

PG600-B02 NIGHTHAWK

GB3B-384, 6GB GDDR5 128Mx32

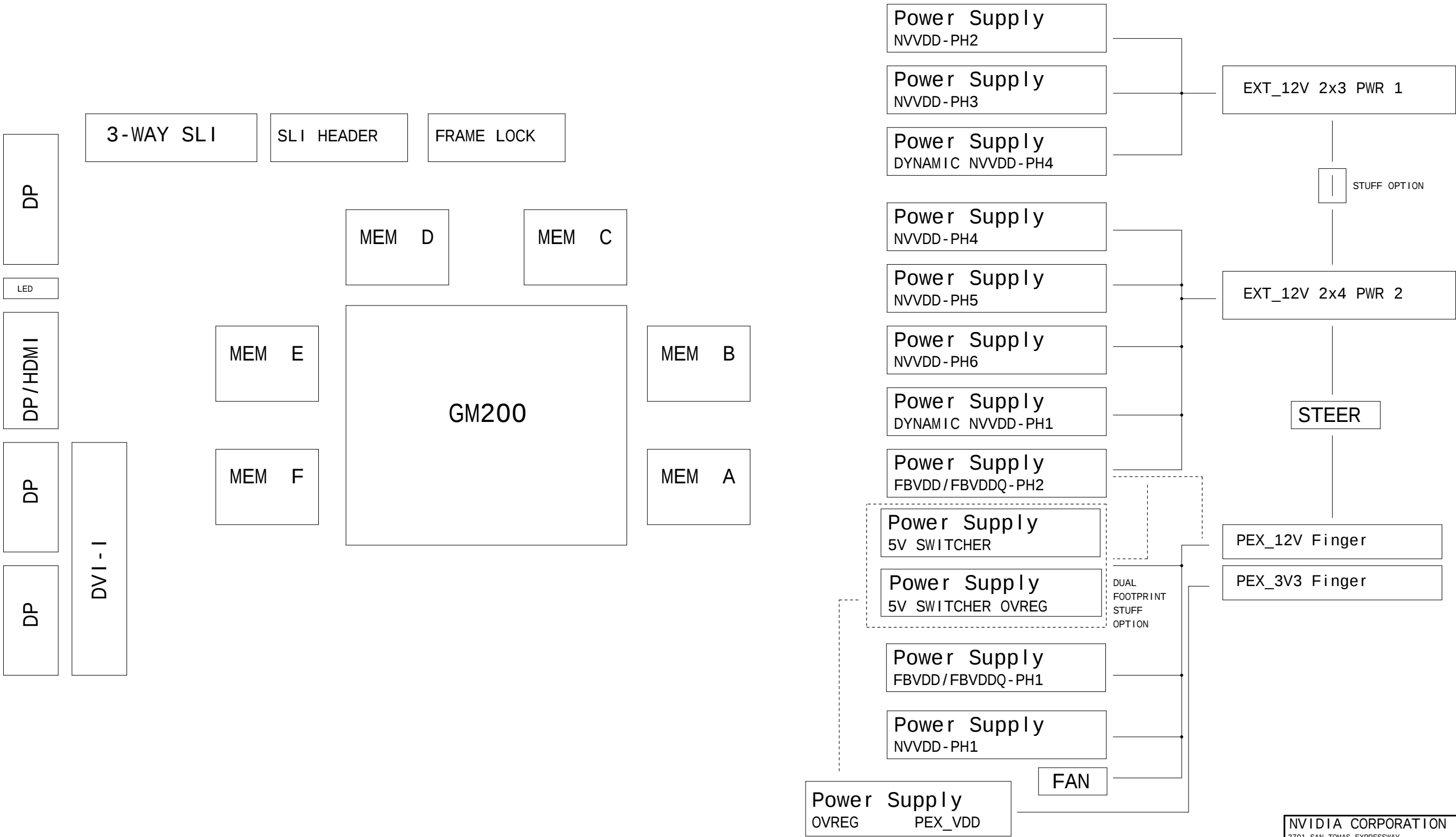
DP + HDMI / DP + DP + DP + DVI-I

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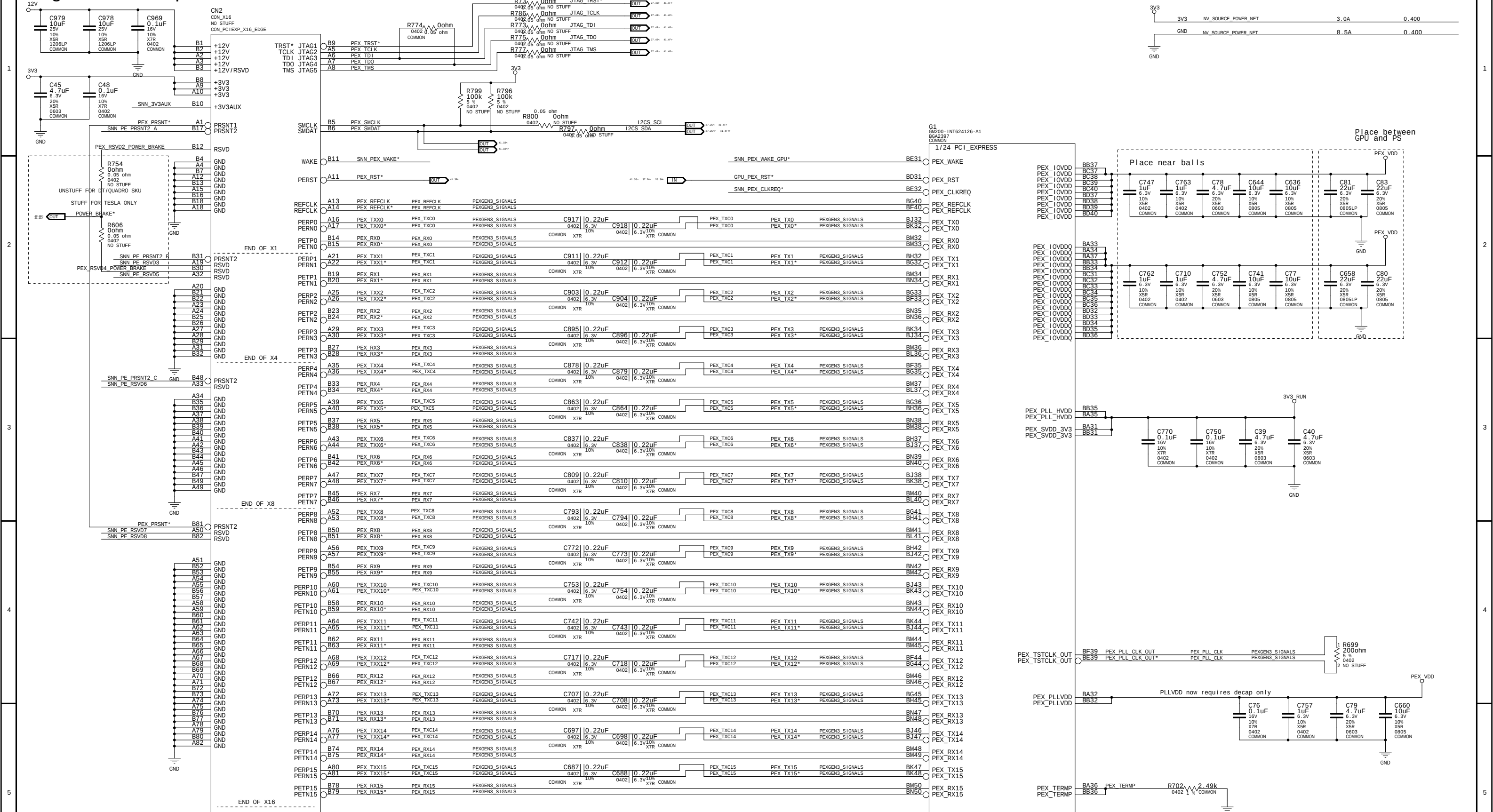
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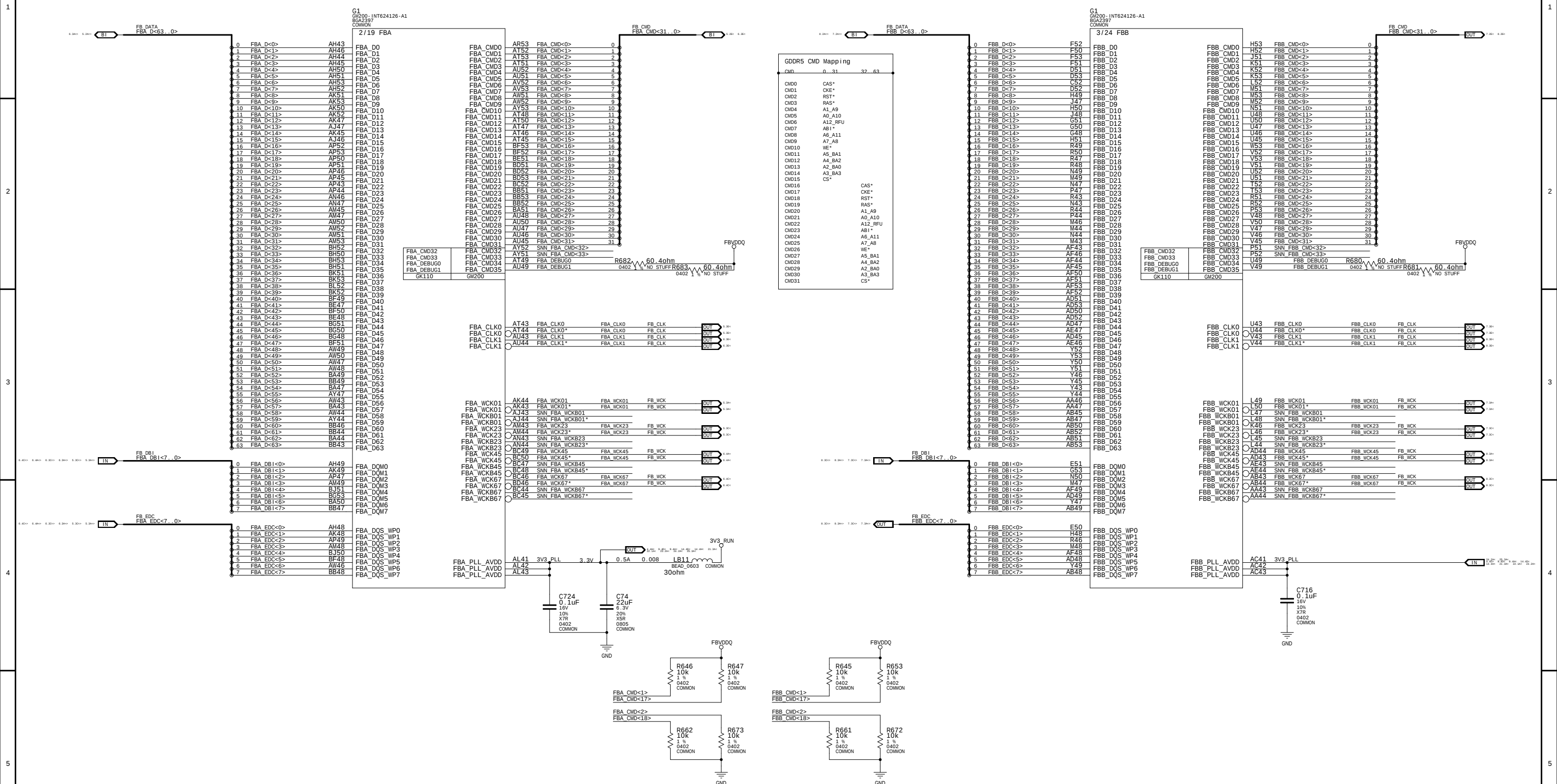
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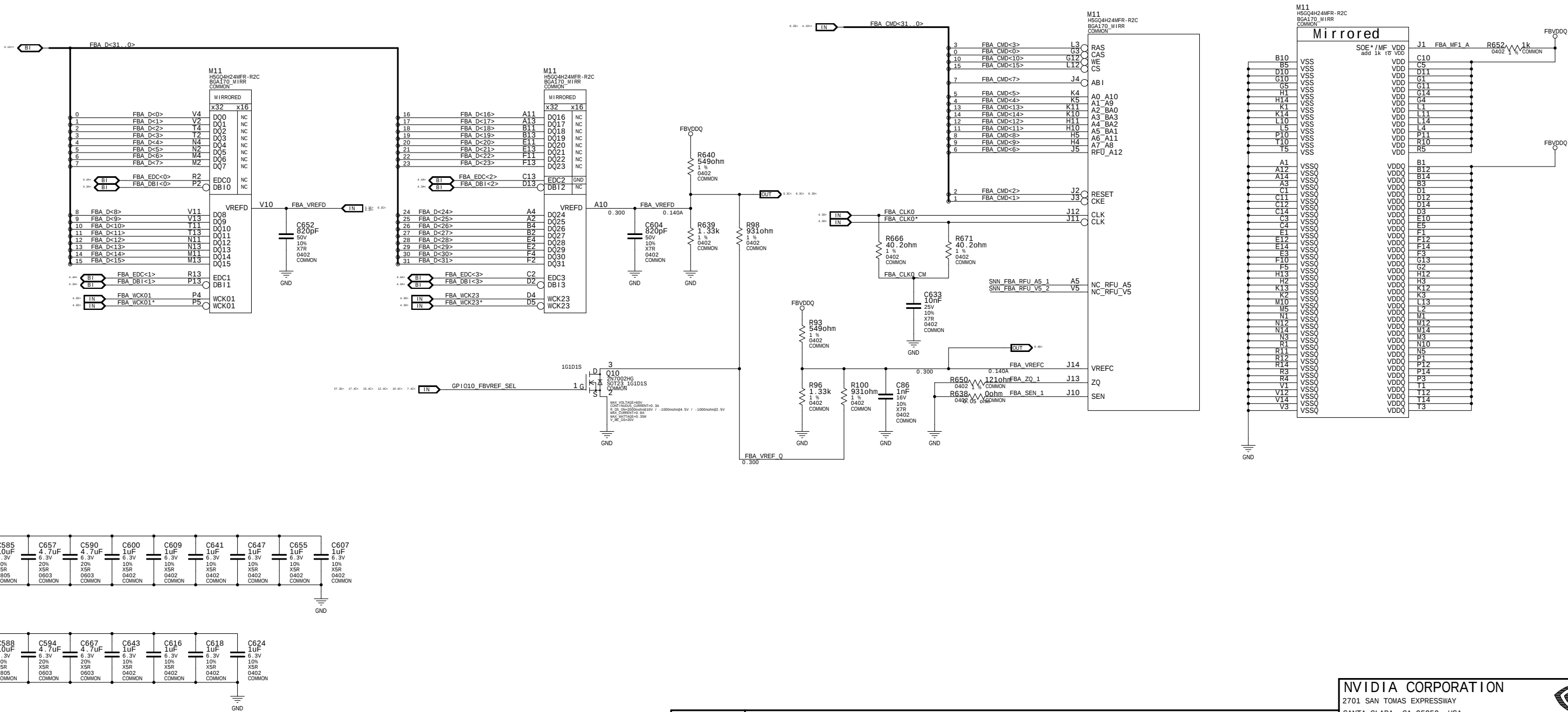


ASSEMBLY	PG600-B02 SKU0030 GB3B-384 GM200 6GB GDDR5 128MX32 DP+DP+HDMI+DP+DVI-I
PAGE DETAIL	PCI Express

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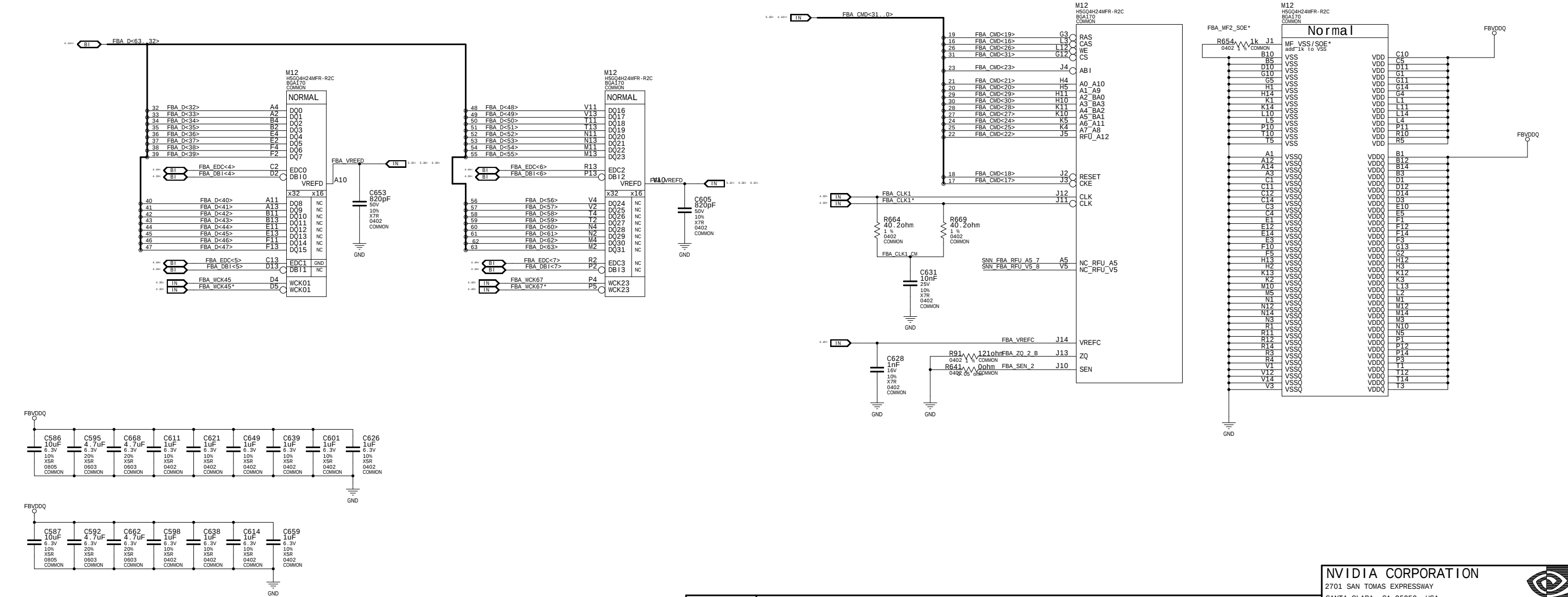
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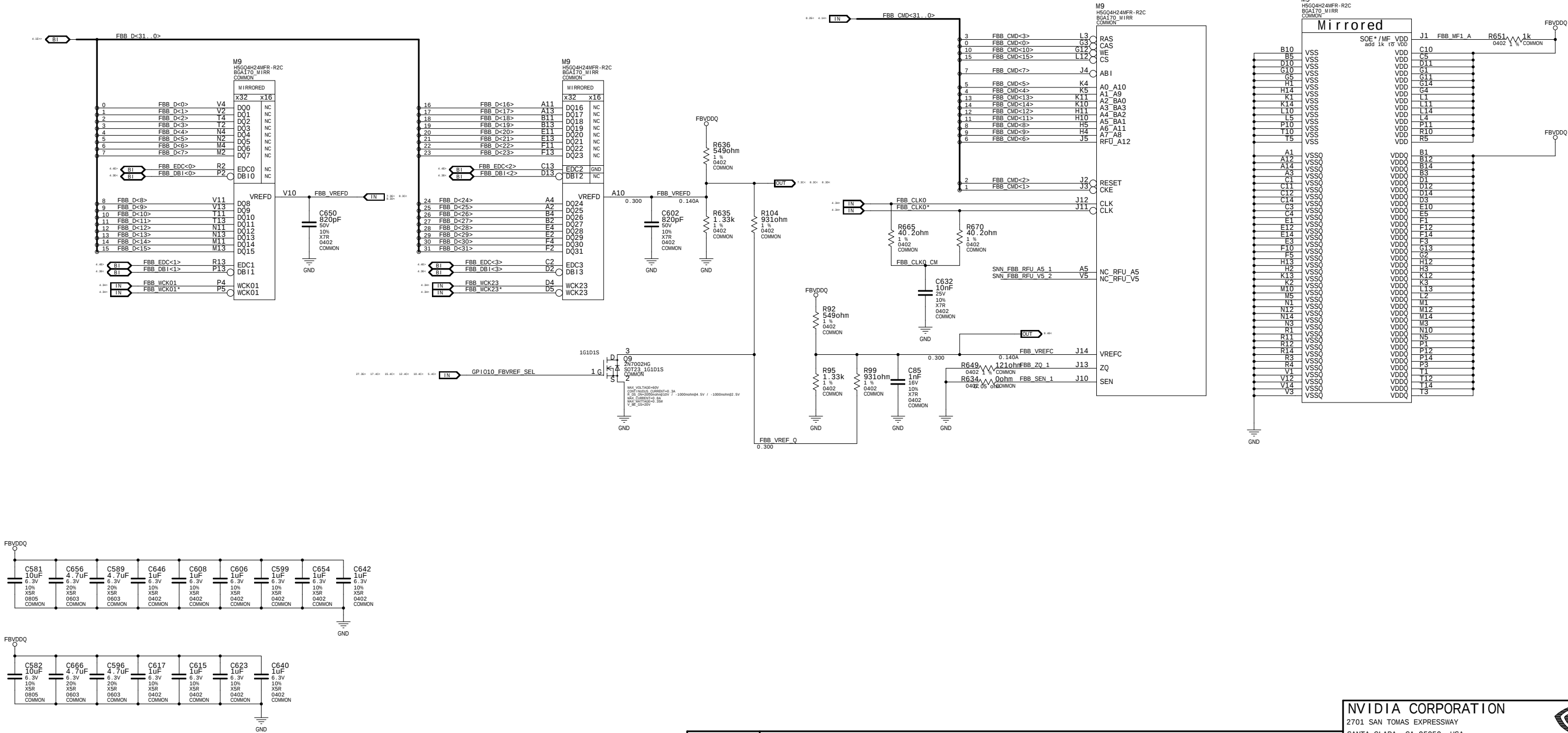


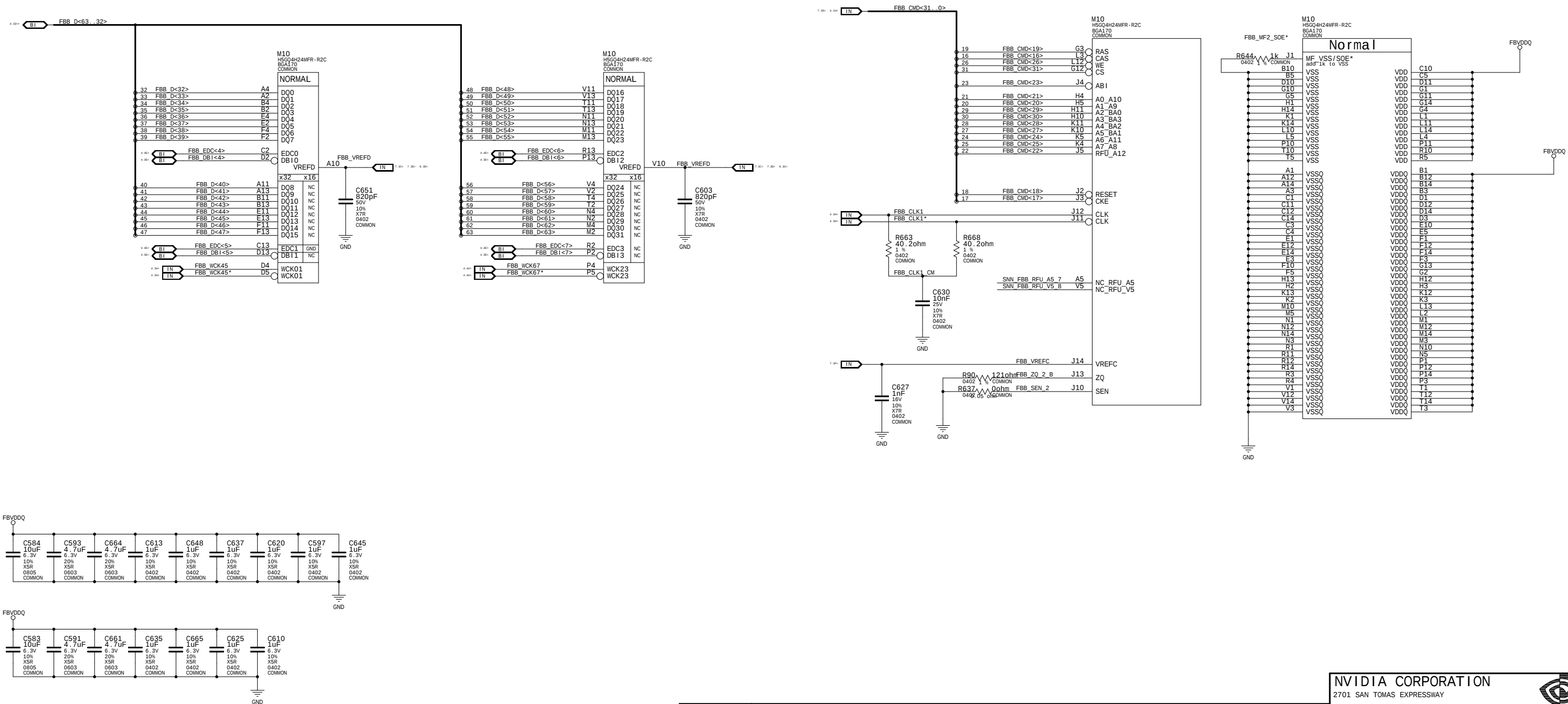


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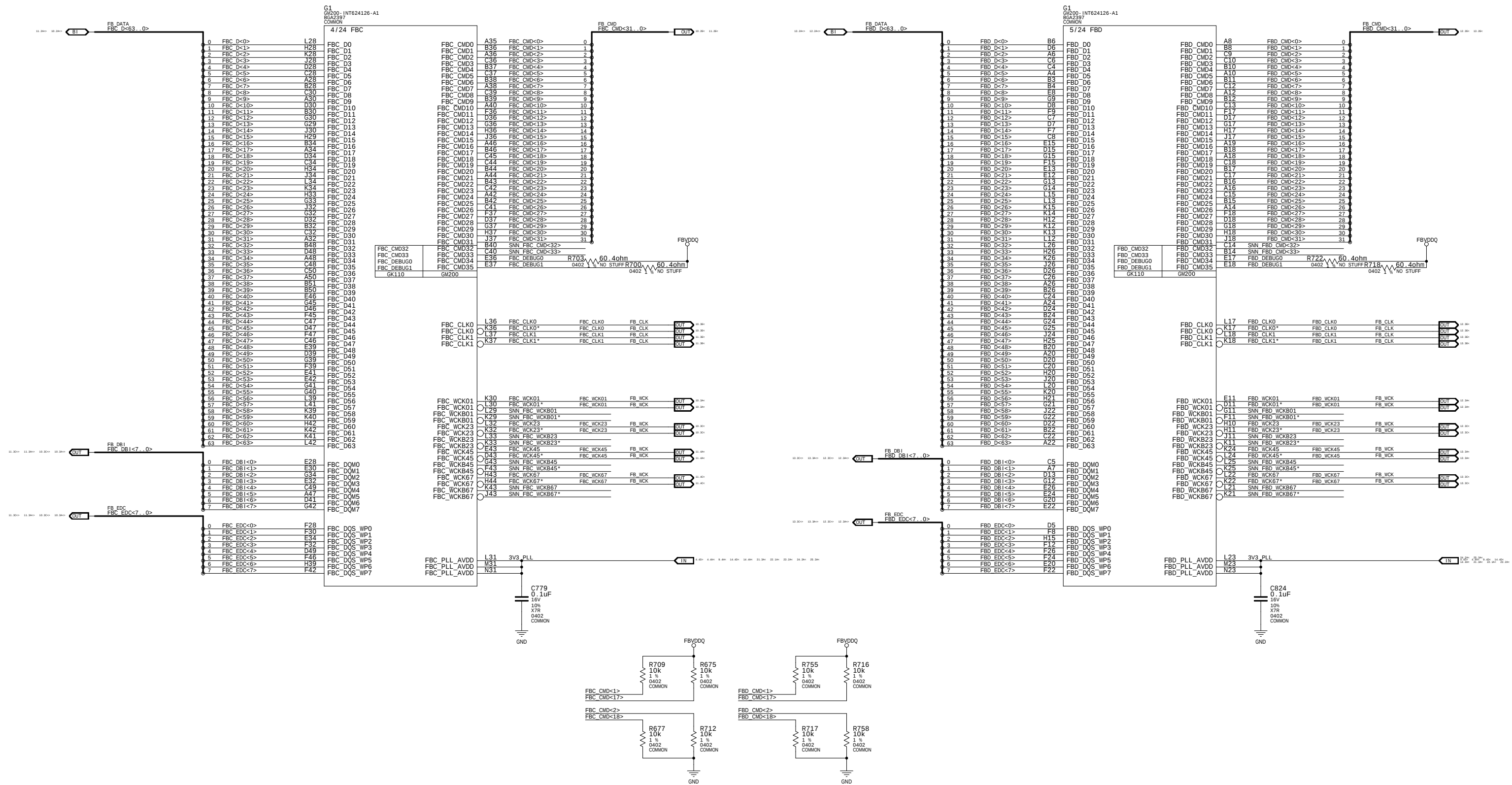


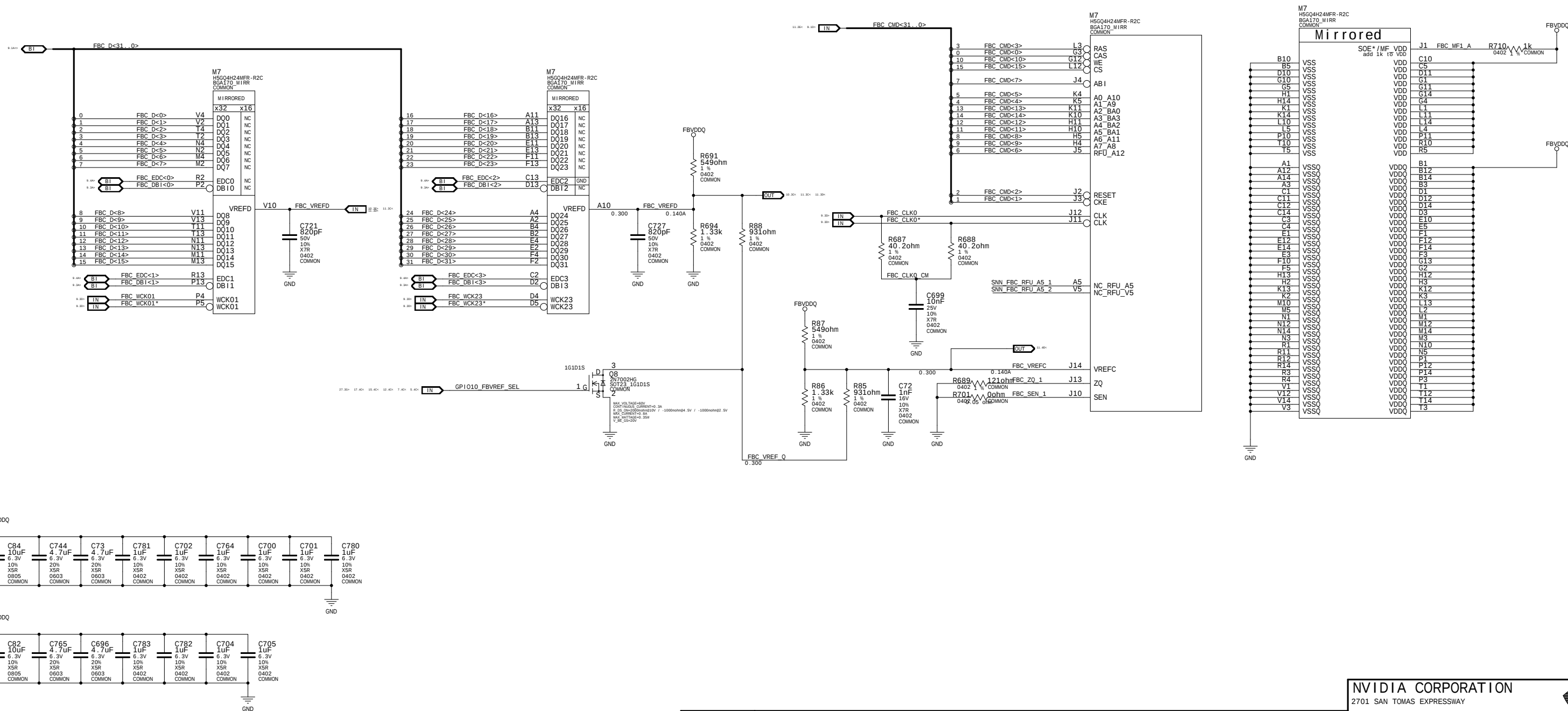


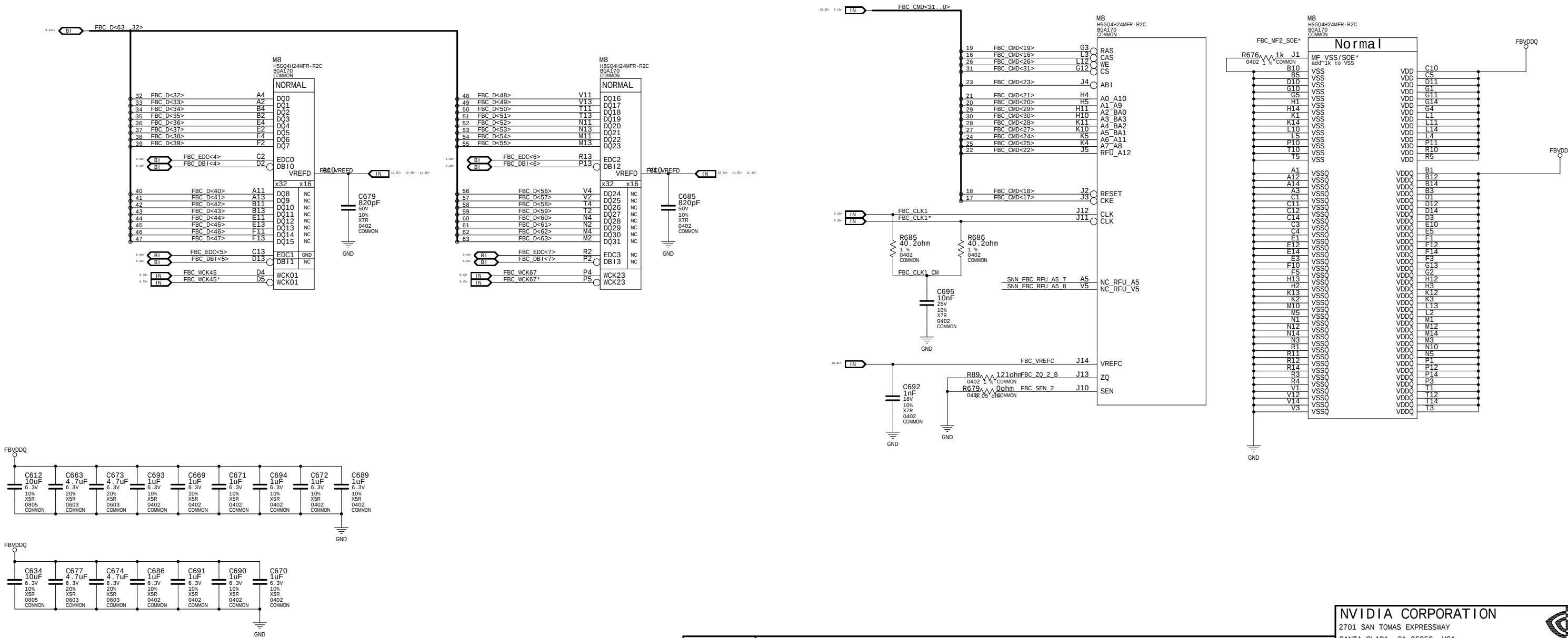
ASSEMBLY	PG600-B02 SKU0030 GB3B-384 GM200 6GB GDDR5 128MX32 DP+DP+HDMI+DP+DVI-I
PAGE DETAIL	MEMORY: FBB[63:32]

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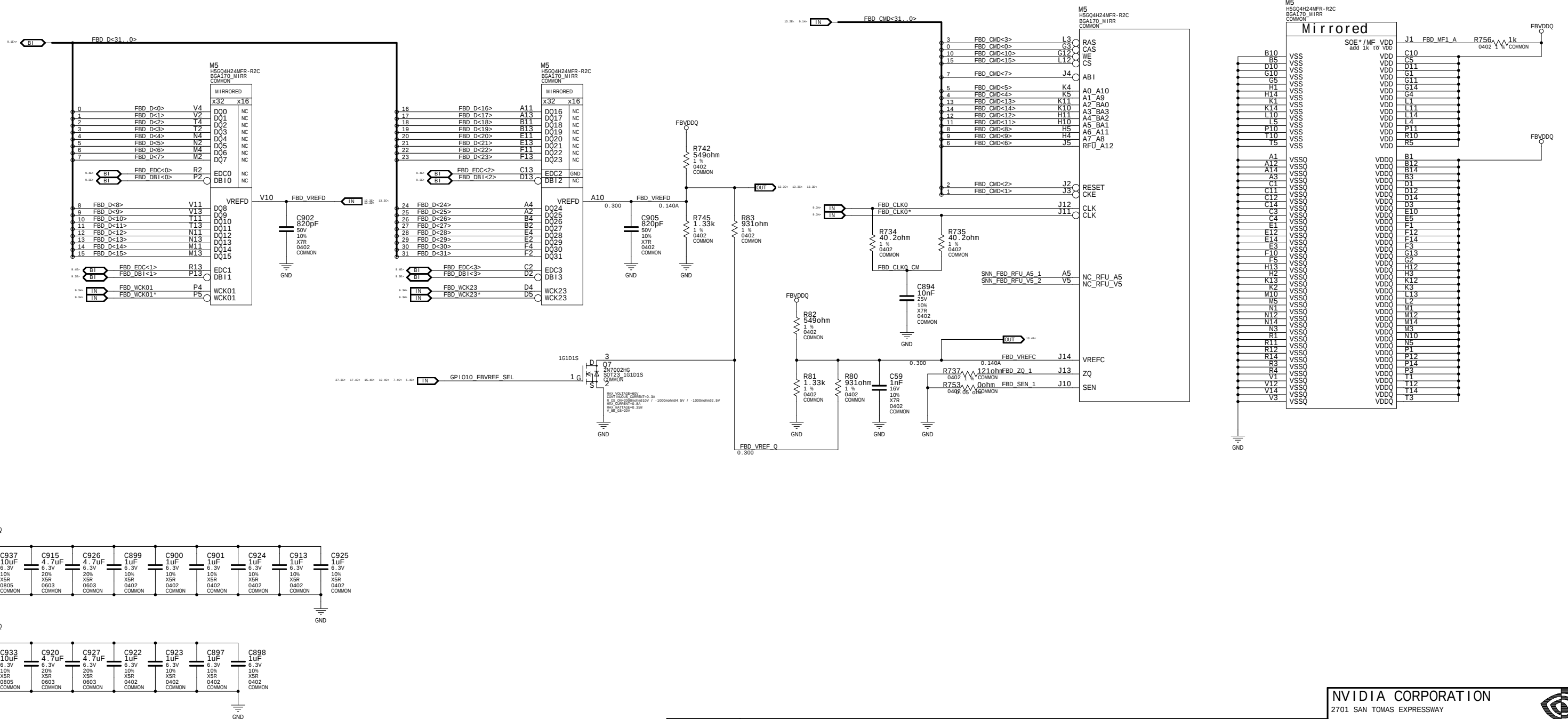


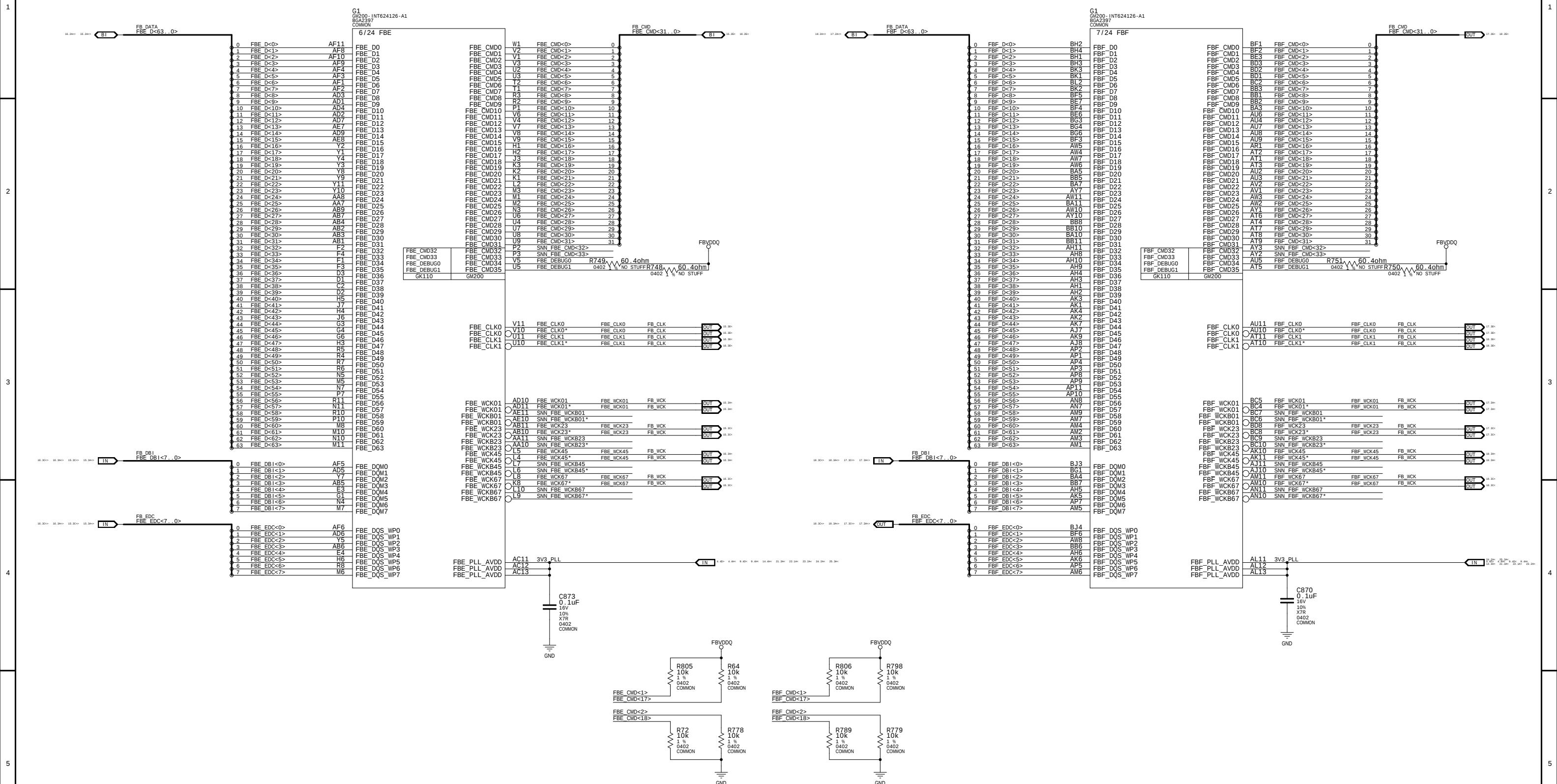
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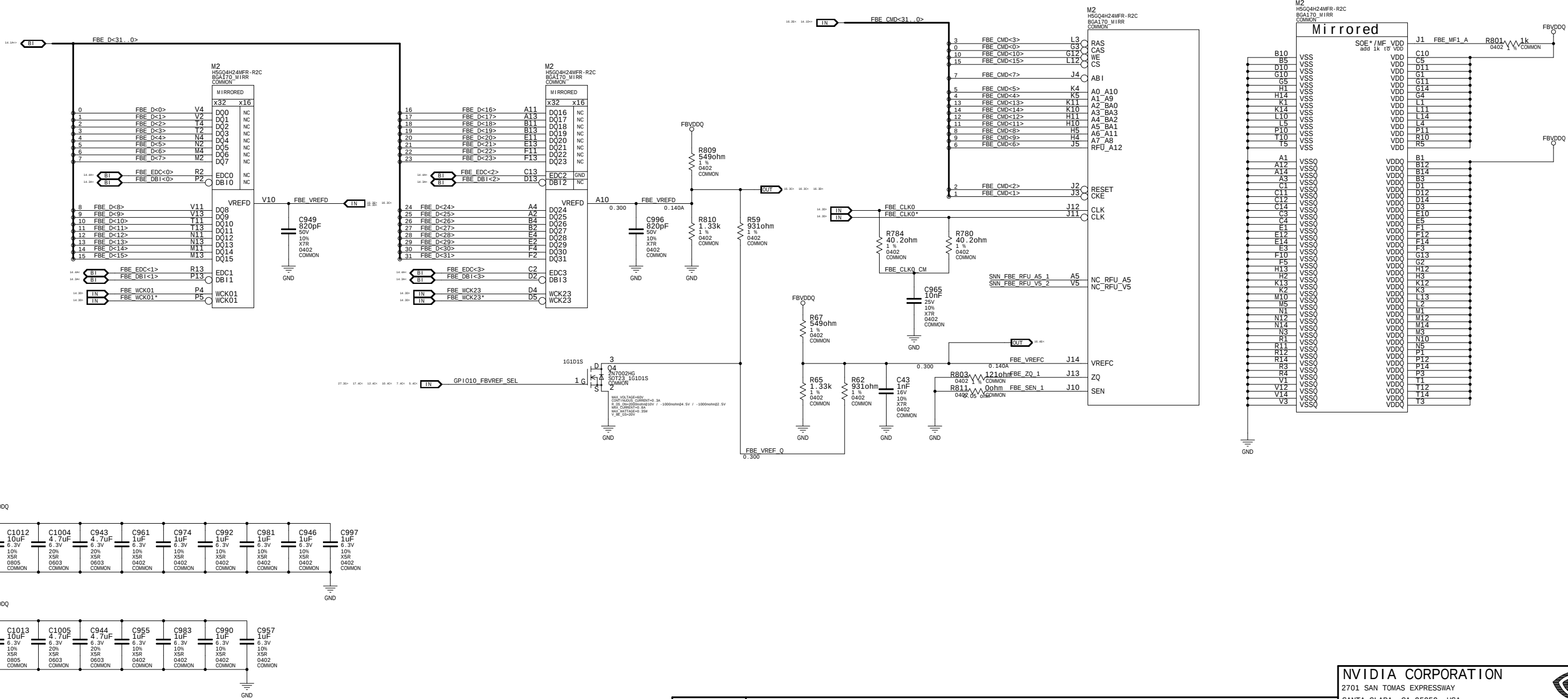
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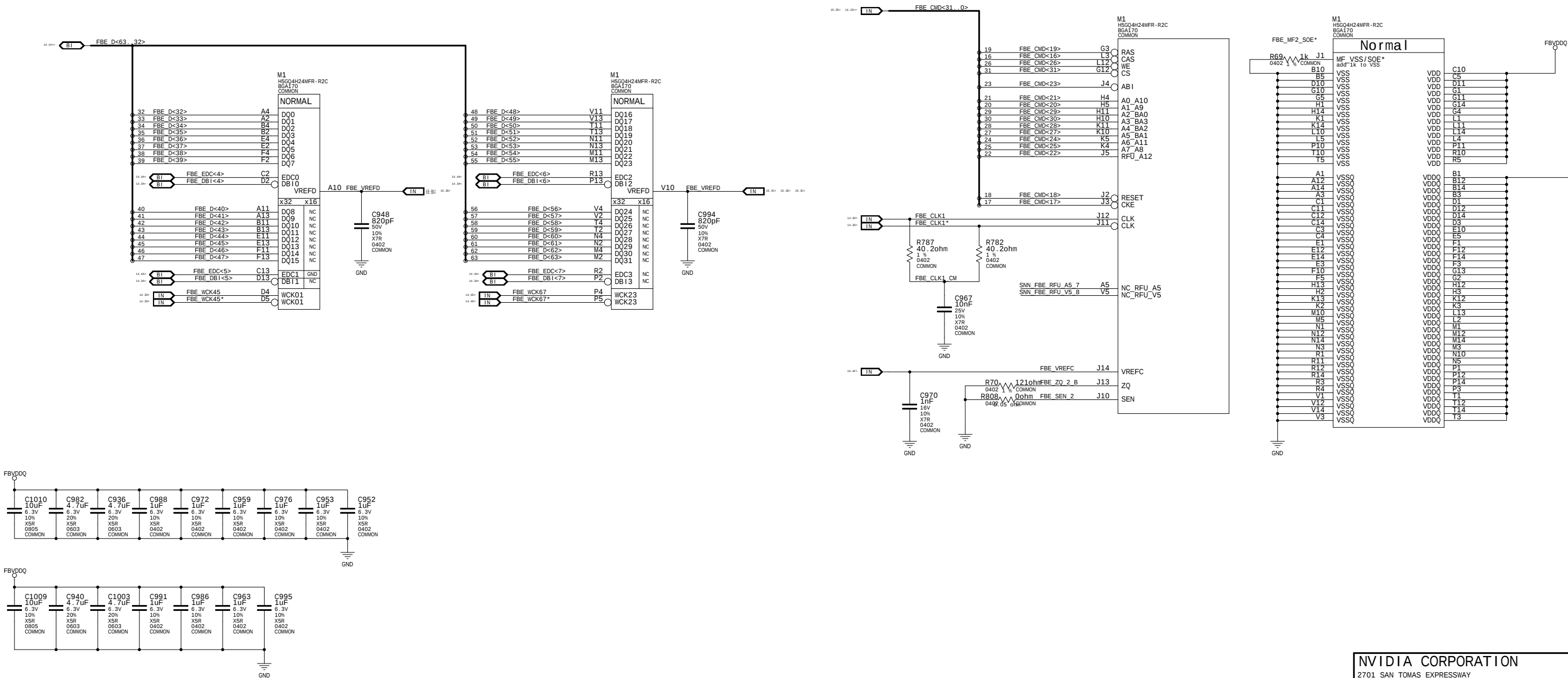
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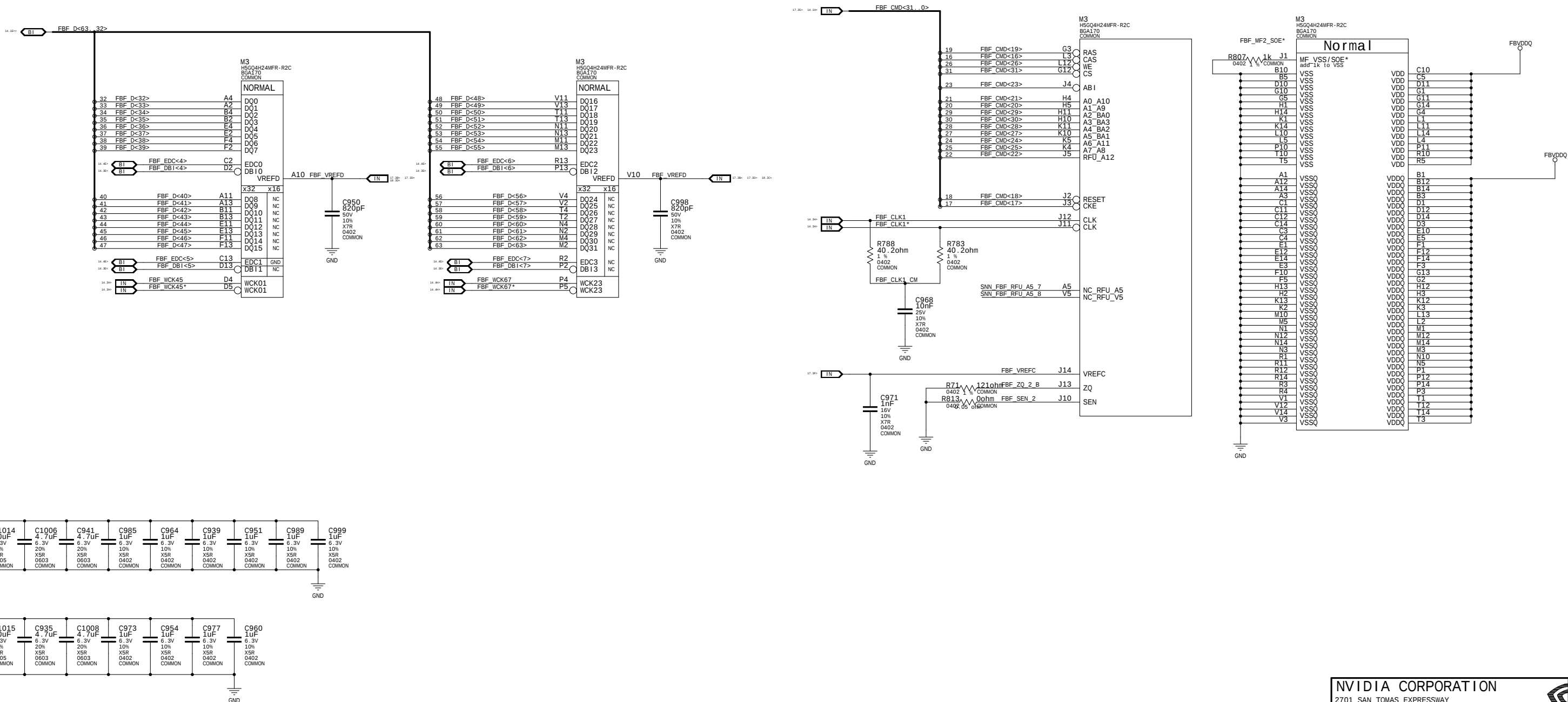
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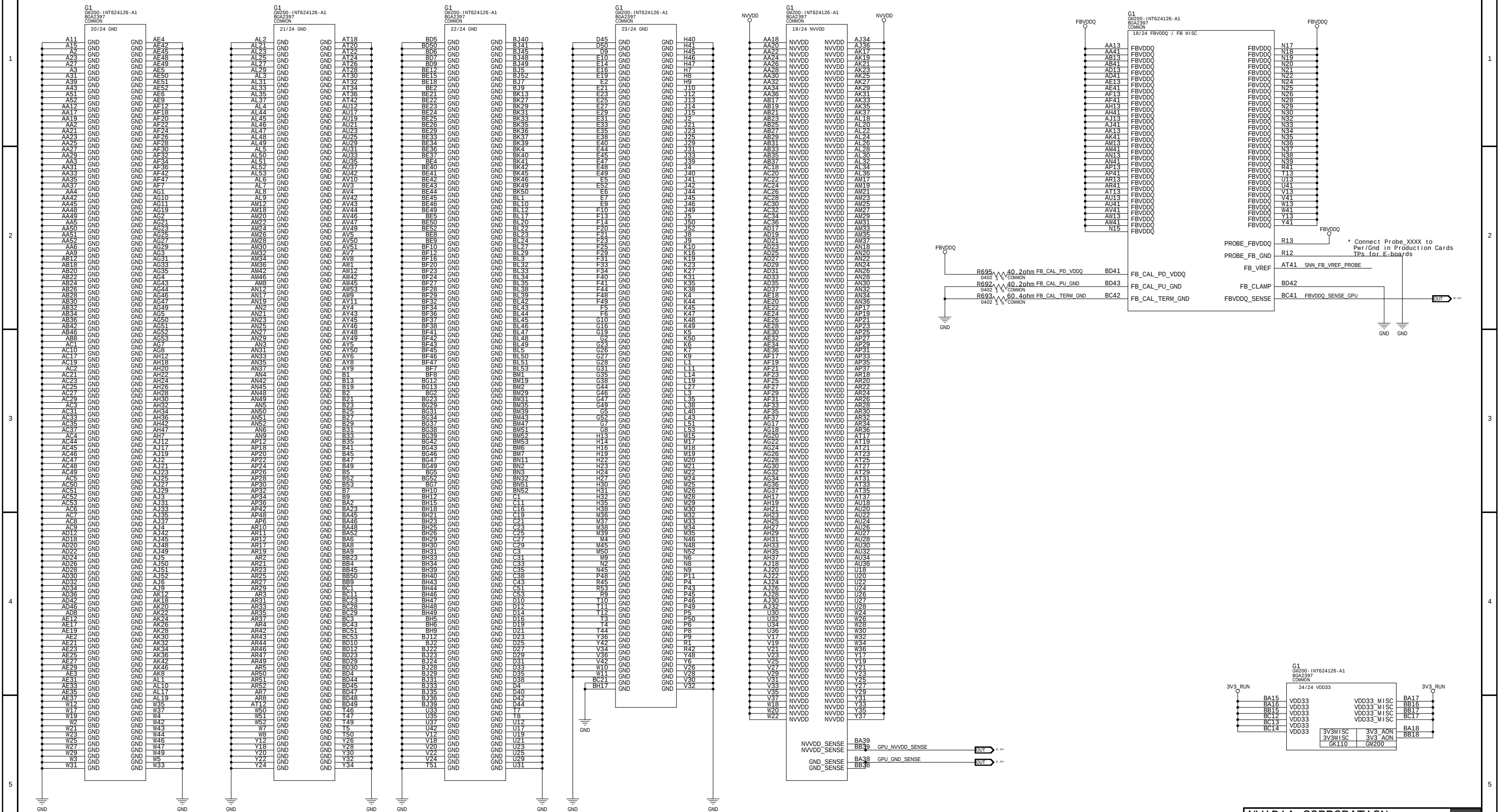
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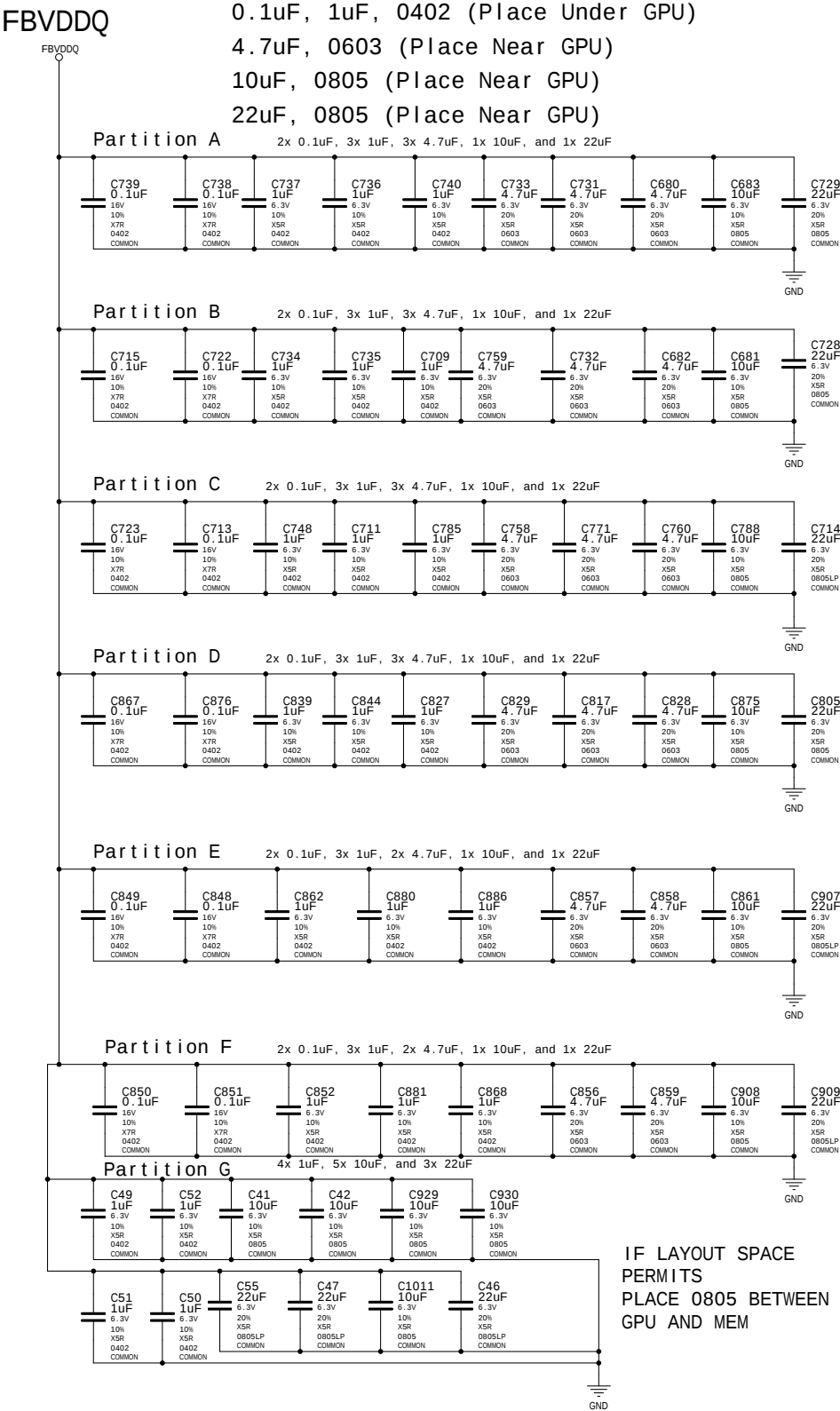


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Page19: GPU PWR and GND

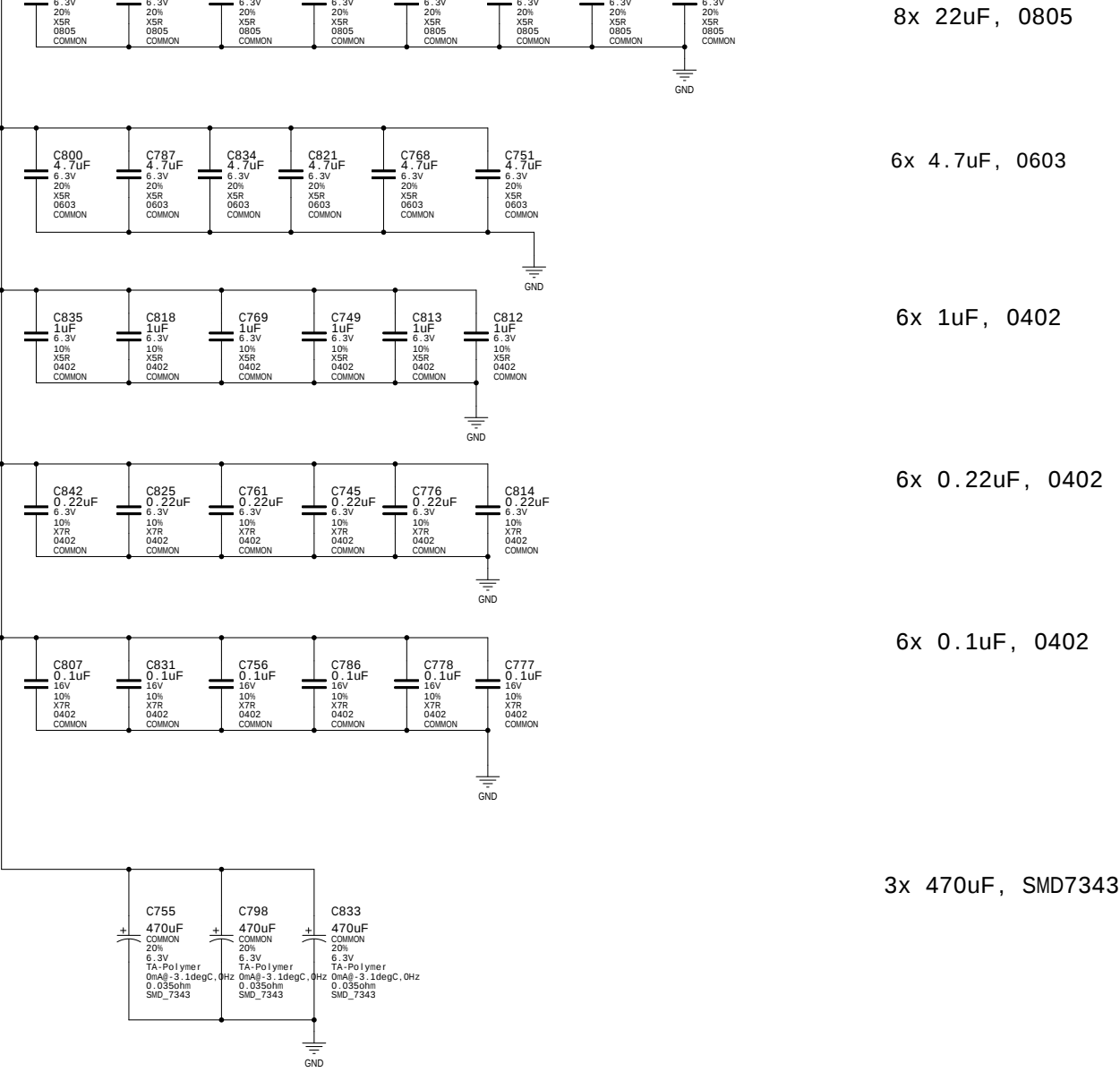
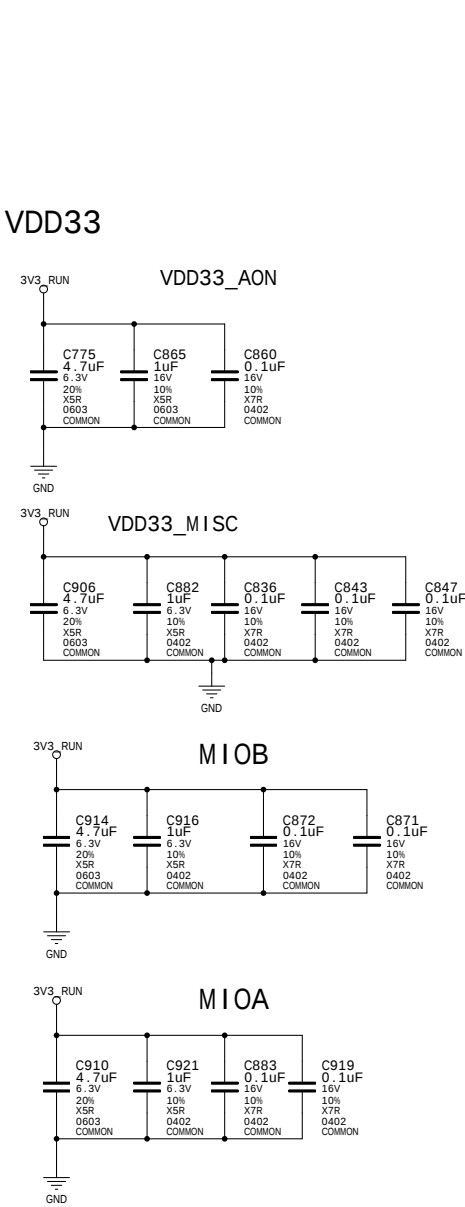


Based on GB3-X GDDR5 FBVDDQ Decap Guideline

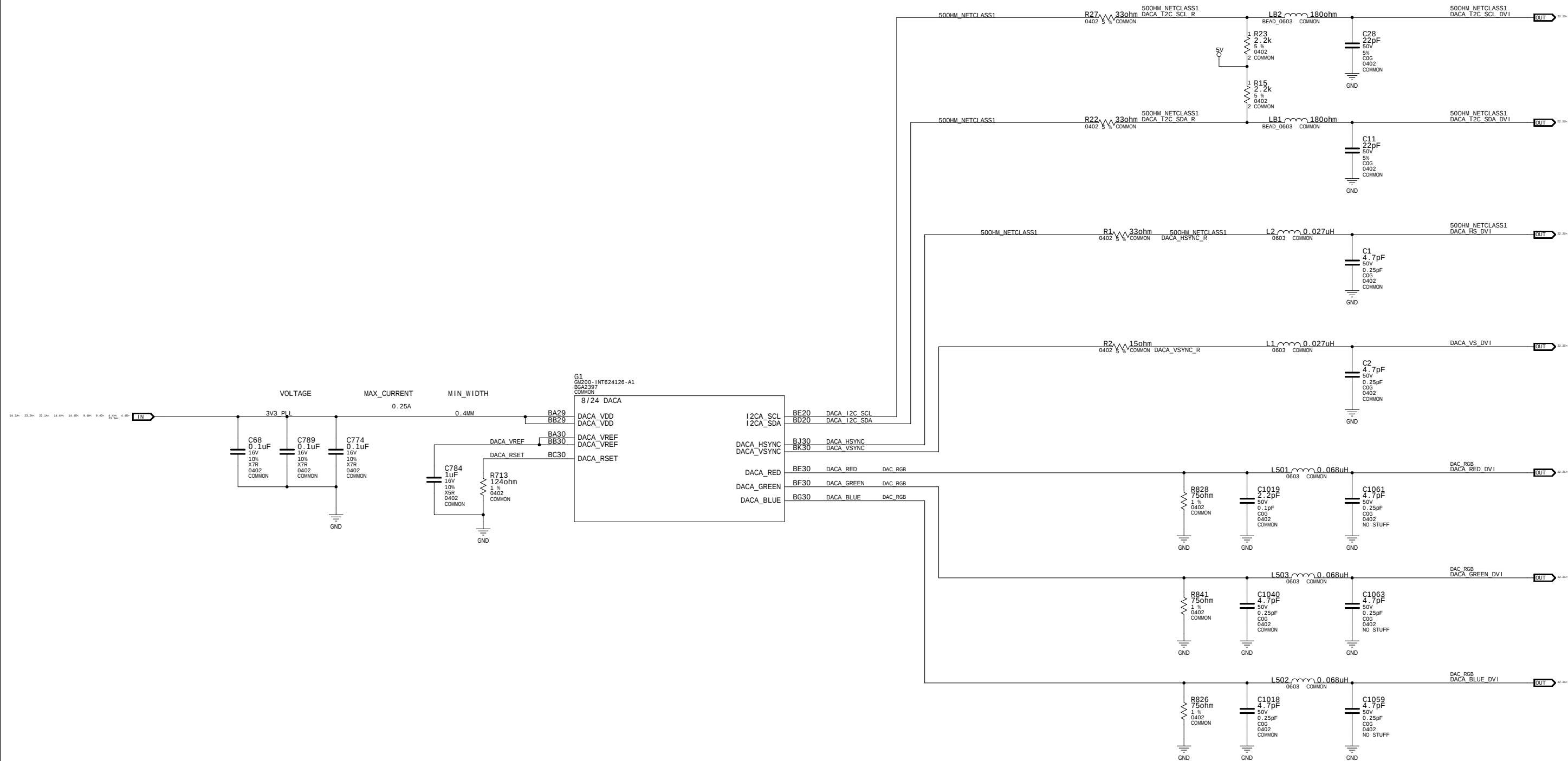


NVVDD Decoupling caps. Place under GPU.

NVVDD

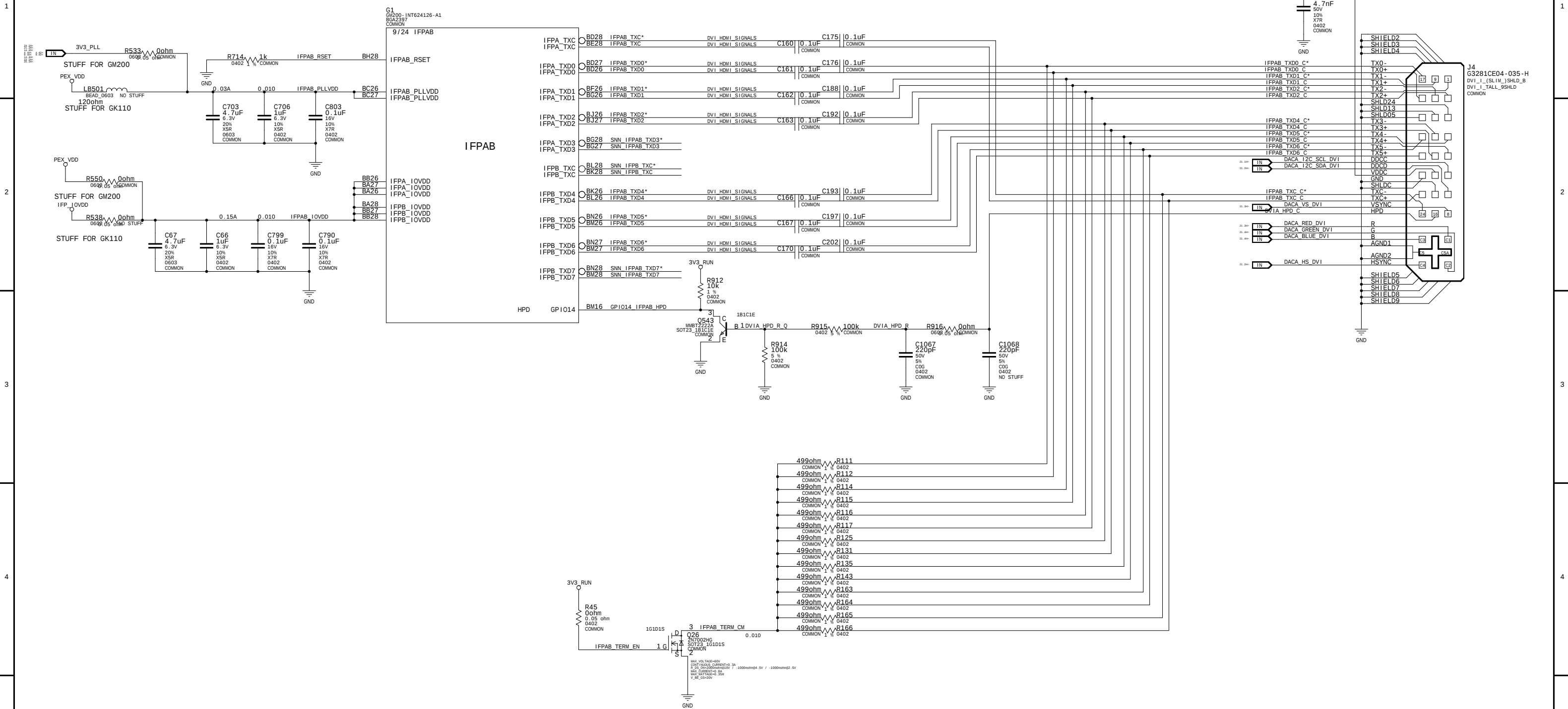


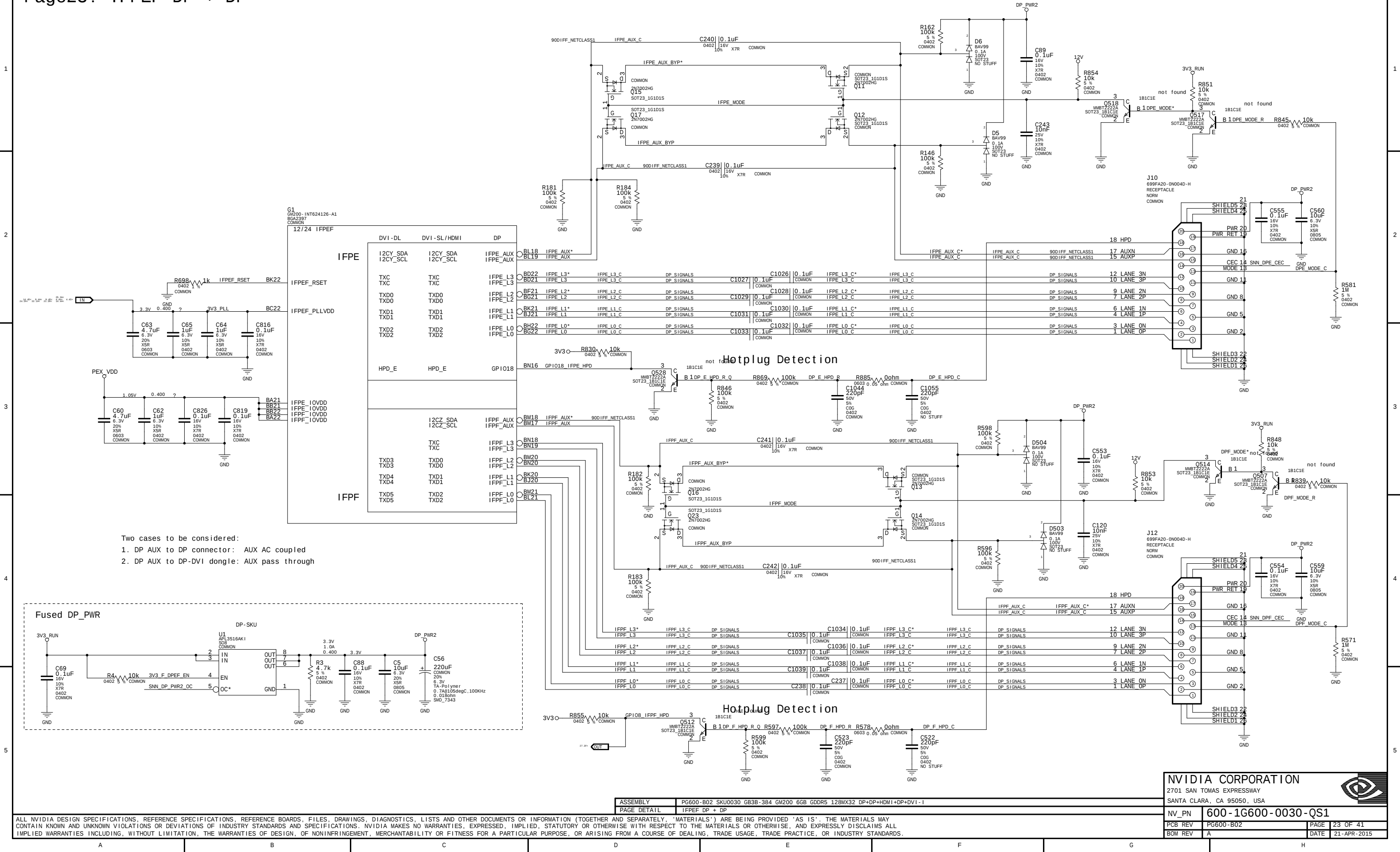
Page21: DACA Interface

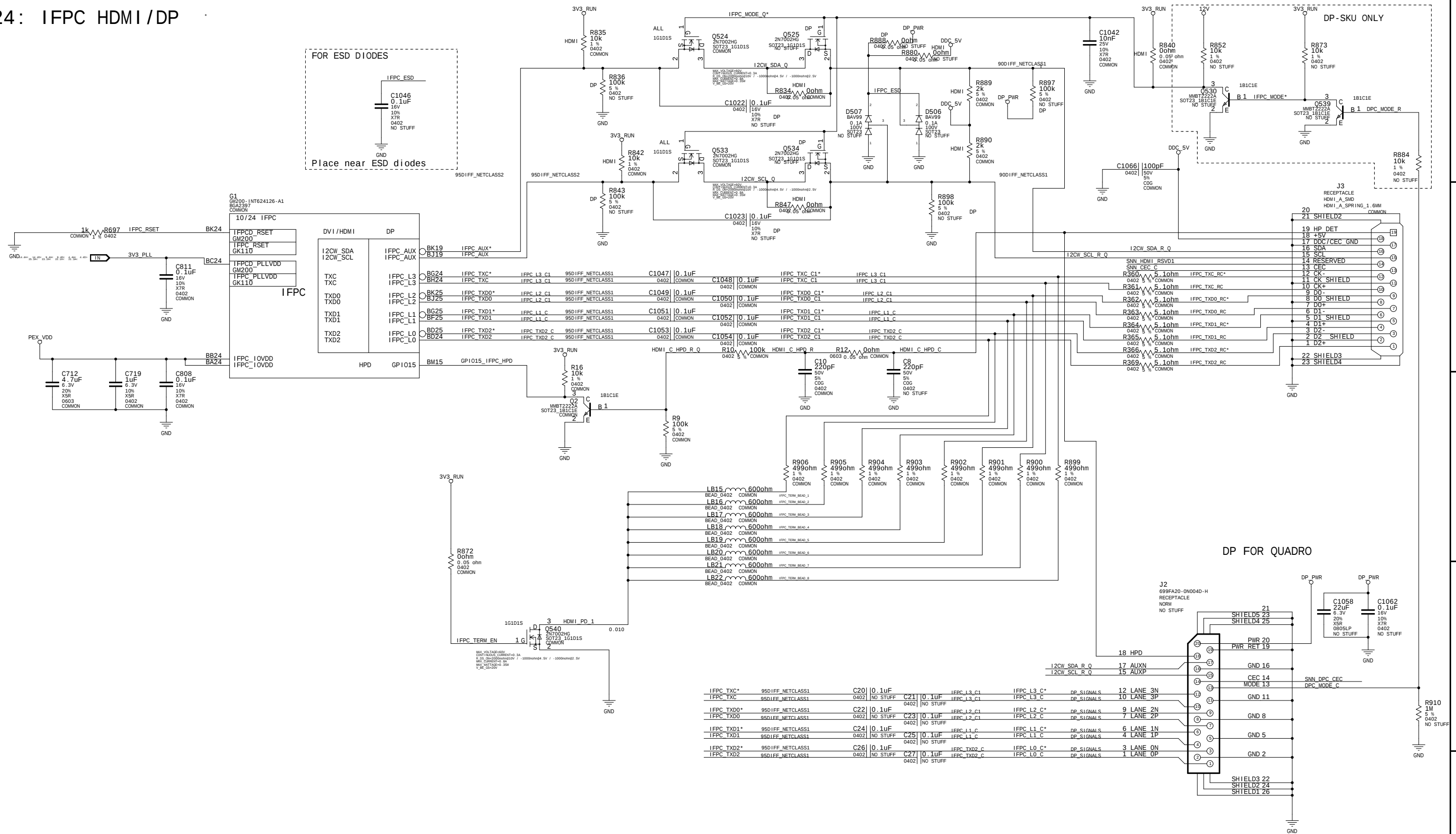


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AC COUPLING NOT NEEDED for KEPLER
REPLACE WITH ZERO OHM RESISTORS FOR KEPLER SKUS







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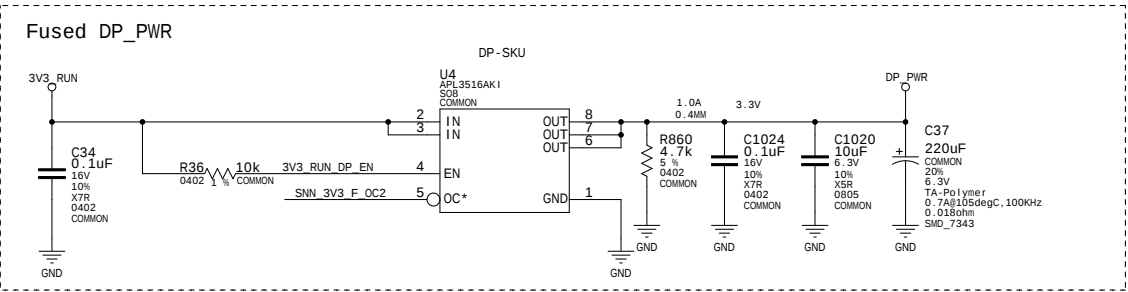
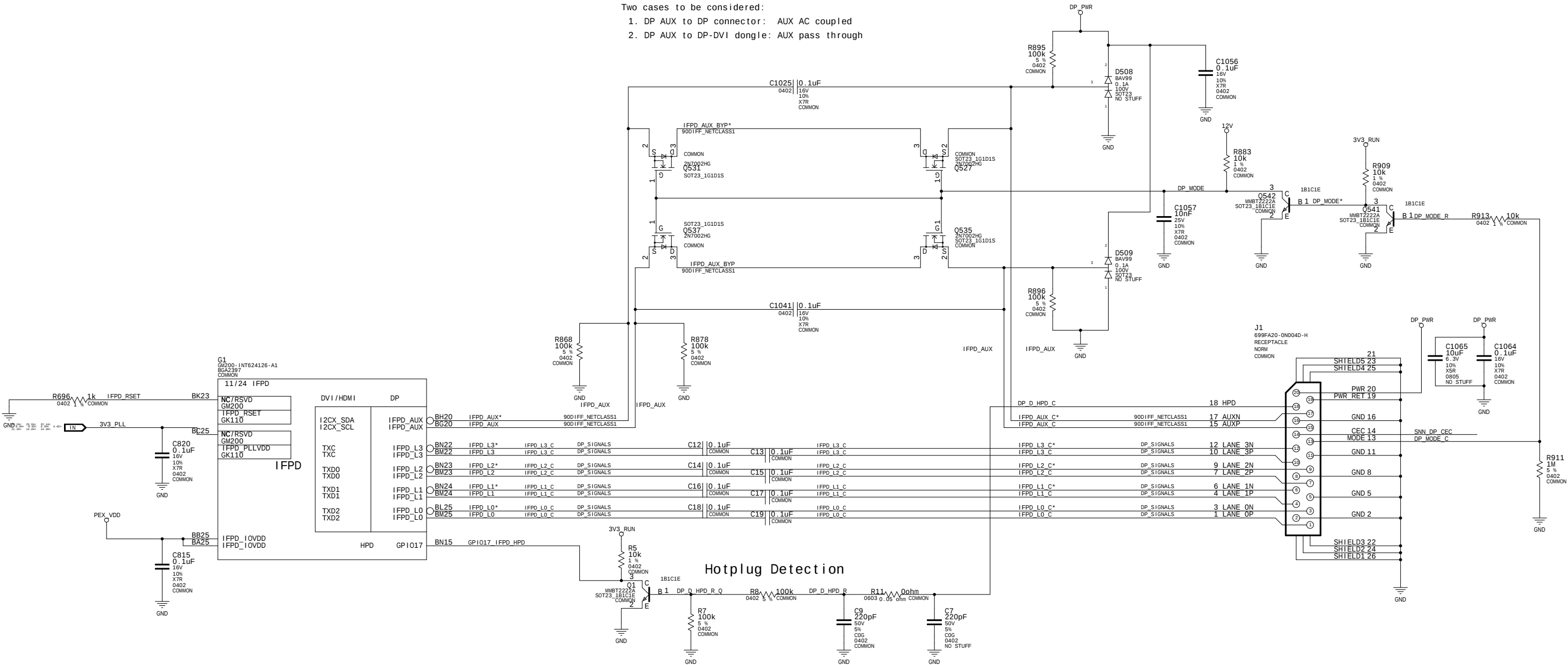
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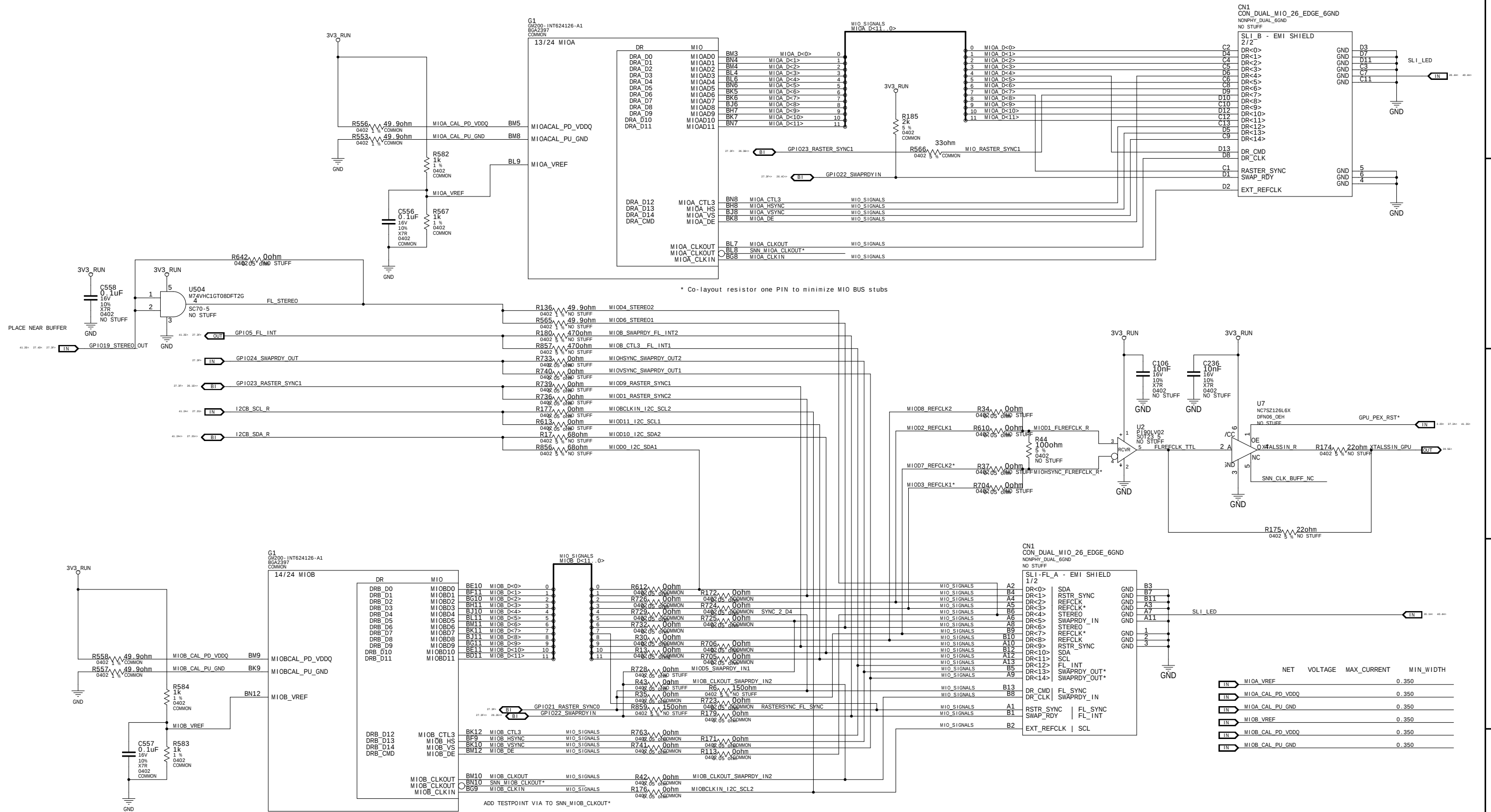
- Two cases to be considered:
1. DP AUX to DP connector: AUX AC coupled
 2. DP AUX to DP-DVI dongle: AUX pass through



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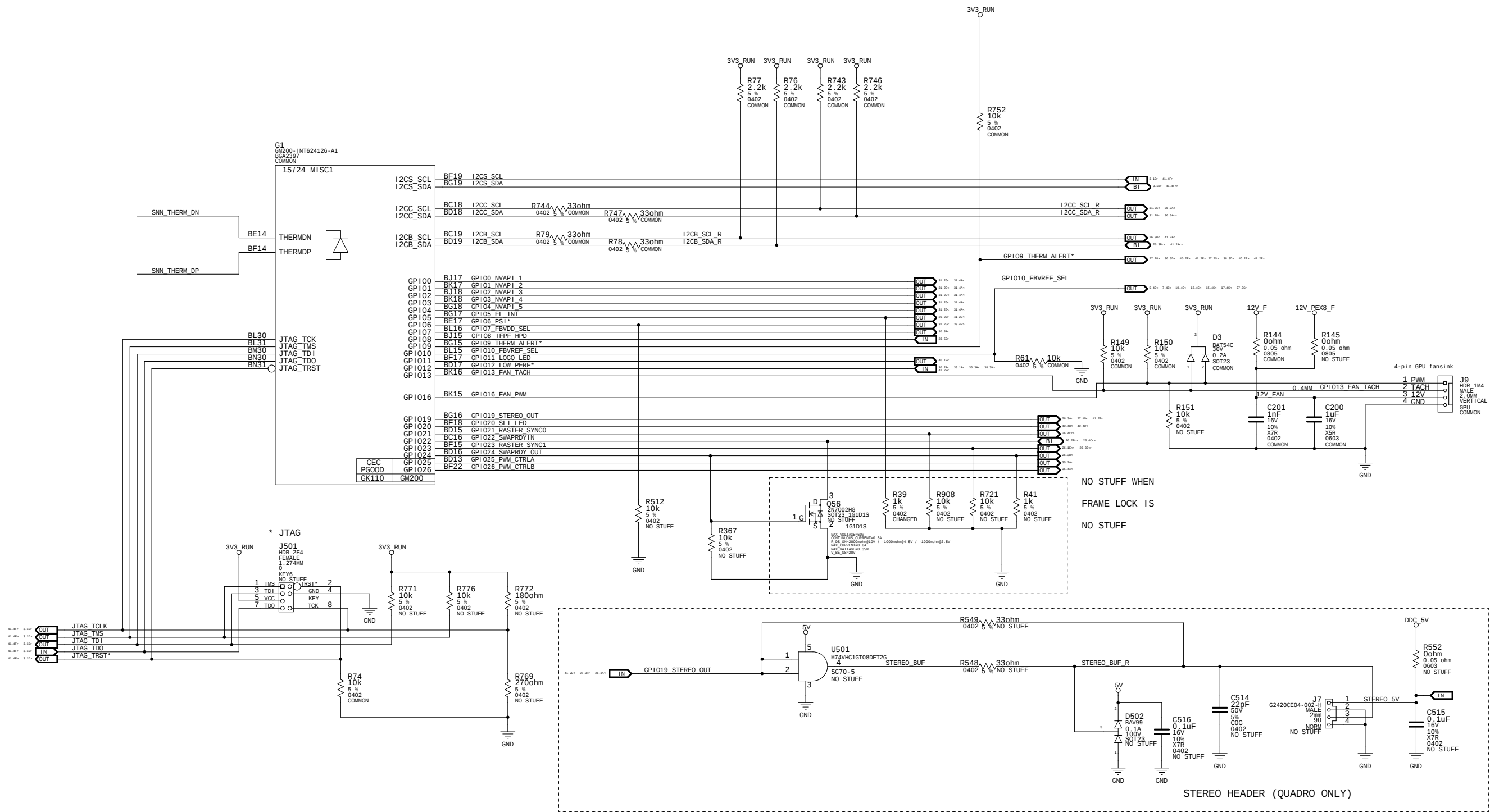
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Page26: MIOA/B and FRAMELOCK Interface



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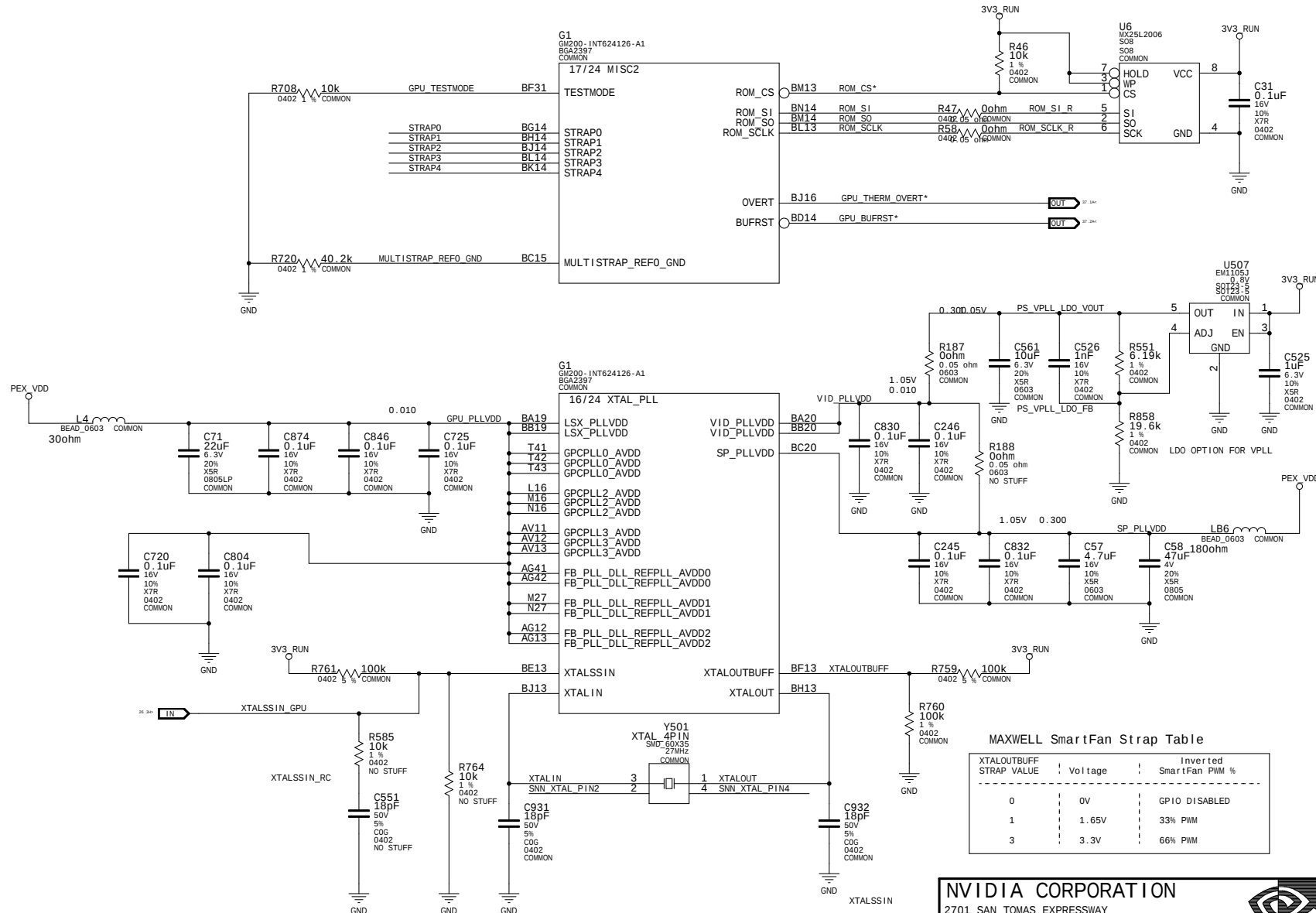
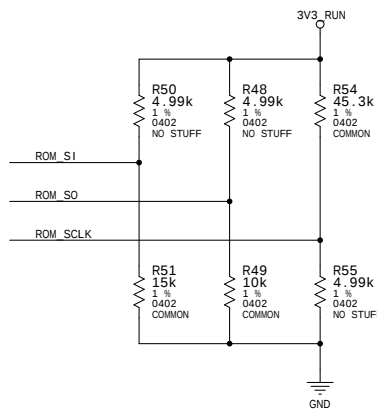
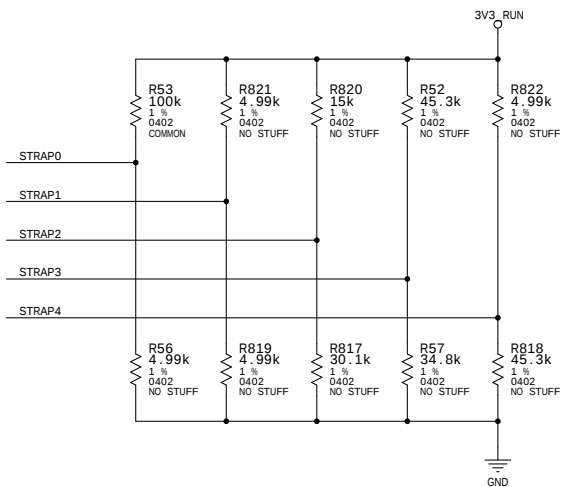
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	GND	3V3
5k	0000	1000
10k	0001	1001
15k	0010	1010
20k	0011	1011
25k	0100	1100
30k	0101	1101
35k	0110	1110
45k	0111	1111

x32 DENSITY MODE STRAPS			
CFG[3:0]	Config	Width	Vendor
0000	Reserved		
0001	128Mx32	384-bit	Elpida
0010	128Mx32	384-bit	Hynix
0011	128Mx32	384-bit	Samsung
0100	64Mx32	384-bit	Hynix B
0101	64Mx32	384-bit	Elpida
0110	64Mx32	384-bit	Hynix
0111	64Mx32	384-bit	Samsung
1000	Reserved		
1001	128Mx32	320-bit	Elpida
1010	128Mx32	320-bit	Hynix
1011	128Mx32	320-bit	Samsung
1100	64Mx32	320-bit	Hynix B
1101	64Mx32	320-bit	Elpida
1110	64Mx32	320-bit	Hynix
1111	64Mx32	320-bit	Samsung

x16 DENSITY MODE STRAPS			
CFG[3:0]	Config	Width	Vendor
0000	Reserved		
0001	256Mx16	384-bit	Elpida
0010	256Mx16	384-bit	Hynix
0011	256Mx16	384-bit	Samsung
0100	128Mx16	384-bit	Hynix B
0101	128Mx16	384-bit	Elpida
0110	128Mx16	384-bit	Hynix
0111	128Mx16	384-bit	Samsung
1000	Reserved		
1001	256Mx16	320-bit	Elpida
1010	256Mx16	320-bit	Hynix
1011	256Mx16	320-bit	Samsung
1100	128Mx16	320-bit	Hynix B
1101	128Mx16	320-bit	Elpida
1110	128Mx16	320-bit	Hynix
1111	128Mx16	320-bit	Samsung



MAXWELL SmartFan Strap Table		
XTALOUTBUFF STRAP VALUE	Voltage	Inverted SmartFan PWM %
0	0V	GPIO DISABLED
1	1.65V	33% PWM
3	3.3V	66% PWM

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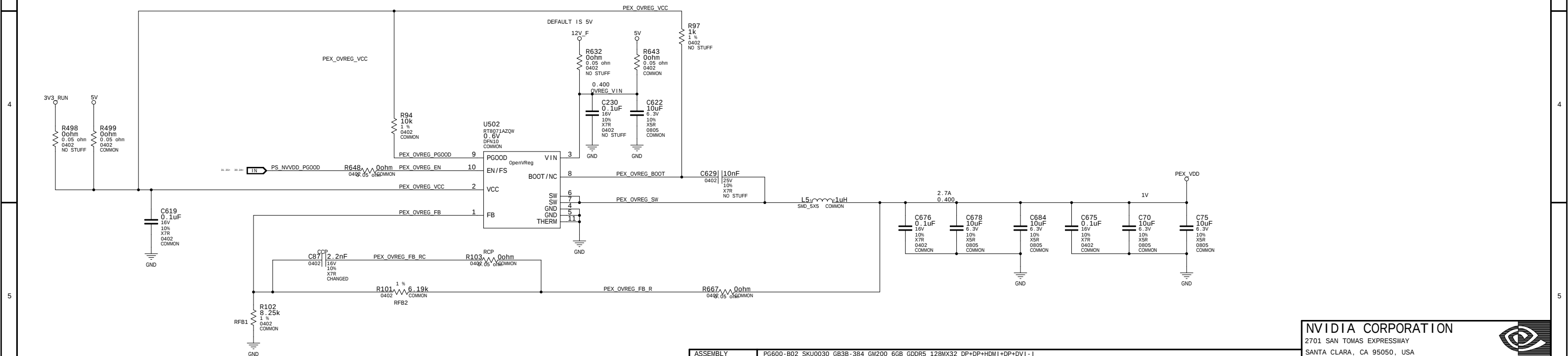
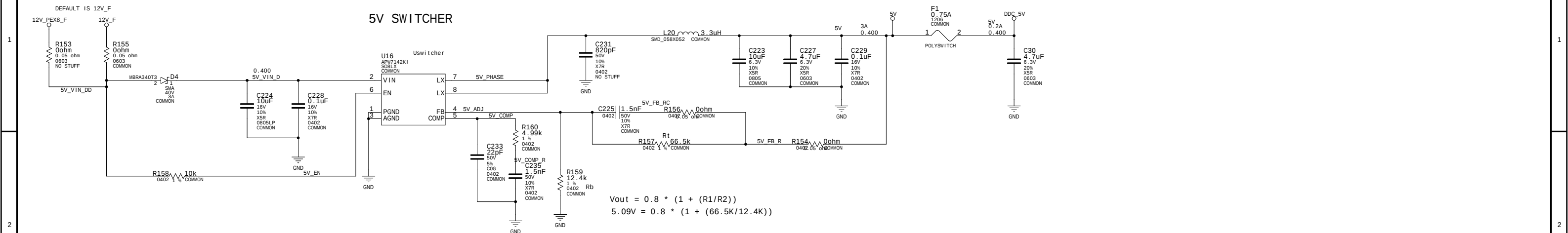
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Page29: PS: 5V, PEX_VDD



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Page30: PS: FBVDDQ

FBVDDQ	FBVDDQ	35A	0.010
NETNAME	MAX_CURRENT	MIN_LINE_WIDTH	VOLTAGE

1

1

2

2

3

3

4

4

5

5

PG401 ran into a power sequencing bug, the outcome of which may cause the value of R580 to change from 10K

NO STUFF FOR RICHTEK STUFF FOR UP1 STUFF FOR ON (NCP81172)

CO-LAYOUT: CHOOSE (C1 & C2) OR C3

FBVDDQ = 1.6V @ 40A

CO-LAYOUT: CHOOSE (CX & CY) OR CZ

FBVDDQ = 1.6V @ 40A

GP107_FBVD_SEL	VOUT
1	1.56V
0	1.35V

ASSEMBLY	PG600-B02 SKU0030 GB3B-384 GM200 6GB GDDR5 128MX32 DP+DP+HDMI+DP+DV1-I
PAGE DETAIL	PS: FBVDDQ

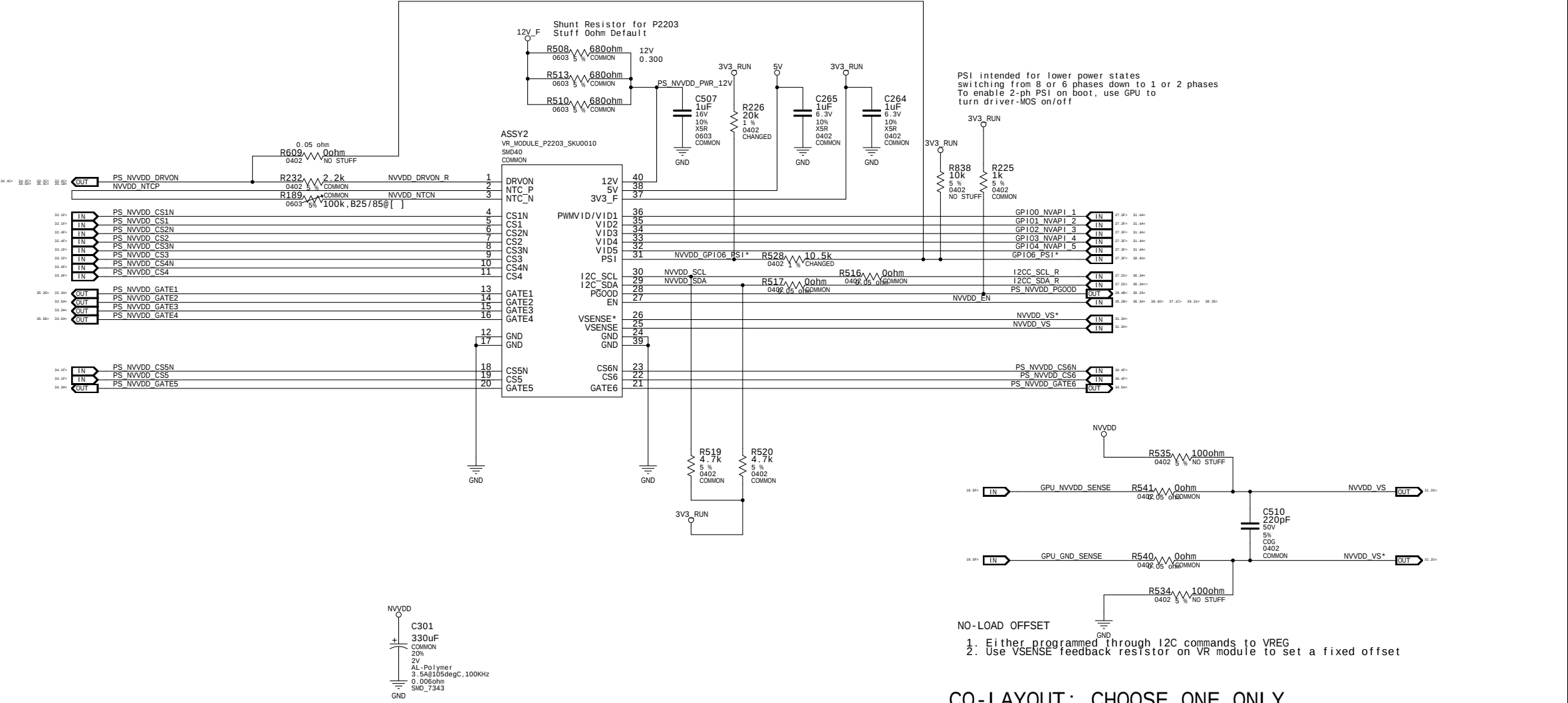
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NV_PN	600-1G600-0030-QS1		
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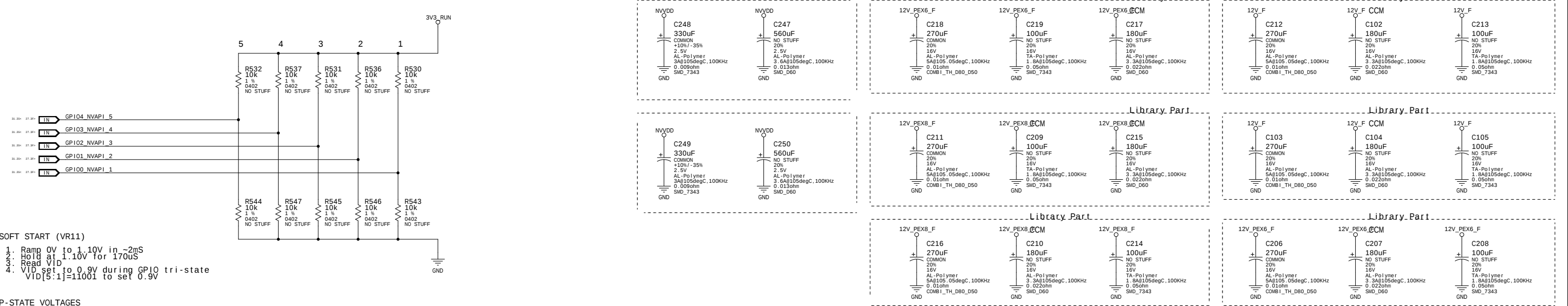


VID Table

GPI04	GPI03	GPI02	GPI01	GPI00	VOUT
VID_5	VID_4	VID_3	VID_2	VID_1	
0	0	0	0	0	1.2125V
0	0	0	0	1	1.2000V
0	0	0	1	0	1.1875V
0	0	0	1	1	1.1750V
0	0	1	0	0	1.1625V
0	0	1	0	1	1.1500V
0	0	1	1	0	1.1375V
0	0	1	1	1	1.1250V
0	1	0	0	0	1.1125V
0	1	0	0	1	1.1000V
0	1	0	1	0	1.0875V
0	1	0	1	1	1.0750V
0	1	1	0	0	1.0625V
0	1	1	0	1	1.0500V
0	1	1	1	0	1.0375V
0	1	1	1	1	1.0250V
1	0	0	0	0	1.0125V
1	0	0	0	1	1.0000V
1	0	0	1	0	0.9875V
1	0	0	1	1	0.9750V
1	0	1	0	0	0.9625V
1	0	1	0	1	0.9500V
1	0	1	1	0	0.9375V
1	0	1	1	1	0.9250V
1	1	0	0	0	0.9125V
1	1	0	0	1	0.9000V
1	1	0	1	0	0.8875V
1	1	0	1	1	0.8750V
1	1	1	0	0	0.8625V
1	1	1	0	1	0.8500V
1	1	1	1	0	0.8375V
1	1	1	1	1	0.8250V



CO-LAYOUT: CHOOSE ONE ONLY



15c1203

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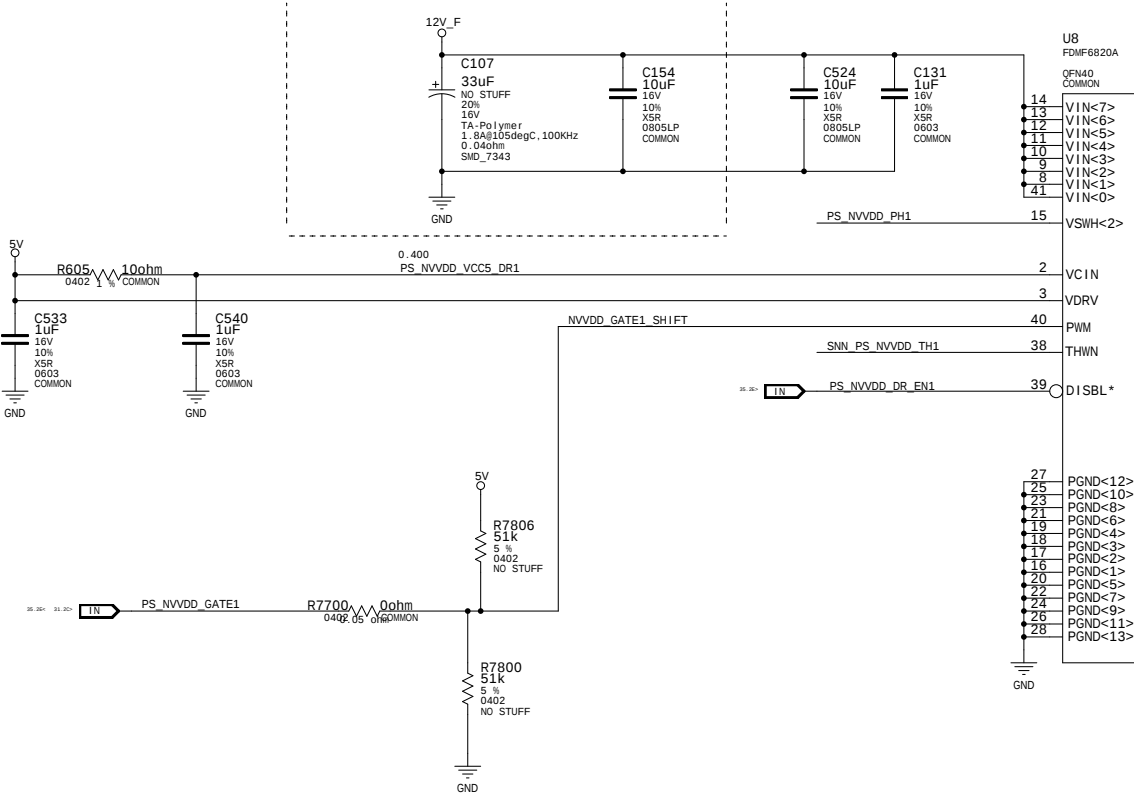
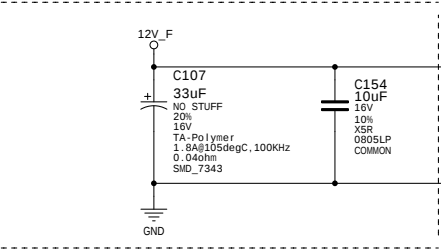
SANTA CLARA, CA 95050, USA



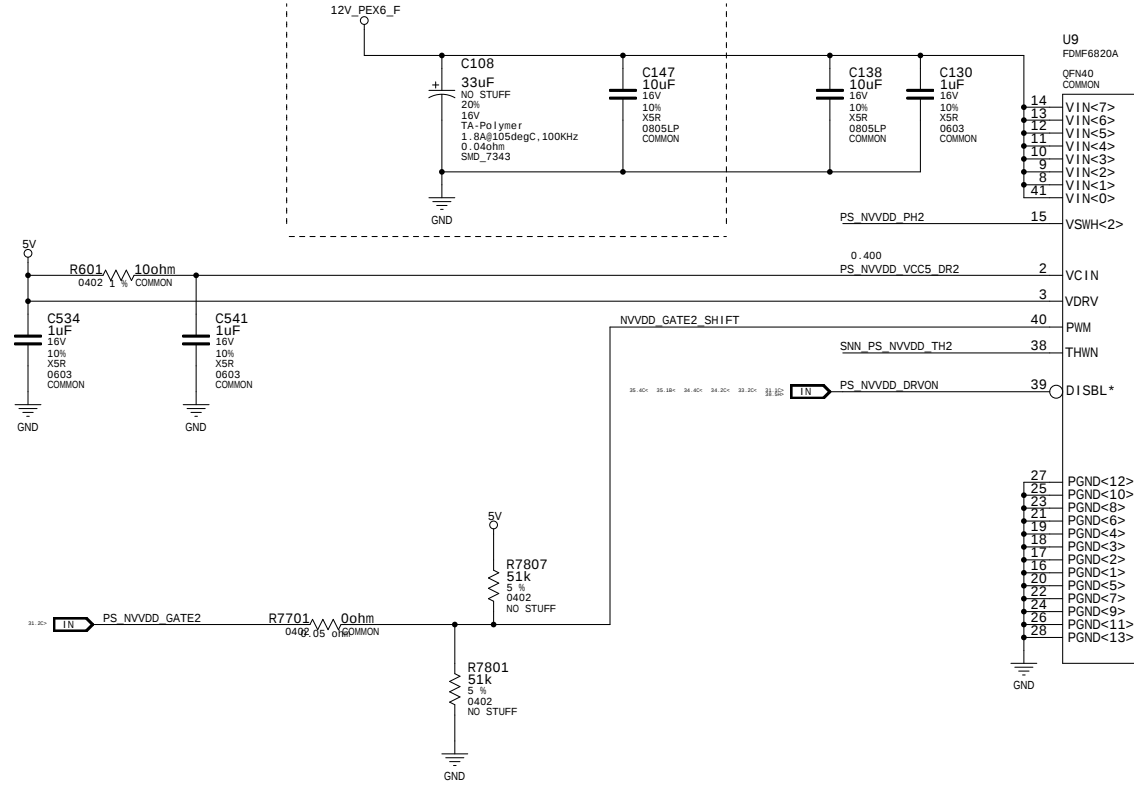
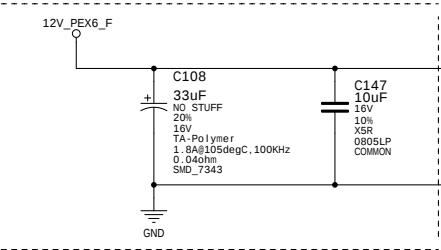
NV_PN	600-1G600-0030-QS1
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CO-LAYOUT: STUFF ONLY ONE



CO-LAYOUT: STUFF ONLY ONE



ASSEMBLY	PG600-B02 SKU0030 GB3B-384 GM200 6GB GDDR5 128MX32 DP+DP+HDMI+DP+DV1-I
PAGE DETAIL	PS: NVVDD Phase 1,2

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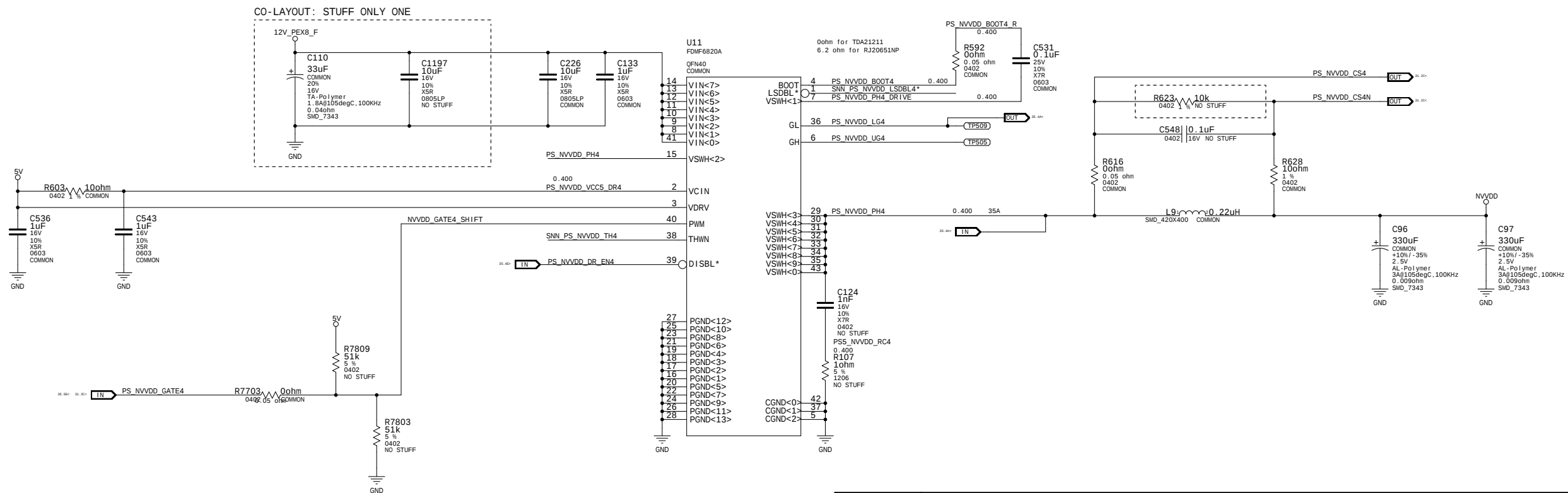
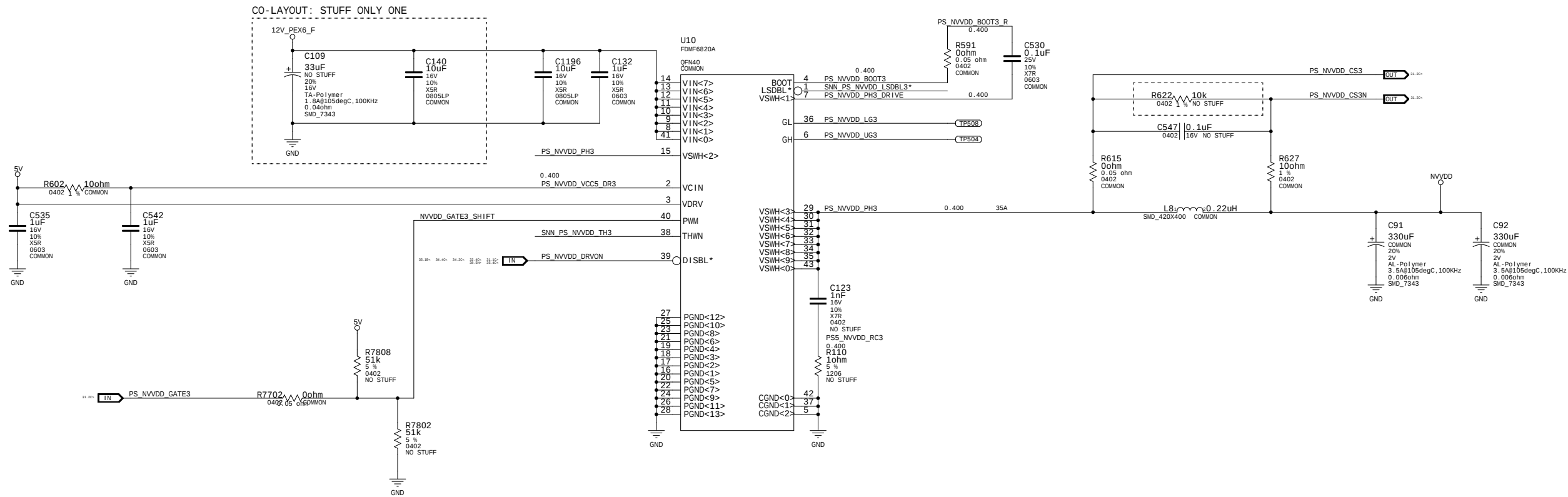
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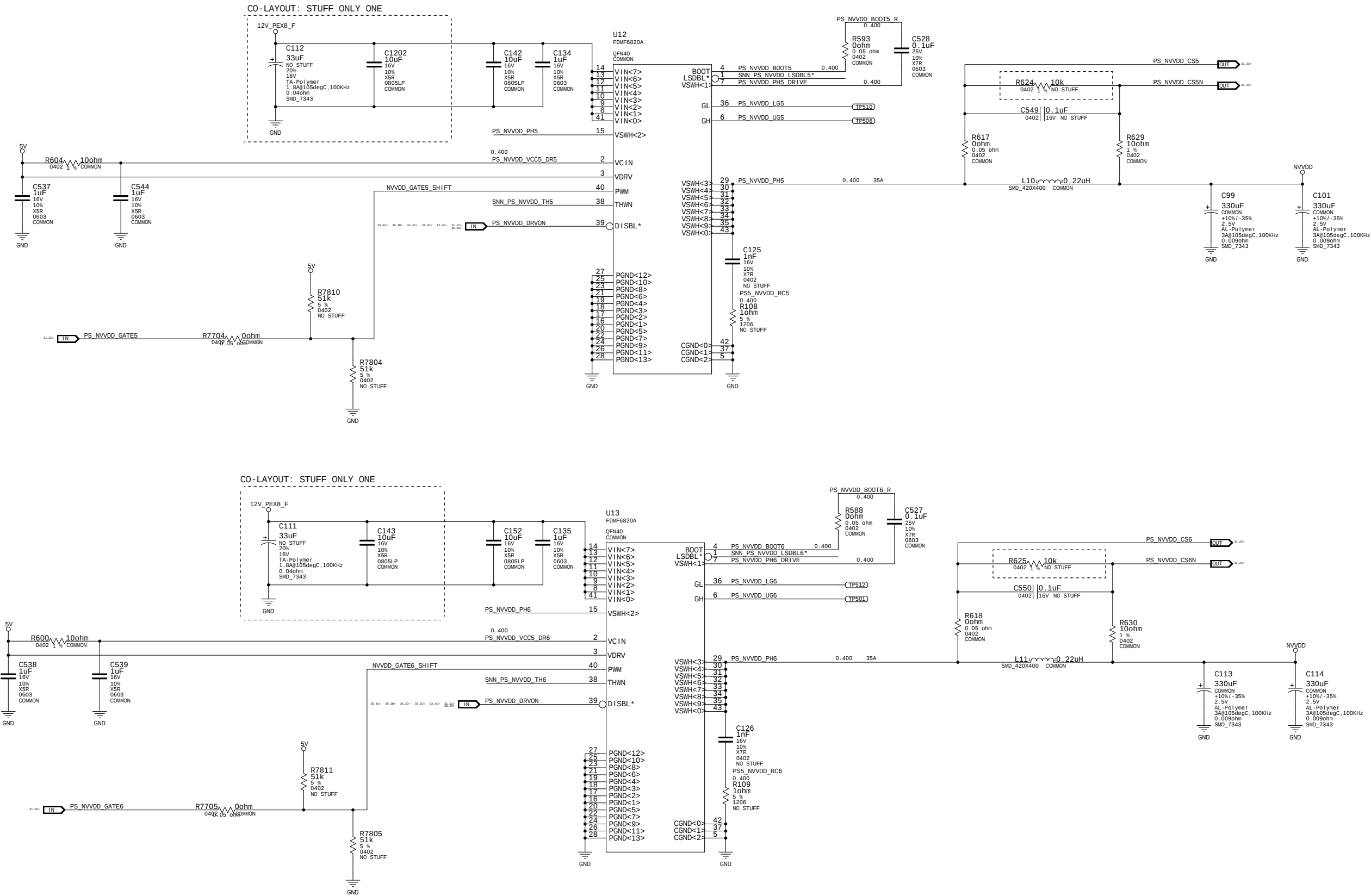
NV_PN 600-1G600-0030-QS1

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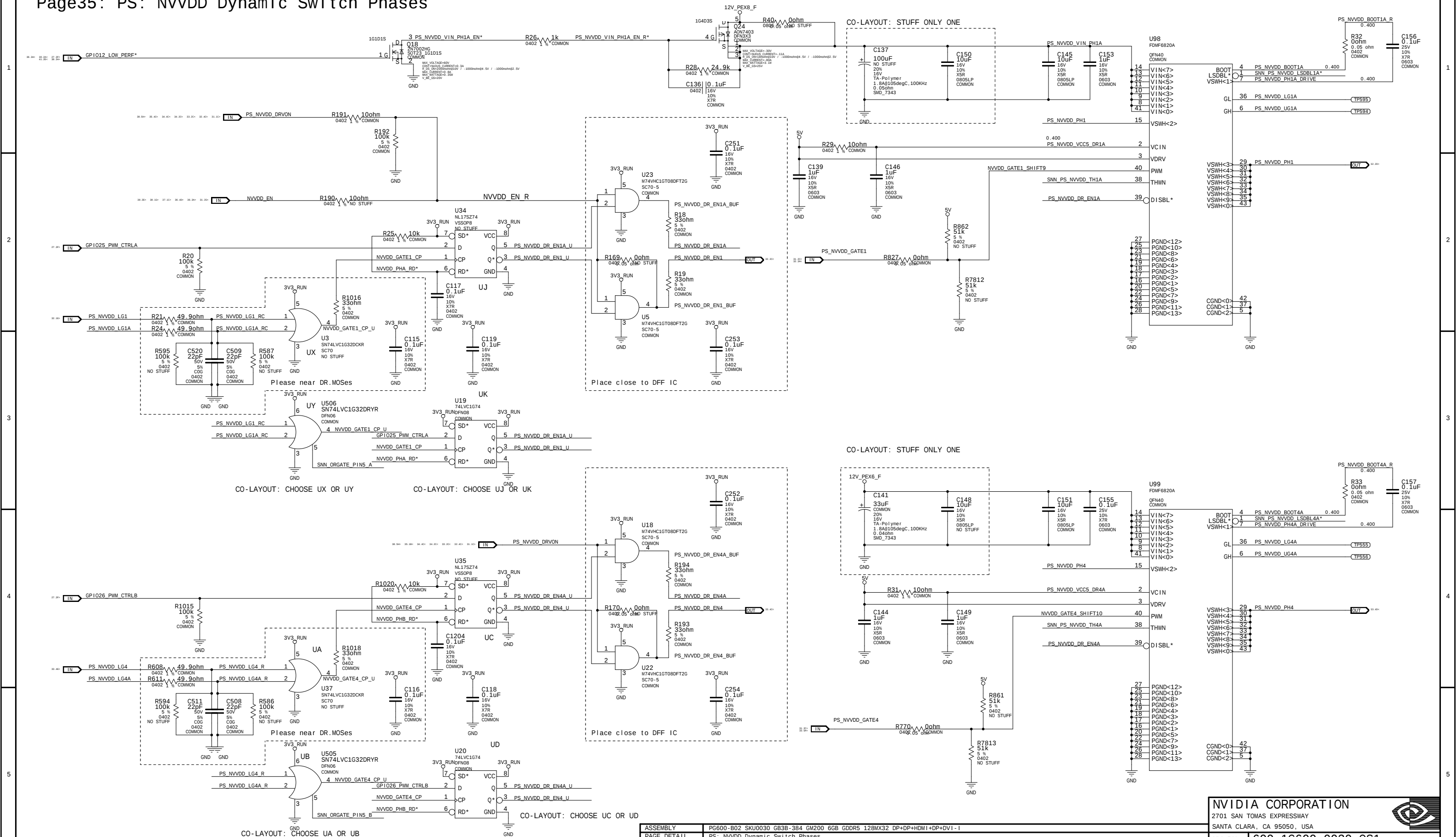


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Page35: PS: NVVDD Dynamic Switch Phases

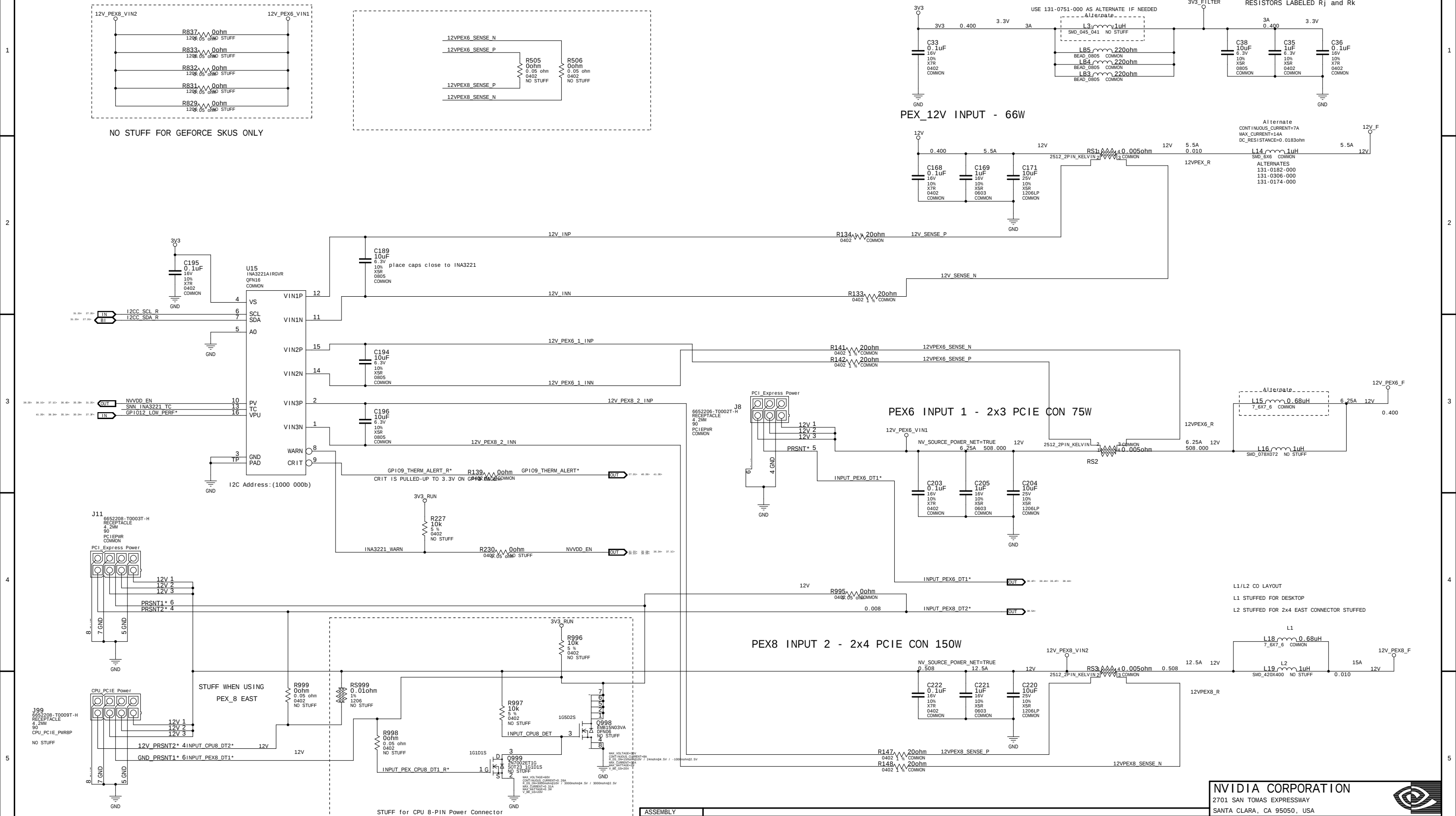


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ASSEMBLY	PG600-B02 SKU0030 G83B-384 GM200 6GB GDDR5 128MX32 DP+DP+HDMI+DP+DVI-I
PAGE DETAIL	PS: NVDD Dynamic Switch Phases

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Page36: PS: Inputs, Filtering, and Monitoring

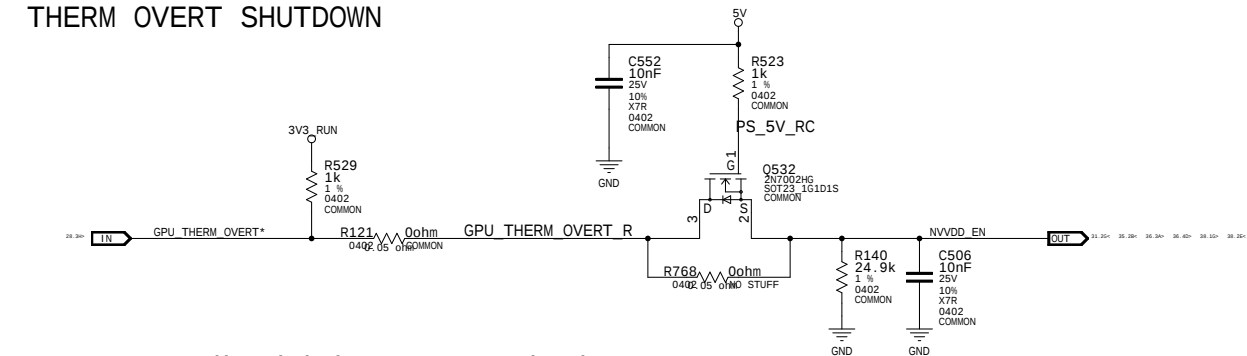


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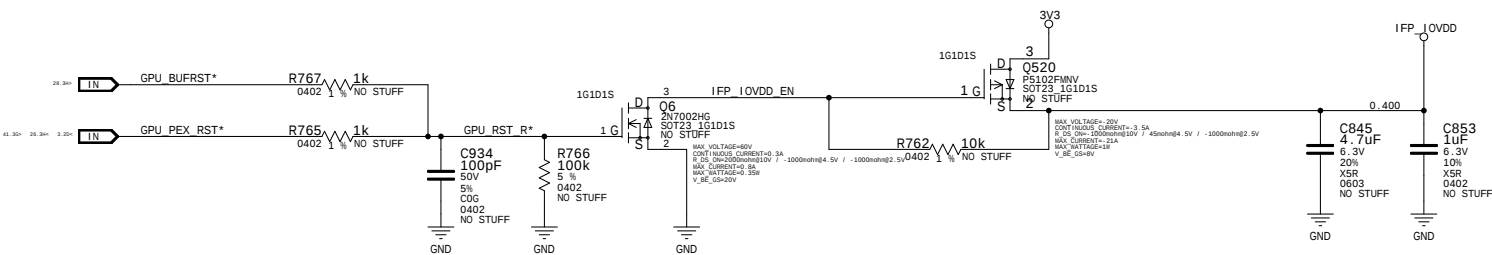
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Page37: PS: Shutdown & IFP_IOVDD & INPUT POWER CONNECTOR DETECTION

THERM OVERT SHUTDOWN



IFP_IOVDD (backdrive prevention)



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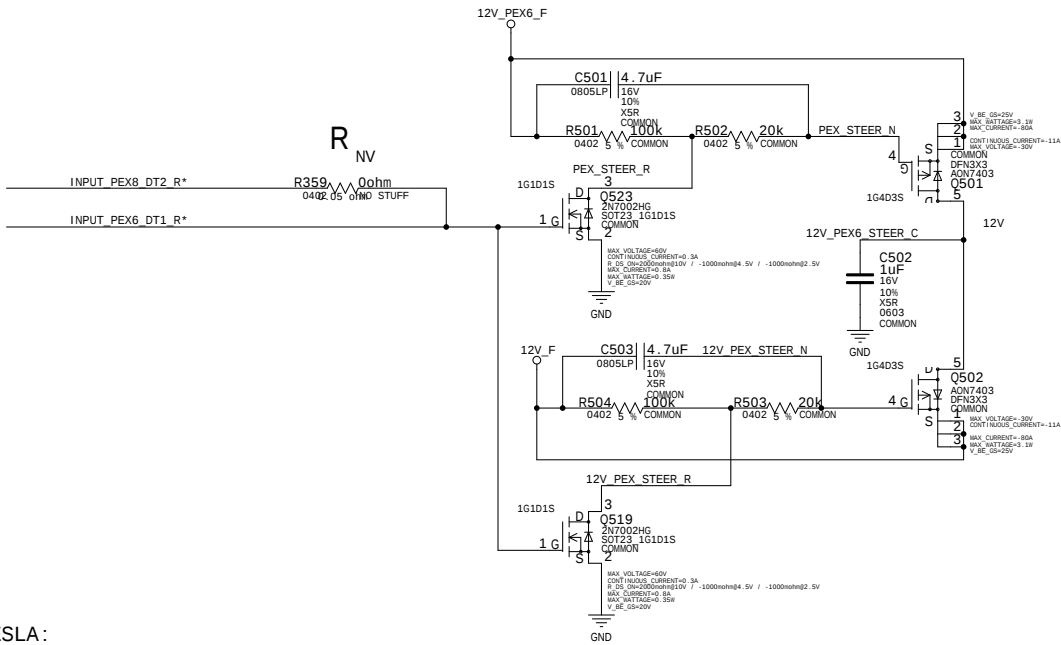
ASSEMBLY	PG600-B02 SKU0030 GB3B-384 GM200 6GB GDDR5 128MX32 DP+DP+HDMI+DP+DV1-I
PAGE DETAIL	PS: Shutdown

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Page38: PS: 12V Current Steering & Hot Unplug Detect

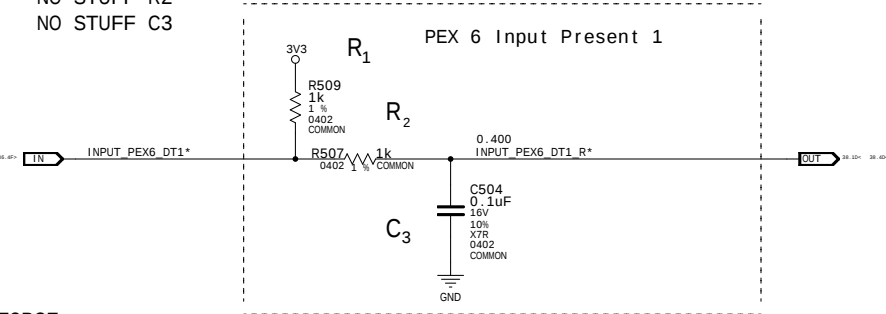
12V CURRENT STEERING (UNDER POWER BOOT):
GUIDES CURRENT FROM PEX EDGE TO PEX 6 PIN INPUT AREA

For OpenVreg Type4 + Phase Doubler, 2 phase PS1 mode



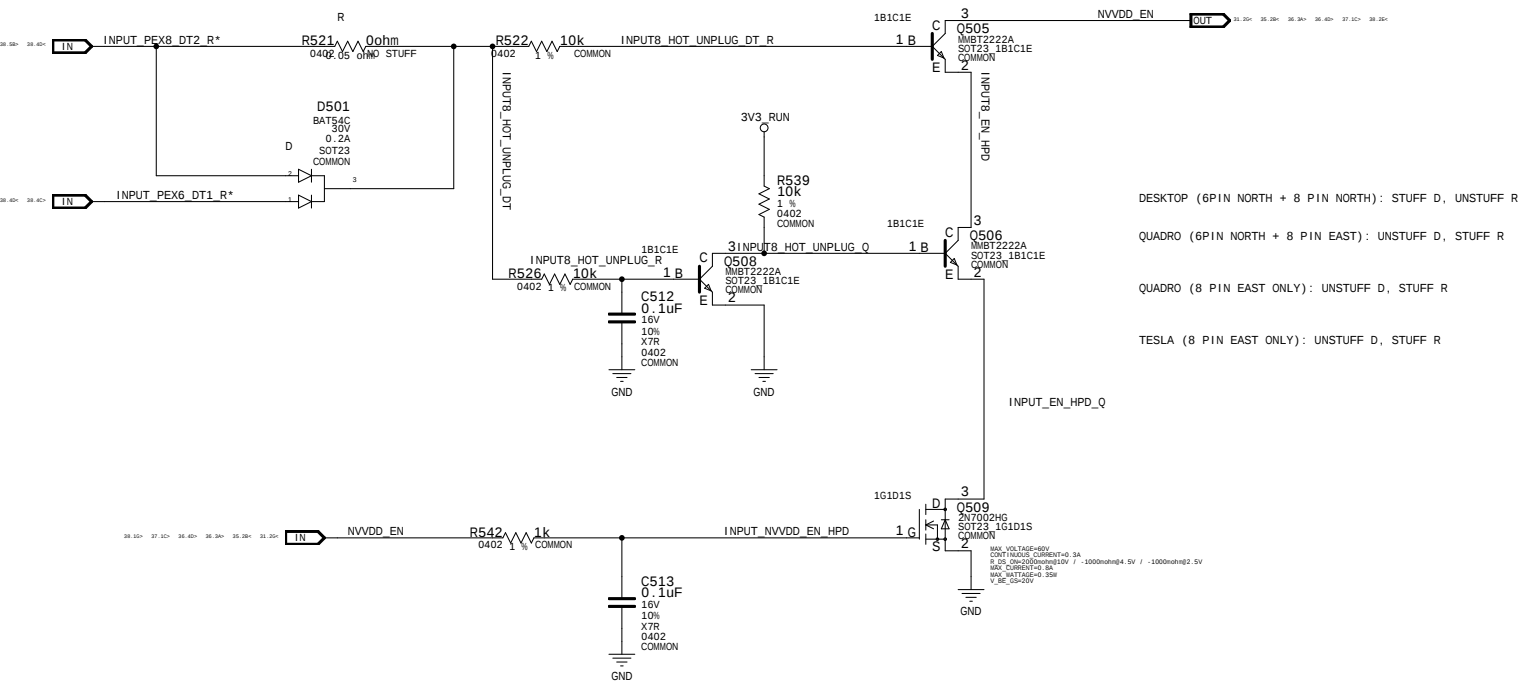
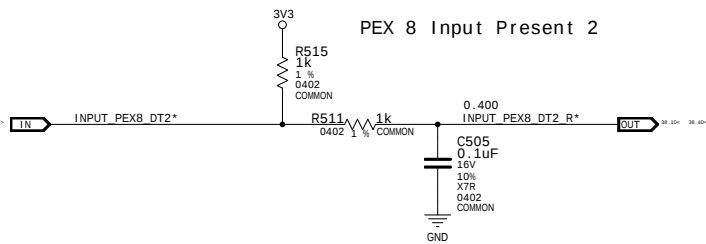
QUADRO/TESLA:

- PEX 6 INPUT CONNECTOR IS NOT LOADED
- PEX 6 INPUT DETECT MUST BE DISABLED
- PEX 8 INPUT DETECT MUST BE USED TO CONTROL STEERING
- STUFF Rnv IN STEERING CIRCUIT
- NO STUFF R1
- NO STUFF R2
- NO STUFF C3



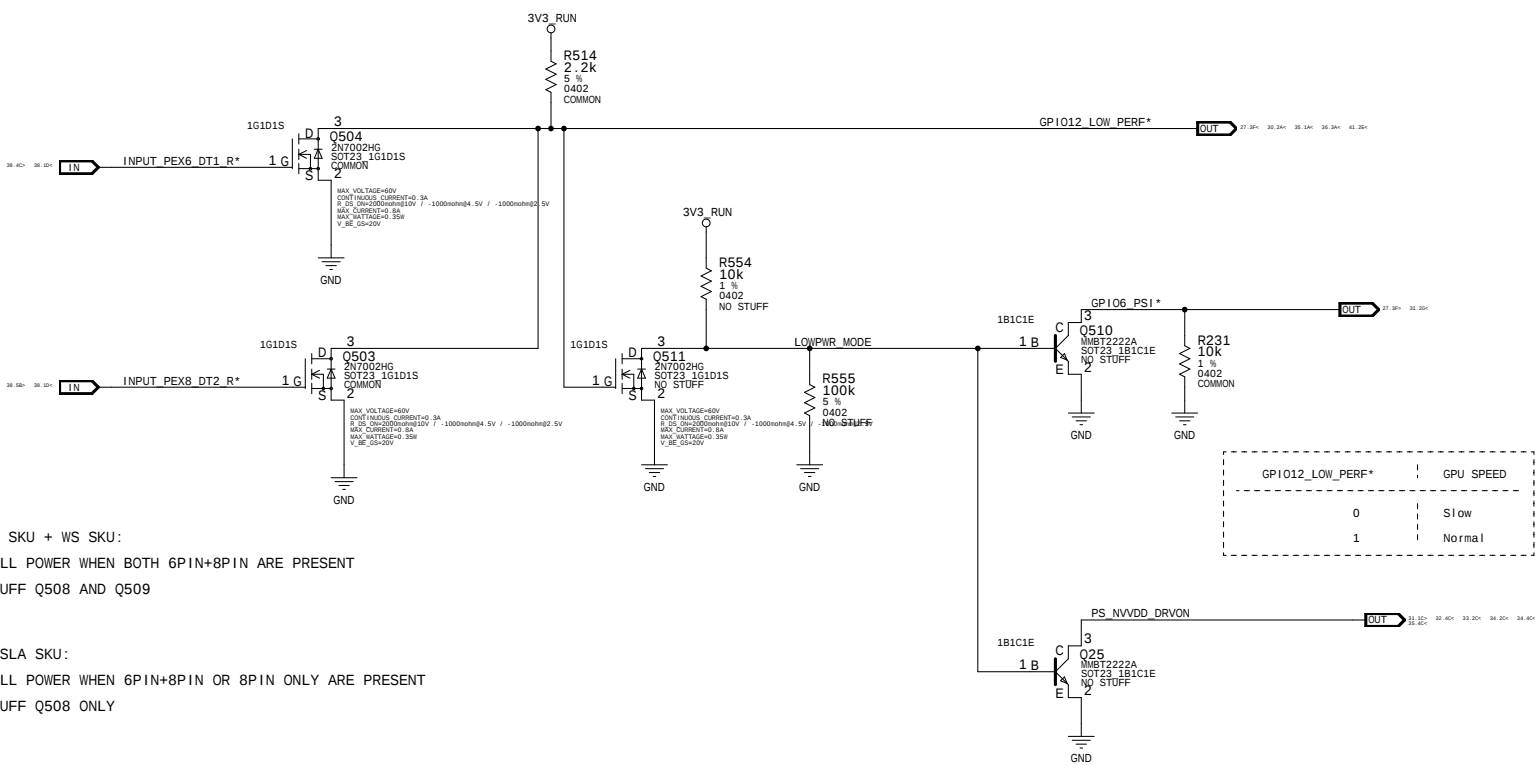
GeFORCE:

- PEX 6 INPUT CONNECTOR IS LOADED
- PEX 6 INPUT DETECT MUST BE USED TO CONTROL STEERING
- NO STUFF Rnv IN STEERING CIRCUIT
- STUFF R1
- STUFF R2
- STUFF C3



- DESKTOP (6PIN NORTH + 8 PIN NORTH): STUFF D, UNSTUFF R
- QUADRO (6PIN NORTH + 8 PIN EAST): UNSTUFF D, STUFF R
- QUADRO (8 PIN EAST ONLY): UNSTUFF D, STUFF R
- TESLA (8 PIN EAST ONLY): UNSTUFF D, STUFF R

PEX Input - Under Power Boot Controls



- DT SKU + WS SKU:
FULL POWER WHEN BOTH 6PIN+8PIN ARE PRESENT
STUFF Q508 AND Q509
- TESLA SKU:
FULL POWER WHEN 6PIN+8PIN OR 8PIN ONLY ARE PRESENT
STUFF Q508 ONLY

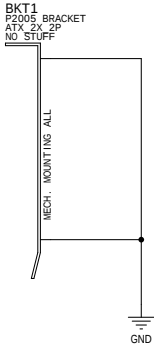
GP1012_LOW_PERF*	GPU SPEED
0	Slow
1	Normal

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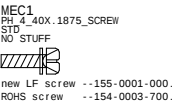
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Brackets:

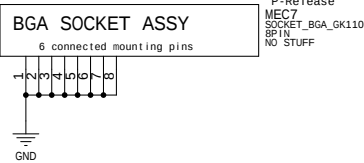
DVIDVI_HDMI_DP : 151-10001-0441-092



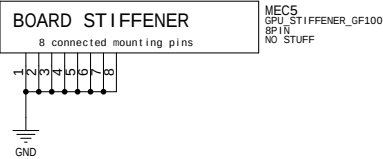
Bracket Screw



GPU SOCKET



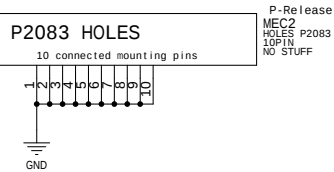
GPU Stiffener (BRING-UP COOLER)



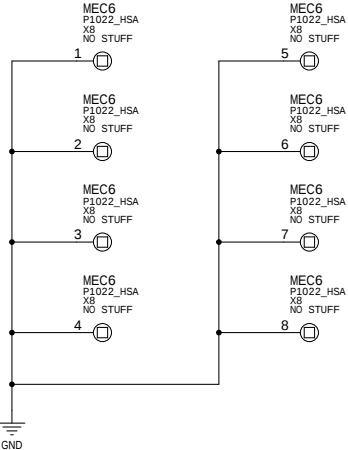
Stiffener

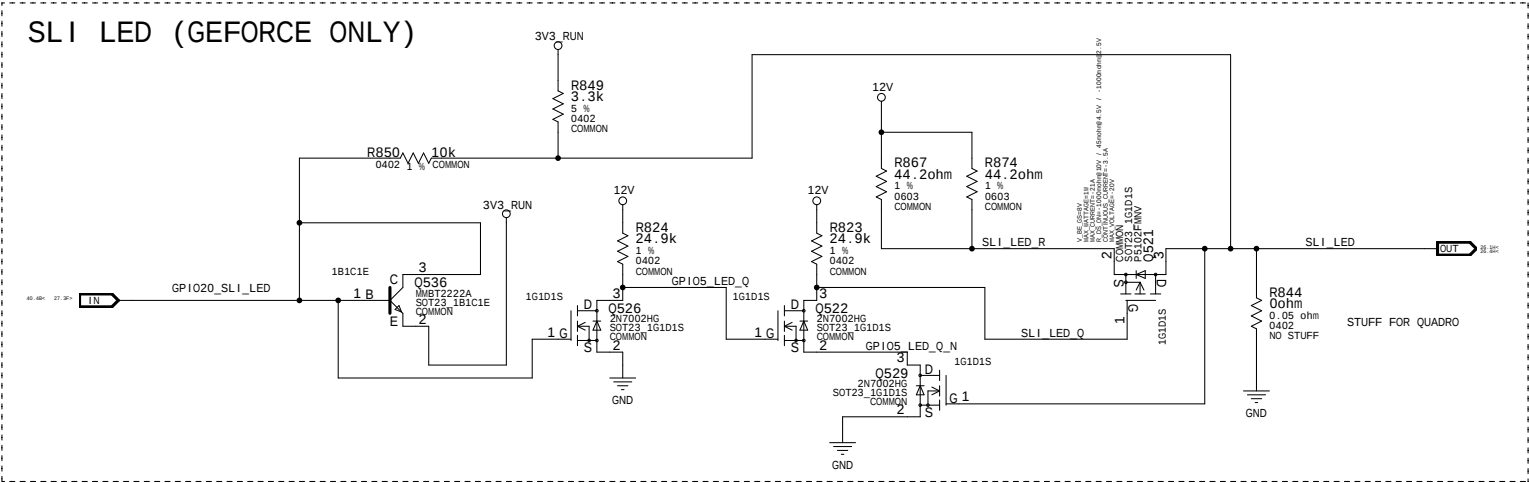
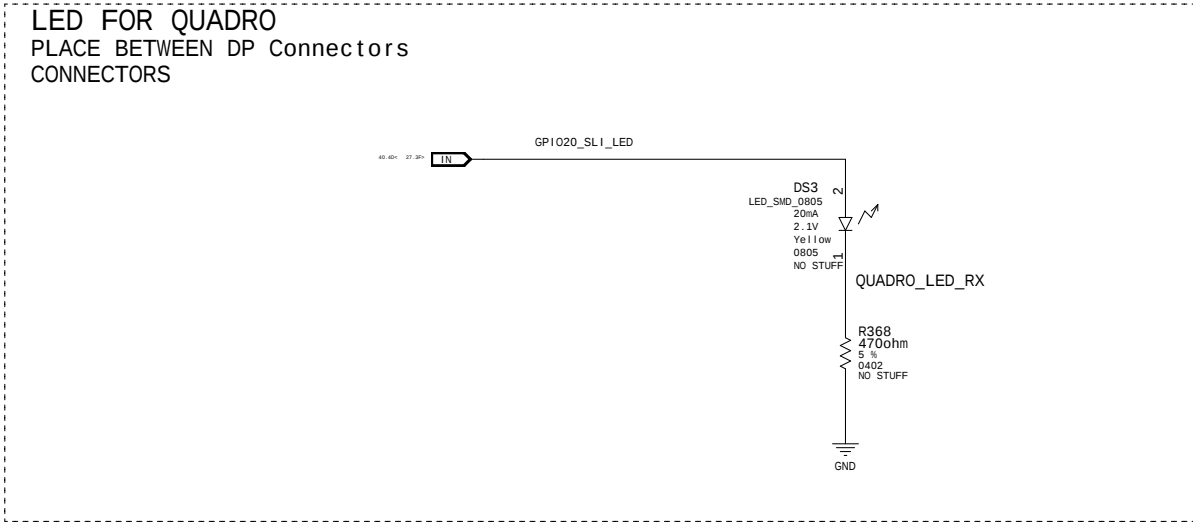
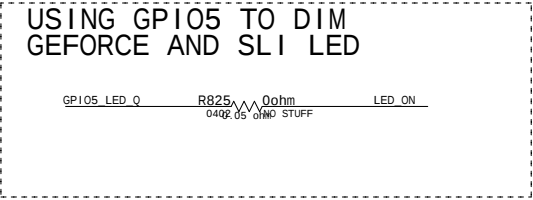
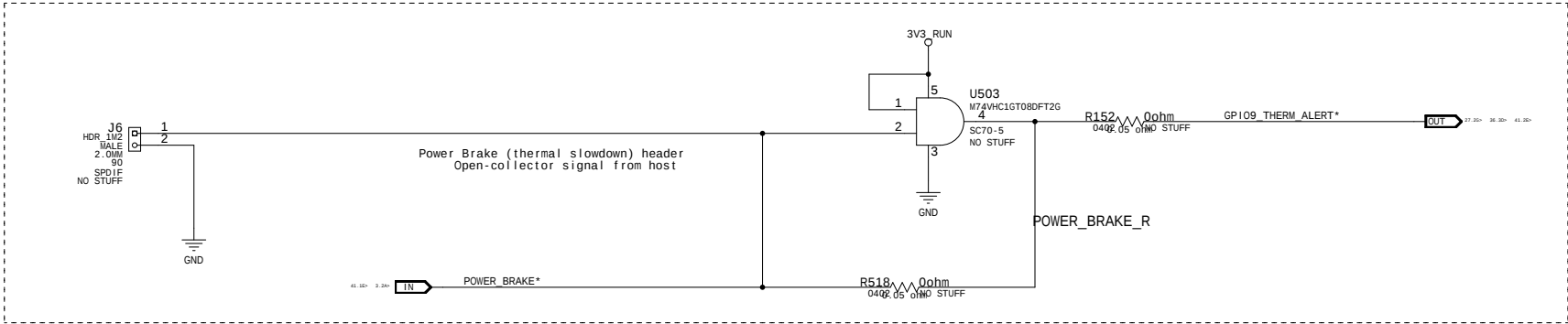
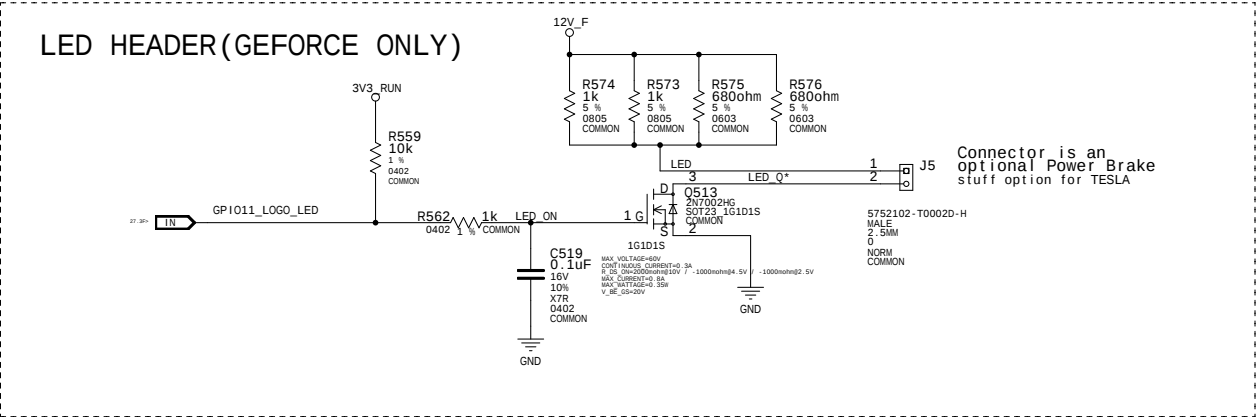


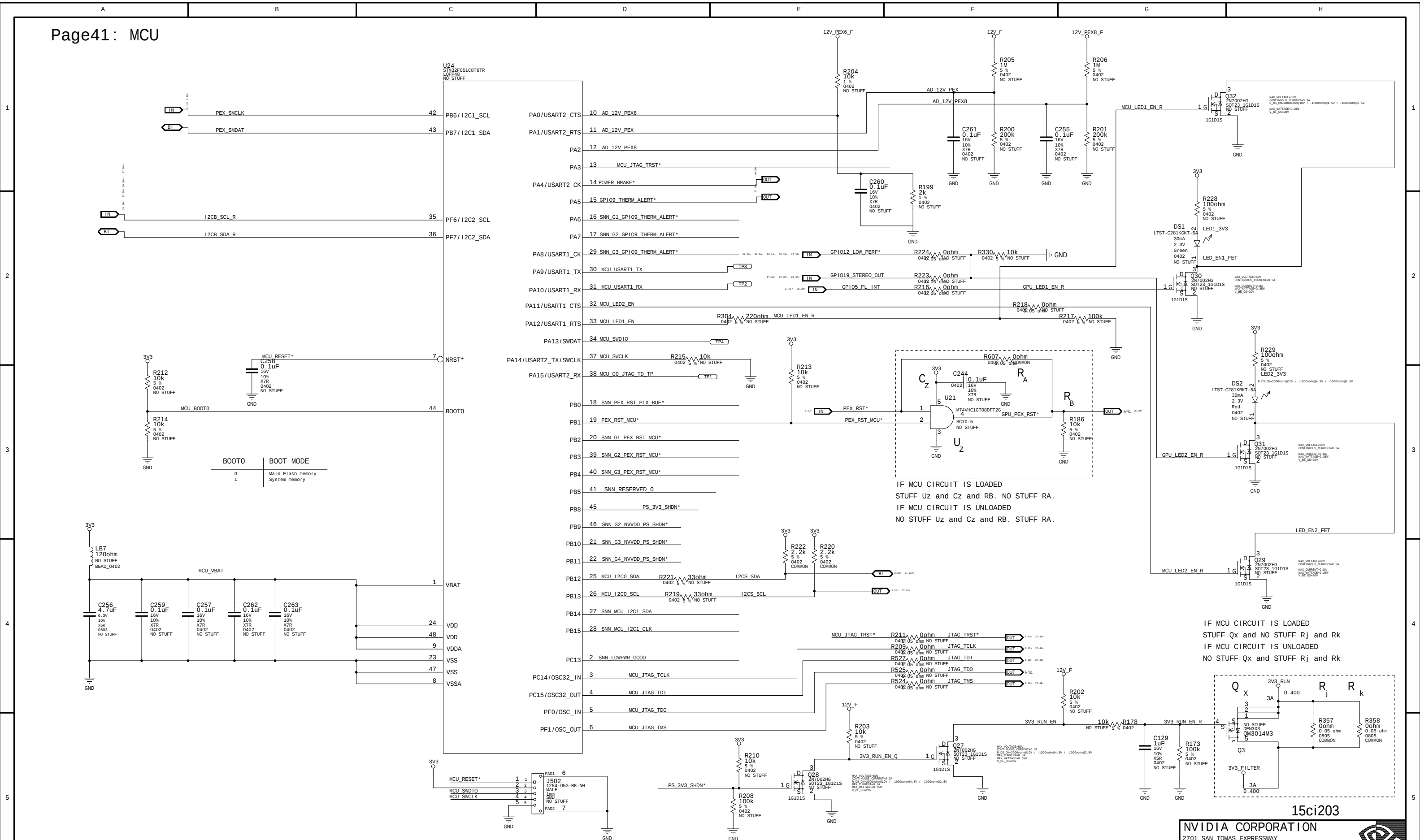
Mechanical Holes Symbol



Bring Up Cooler







ASSEMBLY	
PAGE DETAIL	MICROCONTROLLER

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