


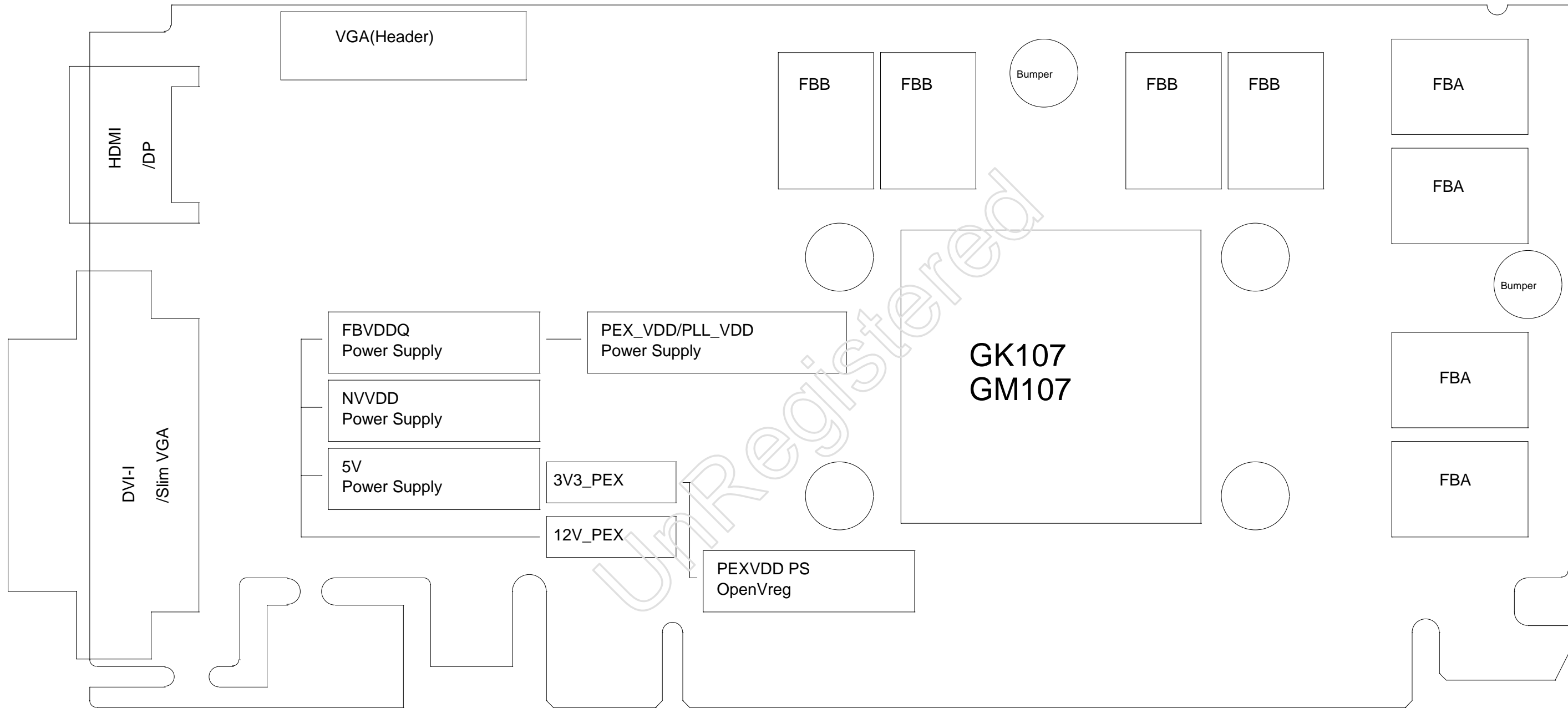


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GM107/GK107 GB4B-128 sDDR3,128bit/64bit, 256M/128M/64Mx16																																																																													
DVI-I DL/VGA+HDMI/DP+VGA																																																																													
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<table><tr><td colspan="2">NVIDIA CORPORATION</td><td colspan="2"></td></tr><tr><td colspan="4">2701 SAN TOMAS EXPRESSWAY</td></tr><tr><td colspan="4">SANTA CLARA, CA 95050, USA</td></tr><tr><td>NV_PN</td><td colspan="15">600-12012-BASE-600</td></tr><tr><td>PCB REV</td><td colspan="13">P2012-C01</td><td>PAGE</td><td colspan="2">1 OF 20</td></tr><tr><td>BOM REV</td><td colspan="13">A</td><td>DATE</td><td colspan="2">26-AUG-2013</td></tr></table>																NVIDIA CORPORATION				2701 SAN TOMAS EXPRESSWAY				SANTA CLARA, CA 95050, USA				NV_PN	600-12012-BASE-600															PCB REV	P2012-C01													PAGE	1 OF 20		BOM REV	A													DATE	26-AUG-2013	
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Block Diagram



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ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY
PAGE DETAIL	Block Diagram

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12V_PEX

C47 10µF

18V 10% 2.05W 1206 COMMON

C51 1µF

18V 10% 0.603 COMMON

GND

3V3_PEX

C48 10µF

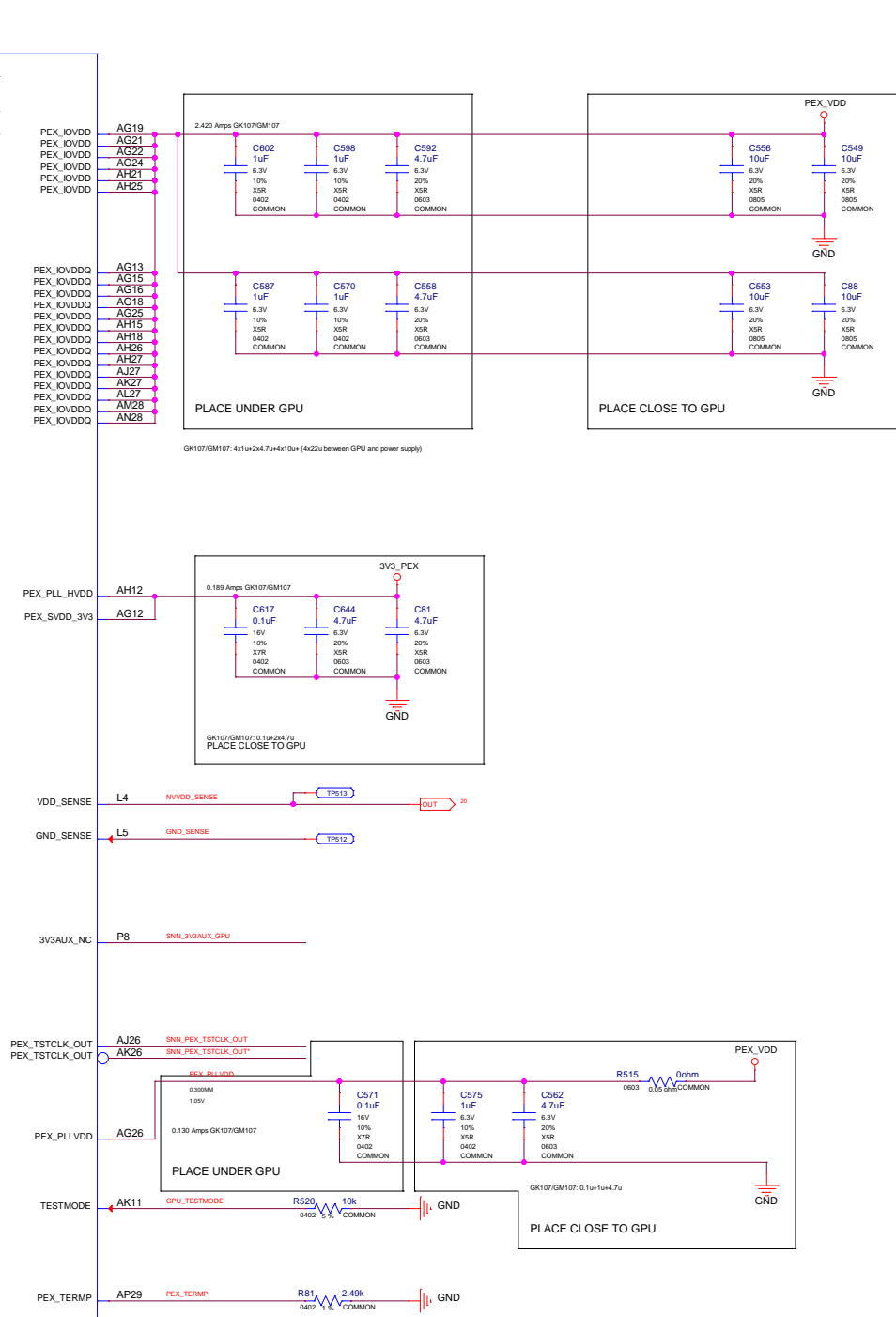
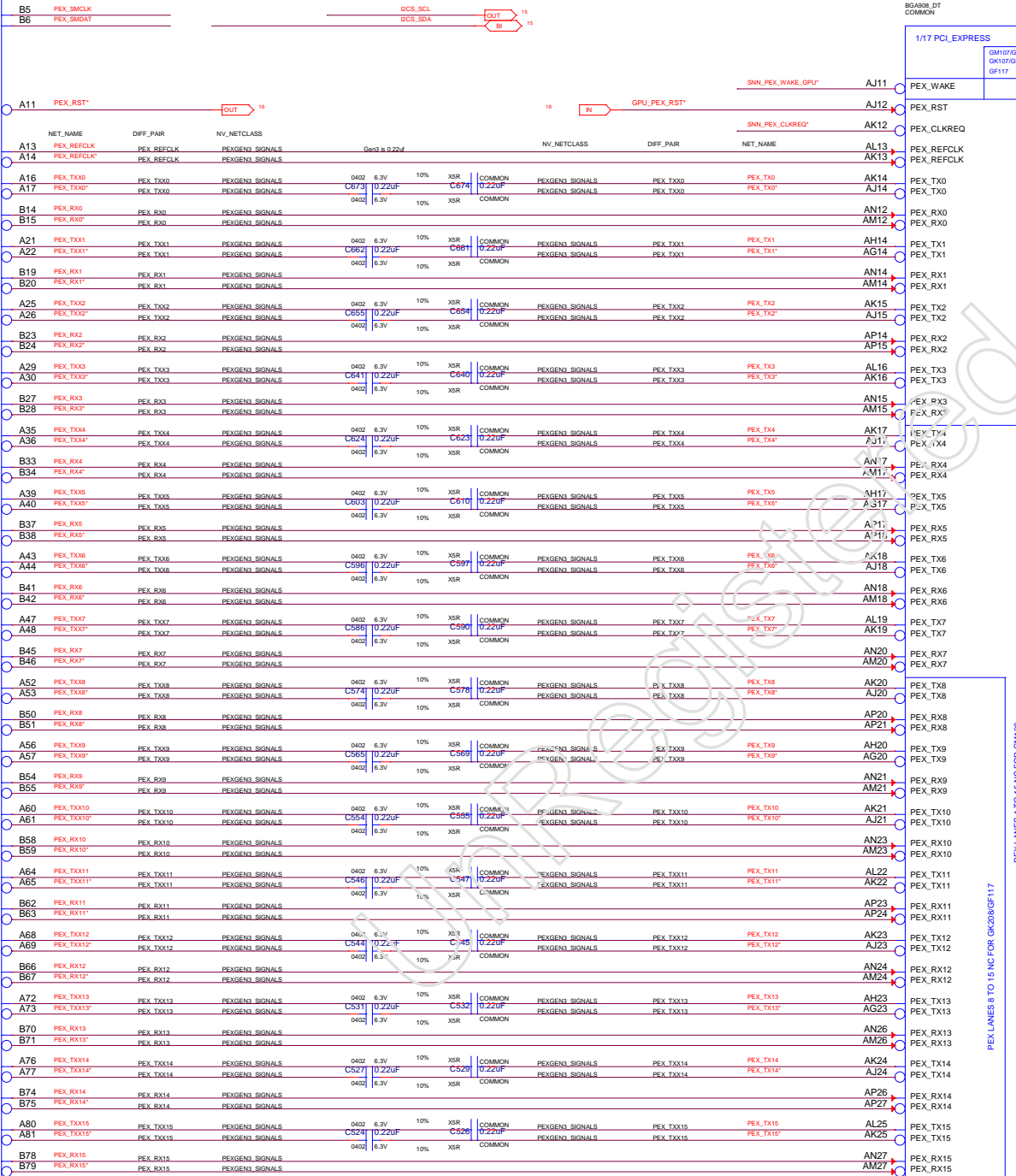
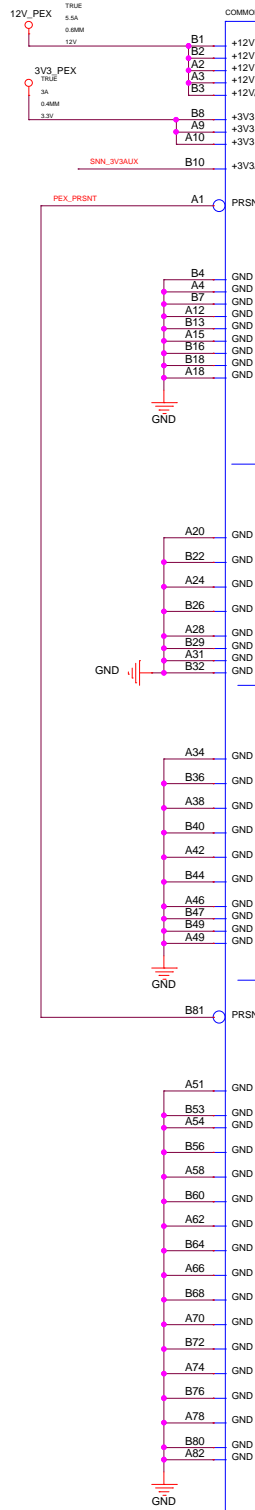
18V 10% 2.05W 1206 COMMON

C55 8.2µF

18V 10% 0.602 COMMON

GND

PLACE CLOSER TO CONNECTOR

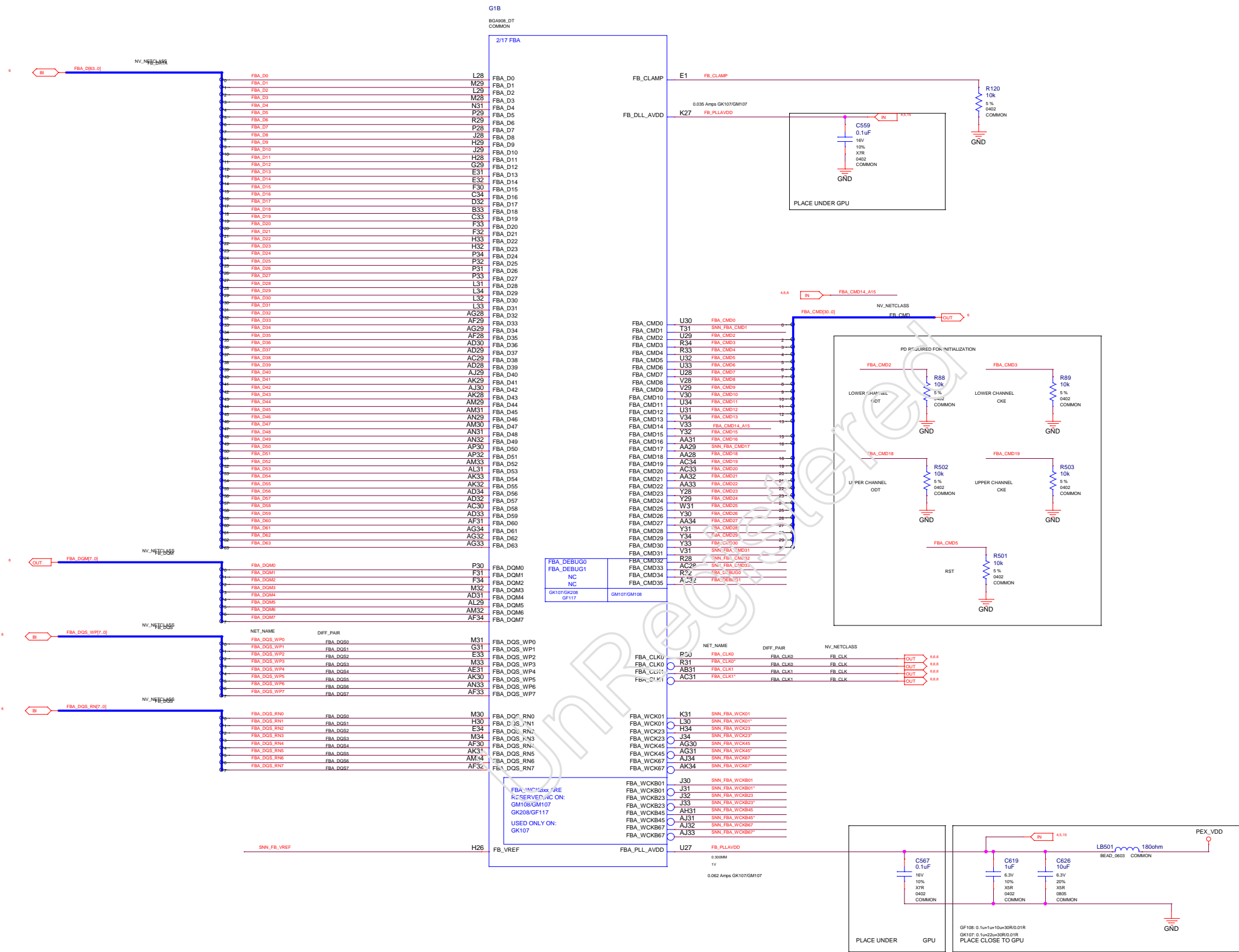


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ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY
PAGE DETAIL	PCI Express

GPU Frame Buffer Partition A



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ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY
PAGE DETAIL	GPU Frame Buffer Partition A

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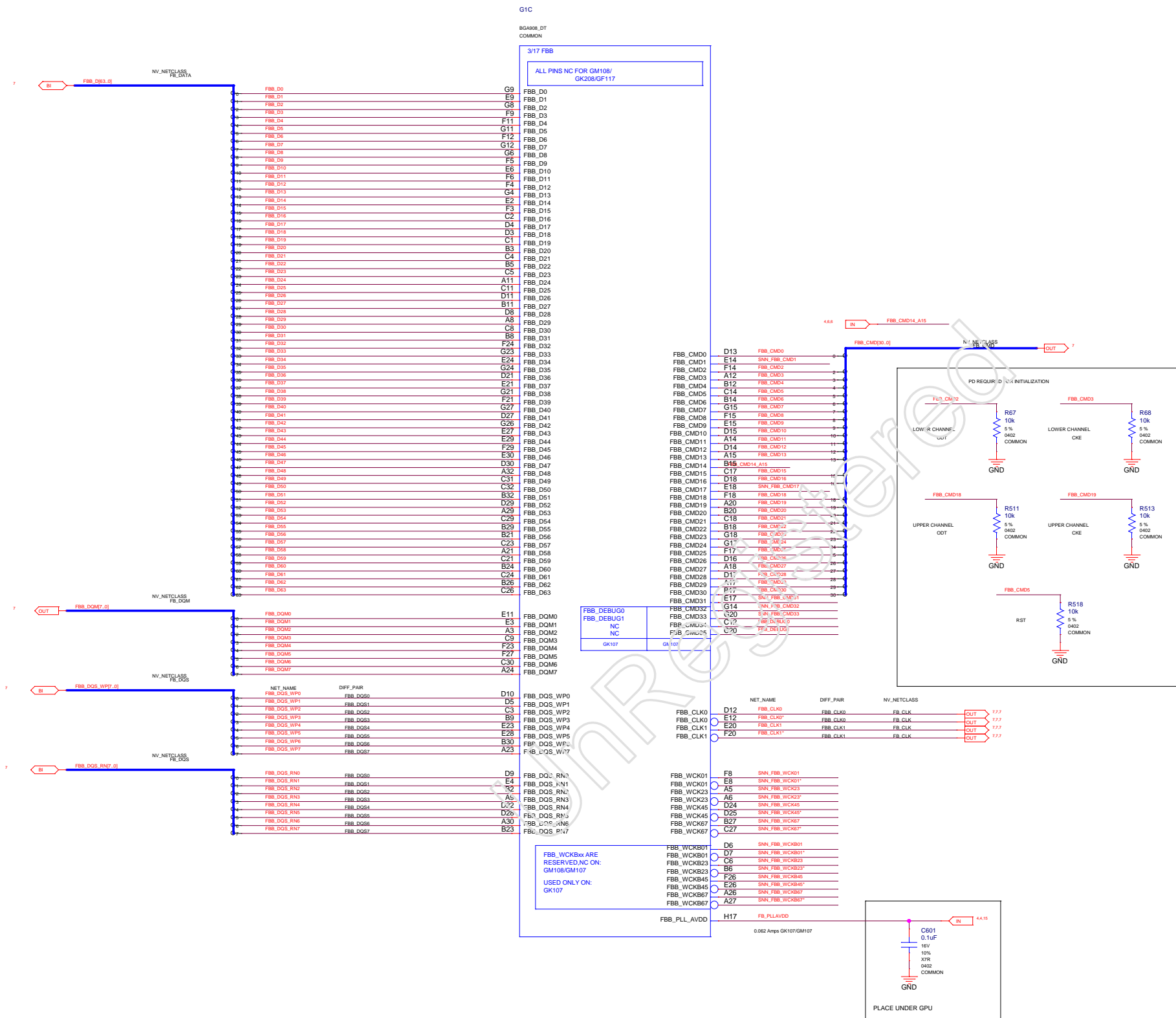
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GPU Frame Buffer Partition B



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PAGE DETAIL	GPU Frame Buffer Partition B

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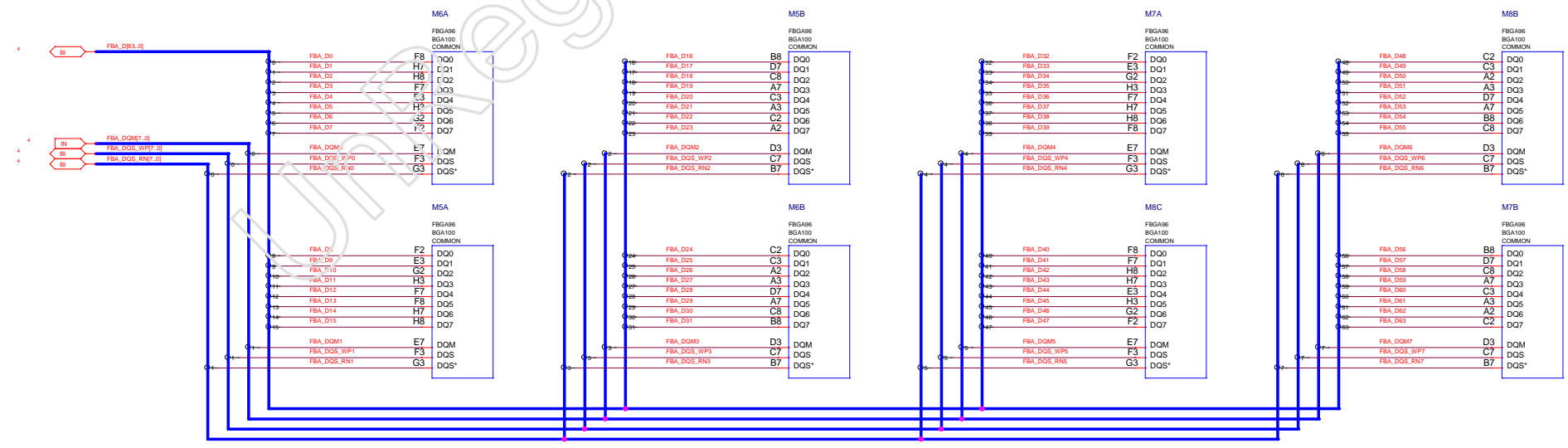
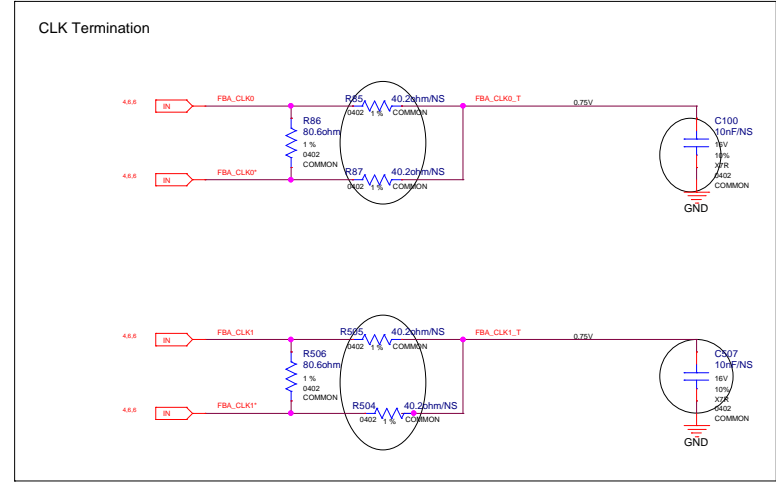
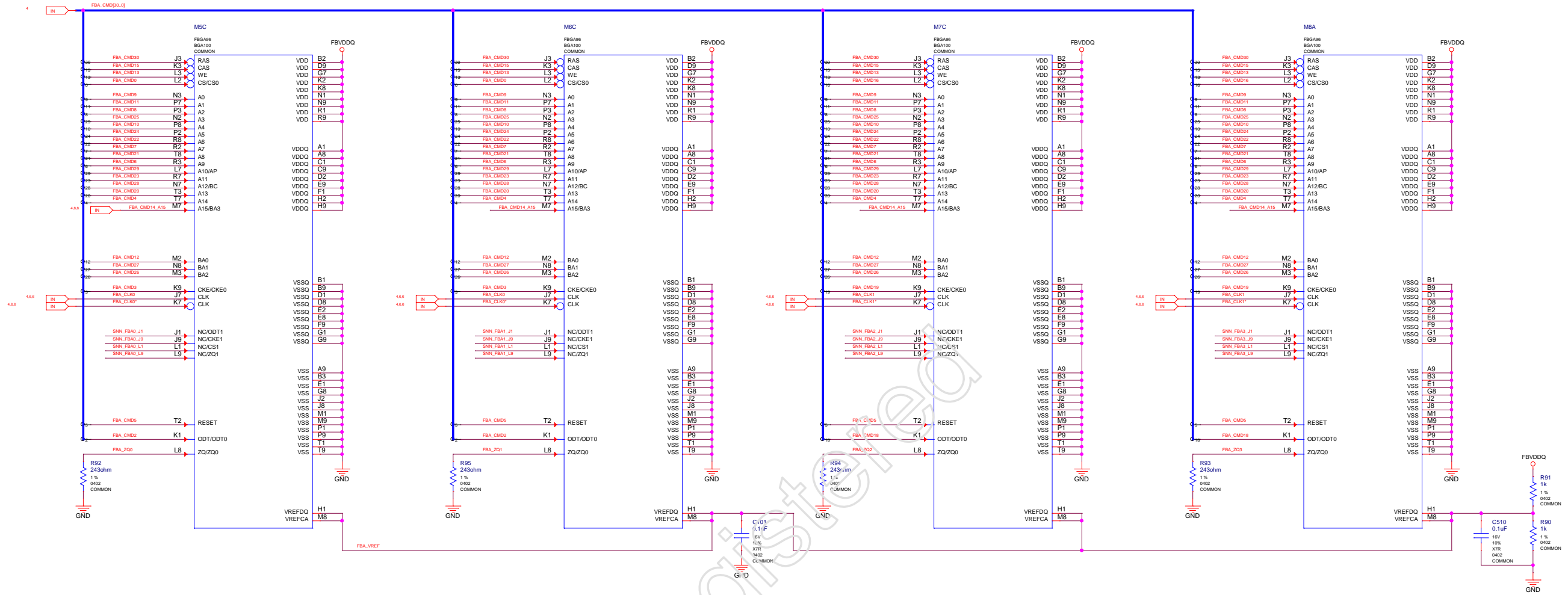
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Memory FBA Partition

CMD Mapping			
CMD	<0..31>	<32..63>	
CMD0	CSD*	N/A	
CMD1	N/A	N/A	
CMD2	ODT	N/A	
CMD3	CKE	N/A	
CMD4	A14	A14	
CMD5	RST	RST	
CMD6	A8	A8	
CMD7	A7	A7	
CMD8	A2	A2	
CMD9	A0	A0	
CMD10	A4	A4	
CMD11	A1	A1	
CMD12	BA0	BA0	
CMD13	WE*	WE*	
CMD14	N/A	N/A	
CMD15	CAS*	CAS*	
CMD16	N/A	CSD*	
CMD17	N/A	N/A	
CMD18	N/A	ODT	
CMD19	N/A	CKE	
CMD20	A13	A13	
CMD21	A6	A6	
CMD22	A6	A6	
CMD23	A11	A11	
CMD24	A5	A5	
CMD25	A3	A3	
CMD26	BA2	BA2	
CMD27	BA1	BA1	
CMD28	A12	A12	
CMD29	A10	A10	
CMD30	RAS*	RAS*	
CMD31	N/A	N/A	



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ASSEMBLY
PAGE DETAIL

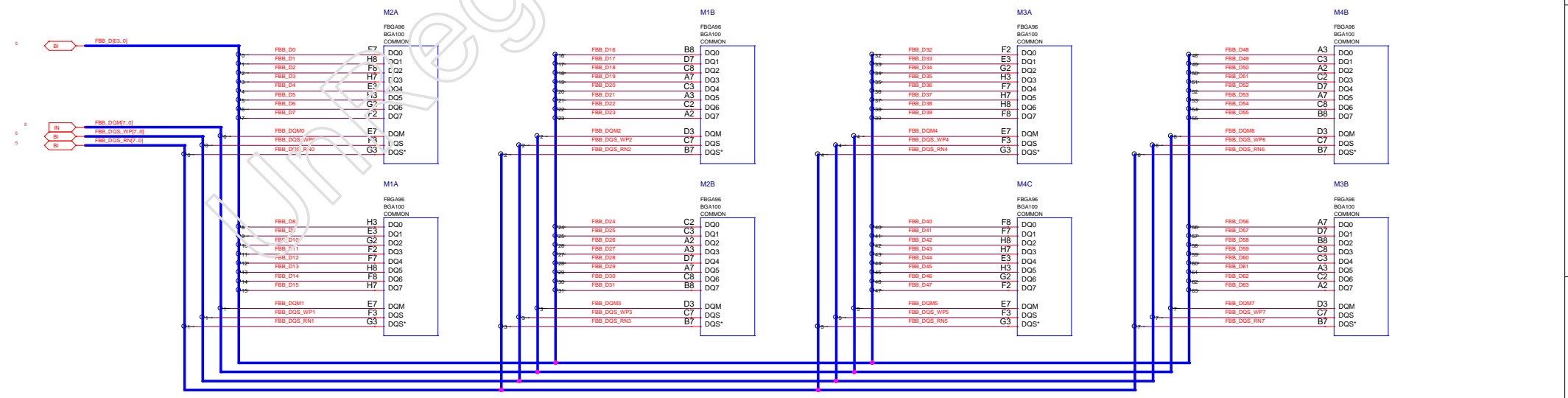
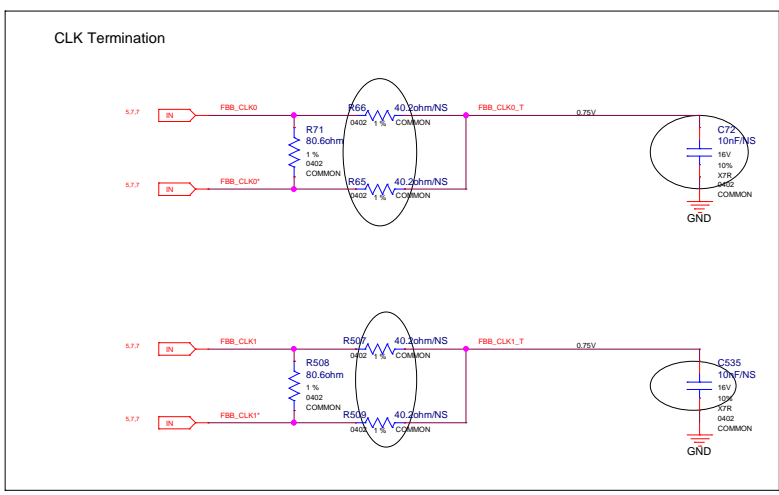
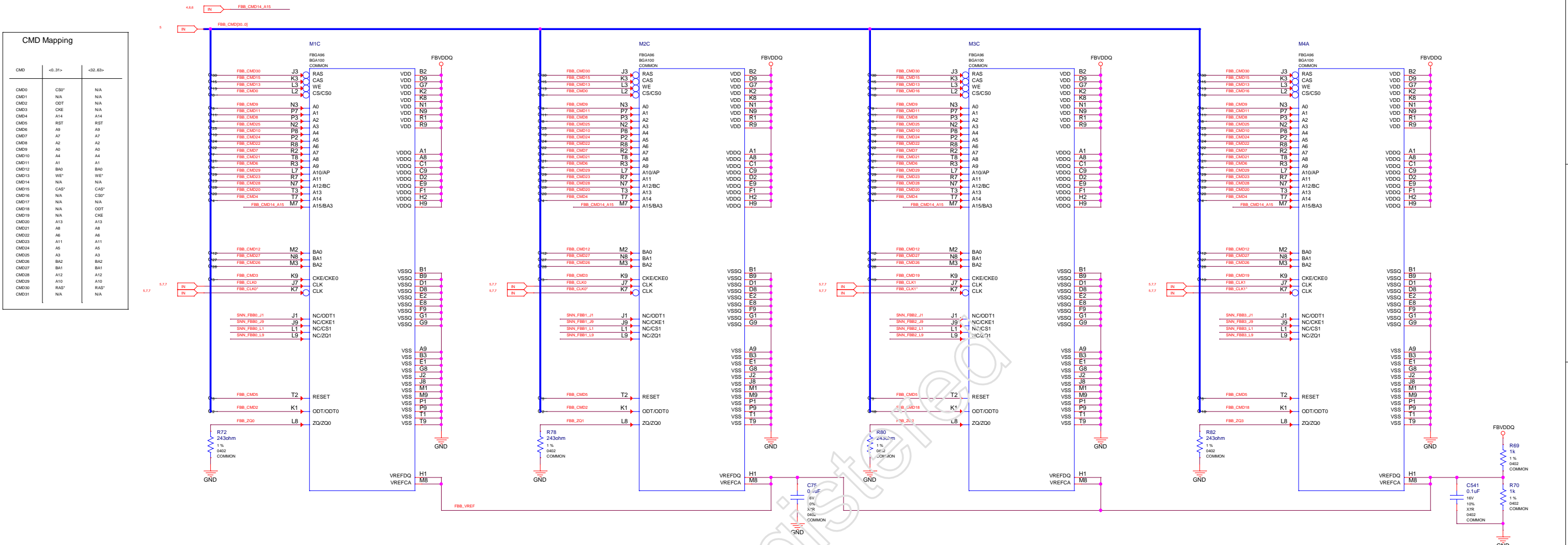
BASE LEVEL GENERIC SCHEMATIC ONLY
Memory FBA Partition

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Memory FBB Partition



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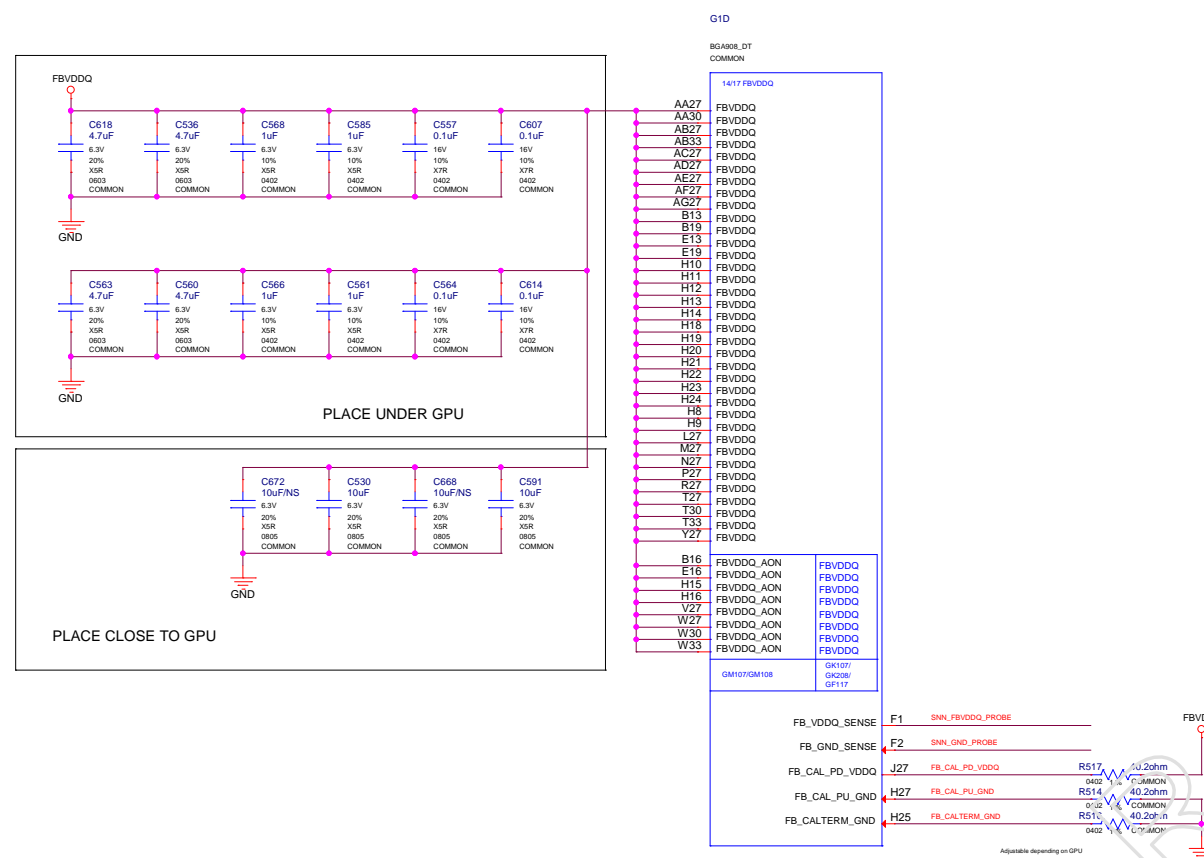
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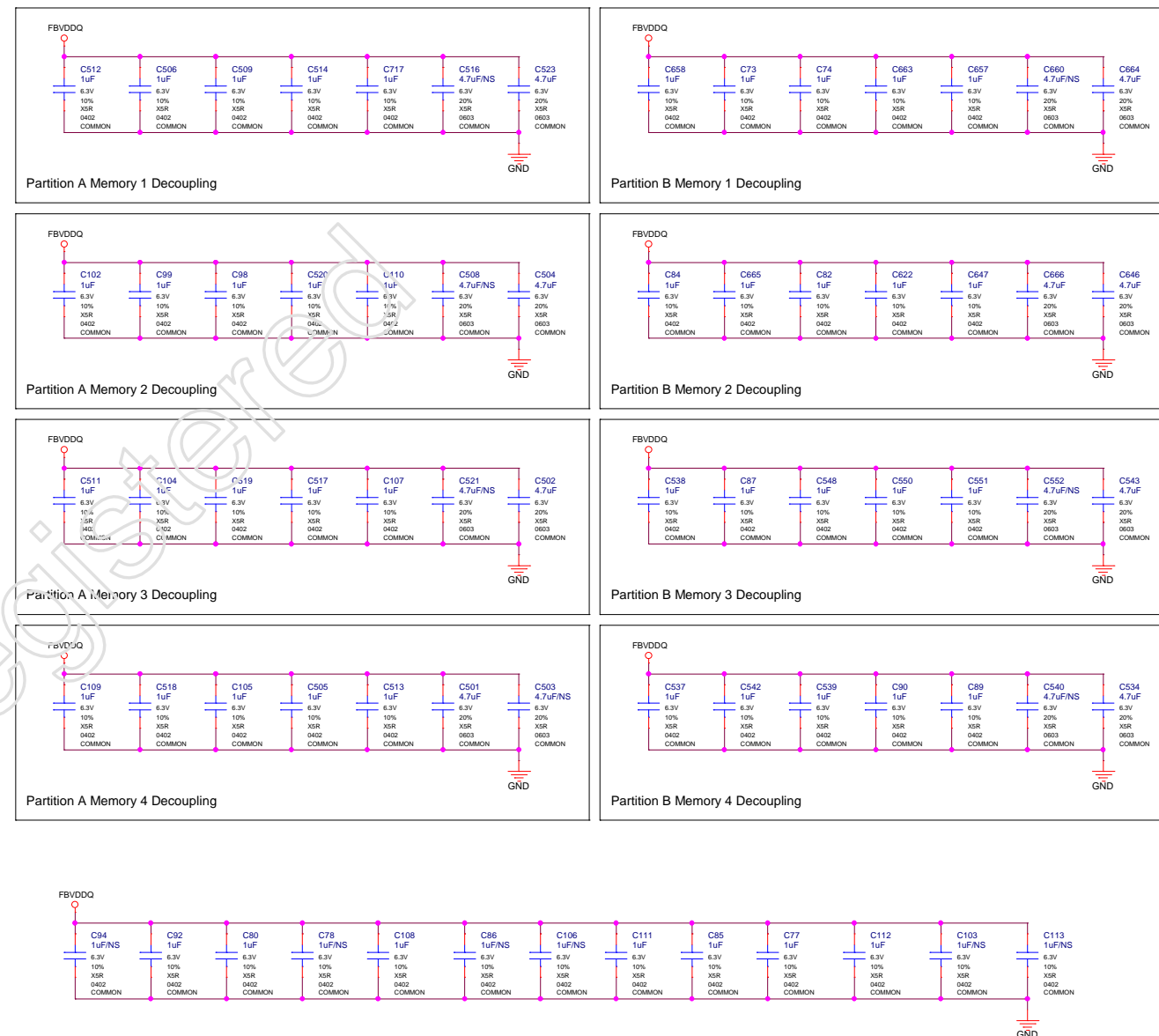
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FB Decoupling(GPU, MEMORY)



ALL PLACE UNDER MEMORY



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PAGE DETAIL	FB Decoupling(GPU+MEMORY)

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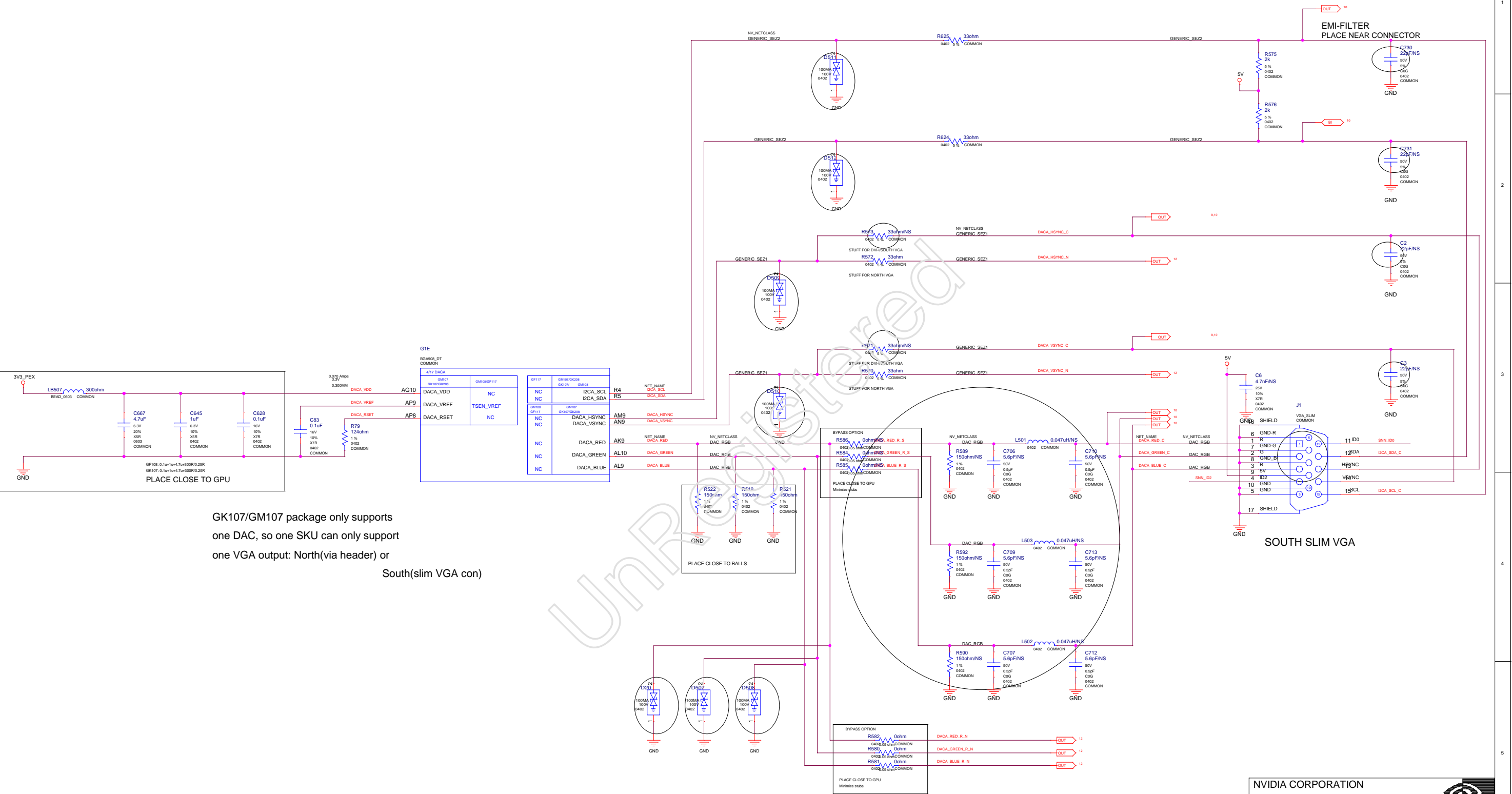
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DACA Slim VGA (South)



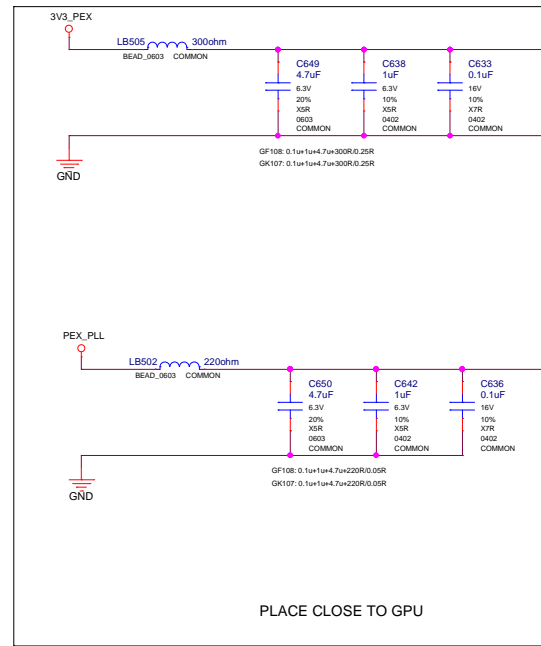
GK107/GM107 package only supports
one DAC, so one SKU can only support
one VGA output: North(via header) or
South(slim VGA con)

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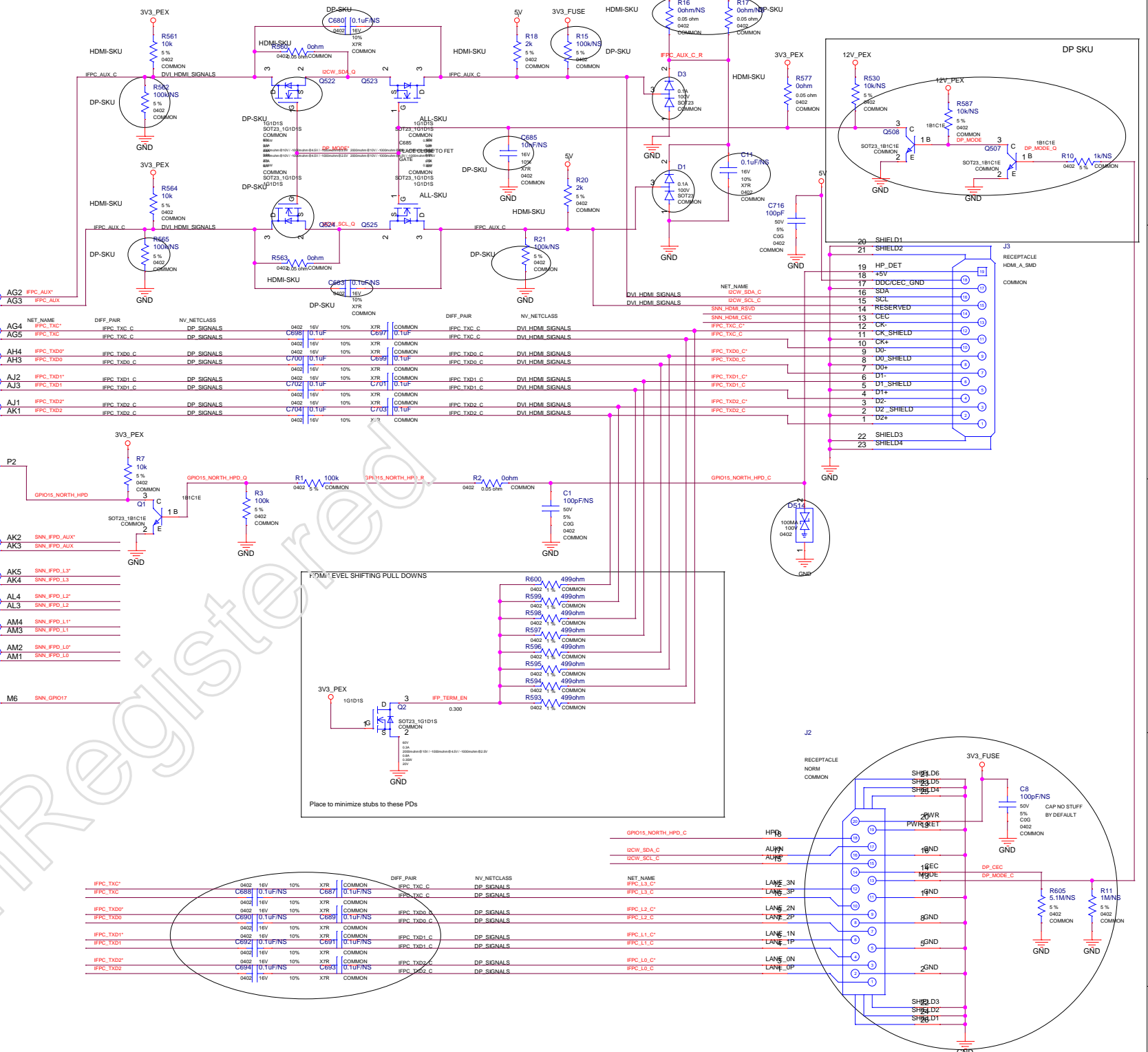
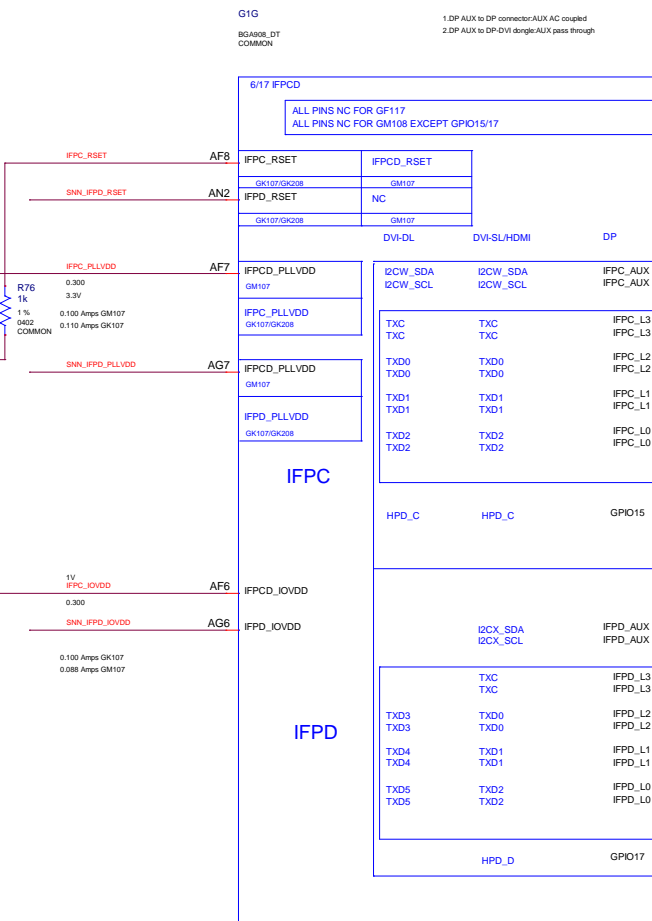
ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY
PAGE DETAIL	DACA Slim VGA (South)

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IFPC HDMI/DP (Middle)




PLACE CLOSE TO GPU



PLACE:MID-Bracket Dual Footprint

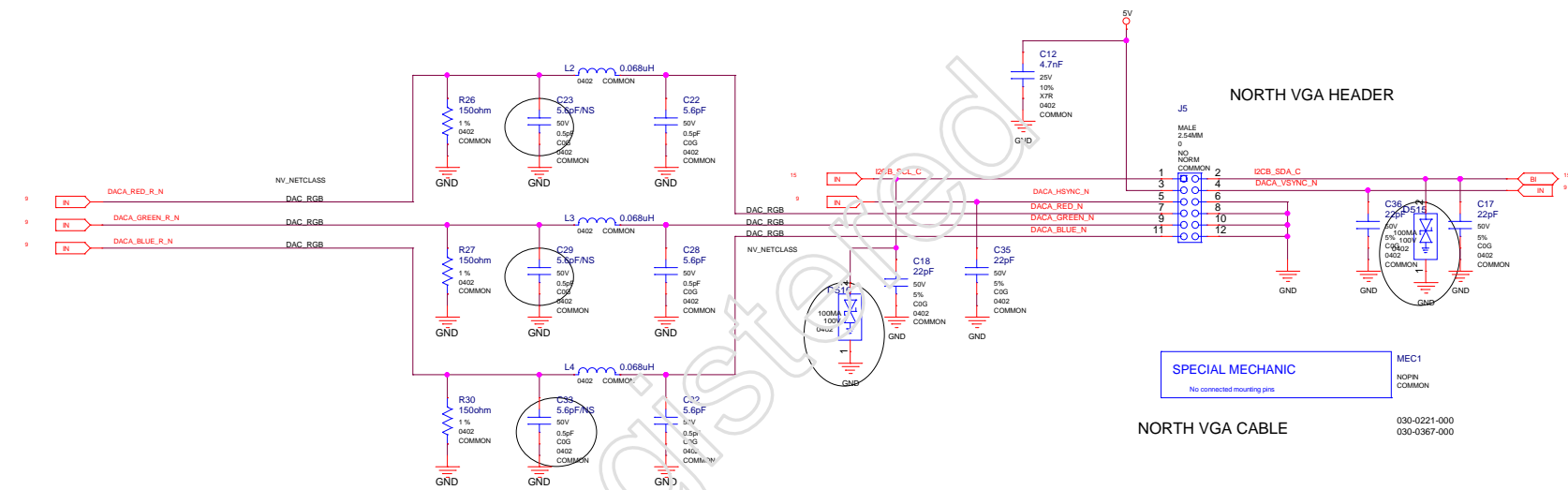
ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY
PAGE DETAIL	IFPC HDMI/DP (Middle)

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DACA VGA (North)



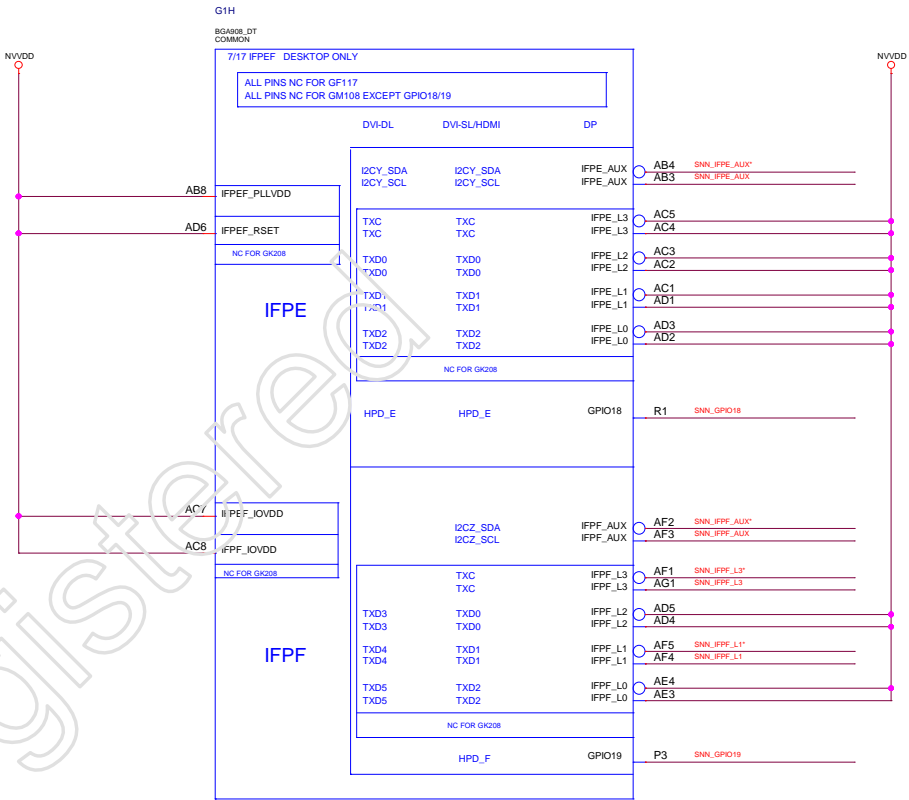
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ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY
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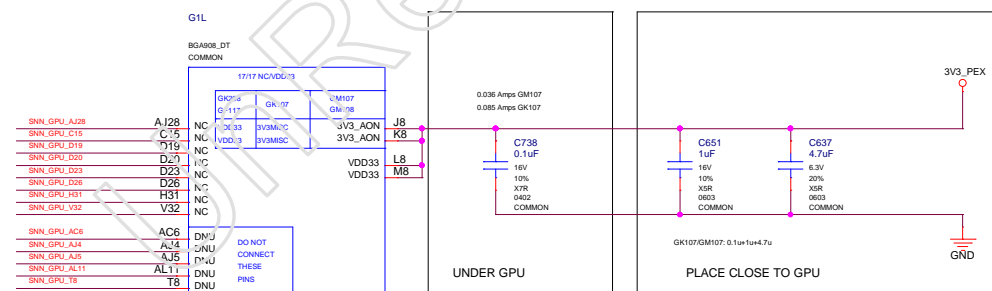
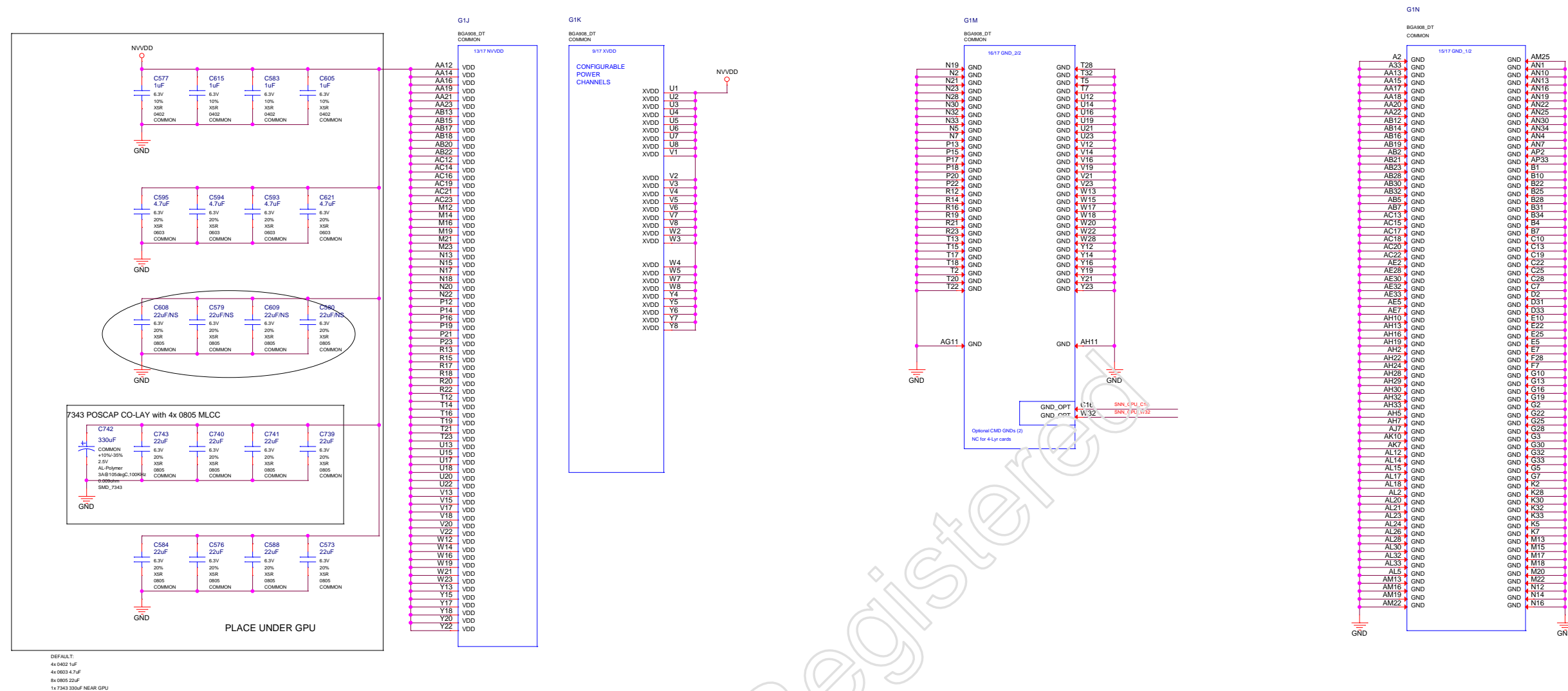


Unused IFPE & IFPF



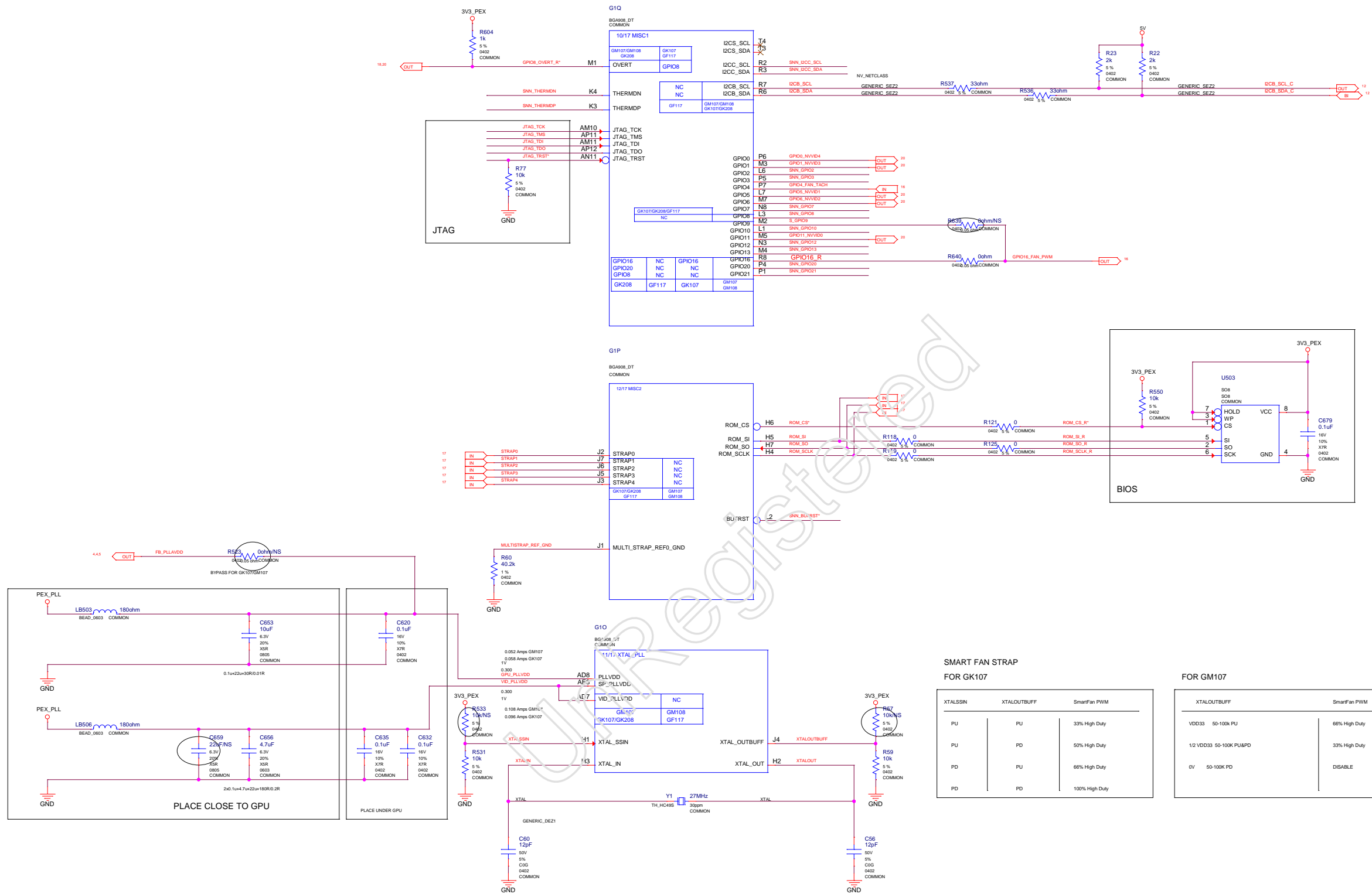
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GPU Core Decoupling



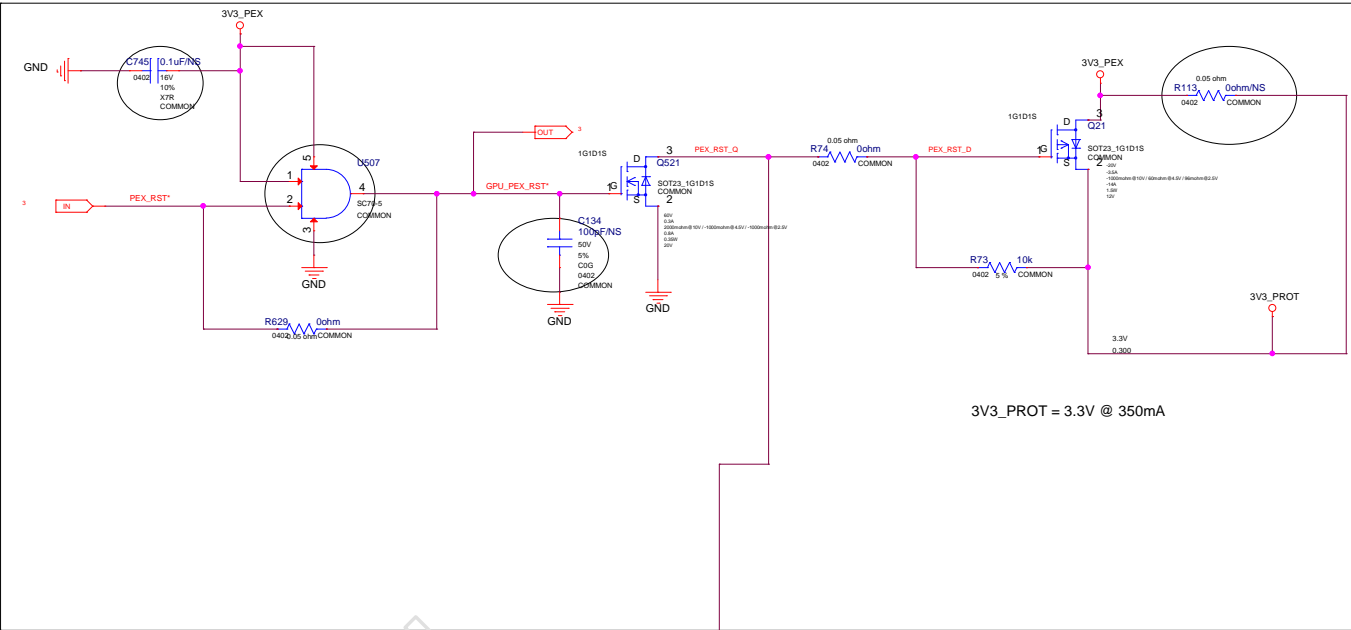
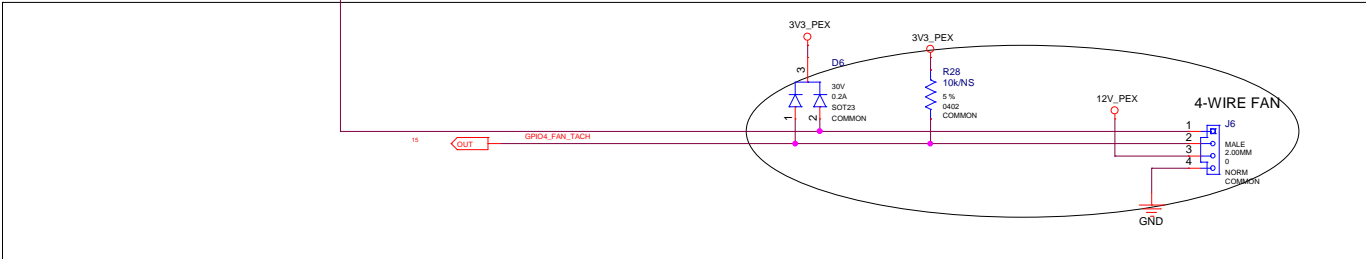
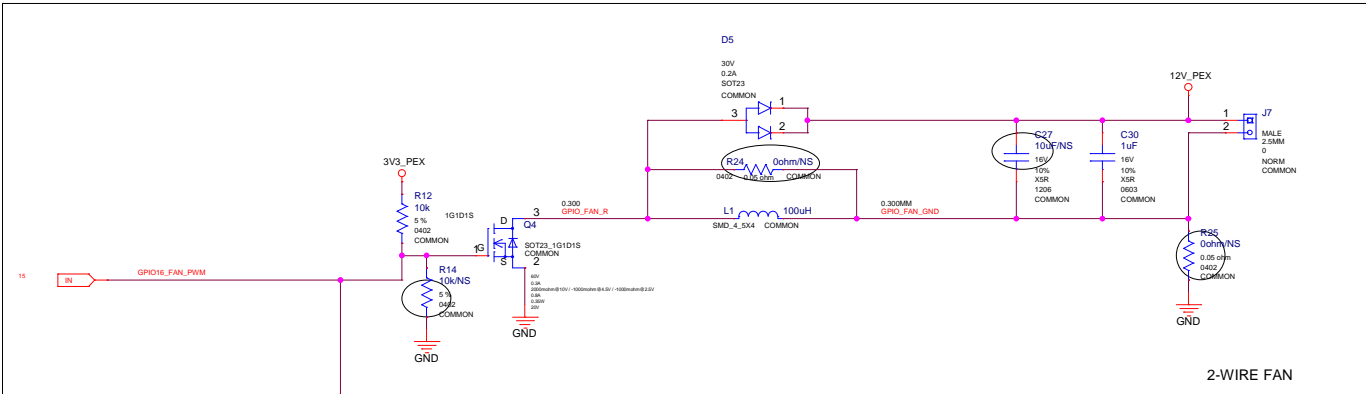
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Misc Interfaces

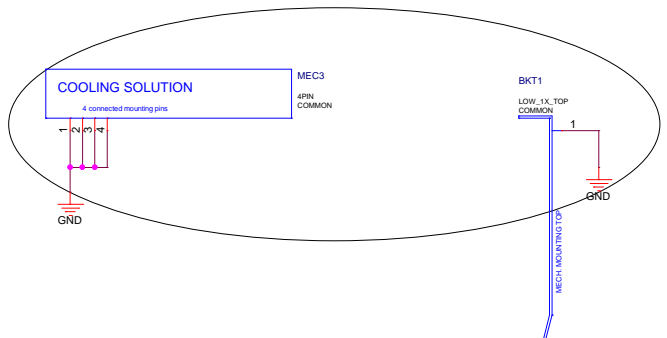
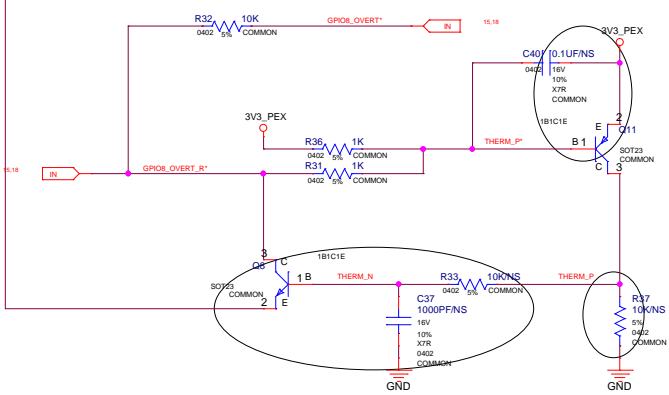


SMART FAN STRAP FOR GK107			FOR GM107		
XTALSSIN	XTALOUTBUFF	SmartFan PWM	XTALOUTBUFF	SmartFan PWM	
PU	PU	33% High Duty	VDD33 50-100K PU	66% High Duty	
PU	PD	50% High Duty	1/2 VDD33 50-100K PU&PD	33% High Duty	
PD	PU	66% High Duty	0V 50-100K PD	DISABLE	
PD	PD	100% High Duty			

Thermal,Mechanical, Fan Control,Backdrive



3V3_PROT = 3.3V @ 350mA



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ASSEMBLY
PAGE DETAIL

BASE LEVEL GENERIC SCHEMATIC ONLY
Thermal,Mechanical, Fan Control,Backdrive

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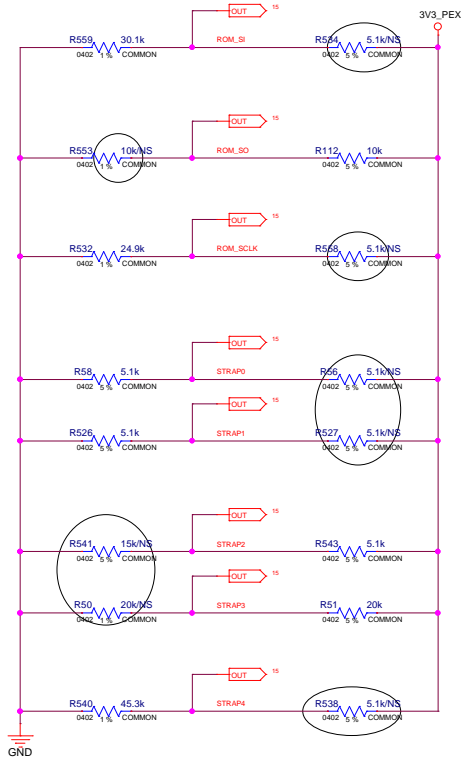


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Straps



GK107 Straps

Bit Signal	Values					
03: RAMCFG[3]	0000	64Mx16 128bit	Reservd	1000	64Mx16 64bit	Reservd
02: RAMCFG[2]	0001	64Mx16 128bit Micron		1001	64Mx16 64bit Micron	
	0010	64Mx16 128bit Hynix		1010	64Mx16 64bit Hynix	
01: RAMCFG[1]	0011	64Mx16 128bit Samsung		1011	64Mx16 64bit Samsung	
	0100	128Mx16 128bit	Reservd	1100	128Mx16 64bit	Reservd
00: RAMCFG[0]	0101	128Mx16 128bit Micron		1101	128Mx16 64bit Micron	
	0110	128Mx16 128bit Hynix		1110	128Mx16 64bit Hynix	
	0111	128Mx16 128bit Samsung		1111	128Mx16 64bit Samsung	
03: FB[1]	01	128M				
02: FB[0]	10	256M				
01: SMB_ALT_ADDR	0	DISABLED		1	ENABLED	
00: VGA_DEVICE	0	DISABLED		1	ENABLED	
03: PCI_DEVICE_EXT	0	SKU 0 GK107-810-A1		1	SKU 501 GK107-810-A01	
	0	SKU 1 GK107-320-A1		1	SKU 502 GK107-810-A01	
02: SUB_VENDOR	0	NO_BIOS		1	BIOS	
	0	SKU 0 GK107-200-A1		1	SKU 501 GK107-810-A01	
01: PCI_DEVICE_EXT_BITS	0	SKU 1 GK107-320-A1		1	SKU 502 GK107-810-A01	
	0	DISABLED		1	ENABLED	
00: PEX_PLL_EN_TERM100	0	DISABLED		1	ENABLED	
03: USER[3]	0000	INT				
02: USER[2]						
01: USER[1]						
00: USER[0]						
03: 3GIO_PADCFG_LUT_ADDR[3]	0000	DSKTOP_DEFAULT		1000	DSKTOP_HTHRS	
	0001	MOBILE_DEFAULT		1001	MOBILE_HTHRS_NAMP	
02: 3GIO_PADCFG_LUT_ADDR[2]	0010	MOBILE_NTHRS_LLAMP		1010	MOBILE_HTHRS_LLAMP	
	0011	MOBILE_NTHRS_LLAMP		1011	MOBILE_HTHRS_LLAMP	
01: 3GIO_PADCFG_LUT_ADDR[1]	0100	MOBILE_NTHRS_HAMP		1100	MOBILE_HTHRS_HAMP	
	0101	MOBILE_NTHRS_HHAMP		1101	MOBILE_HTHRS_HHAMP	
00: 3GIO_PADCFG_LUT_ADDR[0]	0110	MOBILE_NTHRS_HHHAMP		1110	MOBILE_HTHRS_HHHAMP	
	0111	MOBILE_NTHRS_HHHAMP		1111	MOBILE_HTHRS_HHHAMP	
03: PCI_DEVICE[3]	0010	SKU 0 GK107-200-A1		1010	SKU 501 GK107-810-A01	
02: PCI_DEVICE[2]						
01: PCI_DEVICE[1]	0000	SKU 1 GK107-320-A1		1111	SKU 502 GK107-810-A01	
00: PCI_DEVICE[0]						
03: SOR3_EXPOSED	0	DISABLED		1	ENABLED	
02: SOR2_EXPOSED	0	DISABLED		1	ENABLED	
01: SOR1_EXPOSED	0	DISABLED		1	ENABLED	
00: SOR0_EXPOSED	0	DISABLED		1	ENABLED	
03: PCI_SPEED_CHANGE_GEN3	0	DISABLED		1	ENABLED	
01: PCI_MAX_SPEED	0	GEN1		1	GEN2/3	
00: DP_PLL_VDD_33V	0	USE18V		1	USE33V	

GM107 Straps

Bit Signal	Values			
03: RAMCFG[3]	0000	HYNIX 256Mx16	1000	RESERVED
02: RAMCFG[2]	0001	MICRON 256Mx16	1001	RESERVED
	0010	SAMSUNG 256Mx16	1010	RESERVED
01: RAMCFG[1]	0011	HYNIX 128Mx16	1011	RESERVED
	0100	MICRON 128Mx16	1100	RESERVED
00: RAMCFG[0]	0101	SAMSUNG 128Mx16	1101	RESERVED
	0110	RESERVED	1110	RESERVED
	0111	RESERVED	1111	RESERVED
03: DEVID_SEL	0	DEVID A	1	DEVID B
02: PCIe_CFG	0	DESKTOP		NOTEBOOK
01: SMB_ALT_ADDR	0	DISABLED	1	ENABLED
00: VGA_DEVICE	0	DISABLED	1	ENABLED
03: SOR3_EXPOSED	0	DISABLED	1	ENABLED
02: SOR2_EXPOSED	0	DISABLED	1	ENABLED
01: SOR1_EXPOSED	0	DISABLED	1	ENABLED
00: SOR0_EXPOSED	0	DISABLED	1	ENABLED
TERNARY STRAP				
VDD03:	0/1/2	0/1/2	50-100K PU	
1/2 VDD03:	0/1/2	0/1/2	50-100K PUMP	
0V:	0/1/2	0/1/2	50-100K PD	

Multilevel Straps

0/10	5.1K to GND	1000	5.1K to VCC
0001	10K to GND	1001	10K to VCC
0010	15K to GND	1010	15K to VCC
0011	20K to GND	1011	20K to VCC
0100	24.9K to GND	1100	24.9K to VCC
0101	30.1K to GND	1101	30.1K to VCC
0110	34.8K to GND	1110	34.8K to VCC
0111	45.3K to GND	1111	45.3K to VCC

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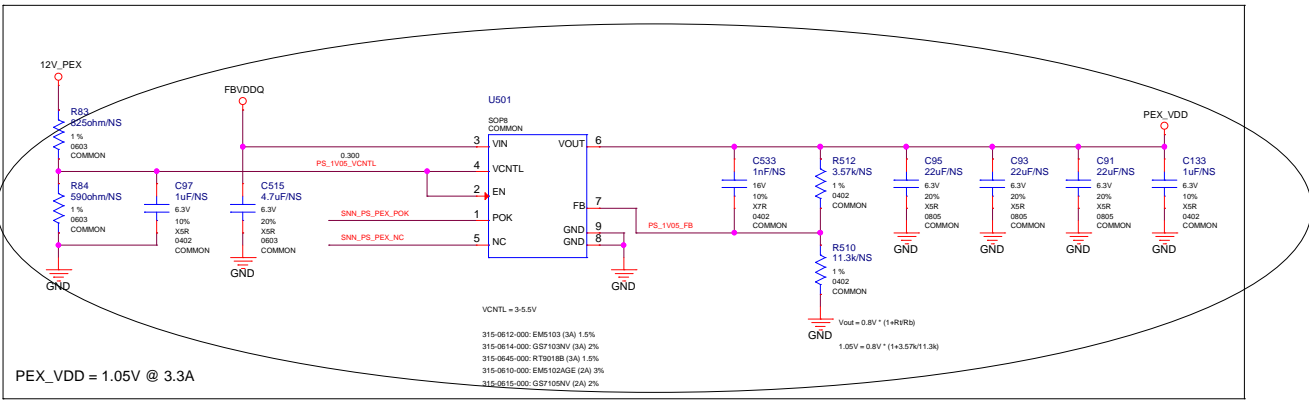
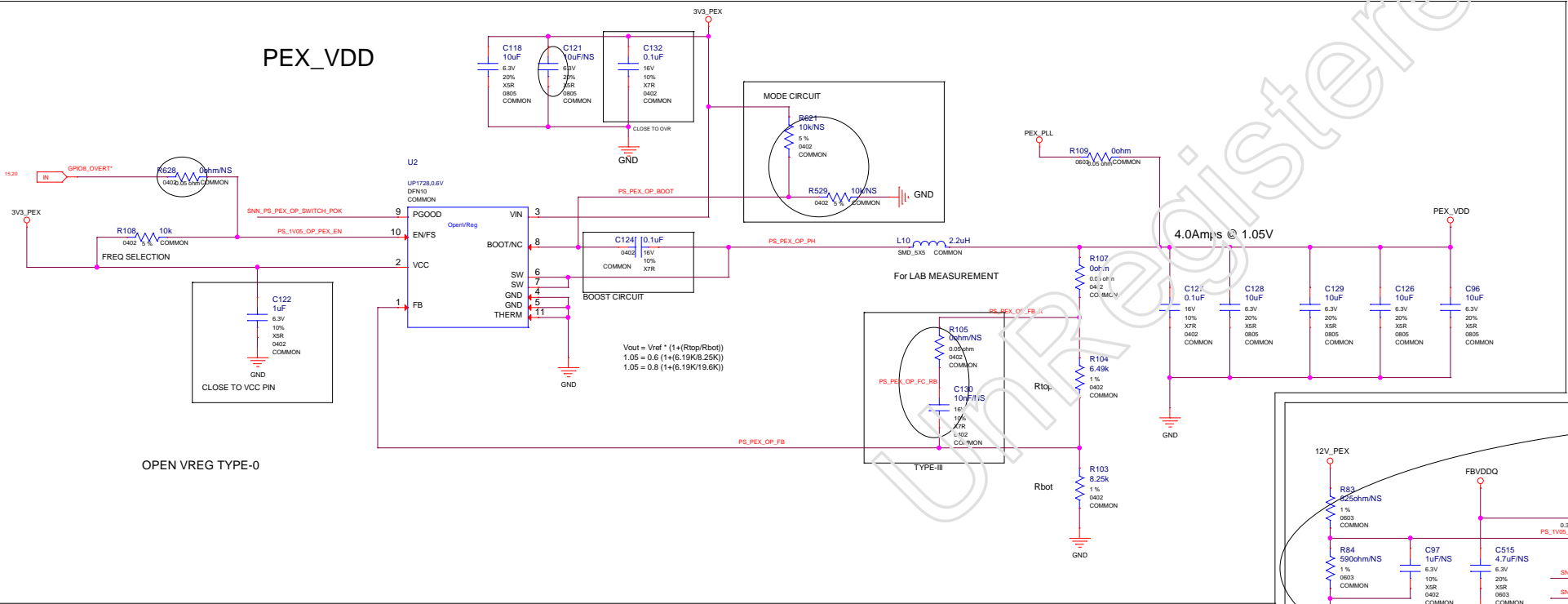
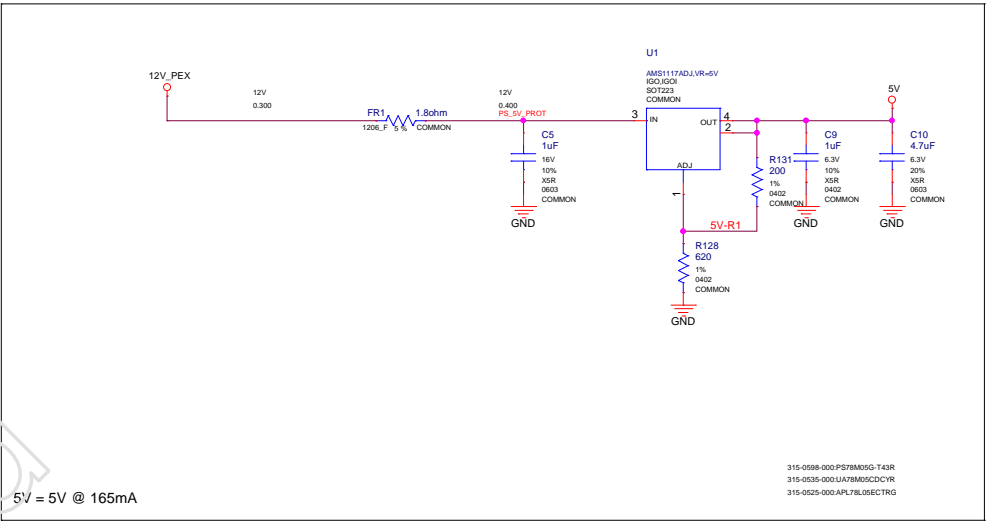
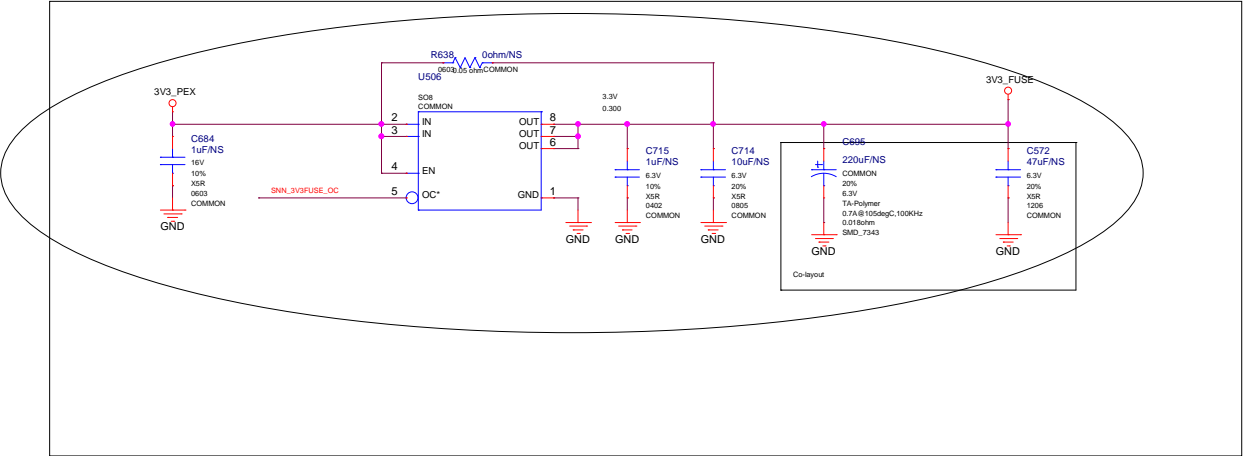


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Power Supply I: PEX_VDD,PEX_PLL,5V



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ASSEMBLY
PAGE DETAIL

BASE LEVEL GENERIC SCHEMATIC ONLY
Power Supply I: PEX_VDD,PEX_PLL,5V

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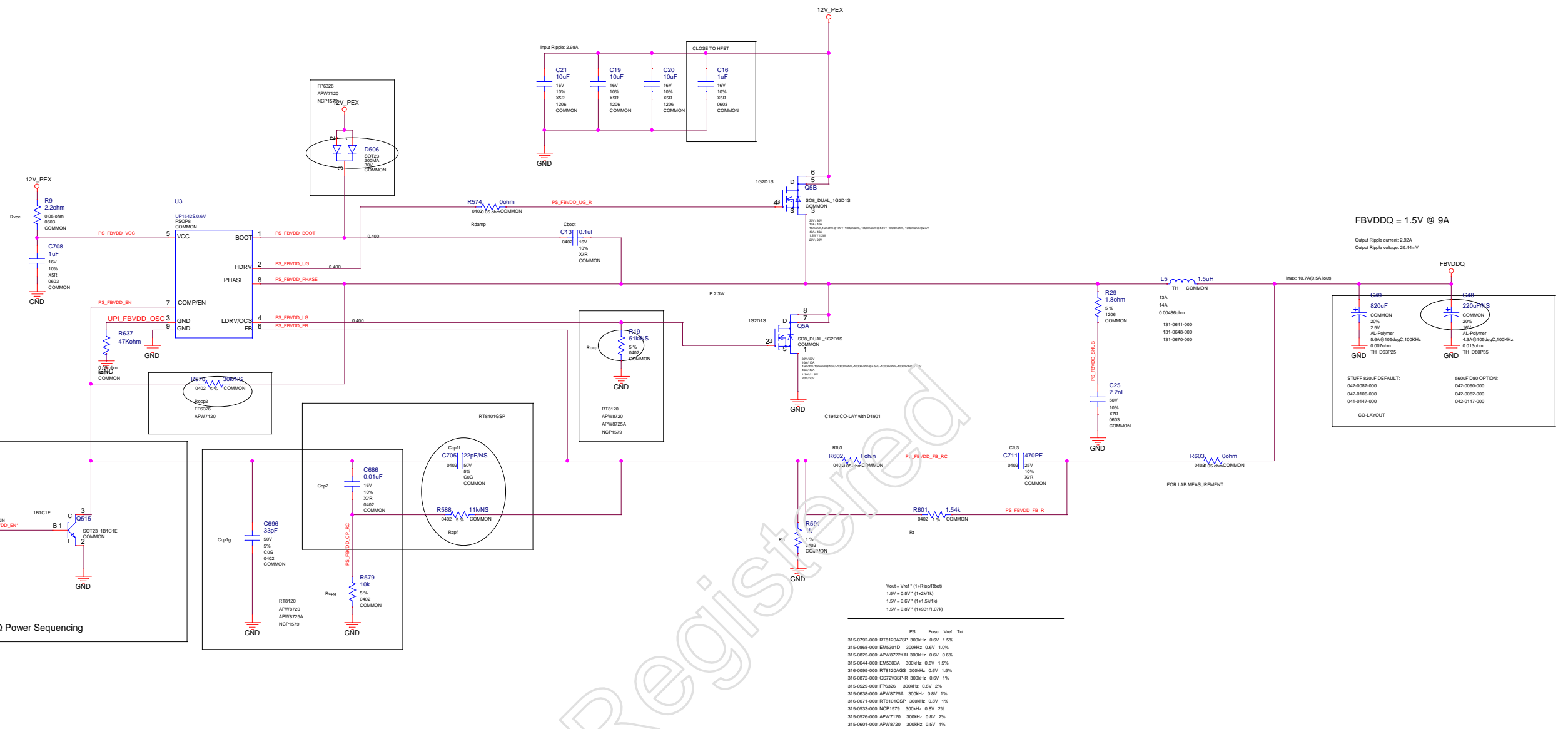
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Power Supply II: FBVDD/Q



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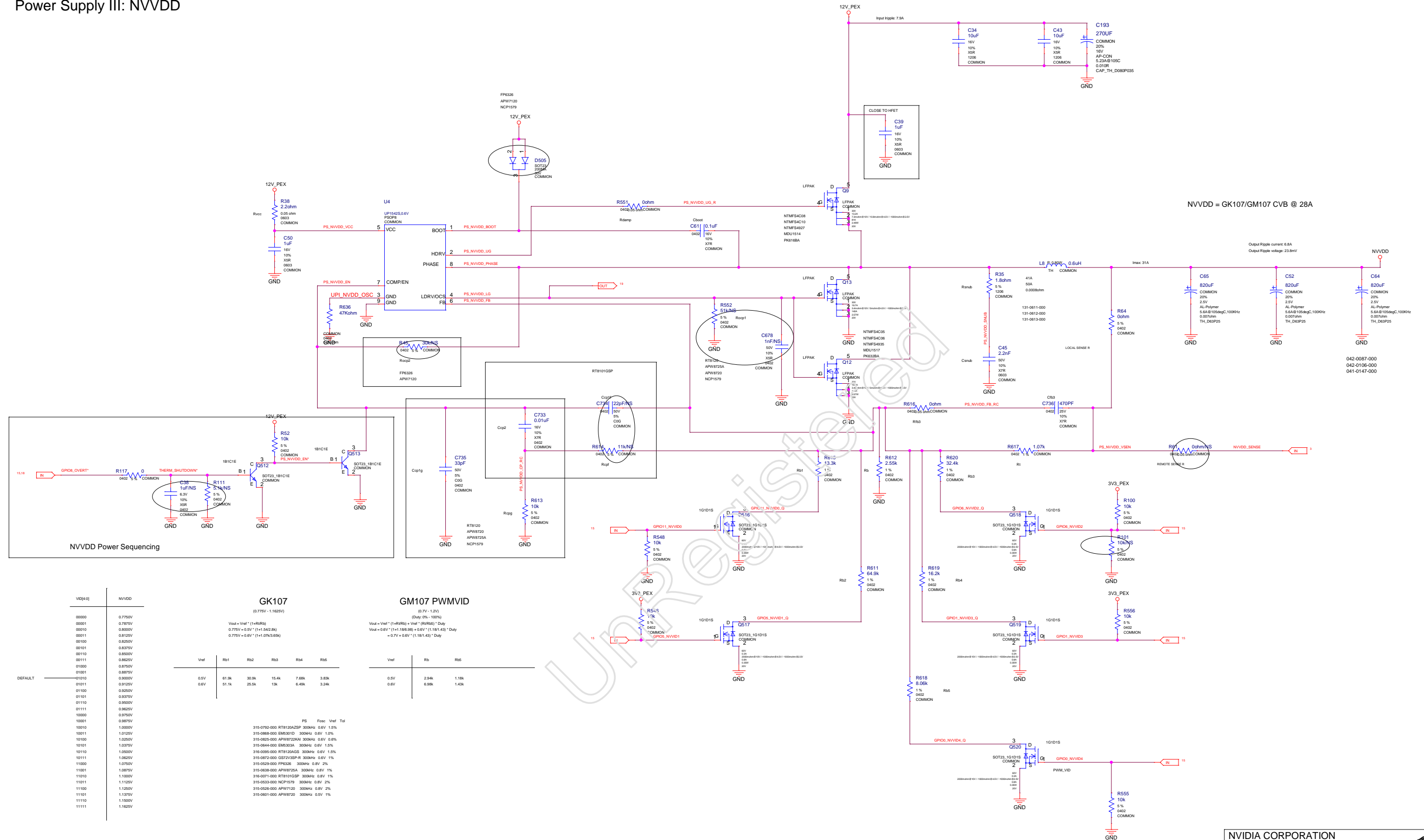
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Power Supply III: NVVDD



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PAGE DETAIL	Power Supply III: NVVDD

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A coordinate plane with a horizontal line labeled A. The line is parallel to the x-axis and intersects the y-axis at a positive value.

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