NV25, P83, DUAL DAC/TMDS, 128MB 4MX32 BGA DDR, TV IN/OUT, GOGGLES, AGP

P80-A00: Based on P53-A00.

A00-X00:

Populate R1034 with 0.01 Ohm
Populate 68R parallel terminations on FBCLK/CLK#

A00-X01:
Isolated GND, AGND and Chassis GND
Corrected Multichip Strap
Changed sync buffers inputs from pin 2 to pin 1 for easy probing.
Corrected PWRGD_FBVDD on memory PS

A00-X02:
Combined CX and SA power filters.
Connected memory PS bootstrap to 12V.
XOR Hotplugs to GPIO3.
Isolated PLL_VDD from 3.3VL to get rid of 350mV stray voltage.
Combined GND, AGND and Chassis GND

A00-X03
Changed both TMDS digital powers from 3.3V to 3.3VL.
Added a resistor to base transistor PLL_VDD sequencer.
Added 2nd fan connector.
Added various placement and routing notes.

P83-A00: TERMINATED DESIGN

Changed memory series resistors to (56R to VTT) terminated design.

Swapping....

Sync up with P81 changes.

Modified PS to support terminated design.

Design Review:

Deleted PU resistor from SII_DVOCLK_IN_PRI

Added PDs resistors on SII_DVOCLK_IN_PRI and SII_DVOCLK_IN_SEC

More cleanup on Assembly properties.

Moved TMDS parallel termination resistors to DVI connector page.

Added C1567 (0.1uF) near Stereo connector pin 1.

Removed bootstrap from SC1102.

Moved R1197.2 to AGND.

P83-A00: X RELEASE

P83-A01:

A01-Y02

Add two 5-3.0 VR for DVOA and B BUS power supply and change Flash Rom power to DVOA_PWR (3.0V) on Page 5.1

Change the decoupling cap. C1349,C1350,C1351,C1362,C907 connect to DVOA_PWR from 3.3V on page 5.1

Change the decoupling cap. C1443,C1444,C1445,C1446,C920, connect to DVOA_PWR from 3.3V on page 5.1

Change series P-ROM U505 power to DVOA_PWR (3.0V) on page 5.2V

Change GPU pin AH1,AD1,AC7 connect to DVOA_PWR and change GPU pin AH15,AP8,AP12 connect to DVOB_PWR on Page 6.0.

A01-Y03-1

Connect AGND to GND symbol on page 3.1

Remove R1183,R1184,R1179,R1180,R1198,R1199,

P83-A01 X RELEASE

A01-000
Fix the cap property errors to match the BOM.

P83-A02:

A02-X00

Put NO_STUUF for C1123, C1126, C1129, C304, C307, C310

Replace C303, C306, C309, C1122, C1125, C1128 with CAP NPO 0603 15PF 16V 5% (035-20150-0006-000)

Replace L715, L717, L719, L300, L305, L309 with IND 0805 MTLR 5% 0.068UH (130-30680-0006-000)

Replace L716, L718, L720, L302, L306, L310 with IND 0603 MTLR 5% 0.068UH (130-20680-0006-000)

Change C29, C30 value from 33PF to 27PF to improve the color burst stability for conexent and philips TV chip

Change R1072 res value from 665 Ohm to 1.5K to allow use other MOSFET with 11mOhm Rdson, like IRF7811.

P83 P-RELEASE

COMMON -- ALL
NO_STUFF - NOT STUFFED
PRI_VGA - Primary VGA Support
PRI_DVI - Primary DVI-D (Digital) Support
PRI_DVI_I - Primary DVI-I - (Digital & Analog) Support
SEC_DVI_I - Secondary DVI-I (Digital & Analog) Support
PRI_PROT - Primary DVI-VGA protection diodes.
SEC_PROT - Secondary DVI-I protection diodes
MEM128 - 128MB EXTENDED MEMORY

NO_STUFF FOR FIRST BUILD
ROM_SER - Serial ROM used
ROM_PAR - Parallel ROM used.

STEREO - USED FOR STEREO GOOGLES
STEREOSYNC1 - USED FOR STEREO GOOGLES
STEREOSYNC2 - USED FOR STEREO GOOGLES
STEREOSYNCS - USED FOR STEREO SYNC BUFFERS
SAA8 - PHILIPS ENCODER/DECODER SAA7108
SAA2 - PHILIPS ENCODER SAA7102
CX - CONEXENT ENCODER CX25671

NO_STUFF FOR FIRST BUILD

SC1102 - USED TO REGULATE FBVDD FROM 12V - SWITCHER
SC1565 - USED TO REGULATE 3.3VL FROM 3.3V - LINEAR
SC1175 - USED TO REGULATE NVVDD FROM 3.3V AND 5V - SWITCHER

VGA-TV-DVI - Used for Primary VGA / TV / Secondary DVI
VGA-DVI - Used for Primary VGA / Secodary DVI only
VGA-TV - Used for Primary VGA / TV
VGA - Used for Primary VGA only
DVI-TV-DVI - Used for Primary DVI / TV / Secondary DVI
DVI-DVI - Used for Primary DVI / Secondary DVI Only
DVI-TV - Used for Primary DVI / TV
DVI - Used for Secondary DVI
PASSIVE_HS - Used for Passive heat sink
FAN_HS - Used for Fan heat Sink
SOCKET - PARTS REMOVED WHEN USING A SOCKET

0. TOP PAGE

NV25, 4MX32 BGA DDR 64/128MB, RGB, DVI-I, TV-DOWN, AGP4X

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

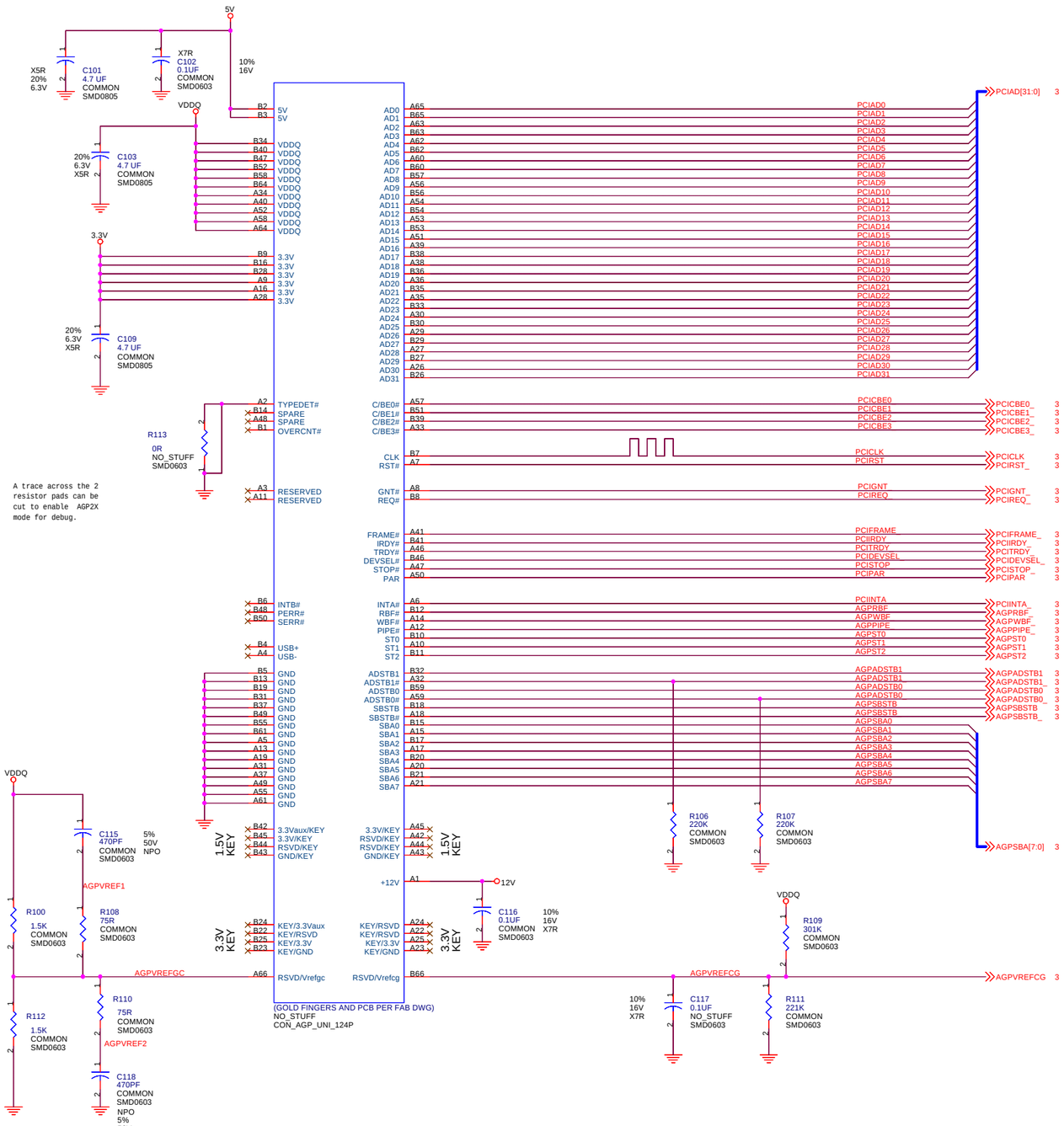
602-P0083-0000-A01

Size	CAGE Code	DWG NO	Rev
Custom			-

Tuesday, January 22, 2002

Scale

Sheet 1 of 27



1.1 BUS I/O

NV25, 4MX32 BGA DDR 64/128MB, RGB, DVI-I, TV-DOWN, AGP4X

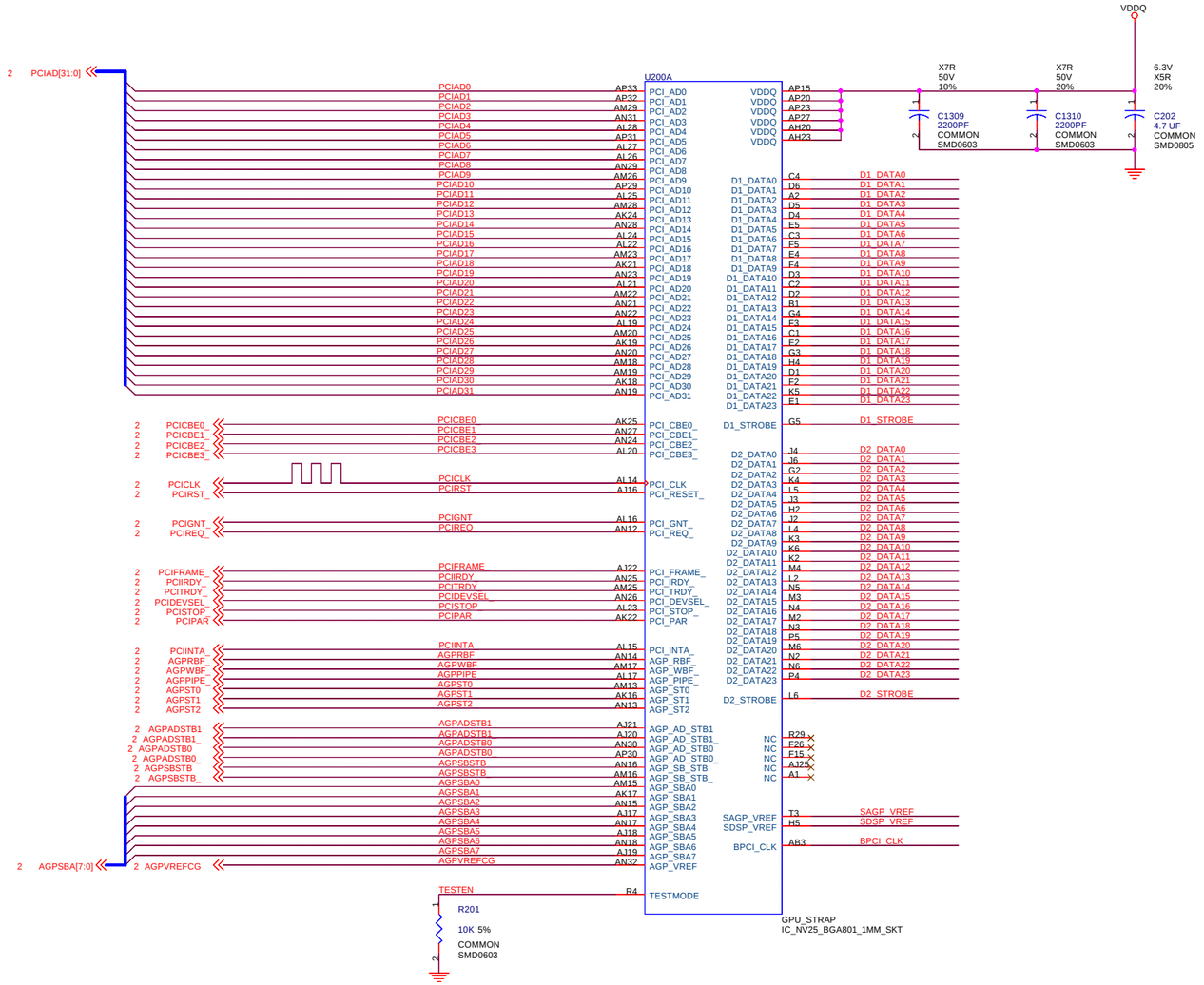
NVIDIA Corporation
3535 Monroe St
Santa Clara, CA 95051, USA

Size	CAGE Code	DWG NO	Rev
Custom			-

Tuesday, January 22, 2002

Scale

Sheet 2 of 27



2.1 NV HOST IF

NV25, 4MX32 BGA DDR 64/128MB, RGB, DVI-I, TV-DOWN, AGP4X

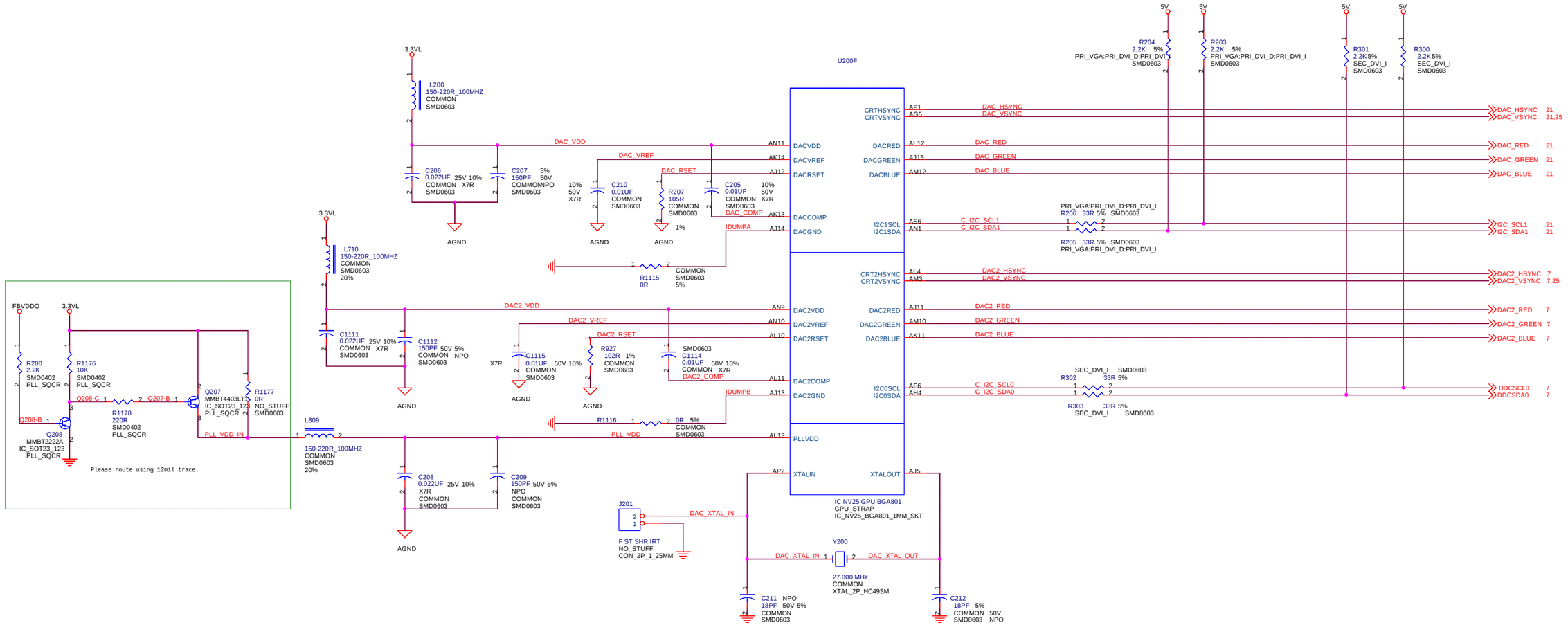
NVIDIA Corporation
3535 Monroe St
Santa Clara, CA 95051, USA

Size	CAGE Code	DWG NO	Rev
Custom			-

Tuesday, January 22, 2002

Scale

Sheet 3 of 27



2.2 NV DAC/PLL/I2C

NV25, 4MX32 BGA DDR 64/128MB, RGB, DVI-I, TV-DOWN, AGP4X

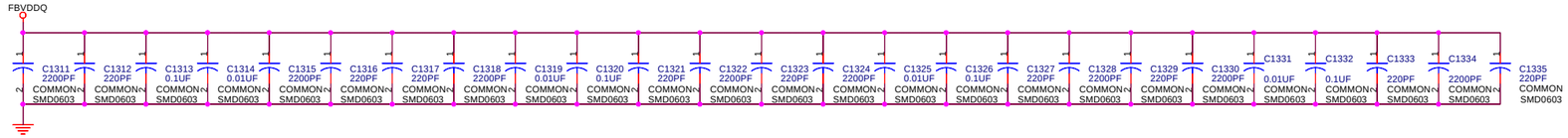
NVIDIA Corporation
3535 Monroe St
Santa Clara, CA 95051, USA

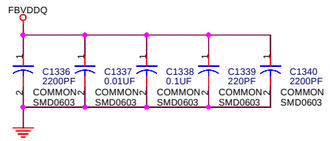
Size	CAGE Code	DWG NO	Rev
Custom			-

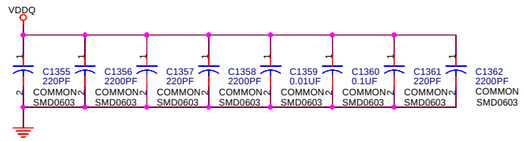
Tuesday, January 22, 2002

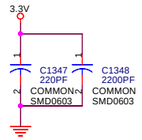
Scale

Sheet 4 of 27

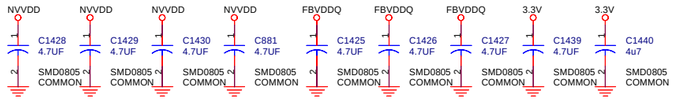




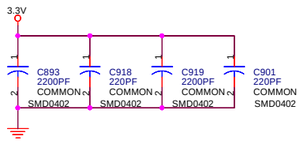


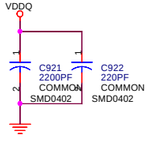


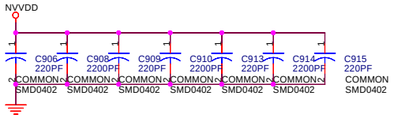
TOP SIDE CAPS

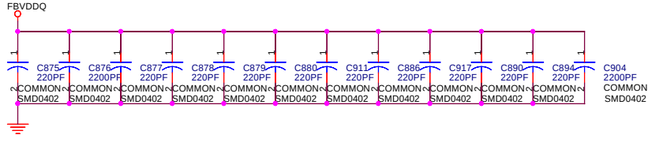


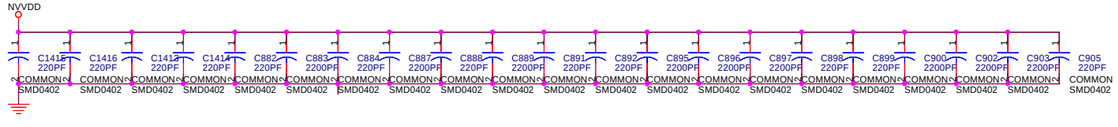
BOT SIDE CAPS











2.3 NV DECOUPLING

NV25, 4MX32 BGA DDR 64/128MB, RGB, DVI-I, TV-DOWN, AGP4X

NVIDIA Corporation
3535 Monroe St
Santa Clara, CA 95051, USA

Size	CAGE Code	DWG NO	Rev
Custom			-

Tuesday, January 22, 2002

Scale

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6,17,18,23,24 DVOD[23:0] — DVOD[23:0]
17,20 DVOBD[23:0] — DVOBD[23:0]
15,16,17,24 VIP_VID[15:0] — VIP_VID[15:0]

3.3V

BOOT_0_STRAP											
0	17,18 DVOD12			DVOD12	R929 COMMON	10k 5% SMD0402			PCI_AD_SWAP	0 = REVERSED 1 = NORMAL	
1	17,18 DVOD21			DVOD21	R931 COMMON	10k 5% SMD0402			SUB_VENDOR	0 = System BIOS 1 = Adapter BIOS	
2	17,18 DVOD22	R932 MEM_STRAP	10k 5% SMD0402	DVOD22	R933 NO_STUFF	10k 5% SMD0402			RAM_CFG_0	[3..0] - RAM_CFG - Frame buffer RAM type configuration 1100 = SS Terminated 4MX32 BGA DQS PER BYTE.	
3	17,18 DVOD23	R934 MEM_STRAP	10k 5% SMD0402	DVOD23	R935 NO_STUFF	10k 5% SMD0402			RAM_CFG_1		
4	17,18,23,24 DVOD8	R936 NO_STUFF	10k 5% SMD0402	DVOD8	R937 MEM_STRAP	10k 5% SMD0402			RAM_CFG_2		
5	17,18,23,24 DVOD9	R938 NO_STUFF	10k 5% SMD0402	DVOD9	R939 MEM_STRAP	10k 5% SMD0402			RAM_CFG_3		
6	17,18,23,24 DVOD10	R940 COMMON	10k 5% SMD0402	DVOD10	R941 NO_STUFF	10k 5% SMD0402			CRYSTAL_0	[1..0] - CRYSTAL 00 = 13.5 MHz 01 = 14.31818 MHz 10 = 27 MHz	
22	15,17 VIP_HAD0	R942 NO_STUFF	10k 5% SMD0402	VIP_HAD0	R943 COMMON	10k 5% SMD0402			CRYSTAL_1		
7	17,18,23,24 DVOD11	R944 NO_STUFF	10k 5% SMD0402	DVOD11	R945 COMMON	10k 5% SMD0402			TVMODE_0	[1..0] - TVMODE 00 = SECAM 01 = NTSC 10 = PAL 11 = VGA	
8	15,17,24 VIP_VID6	R946 COMMON	10k 5% SMD0402	VIP_VID6	R947 NO_STUFF	10k 5% SMD0402			TVMODE_1		
9	15,17,24 VIP_VID7	R948 COMMON	10k 5% SMD0402	VIP_VID7	R949 NO_STUFF	10k 5% SMD0402			AGP4x	0 = Enabled 1 = Disabled	
10	15,17 VIP_VID8	R950 COMMON	10k 5% SMD0402	VIP_VID8	R951 NO_STUFF	10k 5% SMD0402			AGP_SBA	0 = Enabled 1 = Disabled	
11	15,17 VIP_VID9	R952 COMMON	10k 5% SMD0402	VIP_VID9	R953 NO_STUFF	10k 5% SMD0402			AGP_FASTWR	0 = Enabled 1 = Disabled	
14	15,17 VIP_VID12			VIP_VID12	R955 COMMON	10k 5% SMD0402			AGP	0 = PCI 1 = AGP	

GND

3.3V

BOOT_0_STRAP											
12	15,17 VIP_VID10	R956 GPU_STRAP	10k 5% SMD0402	VIP_VID10	R957 NO_STUFF	10k 5% SMD0402			PCI_DEVID_0	[3..0] - PCI_DEVID - PCI DEVICE ID CODE	
13	15,17 VIP_VID11	R958 GPU_STRAP	10k 5% SMD0402	VIP_VID11	R959 NO_STUFF	10k 5% SMD0402			PCI_DEVID_1	PCI_DEVID = 0X250	
20	17,18 DVOD19	R960 GPU_STRAP	10k 5% SMD0402	DVOD19	R961 NO_STUFF	10k 5% SMD0402			PCI_DEVID_2		
21	17,18 DVOD20	R962 GPU_STRAP	10k 5% SMD0402	DVOD20	R963 NO_STUFF	10k 5% SMD0402			PCI_DEVID_3		
16	15,17 VIP_VID14	R964 COMMON	10k 5% SMD0402	VIP_VID14	R965 NO_STUFF	10k 5% SMD0402			STRAP_USER_0	[1..0] - STRAP_USR - USER STRAP ID CODE	
17	15,17 VIP_VID15	R966 COMMON	10k 5% SMD0402	VIP_VID15	R967 NO_STUFF	10k 5% SMD0402			STRAP_USER_1	00 = PC 01 = MAC	
23	17 VIP_HAD1	R972 NO_STUFF	10k 5% SMD0402	VIP_HAD1	R973 COMMON	10k 5% SMD0402			STRAP_FB_0	[1..0] - STRAP_FB - Frame Buffer type selection	
24	17 VIP_HAD5	R974 COMMON	10k 5% SMD0402	VIP_HAD5	R975 NO_STUFF	10k 5% SMD0402			STRAP_FB_1	00 = 64MB 01 = 128MB	
15	15,17 VIP_VID13	R976 COMMON	10k 5% SMD0402	VIP_VID13	R977 NO_STUFF	10k 5% SMD0402			FP_IFACE	0 = 24 bit Flat Panel Interfave 1 = 12 bit Flat Panel Interfave	
25	15,17 VIP_HAD6	R978 COMMON	10k 5% SMD0402	VIP_HAD6	R979 NO_STUFF	10k 5% SMD0402			STRAP_BRIDGE_EN	0 = Disabled 1 = Enabled	0
26	15,17 VIP_HAD7	R980 COMMON	10k 5% SMD0402	VIP_HAD7	R981 NO_STUFF	10k 5% SMD0402			STRAP_BAR0_128	0 = Disabled 1 = Enabled	0
27	17,20 DVOBD12	R982 NO_STUFF	10k 5% SMD0402	DVOBD12	R983 COMMON	10k 5% SMD0402			STRAP_MULTICHIP_AGP_DEV	0 = Disabled 1 = Enabled	1
28	17,20 DVOBD13	R984 NO_STUFF	10k 5% SMD0402	DVOBD13	R985 COMMON	10k 5% SMD0402			STRAP_MULTICHIP_IO_DEV	0 = Disabled 1 = Enabled	1
29	17,18 DVOD14	R986 COMMON	10k 5% SMD0402	DVOD14	R987 NO_STUFF	10k 5% SMD0402			STRAP_ROM_0	[1..0] - STRAP_ROM 00 = PARALLEL 01 = SERIAL AT25F	
30	17,18 DVOD15	R988 COMMON	10k 5% SMD0402	DVOD15					STRAP_ROM_1		

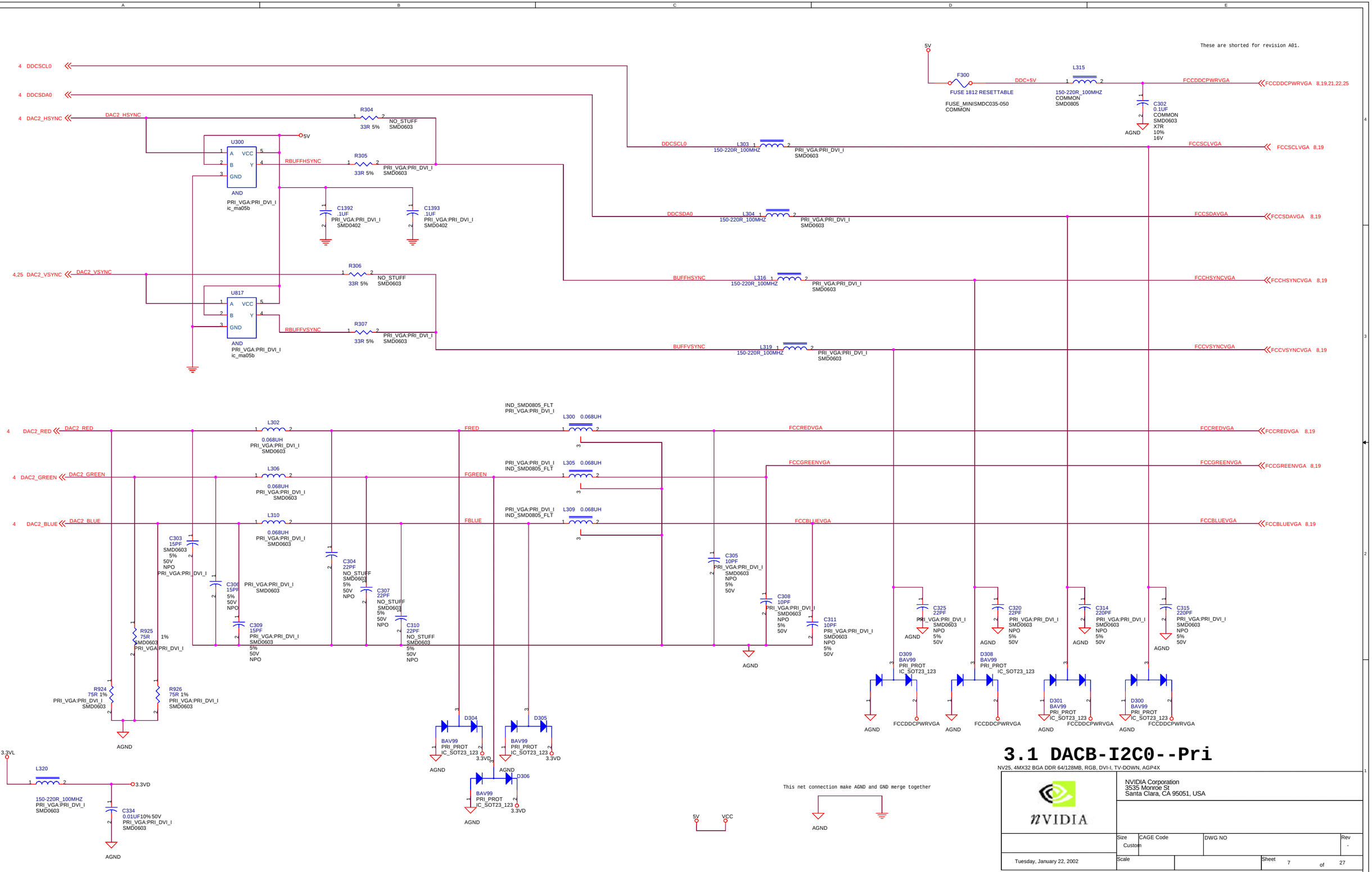
GND

3.0 NV STRAP

NV25, 4MX32 BGA DDR 64/128MB, RGB, DVI-I, TV-DOWN, AGP4X

NVIDIA Corporation
3535 Monroe St
Santa Clara, CA 95051, USA

Size	CAGE Code	DWG NO	Rev
Custom			-
Tuesday, January 22, 2002	Scale		Sheet 6 of 27


These are shorted for revision A01.
4 DDCSCL0
4 DDCSDA0
4 DAC2_HSYNC
DAC2_HSYNC
R304
33R 5%
NO_STUFF
SMD0603
5V
U300
A
B
GND
VCC
Y
AND
PRI_VGA:PRI_DVI_I
ic_ma05b
RBUFFHSYNC
R305
33R 5%
PRI_VGA:PRI_DVI_I
SMD0603
C1392
.1UF
PRI_VGA:PRI_DVI_I
SMD0402
C1393
.1UF
PRI_VGA:PRI_DVI_I
SMD0402
4,25 DAC2_VSYNC
DAC2_VSYNC
R306
33R 5%
NO_STUFF
SMD0603
U817
RBUFFVSYNC
R307
33R 5%
PRI_VGA:PRI_DVI_I
SMD0603
5V
F300
FUSE 1812 RESETTABLE
FUSE_MINISMDC035-050
COMMON
DDC+5V
L315
150-220R_100MHZ
COMMON
SMD0805
FCCDDCPWRVGA
FCCDDCPWRVGA 8,19,21,22,25
C302
0.1UF
COMMON
SMD0603
X7R
10%
16V
AGND
DDCSCL0
L303
150-220R_100MHZ
PRI_VGA:PRI_DVI_I
SMD0603
FCCSCLVGA
FCCSCLVGA 8,19
DDCSDA0
L304
150-220R_100MHZ
PRI_VGA:PRI_DVI_I
SMD0603
FCCSDAVGA
FCCSDAVGA 8,19
BUFFHSYNC
L316
150-220R_100MHZ
PRI_VGA:PRI_DVI_I
SMD0603
FCCHSYNCVGA
FCCHSYNCVGA 8,19
BUFFVSYNC
L319
150-220R_100MHZ
PRI_VGA:PRI_DVI_I
SMD0603
FCCVSYNCVGA
FCCVSYNCVGA 8,19
4 DAC2_RED
DAC2_RED
L302
0.068UH
PRI_VGA:PRI_DVI_I
SMD0603
FRED
IND_SMD0805_FLT
PRI_VGA:PRI_DVI_I
L300 0.068UH
FCCREDVGA
FCCREDVGA
FCCREDVGA 8,19
4 DAC2_GREEN
DAC2_GREEN
L306
0.068UH
PRI_VGA:PRI_DVI_I
SMD0603
FGREEN
PRI_VGA:PRI_DVI_I
IND_SMD0805_FLT
L305 0.068UH
FCCGREENVGA
FCCGREENVGA
FCCGREENVGA 8,19
4 DAC2_BLUE
DAC2_BLUE
L310
0.068UH
PRI_VGA:PRI_DVI_I
SMD0603
FBLUE
PRI_VGA:PRI_DVI_I
IND_SMD0805_FLT
L309 0.068UH
FCCBLUEVGA
FCCBLUEVGA
FCCBLUEVGA 8,19
C303
15PF
SMD0603
5%
50V
NPO
PRI_VGA:PRI_DVI_I
C306
15PF
5%
50V
NPO
PRI_VGA:PRI_DVI_I
SMD0603
C309
15PF
PRI_VGA:PRI_DVI_I
SMD0603
5%
50V
NPO
C304
22PF
NO_STUFF
SMD0603
5%
50V
NPO
C307
22PF
NO_STUFF
SMD0603
5%
50V
NPO
C310
22PF
NO_STUFF
SMD0603
5%
50V
NPO
C305
10PF
PRI_VGA:PRI_DVI_I
SMD0603
NPO
5%
50V
C308
10PF
PRI_VGA:PRI_DVI_I
SMD0603
NPO
5%
50V
C311
10PF
PRI_VGA:PRI_DVI_I
SMD0603
NPO
5%
50V
AGND
R925
75R 1%
SMD0603
PRI_VGA:PRI_DVI_I
R924
75R 1%
PRI_VGA:PRI_DVI_I
SMD0603
R926
75R 1%
PRI_VGA:PRI_DVI_I
SMD0603
AGND
D304
BAV99
PRI_PROT
IC_SOT23_123
3.3VD
AGND
D305
BAV99
PRI_PROT
IC_SOT23_123
3.3VD
AGND
D306
BAV99
PRI_PROT
IC_SOT23_123
3.3VD
AGND
C325
22PF
PRI_VGA:PRI_DVI_I
SMD0603
NPO
5%
50V
AGND
D309
BAV99
PRI_PROT
IC_SOT23_123
AGND
FCCDDCPWRVGA
C320
22PF
PRI_VGA:PRI_DVI_I
SMD0603
NPO
5%
50V
AGND
D308
BAV99
PRI_PROT
IC_SOT23_123
AGND
FCCDDCPWRVGA
C314
220PF
PRI_VGA:PRI_DVI_I
SMD0603
NPO
5%
50V
AGND
D301
BAV99
PRI_PROT
IC_SOT23_123
AGND
FCCDDCPWRVGA
C315
220PF
PRI_VGA:PRI_DVI_I
SMD0603
NPO
5%
50V
AGND
D300
BAV99
PRI_PROT
IC_SOT23_123
AGND
FCCDDCPWRVGA
3.3VL
L320
150-220R_100MHZ
PRI_VGA:PRI_DVI_I
SMD0603
3.3VD
C334
0.01UF10% 50V
PRI_VGA:PRI_DVI_I
SMD0603
AGND
5V
VCC
This net connection make AGND and GND merge together
AGND
3.1 DACB-I2C0--Pri
NV25, 4MX32 BGA DDR 64/128MB, RGB, DVI-I, TV-DOWN, AGP4X
NVIDIA Corporation
3535 Monroe St
Santa Clara, CA 95051, USA
Size
Custom
CAGE Code
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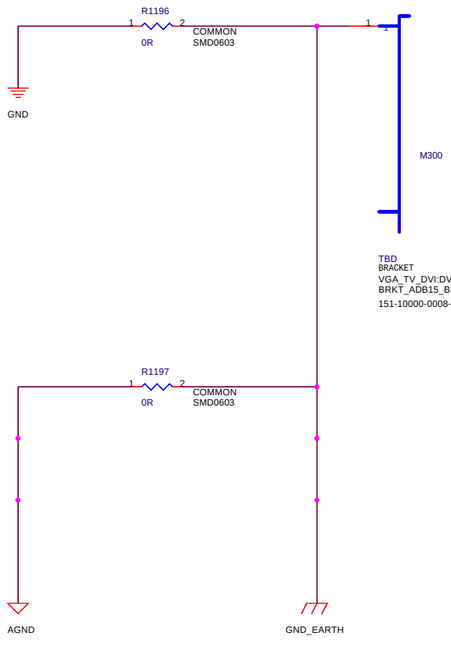
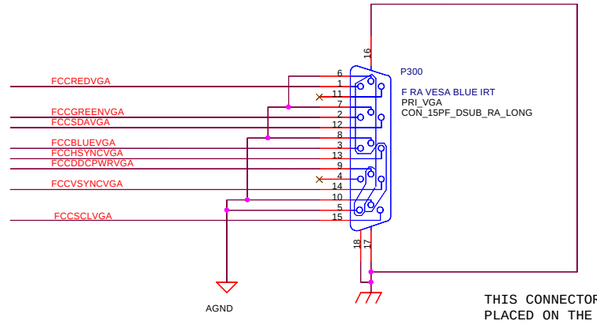
of
27

Single point connection for digital, analog and chassis GND.



VGA-TV-DVI - Used for Primary VGA / TV / Secondary DVI

DVI-TV-DVI - Used for Primary DVI / TV / Secondary DVI



THIS CONNECTOR IS PLACED ON THE NORTH SIDE OF THE BOARD

3.2 VGA CON, BRACKET

NV25, 4MX32 BGA DDR 64/128MB, RGB, DVI-I, TV-DOWN, AGP4X

NVIDIA Corporation
3535 Monroe St
Santa Clara, CA 95051, USA

Size	CAGE Code	DWG NO	Rev
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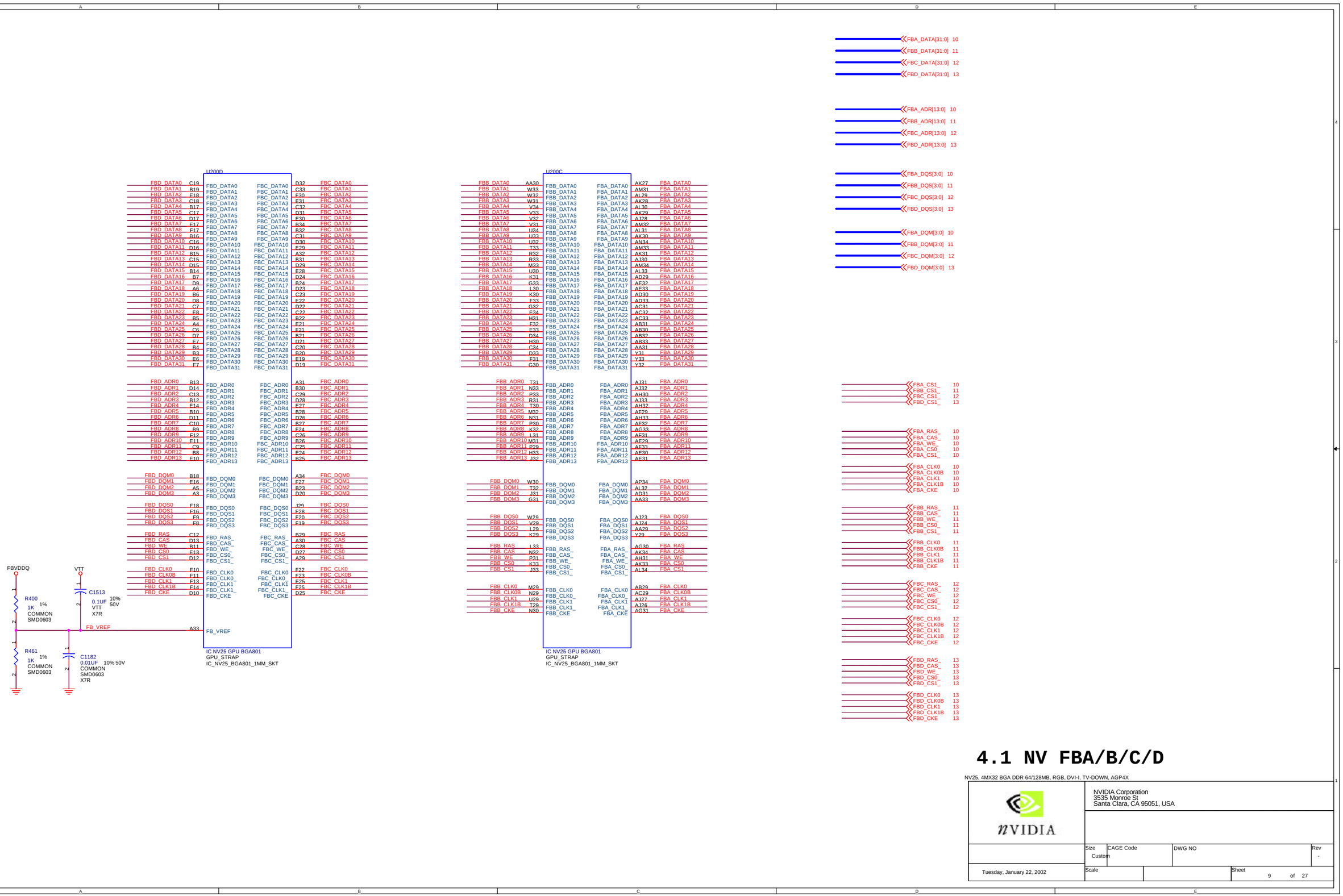

4.1 NV FBA/B/C/D

NV25, 4MX32 BGA DDR 64/128MB, RGB, DVI-I, TV-DOWN, AGP4X

NVIDIA Corporation
3535 Monroe St
Santa Clara, CA 95051, USA

Size	CAGE Code	DWG NO	Rev
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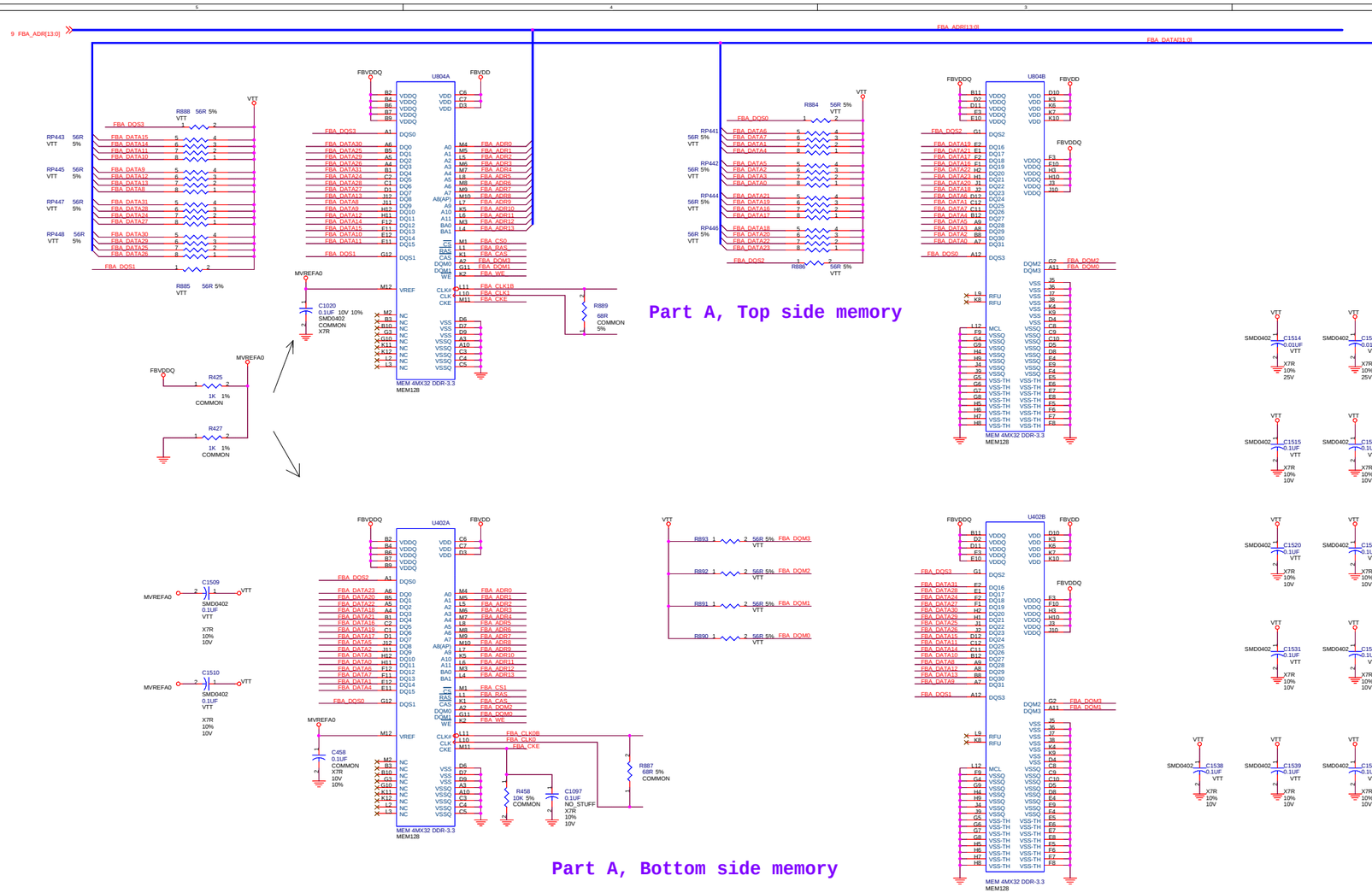

NV25, 4MX32 BGA DDR 64/128MB, RGB, DVI-I, TV-DOWN, AGP4X

NVIDIA Corporation 3535 Monroe St Santa Clara, CA 95051, USA	
Size: D	CAGE Code:
DWG NO:	Rev: -
Tuesday, January 22, 2002	Scale:
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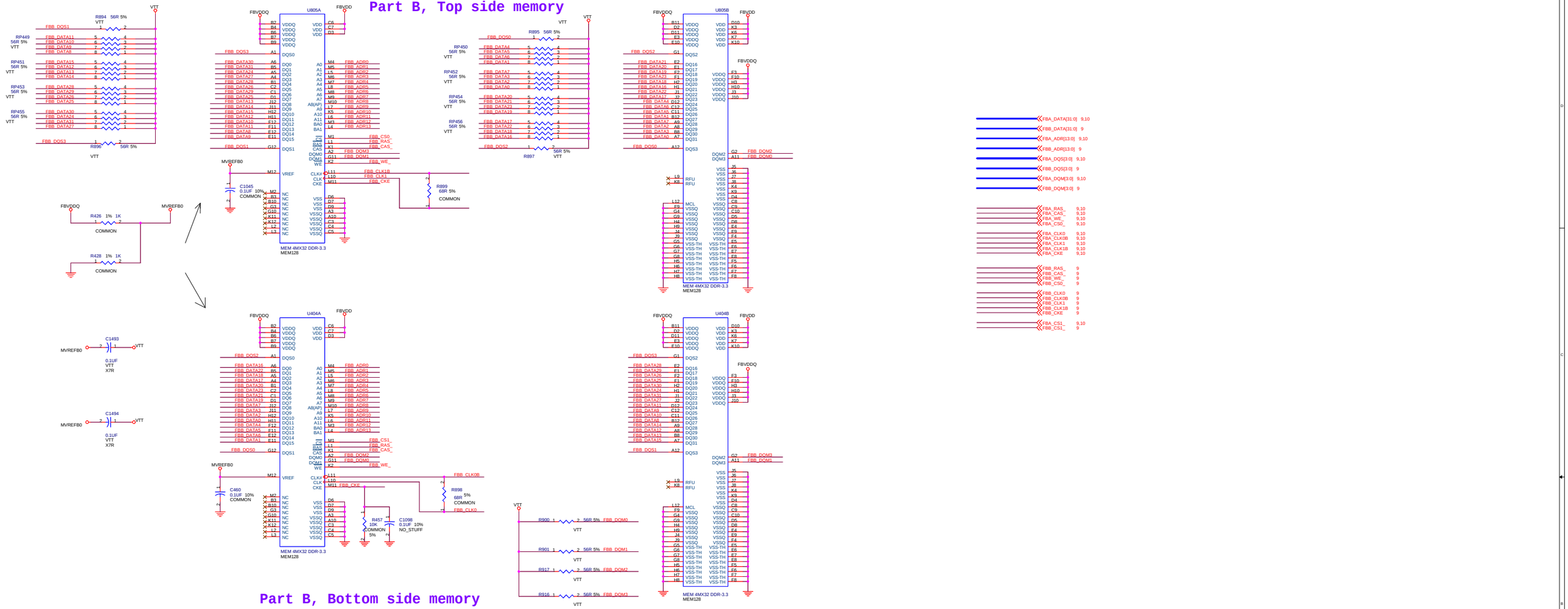
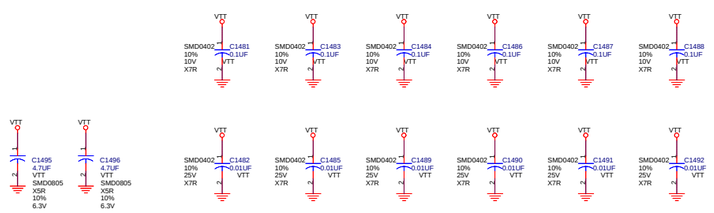
Part B, Top side memory



Part B, Bottom side memory



4.3 FBB DDR 4MX32 SDRAM

NO25_4MX32 BGA DDR 64/128MB, BGB, DUAL TV-DOWN, AG84X

NVIDIA Corporation
3535 Monroe St
Santa Clara, CA 95051, USA

Size	CAGE Code	DWG NO	Rev
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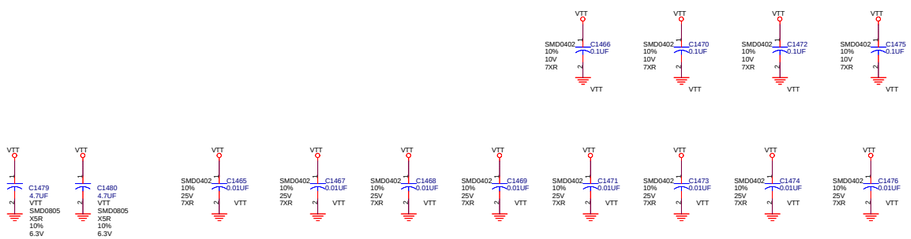
Part C, Top side memory

Part C, Bottom side memory



4.4 FBC DDR 4MX32 SDRAM

NV25, 4MX32 BGA DDR 64/128MB, RGB, DVI-I, TV-DOWN, AGP4X

NVIDIA Corporation
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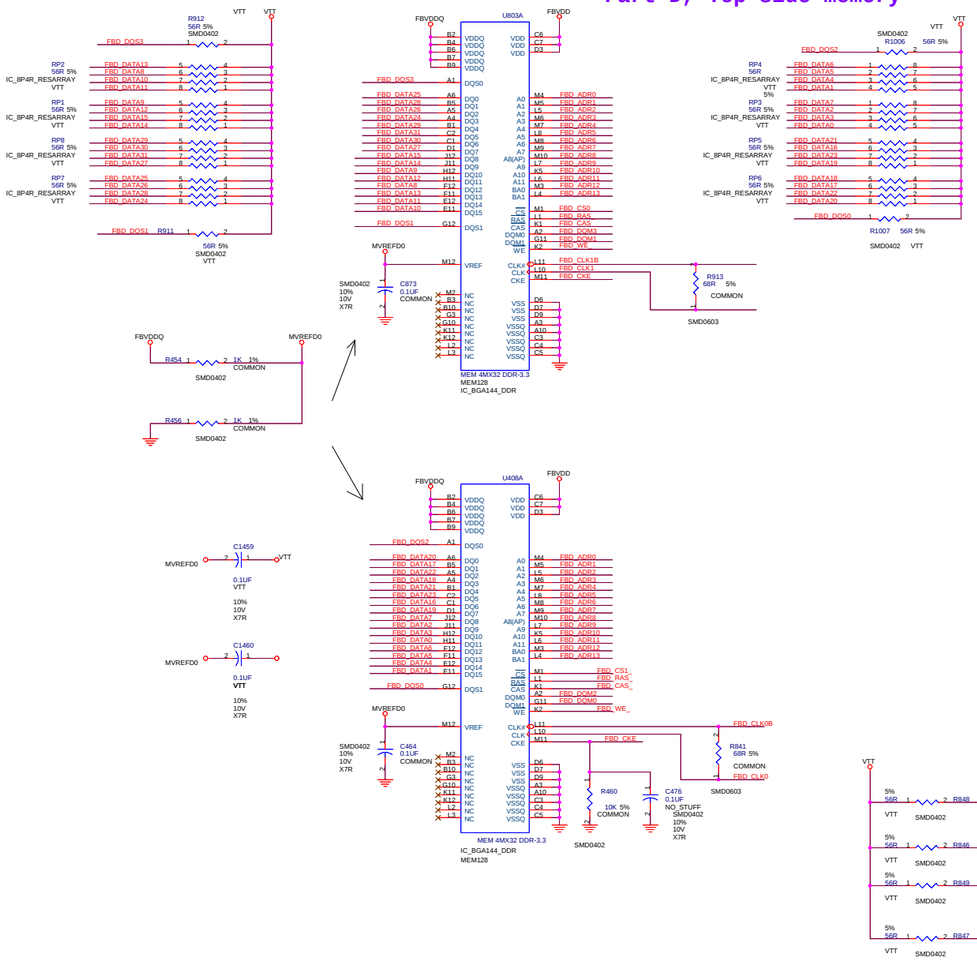
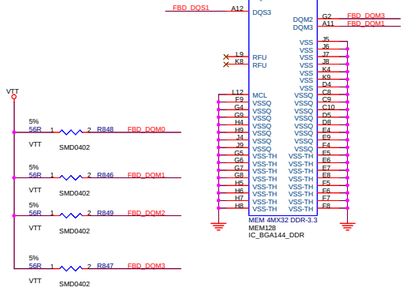
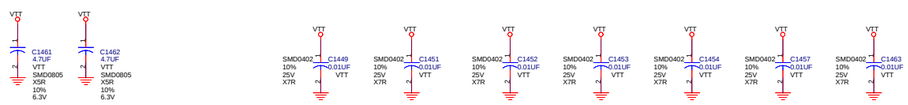
Part D, Top side memory





Part D, Bottom side memory

1 per rpack and extra 2 for Rs



4.5 FBD DDR 4MX32 SDRAM

NV25, 4MX32 BGA DDR 64/128MB, RGB, DVI-I, TV-DOWN, AGP4X

NVIDIA Corporation
3535 Monroe St
Santa Clara, CA 95051, USA

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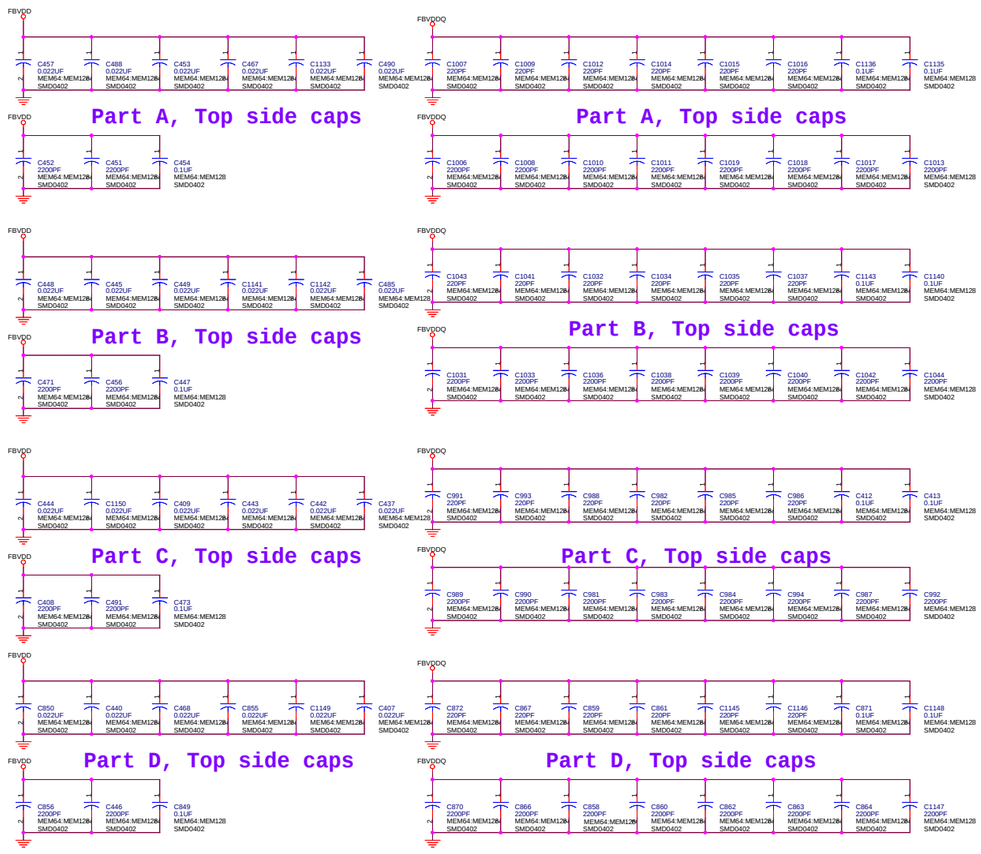

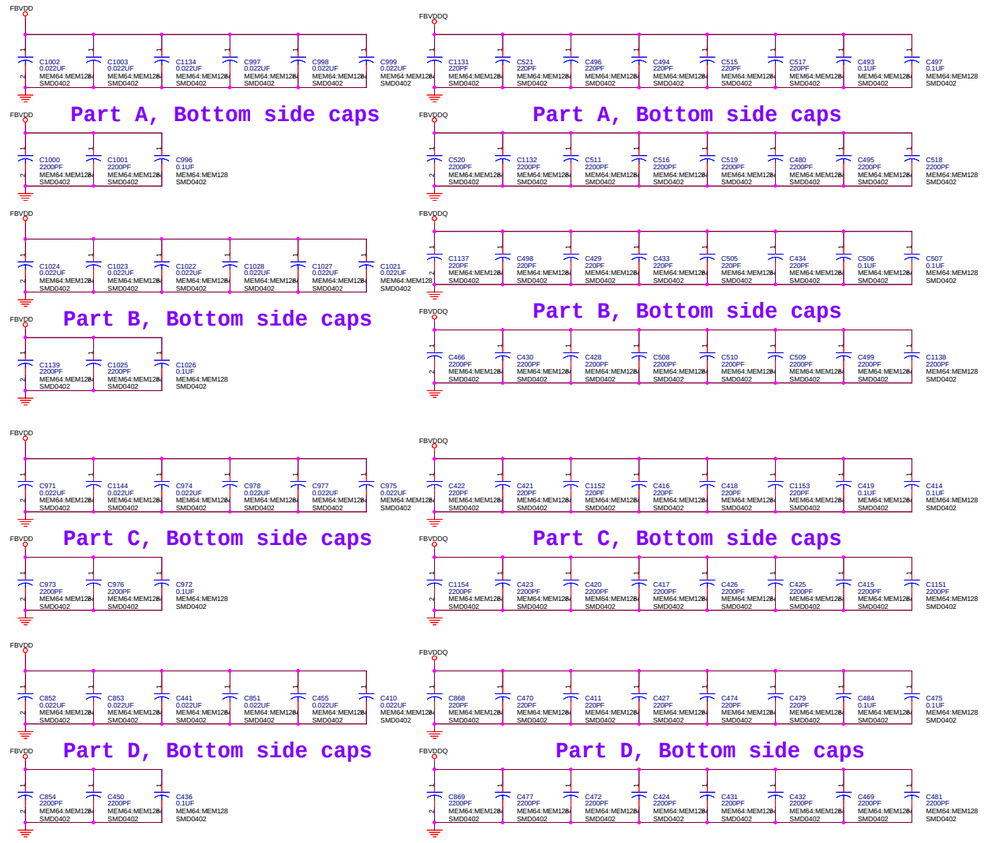

4.6 BGA MEMORY DECOUPLING

NV25, 4MX32 BGA DDR 64/128MB, RGB, DVI-I, TV-DOWN, AGP4X

NVIDIA Corporation
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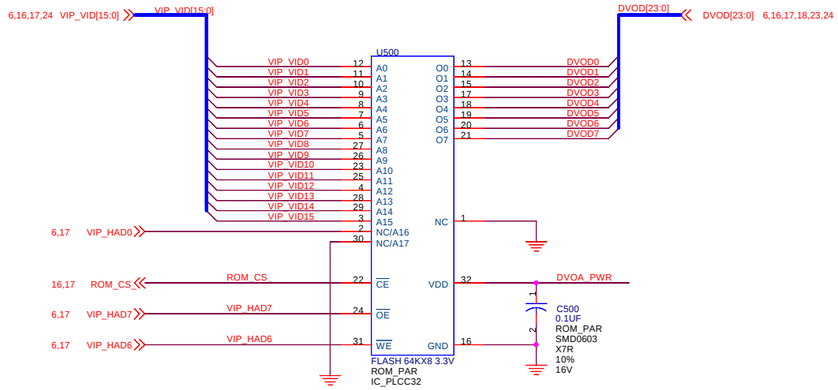

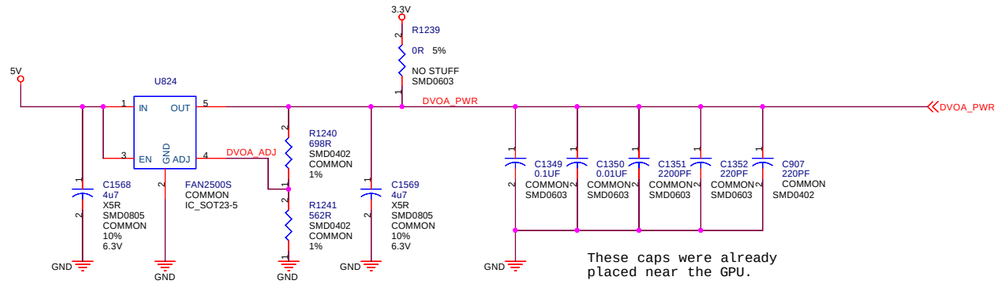

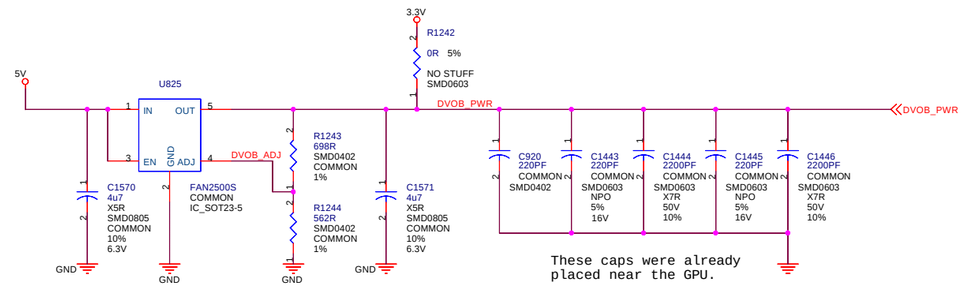

5.1 P-ROM

NV25, 4MX32 BGA DDR 32MB, RGB, DVI-I, TV-DOWN, TV I/F, AGP4X

NVIDIA Corporation
3535 Monroe St
Santa Clara, CA 95051, USA

Size	CAGE Code	DWG NO	Rev
Custom			-

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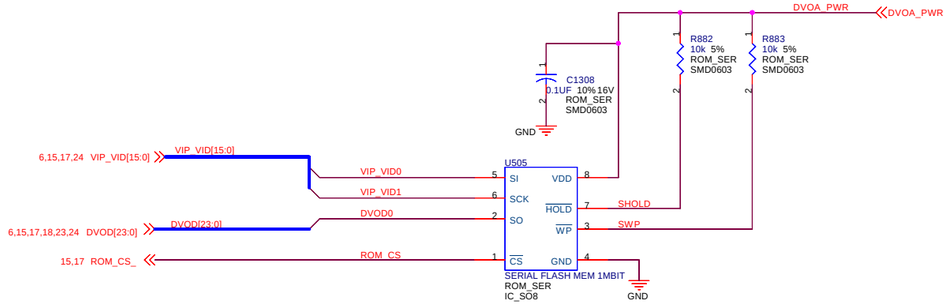

5.2 S-ROM

NV25, 4MX32 BGA DDR 32MB, RGB, DVI-I, TV-DOWN, TV I/F, AGP4X

NVIDIA Corporation
3535 Monroe St
Santa Clara, CA 95051, USA

Size	CAGE Code	DWG NO	Rev
Custom			-

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Scale

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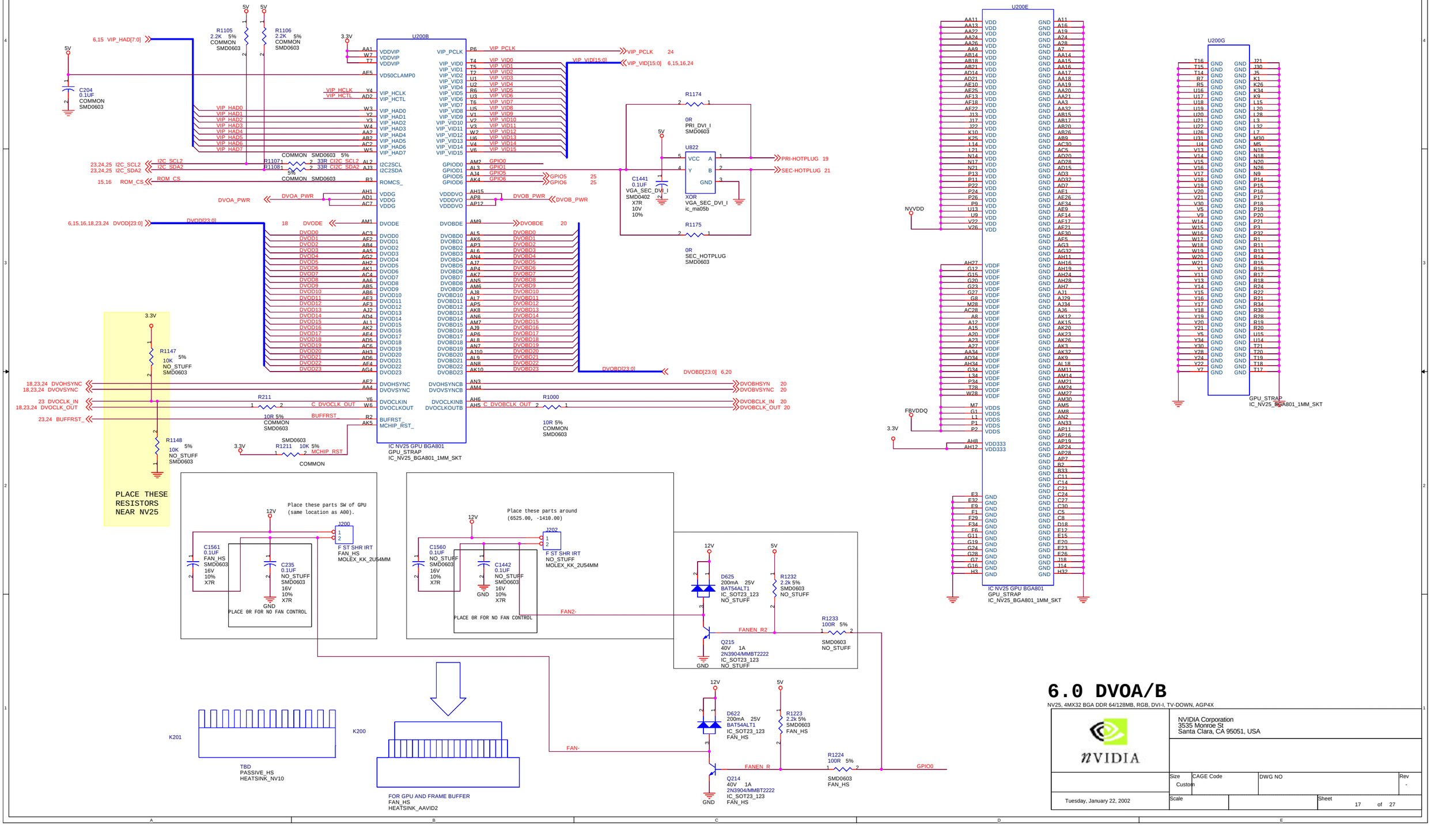

6.0 DVOA/B

NV25, 4MX32 BGA DDR 64/128MB, RGB, DVI-I, TV-DOWN, AGP4X

NVIDIA Corporation
3535 Monroe St
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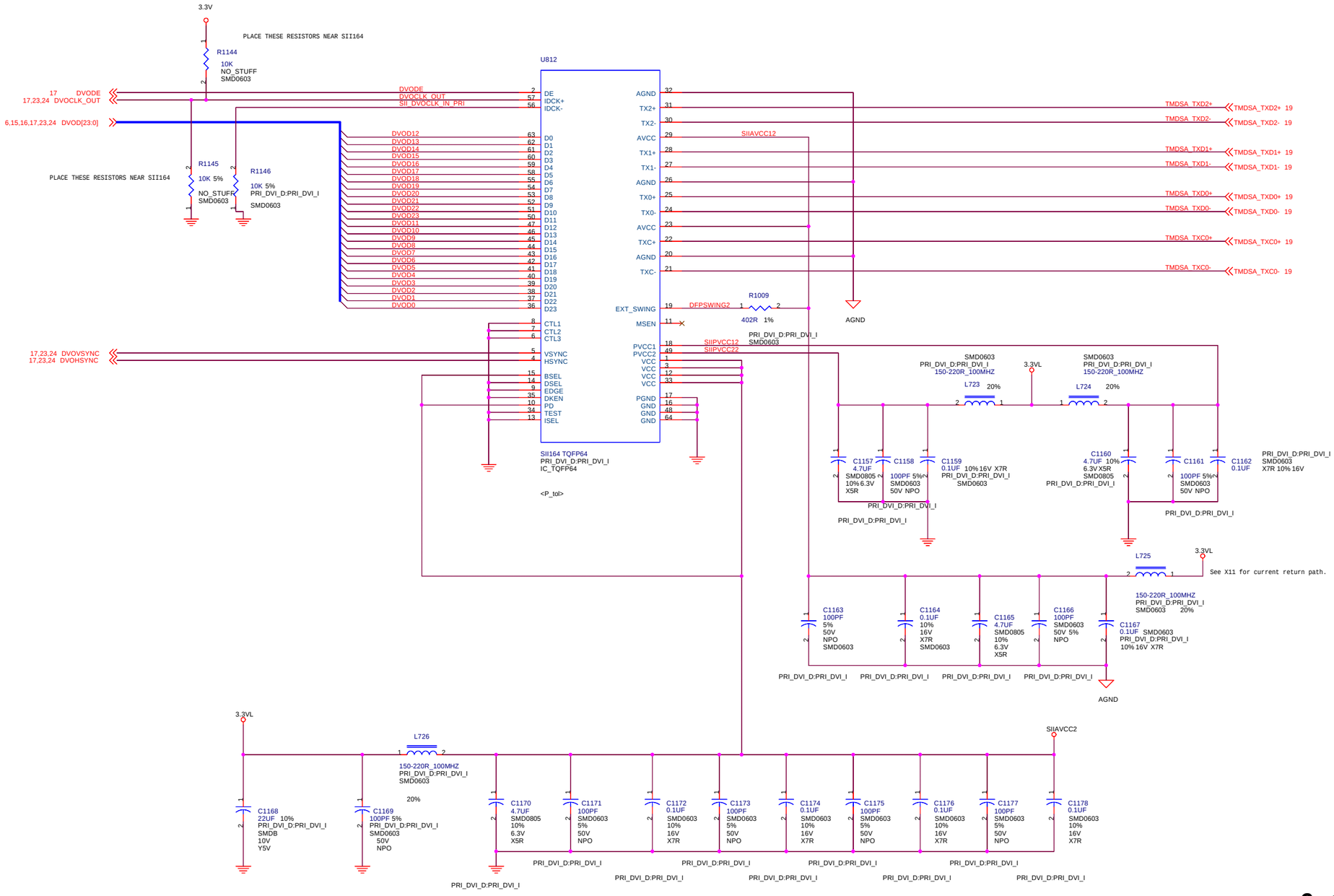

6.1 DVOA EXT. TMDSA PRI

NV25, 4MX16 DDR 64MB, RGB, DVI-I, TV-DOWN, TV I/F, AGP4X

NVIDIA Corporation
3535 Monroe St
Santa Clara, CA 95051, USA

Size	CAGE Code	DWG NO	Rev
Custom			-

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Scale

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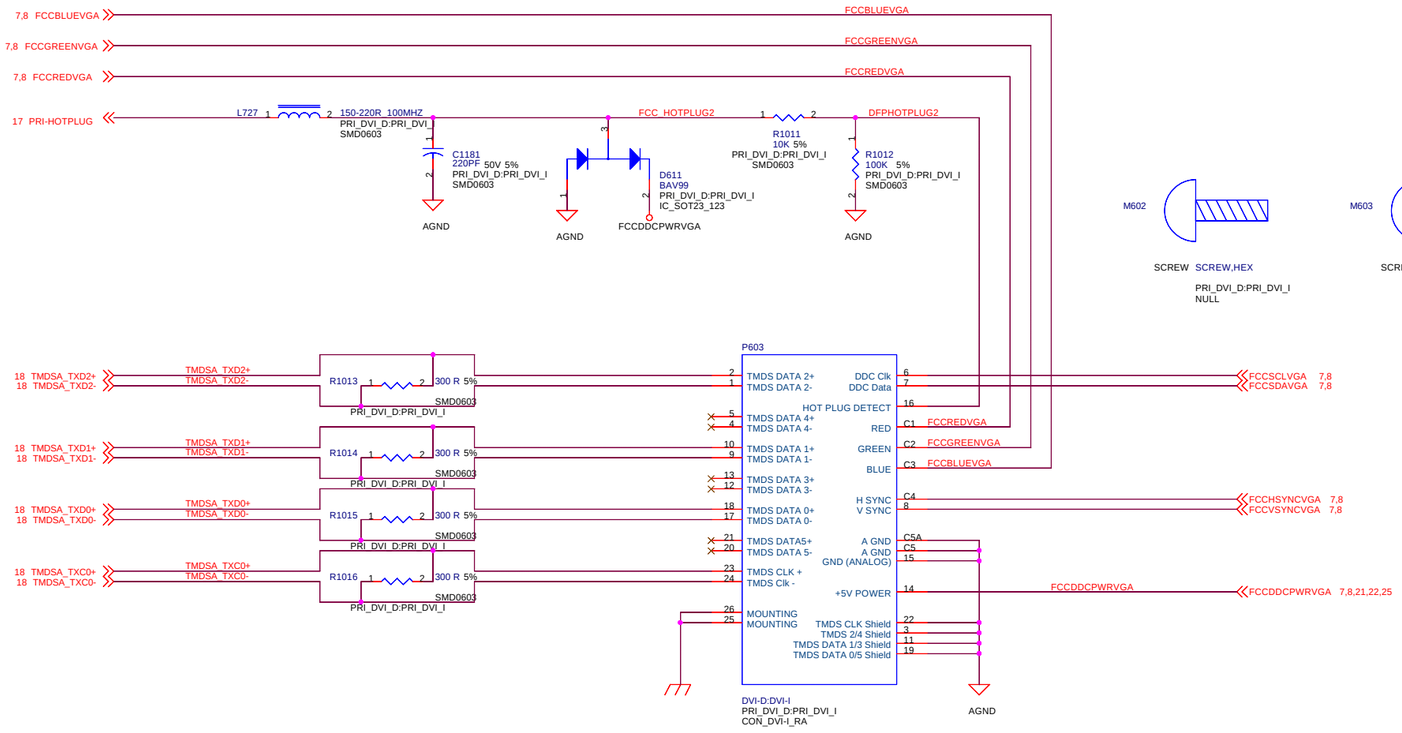

6.2 DVOA EXT. TMDSA I/O PRI

NV25, 4MX32 BGA DDR 64/128MB, RGB, DVI-I, TV-DOWN, AGP4X

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Santa Clara, CA 95051, USA

Size	CAGE Code	DWG NO	Rev
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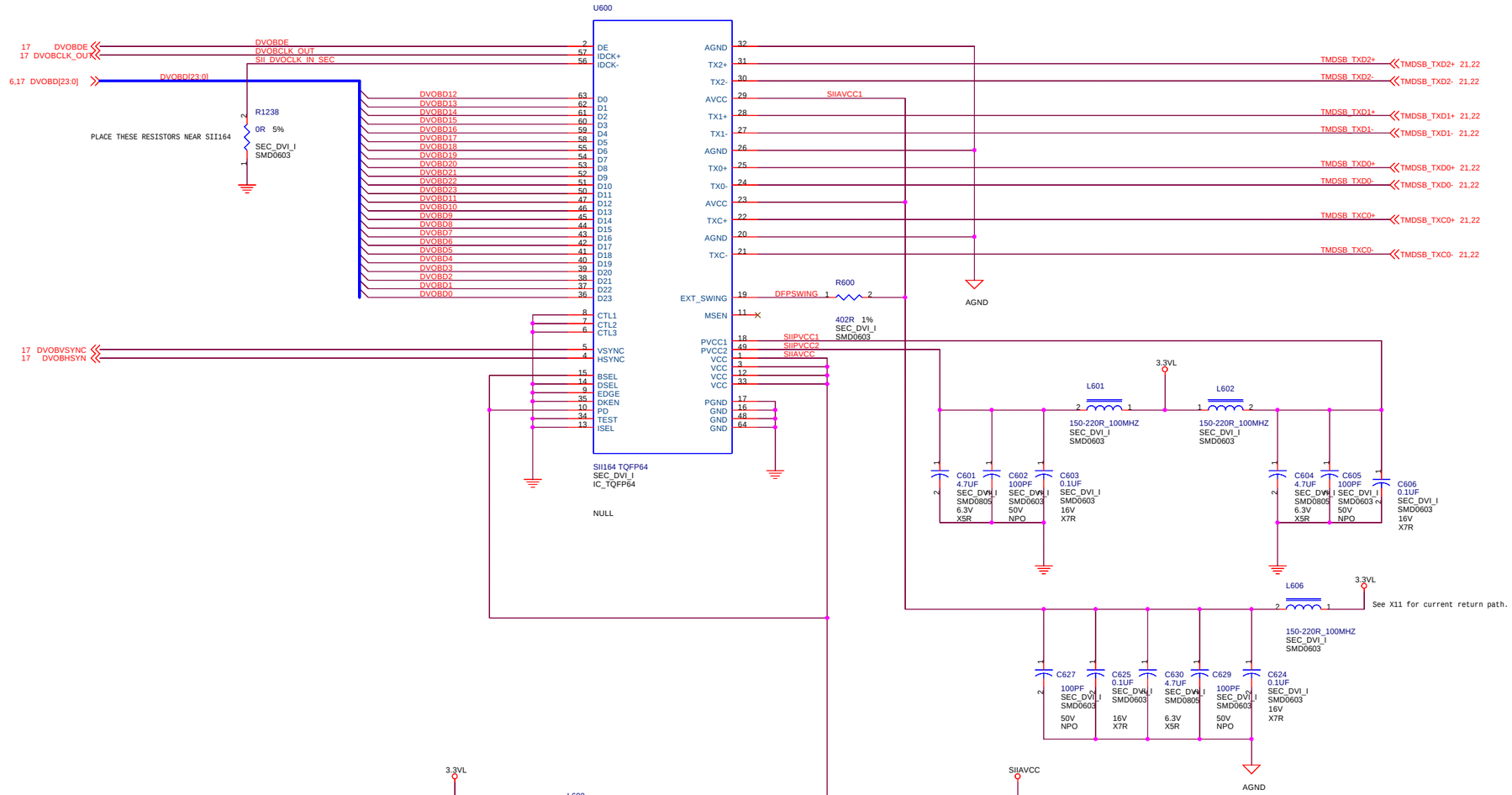

6.3 DVOB EXT. TMDSB SEC

NV25, 4MX32 BGA DDR 64/128MB, RGB, DVI-I, TV-DOWN, AGP4X

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Santa Clara, CA 95051, USA

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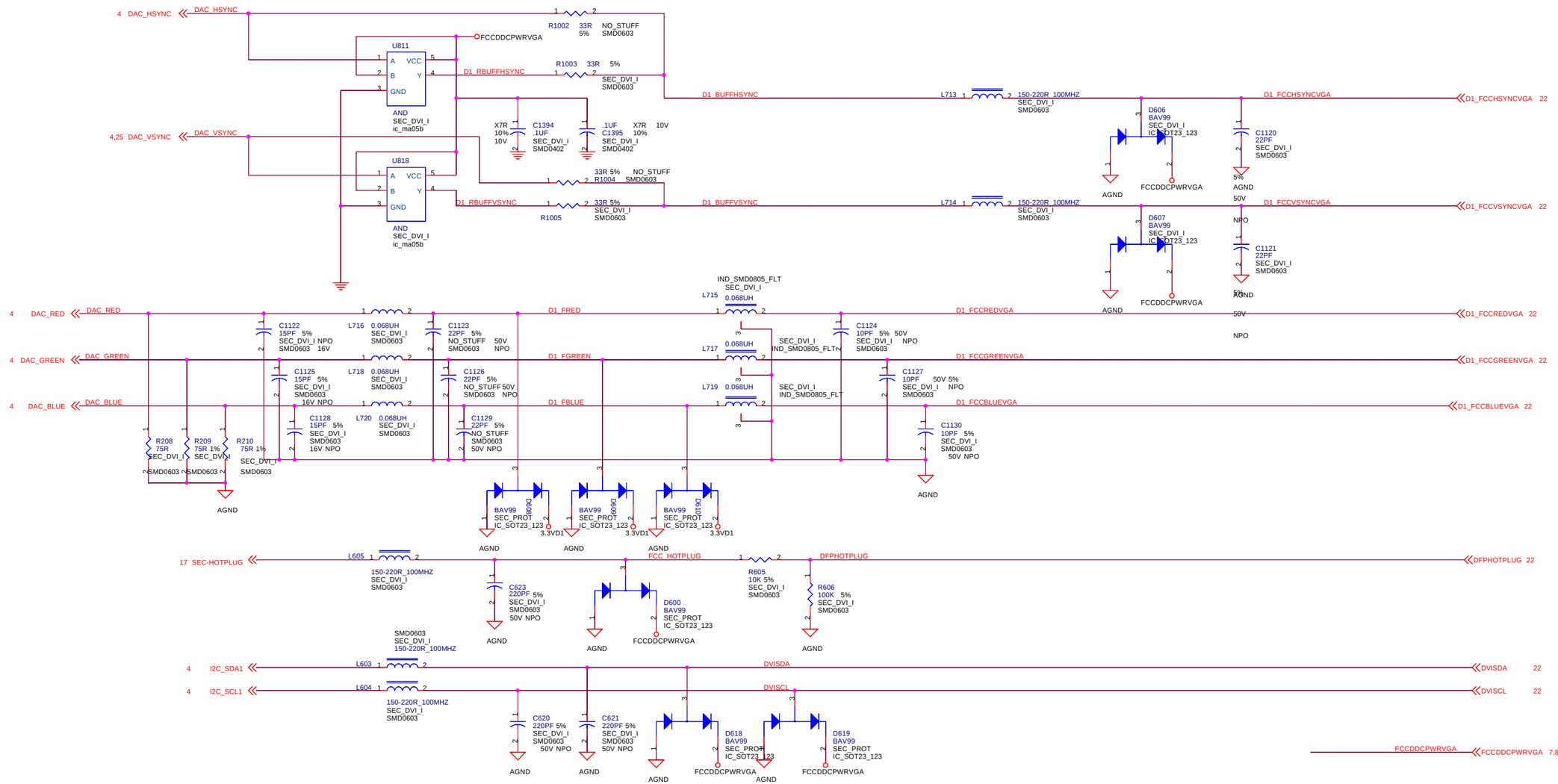

WARNING PRIMARY AS PER STANDARD
6.4 DVOB/DACA I/O SEC

NV25, 4MX32 BGA DDR 64/128MB, RGB, DVI-I, TV-DOWN, AGP4X

NVIDIA Corporation
3535 Monroe St
Santa Clara, CA 95051, USA

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Custom			-

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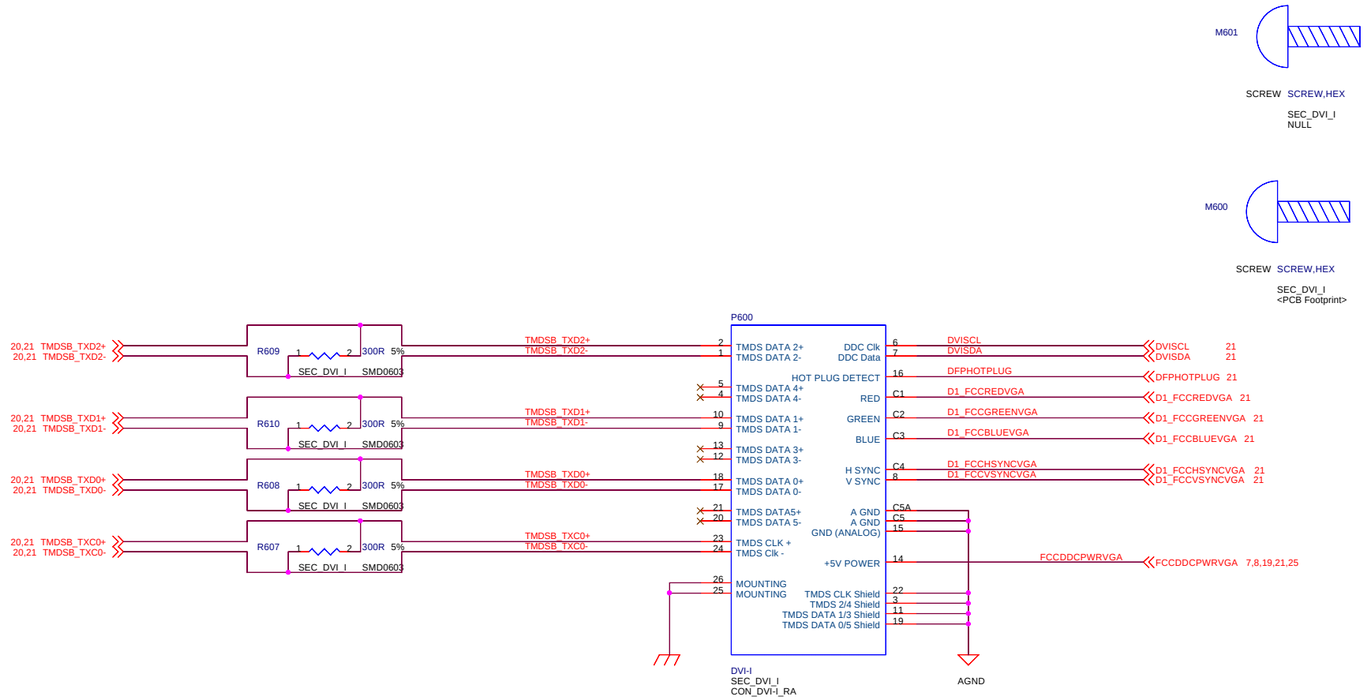

6.5 DVOB/DACA CONNECTOR

NV25, 4MX32 BGA DDR 64/128MB, RGB, DVI-I, TV-DOWN, AGP4X

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3535 Monroe St
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Size	CAGE Code	DWG NO	Rev
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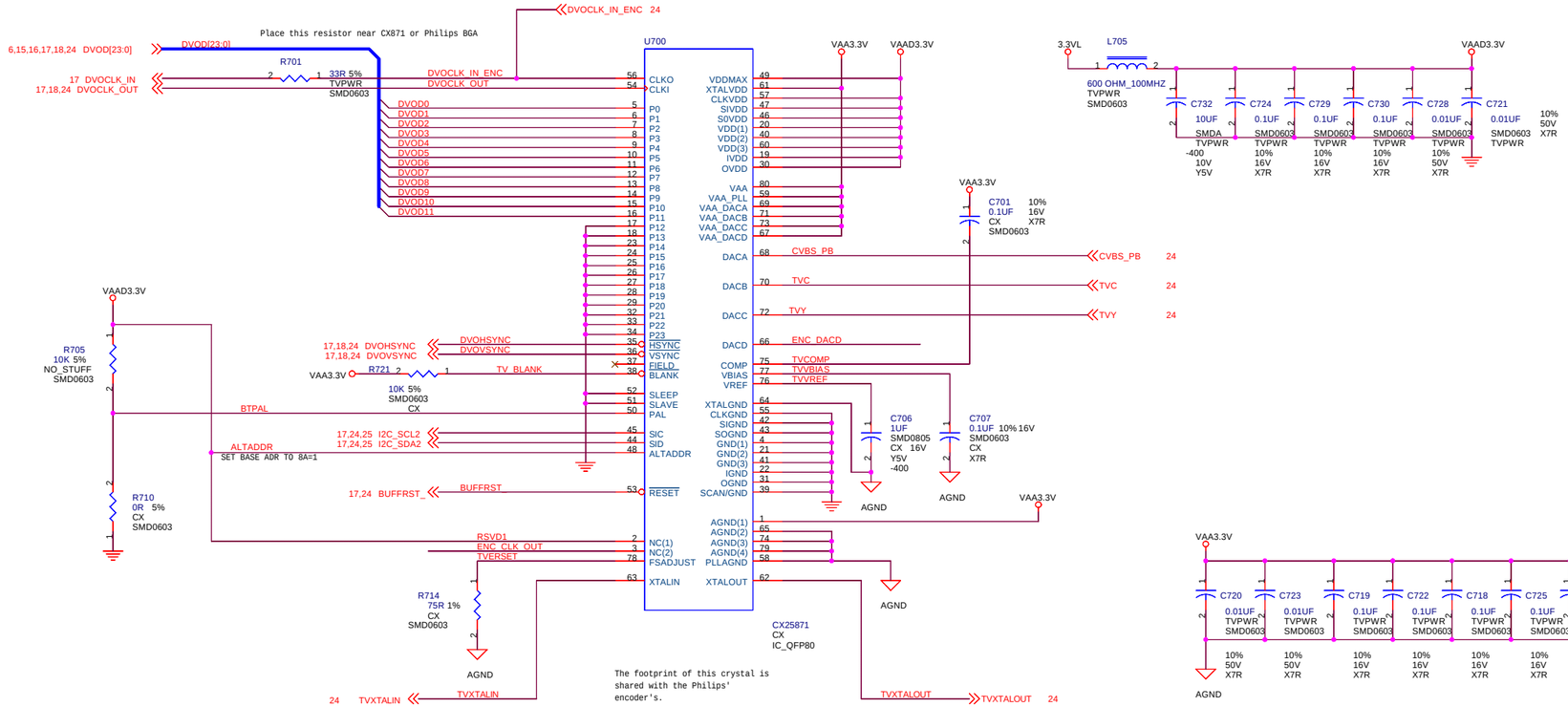

IC CX DIGITAL VIDEO ENCODER CX25871

7.1 TV-CX ENCODER

NV25, 4MX32 BGA DDR 64/128MB, RGB, DVI-I, TV-DOWN, AGP4X

NVIDIA Corporation
3535 Monroe St
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23 TVXTALOUT
23 TVXTALIN
23 CVBS_PB
23 TVY
23 TVC
17,18,23 DVOHSYNC
17,18,23 DVOVSYNC
23 DVOCLK_IN_ENC
17,18,23 DVOCLK_OUT
6,15,16,17,18,23 DVOD[23:0]
17 VIP_PCLK
6,15,16,17 VIP_VID[15:0]

TVXTALOUT
TVXTALIN
CVBS_PB
TVY
TVC
DVOHSYNC
DVOVSYNC
DVOCLK_IN_ENC
DVOCLK_OUT
DVOD[23:0]
VIP_PCLK
VIP_VID[15:0]

SMD0603 SAA8
16V X7R
C23 .047uF 5%

25 CVBSYIN
25 CHROMAIN

AP-P12
AP-P8
CVBSYIN
CHROMAIN

C25
.047uF 5%
SAA8
SMD0603
16V X7R

AGND

X-PORT
I-PORT
H-PORT
P-PORT
SYNC

AOUT
AI1D
AI11
AI12
AI21
AI22
AI23
AI24
AI2D
AMXCLK
ALRCLK
AMCLK
ASCLK
ANALOG-PORT
A-CLOCK

(-------- SAA 7108 ---------)

DECODER

SAA7114

ENCODER

SAA7102

X-TAL
IIC
RESET
RTC-PORT
JTAG
TEST

DXTAL
DXTALI
24.576 MHz
SAA8
XTAL_2P_HC49SM
Y2

C37 33pF 1% 50V NPO SMD0603
C38 33pF 1% 50V NPO SMD0603

SAA8
R1182 100R 5%

SADETMS
SADETDO
SADETCK
SADETRST

X7R 100V 10% SMD0603 SAA8:SAA2 2200pF
C41
C42
C33 2200pF SAA8:SAA2 SMD0603
C34 2200pF SAA8:SAA2 SMD0603
C36 .039UF SAA8:SAA2 SMD0603
C43 0.1uF SAA8:SAA2 SMD0603
C46 0.1uF SAA8:SAA2 SMD0603
C50 0.1uF SAA8:SAA2 SMD0603
C39 .039UF SAA8:SAA2 SMD0603 X7R
C47 X7R 0.1uF SAA8:SAA2 SMD0603
C51 0.1uF SAA8:SAA2 SMD0603
C1422 2200pF 10% 100V X7R SAA8:SAA2 SMD0603
C1417 0.1uF 10% 16V X7R SAA8:SAA2 SMD0603
C49 2200pF 10% 100V X7R SAA8:SAA2 SMD0603
C1418 0.1uF 10% 16V X7R SAA8:SAA2 SMD0603
C48 0.1uF SAA8:SAA2 SMD0603 10% 16V X7R
C40 0.1uF SAA8:SAA2 SMD0603 X7R 10% 16V

AGND
GND

R
G
B
HSOUT
VSOUT
RSET
DUMP1
DUMP2
XTAL
XTALI
TMS
TDO
TCK
TRST
TDI

C8 TVC
C7 TVY
C6 CVBS_PB
D8
D7
A9 SARSET
A7 DUMP12
B7
A6 TVXTALOUT
A5 TVXTALIN
D3 SAECTMS
D1 SAECTDO
E1 SAECTCK
A4 SAECTRST
B5

R22 1K 5% SAA2:SAA8 SMD0603
R23 12R 5% SAA2:SAA8 SMD0603
Y1 27.000 MHz:27.000 MHz:13.500 MHz SAA2:SAA8:CX XTAL_2P_HC49SM
C29 27pF SAA2:SAA8:CX SMD0603
C30 27pF NPO SAA2:SAA8:CX SMD0603
5% 50V NPO2

U2
SAA8:SAA2
IC_BGA156

SAA8
SMD0603
R1181 100R 5%

1.EXTAL,EXTALI,DXTAL AND DXTALI NETS SHOULD BE 10 mils width.

C20 22PF 5% 50V NPO SMD0603 SAA8:SAA2:CX
L5 1.8UH 5% SMD0603 SAA8:SAA2:CX
R21 75R 1% SAA8:SAA2:CX SMD0603
C21 270pF 5% 50V NPO SAA8:SAA2:CX SMD0603
C22 330pF 5% 50V NPO SAA8:SAA2:CX SMD0603
C24 22PF 5% NPO SMD0603 SAA8:SAA2:CX
COUT 25

L7 1.8UH 5% SMD0603 SAA8:SAA2:CX
R24 75R 1% SAA8:SAA2:CX SMD0603
C26 270pF 5% 50V NPO SAA8:SAA2:CX SMD0603 NPO50V
C27 330pF 5% 50V NPO SAA8:SAA2:CX SMD0603 NPO
C28 22PF 5% SMD0603 SAA8:SAA2:CX
YOUT 25

L9 1.8UH 5% SMD0603 SAA8:SAA2:CX
R26 75R 1% SAA8:SAA2:CX SMD0603
C31 270pF 5% 50V NPO SAA8:SAA2:CX SMD0603
C32 330pF 5% 50V NPO SAA8:SAA2:CX SMD0603
CVBSOUT 25

If P602 is a 4 pin connector
Do not install L9,C28,C31,C32

VAAD3.3V
VAA3.3V
SAB3.3V
3.3VL
L31 600 OHM 100MHZ 25% SAA8:SAA2 SMD0603
C55 4.7UF 10% 6.3V X5R SAA8:SAA2 SMDA

17,23 BUFFRST_
17,23,25 I2C_SCL2
17,23,25 I2C_SDA2
R29 0R 5% SMD0603 SAA2
SABUFFRST
I2C_SCL2
I2C_SDA2

OPTION	RXX
SAA7108	NO STUFF
SAA7114	NO STUFF
SAA7102	STUFF

7.2 TV-PH CODEC

NV25, 4MX32 BGA DDR 64/128MB, RGB, DVI-I, TV-DOWN, AGP4X

NVIDIA Corporation
3535 Monroe St
Santa Clara, CA 95051, USA

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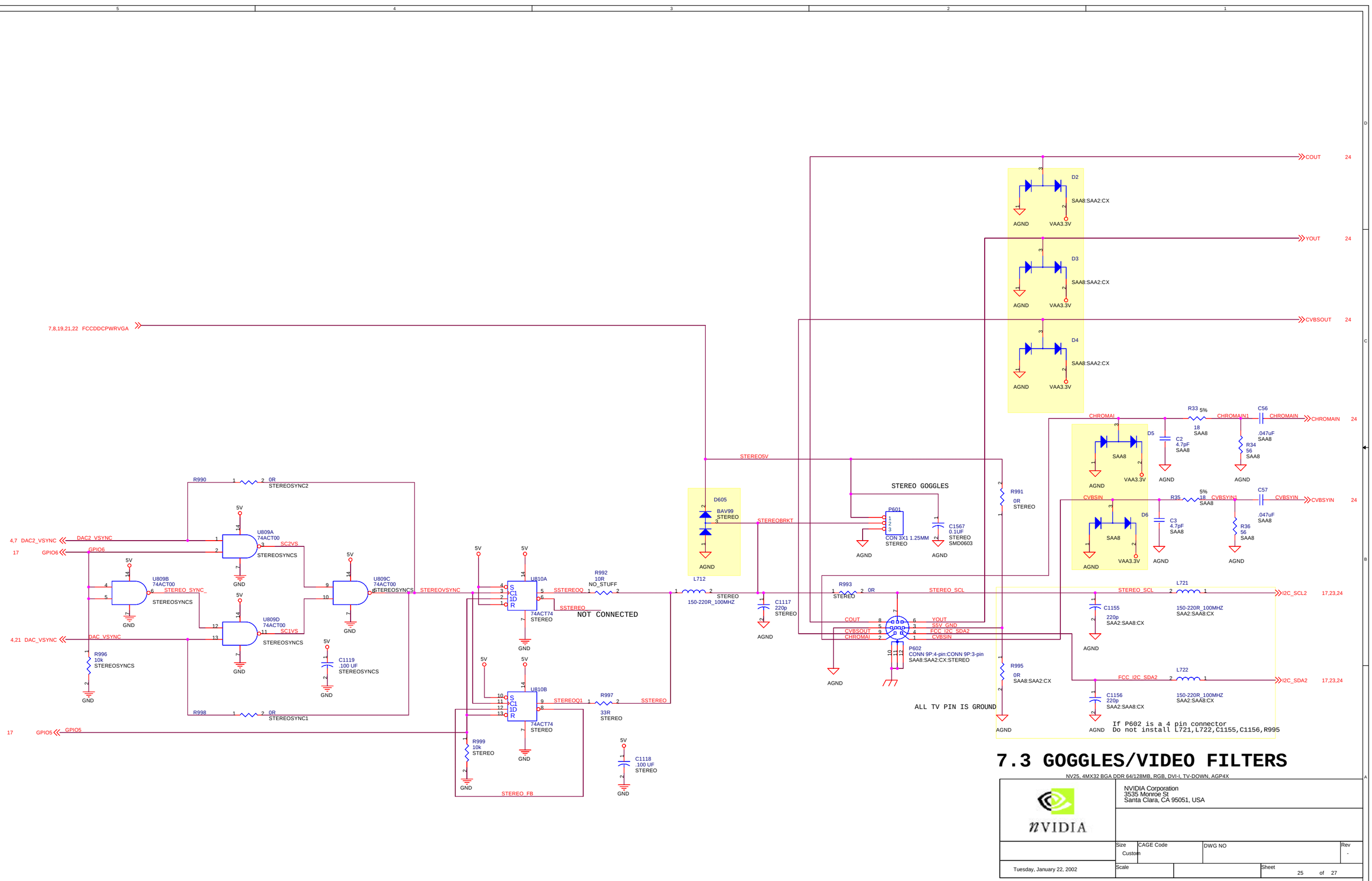

7.3 GOGGLES/VIDEO FILTERS

NV25, 4MX32 BGA DDR 64/128MB, RGB, DVI-I, TV-DOWN, AGP4X

NVIDIA Corporation
3535 Monroe St
Santa Clara, CA 95051, USA

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ASSEMBLY: SC1175

Place these caps near the FET

Place these caps near the FET

POWER SUPPLY SEQUENCE PROTECTION

VOUT = 1.25 (1 + (ROUT/RGND))

2.8V = 1.25 (1 + (150/121))

FBVDDQ 2.8V FBVDD

VTT

FBVDD/2

VADJ

SEE NOTES.

(8V-NOM) + 1.5V = 9.5V TRIP

(2V-NOM) + 1.5V = 3.5V TRIP

NO ADJ = 1.5V TRIP

I=(5-0.5-2.8)/(15/10)=???

FBVDD

8.1 FBVDD-VTT POWER SUPPLY

NV25, 4MX16 DDR 64MB, RGB, DVI-I, TV-DOWN, TV I/F, AGP4X

NVIDIA Corporation
3535 Monroe St
Santa Clara, CA 95051, USA

Size	CAGE Code	DWG NO	Rev
Custom			-

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Regulated 3.3V

Semtech SC1565 SO8
3.3V@500mA
Drop Out 225mV
Typ.

Vout=1.2*(1 + (Rout/Rgnd))
3.38V=1.2*(1 + (200/110))

PWRGD_FBVDD_EN

5V

R1173 0R NO_STUFF SMD0603

R1121 200R 1% SC1565 SMD0603

R1122 110R 1% SC1565 SMD0603

LN-FBADJ

C1412 0.039UF SC1565 SMD0603 X7R 10% 16V

U819 IC REG ADJ LINEAR SC1565 SC1565 (ADJ, Vo, Vin, EN, GND, GND, GND, GND)

C1407 10UF SC1565 SMD1206 80/-20% 16V Y5V

IC_SO8

Large copper shape attached to the Reg. GND to act as heat sink to have RthJA within 65C/W.

C1408 10UF NO_STUFF SMD1206 80/-20% 16V Y5V

C1409 0.1UF SMD0603 SC1565 10% 16V X7R

C1410 0.039UF SMD0603 SC1565 10% 16V X7R

C1411 220PF SMD0603 SC1565 5% 16V NPO

C1405 330UF CAP_ALE_SMD_6_3 SC1565 20% 6.3V ALE 0.76Ohm 150mA

C1406 330UF NO_STUFF 20% 6.3V ALE 0.76Ohm 150mA

Can be placed on same location.
Alternative stuffing

3.3VL

5V

U823 (IN, EN, NC, GND, OUT, OUT, OUT, OUT)

PWRGD_FBVDD_EN

LN-FBADJ

3.3VL

SC1541-3.3V NO_STUFF IC_SO8

DUAL FOR U819

Large copper shape attached to the 3.3VL to act as heat sink to have RthJA within 65C/W.

26 PWRGD_SC1175

26 PWRGD_AGP

26 PWRGD_SC1102

R1140 2 1 0R NO_STUFF SMD0603

R1141 2 1 0R SC1102 SMD0603

ILIM

R1072 1.5K 1% SC1102 SMD0603

C1233 0.1UF SC1102 SMD0603 10% 16V X7R

3.3VFLT

5V

R1118 10K SMD0603 SC1102 5%

R1142 2.2 R 5% SC1102 SMD0603

C1243 0.1UF NO_STUFF SMD0603 10% 16V X7R

C1242 1UF SC1102 SMD0805 80/-20% 16V Y5V

R1129 0R NO_STUFF SMD0603

D617 BAT54ALT1 SC1102 IC_SOT23_123

PLADE THIS DIODE CLOSE TO SC1102

IC_SO14_150MIL SC1102 U816

1	VCC	GND	14
2	PWGD_SC1102	SS/SHDN~	13
3	OVP	VREF	12
4	OCSET	SENSE	11
5	PHASE	BSTH	10
6	DRVH	BSTL	9
7	GND	DRVL	8

SC_VCC
PWRGD_SC1102
OVP
OCSET1
MID_FET12
CGH
CGL

SMD0603 16V SC1102 10% X7R C1234 .1UF 5%

SC_VREF

R1210 2.2R SMD0603

SC_FB

SC_BST

SC_VREFFC

R1078 392R 1% SC1102 SMD0603

C1262 0.001UF SMD0603 X7R 10% 16V

C1240 0.1UF SC1102 SMD0603 10% 10V X7R

C1448 0.1UF NO_STUFF SMD0603 10% 10V X7R

VADJ

NVVDD

R1075 124R 1% SC1102 SMD0603

TP25 NO_STUFF HOLE_48C28P TEST POINT

TP26 NO_STUFF HOLE_48C28P

TP27 NO_STUFF HOLE_48C28P TEST POINT

12V

D615 MMBD4148CA IC_SOT23_123 SC1102

2.2R 5% R1080 GH1

Q905 IRF7809A SC1102 IC_SO8 30V 14.5A 8.5mO

SC1102 SMD0603

CGH

MID_FET12

2.2R 5% R1082 GL1

Q210 INDRC2 IRF7809A SC1102 IC_SO8 30V 14.5A 8.5mO

SC1102 SMD0603

CGL

R1104 2.2R 5% SC1102 SMD0805

C1306 2200PF SMD0603 SC1102 10% 16V X7R

D616 2.1A 40V 10MQ040N RECT_SMDA SC1102

GND

3.3V

CAPS_SMD_8_0-10_0_SANYO

C1371 1000UF SC1102 170mO ALE 0.45A 6.3V 20%

C1276 470UF ALE CAPS_TH_3_5_8-5_0_10 NO_STUFF 110mO 0.56A 6.3V 20%

Can be placed on same location.
Alternative stuffing

L801 SMD0805 1UH IND_CDR73 SC1102

R1114 0R NO_STUFF

R1088 0R NO_STUFF

R1090 0R NO_STUFF

3.3VFLT

C1273 0.039UF SMD0603 SC1102 16V 10%

C1183 4.7UF SMD0805 SC1102 6.3V 10%

C1275 0.1UF SMD0603 SC1102 10% 16V

C1267 470UF SC1102 25mO ALE-EX 2.09A 6.3V 20%

C1268 510UF NO_STUFF CAPS_TH_3_5_8-5_0_10 50/-10% 4V OSCON 14mO 4.08A

Can be placed on same location.
Alternative stuffing

SMD_SANYO_CAP C1366 NO_STUFF ?V ?%

C1263 470UF 25mO ALE-EX 2.09A 6.3V 20% NO_STUFF

C1264 510UF SC1102 CAPS_TH_3_5_8-5_0_10 50/-10% 4V OSCON 14mO 4.08A

CAPS_SMD_8_0-10_0_SANYO

Can be placed on same location.
Alternative stuffing

L731 SMT 12.5X12.5@4.7UH@10A TBD IND_MULTIPADS SC1102

VOUT = 1.265 (1 + (ROUT/RGND))

NVVDD 1.7V Max

C1402 220PF SMD0603 SC1102 5% 16V NPO

C1401 0.039UF SMD0603 SC1102 10% 16V X7R

C1403 0.1UF SMD0603 SC1102 10% 16V X7R

C1305 4.7UF SC1102 SMD0805 10% 6.3V X5R

C1301 510uF NO_STUFF 20% 4V ALE 14mO 4.08A

C1302 510UF SC1102 CAPS_TH_3_5_8-5_0_10 50/-10% 4V OSCON 14mO 4.08A

CAPS_SMD_8_0-10_0_SANYO

Can be placed on same location.
Alternative stuffing

C1379 NO_STUFF SMD_SANYO_CAP ?% ?V ?%

C1303 510uF NO_STUFF 20% 4V ALE 14mO 4.08A

C1304 510UF SC1102 CAPS_TH_3_5_8-5_0_10 50/-10% 4V OSCON 14mO 4.08A

CAPS_SMD_8_0-10_0_SANYO

Can be placed on same location.
Alternative stuffing

1.7V max at 10A

8.3 NVVDD POWER SUPPLY

NV25, 4MX16 DDR 64MB, RGB, DVI-I, TV-DOWN, TV I/F, AGP4X

NVIDIA Corporation
3535 Monroe St
Santa Clara, CA 95051, USA

Size	CAGE Code	DWG NO	Rev
Custom			-

Tuesday, January 22, 2002

Scale

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