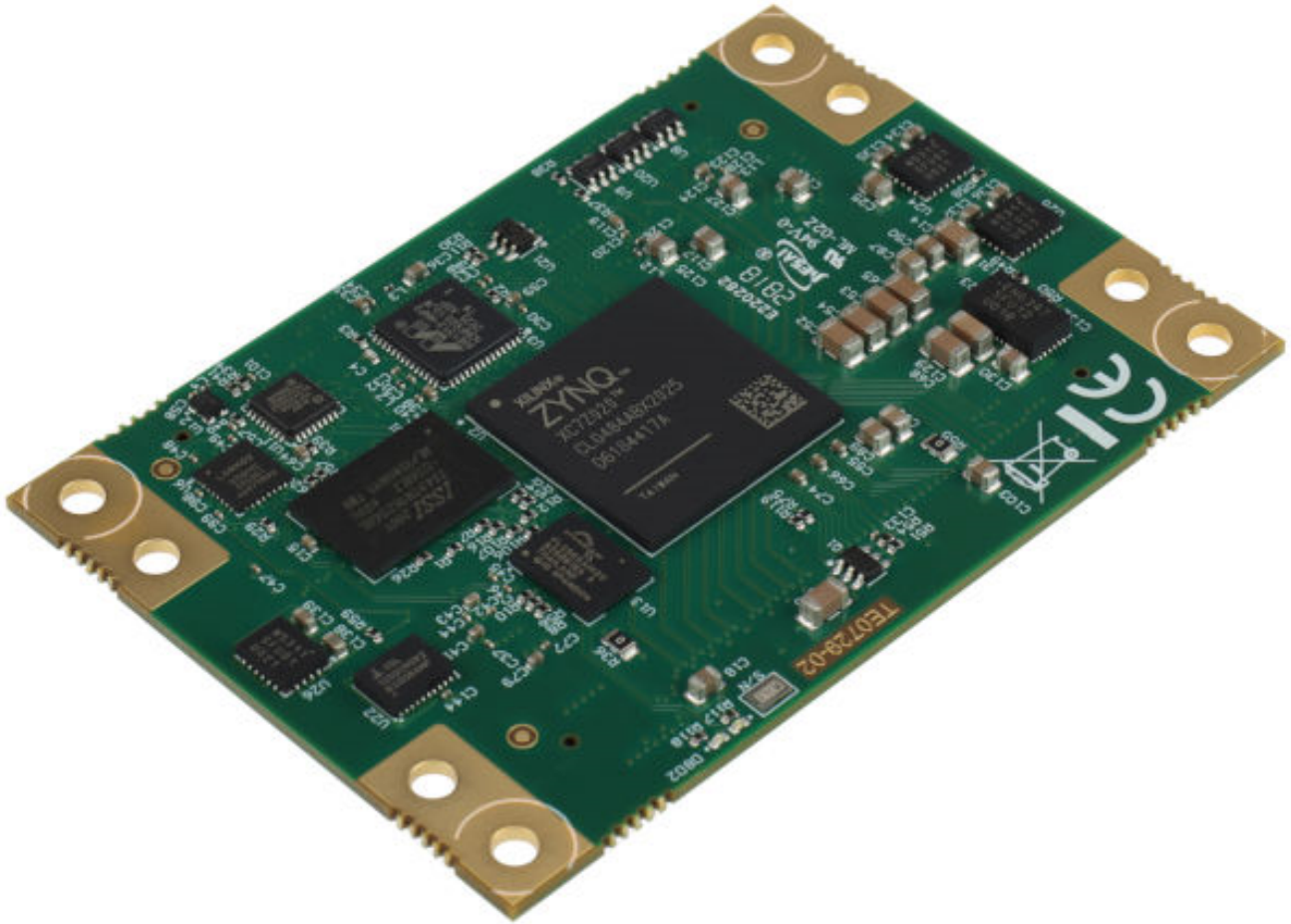
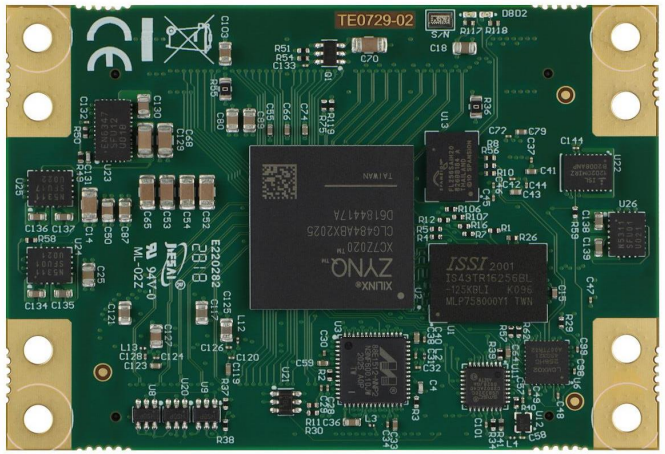
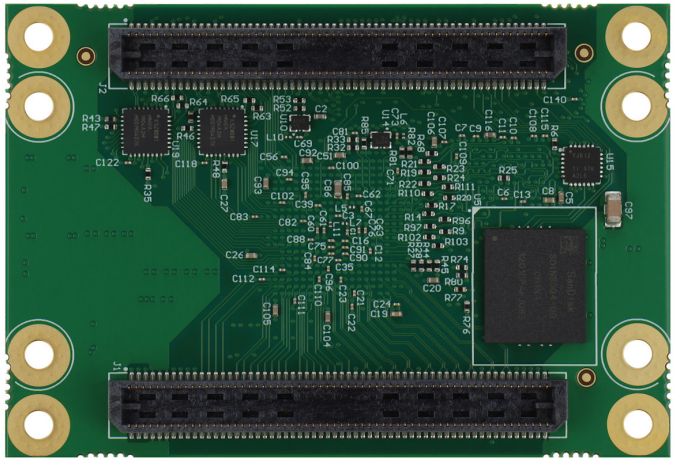






Regarding the usage of our schematics and alike documentation for Trenz module TE0729.

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.

TE0729 is protected under such right and in case of plagiarism we will have to do anything necessary in order to protect our assets.

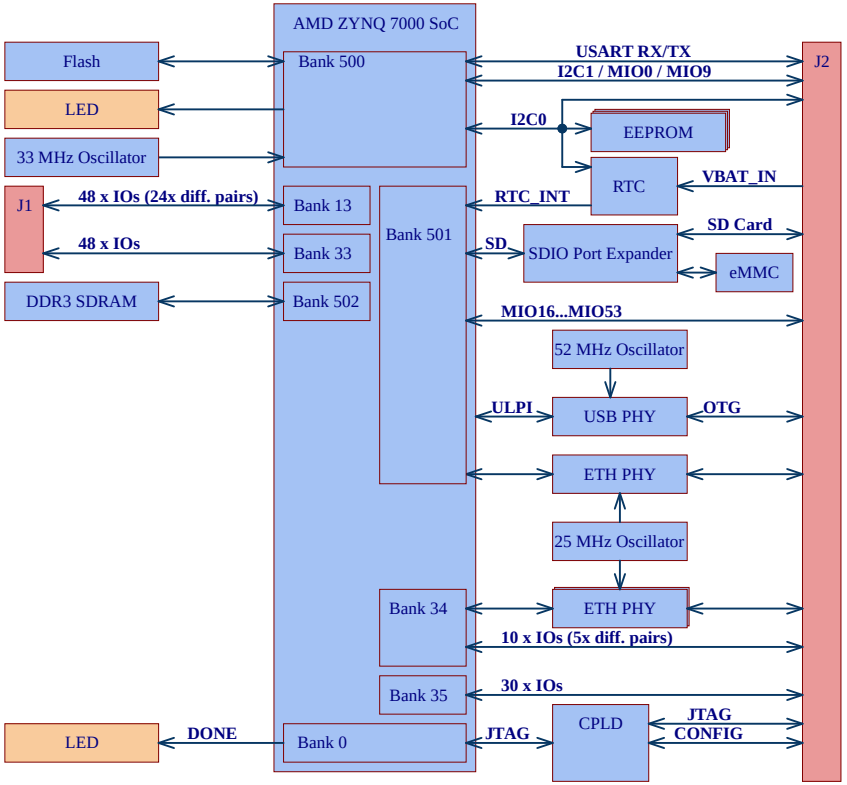
Schematics and other handouts serve for informational purposes only!

trenz electronic	Title: TE0729 – Legal Notice		
	A4	Number: TE0729 62I65MM	Rev. 03
	Date: 22.01.2024	Copyright: Trenz Electronic GmbH	Page 1 of 22
	Filename: Legal Notices Modules.SchDoc		

REV	DATE	Description	
-01	-	Initial Revision	-
-02	-	-	-
-03	2023-12-01	1) Changed DCDC (U24, U25, U26) from EN5311QI to MPM3834C. 2) Changed DCDC (U23) from EN6347QI to MPM3860GQW-Z. 3) Changed load switch (Q1) from TPS27082LDDCR to MP5077GG-Z. 4) Added power supervisor (U4). 5) Changed power net name from 1.5V to DDR_VDD. 6) Changed power sequencing. 6.1) Voltage supervisor (U4) enables 1V voltage rail (DCDC U23) via signal EN_Module. 6.2) 1V DCDC (U23) enables 1.8V voltage rail (DCDC U25) via signal PG_1V0. 6.3) 1.8V DCDC (U25) enables 2.5V (DCDC U24) and DDR_VDD (DCDC U26) voltage rails via signal PG_1V8. 6.4) Voltage rail 3.3V (load switch Q1) is logical AND-enabled via 6.4.1) power good signal PG_2V5_3V3 from voltage rail 2.5V DCDC (U24) and DDR_VDD DCDC (U26) via diode (D4) 6.4.2) CPLD (U6) signal EN_3V3 via diode (D5). 7) Added level shifter in signal FPGA_IO (U7, C185, C186) to separate power domains. Added resistor R91 as fallback. 8) Added diode D3 between U21 pin 3 net nRST_in and voltage rail 3.3V. 9) Added option to improve noise immunity for signal nRST_in via capacitor C187 (default: not assembled). 10) Connected exposed pad to GND for SDIO port expander (U15). 11) Added decoupling capacitors: 11.1) C166 for U2I. 11.2) C178 for U2H. 11.3) C167 and C173 for U11. 11.4) C168... C171 for U3C. 11.5) C172 and C179 for U5B. 11.6) C174 for U15. 11.7) C175 for U8. 11.8) C176 for U9. 11.9) C177 for U20. 12) Changed 10 µF capacitors (C36, C86) to 22 µF. 13) Changed 22 µF capacitors (C117, C121, C125, and C127) from size 0805 to 0603. 14) Changed capacitor C144 from 470 nF, 6.3 V, X5R, 20 % to 100 nF, 16 V, X7R, 10 %. 15) Pulled-up board revision signal (U2D pin H17) and added board revision documentation. 16) Changed fiducials to standard fiducials. 17) Removed serial number S/N. 18) Added testpoints TP1...TP41. 19) Added serial number box on bottom overlay. 20) Changed signal trace length. 21) Added revision history, block and power overview and additional information. Updated page count and order.	ED

trenz electronic

Title: TE0729 – Revision History			
A4	Number: TE0729 62I65MM		Rev. 03
Date: 22.01.2024	Copyright: Trenz Electronic GmbH		Page 2 of 22
Filename: Revision_Changes.SchDoc			



Supported Voltage Ranges:

Power Rail	Direction	Range	Tolerance	Description	Note
VIN	IN	3.3 V	+/- 5 %	Baseboard Power	Baseboard Power Supply.
VBAT_IN	IN	1.8 V - 5.5 V	-	Micromodule Power	Supplies RTC.
VCCIO_13	OUT	3.3 V	-	Micromodule Power	Supplied by 3.3V.
VCCIO_33	OUT	3.3 V	-	Micromodule Power	Supplied by 3.3V.
1.8V	OUT	1.8 V	-	Micromodule Power	Supplies module periphery.
2.5V	OUT	2.5 V	-	Micromodule Power	Supplies module periphery.
3.3V	OUT	3.3 V	-	Micromodule Power	Supplies module periphery.

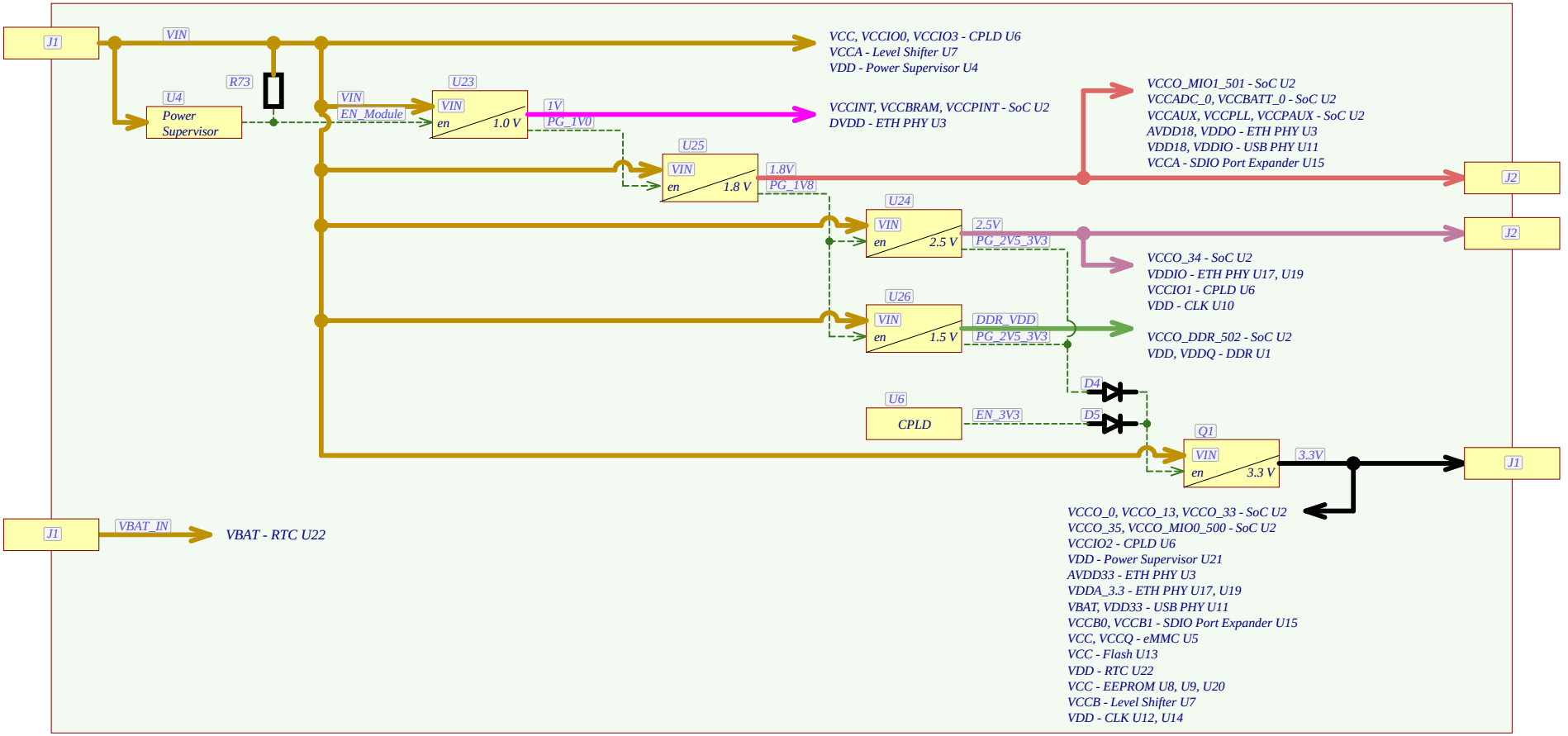
I2C Address:

Device	I2C BUS	I2C ADDR	Note
SoC *U2E*	I2C0	-	Master
EEPROM *U8*	I2C0	0x50	-
EEPROM *U9*	I2C0	0x51	-
EEPROM *U20*	I2C0	0x52	-
RTC *U22*	I2C0	0x6F	-
SRAM *U22*	I2C0	0x57	-

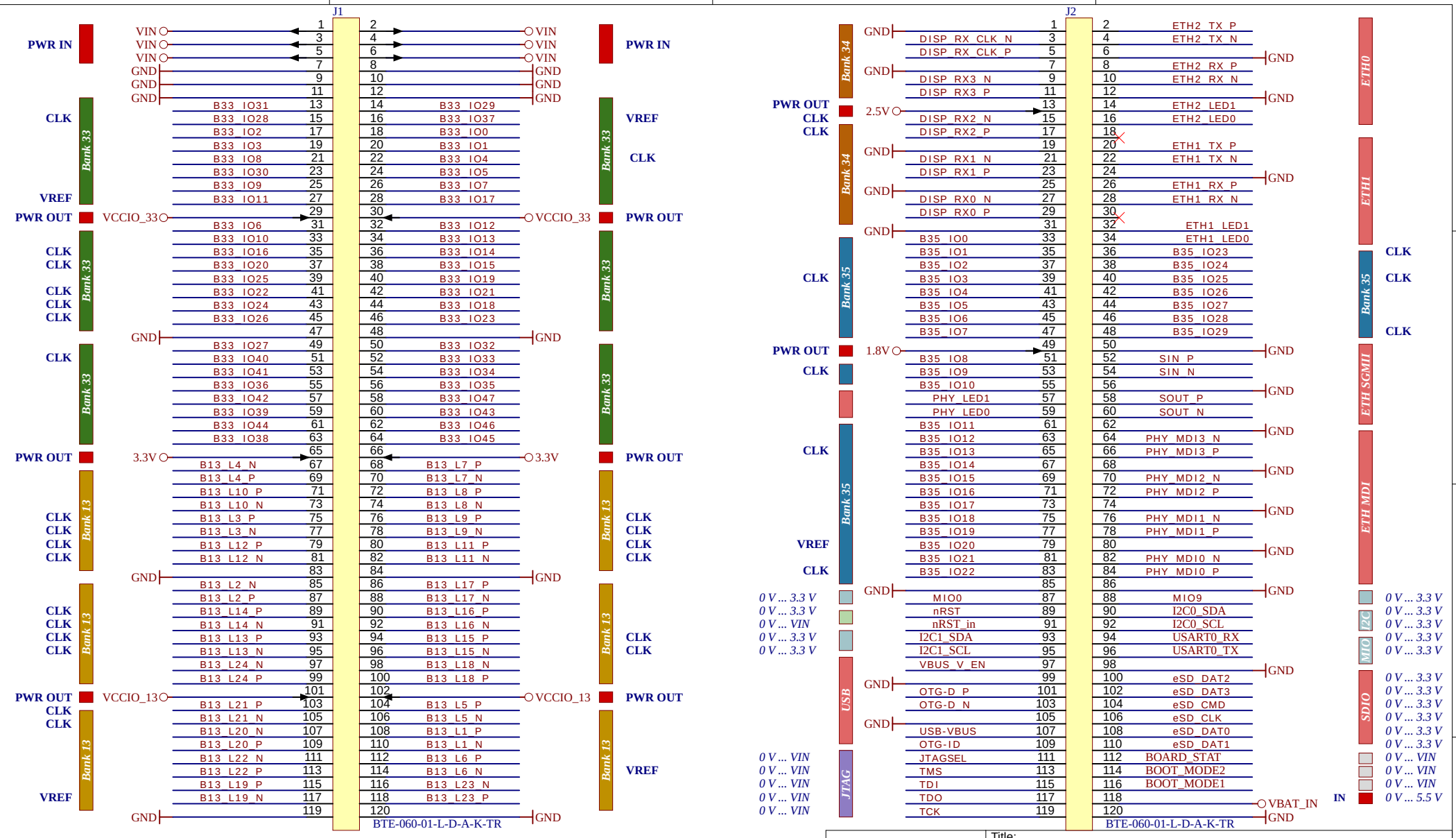
Legend: B2B Connector | LED Interface | On-board Components | ZYNC_POWER | Power

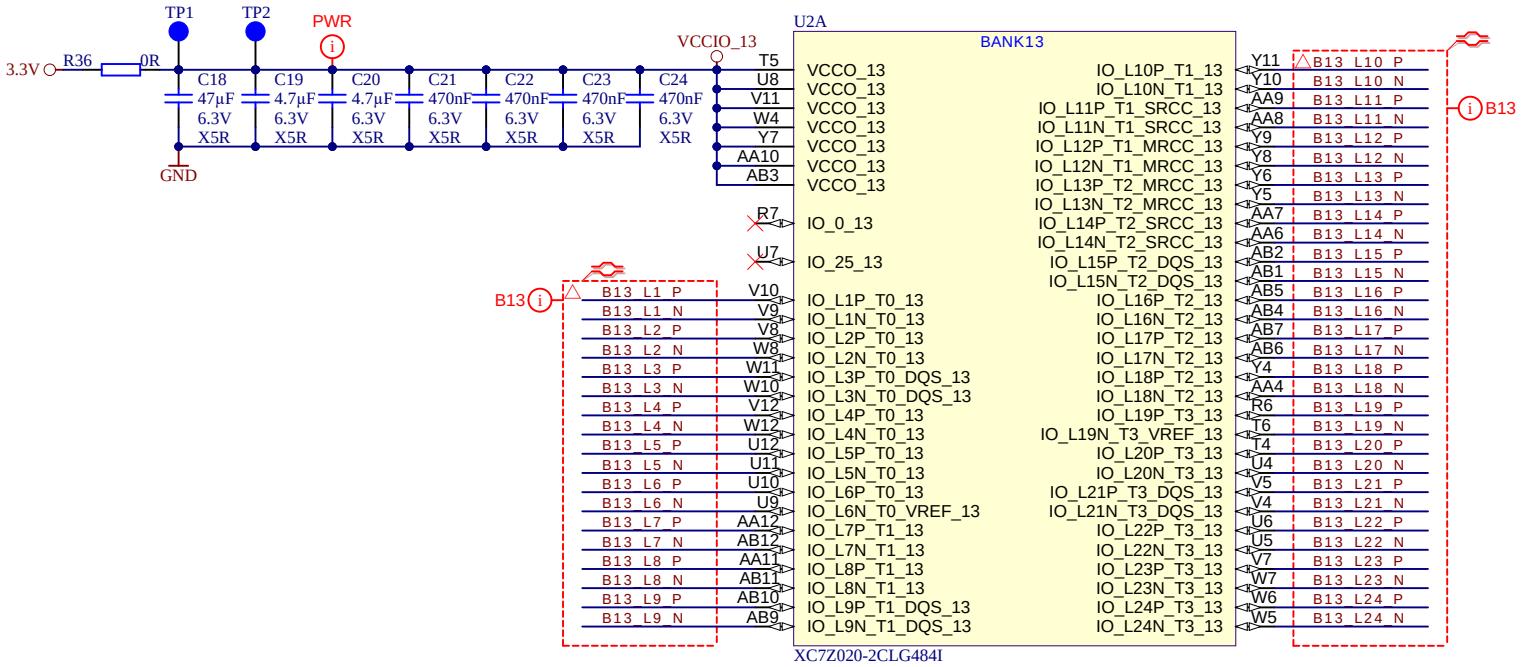
trenz electronic

Title: TE0729		
A4	Number: TE0729 62I65MM	Rev. 03
Date: 22.01.2024	Copyright: Trenz Electronic GmbH	Page 3 of 22
Filename: TE0729.SchDoc		

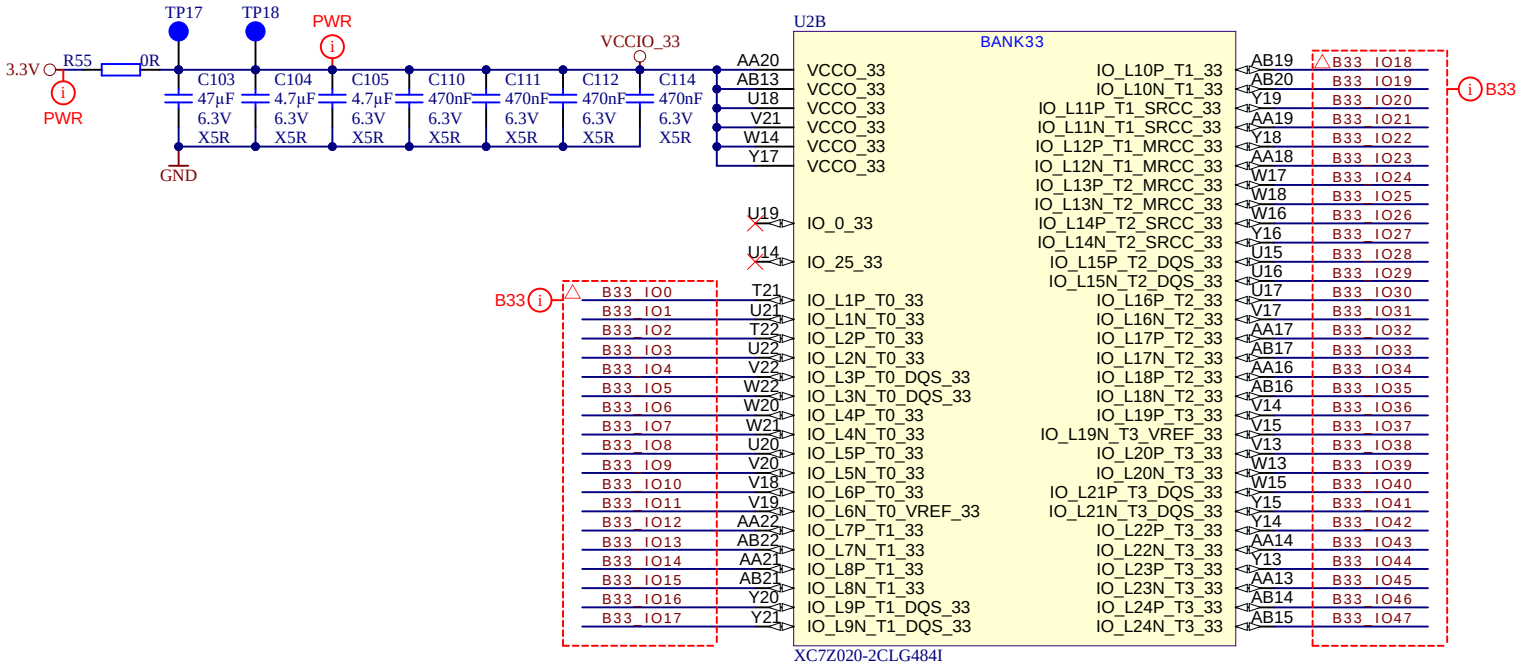


trenz electronic	Title: TE0729 – Power overview		
A4	Number: TE0729 62I65MM		Rev. 03
Date: 22.01.2024	Copyright: Trenz Electronic GmbH		Page 4 of 22
Filename: PowerOverview.SchDoc			

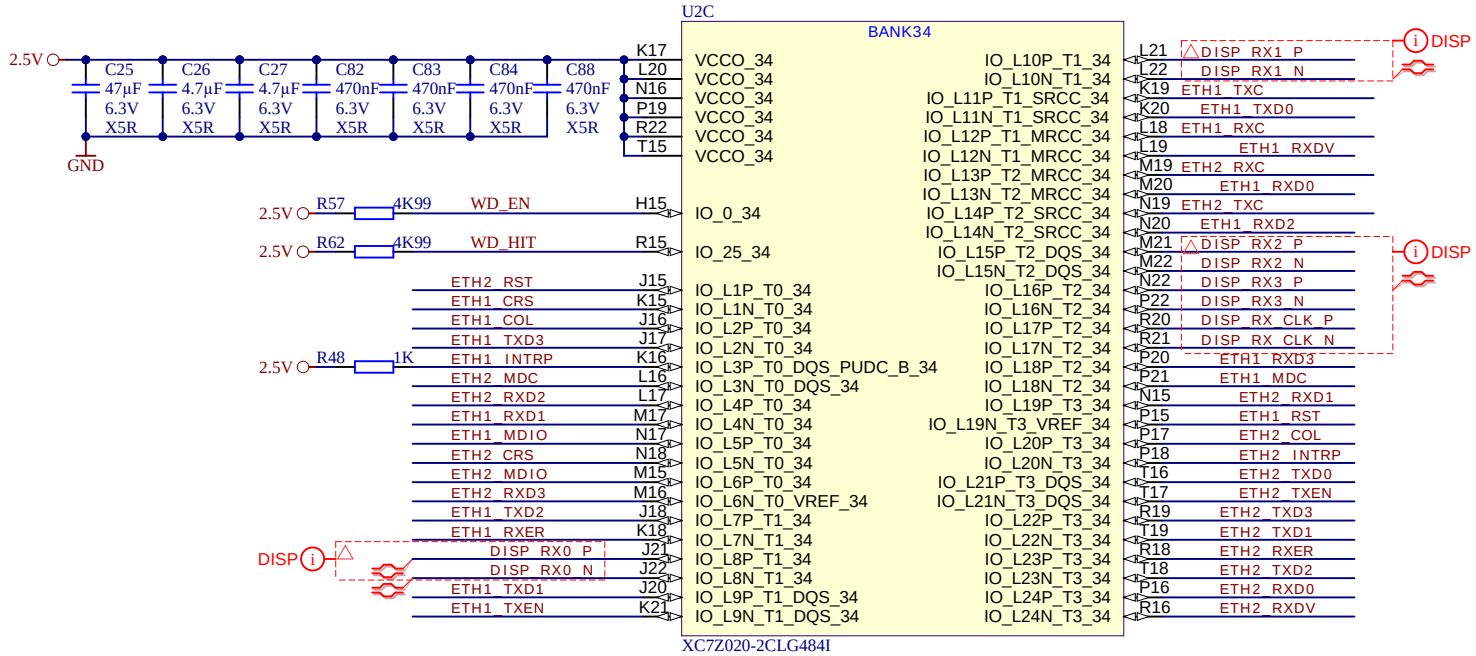

J1
J2
BTE-060-01-L-D-A-K-TR
Bank 13 HR 0..VCCIO_13
Bank 33 HR 0..VCCIO_33
Bank 34 HR 0..2.5 V
Bank 35 HR 0..3.3 V
Bank 500 MIO 0..3.3 V
trenz electronic
Title: TE0729 – Interface
A4
Number: TE0729 62I65MM
Rev. 03
Date: 22.01.2024
Copyright: Trenz Electronic GmbH
Page 5 of 22
Filename: Interface.SchDoc



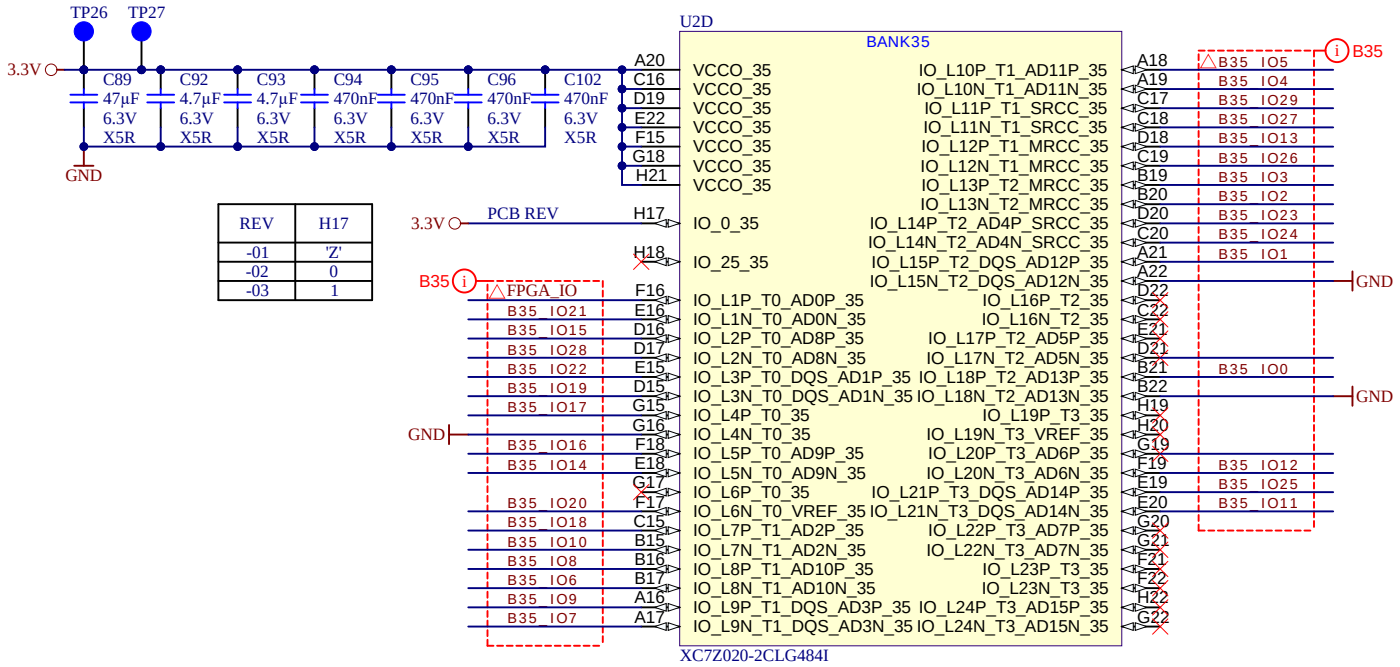
trenz electronic	Title: TE0729 – ZYNQ_B13		
A4	Number: TE0729 62I65MM		Rev. 03
Date: 22.01.2024	Copyright: Trenz Electronic GmbH		Page 6 of 22
Filename: B13.SchDoc			



trenz electronic	Title: TE0729 – ZYNQ_B33		
A4	Number: TE0729 62I65MM		Rev. 03
Date: 22.01.2024	Copyright: Trenz Electronic GmbH		Page 7 of 22
Filename: B33.SchDoc			

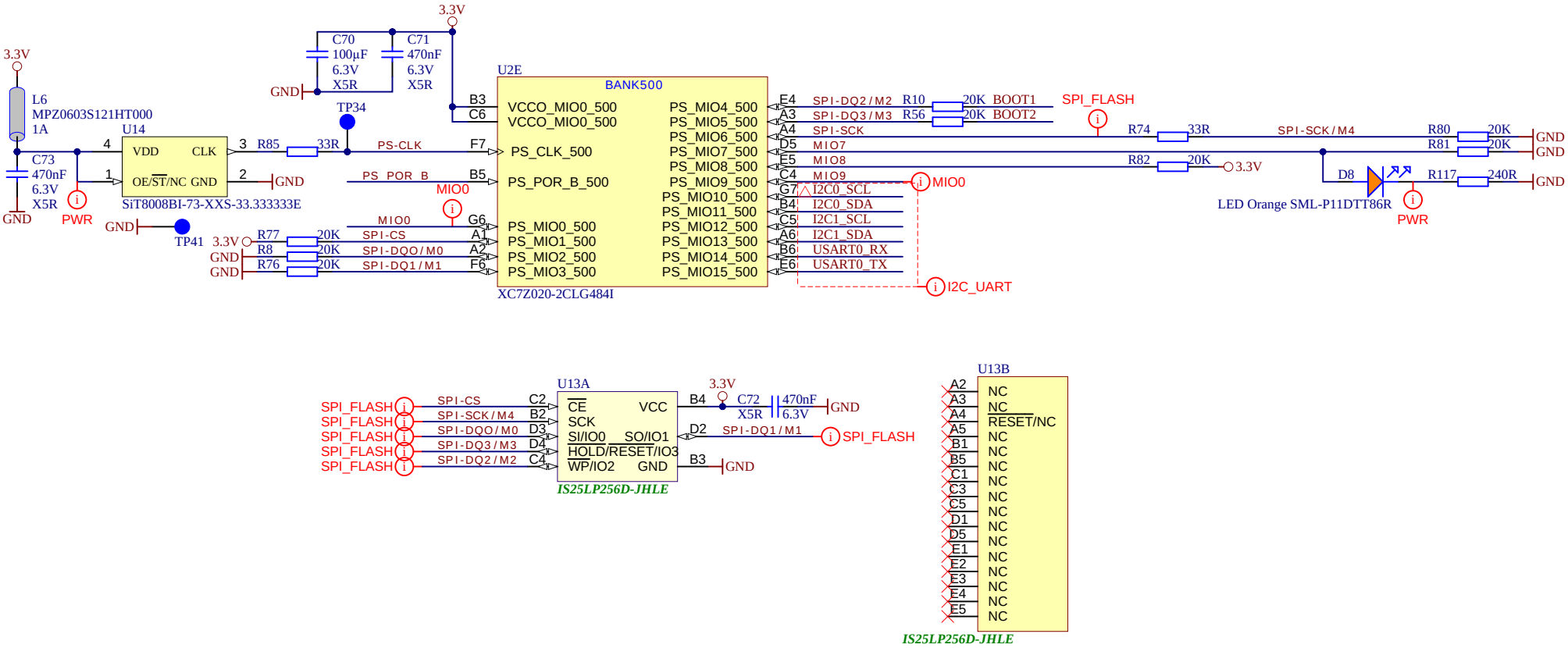


trenz electronic	Title: TE0729 – ZYNQ_B34		
A4	Number: TE0729 62I65MM		Rev. 03
Date: 22.01.2024	Copyright: Trenz Electronic GmbH		Page 8 of 22
Filename: B34.SchDoc			

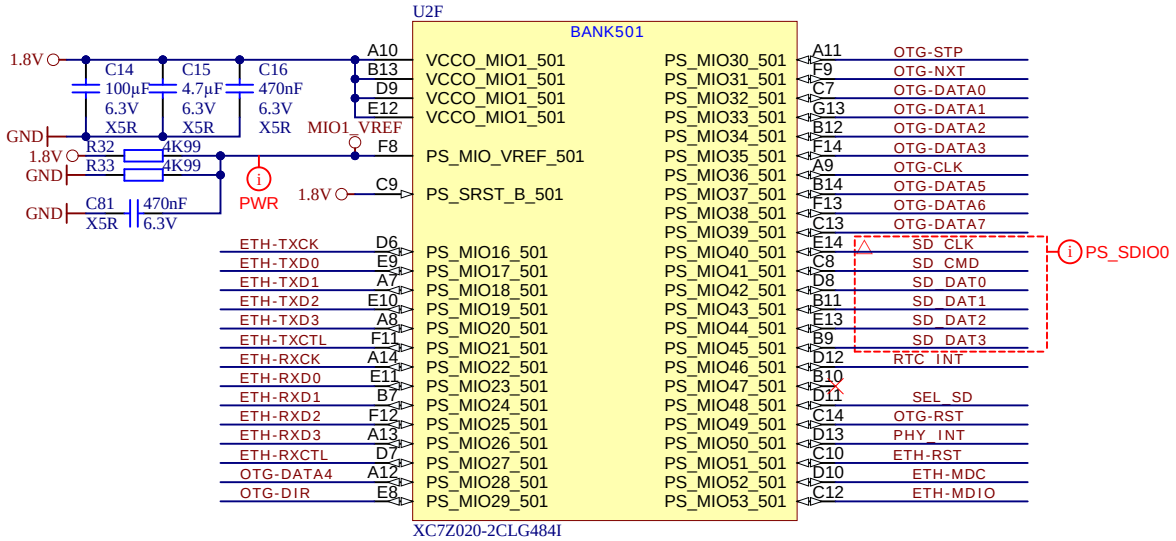


trenz electronic

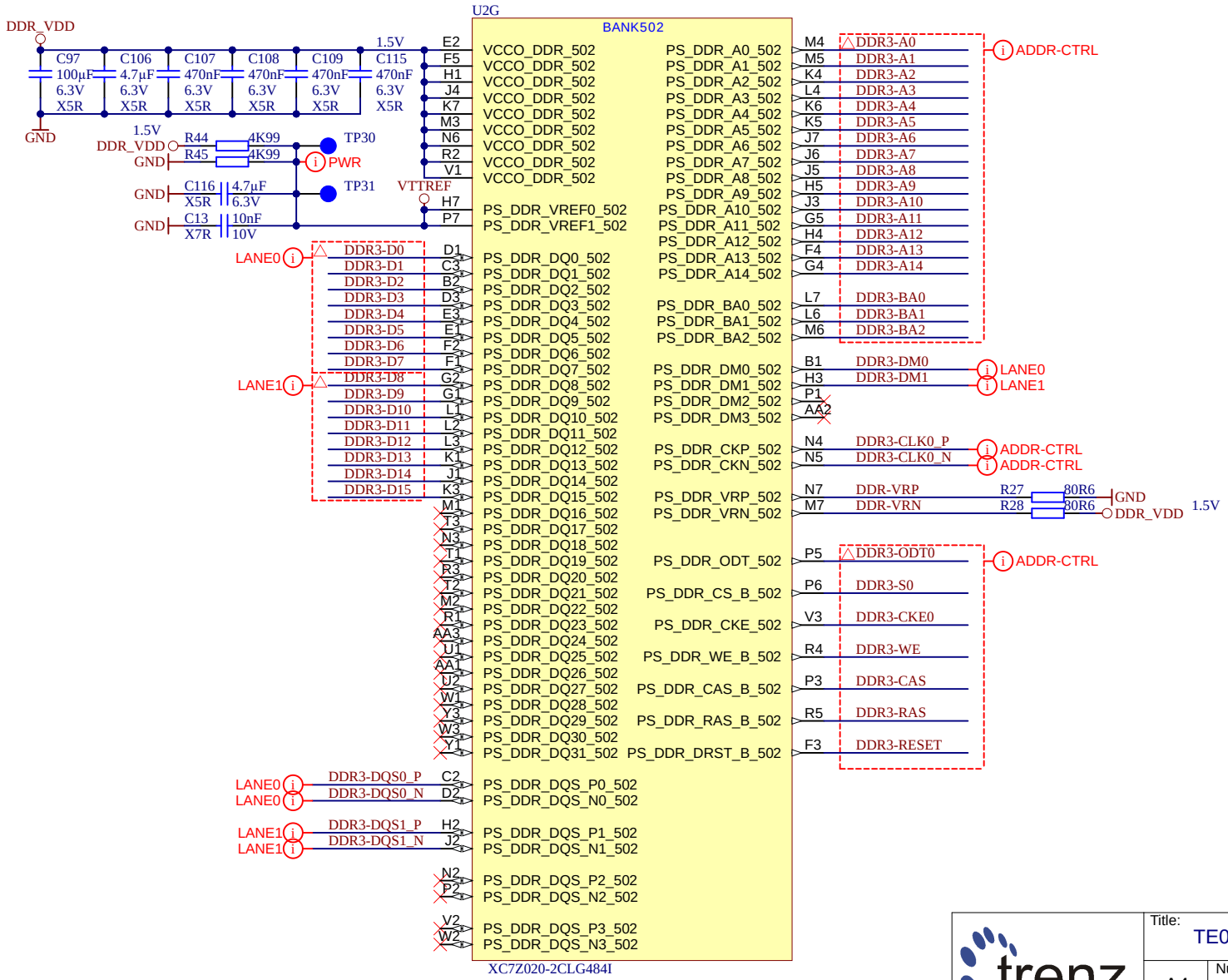
Title: TE0729 – ZYNQ_B35		
A4	Number: TE0729 62I65MM	Rev. 03
Date: 22.01.2024	Copyright: Trenz Electronic GmbH	Page 9 of 22
Filename: B35.SchDoc		



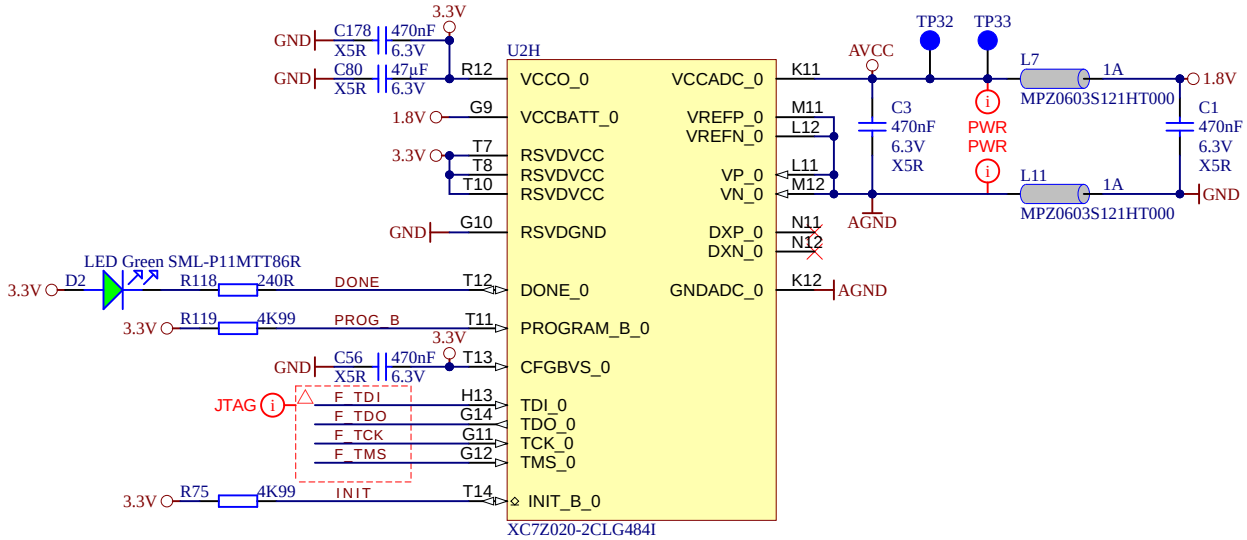
trenz electronic	Title: TE0729 – ZYNQ_MIO_B500		
A4	Number: TE0729 62I65MM		Rev. 03
Date: 22.01.2024	Copyright: Trenz Electronic GmbH		Page 10 of 22
Filename: MIO_B500.SchDoc			



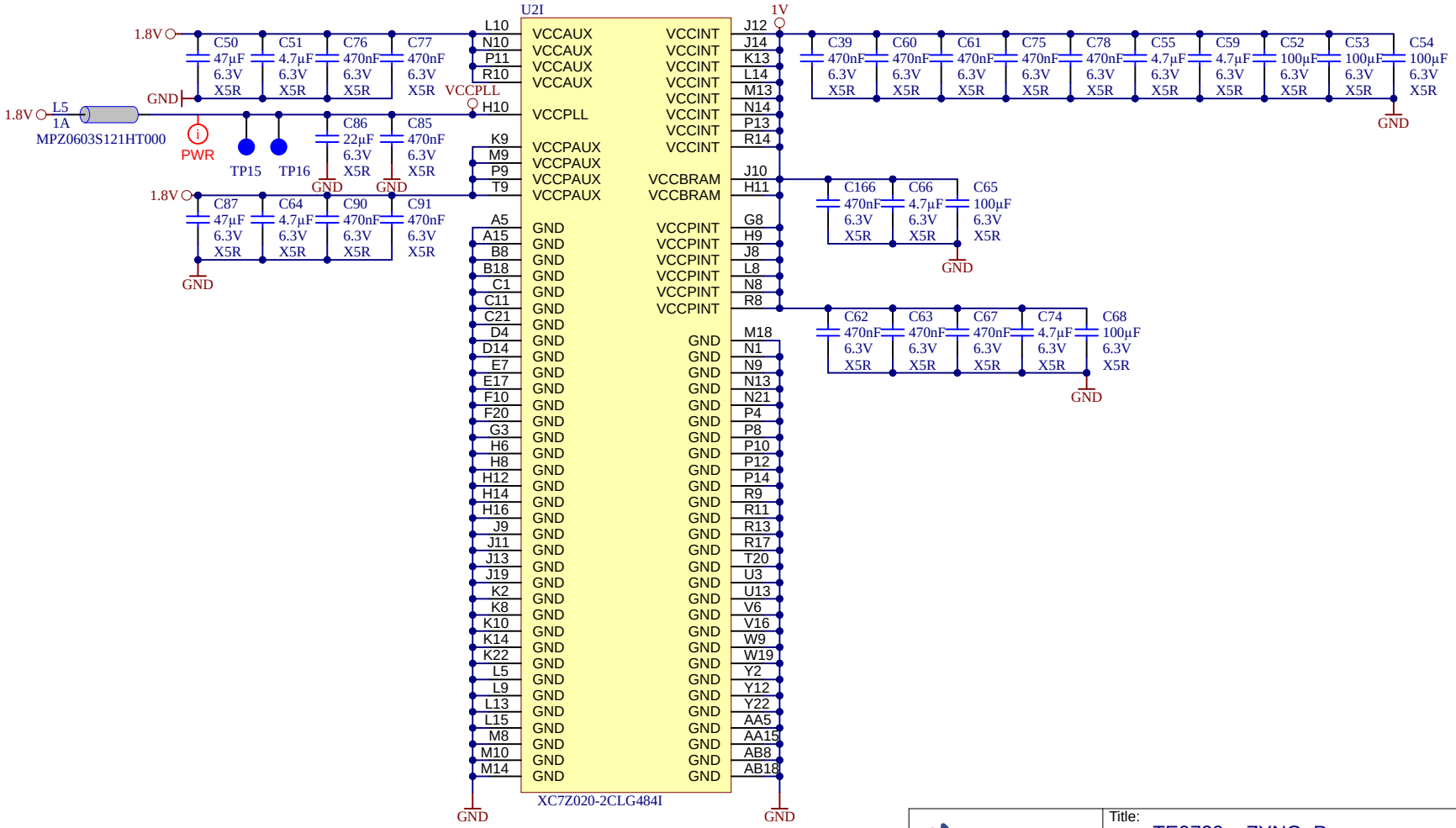
trenz electronic	Title: TE0729 – ZYNQ_MIO_B501		
A4	Number: TE0729 62I65MM		Rev. 03
Date: 22.01.2024	Copyright: Trenz Electronic GmbH		Page 11 of 22
Filename: MIO_B501.SchDoc			



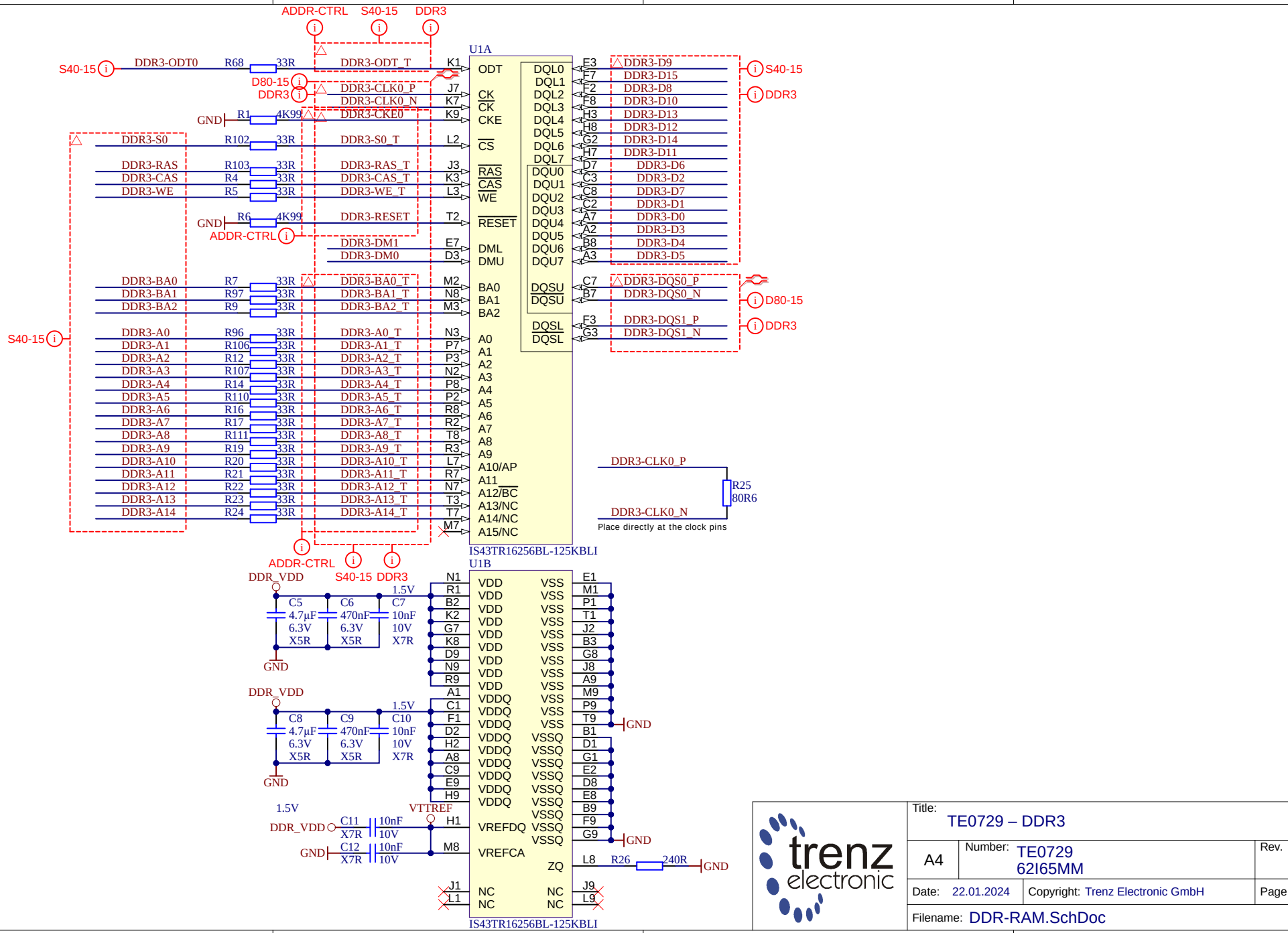
trenz electronic	Title: TE0729 – ZYNQ_PS_DDR		
A4	Number: TE0729 62I65MM		Rev. 03
Date: 22.01.2024	Copyright: Trenz Electronic GmbH		Page 12 of 22
Filename: PS-DDR.SchDoc			



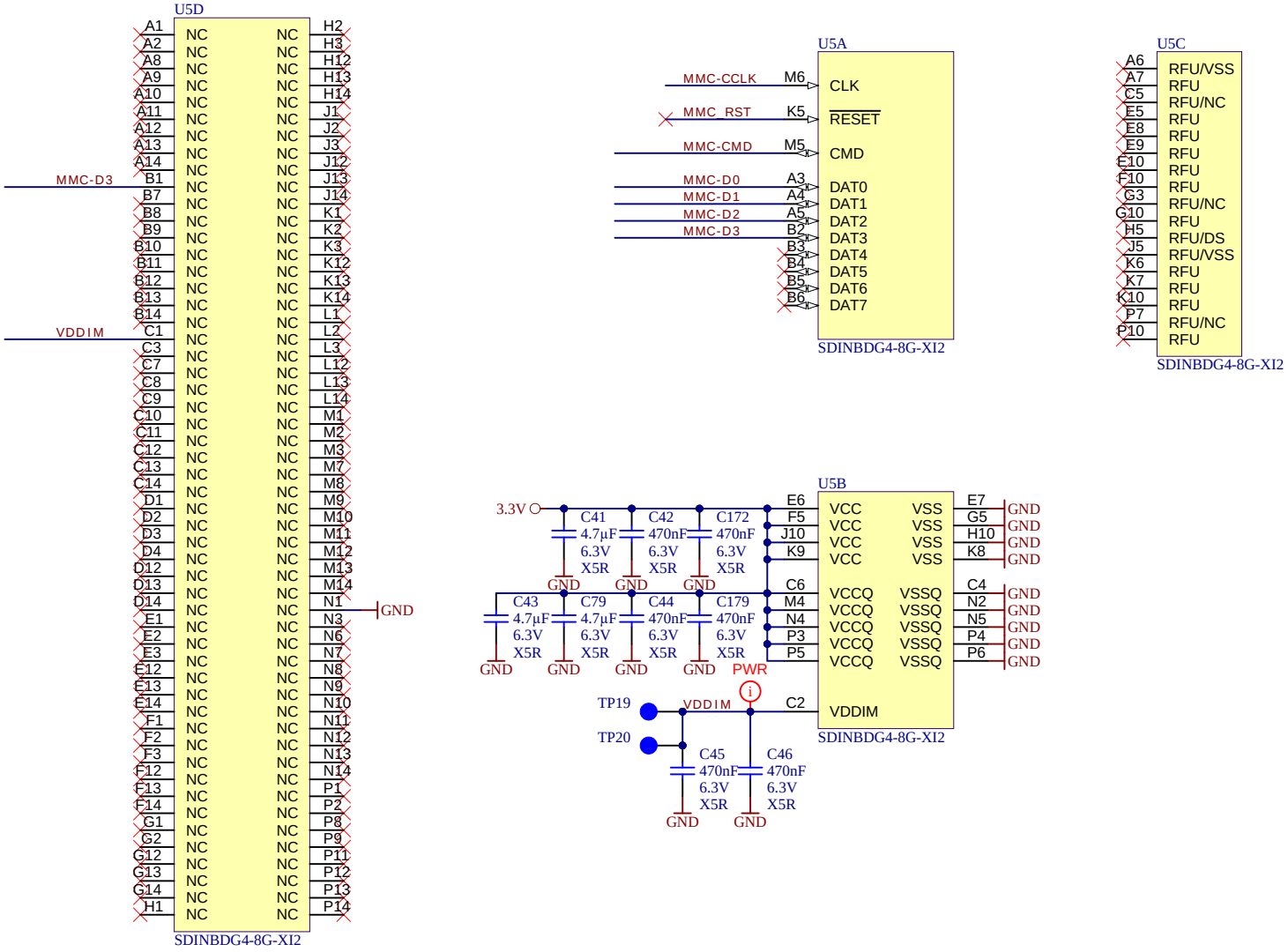
trenz electronic	Title: TE0729 – ZYNQ_MISC		
A4	Number: TE0729 62I65MM		Rev. 03
Date: 22.01.2024	Copyright: Trenz Electronic GmbH		Page 13 of 22
Filename: ZYNQ_MISC.SchDoc			



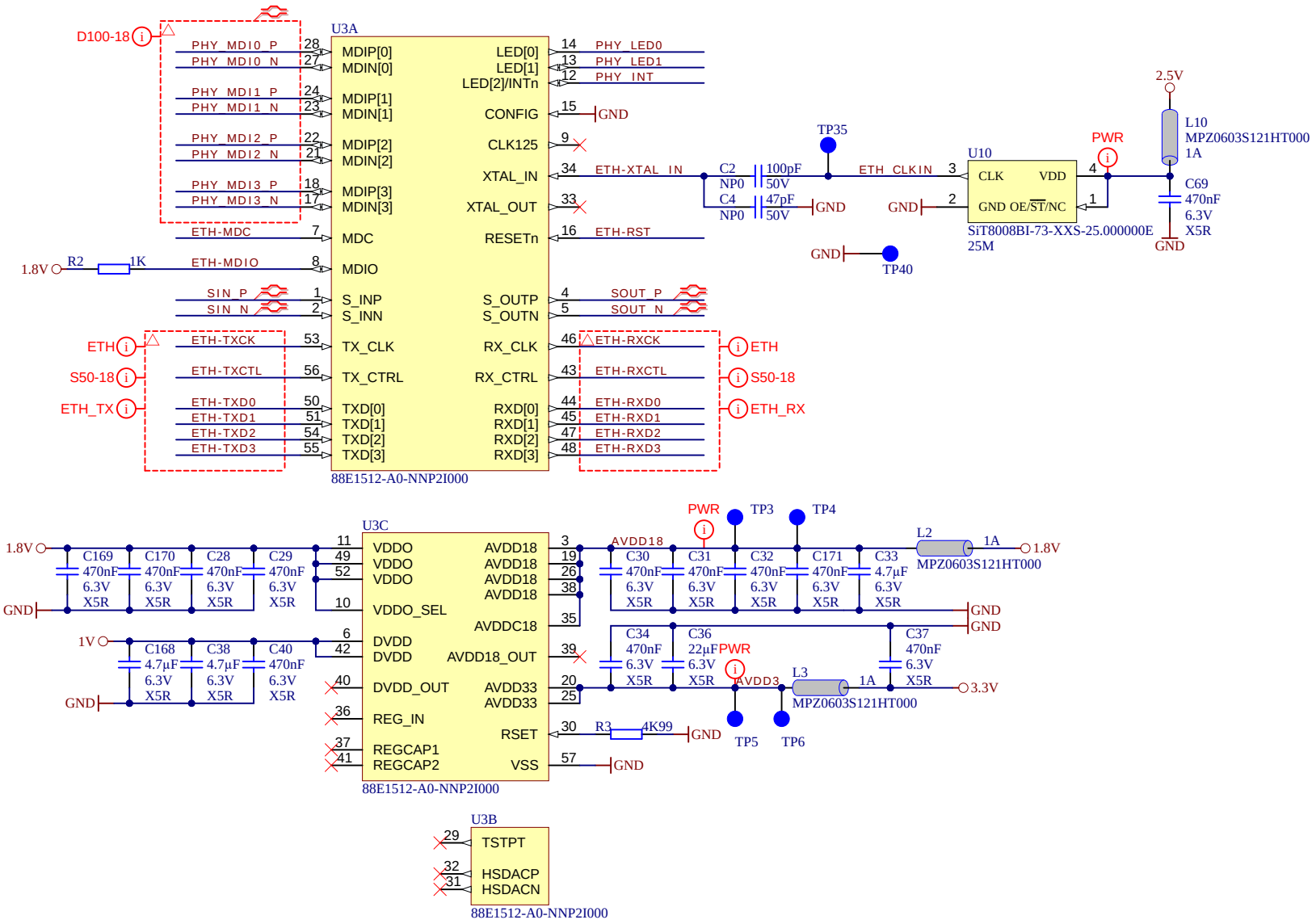
trenz electronic	Title: TE0729 – ZYNQ_Power		
A4	Number: TE0729 62I65MM		Rev. 03
Date: 22.01.2024	Copyright: Trenz Electronic GmbH		Page 14 of 22
Filename: ZYNC_POWER.SchDoc			



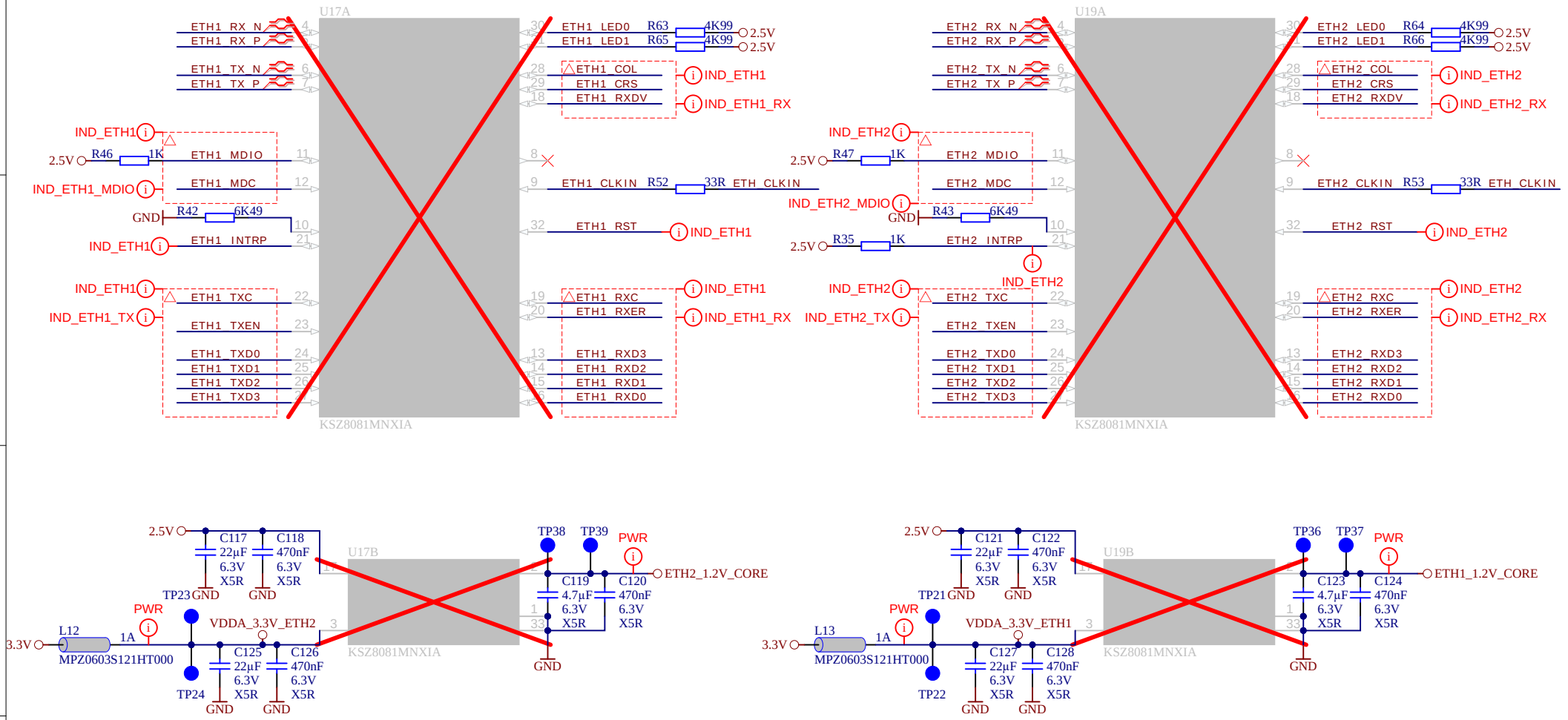
trenz electronic	Title: TE0729 – DDR3		
A4	Number: TE0729 62I65MM		Rev. 03
Date: 22.01.2024	Copyright: Trenz Electronic GmbH		Page 15 of 22
Filename: DDR-RAM.SchDoc			



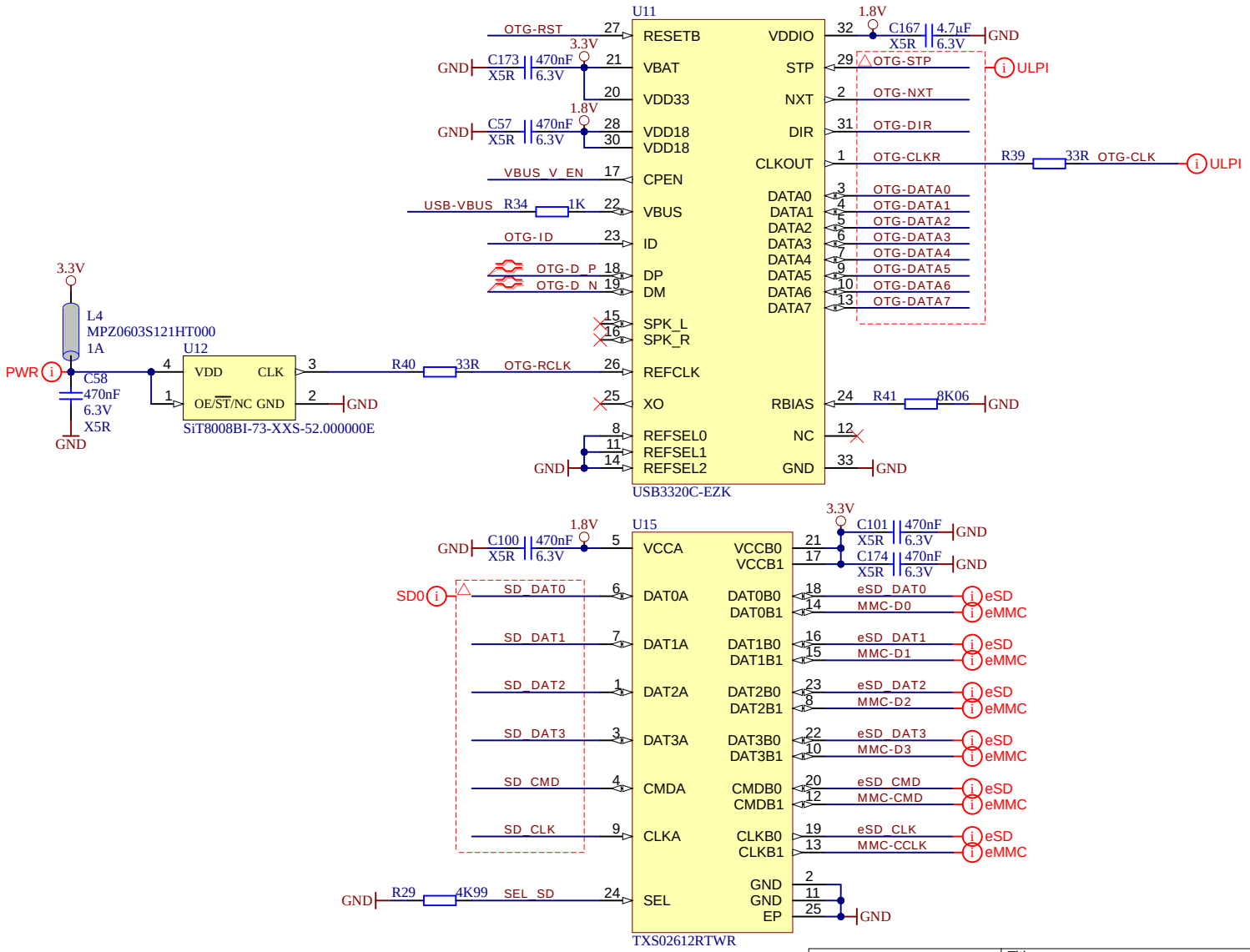
Title: TE0729 – eMMC			
A4	Number: TE0729 62I65MM		Rev. 03
Date: 22.01.2024	Copyright: Trenz Electronic GmbH		Page 16 of 22
Filename: eMMC.SchDoc			



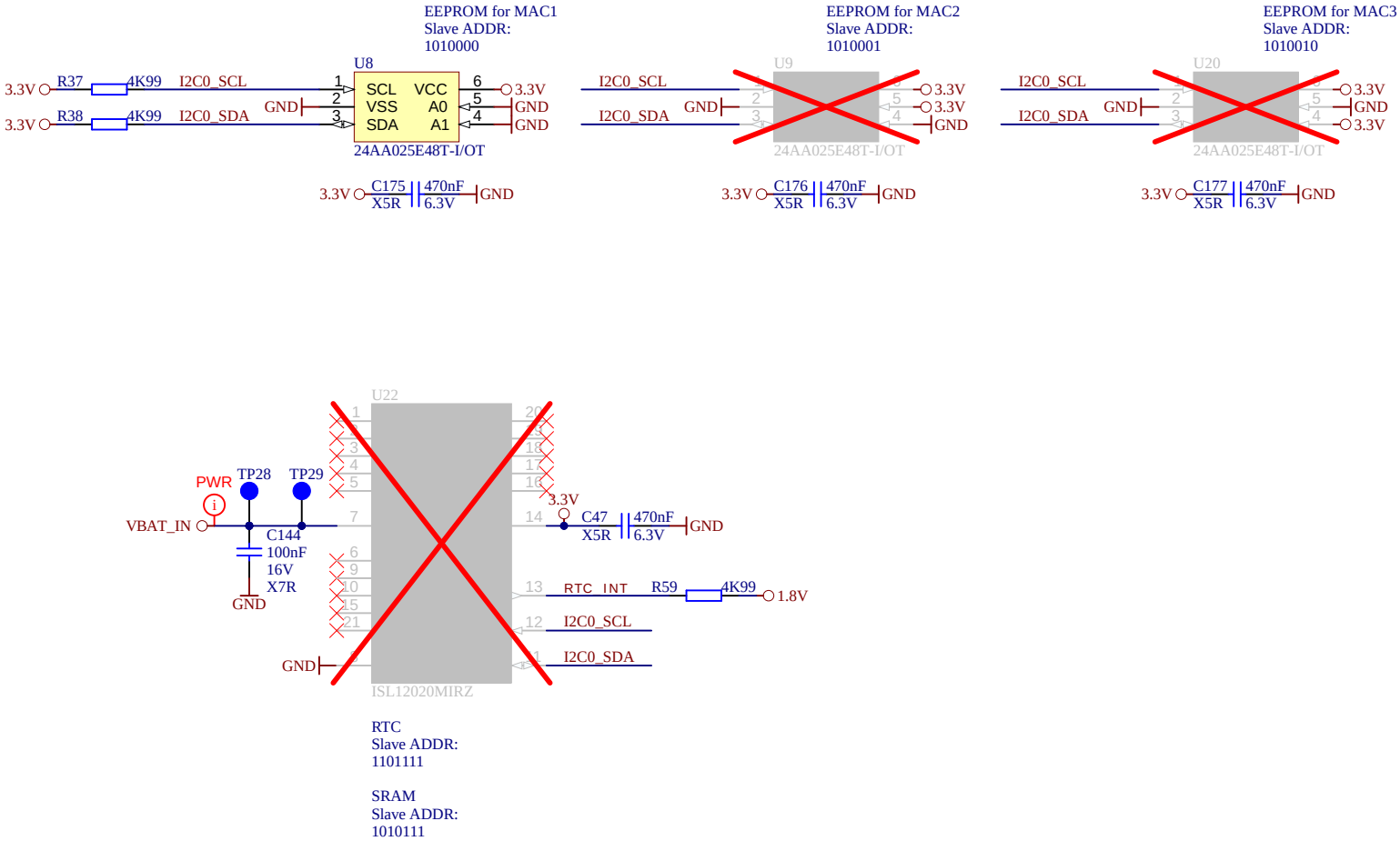
Title: TE0729 – ETH_PHY			
A4	Number: TE0729 62I65MM		Rev. 03
Date: 22.01.2024	Copyright: Trenz Electronic GmbH		Page 17 of 22
Filename: ETH-PHY.SchDoc			



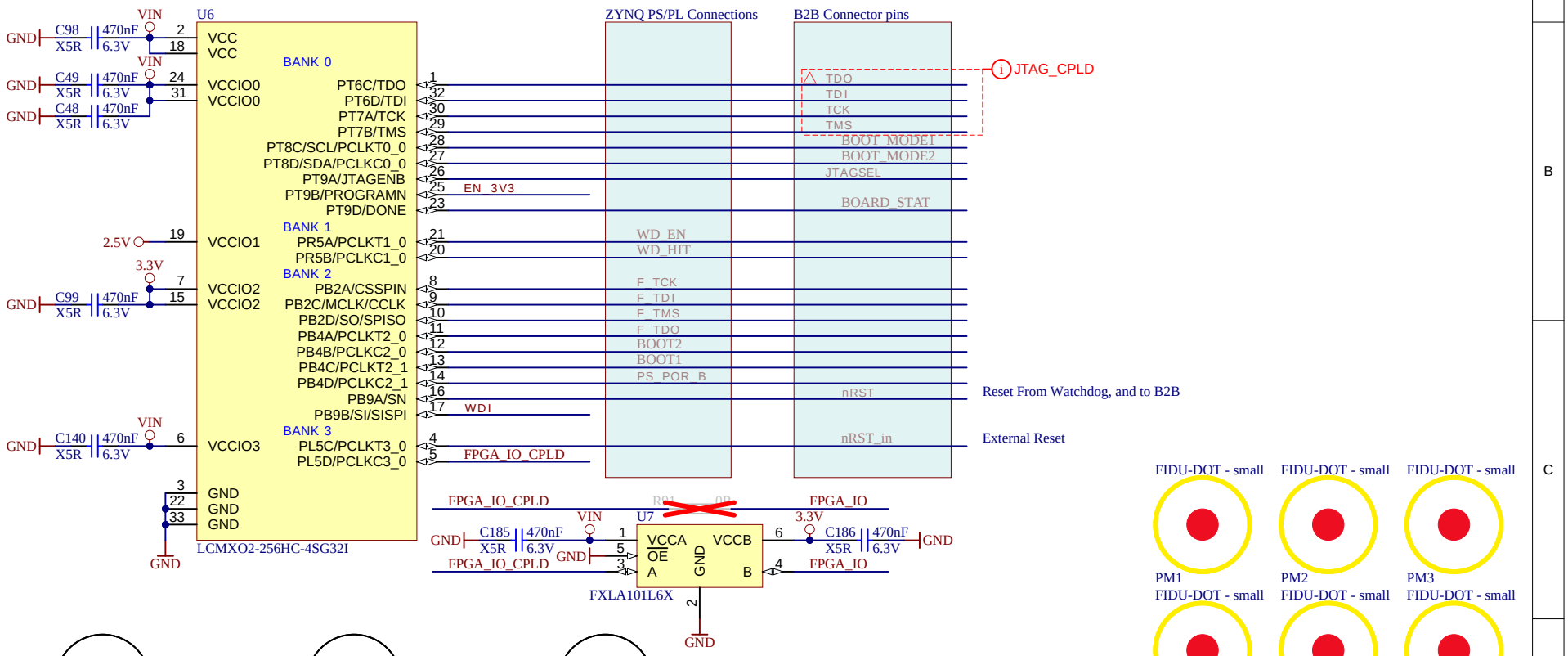
trenz electronic	Title: TE0729 – IND_ETH_PHY		
	A4	Number: TE0729 62I65MM	Rev. 03
	Date: 22.01.2024	Copyright: Trenz Electronic GmbH	Page 18 of 22
	Filename: IND_ETH-PHY.SchDoc		

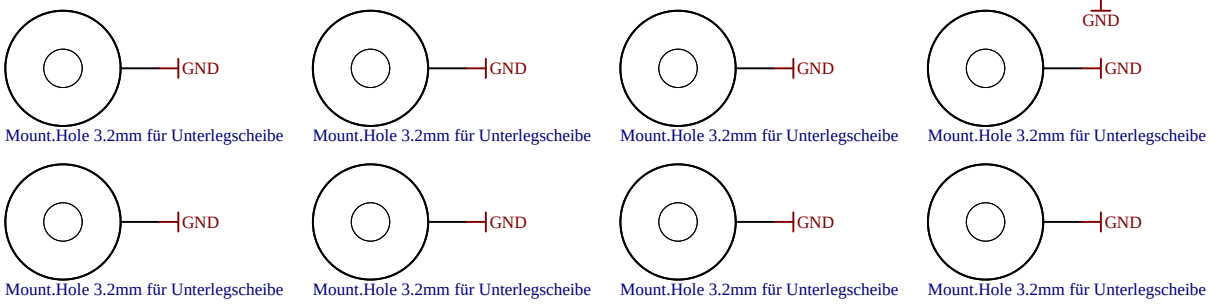


Title: TE0729 – USB_PHY			
A4	Number: TE0729 62I65MM		Rev. 03
Date: 22.01.2024	Copyright: Trenz Electronic GmbH		Page 19 of 22
Filename: USB-PHY.SchDoc			



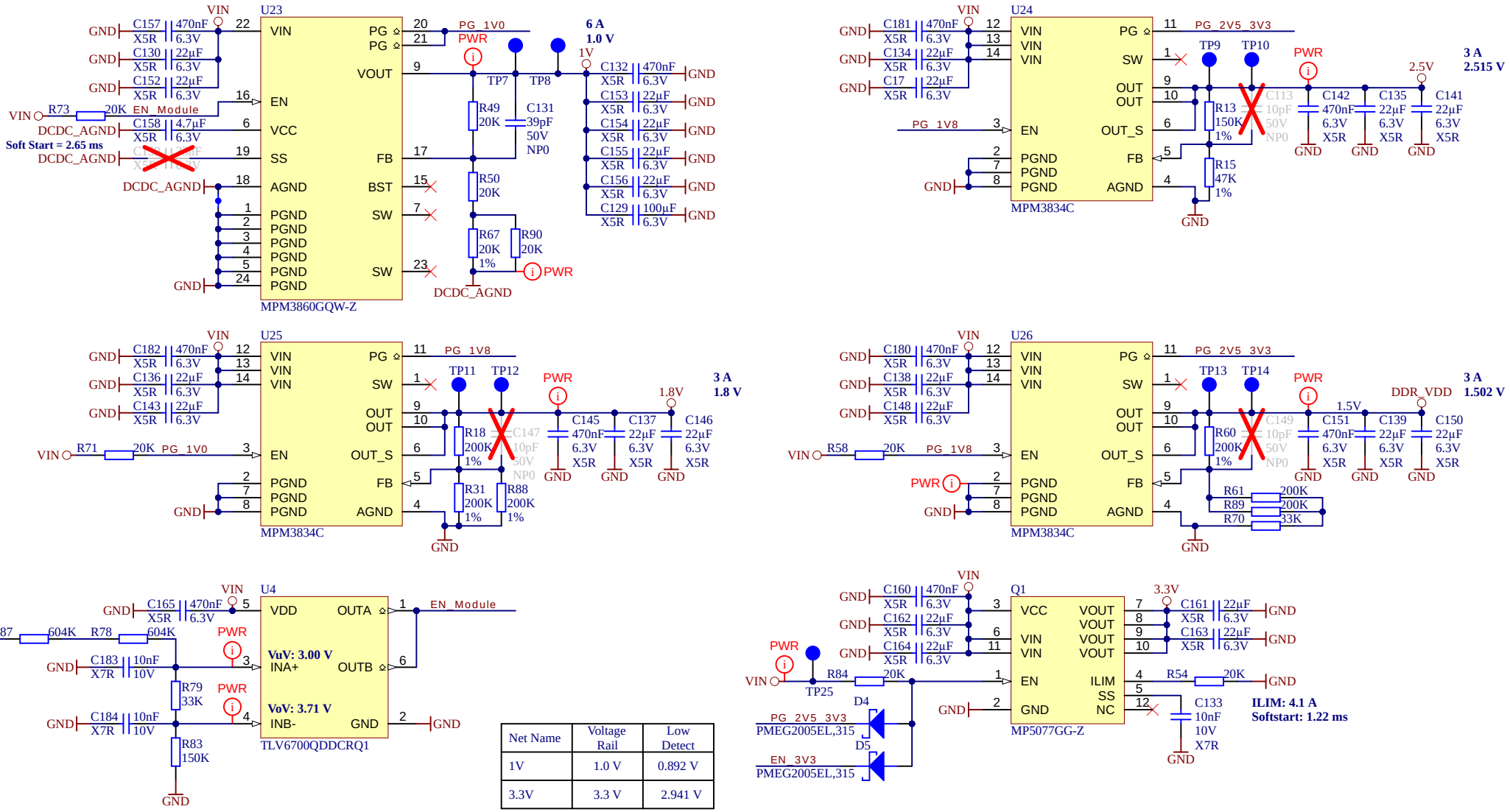
trenz electronic	Title: TE0729 – RTC		
A4	Number: TE0729 62I65MM		Rev. 03
Date: 22.01.2024	Copyright: Trenz Electronic GmbH		Page 20 of 22
Filename: SENSOR-RTC.SchDoc			





Serial
Serial
Serialnumber 6,3 x 6.3mm

Title: TE0729 – CPLD			
A4	Number: TE0729 62I65MM		Rev. 03
Date: 22.01.2024	Copyright: Trenz Electronic GmbH		Page 21 of 22
Filename: CPLD.SchDoc			



Net Name	Voltage Rail	Low Detect
1V	1.0 V	0.892 V
3.3V	3.3 V	2.941 V

Title: TE0729 – Power			
A4	Number: TE0729 62I65MM		Rev. 03
Date: 22.01.2024	Copyright: Trenz Electronic GmbH		Page 22 of 22
Filename: Power.SchDoc			