P71, NV17, 4Mx16 SDR, 64MB, RGB, TV-out, video capture, AGP4X

PCI DEVICE ID 0X0=0X171 FOR NV17-128D.

HISTORY:

X00: Adapted from P70, with memory from P60
X24: 1) Added FB clock terminators.
X26: 1) Changed LFH to new pinout.
X30: 1) Removed cap on FBACKE.
    2) Changed FB clock terminators to 0402 packages.
X42: 1) Swapped power supply FETs
X45: 1) Added R606 in 12V supply to U600
X46: 1) Changed AGPSTOP pullup to 3.3V
    2) Added linear regulator (U602) for frame buffer rail
X50: 1) Changed from integrated to discrete video filters
X51: 1) Removed linear regulator (U602) for frame buffer rail
    2) Many BOM edits to reflect new BOM generation scheme
X52: 1) New heatsink part number.
    2) Change all FB clock terminators to 200 ohms (R210-R217)
X54: 1) NVPN edits to synchronize schematic with Agile BOM.
X56: 1) AGPSTOP_ pullup R103 re-connected to AGPVDDQ to match the PCB.
    2) Connected group of caps including C261 (pg 5) to FBVDDQ

P71-A05
    1) AGPSTOP Pulled to 3.3V from AGPVDDQ(R103)
    2) Changed VGA Filter Inductors to 2 pin 0805 pkg (L305, L307, L308, L316, L317 and L318).
    3) Added TMDS driveback circuit to block and isolate GPU 5VCLAMP, VDD33 and
       A3.3V when power is off (workaround for BugID=47136).
    4) Added a workaround for BugID 48647 on "6. NVVDD Power supply" page.
    5) Added PCI Reset logic BugID 48506.

P71-A06
    1) Added an option to connect PCI Reset to 2nd DFF CLR.

X02: P-Release Candidate
X03: Assigned SKU property NO_TMDS_BACKDRIVE option.

Stuff Option	Meaning
COMMON	Common to all assemblies
NO STUFF	Not normally present in any assembly
VIDCAP	Video Capture
RGB_PROT	RGB Protection diodes on primary DAC outputs
LFH	Second DAC channel goes to LFH connector
TV	Second DAC channel goes to S Video connector as TV out
1117	Fixed 1117 linear regulator for A3.3V
1117_ADJ	Adjustable 1117 linear regulator for A3.3V
NO_1117	Take A3.3V from system 3.3V
64B5N	64 Bit, 5 nS frame buffer
64B6N	64 Bit, 6 nS frame buffer
128B5N	128 Bit, 5 nS frame buffer
128B6N	128 Bit, 6 nS frame buffer
DESK	Desktop system
WKST	Workstation system
WKSTL	Workstation Lite system
IFPREG	IFP linear regulator
BUF_RESET	PCI RESET fix
NVVDD_SEQ	Power sequencing for NVVDD fix
TMDS_BACKDRIVE	Flat panel backdrive opton.
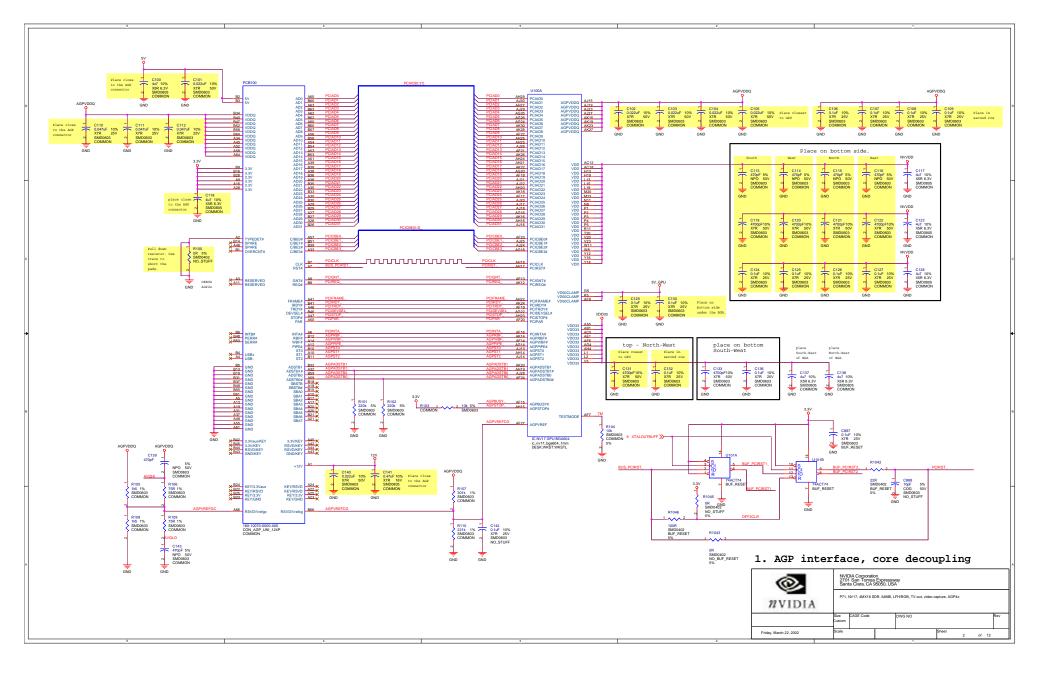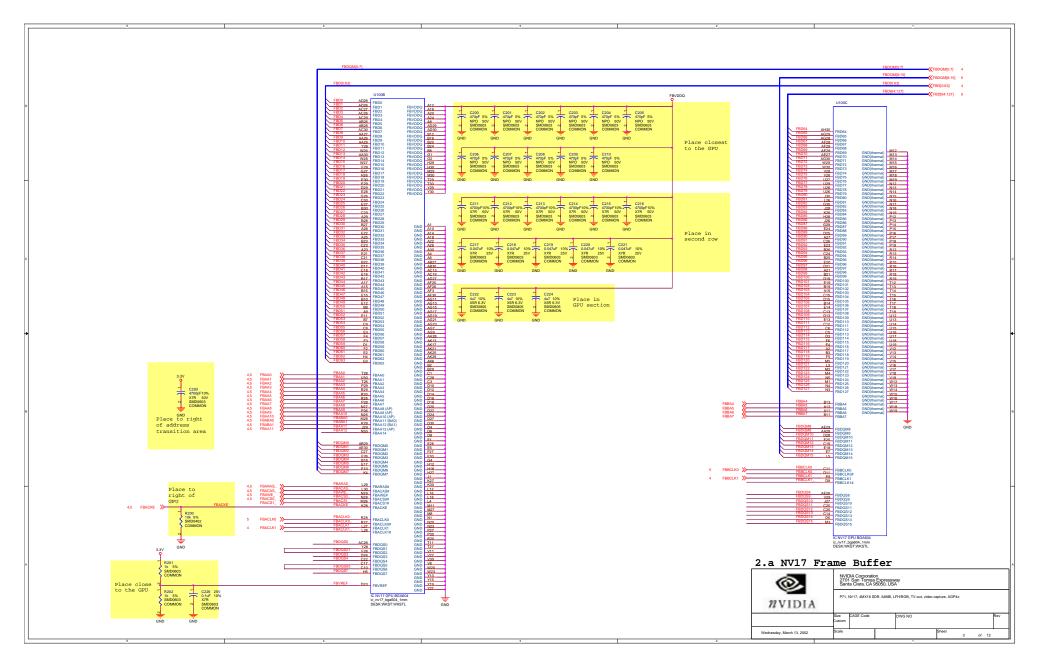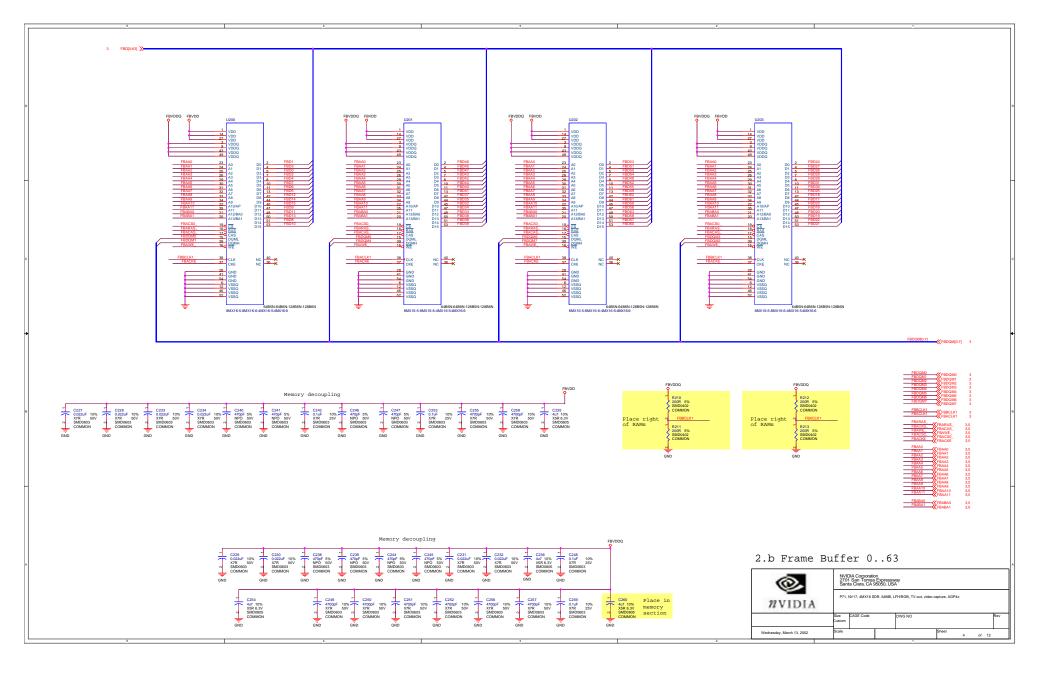
140-10071-0000-xxx
602-10071-0000-xxx

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Custom				

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This is a detailed electronic schematic diagram (PDF page). The drawing is an NVIDIA circuit schematic titled "1. AGP interface, core decoupling." Due to the extremely dense and technical nature of the schematic, the readable text labels are transcribed below.

1. AGP interface, core decoupling

Size: Custom
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Major components and labels:

- PCB100 — 180-10070-0000-A00 — CON_AGP_UNI_124P — COMMON
- U100A — IC NV17 GPU BGA604 — ic_nv17_bqa604_1mm — DESK:WKST:WKSTL
- U101A / U101B — 74ACT74 — BUF_RESET
- Bus labels: PCIAD[0:31], PCICBE[0:3], BUS_PCIRST_, PCIRST_, XTALOUTBUFF
- Power rails: 5V, 3.3V, 12V, +12V, VDDQ, AGPVDDQ, NVVDD, 5V_GPU, VDD33, VDD50CLAMP, AGPVREFCG, AGPVREFGC

Net/pin labels (partial): AD0–AD31, C/BE0#–C/BE3#, CLK, RST#, GNT#, REQ#, FRAME#, IRDY#, TRDY#, DEVSEL#, STOP#, PAR, INTA#, PERR#, SERR#, PIPE#, ST0, ST1, ST2, ADSTB1#, ADSTB0#, SBSTB#, SBSTB0#, SBA0–SBA7, AGPBUSY#, AGPSTOP#, AGPVREF, TESTMODE, TYPEDET#, SPARE, OVERCNT#, USB+, USB-, GND, RESERVED

Notes (highlighted callouts):
- "Place close to the AGP connector"
- "Place closest to GPU"
- "Place in second row"
- "Place on bottom side."
- "Place on bottom side under the BGA."
- "Pull down resistor. Use trace to short the pads."
- "top - North-West" / "place on bottom South-West"

Capacitor/resistor reference designators (partial): C100, C101, C110, C111, C112, C118, C102–C109, C113–C138, C139–C143, C887, C888, R100, R101, R102, R103, R104, R105, R106, R107, R108, R109, R110, R1042, R1043, R1045, R1046

Selected component values:
- C100 4u7 10% X5R 6.3V SMD0805 COMMON
- C101 0.022uF 10% X7R 50V SMD0603 COMMON
- C110/C111/C112 0.047uF 10% X7R 25V SMD0603 COMMON
- C118 4u7 10% X5R 6.3V SMD0805 COMMON
- C102/C103/C104/C105 0.022uF 10% X7R 50V/25V SMD0603 COMMON
- C106/C107/C108/C109 4u7 10% X5R 6.3V SMD0603 COMMON
- C113–C116 470pF 5% NPO 50V SMD0603 COMMON
- C117 4u7 10% X5R 6.3V SMD0805 COMMON
- C119–C122 4700pF 10% X7R SMD0603 COMMON
- C123 4u7 10% X5R 6.3V SMD0805 COMMON
- C124–C127 0.1uF 10% X7R 25V SMD0603 COMMON
- C128 4u7 10% X5R 6.3V SMD0805 COMMON
- C129/C130 0.1uF 10% X7R 25V SMD0603 COMMON
- C131 4700pF 10% X7R 50V SMD0603 COMMON
- C132 0.1uF 10% X7R 25V SMD0603 COMMON
- C133 4700pF 10% X7R 50V SMD0603 COMMON
- C136 0.1uF 10% X7R 25V SMD0603 COMMON
- C137/C138 4u7 10% X5R 6.3V SMD0805 COMMON
- C139 470pF NPO 5% 50V SMD0603 COMMON
- C140 0.022uF 10% X7R 50V SMD0603 COMMON
- C141 0.47uF 10% X7R 16V SMD0805 COMMON
- C142 0.1uF 10% X7R 25V SMD0603 NO_STUFF
- C143 470pF 5% NPO 50V SMD0603 COMMON
- C887 0.1uF 10% X7R 25V SMD0603 BUF_RESET
- C888 10pF 5% COG 50V SMD0603 NO_STUFF
- R100 0R 5% SMD0402 NO_STUFF
- R101/R102 220k 5% SMD0603 COMMON
- R103 10k 5% SMD0603 COMMON
- R104 10k SMD0603 COMMON 5%
- R105 1k5 1% SMD0603 COMMON
- R106 75R 1% SMD0603 COMMON
- R107 301k 1% SMD0603 COMMON
- R108 1k5 1% SMD0603 COMMON
- R109 75R 1% SMD0603 COMMON
- R110 221k 1% SMD0603 COMMON
- R1042 22R SMD0402 BUF_RESET 5%
- R1043 0R SMD0402 NO_BUF_RESET 5%
- R1045 0R SMD0402 NO_STUFF 5%
- R1046 100R SMD0402 BUF_RESET 5%

Rail labels near lower left: AVQHI, AVQLO, NVQLO

Signal labels near buffer: BUF_PCIRST1_, BUF_PCIRST2_, DFF2CLR, TM

DEBUG AGP2x

2.a NV17 Frame Buffer

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Place closest to the GPU

Place in second row

Place in GPU section

Place to right of address transition area

Place to right of GPU

Place close to the GPU

2.b Frame Buffer 0..63

FBD[0:63]

U200 — 64B5N:64B6N:128B5N:128B6N — 8MX16-5:8MX16-6:4MX16-5:4MX16-6

U201 — 64B5N:64B6N:128B5N:128B6N — 8MX16-5:8MX16-6:4MX16-5:4MX16-6

U202 — 64B5N:64B6N:128B5N:128B6N — 8MX16-5:8MX16-6:4MX16-5:4MX16-6

U203 — 64B5N:64B6N:128B5N:128B6N — 8MX16-5:8MX16-6:4MX16-5:4MX16-6

FBDQM[0:7]

Memory decoupling

Memory decoupling

Place right of RAMs

Place right of RAMs

Place in memory section

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3 FBD[64:127]

FBVDDQ FBVDD   U204
FBVDDQ FBVDD   U205
FBVDDQ FBVDD   U206
FBVDDQ FBVDD   U207

NS:NS:4Mx16-5:4Mx16-6   64B5N:64B6N:128B5N:128B6N
NS:NS:4Mx16-5:4Mx16-6   64B5N:64B6N:128B5N:128B6N
64B5N:64B6N:128B5N:128B6N
64B5N:64B6N:128B5N:128B6N

FBDQM[8:15] 3

FBVDD

C263 0.022uF 10% X7R 50V SMD0603 COMMON
C266 470pF 5% NPO 50V SMD0603 COMMON
C269 470pF 5% X7R 50V SMD0603 COMMON
C272 4700pF 10% NPO 50V SMD0603 COMMON
C273 4700pF 10% X7R 50V SMD0603 COMMON
C275 0.1uF 10% X7R 25V SMD0603 COMMON
C277 0.022uF 10% X7R 50V SMD0603 COMMON
C279 0.022uF 10% X7R 50V SMD0603 COMMON
C283 470pF 5% NPO 50V SMD0603 COMMON
C288 4700pF 10% X7R 50V SMD0603 COMMON
C290 4700pF 10% X7R 50V SMD0603 COMMON
C291 0.022uF 10% X7R 25V SMD0603 COMMON
C265 4u7 6.3V SMD0805 COMMON

GND

FBVDDQ
R214 200R 5% SMD0402 COMMON
Place right of RAMs   FBBCLK0
R215 200R 5% SMD0402 COMMON
GND

FBVDDQ
R216 200R 5% SMD0402 COMMON
Place right of RAMs   FBACLK0
R217 200R 5% SMD0402 COMMON
GND

FBBCLK0   FBBCLK0   3
FBACLK0   FBACLK0   3
FBARAS   FBARAS   3,4
FBACAS_   FBACAS_   3,4
FBAWE_   FBAWE_   3,4
FBACS0_   FBACS0_   3,4
FBACKE   FBACKE   3,4
FBAA0   FBAA0   3,4
FBAA1   FBAA1   3,4
FBAA2   FBAA2   3,4
FBAA3   FBAA3   3,4
FBAA4   FBAA4   3,4
FBAA5   FBAA5   3,4
FBAA6   FBAA6   3,4
FBAA7   FBAA7   3,4
FBAA8   FBAA8   3,4
FBAA9   FBAA9   3,4
FBAA10   FBAA10   3,4
FBAA11   FBAA11   3,4
FBABA0   FBABA0   3,4
FBABA1   FBABA1   3,4

Memory decoupling   FBVDDQ

C261 0.022uF 10% X7R 50V SMD0603 COMMON
C262 0.022uF 10% X7R 50V SMD0603 COMMON
C274 4700pF 10% X7R 50V SMD0603 COMMON
C264 0.022uF 10% X7R 50V SMD0603 COMMON
C267 470pF 5% NPO 50V SMD0603 COMMON
C268 470pF 5% NPO 50V SMD0603 COMMON
C271 4700pF 10% X7R 50V SMD0603 COMMON
C270 0.1uF 10% X7R 25V SMD0603 COMMON
C276 4u7 10% X5R 6.3V SMD0805 COMMON

Memory decoupling   FBVDDQ

C294 0.022uF 10% X7R 50V SMD0603 COMMON
C278 0.022uF 10% X7R 50V SMD0603 COMMON
C289 4700pF 10% X7R 50V SMD0603 COMMON
C280 0.022uF 10% X7R 50V SMD0603 COMMON
C281 4u7 10% X5R 6.3V SMD0805 COMMON
C282 470pF 5% NPO 50V SMD0603 COMMON
C287 4700pF 10% X7R 50V SMD0603 COMMON
C284 470pF 5% NPO 50V SMD0603 COMMON
C285 470pF 5% NPO 50V SMD0603 COMMON
C286 0.1uF 10% X7R 25V SMD0603 COMMON
C292 4u7 10% X5R 6.3V SMD0805 COMMON

Place in memory section

GND

2.c Frame Buffer 64...127

3.a Dual DAC, 1st VGA

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3.b Dual DAC, 2nd VGA

DDC5V   DDC5V   6
L311 SMD0805 LFH 1 2 220R 5% Ferrite 3A
C322 220p 5% NPO 50V SMD0603 LFH
GND
DDC2VCC   DDC2VCC 8

5V R317 LFH 1 2 2k2 5% SMD0603
I2C0SDA   I2C0SDA   6   R318 LFH 1 2 33R 5% SMD0603   TI2C0SDA
L312 SMD0805 LFH 1 2 150_220 5% Ferrite 300mA
C323 220p 5% NPO 50V SMD0603 LFH   GND
5V D307 215mA 70V BAV99 IC_SOT23_123 LFH   GND
MI2C0SDA   MI2C0SDA 8

5V R319 LFH 1 2 2k2 5% SMD0603
I2C0SCL   I2C0SCL   6   R320 LFH 1 2 33R 5% SMD0603   TI2C0SCL
L313 SMD0805 LFH 1 2 150_220 5% Ferrite 300mA
C324 220p 5% NPO 50V SMD0603 LFH   GND
5V D308 215mA 70V BAV99 IC_SOT23_123 LFH   GND
MI2C0SCL   MI2C0SCL 8

U300C IC 74ACT08 SO14 5V 9 10 8 C2HS IC_SO14_150MIL COMMON GND
R321 LFH 1 2 33R 5% SMD0603   C2HSBUF
CRT2HSYNC   CRT2HSYNC   6
R322 NO_STUFF 1 2 33R 5% SMD0603   C2HSBUF
L314 SMD0805 LFH 1 2 150_220 5% Ferrite 300mA
C325 22p 5% COG 50V SMD0603 LFH   GND
5V D309 215mA 70V BAV99 IC_SOT23_123 LFH   GND
MCRT2HSYNC   MCRT2HSYNC 8

U300A IC 74ACT08 SO14 5V 1 2 3 C2VS IC_SO14_150MIL COMMON GND
R323 1 2 33R 5% SMD0603   C2VSBUF
CRT2VSYNC   CRT2VSYNC   6
R324 NO_STUFF 1 2 33R 5% SMD0603   C2VSBUF
L315 SMD0805 LFH 1 2 150_220 5% Ferrite 300mA
C326 22p 5% COG 50V SMD0603 LFH   GND
5V D310 215mA 70V BAV99 IC_SOT23_123 LFH   GND
MCRT2VSYNC   MCRT2VSYNC 8

6,9 DAC2RED   DAC2RED
L322 SMD0805 LFH 1 2 68nF F2R Ferrite 5% 300mA
L316 SMD0805 LFH 1 2 68nF F2R Ferrite 5% 300mA
C338 15pF 5% COG 50V SMD0603 LFH
C339 4.7pF 5% COG 50V SMD0603 LFH
A3.3V C340 10p 5% COG 50V SMD0603 LFH
D311 215mA 70V BAV99 IC_SOT23_123 LFH GND
MDAC2RED 8   MDAC2RED

6,9 DAC2GREEN   DAC2GREEN
GND L323 SMD0805 LFH 1 2 68nF F2G Ferrite 5% 300mA
L317 SMD0805 LFH 1 2 68nF F2G Ferrite 5% 300mA
C341 15pF 5% COG 50V SMD0603 LFH
C342 4.7pF 5% COG 50V SMD0603 LFH
A3.3V C343 10p 5% COG 50V SMD0603 LFH
D312 215mA 70V BAV99 IC_SOT23_123 LFH GND
MDAC2GREEN 8   MDAC2GREEN

6,9 DAC2BLUE   DAC2BLUE
GND L324 SMD0805 LFH 1 2 68nF F2B Ferrite 5% 300mA
L318 SMD0805 LFH 1 2 68nF F2B Ferrite 5% 300mA
C344 15pF 5% COG 50V SMD0603 LFH
C345 4.7pF 5% COG 50V SMD0603 LFH
A3.3V C346 10p 5% COG 50V SMD0603 LFH
D313 215mA 70V BAV99 IC_SOT23_123 LFH GND
MDAC2BLUE 8   MDAC2BLUE

GND

A3.3V C327 4u7 10% X5R 6.3V SMD0805 COMMON GND
5V C328 4u7 10% X5R 6.3V SMD0805 COMMON GND

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4. Panel

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M2

Passive
HEATSINK_NV10
COMMON

5. TV out, video capture, stereo

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FBVDDQ   FBVDD   3.3V

5V   3.3V

R1039   R1040
10K   8.2K
NVVDD_SEQ   NVVDD_SEQ

D805
MMBD4148_SOT23_123
NVVDD_SEQ

Workaround for BugID 48647.

Q803
PMBT2222
NVVDD_SEQ

Q804
PMBT2222
NVVDD_SEQ

SS_VTH

R1041
4.7K
NVVDD_SEQ

3.3V

C611
4u7 10%
X5R 6.3V
SMD0805
COMMON
GND

C612
100uF   20%
ALE   16V
230mA   0.44Ohm
CAP_ALE_SMD_6_3
COMMON
GND

L600   1uH   20%
IND_CDR73   Ferrite 6.69A
COMMON

F3.3V

C606
470uF   20%
ALE-EX   6.3V
2.1A   27mO
CAPS_SMD_8_0-10_0_SANYO
COMMON
GND

F3.3V

C616
4u7 10%
X5R 6.3V
SMD0805
COMMON
GND

NVVDD

NVVDD

C632
N/A   N/A
N/A   N/A
SMD0603
NO_STUFF
NCOMP

5V   12V

C617   C618
1uF   20%   1uF   20%
X5R   16V   X5R   16V
SMD0603   SMD0603
COMMON   COMMON
GND   GND

Q1B
IRF7313

SOFTSTART

C619
0.1uF 10%
X7R   25V
SMD0603
COMMON
GND

TP600
NVVDD
HOLE_48C28P
NO_STUFF

R614
N/A N/A
SMD0603
NO_STUFF

R615
1k   1%
SMD0603
COMMON

U600
VCC   VC   12V_IN   R606   47R
5%
COMMON   SMD0603

SS   HDRV   HDRV   R604   2R2   HGATE
5%
COMMON   SMD0603

FB   LDRV   LDRV   R609   2R2   LGATE
5%
COMMON   SMD0603

COMP   GND
IRU3037A
IC_SO8
COMMON

Q1A
IRF7313

PHASE   L601   4u7 20%   NVVDD
IND_MULTIPADS_2P   Ferrite 6.8A
COMMON

NVVDD=1.6V/4A   NVVDD

SW_FB

R610
NO STUFF   270k
1%;5%
SMD0603

RCOMP

C639
SMD0603   2200pF   10%
COMMON   X7R   16V

C640
SMD0603   0.01uF   10%   SW_COMP
NO STUFF   X7R   50V

TP601
SW_FB
HOLE_48C28P
NO_STUFF

R617
1k   1%
SMD0603
COMMON

TP602
GND
HOLE_48C28P
NO_STUFF
GND

IRU3037A
NVVDD=0.80V*(1+R615/R617)

R612
30K   5%
SMD0603
COMMON
GND

R611
N/A N/A
SMD0603
NO_STUFF

SNUB

C633
N/A   N/A
N/A   N/A
SMD0603
NO_STUFF
GND

Q1A
IRF7313

D24
SMA 2.1A

GND

Use multiple
vias for GND
connection

C620
4u7 10%
X5R 6.3V
SMD0805
COMMON
GND

C622
470uF   20%
ALE-EX   6.3V
2.1A   27mO
CAPS_SMD_8_0-10_0_SANYO
COMMON
GND

6. NVVDD Power supply

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Custom

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3.3V

Ref	Value	Signal	Ref	Value	Strap	Description
R700 10k 5% NO_STUFF SMD0402	DVOD0	R701 10k 5% COMMON SMD0402	PCI_AD_SWAP	0: REVERSED not supported 1: NORMAL
R702 10k 5% NO_STUFF SMD0402	DVOD1	R703 10k 5% COMMON SMD0402	SUB_VENDOR	0: system BIOS 1: adapter BIOS default

R704 10K:10K:NS:NS 5% DVOD2 R705 NS:NS:10K:10K 5% RAM_CFG_0 [3:0]
64B5N:64B6N:128B5N:128B6N SMD0402 64B5N:64B6N:128B5N:128B6N SMD0402
R706 NS:NS:10K:10K 5% DVOD3 R707 10K:10K:NS:NS 5% RAM_CFG_1   0001: 4Mx16 SDR
64B5N:64B6N:128B5N:128B6N SMD0402 64B5N:64B6N:128B5N:128B6N SMD0402   0110: 8Mx16 SDR
R708 NS:NS:10K:10K 5% DVOD4 R709 10K:10K:NS:NS 5% RAM_CFG_2
64B5N:64B6N:128B5N:128B6N SMD0402 64B5N:64B6N:128B5N:128B6N SMD0402
R710 10K:10K:10K:10K5% DVOD5 R711 NS:NS:NS:NS 5% RAM_CFG_3
64B5N:64B6N:128B5N:128B6N SMD0402 64B5N:64B6N:128B5N:128B6N SMD0402

R712 NS:10k 5% DVOD6 R713 10k:NS5% CRYSTAL_0 [1:0]
LFH:TV SMD0402 LFH:TV SMD0402   00: 13.5MHz
R714 10k:NS 5% VIPD6 R715 NS:10k5% CRYSTAL_1   01: 14.318MHz
LFH:TV SMD0402 LFH:TV SMD0402   10: 27MHz
   11: unknown

R716 10K 5% DVOD7 R717 10K 5% TVMODE_0 [1:0]
NO_STUFF SMD0402 COMMON SMD0402   00: SECAM
R718 NS:10K 5% DVOD8 R719 10K:NS 5% TVMODE_1   01: NTSC
LFH:TV SMD0402 LFH:TV SMD0402   10: PAL
   11: VGA   default

R722 10K 5% DVOD9 R723 10K 5% AGP4x 0: enabled default
COMMON SMD0402 NO_STUFF SMD0402   1: disabled

R724 10K 5% VIPD7 R725 10k 5% AGP_FW 0: enabled default
COMMON SMD0402 NO_STUFF SMD0402   1: disabled

R726 10K:10K:10K 5% VIPD4 R727 NS:NS:NS 5% PCI_DEVID_0 [3:0]
DESK:WKST:WKST1L SMD0402 DESK:WKST:WKST1L SMD0402
R728 NS:10K:NS 5% VIPD5 R729 10K:NS:10K5% PCI_DEVID_1   0010: NV17-S-xx
DESK:WKST:WKST1L SMD0402 DESK:WKST:WKST1L SMD0402   1000: NV17-GL-xx
R730 10K:10K:10K 5% VIPD3 R731 NS:NS:NS 5% PCI_DEVID_2   1010: NV17-GL-L-xx
DESK:WKST:WKST1L SMD0402 DESK:WKST:WKST1L SMD0402
R732 10K:NS:10K 5% DVOHSYNC R733 NS:10K:NS5% PCI_DEVID_3
DESK:WKST:WKST1L SMD0402 DESK:WKST:WKST1L SMD0402

R734 10k 5% DVOD11 R735 10k 5% BIOS_TYPE 0: PCI not supported
NO_STUFF SMD0402 COMMON SMD0402   1: AGP default

R736 10k 5% VIPD0 R737 10k 5% USER_0 USER[0]=0: PC default
COMMON SMD0402 NO_STUFF SMD0402   USER[0]=1: MAC not supported
R738 10k 5% VIPD1 R739 10k 5% USER_1
COMMON SMD0402 NO_STUFF SMD0402
R740 10k 5% VIPHAD0 R741 10k 5% USER_2
COMMON SMD0402 NO_STUFF SMD0402
R742 10k 5% VIPHAD1 R743 10k 5% USER_3
COMMON SMD0402 NO_STUFF SMD0402

R744 10k 5% DVOD10 R745 10k 5% ROMTYPE_0 [1:0]
NO STUFF SMD0402 COMMON SMD0402   00: parallel
R746 10k 5% VIPD2 R747 10k 5% ROMTYPE_1   01: serial AT25F default
COMMON SMD0402 NO_STUFF SMD0402   10: serial S3745V not supported
   11: serial future not supported

GND

3.3V

C700
0.1u 10%
X7R 25V
SMD0603
COMMON

GND

DVOD[0:11]
VIPD[0:7]

3.3V

R748
10k
SMD0603
NO_STUFF
5%

U701
AT25F1024
COMMON
IC_SO8
COMMON

Pin		Pin
5 SI	VDD 8
6 SCK	HOLD 7
5 SO	WP 3
1 CS	GND 4

DVOD0
DVOD1
VIPD0
ROMCS

GND

DVOVSYNC — DVOHSYNC
DVOHSYNC — ROMA14
ROMA14 — ROMA15
ROMA15 — DVODE
DVODE — VIPHAD0
VIPHAD0 — VIPHAD1
VIPHAD1

7. BIOS, Strapping

NVIDIA Corporation
2701 San Tomas Expressway
Santa Clara, CA 95050, USA

P71, NV17, 4MX16 SDR, 64MB, LFH/RGB, TV-out, video capture, AGP4x

Size Custom	CAGE Code	DWG NO	Rev
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GPU - VDD33

GPU - 5VCLAMP

FP and PLL Powers

Analog 3.3V

8. Linear Power Supplies

12V

5V

3.3V

12V

3.3V

3.3VGATE

5VGATE

VDD33

IFPPLLVDD

5V_GPU

B-BIAS

B-COL

A33ADJ

A3.3V

IFPPLLVDD

IFPPLL_ADJ

R800
1K
SMD0402
TMDS_BACKDRIVE

R803
1K
SMD0402
TMDS_BACKDRIVE

R802
1K
SMD0402
TMDS_BACKDRIVE

R808
1K
SMD0402
TMDS_BACKDRIVE

Q800
IRFL014N
IC_SOT23_1234
1.9A
55V
TMDS_BACKDRIVE
BYPASS MODE

Q801
IRFL014N
IC_SOT23_1234
1.9A
55V
TMDS_BACKDRIVE
BYPASS MODE

Q802
MMBT4403LT1
IC_SOT23_123
TMDS_BACKDRIVE

R805 0R SMD0402 NO_TMDS_BACKDRIVE
R804 0R SMD0402 NO_TMDS_BACKDRIVE

R807 0R SMD0402 NO_TMDS_BACKDRIVE
R806 0R SMD0402 NO_TMDS_BACKDRIVE

D802
BAV99
IC_SOT23_123
70V
215mA
TMDS_BACKDRIVE

R1037 10R SMD0805 TMDS_BACKDRIVE
R1038 10R SMD0805 TMDS_BACKDRIVE
R801 10R SMD0805 TMDS_BACKDRIVE

D800
MMBD4148_SOT23_123
TMDS_BACKDRIVE

D803
MMBD4148_SOT23_123
TMDS_BACKDRIVE

D801
MMBD4148_SOT23_123
TMDS_BACKDRIVE

C800
4u7 10%
X5R 6.3V
SMD0805
TMDS_BACKDRIVE

L800
150_220
SMD0805
300mA
Ferrite:Resistor
5%
NO_STUFF

AN OPTION TO
PROVIDE VDD33
FROM A3.3V

C886
4u7 10%
X5R 6.3V
SMD0805
TMDS_BACKDRIVE

R601
0R 5%
SMD0805
NO_STUFF

U601
VIN VOUT
GND TAB
EZ1117-3.3:EZ1117-ADJ
IC_DPAK_223
1117:1117_ADJ

C601
22uF 20%
ALE 10V
80mA 1.80hm
CAP_SANYO_CASE_B
1117:1117_ADJ

C605
22uF 20%
ALE 10V
80mA 1.80hm
CAP_SANYO_CASE_B
NO_STUFF

R602 100R 1% SMD0603 1117_ADJ

R605 0R:162R 5%:1% SMD0603 1117:1117_ADJ

C602
47uF 20%
ALE 6.3V
150mA 0.760hm
CAP_ALE_SMD_5_0
COMMON

R1030 0R SMD0603 NO_IFPREG

U823
IN OUT
EN GND ADJ
LX8211-00ISE
IC_SOT23-5
IFPREG

C885
4u7 X5R
SMD0805
10%
6.3V
IFPREG

R1031 750R SMD0603 IFPREG 1%

R1032 536R SMD0603 IFPREG 1%

C419
4u7 X5R
SMD0805
COMMON
10%
6.3V

GND

Ripple rejection
1/2/Pi/R7/ERipple

For adjustable regulators:
A3.3V=1.25V*(1+R605/R602)+Iadj*R605

Iadj=55uA-120uA

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Size Custom

CAGE Code

DWG NO

Rev

Friday, March 22, 2002

Scale

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