Revision History

X00
1. 75% if this design is taken from P86.
   GPU, Memory, Power

X01
1. Removed the following:
   U182, P602, Hydra

X02
1. Added the CX25871 (Encoder - TV OUT) circuit
2. Renamed the ref.des-es for the VIVO and TV-Out circuits.
3. Replaced the FBx_CS1- nets with FBx_CS0- on the memory devices
   (where x = A,B,C,D)

X03
1. Added R1248
2. Corrected nets

X04
1. Corrected the footprint for P300
2. Corrected the placement for C896
3. Corrected the RBG filtering for P300 and P600

X05
1. Corrected more I/O circuits
2. Corrected J-TAG signals around the SAA7108
3. Added resistors (R2228, R2229) for TRST (SAA7108-JTAG)
4. Re-ordered the schematic pages
5. Added L721 and C1155 to S-Video connector

X06
1. For Review

X07
1. Renamed the I2C signals
2. Removed R1240
3. Renamed GPU pins GPIO 5,6
4. Connected GPU-VDDG and VDDDVO to 3.3VL
5. Renamed GPIO0 to FAN-EN
6. The following diodes are BAV99 (was BAT54SLT1)
   D300,D301,D304-D306,D308,D309
   D606-D610,D618,D619
7. Changed R2224 to 120hm
8. The following caps are NO_STUFF
   C1123,C1126,C1129
9. Added hotplug circuit to DVI-I. Components are:
   L727,C1181,R1011,D611,R1012
10. P600 pin 14 is connected to FCC-BDC-VGA (5V)
11. Removed R995
12. P602 pins 10,11,12 are connected to CGND (Chassis GND)
13. Added components D615, R1073 to NVVDD supply.
14. Added component R2073 to FBVDDQ supply

X08
1. Clean-up ... BOM / Assemblies
2. Fixed Hot-Plug circuit

X09
1. L819.1 connected to 3.3VL
2. The following GPU pins connected to 3.3V
   AH1,AD1,AC7,AL3,AP8.AP12
3. P400.14 and D611.2 connected to FCC-ADC-VGA
4. Corrected GPU pin name AJ4
5. Corrected net name AGPADSTB1-
6. Corrected address bus to memory.
   FBx_ADR11, FBx_ADR12, FBx_ADR13 (x = A,B,C,D)
7. Added the following components to the I2CC_(SCL/SDA) bus.
   R1212-R1214, R1218.
8. Added strap resistor R989

X10
1. Clean-up .. BOM / Assemblies

X11
1. Swapped memory bits on Bank-A/Byte 0 (pg.5)as follows:
   0->1, 3->7, 2->4, 5->2, 4->5, 1->3 and 7->0.

X12
1. Clean-up .. BOM / Assemblies
2. Removed C1447

X13
1. Added caps C2531 and C2532 to VAAD3.3V
2. Added test point to U7.38 (TV_FIELD)
3. Renamed net name for the following:
   R1106.1, R1105.1, R302.1, R303.1

X14
1. Clean-up .. BOM / Assemblies
2....NO netlist changes
3. X-Release

X15
1. Changed R1139 to NO_STUFF Assembly
2. Changed R1141 to NO_STUFF Assembly
3. Changed R1140 to COMMON Assembly
4. Removed R1118 (pull-up to GPUPWR_GD)
5. Changed values of R1072 and R2072 to 1K
6. Changed net of R2142.2 from 5V to 12V
7. Changed net of R2075 from FBVDD to FBVDDQ
8. Changed stuffing options for STRAP_FB[1:0]
9. Corrected the NVPN for the following:
   L816 through L818
10. Changed C2240 to 1.0uF

X16
1. Changed C2264 and C2268 to 470uF (16V OSCON)
2. Changed Assembly of C2267,C2263,R967 to NO_STUFF
3. Changed C2240 to 1.0 uF 16V (SMD0805)
4. Changed value of C2300 to 1.0uF(16V)
5. Changed Assembly of the following components
   to CX-ENC-TVOUT:VIVO:VIDO
   C2482 through C2494, D2 through D7, C2,C3,
   R33 through R36,C56,C57,C1155,C1156,L721,L722
6. Changed the Assembly of R966 to COMMON

X17
1. X-release AX1
2. NO Netlist changes

X17A
1. BOM Corrections
2. NO Netlist changes
3. Changed R2078 to 1000 Ohm (1%) .. FBVDDQ = 2.619
4. Changed the following resistors to 100 (5%):
   R253, R252, R293, R292, R353, R352, R393, R392

P85-A02-X01
To be updated- 1st Net list file
ADD TL413 circuit for FBVDDQ
Change SC2602 for FBVDDQ to FBVDD
Remove many TH ALE CAPs from SC2602/FBVDD circuit for want of space
Remove Input filter inductor and caps from SC2602/FBVDD circuit for want of space

P85-A02-X02
Renamed FOOT PRINTS IC_MA05B to SC70-5 symbol
Removed C2379
Changed C2302 from SOT223-DPAK-D2PAK to SOT223_DPAK

P85-A02-X03
Sync SCH of A02-X02 to A01-X17A w.r.t. Framebuffer PS sheet only

P85-A02-X04
FBVDD for Hynix , Elite different R2075/R2078

P85-A03-X01
Added Shmoo Test Point (TP38,TP39,TP40) for FBVDDQ supply

P85-A03-X02
Changed the following components to 5PF:
C303, C306, C309, C1122, C1125, C1128
The following components are designated as COMMON:
R1197, R1198, R1199, R1200
Fixed the Philips symbol to read 7104. was 7102

P85-A03-X02

Sub Assemblies	Description
COMMON	Components are stuffed for all SKUs
NO_STUFF	Components are not stuffed
PRI_DVI_I	Components stuffed for Primary VGA
PRI_PROT	Components stuffed for Primary Protection
SEC_DVI_I	Components stuffed for Secondary DVI
SEC_PROT	Components stuffed for Secondary Protection
AGP3VFBDQ	Components stuffed for AGP 3.3V to FBVDD
FBVDD-FBDQ	Components stuffed for FBVDDQ 2.5V to FBVDD
PLL-SEQ	Components stuffed for PLL Sequence
PWR-SEQ	Components stuffed for Power Sequence
PWR-SEQ-BP	Components stuffed for Power Sequence By-PASS
NVVDD-2602	Components stuffed for NVVDD Power
FBVDD-2602	Components stuffed for FBVDD Power
SC1541	Components stuffed for 3.3VL Fixed
SC1565	Components stuffed for SC1565 - 3.3VL Adj.
FB64LO	Components stuffed for FBA_DATA and FBD_DATA
FB64UP	Components stuffed for FBC_DATA and FBD_DATA
SER-PROM	Components stuffed for Serial PROM
PAR-PROM	Components stuffed for Parallel PROM
FAN_HS-LFT	Components stuffed for Fan / Blower left of the GPU
FAN_HS-RGT	Components stuffed for Fan / Blower east of the GPU
FAN_SNK	Fan Sink Component
HEAT_SNK	Heat Sink Component
VIVO	Components stuffed for Video IN/OUT
VIDO-7104	SAA7104 Video Out
CX-ENC-TVOUT	Components stuffed for CX25871 - TV-OUT
SOCKET	Components stuffed for Socket
64MB-4MX16	Components stuffed for Mem-CFG: 64MB (4Mx16) memory
BRACKET	IO Bracket / VGA-DIN-DVI-I
BRACKET-VGA	IO Bracket / VGA- -DVI-I
FBVDQ-2602	Components stuffed for FBVDDQ Power
FBVDD_ADJ	Components to adjust FBVVD out voltage.
FBVDQ_ADJ	Components to adjust FBVVDQ out voltage.

Table of Contents

Legend:
TPNC = Test Point - Not Connected

602-10085-0000-A02
140-10085-0000-A02

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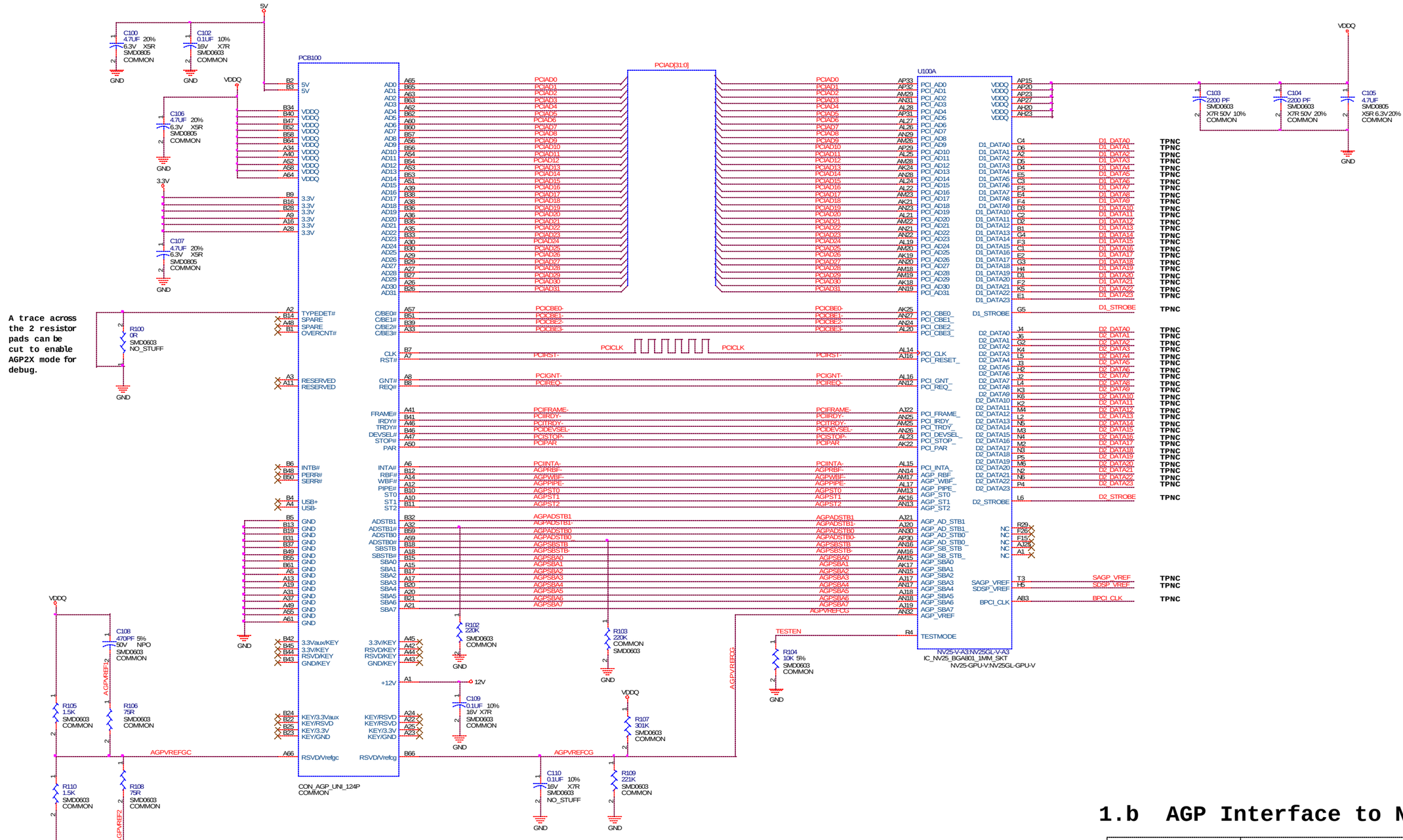
A trace across the 2 resistor pads can be cut to enable AGP2X mode for debug.
PCB100
CON_AGP_UNI_124P
COMMON
U100A
NV25-V-A3:NV25GL-V-A3
IC_NV25_BGA801_1MM_SKT
NV25-GPU-V:NV25GL-GPU-V
PCIAD[31:0]
PCICLK
AGPVREFGC
TESTEN
1.b AGP Interface to NV25
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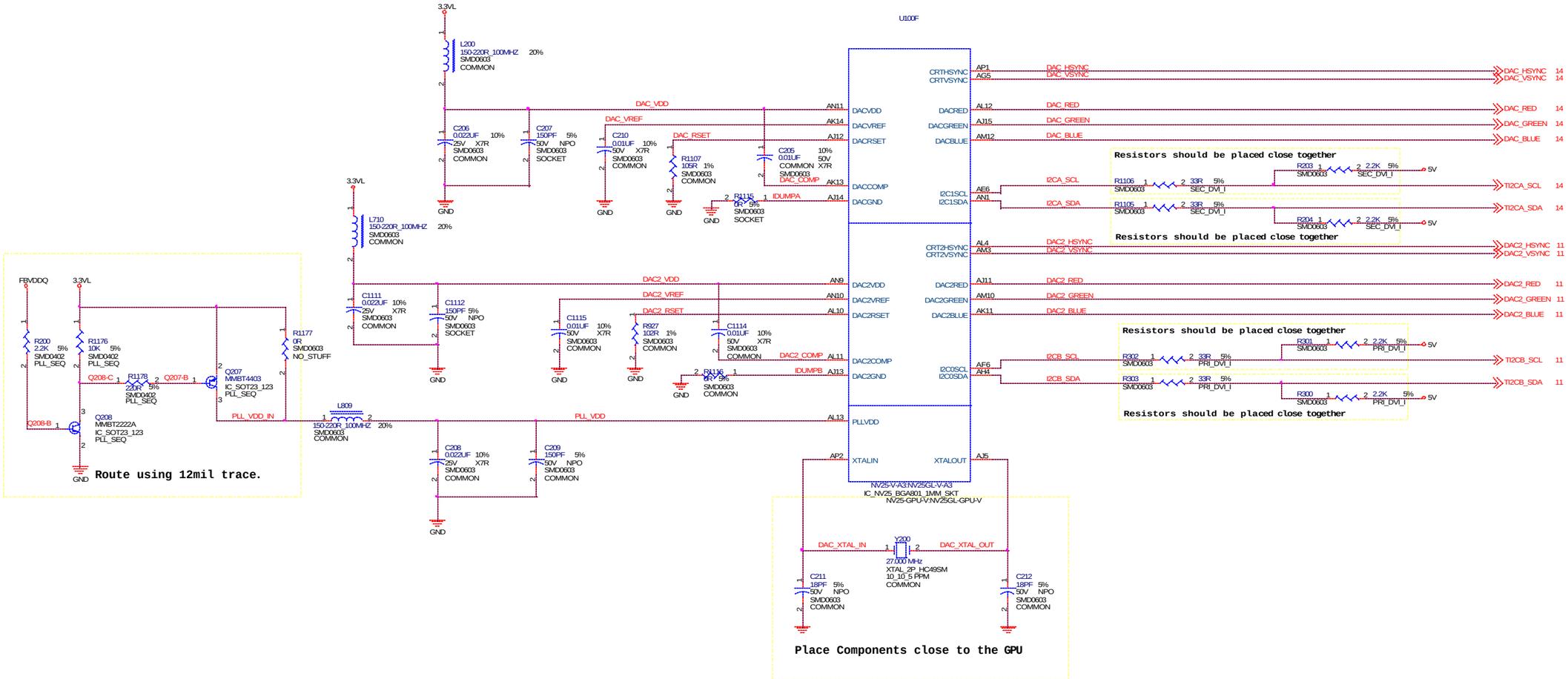

1.c NV25 .. PLL / DAC / I2C

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NV25..PL / DAC / I2C

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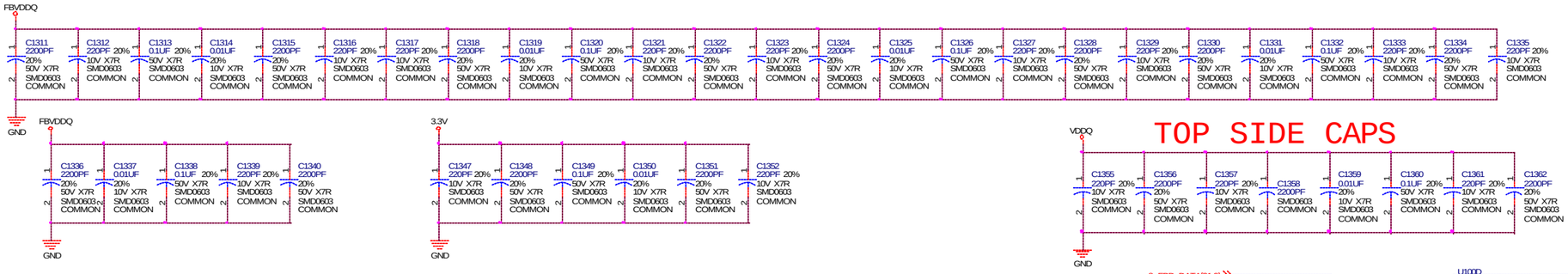
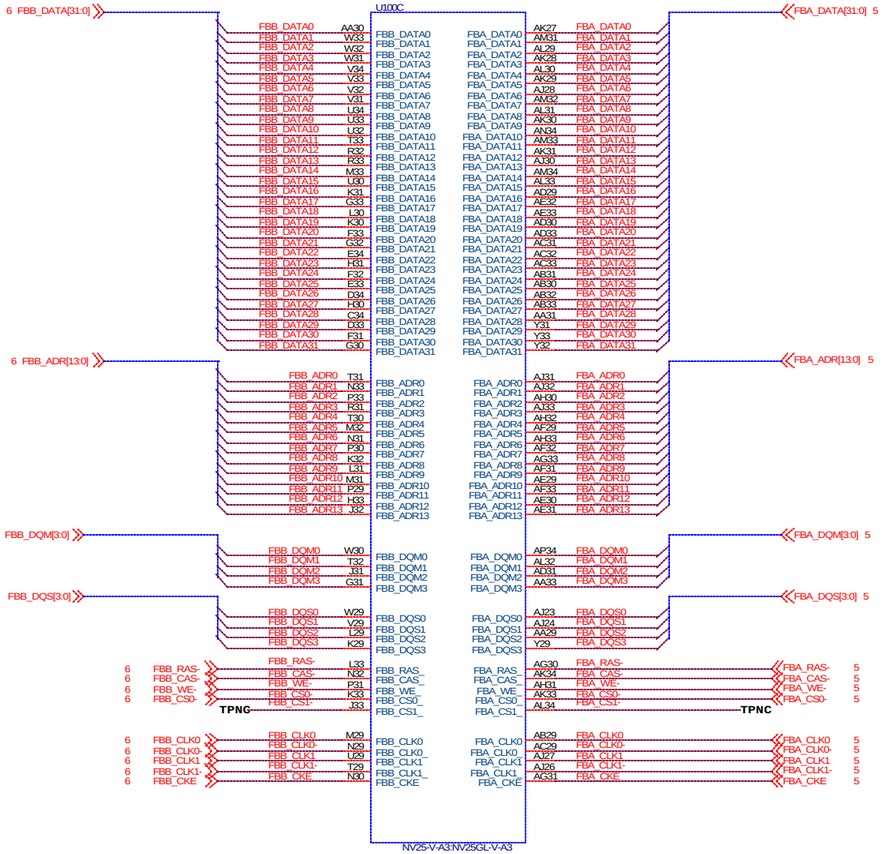
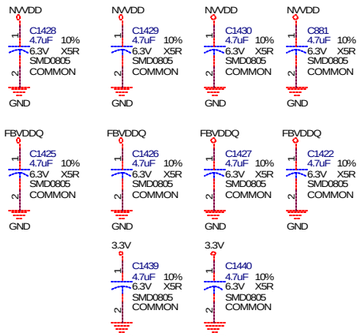
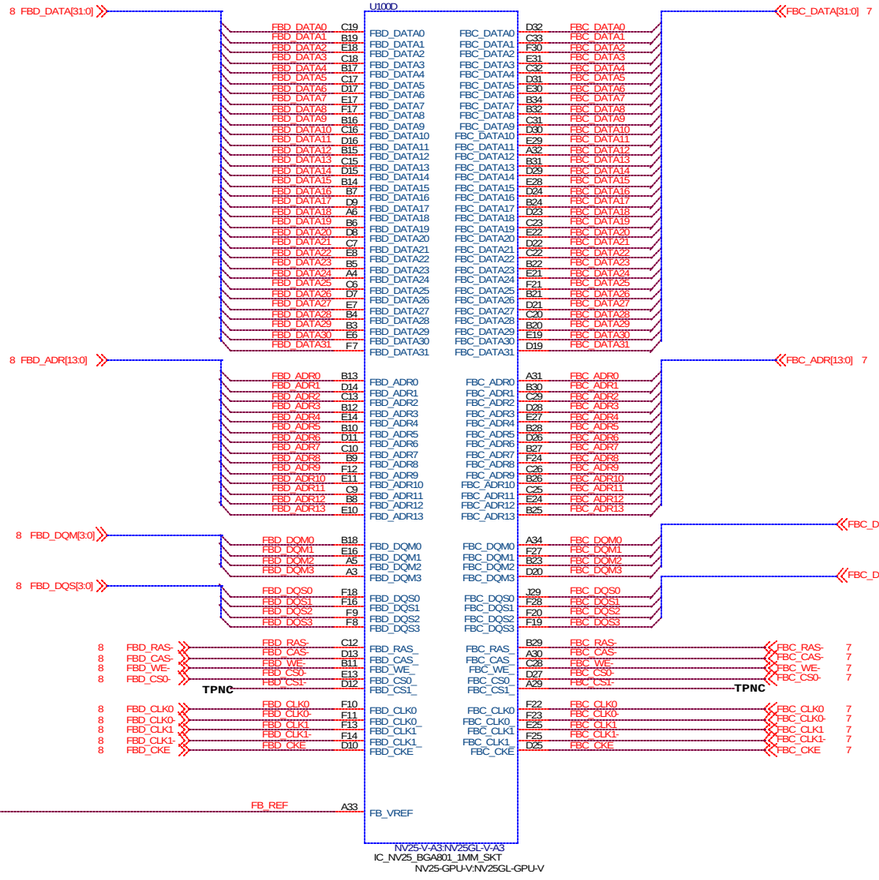
TOP SIDE CAPS

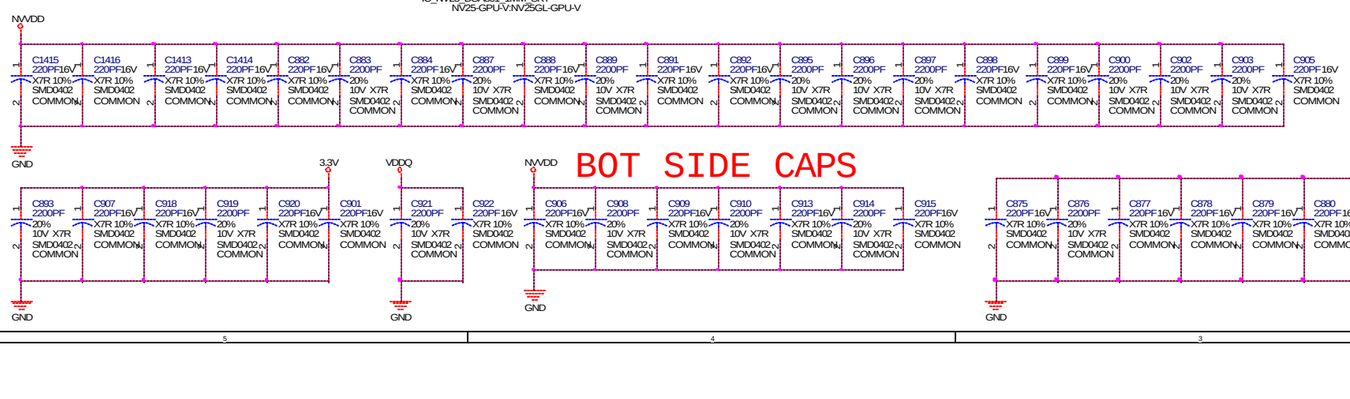








BOT SIDE CAPS



2.a NV25 FB Interface and NV Decoupling

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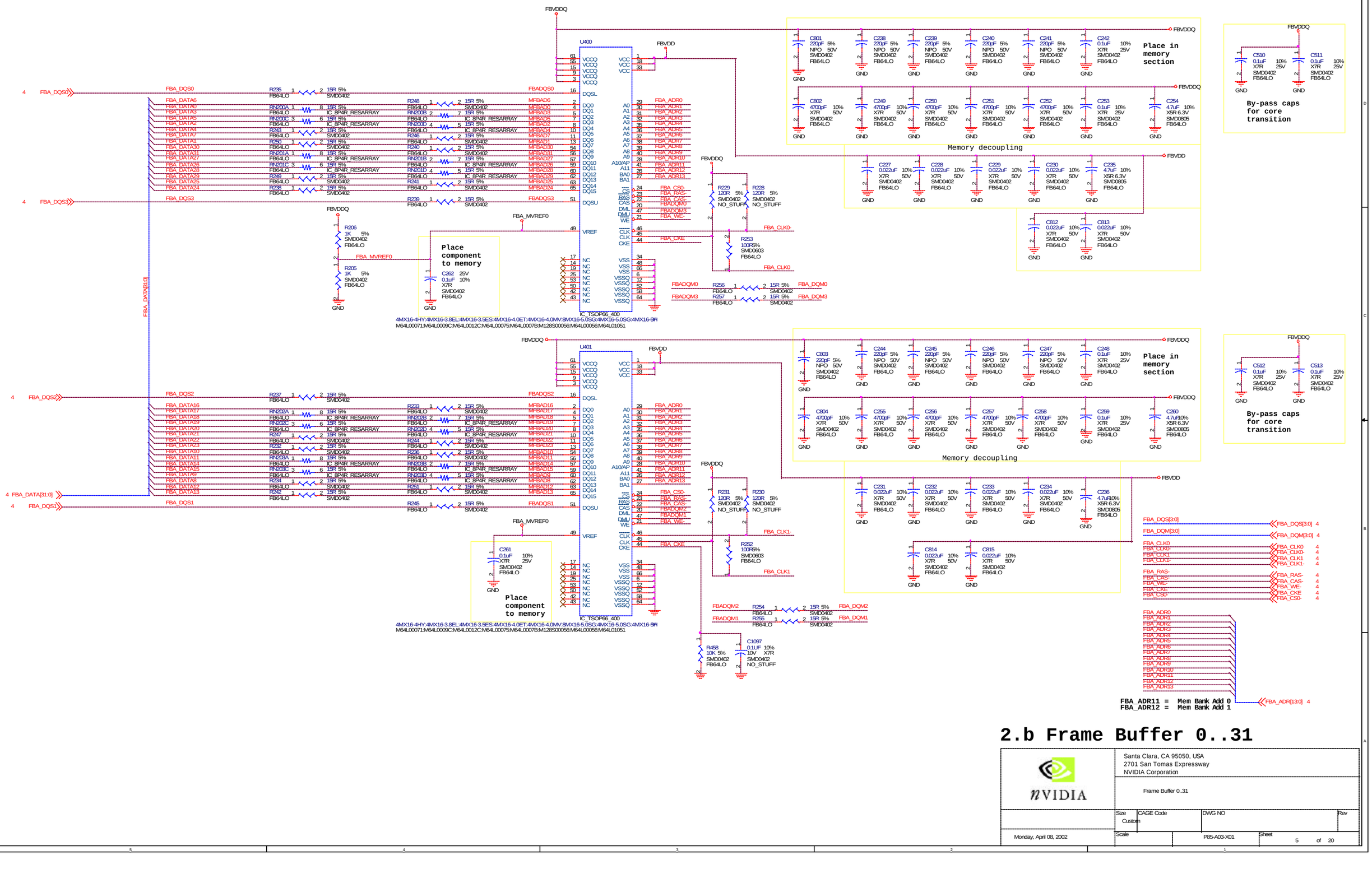

2.b Frame Buffer 0..31

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NVIDIA Corporation

Frame Buffer 0..31

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2.c Frame Buffer 32..63

Memory decoupling

Place component to memory

Place component in memory section

By-pass caps for core transition

FBB_ADR11 = Mem Bank Add 0
FBB_ADR12 = Mem Bank Add 1

4MX16-4HY:4MX16-3.8EL:4MX16-3.5ES:4MX16-4.0ET:4MX16-4.0MV:8MX16-5.0SG:4MX16-5.0SG:4MX16-5HY
M64L00071:M64L0009C:M64L0012C:M64L00075:M64L0007B:M128S00056:M64L00056:M64L01051

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	Frame Buffer 32..63
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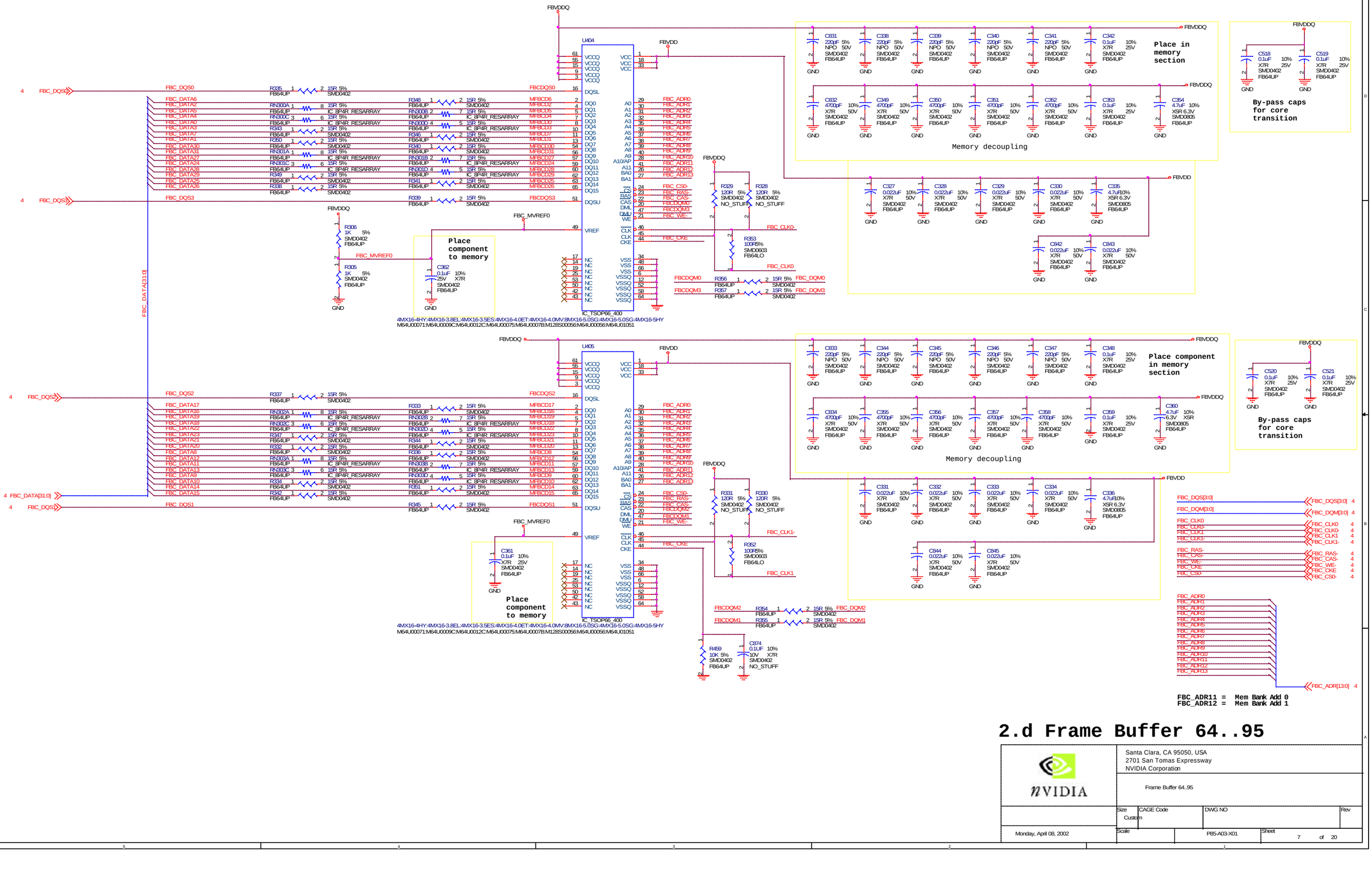
U404
IC_TSOP66_400
4MX16-4HY:4MX16-3.8EL:4MX16-3.5ES:4MX16-4.0ET:4MX16-4.0MV:8MX16-5.0SG:4MX16-5.0SG:4MX16-5HY
M64U00071:M64U0009C:M64U0012C:M64U00075:M64U00078:M128S00056:M64U00056:M64U01051
Place component to memory
Place in memory section
Memory decoupling
By-pass caps for core transition
U405
IC_TSOP66_400
4MX16-4HY:4MX16-3.8EL:4MX16-3.5ES:4MX16-4.0ET:4MX16-4.0MV:8MX16-5.0SG:4MX16-5.0SG:4MX16-5HY
M64U00071:M64U0009C:M64U0012C:M64U00075:M64U00078:M128S00056:M64U00056:M64U01051
Place component to memory
Place component in memory section
Memory decoupling
By-pass caps for core transition
FBC_ADR11 = Mem Bank Add 0
FBC_ADR12 = Mem Bank Add 1
2.d Frame Buffer 64..95
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Frame Buffer 64..95
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2.e Frame Buffer 96..127

Memory decoupling

Place component to memory

Place in memory section

By-pass caps for core transition

4MX16-4HY:4MX16-3.8EL:4MX16-3.5ES:4MX16-4.0ET:4MX16-4.0MV:8MX16-5.0SG:4MX16-5.0SG:4MX16-5H
M64U00071:M64U0009C:M64U0012C:M64U00075:M64U0007B:M128S00056:M64U00056:M64U01051

FBD_ADR11 = Mem Bank Add 0
FBD_ADR12 = Mem Bank Add 1

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Frame Buffer 96..127

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3.a DVO Bus .. A/B

VIVO SAA7108

SII 164 DVI

PLace these components close to the GPU

Place these components close to the GPU

Place components close to the connector

Place components close to the connector

PLACE THESE PARTS CLOSER TO GPU PIN AP8 AND AP12

Fan circuit

TPNC

Replace with 0R for no fan control

Replace with 0R for no fan control

FAN enable input

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DVO A/B

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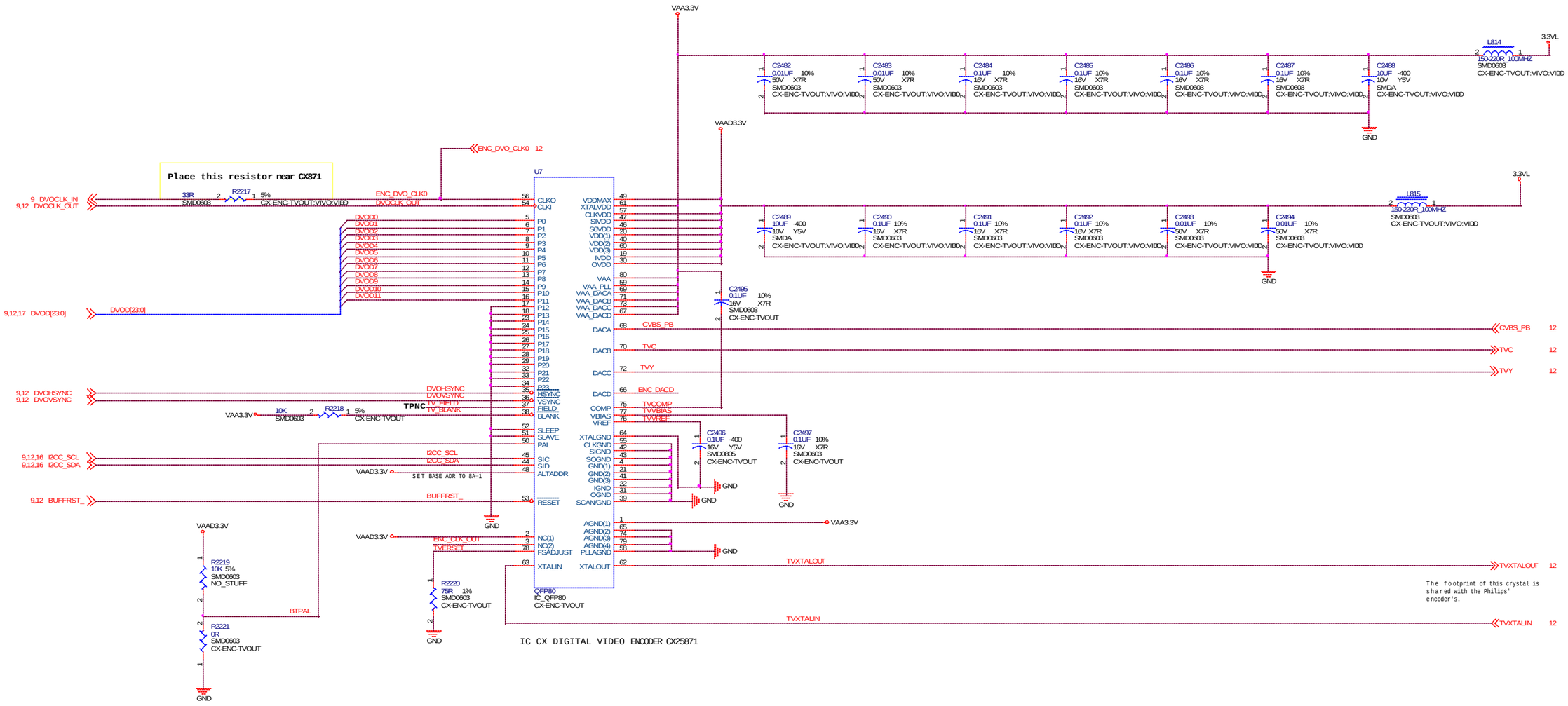

3.b Conexant 25871-Encoder - TV Out

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DVOA Ext. TMDSA Sec

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3 TI2CB_SCL

3 TI2CB_SDA

3 DAC2_HSYNC DAC2_HSYNC

R924 75R 1% SMD0603 PRI_DVI_I

R925 75R 1% SMD0603 PRI_DVI_I

R926 75R 1% SMD0603 PRI_DVI_I

C303 5PF 5% 50V NPO SMD0603 PRI_DVI_I

C306 5PF 5% 50V NPO SMD0603 PRI_DVI_I

C309 5PF 5% 50V NPO SMD0603 PRI_DVI_I

L302 0.068UH 5% SMD0603 PRI_DVI_I

L306 0.068UH 5% SMD0603 PRI_DVI_I

L310 0.068UH 5% SMD0603 PRI_DVI_I

C304 4.7PF 5% 50V NPO SMD0603 NO_STUFF

C307 4.7PF 5% 50V NPO SMD0603 NO_STUFF

C310 4.7PF 5% 50V NPO SMD0603 NO_STUFF

GND

Place components close to the filter section

R304 33R 5% SMD0603 NO_STUFF

5V

U816 AND PRI_DVI_I SC70-5 (A, B, GND, VCC, Y)

RBUFFHSYNC

R1215 33R 5% PRI_DVI_I SMD0603

C1392 0.1UF PRI_DVI_I SMD0402

C1393 0.1UF PRI_DVI_I SMD0402

GND

3 DAC2_VSYNC DAC2_VSYNC

R1216 33R 5% SMD0603 NO_STUFF

U817 AND PRI_DVI_I SC70-5 (A, B, GND, VCC, Y)

RBUFFVSYNC

R1217 33R 5% SMD0603 PRI_DVI_I

GND

HYD_DDCSCL0 — L303 150-220R_100MHZ PRI_DVI_I SMD0603 20% — FCCSCLVGA — FCCSCLVGA 15

DDCSDA0 — L304 150-220R_100MHZ PRI_DVI_I SMD0603 20% — FCCSDAVGA — FCCSDAVGA 15

BUFFHSYNC — L316 150-220R_100MHZ PRI_DVI_I SMD0603 20% — FCCHSYNCVGA — FCCHSYNCVGA 15

BUFFVSYNC — L319 150-220R_100MHZ PRI_DVI_I SMD0603 20% — FCCVSYNCVGA — FCCVSYNCVGA 15

3 DAC2_RED DAC2_RED — FRED — L300 0.068UH 5% SMD0603 PRI_DVI_I — FCCREDVGA — FCCREDVGA — FCCREDVGA 15

3 DAC2_GREEN DAC2_GREEN — FGREEN — L305 0.068UH 5% SMD0603 PRI_DVI_I — FCCGREENVGA — FCCGREENVGA 15

3 DAC2_BLUE DAC2_BLUE — FBLUE — L309 0.068UH 5% SMD0603 PRI_DVI_I — FCCBLUEVGA — FCCBLUEVGA 15

C305 10PF 5% 50V NPO SMD0603 PRI_DVI_I

C308 10PF 5% 50V NPO SMD0603 PRI_DVI_I

C311 10PF 5% 50V NPO SMD0603 PRI_DVI_I

GND

C325 22PF 5% 50V NPO SMD0603 PRI_DVI_I

C320 22PF 5% 50V NPO SMD0603 PRI_DVI_I

C314 220PF 5% 50V NPO SMD0603 PRI_DVI_I

C315 220PF 5% 50V NPO SMD0603 PRI_DVI_I

GND

D309 BAV99 PRI_PROT IC_SOT23_123

D308 BAV99 PRI_PROT IC_SOT23_123

D300 BAV99 IC_SOT23_123 PRI_PROT

D301 BAV99 IC_SOT23_123 PRI_PROT

GND

D304 BAV99 IC_SOT23_123 PRI_PROT

D306 BAV99 IC_SOT23_123 PRI_PROT

D305 BAV99 IC_SOT23_123 PRI_PROT

GND

3.3VL — L320 150-220R_100MHZ PRI_DVI_I SMD0603 20% — 3.3VD — C1034 0.01UF PRI_DVI_I SMD0603 — GND

3.3VD

5V — F300 FUSE 1812 RESETTABLE FUSE_MINISMDC035-050 COMMON — DDC+5V

DDC+5V — L315 150-220R_100MHZ SMD0805 COMMON 20% — FCC-BDC-VGA — FCC-BDC-VGA

C302 0.1UF 10% 16V X7R SMD0603 COMMON — GND

3.c DACB I/O, I2C0 -- PRI

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DACB I/O I2C0 - Sec

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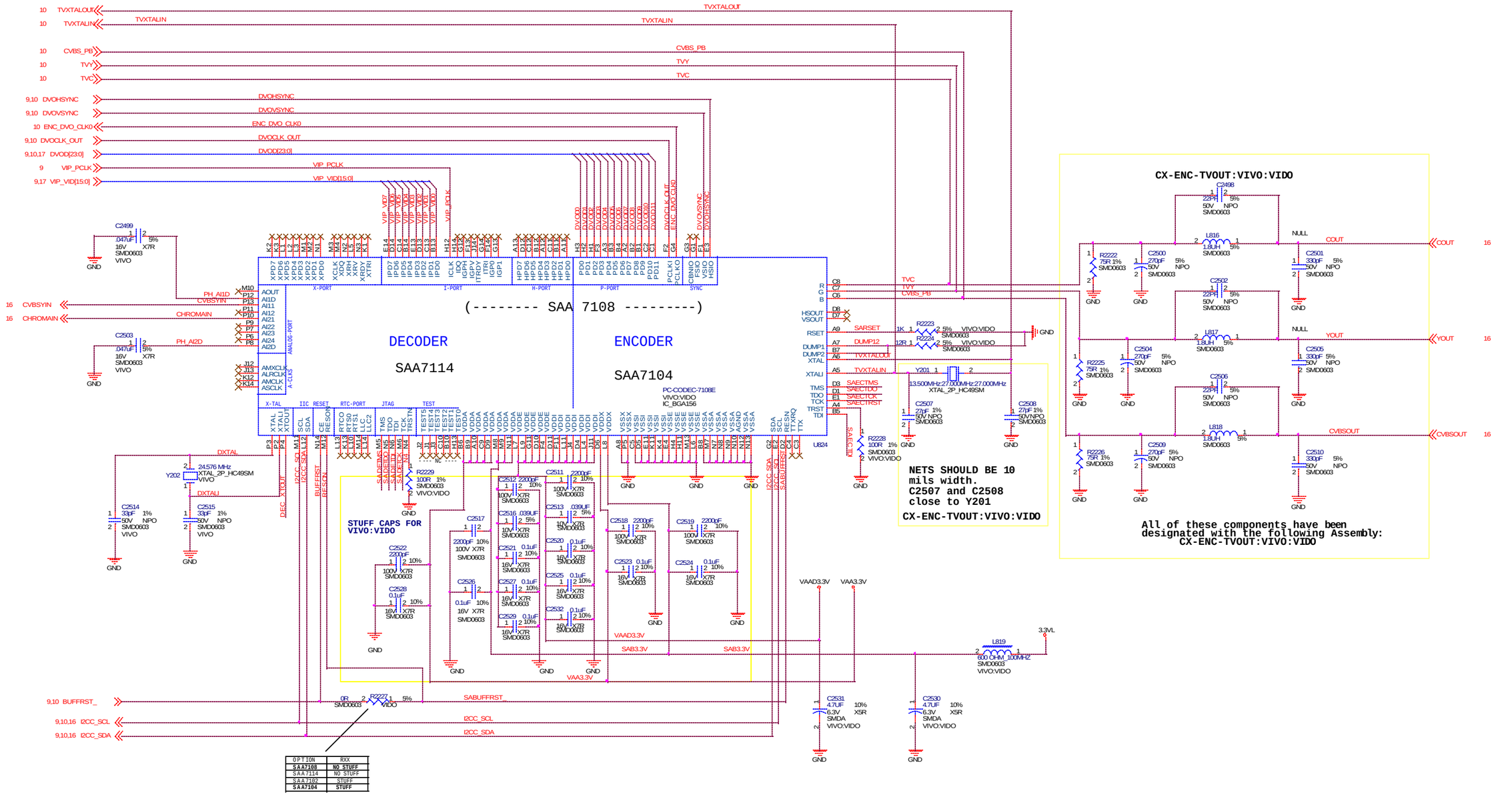

3.d SAA7108 - Video-Codec

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Hyfra Support

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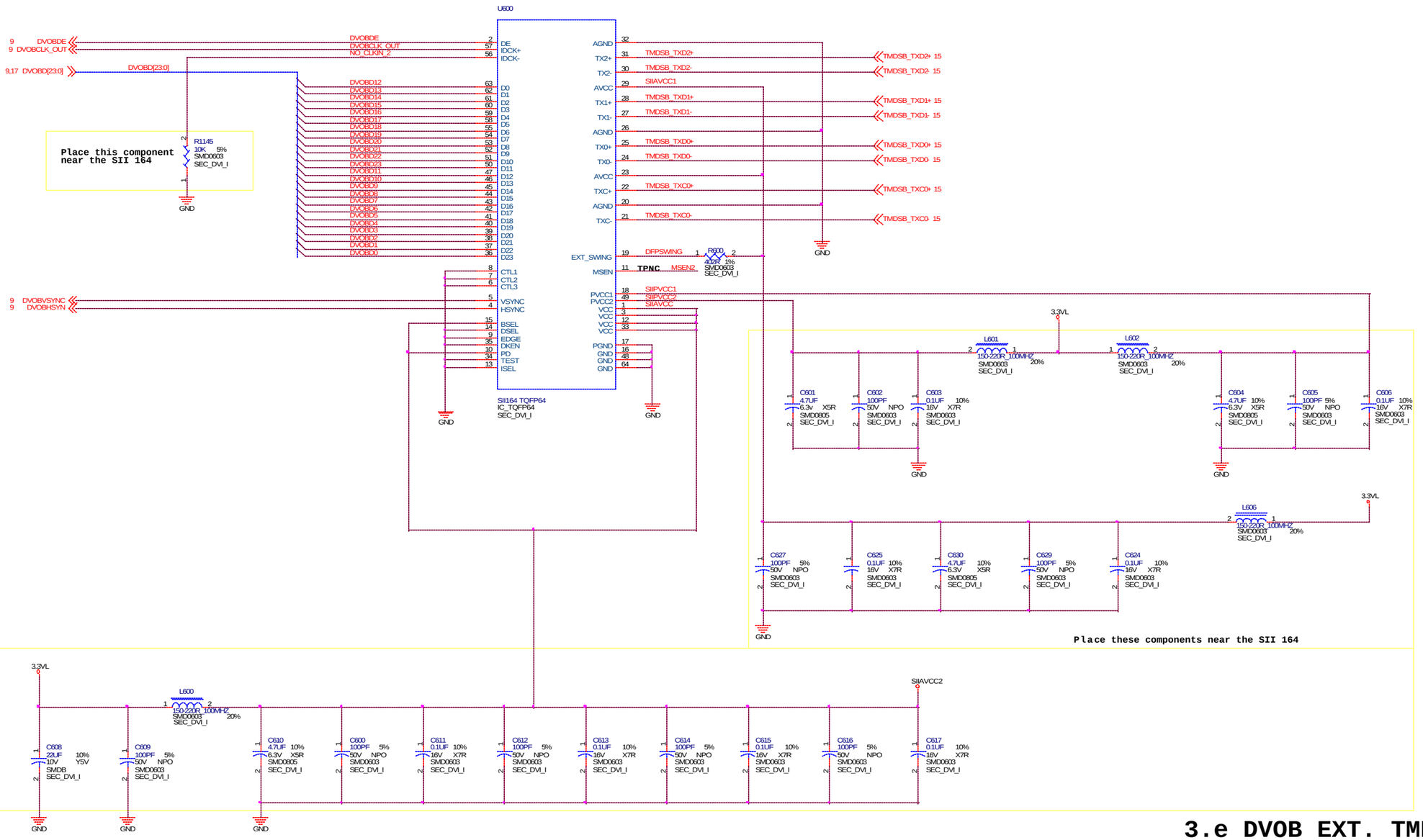

3.e DVOB EXT. TMDSB SEC

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DVOB Ext. TMDSB Pri

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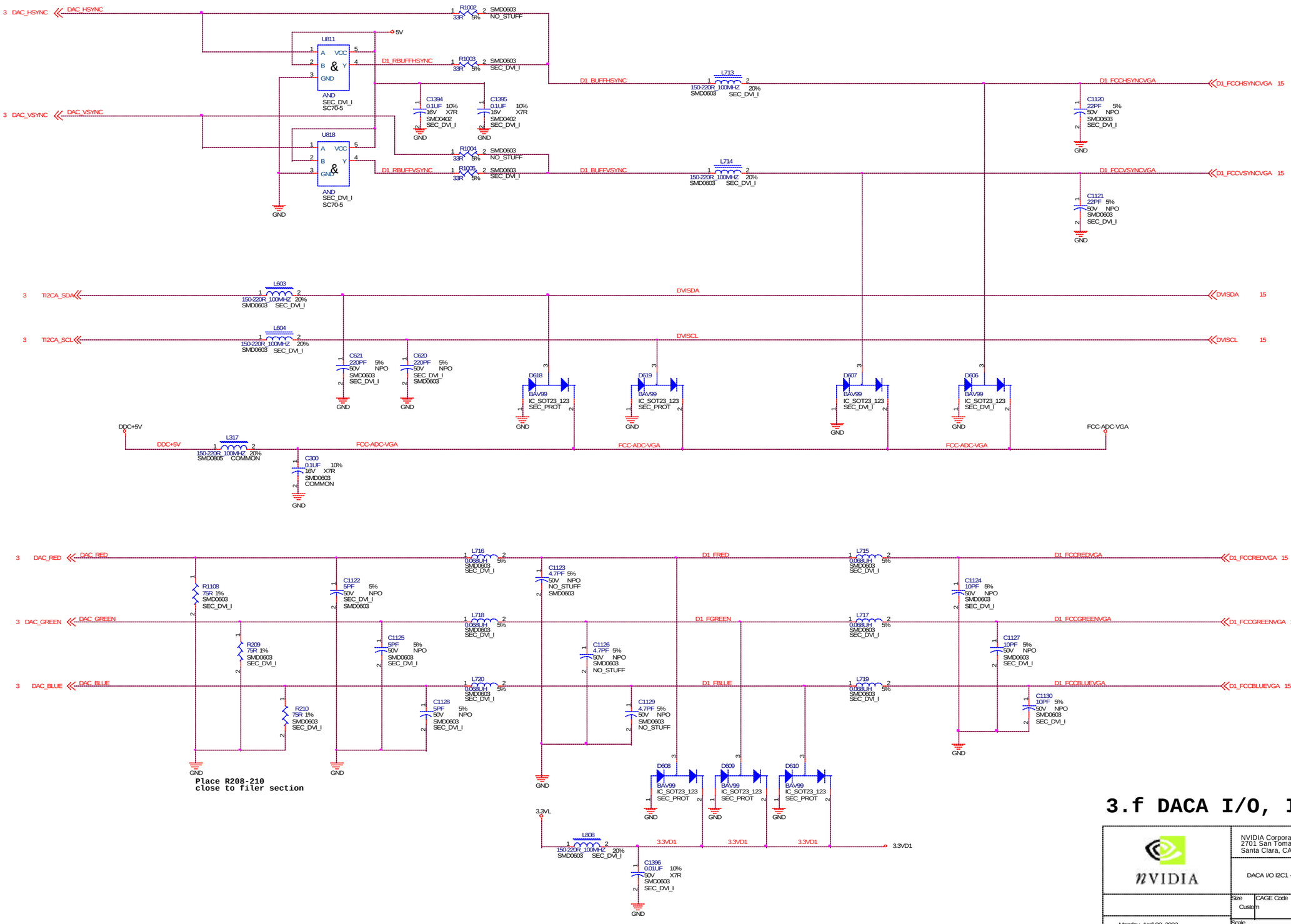

3.f DACA I/O, I2C1-- SEC

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DACA I/O I2C1 – Pri

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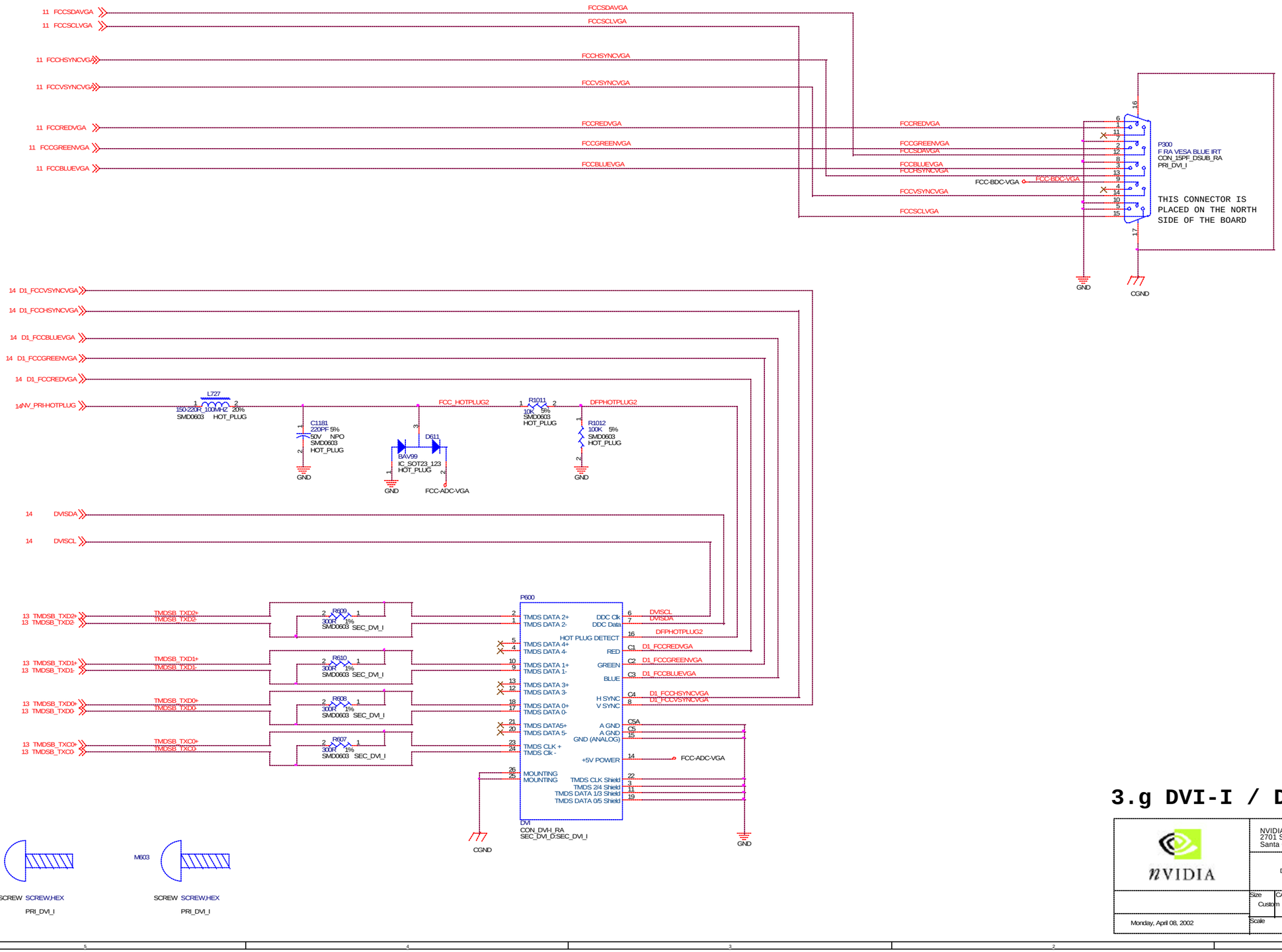

3.g DVI-I / DB15 Connectors

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DVOA / TMDSA DVI Connector

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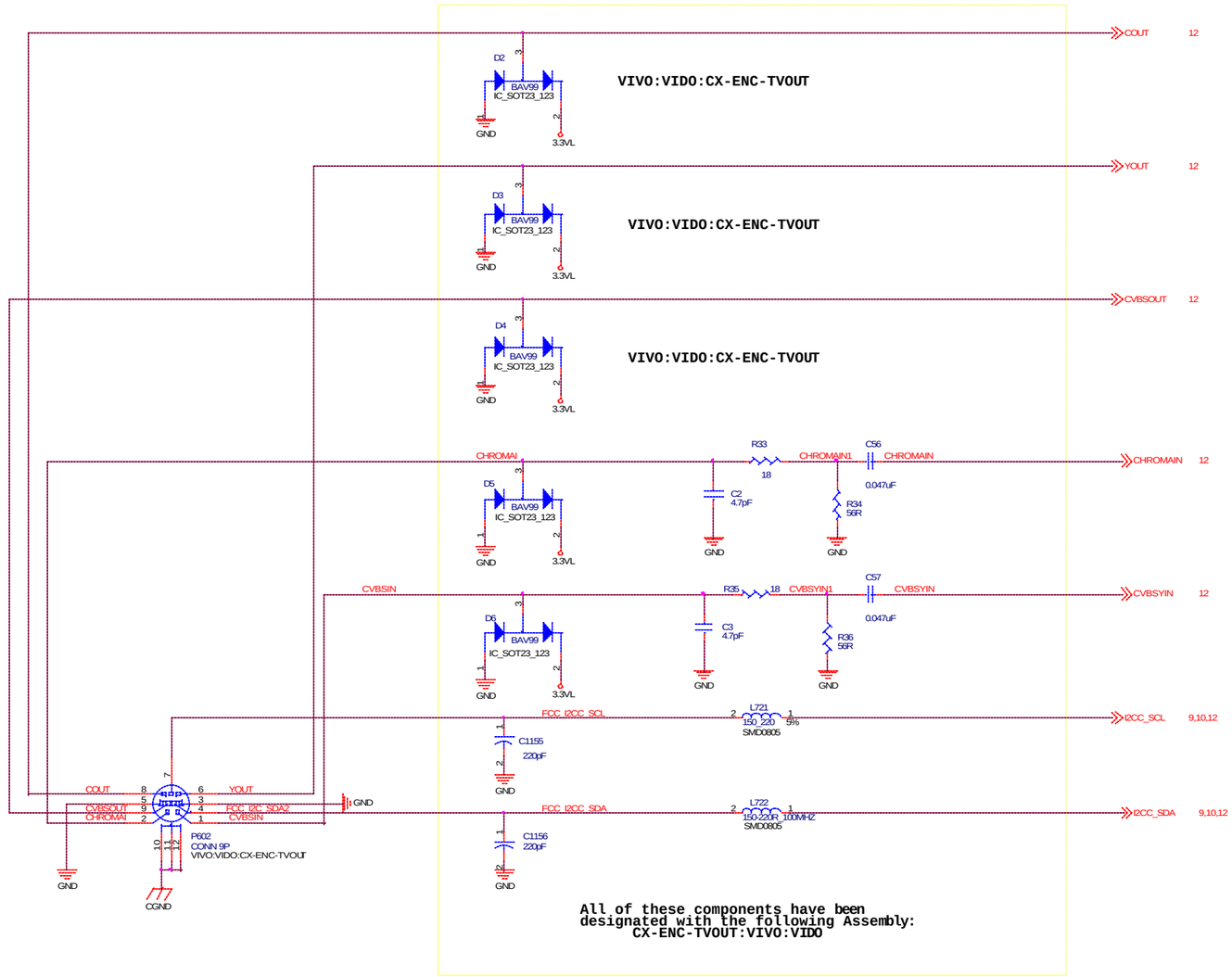

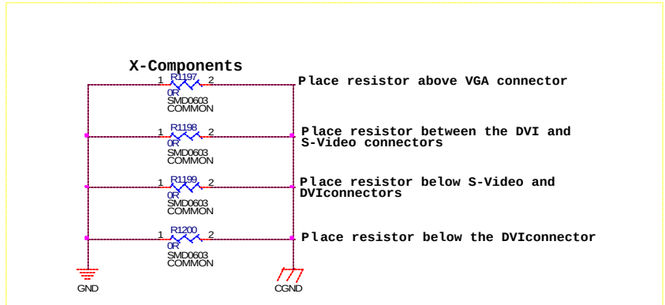

M300
BRACKET:BRACKET-VGA
BRACKET, DVI (3.10), MINI-DIN (2.030), VGA (1.08):BRACKET, DVI (3.100), VGA (1.081)
151-10000-0021-000:151-10000-0022-000
BRACKET:BRACKET-VGA

3.h Connector - S-Video-Vidcap.

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

DVOB / DACA ADC Connector

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Custom			
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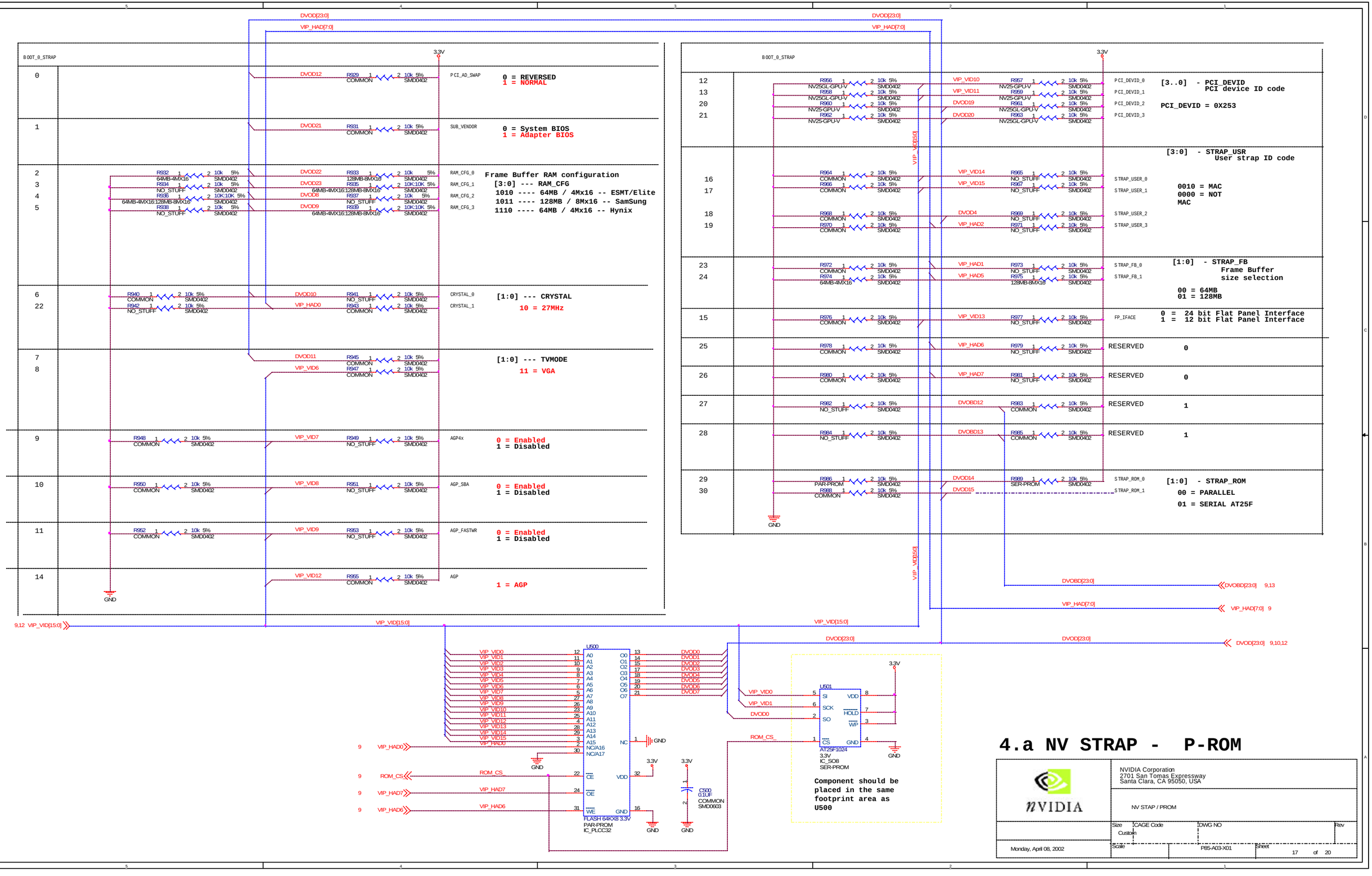
BOOT_0_STRAP
3.3V
DVOD[23:0]
VIP_HAD[7:0]
0
DVOD12
R929 COMMON
PCI_AD_SWAP
0 = REVERSED
1 = NORMAL
1
DVOD21
R931 COMMON
SUB_VENDOR
0 = System BIOS
1 = Adapter BIOS
2
3
4
5
R932 64MB-4MX16
R934 NO_STUFF
R936 64MB-4MX16:128MB-8MX16
R938 NO_STUFF
DVOD22
DVOD23
DVOD8
DVOD9
R933 128MB-8MX16
R935 64MB-4MX16:128MB-8MX16
R937 NO_STUFF
R939 64MB-4MX16:128MB-8MX16
RAM_CFG_0
RAM_CFG_1
RAM_CFG_2
RAM_CFG_3
Frame Buffer RAM configuration
[3:0] --- RAM_CFG
1010 ---- 64MB / 4Mx16 -- ESMT/Elite
1011 ---- 128MB / 8Mx16 -- SamSung
1110 ---- 64MB / 4Mx16 -- Hynix
6
22
R940 COMMON
R942 NO_STUFF
DVOD10
VIP_HAD0
R941 NO_STUFF
R943 COMMON
CRYSTAL_0
CRYSTAL_1
[1:0] --- CRYSTAL
10 = 27MHz
7
8
DVOD11
VIP_VID6
R945 COMMON
R947 COMMON
[1:0] --- TVMODE
11 = VGA
9
R948 COMMON
VIP_VID7
R949 NO_STUFF
AGP4x
0 = Enabled
1 = Disabled
10
R950 COMMON
VIP_VID8
R951 NO_STUFF
AGP_SBA
0 = Enabled
1 = Disabled
11
R952 COMMON
VIP_VID9
R953 NO_STUFF
AGP_FASTWR
0 = Enabled
1 = Disabled
14
VIP_VID12
R955 COMMON
AGP
1 = AGP
GND
BOOT_0_STRAP
3.3V
12
13
20
21
R956 NV25GL-GPU-V
R958 NV25GL-GPU-V
R960 NV25-GPU-V
R962 NV25-GPU-V
VIP_VID10
VIP_VID11
DVOD19
DVOD20
R957 NV25-GPU-V
R959 NV25-GPU-V
R961 NV25GL-GPU-V
R963 NV25GL-GPU-V
PCI_DEVID_0
PCI_DEVID_1
PCI_DEVID_2
PCI_DEVID_3
[3..0] - PCI_DEVID
PCI device ID code
PCI_DEVID = 0X253
VIP_VID[15:0]
16
17
18
19
R964 COMMON
R966 COMMON
R968 COMMON
R970 COMMON
VIP_VID14
VIP_VID15
DVOD4
VIP_HAD2
R965 NO_STUFF
R967 NO_STUFF
R969 NO_STUFF
R971 NO_STUFF
STRAP_USER_0
STRAP_USER_1
STRAP_USER_2
STRAP_USER_3
[3:0] - STRAP_USR
User strap ID code
0010 = MAC
0000 = NOT MAC
23
24
R972 COMMON
R974 64MB-4MX16
VIP_HAD1
VIP_HAD5
R973 NO_STUFF
R975 128MB-8MX16
STRAP_FB_0
STRAP_FB_1
[1:0] - STRAP_FB
Frame Buffer size selection
00 = 64MB
01 = 128MB
15
R976 COMMON
VIP_VID13
R977 NO_STUFF
FP_IFACE
0 = 24 bit Flat Panel Interface
1 = 12 bit Flat Panel Interface
25
R978 COMMON
VIP_HAD6
R979 NO_STUFF
RESERVED
0
26
R980 COMMON
VIP_HAD7
R981 NO_STUFF
RESERVED
0
27
R982 NO_STUFF
DVOBD12
R983 COMMON
RESERVED
1
28
R984 NO_STUFF
DVOBD13
R985 COMMON
RESERVED
1
29
30
R986 PAR-PROM
R988 COMMON
DVOD14
DVOD15
R989 SER-PROM
STRAP_ROM_0
STRAP_ROM_1
[1:0] - STRAP_ROM
00 = PARALLEL
01 = SERIAL AT25F
GND
VIP_VID[15:0]
DVOBD[23:0]
DVOBD[23:0] 9,13
VIP_HAD[7:0]
VIP_HAD[7:0] 9
DVOD[23:0]
DVOD[23:0] 9,10,12
9,12 VIP_VID[15:0]
VIP_VID[15:0]
DVOD[23:0]
U500
VIP_VID0
VIP_VID1
VIP_VID2
VIP_VID3
VIP_VID4
VIP_VID5
VIP_VID6
VIP_VID7
VIP_VID8
VIP_VID9
VIP_VID10
VIP_VID11
VIP_VID12
VIP_VID13
VIP_VID14
VIP_VID15
VIP_HAD0
A0
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
A13
A14
A15
NC/A16
NC/A17
O0
O1
O2
O3
O4
O5
O6
O7
DVOD0
DVOD1
DVOD2
DVOD3
DVOD4
DVOD5
DVOD6
DVOD7
NC
GND
VDD
CE
OE
WE
FLASH (64Kx8 3.3V
PAR-PROM
IC_PLCC32
C500
0.1UF
COMMON
SMD0603
9 VIP_HAD0
9 ROM_CS
9 VIP_HAD7
9 VIP_HAD6
ROM_CS
ROM_CS_
U501
SI
SCK
SO
CS
VDD
HOLD
WP
GND
AT25F1024
3.3V
IC_SO8
SER-PROM
VIP_VID0
VIP_VID1
DVOD0
Component should be placed in the same footprint area as U500
4.a NV STRAP - P-ROM
NVIDIA Corporation
2701 San Tomas Expressway
Santa Clara, CA 95050, USA
NV STAP / PROM
Size
Custom
CAGE Code
DWG NO
P85-A03-X01
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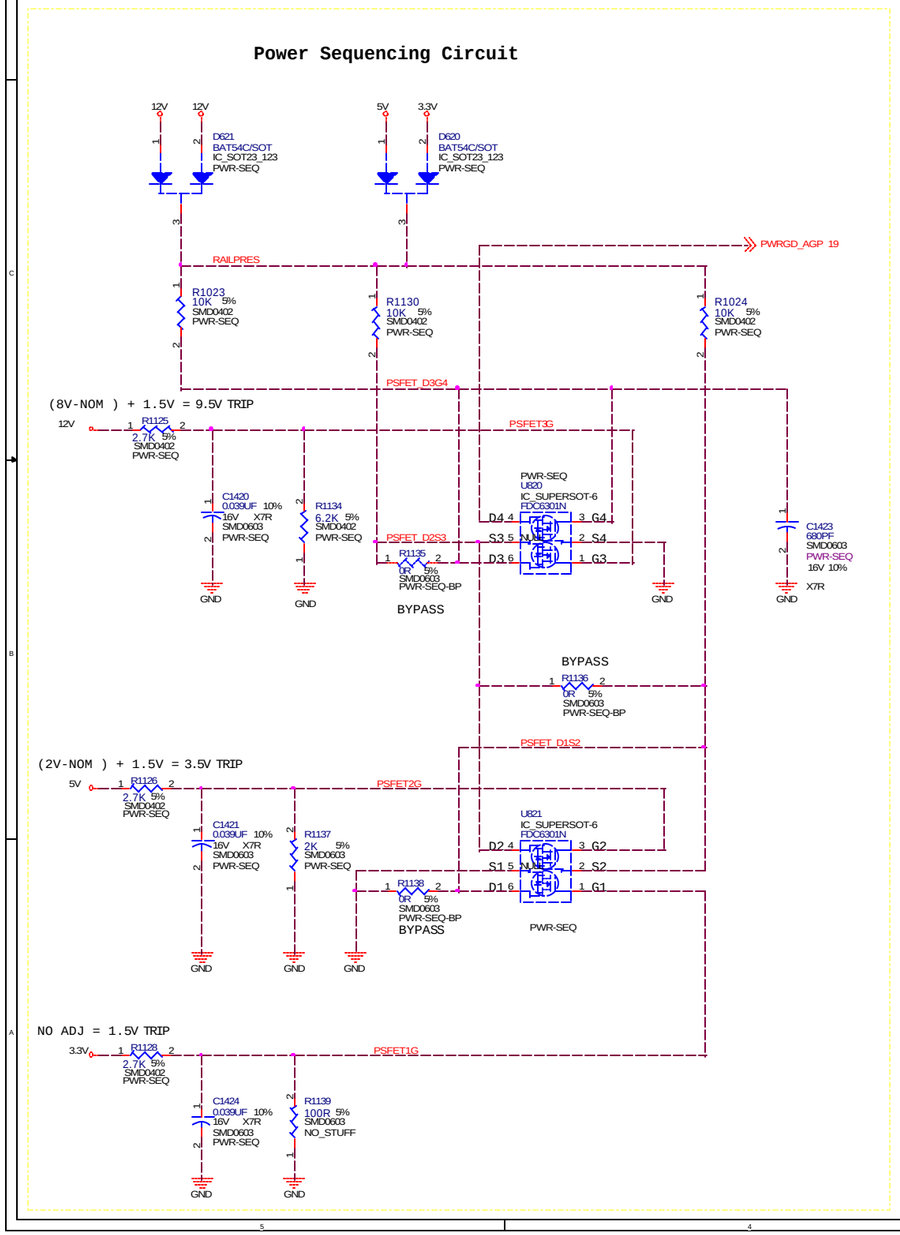

20 FBPWR_GD

R1140 2 1 0R SMD0603 NO_STUFF

19,20 GPUPWR_GD

R1141 2 1 0R SMD0603 NO_STUFF

EN33VL

5V

U823
3 IN OUT 8
1 EN OUT 7
4 NC OUT 6
2 GND OUT 5
SC1541-3.3V
IC_SO8
SC1541

3.3VL

GND

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

5V

C1407
4.7UF 10%
10V X7R
SMD1206
COMMON

GND

EN33VL

5V

R1173 2
0R
SMD0603
COMMON

U819
8 GND EN 1
7 GND Vin 2
6 GND Vo 3
5 GND ADJ 4
IC REG ADJ LINEAR SC1565
SC1565
IC_SO8

GND

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

Alternate for SC1541 if adjustable 3.3 supply is required
Semtech SC1565 SO8
3.3V@500mA
Drop Out 225mV Typ.

Regulated 3.3V

3.3VL

C1408
4.7UF 20%
6.3V X5R
SMD0805
COMMON

C1409
0.1UF 10%
16V X7R
SMD0603
COMMON

C1410
0.039UF 10%
16V X7R
SMD0603
COMMON

C1411
220PF 10%
16V X7R
SMD0603
COMMON

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

C1406
330UF 20%
6.3V ALE
150mA0.76Ohm
NO_STUFF

GND

Can be placed on same location.
Alternative stuffing

Rout

R1121
200R 1%
SMD0603
SC1565

LN-FBADJ

Vout=1.2*(1 + (Rout/Rgnd))

Rgnd

R1122
110R 1%
SMD0603
SC1565

GND

5.a Power Sequence / 3.3VL Pwr.

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

Pwr Sequence / 3.3VL Supply

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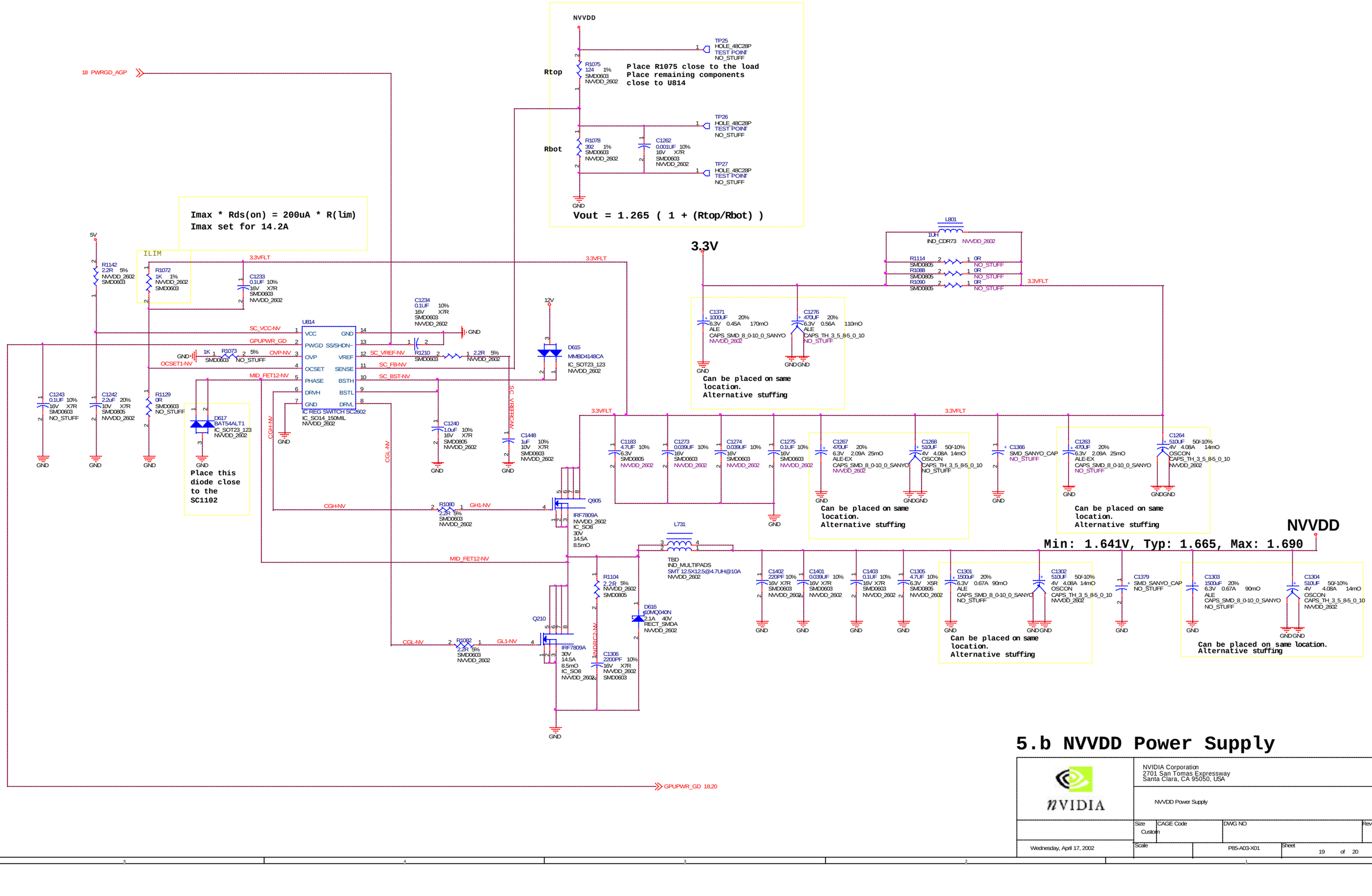

5.b NVVDD Power Supply

NVIDIA	NVIDIA Corporation 2701 San Tomas Expressway Santa Clara, CA 95050, USA
	NVVDD Power Supply
Wednesday, April 17, 2002	Size: Custom; CAGE Code; DWG NO: P85-A03-X01; Rev; Scale; Sheet: 19 of 20

FBVDD

VADJ

Rtop

R2075 210R 1% SMD0603 FBVDD_ADJ

TP35 HOLE_49C28P TEST POINT NO_STUFF

Place R2075 close to the load
Place remaining components close to U813

Rbot

R2078 133R 1% SMD0603 FBVDD_ADJ

C2262 0.001UF 10% X7R 16V SMD0603

TP36 HOLE_48C28P TEST POINT NO_STUFF

TP37 HOLE_48C28P TEST POINT NO_STUFF

GND

Vout = 1.265 (1 + (Rtop/Rbot))

HYNIX-4 196R/124R => 3.192 to 3.339V

ELITE-3.8?? 210R/133R => 3.189 to 3.336V

18,19 GPUPWR_GD

5V

12V

R2118 10K SMD0603 FBVDD_2602 5%

R2142 2.2R 5% FBVDD_2602 SMD0603

SC_FB-FB

FBPWR_GD

FBPWR_GD 18

Imax * Rds(on) = 200uA * R(lim)

ILIM

R2072 1K 1% FBVDD_2602 SMD0603

C2233 0.1UF FBVDD_2602 SMD0603 10% 16V X7R

U813

SC_VCC-FB

FBPWR_GD

OVP-FB

OCSET1-FB

MID_FET12-FB

CGH-FB

CGL-FB

SC_VREF-FB

SC_FB-FB

SC_BST-FB

CGL-FB

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

IC REG SWITCH SC2602 IC_SC14_150MIL FBVDD_2602

R2073 1K 5% SMD0603 NO_STUFF

R2210 2.2R 5% SMD0603 FBVDD_2602

C2243 0.1UF 10% 16V X7R SMD0603 NO_STUFF

C2242 1UF 80/-20% 16V Y5V SMD0805 FBVDD_2602

R2129 0R NO_STUFF SMD0603

D657 BAT54ALT1 FBVDD_2602 IC_SOT23_123

PLADE THIS DIODE CLOSE TO SC1102

C2240 1.0UF 10% 16V X7R SMD0805 FBVDD_2602

C2448 1UF 10% 10V X7R SMD0603 FBVDD_2602

C2234 0.1UF 10% 16V X7R SMD0603 FBVDD_2602

SC_VREF-FB

Place these caps near the FET

12V

C2300 1.0UF 20% 16V X7R SMD0805 FBVDD_2602

C2290 0.039UF 10% 16V X7R SMD0603 FBVDD_2602

C2291 0.01UF 10% 16V X7R SMD0603 FBVDD_2602

C2292 0.1UF 10% 16V X7R SMD0603 FBVDD_2602

D655 MMBD4148CA IC_SOT23_123 FBVDD_2602

C2267 82uF 20% 16V 45mA 170mO ALE-EX FBVDD_2602 CAPS_SMD_8_0-10_0_SANYO

CGH-FB

GH1-FB

R2080 2.2R 5% SMD0603 FBVDD_2602

Q904 IRF7809A FBVDD_2602 IC_SO8 30V 14.5A 8.5mO

C2273 1.0uF 10% 16V SMD0805 FBVDD_2602

Vout = 2.495 (1 + (Rtop/Rbot))
1K/24.9K => 2.54 to 2.65V

FBVDD

L732 SMT 12.5X12.5@4.7UH@10A TBD IND_MULTIPADS FBVDD_2602

MID_FET12-FB

R2104 2.2R 5% FBVDD_2602 SMD0603

Q209 IRF7809A FBVDD_2602 IC_SO8 30V 14.5A 8.5mO

INDRC2RF2

C2306 2200PF 10% 16V X7R SMD0603 FBVDD_2602

D656 2.1A 40V 10MQ040N RECT_SMDA FBVDD_2602

R2082 2.2R 5% FBVDD_2602 SMD0603

GL1-FB

C2402 220PF 10% 16V X7R SMD0603 FBVDD_2602

C2401 0.039UF 10% 16V X7R SMD0603 FBVDD_2602

C2403 0.1UF 10% 16V X7R SMD0603 FBVDD_2602

C2305 4.7UF 10% 6.3V X5R SMD0805 FBVDD_2602

C2301 1500uF 20% 6.3V 0.67A 90mO ALE CAPS_SMD_8_0-10_0_SANYO FBVDD_2602

C2303 1500uF 20% 6.3V 0.67A 90mO ALE CAPS_SMD_8_0-10_0_SANYO FBVDD_2602

5V

PLACE AT BOTTOM

Q800 MTD3055V FBVDD_2602 SOT223_DPAK

C2302 1000uF 20% ALE 6.3V 0.45A 170mO CAP_ALE_SMD_8_0 COMMON

FBVDDQ

12V

R2211 680R 5% SMD1210

TL_G

FBVDD_2602

C1374 220PF 10% 16V SMD0603 X7R FBVDD_2602

U815

ANODE CATHODE ANODE ANODE NC NC ADJ

TL431CDR SO8 ADJ FBVDD_2602 IC_SO8

FB_ADJ

R1102 1K 1% FBVDDQ_ADJ SMD0603

R1103 24.9K 1% SMD0603 FBVDDQ_ADJ

C2264 0.1UF 10% 16V X7R SMD0603 NO_STUFF

C2268 0.1UF 10% 16V X7R SMD0603 NO_STUFF

TP38 HOLE_48C28P TEST POINT NO_STUFF

TP39 HOLE_48C28P TEST POINT NO_STUFF

TP40 HOLE_48C28P TEST POINT NO_STUFF

C2304 470UF 20% 6.3V 2.09A 25mO ALE CAPS_SMD_8_0-10_0_SANYO FBVDDQ_2602

3.3V FBVDD FBVDDQ

R2094 0R 0.050 MAX AGP3VFBVDQ

R2095 0R 0.050 MAX AGP3VFBVDQ

R2096 0R 0.050 MAX AGP3VFBVDQ

R2097 0R 0.050 MAX AGP3VFBVDQ

AGP3.3V sources FBVDD

R2090 0R 0.050 MAX FBVDDFBVDQ

R2091 0R 0.050 MAX FBVDDFBVDQ

R2092 0R 0.050 MAX FBVDDFBVDQ

R2093 0R 0.050 MAX FBVDDFBVDQ

FBVDDQ sources FBVDD

FBVDD

C1417 330UF 20% 6.3V ALE 150mA 0.76Ohm CAP_ALE_SMD_6_3 COMMON

C1418 330UF 20% 6.3V ALE 150mA0.76Ohm NO_STUFF

Should be place between U407 and U405

5.c FRAME BUFFER POWER SUPPLY

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

FBVDD Power Supply

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