

V805-10

P682 DDR2

PCI-EXPRESSx16 DL-DVI VGA HDMI

Page 1: P681-A01 OVERVIEW

Page 2: PCI-EXPRESS INTERFACE

Page 3: PARTITION A FRAME BUFFER INTERFACE

Page 4: PARTITION A MEMORIES

Page 5: FBA DECOUPLING CAPS & NVVDD DECOUPLING CAPS

Page 6: PARTITION C FRAME BUFFER INTERFACE

Page 7: PARTITION C MEMORIES

Page 8: FBC DECOUPLING CAPS

Page 9: DACA (SOUTH DVI-I)

Page 10: DACB (MID VGA)

Page 11: IFP AB (SOUTH DVI-I)

Page 12: IFP C (NORTH HDMI)

Page 13: IFP D (UNUSED)

Page 14: IFP EF (UNUSED)

Page 15: MIOA & MIOB

Page 16: XTAL, MECHANICALS, THERMALS

Page 17: EXTERNAL THERMAL SENSOR, FAN CONTROL, GPIO, JTAG

Page 18: BIOS ROM, HDCP ROM, STRAPPING OPTIONS

Page 19: LINEAR POWER SUPPLIES

Page 20: FBVDDQ/PEXVDD POWER SUPPLY

Page 21: NVVDD POWER SUPPLY

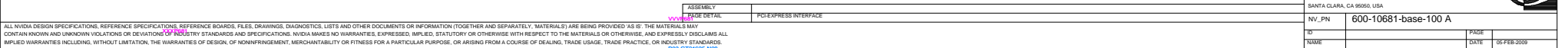
- 07/30
01. Create V805-0A base on MS-V804-0A change to DDR2 Memory
02. DDR2 Memory schematic copy from MS-V202-0A
03. Reserve GPIO[5:6] NVVDD switch · NVVDD state = 0.9V(00) · 1V(10) · 1.0625V(11)
04. remove JTAG
05. remove HDCP ROM
06. remove FAN control · for 12V full speed
07. remove DAC EMI filter & ESD Diode & remove pi type left side cap
08. modify 5V circuit to TO-252 package
09. remove PWM NVVDD OCSET · Chage 10Kohm parallel low-side MOSFET VGS
10. remove R576 net IFP\_PLLVDD change to 3V3
11. decrease caps
12. modify NVVDD & FBVDD PWM compensation value
13. MIOA\_VDDQ net to GND · MIOA\_CLKIN net to NC
14. del PEX\_PLLVDD SUPPLY circuit
15. add NVVDD & FBVDD 12V input SMD choke overlap 0805 / 0 ohm
16. NVVDD & FBVDD 12V input DIP cap change to 3 pin
17. overlap NVVDD & FBVDD output choke

- 05/07
- Page 01 1.Remove C690,C70 47uF
- Page 10 1.Remove J1 D-Sub
- Page 11 1.Remove R16,Q2
- Page 12 1.Remove R1,Q1
- Page 16 1.Change Crystal Footprint to 2-PIN SMD
- 2.Remove C71 47uF
- 05/08
- Page 17 1.Remove Thermal Sensor Circuit
- Page 18 1.Remove U2,C54,R31,R30,D16 INFOROM circuit
- Page 19 1.Remove 3V3 to 1.8V circuit
- 2.Change 5V REGULATOR Circuit
- Page 20 1.Change L8 Footprint to 1.6uH
- 2.Change Footprint to multi cap for EL 1500uF
- Page 21 1.Change NVVDD to UP6161
- 2.Change L12 footprint to 1.2uH
- 05/10
- Page 05 1. Remove Decoupling for EMI cap
- Page 20 1. C84 change Footprint to multi cap
- 05/11
- Page 21 1.Add C39 270uF
- 2.Add R922,R924 for APW7068 OCSET
- Page 16 1.Add XTALIN R566 Resister
- Add XTALOUT R573 Resister
- Page 02 1.Change C51 to 0805 1UF and ADD C54 0805 1UF
- Page 03 1.C642,C666,C633 change to .01UF
- Page 05 1.Remove C516,C525,C549,C556,C541,C512
- Remove C513,C546,C540,C528,C547,C507
- Remove C544,C545,C520,C523,C532,C508
- Remove C535,C526,C543,C553,C537,C88
- Page 08 1.Remove C566,C567,C576,C578,C82,C564
- Remove C619,C592,C586,C585,C622,C574
- Remove C705,C706,C680,C729,C691,C683
- Remove C742,C738,C731,C725,C743,C728
- Page 20 1.Remove C86,C562,C563,C87

- 05/12
- Page 17 1.Remove 4-PIN FAN Circuit
- Page 12 1.Change Q509 to Q513,Q514 SOT23 footprint
- Page 16 1.Change FAN Screw hole
- Page 20 1.Add C102 820uF
- 05/14
- Page 21 1.Remove D94 scottky diode
- 05/19
- Page 11 1.Add EMI bridge
- Page 12 2.Add EMI bridge
- 05/21
- Page 03 1.Add RP24 termination resister
- Page 06 2.Add RP23 termination resister
- 05/26
- SWAP CMD
- Page 03/06 RP5.1 · RP5.2 FBC\_CMD10 · RP5.3 · RP5.4 FBC\_CMD22
- RP4.1 · RP4.2 FBC\_CMD18 · RP4.3 · RP4.4 FBC\_CMD7
- RP24.1, RP24.2 FBA\_CMD30, RP24.3, RP24.4 FBA\_CMD7
- RP20.1, RP20.2 FBA\_CMD14, RP20.3, RP20.4 FBA\_CMD18
- RP14.1, RP14.2 FBA\_CMD1, RP14.3, RP14.4 FBA\_CMD20
- RP12.3, RP12.4 FBA\_CMD29
- 05/27
- Page 05 1. Add Decoupling for EMI cap C80,C524,C517,C102

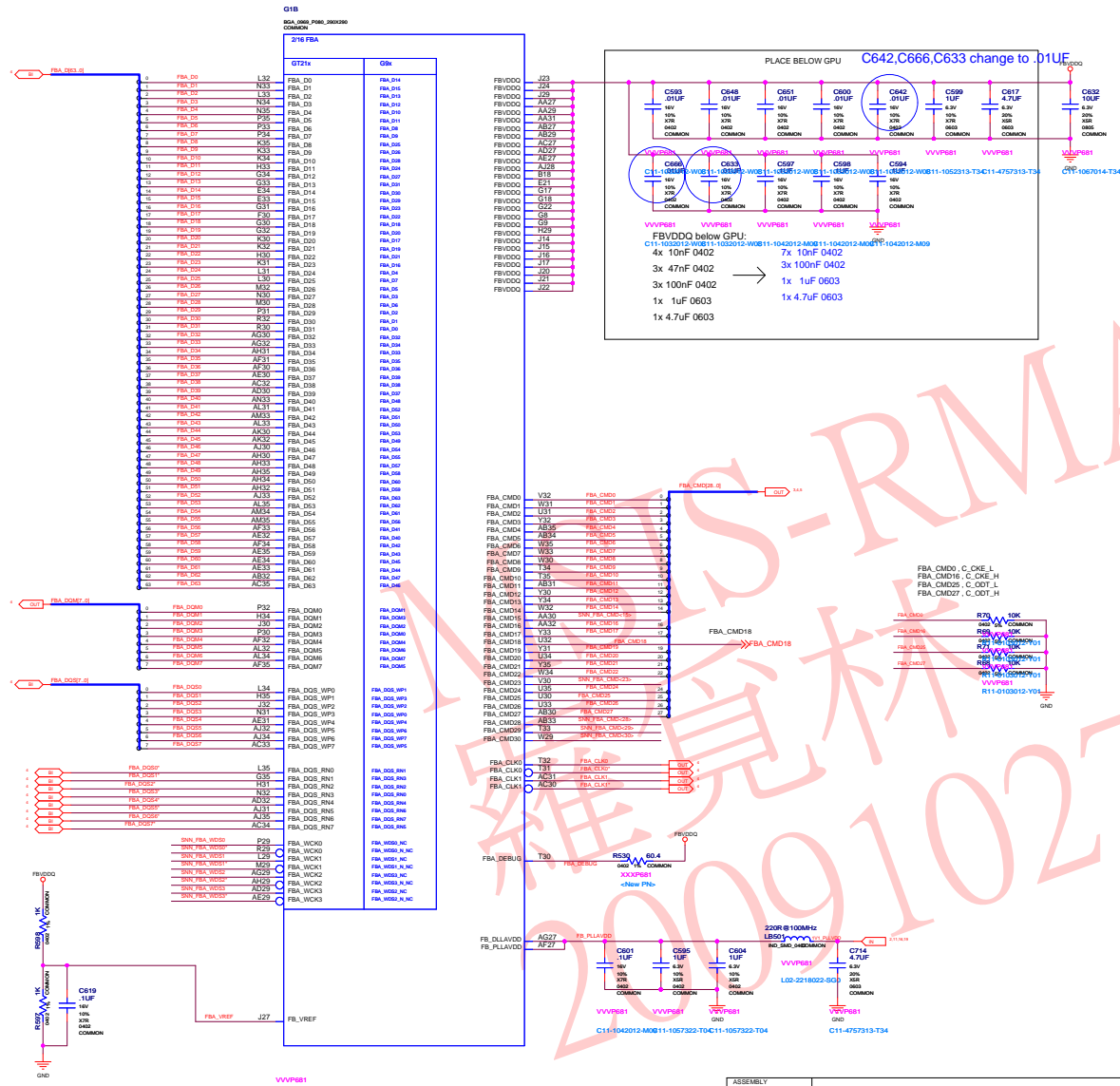
| REV | VARIANT     | NPVN               | ASSEMBLY   |
|-----|-------------|--------------------|--|
| B   | BASE        | 600-10681-0000-100 | BASE LEVEL GENERIC SCHEMATIC ONLY COMMON & NO STUFF ASSEMBLY NOTES AND BOM NOT FINAL |
| 1   | SKU001      | 600-10681-0001-100 | GT215-300 800/1500MHz 1024MB 64Mx16 BGA100 900MHz DDR3 DVI-VGA+HDMI                  |
| 2   | SKU002      | 600-10681-0002-100 | GT215-300 800/1500MHz 1024MB 64Mx16 BGA100 1000MHz DDR3 DVI-VGA+HDMI                 |
| 3   | SKU0011     | 600P0681-0011-100  | GT215-300 800/1500MHz 1024MB 64Mx16 BGA100 900MHz DDR3 DVI-VGA+HDMI                  |
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| 12  | <UNDEFINED> | <UNDEFINED>        | <UNDEFINED>  |
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| 14  | <UNDEFINED> | <UNDEFINED>        | <UNDEFINED>  |
| 15  | <UNDEFINED> | <UNDEFINED>        | <UNDEFINED>  |

Remove 10uF 1206 , Add 1uF 0805x2



| A | B         | C | D | E | F | G | H |
|---|-----------|---|---|---|---|---|---|
|   | Blue Fish |   |   |   |   |   |   |

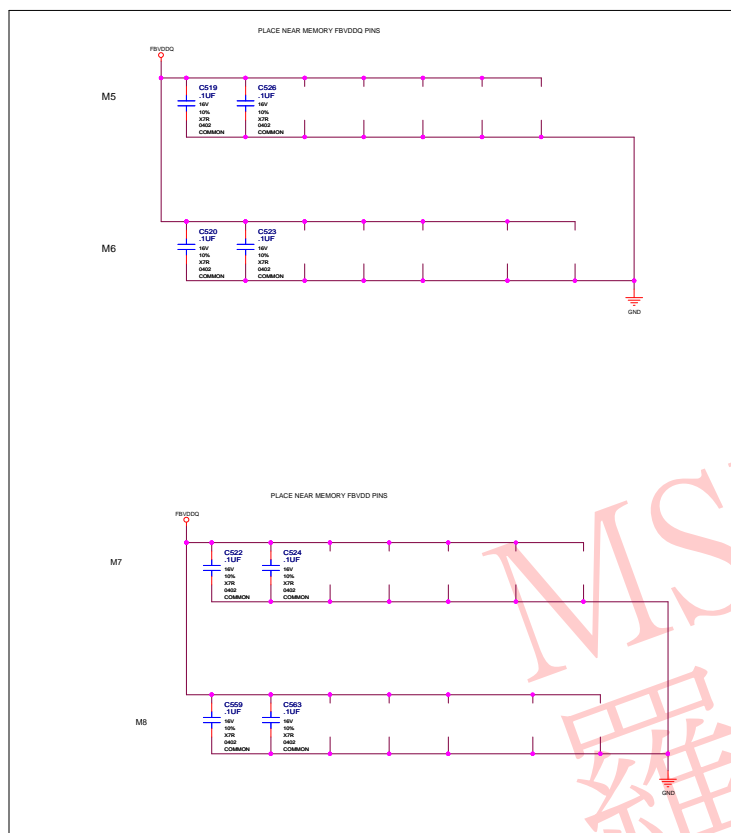
## PARTITION A FRAME BUFFER INTERFACE





## FBA DECOUPLING CAPS & NVVDD DECOUPLING CAPS

## Decoupling for FBA



NV/DD under GPU:

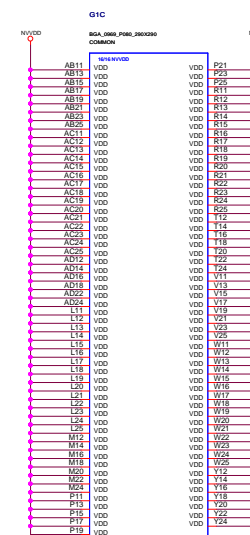
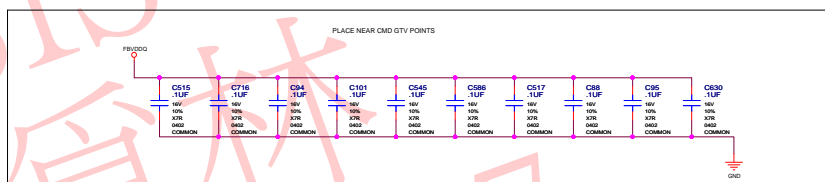
|                     |                        |
|---------------------|------------------------|
| 4x 0.01uF 0402 X5R  |                        |
| 1x 0.015uF 0402 X5R |                        |
| 5x 0.022pF 0402 X5R | → 4 x 0.022pF 0402 X5R |
| 2x 0.047uF 0402 X5R |                        |
| 1x 0.1uF 0402 X5R   |                        |
| 1x 0.22uF 0402 X5R  |                        |
| 4x 1.0uF 0402 X5R   |                        |
| 1x 2.2uF 0402 X5R   |                        |

NV/DD under CPU:

|                     |                        |
|---------------------|------------------------|
| 3x 0.01uF 0402 X5R  |                        |
| 1x 0.015uF 0402 X5R |                        |
| 5x 0.022pF 0402 X5R | → 4 x 0.022pF 0402 X5R |
| 2x 0.047uF 0402 X5R |                        |
| 1x 0.1uF 0402 X5R   |                        |
| 1x 0.22uF 0402 X5R  |                        |
| 4x 1.0uF 0402 X5R   |                        |
| 1x 2.2uF 0402 X5R   |                        |

NVDD near GPU:  
 3x 10uF 0805 X5R NO STUFF → 2 x 10uF 0805 X5R NO STUFF  
 1x 4.7uF 1206 X5R → 0 x 4.7uF 1206 X5R

## Return path coupling GND/FBVDDQ



VVVP681

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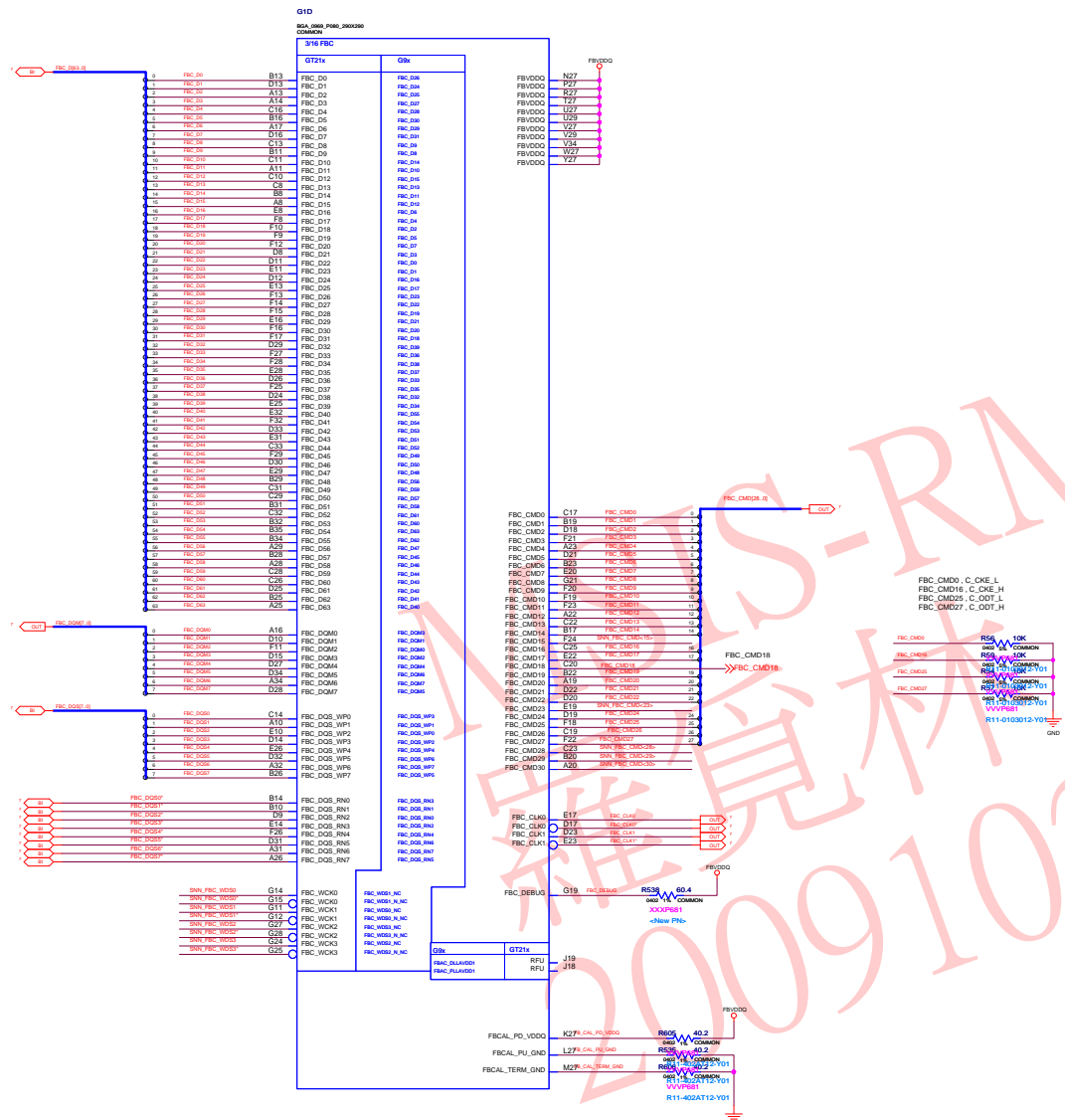
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| ASSEMBLY    | BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL |
| PAGE DETAIL | FBA DECOUPLING CAPS & NVVDD DECOUPLING CAPS   |

## PARTITION C FRAME BUFFER INTERFACE



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| PAGE DETAIL | PARTITION C FRAME BUFFER INTERFACE  |

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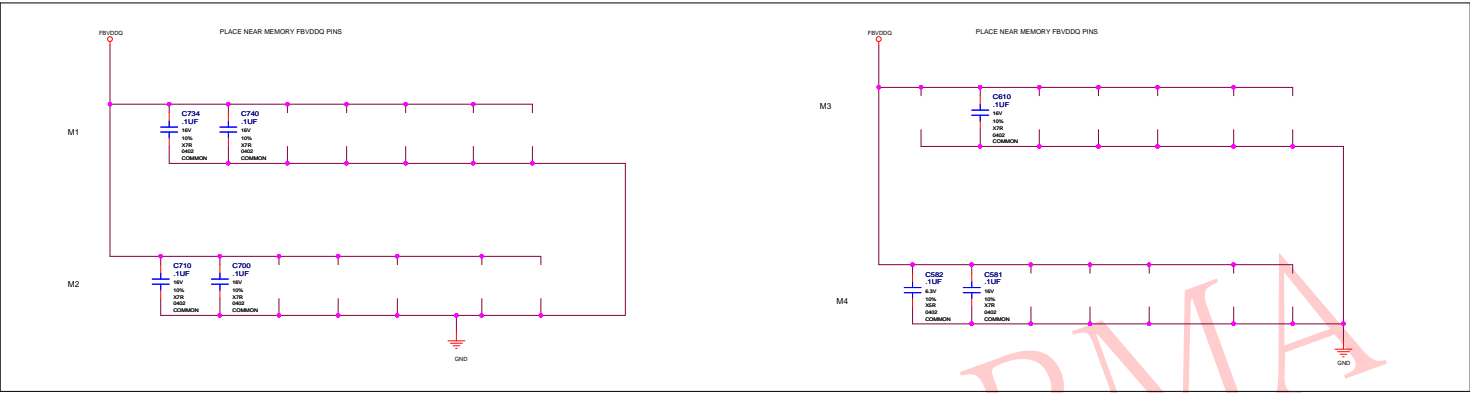
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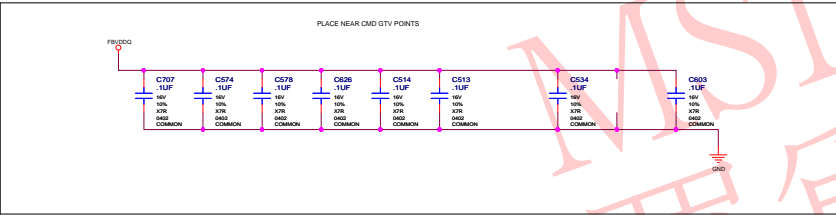


FBC DECOUPLING CAPS & NVVDD DECOUPLING CAPS

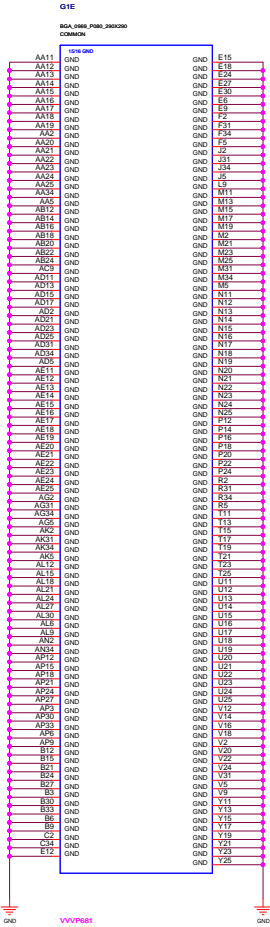
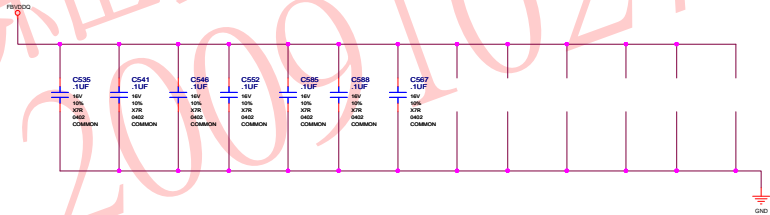
Decoupling for FBC



Return path coupling GND/FBVDDQ



Return path coupling GND/FBVDDQ for FBA/FBC

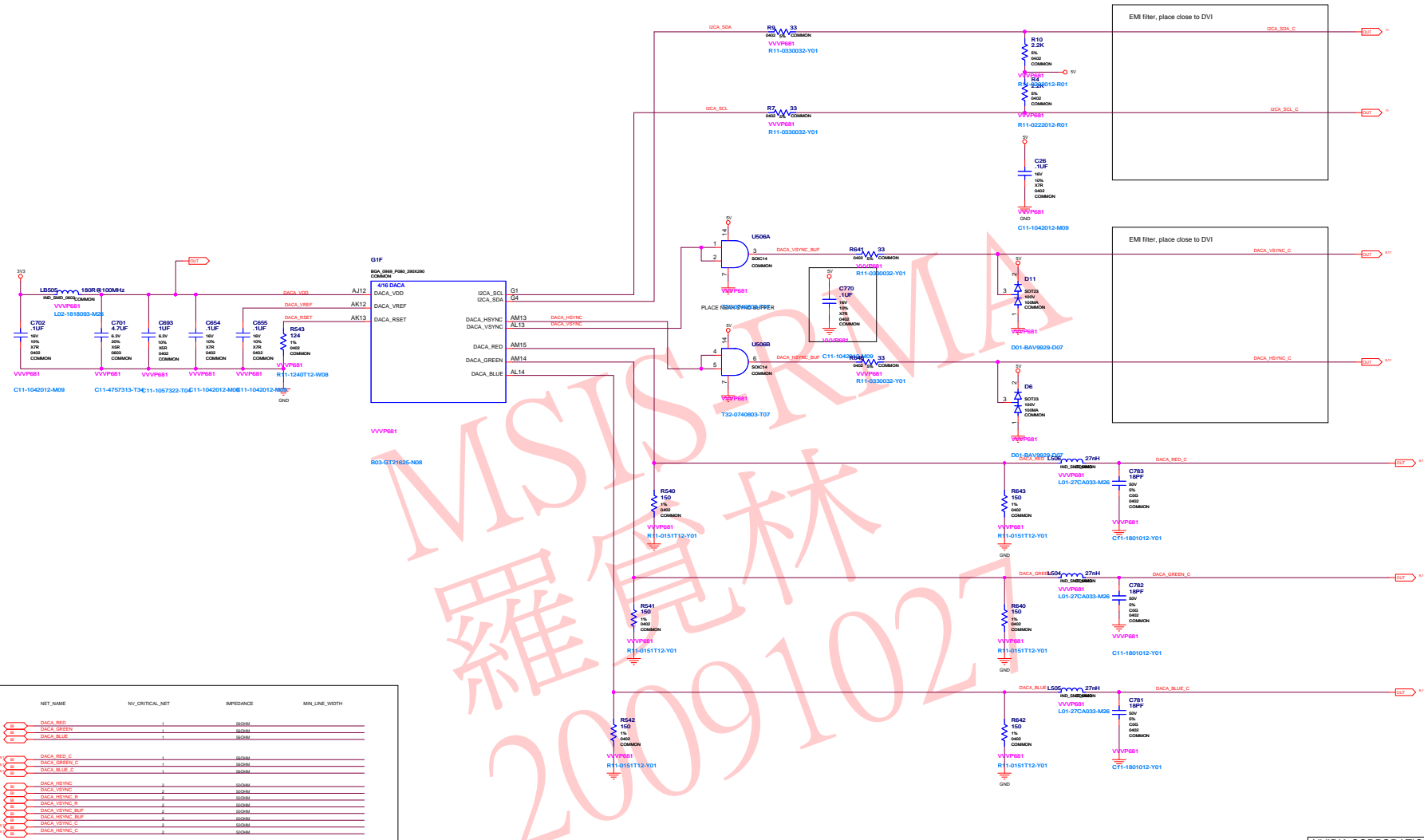


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ASSEMBLY: FBC DECOUPLING CAPS  
PROCESS DETAIL: FBC DECOUPLING CAPS



DACA (SOUTH DVI-I)




| NET_NAME    | NV_CRITICAL_NET | IMPEDANCE | MIN_LINE_WIDTH |
|-------------|-----------------|-----------|----------------|
| DACA_RED    | 1               | 100M      | 100M           |
| DACA_GREEN  | 1               | 100M      | 100M           |
| DACA_BLUE   | 1               | 100M      | 100M           |
| DACA_SYNC   | 1               | 100M      | 100M           |
| DACA_SYNC_C | 1               | 100M      | 100M           |
| DACA_SYNC_H | 1               | 100M      | 100M           |
| DACA_SYNC_B | 1               | 100M      | 100M           |
| DACA_SYNC_R | 1               | 100M      | 100M           |
| DACA_SYNC_G | 1               | 100M      | 100M           |
| DACA_SYNC_B | 1               | 100M      | 100M           |
| DACA_SYNC_C | 1               | 100M      | 100M           |
| DACA_SYNC_H | 1               | 100M      | 100M           |
| DACA_SYNC_R | 1               | 100M      | 100M           |
| DACA_SYNC_G | 1               | 100M      | 100M           |

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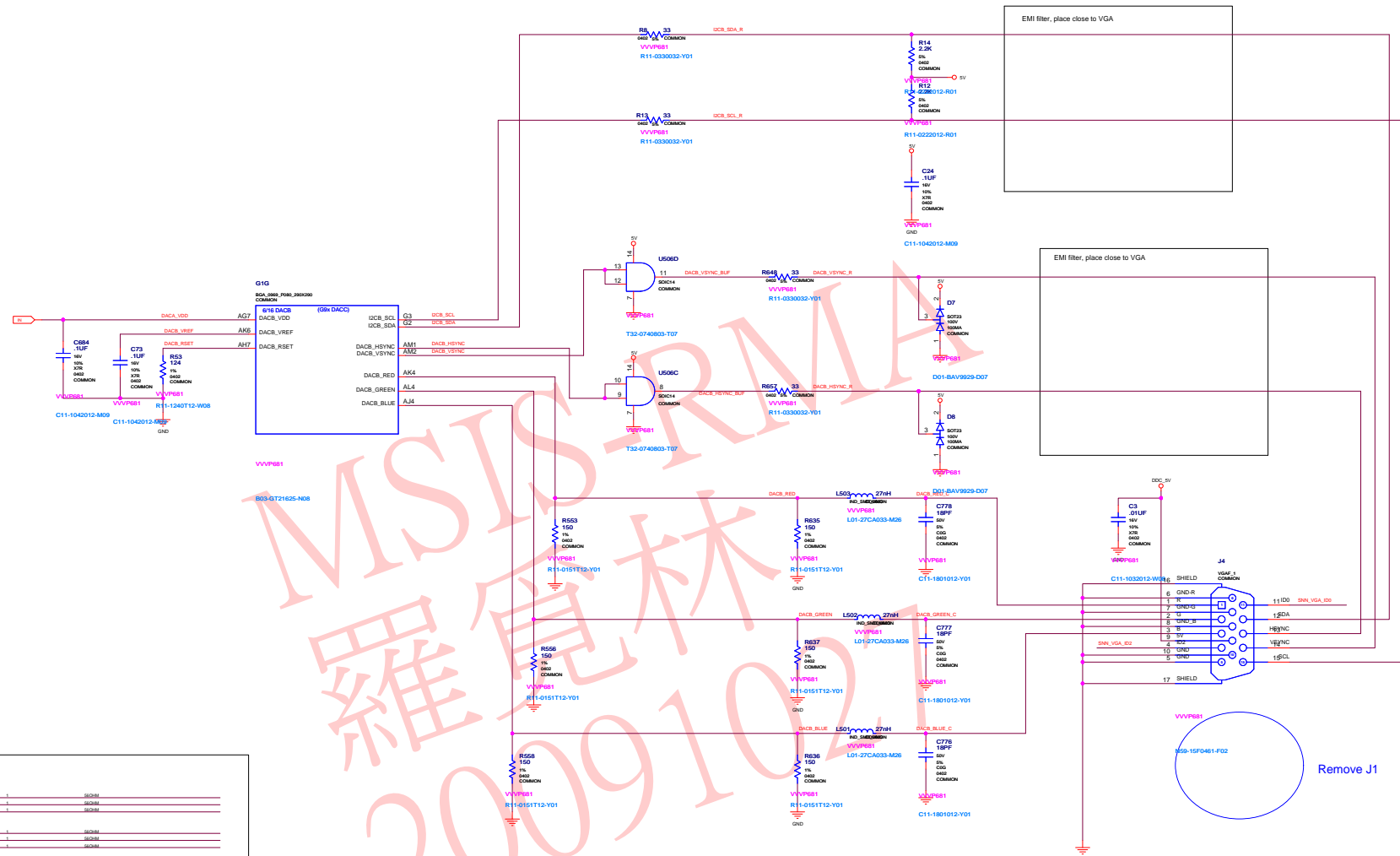
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DACB (MID VGA)

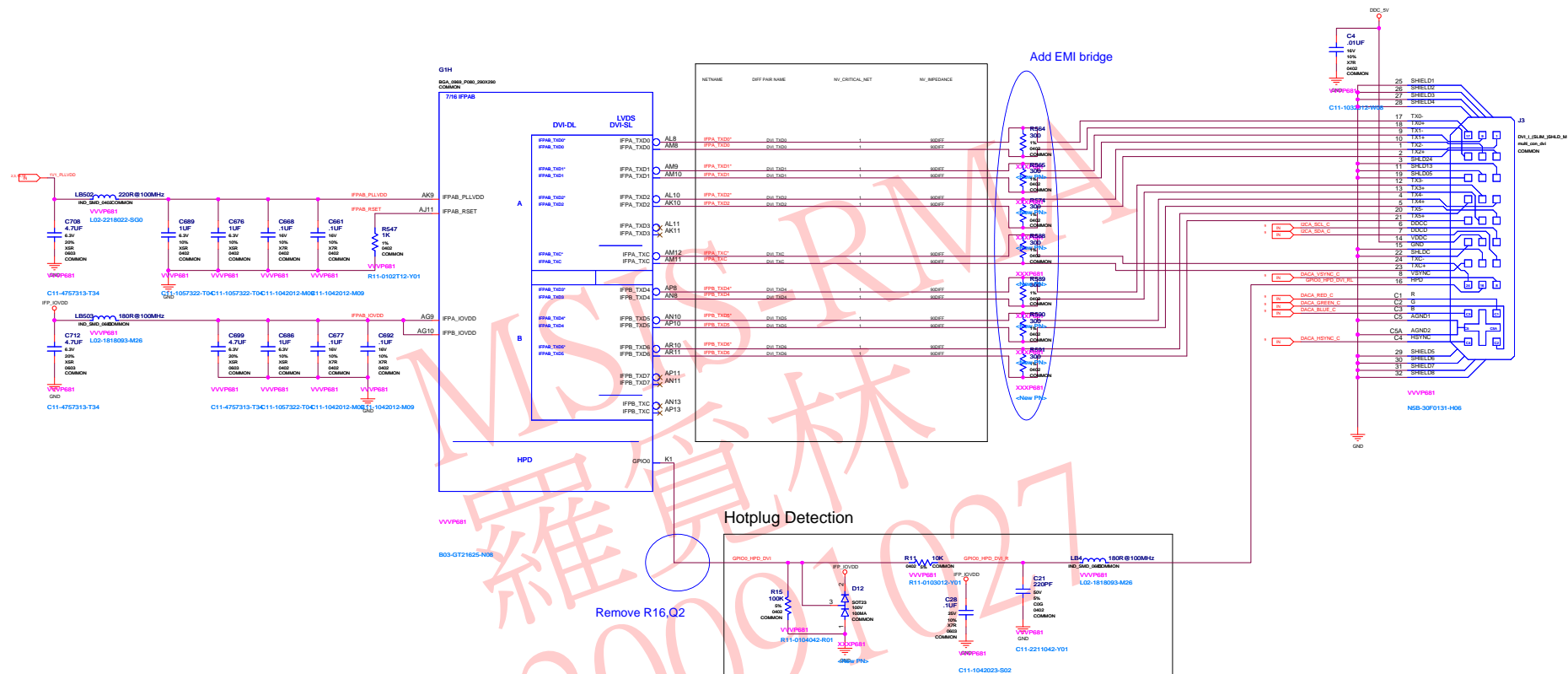


|   |                 |   |     |
|---|-----------------|---|-----|
| B | DACS RED        | 1 | SDM |
| B | DACS GREEN      | 1 | SDM |
| B | DACS BLUE       | 1 | SDM |
| B |                 |   |     |
| B | DACS RED C      | 1 | SDM |
| B | DACS GREEN C    | 1 | SDM |
| B | DACS BLUE C     | 1 | SDM |
| B |                 |   |     |
| B | DACS 15VING     | 2 | SDM |
| B | DACS 15VING     | 2 | SDM |
| B | DACS 15VING_B   | 2 | SDM |
| B | DACS 15VING_B   | 2 | SDM |
| B | DACS 15VING_BUF | 2 | SDM |
| B | DACS 15VING_BUF | 2 | SDM |
| B | DACS 15VING_C   | 2 | SDM |
| B | DACS 15VING_C   | 2 | SDM |

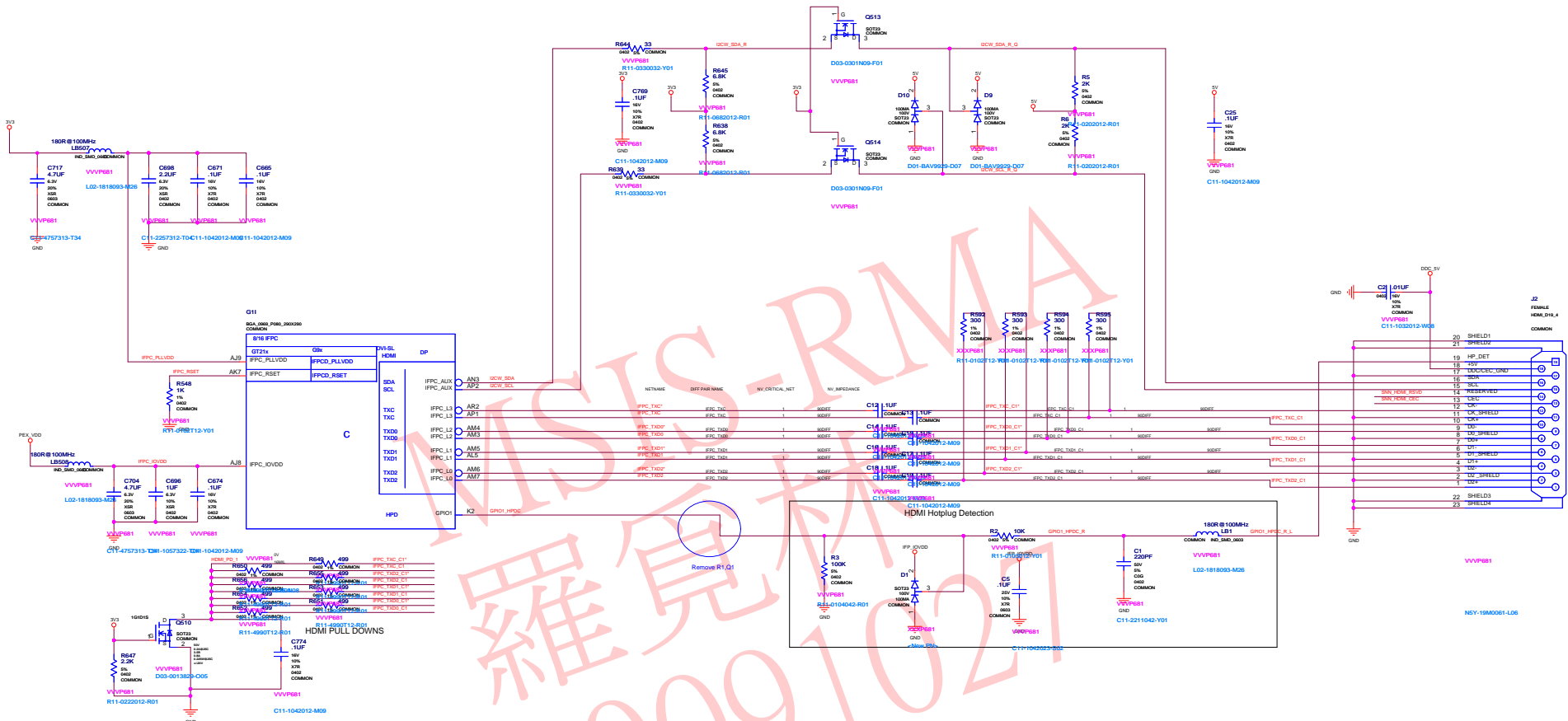
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## IFP AB (SOUTH DVI-I)



IFP C (NORTH HDMI)



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ASSEMBLY

IFP C (NORTH HDMI)

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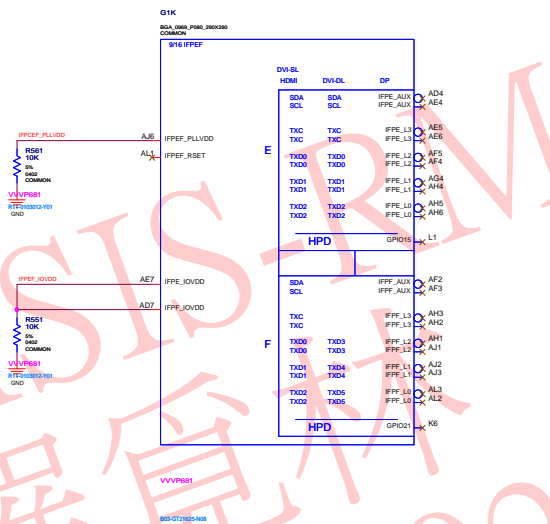
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| PAGE DETAIL | IFP EF (UNUSED)   |



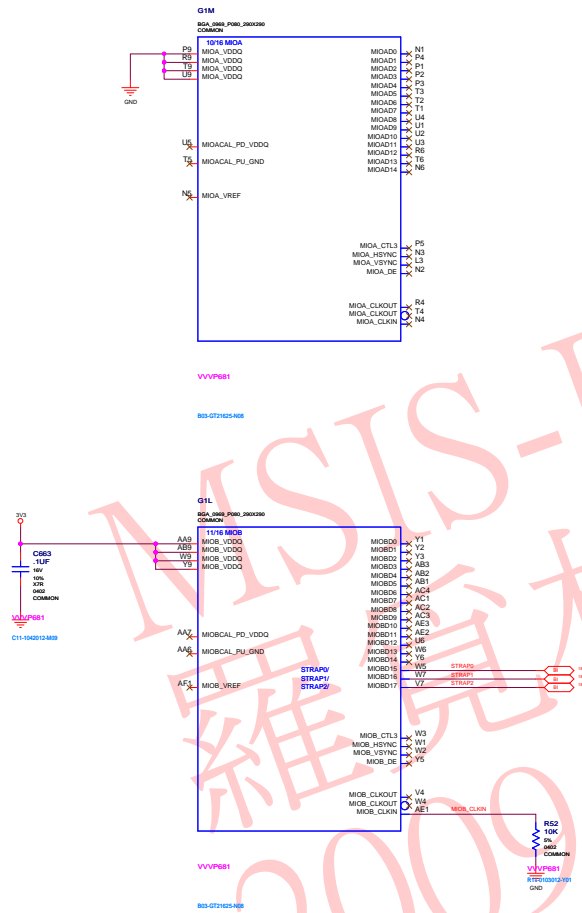
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## MIOA & MIOB



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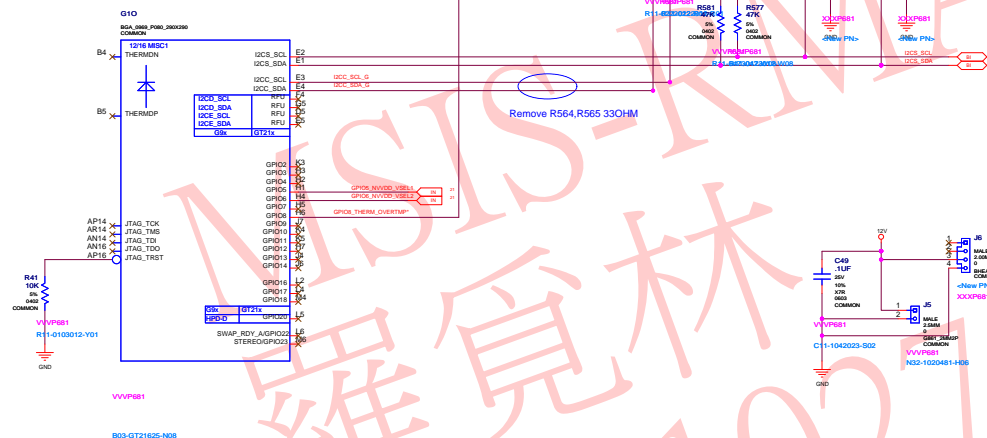
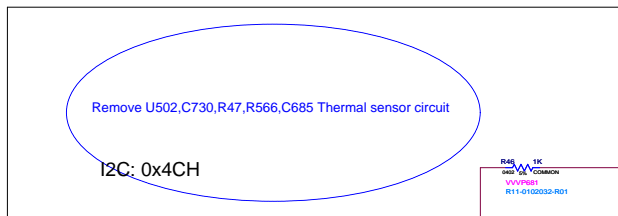
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| ASSEMBLY    | BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL |
| PAGE DETAIL | MIOA & MIOB   |

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## THERMAL SENSOR

~~I2C: 0x4CH~~

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|             |   |
|-------------|---|
| ASSEMBLY    | BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL |
| PAGE DETAIL | EXTERNAL THERMAL SENSOR, FAN CONTROL, GPIO, JTAG                                      |

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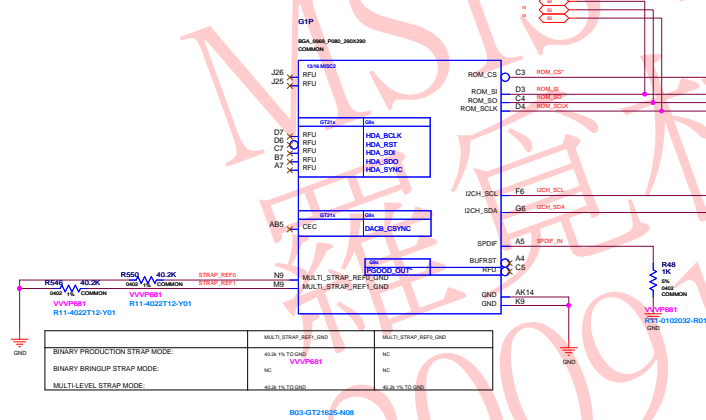
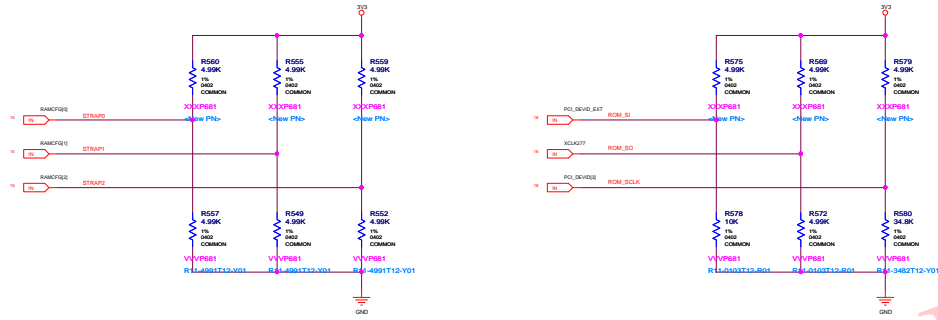
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| NV_PN | 600-10681-base-100 A |      |             |
| ID    |                      | PAGE |             |
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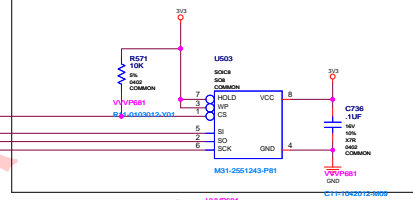


## BIOS ROM, HDCP ROM, STRAPPING OPTIONS

## STRAPPING OPTIONS



BIOS ROM(serial)



For Lab Use Only


# HDCP I2C EEROM



## INFOROM

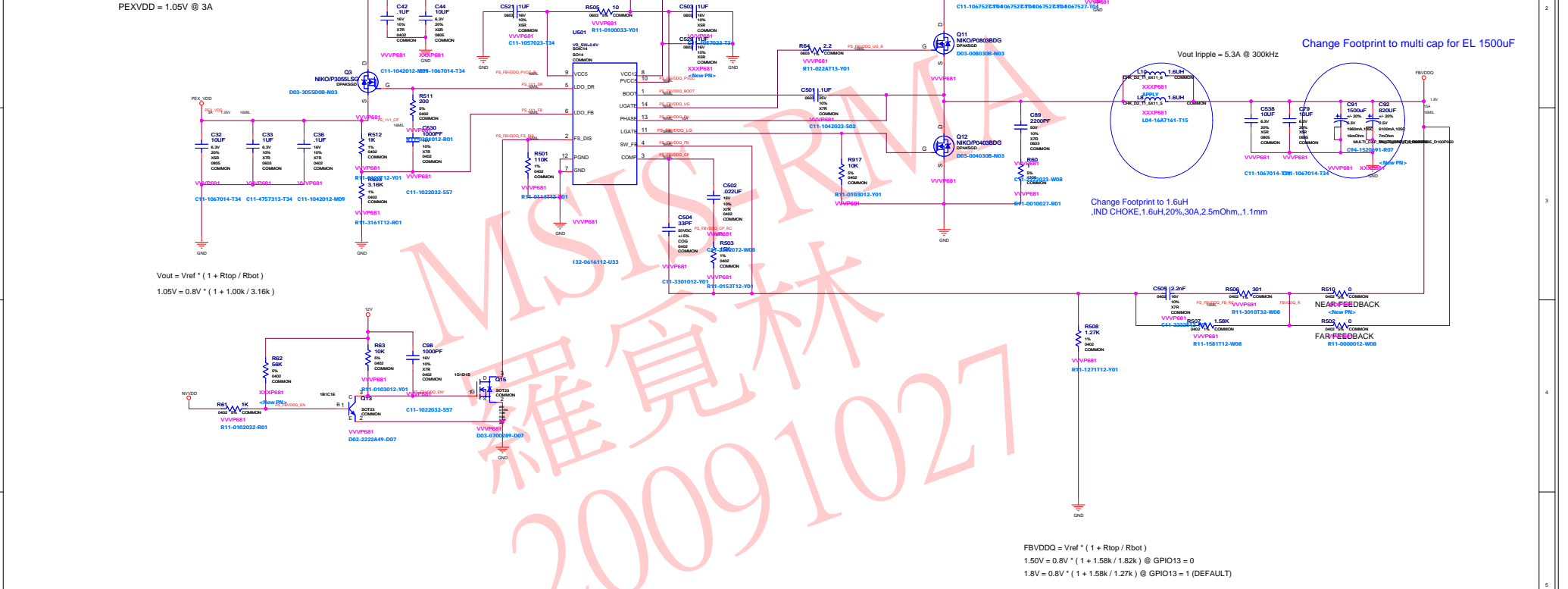
For Lab Use Only  
I2C ADDRESS: 0XA8

Remove  
U2,C54,R31,R30,D16  
INFOROM

|  |  |   |             |
|--|--|---|-------------|
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| <b>NAME</b>  |  | <b>DATE</b>   | 05-FEB-2009 |



FBVDDQ/PEXVDD POWER SUPPLY

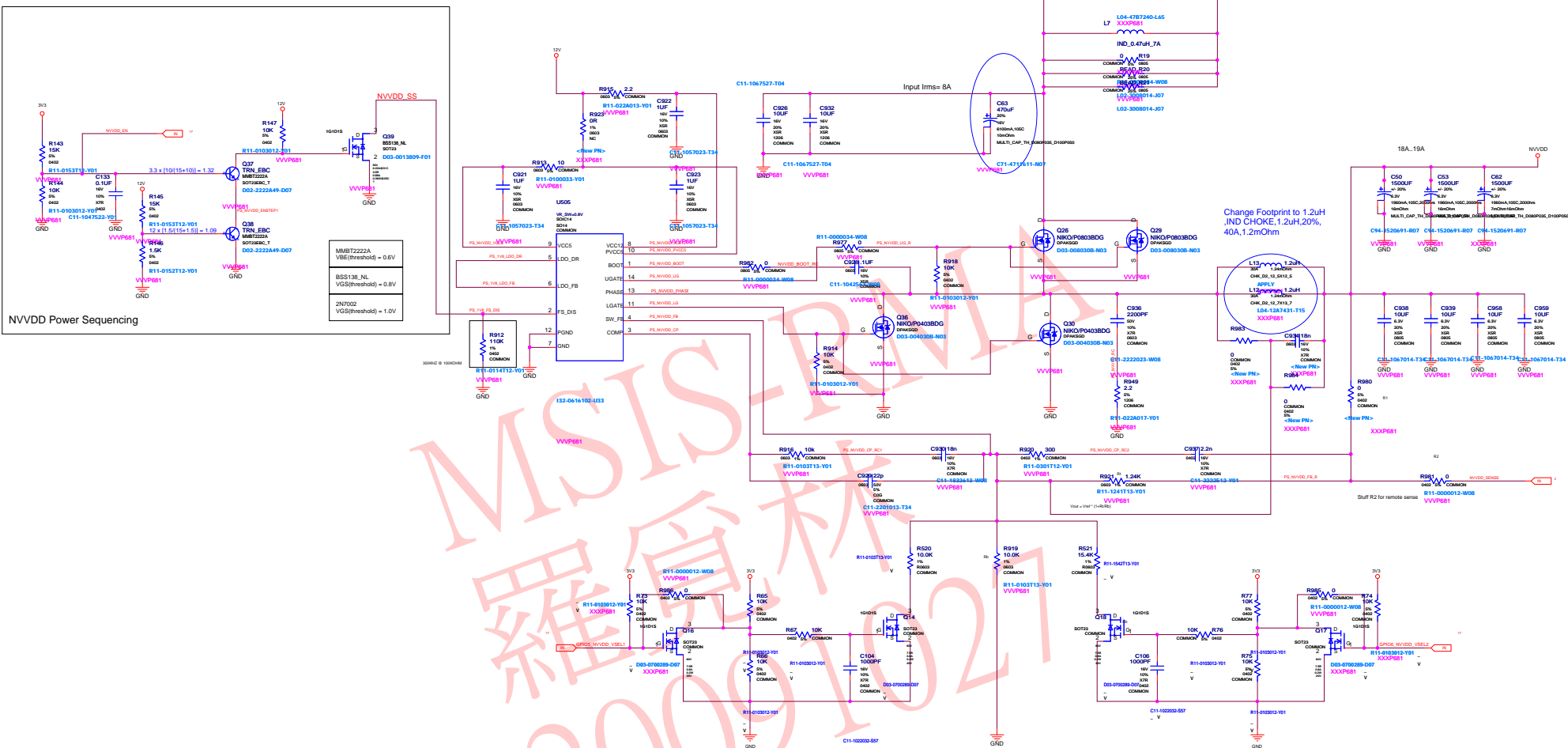


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|----------------|---|
| ASSEMBLY       | BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL |
| PROCESS DETAIL | 78VDDQ/PEXVDD POWER SUPPLY  |

## Power Supply III: NVVDD



| GPIO5 | GPIO6 | Rbn | Vout    |
|-------|-------|-----|---------|
| 0     | 0     | Rb1 | 0.9000V |
| 1     | 0     | Rb2 | 1.0000V |
| 1     | 1     | Rb3 | 1.0625V |

Vout=Vref\*(1+Rt/Rb)  
Vout=0.8\*(1+1.24k/Rbn)  
Rb1 = R919  
Rb2 = R919 // R520  
Rb3 = R919 // R520 // R521

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| PAGE DETAIL | NVVD0 POWER SUPPLY  |

NVDD POWER SUPPLY

## XTAL, MECHANICALS, THERMALS

