P283: LOW PROFILE NV44/G3-64, TSOP MEMORY x16

REV HISTORY

Page1: P262 Overview

Page2: PCI Express Interface

Page3: Frame Buffer Interface

Page4: Memory 1st bank 0..31

Page5: Memory 1st bank 32..63

Page6: DACA VGA

Page7: DACB RGB

Page8: TMDS LINK A

Page9: TMDS LINK C

Page10:TVO Connector

Page11: GPIO, PLL, BIOS

Page12: MIO

Page13: STRAPS, Mechanical Parts

Page14: NVVDD & FBVDDQ

Page15: TMDS_IOVDD,TMDS_PLLVDD,5V,F3V3

SKU	VARIANT	NVPN	ASSEMBLY
B	BASE	600-f0ppp-xxxx-vvv	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
1	WORKSTATION_SKU00	600-50283-0000-200	NVS SKU00
2	0001	600-10283-0001-000	SKU01 - NV44 G3-64, VGA+HDTV, 350/275MHz, 64-bit 64MB MEMORY INTERFACE
3	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>
4	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>
5	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>
6	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>
7	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>
8	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>
9	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>
10	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>
11	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>
12	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>
13	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>
14	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>
15	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>

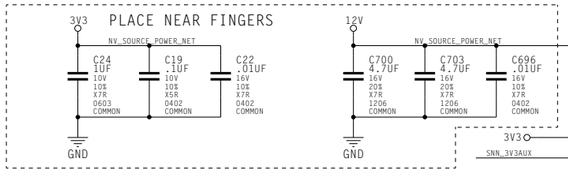
ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

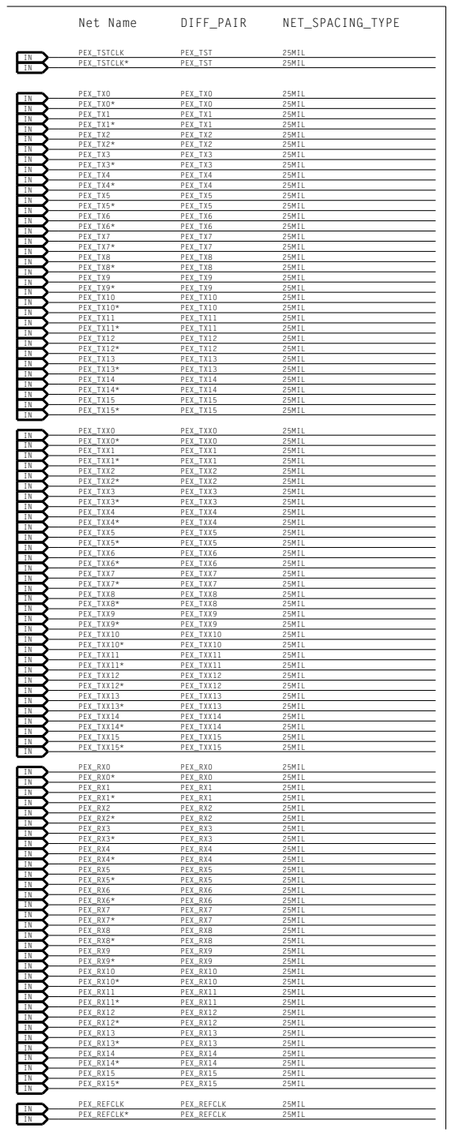
ASSEMBLY	NVS SKU00
PAGE DETAIL	P283 Overview

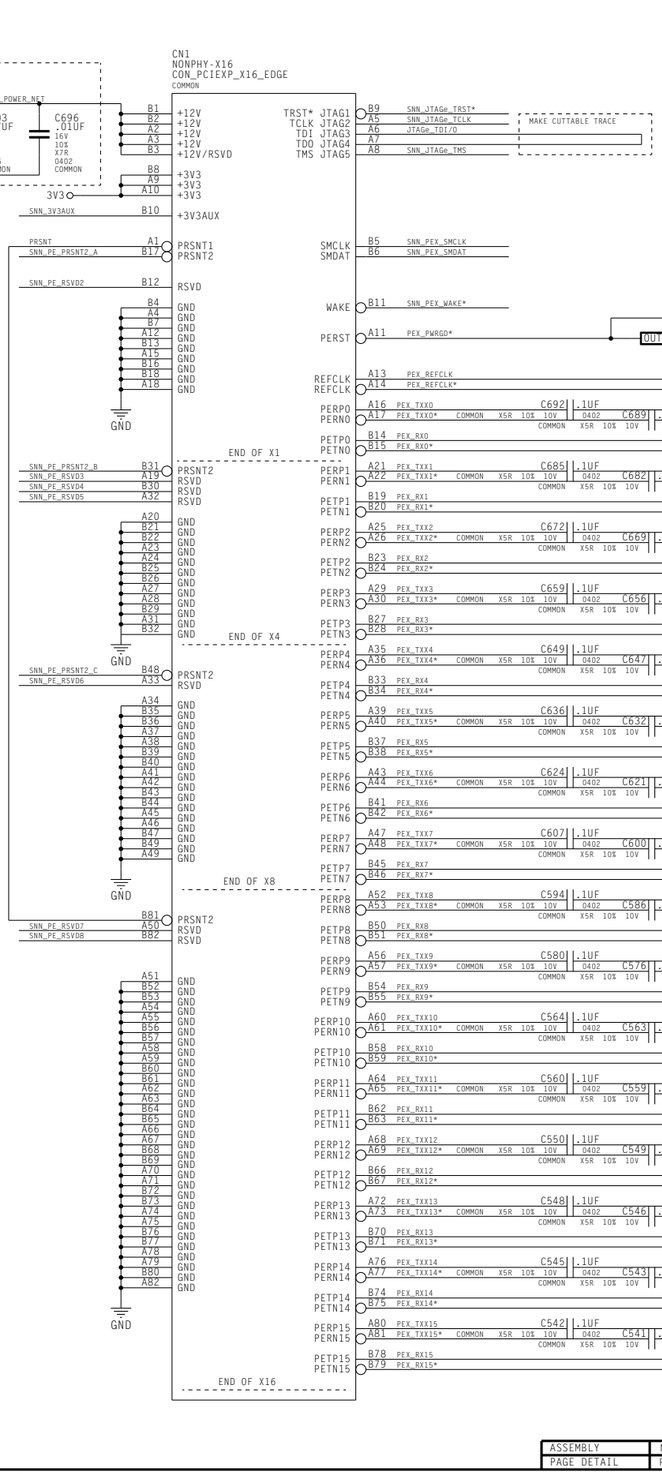
NVIDIA CORPORATION
2701 SAN TOMAS EXPRESSWAY
SANTA CLARA, CA 95050, USA

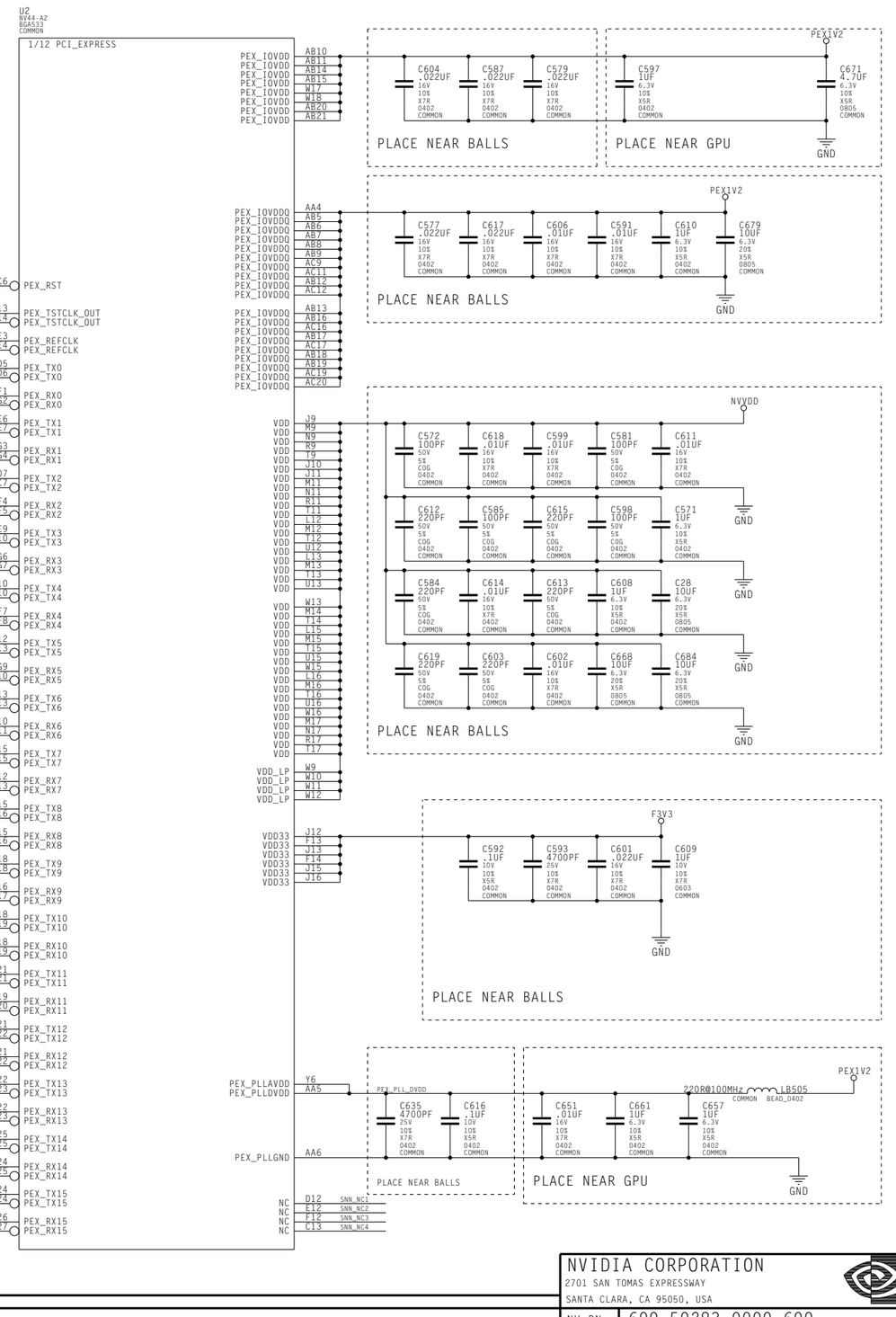
NV_PN	600-50283-0000-600		
ID	p283_nv44	PAGE	1 OF 15
NAME	wzamel	DATE	10-JAN-2005

PEX-Interface









ASSEMBLY	NVS SKU00
PAGE_DETAIL	PCI Express Interface

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

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

NV_PN	600-50283-0000-600		
ID	p283_nv44	PAGE	2 OF 15
NAME	wzamel	DATE	10-JAN-2005

GPU: FB-Interface

Net Name	NET_SPACING_RULE
FBCAL_PD_VDDQ	10MIL
FBCAL_PU_GND	10MIL
FBCAL_TERM_GND	10MIL
FB_DLLVDD	10MIL
FBA_PLLAVDD	10MIL
FBVREF	10MIL

U2
NV44-A2
BGA533
COMMON

2/12 FRAME_BUFFER

4.3A< 4.1F<	B1	FBD<31..0>	
	0	FBD<0>	A26
	1	FBD<1>	C24
	2	FBD<2>	B24
	3	FBD<3>	A24
	4	FBD<4>	C22
	5	FBD<5>	A25
	6	FBD<6>	B25
	7	FBD<7>	D23
	8	FBD<8>	G22
	9	FBD<9>	J23
	10	FBD<10>	E24
	11	FBD<11>	F23
	12	FBD<12>	J24
	13	FBD<13>	F24
	14	FBD<14>	G23
	15	FBD<15>	H24
	16	FBD<16>	D16
	17	FBD<17>	E16
	18	FBD<18>	D17
	19	FBD<19>	F18
	20	FBD<20>	E19
	21	FBD<21>	E18
	22	FBD<22>	D20
	23	FBD<23>	D19
	24	FBD<24>	A18
	25	FBD<25>	B18
	26	FBD<26>	A19
	27	FBD<27>	B19
	28	FBD<28>	D18
	29	FBD<29>	C19
	30	FBD<30>	C16
	31	FBD<31>	C18
5.3A< 5.1F<	B1	FBD<63..32>	
	32	FBD<32>	N26
	33	FBD<33>	N25
	34	FBD<34>	R25
	35	FBD<35>	R26
	36	FBD<36>	R27
	37	FBD<37>	T25
	38	FBD<38>	T27
	39	FBD<39>	T26
	40	FBD<40>	AB23
	41	FBD<41>	Y24
	42	FBD<42>	AB24
	43	FBD<43>	AB22
	44	FBD<44>	AC24
	45	FBD<45>	AC22
	46	FBD<46>	AA23
	47	FBD<47>	AA22
	48	FBD<48>	Y24
	49	FBD<49>	T23
	50	FBD<50>	R24
	51	FBD<51>	R23
	52	FBD<52>	R22
	53	FBD<53>	T22
	54	FBD<54>	N23
	55	FBD<55>	P24
	56	FBD<56>	AA24
	57	FBD<57>	AA27
	58	FBD<58>	AA26
	59	FBD<59>	AB25
	60	FBD<60>	AB26
	61	FBD<61>	AB27
	62	FBD<62>	AA25
	63	FBD<63>	W25
5.4C< 5.1F< 4.3C< 4.4C< 5.3E<	OUT	FBDQM<7..0>	
	0	FBDQM<0>	D21
	1	FBDQM<1>	F22
	2	FBDQM<2>	F20
	3	FBDQM<3>	A21
	4	FBDQM<4>	V27
	5	FBDQM<5>	W22
	6	FBDQM<6>	V22
	7	FBDQM<7>	V24
	B1	FBDQS<7..0>	
	0	FBDQS<0>	B22
	1	FBDQS<1>	D22
	2	FBDQS<2>	E21
	3	FBDQS<3>	C21
	4	FBDQS<4>	V25
	5	FBDQS<5>	W24
	6	FBDQS<6>	U24
	7	FBDQS<7>	W26
		SNN_FBDQS0*	A22
		SNN_FBDQS1*	E22
		SNN_FBDQS2*	F21
		SNN_FBDQS3*	B21
		SNN_FBDQS4*	V26
		SNN_FBDQS5*	W23
		SNN_FBDQS6*	V23
		SNN_FBDQS7*	W27
		FBVREF	A16

FB_VTT	E15		
FB_VTT	F15		
FB_VTT	F16		
FB_VTT	J17		
FB_VTT	J18		
FB_VTT	L19		
FB_VTT	N19		
FB_VTT	R19		
FB_VTT	U19		
FB_VTT	W19		
FB_VDDQ	F17		
FB_VDDQ	F19		
FB_VDDQ	J19		
FB_VDDQ	M19		
FB_VDDQ	T19		
FB_VDDQ	J22		
FB_VDDQ	L22		
FB_VDDQ	P22		
FB_VDDQ	U22		
FB_VDDQ	Y22		
FB_CMD0	G27	FB_CMD<0>	0
FB_CMD1	D25	FB_CMD<1>	1
FB_CMD2	F26	FB_CMD<2>	2
FB_CMD3	F25	FB_CMD<3>	3
FB_CMD4	G25	FB_CMD<4>	4
FB_CMD5	J25	FB_CMD<5>	5
FB_CMD6	J27	FB_CMD<6>	6
FB_CMD7	M26	FB_CMD<7>	7
FB_CMD8	C27	FB_CMD<8>	8
FB_CMD9	C25	FB_CMD<9>	9
FB_CMD10	D24	FB_CMD<10>	10
FB_CMD11	N27	FB_CMD<11>	11
FB_CMD12	G24	FB_CMD<12>	12
FB_CMD13	J26	FB_CMD<13>	13
FB_CMD14	M27	FB_CMD<14>	14
FB_CMD15	C26	FB_CMD<15>	15
FB_CMD16	M25	FB_CMD<16>	16
FB_CMD17	D26	FB_CMD<17>	17
FB_CMD18	D27	FB_CMD<18>	18
FB_CMD19	K26	FB_CMD<19>	19
FB_CMD20	K25	FB_CMD<20>	20
FB_CMD21	K24	FB_CMD<21>	21
FB_CMD22	F27	FB_CMD<22>	22
FB_CMD23	K27	FB_CMD<23>	23
FB_CMD24	G26	FB_CMD<24>	24
FB_CMD25	B27	FB_CMD<25>	25
FB_CMD26	N24	FB_CMD<26>	26

FB_CMD<26..0> OUT 4.1A< 5.1A<

FB_CLK0	L24	FBACLK0	OUT 4.4G< 4.2B< 4.1F<
FB_CLK0	K23	FBACLK0*	OUT 4.2D< 4.1F< 5.4G<
FB_CLK1	M22	FBACLK1	OUT 4.2C< 4.2B< 5.1F<
FB_CLK1	N22	FBACLK1*	OUT 4.5G< 4.2B< 5.1F<
FB_CAL_PD_VDDQ	D15	FBCAL_PD_VDDQ	
FB_CAL_PU_GND	E13	FBCAL_PU_GND	
FB_CAL_TERM_GND	H22	FBCAL_TERM_GND	
FB_DEBUG	K22	SNN_FBA_DEBUG	
FB_REFCLK	M23	SNN_FBA_REFCLK	
FB_REFCLK	M24	SNN_FBA_REFCLK*	
FB_PLLVDD	D14	FBA_PLLVDD	
FB_PLLAVDD	D13	FBA_PLLAVDD	
FB_PLLGND	C15		

FBVDDQ
R516 49.9 1% 0402 COMMON
R518 49.9 1% 0402 COMMON
R514 0 0402 5% COMMON
GND GND

FBVDDQ
R515 1K 1% 0402 COMMON (Rt)
R517 1K 1% 0402 COMMON (Rb)
C590 .1UF 10V 10% X5R 0402 COMMON
GND
FBVREF = FBVDDQ * Rb/(Rt + Rb)
VREF = 0.5 * FBVDDQ
DDR: 1.25V = 2.5V * 1K/(1K + 1K)

PLACE NEAR BGA

FBVDDQ

C570	C583	C568	C569	C547	C38
.01UF	.01UF	.01UF	.01UF	4.7UF	4.7UF
16V	16V	16V	16V	6.3V	6.3V
10%	10%	10%	10%	10%	10%
X7R	X7R	X7R	X7R	X5R	X5R
0402	0402	0402	0402	0805	0805
COMMON	COMMON	COMMON	COMMON	COMMON	COMMON

FBVTT connected to FBVDDQ for unterminated DDR1

GND

PLACE BELOW GPU

FBVDDQ

C562	C578	C554	C573	C550		C565
4700PF	.022UF	.1UF	4700PF	.1UF		1UF
25V	16V	10V	25V	10V		6.3V
10%	10%	10%	10%	10%		10%
X7R	X7R	X5R	X7R	X5R		X5R
0402	0402	0402	0402	0402		0402
COMMON	COMMON	COMMON	COMMON	COMMON		COMMON
C582	C556	C551	C574	C555	C552	
4700PF	.022UF	.1UF	4700PF	.022UF	.1UF	
25V	16V	10V	25V	16V	10V	
10%	10%	10%	10%	10%	10%	
X7R	X7R	X5R	X7R	X7R	X5R	
0402	0402	0402	0402	0402	0402	
COMMON	COMMON	COMMON	COMMON	COMMON	COMMON	
C566	C557	C553	C567	C561		C575
4700PF	.022UF	.1UF	.022UF	.1UF		1UF
25V	16V	10V	16V	10V		6.3V
10%	10%	10%	10%	10%		10%
X7R	X7R	X5R	X7R	X5R		X5R
0402	0402	0402	0402	0402		0402
COMMON	COMMON	COMMON	COMMON	COMMON		COMMON

GND

PLACE NEAR BALLS

C589	C596
.01UF	.01UF
16V	16V
10%	10%
X7R	X7R
0402	0402
COMMON	COMMON

PLACE NEAR GPU

F3V3
LB501 220R@100MHz BEAD_0402 COMMON

C588	C37
1UF	4.7UF
6.3V	6.3V
10%	10%
X5R	X5R
0402	0805
COMMON	COMMON

GND

NVVDD
LB502 220R@100MHz BEAD_0402 COMMON

C595	C35
1UF	4.7UF
6.3V	6.3V
10%	10%
X5R	X5R
0402	0805
COMMON	COMMON

GND

FBA_PLLAVDD not needed for MEP19/NV37MCM

LABTESTPOINTS

TP504	FBDQS<0>	TP3
TP505	FBDQS<1>	
	FBDQS<2>	
	FBDQS<3>	NO STUFF TP2
TP8	FBDQS<4>	
TP506	FBDQS<5>	
TP501	FBDQS<6>	NO STUFF
TP7	FBDQS<7>	

NO STUFF
NO STUFF
NO STUFF

ASSEMBLY	NVS SKU00
PAGE DETAIL	Frame Buffer Interface

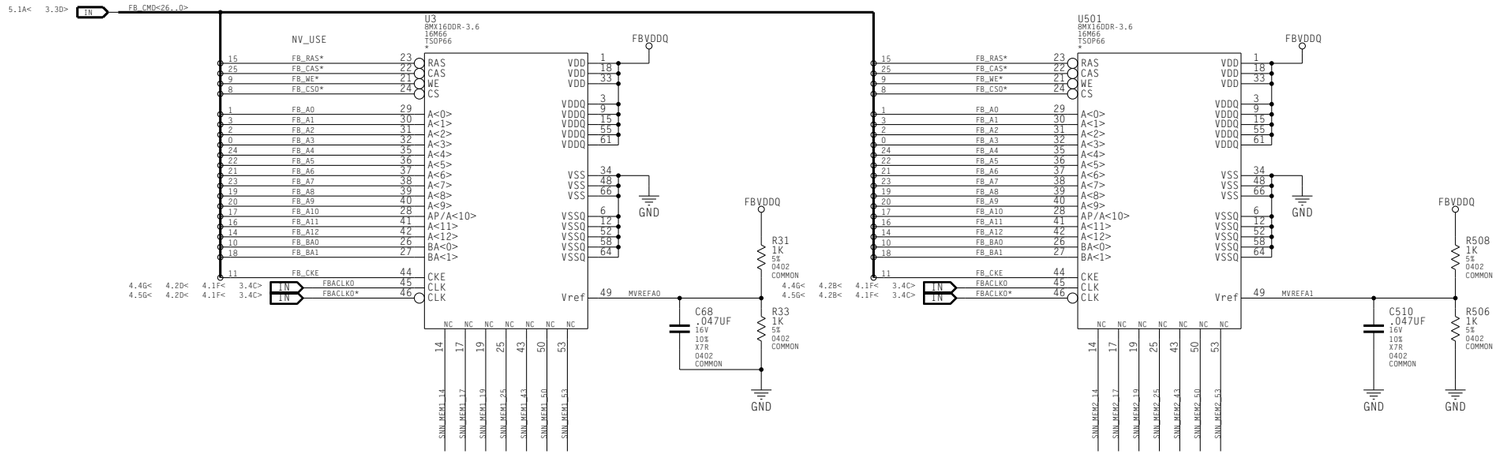
ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

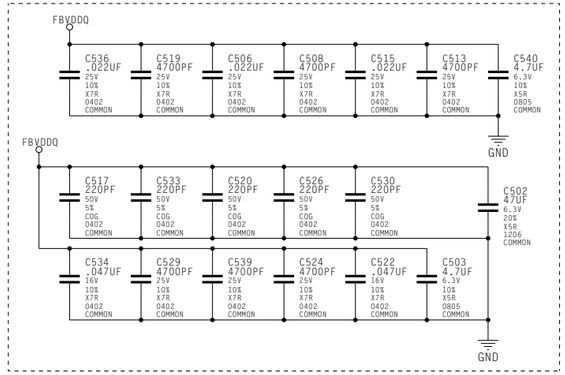
NVIDIA CORPORATION
2701 SAN TOMAS EXPRESSWAY
SANTA CLARA, CA 95050, USA

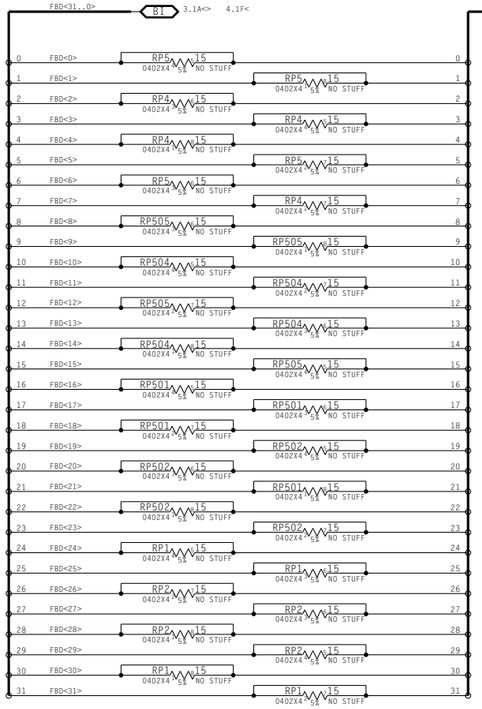
NV_PN	600-50283-0000-600		
ID	p283_nv44	PAGE	3 OF 15
NAME	wzamel	DATE	10-JAN-2005

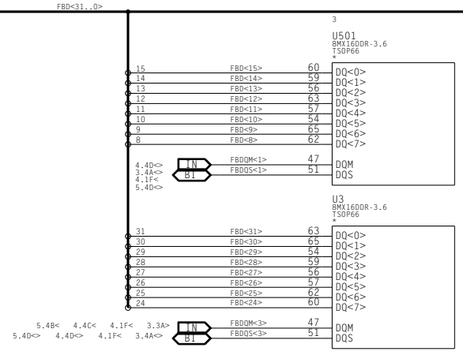
Memory Bit 0..31

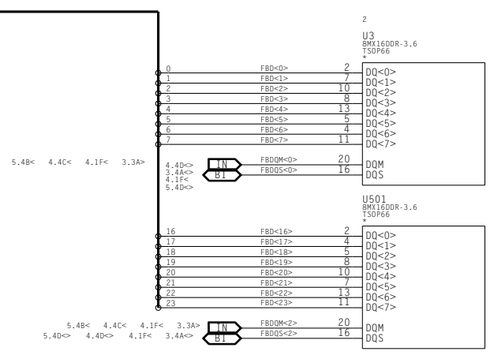
Net Name	Diffpair	NET_SPACING_RULE
FBACLKO	FBACLKO	25MIL
FBACLKO*	FBACLKO	25MIL
FBD<31..0>		10MIL
FBDQM<3..0>		15MIL
FBDQS<3..0>		15MIL
FBCMD<26..0>		10MIL

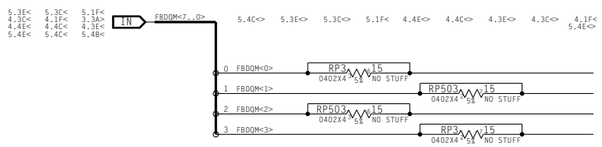


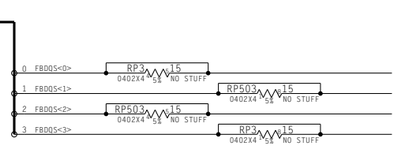


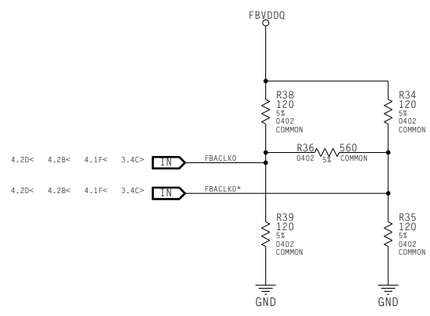












ASSEMBLY	NVS SKU00
PAGE DETAIL	Memory 1st bank 0..31

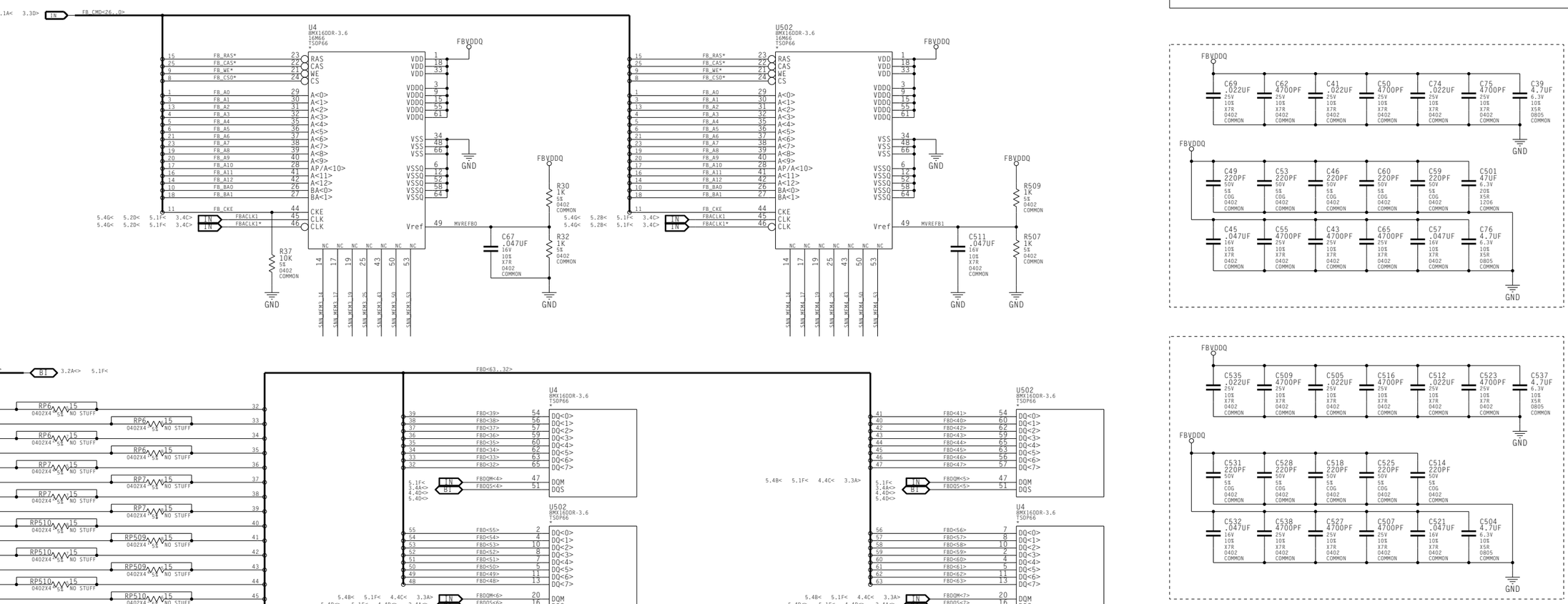
ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

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

NV_PN	600-50283-0000-600		
ID	p283_nv44	PAGE	4 OF 15
NAME	wzamel	DATE	10-JAN-2005

Memory Bit 32..63

Net Name	Diffpair	NET_SPACING_RULE
FBACLK1	FBACLK1	25MIL
FBACLK1*	FBACLK1	25MIL
FBD<63..32>		10MIL
FBDQM<7..4>		10MIL
FBDQS<7..4>		10MIL



ASSEMBLY	NVS SKU00
PAGE DETAIL	Memory 1st bank 32..63

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

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

NV_PN	600-50283-0000-600		
ID	p283_nv44	PAGE	5 OF 15
NAME	wzamel	DATE	10-JAN-2005

DAC-A, DB15 Connector

Net Name	MIN_LINE_WIDTH	NET_SPACING_TYPE
IN I2CA_SCL		10MIL
IN I2CA_SDA		10MIL
IN DACA_HSYNC		10MIL
IN DACA_VSYNC		10MIL
IN DACA_RED		20MIL
IN DACA_GREEN		20MIL
IN DACA_BLUE		20MIL
IN DACA_VDD	12MIL	10MIL
IN DACA_R_F		20MIL
IN DACA_G_F		20MIL
IN DACA_B_F		20MIL
8.2G< IN DACA_RED_C		20MIL
8.2G< IN DACA_GREEN_C		20MIL
8.2G< IN DACA_BLUE_C		20MIL

C711 100UF 25V 10% X7R 0603 COMMON
GND

CAP for Sync Buffer

F3V3
C663 4.7UF 6.3V 10% X5R 0805 COMMON
GND
LB504 220R@100MHz COMMON BEAD_0402

U2 NV44-A2 BGA533 COMMON
3/12 DAC_A

DACA_VDD	AE2	DAC_A_VDD	
DACA_VREF	AB4	DAC_A_VREF	
DACA_RSET	AD3	DAC_A_RSET	
		I2CA_SCL	D10 I2CA_SCL
		I2CA_SDA	E10 I2CA_SDA
		DAC_A_HSYNC	AD4 DACA_HSYNC
		DAC_A_VSYNC	AC4 DACA_VSYNC
		DAC_A_RED	AE1 DACA_RED
		DAC_A_GREEN	AD1 DACA_GREEN
		DAC_A_BLUE	AD2 DACA_BLUE
		DAC_A_IDUMP	U9 GND

C643 1UF 6.3V 10% X5R 0402 COMMON
C644 1UF 6.3V 10% X5R 0402 COMMON
C642 4700PF 25V 10% X7R 0402 COMMON
C641 470PF 50V 10% X7R 0402 COMMON
C639 1UF 6.3V 10% X5R 0402 COMMON
R528 127 1% 0402 COMMON

DACA

R535 33 5% 0402 COMMON — I2CA_SCL_T — LB4 150-220R@100MHz BEAD_0603 COMMON — 8.2G< I2CA_SCL_C
R530 33 5% 0402 COMMON — I2CA_SDA_T — LB3 150-220R@100MHz BEAD_0603 COMMON — 8.2G< I2CA_SDA_C
R4 2.2K 5% 0402 COMMON (5V)
R3 2.2K 5% 0402 COMMON
D5 BAV99 SOT23 100V 100MA NO STUFF
D8 BAV99 SOT23 100V 100MA NO STUFF
C7 22PF 50V 5% NPO 0603 COMMON
C6 22PF 50V 5% NPO 0603 COMMON

R580 15 5% 0402 NO STUFF
U507 74ACT08 74ACT_SO COMMON — AHB — R579 33 5% 0402 COMMON — DACA_HSYNC_BUF — L4 27nH 0603 COMMON — 8.2G< DACA_HSYNC_C
D6 BAV99 SOT23 100V 100MA NO STUFF
C8 12PF 50V 5% NPO 0603 COMMON

R587 15 5% 0402 NO STUFF
U507 74ACT08 74ACT_SO COMMON — AVB — R588 33 5% 0402 COMMON — DACA_VSYNC_BUF — L3 27nH 0603 COMMON — 8.2G< DACA_VSYNC_C
D7 BAV99 SOT23 100V 100MA NO STUFF
C1 12PF 50V 5% NPO 0603 COMMON

DDC_5V
J1 CON_DSUB15HD_LFH VGA_SLIM NO STUFF

DACA_RED_C	1 R	IDO 11	SNN_A_IDO
DACA_GREEN_C	2 G	SDA 12	
DACA_BLUE_C	3 B	HSYNC 13	
SNN_A_IDO	4 IDZ	VSYNC 14	
	5 GND	SCL 15	
	6 GND-R		
	7 GND-G		
	8 GND_B		
	9 5V		
	10 GND		
	16		
	17 SHIELD		

D506 BAV99 SOT23 100V 100MA NO STUFF
R539 150 1% 0402 COMMON
R603 2.2K 5% 0402 NO STUFF
R607 150 1% 0402 COMMON
R612 0 .05R COMMON
C736 22PF 50V 5% NPO 0402 NO STUFF
C741 22PF 50V 5% NPO 0402 NO STUFF
L509 27nH 0603 COMMON
C749 22PF 50V 5% NPO 0402 NO STUFF

D504 BAV99 SOT23 100V 100MA NO STUFF
R538 150 1% 0402 COMMON
R604 2.2K 5% 0402 NO STUFF
R606 150 1% 0402 COMMON
R611 0 .05R COMMON
C735 22PF 50V 5% NPO 0402 NO STUFF
C740 22PF 50V 5% NPO 0402 NO STUFF
L508 27nH 0603 COMMON
C743 22PF 50V 5% NPO 0402 NO STUFF

D505 BAV99 SOT23 100V 100MA NO STUFF
R537 150 1% 0402 COMMON
R602 2.2K 5% 0402 NO STUFF
R605 150 1% 0402 COMMON
R613 0 .05R COMMON
C734 22PF 50V 5% NPO 0402 NO STUFF
C742 22PF 50V 5% NPO 0402 NO STUFF
L504 27nH 0603 COMMON
C750 22PF 50V 5% NPO 0402 NO STUFF

PLACE NEAR OUTPUT FILTERS
F3V3 — C717 4.7UF 6.3V 10% X5R 0805 COMMON — GND
5V — C712 4.7UF 6.3V 10% X5R 0805 COMMON — GND

ASSEMBLY	NVS SKU00
PAGE DETAIL	DACA, DACB, DACC, Sync Buffers

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

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

NV_PN	600-50283-0000-600		
ID	p283_nv44	PAGE	6 OF 15
NAME	wzamel	DATE	10-JAN-2005

DAC-B, MUX, DB15

DACB

U2
NV44-A2
BGA533
COMMON
4/12 DAC_B

DAC_B_VDD
DAC_B_VREF
DAC_B_RSET
I2CB_SCL
I2CB_SDA
DAC_B_HSYNC
DAC_B_VSYNC
DAC_B_RED
DAC_B_GREEN
DAC_B_BLUE
DAC_B_IDUMP

F3V3 → C664 4.7UF 6.3V 10% X5R 0805 COMMON → GND
LB503 220R@100MHz COMMON BEAD_0402 → DACB_VDD
C628 1UF 6.3V 10% X5R 0402 COMMON → GND
C627 1UF 6.3V 10% X5R 0402 COMMON → GND
C629 4700PF 25V 10% X7R 0402 COMMON → GND
C630 470PF 50V 10% X7R 0402 COMMON → GND
C620 1UF 6.3V 10% X5R 0402 COMMON → GND
R548 127 1% 0402 COMMON → DACB_RSET
R549 249 1% 0402 NO STUFF → GND

11.2D> HDTV_SEL → Q501 BSS138 SOT23_1G1D1S NO STUFF (1G1D1S)
R64_VOLTAGE=5V@ CONTINUOUS_CURRENT=0.22A@31C 0.22R_SW=3.3V R64_VOLTAGE=0.08A R64_WATTAGE=0.36W@70C V_RE_GS=+/-20V
→ GND

PLACE NEAR OUTPUT FILTERS
F3V3 → C715 4.7UF 6.3V 10% X5R 0805 COMMON → GND
5V → C719 4.7UF 6.3V 10% X5R 0805 COMMON → GND

I2CB_SCL → R532 33 0402 5% COMMON → I2CB_SCL_T
R1 2.2K 5% 0402 COMMON → 5V
R2 2.2K 5% 0402 COMMON → 5V
I2CB_SCL_T → LB1 150-220R@100MHz BEAD_0603 COMMON → I2CB_SCL_C → C4 220PF 50V 5% NPO 0603 COMMON → GND
D9 BAY99 SOT23 100V 100MA NO STUFF (5V, GND)
I2CB_SCL_C → OUT 9.2F<

I2CB_SDA → R531 33 0402 5% COMMON → I2CB_SDA_T
I2CB_SDA_T → LB2 150-220R@100MHz BEAD_0603 COMMON → I2CB_SDA_C → C5 220PF 50V 5% NPO 0603 COMMON → GND
D4 BAY99 SOT23 100V 100MA NO STUFF (5V, GND)
I2CB_SDA_C → OUT 9.2F<>

DACB_HSYNC → R584 15 0402 5% NO STUFF → U507 74ACT08 74ACT_SO COMMON (5V, GND)
U507 → BHB → R583 33 0402 5% COMMON → DACB_HSYNC_BUF
DACB_HSYNC_BUF → L1 27nH 0603 COMMON → DACB_HSYNC_C → C2 12PF 50V 5% NPO 0603 COMMON → GND
D2 BAY99 SOT23 100V 100MA NO STUFF (5V, GND)
DACB_HSYNC_C → OUT 9.2F<

DACB_VSYNC → R589 15 0402 5% NO STUFF → U507 74ACT08 74ACT_SO COMMON (5V, GND)
U507 → BVB → R586 33 0402 5% COMMON → DACB_VSYNC_BUF
DACB_VSYNC_BUF → L2 27nH 0603 COMMON → DACB_VSYNC_C → C3 12PF 50V 5% NPO 0603 COMMON → GND
D3 BAY99 SOT23 100V 100MA NO STUFF (5V, GND)
DACB_VSYNC_C → OUT 9.2F<

DACB_RED → R524 150 1% 0402 COMMON → GND
R601 2.2K 5% 0402 NO STUFF → GND
R598 150 1% 0402 COMMON → GND
DACB_RED → OUT 7.5A< 10.2B<
DACB_RED → R610 0 0603 .05R COMMON → DACB_RED_F → L506 27nH 0603 COMMON → DACB_RED_C → OUT 9.2F<
F3V3 → D509 BAY99 SOT23 100V 100MA NO STUFF → GND
C729 22PF 50V 5% NPO 0402 NO STUFF → GND
C737 22PF 50V 5% NPO 0402 NO STUFF → GND
C744 22PF 50V 5% NPO 0402 NO STUFF → GND

DACB_GREEN → R527 150 1% 0402 COMMON → GND
R599 2.2K 5% 0402 NO STUFF → GND
R597 150 1% 0402 COMMON → GND
DACB_GREEN → OUT 7.5A< 10.3B<
DACB_GREEN → R609 0 0603 .05R COMMON → DACB_GREEN_F → L507 27nH 0603 COMMON → DACB_GREEN_C → OUT 9.2F<
F3V3 → D507 BAY99 SOT23 100V 100MA NO STUFF → GND
C727 22PF 50V 5% NPO 0402 NO STUFF → GND
C739 22PF 50V 5% NPO 0402 NO STUFF → GND
C745 22PF 50V 5% NPO 0402 NO STUFF → GND

DACB_BLUE → R521 150 1% 0402 COMMON → GND
R600 2.2K 5% 0402 NO STUFF → GND
R596 150 1% 0402 COMMON → GND
DACB_BLUE → OUT 7.5A< 10.3B<
DACB_BLUE → R608 0 0603 .05R COMMON → DACB_BLUE_F → L505 27nH 0603 COMMON → DACB_BLUE_C → OUT 9.2F<
F3V3 → D508 BAY99 SOT23 100V 100MA NO STUFF → GND
C726 22PF 50V 5% NPO 0402 NO STUFF → GND
C738 22PF 50V 5% NPO 0402 NO STUFF → GND
C746 22PF 50V 5% NPO 0402 NO STUFF → GND

DAC_B_IDUMP → L9 → GND

10.2B< 7.3E>

DACB_RED		20MIL
DACB_GREEN		20MIL
DACB_BLUE		20MIL
DACB_VDD	12MIL	10MIL
DACB_VREF	12MIL	10MIL
DACB_RSET	12MIL	10MIL

ASSEMBLY: NVS_SKU00
PAGE DETAIL: VGA Output, TV Out

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

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

NV_PN	600-50283-0000-600		
ID	p283_nv44	PAGE	7 OF 15
NAME	wzamel	DATE	10-JAN-2005

Internal TMDS LINK-A DMS Connector

Net Name	Diffpair	NET_SPACING_RULE	Voltage
IFP_ABPLLVDD			3.3V
IFP_AB_VDD			3.3V
ATXC	ATXC	25MIL	
ATXC*	ATXC	25MIL	
ATXD0	ATXD0	25MIL	
ATXD0*	ATXD0	25MIL	
ATXD1	ATXD1	25MIL	
ATXD1*	ATXD1	25MIL	
ATXD2	ATXD2	25MIL	
ATXD2*	ATXD2	25MIL	

TMDS_IOVDD
LB506 150-220R@100MHz BEAD_0603 COMMON
C686 4.7UF 6.3V 10% X5R 0805 COMMON
C658 4.7UF 6.3V 10% X5R 0805 COMMON
Place on plane next to ATXC
IFP_AB_VDD
C77 1UF 6.3V 20% X5R 0402 NO STUFF
PLACE NEAR GPU
C665 .01UF 16V 10% X7R 0402 COMMON
C666 .01UF 16V 10% X7R 0402 COMMON
C662 .01UF 16V 10% X7R 0402 COMMON
C645 .01UF 16V 10% X7R 0402 COMMON
R547 49.9 1% 0402 COMMON
R544 49.9 1% 0402 COMMON
R542 49.9 1% 0402 COMMON
R543 49.9 1% 0402 COMMON
R545 49.9 1% 0402 COMMON
R546 49.9 1% 0402 COMMON
R525 49.9 1% 0402 COMMON
R526 49.9 1% 0402 COMMON
GND

TMDS_PLLVDD
LB509 220R@100MHz BEAD_0402 COMMON
C683 4.7UF 6.3V 10% X5R 0805 COMMON
C673 1UF 6.3V 10% X5R 0402 COMMON
C667 1UF 6.3V 10% X5R 0402 COMMON
C674 4700PF 25V 10% X7R 0402 COMMON
C631 220PF 50V 5% C0G 0402 COMMON
IFP_ABPLLVDD
IFPABRSET
R520 1K 1% 0402 COMMON
C652 1UF 6.3V 10% X5R 0402 COMMON
C646 1UF 6.3V 10% X5R 0402 COMMON
C640 4700PF 25V 10% X7R 0402 COMMON
C623 220PF 50V 5% C0G 0402 COMMON
IFP_AB_VDD
GND

U2
NV44-A2
BGA533
COMMON

TP1 IFPABVPROBE N6 — NO STUFF
5/12 IFP_AB
IFP_AB_VPROBE
V5 IFP_AB_PLL_VDD
U6 IFP_AB_RSET
V6 IFP_AB_PLL_GND
W4 IFP_A_IO_VDD
Y4 IFP_B_IO_VDD

DATA A
IFP_A_TXD0 N5 ATXD0* / IFP_A_TXD0 N4 ATXD0
IFP_A_TXD1 R4 ATXD1* / IFP_A_TXD1 R5 ATXD1
IFP_A_TXD2 T6 ATXD2* / IFP_A_TXD2 T5 ATXD2
IFP_A_TXD3 P6 SNN_ATXD3* / IFP_A_TXD3 R6 SNN_ATXD3

DATA B
IFP_B_TXD4 W2 SNN_BTXD4* / IFP_B_TXD4 W3 SNN_BTXD4
IFP_B_TXD5 AA3 SNN_BTXD5* / IFP_B_TXD5 AA2 SNN_BTXD5
IFP_B_TXD6 AA1 SNN_BTXD6* / IFP_B_TXD6 AB1 SNN_BTXD6
IFP_B_TXD7 AB2 SNN_BTXD7* / IFP_B_TXD7 AB3 SNN_BTXD7

CLOCK A
IFP_A_TXC U4 ATXC* / IFP_A_TXC T4 ATXC

CLOCK B
IFP_B_TXC W6 SNN_BTXC* / IFP_B_TXC W5 SNN_BTXC

DDC_5V
J3 DMS59 DMS59 COMMON — LFH CONNECTOR
1/2
5 +5V
6.1G> IN 6 I2CA_SCL_C
6.2G> IN 7 I2CA_SDA_C
RGB_SCL / RGB_SDA
6.2G> IN 56 DACA_HSYNC_C
6.3G> IN 55 DACA_VSYNC_C
HSYNC / VSYNC
6.2A< IN 2 DACA_RED_C
6.2A< IN 59 DACA_GREEN_C
6.2A< IN 3 DACA_BLUE_C
RED / GREEN / BLUE
HPD1 — 36 DP_HPD
ATXD0 — 30 DP_TX0- / ATXD0* — 29 DP_TX0+
ATXD1* — 28 DP_TX1- / ATXD1 — 27 DP_TX1+
ATXD2* — 26 DP_TX2- / ATXD2 — 25 DP_TX2+
ATXC* — 32 DP_TXC- / ATXC — 31 DP_TXC+
1 REDRTN
60 GRNRTN
4 BLURTN
SNN_DMS_NC24 — 24 NC24
SNN_DMS_NC37 — 37 NC37
SNN_DMS_NC38 — 38 NC38
SNN_DMS_NC53 — 53 NC53
SNN_DMS_NC58 — 58 NC58
33 GND33
34 GND34
35 GND35
54 GND54
57 GND57
MOUNT1 61
MOUNT2 62
C747 4700PF 25V 10% X7R 0402 COMMON
GND

11.2D< OUT DMS_HPD1
R615 10K 5% 0402 COMMON
R614 1K 0402 5% COMMON DMS_HPD_R1
F3V3
D510 BAV99 SOT23 100V 100MA COMMON
F3V3
C720 .1UF 16V 10% X7R 0603 COMMON
LB518 150-220R@100MHz BEAD_0603 COMMON
HPD1
C751 220PF 50V 5% C0G 0402 COMMON
GND
Hotplug Detection

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

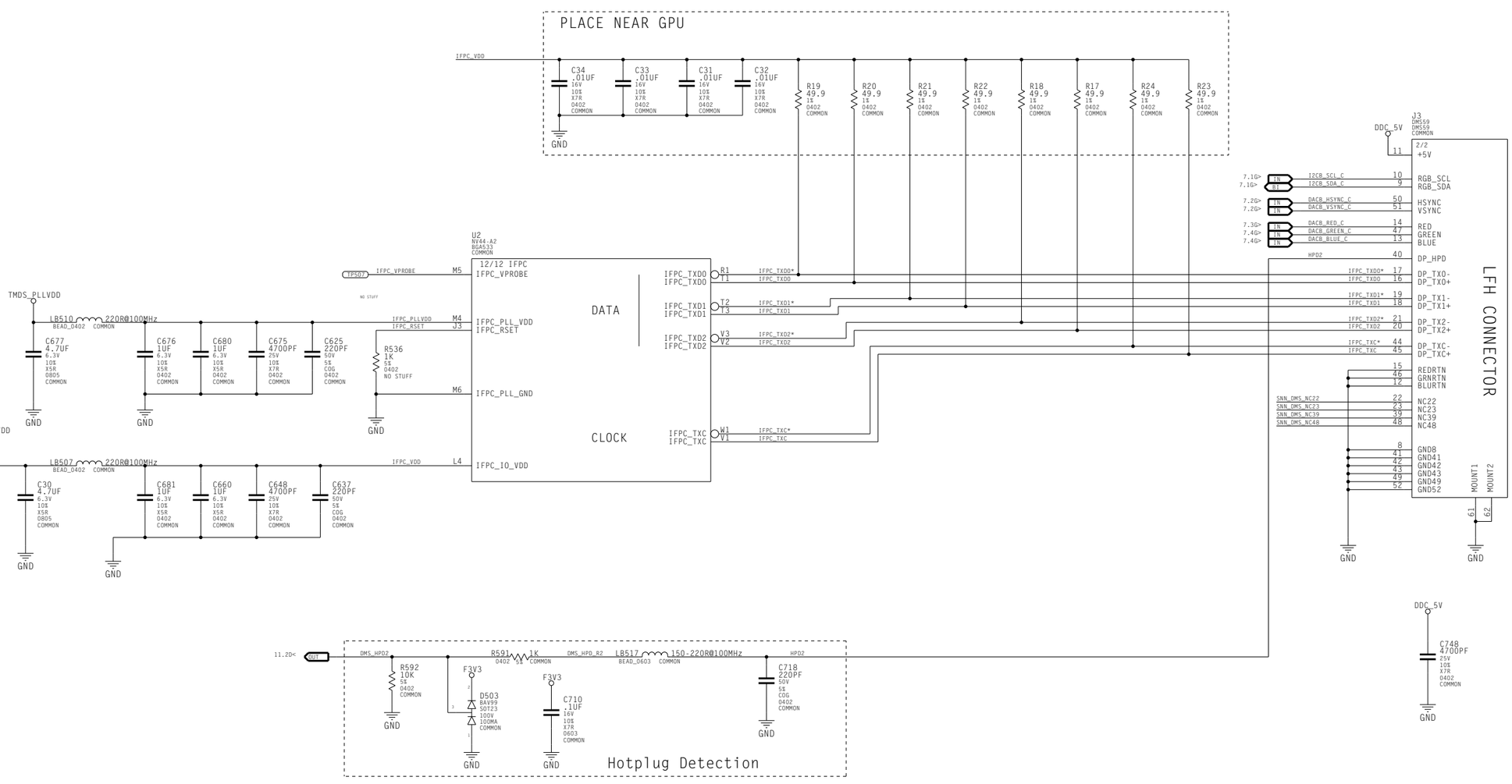
ASSEMBLY	NVS SKU00
PAGE DETAIL	TMDS Interface

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

NV_PN	600-50283-0000-600		
ID	p283_nv44	PAGE	8 OF 15
NAME	wzamel	DATE	10-JAN-2005

Internal TMDS Link-C DMS Connector

Net Name	Diffpair	NET_SPACING_RULE	Voltage
IFPC_PLLVDD			3.3V
IFPC_VDD			3.3V
IFPC_TXD0	IFPC_TXD0	25MIL	
IFPC_TXD0*	IFPC_TXD0	25MIL	
IFPC_TXD1	IFPC_TXD1	25MIL	
IFPC_TXD1*	IFPC_TXD1	25MIL	
IFPC_TXD2	IFPC_TXD2	25MIL	
IFPC_TXD2*	IFPC_TXD2	25MIL	
IFPC_TXC	IFPC_TXC	25MIL	
IFPC_TXC*	IFPC_TXC	25MIL	



ASSEMBLY	NVS SKU00
PAGE DETAIL	TMDS LINK-C

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

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

NV_PN	600-50283-0000-600		
ID	p283_nv44	PAGE	9 OF 15
NAME	wzamel	DATE	10-JAN-2005

VIDEO CONNECTORS: MiniDIN, 2x6 HDR

IN 5V_FUSED 12MIL 5V

11.2E<> IN I2CC_SDA — LB516 150-220R@100MHz BEAD_0603 NO STUFF — I2CC_SDA_M
C713 220PF 50V 5% NPO 0603 NO STUFF — GND

11.2E> IN I2CC_SCL — LB515 150-220R@100MHz BEAD_0603 NO STUFF — I2CC_SCL_M
C714 220PF 50V 5% NPO 0603 NO STUFF — GND

PLACE RESISTORS NEAR RGB TERM RESISTORS

7.5A< 7.3E> IN DACB_RED — R594 0 0603 .05W NO STUFF — TV_DACB_RED
L501 0.56uH 0603 NO STUFF
C723 8.2PF 0603 50V +/-0.5PF NPO NO STUFF — COUT
C721 82PF 50V 5% NPO 0603 NO STUFF — GND
C730 82PF 50V 5% NPO 0603 NO STUFF — GND

7.5A< 7.3E> IN DACB_GREEN — R595 0 0603 .05W NO STUFF — TV_DACB_GREEN
L503 0.56uH 0603 NO STUFF
C725 8.2PF 0603 50V +/-0.5PF NPO NO STUFF — CVBS_OUT
C733 82PF 50V 5% NPO 0603 NO STUFF — GND
C732 82PF 50V 5% NPO 0603 NO STUFF — GND

7.5A< 7.4E> IN DACB_BLUE — R593 0 0603 .05W NO STUFF — TV_DACB_BLUE
L502 0.56uH 0603 NO STUFF
C724 8.2PF 0603 50V +/-0.5PF NPO NO STUFF — PB_OUT
C722 82PF 50V 5% NPO 0603 NO STUFF — GND
C731 82PF 50V 5% NPO 0603 NO STUFF — GND

J4 HDR_2X6 MALE 2.00MM D N/A KEY3 NO STUFF HDTV
2 YUV1 — GND 1
4 RFU — KEYED
6 SDA — +5V 5
8 GND — SCL 7
10 COUT — GND 9
12 PROUT — GND 11
SNN_RFU4
5V_FUSED
GND GND

C728 1UF 10V 10% X5R 0402 NO STUFF — GND

5V
F1 200mA 1206 NO STUFF POLYSWITCH
5V_FUSED

J2 MINIDIN_10_VIVO VIVO NO STUFF
7 10
9 Pb out out — SDA 4
8 C/Pr out — Y/CVBS out 6
5 GND — GND 3
1 Y/CVBS in — C in 2
11 12 13
SNN_CVBSin SNN_Cin
GND GND GND

PLACE NEAR OUTPUT FILTERS
F3V3
C716 4.7UF 6.3V 10% X5R 0805 NO STUFF
GND

ASSEMBLY	NVS SKU00
PAGE DETAIL	VIDEO CONNECTORS: MiniDIN, 2x6 HDR

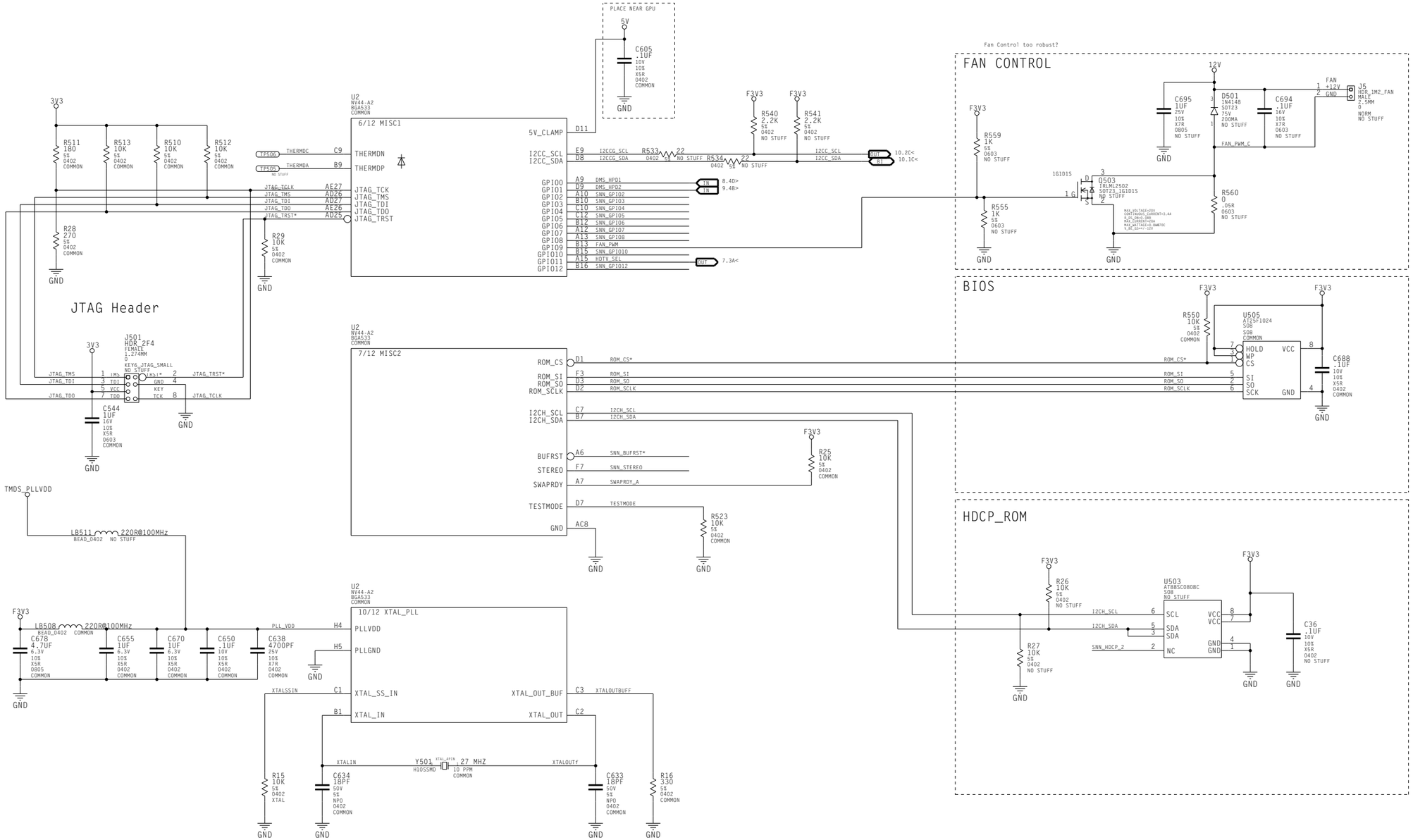
ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

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

NV_PN	600-50283-0000-600		
ID	p283_nv44	PAGE	10 OF 15
NAME	wzamel	DATE	10-JAN-2005

XTAL, GPIO, BIOS, Fan Control, JTAG Headers

Net Name	NET_PHYSICAL_TYPE	NET_SPACING_RULE
XTALIN	5MIL TRACE	20MIL
XTALOUT	5MIL TRACE	20MIL
PLLVDD	12MIL TRACE	10MIL
DISP_PLLVDD	12MIL TRACE	10MIL



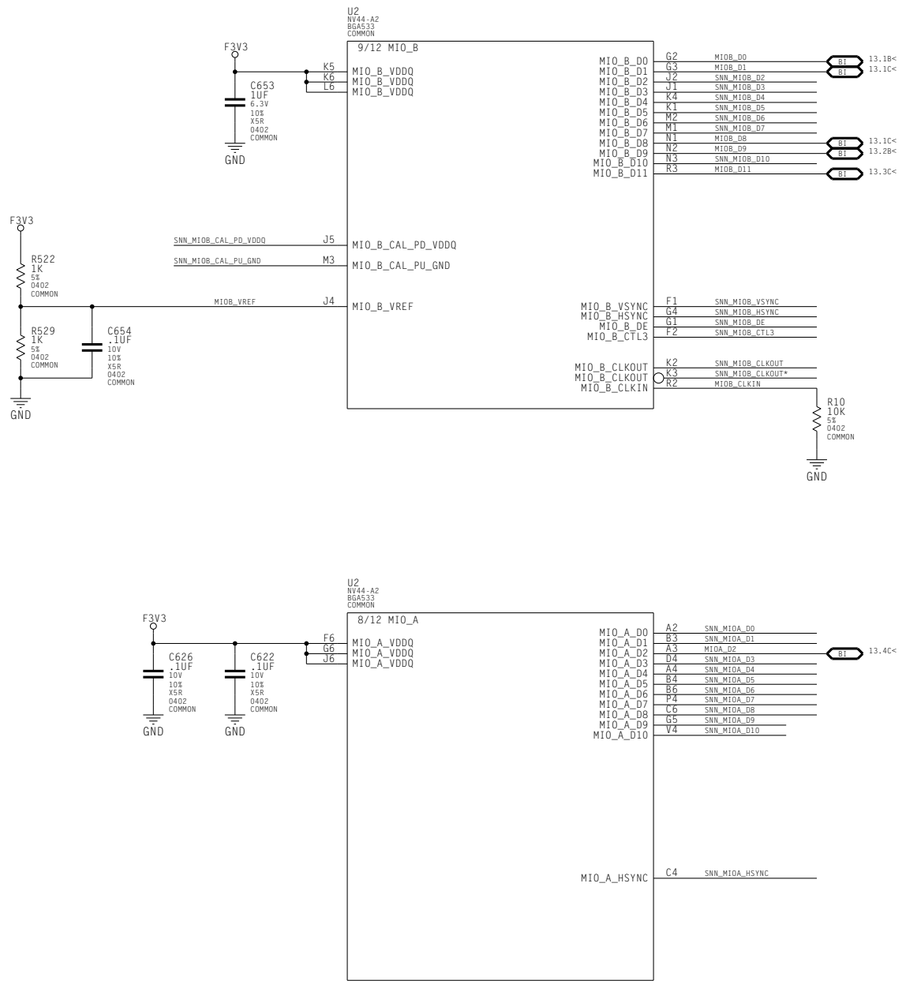
ASSEMBLY	NVS SKU00
PAGE DETAIL	XTAL, GPIO, BIOS, Fan Control, JTAG Headers

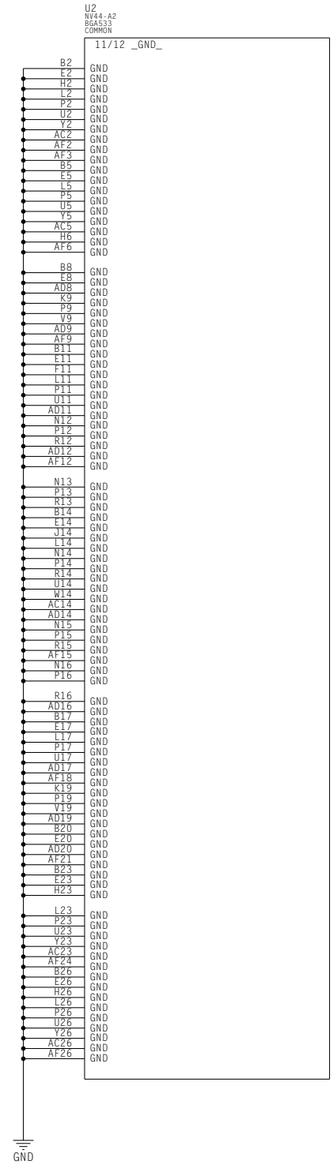
ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

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

NV_PN	600-50283-0000-600		
ID	p283_nv44	PAGE	11 OF 15
NAME	wzamel	DATE	10-JAN-2005

MIOA, MIOB Interface, LPC-ROM





ASSEMBLY	NVS SKU00
PAGE DETAIL	MIOA, MIOB Interface, LPC-ROM

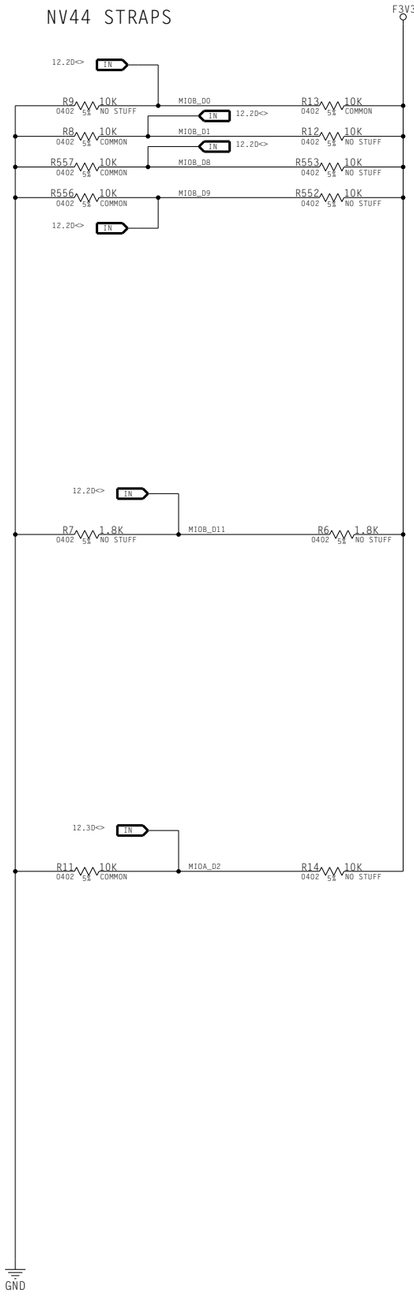
ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

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

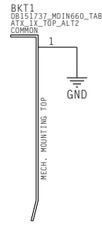
NV_PN	600-50283-0000-600		
ID	p283_nv44	PAGE	12 OF 15
NAME	wzamel	DATE	10-JAN-2005

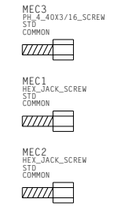
STRAPS, Mechanical Parts

NV44 STRAPS



Bit	Signal	Values	
00:	PCI_AD_SWAP	0 REVERSED 1 NORMAL	
01:	SUB_VENDOR	0 NO_BIOS 1 READ FROM BIOS	
02:	RAM_CFG_0	0000 RFU 0001 8Mx16DDR TSOP 0010 RFU 0011 RFU 0100 RFU 0101 RFU	1000 RFU 1001 RFU 1010 RFU 1011 RFU 1100 RFU 1101 RFU
03:	RAM_CFG_1		
04:	RAM_CFG_2	0110 16Mx16DDR TSOP 0111 RFU	1110 RFU 1111 RFU
05:	RAM_CFG_3		
06:	CRYSTAL_0	00 13.500 MHz 01 14.31818 MHz 10 27.000 MHz 11 UNKNOWN	
22:	CRYSTAL_1		
07:	TV_MODE_0	00 SECAM 01 NTSC 10 PAL 11 CRT	
08:	TV_MODE_1		
09:	AGP_30_8x	0 AGP8x ENABLED 1 AGP8x DISABLED	
10:	AGP_SBA	0 SBA ENABLED 0 SBA DISABLED	
11:	AGP_FASTWR	0 FW ENABLED 0 FW DISABLED	
12:	PCI_DEVID_0	1100 (default 0x00FC)	
13:	PCI_DEVID_1		
20:	PCI_DEVID_2		
21:	PCI_DEVID_3		
14:	BUS_TYPE	0 PCI 1 AGP	
15:	FP_IFACE	0 24Bit 1 12Bit (DEFAULT)	
23:	FB_0	00 64M 01 128M 10 256M (DEFAULT) 11 512M	
24:	FB_1		
25:	BR	0 BRIDGE DISABLED 1 BRIDGE ENABLED	
26:	BR_128M	BR BITS IGNORED IF BRIDGE IS DISABLED	
27:	BR_AGP		
28:	BR_IO		
29:	ROM_TYPE_0	00 PARALLEL 01 SERIAL_AT25F 10 SERIAL_SST45VF	
30:	ROM_TYPE_1	11 LPC	
16:	USER_0	0000 (DEFAULT)	
17:	USER_1		
18:	USER_2		
19:	USER_3		
	PEX_PLL_EN_TERM100		
	3GIO_PADCFG_LUT_ADDR[0]		
	3GIO_PADCFG_LUT_ADDR[1]		





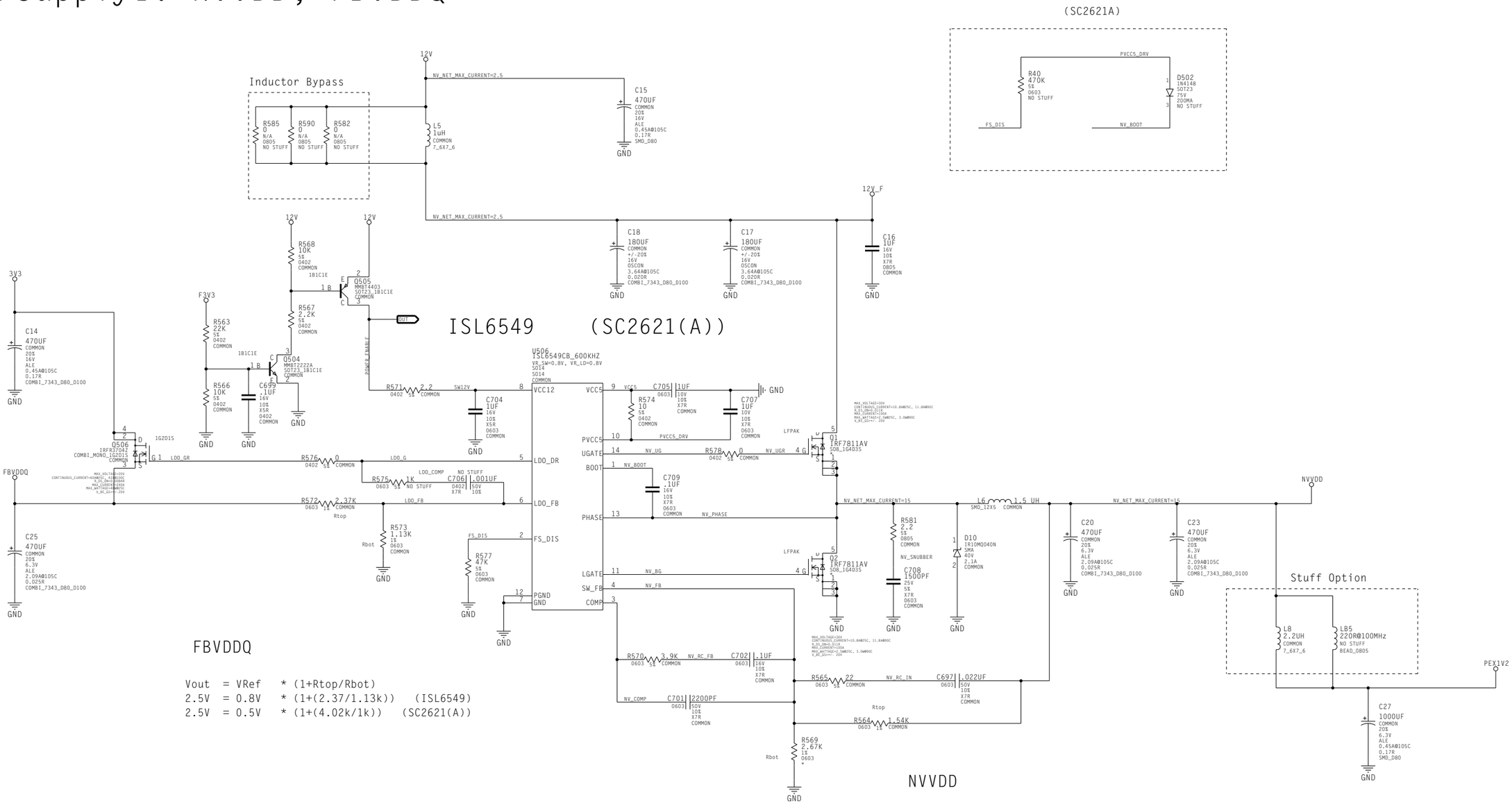
ASSEMBLY	NVS SKU00
PAGE DETAIL	STRAPS, Mechanical Parts

ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

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

NV_PN	600-50283-0000-600		
ID	p283_nv44	PAGE	13 OF 15
NAME	wzamel	DATE	10-JAN-2005

PowerSupplyI: NVVDD, FBVDDQ



FBVDDQ

Vout = VRef * (1+Rtop/Rbot)
2.5V = 0.8V * (1+(2.37/1.13k)) (ISL6549)
2.5V = 0.5V * (1+(4.02k/1k)) (SC2621(A))

NVVDD

Vout = VRef * (1+Rtop/Rbot)
1.2V = 0.8V * (1+(1.54k/3.09k)) (ISL6549)
1.2V = 0.5V * (1+(1.43k/1.02k)) (SC2621)

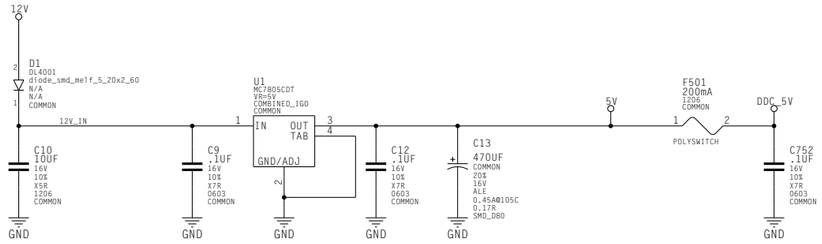
ASSEMBLY	NVS SKU00
PAGE DETAIL	PowerSupplyI: NVVDD, FBVDDQ

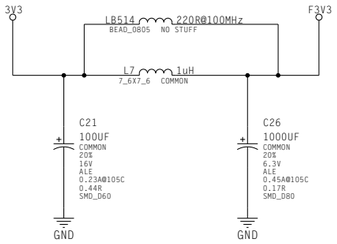
ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

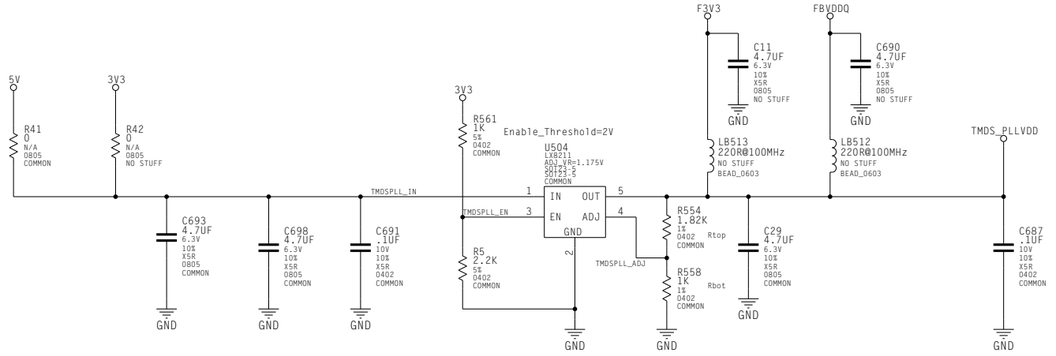
NVIDIA CORPORATION
2701 SAN TOMAS EXPRESSWAY
SANTA CLARA, CA 95050, USA

NV_PN	600-50283-0000-600		
ID	p283_nv44	PAGE	14 OF 15
NAME	wzamel	DATE	10-JAN-2005

PowerSupplyII: 5V, DDC5V, A3V3, F3V3, TMDS_PLLVDD





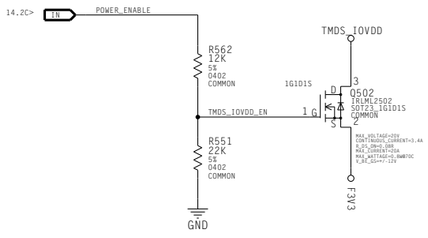


TMDS_PLLVDD

Vout = VRef * (1+Rtop/Rbot)

2.5 = VRef * (1+Rtop/Rbot)

Net Name	NET_PHYSICAL_TYPE		Voltage
5V	5V	12MIL	5V
DDC_5V	DDC_5V	12MIL	5V
F3V3	F3V3	12MIL	3.3V
TMDS_PLLVDD	TMDS_PLLVDD	12MIL	3.3V
IN	12V_IN	12MIL	12V
TMDS_IOVDD	TMDS_IOVDD	12MIL	3.3V



ALL NVIDIA DESIGN SPECIFICATIONS, REFERENCE SPECIFICATIONS, REFERENCE BOARDS, FILES, DRAWINGS, DIAGNOSTICS, LISTS AND OTHER DOCUMENTS OR INFORMATION (TOGETHER AND SEPARATELY, 'MATERIALS') ARE BEING PROVIDED 'AS IS'. THE MATERIALS MAY CONTAIN KNOWN AND UNKNOWN VIOLATIONS OR DEVIATIONS OF INDUSTRY STANDARDS AND SPECIFICATIONS. NVIDIA MAKES NO WARRANTIES, EXPRESSED, IMPLIED, STATUTORY OR OTHERWISE WITH RESPECT TO THE MATERIALS OR OTHERWISE, AND EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF DESIGN, OF NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, TRADE USAGE, TRADE PRACTICE, OR INDUSTRY STANDARDS.

ASSEMBLY	NVS SKU00
PAGE DETAIL	PowerSupplyII: 5V, DDC5V, A3V3, F3V3, TMDS_PLLVDD

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

NV_PN	600-50283-0000-600		
ID	p283_nv44	PAGE	15 OF 15
NAME	wzamel	DATE	10-JAN-2005