

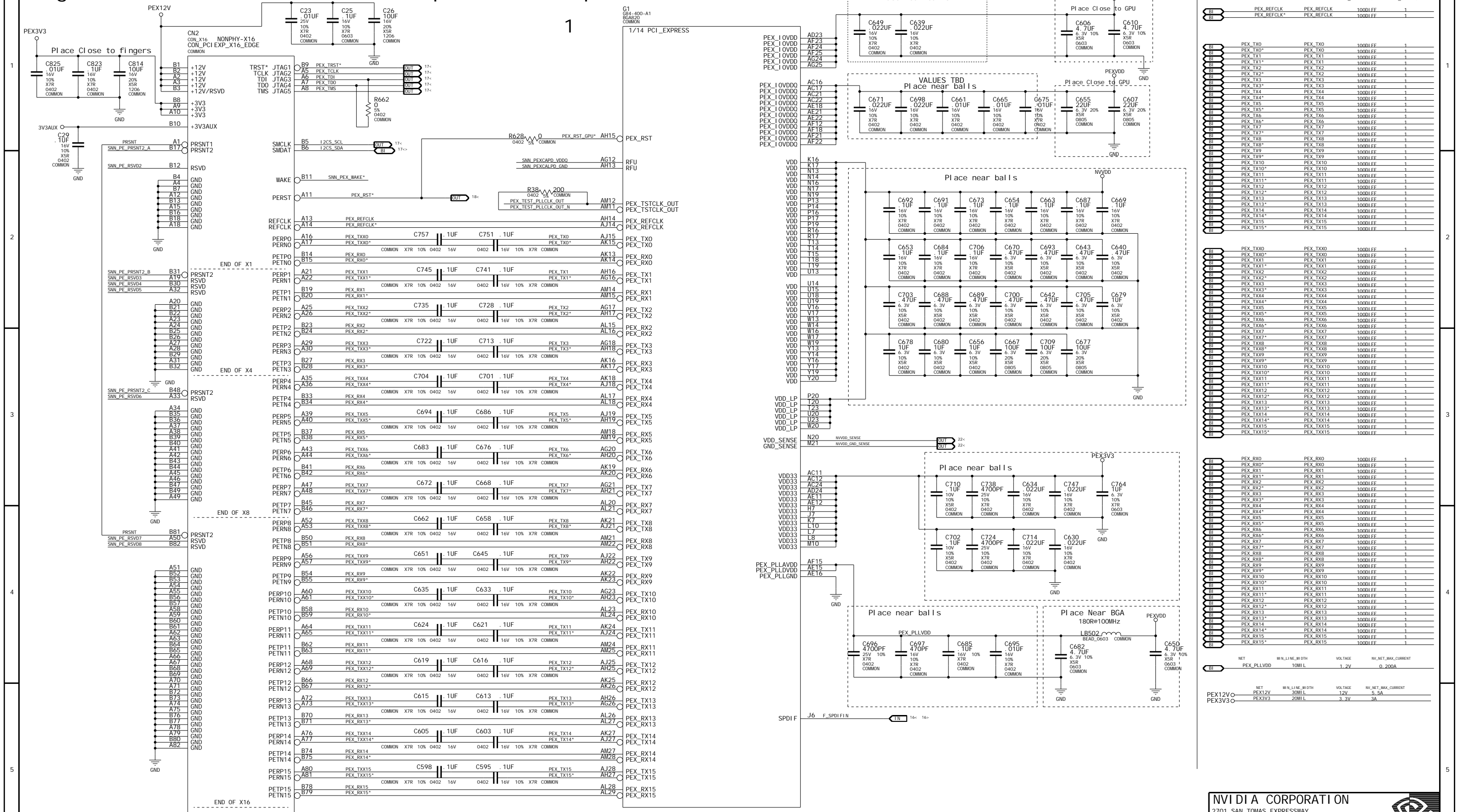
P401-A02 -- G84-400, 700/100MHz, 256MB 16Mx32 BGA136 GDDR3,
DVI -I -DL, DVI -I -DL, VI V0/TV-Out/Stereo

SKU	VARI ANT	NVPN	ASSEMBLY
B	BASE	600-10401-base-200	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
1	SKU0000	600-10401-0000-200	G84-400 700/1000GHz 256MB 16Mx32 BGA136 GDDR3 DVI -I -DL+DVI -I -DL+HDTV-Out
2	SKU0010	600-10401-0010-200	G84-400 700/1000MHz 256MB 16Mx32 BGA136 GDDR3 DVI -I -DL+DVI -I -DL+VI VO
3	SKU0100	600-10401-0100-200	G84-400 700/1000MHz 256MB 16Mx32 BGA136 GDDR3 DVI -I -DL+DVI -I -DL+VI VO FOR SAMSUNG MEMORY
4	SKU9200	600-10401-9200-200	G84-400 700/1000MHz 256MB 16Mx32 BGA136 GDDR3 DVI -I -DL+DVI -I -DL+VI VO FOR HYNIX MEMORY
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Page2: PEX Interface, .NVVDD Decaps, PEX Decaps



	MET	DI_FFPAR I	NV_I MPEDANCE	NV_CRI TIC AL
BI	PEX_REFCLK	PEX_REFCLK	1000LF	1
BI	PEX_REFCLK*	PEX_REFCLK	1000LF	1
BI	PEX_TX0	PEX_TX0	1000LF	1
BI	PEX_TX0*	PEX_TX0	1000LF	1
BI	PEX_TX1	PEX_TX1	1000LF	1
BI	PEX_TX1*	PEX_TX1	1000LF	1
BI	PEX_TX2	PEX_TX2	1000LF	1
BI	PEX_TX2*	PEX_TX2	1000LF	1
BI	PEX_TX3	PEX_TX3	1000LF	1
BI	PEX_TX3*	PEX_TX3	1000LF	1
BI	PEX_TX4	PEX_TX4	1000LF	1
BI	PEX_TX4*	PEX_TX4	1000LF	1
BI	PEX_TX5	PEX_TX5	1000LF	1
BI	PEX_TX5*	PEX_TX5	1000LF	1
BI	PEX_TX6	PEX_TX6	1000LF	1
BI	PEX_TX6*	PEX_TX6	1000LF	1
BI	PEX_TX7	PEX_TX7	1000LF	1
BI	PEX_TX7*	PEX_TX7	1000LF	1
BI	PEX_TX8	PEX_TX8	1000LF	1
BI	PEX_TX8*	PEX_TX8	1000LF	1
BI	PEX_TX9	PEX_TX9	1000LF	1
BI	PEX_TX9*	PEX_TX9	1000LF	1
BI	PEX_TX10	PEX_TX10	1000LF	1
BI	PEX_TX10*	PEX_TX10	1000LF	1
BI	PEX_TX11	PEX_TX11	1000LF	1
BI	PEX_TX11*	PEX_TX11	1000LF	1
BI	PEX_TX12	PEX_TX12	1000LF	1
BI	PEX_TX12*	PEX_TX12	1000LF	1
BI	PEX_TX13	PEX_TX13	1000LF	1
BI	PEX_TX13*	PEX_TX13	1000LF	1
BI	PEX_TX14	PEX_TX14	1000LF	1
BI	PEX_TX14*	PEX_TX14	1000LF	1
BI	PEX_TX15	PEX_TX15	1000LF	1
BI	PEX_TX15*	PEX_TX15	1000LF	1

B1	PEX_TX00	PEX_TX00	100DFFF	1
B1	PEX_TX00*	PEX_TX00	100DFFF	1
B1	PEX_TX01	PEX_TX01	100DFFF	1
B1	PEX_TX01*	PEX_TX01	100DFFF	1
B1	PEX_TX02	PEX_TX02	100DFFF	1
B1	PEX_TX02*	PEX_TX02	100DFFF	1
B1	PEX_TX03	PEX_TX03	100DFFF	1
B1	PEX_TX03*	PEX_TX03	100DFFF	1
B1	PEX_TX04	PEX_TX04	100DFFF	1
B1	PEX_TX04*	PEX_TX04	100DFFF	1
B1	PEX_TX05	PEX_TX05	100DFFF	1
B1	PEX_TX05*	PEX_TX05	100DFFF	1
B1	PEX_TX06	PEX_TX06	100DFFF	1
B1	PEX_TX06*	PEX_TX06	100DFFF	1
B1	PEX_TX07	PEX_TX07	100DFFF	1
B1	PEX_TX07*	PEX_TX07	100DFFF	1
B1	PEX_TX08	PEX_TX08	100DFFF	1
B1	PEX_TX08*	PEX_TX08	100DFFF	1
B1	PEX_TX09	PEX_TX09	100DFFF	1
B1	PEX_TX09*	PEX_TX09	100DFFF	1
B1	PEX_TX010	PEX_TX010	100DFFF	1
B1	PEX_TX010*	PEX_TX010	100DFFF	1
B1	PEX_TX011	PEX_TX011	100DFFF	1
B1	PEX_TX011*	PEX_TX011	100DFFF	1
B1	PEX_TX012	PEX_TX012	100DFFF	1
B1	PEX_TX012*	PEX_TX012	100DFFF	1
B1	PEX_TX013	PEX_TX013	100DFFF	1
B1	PEX_TX013*	PEX_TX013	100DFFF	1
B1	PEX_TX014	PEX_TX014	100DFFF	1
B1	PEX_TX014*	PEX_TX014	100DFFF	1
B1	PEX_TX015	PEX_TX015	100DFFF	1
B1	PEX_TX015*	PEX_TX015	100DFFF	1

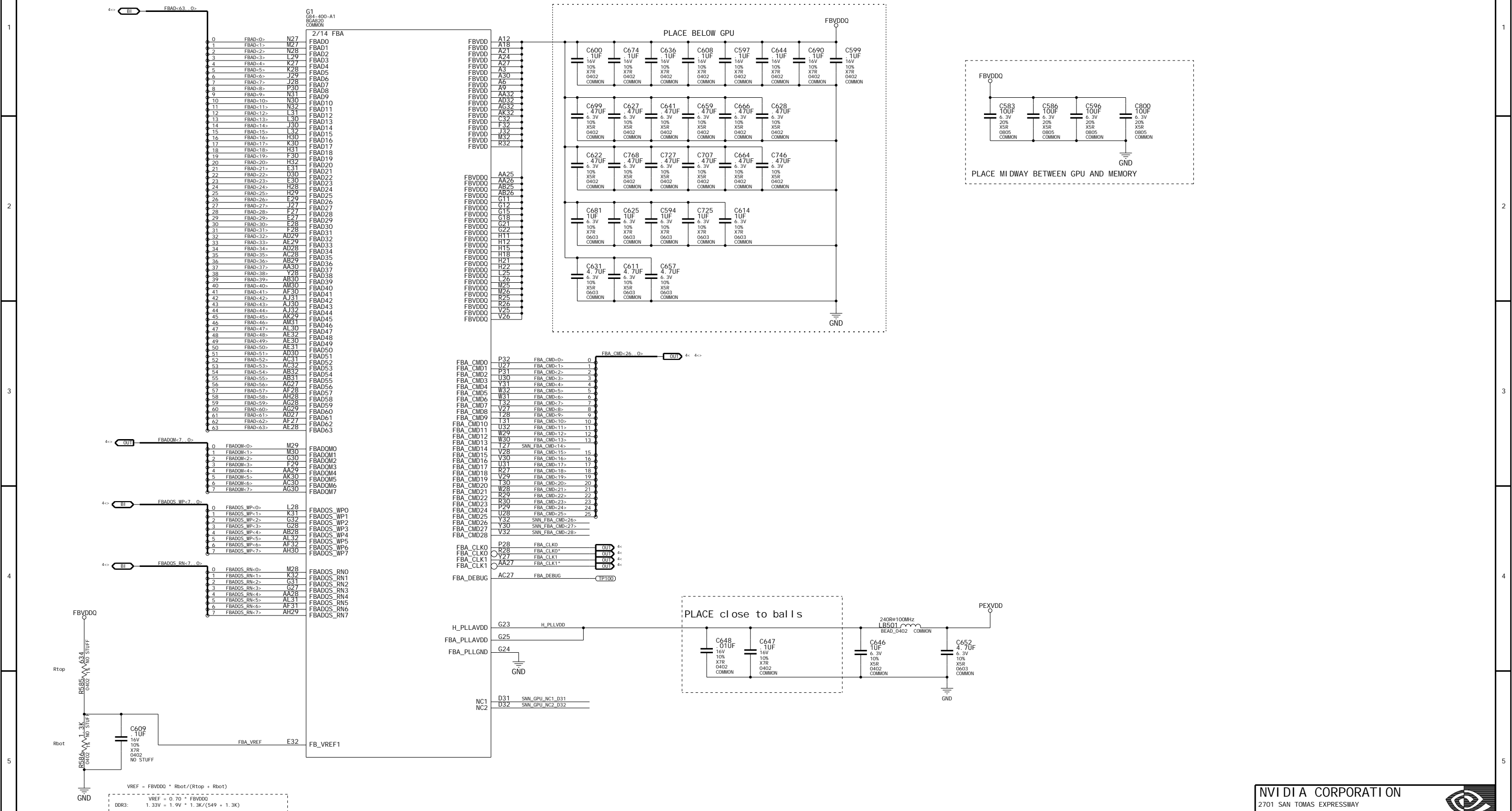
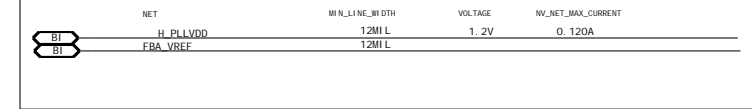
BI	PEX_0	PEX_R00	100DFFF	1
BI	PEX_R0*	PEX_R00	100DFFF	1
BI	PEX_RX1	PEX_RX1	100DFFF	1
BI	PEX_RX1*	PEX_RX1	100DFFF	1
BI	PEX_RX2	PEX_RX2	100DFFF	1
BI	PEX_RX2*	PEX_RX2	100DFFF	1
BI	PEX_RX3	PEX_RX3	100DFFF	1
BI	PEX_RX3*	PEX_RX3	100DFFF	1
BI	PEX_RX4	PEX_RX4	100DFFF	1
BI	PEX_RX4*	PEX_RX4	100DFFF	1
BI	PEX_RX5	PEX_RX5	100DFFF	1
BI	PEX_RX5*	PEX_RX5	100DFFF	1
BI	PEX_RX6	PEX_RX6	100DFFF	1
BI	PEX_RX6*	PEX_RX6	100DFFF	1
BI	PEX_RX7	PEX_RX7	100DFFF	1
BI	PEX_RX7*	PEX_RX7	100DFFF	1
BI	PEX_RX8	PEX_RX8	100DFFF	1
BI	PEX_RX8*	PEX_RX8	100DFFF	1
BI	PEX_RX9	PEX_RX9	100DFFF	1
BI	PEX_RX9*	PEX_RX9	100DFFF	1
BI	PEX_RX10	PEX_RX10	100DFFF	1
BI	PEX_RX10*	PEX_RX10	100DFFF	1
BI	PEX_RX11	PEX_RX11	100DFFF	1
BI	PEX_RX11*	PEX_RX11	100DFFF	1
BI	PEX_RX12	PEX_RX12	100DFFF	1
BI	PEX_RX12*	PEX_RX12	100DFFF	1
BI	PEX_RX13	PEX_RX13	100DFFF	1
BI	PEX_RX13*	PEX_RX13	100DFFF	1
BI	PEX_RX14	PEX_RX14	100DFFF	1
BI	PEX_RX14*	PEX_RX14	100DFFF	1
BI	PEX_RX15	PEX_RX15	100DFFF	1
BI	PEX_RX15*	PEX_RX15	100DFFF	1

	NET	MIN_LENGTH	VOLTAGE	MAX_CURRENT
BI	PEX_PLLVDD	10MIL	1.2V	0.200A

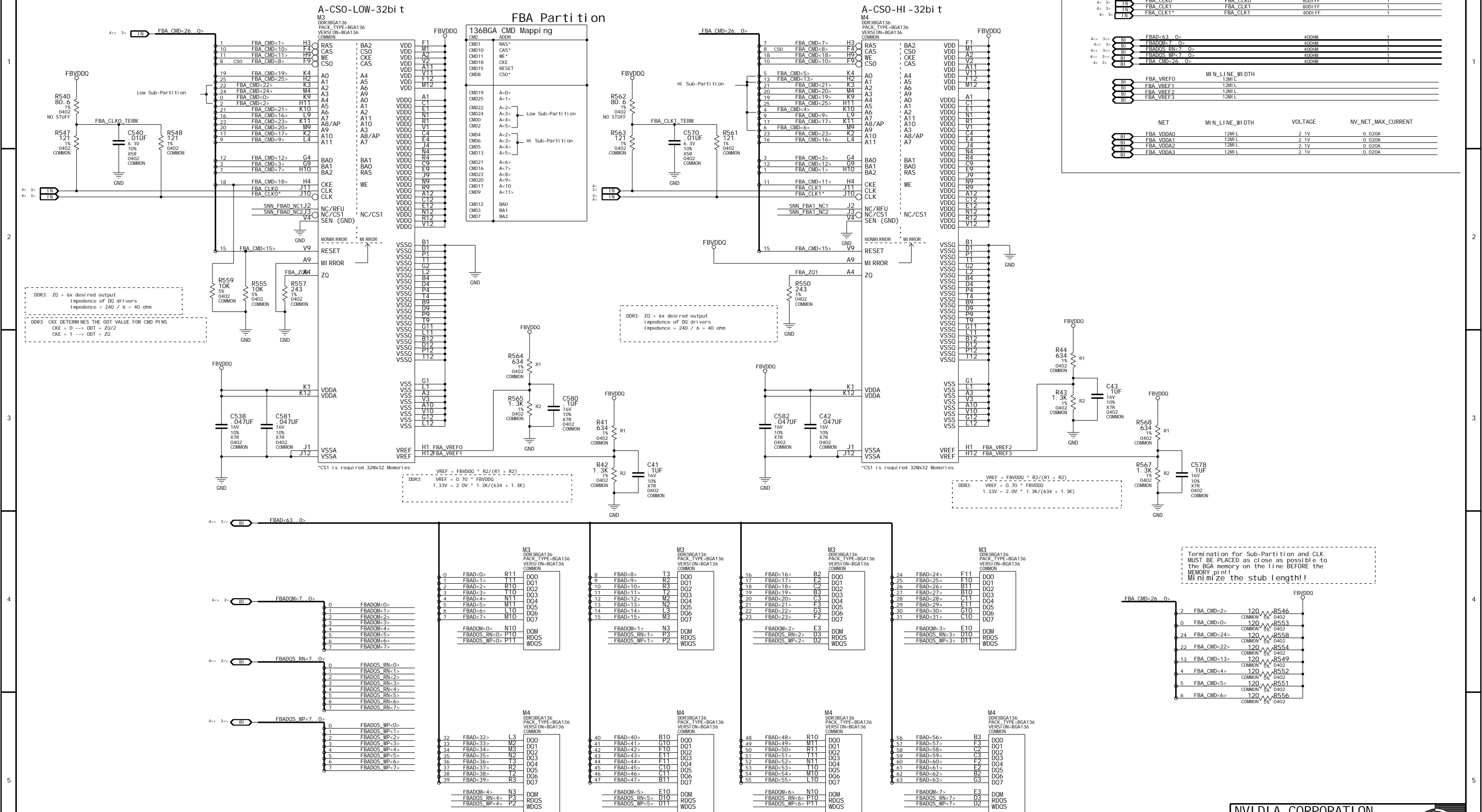
	NET	MIN_LINE_WIDTH	VOLTAGE	NV_NET_MAX_CURRENT
PEX12V0	PEX12V	30MIL	12V	5.5A

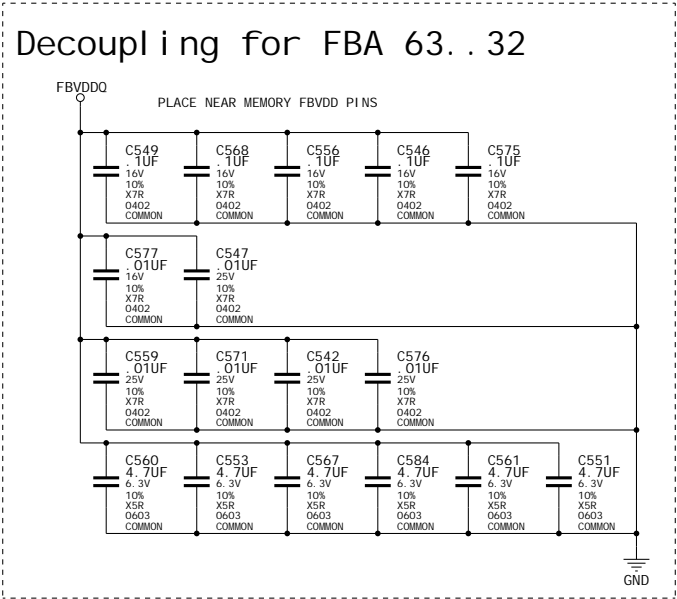
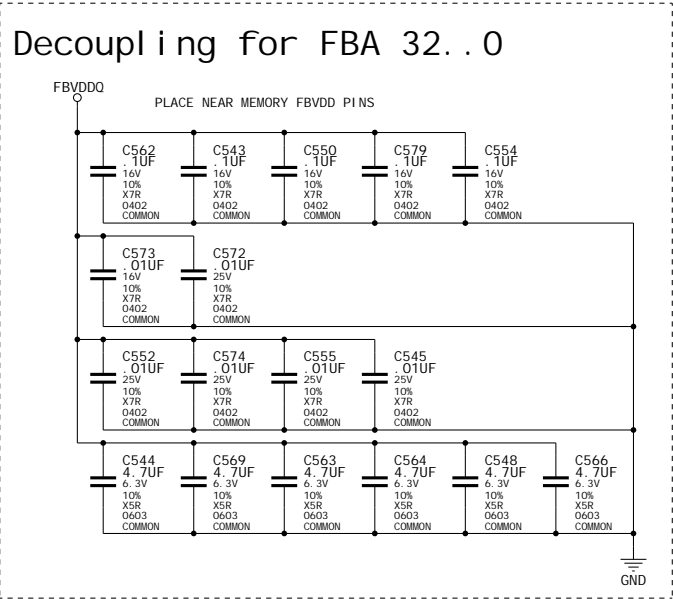
Page3: FrameBuffer - GPU Partition A and FBVDDQ Decaps

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Page4: FrameBuffer - Parti ti on A 16Mx32 BGA136 GDDR3





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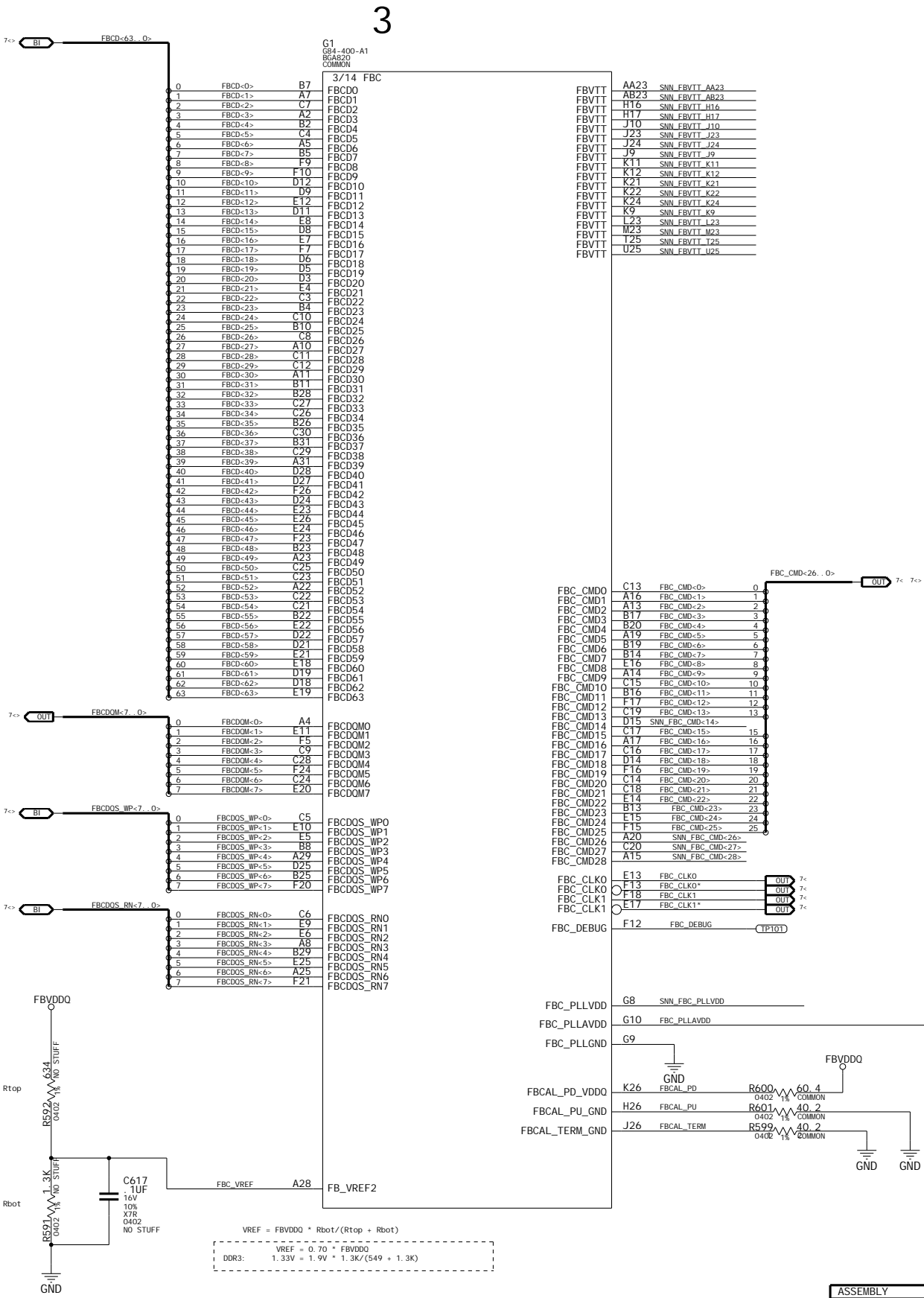
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NET	MIN_LENGTH	VOLTAGE	MAX_CURRENT
FBC_PLLVDD	12MIL	2.1V	0.120A
FBC_PLLAVDD	12MIL	2.1V	0.120A
FBC_VREF	12MIL		



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ASSEMBLY

G84-400 700/1000GHz 256MB 16Mx32 BGA136 GDDR3 DVI-I-DL+DVI-I-DL+HDTV-Out

PAGE DETAIL

FrameBuffer - GPU Partition C and FBVDDQ Decaps

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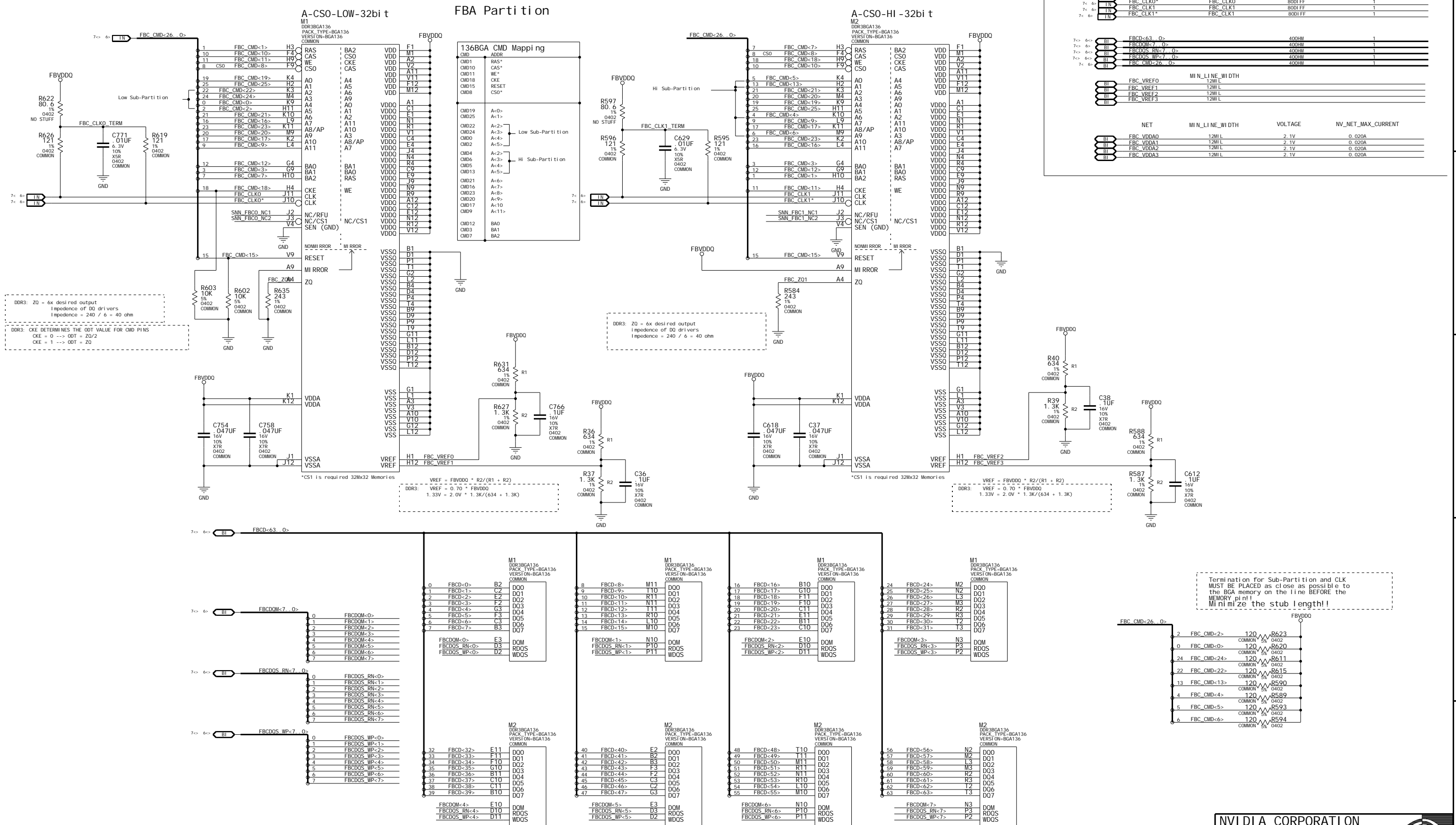
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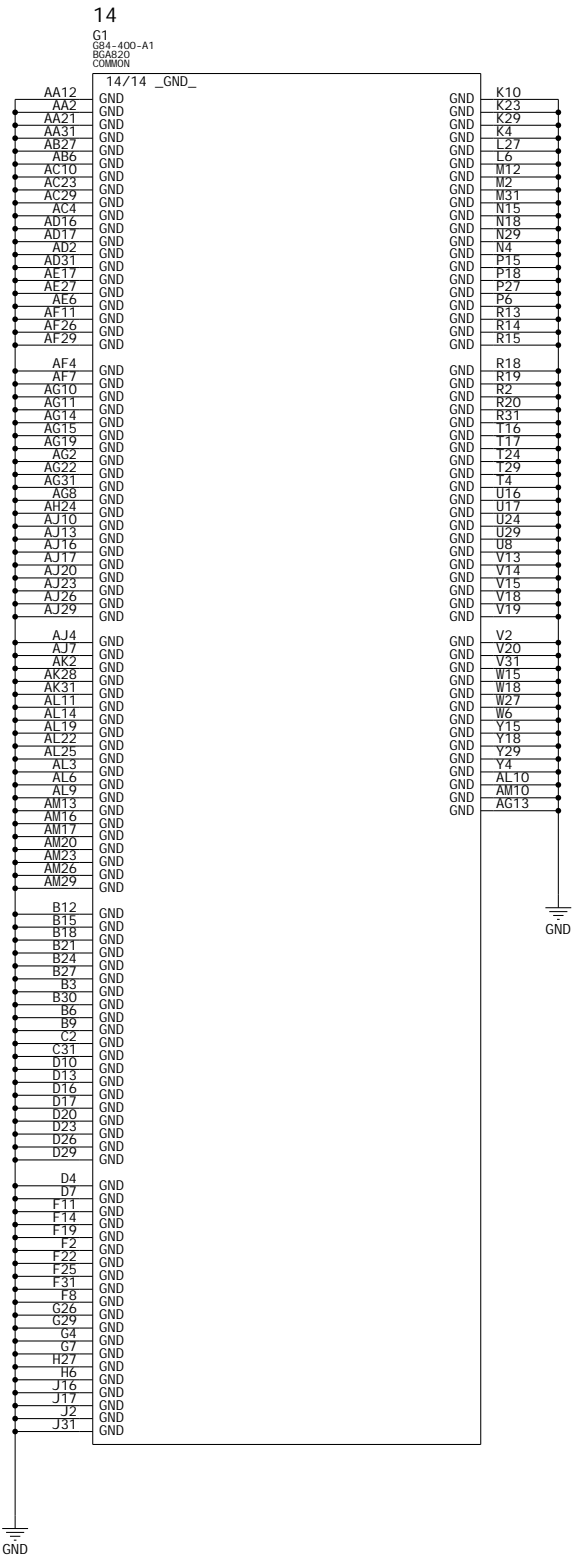
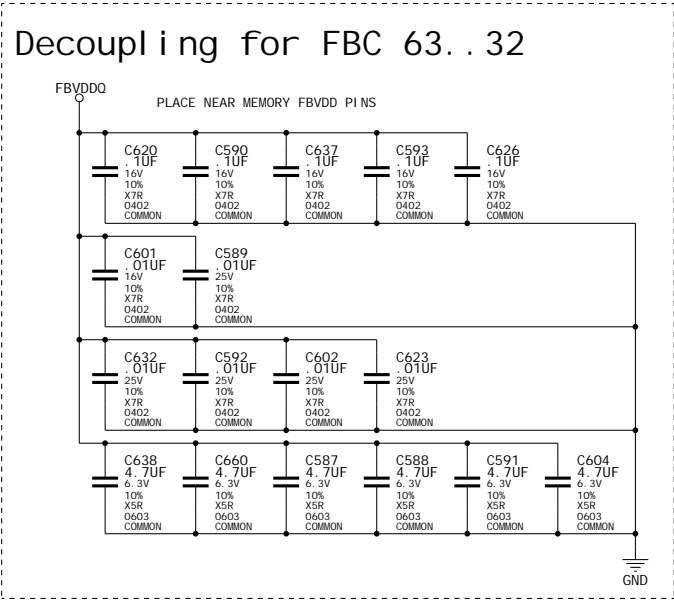
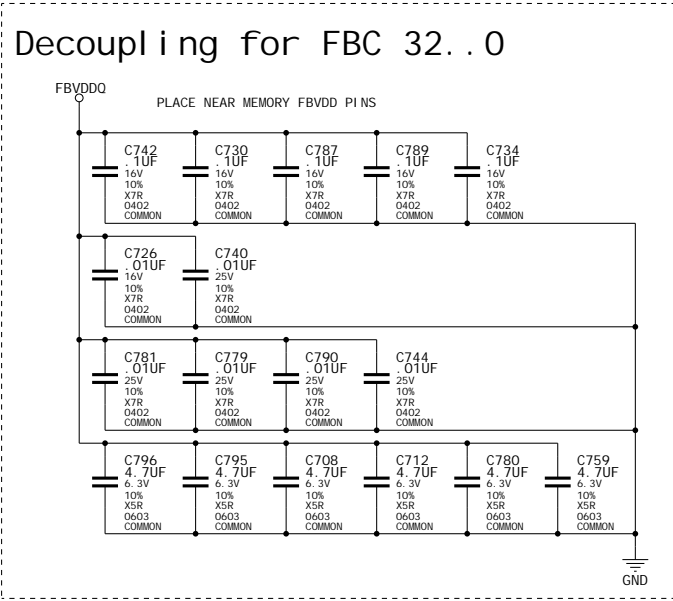
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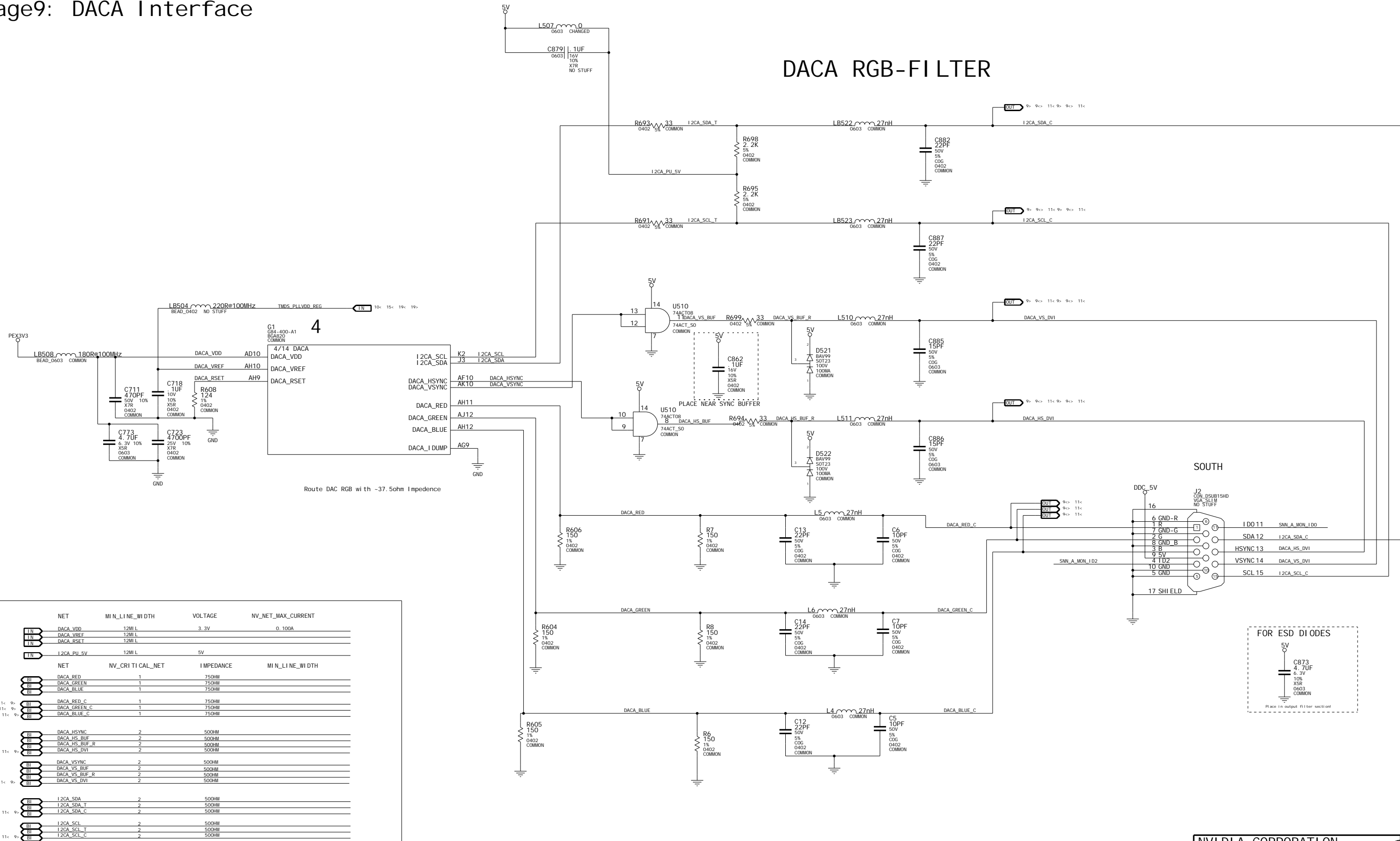
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Page7: FrameBuffer - Partion C 16Mx32 BGA136 GDDR3



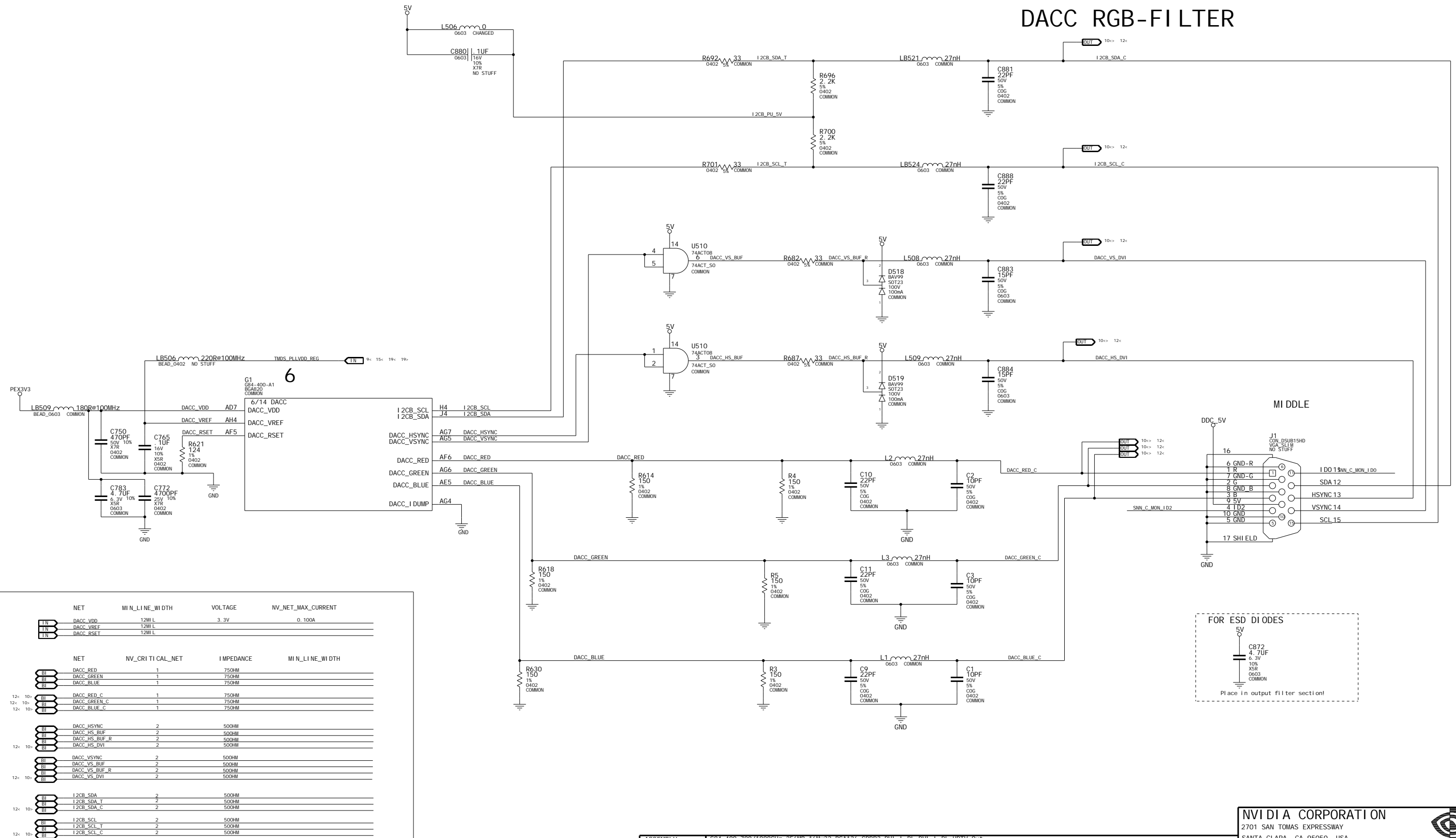




ASSEMBLY	G84-400 700/1000GHz 256MB 16Mx32 BGA136 GDDR3 DVI -I -DL+DVI -I -DL+HDTV-Out
PAGE DETAIL	DACA Interface


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Page10: DACC Interface

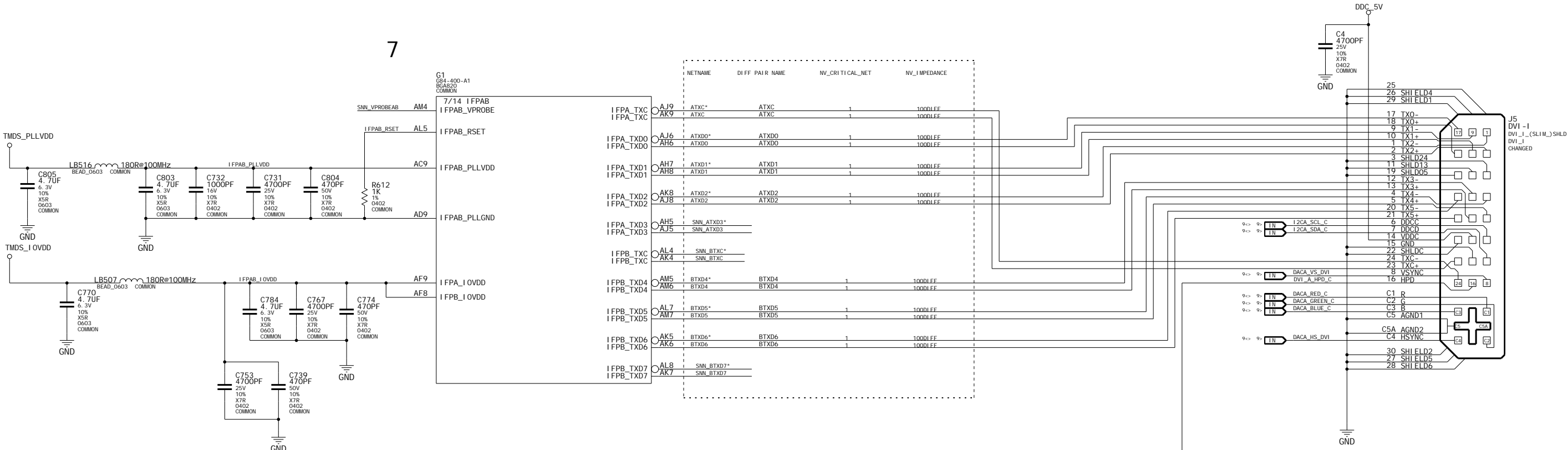


ASSEMBLY	G84-400 700/1000GHZ 256MB 16Mx32 BGA136 GDDR3 DVI -I -DL+DVI -I -DL+HDTV-Out
PAGE DETAIL	DACC Interface

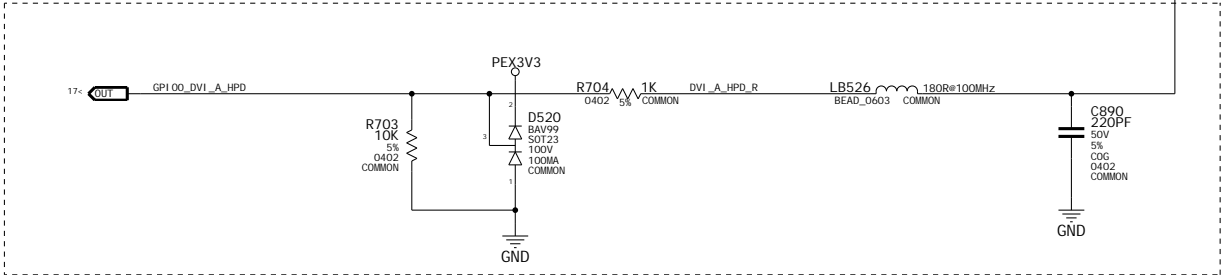
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NET	MIN_LINETH	VOLTAGE	NV_NET_MAX_CURRENT
IFPAB_PLLVDD	12MIL	1.8V	0.035A
IFPAB_I OVDD	12MIL	3.3V	0.145A
IFPAB_RSET	12MIL		



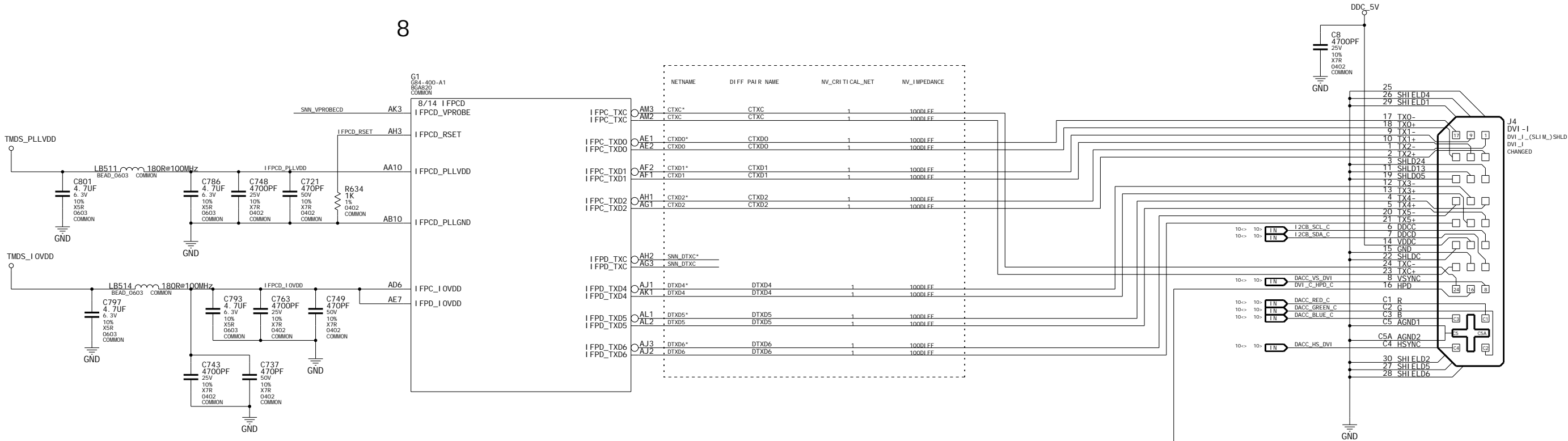
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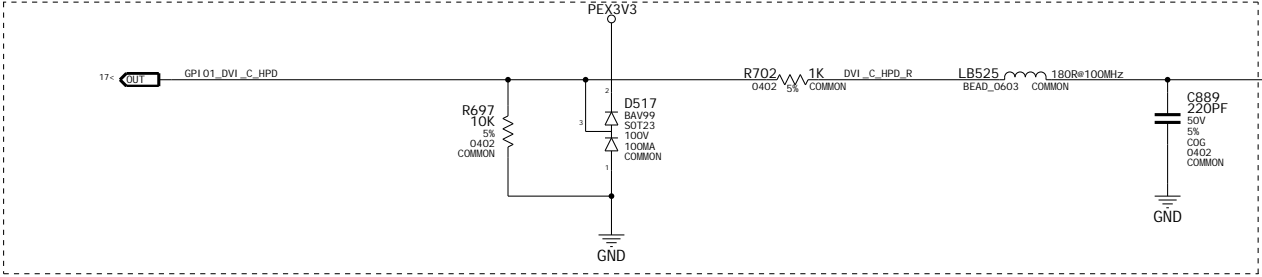
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NET	MIN_LENGTH	VOLTAGE	NV_NET_MAX_CURRENT
I_FPCD_PLLVDD	12MIL	1.8V	0.035A
I_FPCD_I0VDD	12MIL	3.3V	0.145A
I_FPCD_RSET	12MIL		

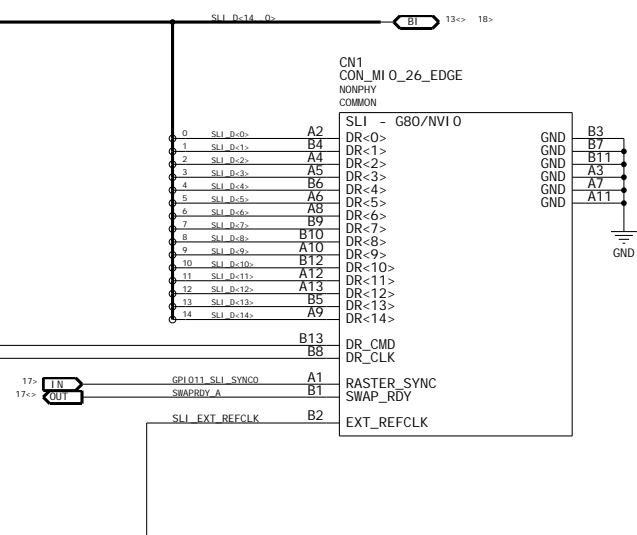
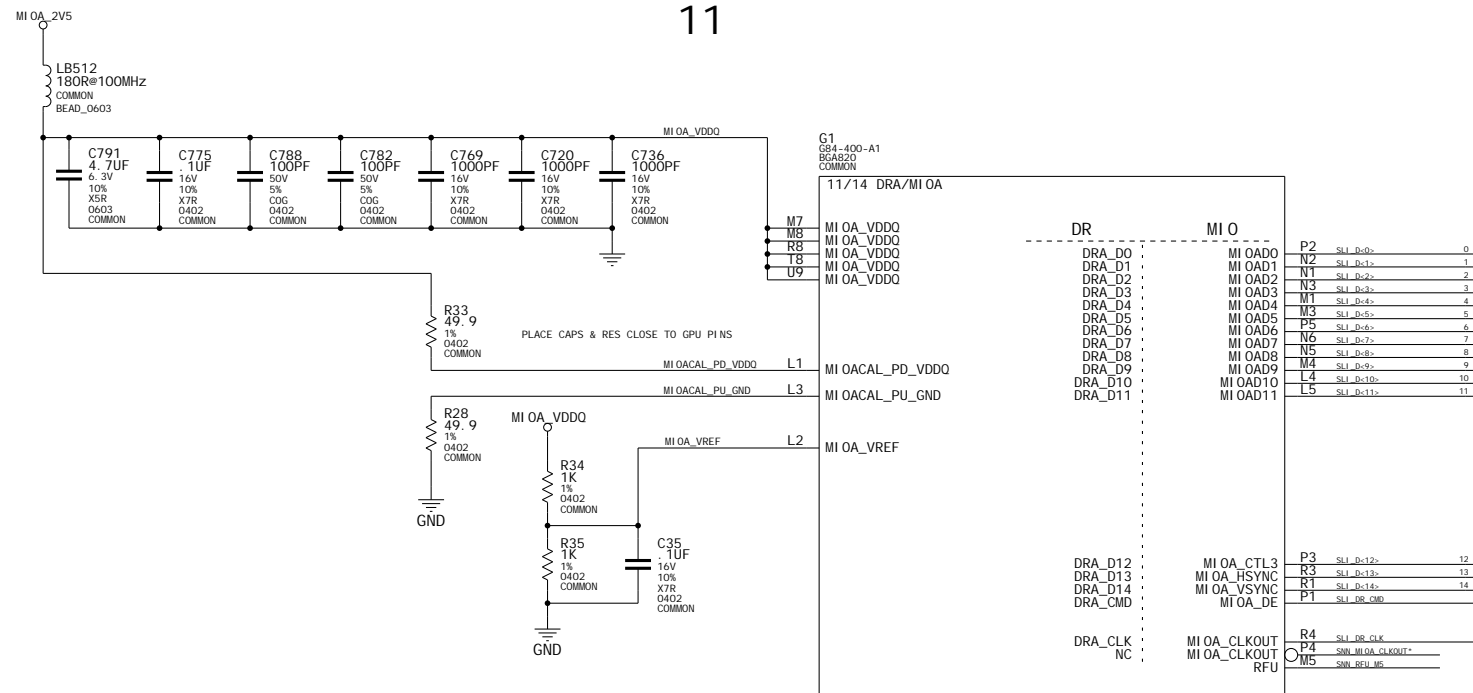
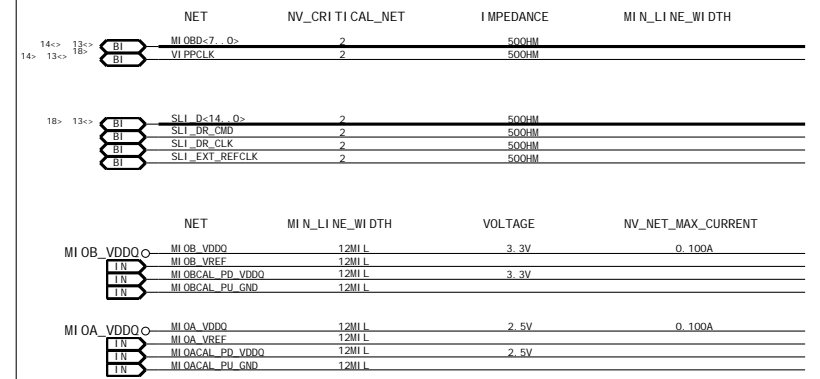
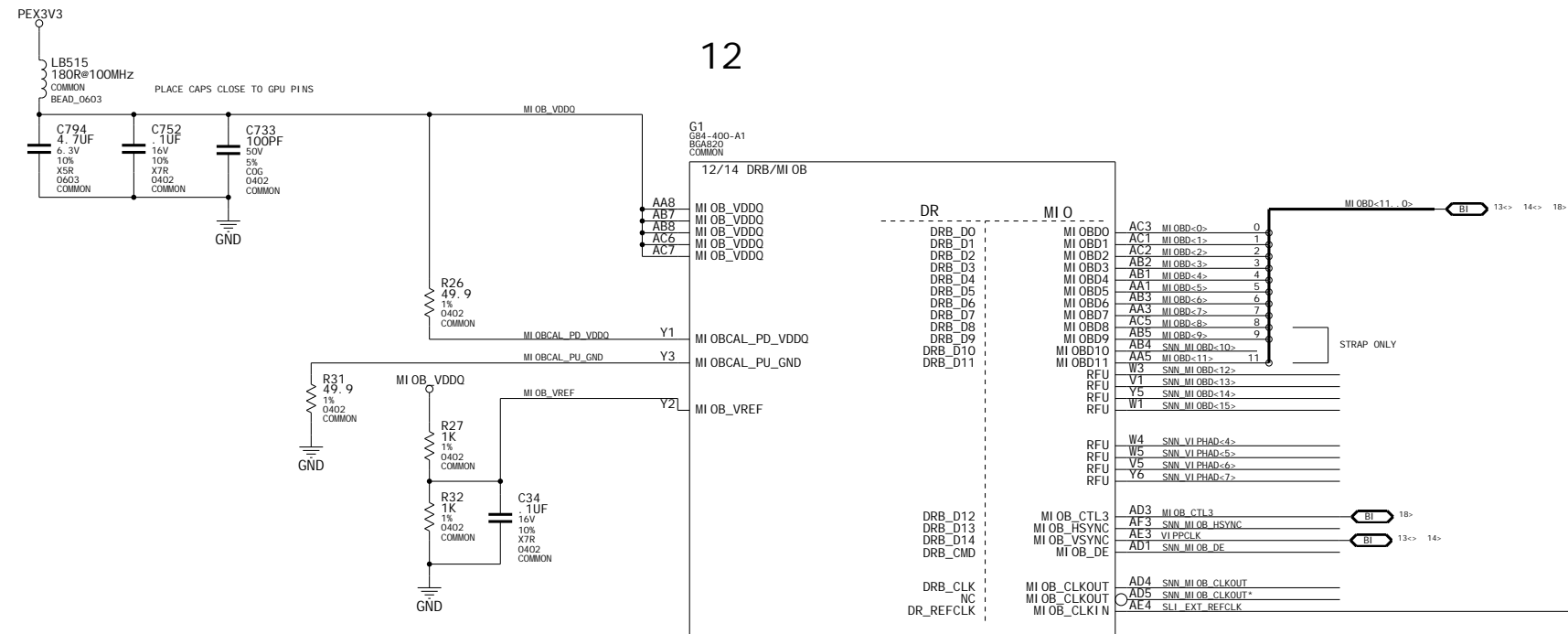


Hotplug Detection

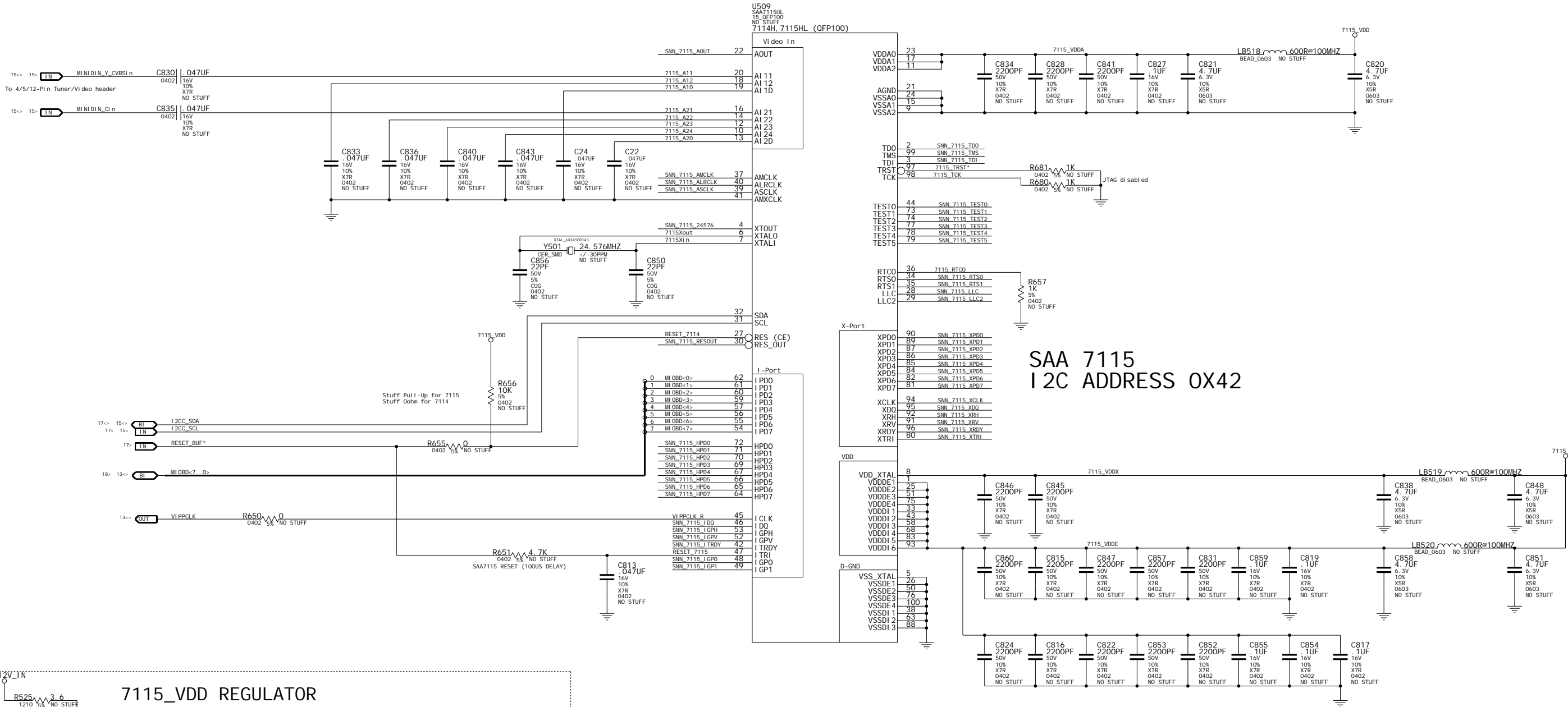


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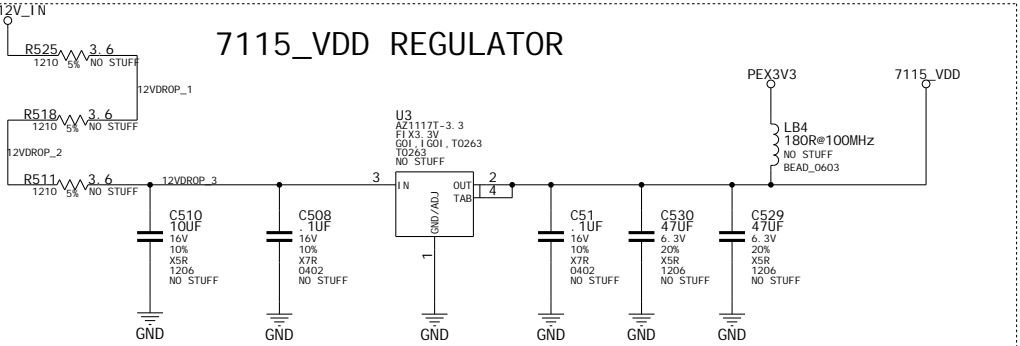


NET	MIN_LENGTH	VOLTAGE	NV_MAX_CURRENT
7115_VDD	18mil	3.3V	0.300A
7115_VDDA	16mil	3.3V	0.090A
7115_VDDE	16mil	3.3V	0.080A
7115_VDDX	16mil	3.3V	0.010A



SAA 7115
I2C ADDRESS 0X42

7115_VDD REGULATOR



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Place close to Mini DIN connector!

1



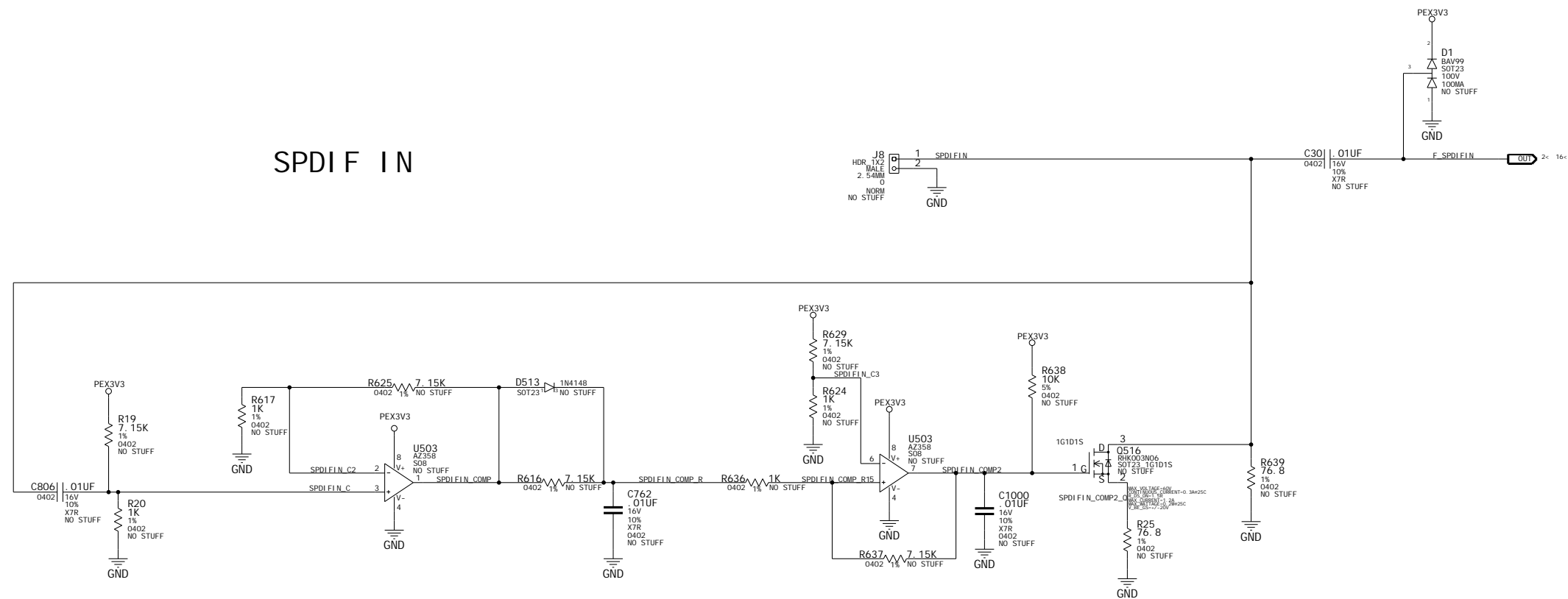
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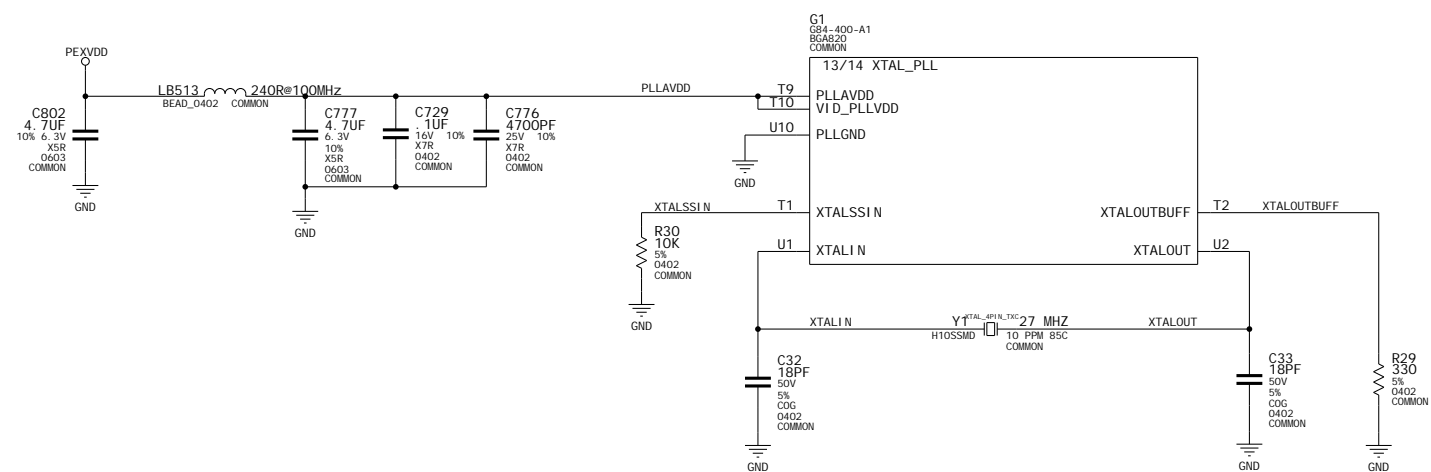
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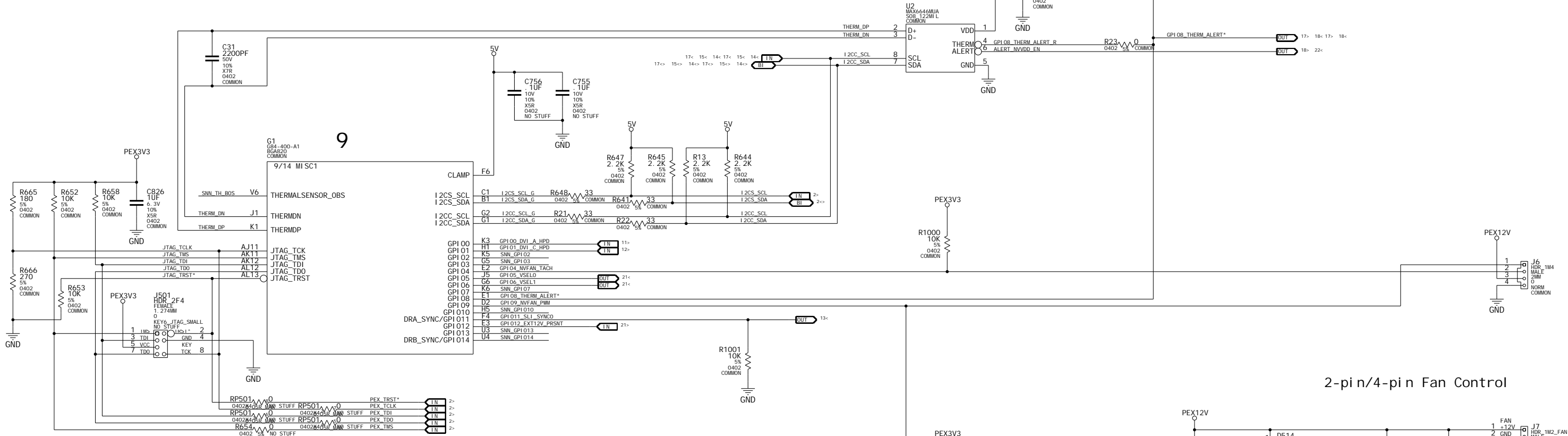
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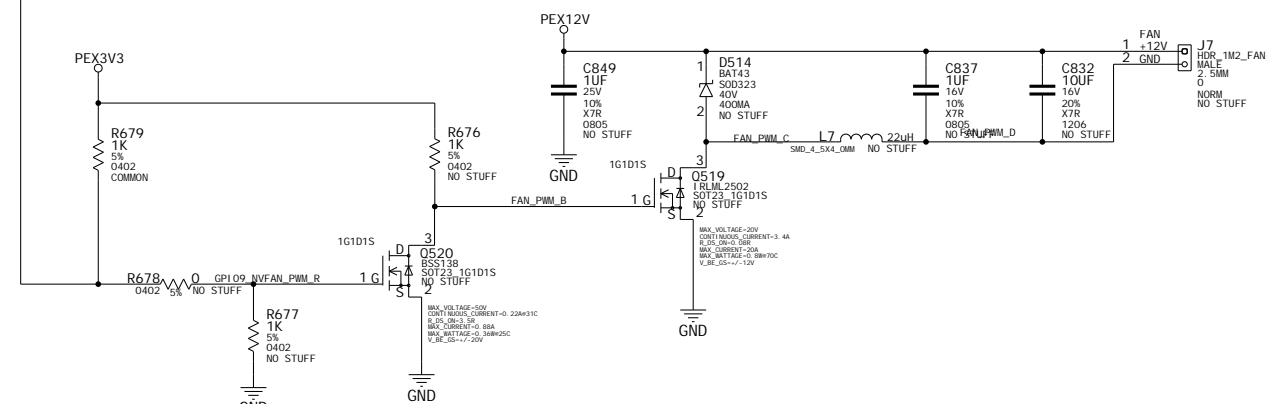
NET		MI_N_LI_NE_WI_DTH	VOLTAGE	NV_NET_MAX_CURRENT
IN	PLLAVDD	12MI L	1.2V	0.140A

NET		IMPEDANCE	NV_CRI TI CAL_NET	MI_N_LI_NE_WI_DTH
IN	SPDIFIN	750HM	1	
IN	SPDIFIN_C	750HM	1	
IN	SPDIFIN_C2	750HM	1	
IN	SPDIFIN_COMP	750HM	1	
IN	SPDIFIN_COMP_R	750HM	1	
IN	SPDIFIN_COMP_R1	750HM	1	
IN	SPDIFIN_C3	750HM	1	
IN	SPDIFIN_COMP2	750HM	1	
IN	SPDIFIN_COMP2_Q	750HM	1	
IN	F_SPDIFIN	750HM	1	
OUT	XTALIN	500HM	1	
OUT	XTALOUT	500HM	1	
OUT	XTALSSIN	500HM	1	
OUT	XTALOUTBUFF	500HM	1	

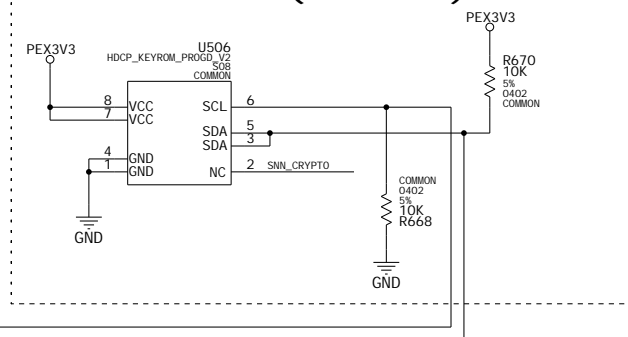
GPI O & JTAG



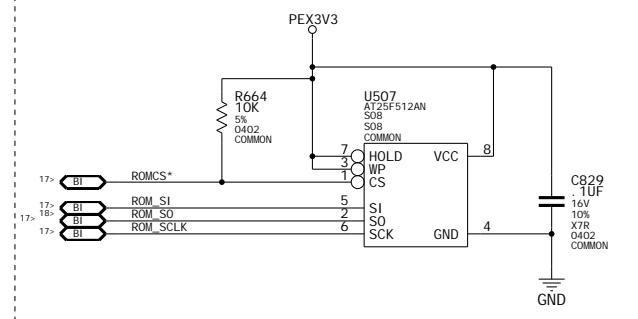
2- π n/4- π n Fan Control



HDCP ROM (serial)



BIOS ROM(serial)



	NETNAME	MIN_LINETHICKNESS	VOLTAGE
(B1)	THERMDC	10MIL	
(C1)	THERMDA	10MIL	
(B1)	FAN_PWM_B	12MIL	
(B1)	FAN_PWM_C	12MIL	
(B1)	FAN_PWM_D	12MIL	

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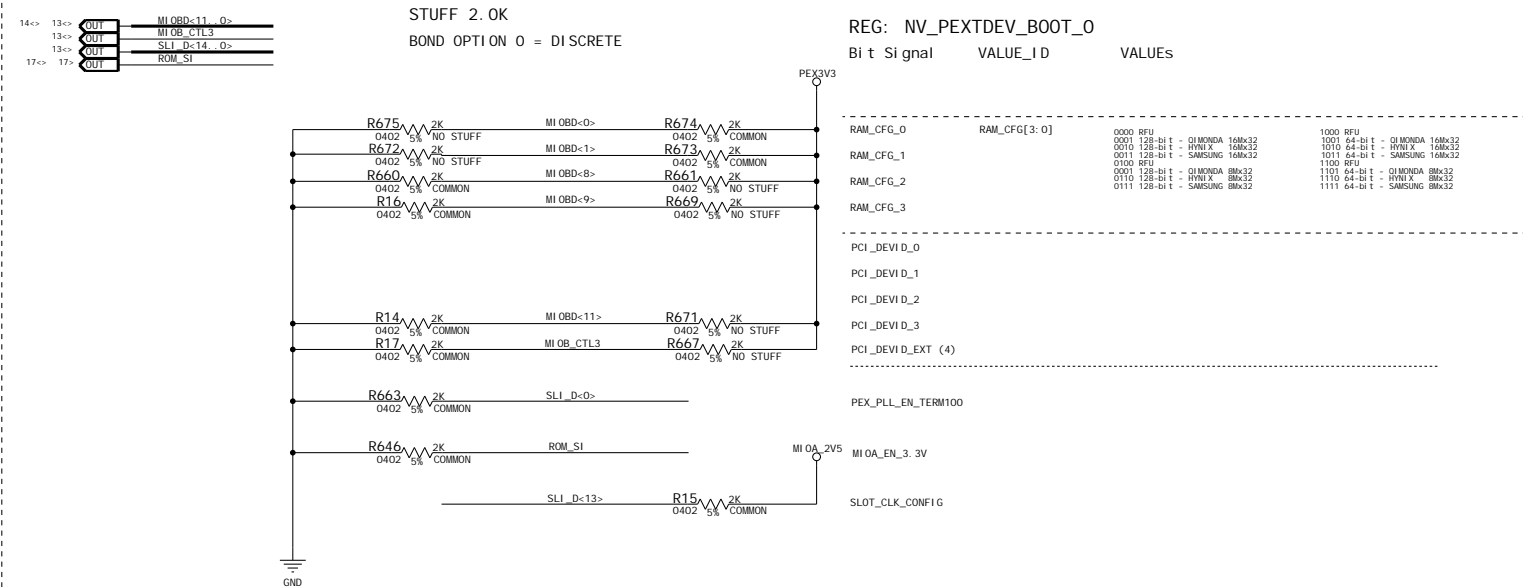
2701 SAN TOMAS EXPRESSWAY



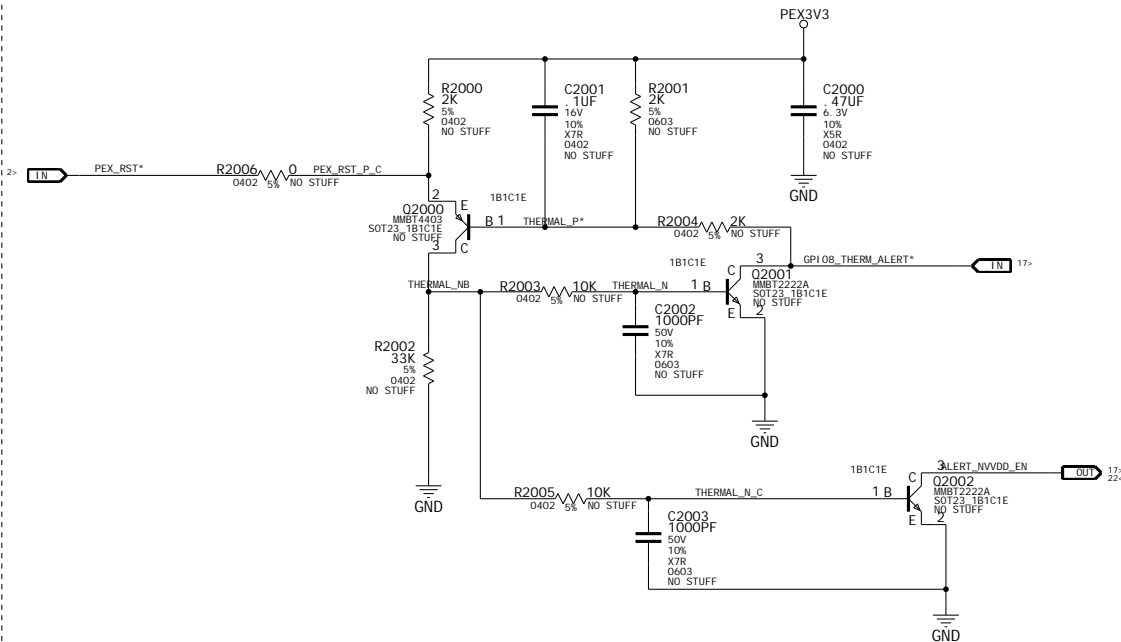
NV_PN	600-10401-0000-200 B		
ID	p401_a02	PAGE	17 OF 22
NAME	APATEL	DATE	16-JAN-2007

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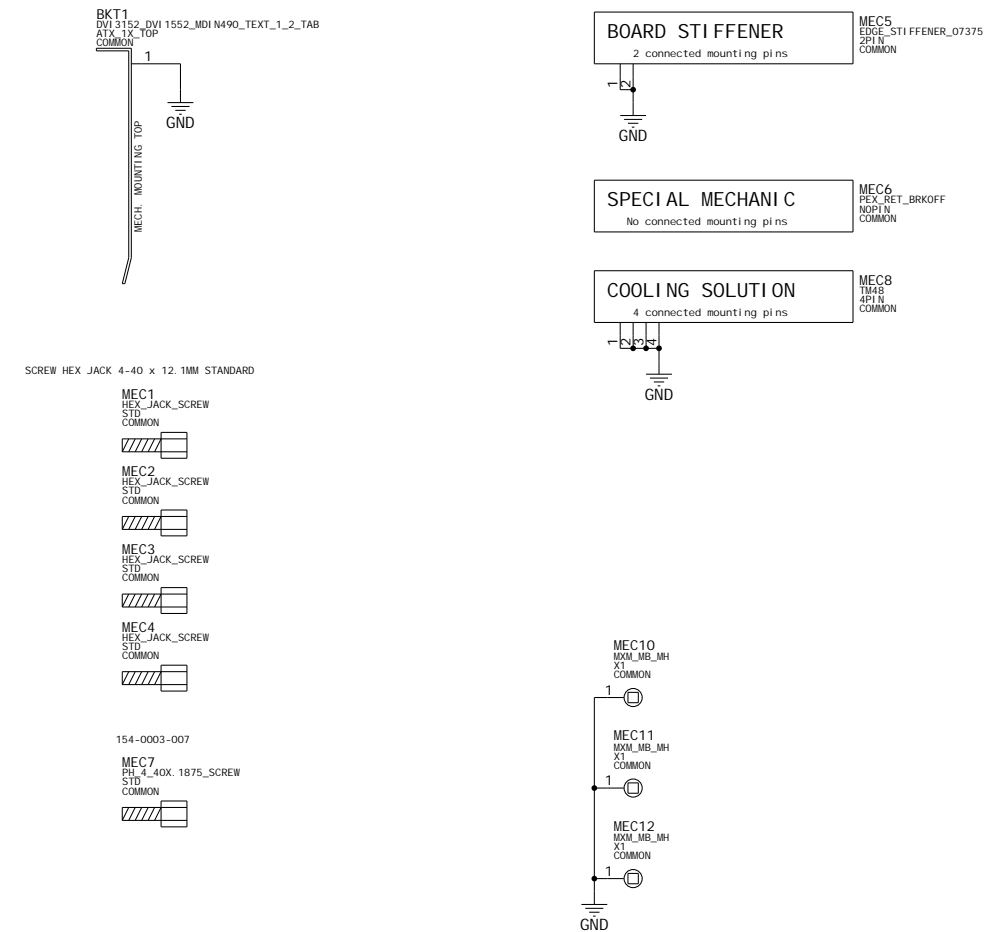
Strap Configuration



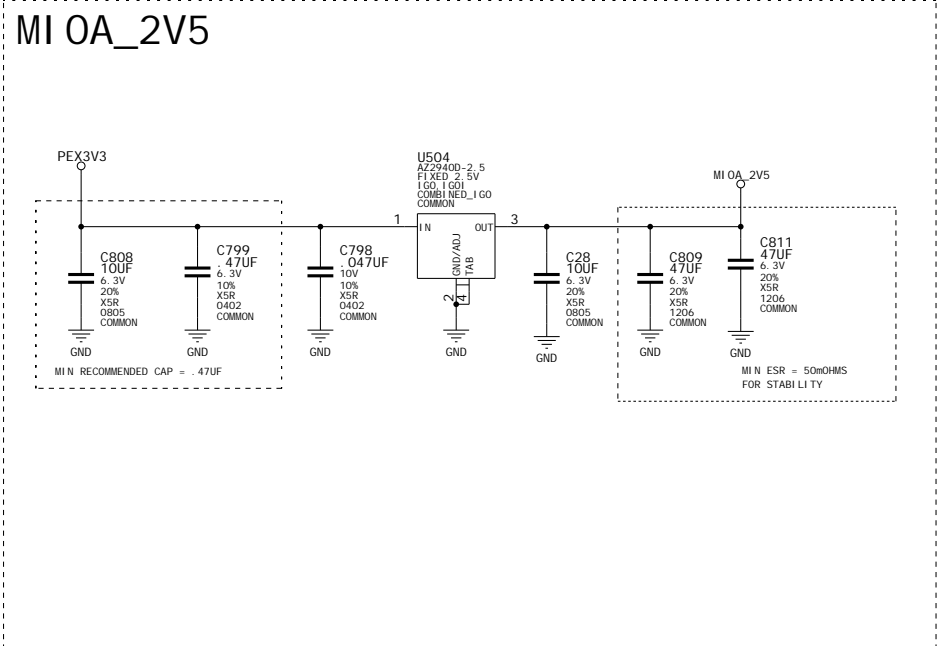
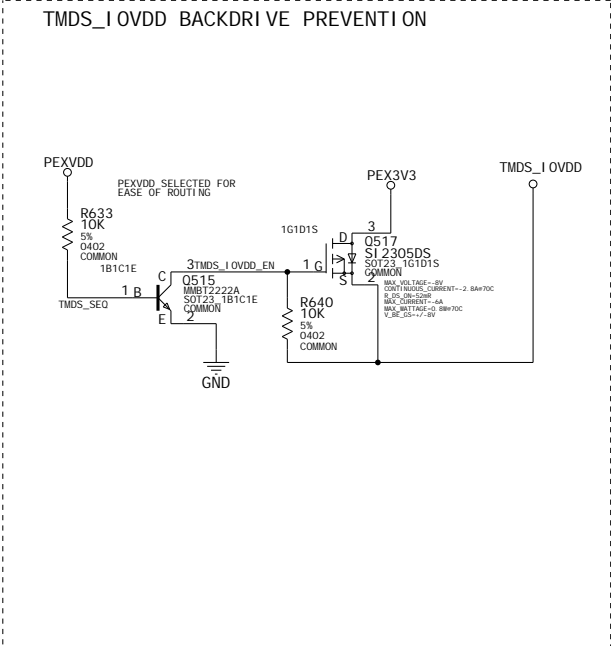
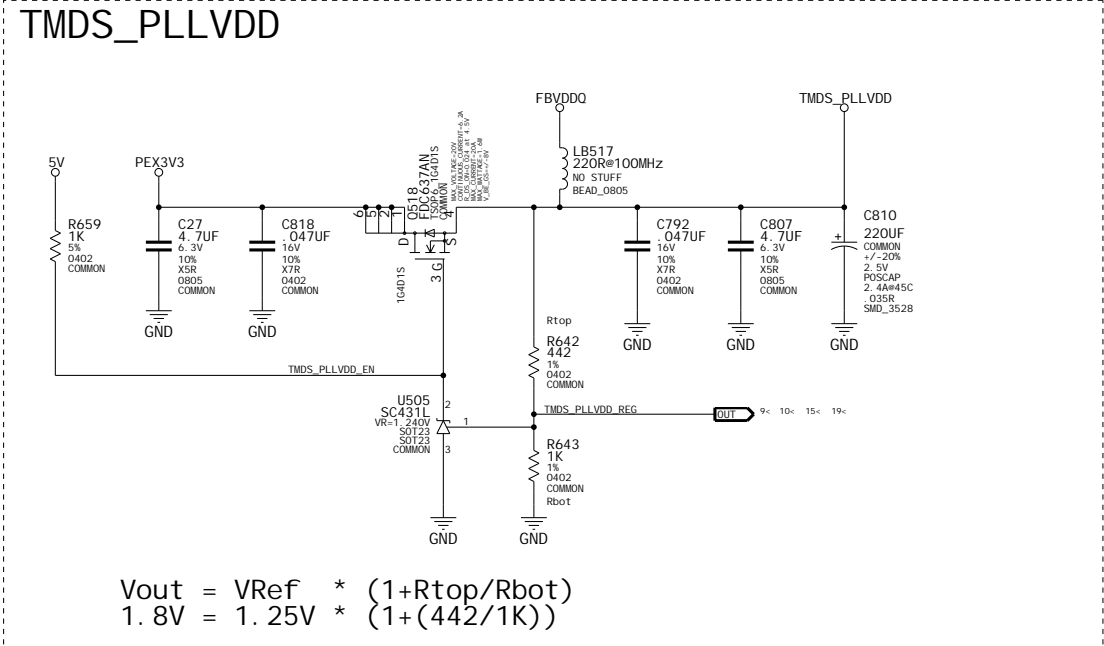
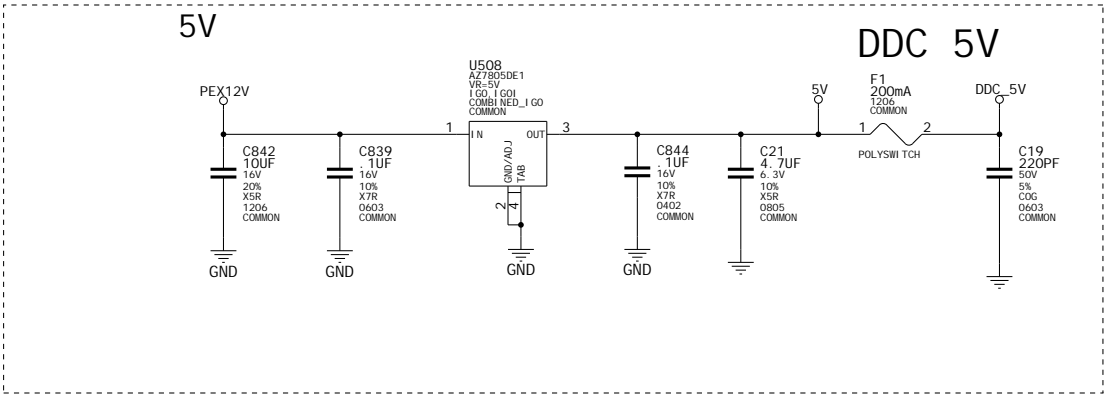
Thermal Protection



Mechanical & Thermal s



	NET	MIN_LENGTH	WIDTH	VOLTAGE	MAX_CURRENT
	5V	18MIL	12MIL	5V	0.400A
	DDC_5V	12MIL	10MIL	5V	0.100A
	TMDS_PLLVDD	16MIL	10MIL	1.8V	0.100A
	TMDS_I0VDD	16MIL	10MIL	3.3V	0.200A
	MIOA_2V5	16MIL	12MIL	2.5V	0.300A



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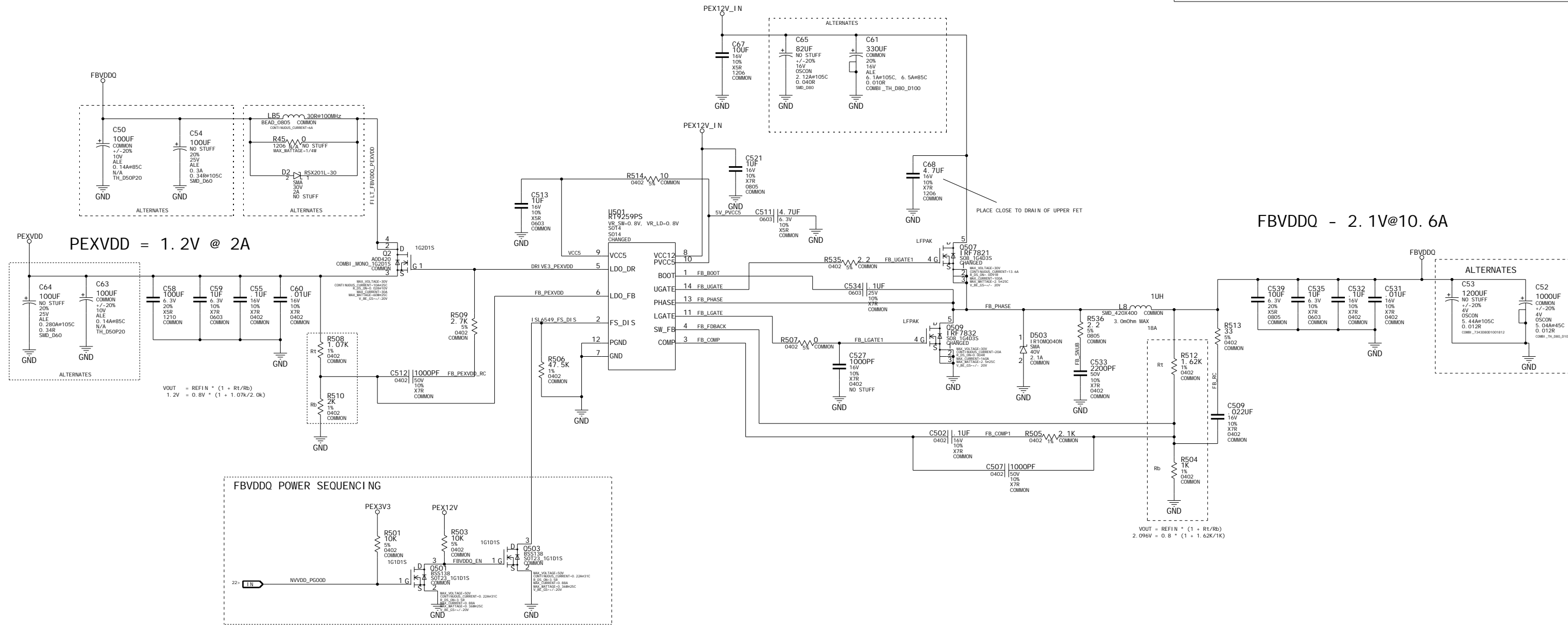
ASSEMBLY	G84-400/700/1000GHz 256MB 16Mx32 BGA136 GDDR3 DVI-I-DL+DVI-I-DL+HDTV-Out
PAGE DETAIL	PowerSupply I - 5V, DDC5V, TMDS_PLL, TMDS_I0VDD, and MIOA_2V5

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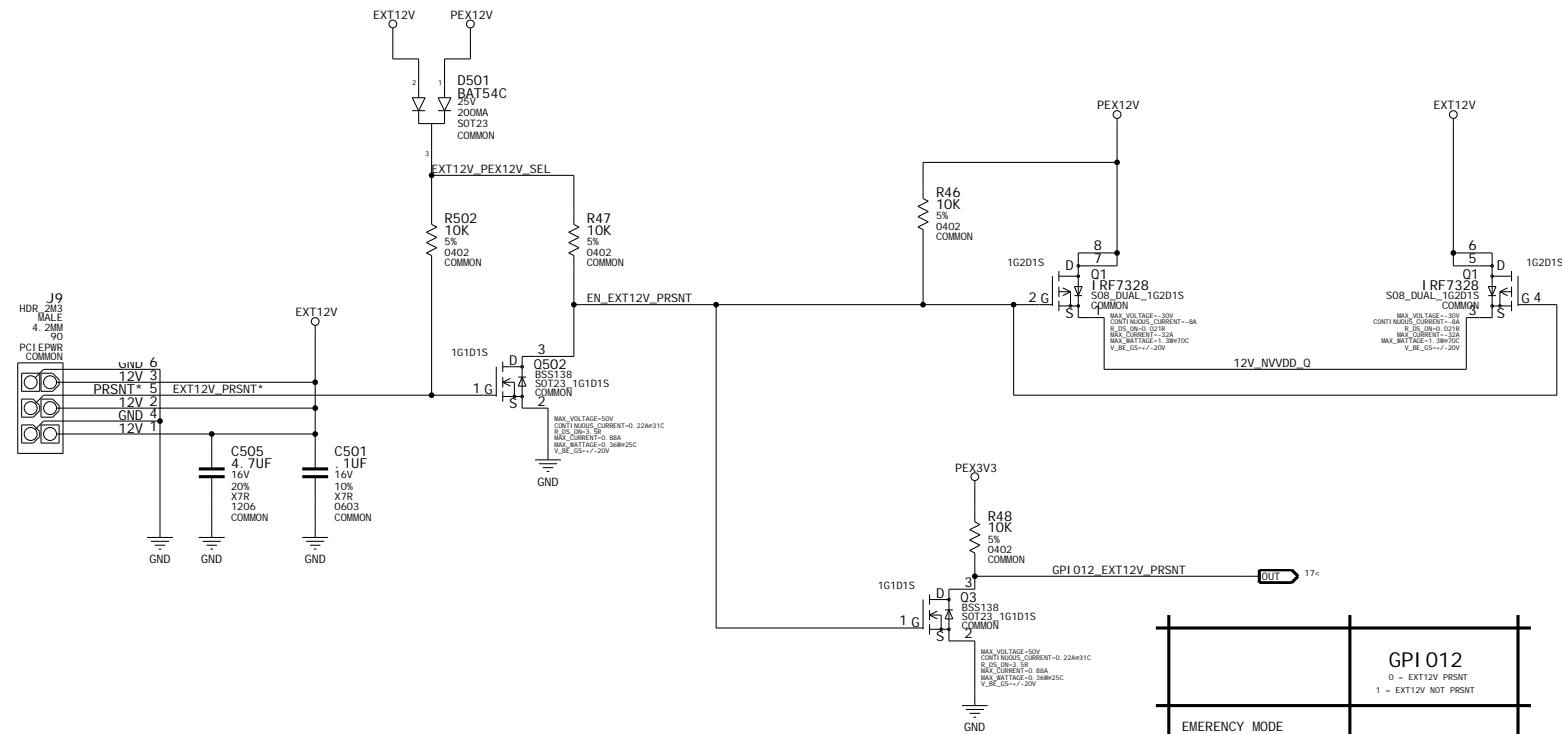
NV_PN	600-10401-0000-200 B		
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NET	MIN_LINE_WIDTH	VOLTAGE	NV_NET_MAX_CURRENT
FBVDDQ	30MIL	2.1V	12A
FB_BOOT	25MIL		
FB_UGATE	30MIL		
FB_UGATE1	30MIL		
FB_PHASE	30MIL		
FB_LGATE	30MIL		
FB_LGATE1	30MIL		
FB_FDBACK	12MIL		
FB_COMP	12MIL		
FB_COMP1	12MIL		
FB_SNUB	20MIL		
FB_RC	12MIL		
5V_PVCC5	20MIL		
VCC5	20MIL		
ISL6549_FS_DIS	12MIL		
FBVDDQ_SEQ	12MIL		
FBVDDQ_EN	12MIL		

PEXVDD	30MIL	1.2V	2A
FILT_FBVDDQ_PEXVDD	30MIL		
DRI_VE3_PEXVDD	20MIL		
FB_PEXVDD	20MIL		
FB_PEXVDD_RC	20MIL		

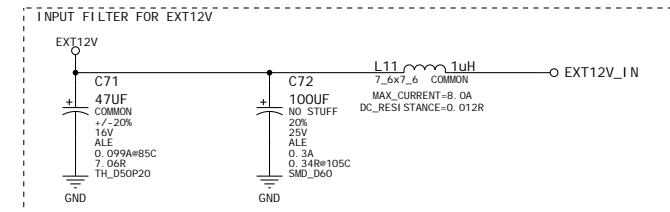
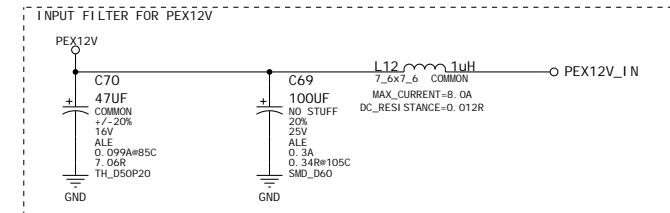


Input Selection for NVVDD

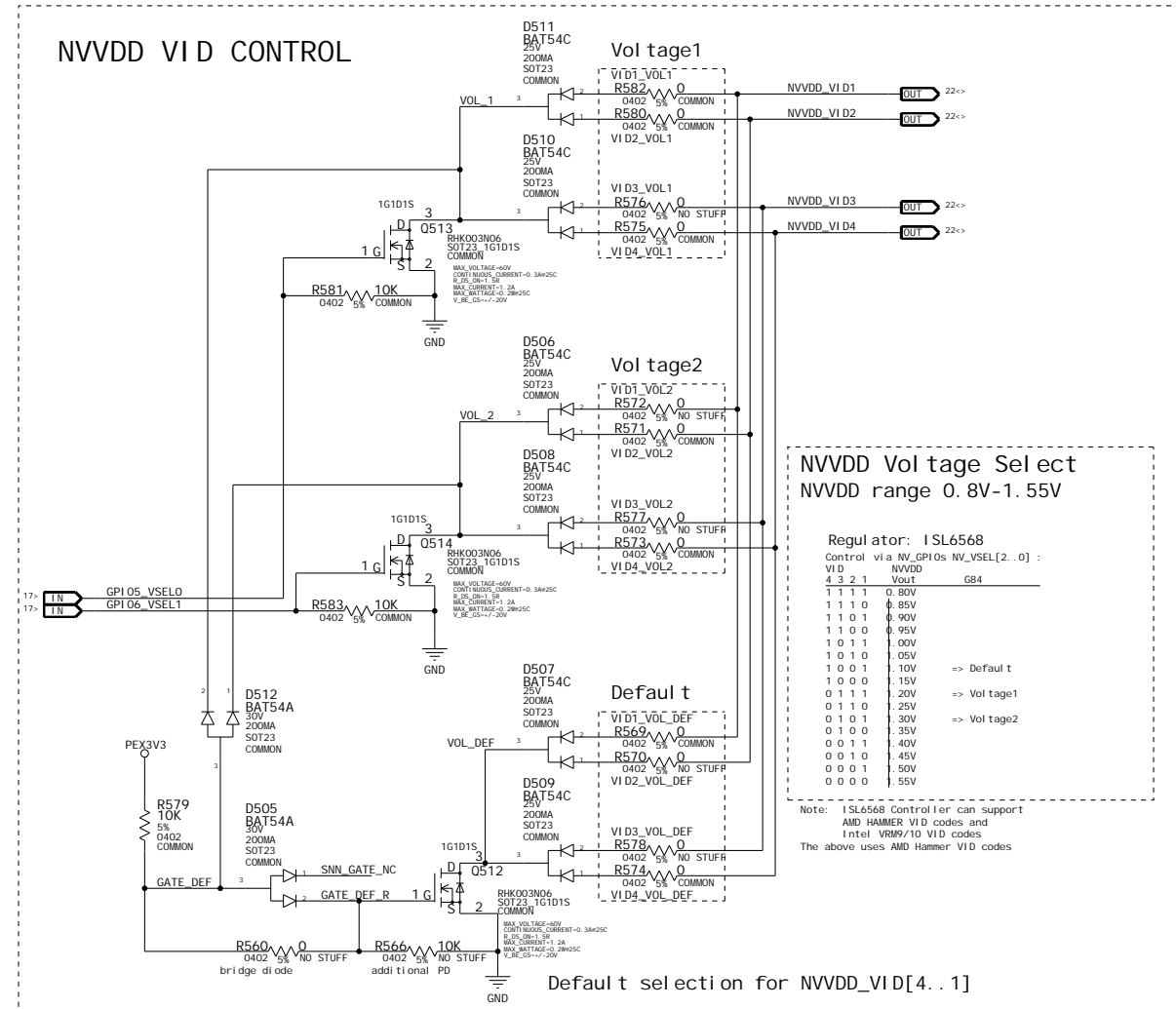


	<p>GPI 012</p> <p>0 - EXT12V, PRSNT 1 - EXT12V, NOT PRSNT</p>
EMERGENCY MODE (NO EXT_12V and BRI CK_12V)	1
150W POWER MODE	0

	NET	MIN_LINENWIDTH	VOLTAGE	IVNET_MAXCURRENT
EXT12V _O	EXT12V	50MIL	12V	6.25A
PEX12V_IN _O	PEX12V_IN	50MIL	12V	5.5A
EXT12V_IN _O	EXT12V_IN	50MIL	12V	6.25A
	12V_NVDIO_0	24MIL	12V	3A



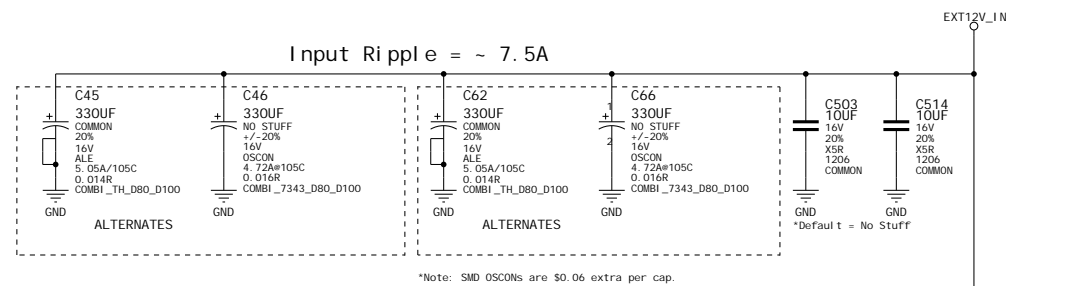
NVVDD VI D CONTROL



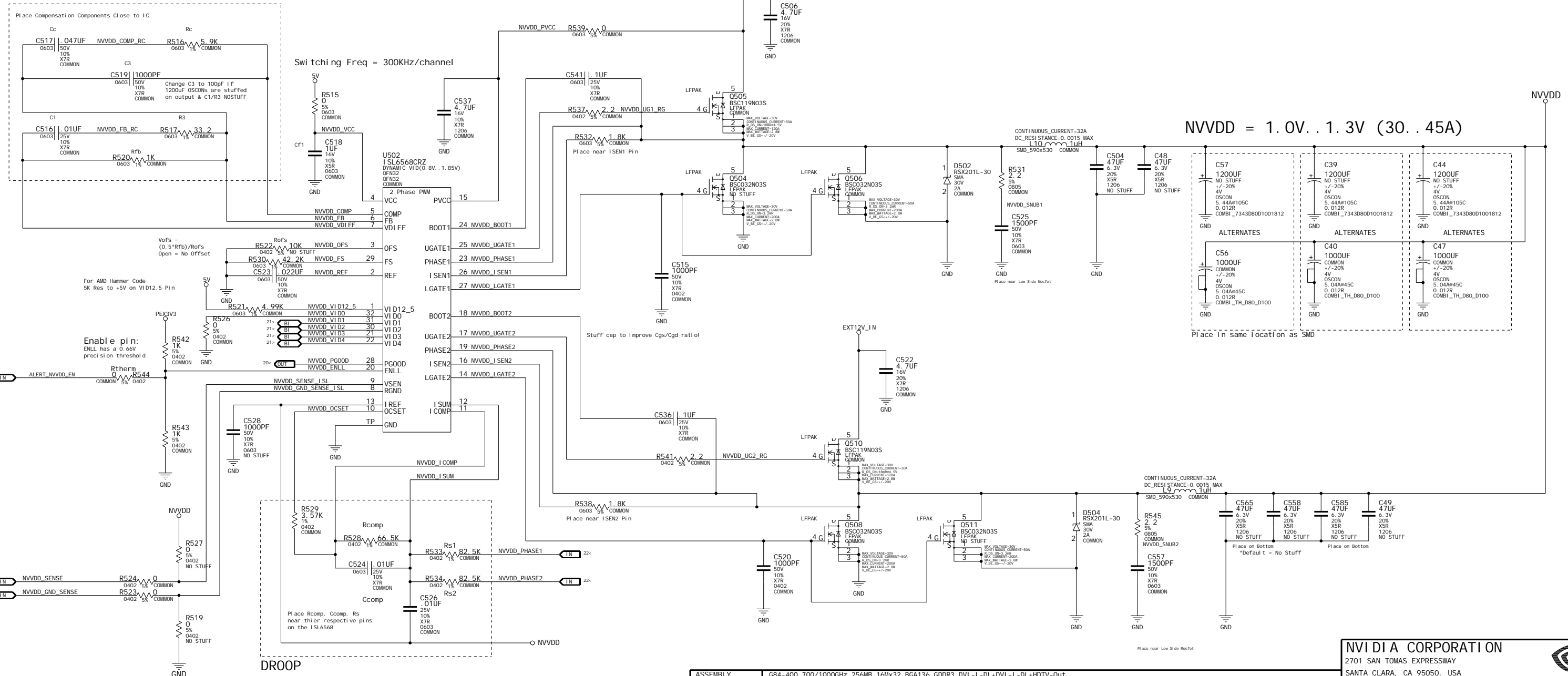
NVI DI A CORPORATI ON 2701 SAN TOMAS EXPRESSWAY SANTA CLARA, CA 95050, USA			
NV_PN 600-10401-0000-200 B			
ID	p401_a02	PAGE	21 OF 22
NAME	APATEL	DATE	16-JAN-2007

NVVDD NET RULES

	NET	VOLTAGE	MAX_CURRENT	MIN_WI_DTH
NVVD0	NVVD0	1.3V	40A	20MIL
	NVVD0_PVCC	12V	0.003A	20MIL
	NVVD0_VCC	5V	0.02A	20MIL
	NVVD0_BOOT1			20MIL
	NVVD0_UGATE1			20MIL
	NVVD0_UG1_RG			20MIL
	NVVD0_PHASE1		20A	20MIL
	NVVD0_LGATE1			20MIL
	NVVD0_LG1_AC			20MIL
	NVVD0_BOOT2			20MIL
	NVVD0_UGATE2			20MIL
	NVVD0_UG2_RG			20MIL
	NVVD0_PHASE2		20A	20MIL
	NVVD0_LGATE2			20MIL
	NVVD0_LG2_AC			20MIL
	NVVD0_ISEN1			20MIL
	NVVD0_ISEN2			20MIL
	NVVD0_SNUB1			12MIL
	NVVD0_SNUB2			12MIL
	NVVD0_COMP			12MIL
	NVVD0_FB			12MIL
	NVVD0_COMP_RC			12MIL
	NVVD0_FB_RC			12MIL
	NVVD0_VDIFF			12MIL
	NVVD0_I_SUM			12MIL
	NVVD0_I_COMP			12MIL
	NVVD0_OCSET			12MIL
	NVVD0_REF			10MIL



Compensation



ASSEMBLY	G84-400 700/1000GHz 256MB 16Mx32 BGA136 GDDR3 DVI-I-DL+DVI-I-DL+HDTV-Out
PAGE DETAIL	Power Supply IV - NVVDD

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