P162, NV34, 16Mx16DDR, 64 bit, 128MB, DVI, TV, VGA

Page Overview

1 Overview
2 AGP Interface
3 NV34 Frame Buffer
4 Frame Buffer 0..31
5 Frame Buffer 32..63
6 Frame Buffer 64..95
7 Frame Buffer 96..127
8 DAC A,B, DAC B MUX, PLL, Video OUT
9 DAC A,B RGB filter
10 Power Supply A3V3, FBVDD/FBVDDQ, Mechanicals.
11 BIOS and Strapping
12 DVO,GPIOs and Xtal.
13 TMDS LinkA and its power supplies, Backdrive.
14 NVVDD SW.
15 Current Supplement and Fan control.
16 Net Rules.

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-C00 History:

Added PUs on TMDS diff pairs by the GPU and series Rs by the conn.

602-10162-0005-200

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.

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

P162-B00 History:

Removed TMDS backdrive prevention circuit.
Changed memory FBVDD(Q) to be regulated from AGP3.3V (was from AGP5V)
Added power sequencing (BUGID 74855)
Isolated 5VCLAMP and I2C PU from AGP5V.

P162-B01 History:

Modified Current Supplement circuit to prevent bacdrive into AGP3V3 from AGP5V. GPIO5 state is unknown before valid PCICLK.
Isolated IFPA/BIOGND from the main digital GND to improve 16x12 TMDS emission.
Moved Sync buffer VDD and Fuse to 5VCLAMP (was 5V)--BugID:78364.

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

DETAIL	DRAWING DETAIL CONTINUED...		
ID	p162	PAGE	1 OF 19
NAME	mlao	DATE	SEP 03 2001

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

AGPST0		15MIL
AGPST1		15MIL
AGPST2		15MIL
PCI0EVSEL*		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

AGP2x4x | AGP8x | AGP2x4x

AD<0> A65 0
AD<1> B65 1
AD<2> A63 2
AD<3> B63 3
AD<4> A62 4
AD<5> B62 5
AD<6> A60 6
AD<7> B60 7
AD<8> B57 8
AD<9> A56 9
AD<10> B56 10
AD<11> A54 11
AD<12> B54 12
AD<13> A53 13
AD<14> B53 14
AD<15> A51 15
AD<16> A39 16
AD<17> B38 17
AD<18> A38 18
AD<19> B36 19
AD<20> A36 20
AD<21> B35 21
AD<22> A35 22
AD<23> B33 23
AD<24> A30 24
AD<25> B30 25
AD<26> A29 26
AD<27> B29 27
AD<28> A27 28
AD<29> B27 29
AD<30> A26 30
AD<31> B26 31

PCIAD<31..0>

PCIAD<0> AJ28
PCIAD<1> AK28
PCIAD<2> AH27
PCIAD<3> AJ27
PCIAD<4> AH26
PCIAD<5> AJ26
PCIAD<6> AH25
PCIAD<7> AH23
PCIAD<8> AJ23
PCIAD<9> AH22
PCIAD<10> AJ22
PCIAD<11> AJ21
PCIAD<12> AK21
PCIAD<13> AH20
PCIAD<14> AJ20
PCIAD<15> AG26
PCIAD<16> AE24
PCIAD<17> AG25
PCIAD<18> AG24
PCIAD<19> AF24
PCIAD<20> AG23
PCIAD<21> AE22
PCIAD<22> AF22
PCIAD<23> AE21
PCIAD<24> AG20
PCIAD<25> AG19
PCIAD<26> AF19
PCIAD<27> AE19
PCIAD<28> AF18
PCIAD<29> AG18
PCIAD<30> AE18
PCIAD<31>

Split plane decoupling
place top, near AGP connector

AGPVDDQ
3V3
NVVDD

C102 .022UF 25V 10% X7R 0402 COMMON
C516 .022UF 25V 10% X7R 0402 COMMON

Split plane decoupling
place bottom, near PCICLK

PCICBE<3..0>

C/BE0* A57 PCICBE<0> 0
C/BE1* B51 PCICBE<1> 1
C/BE2* B39 PCICBE<2> 2
C/BE3* A33 PCICBE<3> 3

PCICBE<0> AJ24
PCICBE<1> AH19
PCICBE<2> AF25
PCICBE<3> AG22

PCICLK B7
PCIRST* A7

PCICLK AG12
PCIRST* AF15

OUT 2.1H> 15.1A<
R163 0 0603 .05R COMMON
15.1O> IN BPCIRST*

REQ* B8
GNT* A8

PCIREQ* AF13
PCIGNT* AE15

FRAME* A41
IRDY* B41
TRDY* A42
DEVSEL* B46
STOP* A47
PAR A50
INTA* A6
INTB* B6 NTP_PCIINTB*

PCIFRAME* AK16
PCIIRDY* AG16
PCITRDY* AJ17
PCIDEVSEL* AJ16
PCISTOP* AH17
PCIPAR AK18
PCIINTA* AG15
TP_PCIINTB* AE10

PERR* B48 NTP_PERR*
SERR* B50 NTP_SERR*

PME* A48 NTP_AGP_PME*

TP_AGP_PME* AF10

RBF* B12
WBF* A14
DBIHI A12
DBILO B14
ST0 A10
ST1 B11
ST2

AGPRBF* AG14
AGPWBF* AG17
PIPE AJ18
<resvd> A19
AGPST0 AG13
AGPST1 AE16
AGPST2 AE13

ADSTBF0 B59
ADSTBS0 A59
ADSTBF1 B32
ADSTBS1 A32

AGPSTB0 AK24
AGPSTB0* AJ25
AGPSTB1 AG21
AGPSTB1* AF21

R517 220K 0402 1% COMMON
R524 220K 0402 1% COMMON

SBSTBF B18
SBSTB* A18

AGPSBSTB AK13
AGPSBSTB* AJ13

SBA<7..0>

SBA0* B15 SBA<0> 0
SBA1* A15 SBA<1> 1
SBA2* B17 SBA<2> 2
SBA3* A17 SBA<3> 3
SBA4* B20 SBA<4> 4
SBA5* A20 SBA<5> 5
SBA6* B21 SBA<6> 6
SBA7* A21 SBA<7> 7

SBA<0> AJ11
SBA<1> AH11
SBA<2> AJ12
SBA<3> AH12
SBA<4> AJ14
SBA<5> AH14
SBA<6> AJ15
SBA<7> AH15

AGPSBA<0>
AGPSBA<1>
AGPSBA<2>
AGPSBA<3>
AGPSBA<4>
AGPSBA<5>
AGPSBA<6>
AGPSBA<7>

AGP_VREFGC B66
AGP_VREFCG A11

NV_VREF AK29

AGPVREF

TYPEDET* A2
<resvd> A3
GCDET* *MBDET <resvd>

AGPMBDET AF16
TP_AGPBUSY* AF12
AGPSTOP AG11

AGPBUSY*
AGPSTOP*

R103 0 0402 5% NO STUFF

3V3
R525 10K 0402 5% COMMON
if easier to connect
use A3V3 instead of 3V3

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

MBDET*
BUSY*
STOP*

AGPVDDQ Decoupling

AD11 AE11 AD14 AE14 AD17 AE17 AD20 AE20 AD23 AE23 AGPVDDQ

C501 .022UF 25V 10% X7R 0402 COMMON
C502 .022UF 25V 10% X7R 0402 COMMON
C504 .022UF 25V 10% X7R 0402 COMMON
C266 .022UF 25V 10% X7R 0402 COMMON
C267 .1UF 10V 10% X7R 0402 COMMON

NVVDD Decoupling

L11 N11 P11 U11 V11 Y11 L13 Y13 L14 Y14 L17 Y17 AA17 L18 Y18 AA18 L20 N20 P20 U20 V20 Y20 VDD

C520 100PF 16V 10% X7R 0402 COMMON
C517 470PF 50V 10% X7R 0402 COMMON
C509 1000PF 16V 10% X7R 0402 COMMON
C512 4700PF 16V 20% X7R 0402 COMMON
C524 1UF 10V 10% X7R 0603 COMMON
C522 100PF 16V 10% X7R 0402 COMMON
C514 470PF 50V 10% X7R 0402 COMMON
C508 1000PF 16V 10% X7R 0402 COMMON
C515 4700PF 16V 20% X7R 0402 COMMON
C506 1UF 10V 10% X7R 0603 COMMON
C521 100PF 16V 10% X7R 0402 COMMON
C511 470PF 50V 10% X7R 0402 COMMON
C510 1000PF 16V 10% X7R 0402 COMMON
C518 4700PF 16V 20% X7R 0402 COMMON
C513 1UF 10V 10% X7R 0603 COMMON
C163 100PF 16V 10% X7R 0402 COMMON
C165 470PF 60V 10% X7R 0402 COMMON
C258 1000PF 16V 10% X7R 0402 COMMON
C263 4700PF 16V 20% X7R 0402 COMMON
C265 1UF 10V 10% X7R 0603 COMMON

5VCLAMP
VD50CLAMPO N4
VD50CLAMP1 AE9
C249 .1UF 10V 10% X7R 0402 COMMON
C569 .1UF 10V 10% X7R 0402 COMMON

3V3 Decoupling

VDD33 H6 U6 AC6 H7 U7 AC7 AD12 G14 AD15 AD16 AD19 AD22 P24

C68 .022UF 25V 10% X7R 0402 COMMON
C62 .1UF 10V 10% X7R 0402 COMMON
C51 1UF 10V 10% X7R 0603 COMMON
C37 1UF 10V 10% X7R 0603 COMMON
C67 4700PF 16V 20% X7R 0402 COMMON
C61 .022UF 25V 10% X7R 0402 COMMON
C52 .1UF 10V 10% X7R 0402 COMMON
C131 1UF 10V 10% X7R 0603 COMMON
C164 4700PF 16V 20% X7R 0402 COMMON
C250 .022UF 25V 10% X7R 0402 COMMON
C262 .1UF 10V 10% X7R 0402 COMMON
C264 1UF 10V 10% X7R 0402 COMMON

For NV18B A02 and lower R92 = 56.2

NC A1 NTP_NC1
NC AK30 NTP_NC2
NC G6 NTP_NC3
NC R7 NTP_NC4
NC T7 NTP_NC5

ACALPO R92 49.9 0402 1% COMMON
AGPCALPD_VDDQ AA13
AGPCALPU_GND AA14
ACALPU R91 49.9 0402 1% COMMON

..AGP_PLLVDD AE12 AGP_PLL_VDD

..TESTMEMCLK G24 TESTMEMCLK
TESTMODE AE5 TESTMODE

R89 10K 5% 0402 COMMON
R9 10K 5% 0402 COMMON

NOT USED ON NV18

A3V3
AGP_PLL_VDD
LB604 150-220R@100MHz BEAD_0603 COMMON
C246 470PF 50V 10% X7R 0402 COMMON
C247 4700PF 16V 20% X7R 0402 COMMON
C248 1UF 10V 10% X7R 0603 COMMON

AGPVDDQ
C114 .047UF 16V 10% X7R 0402 COMMON
C110 .047UF 16V 10% X7R 0402 COMMON
C105 .047UF 16V 10% X7R 0402 COMMON
C129 1UF 10V 10% X7R 0603 COMMON
C115 .01UF 16V 10% X7R 0402 COMMON
C111 .01UF 16V 10% X7R 0402 COMMON
C107 .01UF 16V 10% X7R 0402 COMMON
C256 .047UF 16V 10% X7R 0402 COMMON
C259 .01UF 16V 10% X7R 0402 COMMON
C260 .01UF 16V 10% X7R 0402 COMMON
C261 .01UF 16V 10% X7R 0402 COMMON

+VDDQ B34 A34 B40 A40 B47 B52 A52 B58 A58 B64 A64
GND B5 A5 B13 A13 B19 A19 B31 A31 B37 A37 B49 A49 B55 A55 B61 A61
+12V A1 B1
+5V B2 B3
+3V3 B9 A9 B16 A16 B28 A28
USB+ B4
USB- A4
OVRCNT B1

NTP_USB
NTP_USB*
NTP_OVRCNT

12V
TP_P12V
C147 .022UF 25V 10% X7R 0402 COMMON
C148 .047UF 16V 10% X7R 0402 COMMON
5V
C35 4.7UF 6.3V 10% X5R 0805 COMMON
C34 .022UF 25V 10% X7R 0402 COMMON
3V3
C70 4.7UF 6.3V 10% X5R 0805 COMMON
C525 .022UF 25V 10% X7R 0402 COMMON
C75 .022UF 25V 10% X7R 0402 COMMON

GND

CO*/BE0* C0/BE0* CLK RST*
C1*/BE1* C1/BE1* REQ GNT*
C2*/BE2* C2/BE2* FRAME* IRDY* TRDY* DEVSEL* STOP* PAR INTA* INTB*
C3*/BE3* C3/BE3* PERR* SERR* PME* RBF* WBF* DBIHI DBILO ST0 ST1 ST2
ADSTBF0 ADSTBS0 ADSTBF1 ADSTBS1 SBSTBF SBSTBS SBA0* SBA1* SBA2* SBA3* SBA4* SBA5* SBA6* SBA7*
VREFGC VREFCG
TYPEDET* <resvd> GCDET* *MBDET <resvd>

AGP univ

R645 2.32K 1% 0603 COMMON
R547 2.32K 1% 0603 COMMON
C568 .01UF 16V 10% X7R 0402 COMMON
R646 1.21K 1% 0603 COMMON
R85 6.49K 1% 0603 COMMON
R534 0 5% 0402 NO STUFF
R253 0 5% 0402 NO STUFF
AGPVREFGCEN

Q2 IRLML2502 SOT23_1G1D1S COMMON
MAX_VOLTAGE=20V CONTINUOUS_CURRENT=3A R_DS_ON=0.080R MAX_CURRENT=2A MAX_WATTAGE=0.5WBTOC K_DR_SAT=.8V

R86 10K 5% 0402 COMMON

A3V3
R87 10K 5% 0402 COMMON
MBDETB1
R93 1K 0402 5% COMMON
MBDETG1
R94 1K 0402 5% COMMON
Q4 FDC6301N SOT23_6_DUAL_1G1D1S COMMON

AGPMBDETEN
Q3 MMBT4403 SOT23_1B1CE COMMON
1B1CE

C245 .22UF 16V 10% X7R 0603 COMMON
PLACE NEAR AGP

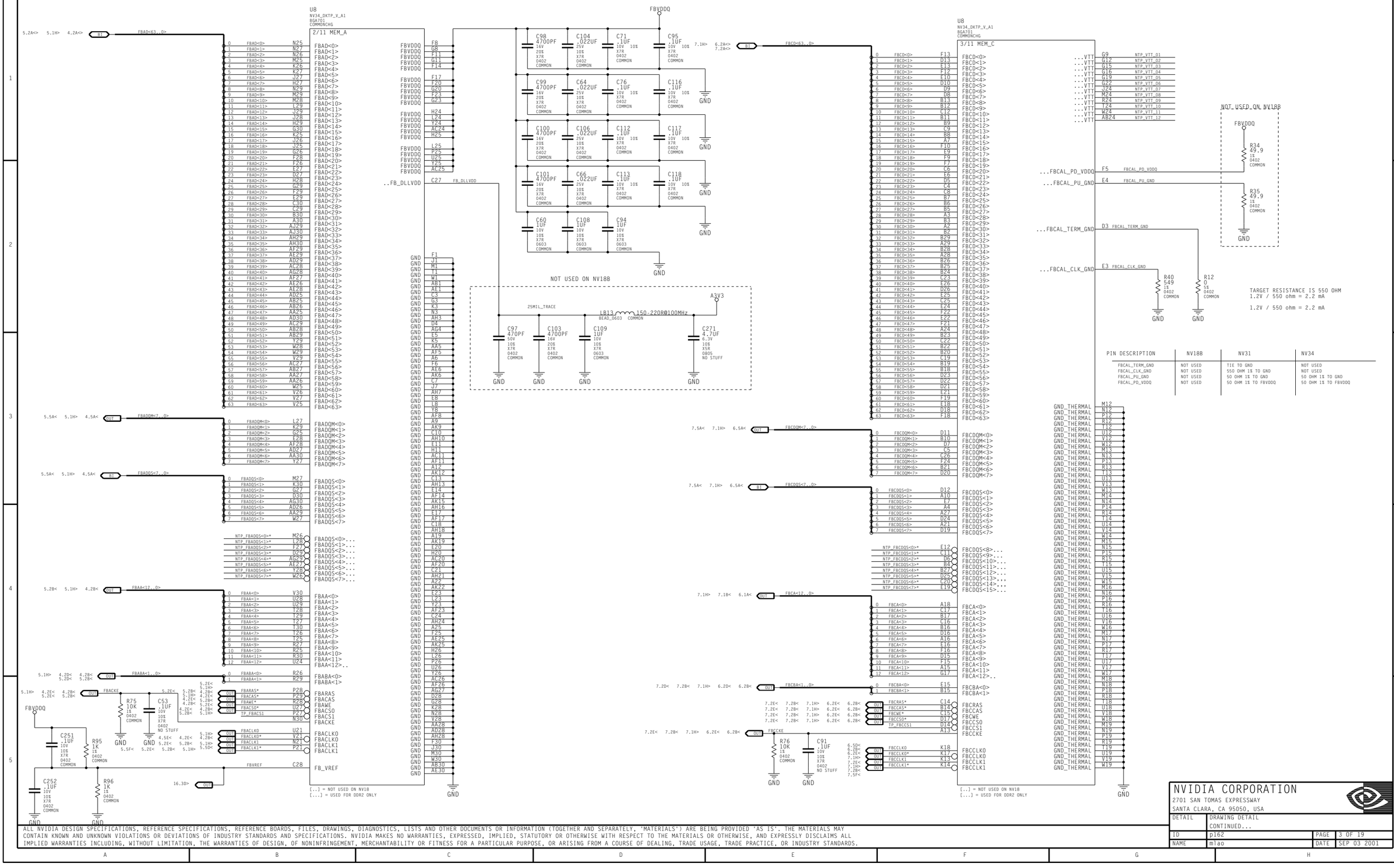
C243 .022UF 25V 10% X7R 0402 COMMON
R551 301K 1% 0603 COMMON
R552 221K 1% 0603 COMMON
C244 .01UF 16V 10% X7R 0402 COMMON
PLACE NEAR GPU

Q4 FDC6301N SOT23_6_DUAL_1G1D1S COMMON
R104 240K 5% 0402 NO STUFF
R101 158K 1% 0402 COMMON
For NV18B rev A02 and lower R101= 121K
For NV18B rev A03 and higher and NV31/34r R101= 158K
AGPVREFLCL

12V
5VCLAMP
5V
R69 0 0603 .05R NO STUFF
Q7 IRLML2502 SOT23_1G1D1S COMMON
R57 1K 0603 5% 5VCLAMPG

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

DETAIL	NVxx AGP Section and AGP connector		
ID	p162	PAGE	2 OF 19
NAME	mlao	DATE	SEP 03 2001



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

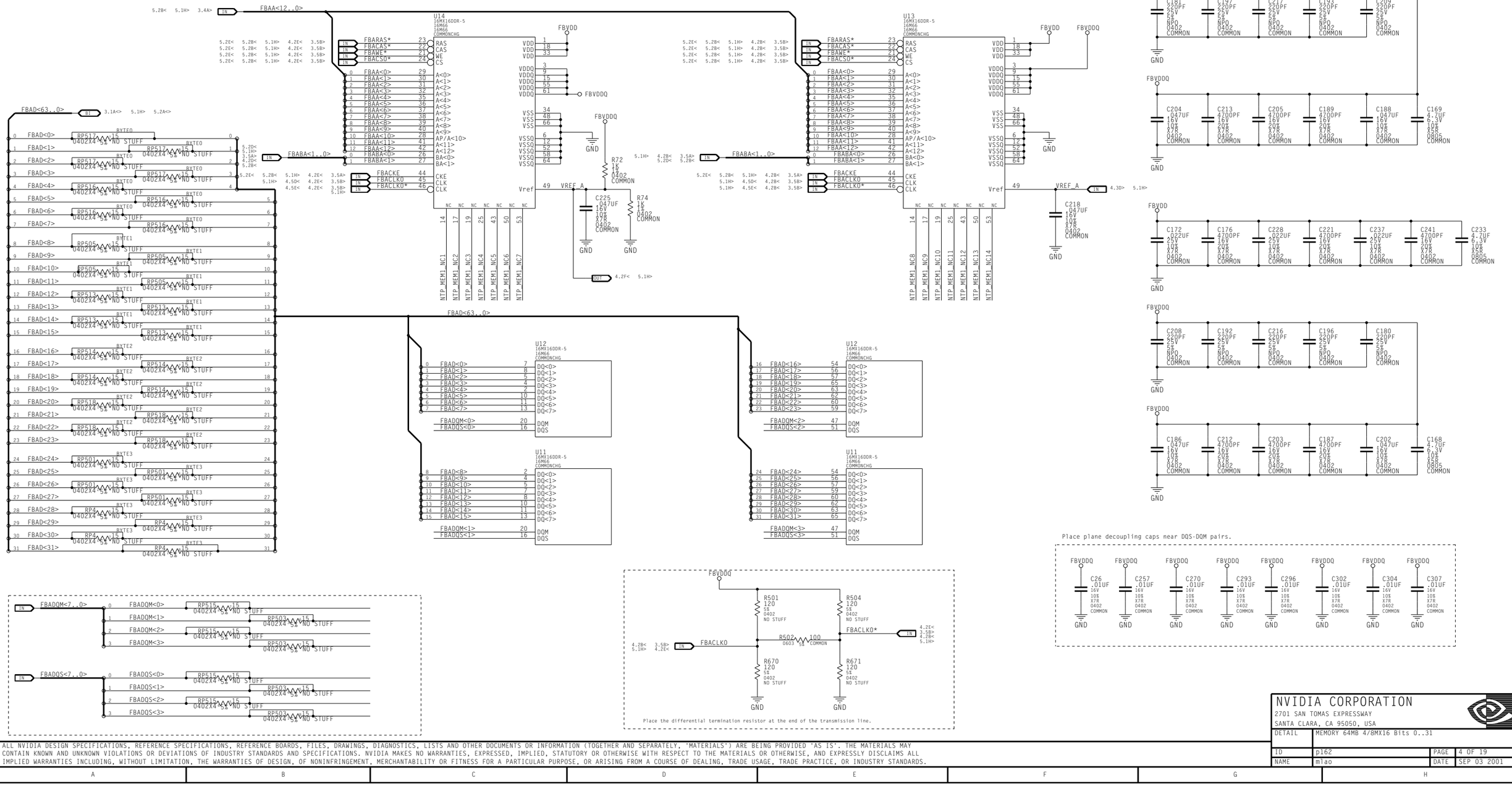
DETAIL	DRAWING DETAIL		
	CONTINUED...		
ID	p162	PAGE	3 OF 19
NAME	mlao	DATE	SEP 03 2001

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

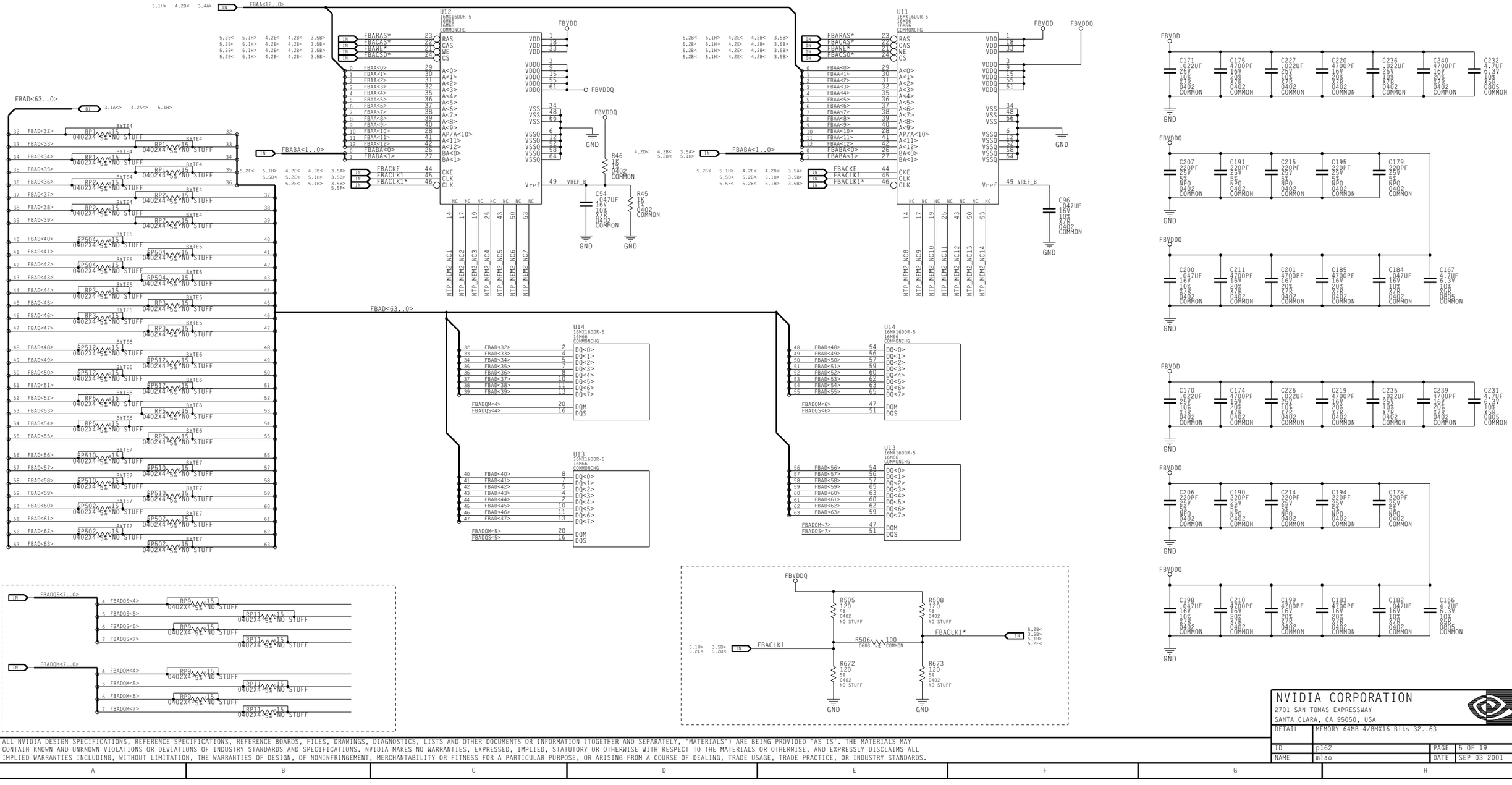


NVIDIA CORPORATION
2701 SAN TOMAS EXPRESSWAY
SANTA CLARA, CA 95050, USA

DETAIL	MEMORY 64MB 4/8MX16 Bits 0..31		
ID	p162	PAGE	4 OF 19
NAME	mlao	DATE	SEP 03 2001

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

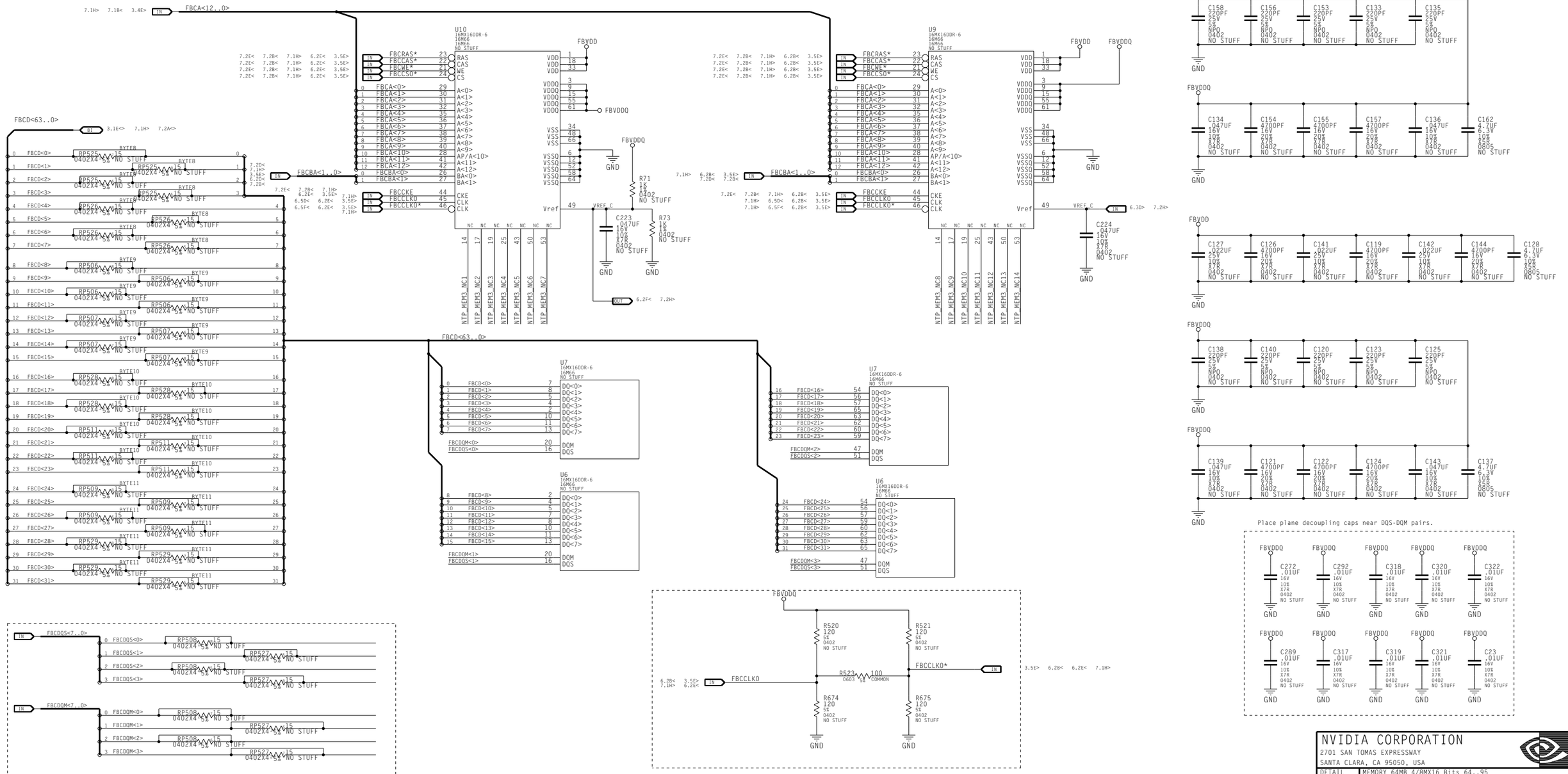
NET_PHYSICAL_TYPE	NET_SPACING_TYPE	Diffpair
FBACLK0	20MIL_G2G_30MIL	FBACLK0
FBACLK0*	20MIL_G2G_30MIL	FBACLK0
FBACLK1	20MIL_G2G_30MIL	FBACLK1
FBACLK1*	20MIL_G2G_30MIL	FBACLK1
FBAD<63..0>	10MIL	
FBADQM<7..0>	10MIL	
FBADQS<7..0>	15MIL	
FBAA<12..0>	10MIL	
FBARAS*	10MIL	
FBACAS*	10MIL	
FBAWE*	10MIL	
FBACS0*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



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

DETAIL	MEMORY 64MB 4/8MX16 Bits 32..63		
ID	p162	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

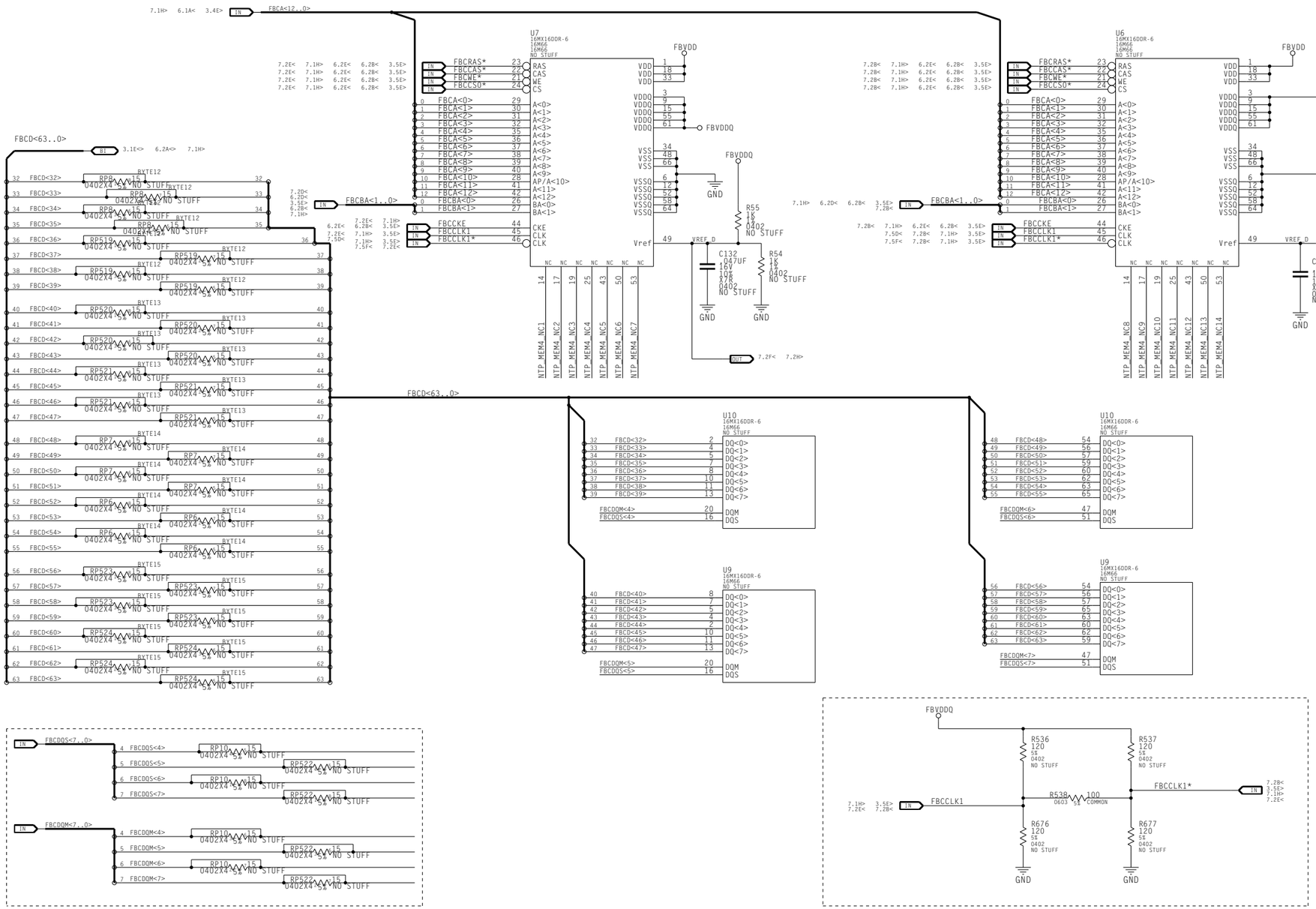


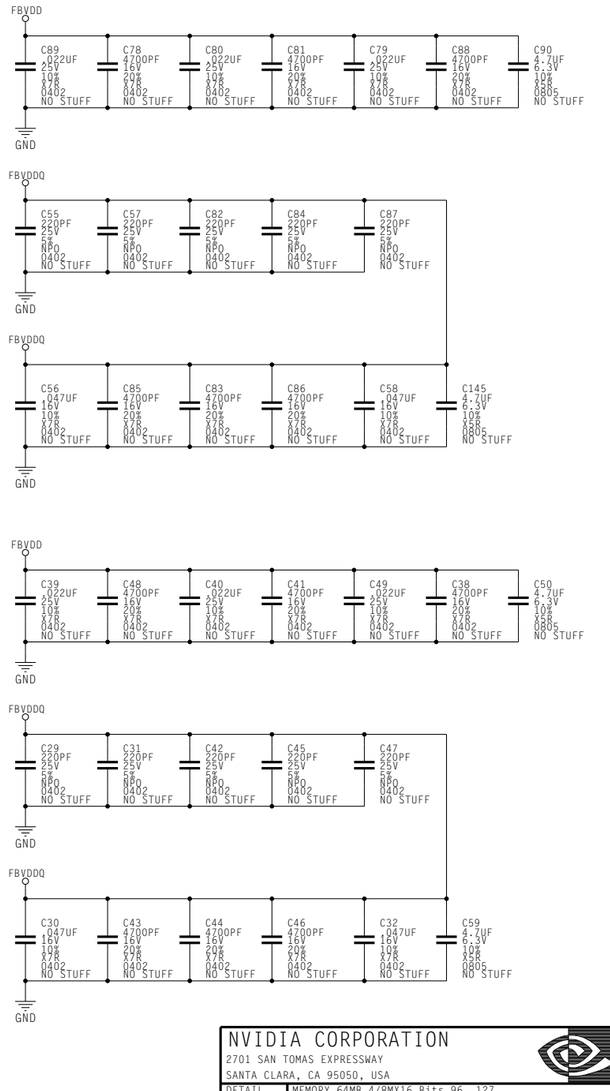
NVIDIA CORPORATION
2701 SAN TOMAS EXPRESSWAY
SANTA CLARA, CA 95050, USA

DETAIL	MEMORY 64MB 4/8MX16 Bits 64..95		
ID	p162	PAGE	6 OF 19
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

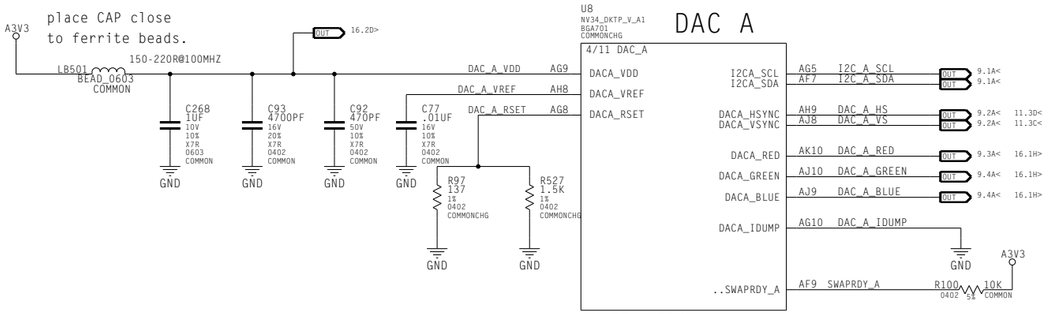




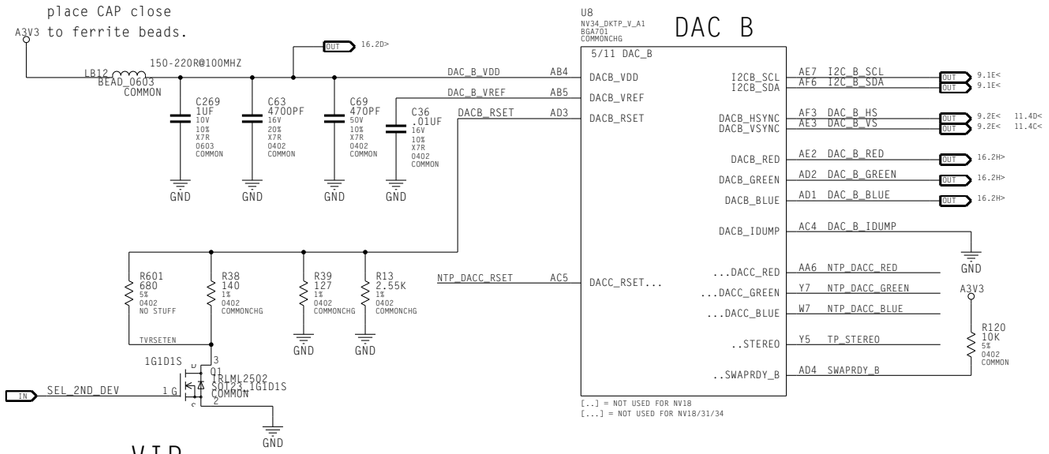
NVIDIA CORPORATION
2701 SAN TOMAS EXPRESSWAY
SANTA CLARA, CA 95050, USA

DETAIL	MEMORY 64MB 4/8MX16 Bits 96..127		
ID	p162	PAGE	7 OF 19
NAME	mlao	DATE	SEP 03 2001

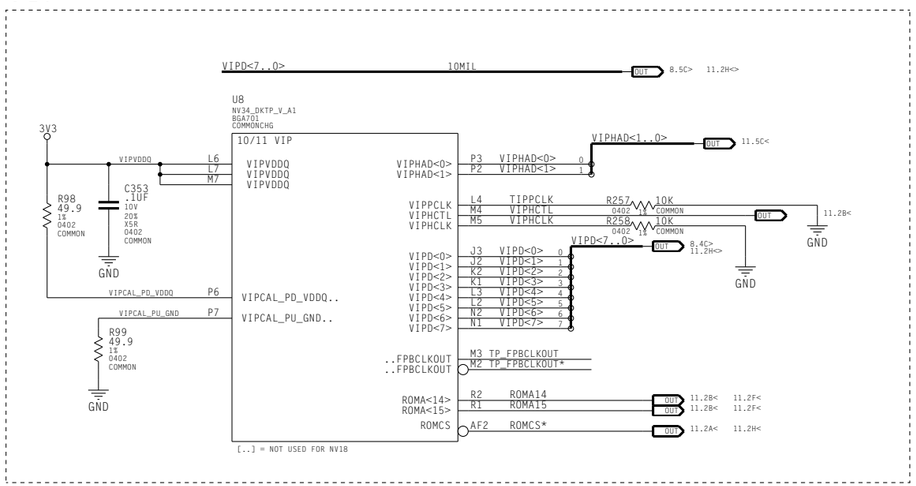
DAC A



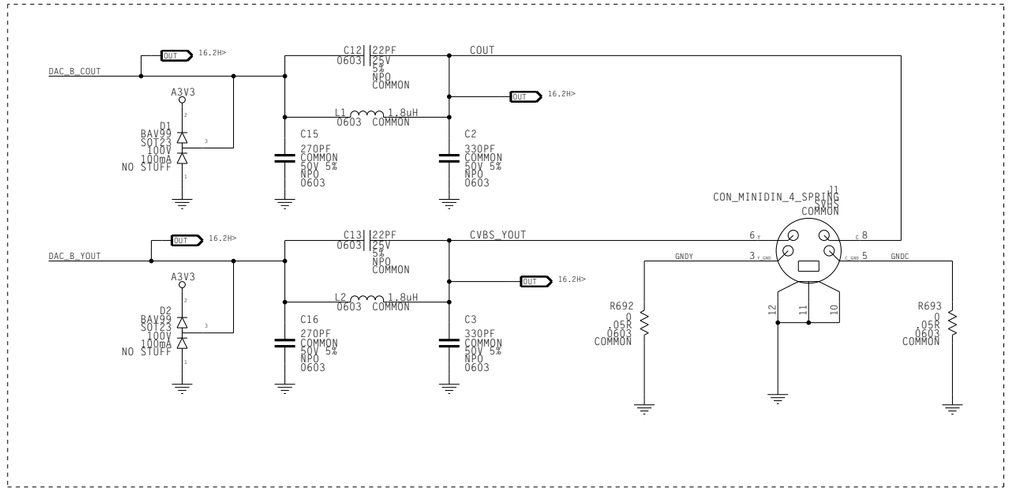
DAC B



VIP

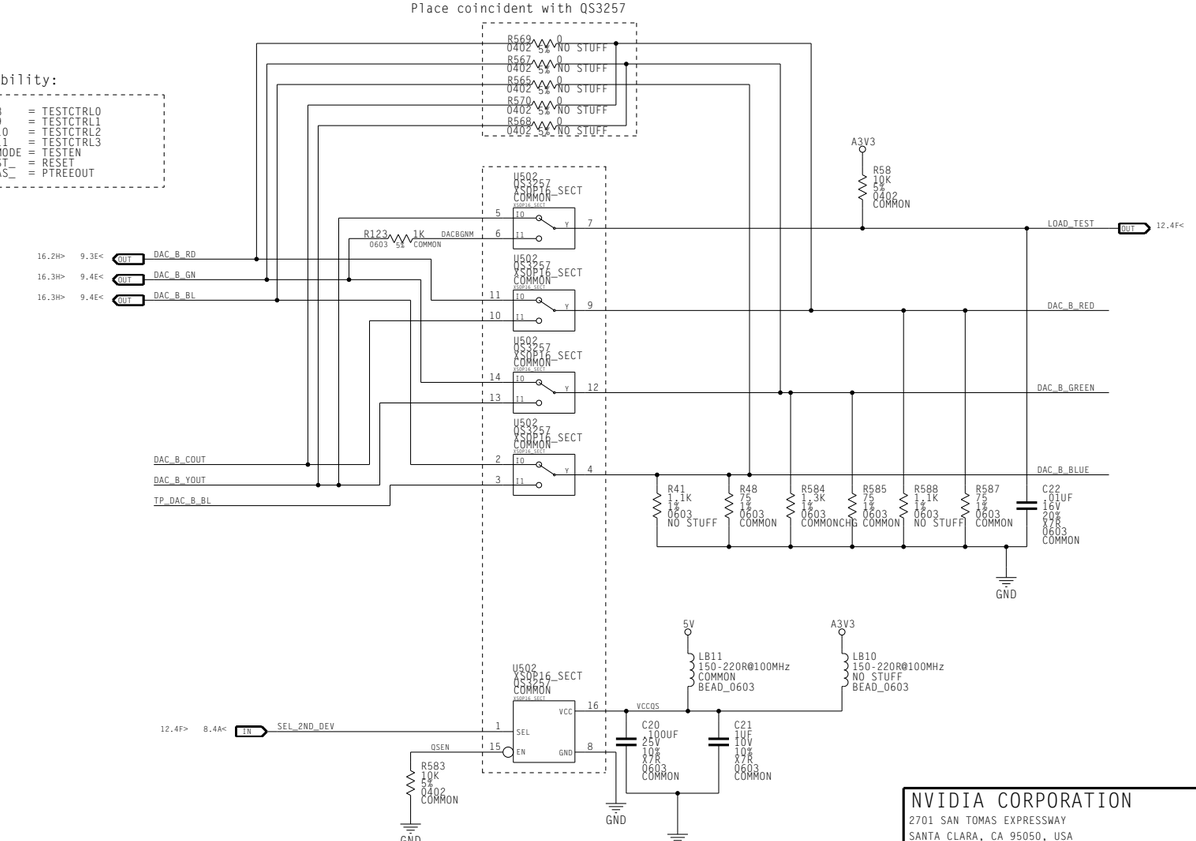


VIDEO OUT , internal DAC



DACB SWITCH BETWEEN VGA OUT AND TV OUT

Place coincident with QS3257



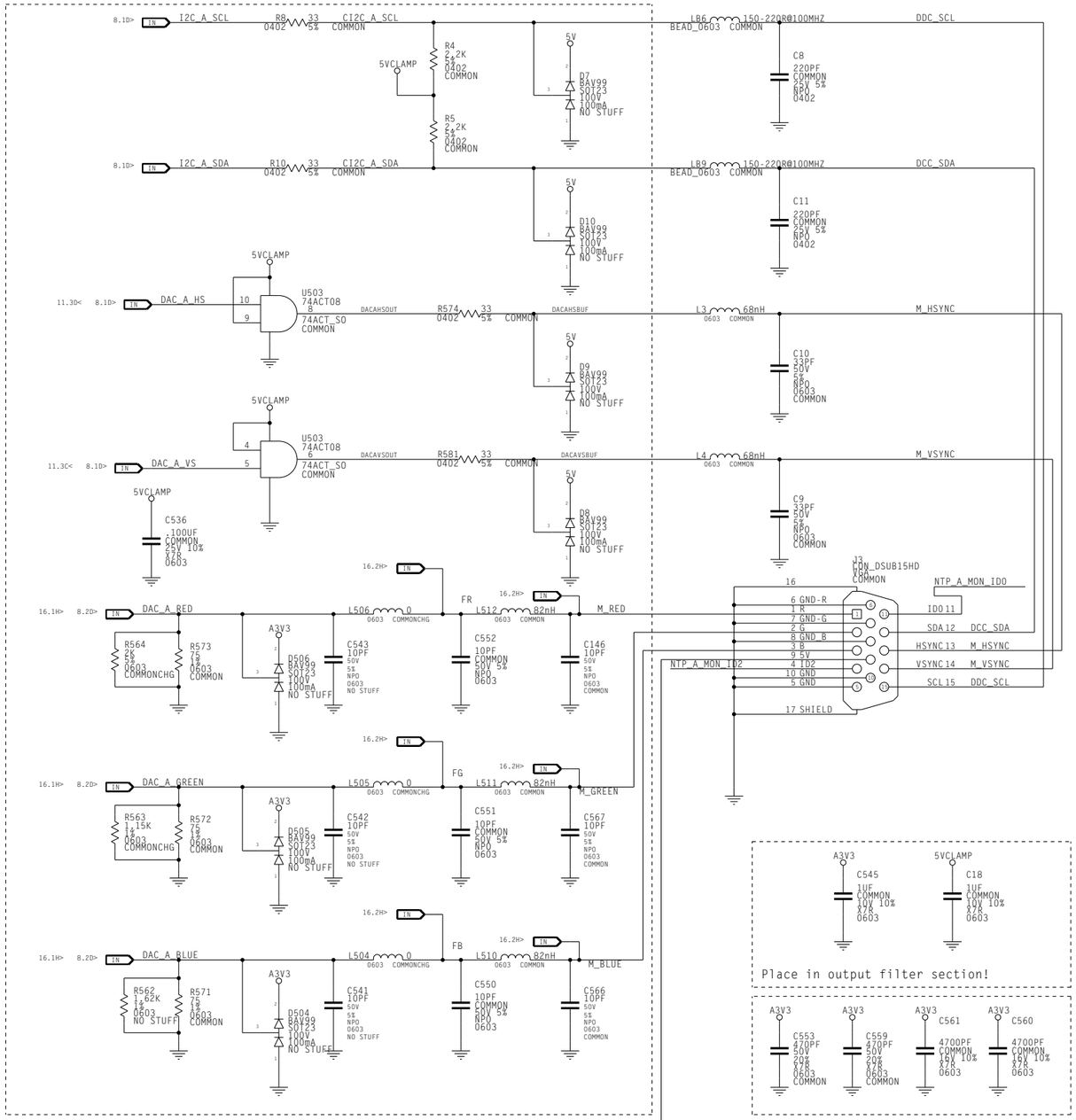
Testability:

```
DVOD8    = TESTCTRL0
DVOD9    = TESTCTRL1
DVOD10   = TESTCTRL2
DVOD11   = TESTCTRL3
TESTMODE = TESTEN
PCIRST_  = RESET
FBACAS_  = PTREEOUT
```

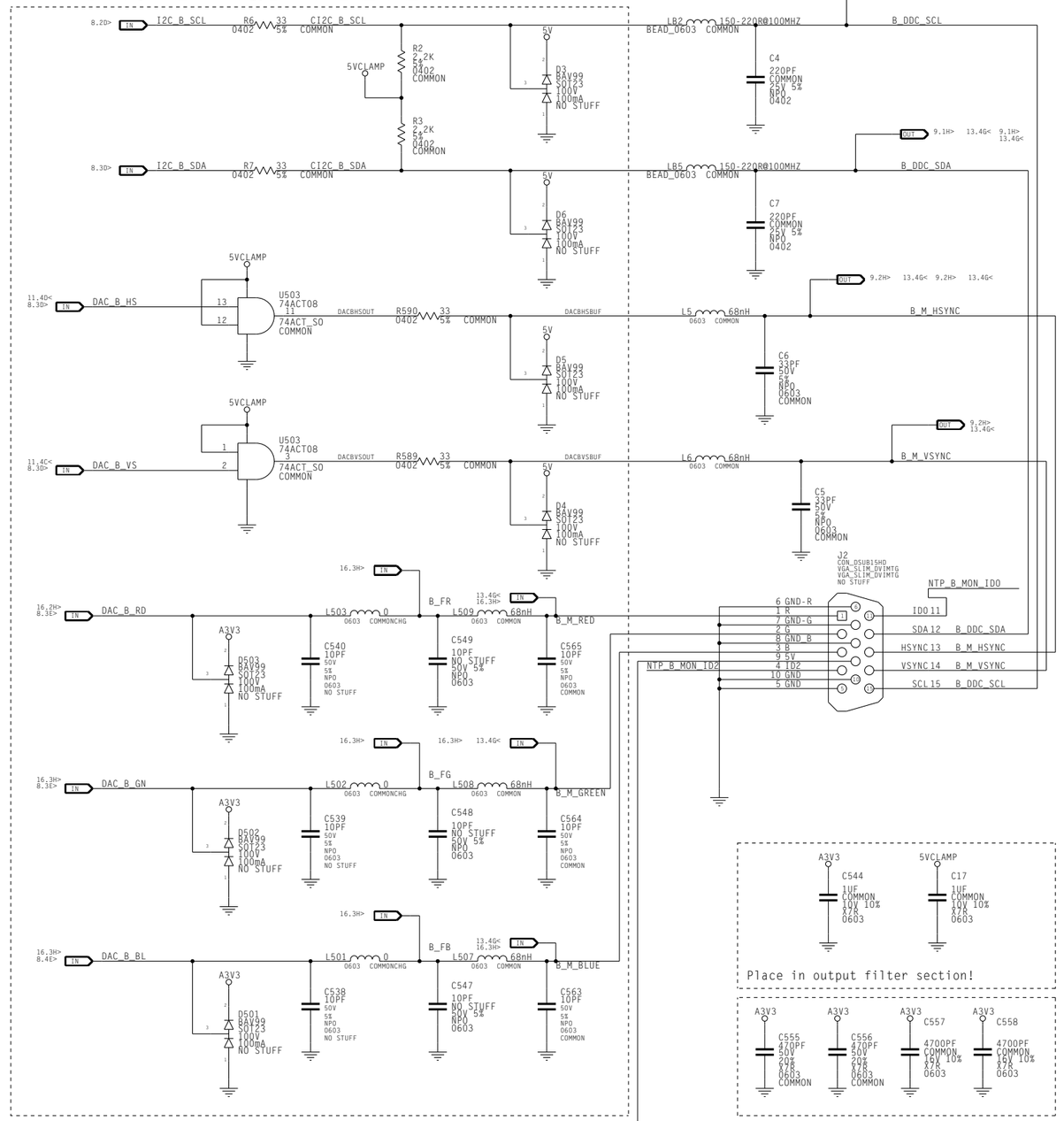

NVIDIA CORPORATION
2701 SAN TOMAS EXPRESSWAY
SANTA CLARA, CA 95050, USA

DETAIL	DACA, DACB output, PLL section DACB MUX, DACB TV-out		
ID	p162	PAGE	8 OF 19
NAME	mlao	DATE	SEP 03 2001

DAC A RGB-FILTER



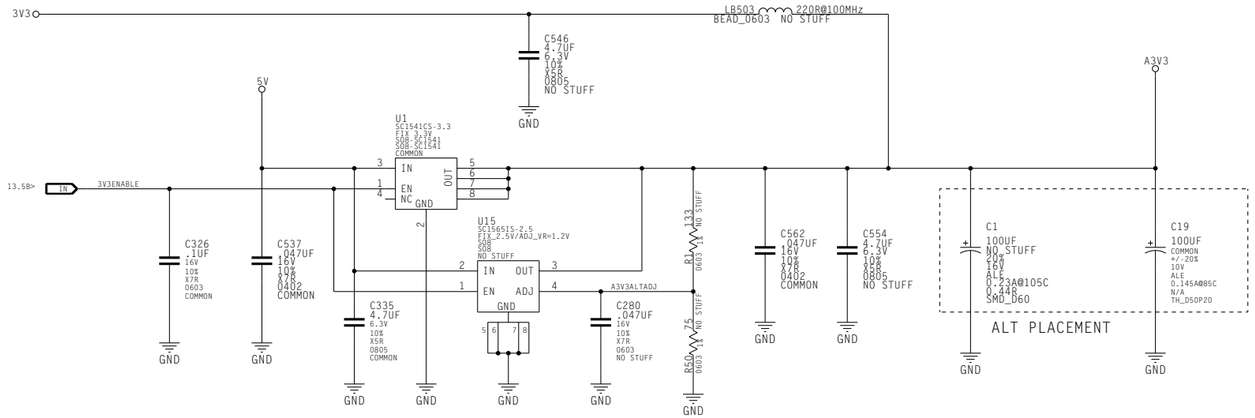
DAC B RGB-FILTER

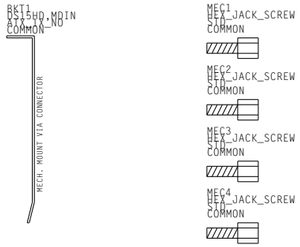


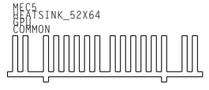
NVIDIA CORPORATION
2701 SAN TOMAS EXPRESSWAY
SANTA CLARA, CA 95050, USA

DETAIL	DACA, DACB display filter and connector SYNC amplifier		
ID	p162	PAGE	9 OF 19
NAME	mlao	DATE	SEP 03 2001

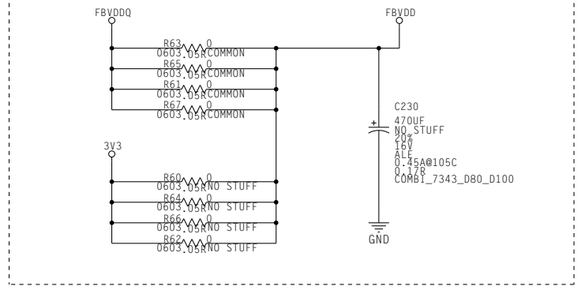
Analog Power Supply







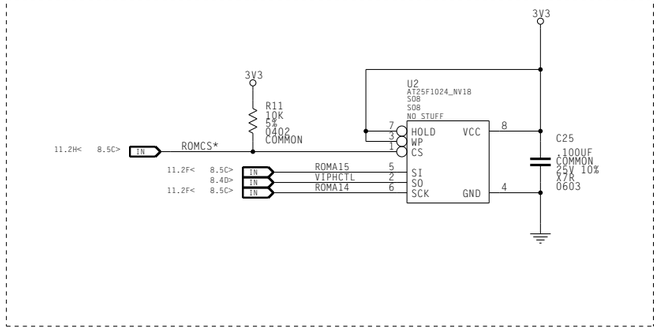
FBVDD 3.3/2.5V



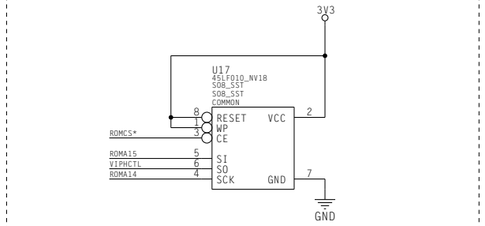
NVIDIA CORPORATION
2701 SAN TOMAS EXPRESSWAY
SANTA CLARA, CA 95050, USA

DETAIL	POWER supply: A3V3,FBVDD,FBVDDQ,NVVDD MECHANICS		
ID	p162	PAGE	10 OF 19
NAME	mlao	DATE	SEP 03 2001

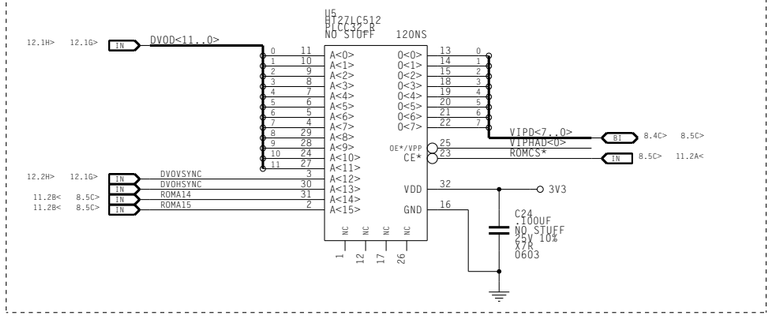
ATL BIOS (ATMEL Serial ROM)



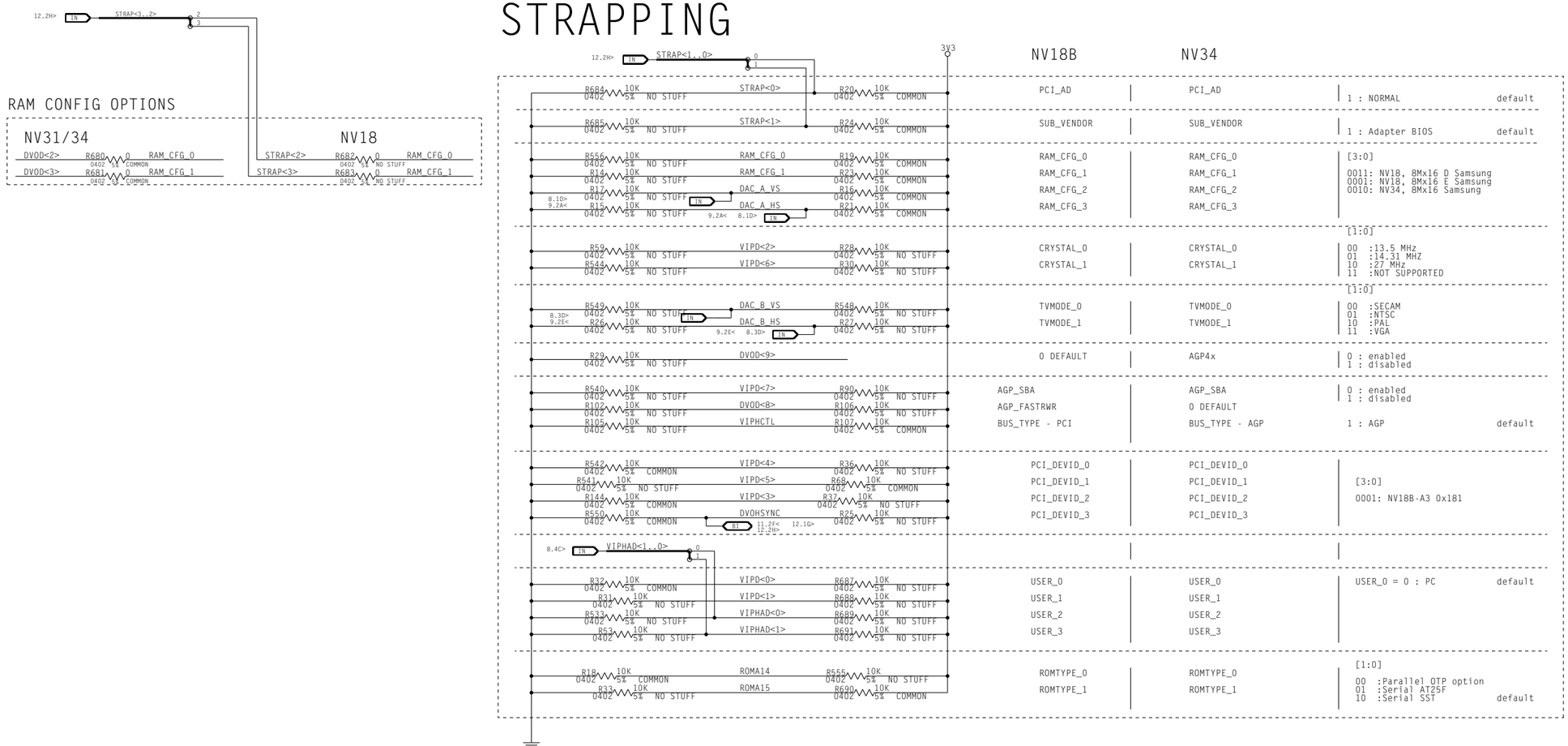
BIOS (SST Serial ROM)



PARALLEL EPROM



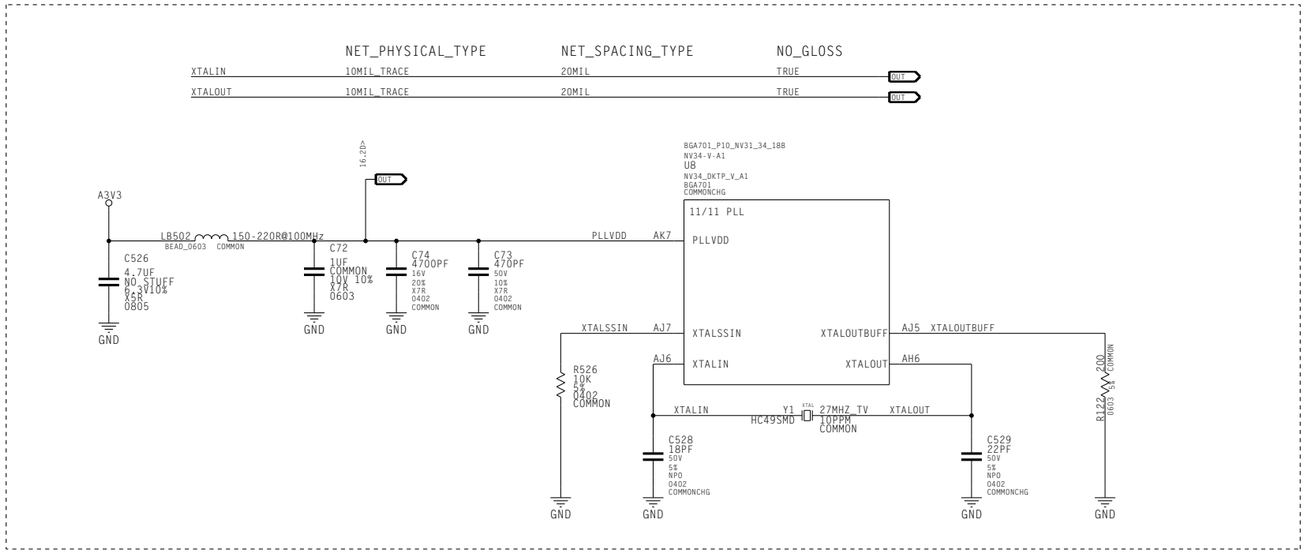
STRAPPING



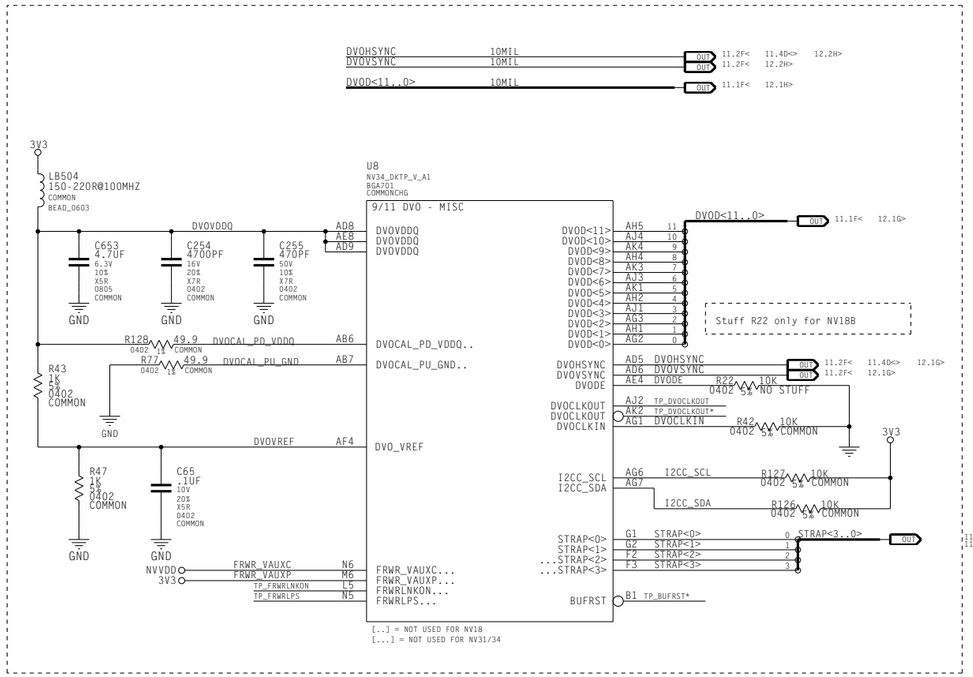
NVIDIA CORPORATION
2701 SAN TOMAS EXPRESSWAY
SANTA CLARA, CA 95050, USA

DETAIL	NV17 STRAPPING, BIOS TMDS section		
ID	p162	PAGE	11 OF 19
NAME	mlao	DATE	SEP 03 2001

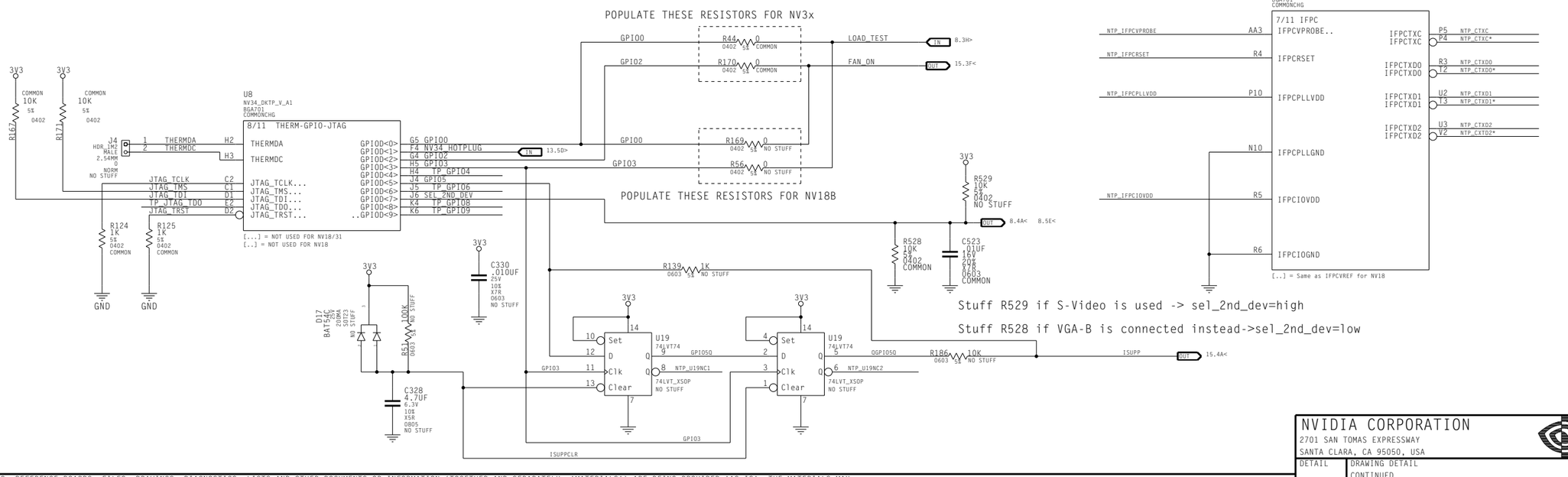
CLOCK



DVO



JTAG, THERMAL and GPIOs

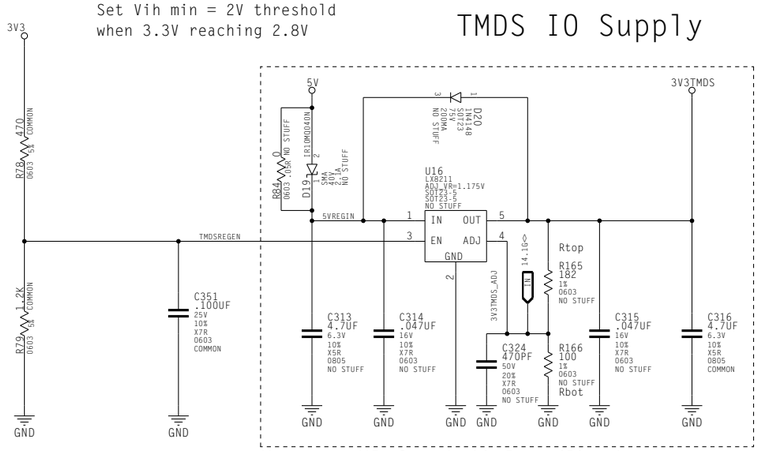


NVIDIA CORPORATION
2701 SAN TOMAS EXPRESSWAY
SANTA CLARA, CA 95050, USA

DETAIL	DRAWING DETAIL CONTINUED...		
ID	p162	PAGE	12 OF 19
NAME	mlao	DATE	SEP 03 2001

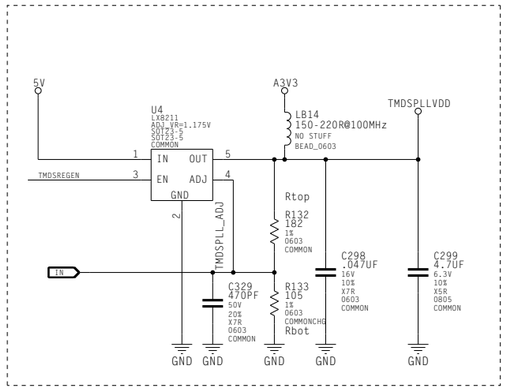
TMDS IO Supply

Set Vih min = 2V threshold
when 3.3V reaching 2.8V



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

TMDS PLL Supply

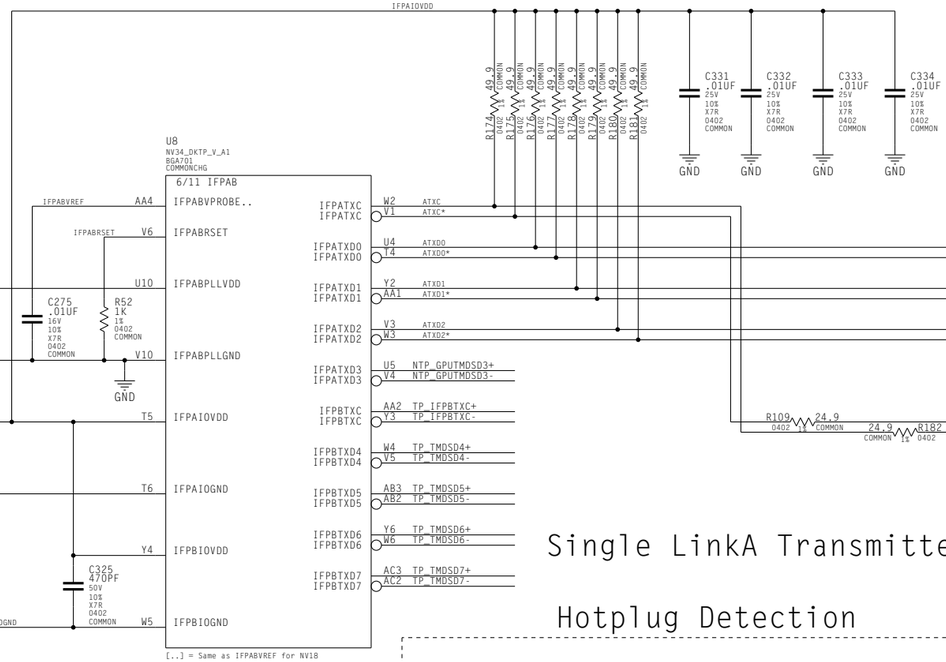


Vout = VRef * (1+Rtop/Rbot)
3.2V = 1.175V * (1+(182/105))

	NET	NET_PHYSICAL_TYPE	VOLTAGE
	IFPABVREF	12MIL_TRACE	3.3V
13.3B<	IFPABPLLVDD	12MIL_TRACE	3.3V
13.4B<	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
15.3G<	FAN_RETURN	12MIL_TRACE	3.3V
	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

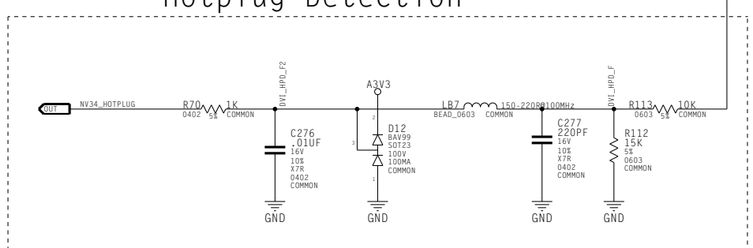
Place these parts near GPU



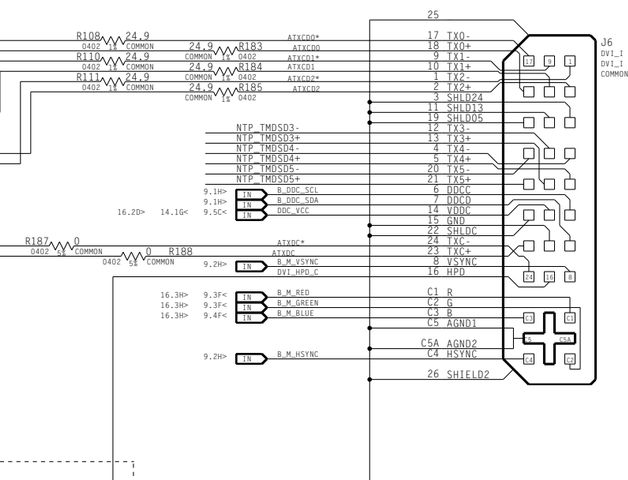
Q is on when 3v3=2.8v

Single LinkA Transmitter

Hotplug Detection



Place these parts near con.



Nv 31 Internal TMDS Trasmitter

DVI-Connector and Backdrive Prevention

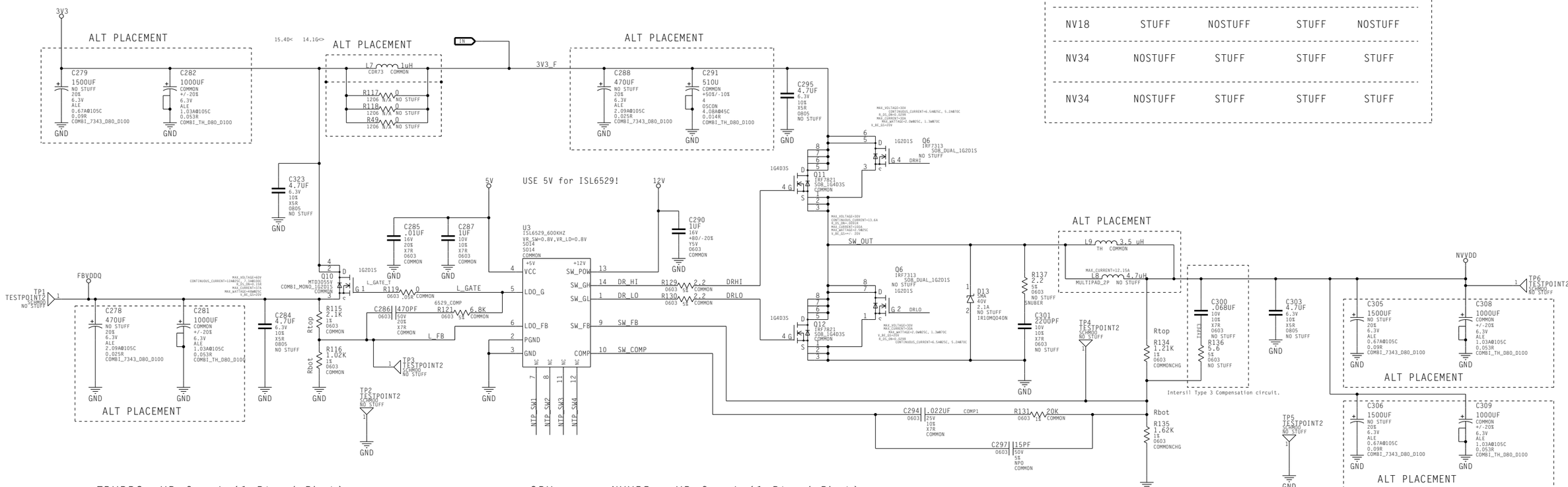
NVIDIA CORPORATION
2701 SAN TOMAS EXPRESSWAY
SANTA CLARA, CA 95050, USA

DETAIL	Nv 31 Internal TMDS Trasmitter DVI-Connector and Backdrive Prevention		
ID	p162	PAGE	13 OF 19
NAME	mlao	DATE	SEP 03 2001

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



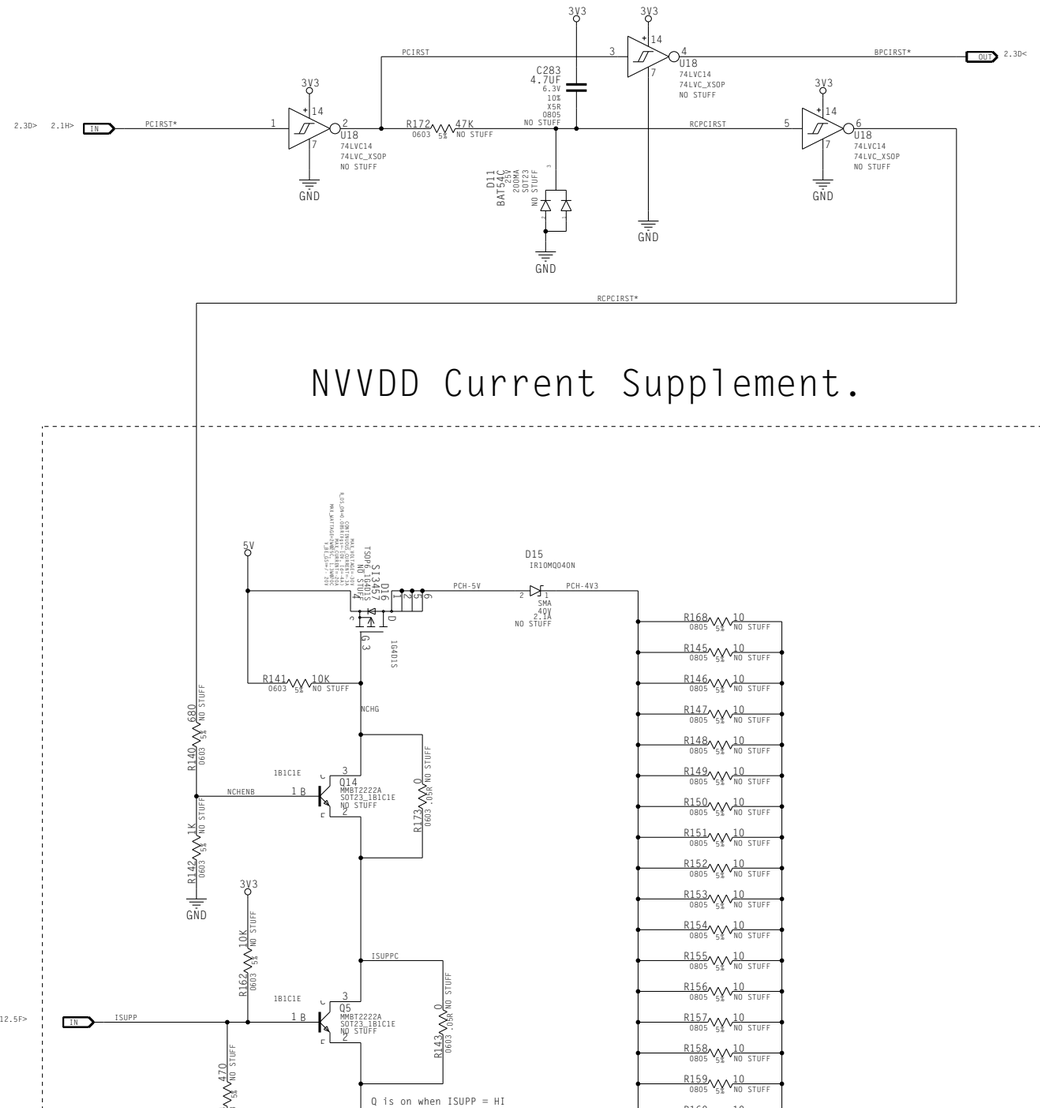
FBVDDQ= VRef * (1+Rtop/ Rbot)

ISL6529 2.45V = 0.800V * (1+2.1k/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	1.40V = 0.800V * (1+1210/1620)
NV34GL	1.55V = 0.800V * (1+1500/1620)

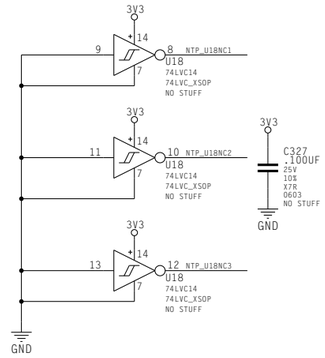
NVIDIA CORPORATION
2701 SAN TOMAS EXPRESSWAY
SANTA CLARA, CA 95050, USA

DETAIL	Power Supplies: A3V3,TMDS3V3, TMDSPLLVDD, FBVDDQ, NVVDD		
ID	p162	PAGE	14 OF 19
NAME	mlao	DATE	SEP 03 2001

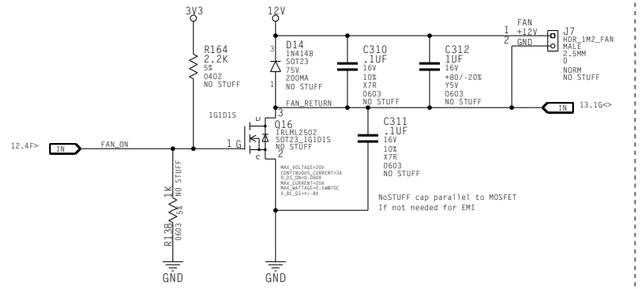


NVVDD Current Supplement.

Approx 1A (TBD after Qualification)



FAN Control



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

DETAIL	DRAWING DETAIL CONTINUED...		
ID	p162	PAGE	15 OF 19
NAME	mlao	DATE	SEP 03 2001

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<

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

DETAIL	DESIGN NET RULES		
ID	p162	PAGE	16 OF 19
NAME	mlao	DATE	SEP 03 2001

*** Signal Cross-Reference for the entire design ***

3V3ENABLE	10.2B< 13.5B>
3V3TMOS_ADJ	13.1B< 14.1G<>
3V3_F	14.1G> 14.3C< 15.4D<
12V_F	14.1G>
A3V3_ADJ	14.1G<>
AGPDB1_HI	2.1G>
AGPDB1_LO	2.1G>
AGPMBDET	2.1F>
AGPRBF*	2.1G>
AGPSTO	2.1G>
AGPST1	2.1G>
AGPST2	2.1G>
AGPSTB0	2.1F>
AGPSTB0*	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<>
ATXD0	13.1G<>
ATXD0*	13.1G<>
ATXD1	13.1G<>
ATXD1*	13.1G<>
ATXD2	13.1G<>
ATXD2*	13.1G<>
BPCIRST*	2.3D< 15.1D>
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<>
DVDD<11..0>	11.1F< 12.1G> 12.1H>
DVDD<2>	11.1F< 12.1G> 12.1H>
DVDD<3>	11.1F< 12.1G> 12.1H>
DVDD<8>	11.1F< 12.1G> 12.1H>
DVDD<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<
FBACLKO	3.5B> 4.2B< 4.2E< 4.5D< 5.1H>
FBACLKO*	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<6>	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<>
FBCD<5>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<6>	3.1E<> 6.2A<> 7.1H> 7.2A<>
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<>
FBCD<13>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<14>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<15>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<16>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<17>	3.1E<> 6.2A<> 7.1H> 7.2A<>
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<>
FBCD<22>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<23>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<24>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<25>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<26>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<27>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<28>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<29>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<30>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<31>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<32>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<33>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<34>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<35>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<36>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<37>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<38>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<39>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<40>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<41>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<42>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<43>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<44>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<45>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<46>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<47>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<48>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<49>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<50>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<51>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<52>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<53>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<54>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<55>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<56>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<57>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<58>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<59>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<60>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<61>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<62>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCD<63>	3.1E<> 6.2A<> 7.1H> 7.2A<>
FBCDQM<0>	3.3E> 6.5A< 7.1H> 7.5A<
FBCDQM<7..0>	3.3E> 6.5A< 7.1H> 7.5A<
FBCDQM<1>	3.3E> 6.5A< 7.1H> 7.5A<
FBCDQM<2>	3.3E> 6.5A< 7.1H> 7.5A<
FBCDQM<3>	3.3E> 6.5A< 7.1H> 7.5A<
FBCDQM<4>	3.3E> 6.5A< 7.1H> 7.5A<
FBCDQM<5>	3.3E> 6.5A< 7.1H> 7.5A<
FBCDQM<6>	3.3E> 6.5A< 7.1H> 7.5A<
FBCDQM<7>	3.3E> 6.5A< 7.1H> 7.5A<
FBCDQS<0>	3.3E<> 6.5A< 7.1H> 7.5A<
FBCDQS<7..0>	3.3E<> 6.5A< 7.1H> 7.5A<
FBCDQS<1>	3.3E<> 6.5A< 7.1H> 7.5A<
FBCDQS<2>	3.3E<> 6.5A< 7.1H> 7.5A<
FBCDQS<3>	3.3E<> 6.5A< 7.1H> 7.5A<
FBCDQS<4>	3.3E<> 6.5A< 7.1H> 7.5A<
FBCDQS<5>	3.3E<> 6.5A< 7.1H> 7.5A<
FBCDQS<6>	3.3E<> 6.5A< 7.1H> 7.5A<
FBCDQS<7>	3.3E<> 6.5A< 7.1H> 7.5A<
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<
FBVREF	3.5B> 16.3D>
FG	9.3B< 16.2H>
FR	9.3B< 16.2H>
I2C_A_SCL	8.1D> 9.1A<
I2C_A_SDA	8.1D> 9.1A<
I2C_B_SCL	8.2D> 9.1E<
I2C_B_SDA	8.3D> 9.1E<
IFPABPLLVDD	13.1G<> 13.3B<
IFPABVREF	13.1G<>
IFPAIOVDD	13.1G<> 13.4B<
IFPBIOVDD	13.1G<>
IFPC1OVDD	13.1G<>
IFPCPLLVDD	13.1G<>
IFPCVREF	13.1G<>
ISUPP	12.5F> 15.4A<
LOAD_TEST	8.3H> 12.4F<
M_BLUE	9.4B< 16.2H>
M_GREEN	9.3B< 16.2H>
M_RED	9.3B< 16.2H>
NV34_HOTPLUG	12.4D< 13.5D>
NV_VREF	2.1F>
PCIAD<31..0>	2.1H>
PCICBE<0>	2.1H>
PCICBE<3..0>	2.1H>

PCICBE<1>	2.1H>
PCICBE<2>	2.1H>
PCICBE<3>	2.1H>
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> 2.3D> 15.1A<
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<
ROMCS*	8.5C> 11.2A< 11.2H<
SBA<0>	2.1F<>
SBA<7..0>	2.1F<>
SBA<1>	2.1F<>
SBA<2>	2.1F<>
SBA<3>	2.1F<>
SBA<4>	2.1F<>
SBA<5>	2.1F<>
SBA<6>	2.1F<>
SBA<7>	2.1F<>
SBSTB	2.1F>
SBSTB*	2.1F>
SEL_2ND_DEV	8.4A< 8.5E< 12.4F>
STRAP<0>	11.3C< 12.2H>
STRAP<1..0>	11.3C< 12.2H>
STRAP<3..0>	11.2A< 11.3C< 12.2H>
STRAP<1>	11.3C< 12.2H>
STRAP<2>	11.2A< 12.2H>
STRAP<3..2>	11.2A< 12.2H>
STRAP<3>	11.2A< 12.2H>
SW_5V	14.1G<>
SW_12V	14.1G<>
SW_COMP	14.1G<>
SW_FB	14.1G<>
TMDSPLL_ADJ	13.2D< 14.2G<>
TMDS_BACK	13.1G<>
VIPD<0>	8.4C> 8.5C> 11.2H<>
VIPD<7..0>	8.4C> 8.5C> 11.2H<>
VIPD<1>	8.4C> 8.5C> 11.2H<>
VIPD<2>	8.4C> 8.5C> 11.2H<>
VIPD<3>	8.4C> 8.5C> 11.2H<>
VIPD<4>	8.4C> 8.5C> 11.2H<>
VIPD<5>	8.4C> 8.5C> 11.2H<>
VIPD<6>	8.4C> 8.5C> 11.2H<>
VIPD<7>	8.4C> 8.5C> 11.2H<>
VIPHAD<0>	8.4C> 11.5C<
VIPHAD<1..0>	8.4C> 11.5C<
VIPHAD<1>	8.4C> 11.5C<
VIPHCTL	8.4D> 11.2B<
VREF_A	4.2F< 4.3D> 5.1H>
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...		
ID	p162	PAGE	17 OF 19
NAME	mlao	DATE	SEP 03 2001

*** 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
C43	C	7.5G
C44	C	7.5G
C45	C	7.4G
C46	C	7.5G
C47	C	7.4H
C48	C	7.4G
C49	C	7.4H
C50	C	7.4H
C51	C	2.3H
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
C75	C	2.2A
C76	C	3.1D
C77	C	8.1B
C78	C	7.2G
C79	C	7.2H
C80	C	7.2G
C81	C	7.2G
C82	C	7.2G
C83	C	7.3G
C84	C	7.2G
C85	C	7.3G
C86	C	7.3G
C87	C	7.2H
C88	C	7.2H
C89	C	7.2G
C90	C	7.2H
C91	C	3.5E
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
C104	C	3.1D
C105	C	2.3A
C106	C	3.1D
C107	C	2.3A
C108	C	3.2D
C109	C	3.2D
C110	C	2.3A
C111	C	2.3A
C112	C	3.1D
C113	C	3.2D
C114	C	2.3A
C115	C	2.3A
C116	C	3.1D
C117	C	3.1D
C118	C	3.2D
C119	C	6.3G
C120	C	6.3G
C121	C	6.4G
C122	C	6.4G
C123	C	6.3G
C124	C	6.4G
C125	C	6.3H
C126	C	6.3G
C127	C	6.3G
C128	C	6.3H
C129	C	2.3B
C130	C	13.3B
C131	C	2.4H
C132	C	7.3D
C133	C	6.1G
C134	C	6.2G
C135	C	6.1H
C136	C	6.2H
C137	C	6.4H
C138	C	6.3G
C139	C	6.4G
C140	C	6.3G
C141	C	6.3G
C142	C	6.3H
C143	C	6.4H
C144	C	6.3H
C145	C	7.3H
C146	C	9.3C
C147	C	2.1B
C148	C	2.1B
C149	C	6.1G
C150	C	6.1G
C151	C	6.1G
C152	C	6.1G
C153	C	6.1G
C154	C	6.2G
C155	C	6.2G
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
C165	C	2.3G
C166	C	5.5H
C167	C	5.3H
C168	C	4.4H
C169	C	4.2H
C170	C	5.4G
C171	C	5.2G
C172	C	4.3G
C173	C	4.1G
C174	C	5.4G
C175	C	5.2G
C176	C	4.3G
C177	C	4.1G
C178	C	5.4H
C179	C	5.2H
C180	C	4.3H
C181	C	4.1G
C182	C	5.5H
C183	C	5.5H
C184	C	5.3H
C185	C	5.3H
C186	C	4.4G
C187	C	4.4G
C188	C	4.2H
C189	C	4.2G
C190	C	5.4G
C191	C	5.2G
C192	C	4.3G
C193	C	4.1G
C194	C	5.4H
C195	C	5.2H
C196	C	4.3G
C197	C	4.1G
C198	C	5.5G
C199	C	5.5G
C200	C	5.3G
C201	C	5.3G
C202	C	4.4H
C203	C	4.4G
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
C214	C	5.4G
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
C226	C	5.4G
C227	C	5.2G
C228	C	4.3G
C229	C	4.1G
C230	C_POL	10.4F
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
C247	C	2.5G
C248	C	2.5H
C249	C	2.3F
C250	C	2.4G
C251	C	3.5A
C252	C	3.5A
C253	C	13.4B
C254	C	12.2F
C255	C	12.2F
C256	C	2.3B
C257	C	4.5F
C258	C	2.3G
C259	C	2.3A
C260	C	2.3A
C261	C	2.3A
C262	C	2.4H
C263	C	2.3H
C264	C	2.4H
C265	C	2.3H
C266	C	2.1H
C267	C	2.1H
C268	C	8.1A
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
C279	C_POL	14.3A
C280	C	10.2D
C281	C_POL	14.4B
C282	C_POL	14.3B
C283	C	15.1B
C284	C	14.4B
C285	C	14.4C
C286	C	14.4C
C287	C	14.4C
C288	C_POL	14.3D
C289	C	6.5G
C290	C	14.4D
C291	C_POL	14.3D
C292	C	6.4G
C293	C	4.5G
C294	C	14.5E
C295	C	14.3E
C296	C	4.5G
C297	C	14.5F
C298	C	13.2E
C299	C	13.2F
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	13.2B
C314	C	13.2B
C315	C	13.2C
C316	C	13.2C
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
C326	C	10.2C
C327	C	15.1G
C328	C	12.5C
C329	C	13.2E
C330	C	12.4D
C350	C	13.5A
C351	C	13.2A
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	10.2C
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
D11	D_3PIN_CC	15.1B
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
D17	D_3PIN_CC	12.5C
D19	D_SCHOTTKY	13.1B
D20	D	13.1B
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	13.5C
LB9	L	9.1C
LB10	L	8.5G
LB11	L	8.5G
LB12	L	8.2A
LB13	L	3.2D
LB14	L	13.1E
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
Q5	Q_NPN	15.4B
Q6	Q_FET_N_ENH	14.3E 14.4E
Q7	Q_FET_N_ENH	2.5F
Q8	Q_NPN	13.5A
Q9	Q_FET_N_ENH	13.4A
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
Q17	Q_PNP	13.5B
R1	R	10.2D
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
R50	R	10.2D
R51	R	12.5C
R52	R	13.3C
R53	R	11.5C
R54	R	7.3D
R55	R	7.2D
R56	R	12.4E
R57	R	2.5E
R58	R	8.3G
R59	R	11.3C
R60	R	10.5F
R61	R	10.4F
R62	R	10.5F
R63	R	10.4F
R64	R	10.5F
R65	R	10.4F
R66	R	10.5F
R67	R	10.4F
R68	R	11.4D
R69	R	2.5F
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

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

DETAIL	DRAWING DETAIL CONTINUED...		
ID	p162	PAGE	18 OF 19
NAME	mlao	DATE	SEP 03 2001

R78	R	13.1A
R79	R	13.2A
R80	R	13.5A
R81	R	13.5A
R82	R	13.5A
R83	R	13.5A
R84	R	13.1B
R85	R	2.4A
R86	R	2.5B
R87	R	2.5C
R88	R	13.5B
R89	R	2.4F
R90	R	11.4D
R91	R	2.4F
R92	R	2.4F
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
R106	R	11.4D
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
R114	R	15.4A
R115	R	14.4B
R116	R	14.4B
R117	R	14.3C
R118	R	14.3C
R119	R	14.4C
R120	R	8.3D
R121	R	14.4C
R122	R	12.2D
R123	R	8.3F
R124	R	12.4B
R125	R	12.4B
R126	R	12.2H
R127	R	12.2H
R128	R	12.2F
R129	R	14.4D
R130	R	14.4D
R131	R	14.5F
R132	R	13.1E
R133	R	13.2E
R134	R	14.4F
R135	R	14.5F
R136	R	14.4G
R137	R	14.4F
R138	R	15.3F
R139	R	12.4E
R140	R	15.3A
R141	R	15.3B
R142	R	15.3A
R143	R	15.4B
R144	R	11.4C
R145	R	15.3C
R146	R	15.3C
R147	R	15.3C
R148	R	15.3C
R149	R	15.3C
R150	R	15.3C
R151	R	15.3C
R152	R	15.3C
R153	R	15.3C
R154	R	15.4C
R155	R	15.4C
R156	R	15.4C
R157	R	15.4C
R158	R	15.4C
R159	R	15.4C
R160	R	15.4C
R161	R	15.4C
R162	R	15.4A
R163	R	2.3D
R164	R	15.3F
R165	R	13.1C
R166	R	13.2C
R167	R	12.4B
R168	R	15.3C
R169	R	12.4E
R170	R	12.4E
R171	R	12.4B
R172	R	15.1B
R173	R	15.3B
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
R517	R	2.4D
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	12.4F
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
R571	R	9.4A
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
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_5PIN	10.2C
U2	U_MEM_FL_SER_128KX8	11.1B
U3	U_SWREG_ISL6529	14.4C
U4	U_VREG_5PIN	13.1E

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
U15	U_VREG_5PIN 10.2D
U16	U_VREG_5PIN 13.1B
U17	U_MEM_FL_SER_128KX8 11.1D
U18	U_NOT_SCHMITT 15.1B 15.1C 15.1F 15.2F
U19	U_FLIPFLOP_D_POSEDGE 12.5D 12.5E
U502	U_SW_ANA_3257 8.3F 8.4F 8.5F
U503	U_AND_2IN 9.2B 9.2F
Y1	XTAL 12.2C

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

DETAIL	DRAWING DETAIL CONTINUED...		
ID	p162	PAGE	19 OF 19
NAME	mlao	DATE	SEP 03 2001