P162, NV34, 8Mx16DDR, 128bit, 128MB, DVI, TV OUT, VGA

Page Overview

P160 HISTORY:

X00	INITIAL VERSION
X01	Cleaned up schematics - changes from initial design review meeting
X02	Imported board file #65 and synchronized with latest version of schematics.
X03	Nov 18/02 - Replaced LB502 with an 805 bead, changed PLLVDD rail to 3V3 instead of A3V3, and removed AGPVDDQ deoupling caps C130, C257, and C570.
X04	Nov 21/02 - C75 is changed to decouple 3V3 to GND.
X05	Nov 22/02 - VIP interface rail changed to 3V3 instead of A3V3 due to short between VIPVDDQ and VDD33.
X06	Nov 25/02 - FRWR_VAUXP rail changed to 3V3.
X07	Nov 26/02 - Changed DACB_LOAD_TEST GPIO assignment for NV34.
X08	Dec 02/02 - AGP_PLL_VDD and FB_DLLVDD are supplied from A3V3 rail.

P162-A00 History:

1-Added P162 specific features:

- SW PS,TMDS LinkA, Backdrive, new slim VGA, Fan Cntl.
- Added Current sharing, TMDS IO and PLL linear regulators.

2-Added TH parts in PS section as ALT.
3-Added SST serial support.
4-Changed AGP_PLL_VDD, FB_PLLVDD, DAC_A/B_VDD and PLL_VDD to A3V3.
5-Added 10 caps as part of P160 sync up.
6-Added PU resitors on Jtag TMS and TDI
7-Incorporated recommendations from PS Vendor.
8-Added extra X elements near connectors to bridge CGND and GND cut.
9-Added an option to use a single dual FET for low end bd.
10-Fixed error on 6529 power good and current supplement.
11-Changed C302 to 0603 (too big pkg for .1uf in 0805)
12-Deleted C296 and C293 (shared them with C313, C324)
13-Changed C329 and C324 to 0603 pkg.
14-Removed alternate Semtech SW (could not route).

Changes after the design review:

1-Remove C301 and R137-left over from Semtech PS circuit.
2-Remove sync buffer bypass resistors.
3-Remove R122 and R123 from Intersil power rails.
4-Add snubber circuit for NVVDD PS.
5-Add PD res on TP_XTALOUTBUF to terminate the signal.
6-Fan controler PU to 3V3 from A3V3.
7-Cleaned up Unnamed nets.

==========

8-Split CGND into 2 nets (added CGND1 to J6.25 and J2. 16).
9-Added PD resistor on FAN_ON.
10-Added 8 caps for DQS/DQM routings that break plane reference.

X-RELEASE.

P162-A01 History:

Merged net IFPBIOVDD with IFPAIOVDD.
Merged Q4 and Q5 into one package.
Implemented TV signal return scheme thru zero Ohm resistors.

P162-A02 History:

The main changes for this revision is to improve routing for DAC B and add 100ps inter-pair skew to pass EMC as modeled on A01 board. See 149- document for detail.

P162-A03 History:

Merged CGND and GND to become GND net to pass EMI at 16x12. This modificaiton was tested on P162-A02

600-10162-0000-003

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DETAIL	DRAWING DETAIL CONTINUED...		
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NV18/NV3X AGP SECTION AND AGP CONNECTOR

AGP BUS NET_SPACING_TYPE

NV_VREF	12MIL_TRACE	10MIL
AGP_VREFGC	12MIL_TRACE	10MIL
AGP_VREFCG	12MIL_TRACE	10MIL
AGPSTOP		10MIL
AGPMBDET		10MIL
SBA<7..0>		20MIL
SBSTB		25MIL
SBSTB*		25MIL
AGPSTB0		25MIL
AGPSTB0*		25MIL
AGPSTB1		25MIL
AGPSTB1*		25MIL
AGPSTO		15MIL
AGPST1		15MIL
AGPST2		15MIL
PCIDEVSEL*		10MIL
PCIPAR		10MIL
PCIINTA*		10MIL
PCIINTB*		10MIL
AGPRBF*		10MIL
AGPWBF*		10MIL
AGPDBI_HI		20MIL
AGPDBI_LO		20MIL
PCIAD<31..0>		20MIL
PCICBE<3..0>		20MIL
PCICLK		20MIL
PCIRST*		10MIL
PCIREQ*		10MIL
PCIGNT*		10MIL
PCIFRAME*		10MIL
PCIIRDY*		10MIL
PCITRDY*		10MIL
PCISTOP*		10MIL

NO STUFF

CN501 CON_AGP

U8 NV34_DKTP_V_A1 BGA701 COMMONCHG

1/11 PCI/AGP

AGP 2x,4x | AGP 8x

Split plane decoupling place top, near AGP connector

Split plane decoupling place bottom, near PCICLK

AGPVDDQ Decoupling

NVVDD Decoupling

3V3 Decoupling

NOT USED ON NV18

If easier to connect use A3V3 instead of 3V3

For NV18B A02 and lower R92 = 56.2

For NV18B rev A02 and lower R101= 121K
For NV18B rev A03 and higher and NV31/34r R101= 158K

[..] = NOT USED ON NV18
[...] = NOT USED ON NV31/34

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DETAIL	NVxx AGP Section and AGP connector		
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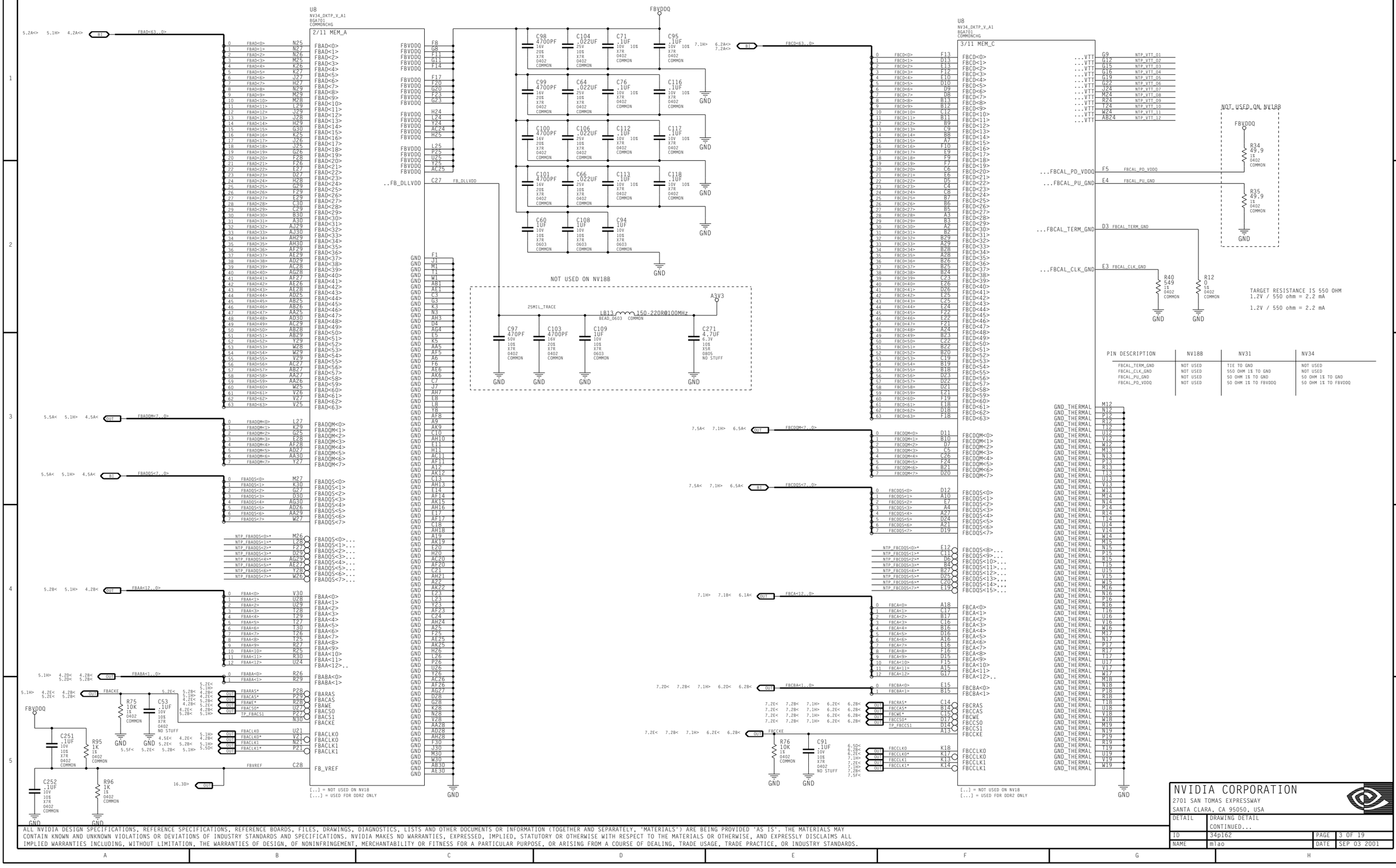

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DETAIL	DRAWING DETAIL		
	CONTINUED...		
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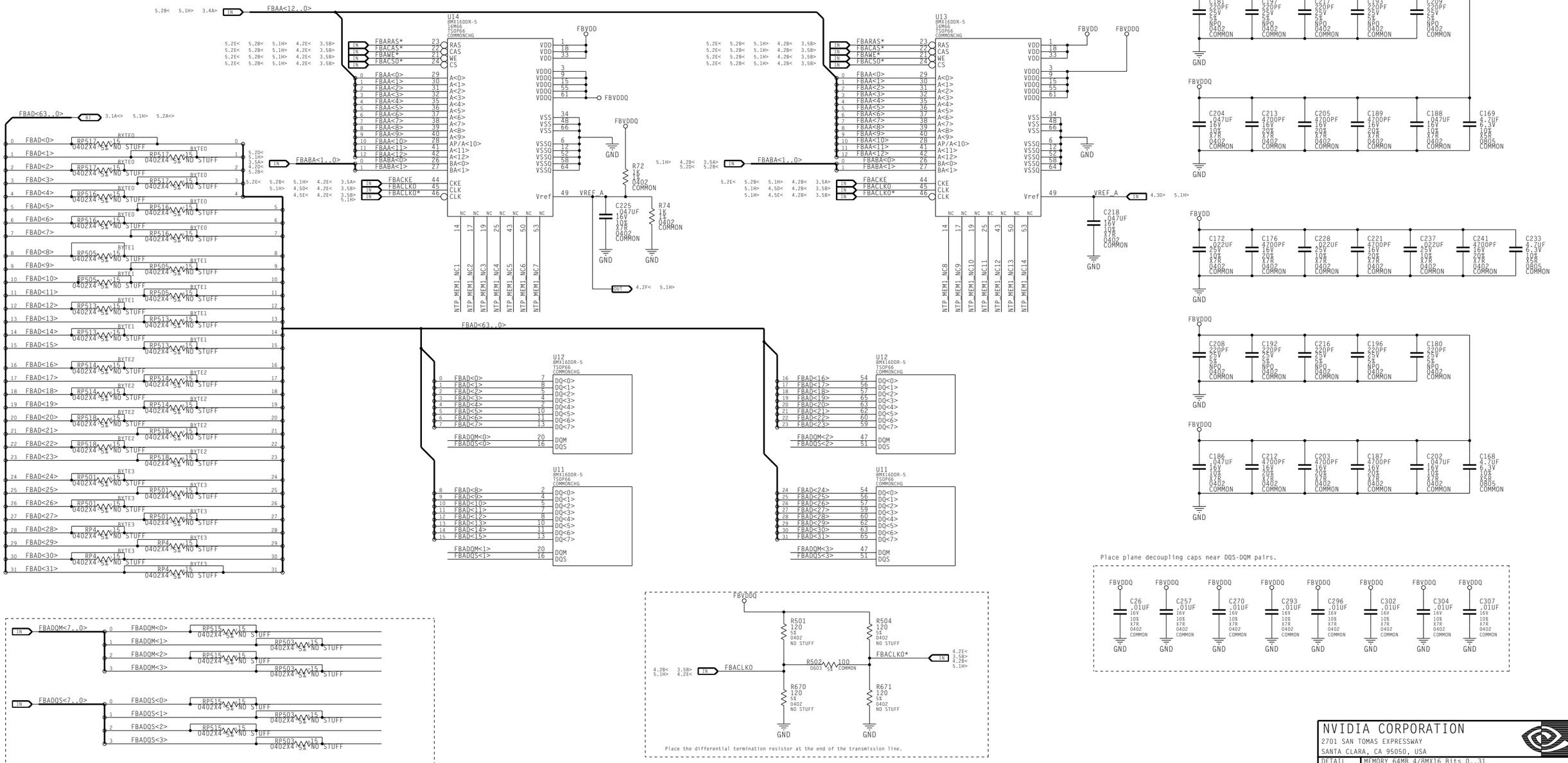
MEMORY 1st bank 0..31
PLACE ALL DISCRETE COMPONENTS AS NEAR AS POSSIBLE TO MEMORY

NV31 FB i/f can be configured in two ways:
2x64 bits or 2x32 bits

THIS REQUIRES THAT BOTH PARTITIONS

TO BE CONNECTED TO BE FUNCTIONAL



Place plane decoupling caps near DQS-DQM pairs.

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DETAIL	MEMORY 64MB 4/8MX16 Bits 0..31		
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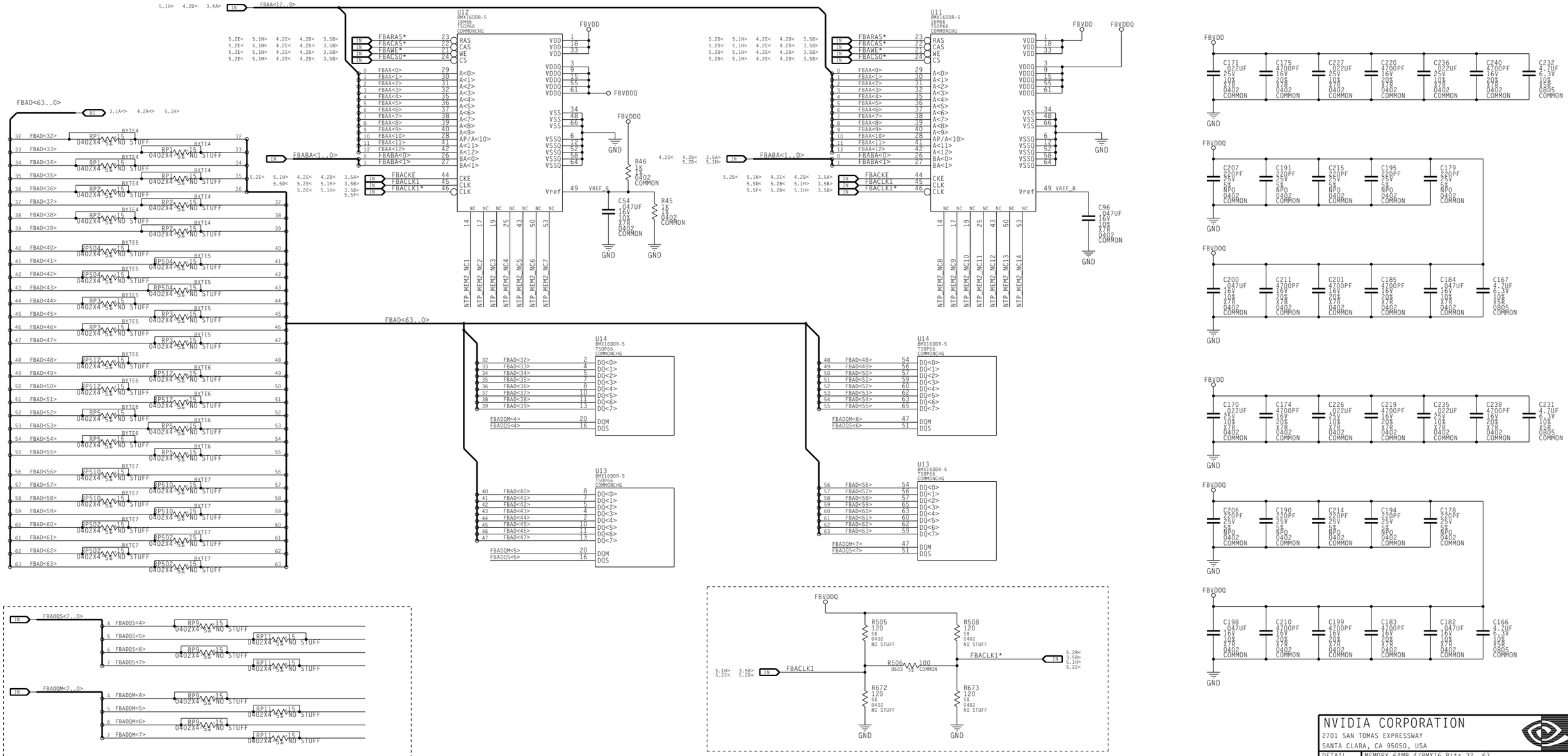
NAME	mlao	DATE	SEP 03 2001

MEMORY 1st bank 32..63
PLACE ALL DISCRETE COMPONENTS AS NEAR AS POSSIBLE TO MEMORY

NET_PHYSICAL_TYPE	NET_SPACING_TYPE	Diffpair
FBACLK0	20MIL_G2G_30MIL	FBACLK0
FBACLK0*	20MIL_G2G_30MIL	FBACLK0
FBACLK1	20MIL_G2G_30MIL	FBACLK1
FBACLK1*	20MIL_G2G_30MIL	FBACLK1
FBAD<63..0>	10MIL	
FBADQM<7..0>	10MIL	
FBADQS<7..0>	15MIL	
FBAA<12..0>	10MIL	
FBARAS*	10MIL	
FBACAS*	10MIL	
FBAWE*	10MIL	
FBACS0*	10MIL	
FBABA<1..0>	10MIL	
FBACKE	10MIL	
VREF_A	12MIL_TRACE	10MIL
VREF_B	12MIL_TRACE	10MIL



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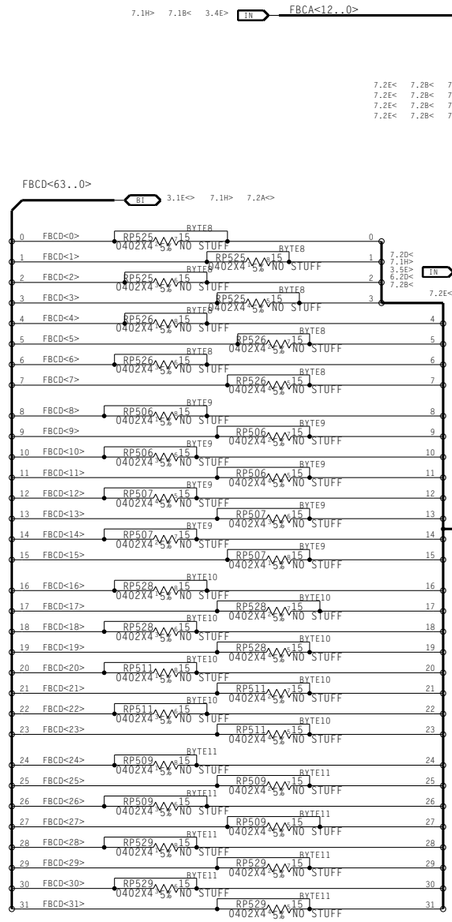
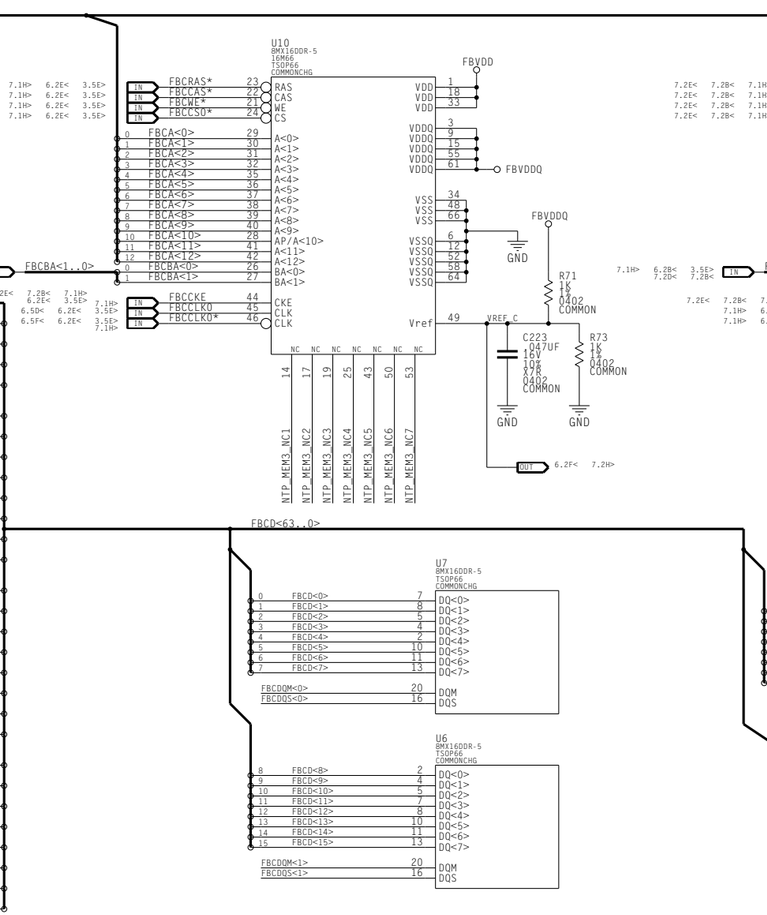
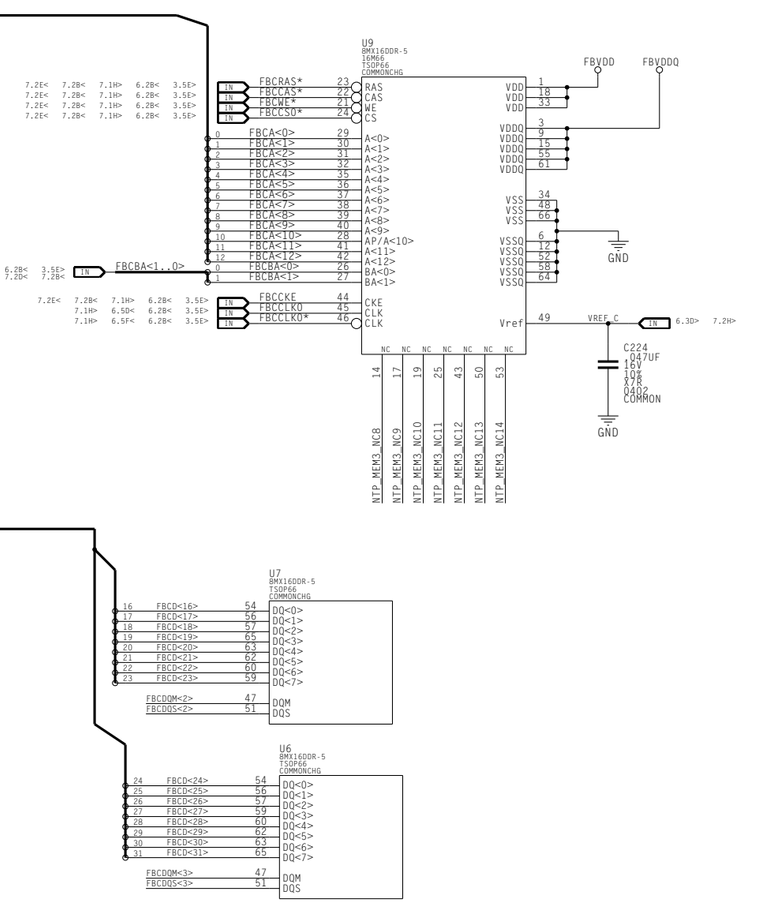
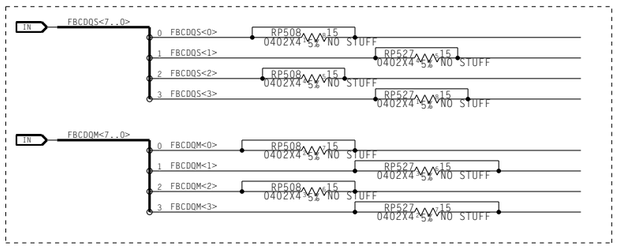
DETAIL	MEMORY 64MB 4/8MX16 Bits 32..63		
ID	34p162	PAGE	5 OF 19
NAME	mlao	DATE	SEP 03 2001

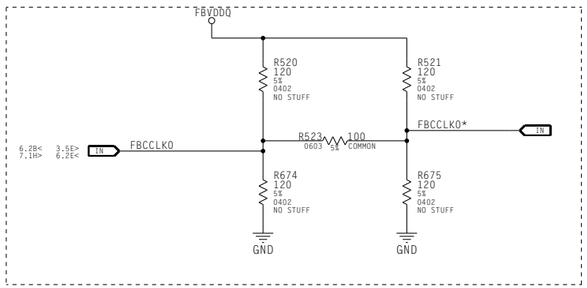
MEMORY 2nd bank 0..31
PLACE ALL DISCRETE COMPONENTS AS NEAR AS POSSIBLE TO MEMORY

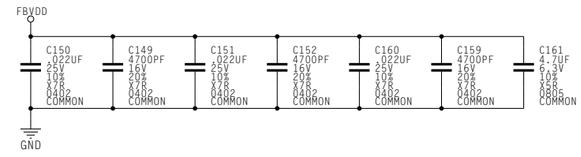


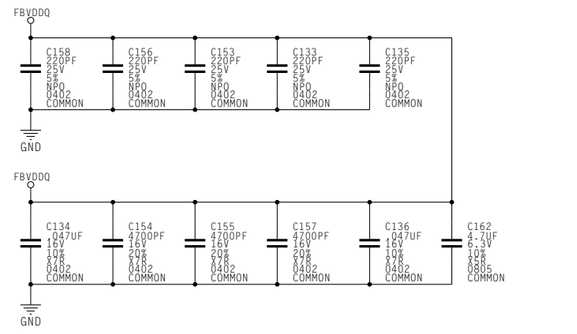


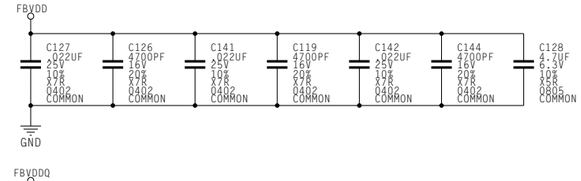


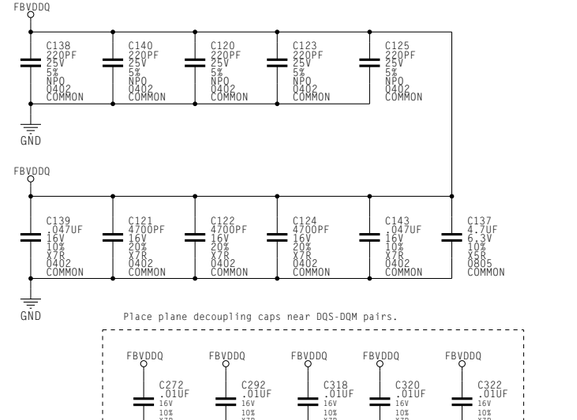




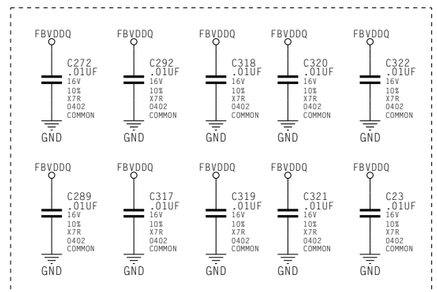








Place plane decoupling caps near DQS-DQM pairs.



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DETAIL	MEMORY 64MB 4/8MX16 Bits 64..95		
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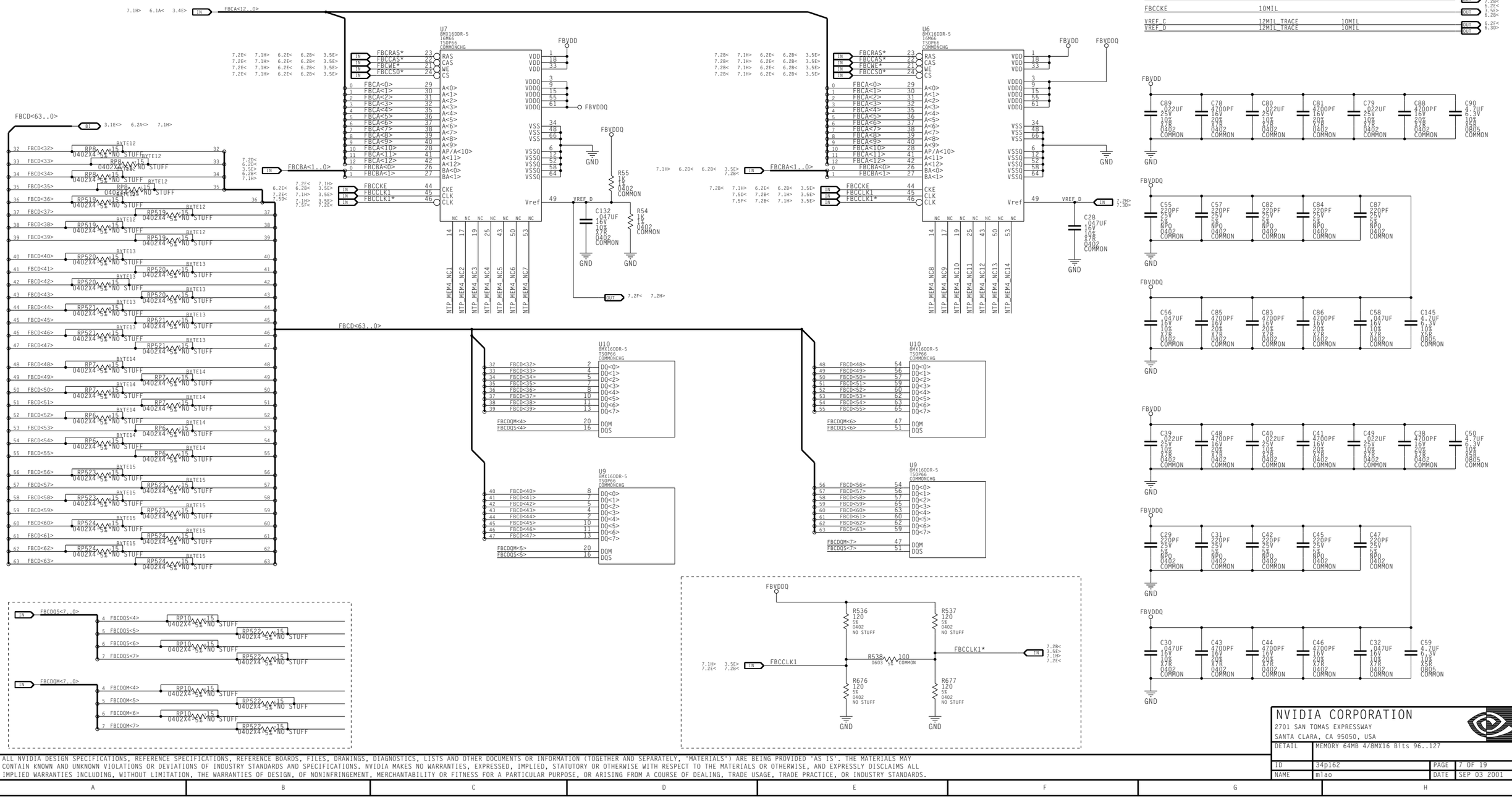
NAME	mlao	DATE	SEP 03 2001

MEMORY 2nd bank 32..63
PLACE ALL DISCRETE COMPONENTS AS NEAR AS POSSIBLE TO MEMORY

NET_PHYSICAL_TYPE	NET_SPACING_TYPE	Diffpair
FBCCLK0	20MIL_G2G_30MIL	FBCCLK0
FBCCLK0*	20MIL_G2G_30MIL	FBCCLK0
FBCCLK1	20MIL_G2G_30MIL	FBCCLK1
FBCCLK1*	20MIL_G2G_30MIL	FBCCLK1
FBCD<63..0>	10MIL	
FBCDQM<7..0>	10MIL	
FBCDQS<7..0>	15MIL	
FBCA<12..0>	10MIL	
FBCRAS*	10MIL	
FBCCAS*	10MIL	
FBCWE*	10MIL	
FBCCS0*	10MIL	
FBCBA<1..0>	10MIL	
FBCCKE	10MIL	
VREF_C	12MIL_TRACE 10MIL	
VREF_D	12MIL_TRACE 10MIL	



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DETAIL	MEMORY 64MB 4/8MX16 Bits 96..127		
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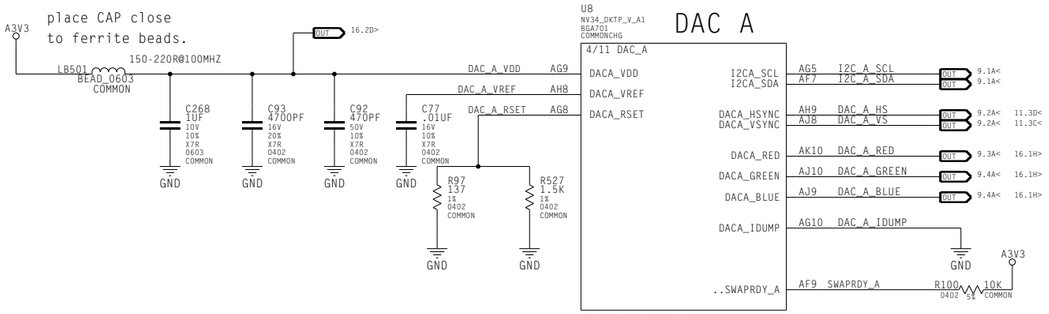
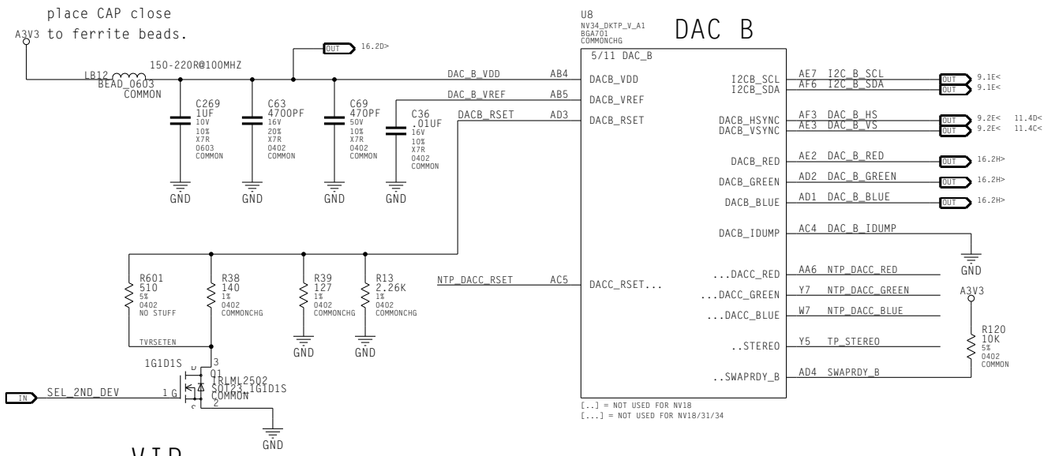
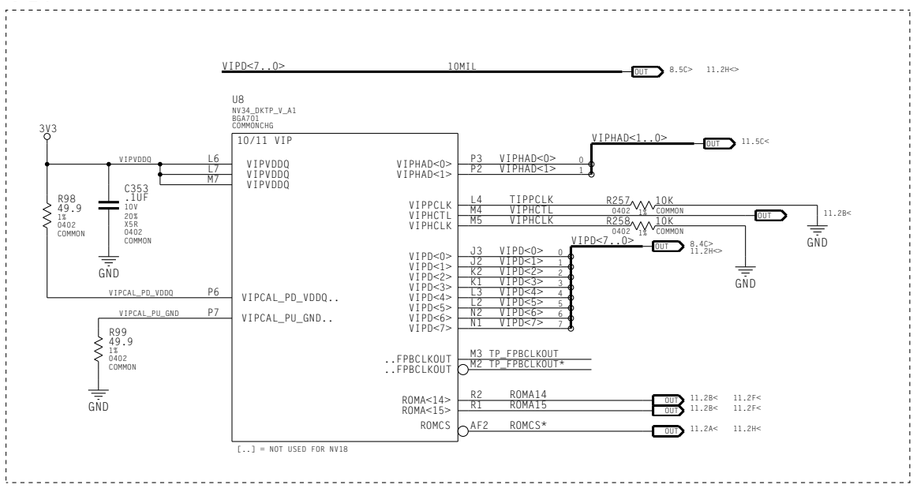
DAC A



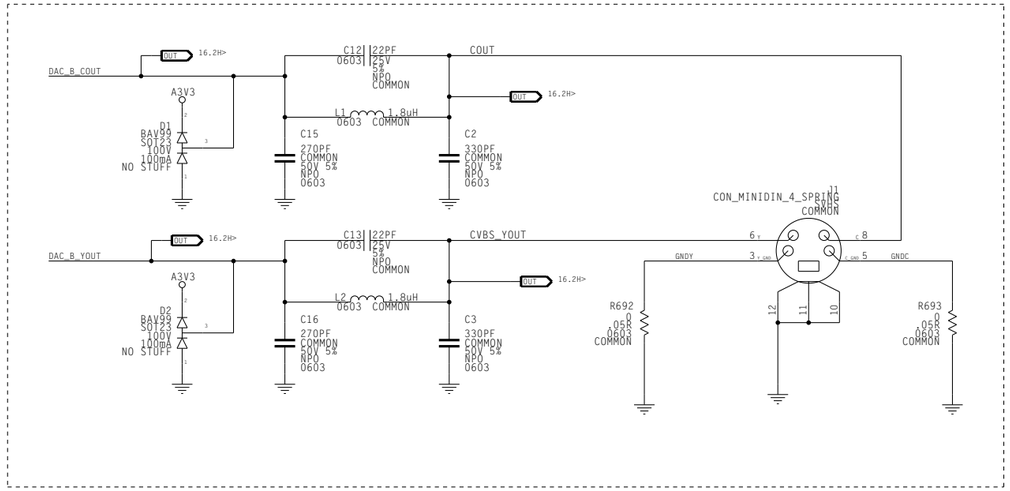
DAC B



VIP

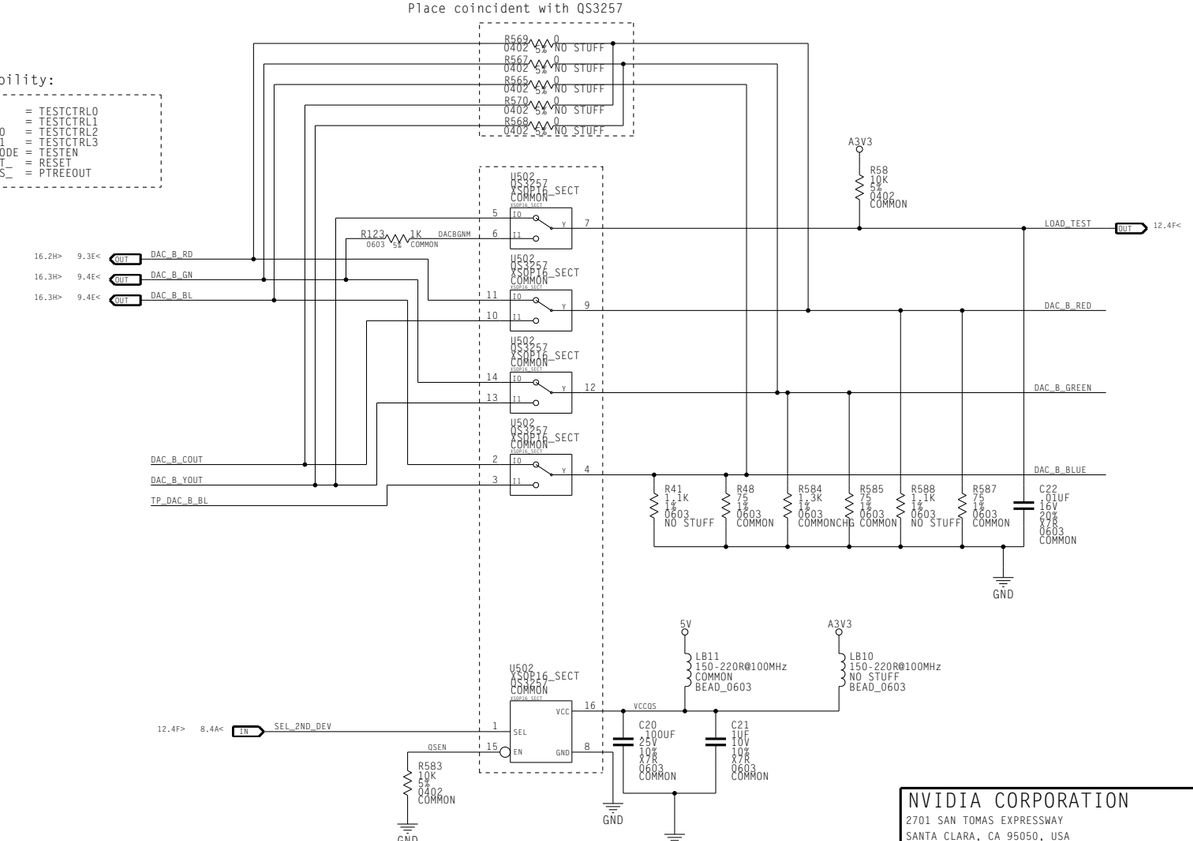


VIDEO OUT , internal DAC



DACB SWITCH BETWEEN VGA OUT AND TV OUT

Place coincident with QS3257



Testability:

```
DVOD8    = TESTCTRL0
DVOD9    = TESTCTRL1
DVOD10   = TESTCTRL2
DVOD11   = TESTCTRL3
TESTMODE = TESTEN
PCIRST_  = RESET
FBACAS_  = PTREEOUT
```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DETAIL	DACA, DACB output, PLL section DACB MUX, DACB TV-out		
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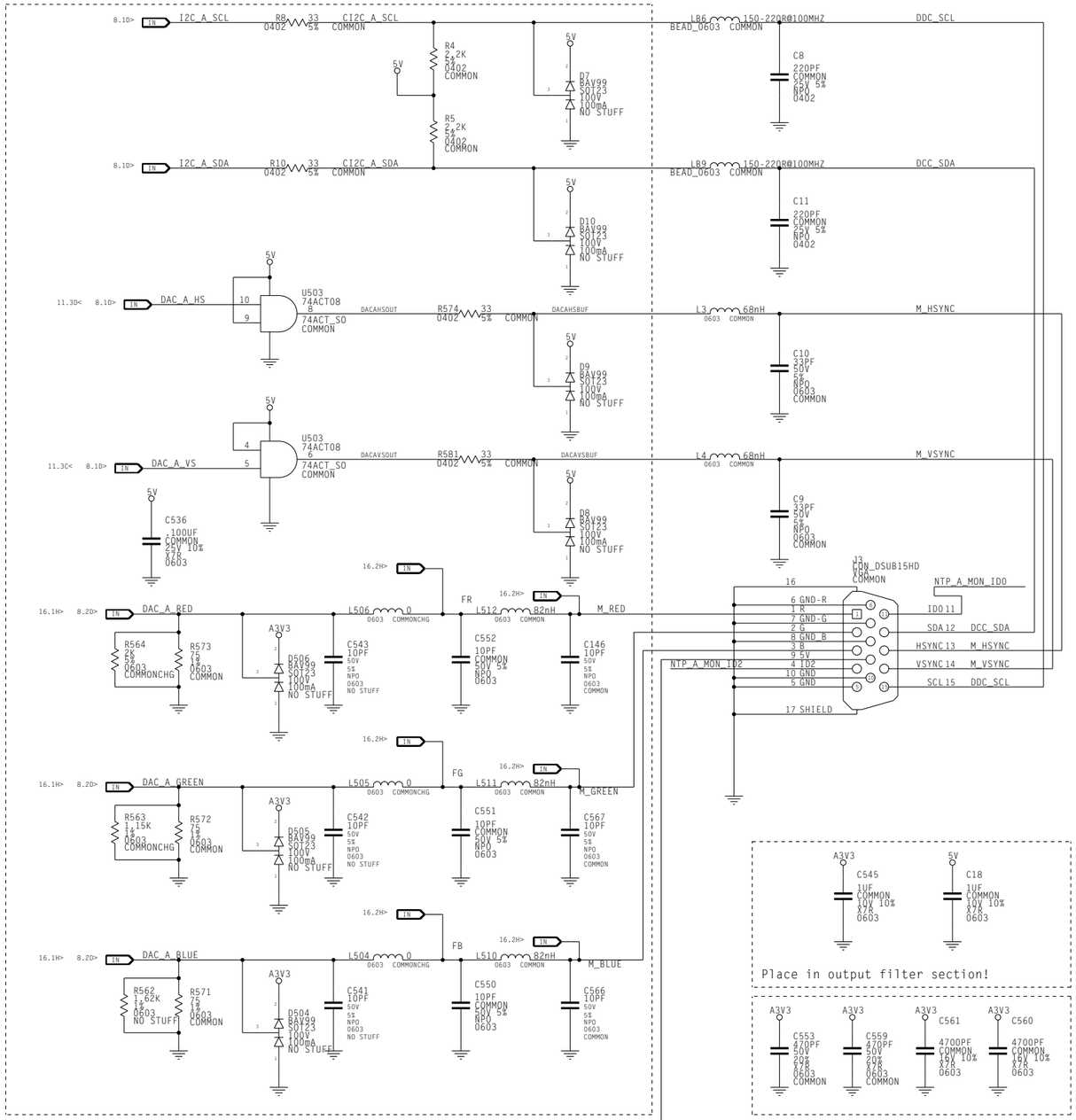
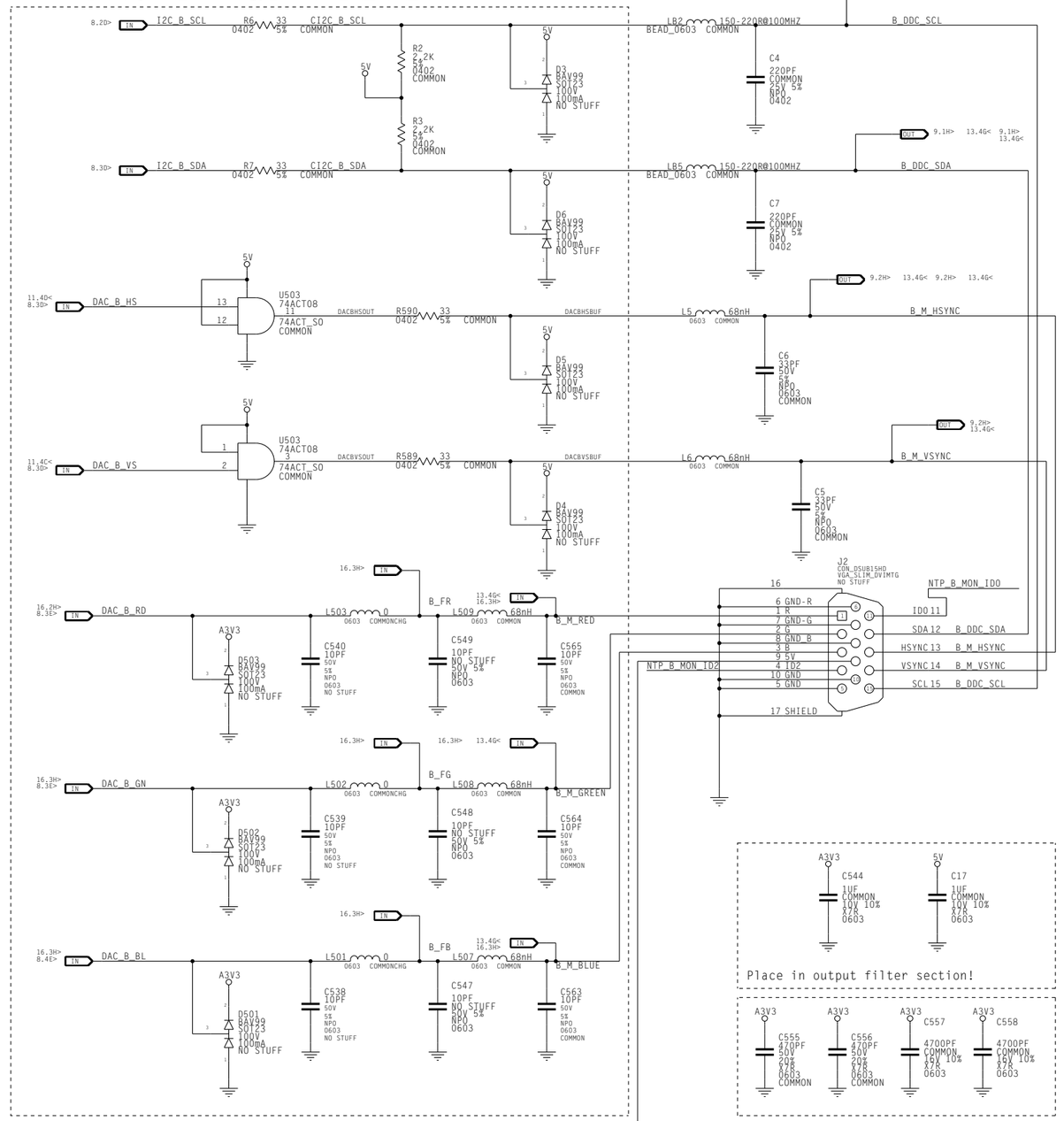
DAC A RGB-FILTER



DAC B RGB-FILTER



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DETAIL	DACA, DACB display filter and connector SYNC amplifier		
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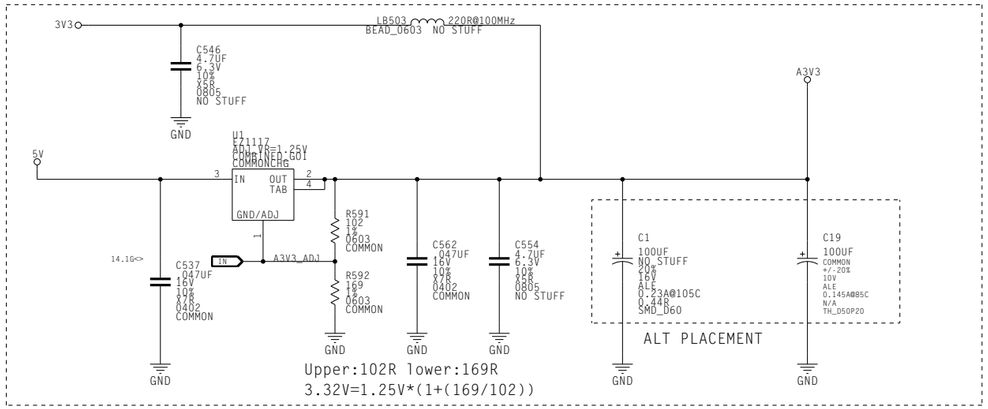
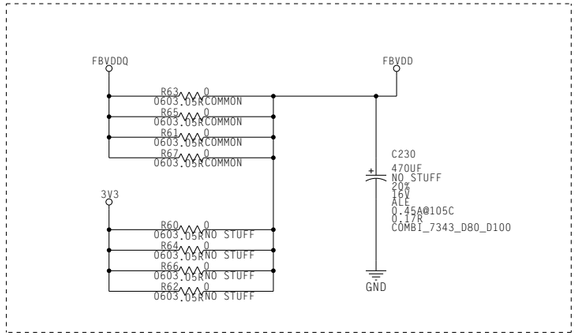
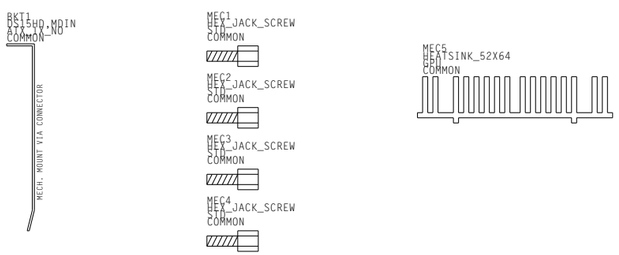
Analog Power Supply



FBVDD 3.3/2.5V





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DETAIL	POWER supply: A3V3,FBVDD,FBVDDQ,NVVDD MECHANICS		
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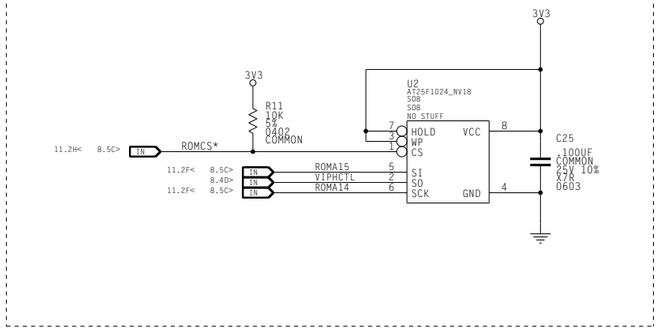
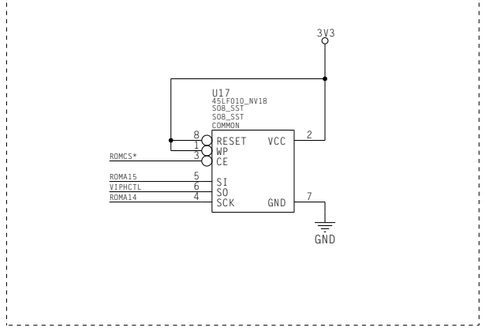
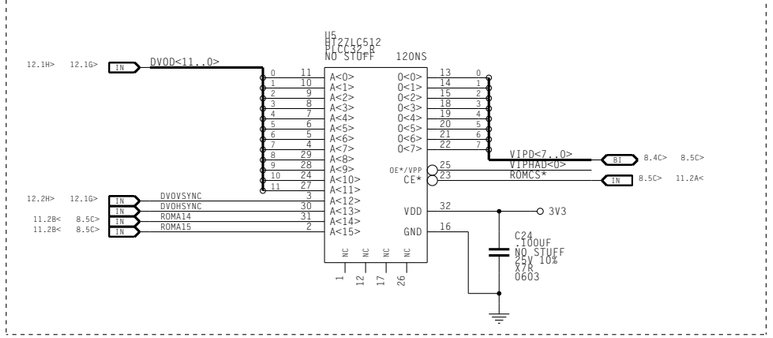
ATL BIOS (ATMEL Serial ROM)



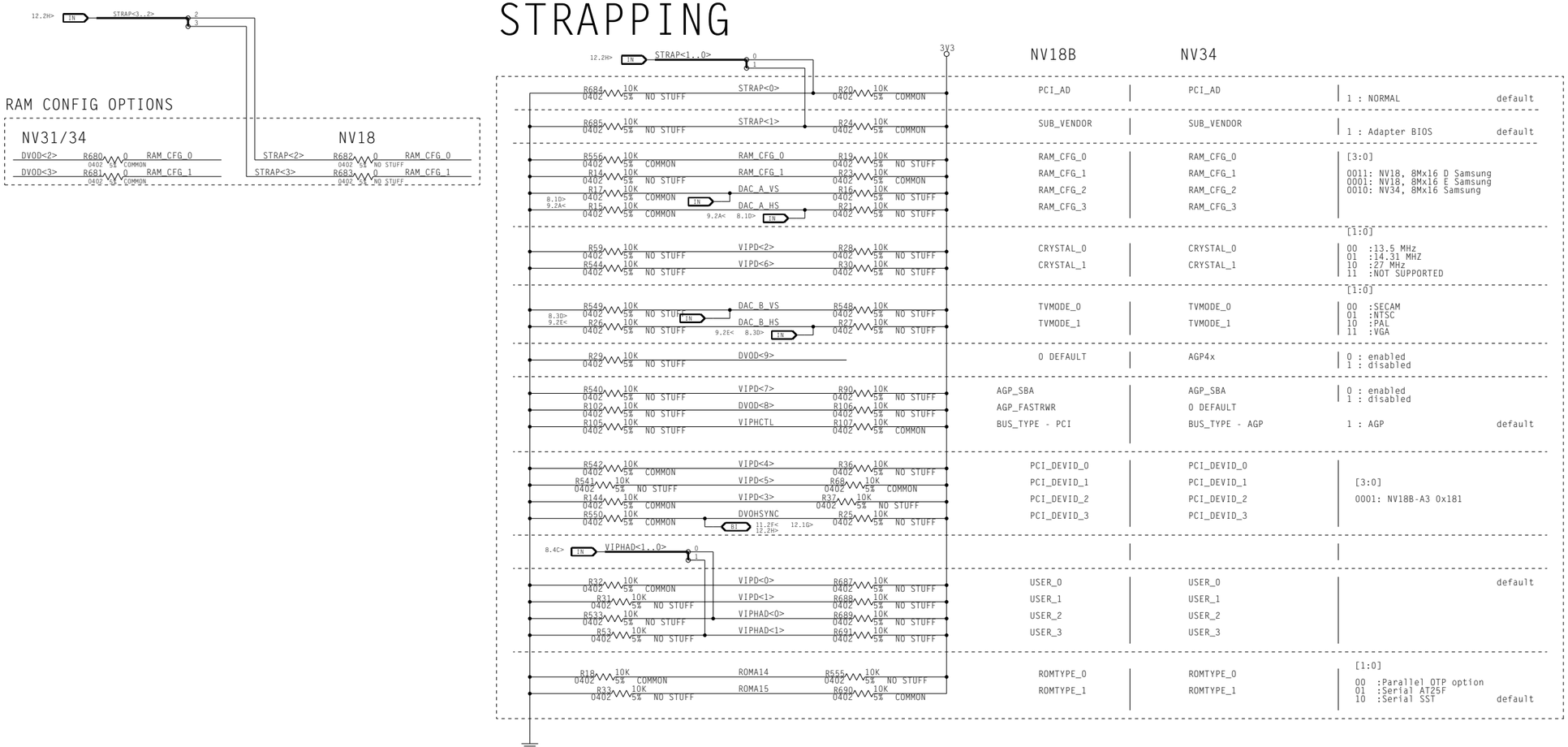
BIOS (SST Serial ROM)



PARALLEL EPROM



STRAPPING



	NV18B	NV34		
	PCI_AD	PCI_AD	1 : NORMAL	default
	SUB_VENDOR	SUB_VENDOR	1 : Adapter BIOS	default
	RAM_CFG_0	RAM_CFG_0	[3:0]	
	RAM_CFG_1	RAM_CFG_1	0011: NV18, 8Mx16 D Samsung 0001: NV18, 8Mx16 E Samsung 0010: NV34, 8Mx16 Samsung	
	RAM_CFG_2	RAM_CFG_2		
	RAM_CFG_3	RAM_CFG_3		
	CRYSTAL_0	CRYSTAL_0	[1:0] 00 :13.5 MHz 01 :14.31 MHZ 10 :27 MHz 11 :NOT SUPPORTED	
	CRYSTAL_1	CRYSTAL_1		
	TVMODE_0	TVMODE_0	[1:0] 00 :SECAM 01 :NTSC 10 :PAL 11 :VGA	
	TVMODE_1	TVMODE_1		
	0 DEFAULT	AGP4x	0 : enabled 1 : disabled	
	AGP_SBA	AGP_SBA	0 : enabled 1 : disabled	
	AGP_FASTRWR	0 DEFAULT		
	BUS_TYPE - PCI	BUS_TYPE - AGP	1 : AGP	default
	PCI_DEVID_0	PCI_DEVID_0		
	PCI_DEVID_1	PCI_DEVID_1	[3:0]	
	PCI_DEVID_2	PCI_DEVID_2	0001: NV18B-A3 0x181	
	PCI_DEVID_3	PCI_DEVID_3		
	USER_0	USER_0		default
	USER_1	USER_1		
	USER_2	USER_2		
	USER_3	USER_3		
	ROMTYPE_0	ROMTYPE_0	[1:0] 00 :Parallel OTP option 01 :Serial AT25F 10 :Serial SST	default
	ROMTYPE_1	ROMTYPE_1		

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DETAIL	NV17 STRAPPING, BIOS TMDS section		
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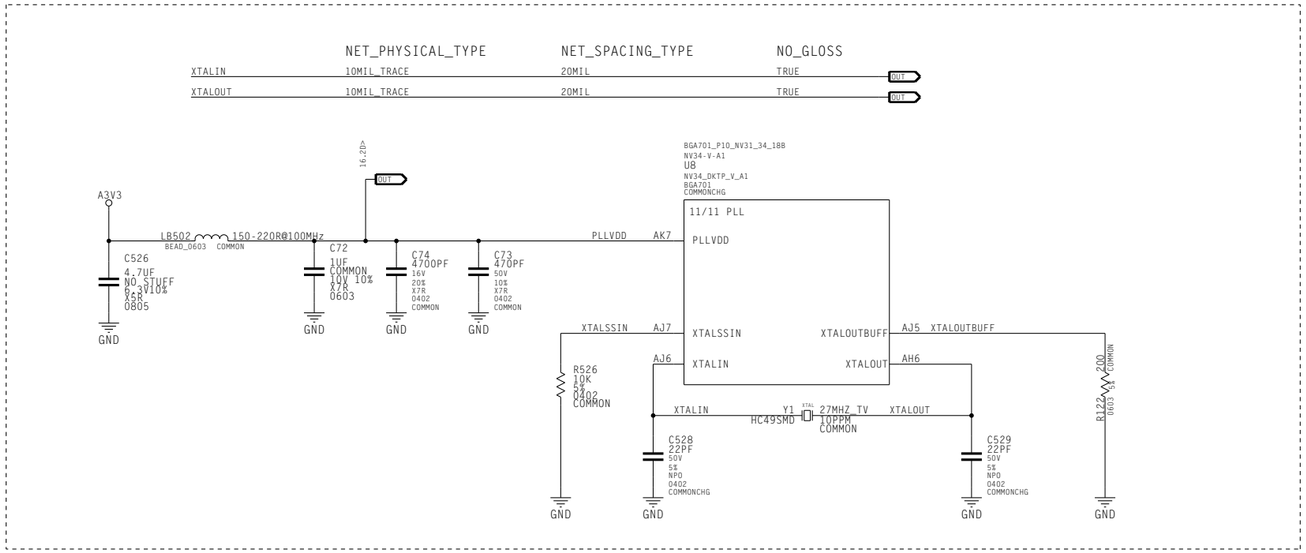
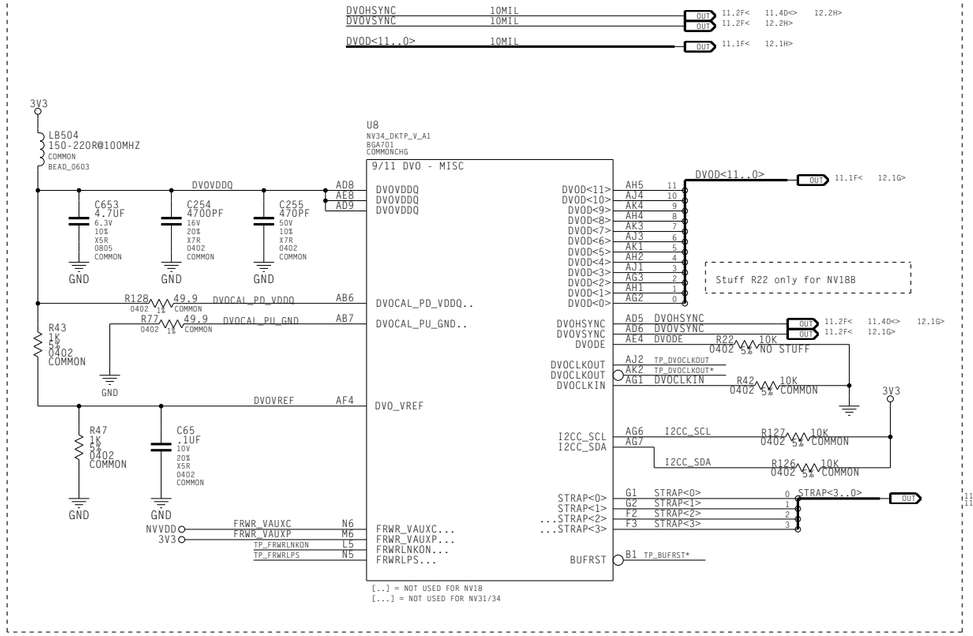
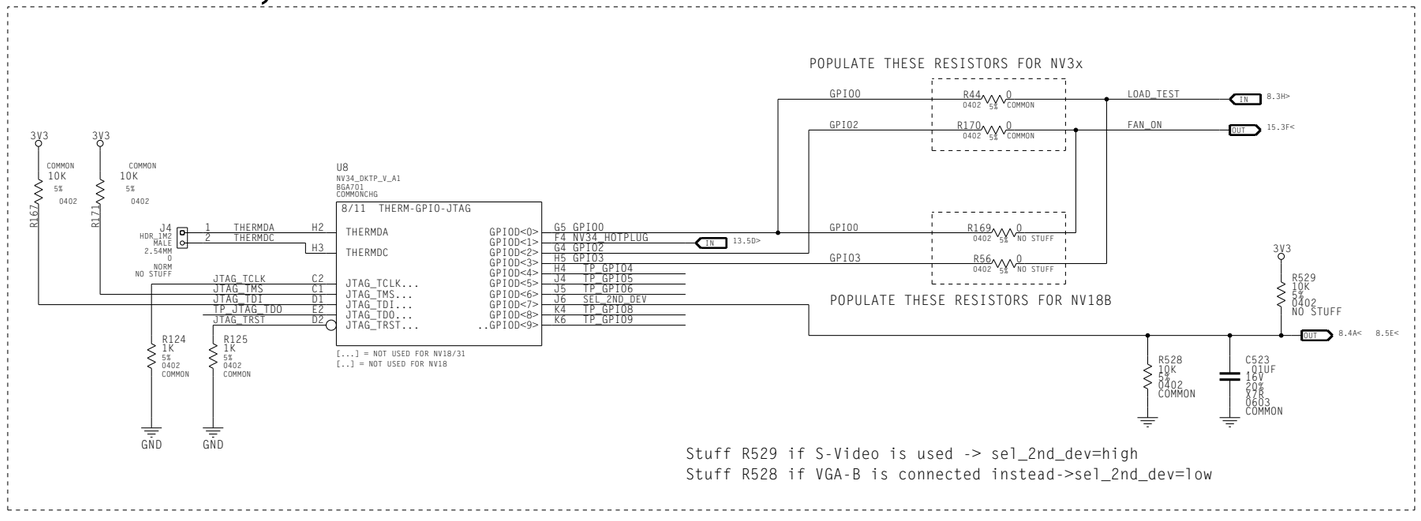
CLOCK

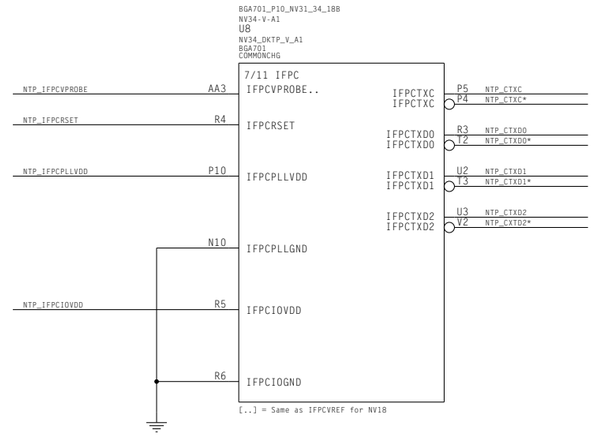


DVO



JTAG, THERMAL and GPIOs





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DETAIL	DRAWING DETAIL CONTINUED...		
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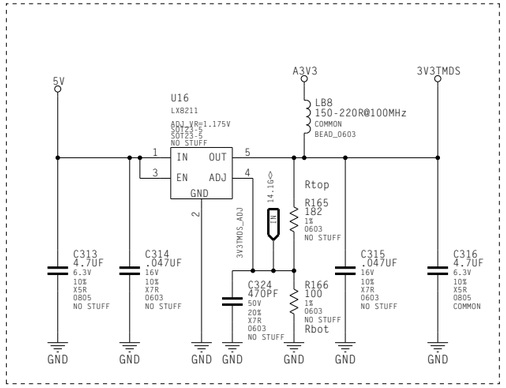
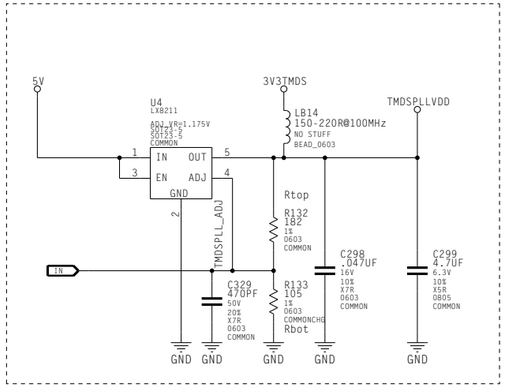
TMDS IO Supply



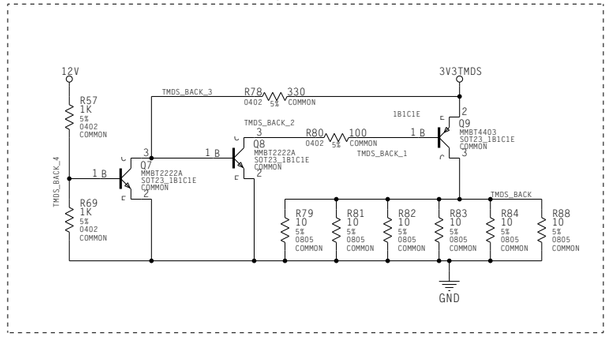
Vout = VRef * (1+Rtop/Rbot)
3.31V = 1.175V * (1+(182/100))

TMDS PLL Supply



Vout = VRef * (1+Rtop/Rbot)
3.2V = 1.175V * (1+(182/105))

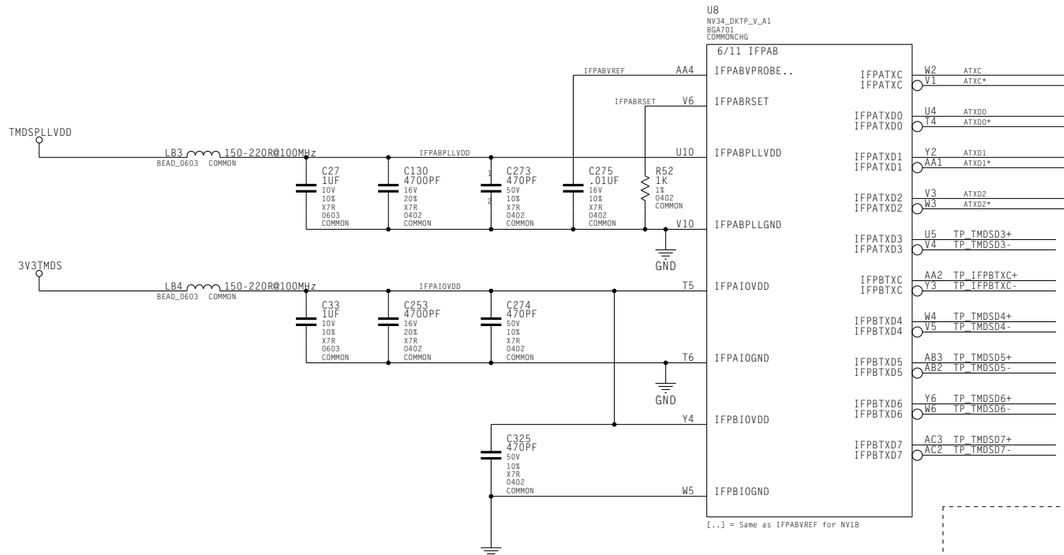
TMDS backdrive prevention



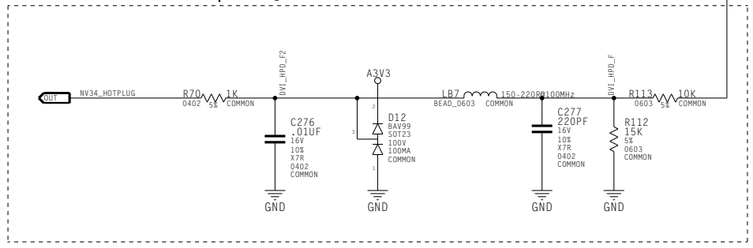
	NET	NET_PHYSICAL_TYPE	VOLTAGE
	IFPABVREF	12MIL_TRACE	3.3V
	IFPABPLLVDD	12MIL_TRACE	3.3V
	IFPAIOVDD	12MIL_TRACE	3.3V
	IFPBIOVDD	12MIL_TRACE	3.3V
	IFPCVREF	12MIL_TRACE	3.3V
	IFPCPLLVDD	12MIL_TRACE	3.3V
	IFPCIOVDD	12MIL_TRACE	3.3V
	FAN_RETURN	12MIL_TRACE	3.3V
15.3G<	TMDS_BACK	12MIL_TRACE	3.3V

	NET	Diffpair	NET_SPACING_RULE
	ATXD0	ATX0	20MIL_G2G_30MIL
	ATXD0*	ATX0	20MIL_G2G_30MIL
	ATXD1	ATX1	20MIL_G2G_30MIL
	ATXD1*	ATX1	20MIL_G2G_30MIL
	ATXD2	ATX2	20MIL_G2G_30MIL
	ATXD2*	ATX2	20MIL_G2G_30MIL
	ATXC	ATXC	20MIL_G2G_30MIL
	ATXC*	ATXC	20MIL_G2G_30MIL
	BTXD4	BTX4	20MIL_G2G_30MIL
	BTXD4*	BTX4	20MIL_G2G_30MIL
	BTXD5	BTX5	20MIL_G2G_30MIL
	BTXD5*	BTX5	20MIL_G2G_30MIL
	BTXD6	BTX6	20MIL_G2G_30MIL
	BTXD6*	BTX6	20MIL_G2G_30MIL

Single LinkA Transmitter



Hotplug Detection



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DETAIL	Nv 31 Internal TMDS Trasmitter DVI-Connector and Backdrive Prevention		
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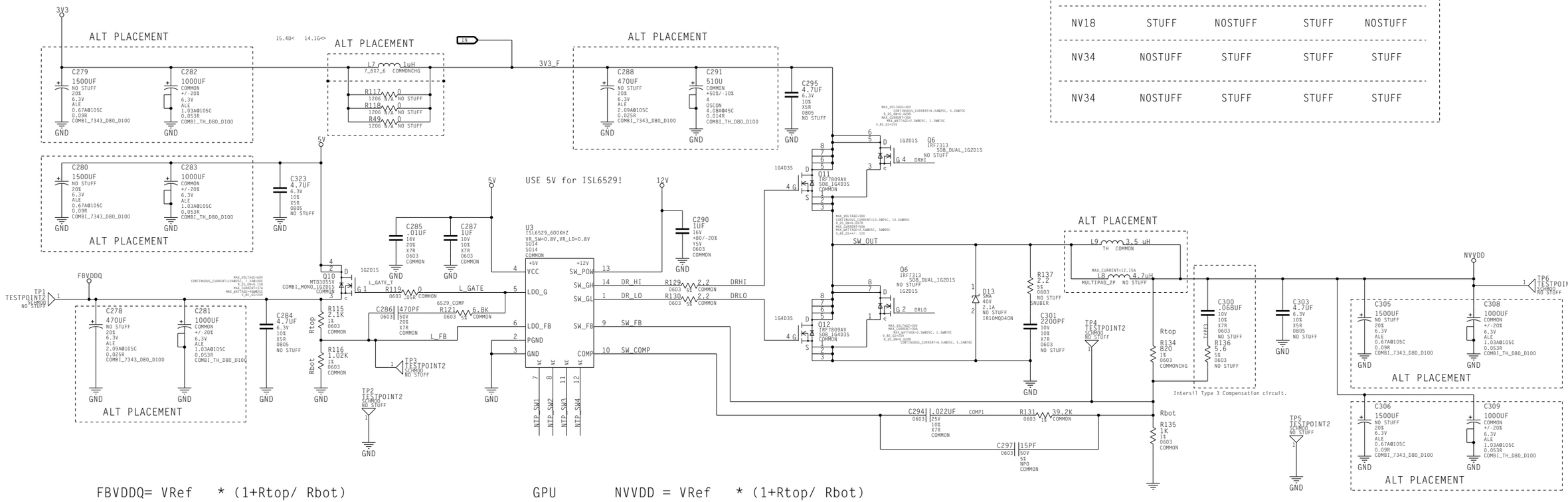
NVVDD-SWITCHER / FBVDDQ-LDO CONTROLER ISL6529

NET	NET_PHYSICAL_TYPE	VOLTAGE
3V3	12MIL_TRACE	3.3V
A3V3	12MIL_TRACE	3.3V
3V3TMDS	12MIL_TRACE	3.3V
FBVDD	12MIL_TRACE	2.5V
NVVDD	12MIL_TRACE	1.65V
5V	12MIL_TRACE	5V
12V	12MIL_TRACE	12V
3V3_F	12MIL_TRACE	3.3V
12V_F	12MIL_TRACE	12V
DDC_VCC	12MIL_TRACE	5V
SW_12V	10MIL_TRACE	12V
SW_5V	10MIL_TRACE	5V
DR_HI	10MIL_TRACE	
DR_LO	10MIL_TRACE	
DRHI	10MIL_TRACE	
DRLO	10MIL_TRACE	
SW_FB	10MIL_TRACE	
SW_COMP	10MIL_TRACE	
A3V3_ADJ	10MIL_TRACE	
3V3TMDS_ADJ	10MIL_TRACE	
TMDSPLL_ADJ	10MIL_TRACE	
TMDSPLLVDD	12MIL_TRACE	3.3V



GPU	Q6	Q11/Q12	C308	C309
NV18	STUFF	NOSTUFF	STUFF	NOSTUFF
NV34	NOSTUFF	STUFF	STUFF	STUFF
NV34	NOSTUFF	STUFF	STUFF	STUFF
NV34	NOSTUFF	STUFF	STUFF	STUFF

FBVDDQ= VRef * (1+Rtop/ Rbot)

ISL6529 2.52V = 0.800V * (1+2.2k/1.02k)

GPU	NVVDD = VRef * (1+Rtop/ Rbot)
NV18B	1.60V = 0.800V * (1+1000/1000)
NV31	1.11V = 0.800V * (1+392/1020)
NV34	1.45V = 0.800V * (1+820/1000)
NV34	1.55V = 0.800V * (1+1500/1600)

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DETAIL	Power Supplies: A3V3,TMDS3V3, TMDSPLLVDD, FBVDDQ, NVVDD		
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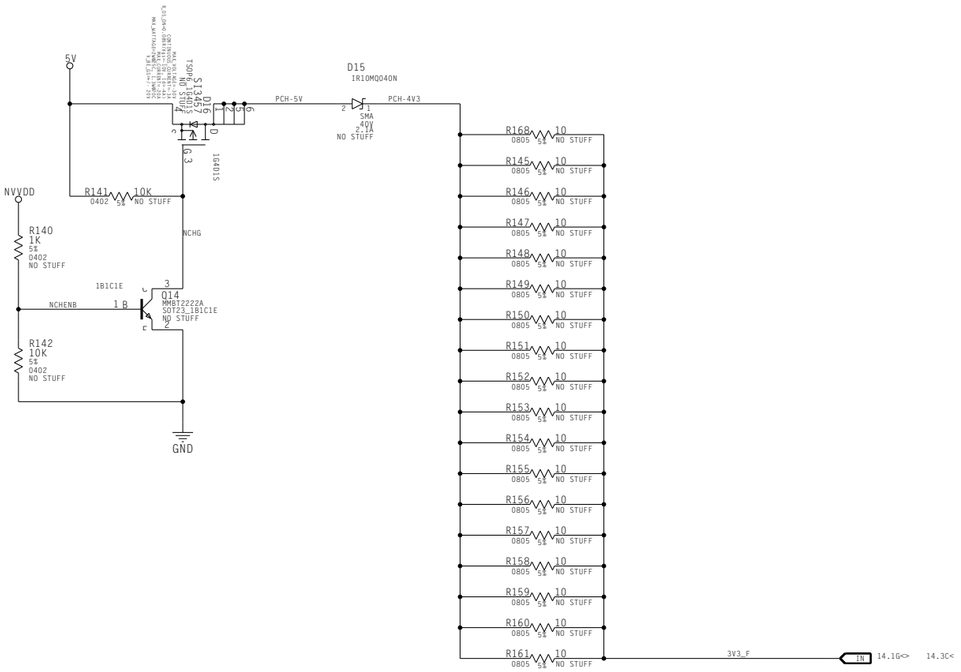
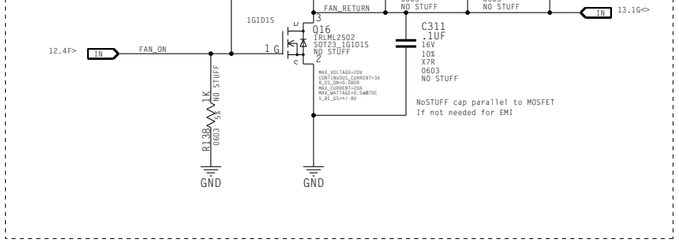
NVVDD Current Supplement.



Approx 1A (TBD after Qualification)

FAN Control



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DETAIL	DRAWING DETAIL CONTINUED...		
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NET RULES

Power Nets:

	NET_PHYSICAL_TYPE	NET_SPACING_TYPE
GND	GND	12MIL_TRACE
5V	5V	12MIL_TRACE
A3V3	A3V3	12MIL_TRACE
3V3	3V3	12MIL_TRACE
AGPVDDQ	AGPVDDQ	12MIL_TRACE
FBVDDQ	FBVDDQ	12MIL_TRACE
FBVDD	FBVDD	12MIL_TRACE
NVVDD	NVVDD	12MIL_TRACE
DAC_A_VDD	DAC_A_VDD	12MIL_TRACE
DAC_B_VDD	DAC_B_VDD	12MIL_TRACE
PLLVDD	PLLVDD	12MIL_TRACE
DDC_VCC	DDC_VCC	12MIL_TRACE
FBVREF	FBVREF	12MIL_TRACE

RAM_DAC : impedance controlled by constraint manager

	NET_PHYSICAL_TYPE	NET_SPACING_TYPE	NO_GLOSS	
DAC_A_RED		20MIL	TRUE	OUT 8.2D> 9.3A<
DAC_A_GREEN		20MIL	TRUE	OUT 8.2D> 9.4A<
DAC_A_BLUE		20MIL	TRUE	OUT 8.2D> 9.4A<
FR		20MIL	TRUE	OUT 9.3B<
FG		20MIL	TRUE	OUT 9.3B<
FB		20MIL	TRUE	OUT 9.4B<
M_RED		20MIL	TRUE	OUT 9.3B<
M_GREEN		20MIL	TRUE	OUT 9.3B<
M_BLUE		20MIL	TRUE	OUT 9.4B<
DAC_B_RED		20MIL	TRUE	OUT 8.3D>
DAC_B_GREEN		20MIL	TRUE	OUT 8.3D>
DAC_B_BLUE		20MIL	TRUE	OUT 8.3D>
DAC_B_YOUT		20MIL	TRUE	OUT 8.2E>
DAC_B_COUT		20MIL	TRUE	OUT 8.1E>
CVBS_YOUT		20MIL	TRUE	OUT 8.2G>
COUT		20MIL	TRUE	OUT 8.1F>
DAC_B_RD		20MIL	TRUE	OUT 8.3E> 9.3E<
DAC_B_GN		20MIL	TRUE	OUT 8.3E> 9.4E<
DAC_B_BL		20MIL	TRUE	OUT 8.4E> 9.4E<
B_FR		20MIL	TRUE	OUT 9.3F<
B_FG		20MIL	TRUE	OUT 9.3F<
B_FB		20MIL	TRUE	OUT 9.4F<
B_M_RED		20MIL	TRUE	OUT 9.3F< 13.4G<
B_M_GREEN		20MIL	TRUE	OUT 9.3F< 13.4G<
B_M_BLUE		20MIL	TRUE	OUT 9.4F< 13.4G<

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DETAIL	DESIGN NET RULES		
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*** Signal Cross-Reference for the entire design ***

3V3TMDS_ADJ	13.1B< 14.1G<>
3V3_F	14.1G<> 14.3C< 15.4D<
12V_F	14.1G<>
A3V3_ADJ	10.2D< 14.1G<>
AGPDBI_HI	2.1G>
AGPDBI_LO	2.1G>
AGPMBDET	2.1F>
AGPRBF*	2.1G>
AGPSTO	2.1G>
AGPST1	2.1G>
AGPST2	2.1G>
AGPSTBO	2.1F>
AGPSTBO*	2.1F>
AGPSTB1	2.1F>
AGPSTB1*	2.1F>
AGPSTOP	2.1F>
AGPWBF*	2.1G>
AGP_VREFCG	2.1F>
AGP_VREFGC	2.1F>
ATXC	13.1G<>
ATXC*	13.1G<>
ATXDO	13.1G<>
ATXDO*	13.1G<>
ATXD1	13.1G<>
ATXD1*	13.1G<>
ATXD2	13.1G<>
ATXD2*	13.1G<>
BTXD4	13.2G<>
BTXD4*	13.2G<>
BTXD5	13.2G<>
BTXD5*	13.2G<>
BTXD6	13.2G<>
BTXD6*	13.2G<>
B_DDC_SCL	9.1H> 13.4G<
B_DDC_SDA	9.1H> 13.4G<
B_FB	9.4F< 16.3H>
B_FG	9.3F< 16.3H>
B_FR	9.3F< 16.3H>
B_M_BLUE	9.4F< 13.4G< 16.3H>
B_M_GREEN	9.3F< 13.4G< 16.3H>
B_M_HSYNC	9.2H> 13.4G<
B_M_RED	9.3F< 13.4G< 16.3H>
B_M_VSYNC	9.2H> 13.4G<
COUT	8.1F> 16.2H>
CVBS_YOUT	8.2G> 16.2H>
DAC_A_BLUE	8.2D> 9.4A< 16.1H>
DAC_A_GREEN	8.2D> 9.4A< 16.1H>
DAC_A_HS	8.1D> 9.2A< 11.3D<
DAC_A_RED	8.2D> 9.3A< 16.1H>
DAC_A_VDD	8.1B> 16.2D>
DAC_A_VS	8.1D> 9.2A< 11.3C<
DAC_B_BL	8.4E> 9.4E< 16.3H>
DAC_B_BLUE	8.3D> 16.2H>
DAC_B_COUT	8.1E> 16.2H>
DAC_B_GN	8.3E> 9.4E< 16.3H>
DAC_B_GREEN	8.3D> 16.2H>
DAC_B_HS	8.3D> 9.2E< 11.4D<
DAC_B_RD	8.3E> 9.3E< 16.2H>
DAC_B_RED	8.3D> 16.2H>
DAC_B_VDD	8.2B> 16.2D>
DAC_B_VS	8.3D> 9.2E< 11.4C<
DAC_B_YOUT	8.2E> 16.2H>
DDC_VCC	9.5C< 13.4G< 14.1G< 16.2D>
DRHI	14.1G<>
DRLO	14.1G<>
DR_HI	14.1G<>
DR_LO	14.1G<>
DVOD<11..0>	11.1F< 12.1G> 12.1H>
DVOD<2>	11.1F< 12.1G> 12.1H>
DVOD<3>	11.1F< 12.1G> 12.1H>
DVOD<8>	11.1F< 12.1G> 12.1H>
DVOD<9>	11.1F< 12.1G> 12.1H>
DVOHSYNC	11.2F< 11.4D<> 12.1G> 12.2H>
DVOVSYNC	11.2F< 12.1G> 12.2H>
FAN_ON	12.4F> 15.3F<
FAN_RETURN	13.1G<> 15.3G<
FB	9.4B< 16.2H>
FBAA<0>	3.4A> 4.2B< 5.1H> 5.2B<
FBAA<12..0>	3.4A> 4.2B< 5.1H> 5.2B<
FBAA<1>	3.4A> 4.2B< 5.1H> 5.2B<
FBAA<2>	3.4A> 4.2B< 5.1H> 5.2B<
FBAA<3>	3.4A> 4.2B< 5.1H> 5.2B<
FBAA<4>	3.4A> 4.2B< 5.1H> 5.2B<
FBAA<5>	3.4A> 4.2B< 5.1H> 5.2B<
FBAA<6>	3.4A> 4.2B< 5.1H> 5.2B<
FBAA<7>	3.4A> 4.2B< 5.1H> 5.2B<
FBAA<8>	3.4A> 4.2B< 5.1H> 5.2B<
FBAA<9>	3.4A> 4.2B< 5.1H> 5.2B<
FBAA<10>	3.4A> 4.2B< 5.1H> 5.2B<
FBAA<11>	3.4A> 4.2B< 5.1H> 5.2B<
FBAA<12>	3.4A> 4.2B< 5.1H> 5.2B<
FBABA<0>	3.5A> 4.2B< 4.2D< 5.1H> 5.2B< 5.2D<
FBABA<1..0>	3.5A> 4.2B< 4.2D< 5.1H> 5.2B< 5.2D<
FBABA<1>	3.5A> 4.2B< 4.2D< 5.1H> 5.2B< 5.2D<
FBACAS*	3.5B> 4.2B< 4.2E< 5.1H> 5.2B< 5.2E<
FBACKE	3.5A> 4.2B< 4.2E< 5.1H> 5.2B< 5.2E<
FBACLK0	3.5B> 4.2B< 4.2E< 4.5D< 5.1H>
FBACLK0*	3.5B> 4.2B< 4.2E< 4.5E< 5.1H>
FBACLK1	3.5B> 5.1H> 5.2B< 5.2E< 5.5D<
FBACLK1*	3.5B> 5.1H> 5.2B< 5.2E< 5.5F<
FBACS0*	3.5B> 4.2B< 4.2E< 5.1H> 5.2B< 5.2E<
FBAD<0>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<63..0>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<1>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<2>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<3>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<4>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<5>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<7>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<8>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<9>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<10>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<11>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<12>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<13>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<14>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<15>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<16>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<17>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<18>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<19>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<20>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<21>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<22>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<23>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<24>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<25>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<26>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<27>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<28>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<29>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<30>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<31>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<32>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<33>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<34>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<35>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<36>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<37>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<38>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<39>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<40>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<41>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<42>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<43>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<44>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<45>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<46>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<47>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<48>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<49>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<50>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<51>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<52>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<53>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<54>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<55>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<56>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<57>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<58>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<59>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<60>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<61>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<62>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBAD<63>	3.1A<> 4.2A<> 5.1H> 5.2A<>
FBADQM<0>	3.3A> 4.5A< 5.1H> 5.5A<
FBADQM<7..0>	3.3A> 4.5A< 5.1H> 5.5A<
FBADQM<1>	3.3A> 4.5A< 5.1H> 5.5A<
FBADQM<2>	3.3A> 4.5A< 5.1H> 5.5A<
FBADQM<3>	3.3A> 4.5A< 5.1H> 5.5A<
FBADQM<4>	3.3A> 4.5A< 5.1H> 5.5A<
FBADQM<5>	3.3A> 4.5A< 5.1H> 5.5A<
FBADQM<6>	3.3A> 4.5A< 5.1H> 5.5A<
FBADQM<7>	3.3A> 4.5A< 5.1H> 5.5A<
FBADQS<0>	3.3A<> 4.5A< 5.1H> 5.5A<
FBADQS<7..0>	3.3A<> 4.5A< 5.1H> 5.5A<
FBADQS<1>	3.3A<> 4.5A< 5.1H> 5.5A<
FBADQS<2>	3.3A<> 4.5A< 5.1H> 5.5A<
FBADQS<3>	3.3A<> 4.5A< 5.1H> 5.5A<
FBADQS<4>	3.3A<> 4.5A< 5.1H> 5.5A<
FBADQS<5>	3.3A<> 4.5A< 5.1H> 5.5A<
FBADQS<6>	3.3A<> 4.5A< 5.1H> 5.5A<
FBADQS<7>	3.3A<> 4.5A< 5.1H> 5.5A<
FBARAS*	3.5B> 4.2B< 4.2E< 5.1H> 5.2B< 5.2E<
FBAWE*	3.5B> 4.2B< 4.2E< 5.1H> 5.2B< 5.2E<
FBCA<0>	3.4E> 6.1A< 7.1B< 7.1H>
FBCA<12..0>	3.4E> 6.1A< 7.1B< 7.1H>
FBCA<1>	3.4E> 6.1A< 7.1B< 7.1H>
FBCA<2>	3.4E> 6.1A< 7.1B< 7.1H>
FBCA<3>	3.4E> 6.1A< 7.1B< 7.1H>
FBCA<4>	3.4E> 6.1A< 7.1B< 7.1H>
FBCA<5>	3.4E> 6.1A< 7.1B< 7.1H>
FBCA<6>	3.4E> 6.1A< 7.1B< 7.1H>
FBCA<7>	3.4E> 6.1A< 7.1B< 7.1H>
FBCA<8>	3.4E> 6.1A< 7.1B< 7.1H>
FBCA<9>	3.4E> 6.1A< 7.1B< 7.1H>
FBCA<10>	3.4E> 6.1A< 7.1B< 7.1H>
FBCA<11>	3.4E> 6.1A< 7.1B< 7.1H>
FBCA<12>	3.4E> 6.1A< 7.1B< 7.1H>
FBCBA<0>	3.5E> 6.2B< 6.2D< 7.1H> 7.2B< 7.2D<
FBCBA<1..0>	3.5E> 6.2B< 6.2D< 7.1H> 7.2B< 7.2D<
FBCBA<1>	3.5E> 6.2B< 6.2D< 7.1H> 7.2B< 7.2D<
FBCCAS*	3.5E> 6.2B< 6.2E< 7.1H> 7.2B< 7.2E<
FBCCKE	3.5E> 6.2B< 6.2E< 7.1H> 7.2B< 7.2E<
FBCCLK0	3.5E> 6.2B< 6.2E< 6.5D< 7.1H>
FBCCLK0*	3.5E> 6.2B< 6.2E< 6.5F< 7.1H>
FBCCLK1	3.5E> 7.1H> 7.2B< 7.2E< 7.5D<
FBCCLK1*	3.5E> 7.1H> 7.2B< 7.2E< 7.5F<
FBCCS0*	3.5E> 6.2B< 6.2E< 7.1H> 7.2B< 7.2E<
FBCD<0>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<63..0>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<1>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<2>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<3>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<4>	3.1E<> 6.2A<> 7.1H> 7.2A<>
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FBCD<7>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<8>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<9>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<10>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<11>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<12>	3.1E<> 6.2A<> 7.1H> 7.2A<>
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FBCD<18>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<19>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<20>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<21>	3.1E<> 6.2A<> 7.1H> 7.2A<>
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FBCD<37>	3.1E<> 6.2A<> 7.1H> 7.2A<>
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FBCD<49>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<50>	3.1E<> 6.2A<> 7.1H> 7.2A<>
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FBCD<52>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<53>	3.1E<> 6.2A<> 7.1H> 7.2A<>
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FBCD<57>	3.1E<> 6.2A<> 7.1H> 7.2A<>
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FBCD<59>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<60>	3.1E<> 6.2A<> 7.1H> 7.2A<>
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FBCDQM<2>	3.3E> 6.5A< 7.1H> 7.5A<
FBCDQM<3>	3.3E> 6.5A< 7.1H> 7.5A<
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FBCDQM<6>	3.3E> 6.5A< 7.1H> 7.5A<
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FBCDQS<2>	3.3E<> 6.5A< 7.1H> 7.5A<
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FBCDQS<4>	3.3E<> 6.5A< 7.1H> 7.5A<
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FBCRAS*	3.5E> 6.2B< 6.2E< 7.1H> 7.2B< 7.2E<
FBCWE*	3.5E> 6.2B< 6.2E< 7.1H> 7.2B< 7.2E<
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FG	9.3B< 16.2H>
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M_RED	9.3B< 16.2H>
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NV_VREF	2.1F>
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PCICBE<3..0>	2.1H>
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PCICBE<2>	2.1H>
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PCICLK	2.1H>
PCIDEVSEL*	2.1G>
PCIFRAME*	2.1H>
PCIGNT*	2.1H>
PCIINTA*	2.1G>
PCIINTB*	2.1G>
PCIIRDY*	2.1H>
PCIPAR	2.1G>
PCIREQ*	2.1H>
PCIRST*	2.1H>
PCISTOP*	2.1H>
PCITRDY*	2.1H>
PLLVDD	12.1B> 16.2D>
ROMA14	8.5C> 11.2B< 11.2F<
ROMA15	8.5C> 11.2B< 11.2F<
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SBA<1>	2.1F<>
SBA<2>	2.1F<>
SBA<3>	2.1F<>
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SBA<5>	2.1F<>
SBA<6>	2.1F<>
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SBSTB*	2.1F>
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STRAP<2>	11.2A< 12.2H>
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STRAP<3>	11.2A< 12.2H>
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SW_12V	14.1G<>
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SW_FB	14.1G<>
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TMDS_BACK	13.1G<>
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VIPD<2>	8.4C> 8.5C> 11.2H<>
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VREF_B	5.1H>
VREF_C	6.2F< 6.3D> 7.2H>
VREF_D	7.2F< 7.2H> 7.3D>
XTALIN	12.1D>
XTALOUT	12.1D>

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

DETAIL	DRAWING DETAIL CONTINUED...		
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*** Part Cross-Reference for the entire design ***

BKT1	BRACKET	10.4C
C1	C_POL	10.2E
C2	C	8.1F
C3	C	8.2F
C4	C	9.1G
C5	C	9.2H
C6	C	9.2G
C7	C	9.1G
C8	C	9.1C
C9	C	9.2C
C10	C	9.2C
C11	C	9.1C
C12	C	8.1F
C13	C	8.2F
C14	C	9.5B
C15	C	8.1F
C16	C	8.2F
C17	C	9.4H
C18	C	9.4D
C19	C_POL	10.2F
C20	C	8.5F
C21	C	8.5G
C22	C	8.4H
C23	C	6.5H
C24	C	11.2G
C25	C	11.1C
C26	C	4.5F
C27	C	13.3B
C28	C	7.3F
C29	C	7.4G
C30	C	7.5G
C31	C	7.4G
C32	C	7.5H
C33	C	13.4B
C34	C	2.2B
C35	C	2.2B
C36	C	8.3B
C37	C	2.3H
C38	C	7.4H
C39	C	7.4G
C40	C	7.4G
C41	C	7.4G
C42	C	7.4G
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C52	C	2.4H
C53	C	3.5A
C54	C	5.3D
C55	C	7.2G
C56	C	7.3G
C57	C	7.2G
C58	C	7.3H
C59	C	7.5H
C60	C	3.2D
C61	C	2.4G
C62	C	2.3G
C63	C	8.3A
C64	C	3.1D
C65	C	12.2F
C66	C	3.2D
C67	C	2.4G
C68	C	2.3G
C69	C	8.3B
C70	C	2.2A
C71	C	3.1D
C72	C	12.2B
C73	C	12.2B
C74	C	12.2B
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C92	C	8.1B
C93	C	8.1A
C94	C	3.2D
C95	C	3.1D
C96	C	5.3F
C97	C	3.2C
C98	C	3.1D
C99	C	3.1D
C100	C	3.1D
C101	C	3.2D
C102	C	2.2D
C103	C	3.2D
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C113	C	3.2D
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C116	C	3.1D
C117	C	3.1D
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C124	C	6.4G
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C127	C	6.3G
C128	C	6.3H
C129	C	2.3B
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C156	C	6.1G
C157	C	6.2G
C158	C	6.1G
C159	C	6.1H
C160	C	6.1H
C161	C	6.1H
C162	C	6.2H
C163	C	2.3G
C164	C	2.4G
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C166	C	5.5H
C167	C	5.3H
C168	C	4.4H
C169	C	4.2H
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C173	C	4.1G
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C176	C	4.3G
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C181	C	4.1G
C182	C	5.5H
C183	C	5.5H
C184	C	5.3H
C185	C	5.3H
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C192	C	4.3G
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C201	C	5.3G
C202	C	4.4H
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C204	C	4.2G
C205	C	4.2G
C206	C	5.4G
C207	C	5.2G
C208	C	4.3G
C209	C	4.1H
C210	C	5.5G
C211	C	5.3G
C212	C	4.4G
C213	C	4.2G
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C215	C	5.2G
C216	C	4.3G
C217	C	4.1G
C218	C	4.3F
C219	C	5.4H
C220	C	5.2H
C221	C	4.3G
C222	C	4.1G
C223	C	6.3D
C224	C	6.3F
C225	C	4.3D
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C227	C	5.2G
C228	C	4.3G
C229	C	4.1G
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C231	C	5.4H
C232	C	5.2H
C233	C	4.3H
C234	C	4.1H
C235	C	5.4H
C236	C	5.2H
C237	C	4.3H
C238	C	4.1H
C239	C	5.4H
C240	C	5.2H
C241	C	4.3H
C242	C	4.1H
C243	C	2.5C
C244	C	2.5D
C245	C	2.4C
C246	C	2.5G
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C258	C	2.3G
C259	C	2.3A
C260	C	2.3A
C261	C	2.3A
C262	C	2.4H
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C264	C	2.4H
C265	C	2.3H
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C269	C	8.3A
C270	C	4.5G
C271	C	3.2D
C272	C	6.4G
C273	C	13.3C
C274	C	13.4C
C275	C	13.3C
C276	C	13.5E
C277	C	13.5F
C278	C_POL	14.4A
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C286	C	14.4C
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C295	C	14.3E
C296	C	4.5G
C297	C	14.5F
C298	C	13.2D
C299	C	13.2D
C300	C	14.4G
C301	C	14.4F
C302	C	4.5H
C303	C	14.4G
C304	C	4.5H
C305	C_POL	14.4G
C306	C_POL	14.5G
C307	C	4.5H
C308	C_POL	14.4H
C309	C_POL	14.5H
C310	C	15.3G
C311	C	15.3G
C312	C	15.3G
C313	C	13.2A
C314	C	13.2A
C315	C	13.2B
C316	C	13.2B
C317	C	6.5G
C318	C	6.4H
C319	C	6.5H
C320	C	6.4H
C321	C	6.5H
C322	C	6.4H
C323	C	14.3B
C324	C	13.2B
C325	C	13.4C
C329	C	13.2C
C353	C	8.4A
C501	C	2.1G
C502	C	2.1G
C504	C	2.1G
C506	C	2.2H
C508	C	2.2G
C509	C	2.2G
C510	C	2.3G
C511	C	2.3G
C512	C	2.2H
C513	C	2.3H
C514	C	2.2G
C515	C	2.2H
C516	C	2.2D
C517	C	2.2G
C518	C	2.3H
C520	C	2.2G
C521	C	2.3G
C522	C	2.2G
C523	C	12.4F
C524	C	2.2H
C525	C	2.2B
C526	C	12.2A
C528	C	12.2C
C529	C	12.2D
C536	C	9.3A
C537	C	10.2D
C538	C	9.4F
C539	C	9.4F
C540	C	9.3F
C541	C	9.4B
C542	C	9.4B
C543	C	9.3B
C544	C	9.4H
C545	C	9.4D
C546	C	10.1D
C547	C	9.4F
C548	C	9.4F
C549	C	9.3F
C550	C	9.4B
C551	C	9.4B
C552	C	9.3B
C553	C	9.4C
C554	C	10.2E
C555	C	9.4G
C556	C	9.4H
C557	C	9.4H
C558	C	9.4H
C559	C	9.4D
C560	C	9.4D
C561	C	9.4D
C562	C	10.2D
C563	C	9.4G
C564	C	9.4G
C565	C	9.3G
C566	C	9.4C
C567	C	9.4C
C568	C	2.4A
C569	C	2.3F
C653	C	12.2E
CN501	CON_AGP	2.1B
D1	D_3PIN_AC	8.1E
D2	D_3PIN_AC	8.2E
D3	D_3PIN_AC	9.1G
D4	D_3PIN_AC	9.3G
D5	D_3PIN_AC	9.2G
D6	D_3PIN_AC	9.1G
D7	D_3PIN_AC	9.1C
D8	D_3PIN_AC	9.3C
D9	D_3PIN_AC	9.2C
D10	D_3PIN_AC	9.1C
D12	D_3PIN_AC	13.5E
D13	D_SCHOTTKY	14.4E
D14	D	15.3F
D15	D_SCHOTTKY	15.2B
D16	Q_FET_P_ENH	15.3B
D501	D_3PIN_AC	9.4E
D502	D_3PIN_AC	9.4E
D503	D_3PIN_AC	9.3E
D504	D_3PIN_AC	9.4B
D505	D_3PIN_AC	9.4B
D506	D_3PIN_AC	9.3B
F1	F_POLYSW	9.5A
J1	CON_MINIDIN_4	8.1G
J2	CON_DSUB15HD	9.3H
J3	CON_DSUB15HD	9.3D
J4	HDR_1X2	12.4B
J6	CON_DVI_I	13.3H
J7	HDR_1X2	15.3G
L1	L	8.1F
L2	L	8.2F
L3	L	9.2C
L4	L	9.2C
L5	L	9.2G
L6	L	9.2G
L7	L	14.3C
L8	L	14.4F
L9	L	14.4F
L501	L	9.4F
L502	L	9.4F
L503	L	9.3F
L504	L	9.4B
L505	L	9.4B
L506	L	9.3B
L507	L	9.4F
L508	L	9.4F
L509	L	9.3F
L510	L	9.4B
L511	L	9.4B
L512	L	9.3B
LB1	L	9.5B
LB2	L	9.1G
LB3	L	13.3B
LB4	L	13.4B
LB5	L	9.1G
LB6	L	9.1C
LB7	L	13.5F
LB8	L	13.1B
LB9	L	9.1C
LB10	L	8.5G
LB11	L	8.5G
LB12	L	8.2A
LB13	L	3.2D
LB14	L	13.1D
LB501	L	8.1A
LB502	L	12.2A
LB503	L	10.1D
LB504	L	12.1E
LB604	L	2.5H
MEC1	MEC_SCREW	10.4D
MEC2	MEC_SCREW	10.4D
MEC3	MEC_SCREW	10.5D
MEC4	MEC_SCREW	10.5D
MEC5	HEATSINK	10.4D
Q1	Q_FET_N_ENH	8.3A
Q2	Q_FET_N_ENH	2.5A
Q3	Q_PNP	2.5B
Q4	Q_FET_N_ENH	2.5B 2.5D
Q6	Q_FET_N_ENH	14.3E 14.4E
Q7	Q_NPN	13.1E
Q8	Q_NPN	13.1E
Q9	Q_PNP	13.1F
Q10	Q_FET_N_ENH	14.4B
Q11	Q_FET_N_ENH	14.3E
Q12	Q_FET_N_ENH	14.4E
Q14	Q_NPN	15.3B
Q16	Q_FET_N_ENH	15.3F
R2	R	9.1F
R3	R	9.1F
R4	R	9.1B
R5	R	9.1B
R6	R	9.1E
R7	R	9.1E
R8	R	9.1B
R9	R	2.4G
R10	R	9.1B
R11	R	11.1B
R12	R	3.2G
R13	R	8.3B
R14	R	11.3C
R15	R	11.3C
R16	R	11.3D
R17	R	11.3C
R18	R	11.5C
R19	R	11.3D
R20	R	11.3D
R21	R	11.3D
R22	R	12.2H
R23	R	11.3D
R24	R	11.3D
R25	R	11.4D
R26	R	11.4C
R27	R	11.4D
R28	R	11.3D
R29	R	11.4C
R30	R	11.3D
R31	R	11.5C
R32	R	11.5C
R33	R	11.5C
R34	R	3.1H
R35	R	3.2H
R36	R	11.4D
R37	R	11.4D
R38	R	8.3A
R39	R	8.3B
R40	R	3.2G
R41	R	8.4F
R42	R	12.2H
R43	R	12.2E
R44	R	12.4E
R45	R	5.3D
R46	R	5.2D
R47	R	12.2E
R48	R	8.4G
R49	R	14.3C
R52	R	13.3C
R53	R	11.5C
R54	R	7.3D
R55	R	7.2D
R56	R	12.4E
R57	R	13.1E
R58	R	8.3G
R59	R	11.3C
R60	R	10.3D
R61	R	10.3D
R62	R	10.4D
R63	R	10.3D
R64	R	10.4D
R65	R	10.3D
R66	R	10.4D
R67	R	10.3D
R68	R	11.4D
R69	R	13.2E
R70	R	13.5E
R71	R	6.2D
R72	R	4.2D
R73	R	6.3D
R74	R	4.3D
R75	R	3.5A
R76	R	3.5E
R77	R	12.2F
R78	R	13.1E
R79	R	13.2E
R80	R	13.1F
R81	R	13.2F
R82	R	13.2F
R83	R	13.2F
R84	R	13.2F
R85	R	2.4A
R86	R	2.5B
R87	R	2.5C
R88	R	13.2F
R89	R	2.4F
R90	R	11.4D
R91	R	2.4F
R92	R	2.4F

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R93	R	2.5C
R94	R	2.5C
R95	R	3.5A
R96	R	3.5A
R97	R	8.2B
R98	R	8.4A
R99	R	8.5A
R100	R	8.2D
R101	R	2.5D
R102	R	11.4C
R103	R	2.4D
R104	R	2.5C
R105	R	11.4C
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R107	R	11.4D
R108	R	13.3F
R109	R	13.4F
R110	R	13.3F
R111	R	13.4F
R112	R	13.5F
R113	R	13.5F
R115	R	14.4B
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R118	R	14.3C
R119	R	14.4C
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R127	R	12.2H
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R129	R	14.4D
R130	R	14.4D
R131	R	14.5F
R132	R	13.1D
R133	R	13.2D
R134	R	14.4F
R135	R	14.5F
R136	R	14.4G
R137	R	14.4F
R138	R	15.3F
R140	R	15.3A
R141	R	15.3B
R142	R	15.3A
R144	R	11.4C
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R158	R	15.4C
R159	R	15.4C
R160	R	15.4C
R161	R	15.4C
R164	R	15.3F
R165	R	13.1B
R166	R	13.2B
R167	R	12.4B
R168	R	15.3C
R169	R	12.4E
R170	R	12.4E
R171	R	12.4B
R253	R	2.4B
R257	R	8.4C
R258	R	8.4C
R501	R	4.5E
R502	R	4.5E
R504	R	4.5E
R505	R	5.5E
R506	R	5.5E
R508	R	5.5E
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R520	R	6.5E
R521	R	6.5E
R523	R	6.5E
R524	R	2.4D
R525	R	2.4E
R526	R	12.2C
R527	R	8.2B
R528	R	12.4E
R529	R	12.4F
R533	R	11.5C
R534	R	2.4B
R536	R	7.5E
R537	R	7.5E
R538	R	7.5E
R540	R	11.4C
R541	R	11.4C
R542	R	11.4C
R544	R	11.3C
R547	R	2.4A
R548	R	11.4D
R549	R	11.4C
R550	R	11.4C
R551	R	2.5D
R552	R	2.5D
R555	R	11.5D
R556	R	11.3C
R562	R	9.4A
R563	R	9.4A
R564	R	9.3A

R565	R	8.3F
R567	R	8.3F
R568	R	8.3F
R569	R	8.3F
R570	R	8.3F
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R572	R	9.4A
R573	R	9.3A
R574	R	9.2B
R581	R	9.2B
R583	R	8.5F
R584	R	8.4G
R585	R	8.4G
R587	R	8.4G
R588	R	8.4G
R589	R	9.2F
R590	R	9.2F
R591	R	10.2D
R592	R	10.2D
R601	R	8.3A
R645	R	2.4A
R646	R	2.4A
R670	R	4.5E
R671	R	4.5E
R672	R	5.5E
R673	R	5.5E
R674	R	6.5E
R675	R	6.5E
R676	R	7.5E
R677	R	7.5E
R680	R	11.3A
R681	R	11.3A
R682	R	11.3B
R683	R	11.3B
R684	R	11.3C
R685	R	11.3C
R687	R	11.5D
R688	R	11.5D
R689	R	11.5D
R690	R	11.5D
R691	R	11.5D
R692	R	8.2G
R693	R	8.2H
RP1	R_PAK	5.2A
RP2	R_PAK	5.2A 5.3A 5.3A
RP3	R_PAK	5.3A
RP4	R_PAK	4.4A
RP5	R_PAK	5.4A
RP6	R_PAK	7.4A
RP7	R_PAK	7.3A 7.3A 7.4A
RP8	R_PAK	7.2A
RP9	R_PAK	5.5B
RP10	R_PAK	7.5B
RP11	R_PAK	5.5B
RP501	R_PAK	4.4A
RP502	R_PAK	5.4A
RP503	R_PAK	4.5B
RP504	R_PAK	5.3A
RP505	R_PAK	4.3A
RP506	R_PAK	6.3A
RP507	R_PAK	6.3A
RP508	R_PAK	6.5B
RP509	R_PAK	6.4A
RP510	R_PAK	5.4A
RP511	R_PAK	6.4A
RP512	R_PAK	5.3A 5.3A 5.4A
RP513	R_PAK	4.3A
RP514	R_PAK	4.3A 4.4A
RP515	R_PAK	4.5B
RP516	R_PAK	4.2A 4.3A
RP517	R_PAK	4.2A
RP518	R_PAK	4.4A
RP519	R_PAK	7.2A 7.3A 7.3A
RP520	R_PAK	7.3A
RP521	R_PAK	7.3A
RP522	R_PAK	7.5B
RP523	R_PAK	7.4A
RP524	R_PAK	7.4A
RP525	R_PAK	6.2A
RP526	R_PAK	6.2A 6.3A 6.3A
RP527	R_PAK	6.5B
RP528	R_PAK	6.3A 6.3A 6.4A
RP529	R_PAK	6.4A
TP1	TESTPOINT	14.4A
TP2	TESTPOINT	14.4B
TP3	TESTPOINT	14.4C
TP4	TESTPOINT	14.4F
TP5	TESTPOINT	14.5G
TP6	TESTPOINT	14.4H
U1	U_VREG_3PIN	10.2D
U2	U_MEM_FL_SER_128KX8	11.1B
U3	U_SWREG_ISL6529	14.4C
U4	U_VREG_5PIN	13.1C
U5	U_MEM_EP_OTP_64KX8	11.1G
U6	U_MEM_SD_DDR_4_8MX16	6.4C 6.4E 7.2E
U7	U_MEM_SD_DDR_4_8MX16	6.3C 6.3E 7.2C
U8	U_GPU_DDR2M64X2_V1	2.1E 3.1B 3.1F 8.1B 8.2B 8.4B 12.1C 12.1F 12.3G 12.4C 13.3C
U9	U_MEM_SD_DDR_4_8MX16	6.2E 7.4D 7.4E
U10	U_MEM_SD_DDR_4_8MX16	6.2C 7.3D 7.3E
U11	U_MEM_SD_DDR_4_8MX16	4.4C 4.4E 5.2E
U12	U_MEM_SD_DDR_4_8MX16	4.3C 4.3E 5.2C
U13	U_MEM_SD_DDR_4_8MX16	4.2E 5.4D 5.4E
U14	U_MEM_SD_DDR_4_8MX16	4.2C 5.3D 5.3E
U16	U_VREG_5PIN	13.1A
U17	U_MEM_FL_SER_128KX8	11.1D
U502	U_SW_ANA_3257	8.3F 8.4F 8.5F
U503	U_AND_2IN	9.2B 9.2F
Y1	XTAL	12.2C

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