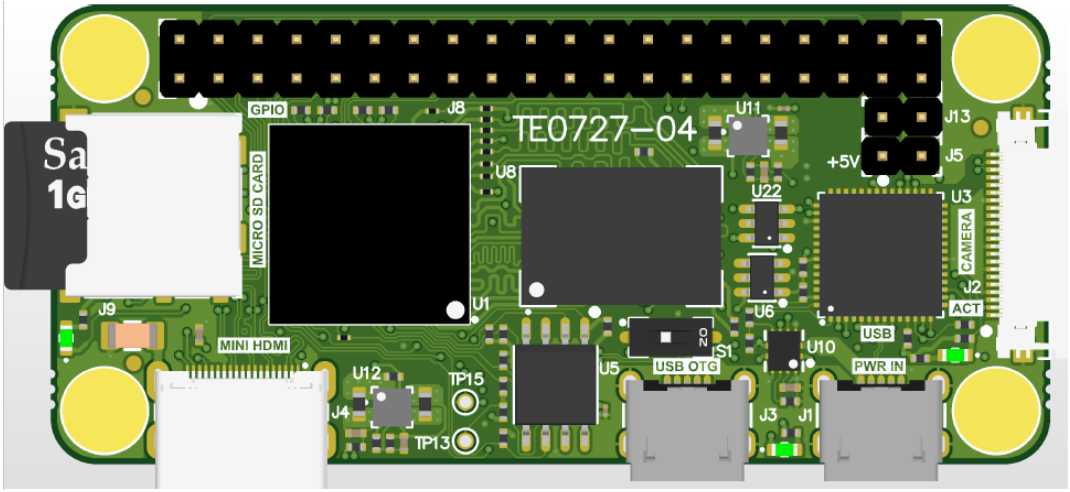

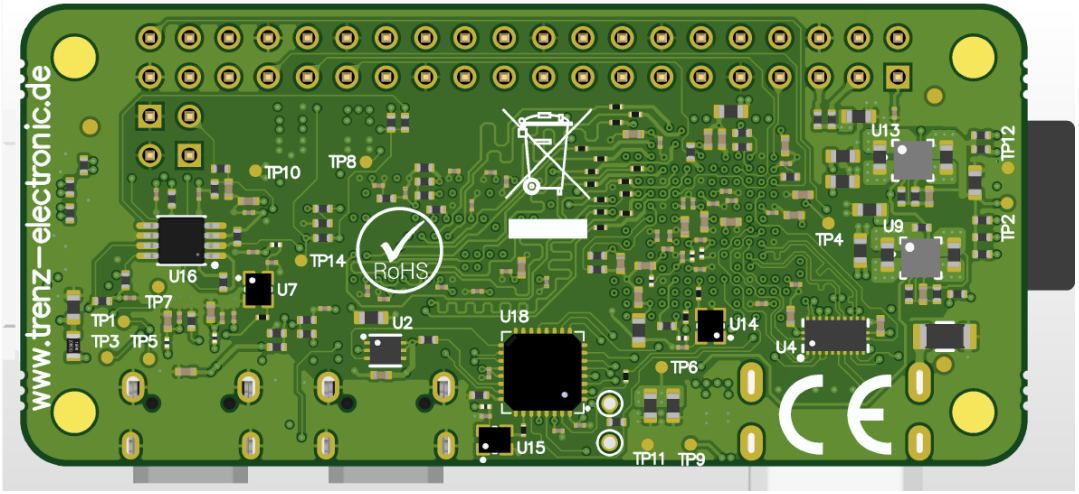

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Schematics and other handouts serve for informational purposes only!

trenz electronic	Title: Legal Notices		
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REV	Description	
-01	Initial revision	
-02	1) Fixed I2C connection, added I2C MUX (U16) 2) Added optional pin-header connector for select JTAG boot mode 3) Added 2x user LEDs 4) Changed obsolete DDR3 chip 5) Fixed wrong type connector for CSI 6) full update lib	
-03	1. EOL components U11 , U12 (EP53A7LQI), U9 , U13 (EP53A7HQI) were replaced by MPM3834CGPA; 2. EOL component U16 (PCA9540BGD,125) was replaced by PCA9540BDP,118; 3. EOL components L1 - L7, L10 BKP0603HS121-T replaced by MPZ0603S121HT000. 4. Added S1 switch and R53 for "JTAG only mode" enable; 5. The signals were renamed: - SPI-DQ0/M0 ---> SPI-DQ0/M3, - SPI-DQ3/M3 ---> SPI-DQ3/M0 according to AMD Table 6-4; 6. Power supply rail of Bank 35 was changed from 1.8V to 3.3V; 7. Added decoupling capacitors C52, C53, C73, C85 according to AMD specification (UG 933); 8. The capacitors were replaced: - C7, C16, C54, C71, C93: 47µF (0805) ---> 47µF (0603), - C1, C4, C12, C15, C18, C19, C24, C35, C57, C63, C65, C79, C81, C87, C89 4.7µF (0402)---> 10µF (0402), - C29, C32, C33, C41, C42, C43, C44, C47: 10µF (0402) ---> 22µF (0603); 9. Capasitor C86 replaced by 47µF (was 10µF); 10. Added power diagram; 11. Added Block diagramm; 12. Added TestPoints TP16, TP17, TP18; 13. J5 and J13 connectors are polarity changed.	VG (23.05.2023)
-04	1. J5 and J13 connectors changed back; 2. Power Supply Sequencing was changed according to DS187; 3. Test points TP16, TP17, TP18 removed; 4. U10 Current limit changed 1.24A → 2.037A, R28 replaced by 56K (was 100K); 5. U7(SiT8008AI-73-XXS-12.000000E) replaced by SiT8008BI-73-XXS-12.000000E; 6. U14(SiT8008AI-73-XXS-33.333333E) replaced by SiT8008BI-73-XXS-33.333333E; 7. U15 (SiT8008AI-73-XXS-52.000000E) replaced by SiT8008BI-73-XXS-52.000000E; 8. Green LEDs D1, D2, D3 replaced by 19-213/G6C-BM1N2/DT; 9. The capacitors were replaced: - C51: 470nF ---> 10µF; - C55, C56: 470nF ---> 47µF; 10. The capacitors C13, C25 (0805) replaced by (0402) (BOM optimisation); 11. Added resistor R140 according to UG933. 12. U5 is EOL and replaced by S25FL128LAGMFI013 (created new assembly variant).	VG (30.04.2024) VG (22.07.2024)

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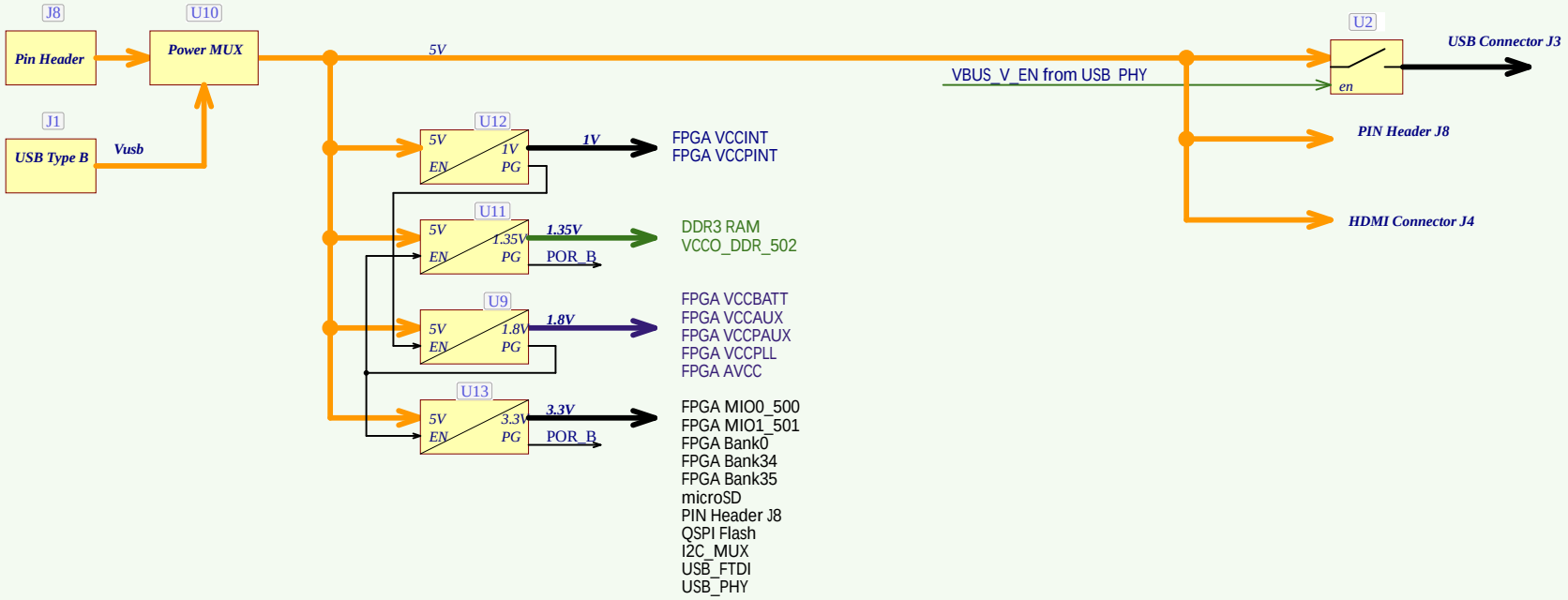
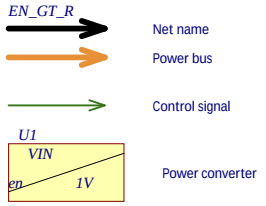
Power-on sequencing:



Supported Voltage Ranges:

Power Rail	Direction	Range	Tolerance	Description	Note
5V	OUT	5V	+/-5%	Micromodule Power	-
USB_B_Vbus	IN	5V	+/-5%	Micromodule Power	-
USB_Vbus	IN	5V	+/-5%	Internal Power	-
3.3V	OUT	3.3V	+/-3%	Internal Power	-



trenz electronic	Title: Power_Diagram		
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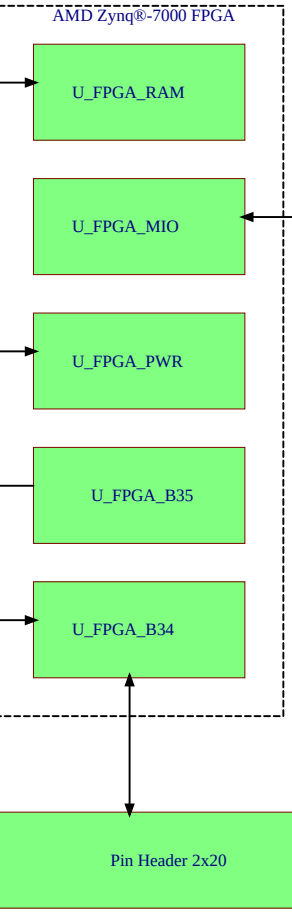
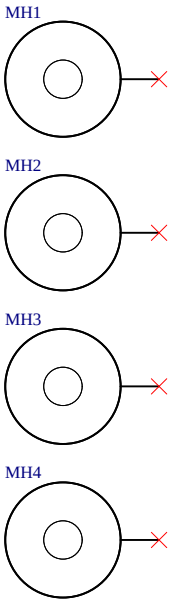
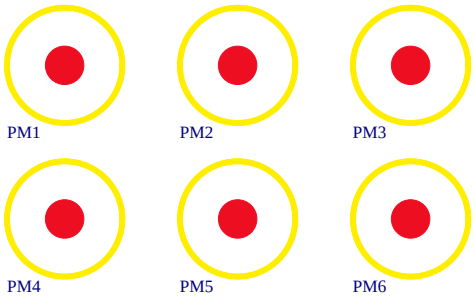
Special notes:

U5 replaced with S25FL128LAGMFI013







Serial
Serial
Serialnumber 6,3 x 6.3mm

U_PowerSupply

Drawn by	VG
Checked by	IG
Assembly variant	41C38
Created by	VG
Modified by	
Modified at	

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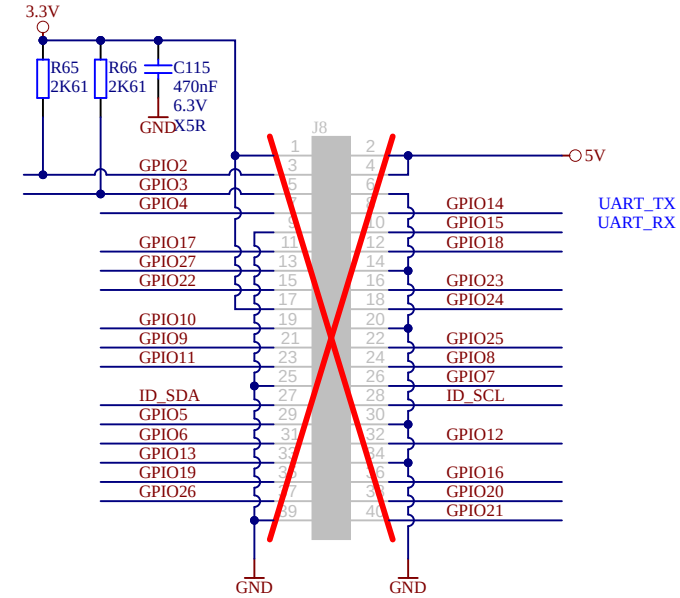

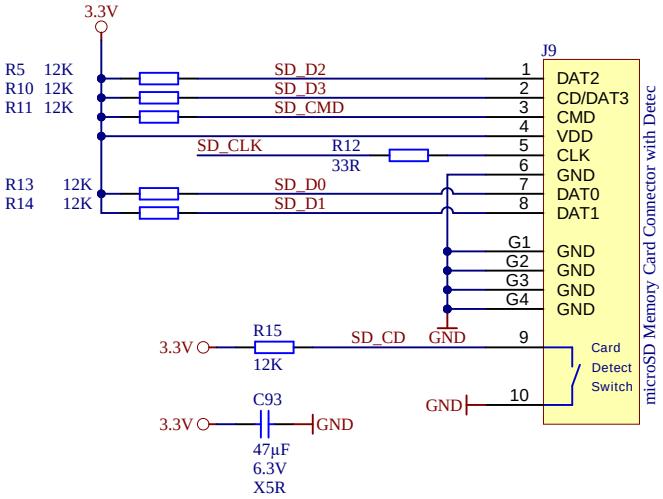

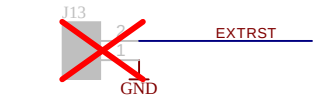

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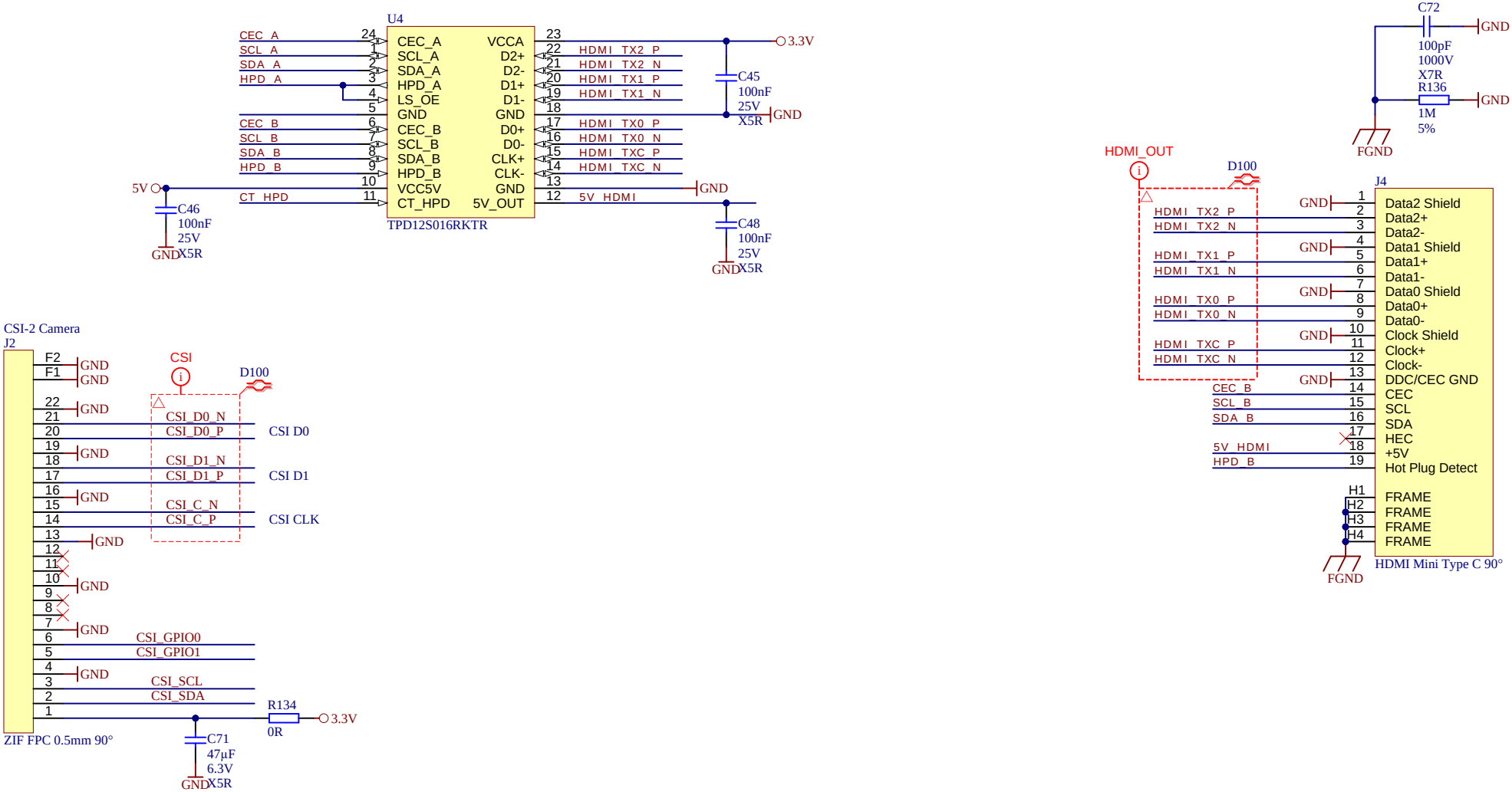
Filename: RPi-Headers.SchDoc			



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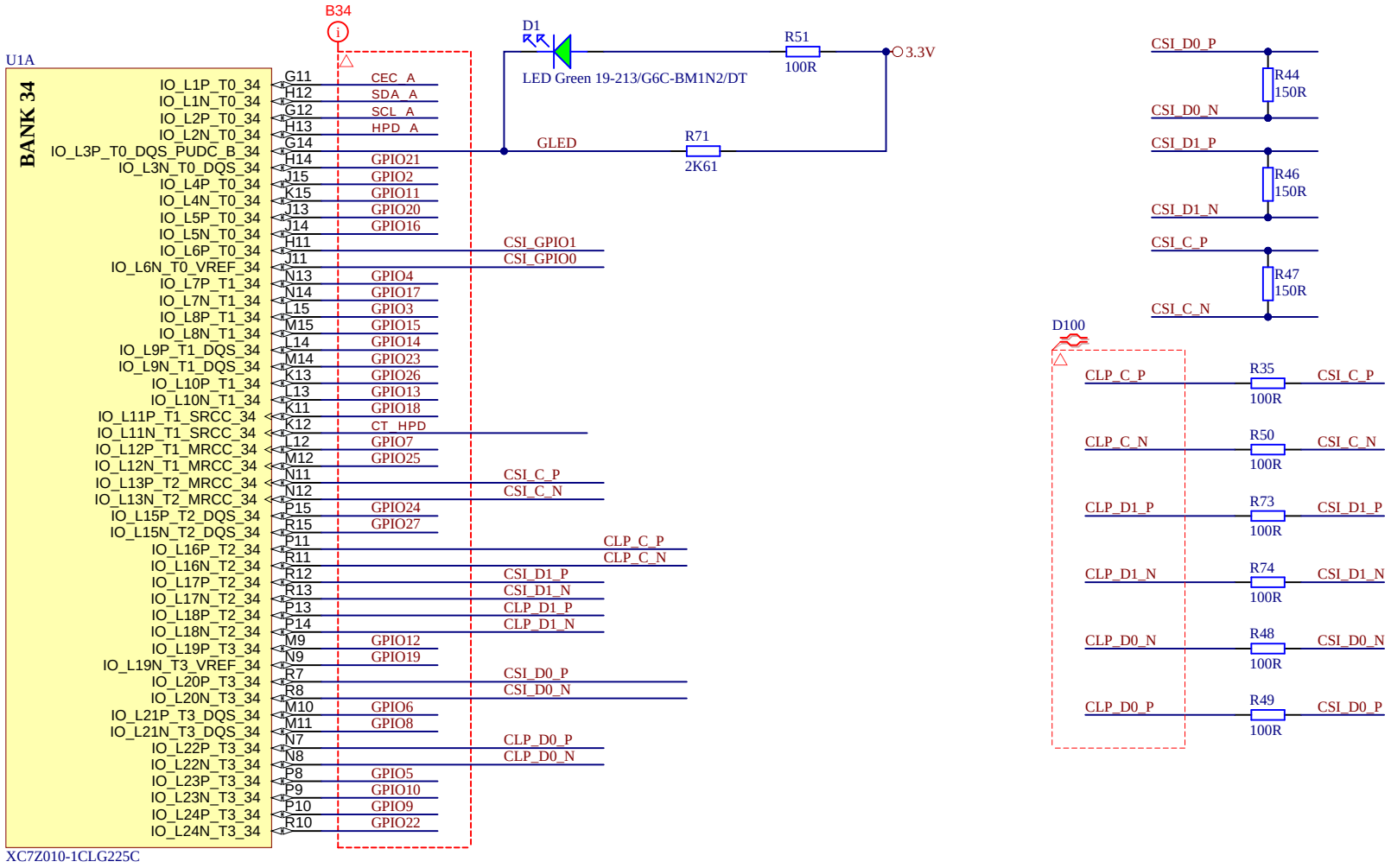

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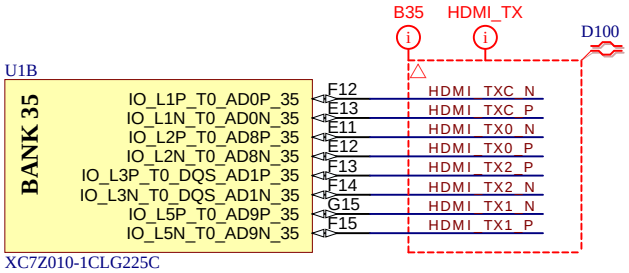
Date: 2023-05-23	Copyright: Trenz Electronic GmbH		Page7 of 15
Filename: FPGA_B34.SchDoc			



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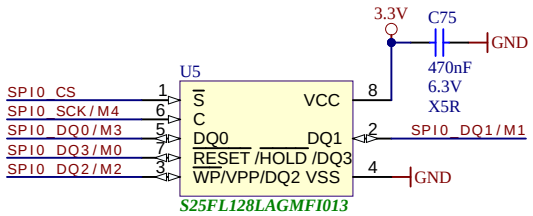
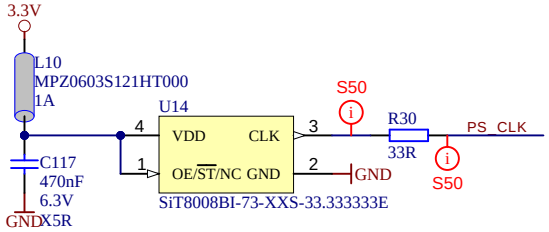
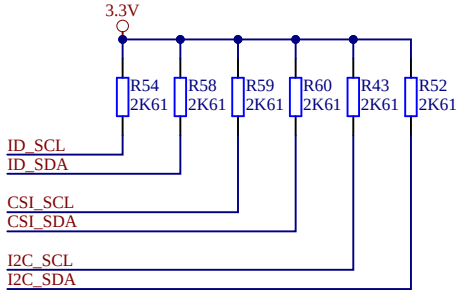
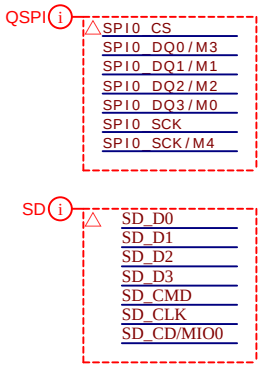
Filename: FPGA_B35.SchDoc		









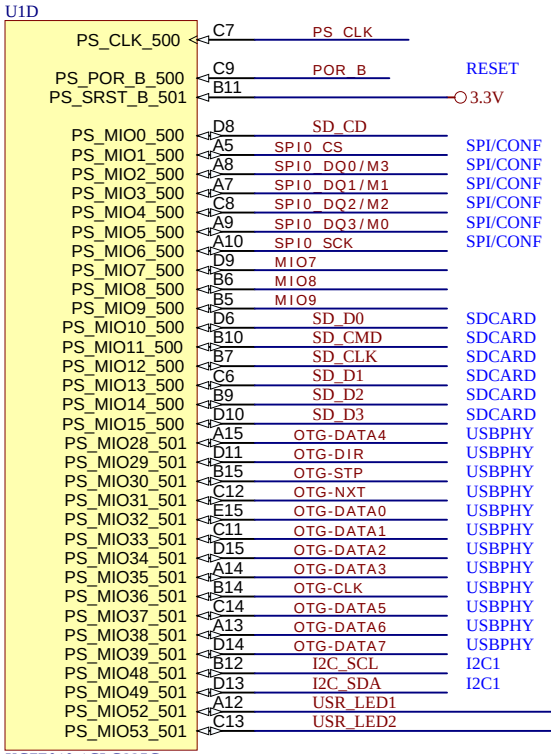
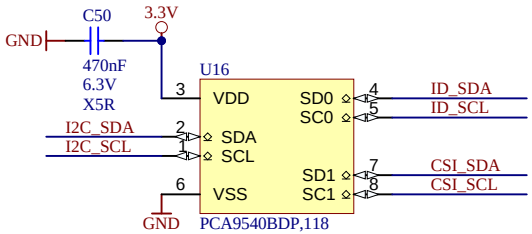
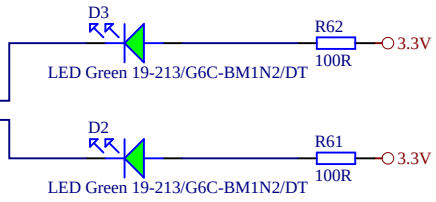
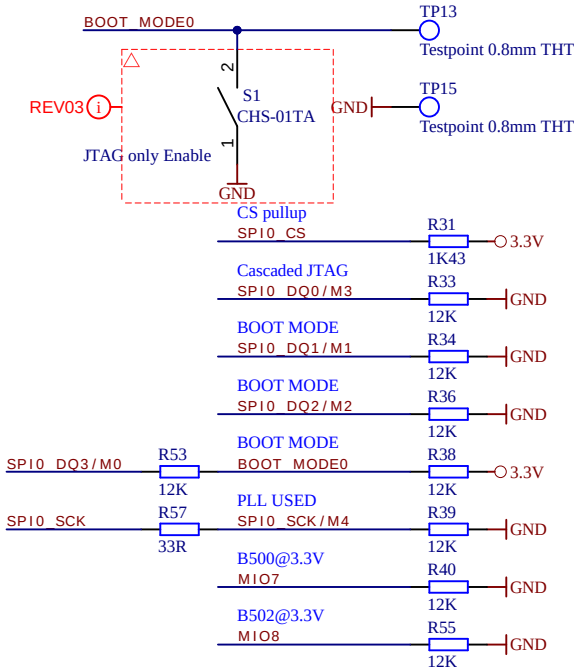


Table 6-4: **Boot Mode MIO Strapping Pins**

Pin-signal / Mode	MIO[8] VMODE[1]	MIO[7] VMODE[0]	MIO[6] BOOT_MODE[4]	MIO[5] BOOT_MODE[0]	MIO[4] BOOT_MODE[2]	MIO[3] BOOT_MODE[1]	MIO[2] BOOT_MODE[3]
Boot Devices							
JTAG Boot Mode; cascaded is most common[1]			0	0	0		
NOR Boot[3]			0	0	1		**JTAG Chain Routing**[2]
NAND			0	1	0		0: Cascade mode
Quad-SPI[3]			1	0	0		1: Independent mode
SD Card			1	1	0		







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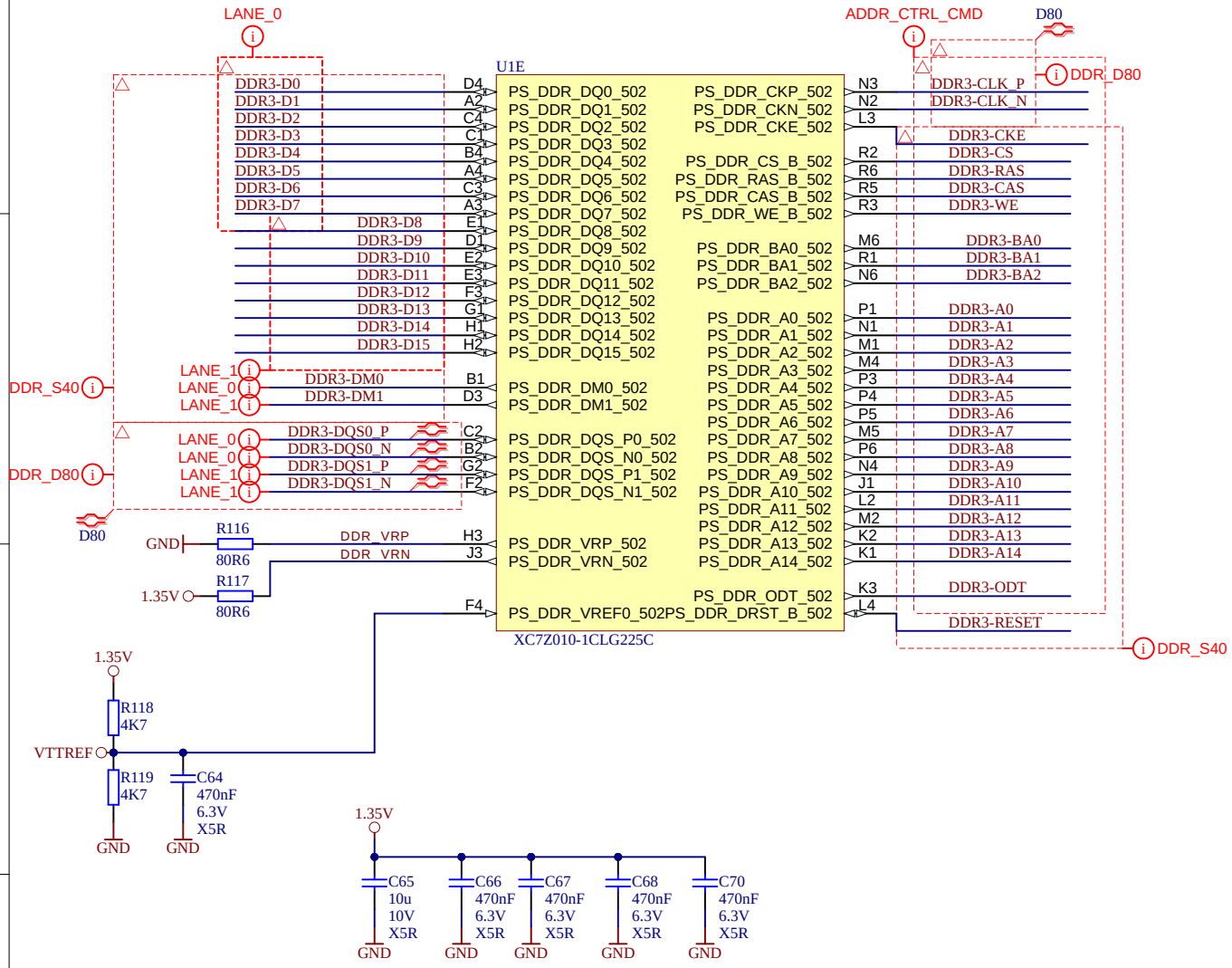

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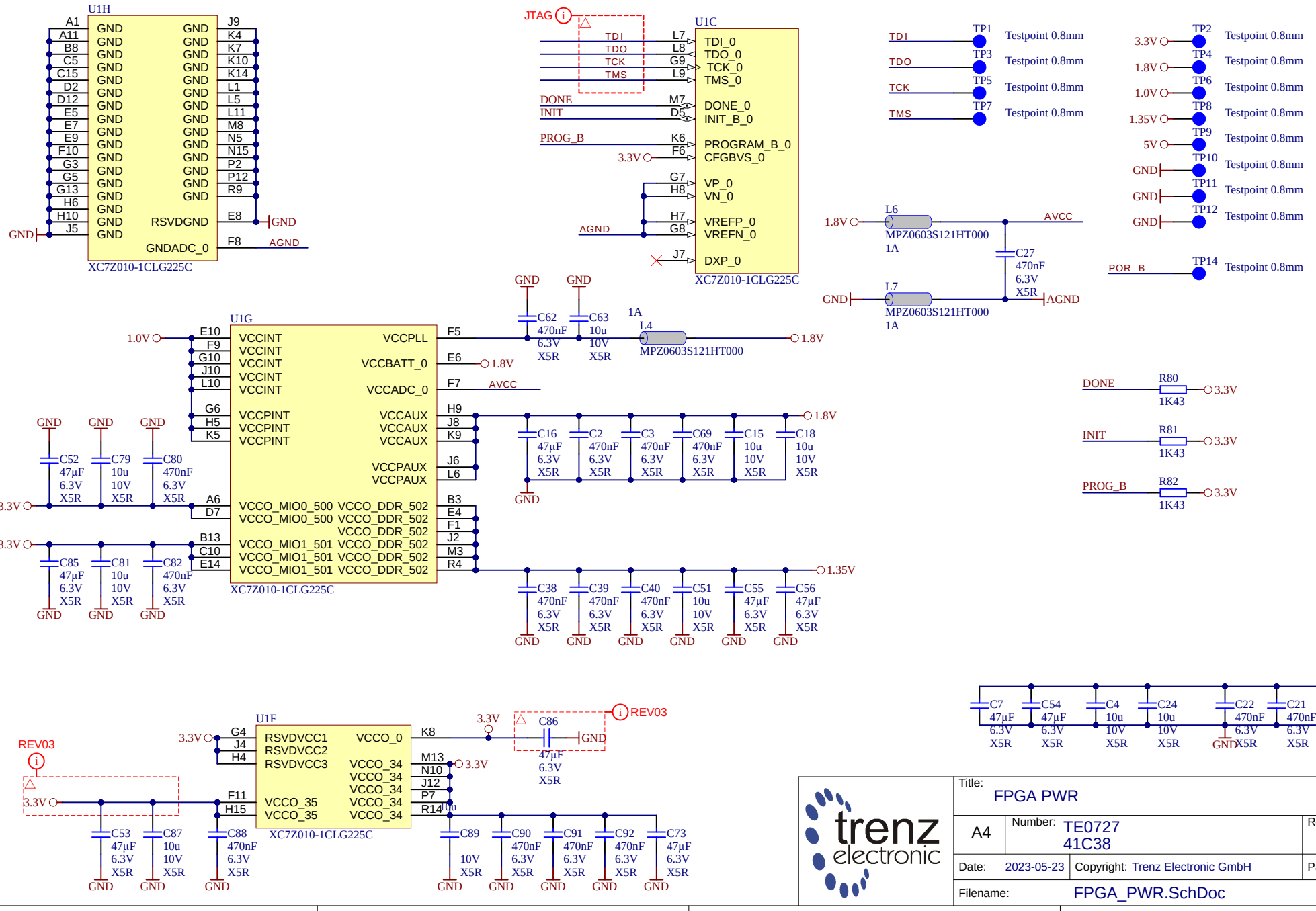
Date: 2023-05-23	Copyright: Trenz Electronic GmbH		Page10 of 15
Filename: FPGA_RAM.SchDoc			



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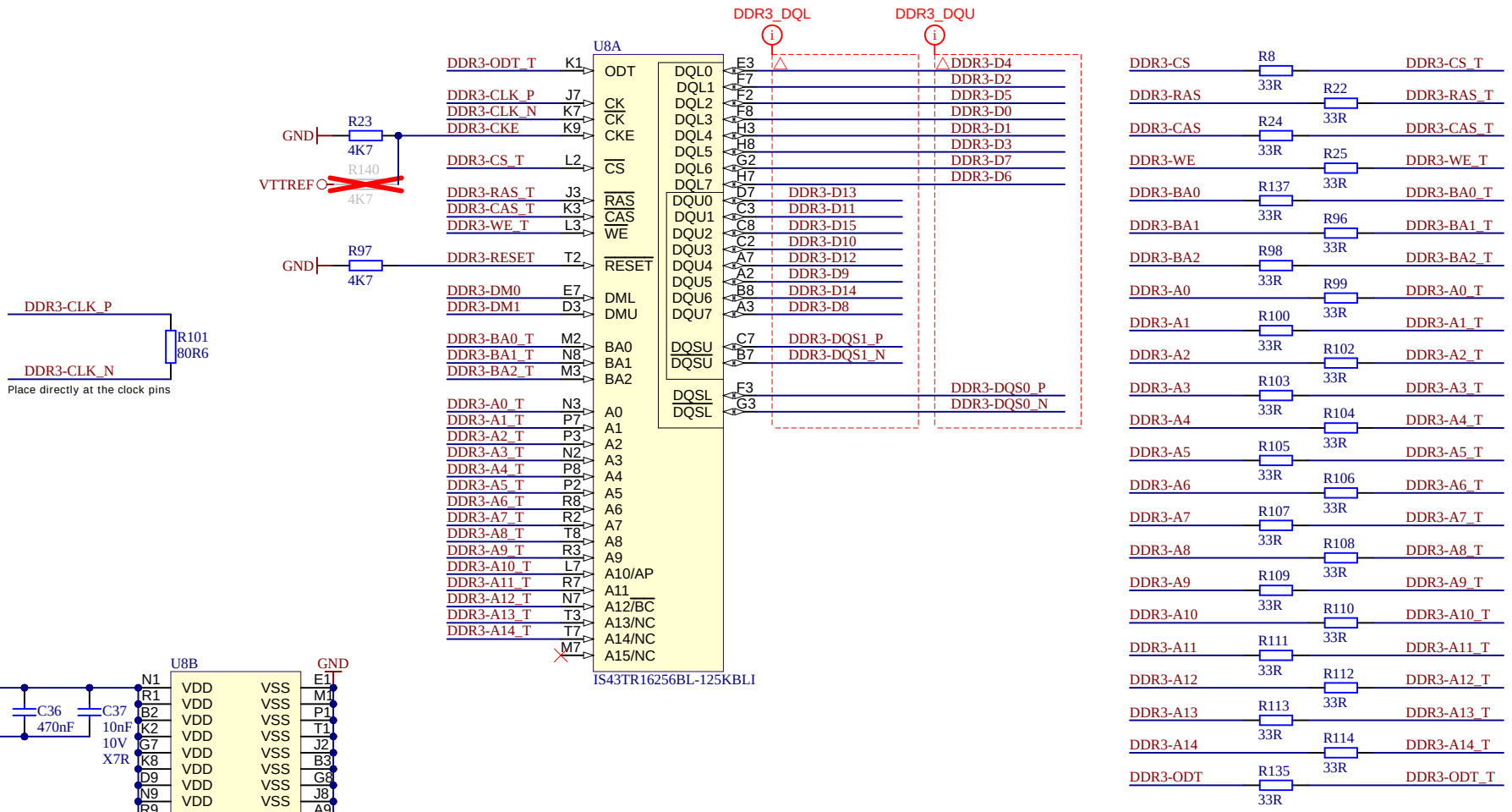
Date: 2023-05-23	Copyright: Trenz Electronic GmbH		Page11 of 15
Filename: FPGA_PWR.SchDoc			



Title: DDR Memory			
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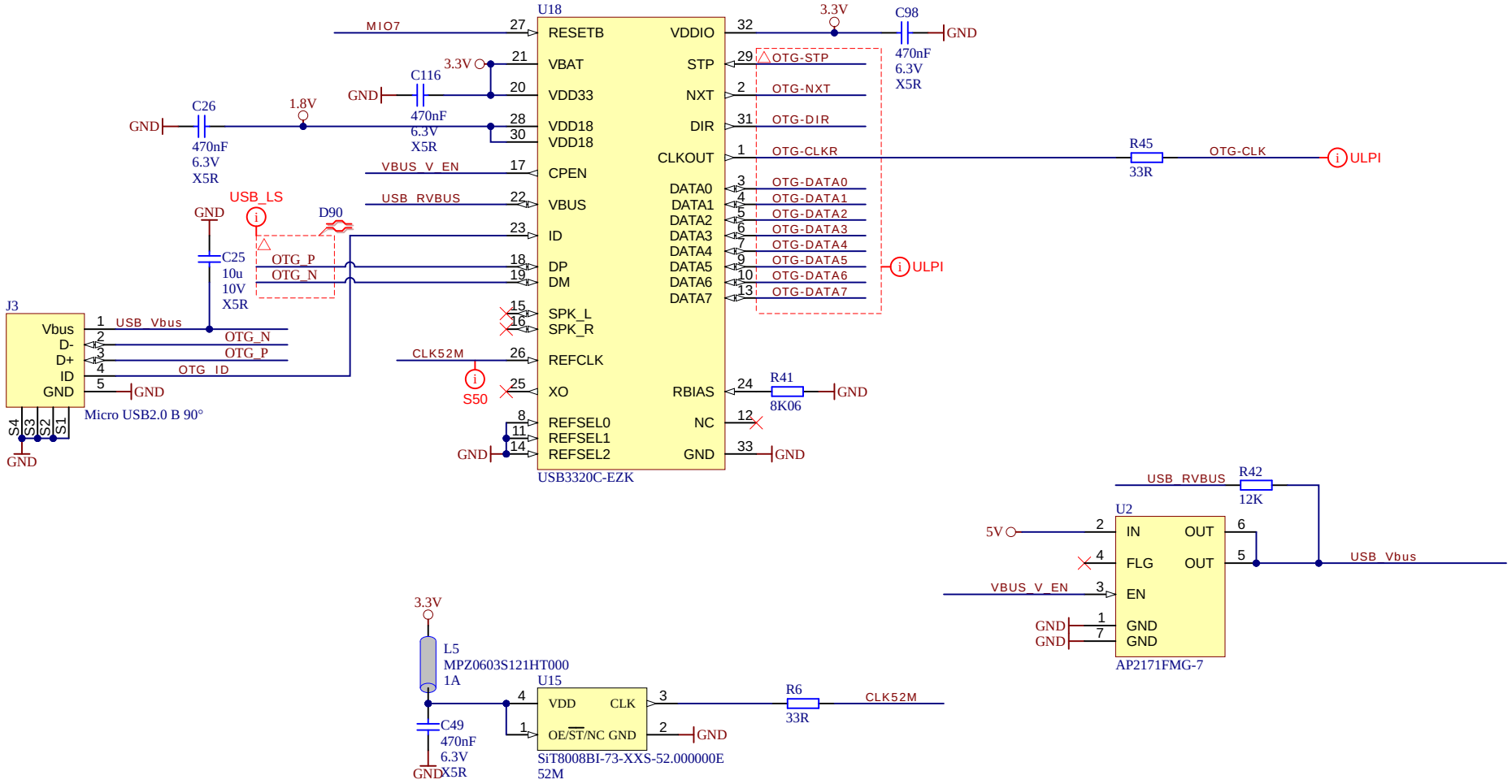
Date: 2023-05-23	Copyright: Trenz Electronic GmbH		Page12 of 15
Filename: DDR3-RAM.SchDoc			



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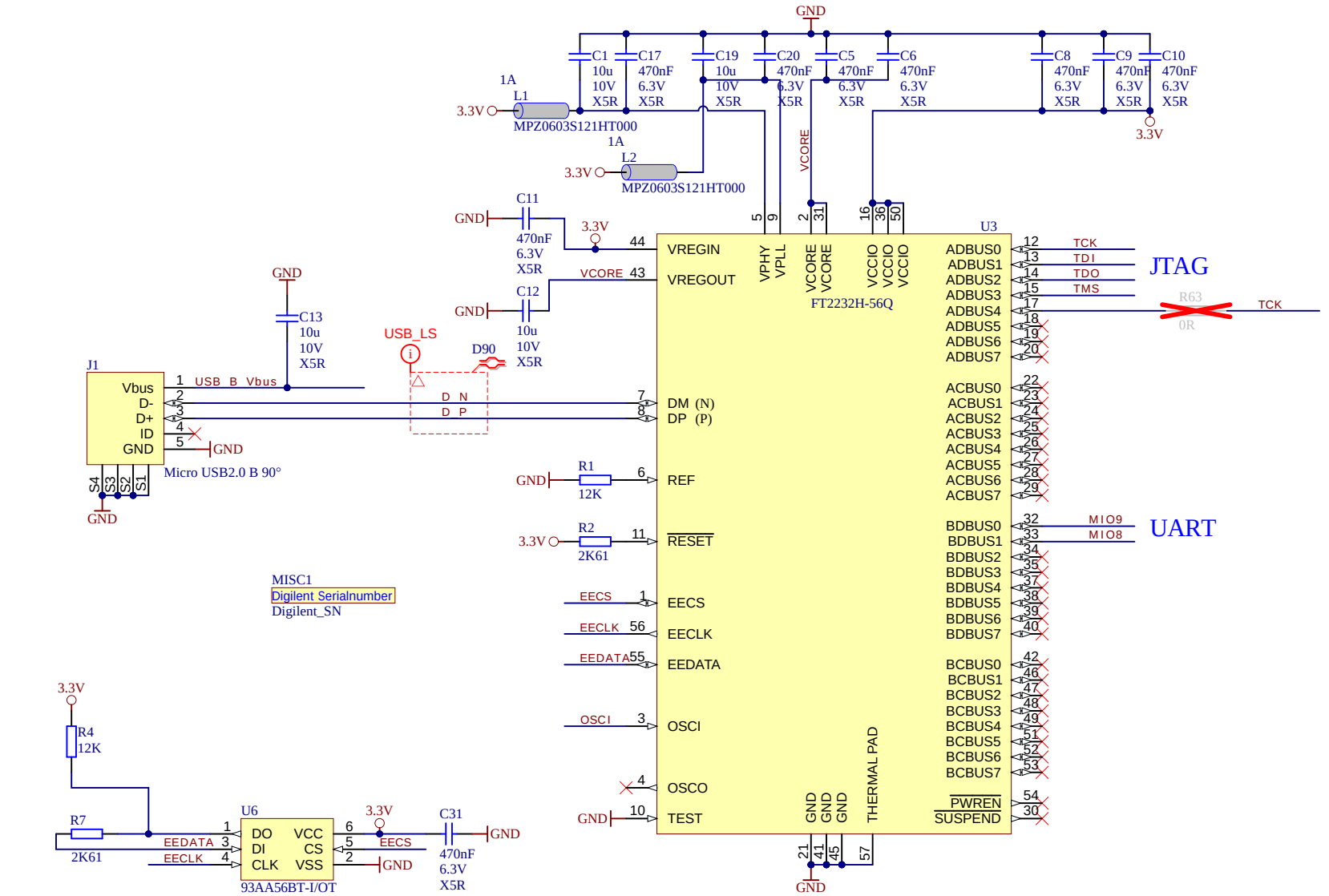
Filename: USB-PHY.SchDoc			



trenz electronic	Title: FTDI		
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	Date: 2023-05-23	Copyright: Trenz Electronic GmbH	Page14 of 15
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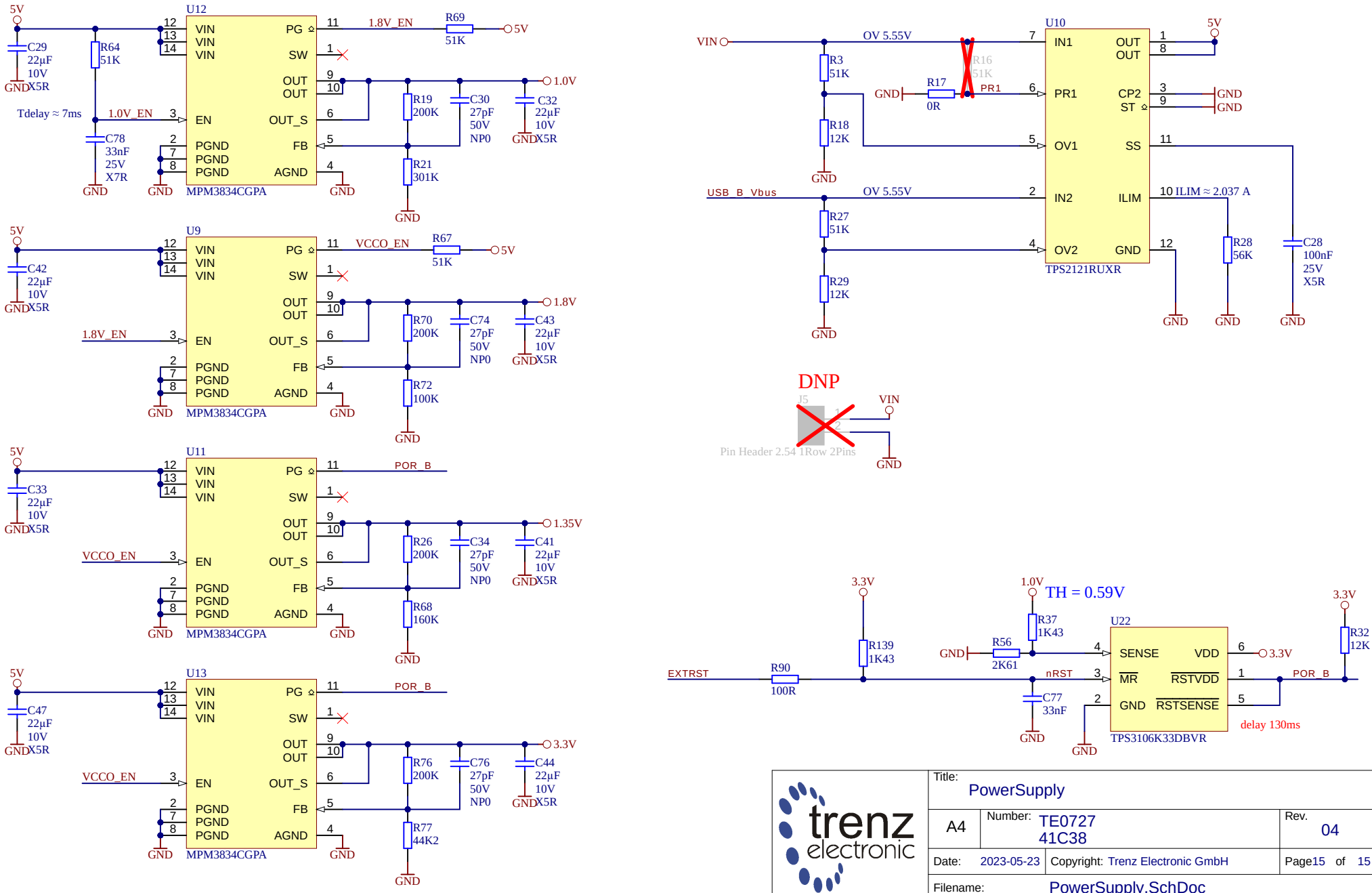

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	Filename: PowerSupply.SchDoc		