

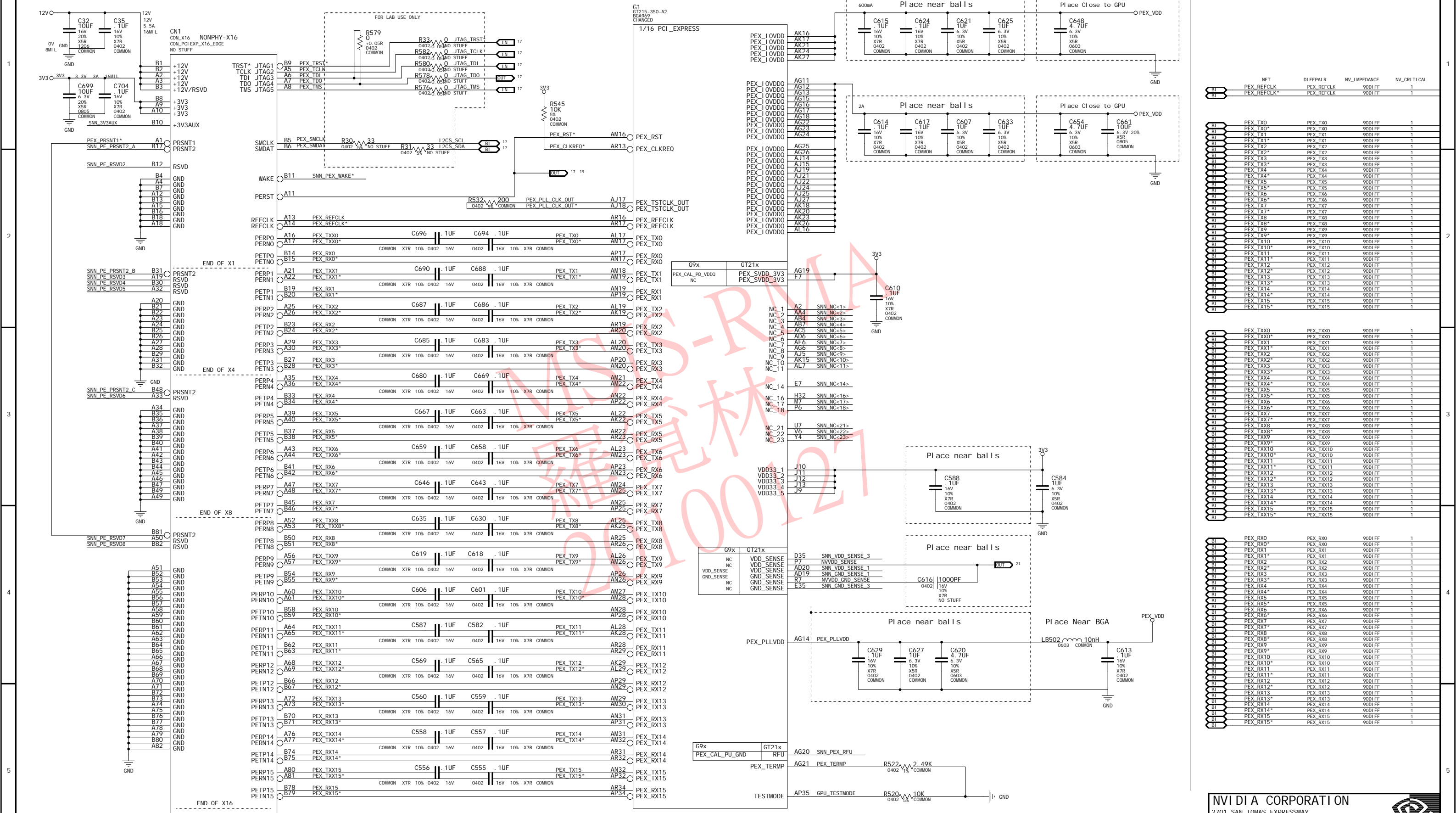
P684-A01 GT216/GT215 DESKTOP Low Profile
PCI-EXPRESSx16 DVI-I HDMI VGA DDR3


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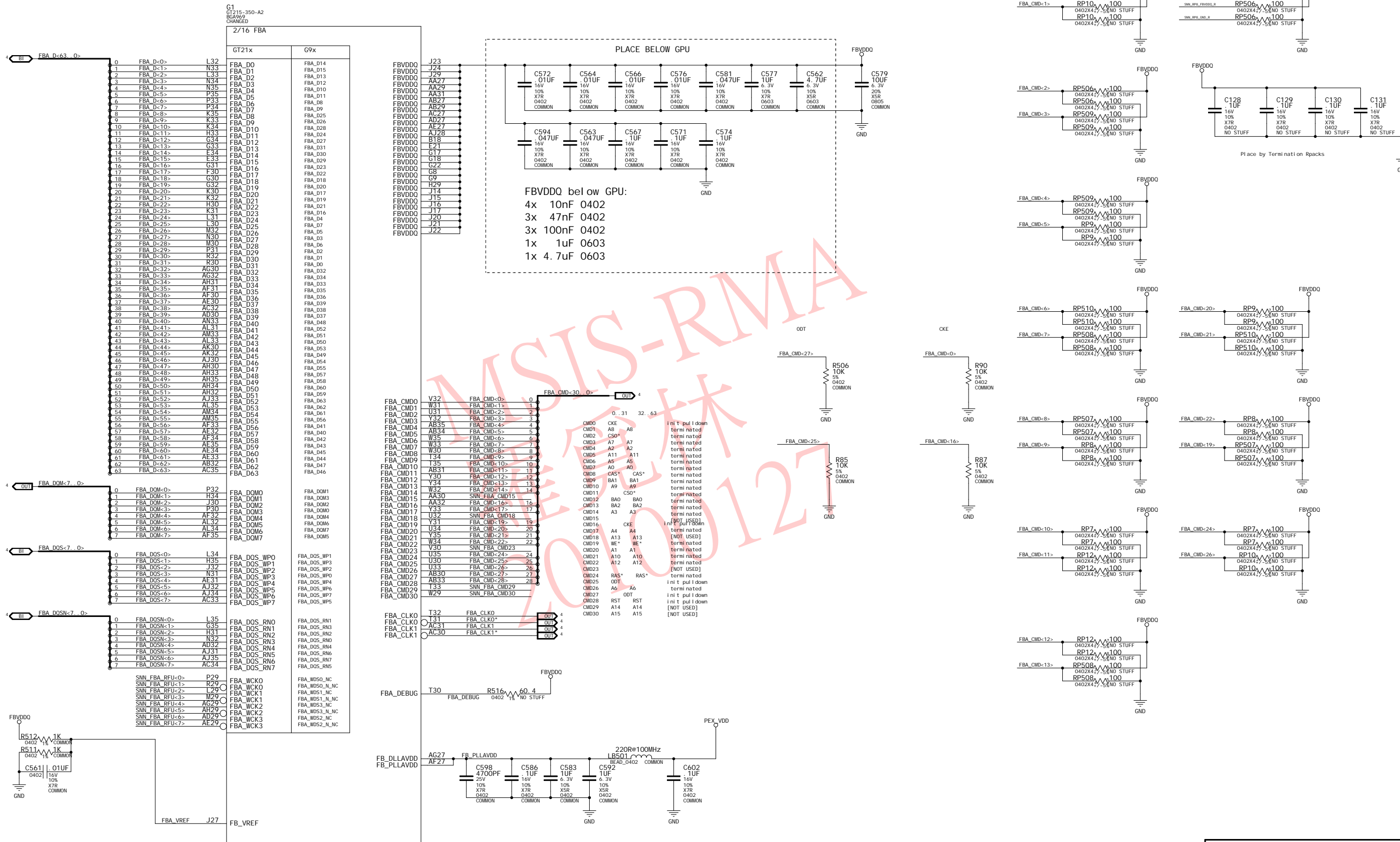
SKU	VARIANT	NVPN	ASSEMBLY
B	BASE	600-10684-base-100	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO STUFF ASSEMBLY NOTES AND BOM NOT FINAL
1	SKU0000	600-10684-0000-100	GT216-350 615/1335MHz 1024MB 64Mx16 BGA100 790MHz DDR3 DVI-I/HDMI/VGA
2	SKU0011	600-10684-0011-100	GT215-350 540/1302MHz 1024MB 64Mx16 BGA100 790MHz DDR3 DVI-I/HDMI/VGA
3	SKU0012	600-10684-0012-100	GT215-250 540/1302MHz 1024MB 64Mx16 BGA100 790MHz DDR3 DVI-I/HDMI/VGA
4	SKU0013	600-10684-0013-100	GT215-250 NVS 540/1302MHz 1024MB 64Mx16 BGA100 790MHz DDR3 DVI-I/HDMI/VGA
5	SKU0014	600-10684-0014-100	GT215-350 NVS 540/1302MHz 1024MB 64Mx16 BGA100 790MHz DDR3 DVI-I/HDMI/VGA
6	SKU0005	600-10684-0005-100	GT216-205 475/1100MHz 1024MB 64Mx16 BGA100 790MHz DDR3 DVI-I/HDMI/VGA
7	SKU0015	600-10684-0015-100	GT215-255 540/1302MHz 1024MB 64Mx16 BGA100 790MHz DDR3 DVI-I/HDMI/VGA
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15	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>

PCI -EXPRESS I NTERFACE



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NAME	Garrett Hall	DATE	30-OCT-2009

PARTITION A FRAME BUFFER INTERFACE



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PARTITION A MEMORY



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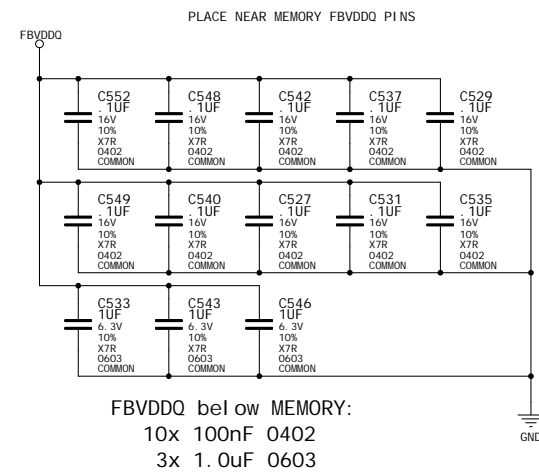
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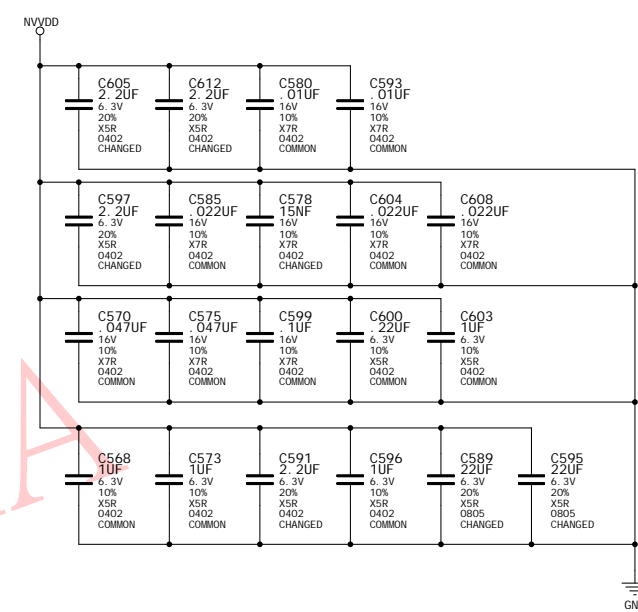
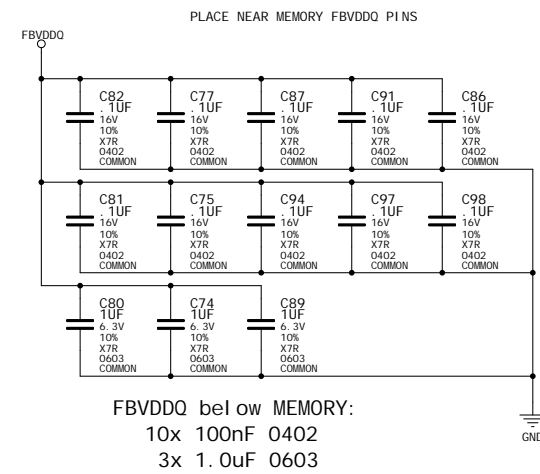
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FBA DECOUPLING CAPS & NVVDD DECOUPLING CAPS

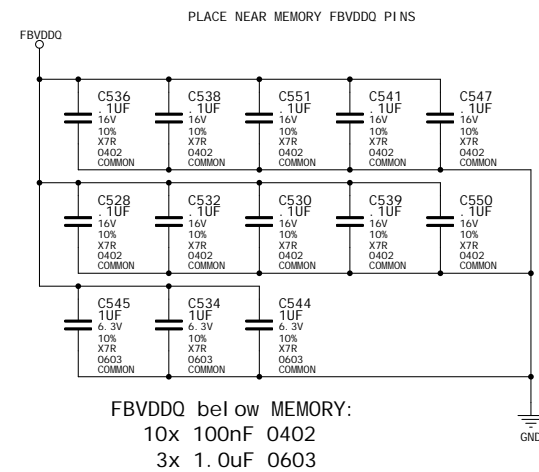
Decoupling for FBA 0..15



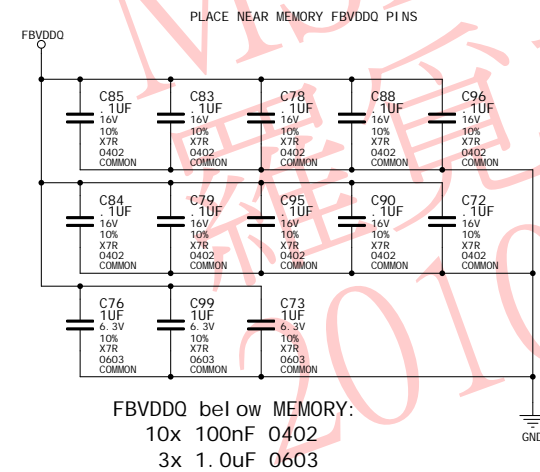
Decoupling for FBA 16..31



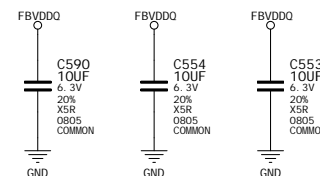
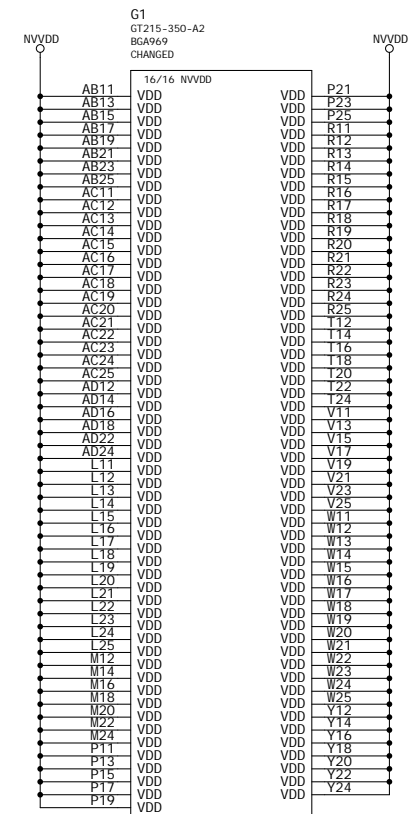
Decoupling for FBA 32..47



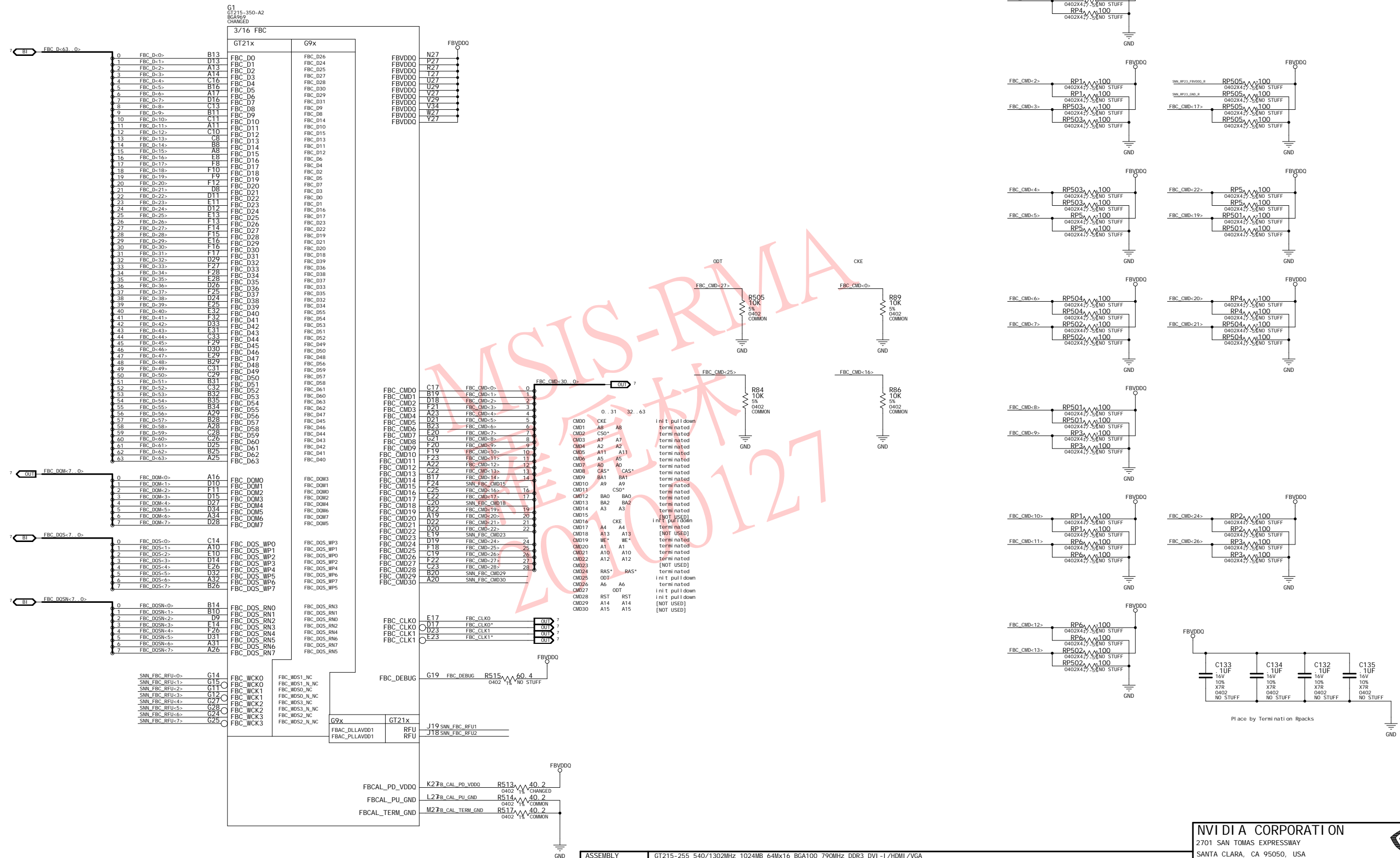
Decoupling for FBA 48..63



NVVDD under GPU:



PARTITION C FRAME BUFFER INTERFACE



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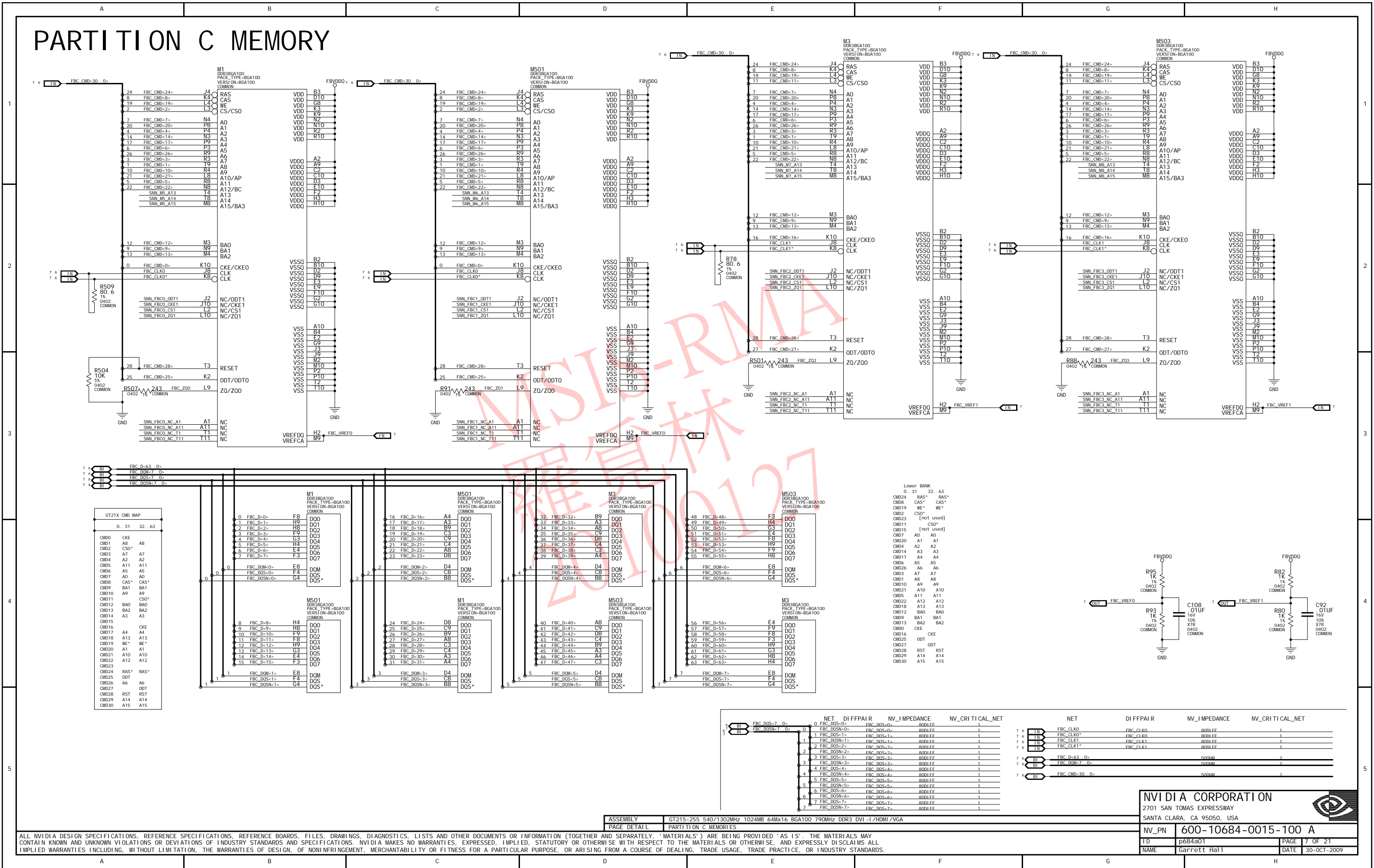
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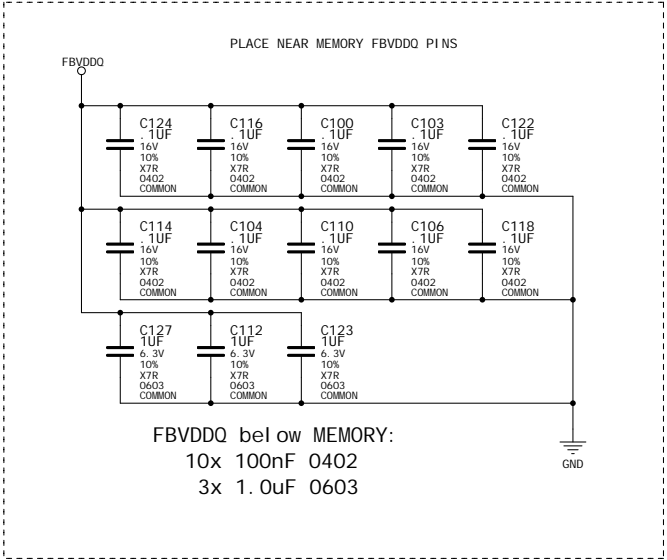
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PARTITION C MEMORY

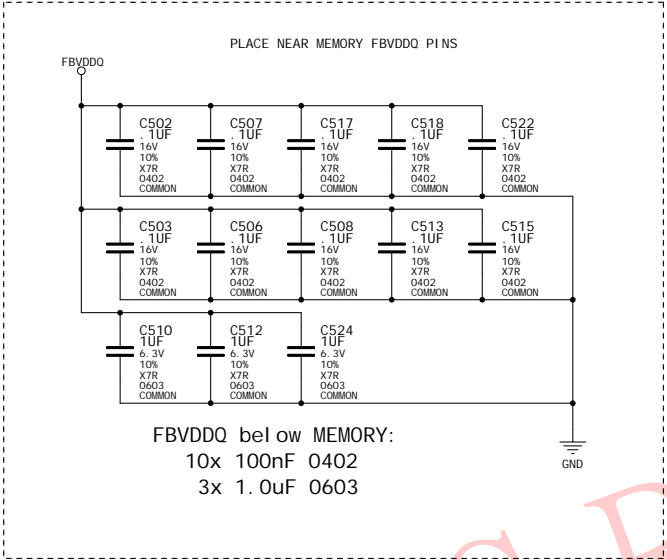


FBC DECOUPLING CAPS & NVVDD DECOUPLING CAPS

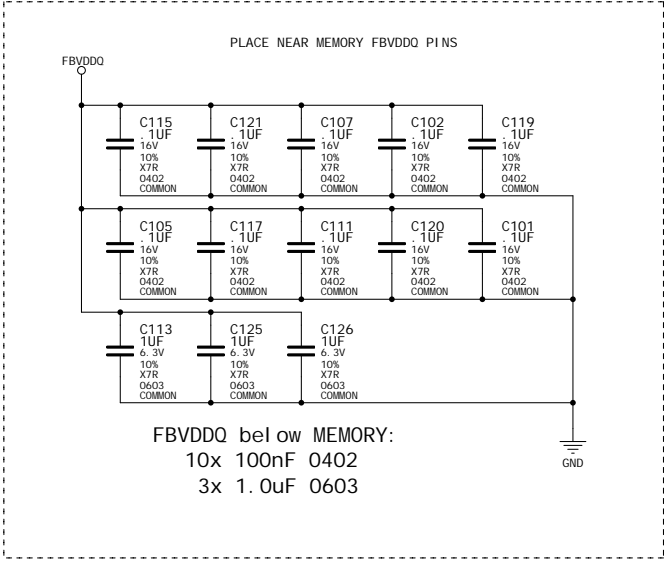
Decoupling for FBC 0..15



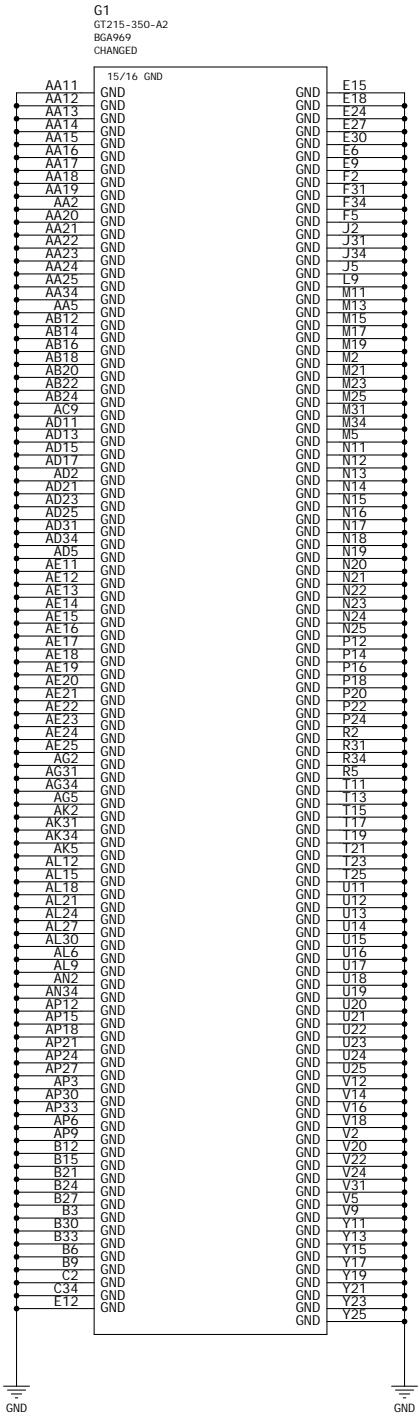
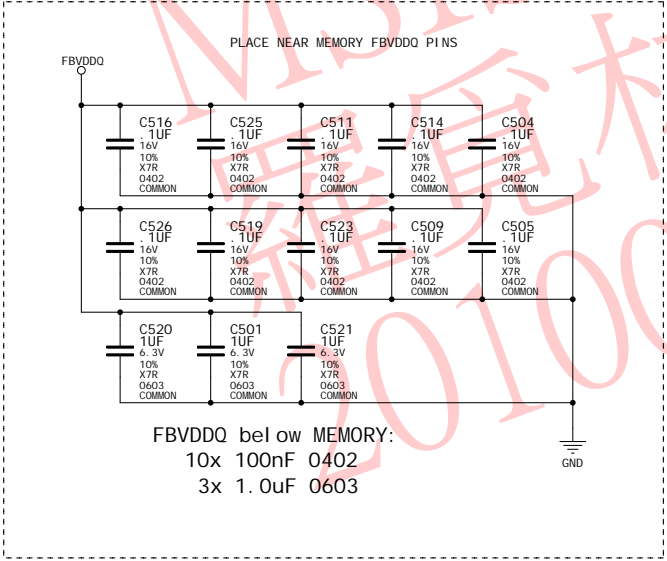
Decoupling for FBC 16..31



Decoupling for FBC 32..47



Decoupling for FBC 48..63



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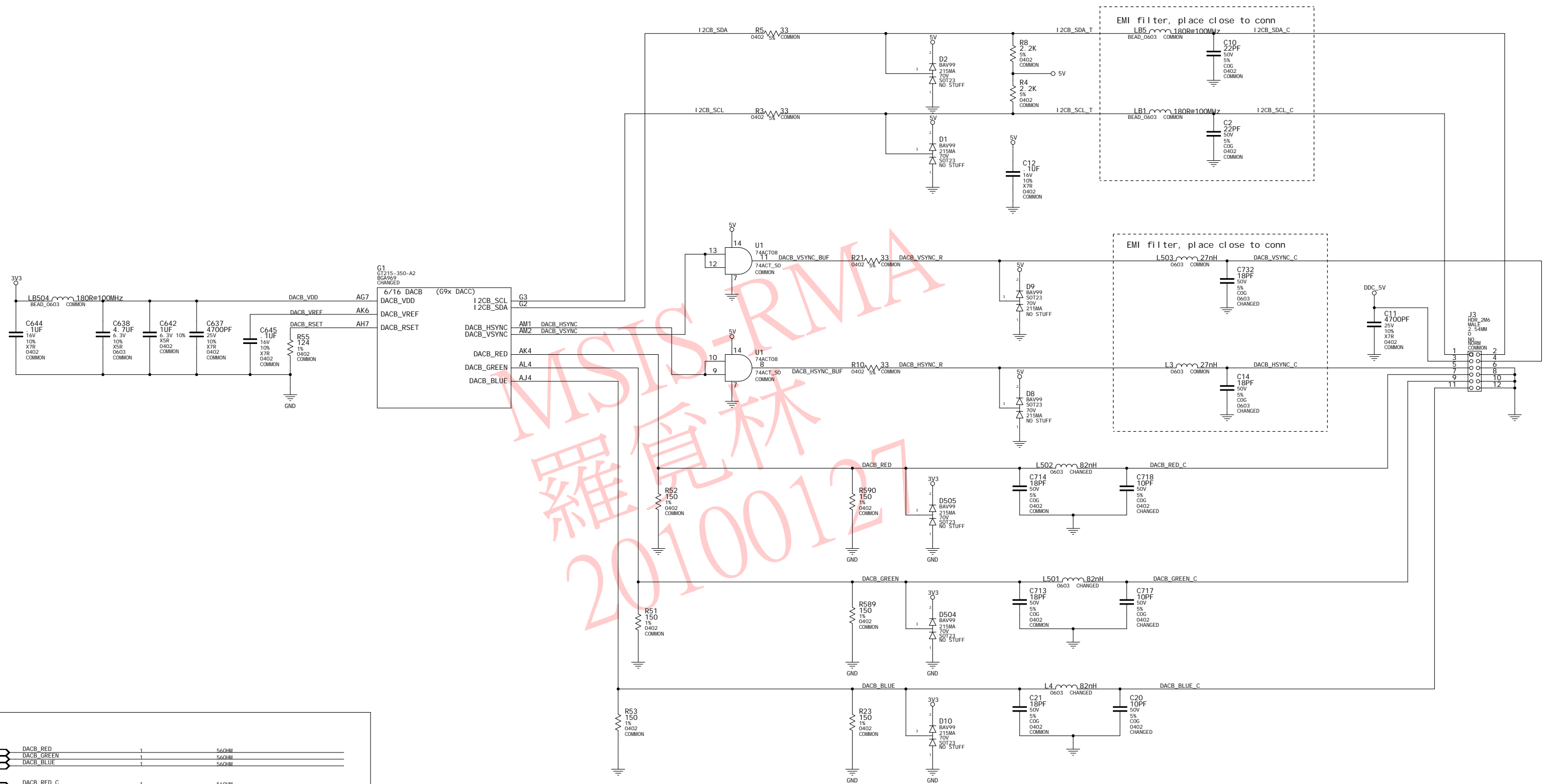
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DACB (cable-up VGA)



[BI]	DACB_RED	1	560HM
[BI]	DACB_GREEN	1	560HM
[BI]	DACB_BLUE	1	560HM
[BI]	DACB_RED_C	1	560HM
[BI]	DACB_GREEN_C	1	560HM
[BI]	DACB_BLUE_C	1	560HM
[BI]	DACB_HSYNC	1	500HM
[BI]	DACB_VSYNC	1	500HM
[BI]	DACB_HSYNC_R	1	500HM
[BI]	DACB_VSYNC_R	1	500HM
[BI]	DACB_HSYNC_BUF	1	500HM
[BI]	DACB_VSYNC_BUF	1	500HM
[BI]	DACB_HSYNC_C	1	500HM
[BI]	DACB_VSYNC_C	1	500HM

ASSEMBLY	GT215-255 540/1302MHz 1024MB 64Mx16 BGA100 790MHz DDR3 DVI -I /HDMI /VGA
PAGE DETAIL L	DACB (cable up VGA)

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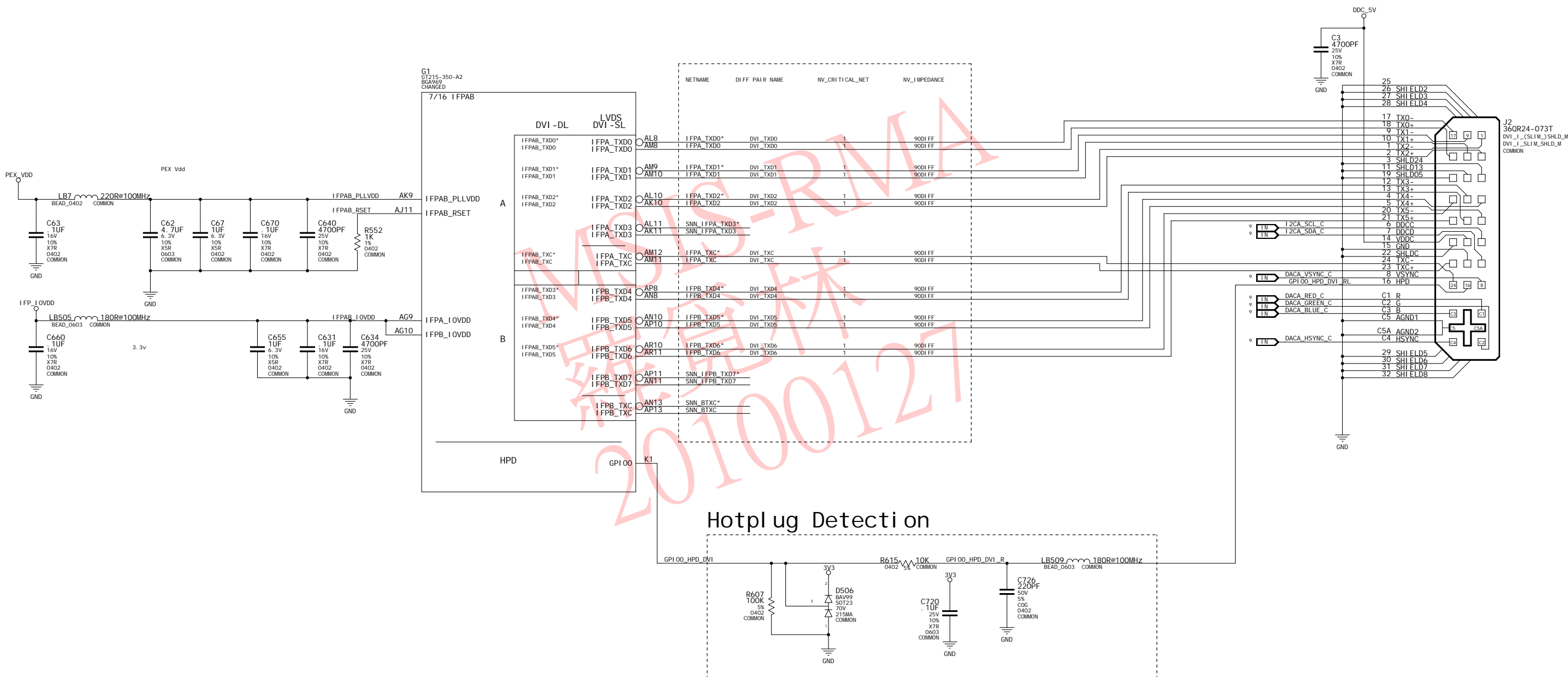
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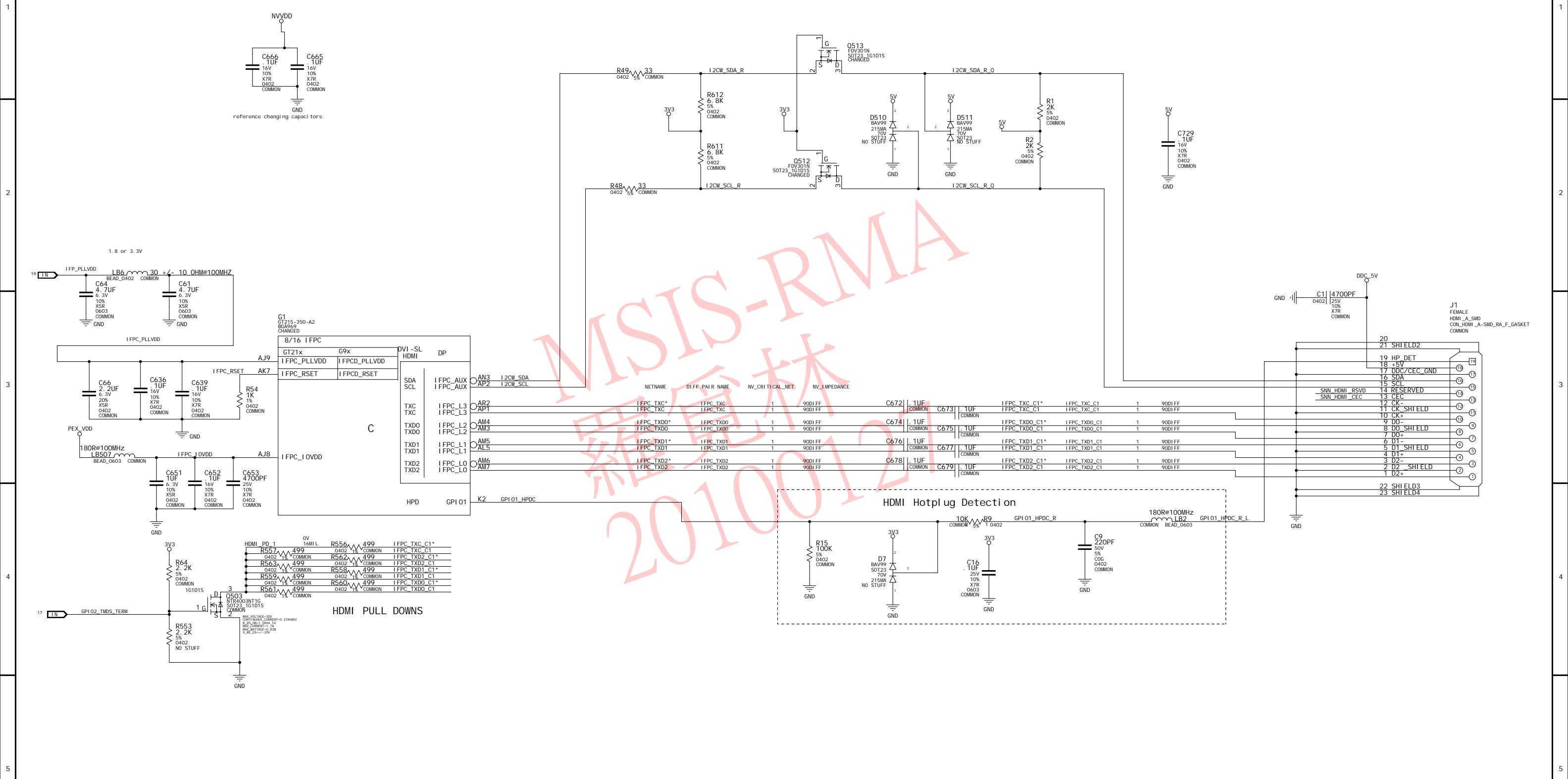
ID	p684a01	PAGE	10 OF 21
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I FP AB (SOUTH DVI -I)



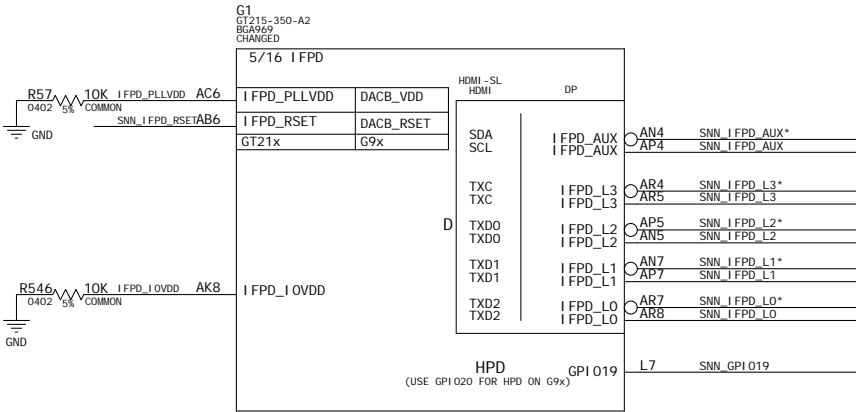
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I FP C (NORTH HDMI)



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I F P D (UNUSED)



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NET	PAIR	NV_CRITICAL	IMPEDANCE
I F P E _ A U X _ B Y P	I F P E _ A U X _ B Y P	1	90DI FF
I F P E _ A U X _ B Y P *	I F P E _ A U X _ B Y P	1	90DI FF

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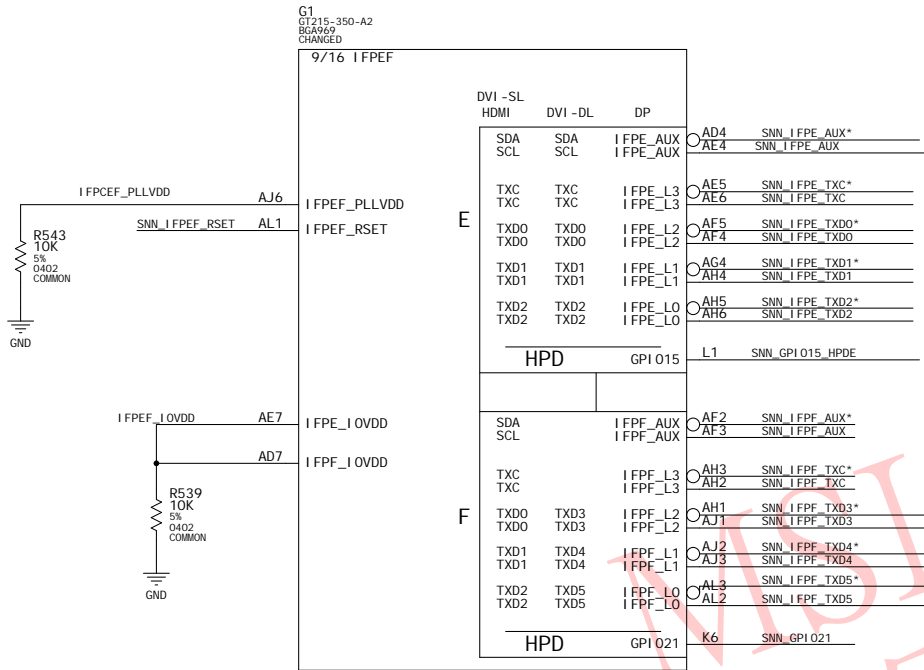
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NAME	Garrett Hall	DATE	30-OCT-2009

I FP EF (unused)



NET	PAIR	NV_CRIT I CAL	IMPEDANCE
I FPEF_TXC*	I FPEF_TXC	1	90D FF
I FPEF_TXC	I FPEF_TXC	1	90D FF
I FPE_TXC*	I FPE_TXC	1	90D FF
I FPE_TXC	I FPE_TXC	1	90D FF
I FPE_TXD0*	I FPE_TXD0	1	90D FF
I FPE_TXD0	I FPE_TXD0	1	90D FF
I FPE_TXD1*	I FPE_TXD1	1	90D FF
I FPE_TXD1	I FPE_TXD1	1	90D FF
I FPE_TXD2*	I FPE_TXD2	1	90D FF
I FPE_TXD2	I FPE_TXD2	1	90D FF
I FPF_TXD3*	I FPF_TXD3	1	90D FF
I FPF_TXD3	I FPF_TXD3	1	90D FF
I FPF_TXD4*	I FPF_TXD4	1	90D FF
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I FPEF_TXD4	I FPEF_TXD4	1	90D FF
I FPEF_TXD5*	I FPEF_TXD5	1	90D FF
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I FPEF_TXD2*	I FPEF_TXD2	1	90D FF
I FPEF_TXD2	I FPEF_TXD2	1	90D FF
I FPE_AUX*	I FPE_AUX	1	90D FF
I FPE_AUX	I FPE_AUX	1	90D FF

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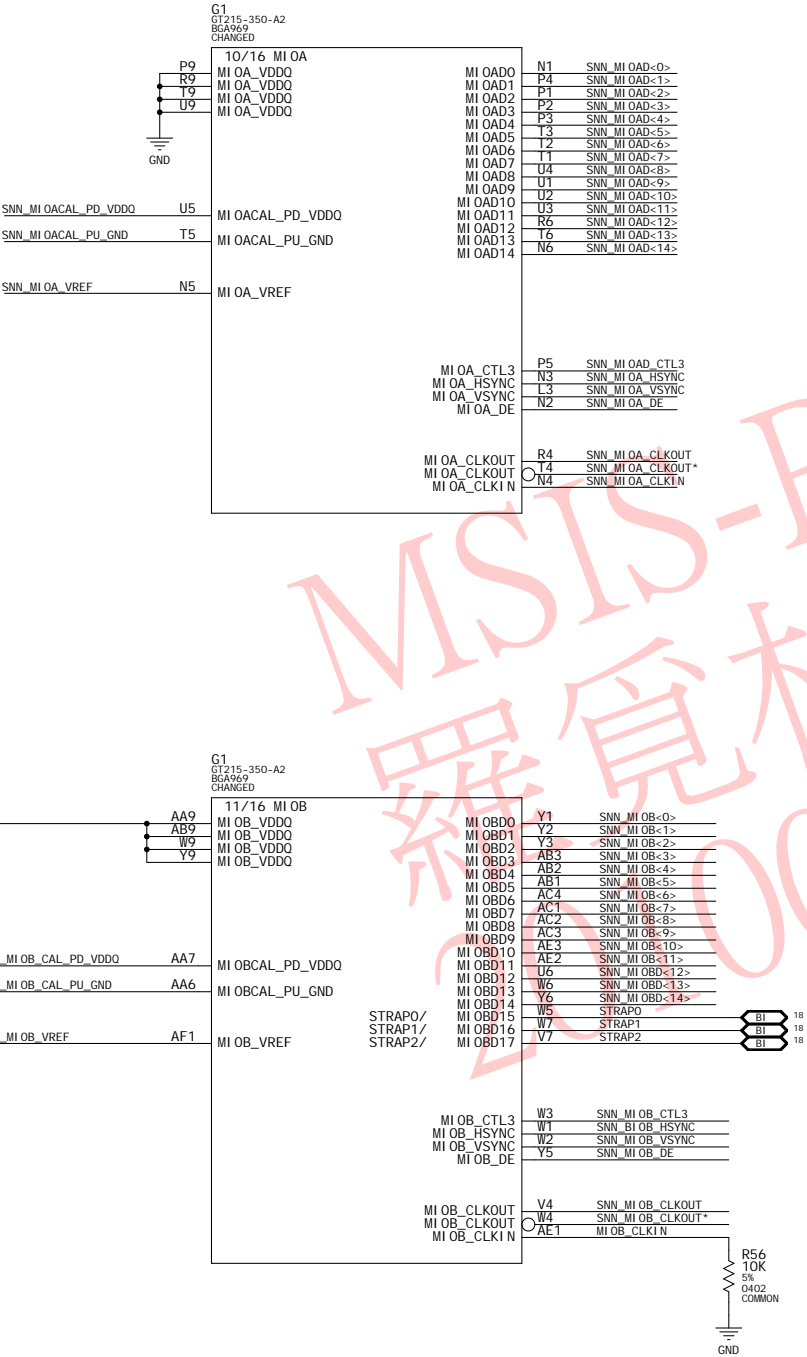


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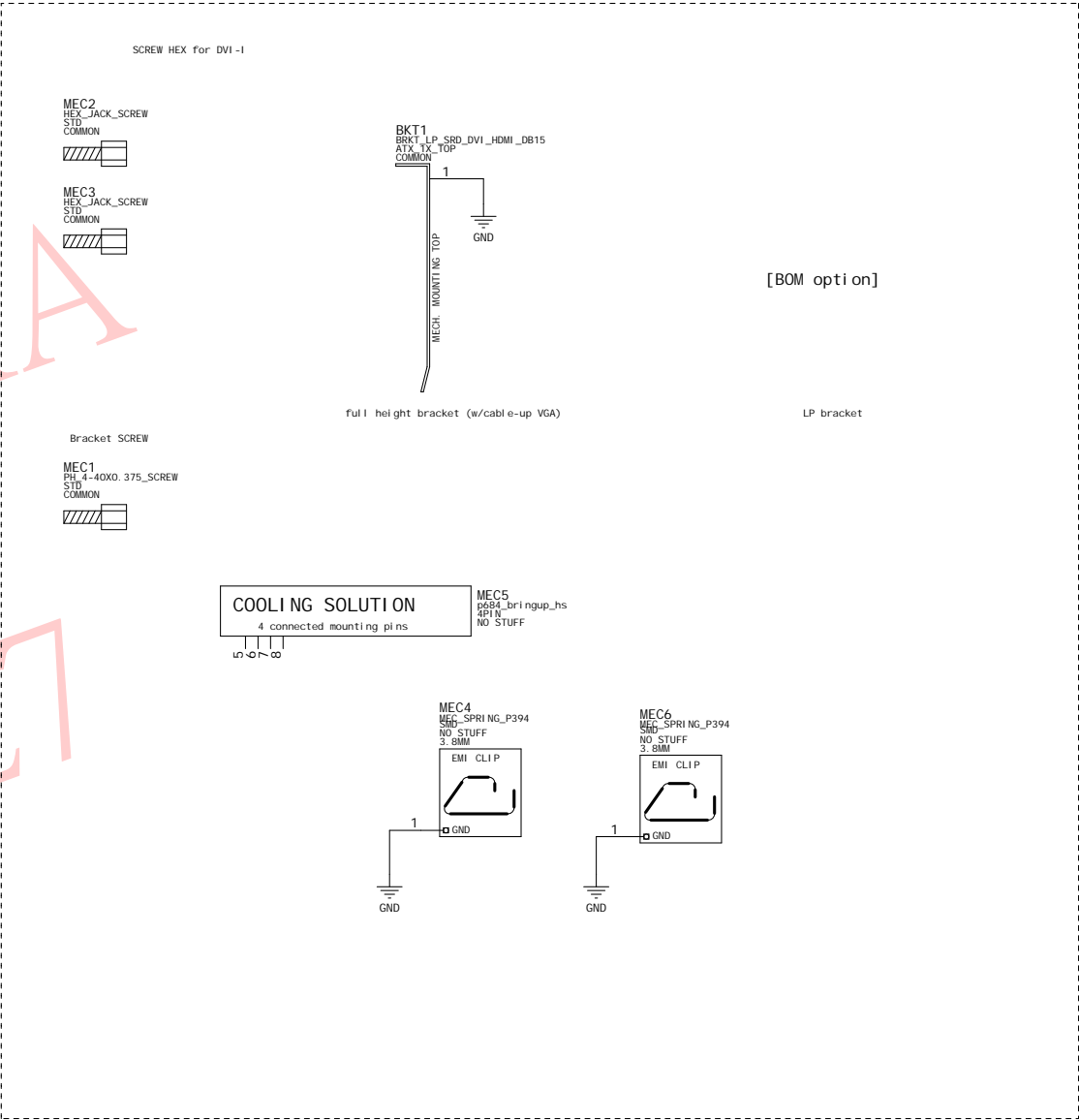
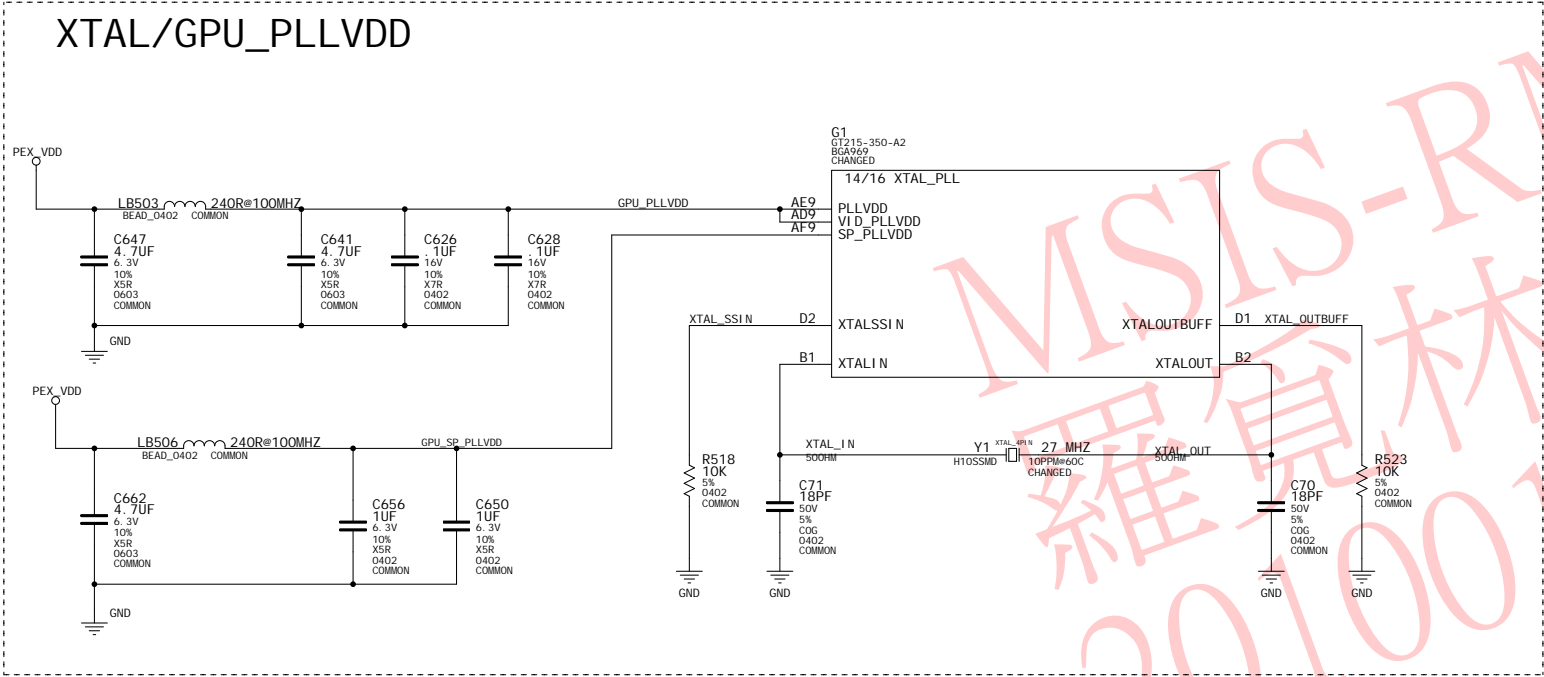
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NAME	Garrett Hall	DATE	30-OCT-2009

ASSEMBLY	GT215-255 540/1302MHz 1024MB 64Mx16 BGA100 790MHz DDR3 DVI-I /HDMI /VGA
PAGE DETAIL	I FP EF (unused)

MI OA & MI OB



XTAL, MECHANICALS, THERMALS

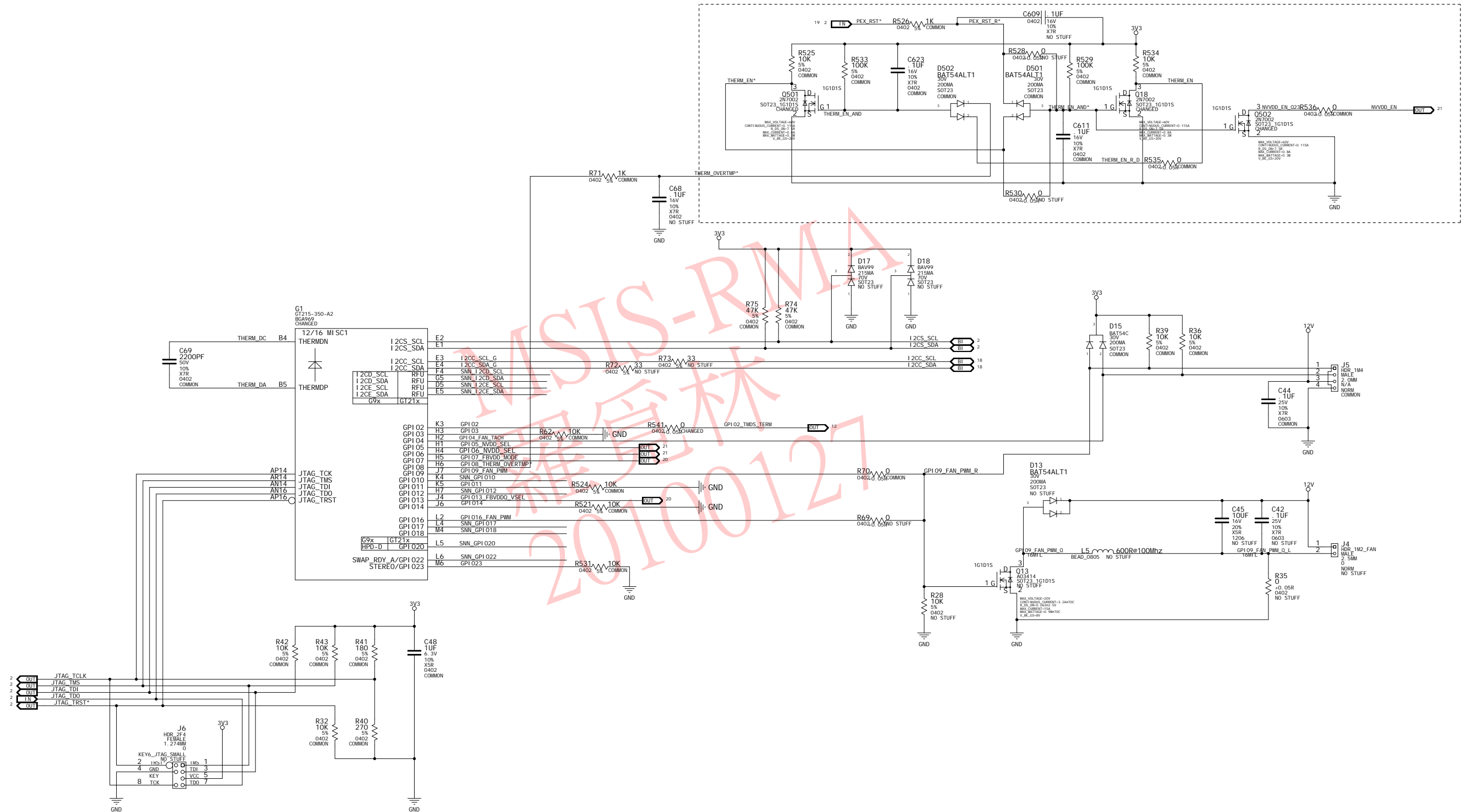


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FAN CONTROL, GPIO, JTAG

OVERTEMP LATCH



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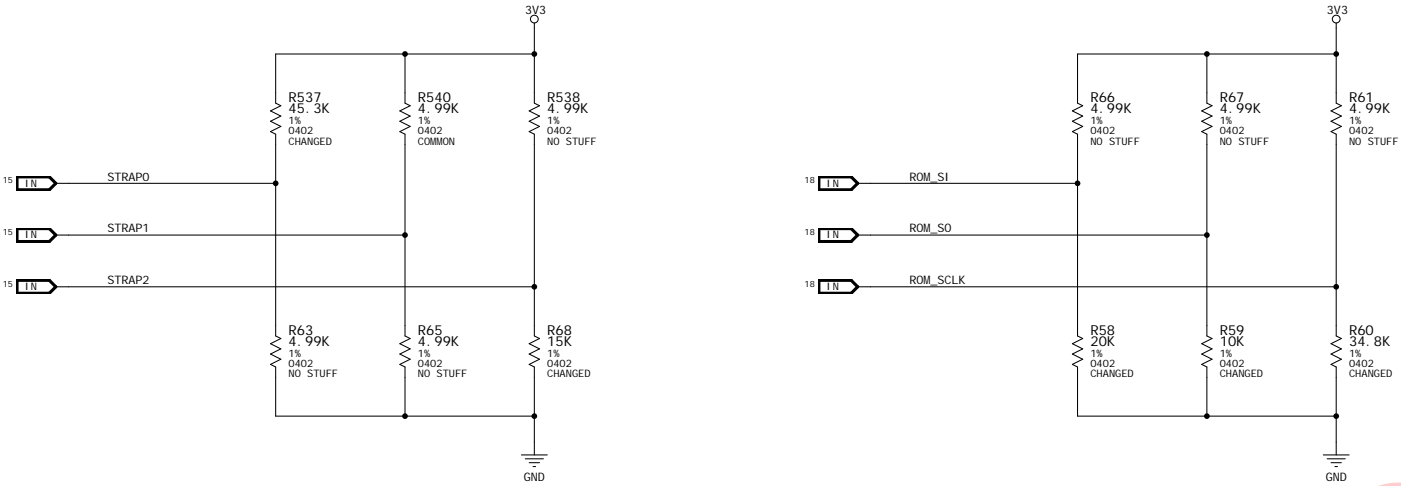


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BIOS ROM, HDCP ROM, STRAPPING OPTIONS

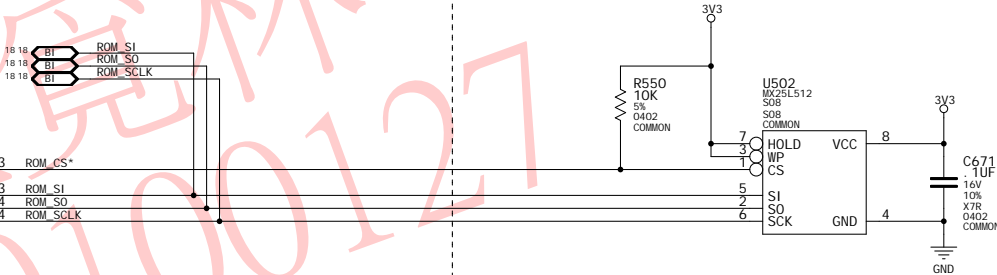
STRAPPING OPTIONS



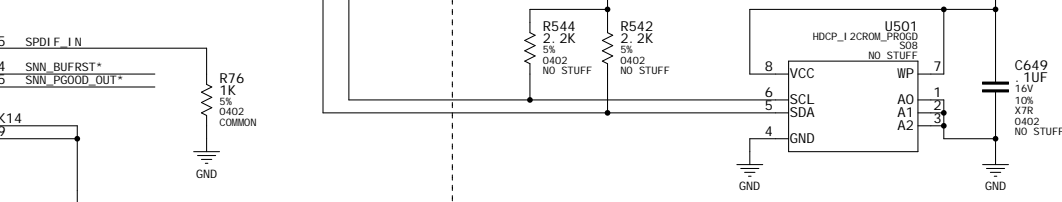
Strap0	USER[3:0]	EDID: 1111	45k pull up		
Strap1	3G10PADC[3:0]	sku0: 0000	5k pull down	0 5k PD	8 5k PU
		sku11, 12, 13, 14: 1000	5k pull up	1 10k PD	9 10k PU
				2 15k PD	10 15k PU
Strap2	PCI_DEV[3:0]	GT216-350: 0A20	5k pull down	3 20k PD	11 20k PU
		GT215-350: 0CA3	20k pull down	4 25k PD	12 25k PU
		GT215-250: 0CA2	15k pull down	5 30k PD	13 30k PU
		GT215-250 NVS: 0CA6	35k pull down	6 35k PD	14 35k PU
		GT215-350 NVS: 0CA7	45k pull down	7 45k PD	15 45k PU
		GT216-205: 0A22	15k pull down		
		GT215-255: 0CA2	15k pull down		

ROM_SI	RAMCFG[3:0]	64Mx16 DDR3 Hynix: 0010	15k pull down
		64Mx16 DDR3 Samsung: 0011	20k pull down
ROM_SO	3: XCLK_417		
	2: FB[0]		
	1: SMB_ALT_ADDR	0001	10k PD
	0: VGA_DEVICE		
ROM_SCLK	3: PCI_DEV_EXT		
	2: SUB_VENDOR	0110	35k PD
	1: SLOT_CLK_CFG		
	0: PEX_PLL_EN_TERM100		

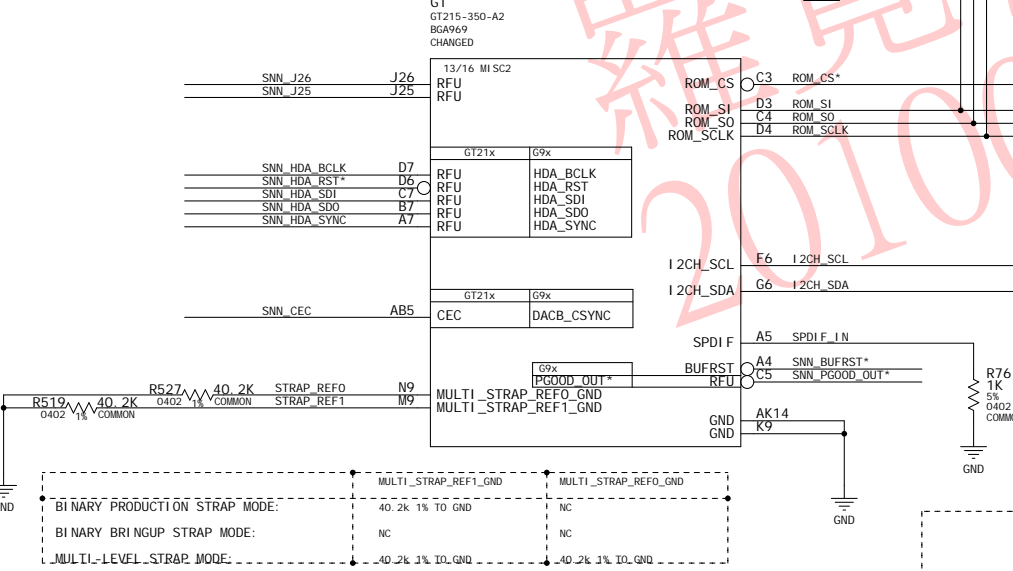
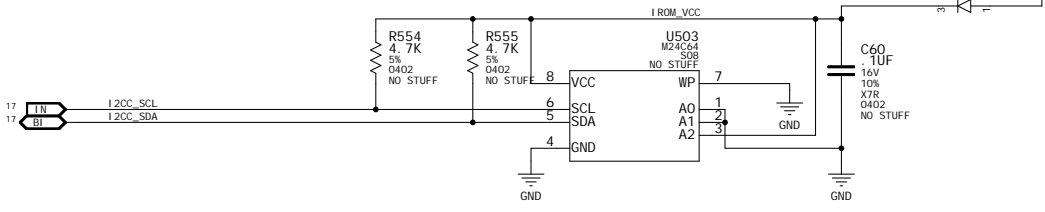
BIOS ROM(serial)



HDCP I2C EEROM



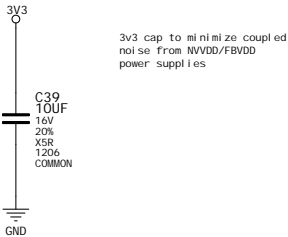
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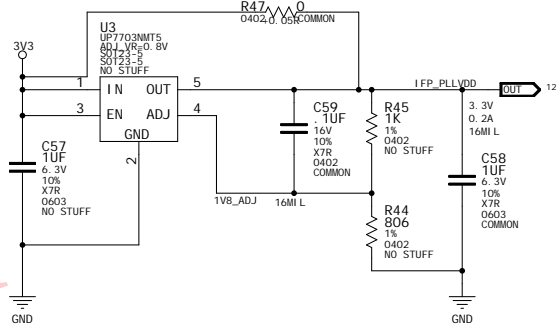
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LINEAR POWER SUPPLIES



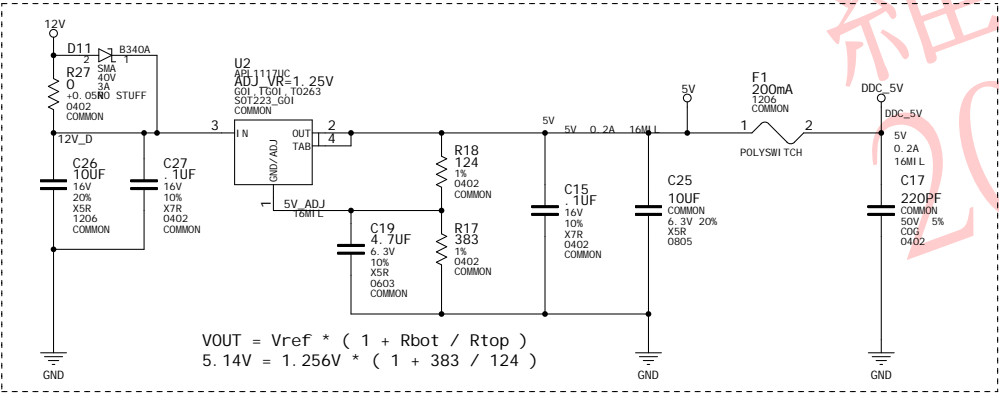
3v3 cap to minimize coupled noise from NVDD/FBVD power supplies

IFP_PLLVDD SUPPLY



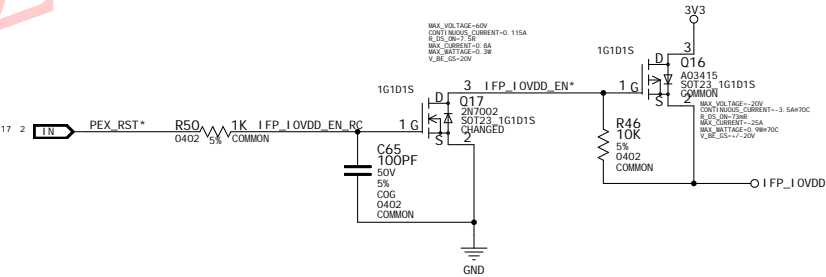
$$V_{OUT} = V_{ref} * (1 + R_{bot} / R_{top})$$
$$1.793V = 0.8V * (1 + 1k / 0.806k)$$

5V & DDC_5V REGULATOR

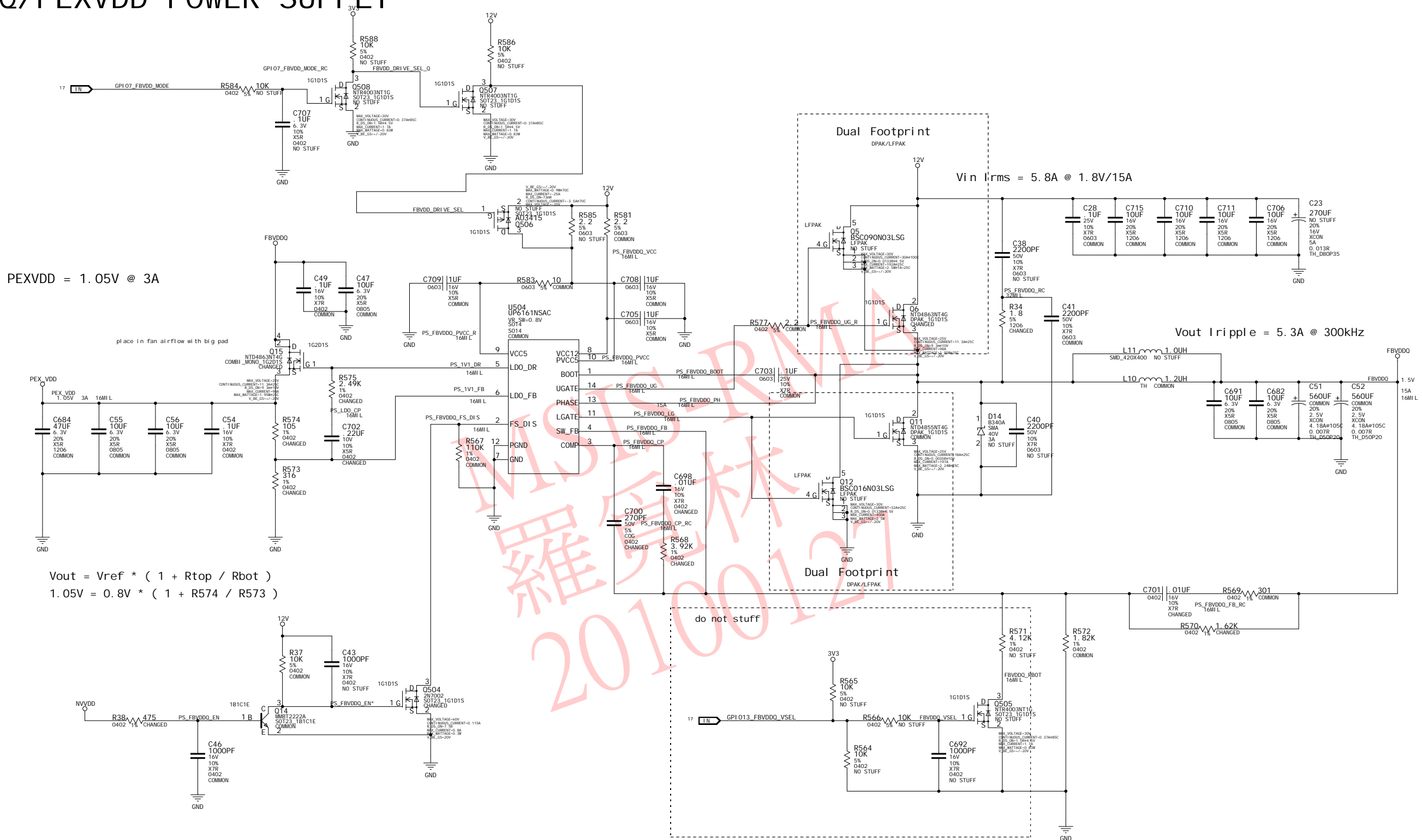


$$V_{OUT} = V_{ref} * (1 + R_{bot} / R_{top})$$
$$5.14V = 1.256V * (1 + 383 / 124)$$

IFP_IOVDD BACKDRIVE PREVENTION

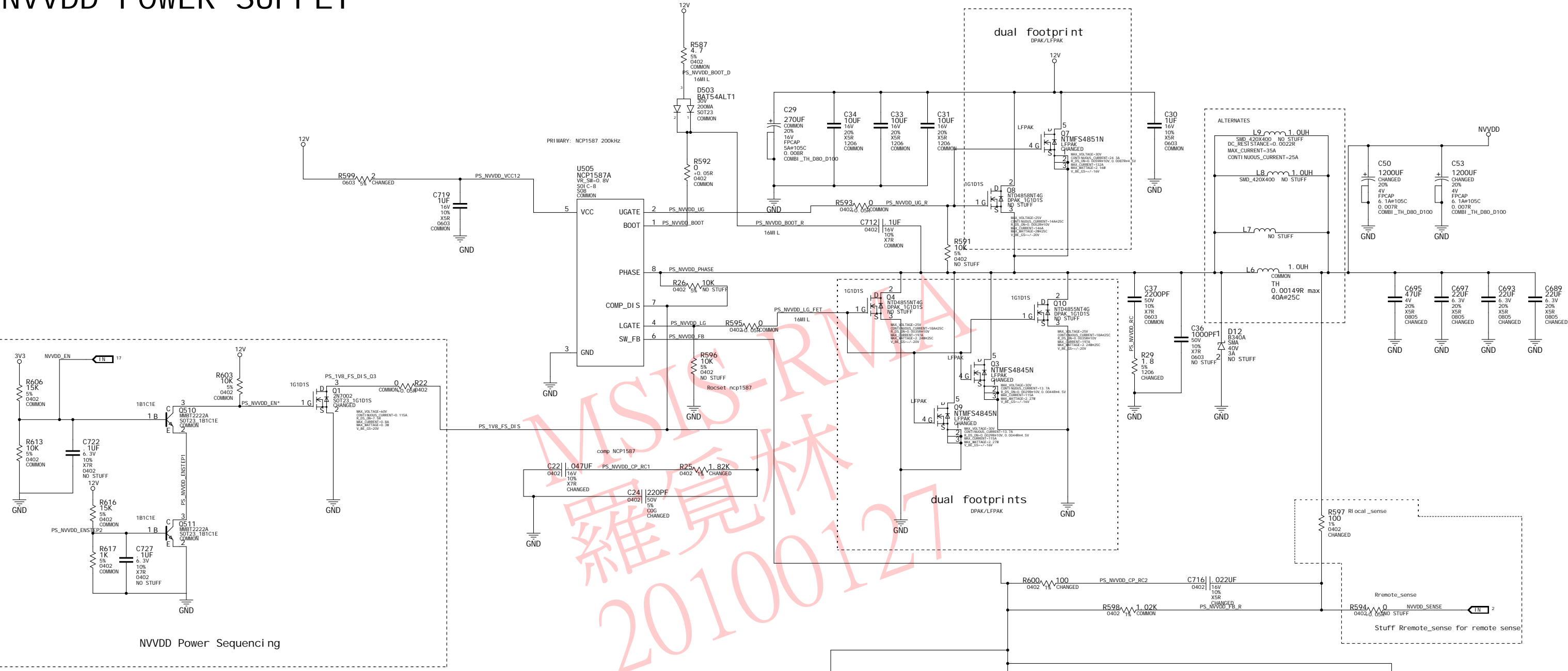


FBVDDQ/PEXVDD POWER SUPPLY



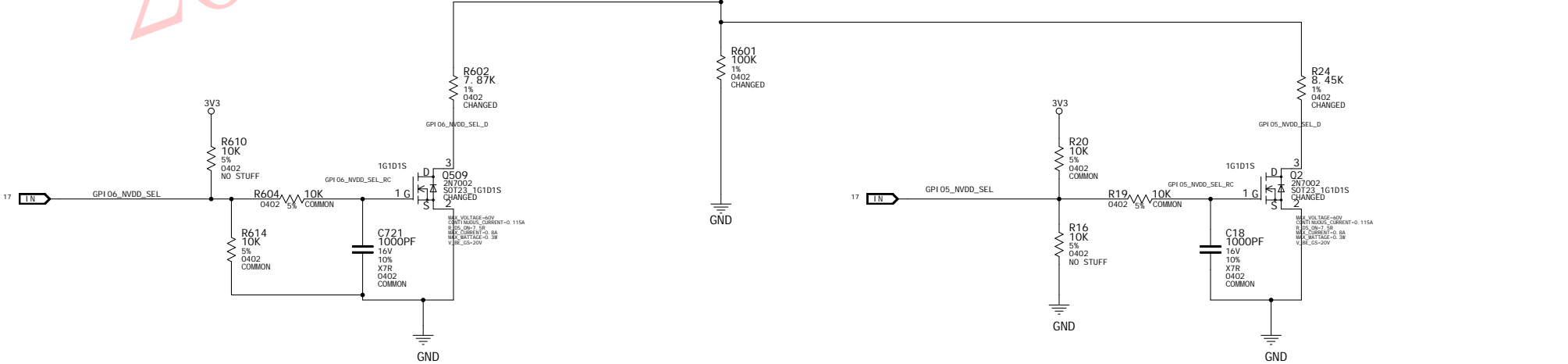
$$1.50V = 0.8V * (1 + R570 / R572) @ GPI013 = 0 \text{ [DEFAULT]}$$

NVVDD POWER SUPPLY



NVVDD Power Sequenci ng

Net Name	MI N_LINE_WIDTH	VOLTAGE	NV_NET_MAX_CURRENT
NVVDD	NVVDD	1.6MI L	1V 20A
PS_NVVDD_VCC5	1.6MI L		
PS_NVVDD_VCC12	1.6MI L		
PS_NVVDD_VCC5	1.6MI L		
PS_NVVDD_BOOT	1.6MI L		
PS_NVVDD_UG	1.6MI L		
PS_NVVDD_PHASE	1.6MI L		
PS_NVVDD_LG	1.6MI L		
PS_NVVDD_FB	1.2MI L		
PS_NVVDD_CP	1.2MI L		
PS_NVVDD_UG_R	1.6MI L		
PS_NVVDD_CP_RC1	1.2MI L		
PS_NVVDD_CP_RC2	1.2MI L		
PS_NVVDD_FB_R	1.2MI L		
PS_NVVDD_RC	1.2MI L		



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