

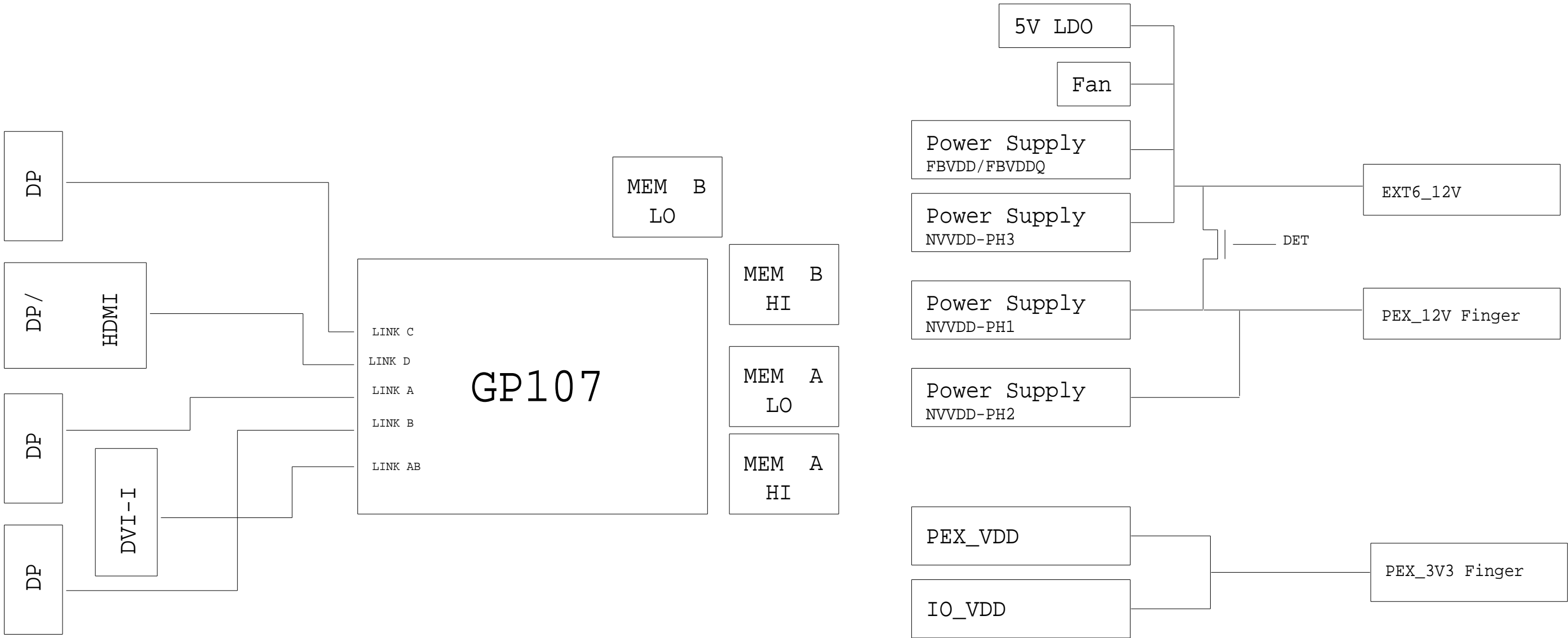
A	B	C	D	E	F	G	H
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1

2

34

Block Diagram



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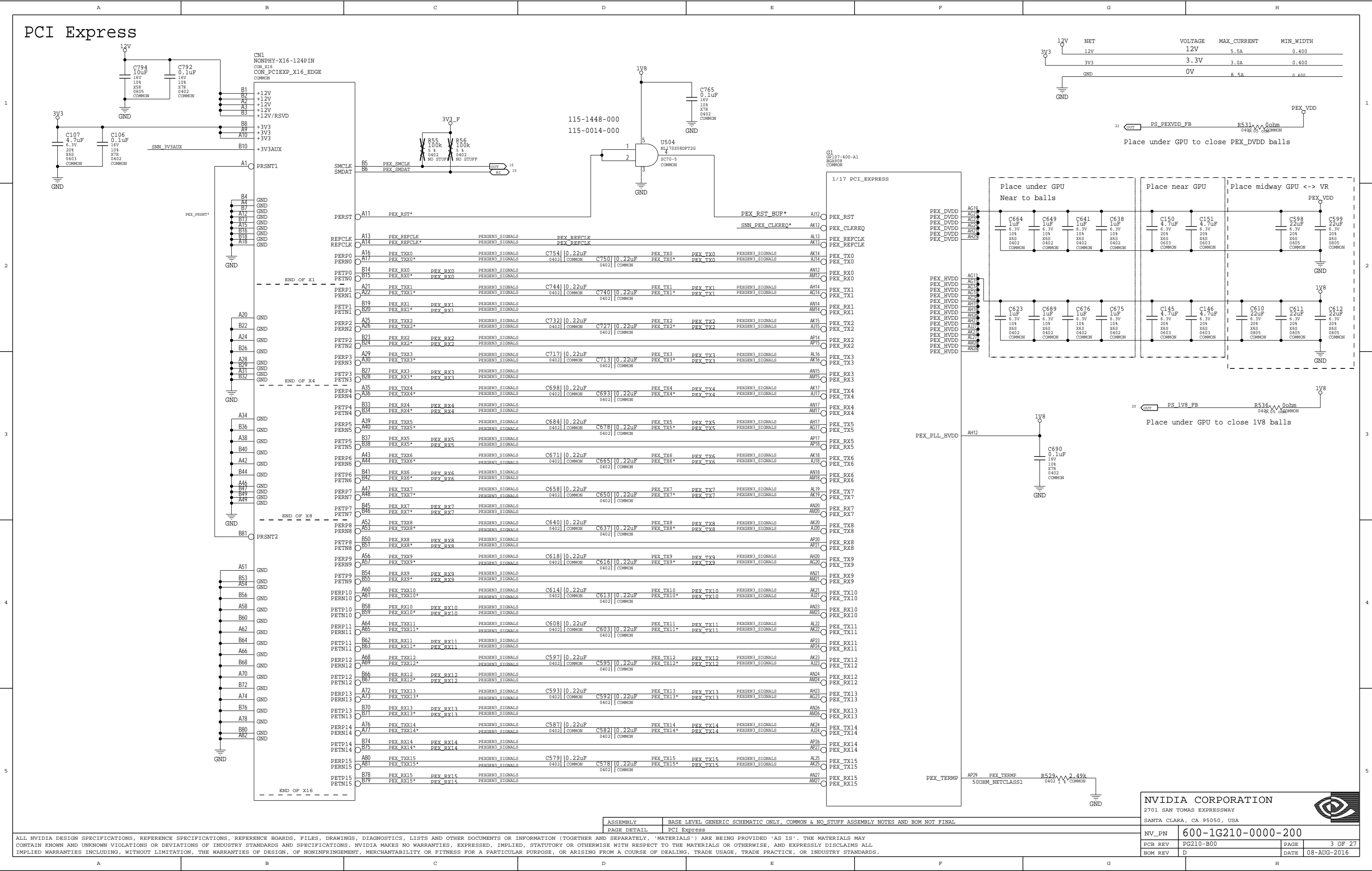
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PCI Express



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ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
PAGE DETAIL	PCI Express

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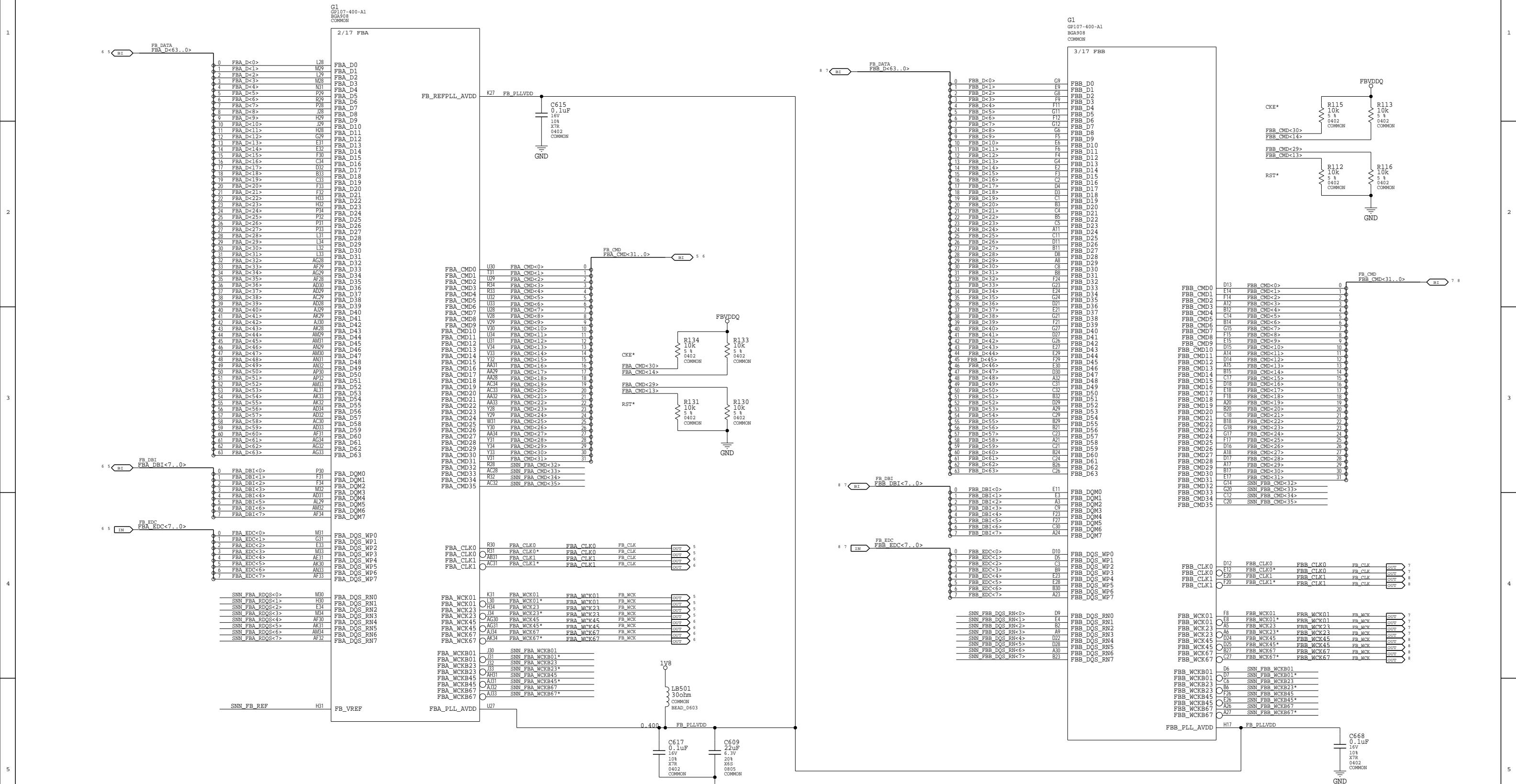
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MEMORY: GPU Partition A/B

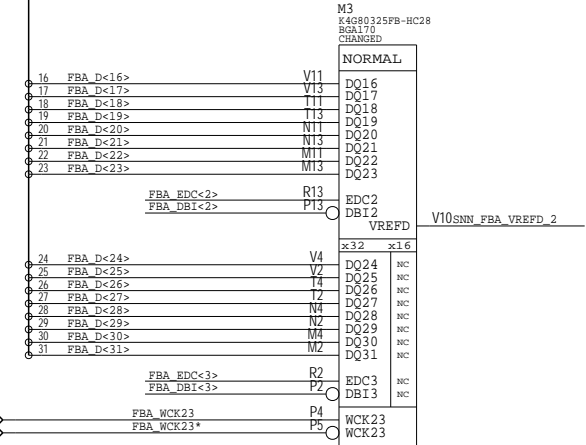
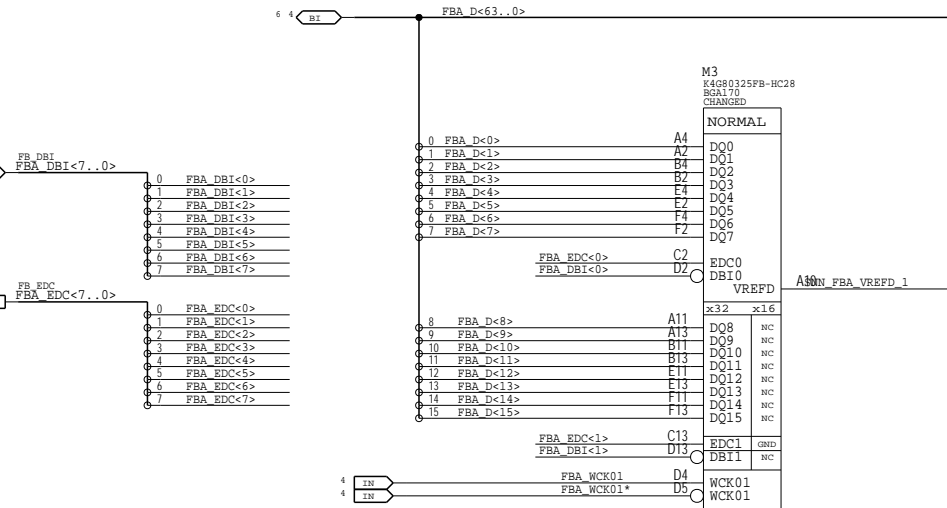
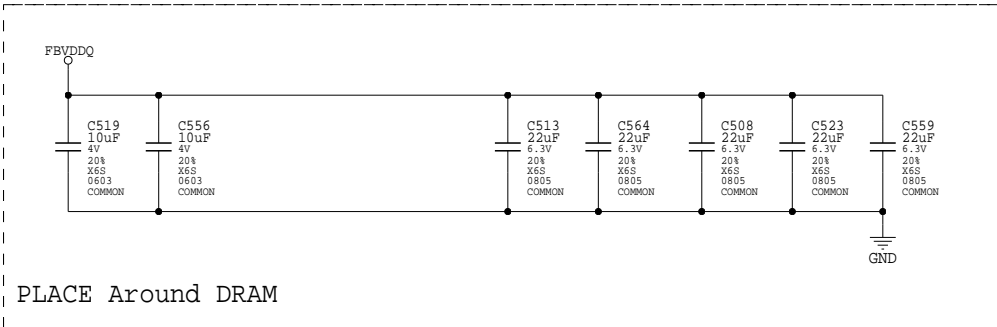
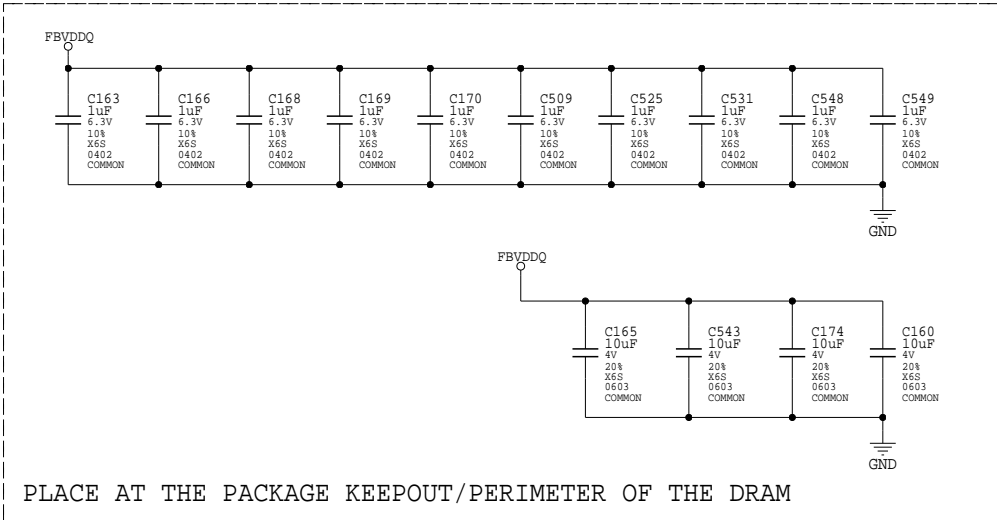
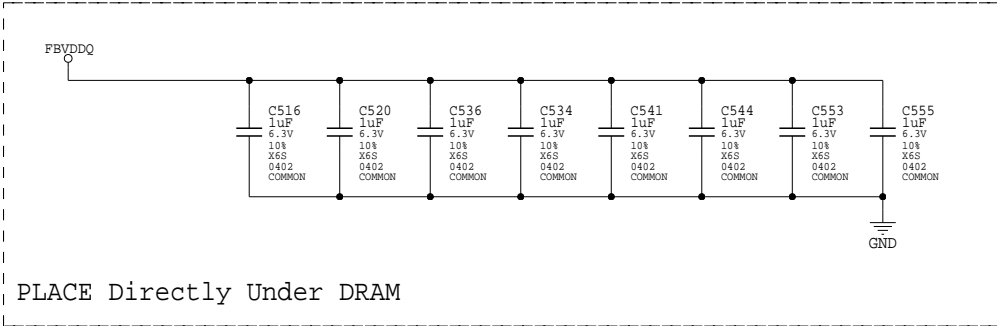
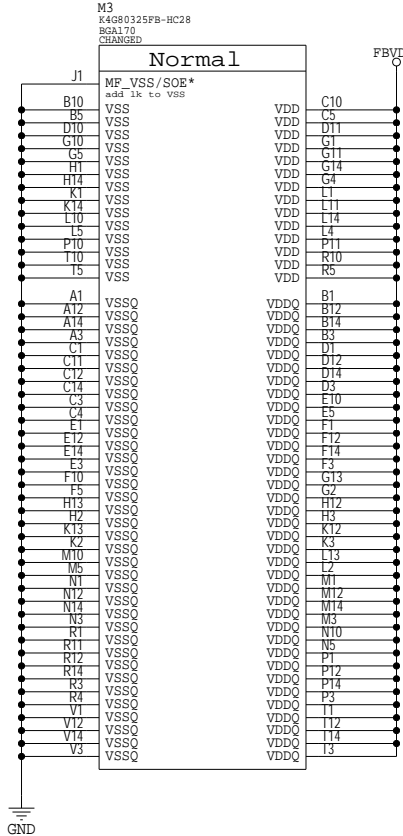
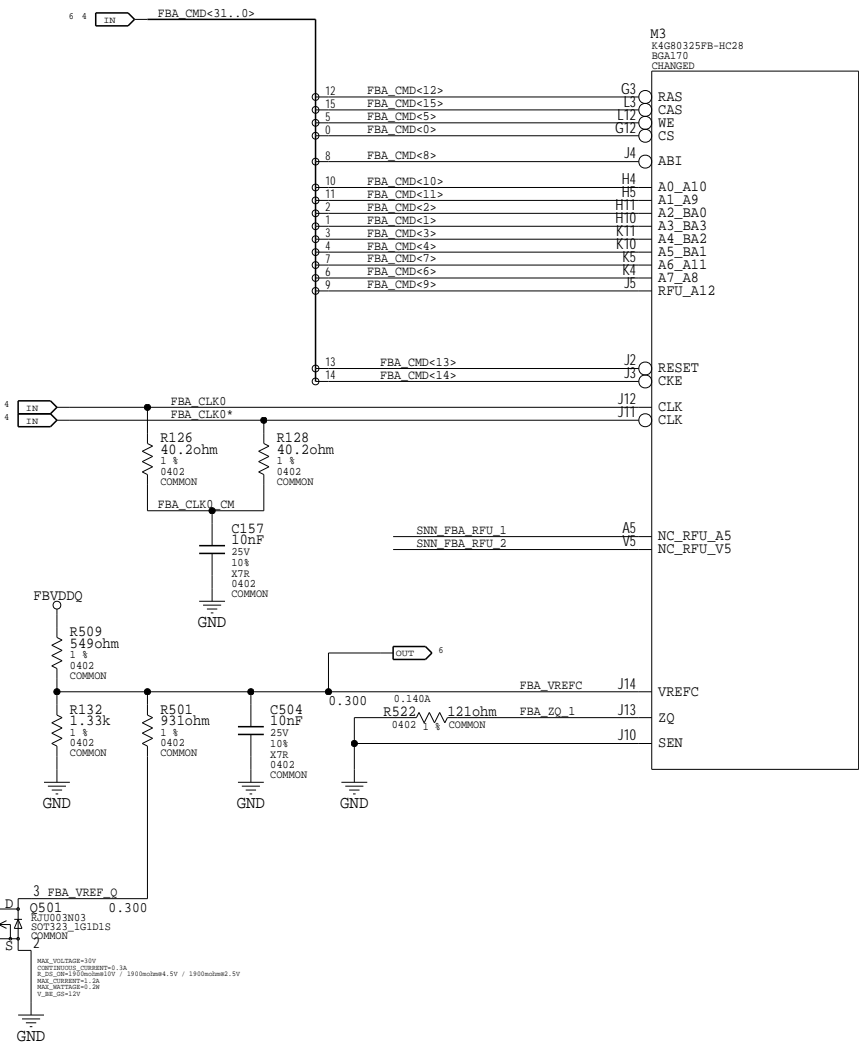


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PAGE DETAIL	MEMORY: GPU Partition A/B

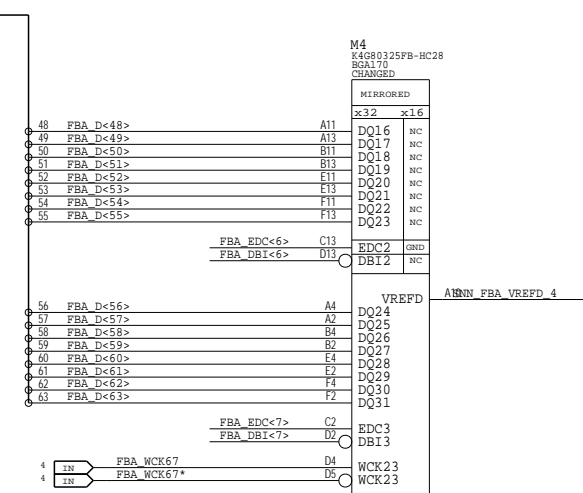
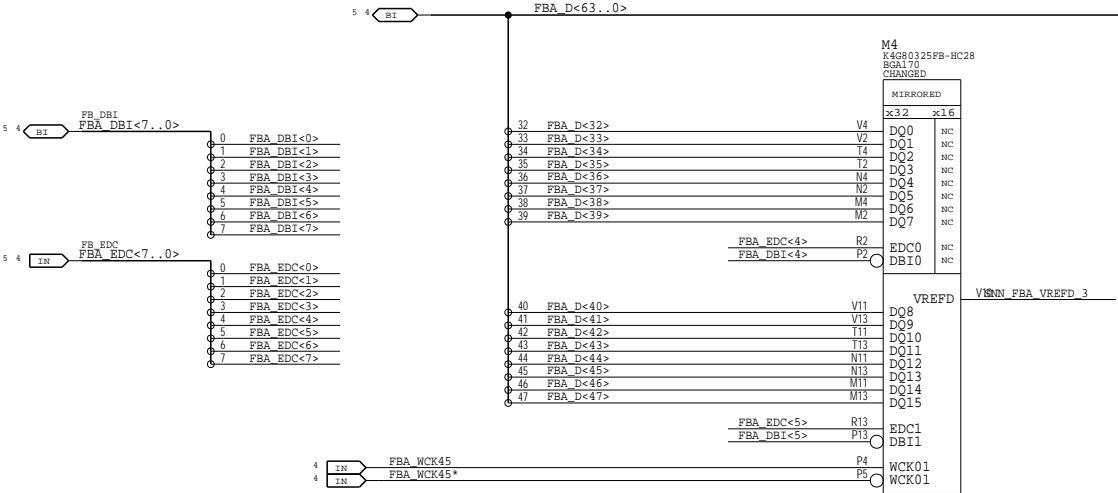
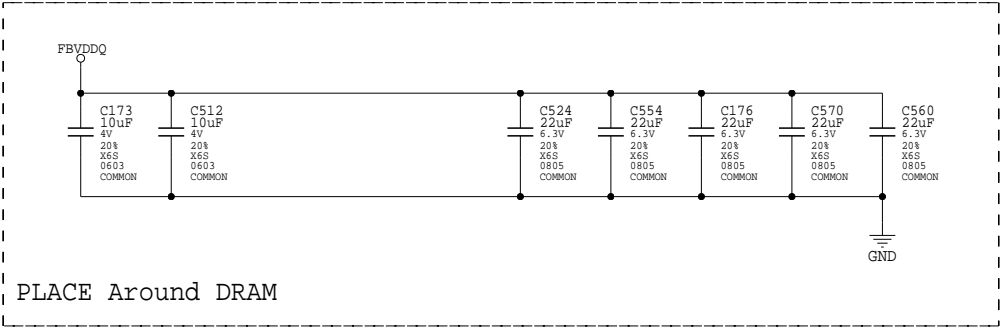
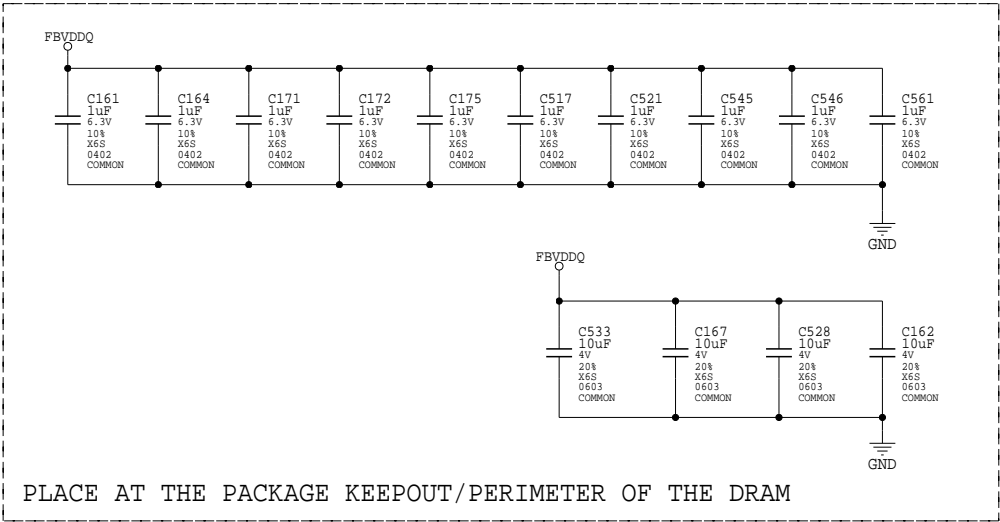
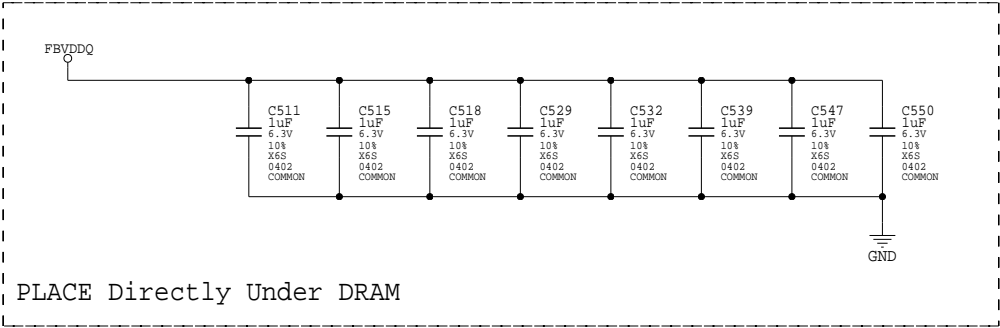
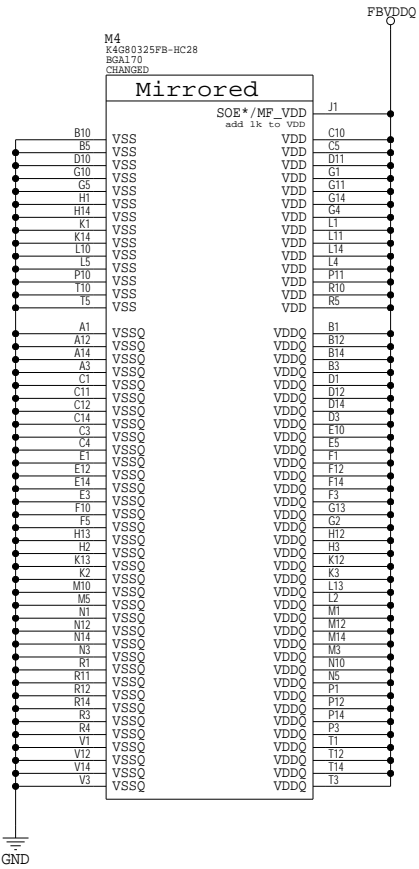
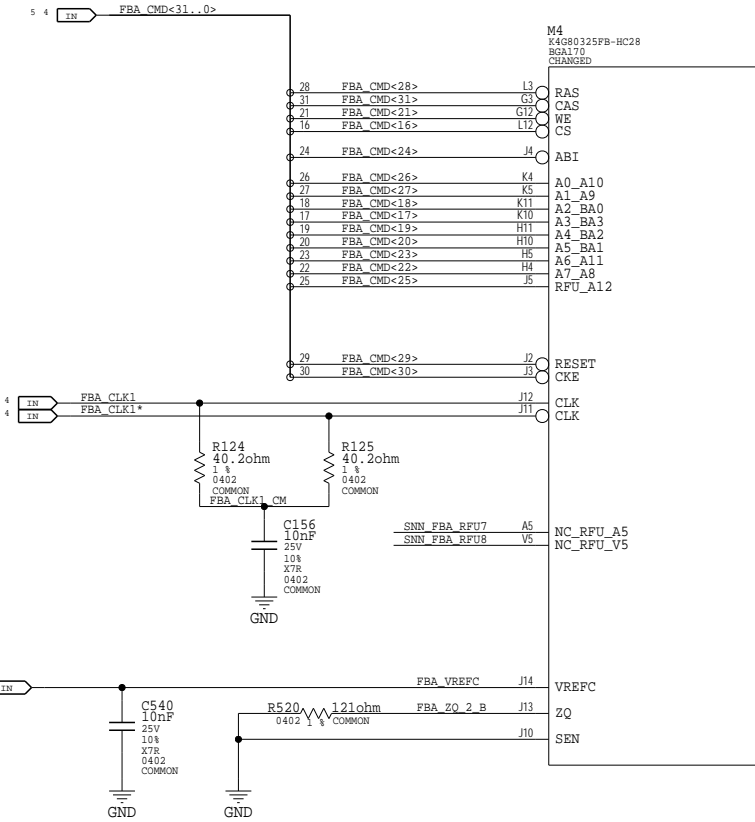
MEMORY: FBA Partition 31..0

CMD	0..31	32..63
CMD0	CS*	
CMD1	A3_BA3	
CMD2	A2_BA0	
CMD3	A4_BA2	
CMD4	A5_BA1	
CMD5	WE*	
CMD6	A7_A8	
CMD7	A6_A11	
CMD8	ABT*	
CMD9	A12_RFU	
CMD10	A0_A10	
CMD11	A1_A9	
CMD12	RAS*	
CMD13	RST*	
CMD14	CKE*	
CMD15	CAS*	
CMD16		CS*
CMD17		A3_BA3
CMD18		A2_BA0
CMD19		A4_BA2
CMD20		A5_BA1
CMD21		WE*
CMD22		A7_A8
CMD23		A6_A11
CMD24		ABT*
CMD25		A12_RFU
CMD26		A0_A10
CMD27		A1_A9
CMD28		RAS*
CMD29		RST*
CMD30		CKE*
CMD31		CAS*



MEMORY: FBA Partition 63..32

CMD	0..31	32..63
CMD0	CS*	
CMD1	A3_BA3	
CMD2	A2_BA0	
CMD3	A4_BA2	
CMD4	A5_BA1	
CMD5	WE*	
CMD6	A7_A8	
CMD7	A6_A11	
CMD8	ABT*	
CMD9	A12_RFU	
CMD10	A0_A10	
CMD11	A1_A9	
CMD12	RAS*	
CMD13	RST*	
CMD14	CKE*	
CMD15	CAS*	
CMD16		CS*
CMD17		A3_BA3
CMD18		A2_BA0
CMD19		A4_BA2
CMD20		A5_BA1
CMD21		WE*
CMD22		A7_A8
CMD23		A6_A11
CMD24		ABT*
CMD25		A12_RFU
CMD26		A0_A10
CMD27		A1_A9
CMD28		RAS*
CMD29		RST*
CMD30		CKE*
CMD31		CAS*



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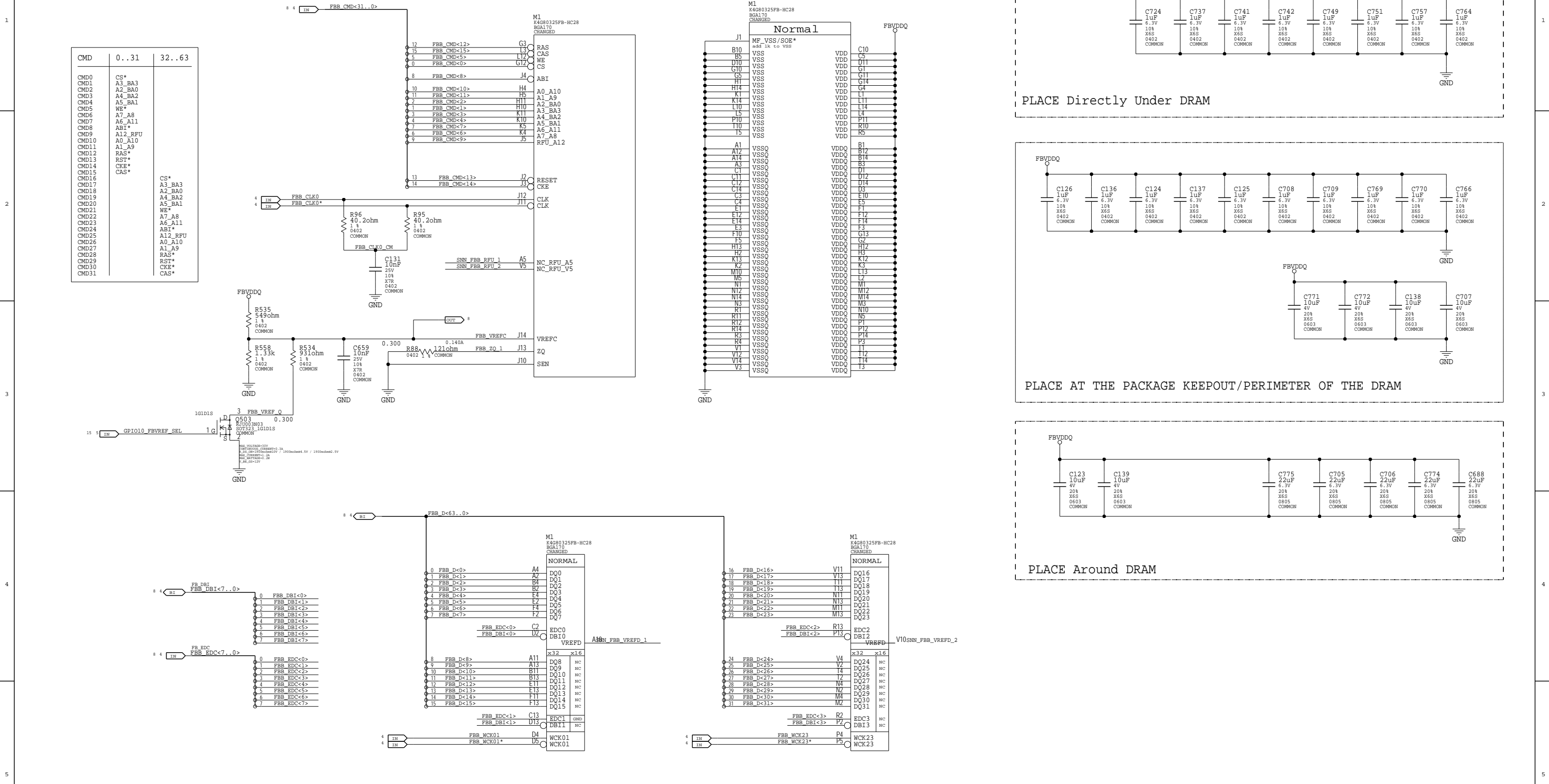
PAGE

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MEMORY: FBB Partition 31..0



PLACE Directly Under DRAM

PLACE AT THE PACKAGE KEEPOUT/PERIMETER OF THE DRAM

PLACE Around DRAM

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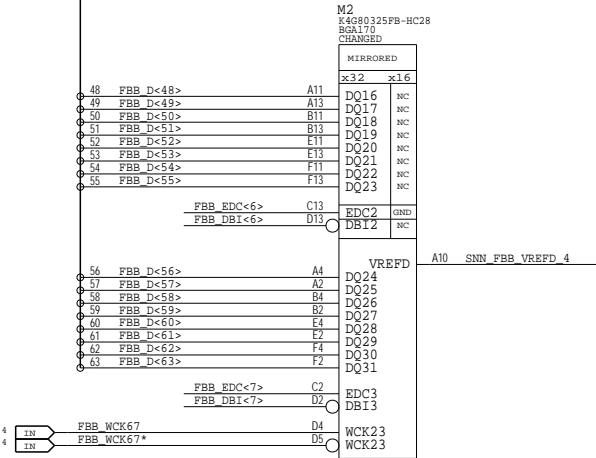
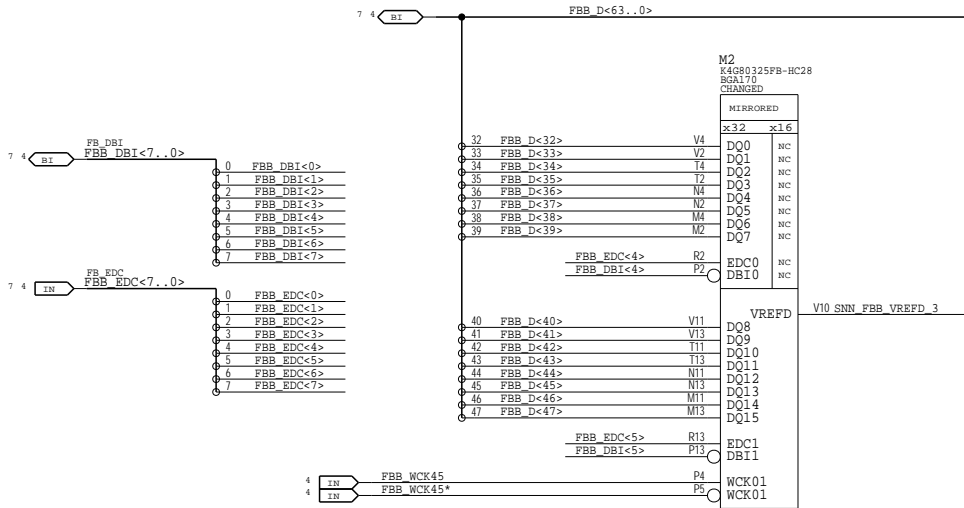
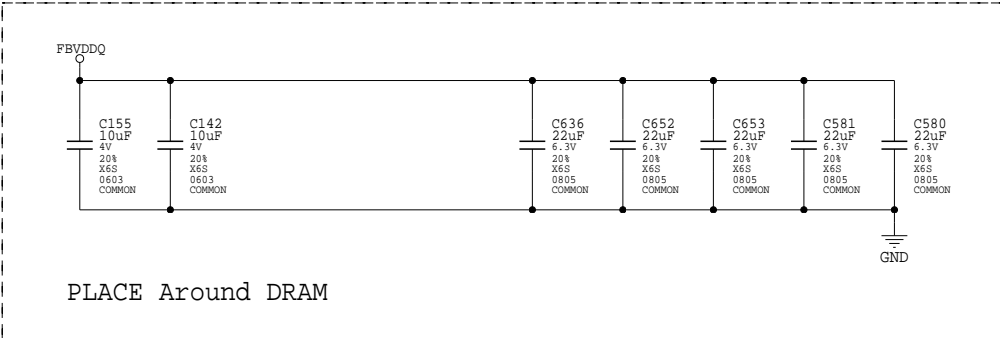
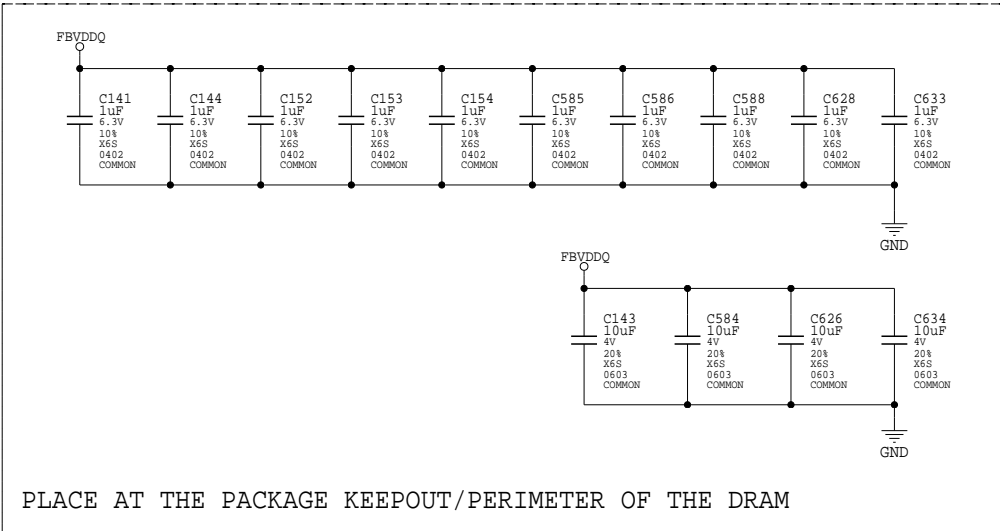
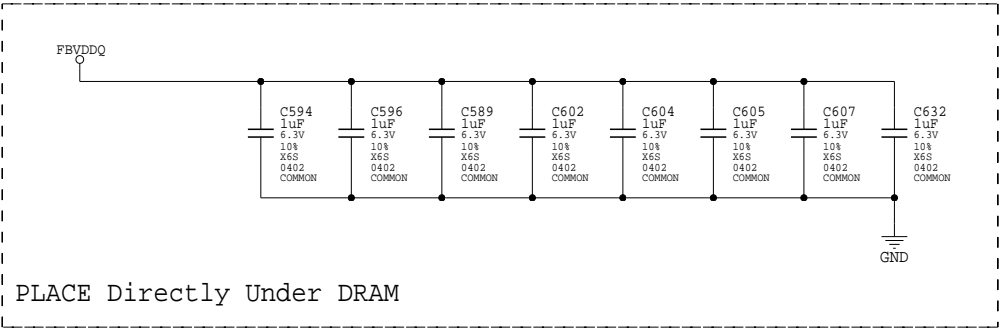
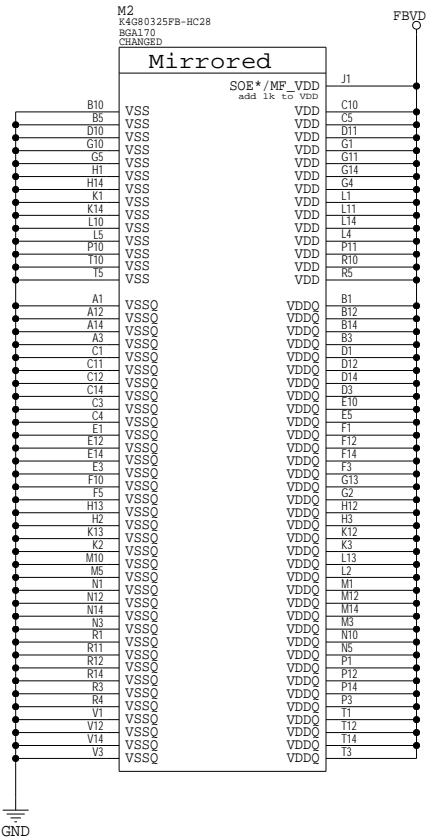
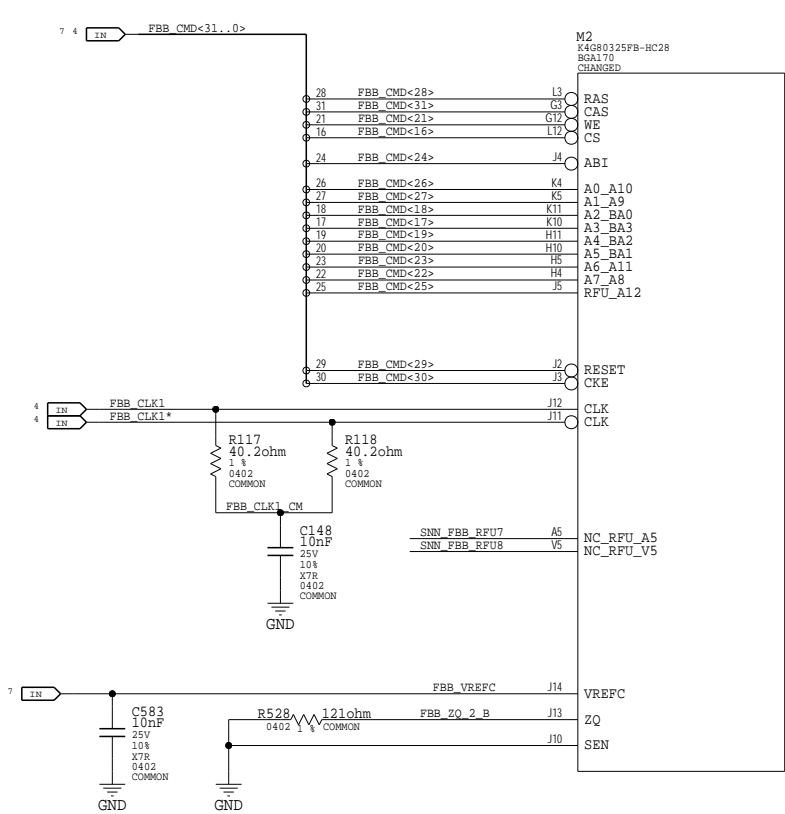
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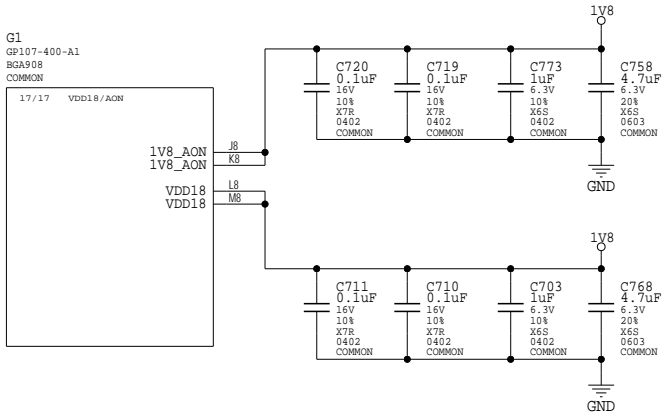
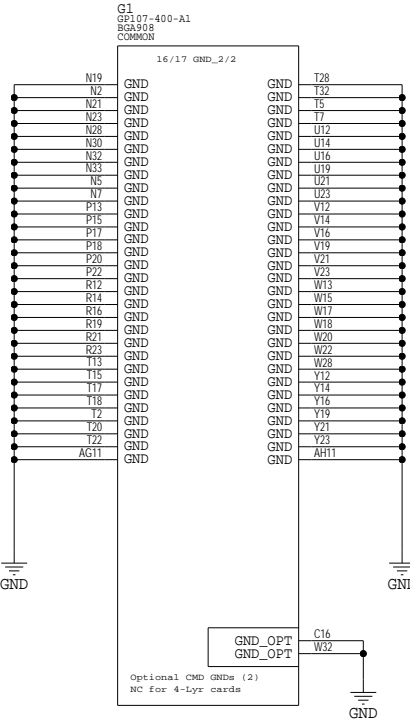
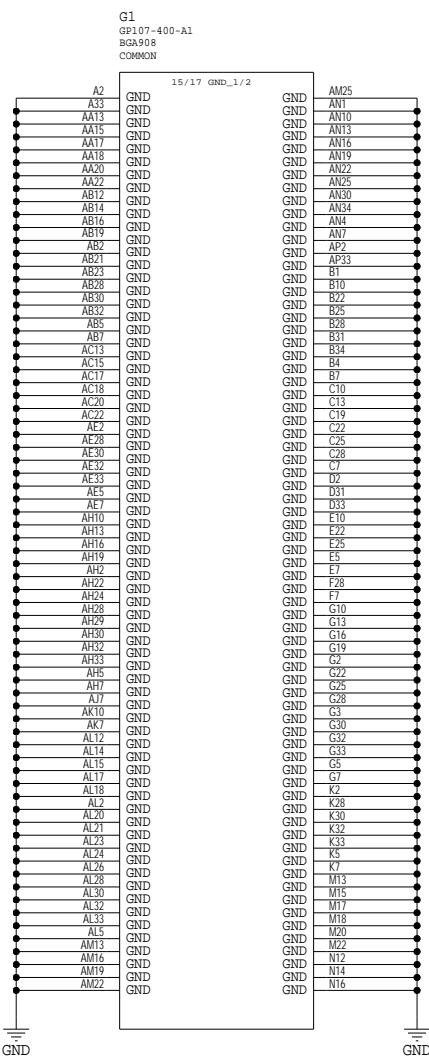
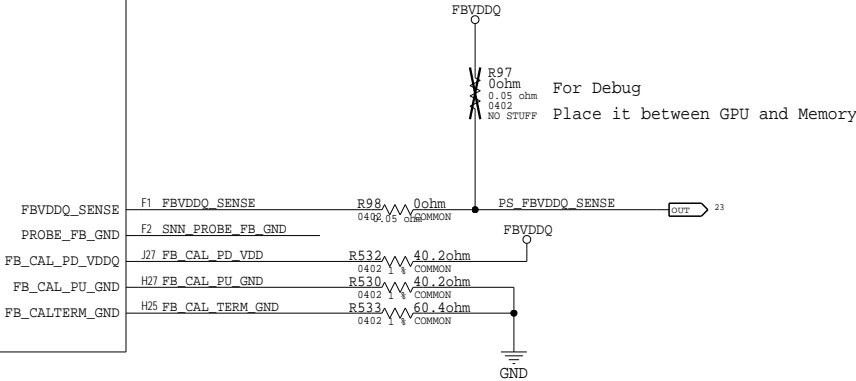
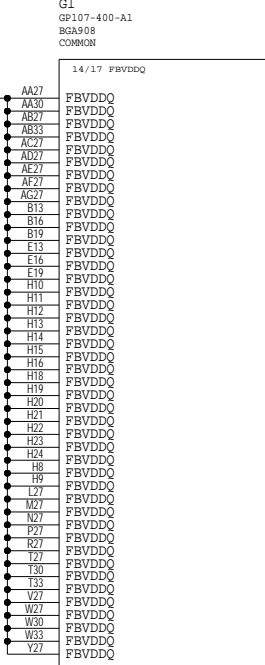
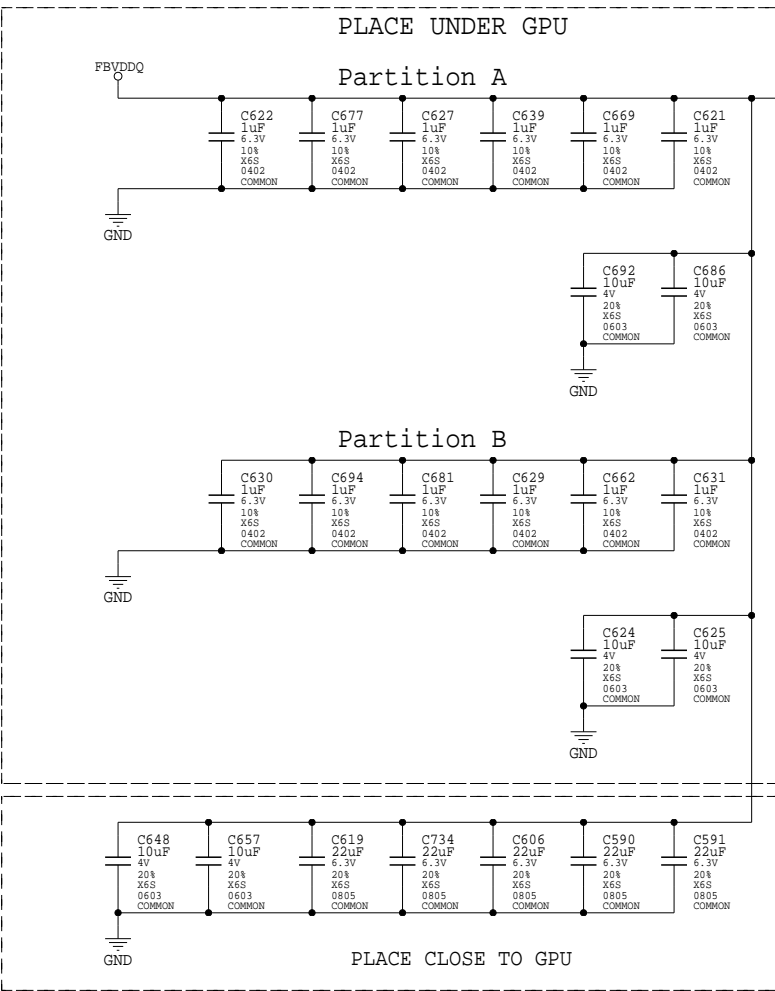
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PAGE DETAIL MEMORY: FBB[31:0]

MEMORY: FBB Partition 63..32

CMD	0..31	32..63
CMD0	CS*	
CMD1	A3_BA3	
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CMD3	A4_BA2	
CMD4	A5_BA1	
CMD5	WE*	
CMD6	A7_A8	
CMD7	A6_A11	
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CMD13	RST*	
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CMD15	CAS*	
CMD16		CS*
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CMD22		A7_A8
CMD23		A6_A11
CMD24		ABI*
CMD25		A12_RFU
CMD26		A0_A10
CMD27		A1_A9
CMD28		RAS*
CMD29		RST*
CMD30		CKE*
CMD31		CAS*



GPU FBVDDQ & 1V8 Decoupling



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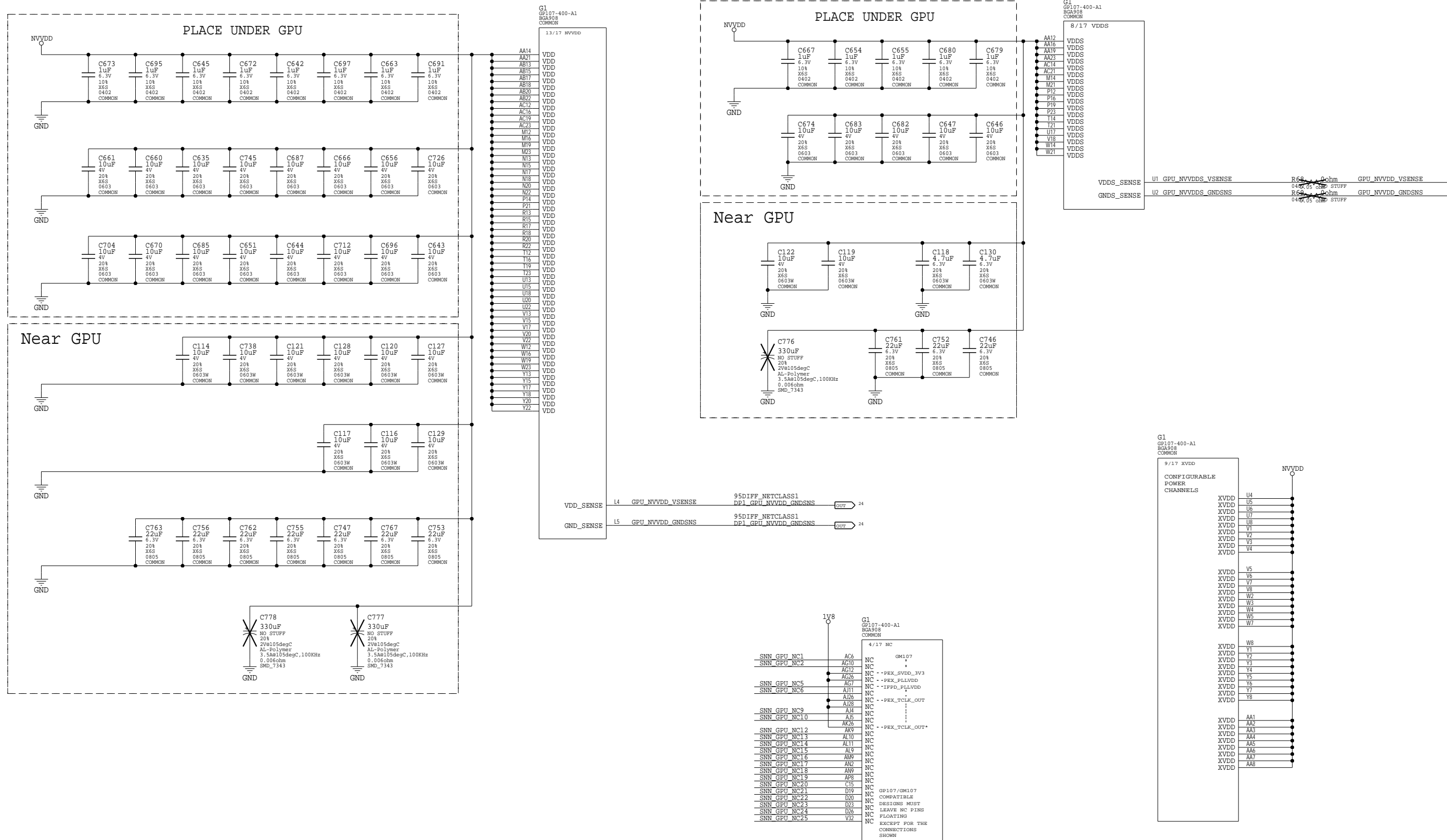
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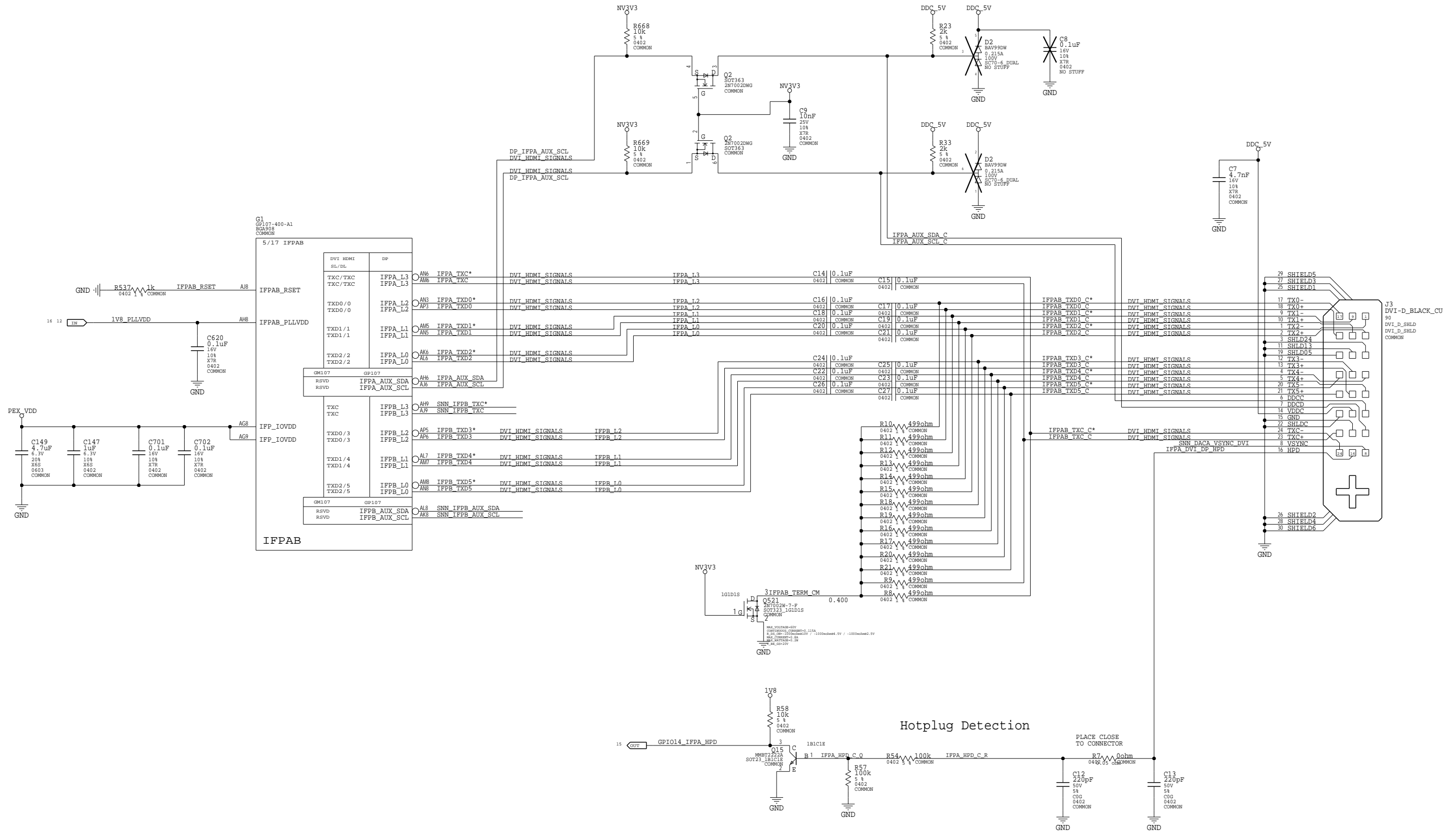
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GPU NVVDD & NVVDDS Decoupling



IFPAB DVI-DL



IFPD DP

1

2

3

4

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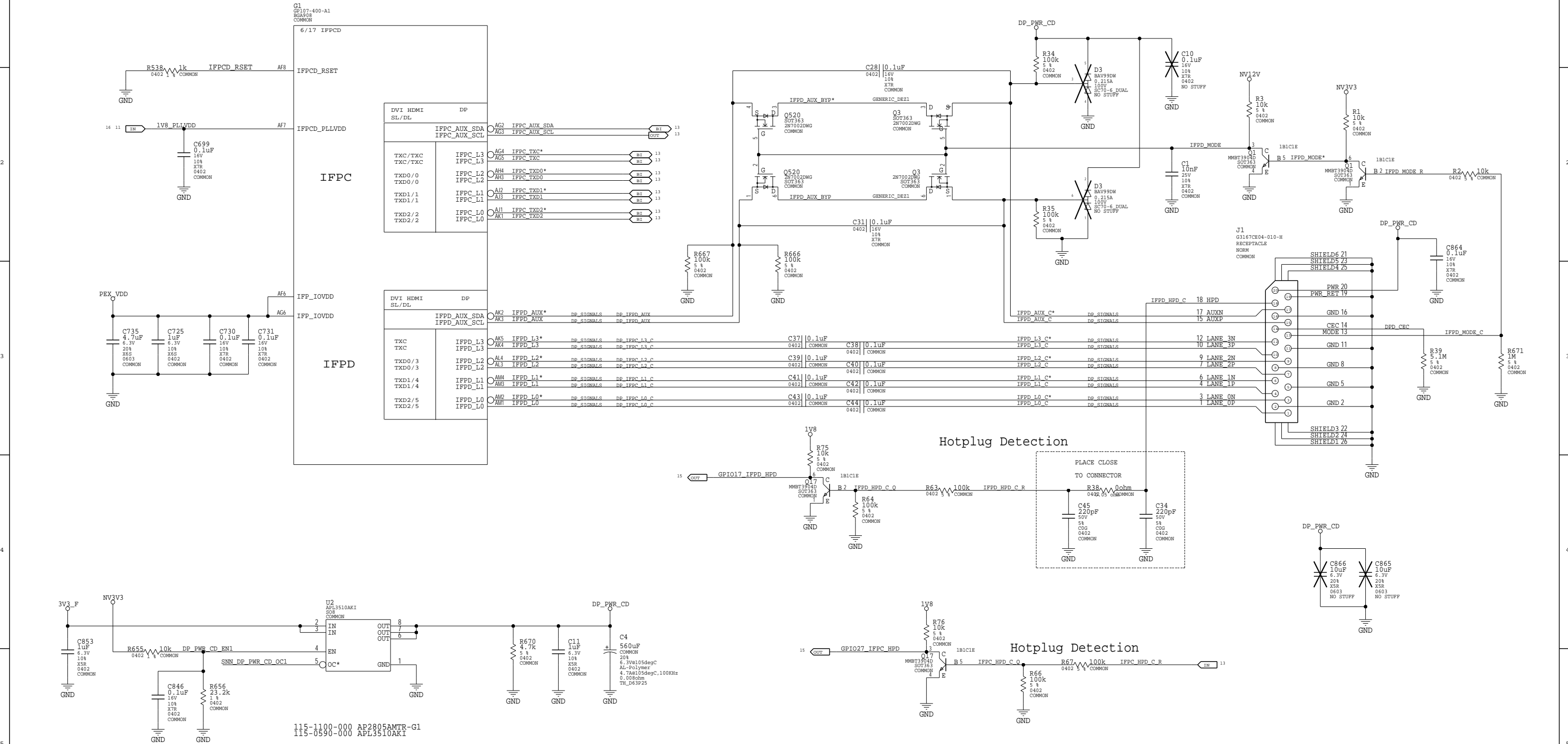
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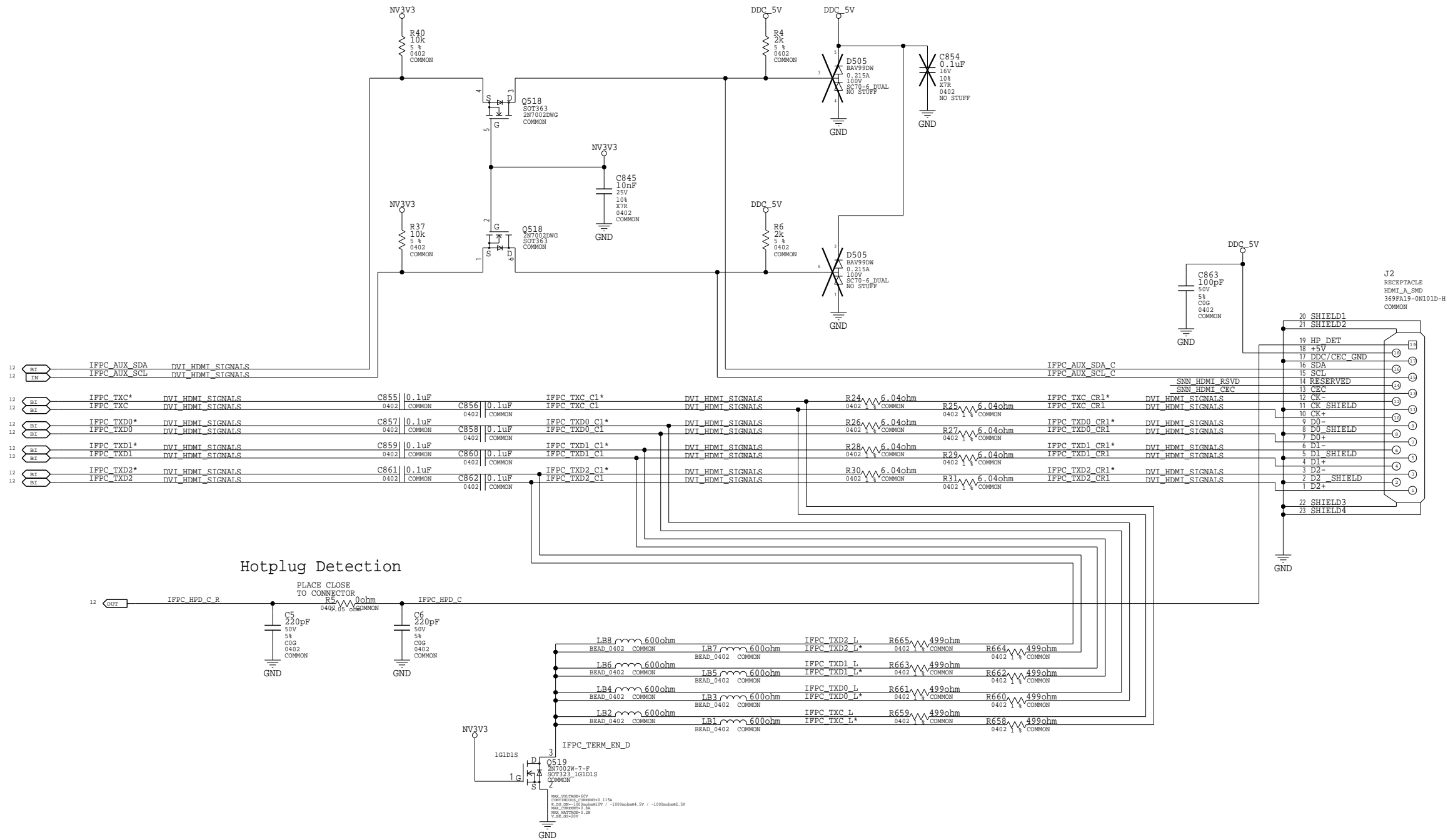
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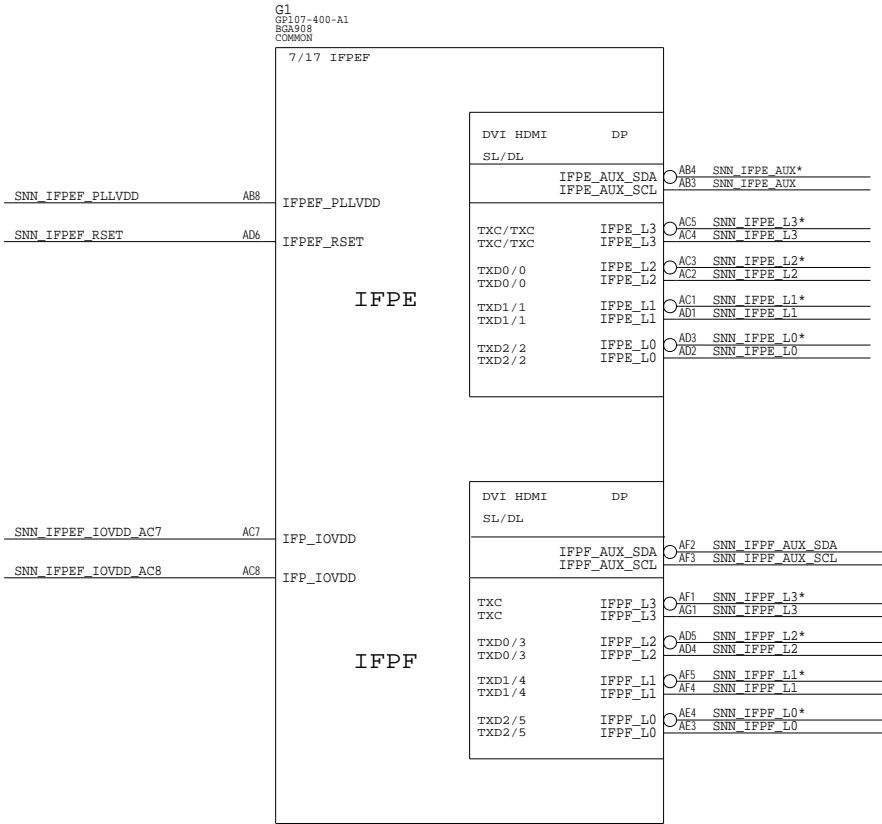
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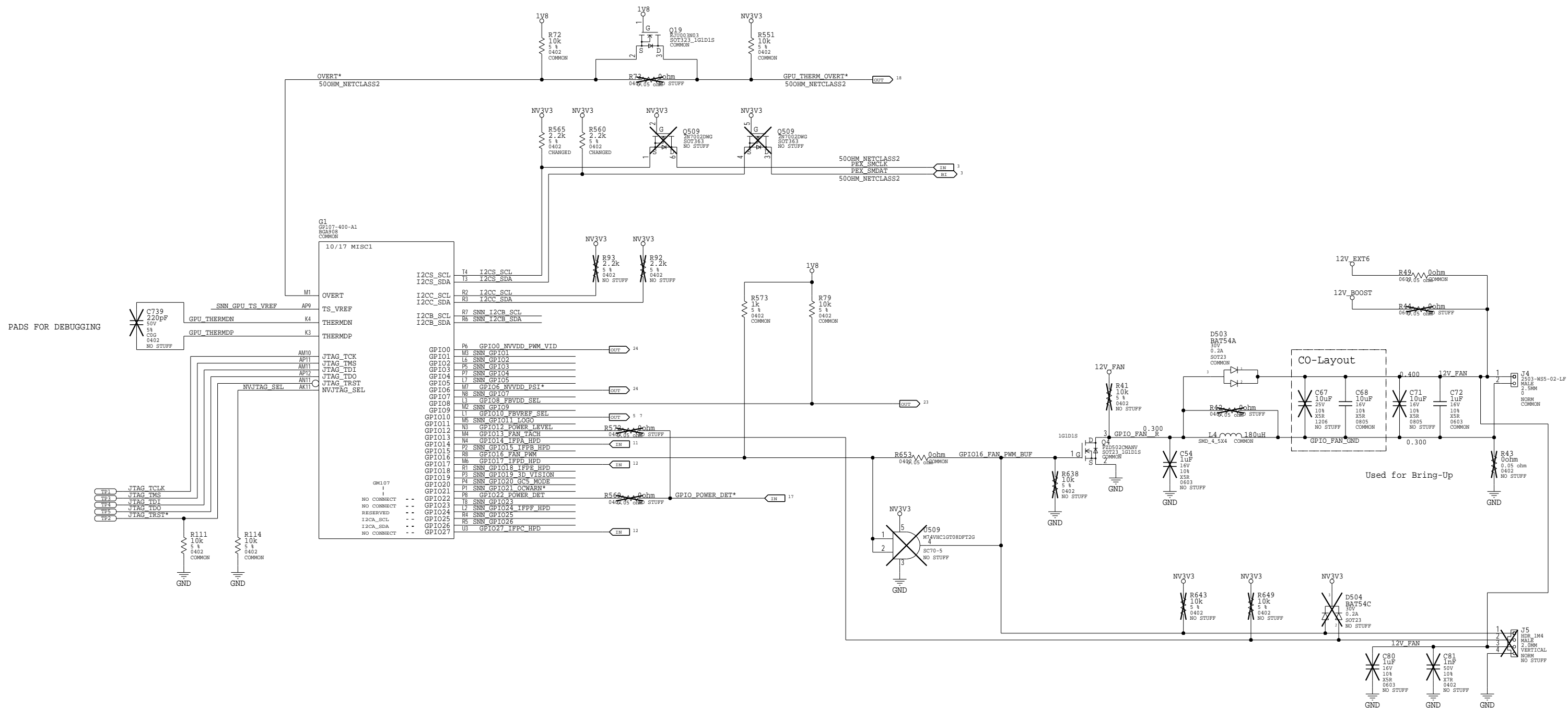
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PAGE DETAIL	IFPEF UNUSED

MISC1: GPIO, Fan, Thermal, JTAG



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BOM REV	D	DATE	08-AUG-2016

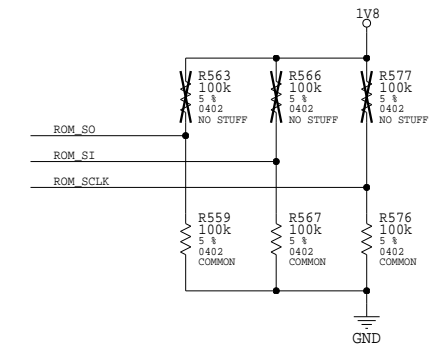
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MISC2: ROM, XTAL, Straps

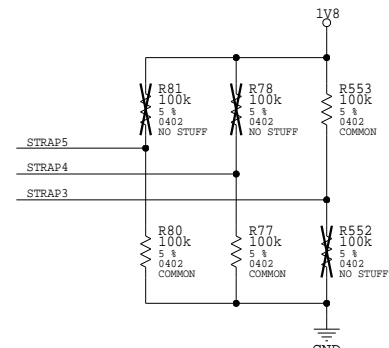
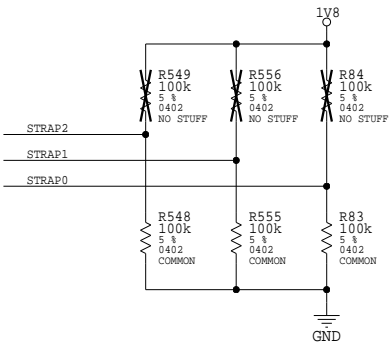
ROM_SO	ROM_SI	ROM_SCLK	SOR_EXPOSED[3:0]	1:ENABLE 0:DISABLE
L	L	L	1111	Default
L	L	H	1110	
L	H	L	1101	
L	H	H	1100	
H	L	L	1011	
H	L	H	1010	
H	H	L	1001	
H	H	H	1000	
L	L	M	0111	
L	M	L	0110	
L	M	H	0101	
L	H	M	0100	
H	L	M	0011	
H	M	L	0010	
H	M	H	0001	
H	H	M	0000	

STRAP2	STRAP1	STRAP0	RAMCFG[4:0]	
L	L	L	0000	Samsung B-Die 8Gb 256Mx32
L	L	H	0001	Micron F-Die 8Gb 256Mx32
L	H	L	0010	Hynix M-Die 8Gb 256Mx32
L	H	H	0011	
H	H	L	0110	Hynix A-Die 4Gb 128Mx32
H	H	H	0111	Samsung E-Die 4Gb 128Mx32
L	L	M	1000	Micron B-Die 4Gb 128Mx32
L	M	L	1001	

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

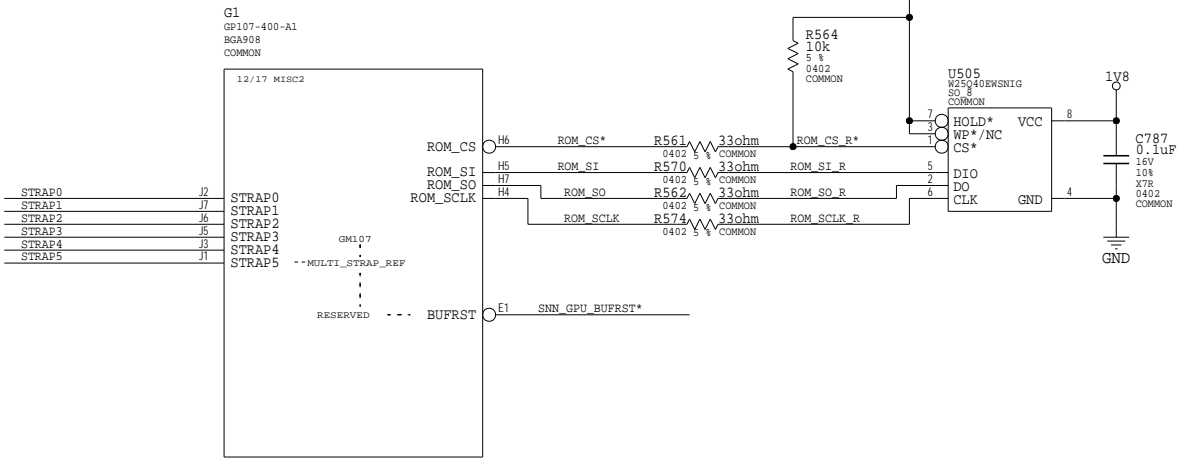


1:SMB_ALT_ADDR ENABLE
0:SMB_ALT_ADDR DISABLE

1:DEVID_SEL REBRAND
0:DEVID_SEL ORIGNAL

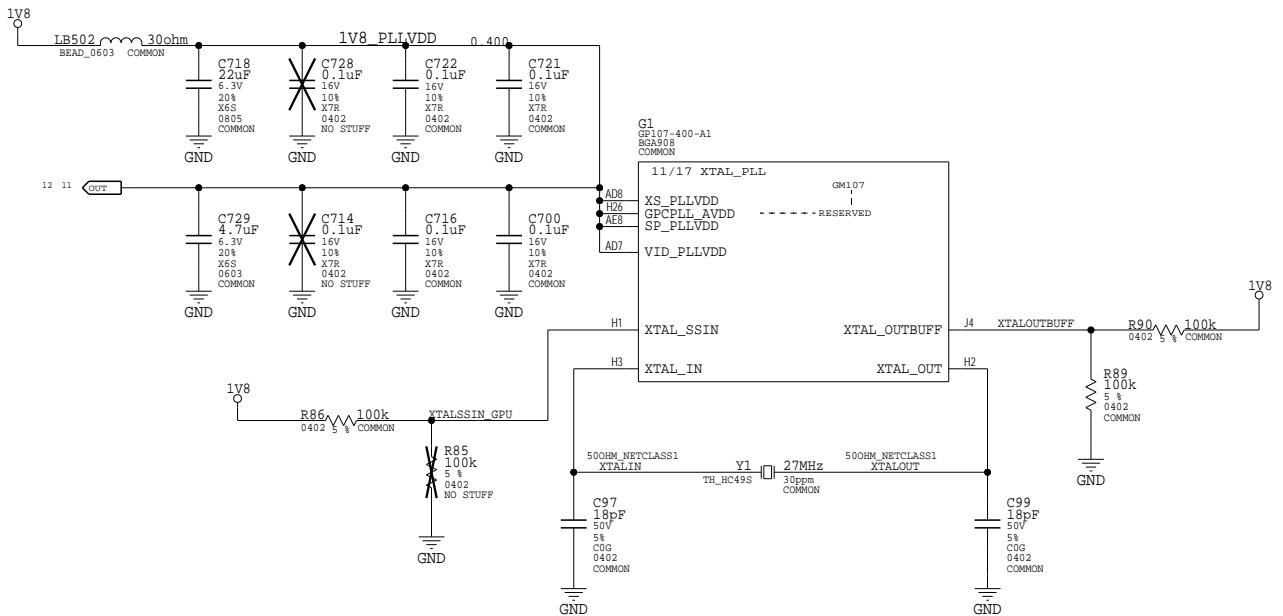
1:PCIE_CFG LOW POWER
0:PCIE_CFG HIGH POWER

1:VGA_DEVICE ENABLE
0:VGA_DEVICE DISABLE



Smart Fan

XTALOUTBUFF	Volatge	SmartFan PWM	GPIO/PWM at the FAN
Low	0V	GPIO Disabled	100%
Middle	0.9V	66% PWM	33% PWM (Typical)
High	1.8V	33% PWM	66% PWM



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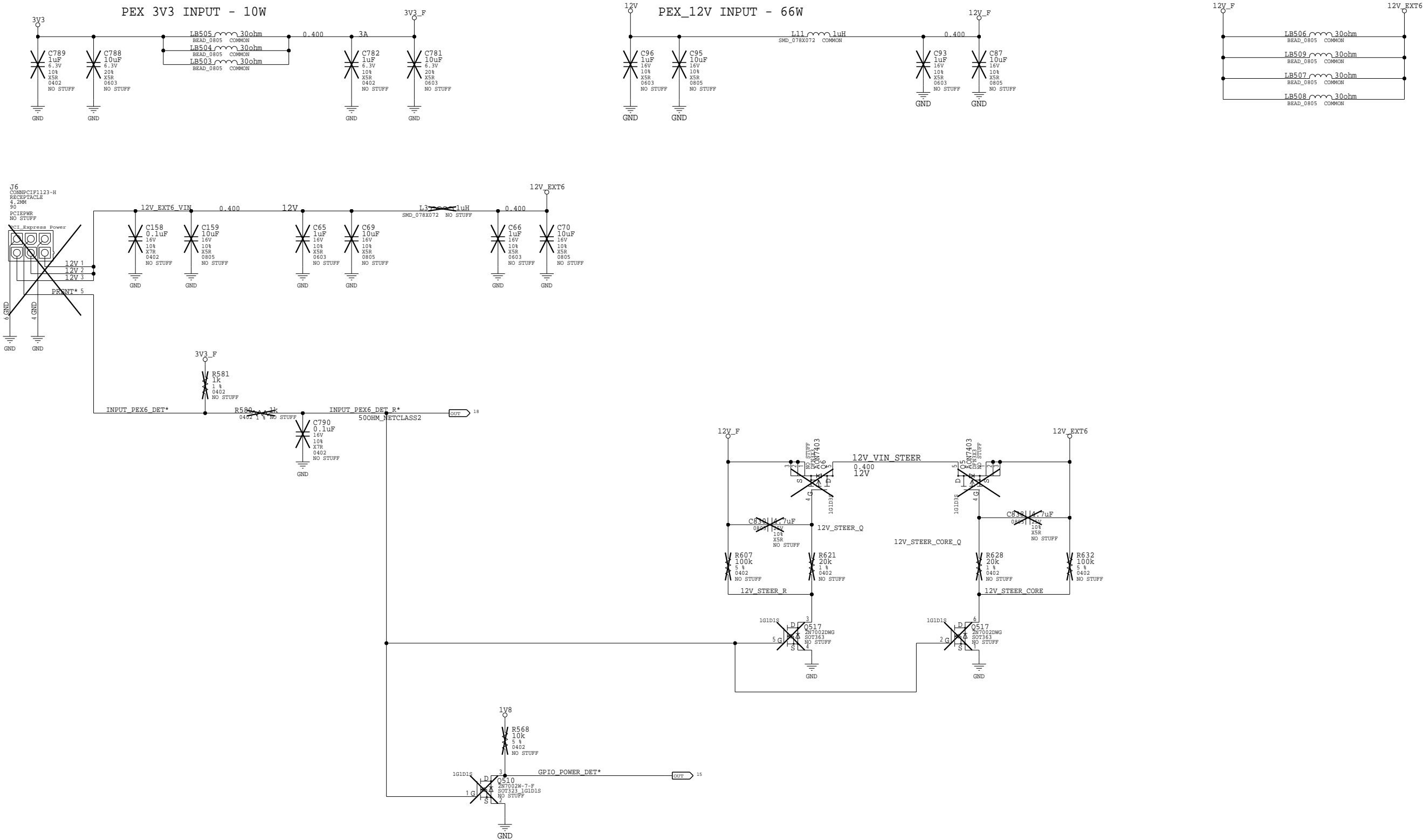
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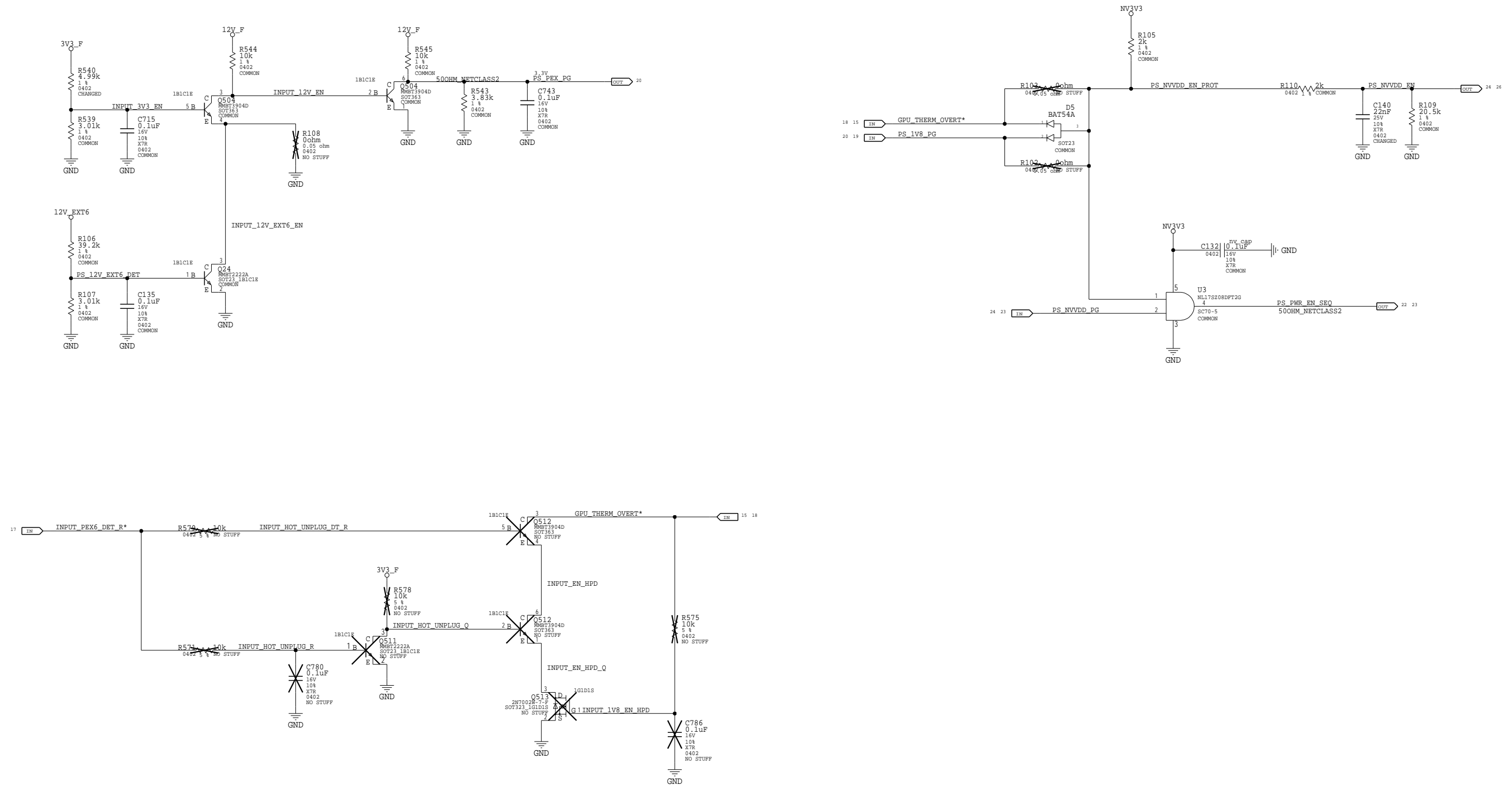
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Power Inputs and Filtering



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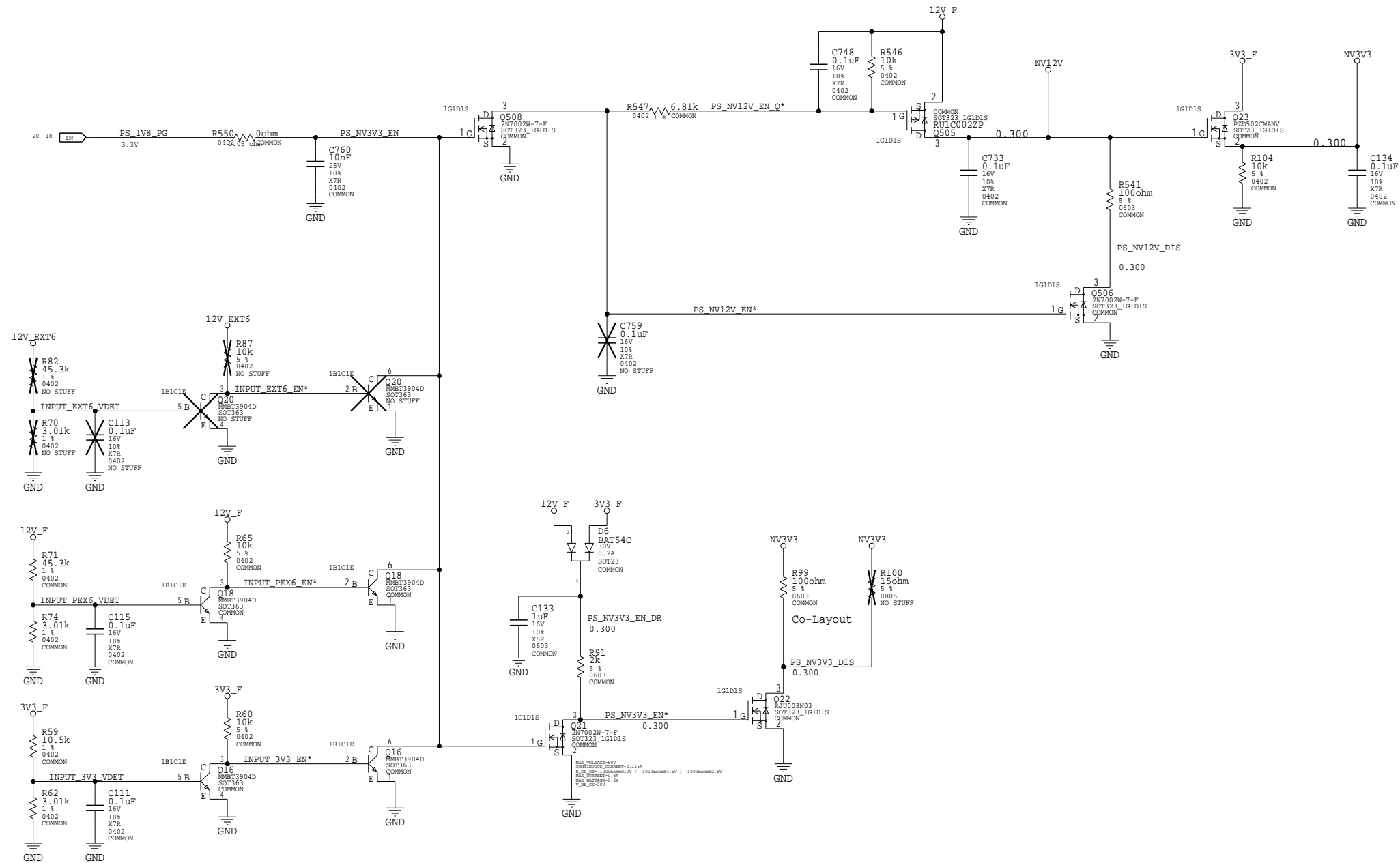
Power sequence



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PS: NV3V3 & NV12V



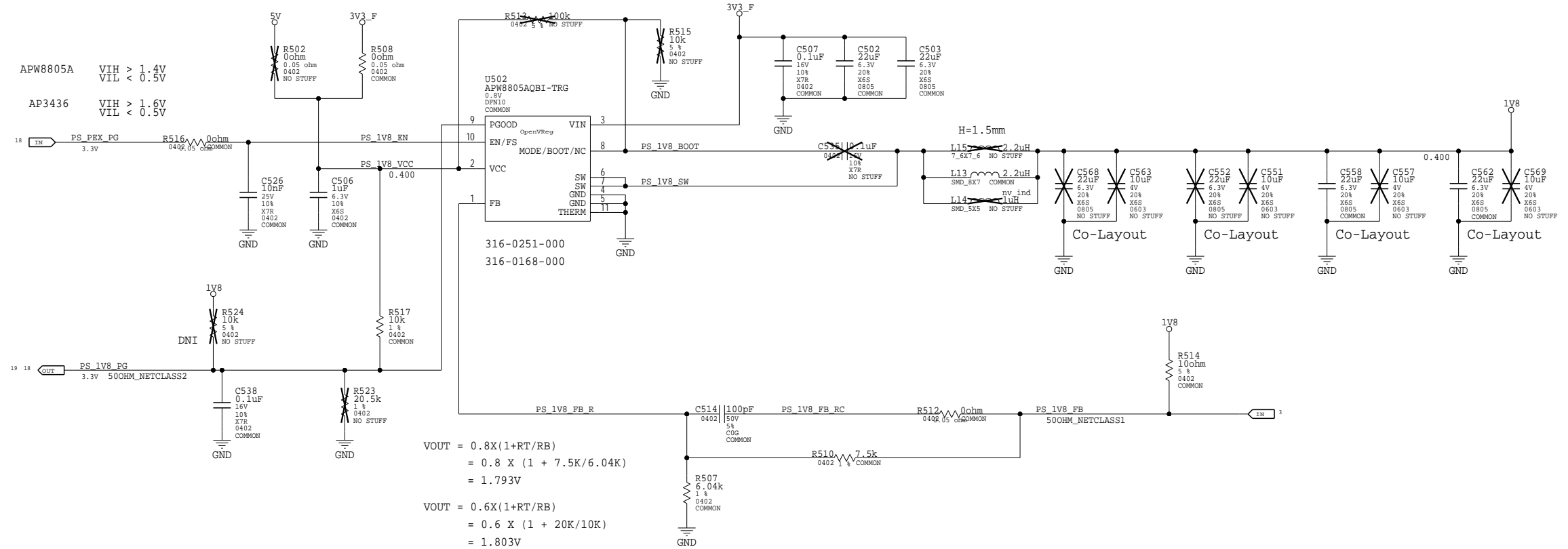
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PAGE DETAIL	PS: NV3V3 & NV12V

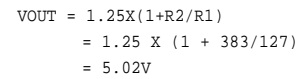
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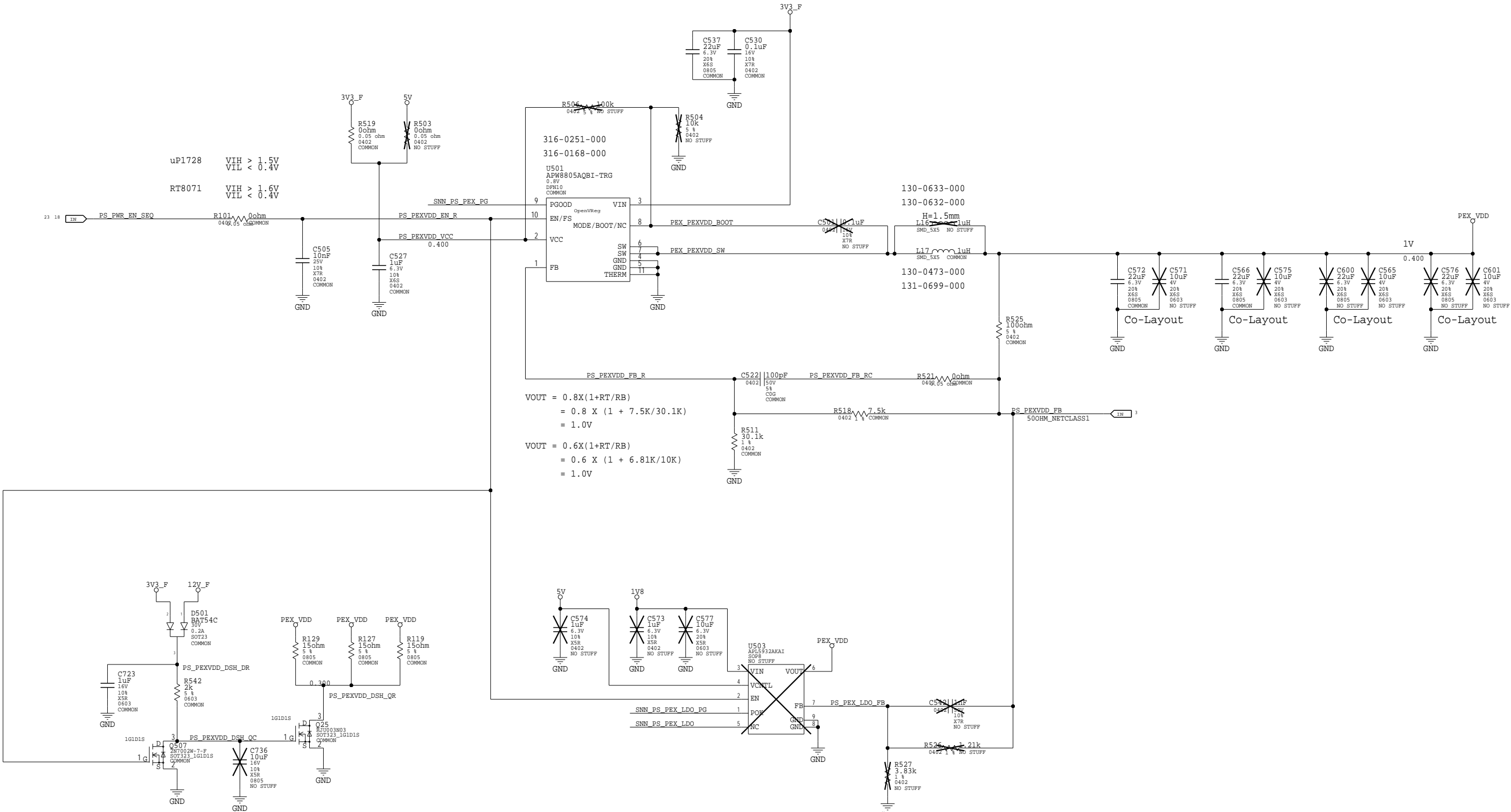
PS I: 1V8


$$\begin{aligned} V_{OUT} &= 0.8X(1+R_T/R_B) \\ &= 0.8 \times (1 + 7.5K/6.04K) \\ &= 1.793V \end{aligned}$$
$$\begin{aligned} V_{OUT} &= 0.6 \times (1 + R_T/R_B) \\ &= 0.6 \times (1 + 20K/10K) \\ &= 1.803V \end{aligned}$$

5




PS III: PEXVDD



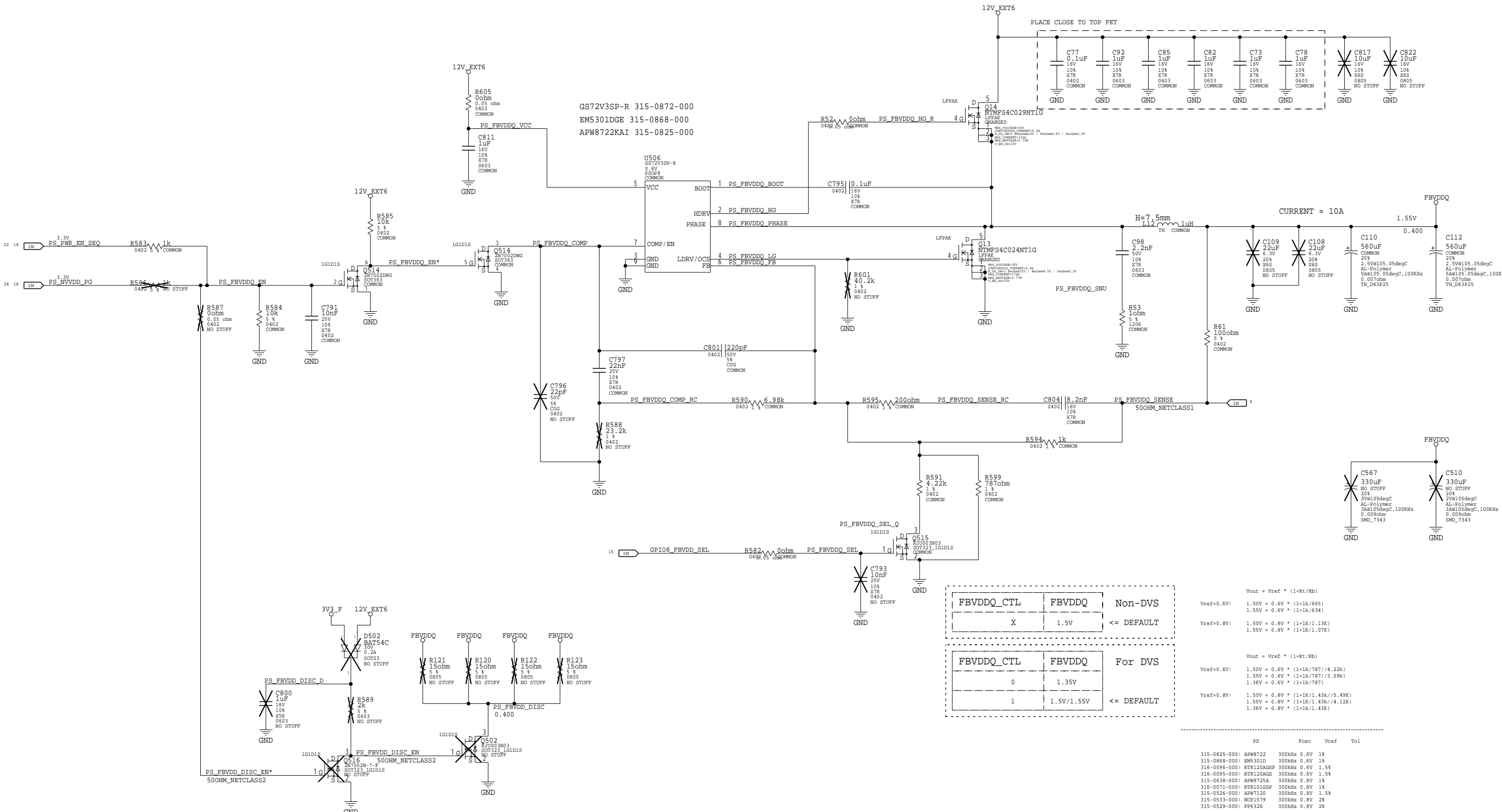
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PAGE DETAIL	PS III: PEXVDD

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PS IV: FBVDDQ



FBVDDQ_CTL	FBVDDQ	Non-DVS
X	1.5V	<= DEFAULT

FBVDDQ_CTL	FBVDDQ	For DVS
0	1.35V	
1	1.5V/1.55V	<= DEFAULT

Vout = Vref * (1+Rt/Rb)
Vref=0.6V: 1.50V = 0.6V * (1+1k/665)
1.55V = 0.6V * (1+1k/634)
Vref=0.8V: 1.50V = 0.8V * (1+1k/1.13K)
1.55V = 0.8V * (1+1k/1.07K)

Vout = Vref * (1+Rt/Rb)
Vref=0.6V: 1.50V = 0.6V * (1+1k/787//4.22k)
1.55V = 0.6V * (1+1k/787//3.09k)
1.36V = 0.6V * (1+1k/787)
Vref=0.8V: 1.50V = 0.8V * (1+1k/1.43k//5.49k)
1.55V = 0.8V * (1+1k/1.43k//4.12k)
1.36V = 0.8V * (1+1k/1.43k)

PS	Fosc	Vref	Tol
315-0825-000: APW8722	300kHz	0.6V	1%
315-0868-000: EM5301D	300kHz	0.6V	1%
316-0096-000: RT8120AGSP	300kHz	0.6V	1.5%
316-0095-000: RT8120AGS	300kHz	0.6V	1.5%
315-0638-000: APW8725A	300kHz	0.8V	1%
316-0071-000: RT8101GSP	300kHz	0.8V	1%
315-0526-000: APW7120	300kHz	0.8V	1.5%
315-0533-000: MCP1579	300kHz	0.8V	2%
315-0529-000: FP6326	300kHz	0.8V	2%

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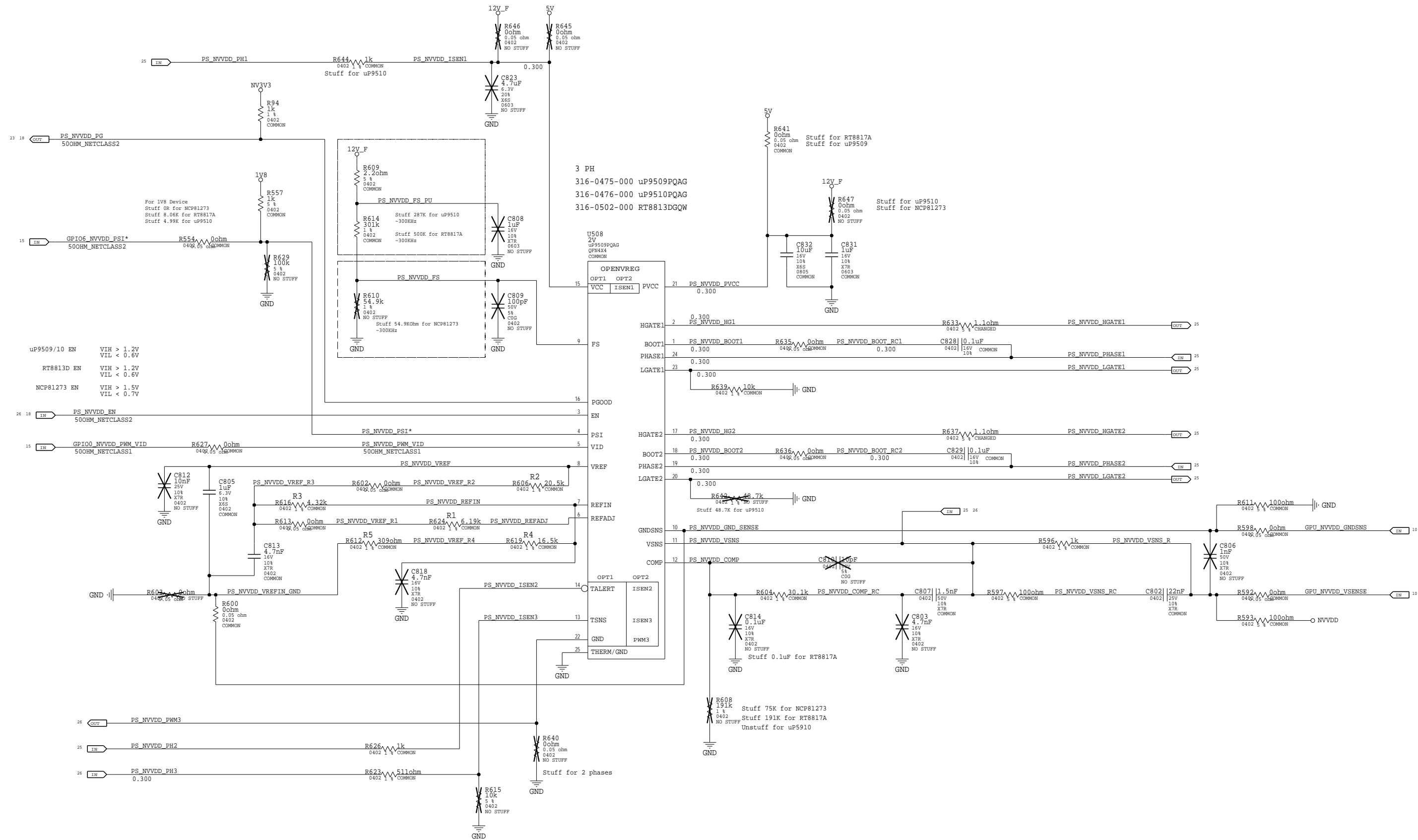


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PS V: NVVDD OVR2+1



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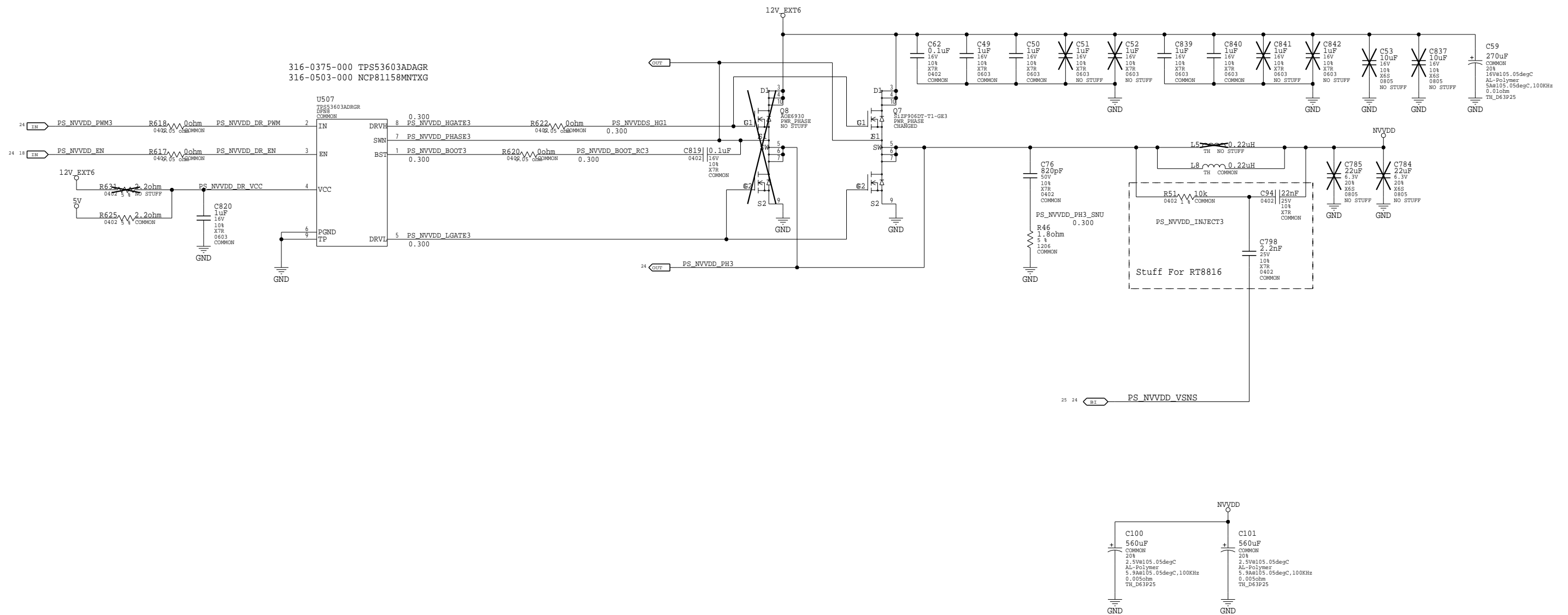
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PS V: NVVDD Phase 3

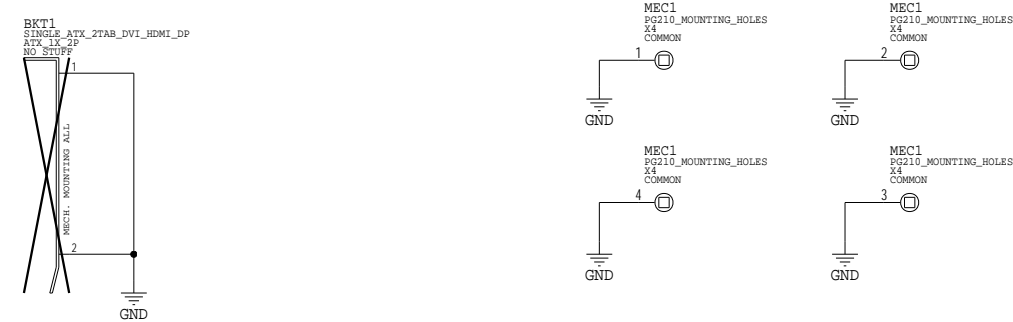


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