

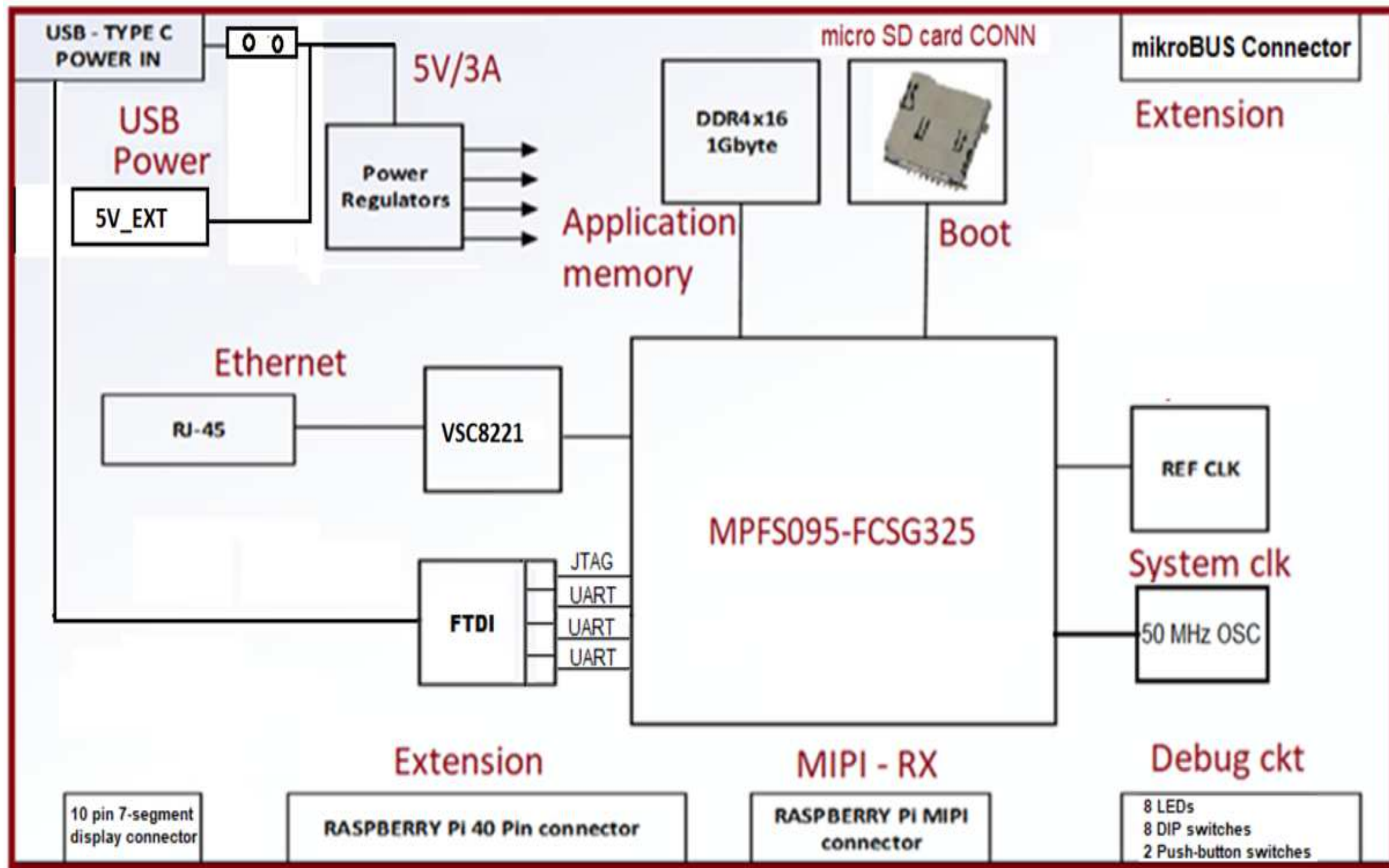
PolarFire SoC Discovery Kit

Part Number: MPFS-DISCO-KIT

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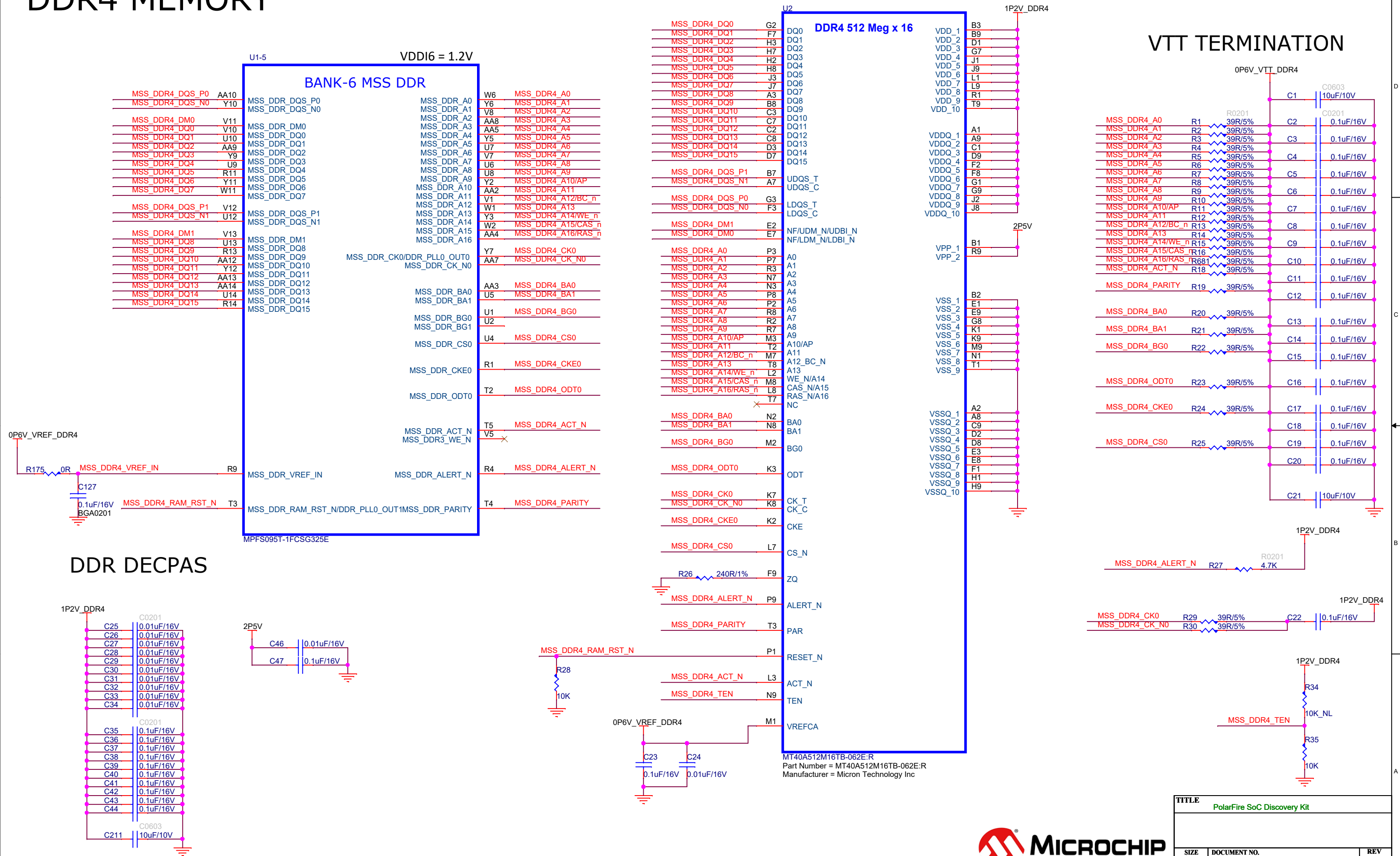


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| Rev | Part Number: | DVP-100-000578-002 | | | PACTRON: |
| 2.0 | | | | | |
| Originator: | | | | | |
| Size | Date: | Monday, September 04, 2023 | | | Sheet |
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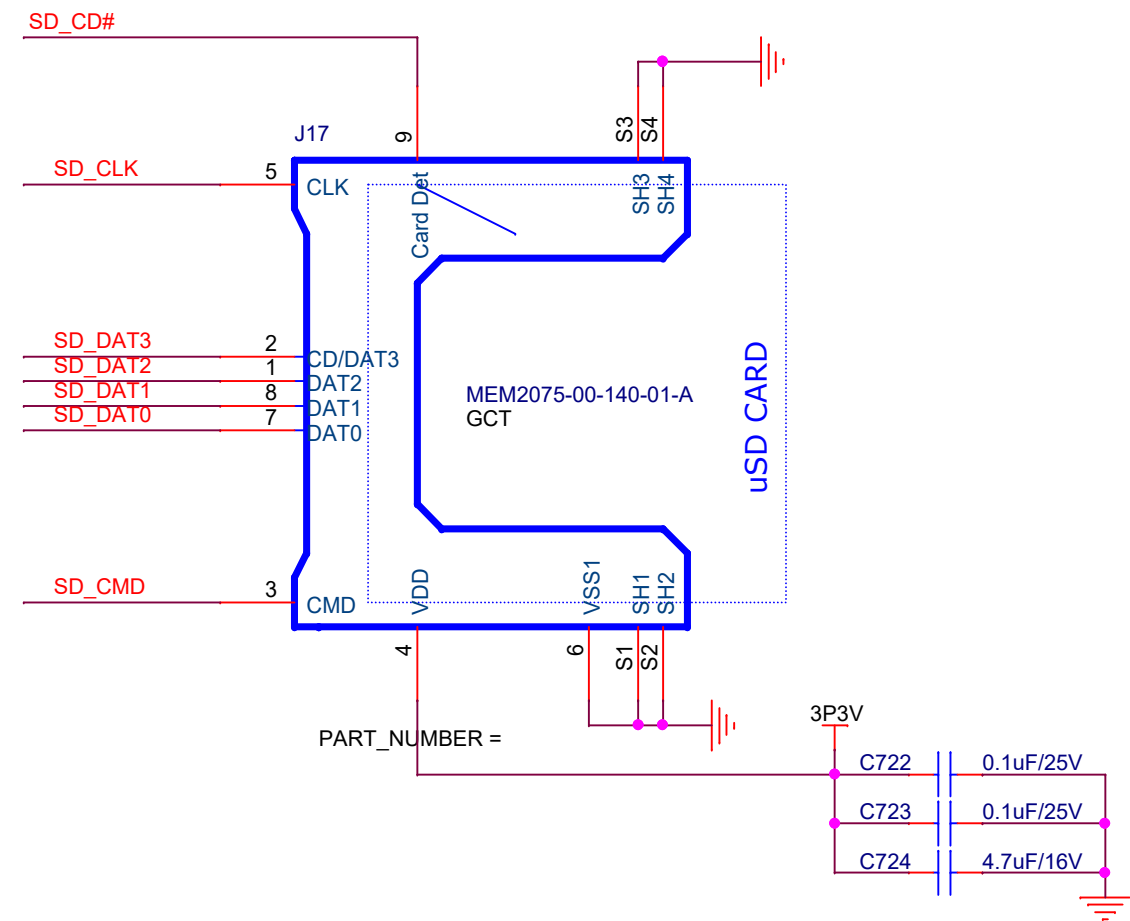
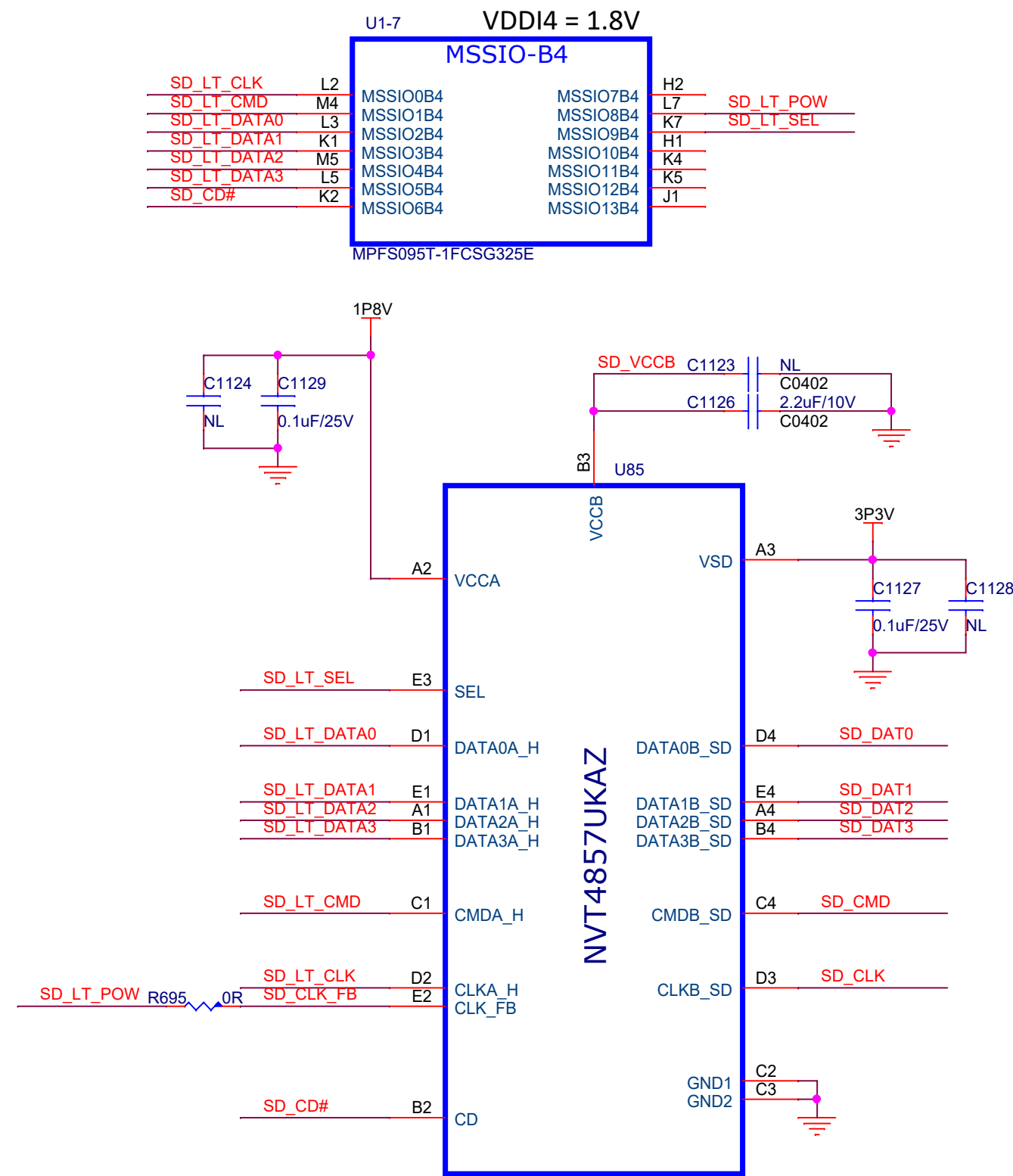
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DDR4 MEMORY



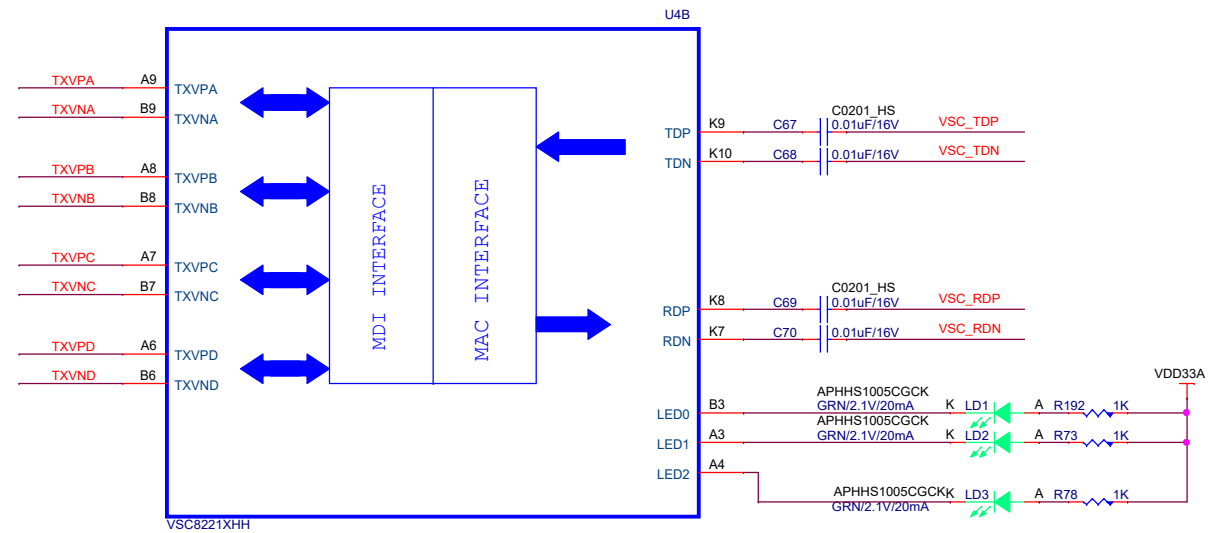
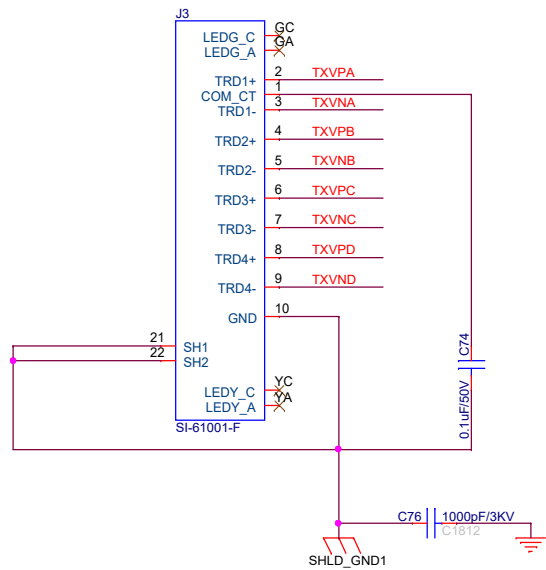
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BANK4- uSD Conneciton

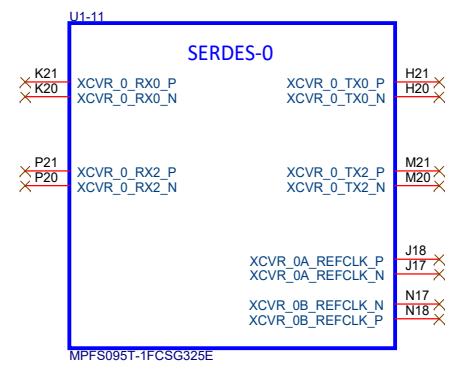
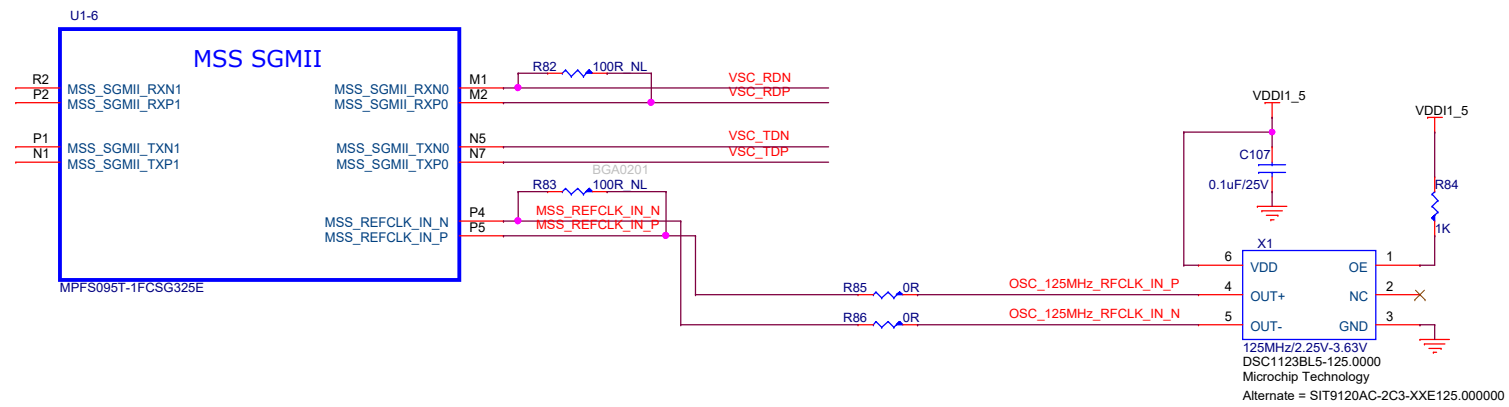
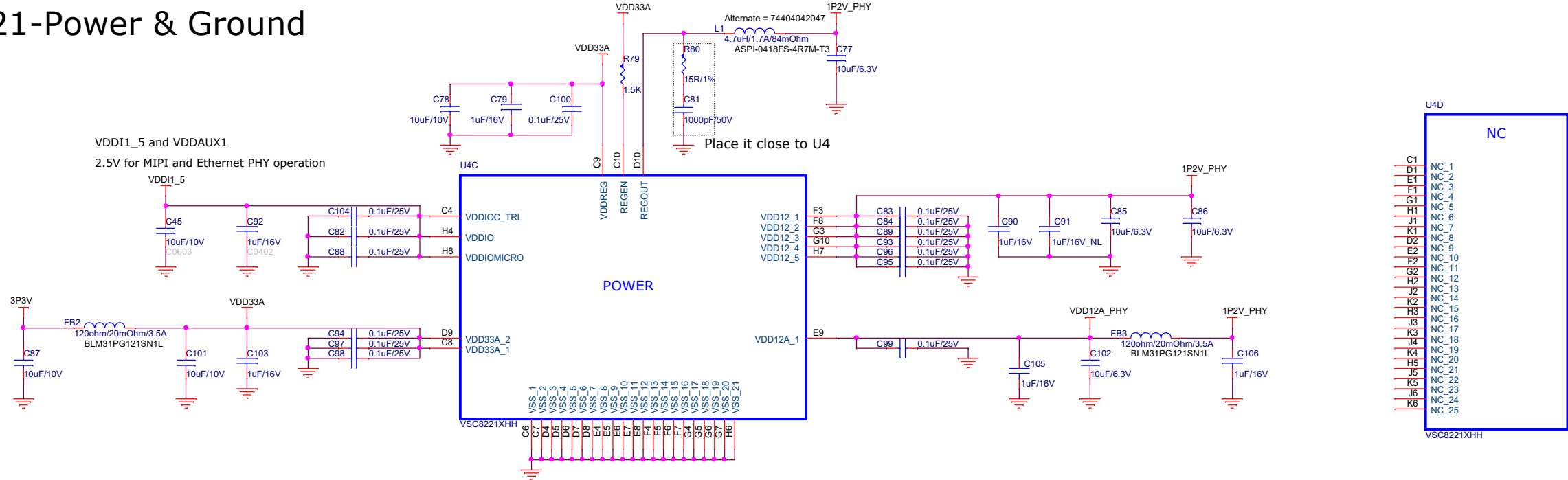


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VSC8221 - SGMII Interface

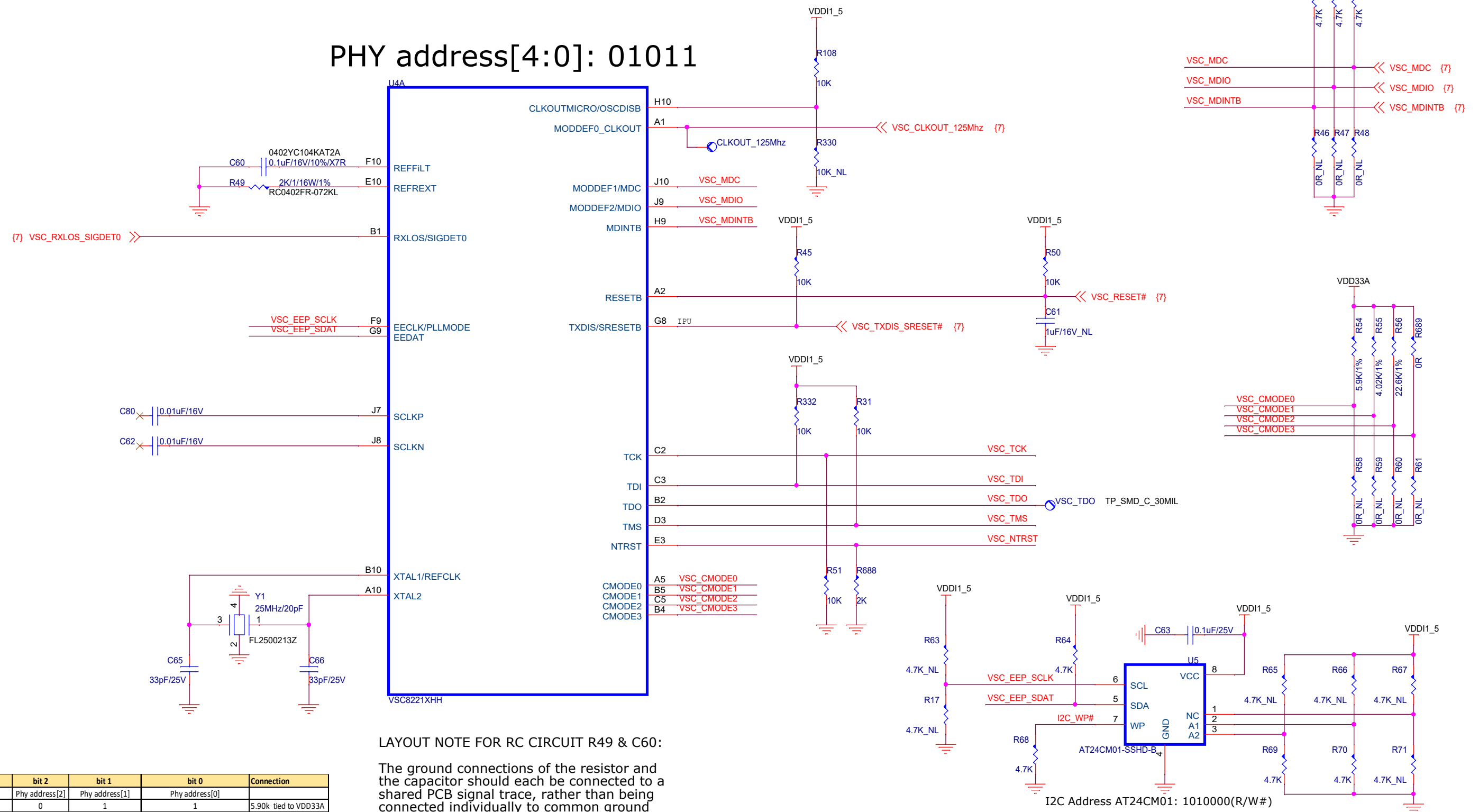


VSC8221-Power & Ground



VSC8221 - Connection

PHY address[4:0]: 01011



| | bit 3 | bit 2 | bit 1 | bit 0 | Connection |
|---------|--|-----------------------|-----------------------|---|----------------------|
| CMODE 0 | Phy address[3] | Phy address[2] | Phy address[1] | Phy address[0] | |
| | 1 | 0 | 1 | 1 | 5.90k tied to VDD33A |
| CMODE1 | SFP Mode Disable | PHY Address[4] | SIGDET pin direction | SerDes Line impedance | |
| | 1 | 0 | 1 | 0 | 4.02k tied to VDD33A |
| CMODE 2 | PHY Operating Mode[3] | PHY Operating Mode[2] | PHY Operating Mode[1] | PHY Operating Mode[0] | |
| | 1 | 1 | 1 | 1 | 22.6k tied to VDD33A |
| CMODE3 | LED Control[1] | SQE Enable | Reserved | Auto-negotiation Advertisement Control[1] | |
| | 1 | 0 | 0 | 0 | 0k tied to VDD33A |
| | LED[2:0] = {Link/Activty, Link/Activty, Fault} | | | 10/100/1000BASE-T HDX, FDX | |

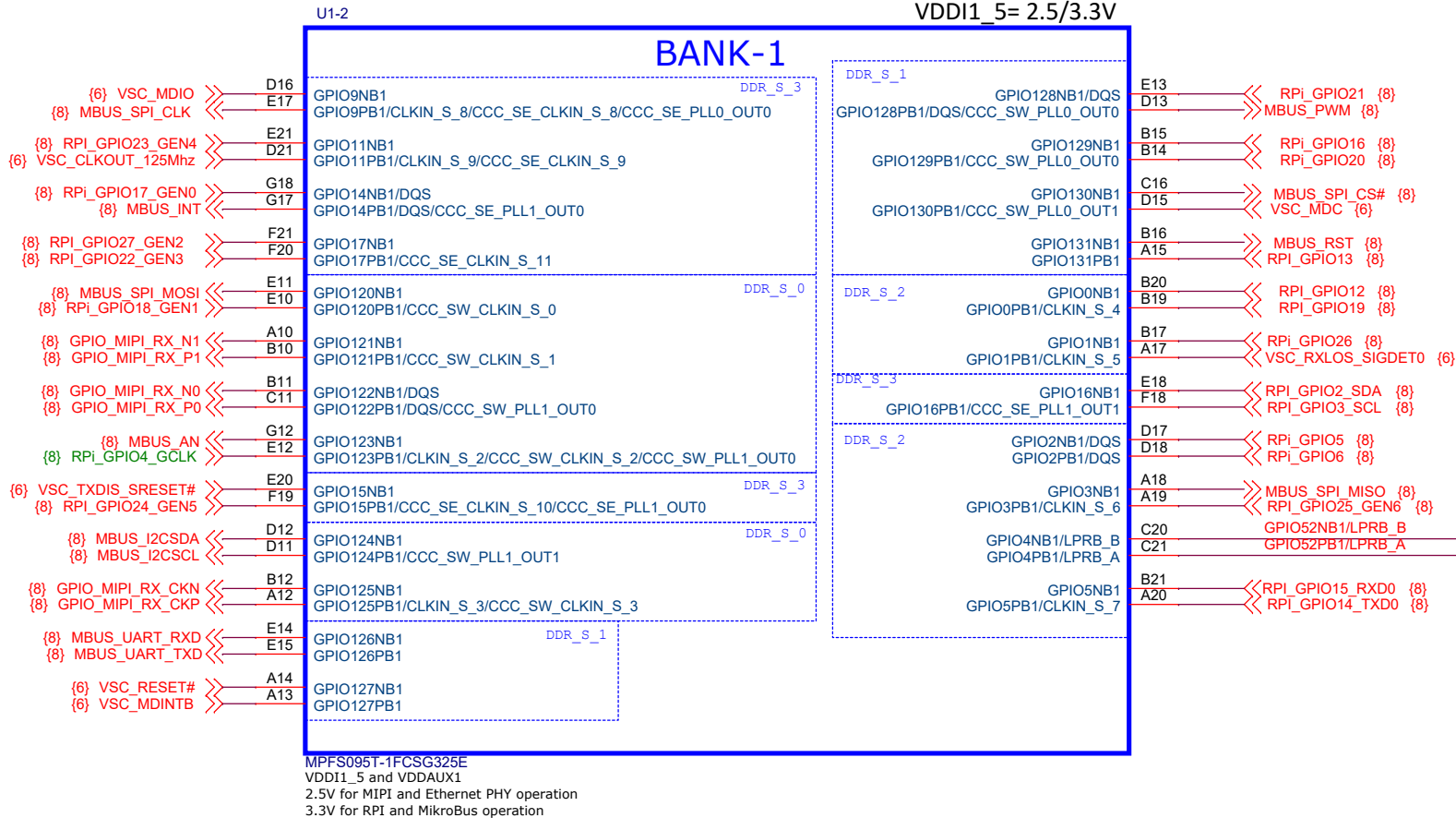
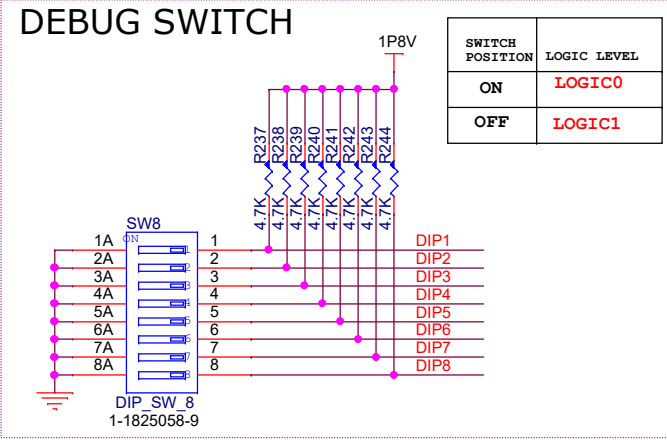
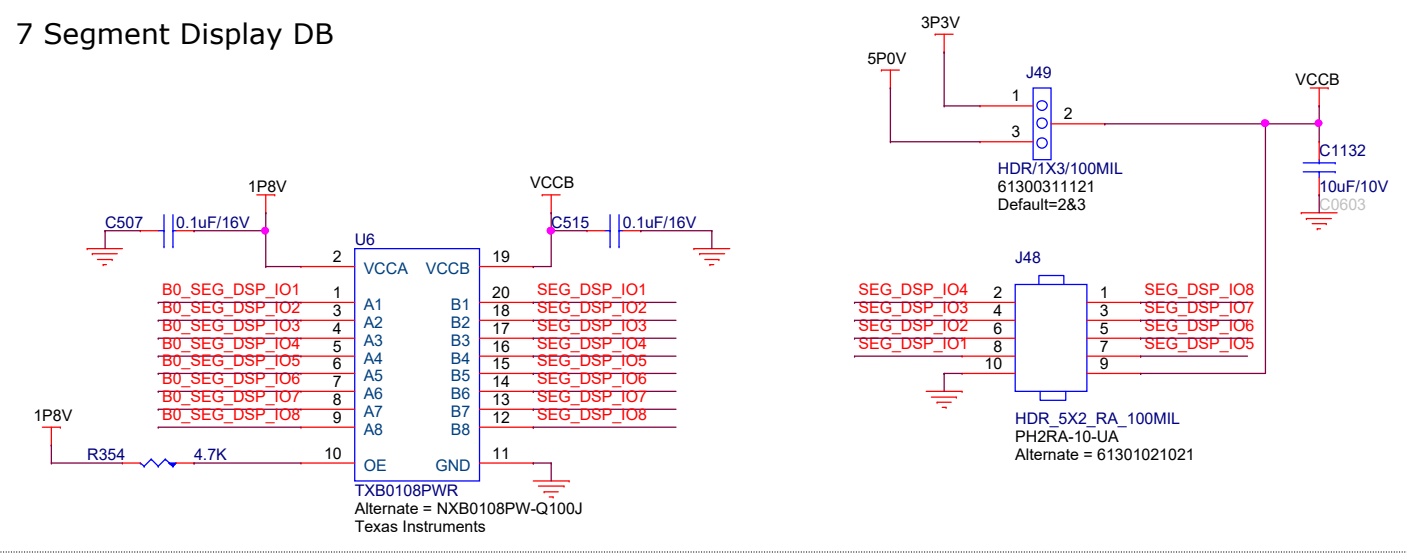
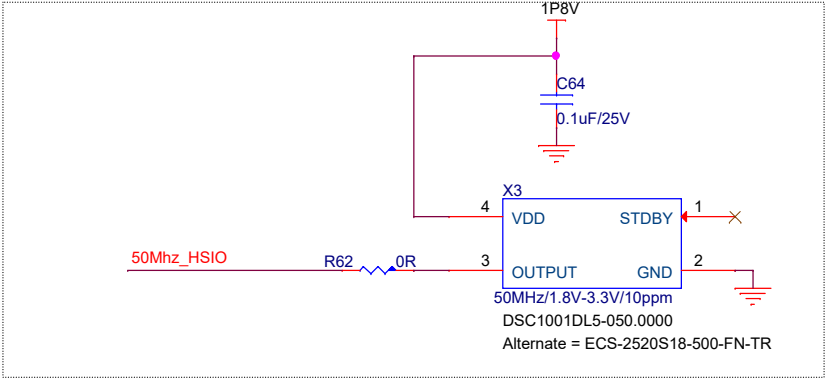
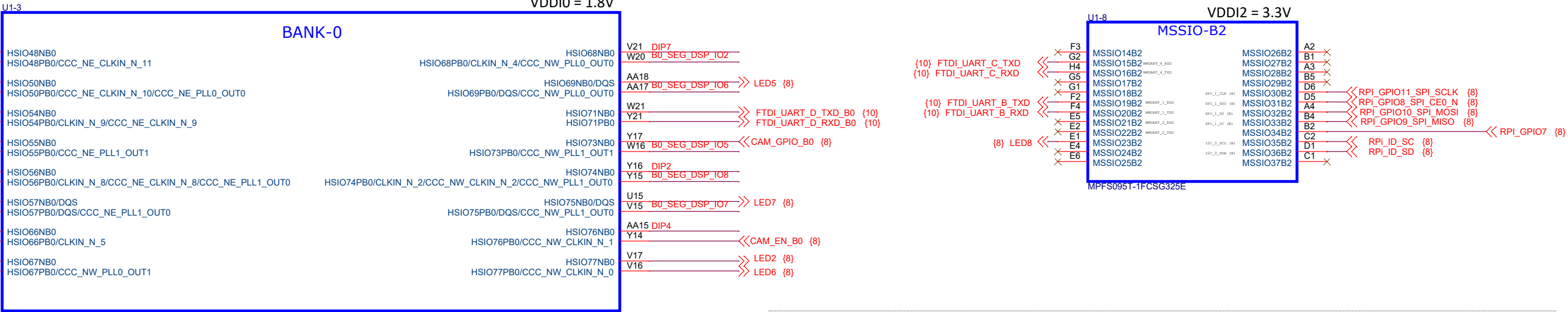
LAYOUT NOTE FOR RC CIRCUIT R49 & C60:

The ground connections of the resistor and the capacitor should each be connected to a shared PCB signal trace, rather than being connected individually to common ground plane. This PCB signal trace should then be connected to a ground plane at a single point. In addition, the reference capacitor and resistor should be placed as close as possible to the VSC8221

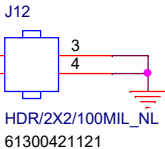


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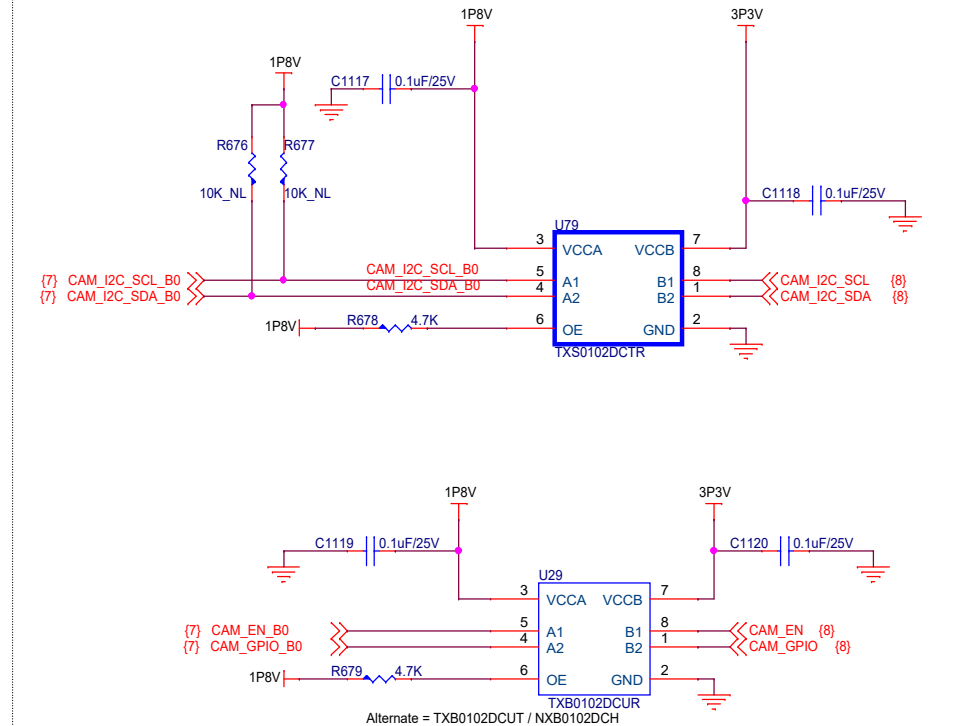
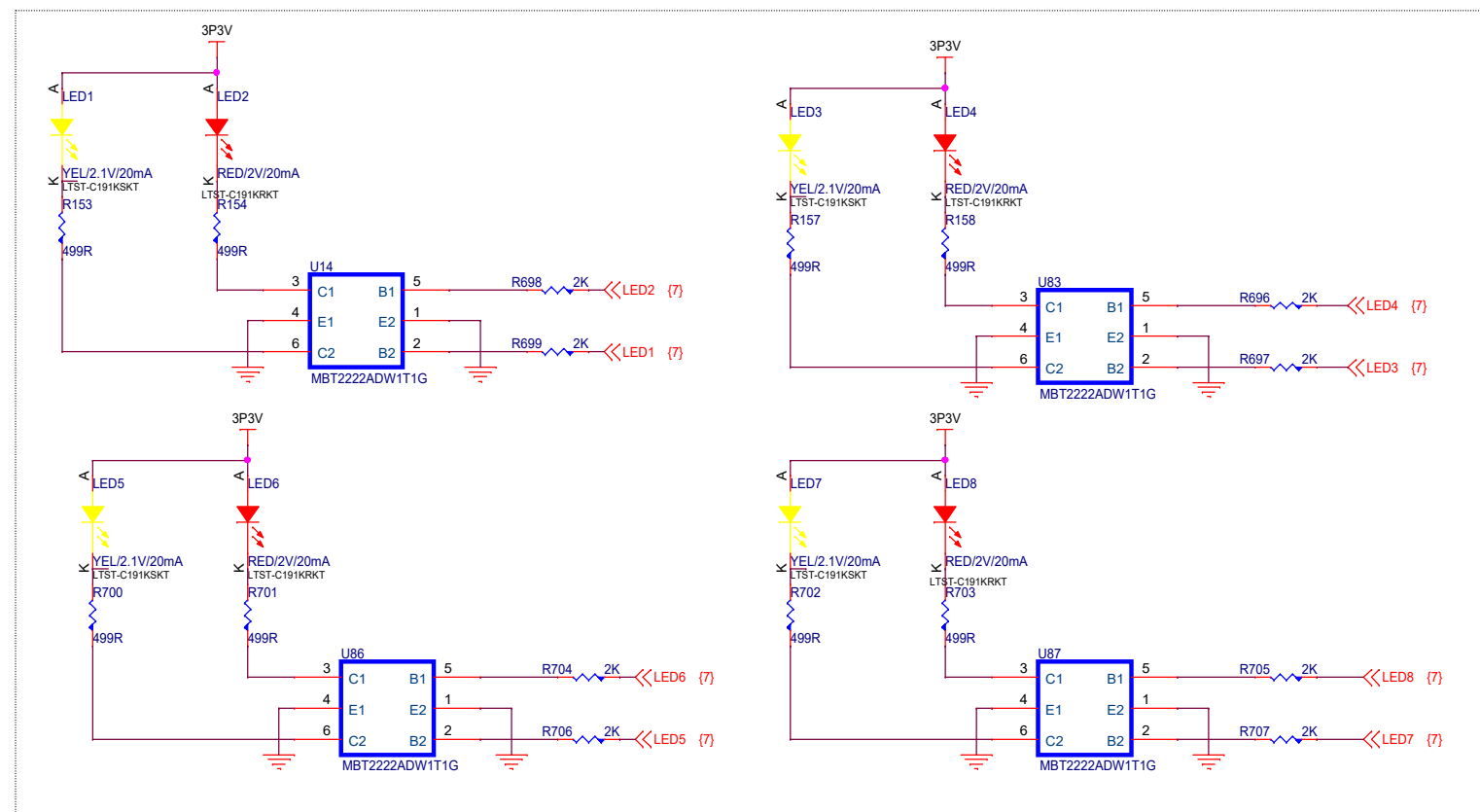
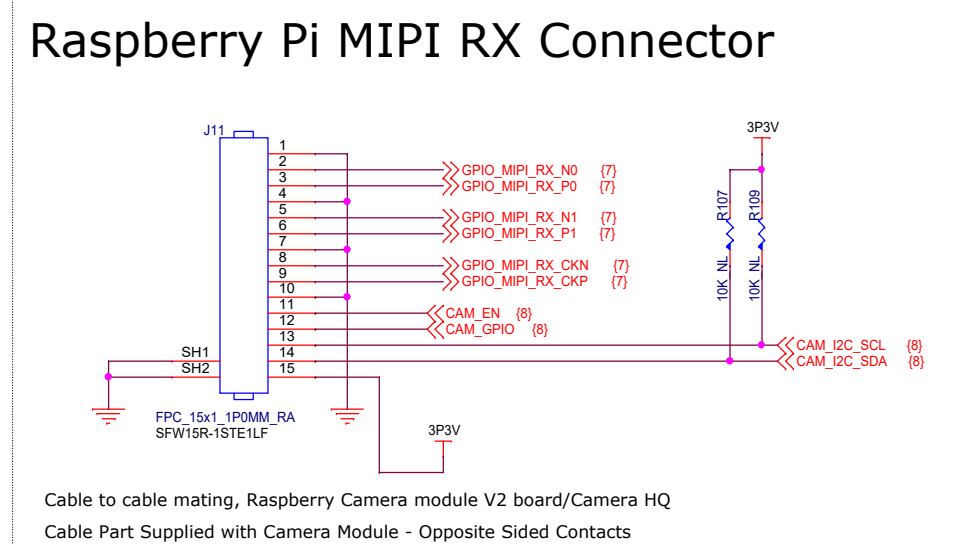
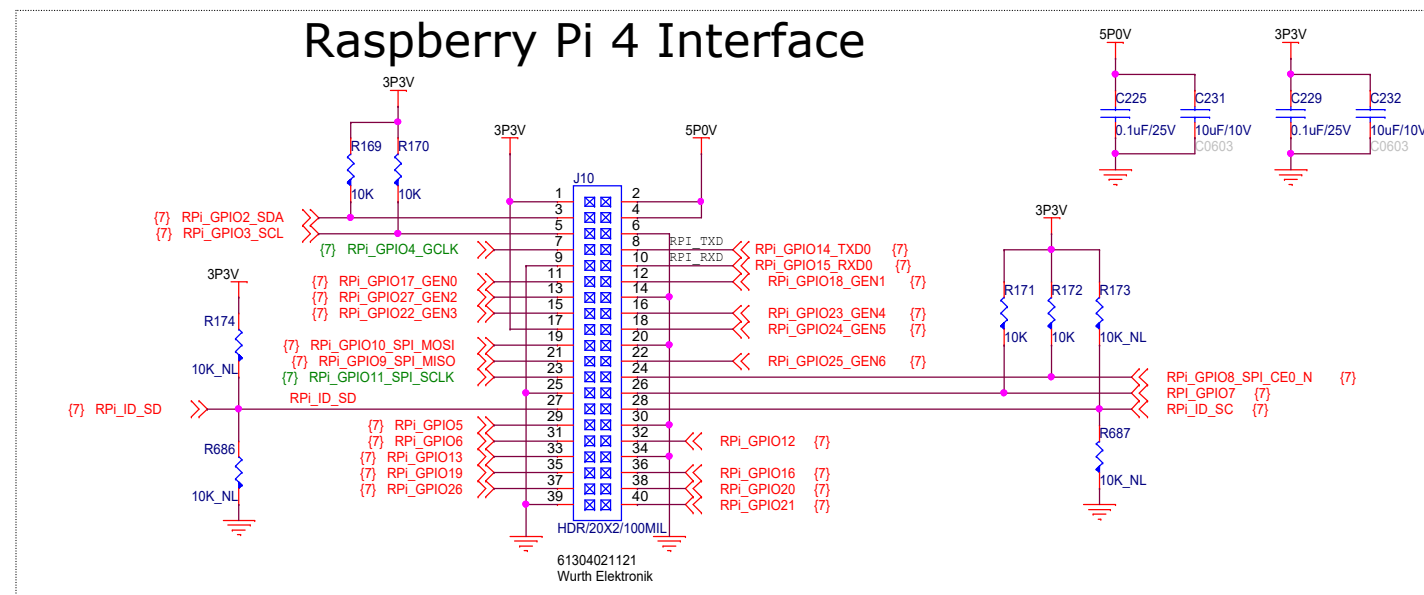
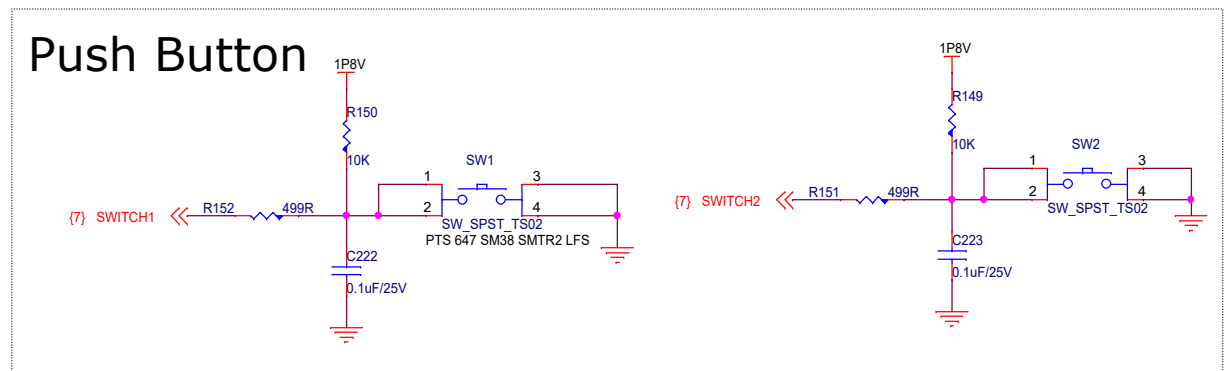
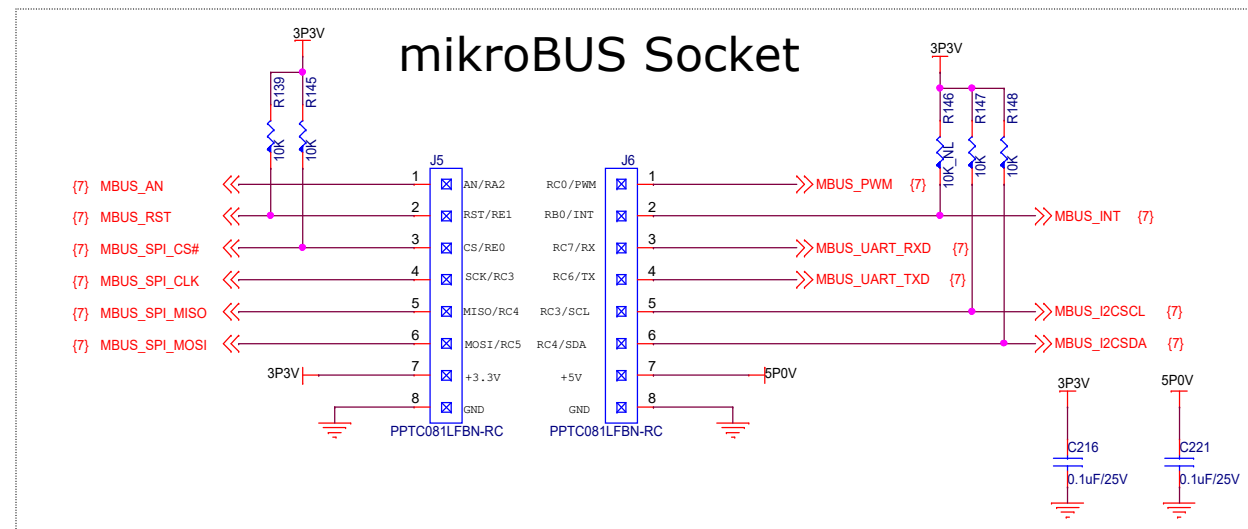
Bank0,1 & 2 Connection



NOTE:
Nets from pins C20 & C21
should be
routed differentially.

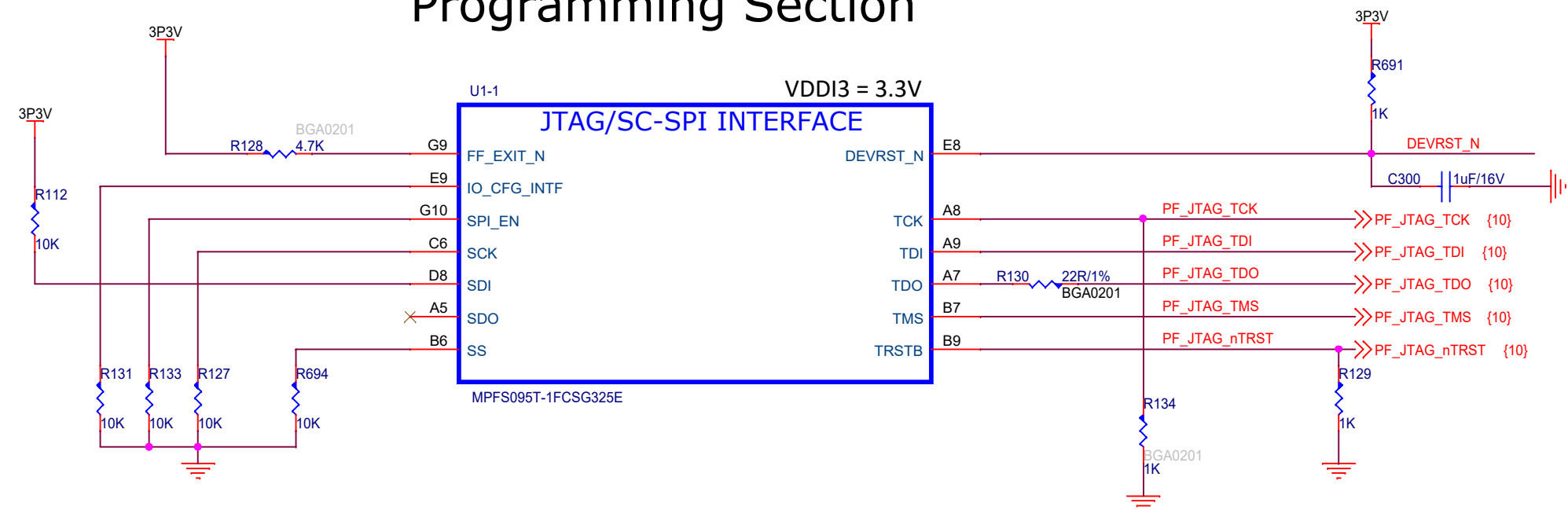


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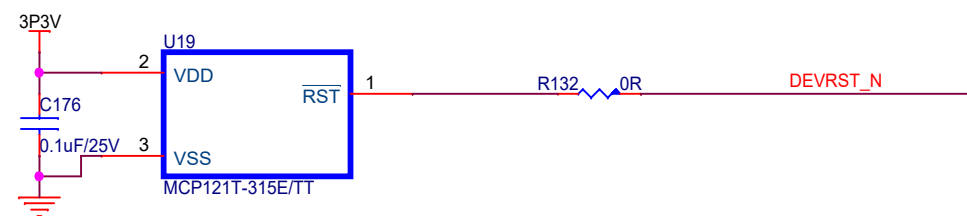


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Programming Section

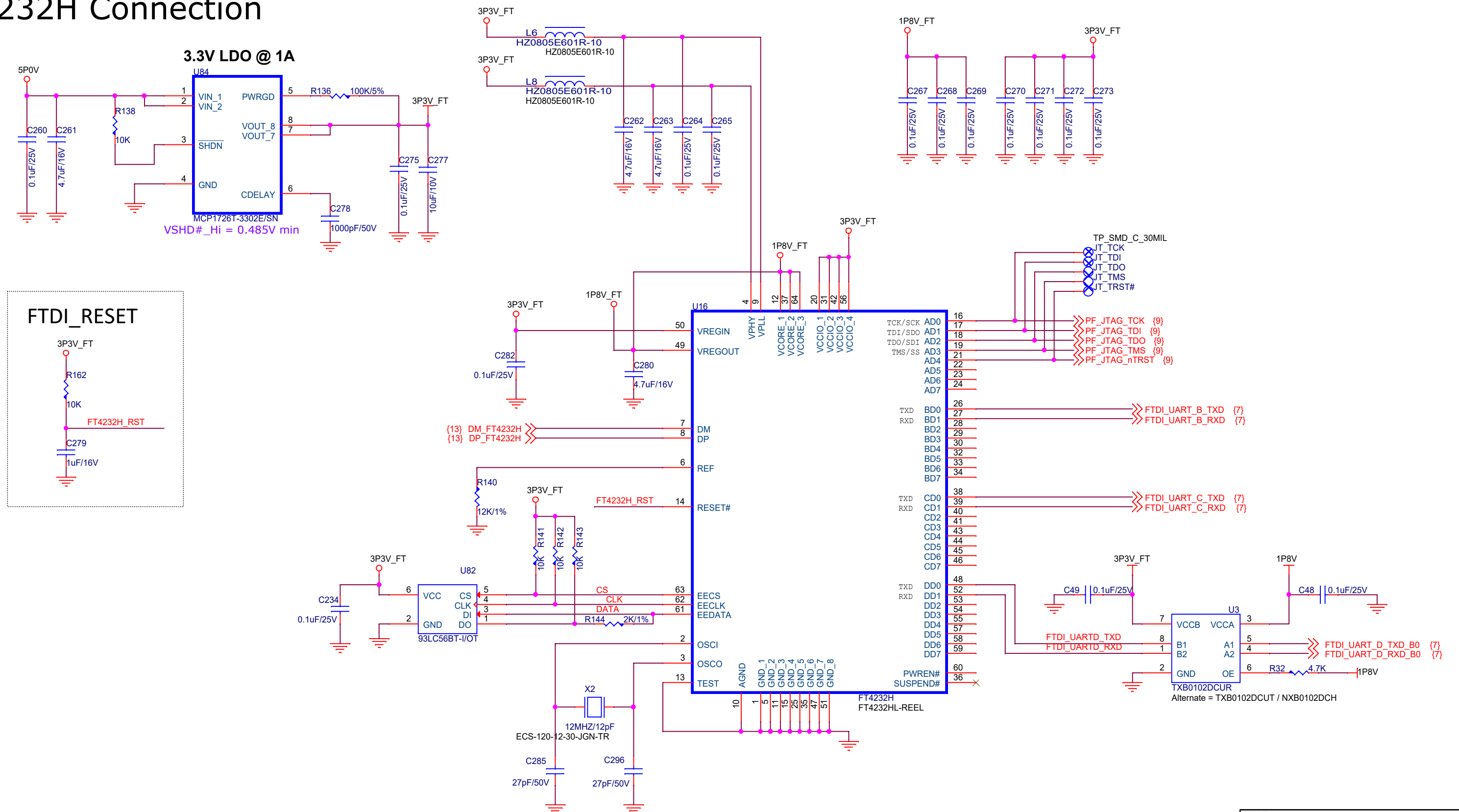


Device Reset



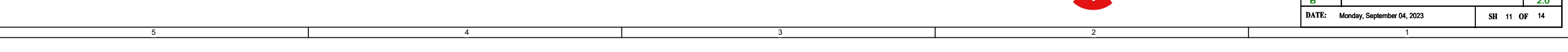
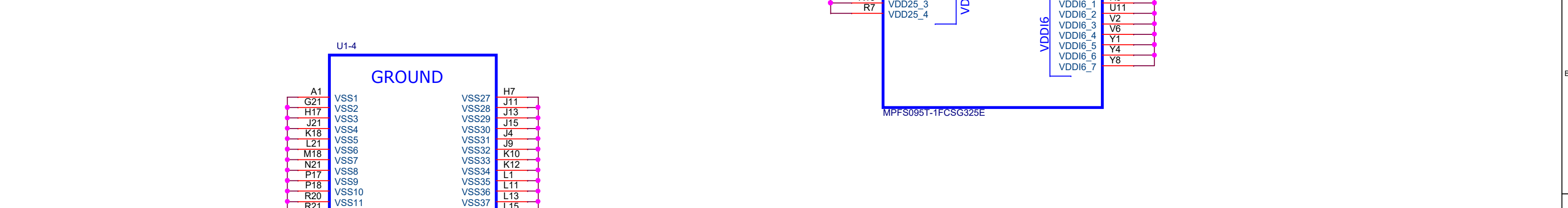
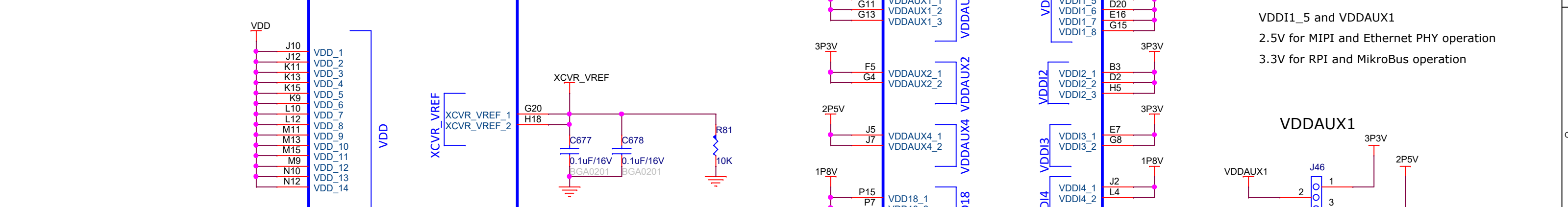
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FT4232H Connection



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| | | | | |
|---|---|---|---|---|
| 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|



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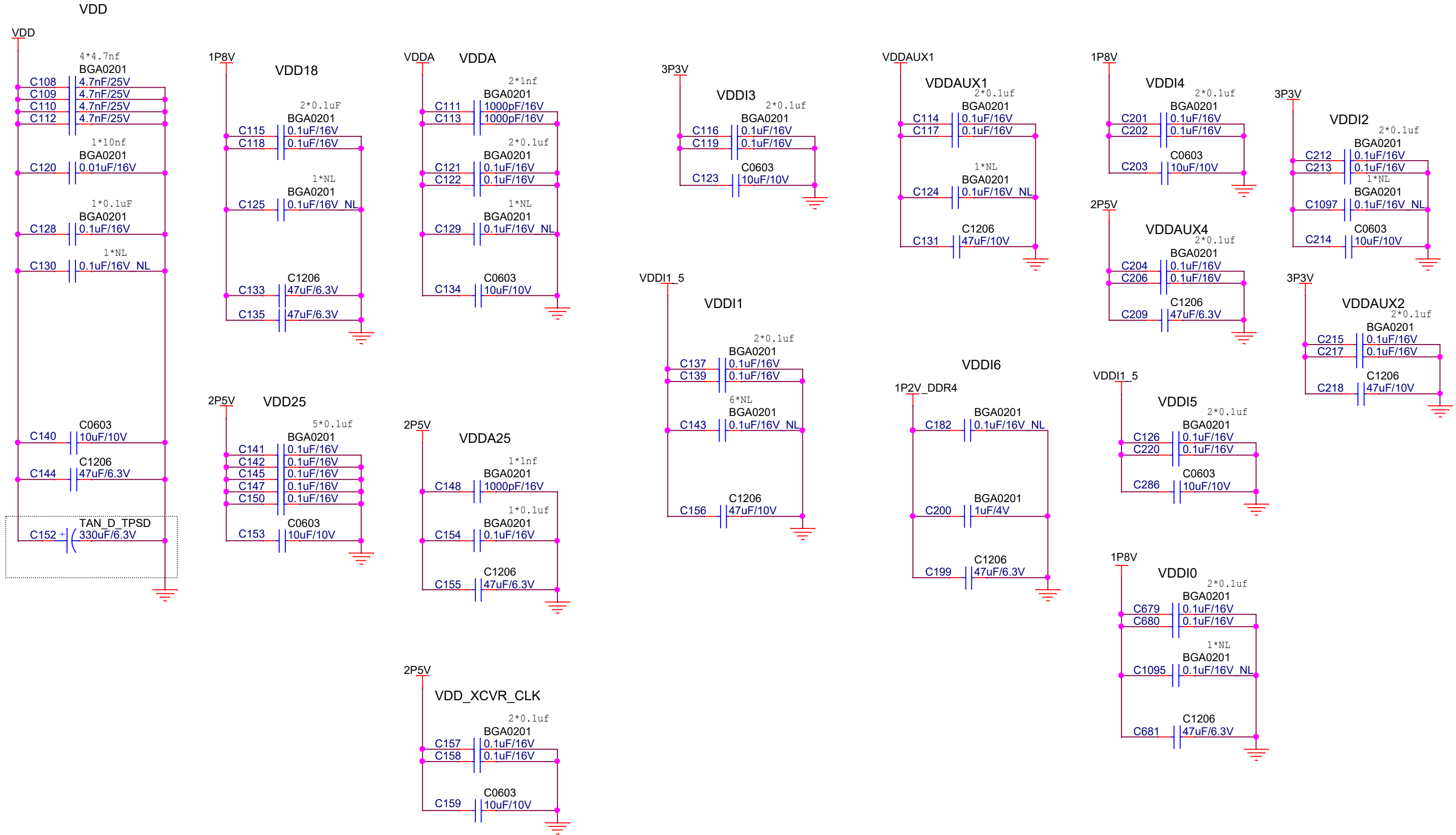
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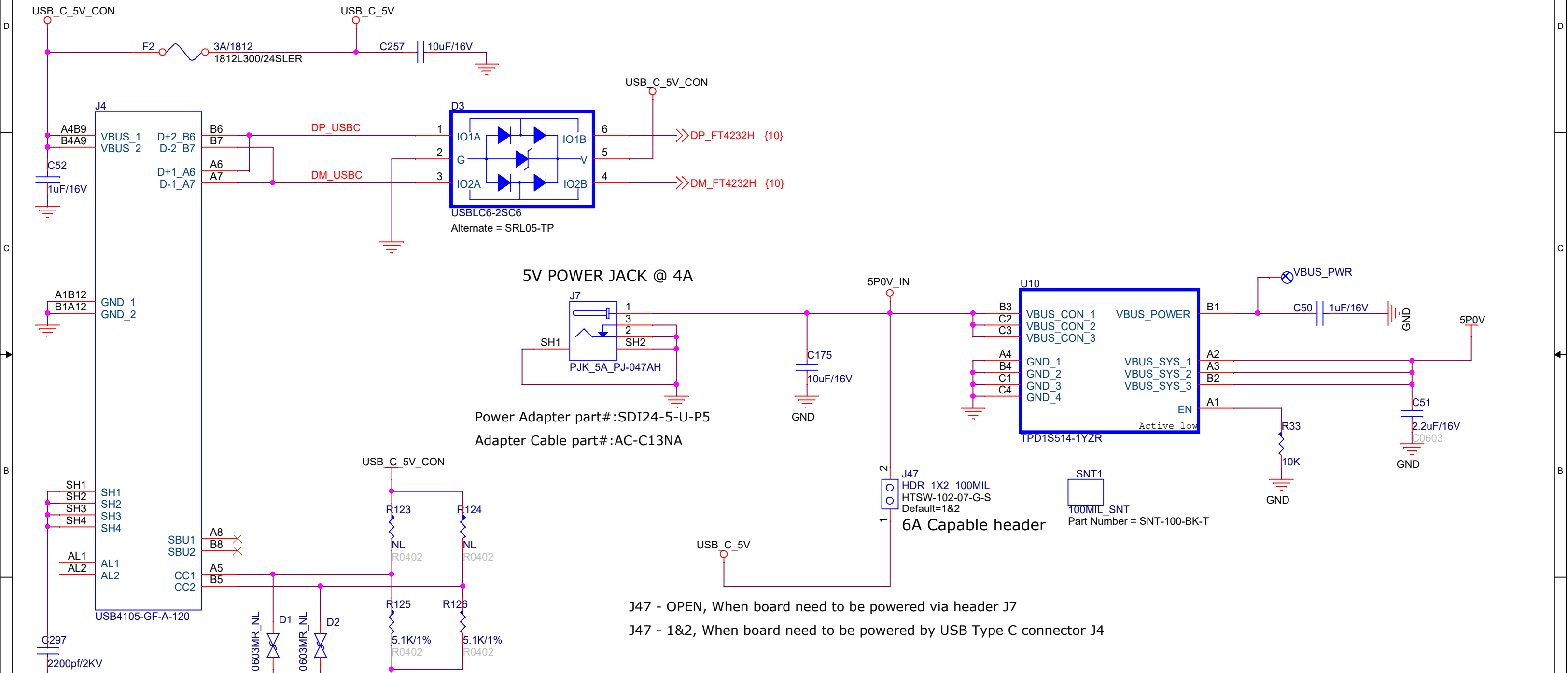
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Decoupling Capacitors



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5V DC Supply



J47 - OPEN, When board need to be powered via header J7
J47 - 1&2, When board need to be powered by USB Type C connector J4



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