

NP, GeForce SKU P-BOARD

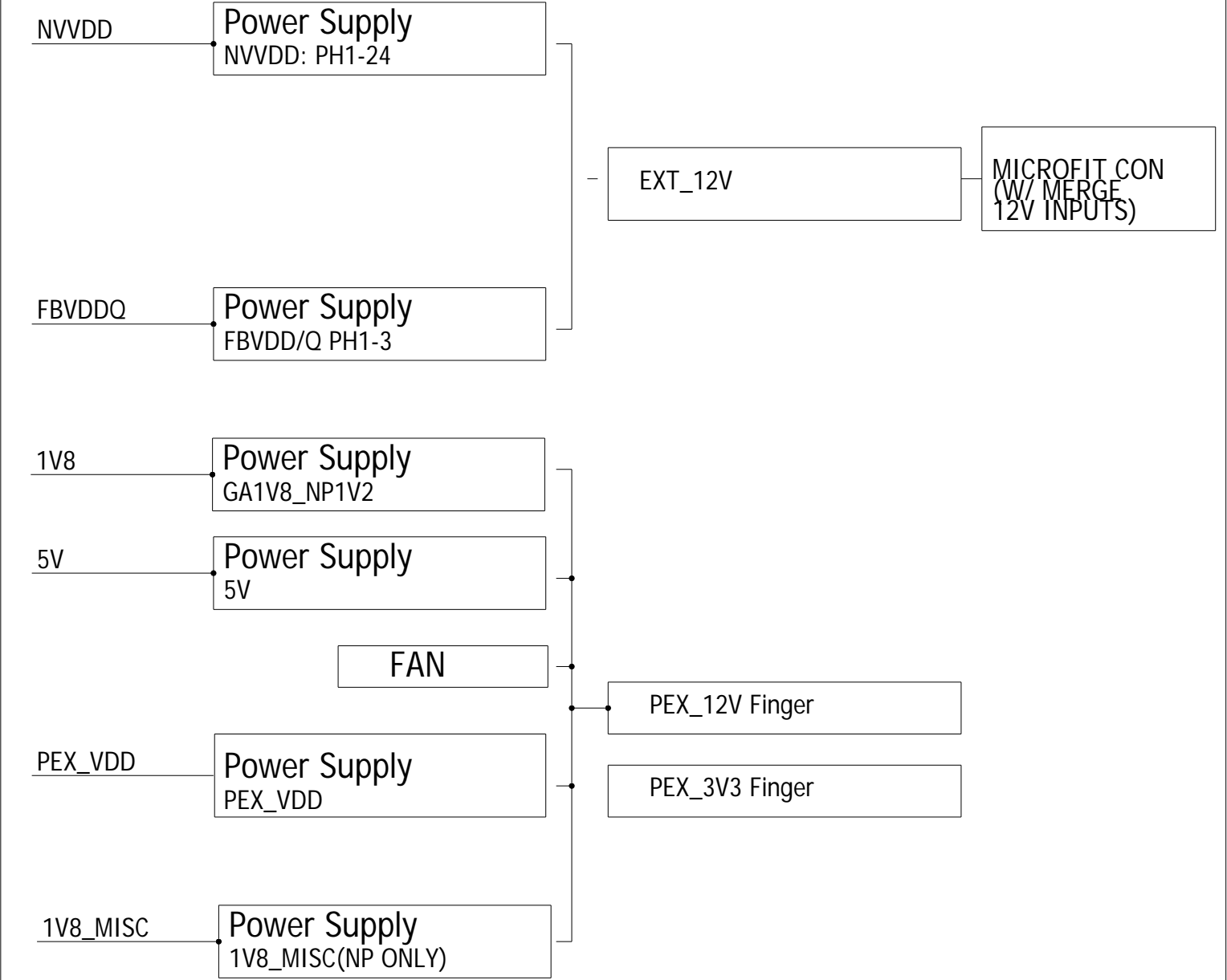
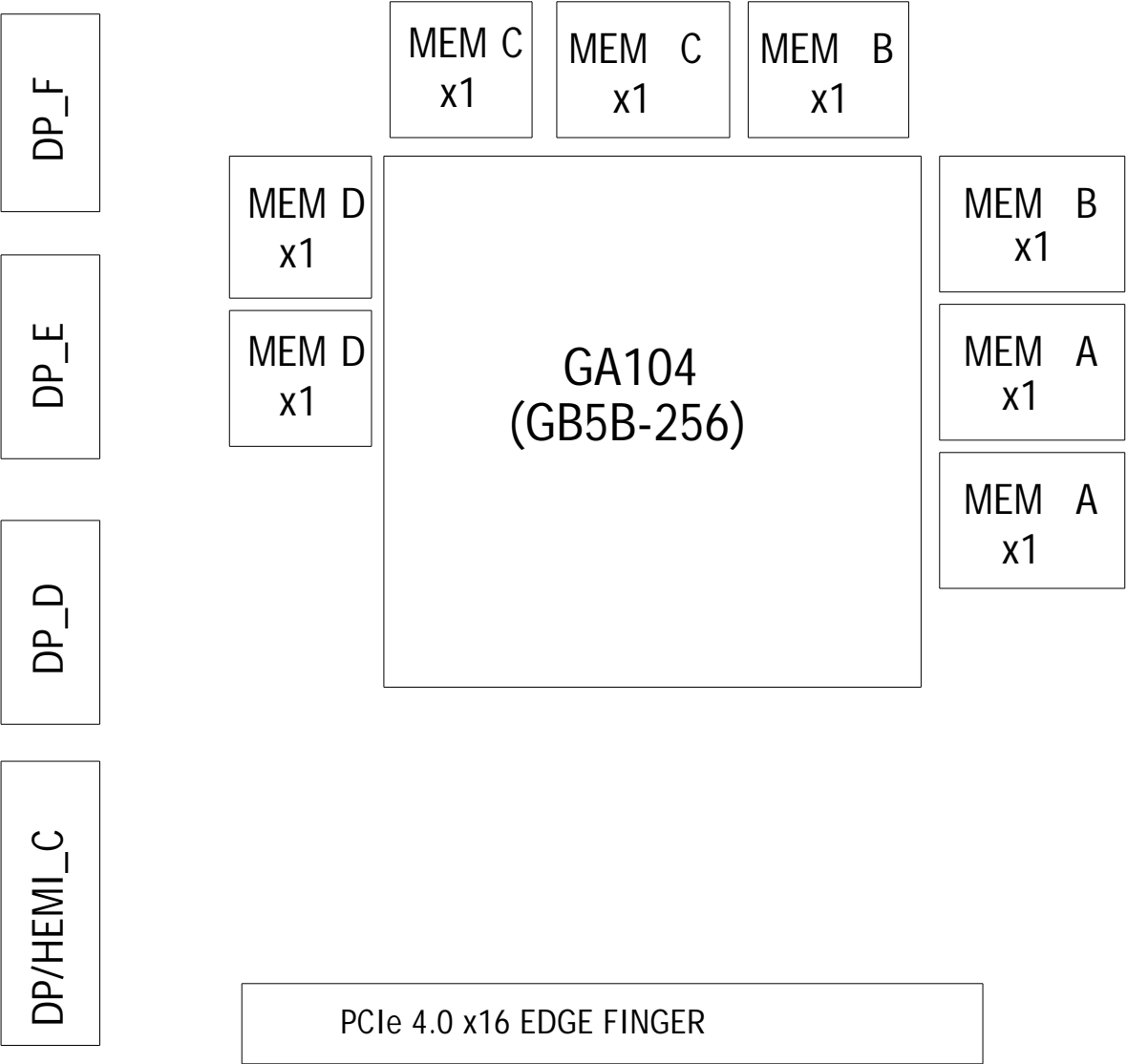
300W-500W, 256bit, GDDR6x x16 16GB

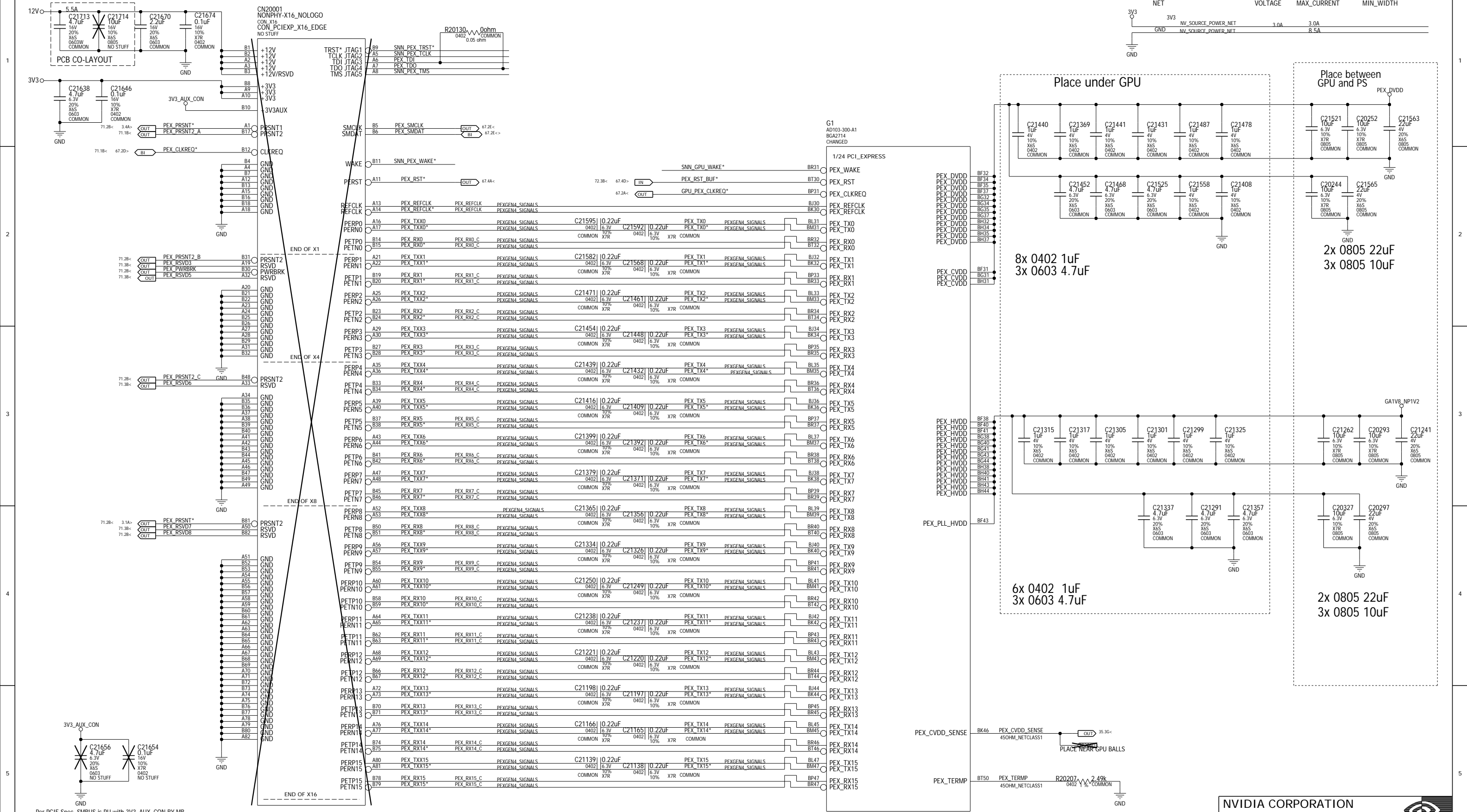
DP + DP + DP + HDMI/DP

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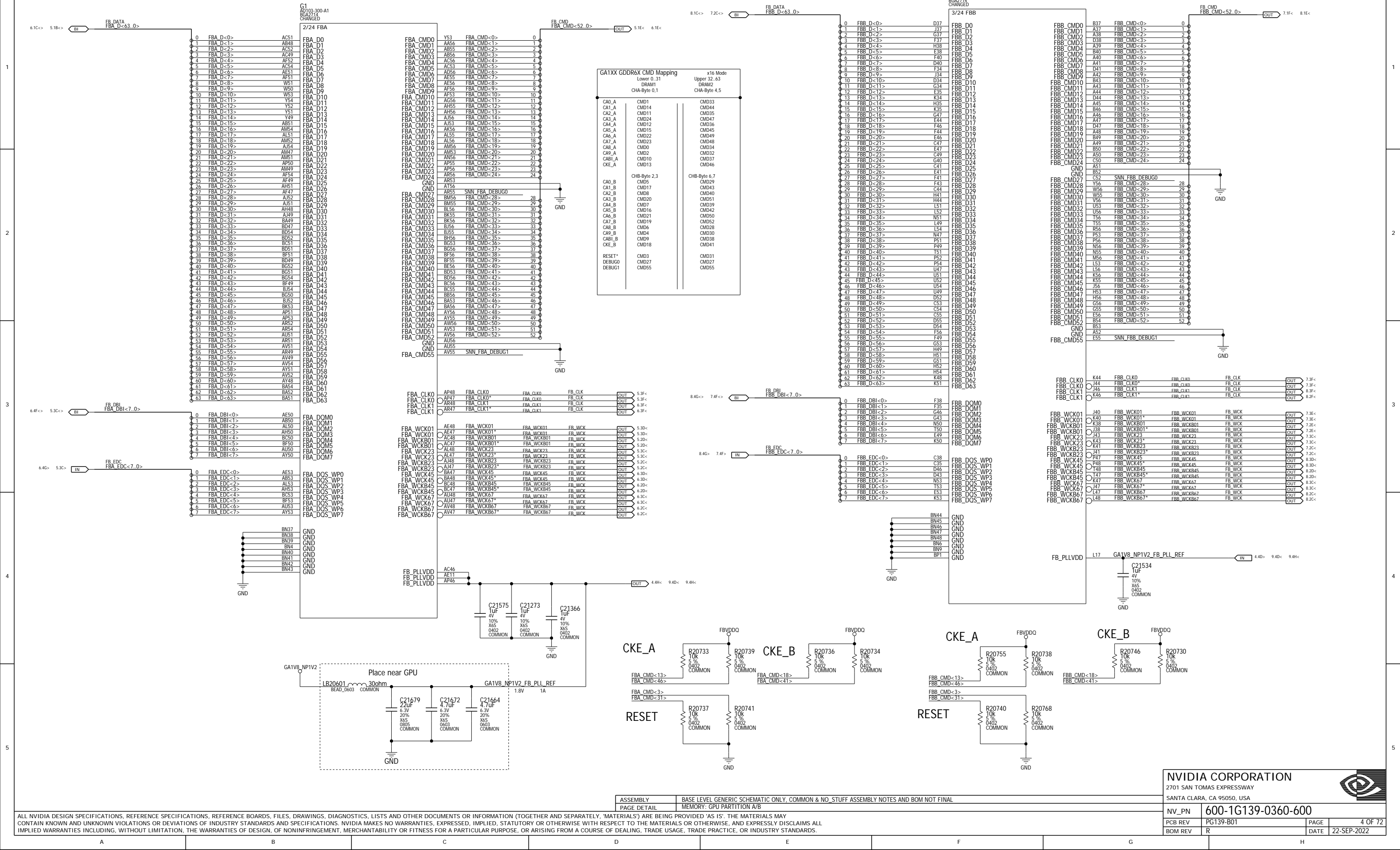
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Page 2: Block Diagram





Page 4: MEMORY: GPU Partition A/B



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NV_PN 600-1G139-0360-600

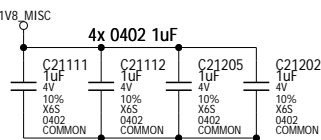
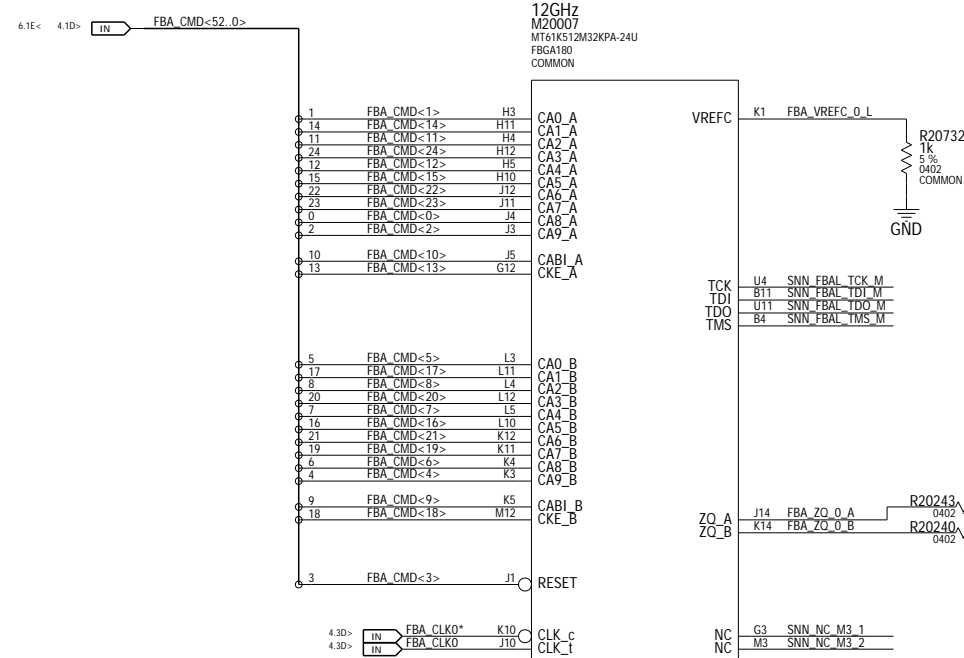
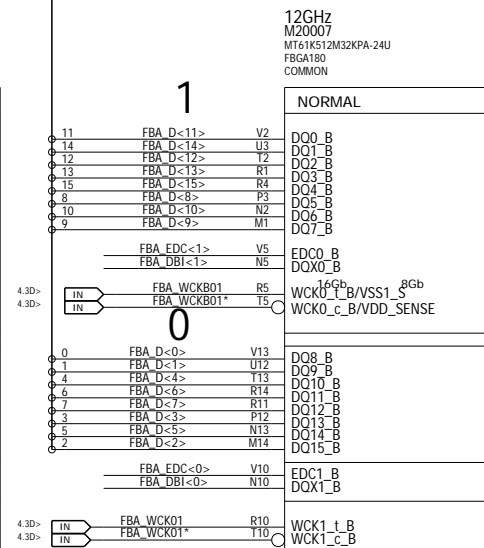
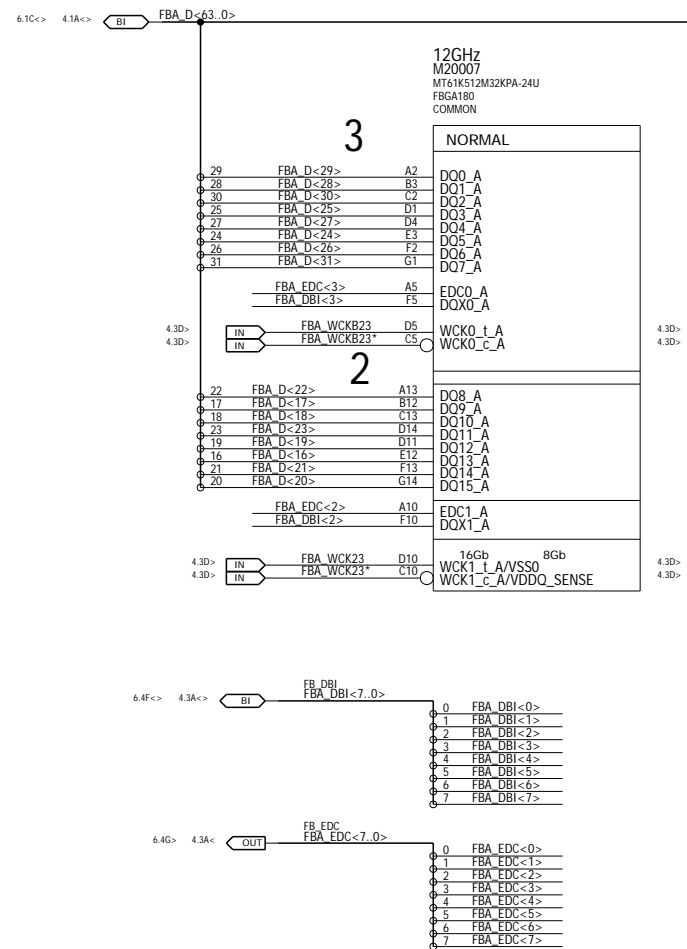
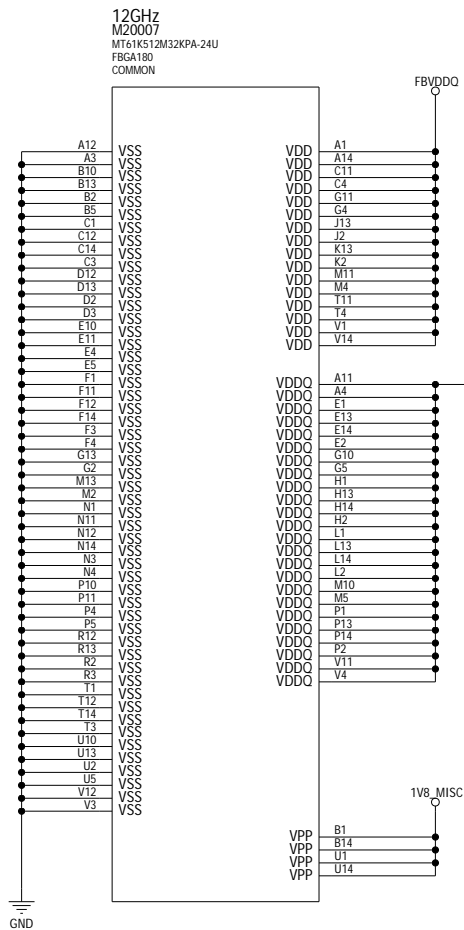
PCB REV PG139-B01

BOM REV R

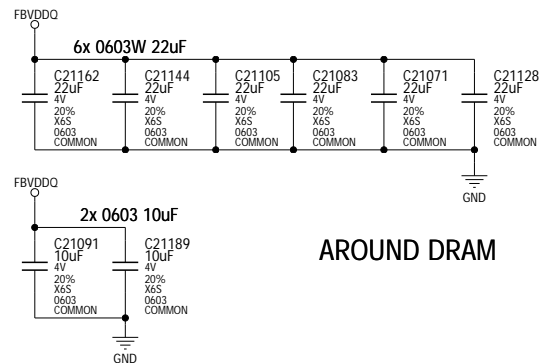
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CLOSE OR UNDER DRAM



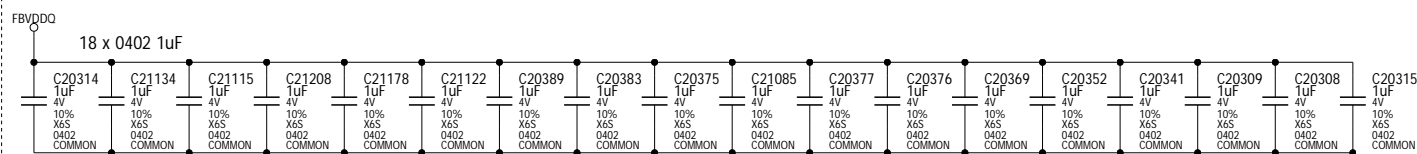
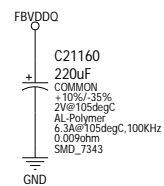
AROUND DRAM

FBVDDQ DECAP per clamshell pair:

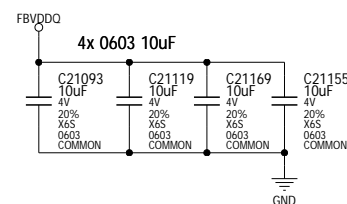
Close to DRAM:
18x 1uF 0402
4x 10uF 0603

Around DRAM:
2x 10uF 0603
6x 22uF 0603W

Need at least 2 gnd and 2 pwr vias per DECAP



CLOSE OR UNDER DRAM



4x 0603 10uF

ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	MEMORY: FBA PARTITION[31:0]

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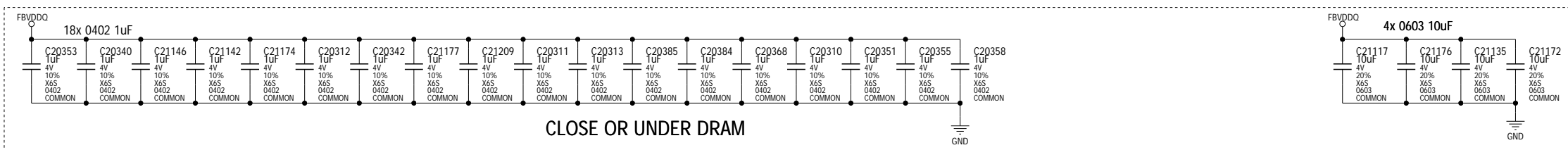
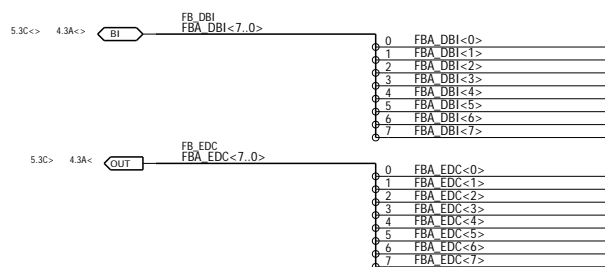
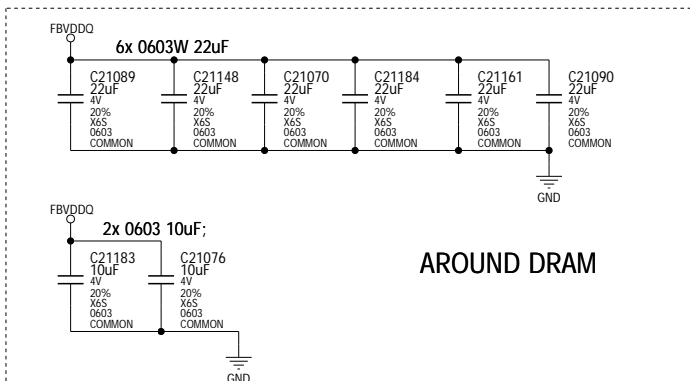
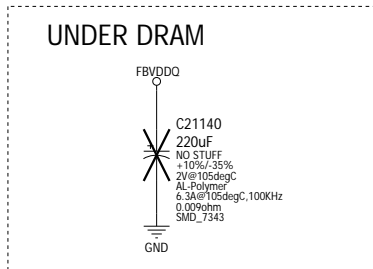
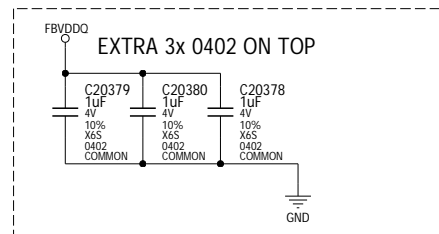
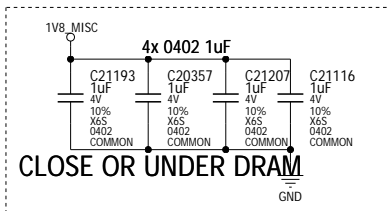
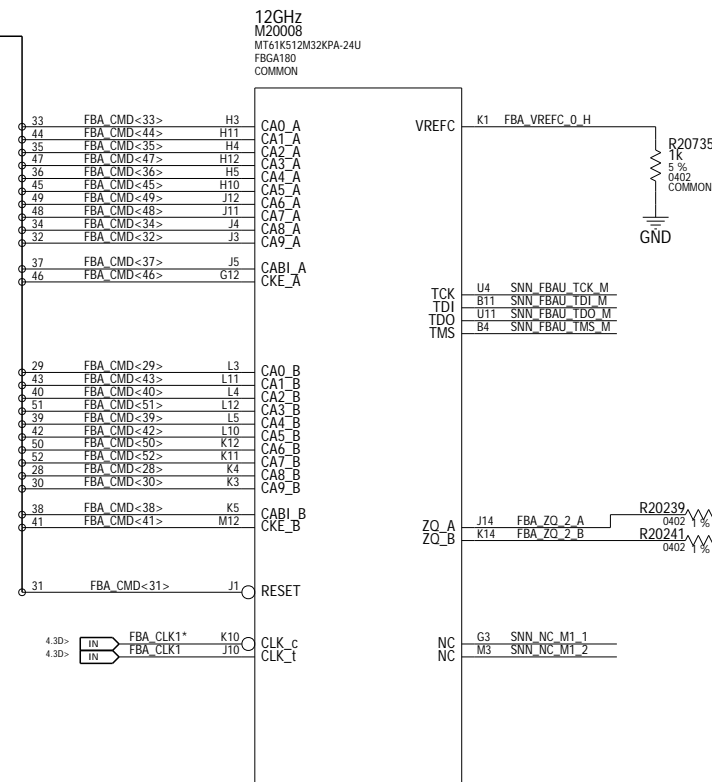
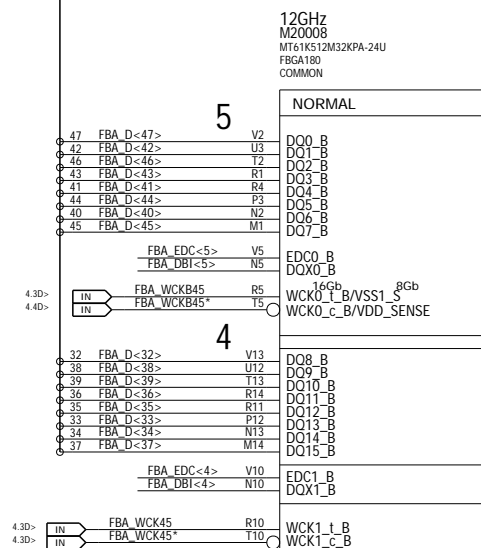
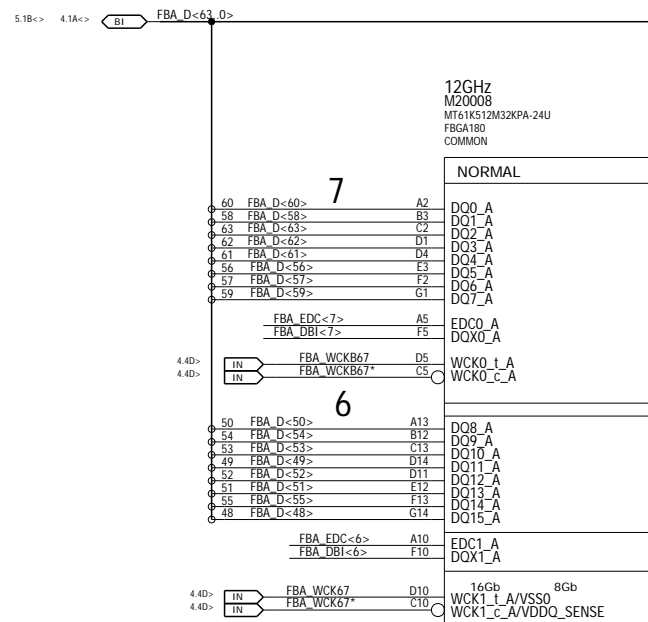
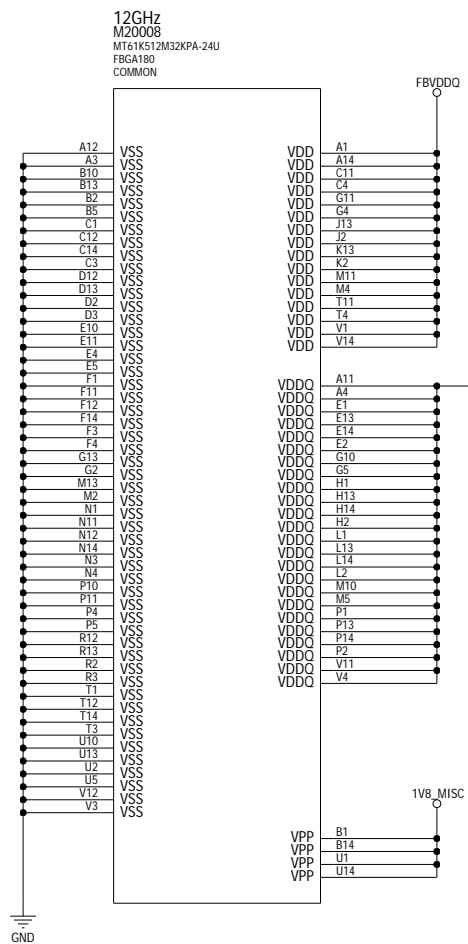
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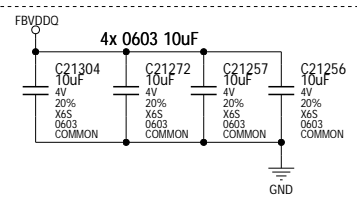
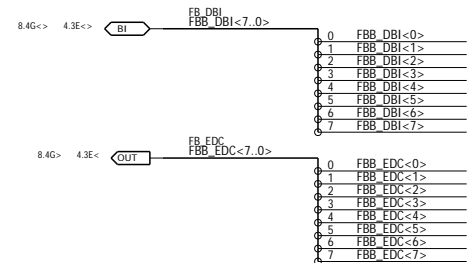
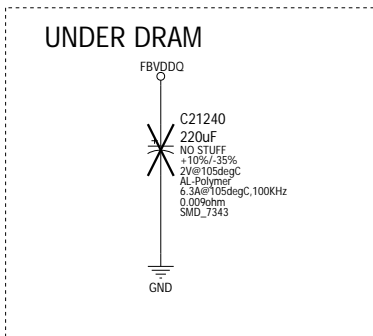
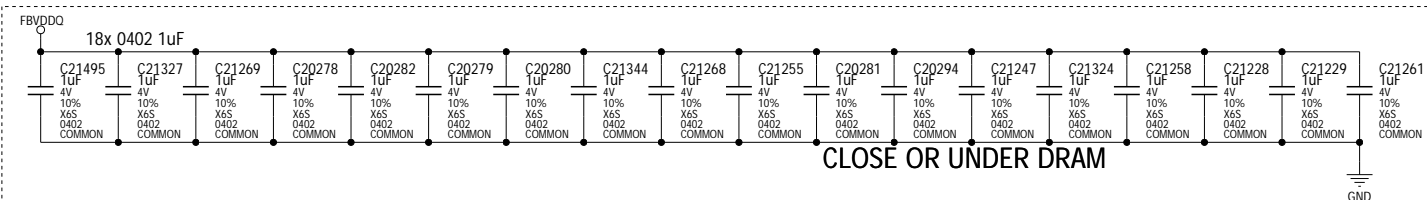
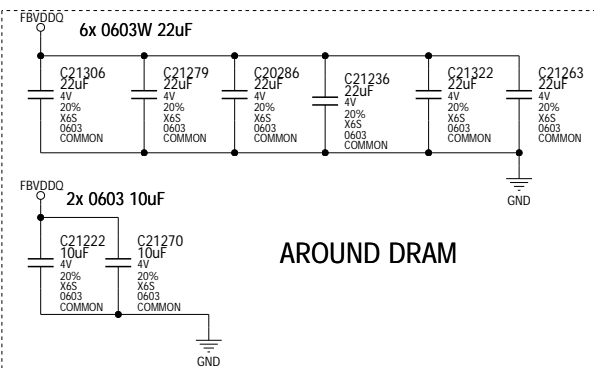
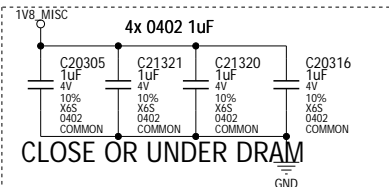
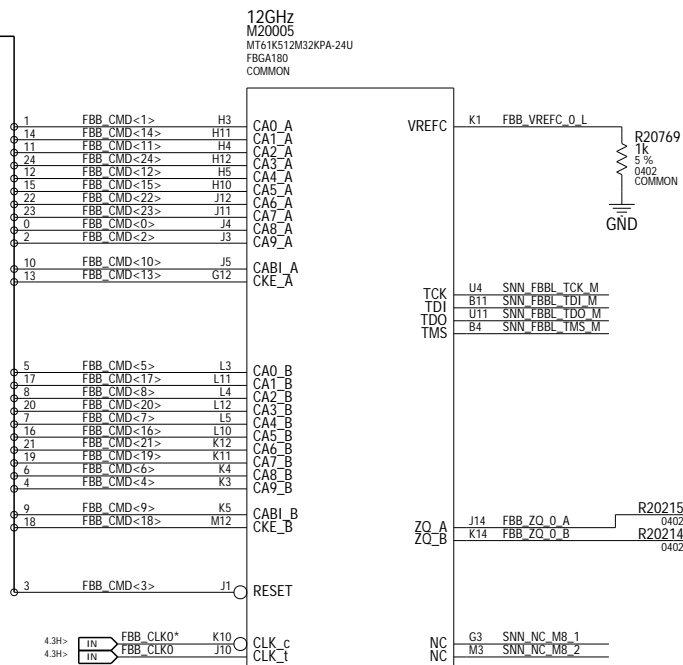
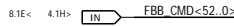
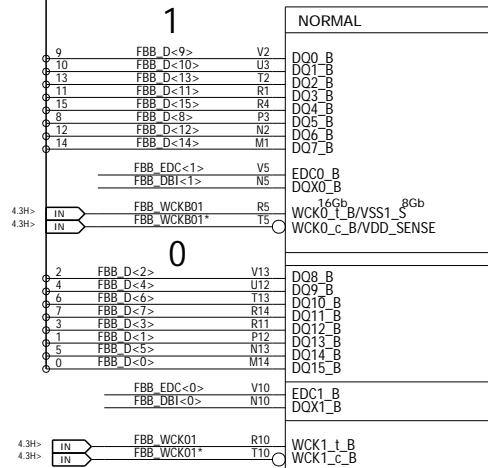
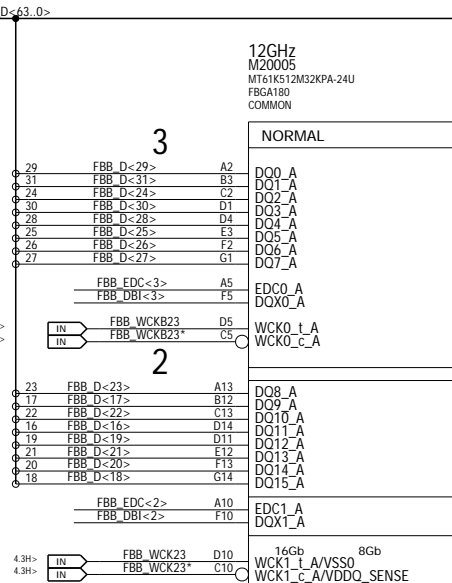
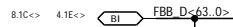
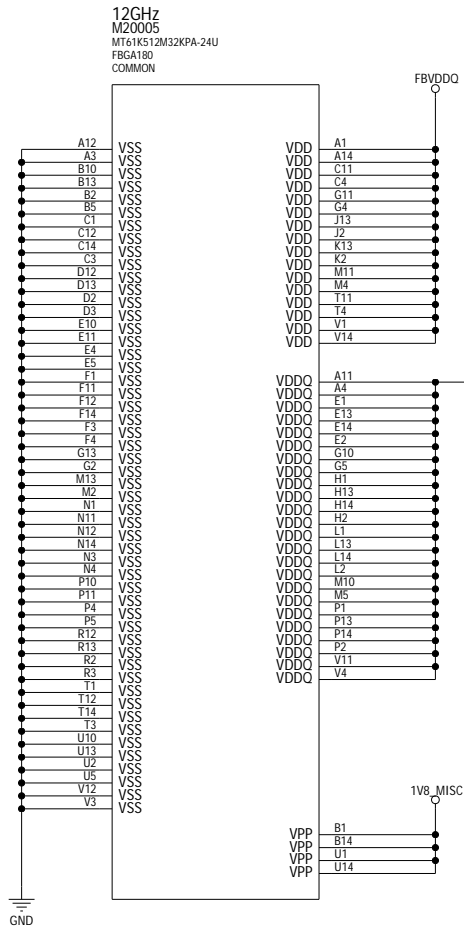




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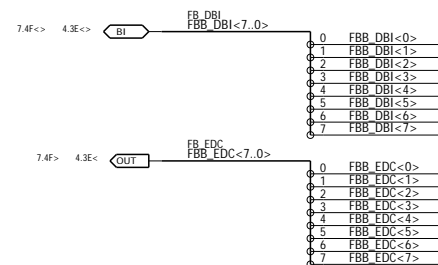
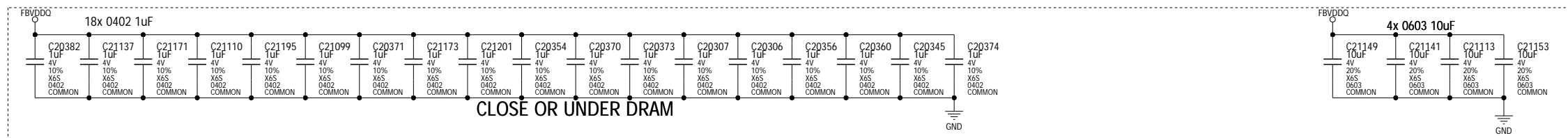
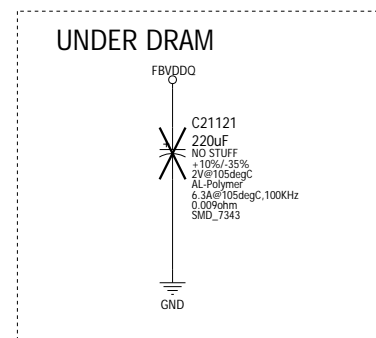
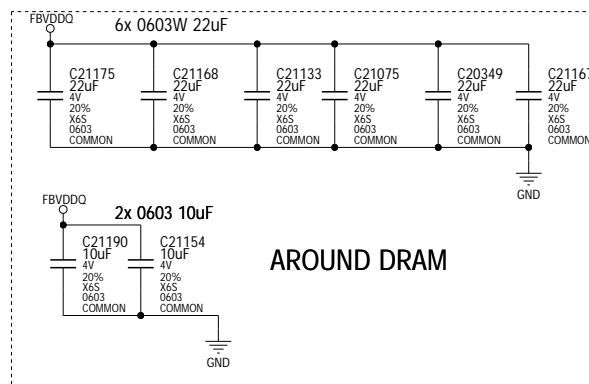
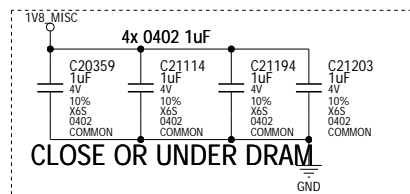
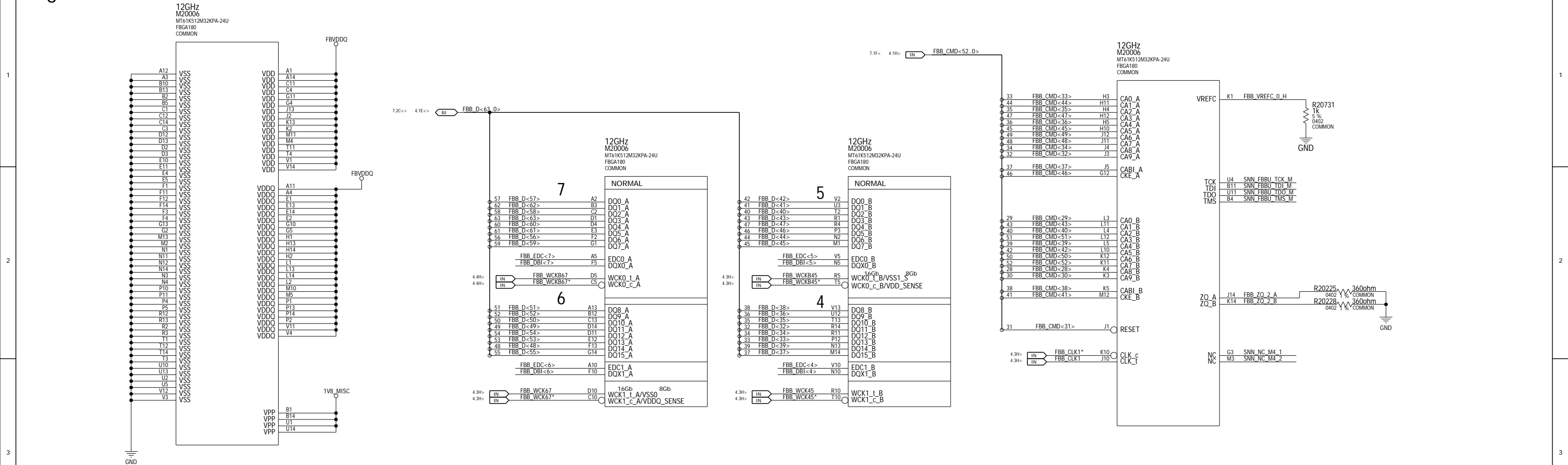
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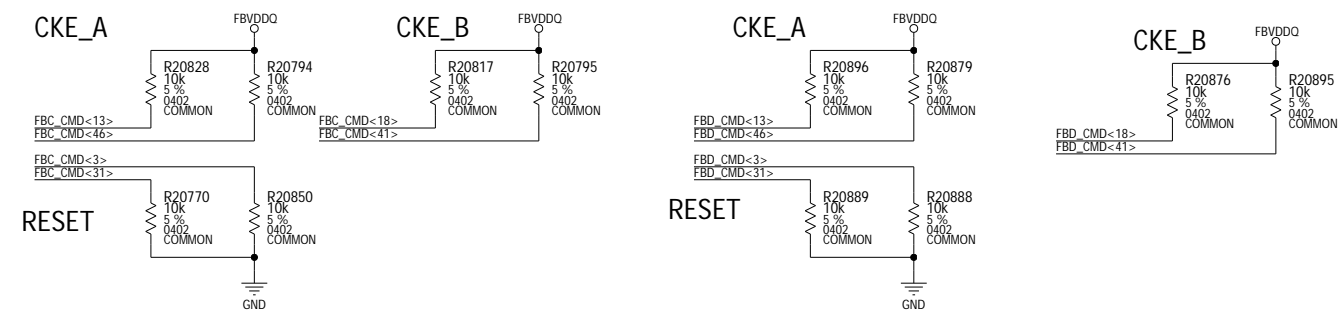
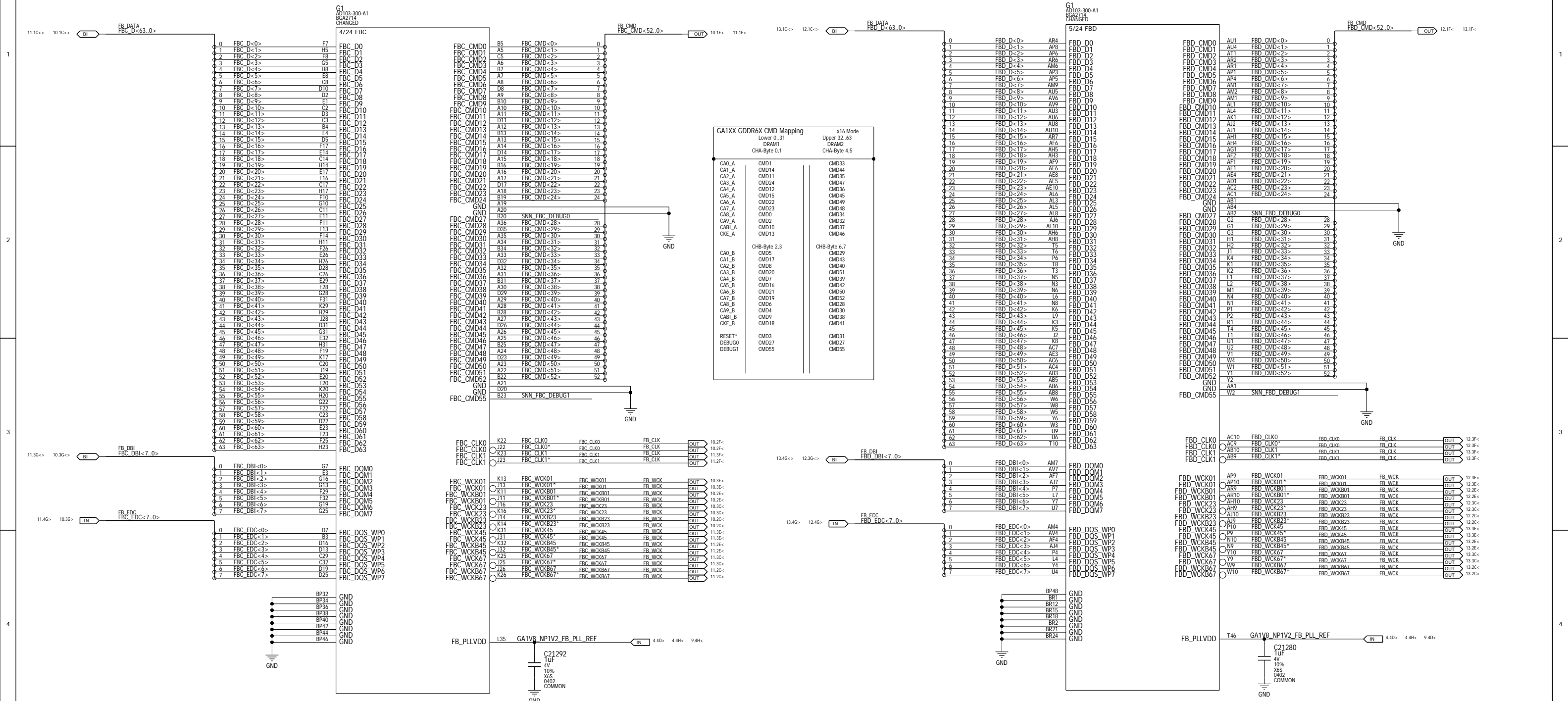
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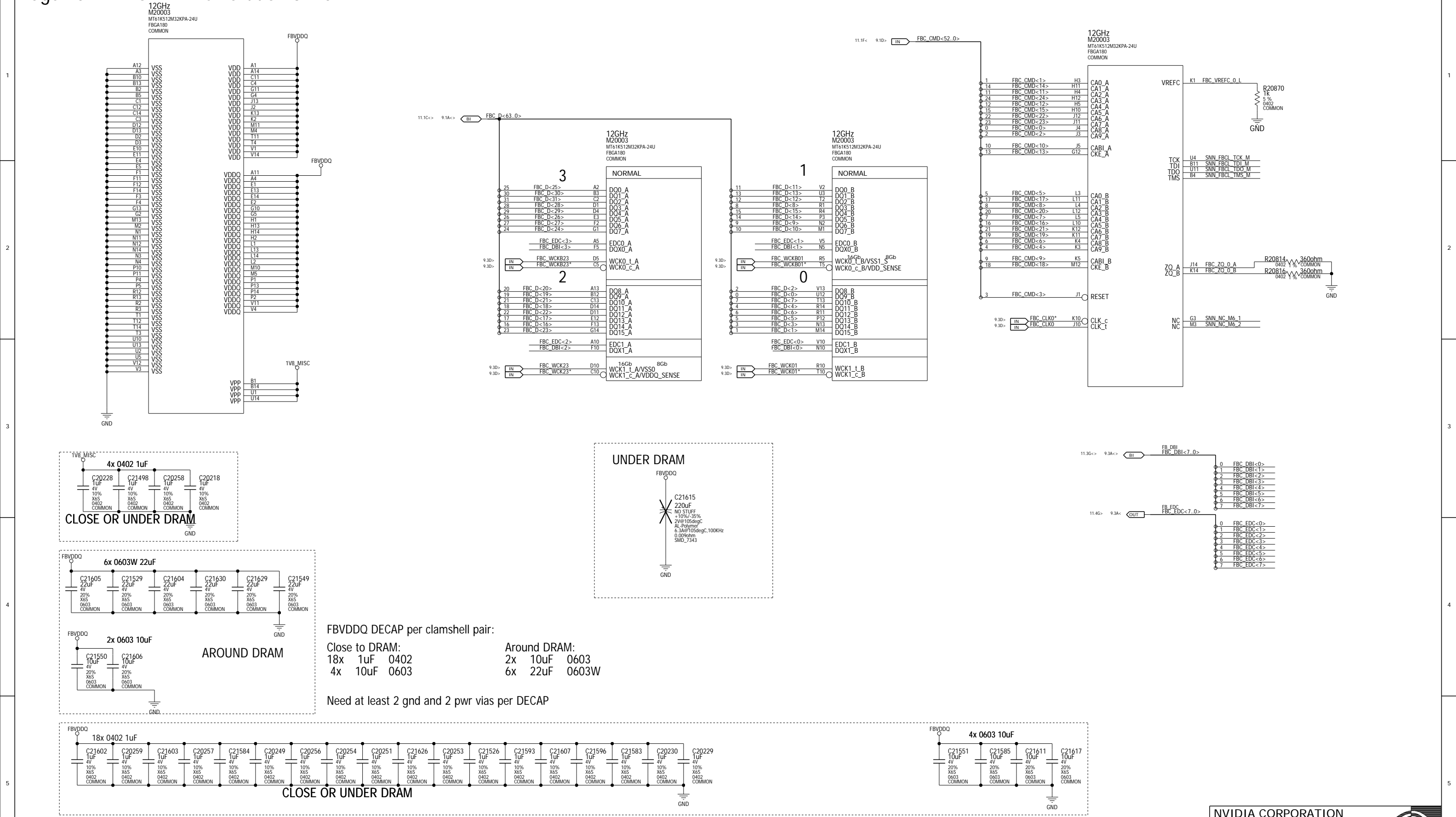




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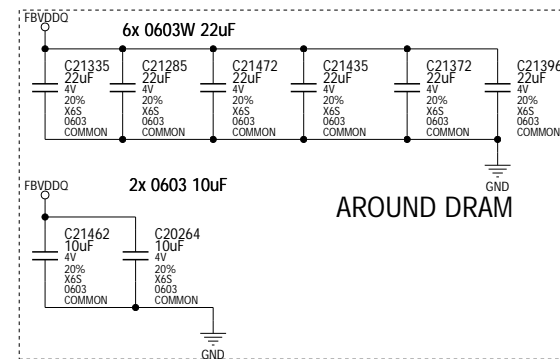
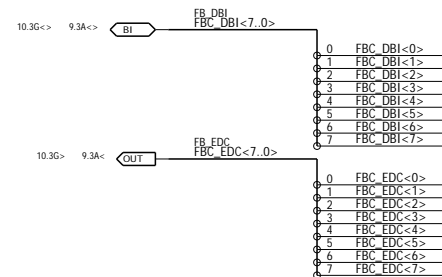
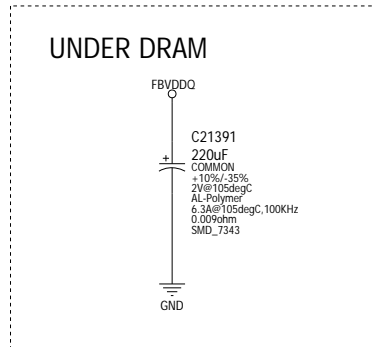
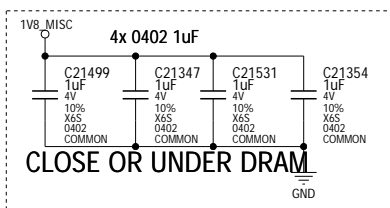
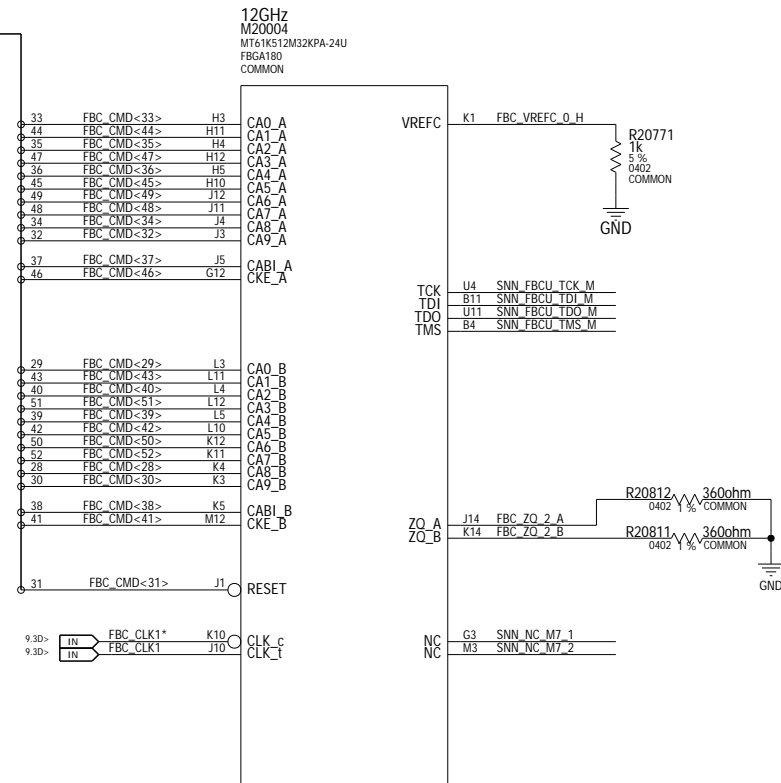
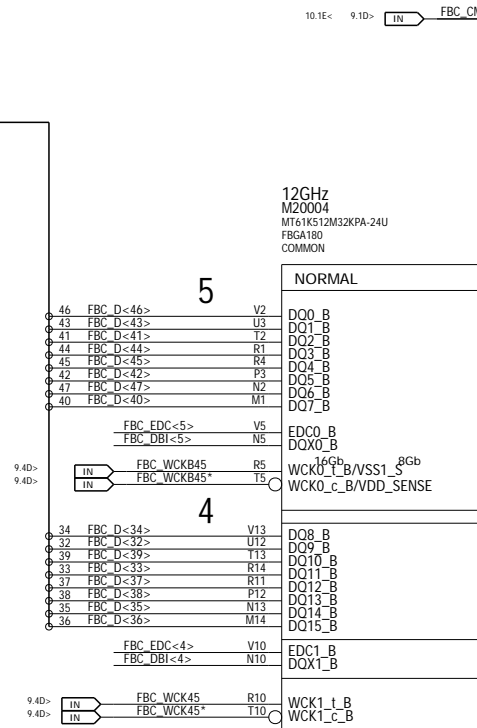
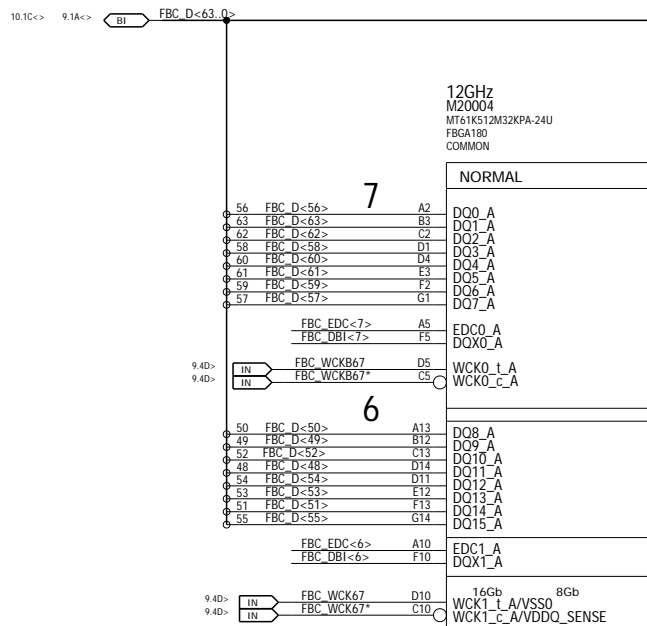
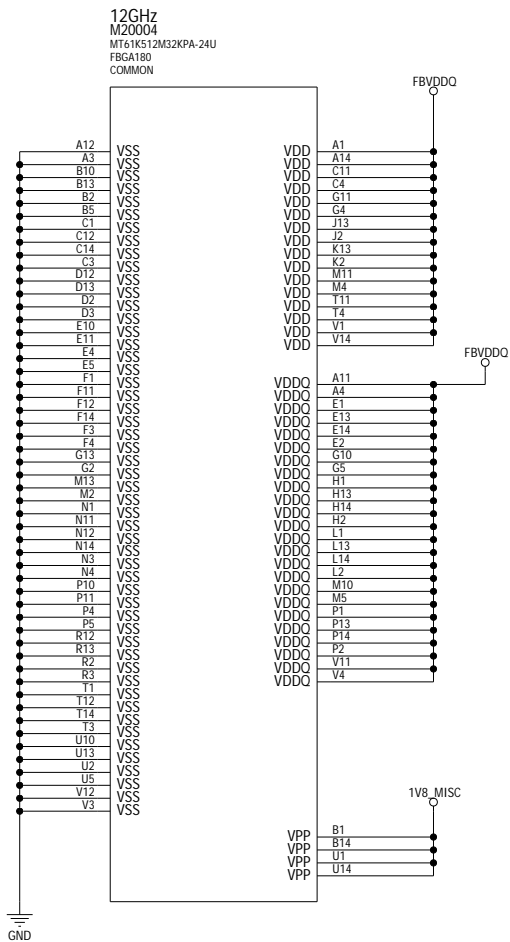




FBVDDQ DECAP per clamshell pair:

Close to DRAM:	Around DRAM:
18x 1uF 0402	2x 10uF 0603
4x 10uF 0603	6x 22uF 0603W

Need at least 2 gnd and 2 pwr vias per DECAP



FBVDDQ DECAP per clamshell pair:

Close to DRAM:

18x 1uF 0402

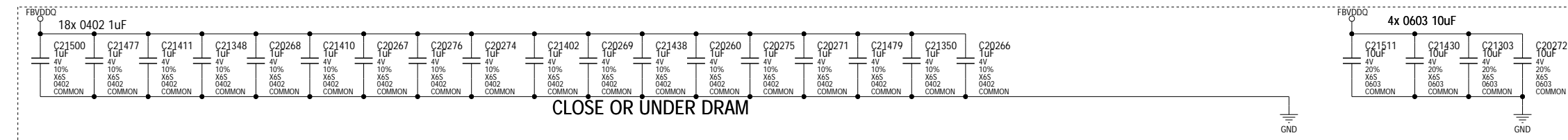
4x 10uF 0603

Around DRAM:

2x 10uF 0603

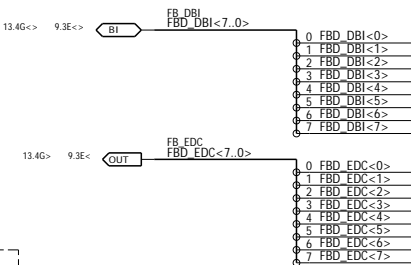
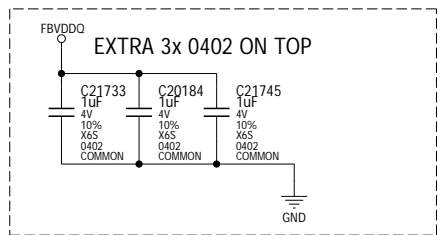
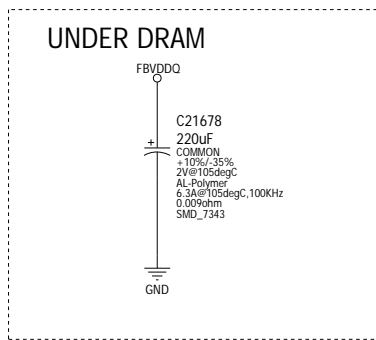
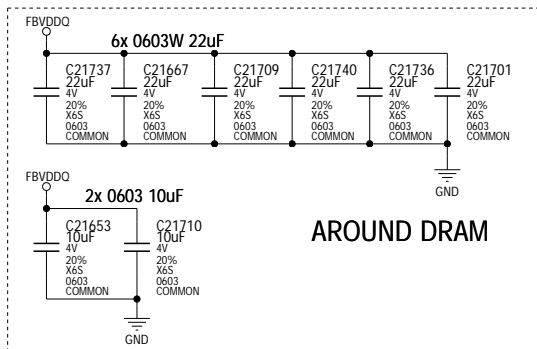
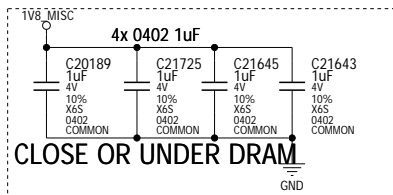
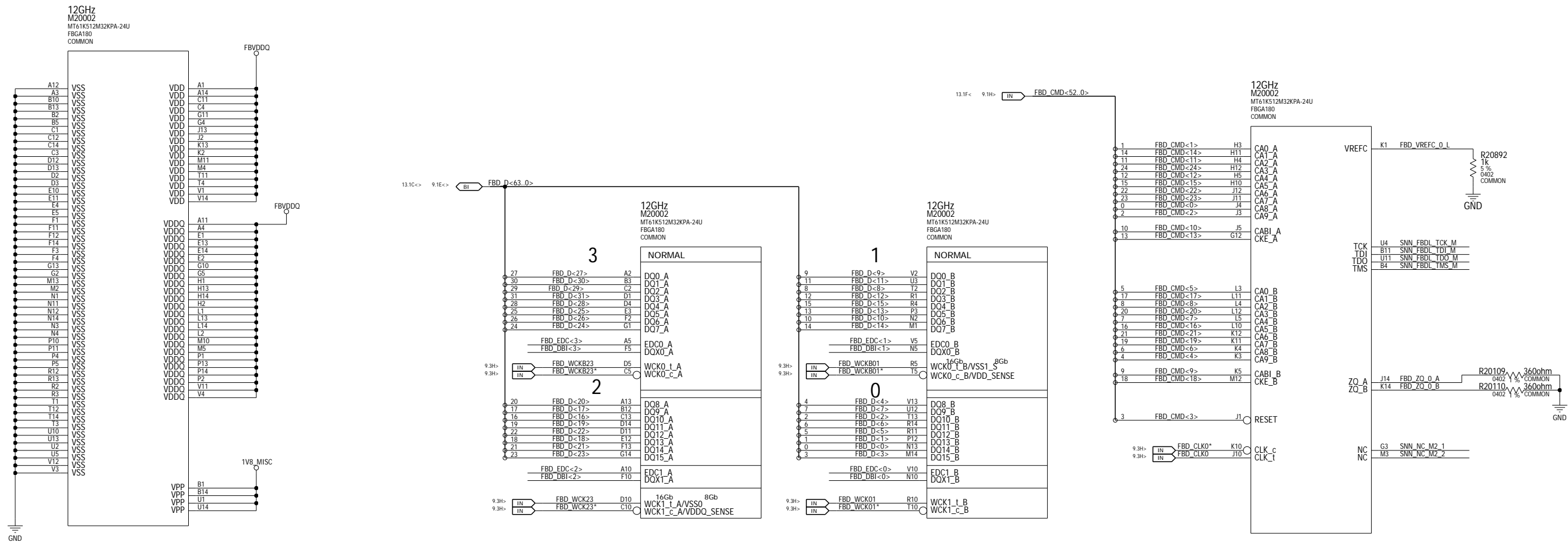
6x 22uF 0603W

Need at least 2 gnd and 2 pwr vias per DECAP



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PAGE DETAIL	MEMORY: FBC PARTITION[63:32]

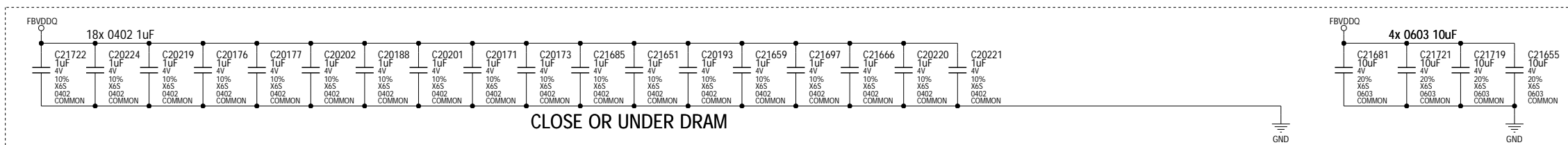
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FBVDDQ DECAP per clamshell pair:


Close to DRAM:	Around DRAM:
18x 1uF 0402	2x 10uF 0603
4x 10uF 0603	6x 22uF 0603W

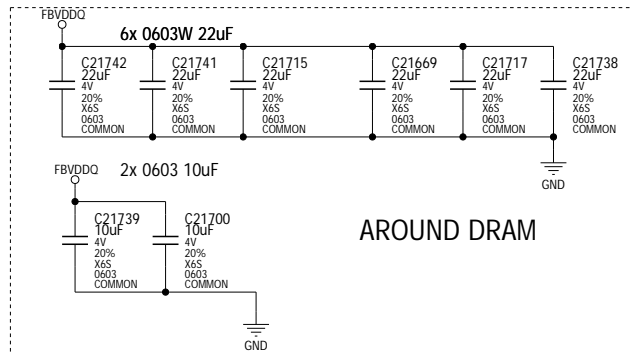
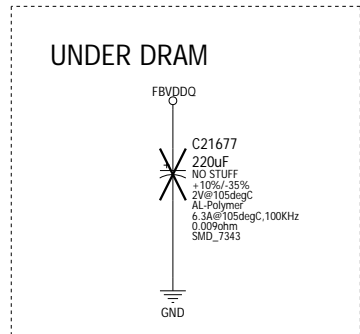
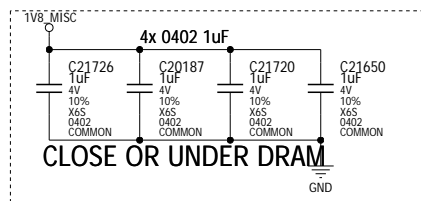
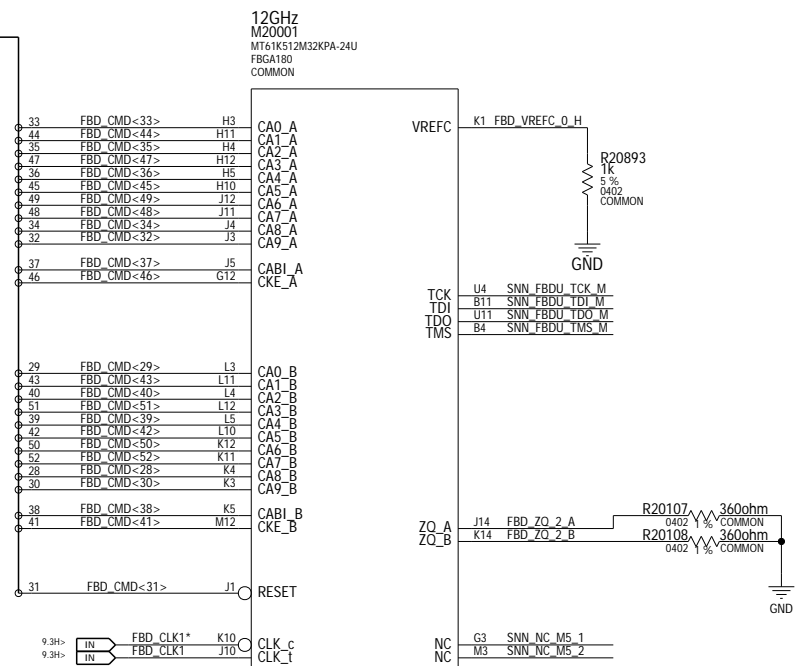
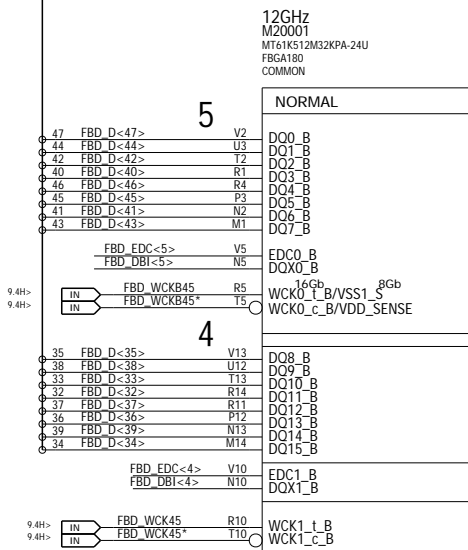
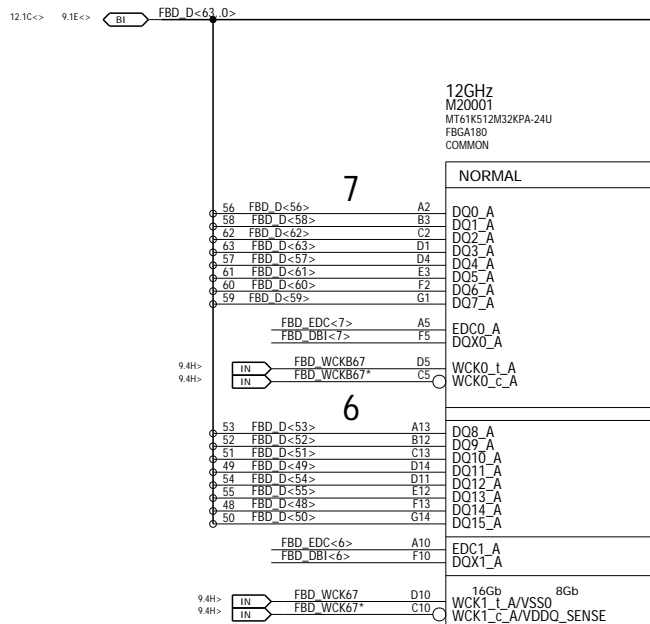
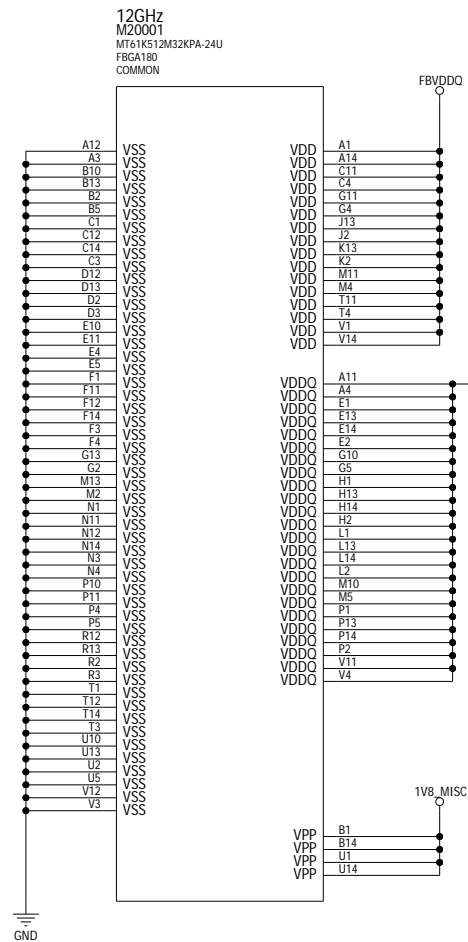
Need at least 2 gnd and 2 pwr vias per DECAP



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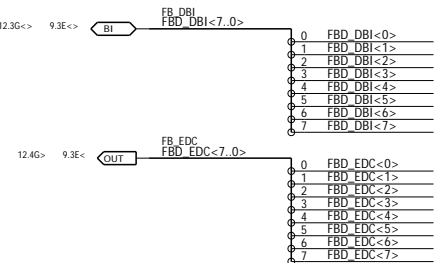
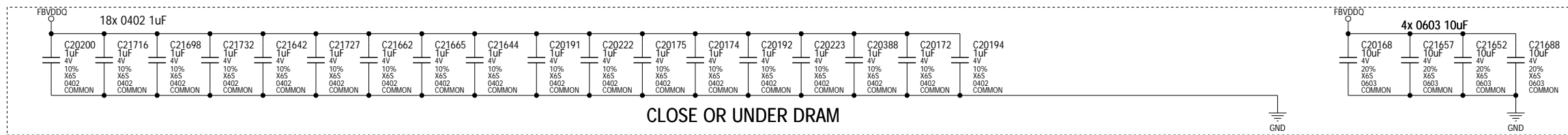
NVIDIA CORPORATION 2701 SAN TOMAS EXPRESSWAY SANTA CLARA, CA 95050, USA				
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FBVDDQ DECAP per clamshell pair:

Close to DRAM:			Around DRAM:		
18x	1uF	0402	2x	10uF	0603
4x	10uF	0603	6x	22uF	0603W

Need at least 2 gnd and 2 pwr vias per DECAP



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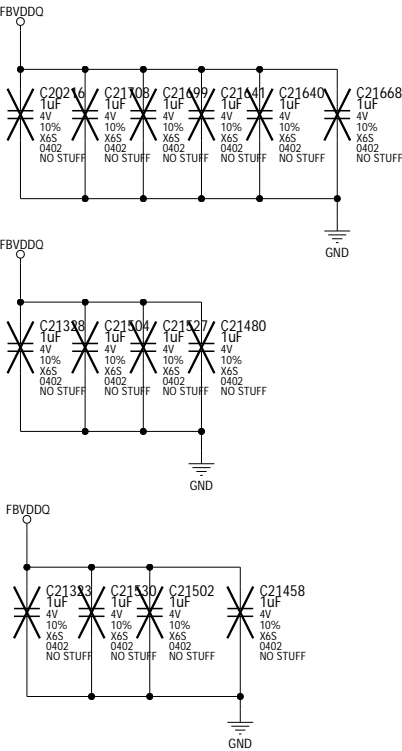
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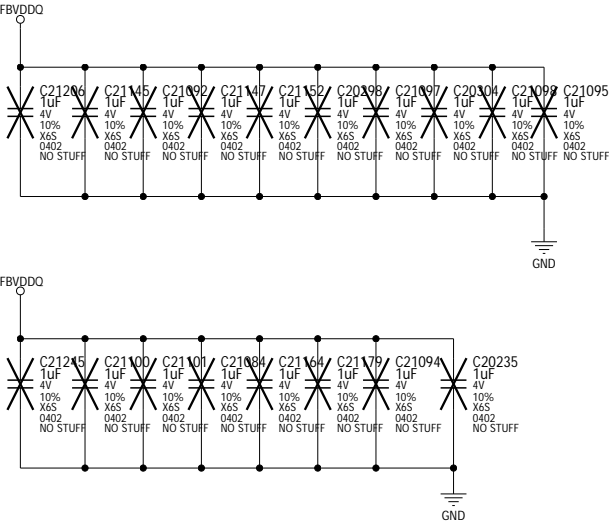
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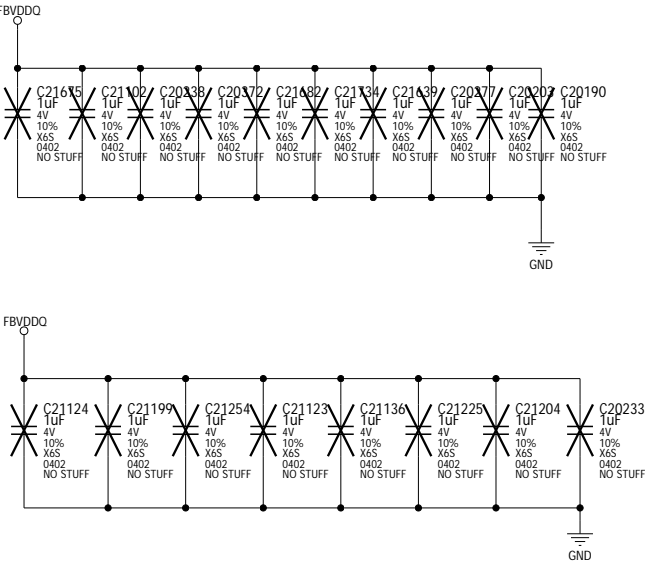
PER SI REQUIREMENT, RESERVE MORE 0402 1UF AROUND DRAM



PLACE AROUND WEST DRAM



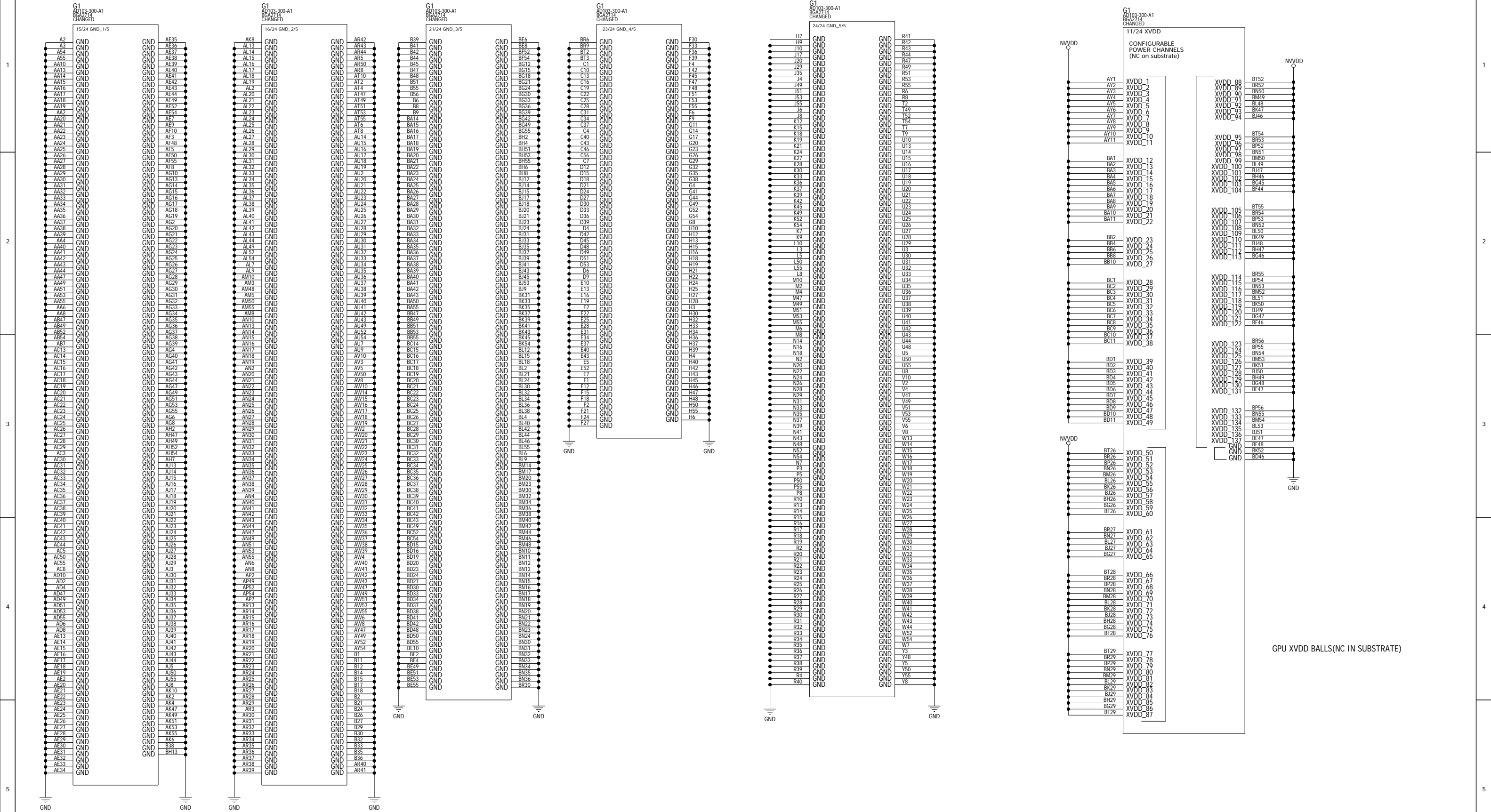
PLACE AROUND EAST DRAM



PLACE NORTH DRAM

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Page20: GPU: GND, NC



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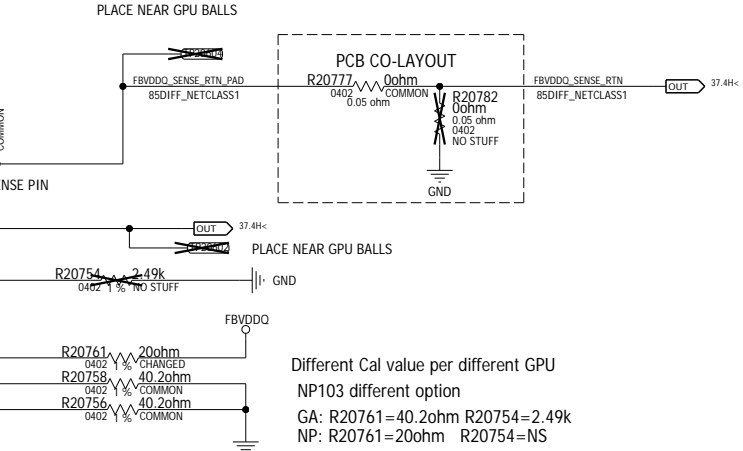
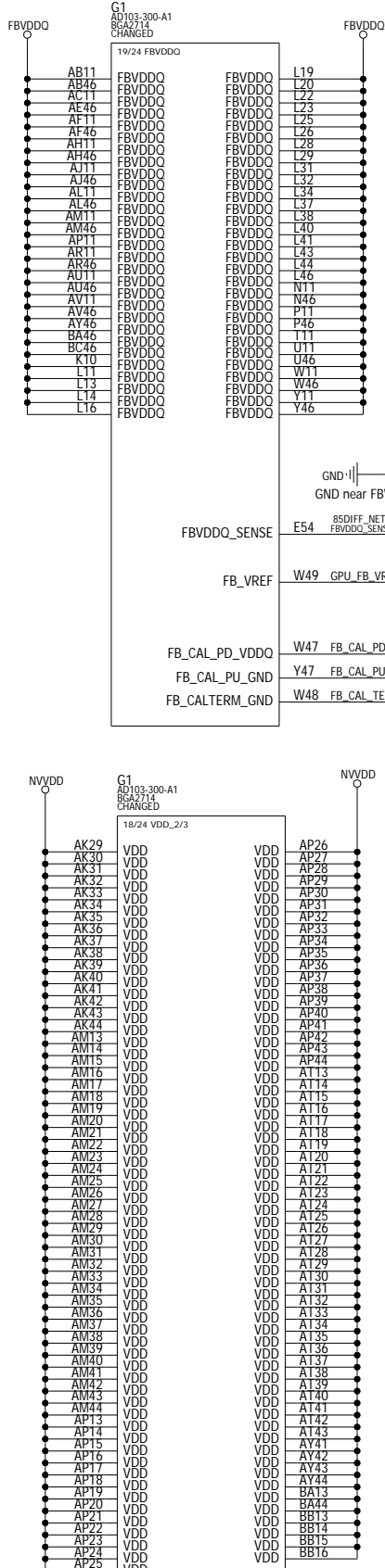
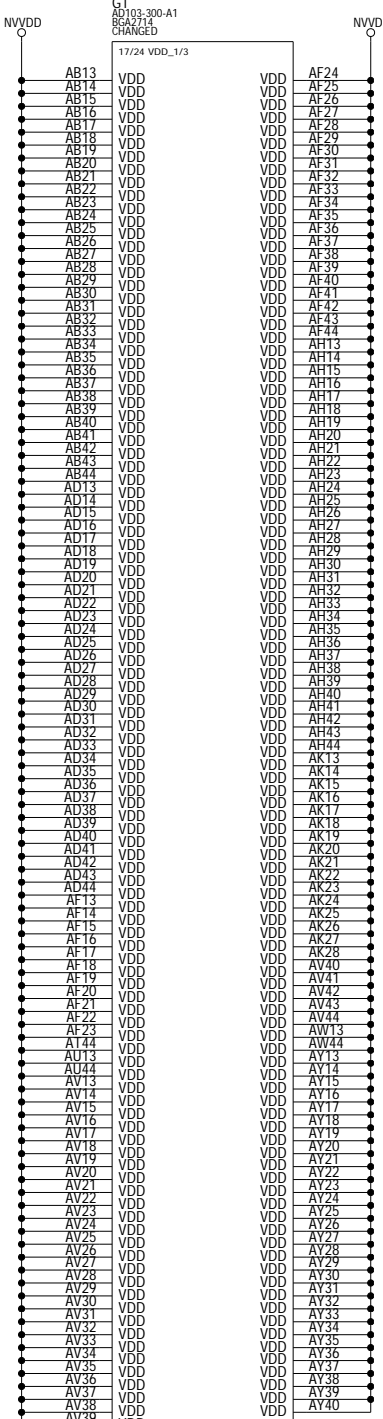
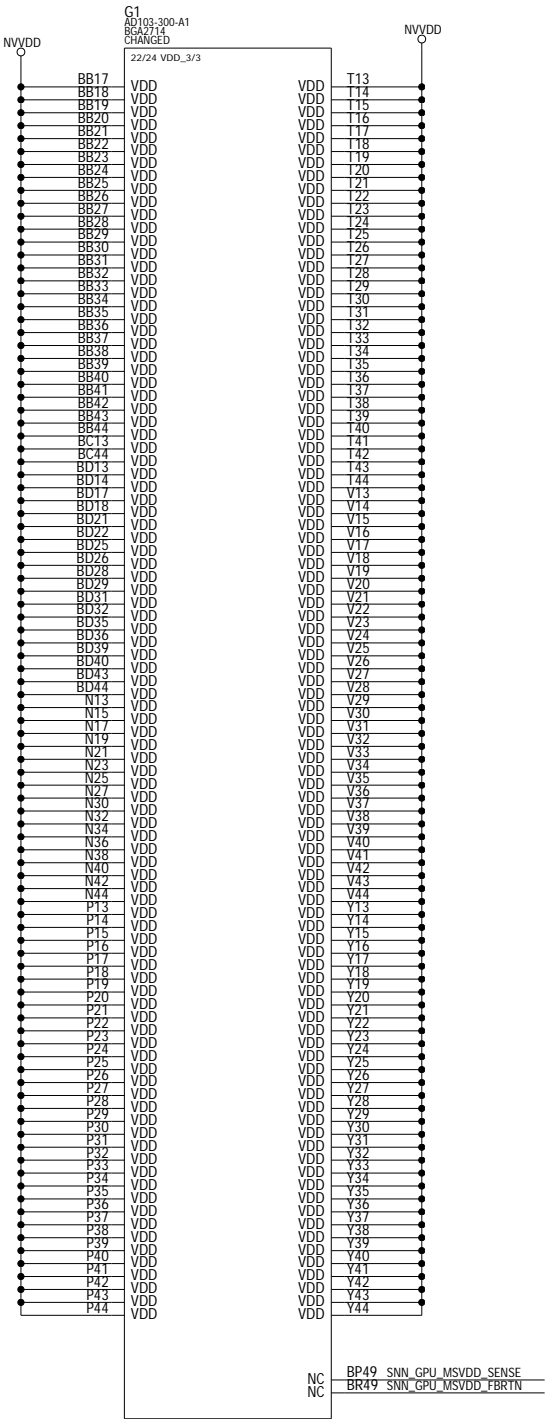
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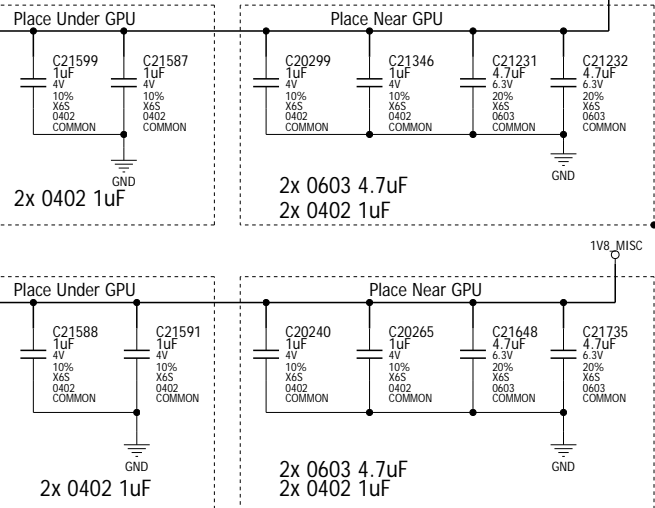
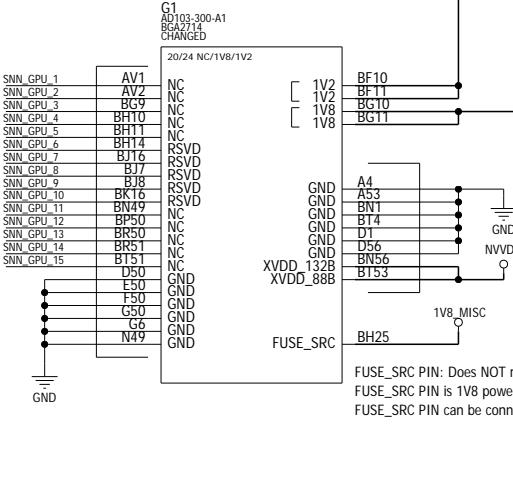
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PENDING CONNECTIONS TO OPTIMIZE POWER CHANNEL

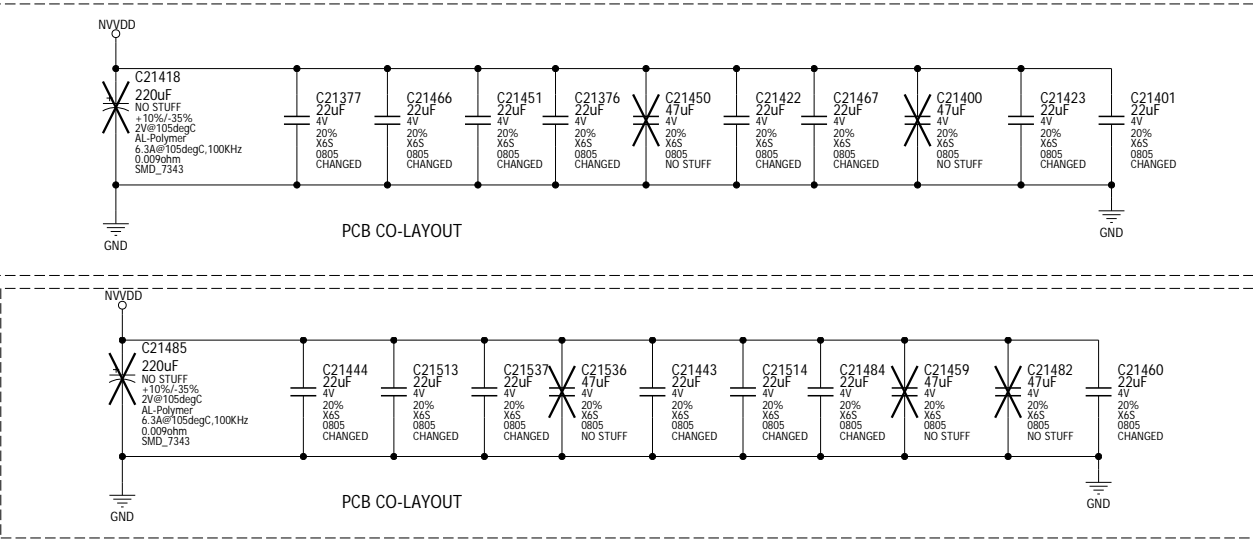
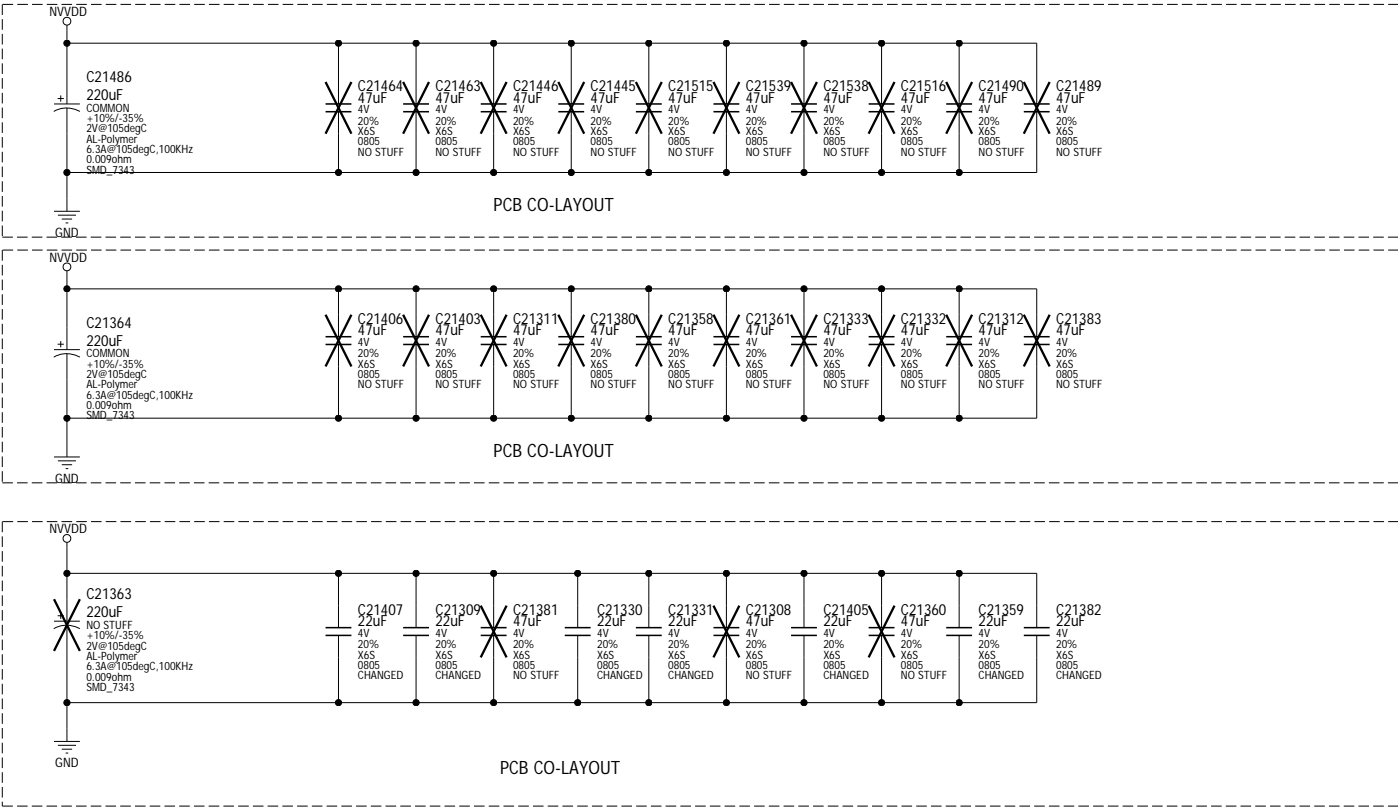


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PAGE DETAIL	GPU: GPU POWER

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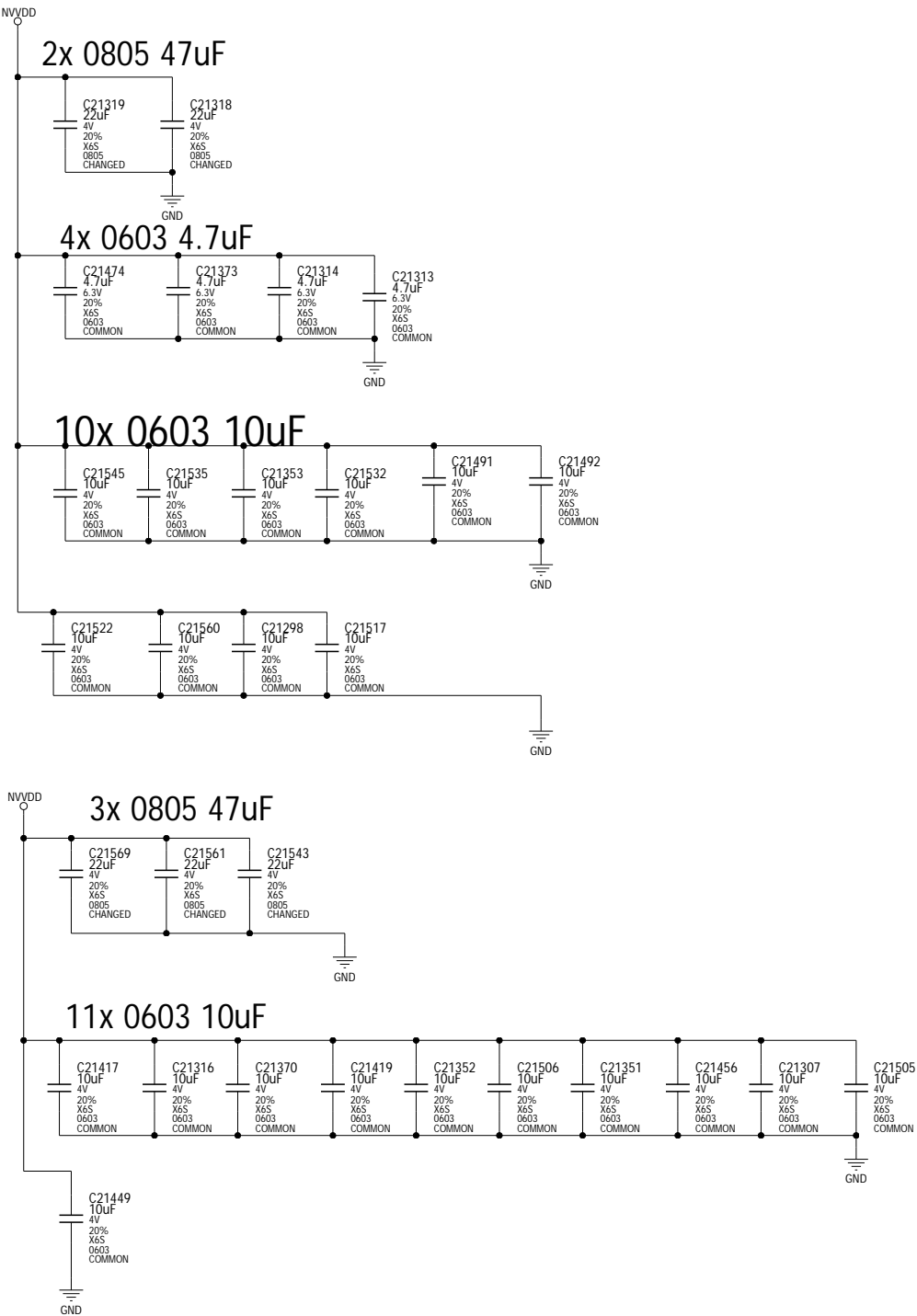
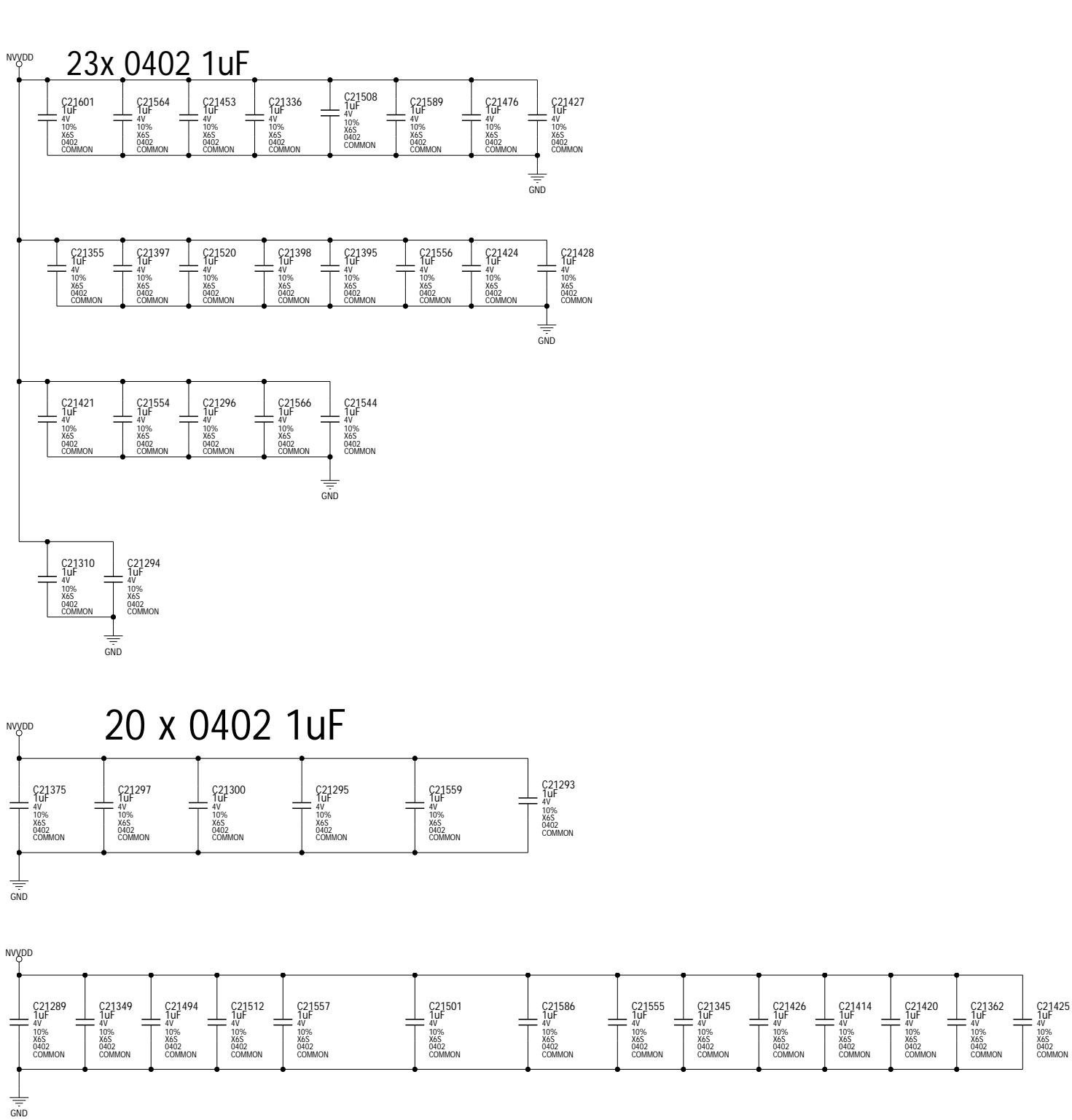
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NVVDD UNDER GPU



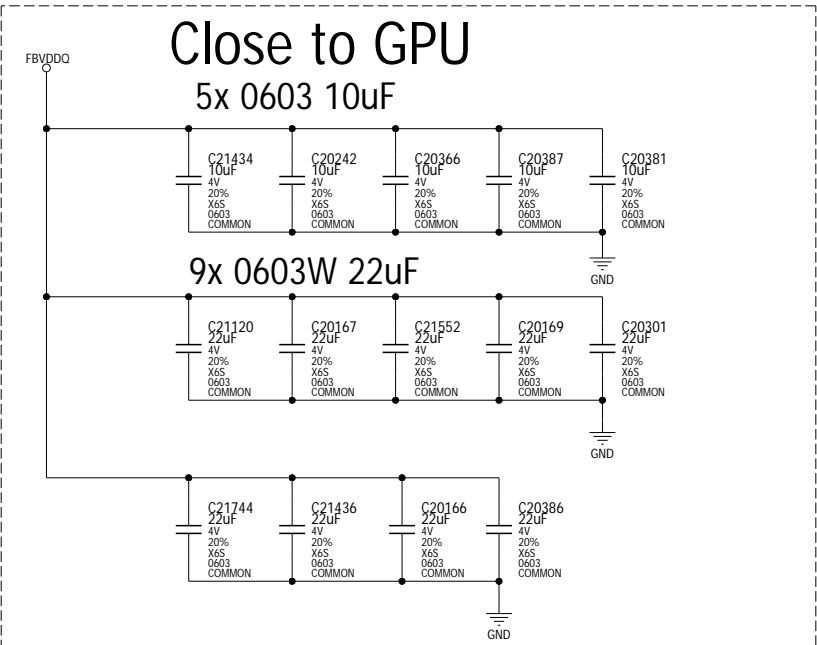
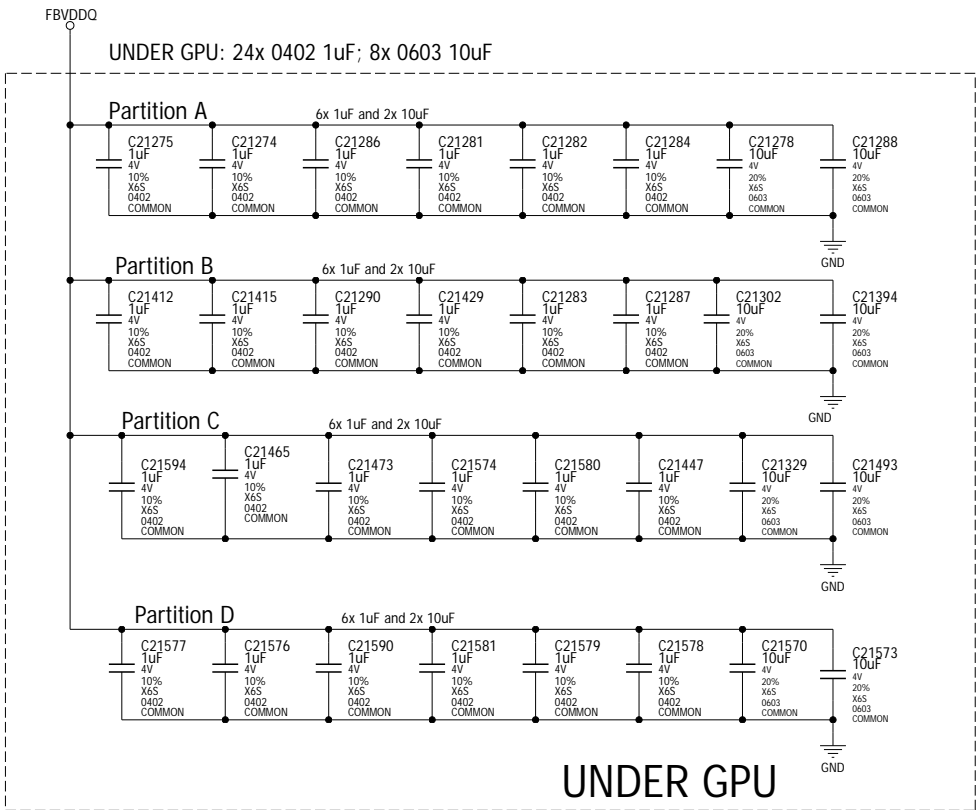
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NVVDD UNDER GPU



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FBVDDQ



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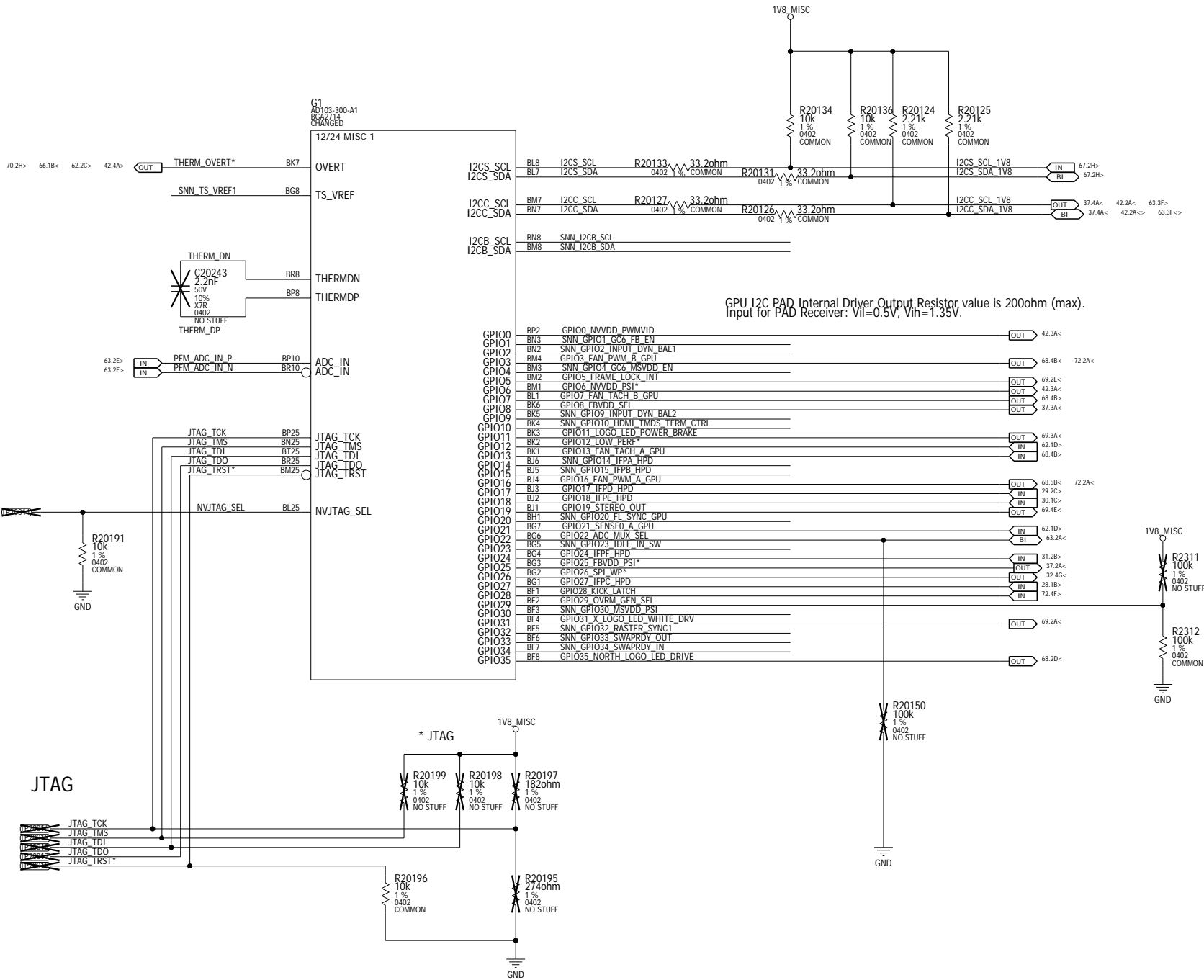
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GPIO29=L, OVRM Gen1
GPIO29=H, OVRM Gen2

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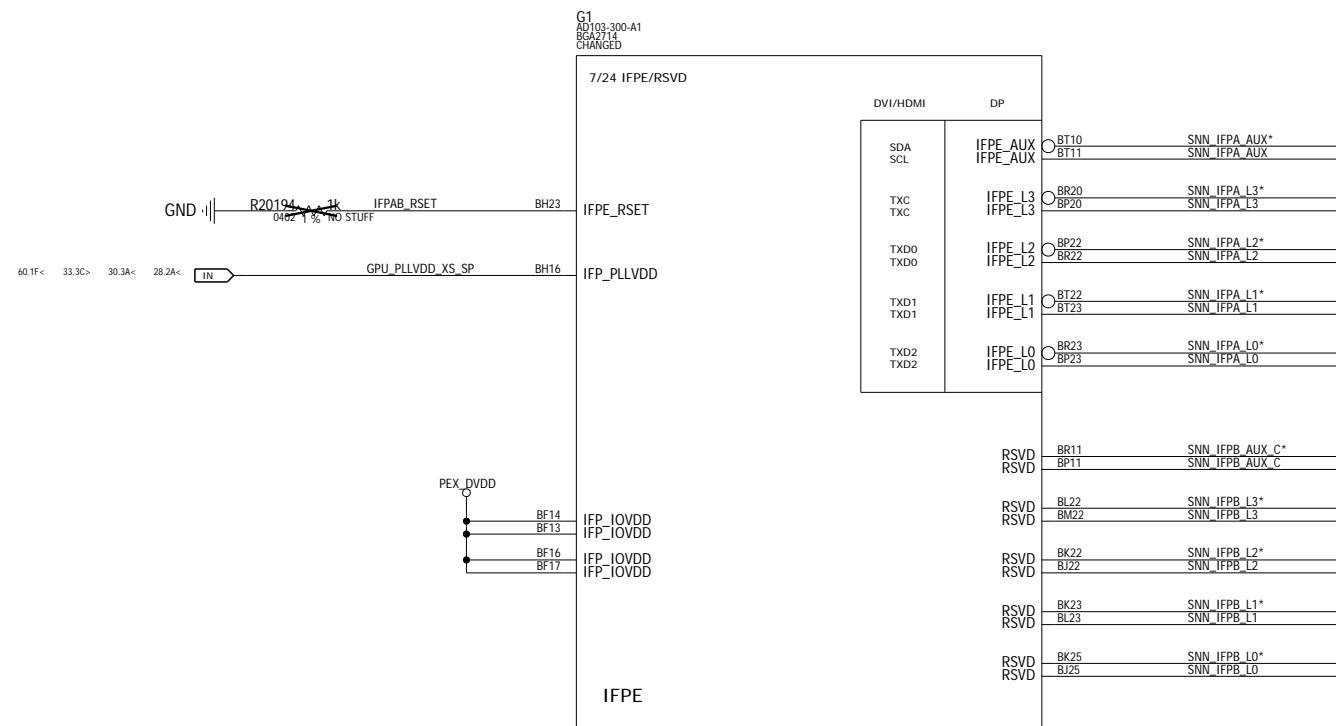
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PAGE DETAIL	IFPA&IFPB UNUSED,NP IFPE

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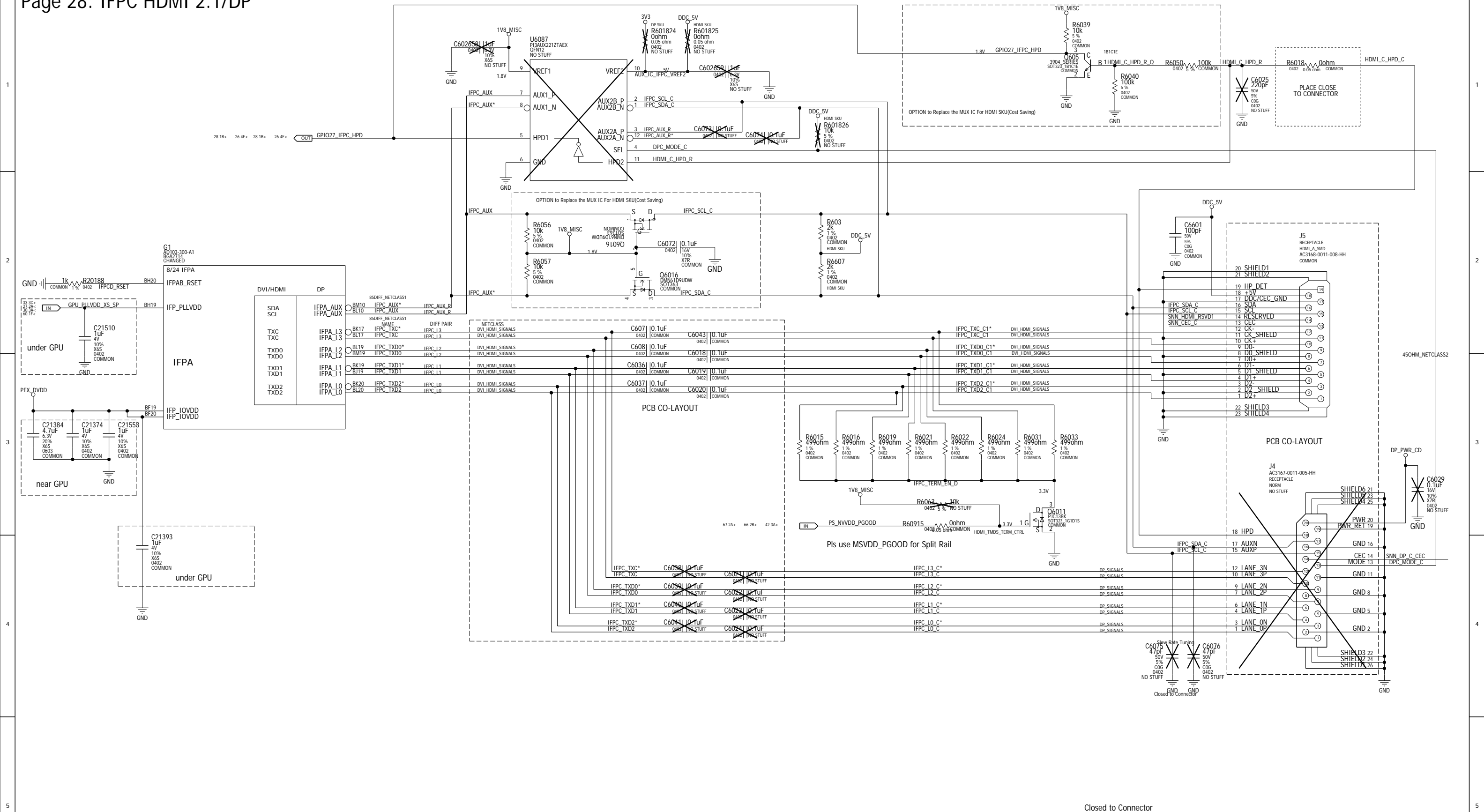
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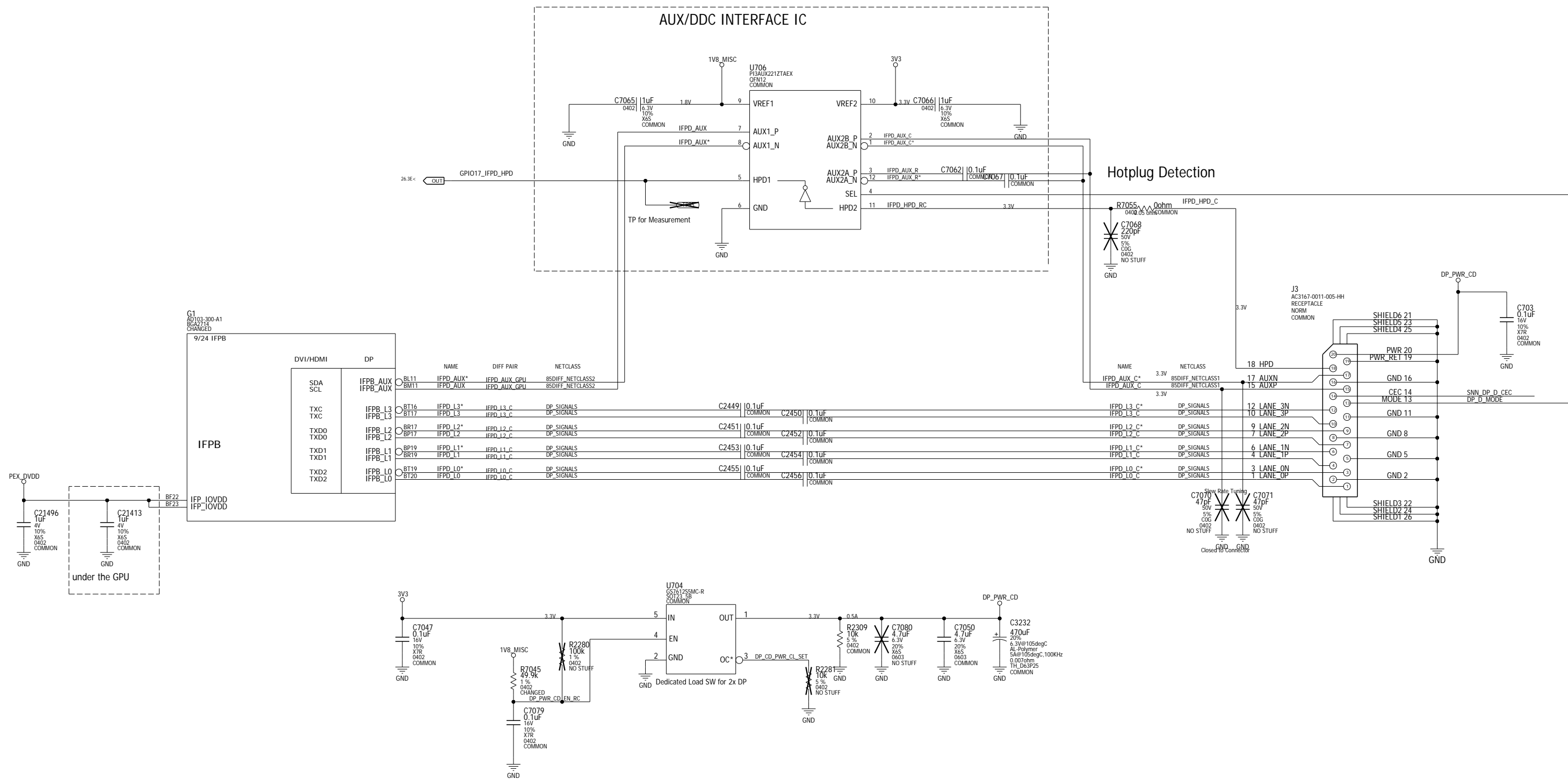
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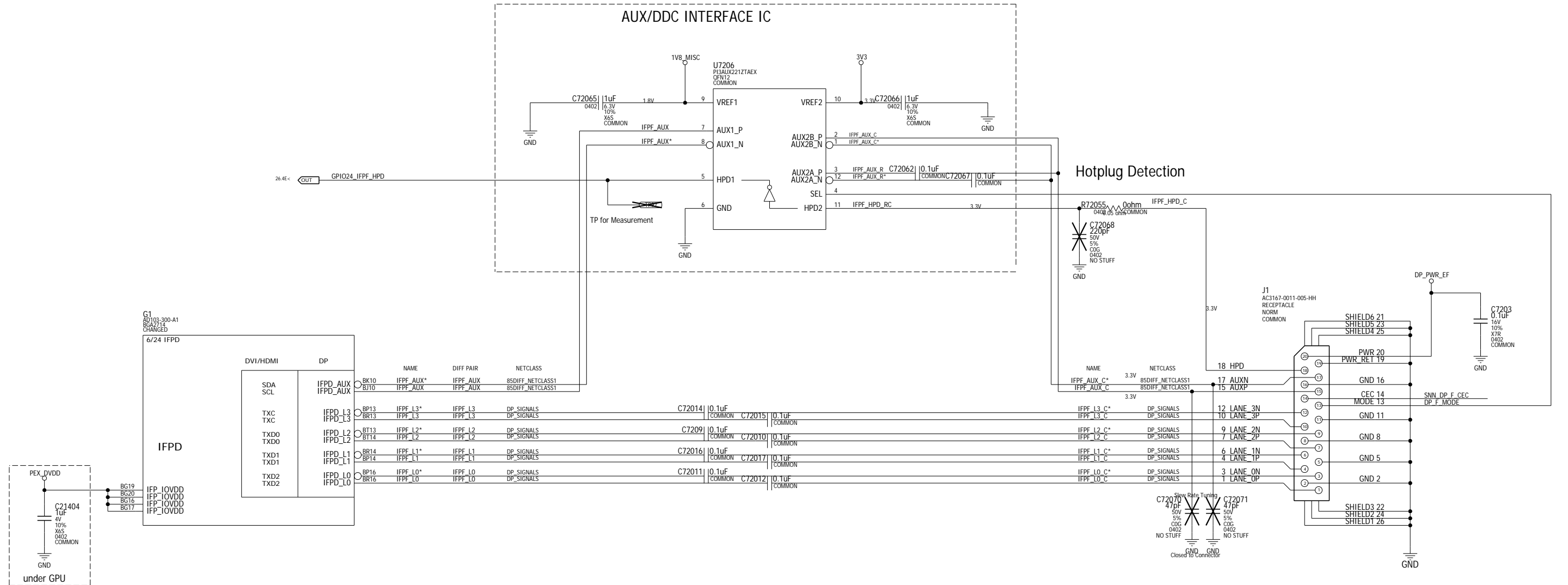
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Page 32: MISC: ROM, Straps

GROUP0

STRAP2	STRAP1	STRAP0	RAMCFG[4:0]
L	L	H	00001
L	H	L	00010
L	H	H	00011
L	M	H	01010
L	H	M	01011
H	H	H	00111

For NP, Middle Level should be 0.6V
H=High :Tied to 1.8V
M=Middle:Tied to 0.9V
L=Low :Tied to 0V

DEFAULT

GROUP1

ROM_SO	ROM_SI	ROM_SCLK	SMARTFAN[2:0],FS_OVERT	1:ENABLE 0:DISABLE
L	M	L	1001	FAN0/1=33%33%, FS_OVERT ENABLE

<-DEFAULT

GROUP2

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
L	L	L	0	0	0	0

1:SMB_ALT_ADDR ENABLE
0:SMB_ALT_ADDR DISABLE

1:DEVID_SEL REBRAND
0:DEVID_SEL ORIGINAL

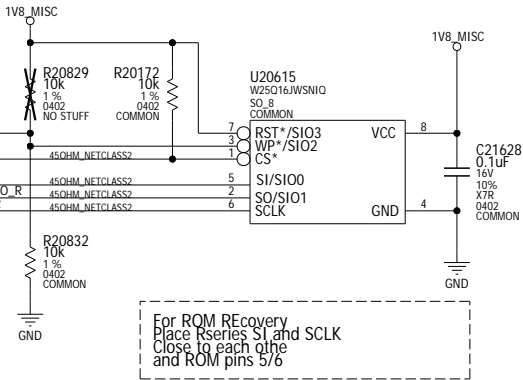
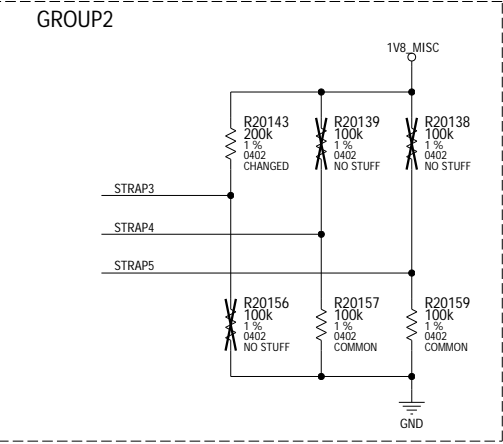
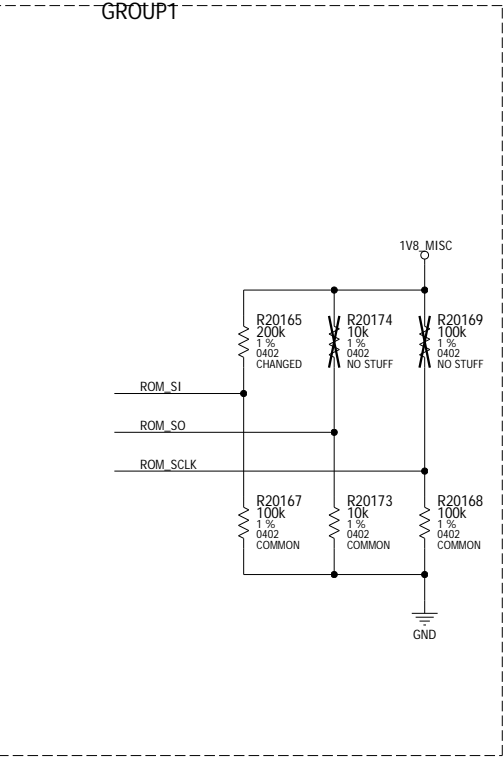
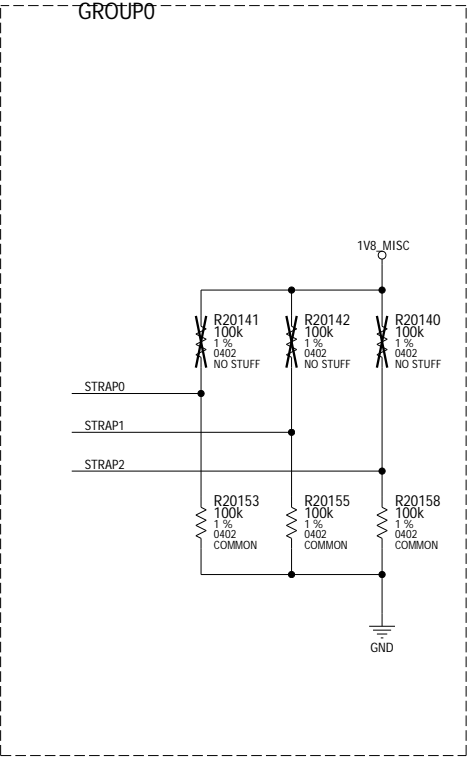
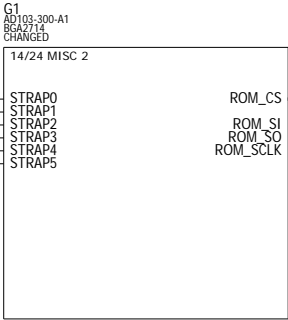
1:PCIE_CFG LOW POWER
0:PCIE_CFG HIGH POWER

1:VGA_DEVICE ENABLE
0:VGA_DEVICE DISABLE

Default

SKU 200

STRAP0	BM5	STRAP0
STRAP1	BM5	STRAP1
STRAP2	BP4	STRAP2
STRAP3	BP3	STRAP3
STRAP4	BR3	STRAP4
STRAP5	BR4	STRAP5



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BOM REV R

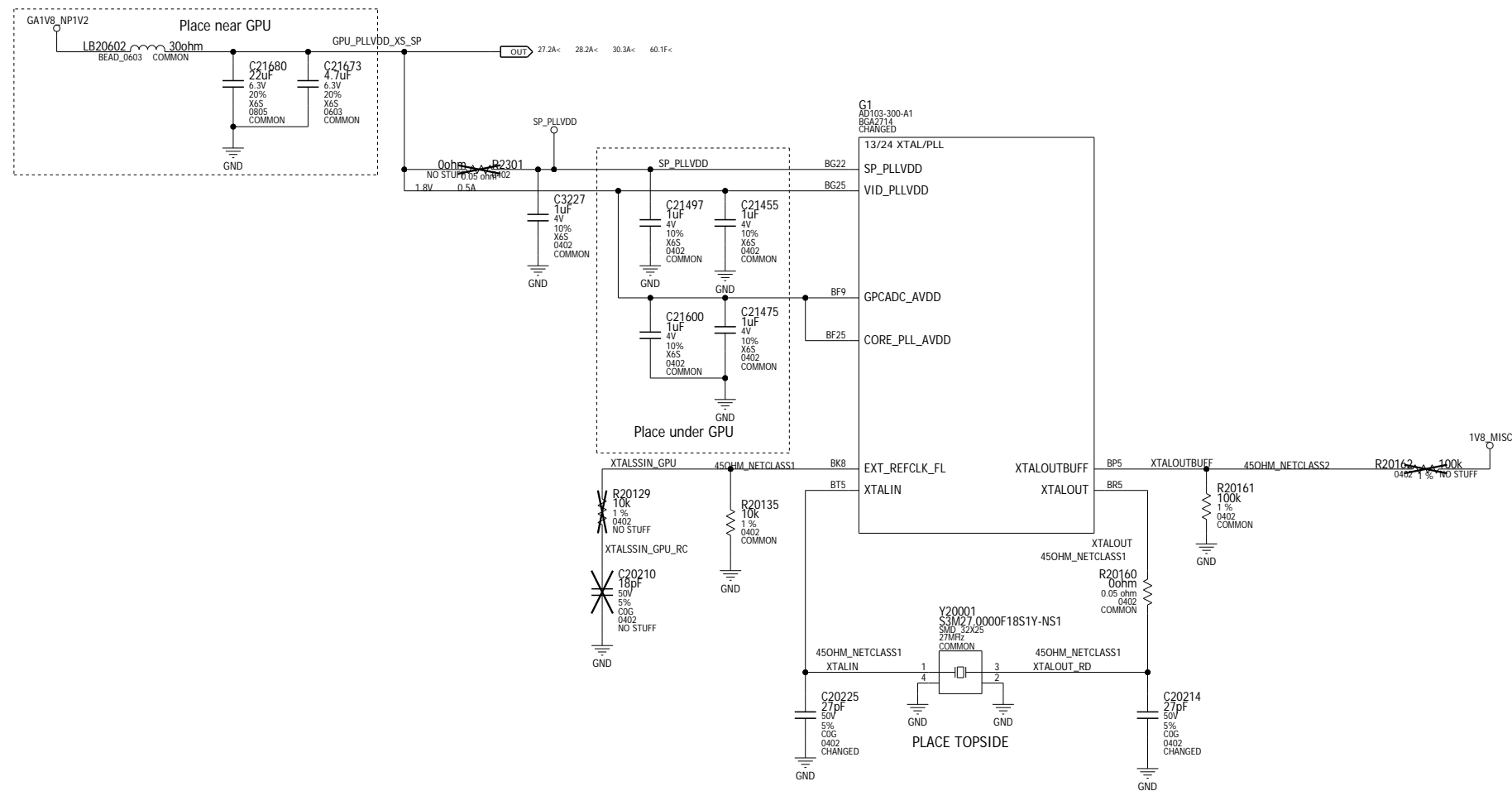
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DATE

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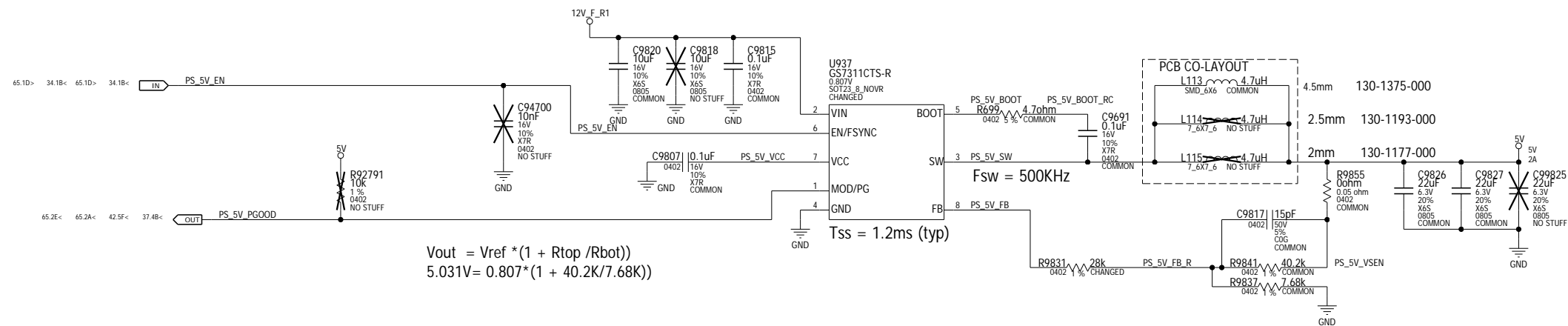
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PAGE DETAIL	MISC. XTAL, PLL

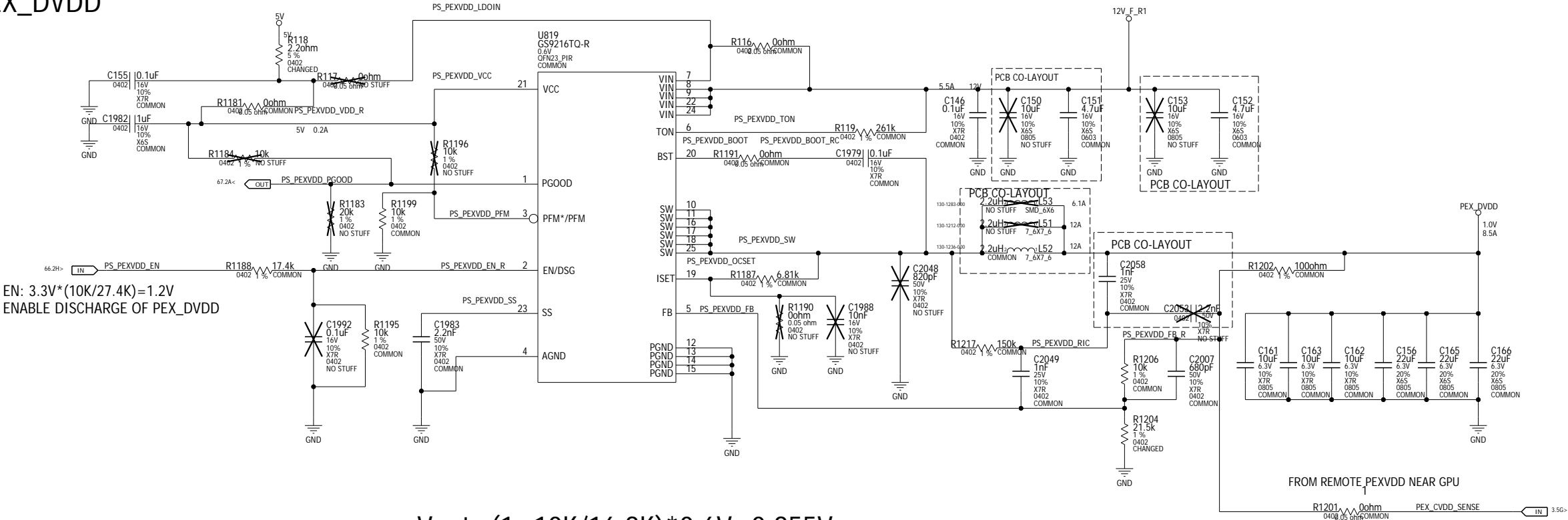
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PAGE DETAIL	PS: 5V

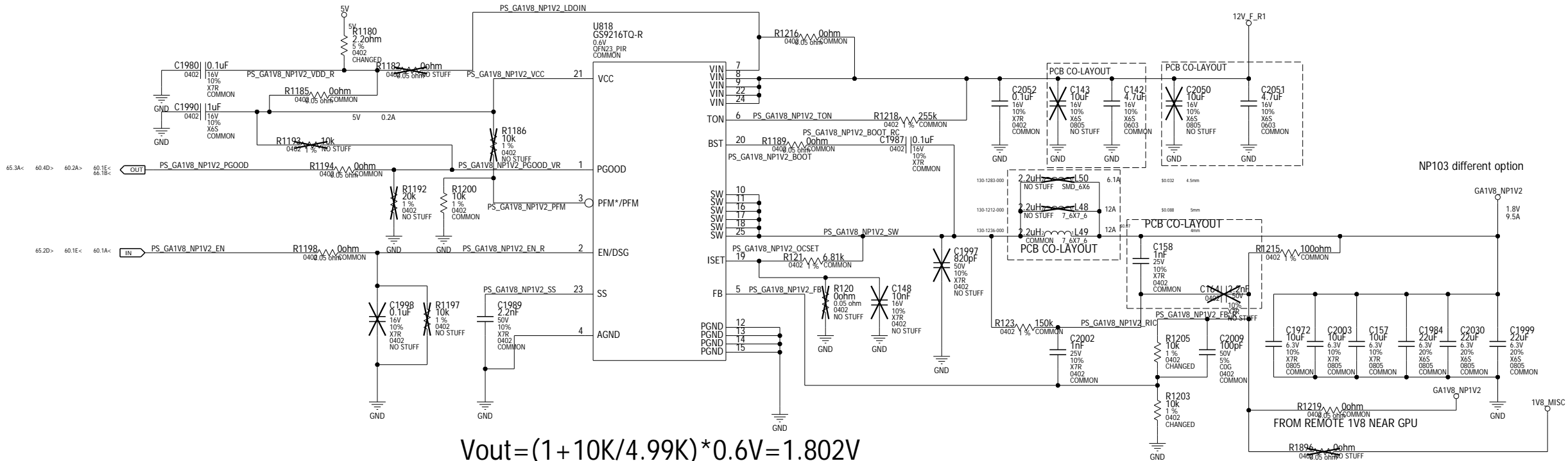
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PEX_DVDD



$$V_{out} = (1 + 10K/16.9K) * 0.6V = 0.955V$$

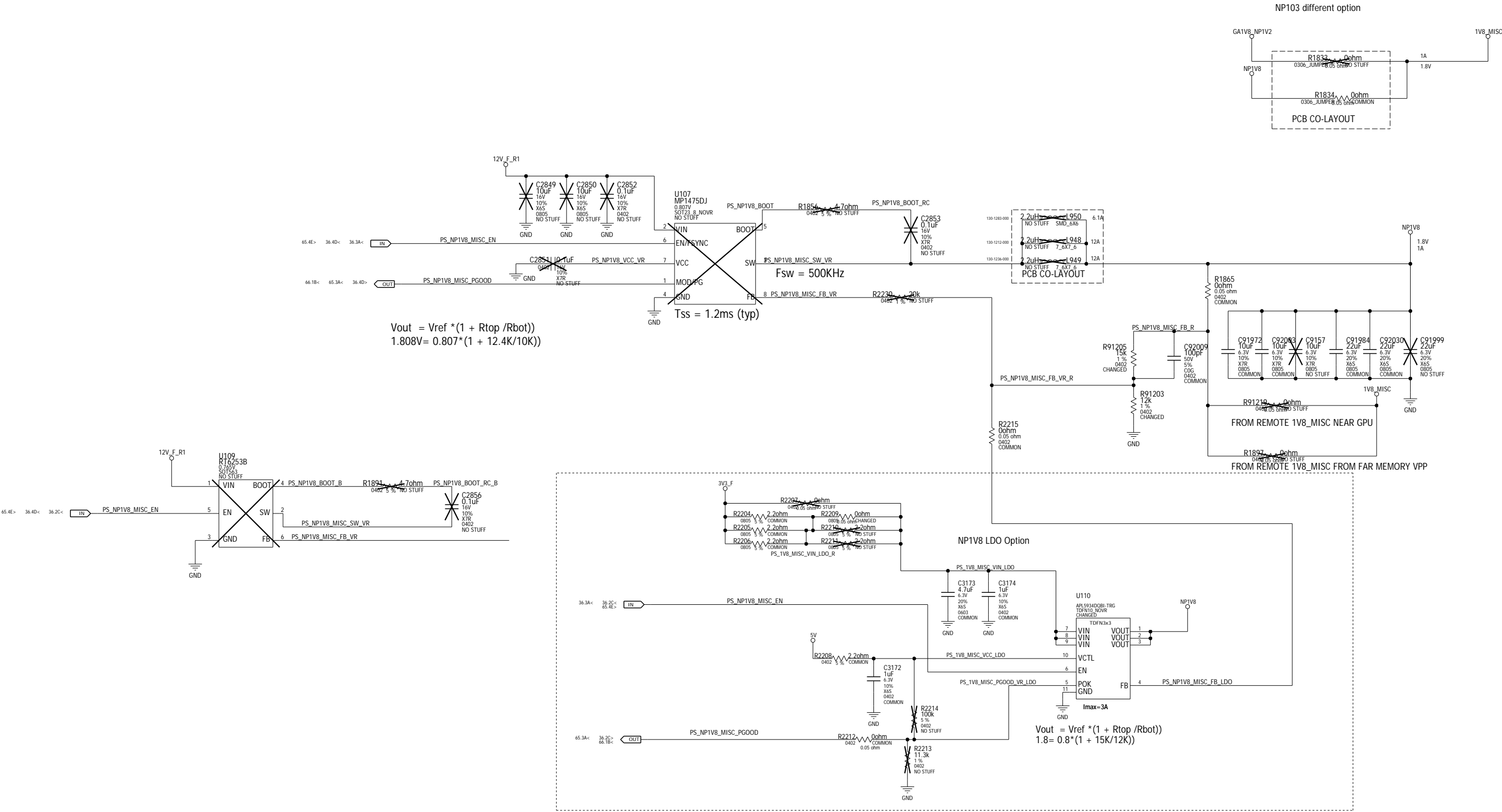
1V8(1V2 for NP;1V8 for GA102)



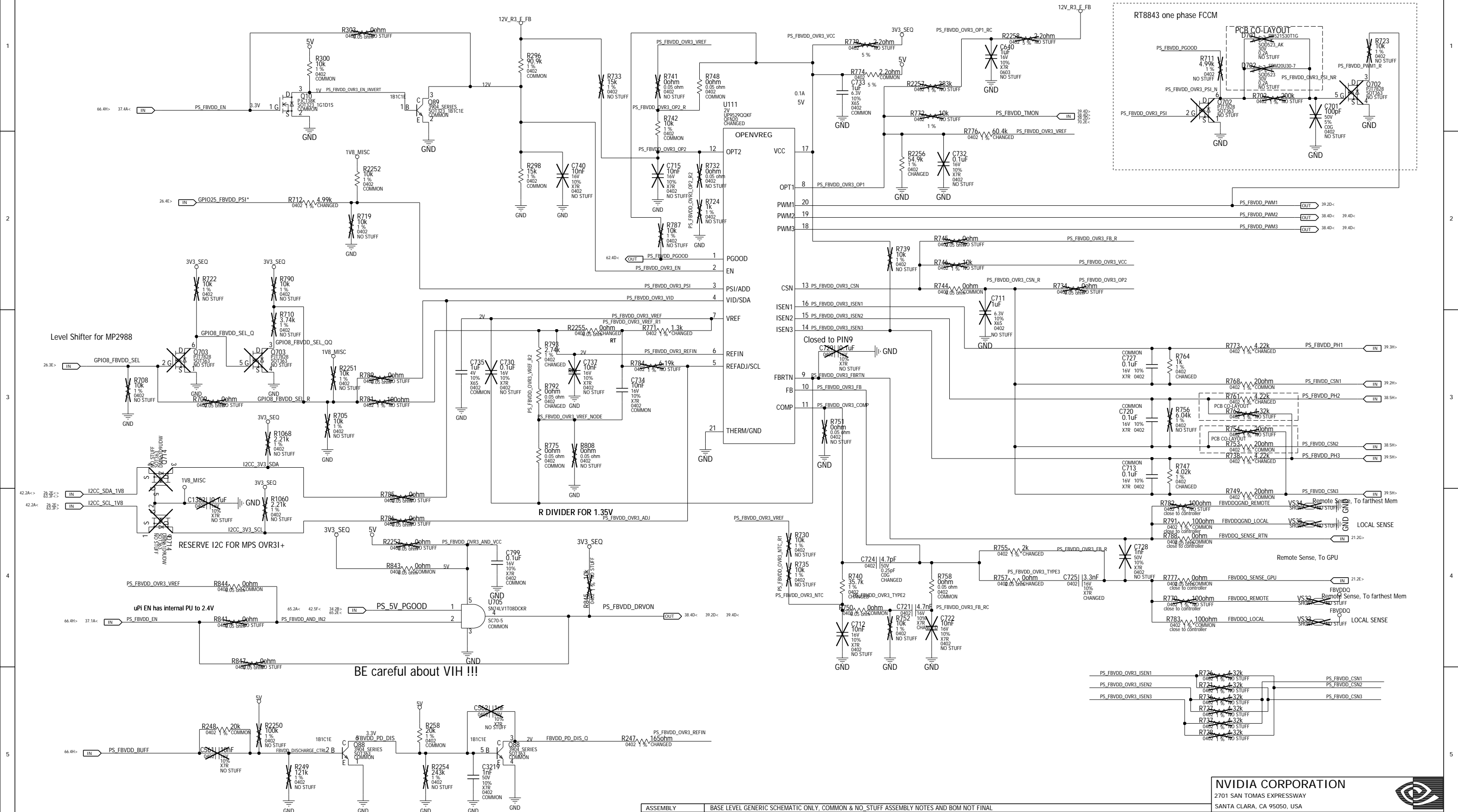
$$V_{out} = (1 + 10K/4.99K) * 0.6V = 1.802V$$

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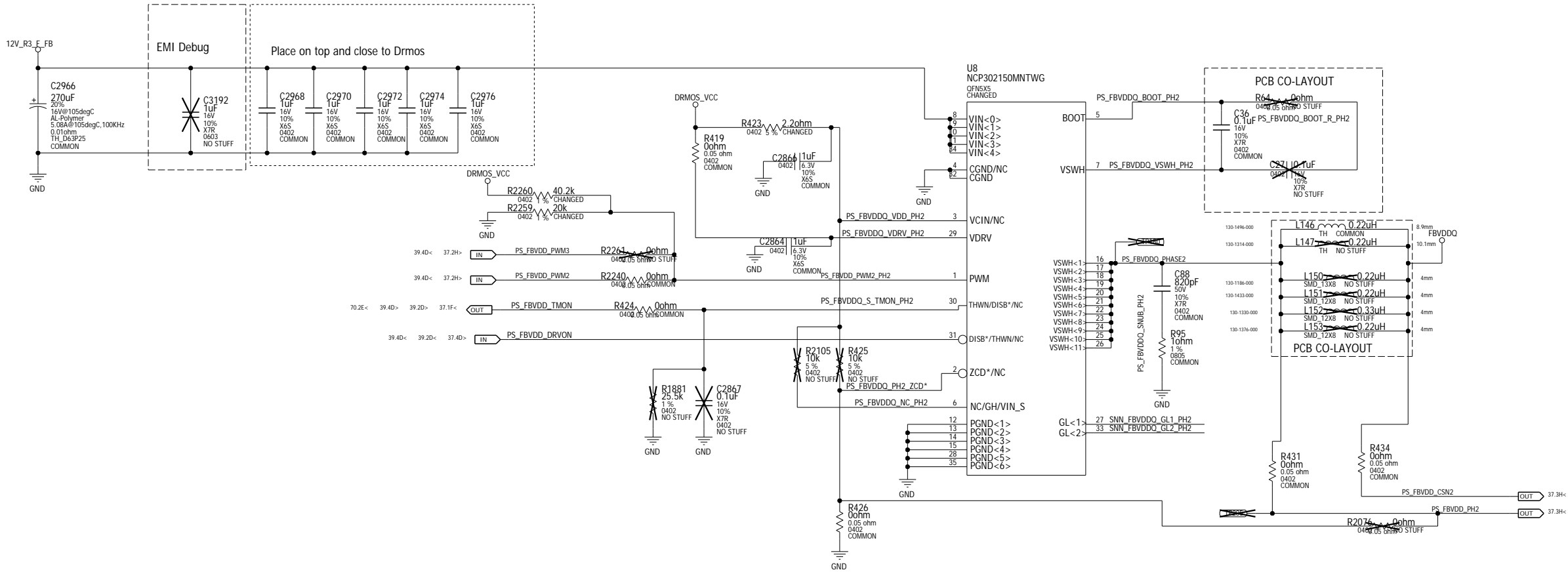
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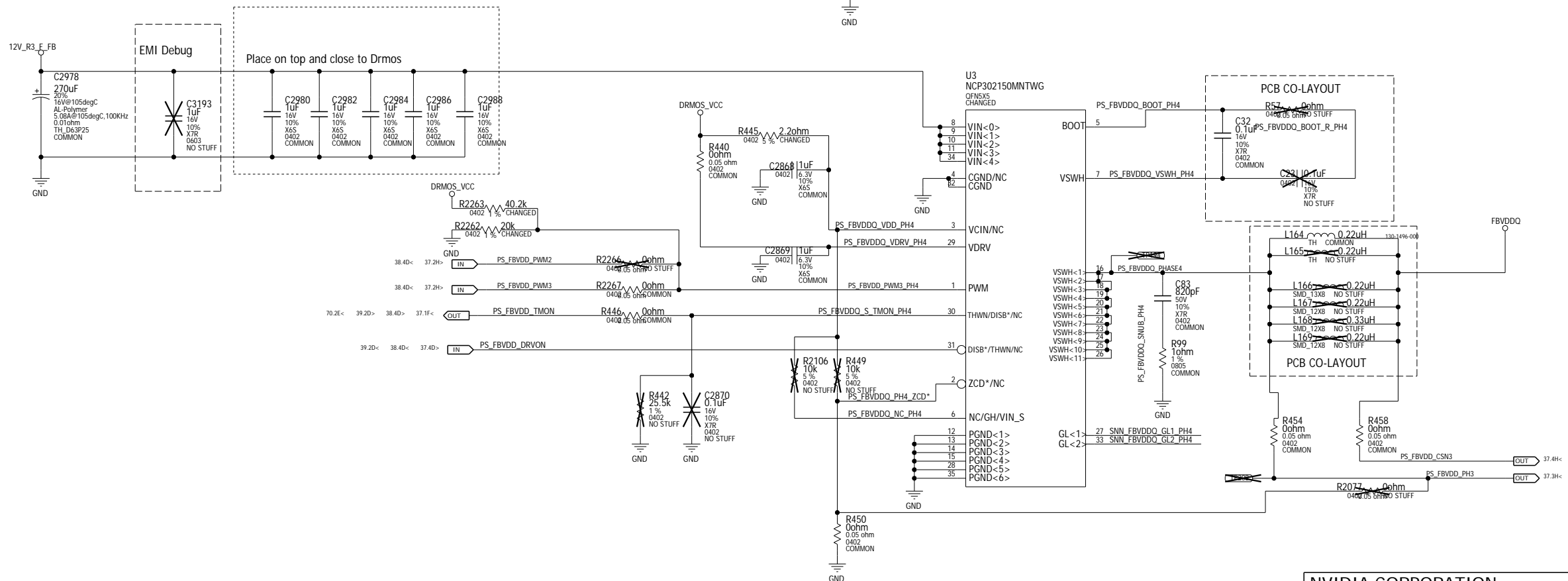
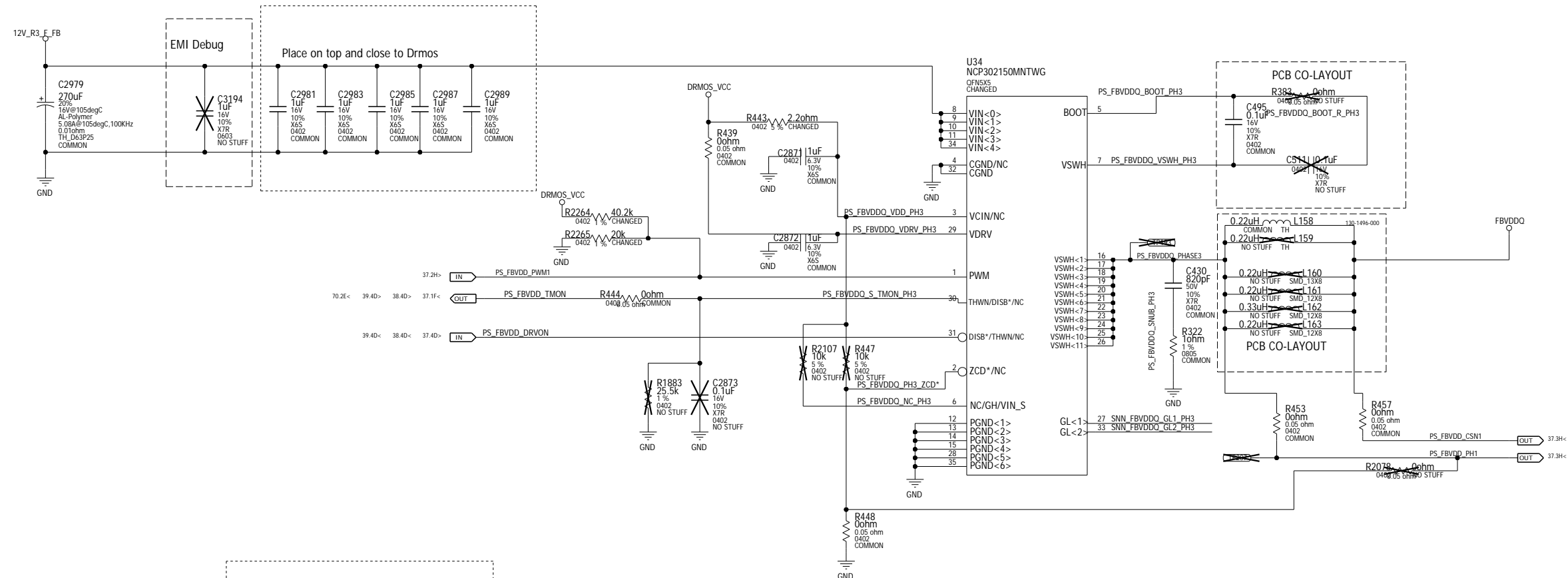
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PAGE DETAIL	PS: FBVDDQ OVR3

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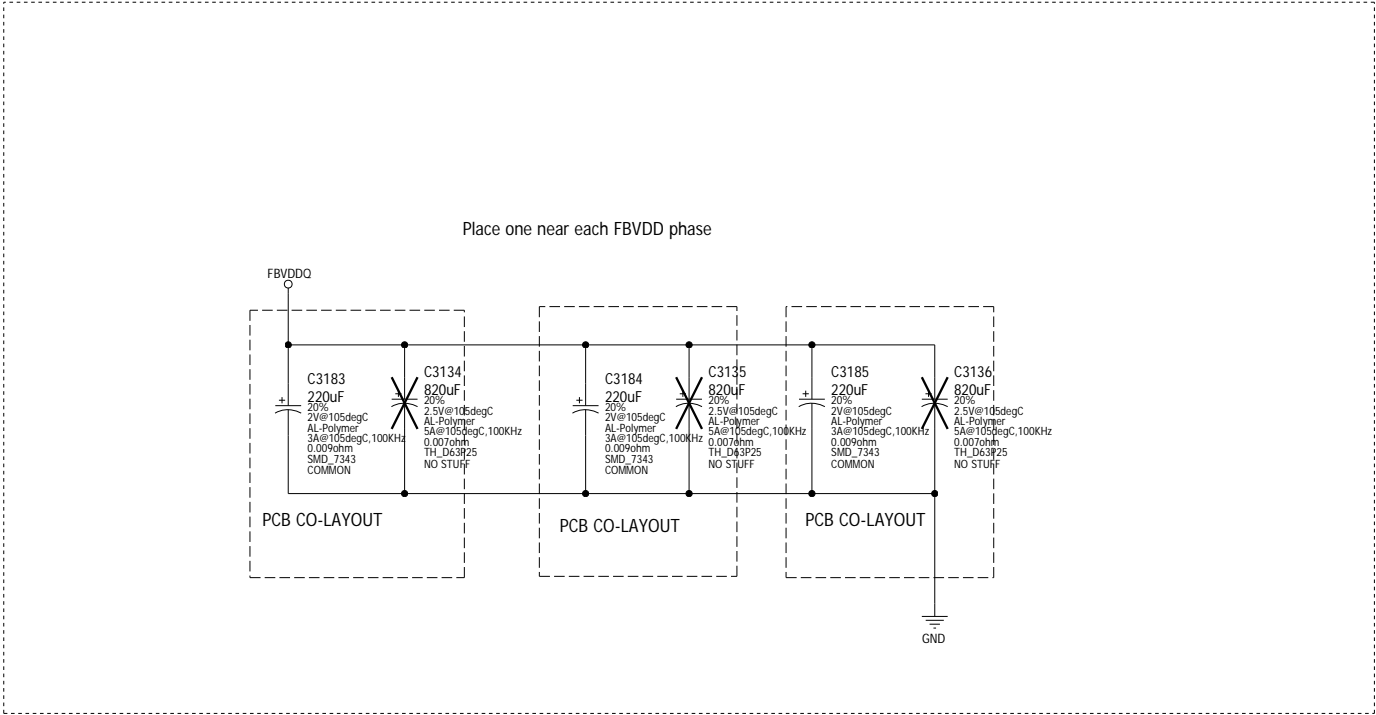


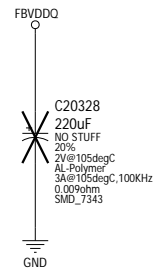
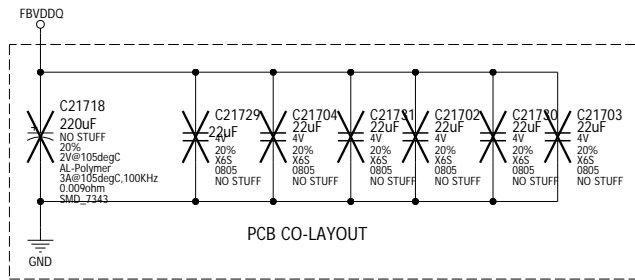
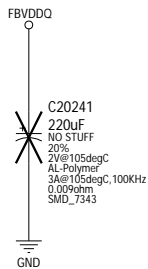
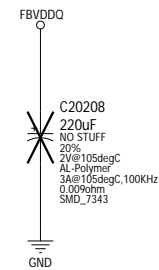
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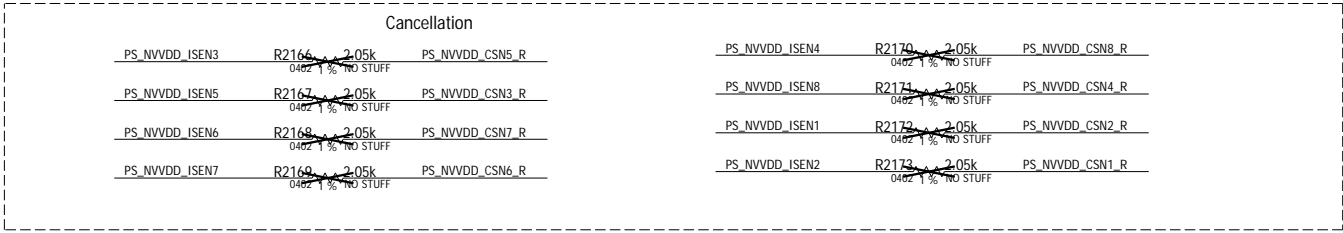
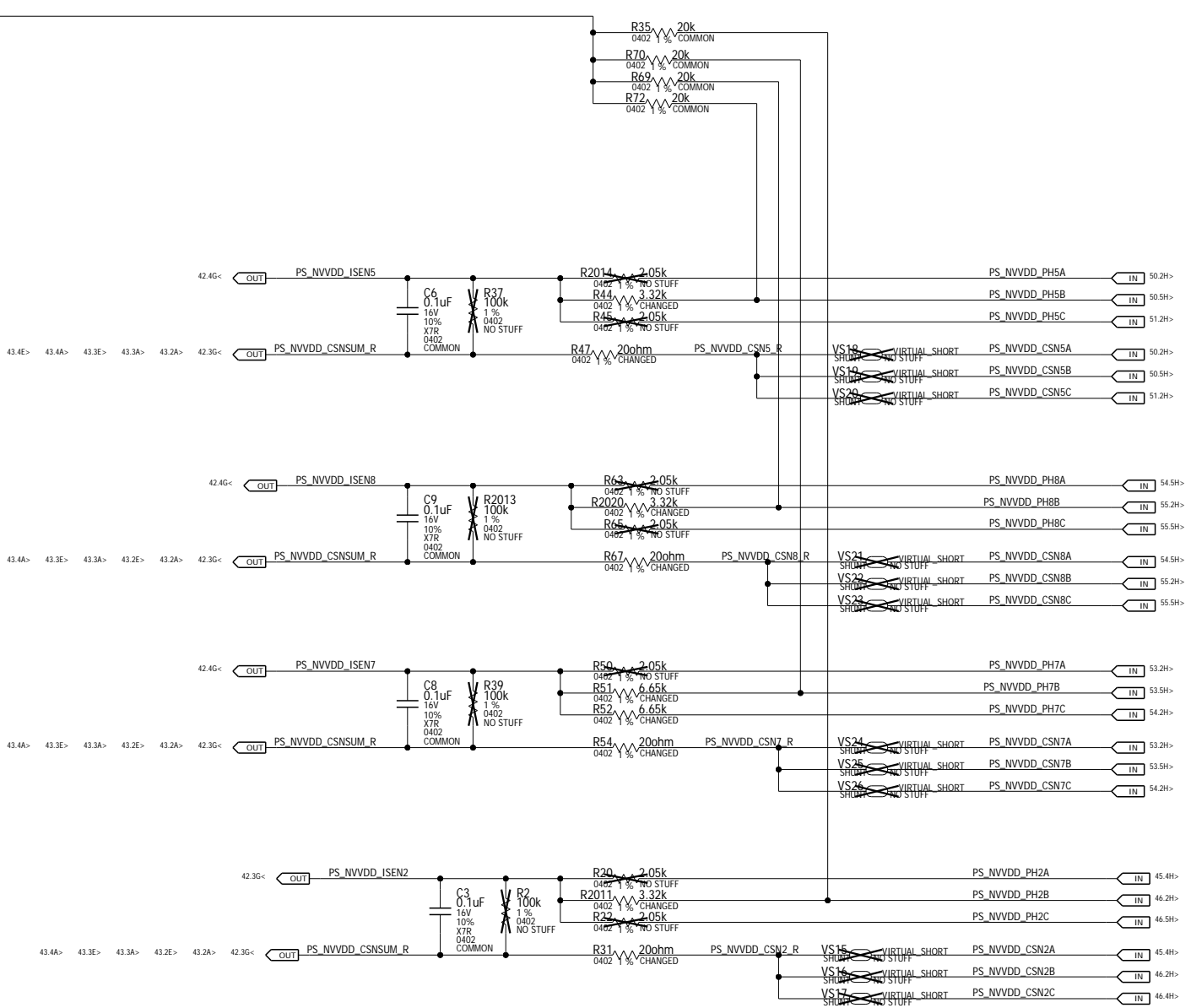
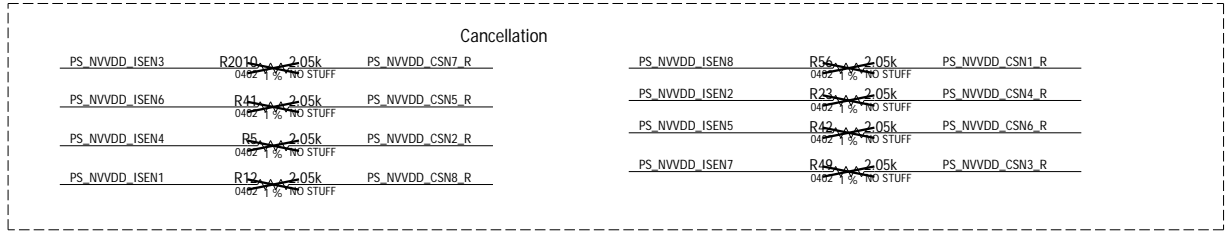
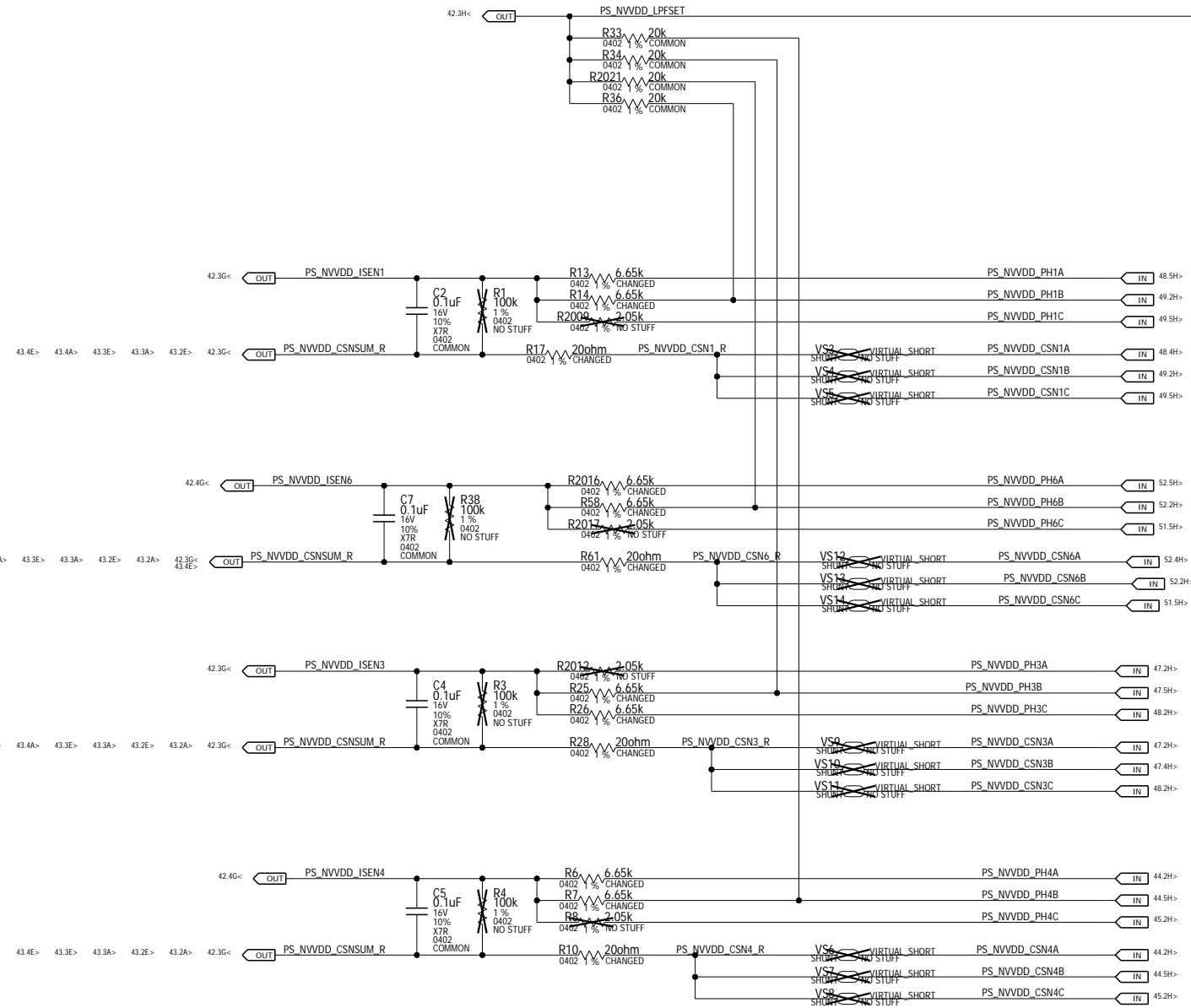




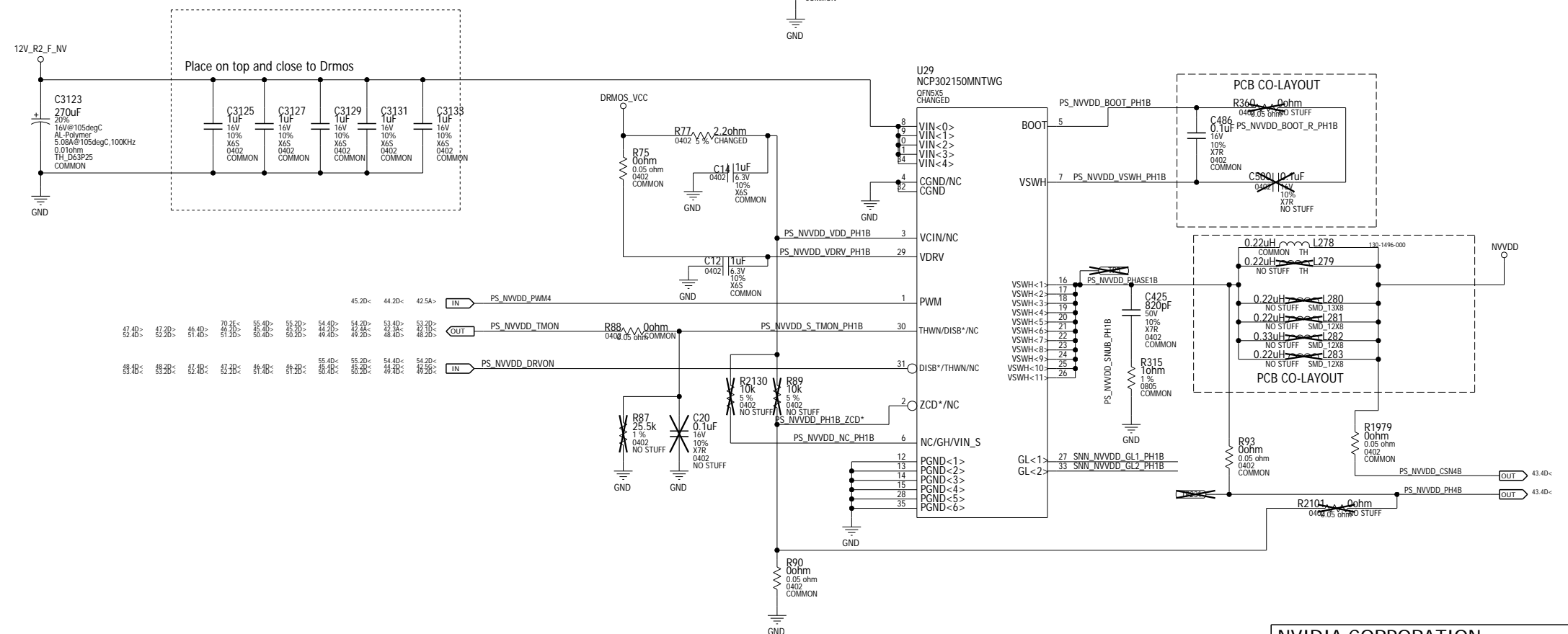
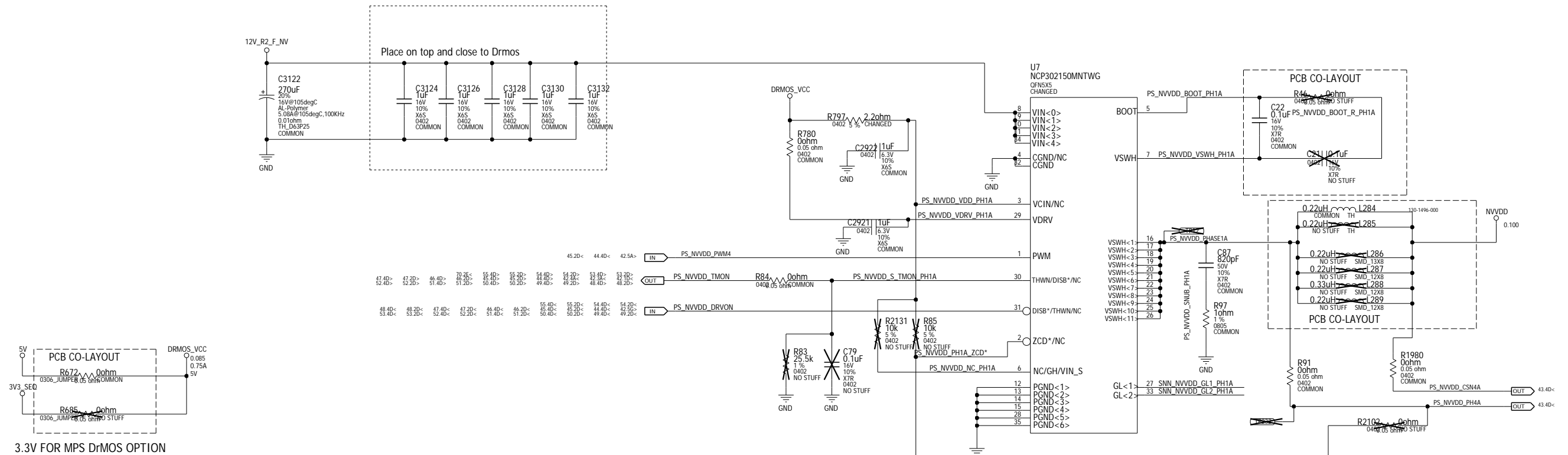
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Same side: 3,5 4,8 6,7 1,2




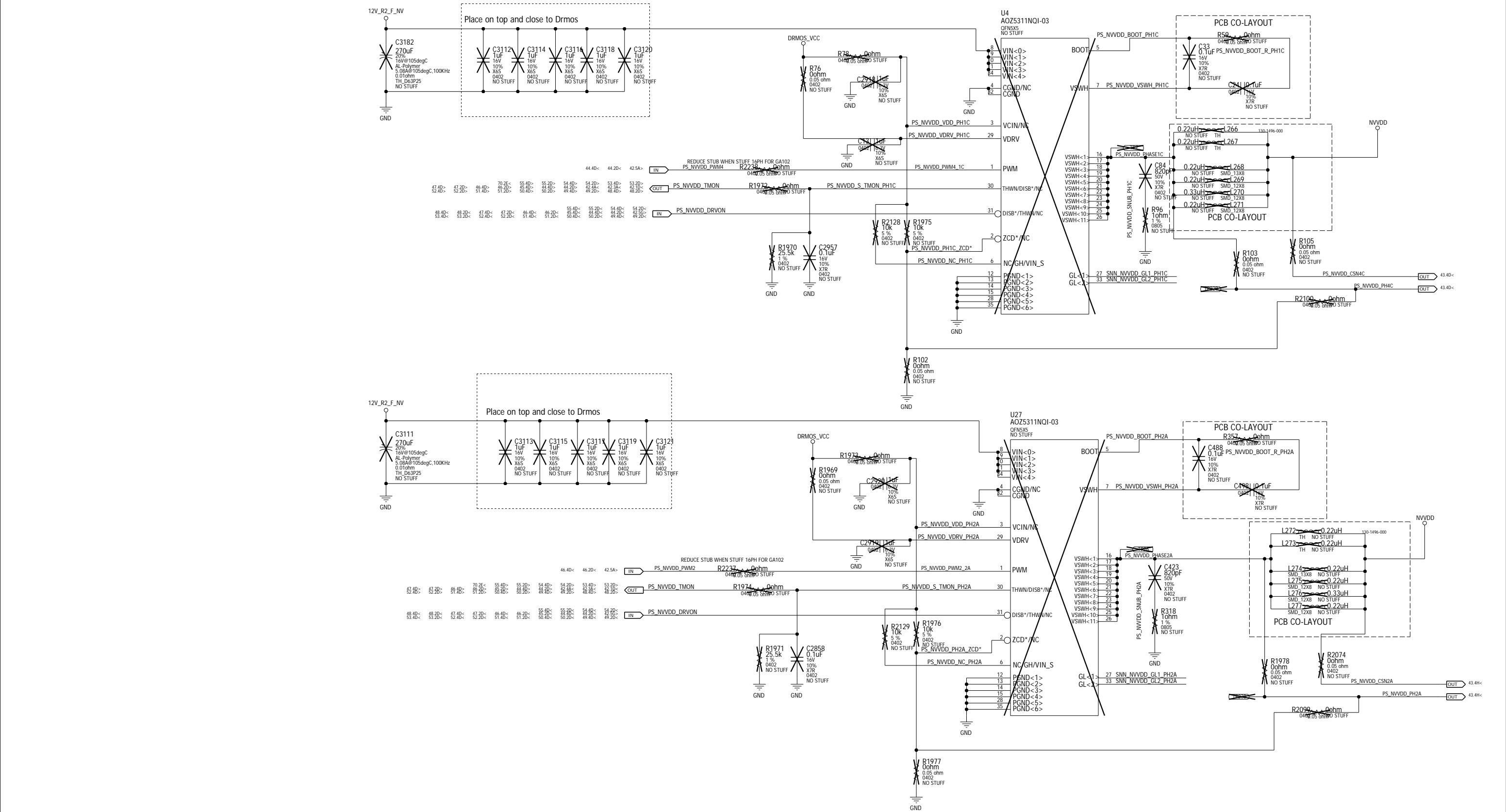
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PAGE DETAIL		PS: NVVDD PH1C, PH2A	

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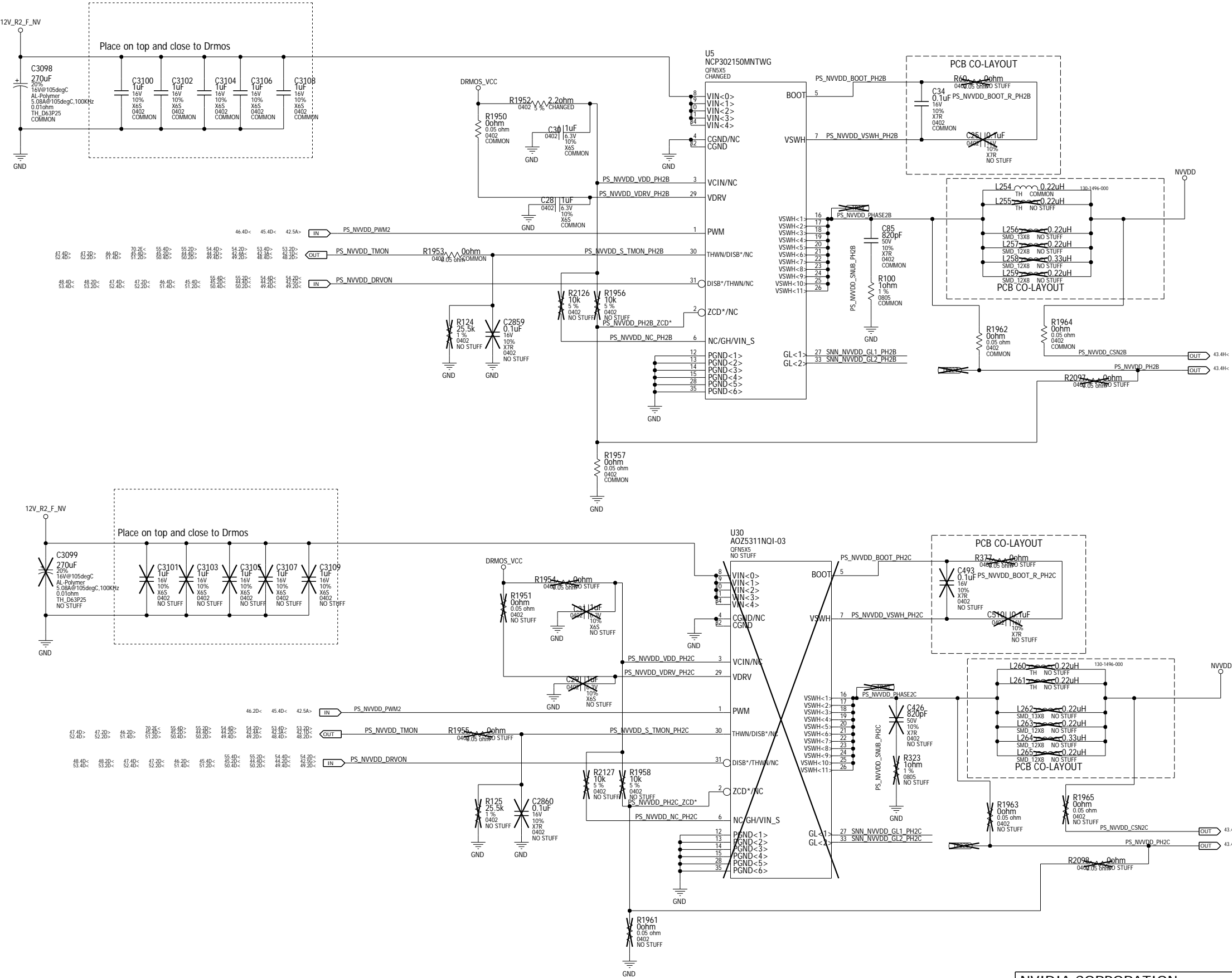
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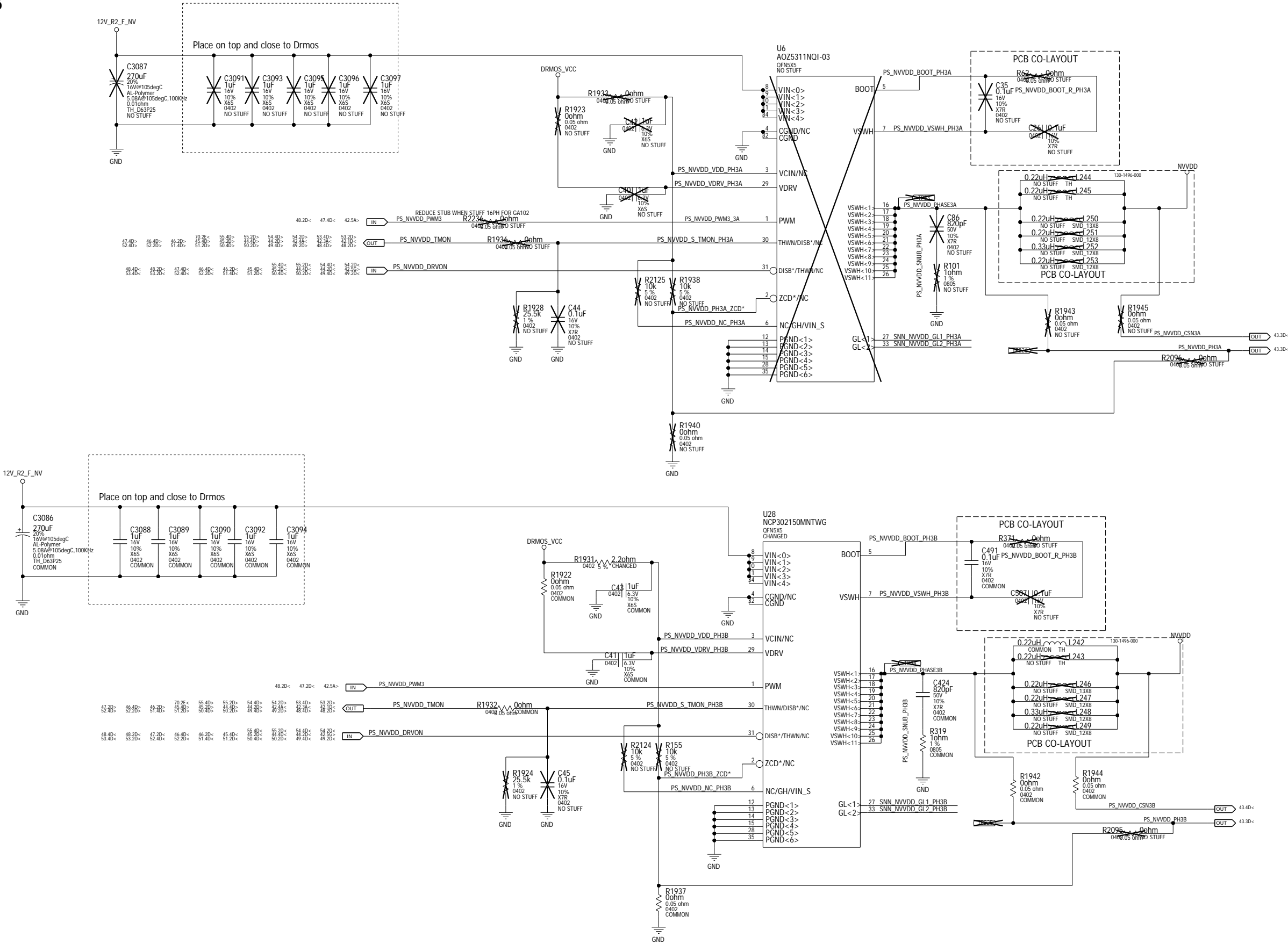
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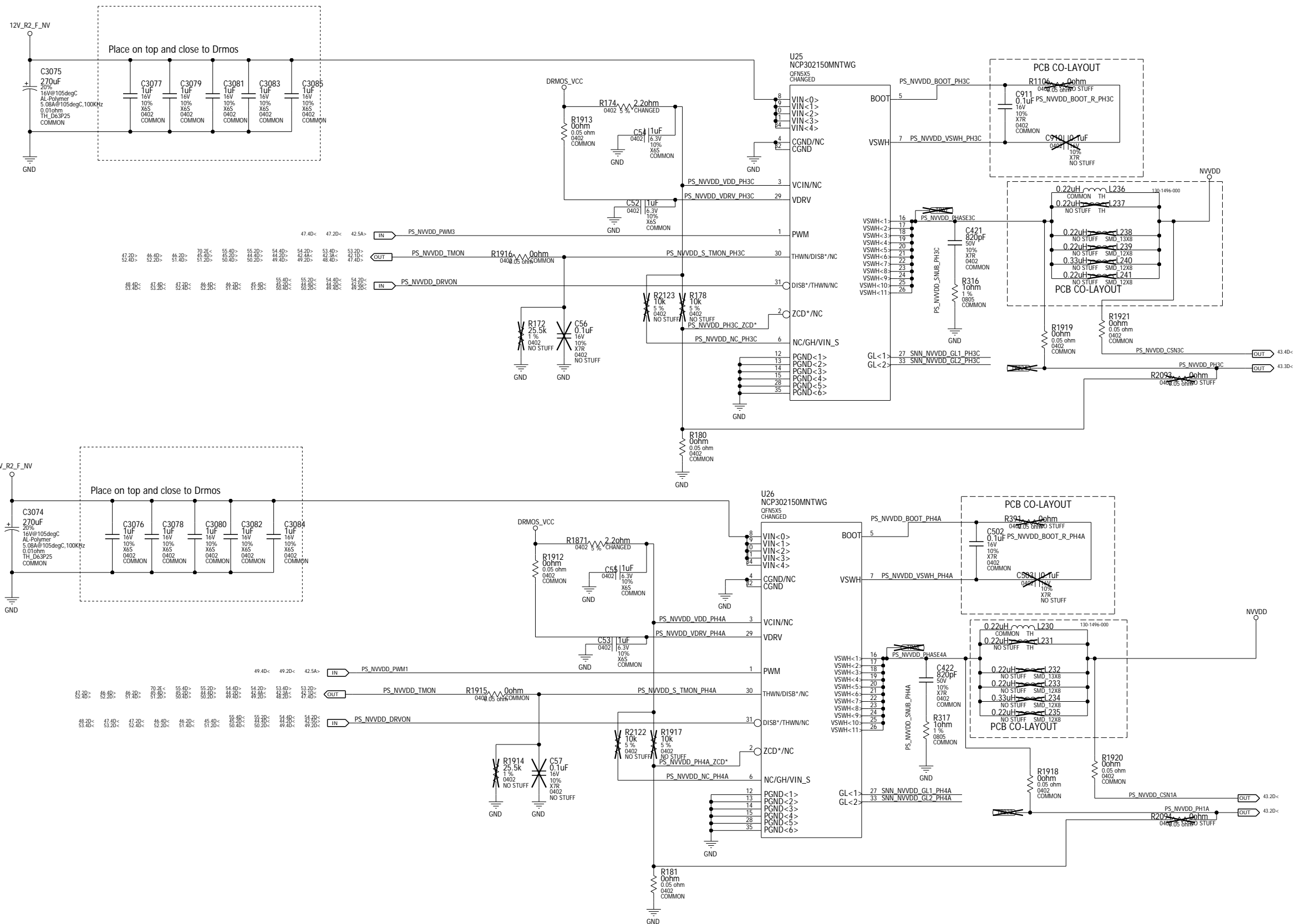
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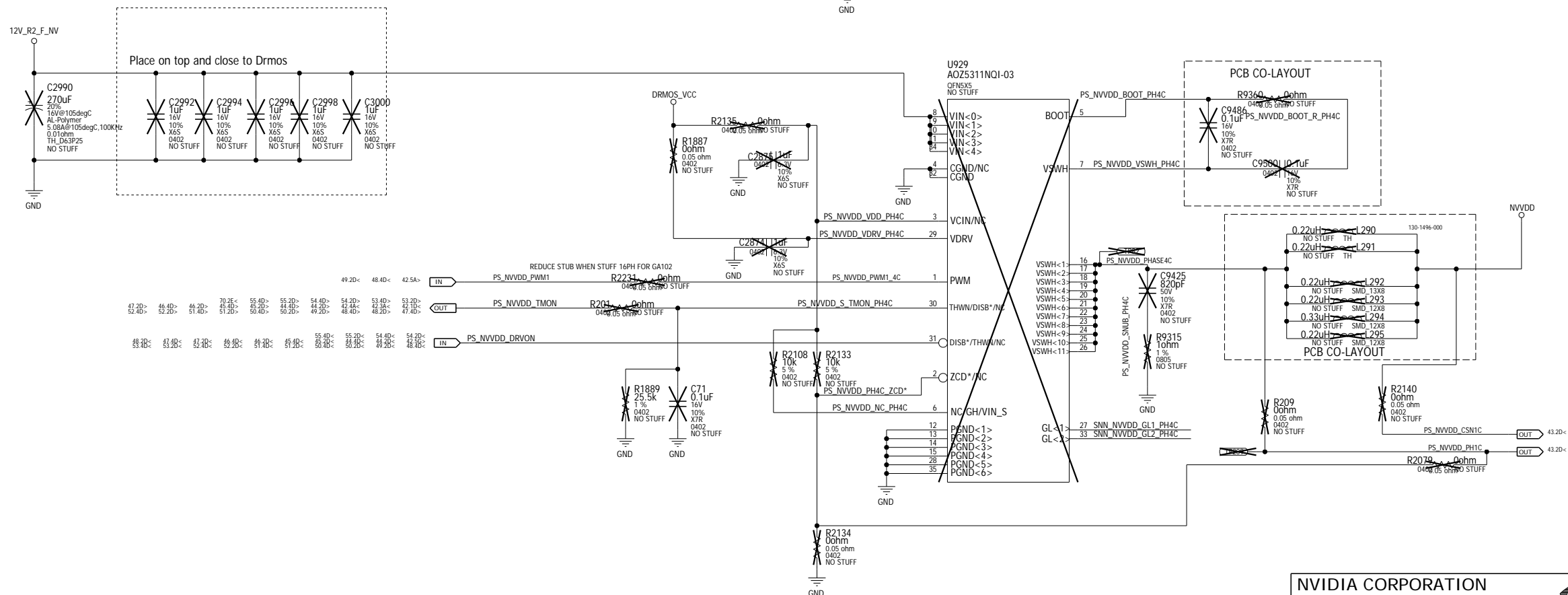
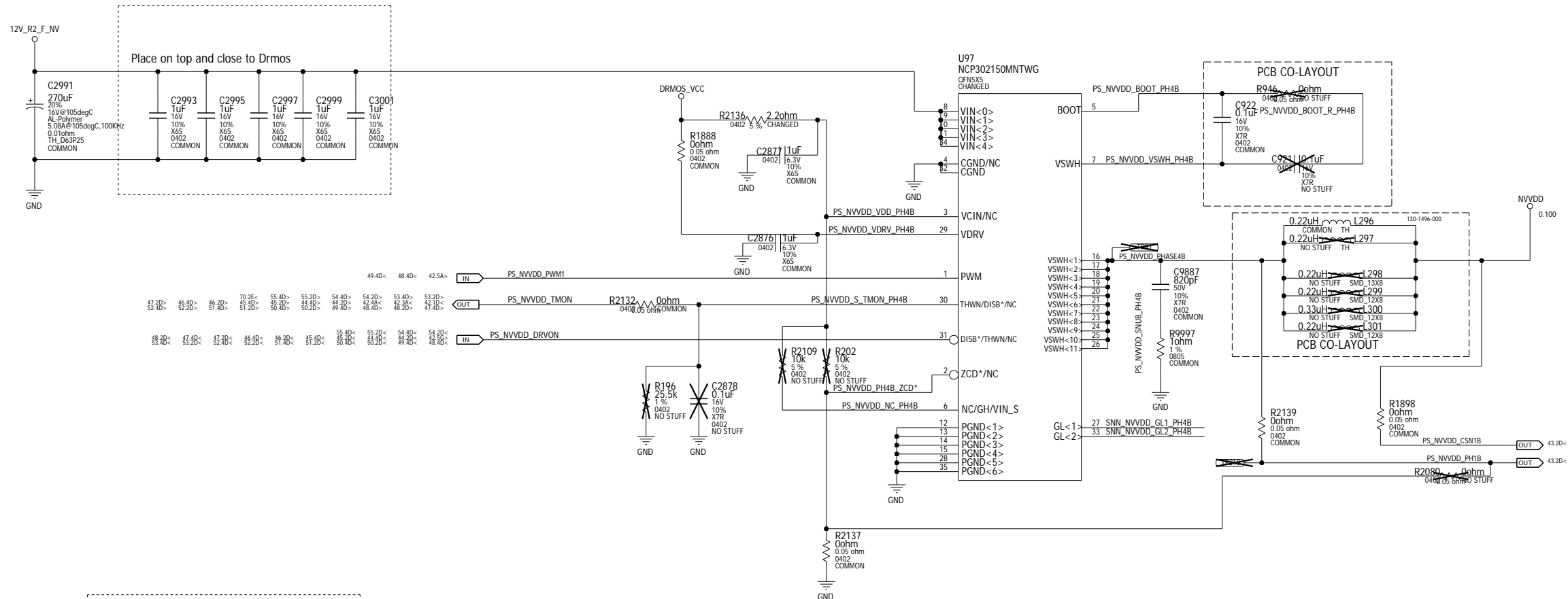


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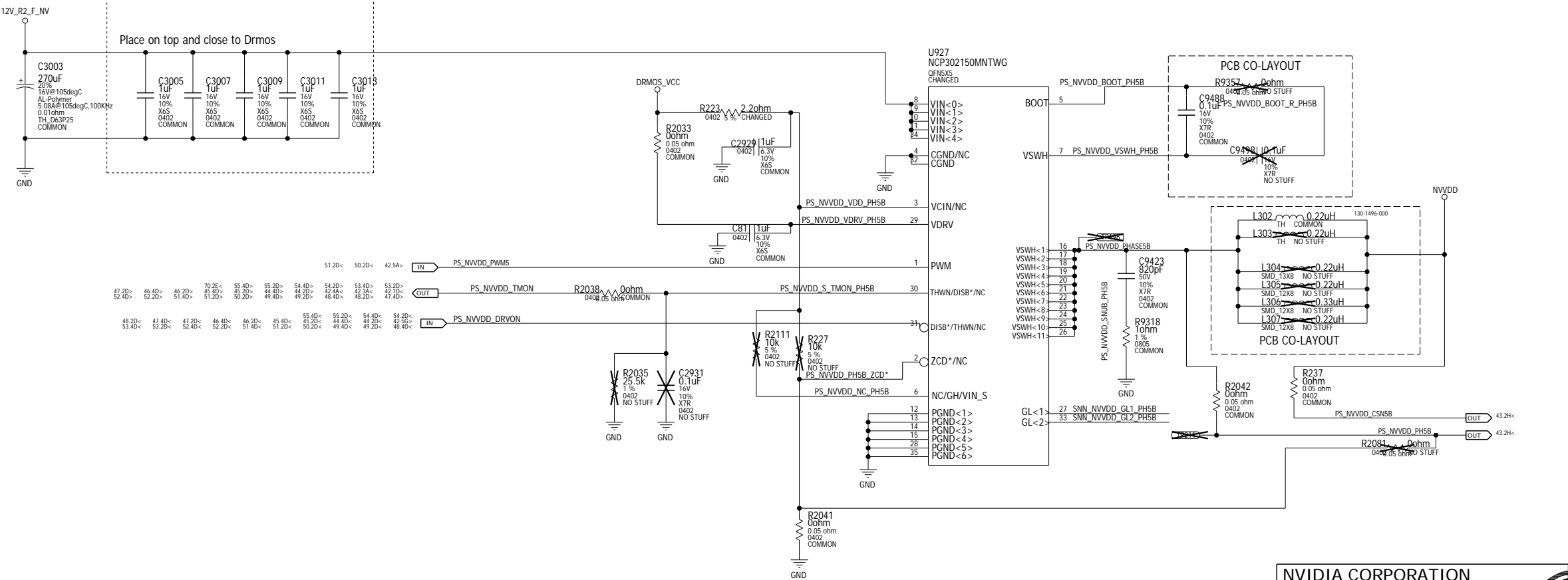
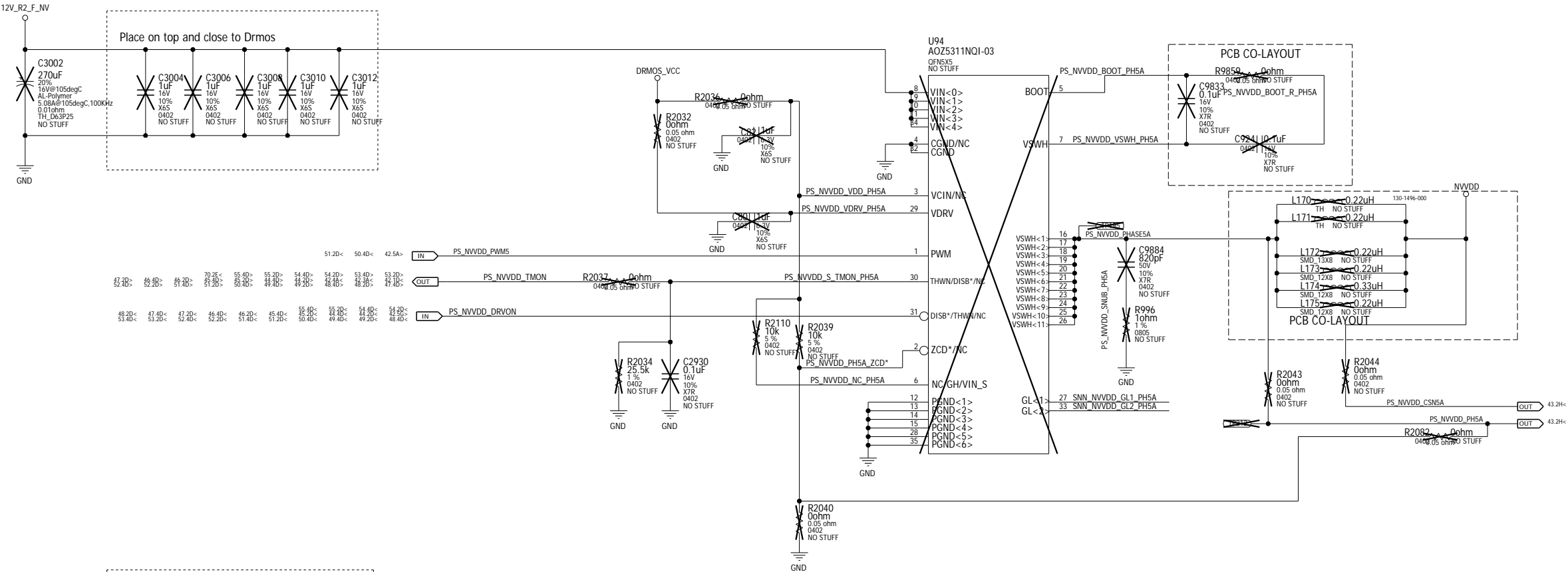
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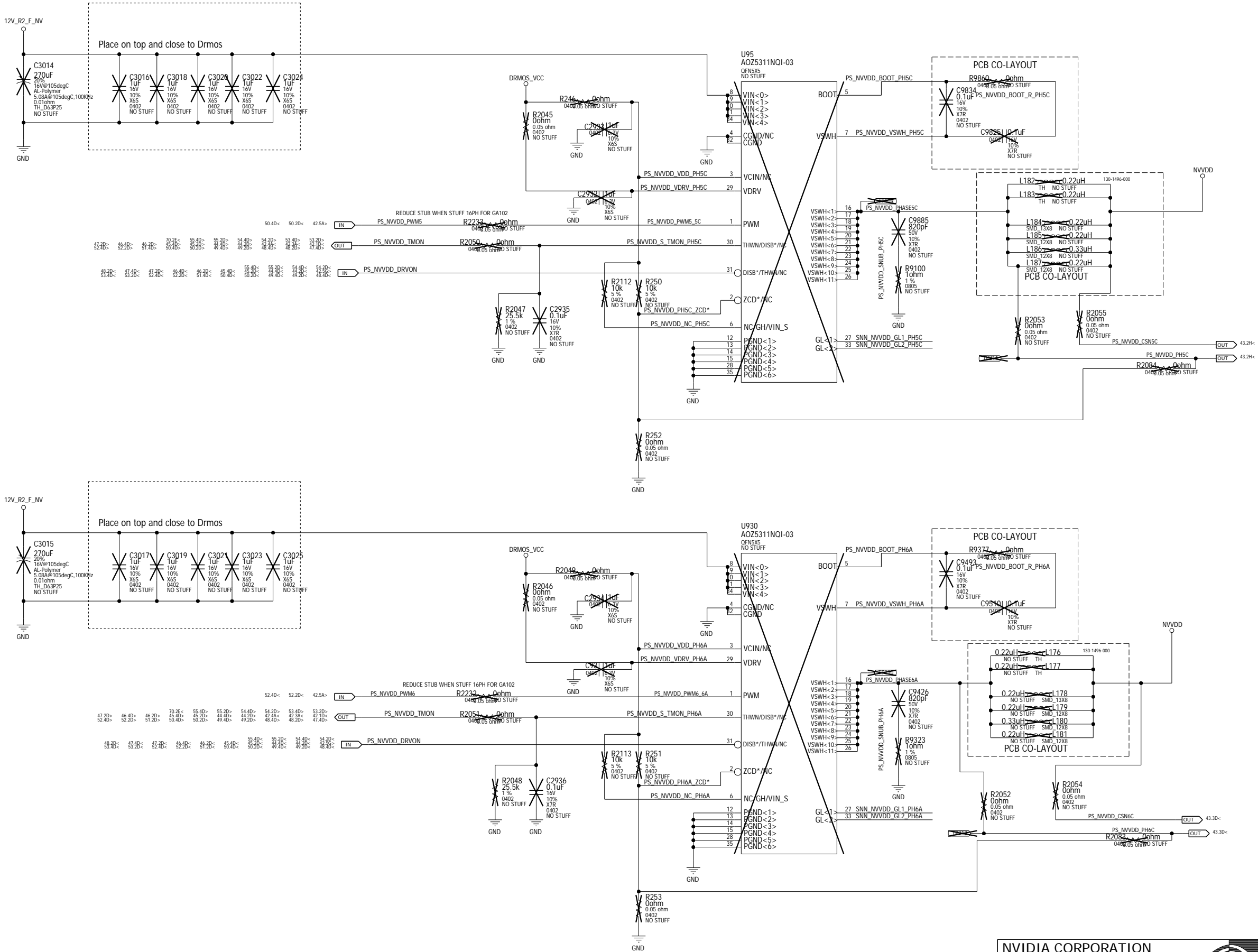
ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	PS: NVVDD PH4B, PH4C

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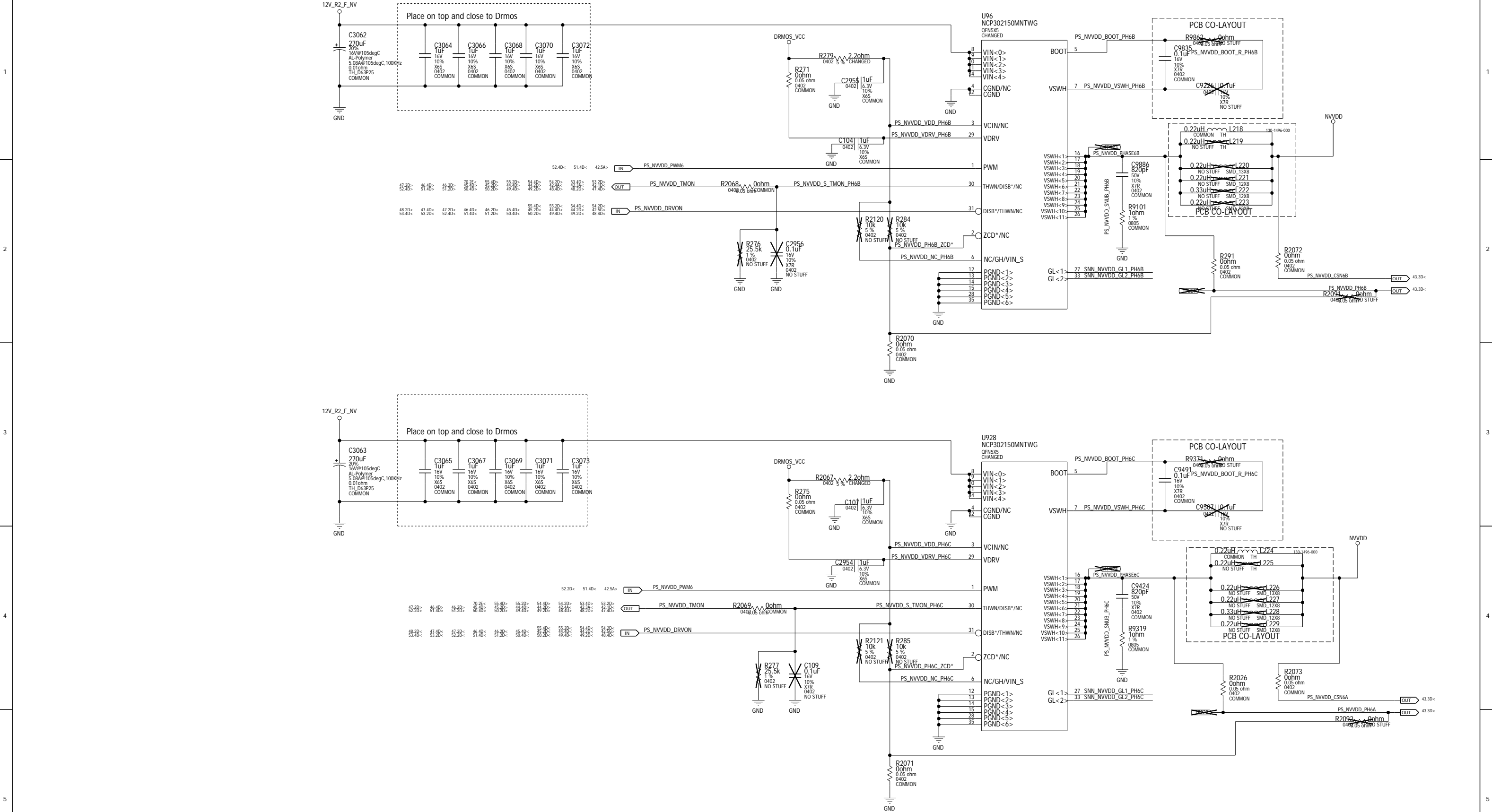
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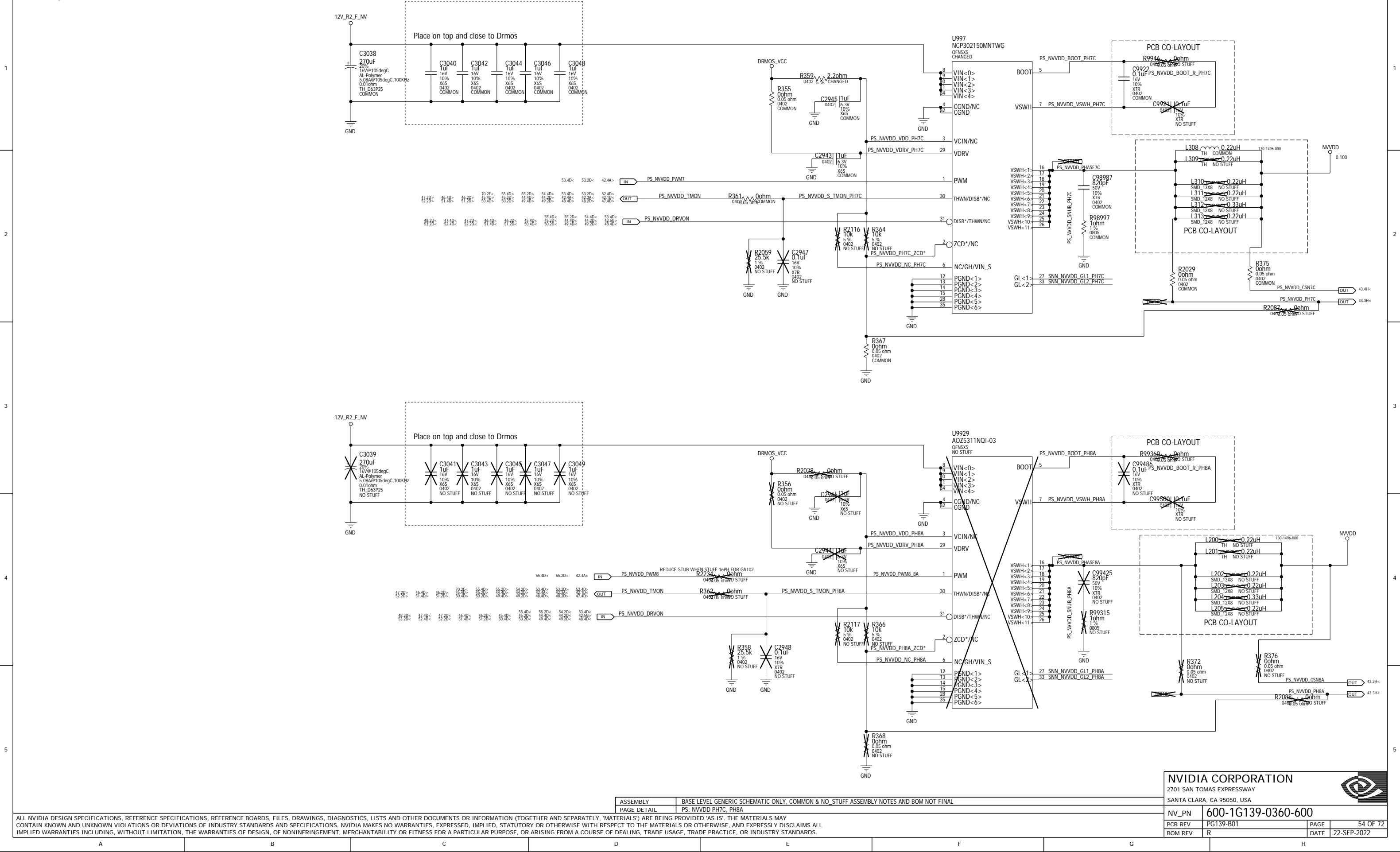
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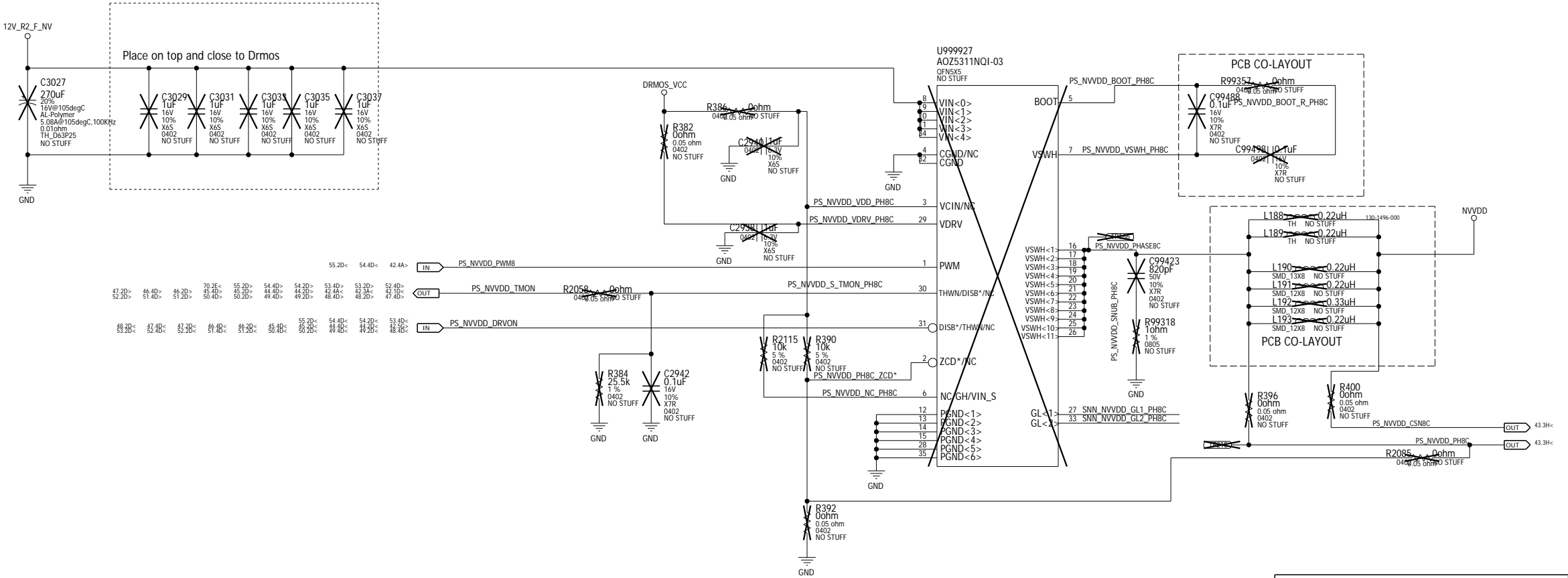
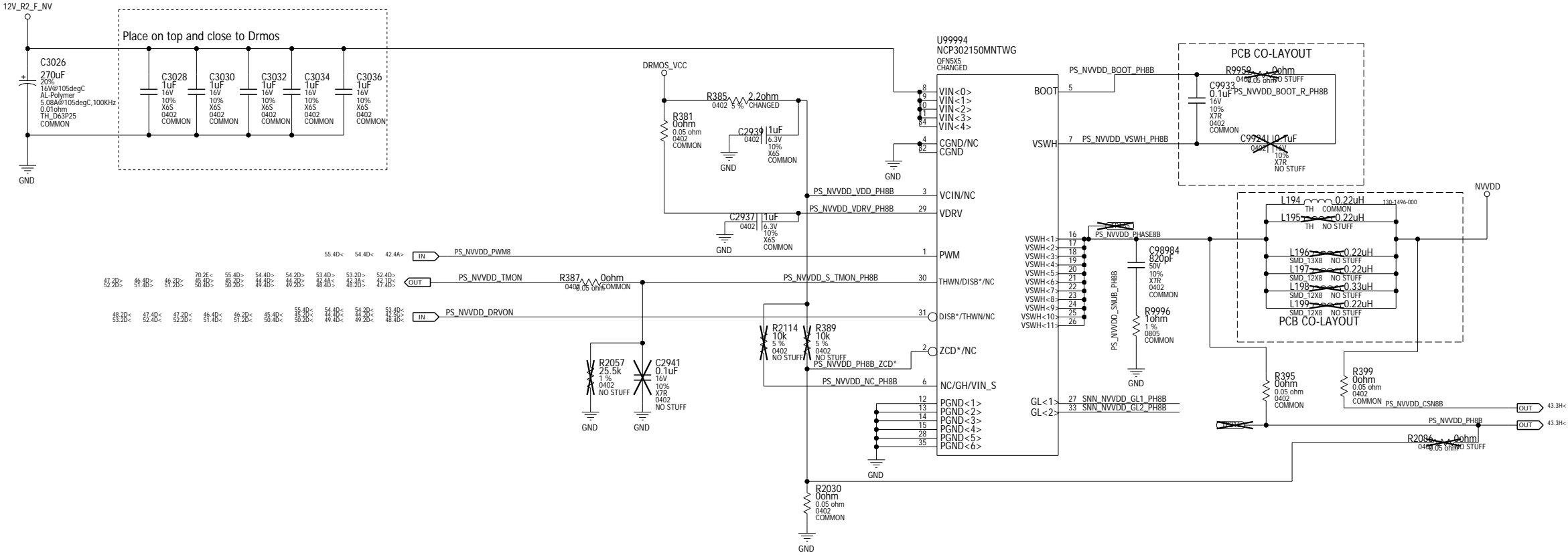


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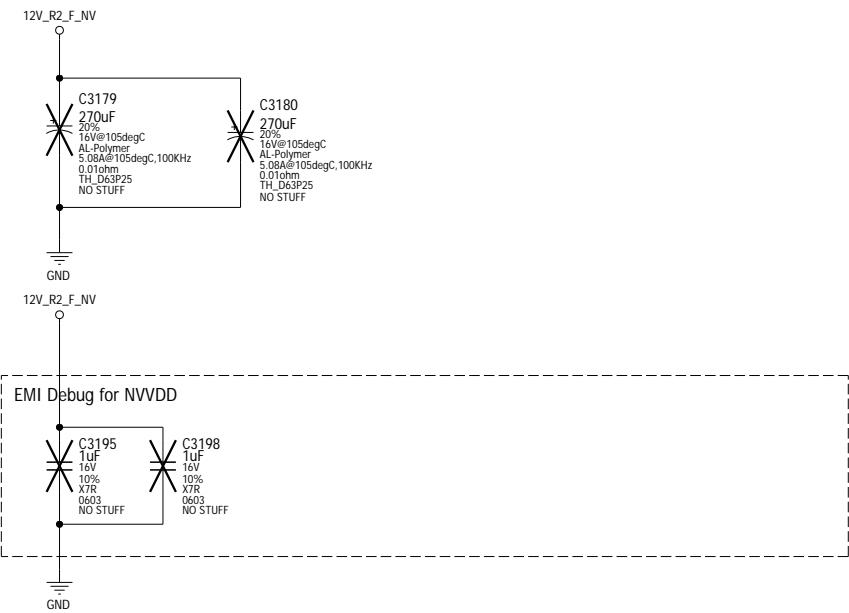


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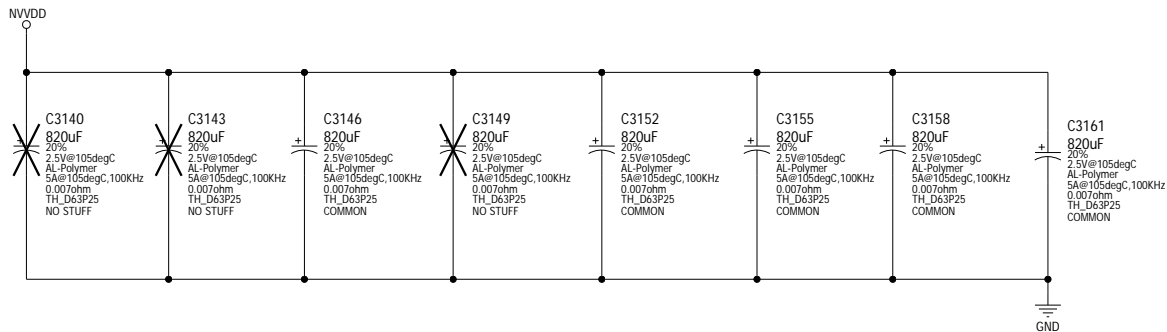
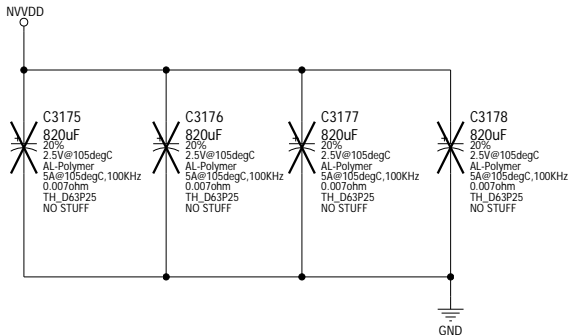
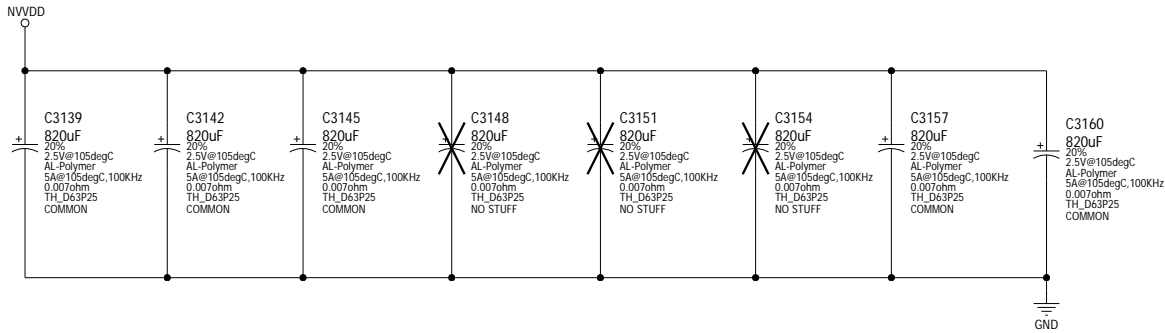
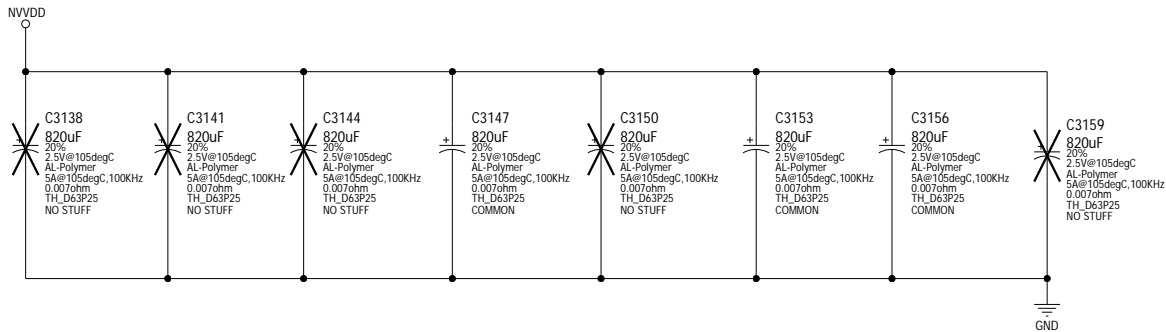




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Page 57: PS: NVVDD OUTPUT CAP



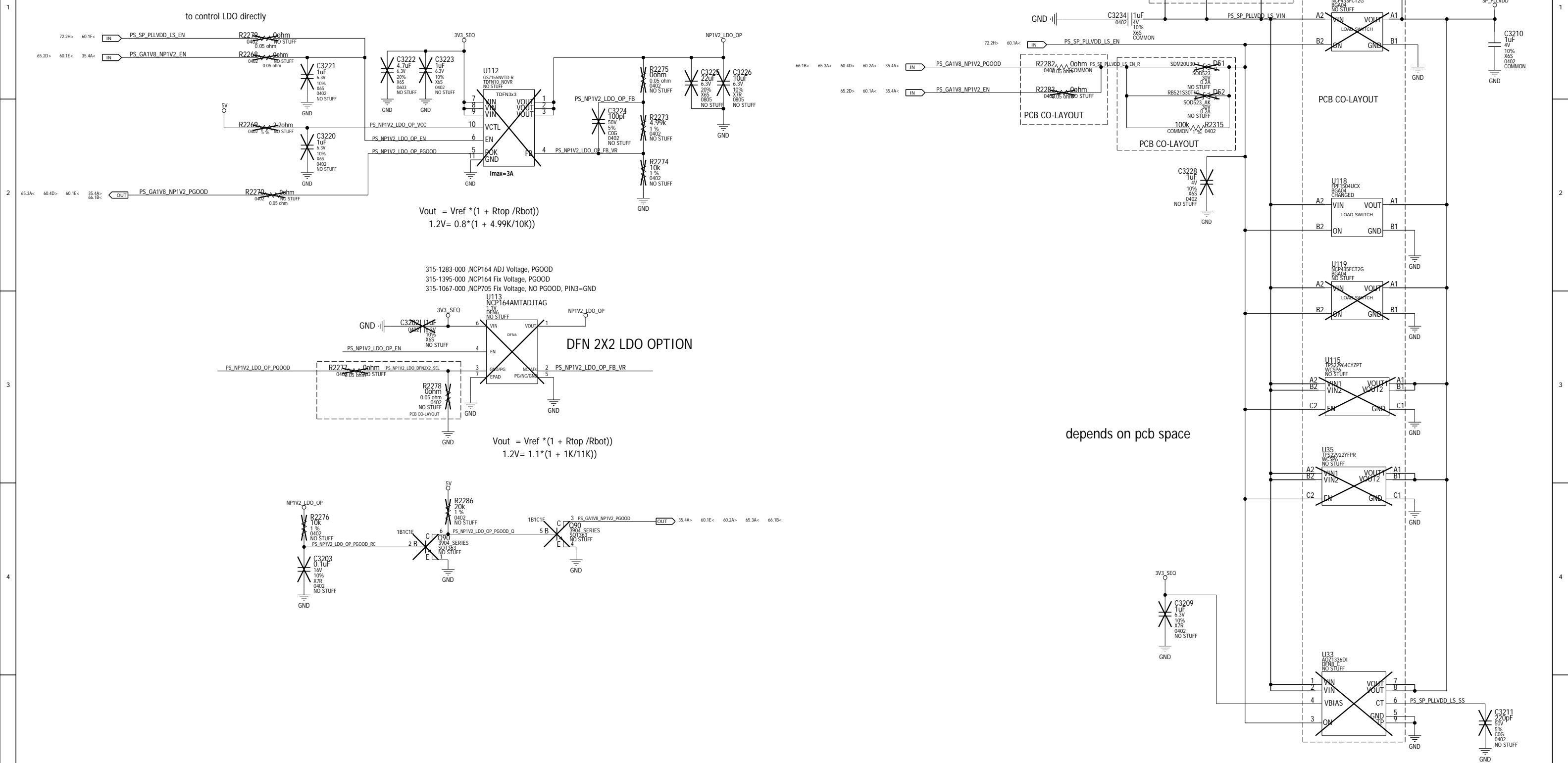
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Page 60: SPPLLVDD LDO_LOADSWITCH



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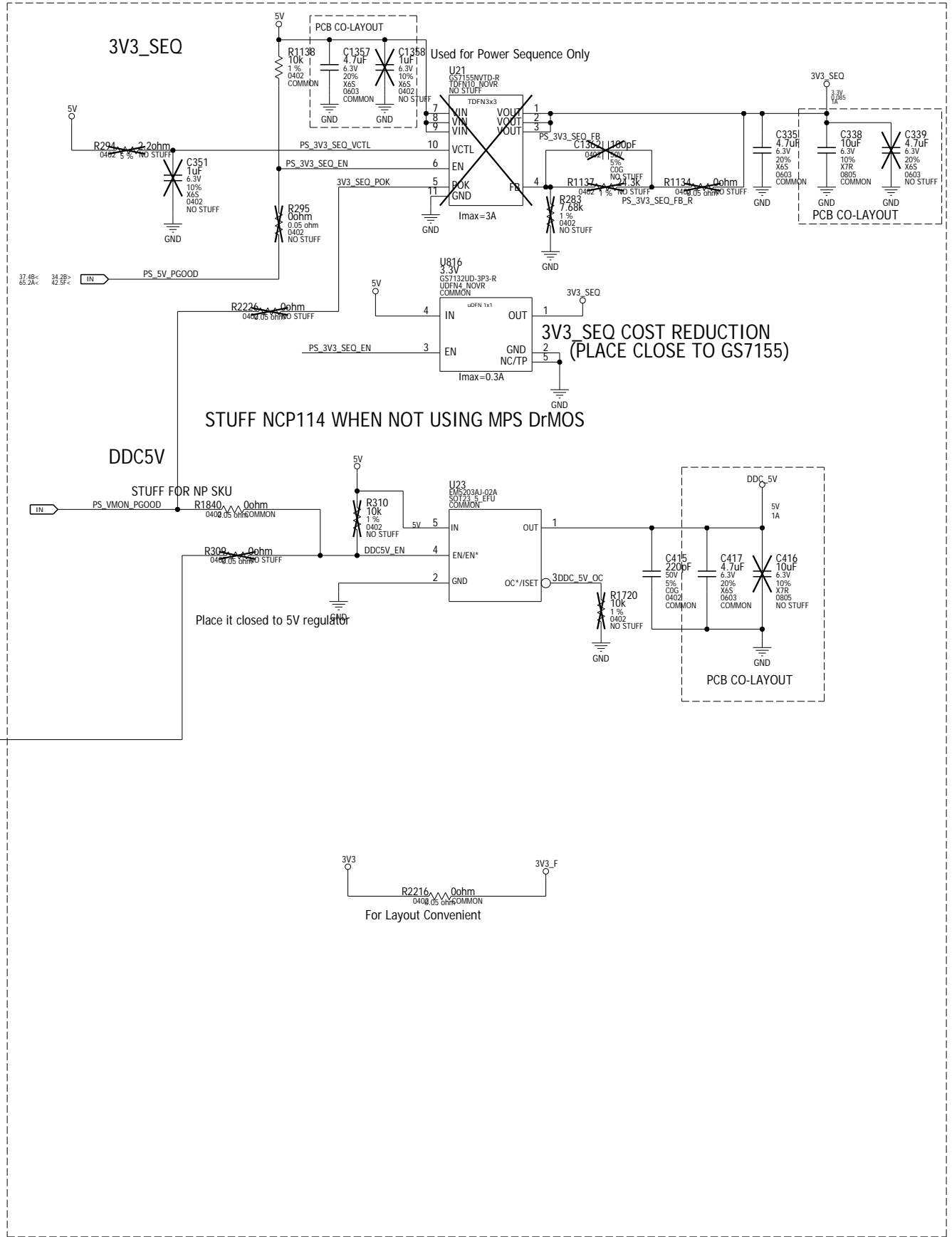
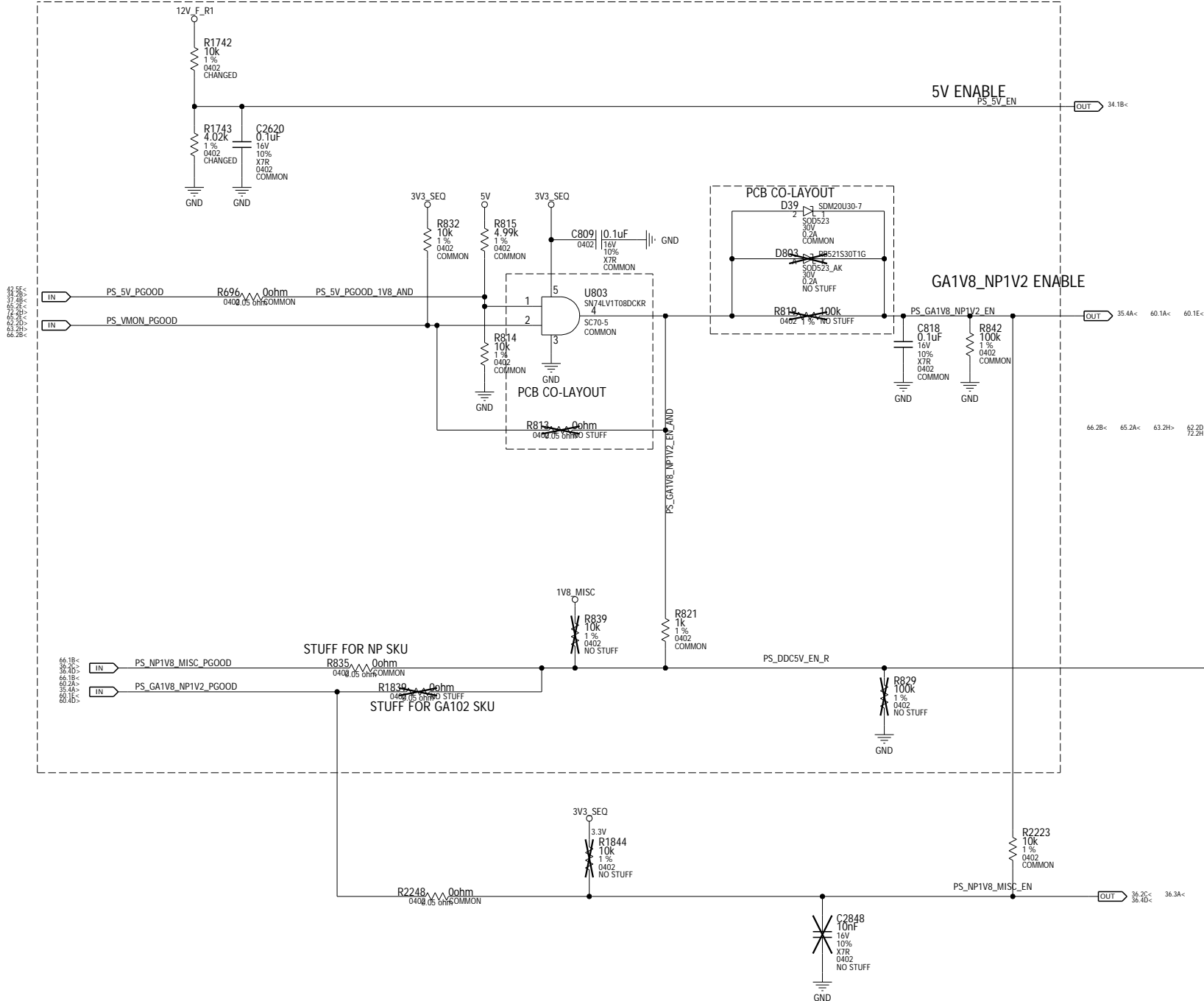
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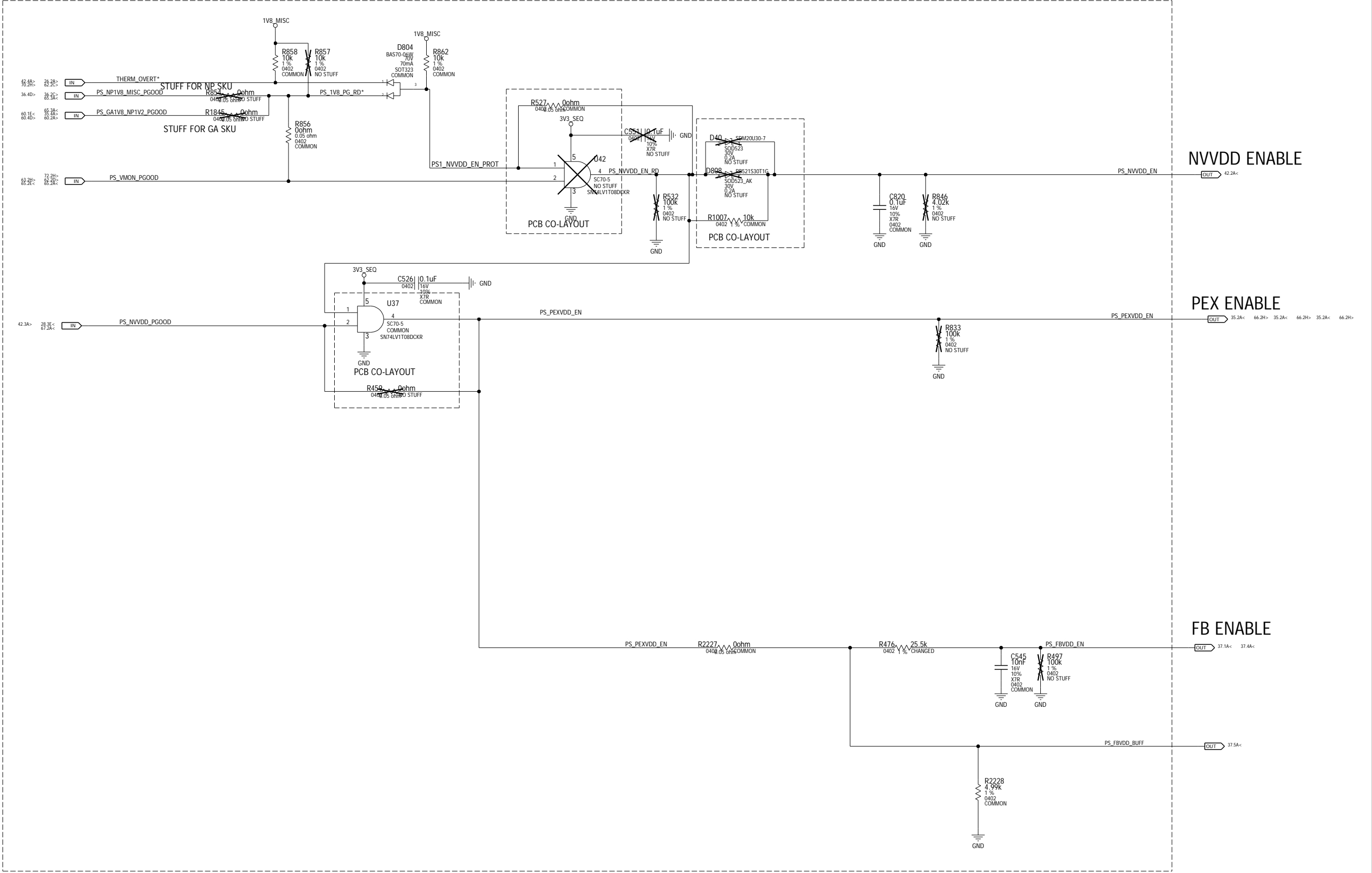
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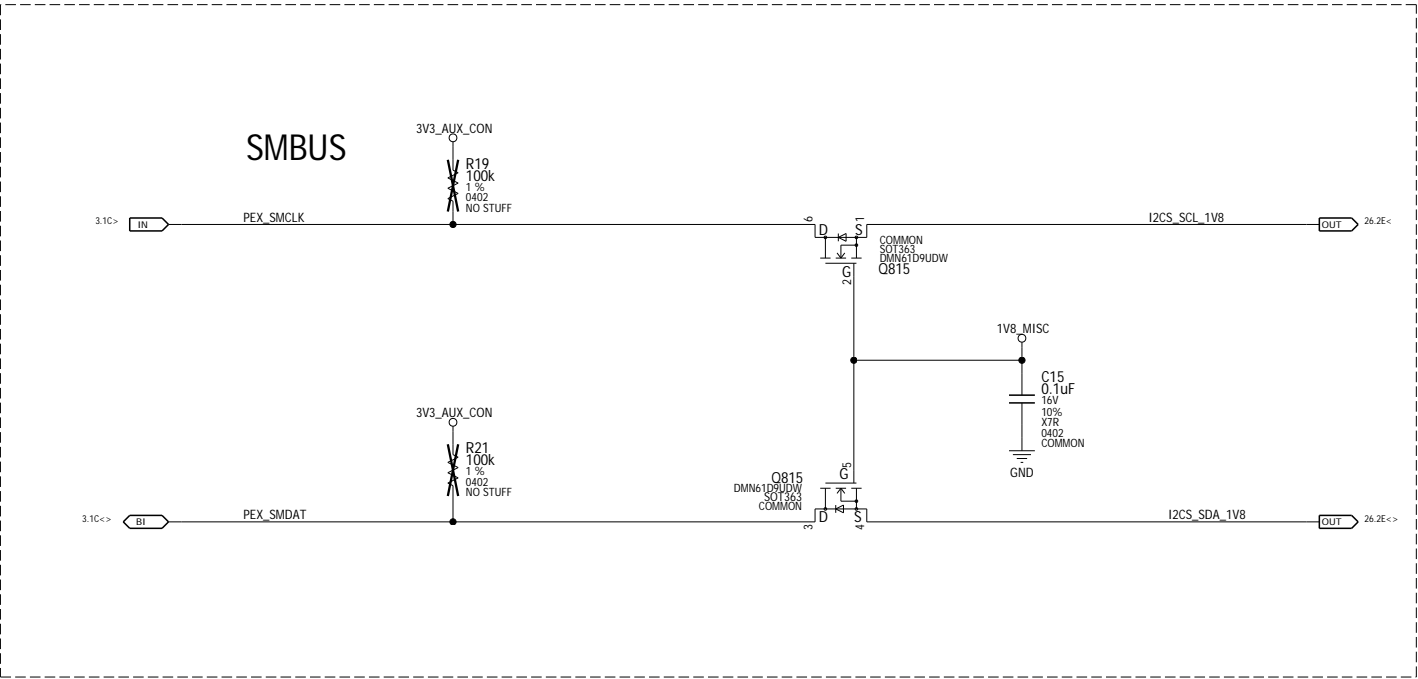
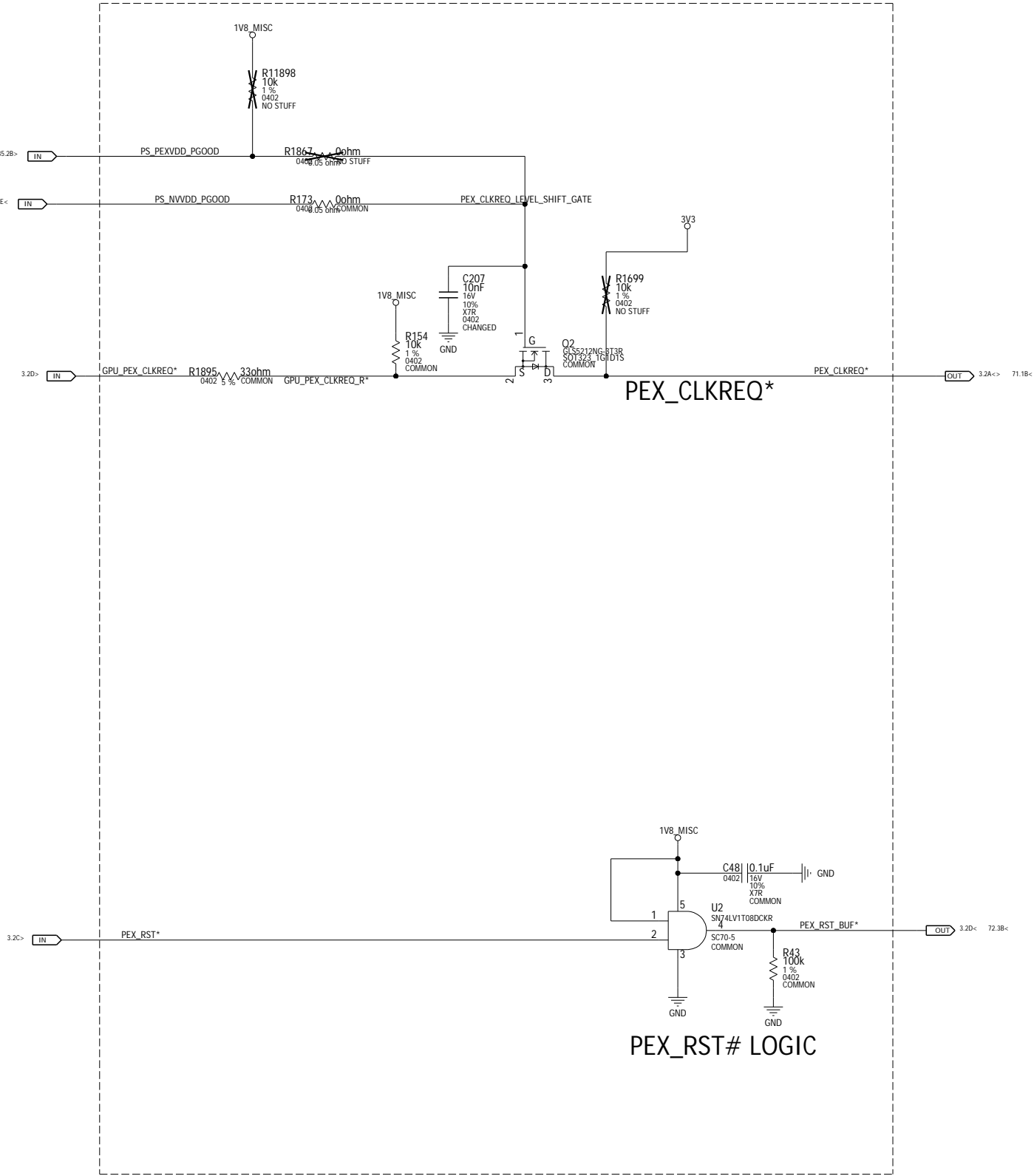
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REMOVE PEX3V3 MONITOR

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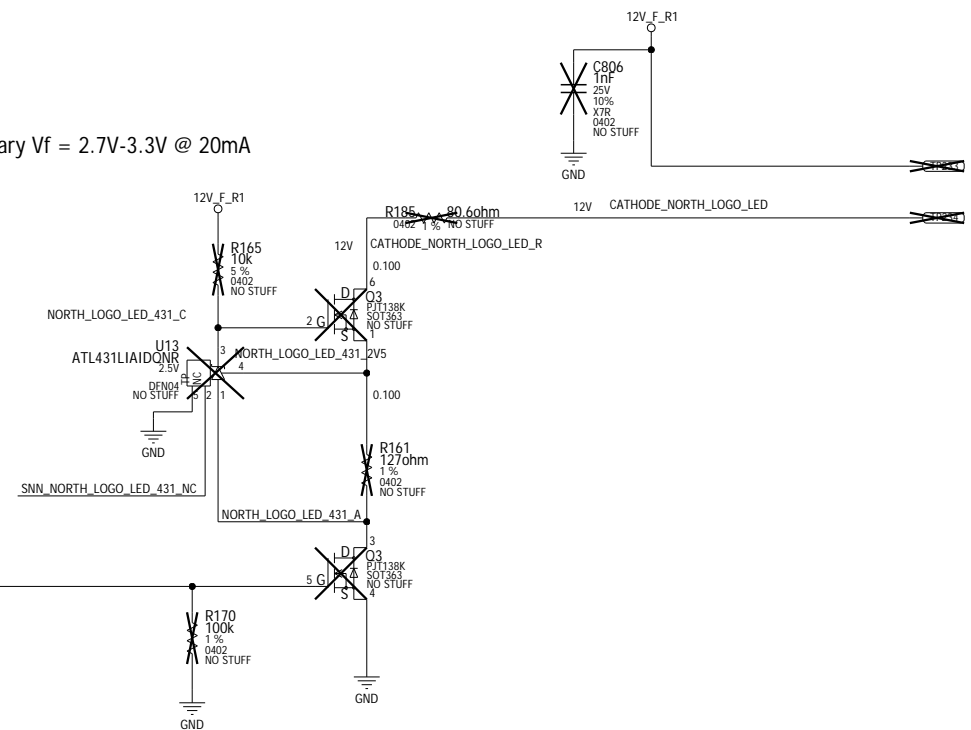
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2-PIN LED HEADER FOR NORTH LOGO LED (WHITE)

White LED: Preliminary $V_f = 2.7V-3.3V @ 20mA$

NORTH LOGO LED (WHITE)

(LED should not blink during boot)



DUAL FAN 6-PIN FFC HEADERS W/ 0.5MM PITCH

FAN B (RIGHT)

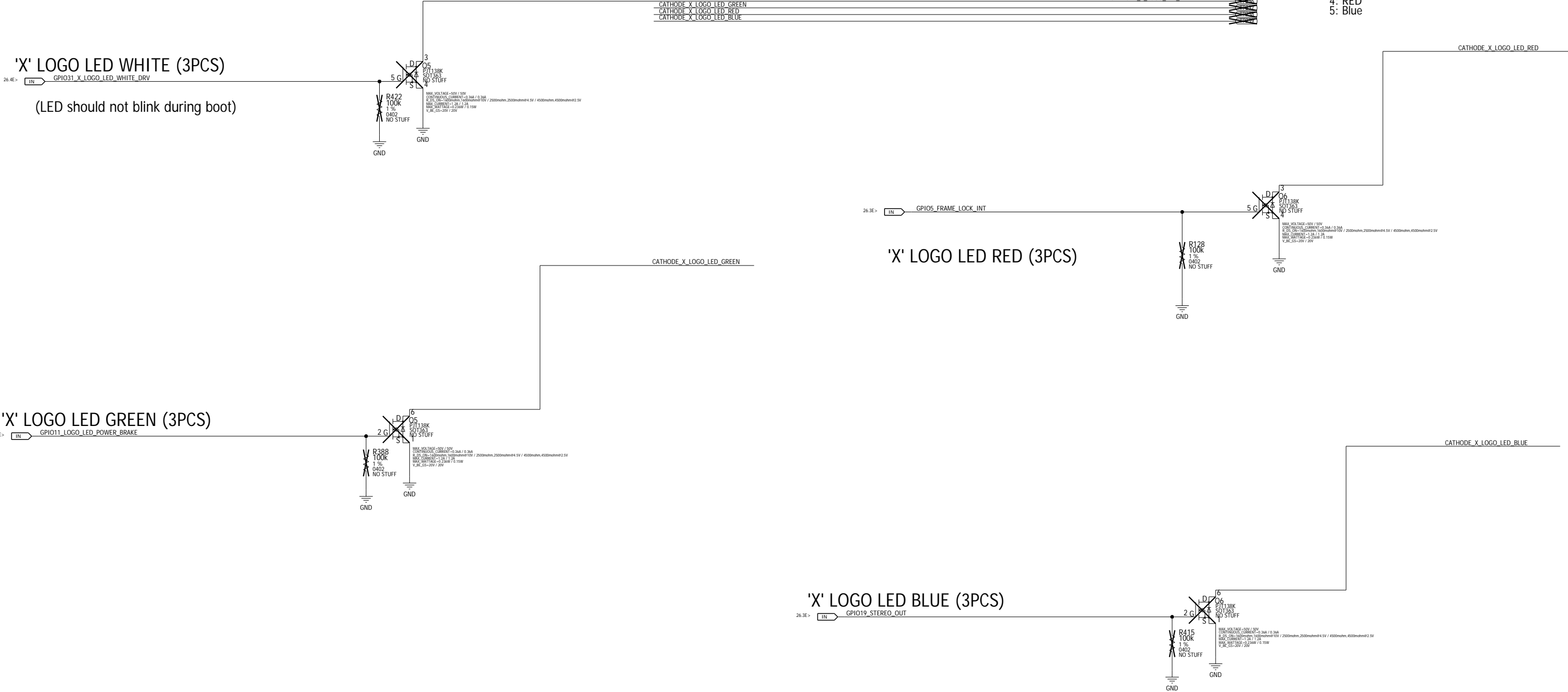
FAN A (LEFT)

ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	FAN & NORTH LOGO LED

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5-PIN POGO-PIN HEADERS FOR 'X' LOGO LEDs

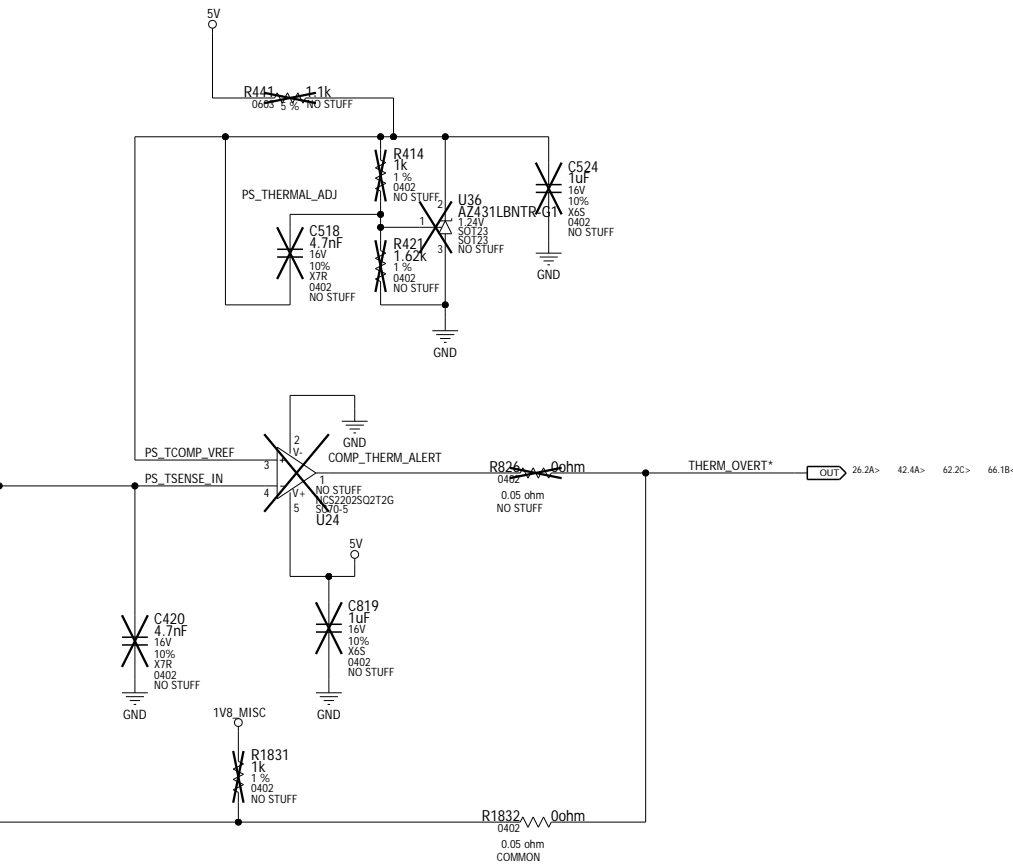
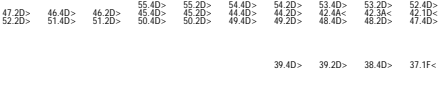
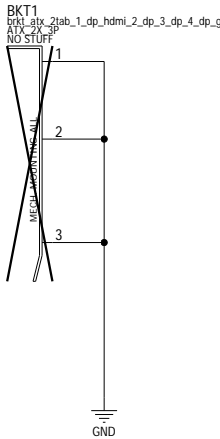


'X' LOGO LED WHITE (3PCS)

(LED should not blink during boot)

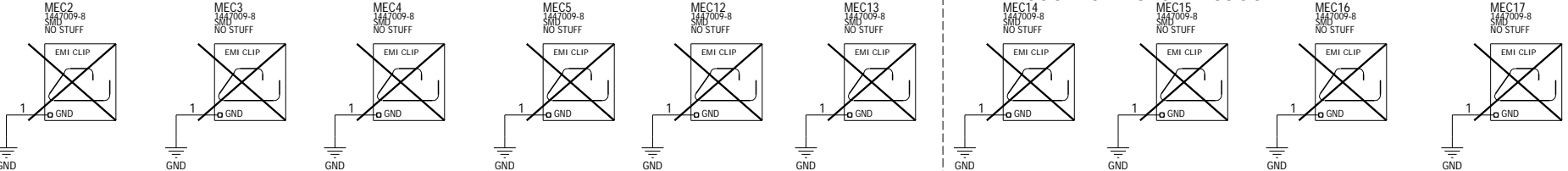
'X' LOGO LED GREEN (3PCS)

'X' LOGO LED BLUE (3PCS)

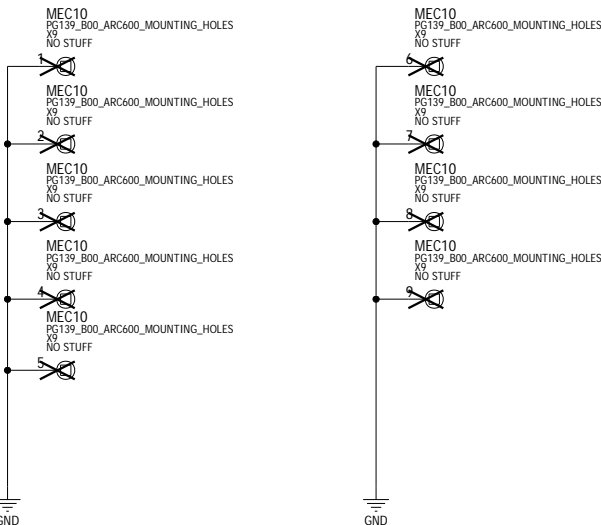


TOP: 6x EMI CLIPS

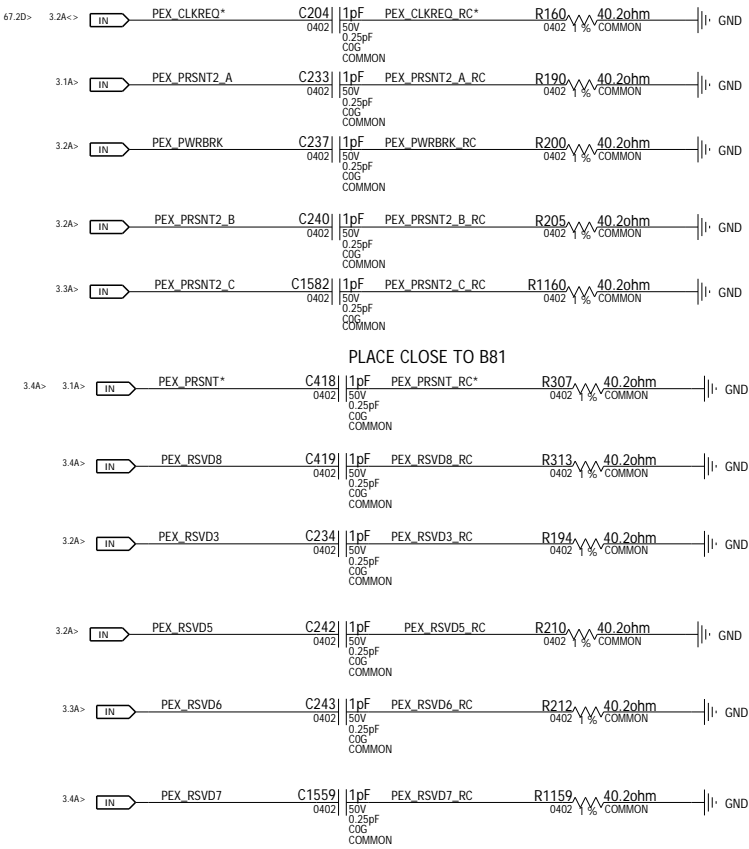
reserve more in case



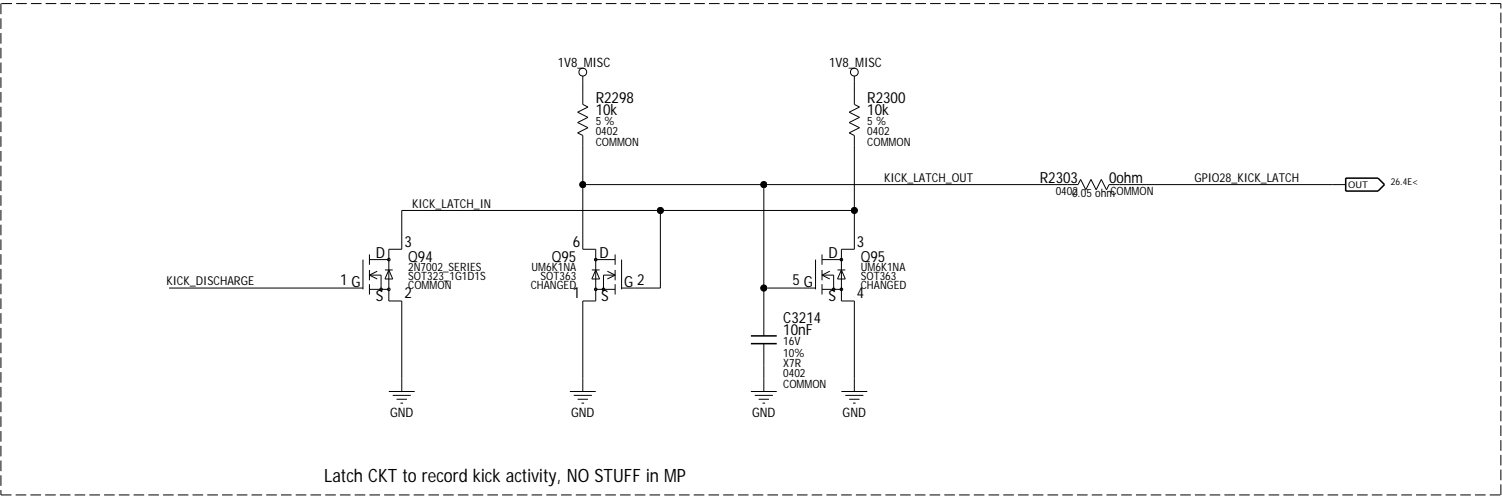
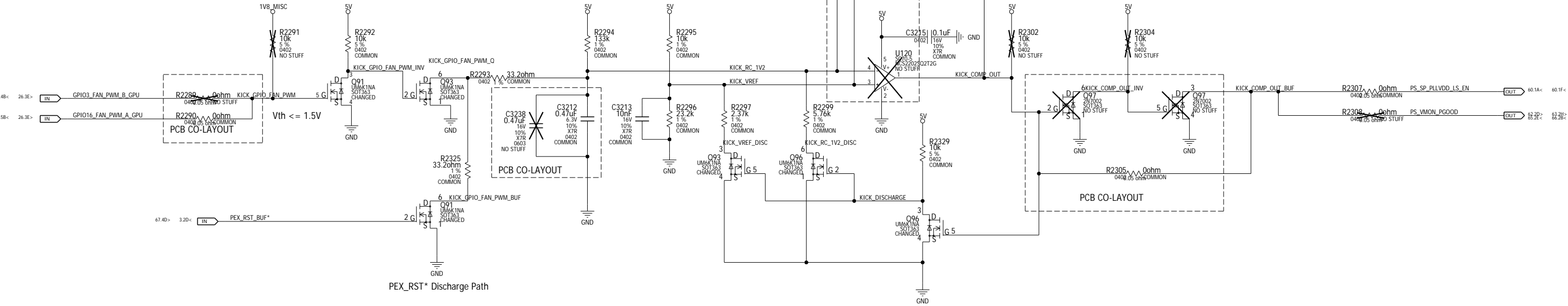
MOUNTING HOLES



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