PG611 C00

12GB GDDR5X, 384b, 256Mx32

TALL DVI-D + DP + DP + HDMI/DP + DP

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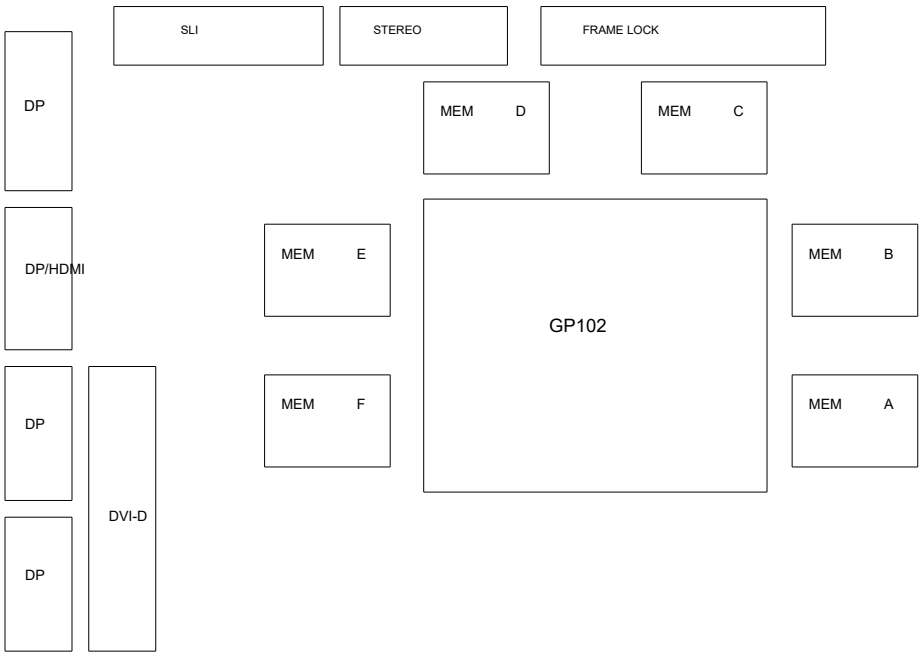
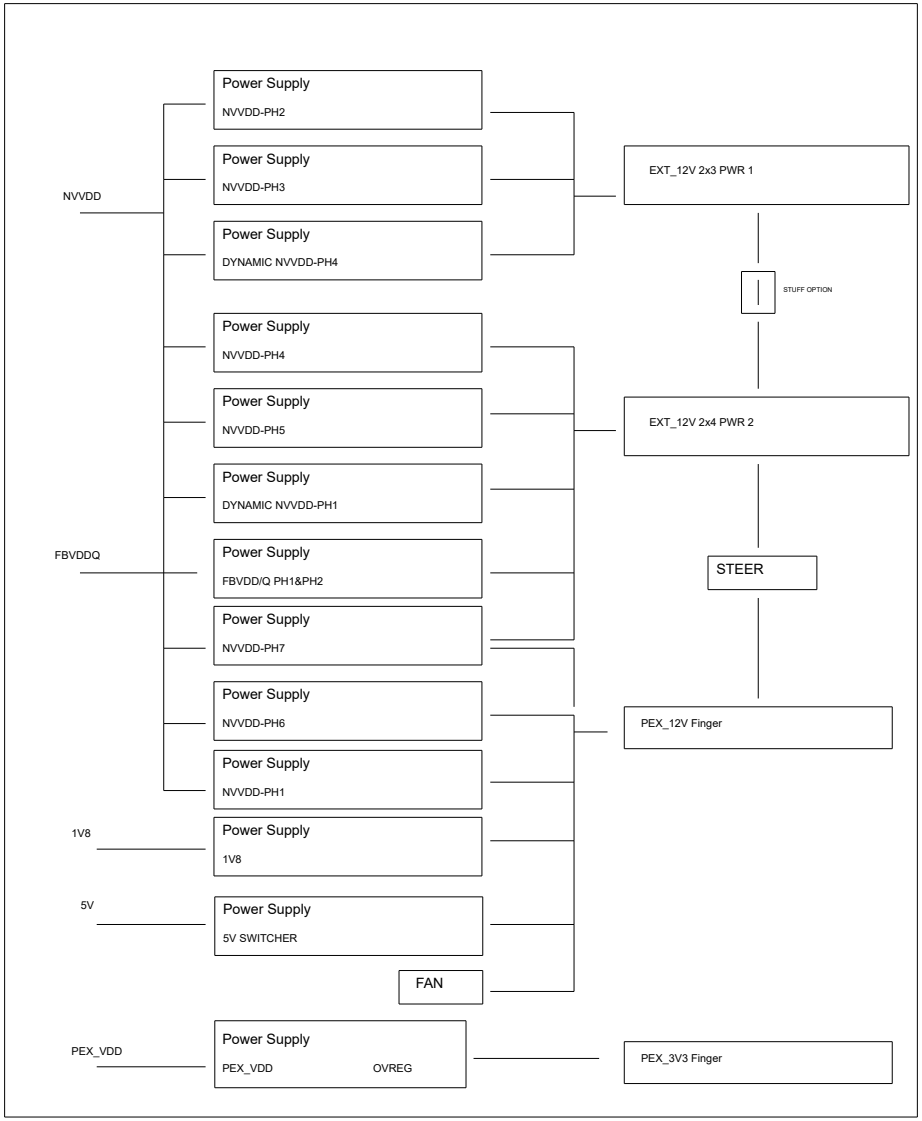
Page2: Block Diagram





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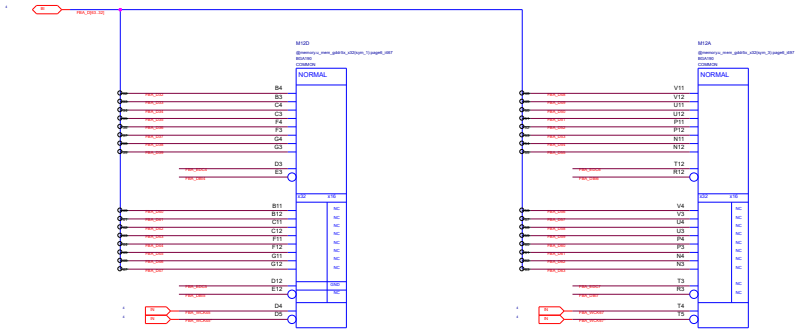

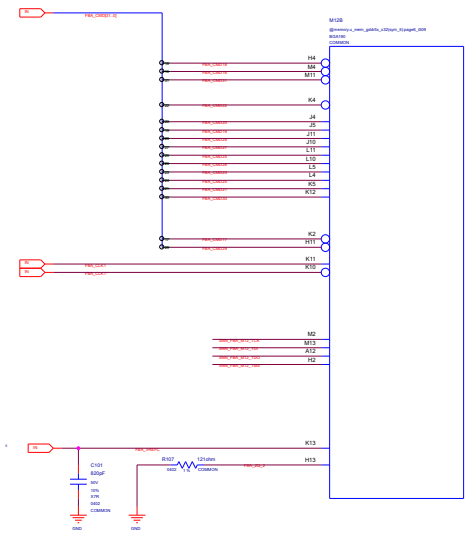

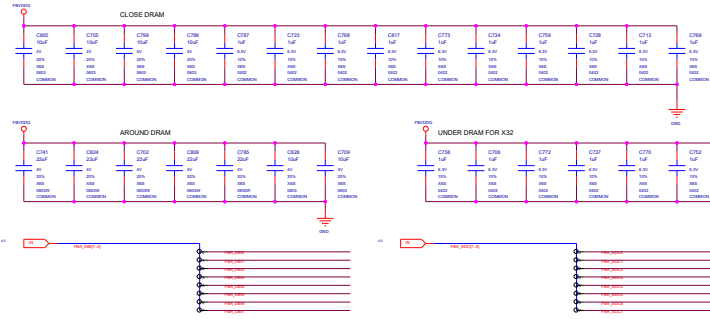

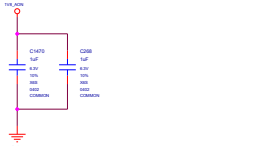

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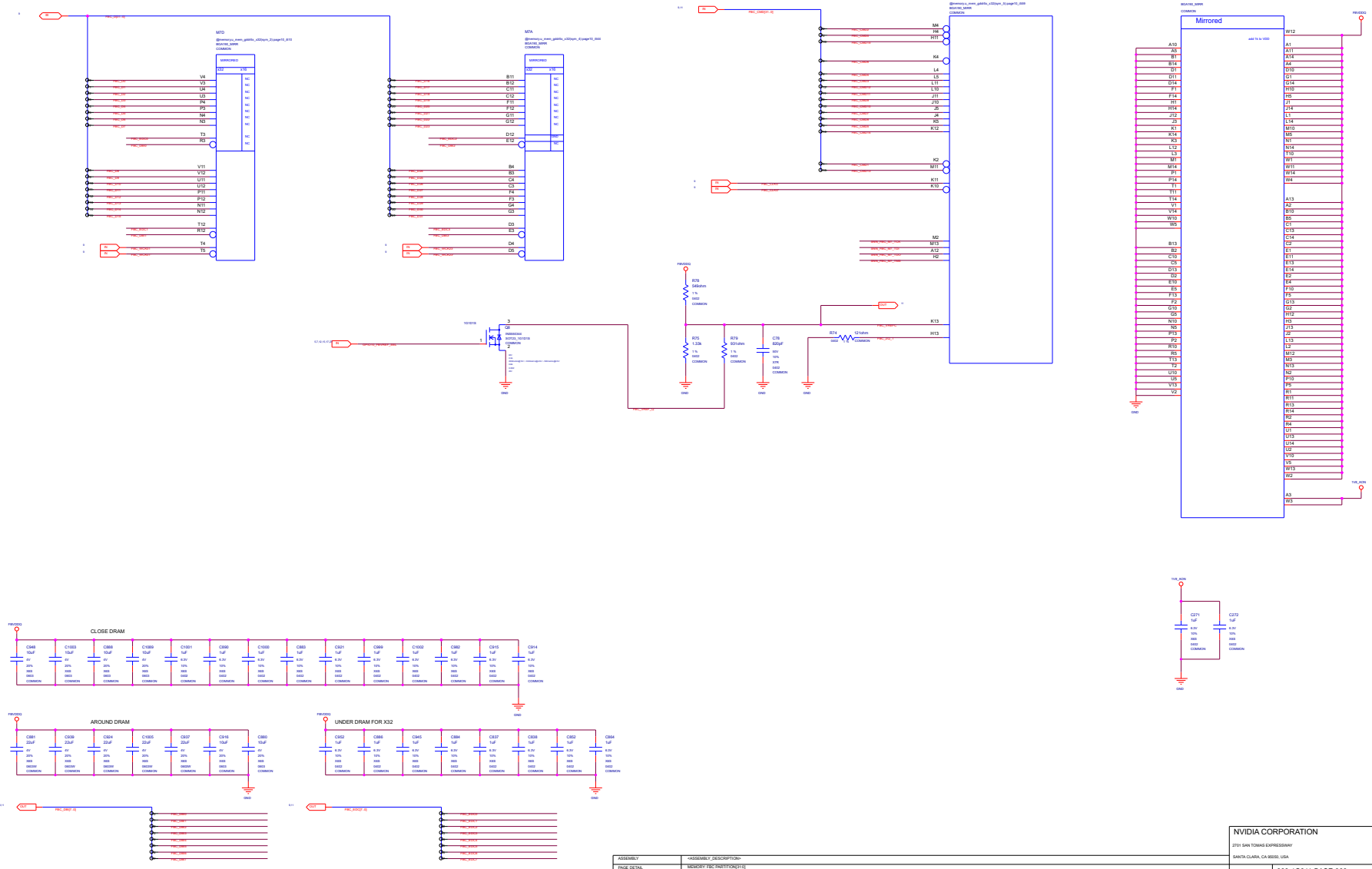

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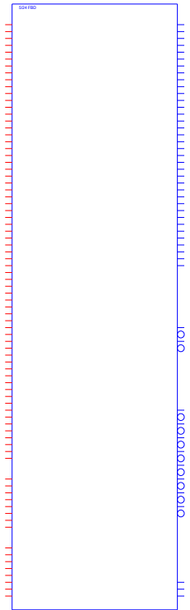

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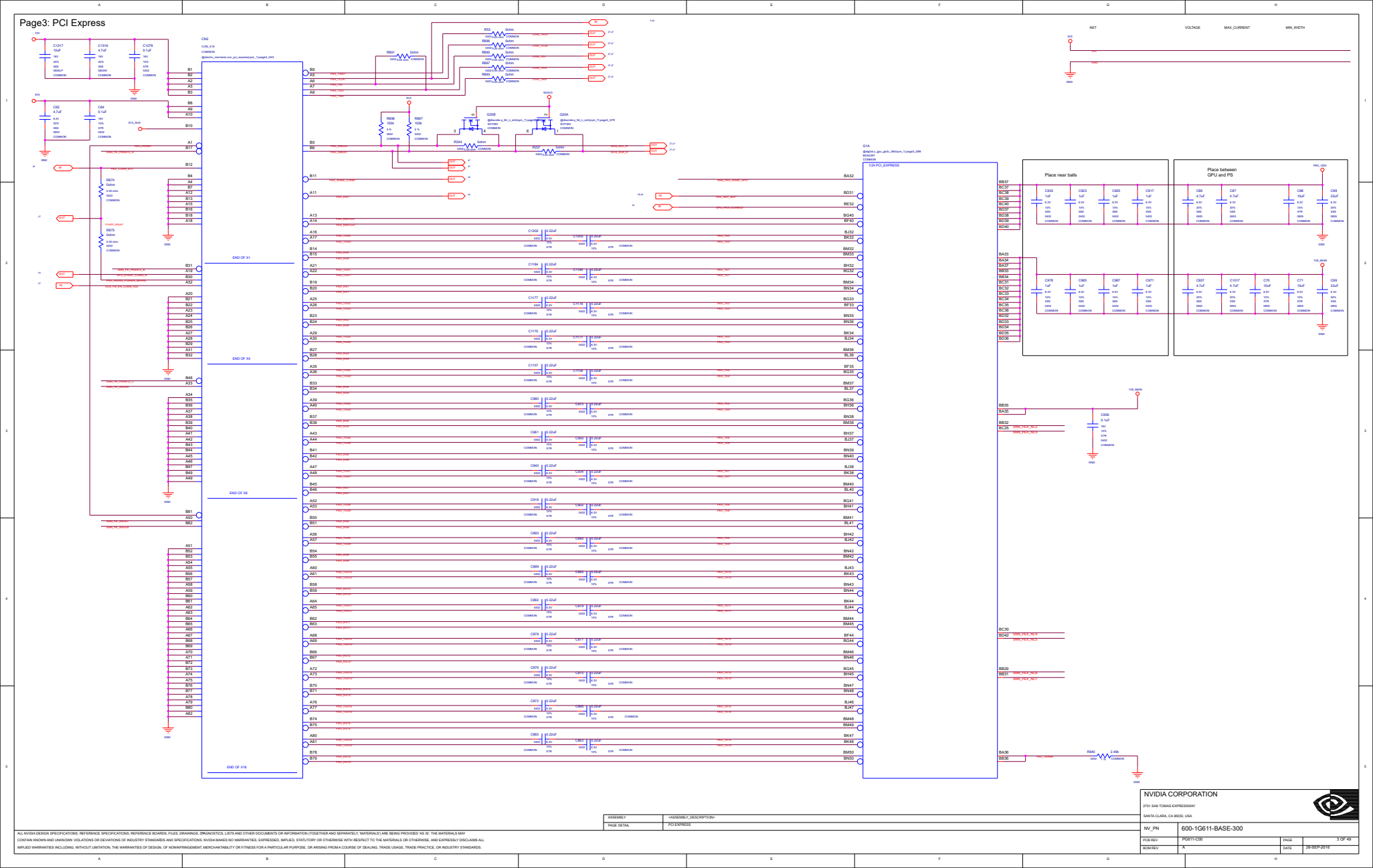

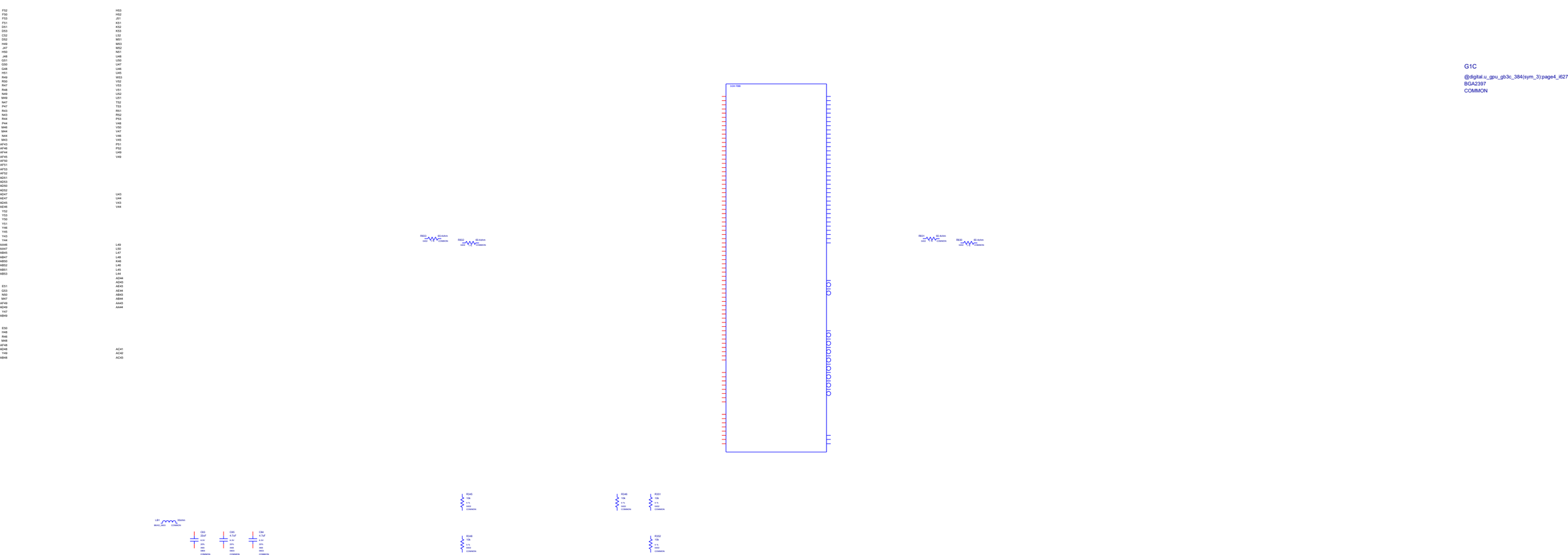
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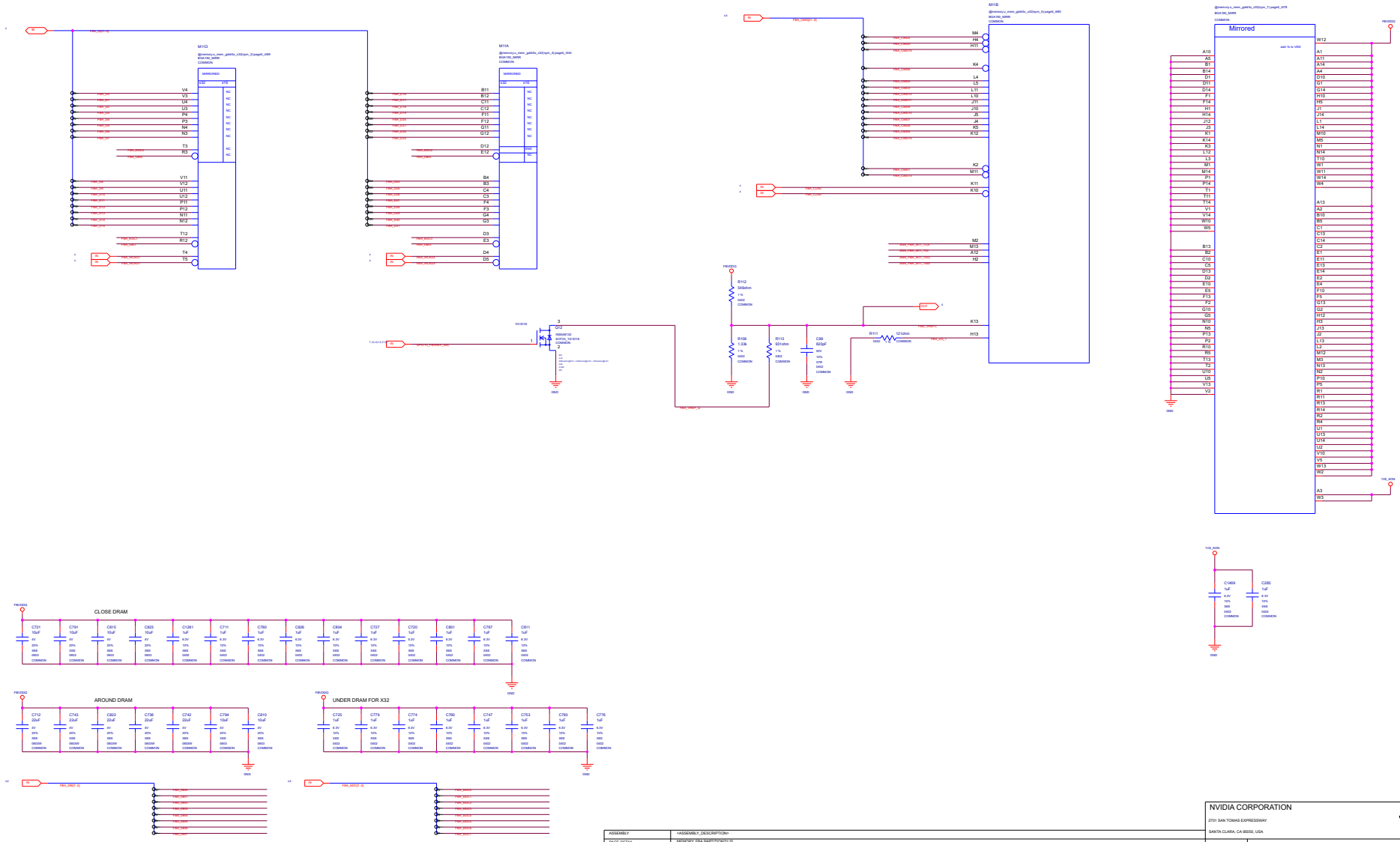
Page5: MEMORY: FBA Partition 31..0



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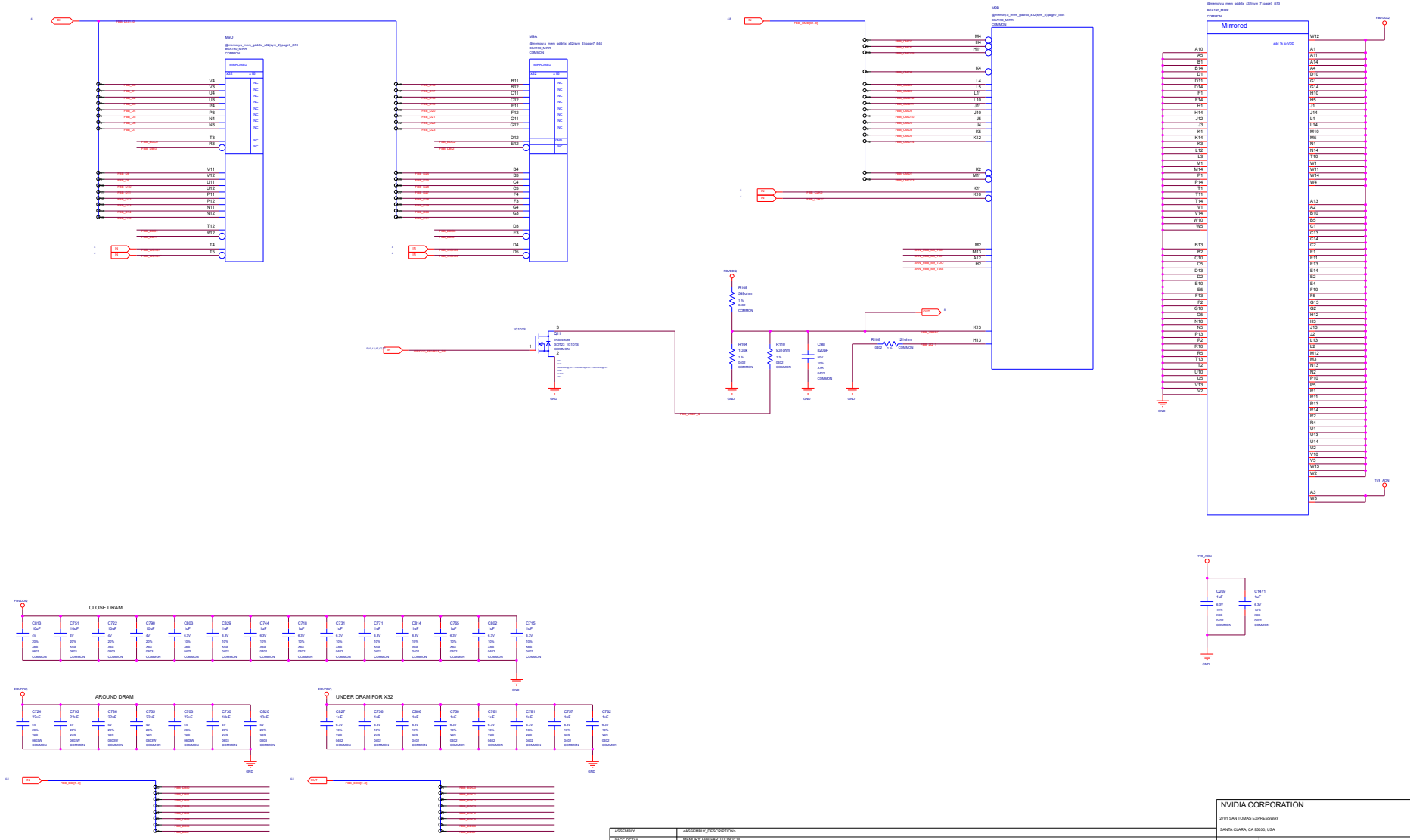

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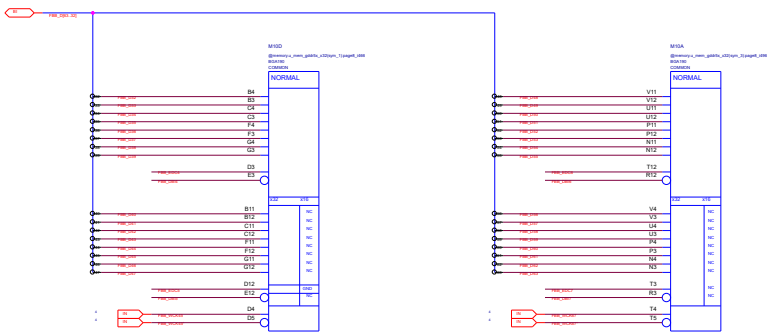

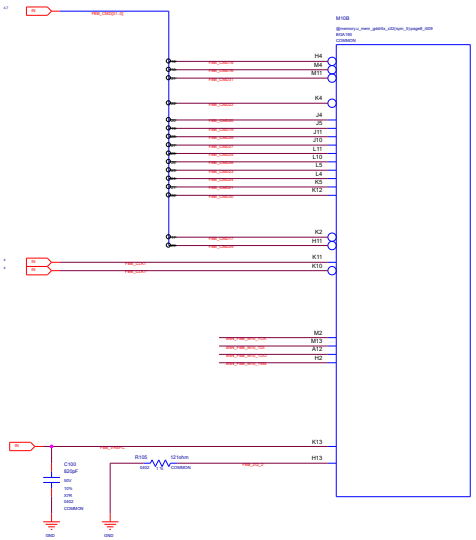

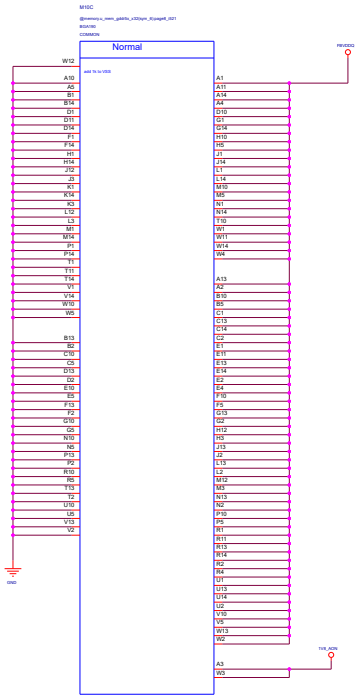

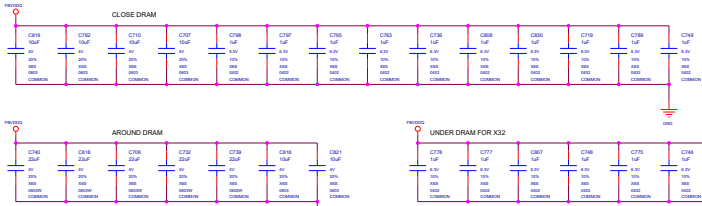

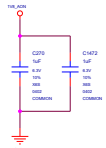

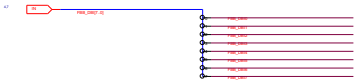

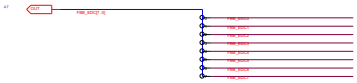

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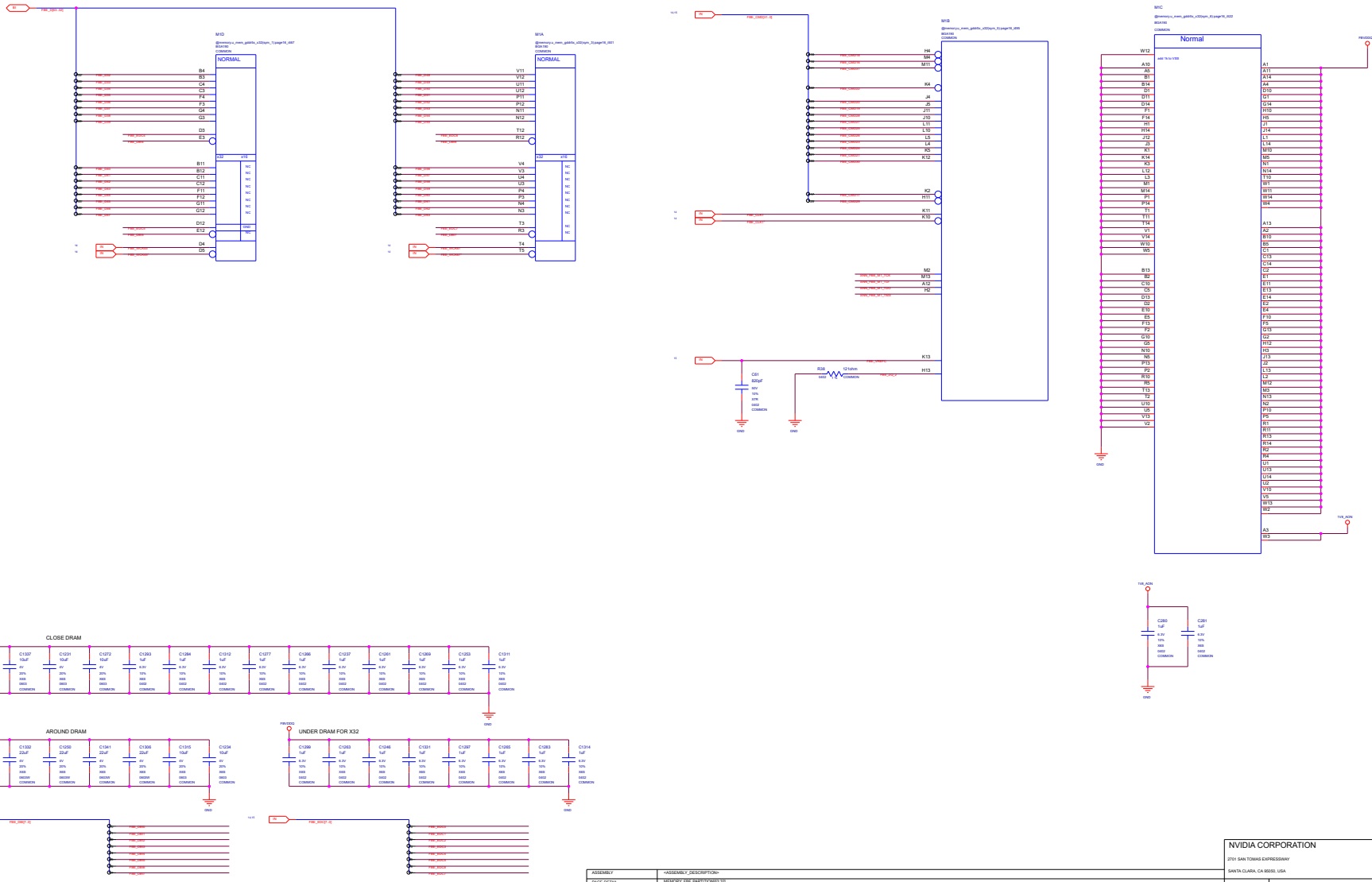

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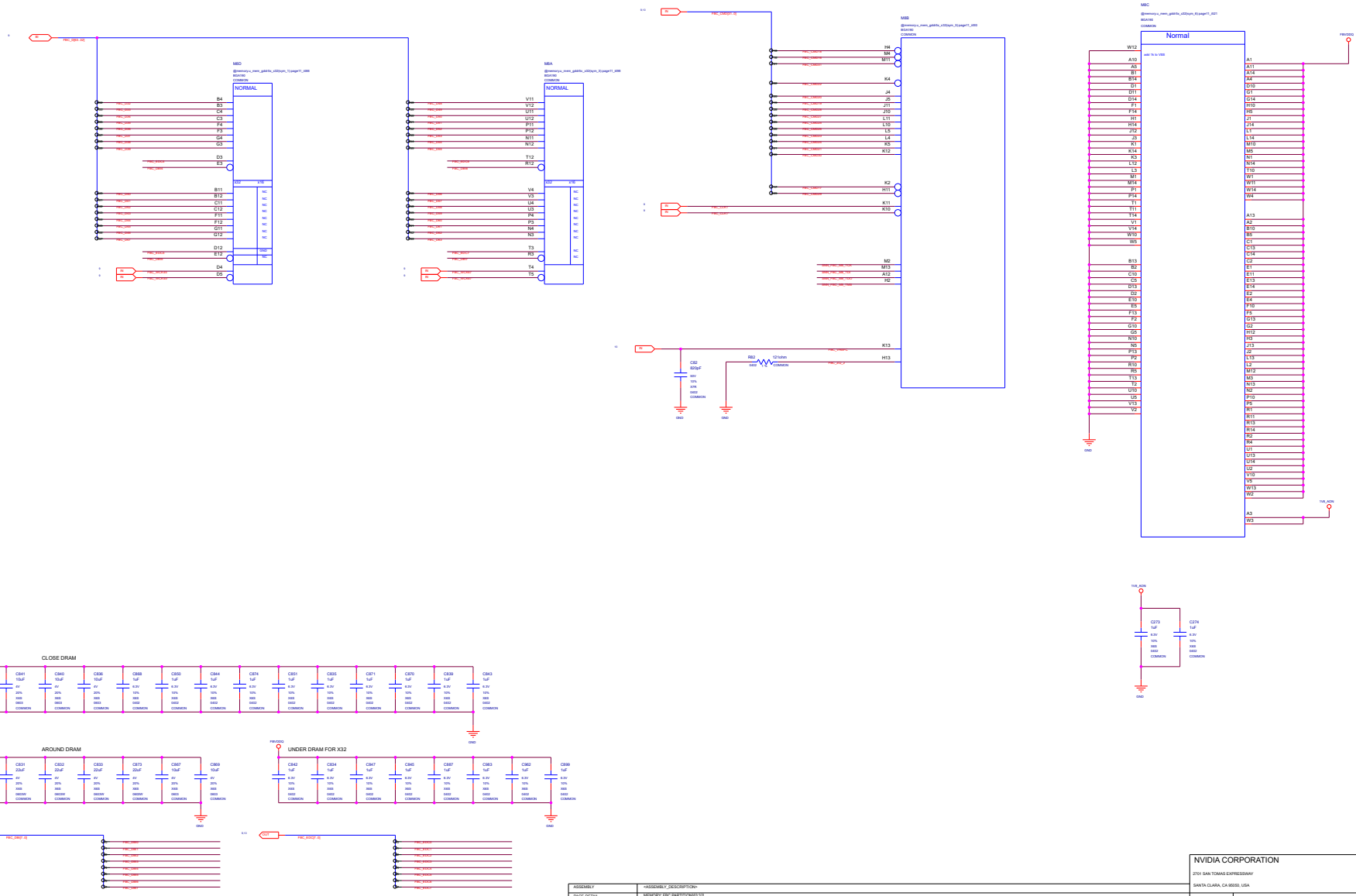
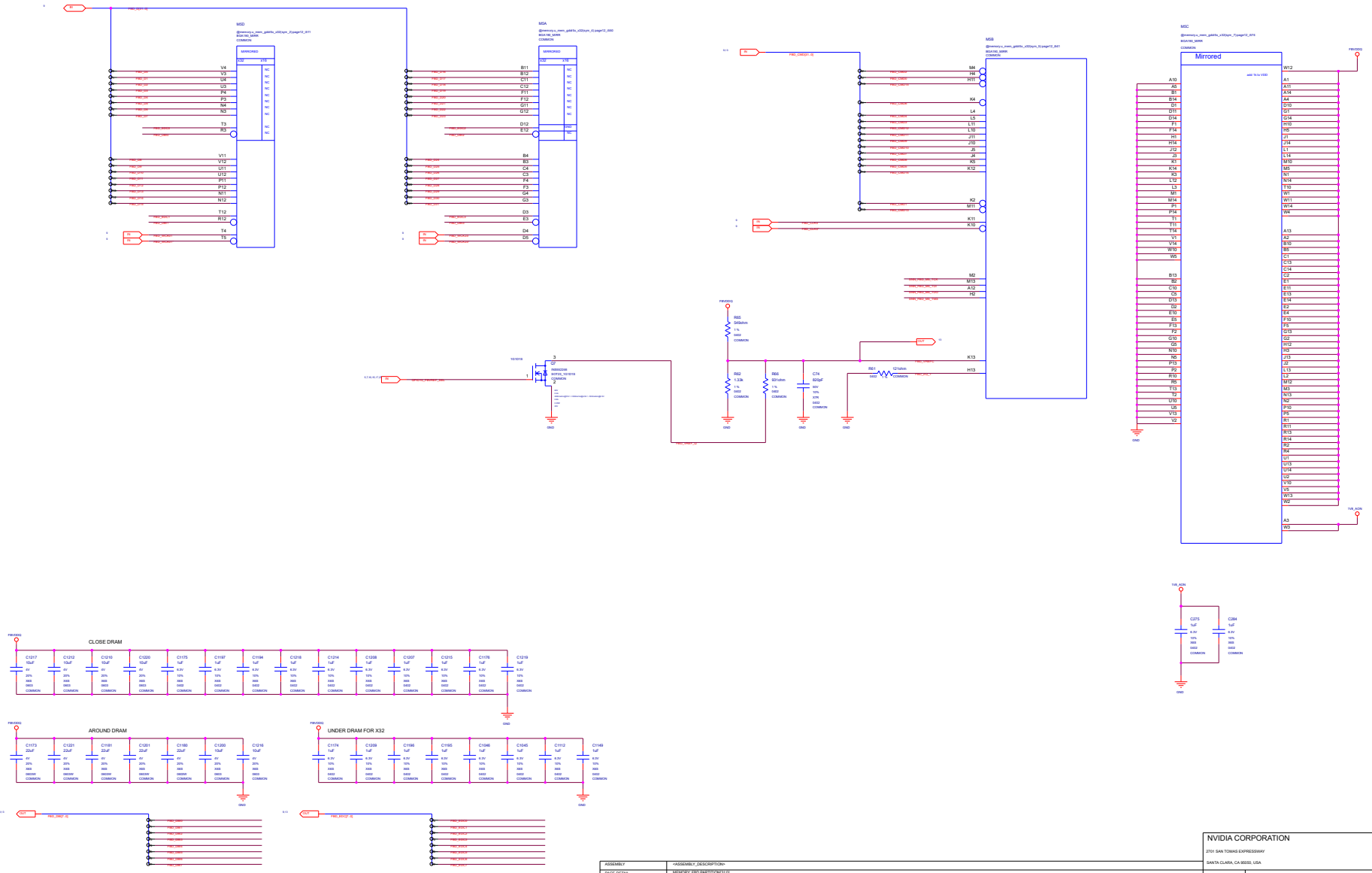


Page12: MEMORY: FBD Partition 31..0



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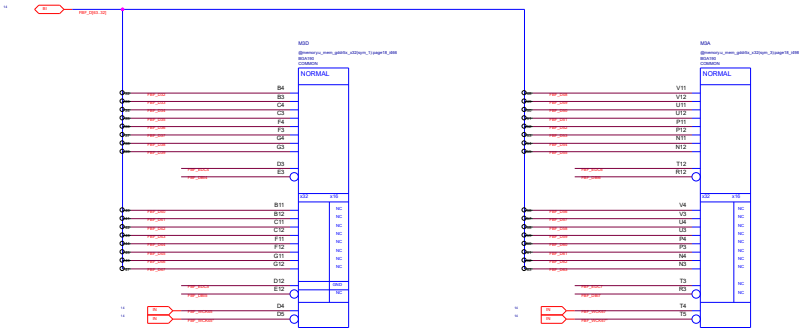

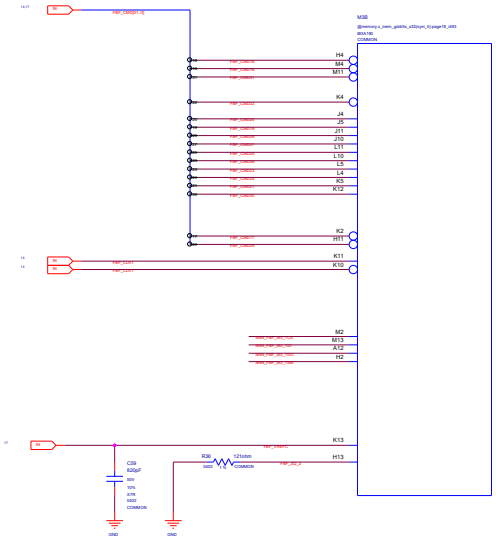

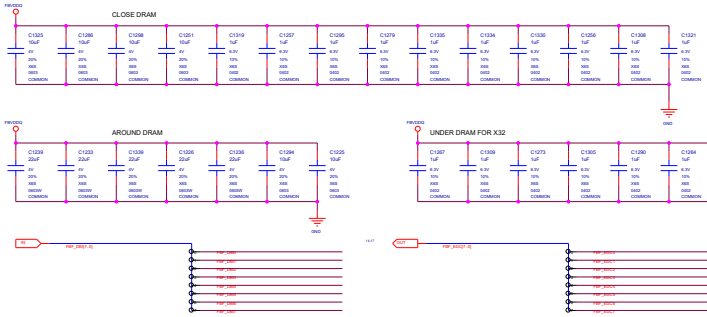

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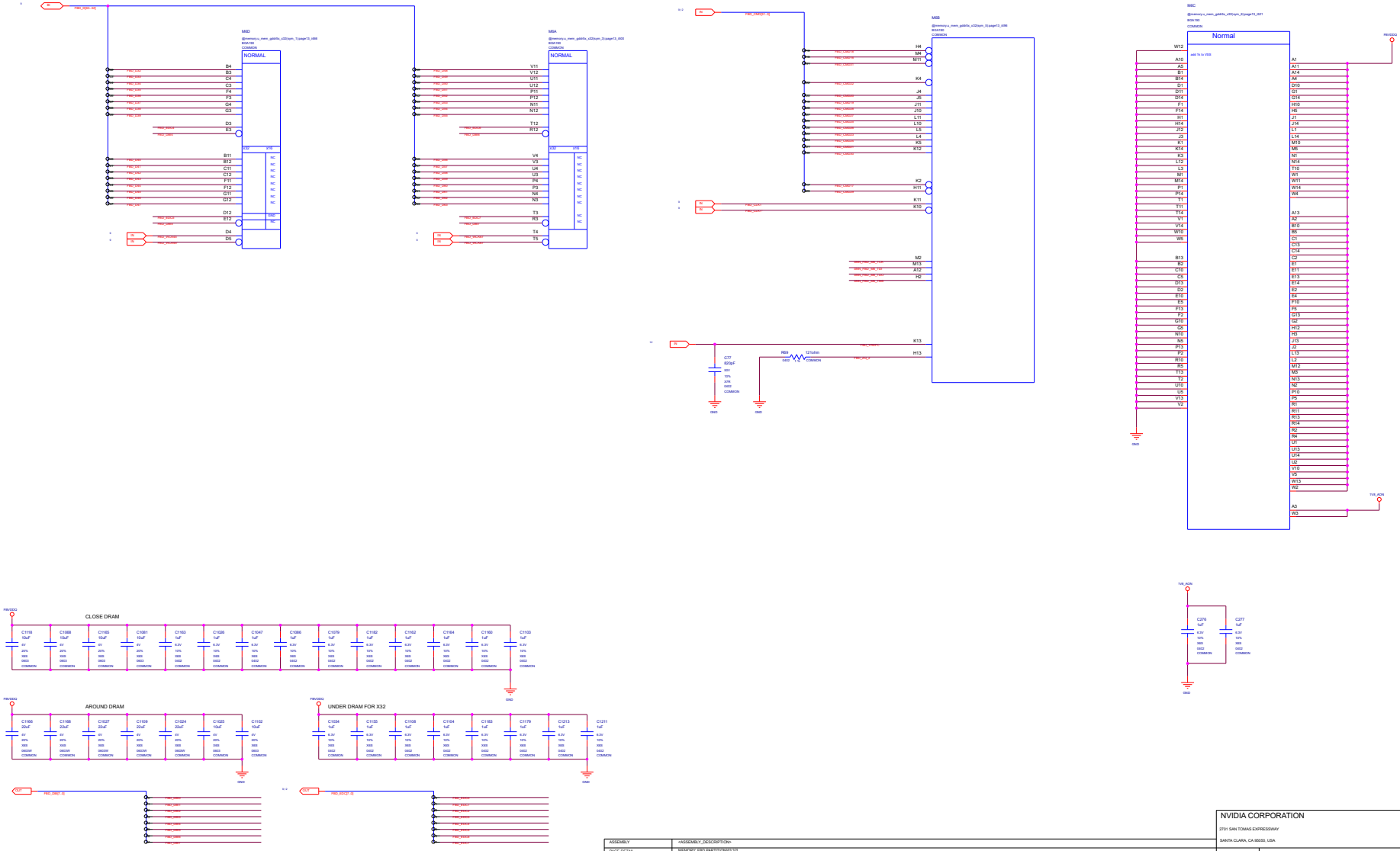

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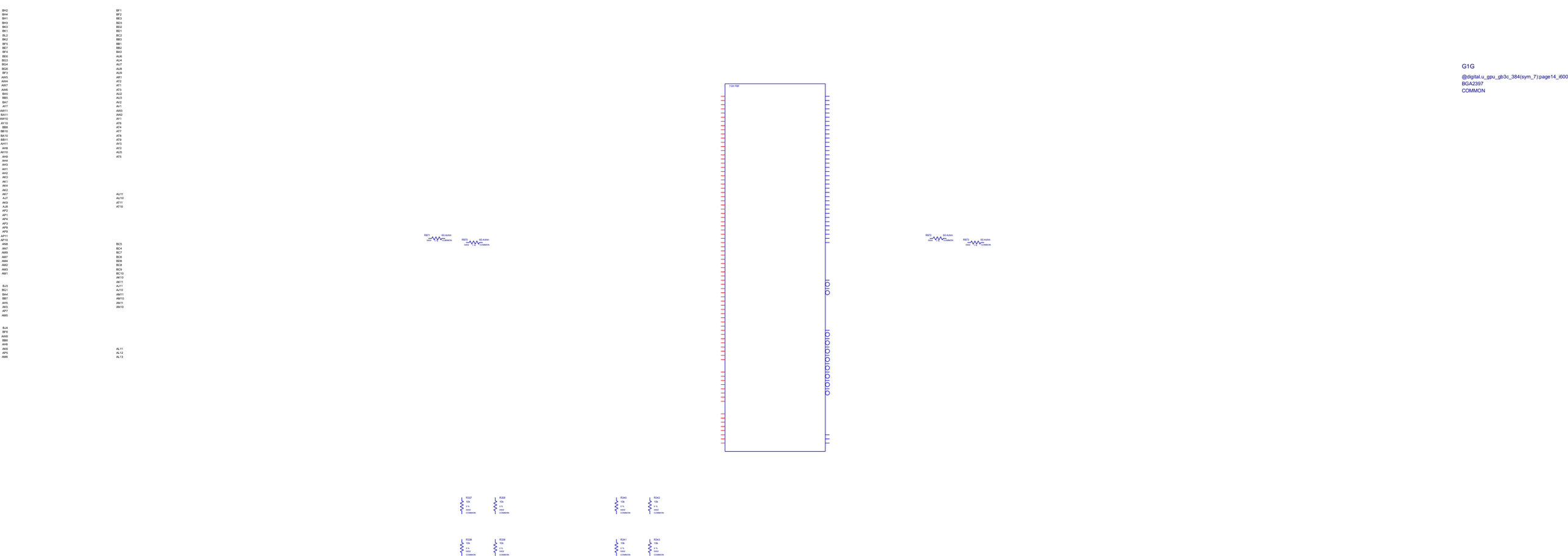
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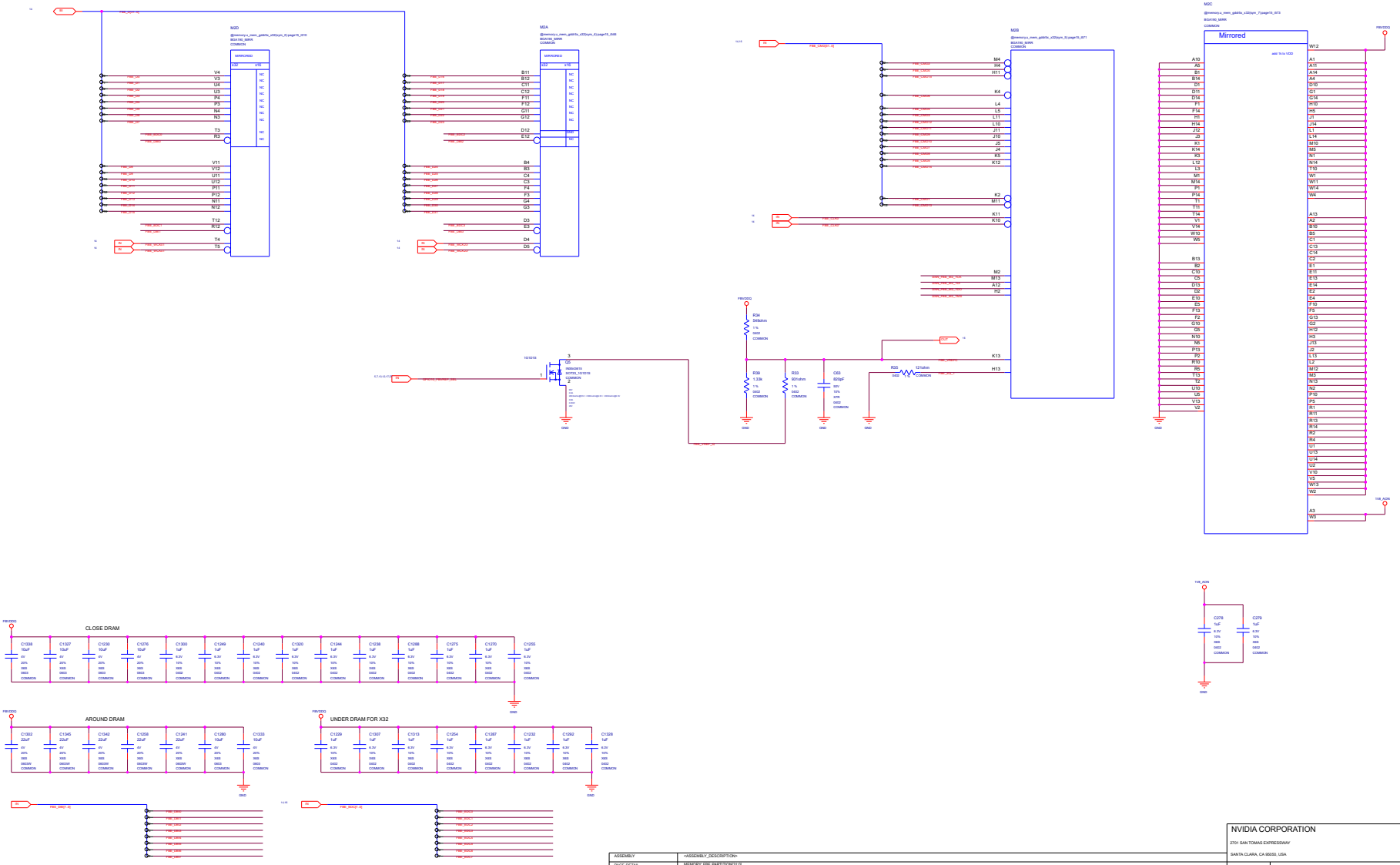
Page15: MEMORY: FBE Partition 31..0



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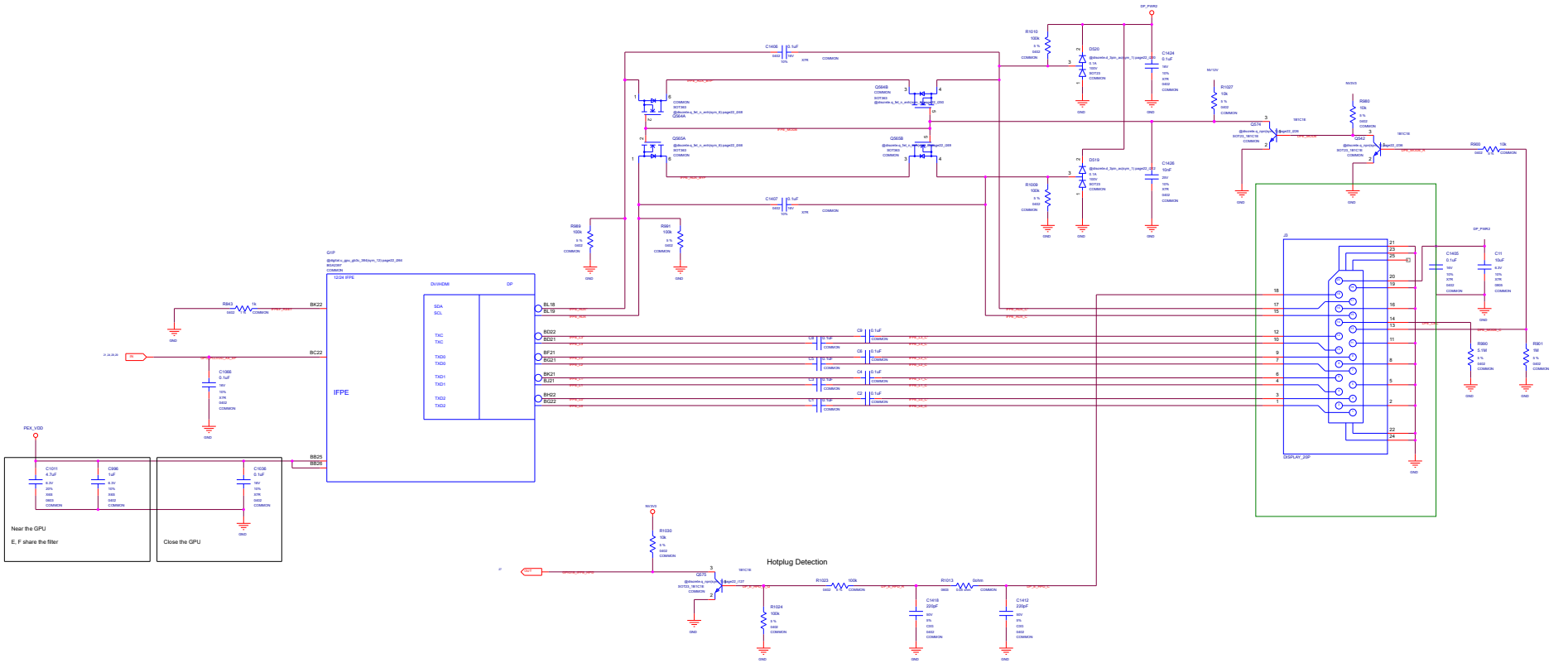
Page22: IFPE DP



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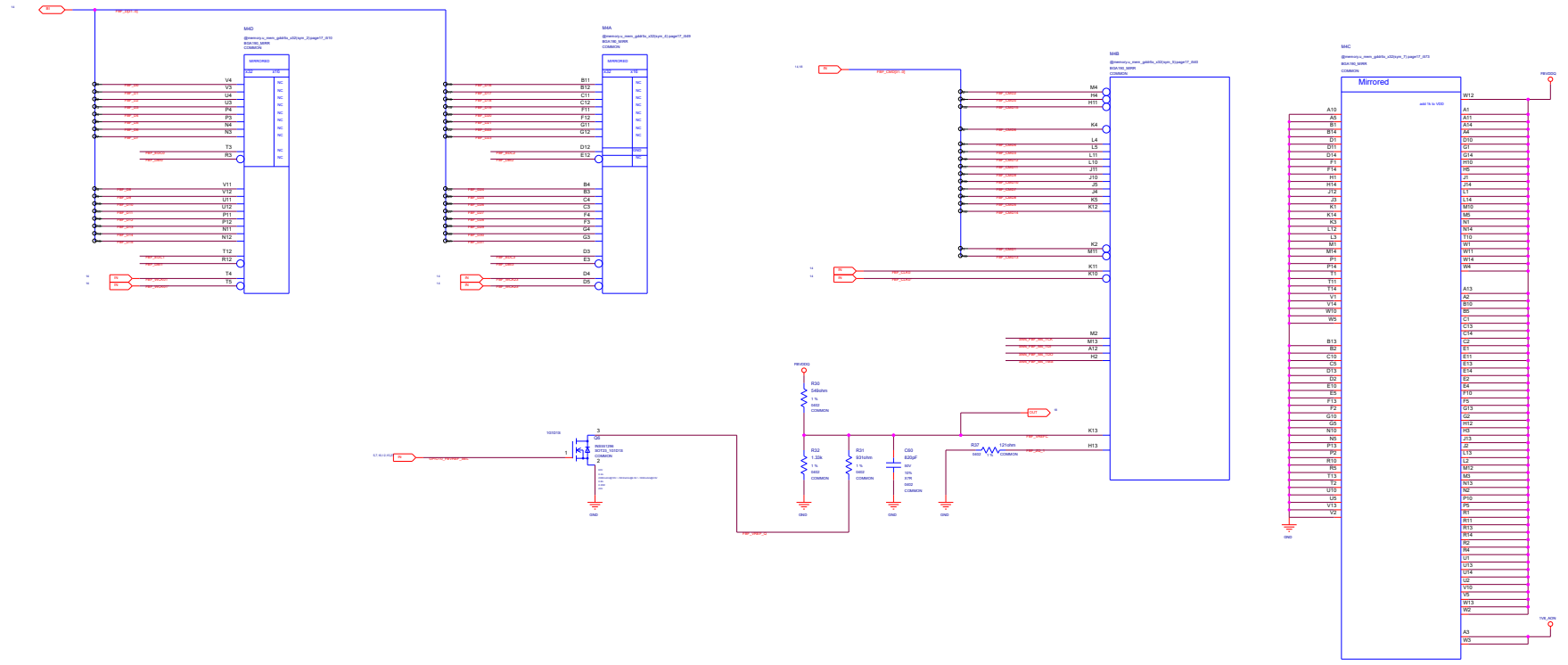

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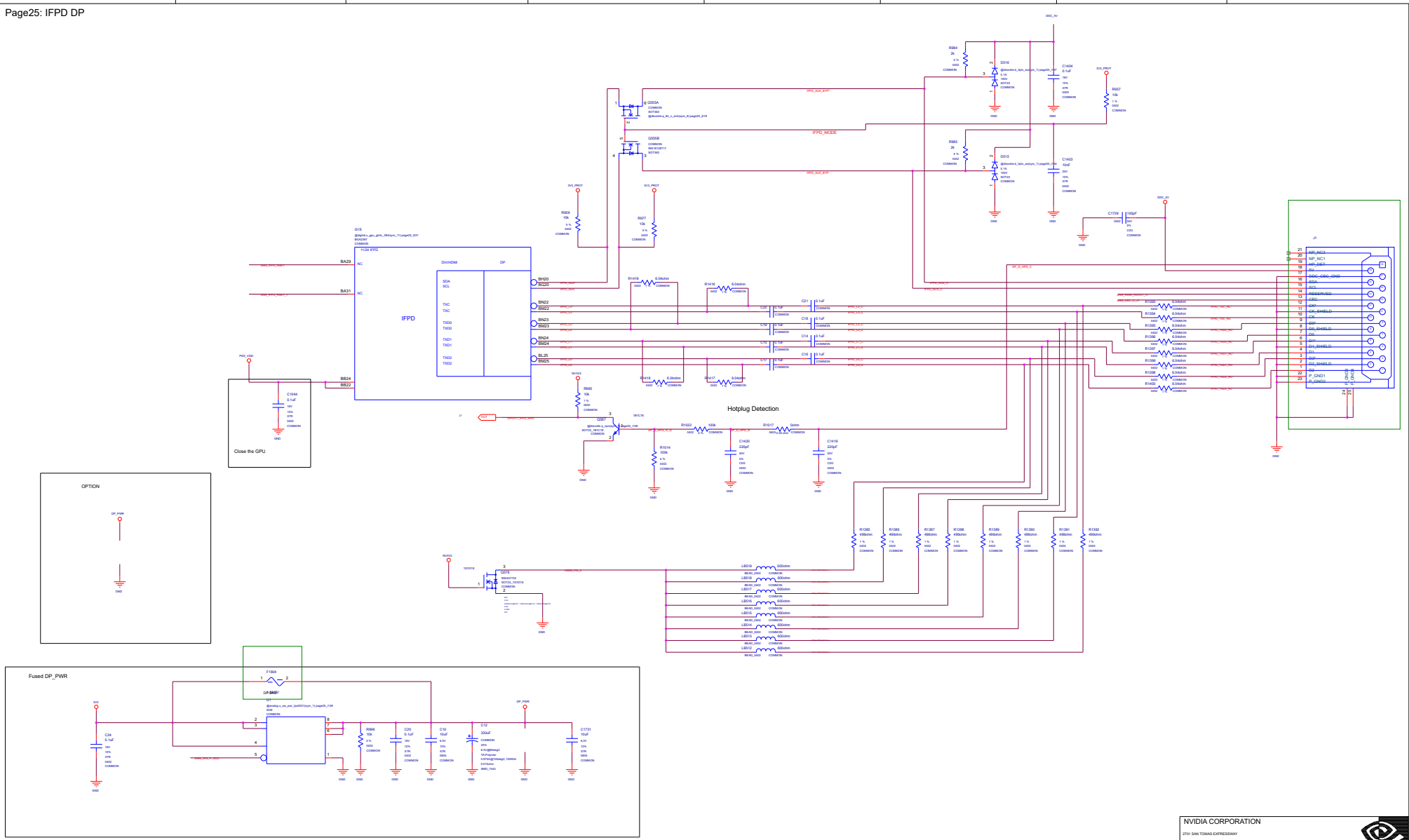

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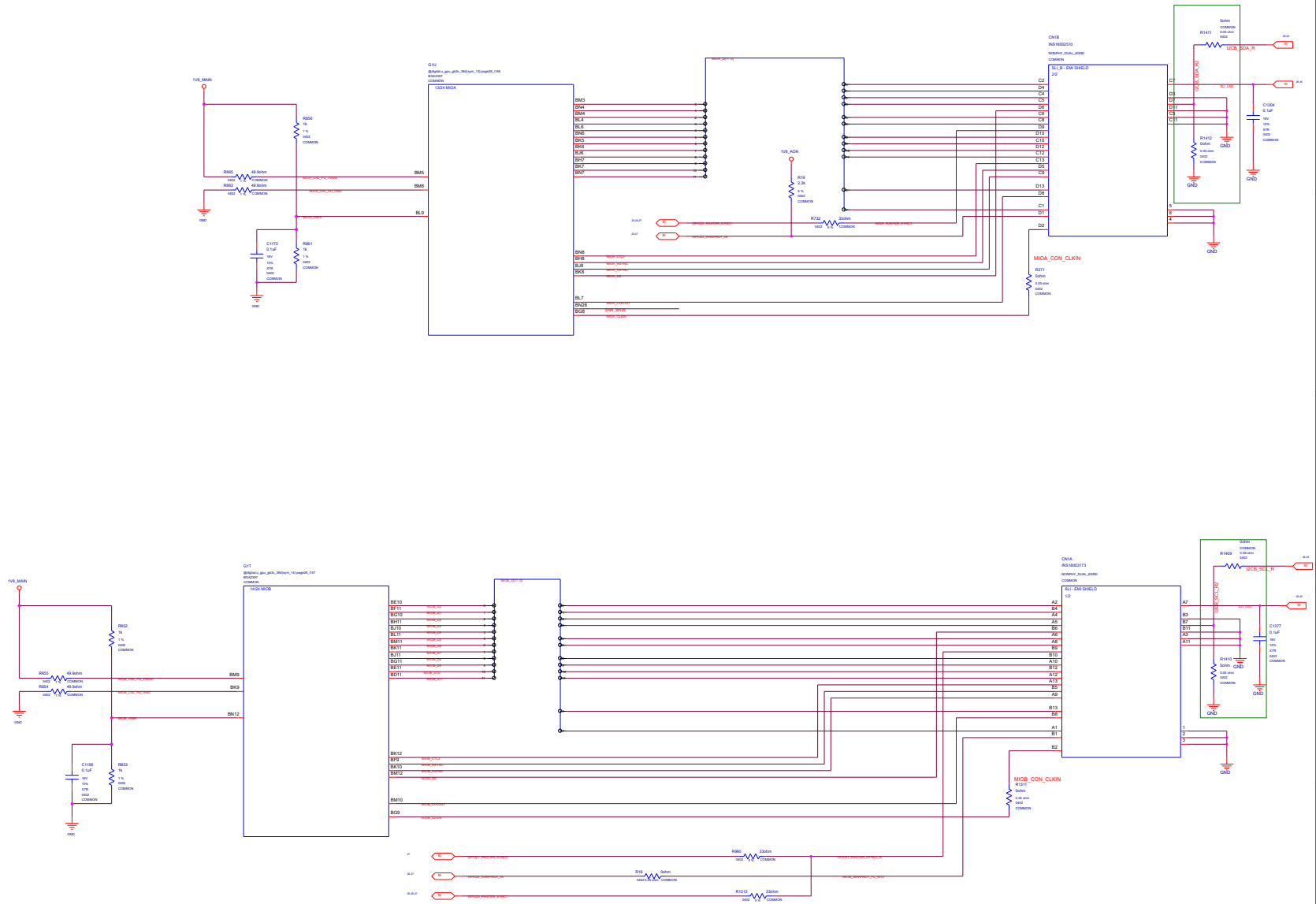
Page26: MIOA/B Interface and FRAME LOCK



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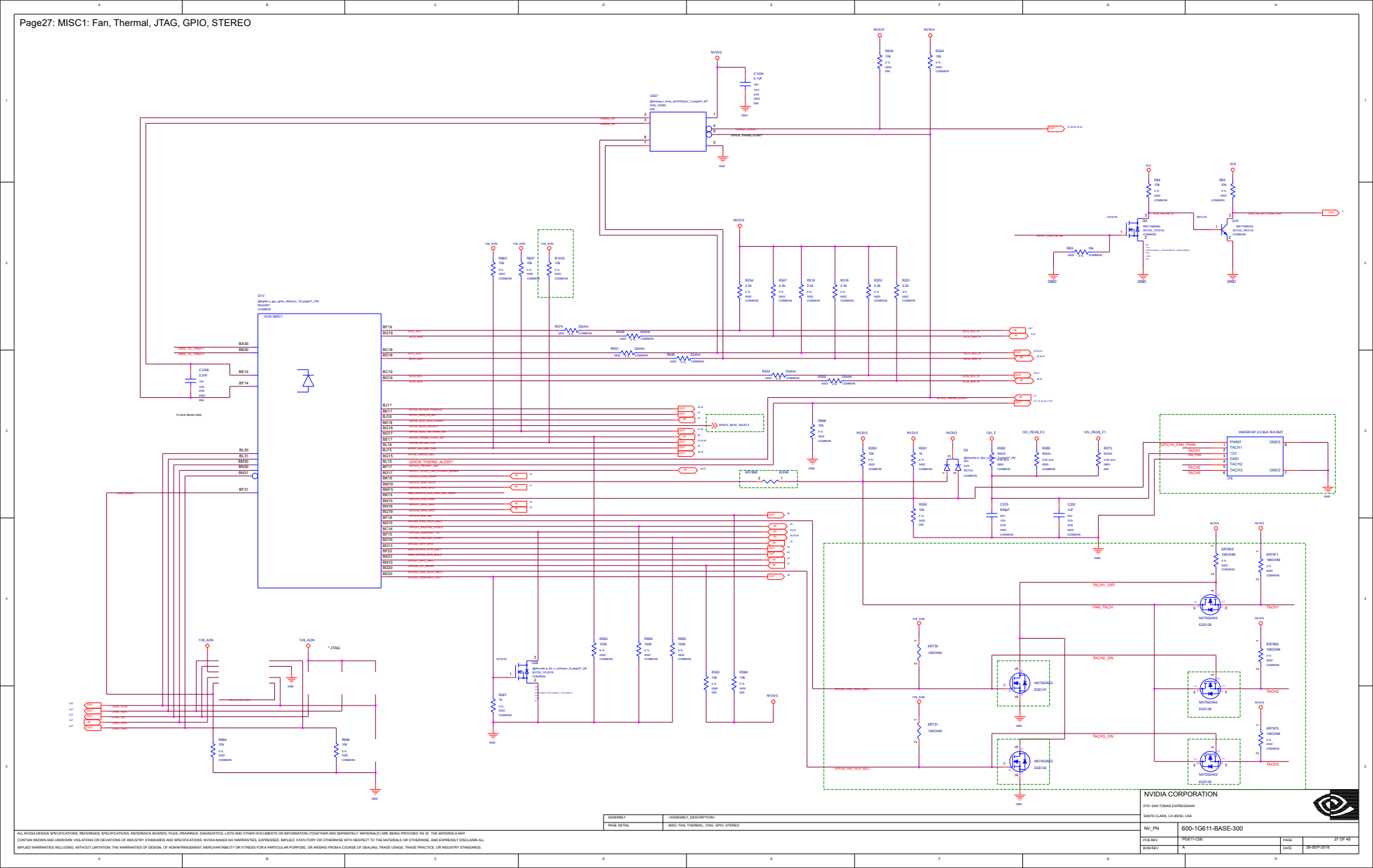
Page27: MISC1: Fan, Thermal, JTAG, GPIO, STEREO



ASSEMBLY	<ASSEMBLY_DESCRIPTION>
PAGE DETAIL	MISC: FAN, THERMAL, JTAG, GPIO, STEREO

NVIDIA CORPORATION
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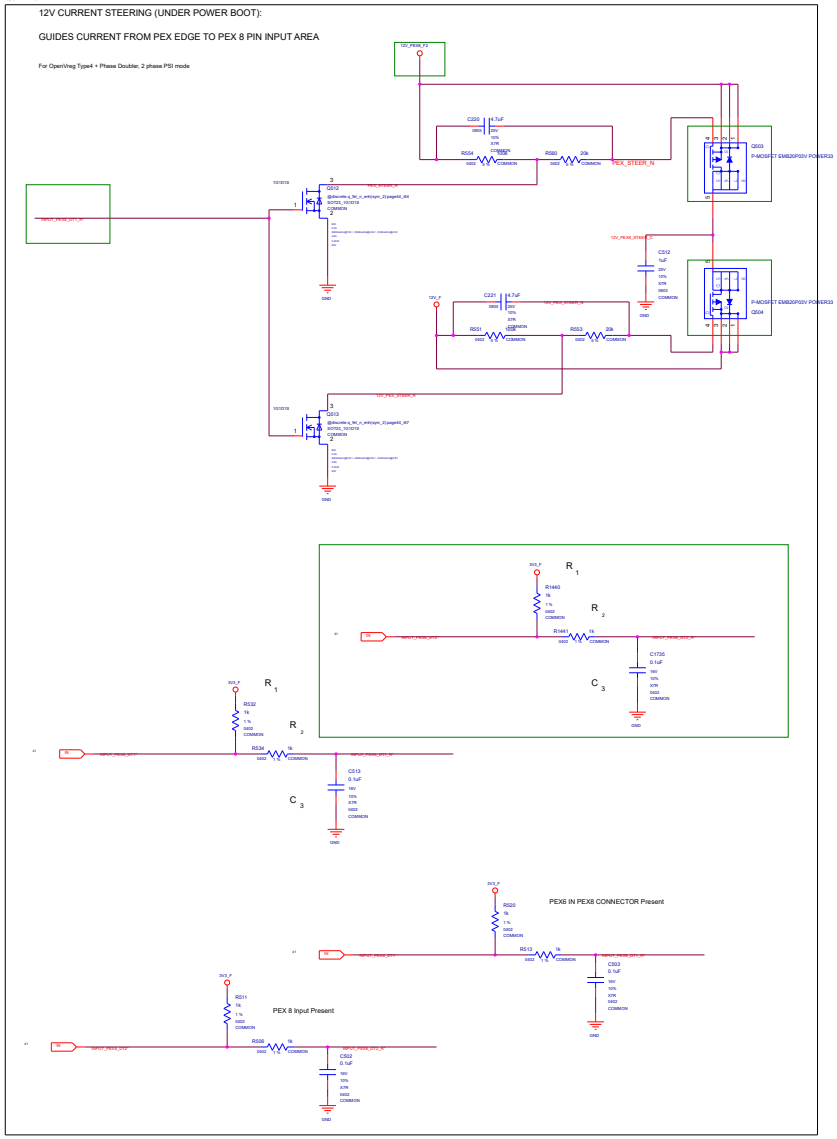
Page42: PS: 12V Current Steering & Hot Unplug Detect

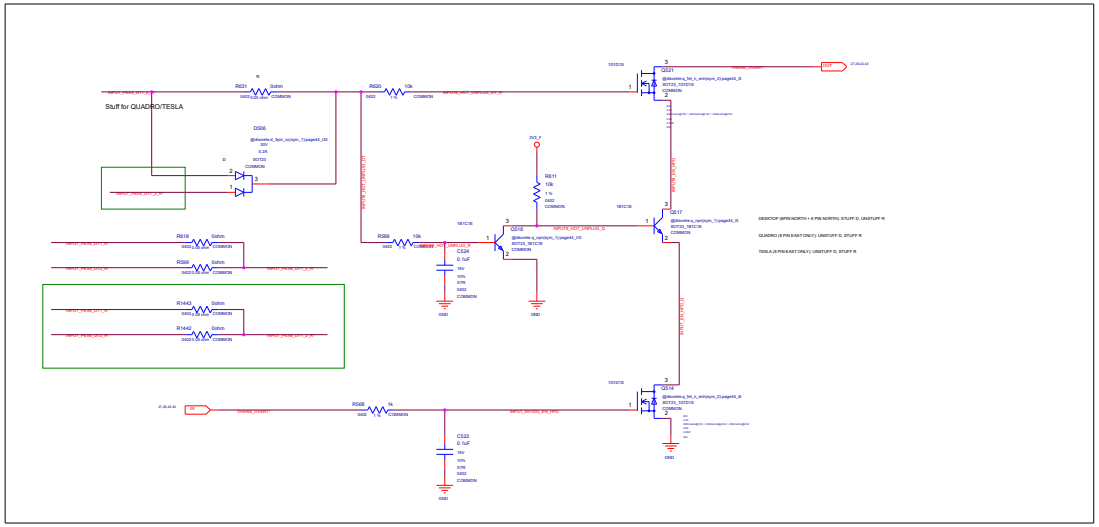
QUADRO/TESLA:

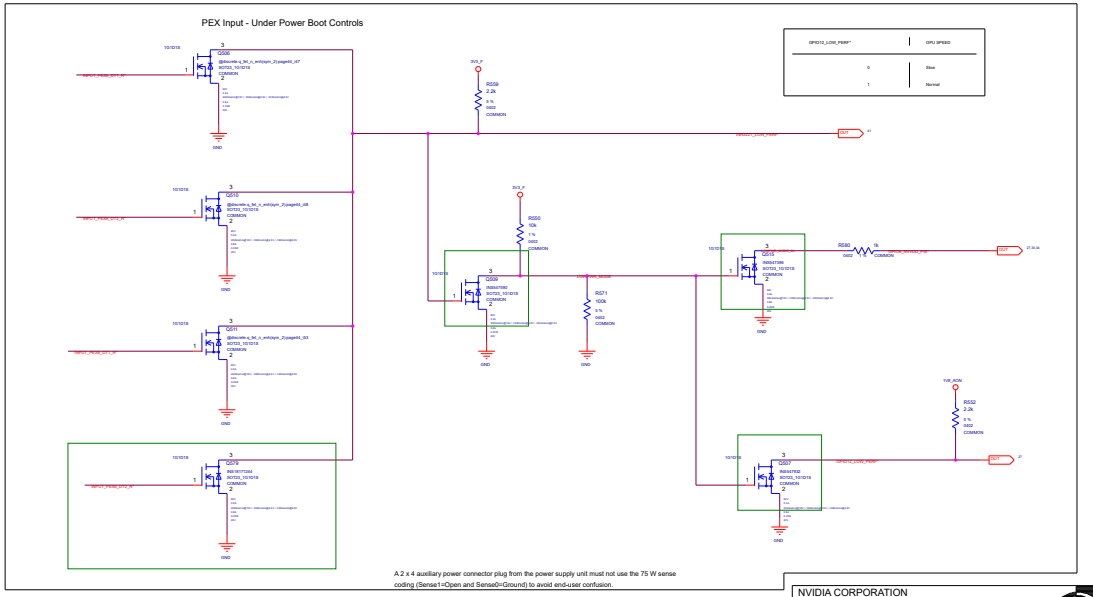
12V CURRENT STEERING (UNDER POWER BOOT):

GUIDES CURRENT FROM PEX EDGE TO PEX 8 PIN INPUT AREA

For OpenVreg Type4 + Phase Doubler, 2 phase PSI mode







ASSEMBLY	<ASSEMBLY_DESCRIPTION>
PAGE DETAIL	PS: Current Steering, Hot Unplug

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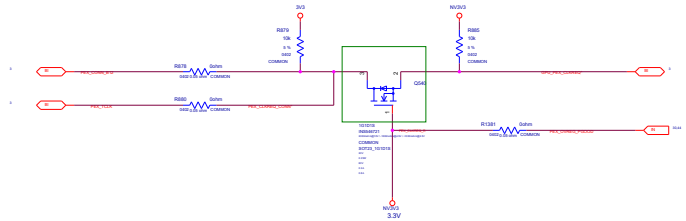
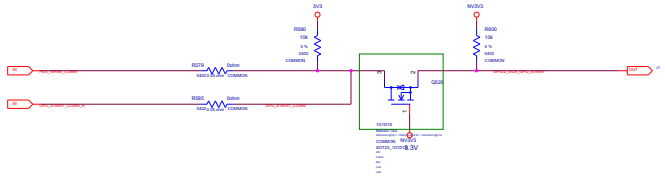
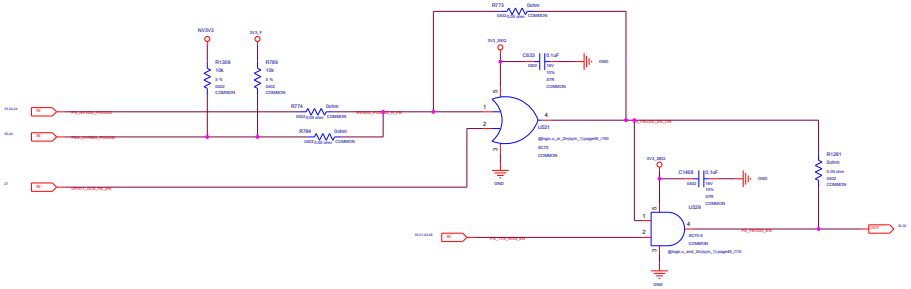
PEX_CLKREQ*



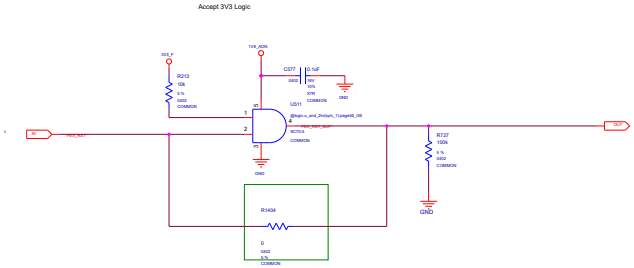
GPU_EVENT*



FBVDD/Q ENABLE



PEX_RST# LOGIC



ASSEMBLY	<ASSEMBLY_DESCRIPTION>
PAGE DETAIL	PS: GC6 MISC

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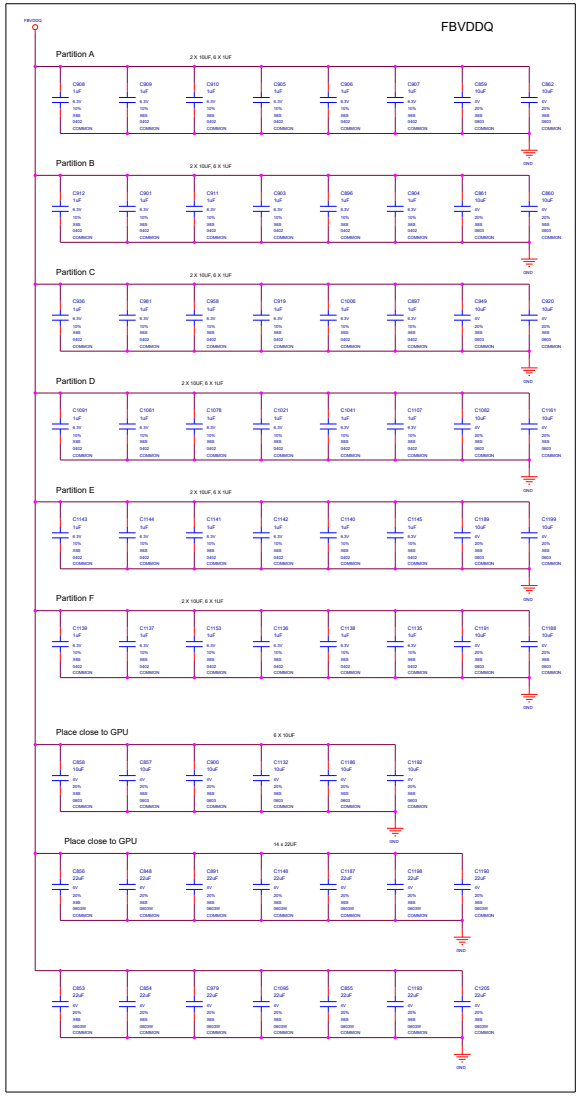
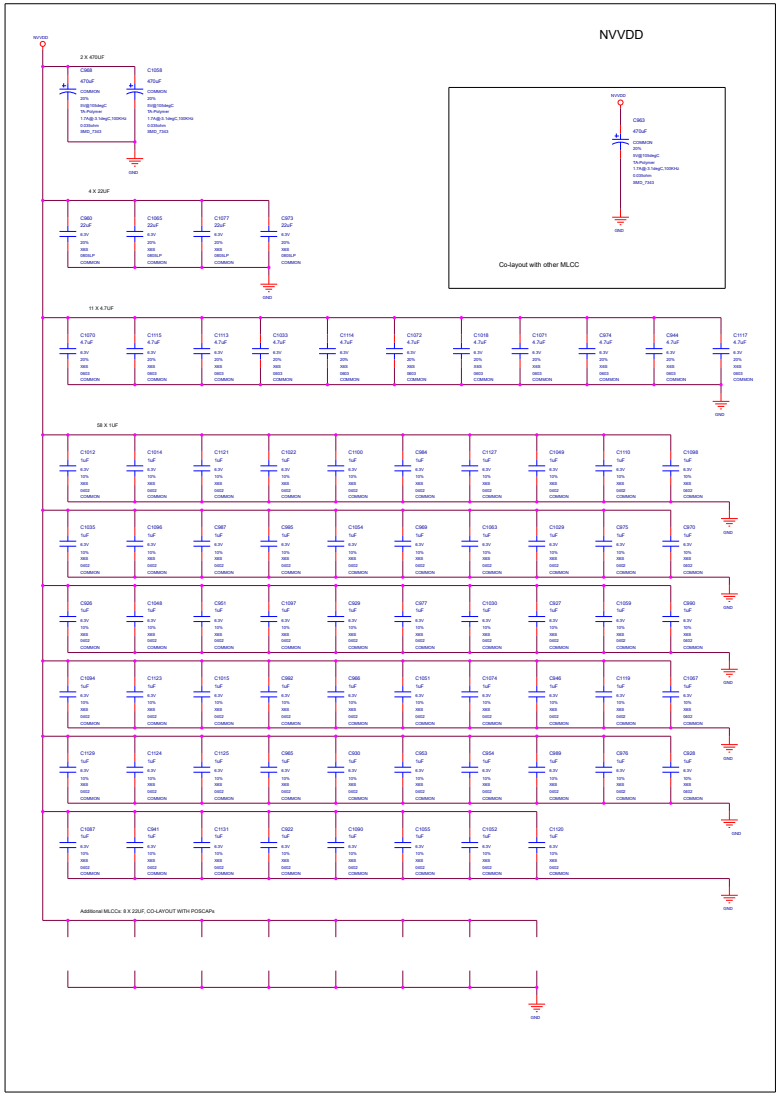
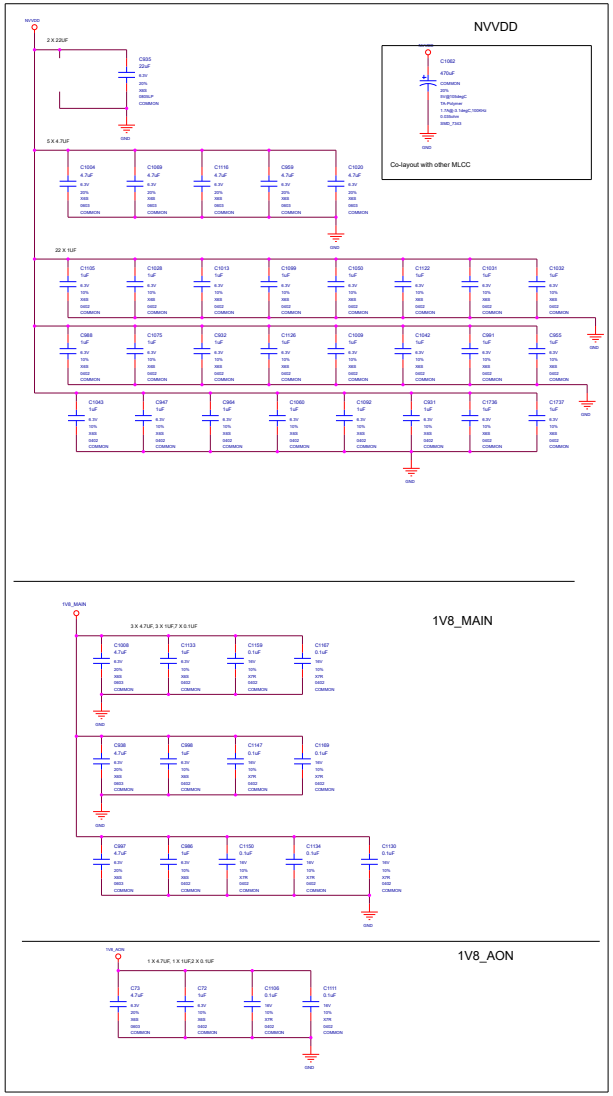
Page20: GPU Decoupling







ASSEMBLY	<ASSEMBLY_DESCRIPTION>
PAGE DETAIL	GPU DECOUPLING

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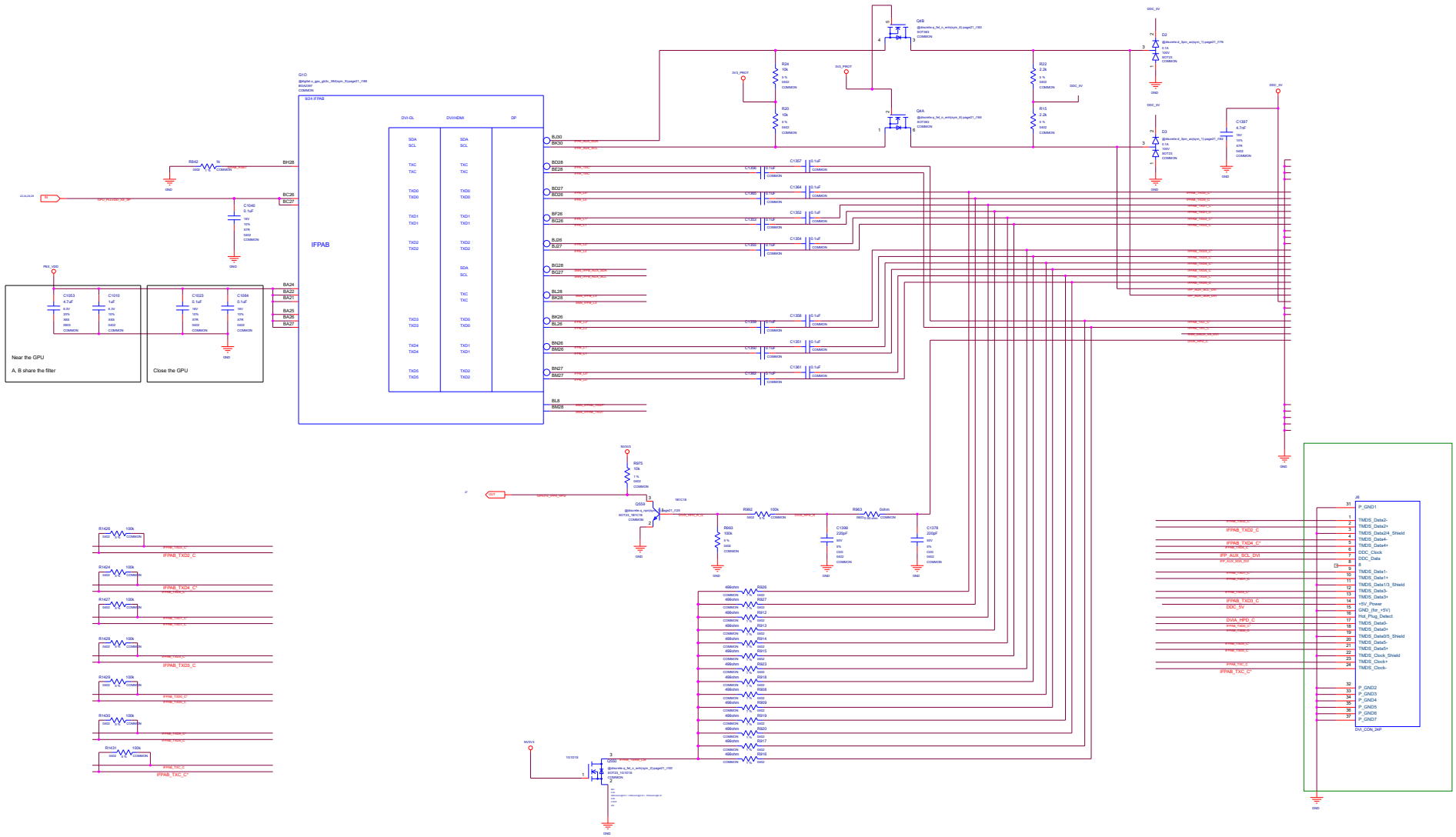
Page21: IFPAB DVI-D-DL



ASSEMBLY	<ASSEMBLY_DESCRIPTION>
PAGE DETAIL	IFPAB DVI-D-DL

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NV_PN	600-1G611-BASE-300		
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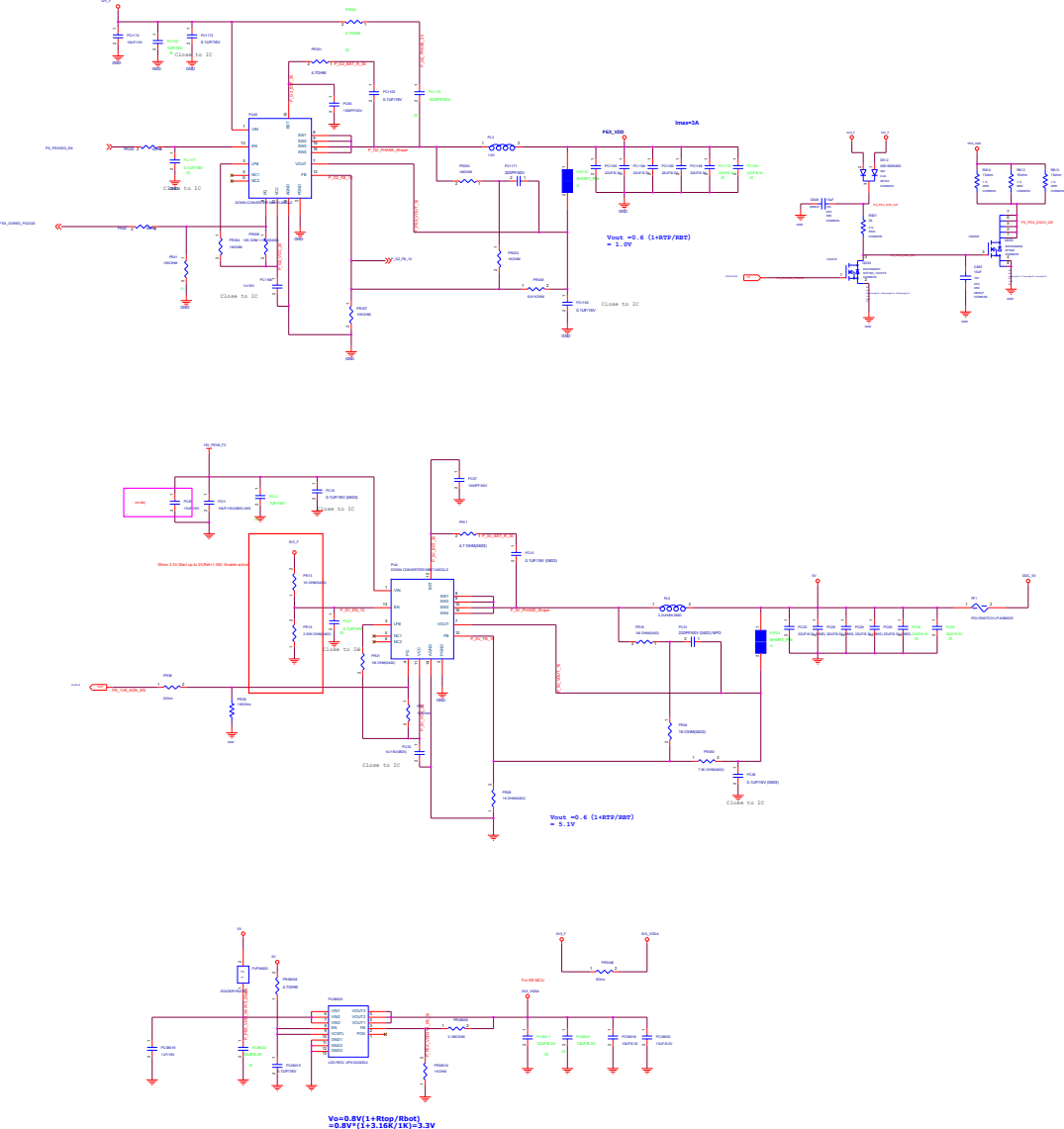
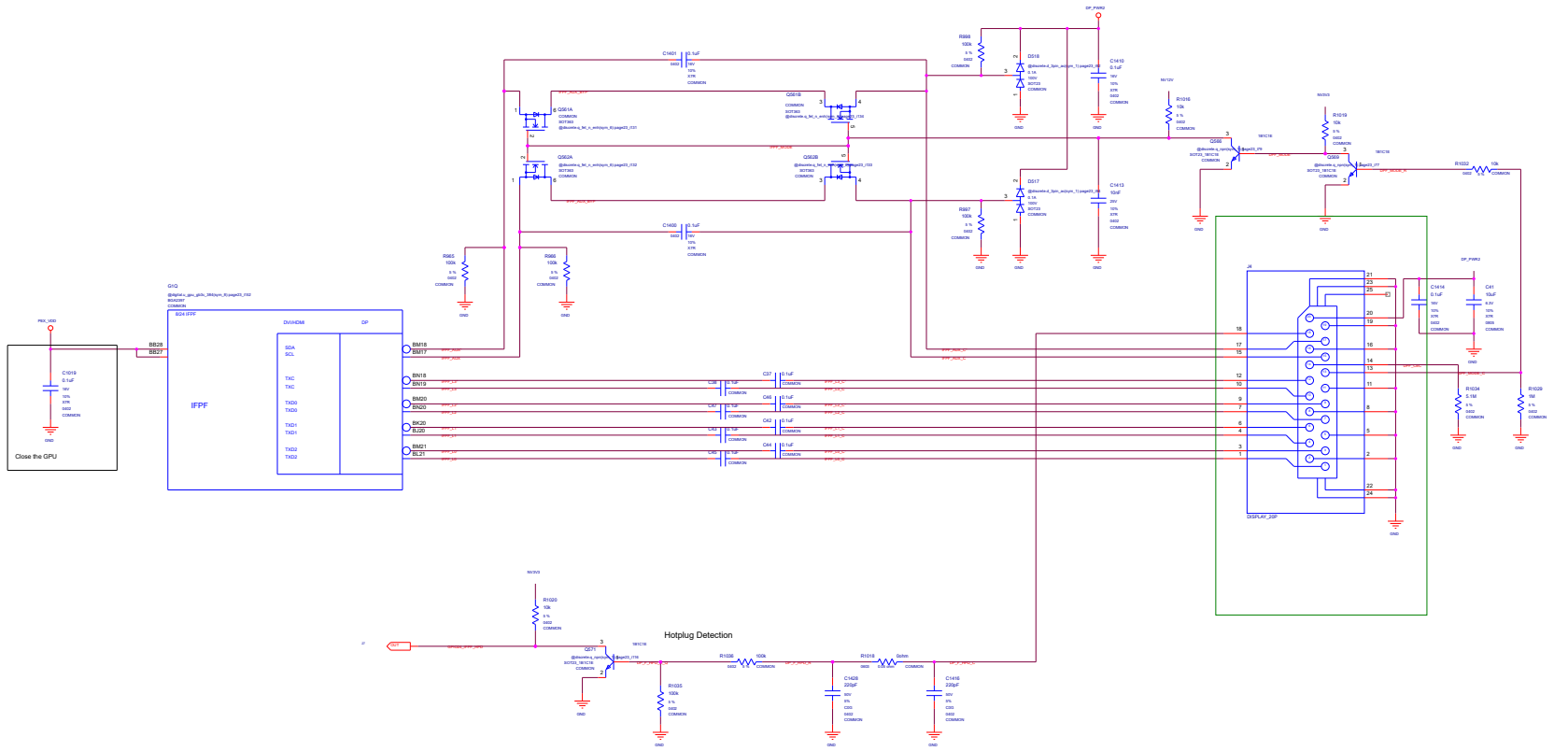
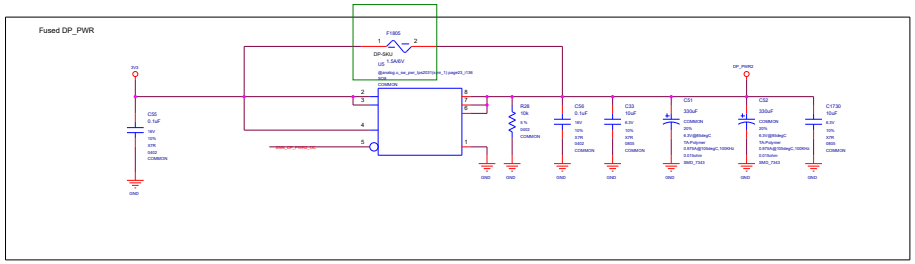

Imax=3A
PEX_VDD
Vout =0.6 (1+RTP/RBT)
= 1.0V
Vout =0.6 (1+RTP/RBT)
= 5.1V
Vo=0.8V(1+Rtop/Rbot)
=0.8V*(1+3.16K/1K)=3.3V

Page23: IFPF DP





ASSEMBLY	<ASSEMBLY_DESCRIPTION>
PAGE DETAIL	IFPF DP

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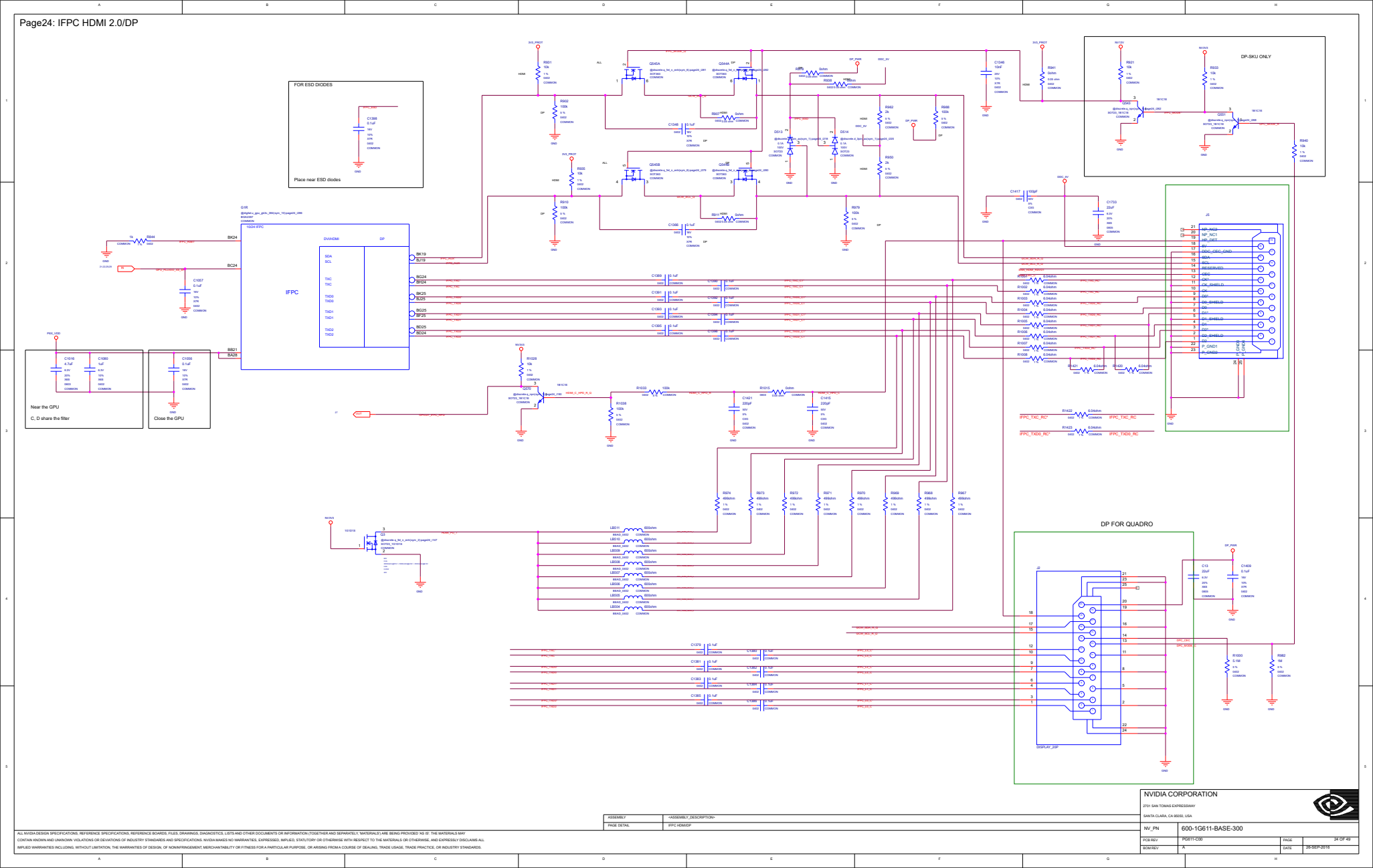
Page24: IFPC HDMI 2.0/DP



ASSEMBLY	<ASSEMBLY_DESCRIPTION>
PAGE DETAIL	IFPC HDMI/DP

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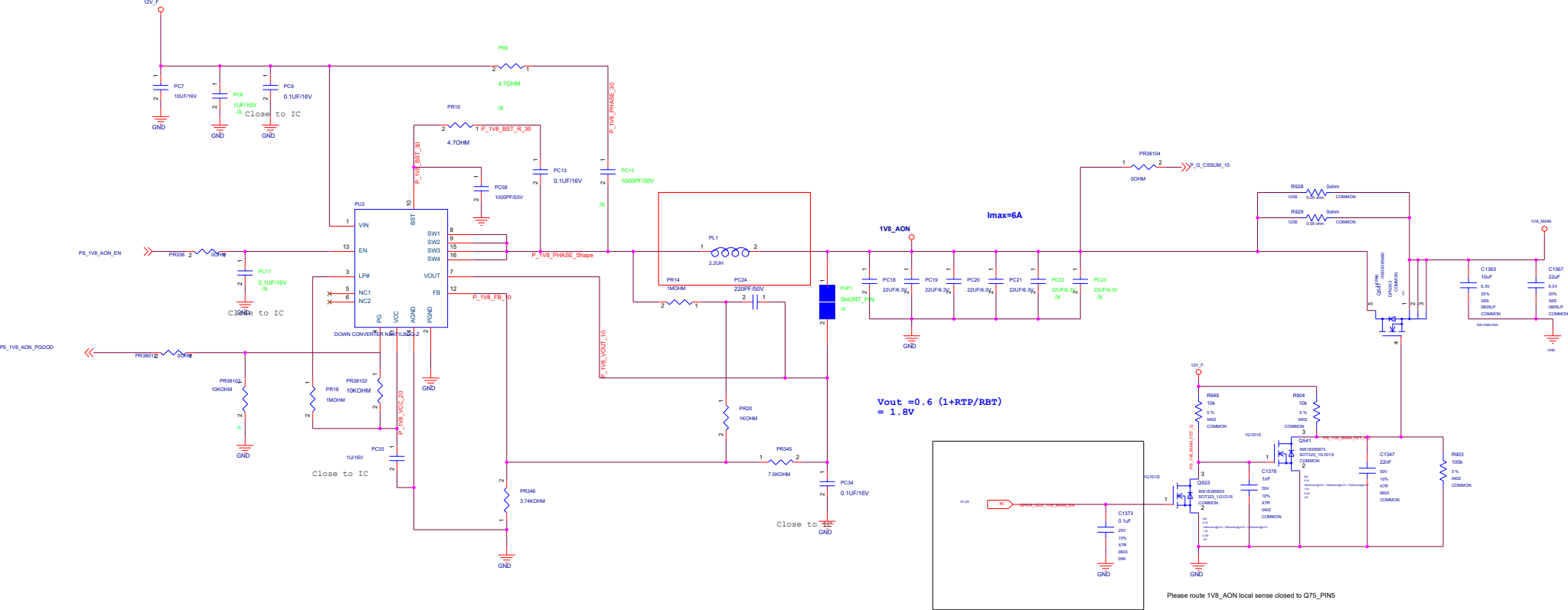

12V_F
PC7
10UF/16V
PC8
1UF/16V
/X
PC9
0.1UF/16V
Close to IC
GND
PR8
4.7OHM
PR10
/X
4.7OHM
P_1V8_BST_R_30
P_1V8_BST_30
P_1V8_PHASE_30
PC13
0.1UF/16V
PC14
1000PF/50V
/X
PC58
1000PF/50V
PU3
VIN
EN
LP#
NC1
NC2
BST
SW1
SW2
SW3
SW4
VOUT
FB
PG
VCC
AGND
PGND
DOWN CONVERTER NS1118DCC
PS_1V8_AON_EN
PR338
0OHM
PC17
0.1UF/16V
/X
Close to IC
PS_1V8_AON_PGOOD
PR380
0OHM
PR38103
10KOHM
/X
PR18
1MOHM
PR38102
10KOHM
P_1V8_VCC_20
PC33
1UF/16V
Close to IC
P_1V8_FB_10
P_1V8_PHASE_Shape
P_1V8_VOUT_10
PR346
3.74KOHM
PL1
2.2UH
PR14
1MOHM
PC24
220PF/50V
PJP1
SHORT_PIN
/X
PR20
1KOHM
PR345
7.5KOHM
PC34
0.1UF/16V
Close to
Imax=6A
1V8_AON
PR38104
0OHM
P_G_CSSUM_10
PC18
22UF/6.3V
PC19
22UF/6.3V
PC20
22UF/6.3V
PC21
22UF/6.3V
PC22
22UF/6.3V
/X
PC23
22UF/6.3V
/X
R928
0ohm
1206
0.05 ohm
COMMON
R929
0ohm
1206
0.05 ohm
COMMON
Q542
PMK
PMDXB50EP
DFN3X3
COMMON
1V8_MAIN
C1363
10uF
6.3V
20%
X6S
0805LP
COMMON
C1367
22uF
6.3V
20%
X6S
0805LP
COMMON
Vout =0.6 (1+RTP/RBT)
= 1.8V
12V_F
R949
10k
5 %
0402
COMMON
R904
10k
5 %
0402
COMMON
PS_1V8_MAIN_FBT_0
1G1D1S
Q541
INDS1838573
SOT323_1G1D1S
COMMON
C1347
22nF
50V
10%
X7R
0603
COMMON
R903
100k
5 %
0402
COMMON
C1376
1nF
50V
10%
X7R
0402
COMMON
Q553
INDS1838805
SOT323_1G1D1S
COMMON
1G1D1S
27.43
IN
GPIO4_GOE_1V8_MAIN_EN
C1373
0.1uF
25V
10%
X7R
0603
DNI
Please route 1V8_AON local sense closed to Q75_PIN5

Page28: MISC2: ROM, Straps

STRAP2	STRAP1	STRAP0	RAMCFG[4:0]	
L	L	L	00000	
L	L	H	00001	
L	H	L	00010	MICRON 12Gbps REV.B
L	H	H	00011	
H	L	L	00100	

ROM_SO	ROM_SI	ROM_SCLK	SOR_EXPOSED[3:0]	1:ENABLE 0:DISABLE
L	L	L	1111 DEFAULT	SOR0/1/2/3 ENABLE
L	L	H	1110	
L	H	L	1101	
L	H	H	1100	
H	L	L	1011	
H	L	H	1010	
H	H	L	1001	
H	H	H	1000	
L	L	M	0111	
L	M	L	0110	
L	M	H	0101	
L	H	M	0100	
H	L	M	0011	
H	M	L	0010	
H	M	H	0001	
H	H	M	0000	

STRAP5	STRAP4	STRAP3	SMB_ALT_ADDR	DEVID_SEL	PCIE_CFG	VGA_DEVICE
M	H	H	1	1	1	1
M	H	L	1	1	1	0
M	L	H	1	1	0	1
M	L	L	1	1	0	0
L	H	M	1	0	1	1
L	M	H	1	0	1	0
L	M	L	1	0	0	1
L	L	M	1	0	0	0
H	H	H	0	1	1	1
H	H	L	0	1	1	0
H	L	H	0	1	0	1
H	L	L	0	1	0	0
L	H	H	0	0	1	1
L	H	L	0	0	1	0
L	L	H	0	0	0	1 DEFAULT
L	L	L	0	0	0	0

H=High :Tied to 1.8V

M=Middle:Tied to 0.9V

L=Low :Tied to 0V

1:SMB_ALT_ADDR ENABLE

0:SMB_ALT_ADDR DISABLE

1:DEVID_SEL REBRAND

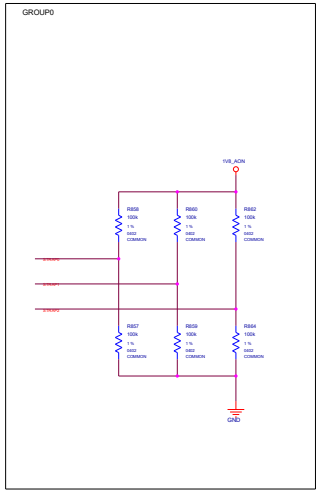
0:DEVID_SEL ORIGNAL

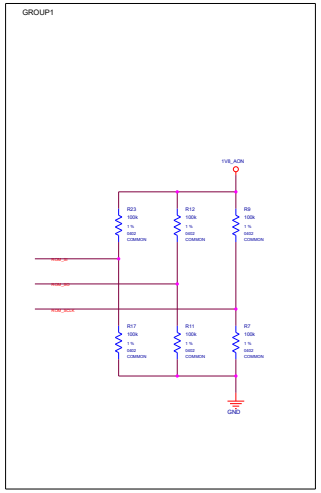
1:PCIE_CFG LOW POWER

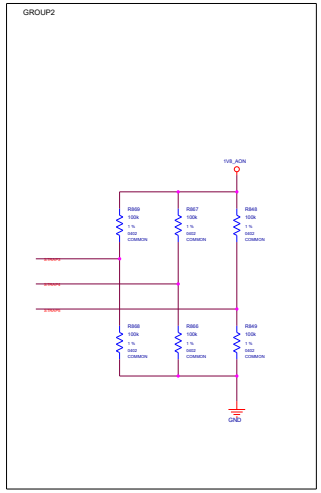
0:PCIE_CFG HIGH POWER

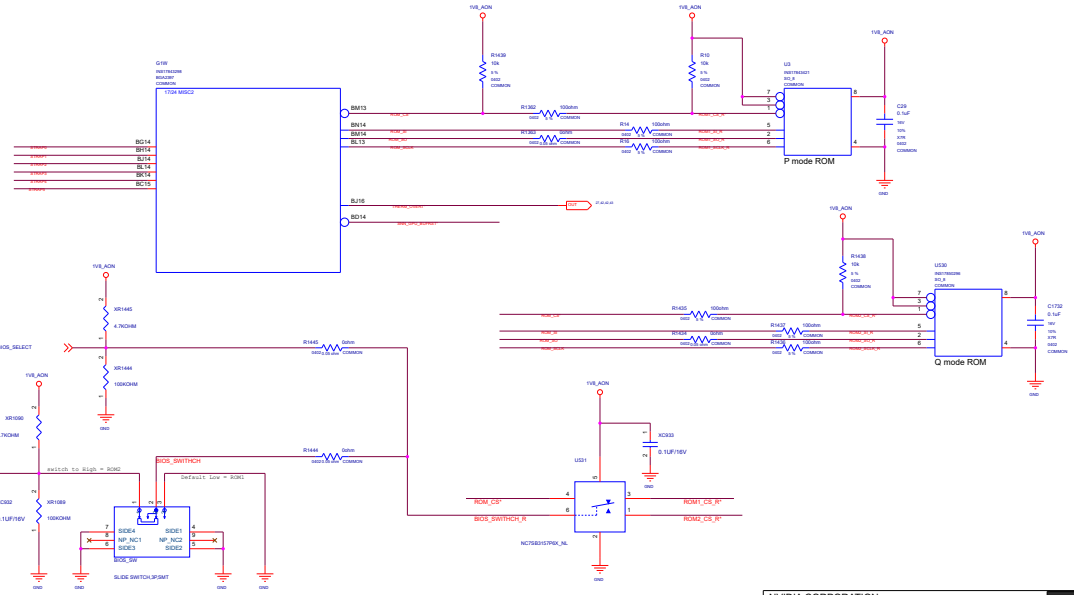
1:VGA_DEVICE ENABLE

0:VGA_DEVICE DISABLE









ASSEMBLY	<ASSEMBLY_DESCRIPTION>
PAGE DETAIL	MISC ROM, STRAPS

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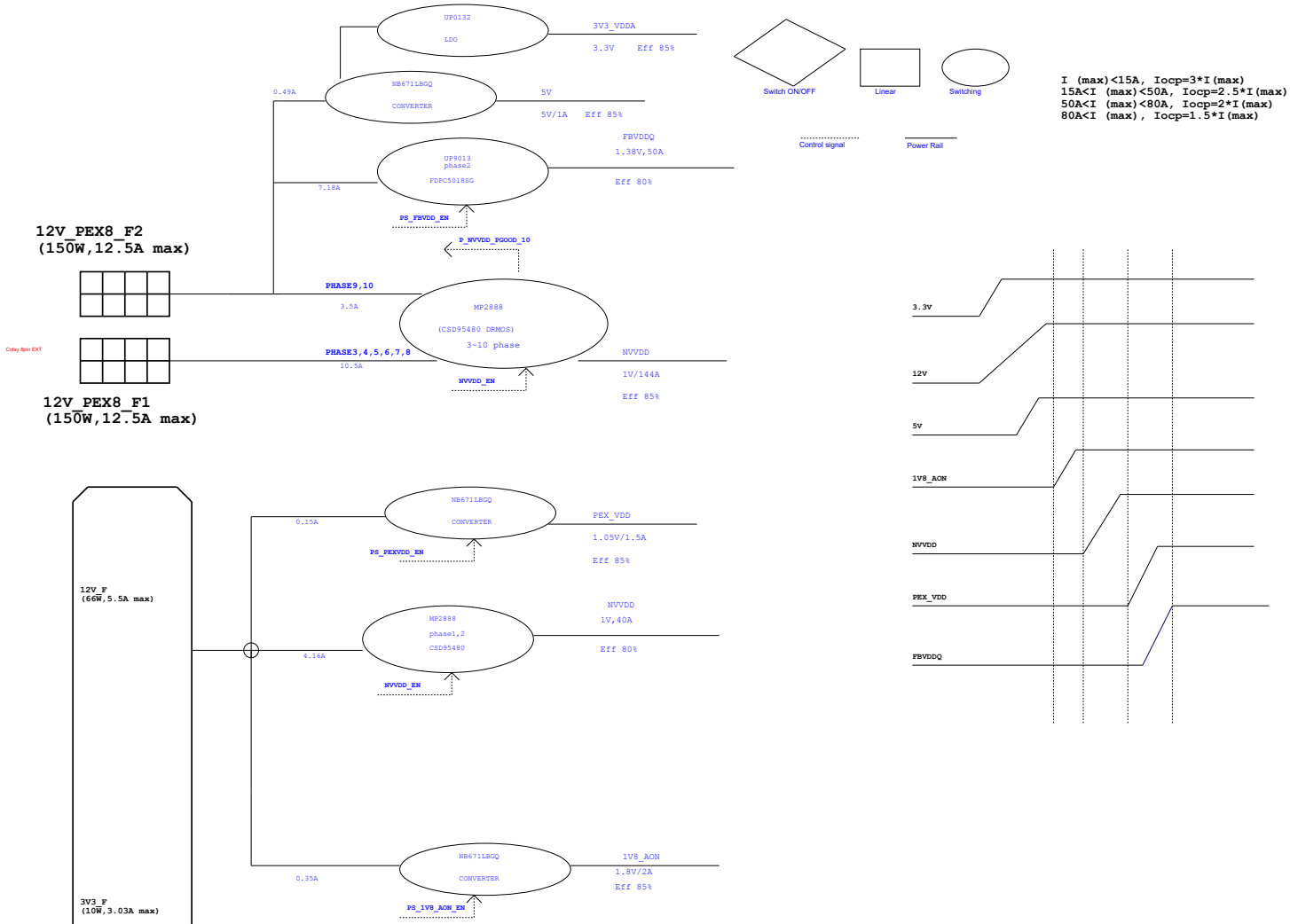
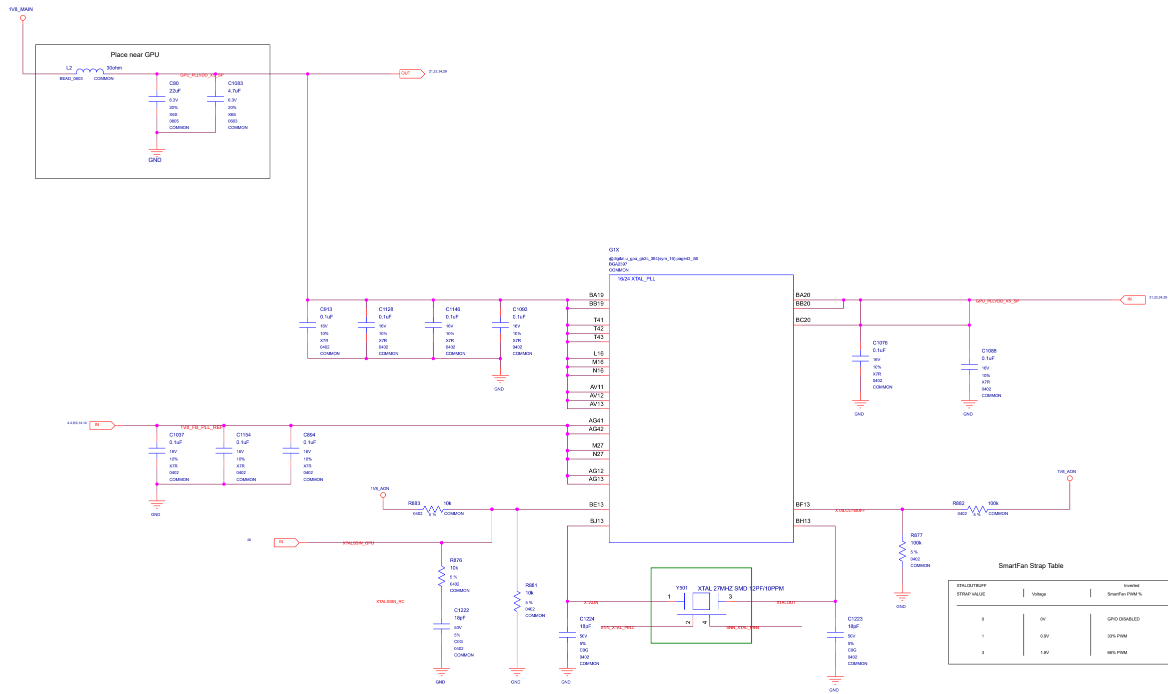

UP0132
LDO
3V3_VDDA
3.3V Eff 85%
0.49A
NB671LBGQ
CONVERTER
5V
5V/1A Eff 85%
FBVDDQ
1.38V,50A
UP9013
phase2
FDPC5018SG
Eff 80%
7.18A
PS_FBVDD_EN
P_NVVDD_PGOOD_10
12V_PEX8_F2
(150W,12.5A max)
PHASE9,10
3.5A
MP2888
(CSD95480 DRMOS)
3~10 phase
Coley 8pin EXT
PHASE3,4,5,6,7,8
10.5A
NVVDD
1V/144A
Eff 85%
NVVDD_EN
12V_PEX8_F1
(150W,12.5A max)
12V_F
(66W,5.5A max)
3V3_F
(10W,3.03A max)
0.15A
NB671LBGQ
CONVERTER
PEX_VDD
1.05V/1.5A
Eff 85%
PS_PEXVDD_EN
NVVDD
1V,40A
MP2888
phase1,2
CSD95480
Eff 80%
4.16A
NVVDD_EN
0.35A
NB671LBGQ
CONVERTER
1V8_AON
1.8V/2A
Eff 85%
PS_1V8_AON_EN
Switch ON/OFF
Linear
Switching
Control signal
Power Rail
I (max)<15A, Iocp=3*I(max)
15A<I (max)<50A, Iocp=2.5*I(max)
50A<I (max)<80A, Iocp=2*I(max)
80A<I (max), Iocp=1.5*I(max)
3.3V
12V
5V
1V8_AON
NVVDD
PEX_VDD
FBVDDQ

Page29: MISC2: XTAL. PLL



SmartFan Strap Table

XTALOUTBUFF STRAP VALUE	Voltage	Inverted SmartFan PWM %
0	0V	GPIO DISABLED
1	0.9V	33% PWM
3	1.8V	66% PWM

ASSEMBLY	<ASSEMBLY_DESCRIPTION>
PAGE DETAIL	MISC: XTAL, PLL

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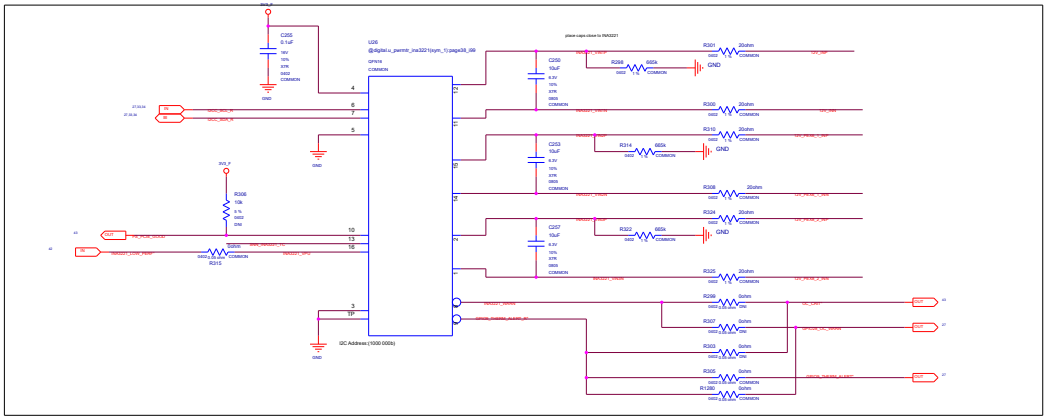
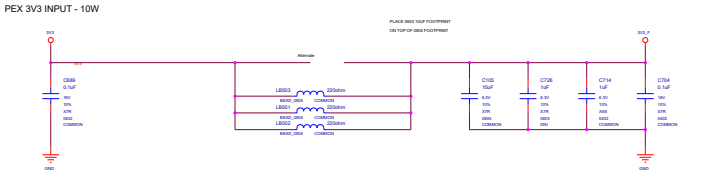
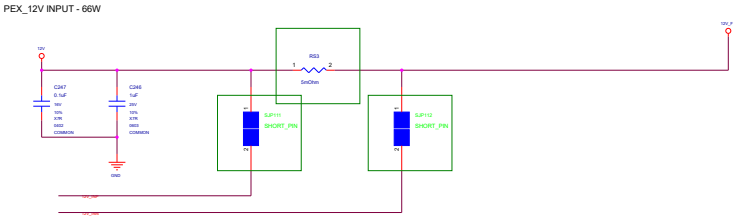
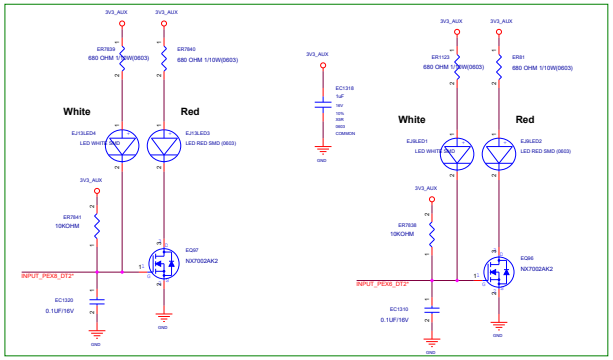
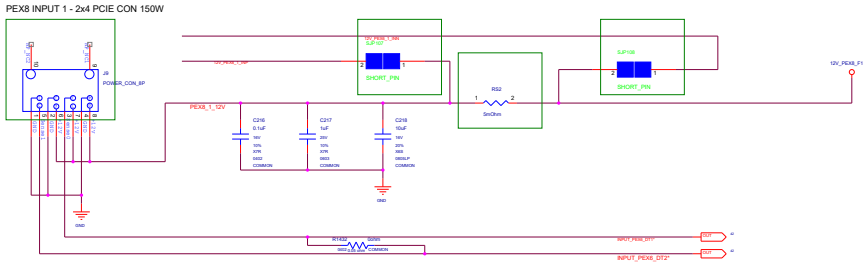
Page41: PS: Inputs, Filtering, and Monitoring

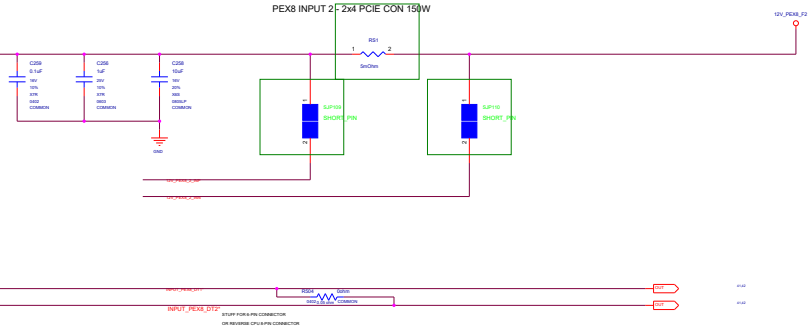


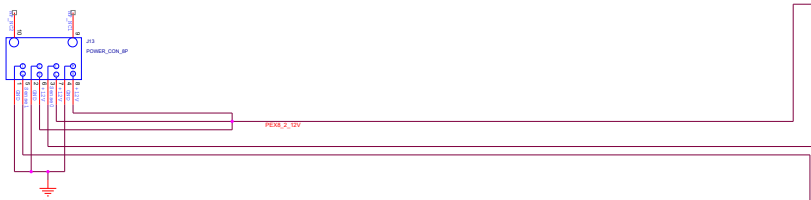












ASSEMBLY	<ASSEMBLY_DESCRIPTION>
PAGE DETAIL	PS: Input, filtering, and Monitoring

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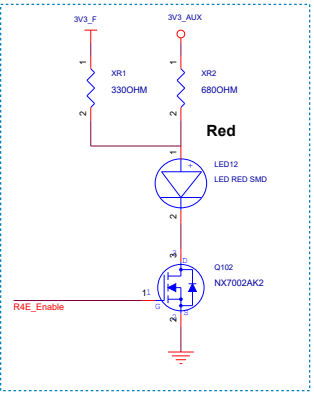
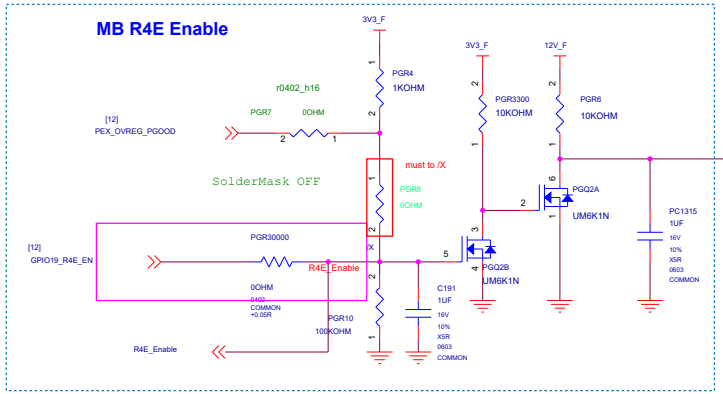
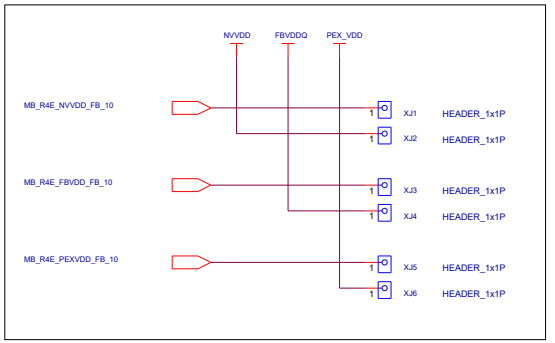
觸發信號來源需要靠整塊板子最後的POWER RAIL來決定
. 我們會先上PEXVDD這路的PG信號
. 另外預留不上 PEXVDD1這路的PG信號。





MB VGA Hotwire

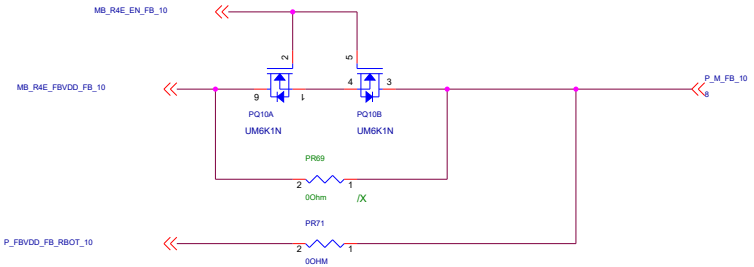


P-STATE VOLTAGES

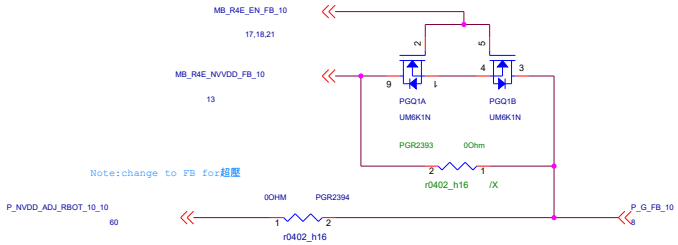
1. P0 at 1.05V to 1.15V (depending on VB)
2. P8/P12 at 0.80V

SOFT START (VR11)

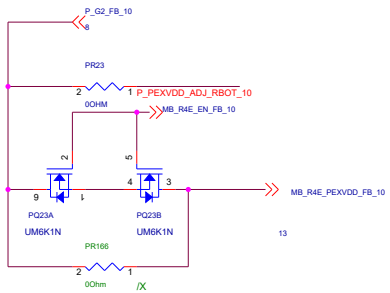
1. Ramp 0V to 1.10V in ~2mS
2. Hold at 1.10V for 170uS
3. Read VID
4. VID set to 0.9V during GPIO tri-state
   VID[5:1]=11000 to set 0.9125V



For MB R4E的預留超壓電路

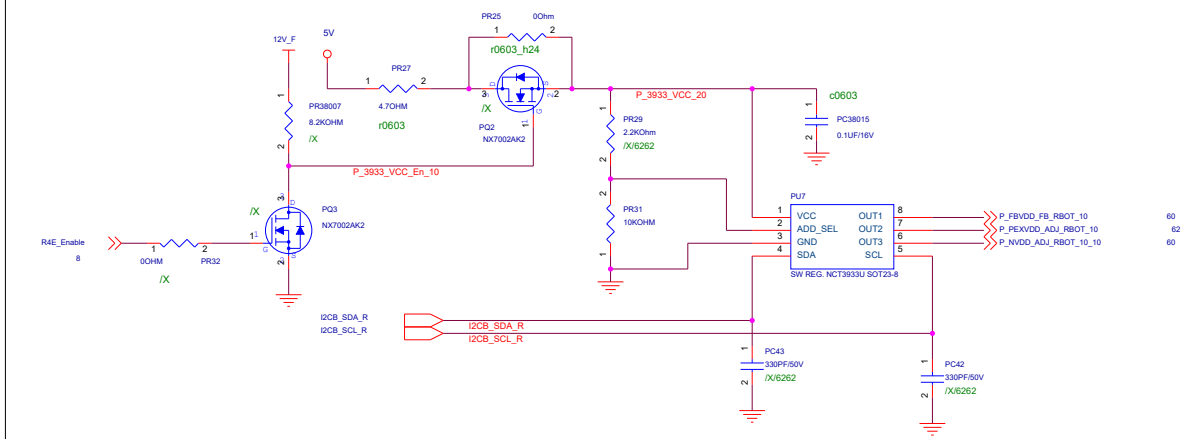


Note:change to LL for超壓(RESERVE)



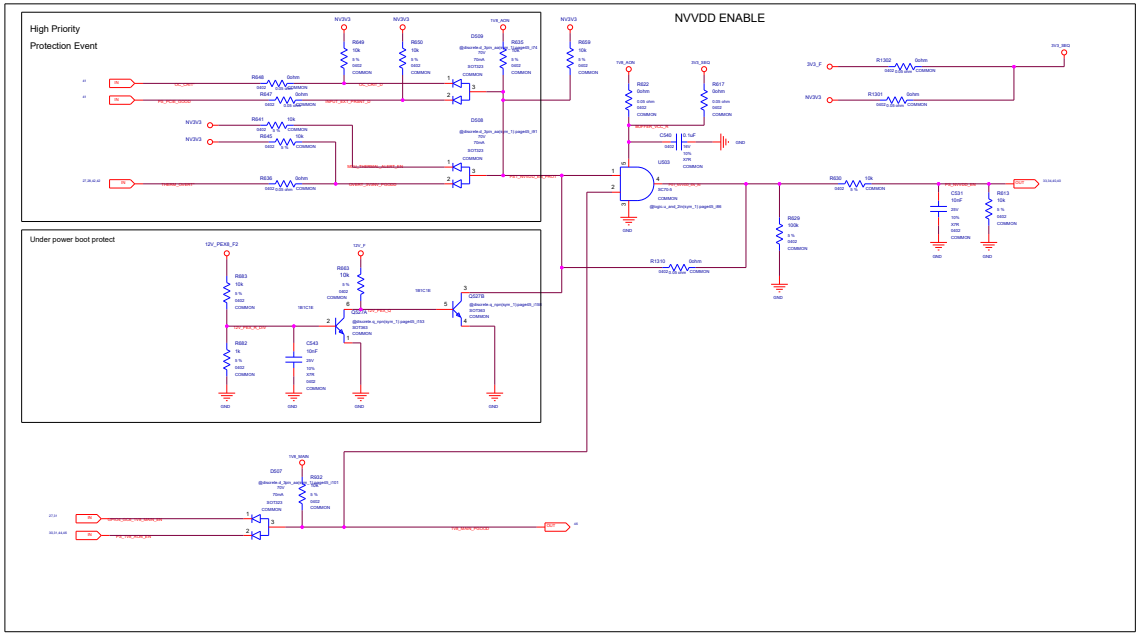
NCT3933U Over Voltage

Address : 0x2A

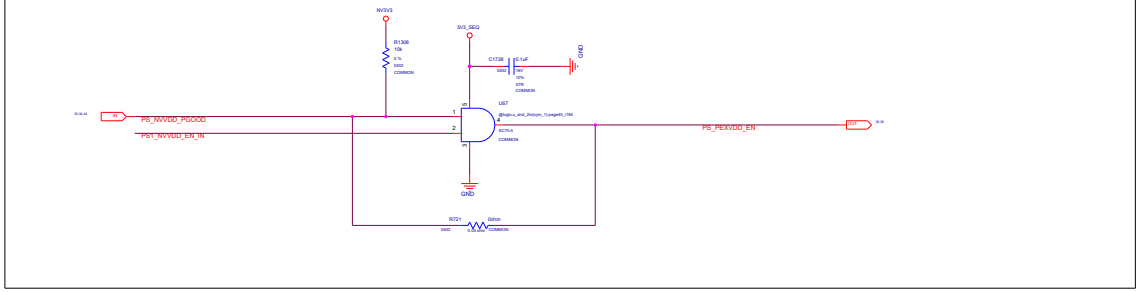


Page43: PS: NVVDD ENABLE

NVVDD ENABLE



PEXVDD ENABLE



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PAGE DETAIL	PS: NVVDD ENABLE

NVIDIA CORPORATION
2701 SAN TOMAS EXPRESSWAY
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NV_PN	600-1G611-BASE-300		
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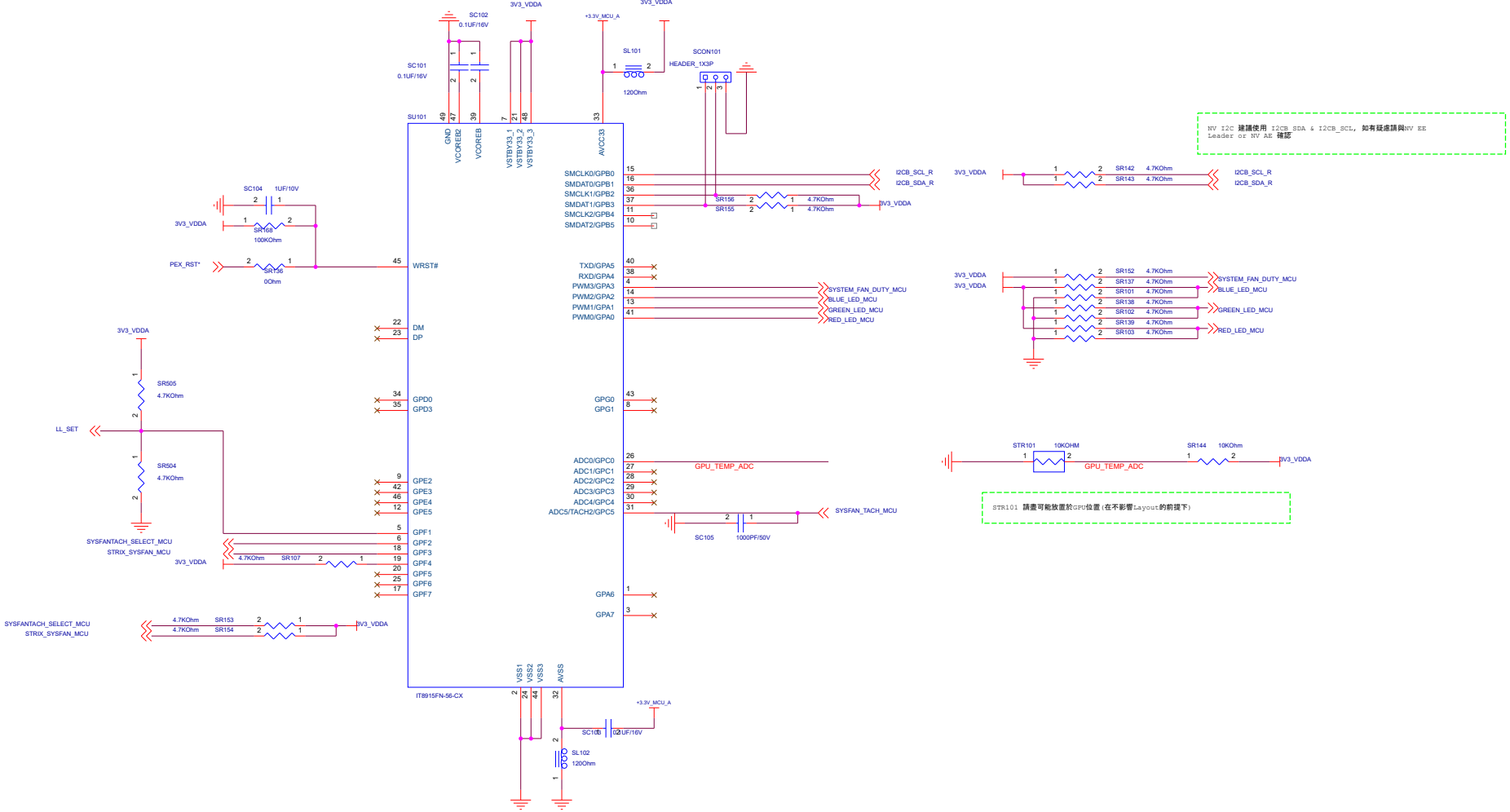


STRIX_SYSFAN_MCU	Mode
L	NORMAL
H(Default)	STRIX

SYSFANTACH_SELECT_MCU	Mode
L	SYSFAN_TACH1
H(Default)	SYSFAN_TACH2

SCL
SDA
TO GPU MASTER I2C

PERST#
TO_PCIE

3V3_VDDA
TO_Power (under 10mA)

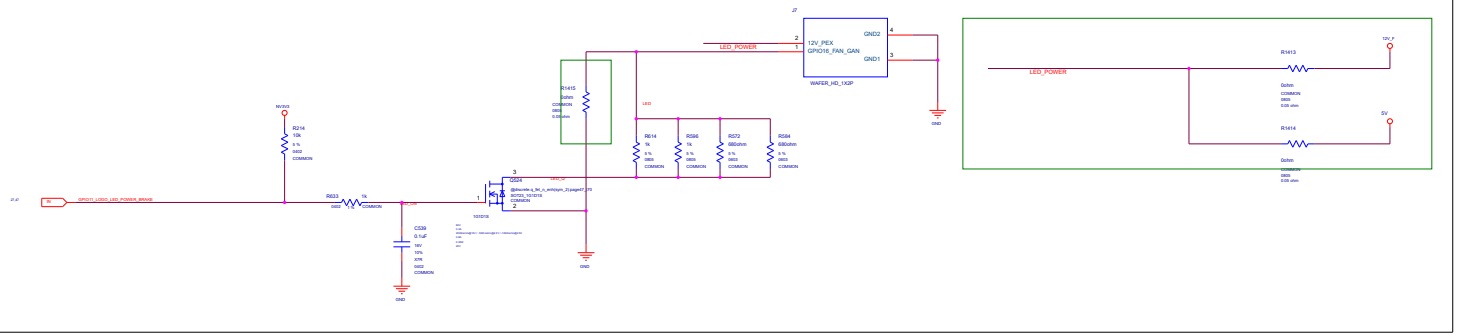
SYSFAN_TACH_MCU
SYSFANTACH_SELECT_MCU
STRIX_SYSFAN_MCU
SYSTEM_FAN_DUTY_MCU
TO_S0002_SYSTEM_FAN_CONTROL

BLUE_LED_MCU
GREEN_LED_MCU
RED_LED_MCU
TO_S0003_RGB_LED

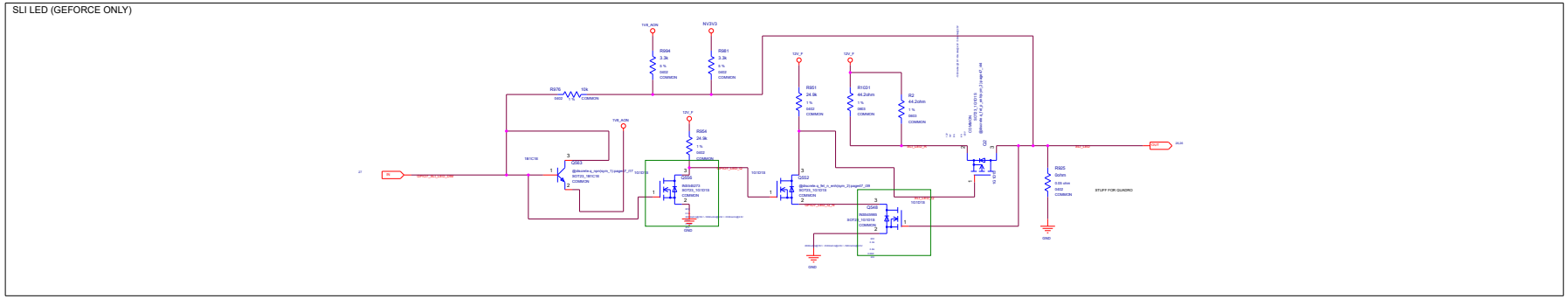
Title: <Title>		
Size: A3	Document Number: <Doc>	Rev: <RevCode>
Date: Tuesday, August 01, 2017	Sheet 1 of 1	

Page45:GEFORCE LED & SLI LED

LED HEADER(GEFORCE ONLY)



SLI LED (GEFORCE ONLY)



ASSEMBLY	<ASSEMBLY_DESCRIPTION>
PAGE DETAIL	GEFORCE LED AND SLI LED

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NV_PN	600-1G611-BASE-300		
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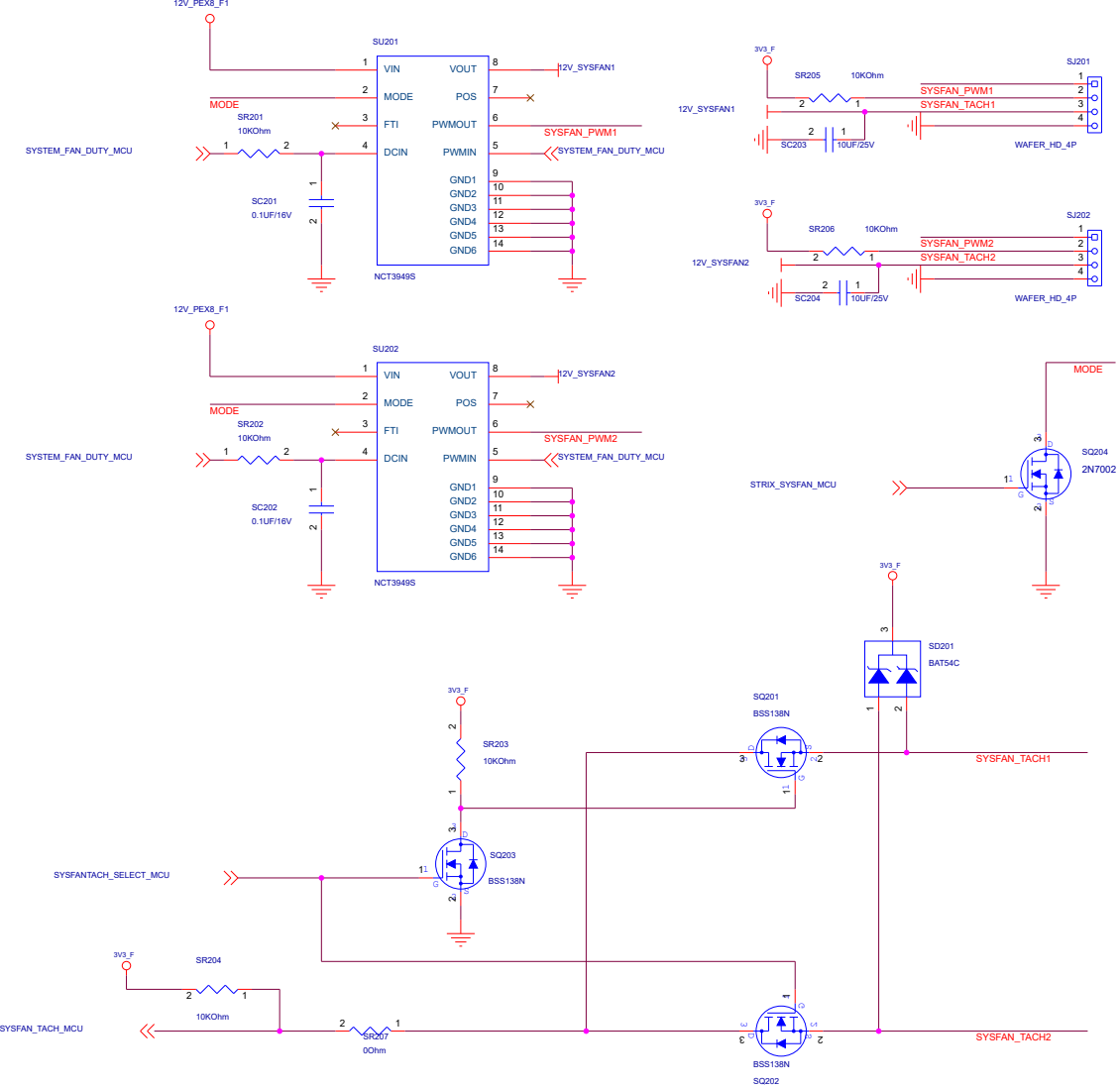
BOM REV	A	DATE	26-SEP-2016



TO Power

+3.3V_BUS

TO Power, Max. 1A

12V_SYSFAN

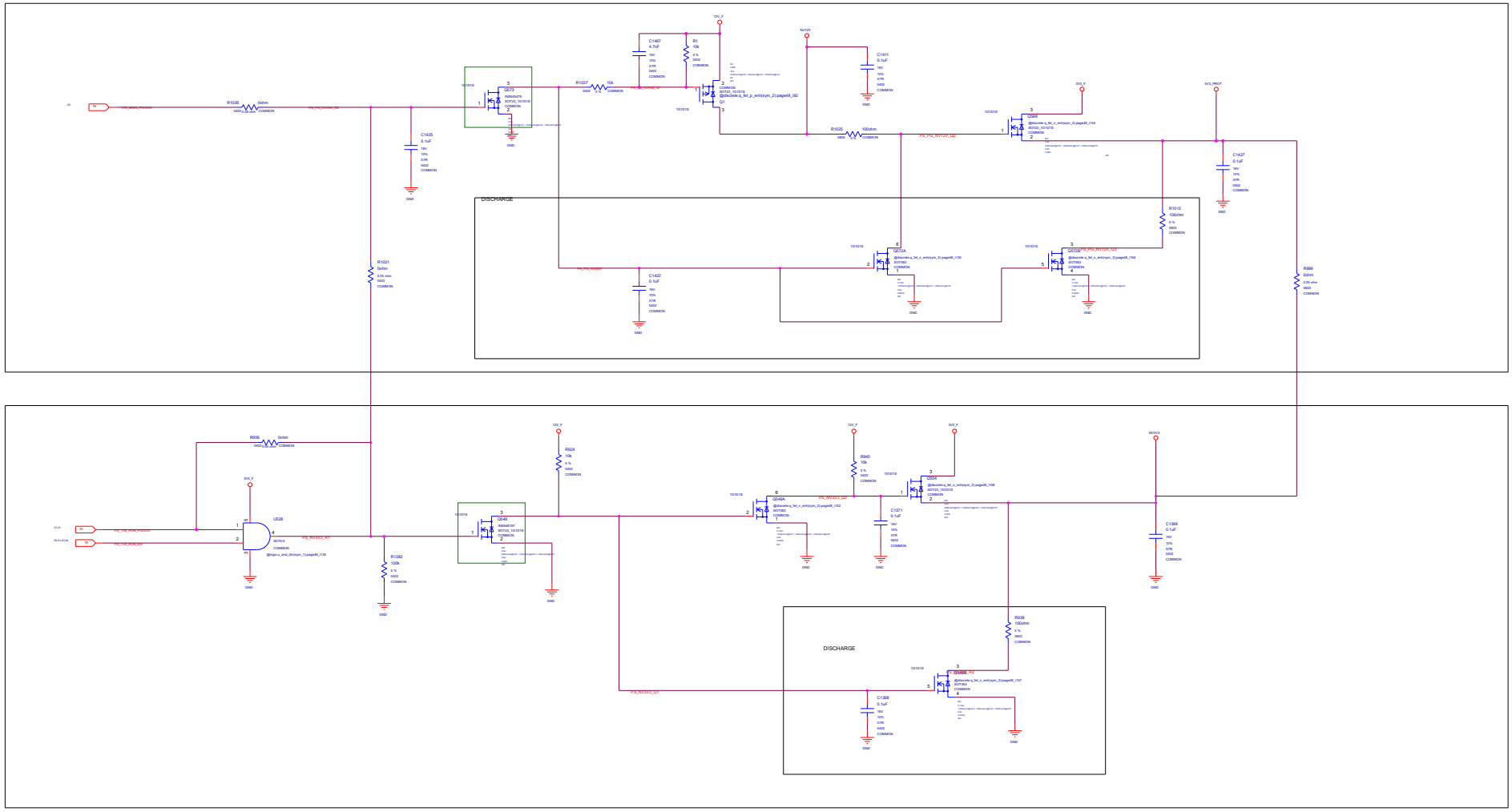
TO S0001 IT8915

STRIX_SYSFAN_MCU
SYSTEM_FAN_DUTY_MCU
SYSFANTACH_SELECT_MCU
SYSFAN_TACH_MCU

STRIX_SYSFAN_MCU	Mode
L	NORMAL
H(Default)	STRIX

SYSFANTACH_SELECT_MCU	Mode
L	SYSFAN_TACH1
H(Default)	SYSFAN_TACH2

Title	<Title>	
Size: B	Document Number: <Doc>	Rev: <RevCode>
Date: Tuesday, August 01, 2017	Sheet 1 of 1	



ASSEMBLY	<ASSEMBLY_DESCRIPTION>
PAGE DETAIL	PS: NV3V3, NV12V

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NV_PN	600-1G611-BASE-300
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Page48: Mechanical: Bracket/Thermal Solution

Brackets:

Bracket Screw

GPU Stiffener (BRING-UP COOLER)

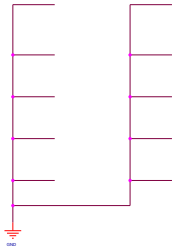
QUAL COOLER STIFFENER

GPU HEATLINK

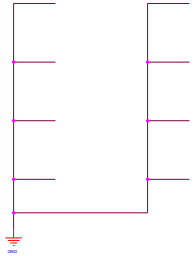
STIFFENER

BOARD BACK PLATE

Mechanical Holes Symbol



GPU HOLES SYMBOL



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PAGE DETAIL	MECH

NVIDIA CORPORATION
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SANTA CLARA, CA 95050, USA

NV_PN	600-1G611-BASE-300		
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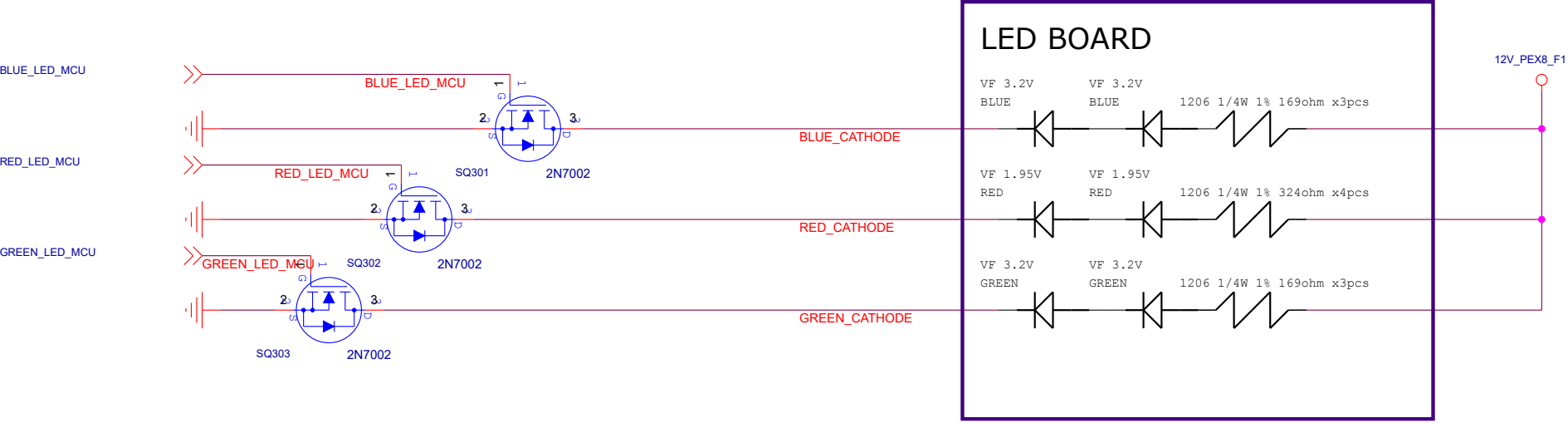
BOM REV	A	DATE	26-SEP-2016



BLUE_LED_MCU

RED_LED_MCU

GREEN_LED_MCU

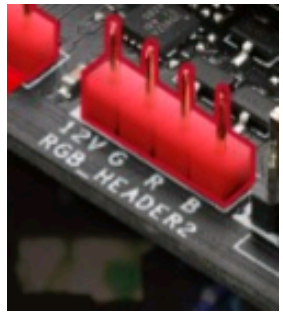
TO S0001 IT8915

+12V_LED

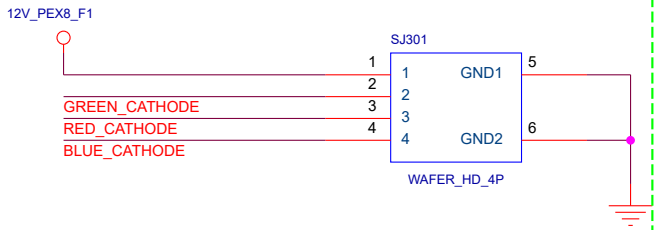
TO Power, Max 300mA

COVER LED線路

示意圖



連接座旁請註明 12V G R B



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Size A	Document Number <Doc>		Rev <RevCode>
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背板ROG LED線路

5V_LED

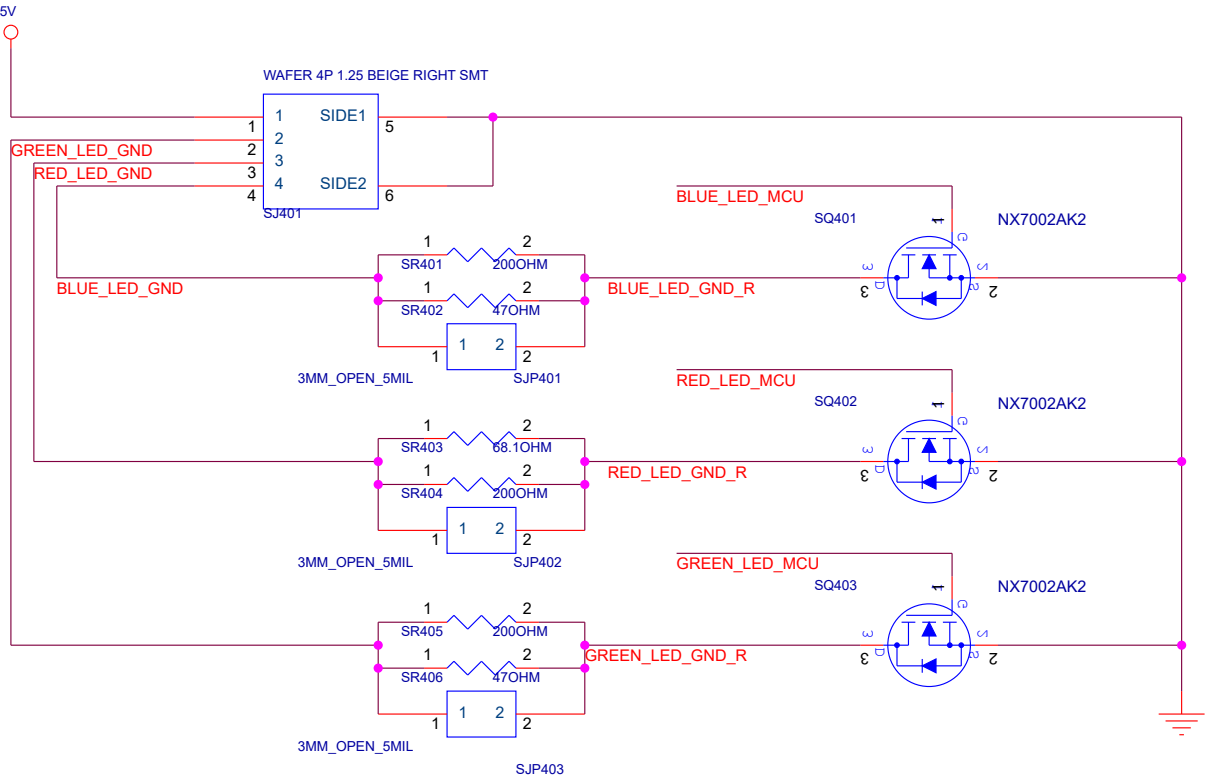
TO Power

BLUE_LED_MCU

RED_LED_MCU

GREEN_LED_MCU

TO S0001 IT8915



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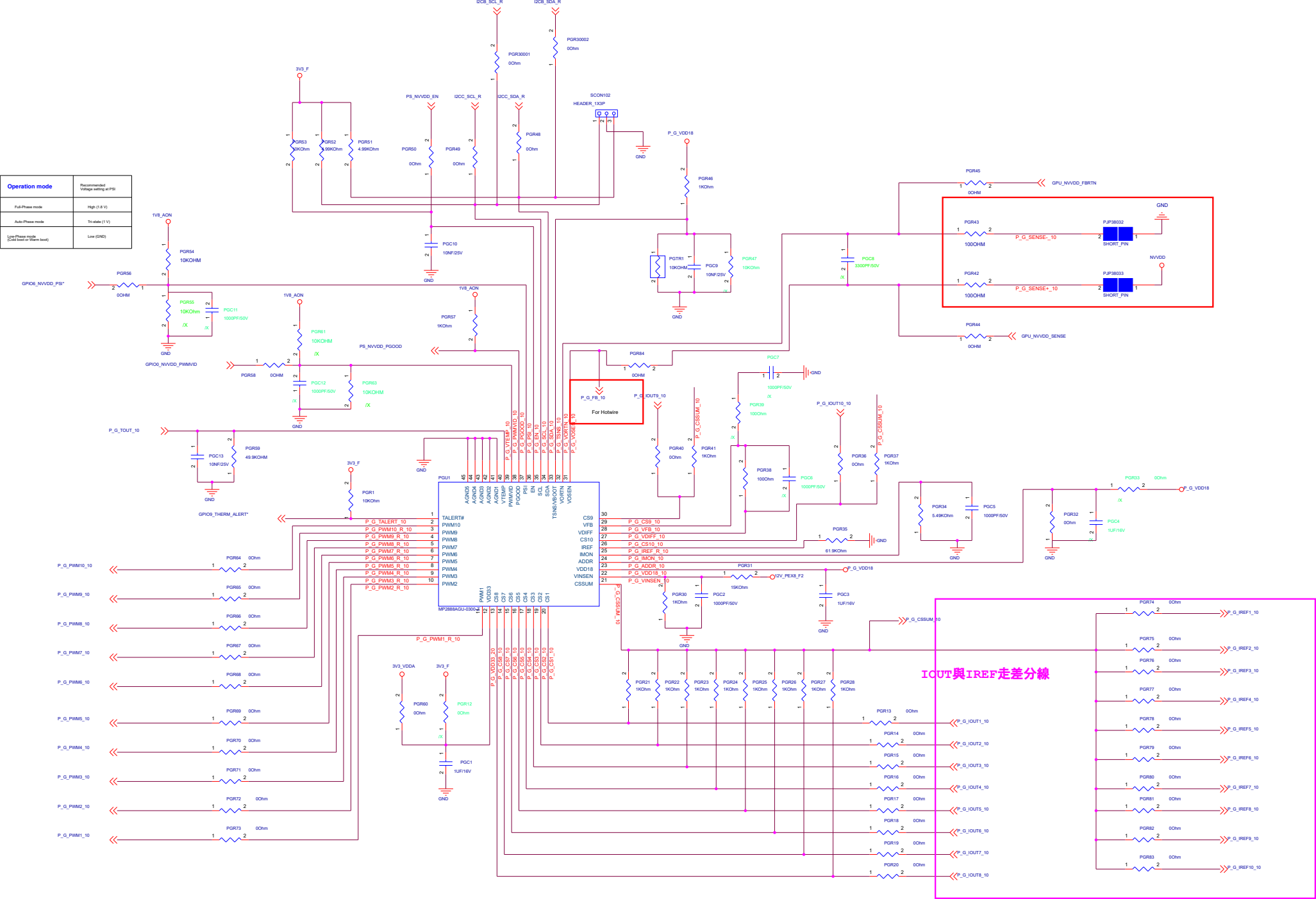
Size A	Document Number <Doc>		Rev <RevCode>
Date: Tuesday, August 01, 2017		Sheet 1 of 1	


Operation mode
Recommended Voltage setting at PSI
Full-Phase mode
High (1.8 V)
Auto-Phase mode
Tri-state (1 V)
Low-Phase mode (Cold boot or Warm boot)
Low (GND)
I2CB_SCL_R
I2CB_SDA_R
PGR30001 0Ohm
PGR30002 0Ohm
3V3_F
PS_NVVDD_EN
I2CC_SCL_R
I2CC_SDA_R
SCON102
HEADER_1X3P
PGR53 10KOhm
PGR52 4.99KOhm
PGR51 4.99KOhm
PGR50 0Ohm
PGR49 0Ohm
PGR48 0Ohm
P_G_VDD18
PGR46 1KOhm
PGR45 0OHM
GPU_NVVDD_FBRTN
GND
PGR43 100OHM
P_G_SENSE-_10
PJP38032
SHORT_PIN
NVVDD
PGR42 100OHM
P_G_SENSE+_10
PJP38033
SHORT_PIN
PGR44 0OHM
GPU_NVVDD_SENSE
1V8_AON
PGR54 10KOHM
PGC10 10NF/25V
PGTR1 10KOHM
PGC9 10NF/25V
PGR47 10KOhm
PGC8 3300PF/50V
GPIO6_NVVDD_PSI*
PGR56 0OHM
PGR55 10KOhm
PGC11 1000PF/50V
PGR61 10KOHM
PGR57 1KOhm
PS_NVVDD_PGOOD
GPIO0_NVVDD_PWMVID
PGR58 0OHM
PGC12 1000PF/50V
PGR63 10KOHM
PGR84 0OHM
P_G_FB_10
For Hotwire
P_G_IOUT9_10
P_G_IOUT10_10
PGC7 1000PF/50V
PGR39 100Ohm
P_G_TOUT_10
PGC13 10NF/25V
PGR59 49.9KOHM
PGR40 0Ohm
PGR41 1KOhm
PGR38 100Ohm
PGC6 1000PF/50V
PGR36 0Ohm
PGR37 1KOhm
P_G_CSSUM_10
PGR34 5.49KOhm
PGC5 1000PF/50V
PGR33 0Ohm
PGR32 0Ohm
PGC4 1UF/16V
P_G_VDD18
PGR35 61.9KOhm
PGR31 15KOhm
12V_PEX8_F2
PGR30 1KOhm
PGC2 1000PF/50V
PGC3 1UF/16V
GPIO9_THERM_ALERT*
PGR1 10KOhm
PGU1
MP2888AGU-0300-P
TALERT#
PWM10
PWM9
PWM8
PWM7
PWM6
PWM5
PWM4
PWM3
PWM2
CS9
VFB
VDIFF
CS10
IREF
IMON
ADDR
VDD18
VINSEN
CSSUM
P_G_TALERT_10
P_G_PWM10_R_10
P_G_PWM9_R_10
P_G_PWM8_R_10
P_G_PWM7_R_10
P_G_PWM6_R_10
P_G_PWM5_R_10
P_G_PWM4_R_10
P_G_PWM3_R_10
P_G_PWM2_R_10
P_G_PWM1_R_10
P_G_CS9_10
P_G_VFB_10
P_G_VDIFF_10
P_G_CS10_10
P_G_IREF_R_10
P_G_IMON_10
P_G_ADDR_10
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P_G_VINSEN_10
P_G_CSSUM_10
P_G_PWM10_10
P_G_PWM9_10
P_G_PWM8_10
P_G_PWM7_10
P_G_PWM6_10
P_G_PWM5_10
P_G_PWM4_10
P_G_PWM3_10
P_G_PWM2_10
P_G_PWM1_10
PGR64 0Ohm
PGR65 0Ohm
PGR66 0Ohm
PGR67 0Ohm
PGR68 0Ohm
PGR69 0Ohm
PGR70 0Ohm
PGR71 0Ohm
PGR72 0Ohm
PGR73 0Ohm
3V3_VDDA
PGR60 0Ohm
PGR12 0Ohm
PGC1 1UF/16V
PGR21 1KOhm
PGR22 1KOhm
PGR23 1KOhm
PGR24 1KOhm
PGR25 1KOhm
PGR26 1KOhm
PGR27 1KOhm
PGR28 1KOhm
PGR13 0Ohm
PGR14 0Ohm
PGR15 0Ohm
PGR16 0Ohm
PGR17 0Ohm
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PGR19 0Ohm
PGR20 0Ohm
P_G_IOUT1_10
P_G_IOUT2_10
P_G_IOUT3_10
P_G_IOUT4_10
P_G_IOUT5_10
P_G_IOUT6_10
P_G_IOUT7_10
P_G_IOUT8_10
IOUT與IREF走差分線
PGR74 0Ohm
PGR75 0Ohm
PGR76 0Ohm
PGR77 0Ohm
PGR78 0Ohm
PGR79 0Ohm
PGR80 0Ohm
PGR81 0Ohm
PGR82 0Ohm
PGR83 0Ohm
P_G_IREF1_10
P_G_IREF2_10
P_G_IREF3_10
P_G_IREF4_10
P_G_IREF5_10
P_G_IREF6_10
P_G_IREF7_10
P_G_IREF8_10
P_G_IREF9_10
P_G_IREF10_10

BLUE_LED_MCU

RED_LED_MCU

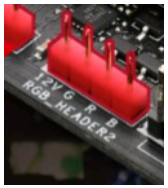
GREEN_LED_MCU

TO S0001 IT8915

+12V_LED

TO Power, Max 2A

示意圖



連接座旁請註明 12V G R B

RGB Header

RGB_HEADER

+12V_efuse1

LEDD_B

LEDD_R

LEDD_G

HEADER_1X4P

LEDD_R

SQ501 EMF30N02J

SC501 0.1UF/16V /X/SB357x

RED_LED_MCU

LEDD_B

SQ502 EMF30N02J

SC502 0.1UF/16V /X/SB357x

BLUE_LED_MCU

LEDD_G

SQ503 EMF30N02J

SC503 0.1UF/16V /X/SB357x

GREEN_LED_MCU

eFuse

12V_PEX8_F1

12V_PEX8_F1

SU501

NCT3581Y-A

GND3 GND2 GND1 ILIM BFET OUT3 OUT2 OUT1

dV/dT EN/UVLO VIN1 VIN2 VIN3

ST501 /X/SB3572

SJP501 3MM_OPEN_5MIL

+12V_efuse1

SC504 0.1UF/16V /X/SB3572

SR501 8.2KOhm

SR502 4.7KOhm

SC505 1000PF/50V /X/SB3572

SC506 1UF/16V /X/SB3572

SC507 10UF/16V

SR503 44.2KOhm

改用NCT3581

限流=2A, (R*3)/10^5 = I-0.7

12V_PEX8_F1

+12V_efuse1

SJP502 3MM_OPEN_5MIL

SF1806 1.5A/6V colay

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Size A3	Document Number <Doc>	Rev <RevCode>
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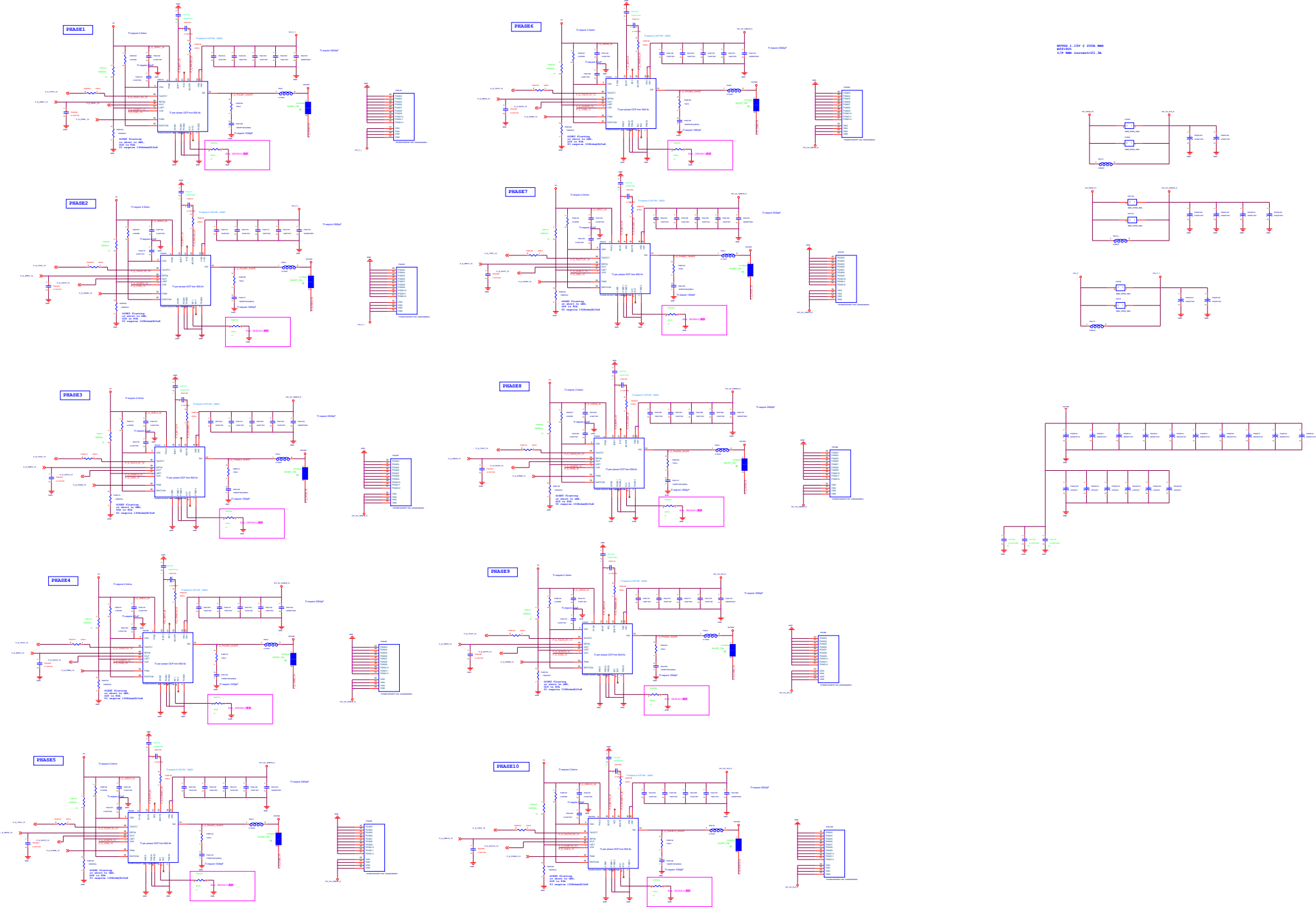
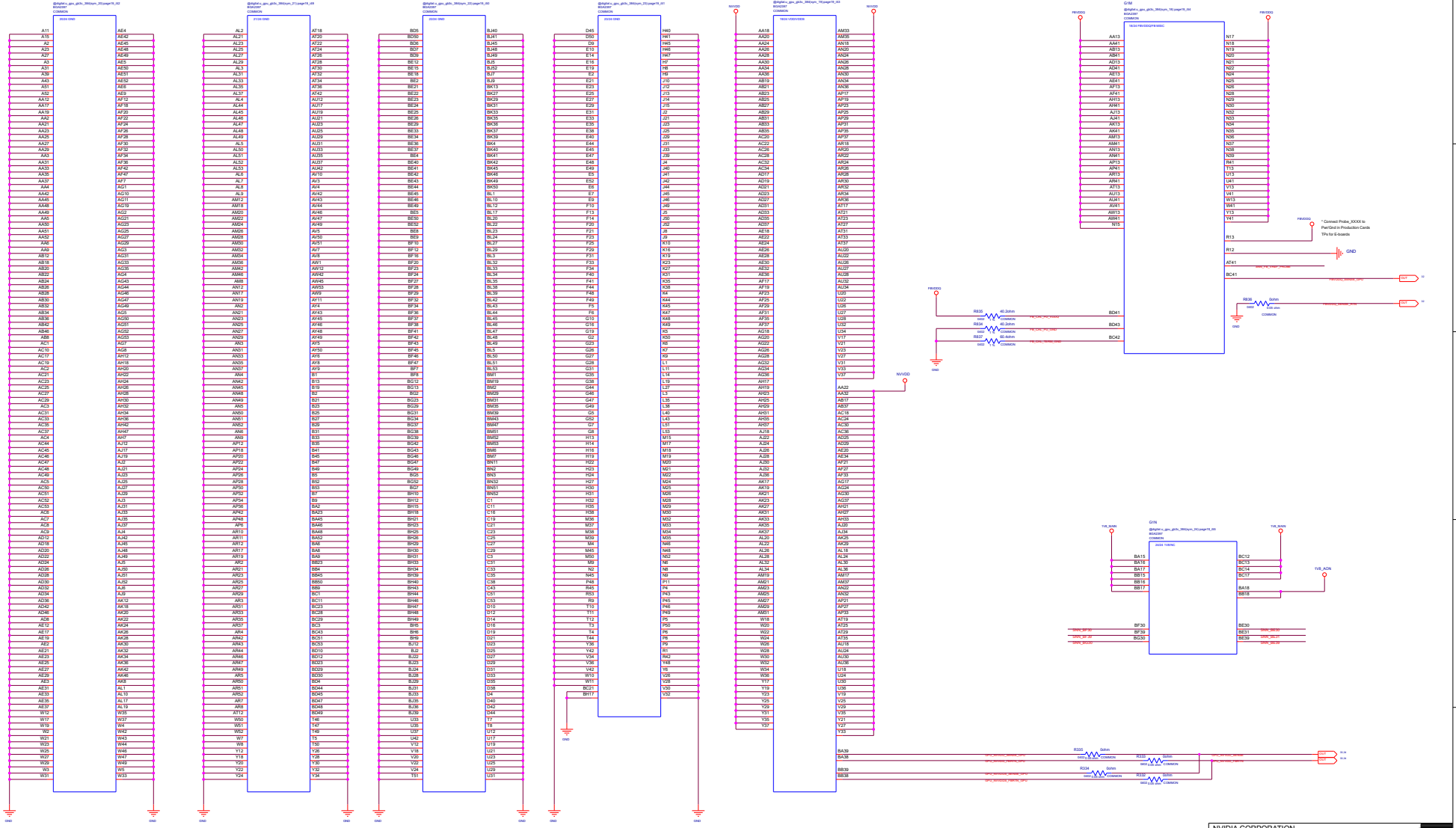

PHASE1
PHASE2
PHASE3
PHASE4
PHASE5
PHASE6
PHASE7
PHASE8
PHASE9
PHASE10
VDDIO 1.15V @ 200A MAX
VDDIO_SENSE
0/0 MAX measured=21.3A

Page19: GPU PWR and GND



ASSEMBLY	<ASSEMBLY_DESCRIPTION>
PAGE DETAIL	GPU PWR AND GND

NVIDIA CORPORATION
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SANTA CLARA, CA 95050, USA

NV_PN	600-1G611-BASE-300
PCB REV	PG611-C00
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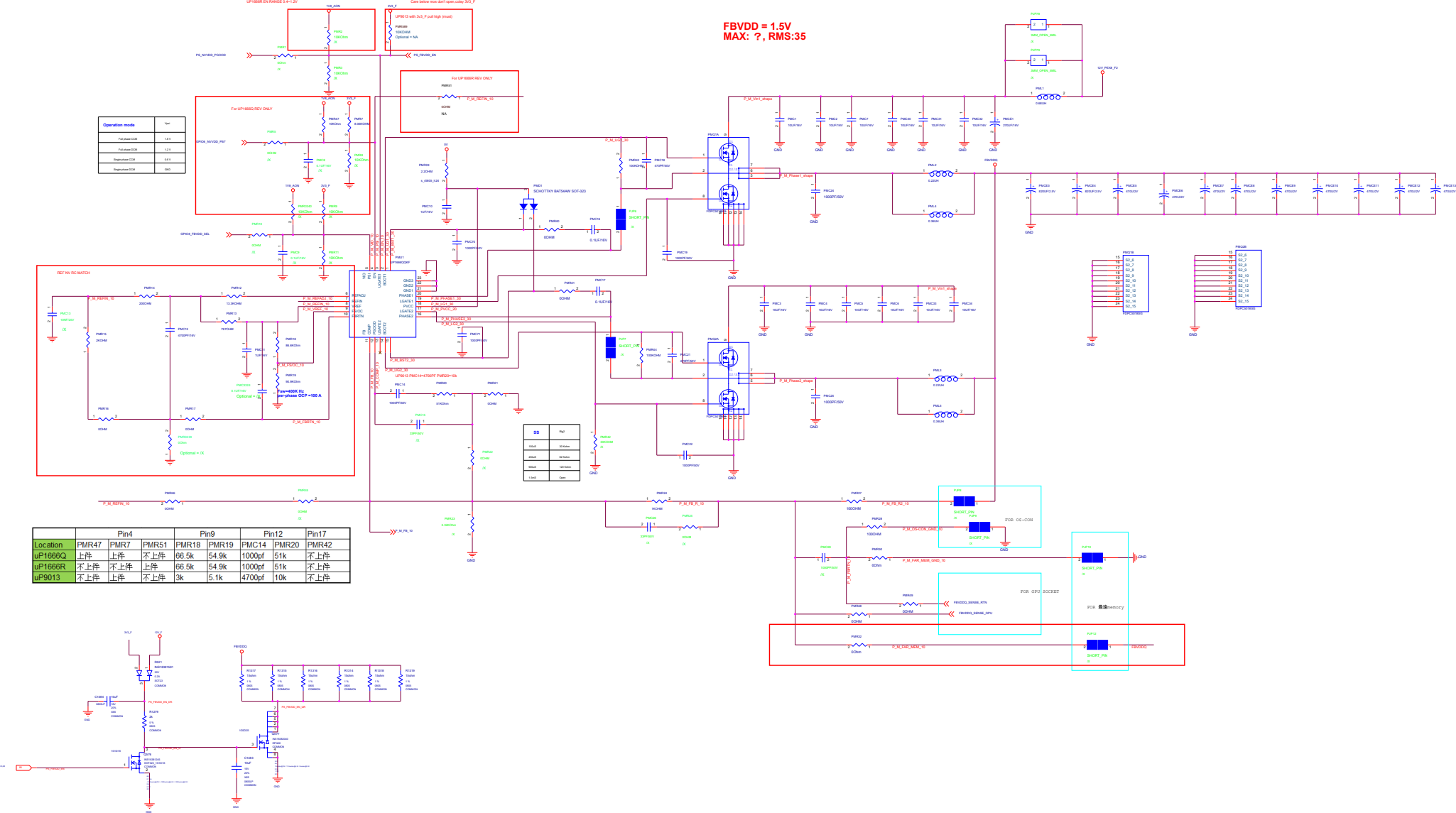

	Pin4			Pin9		Pin12	Pin17
Location	PMR47	PMR7	PMR51	PMR18	PMR19	PMC14	PMR20	PMR42
uP1666Q	上件	上件	不上件	66.5k	54.9k	1000pf	51k	不上件
uP1666R	不上件	不上件	上件	66.5k	54.9k	1000pf	51k	不上件
uP9013	不上件	上件	不上件	3k	5.1k	4700pf	10k	不上件