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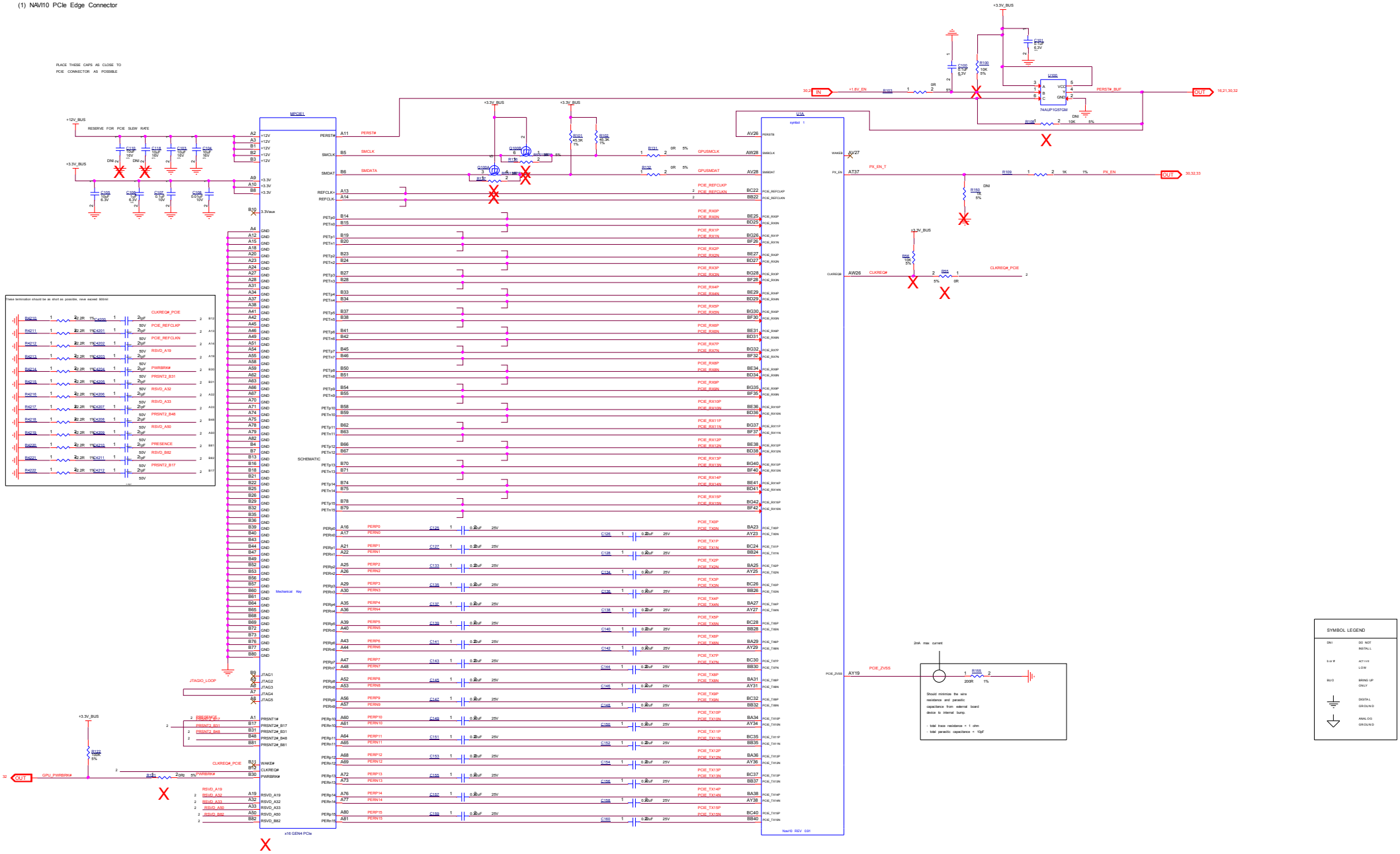
(1) NAVI10 PCIe Edge Connector

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| MICRO-STAR INT'L CO.,LTD | | | |
| MS-V381 | | | |
| Size: Custom | Document Description: NAVI10 PCIe Interface | | Rev: 5.0 |
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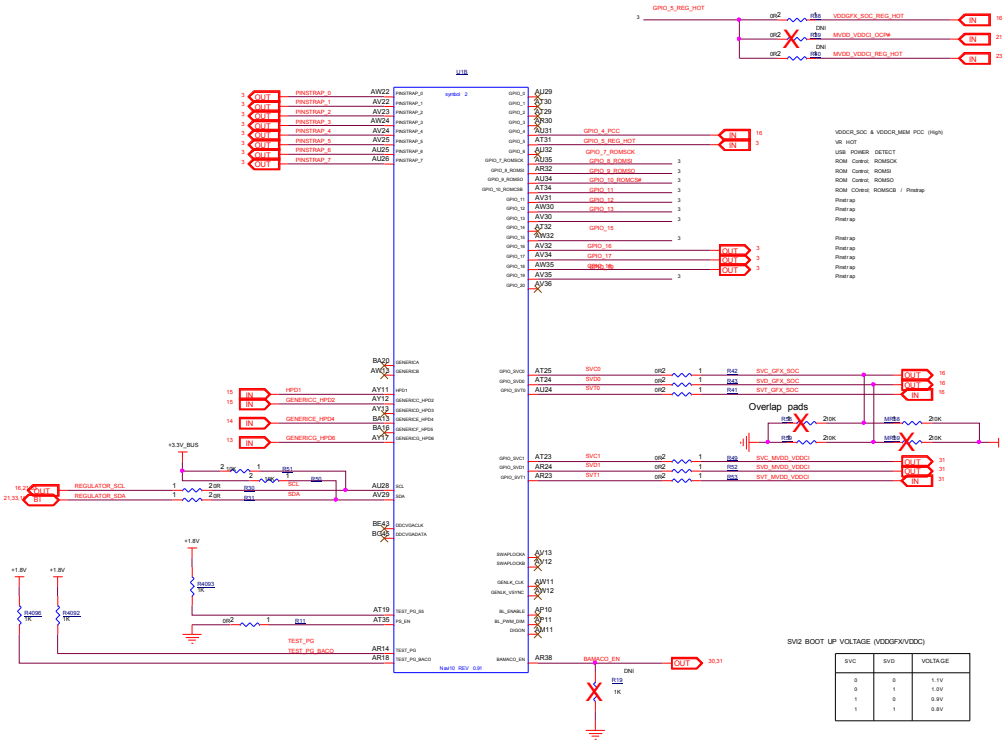


Note: Internal PUPD at GPIO pad is ~40k strength in 14nm design spec

| User | | Internal Default Value | Definition |
|---|---|---|---|
| BIF | PINSTRAP_6 | 0 | STRAP_BIF_GEN4_DIS_A<br>0: PCIe GEN 4 supported<br>1: PCIe GEN 4 not supported |
| | PINSTRAP_7 | 0 | PINSTRAP_BIF_CLK_PM_EN<br>0: CLKREQ# power management capability is disabled<br>1: CLKREQ# power management capability is enabled |
| | GPIO_13 | 0 | PINSTRAP_BIF_LC_TX_SWING |
| | GPIO_15 | 0 | PINSTRAP_BIF_VGA_DIS<br>0: VGA controller capacity enabled<br>1: The device won't be recognised as the system's VGA controller |
| DCE | PINSTRAP_5<br>PINSTRAP_4<br>PINSTRAP_3 | 0<br>0<br>0 | PINSTRAP_AUD_PORT_CONN[2:0]<br>Number of audio-capable display outputs<br>0: All endpoints connected<br>1: 6 endpoints connected<br>2: 5 endpoints connected<br>3: 4 endpoints connected<br>4: 3 endpoints connected<br>5: 2 endpoints connected<br>6: 1 endpoint connected<br>7: 0 endpoints connected |
| | GPIO_12<br>GPIO_11 | 0<br>0 | PINSTRAP_AUD[1:0]<br>1: Audio for DisplayPort only<br>2: Audio for DisplayPort and HDMI if dongle is detected<br>3: Audio for DisplayPort and native HDMI |
| Platform | GPIO_18<br>GPIO_17<br>GPIO_16 | 0<br>0<br>0 | |
| SMU | PINSTRAP_2<br>PINSTRAP_1<br>PINSTRAP_0 | 1<br>0<br>1 | |
| | GPIO_19 | | PINSTRAP_SMBUS_ADDR<br>0: 0x4Eh<br>1: 0x4Dh |
| | GPIO_10_ROMCS# | 1 | PINSTRAP_BIOS_ROM_EN<br>0: Disable the external BIOS ROM device<br>1: Enable the external BIOS ROM device |

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| Size: Custom | Document Description: NAV110 GPIOs | | Rev: 5.0 |
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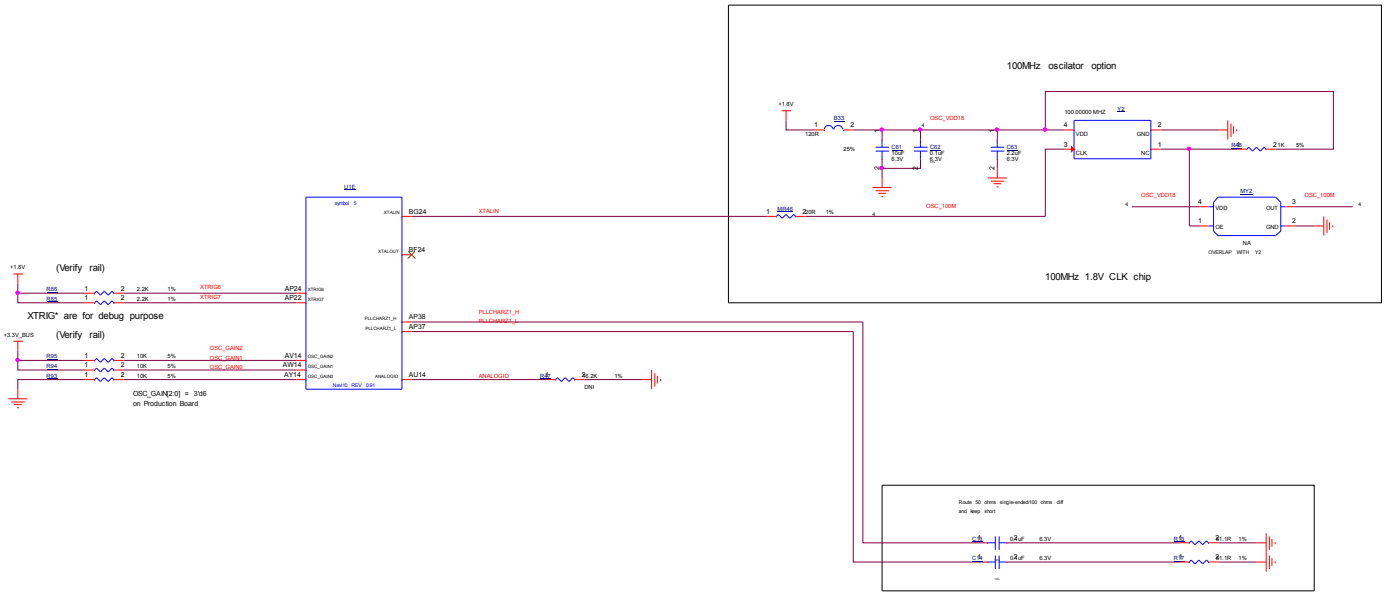


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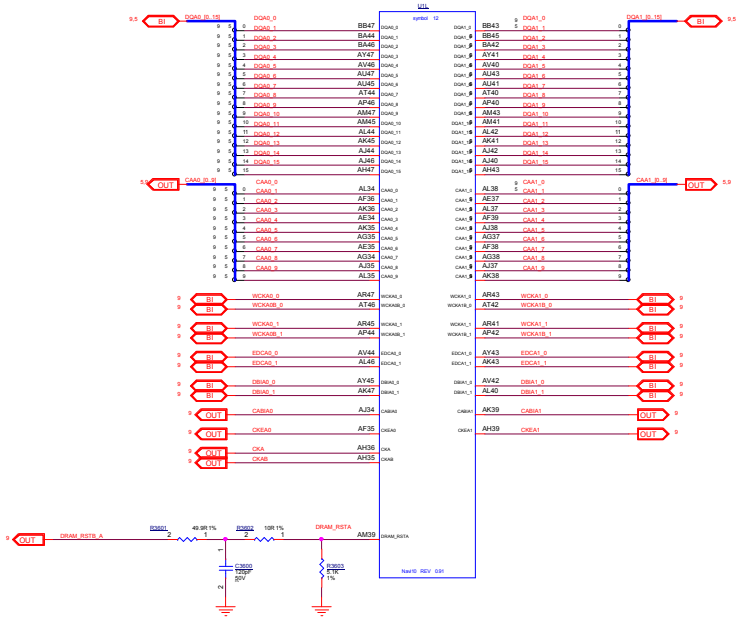
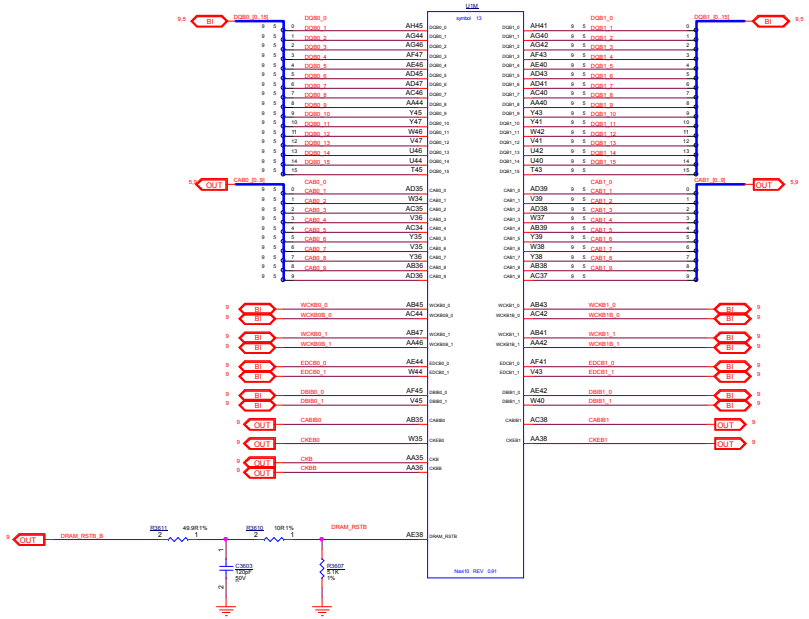
NAVI 10 MEM INTERFACE CH A/B





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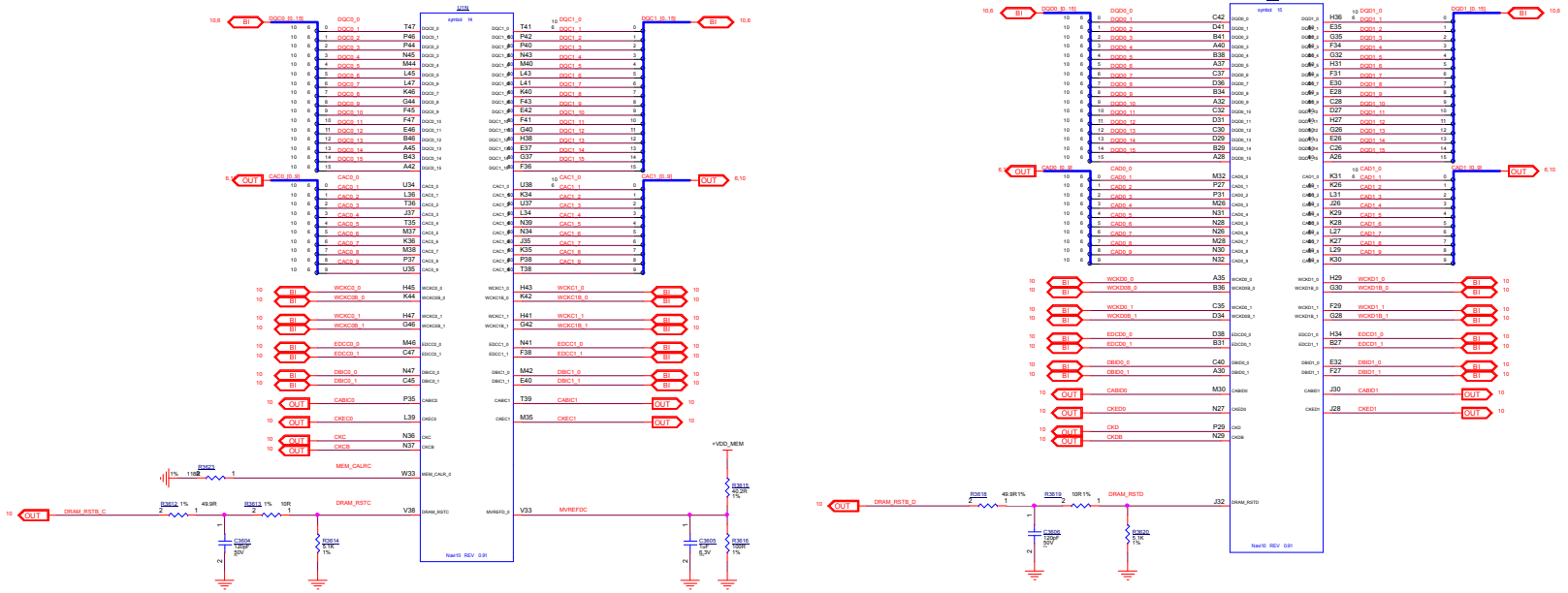
NAVI 10 MEM INTERFACE CH C/D



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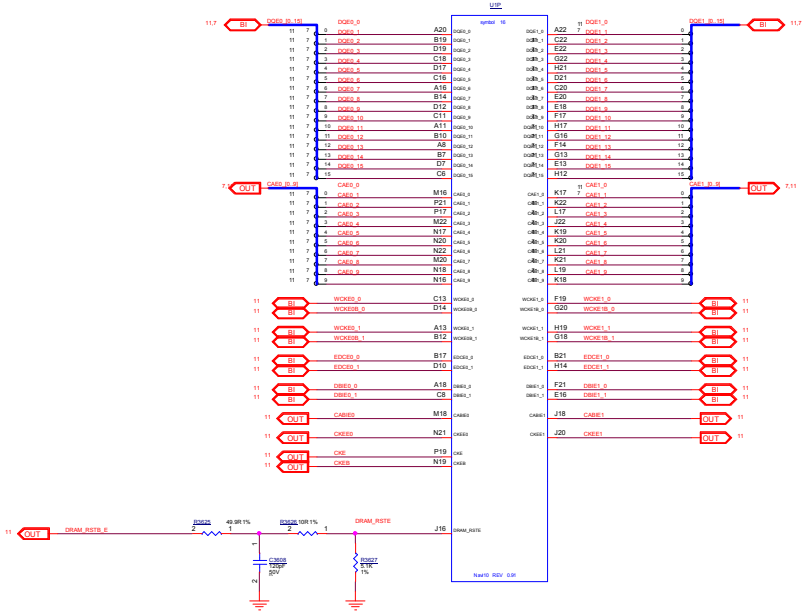
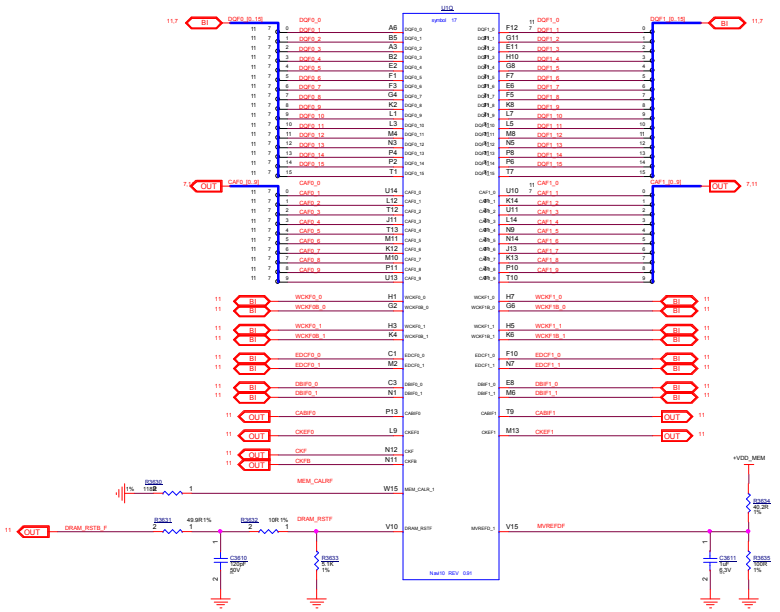
NAVI 10 MEM INTERFACE CH E/F





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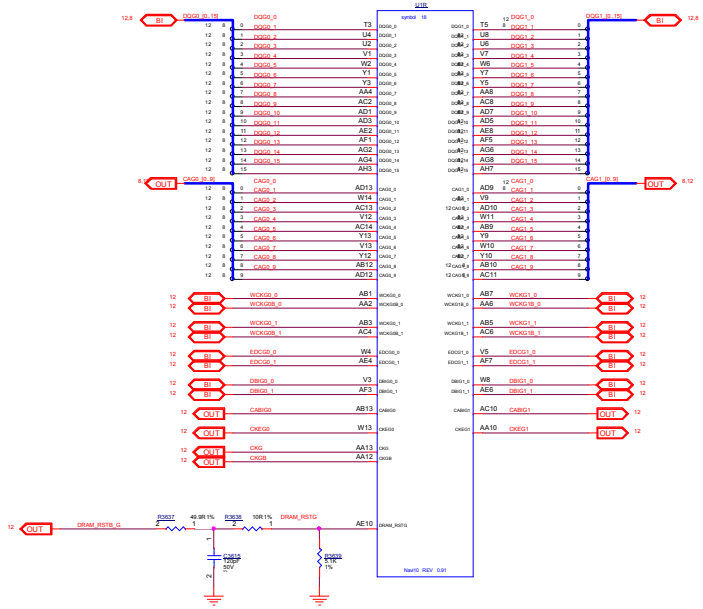
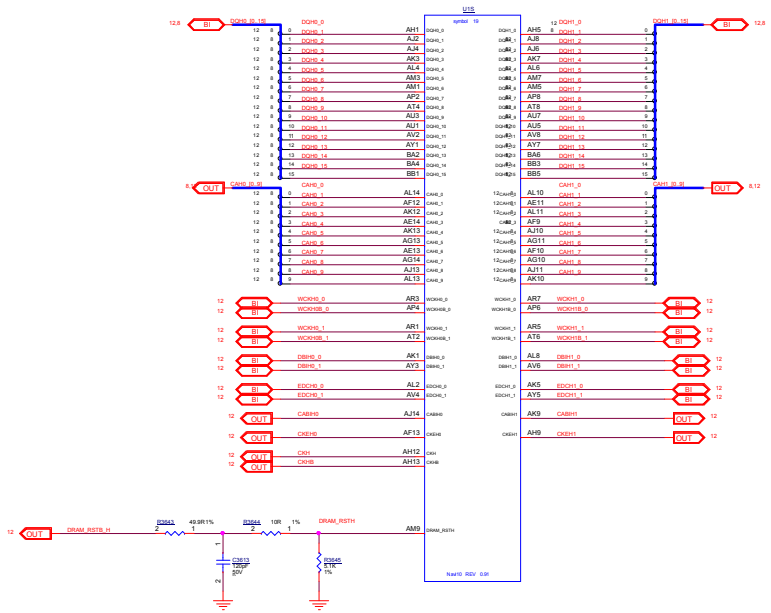
NAVI 10 MEM INTERFACE CH G/H





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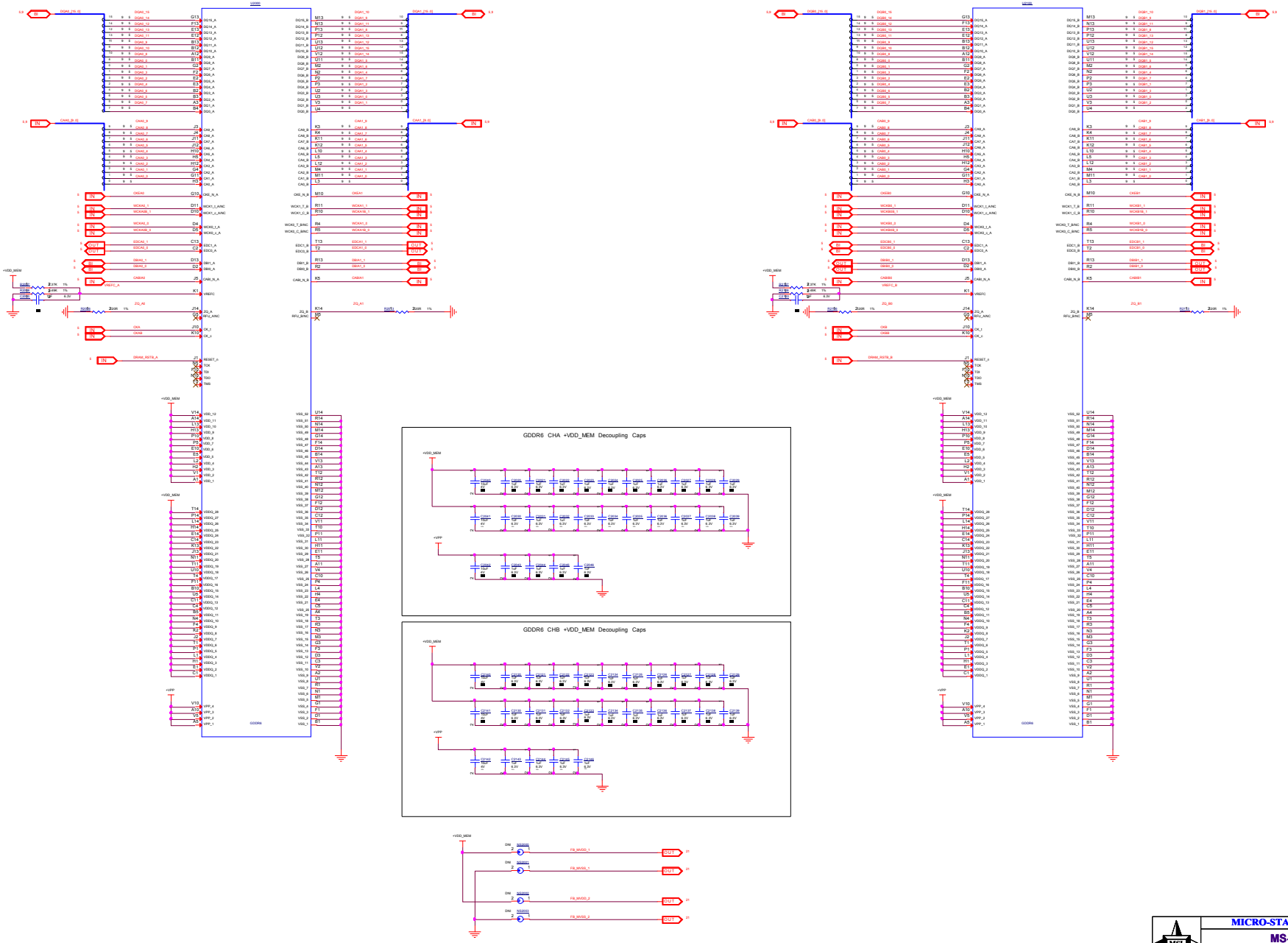


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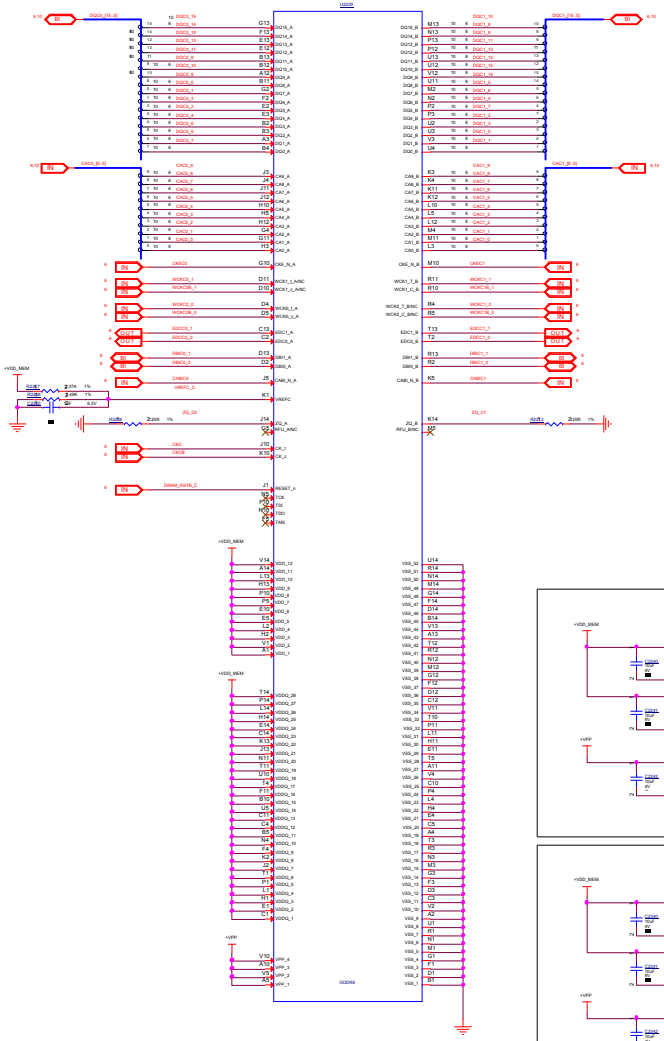

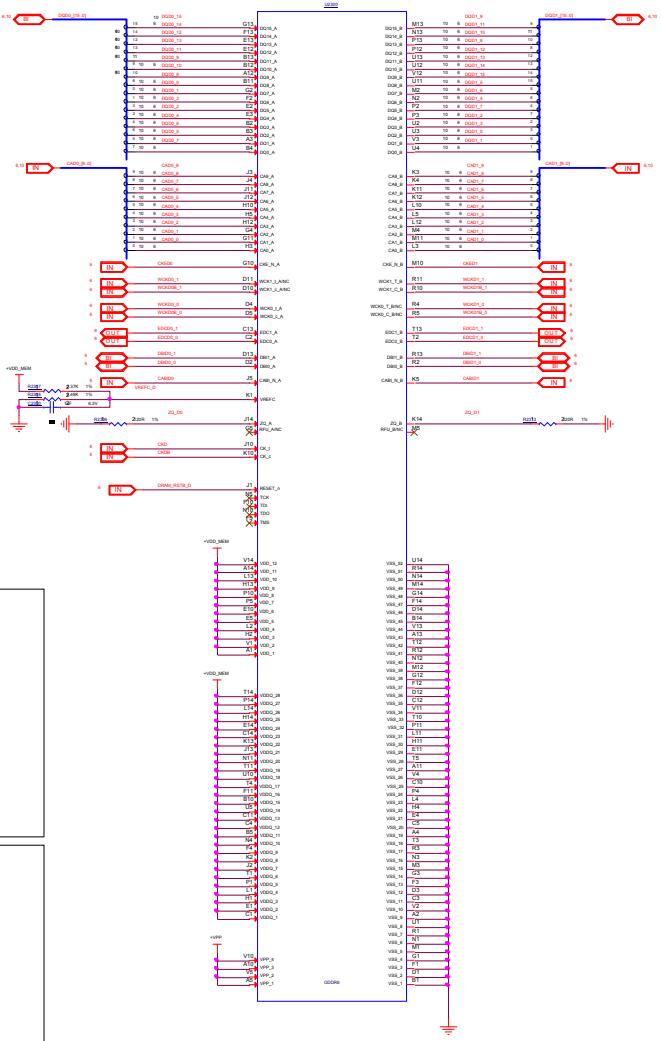

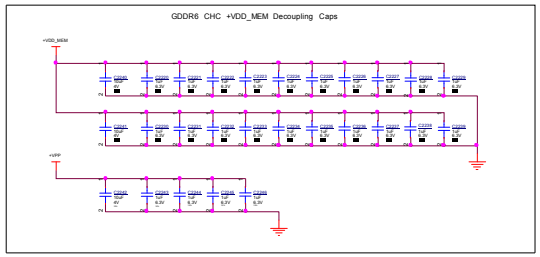


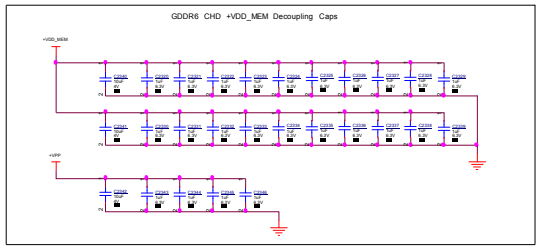


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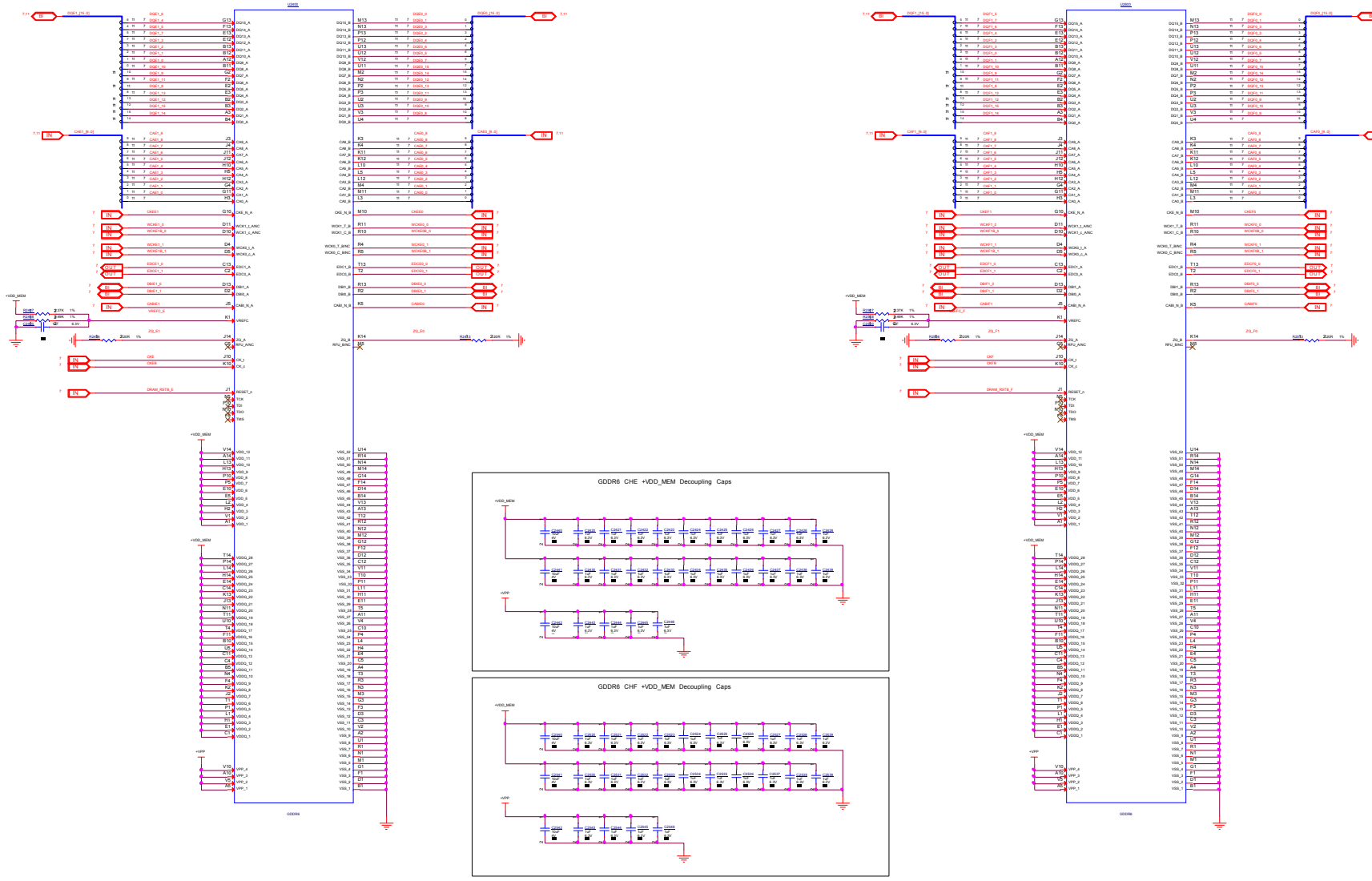


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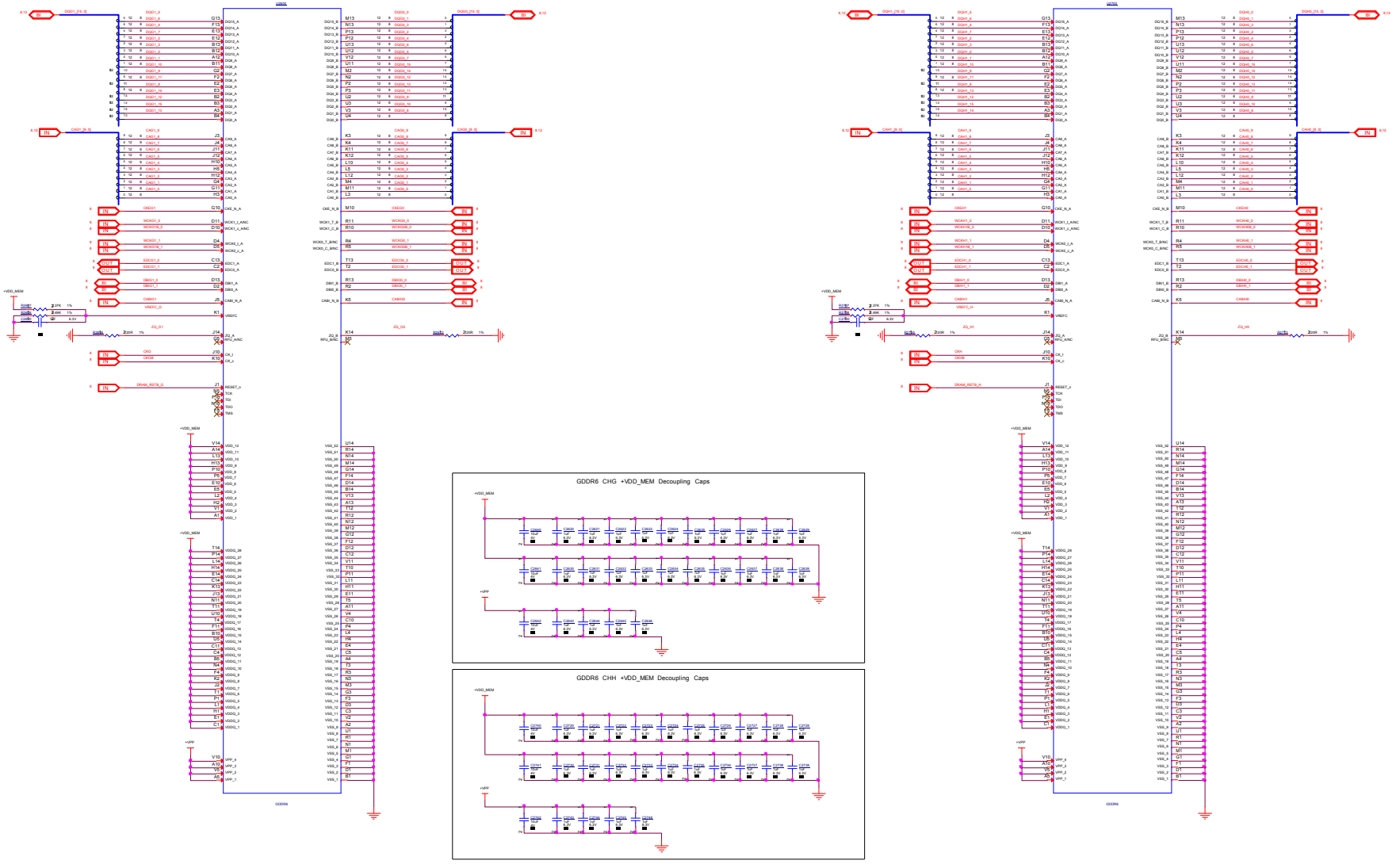


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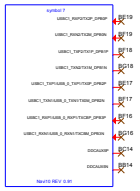
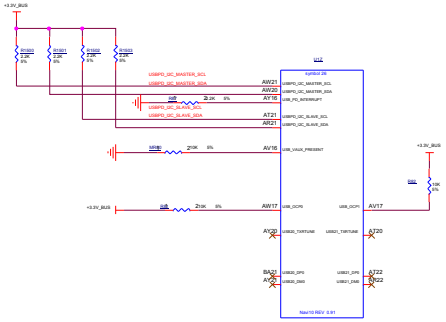
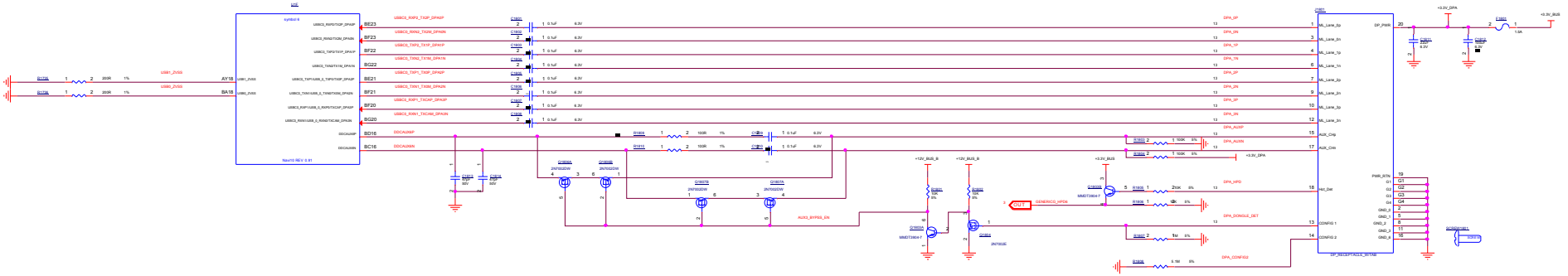
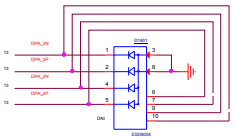
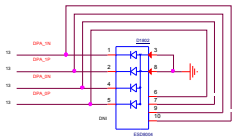
NAVI10 TMDP A/B

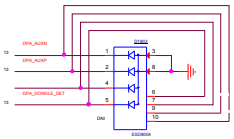


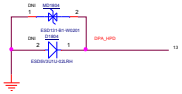












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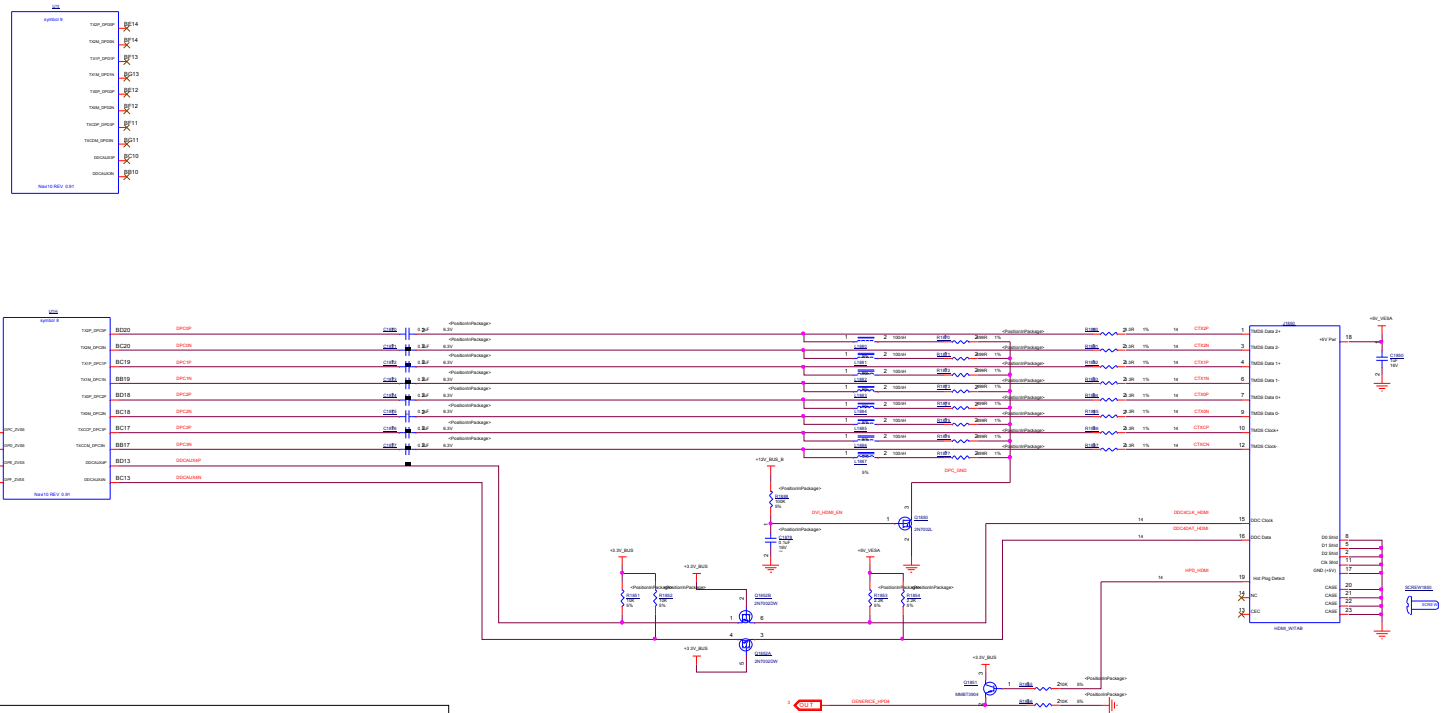
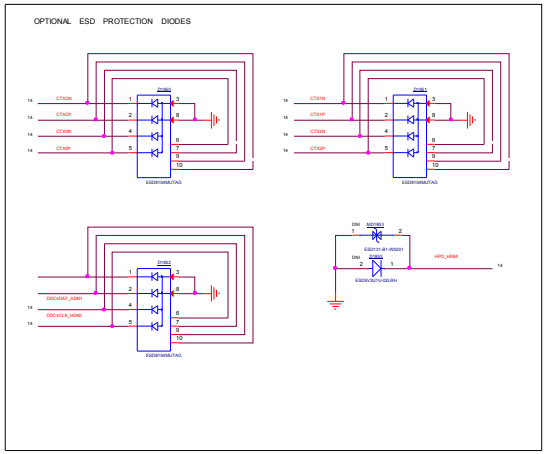
NAVI10 TMDP C/D



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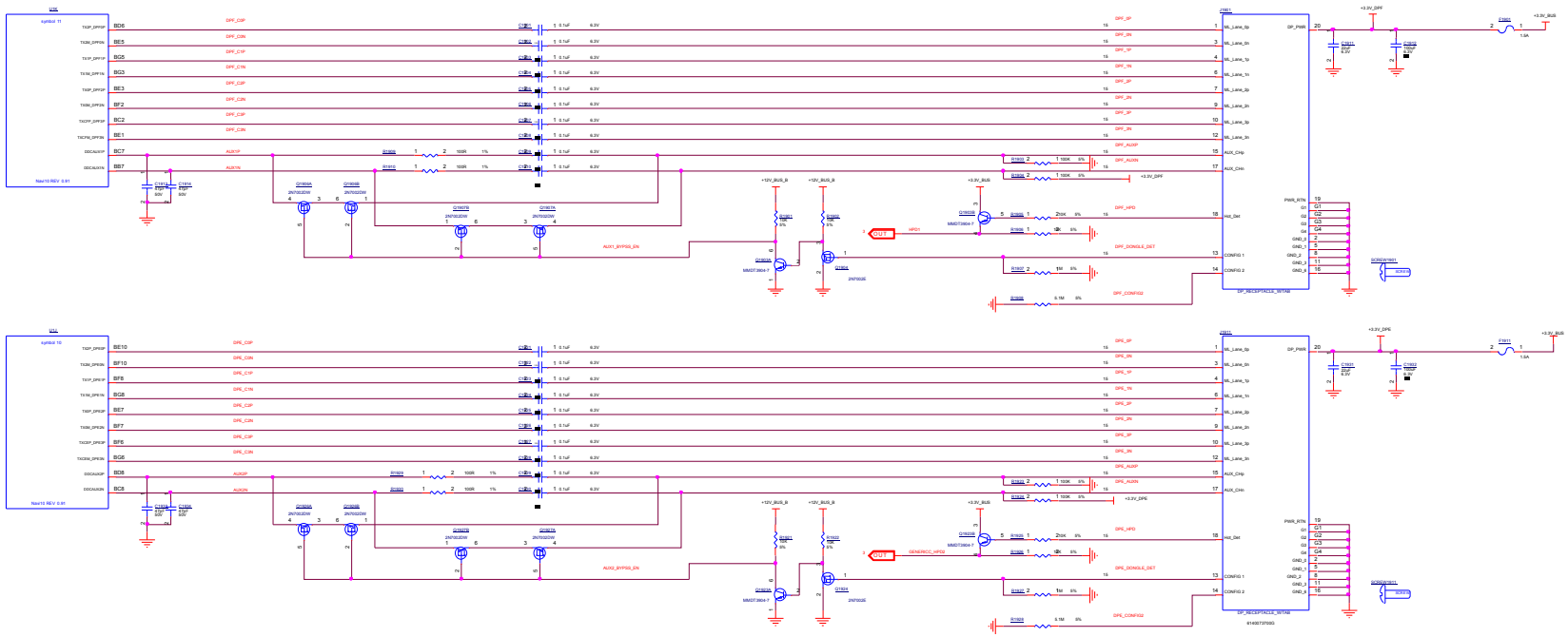
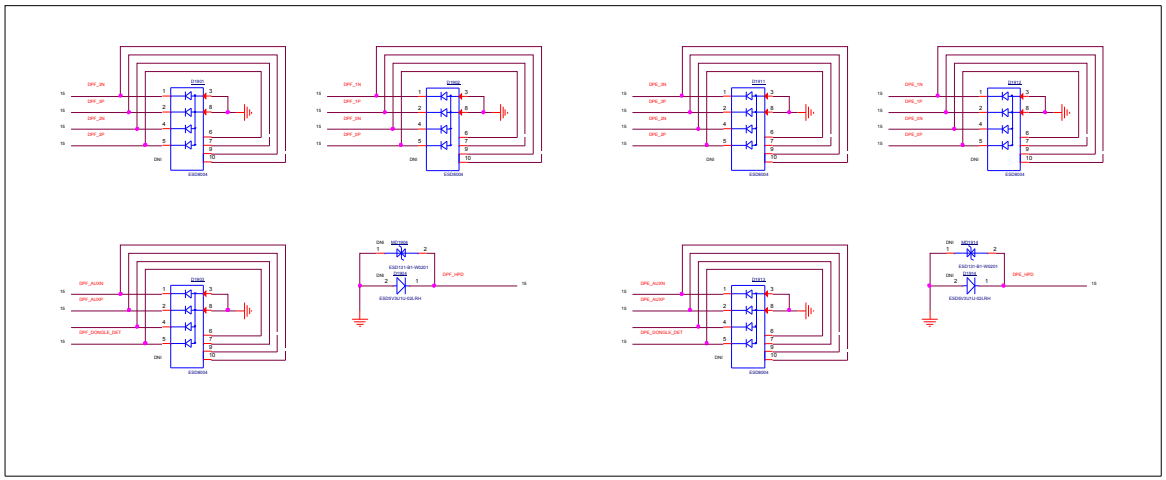
(9) NAVI10 TMDP E/F





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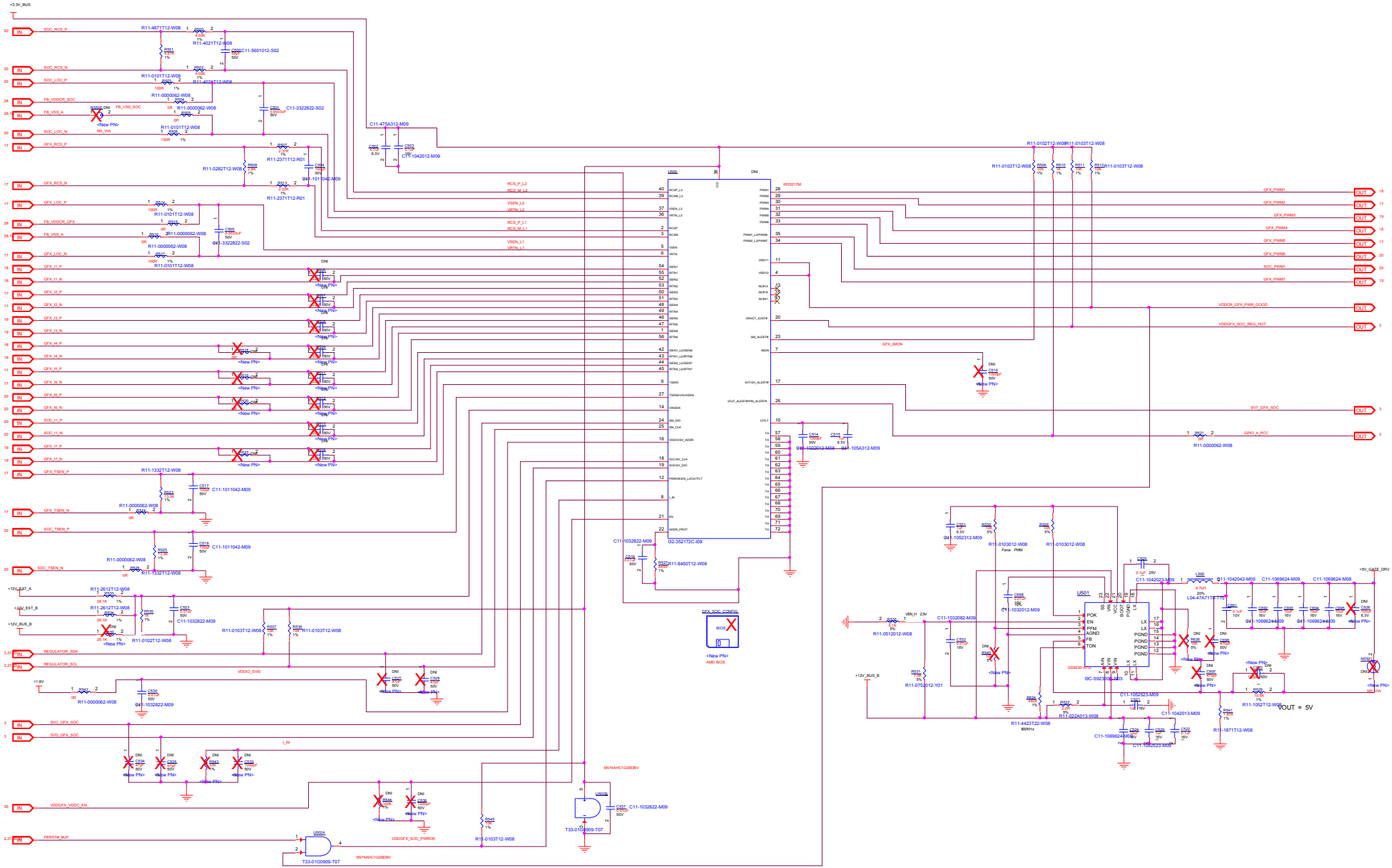

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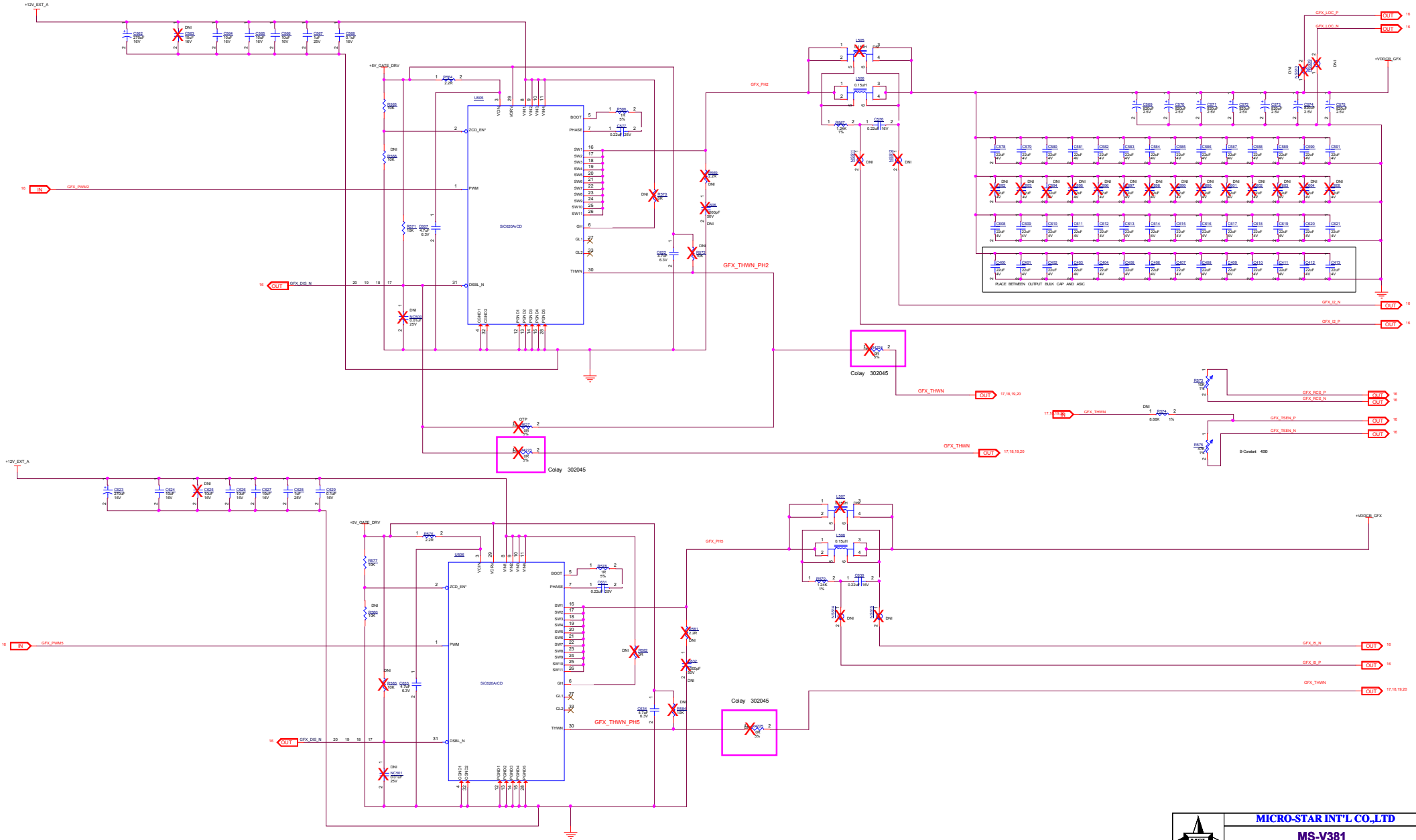


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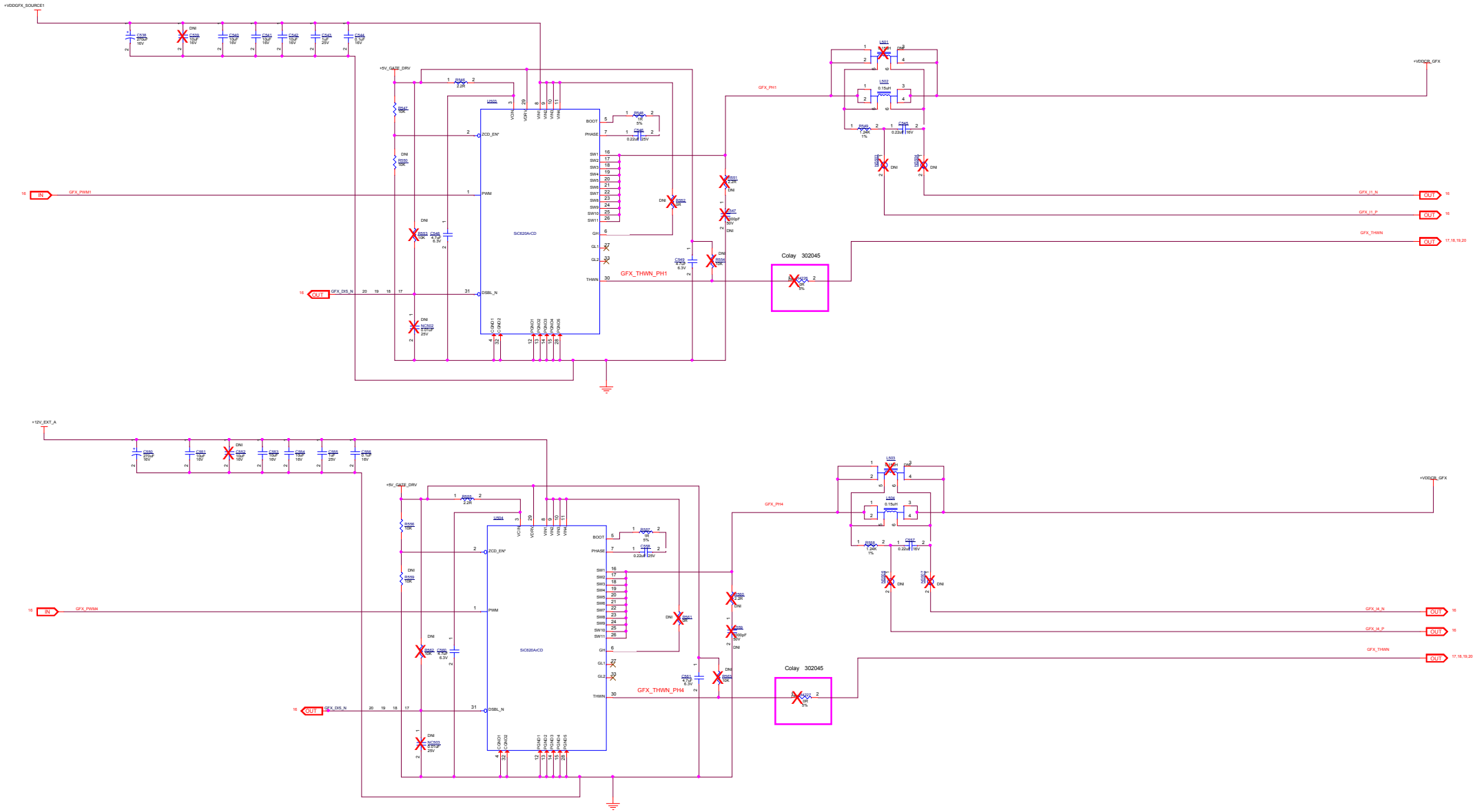


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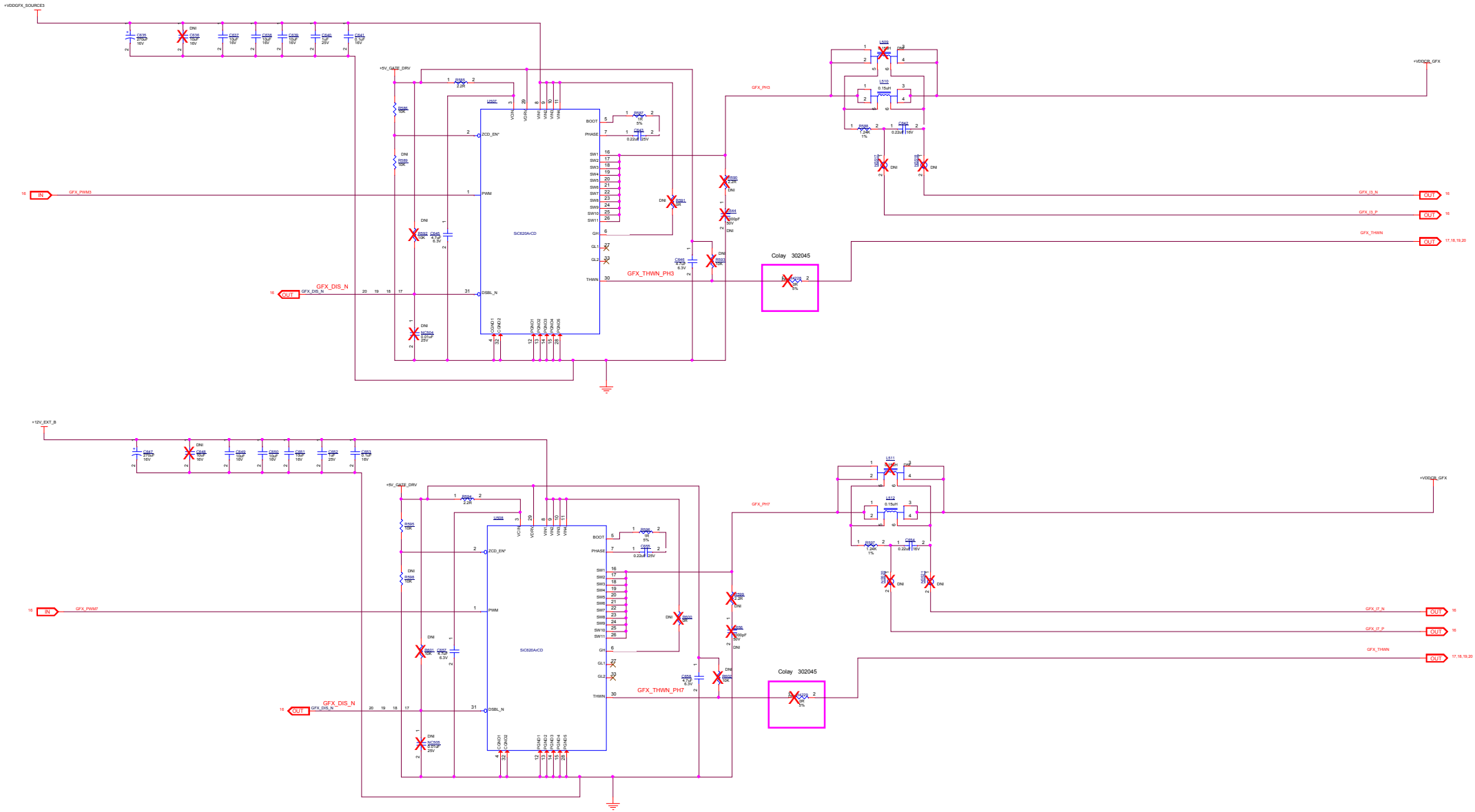


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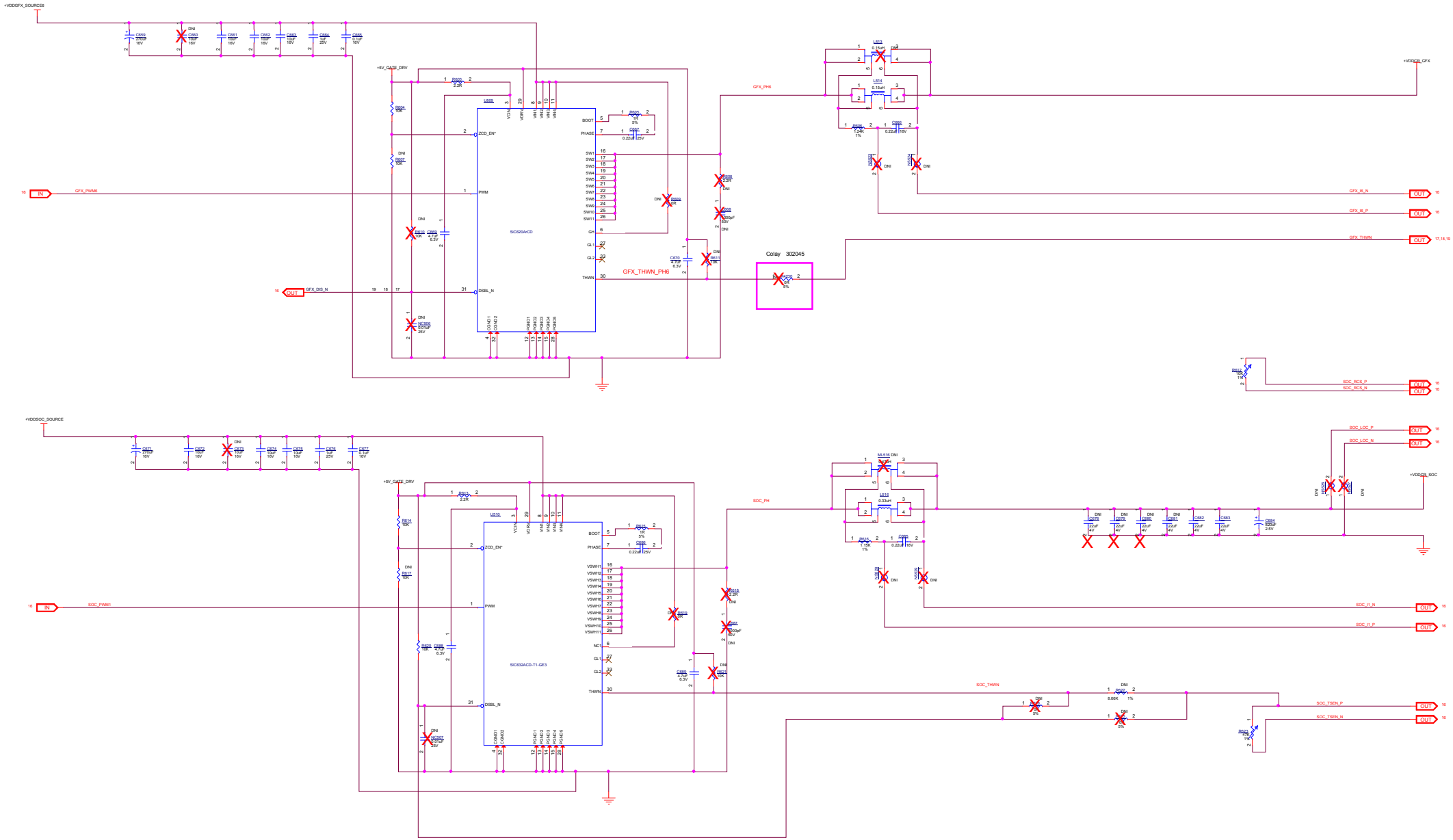


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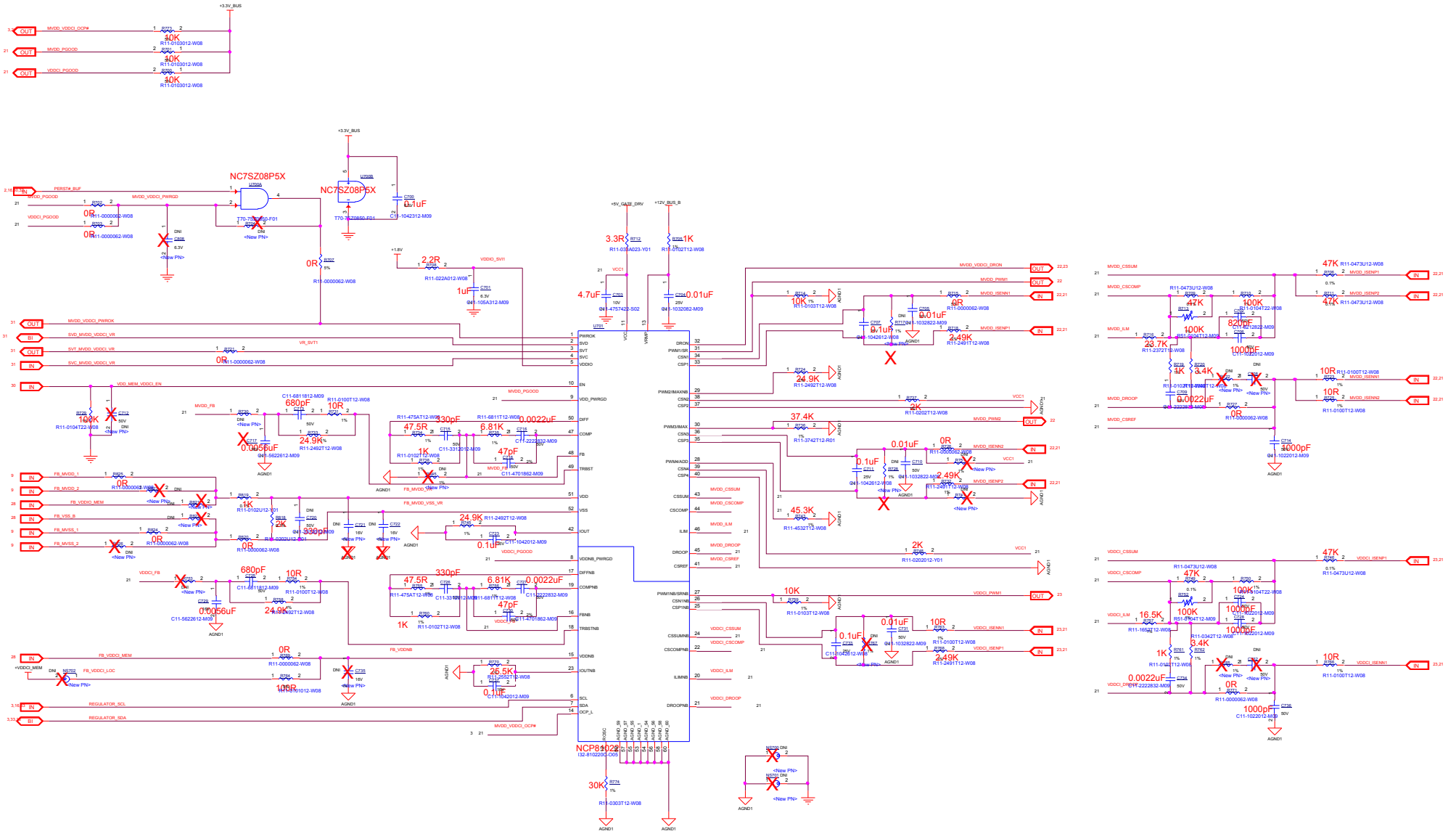


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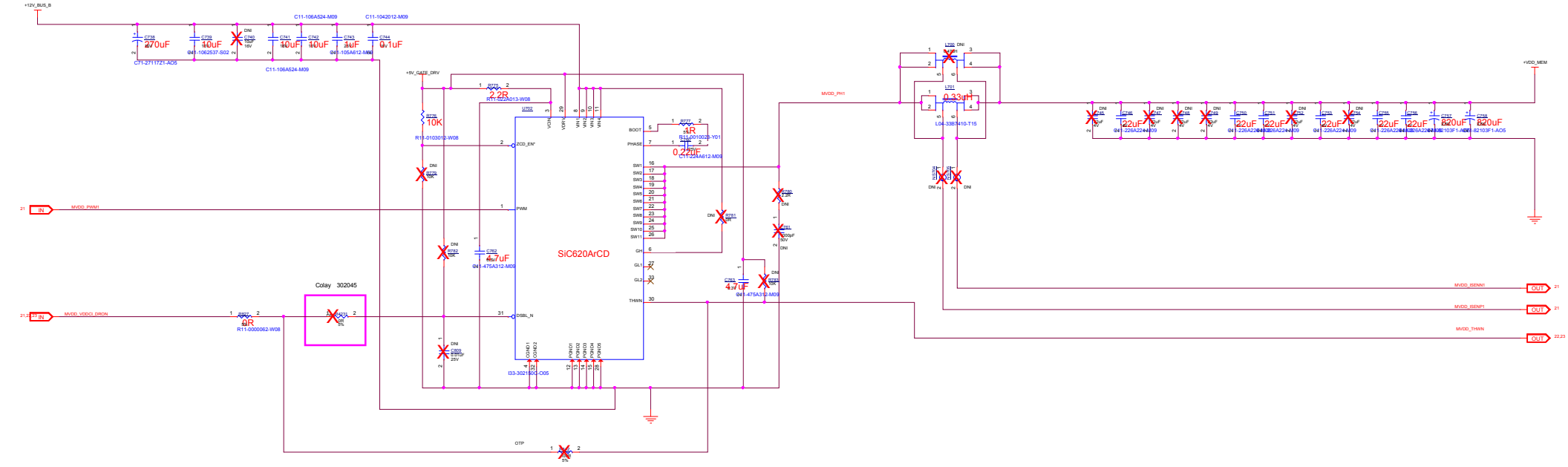


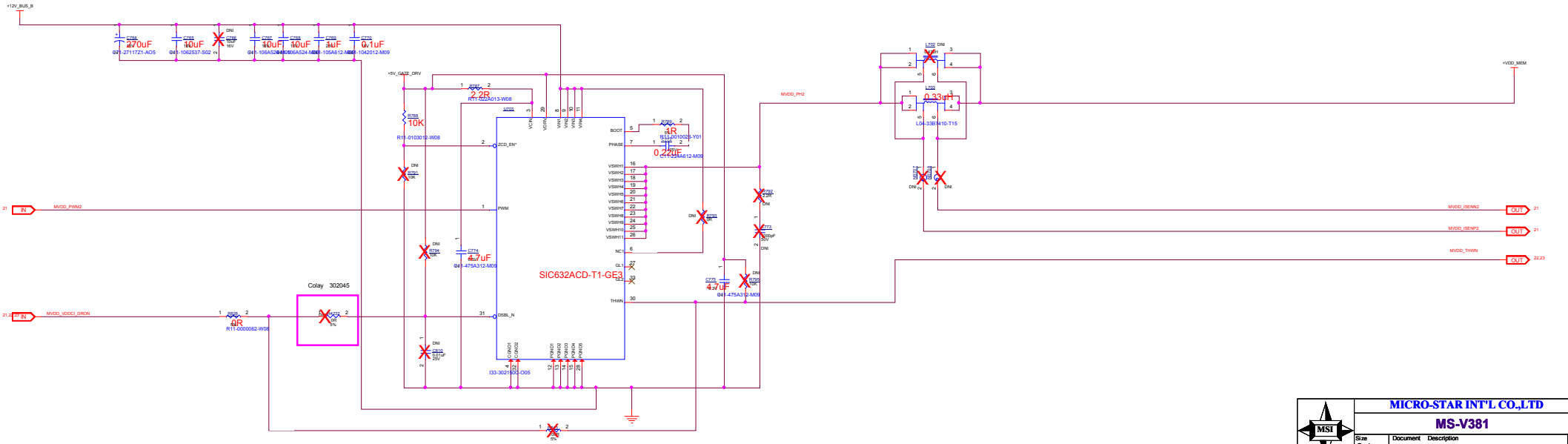


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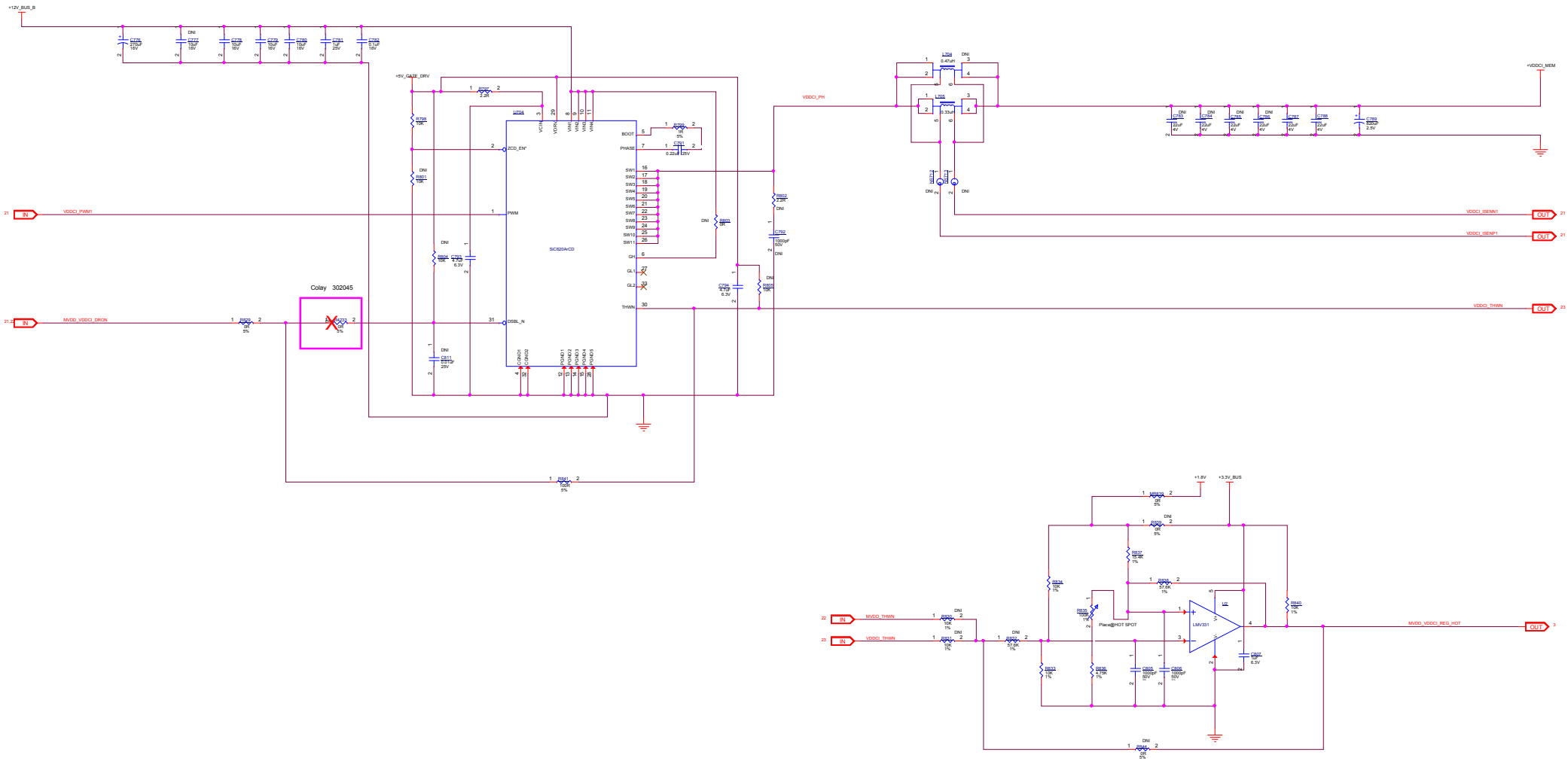


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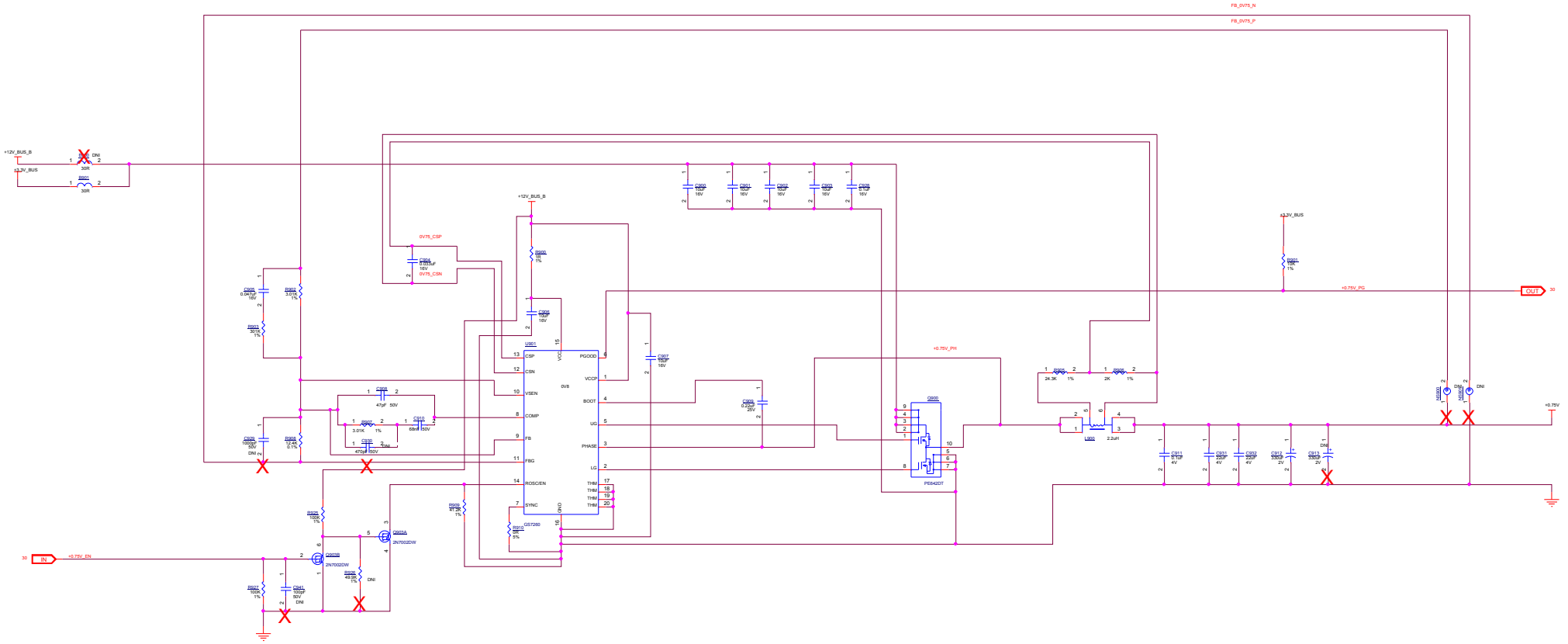


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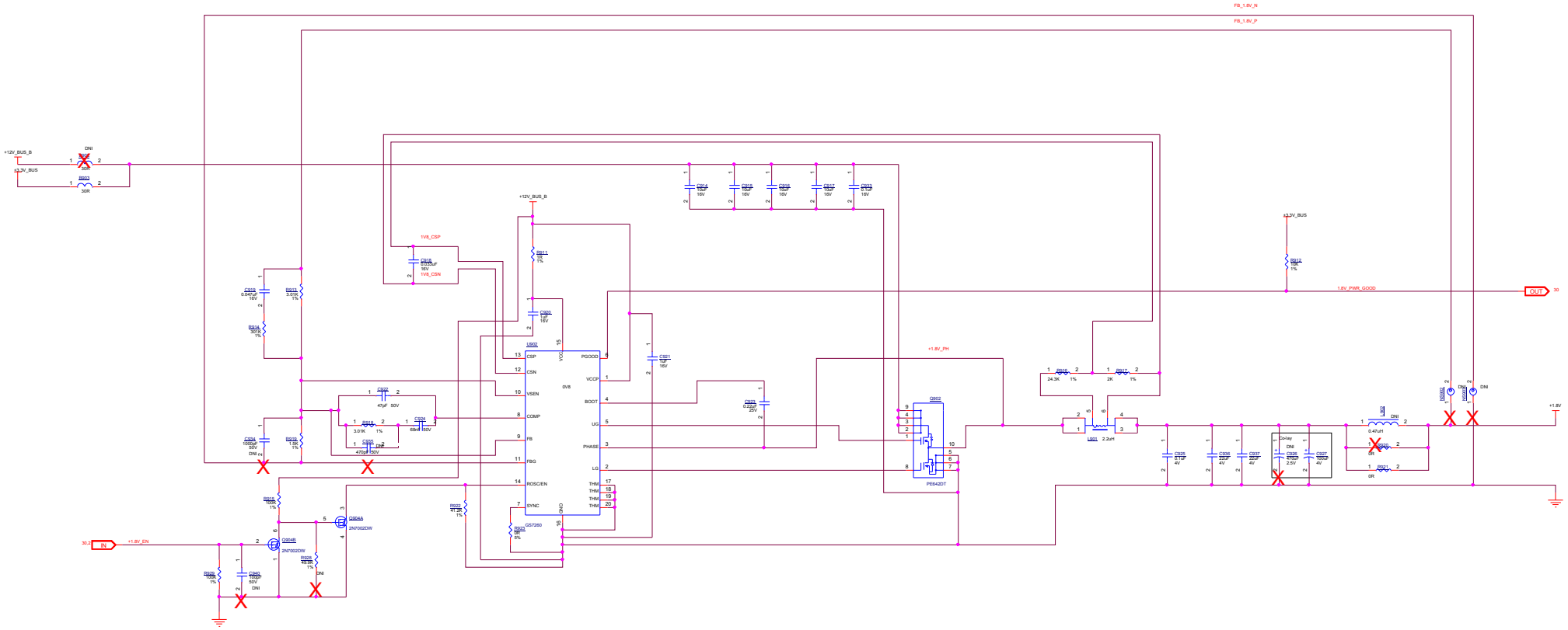


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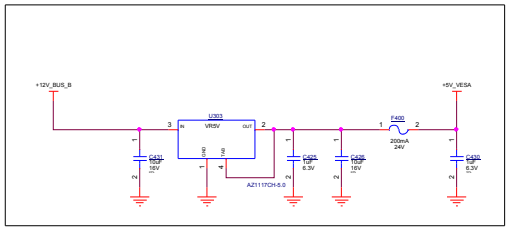
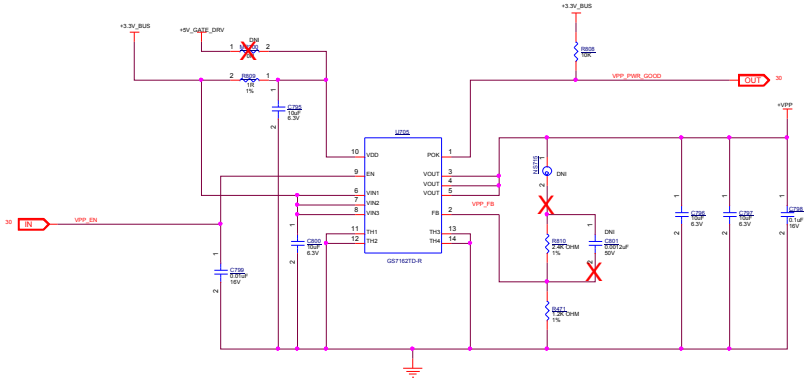
REGULATOR FOR +5V RAILS

IOUT = 50mA

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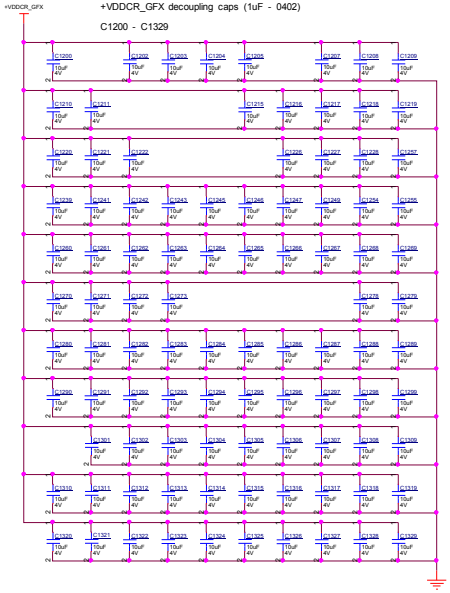
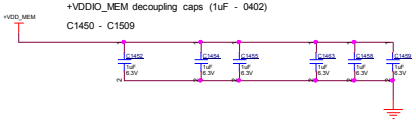
+VDDCR_GFX decoupling caps (1uF - 0402)

C1200 - C1329




+VDDIO_MEM decoupling caps (1uF - 0402)

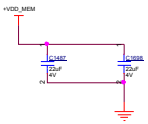
C1450 - C1509



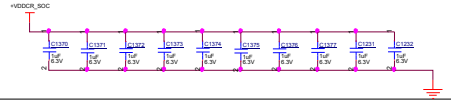

+VDDIO_MEM decoupling caps (22uF)

C1510 - C1539

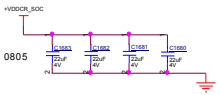
0805




+VDDCR_SOC decoupling caps (1uF - 0402)

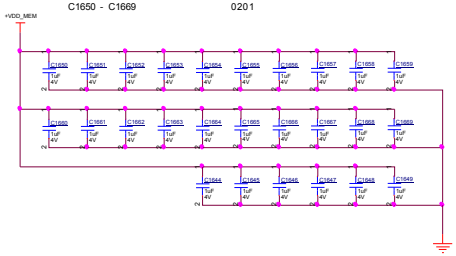



0805



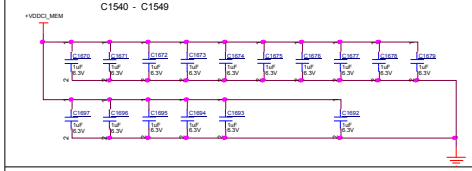

+VDDIO_MEM decoupling caps (1uF)

C1650 - C1669 0201



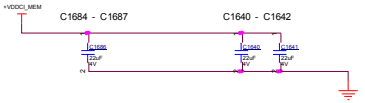

+VDDCI_MEM decoupling caps (1uF - 0402)

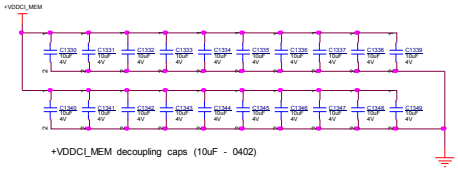
C1540 - C1549




+VDDCI_MEM decoupling caps (22uF - 0805)

C1684 - C1687 C1640 - C1642




+VDDCI_MEM decoupling caps (10uF - 0402)

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|---|---|---|
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| MS-V381 | | |
| Size: Custom | Document Description: NAVI10 DECAPS | Rev: 5.0 |
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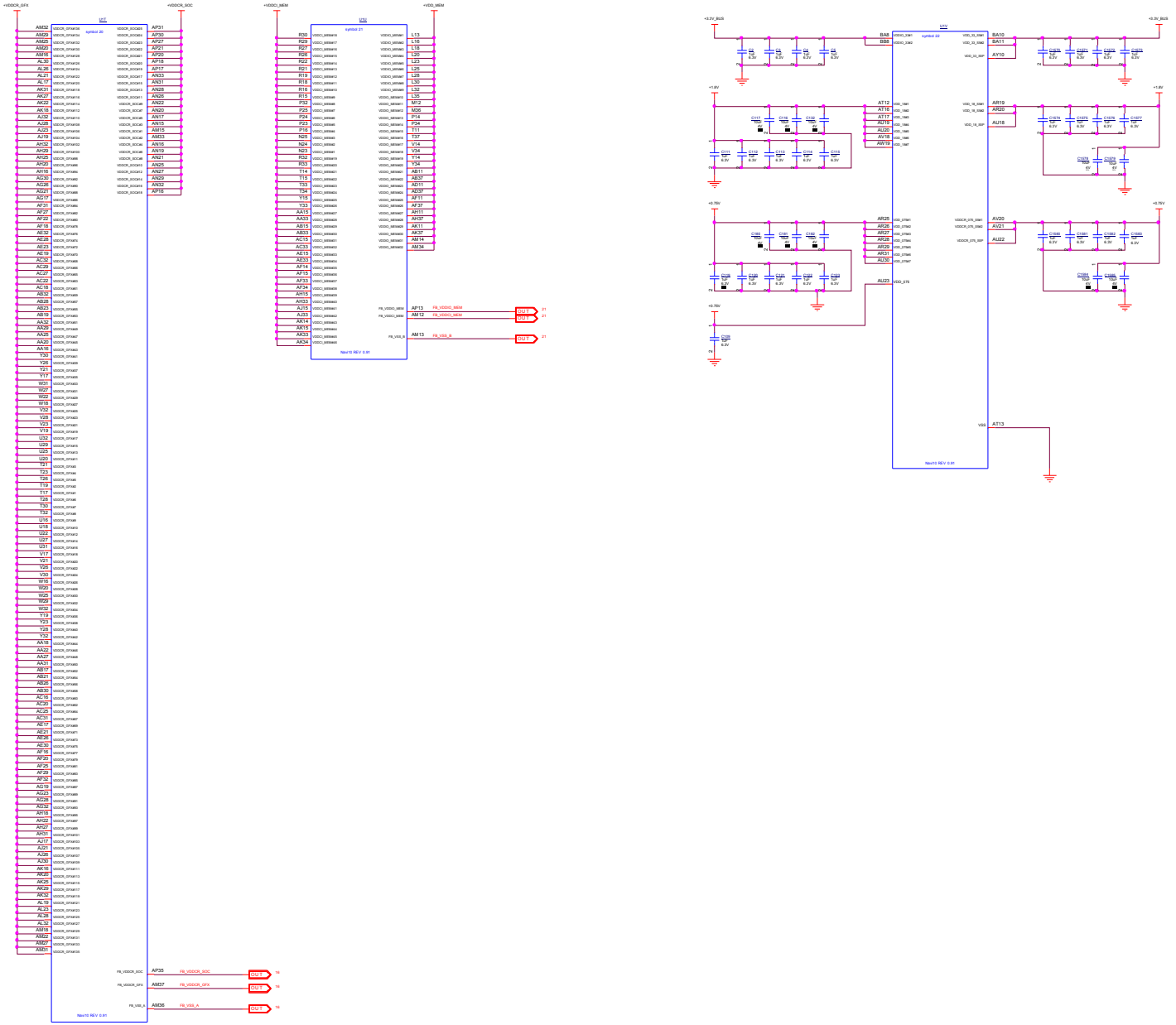

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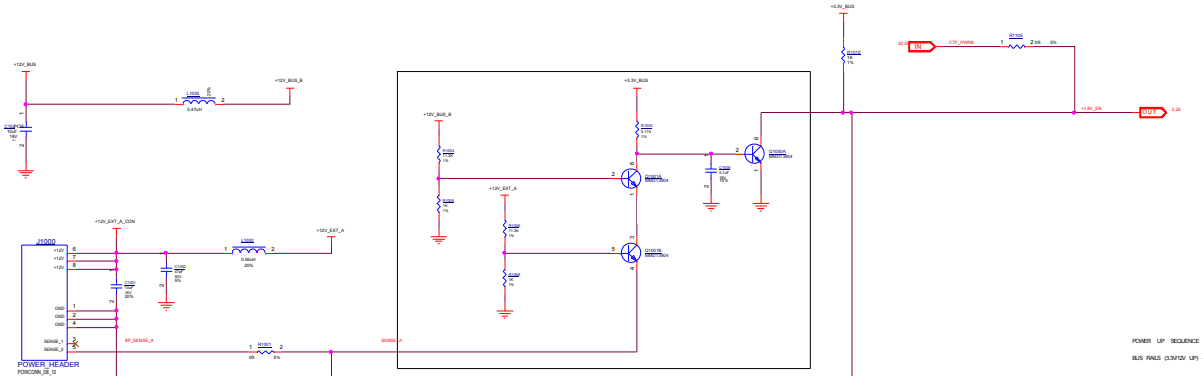
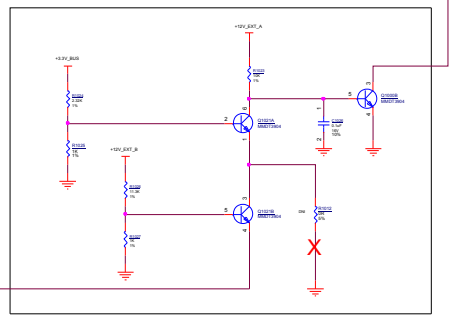
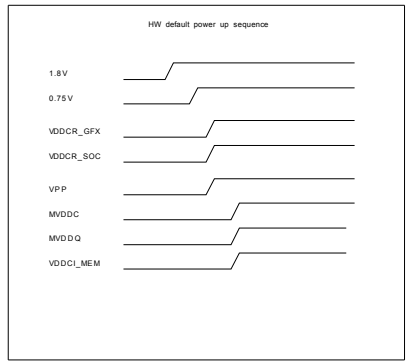
| Size: Custom | Document Description | | Rev: 5.0 |
| Date: 2019_11_07 | Sheet 29 of 35 | | |



12V_BUS and 12V_EXT_A power-up sequence

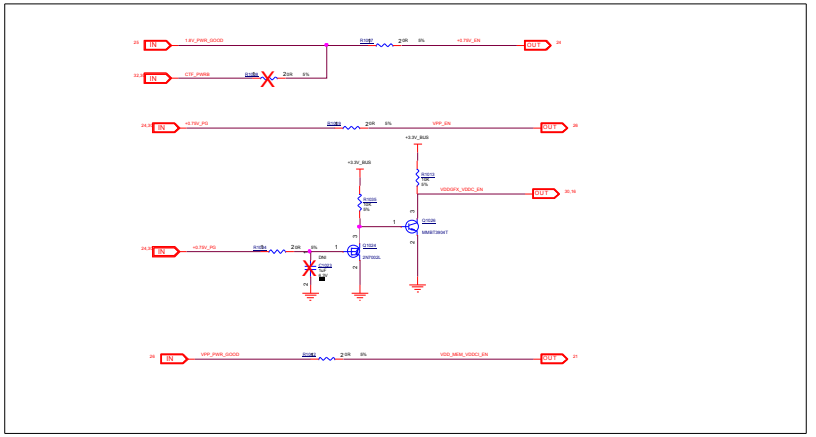


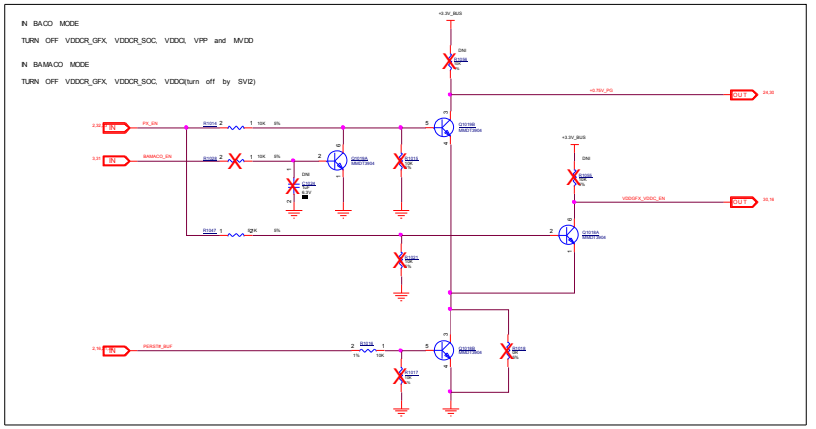
3.3V_BUS and 12V_EXT_B (6PIN/8PIN) power-up sequence

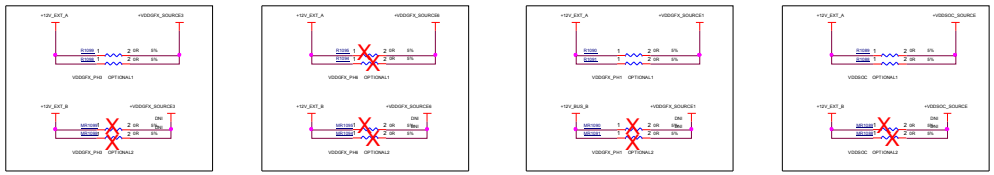



POWER UP SEQUENCE

BUS RAILS (3.3/12V UP) -> +1.8V -> 0.75V -> VDDGFX/VDDSOC
-> VPP -> VDDCI/MVDD





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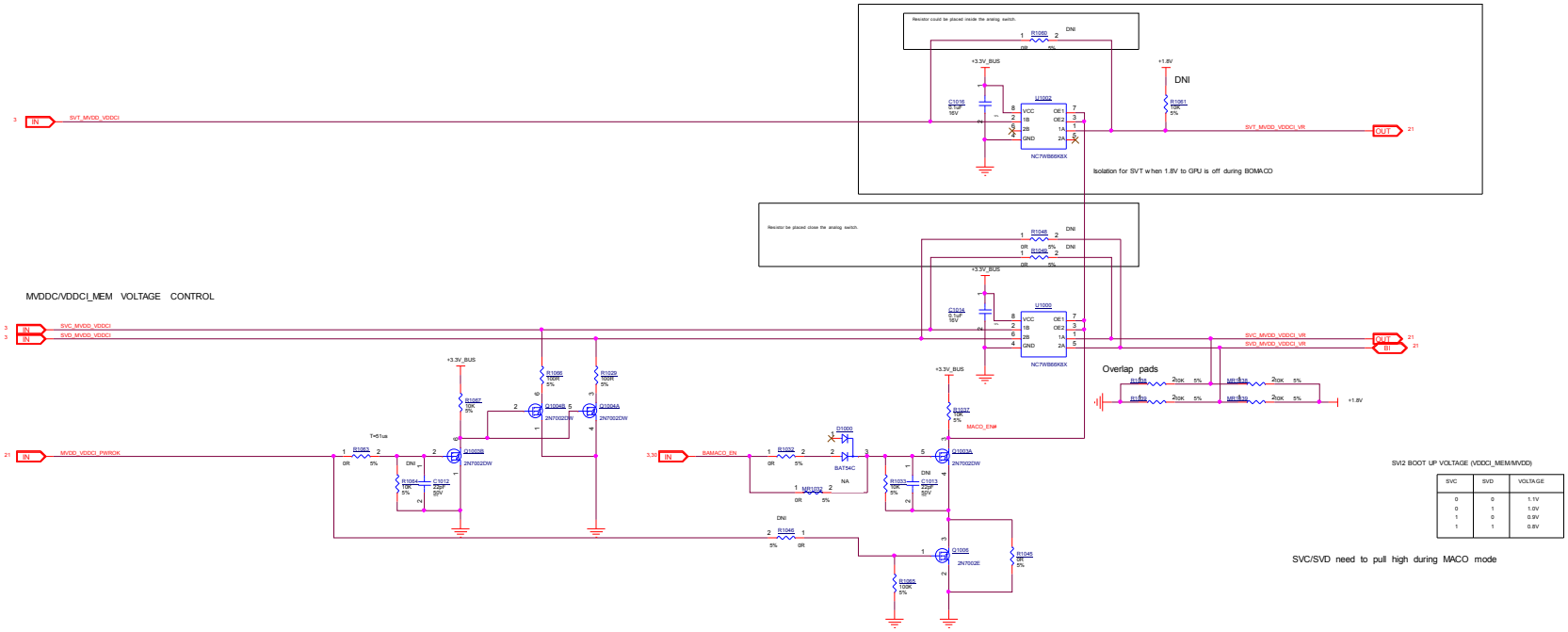
| Size: Custom | Document Description: POWER MANAGEMENT | | Rev: 5.0 |
| Date: 2019 11 07 | Sheet 30 of 35 | | |




SVI2 BOOT UP VOLTAGE (VDDCI_MEM/MVDD)

| SVC | SVD | VOLTAGE |
|---|---|---|
| 0 | 0 | 1.1V |
| 0 | 1 | 1.0V |
| 1 | 0 | 0.9V |
| 1 | 1 | 0.8V |

| | | |
|---|---|---|
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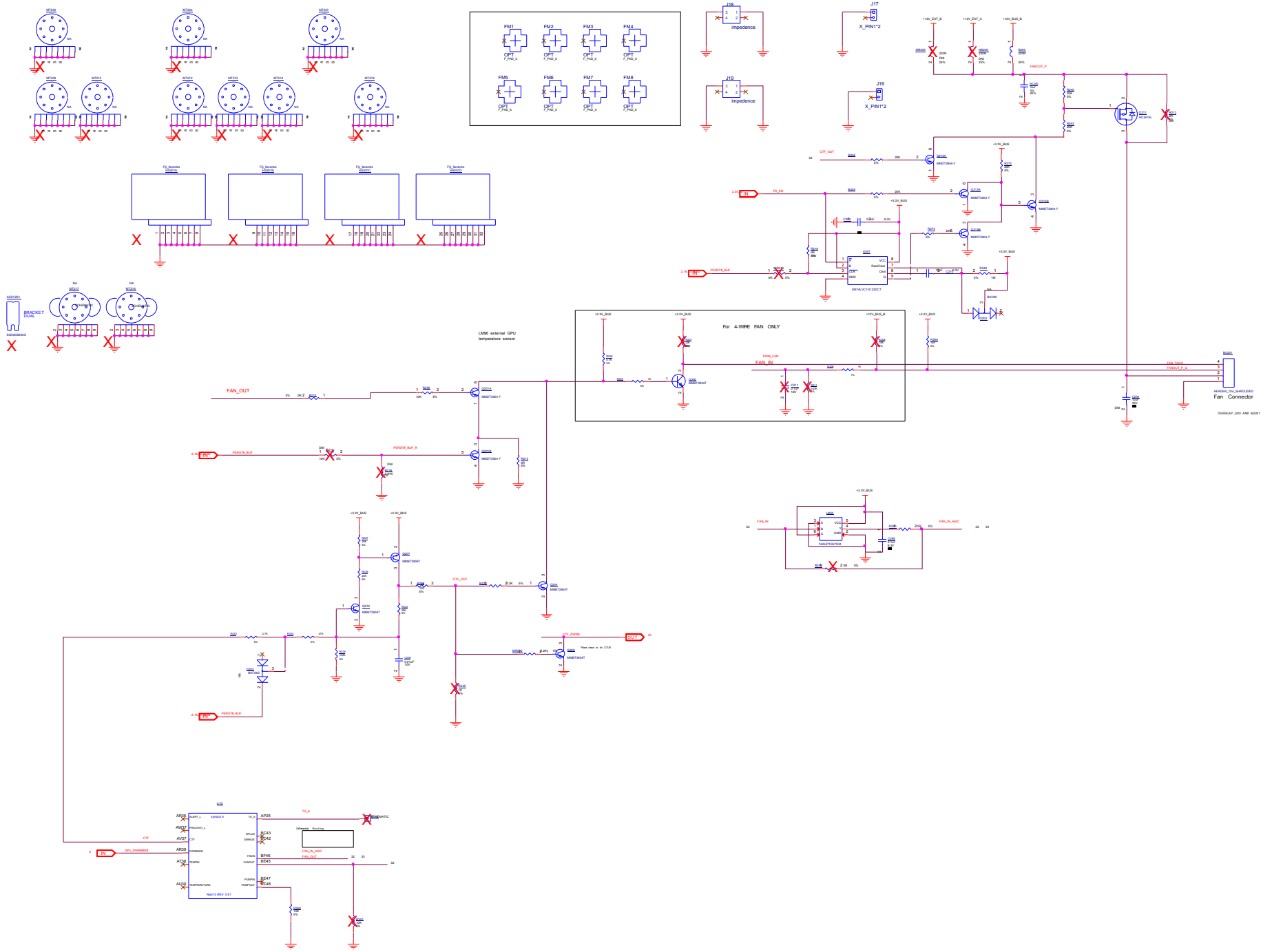
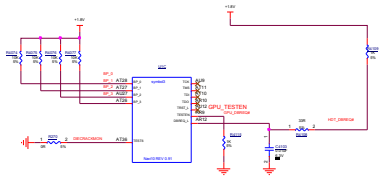
| Size: Custom | Document Description: SVI2 & BAMACO | Rev: 5.0 |
| Date: 2019 11 07 | Sheet 31 of 35 | |


For 4-WIRE FAN ONLY
LM96 external GPU temperature sensor
FAN_OUT
FAN_IN
Fan Connector
BRACKET DUAL
MICRO-STAR INT'L CO.,LTD
MS-V381
MECHANICAL & THERMAL



RADEON Lightbar header

| | | |
|---|---|---|
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| Size: Custom | Document Description: DEBUG | Rev: 0.0 |
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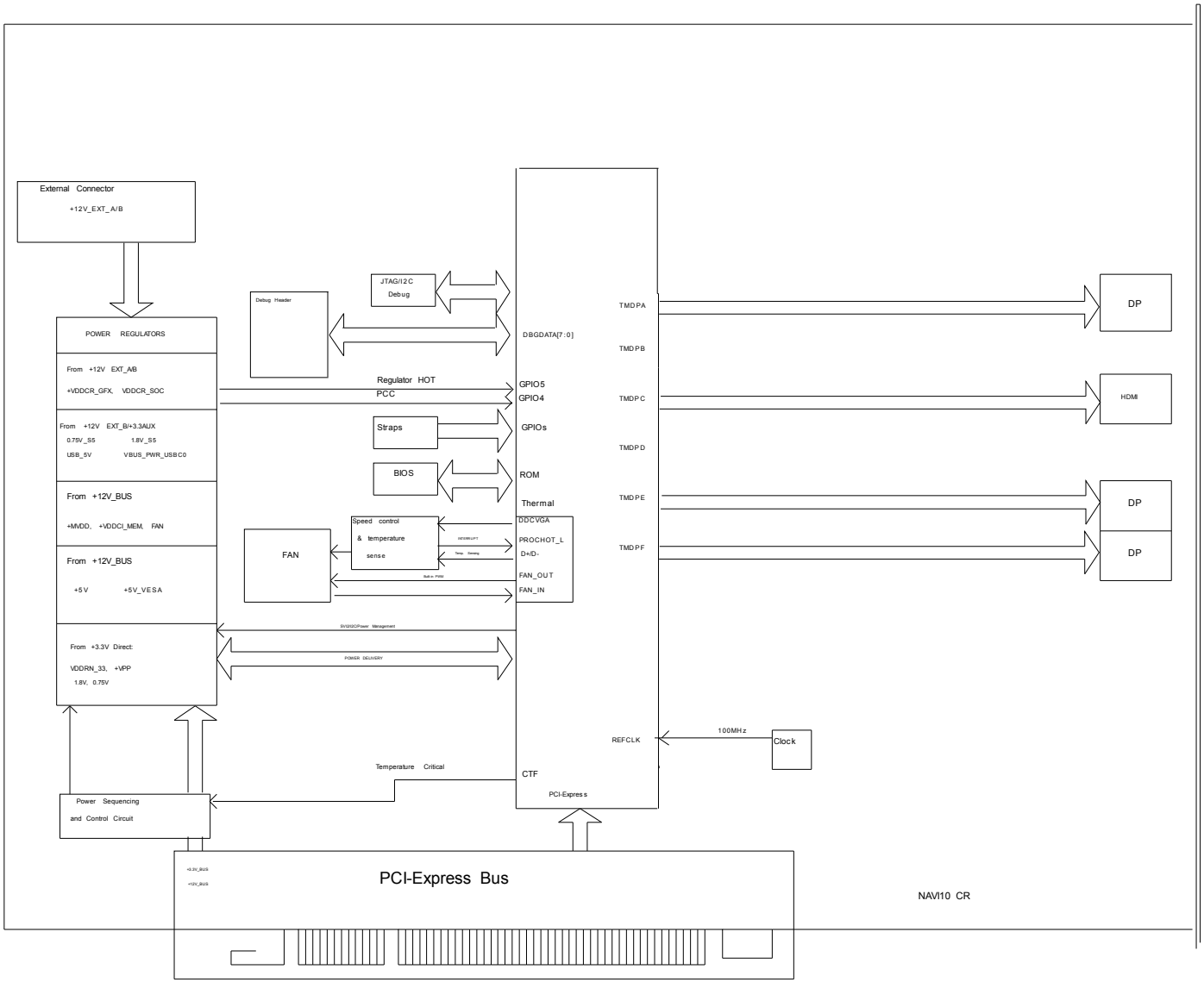


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|---|---|---|
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| Size: Custom | Document Description: BLOCK DIAGRAM | Rev: 5.0 |
| Date: 2019_11_07 | Sheet 34 of 35 | |

AMD

TITLE: NAVI10 G6X16mode DP DP HDMI DP

DOCUMENT NUMBER: 105_D199xx_00B

DATE: Fri Jun 21 03:44:58 2019

SHEET NUMBER: 35 OF 35

REV: 1.00

REVISION HISTORY

ENGINEER: Peak, Dong

NOTES: NOTE



AMD - PLATFORM HARDWARE ENG
No.669, HUANKE ROAD
SHANGHAI, CHINA 201203

| SCH Rev | PCB Rev | Date | REVISION DESCRIPTON |
|---|---|---|---|
| 1 | -00A | FEB 11 2019 | -00A schematics |
| 2 | -00B | JUN 21 2019 | ADD PULL HIGH ON THE PWRBRKB |
| | | | |
| | | | |

2019_11_07 GFX_MEM_SOC_VDDCI Co-Lay 302045 and Power PIN fix to 8+6 reverse type Only

2019_11_11 Add Fan_IN output back Page 32, Change Footprint con_dp_astron_r6890020_tab > con_tab , edgecon_pci_express_gen4_16 > edgecon_16 , Remove MT203, MT 211, MT208 Screw Hole

2019_11_14 add Cross Light point , Remove Page 2 TP detect point, Remove lightbar header, Remove CTF & J4100 debug Pin