

P2010

75W/100W GK107/GF108 128-BIT GDDR5 in x32/x16 MODE  
DVI-I-DL + DVI-D-DL/HDMI +mHDMI/DP


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A06 change Items:

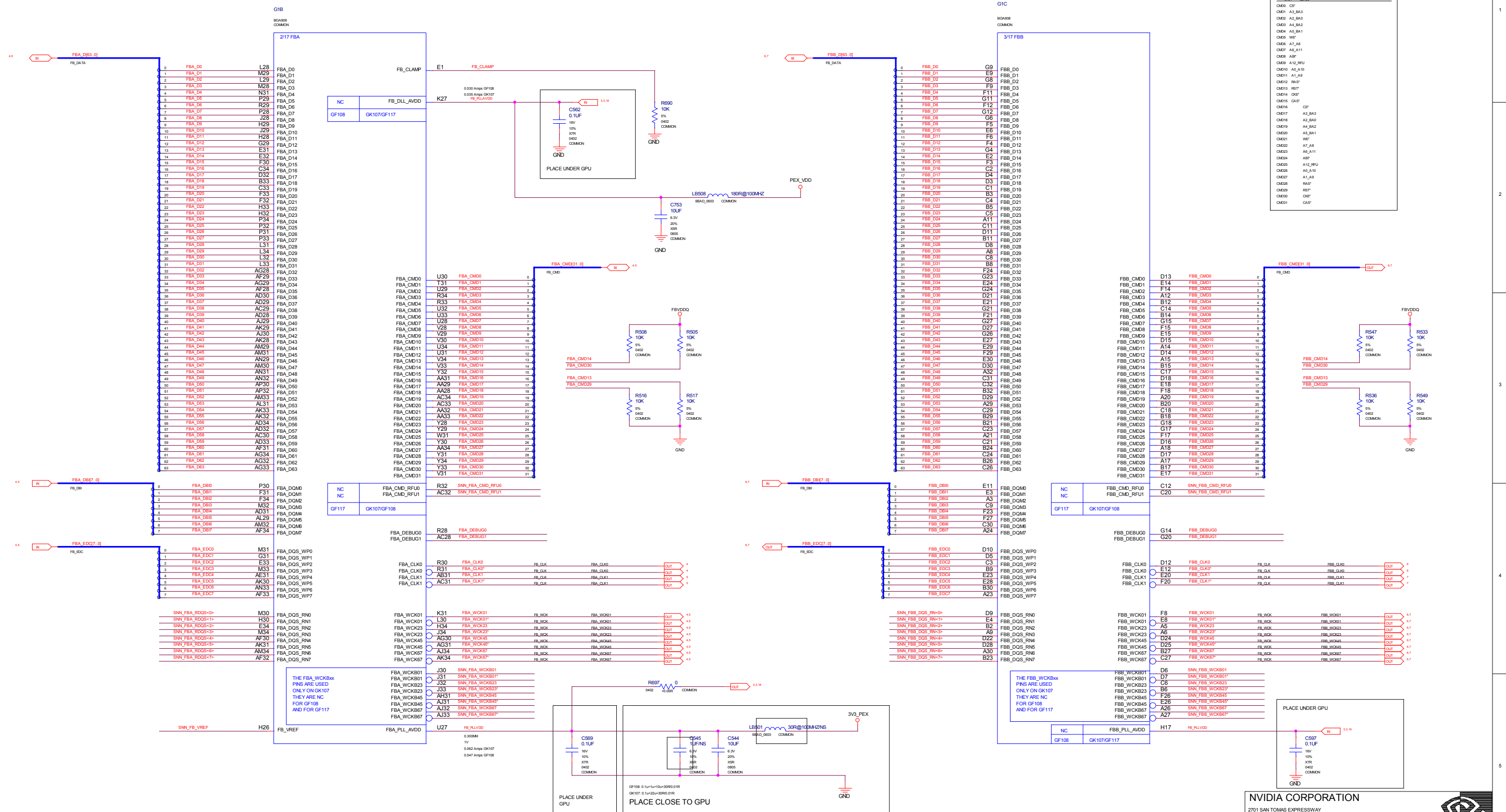
- 1) I2C 给中间的改为I2CB
- 2) 拨号开关往下移，不要突出PCB
- 3) 拨号开关标方向，左边1，右边2
- 4) 电源外接头只保留朝上的那个

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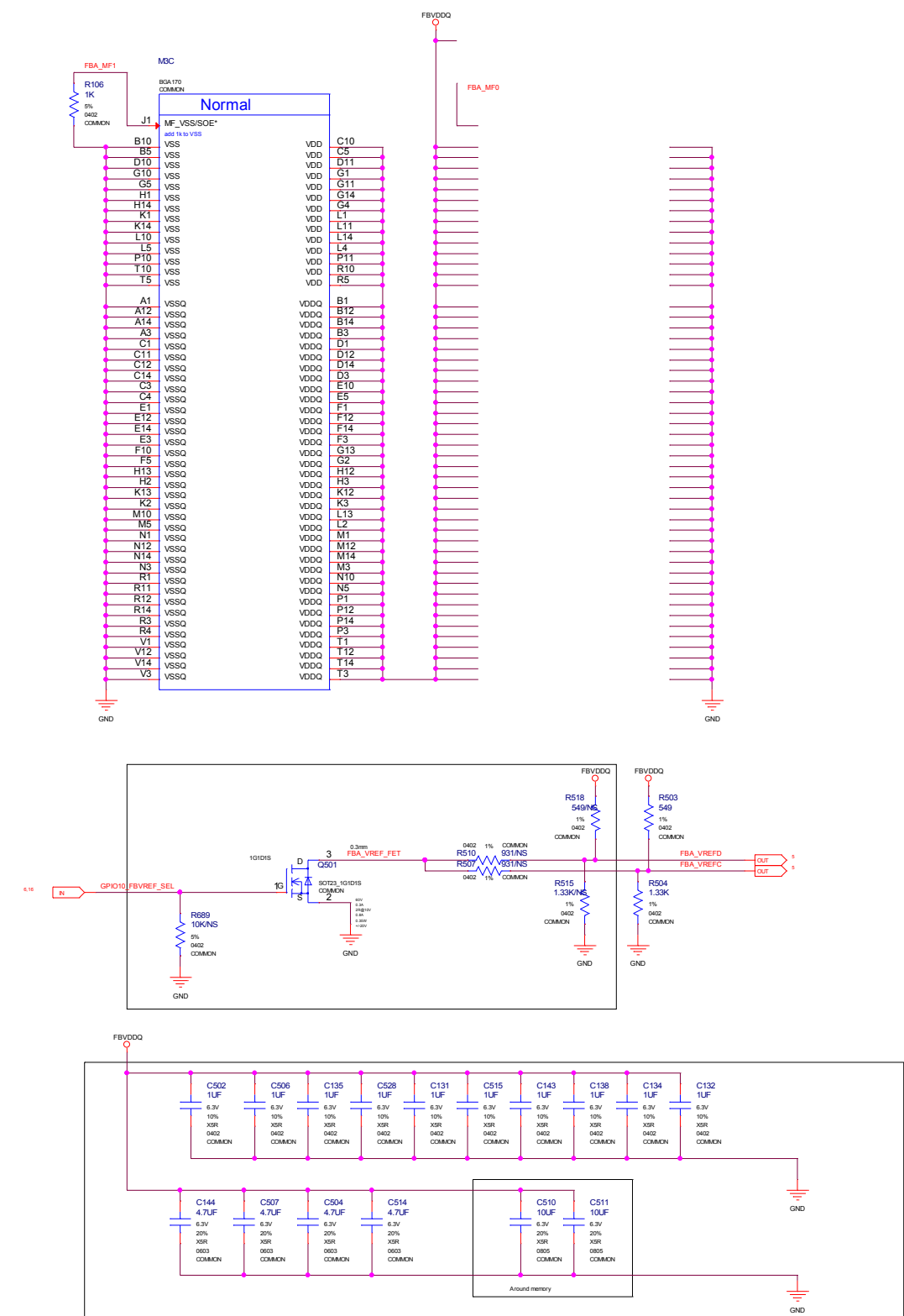
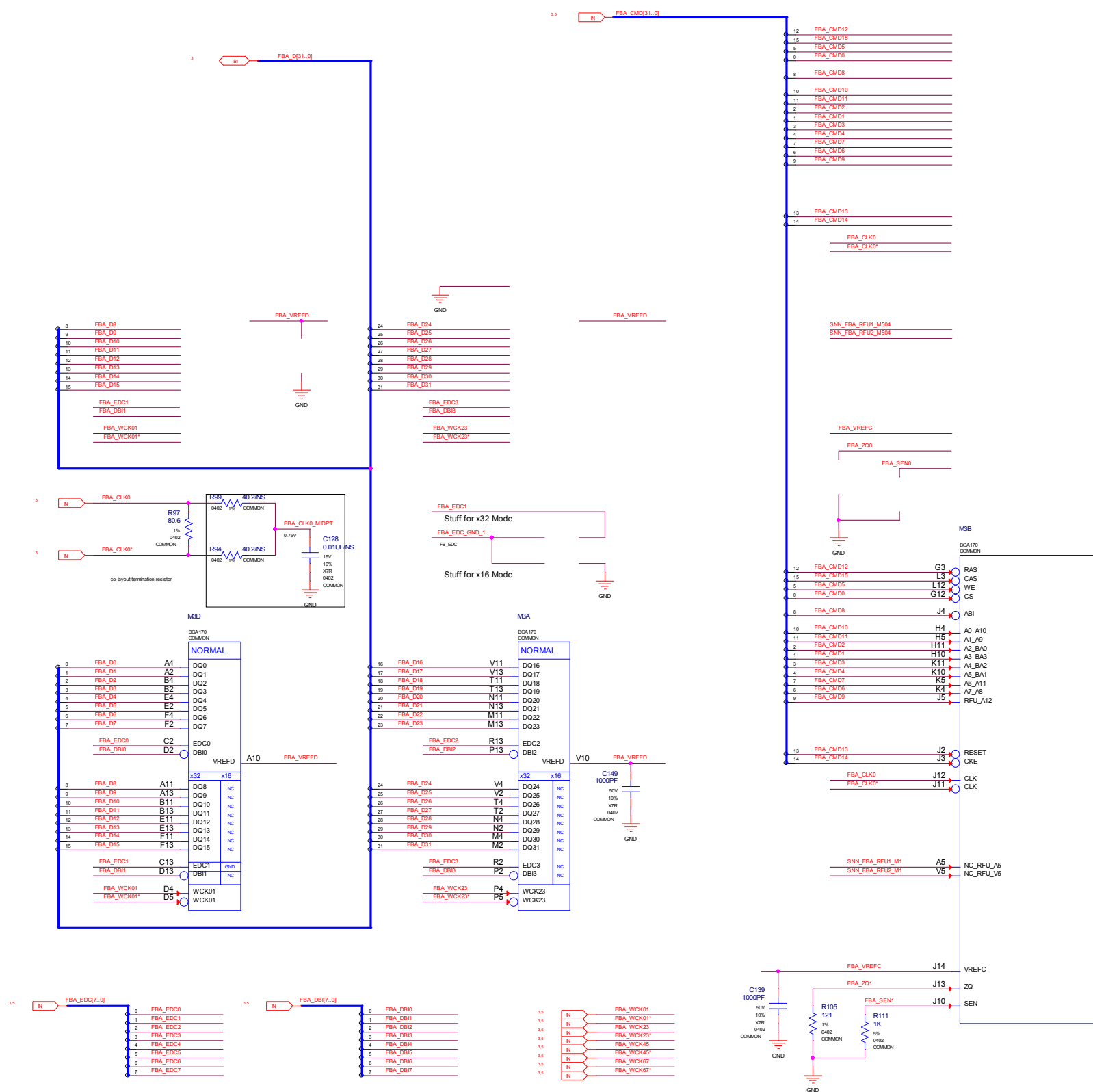
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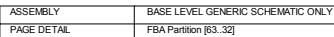


## GPU Frame Buffer Partition A/B



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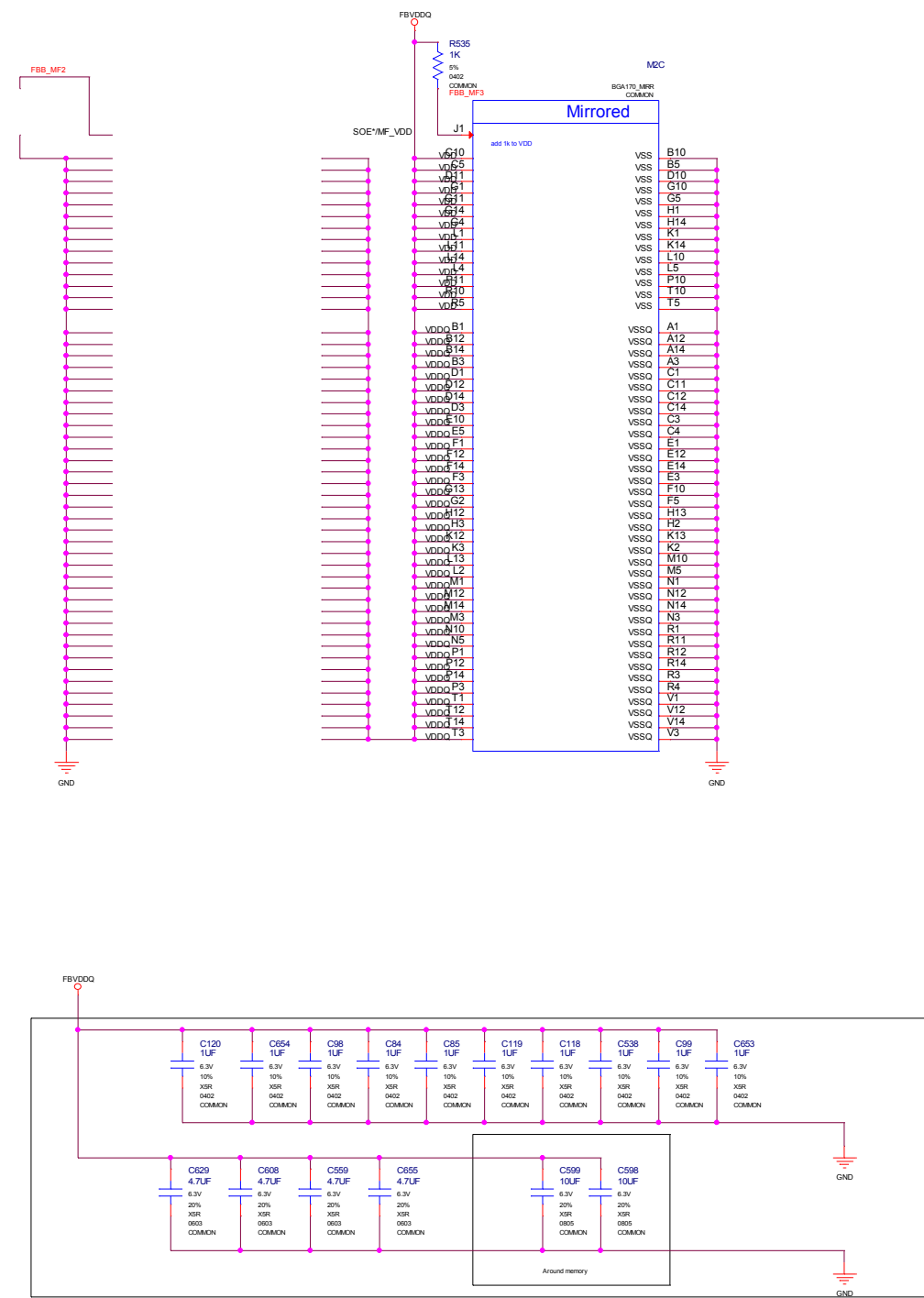




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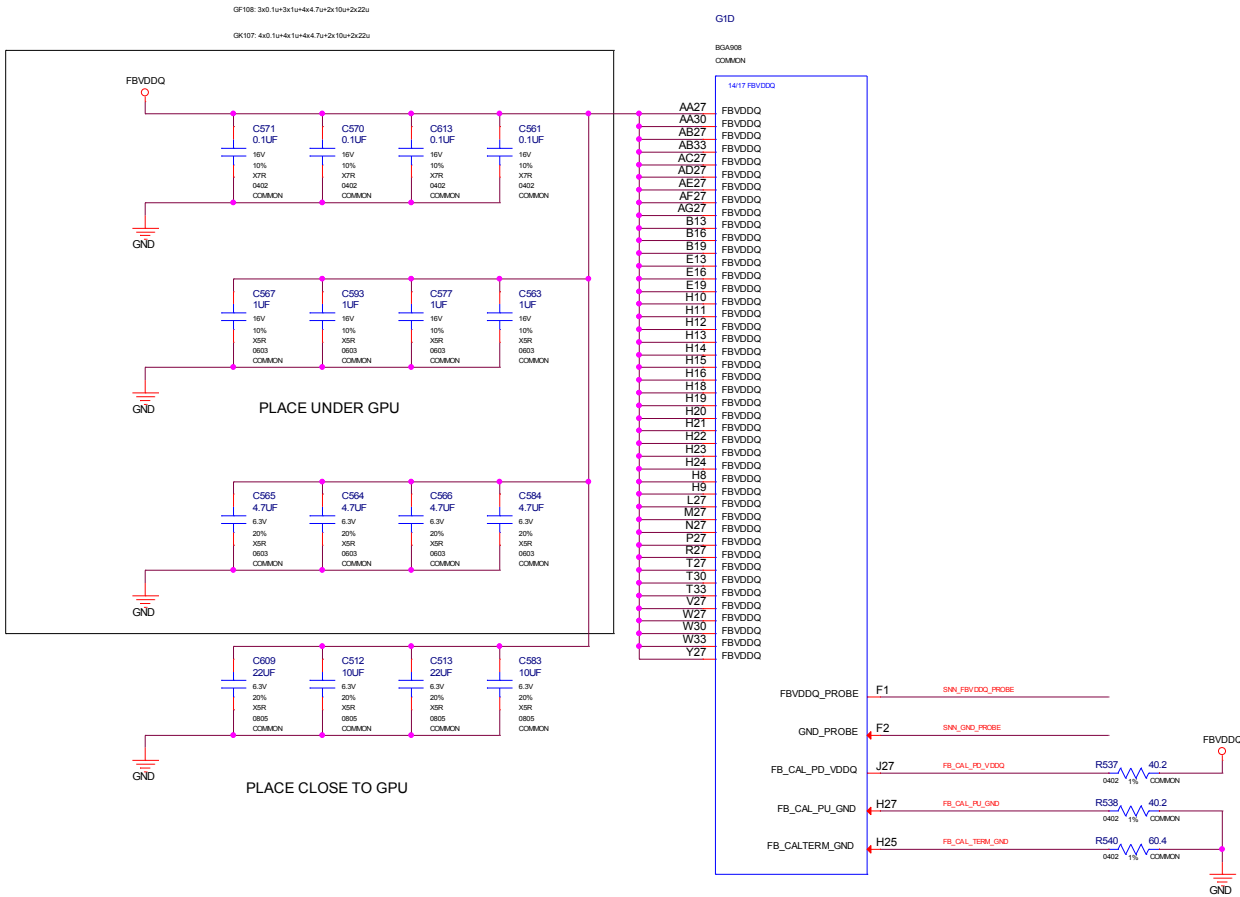




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| PAGE DETAIL | FBB Partition [63..32]            |



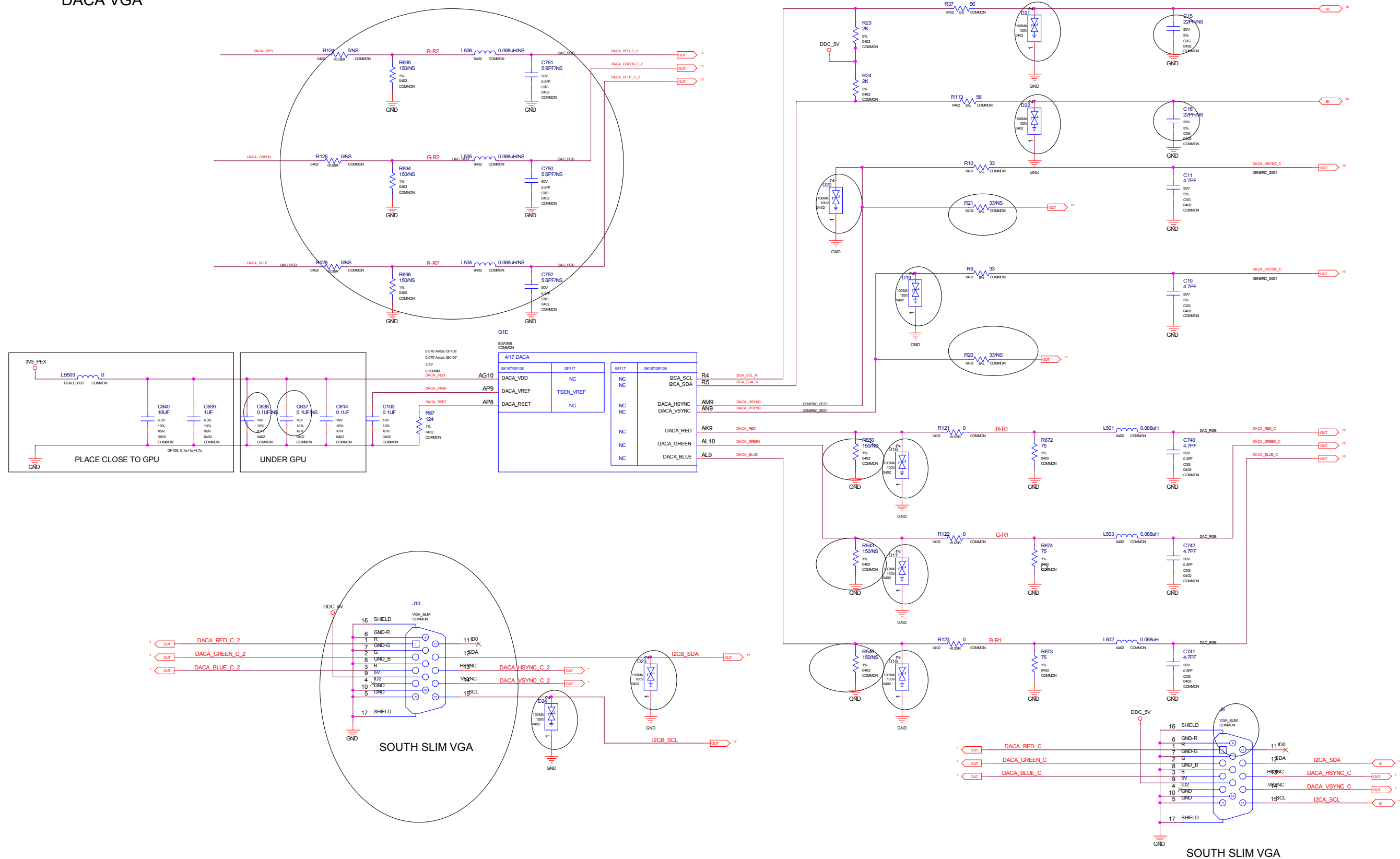
FB Decoupling



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## DACA VGA



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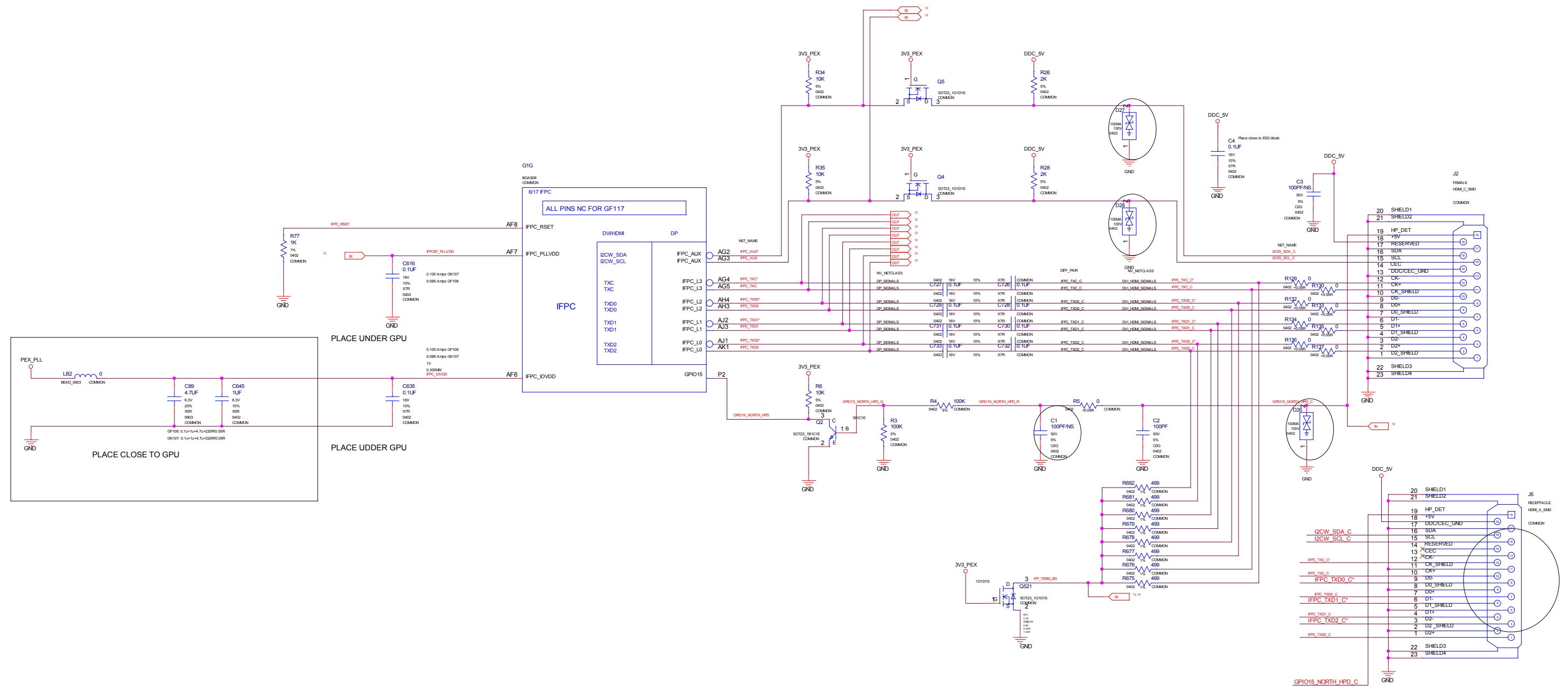
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## IFPC mHDMI



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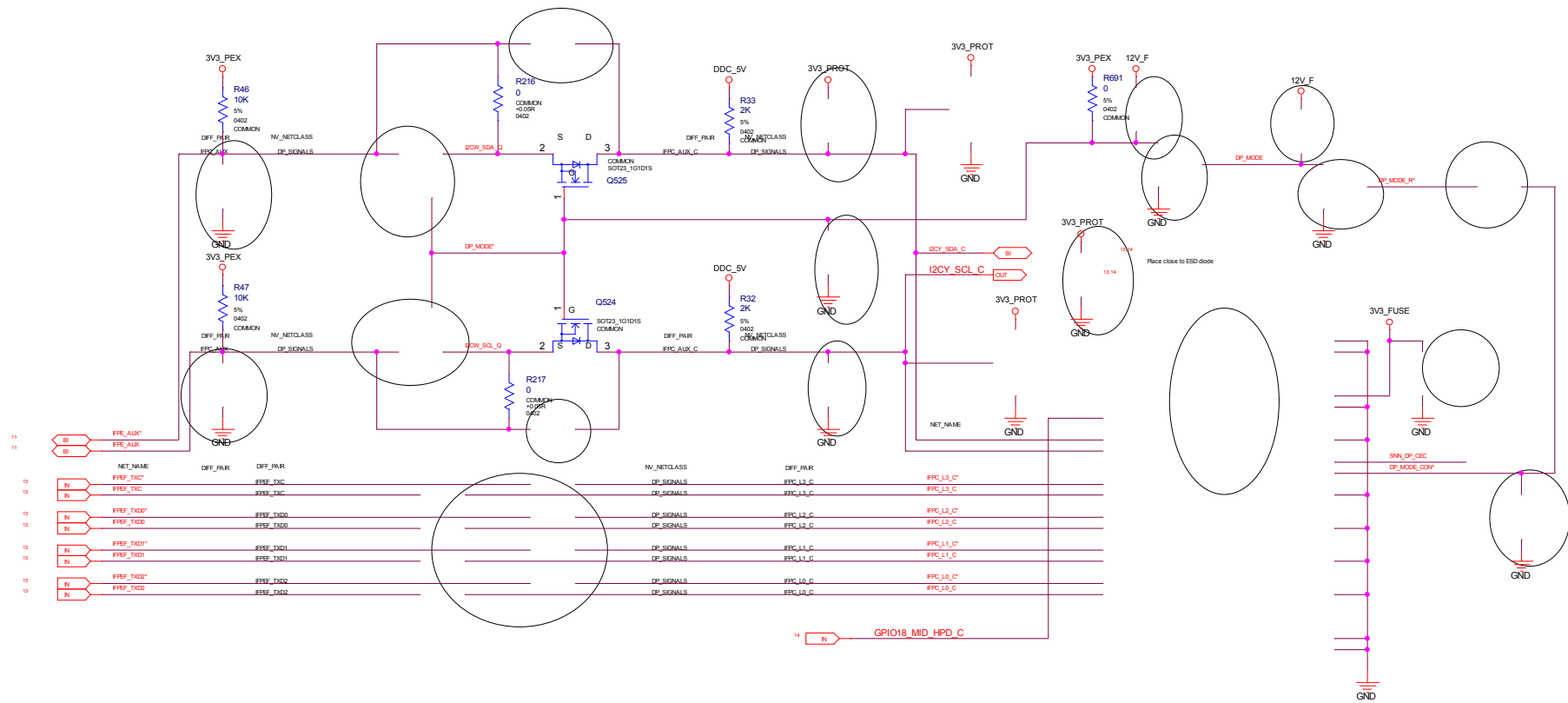
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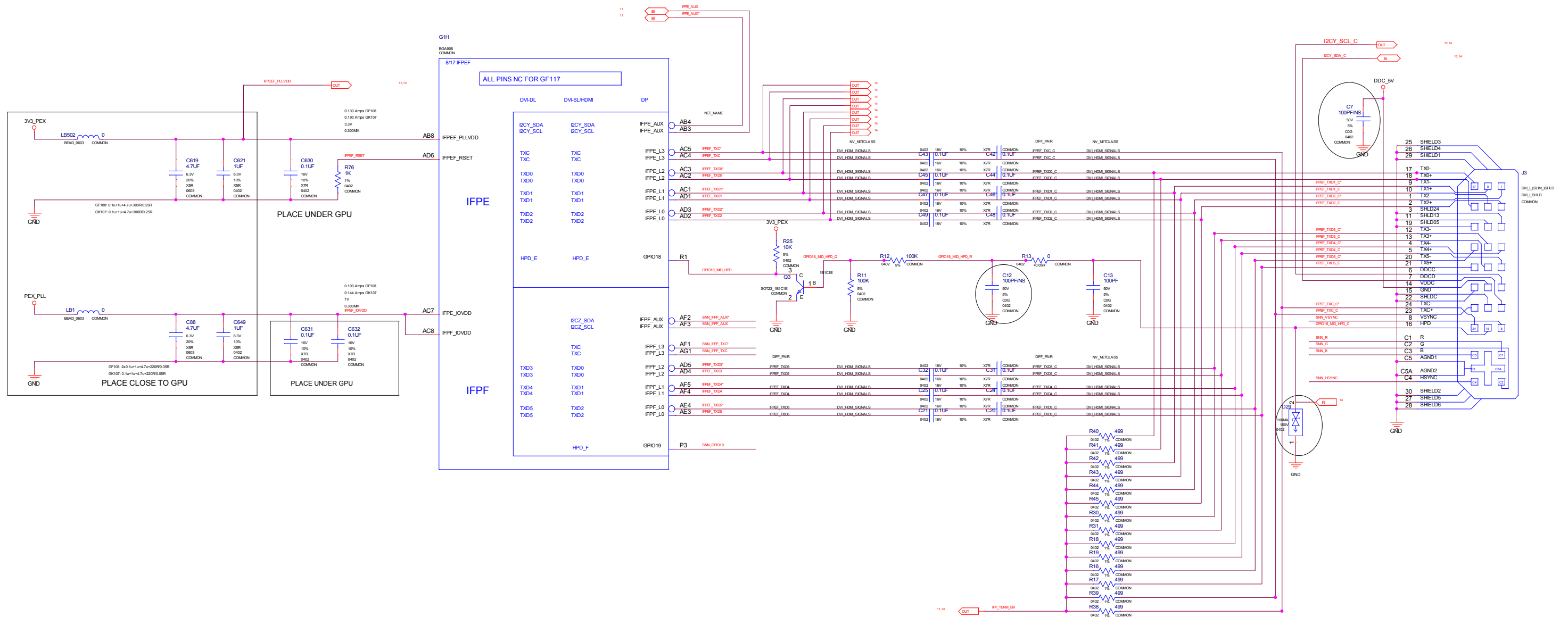


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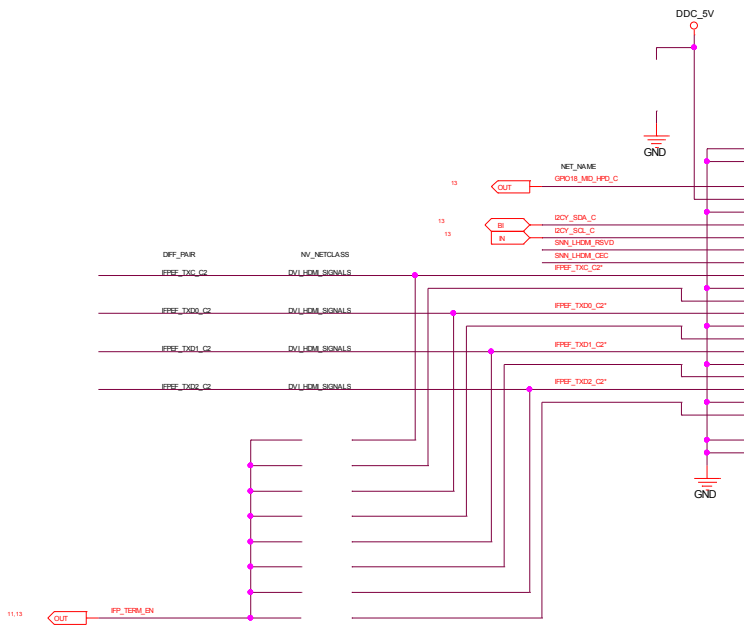
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IFPE Long HDMI

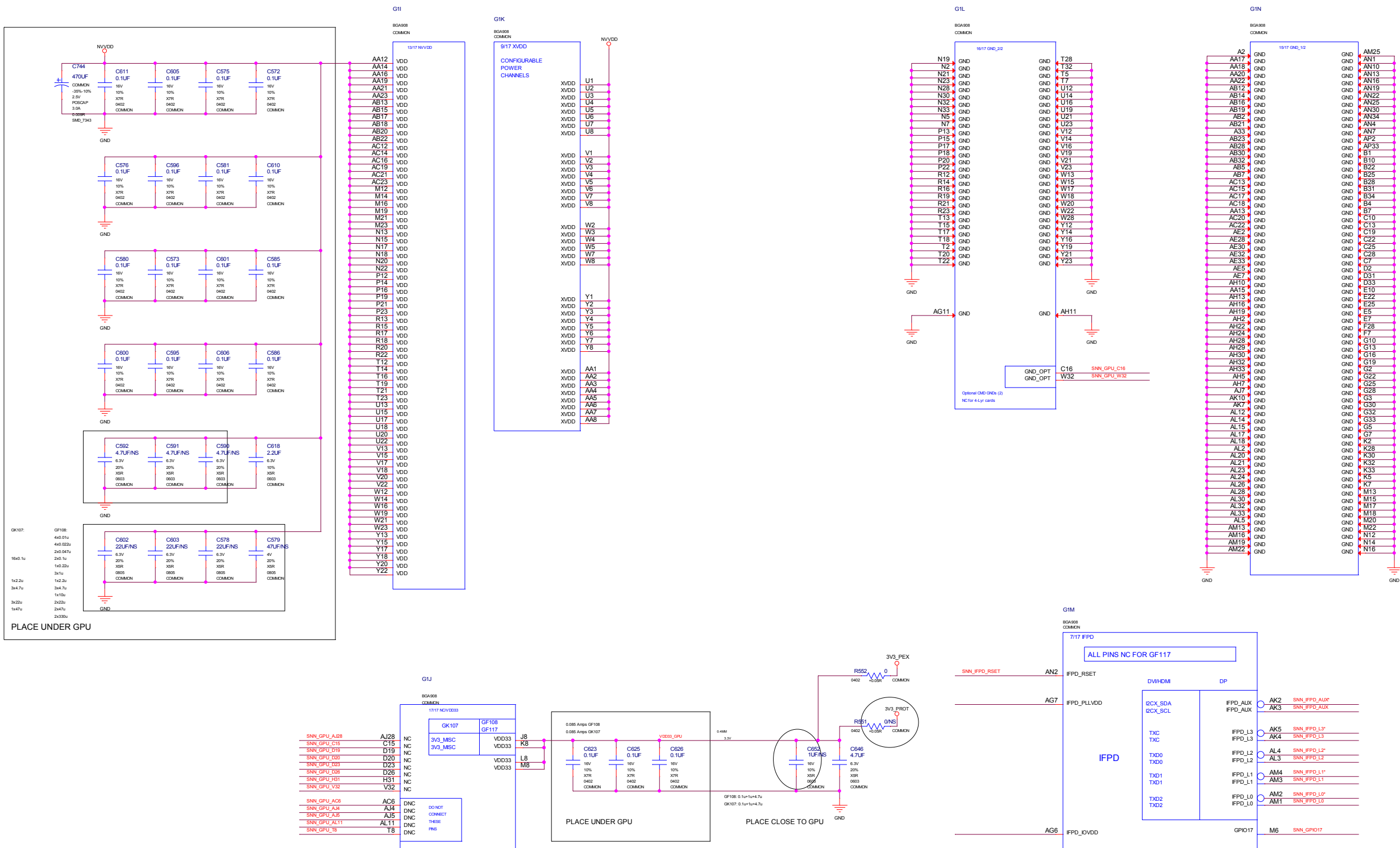


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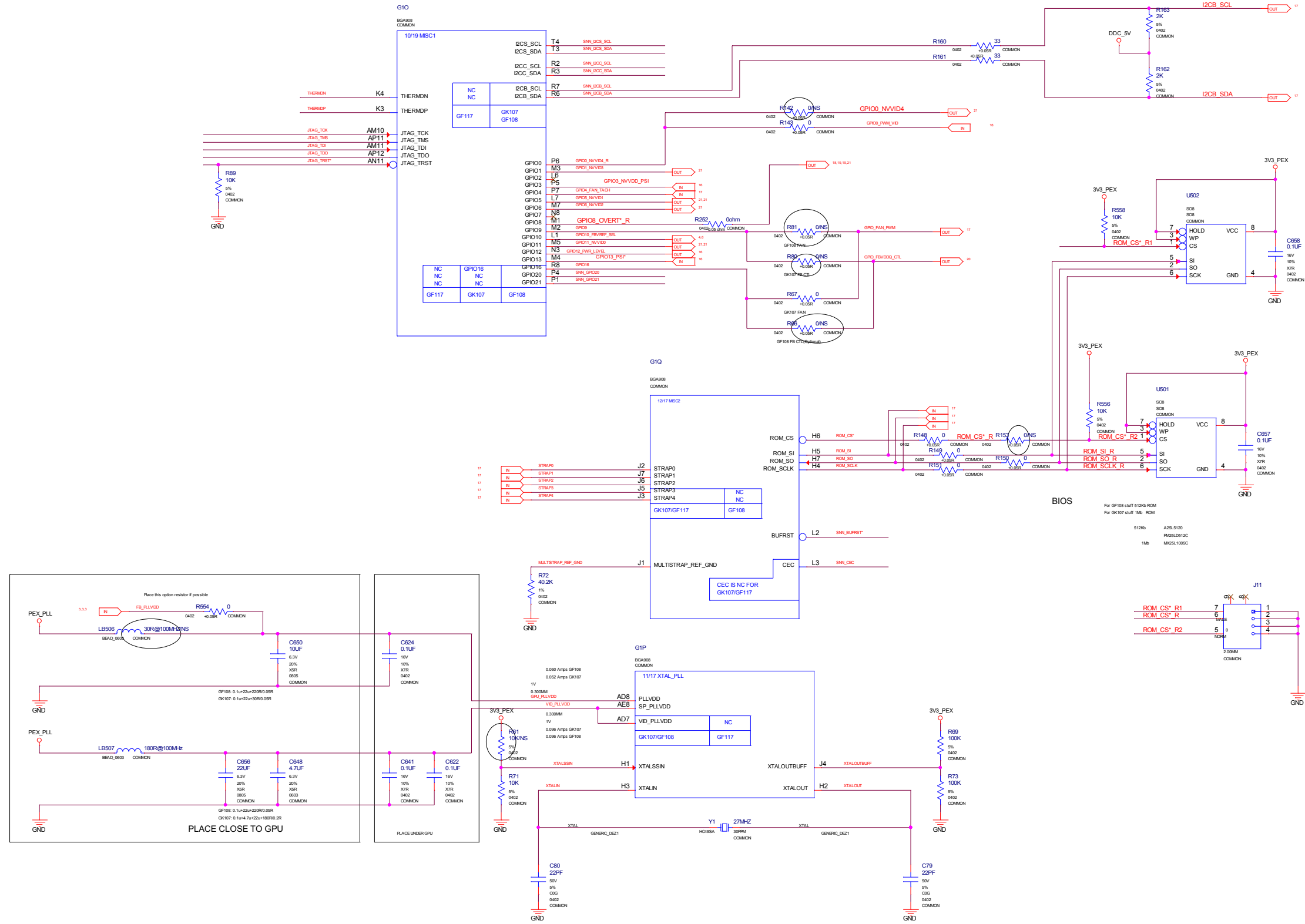


Core Decoupling, GPU\_VDD\_3V3

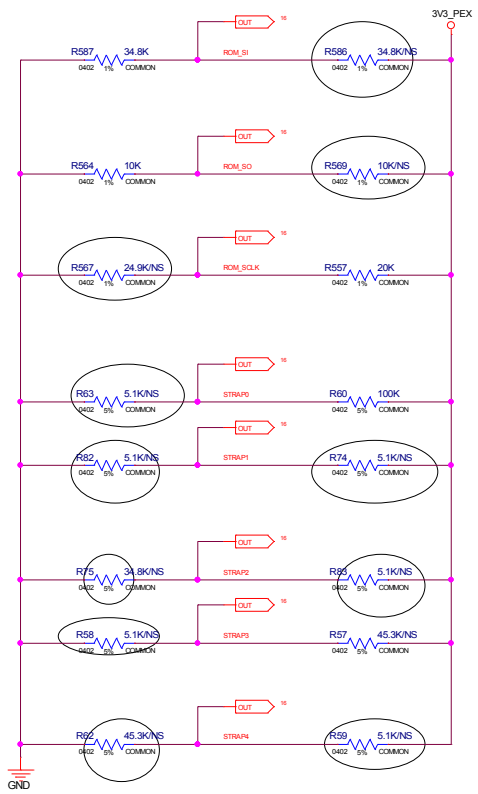
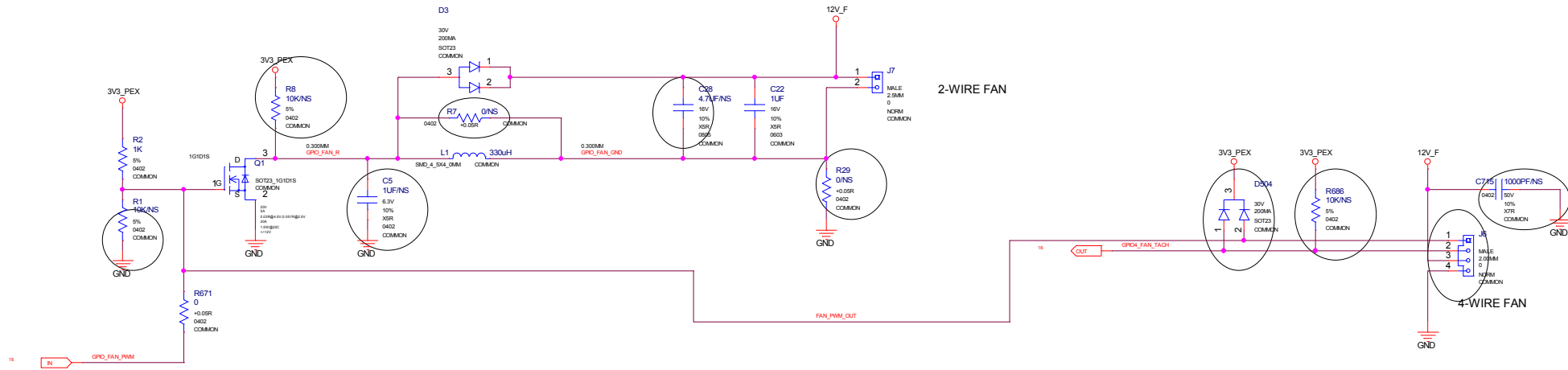




## Misc Interfaces



## Straps, Thermal, Mechanical



## GK107 Straps

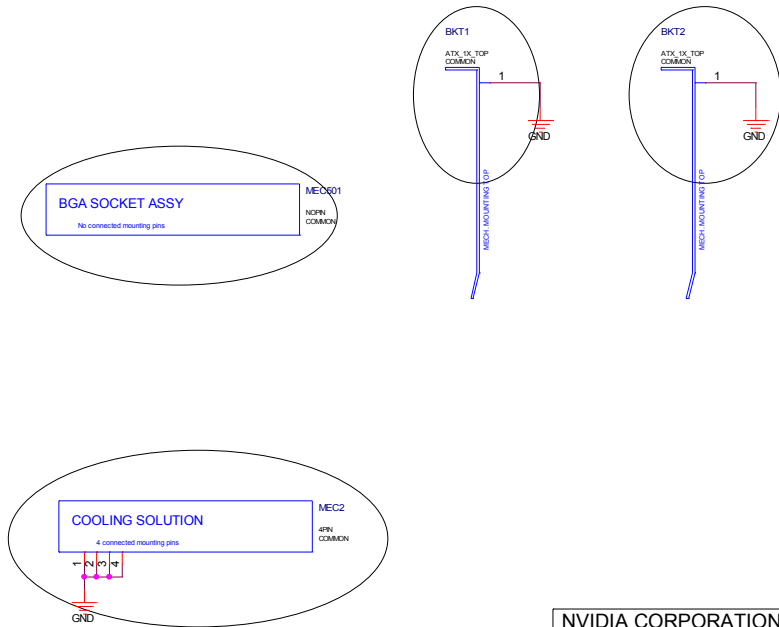
| Bit Signal |                       | Values |                       |      |                     |
|------------|-----------------------|--------|-----------------------|------|---------------------|
| 03:        | RAMCFG[2]             | 0000   | 64Mx16 128Mb          | 1000 | 64Mx16 64Mb         |
|            |                       | 0001   | 64Mx16 128Mb Micron   | 1001 | 64Mx16 64Mb Micron  |
| 02:        | RAMCFG[2]             | 0010   | 64Mx16 128Mb Hynix    | 1010 | 64Mx16 64Mb Hynix   |
|            |                       | 0011   | 64Mx16 128Mb Samsung  | 1011 | 64Mx16 64b Samsung  |
| 01:        | RAMCFG[1]             | 0100   | 128Mx16 128Mb         | 1100 | 128Mx16 64Mb        |
|            |                       | 0101   | 128Mx16 128Mb Micron  | 1101 | 128Mx16 64Mb Micron |
| 00:        | RAMCFG[0]             | 0110   | 128Mx16 128Mb Hynix   | 1110 | 128Mx16 64Mb Hynix  |
|            |                       | 0111   | 128Mx16 128Mb Samsung | 1111 | 128Mx16 64b Samsung |
| 03:        | FRQ1                  | 01     | 128MHz                |      |                     |
| 02:        | FRQ0                  |        |                       |      |                     |
| 01:        | SMU_ALT_ACDR          | 0      | DISABLED              | 1    | ENABLED             |
| 00:        | VGA_DEVICE            | 0      | DISABLED              | 1    | ENABLED             |
| 03:        | PCI_DEV_ID_EXT        | 0      | INT                   |      |                     |
| 02:        | SUB_VENDOR            | 0      | NO_BIOS               | 1    | BIOS                |
| 01:        | PCI_DEV_ID_EXT_BITS   | 0      | INT                   |      |                     |
| 00:        | PRX_PLU_EN_TERM100    | 0      | DISABLED              | 1    | ENABLED             |
| 03:        | USE[0]                | 0000   | INT                   |      |                     |
| 02:        | USE[0]                |        |                       |      |                     |
| 01:        | USE[0]                |        |                       |      |                     |
| 00:        | USE[0]                |        |                       |      |                     |
| 03:        | X3G0_PALCFG_LUT_ADDR0 | 0000   | DRKTOP_DEFAULT        | 1000 | DRKTOP_HTRHS        |
|            |                       | 0001   | MOBILE_DEFAULT        | 1001 | MOBILE_HTRHS_NHAMP  |
| 02:        | X3G0_PALCFG_LUT_ADDR0 | 0010   | MOBILE_NTRHS_LLAMP    | 1010 | MOBILE_HTRHS_LLAMP  |
|            |                       | 0011   | MOBILE_NTRHS_LLAMP    | 1011 | MOBILE_HTRHS_LLAMP  |
| 01:        | X3G0_PALCFG_LUT_ADDR1 | 0100   | MOBILE_NTRHS_HAMP     | 1100 | MOBILE_HTRHS_HAMP   |
|            |                       | 0101   | MOBILE_NTRHS_HAMP     | 1101 | MOBILE_HTRHS_HAMP   |
| 00:        | X3G0_PALCFG_LUT_ADDR0 | 0110   | MOBILE_NTRHS_HHAMP    | 1110 | MOBILE_HTRHS_HHAMP  |
|            |                       | 0111   | MOBILE_NTRHS_HHAMP    | 1111 | MOBILE_HTRHS_HHAMP  |
| 03:        | PCI_DEV[0]            | 0000   | GK107P_450-A.1        |      |                     |
| 02:        | PCI_DEV[0]            | 0110   | GK107P_450-A.1        |      |                     |
| 01:        | PCI_DEV[1]            |        |                       |      |                     |
| 00:        | PCI_DEV[0]            |        |                       |      |                     |
| 03:        | ISFR0_EXPOSED         | 0      | DISABLED              | 1    | ENABLED             |
| 02:        | ISFR0_EXPOSED         | 0      | DISABLED              | 1    | ENABLED             |
| 01:        | ISFR1_EXPOSED         | 0      | DISABLED              | 1    | ENABLED             |
| 00:        | ISFR0_EXPOSED         | 0      | DISABLED              | 1    | ENABLED             |
| 02:        | PCE_SPEED_CHANCE_C0B0 | 0      | DISABLED              | 1    | ENABLED             |
| 01:        | PCIEX_MAX_SPEED       | 0      | GEN1                  | 1    | GEN2                |
| 00:        | DP_AUX_VDDA_3V3       | 0      | USETVB                | 1    | USETV3              |

## GF108 Straps

| Bit Signal |                        | Values |                        |
|------------|------------------------|--------|------------------------|
| 03:        | RAMCF[3]               | 0000   | 64Mx16 128bit          |
|            |                        | 1000   | 64Mx16 64bit           |
| 02:        | RAMCF[2]               | 0011   | 64Mx16 128bit Micron   |
|            |                        | 1001   | 64Mx16 64bit Micron    |
| 01:        | RAMCF[1]               | 0010   | 64Mx16 128bit Hynix    |
|            |                        | 1010   | 64Mx16 64bit Hynix     |
| 00:        | RAMCF[0]               | 0100   | 128Mx16 128bit         |
|            |                        | 1000   | 128Mx16 64bit          |
|            |                        | 0110   | 128Mx16 128bit Micron  |
|            |                        | 1110   | 128Mx16 64bit Micron   |
|            |                        | 0101   | 128Mx16 128bit Hynix   |
|            |                        | 1101   | 128Mx16 64bit Hynix    |
|            |                        | 0111   | 128Mx16 128bit Samsung |
|            |                        | 1111   | 128Mx16 64bit Samsung  |
| 03:        | XC_L4_417              | 0      | DISABLED               |
|            |                        | 1      | ENABLED                |
| 02:        | FRQ[3]                 | 1      | 128MHz                 |
| 01:        | SMI_AL1_ADDR           | 0      | DISABLED               |
|            |                        | 1      | ENABLED                |
| 00:        | VGA_DEVICE             | 0      | DISABLED               |
|            |                        | 1      | ENABLED                |
| 03:        | PCI_DEVICE_EXT         | 0      | GP10B-460-A-1          |
| 02:        | SUB_VENDOR             | 0      | NO_BIOS                |
|            |                        | 1      | BIOS                   |
| 01:        | SLOT_CLK_CFG           | 0      | DISABLED               |
|            |                        | 1      | ENABLED                |
| 00:        | PEX_RL1_EN_TERM100     | 0      | DISABLED               |
|            |                        | 1      | ENABLED                |
| 03:        | USER[3]                | 0000   | INIT                   |
| 02:        | USER[2]                |        |                        |
| 01:        | USER[1]                |        |                        |
| 00:        | USER[0]                |        |                        |
| 03:        | 3XGO_PADCFG_LUT_ADR[3] | 0000   | DOKTOP_DEFAULT         |
|            |                        | 0001   | MOBILE_HYPER_LAMP      |
| 02:        | 3XGO_PADCFG_LUT_ADR[2] | 0010   | MOBILE_HYPER_LAMP      |
|            |                        | 0011   | MOBILE_HYPER_LAMP      |
| 01:        | 3XGO_PADCFG_LUT_ADR[1] | 0100   | MOBILE_HYPER_LAMP      |
|            |                        | 0101   | MOBILE_HYPER_LAMP      |
|            |                        | 0110   | MOBILE_HYPER_LAMP      |
| 00:        | 3XGO_PADCFG_LUT_ADR[0] | 0111   | MOBILE_HYPER_LAMP      |
|            |                        | 0110   | MOBILE_HYPER_LAMP      |
|            |                        | 0111   | MOBILE_HYPER_LAMP      |
|            |                        | 1110   | MOBILE_HYPER_LAMP      |
|            |                        | 1111   | MOBILE_HYPER_LAMP      |
| 03:        | PCI_DEVICE[3]          | 1      | GP10B-460-A-1          |
| 02:        | PCI_DEVICE[2]          |        |                        |
| 01:        | PCI_DEVICE[1]          |        |                        |
| 00:        | PCI_DEVICE[0]          |        |                        |

## Multilevel Straps

|      |              |      |              |
|------|--------------|------|--------------|
| 0000 | 5.1K to GND  | 1000 | 5.1K to VCC  |
| 0001 | 10K to GND   | 1001 | 10K to VCC   |
| 0010 | 15K to GND   | 1010 | 15K to VCC   |
| 0011 | 20K to GND   | 1011 | 20K to VCC   |
| 0100 | 24.9K to GND | 1100 | 24.9K to VCC |
| 0101 | 30.1K to GND | 1101 | 30.1K to VCC |
| 0110 | 34.8K to GND | 1110 | 34.8K to VCC |
| 0111 | 45.3K to GND | 1111 | 45.3K to VCC |



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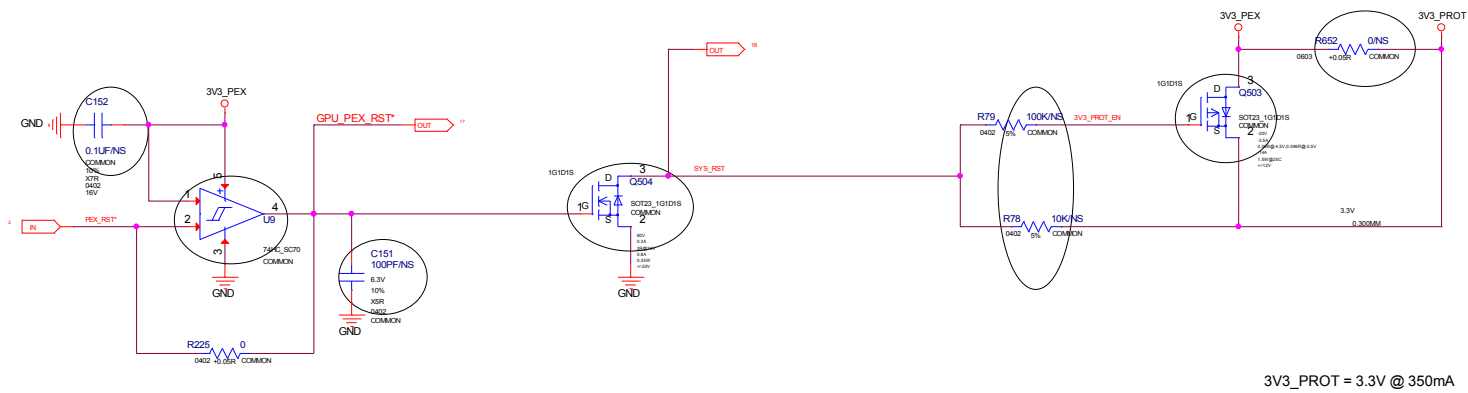
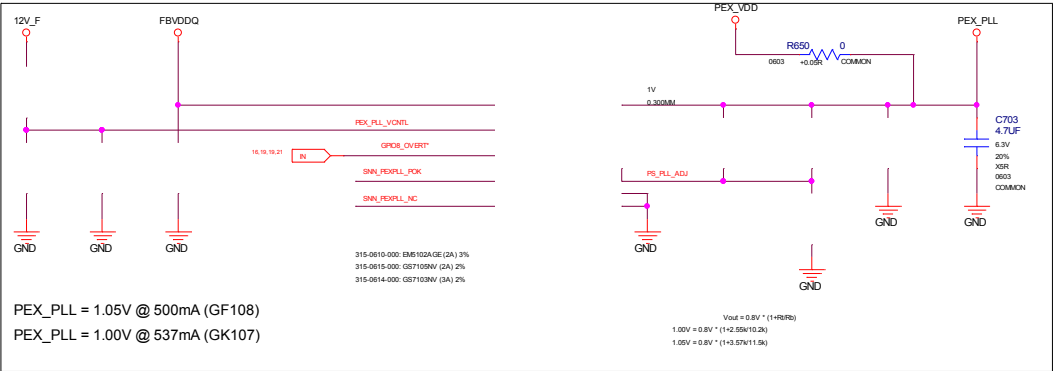
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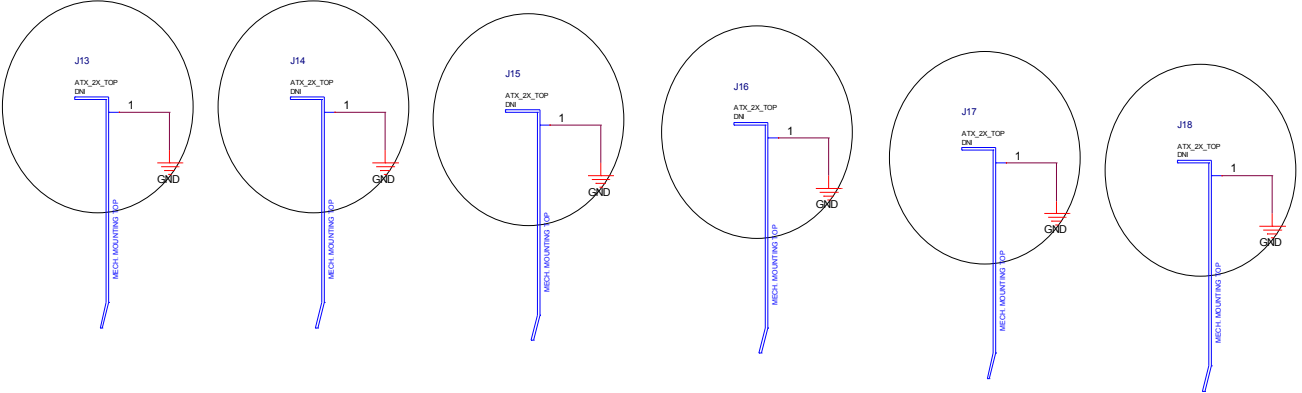
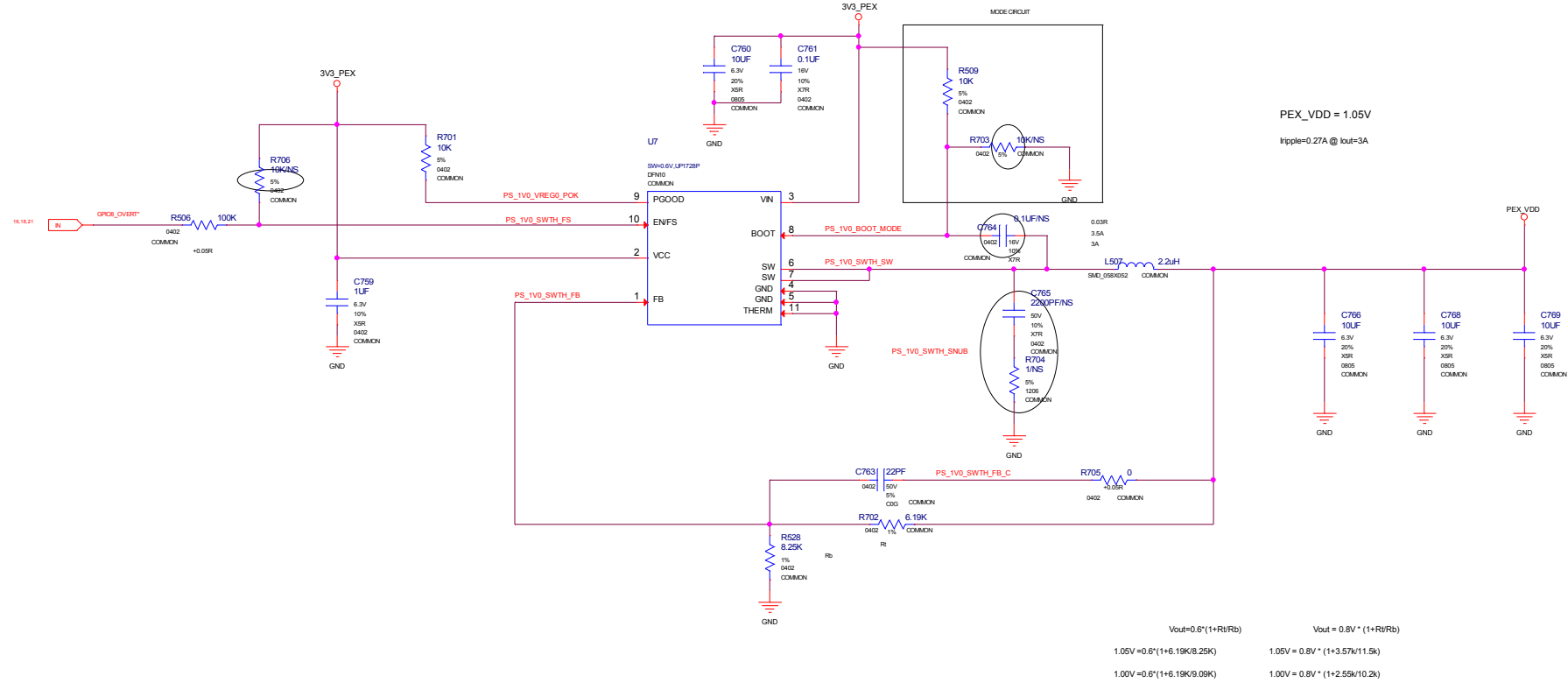
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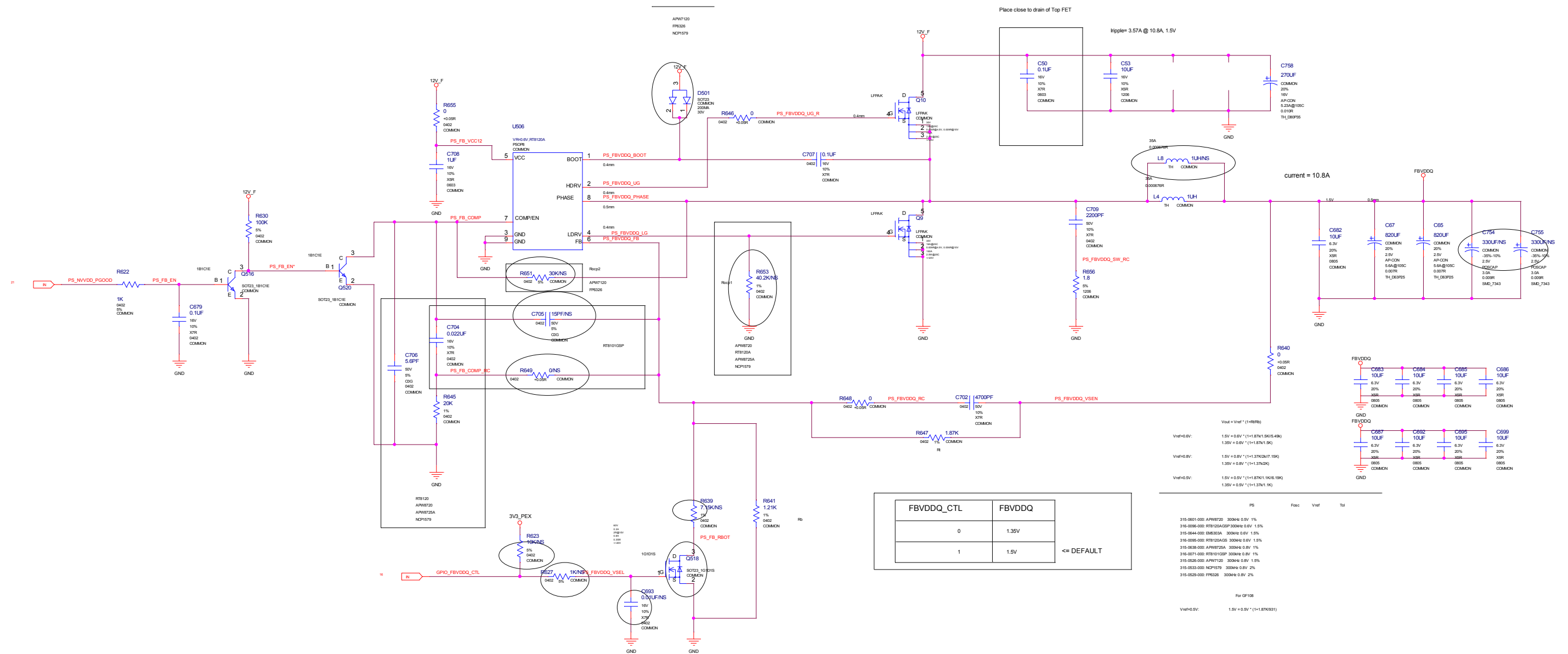
|             |                                   |
|-------------|-----------------------------------|
| ASSEMBLY    | BASE LEVEL GENERIC SCHEMATIC ONLY |
| PAGE DETAIL | Straps, Thermal, Mechanical       |



Power Supply II: PEX\_VDD



## FBVDDQ




| FBVDDQ_CTL | FBVDDQ |            |
|------------|--------|------------|
| 0          | 1.35V  |            |
| 1          | 1.5V   | <= DEFAULT |

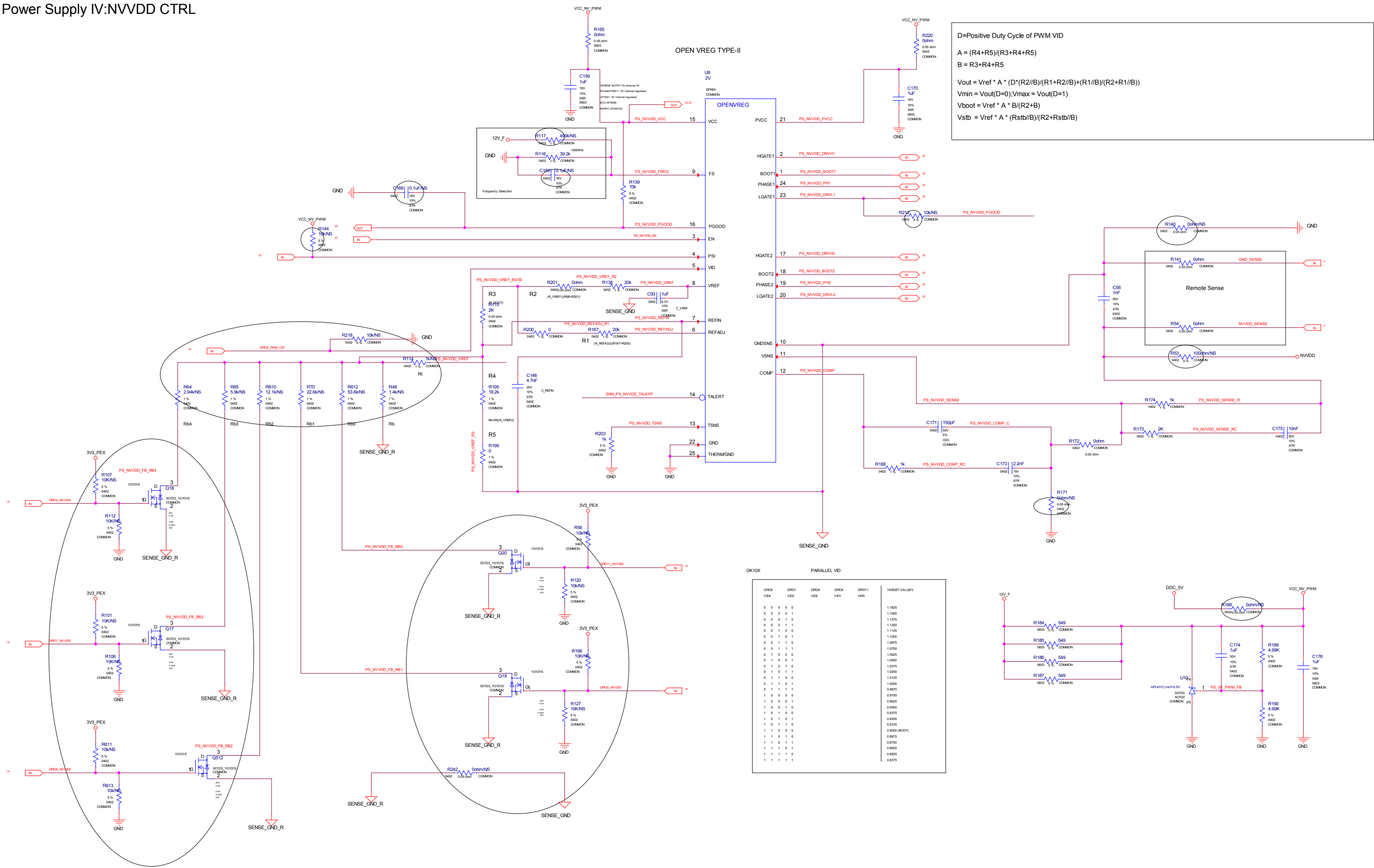
| Vout = Vref * (1+R1/R2) |                                   |
|-------------------------|-----------------------------------|
| Vref=0.5V:              | 1.5V = 0.5V * (1+187K1/5K0K49K)   |
|                         | 1.35V = 0.5V * (1+187K1/5K0K49K)  |
| Vref=0.7V:              | 1.5V = 0.7V * (1+137K2/67.15K)    |
|                         | 1.35V = 0.7V * (1+137K2/67.15K)   |
| Vref=0.5V:              | 1.5V = 0.5V * (1+187K1/10K6159K)  |
|                         | 1.35V = 0.5V * (1+187K1/10K6159K) |
| PS                      |                                   |
| 315-0001-000: AFW8720   | 300K@ 0.5V 1%                     |
| 315-0004-000: M8630A    | 300K@ 0.5V 1.5%                   |
| 315-0095-000: RT12A0420 | 300K@ 0.5V 1.5%                   |
| 315-0038-000: AFW725A   | 300K@ 0.5V 1%                     |
| 315-0071-000: RT12A1GSP | 300K@ 0.5V 1%                     |
| 315-0026-000: AFW7120   | 300K@ 0.5V 1.5%                   |
| 315-0033-000: NCP1970   | 300K@ 0.5V 2%                     |
| 315-0029-000: PFE326    | 300K@ 0.5V 2%                     |
| For CF108               |                                   |
| Vref=0.5V:              | 1.5V = 0.5V * (1+187K9/6K1)       |

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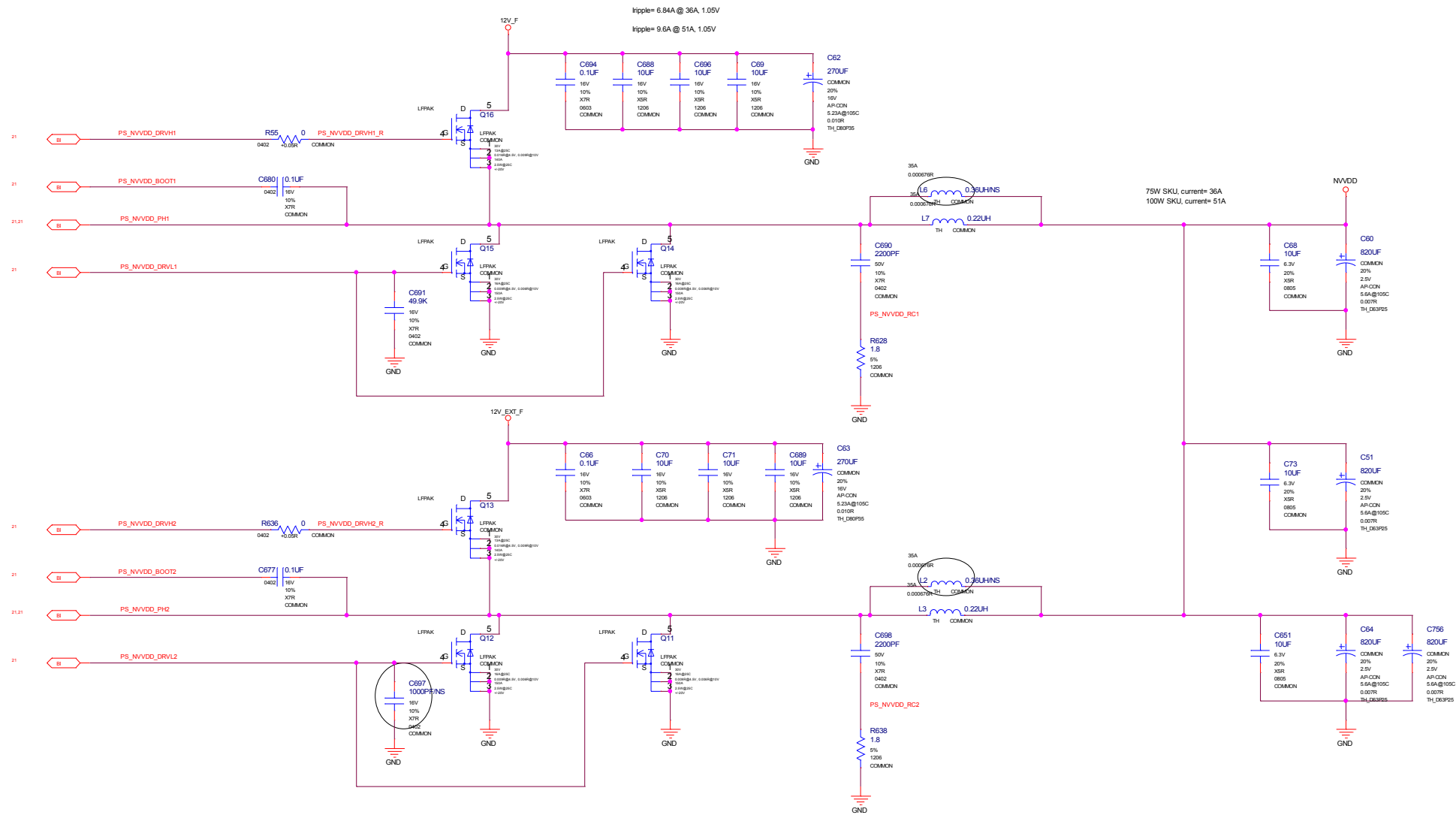
|             |                                   |
|-------------|-----------------------------------|
| ASSEMBLY    | BASE LEVEL GENERIC SCHEMATIC ONLY |
| PAGE DETAIL | FBVDDQ                            |

|  |           |   |             |
|--|-----------|---|-------------|
| <b>NVIDIA CORPORATION</b><br>2701 SAN TOMAS EXPRESSWAY<br>SANTA CLARA, CA 95050, USA |           |  |             |
| <b>Nv_PN</b>   |           | <b>600-12010-BASE-000</b>   |             |
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Power Supply IV:NVVDD CTRL



NVDD MOS



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|             |                                   |
|-------------|-----------------------------------|
| ASSEMBLY    | BASE LEVEL GENERIC SCHEMATIC ONLY |
| PAGE DETAIL | NVDD MOS                          |

|                            |                    |      |             |
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| SANTA CLARA, CA 95050, USA |                    |      |             |
| NV_PN                      | 600-12010-BASE-000 |      |             |
| PCB REV                    | P2010-A00          | PAGE | 22 OF 23    |
| BOM REV                    | A                  | DATE | 14-JUN-2011 |



## 12V EXT / 12V PEX Power Select Circuit

