

P1310-A01

GF119, 64bi t, 1GB, Si ngl e-Rank, 128Mx16, sDDR3

DVI -DL, HDMI /DP, VGA DT

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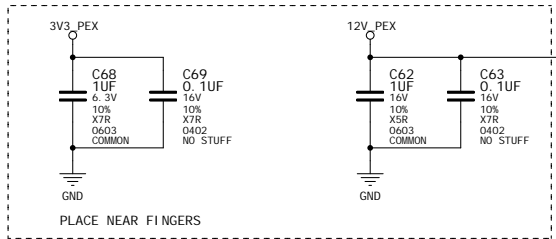
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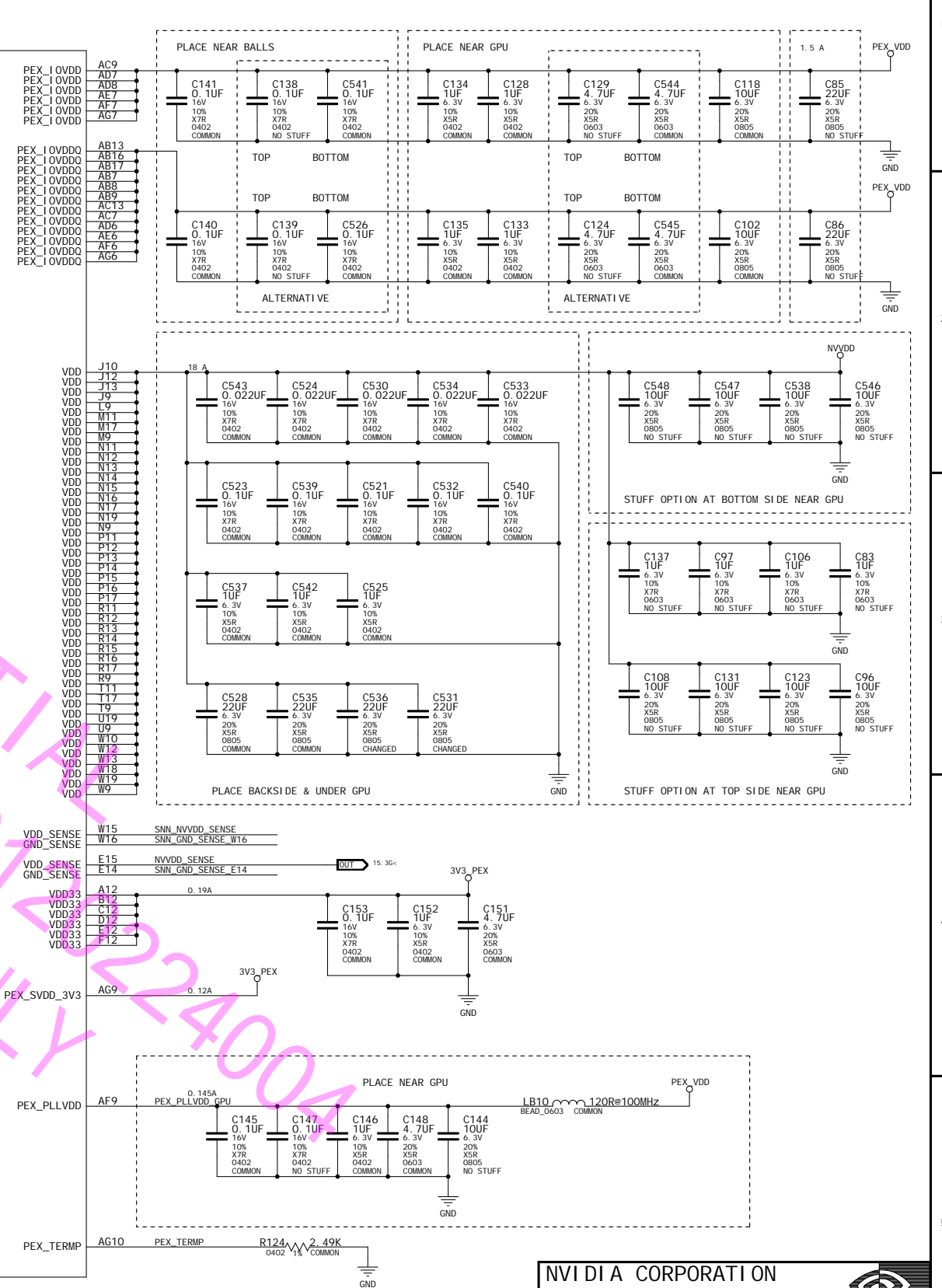
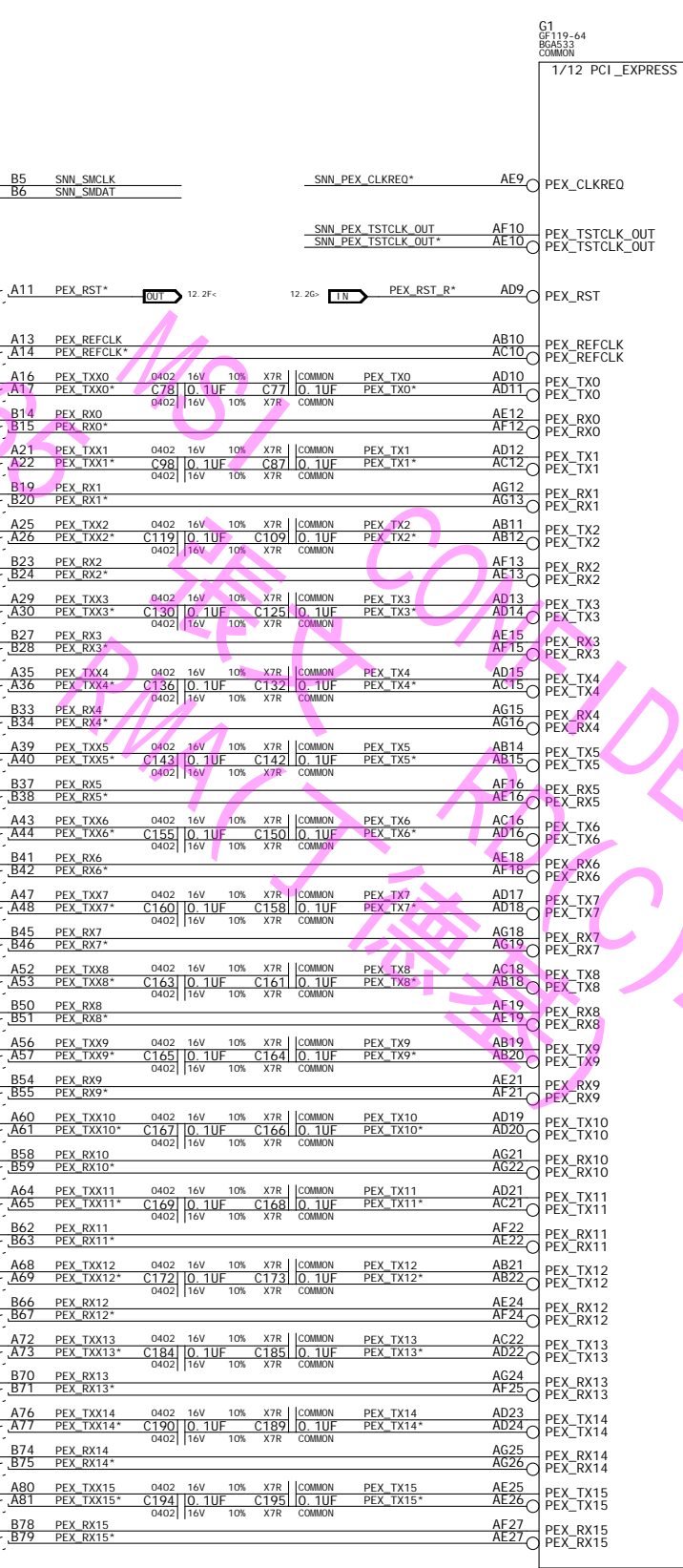
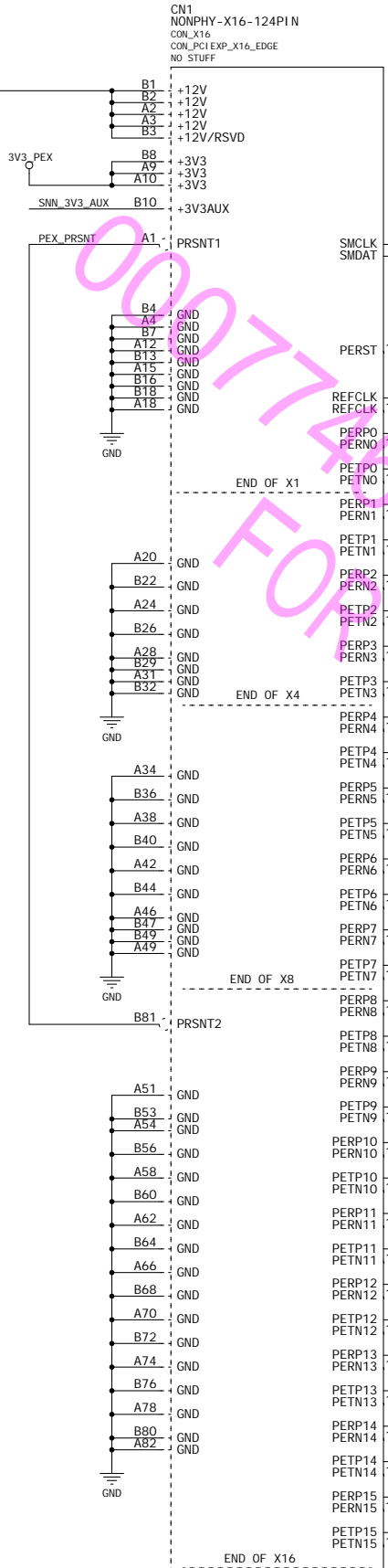
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PCI Express Interface




	Net Name	DI FF_PAIR	CR I_TAL	I_MPEDANCE
IN	PEX TX0	PEX TX0	1	90DI FF
IN	PEX TX0*	PEX TX0	1	90DI FF
IN	PEX TX1	PEX TX1	1	90DI FF
IN	PEX TX1*	PEX TX1	1	90DI FF
IN	PEX TX2	PEX TX2	1	90DI FF
IN	PEX TX2*	PEX TX2	1	90DI FF
IN	PEX TX3	PEX TX3	1	90DI FF
IN	PEX TX3*	PEX TX3	1	90DI FF
IN	PEX TX4	PEX TX4	1	90DI FF
IN	PEX TX4*	PEX TX4	1	90DI FF
IN	PEX TX5	PEX TX5	1	90DI FF
IN	PEX TX5*	PEX TX5	1	90DI FF
IN	PEX TX6	PEX TX6	1	90DI FF
IN	PEX TX6*	PEX TX6	1	90DI FF
IN	PEX TX7	PEX TX7	1	90DI FF
IN	PEX TX7*	PEX TX7	1	90DI FF
IN	PEX TX8	PEX TX8	1	90DI FF
IN	PEX TX8*	PEX TX8	1	90DI FF
IN	PEX TX9	PEX TX9	1	90DI FF
IN	PEX TX9*	PEX TX9	1	90DI FF
IN	PEX TX10	PEX TX10	1	90DI FF
IN	PEX TX10*	PEX TX10	1	90DI FF
IN	PEX TX11	PEX TX11	1	90DI FF
IN	PEX TX11*	PEX TX11	1	90DI FF
IN	PEX TX12	PEX TX12	1	90DI FF
IN	PEX TX12*	PEX TX12	1	90DI FF
IN	PEX TX13	PEX TX13	1	90DI FF
IN	PEX TX13*	PEX TX13	1	90DI FF
IN	PEX TX14	PEX TX14	1	90DI FF
IN	PEX TX14*	PEX TX14	1	90DI FF
IN	PEX TX15	PEX TX15	1	90DI FF
IN	PEX TX15*	PEX TX15	1	90DI FF
IN	PEX TX0	PEX TX0	1	90DI FF
IN	PEX TX0*	PEX TX0	1	90DI FF
IN	PEX TX1	PEX TX1	1	90DI FF
IN	PEX TX1*	PEX TX1	1	90DI FF
IN	PEX TX2	PEX TX2	1	90DI FF
IN	PEX TX2*	PEX TX2	1	90DI FF
IN	PEX TX3	PEX TX3	1	90DI FF
IN	PEX TX3*	PEX TX3	1	90DI FF
IN	PEX TX4	PEX TX4	1	90DI FF
IN	PEX TX4*	PEX TX4	1	90DI FF
IN	PEX TX5	PEX TX5	1	90DI FF
IN	PEX TX5*	PEX TX5	1	90DI FF
IN	PEX TX6	PEX TX6	1	90DI FF
IN	PEX TX6*	PEX TX6	1	90DI FF
IN	PEX TX7	PEX TX7	1	90DI FF
IN	PEX TX7*	PEX TX7	1	90DI FF
IN	PEX TX8	PEX TX8	1	90DI FF
IN	PEX TX8*	PEX TX8	1	90DI FF
IN	PEX TX9	PEX TX9	1	90DI FF
IN	PEX TX9*	PEX TX9	1	90DI FF
IN	PEX TX10	PEX TX10	1	90DI FF
IN	PEX TX10*	PEX TX10	1	90DI FF
IN	PEX TX11	PEX TX11	1	90DI FF
IN	PEX TX11*	PEX TX11	1	90DI FF
IN	PEX TX12	PEX TX12	1	90DI FF
IN	PEX TX12*	PEX TX12	1	90DI FF
IN	PEX TX13	PEX TX13	1	90DI FF
IN	PEX TX13*	PEX TX13	1	90DI FF
IN	PEX TX14	PEX TX14	1	90DI FF
IN	PEX TX14*	PEX TX14	1	90DI FF
IN	PEX TX15	PEX TX15	1	90DI FF
IN	PEX TX15*	PEX TX15	1	90DI FF
IN	PEX RX0	PEX RX0	1	90DI FF
IN	PEX RX0*	PEX RX0	1	90DI FF
IN	PEX RX1	PEX RX1	1	90DI FF
IN	PEX RX1*	PEX RX1	1	90DI FF
IN	PEX RX2	PEX RX2	1	90DI FF
IN	PEX RX2*	PEX RX2	1	90DI FF
IN	PEX RX3	PEX RX3	1	90DI FF
IN	PEX RX3*	PEX RX3	1	90DI FF
IN	PEX RX4	PEX RX4	1	90DI FF
IN	PEX RX4*	PEX RX4	1	90DI FF
IN	PEX RX5	PEX RX5	1	90DI FF
IN	PEX RX5*	PEX RX5	1	90DI FF
IN	PEX RX6	PEX RX6	1	90DI FF
IN	PEX RX6*	PEX RX6	1	90DI FF
IN	PEX RX7	PEX RX7	1	90DI FF
IN	PEX RX7*	PEX RX7	1	90DI FF
IN	PEX RX8	PEX RX8	1	90DI FF
IN	PEX RX8*	PEX RX8	1	90DI FF
IN	PEX RX9	PEX RX9	1	90DI FF
IN	PEX RX9*	PEX RX9	1	90DI FF
IN	PEX RX10	PEX RX10	1	90DI FF
IN	PEX RX10*	PEX RX10	1	90DI FF
IN	PEX RX11	PEX RX11	1	90DI FF
IN	PEX RX11*	PEX RX11	1	90DI FF
IN	PEX RX12	PEX RX12	1	90DI FF
IN	PEX RX12*	PEX RX12	1	90DI FF
IN	PEX RX13	PEX RX13	1	90DI FF
IN	PEX RX13*	PEX RX13	1	90DI FF
IN	PEX RX14	PEX RX14	1	90DI FF
IN	PEX RX14*	PEX RX14	1	90DI FF
IN	PEX RX15	PEX RX15	1	90DI FF
IN	PEX RX15*	PEX RX15	1	90DI FF
IN	PEX_REFCLK	PEX_REFCLK	1	90DI FF
IN	PEX_REFCLK*	PEX_REFCLK	1	90DI FF

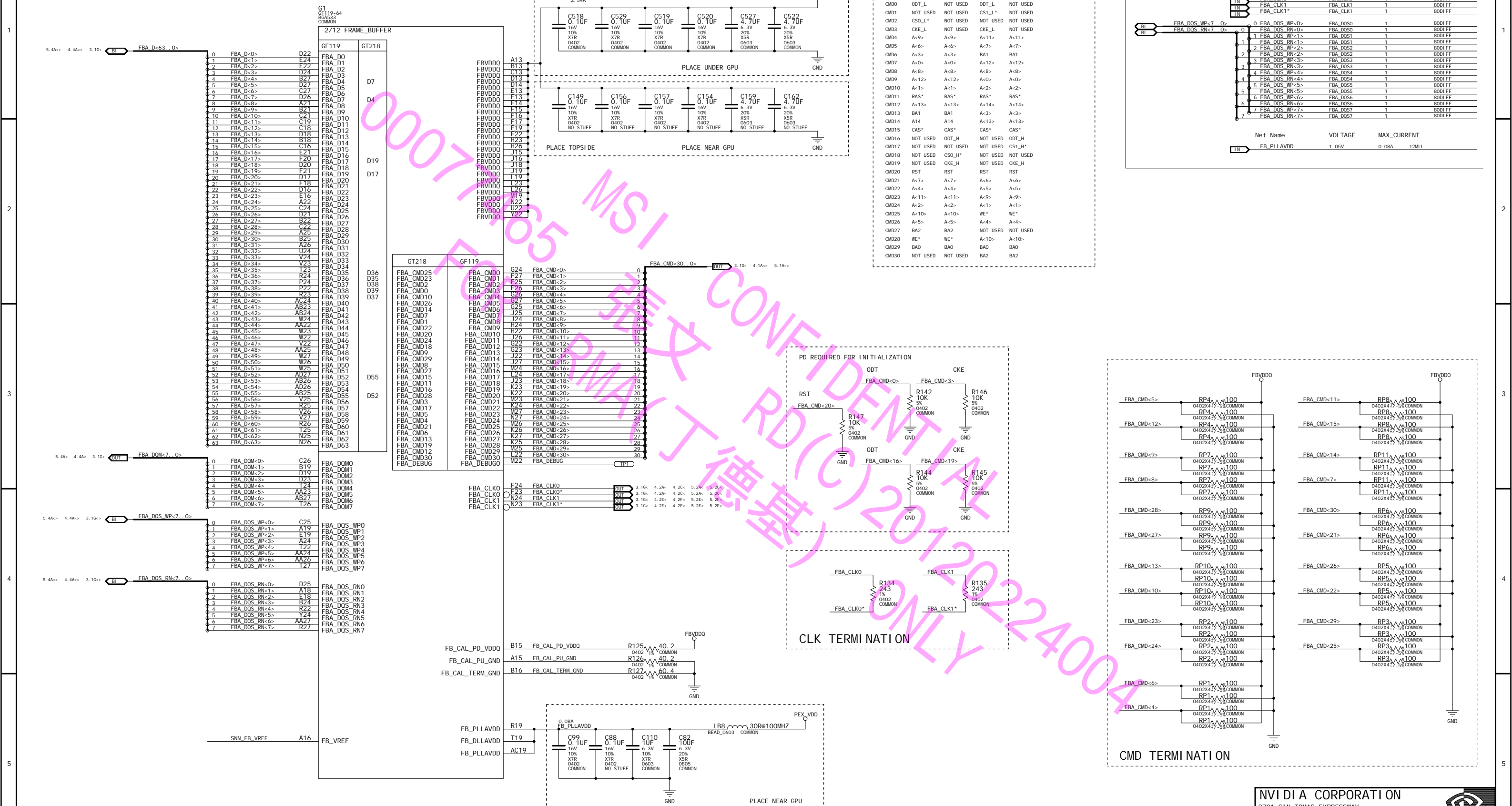


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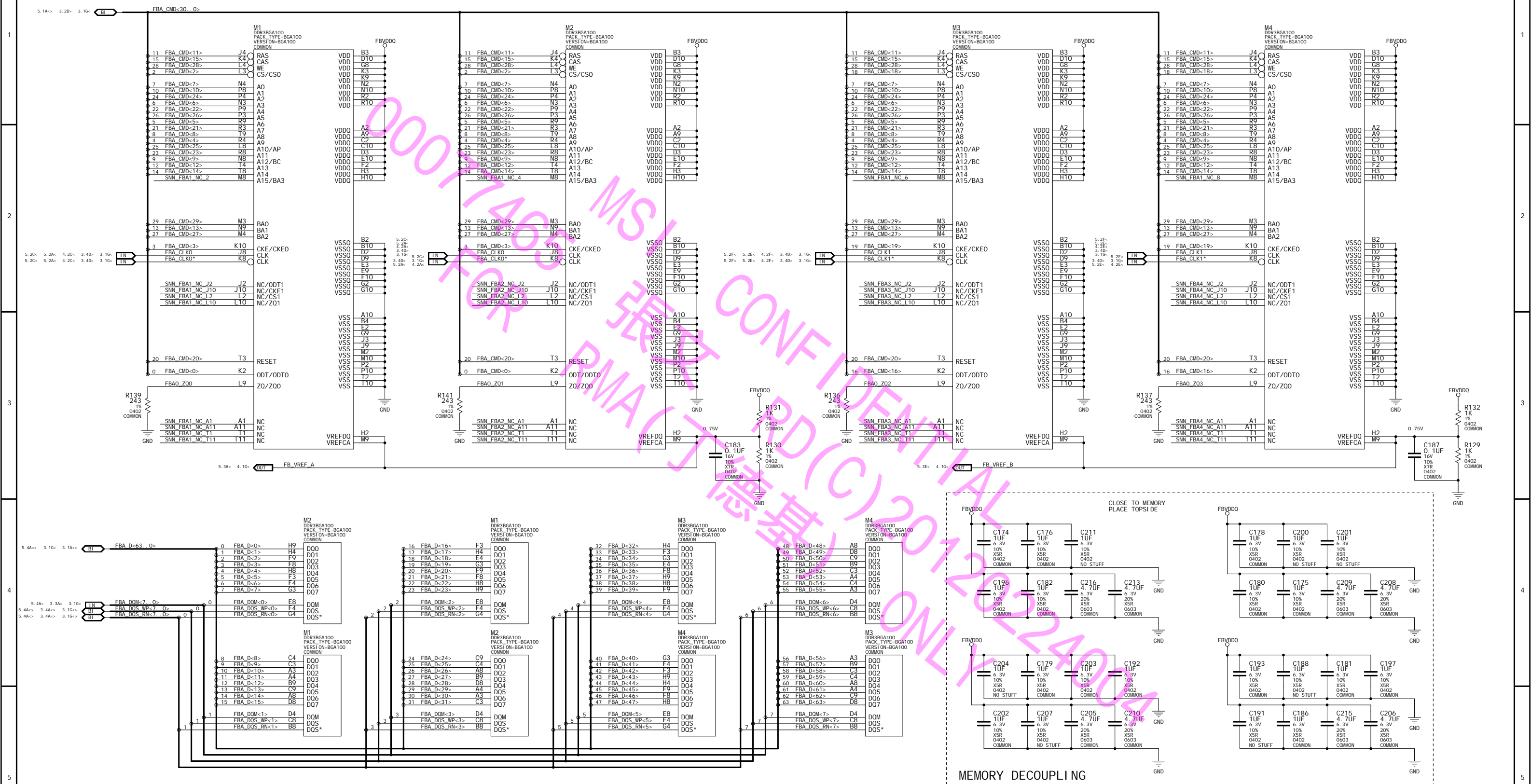
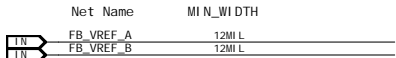
ASSEMBLY	P1310-A01 SKU1 GF119-300 SINGLE-RANK 1024MB/64bi t 128Mx16 DDR3 VGA+HDMI +DVI DT
PAGE DETAIL	PCI Express Interface

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Frame Buffer Interface



DDR3 Memories Rank 0



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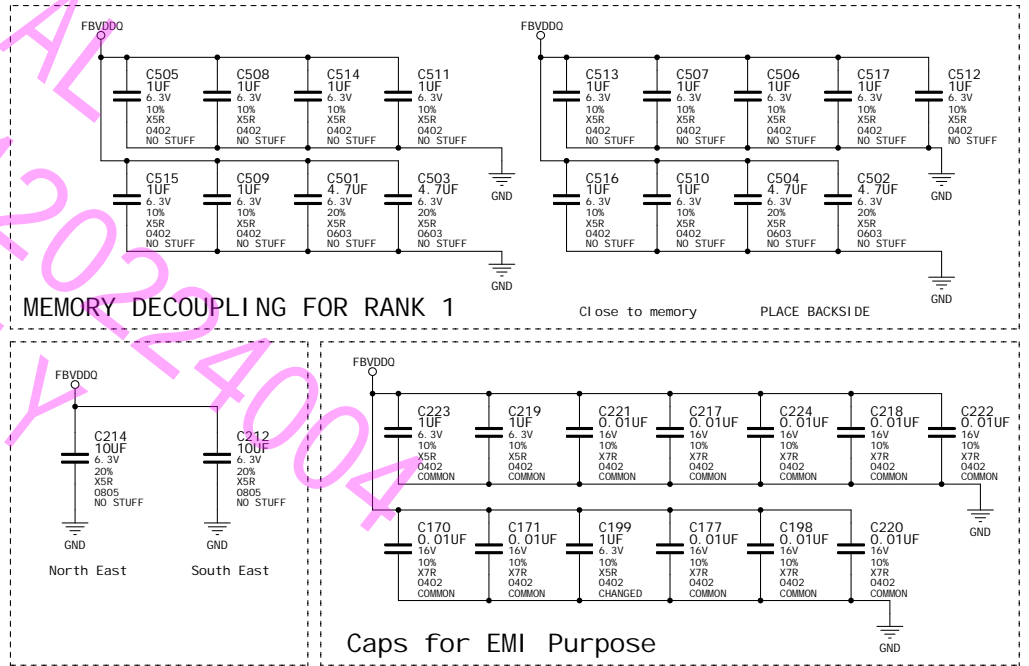


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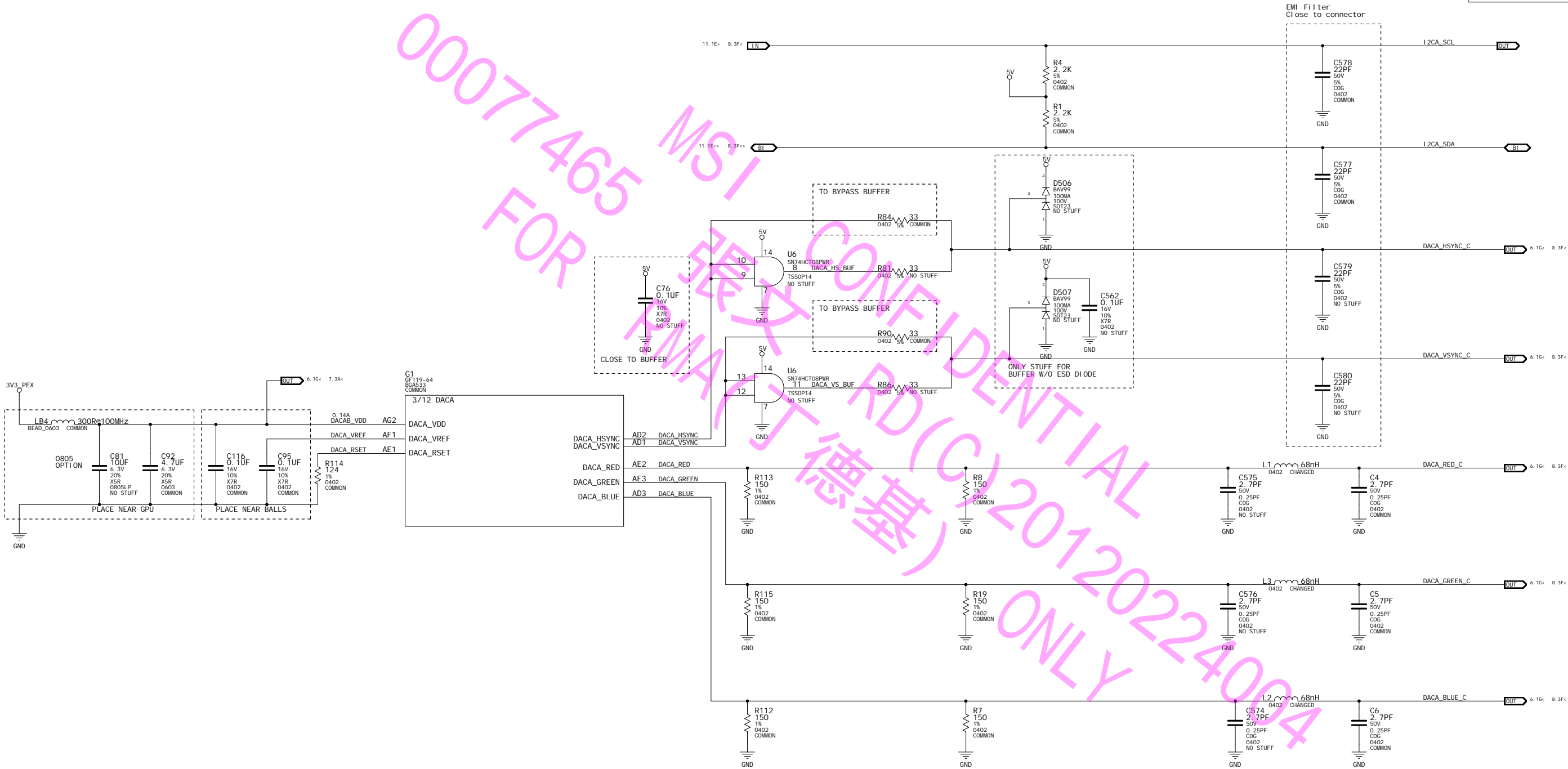
DDR3 Memories Rank 1



DAC A VGA

Net Name		CRI TICAL	IMDEDANCE
IN	DACA_RED	1	500HM
IN	DACA_GREEN	1	500HM
IN	DACA_BLUE	1	500HM
IN	DACA_RED_C	1	530HM
IN	DACA_GREEN_C	1	530HM
IN	DACA_BLUE_C	1	530HM
IN	DACA_HSYNC	2	500HM
IN	DACA_VSYNC	2	500HM
IN	DACA_HS_BUF	2	500HM
IN	DACA_VS_BUF	2	500HM
IN	DACA_HSYNC_C	2	500HM
IN	DACA_VSYNC_C	2	500HM
Net Name		MI N_WI DTH	MAX_CURRENT
IN	DACAB_VDD	12MI L	0.14A

1
2
3
4
5



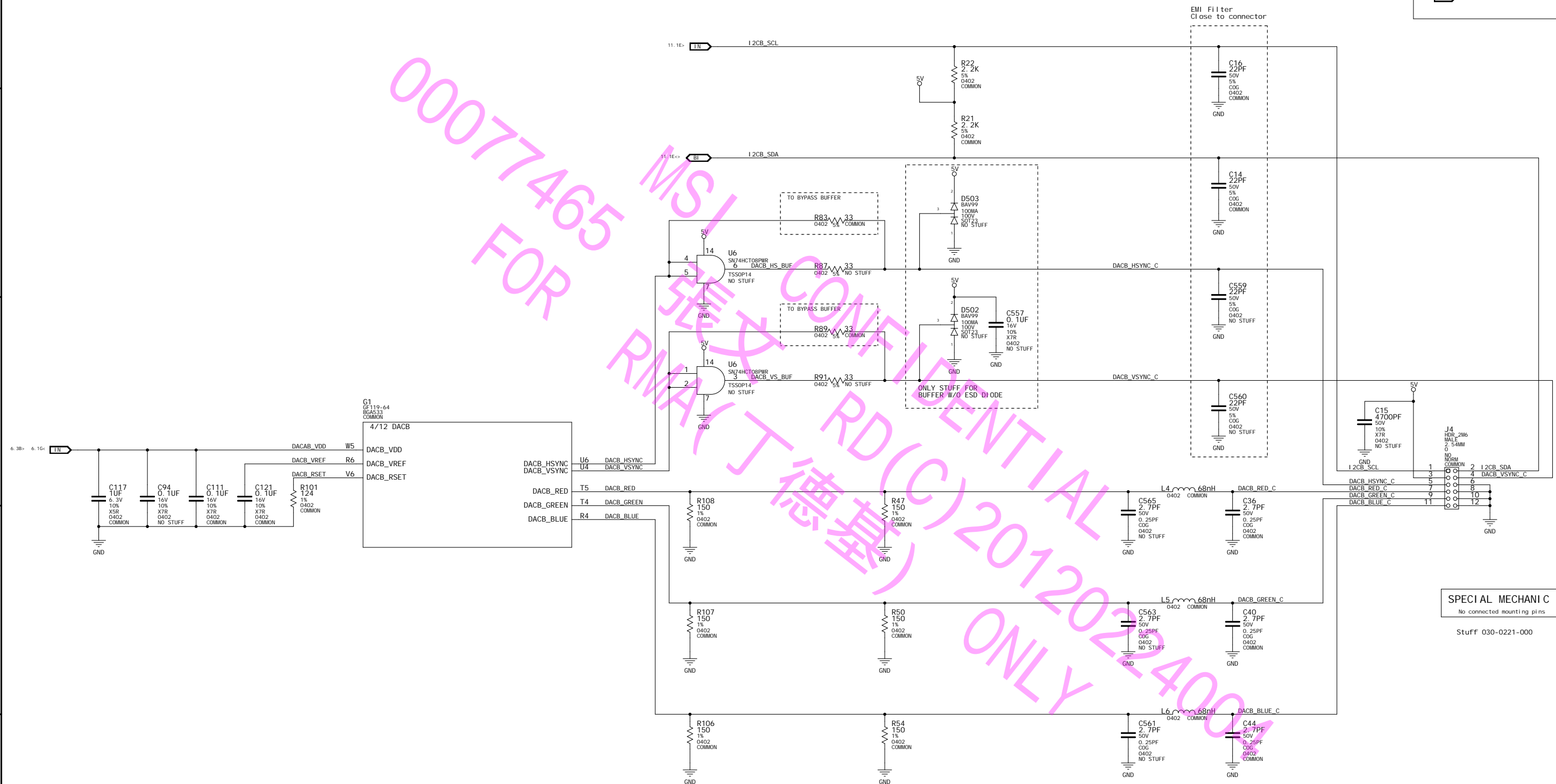
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ASSEMBLY	P1310-A01 SKU1 GF119-300 SINGLE-RANK 1024MB/64bi t 128Mx16 DDR3 VGA+HDMI+DVI DT
PAGE DETAIL	DAC A VGA
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DAC B VGA Header

	Net Name	CRI TI CAL	IMPEDANCE
IN	DACB_RED	1	500HM
IN	DACB_GREEN	1	500HM
IN	DACB_BLUE	1	500HM
IN	DACB_RED_C	1	500HM
IN	DACB_GREEN_C	1	500HM
IN	DACB_BLUE_C	1	500HM
IN	DACB_HSYNC	2	500HM
IN	DACB_VSYNC	2	500HM
IN	DACB_HSYNC_C	2	500HM
IN	DACB_VSYNC_C	2	500HM
IN	DACB_HS_BUF	2	500HM
IN	DACB_VS_BUF	2	500HM



SPECIAL MECHANIC
No connected mounting pins

Stuff 030-0221-000

MEC2
VGA_HDR_CABLE
NOPTN
COMMON

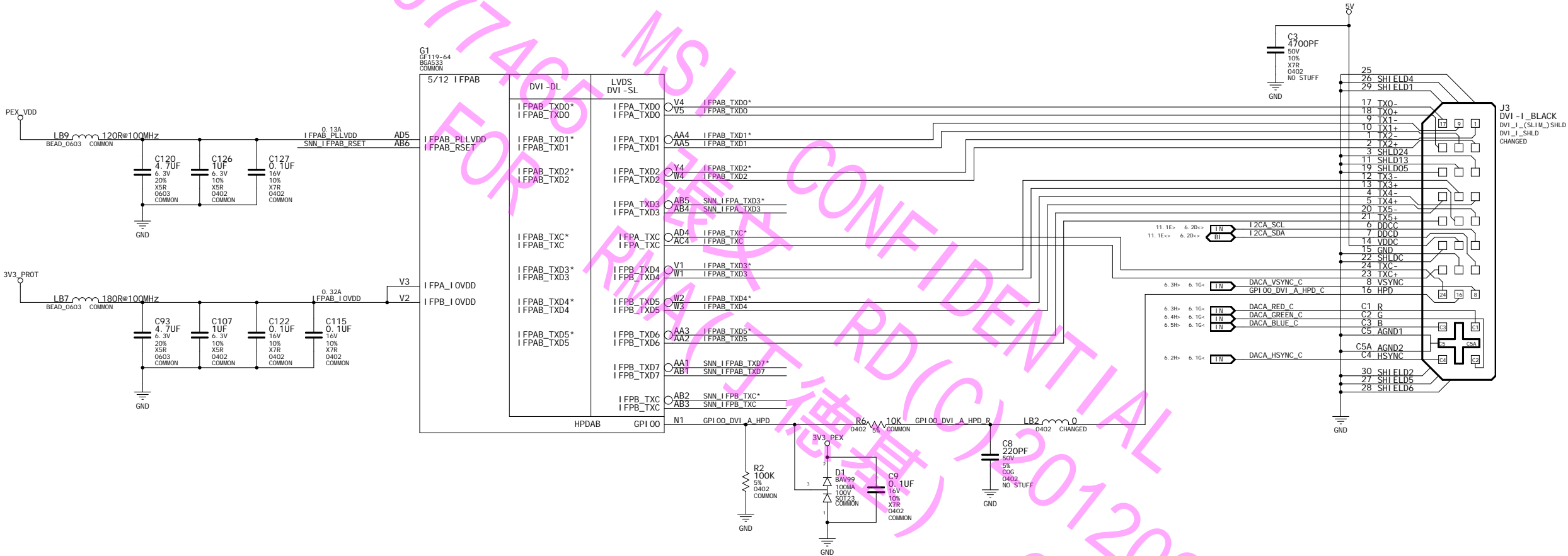
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IFPAB TMDs Interface

Net Name	DIFF_PAIR	CRI TI CAL	IMPEDANCE
IFPAB_TXD0*	IFPAB_TXD0	1	90DI FF
IFPAB_TXD0	IFPAB_TXD0	1	90DI FF
IFPAB_TXD1*	IFPAB_TXD1	1	90DI FF
IFPAB_TXD1	IFPAB_TXD1	1	90DI FF
IFPAB_TXD2*	IFPAB_TXD2	1	90DI FF
IFPAB_TXD2	IFPAB_TXD2	1	90DI FF
IFPAB_TXD3*	IFPAB_TXD3	1	90DI FF
IFPAB_TXD3	IFPAB_TXD3	1	90DI FF
IFPAB_TXD4*	IFPAB_TXD4	1	90DI FF
IFPAB_TXD4	IFPAB_TXD4	1	90DI FF
IFPAB_TXD5*	IFPAB_TXD5	1	90DI FF
IFPAB_TXD5	IFPAB_TXD5	1	90DI FF
IFPAB_TXC*	IFPAB_TXC	1	90DI FF
IFPAB_TXC	IFPAB_TXC	1	90DI FF

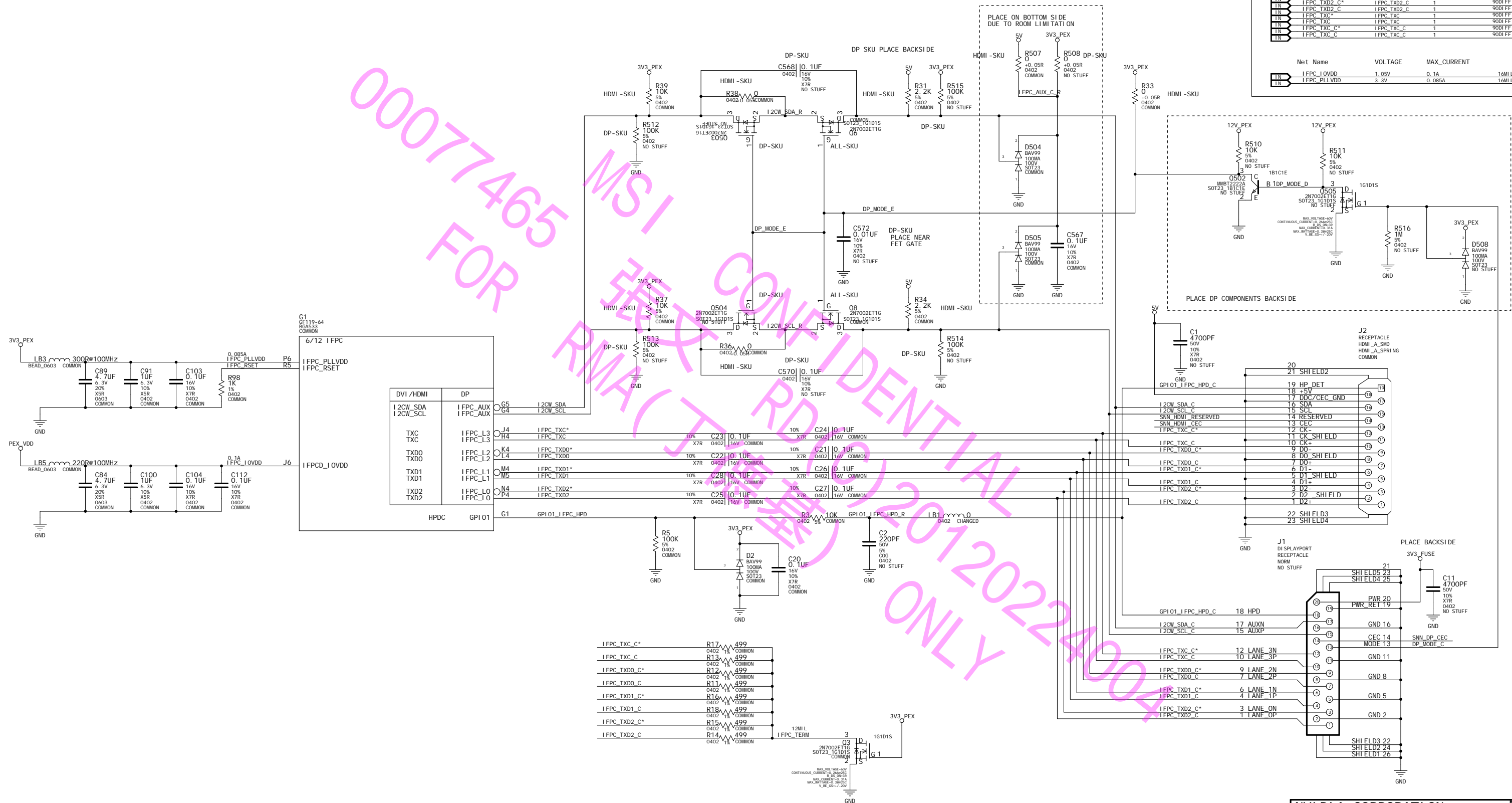
Net Name	VOLTAGE	MAX_CURRENT
IFPAB_PLLVDD	1.05V	0.13A 16MI L
IFPAB_IOVDD	3.3V	0.32A 16MI L



I FPC HDMI /DP Connector


Net Name		DIFF_PAIR	CRI TI CAL	IMPEDANCE
1IN	I FPC_TXD0*	I FPC_TXD0	1	90DI FF
1IN	I FPC_TXD0	I FPC_TXD0	1	90DI FF
1IN	I FPC_TXD1*	I FPC_TXD1	1	90DI FF
1IN	I FPC_TXD1	I FPC_TXD1	1	90DI FF
1IN	I FPC_TXD2*	I FPC_TXD2	1	90DI FF
1IN	I FPC_TXD2	I FPC_TXD2	1	90DI FF
1IN	I FPC_TXD0_C*	I FPC_TXD0_C	1	90DI FF
1IN	I FPC_TXD0_C	I FPC_TXD0_C	1	90DI FF
1IN	I FPC_TXD1_C*	I FPC_TXD1_C	1	90DI FF
1IN	I FPC_TXD1_C	I FPC_TXD1_C	1	90DI FF
1IN	I FPC_TXD2_C*	I FPC_TXD2_C	1	90DI FF
1IN	I FPC_TXD2_C	I FPC_TXD2_C	1	90DI FF
1IN	I FPC_TXC*	I FPC_TXC	1	90DI FF
1IN	I FPC_TXC	I FPC_TXC	1	90DI FF
1IN	I FPC_TXC_C*	I FPC_TXC_C	1	90DI FF
1IN	I FPC_TXC_C	I FPC_TXC_C	1	90DI FF

Net Name		VOLTAGE	MAX_CURRENT	
1IN	I FPC_I OVDD	1.05V	0.1A	16MI L
1IN	I FPC_PLLVDD	3.3V	0.085A	16MI L

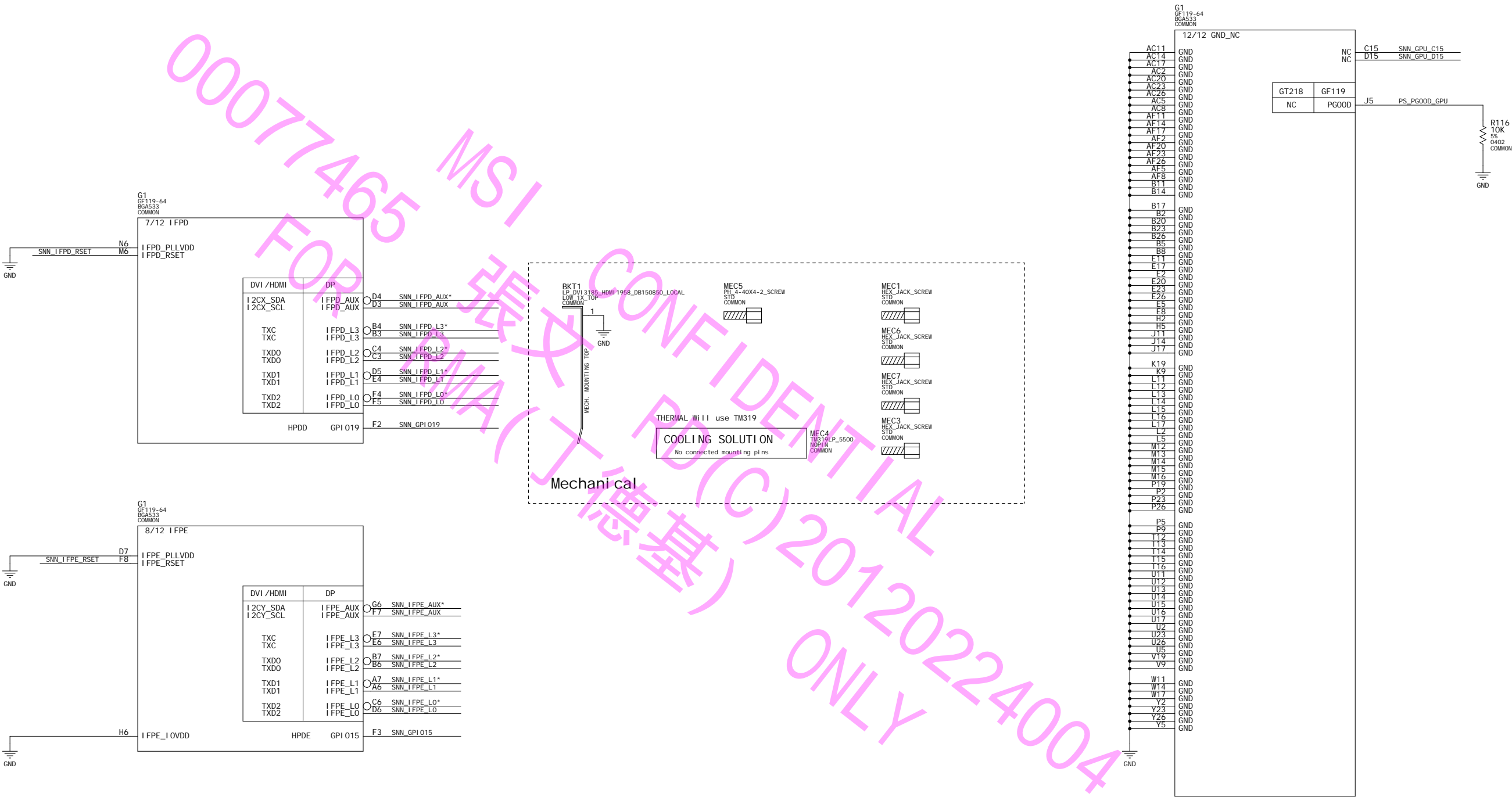


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PAGE DETAIL	IFPC HDMI/DP Connector

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I FPD, IFPE Interface(Not used), Mechanical parts

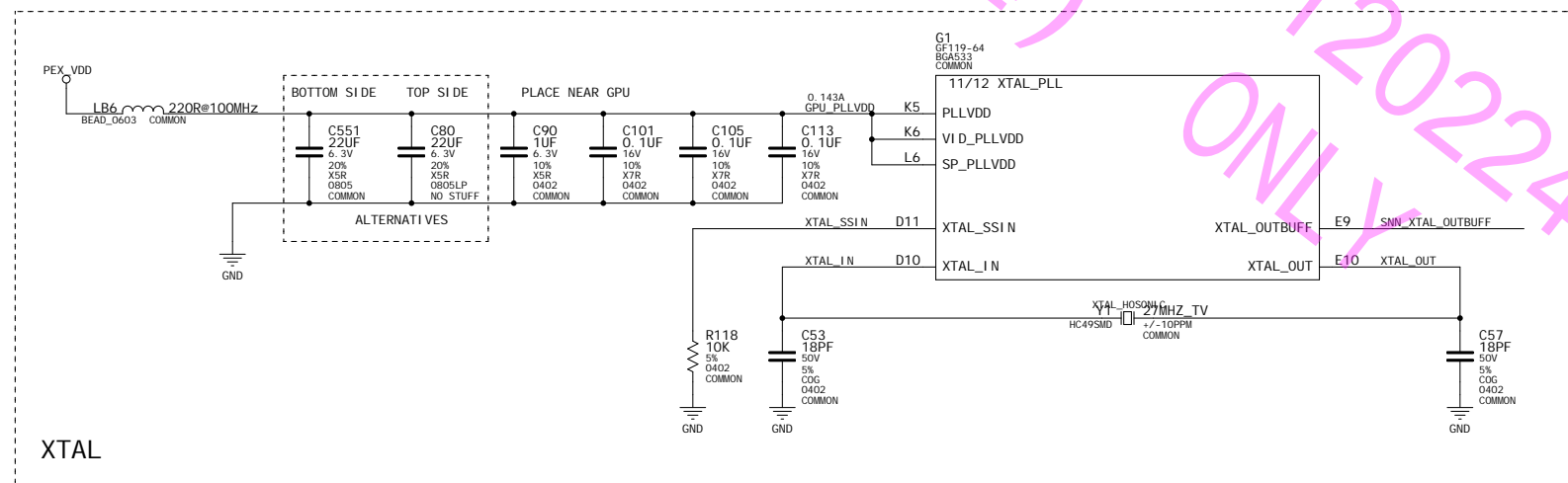
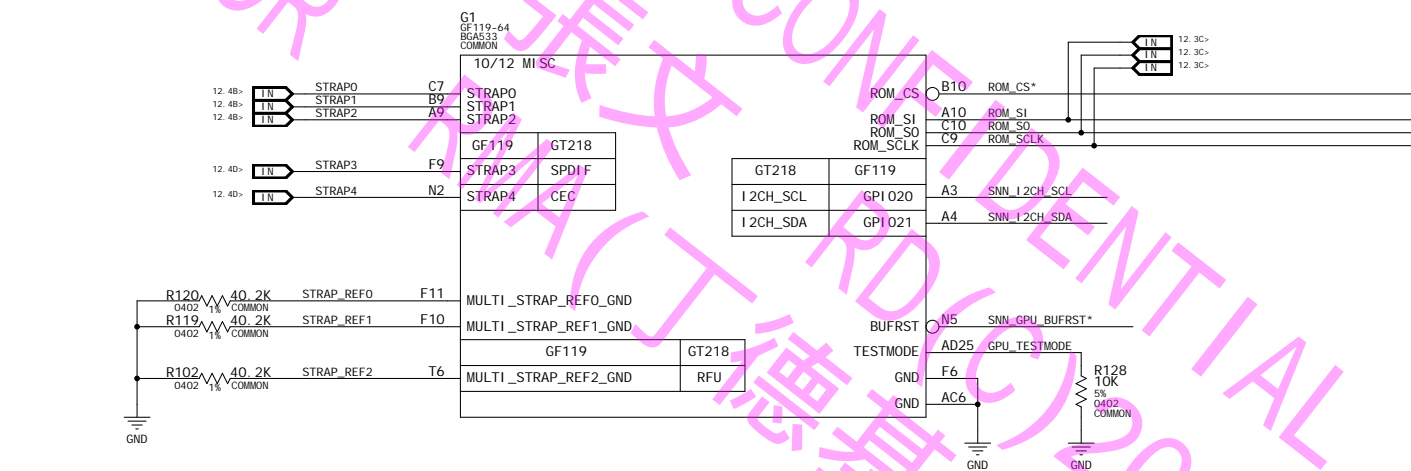
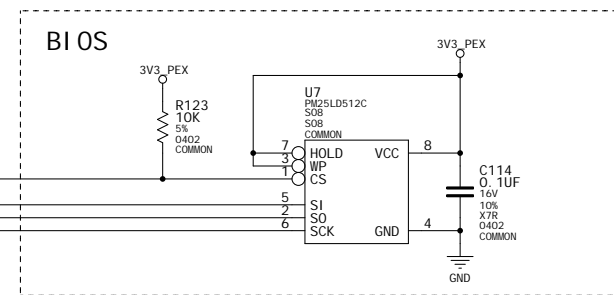
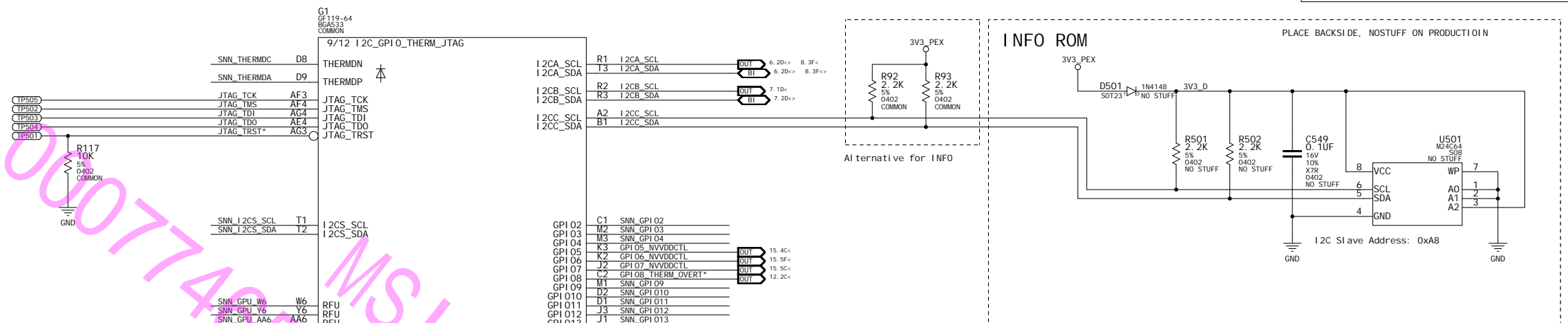


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XTAL, ROM, INFO ROM, JTAG

	Net Name	DIFF_PAIR	CRITICAL	IMPEDANCE
IN	XTAL_OUT	XTAL	1	90DI FF
IN	XTAL_IN	XTAL	1	90DI FF

	Net Name	VOLTAGE	MAX_CURRENT
IN	GPU_PLLVDD	1.05V	0.143A
IN	3V3_D		16MI L

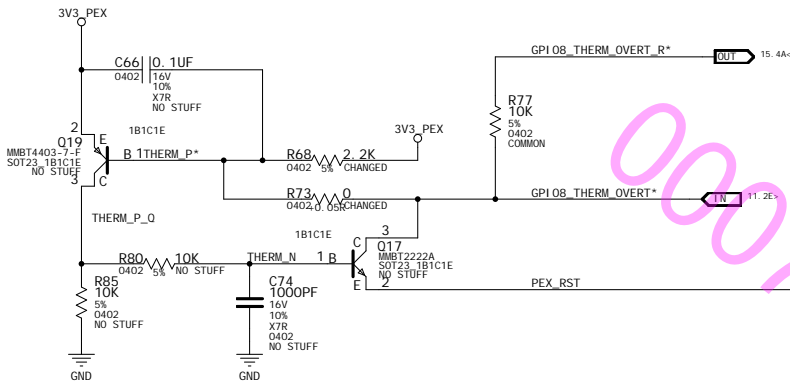


Thermal Protection, Protected 3V3, Straps, Fan

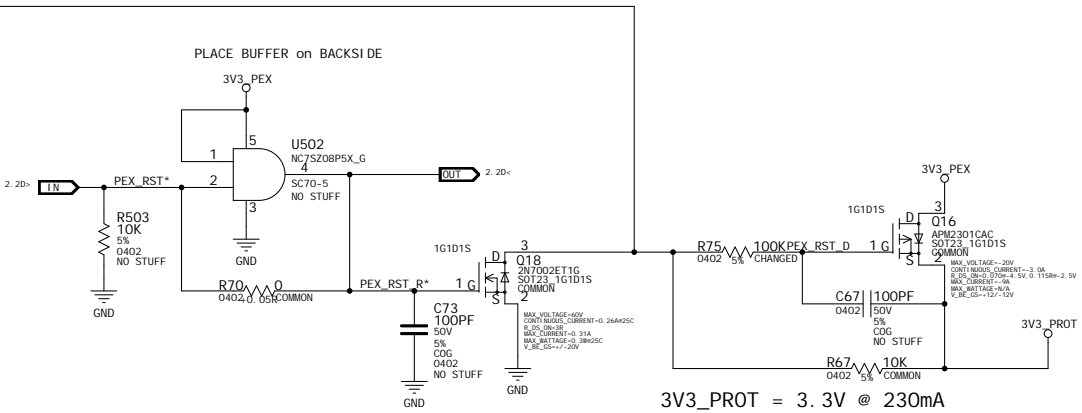
Net Name	VOLTAGE	MAX_CURRENT
3V3_PROT	3.3V	0.23A 16MIL

Net Name	MIN_WIDTH
GPI016_FAN_R	12MIL
GPI016_FAN_PWM_R	12MIL

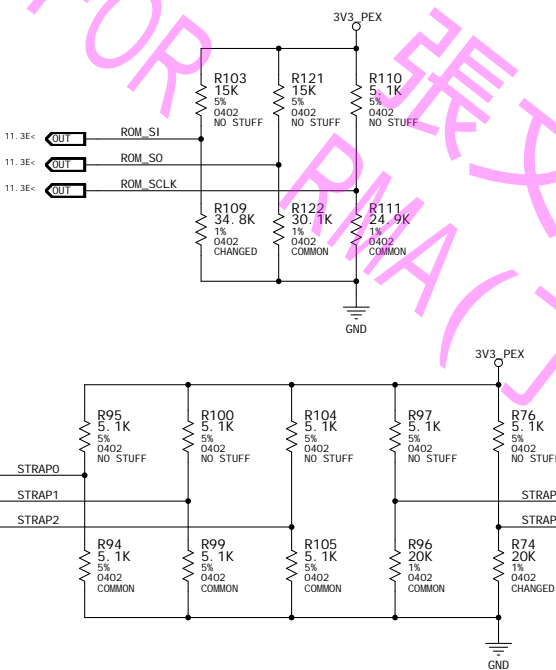
Thermal Latch



Backdrive Prevention

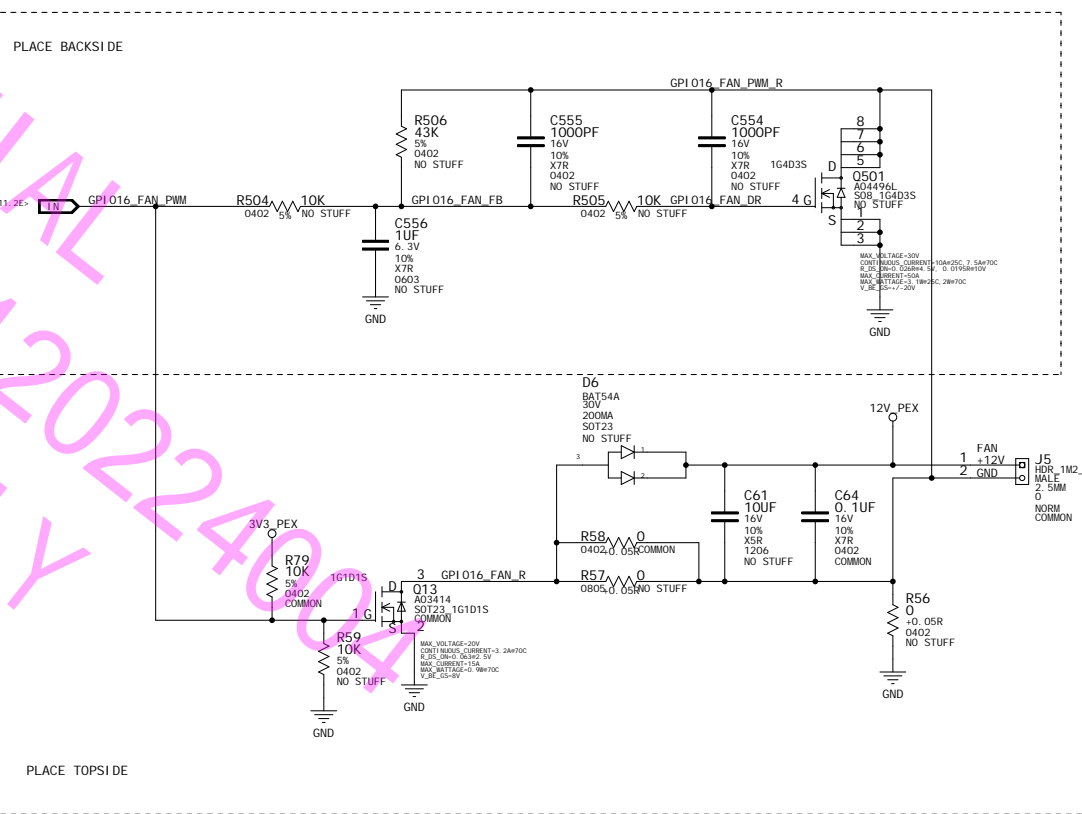


STRAPS



Strap	PU/PD	Rval	
0	PD	5k	0001 64Mx16 sDDR3 64-bit Micron
1	PD	10k	0010 64Mx16 sDDR3 64-bit Hynix
2	PD	15k	0011 64Mx16 sDDR3 64-bit Samsung
3	PD	20k	
4	PD	25k	
5	PD	30k	0101 128Mx16 sDDR3 64-bit Micron
6	PD	35k	0110 128Mx16 sDDR3 64-bit Hynix
7	PD	45k	0111 128Mx16 sDDR3 64-bit Samsung
8	PU	5k	1001 64Mx16 sDDR3 64-bit DR Micron
9	PU	10k	1010 64Mx16 sDDR3 64-bit DR Hynix
A	PU	15k	1011 64Mx16 sDDR3 64-bit DR Samsung
B	PU	20k	
C	PU	25k	
D	PU	30k	1101 128Mx16 sDDR3 64-bit DR Micron
E	PU	35k	1110 128Mx16 sDDR3 64-bit DR Hynix
F	PU	45k	1111 128Mx16 sDDR3 64-bit DR Samsung

FAN CIRCUIT



STRAP PIN MODE TABLE

	PIN NAME	MULTI-LEVEL bit [3:0]	BINARY PRODUCTION	BINARY BRINGUP
GF119	STRAP0	USER[3:0]	RAMCFG0	3GIO_PADCFG_LUT_ADRO
	STRAP1	3GIO_PADCFG_ADR[3:0]	RAMCFG1	3GIO_PADCFG_LUT_ADR1
	STRAP2	PCI_DEVID[3:0]	RAMCFG2	3GIO_PADCFG_LUT_ADR2
	STRAP3	SORT[3:0]_EXPOSED	TBD	TBD
GF119	STRAP4	RESERVED, RESERVED, PCI_E_MAX_SPEED, DP_PLL_VDD33V	TBD	TBD
	ROM_SCLK	PCI_DEVID[4], SUB_VENDOR, SLOT_CLK, PEX_PLL_EN_TERM	PCI_DEVID3	3GIO_PADCFG_LUT_ADR3
	ROM_SCLK	PCI_DEVID[4], SUB_VENDOR, PCI_DEVID[5], PEX_PLL_EN_TERM	TBD	TBD
	ROM_SI	RAMCFG[3:0]	PCI_DEVID_EXT	SUB_VENDOR
GF119	ROM_SO	XCLK_417, FBO_BAR_SIZE, SMB_ALT_ADDR, VGA_DEVICE	XCLK_417	XCLK_277
	ROM_SO	FB[1], FB[0], SMB_ALT_ADDR, VGA_DEVICE	TBD	TBD

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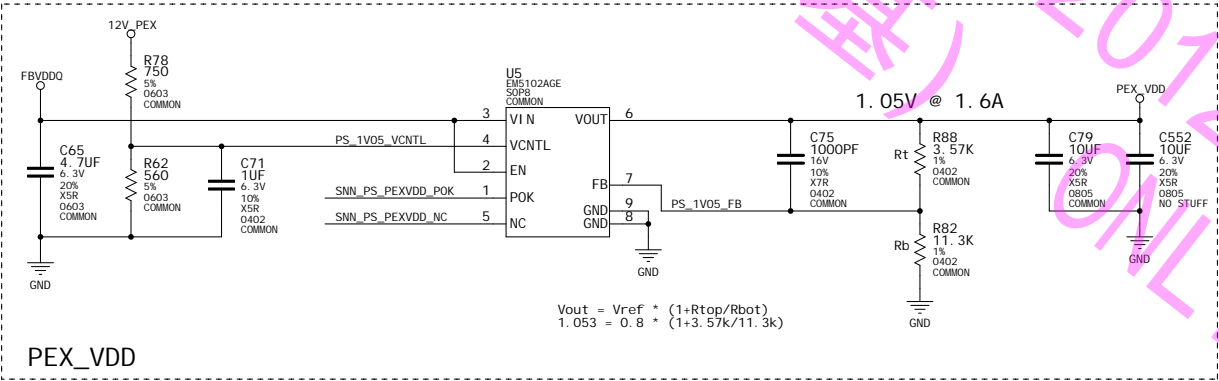
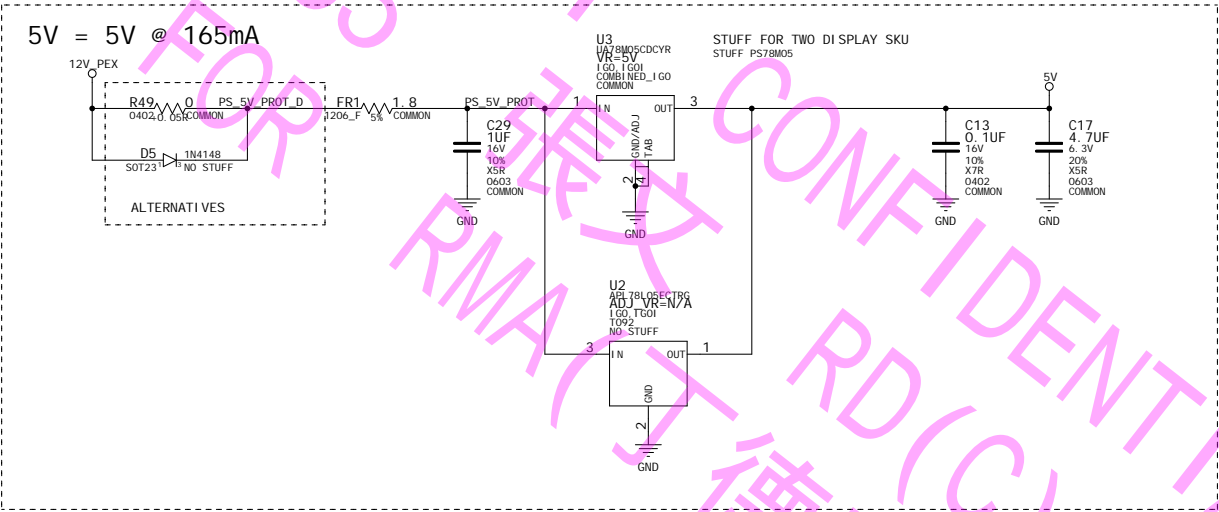
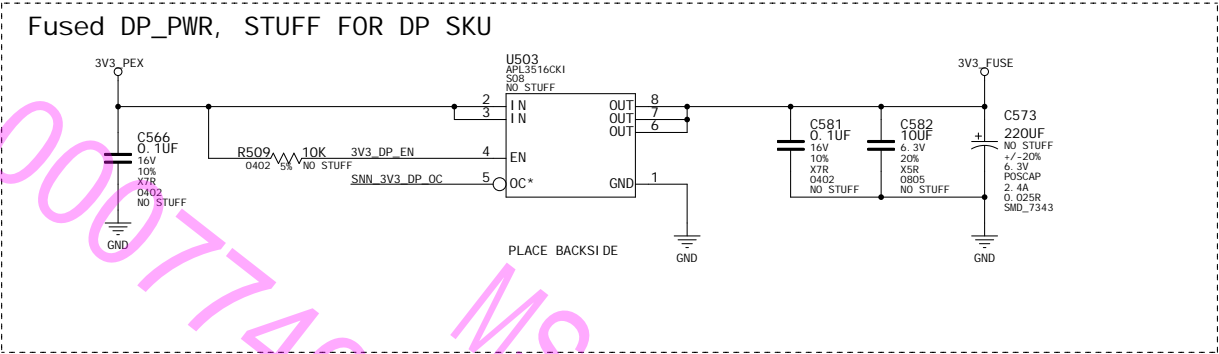
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Power Supply I: 3V3_FUSE, 5V, PEXVDD

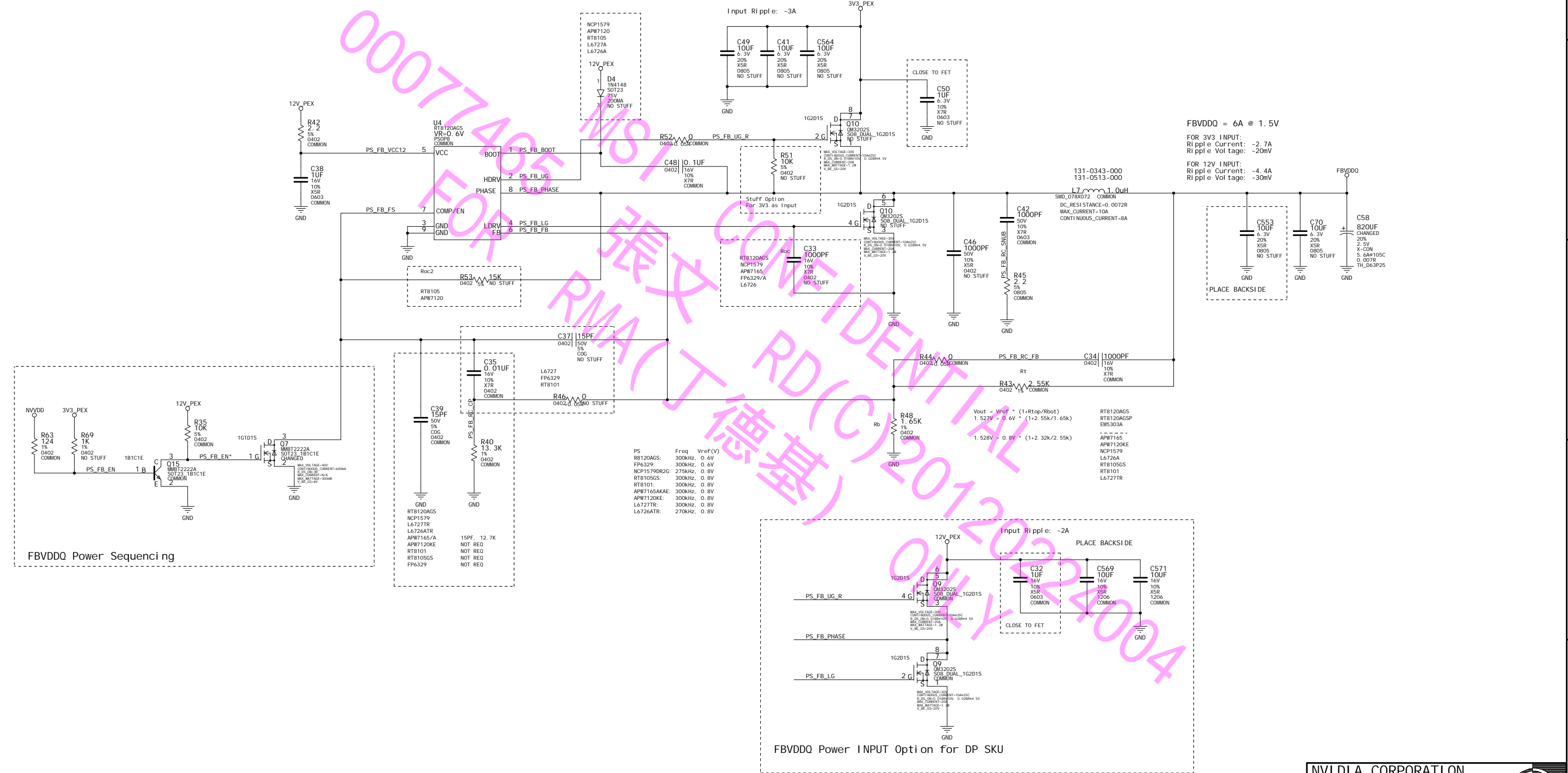
Net Name		MI N_WI DTH	
IN	PS_5V_PROT	12MI L	
IN	PS_5V_PROT_D	12MI L	
IN	PS_1V05_VCN TL	12MI L	
IN	PS_1V05_FB	12MI L	

Net Name		VOLTAGE	MAX_CURRENT
5V_O	5V	5V	0.365A
PEX_VDD_O	PEX_VDD	1.05V	1.6A
3V3_PEX_O	3V3_PEX	3.3V	3A
3V3_FUSE_O	3V3_FUSE	3.3V	0.5A



Power Supply II: FBVDDQ

Net Name	MIN_LENGTH	VOLTAGE	NV_NET_MAX_CURRENT
FBVDDQ	12MIL	1.5V	6A
PS_FB_VCC12	16MIL		
PS_FB_FS	8MIL		
PS_FB_FB	8MIL		
PS_FB_RC_FB	8MIL		
PS_FB_RC_CP	8MIL		
PS_FB_BOOT	16MIL		
PS_FB_UG	16MIL		
PS_FB_PHASE	16MIL		
PS_FB_UG_R	16MIL		
PS_FB_RC_SNUB	16MIL		



FBVDDQ Power Sequencing

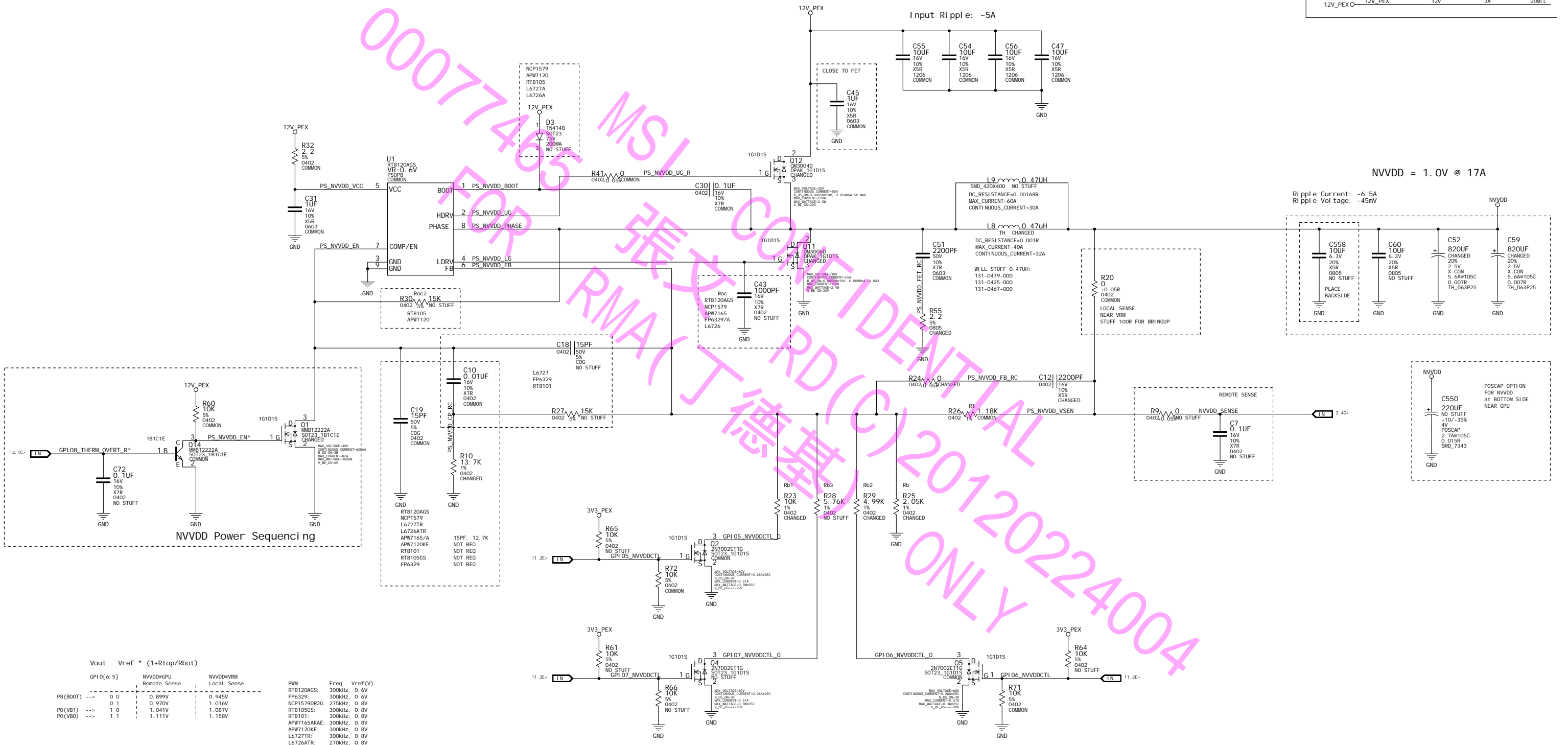
FBVDDQ Power INPUT Option for DP SKU

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Power Supply III: NVVDD

Net Name			MI_N_WI_DTH		
IN	PS_NVVDD_EN	8MIL	L		
IN	PS_NVVDD_VCC	16MIL	L		
IN	PS_NVVDD_BOOT	16MIL	L		
IN	PS_NVVDD_UG_R	16MIL	L		
IN	PS_NVVDD_LG	16MIL	L		
IN	PS_NVVDD_PHASE	16MIL	L		
IN	PS_NVVDD_FET_RC	16MIL	L		
IN	PS_NVVDD_FB	8MIL	L		
IN	PS_NVVDD_FB_RC	8MIL	L		
IN	PS_NVVDD_CP_RC	8MIL	L		
Net Name			VOLTAGE	MAX_CURRENT	
NVVDD	NVVDD	1.00V		18A	20MIL
12V_PEX	12V_PEX	12V		3A	20MIL



NVVDD = 1.0V @ 17A

Ripple Current: ~6.5A

Ripple Voltage: ~45mV

Vout = Vref * (1+Rtop/Rbot)					
GPI0[6:5]			NVVDD=GPU Remote Sense		
			NVVDD=VRM Local Sense		
P8 (BOOT)	-->	0 0	0.899V	0.945V	
P0 (V81)	-->	0 1	0.970V	1.016V	
P0 (V81)	-->	1 0	1.041V	1.087V	
P0 (V80)	-->	1 1	1.111V	1.158V	
			PWM		
			Freq	Vref(V)	
RT8120AGS		300KHz, 0.6V			
FP6329		300KHz, 0.6V			
NCP1579R2G		275KHz, 0.8V			
RT8105GS		300KHz, 0.8V			
RT8101		300KHz, 0.8V			
APW7165AAE		300KHz, 0.8V			
APW7120KE		300KHz, 0.8V			
L6727TR		300KHz, 0.8V			
L6726ATR		270KHz, 0.8V			

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ASSEMBLY	P1310-A01 SKU1 GF119-300 SINGLE-RANK 1024MB/64bit 128Mx16 DDR3 VGA+HDMI+DVI DT
PAGE DETAIL	Power Supply III: NVVDD

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