P691: G98/GT218, DDR2 MEMORY 64MX16/32MX16

Page 1: P691 Overview

Page 2: PCI Express Interface

Page 3: Frame Buffer Interface

Page 4: DDR2 Memories

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Page 12: Power Supply I: FBVDD/Q, PEX_VDD, 5V, 3V3_F

Page 13: Power Supply II: PEX_PLLVDD, NVVDD

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SKU	VARIANT	NVPN	ASSEMBLY
B	BASE	600-10691-BASE-100	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
1	SKU0001	600-10691-0001-100	GT218-300, 550/1375/500, 256MB/64bit, 32Mx16 DDR2, DVI-DL+DP+VGA, DT
2	SKU0002	600-10691-0002-100	GT218-300, 550/1375/500, 512MB/64bit, 64Mx16 DDR2, DVI-DL+DP+VGA, DT
3	SKU0010	600-10691-0010-100	G98-400, 550/1375/500, 256MB/64bit, 32Mx16 DDR2, DVI-DL+DP+VGA, DT
4	SKU0011	600-10691-0011-100	G98-400, 550/1375/500, 512MB/64bit, 64Mx16 DDR2, DVI-DL+DP+VGA, DT
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ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	P691 Overview

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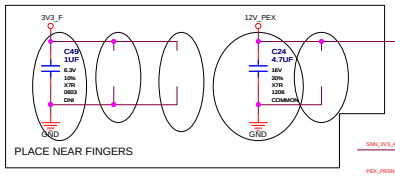
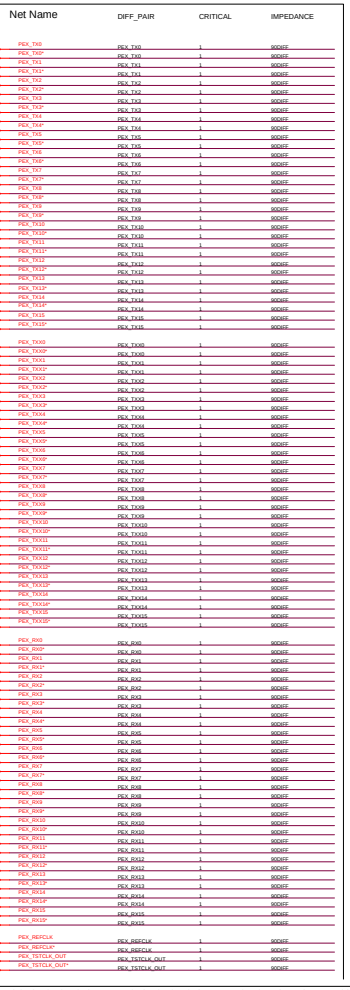
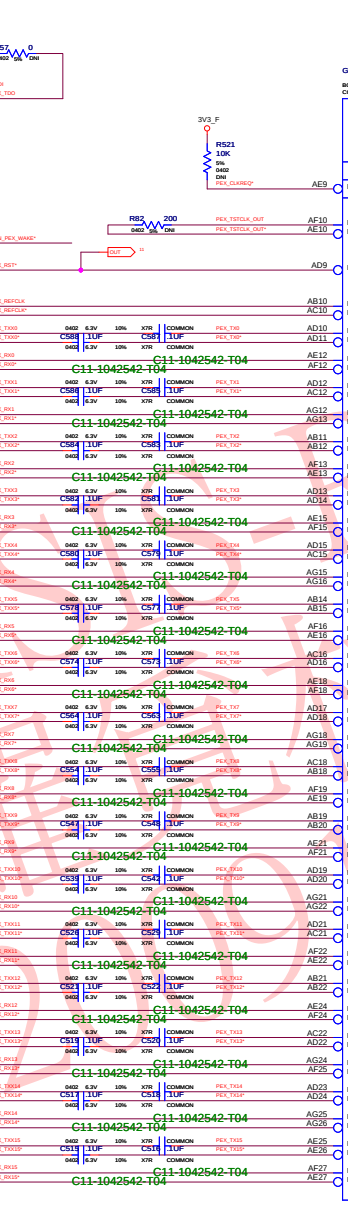
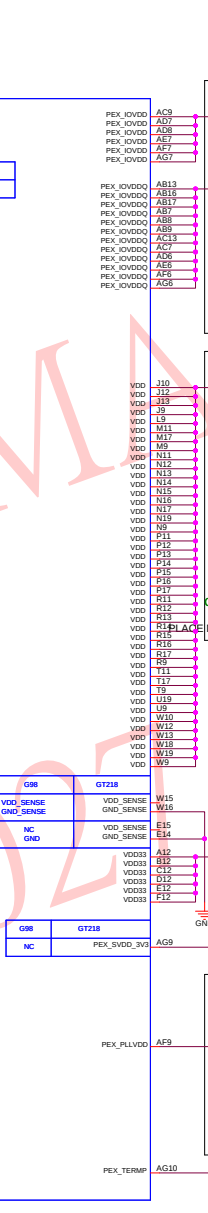
NV_PN	600-10691-BASE-100 A		
ID		PAGE	
NAME		DATE	05-FEB-2009

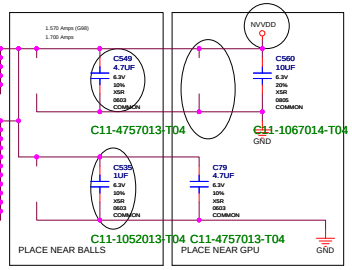
PCI Express Interface

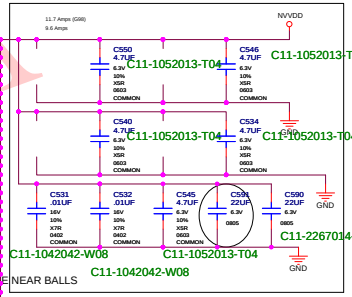


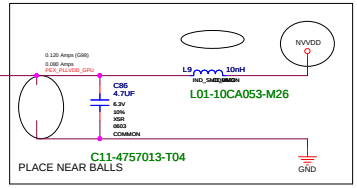


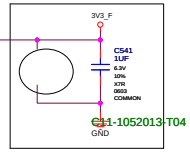


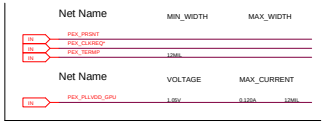












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ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	PCI Express Interface

B03-GT21805-N08

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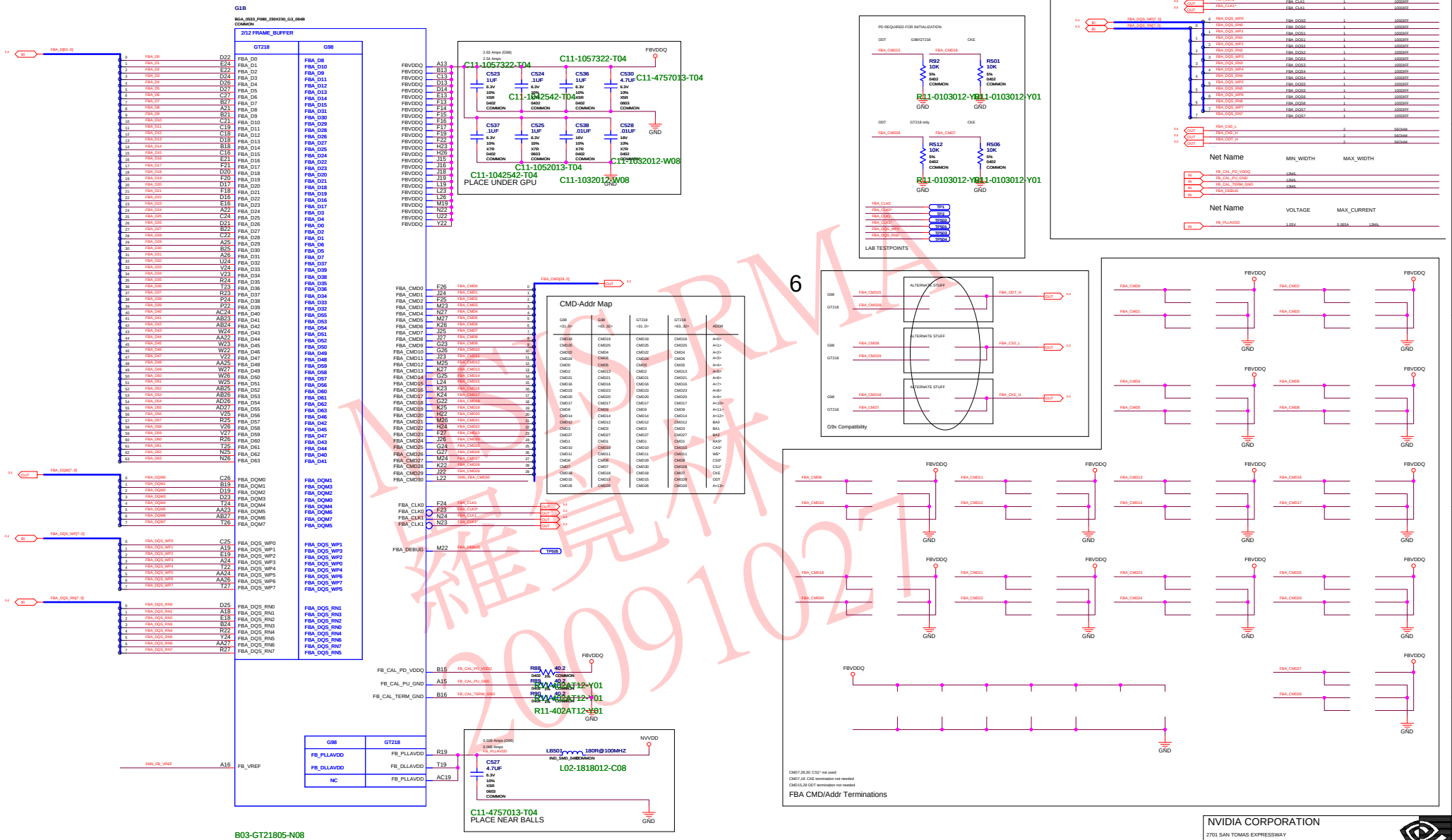
Frame Buffer Interface



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

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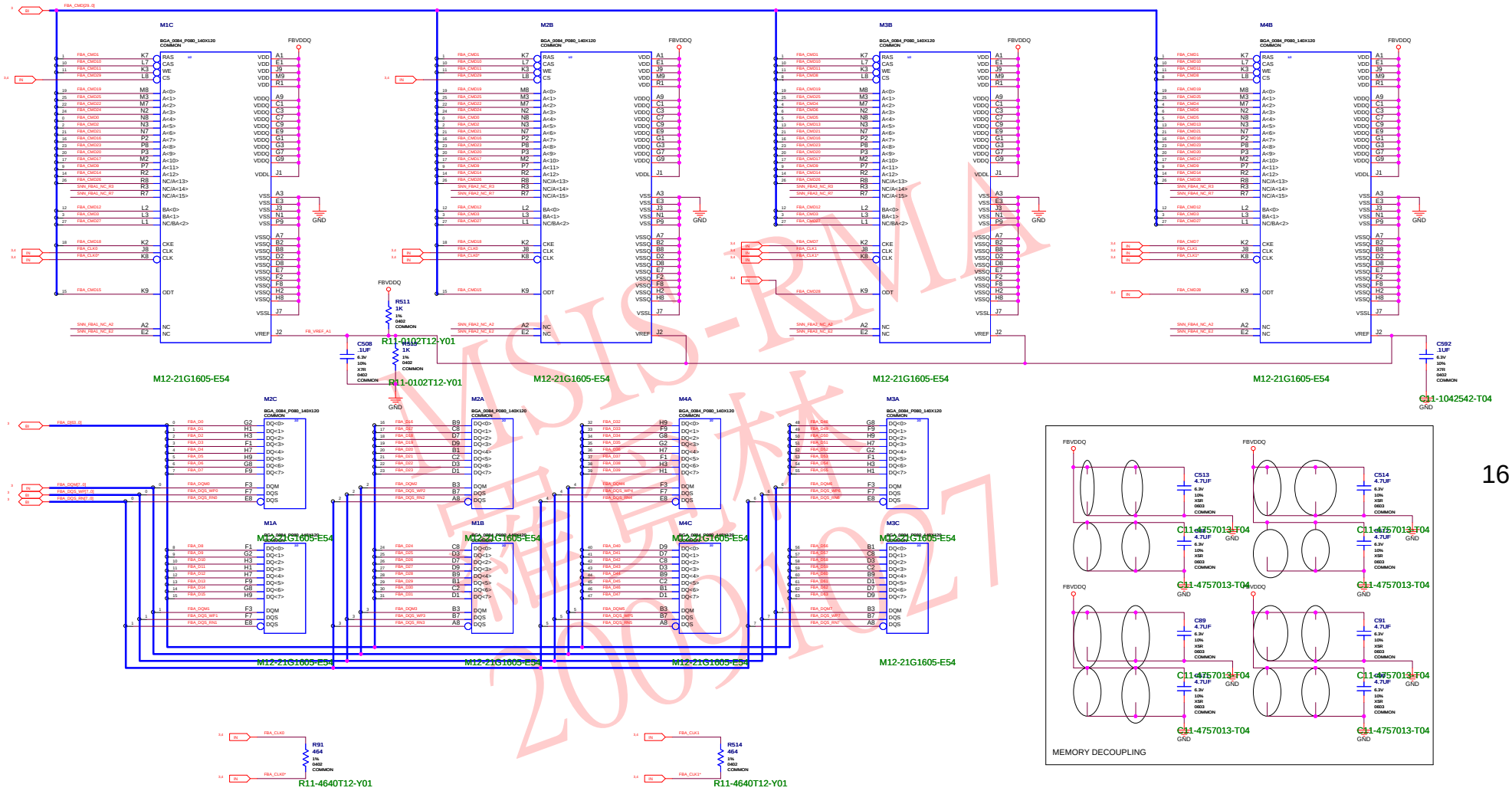
DDR2 Memories



Net Name | MIN_WIDTH | MAX_WIDTH

FB_VREF_A | 12MIL

16

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ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	DDR2 Memories

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DAC A Slim VGA

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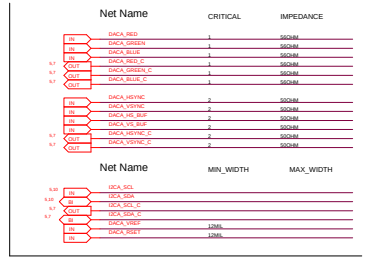

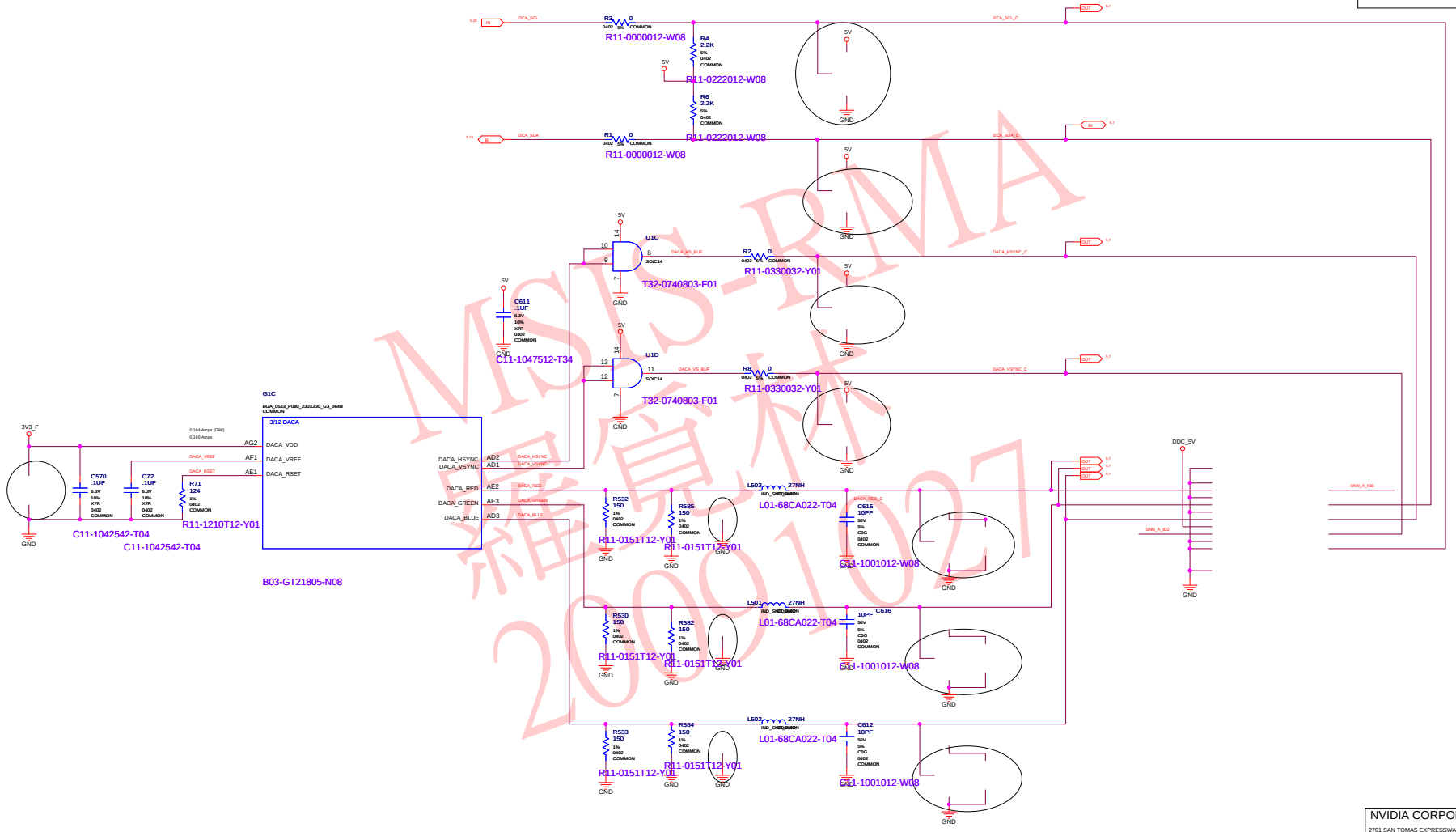

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ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	DAC A Slim VGA

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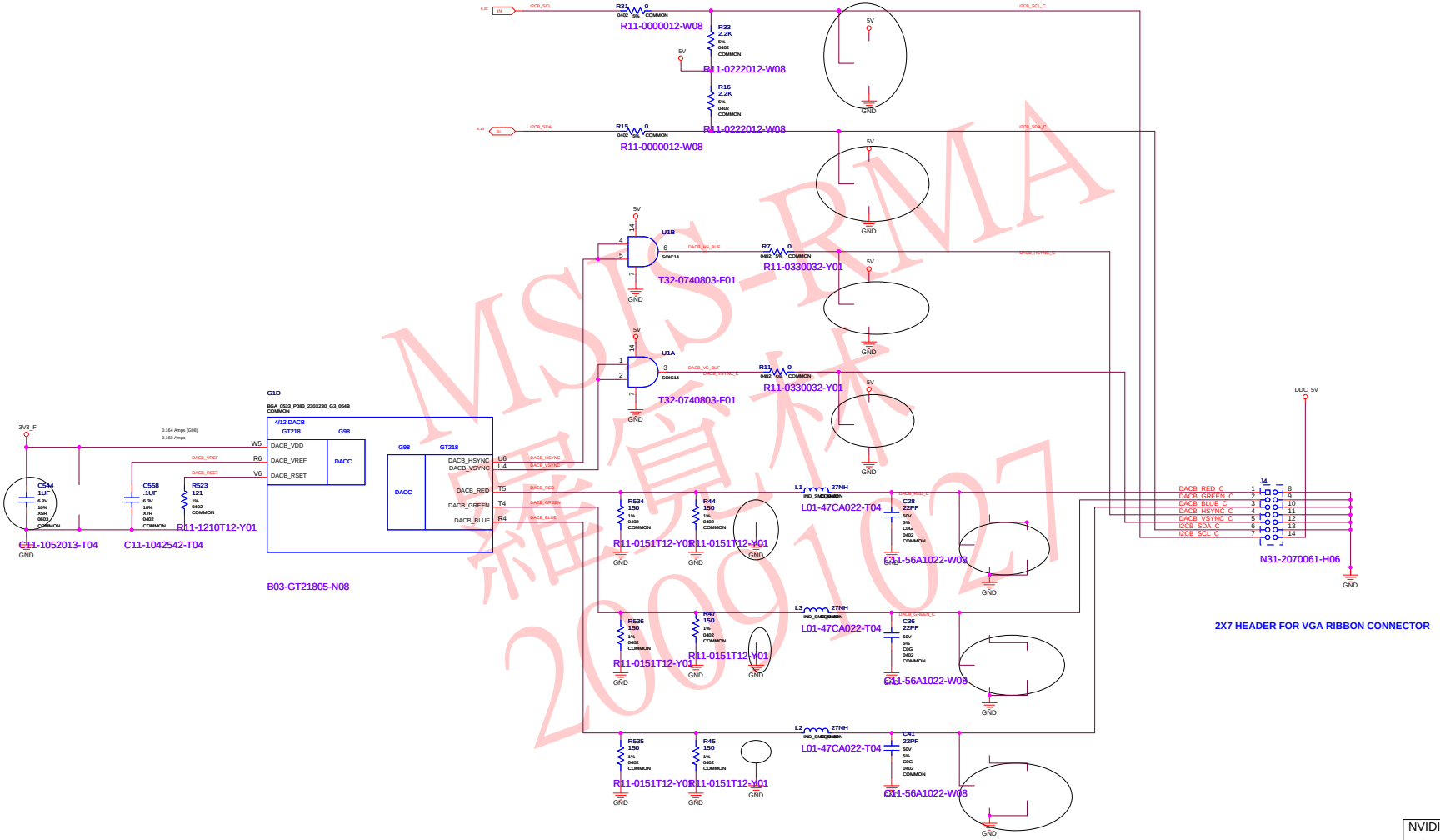
DAC B VGA Header

Net Name	CRITICAL	IMPEDANCE
DACB_RED	1	50OHM
DACB_GREEN	1	50OHM
DACB_BLUE	1	50OHM
DACB_RED_C	1	50OHM
DACB_GREEN_C	1	50OHM
DACB_BLUE_C	1	50OHM
DACB_HSYNC	2	50OHM
DACB_VSYNC	2	50OHM
DACB_HSYNC_C	2	50OHM
DACB_VSYNC_C	2	50OHM
DACB_HS_BUF	2	50OHM
DACB_VS_BUF	2	50OHM

Net Name	MIN_WIDTH	MAX_WIDTH
I2CB_SCL		
I2CB_SDA		
I2CB_SCL_C		
I2CB_SDA_C		
DACB_VREF	12MIL	
DACB_RSET	12MIL	

11



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ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	DAC B VGA Header

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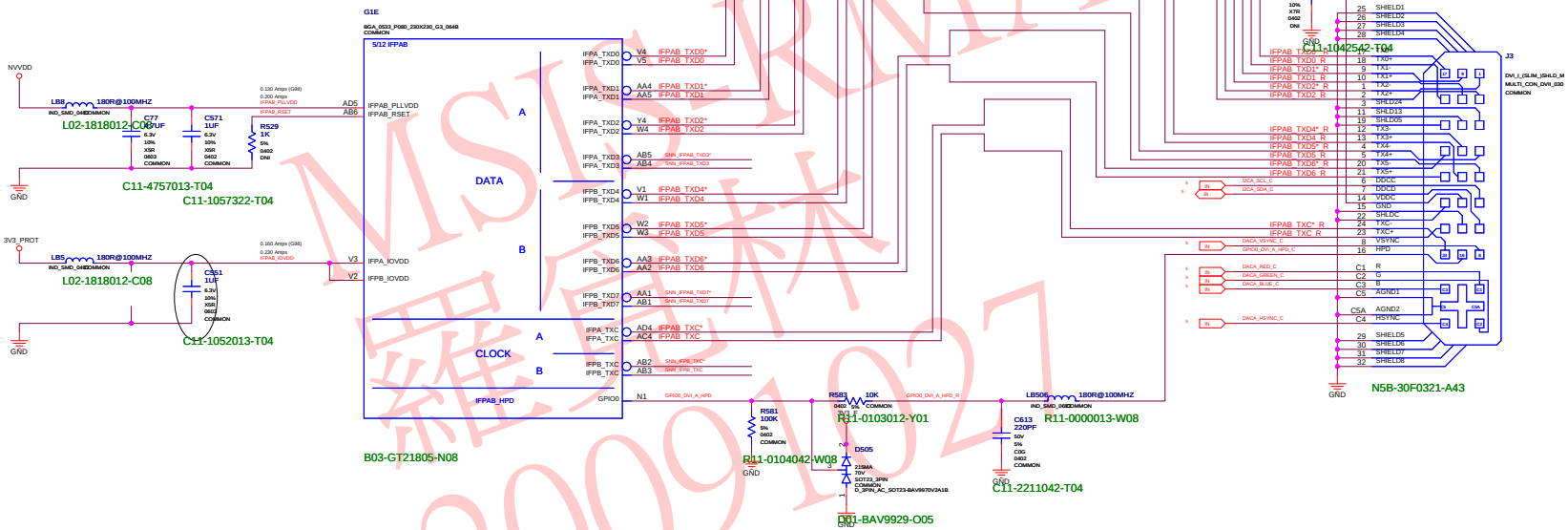
TMDS Interface



Net Name	DIFF_PAIR	CRITICAL	IMPEDANCE
IFPAB_TXD0*	IFPAB_TXD0	1	90OHM
IFPAB_TXD0	IFPAB_TXD0	1	90OHM
IFPAB_TXD1*	IFPAB_TXD1	1	90OHM
IFPAB_TXD1	IFPAB_TXD1	1	90OHM
IFPAB_TXD2*	IFPAB_TXD2	1	90OHM
IFPAB_TXD2	IFPAB_TXD2	1	90OHM
IFPAB_TXD4*	IFPAB_TXD4	1	90OHM
IFPAB_TXD4	IFPAB_TXD4	1	90OHM
IFPAB_TXD5*	IFPAB_TXD5	1	90OHM
IFPAB_TXD5	IFPAB_TXD5	1	90OHM
IFPAB_TXD6*	IFPAB_TXD6	1	90OHM
IFPAB_TXD6	IFPAB_TXD6	1	90OHM
IFPAB_TXC*	IFPAB_TXC	1	90OHM
IFPAB_TXC	IFPAB_TXC	1	90OHM

Net Name	MIN_WIDTH	MAX_WIDTH
GPIO0_DVI_A_HPD		
GPIO0_DVI_A_HPD_R		
GPIO0_DVI_A_HPD_C		

Net Name	VOLTAGE	MAX_CURRENT		
IFPAB_PLLVDD	1.05V	0.200A	18MIL	
IFPAB_IOVDD	3.3V	0.230A	18MIL	
IFPAB_RSET			12MIL	

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PAGE DETAIL	TMDS Interface

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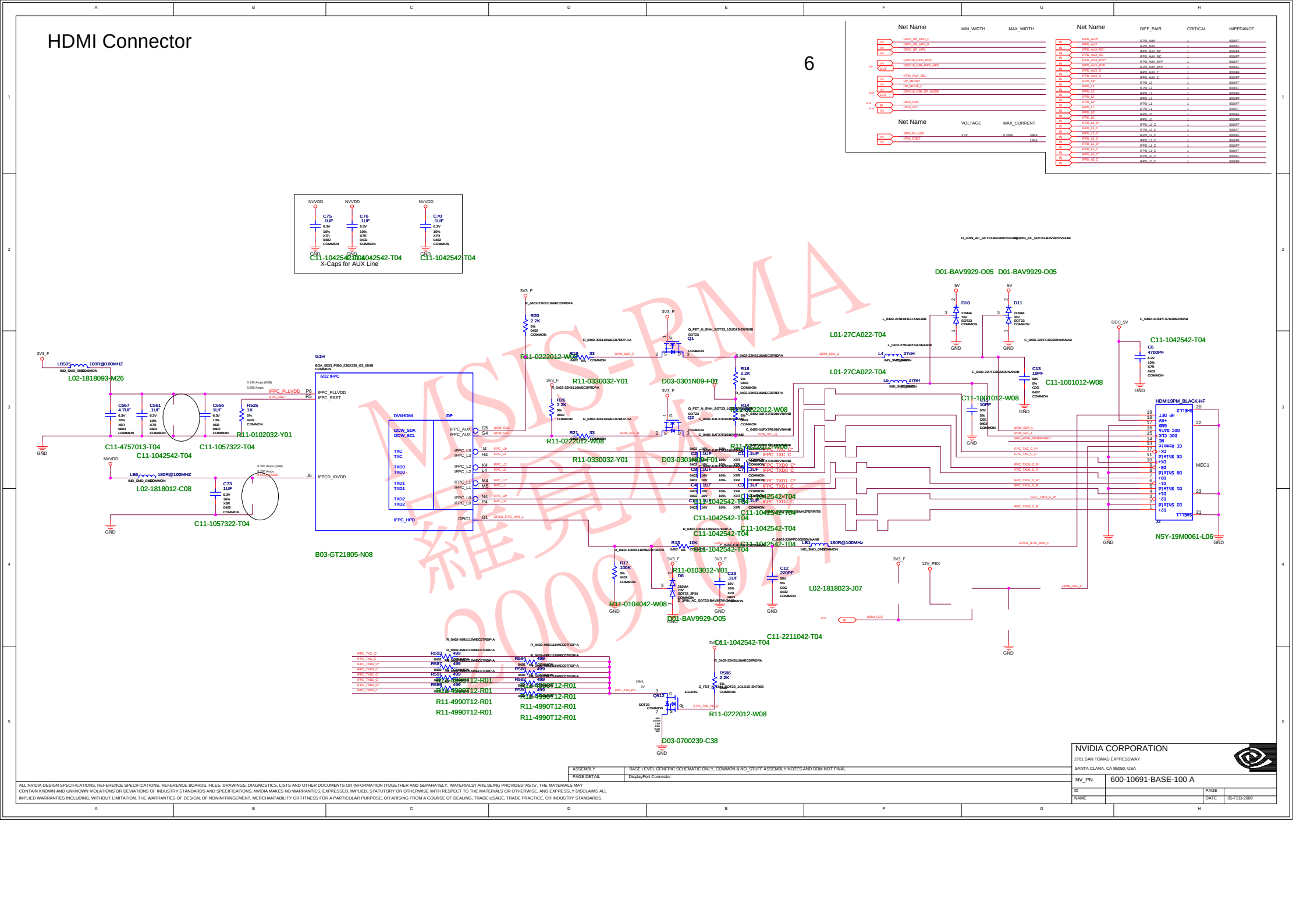
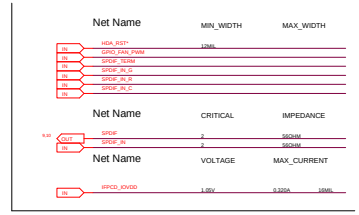
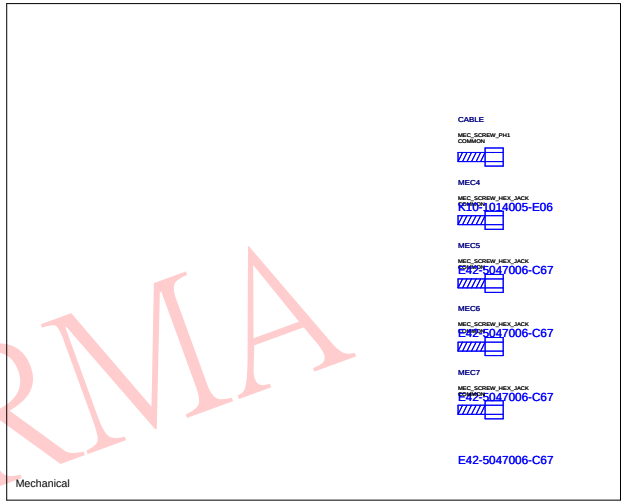
HDMI Connector

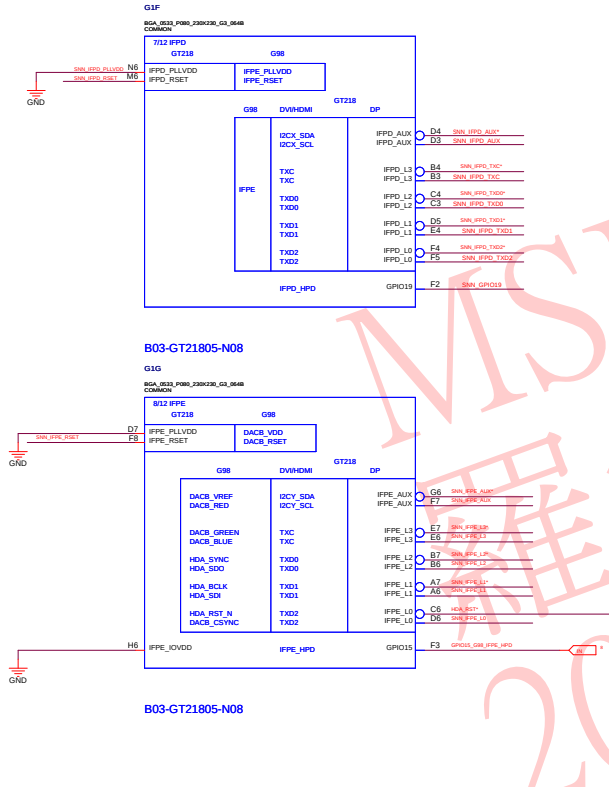
6

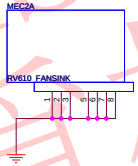


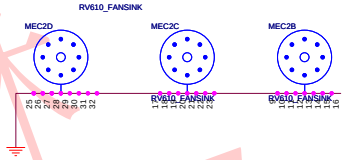
IFPC, IFPE Interface, Mechanical, SPDIF

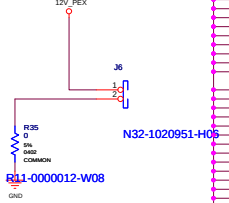


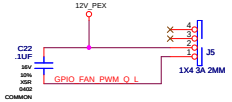


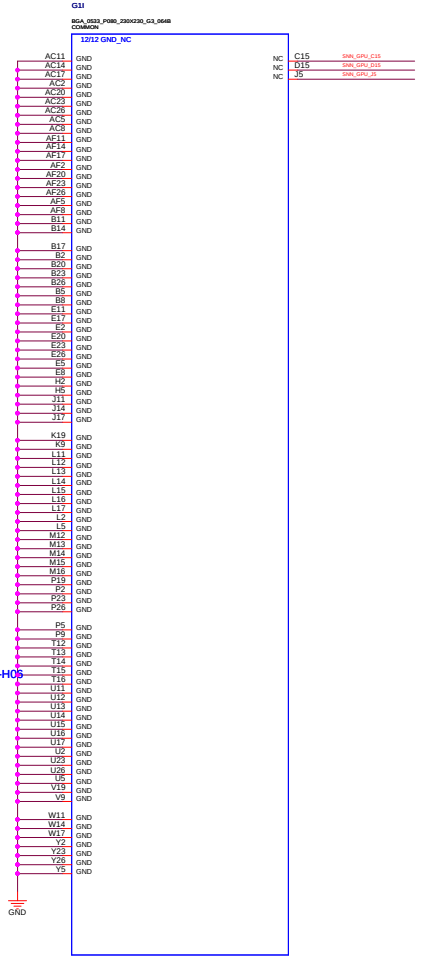


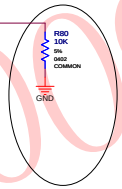












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PAGE DETAIL	IFPC, IFPE Interface, Mechanical, SPDIF

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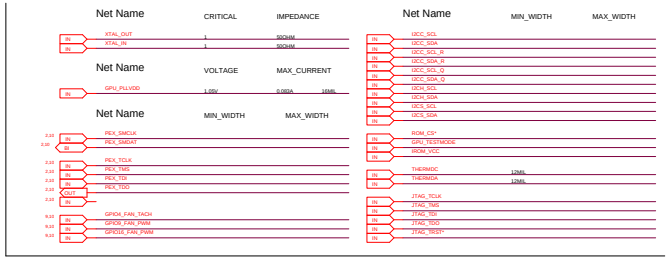
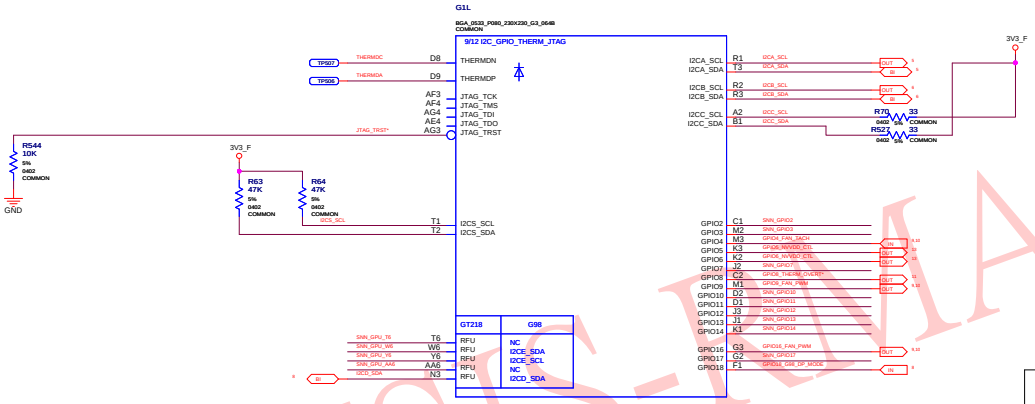
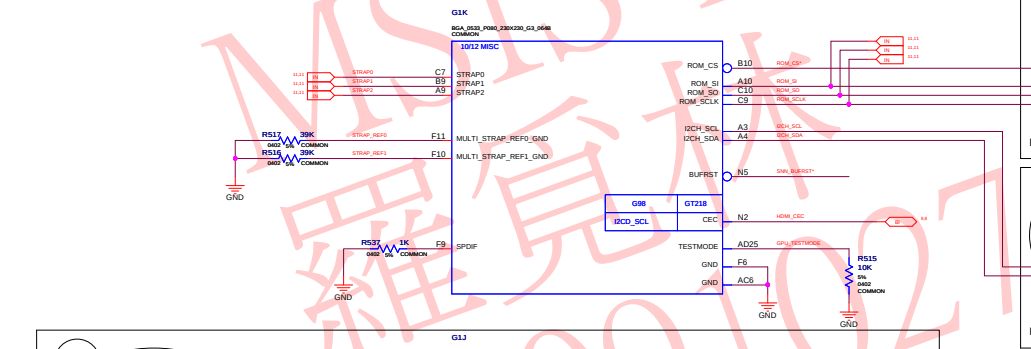
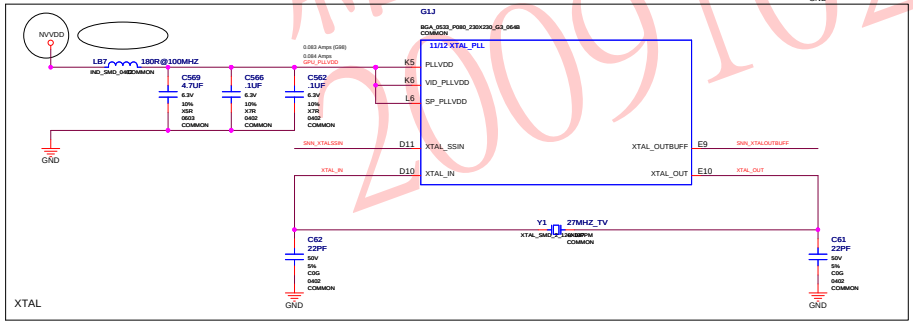
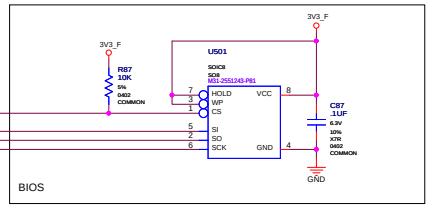
XTAL, ROM, JTAG

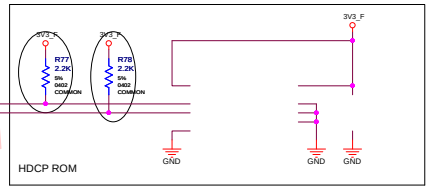












MSI-NMA
羅宜林
2009/10/27

ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	XTAL, ROM, JTAG

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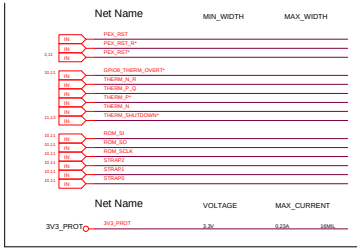
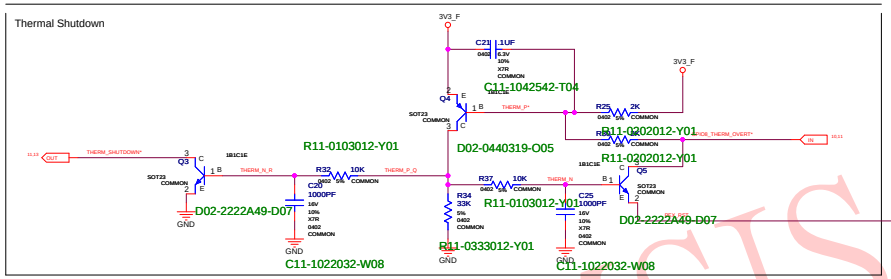
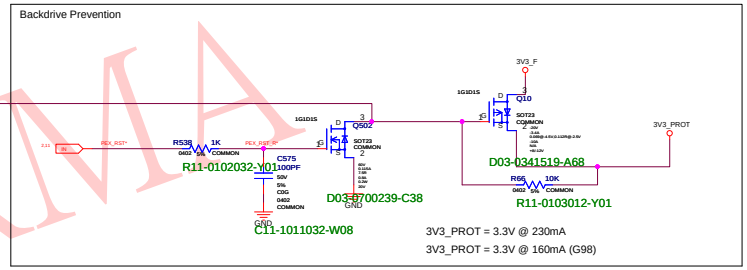
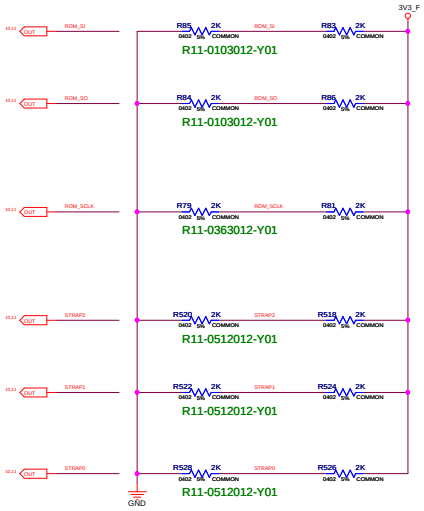
NV_PN	600-10691-BASE-100 A		
ID		PAGE	
NAME		DATE	05-FEB-2009

Thermal Protection, Protected 3V3, Straps









GT218 Straps MLS Mode

Bit Signal		Values	
03:	RAMCFG[3]	0000	Elpida
		0001	Samsung, Micron
02:	RAMCFG[2]	0010	Qimonda
		0011	Hynix
01:	RAMCFG[1]	0100	Nanya
00:	RAMCFG[0]		
03:	XCLK_417	0	277 (Default)
02:	FB[0]	0	256M (Default)
01:	SMB_ALT_ADDR	0	0x6C
		1	0x6C
00:	VGA_DEVICE	0	Class code 302
		1	Class code 300
03:	PCI_DEVID_EXT	0	GT218-300-A1
02:	SUB_VENDOR	0	No BIOS
		1	BIOS
01:	SLOT_CLK_CFG	0	Disable
		1	Enable
00:	PEX_PLL_EN_TERM100	0	Disable
		1	Enable
03:	PCI_DEVID[3]	0000	GT218-300-A1
02:	PCI_DEVID[2]		
01:	PCI_DEVID[1]		
00:	PCI_DEVID[0]		
03:	3GIO_PADCFG_LUT_ADR[3]	0000	DSKTOP_DEFAULT
		0001	MOBILE_DEFAULT
02:	3GIO_PADCFG_LUT_ADR[2]	0010	MOBILE_NTHRS_LLAMP
		0011	MOBILE_NTHRS_LAMP
01:	3GIO_PADCFG_LUT_ADR[1]	0100	MOBILE_NTHRS_HAMP
00:	3GIO_PADCFG_LUT_ADR[0]	0101	MOBILE_NTHRS_HHAMP
		0110	MOBILE_NTHRS_HHHAMP
		0111	MOBILE_NTHRS_HHHHAMP
		1000	DSKTOP_HTHRS
		1001	MOBILE_HTHRS_NAMP
		1010	MOBILE_HTHRS_LLAMP
		1011	MOBILE_HTHRS_LAMP
		1100	MOBILE_HTHRS_HAMP
		1101	MOBILE_HTHRS_HHAMP
		1110	MOBILE_HTHRS_HHHAMP
		1111	MOBILE_HTHRS_HHHHAMP
03:	USER[3]	0000	Default
02:	USER[2]		
01:	USER[1]		
00:	USER[0]		

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
45K to GND	0111
5K to VCC	1000
10K to VCC	1001
15K to VCC	1010
20K to VCC	1011
25K to VCC	1100
30K to VCC	1101
35K to VCC	1110
45K to VCC	1111

GT218 Straps BU Mode

Bit Signal		Values	
PCI_DEVID_EXT		0	GT218-300-A1
XCLK_417		0	277 (Default)
3GIO_PADCFG_LUT_ADR[3]		0000	DSKTOP_DEFAULT
		0001	MOBILE_DEFAULT
3GIO_PADCFG_LUT_ADR[2]		0010	MOBILE_NTHRS_LLAMP
		0011	MOBILE_NTHRS_LAMP
		0100	MOBILE_NTHRS_HAMP
		0101	MOBILE_NTHRS_HHAMP
		0110	MOBILE_NTHRS_HHHAMP
		0111	MOBILE_NTHRS_HHHHAMP
		1000	DSKTOP_HTHRS
		1001	MOBILE_HTHRS_NAMP
3GIO_PADCFG_LUT_ADR[1]		1010	MOBILE_HTHRS_LLAMP
		1011	MOBILE_HTHRS_LAMP
		1100	MOBILE_HTHRS_HAMP
		1101	MOBILE_HTHRS_HHAMP
		1110	MOBILE_HTHRS_HHHAMP
3GIO_PADCFG_LUT_ADR[0]		1111	MOBILE_HTHRS_HHHHAMP

GT218 Straps PM Mode

Bit Signal		Values	
PCI_DEVID_EXT		0	GT218-300-A1
XCLK_417		0	277/277 OR 417/417
PCI_DEVID[3]		0	GT218-300-A1
RAMCFG[3]		0000	Elpida
		0001	Samsung, Micron
		0010	Qimonda
		0011	Hynix
		0100	Nanya
RAMCFG[2]			
RAMCFG[1]			
RAMCFG[0]			

Mode	REF0/REF1
MLS	Stuff
BU	No stuff
PM	Stuff one

G98 Straps MLS Mode

Bit Signal		Values	
03:	RAMCFG[3]	0000	Elpida
		0100	Nanya
02:	RAMCFG[2]	0101	Samsung
		0110	Qimonda
01:	RAMCFG[1]	0111	Hynix
00:	RAMCFG[0]		
03:	XCLK_277	1	Enabled
02:	TVMODE[2]	001	NTSC_J
01:	TVMODE[1]		
00:	TVMODE[0]		
03:	PCI_DEVID_EXT	0	G98-409-U2
			G98-400-A2
			G98-400-U2
02:	SUB_VENDOR	1	BIOS
01:	SLOT_CLK_CFG	0	Disable
		1	Enable
00:	PEX_PLL_EN_TERM100	0	Disable
03:	PCI_DEVID[3]	0000	RFU
02:	PCI_DEVID[2]	0100	G98-409-U2
		0100	G98-400-A2
01:	PCI_DEVID[1]	0100	G98-400-U2
00:	PCI_DEVID[0]		
03:	3GIO_PADCFG_LUT_ADR[3]	0000	DSKTOP_DEFAULT
02:	3GIO_PADCFG_LUT_ADR[2]		
01:	3GIO_PADCFG_LUT_ADR[1]		
00:	3GIO_PADCFG_LUT_ADR[0]		
03:	USER[3]	0000	Default
02:	USER[2]		
01:	USER[1]		
00:	USER[0]		

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
45K to GND	0111
5K to VCC	1000
10K to VCC	1001
15K to VCC	1010
20K to VCC	1011
25K to VCC	1100
30K to VCC	1101
35K to VCC	1110
45K to VCC	1111

NVSIS-RMA 羅宣林 20091027

ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	Thermal Protection, Protected 3V3, Straps

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Power Supply I: FBVDD/Q, PEX_VDD, 5V, 3V3_F

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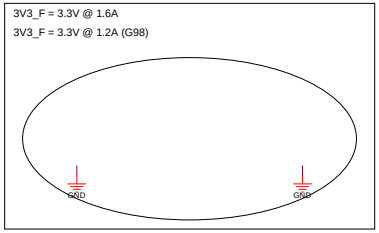

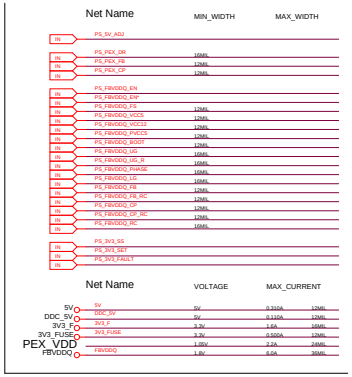

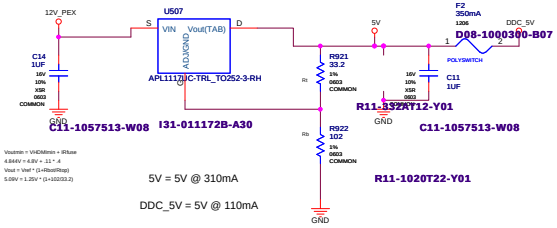

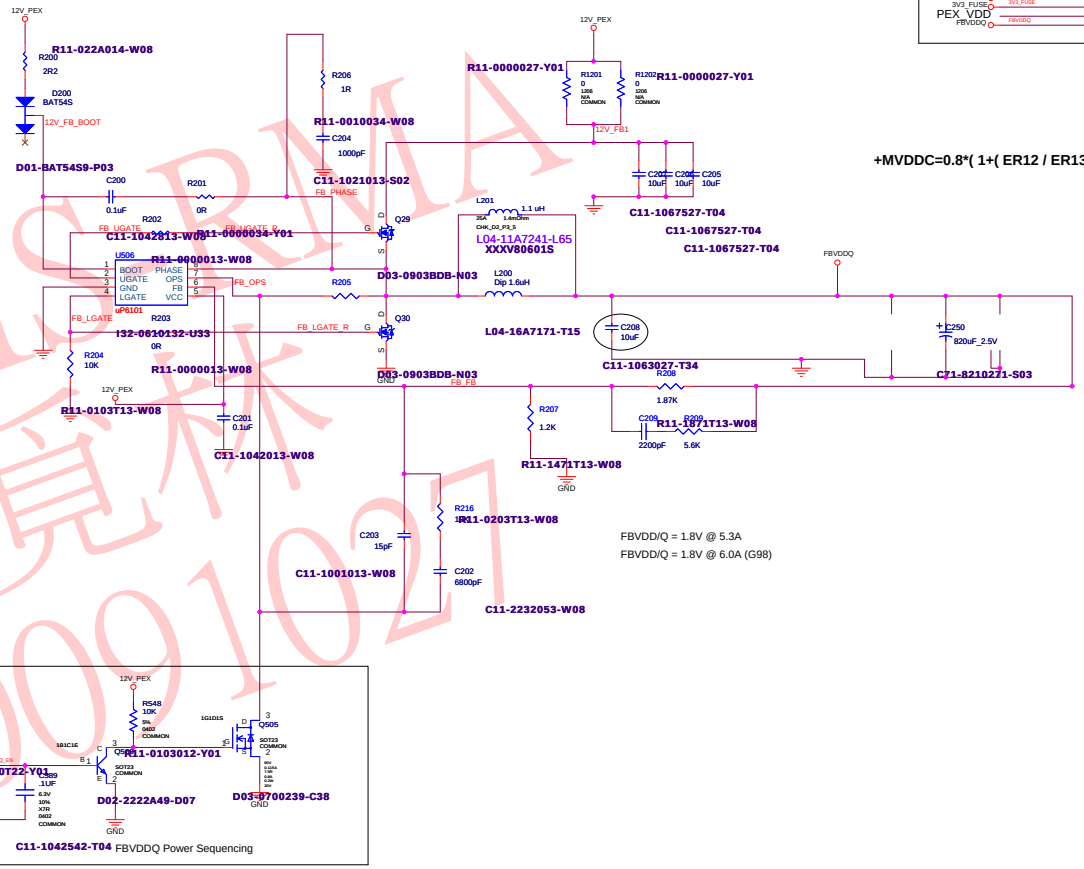

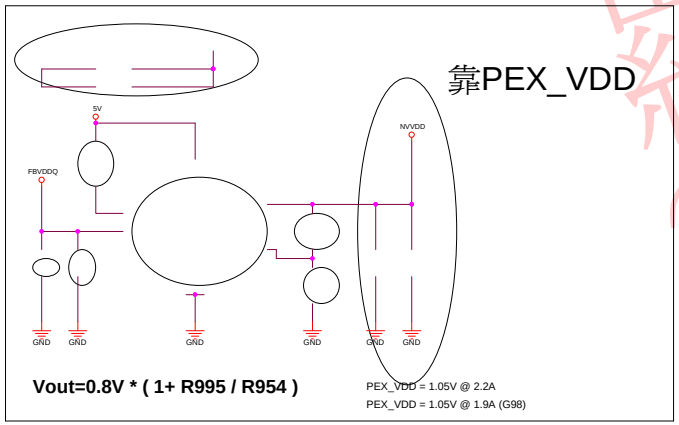

MSI RMA
羅宜林
20091027

ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	Power Supply I: FBVDD/Q, PEX_VDD, 5V, 3V3_F

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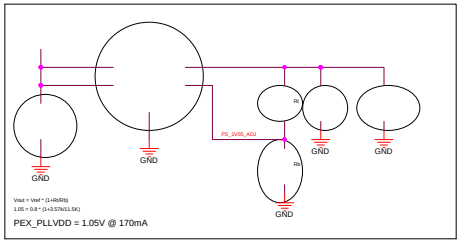
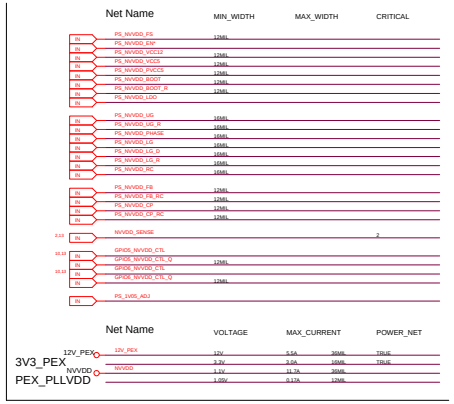
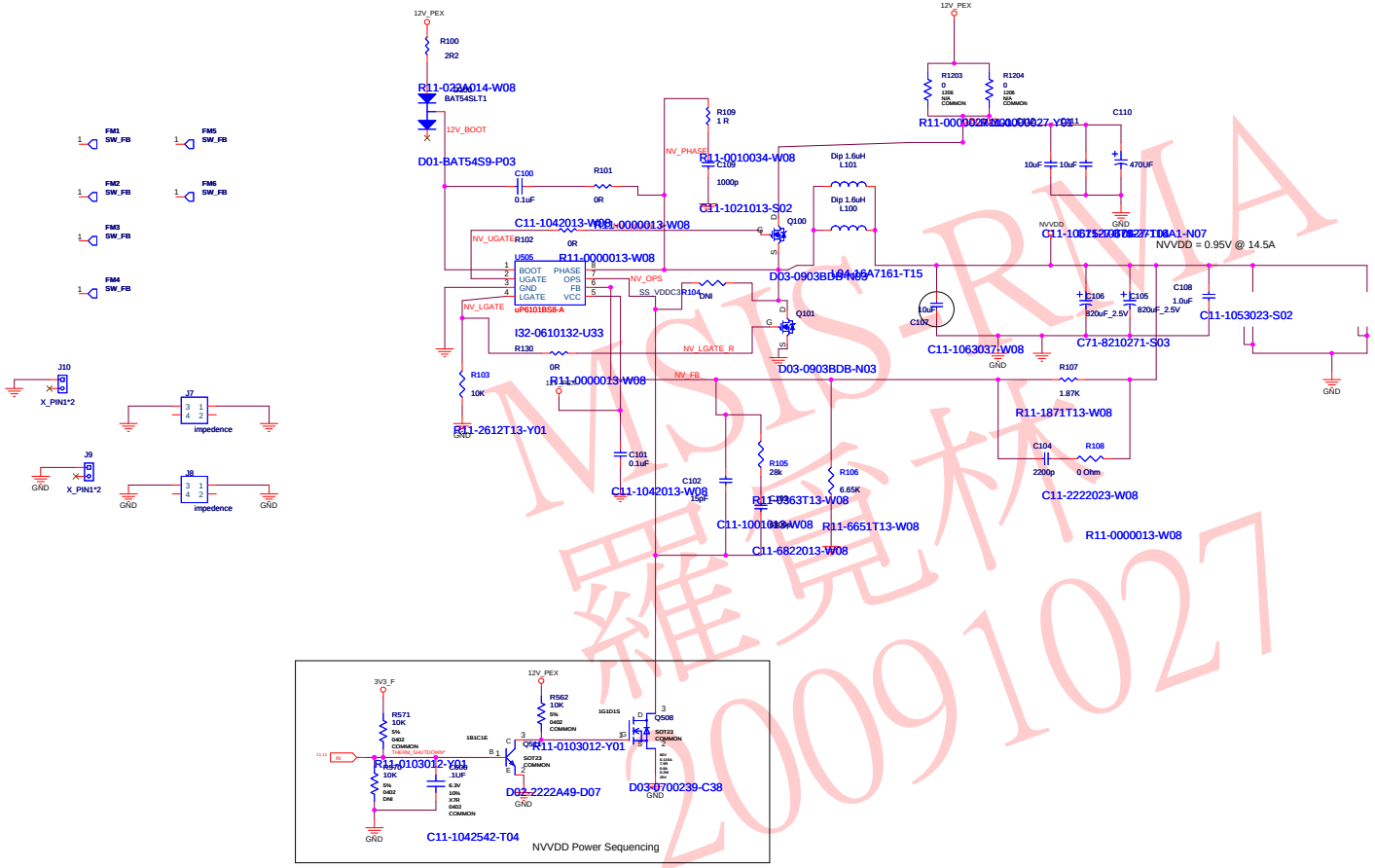
Power Supply II: PEX_PLLVDD, NVVDD

6







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

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ID		PAGE	
NAME		DATE	05-FEB-2009

Title: Basenet Report
Design: p691_a01
Date: Jan 27 23:02:52 2009

Base nets and synonyms for
p691_a01_lib.P691_A01(@p691_a01_lib.p691
_a01(sch_1))
Base Signal Location([Zone][dir])

3V3_F 12.2H
3V3_FUSE 12.2H
3V3_PEX 13.2G
3V3_PROT 11.1H
5V 12.2H
12V_PEX 13.2G
DACA_BLUE 5.1G< 5.4C
DACA_BLUE_C 5.1G> 5.4F> 7.3F<
DACA_GREEN 5.1G< 5.4C
DACA_GREEN_C 5.1G> 5.4F> 7.3F<
DACA_HSYNC 5.1G< 5.4C
DACA_HSYNC_C 5.1G> 5.3F> 7.4F<
DACA_HS_BUF 5.1G< 5.3D
DACA_RED 5.1G< 5.4C
DACA_RED_C 5.1G> 5.4F> 7.3F<
DACA_RSET 5.1G< 5.4B
DACA_VREF 5.1G< 5.4B
DACA_VSYNC 5.1G< 5.4C
DACA_VSYNC_C 5.1G> 5.3F> 7.3F<
DACA_VS_BUF 5.1G< 5.3D
DACB_BLUE 6.1G< 6.4C
DACB_BLUE_C 6.1G< 6.5E
DACB_GREEN 6.1G< 6.4C
DACB_GREEN_C 6.1G< 6.4E
DACB_HSYNC 6.1G< 6.4C
DACB_HSYNC_C 6.1G< 6.3E
DACB_HS_BUF 6.1G< 6.3D
DACB_RED 6.1G< 6.4C
DACB_RED_C 6.1G< 6.4E
DACB_RSET 6.1G< 6.4B
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DACB_VS_BUF 6.1G< 6.3D
DDC_5V 12.2H
DP_MODE* 8.1F< 8.2G
DP_MODE_C 8.1F< 8.3H
FBA_CKE_H 3.2G> 3.3F> 4.2D<
4.2F<
FBA_CLK0 3.1G> 3.2E 3.4D>
4.2A< 4.2C< 4.5B<
FBA_CLK0* 3.1G> 3.2E 3.4D>
4.2A< 4.2C< 4.5B<
FBA_CLK1 3.1G> 3.2E 3.4D>
4.2D< 4.2F< 4.5D<
FBA_CLK1* 3.1G> 3.2E 3.4D>
4.2D< 4.2F< 4.5D<
FBA_CMD<0> 3.2C 3.2G 4.2A 4.2C
FBA_CMD<29..0> 3.1G> 3.2D> 4.1A<>
FBA_CMD<1> 3.2C 3.2G 4.1A 4.1C
4.1E 4.1G
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FBA_CMD<3> 3.2C 3.2H 4.2A 4.2C
4.2E 4.2G
FBA_CMD<4> 3.2C 3.3G 4.2E 4.2G
FBA_CMD<5> 3.3C 3.3G 4.2E 4.2G
FBA_CMD<6> 3.3C 3.3H 4.2E 4.2G
FBA_CMD<7> 3.2F 3.3C 3.3E
FBA_CMD<8> 3.3C 3.3E 3.3H 4.2E
4.2G
FBA_CMD<9> 3.3C 3.3E 4.2A 4.2C
4.2E 4.2G
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4.2E 4.2G
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4.2E 4.2G
FBA_CMD<15> 3.1E 3.2E 3.3C 4.3A
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4.2E 4.2G
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4.2E 4.2G
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4.2E 4.2G
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4.2E 4.2G
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4.2E 4.2G
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4.2E 4.2G
FBA_CMD<28> 3.2E 3.2E 3.3C
FBA_CMD<29> 3.3C 3.3E 3.4H
FBA_CSD_L 3.2G> 3.3F> 4.2A<
4.2C<
FBA_D<0> 3.1B 4.3B
FBA_D<63..0> 3.1A<> 3.1G<> 4.3A<>
FBA_D<1> 3.1B 4.3B
FBA_D<2> 3.1B 4.3B
FBA_D<3> 3.1B 4.3B
FBA_D<4> 3.1B 4.3B
FBA_D<5> 3.1B 4.3B
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FBA_D<13> 3.2B 4.4B
FBA_D<14> 3.2B 4.4B
FBA_D<15> 3.2B 4.4B
FBA_D<16> 3.2B 4.3C
FBA_D<17> 3.2B 4.3C
FBA_D<18> 3.2B 4.3C
FBA_D<19> 3.2B 4.3C
FBA_D<20> 3.2B 4.3C
FBA_D<21> 3.2B 4.3C
FBA_D<22> 3.2B 4.3C
FBA_D<23> 3.2B 4.3C
FBA_D<24> 3.2B 4.4C
FBA_D<25> 3.2B 4.4C
FBA_D<26> 3.2B 4.4C
FBA_D<27> 3.2B 4.4C
FBA_D<28> 3.2B 4.4C
FBA_D<29> 3.2B 4.4C
FBA_D<30> 3.2B 4.4C
FBA_D<31> 3.2B 4.4C
FBA_D<32> 3.2B 4.3D
FBA_D<33> 3.2B 4.3D
FBA_D<34> 3.2B 4.3D
FBA_D<35> 3.2B 4.3D
FBA_D<36> 3.2B 4.3D
FBA_D<37> 3.2B 4.3D
FBA_D<38> 3.2B 4.3D
FBA_D<39> 3.2B 4.3D
FBA_D<40> 3.2B 4.4D
FBA_D<41> 3.3B 4.4D
FBA_D<42> 3.3B 4.4D
FBA_D<43> 3.3B 4.4D
FBA_D<44> 3.3B 4.4D
FBA_D<45> 3.3B 4.4D
FBA_D<46> 3.3B 4.4D
FBA_D<47> 3.3B 4.4D
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FBA_D<49> 3.3B 4.3E
FBA_D<50> 3.3B 4.3E
FBA_D<51> 3.3B 4.3E
FBA_D<52> 3.3B 4.3E
FBA_D<53> 3.3B 4.3E
FBA_D<54> 3.3B 4.3E
FBA_D<55> 3.3B 4.3E
FBA_D<56> 3.3B 4.4E
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FBA_D<58> 3.3B 4.4E
FBA_D<59> 3.3B 4.4E
FBA_D<60> 3.3B 4.4E
FBA_D<61> 3.3B 4.4E
FBA_D<62> 3.3B 4.4E
FBA_D<63> 3.3B 4.4E
FBA_DEBUG 3.2G< 3.4C
FBA_DQM<0> 3.3B 4.3B
FBA_DQM<7..0> 3.1G> 3.3A> 4.4A<
FBA_DQM<1> 3.3B 4.4B
FBA_DQM<2> 3.3B 4.3C
FBA_DQM<3> 3.3B 4.4C
FBA_DQM<4> 3.3B 4.3D
FBA_DQM<5> 3.4B 4.4D
FBA_DQM<6> 3.4B 4.3E
FBA_DQM<7> 3.4B 4.4E
FBA_DQS_RN<0> 3.1G 3.2E 3.4B 4.4B
FBA_DQS_RN<7..0> 3.1G<> 3.4A<> 4.4A<>
FBA_DQS_RN<1> 3.1G 3.4B 4.4B
FBA_DQS_RN<2> 3.1G 3.4B 4.4C
FBA_DQS_RN<3> 3.1G 3.4B 4.4C
FBA_DQS_RN<4> 3.1G 3.4B 4.4D
FBA_DQS_RN<5> 3.1G 3.4B 4.4D
FBA_DQS_RN<6> 3.1G 3.4B 4.4E
FBA_DQS_RN<7> 3.1G 3.4B 4.4E
FBA_DQS_WP<0> 3.1G 3.2E 3.4B 4.4B
FBA_DQS_WP<7..0> 3.1G<> 3.4A<> 4.4A<>
FBA_DQS_WP<1> 3.1G 3.4B 4.4B
FBA_DQS_WP<2> 3.1G 3.4B 4.4C
FBA_DQS_WP<3> 3.1G 3.4B 4.4C
FBA_DQS_WP<4> 3.1G 3.4B 4.4D
FBA_DQS_WP<5> 3.1G 3.4B 4.4D
FBA_DQS_WP<6> 3.1G 3.4B 4.4E
FBA_DQS_WP<7> 3.1G 3.4B 4.4E
FBA_ODT_H 3.2F> 3.2G> 4.3D<
4.3F<
FBVDDQ 12.2H
FB_CAL_PD_VDDQ 3.2G< 3.4C
FB_CAL_PU_GND 3.2G< 3.4C
FB_CAL_TERM_GND 3.2G< 3.4C
FB_PLLAVDD 3.2G< 3.5C
FB_VREF_A 4.1G< 4.3B
GPIO0_DVI_A_HPD 7.1G< 7.4D
GPIO0_DVI_A_HPD_C 7.1G< 7.3F
GPIO0_DVI_A_HPD_R 7.1G< 7.4E
GPIO4_FAN_TACH 9.5D> 10.1F< 10.2E<
GPIO5_NVDD_CTL 10.2E> 13.1G< 13.5D<
GPIO5_NVDD_CTL_Q 13.2G< 13.4E
GPIO6_NVDD_CTL 10.2E> 13.2G< 13.5G<
GPIO6_NVDD_CTL_Q 13.2G< 13.4F
GPIO8_THERM_OVERT* 10.2E> 11.1G< 11.2D<
GPIO9_FAN_PWM 9.5D< 10.1F< 10.2E>
GPIO15_G98_IFPE_HP 8.1F> 8.5C> 9.4D<
D
GPIO16_FAN_PWM 9.5D< 10.1F< 10.3E>
GPIO18_G98_DP_MODE 8.1F> 8.3G> 10.3E<
GPIO19_IFPD_HPD 8.1F< 8.5C
GPIO_DP_HPD 8.1F< 8.5D
GPIO_DP_HPD_C 8.1F< 8.4G
GPIO_DP_HPD_R 8.1F< 8.5E
GPIO_FAN_PWM 9.1G< 9.5E
GPU_PLLVDD 10.1F< 10.4C
GPU_TESTMODE 10.1G< 10.4E
HDA_RST* 9.1G< 9.4C
I2CA_SCL 5.1G< 5.2C< 10.2E>
I2CA_SCL_C 5.1F> 5.1G> 7.3F<
I2CA_SDA 5.1G<> 5.2C<> 10.2E<>
I2CA_SDA_C 5.1G<> 5.3F<> 7.3F<>
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I2CB_SCL_C 6.1G< 6.2E
I2CB_SDA 6.1G<> 6.2C<> 10.2E<>
I2CB_SDA_C 6.1G< 6.2E
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I2CC_SCL_Q 10.1G< 10.2G
I2CC_SCL_R 10.1G< 10.2F
I2CC_SDA 10.1G< 10.2E
I2CC_SDA_Q 10.1G< 10.2G
I2CC_SDA_R 10.1G< 10.2F
I2CD_SCL 8.1F< 8.2G< 10.4E>
I2CD_SDA 8.1F<> 8.2G<> 10.3C<>
I2CH_SCL 10.1G< 10.3E
I2CH_SDA 10.1G< 10.3E
I2CS_SCL 10.1G< 10.2C
I2CS_SDA 10.1G< 10.2C
IFPAB_IOVDD 7.2G< 7.3C
IFPAB_PLLVDD 7.2G< 7.3C
IFPAB_RSET 7.2G< 7.3C
IFPAB_TXC 7.1G< 7.4D
IFPAB_TXC* 7.1G< 7.4D
IFPAB_TXD0 7.1G< 7.3D
IFPAB_TXD0* 7.1G< 7.3D
IFPAB_TXD1 7.1G< 7.3D
IFPAB_TXD1* 7.1G< 7.3D
IFPAB_TXD2 7.1G< 7.3D
IFPAB_TXD2* 7.1G< 7.3D
IFPAB_TXD4 7.1G< 7.3D
IFPAB_TXD4* 7.1G< 7.3D
IFPAB_TXD5 7.1G< 7.3D
IFPAB_TXD5* 7.1G< 7.3D
IFPAB_TXD6 7.1G< 7.3D
IFPAB_TXD6* 7.1G< 7.3D
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IFPD_AUX 8.1G< 8.4C
IFPD_AUX* 8.1G< 8.4C
IFPD_AUX_BYP 8.1G< 8.3D
IFPD_AUX_BYP* 8.1G< 8.2D
IFPD_AUX_C 8.1G< 8.4G
IFPD_AUX_C* 8.1G< 8.4G
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IFPD_L0 8.1G< 8.4C
IFPD_L0* 8.1G< 8.4C
IFPD_L0_C 8.1G< 8.4G
IFPD_L0_C* 8.1G< 8.4G
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IFPD_L1_C* 8.1G< 8.4G
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IFPD_L2* 8.1G< 8.4C
IFPD_L2_C 8.1G< 8.4G
IFPD_L2_C* 8.1G< 8.4G
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IFPD_L3* 8.1G< 8.4C
IFPD_L3_C 8.1G< 8.4G
IFPD_L3_C* 8.1G< 8.4G
IFPD_PLLVDD 8.1F< 8.4B
IFPD_RSET 8.1F< 8.4B
IROM_VCC 10.1G< 10.2G
JTAG_TCLK 10.1G< 10.2C
JTAG_TDI 10.1G< 10.2C
JTAG_TDO 10.1G< 10.2C
JTAG_TMS 10.1G< 10.2C
JTAG_TRST* 10.1G< 10.2C
NVVDD 13.2G
NVVDD_SENSE 2.4F> 13.1G< 13.4H<
PEX_CLKREQ* 2.1D 2.1G<
PEX_PLLVDD 13.2G
PEX_PLLVDD_GPU 2.1G< 2.5F
PEX_PRSNT 2.1B 2.1G<
PEX_REFCLK 2.2C 2.5A<
PEX_REFCLK* 2.2C 2.5A<
PEX_RST 11.1G< 11.3C
PEX_RST* 2.2D> 11.1G< 11.2E<
PEX_RST_R* 11.1G< 11.2F
PEX_RX0 2.2C 2.4A<
PEX_RX0* 2.2C 2.4A<
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PEX_RX1* 2.2C 2.4A<
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PEX_RX5 2.3C 2.4A<
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PEX_RX7* 2.4C 2.5A<
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PEX_RX9 2.4C 2.5A<
PEX_RX9* 2.4C 2.5A<
PEX_RX10 2.4C 2.5A<
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PEX_RX12* 2.5A< 2.5C
PEX_RX13 2.5A< 2.5C
PEX_RX13* 2.5A< 2.5C
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PEX_RX14* 2.5A< 2.5C
PEX_RX15 2.5A< 2.5C
PEX_RX15* 2.5A< 2.5C
PEX_SMCLK 2.1D> 10.1F< 10.3B<
PEX_SMDAT 2.2D<> 10.1F<>
10.3B<>
PEX_TCLK 2.1D> 10.1F< 10.3A<
PEX_TDI 2.1D> 10.1F< 10.2A<
PEX_TDO 2.1D< 10.1F> 10.2A>
PEX_TERMP 2.1G< 2.5F
PEX_TMS 2.1D> 10.1F< 10.2A<
PEX_TRST* 2.1D> 10.1F< 10.2A<
PEX_TSTCLK_OUT 2.2D 2.5A<
PEX_TSTCLK_OUT* 2.2D 2.5A<
PEX_TX0 2.2A< 2.2D
PEX_TX0* 2.2A< 2.2D
PEX_TX1 2.2A< 2.2D
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PEX_TX2 2.2A< 2.2D
PEX_TX2* 2.2A< 2.2D
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PEX_TX8* 2.2A< 2.4D
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PEX_TX1 2.2C 2.3A<
PEX_TX1* 2.2C 2.3A<
PEX_TX2 2.2C 2.3A<
PEX_TX2* 2.2C 2.3A<
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PEX_TX5* 2.3A< 2.3C
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PEX_TX6* 2.3A< 2.3C
PEX_TX7 2.3A< 2.3C
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PEX_TX8 2.4A< 2.4C
PEX_TX8* 2.4A< 2.4C
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PEX_TX9* 2.4A< 2.4C
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PEX_TX10* 2.4A< 2.4C
PEX_TX11 2.4A< 2.4C
PEX_TX11* 2.4A< 2.4C
PEX_TX12 2.4A< 2.4C
PEX_TX12* 2.4A< 2.4C
PEX_TX13 2.4A< 2.5C
PEX_TX13* 2.4A< 2.5C
PEX_TX14 2.4A< 2.5C
PEX_TX14* 2.4A< 2.5C
PEX_TX15 2.4A< 2.5C
PEX_TX15* 2.4A< 2.5C
PEX_VDD 12.2H
PS_1V05_ADJ 13.2E 13.2G<
PS_3V3_FAULT 12.2G< 12.3F
PS_3V3_SET 12.1G< 12.3F
PS_3V3_SS 12.1G< 12.3F
PS_5V_ADJ 12.1G< 12.2B
PS_FBVDDQ_BOOT 12.1G< 12.3E
PS_FBVDDQ_CP 12.1G< 12.4E
PS_FBVDDQ_CP_RC 12.1G< 12.4E
PS_FBVDDQ_EN 12.1G< 12.5C
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PS_FBVDDQ_FB 12.1G< 12.4E
PS_FBVDDQ_FB_RC 12.1G< 12.4G
PS_FBVDDQ_FS 12.1G< 12.4D
PS_FBVDDQ_LG 12.1G< 12.4E
PS_FBVDDQ_PHASE 12.1G< 12.4E
PS_FBVDDQ_PVCCS 12.1G< 12.3E
PS_FBVDDQ_RC 12.1G< 12.4G
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PS_FBVDDQ_UG_R 12.1G< 12.3F
PS_FBVDDQ_VCC5 12.1G< 12.3D
PS_FBVDDQ_VCC12 12.1G< 12.3E
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PS_NVVDD_BOOT_R 13.1G< 13.3D
PS_NVVDD_CP 13.1G< 13.3C
PS_NVVDD_CP_RC 13.1G< 13.4E
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PS_NVVDD_FB_RC 13.1G< 13.4F
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PS_NVVDD_LDO 13.1G< 13.3C
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PS_NVVDD_LG_D 13.1G< 13.3D
PS_NVVDD_LG_R 13.1G< 13.4E
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PS_NVVDD_PVCC5 13.1G< 13.3C
PS_NVVDD_RC 13.1G< 13.4F
PS_NVVDD_UG 13.1G< 13.3C
PS_NVVDD_UG_R 13.1G< 13.3E
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PS_NVVDD_VCC12 13.1G< 13.3C
PS_PEX_CP 12.1G< 12.4B
PS_PEX_DR 12.1G< 12.3D
PS_PEX_FB 12.1G< 12.4D
ROM_CS* 10.1G< 10.3E
ROM_SCLK 10.3E< 11.1G< 11.4A>
11.4B
ROM_SI 10.3E< 11.1G< 11.3A>
11.3B
ROM_SO 10.3E< 11.1G< 11.3A>
11.3B
SNN_3V3_AUX 2.1B
SNN_AD2_7 12.3G
SNN_A_ID0 5.4G
SNN_A_ID2 5.4F
SNN_BUFRST* 10.3E
SNN_DP_CEC_C 8.4H
SNN_FBA1_NC_A2 4.3A
SNN_FBA1_NC_E2 4.3A
SNN_FBA1_NC_R3 4.2A
SNN_FBA1_NC_R7 4.2A
SNN_FBA2_NC_A2 4.3C
SNN_FBA2_NC_E2 4.3C
SNN_FBA2_NC_R3 4.2C
SNN_FBA2_NC_R7 4.2C
SNN_FBA3_NC_A2 4.3E
SNN_FBA3_NC_E2 4.3E
SNN_FBA3_NC_R3 4.2E
SNN_FBA3_NC_R7 4.2E
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SNN_FBA4_NC_E2 4.3G
SNN_FBA4_NC_R3 4.2G
SNN_FBA4_NC_R7 4.2G
SNN_FBA_CMD30 3.3C
SNN_FB_VREF 3.5B
SNN_GPIO2 10.2E
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SNN_GPIO11 10.2E
SNN_GPIO12 10.2E
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SNN_GPIO17 10.3E
SNN_GPU_AA6 10.3C
SNN_GPU_C15 9.2H
SNN_GPU_D15 9.2H
SNN_GPU_J5 9.2H
SNN_GPU_T6 10.3C
SNN_GPU_W6 10.3C
SNN_GPU_Y6 10.3C
SNN_IFPAB_TXD3 7.3D
SNN_IFPAB_TXD3* 7.3D
SNN_IFPAB_TXD7 7.4D
SNN_IFPAB_TXD7* 7.3D
SNN_IFPB_TXC 7.4D
SNN_IFPB_TXC* 7.4D
SNN_IFPC_AUX 9.3C
SNN_IFPC_AUX* 9.3C
SNN_IFPC_HPD 9.3C
SNN_IFPC_L0 9.3C
SNN_IFPC_L0* 9.3C
SNN_IFPC_L1 9.3C
SNN_IFPC_L1* 9.3C
SNN_IFPC_L2 9.3C
SNN_IFPC_L2* 9.3C
SNN_IFPC_L3 9.3C
SNN_IFPC_L3* 9.3C
SNN_IFPC_RSET 9.3B
SNN_IFPE_AUX 9.4C
SNN_IFPE_AUX* 9.4C
SNN_IFPE_L0 9.4C
SNN_IFPE_L1 9.4C
SNN_IFPE_L1* 9.4C
SNN_IFPE_L2 9.4C
SNN_IFPE_L2* 9.4C
SNN_IFPE_L3 9.4C
SNN_IFPE_L3* 9.4C
SNN_IFPE_RSET 9.4B
SNN_PEX_WAKE* 2.2C
SNN_PE_PRSNT2_A 2.1B
SNN_PE_PRSNT2_B 2.2B
SNN_PE_PRSNT2_C 2.3B
SNN_PE_RSVD1 2.2B
SNN_PE_RSVD2 2.2B
SNN_PE_RSVD3 2.2B
SNN_PE_RSVD4 2.2B
SNN_PE_RSVD5 2.3B
SNN_PE_RSVD6 2.4B
SNN_PE_RSVD7 2.4B
SNN_XTALOUTBUFF 10.5E
SNN_XTALSSIN 10.5C
SPDIF 9.1F> 9.1G> 10.4C<
SPDIF_IN 9.1C 9.1G<
SPDIF_IN_C 9.1G< 9.2C
SPDIF_IN_G 9.1G< 9.2D
SPDIF_IN_R 9.1G< 9.2D
SPDIF_TERM 9.1G< 9.2E
STRAP0 10.3C< 11.1G< 11.5A>
11.5B
STRAP1 10.3C< 11.1G< 11.4A>
11.4B
STRAP2 10.3C< 11.1G< 11.4A>
STRAP_REF0 10.3C
STRAP_REF1 10.3C
THERMDA 10.1G< 10.2C
THERMDC 10.1G< 10.2C
THERM_N 11.1G< 11.2C
THERM_N_R 11.1G< 11.2B
THERM_P* 11.1G< 11.2C
THERM_P_Q 11.1G< 11.2B
THERM_SHUTDOWN* 11.1G< 11.2A> 13.4A<
XTAL_IN 10.1F< 10.5C
XTAL_OUT 10.1F< 10.5E

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