

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

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REV	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/4GB, 32Mx16 DDR2, DVI-DL+DP+VGA, DT
2	SKU0002	600-10691-0002-100	GT218-300, 550/1375/500, 512MB/4GB, 64Mx16 DDR2, DVI-DL+DP+VGA, DT
3	SKU0010	600-10691-0010-100	G98-400, 550/1375/500, 256MB/4GB, 32Mx16 DDR2, DVI-DL+DP+VGA, DT
4	SKU0011	600-10691-0011-100	G98-400, 550/1375/500, 512MB/4GB, 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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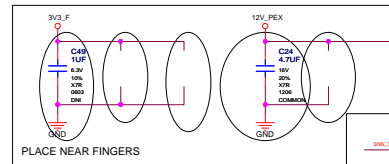
2701 SAN TOMAS EXPRESSWAY

SANTA CLARA, CA 95050, USA

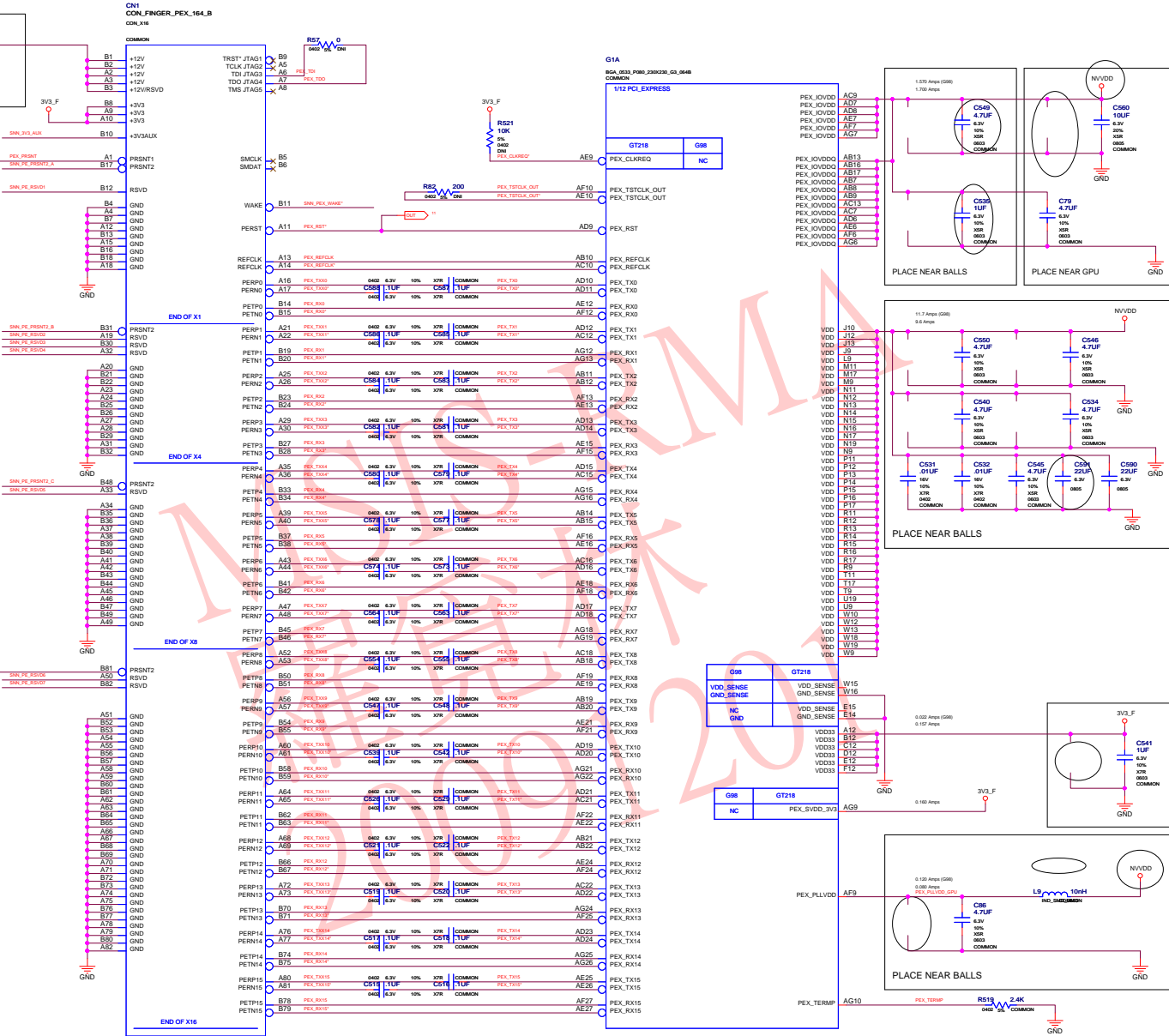


NV_PN	600-10691-BASE-100 A		
ID		PAGE	
NAME		DATE	05-FEB-2009

PCI Express Interface



Net Name		DIFF_PAIR	CRITICAL	IMPEDANCE
IN	PEL_700	PEL_700	+	50000
IN	PEL_700	PEL_700	-	50000
IN	PEL_701	PEL_701	+	50000
IN	PEL_701	PEL_701	-	50000
IN	PEL_702	PEL_702	+	50000
IN	PEL_702	PEL_702	-	50000
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IN	PEL_704	PEL_704	+	50000
IN	PEL_704	PEL_704	-	50000
IN	PEL_705	PEL_705	+	50000
IN	PEL_705	PEL_705	-	50000
IN	PEL_706	PEL_706	+	50000
IN	PEL_706	PEL_706	-	50000
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IN	PEL_708	PEL_708	+	50000
IN	PEL_708	PEL_708	-	50000
IN	PEL_709	PEL_709	+	50000
IN	PEL_709	PEL_709	-	50000
IN	PEL_710	PEL_710	+	50000
IN	PEL_710	PEL_710	-	50000
IN	PEL_711	PEL_711	+	50000
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IN	PEL_712	PEL_712	+	50000
IN	PEL_712	PEL_712	-	50000
IN	PEL_713	PEL_713	+	50000
IN	PEL_713	PEL_713	-	50000
IN	PEL_714	PEL_714	+	50000
IN	PEL_714	PEL_714	-	50000
IN	PEL_715	PEL_715	+	50000
IN	PEL_715	PEL_715	-	50000
IN	PEL_716	PEL_716	+	50000
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IN	PEL_719	PEL_719	+	50000
IN	PEL_719	PEL_719	-	50000
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IN	PEL_720	PEL_720	-	50000
IN	PEL_721	PEL_721	+	50000
IN	PEL_721	PEL_721	-	50000
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IN	PEL_722	PEL_722	-	50000
IN	PEL_723	PEL_723	+	50000
IN	PEL_723	PEL_723	-	50000
IN	PEL_724	PEL_724	+	50000
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IN	PEL_725	PEL_725	+	50000
IN	PEL_725	PEL_725	-	50000
IN	PEL_726	PEL_726	+	50000
IN	PEL_726	PEL_726	-	50000
IN	PEL_727	PEL_727	+	50000
IN	PEL_727	PEL_727	-	50000
IN	PEL_728	PEL_728	+	50000
IN	PEL_728	PEL_728	-	50000
IN	PEL_729	PEL_729	+	50000
IN	PEL_729	PEL_729	-	50000
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IN	PEL_731	PEL_731	+	50000
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IN	PEL_733	PEL_733	-	50000
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IN	PEL_737	PEL_737	+	50000
IN	PEL_737	PEL_737	-	50000
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IN	PEL_738	PEL_738	-	50000
IN	PEL_739	PEL_739	+	50000
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IN	PEL_7544A	PEL_7544A	-	50000
IN	PEL_7544B	PEL_7544B	+	50000
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IN	PEL_7544C	PEL_7544C	+	50000
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IN	PEL_7544E	PEL_7544E	+	50000
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IN	PEL_7544M	PEL_7544M	-	50000
IN	PEL_7544N	PEL_7544N	+	50000
IN				



Net Name		MIN_WIDTH	MAX_WIDTH
IN	PEX_PRESENT		
IN	PEX_CLKREQ		
IN	PEX_TERMAPP	120MIL	

Net Name		VOLTAGE	MAX_CURRENT
IN	PEX_PL1VDD_GPU	1.05V	0.125A 120MIL

9

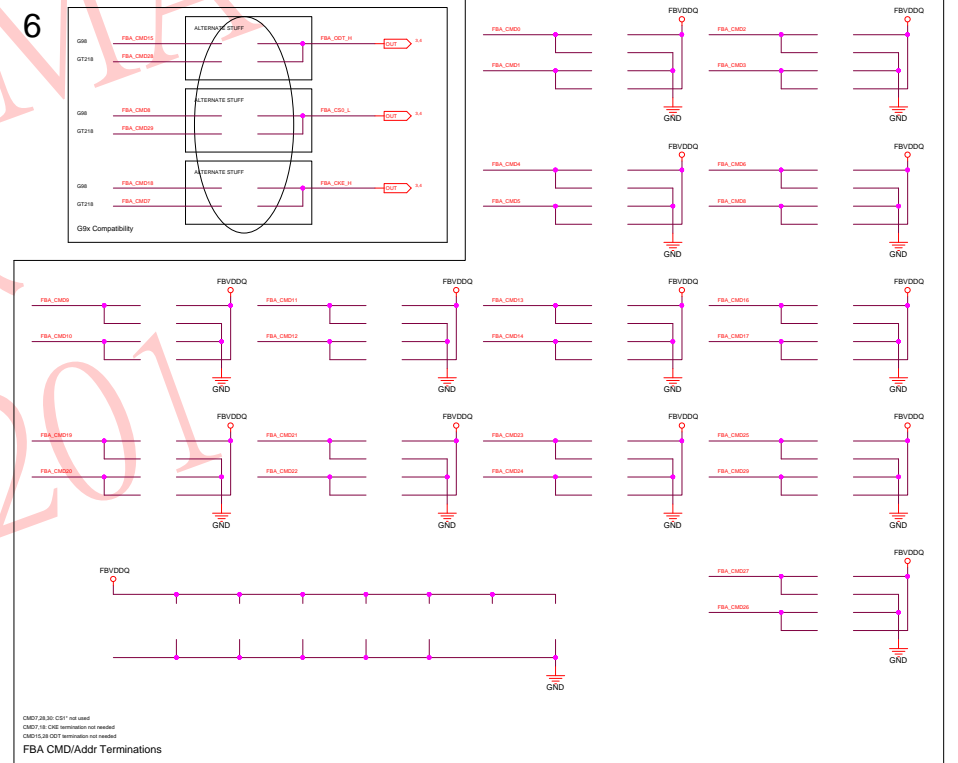
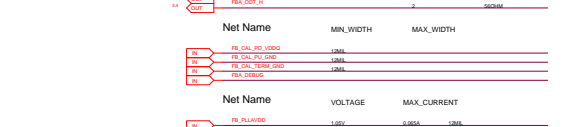
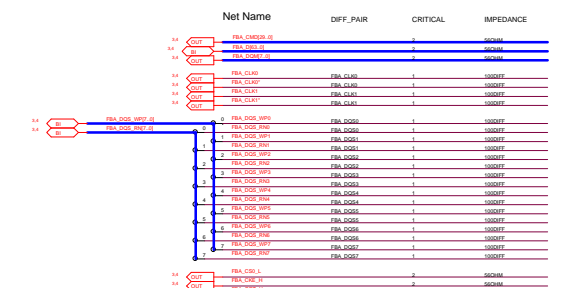
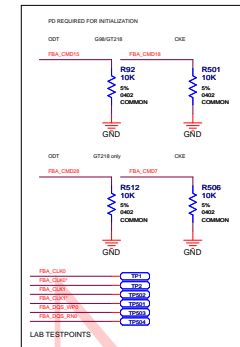
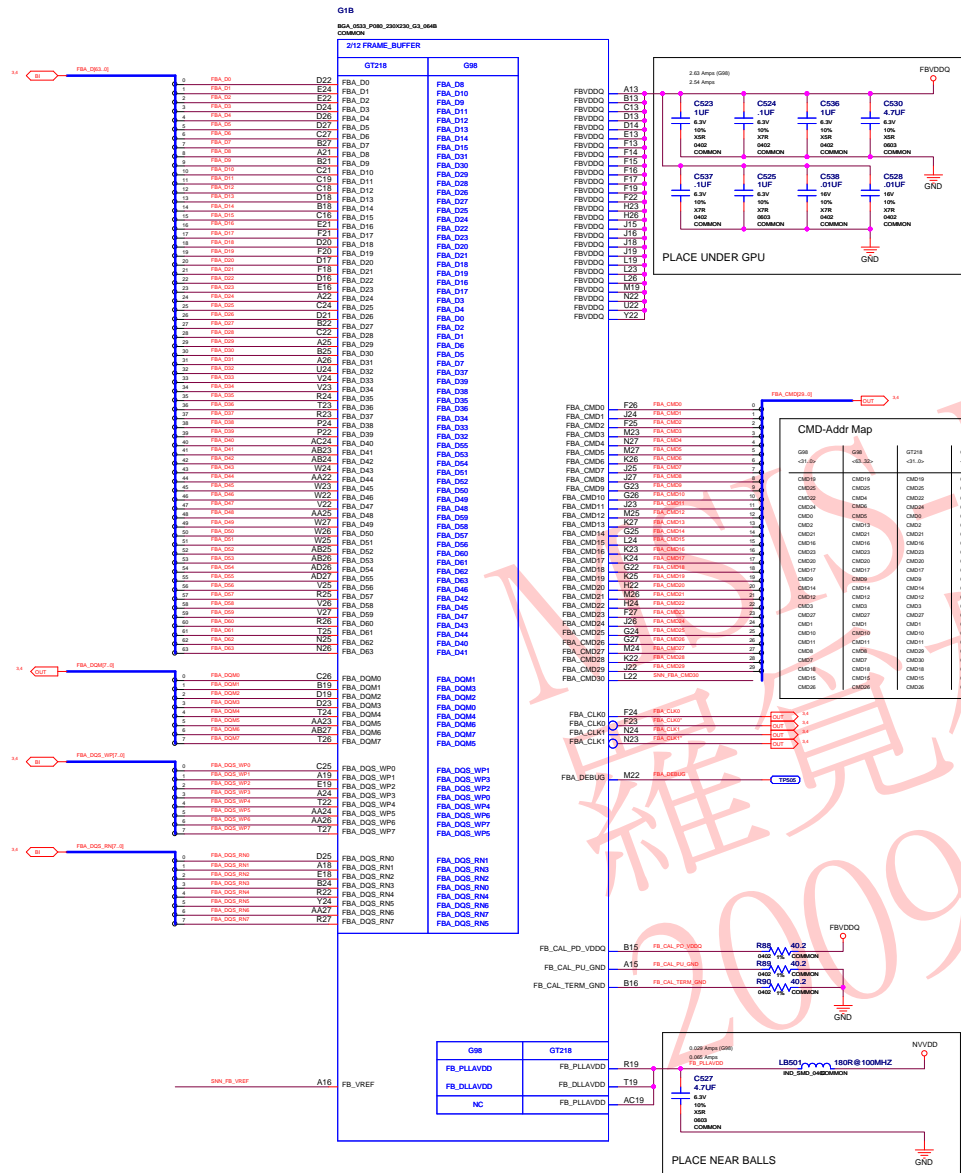
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Frame Buffer Interface



NVIDIA CORPORATION
2701 SAN TOMAS EXPRESSWAY
SANTA CLARA, CA 95050, USA

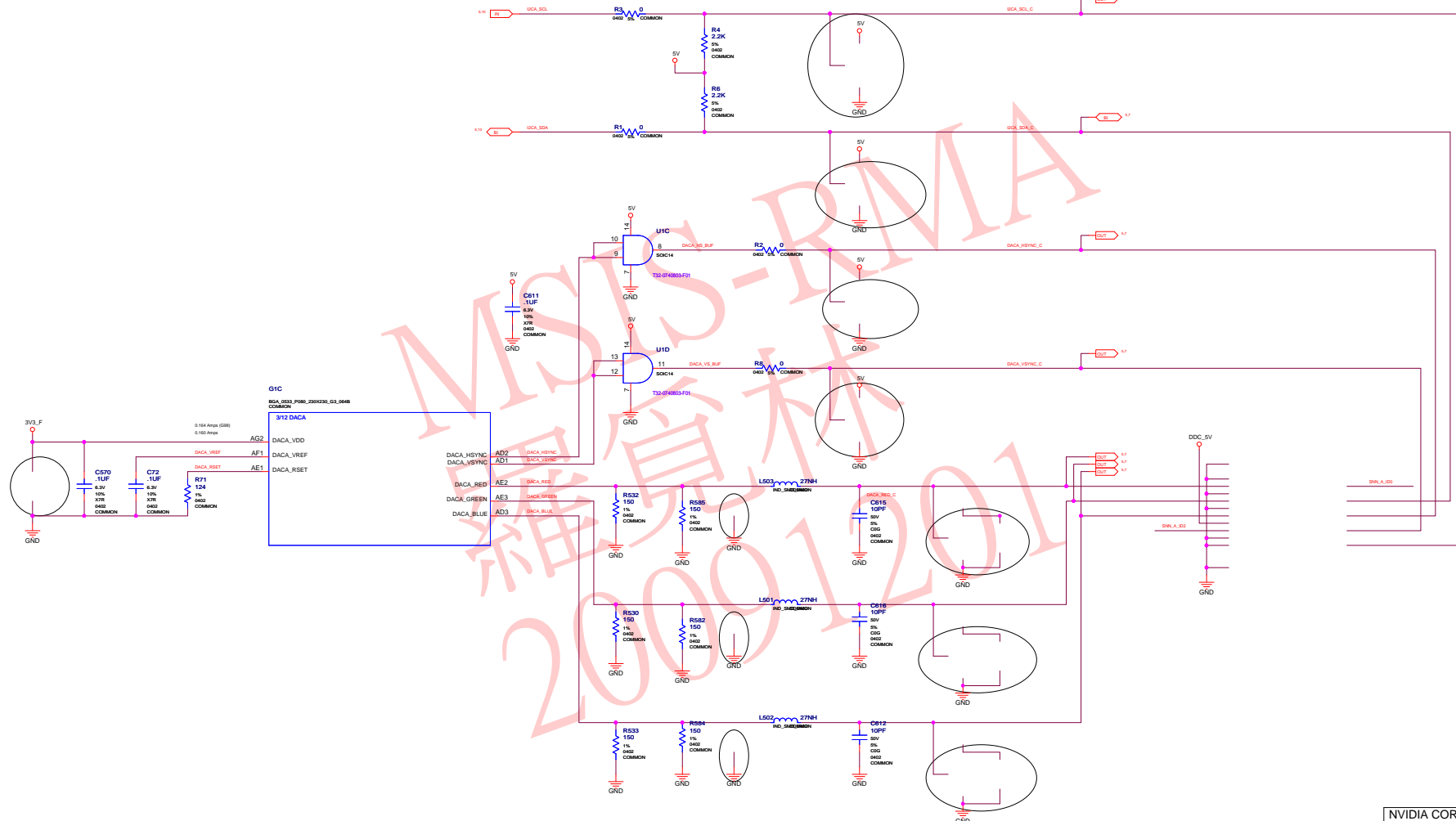
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DAC A Slim VGA

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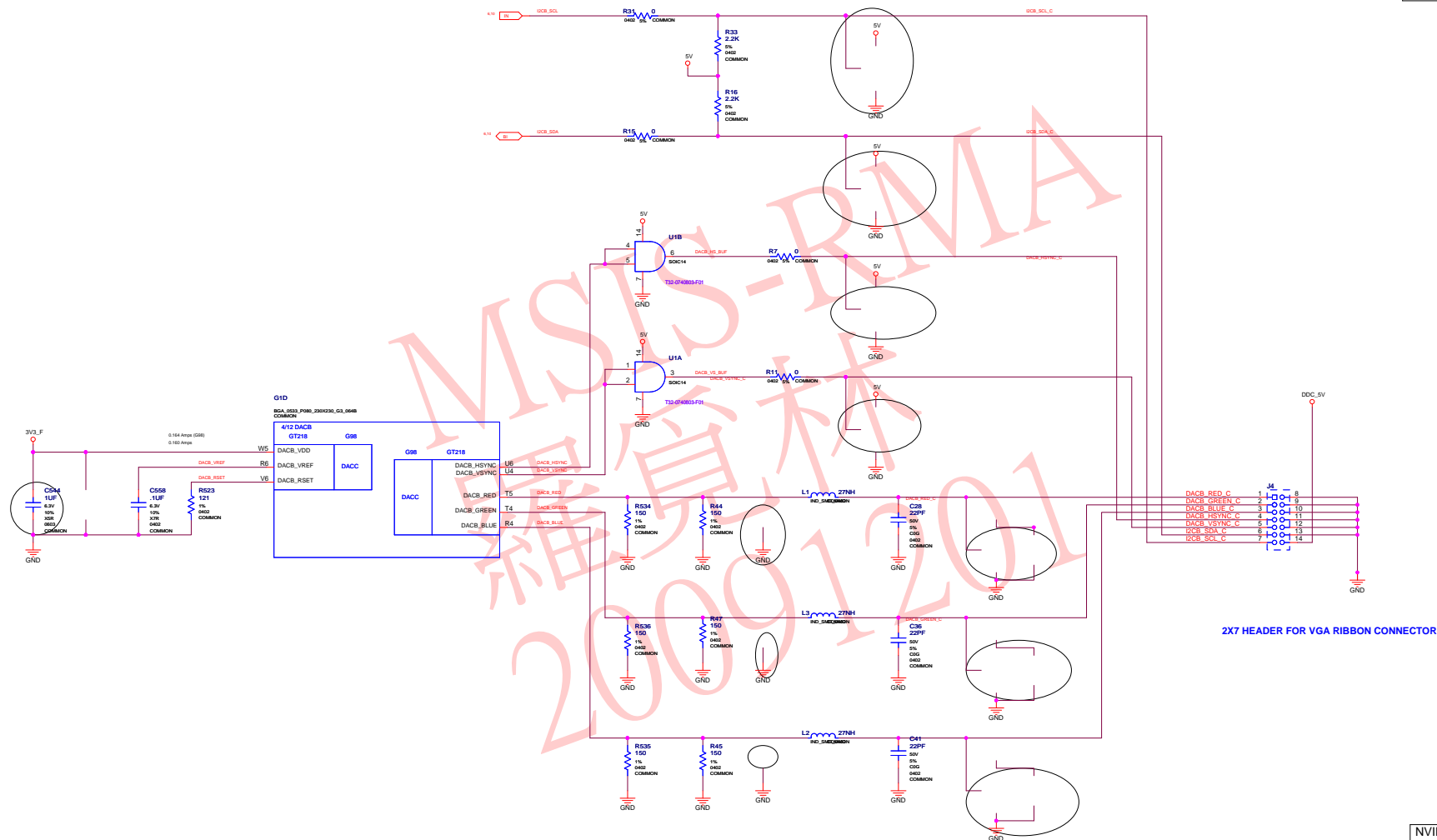
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	OUT	1	50ΩOUT
	IN	1	50ΩIN
	OUT	1	50ΩOUT
	IN	1	50ΩIN
	OUT	1	50ΩOUT
0.7	IN	2	50ΩIN
	OUT	2	50ΩOUT
	IN	2	50ΩIN
	OUT	2	50ΩOUT
	IN	2	50ΩIN
	OUT	2	50ΩOUT
0.5	IN	2	50ΩIN
	OUT	2	50ΩOUT
	IN	2	50ΩIN
	OUT	2	50ΩOUT
	IN	2	50ΩIN
	OUT	2	50ΩOUT

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DAC B VGA Header




Net Name		CRITICAL	IMPEDANCE
10	DACK_B0	1	50.00Ω
10	DACK_GREEN	1	50.00Ω
10	DACK_BLUE	1	50.00Ω
10	DACK_P001_C	1	50.00Ω
10	DACK_GREEN_C	1	50.00Ω
10	DACK_BLUE_C	1	50.00Ω
10	DACK_V010	2	50.00Ω
10	DACK_V011	2	50.00Ω
10	DACK_V012_C	2	50.00Ω
10	DACK_V013_BUF	2	50.00Ω
10	DACK_V014_BUF	2	50.00Ω
10	DACK_V015_BUF	2	50.00Ω

Net Name		MIN_WIDTH	MAX_WIDTH
10	H001_S01		
10	H001_S02		
10	H001_S03_C		
10	H001_V001_C		
10	H001_V002		
10	H001_V003	<20%	
10	H001_V004	<20%	

11

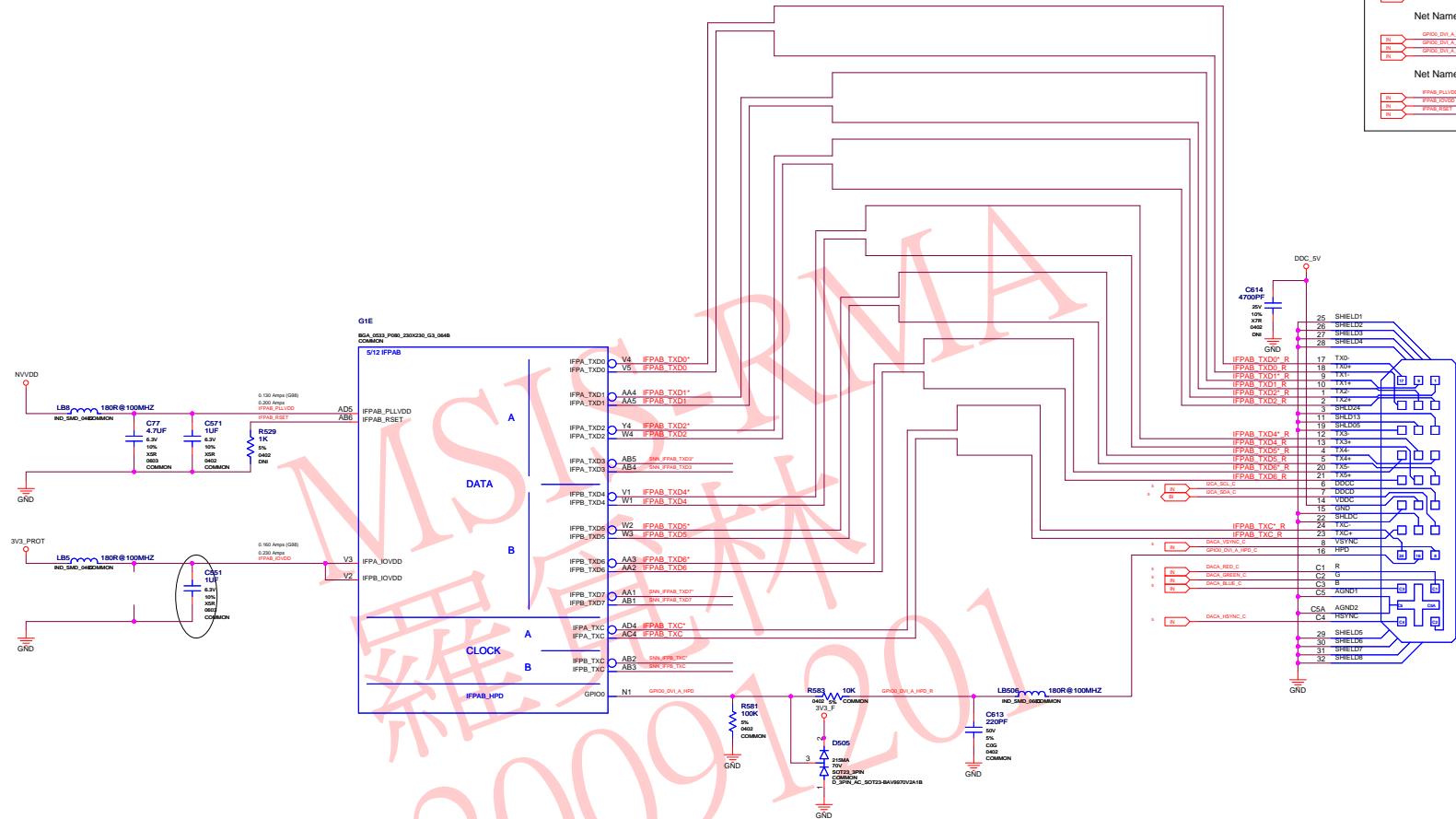
2X7 HEADER FOR VGA RIBBON CONNECTOR

NVIDIA CORPORATION 2701 SAN TOMAS EXPRESSWAY SANTA CLARA, CA 95050, USA			
NV_PN 600-10691-BASE-100 A			
ID		PAGE	
NAME		DATE	05-FEB-2009

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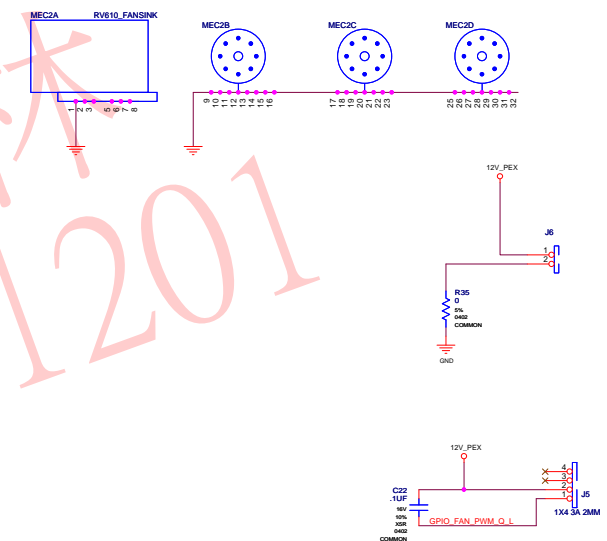
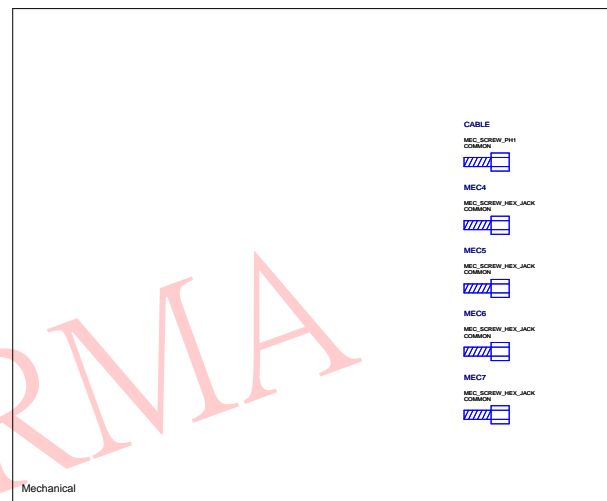
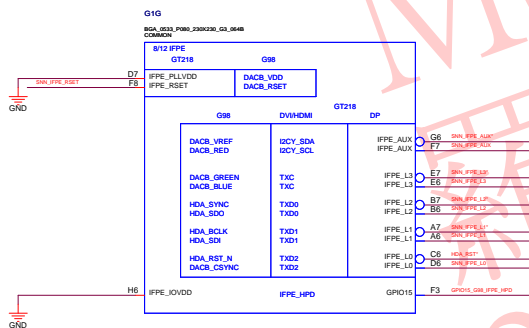
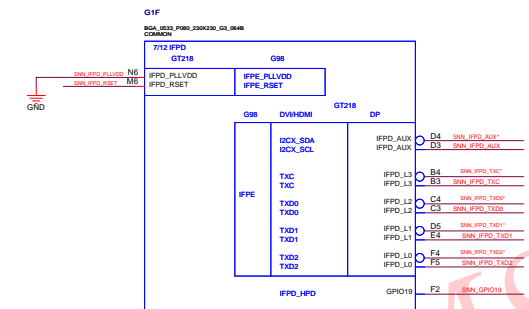
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PAGE DETAIL	DAC B VGA Header

TMDs Interface



Net Name	DIFF_PAIR	CRITICAL	IMPEDANCE
IFPAB_TXD0	IFPAB_TXD0	1	50OHM
IFPAB_TXD1	IFPAB_TXD1	1	50OHM
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IFPAB_TXD3	IFPAB_TXD3	1	50OHM
IFPAB_TXD4	IFPAB_TXD4	1	50OHM
IFPAB_TXD5	IFPAB_TXD5	1	50OHM
IFPAB_TXD6	IFPAB_TXD6	1	50OHM
IFPAB_TXD7	IFPAB_TXD7	1	50OHM
IFPAB_TXD8	IFPAB_TXD8	1	50OHM
IFPAB_TXD9	IFPAB_TXD9	1	50OHM
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IFPAB_TXD171	IFPAB_TXD171	1	50OHM

IFPC, IFPE Interface, Mechanical, SPDIF



Net Name **MIN_WIDTH** **MAX_WIDTH**

IN HDA_BST 1708L

IN GPIO_FAN_PWM

IN GPIO_TEMP

IN GPIO_IN_2

IN GPIO_IN_3

IN GPIO_IN_4

Net Name **CRITICAL** **IMPEDANCE**

IN GOUT 2 50OHM

IN GPIO_IN

Net Name **VOLTAGE** **MAX_CURRENT**

IN I2C0_KVDD 1.80V 0.200A 0.000A

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NV_PN	600-10691-BASE-100 A
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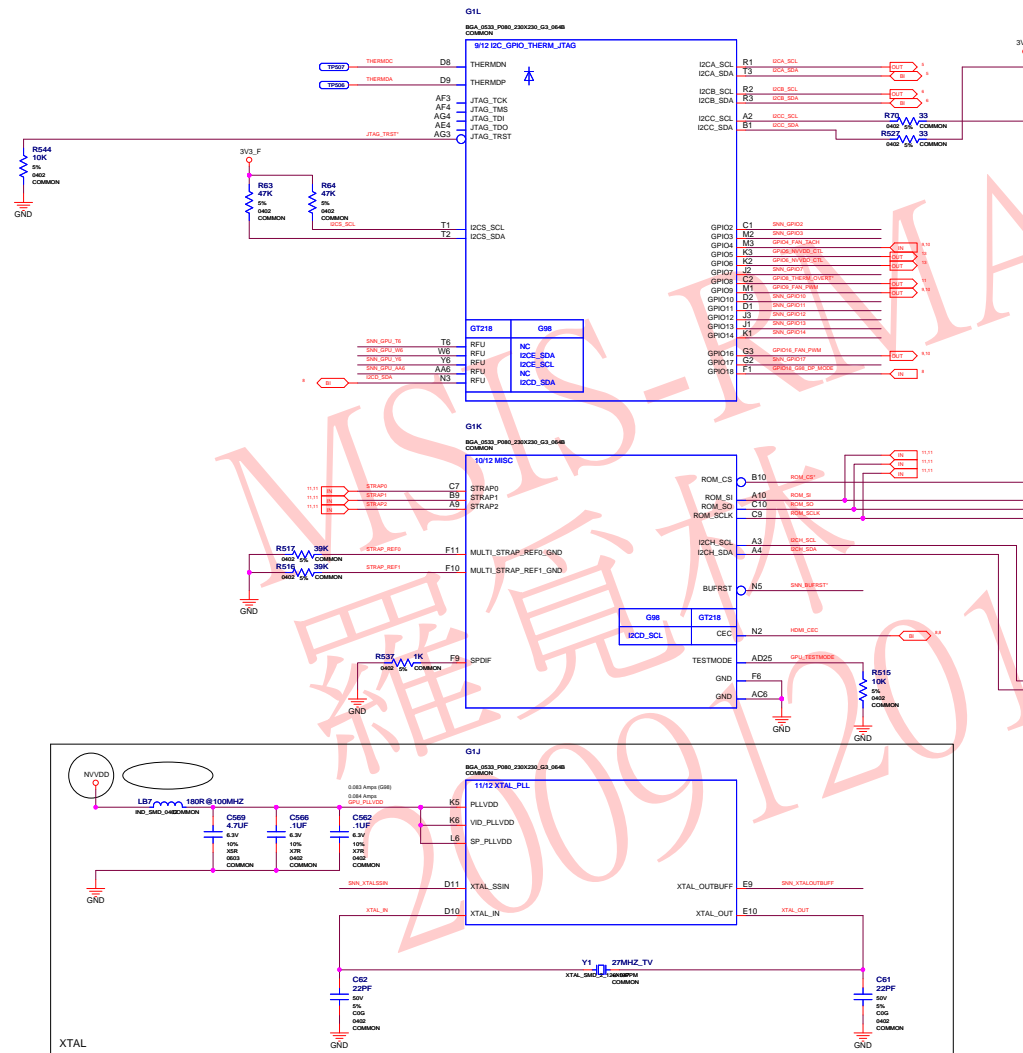
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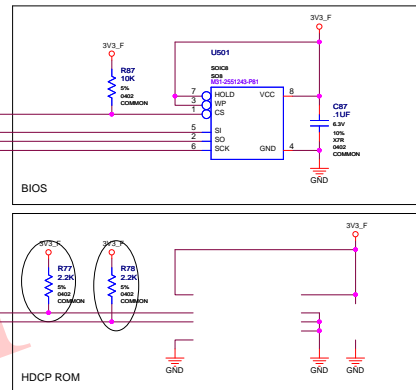
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ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	IFPC, IFPE Interface, Mechanical, SPDIF

XTAL, ROM, JTAG




	Net Name	CRITICAL	IMPEDANCE	Net Name	MIN_WIDTH	MAX_WIDTH
	<div> <div>IN</div> <div>ITAL_OUT</div> <div>ITAL_IN</div> </div>	1	50OHM	<div> <div>IN</div> <div>IOCC_S0C</div> <div>IOCC_S0A</div> <div>IOCC_S0L_0</div> <div>IOCC_S0L_1</div> <div>IOCC_S0L_2</div> <div>IOCC_S0L_3</div> <div>IOCC_S0L_4</div> <div>IOCC_S0L_5</div> </div>		
	<div> <div>IN</div> <div>GPU_F1LVDD</div> </div>	1.000	0.000A 100A			
	<div> <div>IN</div> <div>Net Name</div> </div>	MIN_WIDTH	MAX_WIDTH	<div> <div>IN</div> <div>ROM_CS</div> <div>GPU_THERMOND</div> <div>ROM_VDD</div> <div> <div>IN</div> <div>THERMOND</div> <div>THERMONA</div> </div> <div> <div>IN</div> <div>JTAG_T0A</div> <div>JTAG_T0B</div> <div>JTAG_T0C</div> <div>JTAG_T0D</div> <div>JTAG_T0E</div> </div> </div>	1200A	
0.10	<div> <div>IN</div> <div>PEX_S0A0C</div> <div>PEX_S0A0T</div> </div>			<div> <div>IN</div> <div>PEX_S0L0C</div> <div>PEX_S0L0E</div> <div>PEX_S0L1C</div> <div>PEX_S0L1E</div> <div>PEX_S0L2C</div> <div>PEX_S0L2E</div> <div> <div>IN</div> <div>GPU_T0</div> </div> </div>		
0.10	<div> <div>IN</div> <div>GPU_F1AN_T0A0C</div> <div>GPU_F1AN_T0A0E</div> <div>GPU_F1AN_T0B0C</div> <div>GPU_F1AN_T0B0E</div> </div>			<div> <div>IN</div> <div>JTAG_T0F</div> <div>JTAG_T0G</div> </div>		



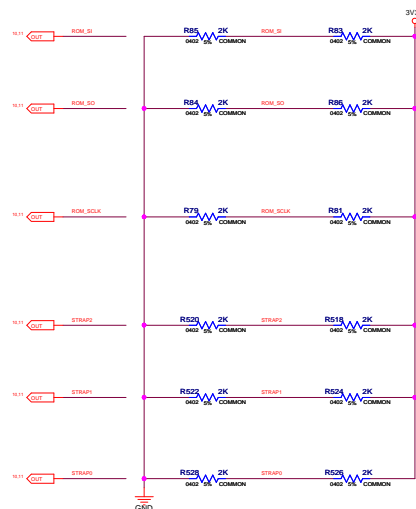
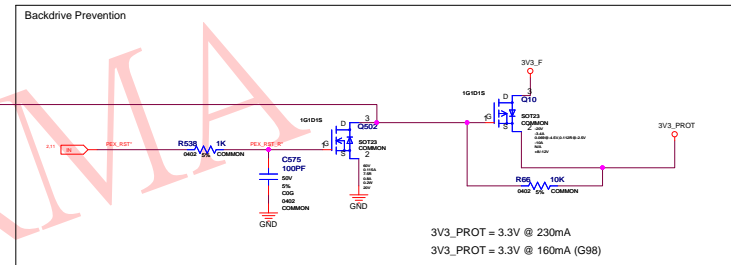
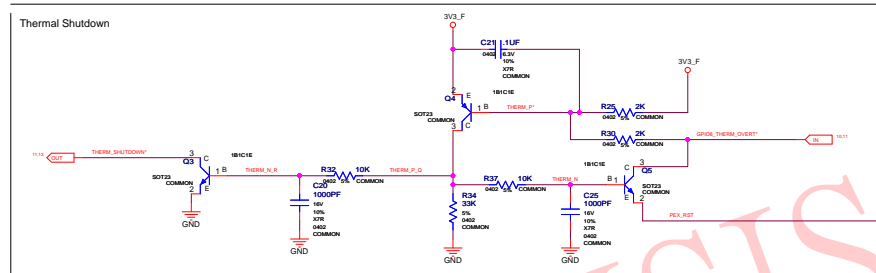
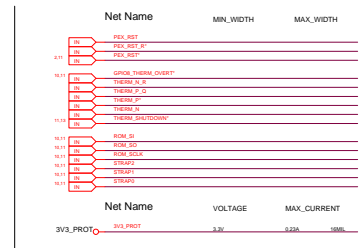
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PAGE DETAIL	XTAL, ROM, JTAG

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Thermal Protection, Protected 3V3, Straps



GLT18 Straps		GLTS Mode		Values		Multilane Straps	
03	RAMCFG1	0000	Elisa				
		0001	Deming, Moore				
		0010	Orlando				
01	RAMCFG2	0001	Helen				
		0000	Nancy				
03	ACCEL_XYZ	0	277 (Default)				
03	FREQ	0	250M (Default)				
01	SAR_ALT_ADDR	0	Cold				
		1	Hot				
03	VGA_DEVICE	0	Class code 000				
		1	Class code 300				
03	PCI_DEVICE_EXT	0	GT218-B00-A1				
03	SUB_VENDOR	0	No BIOS				
		1	BIOS				
01	SLOT_CFG_CFG	0	Disable				
		1	Enable				
03	PEX_LIN_EN_TERMINIO	0	Disable				
		1	Enable				
03	PCI_DEVICE1	0000	GT218-B00-A1				
03	PCI_DEVICE2						
01	PCI_DEVICE3						
03	PCI_DEVICE4						
03	SGSC_PACCFG1_LUT_ADDR0	0000	DISKTOP_DEFAULT	1000	DISKTOP_STRIPS		
		0001	MOBILE_DEFAULT	1001	MOBILE_STRIPS_HAMP		
		0002	MOBILE_STRIPS_LAMP	1002	MOBILE_STRIPS_LAMP		
		0003	MOBILE_STRIPS_LAMP	1001	MOBILE_STRIPS_LAMP		
		0100	MOBILE_STRIPS_HAMP	1100	MOBILE_STRIPS_HAMP		
		0101	MOBILE_STRIPS_HAMP	1101	MOBILE_STRIPS_HAMP		
		0110	MOBILE_STRIPS_HAMP	1110	MOBILE_STRIPS_HAMP		
		0111	MOBILE_STRIPS_HAMP	1111	MOBILE_STRIPS_HAMP		
03	USEREQ0	0000	Default				
03	USEREQ2						
01	USEREQ1						
03	USEREQ3						

BT18 Straps		BU Mode	
Bit Signal		Values	
POL_DEVICE_EXT	0	CT519-308A1	
ICL4_417	0	277 (default)	
<p> 0000 CSDTOP_DEFAULT 0001 M0BLE_DEFAULT 0003 M0BLE_ATHWES_LAMP 0011 M0BLE_ATHWES_LAMP 0100 M0BLE_ATHWES_LAMP 0101 M0BLE_ATHWES_LAMP 0110 M0BLE_ATHWES_LAMP 0111 M0BLE_ATHWES_LAMP 1000 CSDTOP_ATHWES 1001 M0BLE_ATHWES_LAMP 1010 M0BLE_ATHWES_LAMP 1011 M0BLE_ATHWES_LAMP 1100 M0BLE_ATHWES_LAMP 1101 M0BLE_ATHWES_LAMP 1110 M0BLE_ATHWES_LAMP 1111 M0BLE_ATHWES_LAMP </p>			
<p> 0000 CSDTOP_DEFAULT 0001 M0BLE_DEFAULT 0003 M0BLE_ATHWES_LAMP 0011 M0BLE_ATHWES_LAMP 0100 M0BLE_ATHWES_LAMP 0101 M0BLE_ATHWES_LAMP 0110 M0BLE_ATHWES_LAMP 0111 M0BLE_ATHWES_LAMP 1000 CSDTOP_ATHWES 1001 M0BLE_ATHWES_LAMP 1010 M0BLE_ATHWES_LAMP 1011 M0BLE_ATHWES_LAMP 1100 M0BLE_ATHWES_LAMP 1101 M0BLE_ATHWES_LAMP 1110 M0BLE_ATHWES_LAMP 1111 M0BLE_ATHWES_LAMP </p>			
<p> 0000 CSDTOP_DEFAULT 0001 M0BLE_DEFAULT 0003 M0BLE_ATHWES_LAMP 0011 M0BLE_ATHWES_LAMP 0100 M0BLE_ATHWES_LAMP 0101 M0BLE_ATHWES_LAMP 0110 M0BLE_ATHWES_LAMP 0111 M0BLE_ATHWES_LAMP 1000 CSDTOP_ATHWES 1001 M0BLE_ATHWES_LAMP 1010 M0BLE_ATHWES_LAMP 1011 M0BLE_ATHWES_LAMP 1100 M0BLE_ATHWES_LAMP 1101 M0BLE_ATHWES_LAMP 1110 M0BLE_ATHWES_LAMP 1111 M0BLE_ATHWES_LAMP </p>			

GT218 Straps		
PM Mode		
Bit Signal	Values	
PCI_DEV0_EXT	0	GT218-300-A1
ACSC_EXT	0	270227 QR-471617
PCI_DEV00E	0	GT218-300-A1
NAMEFQ[2]	0000	Epilete
	0001	Samungung Mirror
	0003	Omnicube
	0011	Phylix
	0100	Natanga
NAMEFQ[1]		
NAMEFQ[0]		

Mode	REFOREF1
ML5	Druff
BZ	No stuff
PM	Druff one

G98 Straps		
MLS Mode		
Bit Signal	Values	
(0): RMVC[02]	0000	Empty
(1): RMVC[02]	0100	Normal
(2): RMVC[02]	0101	Swarming
(3): RMVC[02]	0110	Overload
(4): RMVC[02]	0111	Ways
(5): RMVC[02]		
(6): ACUX_377	1	Enabled
(7): TUNMODE[02]	001	NTSC_L
(8): TUNMODE[1]		
(9): TUNMODE[0]		
(10): TUNMODE[02]		
(11): PCL_DEVIO_EXT	0	G98-403-12
(12): SUB_VENDOR	0	G98-403-A2
(13): SUB_VENDOR	1	G98-403-12
(14): SUB_VENDOR	1	BOS
(15): SLOTT_CLK_CFG	0	Disable
(16): SLOTT_CLK_CFG	1	Enable
(17): PEU_PLL_EN_TERR100	0	Disable
(18): PCL_DEVIO[5]		
(19): PCL_DEVIO[5]	0000	RTU
(20): PCL_DEVIO[5]	0100	G98-403-12
(21): PCL_DEVIO[5]	0101	G98-403-A2
(22): PCL_DEVIO[5]	0110	G98-403-12
(23): PCL_DEVIO[5]		
(24): SGPIO_FUNC[03_LUT_ADR0]	0000	G987TOP_020A1.1
(25): SGPIO_FUNC[03_LUT_ADR0]		
(26): SGPIO_FUNC[03_LUT_ADR1]		
(27): SGPIO_FUNC[03_LUT_ADR1]		
(28): SGPIO_FUNC[03_LUT_ADR2]		
(29): SGPIO_FUNC[03_LUT_ADR2]		
(30): USERR[02]	0000	Default
(31): USERR[02]		
(32): USERR[1]		
(33): USERR[1]		
(34): USERR[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

Mode	REFQ/REFP
MLS	Stall
EU	No stall
PM	Stall one

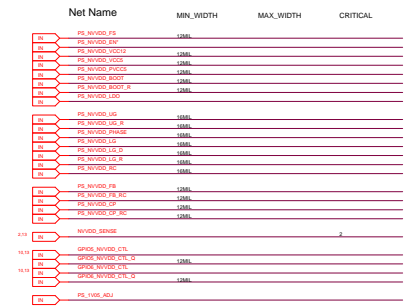
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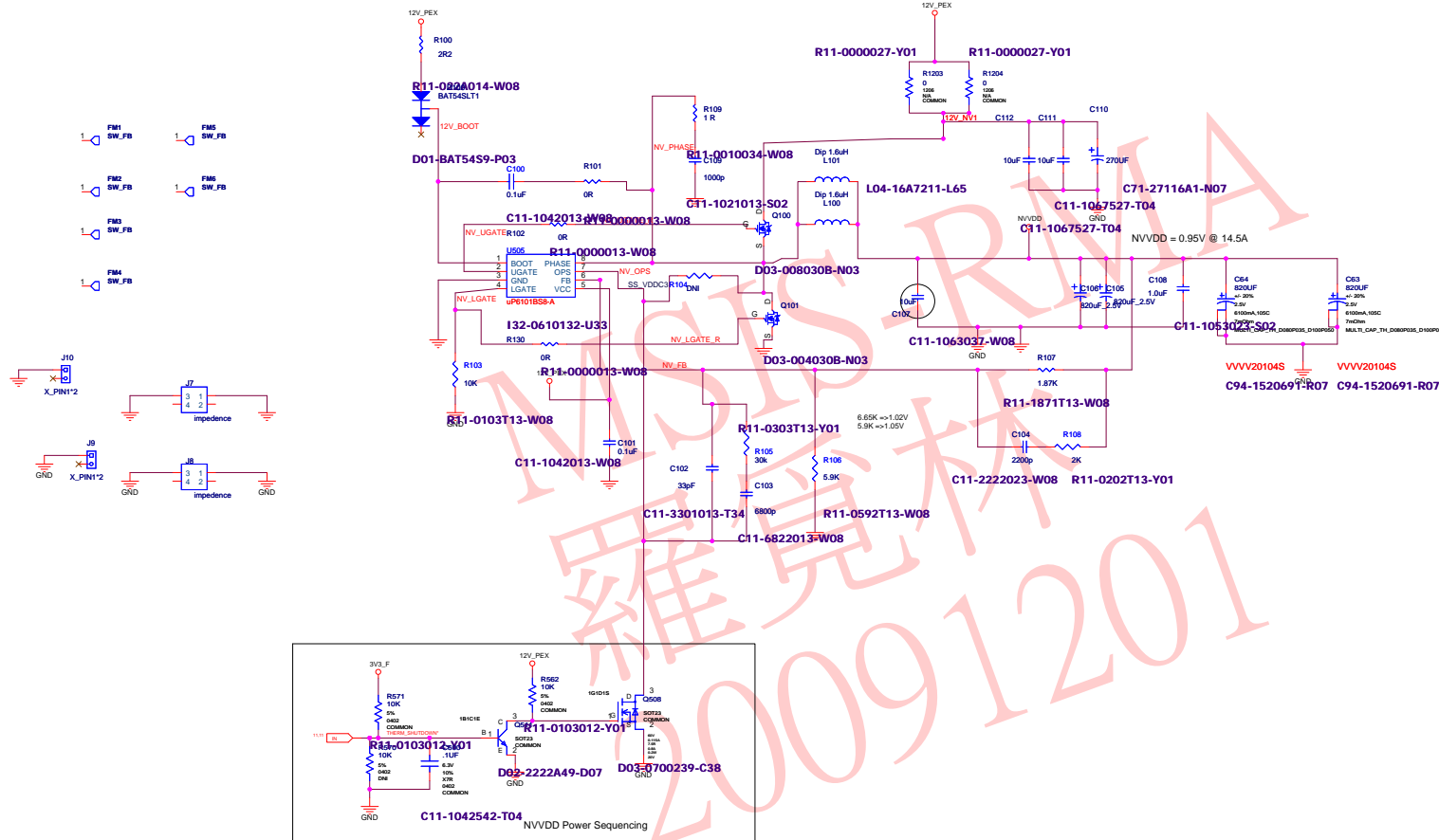
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PAGE DETAIL	Thermal Protection, Protected 3V3, Straps

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Net Name	VOLTAGE	MAX_CURRENT	POWER_NET
12V_PEX	12V	5.5A	30W
3V3_PEX	3.3V	3.0A	10W
1V_PEX	1.1V	11.7A	30W
PEX_PLLVDD	1.05V	0.17A	1.2W



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