PG413 A00

GP104 - 8GB GDDR5X, 256b, 256Mx32
Tall DVI-D + DP + DP + DP/HDMI + DP

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2701 SAN TOMAS EXPRESSWAY
SANTA CLARA, CA 95050, USA

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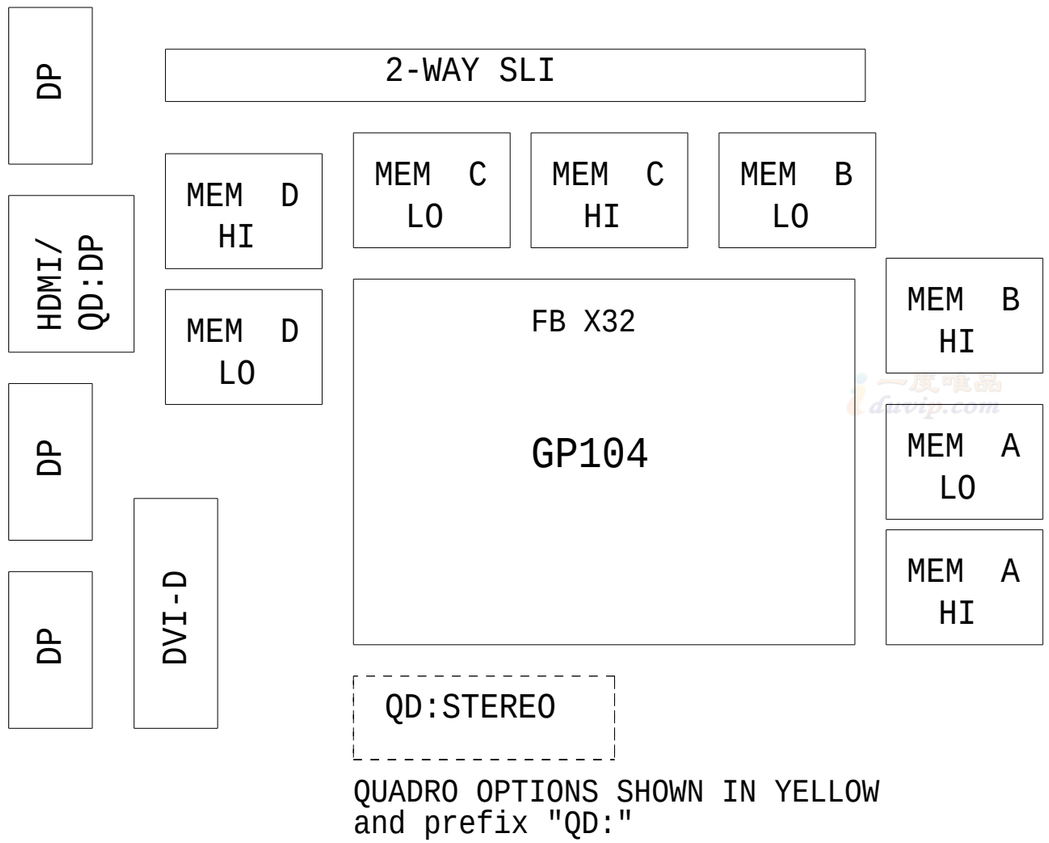
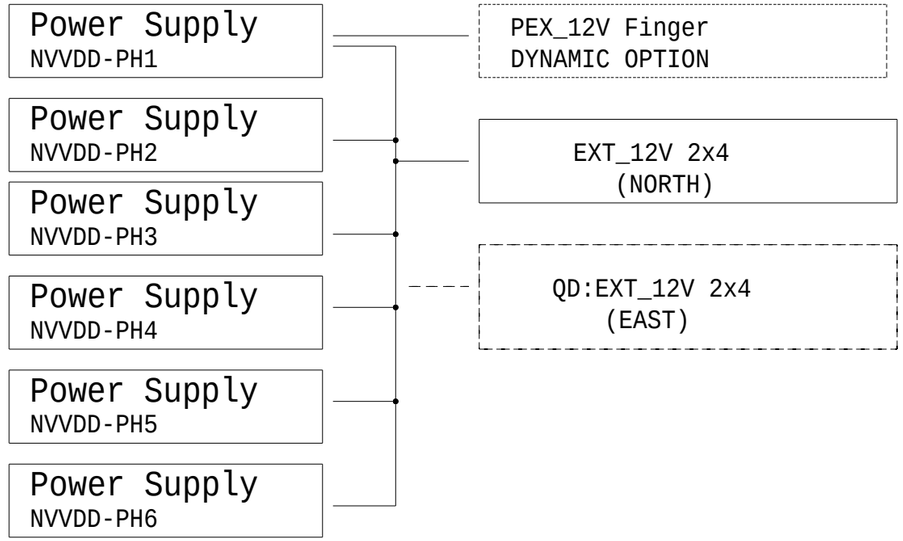
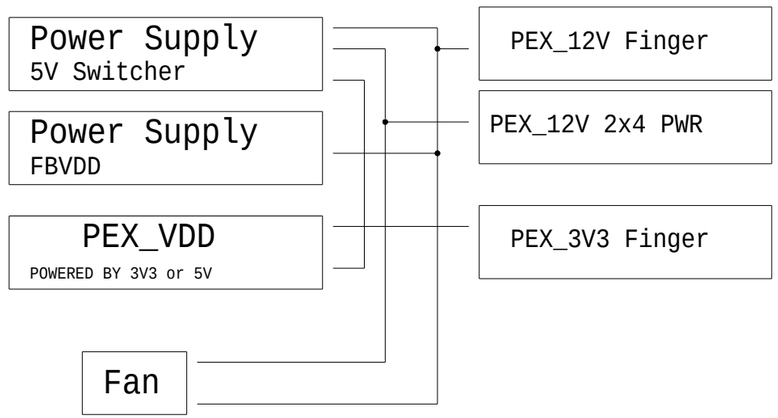
BOM REV	D	DATE	29-MAR-2016

Page2: Block Diagram



QUADRO OPTIONS SHOWN IN YELLOW
and prefix "QD:"





ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	Block Diagram

NVIDIA CORPORATION
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Page3: PCI Express

NET		VOLTAGE	MAX_CURRENT	MIN_WIDTH
12V	NV_SOURCE_POWER_NET	12V	5.5A	0.400
3V3	NV_SOURCE_POWER_NET	3.3V	3.0A	0.400
GND	NV_SOURCE_POWER_NET	0V	8.5A	0.400

PLACE 0603 4.7UF FOOTPRINT ON TOP OF 0805 FOOTPRINT

CN1 CON_X16 NO_STUFF CON_PCIEXP_X16_EDGE

G1 GP104-400-A1 96A2152 COMMON 1/23 PCI_EXPRESS

Place under GPU

Place between GPU and PS

FUTURE USE Approved in PCIE SIG

END OF X1 / END OF X4 / END OF X8 / END OF X16

ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	PCI Express

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

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Page4: MEMORY: GPU Partition A/B

G1
GP104-400-A1
BGA2152
COMMON

2/23 FBA

FB_DATA
FBA_D<63..0>

0	FBA_D<0>	U51	FBA_D0
1	FBA_D<1>	U48	FBA_D1
2	FBA_D<2>	U50	FBA_D2
3	FBA_D<3>	U49	FBA_D3
4	FBA_D<4>	R51	FBA_D4
5	FBA_D<5>	R50	FBA_D5
6	FBA_D<6>	R47	FBA_D6
7	FBA_D<7>	U46	FBA_D7
8	FBA_D<8>	V46	FBA_D8
9	FBA_D<9>	Y45	FBA_D9
10	FBA_D<10>	Y47	FBA_D10
11	FBA_D<11>	Y46	FBA_D11
12	FBA_D<12>	V50	FBA_D12
13	FBA_D<13>	V47	FBA_D13
14	FBA_D<14>	U52	FBA_D14
15	FBA_D<15>	V51	FBA_D15
16	FBA_D<16>	AJ44	FBA_D16
17	FBA_D<17>	AG48	FBA_D17
18	FBA_D<18>	AJ45	FBA_D18
19	FBA_D<19>	AG49	FBA_D19
20	FBA_D<20>	AF46	FBA_D20
21	FBA_D<21>	AF47	FBA_D21
22	FBA_D<22>	AF48	FBA_D22
23	FBA_D<23>	AD47	FBA_D23
24	FBA_D<24>	AD49	FBA_D24
25	FBA_D<25>	AD48	FBA_D25
26	FBA_D<26>	AC46	FBA_D26
27	FBA_D<27>	AC47	FBA_D27
28	FBA_D<28>	AA47	FBA_D28
29	FBA_D<29>	AA48	FBA_D29
30	FBA_D<30>	AA45	FBA_D30
31	FBA_D<31>	Y44	FBA_D31
32	FBA_D<32>	AW51	FBA_D32
33	FBA_D<33>	BA52	FBA_D33
34	FBA_D<34>	AW50	FBA_D34
35	FBA_D<35>	BA51	FBA_D35
36	FBA_D<36>	BA50	FBA_D36
37	FBA_D<37>	BB50	FBA_D37
38	FBA_D<38>	BA49	FBA_D38
39	FBA_D<39>	AW49	FBA_D39
40	FBA_D<40>	AV48	FBA_D40
41	FBA_D<41>	AT49	FBA_D41
42	FBA_D<42>	AT47	FBA_D42
43	FBA_D<43>	AT48	FBA_D43
44	FBA_D<44>	AT46	FBA_D44
45	FBA_D<45>	AV51	FBA_D45
46	FBA_D<46>	AV52	FBA_D46
47	FBA_D<47>	AV49	FBA_D47
48	FBA_D<48>	AJ48	FBA_D48
49	FBA_D<49>	AJ46	FBA_D49
50	FBA_D<50>	AJ47	FBA_D50
51	FBA_D<51>	AK49	FBA_D51
52	FBA_D<52>	AM47	FBA_D52
53	FBA_D<53>	AM46	FBA_D53
54	FBA_D<54>	AN48	FBA_D54
55	FBA_D<55>	AN49	FBA_D55
56	FBA_D<56>	AM44	FBA_D56
57	FBA_D<57>	AM45	FBA_D57
58	FBA_D<58>	AN45	FBA_D58
59	FBA_D<59>	AN46	FBA_D59
60	FBA_D<60>	AR48	FBA_D60
61	FBA_D<61>	AN47	FBA_D61
62	FBA_D<62>	AR47	FBA_D62
63	FBA_D<63>	AR46	FBA_D63

FB_DBI
FBA_DBI<7..0>

0	FBA_DBI<0>	U47	FBA_DQM0
1	FBA_DBI<1>	Y48	FBA_DQM1
2	FBA_DBI<2>	AG47	FBA_DQM2
3	FBA_DBI<3>	AC48	FBA_DQM3
4	FBA_DBI<4>	BB51	FBA_DQM4
5	FBA_DBI<5>	AV50	FBA_DQM5
6	FBA_DBI<6>	AM48	FBA_DQM6
7	FBA_DBI<7>	AR49	FBA_DQM7

FB_EDC
FBA_EDC<7..0>

0	FBA_EDC<0>	R48	FBA_DQS_WP0
1	FBA_EDC<1>	V48	FBA_DQS_WP1
2	FBA_EDC<2>	AF44	FBA_DQS_WP2
3	FBA_EDC<3>	AA48	FBA_DQS_WP3
4	FBA_EDC<4>	BB52	FBA_DQS_WP4
5	FBA_EDC<5>	AT50	FBA_DQS_WP5
6	FBA_EDC<6>	AK48	FBA_DQS_WP6
7	FBA_EDC<7>	AR51	FBA_DQS_WP7

W47	GND	
W49	GND	
W51	GND	
W6	GND	
W8	GND	
Y14	GND	
Y15	GND	
Y16	GND	

AF42 → FB_REFPLL_AVDD0
L29 → FB_REFPLL_AVDD1

Y51	FBA_CMD<0>	0	FBA_CMD0
Y52	FBA_CMD<1>	1	FBA_CMD1
AA52	FBA_CMD<2>	2	FBA_CMD2
AA51	FBA_CMD<3>	3	FBA_CMD3
AA50	FBA_CMD<4>	4	FBA_CMD4
AC50	FBA_CMD<5>	5	FBA_CMD5
AC51	FBA_CMD<6>	6	FBA_CMD6
AC52	FBA_CMD<7>	7	FBA_CMD7
AC49	FBA_CMD<8>	8	FBA_CMD8
AD52	FBA_CMD<9>	9	FBA_CMD9
AD51	FBA_CMD<10>	10	FBA_CMD10
AD50	FBA_CMD<11>	11	FBA_CMD11
AF50	FBA_CMD<12>	12	FBA_CMD12
AF51	FBA_CMD<13>	13	FBA_CMD13
AF52	FBA_CMD<14>	14	FBA_CMD14
AN50	FBA_CMD<15>	15	FBA_CMD15
AN51	FBA_CMD<16>	16	FBA_CMD16
AN52	FBA_CMD<17>	17	FBA_CMD17
AM49	FBA_CMD<18>	18	FBA_CMD18
AM52	FBA_CMD<19>	19	FBA_CMD19
AM51	FBA_CMD<20>	20	FBA_CMD20
AM50	FBA_CMD<21>	21	FBA_CMD21
AK50	FBA_CMD<22>	22	FBA_CMD22
AK51	FBA_CMD<23>	23	FBA_CMD23
AK52	FBA_CMD<24>	24	FBA_CMD24
AJ49	FBA_CMD<25>	25	FBA_CMD25
AJ52	FBA_CMD<26>	26	FBA_CMD26
AJ51	FBA_CMD<27>	27	FBA_CMD27
AJ50	FBA_CMD<28>	28	FBA_CMD28
AG50	FBA_CMD<29>	29	FBA_CMD29
AG51	FBA_CMD<30>	30	FBA_CMD30
AG52	FBA_CMD<31>	31	FBA_CMD31
AF49	SNN_FBA_CMD<32>		FBA_CMD32
Y50	SNN_FBA_CMD<33>		FBA_CMD33
AR50	FBA_DEBUG0		FBA_CMD34
	FBA_DEBUG1		FBA_CMD35

FB_CMD
FBA_CMD<31..0>

R779 60.4ohm 0402 1 % NO STUFF
R780 60.4ohm 0402 1 % NO STUFF
FBVDD

AA44	SNN_FBA_DBG_RFU1		FBA_DBG_RFU1
AN44	SNN_FBA_DBG_RFU2		FBA_DBG_RFU2

AG45	FBA_CLK0	FBA_CLK0	FB_CLK	OUT 5.3D<
AG46	FBA_CLK0*	FBA_CLK0	FB_CLK	OUT 5.3D<
AK46	FBA_CLK1	FBA_CLK1	FB_CLK	OUT 6.3E<
AK45	FBA_CLK1*	FBA_CLK1	FB_CLK	OUT 6.3E<

FBA_CLK0, FBA_CLK0, FBA_CLK1, FBA_CLK1

U45	FBA_WCK01	FBA_WCK01	FB_WCK	OUT 5.3B<
U44	FBA_WCK01*	FBA_WCK01	FB_WCK	OUT 5.3B<
V45	SNN_FBA_WCKB01			
Y44	SNN_FBA_WCKB01*			
AC45	FBA_WCK23	FBA_WCK23	FB_WCK	OUT 5.3C<
AC44	FBA_WCK23*	FBA_WCK23	FB_WCK	OUT 5.3C<
AD46	SNN_FBA_WCKB23			
AD45	SNN_FBA_WCKB23*			
AV47	FBA_WCK45	FBA_WCK45	FB_WCK	OUT 6.3B<
AV46	FBA_WCK45*	FBA_WCK45	FB_WCK	OUT 6.3B<
AW48	SNN_FBA_WCKB45			
AW47	SNN_FBA_WCKB45*			
AR45	FBA_WCK67	FBA_WCK67	FB_WCK	OUT 6.3C<
AR44	FBA_WCK67*	FBA_WCK67	FB_WCK	OUT 6.3C<
AT45	SNN_FBA_WCKB67			
AT44	SNN_FBA_WCKB67*			

FBA_WCKB01, FBA_WCKB01, FBA_WCKB23, FBA_WCKB23, FBA_WCKB45, FBA_WCKB45, FBA_WCKB67, FBA_WCKB67

1V8
LB501 30ohm COMMON BEAD_0603
1.0V
AN42 FBA_PLL_AVDD
1V8_FB_PLL OUT 4.4H< 4.5A< 9.4D< 9.4H<
C924 0.1uF 16V 10% X7R 0402 COMMON
C949 22uF 6.3V 20% X5R 0805LP COMMON
GND

FBVDD
R759 10k 5 % 0402 COMMON
R760 10k 5 % 0402 COMMON
FBA_CMD<13>
FBA_CMD<29>
FBA_CMD<1>
FBA_CMD<17>
R764 10k 5 % 0402 COMMON
R770 10k 5 % 0402 COMMON
GND

9.4H< 9.4D< 4.4H< 4.4D> IN 1V8_FB_PLL
C783 0.1uF 16V 10% X7R 0402 COMMON
C859 0.1uF 16V 10% X7R 0402 COMMON
GND

FB_DATA
FBB_D<63..0>

0	FBB_D<0>	H32	FBB_D0
1	FBB_D<1>	D32	FBB_D1
2	FBB_D<2>	A33	FBB_D2
3	FBB_D<3>	B32	FBB_D3
4	FBB_D<4>	E32	FBB_D4
5	FBB_D<5>	G32	FBB_D5
6	FBB_D<6>	J30	FBB_D6
7	FBB_D<7>	F32	FBB_D7
8	FBB_D<8>	H36	FBB_D8
9	FBB_D<9>	G36	FBB_D9
10	FBB_D<10>	J36	FBB_D10
11	FBB_D<11>	F36	FBB_D11
12	FBB_D<12>	F33	FBB_D12
13	FBB_D<13>	D33	FBB_D13
14	FBB_D<14>	J32	FBB_D14
15	FBB_D<15>	G33	FBB_D15
16	FBB_D<16>	E45	FBB_D16
17	FBB_D<17>	D45	FBB_D17
18	FBB_D<18>	F45	FBB_D18
19	FBB_D<19>	G45	FBB_D19
20	FBB_D<20>	D42	FBB_D20
21	FBB_D<21>	E42	FBB_D21
22	FBB_D<22>	F42	FBB_D22
23	FBB_D<23>	H41	FBB_D23
24	FBB_D<24>	E41	FBB_D24
25	FBB_D<25>	F39	FBB_D25
26	FBB_D<26>	E39	FBB_D26
27	FBB_D<27>	D39	FBB_D27
28	FBB_D<28>	F38	FBB_D28
29	FBB_D<29>	E38	FBB_D29
30	FBB_D<30>	D36	FBB_D30
31	FBB_D<31>	E36	FBB_D31
32	FBB_D<32>	M50	FBB_D32
33	FBB_D<33>	P48	FBB_D33
34	FBB_D<34>	M51	FBB_D34
35	FBB_D<35>	M49	FBB_D35
36	FBB_D<36>	P47	FBB_D36
37	FBB_D<37>	P52	FBB_D37
38	FBB_D<38>	R46	FBB_D38
39	FBB_D<39>	P46	FBB_D39
40	FBB_D<40>	L50	FBB_D40
41	FBB_D<41>	L51	FBB_D41
42	FBB_D<42>	L52	FBB_D42
43	FBB_D<43>	L49	FBB_D43
44	FBB_D<44>	M46	FBB_D44
45	FBB_D<45>	L47	FBB_D45
46	FBB_D<46>	M48	FBB_D46
47	FBB_D<47>	M47	FBB_D47
48	FBB_D<48>	D48	FBB_D48
49	FBB_D<49>	C50	FBB_D49
50	FBB_D<50>	C48	FBB_D50
51	FBB_D<51>	C49	FBB_D51
52	FBB_D<52>	E49	FBB_D52
53	FBB_D<53>	E50	FBB_D53
54	FBB_D<54>	F49	FBB_D54
55	FBB_D<55>	F48	FBB_D55
56	FBB_D<56>	F50	FBB_D56
57	FBB_D<57>	D52	FBB_D57
58	FBB_D<58>	J50	FBB_D58
59	FBB_D<59>	H48	FBB_D59
60	FBB_D<60>	H51	FBB_D60
61	FBB_D<61>	J51	FBB_D61
62	FBB_D<62>	H49	FBB_D62
63	FBB_D<63>	H52	FBB_D63

FB_DBI
FBB_DBI<7..0>

0	FBB_DBI<0>	C32	FBB_DQM0
1	FBB_DBI<1>	E33	FBB_DQM1
2	FBB_DBI<2>	E44	FBB_DQM2
3	FBB_DBI<3>	G39	FBB_DQM3
4	FBB_DBI<4>	P49	FBB_DQM4
5	FBB_DBI<5>	L48	FBB_DQM5
6	FBB_DBI<6>	D50	FBB_DQM6
7	FBB_DBI<7>	H50	FBB_DQM7

FB_EDC
FBB_EDC<7..0>

0	FBB_EDC<0>	B33	FBB_DQS_WP0
1	FBB_EDC<1>	E35	FBB_DQS_WP1
2	FBB_EDC<2>	G44	FBB_DQS_WP2
3	FBB_EDC<3>	H38	FBB_DQS_WP3
4	FBB_EDC<4>	P50	FBB_DQS_WP4
5	FBB_EDC<5>	J48	FBB_DQS_WP5
6	FBB_EDC<6>	D51	FBB_DQS_WP6
7	FBB_EDC<7>	F51	FBB_DQS_WP7

Y17	GND	
Y18	GND	
Y19	GND	
Y20	GND	
Y21	GND	
Y22	GND	
Y23	GND	
Y24	GND	

GDDR5x CMD Mapping

CMD	0..31	32..63
CMD0	CAS*	
CMD1	RST*	
CMD2	RAS*	
CMD3	A1_A9	
CMD4	A0_A10	
CMD5	A12_A13	
CMD6	ABI*	
CMD7	A6_A11	
CMD8	A7_A8	
CMD9	A4_BA2	
CMD10	A5_BA1	
CMD11	A3_BA3	
CMD12	A2_BA0	
CMD13	CKE*	
CMD14	A14_A15	
CMD15	WE*	
CMD16		CAS*
CMD17		RST*
CMD18		RAS*
CMD19		A1_A9
CMD20		A0_A10
CMD21		A12_A13
CMD22		ABI*
CMD23		A6_A11
CMD24		A7_A8
CMD25		A4_BA2
CMD26		A5_BA1
CMD27		A3_BA3
CMD28		A2_BA0
CMD29		CKE*
CMD30		A14_A15
CMD31		WE*

G1
GP104-400-A1
BGA2152
COMMON

3/23 FBB

FB_CMD
FBB_CMD<31..0>

B35	FBB_CMD<0>	0	FBB_CMD0
A35	FBB_CMD<1>	1	FBB_CMD1
D35	FBB_CMD<2>	2	FBB_CMD2
A36	FBB_CMD<3>	3	FBB_CMD3
B36	FBB_CMD<4>	4	FBB_CMD4
C36	FBB_CMD<5>	5	FBB_CMD5
C38	FBB_CMD<6>	6	FBB_CMD6
B38	FBB_CMD<7>	7	FBB_CMD7
A38	FBB_CMD<8>	8	FBB_CMD8
D38	FBB_CMD<9>	9	FBB_CMD9
A39	FBB_CMD<10>	10	FBB_CMD10
B39	FBB_CMD<11>	11	FBB_CMD11
C39	FBB_CMD<12>	12	FBB_CMD12
C41	FBB_CMD<13>	13	FBB_CMD13
B41	FBB_CMD<14>	14	FBB_CMD14
A41	FBB_CMD<15>	15	FBB_CMD15
B49	FBB_CMD<16>	16	FBB_CMD16
A49	FBB_CMD<17>	17	FBB_CMD17
A48	FBB_CMD<18>	18	FBB_CMD18
D47	FBB_CMD<19>	19	FBB_CMD19
A47	FBB_CMD<20>	20	FBB_CMD20
B47	FBB_CMD<21>	21	FBB_CMD21
C47	FBB_CMD<22>	22	FBB_CMD22
C45	FBB_CMD<23>	23	FBB_CMD23
B45	FBB_CMD<24>	24	FBB_CMD24
A45	FBB_CMD<25>	25	FBB_CMD25
D44	FBB_CMD<26>	26	FBB_CMD26
A44	FBB_CMD<27>	27	FBB_CMD27
B44	FBB_CMD<28>	28	FBB_CMD28
C44	FBB_CMD<29>	29	FBB_CMD29
C42	FBB_CMD<30>	30	FBB_CMD30
B42	FBB_CMD<31>	31	FBB_CMD31
A42	SNN_FBB_CMD<32>		FBB_CMD32
D41	SNN_FBB_CMD<33>		FBB_CMD33
C35	FBB_DEBUG0		FBB_CMD34
B50	FBB_DEBUG1		FBB_CMD35

R791 60.4ohm 0402 1 % NO STUFF
R784 60.4ohm 0402 1 % NO STUFF
FBVDD

J35	SNN_FBB_DBG_RFU1		FBB_DBG_RFU1
J41	SNN_FBB_DBG_RFU2		FBB_DBG_RFU2

H42	FBB_CLK0	FBB_CLK0	FB_CLK	OUT 7.3D<
G42	FBB_CLK0*	FBB_CLK0	FB_CLK	OUT 7.3D<
F47	FBB_CLK1	FBB_CLK1	FB_CLK	OUT 8.3D<
E47	FBB_CLK1*	FBB_CLK1	FB_CLK	OUT 8.3D<

FBB_CLK0, FBB_CLK0, FBB_CLK1, FBB_CLK1

J33	FBB_WCK01	FBB_WCK01	FB_WCK	OUT 7.3A<
H33	FBB_WCK01*	FBB_WCK01	FB_WCK	OUT 7.3A<
G35	SNN_FBB_WCKB01			
H35	SNN_FBB_WCKB01*			
J39	FBB_WCK23	FBB_WCK23	FB_WCK	OUT 7.3C<
H39	FBB_WCK23*	FBB_WCK23	FB_WCK	OUT 7.3C<
F41	SNN_FBB_WCKB23			
G41	SNN_FBB_WCKB23*			
L46	FBB_WCK45	FBB_WCK45	FB_WCK	OUT 8.3B<
L45	FBB_WCK45*	FBB_WCK45	FB_WCK	OUT 8.3B<
M44	SNN_FBB_WCKB45			
M45	SNN_FBB_WCKB45*			
H47	FBB_WCK67	FBB_WCK67	FB_WCK	OUT 8.3C<
H46	FBB_WCK67*	FBB_WCK67	FB_WCK	OUT 8.3C<
J47	SNN_FBB_WCKB67			
J46	SNN_FBB_WCKB67*			

FBB_WCKB01, FBB_WCKB01, FBB_WCKB23, FBB_WCKB23, FBB_WCKB45, FBB_WCKB45, FBB_WCKB67, FBB_WCKB67

FBB_PLL_AVDD L38 1V8_FB_PLL IN 4.4D> 4.5A< 9.4D< 9.4H<
C800 0.1uF 16V 10% X7R 0402 COMMON
GND

FBVDD
R787 10k 5 % 0402 COMMON
R758 10k 5 % 0402 COMMON
FBB_CMD<13>
FBB_CMD<29>
FBB_CMD<1>
FBB_CMD<17>
R775 10k 5 % 0402 COMMON
R788 10k 5 % 0402 COMMON
GND

ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	MEMORY: GPU Partition A/B

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Page5: MEMORY: FBA Partition 31..0

FB_DBI
FBA_DBI<7..0>
FB_EDC
FBA_EDC<7..0>
FBA_D<31..0>
FBA_CMD<31..0>
FBA_CLK0
FBA_CLK0*
FBA_WCK01
FBA_WCK01*
FBA_WCK23
FBA_WCK23*
FBA_EDC<0>
FBA_DBI<0>
FBA_EDC<1>
FBA_DBI<1>
FBA_EDC<2>
FBA_DBI<2>
FBA_EDC<3>
FBA_DBI<3>
FBA_VREFC
FBA_ZQ_1_B
FBA_VREF_Q
GPIO10_FBVREF_SEL
SNN_FB_TCK1
SNN_FB_TDI1
SNN_FB_TDO1
SNN_FB_TMS1
MEM_VPP
FBVDD

M7
MT58K256M32JA-100
BGA190_MIRR
COMMON

MIRRORED
x32 x16

R54 549ohm 1 % 0402 COMMON
R52 1.33k 1 % 0402 COMMON
R55 931ohm 1 % 0402 COMMON
C123 820pF 50V 10% X7R 0402 COMMON
R763 121ohm 1 % 0402 COMMON
Q11 A03416 SOT23_1G1D1S COMMON

0.350 1.05V
1.05V 0.350

Mirrored
MF
add 1k to VDD

C724 C714 C129 C694 C136 C128 C735 C116 C120 C139 C1308 C1309
1uF 6.3V 10% X6S 0402 COMMON

C709 C686 C697 C704 C720 C731 C721 C727
1uF 6.3V 10% X6S 0402 COMMON

C701 C144 C153 C685 C690 C733 C679 C676 C154 C151 C680
10uF 4V 20% X6S 0603 COMMON
22uF 4V 20% X6S 0603W COMMON

C1225 4.7uF 6.3V 20% X6S 0603 COMMON
C1226 1uF 6.3V 10% X6S 0402 COMMON
C1227 1uF 6.3V 10% X6S 0402 COMMON
OPTION
UNDER DRAM

ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	MEMORY: FBA[31:0]

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Page6: MEMORY: FBA Partition 63..32

FB_DBI
FBA_DBI<7..0>
FB_EDC
FBA_EDC<7..0>
FBA_D<63..32>
FBA_D<31..0>
FBA_CMD<31..0>
FBA_CLK1
FBA_CLK1*
FBA_WCK45
FBA_WCK45*
FBA_WCK67
FBA_WCK67*
FBA_VREFC
FBA_ZQ_2B
SNN_FB_TCK2
SNN_FB_TDI2
SNN_FB_TDO2
SNN_FB_TMS2
MEM_VPP
FBVDD
GND

M8
MT58K256M32JA-100
BGA190
COMMON

NORMAL

x32 x16

R762 121ohm 0402 1% COMMON

C126 820pF 50V 10% X7R 0402 COMMON

C725 C138 C131 C121 C703 C736 C133 C143 C722 C117
1uF 6.3V 10% X6S 0402 COMMON

C691 C146 C150 C695 C683 C712 C158 C142 C677 C678 C682
10uF 4V 20% X6S 0603 COMMON
22uF 4V 20% X6S 0603W COMMON

C717 C719 C730 C708 C729 C699 C706 C688
1uF 6.3V 10% X6S 0402 COMMON

C1228 4.7uF 6.3V 20% X6S 0603 COMMON
C1229 1uF 6.3V 10% X6S 0402 COMMON
C1241 1uF 6.3V 10% X6S 0402 COMMON
OPTION
UNDER DRAM

ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	MEMORY: FBA[63:32]

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Page7: MEMORY: FBB Partition 31..0

FB_DBI
FBB_DBI<7..0>
8.1B<> 4.3E<> BI
0 FBB_DBI<0>
1 FBB_DBI<1>
2 FBB_DBI<2>
3 FBB_DBI<3>
4 FBB_DBI<4>
5 FBB_DBI<5>
6 FBB_DBI<6>
7 FBB_DBI<7>

FB_EDC
FBB_EDC<7..0>
8.1B<> 4.4E< BI
0 FBB_EDC<0>
1 FBB_EDC<1>
2 FBB_EDC<2>
3 FBB_EDC<3>
4 FBB_EDC<4>
5 FBB_EDC<5>
6 FBB_EDC<6>
7 FBB_EDC<7>

4.1E<> BI FBB_D<31..0>

M5
MT58K256M32JA-100
BGA190_MIRR
COMMON

MIRRORED
x32 x16

0	FBB_D<0>	V4	DQ00	
1	FBB_D<1>	V3	DQ01	NC
2	FBB_D<2>	U4	DQ02	NC
3	FBB_D<3>	U3	DQ03	NC
4	FBB_D<4>	P4	DQ04	NC
5	FBB_D<5>	P3	DQ05	NC
6	FBB_D<6>	N4	DQ06	NC
7	FBB_D<7>	N3	DQ07	NC
	FBB_EDC<0>	T3	EDC0	NC
	FBB_DBI<0>	R3	DBI0	NC
8	FBB_D<8>	V11	DQ08	
9	FBB_D<9>	V12	DQ09	
10	FBB_D<10>	U11	DQ10	
11	FBB_D<11>	U12	DQ11	
12	FBB_D<12>	P11	DQ12	
13	FBB_D<13>	P12	DQ13	
14	FBB_D<14>	N11	DQ14	
15	FBB_D<15>	N12	DQ15	
	FBB_EDC<1>	T12	EDC1	
	FBB_DBI<1>	R12	DBI1	
4.3H> IN	FBB_WCK01	T4	WCK01	
4.3H> IN	FBB_WCK01*	T5	WCK01	

M5
MT58K256M32JA-100
BGA190_MIRR
COMMON

MIRRORED
x32 x16

16	FBB_D<16>	B11	DQ16	NC
17	FBB_D<17>	B12	DQ17	NC
18	FBB_D<18>	C11	DQ18	NC
19	FBB_D<19>	C12	DQ19	NC
20	FBB_D<20>	F11	DQ20	NC
21	FBB_D<21>	F12	DQ21	NC
22	FBB_D<22>	G11	DQ22	NC
23	FBB_D<23>	G12	DQ23	NC
	FBB_EDC<2>	D12	EDC2	GND
	FBB_DBI<2>	E12	DBI2	NC
24	FBB_D<24>	B4	DQ24	
25	FBB_D<25>	B3	DQ25	
26	FBB_D<26>	C4	DQ26	
27	FBB_D<27>	C3	DQ27	
28	FBB_D<28>	F4	DQ28	
29	FBB_D<29>	F3	DQ29	
30	FBB_D<30>	G4	DQ30	
31	FBB_D<31>	G3	DQ31	
	FBB_EDC<3>	D3	EDC3	
	FBB_DBI<3>	E3	DBI3	
4.3H> IN	FBB_WCK23	D4	WCK23	
4.3H> IN	FBB_WCK23*	D5	WCK23	

8.2D< 4.1H> IN FBB_CMD<31..0>

M5
MT58K256M32JA-100
BGA190_MIRR
COMMON

2	FBB_CMD<2>	M4	RAS
0	FBB_CMD<0>	H4	CAS
15	FBB_CMD<15>	H11	WE
6	FBB_CMD<6>	K4	ABI
4	FBB_CMD<4>	L4	A0_A10
3	FBB_CMD<3>	L5	A1_A9
12	FBB_CMD<12>	L11	A2_BA0
11	FBB_CMD<11>	L10	A3_BA3
9	FBB_CMD<9>	J11	A4_BA2
10	FBB_CMD<10>	J10	A5_BA1
7	FBB_CMD<7>	J5	A6_A11
8	FBB_CMD<8>	J4	A7_A8
5	FBB_CMD<5>	K5	A12_A13
14	FBB_CMD<14>	K12	A15_A14
1	FBB_CMD<1>	K2	RESET
13	FBB_CMD<13>	M11	CKE
4.3H> IN	FBB_CLK0	K11	CLK
4.3H> IN	FBB_CLK0*	K10	CLK
	SNN_FB_TCK3	M2	TCK
	SNN_FB_TDI3	M13	TDI
	SNN_FB_TDO3	A12	TDO
	SNN_FB_TMS3	H2	TMS
	FBB_VREFC	K13	VREFC
	FBB_ZQ_1_B	H13	ZQ

FBVDD
R50 549ohm 1 % 0402 COMMON
DUT 8.4D<
0.350 1.05V
R51 1.33k 1 % 0402 COMMON
R53 931ohm 1 % 0402 COMMON
C109 820pF 50V 10% X7R 0402 COMMON
R778 121ohm 0402 1 % COMMON FBB_ZQ_1_B
GND

1G1D1S
Q12 X03416 SOT23_1G1D1S COMMON
3 D
1 G
2 S
0.350 1.05V FBB_VREF_Q
22.3F> 12.4C< 10.4C< 5.4B< IN GPIO10_FBVREF_SEL
MAX_VOLTAGE=28V
CONTINUOUS_CURRENT=6.5A
R_ON_ON=22mohm@10V / 22mohm@4.5V / 22mohm@2.5V
MAX_CURRENT=6.5A
MAX_WATTAGE=1.4W
V_GS_ED=5V
GND

M5
MT58K256M32JA-100
BGA190_MIRR
COMMON

Mirrored

A10	VSS	MF	W12
A5	VSS	add 1k to VDD	
B1	VSS	VDD	A1
B14	VSS	VDD	A11
D1	VSS	VDD	A14
D11	VSS	VDD	A4
D14	VSS	VDD	D10
F1	VSS	VDD	G1
F14	VSS	VDD	G14
H1	VSS	VDD	H10
H14	VSS	VDD	H5
J12	VSS	VDD	J1
J3	VSS	VDD	J14
K1	VSS	VDD	L1
K14	VSS	VDD	L14
K3	VSS	VDD	M10
L12	VSS	VDD	M5
L3	VSS	VDD	N1
M1	VSS	VDD	N14
M14	VSS	VDD	T10
P1	VSS	VDD	W1
P14	VSS	VDD	W11
T1	VSS	VDD	W14
T11	VSS	VDD	W4
T14	VSS		
V1	VSS	VDDQ	A13
V14	VSS	VDDQ	A2
W10	VSS	VDDQ	B10
W5	VSS	VDDQ	B5
		VDDQ	C1
B13		VDDQ	C13
B2	VSSQ	VDDQ	C14
C10	VSSQ	VDDQ	C2
C5	VSSQ	VDDQ	E1
D13	VSSQ	VDDQ	E11
D2	VSSQ	VDDQ	E13
E10	VSSQ	VDDQ	E14
E5	VSSQ	VDDQ	E2
F13	VSSQ	VDDQ	E4
F2	VSSQ	VDDQ	F10
G10	VSSQ	VDDQ	F5
G5	VSSQ	VDDQ	G13
N10	VSSQ	VDDQ	G2
N5	VSSQ	VDDQ	H12
P13	VSSQ	VDDQ	H3
P2	VSSQ	VDDQ	J13
R10	VSSQ	VDDQ	J2
R5	VSSQ	VDDQ	L13
T13	VSSQ	VDDQ	L2
T2	VSSQ	VDDQ	M12
U10	VSSQ	VDDQ	M3
U5	VSSQ	VDDQ	N13
V13	VSSQ	VDDQ	N2
V2	VSSQ	VDDQ	P10
		VDDQ	P5
		VDDQ	R1
		VDDQ	R11
		VDDQ	R13
		VDDQ	R14
		VDDQ	R2
		VDDQ	R4
		VDDQ	U1
		VDDQ	U13
		VDDQ	U14
		VDDQ	U2
		VDDQ	V10
		VDDQ	V5
		VDDQ	W13
		VDDQ	W2
		MEM_VPP	
		VPP	A3
		VPP	W3

FBVDD
C102 1uF 6.3V 10% X6S 0402 COMMON
C107 1uF 6.3V 10% X6S 0402 COMMON
C111 1uF 6.3V 10% X6S 0402 COMMON
C804 1uF 6.3V 10% X6S 0402 COMMON
C741 1uF 6.3V 10% X6S 0402 COMMON
C743 1uF 6.3V 10% X6S 0402 COMMON
C742 1uF 6.3V 10% X6S 0402 COMMON
C108 1uF 6.3V 10% X6S 0402 COMMON
C110 1uF 6.3V 10% X6S 0402 COMMON
C101 1uF 6.3V 10% X6S 0402 COMMON
GND

FBVDD
C103 10uF 4V 20% X6S 0603 COMMON
C803 10uF 4V 20% X6S 0603 COMMON
C100 10uF 4V 20% X6S 0603 COMMON
C739 10uF 4V 20% X6S 0603 COMMON
C802 10uF 4V 20% X6S 0603 COMMON
C801 10uF 4V 20% X6S 0603 COMMON
C772 22uF 4V 20% X6S 0603W COMMON
C104 22uF 4V 20% X6S 0603W COMMON
C105 22uF 4V 20% X6S 0603W COMMON
C751 22uF 4V 20% X6S 0603W COMMON
C779 22uF 4V 20% X6S 0603W COMMON
GND

FBVDD
C768 1uF 6.3V 10% X6S 0402 COMMON
C759 1uF 6.3V 10% X6S 0402 COMMON
C770 1uF 6.3V 10% X6S 0402 COMMON
C756 1uF 6.3V 10% X6S 0402 COMMON
C774 1uF 6.3V 10% X6S 0402 COMMON
C762 1uF 6.3V 10% X6S 0402 COMMON
C765 1uF 6.3V 10% X6S 0402 COMMON
C760 1uF 6.3V 10% X6S 0402 COMMON
GND

MEM_VPP
OPTION
C1242 4.7uF 6.3V 20% X6S 0603 COMMON
C1243 1uF 6.3V 10% X6S 0402 COMMON
C1276 1uF 6.3V 10% X6S 0402 COMMON
UNDER DRAM
GND

ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	MEMORY: FBB[31:0]

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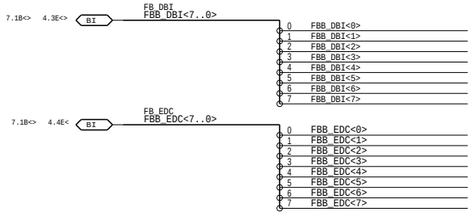
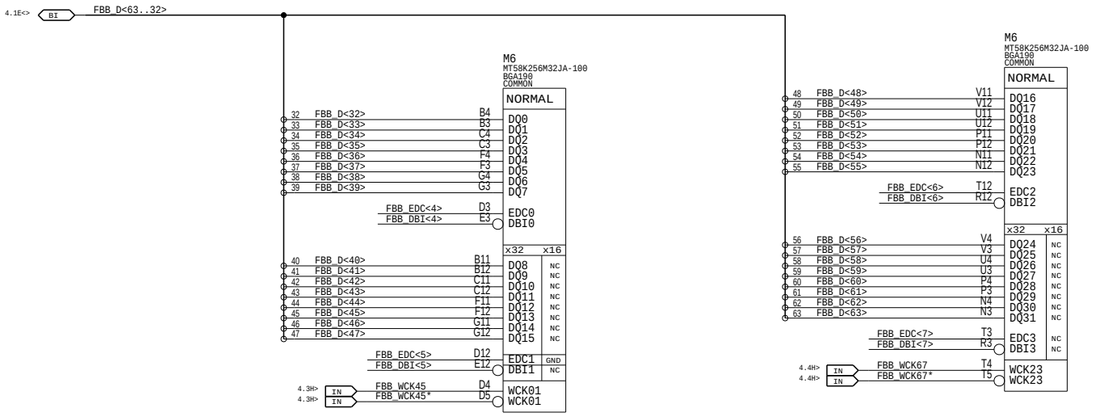
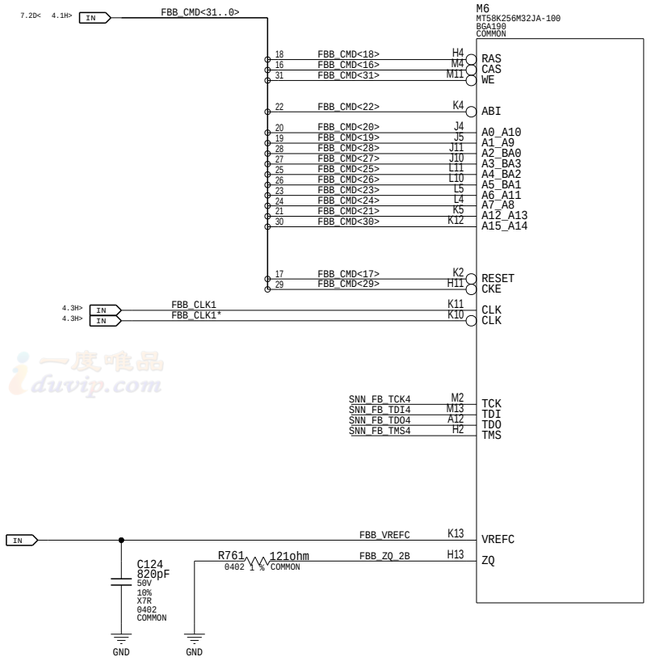
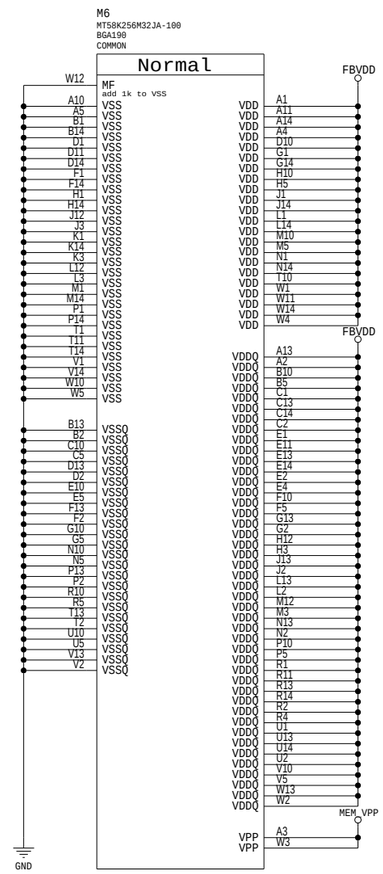
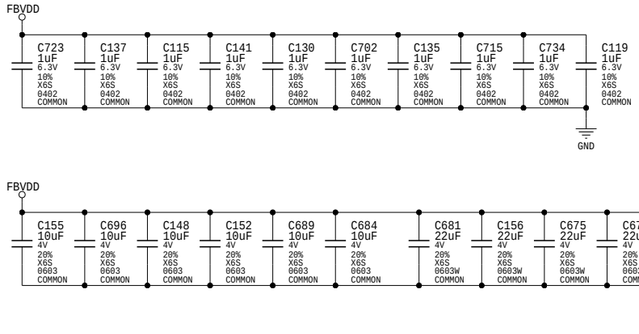
Page8: MEMORY: FBB Partition 63..32

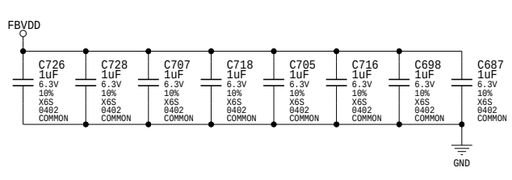


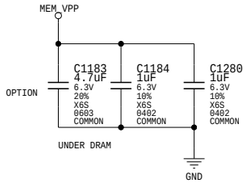












ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	MEMORY: FBB[63:32]

NVIDIA CORPORATION
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Page9: MEMORY: GPU Partition C/D

G1 — 4/23 FBC

GP104-400-A1
BGA2152
COMMON

FB_DATA
FBC_D<63..0>
11.2A<> 10.2A<> BI

0	FBC_D<0>	C6	FBC_D0
1	FBC_D<1>	D6	FBC_D1
2	FBC_D<2>	A6	FBC_D2
3	FBC_D<3>	B6	FBC_D3
4	FBC_D<4>	B4	FBC_D4
5	FBC_D<5>	A4	FBC_D5
6	FBC_D<6>	B3	FBC_D6
7	FBC_D<7>	C4	FBC_D7
8	FBC_D<8>	D9	FBC_D8
9	FBC_D<9>	C9	FBC_D9
10	FBC_D<10>	E9	FBC_D10
11	FBC_D<11>	B9	FBC_D11
12	FBC_D<12>	B8	FBC_D12
13	FBC_D<13>	A8	FBC_D13
14	FBC_D<14>	F6	FBC_D14
15	FBC_D<15>	E6	FBC_D15
16	FBC_D<16>	F18	FBC_D16
17	FBC_D<17>	G18	FBC_D17
18	FBC_D<18>	E18	FBC_D18
19	FBC_D<19>	H18	FBC_D19
20	FBC_D<20>	D15	FBC_D20
21	FBC_D<21>	E15	FBC_D21
22	FBC_D<22>	G17	FBC_D22
23	FBC_D<23>	H17	FBC_D23
24	FBC_D<24>	J15	FBC_D24
25	FBC_D<25>	H15	FBC_D25
26	FBC_D<26>	E14	FBC_D26
27	FBC_D<27>	F14	FBC_D27
28	FBC_D<28>	H11	FBC_D28
29	FBC_D<29>	G11	FBC_D29
30	FBC_D<30>	F11	FBC_D30
31	FBC_D<31>	E11	FBC_D31
32	FBC_D<32>	J29	FBC_D32
33	FBC_D<33>	F30	FBC_D33
34	FBC_D<34>	H29	FBC_D34
35	FBC_D<35>	G30	FBC_D35
36	FBC_D<36>	B30	FBC_D36
37	FBC_D<37>	A30	FBC_D37
38	FBC_D<38>	H30	FBC_D38
39	FBC_D<39>	C30	FBC_D39
40	FBC_D<40>	D27	FBC_D40
41	FBC_D<41>	J26	FBC_D41
42	FBC_D<42>	F27	FBC_D42
43	FBC_D<43>	G27	FBC_D43
44	FBC_D<44>	C27	FBC_D44
45	FBC_D<45>	B27	FBC_D45
46	FBC_D<46>	A27	FBC_D46
47	FBC_D<47>	G29	FBC_D47
48	FBC_D<48>	H20	FBC_D48
49	FBC_D<49>	D18	FBC_D49
50	FBC_D<50>	G20	FBC_D50
51	FBC_D<51>	E20	FBC_D51
52	FBC_D<52>	F23	FBC_D52
53	FBC_D<53>	E21	FBC_D53
54	FBC_D<54>	D21	FBC_D54
55	FBC_D<55>	E23	FBC_D55
56	FBC_D<56>	G24	FBC_D56
57	FBC_D<57>	H26	FBC_D57
58	FBC_D<58>	F24	FBC_D58
59	FBC_D<59>	G26	FBC_D59
60	FBC_D<60>	F26	FBC_D60
61	FBC_D<61>	D26	FBC_D61
62	FBC_D<62>	B26	FBC_D62
63	FBC_D<63>	C26	FBC_D63

FB_DBI
FBC_DBI<7..0>
11.1B<> 10.1B<> BI

0	FBC_DBI<0>	A5	FBC_DQM0
1	FBC_DBI<1>	C8	FBC_DQM1
2	FBC_DBI<2>	J18	FBC_DQM2
3	FBC_DBI<3>	F12	FBC_DQM3
4	FBC_DBI<4>	D29	FBC_DQM4
5	FBC_DBI<5>	E27	FBC_DQM5
6	FBC_DBI<6>	F20	FBC_DQM6
7	FBC_DBI<7>	E28	FBC_DQM7

FB_EDC
FBC_EDC<7..0>
11.1B<> 10.1B<> IN

0	FBC_EDC<0>	D5	FBC_DQS_WP0
1	FBC_EDC<1>	D8	FBC_DQS_WP1
2	FBC_EDC<2>	E17	FBC_DQS_WP2
3	FBC_EDC<3>	E12	FBC_DQS_WP3
4	FBC_EDC<4>	E30	FBC_DQS_WP4
5	FBC_EDC<5>	B29	FBC_DQS_WP5
6	FBC_EDC<6>	G21	FBC_DQS_WP6
7	FBC_EDC<7>	E24	FBC_DQS_WP7

Y25	GND	
Y26	GND	
Y27	GND	
Y28	GND	
Y29	GND	
Y30	GND	
Y31	GND	
Y32	GND	

GND

FBC_CMD
FBC_CMD<31..0>
OUT 10.2D< 11.2D<

C11	FBC_CMD<0>	0	FBC_CMD0
B11	FBC_CMD<1>	1	FBC_CMD1
A11	FBC_CMD<2>	2	FBC_CMD2
D11	FBC_CMD<3>	3	FBC_CMD3
A12	FBC_CMD<4>	4	FBC_CMD4
B12	FBC_CMD<5>	5	FBC_CMD5
C12	FBC_CMD<6>	6	FBC_CMD6
C14	FBC_CMD<7>	7	FBC_CMD7
B14	FBC_CMD<8>	8	FBC_CMD8
A14	FBC_CMD<9>	9	FBC_CMD9
D14	FBC_CMD<10>	10	FBC_CMD10
A15	FBC_CMD<11>	11	FBC_CMD11
B15	FBC_CMD<12>	12	FBC_CMD12
C15	FBC_CMD<13>	13	FBC_CMD13
C17	FBC_CMD<14>	14	FBC_CMD14
B17	FBC_CMD<15>	15	FBC_CMD15
B24	FBC_CMD<16>	16	FBC_CMD16
A24	FBC_CMD<17>	17	FBC_CMD17
D23	FBC_CMD<18>	18	FBC_CMD18
A23	FBC_CMD<19>	19	FBC_CMD19
B23	FBC_CMD<20>	20	FBC_CMD20
C23	FBC_CMD<21>	21	FBC_CMD21
C21	FBC_CMD<22>	22	FBC_CMD22
B21	FBC_CMD<23>	23	FBC_CMD23
A21	FBC_CMD<24>	24	FBC_CMD24
D20	FBC_CMD<25>	25	FBC_CMD25
A20	FBC_CMD<26>	26	FBC_CMD26
B20	FBC_CMD<27>	27	FBC_CMD27
C20	FBC_CMD<28>	28	FBC_CMD28
C18	FBC_CMD<29>	29	FBC_CMD29
B18	FBC_CMD<30>	30	FBC_CMD30
A18	FBC_CMD<31>	31	FBC_CMD31
D17	SNN_FBC_CMD<32>		FBC_CMD32
A17	SNN_FBC_CMD<33>		FBC_CMD33
A9	FBC_DEBUG0		FBC_CMD34
C24	FBC_DEBUG1		FBC_CMD35

FBVDD

R802 60.4ohm 0402 1 % NO STUFF
R792 60.4ohm 0402 1 % NO STUFF

J14	SNN_FBC_DBG_RFU1	FBC_DBG_RFU1
J23	SNN_FBC_DBG_RFU2	FBC_DBG_RFU2

G15	FBC_CLK0	FBC_CLK0	FB_CLK	OUT 10.3D<
F15	FBC_CLK0*	FBC_CLK0	FB_CLK	OUT 10.3D<
H21	FBC_CLK1	FBC_CLK1	FB_CLK	OUT 11.3E<
J21	FBC_CLK1*	FBC_CLK1	FB_CLK	OUT 11.3E<

FBC_CLK0
FBC_CLK0
FBC_CLK1
FBC_CLK1

F8	FBC_WCK01	FBC_WCK01	FB_WCK	OUT 10.3B<
G8	FBC_WCK01*	FBC_WCK01	FB_WCK	OUT 10.3B<
G9	SNN_FBC_WCKB01			
F9	SNN_FBC_WCKB01*			
H12	FBC_WCK23	FBC_WCK23	FB_WCK	OUT 10.3C<
G12	FBC_WCK23*	FBC_WCK23	FB_WCK	OUT 10.3C<
G14	SNN_FBC_WCKB23			
H14	SNN_FBC_WCKB23*			
J27	FBC_WCK45	FBC_WCK45	FB_WCK	OUT 11.3B<
H27	FBC_WCK45*	FBC_WCK45	FB_WCK	OUT 11.3B<
E29	SNN_FBC_WCKB45			
F29	SNN_FBC_WCKB45*			
G23	FBC_WCK67	FBC_WCK67	FB_WCK	OUT 11.3C<
H23	FBC_WCK67*	FBC_WCK67	FB_WCK	OUT 11.3C<
H24	SNN_FBC_WCKB67			
J24	SNN_FBC_WCKB67*			

FBC_WCK01
FBC_WCK01
FBC_WCKB01
FBC_WCKB01
FBC_WCK23
FBC_WCK23
FBC_WCKB23
FBC_WCKB23
FBC_WCK45
FBC_WCK45
FBC_WCKB45
FBC_WCKB45
FBC_WCK67
FBC_WCK67
FBC_WCKB67
FBC_WCKB67

L17	1V8_FB_PLL	IN	4.4D> 4.4H< 4.5A< 9.4H<

FBC_PLL_AVDD

C789
0.1uF
16V
10%
X7R
0402
COMMON

GND

FBVDD

R825 10k 5 % 0402 COMMON
R789 10k 5 % 0402 COMMON
FBC_CMD<13>
FBC_CMD<29>
FBC_CMD<1>
FBC_CMD<17>
R790 10k 5 % 0402 COMMON
R826 10k 5 % 0402 COMMON

GND

GDDR5x CMD Mapping

CMD	0..31	32..63
CMD0	CAS*	
CMD1	RST*	
CMD2	RAS*	
CMD3	A1_A9	
CMD4	A0_A10	
CMD5	A12_A13	
CMD6	ABI*	
CMD7	A6_A11	
CMD8	A7_A8	
CMD9	A4_BA2	
CMD10	A5_BA1	
CMD11	A3_BA3	
CMD12	A2_BA0	
CMD13	CKE*	
CMD14	A14_A15	
CMD15	WE*	
CMD16		CAS*
CMD17		RST*
CMD18		RAS*
CMD19		A1_A9
CMD20		A0_A10
CMD21		A12_A13
CMD22		ABI*
CMD23		A6_A11
CMD24		A7_A8
CMD25		A4_BA2
CMD26		A5_BA1
CMD27		A3_BA3
CMD28		A2_BA0
CMD29		CKE*
CMD30		A14_A15
CMD31		WE*

FB_DATA
FBD_D<63..0>
13.2A<> 12.2A<> BI

0	FBD_D<0>	AK8	FBD_D0
1	FBD_D<1>	AK4	FBD_D1
2	FBD_D<2>	AK2	FBD_D2
3	FBD_D<3>	AK3	FBD_D3
4	FBD_D<4>	AK5	FBD_D4
5	FBD_D<5>	AK6	FBD_D5
6	FBD_D<6>	AK9	FBD_D6
7	FBD_D<7>	AK7	FBD_D7
8	FBD_D<8>	AG4	FBD_D8
9	FBD_D<9>	AF9	FBD_D9
10	FBD_D<10>	AG6	FBD_D10
11	FBD_D<11>	AG7	FBD_D11
12	FBD_D<12>	AJ4	FBD_D12
13	FBD_D<13>	AJ5	FBD_D13
14	FBD_D<14>	AJ6	FBD_D14
15	FBD_D<15>	AG5	FBD_D15
16	FBD_D<16>	Y6	FBD_D16
17	FBD_D<17>	Y5	FBD_D17
18	FBD_D<18>	V5	FBD_D18
19	FBD_D<19>	Y4	FBD_D19
20	FBD_D<20>	AA6	FBD_D20
21	FBD_D<21>	AA5	FBD_D21
22	FBD_D<22>	AC5	FBD_D22
23	FBD_D<23>	AC4	FBD_D23
24	FBD_D<24>	AD7	FBD_D24
25	FBD_D<25>	AC6	FBD_D25
26	FBD_D<26>	AF6	FBD_D26
27	FBD_D<27>	AD6	FBD_D27
28	FBD_D<28>	AF7	FBD_D28
29	FBD_D<29>	AF8	FBD_D29
30	FBD_D<30>	AF2	FBD_D30
31	FBD_D<31>	AF3	FBD_D31
32	FBD_D<32>	F4	FBD_D32
33	FBD_D<33>	E1	FBD_D33
34	FBD_D<34>	F3	FBD_D34
35	FBD_D<35>	F5	FBD_D35
36	FBD_D<36>	D2	FBD_D36
37	FBD_D<37>	D1	FBD_D37
38	FBD_D<38>	C3	FBD_D38
39	FBD_D<39>	C2	FBD_D39
40	FBD_D<40>	J5	FBD_D40
41	FBD_D<41>	J4	FBD_D41
42	FBD_D<42>	L8	FBD_D42
43	FBD_D<43>	J2	FBD_D43
44	FBD_D<44>	F1	FBD_D44
45	FBD_D<45>	F2	FBD_D45
46	FBD_D<46>	H4	FBD_D46
47	FBD_D<47>	H5	FBD_D47
48	FBD_D<48>	V7	FBD_D48
49	FBD_D<49>	V8	FBD_D49
50	FBD_D<50>	V6	FBD_D50
51	FBD_D<51>	V9	FBD_D51
52	FBD_D<52>	U4	FBD_D52
53	FBD_D<53>	R5	FBD_D53
54	FBD_D<54>	R6	FBD_D54
55	FBD_D<55>	U8	FBD_D55
56	FBD_D<56>	P6	FBD_D56
57	FBD_D<57>	R9	FBD_D57
58	FBD_D<58>	P4	FBD_D58
59	FBD_D<59>	P5	FBD_D59
60	FBD_D<60>	L7	FBD_D60
61	FBD_D<61>	L6	FBD_D61
62	FBD_D<62>	L4	FBD_D62
63	FBD_D<63>	L5	FBD_D63

FB_DBI
FBD_DBI<7..0>
13.1B<> 12.1B<> BI

0	FBD_DBI<0>	AJ1	FBD_DQM0
1	FBD_DBI<1>	AG1	FBD_DQM1
2	FBD_DBI<2>	AA7	FBD_DQM2
3	FBD_DBI<3>	AD5	FBD_DQM3
4	FBD_DBI<4>	D3	FBD_DQM4
5	FBD_DBI<5>	H3	FBD_DQM5
6	FBD_DBI<6>	U5	FBD_DQM6
7	FBD_DBI<7>	M9	FBD_DQM7

FB_EDC
FBD_EDC<7..0>
13.1B<> 12.1B<> IN

0	FBD_EDC<0>	AJ3	FBD_DQS_WP0
1	FBD_EDC<1>	AG2	FBD_DQS_WP1
2	FBD_EDC<2>	AA9	FBD_DQS_WP2
3	FBD_EDC<3>	AF4	FBD_DQS_WP3
4	FBD_EDC<4>	E3	FBD_DQS_WP4
5	FBD_EDC<5>	H2	FBD_DQS_WP5
6	FBD_EDC<6>	U6	FBD_DQS_WP6
7	FBD_EDC<7>	M5	FBD_DQS_WP7

Y33	GND	
Y34	GND	
Y35	GND	
Y36	GND	
Y37	GND	
Y38	GND	
Y39	GND	
Y9	GND	

GND

FBVDD

R870 10k 5 % 0402 COMMON
R873 10k 5 % 0402 COMMON
FBD_CMD<13>
FBD_CMD<29>
FBD_CMD<1>
FBD_CMD<17>
R860 10k 5 % 0402 COMMON
R859 10k 5 % 0402 COMMON

GND

G1 — 5/23 FBD

GP104-400-A1
BGA2152
COMMON

FBD_D0	AD2	FBD_CMD<0>	FBD_CMD0
FBD_D1	AD1	FBD_CMD<1>	FBD_CMD1
FBD_D2	AD4	FBD_CMD<2>	FBD_CMD2
FBD_D3	AC1	FBD_CMD<3>	FBD_CMD3
FBD_D4	AC2	FBD_CMD<4>	FBD_CMD4
FBD_D5	AC3	FBD_CMD<5>	FBD_CMD5
FBD_D6	AA3	FBD_CMD<6>	FBD_CMD6
FBD_D7	AA2	FBD_CMD<7>	FBD_CMD7
FBD_D8	AA1	FBD_CMD<8>	FBD_CMD8
FBD_D9	AA4	FBD_CMD<9>	FBD_CMD9
FBD_D10	Y1	FBD_CMD<10>	FBD_CMD10
FBD_D11	Y2	FBD_CMD<11>	FBD_CMD11
FBD_D12	Y3	FBD_CMD<12>	FBD_CMD12
FBD_D13	V3	FBD_CMD<13>	FBD_CMD13
FBD_D14	V2	FBD_CMD<14>	FBD_CMD14
FBD_D15	V1	FBD_CMD<15>	FBD_CMD15
FBD_D16	L3	FBD_CMD<16>	FBD_CMD16
FBD_D17	L2	FBD_CMD<17>	FBD_CMD17
FBD_D18	L1	FBD_CMD<18>	FBD_CMD18
FBD_D19	M4	FBD_CMD<19>	FBD_CMD19
FBD_D20	M1	FBD_CMD<20>	FBD_CMD20
FBD_D21	M2	FBD_CMD<21>	FBD_CMD21
FBD_D22	M3	FBD_CMD<22>	FBD_CMD22
FBD_D23	P3	FBD_CMD<23>	FBD_CMD23
FBD_D24	P2	FBD_CMD<24>	FBD_CMD24
FBD_D25	P1	FBD_CMD<25>	FBD_CMD25
FBD_D26	R4	FBD_CMD<26>	FBD_CMD26
FBD_D27	R1	FBD_CMD<27>	FBD_CMD27
FBD_D28	R2	FBD_CMD<28>	FBD_CMD28
FBD_D29	R3	FBD_CMD<29>	FBD_CMD29
FBD_D30	U3	FBD_CMD<30>	FBD_CMD30
FBD_D31	U2	FBD_CMD<31>	FBD_CMD31
FBD_D32	U1	SNN_FBD_CMD<32>	FBD_CMD32
FBD_D33	V4	SNN_FBD_CMD<33>	FBD_CMD33
FBD_D34	AD3	FBD_DEBUG0	FBD_CMD34
FBD_D35	J3	FBD_DEBUG1	FBD_CMD35

FBVDD

R823 60.4ohm 0402 1 % NO STUFF
R824 60.4ohm 0402 1 % NO STUFF

AC9	SNN_FBD_DBG_RFU1	FBD_DBG_RFU1
P9	SNN_FBD_DBG_RFU2	FBD_DBG_RFU2

Y8	FBD_CLK0	FBD_CLK0	FB_CLK	OUT 12.2E<
Y7	FBD_CLK0*	FBD_CLK0	FB_CLK	OUT 12.2E<
P8	FBD_CLK1	FBD_CLK1	FB_CLK	OUT 13.3E<
R7	FBD_CLK1*	FBD_CLK1	FB_CLK	OUT 13.3E<

FBD_CLK0
FBD_CLK0
FBD_CLK1
FBD_CLK1

AJ8	FBD_WCK01	FBD_WCK01	FB_WCK	OUT 12.3B<
AJ7	FBD_WCK01*	FBD_WCK01	FB_WCK	OUT 12.3B<
AG8	SNN_FBD_WCKB01			
AG9	SNN_FBD_WCKB01*			
AD8	FBD_WCK23	FBD_WCK23	FB_WCK	OUT 12.3C<
AD9	FBD_WCK23*	FBD_WCK23	FB_WCK	OUT 12.3C<
AC7	SNN_FBD_WCKB23			
AC8	SNN_FBD_WCKB23*			
J6	FBD_WCK45	FBD_WCK45	FB_WCK	OUT 13.3A<
J7	FBD_WCK45*	FBD_WCK45	FB_WCK	OUT 13.3A<
H7	SNN_FBD_WCKB45			
H6	SNN_FBD_WCKB45*			
P6	FBD_WCK67	FBD_WCK67	FB_WCK	OUT 13.3C<
P7	FBD_WCK67*	FBD_WCK67	FB_WCK	OUT 13.3C<
M7	SNN_FBD_WCKB67			
M8	SNN_FBD_WCKB67*			

FBD_WCK01
FBD_WCK01
FBD_WCKB01
FBD_WCKB01
FBD_WCK23
FBD_WCK23
FBD_WCKB23
FBD_WCKB23
FBD_WCK45
FBD_WCK45
FBD_WCKB45
FBD_WCKB45
FBD_WCK67
FBD_WCK67
FBD_WCKB67
FBD_WCKB67

V11	1V8_FB_PLL	IN	4.4D> 4.4H< 4.5A< 9.4H<

FBD_PLL_AVDD

C958
0.1uF
16V
10%
X7R
0402
COMMON

GND

FBD_CMD
FBD_CMD<31..0>
OUT 12.2E< 13.2E<

GP104	GP106
FBD	UNUSED

ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	MEMORY: GPU Partition C/D

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

NV_PN	600-1G413-0000-000		
PCB REV	1G413-A00	PAGE	9 OF 38
BOM REV	D	DATE	29-MAR-2016

Page10: MEMORY: FBC Partition 31..0

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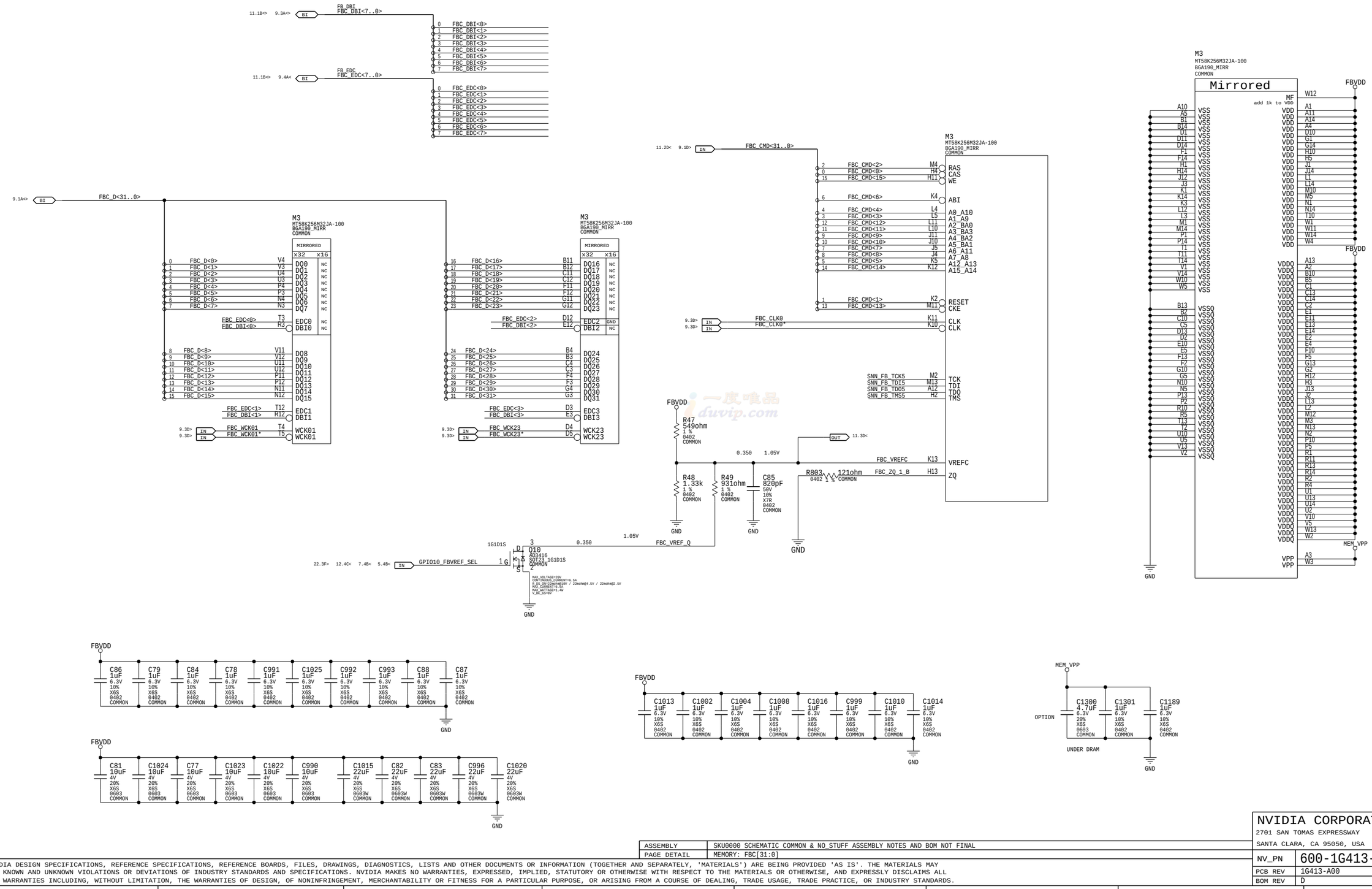

ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	MEMORY: FBC[31:0]

NVIDIA CORPORATION
2701 SAN TOMAS EXPRESSWAY
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NV_PN	600-1G413-0000-000		
PCB REV	1G413-A00	PAGE	10 OF 38
BOM REV	D	DATE	29-MAR-2016

Page11: MEMORY: FBC Partition 63..32

FB_DBI
FBC_DBI<7..0>
FB_EDC
FBC_EDC<7..0>
FBC_D<63..32>
FBC_CMD<31..0>
FBC_CLK1
FBC_CLK1*
FBC_VREFC
FBC_ZQ_2B
SNN_FB_TCK6
SNN_FB_TDI6
SNN_FB_TDO6
SNN_FB_TMS6
FBC_WCK45
FBC_WCK45*
FBC_WCK67
FBC_WCK67*
MEM_VPP
FBVDD
GND

M4
MT58K256M32JA-100
BGA190
COMMON

NORMAL

R796 121ohm 0402 1% COMMON

C93 820pF 50V 10% X7R 0402 COMMON

C89 C92 C819 C91 C942 C99 C943 C940 C90 C98 1uF 6.3V 10% X6S 0402 COMMON

C816 C94 C97 C820 C818 C941 C893 C846 C95 C96 C920 10uF 4V 20% X6S 0603 COMMON
22uF 4V 20% X6S 0603W COMMON

C858 C862 C865 C887 C861 C886 C897 C881 1uF 6.3V 10% X6S 0402 COMMON

C1190 4.7uF 6.3V 20% X6S 0603 COMMON
C1302 C1303 1uF 6.3V 10% X6S 0402 COMMON
OPTION
UNDER DRAM

ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	MEMORY: FBC[63:32]

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

NV_PN	600-1G413-0000-000		
PCB REV	1G413-A00	PAGE	11 OF 38
BOM REV	D	DATE	29-MAR-2016

Page12: MEMORY: FBD Partition 31..0

FB_DBI
FBD_DBI<7..0>
13.1B<> 9.3E<> BI
0 FBD_DBI<0>
1 FBD_DBI<1>
2 FBD_DBI<2>
3 FBD_DBI<3>
4 FBD_DBI<4>
5 FBD_DBI<5>
6 FBD_DBI<6>
7 FBD_DBI<7>

FB_EDC
FBD_EDC<7..0>
13.1B<> 9.4E< BI
0 FBD_EDC<0>
1 FBD_EDC<1>
2 FBD_EDC<2>
3 FBD_EDC<3>
4 FBD_EDC<4>
5 FBD_EDC<5>
6 FBD_EDC<6>
7 FBD_EDC<7>

9.1E<> BI FBD_D<31..0>

M2
MT58K256M32JA-100
BGA190_MIRR
COMMON
MIRRORED
x32 x16

0	FBD_D<0>	V4	DQ0	NC
1	FBD_D<1>	V3	DQ1	NC
2	FBD_D<2>	U4	DQ2	NC
3	FBD_D<3>	U3	DQ3	NC
4	FBD_D<4>	P4	DQ4	NC
5	FBD_D<5>	P3	DQ5	NC
6	FBD_D<6>	N4	DQ6	NC
7	FBD_D<7>	N3	DQ7	NC
FBD_EDC<0>		T3	EDC0	NC
FBD_DBI<0>		R3	DBI0	NC
8	FBD_D<8>	V11	DQ8	
9	FBD_D<9>	V12	DQ9	
10	FBD_D<10>	U11	DQ10	
11	FBD_D<11>	U12	DQ11	
12	FBD_D<12>	P11	DQ12	
13	FBD_D<13>	P12	DQ13	
14	FBD_D<14>	N11	DQ14	
15	FBD_D<15>	N12	DQ15	
FBD_EDC<1>		T12	EDC1	
FBD_DBI<1>		R12	DBI1	
9.3H> IN	FBD_WCK01	T4	WCK01	
9.3H> IN	FBD_WCK01*	T5	WCK01	

M2
MT58K256M32JA-100
BGA190_MIRR
COMMON
MIRRORED
x32 x16

16	FBD_D<16>	B11	DQ16	NC
17	FBD_D<17>	B12	DQ17	NC
18	FBD_D<18>	C11	DQ18	NC
19	FBD_D<19>	C12	DQ19	NC
20	FBD_D<20>	F11	DQ20	NC
21	FBD_D<21>	F12	DQ21	NC
22	FBD_D<22>	G11	DQ22	NC
23	FBD_D<23>	G12	DQ23	NC
FBD_EDC<2>		D12	EDC2	GND
FBD_DBI<2>		E12	DBI2	NC
24	FBD_D<24>	B4	DQ24	
25	FBD_D<25>	B3	DQ25	
26	FBD_D<26>	C4	DQ26	
27	FBD_D<27>	C3	DQ27	
28	FBD_D<28>	F4	DQ28	
29	FBD_D<29>	F3	DQ29	
30	FBD_D<30>	G4	DQ30	
31	FBD_D<31>	G3	DQ31	
FBD_EDC<3>		D3	EDC3	
FBD_DBI<3>		E3	DBI3	
9.3H> IN	FBD_WCK23	D4	WCK23	
9.3H> IN	FBD_WCK23*	D5	WCK23	

13.2E< 9.1H> IN FBD_CMD<31..0>

M2
MT58K256M32JA-100
BGA190_MIRR
COMMON

2	FBD_CMD<2>	M4	RAS
0	FBD_CMD<0>	H4	CAS
15	FBD_CMD<15>	H11	WE
6	FBD_CMD<6>	K4	ABI
4	FBD_CMD<4>	L4	A0_A10
3	FBD_CMD<3>	L5	A1_A9
12	FBD_CMD<12>	L11	A2_BA0
11	FBD_CMD<11>	L10	A3_BA3
9	FBD_CMD<9>	J11	A4_BA2
10	FBD_CMD<10>	J10	A5_BA1
7	FBD_CMD<7>	J5	A6_A11
8	FBD_CMD<8>	J4	A7_A8
5	FBD_CMD<5>	K5	A12_A13
14	FBD_CMD<14>	K12	A15_A14
1	FBD_CMD<1>	K2	RESET
13	FBD_CMD<13>	M11	CKE
9.3H> IN	FBD_CLK0	K11	CLK
9.3H> IN	FBD_CLK0*	K10	CLK
SNN_FB_TCK7		M2	TCK
SNN_FB_TDI7		M13	TDI
SNN_FB_TDO7		A12	TDO
SNN_FB_TMS7		H2	TMS
FBD_VREFC		K13	VREFC
FBD_ZQ_1_B		H13	ZQ

FBVDD
R32 549ohm 1 % 0402 COMMON
0.350 1.05V
OUT 13.3D<
R34 1.33k 1 % 0402 COMMON
R31 931ohm 1 % 0402 COMMON
C71 820pF 50V 10% X7R 0402 COMMON
R868 121ohm 0402 1 % COMMON
GND

1G1D1S
3 D
Q8 AO3416 SOT23_1G1D1S COMMON
1 G
2 S
0.350 1.05V FBD_VREF_Q
22.3F> 10.4C< 7.4B< 5.4B< IN GPIO10_FBVREF_SEL
MAX_VOLTAGE=20V CONTINUOUS_CURRENT=6.5A R_ON_ON=22mohm@4.5V / 22mohm@4.5V / 22mohm@2.5V MAX_POWER=1.4W MAX_VATTAGE=1.4W V_BE_GS=8V
GND

M2
MT58K256M32JA-100
BGA190_MIRR
COMMON
Mirrored

A10	VSS	MF add 1k to VDD	W12
A5	VSS	VDD	A1
B1	VSS	VDD	A11
B14	VSS	VDD	A14
D1	VSS	VDD	A4
D11	VSS	VDD	D10
D14	VSS	VDD	G1
F1	VSS	VDD	G14
F14	VSS	VDD	H10
H1	VSS	VDD	H5
H14	VSS	VDD	J1
J12	VSS	VDD	J14
J3	VSS	VDD	L1
K1	VSS	VDD	L14
K14	VSS	VDD	M10
K3	VSS	VDD	M5
L12	VSS	VDD	N1
L3	VSS	VDD	N14
M1	VSS	VDD	T10
M14	VSS	VDD	W1
P1	VSS	VDD	W11
P14	VSS	VDD	W14
T1	VSS	VDD	W4
T11	VSS		
T14	VSS	VDDQ	A13
V1	VSS	VDDQ	A2
V14	VSS	VDDQ	B10
W10	VSS	VDDQ	B5
W5	VSS	VDDQ	C1
		VDDQ	C13
		VDDQ	C14
B13	VSSQ	VDDQ	C2
B2	VSSQ	VDDQ	E1
C10	VSSQ	VDDQ	E11
C5	VSSQ	VDDQ	E13
D13	VSSQ	VDDQ	E14
D2	VSSQ	VDDQ	E2
E10	VSSQ	VDDQ	E4
E5	VSSQ	VDDQ	F10
F13	VSSQ	VDDQ	F5
F2	VSSQ	VDDQ	G13
G10	VSSQ	VDDQ	G2
G5	VSSQ	VDDQ	H12
N10	VSSQ	VDDQ	H3
N5	VSSQ	VDDQ	J13
P13	VSSQ	VDDQ	J2
P2	VSSQ	VDDQ	L13
R10	VSSQ	VDDQ	L2
R5	VSSQ	VDDQ	M12
T13	VSSQ	VDDQ	M3
T2	VSSQ	VDDQ	N13
U10	VSSQ	VDDQ	N2
U5	VSSQ	VDDQ	P10
V13	VSSQ	VDDQ	P5
V2	VSSQ	VDDQ	R1
		VDDQ	R11
		VDDQ	R13
		VDDQ	R14
		VDDQ	R2
		VDDQ	R4
		VDDQ	U1
		VDDQ	U13
		VDDQ	U14
		VDDQ	U2
		VDDQ	V10
		VDDQ	V5
		VDDQ	W13
		VDDQ	W2
		VPP	A3
		VPP	W3

FBVDD
MEM_VPP
GND

FBVDD
C69 1uF 6.3V 10% X6S 0402 COMMON
C73 1uF 6.3V 10% X6S 0402 COMMON
C75 1uF 6.3V 10% X6S 0402 COMMON
C1056 1uF 6.3V 10% X6S 0402 COMMON
C52 1uF 6.3V 10% X6S 0402 COMMON
C1063 1uF 6.3V 10% X6S 0402 COMMON
C1039 1uF 6.3V 10% X6S 0402 COMMON
C1032 1uF 6.3V 10% X6S 0402 COMMON
C59 1uF 6.3V 10% X6S 0402 COMMON
C1044 1uF 6.3V 10% X6S 0402 COMMON
GND

FBVDD
C1070 10uF 4V 20% X6S 0603 COMMON
C63 10uF 4V 20% X6S 0603 COMMON
C49 10uF 4V 20% X6S 0603 COMMON
C1038 10uF 4V 20% X6S 0603 COMMON
C1062 10uF 4V 20% X6S 0603 COMMON
C1072 10uF 4V 20% X6S 0603 COMMON
C1073 22uF 4V 20% X6S 0603W COMMON
C51 22uF 4V 20% X6S 0603W COMMON
C66 22uF 4V 20% X6S 0603W COMMON
C50 22uF 4V 20% X6S 0603W COMMON
C61 22uF 4V 20% X6S 0603W COMMON
GND

FBVDD
C1046 1uF 6.3V 10% X6S 0402 COMMON
C1066 1uF 6.3V 10% X6S 0402 COMMON
C1059 1uF 6.3V 10% X6S 0402 COMMON
C1068 1uF 6.3V 10% X6S 0402 COMMON
C1043 1uF 6.3V 10% X6S 0402 COMMON
C1034 1uF 6.3V 10% X6S 0402 COMMON
C1054 1uF 6.3V 10% X6S 0402 COMMON
C1036 1uF 6.3V 10% X6S 0402 COMMON
GND

MEM_VPP
OPTION
C1304 4.7uF 6.3V 20% X6S 0603 COMMON
C1305 1uF 6.3V 10% X6S 0402 COMMON
C1306 1uF 6.3V 10% X6S 0402 COMMON
UNDER DRAM
GND

ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	MEMORY: FBD[31:0]

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

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Page13: MEMORY: FBD Partition 63..32

FB_DBI
FBD_DBI<7..0>
12.1B<> 9.3E<> BI
0 FBD_DBI<0>
1 FBD_DBI<1>
2 FBD_DBI<2>
3 FBD_DBI<3>
4 FBD_DBI<4>
5 FBD_DBI<5>
6 FBD_DBI<6>
7 FBD_DBI<7>

FB_EDC
FBD_EDC<7..0>
12.1B<> 9.4E< BI
0 FBD_EDC<0>
1 FBD_EDC<1>
2 FBD_EDC<2>
3 FBD_EDC<3>
4 FBD_EDC<4>
5 FBD_EDC<5>
6 FBD_EDC<6>
7 FBD_EDC<7>

9.1E<> BI FBD_D<63..32>

M1
MT58K256M32JA-100
BGA190
COMMON

NORMAL

32	FBD_D<32>	B4	DQ0	
33	FBD_D<33>	B3	DQ1	
34	FBD_D<34>	C4	DQ2	
35	FBD_D<35>	C3	DQ3	
36	FBD_D<36>	F4	DQ4	
37	FBD_D<37>	F3	DQ5	
38	FBD_D<38>	G4	DQ6	
39	FBD_D<39>	G3	DQ7	
	FBD_EDC<4>	D3	EDC0	
	FBD_DBI<4>	E3	DBI0	
x32		x16		
40	FBD_D<40>	B11	DQ8	NC
41	FBD_D<41>	B12	DQ9	NC
42	FBD_D<42>	C11	DQ10	NC
43	FBD_D<43>	C12	DQ11	NC
44	FBD_D<44>	F11	DQ12	NC
45	FBD_D<45>	F12	DQ13	NC
46	FBD_D<46>	G11	DQ14	NC
47	FBD_D<47>	G12	DQ15	NC
	FBD_EDC<5>	D12	EDC1	GND
	FBD_DBI<5>	E12	DBI1	NC
9.3H> IN	FBD_WCK45	D4	WCK01	
9.3H> IN	FBD_WCK45*	D5	WCK01	

M1
MT58K256M32JA-100
BGA190
COMMON

NORMAL

48	FBD_D<48>	V11	DQ16	
49	FBD_D<49>	V12	DQ17	
50	FBD_D<50>	U11	DQ18	
51	FBD_D<51>	U12	DQ19	
52	FBD_D<52>	P11	DQ20	
53	FBD_D<53>	P12	DQ21	
54	FBD_D<54>	N11	DQ22	
55	FBD_D<55>	N12	DQ23	
	FBD_EDC<6>	T12	EDC2	
	FBD_DBI<6>	R12	DBI2	
x32		x16		
56	FBD_D<56>	V4	DQ24	NC
57	FBD_D<57>	V3	DQ25	NC
58	FBD_D<58>	U4	DQ26	NC
59	FBD_D<59>	U3	DQ27	NC
60	FBD_D<60>	P4	DQ28	NC
61	FBD_D<61>	P3	DQ29	NC
62	FBD_D<62>	N4	DQ30	NC
63	FBD_D<63>	N3	DQ31	NC
	FBD_EDC<7>	T3	EDC3	NC
	FBD_DBI<7>	R3	DBI3	NC
9.4H> IN	FBD_WCK67	T4	WCK23	
9.4H> IN	FBD_WCK67*	T5	WCK23	

12.2E< 9.1H> IN FBD_CMD<31..0>

M1
MT58K256M32JA-100
BGA190
COMMON

18	FBD_CMD<18>	H4	RAS
16	FBD_CMD<16>	M4	CAS
31	FBD_CMD<31>	M11	WE
22	FBD_CMD<22>	K4	ABI
20	FBD_CMD<20>	J4	A0_A10
19	FBD_CMD<19>	J5	A1_A9
28	FBD_CMD<28>	J11	A2_BA0
27	FBD_CMD<27>	J10	A3_BA3
25	FBD_CMD<25>	L11	A4_BA2
26	FBD_CMD<26>	L10	A5_BA1
23	FBD_CMD<23>	L5	A6_A11
24	FBD_CMD<24>	L4	A7_A8
21	FBD_CMD<21>	K5	A12_A13
30	FBD_CMD<30>	K12	A15_A14
17	FBD_CMD<17>	K2	RESET
29	FBD_CMD<29>	H11	CKE
9.3H> IN	FBD_CLK1	K11	CLK
9.3H> IN	FBD_CLK1*	K10	CLK
SNN_FB_TCK8		M2	TCK
SNN_FB_TDI8		M13	TDI
SNN_FB_TDO8		A12	TDO
SNN_FB_TMS8		H2	TMS
12.3E> IN	FBD_VREFC	K13	VREFC
	FBD_ZQ_2B	H13	ZQ

C1053 820pF 50V 10% X7R 0402 COMMON
R867 121ohm 0402 1 % COMMON
GND GND

M1
MT58K256M32JA-100
BGA190
COMMON

NORMAL
MF
add 1k to VSS

W12			FBVDD
A10	VSS	VDD	A1
A5	VSS	VDD	A11
B1	VSS	VDD	A14
B14	VSS	VDD	A4
D1	VSS	VDD	D10
D11	VSS	VDD	G1
D14	VSS	VDD	G14
F1	VSS	VDD	H10
F14	VSS	VDD	H5
H1	VSS	VDD	J1
H14	VSS	VDD	J14
J12	VSS	VDD	L1
J3	VSS	VDD	L14
K1	VSS	VDD	M10
K14	VSS	VDD	M5
K3	VSS	VDD	N1
L12	VSS	VDD	N14
L3	VSS	VDD	T10
M1	VSS	VDD	W1
M14	VSS	VDD	W11
P1	VSS	VDD	W14
P14	VSS	VDD	W4
T1	VSS		
T11	VSS		
T14	VSS		FBVDD
V1	VSS	VDDQ	A13
V14	VSS	VDDQ	A2
W10	VSS	VDDQ	B10
W5	VSS	VDDQ	B5
		VDDQ	C1
B13	VSSQ	VDDQ	C13
B2	VSSQ	VDDQ	C14
C10	VSSQ	VDDQ	C2
C5	VSSQ	VDDQ	E1
D13	VSSQ	VDDQ	E11
D2	VSSQ	VDDQ	E13
E10	VSSQ	VDDQ	E14
E5	VSSQ	VDDQ	E2
F13	VSSQ	VDDQ	E4
F2	VSSQ	VDDQ	F10
G10	VSSQ	VDDQ	F5
G5	VSSQ	VDDQ	G13
N10	VSSQ	VDDQ	G2
N5	VSSQ	VDDQ	H12
P13	VSSQ	VDDQ	H3
P2	VSSQ	VDDQ	J13
R10	VSSQ	VDDQ	J2
R5	VSSQ	VDDQ	L13
T13	VSSQ	VDDQ	L2
T2	VSSQ	VDDQ	M12
U10	VSSQ	VDDQ	M3
U5	VSSQ	VDDQ	N13
V13	VSSQ	VDDQ	N2
V2	VSSQ	VDDQ	P10
		VDDQ	P5
		VDDQ	R1
		VDDQ	R11
		VDDQ	R13
		VDDQ	R14
		VDDQ	R2
		VDDQ	R4
		VDDQ	U1
		VDDQ	U13
		VDDQ	U14
		VDDQ	U2
		VDDQ	V10
		VDDQ	V5
		VDDQ	W13
		VDDQ	W2
			MEM_VPP
		VPP	A3
		VPP	W3

GND

FBVDD
C64 1uF 6.3V 10% X6S 0402 COMMON
C1057 1uF 6.3V 10% X6S 0402 COMMON
C1031 1uF 6.3V 10% X6S 0402 COMMON
C1040 1uF 6.3V 10% X6S 0402 COMMON
C65 1uF 6.3V 10% X6S 0402 COMMON
C62 1uF 6.3V 10% X6S 0402 COMMON
C68 1uF 6.3V 10% X6S 0402 COMMON
C1042 1uF 6.3V 10% X6S 0402 COMMON
C74 1uF 6.3V 10% X6S 0402 COMMON
C70 1uF 6.3V 10% X6S 0402 COMMON
GND

FBVDD
C1060 10uF 4V 20% X6S 0603 COMMON
C58 10uF 4V 20% X6S 0603 COMMON
C57 10uF 4V 20% X6S 0603 COMMON
C1065 10uF 4V 20% X6S 0603 COMMON
C1033 10uF 4V 20% X6S 0603 COMMON
C1069 10uF 4V 20% X6S 0603 COMMON
C1077 22uF 4V 20% X6S 0603W COMMON
C47 22uF 4V 20% X6S 0603W COMMON
C48 22uF 4V 20% X6S 0603W COMMON
C1075 22uF 4V 20% X6S 0603W COMMON
C1076 22uF 4V 20% X6S 0603W COMMON
GND

FBVDD
C1067 1uF 6.3V 10% X6S 0402 COMMON
C1052 1uF 6.3V 10% X6S 0402 COMMON
C1048 1uF 6.3V 10% X6S 0402 COMMON
C1058 1uF 6.3V 10% X6S 0402 COMMON
C1037 1uF 6.3V 10% X6S 0402 COMMON
C1047 1uF 6.3V 10% X6S 0402 COMMON
C1055 1uF 6.3V 10% X6S 0402 COMMON
C1035 1uF 6.3V 10% X6S 0402 COMMON
GND

MEM_VPP
OPTION C1307 4.7uF 6.3V 20% X6S 0603 COMMON
C1223 1uF 6.3V 10% X6S 0402 COMMON
C1224 1uF 6.3V 10% X6S 0402 COMMON
UNDER DRAM
GND

ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	MEMORY: FBD[63:32]

NVIDIA CORPORATION
2701 SAN TOMAS EXPRESSWAY
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Page14: GPU PWR and GND

G1
GP104-400-A1
BGA2152
COMMON

16/23 GND_1/3

A2	GND	GND	AH6
A26	GND	GND	AH8
A29	GND	GND	AJ14
A3	GND	GND	AJ15
A32	GND	GND	AJ16
A50	GND	GND	AJ17
A51	GND	GND	AJ18
AA49	GND	GND	AJ19
AA8	GND	GND	AJ2
AB10	GND	GND	AJ20
AB14	GND	GND	AJ21
AB15	GND	GND	AJ22
AB16	GND	GND	AJ23
AB17	GND	GND	AJ24
AB18	GND	GND	AJ25
AB19	GND	GND	AJ26
AB2	GND	GND	AJ27
AB20	GND	GND	AJ28
AB21	GND	GND	AJ29
AB22	GND	GND	AJ30
AB23	GND	GND	AJ31
AB24	GND	GND	AJ32
AB25	GND	GND	AJ33
AB26	GND	GND	AJ34
AB27	GND	GND	AJ35
AB28	GND	GND	AJ36
AB29	GND	GND	AJ37
AB30	GND	GND	AJ38
AB31	GND	GND	AJ39
AB32	GND	GND	AJ9
AB33	GND	GND	AK1
AB34	GND	GND	AK44
AB35	GND	GND	AK47
AB36	GND	GND	AL10
AB37	GND	GND	AL14
AB38	GND	GND	AL15
AB39	GND	GND	AL16
AB4	GND	GND	AL17
AB43	GND	GND	AL18
AB45	GND	GND	AL19
AB47	GND	GND	AL2
AB49	GND	GND	AL20
AB51	GND	GND	AL21
AB6	GND	GND	AL22
AB8	GND	GND	AL23
AD14	GND	GND	AL24
AD15	GND	GND	AL25
AD16	GND	GND	AL26
AD17	GND	GND	AL27
AD18	GND	GND	AL28
AD19	GND	GND	AL29
AD20	GND	GND	AL30
AD21	GND	GND	AL31
AD22	GND	GND	AL32
AD23	GND	GND	AL33
AD24	GND	GND	AL34
AD25	GND	GND	AL35
AD26	GND	GND	AL36
AD27	GND	GND	AL37
AD28	GND	GND	AL38
AD29	GND	GND	AL39
AD30	GND	GND	AL4
AD31	GND	GND	AL43
AD32	GND	GND	AL45
AD33	GND	GND	AL47
AD34	GND	GND	AL49
AD35	GND	GND	AL51
AD36	GND	GND	AL6
AD37	GND	GND	AL8
AD38	GND	GND	AM4
AD39	GND	GND	AM9
AD44	GND	GND	AN14
AE10	GND	GND	AN15
AE2	GND	GND	AN16
AE4	GND	GND	AN17
AE43	GND	GND	AN18
AE45	GND	GND	AN19
AE47	GND	GND	AN20
AE49	GND	GND	AN21
AE51	GND	GND	AN22
AE6	GND	GND	AN23
AE8	GND	GND	AN24
AF1	GND	GND	AN25
AF19	GND	GND	AN26
AF20	GND	GND	AN27
AF21	GND	GND	AN28
AF22	GND	GND	AN29
AF23	GND	GND	AN30
AF27	GND	GND	AN31
AF28	GND	GND	AN32
AF29	GND	GND	AN33
AF35	GND	GND	AN34
AF36	GND	GND	AN35
AF37	GND	GND	AN36
AF38	GND	GND	AN37
AF39	GND	GND	AN38
AF45	GND	GND	AN39
AF5	GND	GND	AN4
AG14	GND	GND	AN5
AG15	GND	GND	AN8
AG16	GND	GND	AP10
AG17	GND	GND	AP2
AG18	GND	GND	AP4
AG24	GND	GND	AP43
AG25	GND	GND	AP45
AG26	GND	GND	AP47
AG3	GND	GND	AP49
AG30	GND	GND	AP51
AG31	GND	GND	AP6
AG32	GND	GND	AP8
AG33	GND	GND	AR14
AG34	GND	GND	AR15
AG44	GND	GND	AR16
AH10	GND	GND	AR17
AH2	GND	GND	AR18
AH4	GND	GND	AR19
AH43	GND	GND	BL37
AH45	GND	GND	BD24
AH47	GND	GND	BC24
AH49	GND		
AH51	GND		

17/23 GND_2/3

AR20	GND	GND	B52
AR21	GND	GND	B7
AR22	GND	GND	BA48
AR23	GND	GND	BB49
AR24	GND	GND	BC13
AR25	GND	GND	BC16
AR26	GND	GND	BC19
AR27	GND	GND	BC2
AR28	GND	GND	BC22
AR29	GND	GND	BC25
AR30	GND	GND	BC28
AR31	GND	GND	BC31
AR32	GND	GND	BC34
AR33	GND	GND	BC37
AR34	GND	GND	BC4
AR35	GND	GND	BC51
AR36	GND	GND	BC6
AR37	GND	GND	BC8
AR38	GND	GND	BD26
AR39	GND	GND	BD29
AR4	GND	GND	BD32
AR52	GND	GND	BD35
AR9	GND	GND	BD38
AT4	GND	GND	BD52
AT5	GND	GND	BE10
AT51	GND	GND	BE13
AT52	GND	GND	BE15
AT8	GND	GND	BE16
AU10	GND	GND	BE18
AU14	GND	GND	BE19
AU15	GND	GND	BE21
AU16	GND	GND	BE22
AU17	GND	GND	BE24
AU18	GND	GND	BE25
AU19	GND	GND	BE27
AU2	GND	GND	BE28
AU20	GND	GND	BE30
AU21	GND	GND	BE31
AU22	GND	GND	BE33
AU23	GND	GND	BE34
AU24	GND	GND	BE36
AU25	GND	GND	BE37
AU26	GND	GND	BE39
AU27	GND	GND	BE40
AU28	GND	GND	BF2
AU29	GND	GND	BF4
AU30	GND	GND	BF41
AU31	GND	GND	BF6
AU32	GND	GND	BG10
AU33	GND	GND	BG13
AU34	GND	GND	BG16
AU35	GND	GND	BG19
AU36	GND	GND	BG22
AU37	GND	GND	BG25
AU38	GND	GND	BG28
AU39	GND	GND	BG31
AU4	GND	GND	BG34
AU45	GND	GND	BG37
AU47	GND	GND	BG40
AU49	GND	GND	BG42
AU51	GND	GND	BG7
AU6	GND	GND	BH15
AU8	GND	GND	BH18
AV4	GND	GND	BH2
AV45	GND	GND	BH21
AV9	GND	GND	BH24
AW14	GND	GND	BH27
AW15	GND	GND	BH30
AW16	GND	GND	BH33
AW17	GND	GND	BH36
AW18	GND	GND	BH39
AW19	GND	GND	BH42
AW20	GND	GND	BH5
AW21	GND	GND	BJ10
AW22	GND	GND	BJ12
AW23	GND	GND	BJ13
AW24	GND	GND	BJ14
AW25	GND	GND	BJ15
AW26	GND	GND	BJ16
AW27	GND	GND	BJ17
AW28	GND	GND	BJ18
AW29	GND	GND	BJ19
AW30	GND	GND	BJ20
AW31	GND	GND	BJ21
AW32	GND	GND	BJ22
AW33	GND	GND	BJ23
AW34	GND	GND	BJ24
AW35	GND	GND	BJ25
AW36	GND	GND	BJ26
AW37	GND	GND	BJ27
AW38	GND	GND	BJ28
AW39	GND	GND	BJ29
AW4	GND	GND	BJ30
AW46	GND	GND	BJ31
AW5	GND	GND	BJ32
AW52	GND	GND	BJ33
AW8	GND	GND	BJ34
AY10	GND	GND	BJ35
AY2	GND	GND	BJ36
AY4	GND	GND	BJ37
AY47	GND	GND	BJ38
AY49	GND	GND	BJ39
AY51	GND	GND	BJ40
AY6	GND	GND	BJ41
AY8	GND	GND	BJ42
B1	GND	GND	BJ43
B10	GND	GND	BJ7
B13	GND	GND	BK1
B16	GND	GND	BL1
B19	GND	GND	BL10
B2	GND	GND	BL13
B22	GND	GND	BL16
B25	GND	GND	BL19
B28	GND	GND	BL2
B31	GND	GND	BL22
B34	GND	GND	BL25
B37	GND	GND	BL28
B40	GND	GND	BL31
B43	GND	GND	BL34
B46	GND	GND	B5
B48	GND	GND	B51

22/23 GND_3/3

BL43	GND	GND	N6
BL5	GND	GND	N8
BL7	GND	GND	P14
BM2	GND	GND	P15
BM3	GND	GND	P16
C1	GND	GND	P17
C29	GND	GND	P18
C33	GND	GND	P19
C5	GND	GND	P20
C51	GND	GND	P21
C52	GND	GND	P22
D10	GND	GND	P23
D12	GND	GND	P24
D13	GND	GND	P25
D16	GND	GND	P26
D19	GND	GND	P27
D22	GND	GND	P28
D24	GND	GND	P29
D25	GND	GND	P30
D28	GND	GND	P31
D30	GND	GND	P32
D31	GND	GND	P33
D34	GND	GND	P34
D37	GND	GND	P35
D4	GND	GND	P36
D40	GND	GND	P37
D43	GND	GND	P38
D46	GND	GND	P39
D49	GND	GND	P51
D7	GND	GND	R49
E2	GND	GND	R52
E4	GND	GND	T10
E48	GND	GND	T14
E5	GND	GND	T15
E51	GND	GND	T16
E8	GND	GND	T17
F10	GND	GND	T18
F13	GND	GND	T19
F16	GND	GND	T2
F17	GND	GND	T20
F19	GND	GND	T21
F21	GND	GND	T22
F22	GND	GND	T23
F25	GND	GND	T24
F28	GND	GND	T25
F31	GND	GND	T26
F34	GND	GND	T27
F35	GND	GND	T28
F37	GND	GND	T29
F40	GND	GND	T30
F43	GND	GND	T31
F44	GND	GND	T32
F46	GND	GND	T33
F52	GND	GND	T34
F7	GND	GND	T35
G2	GND	GND	T36
G38	GND	GND	T37
G4	GND	GND	T38
G47	GND	GND	T39
G49	GND	GND	T4
G51	GND	GND	T43
G6	GND	GND	T45
H1	GND	GND	T47
H10	GND	GND	T49
H13	GND	GND	T51
H16	GND	GND	T6
H19	GND	GND	T8
H22	GND	GND	U7
H25	GND	GND	U9
H28	GND	GND	V14
H31	GND	GND	V15
H34	GND	GND	V16
H37	GND	GND	V17
H40	GND	GND	V18
H43	GND	GND	V19
J1	GND	GND	V20
J12	GND	GND	V21
J17	GND	GND	V22
J20	GND	GND	V23
J38	GND	GND	V24
J49	GND	GND	V25
J52	GND	GND	V26
K13	GND	GND	V27
K16	GND	GND	V28
K19	GND	GND	V29
K2	GND	GND	V30
K22	GND	GND	V31
K25	GND	GND	V32
K28	GND	GND	V33
K31	GND	GND	V34
K34	GND	GND	V35
K37	GND	GND	V36
K4	GND	GND	V37
K40	GND	GND	V38
K45	GND	GND	V39
K47	GND	GND	V49
K49	GND	GND	V52
K51	GND	GND	W10
K6	GND	GND	W2
K8	GND	GND	W4
M52	GND	GND	W43
M6	GND	GND	W45
N10	GND	GND	
N2	GND	GND	
N4	GND	GND	
N43	GND	GND	
N45	GND	GND	
N47	GND	GND	
N49	GND	GND	
N51	GND	GND	
BL40	GND	GND	

18/21 VDD_1/2

AA14	VDD	VDD	AG22
AA15	VDD	VDD	AG23
AA16	VDD	VDD	AG40
AA17	VDD	VDD	AH14
AA18	VDD	VDD	AH15
AA19	VDD	VDD	AH16
AA20	VDD	VDD	AH17
AA21	VDD	VDD	AH18
AA22	VDD	VDD	AH19
AA23	VDD	VDD	AH20
AA24	VDD	VDD	AH21
AA25	VDD	VDD	AH22
AA26	VDD	VDD	AH23
AA27	VDD	VDD	AH24
AA28	VDD	VDD	AH25
AA29	VDD	VDD	AH26
AA30	VDD	VDD	AH27
AA31	VDD	VDD	AH28
AA32	VDD	VDD	AH29
AA33	VDD	VDD	AH30
AA34	VDD	VDD	AH31
AA35	VDD	VDD	AH32
AA36	VDD	VDD	AH33
AA37	VDD	VDD	AH34
AA38	VDD	VDD	AH35
AA39	VDD	VDD	AH36
AA40	VDD	VDD	AH37
AA41	VDD	VDD	AH38
AA42	VDD	VDD	AH39
AA43	VDD	VDD	AK19
AB13	VDD	VDD	AK20
AB40	VDD	VDD	AK21
AC19	VDD	VDD	AK22
AC20	VDD	VDD	AK23
AC21	VDD	VDD	AK30
AC22	VDD	VDD	AK31
AC23	VDD	VDD	AK32
AC30	VDD	VDD	AK33
AC31	VDD	VDD	AK34
AC32	VDD	VDD	AK35
AC33	VDD	VDD	AK36
AC34	VDD	VDD	AK37
AE14	VDD	VDD	AK38
AE15	VDD	VDD	AL13
AE16	VDD	VDD	AL40
AE17	VDD	VDD	AM14
AE18	VDD	VDD	AM15
AE19	VDD	VDD	AM16
AE20	VDD	VDD	AM17
AE21	VDD	VDD	AM18
AE22	VDD	VDD	AM19
AE23	VDD	VDD	AM20
AE24	VDD	VDD	AM21
AE25	VDD	VDD	AM22
AE26	VDD	VDD	AM23
AE27	VDD	VDD	AM24
AE28	VDD	VDD	AM25
AE29	VDD	VDD	AM26
AE30	VDD	VDD	AM27
AE31	VDD	VDD	AM28
AE32	VDD	VDD	AM29
AE33	VDD	VDD	AM30
AE34	VDD	VDD	AM31
AE35	VDD	VDD	AM32
AE36	VDD	VDD	AM33
AE37	VDD	VDD	AM34
AE38	VDD	VDD	AM35
AE39	VDD	VDD	AM36
AF13	VDD	VDD	AM37
AF30	VDD	VDD	AM38
AF31	VDD	VDD	AM39
AF32	VDD	VDD	AP19
AF33	VDD	VDD	AP20
AF34	VDD	VDD	BK52
AF40	VDD	VDD	BL46
AG13	VDD	VDD	BL47
AG19	VDD	VDD	BL48
AG20	VDD	VDD	BL49
AG21	VDD	VDD	BL50
BG45	VDD	VDD	BL51
BG46	VDD	VDD	BL52
BG47	VDD	VDD	BM47
BG48	VDD	VDD	BM48
BG49	VDD	VDD	BM49
BG50	VDD	VDD	BM50
BG51	VDD	VDD	BM51
BG52	VDD	VDD	N14
BH44	VDD	VDD	N18
BH45	VDD	VDD	N22
BH47	VDD	VDD	N26
BH48	VDD	VDD	N27
BH49	VDD	VDD	N31
BH50	VDD	VDD	N35
BH51	VDD	VDD	N39
BH52	VDD	VDD	P13
BJ44	VDD	VDD	P40
BJ45	VDD	VDD	R19
BJ46	VDD	VDD	R20
BJ47	VDD	VDD	R21
BJ48	VDD	VDD	R22
BJ49	VDD	VDD	R23
BJ50	VDD	VDD	R30
BJ51	VDD	VDD	R31
BJ52	VDD	VDD	R32
BK47	VDD	VDD	R33
BK48	VDD	VDD	R34
BK49	VDD	VDD	U14
BK50	VDD	VDD	U15
BK51	VDD	VDD	

19/23 VDD_2/2

AP21	VDD	VDD	BB45
AP22	VDD	VDD	BB46
AP23	VDD	VDD	BB47
AP30	VDD	VDD	BB48
AP31	VDD	VDD	BC38
AP32	VDD	VDD	BC39
AP33	VDD	VDD	BC40
AP34	VDD	VDD	BC41
AR13	VDD	VDD	BC45
AR40	VDD	VDD	BC47
AT14	VDD	VDD	BC49
AT15	VDD	VDD	BD39
AT16	VDD	VDD	BD41
AT17	VDD	VDD	BD46
AT18	VDD	VDD	BD47
AT19	VDD	VDD	BD48
AT20	VDD	VDD	BD49
AT21	VDD	VDD	BD50
AT22	VDD	VDD	BD51
AT23	VDD	VDD	BE41
AT24	VDD	VDD	BE42
AT25	VDD	VDD	BE43
AT26	VDD	VDD	BE46
AT27	VDD	VDD	BE47
AT28	VDD	VDD	BE48
AT29	VDD	VDD	BE49
AT30	VDD	VDD	BE50
AT31	VDD	VDD	BE51
AT32	VDD	VDD	BE52
AT33	VDD	VDD	BF42
AT34	VDD	VDD	BF44
AT35	VDD	VDD	BF45
AT36	VDD	VDD	BF47
AT37	VDD	VDD	BF49
AT38	VDD	VDD	BF51
AT39	VDD	VDD	BG43
AT42	VDD	VDD	BG44
AU43	VDD	VDD	U16
AV19	VDD	VDD	U17
AV20	VDD	VDD	U18
AV21	VDD	VDD	U19
AV22	VDD	VDD	U20
AV23	VDD	VDD	U21
AV30	VDD	VDD	U22
AV31	VDD	VDD	U23
AV32	VDD	VDD	U24
AV33	VDD	VDD	U25
AV34	VDD	VDD	U26
AV35	VDD	VDD	U27
AV42	VDD	VDD	U28
AV43	VDD	VDD	U29
AV44	VDD	VDD	U30
AW13	VDD	VDD	U31
AW40	VDD	VDD	U32
AW42	VDD	VDD	U33
AW43	VDD	VDD	U34
AW44	VDD	VDD	U35
AW45	VDD	VDD	U36
AY14	VDD	VDD	U37
AY18	VDD	VDD	U38
AY22	VDD	VDD	U39
AY26	VDD	VDD	V13
AY27	VDD	VDD	V40
AY31	VDD	VDD	W19
AY35	VDD	VDD	W20
AY39	VDD	VDD	W21
AY43	VDD	VDD	W22
BA43	VDD	VDD	W23
BA44	VDD	VDD	W30
BA45	VDD	VDD	W31
BA46	VDD	VDD	W32
BA47	VDD	VDD	W33
BB38	VDD	VDD	W34
BB39	VDD	VDD	

23/23 VDDS

AP27	VDDS	VDDS	AC14
AP28	VDDS	VDDS	AC15
AP29	VDDS	VDDS	AC16
AP35	VDDS	VDDS	AC17
AP36	VDDS	VDDS	AC18
AP37	VDDS	VDDS	AC24
AP38	VDDS	VDDS	AC25
AP39	VDDS	VDDS	AC26
AV14	VDDS	VDDS	AC27
AV15	VDDS	VDDS	AC28
AV16	VDDS	VDDS	AC29
AV17	VDDS	VDDS	AC35
AV18	VDDS	VDDS	AC36
AV24	VDDS	VDDS	AC37
AV25	VDDS	VDDS	AC38
AV26	VDDS	VDDS	AC39
AV27	VDDS	VDDS	AF14
AV28	VDDS	VDDS	AF15
AV29	VDDS	VDDS	AF16
AV35	VDDS	VDDS	AF17
AV36	VDDS	VDDS	AF18
AV37	VDDS	VDDS	AF24
AV38	VDDS	VDDS	AF25
AV39	VDDS	VDDS	AF26
R14	VDDS	VDDS	AG27
R15	VDDS	VDDS	AG28
R16	VDDS	VDDS	AG29
R17	VDDS	VDDS	AG35
R18	VDDS	VDDS	AG36
R24	VDDS	VDDS	AG37
R25	VDDS	VDDS	AG38
R26	VDDS	VDDS	AG39
R27	VDDS	VDDS	AK14
R28	VDDS	VDDS	AK15
R29	VDDS	VDDS	AK16
R35	VDDS	VDDS	AK17
R36	VDDS	VDDS	AK18
R37	VDDS	VDDS	AK24
R38	VDDS	VDDS	AK25
R39	VDDS	VDDS	AK26
W14	VDDS	VDDS	AK27
W15	VDDS	VDDS	AK28
W16	VDDS	VDDS	AK29
W17	VDDS	VDDS	AK35
W18	VDDS	VDDS	AK36
W24	VDDS	VDDS	AK37
W25	VDDS	VDDS	AK38
W26	VDDS	VDDS	AK39
W27	VDDS	VDDS	AP14
W28	VDDS	VDDS	AP15
W29	VDDS	VDDS	AP16
W35	VDDS	VDDS	AP17
W36	VDDS	VDDS	AP18
W37	VDDS	VDDS	AP24
W38	VDDS	VDDS	AP25
W39	VDDS	VDDS	AP26

20/23 FBVDDQ

AA10	FBVDDQ	FBVDDQ	AT43
AA11	FBVDDQ	FBVDDQ	K12
AA42	FBVDDQ	FBVDDQ	K14
AA43	FBVDDQ	FBVDDQ	K15
AC10	FBVDDQ	FBVDDQ	K17
AC11	FBVDDQ	FBVDDQ	K18
AC42	FBVDDQ	FBVDDQ	K20
AC43	FBVDDQ	FBVDDQ	K21
AD10	FBVDDQ	FBVDDQ	K23
AD11	FBVDDQ	FBVDDQ	K24
AD42	FBVDDQ	FBVDDQ	K26
AD43	FBVDDQ	FBVDDQ	K27
AF10	FBVDDQ	FBVDDQ	K29
AF43	FBVDDQ	FBVDDQ	K30
AG10	FBVDDQ	FBVDDQ	K32
AG11	FBVDDQ	FBVDDQ	K33
AG42	FBVDDQ	FBVDDQ	K35
AG43	FBVDDQ	FBVDDQ	K36
AJ10	FBVDDQ	FBVDDQ	K38
AJ11	FBVDDQ	FBVDDQ	K39
AJ42	FBVDDQ	FBVDDQ	K41
AJ43	FBVDDQ	FBVDDQ	L14
AK10	FBVDDQ	FBVDDQ	L15
AK11	FBVDDQ	FBVDDQ	L18
AK42	FBVDDQ	FBVDDQ	L20
AK43	FBVDDQ	FBVDDQ	L21
AM42	FBVDDQ	FBVDDQ	L23
AM43	FBVDDQ	FBVDDQ	L24
AN43	FBVDDQ	FBVDDQ	L26
AR42	FBVDDQ	FBVDDQ	L27
AR43	FBVDDQ	FBVDDQ	L30
R42	FBVDDQ	FBVDDQ	L32
R43	FBVDDQ	FBVDDQ	L33
U10	FBVDDQ	FBVDDQ	L35
U11	FBVDDQ	FBVDDQ	L36
U43	FBVDDQ	FBVDDQ	L39
V10	FBVDDQ	FBVDDQ	M10
V42	FBVDDQ	FBVDDQ	M43
V43	FBVDDQ	FBVDDQ	P10
Y10	FBVDDQ	FBVDDQ	P11
Y11	FBVDDQ	FBVDDQ	P42
Y42	FBVDDQ	FBVDDQ	P43
Y43	FBVDDQ	FBVDDQ	R10
	FBVDDQ	FBVDDQ	R11

FBVDDQ_SENSE — E52 PS_FBVDD_SENSE — OUT 26.5H<

FB_VREF — P45 SNN_FB_VREF_PROBE

FB_CAL_PD_VDDQ — R44 FB_CAL_PD_VDDQ — R786 40.2ohm 0402 1 % COMMON

FB_CAL_PU_GND — R45 FB_CAL_PU_GND — R783 40.2ohm 0402 1 % COMMON

FB_CALTERM_GND — R45 FB_CAL_TERM_GND — R782 60.4ohm 0402 1 % COMMON

R781 0ohm 0402 5% COMMON — PS_FBVDD_SENSE_RTN — OUT 26.5H<

VDDS_SENSE — BM45 GPU_NVVDDS_SENSE — OUT 27.1A<
GNDS_SENSE — BM44 GPU_NVVDDS_FBRTN — OUT 27.1A<
85OHM_NETCLASS3

NVVDD_SENSE — BK45 GPU_NVVDD_SENSE — OUT 27.1A<
GND_SENSE — BL45 GPU_NVVDD_FBRTN — OUT 27.1A<
DP_NVVDD_SENSE
85OHM_NETCLASS3
DP_NVVDD_SENSE

G1
GP104-400-A1
BGA2152
COMMON

21/23 NC/1V8

SNN_NC_S21_1	AT9	NC	BA10
SNN_NC_S21_2	BA6	NC	BB14
SNN_NC_S21_3	BA9	NC	BC14
SNN_NC_S21_4	BD14	NC	
SNN_NC_S21_5	BE12	NC	
SNN_NC_S21_6	BG6	NC	
SNN_NC_S21_7	BH6	NC	
SNN_NC_S21_8	BJ11	NC	
SNN_NC_S21_9	BJ9	NC	
SNN_NC_S21_10	BK44	NC	

1V8_AON
1V8
FBVDD
NVVDD
GND

ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	GPU PWR and GND

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

NV_PN	600-1G413-0000-000		
PCB REV	1G413-A00	PAGE	14 OF 38
BOM REV	D	DATE	29-MAR-2016

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FBVDD

FBVDD

Partition A

6x 1uF and 2x 10uF

C790 1uF 6.3V 10% X6S 0402 COMMON
C791 1uF 6.3V 10% X6S 0402 COMMON
C792 1uF 6.3V 10% X6S 0402 COMMON
C793 1uF 6.3V 10% X6S 0402 COMMON
C782 1uF 6.3V 10% X6S 0402 COMMON
C781 1uF 6.3V 10% X6S 0402 COMMON
C758 10uF 4V 20% X6S 0603 COMMON
C757 10uF 4V 20% X6S 0603 COMMON

GND

Partition B

6x 1uF and 2x 10uF

C856 1uF 6.3V 10% X6S 0402 COMMON
C864 1uF 6.3V 10% X6S 0402 COMMON
C834 1uF 6.3V 10% X6S 0402 COMMON
C788 1uF 6.3V 10% X6S 0402 COMMON
C784 1uF 6.3V 10% X6S 0402 COMMON
C807 1uF 6.3V 10% X6S 0402 COMMON
C778 10uF 4V 20% X6S 0603 COMMON
C821 10uF 4V 20% X6S 0603 COMMON

GND

Partition C

6x 1uF and 2x 10uF

C972 1uF 6.3V 10% X6S 0402 COMMON
C957 1uF 6.3V 10% X6S 0402 COMMON
C939 1uF 6.3V 10% X6S 0402 COMMON
C921 1uF 6.3V 10% X6S 0402 COMMON
C948 1uF 6.3V 10% X6S 0402 COMMON
C959 1uF 6.3V 10% X6S 0402 COMMON
C882 10uF 4V 20% X6S 0603 COMMON
C978 10uF 4V 20% X6S 0603 COMMON

GND

Partition D

6x 1uF and 2x 10uF

C962 1uF 6.3V 10% X6S 0402 COMMON
C960 1uF 6.3V 10% X6S 0402 COMMON
C973 1uF 6.3V 10% X6S 0402 COMMON
C963 1uF 6.3V 10% X6S 0402 COMMON
C961 1uF 6.3V 10% X6S 0402 COMMON
C968 1uF 6.3V 10% X6S 0402 COMMON
C1000 10uF 4V 20% X6S 0603 COMMON
C1001 10uF 4V 20% X6S 0603 COMMON

GND

C786 10uF 4V 20% X6S 0603 COMMON
C740 10uF 4V 20% X6S 0603 COMMON
C745 10uF 4V 20% X6S 0603 COMMON
C937 10uF 4V 20% X6S 0603 COMMON

GND

C769 22uF 4V 20% X6S 0603W COMMON
C980 22uF 4V 20% X6S 0603W COMMON
C896 22uF 4V 20% X6S 0603W COMMON
C824 22uF 4V 20% X6S 0603W COMMON
C753 22uF 4V 20% X6S 0603W COMMON
C749 22uF 4V 20% X6S 0603W COMMON
C1005 22uF 4V 20% X6S 0603W COMMON
C752 22uF 4V 20% X6S 0603W COMMON
C1003 22uF 4V 20% X6S 0603W COMMON

GND

NVVDD

NVVDD

C747 330uF COMMON 20% 2V@105degC AL-Polymer 3.5A@105degC,100KHz 0.006ohm SMD_7343
C113 330uF COMMON 20% 2V@105degC AL-Polymer 3.5A@105degC,100KHz 0.006ohm SMD_7343

GND

C776 47uF 4V 20% X5R 0805LP COMMON
C766 47uF 4V 20% X5R 0805LP COMMON
C785 22uF 6.3V 20% X5R 0805LP COMMON
C773 22uF 6.3V 20% X5R 0805LP COMMON
C771 22uF 6.3V 20% X5R 0805LP COMMON
C805 22uF 6.3V 20% X5R 0805LP COMMON

GND

C870 10uF 4V 20% X6S 0603 COMMON
C873 10uF 4V 20% X6S 0603 COMMON
C877 10uF 4V 20% X6S 0603 COMMON
C871 10uF 4V 20% X6S 0603 COMMON
C869 10uF 4V 20% X6S 0603 COMMON
C875 10uF 4V 20% X6S 0603 COMMON
C876 10uF 4V 20% X6S 0603 COMMON

GND

C836 1uF 6.3V 10% X6S 0402 COMMON
C809 1uF 6.3V 10% X6S 0402 COMMON
C917 1uF 6.3V 10% X6S 0402 COMMON
C838 1uF 6.3V 10% X6S 0402 COMMON
C907 1uF 6.3V 10% X6S 0402 COMMON
C904 1uF 6.3V 10% X6S 0402 COMMON
C851 1uF 6.3V 10% X6S 0402 COMMON
C812 1uF 6.3V 10% X6S 0402 COMMON
C914 1uF 6.3V 10% X6S 0402 COMMON
C892 1uF 6.3V 10% X6S 0402 COMMON

GND

C814 1uF 6.3V 10% X6S 0402 COMMON
C810 1uF 6.3V 10% X6S 0402 COMMON
C849 1uF 6.3V 10% X6S 0402 COMMON
C827 1uF 6.3V 10% X6S 0402 COMMON
C829 1uF 6.3V 10% X6S 0402 COMMON
C839 1uF 6.3V 10% X6S 0402 COMMON
C830 1uF 6.3V 10% X6S 0402 COMMON
C905 1uF 6.3V 10% X6S 0402 COMMON
C931 1uF 6.3V 10% X6S 0402 COMMON
C889 1uF 6.3V 10% X6S 0402 COMMON

GND

C926 1uF 6.3V 10% X6S 0402 COMMON
C913 1uF 6.3V 10% X6S 0402 COMMON
C916 1uF 6.3V 10% X6S 0402 COMMON
C828 1uF 6.3V 10% X6S 0402 COMMON
C837 1uF 6.3V 10% X6S 0402 COMMON
C933 1uF 6.3V 10% X6S 0402 COMMON
C915 1uF 6.3V 10% X6S 0402 COMMON
C952 1uF 6.3V 10% X6S 0402 COMMON
C891 1uF 6.3V 10% X6S 0402 COMMON
C852 1uF 6.3V 10% X6S 0402 COMMON

GND

C888 1uF 6.3V 10% X6S 0402 COMMON
C835 1uF 6.3V 10% X6S 0402 COMMON
C850 1uF 6.3V 10% X6S 0402 COMMON
C853 1uF 6.3V 10% X6S 0402 COMMON
C831 1uF 6.3V 10% X6S 0402 COMMON
C890 1uF 6.3V 10% X6S 0402 COMMON
C928 1uF 6.3V 10% X6S 0402 COMMON
C906 1uF 6.3V 10% X6S 0402 COMMON
C908 1uF 6.3V 10% X6S 0402 COMMON
C935 1uF 6.3V 10% X6S 0402 COMMON

GND

C901 1uF 6.3V 10% X6S 0402 COMMON
C848 1uF 6.3V 10% X6S 0402 COMMON
C956 1uF 6.3V 10% X6S 0402 COMMON
C797 1uF 6.3V 10% X6S 0402 COMMON
C951 1uF 6.3V 10% X6S 0402 COMMON

GND

NVVDD

NVVDD

C764 330uF COMMON 20% 2V@105degC AL-Polymer 3.5A@105degC,100KHz 0.006ohm SMD_7343
C737 47uF 4V 20% X5R 0805LP COMMON
C878 10uF 4V 20% X6S 0603 COMMON
C868 10uF 4V 20% X6S 0603 COMMON
C874 10uF 4V 20% X6S 0603 COMMON
C872 10uF 4V 20% X6S 0603 COMMON

GND

C925 1uF 6.3V 10% X6S 0402 COMMON
C929 1uF 6.3V 10% X6S 0402 COMMON
C808 1uF 6.3V 10% X6S 0402 COMMON
C955 1uF 6.3V 10% X6S 0402 COMMON
C795 1uF 6.3V 10% X6S 0402 COMMON
C811 1uF 6.3V 10% X6S 0402 COMMON
C794 1uF 6.3V 10% X6S 0402 COMMON
C796 1uF 6.3V 10% X6S 0402 COMMON

GND

C930 1uF 6.3V 10% X6S 0402 COMMON
C954 1uF 6.3V 10% X6S 0402 COMMON
C932 1uF 6.3V 10% X6S 0402 COMMON
C815 1uF 6.3V 10% X6S 0402 COMMON
C934 1uF 6.3V 10% X6S 0402 COMMON
C813 1uF 6.3V 10% X6S 0402 COMMON
C798 1uF 6.3V 10% X6S 0402 COMMON
C927 1uF 6.3V 10% X6S 0402 COMMON

GND

NVVDD

STUFF C902 OR
C918,C919,C898,C899

C902 330uF COMMON 20% 2V@105degC AL-Polymer 3.5A@105degC,100KHz 0.006ohm SMD_7343
C918 1uF 6.3V 10% X6S 0402 NO STUFF
C919 1uF 6.3V 10% X6S 0402 NO STUFF
C898 10uF 4V 20% X6S 0603 NO STUFF
C899 10uF 4V 20% X6S 0603 NO STUFF

GND

NVVDD

STUFF C842 OR
C843,C844,C826,C825

C842 330uF COMMON 20% 2V@105degC AL-Polymer 3.5A@105degC,100KHz 0.006ohm SMD_7343
C843 10uF 4V 20% X6S 0603 NO STUFF
C844 10uF 4V 20% X6S 0603 NO STUFF
C826 1uF 6.3V 10% X6S 0402 NO STUFF
C825 1uF 6.3V 10% X6S 0402 NO STUFF

GND

1V8_AON

1V8_AON

place 1 0.1uF cap near BA10

C1007 4.7uF 4V 10% X6S 0603 COMMON
C989 1uF 6.3V 10% X6S 0402 COMMON
C969 0.1uF 16V 10% X7R 0402 COMMON
C970 0.1uF 16V 10% X7R 0402 COMMON

GND

place 1 0.1uf cap for BB14 and BC14 to share

VDD18

1V8

C984 0.1uF 16V 10% X7R 0402 COMMON
C860 0.1uF 16V 10% X7R 0402 COMMON
C840 0.1uF 16V 10% X7R 0402 COMMON

GND

ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	GPU Decoupling

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Page16: IFPAB DVI-D-DL

ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	IFPAB DVI-D-DL

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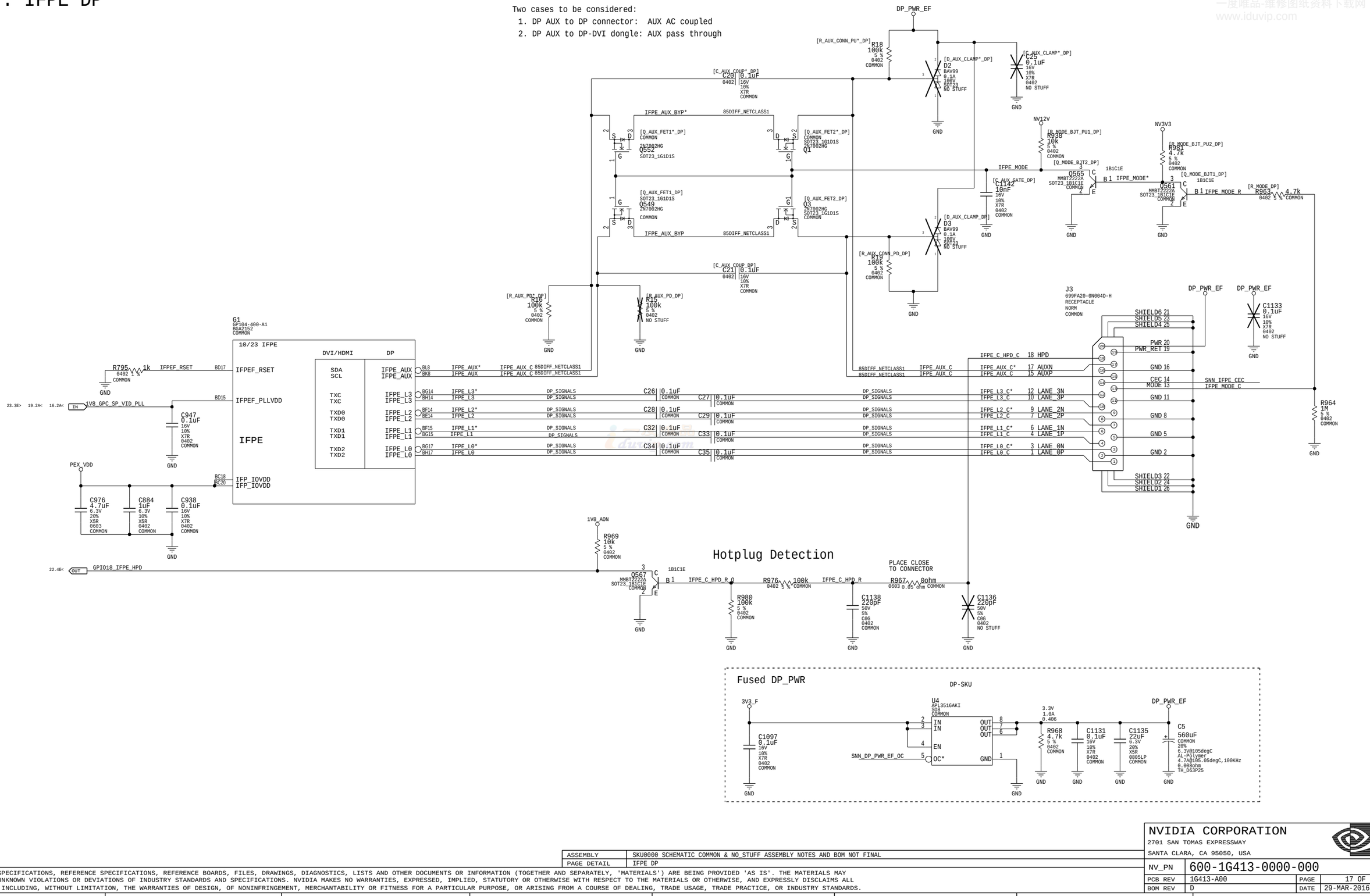
Page17: IFPE DP

Two cases to be considered:
1. DP AUX to DP connector: AUX AC coupled
2. DP AUX to DP-DVI dongle: AUX pass through



ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	IFPE DP

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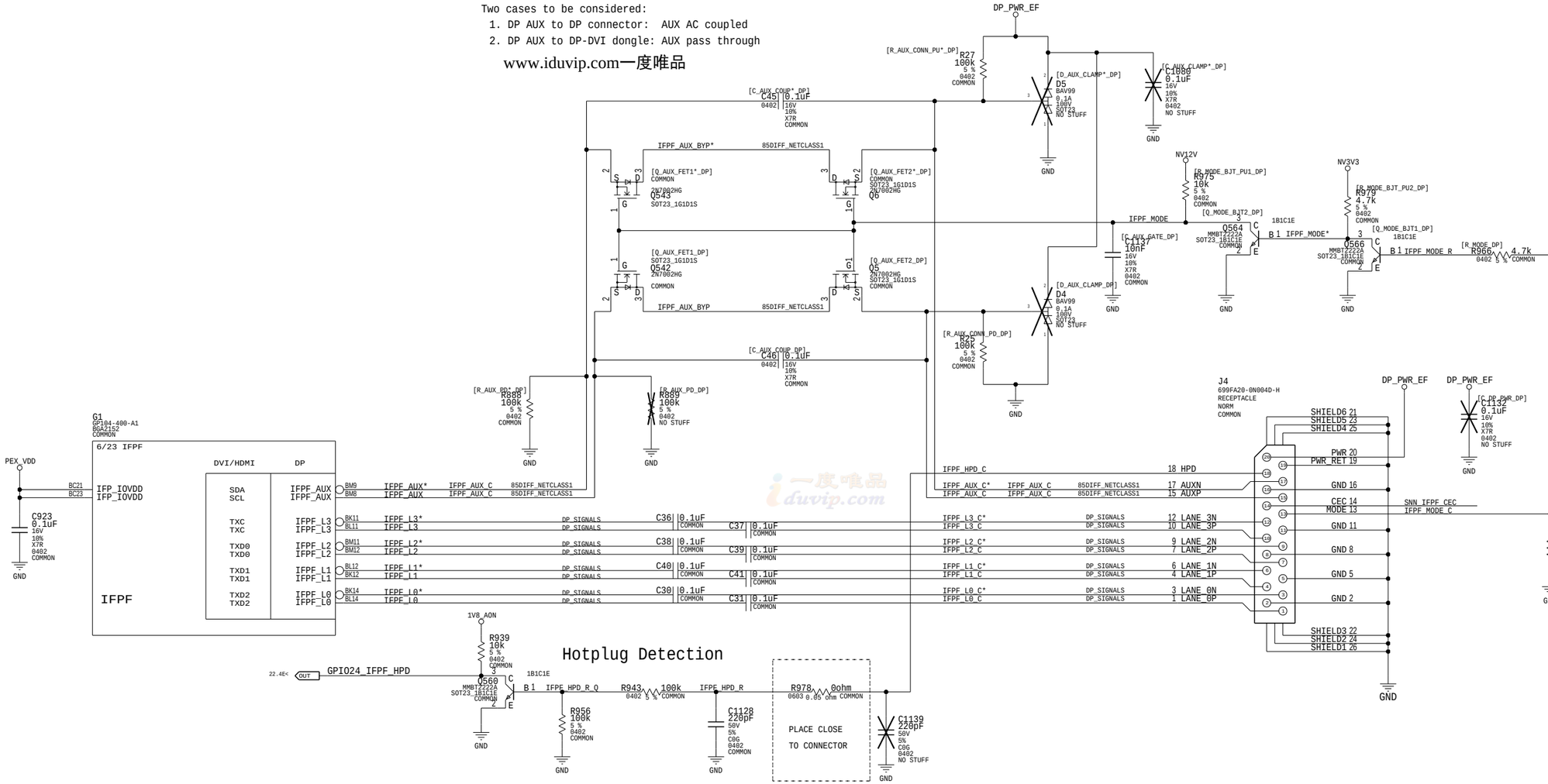
Page18: IFPF DP

Two cases to be considered:
1. DP AUX to DP connector: AUX AC coupled
2. DP AUX to DP-DVI dongle: AUX pass through



ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	IFPEF DP

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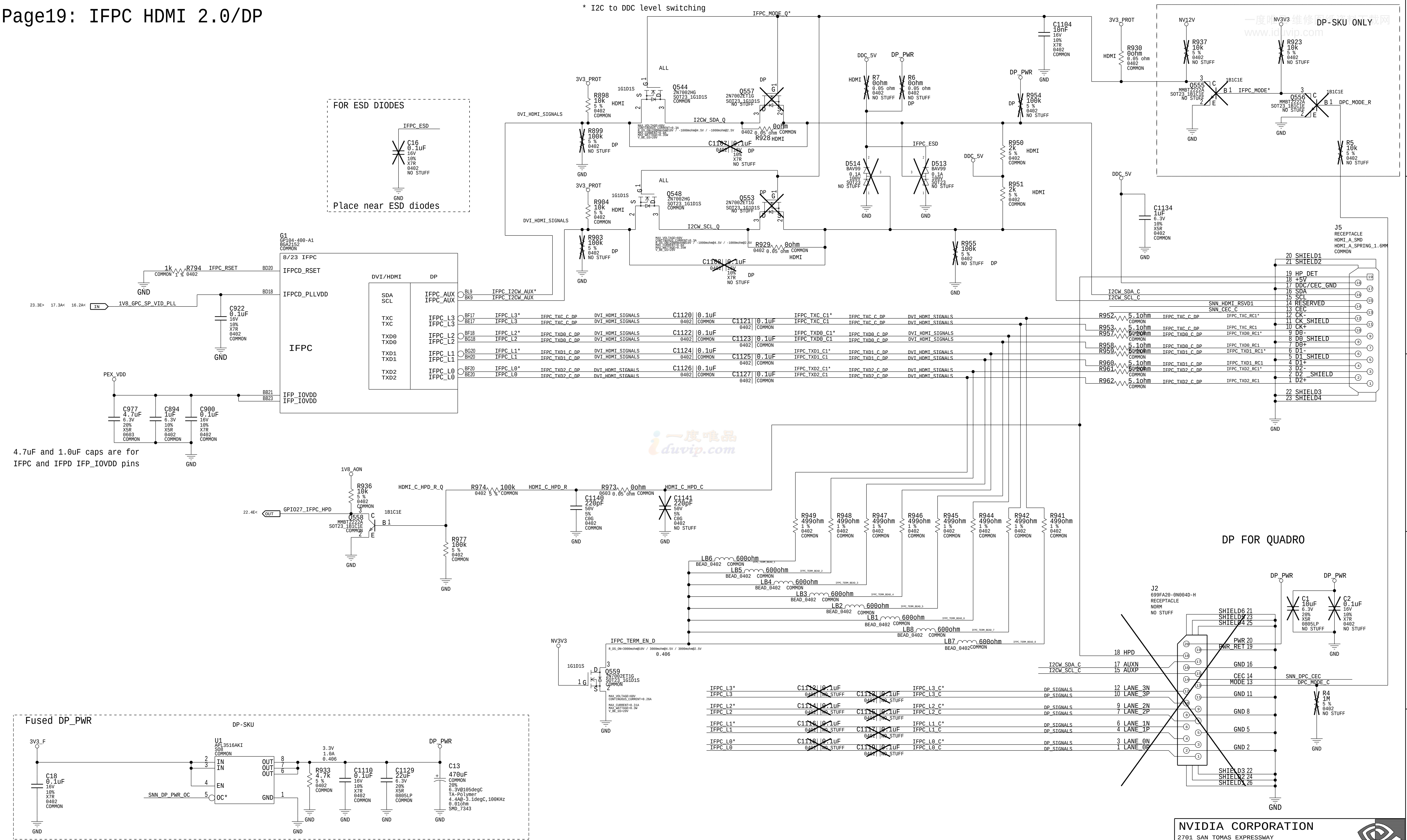
Page19: IFPC HDMI 2.0/DP



ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	IFPC HDMI 2.0/DP

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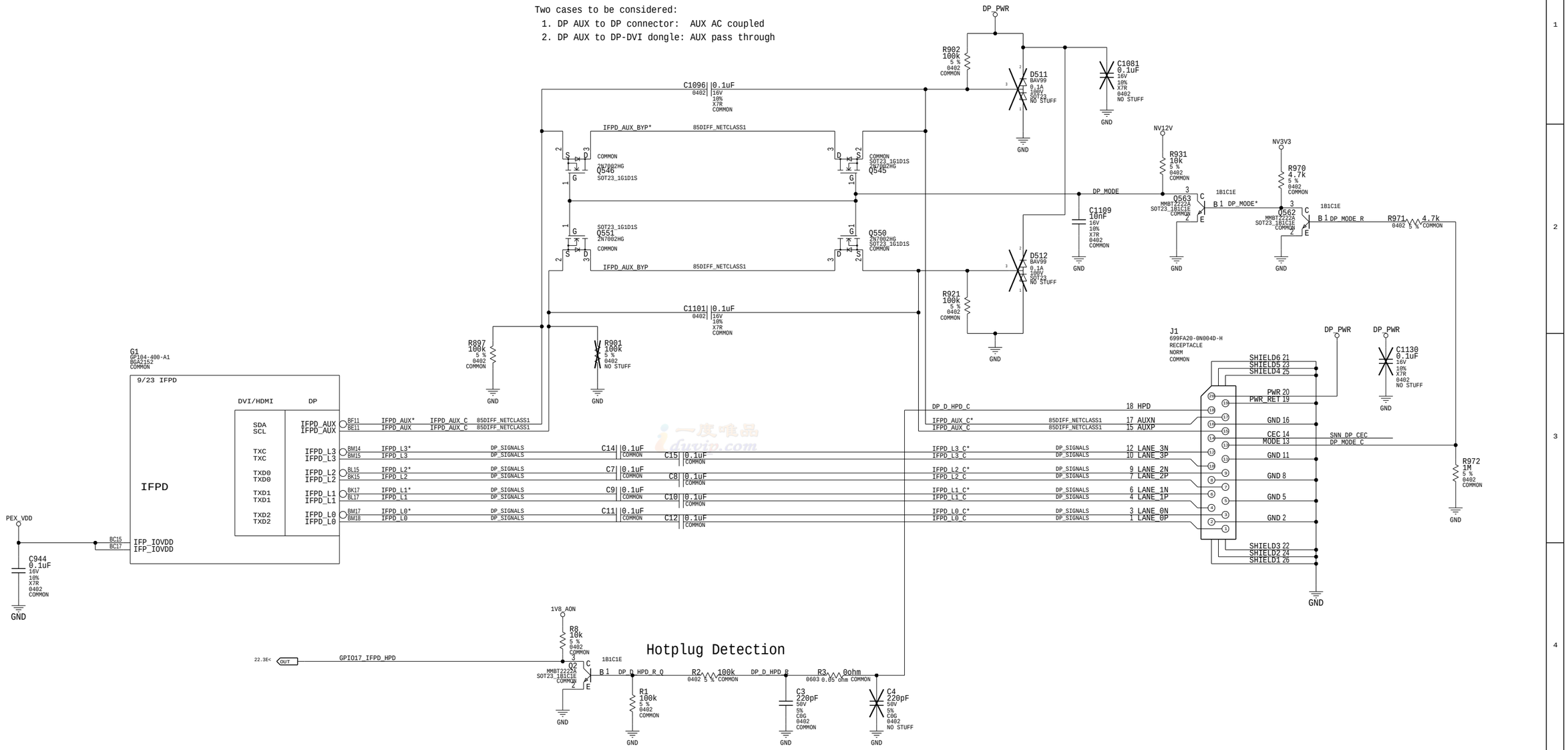
Page20: IFPD DP

Two cases to be considered:
1. DP AUX to DP connector: AUX AC coupled
2. DP AUX to DP-DVI dongle: AUX pass through



ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	IFPD DP

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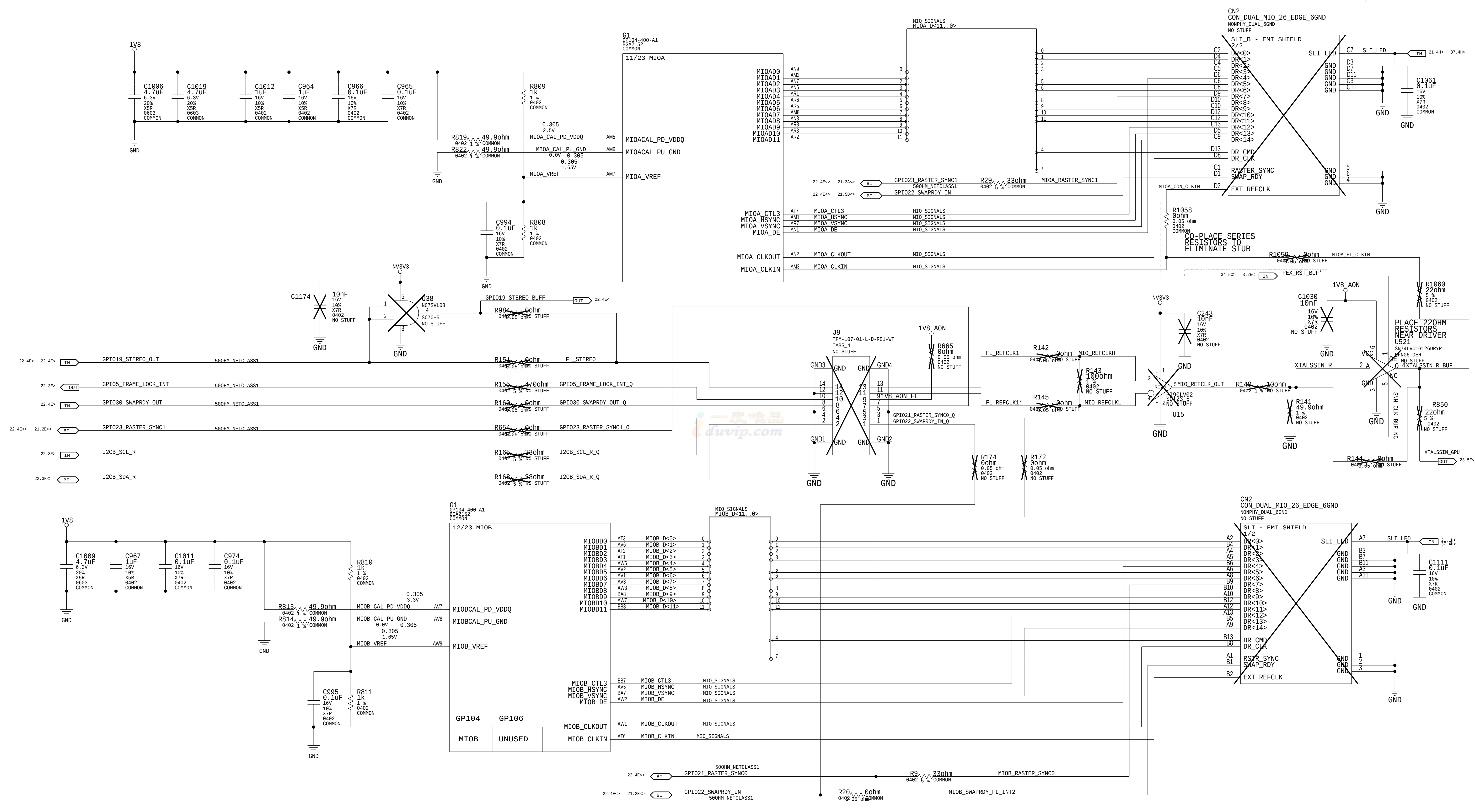
Page21: MIOA/B Interface and FRAME LOCK


1V8
C1006 4.7uF 6.3V 20% X5R 0603 COMMON
C1019 4.7uF 6.3V 20% X5R 0603 COMMON
C1012 1uF 16V 10% X5R 0402 COMMON
C964 1uF 16V 10% X5R 0402 COMMON
C966 0.1uF 16V 10% X7R 0402 COMMON
C965 0.1uF 16V 10% X7R 0402 COMMON
GND
R809 1k 1 % 0402 COMMON
R819 49.9ohm 0402 1 % COMMON
R822 49.9ohm 0402 1 % COMMON
MIOA_CAL_PD_VDDQ
MIOA_CAL_PU_GND
MIOA_VREF
C994 0.1uF 16V 10% X7R 0402 COMMON
R808 1k 1 % 0402 COMMON
G1 GP104-400-A1 BGA2152 COMMON
11/23 MIOA
MIOAD0 MIOAD1 MIOAD2 MIOAD3 MIOAD4 MIOAD5 MIOAD6 MIOAD7 MIOAD8 MIOAD9 MIOAD10 MIOAD11
MIOACAL_PD_VDDQ
MIOACAL_PU_GND
MIOA_VREF
MIOA_CTL3 MIOA_HSYNC MIOA_VSYNC MIOA_DE
MIOA_CLKOUT
MIOA_CLKIN
MIO_SIGNALS
MIOA_D<11..0>
CN2 CON_DUAL_MIO_26_EDGE_6GND NONPHY_DUAL_6GND NO STUFF
SLI_B - EMI SHIELD 2/2
SLI_LED
DR<0> ... DR<14>
DR_CMD DR_CLK
RASTER_SYNC SWAP_RDY EXT_REFCLK
C1061 0.1uF 16V 10% X7R 0402 COMMON
GPIO23_RASTER_SYNC1
GPIO22_SWAPRDY_IN
R29 33ohm 0402 5 % COMMON
MIOA_RASTER_SYNC1
MIOA_CON_CLKIN
R1058 0ohm 0.05 ohm 0402 COMMON
CO-PLACE SERIES RESISTORS TO ELIMINATE STUB
R1059 0ohm 0402 0.05 ohm NO STUFF
MIOA_FL_CLKIN
PEX_RST_BUF*
R1060 220hm 5 % 0402 NO STUFF
NV3V3
C1174 10nF 16V 10% X7R 0402 NO STUFF
U38 NC7SVL08 SC70-5 NO STUFF
GPIO19_STEREO_BUFF
R984 0ohm 0402 0.05 ohm NO STUFF
GPIO19_STEREO_OUT
R151 0ohm FL_STEREO
GPIO5_FRAME_LOCK_INT
R155 470ohm GPIO5_FRAME_LOCK_INT_Q
GPIO30_SWAPRDY_OUT
R160 0ohm GPIO30_SWAPRDY_OUT_Q
GPIO23_RASTER_SYNC1
R654 0ohm GPIO23_RASTER_SYNC1_Q
I2CB_SCL_R
R165 33ohm I2CB_SCL_R_Q
I2CB_SDA_R
R168 33ohm I2CB_SDA_R_Q
500HM_NETCLASS1
J9 TFM-107-01-L-D-RE1-WT TABS_4 NO STUFF
1V8_AON
R665 0ohm 0.05 ohm 0402 NO STUFF
1V8_AON_FL
GPIO21_RASTER_SYNC0_Q
GPIO22_SWAPRDY_IN_Q
FL_REFCLK1
R142 0ohm MIO_REFCLKH
R143 100ohm 1 % 0402 NO STUFF
R145 0ohm MIO_REFCLKL
FL_REFCLK1*
R174 0ohm 0.05 ohm 0402 NO STUFF
R172 0ohm 0.05 ohm 0402 NO STUFF
C243 10nF 16V 10% X7R 0402 NO STUFF
U15 SY100LV02 SOT23-5 NO STUFF
MIO_REFCLK_OUT
R140 10ohm 0402 NO STUFF
C1030 10nF 16V 10% X7R 0402 NO STUFF
PLACE 22OHM RESISTORS NEAR DRIVER
U521 SN74LVC1G126DRYR SON06_OEH NO STUFF
XTALSSIN_R
XTALSSIN_R_BUF
SNN_CLK_BUF_NC
R141 49.9ohm 1 % 0402 NO STUFF
R850 22ohm 5 % 0402 NO STUFF
R144 0ohm 0402 0.05 ohm NO STUFF
XTALSSIN_GPU
C1009 4.7uF 6.3V 20% X5R 0603 COMMON
C967 1uF 16V 10% X5R 0402 COMMON
C1011 0.1uF 16V 10% X7R 0402 COMMON
C974 0.1uF 16V 10% X7R 0402 COMMON
R810 1k 1 % 0402 COMMON
R813 49.9ohm 0402 1 % COMMON
R814 49.9ohm 0402 1 % COMMON
MIOB_CAL_PD_VDDQ
MIOB_CAL_PU_GND
MIOB_VREF
C995 0.1uF 16V 10% X7R 0402 COMMON
R811 1k 1 % 0402 COMMON
G1 GP104-400-A1 BGA2152 COMMON
12/23 MIOB
MIOBD0 MIOBD1 MIOBD2 MIOBD3 MIOBD4 MIOBD5 MIOBD6 MIOBD7 MIOBD8 MIOBD9 MIOBD10 MIOBD11
MIOBCAL_PD_VDDQ
MIOBCAL_PU_GND
MIOB_VREF
MIOB_CTL3 MIOB_HSYNC MIOB_VSYNC MIOB_DE
MIOB_CLKOUT
MIOB_CLKIN
GP104 GP106
MIOB UNUSED
MIOB_D<11..0>
CN2 CON_DUAL_MIO_26_EDGE_6GND NONPHY_DUAL_6GND NO STUFF
SLI - EMI SHIELD 1/2
RSTR_SYNC SWAP_RDY EXT_REFCLK
C1111 0.1uF 16V 10% X7R 0402 COMMON
GPIO21_RASTER_SYNC0
R9 33ohm 0402 5 % COMMON
MIOB_RASTER_SYNC0
GPIO22_SWAPRDY_IN
R20 0ohm 0402 0.05 ohm COMMON
MIOB_SWAPRDY_FL_INT2

ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	MIOA/B Interface and Frame Lock

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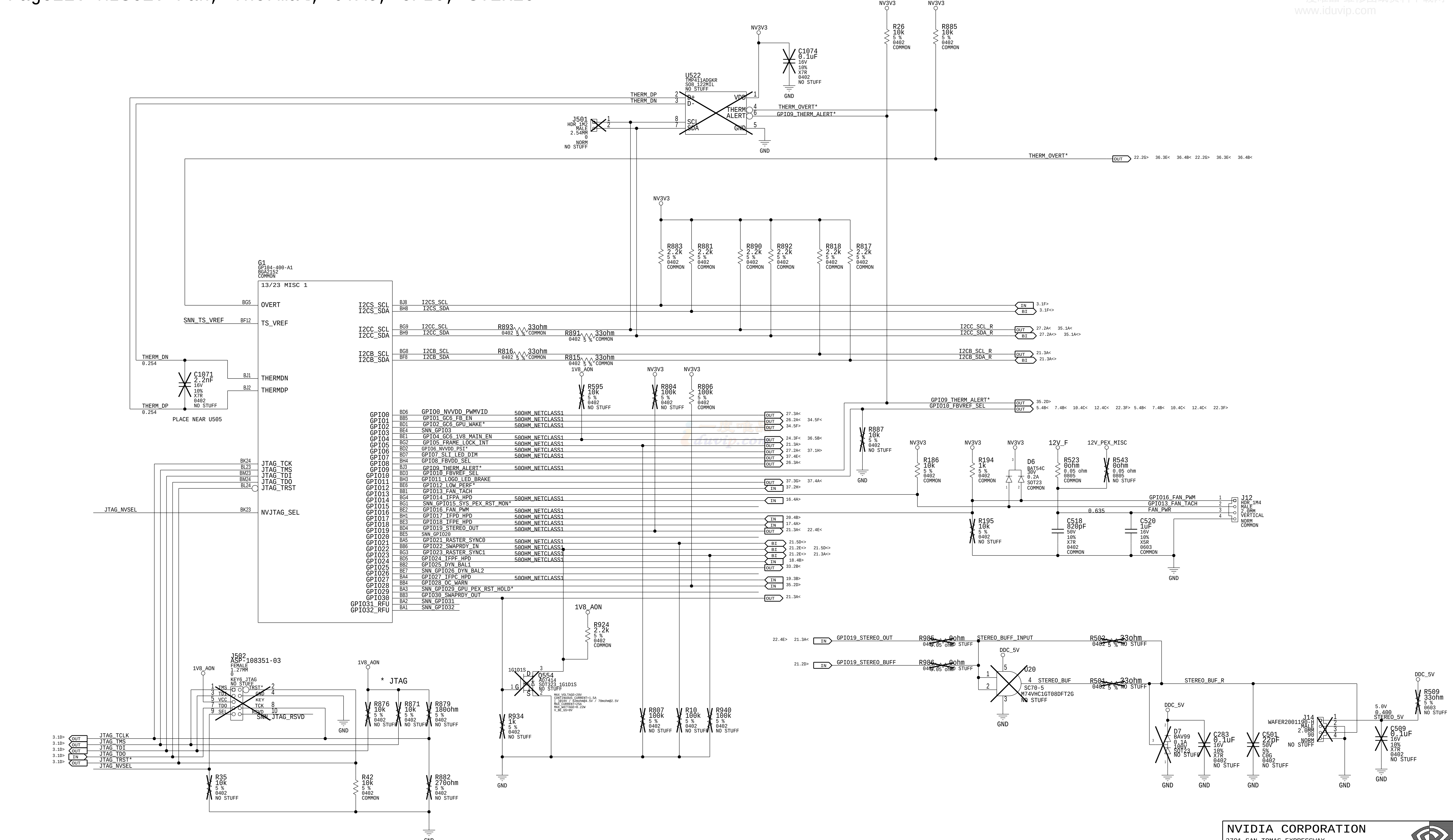
Page22: MISC1: Fan, Thermal, JTAG, GPIO, STEREO



ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	MISC1; Fan, Thermal, JTAG, GPIO, Stereo

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Page23: MISC2: ROM, XTAL, Straps

STRAP2	STRAP1	STRAP0	RAMCFG[4:0]
L	L	L	00000
L	H	L	00010
L	H	H	00011
H	H	L	00110
H	H	H	00111

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

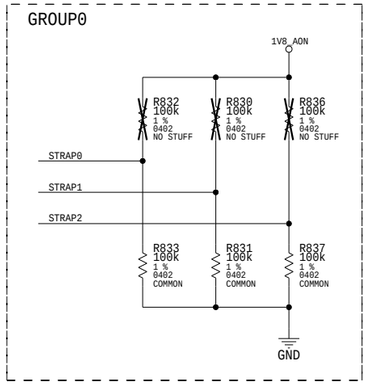
H=High :Tied to 1.8V
M=Middle:Tied to 0.9V
L=Low :Tied to 0V

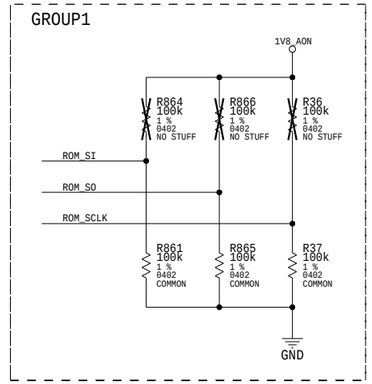
1:SMB_ALT_ADDR ENABLE
0:SMB_ALT_ADDR DISABLE

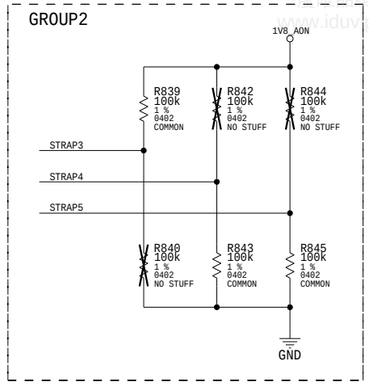
1:DEVID_SEL REBRAND
0:DEVID_SEL ORIGNAL

1:PCIE_CFG LOW POWER
0:PCIE_CFG HIGH POWER

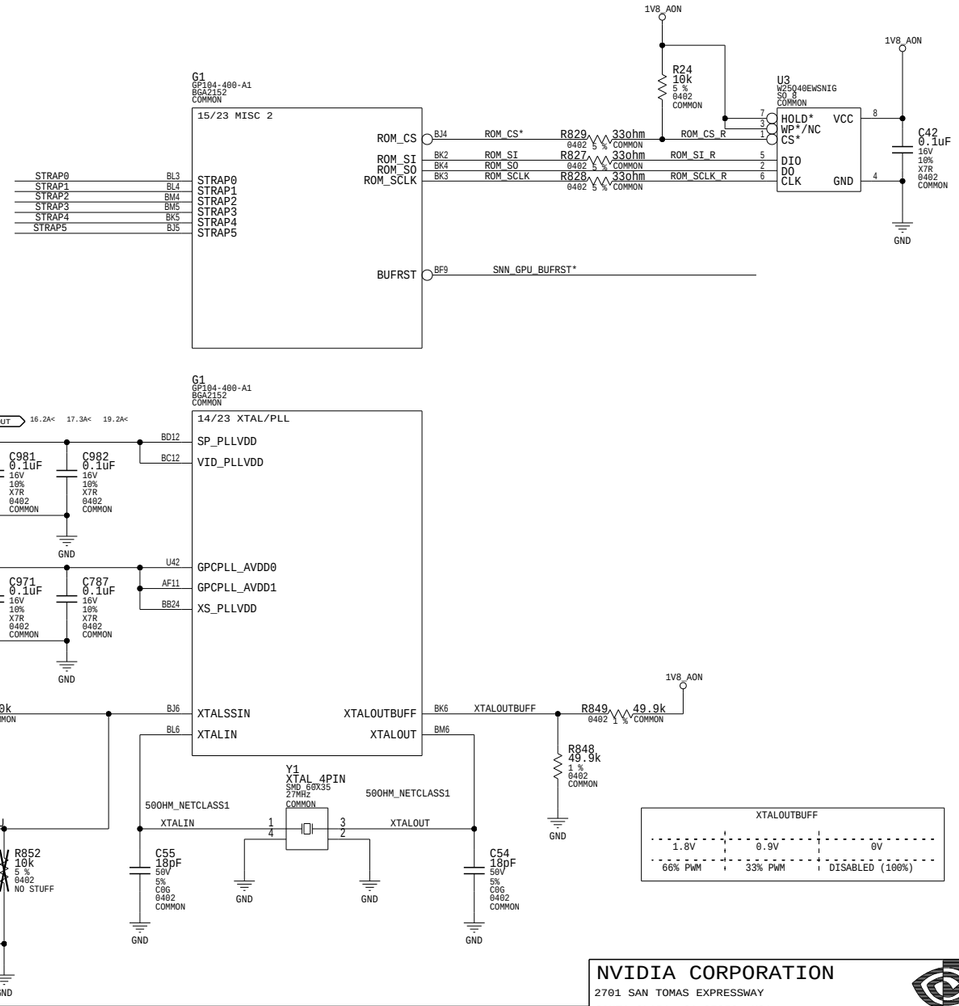
1:VGA_DEVICE ENABLE
0:VGA_DEVICE DISABLE







CFG[3:0]	Config Width	Vendor
0000	256Mx32 256-bit	Micron
0001	Reserved	
0010	Reserved	
0011	Reserved	
0100	Reserved	
0101	Reserved	
0110	Reserved	
0111	Reserved	



ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	MISC2: ROM, XTAL, Straps

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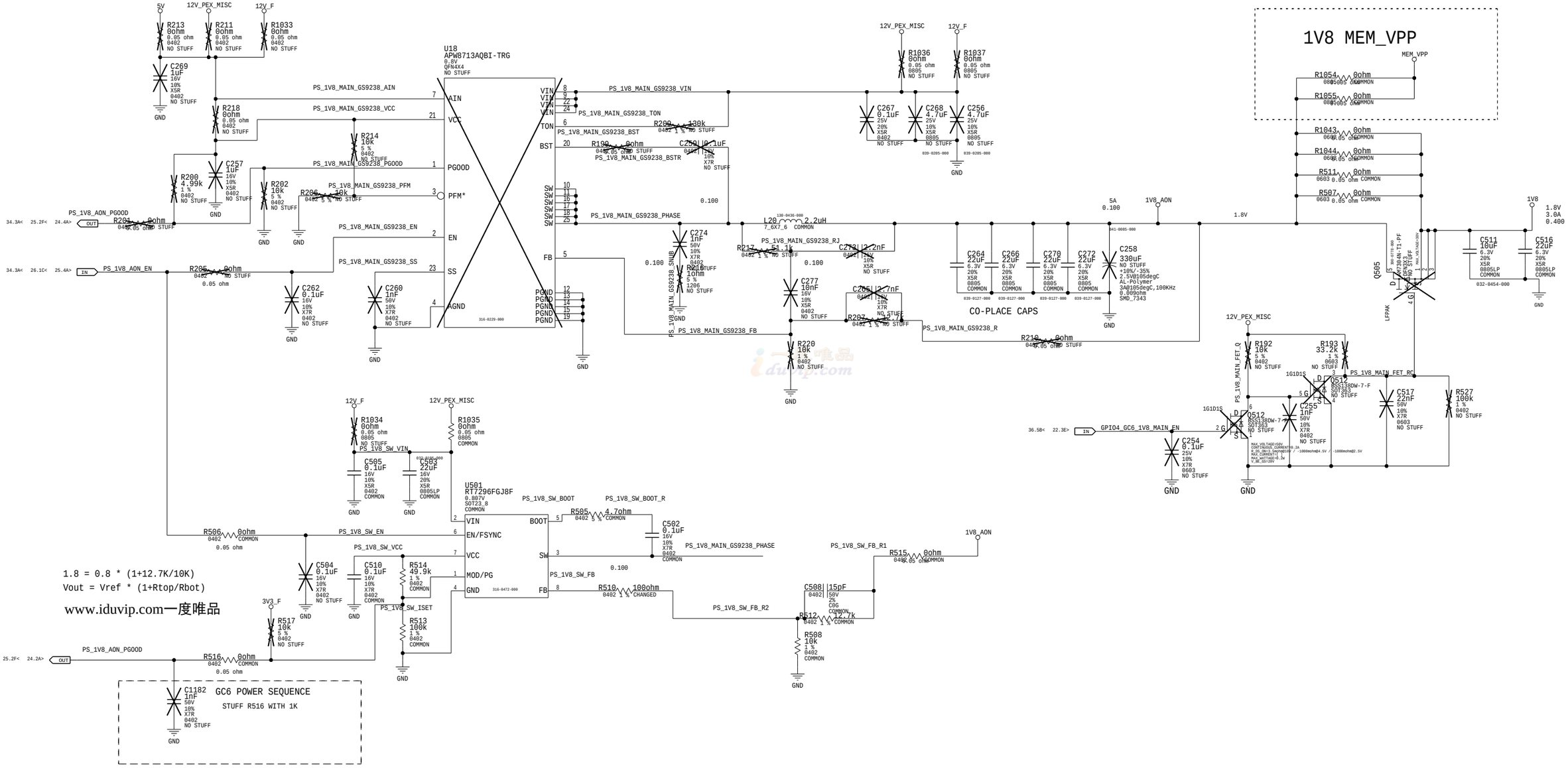
Page24: PS: 1V8, 1V8_AON



ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	PS: 1V8, 1V8_AON

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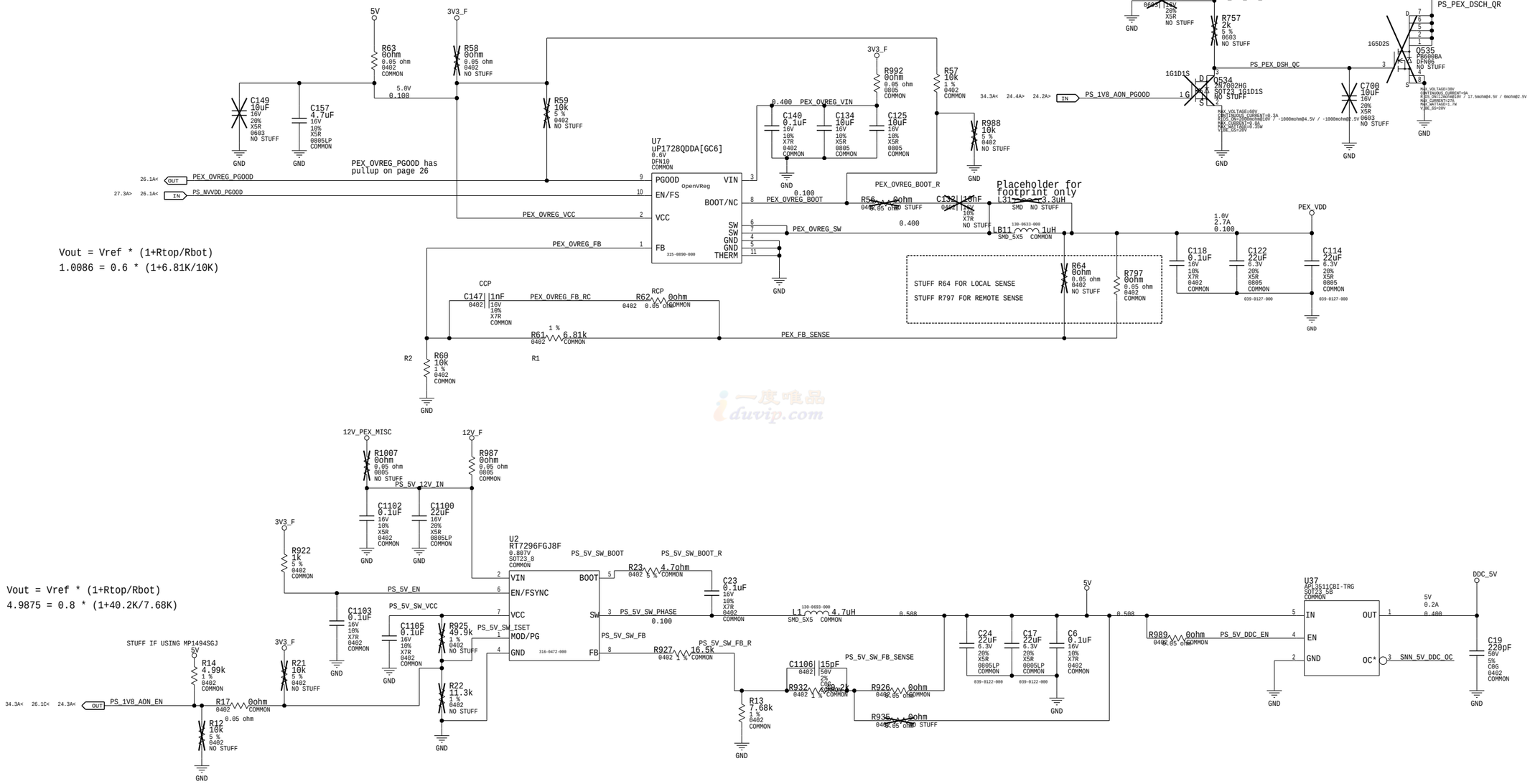
Page25: PS: 5V, PEX_VDD

PEX PLL Switcher



ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	PS: 5V, PEX_VDD

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Page26: PS: FBVDD

FBVDD Enable

GDDR5X IS 1.35 ONLY

GM Amp Compensation

A RESISTOR
IS PLACED ON
C206 FOOTPRINT

OP Amp Compensation

ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	PS: FBVDD

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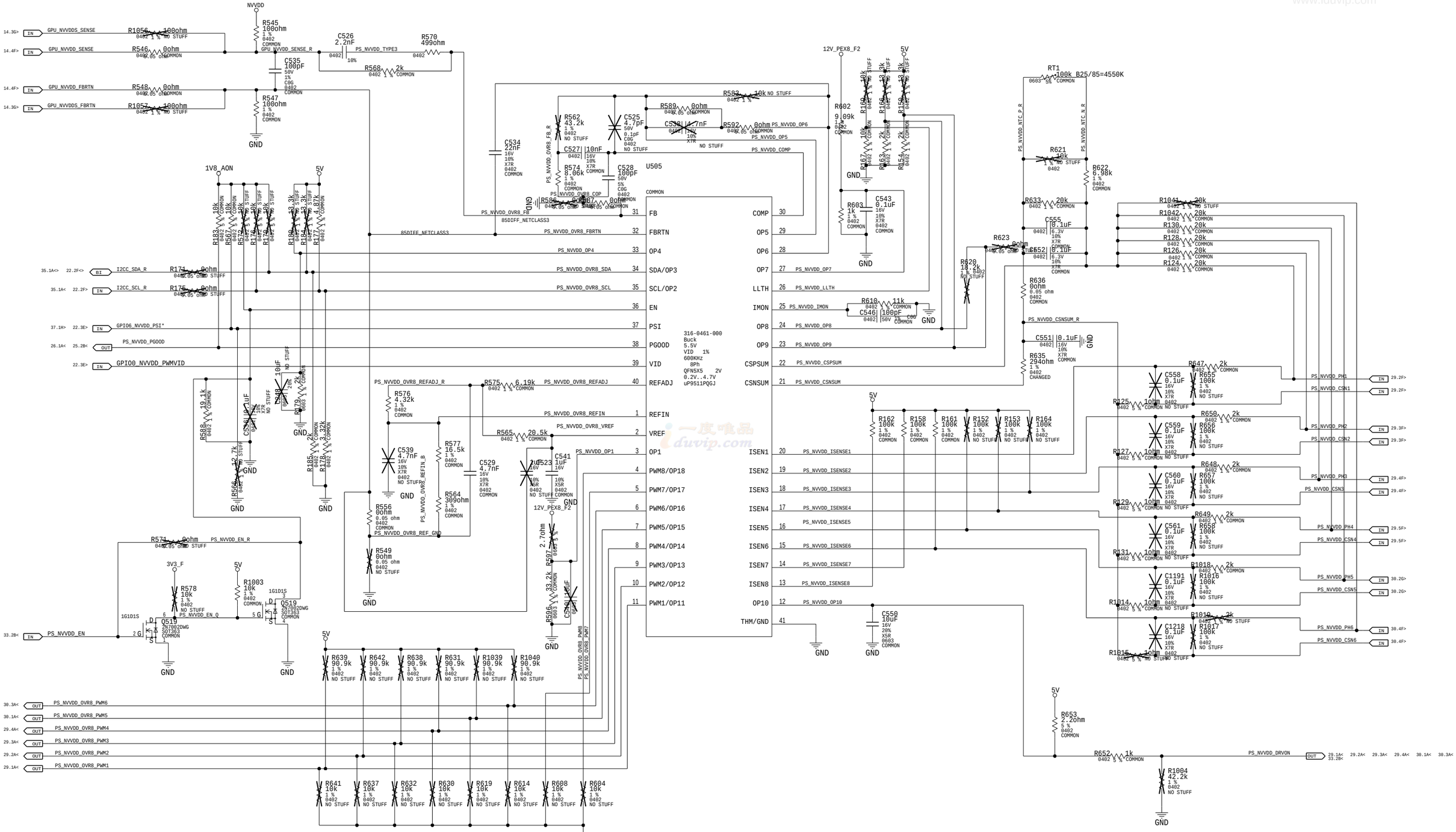
Page27: PS: NVVDD_OVR8



ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	PS: NVVDD_OVR8

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Page28: PS: Blank Page

ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	PS: Blank Page

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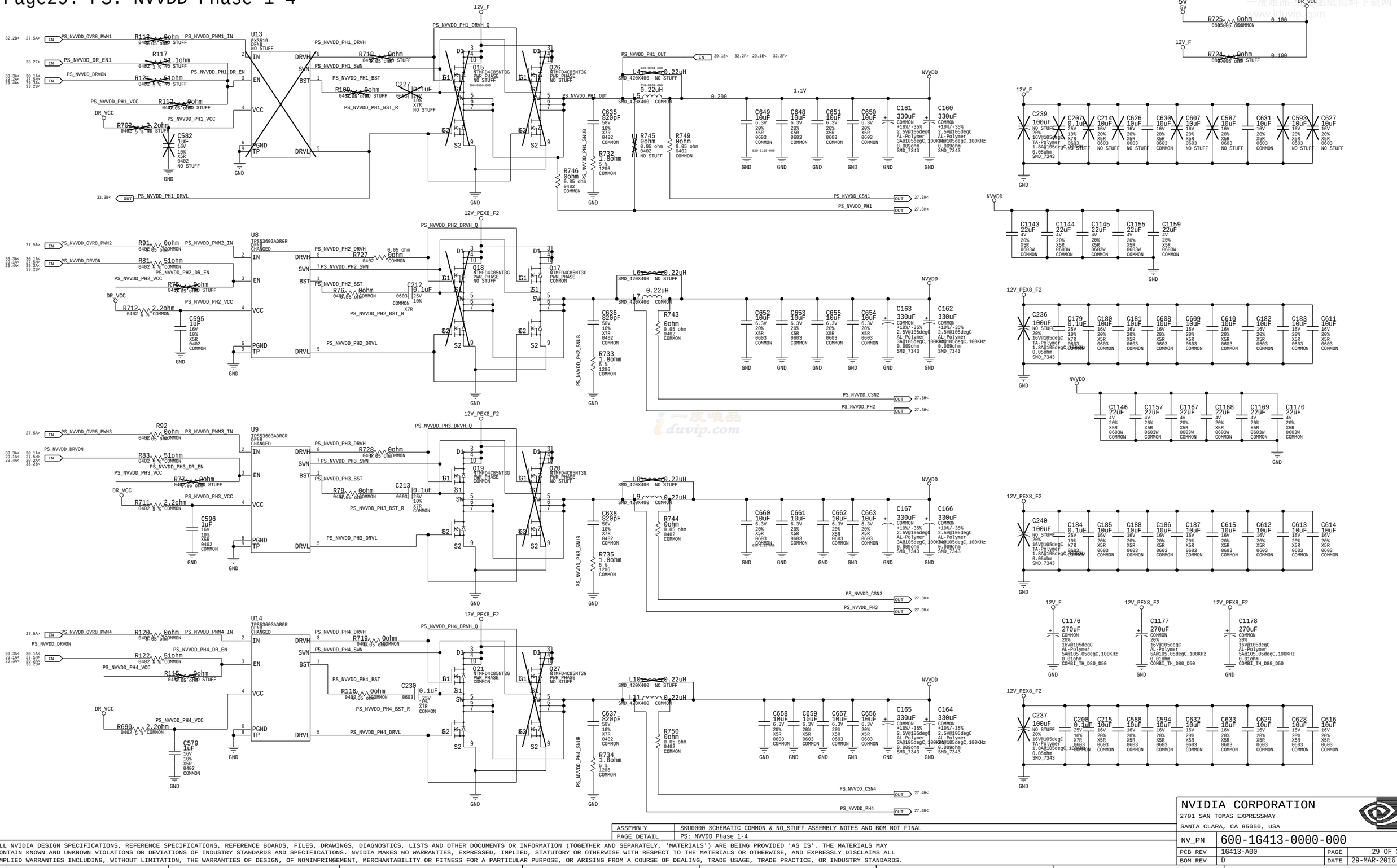
Page29: PS: NVVDD Phase 1-4



ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	PS: NVVDD Phase 1-4

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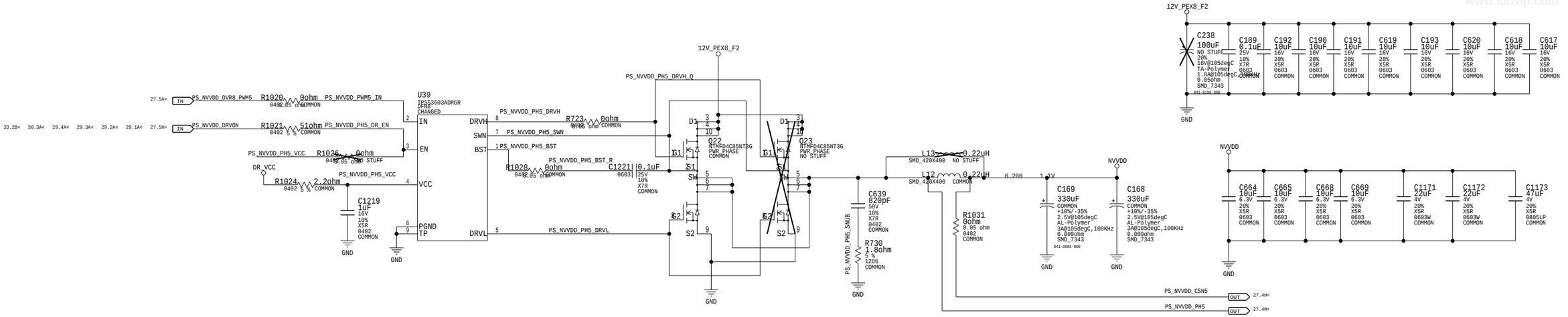
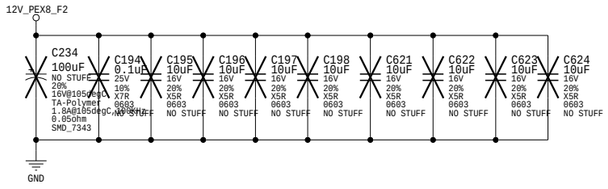
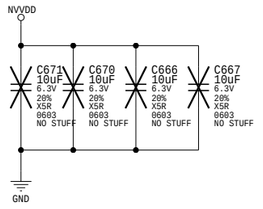
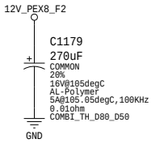
Page30: PS: NVVDD Phase 5 & 6









ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	PS: NVVDD Phase 5 & 6

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Page31: PS: Blank Page

ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	PS: Blank Page

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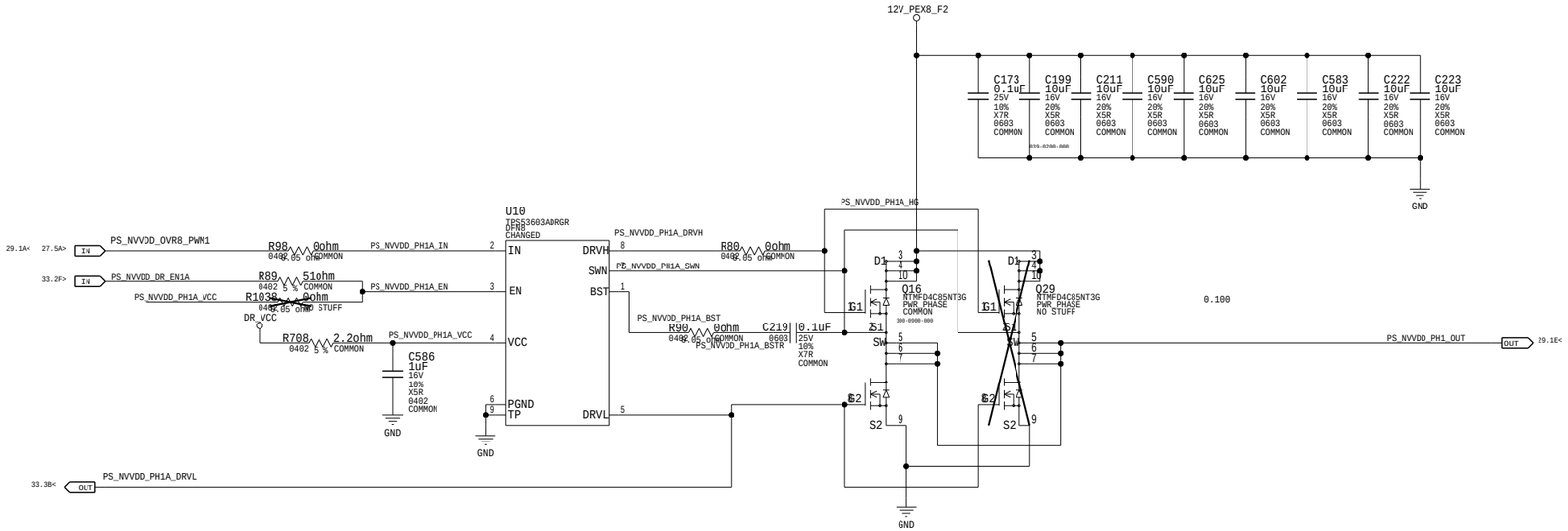
Page32: PS: Dynamic Power Balance Phases



ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	PS: Dynamic Power Balance Phases

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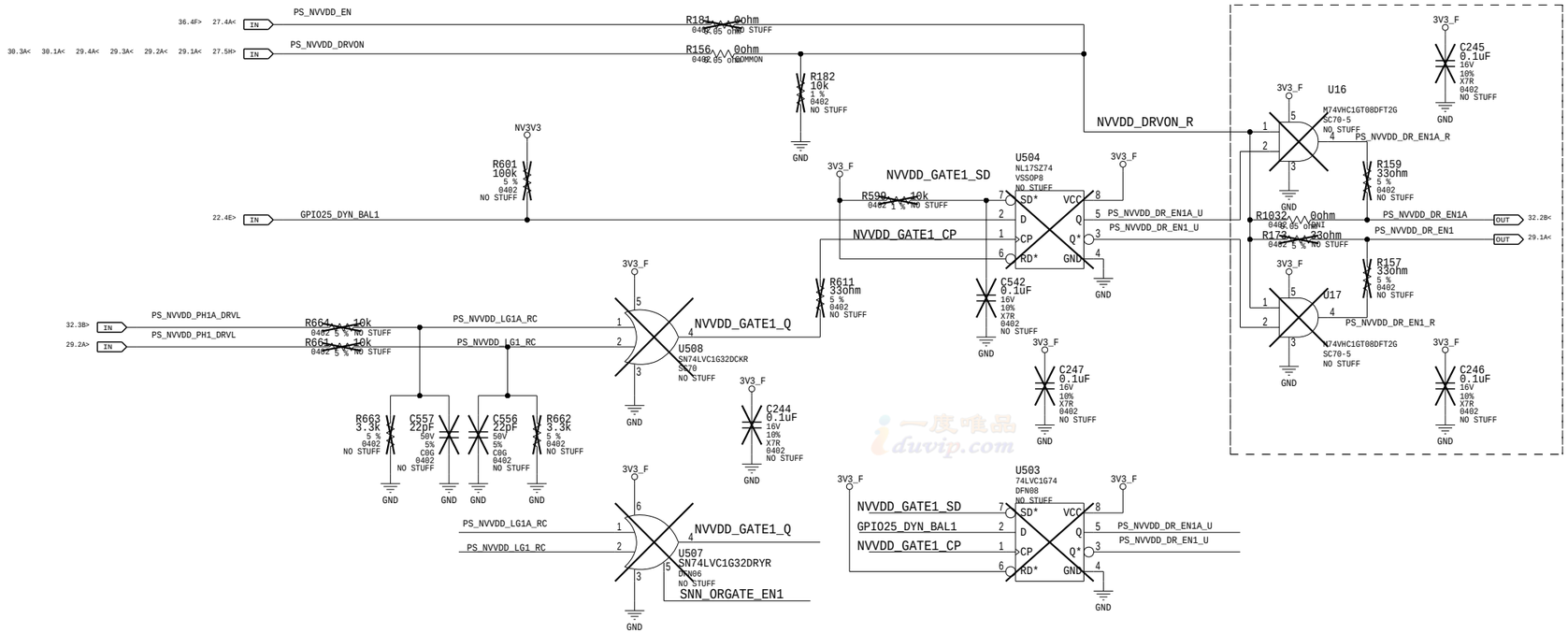
Page33: PS: Dynamic Power Balance Logic



ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	PS: Dynamic Power Balance Logic

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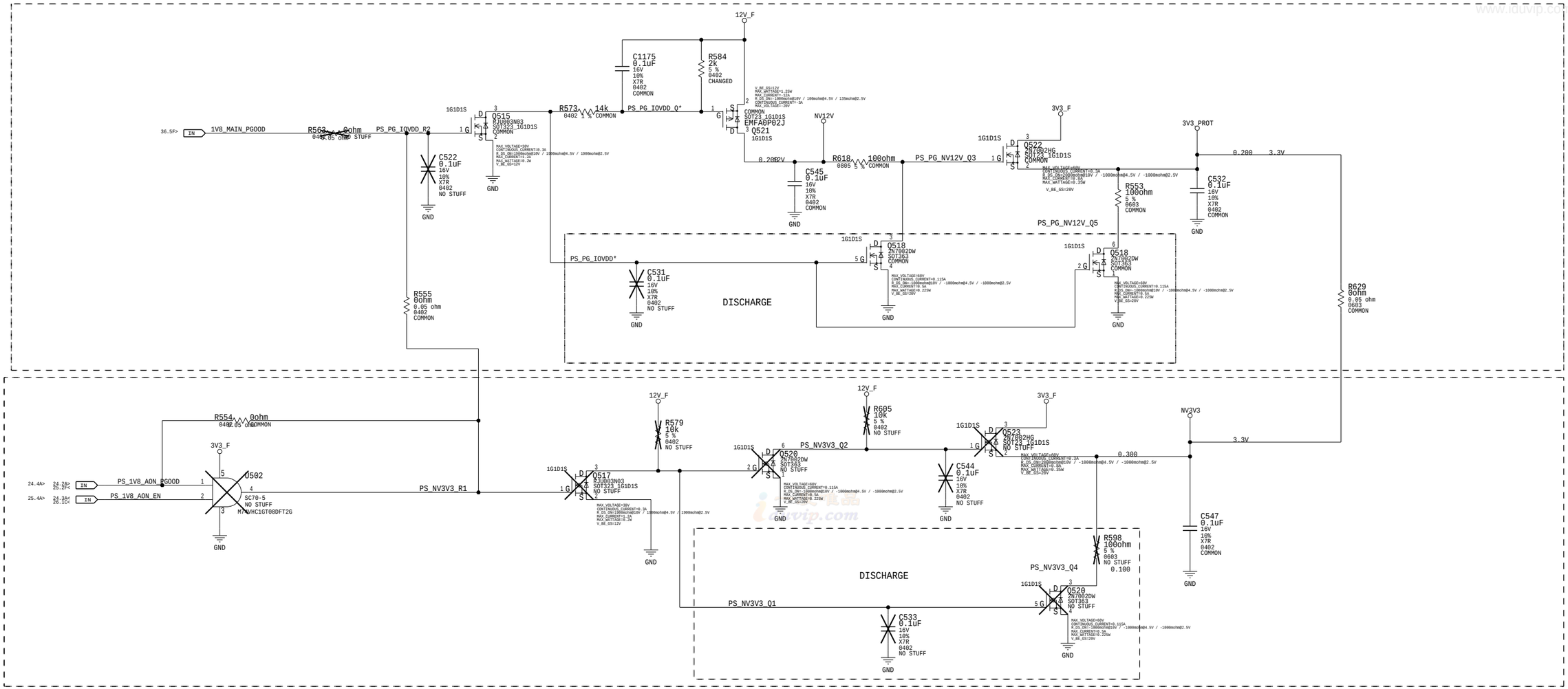
Page34:PS: NV3V3, NV12V



ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	PS: NV3V3, NV12V

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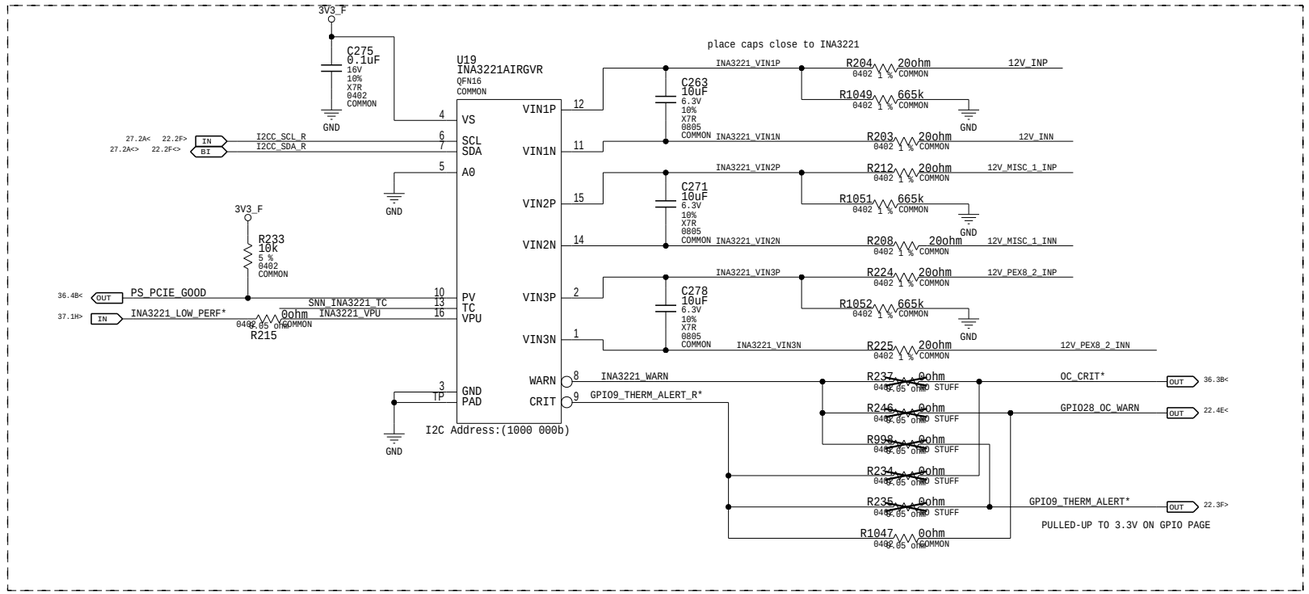
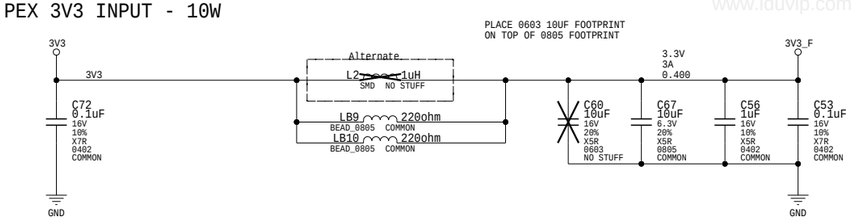
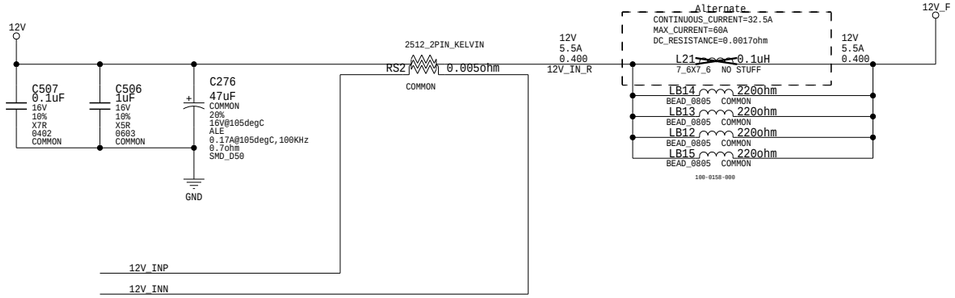
Page35: PS: Inputs, Filtering, and Monitoring



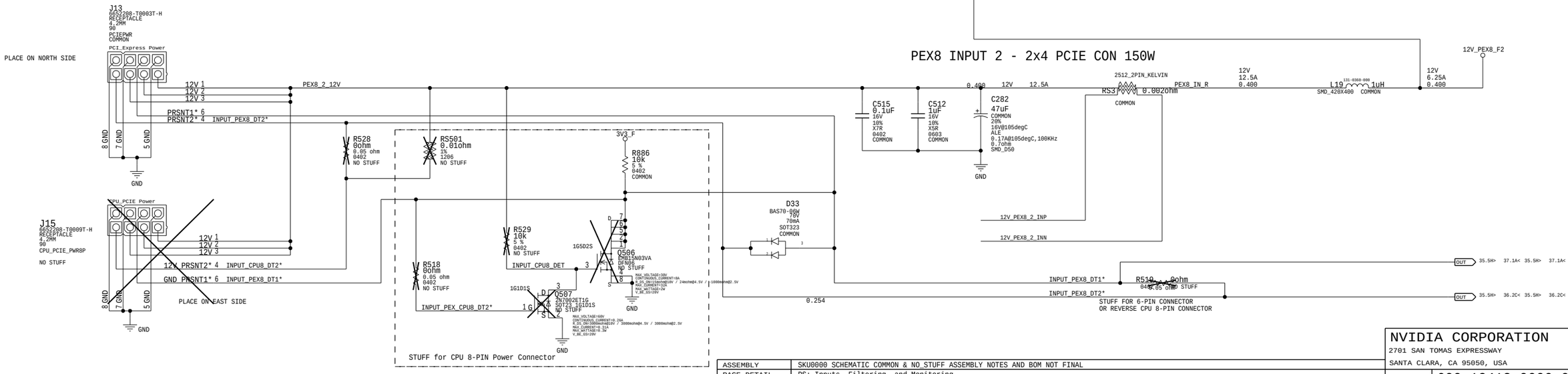
PEX 3V3 INPUT - 10W



PEX_12V INPUT - 66W



PEX8 INPUT 2 - 2x4 PCIE CON 150W



ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	PS: Inputs, Filtering, and Monitoring

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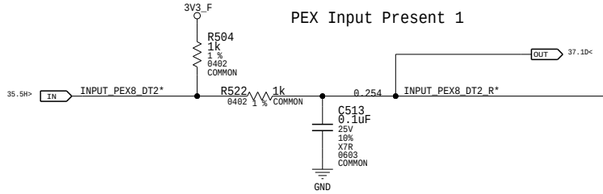
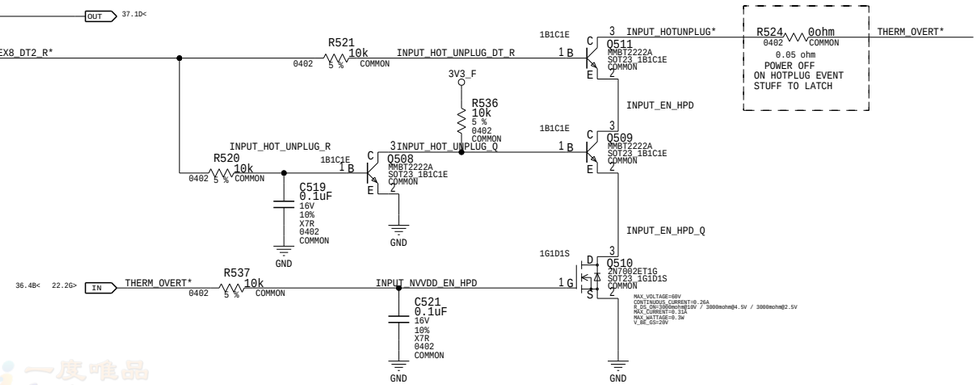
Page36: PS: Shutdown and Sequencing

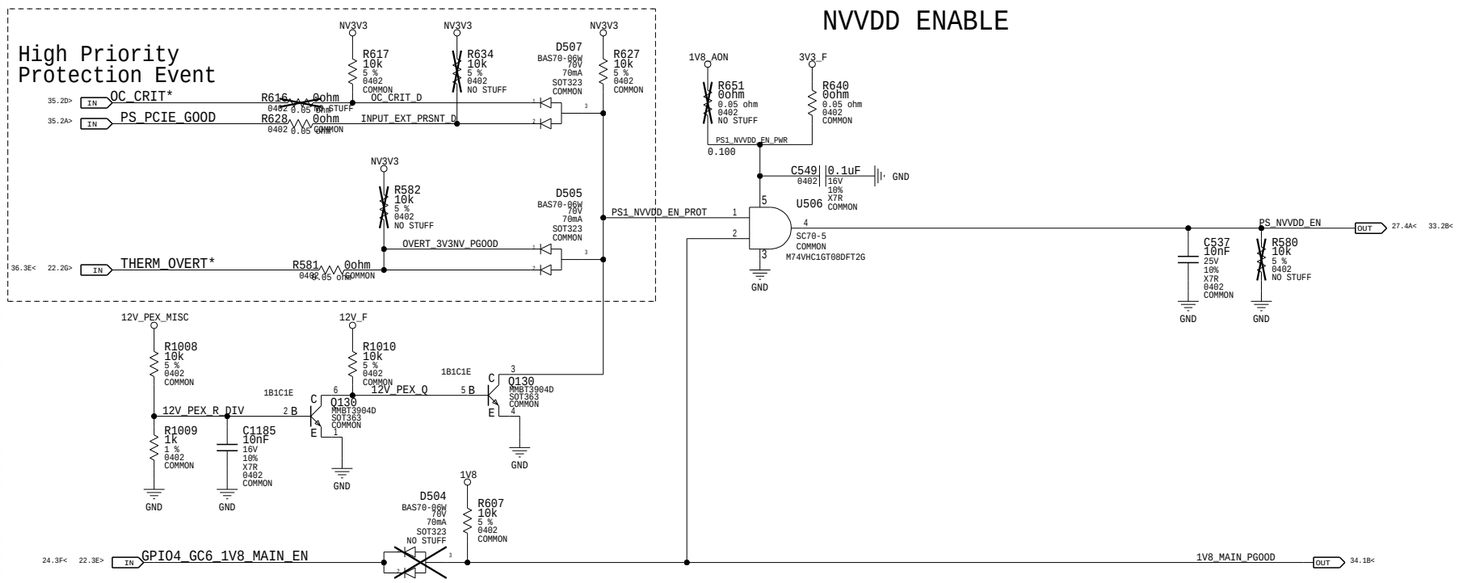
PEX Input Present 1



POWER CONNECTOR HOT-UNPLUG DETECT



NVVDD ENABLE



ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	PS: Shutdown and Sequencing

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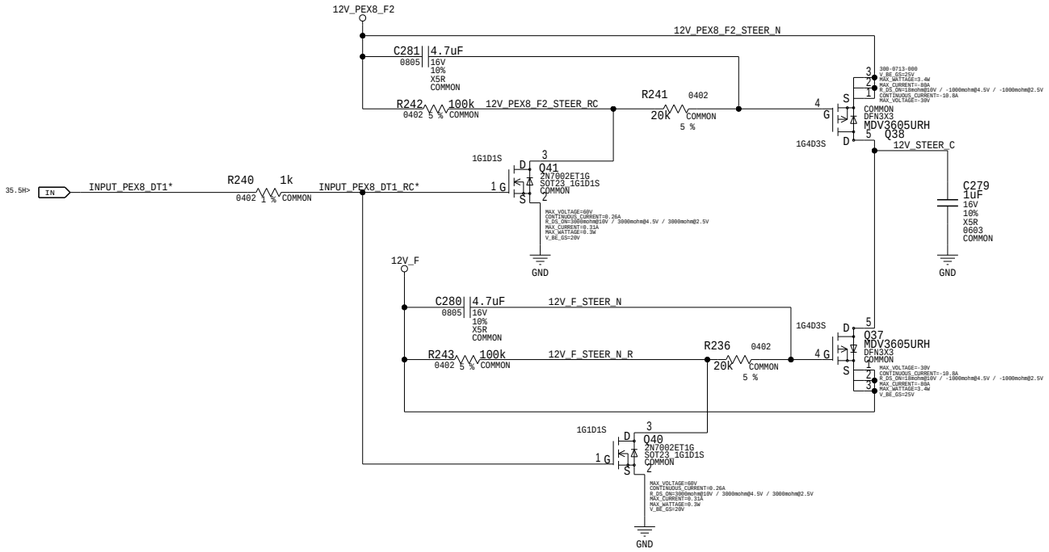
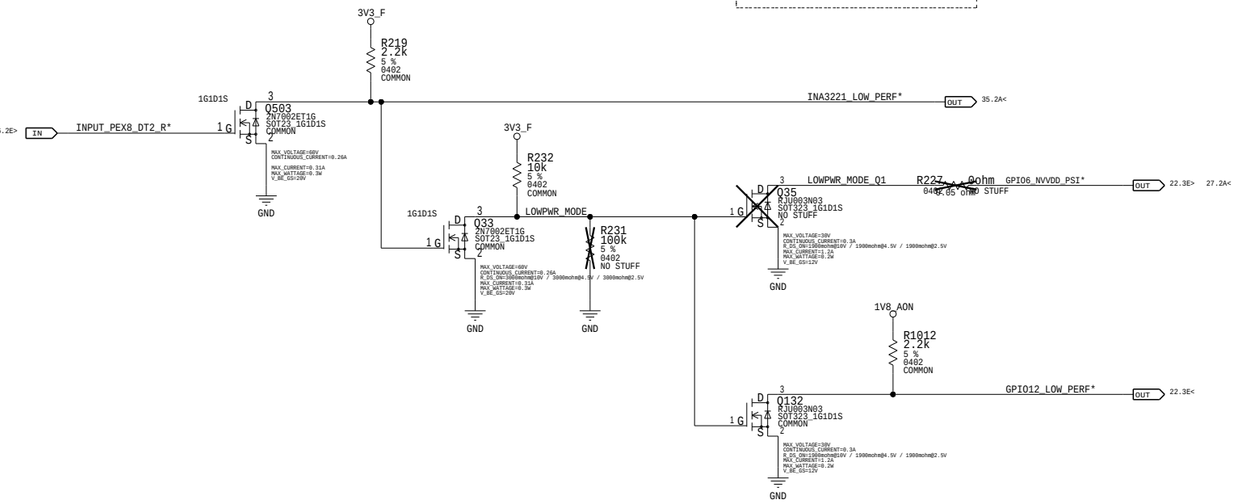
Page37: PS: 12V Current Steering, PSI Control, and LED

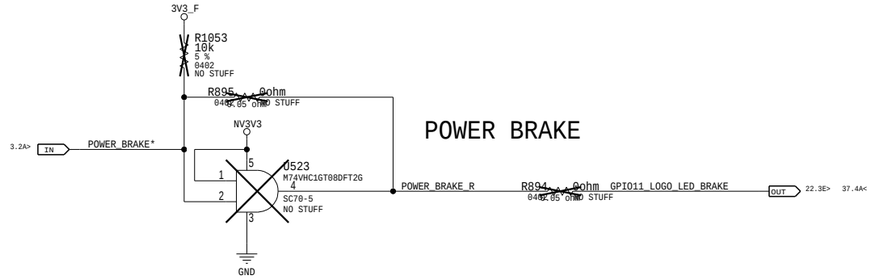
PEX Input - 12V Current Steering FETs



PEX Input - Power Level/PSI* Control

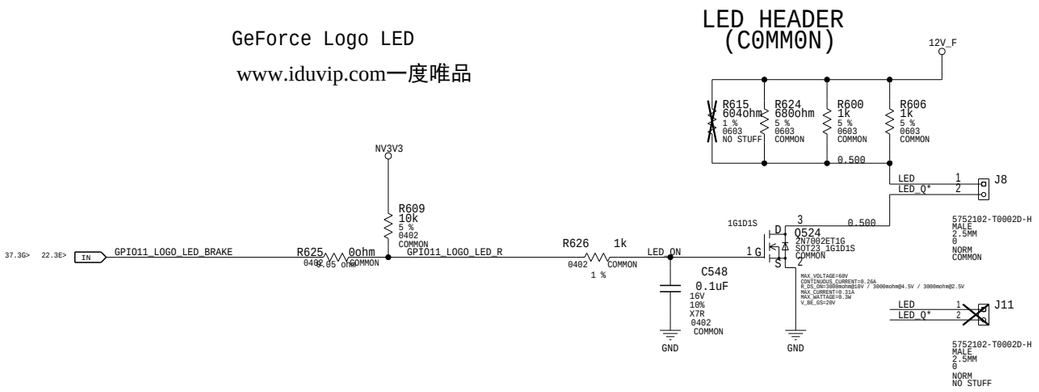


GPIO12_LOW_PERF*	GPU SPEED
0	Slow
1	Normal

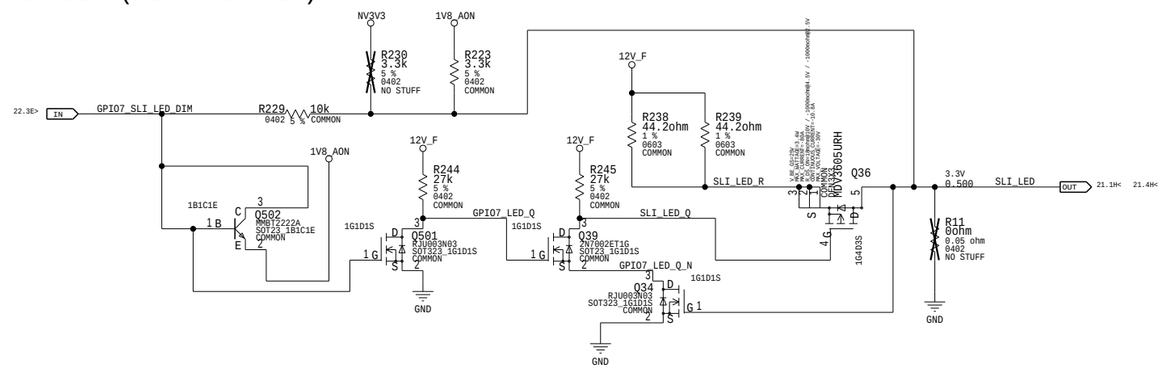


GeForce Logo LED

LED HEADER (C0MM0N)



SLI LED (GEFORCE ONLY)



ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	PS: 12V Current Steering PSI Control and LED

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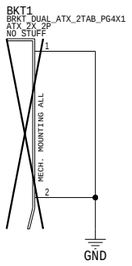
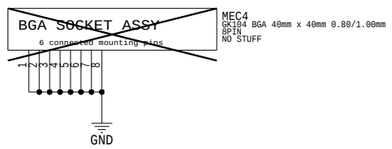
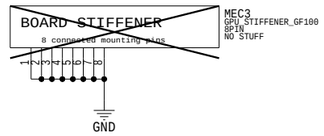
Page38: Mechanical: Bracket/Thermal Solution

Brackets:

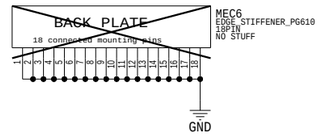


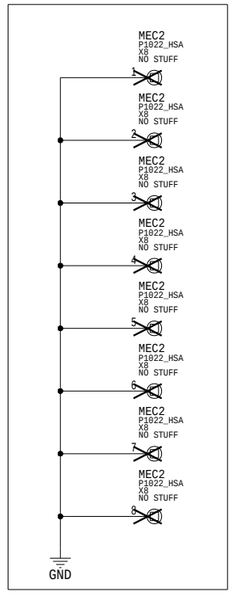


GPU Stiffner



Mechanical Holes Symbol





ASSEMBLY	SKU0000 SCHEMATIC COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	MECH: Bracket/Thermal

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