



Regarding the usage of our schematics and alike documentation for Trenz module TE0720.

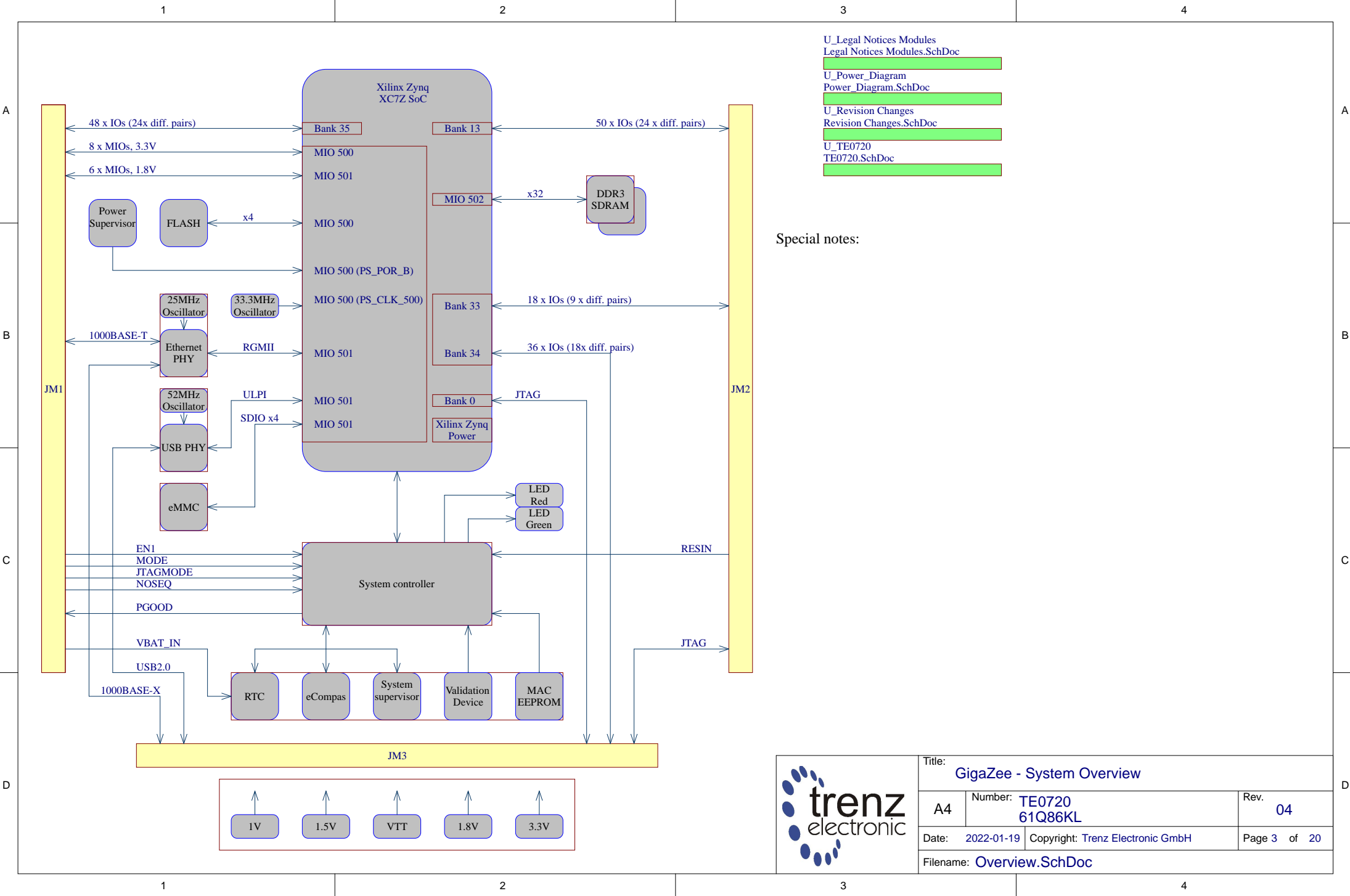
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Schematics and other handouts serve for informational purposes only!

	Title: GigaZee		
	A4	Number: TE0720 61Q86KL	Rev. 04
	Date: 2022-01-19	Copyright: Trenz Electronic GmbH / TT	Page 1 of 20
	Filename: Legal Notices Modules.SchDoc		

REV	Description	
-01	Initial revision	
-02		
-03		
-04	<p>1. Revised power supply circuit, replaced next components:</p> <ul style="list-style-type: none"> - EN6347QI (U1) by MPM3840GQV-Z, - EP53F8QI (U2, U3) by MPM3834CGPA, - TPS27082LDDCR (Q1) by MP5077GG-Z. <p>2. Added power supervisor BD39040MUF (U27). Next signal connected to system controller:</p> <ul style="list-style-type: none"> - PG_All (U27 - U19.C12) with pull-up resistor R67; - WDEN (U27.13 - U19.C6) with pull-down resistor R80; - WDIN (U27.14 - U19.N8); - WDOUT (U27.16 - U19.M3). <p>3. Signal MIO8 (U5.E5) connected to system controller (U19.N7)</p> <p>4. Added pull-down resistors R64 (net ON_1V0) and R65 (net ON_1V8)</p> <p>5. Revised voltage supervisor U26 circuit: U26.6 (VDD) connected to 3.3VIN, Added protection diode D3 to U26.3 (#MR input)</p> <p>6. Replaced BKP0603HS (L1, L2, L3, L4, L5, L7, L8) by MPZ0603S121HT000</p> <p>7. Auxiliary information has been added on Samtec B2B connectors page</p> <p>8. PCB: Revised layout of power supplies</p> <p>9. PCB: Revised layout of Samtec B2B signals. The length of the tracks has been changed. Pinout of Samtec B2B connectors not affected</p> <p>10. PCB: Added option to install Heatsink SuperGrip (c)</p> <p>11. Added capacitors C7, C8 (100uF, 1V)</p> <p>12. Changed voltage divider resistors (R21, R61) to set the threshold for U26.</p>	VY
-04A	1. Added note regarding VCCIO34, page B2B-Connectors	VY

		Title: GigaZee - Revision History	
		A4	Number: TE0720 61Q86KL
Date: 2022-01-19		Copyright: Trenz Electronic GmbH	
Page 2 of 20		Filename: Revision Changes.SchDoc	
Drawn by: VY			



- U_Legal Notices Modules
Legal Notices Modules.SchDoc
- U_Power_Diagram
Power_Diagram.SchDoc
- U_Revision Changes
Revision Changes.SchDoc
- U_TE0720
TE0720.SchDoc

Special notes:

Title: GigaZee - System Overview		
A4	Number: TE0720 61Q86KL	Rev. 04
Date: 2022-01-19	Copyright: Trenz Electronic GmbH	Page 3 of 20
Filename: Overview.SchDoc		



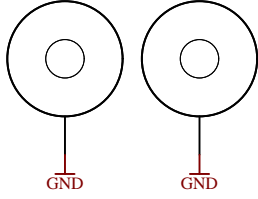
1

2

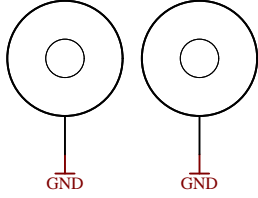
3

4

Mount.Hole 3.2mmMount.Hole 3.2mm



Mount.Hole 3.2mmMount.Hole 3.2mm



- 1V ○ TP1 ● Testpoint 0.8mm
- VIN ○ TP2 ● Testpoint 0.8mm
- 1.5V ○ TP3 ● Testpoint 0.8mm
- 1.8V ○ TP4 ● Testpoint 0.8mm
- VTT ○ TP5 ● Testpoint 0.8mm
- VTTREF ○ TP6 ● Testpoint 0.8mm
- 3.3VIN ○ TP7 ● Testpoint 0.8mm
- 3.3V ○ TP8 ● Testpoint 0.8mm
- VCCIO13 ○ TP9 ● Testpoint 0.8mm
- VCCIO33 ○ TP10 ● Testpoint 0.8mm
- VCCIO34 ○ TP11 ● Testpoint 0.8mm
- VCCIO35 ○ TP12 ● Testpoint 0.8mm
- AVCC ○ TP13 ● Testpoint 0.8mm
- AVREF ○ TP14 ● Testpoint 0.8mm
- AGND | TP15 ● Testpoint 0.8mm
- GND | TP16 ● Testpoint 0.8mm
- GND | TP17 ● Testpoint 0.8mm
- GND | TP18 ● Testpoint 0.8mm
- GND | TP19 ● Testpoint 0.8mm
- GND | TP20 ● Testpoint 0.8mm

A

A

B

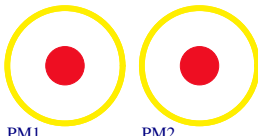
B

C

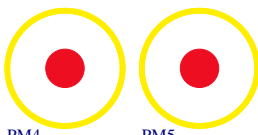
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D

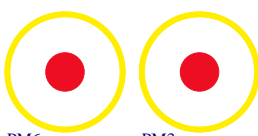
D



PM1 PM2



PM4 PM5



PM6 PM3

1

2

3

4

Serial

 Serialnumber 6,3 x 6.3mm

Assembly variant	61Q86KL
Created by	VY
Modified by	VY
Modified at	2021-03-09
SVN Revision	13140



Title: GigaZee - TE0720		
A4	Number: TE0720 61Q86KL	Rev. 04
Date: 2022-01-19	Copyright: 2013 Trenz Electronic GmbH	Page 4 of 20
Drawn by: VY	Filename: TE0720.SchDoc	

B35 48 IO, 24 LVDS Pairs
 MIO0 8 IO, 3.3V
 MIO1 6 IO 1.8V
 ETH MDI Copper

B34 36 IO, 18 LVDS Pairs
 USB OTG
 ETH SGMI I

B33 18 IO, 9 LVDS Pairs
 B13 48 IO, 24 LVDS Pairs
 B13 2 IO

VCCIO34 must be connected to power even if the signals of this bank are not used externally.

A

A

B

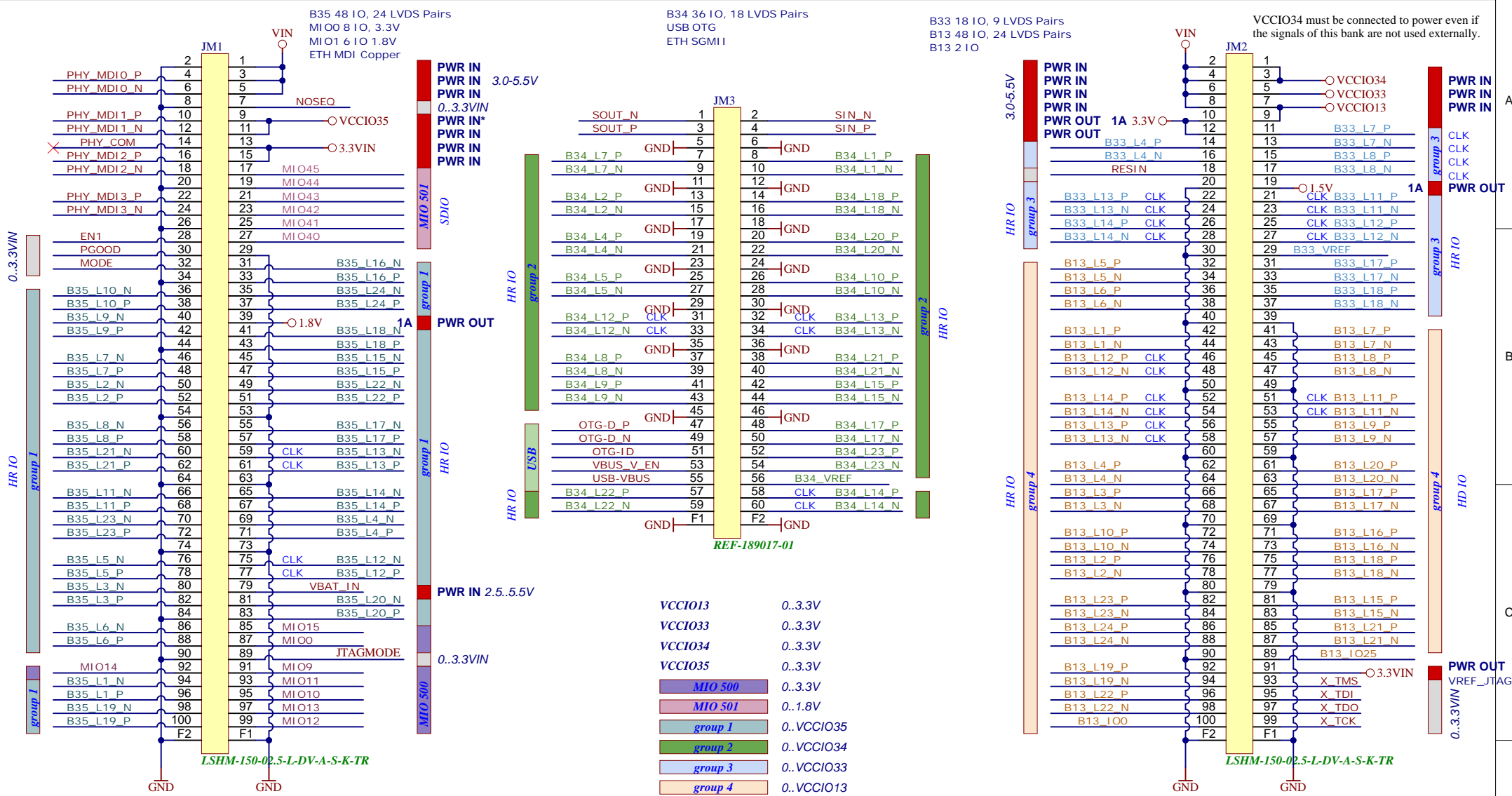
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C

C

D

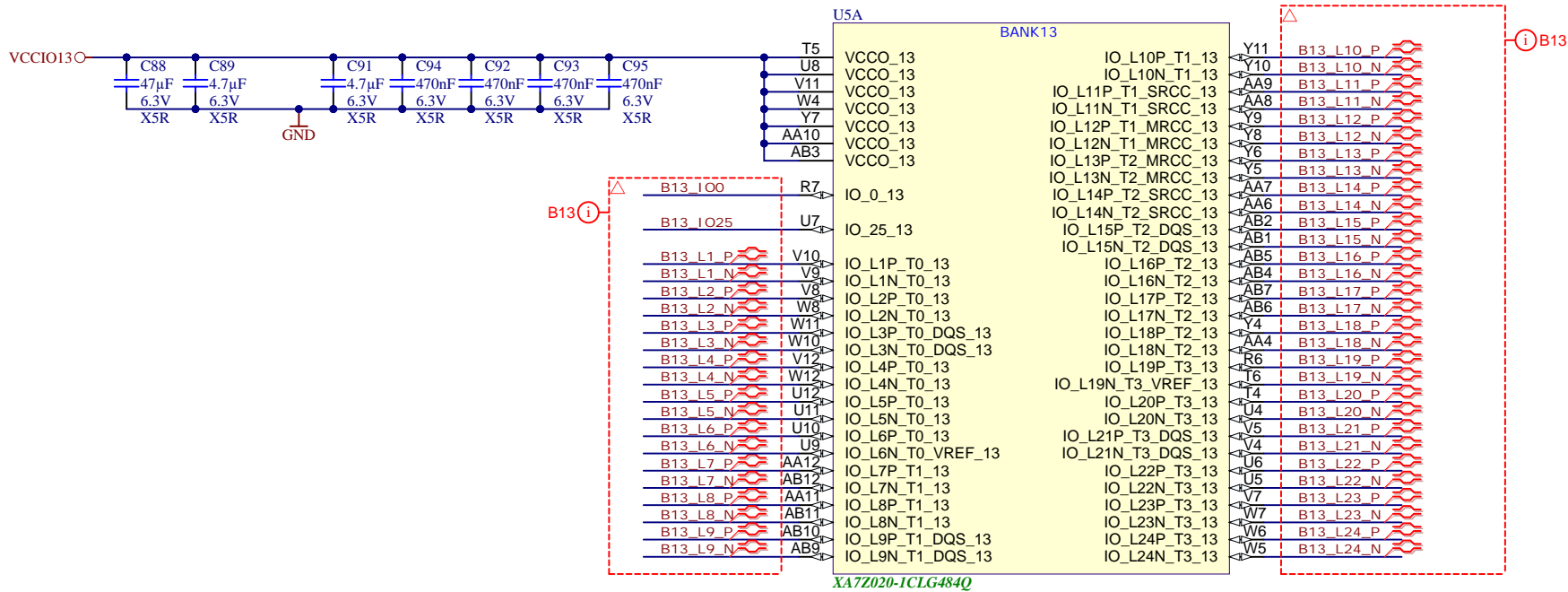
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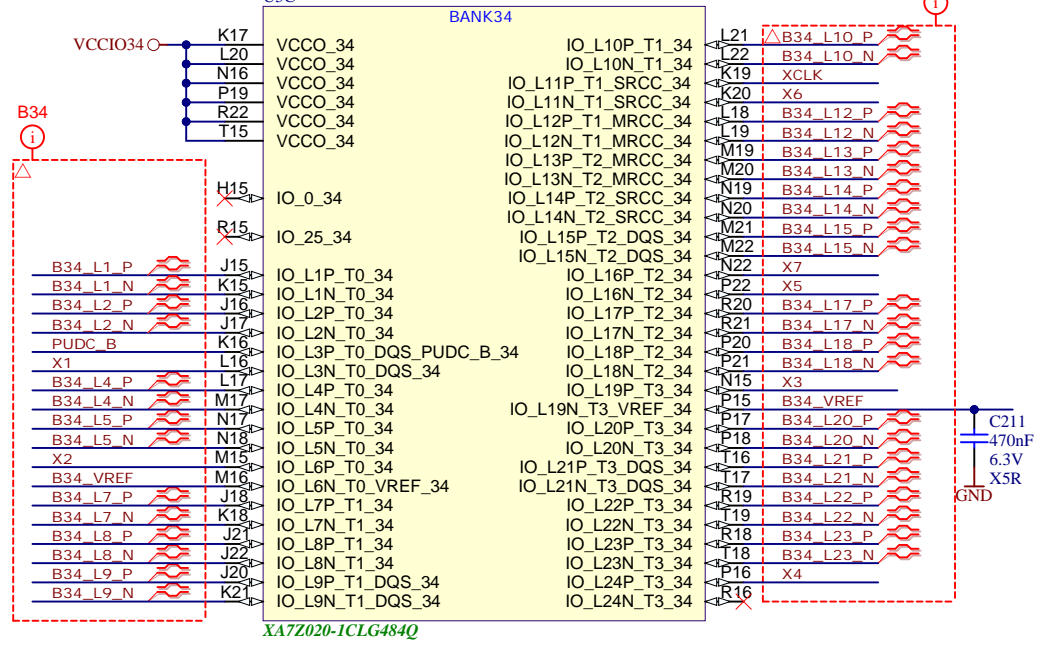
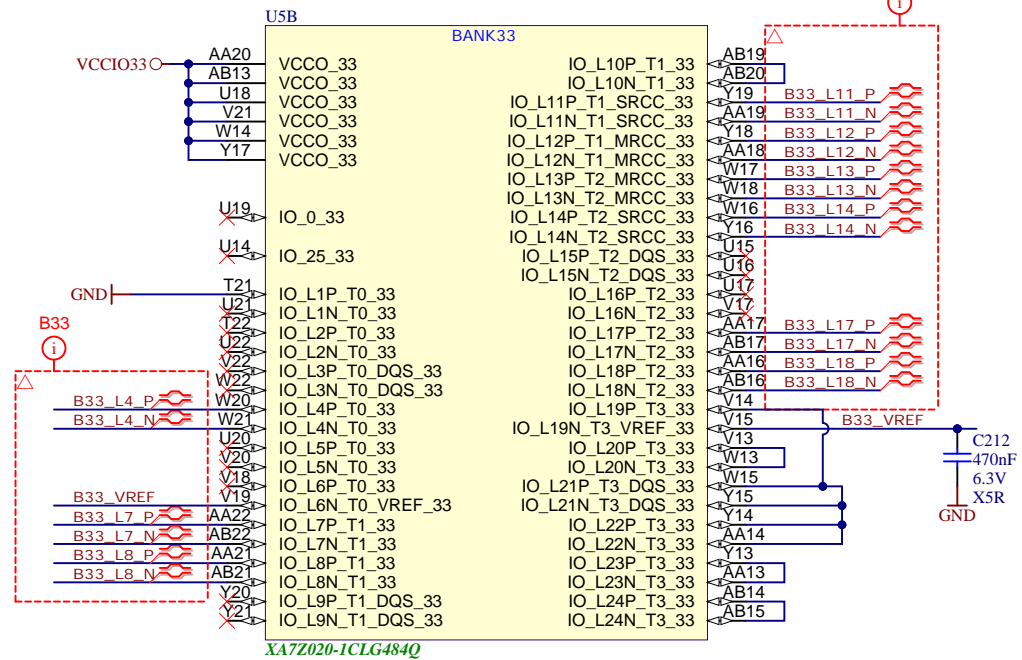
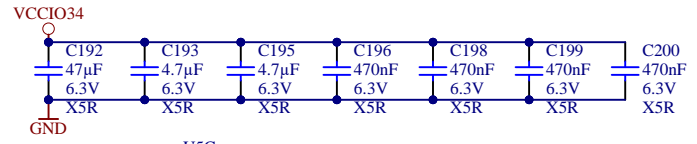
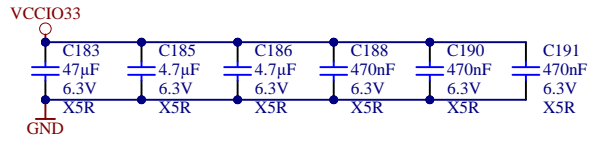
- VCCIO13 0..3.3V
- VCCIO33 0..3.3V
- VCCIO34 0..3.3V
- VCCIO35 0..3.3V
- MIO 500 0..3.3V
- MIO 501 0..1.8V
- group 1 0..VCCIO35
- group 2 0..VCCIO34
- group 3 0..VCCIO33
- group 4 0..VCCIO13



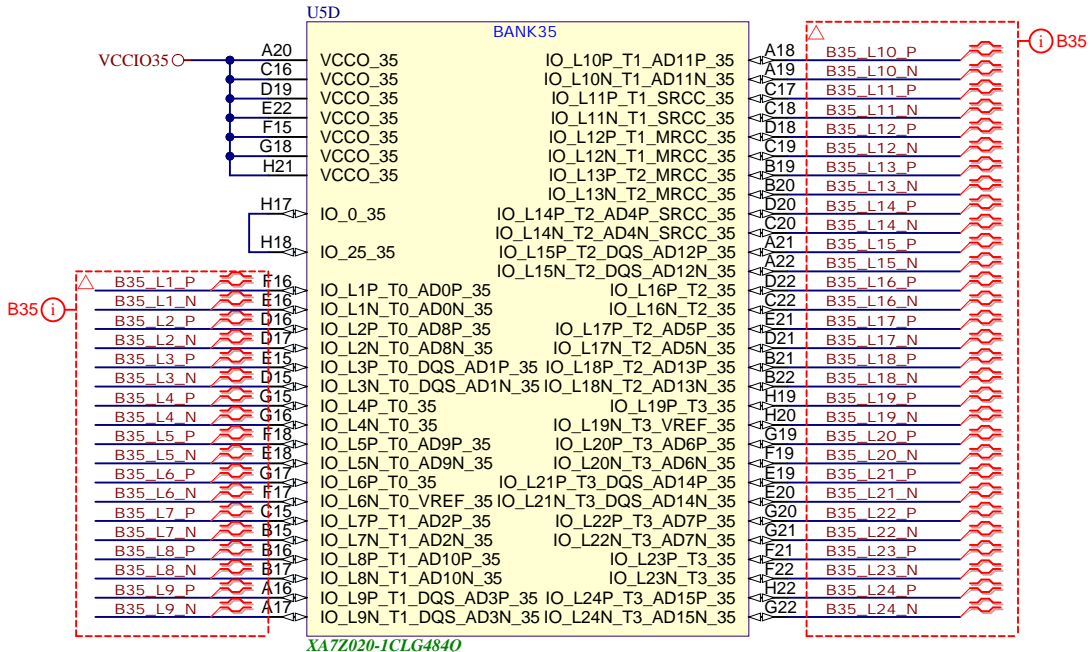
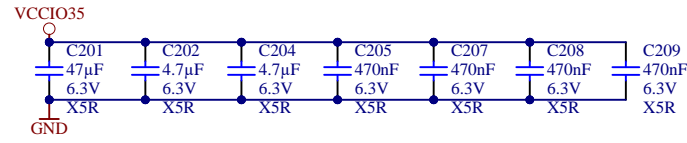
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A4	Number: TE0720 61Q86KL	Rev. 04
Date: 2022-01-19	Copyright: 2013 Trenz Electronic GmbH	Page5 of 20
Filename: B2B-Connectors.SchDoc		



Title: GigaZee - B13		
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Date: 2022-01-19	Copyright: 2013 Trenz Electronic GmbH	Page6 of 20
Filename: B13.SchDoc		



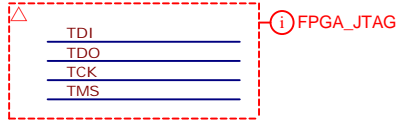
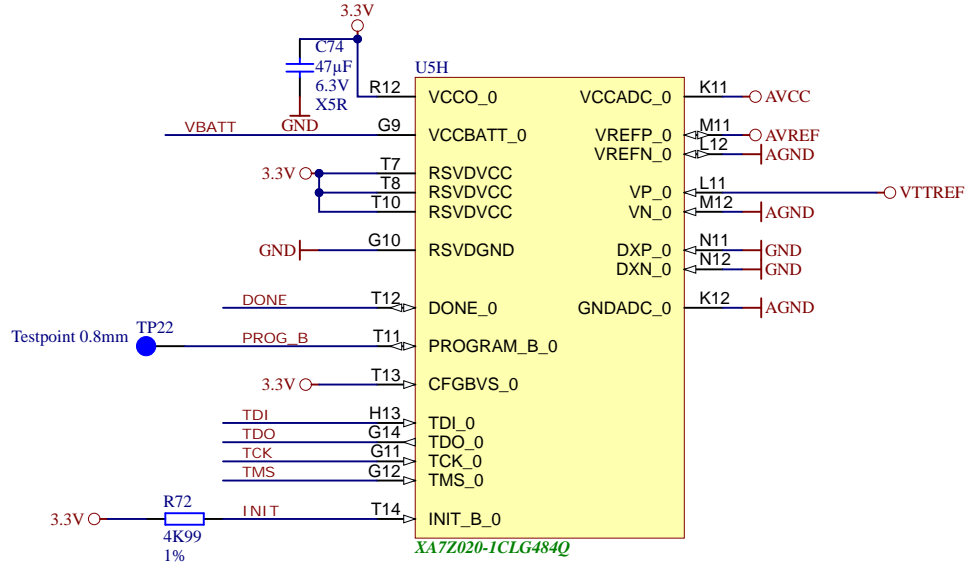
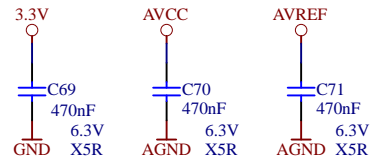
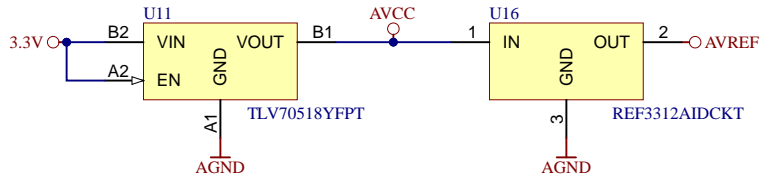
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Date: 2022-01-19	Copyright: 2013 Trenz Electronic GmbH	Page7 of 20
Filename: B33-B34.SchDoc		



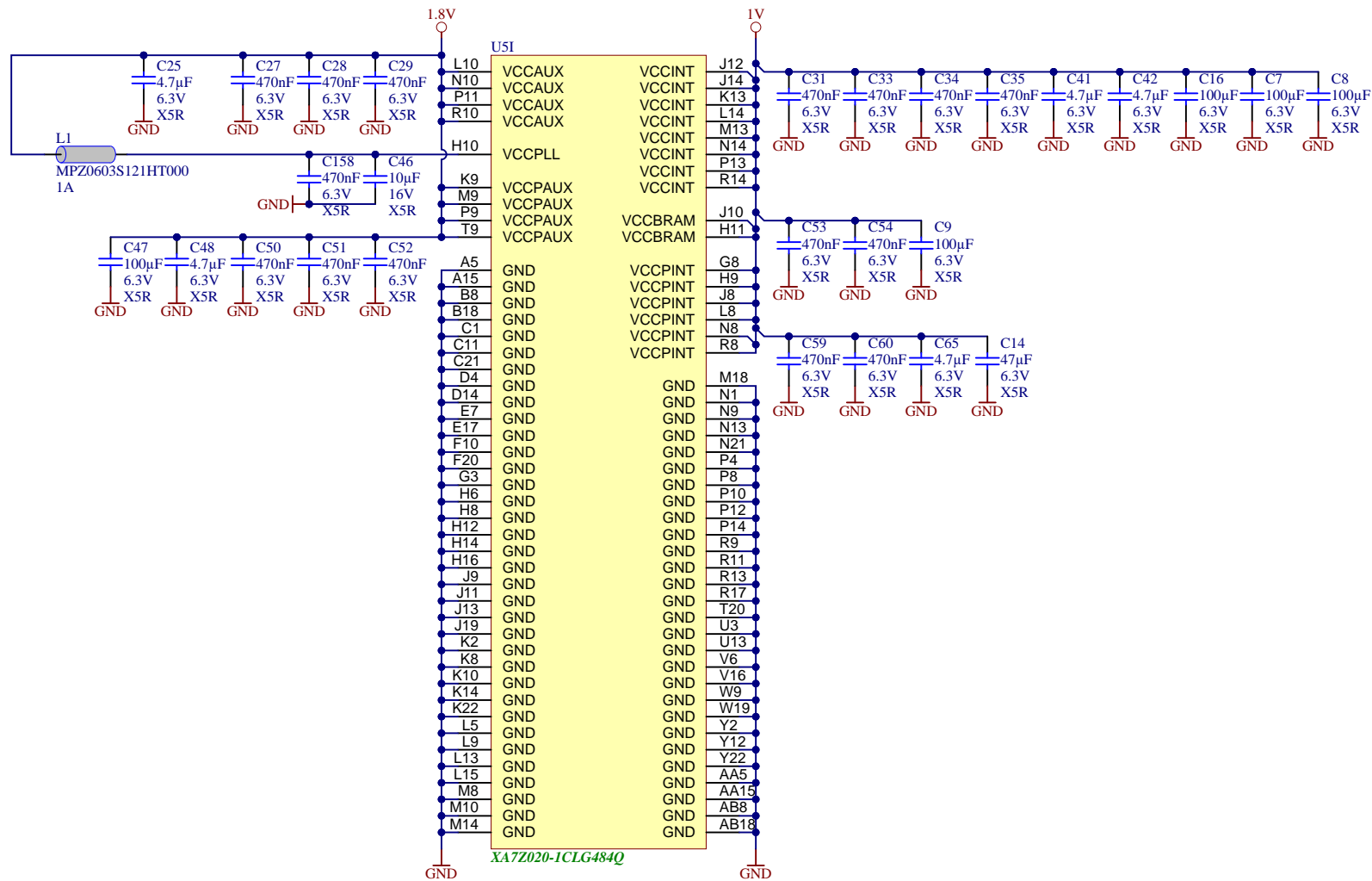
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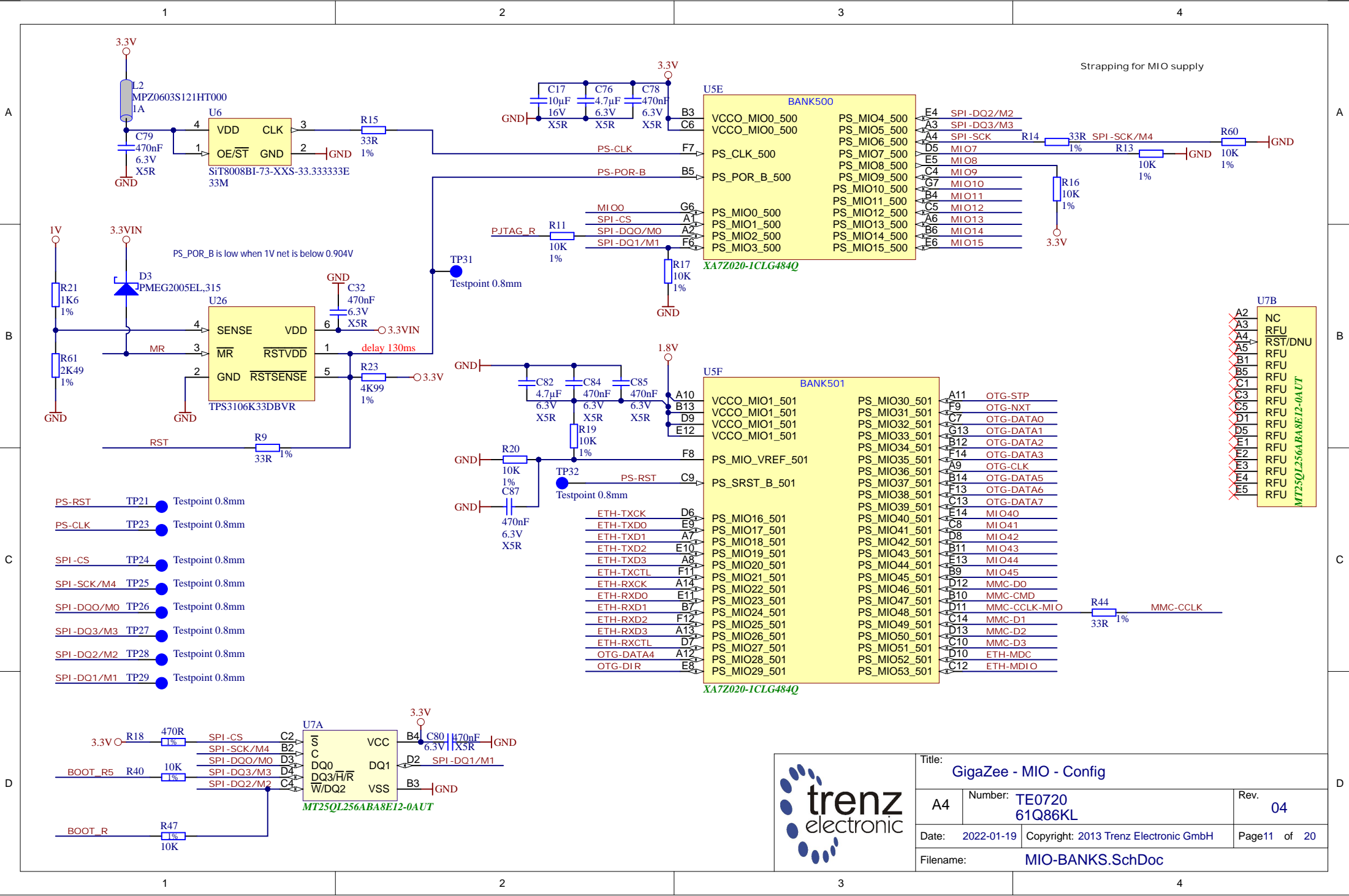
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Date: 2022-01-19	Copyright: 2013 Trenz Electronic GmbH	Page8 of 20
Filename: B35.SchDoc		



Title: GigaZee - B0		
A4	Number: TE0720 61Q86KL	Rev. 04
Date: 2022-01-19	Copyright: 2013 Trenz Electronic GmbH	Page9 of 20
Filename: FPGA-MISC.SchDoc		



		Title: GigaZee - FPGA Power	
		A4	Number: TE0720 61Q86KL
Date: 2022-01-19		Copyright: 2013 Trenz Electronic GmbH	
Filename: FPGA-PWR.SchDoc		Page 10 of 20	



- PS-RST TP21 Testpoint 0.8mm
- PS-CLK TP23 Testpoint 0.8mm
- SPI-CS TP24 Testpoint 0.8mm
- SPI-SCK/M4 TP25 Testpoint 0.8mm
- SPI-DQ0/M0 TP26 Testpoint 0.8mm
- SPI-DQ3/M3 TP27 Testpoint 0.8mm
- SPI-DQ2/M2 TP28 Testpoint 0.8mm
- SPI-DQ1/M1 TP29 Testpoint 0.8mm

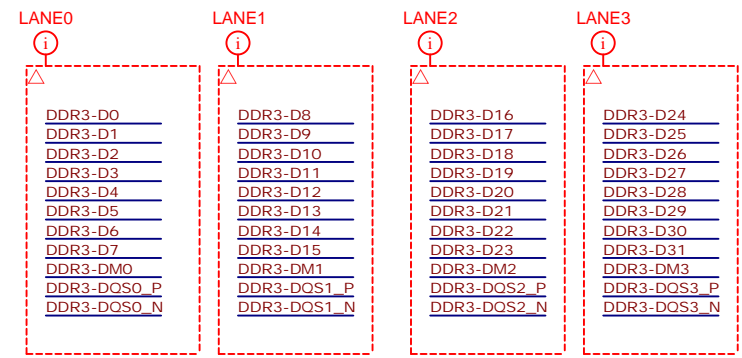
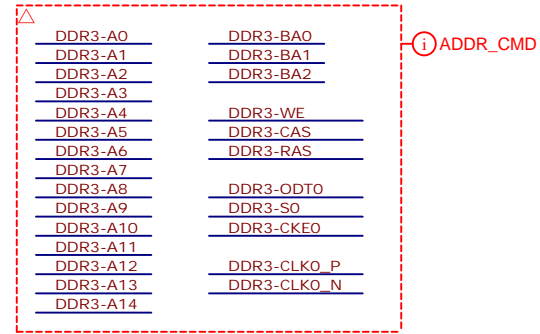
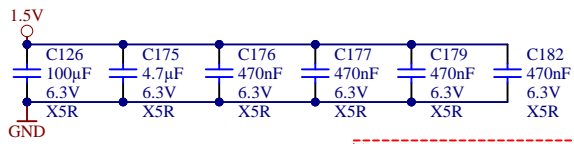
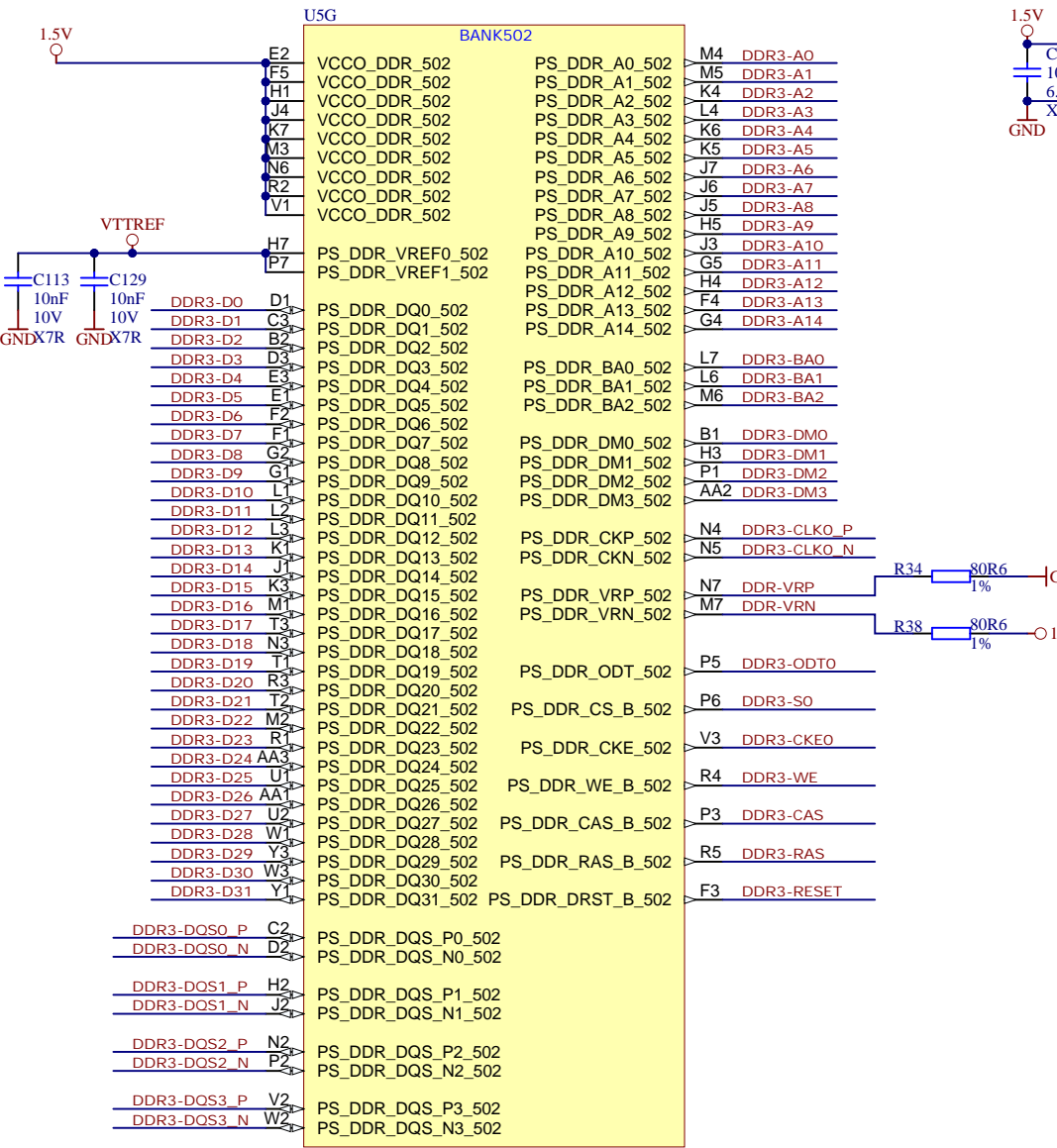
USE BANK500	
VCCO_MIO0_500	PS_MIO4_500
VCCO_MIO0_500	PS_MIO5_500
PS_CLK_500	PS_MIO6_500
PS_POR_B_500	PS_MIO7_500
PS_MIO0_500	PS_MIO8_500
PS_MIO1_500	PS_MIO9_500
PS_MIO2_500	PS_MIO10_500
PS_MIO3_500	PS_MIO11_500
	PS_MIO12_500
	PS_MIO13_500
	PS_MIO14_500
	PS_MIO15_500

USF BANK501	
VCCO_MIO1_501	PS_MIO30_501
VCCO_MIO1_501	PS_MIO31_501
VCCO_MIO1_501	PS_MIO32_501
VCCO_MIO1_501	PS_MIO33_501
PS_MIO_VREF_501	PS_MIO34_501
PS_SRST_B_501	PS_MIO35_501
	PS_MIO36_501
	PS_MIO37_501
	PS_MIO38_501
	PS_MIO39_501
	PS_MIO40_501
	PS_MIO41_501
	PS_MIO42_501
	PS_MIO43_501
	PS_MIO44_501
	PS_MIO45_501
	PS_MIO46_501
	PS_MIO47_501
	PS_MIO48_501
	PS_MIO49_501
	PS_MIO50_501
	PS_MIO51_501
	PS_MIO52_501
	PS_MIO53_501

U7B	
A2	NC
A3	RFU
A4	RFU
A5	RST/DNU
B1	RFU
B5	RFU
C1	RFU
C3	RFU
C5	RFU
D1	RFU
D5	RFU
E1	RFU
E2	RFU
E3	RFU
E4	RFU
E5	RFU



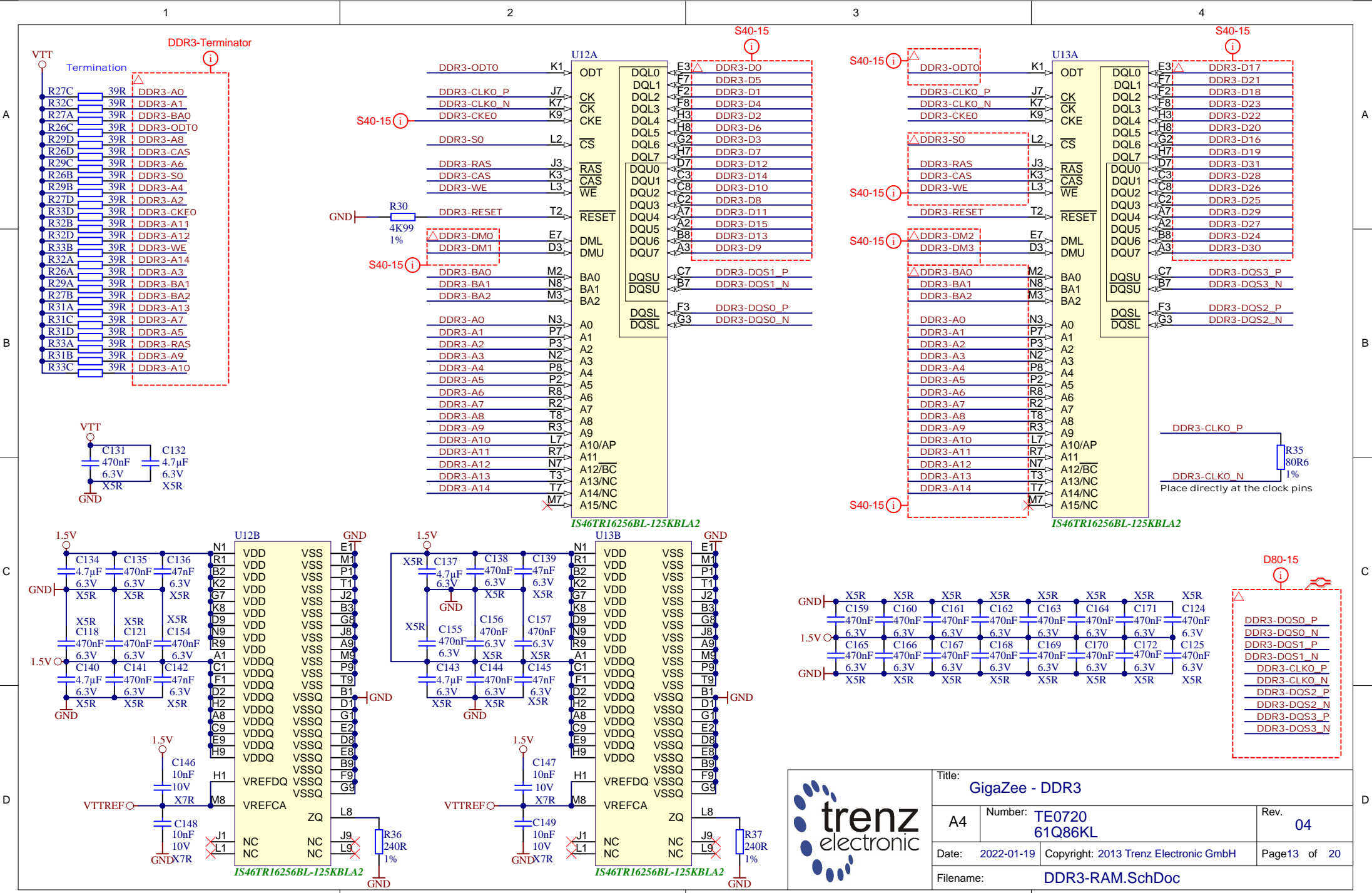
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A4	Number: TE0720 61Q86KL	Rev. 04	
Date: 2022-01-19	Copyright: 2013 Trenz Electronic GmbH	Page 11 of 20	
Filename: MIO-BANKS.SchDoc			



XA7Z020-1CLG484Q

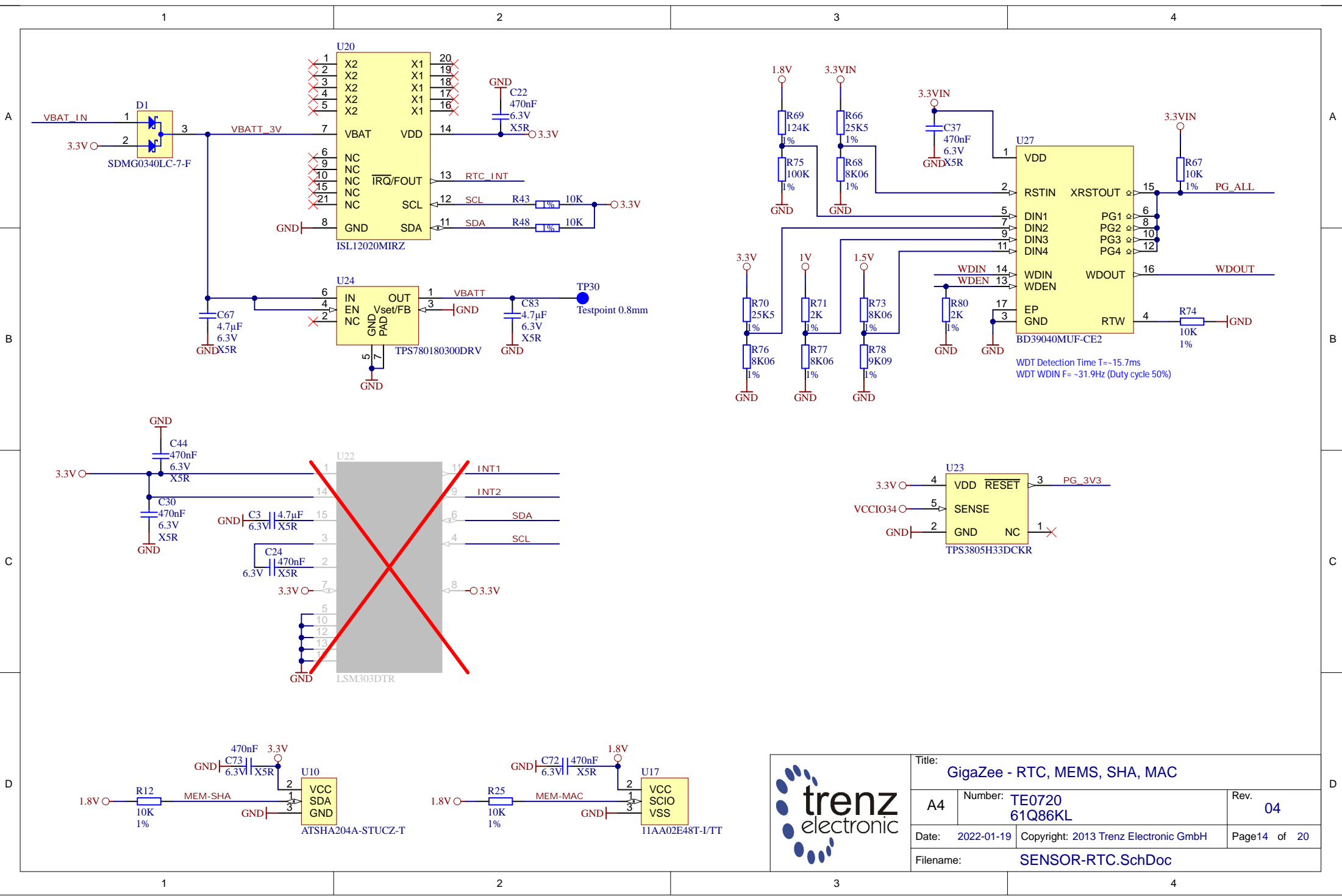


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Date: 2022-01-19	Copyright: 2013 Trenz Electronic GmbH	Page 12 of 20
Filename: PS-DDR.SchDoc		

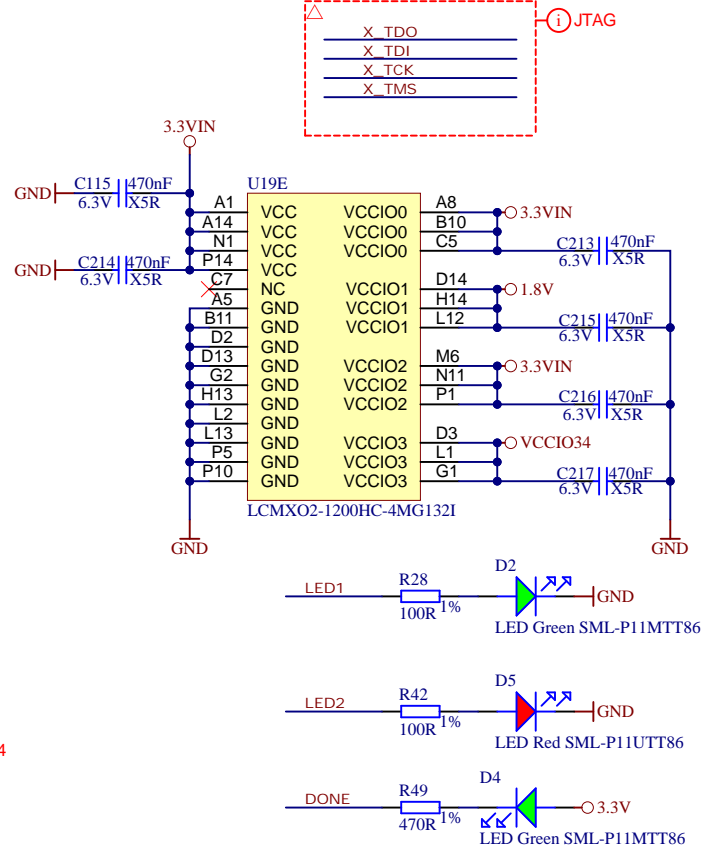
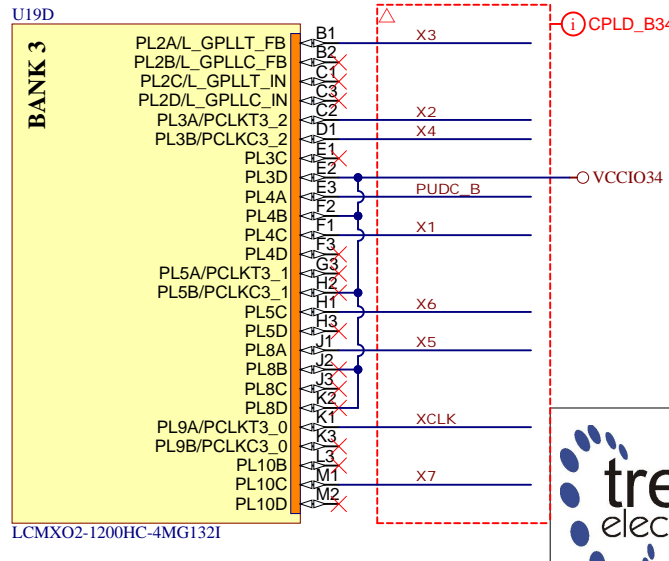
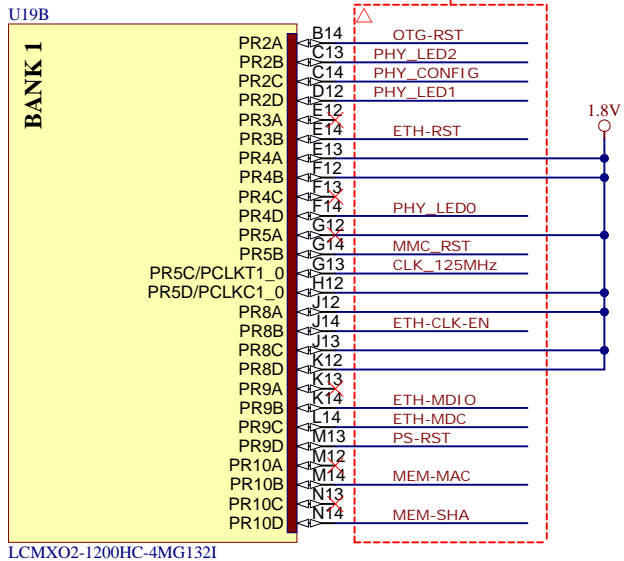
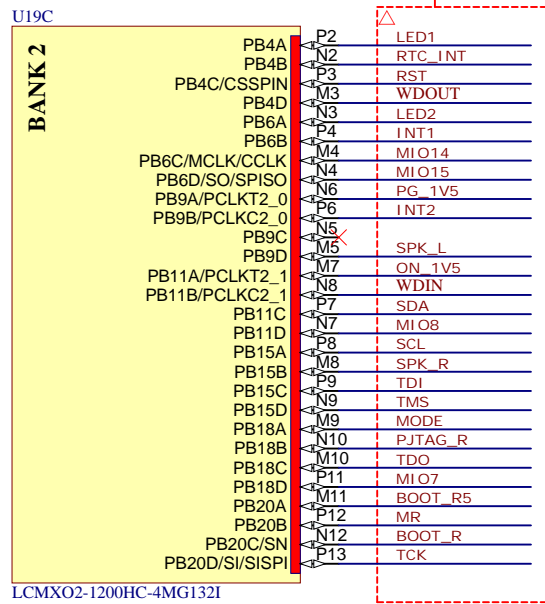
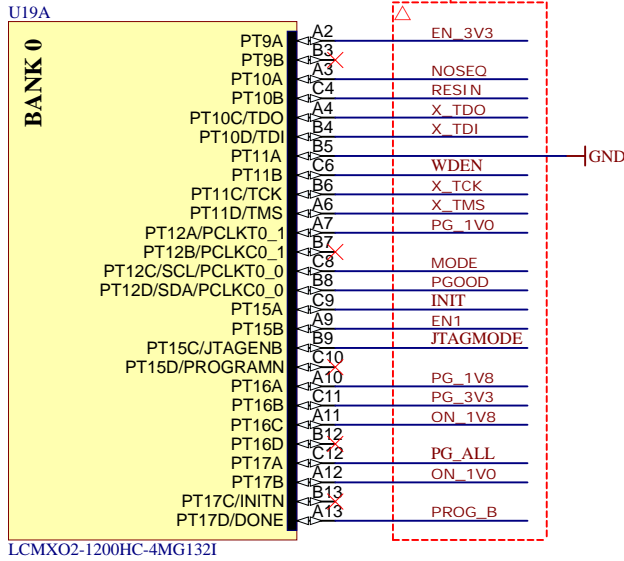


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Date: 2022-01-19	Copyright: 2013 Trenz Electronic GmbH	Page13 of 20
Filename: DDR3-RAM.SchDoc		

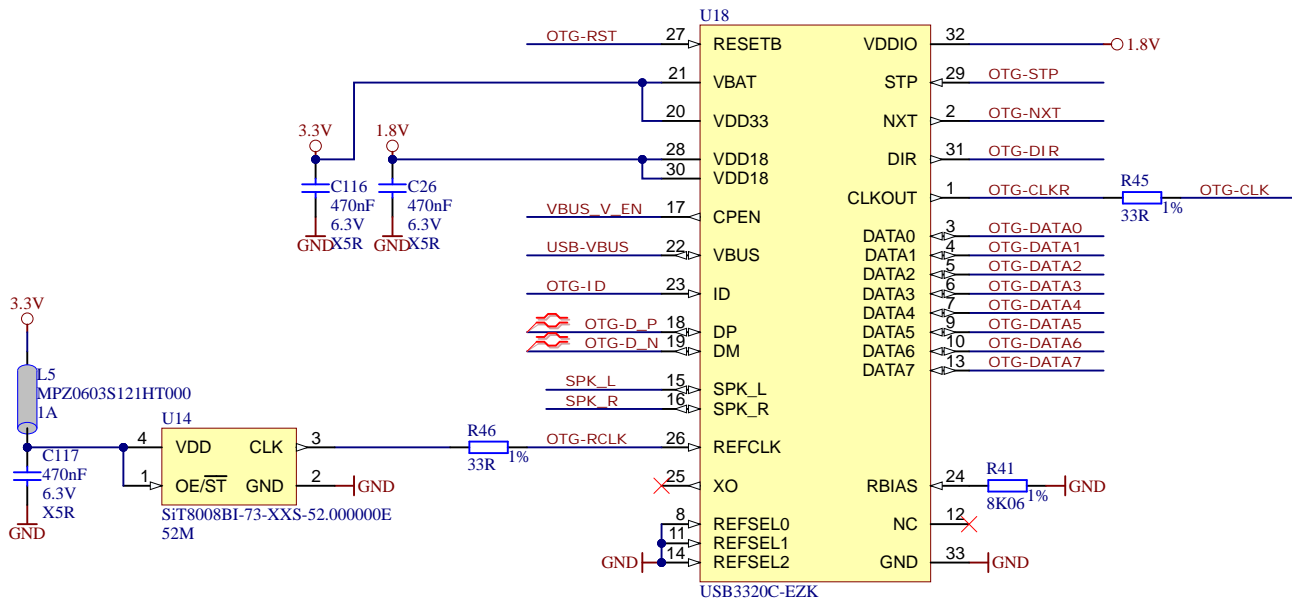




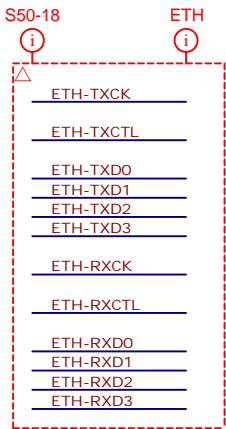
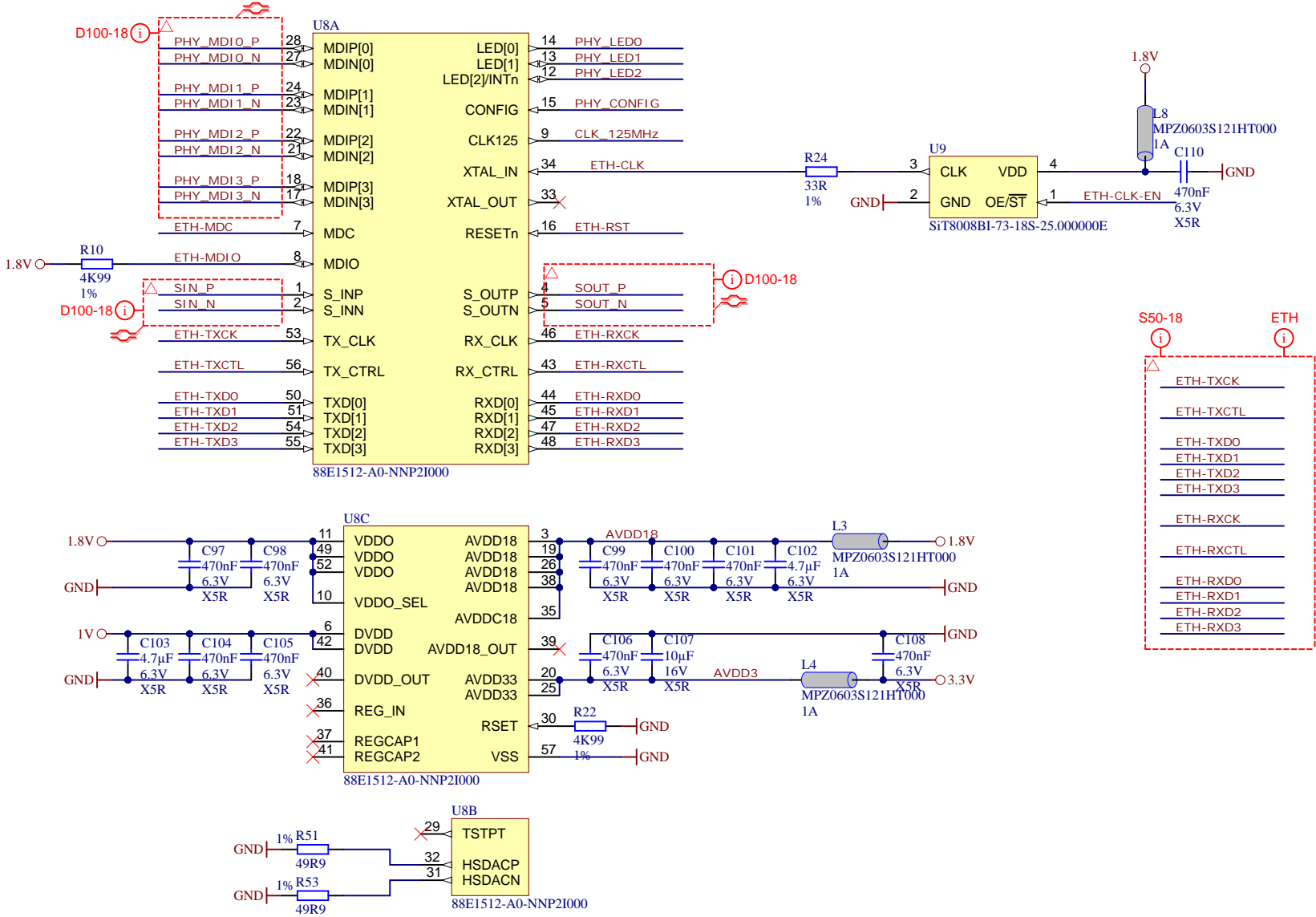
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A4	Number: TE0720 61Q86KL	Rev. 04
Date: 2022-01-19	Copyright: 2013 Trenz Electronic GmbH	Page 14 of 20
Filename: SENSOR-RTC.SchDoc		




Title: GigaZee - System Controller		
A4	Number: TE0720 61Q86KL	Rev. 04
Date: 2022-01-19	Copyright: 2013 Trenz Electronic GmbH	Page 15 of 20
Filename: SystemController.SchDoc		



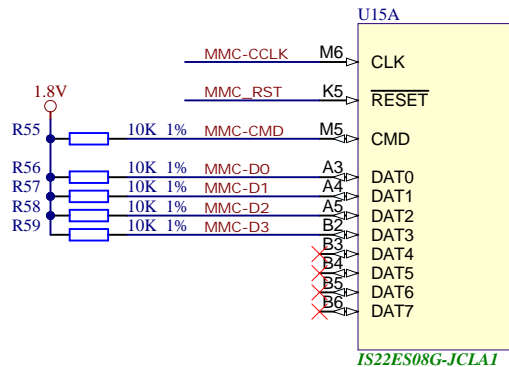
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	A4	Number: TE0720 61Q86KL	Rev. 04
	Date: 2022-01-19	Copyright: 2013 Trenz Electronic GmbH	Page 16 of 20
	Filename: USB-PHY.SchDoc		



			Title: GigaZee - Ethernet	
			A4	Number: TE0720 61Q86KL
Date: 2022-01-19		Copyright: 2013 Trenz Electronic GmbH		Page 17 of 20
Filename: ETH-PHY.SchDoc				

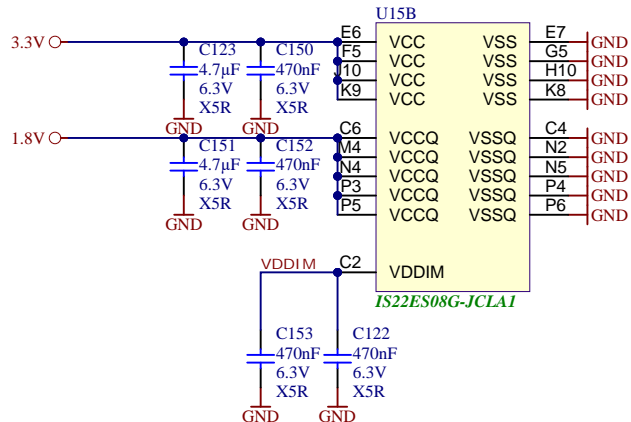
U15D			
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A2	NC	NC	H3
A8	NC	NC	H12
A9	NC	NC	H13
A10	NC	NC	H14
A11	NC	NC	J1
A12	NC	NC	J2
A13	NC	NC	J3
A14	NC	NC	J12
B1	NC	NC	J13
B7	NC	NC	J14
B8	NC	NC	K1
B9	NC	NC	K2
B10	NC	NC	K3
B11	NC	NC	K12
B12	NC	NC	K13
B13	NC	NC	K14
B14	NC	NC	L1
C1	NC	NC	L2
C3	NC	NC	L3
C7	NC	NC	L12
C8	NC	NC	L13
C9	NC	NC	L14
C10	NC	NC	M1
C11	NC	NC	M2
C12	NC	NC	M3
C13	NC	NC	M7
C14	NC	NC	M8
D1	NC	NC	M9
D2	NC	NC	M10
D3	NC	NC	M11
D4	NC	NC	M12
D12	NC	NC	M13
D13	NC	NC	M14
D14	NC	NC	N1
E1	NC	NC	N3
E2	NC	NC	N6
E3	NC	NC	N7
E12	NC	NC	N8
E13	NC	NC	N9
E14	NC	NC	N10
F1	NC	NC	N11
F2	NC	NC	N12
F3	NC	NC	N13
F12	NC	NC	N14
F13	NC	NC	P1
F14	NC	NC	P2
G1	NC	NC	P8
G2	NC	NC	P9
G12	NC	NC	P11
G13	NC	NC	P12
G14	NC	NC	P13
H1	NC	NC	P14

IS22ES08G-JCLAI



U15C	
A6	RFU/VSS
A7	RFU
C5	RFU/NC
E5	RFU
E8	RFU
E9	RFU
F10	RFU
F10	RFU
G3	RFU
G10	RFU/NC
H5	RFU
J5	RFU/DS
K6	RFU/VSS
K7	RFU
K10	RFU
P7	RFU/NC
P10	RFU

IS22ES08G-JCLAI

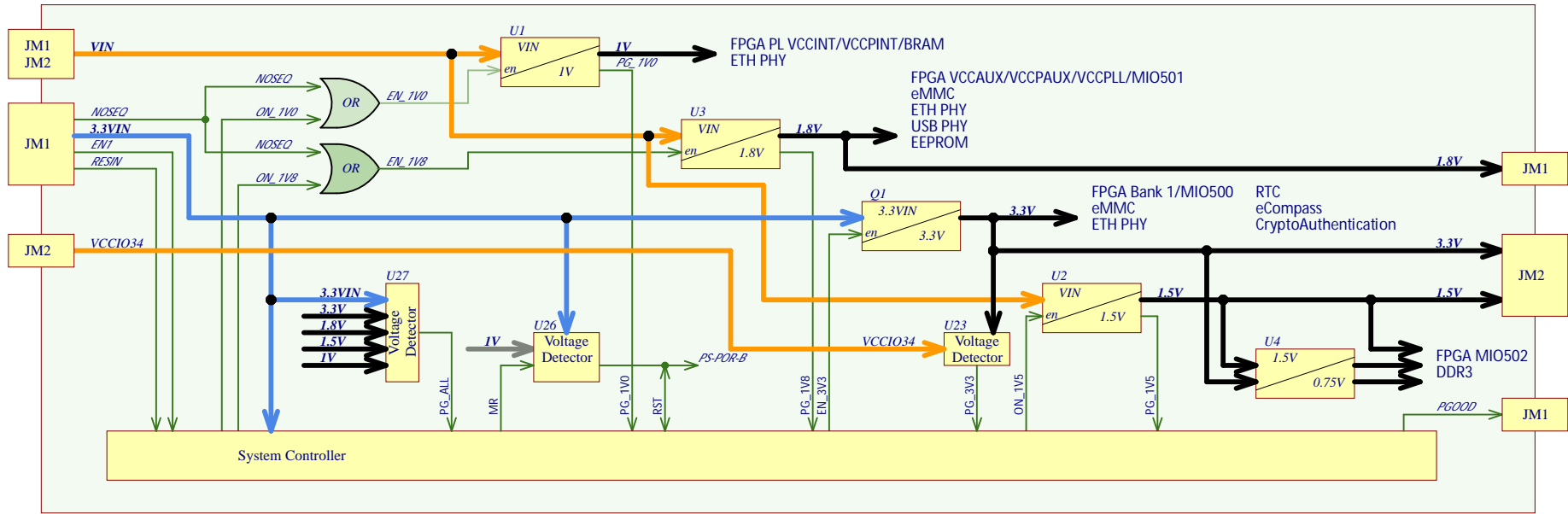


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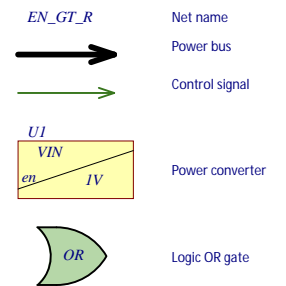
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A4	Number: TE0720 61Q86KL	Rev. 04
Date: 2022-01-19	Copyright: 2013 Trenz Electronic GmbH	Page18 of 20
Filename: eMMC.SchDoc		

Power-on sequencing:

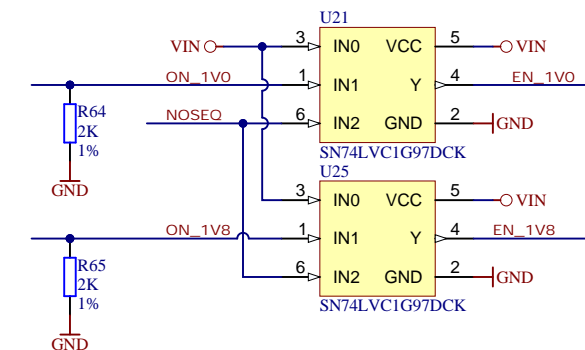
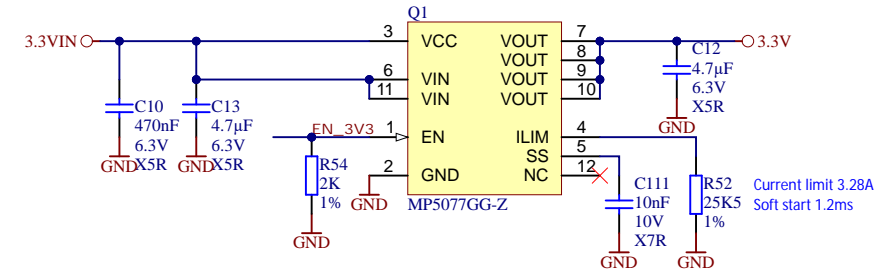
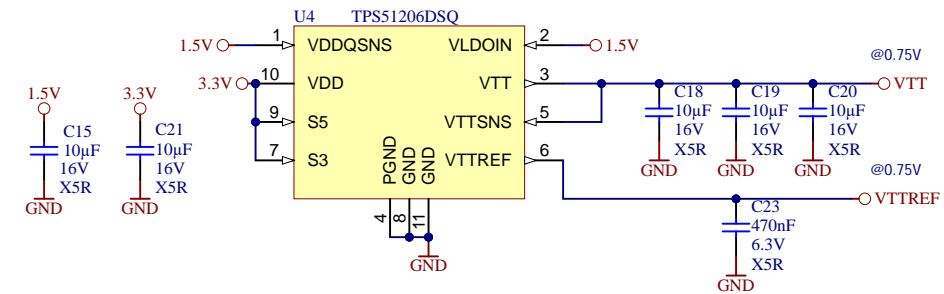
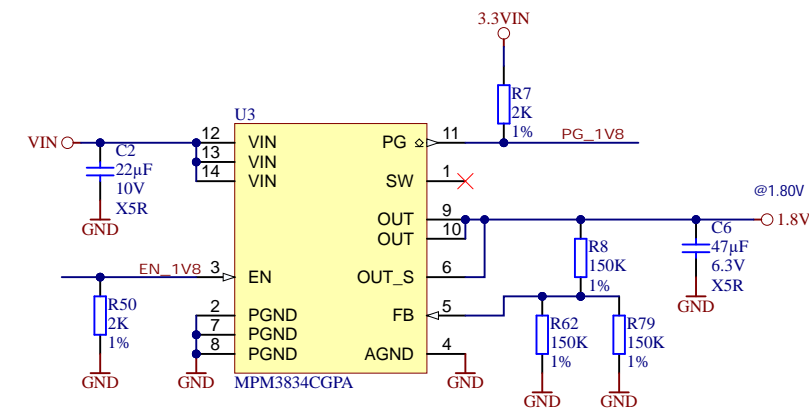
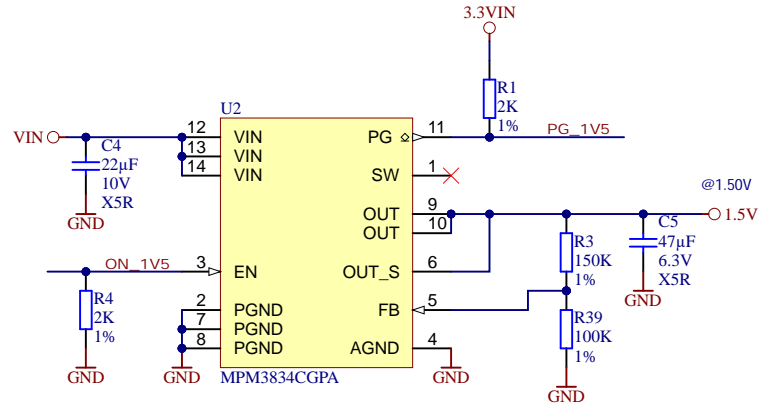
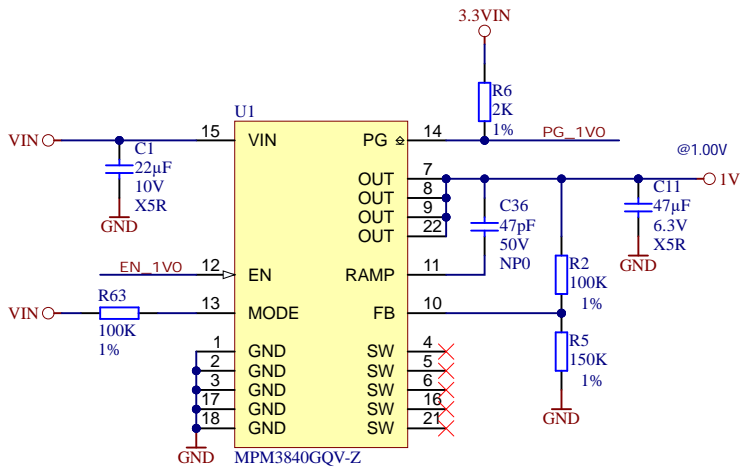


Recommended Operating Conditions

Power Rail	Direction	Range	Tolerance	Description	Note
VIN	IN	3.3 - 5V	+/-5%	Micromodule Power	Mandatory
3.3VIN	IN	3.3V	+/-5%	Micromodule Power	Mandatory
VCCIO13	IN	1.2 - 3.3V	+/-5%	HR IO Bank13	Mandatory
VCCIO33	IN	1.2 - 3.3V	+/-5%	HR IO Bank33	-
VCCIO34	IN	1.2 - 3.3V	+/-5%	HR IO Bank34	Mandatory
VCCIO35	IN	1.2 - 3.3V	+/-5%	HR IO Bank35	-
VBAT_IN	IN	2.5 - 5V	+/-5%	RTC	-
1.8V	OUT	1.8V	+/-5%	For Carrier card Periphery	-
3.3V	OUT	3.3V	+/-5%	For Carrier card Periphery	-
DDR_PWR	OUT	1.5V	+/-5%	For Carrier card Periphery	-
VREF_JTAG	OUT	3.3V	+/-5%	For Carrier card Periphery	Connected to 3.3VIN



Title: GigaZee - Power Diagram		
A4	Number: TE0720 61Q86KL	Rev. 04
Date: 28.10.2022	Copyright: Trenz Electronic GmbH / TT	Page 19 of 20
Filename: Power_Diagram.SchDoc		



Title: **GigaZee - Power**

A4	Number: TE0720 61Q86KL	Rev. 04
Date: 2022-01-19	Copyright: 2013 Trenz Electronic GmbH	
Filename: Power.SchDoc		Page 20 of 20