

45P211-NV45 Board

NV 45 P211_A04 - Front side 8pcs x (8Mx32MB) DDR3 = 256MB Total, PCI-Express X16
Internal TMDS (dual link) and External TMDS (dual link), Internal SVideo Out,
Video Capture (7114), optional Framelock/SDI connector, 5-pin PVA

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SKU	VARIANT	NVPN	ASSEMBLY
B	BASE	600-10211-base-sch	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
1	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>
2	9460000_DVI_NORTH_DUAL_DVI_SOUTH_DUAL	600-50211-0000-400	SKU 5-0000: NV45-P211 A04, 256MB, 600MHZ GDDR3, DVI-NORTH (DUAL-LINK), DVI-SOUTH (DUAL-LINK), STEREO, WRK-ST
3	9460001_DVI_NORTH_SINGLE_DVI_SOUTH_DUAL_SKU	600-50211-0001-400	SKU 5-0001: NV45-P211 A04, 256MB, 500MHZ GDDR3, DVI-NORTH (SINGLE-LINK), DVI-SOUTH (DUAL-LINK), STEREO, DELL
4	9460002_DVI_NORTH_SINGLE_DVI_SOUTH_SINGLE	600-10211-0003-400	SKU 1-0003: NV45-P211 A04, 256MB, 500MHZ GDDR3, DVI-NORTH (SINGLE-LINK), DVI-SOUTH (SINGLE-LINK), SVIDEO, ULTRA
5	9460004_DVI_NORTH_SINGLE_DVI_SOUTH_SINGLE	600-10211-0004-400	SKU 1-0004: NV45-P211 A04, 256MB, 500MHZ GDDR3, DVI-NORTH (SINGLE-LINK), DVI-SOUTH (SINGLE-LINK), SVIDEO, GT
6	94610005_DVI_NORTH_SINGLE_VGA_SOUTH	600-10211-0005-400	SKU 1-0005: NV45-P211 A04, 256MB, 600MHZ GDDR3, DVI-NORTH (SINGLE-LINK), VGA-SOUTH, SVIDEO, ULTRA, W/O SLI
7	94610006_DVI_NORTH_SINGLE_VGA_SOUTH	600-10211-0006-400	SKU 1-0006: NV45-P211 A04, 256MB, 600MHZ GDDR3, DVI-NORTH (SINGLE-LINK), VGA-SOUTH, SVIDEO, ULTRA, SLI
8	94610007_DVI_NORTH_SINGLE_VGA_SOUTH	600-10211-0007-400	SKU 1-0007: NV45-P211 A04, 256MB, 500MHZ GDDR3, DVI-NORTH (SINGLE-LINK), VGA-SOUTH, SVIDEO, GT, SLI
9	9460008_DVI_NORTH_SINGLE_DVI_SOUTH_SINGLE	600-10211-0008-400	SKU 1-0008: NV45-P211 A04, 256MB, 600MHZ GDDR3, DVI-NORTH (SINGLE-LINK), DVI-SOUTH (SINGLE-LINK), SVIDEO, ULTRA
10	9460009_DVI_NORTH_SINGLE_DVI_SOUTH_SINGLE	600-10211-0009-400	SKU 1-0009: NV45-P211 A04, 256MB, 500MHZ GDDR3, DVI-NORTH (SINGLE-LINK), DVI-SOUTH (SINGLE-LINK), SVIDEO, GT
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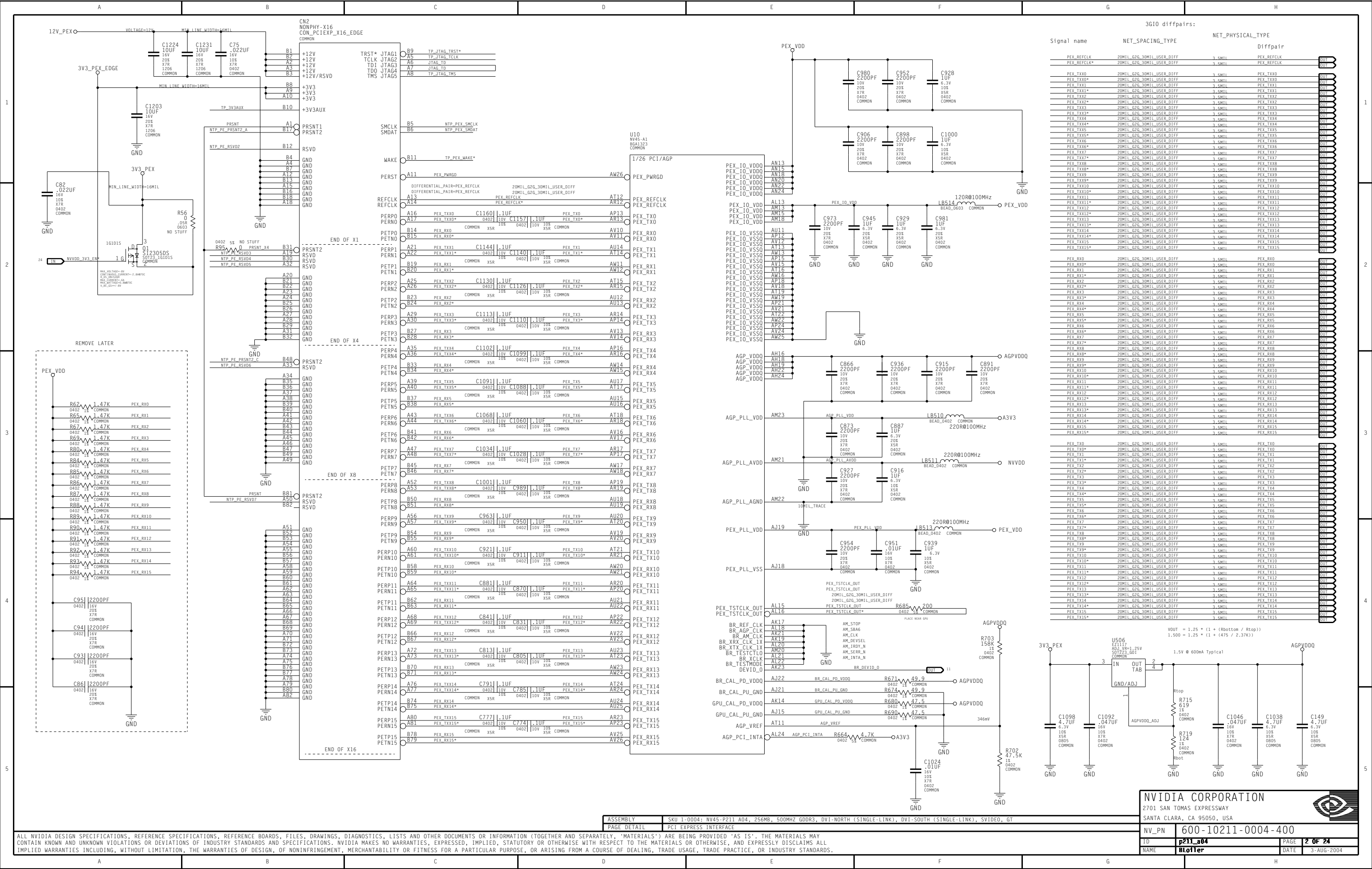
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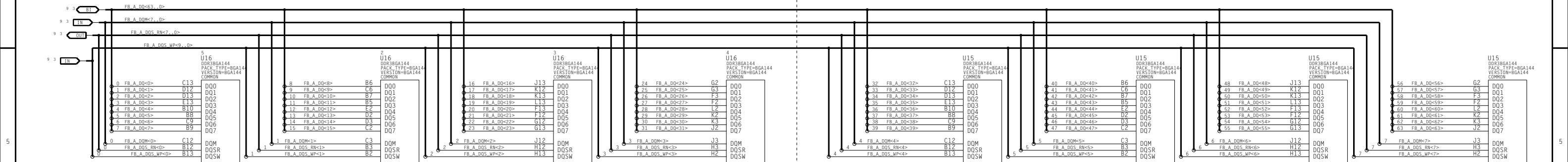
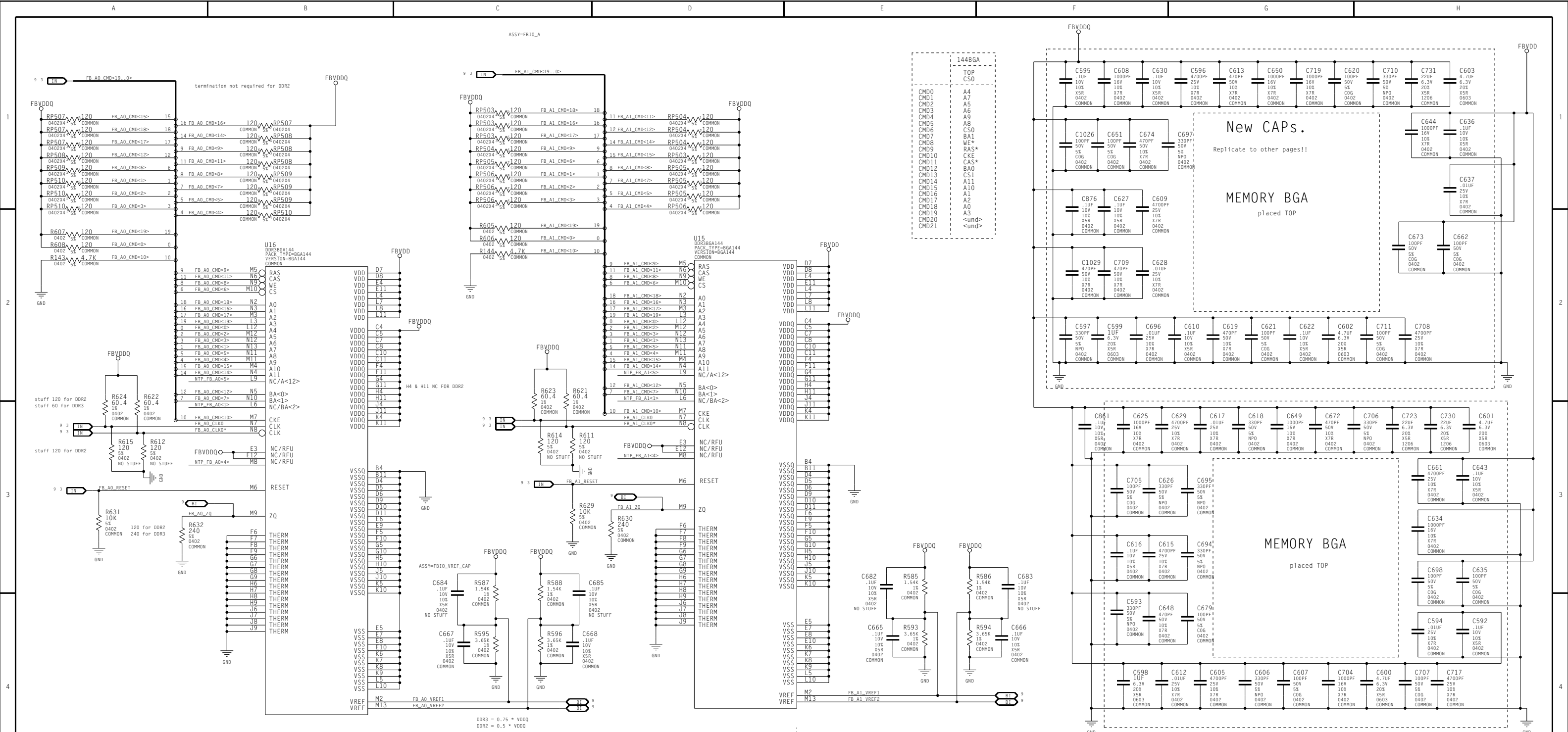
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ASSEMBLY	SKU 1-0004: NV45-P211 A04, 256MB, 500MHZ GDDR3, DVI-NORTH (SINGLE-LINK), DVI-SOUTH (SINGLE-LINK), SVVIDEO, GT
PAGE	DETAIL PCI EXPRESS INTERFACE



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1

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555

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Straps

Assembly: BIOS

JTAG

BIOS (serial)

PLL FILTERS

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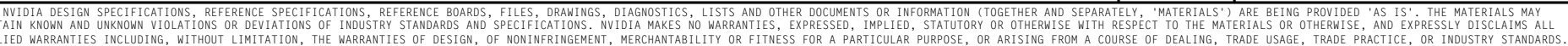
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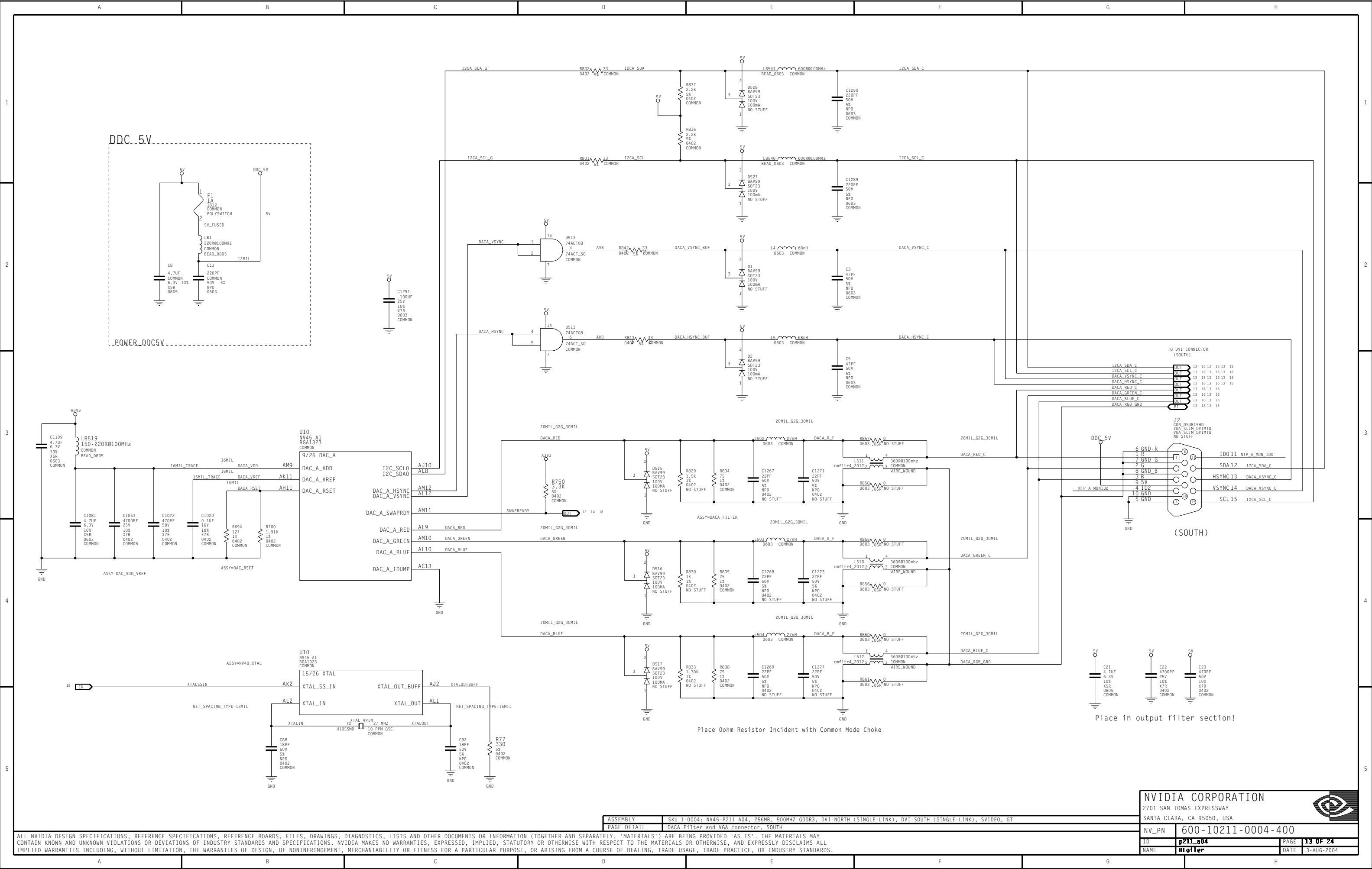
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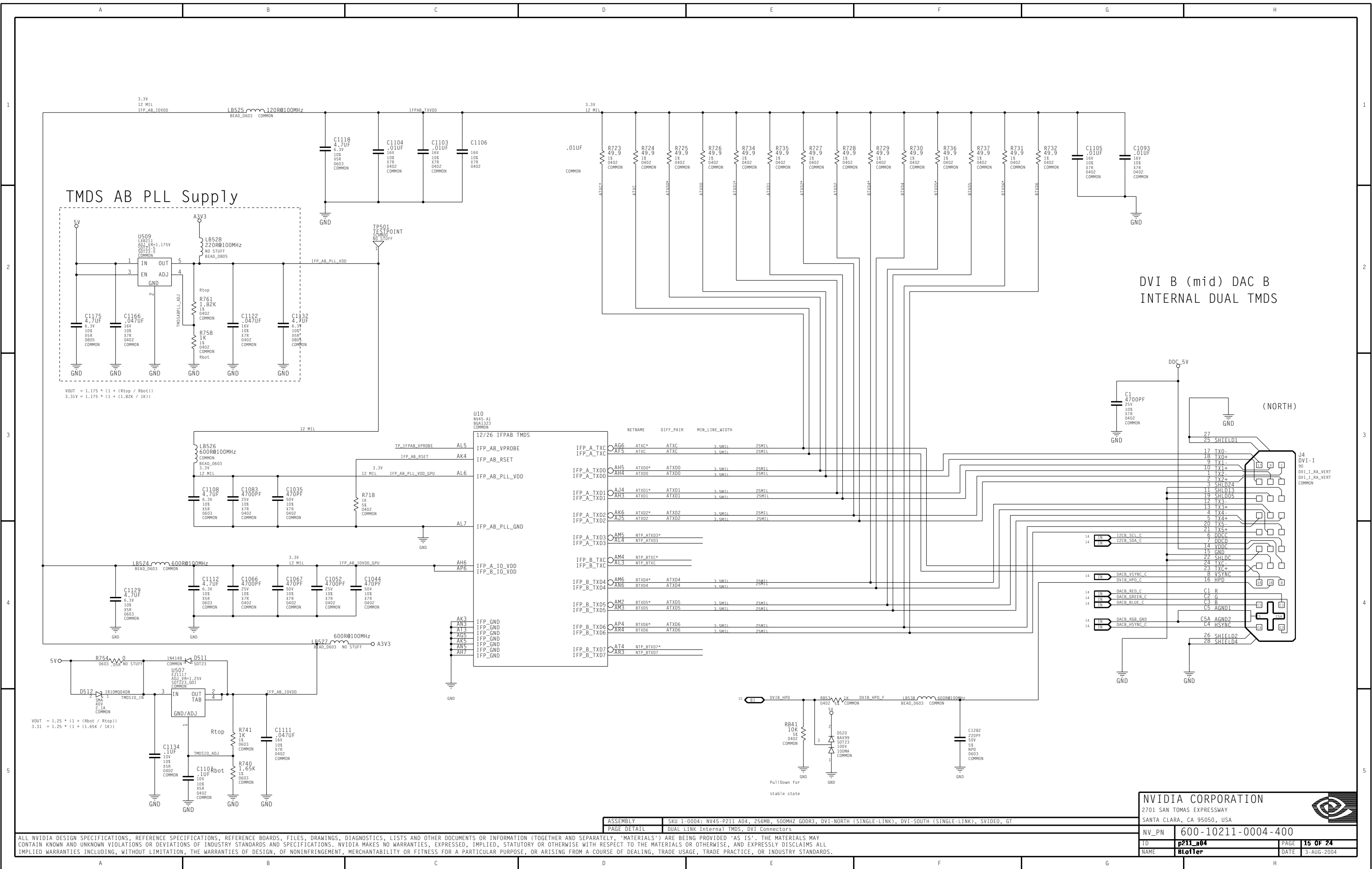
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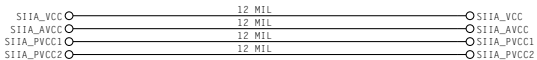
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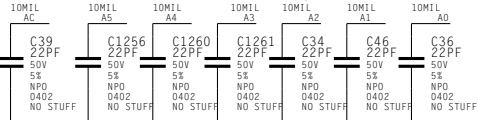


NET RULES (OTHER)

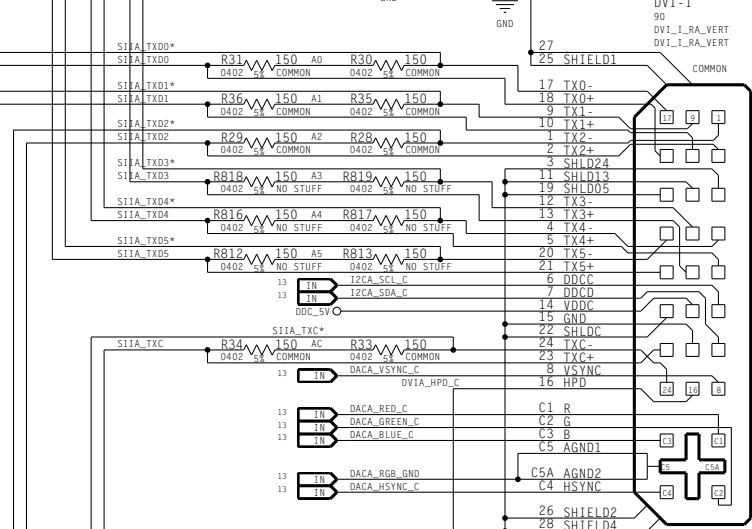
PHYSICAL



MODIFIED AC TERMINATION, USED FOR EMI

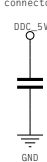


J5 DVI-I



(SOUTH)

Place near connector



MASTER
I2C Address is 70h and is based on MAST and DUAL pins.

SLAVE
I2C Address is 72h

Notes:

- Make sure Software knows and programs this correctly.
1. Detect Dual-Link Capable
2. Detect Master and Slave
3. Both Master and Slave Transmitters must set bit 2 (BSEL) at register addr 0x08 to 0 for 12-bit mode
4. For frequencies less than or equal to 165MHz, bit 0 (PD) at register addr 0x08 of Slave must be set to 0. For frequencies greater than 165MHz, bit 0 (PD) at register addr 0x08 of Slave must be set to 1.
5. Skew between Master and Slave can be controlled by DCTL2[2:0] register
6. Both Single-Link and Dual-Link mode will be configured via I2CC

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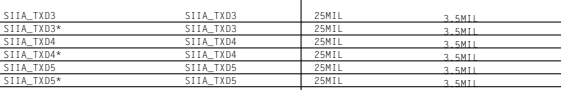


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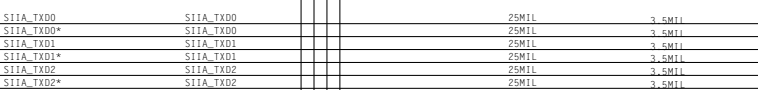
NET RULES

NET DIFFPAIR SPACING MIN_LINE_WIDTH



NET RULES

NET DIFFPAIR SPACING MIN_LINE_WIDTH



Sii178 Dual-Link TMDS

ISEL/RST - I2C Interface Select.
HIGH - active (config programmed by I2C)

When ISEL/RST = HIGH
BSEL/SCL - I2C CLK
DSEL/SDA - I2C DATA

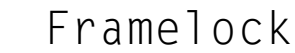
ASSEMBLY	SKU 1-0004: NV45-P211 A04, 256MB, 500MHz GDDR3, DVI-NORTH (SINGLE-LINK), DVI-SOUTH (SINGLE-LINK), SVIDED, GT
PAGE DETAIL	DUAL LINK TMDS External with Sii1con Image


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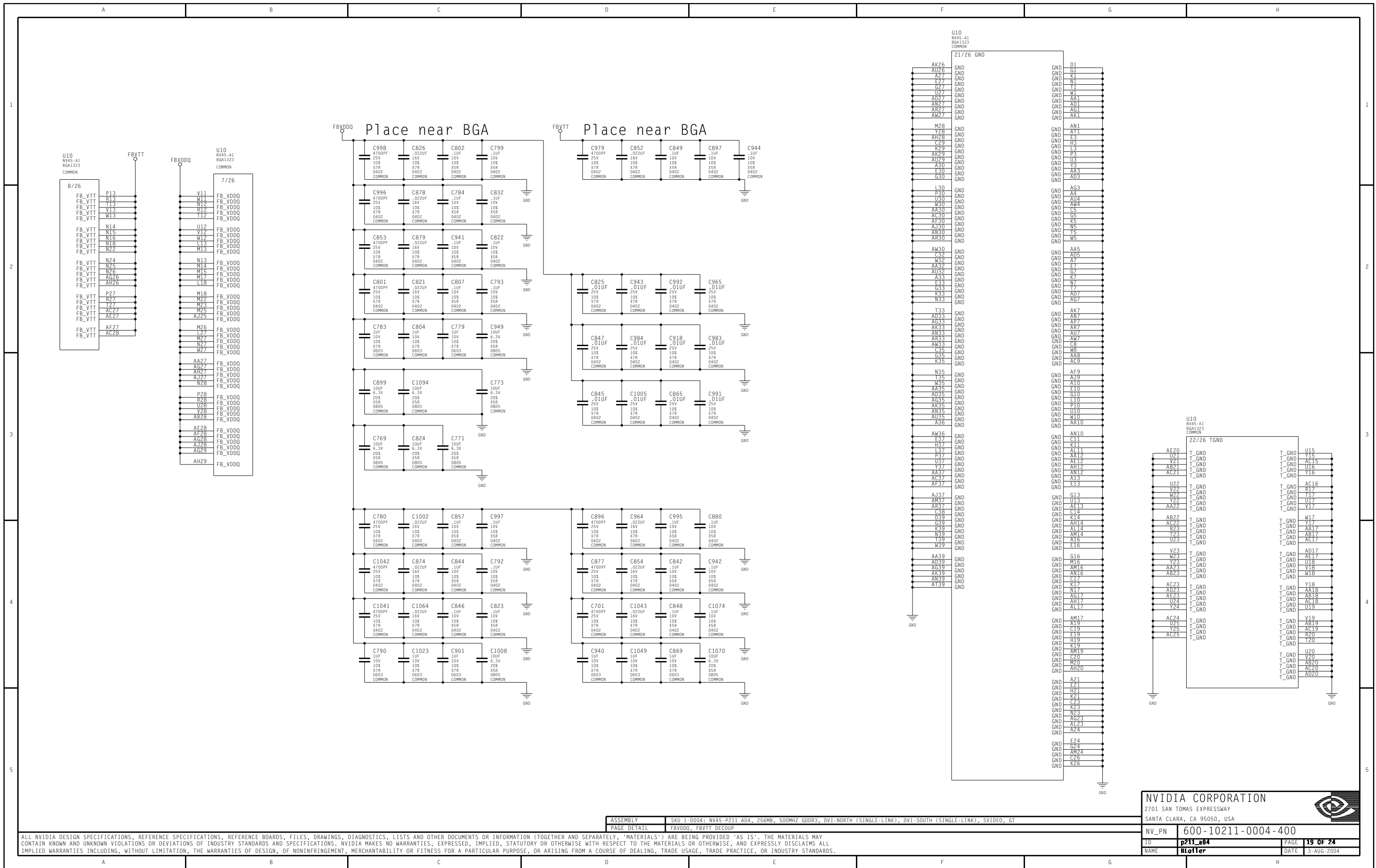
	NET	SPACING	PHYSICAL	VOLTAGE
IN	7114_VDDA		12 MIL	3.3V
IN	7114_VDDE		12 MIL	3.3V
IN	7114_VDDX		12 MIL	3.3V
IN	7114_Xout	20MIL		
IN	7114_XIn	20MIL		

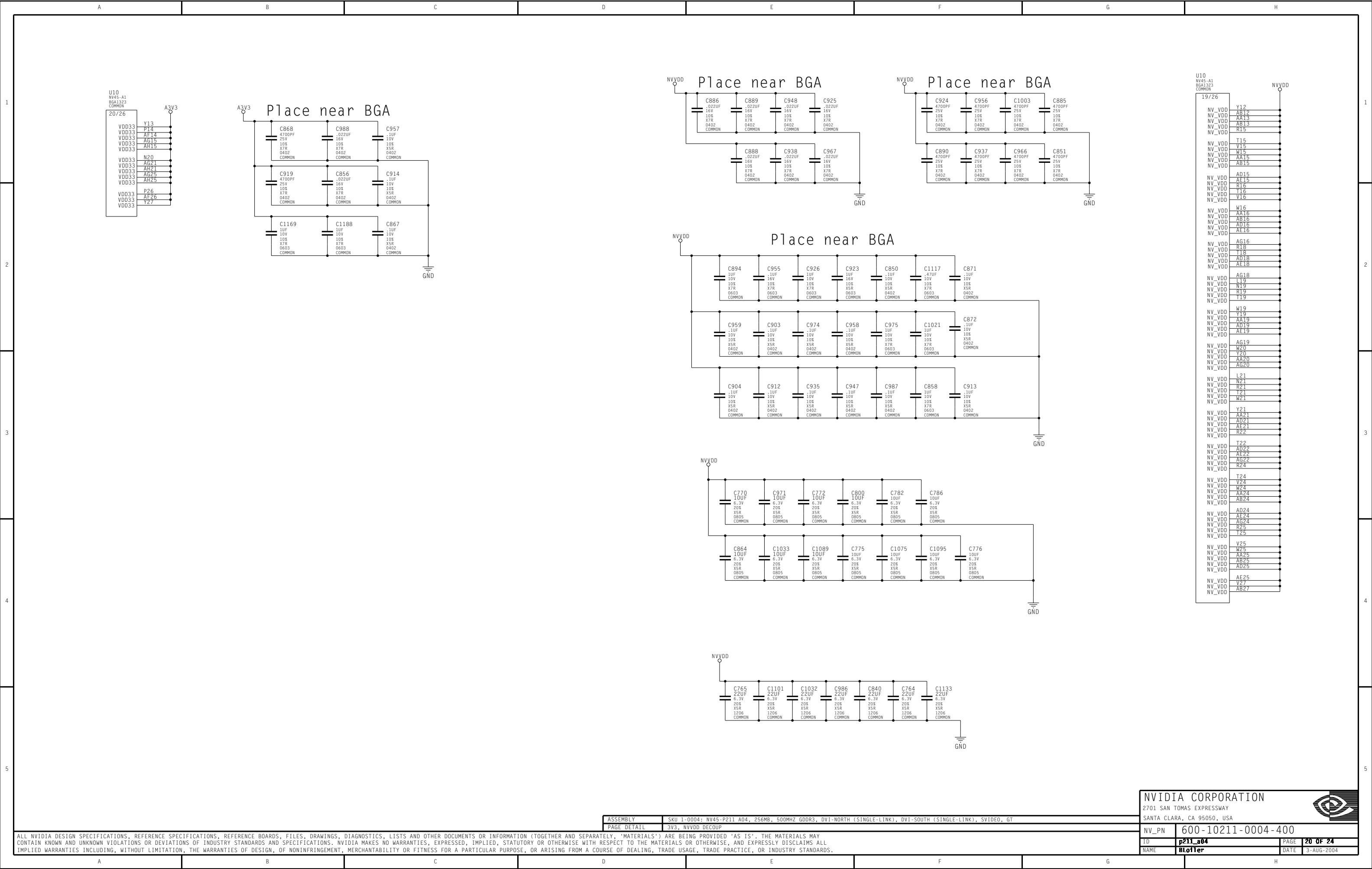
VIDEO CAPTURE





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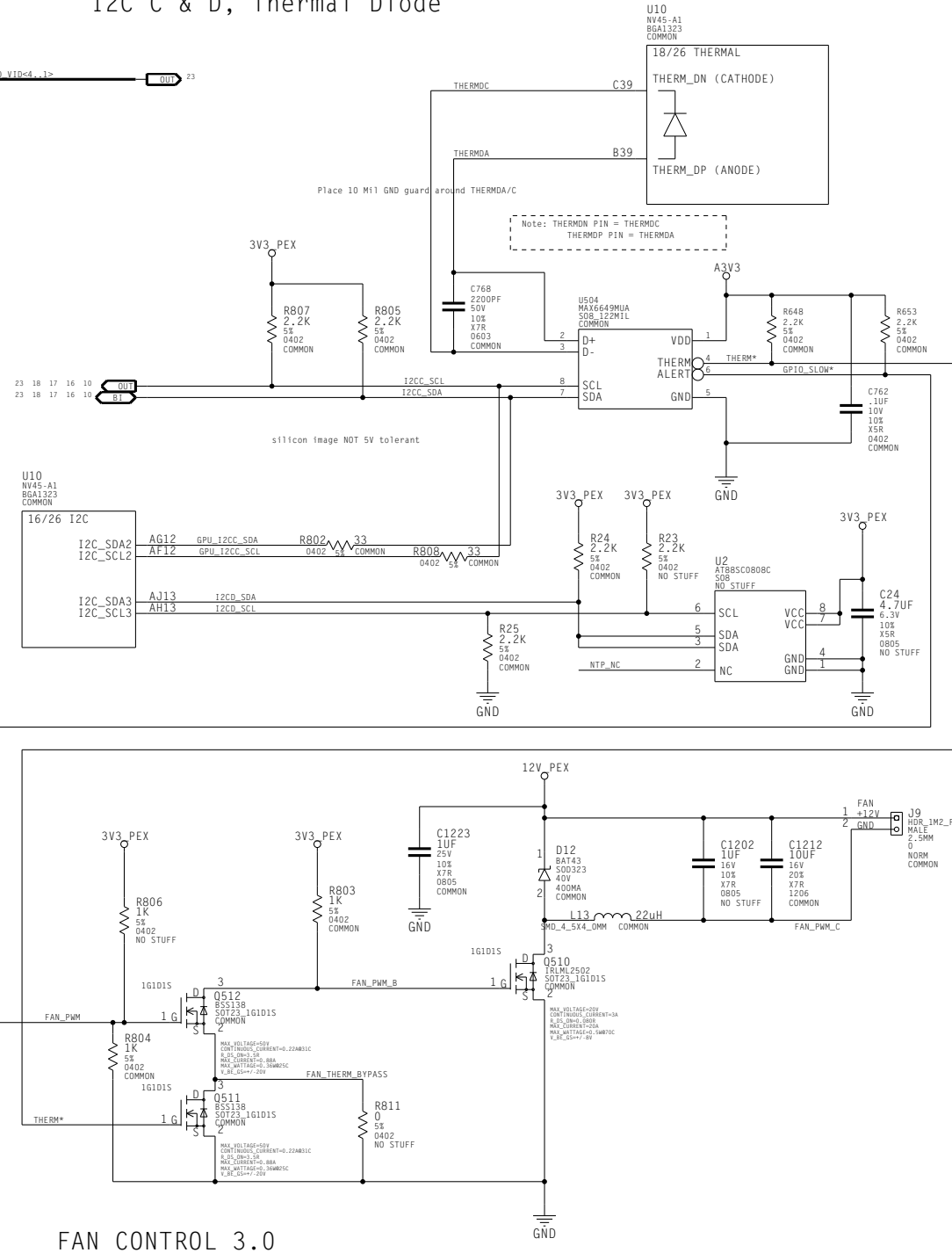
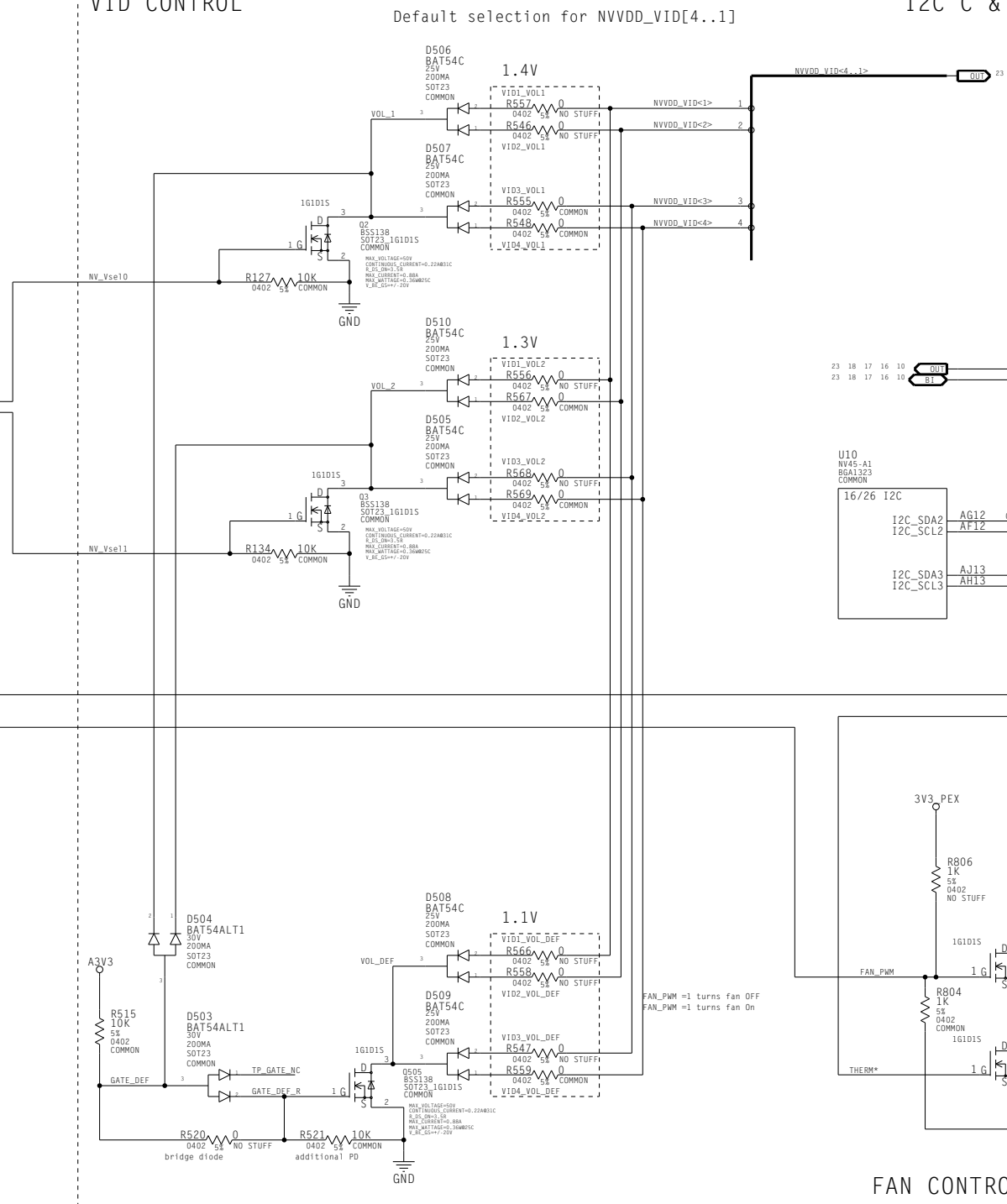
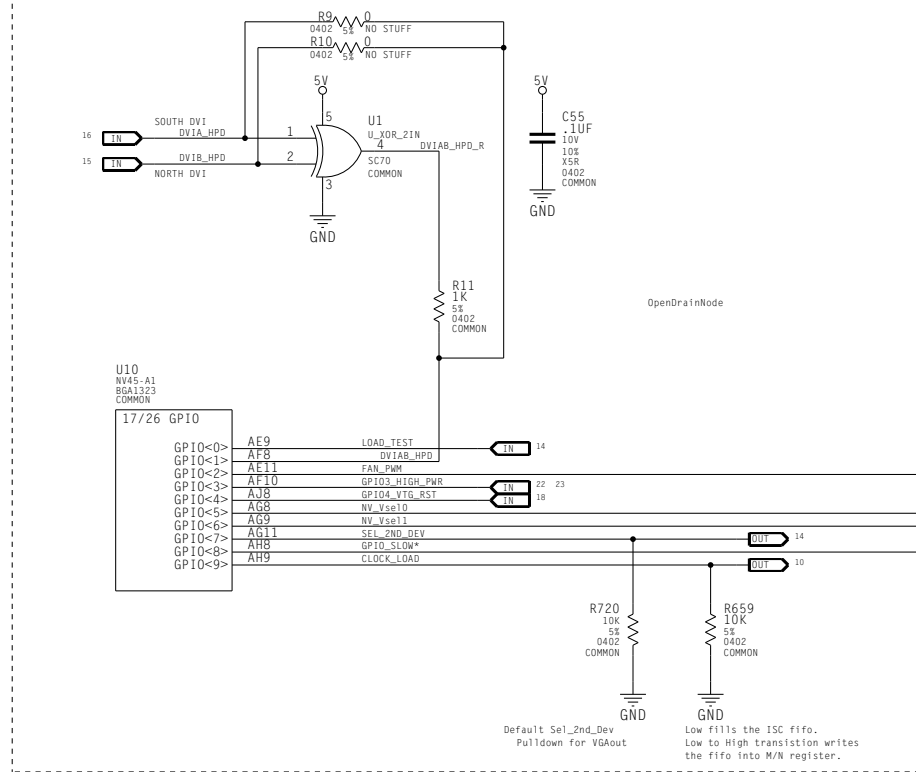




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ASSEMBLY	SKU 1-0004: NV45-P211 A04, 256MB, 500MHZ GDDR3, DVI-NORTH (SINGLE-LINK), DVI-SOUTH (SINGLE-LINK), SVIDEO, GT
PAGE DETAIL	3V3, NVVDD DECOU



	NET	SPACING	PHYSICAL
(B1)	THERMDA		10MIL
(B1)	THERMDC		10MIL
(B1)	FAN_PWM	20MIL	10MIL
(B1)	FAN_PWM_B	20MIL	12MIL
(B1)	FAN_PWM_C	20MIL	12MIL

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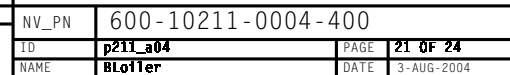
Regulator: ISL6563

Control via NV_GPIOS NV_VSEL[2..0] :
VID      NVVDD
1 4 3 2 1      Vout
1 1 1 1 0      0.80V
1 1 1 1 0      0.85V
1 1 1 0 1      0.90V
1 1 1 0 0      0.95V
1 0 1 1 1      1.00V
1 0 1 1 0      1.05V
1 0 0 1 1      1.10V
1 0 0 1 0      1.15V
0 1 1 1 1      0.20V
0 1 1 1 0      1.25V
0 1 0 1 1      1.30V
0 1 0 1 0      1.35V
0 0 1 1 1      1.40V
0 0 1 1 0      1.45V
0 0 0 1 1      1.50V
0 0 0 1 0      1.55V

```

FAN CONTROL 3.0

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NVVDD = 0.8V..1.5V (60A)

NOTES:
For each 11035, the ground pins H6, H7, and Iref should be connected with traces to the input cap ground on J7 and there the via is located to tie to regular GND.
The analog ground amongst different 11035 should not be connected together.

NET RULES

NET	LINE WIDTH	VOLTAGE
5V	12 MIL	5V
NVDD	24 MIL	1.4V
12V_EXT2	12 MIL	12V
12V_EXT1	12 MIL	12V
12V_PEX	12 MIL	12V

