



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

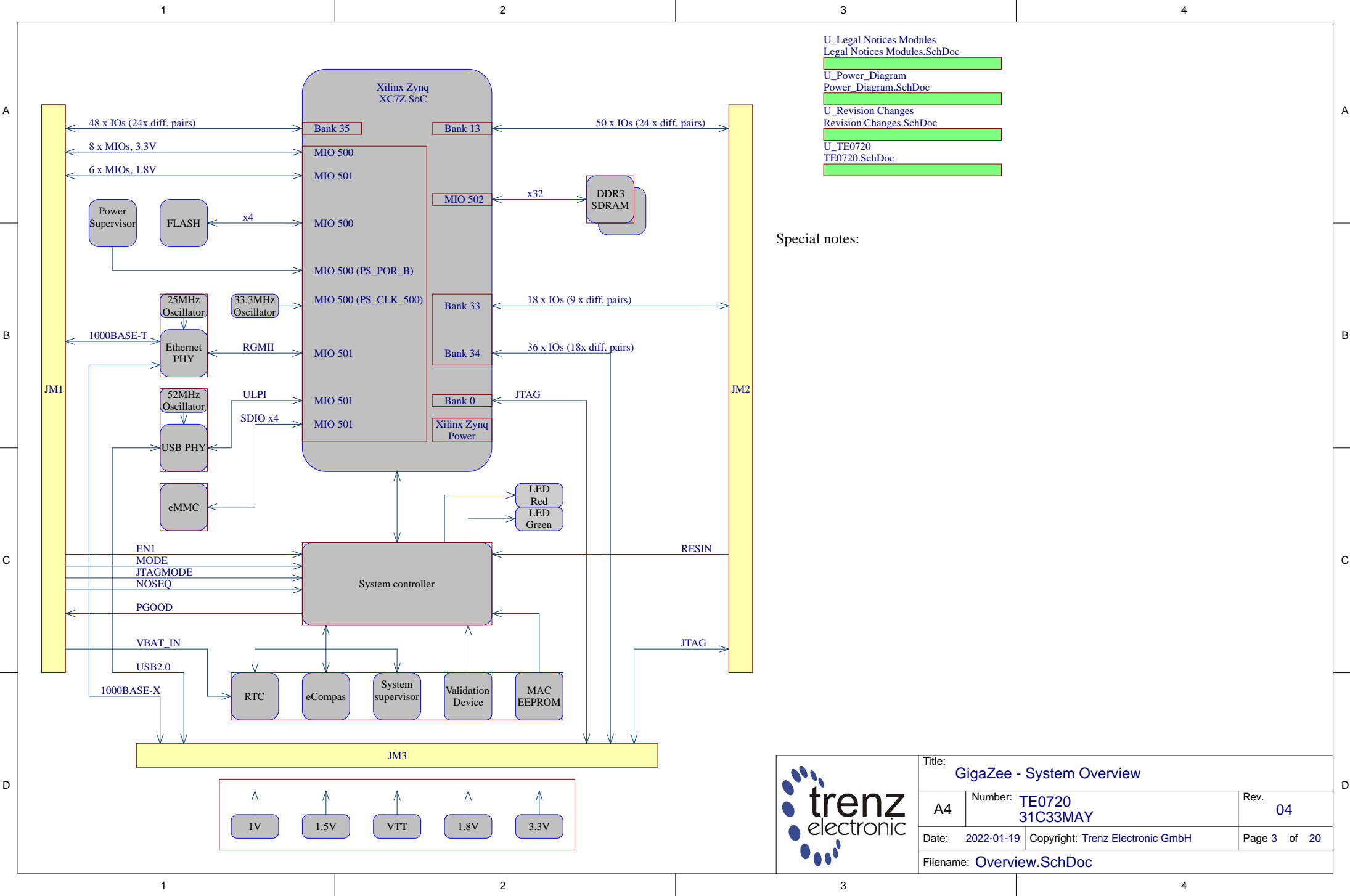
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Schematics and other handouts serve for informational purposes only!

|   |   |  |                            |
|---|---|--|----------------------------|
|  | Title: <b>GigaZee</b>                         |  |                            |
|   | A4  | Number: <b>TE0720<br/>31C33MAY</b>           | Rev. <b>04</b>             |
|   | Date: <b>2022-01-19</b>                       | Copyright: <b>Trenz Electronic GmbH / TT</b> | Page <b>1</b> of <b>20</b> |
|   | Filename: <b>Legal Notices Modules.SchDoc</b> |  |                            |

| REV  | Description   |    |
|------|---|----|
| -01  | Initial revision  |    |
| -02  |   |    |
| -03  |   |    |
| -04  | <p>1. Revised power supply circuit, replaced next components:</p> <ul style="list-style-type: none"> <li>- EN6347QI (U1) by MPM3840GQV-Z,</li> <li>- EP53F8QI (U2, U3) by MPM3834CGPA,</li> <li>- TPS27082LDDCR (Q1) by MP5077GG-Z.</li> </ul> <p>2. Added power supervisor BD39040MUF (U27). Next signal connected to system controller:</p> <ul style="list-style-type: none"> <li>- PG_All (U27 - U19.C12) with pull-up resistor R67;</li> <li>- WDEN (U27.13 - U19.C6) with pull-down resistor R80;</li> <li>- WDIN (U27.14 - U19.N8);</li> <li>- WDOUT (U27.16 - U19.M3).</li> </ul> <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 | <p>1. Added note regarding VCCIO34, page B2B-Connectors</p>   | VY |

|   |  |                                   |                            |
|---|--|-----------------------------------|----------------------------|
|  |  | Title: GigaZee - Revision History |                            |
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| 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<br>31C33MAY       | Rev. 04      |
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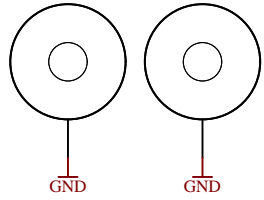
1

2

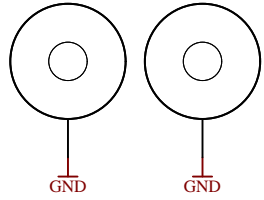
3

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

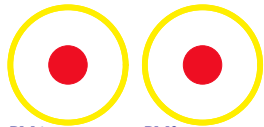
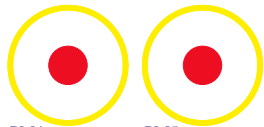
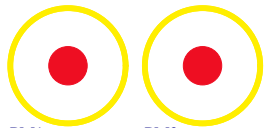
B

C

C

D

D



Serial  
  
 Serialnumber 6,3 x 6.3mm

|                  |            |
|------------------|------------|
| Assembly variant | 31C33MAY   |
| Created by       | MR         |
| Modified by      | MR         |
| Modified at      | 2021-08-13 |
| SVN Revision     | 13140      |



|                         |                                       |              |
|-------------------------|---------------------------------------|--------------|
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| Drawn by: VY            | Filename: TE0720.SchDoc               |              |

1

2

3

4

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

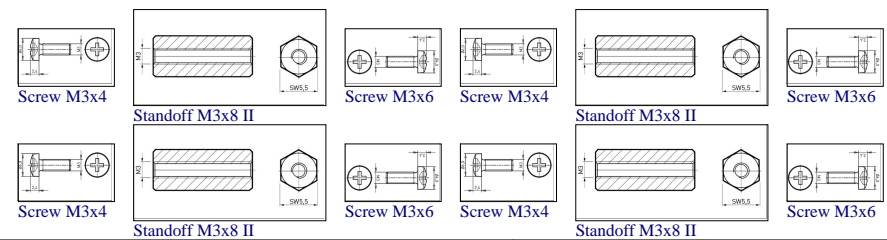
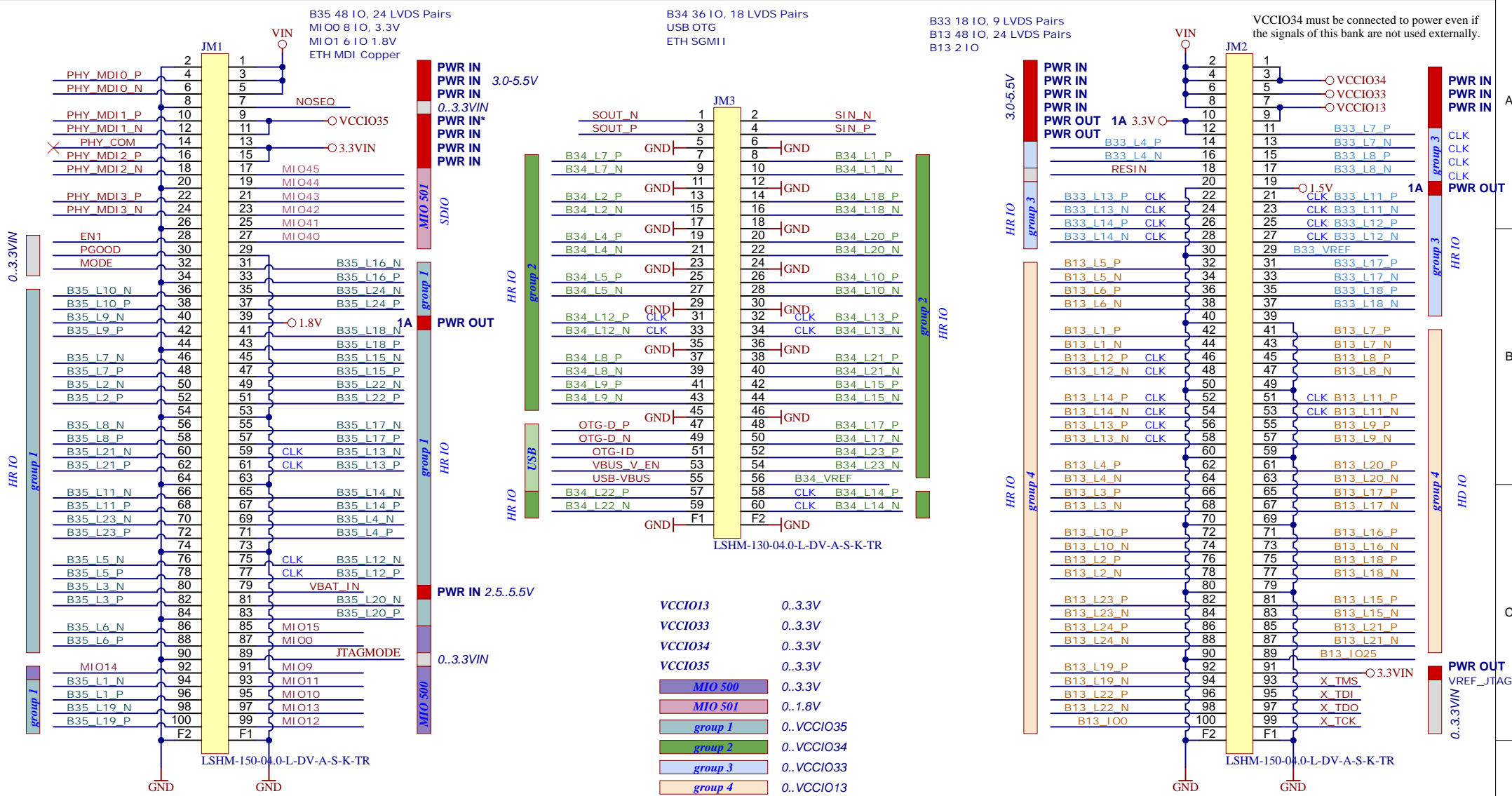
B

C

C

D

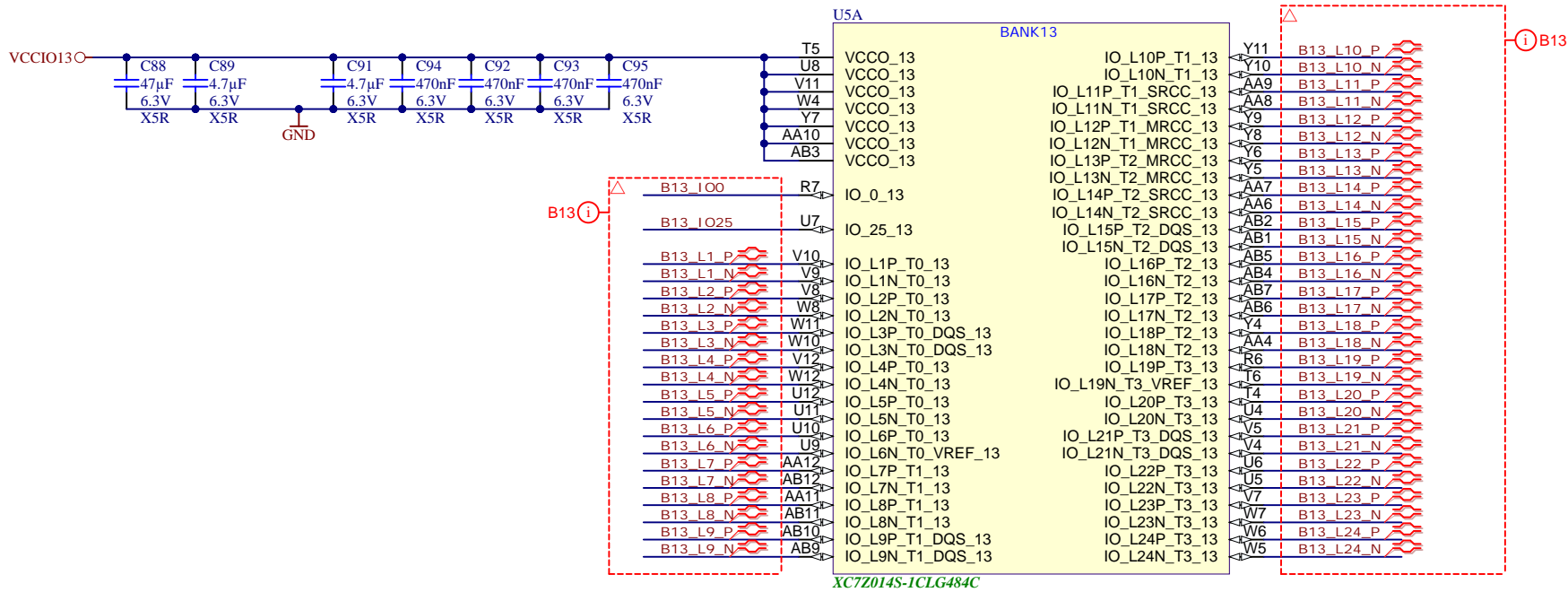
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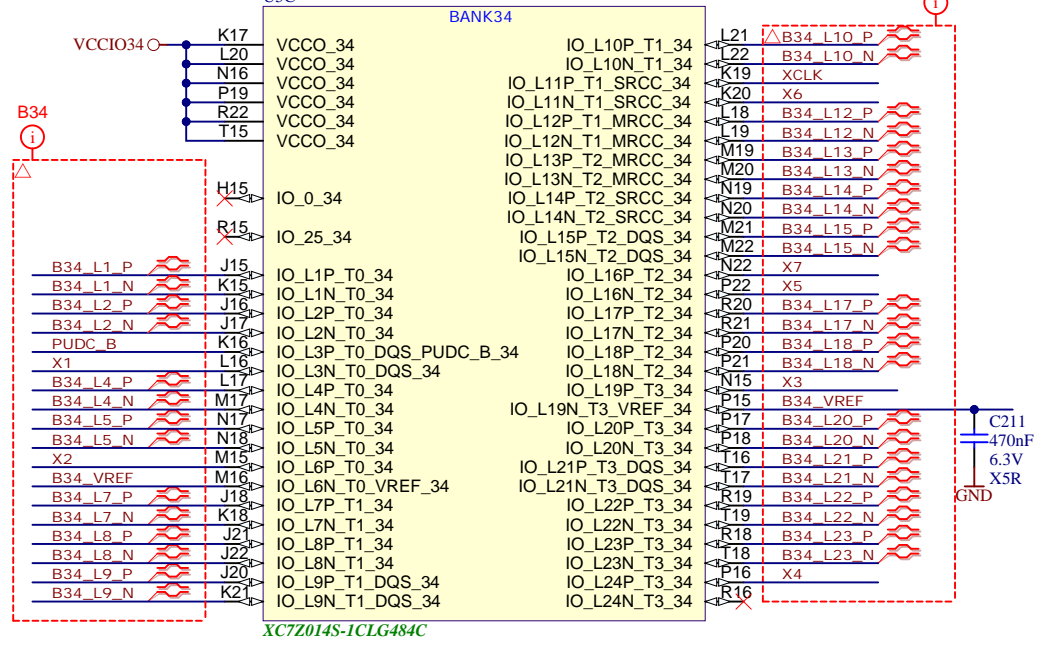
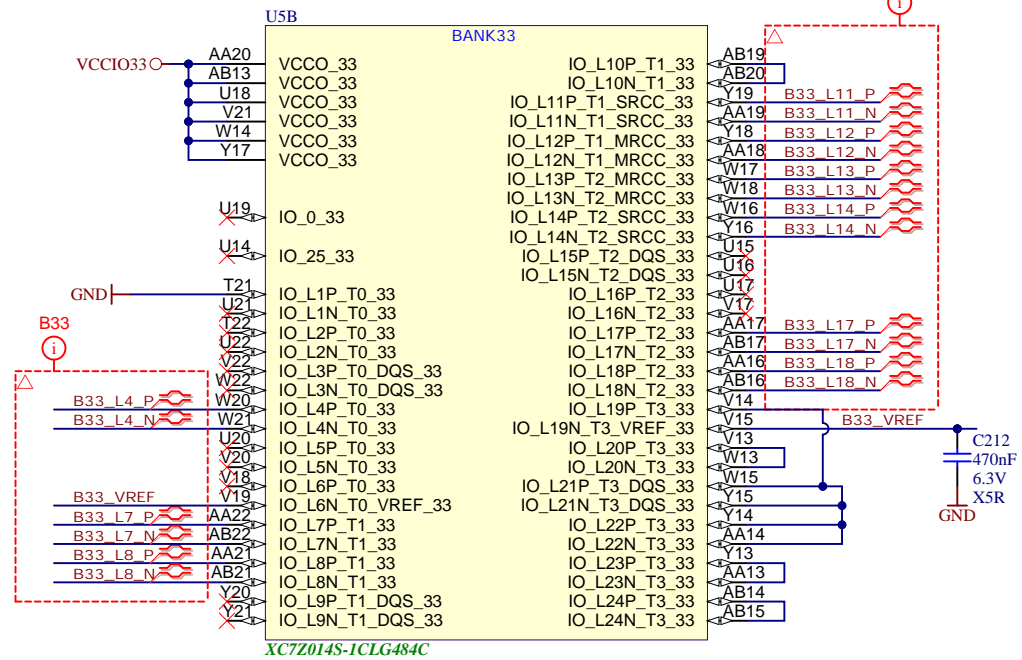
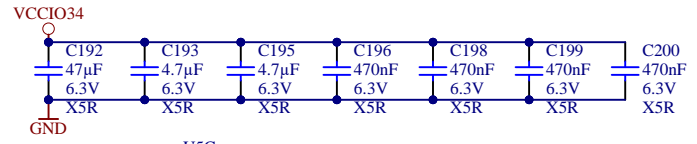
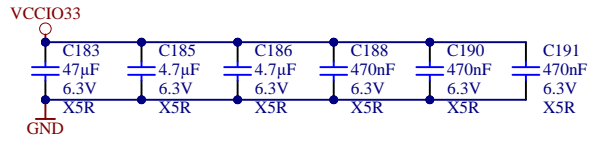
- VCCIO13 0..3.3V
- VCCIO33 0..3.3V
- VCCIO34 0..3.3V
- VCCIO35 0..3.3V
- MIO 500 0..3.3V
- MIO 501 0..1.8V
- group 1 0..VCCIO35
- group 2 0..VCCIO34
- group 3 0..VCCIO33
- group 4 0..VCCIO13



|                                 |                                       |             |
|---------------------------------|---------------------------------------|-------------|
| Title: GigaZee - B2B Connector  |                                       |             |
| A4                              | Number: TE0720<br>31C33MAY            | Rev. 04     |
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| Filename: B2B-Connectors.SchDoc |                                       |             |



|                      |                                       |             |
|----------------------|---------------------------------------|-------------|
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| A4                   | Number: TE0720<br>31C33MAY            | Rev. 04     |
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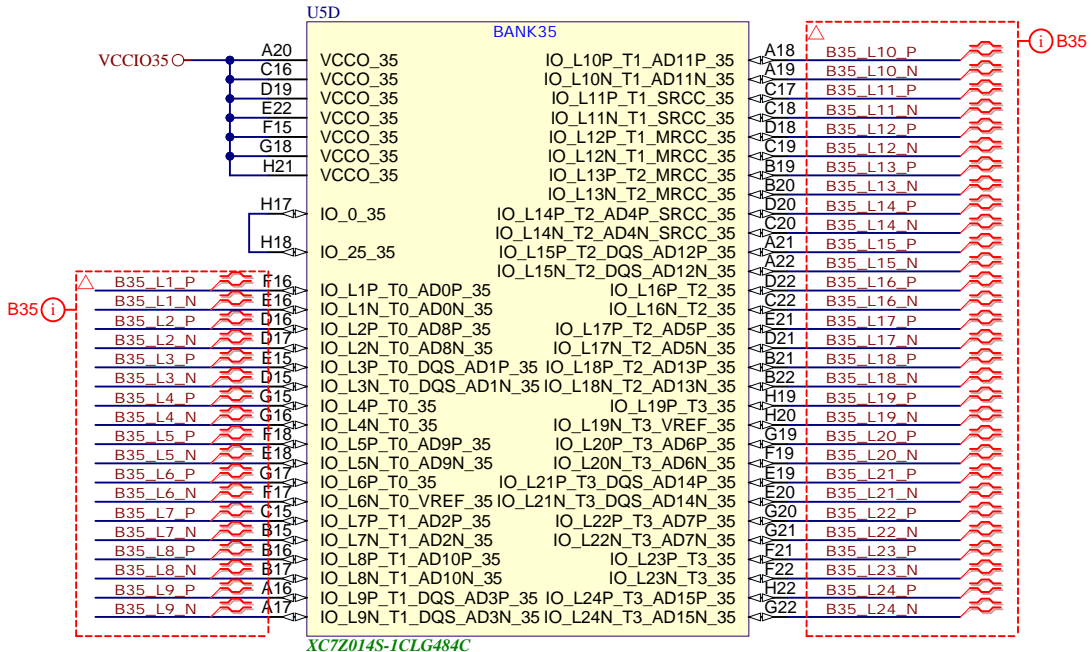
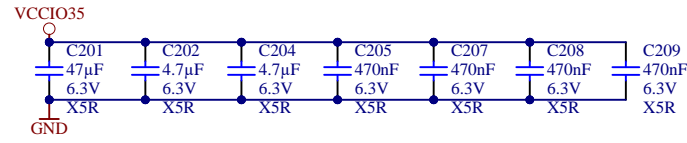


XC7Z014S-ICLG484C

XC7Z014S-ICLG484C



|                            |                                       |             |
|----------------------------|---------------------------------------|-------------|
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| A4                         | Number: TE0720<br>31C33MAY            | Rev. 04     |
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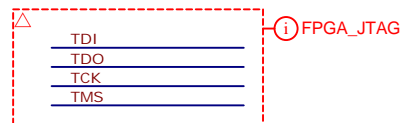
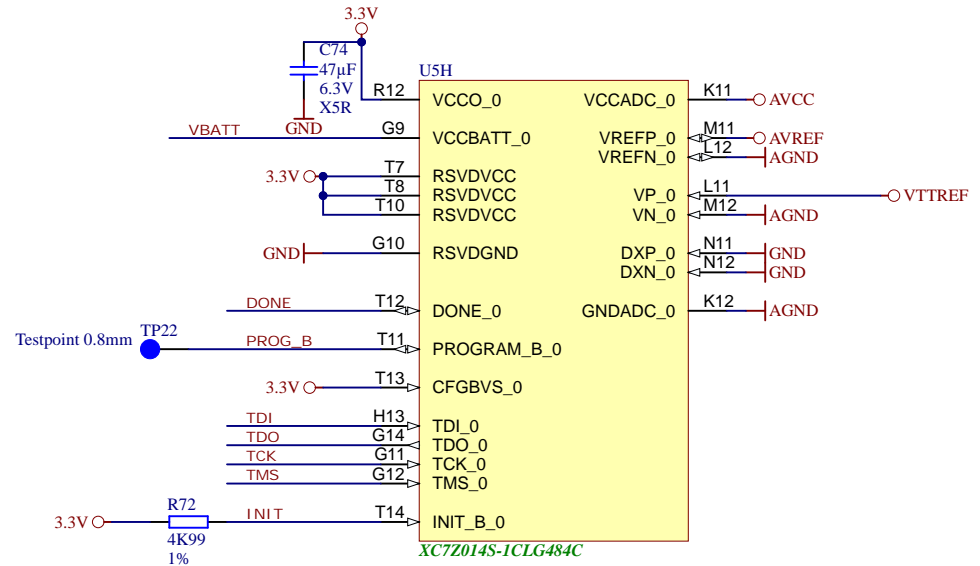
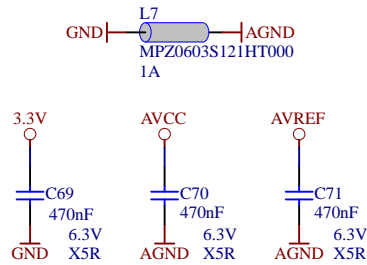
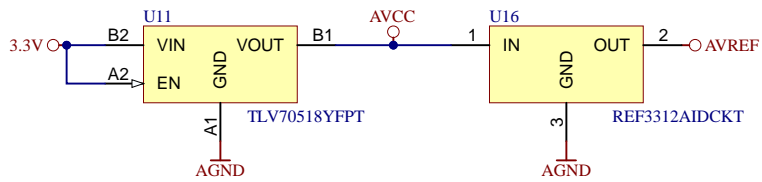


XC7Z014S-1CLG484C

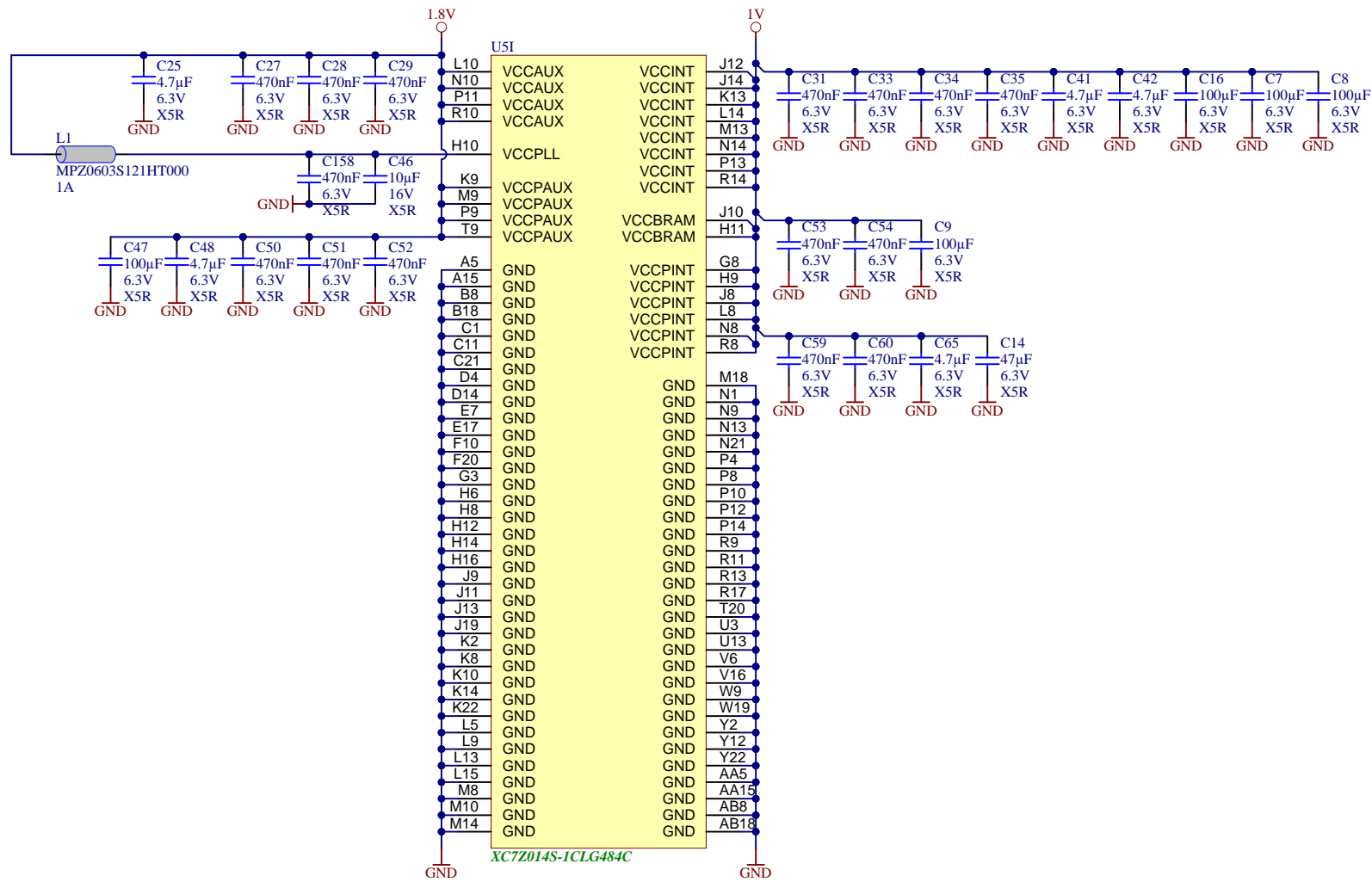



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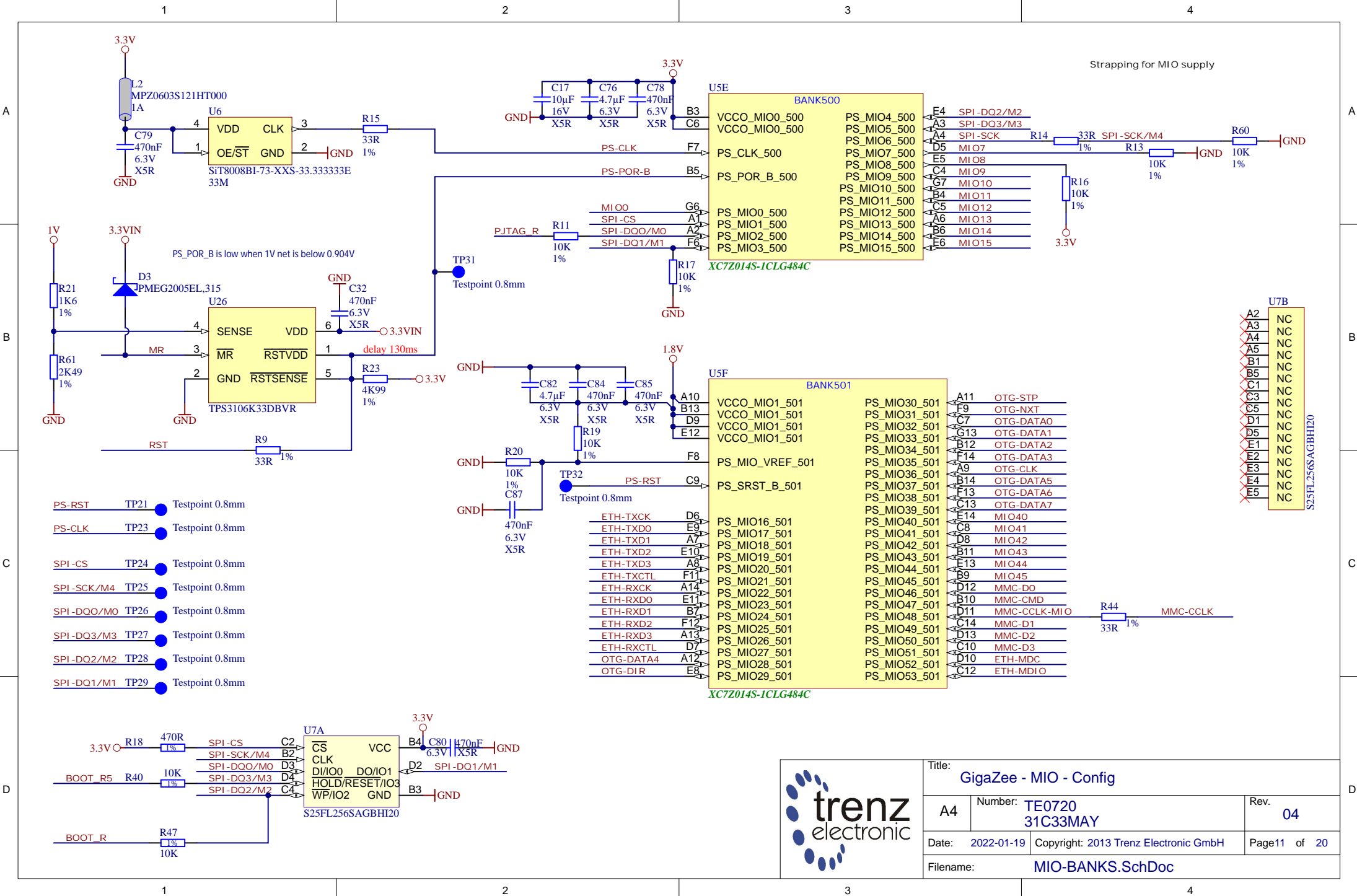




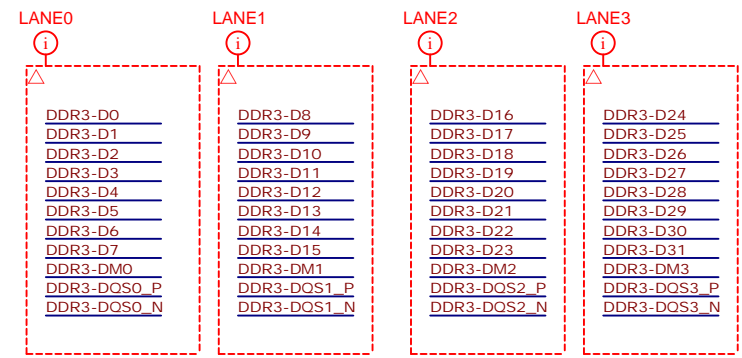
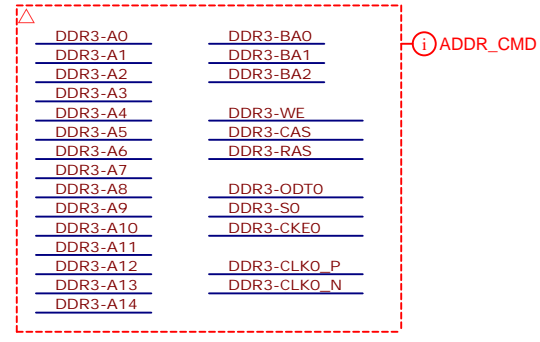
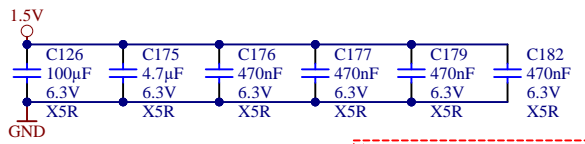
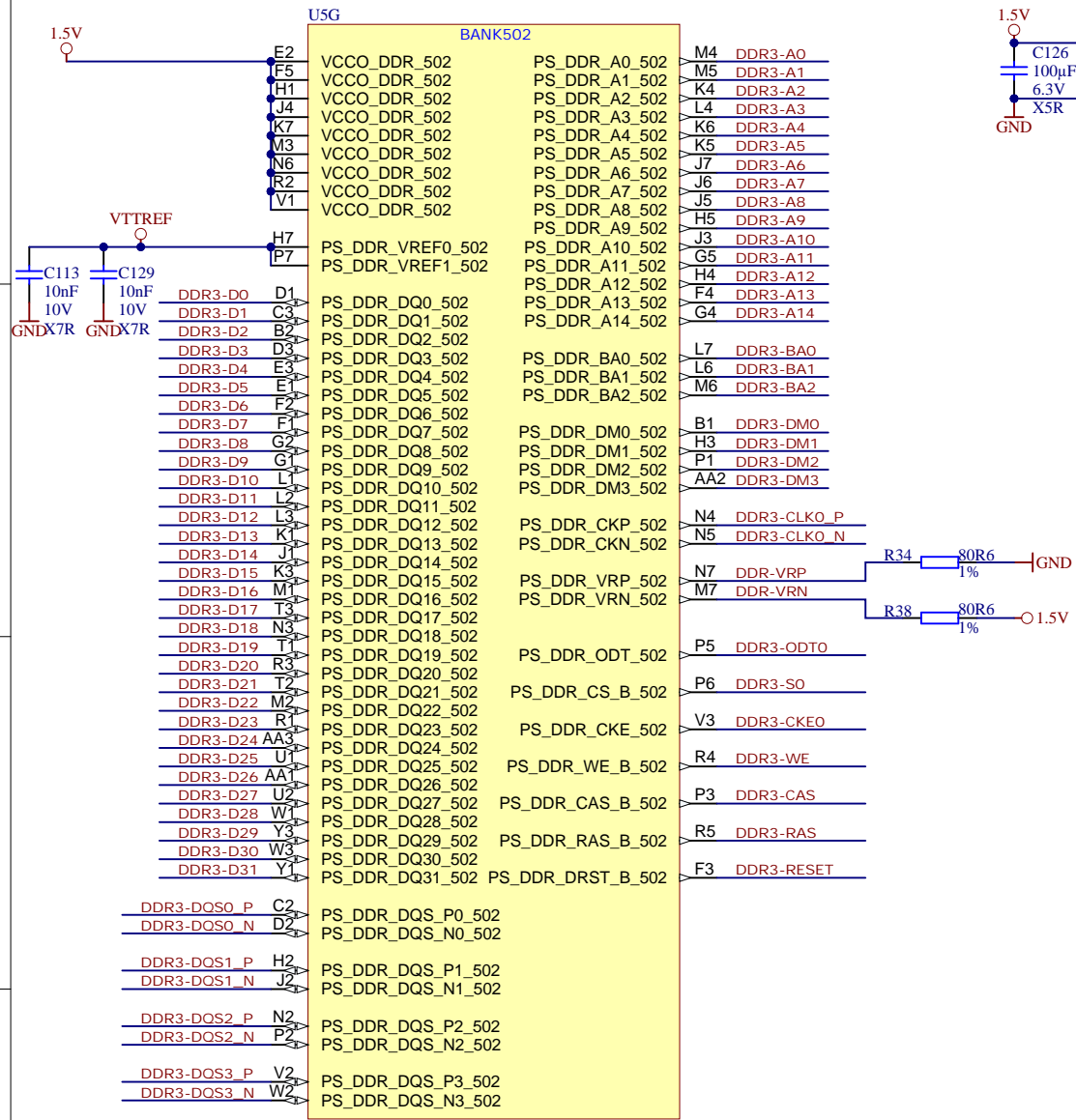
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|   | Filename: FPGA-MISC.SchDoc |                                       |             |



|   |  |                                       |                            |
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|  |  | Title: GigaZee - FPGA Power           |                            |
|   |  | A4                                    | Number: TE0720<br>31C33MAY |
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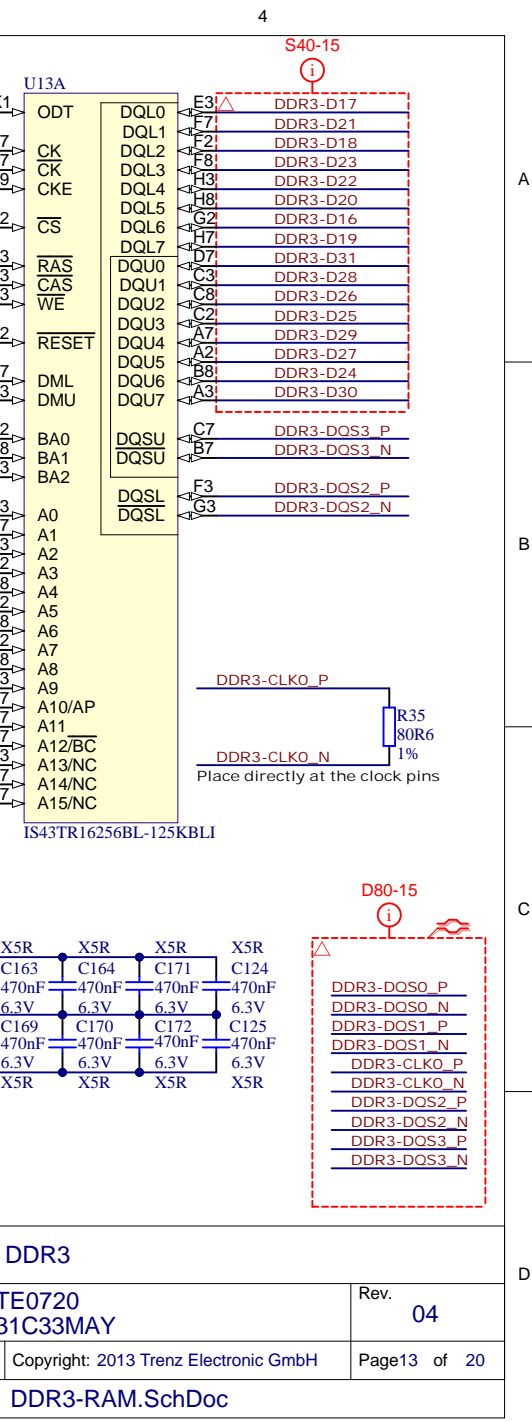
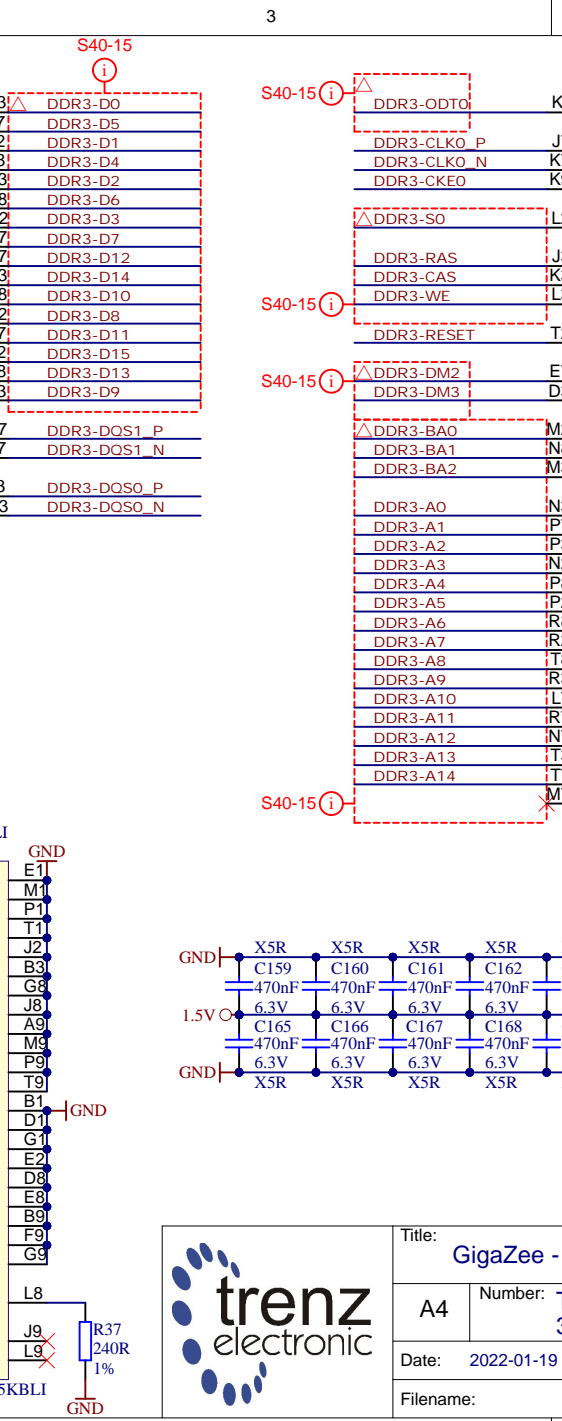
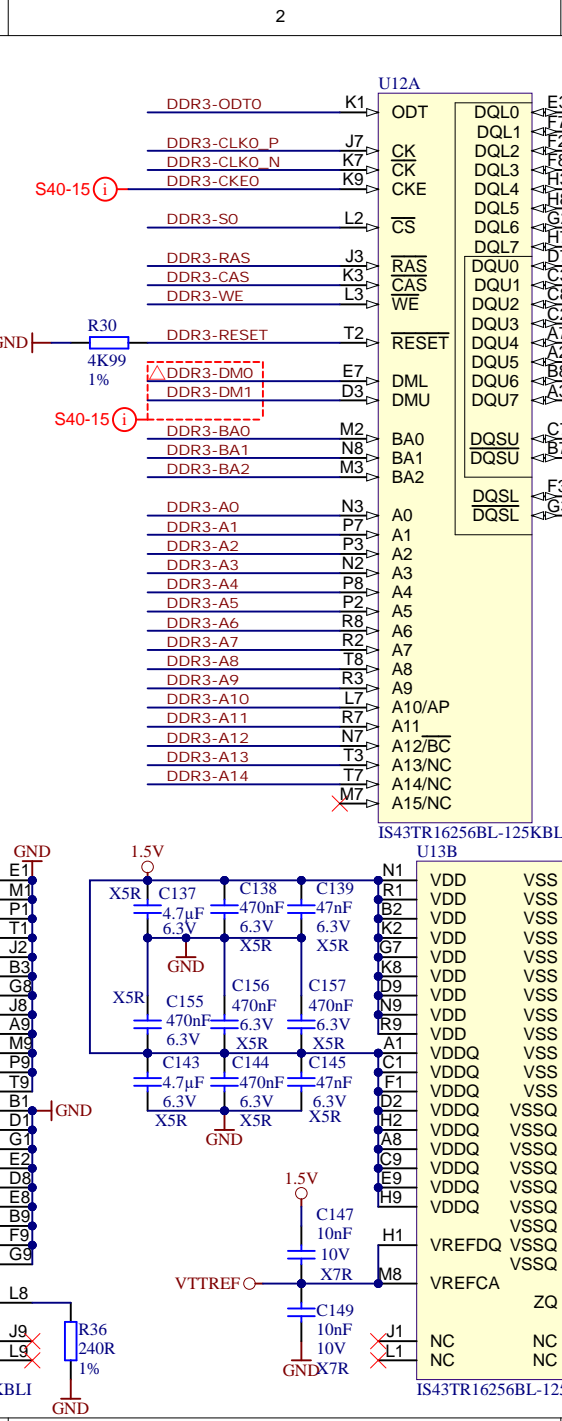
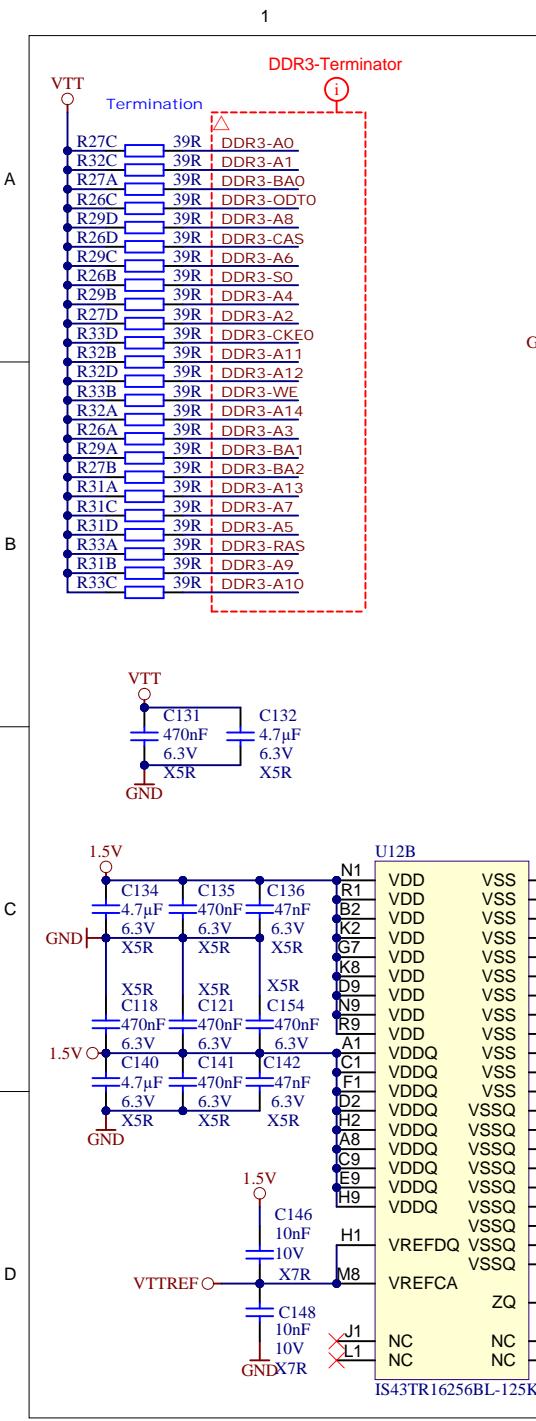
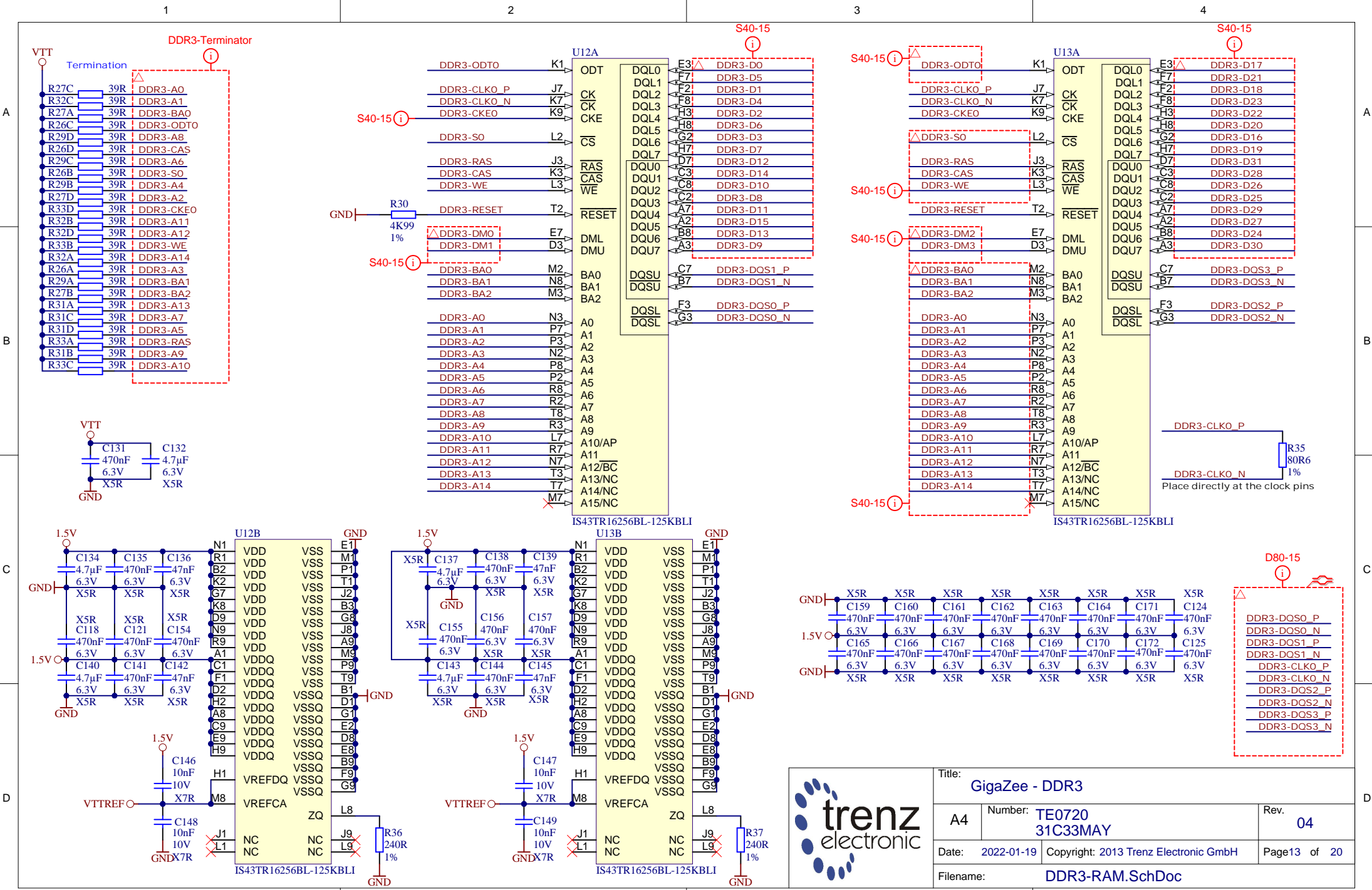


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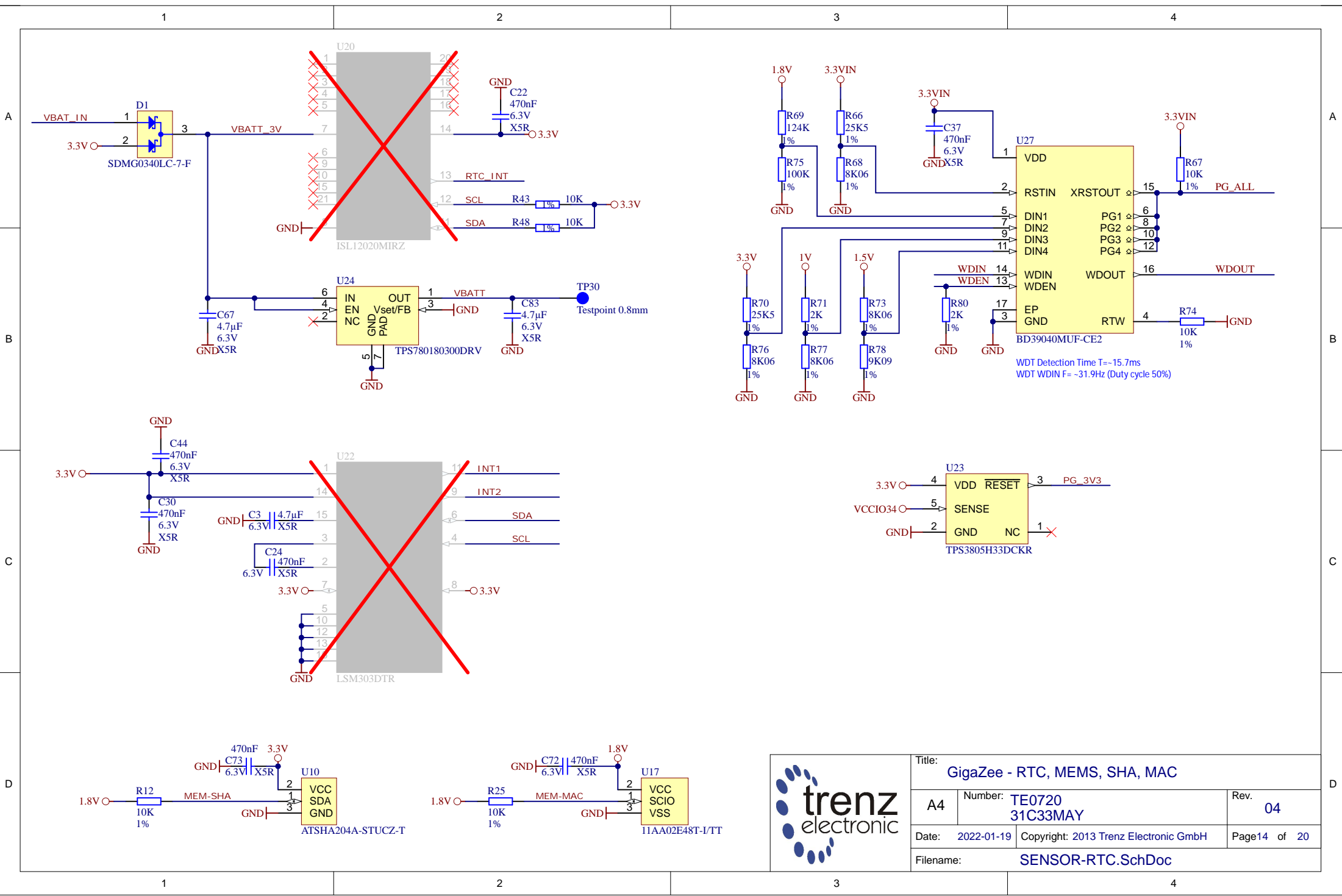
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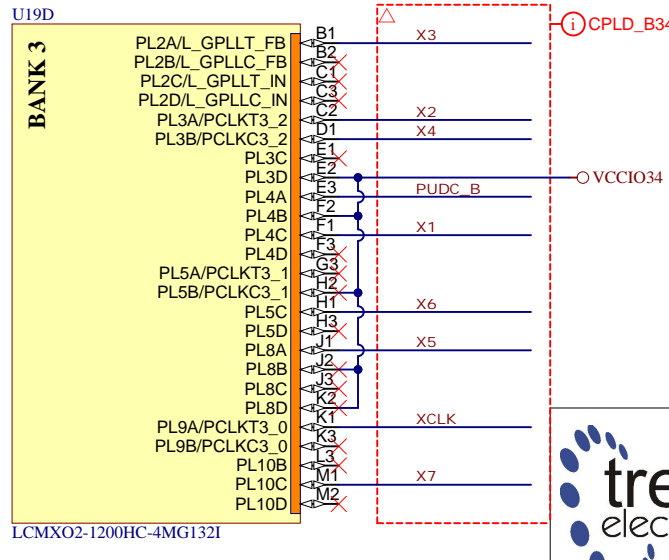
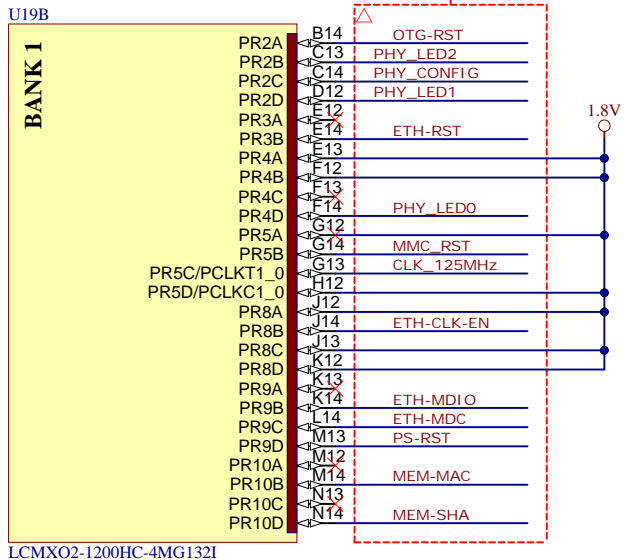
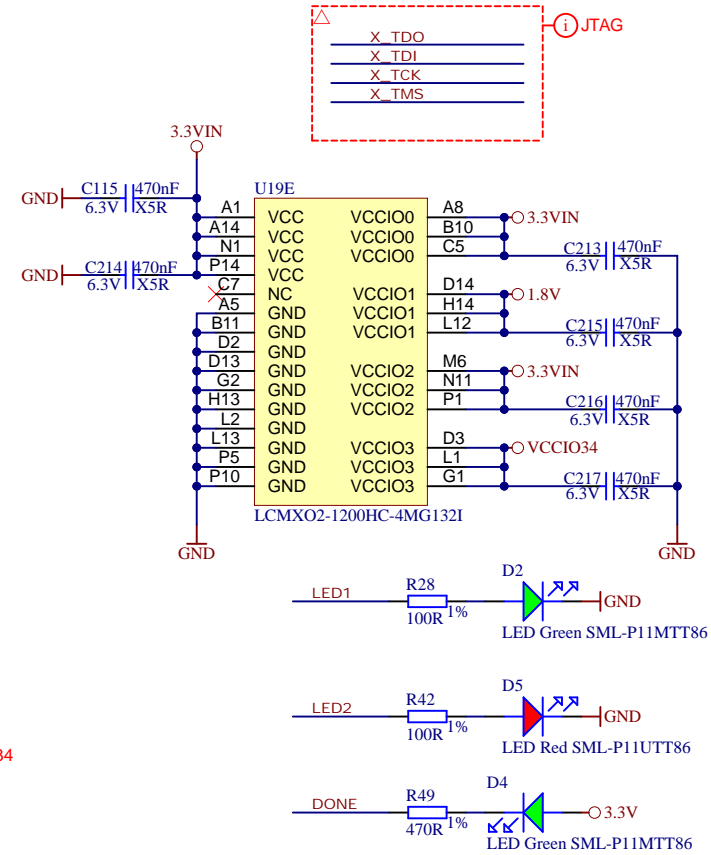
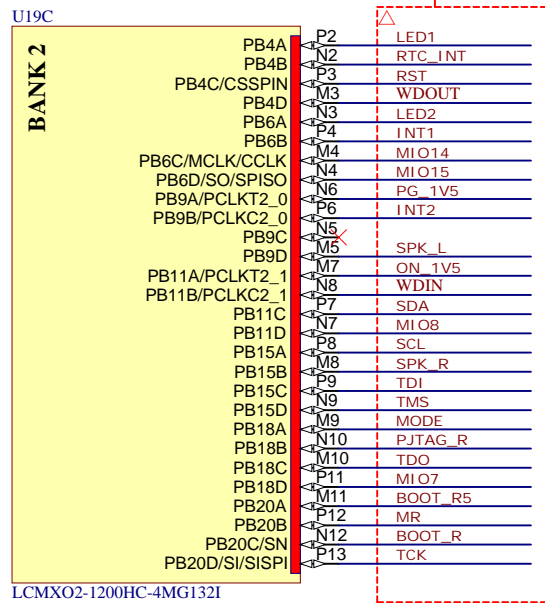
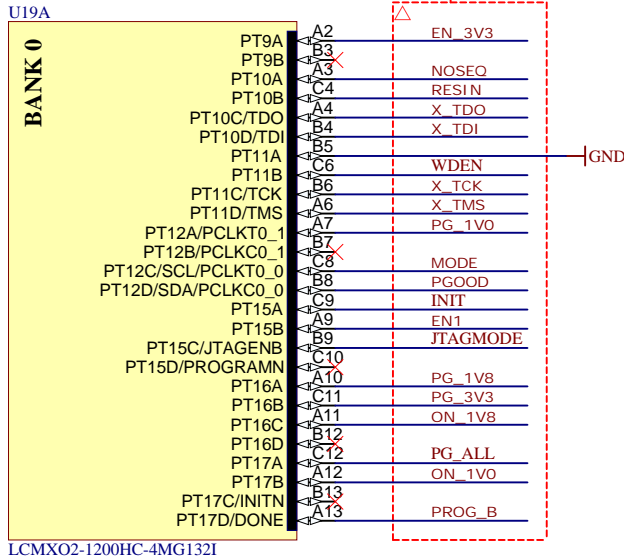


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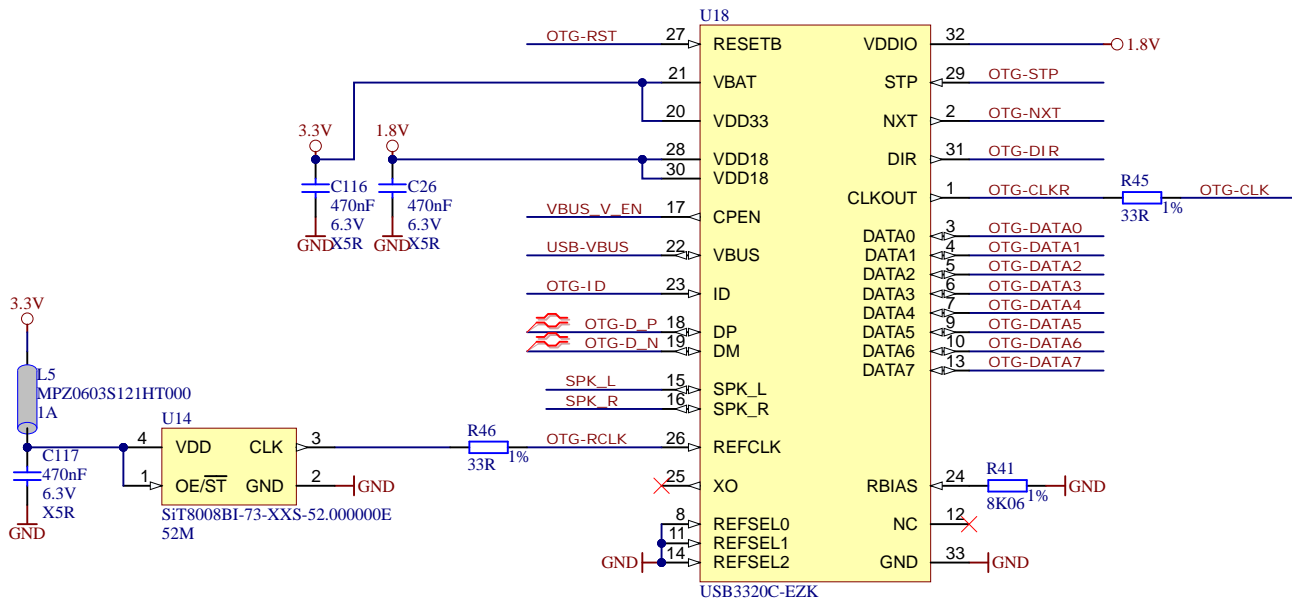
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| Filename: DDR3-RAM.SchDoc |                                       |               |



|                                      |                                       |               |
|--------------------------------------|---------------------------------------|---------------|
| Title: GigaZee - RTC, MEMS, SHA, MAC |                                       |               |
| A4                                   | Number: TE0720<br>31C33MAY            | Rev. 04       |
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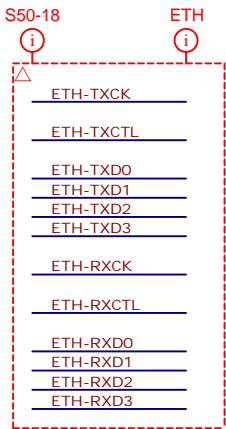
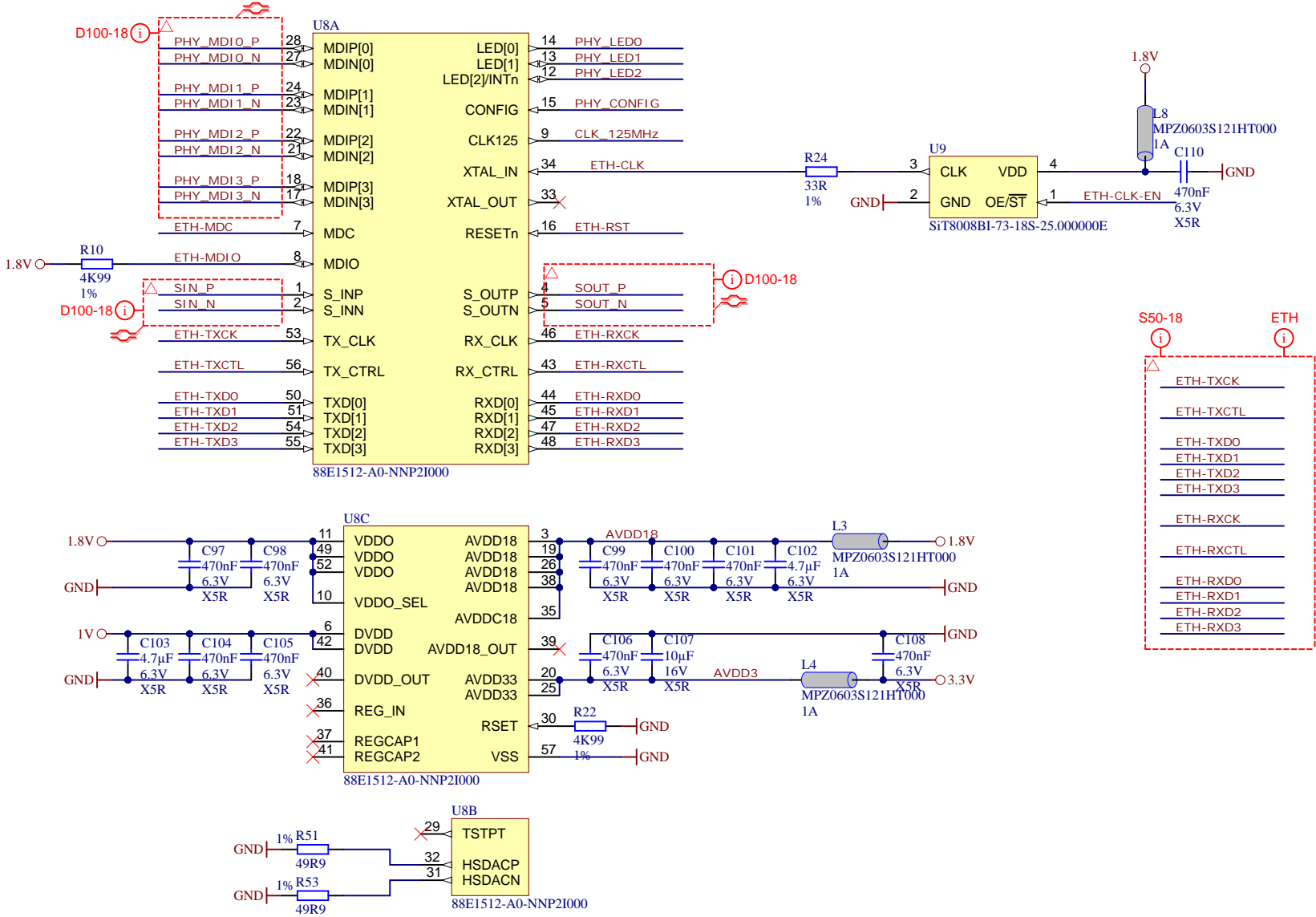



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| Title: GigaZee - System Controller |                                       |               |
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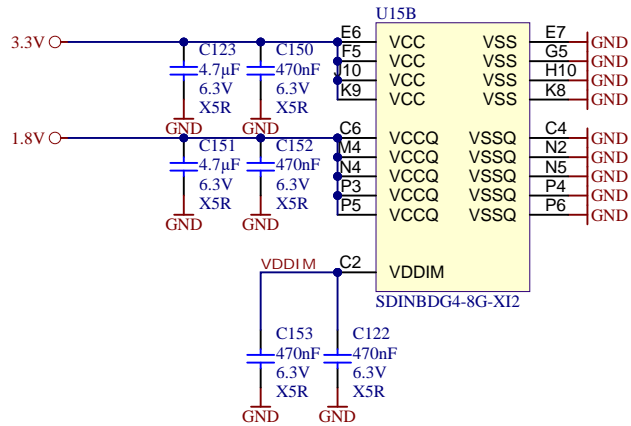
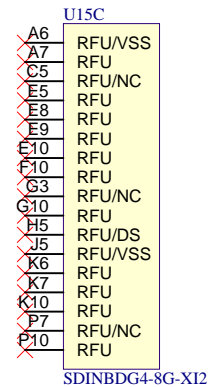
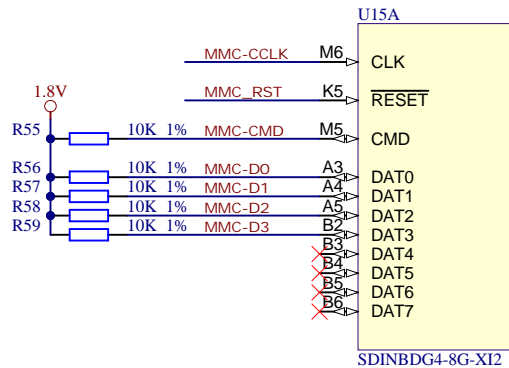
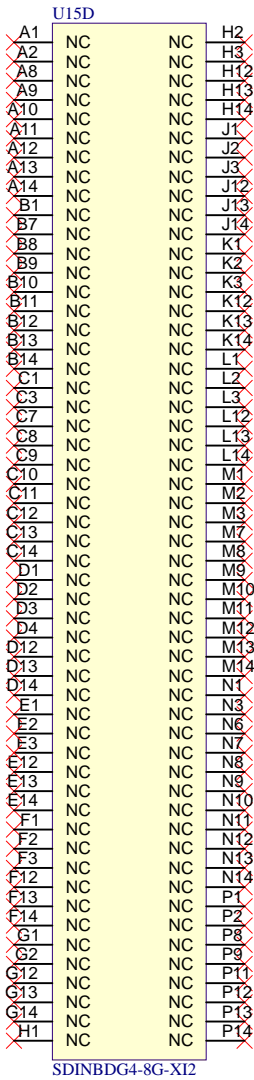


|                                 |                             |                                       |                |
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|                                 | Page <b>16</b> of <b>20</b> |                                       |                |
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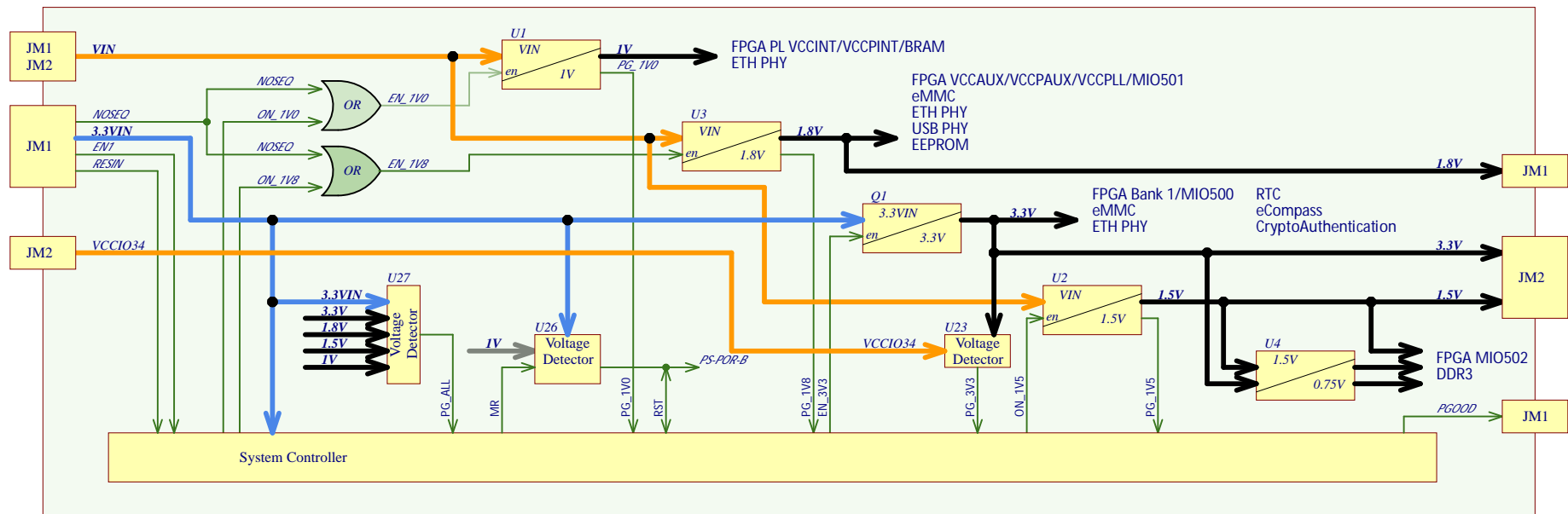


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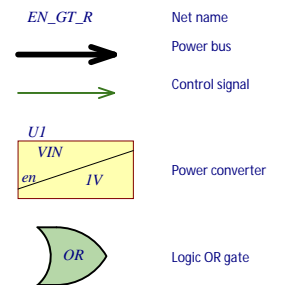
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## Power-on sequencing:

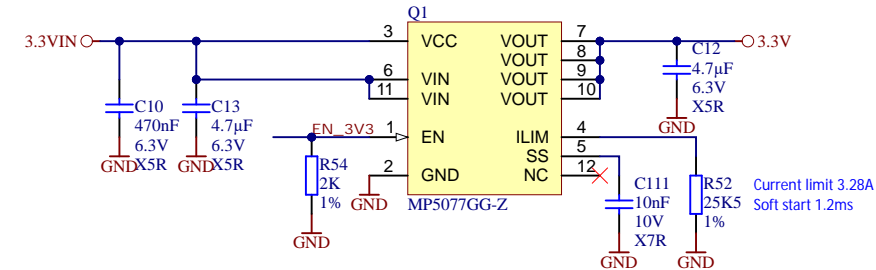
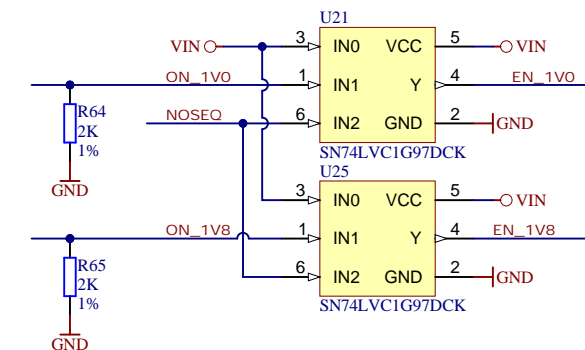
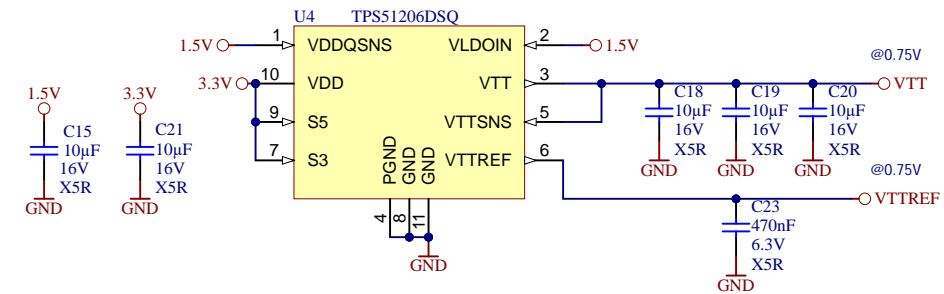
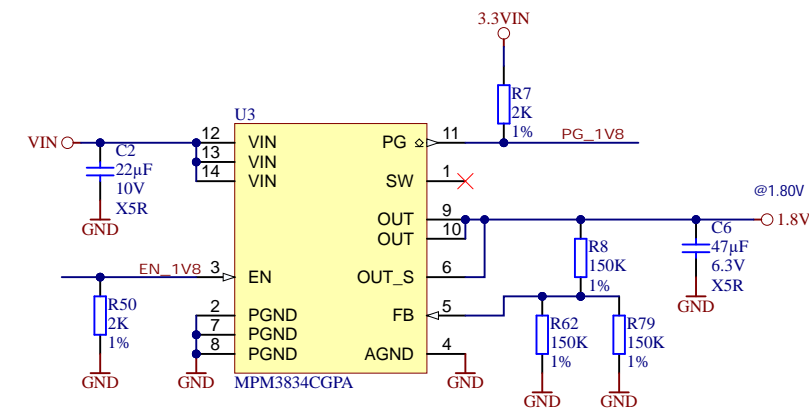
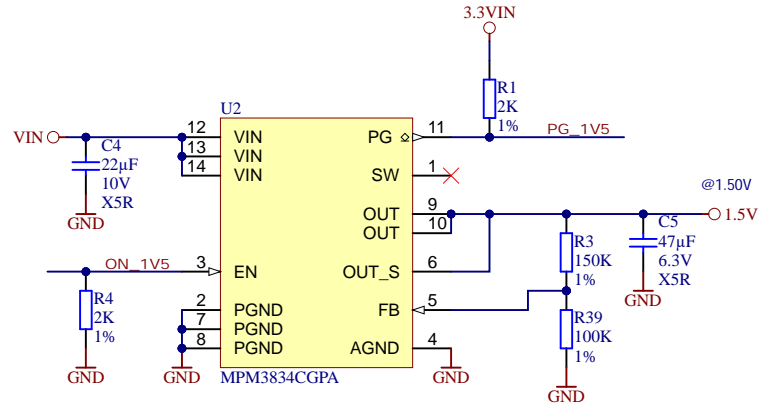
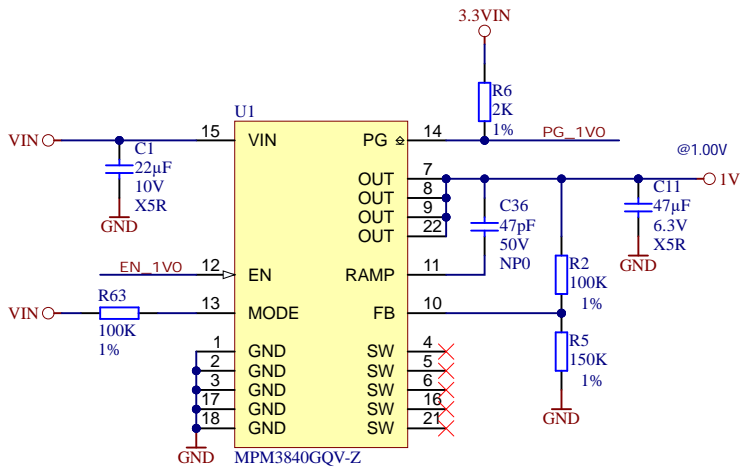


## Recommended Operating Conditions

| 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 |



|                                |                                       |               |
|--------------------------------|---------------------------------------|---------------|
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| Date: 2022-01-19              | Copyright: 2013 Trenz Electronic GmbH | Page 20 of 20  |
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