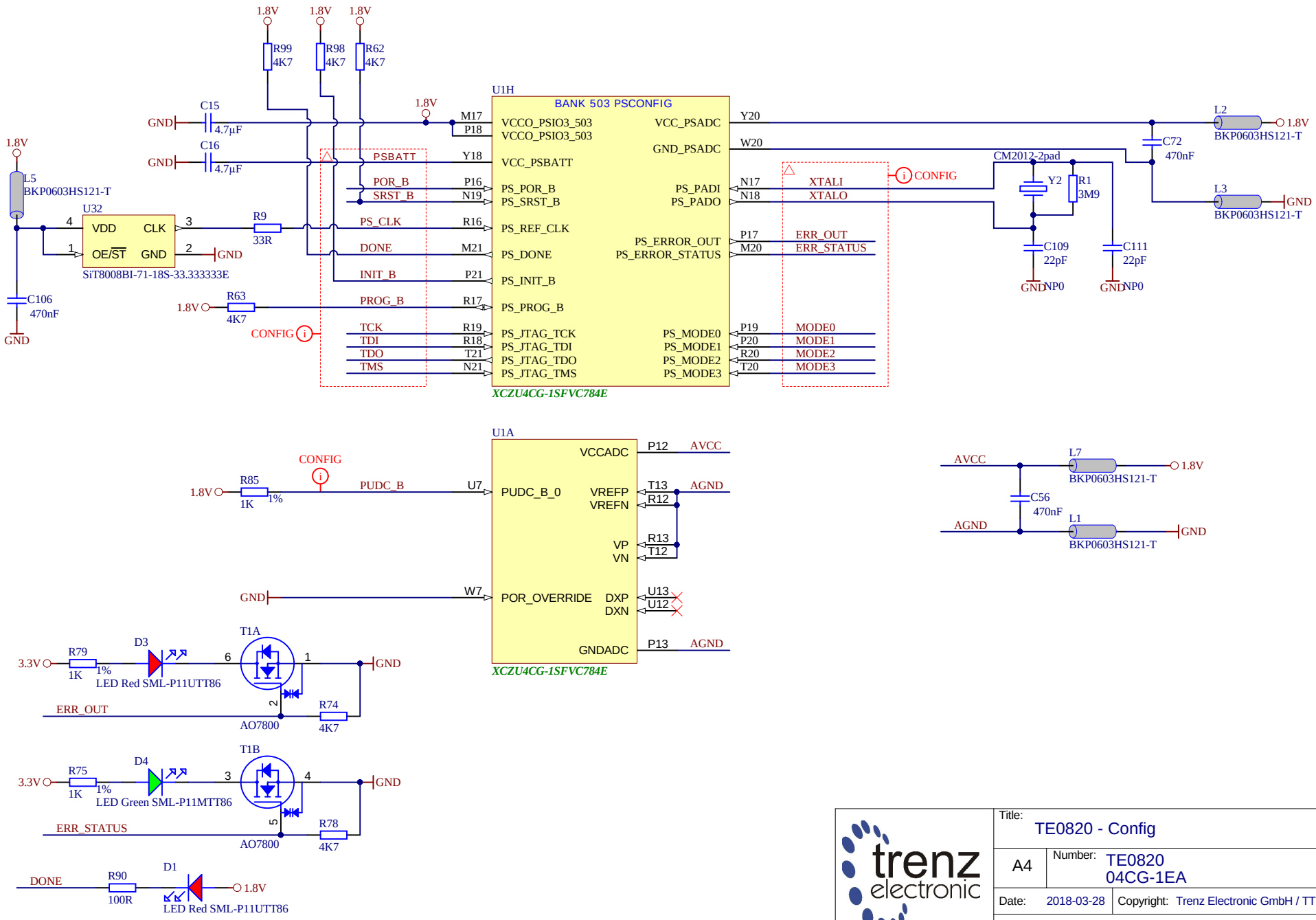
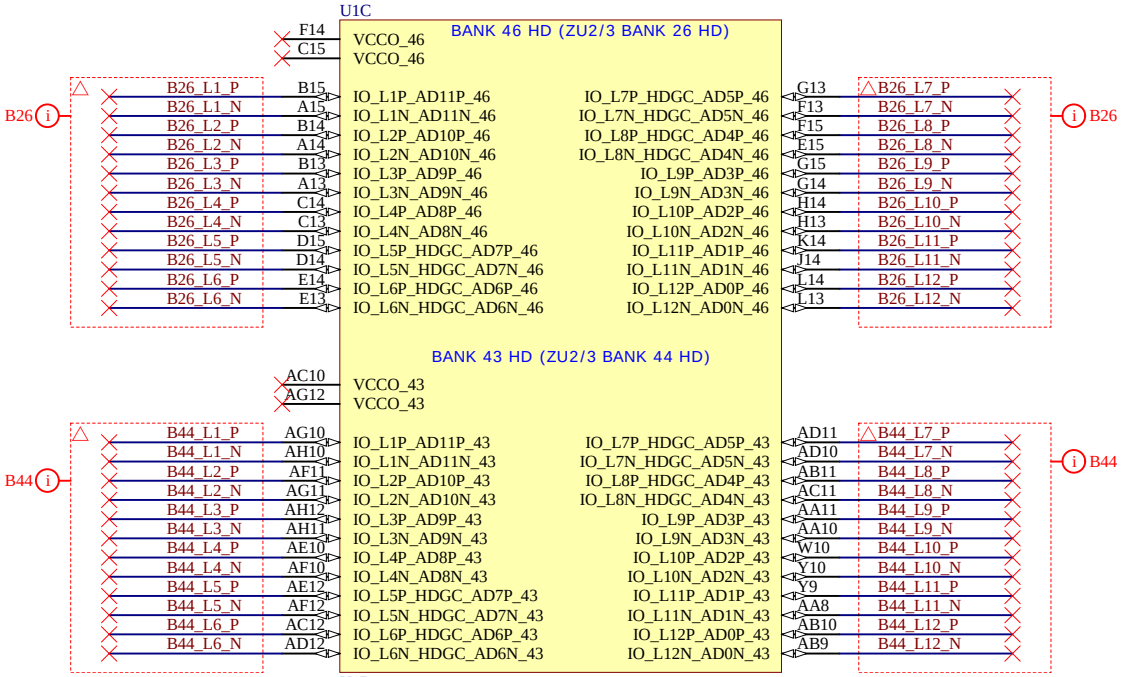
Title: TE0820		
A4	Number: TE0820 04CG-1EA	Rev. 03
Date: 2018-03-28	Copyright: 2015 Trenz Electronic GmbH	Page 1 of 21
Filename: TE0820.SchDoc		

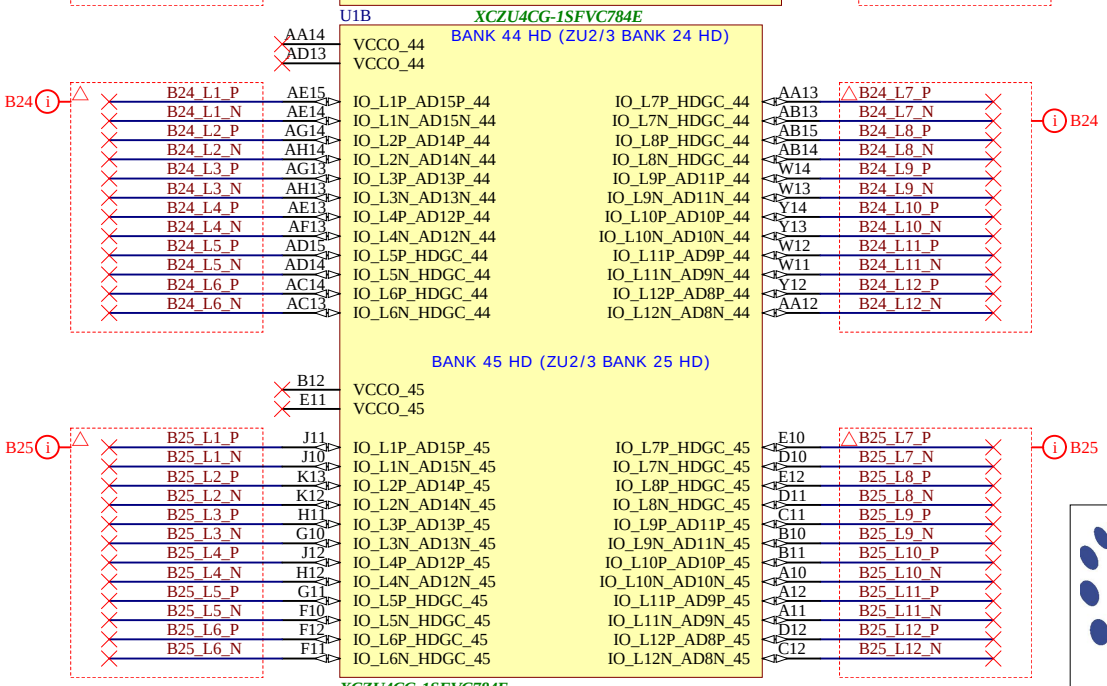


Title: TE0820 - B2B Connectors			
A4	Number: TE0820 04CG-1EA		Rev. 03
Date: 2018-03-28	Copyright: 2015 Trenz Electronic GmbH		Page 2 of 21
Filename: B2B-Connectors.SchDoc			

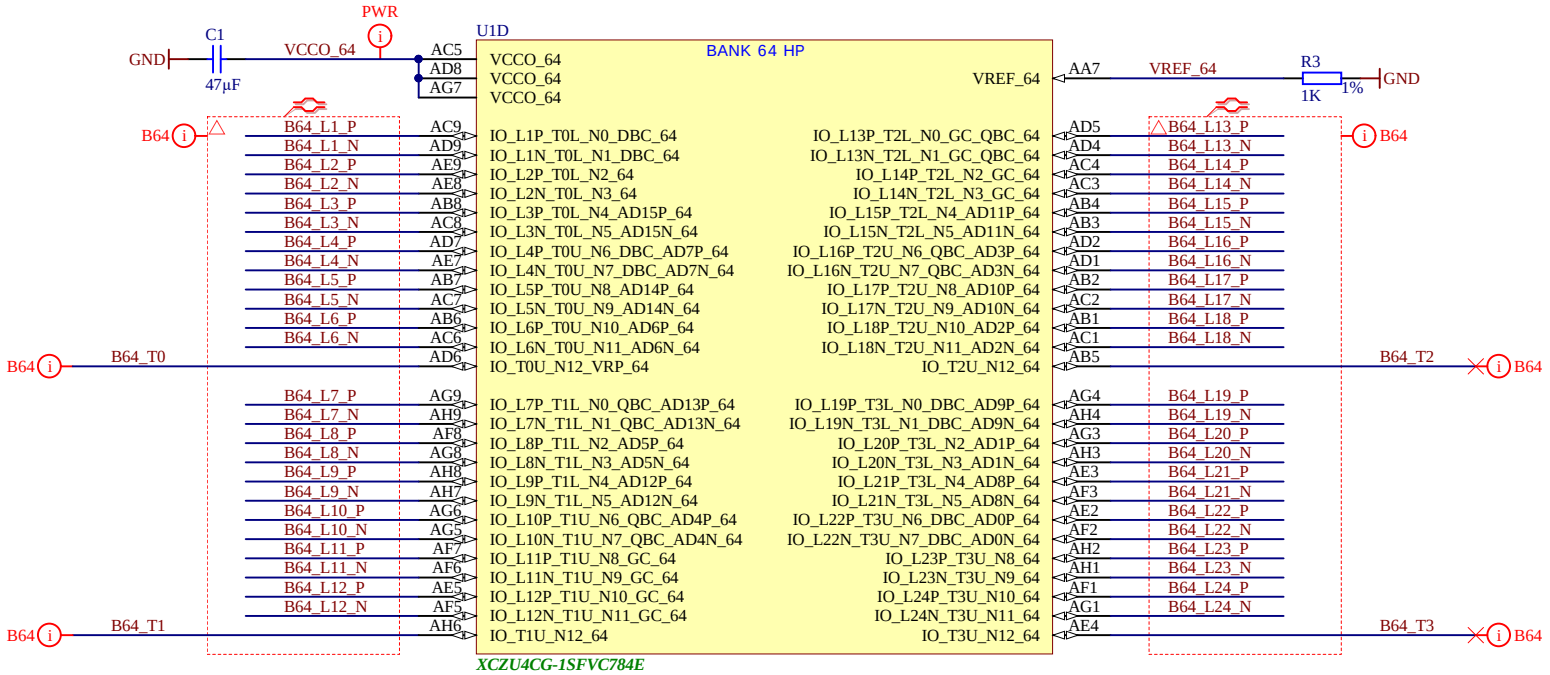


Title: TE0820 - Config			
A4	Number: TE0820 04CG-1EA		Rev. 03
Date: 2018-03-28	Copyright: Trenz Electronic GmbH / TT		Page 3 of 21
Filename: CONFIG.SchDoc			

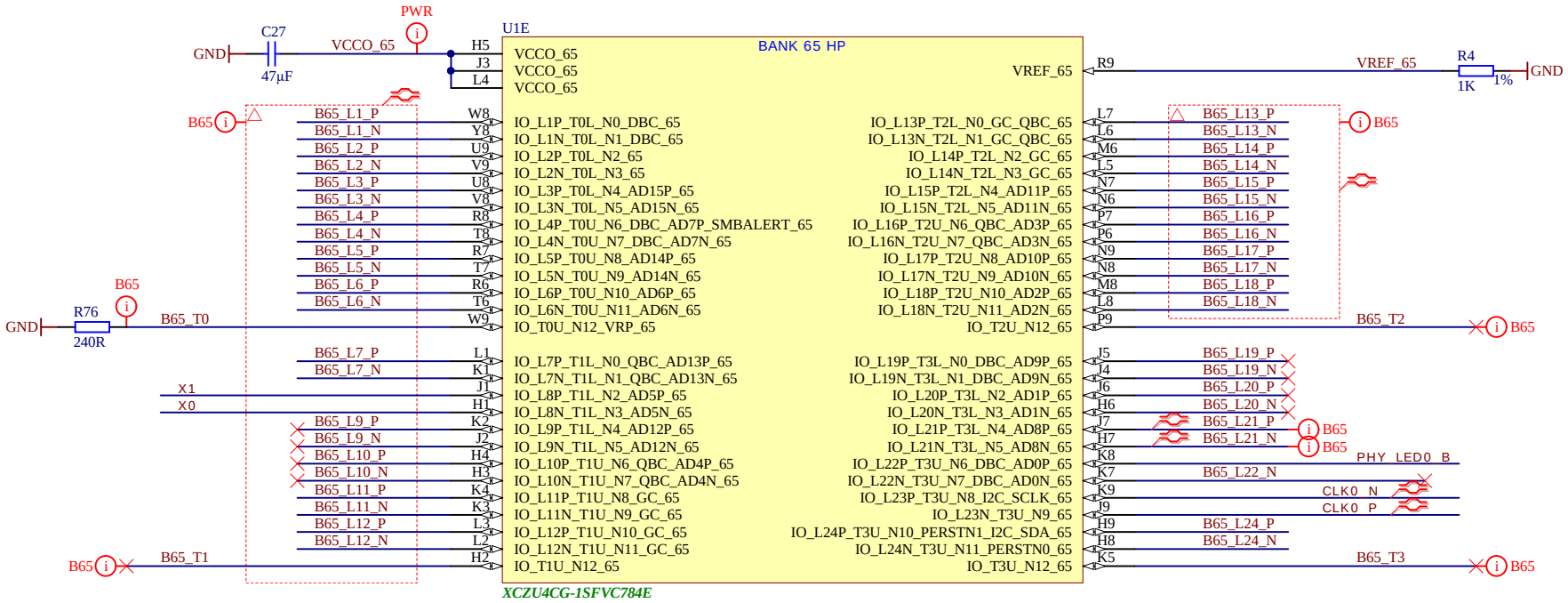




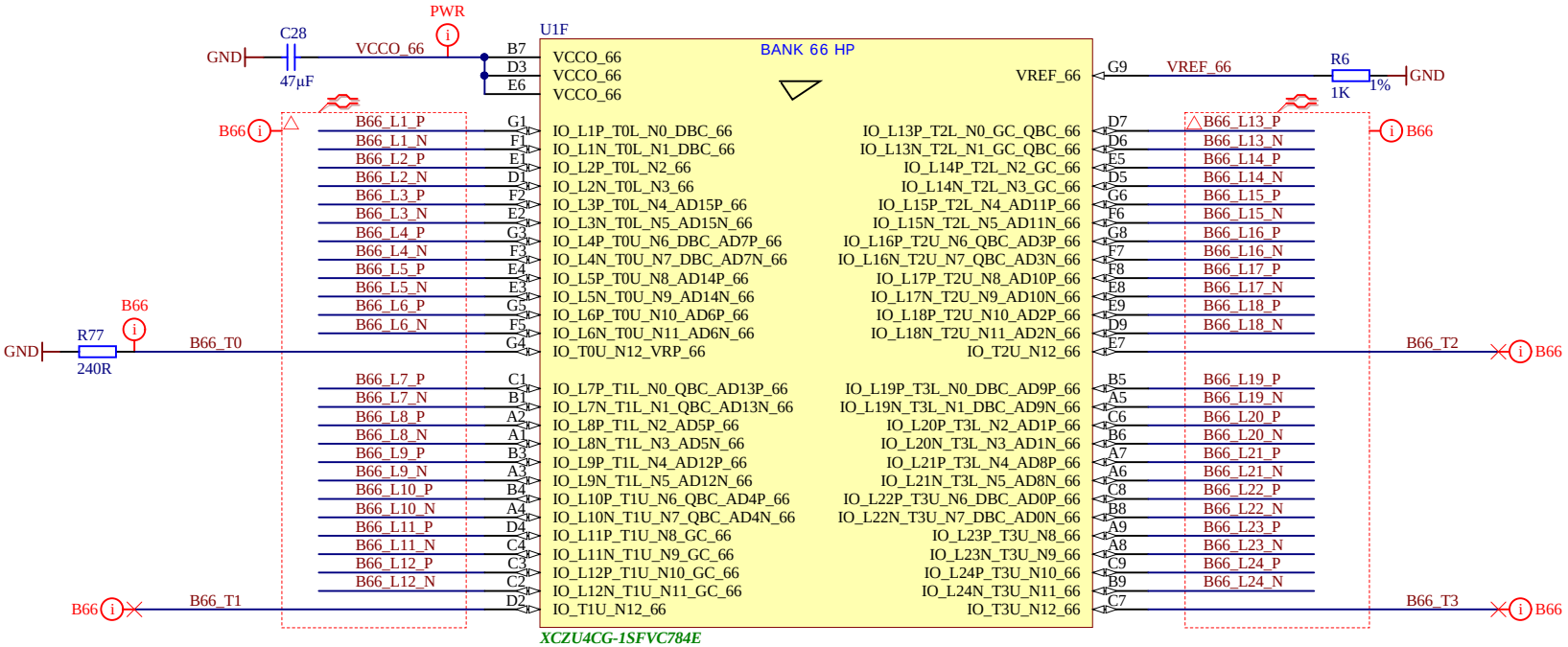
Title: TE0820 - HD Banks			
A4	Number: TE0820 04CG-1EA		Rev. 03
Date: 2018-03-28	Copyright: Trenz Electronic GmbH / TT		Page 4 of 21
Filename: B_HD.SchDoc			



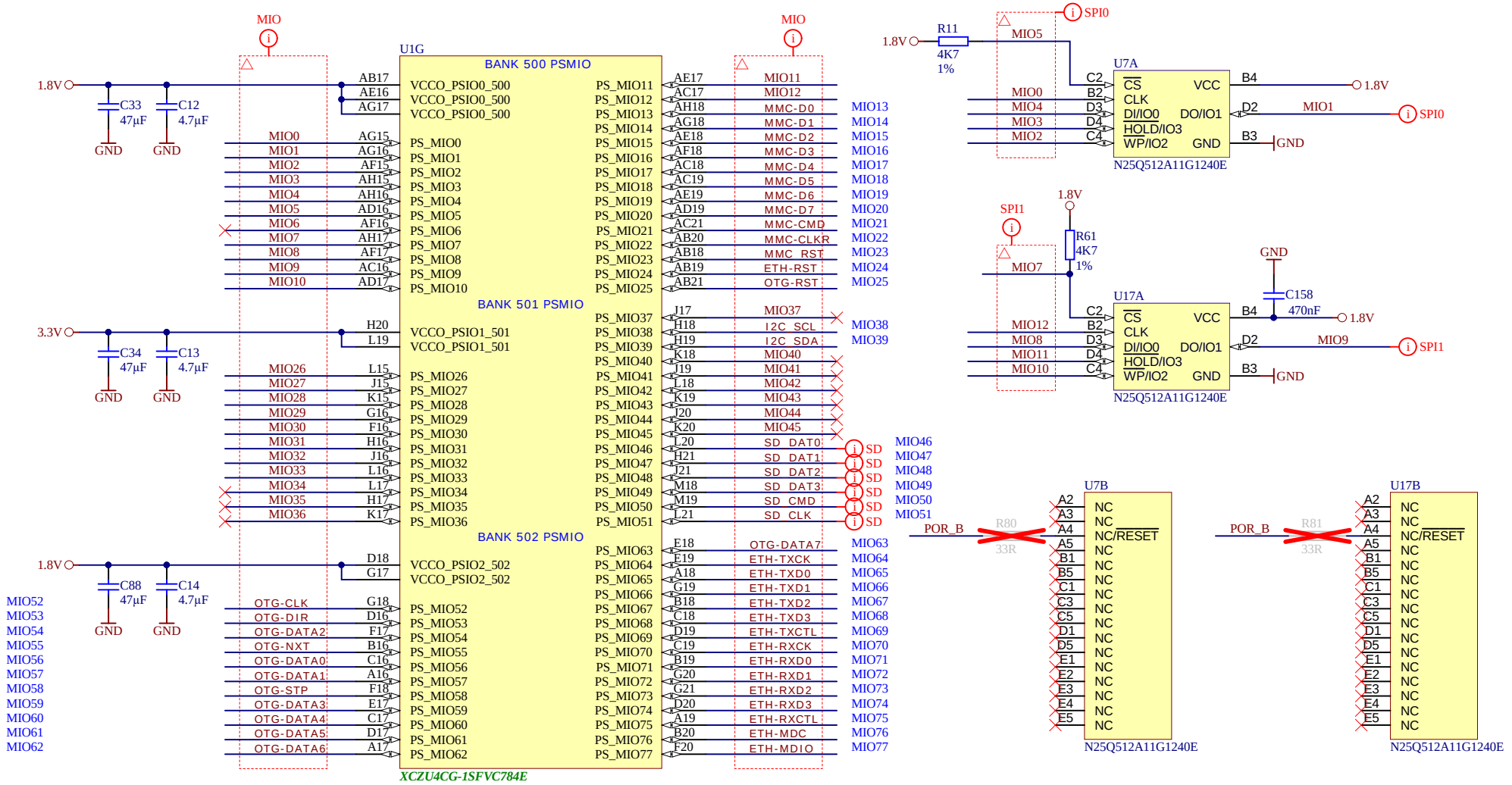
Title: TE0820 - B64			
A4	Number: TE0820 04CG-1EA		Rev. 03
Date: 2018-03-28	Copyright: Trenz Electronic GmbH / TT		Page 5 of 21
Filename: B64.SchDoc			



trenz electronic	Title: TE0820 - B65		
	A4	Number: TE0820 04CG-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 04CG-1EA		Rev. 03
Date: 2018-03-28	Copyright: Trenz Electronic GmbH / TT		Page 7 of 21
Filename: B66.SchDoc			



Title: TE0820 - MIO Banks			
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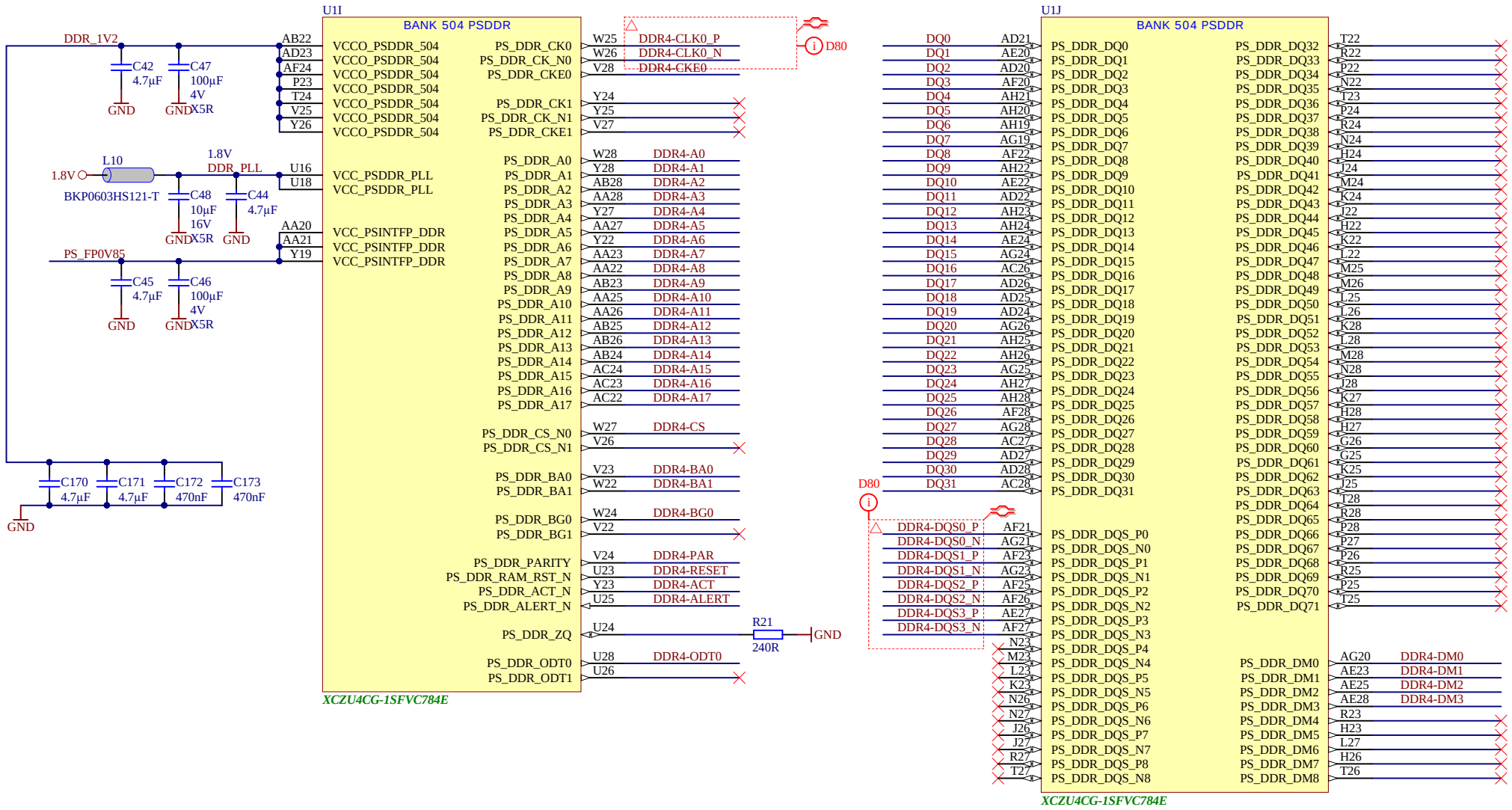
Date: 2018-03-28	Copyright: Trenz Electronic GmbH / TT		Page 8 of 21
Filename: B_MIO.SchDoc			



Title:	TE0820 - PS_DDR
A4	Number: TE0820 04CG-1EA
Rev.	03
Date: 2018-03-28	Copyright: Trenz Electronic GmbH / TT
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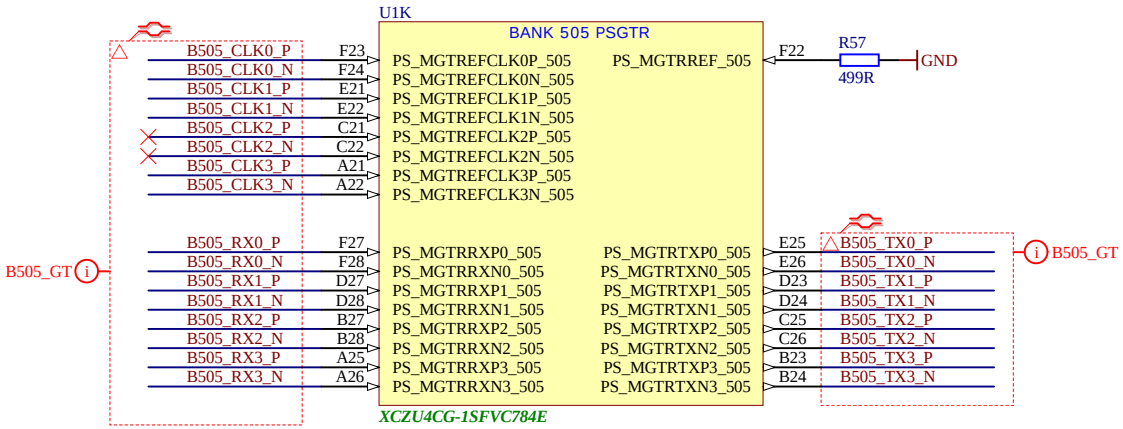
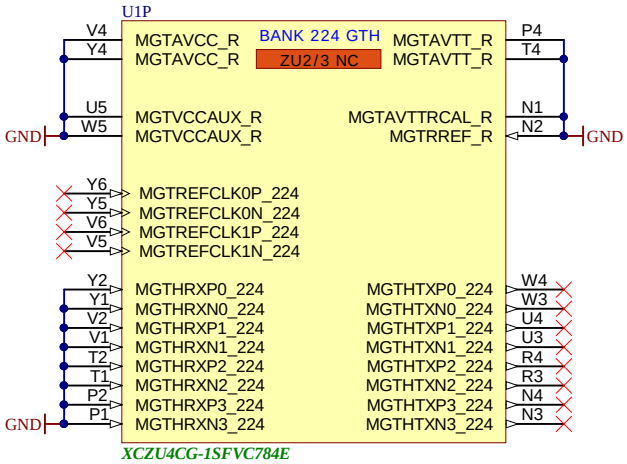
Filename:	PS_DDR.SchDoc





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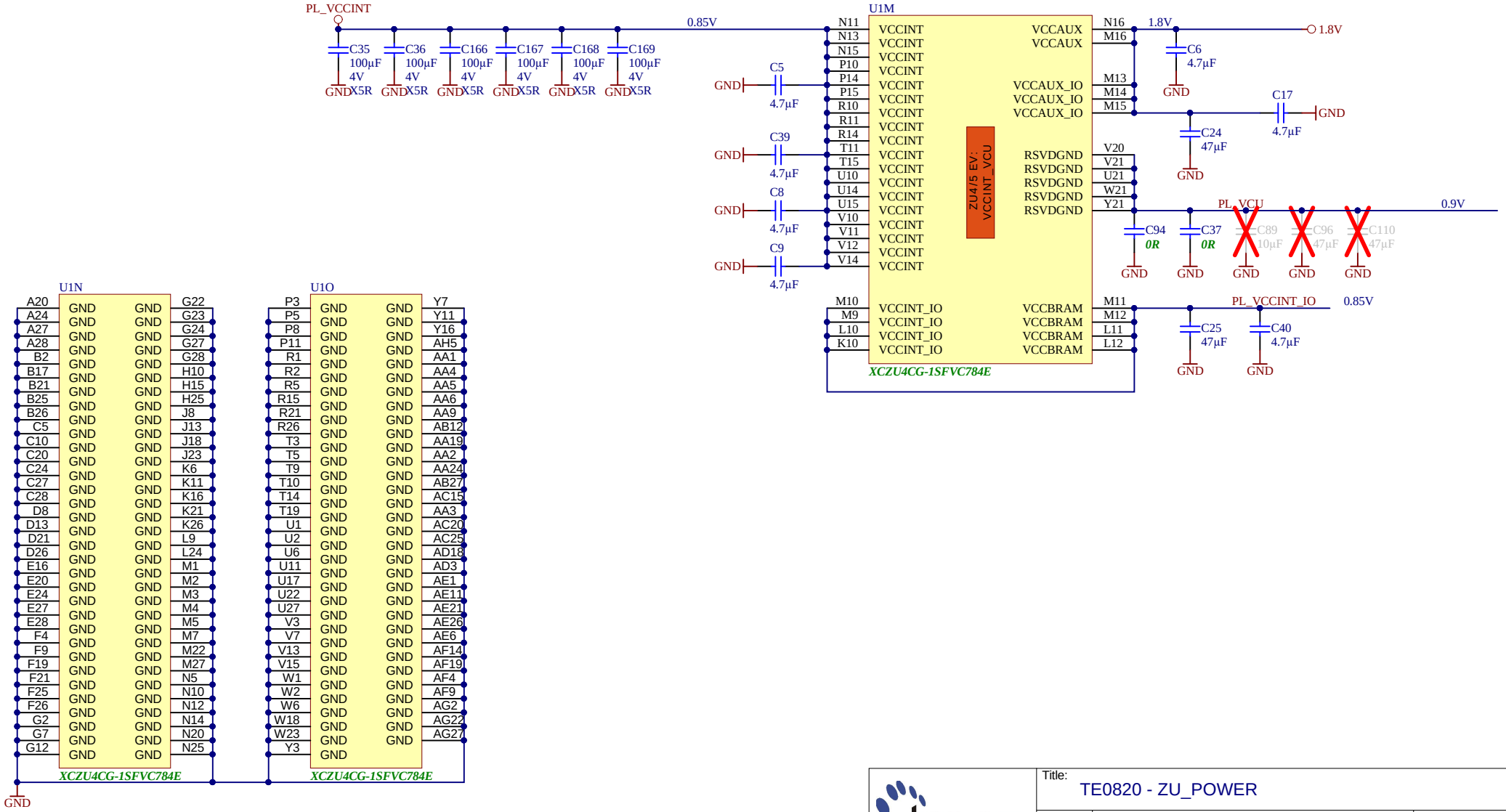
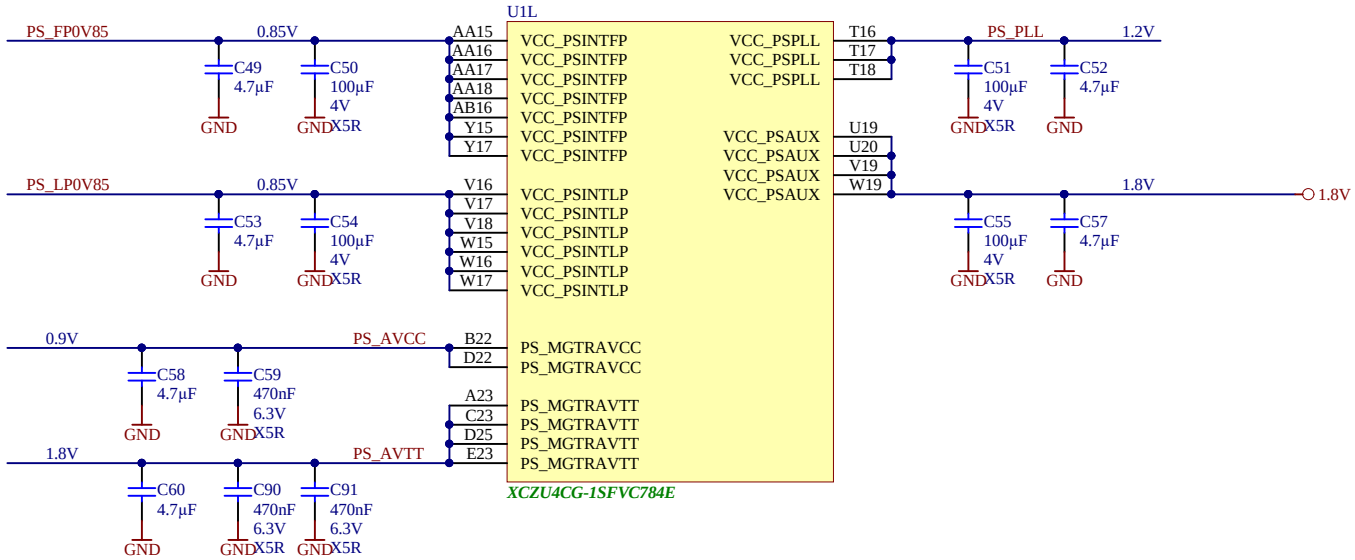
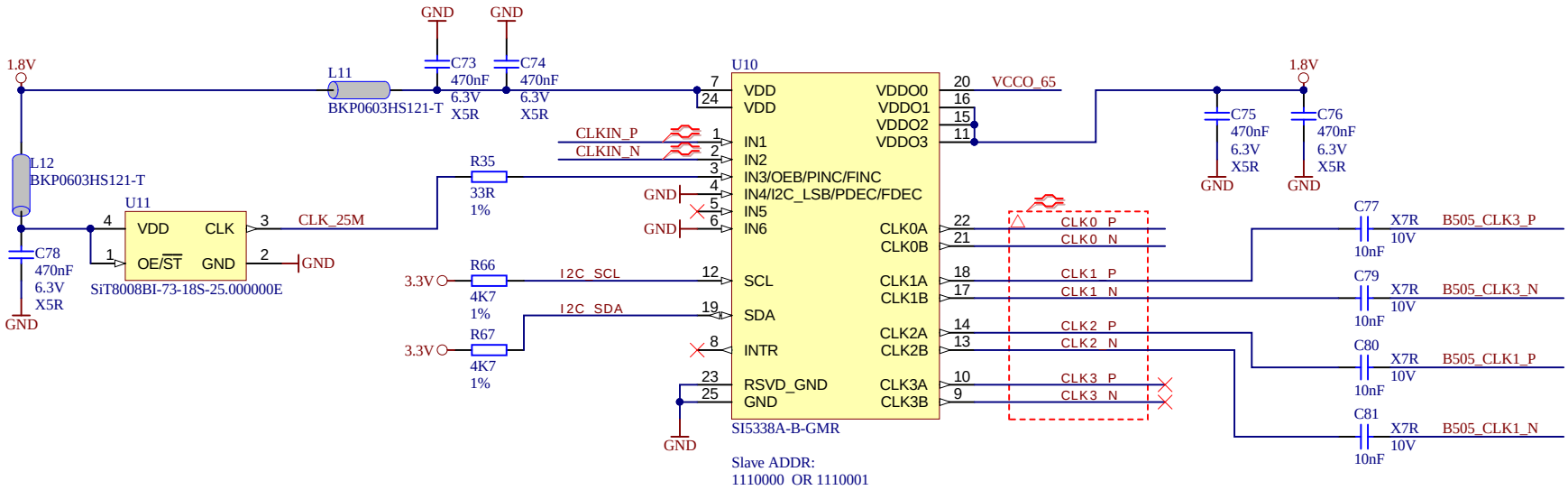
Title: TE0820 - PS_GT		
A4	Number: TE0820 04CG-1EA	Rev. 03
Date: 2018-03-28	Copyright: Trenz Electronic GmbH / TT	Page 10 of 21
Filename: B_PS_GT.SchDoc		



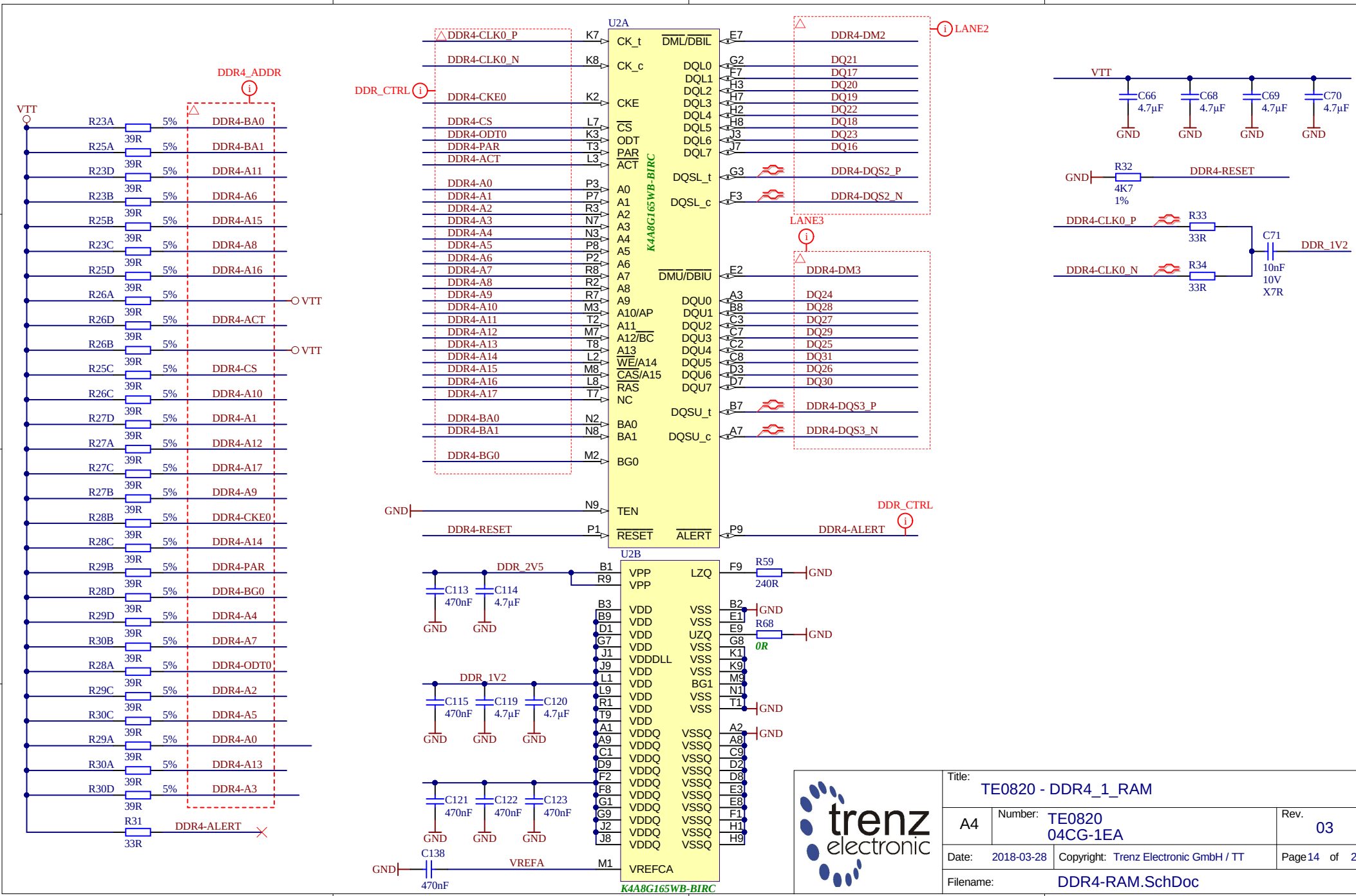
Title: TE0820 - ZU_POWER			
A4	Number: TE0820 04CG-1EA		Rev. 03
Date: 2018-03-28	Copyright: Trenz Electronic GmbH / TT		Page 11 of 21
Filename: ZU_POWER.SchDoc			



trenz electronic	Title: TE0820 - ZU_PS_POWER		
A4	Number: TE0820 04CG-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 04CG-1EA		Rev. 03
Date: 2018-03-28	Copyright: 2015 Trenz Electronic GmbH		Page 13 of 21
Filename: CLK.SchDoc			



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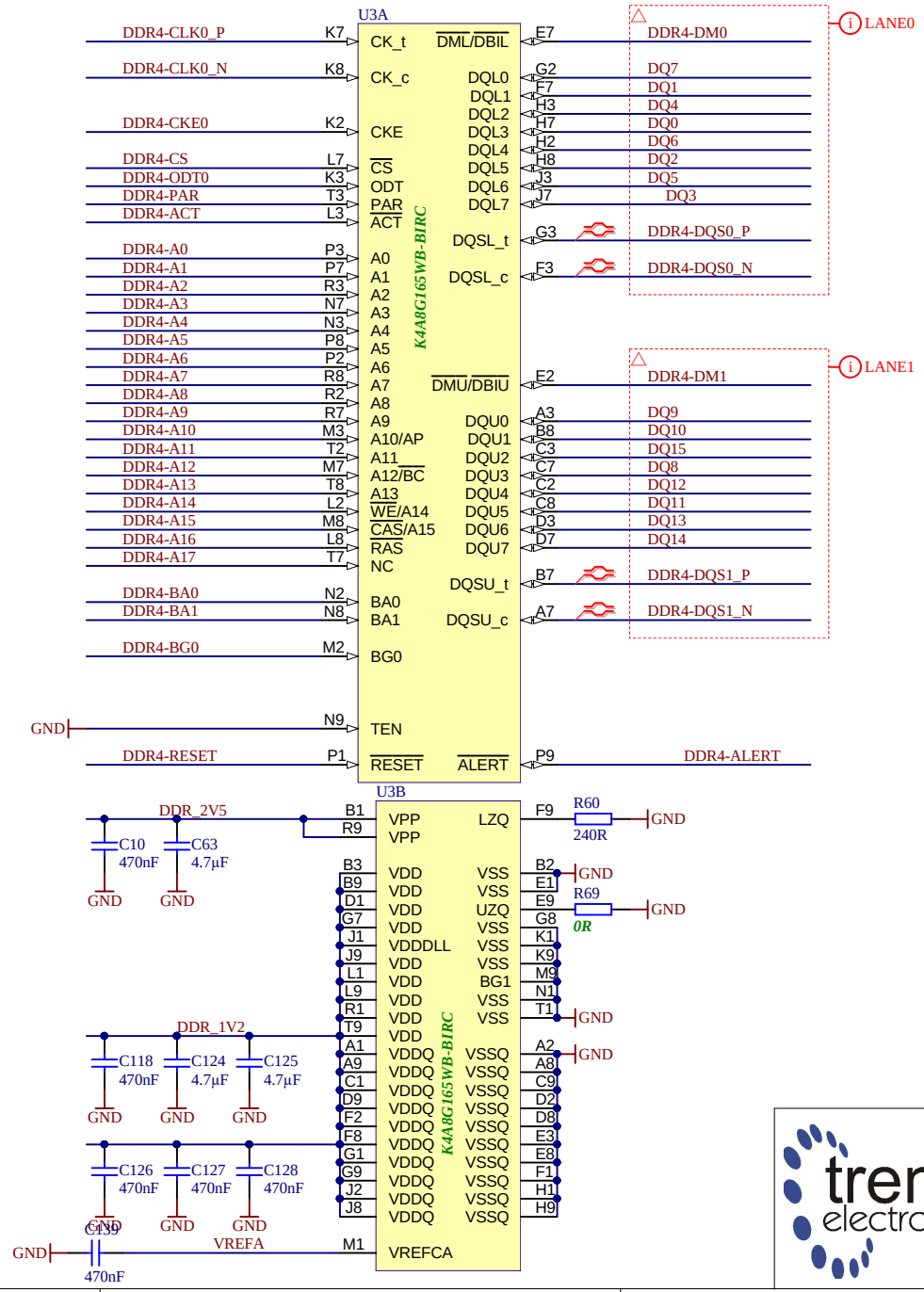
Title: TE0820 - DDR4_1_RAM			
A4	Number: TE0820 04CG-1EA		Rev. 03
Date: 2018-03-28	Copyright: Trenz Electronic GmbH / TT		Page 14 of 21
Filename: DDR4-RAM.SchDoc			



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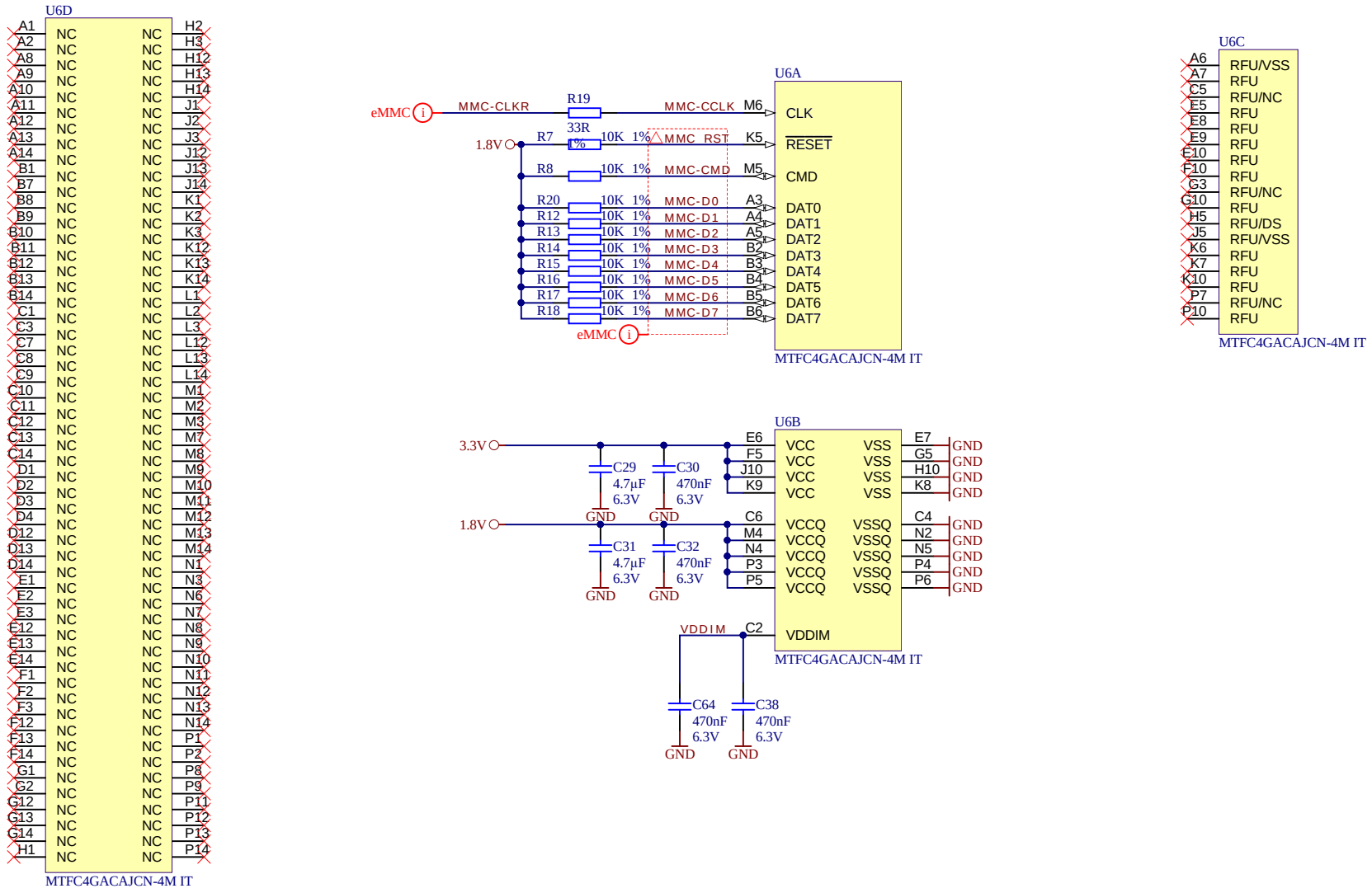
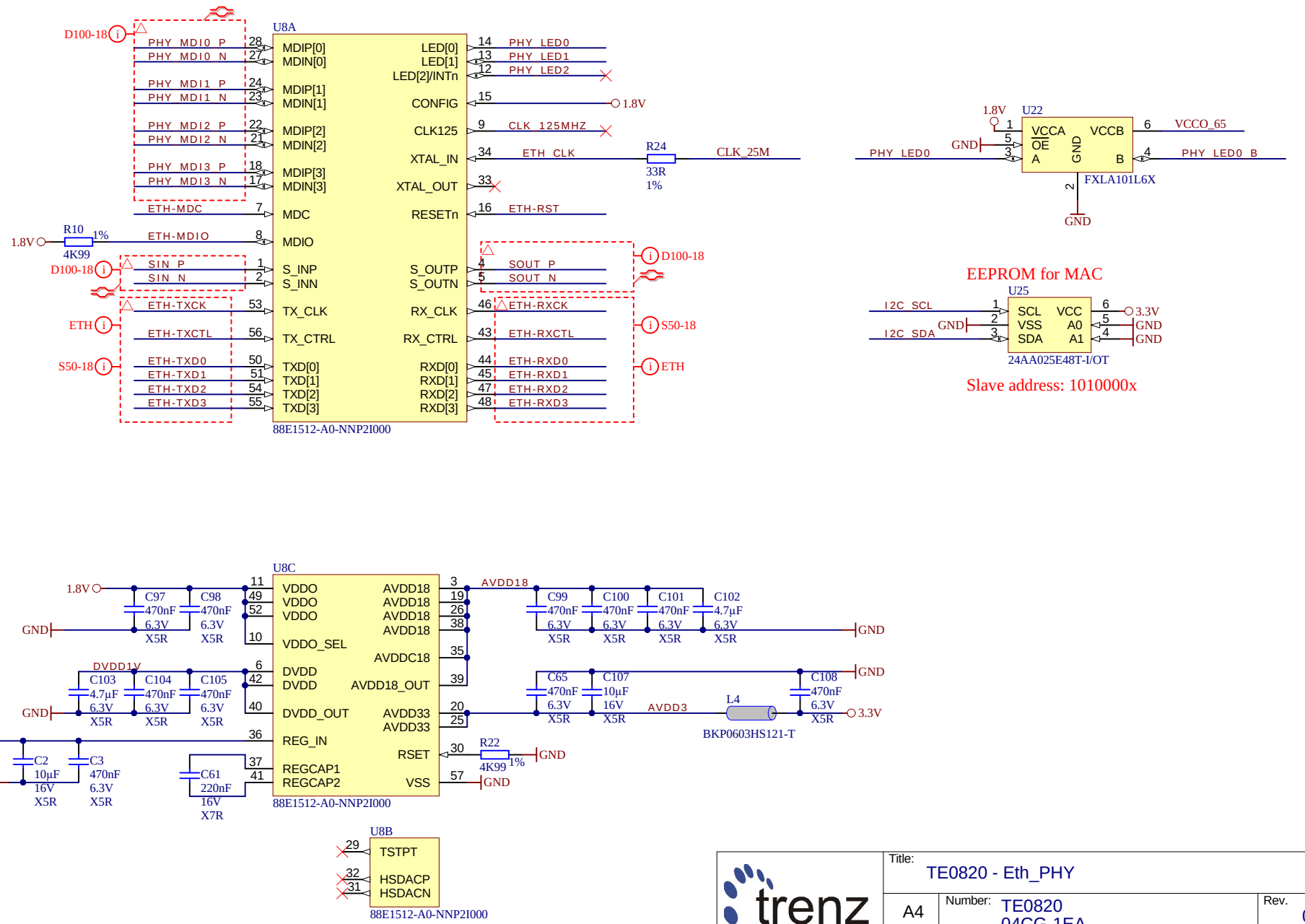
Title: TE0820 - DDR4_2_RAM			
A4	Number: TE0820 04CG-1EA		Rev. 03
Date: 2018-03-28	Copyright: Trenz Electronic GmbH / TT		Page 15 of 21
Filename: DDR4-RAM_2.SchDoc			



trenz electronic	Title: TE0820 - eMMC		
A4	Number: TE0820 04CG-1EA		Rev. 03
Date: 2018-03-28	Copyright: Trenz Electronic GmbH / TT		Page 16 of 21
Filename: eMMC.SchDoc			


U8A
D100-18
PHY_MDI0_P
PHY_MDI0_N
PHY_MDI1_P
PHY_MDI1_N
PHY_MDI2_P
PHY_MDI2_N
PHY_MDI3_P
PHY_MDI3_N
MDIP[0]
MDIN[0]
MDIP[1]
MDIN[1]
MDIP[2]
MDIN[2]
MDIP[3]
MDIN[3]
LED[0]
LED[1]
LED[2]/INTn
CONFIG
CLK125
XTAL_IN
XTAL_OUT
RESETn
PHY_LED0
PHY_LED1
PHY_LED2
1.8V
CLK_125MHZ
ETH_CLK
R24
33R
1%
CLK_25M
ETH-RST
ETH-MDC
MDC
R10
1%
4K99
1.8V
ETH-MDIO
MDIO
SIN_P
SIN_N
S_INP
S_INN
S_OUTP
S_OUTN
SOUT_P
SOUT_N
D100-18
ETH-TXCK
ETH-TXCTL
ETH-TXD0
ETH-TXD1
ETH-TXD2
ETH-TXD3
TX_CLK
TX_CTRL
TXD[0]
TXD[1]
TXD[2]
TXD[3]
RX_CLK
RX_CTRL
RXD[0]
RXD[1]
RXD[2]
RXD[3]
ETH-RXCK
ETH-RXCTL
ETH-RXD0
ETH-RXD1
ETH-RXD2
ETH-RXD3
S50-18
ETH
88E1512-A0-NNP2I000
U22
1.8V
VCCA
OE
A
GND
VCCB
B
VCCO_65
PHY_LED0_B
FXLA101L6X
EEPROM for MAC
U25
I2C_SCL
I2C_SDA
SCL
VSS
SDA
VCC
A0
A1
3.3V
24AA025E48T-I/OT
Slave address: 1010000x
U8C
VDDO
VDDO
VDDO
VDDO_SEL
DVDD
DVDD
DVDD_OUT
REG_IN
REGCAP1
REGCAP2
AVDD18
AVDD18
AVDD18
AVDD18
AVDDC18
AVDD18_OUT
AVDD33
AVDD33
RSET
VSS
AVDD18
C97
C98
C99
C100
C101
C102
470nF
4.7µF
6.3V
X5R
C103
C104
C105
DVDD1V
C65
C107
C108
10µF
16V
AVDD3
L4
BKP0603HS121-T
C2
C3
C61
220nF
X7R
R22
4K99
U8B
TSTPT
HSDACP
HSDACN
88E1512-A0-NNP2I000
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Title: TE0820 - Eth_PHY
A4
Number: TE0820 04CG-1EA
Rev. 03
Date: 2018-03-28
Copyright: 2015 Trenz Electronic GmbH
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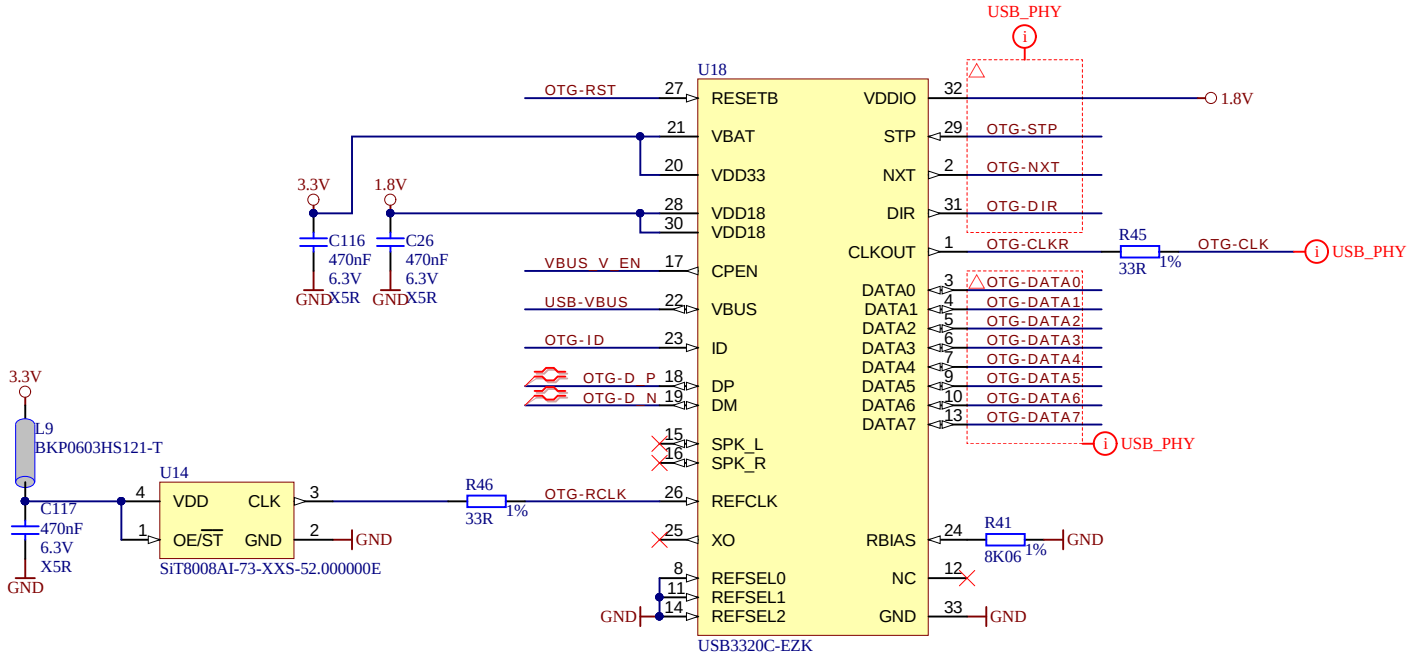
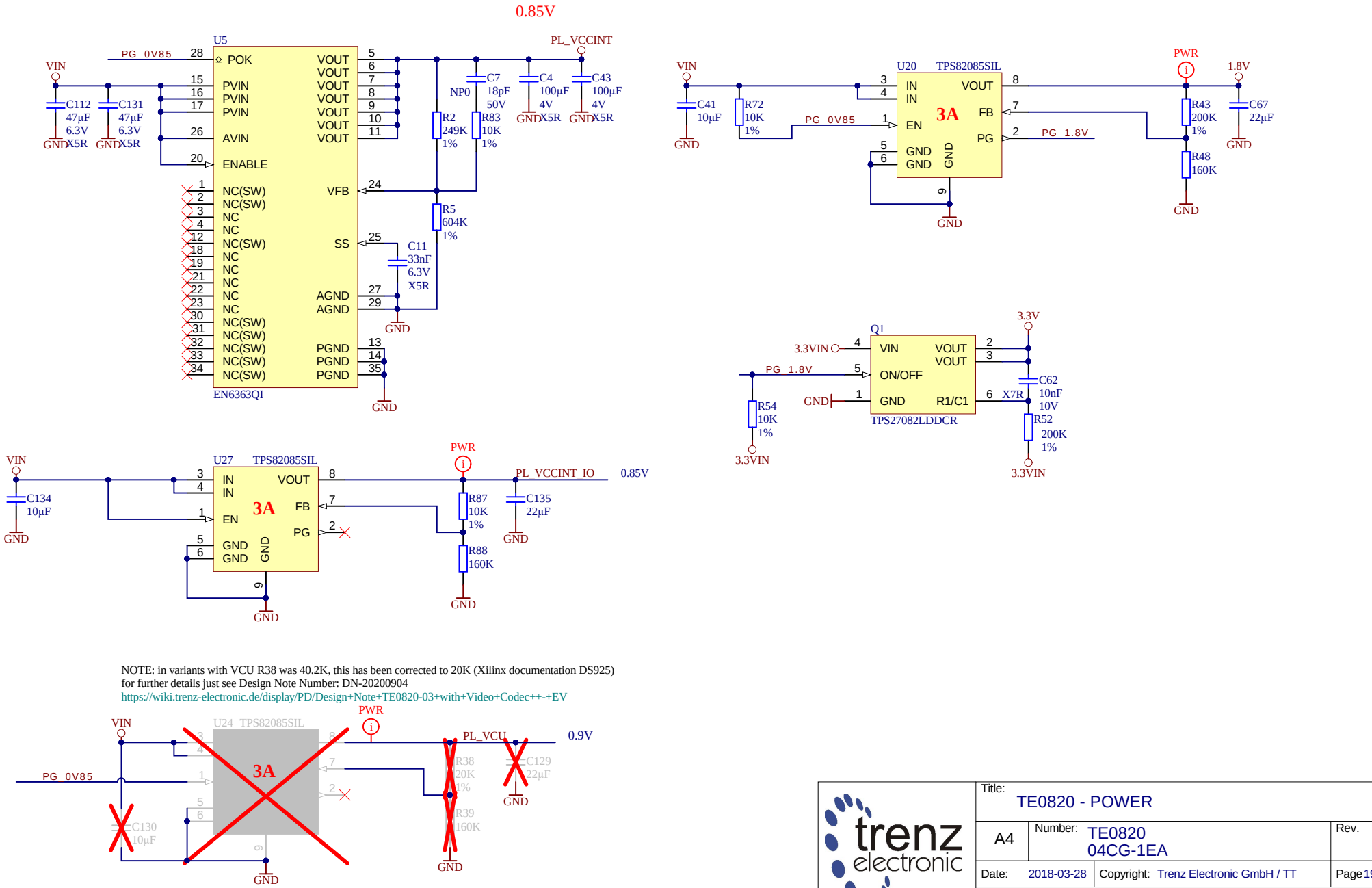
Filename: ETH-PHY.SchDoc



Title: TE0820 - USB_PHY			
A4	Number: TE0820 04CG-1EA		Rev. 03
Date: 2018-03-28	Copyright: 2015 Trenz Electronic GmbH		Page 18 of 21
Filename: USB-PHY.SchDoc			


0.85V
U5
EN6363QI
PG_0V85
VIN
PL_VCCINT
POK
PVIN
AVIN
ENABLE
NC(SW)
NC
VOUT
VFB
SS
AGND
PGND
C112 47µF 6.3V X5R
C131 47µF 6.3V X5R
C7 18pF 50V NP0
C4 100µF 4V X5R
C43 100µF 4V X5R
R2 249K 1%
R83 10K 1%
R5 604K 1%
C11 33nF 6.3V X5R
GND
U20 TPS82085SIL
IN
EN
GND
FB
PG
3A
PWR
1.8V
C41 10µF
R72 10K 1%
R43 200K 1%
R48 160K
C67 22µF
PG_1.8V
Q1
TPS27082LDDCR
3.3VIN
3.3V
ON/OFF
R1/C1
R54 10K 1%
C62 10nF 10V X7R
R52 200K 1%
U27 TPS82085SIL
C134 10µF
R87 10K 1%
R88 160K
C135 22µF
PL_VCCINT_IO
0.85V
NOTE: in variants with VCU R38 was 40.2K, this has been corrected to 20K (Xilinx documentation DS925)
for further details just see Design Note Number: DN-20200904
https://wiki.trenz-electronic.de/display/PD/Design+Note+TE0820-03+with+Video+Codec++-+EV
U24 TPS82085SIL
C130 10µF
R38 20K 1%
R39 160K
C129 22µF
PL_VCU
0.9V
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Title: TE0820 - POWER
A4
Number: TE0820 04CG-1EA
Rev. 03
Date: 2018-03-28
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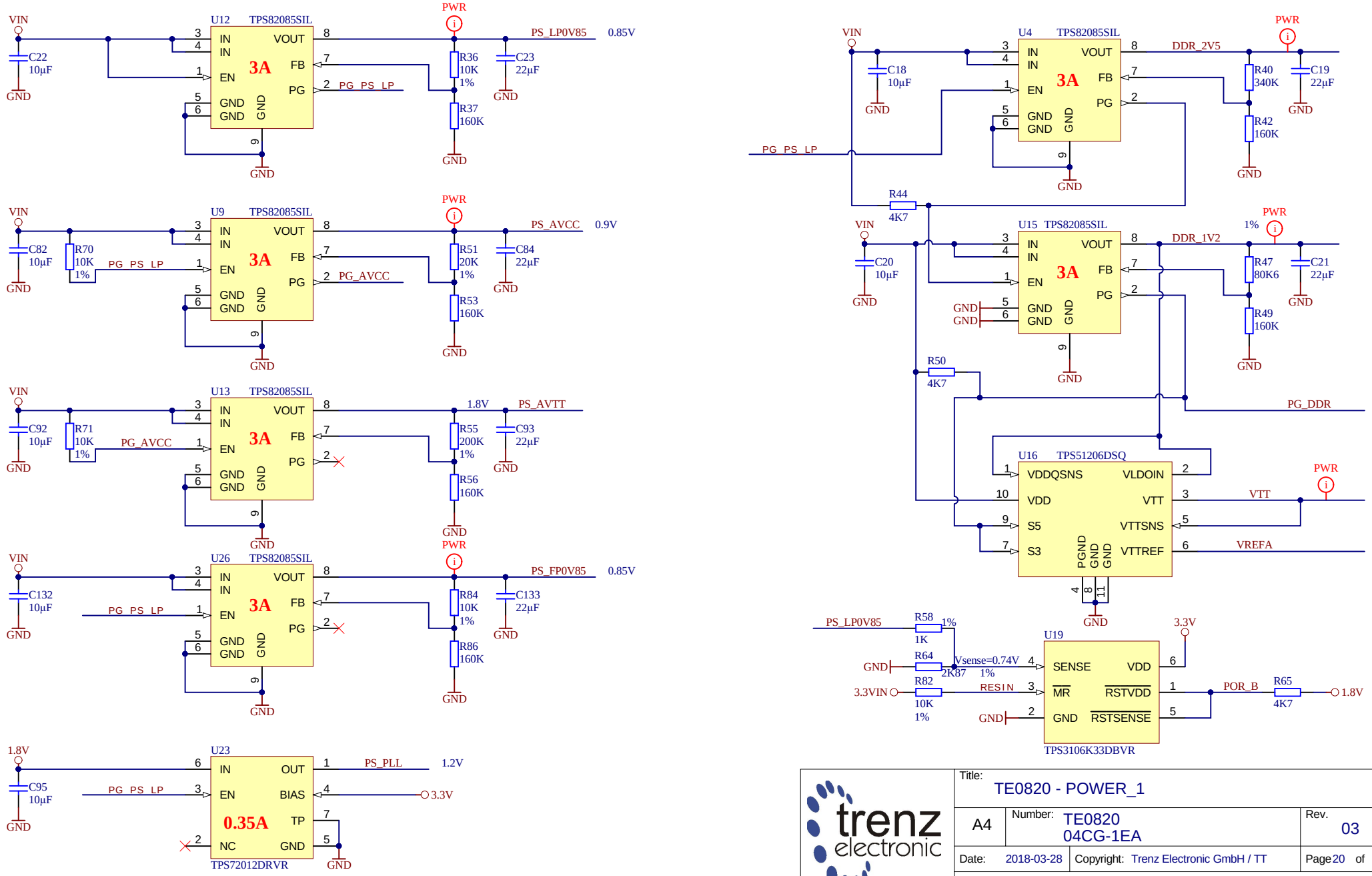
Filename: POWER.SchDoc



Title: TE0820 - POWER_1			
A4	Number: TE0820 04CG-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 04CG-1EA	Rev. 03
	Date: 2018-03-28	Copyright: Trenz Electronic GmbH / TT	Page 21 of 21
	Filename: Revision Changes.SchDoc		