

V141-10

P729: G96, DDR2 MEMORY 32MX16/16MX16

- Page 1: P729 Overview
- Page 2: PCI Express Interface
- Page 3: Partition A Frame Buffer Interface
- Page 4: Partition C Frame Buffer Interface
- Page 5: Partition A Memories
- Page 6: Partition C Memories
- Page 7: Decoupling Caps
- Page 8: DACA
- Page 9: DACC, Slim DB15 Connector
- Page 10: Internal TMDS ... Link A & B
- Page 11: Internal TMDS ... Link C & D
- Page 12: DACB, MINIDIN Connector
- Page 13: MIOA, MIOB Interface
- Page 14: Thermal Sensors, GPIOs, XTAL, JTAG, Fan
- Page 15: BIOS, HDCP, SPDIF, HDA, Mechanical
- Page 16: Straps
- Page 17: Hybrid Power
- Page 18: Power Supply I: 2V5, 3V3, 5V, IFP\_IOVDD
- Page 19: Power Supply II: FBVDDQ
- Page 20: Power Supply III: NVVDD, PEX\_VDD

REV	VARIANT	W/FPN	ASSEMBLY
0	BASE	600-10729-xxxx-000	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
1	SKU0000	600-10729-0000-000	G96-300-A1, 550/500MHz, 512MB 32mx16 DDR2 BGAB4 DVI-DL+VGA+HDTV
2	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>
3	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>
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14	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>
15	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>

REV HISTORY

- Modify Power Sequencing

02/25

PAGE 14.EDIT NET

R562 : I2CD\_SCL\_R to I2CC\_SCL\_R

R563 : I2CD\_SDA\_R to I2CC\_SDA\_R

R172,R173 Pull high 5V
- PAGE 19.EDIT footprint

C87 footprint 0805 to 1206
- PAGE 11.Remove R130

HDMI gate pull down
- 02/26

PAGE 2.Change 3V3\_PEX to 3V3\_AUX
- 05/19 Change PCB Version 1.0 Modify

PAGE 14. Revise J3 HDMI issue

I2CD\_SCL\_R and I2CD\_SDA\_R net
- PAGE 13. Remove FBVDDQ feedback connect form M6

change L12 footprint to colay CHK\_D2\_P3\_5 and

CHK\_D2\_11\_5X10\_8
- PAGE 14. Change C49 and L11 footprint
- 05/20

PAGE 15. Remove BKT1 footprint for HDMI Jammed issue
- 05/22

PAGE 11. Add HDMI EMI solution bridge R and Common choke
- 05/26

PAGE 12. Add HDA RST\*/BCLK/SDI pull down Resistor

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ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	P729 Overview

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ID		PAGE	
NAME		DATE	25 OCT 2009

change to 3V3\_AUX



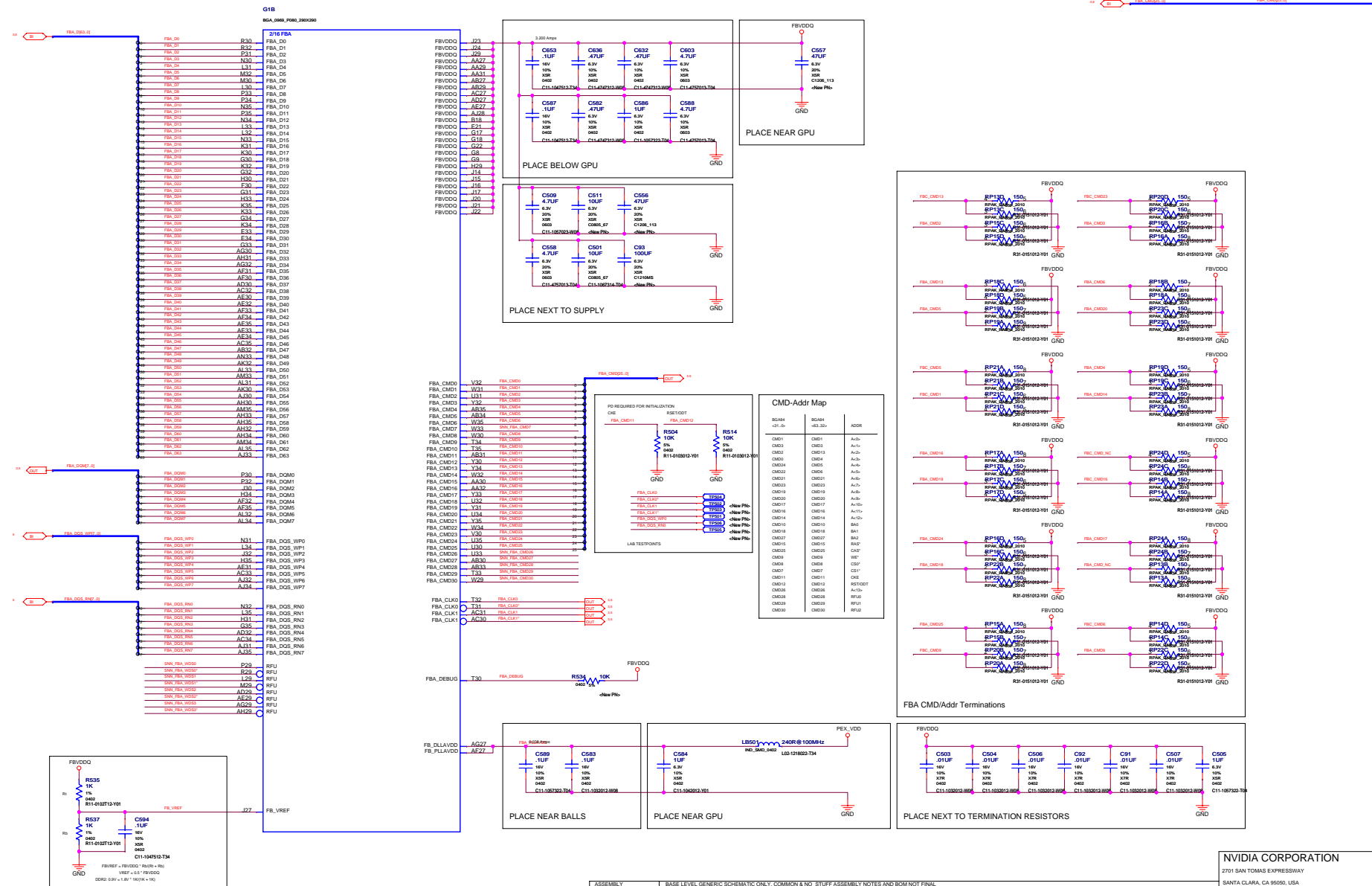
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PAGE DETAIL	PCI Express Interface



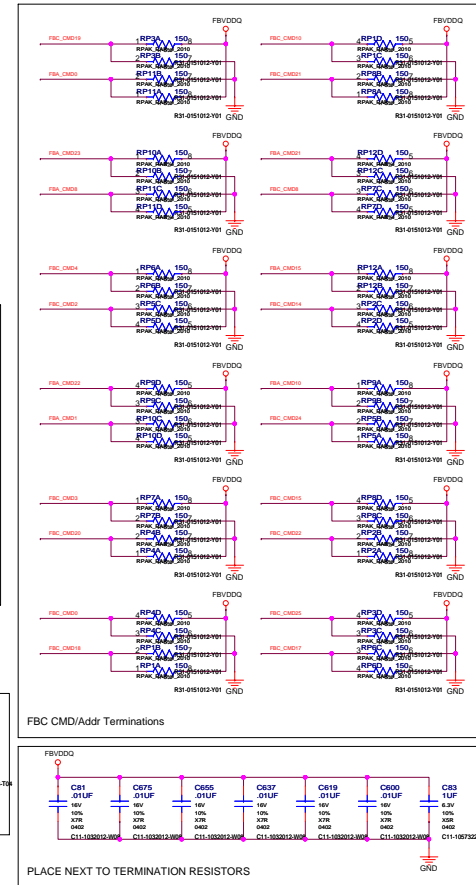
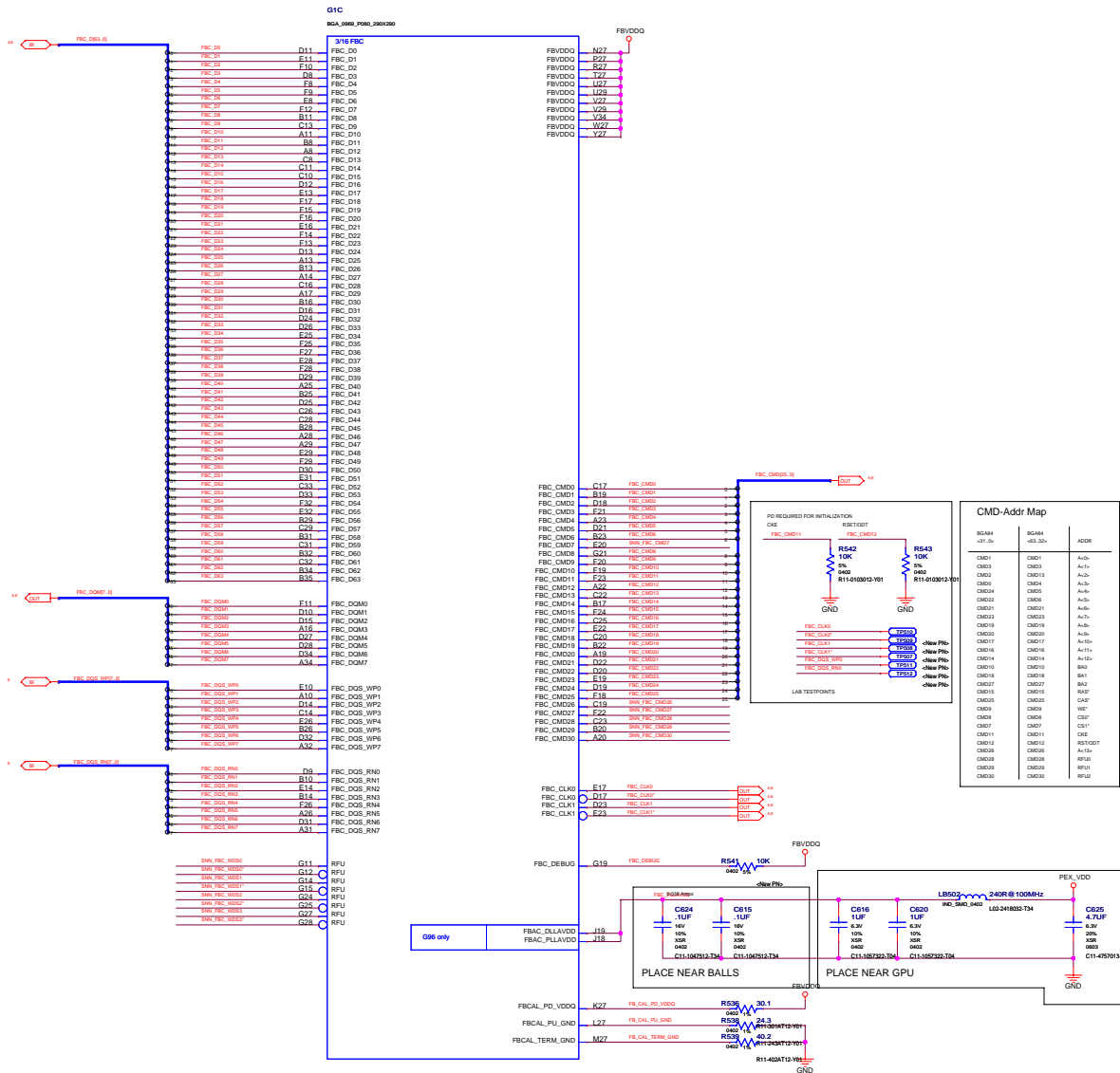
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# Partition A Frame Buffer Interface



## Partition C Frame Buffer Interface



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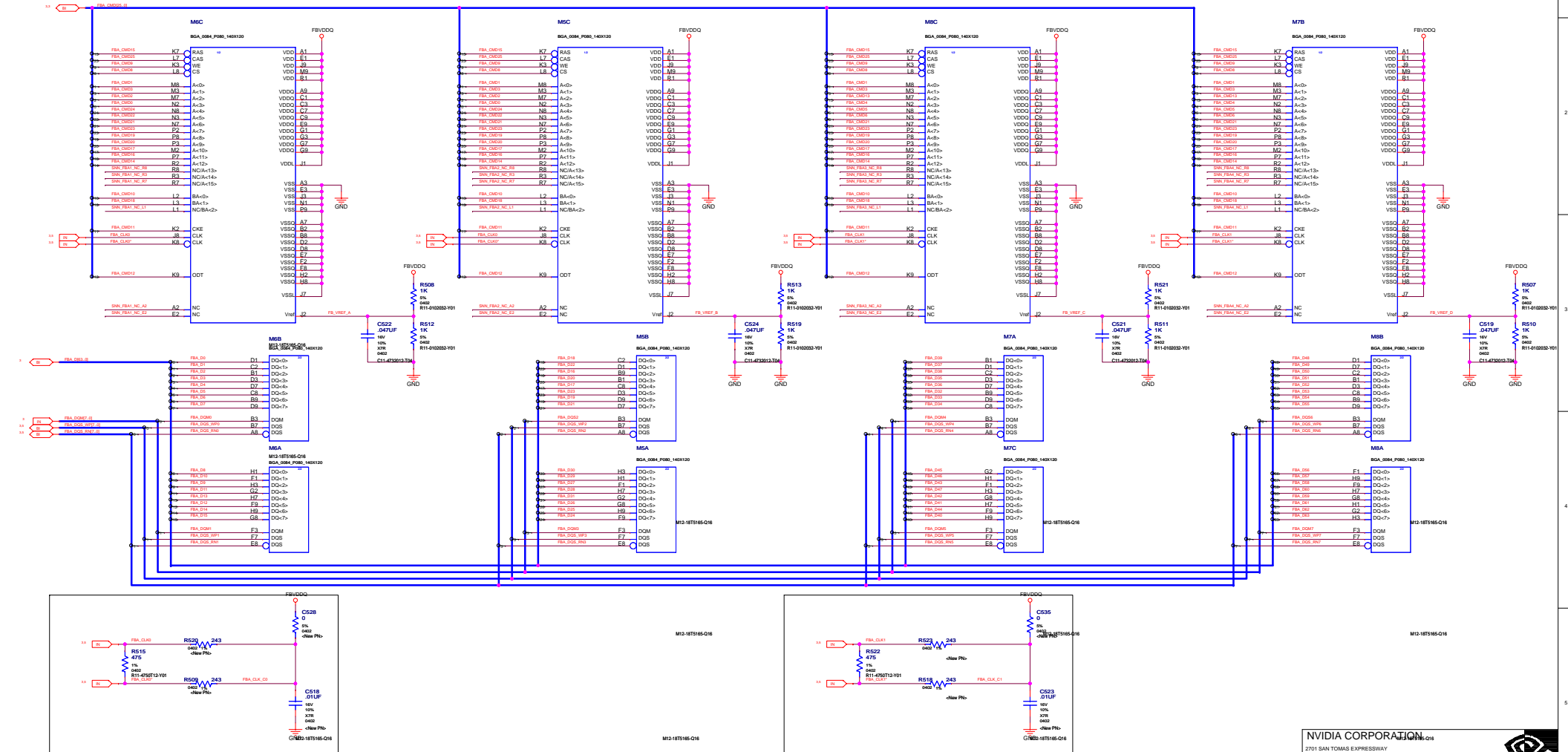


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PAGE DETAIL	Partition C Frame Buffer Interface

# Partition A Memories

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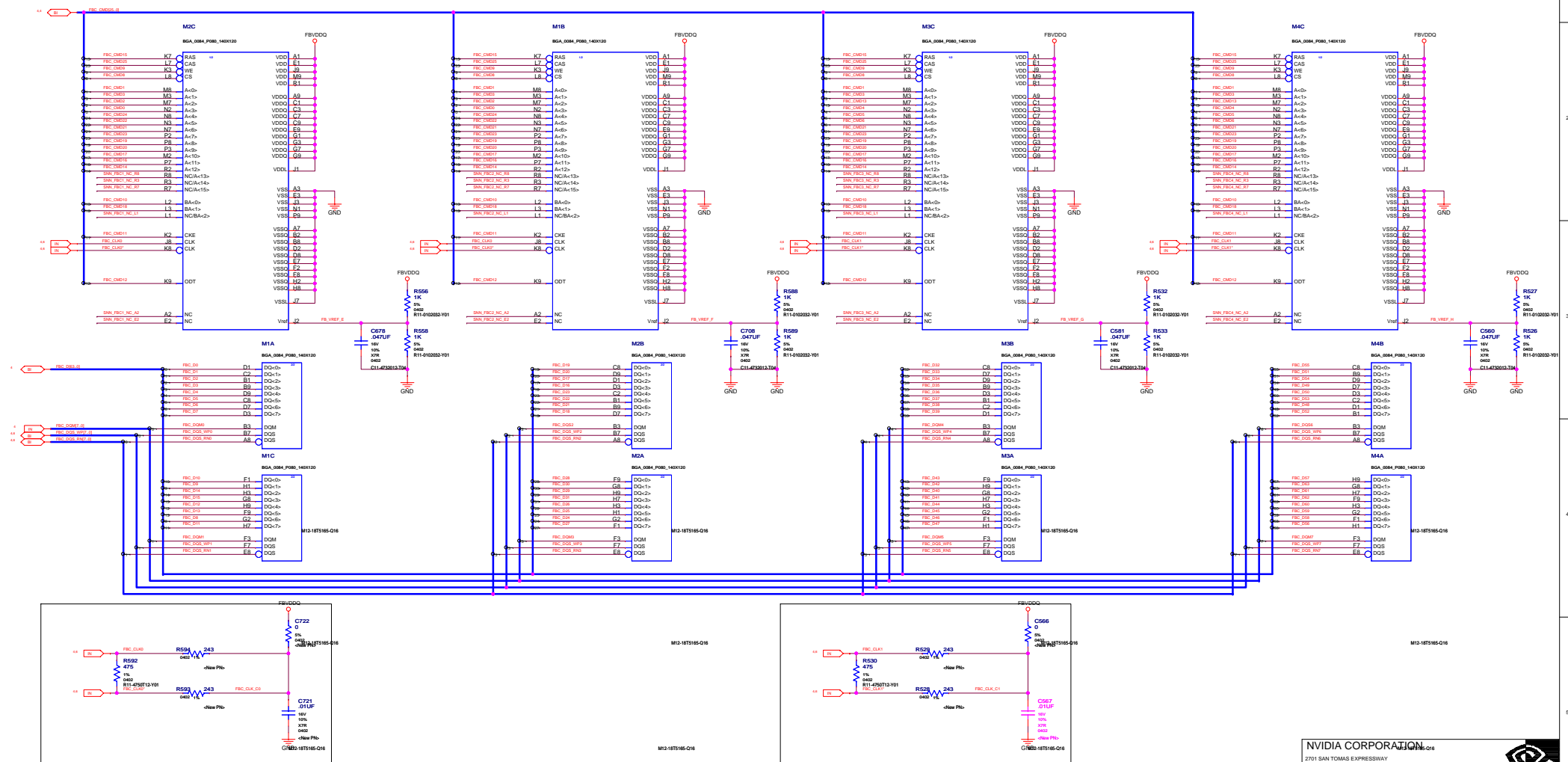
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## Partition C Memories



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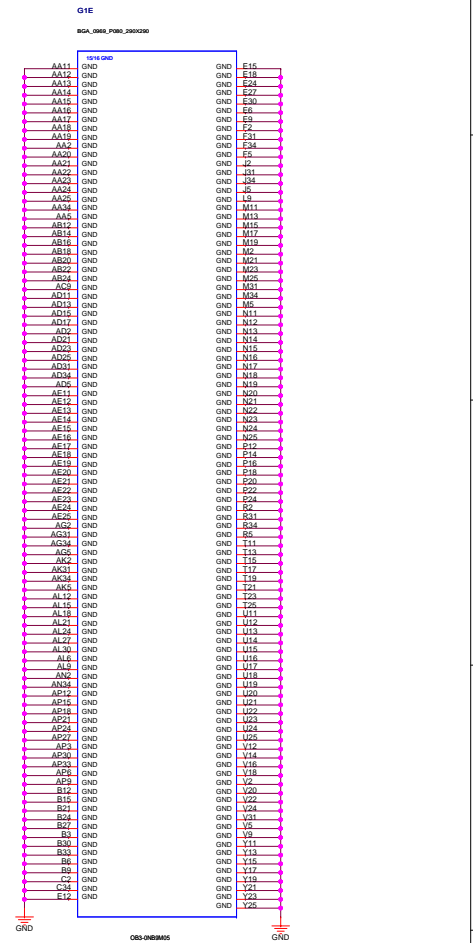
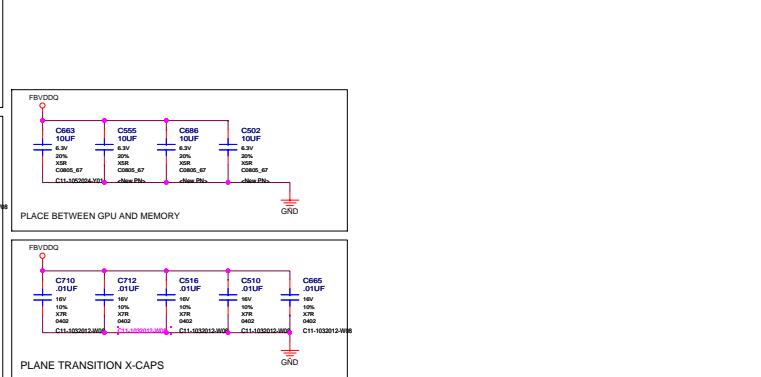
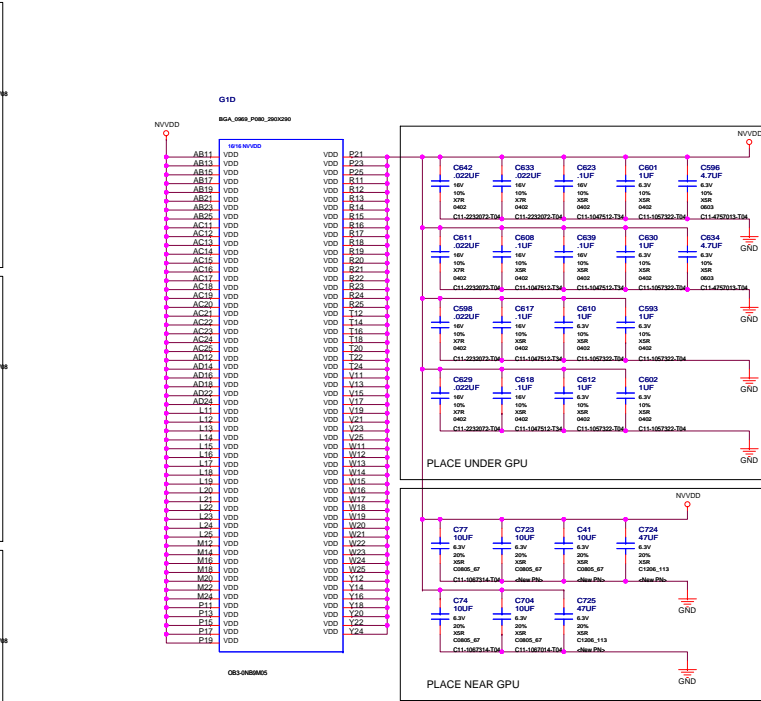
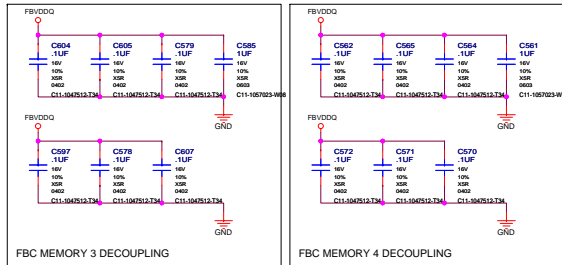
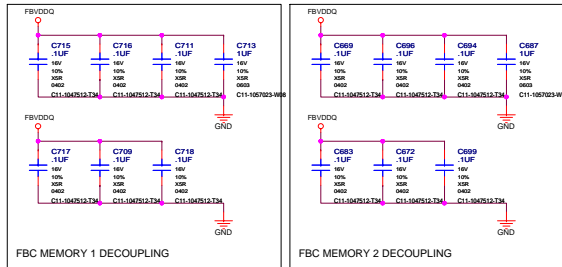
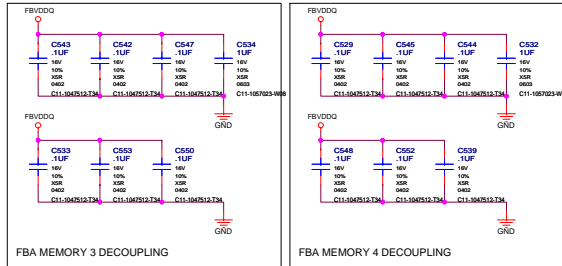
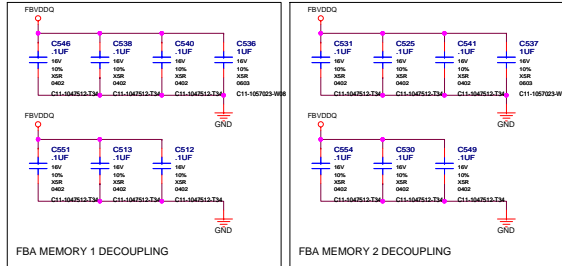
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PAGE DETAIL	Partition C Memory
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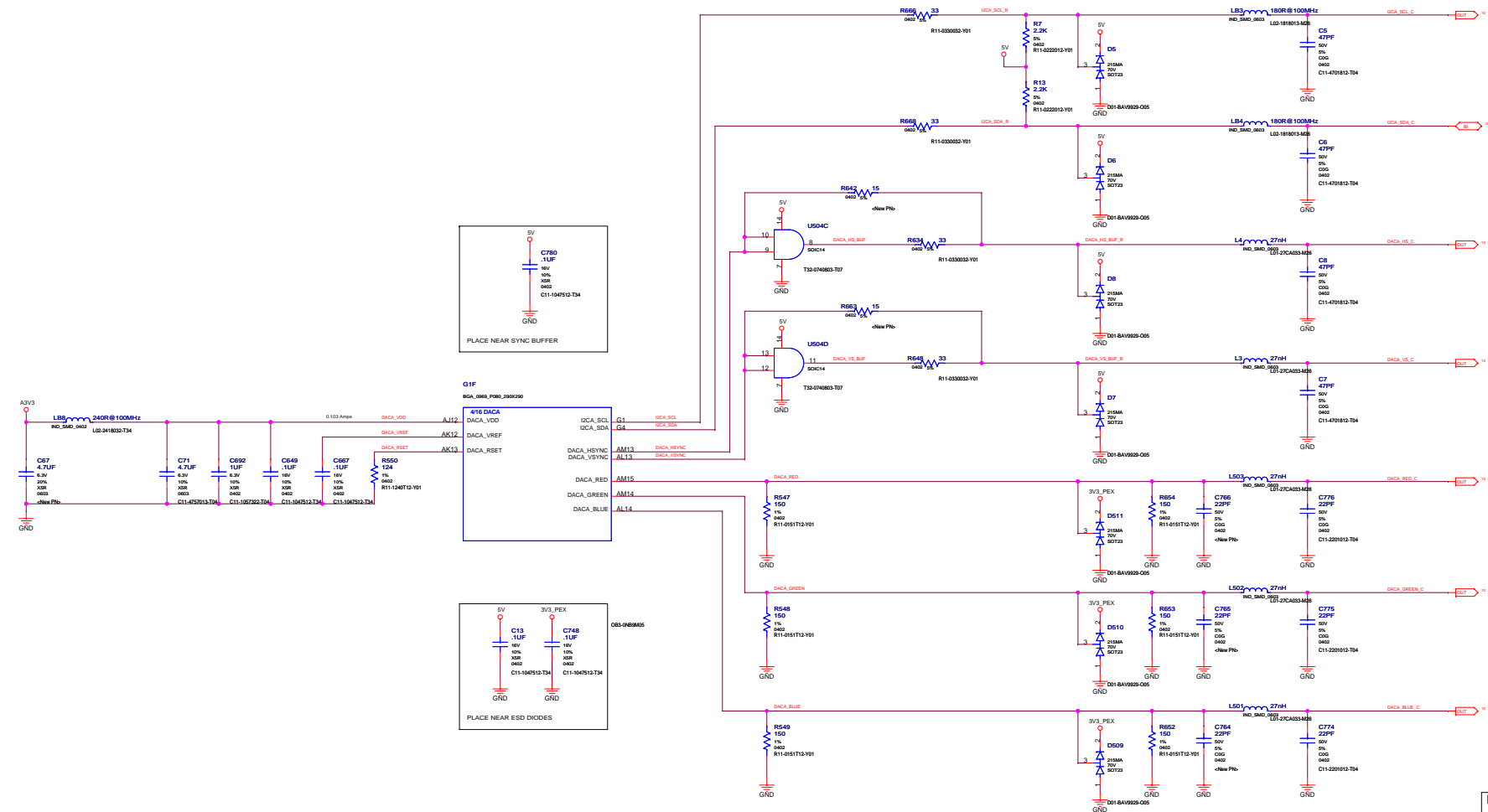
# Decoupling Caps




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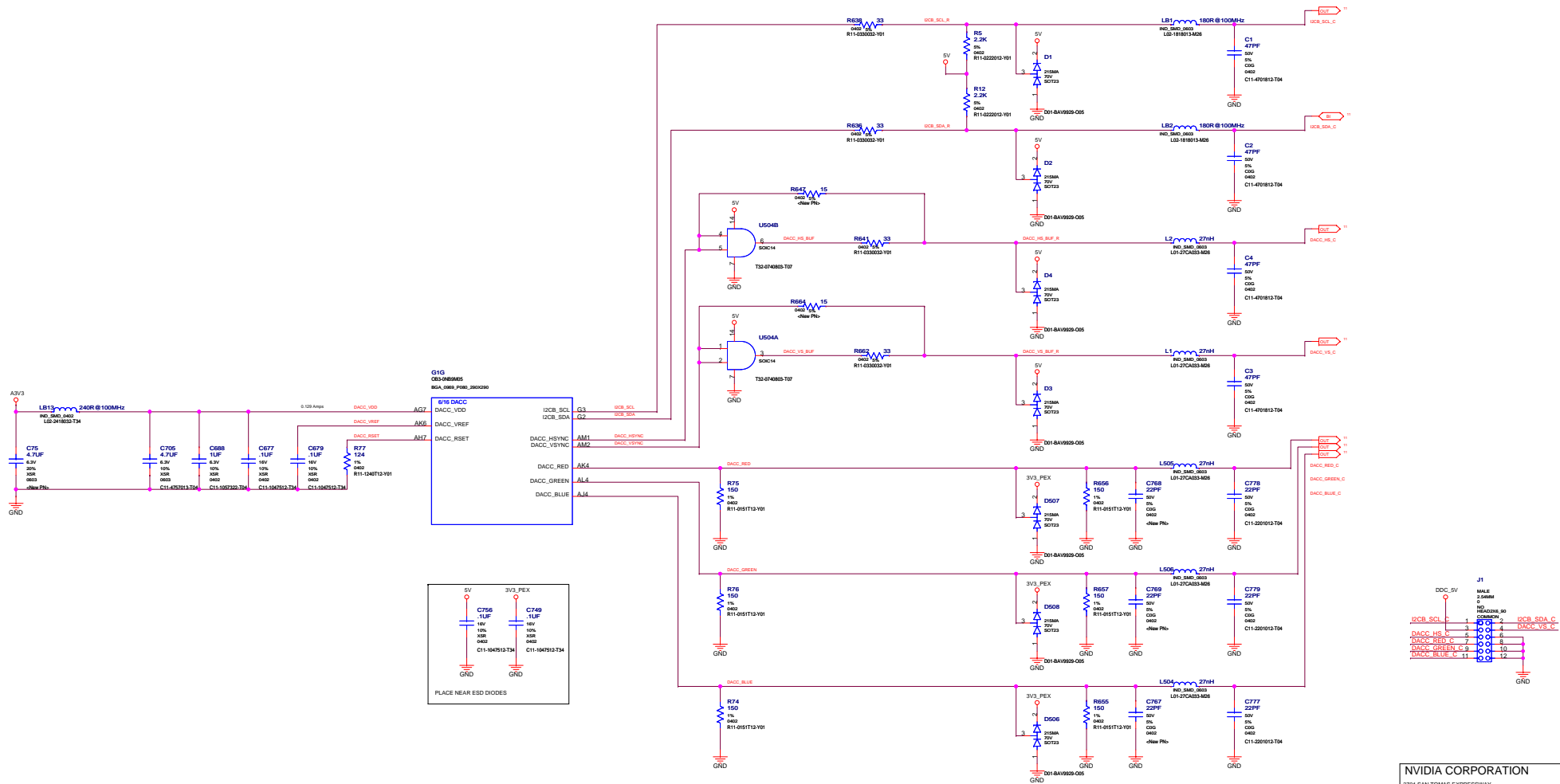



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## DACC, Slim DB15 Connector



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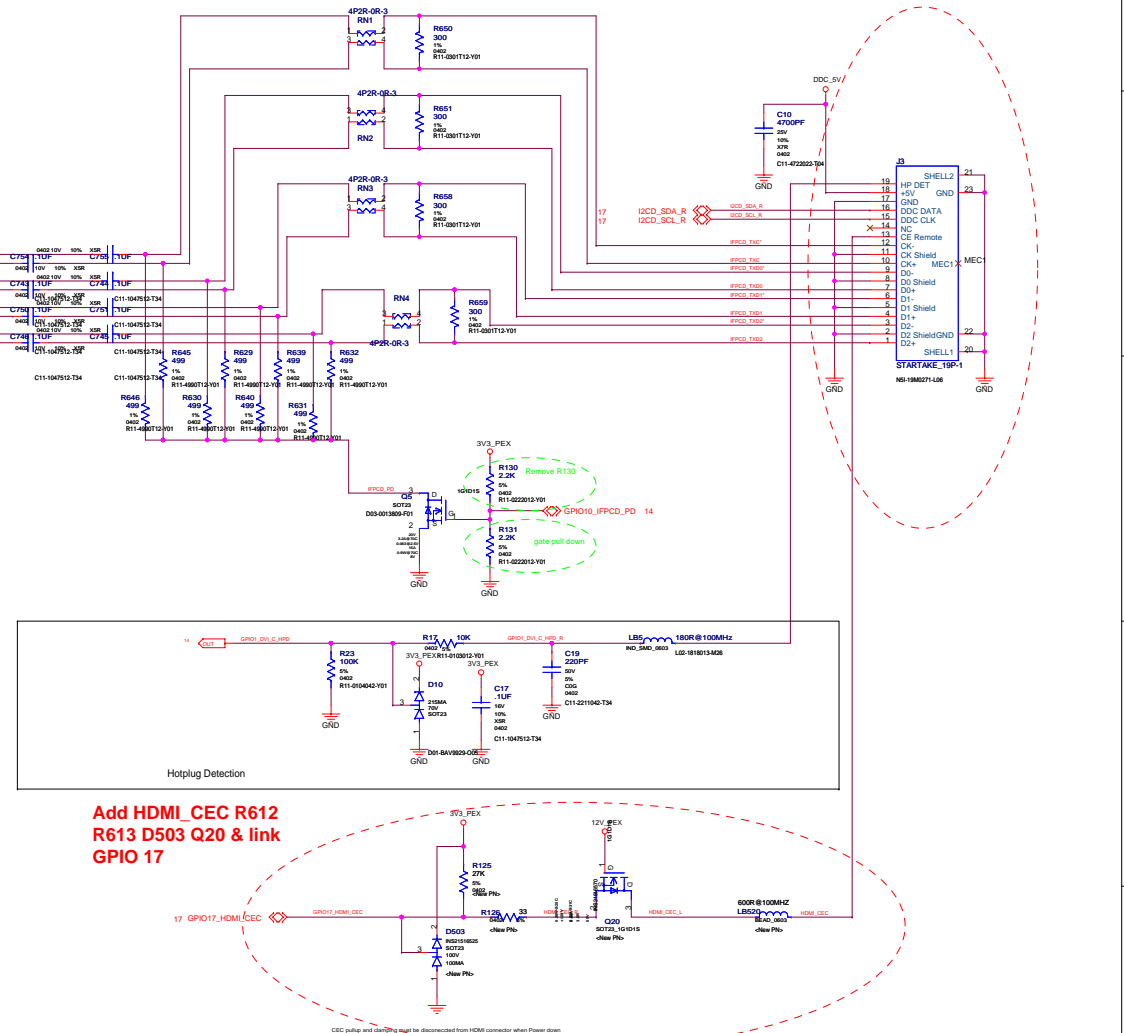
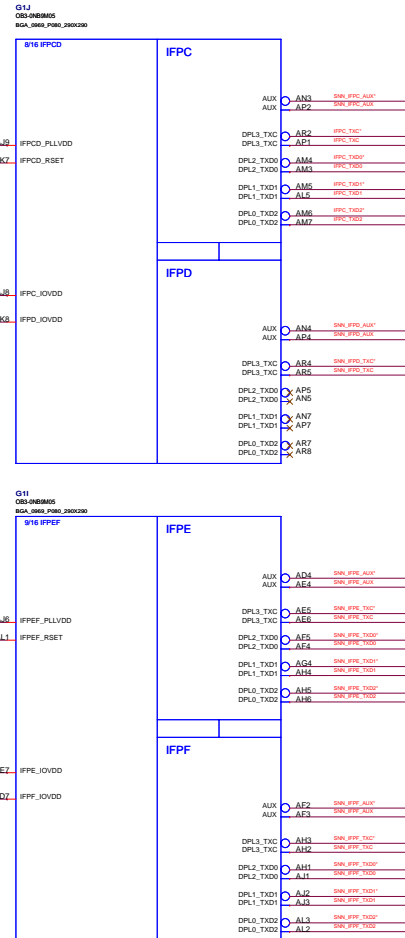


### Internal TMDS .. Link C & D

change FBVDDQ to 1V8

**add EMI bridge**

## Change DVI to HDMI



**Add HDMI\_CEC R612  
R613 D503 Q20 & link  
GPIO 17**

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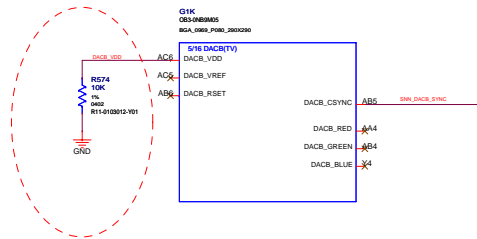
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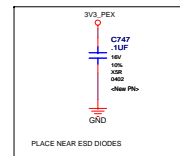
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PAGE DETAIL	Internal YMDS .. Link C & D

## DACB, MINIDIN Connector



## Remove TV-OUT



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PAGE DETAIL	DACB, MINDIN Connector

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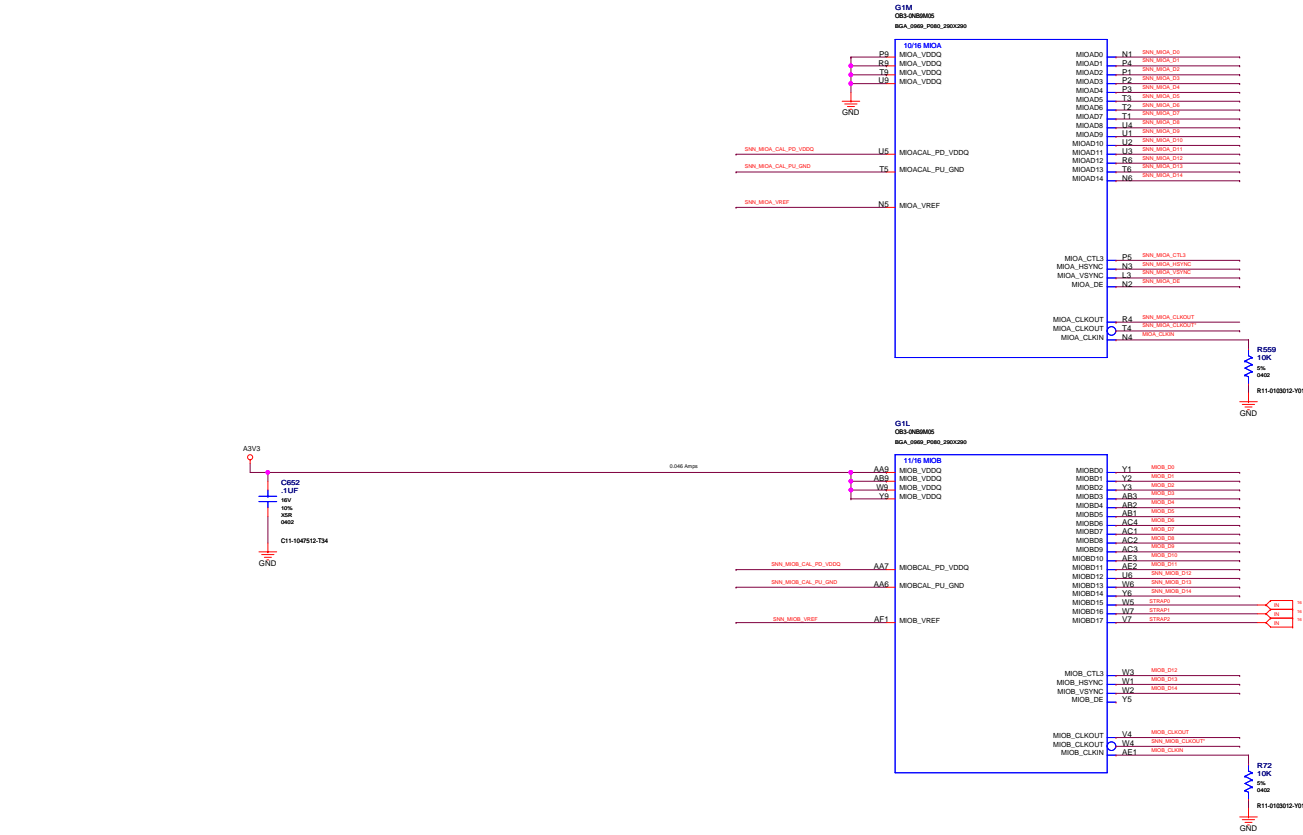
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MIOA, MIOB Interface



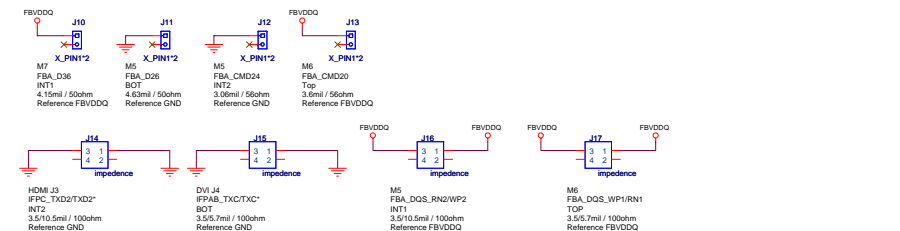
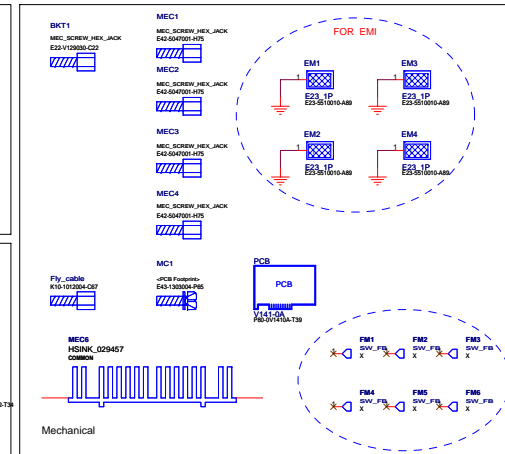
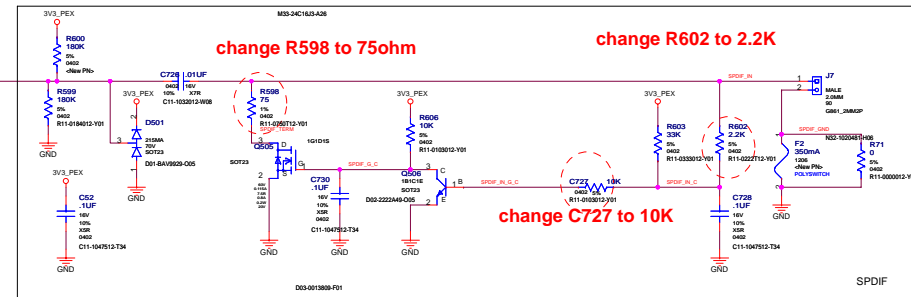
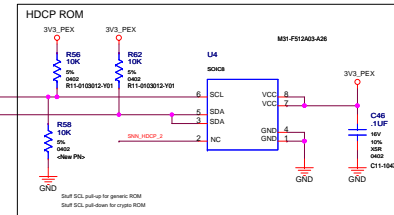
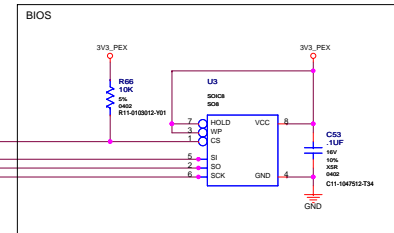
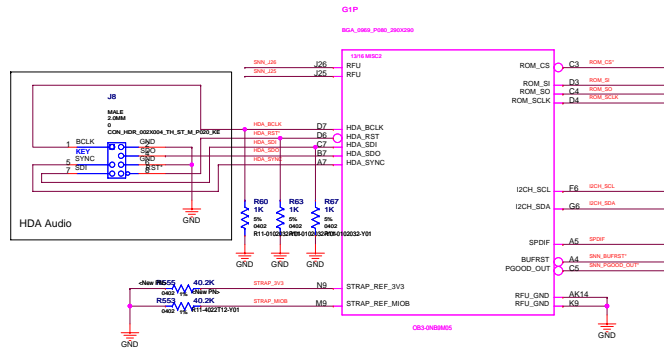
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PAGE DETAIL	MIOA, MIOB Interface

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## BIOS, HDCP, SPDIF, HDA, Mechanical



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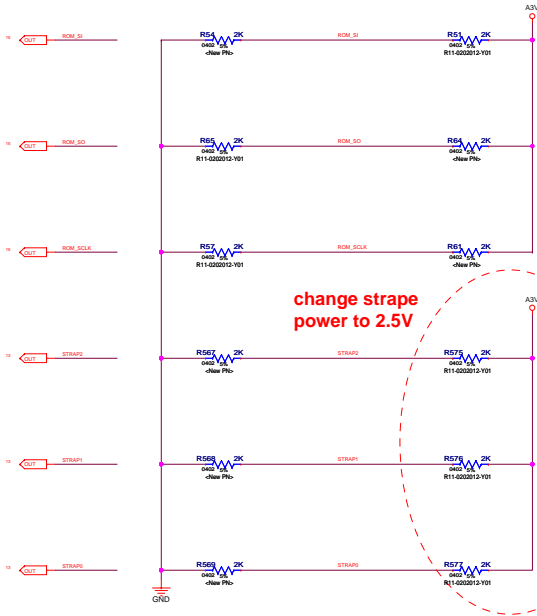
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Straps



G94 Straps  
Multilevel Mode

Bit Signal

Values

03	ACLK_277	0 DISABLE 1 ENABLE
02	TVMODE[2]	000 NTSC_A 001 NTSC_J 010 PAL_M 011 PAL_N 100 PAL_CN 101 PAL_MSCA 110 RESERVE00 111 RESERVE01
03	PCL_DEV0_EXT	1 G96-300-A1
03	SUB_VENDOR	0 NO BIOS 1 BIOS
01	SLOT_CLK_CFG	0 DISABLE 1 ENABLE
00	PEX_PLL_EN_TERM100	0 DIS 1 EN

03	RAMCFG[2]	0000 32Mx16/16Mx16 DDR2 128-bit E6n6 0001 16Mx16 DDR2 128-bit Samsung, Micron 0010 16Mx16 DDR2 128-bit Corsair 0011 16Mx16 DDR2 128-bit Hynix 0100 32Mx16/16Mx16 DDR2 128-bit Hynix 0101 32Mx16/16Mx16 DDR2 128-bit Samsung 0110 32Mx16/16Mx16 DDR2 64-bit Corsair 0111 32Mx16/16Mx16 DDR2 64-bit Hynix
03	RAMCFG[2]	1000 32Mx16/16Mx16 DDR2 64-bit E6n6 1001 16Mx16 DDR2 64-bit Samsung, Micron 1010 16Mx16 DDR2 64-bit Corsair 1011 16Mx16 DDR2 64-bit Hynix 1100 32Mx16/16Mx16 DDR2 64-bit Hynix 1101 32Mx16/16Mx16 DDR2 64-bit Samsung 1110 32Mx16/16Mx16 DDR2 64-bit Corsair 1111 32Mx16/16Mx16 DDR2 64-bit Hynix

Multilevel  
Straps

5K to GND	0000
10K to GND	0001
15K to GND	0010
20K to GND	0011
25K to GND	0100
30K to GND	0101
35K to GND	0110
40K to GND	0111
45K to GND	1000
50K to GND	1001
55K to GND	1010
60K to GND	1011
65K to GND	1100
70K to GND	1101
75K to GND	1110
80K to GND	1111

G94 Straps  
Binary-Bringup Mode

Bit Signal

Values

SUB_VENDOR	0 NO BIOS 1 BIOS
SLOT_CLK_CFG	0 DISABLE 1 ENABLE
SGO_PACCFG_LUT_ADR[2]	0000 GSKTOP_DEFAULT 0001 MOBILE_DEFAULT 0010 MOBILE_JTTRES_LLAMP 0011 MOBILE_JTTRES_LAMP 0100 MOBILE_JTTRES_HAMP 0101 MOBILE_JTTRES_HHAMP 1000 GSKTOP_JTTRES 1001 MOBILE_JTTRES_LLAMP 1010 MOBILE_JTTRES_LAMP 1011 MOBILE_JTTRES_HAMP 1100 MOBILE_JTTRES_HHAMP 1101 MOBILE_JTTRES_LLAMP 1110 MOBILE_JTTRES_LAMP 1111 MOBILE_JTTRES_HAMP
SGO_PACCFG_LUT_ADR[1]	0000 GSKTOP_DEFAULT 0001 MOBILE_JTTRES_LLAMP 0010 MOBILE_JTTRES_LAMP 0011 MOBILE_JTTRES_HAMP 0100 MOBILE_JTTRES_HHAMP 0101 MOBILE_JTTRES_LLAMP 0110 MOBILE_JTTRES_LAMP 0111 MOBILE_JTTRES_HAMP 1000 GSKTOP_JTTRES 1001 MOBILE_JTTRES_LLAMP 1010 MOBILE_JTTRES_LAMP 1011 MOBILE_JTTRES_HAMP 1100 MOBILE_JTTRES_HHAMP 1101 MOBILE_JTTRES_LLAMP 1110 MOBILE_JTTRES_LAMP 1111 MOBILE_JTTRES_HAMP
SGO_PACCFG_LUT_ADR[0]	0000 GSKTOP_DEFAULT 0001 MOBILE_JTTRES_LLAMP 0010 MOBILE_JTTRES_LAMP 0011 MOBILE_JTTRES_HAMP 0100 MOBILE_JTTRES_HHAMP 0101 MOBILE_JTTRES_LLAMP 0110 MOBILE_JTTRES_LAMP 0111 MOBILE_JTTRES_HAMP 1000 GSKTOP_JTTRES 1001 MOBILE_JTTRES_LLAMP 1010 MOBILE_JTTRES_LAMP 1011 MOBILE_JTTRES_HAMP 1100 MOBILE_JTTRES_HHAMP 1101 MOBILE_JTTRES_LLAMP 1110 MOBILE_JTTRES_LAMP 1111 MOBILE_JTTRES_HAMP

G94 Straps  
Binary-Production Mode

Bit Signal

Values

SLOT_CLK_CFG	0 DISABLE 1 ENABLE
PCL_DEV0_EXT	10 G96-300-A1
PCL_DEV0[2]	000 32Mx16/16Mx16 DDR2 E6n6 001 16Mx16 DDR2 Samsung, Micron 010 16Mx16 DDR2 Corsair 011 16Mx16 DDR2 Hynix 100 32Mx16/16Mx16 DDR2 128-bit Hynix 101 32Mx16/16Mx16 DDR2 128-bit Samsung 110 32Mx16/16Mx16 DDR2 64-bit Corsair 111 32Mx16/16Mx16 DDR2 64-bit Hynix
RAMCFG[2]	000 32Mx16/16Mx16 DDR2 E6n6 001 16Mx16 DDR2 Samsung, Micron 010 16Mx16 DDR2 Corsair 011 16Mx16 DDR2 Hynix 100 32Mx16/16Mx16 DDR2 128-bit Hynix 101 32Mx16/16Mx16 DDR2 128-bit Samsung 110 32Mx16/16Mx16 DDR2 64-bit Corsair 111 32Mx16/16Mx16 DDR2 64-bit Hynix
RAMCFG[2]	1000 32Mx16/16Mx16 DDR2 64-bit E6n6 1001 16Mx16 DDR2 64-bit Samsung, Micron 1010 16Mx16 DDR2 64-bit Corsair 1011 16Mx16 DDR2 64-bit Hynix 1100 32Mx16/16Mx16 DDR2 64-bit Hynix 1101 32Mx16/16Mx16 DDR2 64-bit Samsung 1110 32Mx16/16Mx16 DDR2 64-bit Corsair 1111 32Mx16/16Mx16 DDR2 64-bit Hynix

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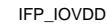
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DATE25 OCT 2009



Power Supply I: 1V8, A3V3, 5V, IFP\_IOVDD

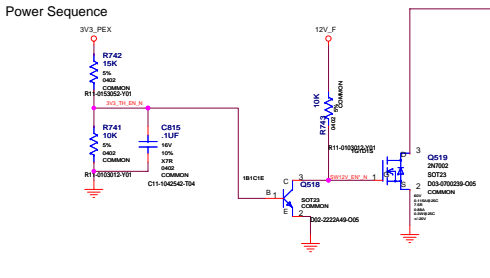


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PAGE DETAIL	Power Supply I: 2V5, 3V3, 5V, IFF_JOVDD



[illegible]

### NVDD

$V_{out} = V_{Ref} * (1 + (R_{top}/R_{bot}))$

$1.1V = 0.8V * (1 + (1.54k/4.02k))$  (ISL6549)

$1.2V = 0.8V * (1 + (1.54k/3.09k))$  (ISL6549)

$1.0V = 0.8V * (1 + (1.24k/4.87k))$  (ISL6549)

$1.0526V = 0.8V * (1 + (1.5k/4.75k))$  (ISL6549)


## NVVD Power Supply

NVVD = 0.9-1.2V @ 30-35A

NVVD: 1.2mil internal PLANE

2inch plane width from VRM to GPU

3inch length from VRM to GPU

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