

V133-20

P729: G96, DDR2 MEMORY 32MX16/16MX16

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REV HISTORY

- 04/16  
Remove PAGE 9 Slim D-SUB  
Add PAGE 12 Minidin  
  
1. Remove  
C4,D1,D2,D3,D4  
,J1,L1,L2,LB1,LB2  
,R5,R12,R636,R638 ,R641  
,R647,R662,R664
- 04/17  
1.PCI-e bus add SPDIF-IN PIN (BASE on V129).
- 04/18  
1.Add R4,R5,R6 0ohm  
2.add C201,C202,C203,C204,C205  
,C206,C207,C208,C209,C210,C211


REV	VARIANT	W/P/N	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
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3	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>
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PAGE DETAIL	P729 Overview

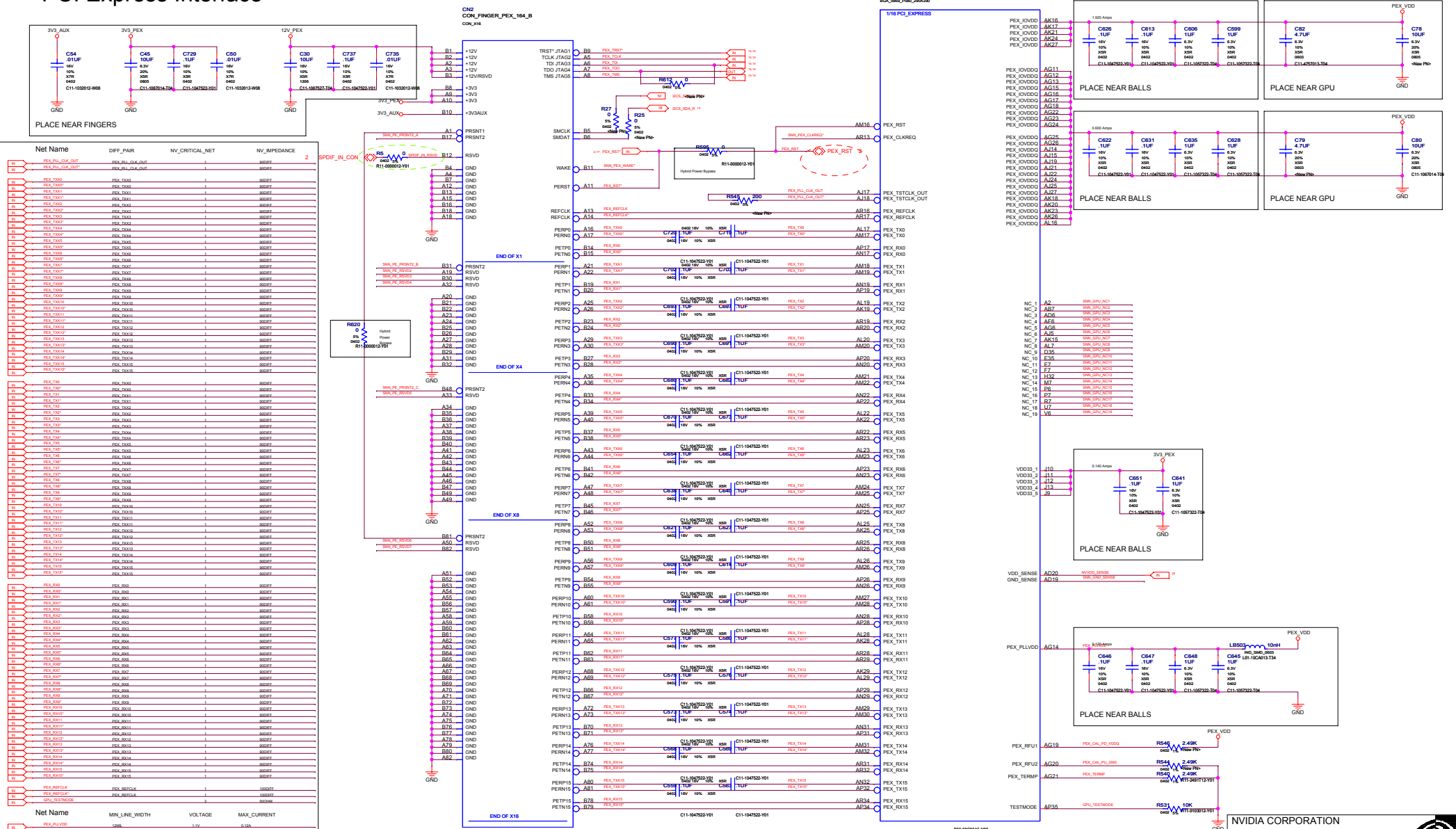
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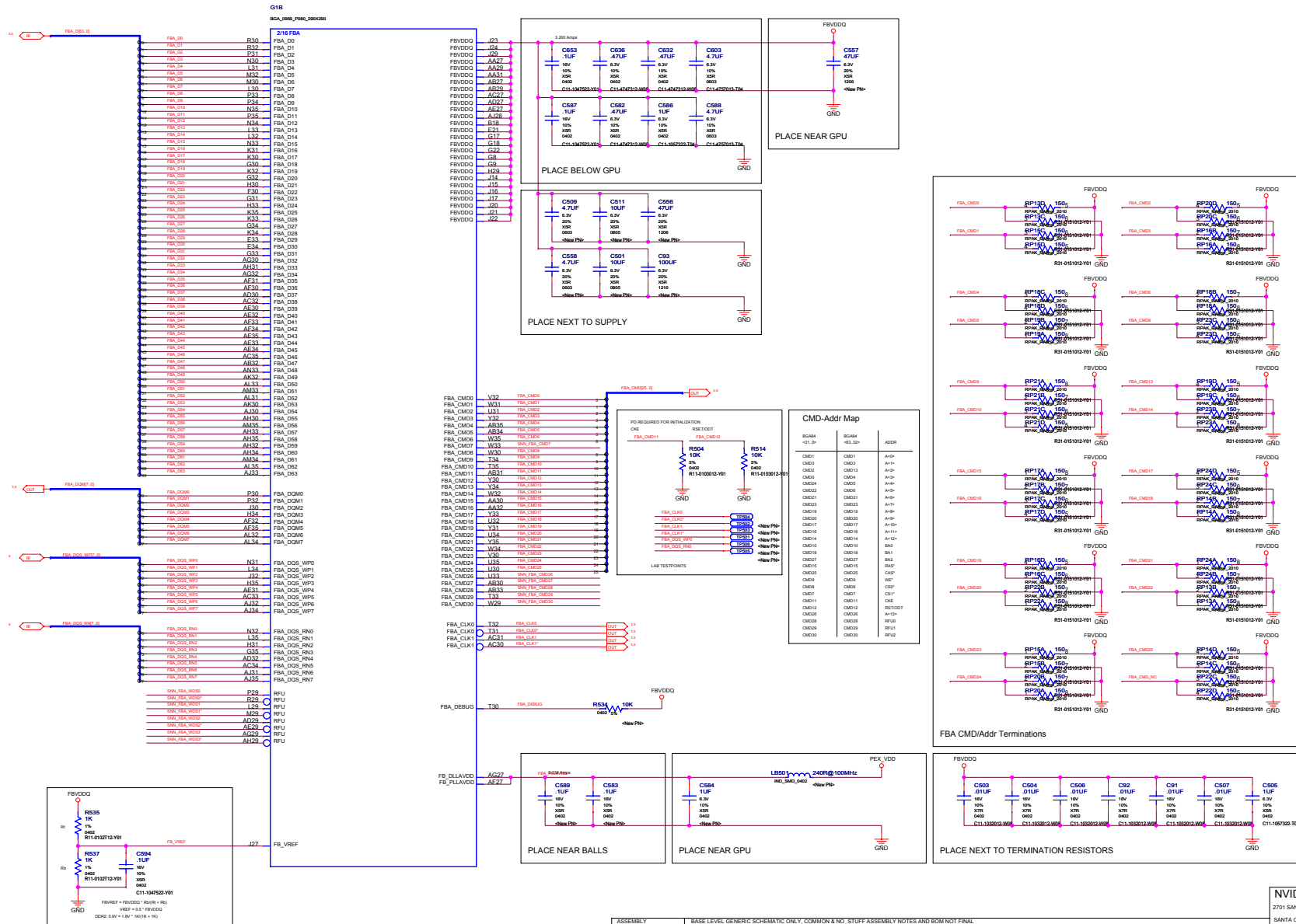
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## PCI Express Interface



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## Partition A Frame Buffer Interface



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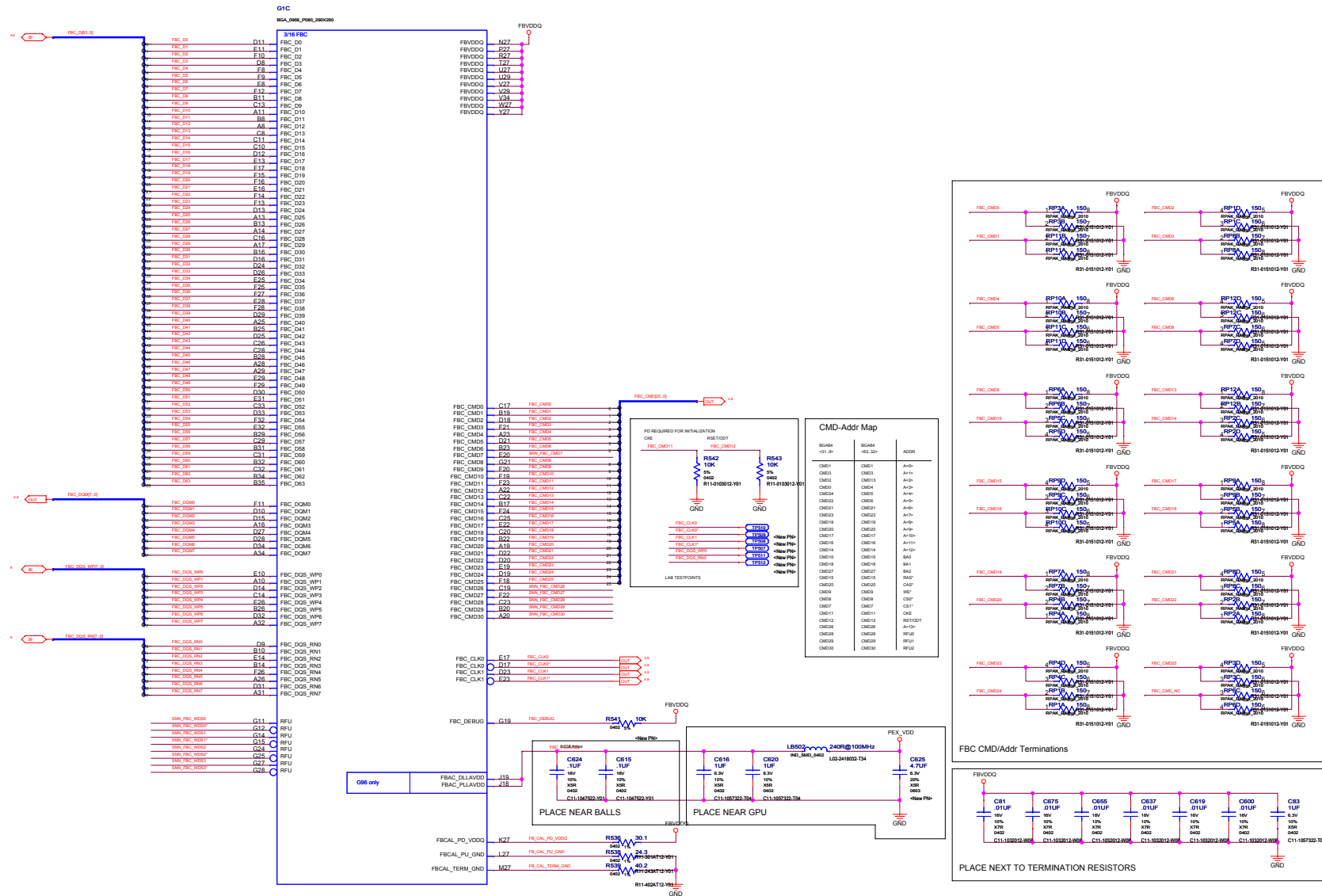
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ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	Partition A Frame Buffer Interface

# Partition C Frame Buffer Interface



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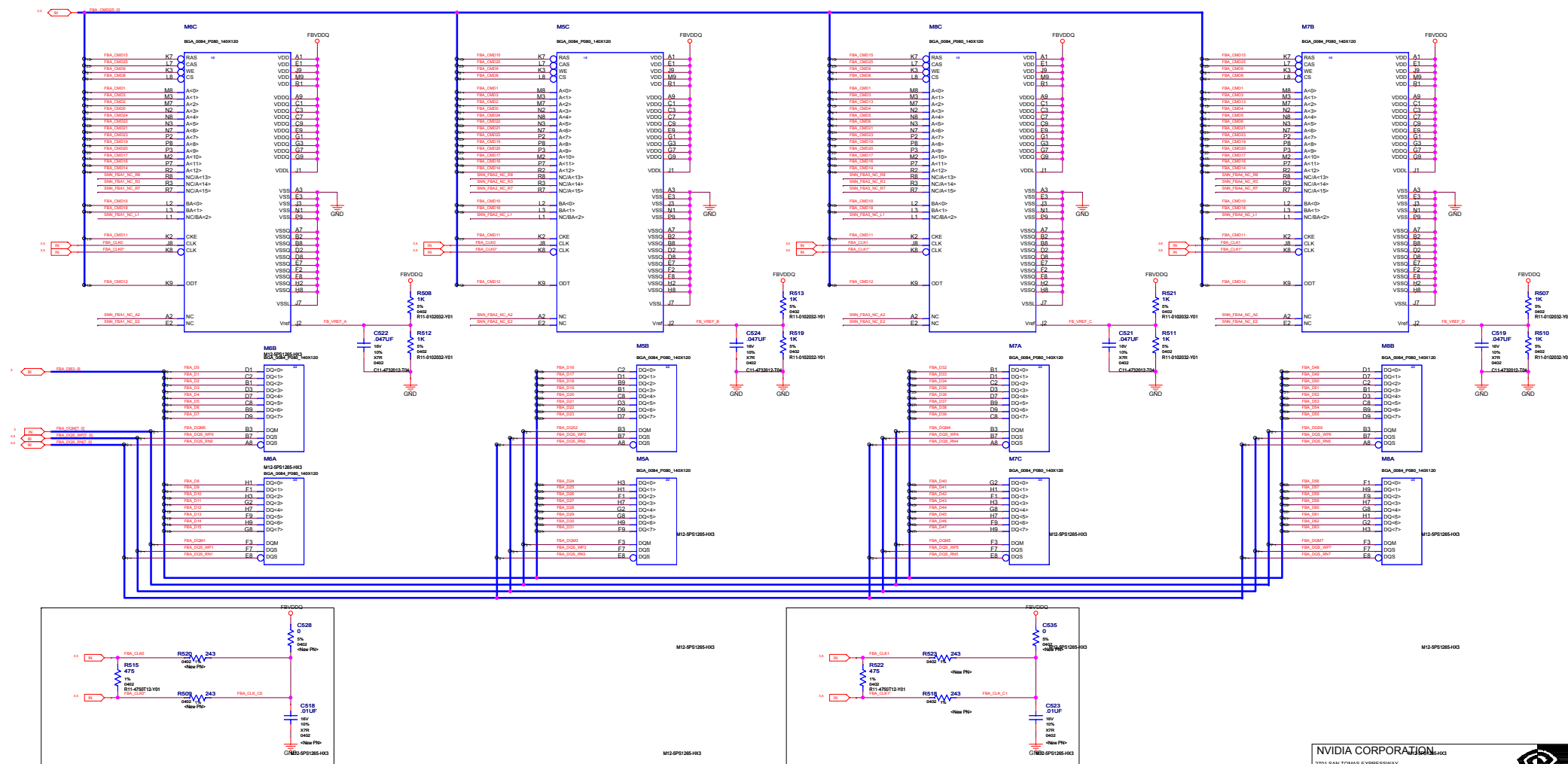
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ASSEMBLY: BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO\_STUFF ASSEMBLY NOTES AND BOM NOT FINAL  
PAGE DETAIL: Partition C Frame Buffer Interface

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## Partition A Memories



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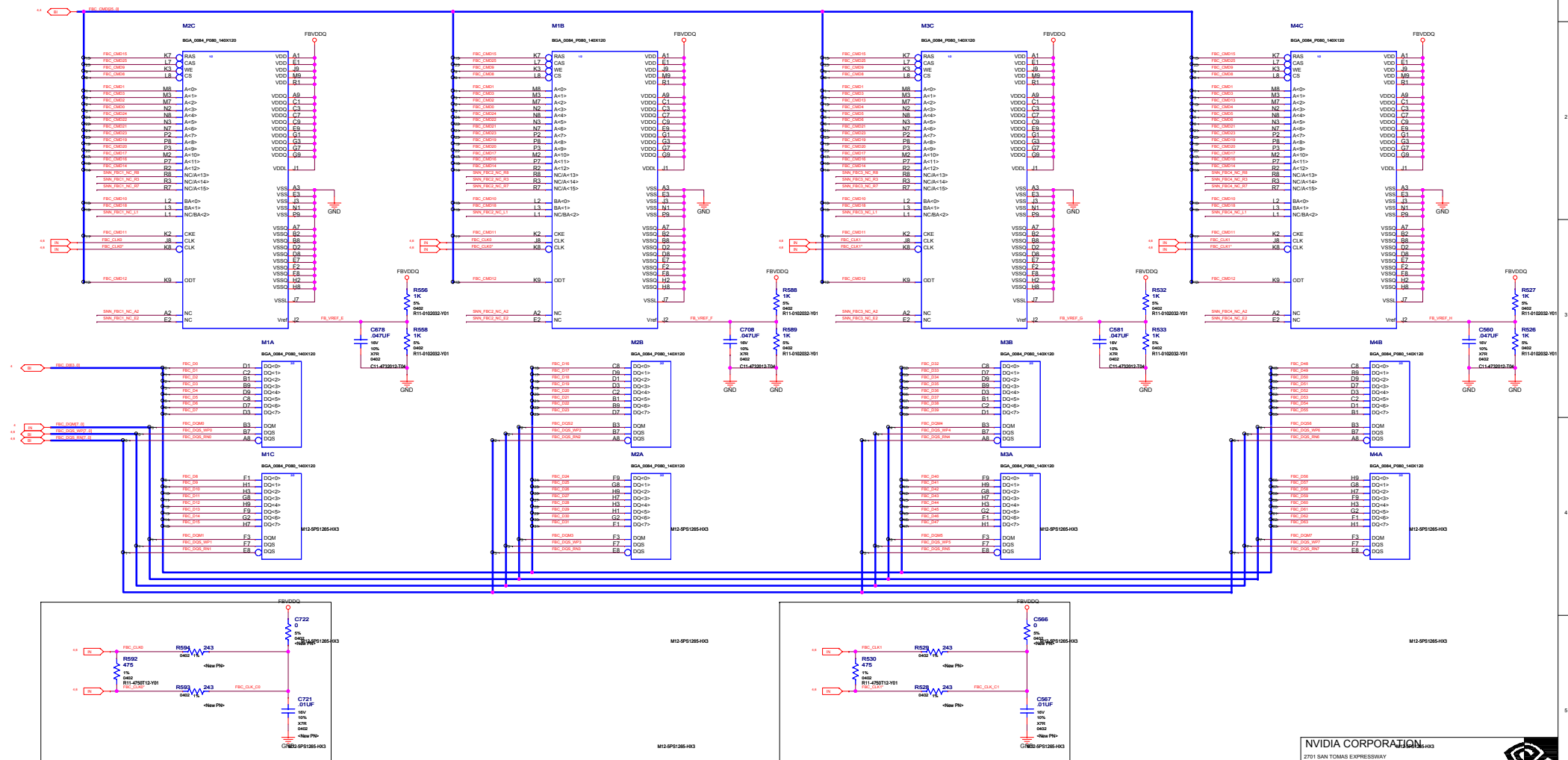
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PAGE DETAIL	Partition & Memories

# Partition C Memories



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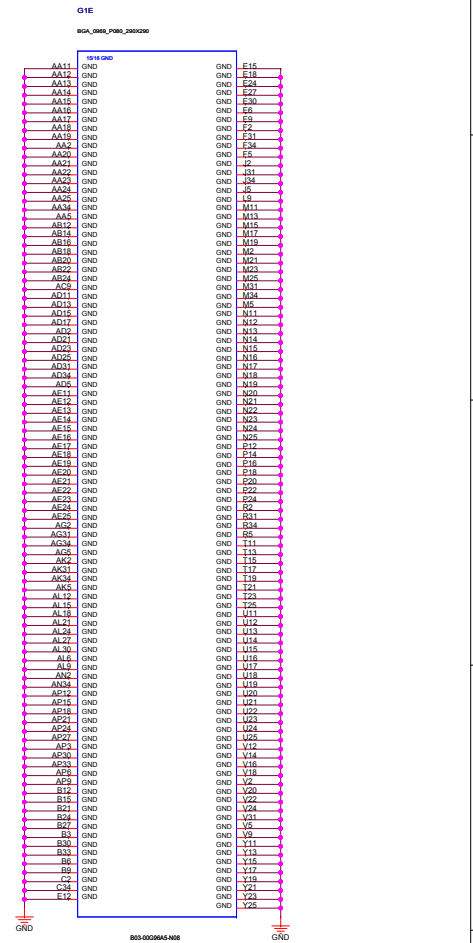
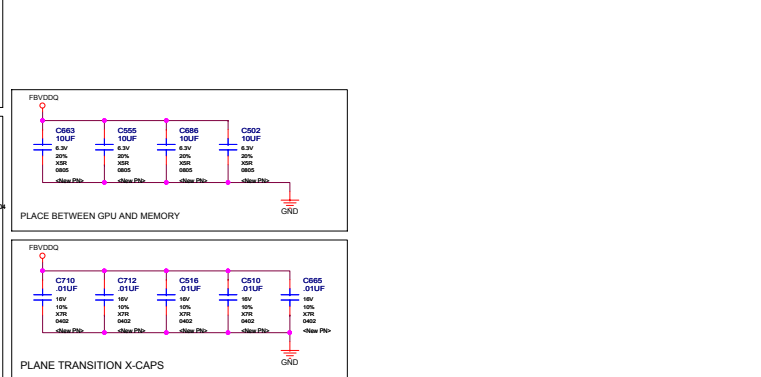
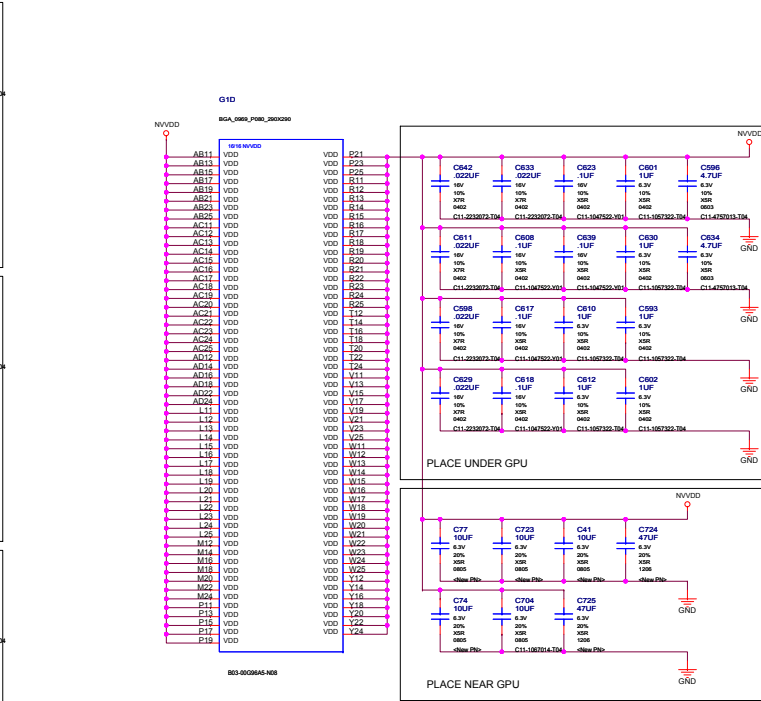
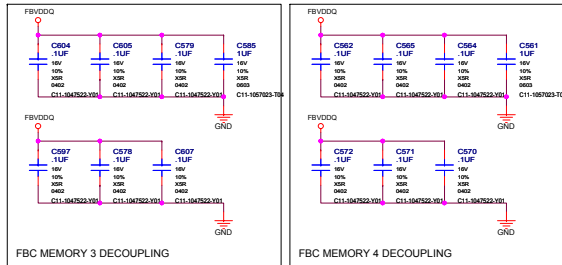
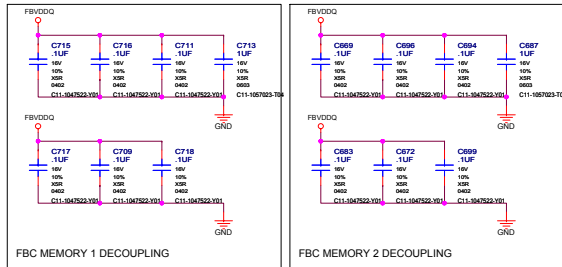
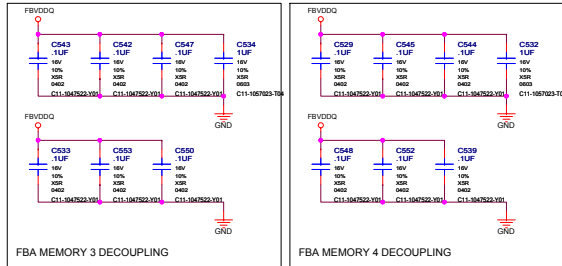
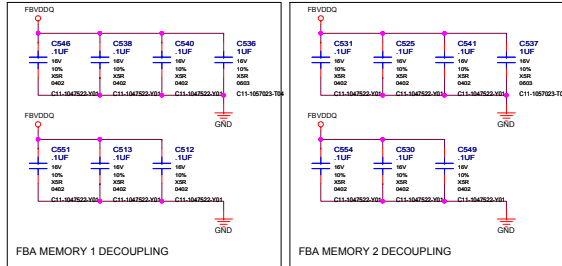


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Partition C Memories

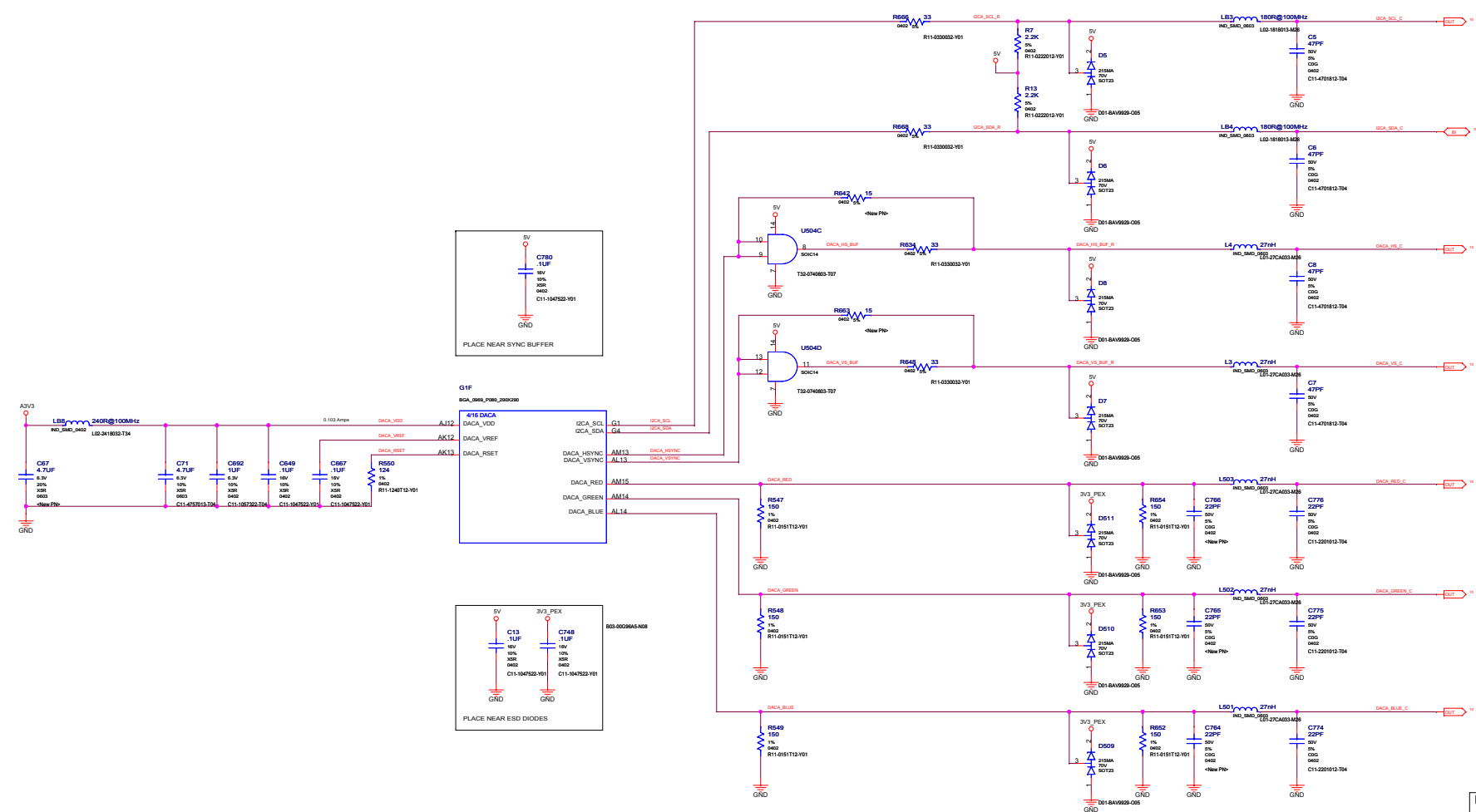
# Decoupling Caps




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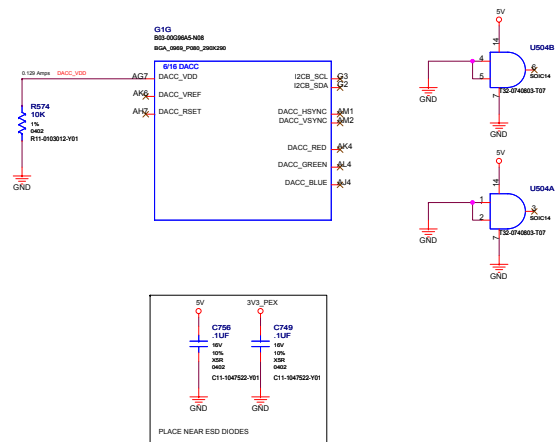
## DACA



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## DACC, Slim DB15 Connector



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PAGE DETAIL	DACC, Slim DB15 Connector

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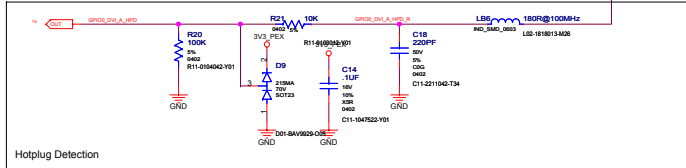



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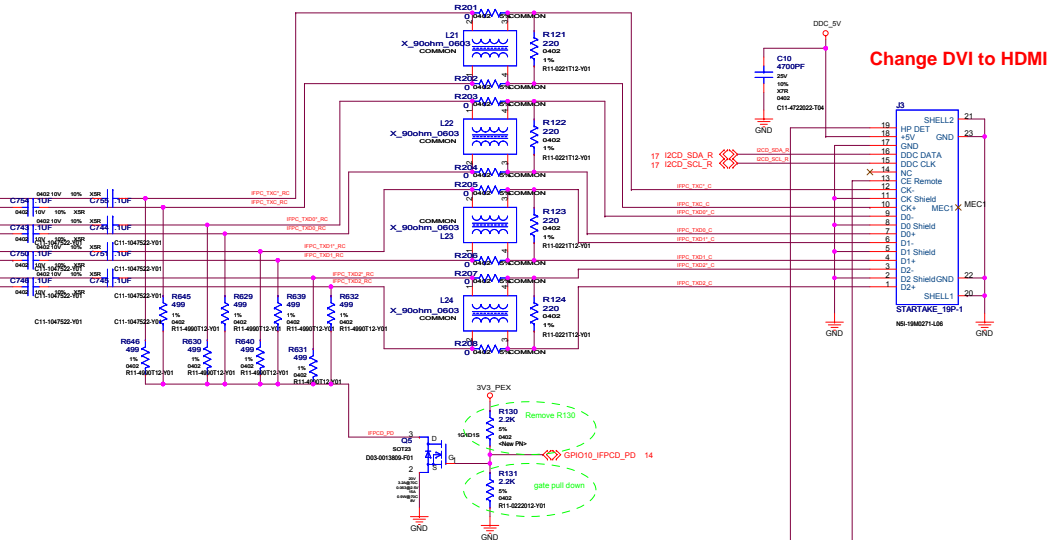
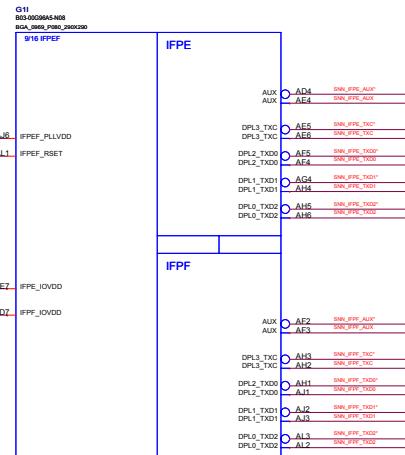
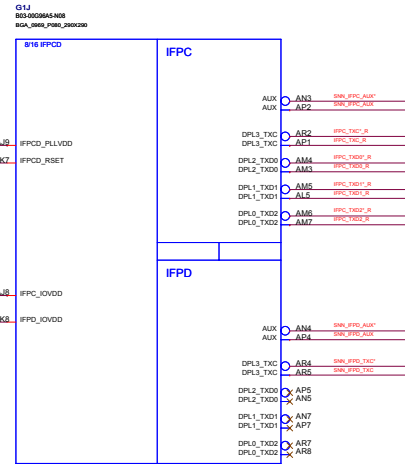
### change FBVDDQ to 1V8



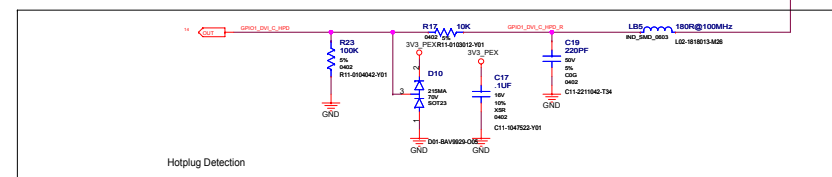
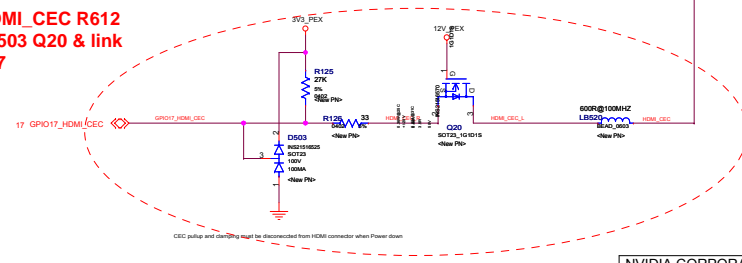
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### Internal TMDS .. Link C & D



## Change DVI to HDMI

MI\_CEC R612  
503 Q20 & link  
7

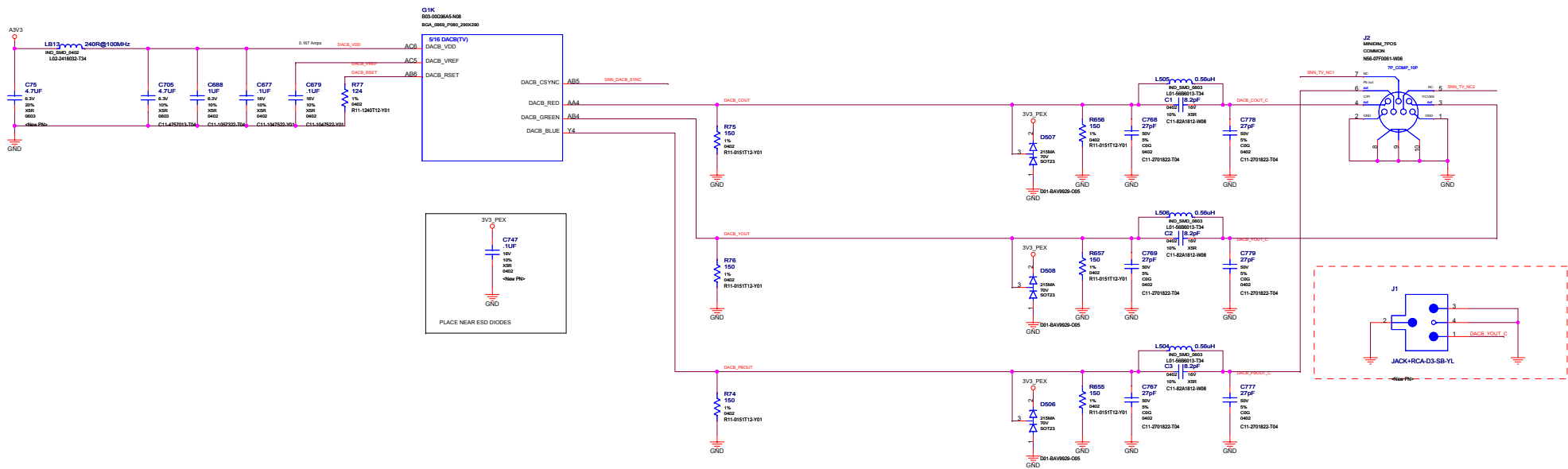
CEC pullup and damping must be disconnected from HDMI connector when Power down

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# DACB, MINIDIN Connector

Remove R574



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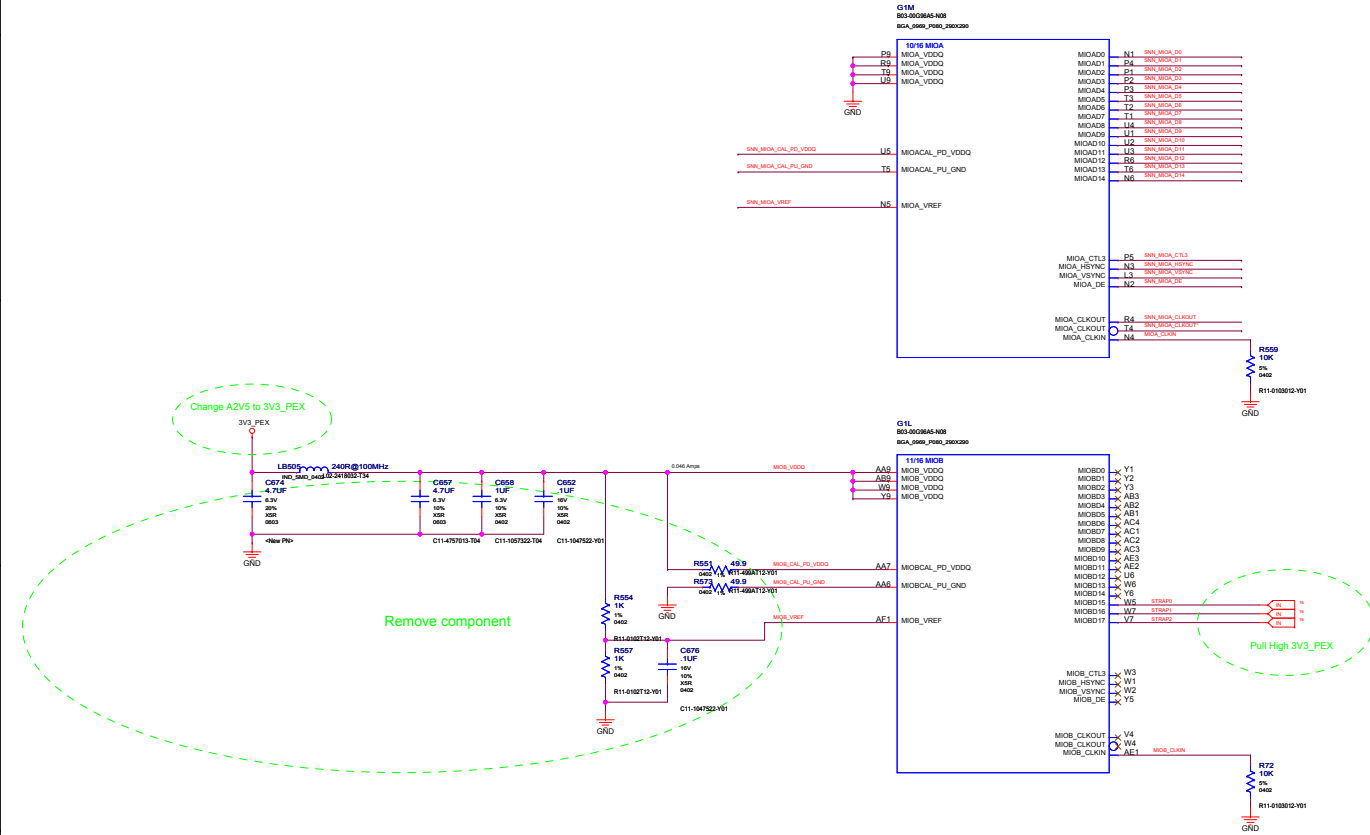
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PAGE DETAIL DACB, MINIDIN Connector

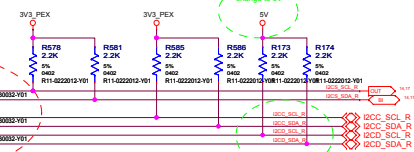
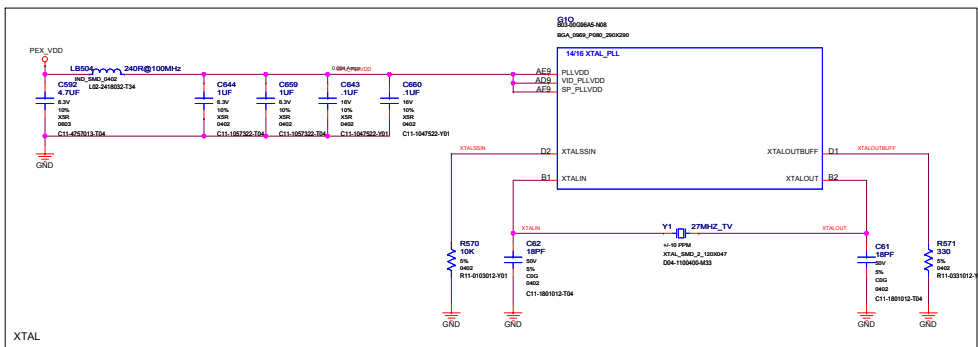
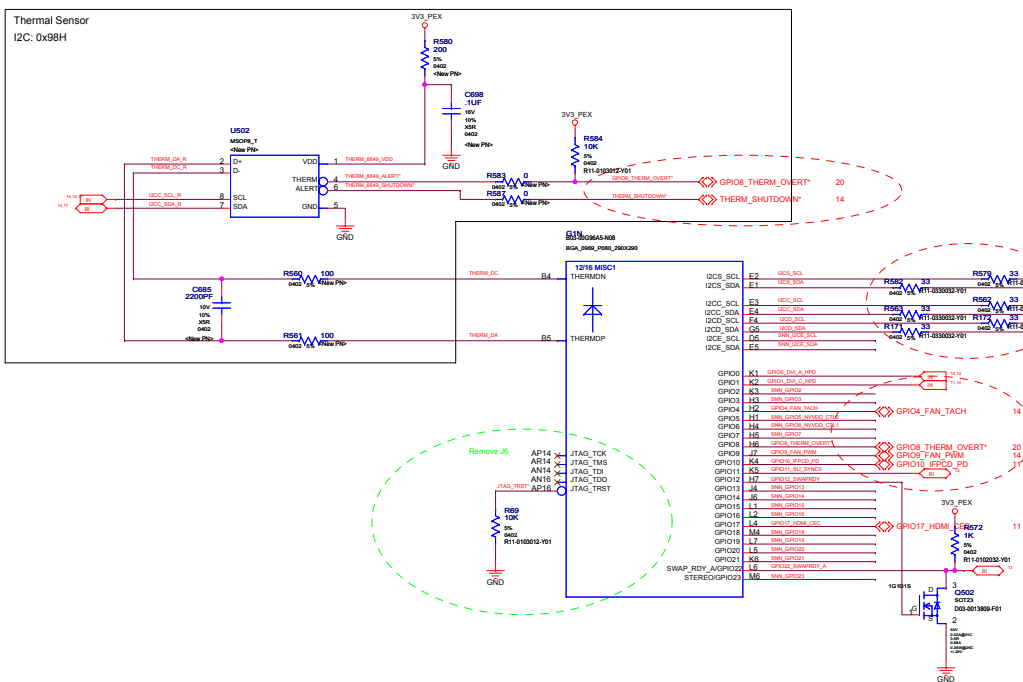
MIOA, MIOB Interface



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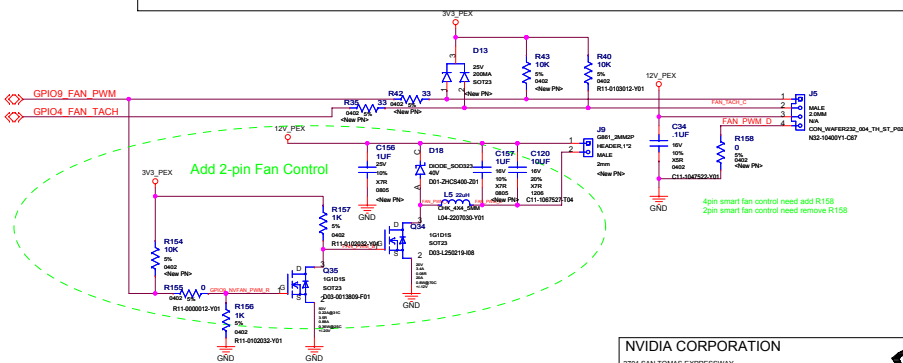
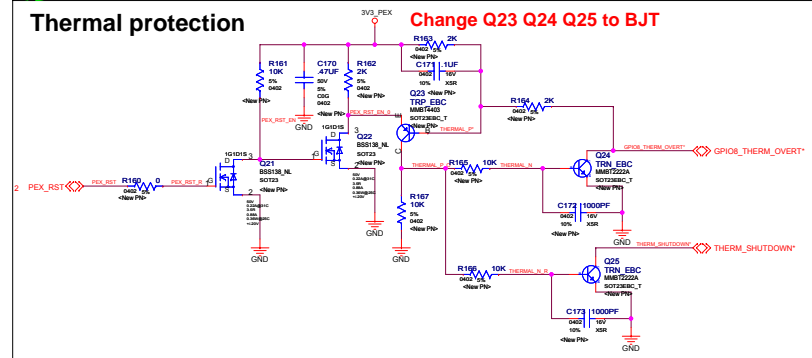
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## Thermal Sensors, GPIOs, XTAL, JTAG, Fan



Add R171 R172 R173 R174  
I2CD SCL & I2CD SDA

GPIO Table		
GPIO	IO	Function
0	IN	DAS SOUTH HOTPLUG DETECT
1	IN	DVI MD HOTPLUG DETECT
2		
3		
4	OUT	PWM FAN
5	OUT	INVOID VOLTAGE SELECT 0
6	OUT	INVID VOLTAGE SELECT 1
7		
8	IN	THERMAL SLOWDOWN
9	IN	FAN TACH
10		
11	INOUT	RASTER SYNC 0
12	INOUT	SWAP READY 0
13		
14		
15		
16		
17		
18		
19		
20		
21	IN	SWAP READY IN
22		
23		



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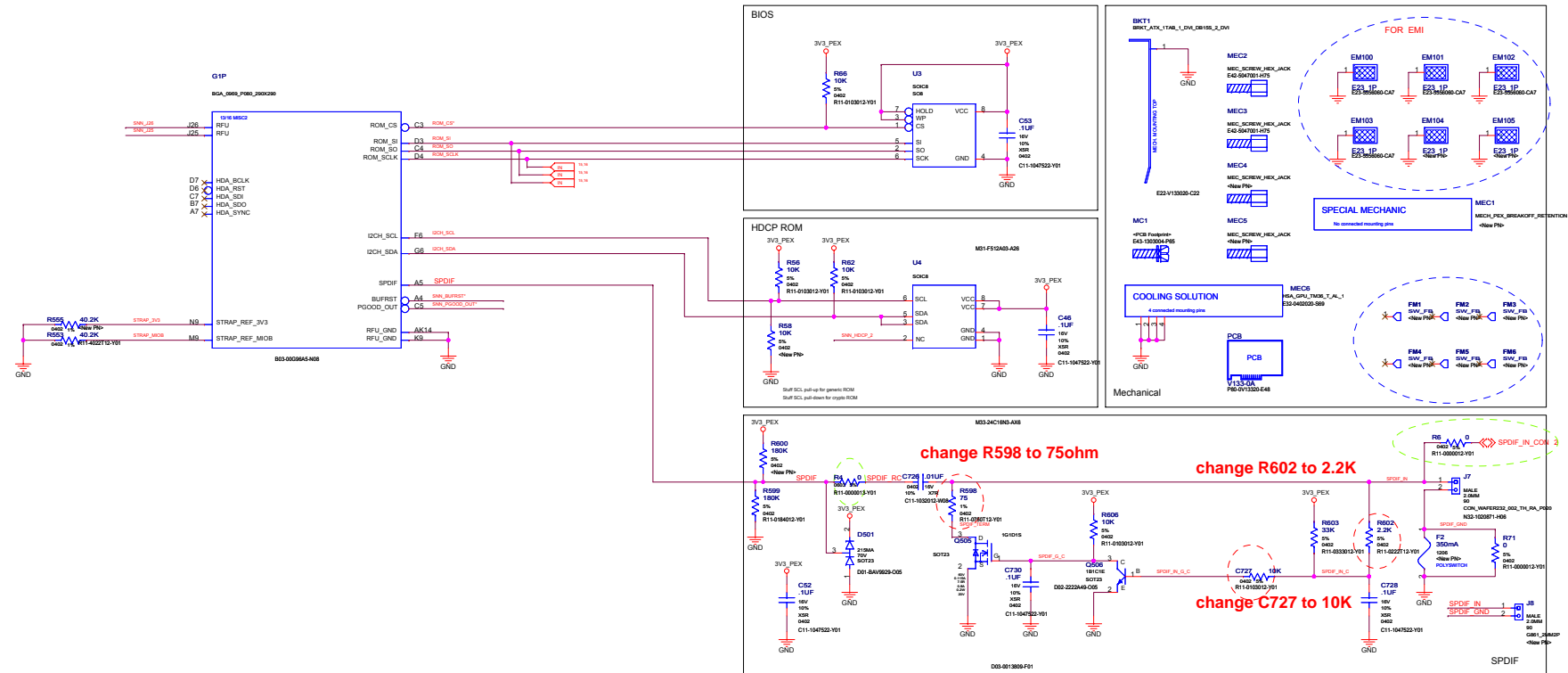


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ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	Thermal Sensors, GPIOs, XTAL, JTAG, Fan

NAME		DATE	28-OCT-2007
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## BIOS, HDCP, SPDIF, HDA, Mechanical



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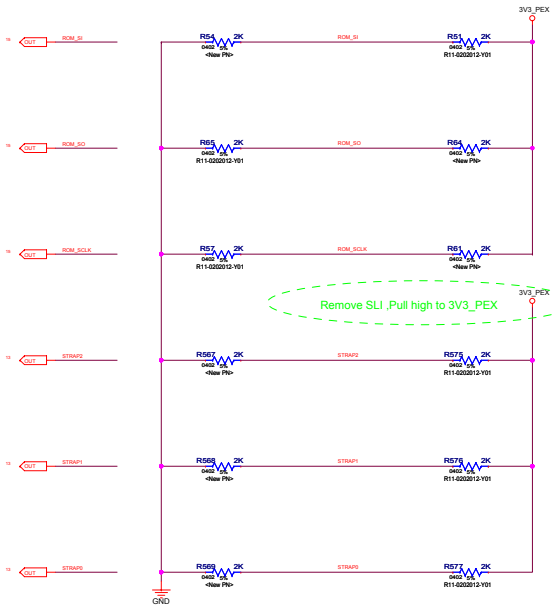
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NAME	DATE 25-OCT-2007

ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO _STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	BIOS, HXCP, SPDIF, HDA, Mechanical

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Straps



G94 Straps  
Multilevel Mode  
Bit Signal

Values

03:	ACLK_277	0 DISABLED	1 ENABLED
02:	TWADD2	000 N75C_A4	001 N75C_A
01:	TWADD1	010 PAL_M	011 PAL_M
00:	TWADD0	100 PAL_CK	101 PAL_CK
03:	PCL_DEV0_EXT	1 000-300-A1	
	SUB_VENDOR	0 NO BIOS	1 BIOS
01:	SLOT_CLK_CFG	0 DISABLED	1 ENABLED
00:	PEX_PUL_CLK_TERM100	0 DIS	1 EN
03:	RAMCFG2	0000 32Mx16/18Mx16 DDR2 128-bit Ewinx 0001 18Mx16 DDR2 128-bit Samsung, Micron 0010 18Mx16 DDR2 128-bit Corsair 0011 18Mx16 DDR2 128-bit Hynix 0100 32Mx16/18Mx16 DDR2 128-bit Nanya 0101 32Mx16 DDR2 64-bit Samsung 0110 32Mx16 DDR2 64-bit Qimonda 0111 32Mx16 DDR2 128-bit Hynix	1000 32Mx16/18Mx16 DDR2 64-bit Ewinx 1001 18Mx16 DDR2 64-bit Samsung, Micron 1010 18Mx16 DDR2 64-bit Corsair 1011 18Mx16 DDR2 64-bit Hynix 1100 32Mx16/18Mx16 DDR2 64-bit Nanya 1101 32Mx16 DDR2 64-bit Samsung 1110 32Mx16 DDR2 64-bit Qimonda 1111 32Mx16 DDR2 64-bit Hynix
03:	PCL_DEV0S	0001 000-300-A1	
02:	PCL_DEV0S		
01:	PCL_DEV0S		
00:	PCL_DEV0S		
03:	SIG0_PANDCFG_LUT_ADR0	0000 DSKTOP_DEFAULT 0001 MOBILE_JTTRES 0010 MOBILE_JTTRES_LLAMP 0011 MOBILE_JTTRES_LLAMP 0100 MOBILE_JTTRES_HAMP 0101 MOBILE_JTTRES_HAMP 0110 MOBILE_JTTRES_HAMP 0111 MOBILE_JTTRES_HAMP	1000 DSKTOP_JTTRES 1001 MOBILE_JTTRES_HAMP 1010 MOBILE_JTTRES_LLAMP 1011 MOBILE_JTTRES_LLAMP 1100 MOBILE_JTTRES_HAMP 1101 MOBILE_JTTRES_HAMP 1110 MOBILE_JTTRES_HAMP 1111 MOBILE_JTTRES_HAMP
03:	USER0	0000 DEFAULT	
02:	USER0		
01:	USER0		
00:	USER0		

G94 Straps  
Binary-Bringup Mode  
Bit Signal

Values

SUB_VENDOR	0 NO BIOS 1 BIOS
SLOT_CLK_CFG	0 DISABLED 1 ENABLED
SIG0_PANDCFG_LUT_ADR0	0000 DSKTOP_DEFAULT 0001 MOBILE_DEFAULT 0010 MOBILE_JTTRES_LLAMP 0011 MOBILE_JTTRES_LLAMP 0100 MOBILE_JTTRES_HAMP 0101 MOBILE_JTTRES_HAMP 0110 MOBILE_JTTRES_HAMP 0111 MOBILE_JTTRES_HAMP 1000 DSKTOP_JTTRES 1001 MOBILE_JTTRES_LLAMP 1010 MOBILE_JTTRES_LLAMP 1011 MOBILE_JTTRES_LLAMP 1100 MOBILE_JTTRES_HAMP 1101 MOBILE_JTTRES_HAMP 1110 MOBILE_JTTRES_HAMP 1111 MOBILE_JTTRES_HAMP
SIG0_PANDCFG_LUT_ADR1	
SIG0_PANDCFG_LUT_ADR0	

G94 Straps  
Binary-Production Mode  
Bit Signal

Values

SLOT_CLK_CFG	0 DISABLED 1 ENABLED
PCL_DEV0S_EXT	10 000-300-A1
PCL_DEV0S	
RAMCFG2	000 32Mx16/18Mx16 DDR2 Ewinx 001 18Mx16 DDR2 Samsung, Micron 010 18Mx16 DDR2 Corsair 011 18Mx16 DDR2 Hynix 100 32Mx16/18Mx16 DDR2 Nanya 101 32Mx16 DDR2 Samsung 110 32Mx16 DDR2 Qimonda 111 32Mx16 DDR2 Hynix
RAMCFG1	
RAMCFG0	

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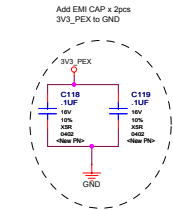
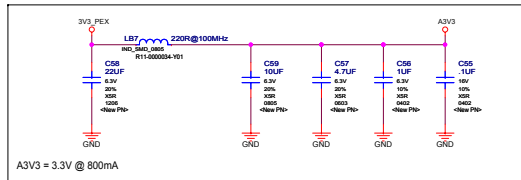
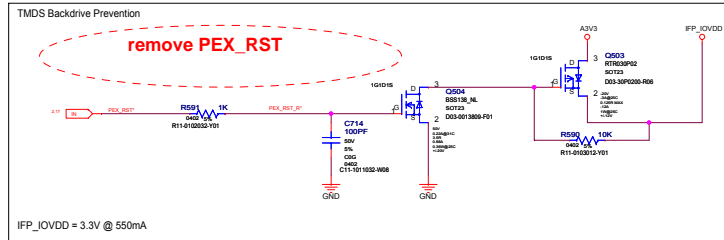
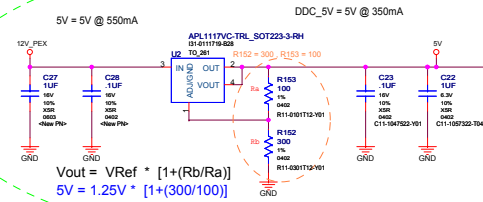
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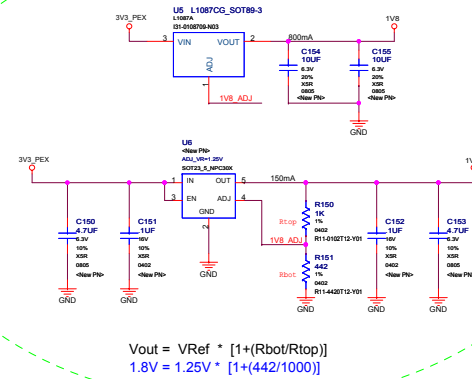


# Power Supply I: 2V5, 3V3, 5V, IFP\_IOVDD

## Change DDC\_5V circuit



## Change 1V8 circuit



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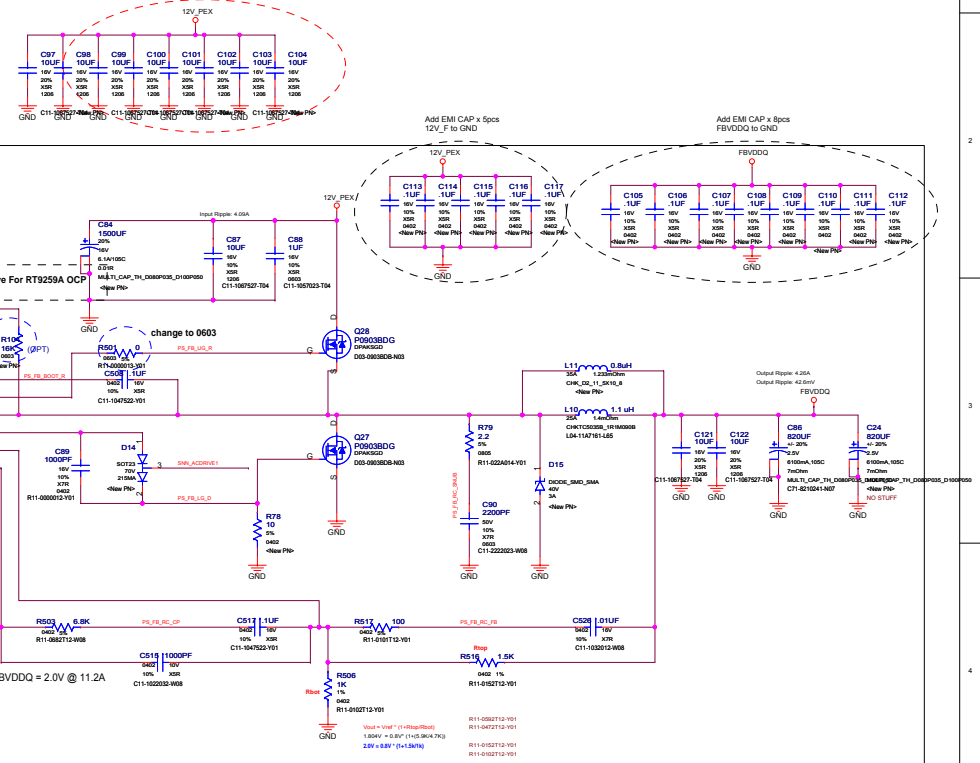


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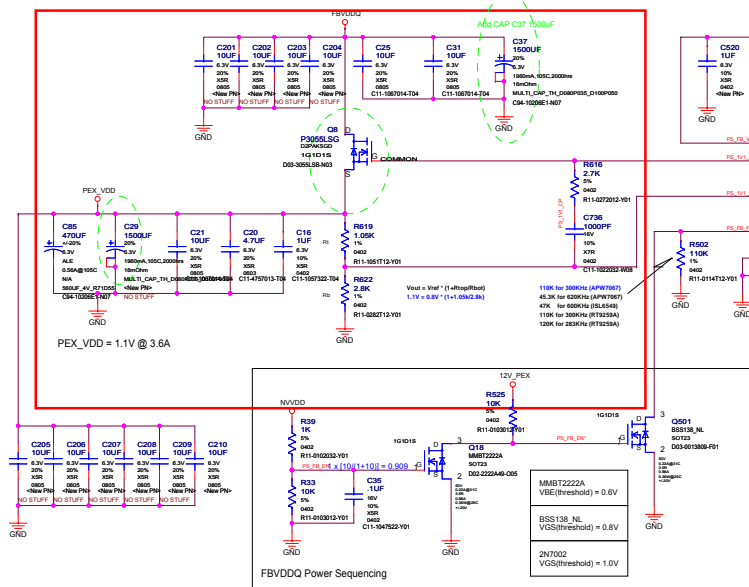
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## Power Supply II: FBVDDQ



<b>APW7067N</b>			
<b>R503 = 6.8K</b>	<b>C517 = 0.1uF</b>	<b>R517 = 100</b>	<b>C526 = 0.01uF</b>
<b>C515 = 1000pF</b>		<b>R516 = 1.5K</b>	
<b>OS-CON 820uF "1" x 1050uF "1" + 1.1uH &gt;&gt; C515 = 1000pF</b>			
<b>1500uF "2" x 1050uF "1" + 1.1uH &gt;&gt; C515 = 2200pF</b>			
<b>RT9259A</b>			
<b>R503 = 15K</b>	<b>C517 = 0.1uF</b>	<b>R517 = 100</b>	<b>C526 = 0.01uF</b>
<b>C515 = 3300pF</b>		<b>R516 = 1.5K</b>	
<b>OCP : R104=10k ohm for 25A OCP</b>			
<b>CS14 CS20,R505 &gt;&gt; NG</b>			



ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	Power Supply II: FBVDDQ

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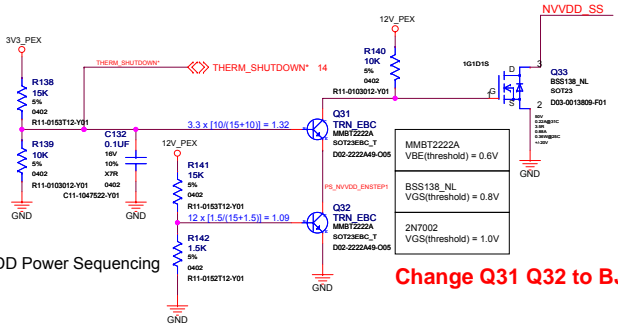
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Power Supply III: NVVDD, PEX\_VDD



NVVDD Power Sequencing

Change Q31 Q32 to BJT

**APW7088**  
Switching Frequency Fixed 300KHz  
a. Inductance(L) : L=0.8~20μH(100KHz~0.25V)  
b. DC Resistance(RDC) : 1.233mΩ +6%  
c. Iout Max=35A  
d. output CAP = 820uF(7mohm) \* 2  
R303 = R305 = 4.32K  
R306 = R318 = 620 ohm (OCP trigger point = 60A)  
C302 = C310 = 0.22uF  
Compensation  
C308 = 3.3nF ; R314 = 68 ohm  
C308 = 330uF ; C307 = 10K ohm  
R310 = 10K ohm ; R313 = 1.78K ohm  
R307, R311, R316, R319, R320 = 0 ohm  
R308, R302, R308, R309, R315, R317 = NC  
C304, C305 = NC  
VID0, VID1, VID2 Float Vref = 0.85V

**RT9258**  
Switching Frequency 250KHz (R308=42K)  
a. Inductance(L) : L=0.8~20μH(100KHz~0.25V)  
b. DC Resistance(RDC) : 1.233mΩ +6%  
c. Iout Max=35A  
d. output CAP = 820uF(7mohm) \* 2  
Modify:  
1. R302, R317, R309, R306, R318 >> 0 ohm  
2. R313 >> 7.15K ohm  
3. R314, R311, C308 >> NC  
4. R310 >> 12K ohm  
5. C307 >> 4.7nF  
6. C308 >> 8.2pF  
7. R308 >> 38K ohm  
8. R307 >> 6.8K ohm  
9. R319, R320 >> 430 ohm  
10. R303, R305 >> 7.2K ohm  
11. R321, R322 >> 0 ohm

APW7088 change RT9258  
0 Ohm  
remove  
change

