

P1263-A03

GF110, GDDR5, 320-bit, 32Mx32/64Mx32
DVI -I DL, HDMI , DP, 3Way-SLI

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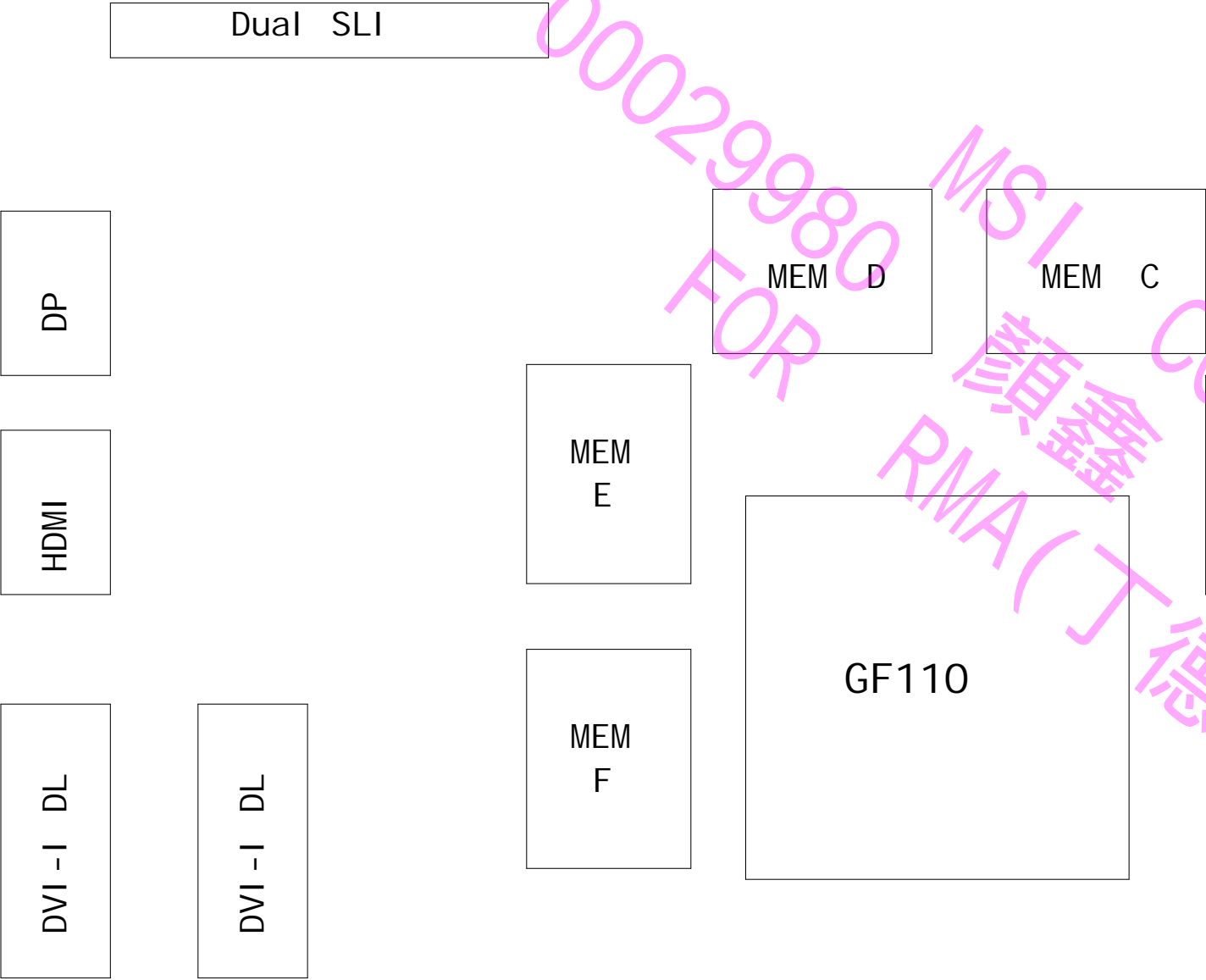
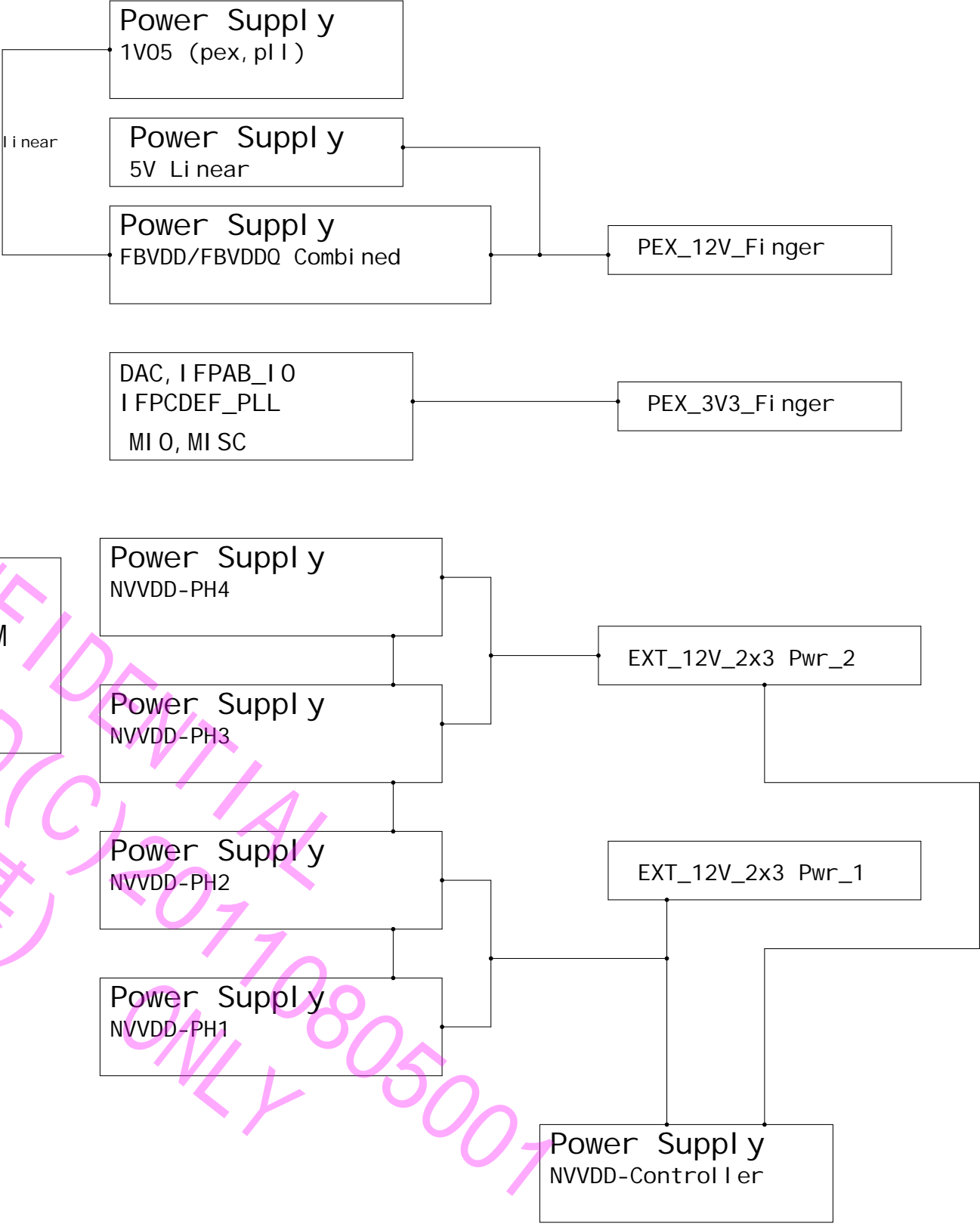
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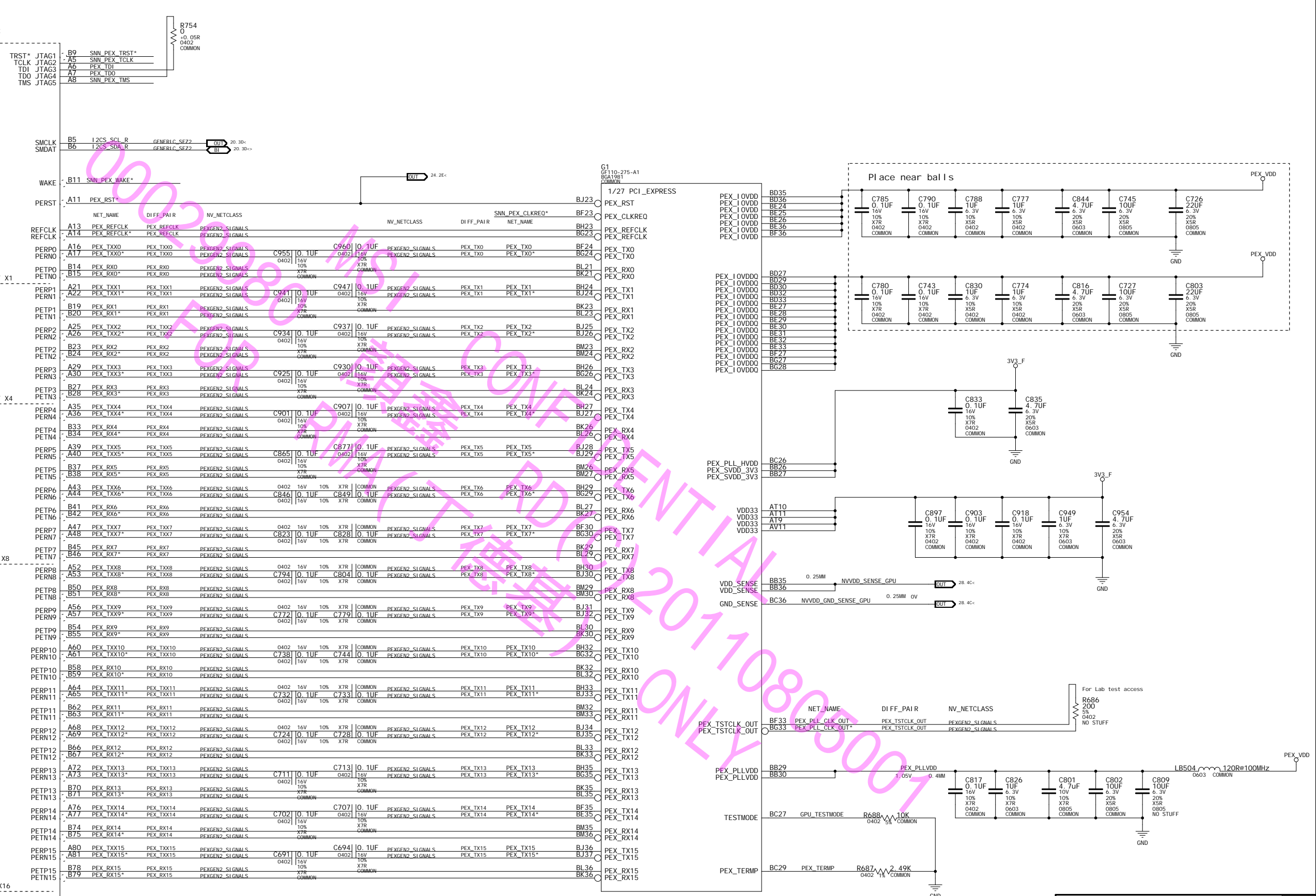
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Block Diagram

Power Sequence

- 5V - Always On
- 3V3 - Always On
- 12V_F - Always On
- 12V_PEX6_EXT1 - Always On
- 12V_PEX6_EXT2 - Always On
- NVVDD - Input_Pex_Power_Rail_Enable + Thermal_Shutdown
- FBVDD/FBVDDQ - NVVDD_PG00D
- PEX_VDD - Following FBVDDQ





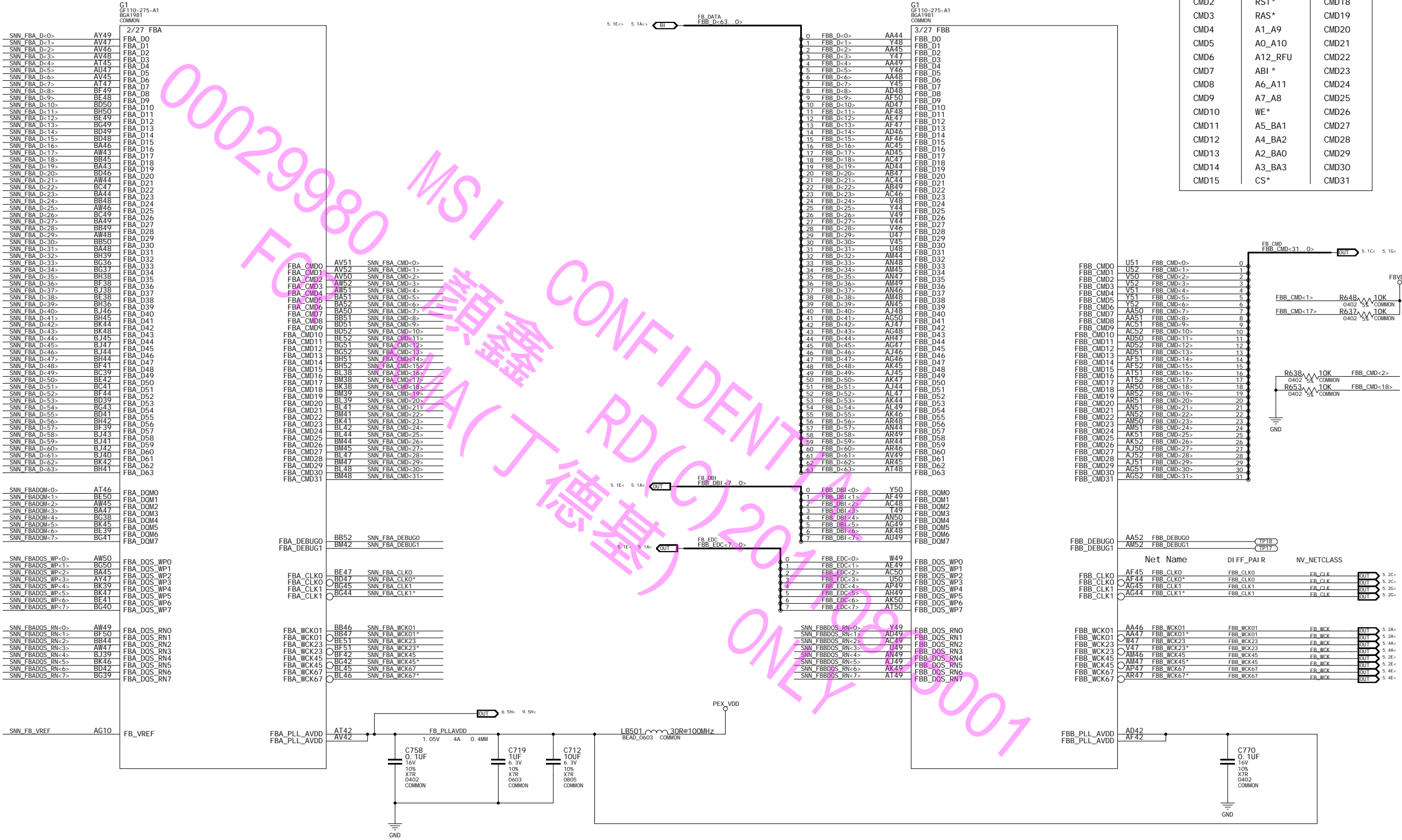
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NV_PN		602-11263-0004-QS2	
PCB REV	A1263-A03	PAGE	3 OF 31
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ASSEMBLY	P1263 GF110-040 1280MB GDDR5 32Mx32 DVI -I /DUAL+HDMI +DP
PAGE DETAIL	PCI Express 2.0

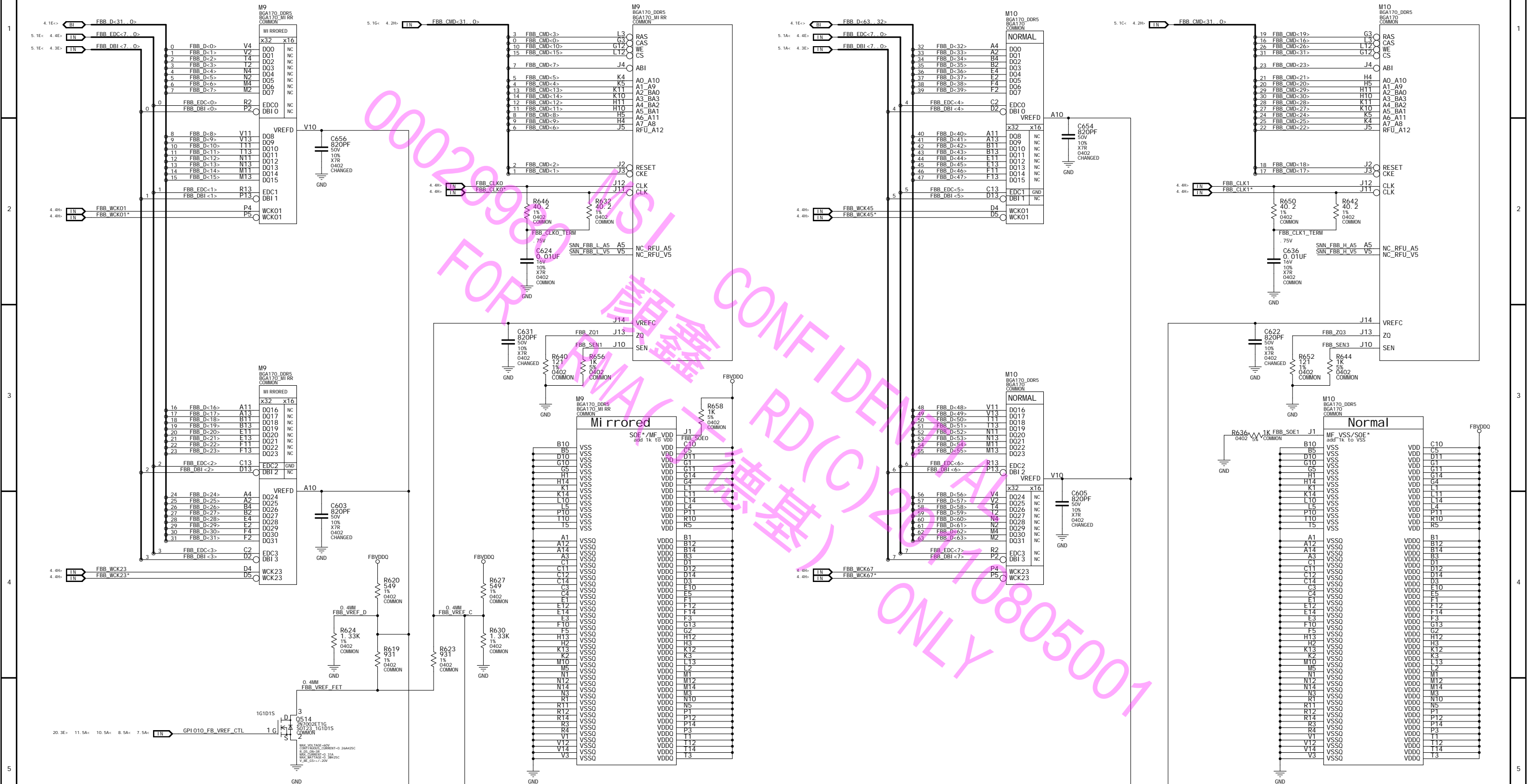
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GPU Framebuffer: Part i t i o n A/B

GDDR5 CMD Mappi ng		
0 . . 31	CMD	32 . . 63
CMD0	CAS*	CMD16
CMD1	CKE*	CMD17
CMD2	RST*	CMD18
CMD3	RAS*	CMD19
CMD4	A1_A9	CMD20
CMD5	A0_A10	CMD21
CMD6	A12_RFU	CMD22
CMD7	ABI *	CMD23
CMD8	A6_A11	CMD24
CMD9	A7_A8	CMD25
CMD10	WE*	CMD26
CMD11	A5_BA1	CMD27
CMD12	A4_BA2	CMD28
CMD13	A2_BA0	CMD29
CMD14	A3_BA3	CMD30
CMD15	CS*	CMD31



MEMORY: FBB Parti ti on



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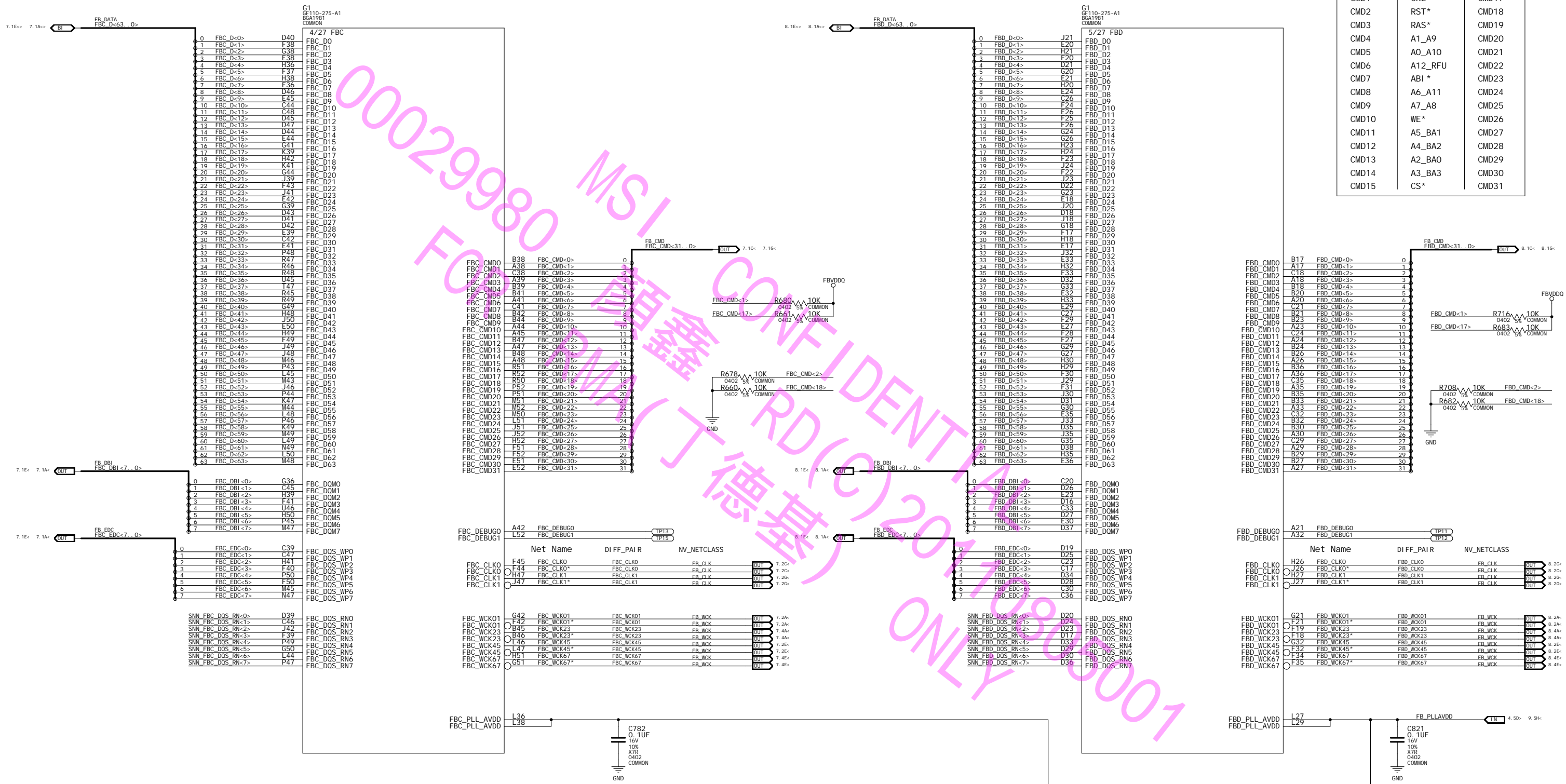
ASSEMBLY	P1263 GF110-040 1280MB GDDR5 32Mx32 DVI -I/DUAL+HDMI +DP
PAGE DETAIL	FBB Partition

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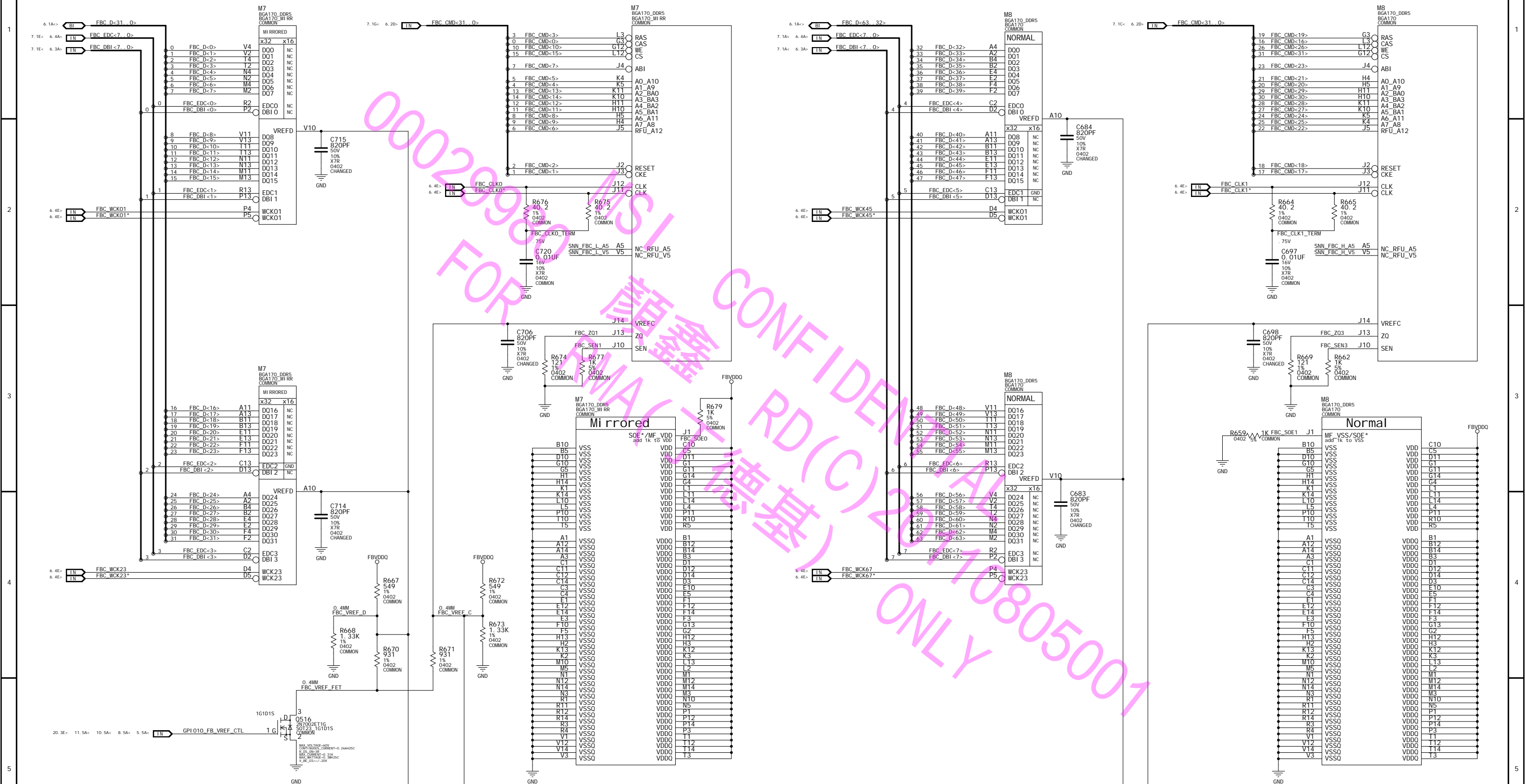
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GPU Framebuffer: Partition C/D

GDDR5 CMD Mapping		
0. . 31	CMD	32. . 63
CMD0	CAS*	CMD16
CMD1	CKE*	CMD17
CMD2	RST*	CMD18
CMD3	RAS*	CMD19
CMD4	A1_A9	CMD20
CMD5	A0_A10	CMD21
CMD6	A12_RFU	CMD22
CMD7	AB1 *	CMD23
CMD8	A6_A11	CMD24
CMD9	A7_A8	CMD25
CMD10	WE*	CMD26
CMD11	A5_BA1	CMD27
CMD12	A4_BA2	CMD28
CMD13	A2_BAO	CMD29
CMD14	A3_BA3	CMD30
CMD15	CS*	CMD31



MEMORY: FBC Parti ti on



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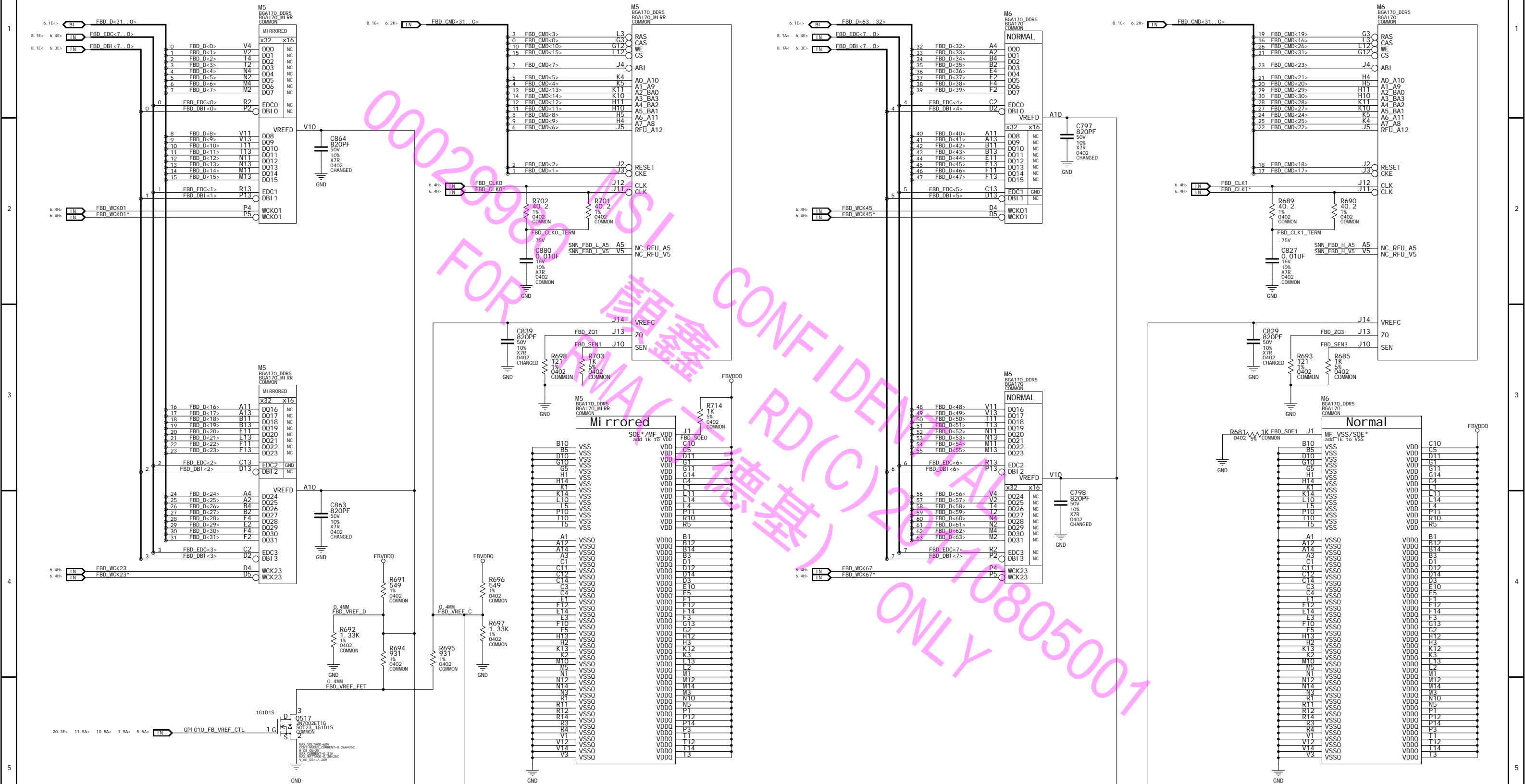
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MEMORY: FBD Parti ti on



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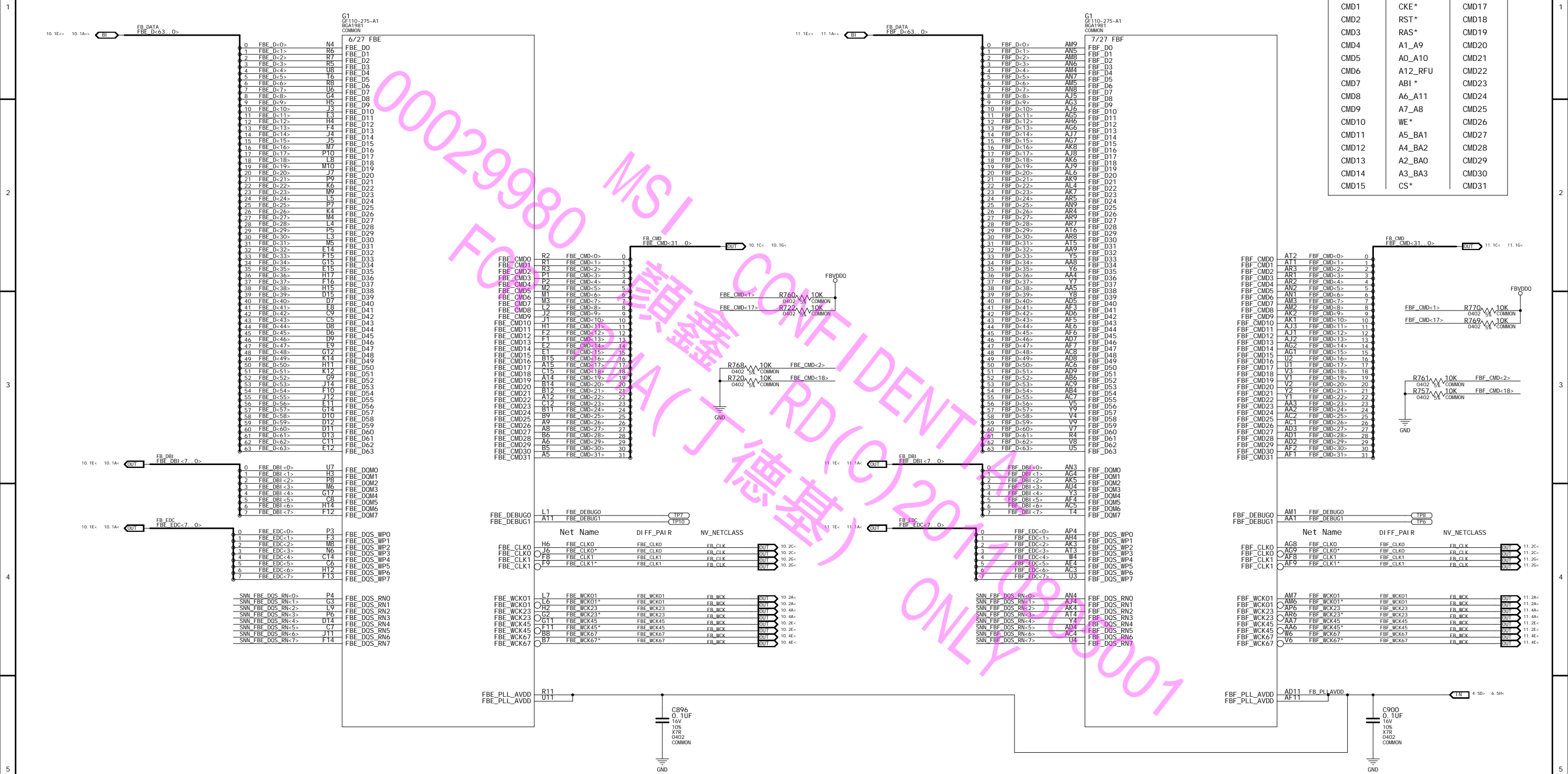
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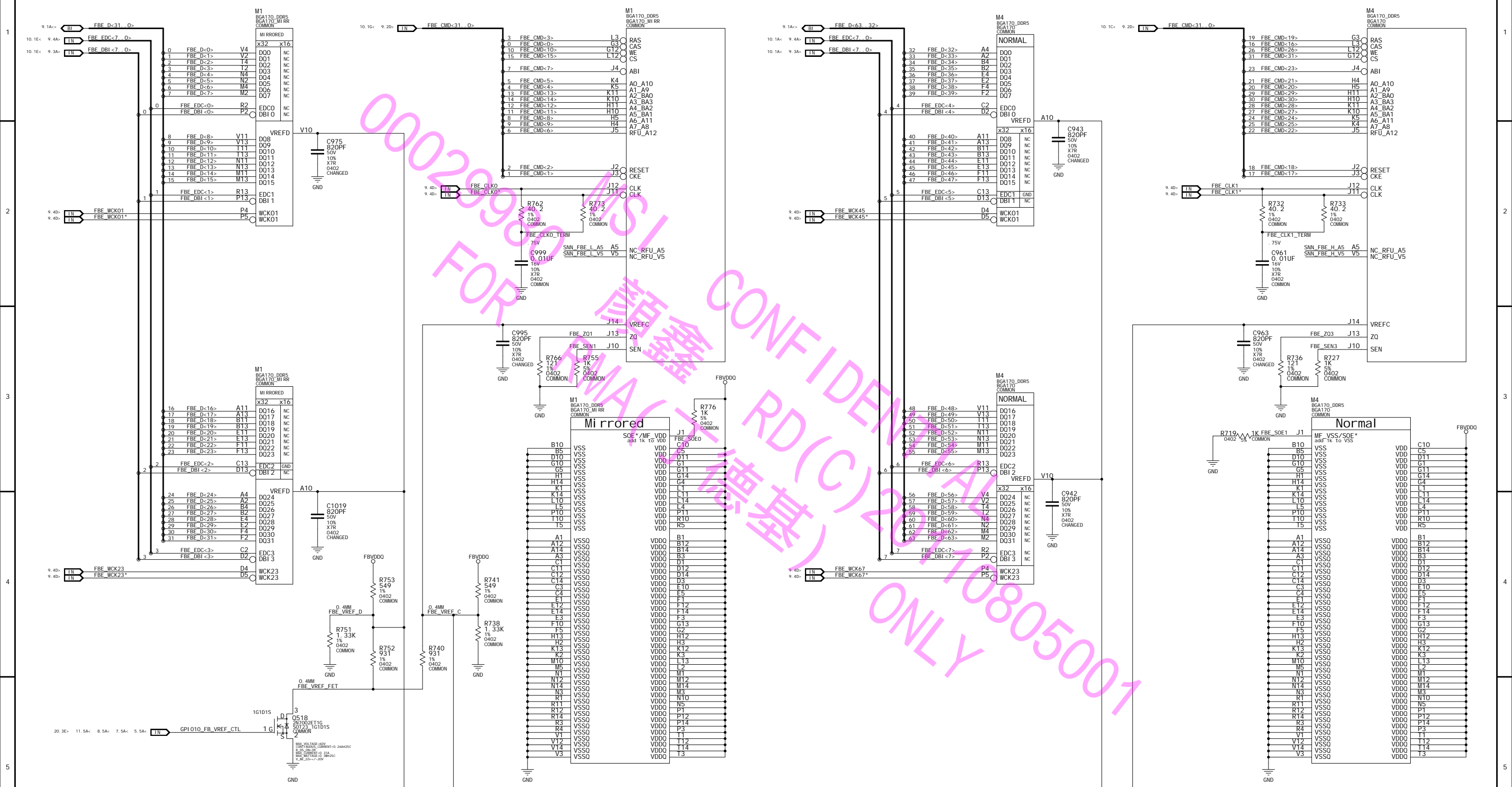
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GPU Framebuffer: Partition E/F

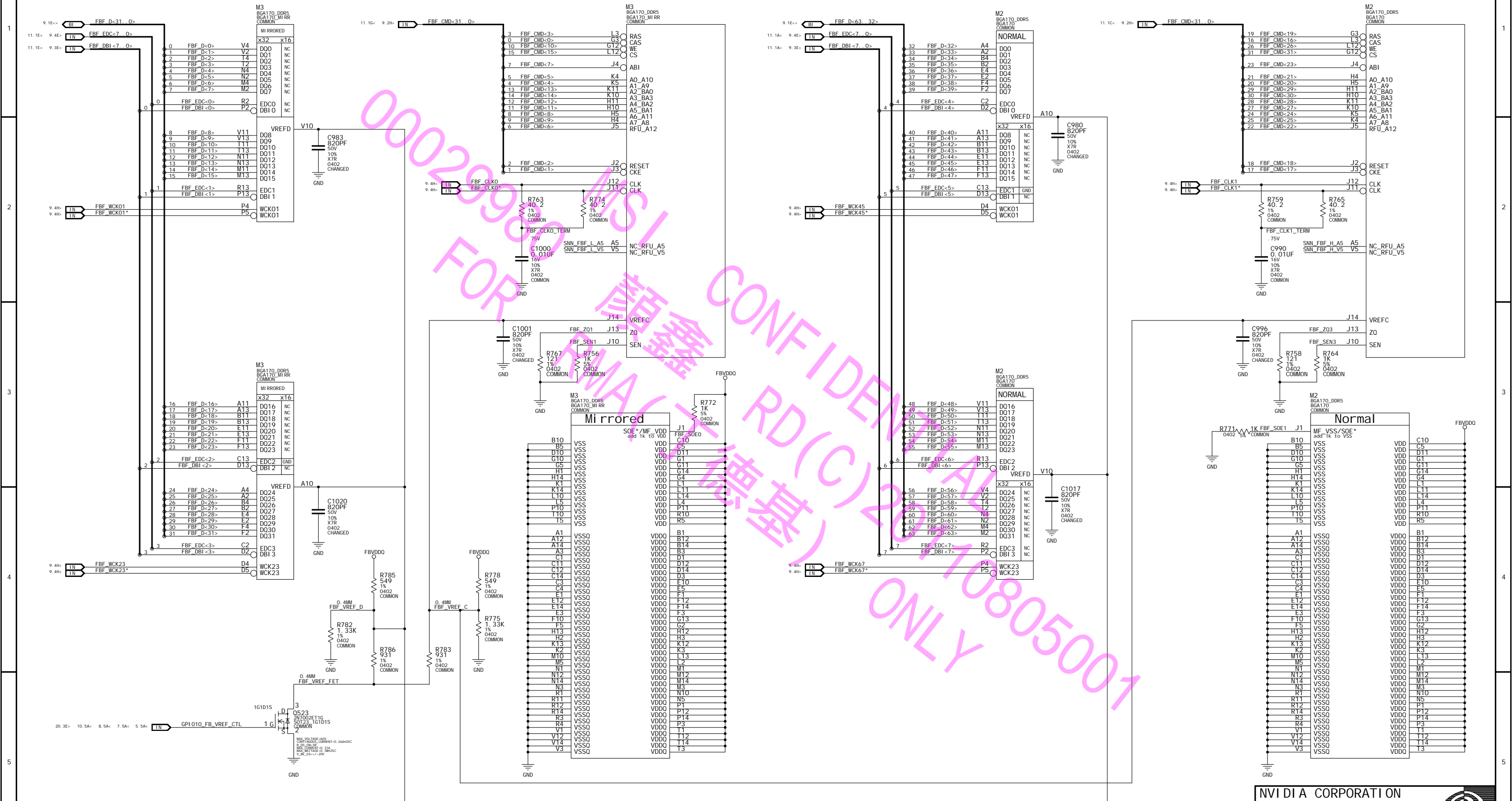
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0..31	CMD	32..63
CMD0	CAS*	CMD16
CMD1	CKE*	CMD17
CMD2	RST*	CMD18
CMD3	RAS*	CMD19
CMD4	A1_A9	CMD20
CMD5	A0_A10	CMD21
CMD6	A12_RFU	CMD22
CMD7	ABI *	CMD23
CMD8	A6_A11	CMD24
CMD9	A7_A8	CMD25
CMD10	WE*	CMD26
CMD11	A5_BA1	CMD27
CMD12	A4_BA2	CMD28
CMD13	A2_BAO	CMD29
CMD14	A3_BA3	CMD30
CMD15	CS*	CMD31



MEMORY: FBE Parti ti on



MEMORY: FBF Parti ti on



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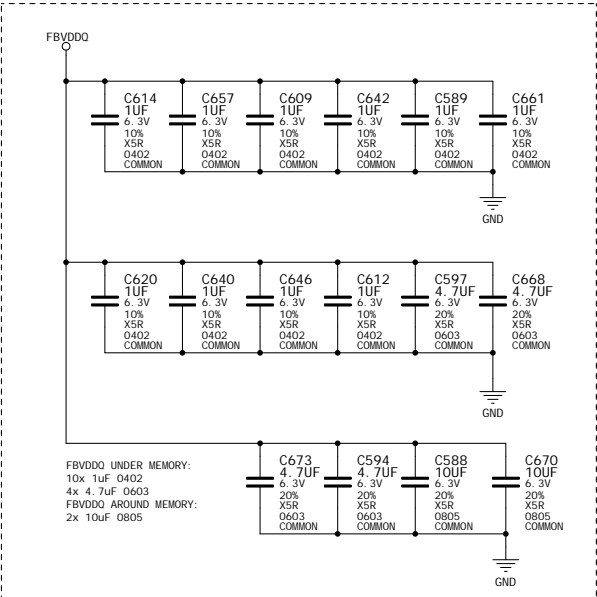
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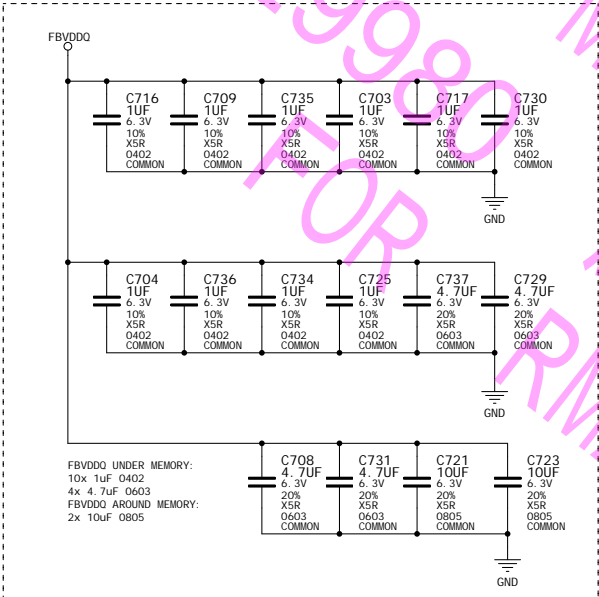
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GDDR5 Memory Decoupling

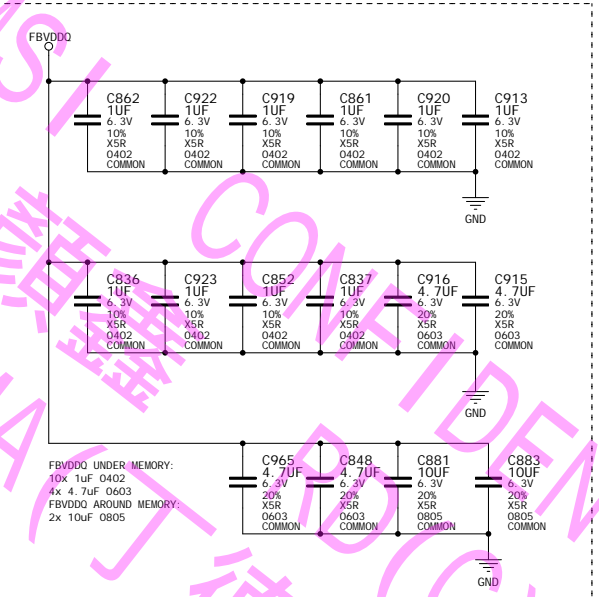
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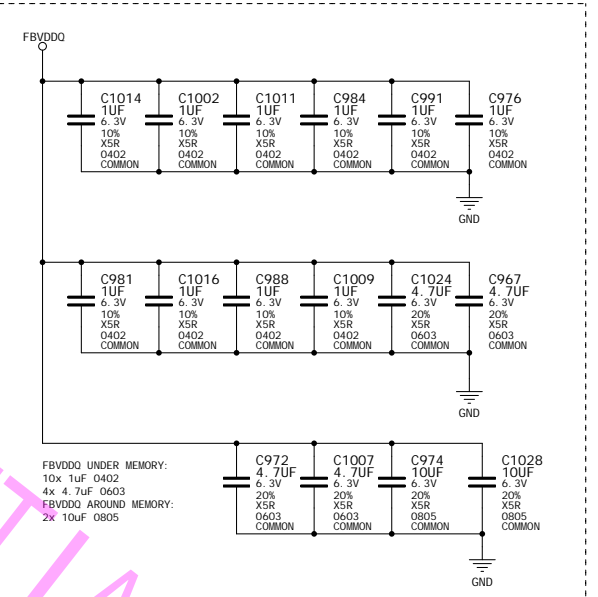
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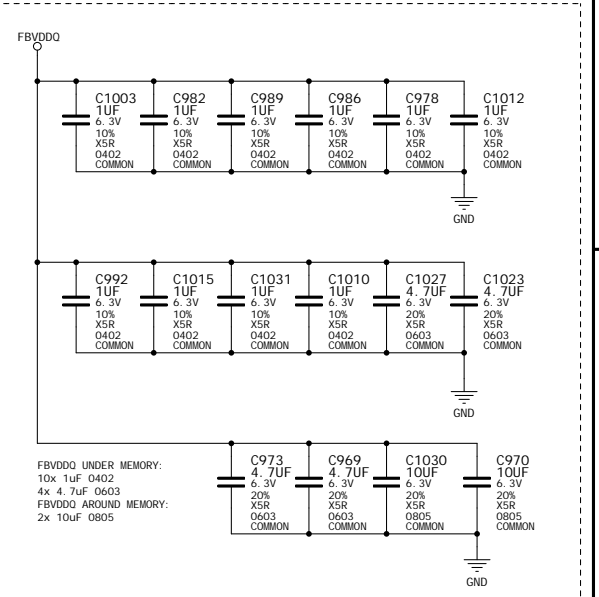
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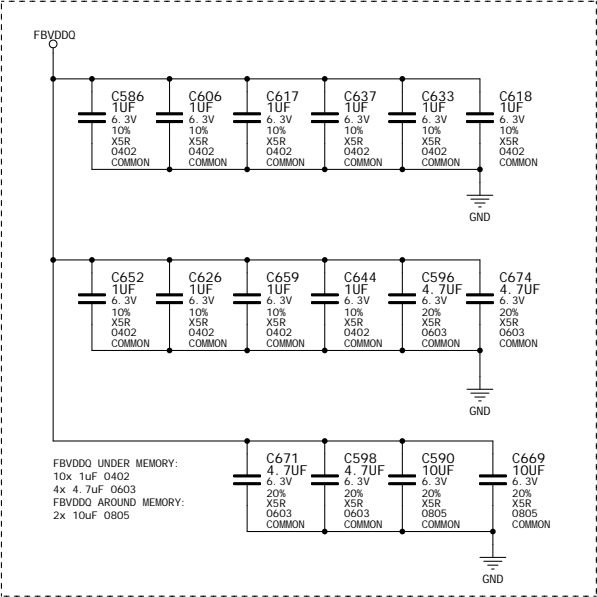
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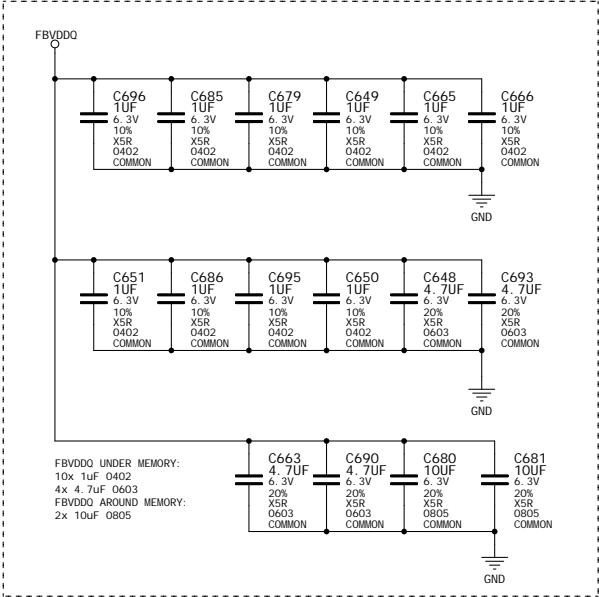
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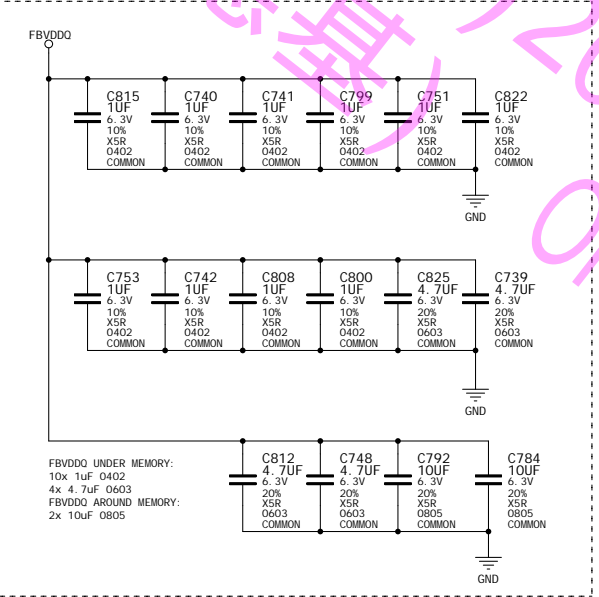
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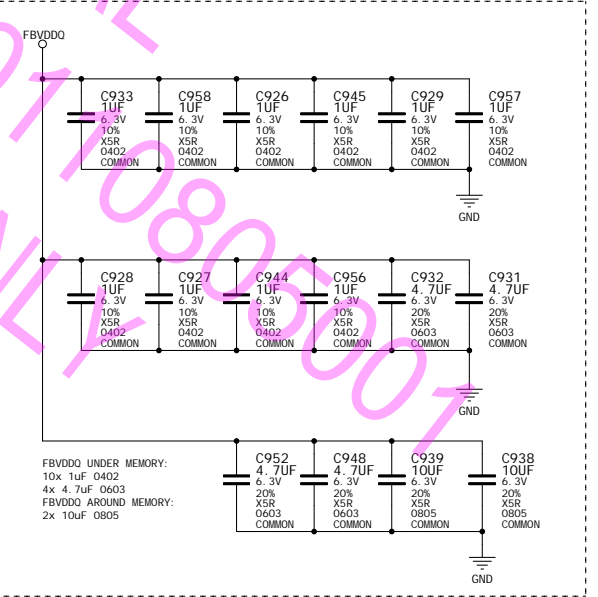
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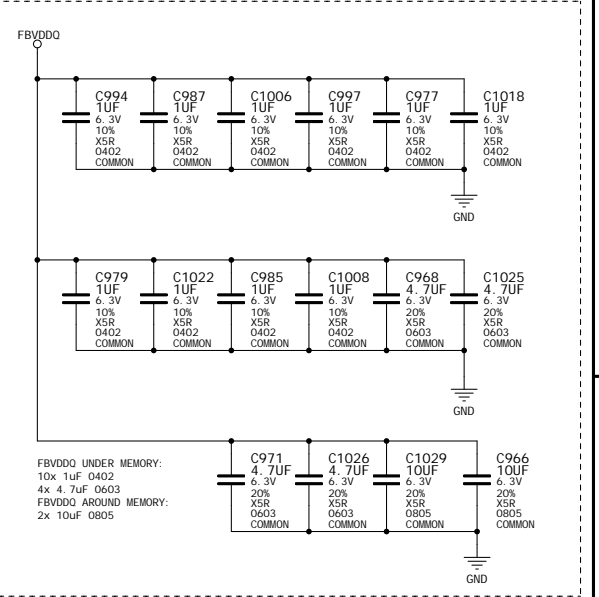
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DECOUPLING: FBE<63..32>



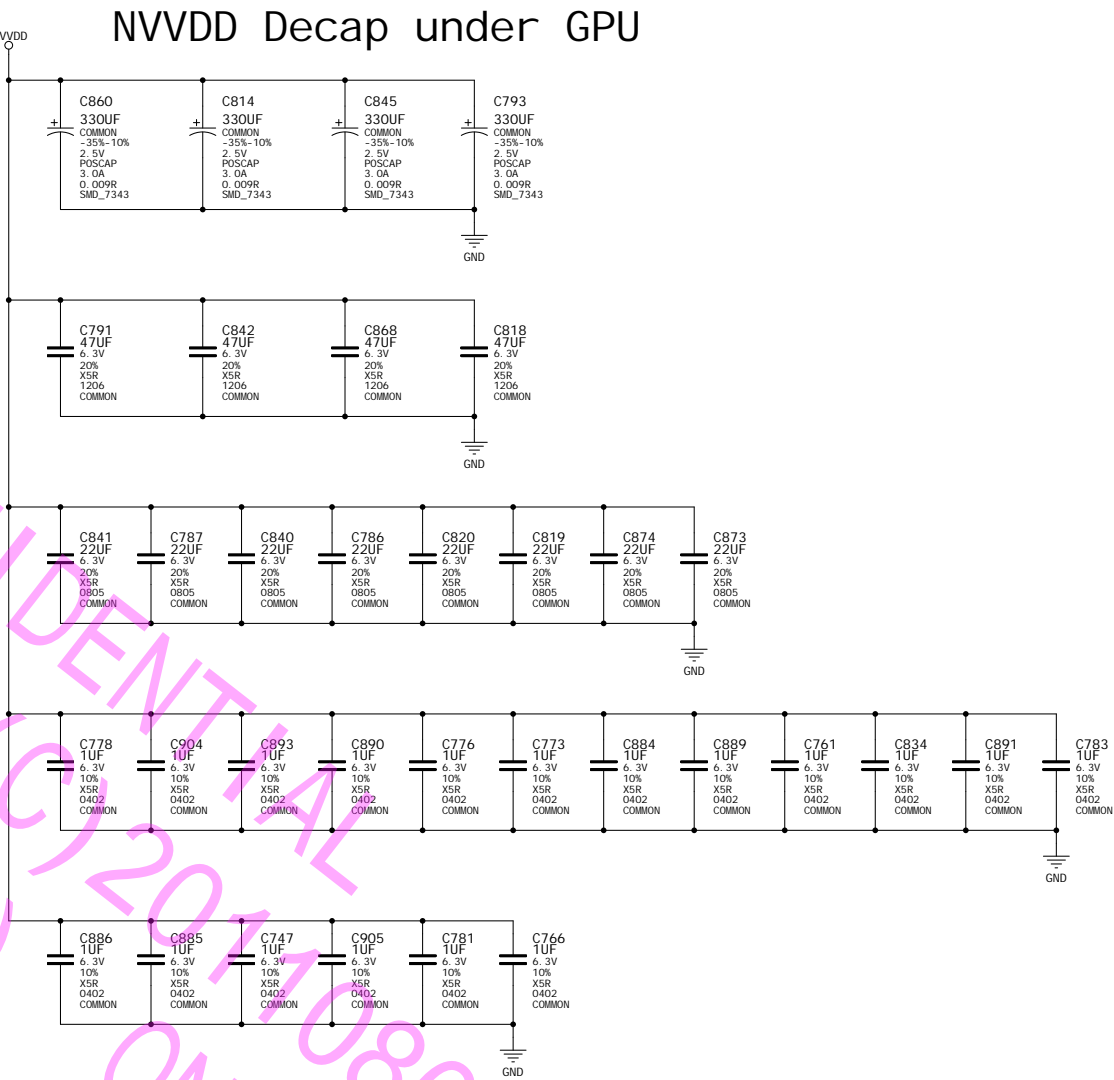
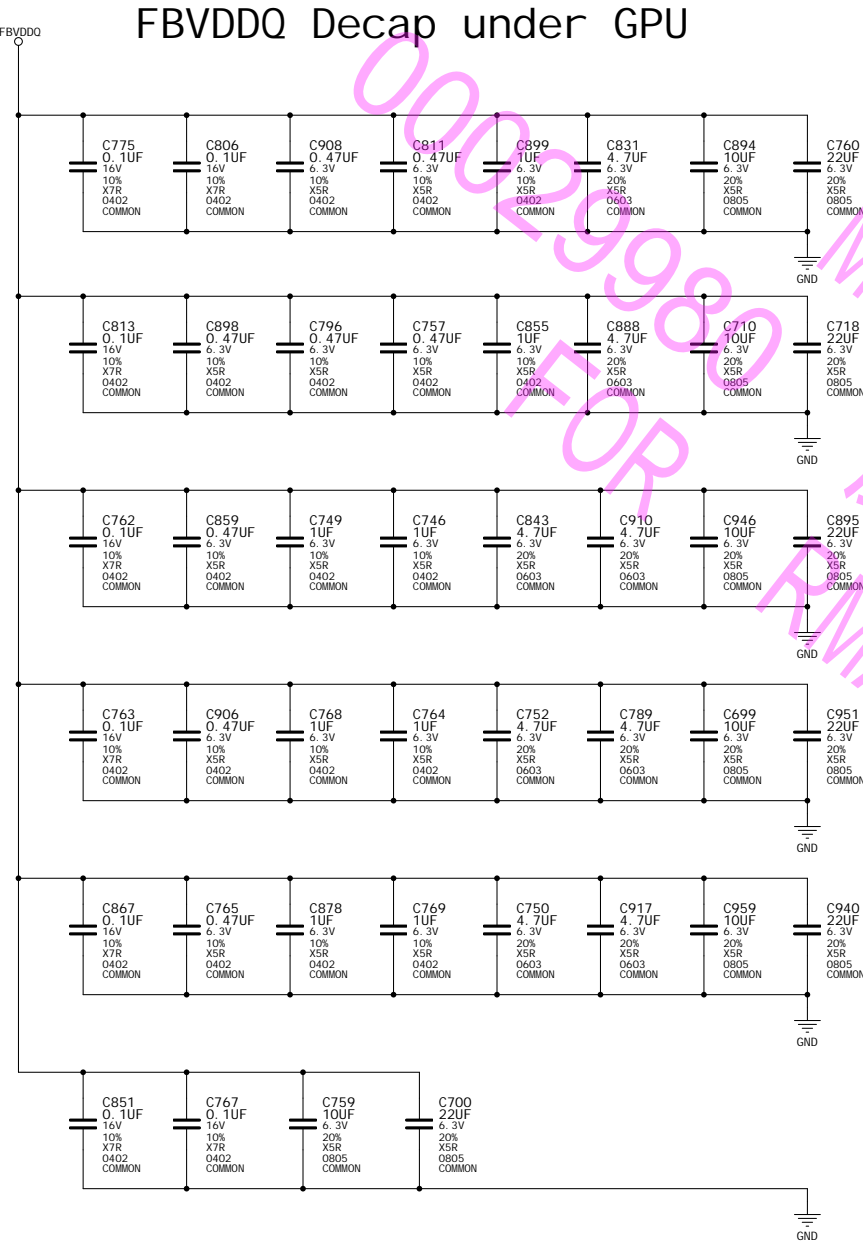
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GPU DECOUPLING (NVVDD, FBVDDQ)



FBVDDQ under GPU

0.1uF 0402 X7R x8

0.47uF 0402 X5R x8

1uF 0402 X5R x8

FBVDDQ around GPU

4.7uF 0603 X5R x8

10uF 0805 X5R x6

22uF 0805 X5R x6

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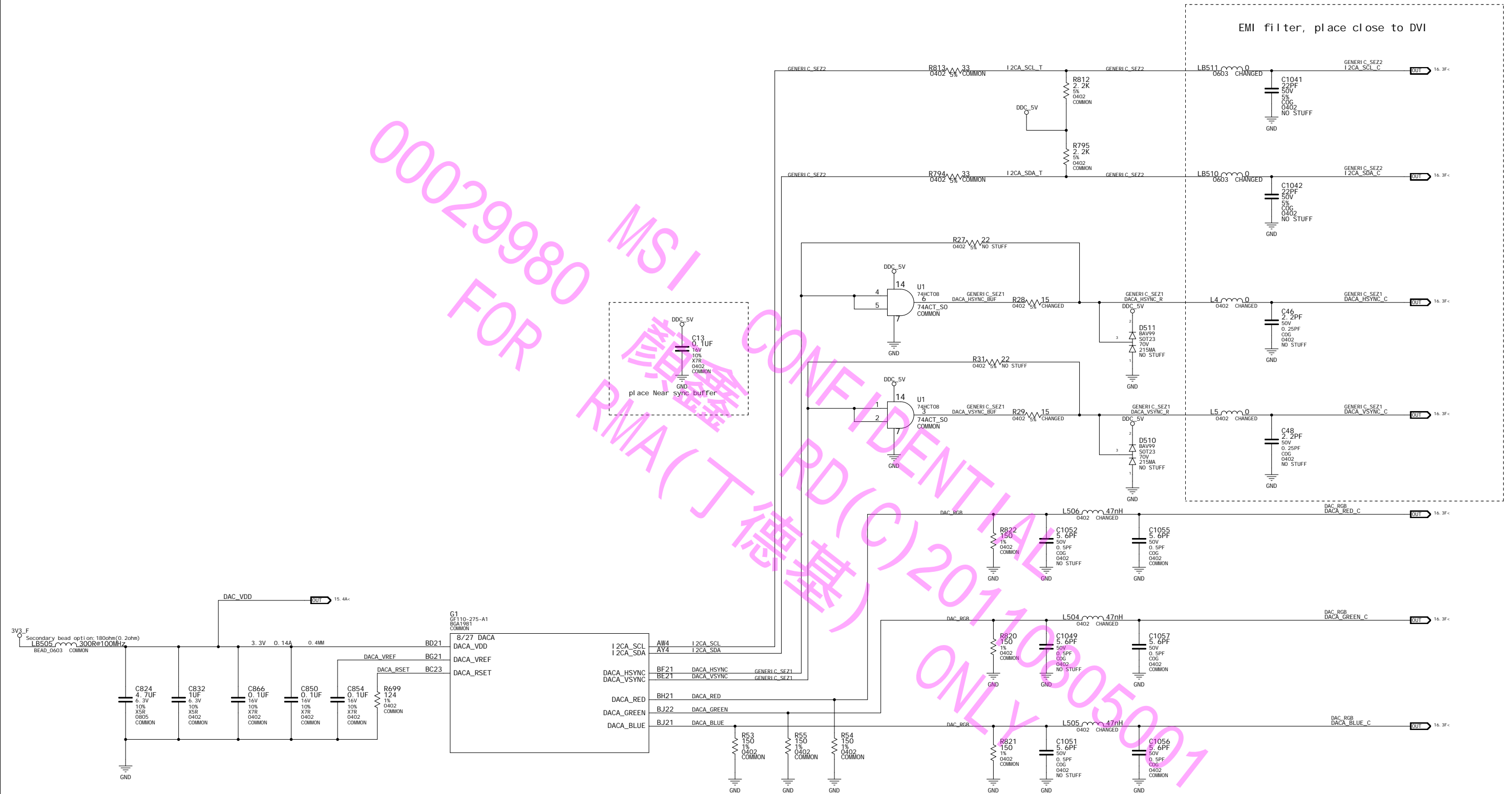
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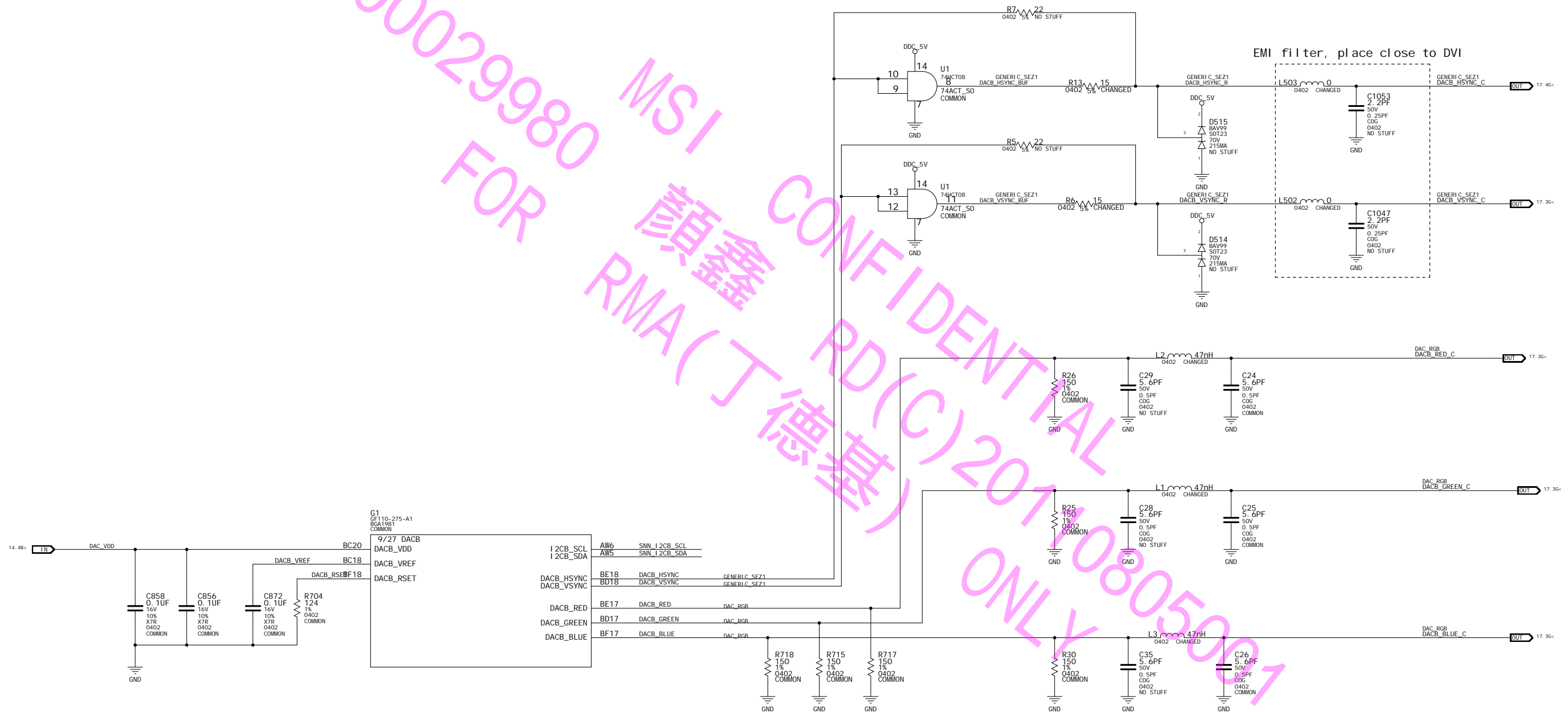
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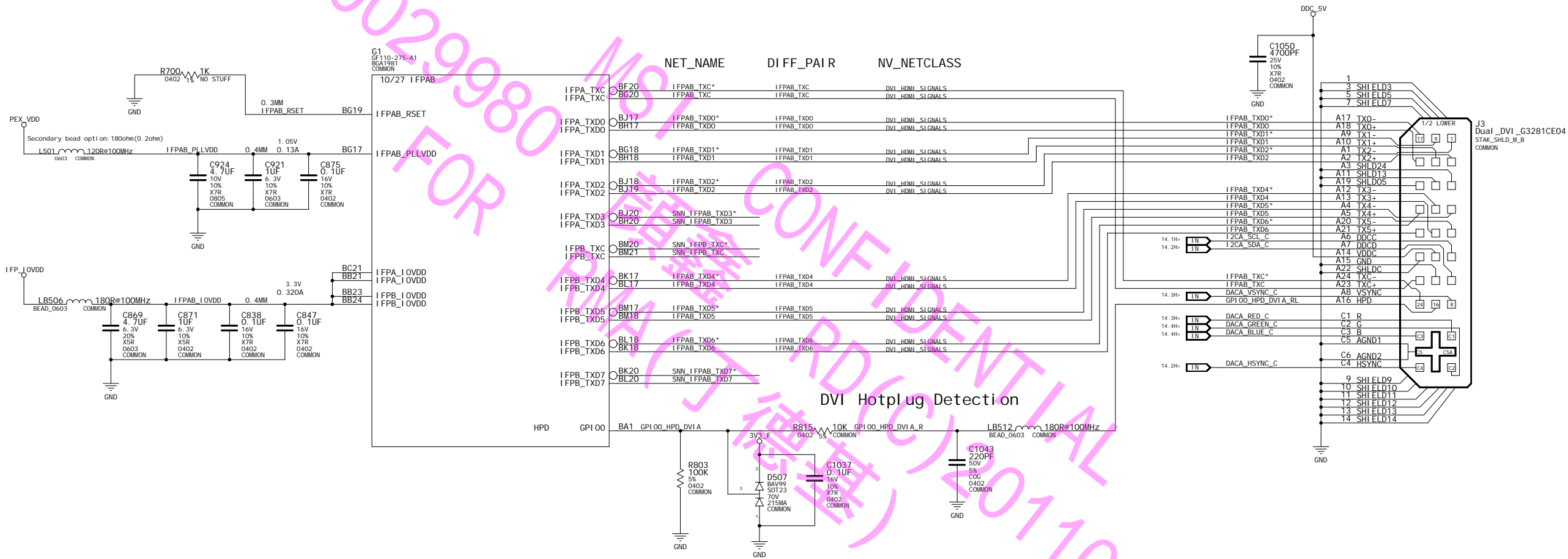
Display: DACA (South DVI -I Lower)



Display: DACB (South DVI -I Upper)



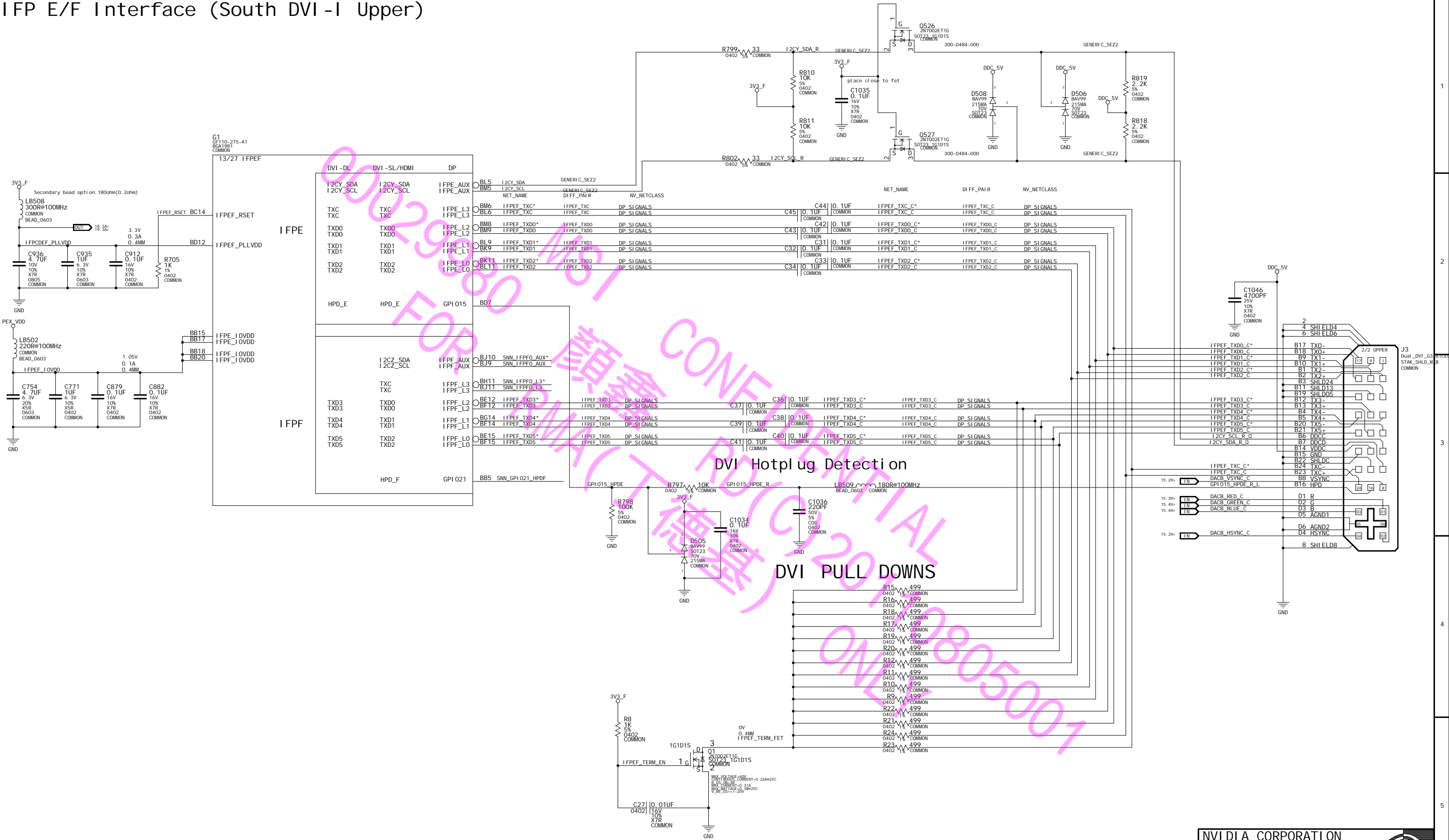
I FP A/B Interface (South DVI -I Lower)



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I/F E/F Interface (South DVI -I Upper)

1
2
3
4
5

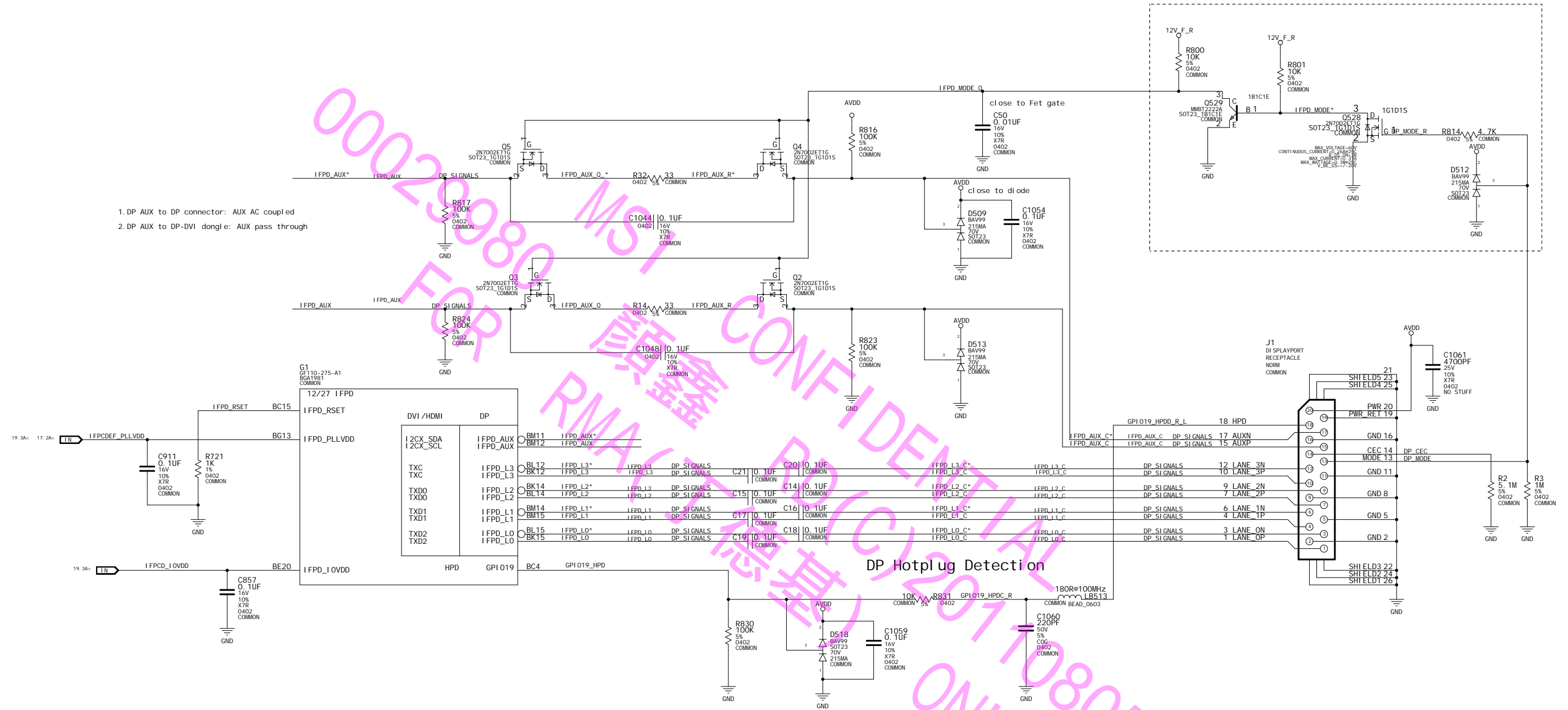


1
2
3
4
5

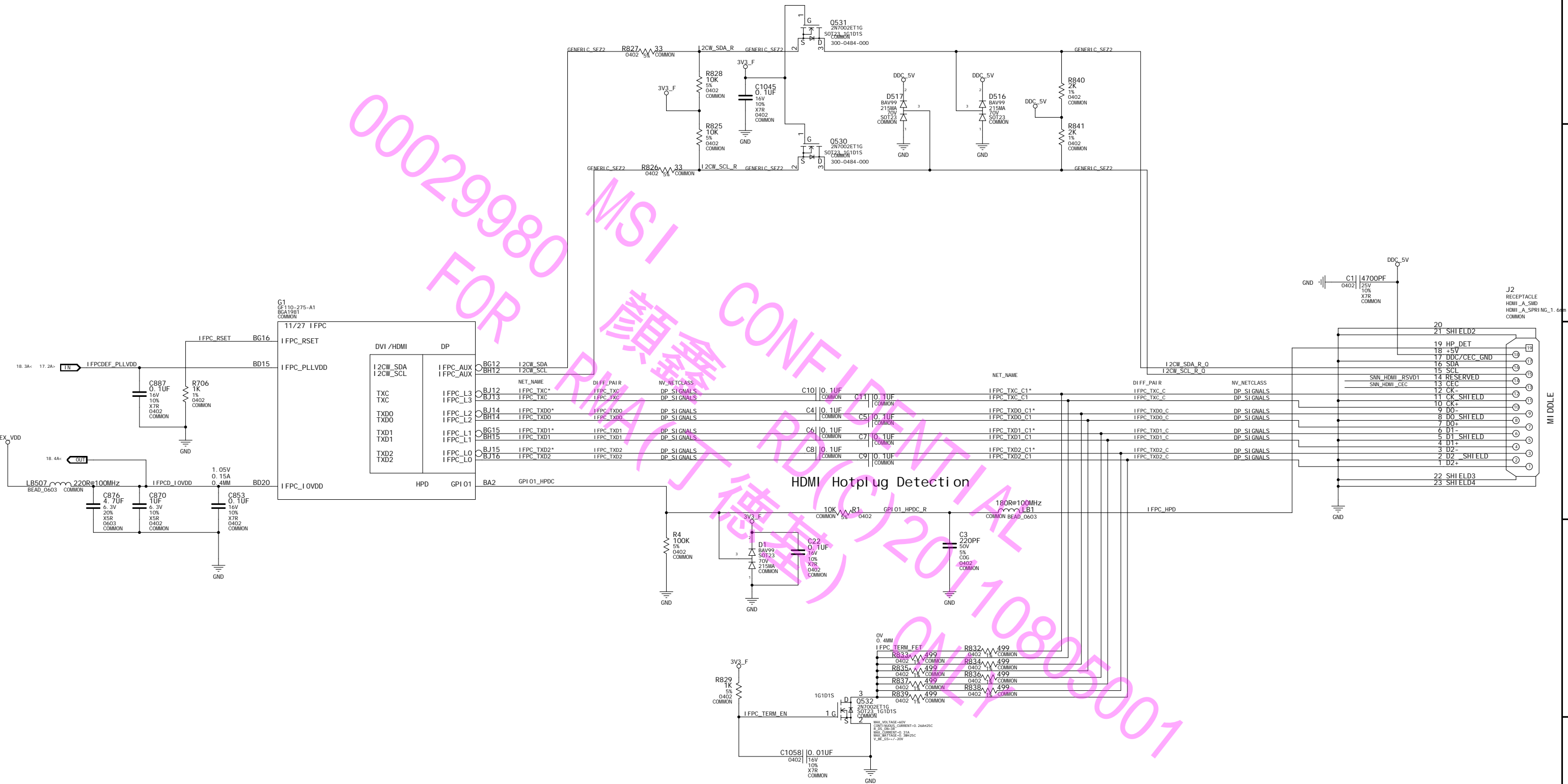
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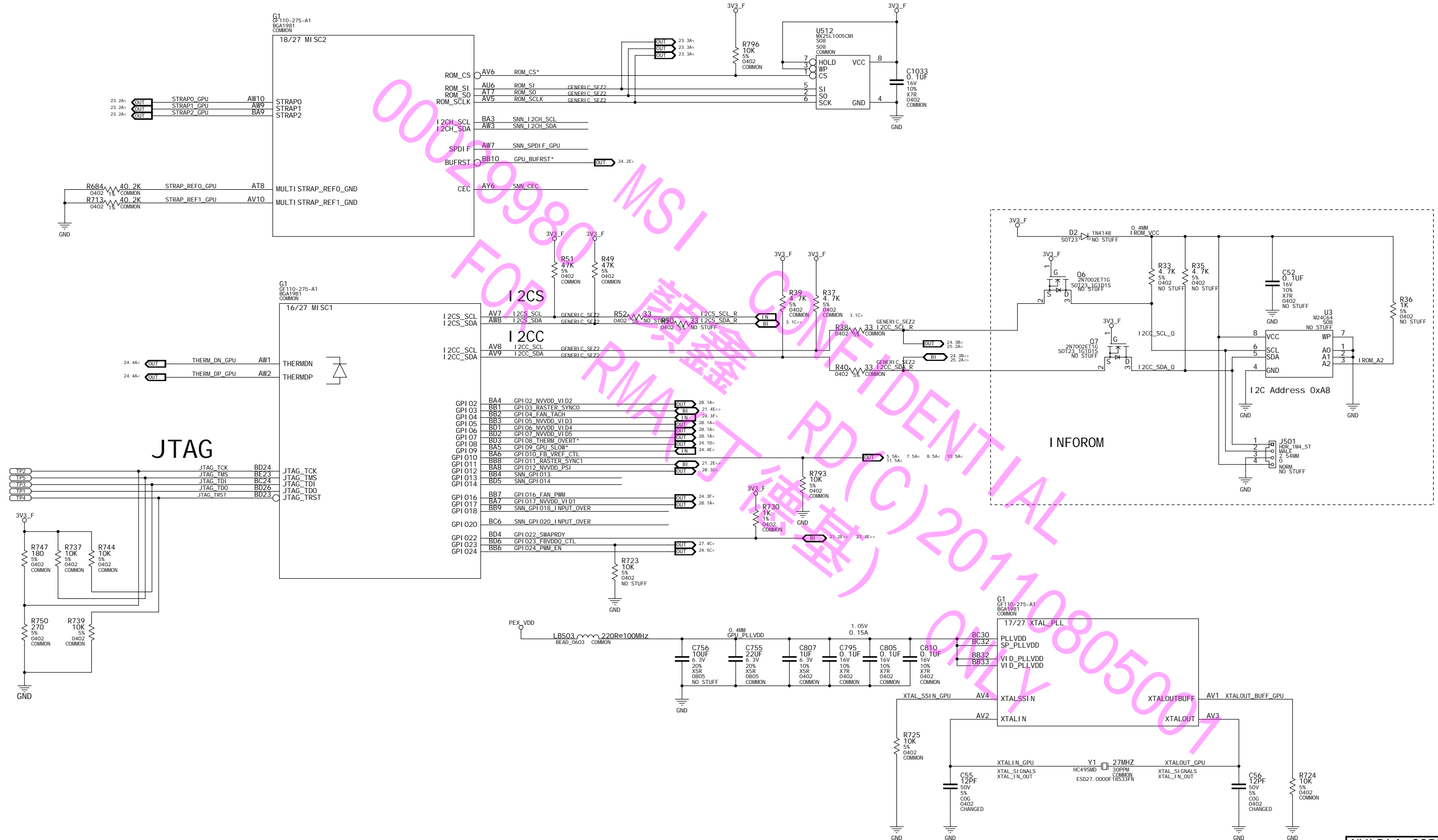
I FPD, (North DP)



I FPC Interface (Mi d HDMI)



MISC: GPIO, I2C, ROM, and XTAL

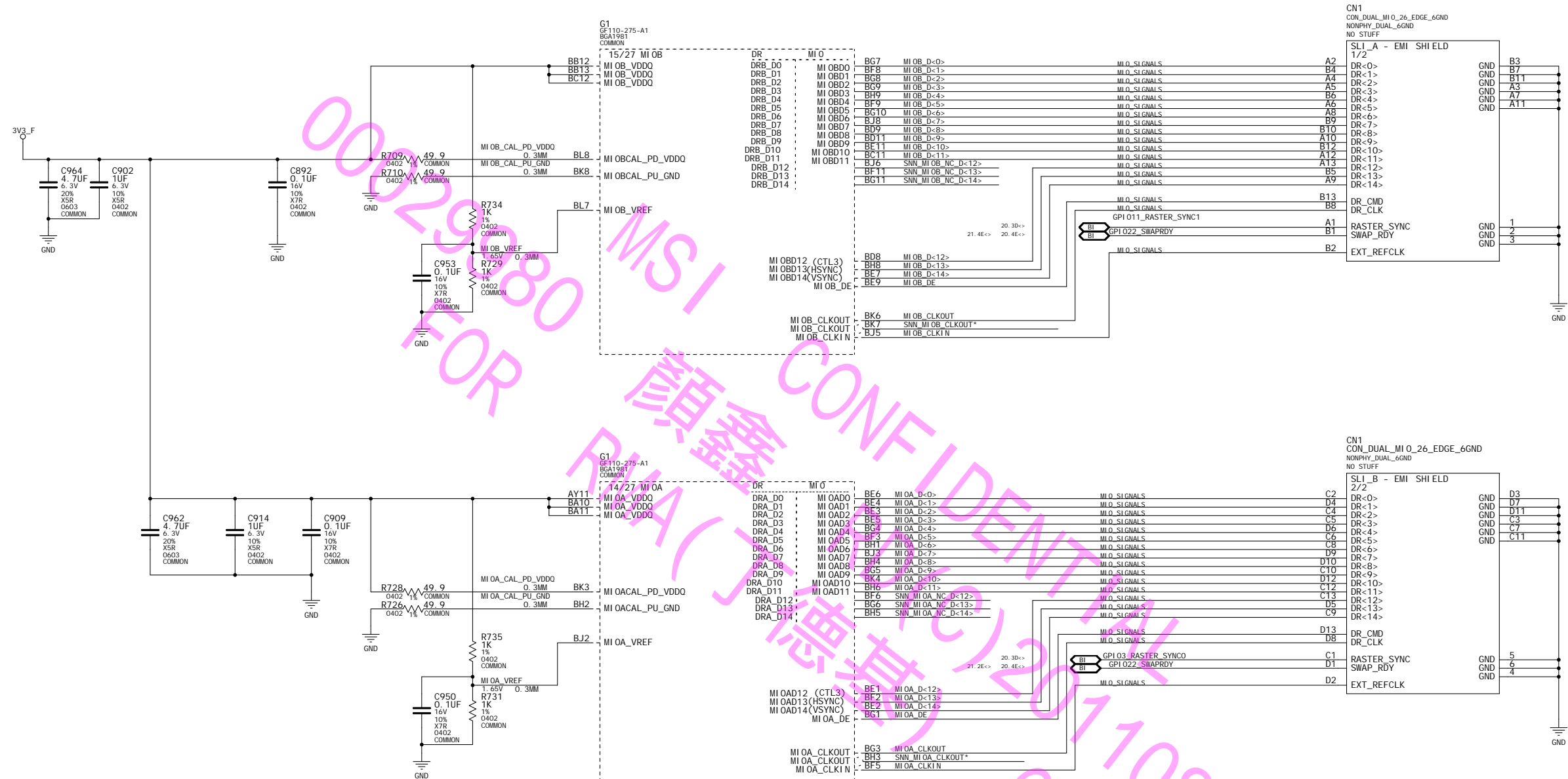


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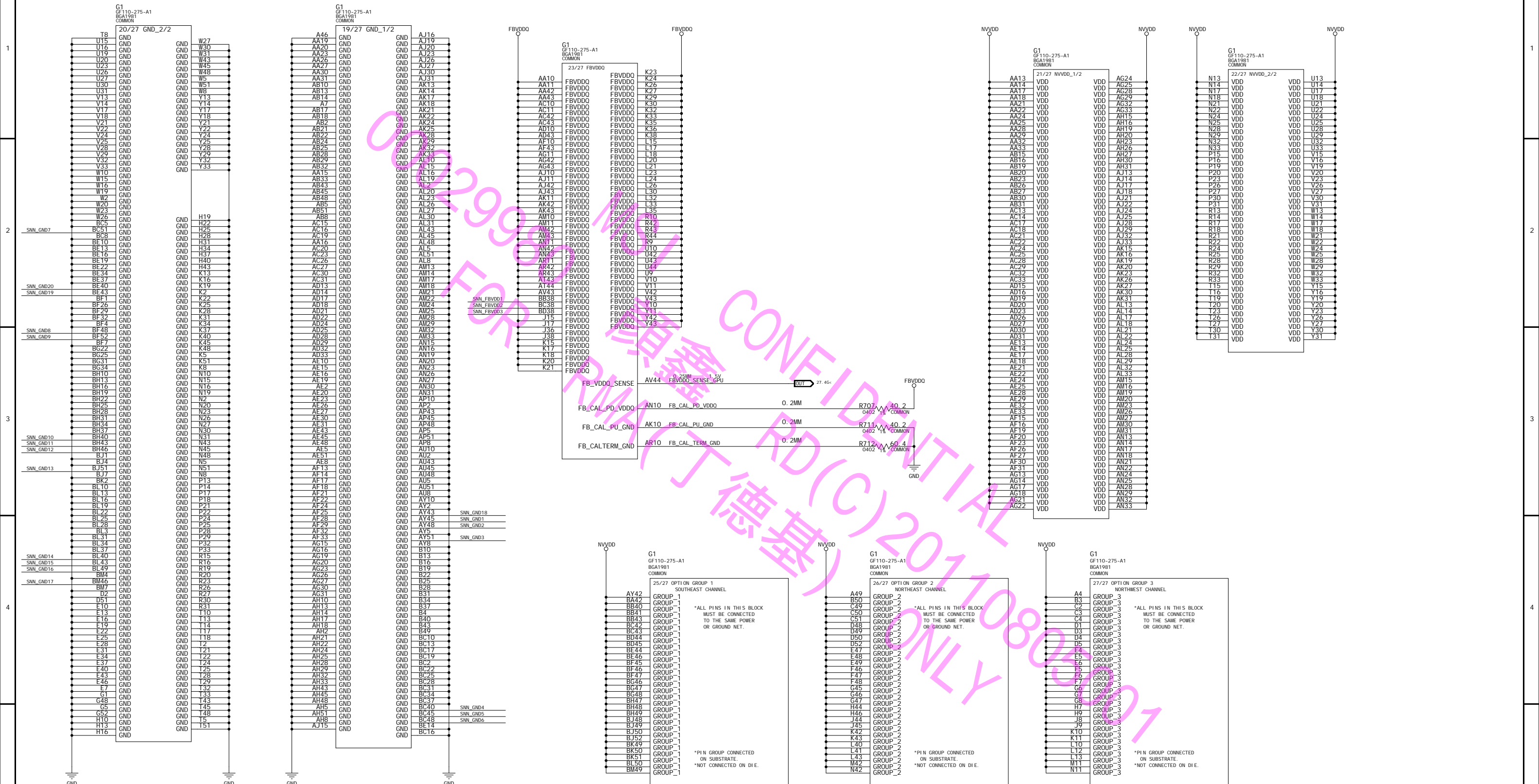
ASSEMBLY	P1263 GF110-040 1280MB GDDR5 32Mx32 DVI -I /DUAL+HDMI +DP
PAGE DETAIL	MISC: GPIO, I2C, ROM, and XTAL

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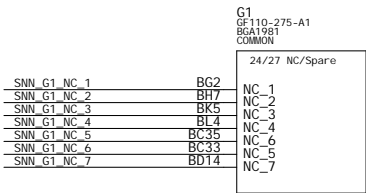
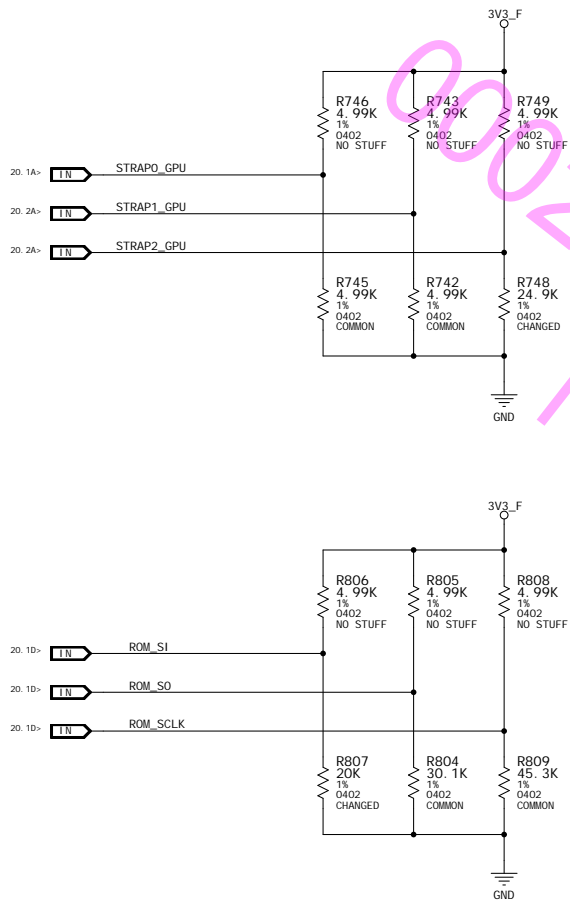
Mul ti -use I O(MI O) I nterface



GPU POWER CONNECTIONS



GPU Strapping Configuration



ROM_SI	RAMCFG[0]	0010 32Mx32 GDDR5 320-bit Hynix	
	RAMCFG[1]	0011 32Mx32 GDDR5 320-bit Samsung	
	RAMCFG[2]	0110 64Mx32 GDDR5 320-bit Hynix	
	RAMCFG[3]	0111 64Mx32 GDDR5 320-bit Samsung	
ROM_SO	VGA_DEVICE	1 0=Disabled(3D Only) 1=Enabled(VGA Display Device)	
	SMB_ALT_ADDR	0	
	FB[0]_BAR_SIZE	1 128MB	30k PD
	XCLK_417	0	
ROM_SCLK	PEX_PLC_EN_TERM100	1 ENABLE 0 DISABLED	
	SLOT_CLK_CFG	1 ENABLE	
	SUB_VENDOR	1 Dedicated BIOS	45K PD
	PCI_DEVID_EXT	0 0x108	
STRAP0	USER_BIT [3..0]	0000: => 5K PD Default	
STRAP1	3GIO_PADCFG_LUT_ADR	0000 : =>5K PD Desktop Default	
STRAP2	PCI_DEVID [3:0]	0110 : =>35K PD For 0x1086 0010 : =>15K PD For 0x1082 0100 : =>25K PD For 0x1084	

	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

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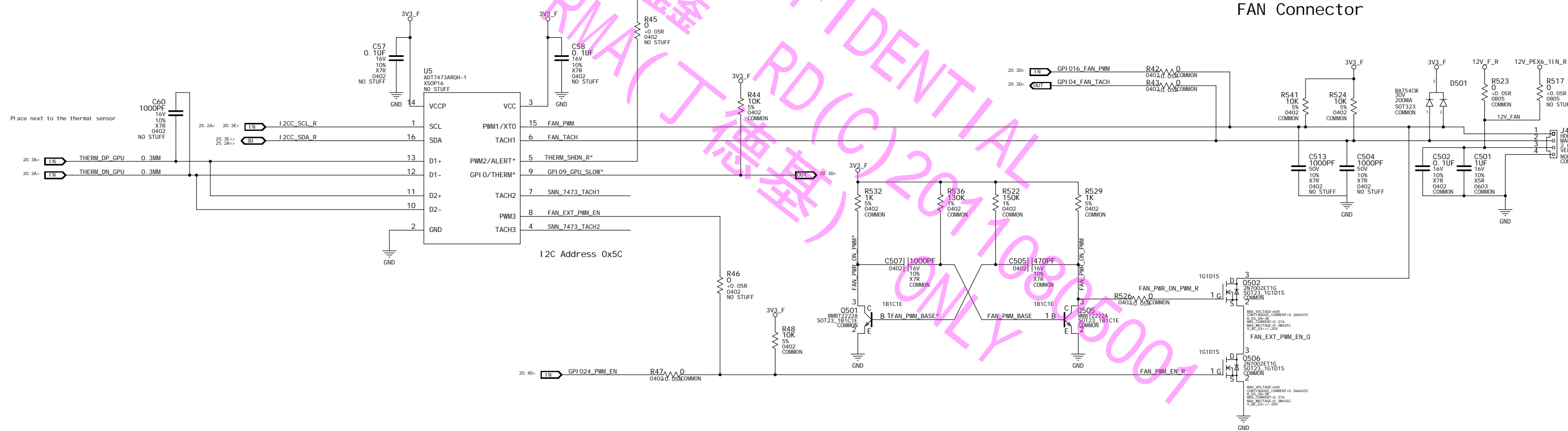
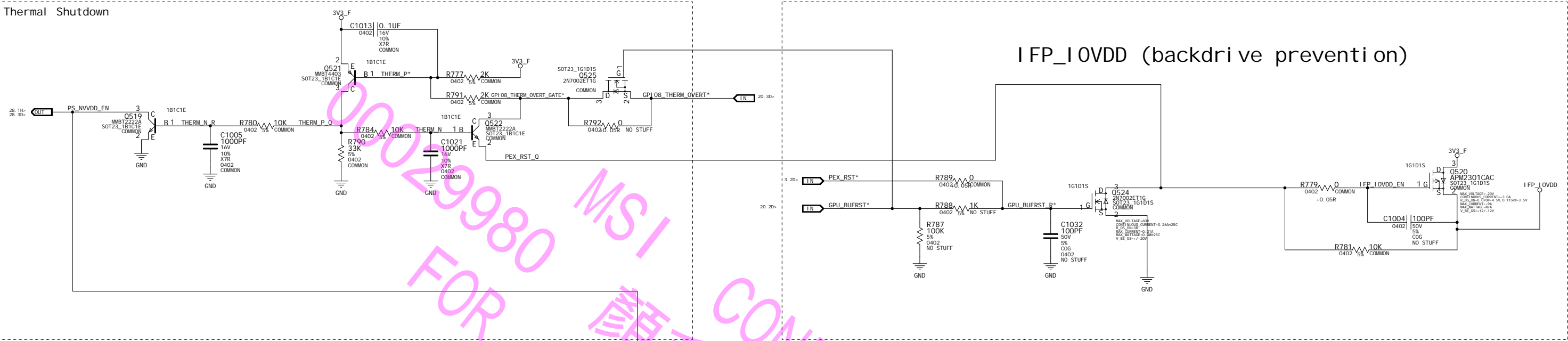
ASSEMBLY	P1263 GF110-040 1280MB GDDR5 32Mx32 DVI-I/DUAL+HDMI+DP
PAGE DETAIL	GPU Strapping Configuration

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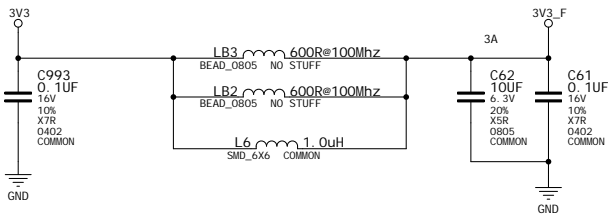
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MI SC: THERMAL/BACKDRIVE

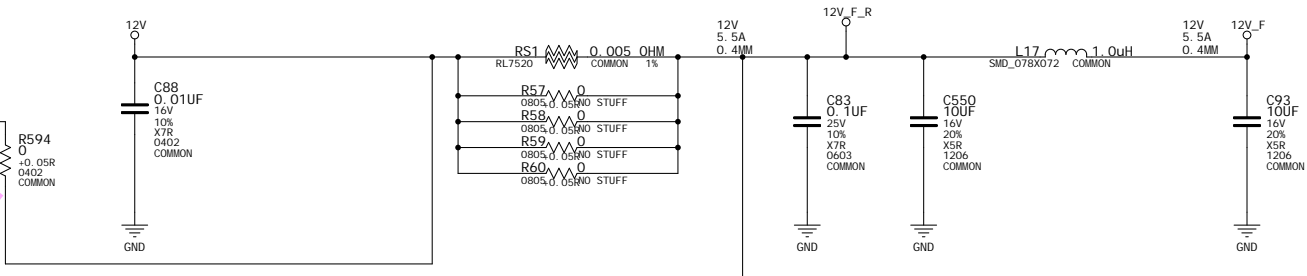


Power Supply: PEX PS INPUT, DETECTION LOGIC

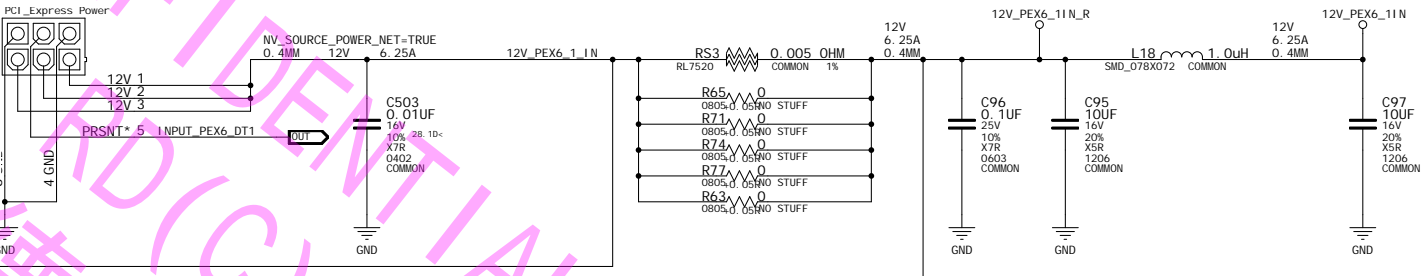
PEX_3V3 INPUT - 10W



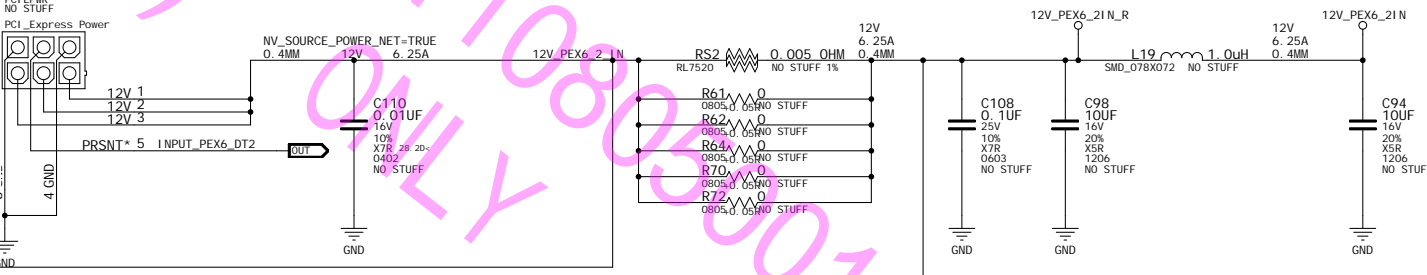
PEX_12V INPUT - 66W



PEX6 INPUT 1 - 2x3 PCIE CON 75W



PEX6 INPUT 2 - 2x3 PCIE CON 75W



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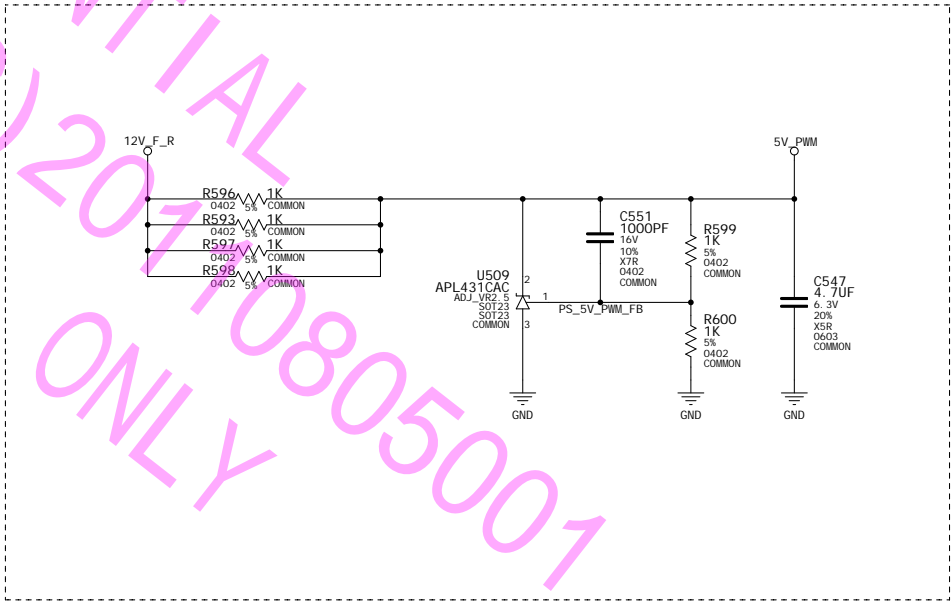
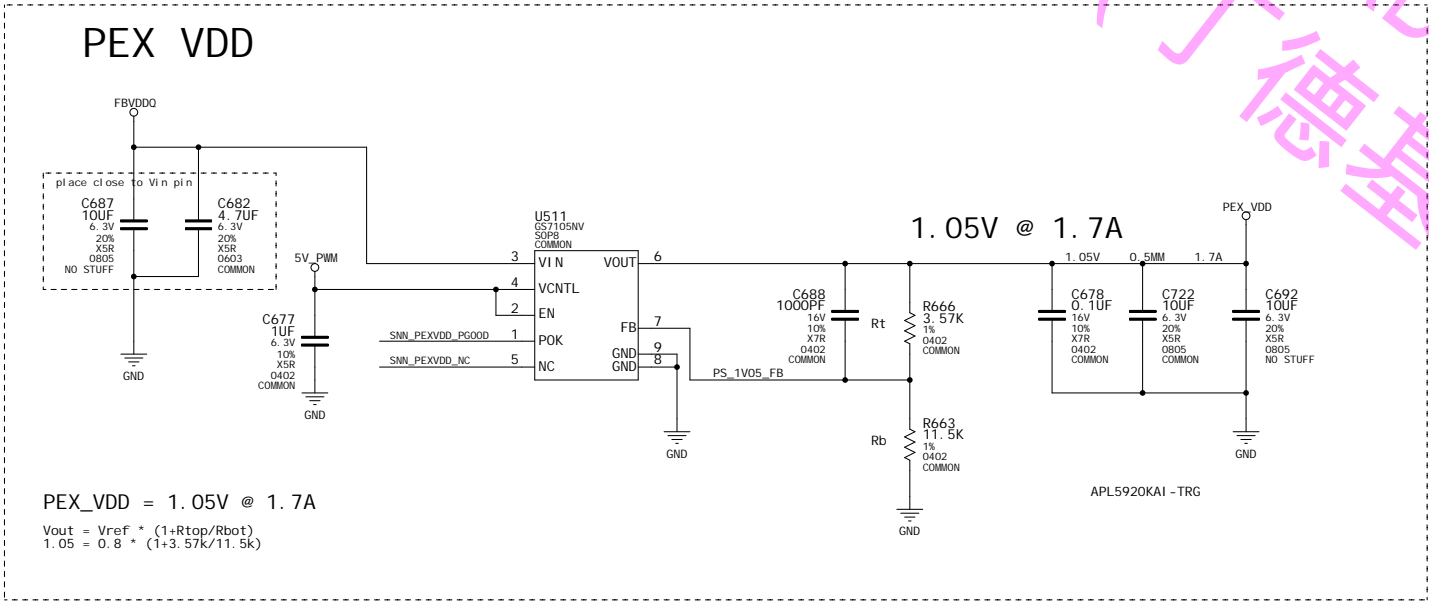
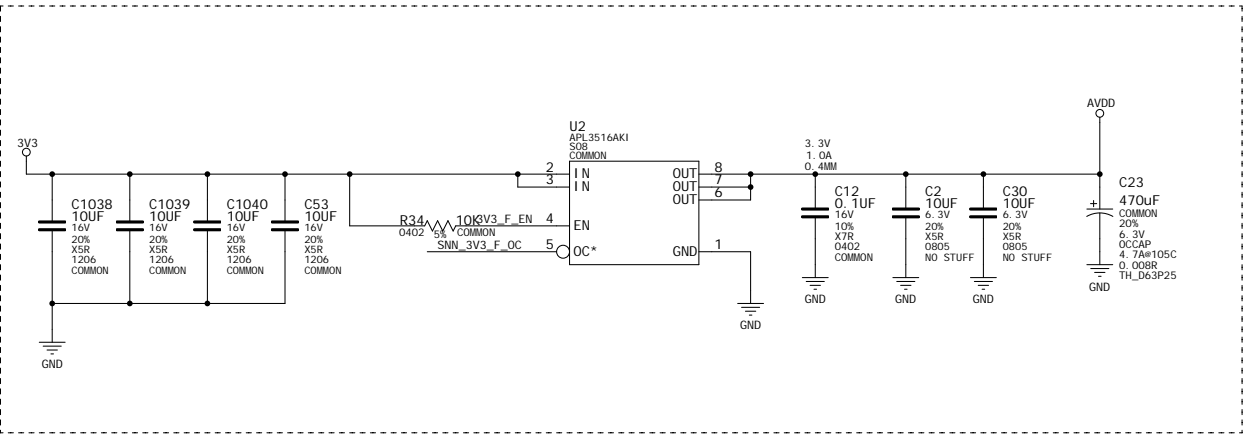
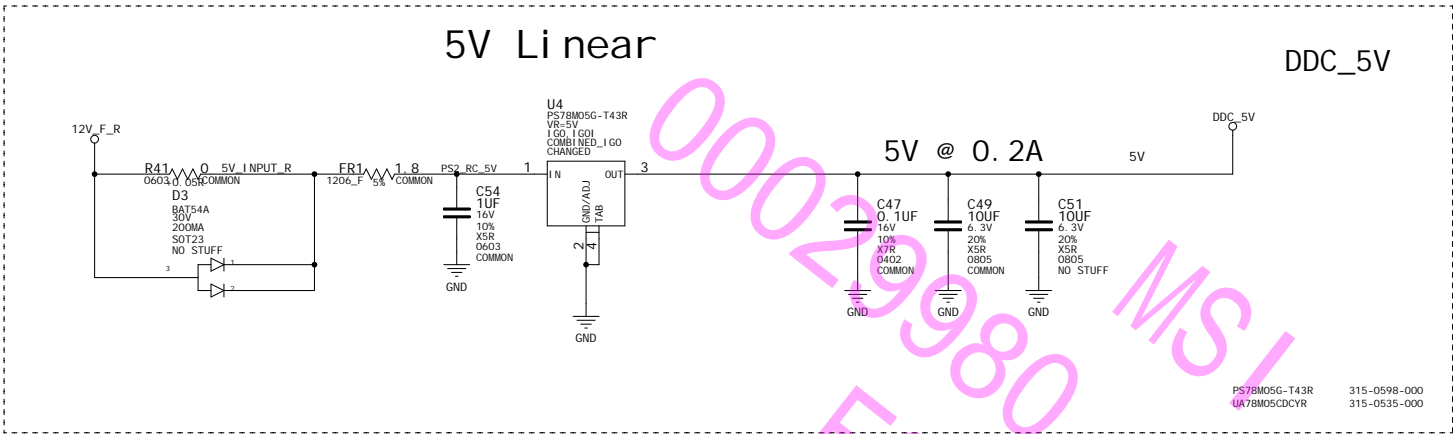
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ASSEMBLY	P1263 GF110-040 1280MB GDDR5 32Mx32 DVI-I / DUAL+HDMI +DP
PAGE DETAIL	Power Supply: PEX PS INPUT, DETECTION LOGIC

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Power Supply: DDC5V, PEX_VDD, 5V_PWM, AVDD



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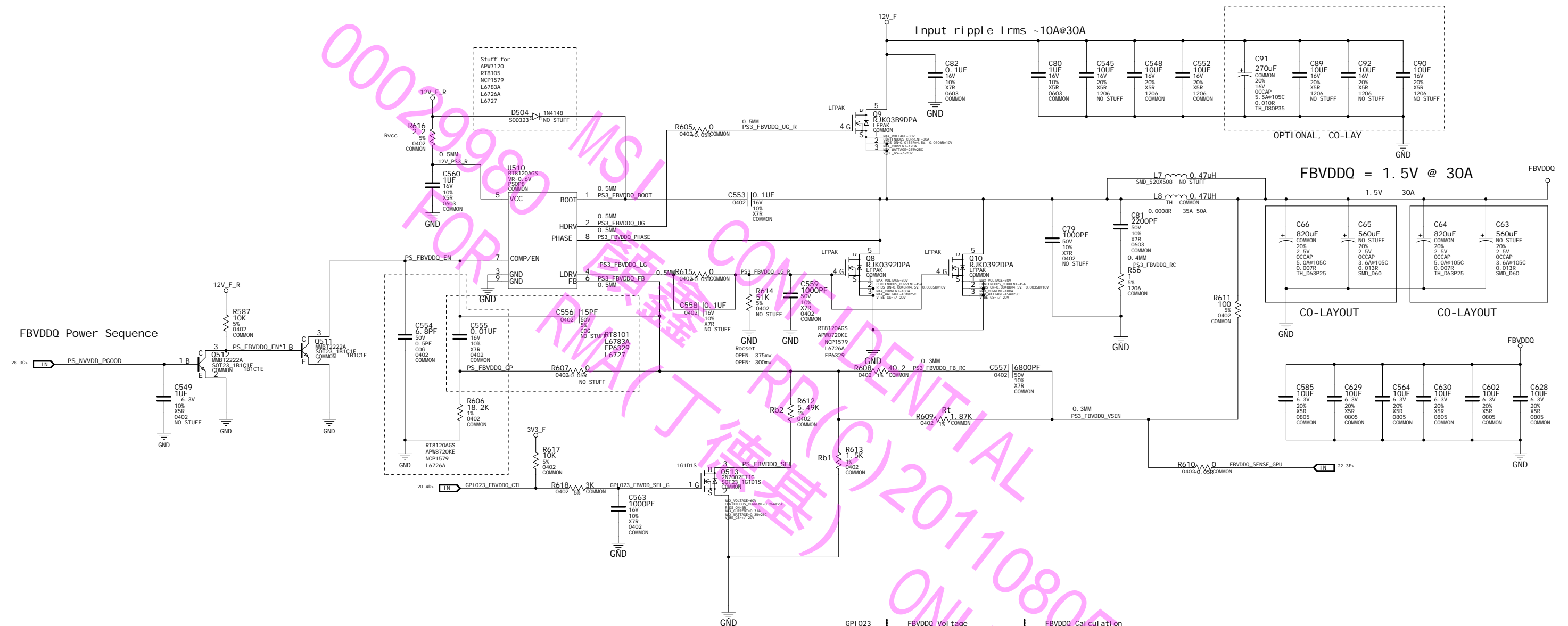


ASSEMBLY
PAGE DETAIL
Power Supply: DDC5V, PEX_VDD, 5V_PWM, AVDD

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Power Supply: FBVDDQ

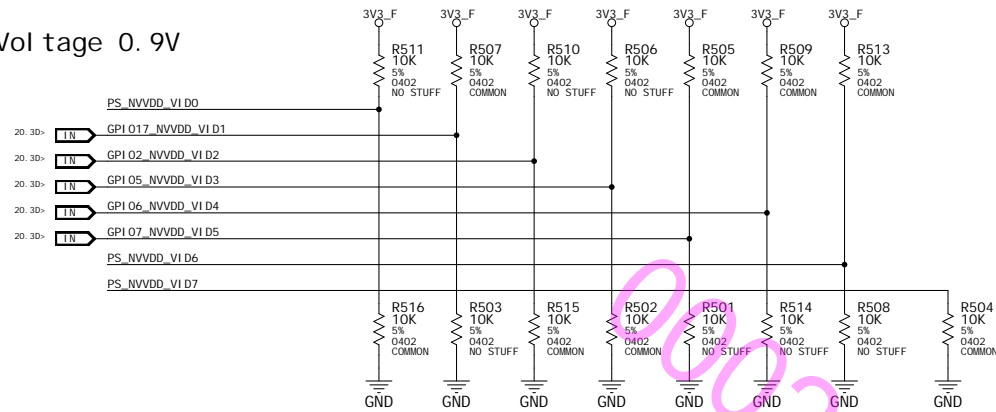


GPI 023	FBVDD0 Vol tage	FBVDD0 Cal culation	
0	1.35V (Low perfmode)	$FBVDD0 = 0.8V * (1 + 1.37K / 2K) = 1.348V$ $FBVDD0 = 0.6V * (1 + 1.87K / 1.5K) = 1.348V$ $FBVDD0 = 0.5V * (1 + 1.87K / 1.1K) = 1.35V$	1% 1.5% 1%
1	1.5V (3D)	$FBVDD0 = 0.8V * (1 + 1.37K / (2K / 5.36K)) = 1.55V$ $FBVDD0 = 0.6V * (1 + 1.87K / (1.5K / 5.49K)) = 1.55V$ $FBVDD0 = 0.5V * (1 + 1.87K / (1.1K / 4.64K)) = 1.55V$	1% 1.5% 1%

	Vref
RT8120A 300KHz 0.6V	1.5%
APW8720KE300KHz 0.5V	1%
APW7120K 300KHz 0.8V	
RT8101 300KHz 0.8V	
RT8105 300KHz 0.8V	
NCP1579 275KHz 0.8V	

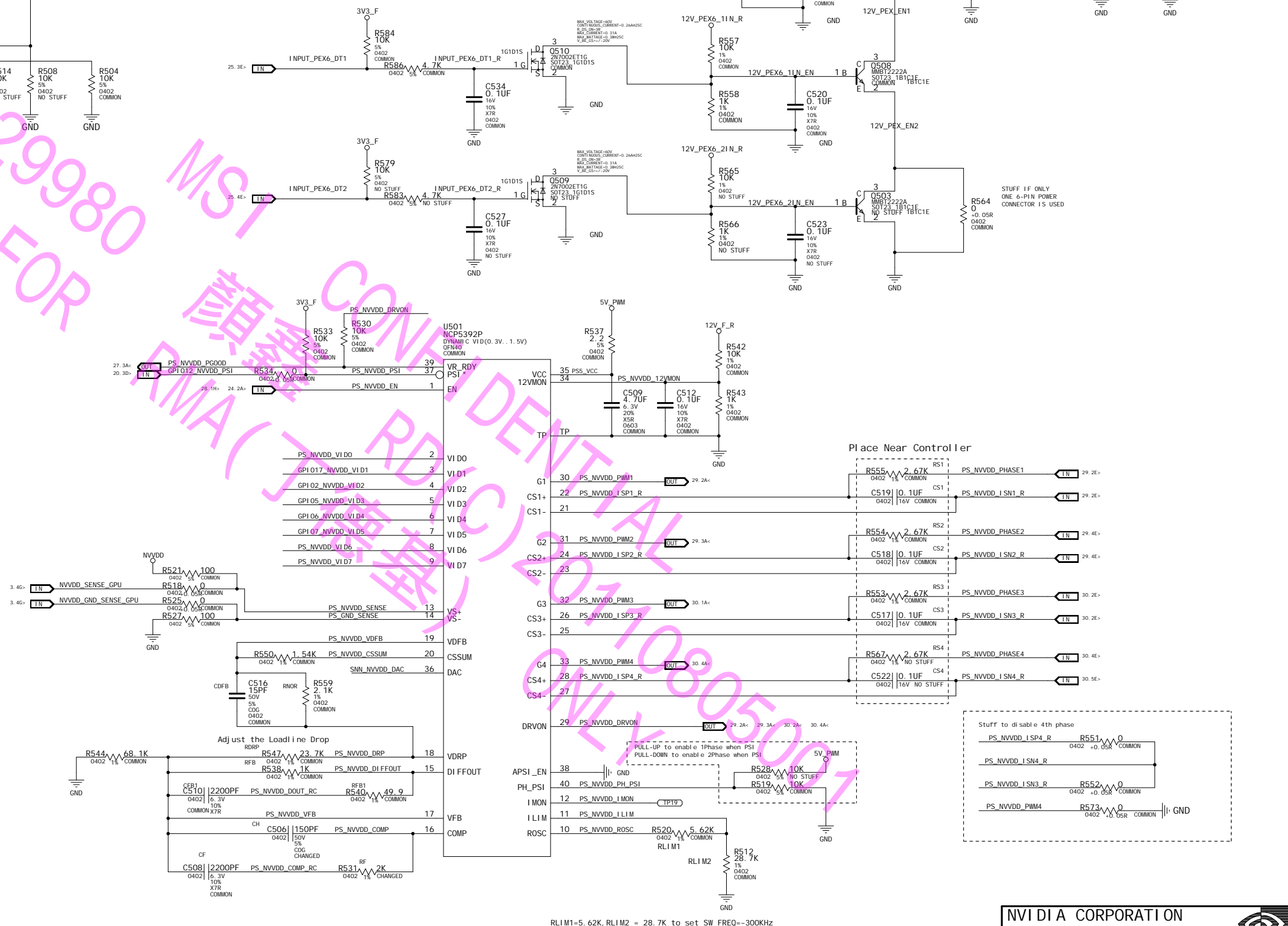
Power Supply: NVVDD Controller

BootVoltage 0.9V



VI D Table

GPI 07 VID_5	GPI 06 VID_4	GPI 05 VID_3	GPI 02 VID_2	GPI 017 VID_1	VRM11.0 VID Setting
0	0	0	0	1	1.20000V
0	0	0	1	0	1.18750V
0	0	0	1	1	1.17500V
0	0	1	0	0	1.16250V
0	0	1	0	1	1.15000V
0	0	1	1	0	1.13750V
0	0	1	1	1	1.12500V
0	1	0	0	0	1.11250V
0	1	0	0	1	1.10000V
0	1	0	1	0	1.08750V
0	1	0	1	1	1.07500V
0	1	1	0	0	1.06250V
0	1	1	0	1	1.05000V
0	1	1	1	0	1.03750V
0	1	1	1	1	1.02500V
1	0	0	0	0	1.01250V
1	0	0	0	1	1.00000V
1	0	0	1	0	0.98750V
1	0	0	1	1	0.97500V
1	0	1	0	0	0.96250V
1	0	1	0	1	0.95000V
1	0	1	1	0	0.93750V
1	0	1	1	1	0.92500V
1	1	0	0	0	0.91250V
1	1	0	0	1	0.90000V
1	1	0	1	0	0.88750V
1	1	0	1	1	0.87500V
1	1	1	0	0	0.86250V
1	1	1	0	1	0.85000V
1	1	1	1	0	0.83750V
1	1	1	1	1	0.82500V



RLIM1=5.62K, RLIM2 = 28.7K to set SW FREQ=-300KHz

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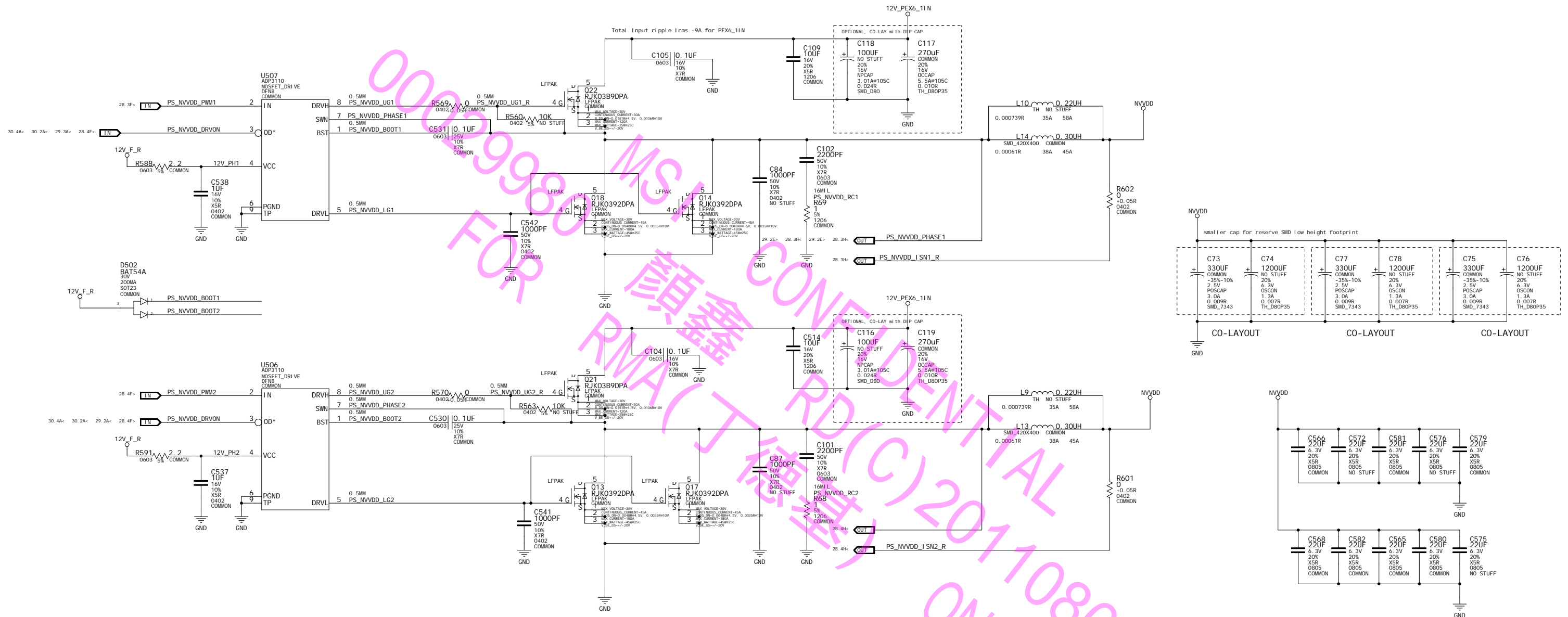
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Power Supply: NVVDD PHASE 1, 2




ASSEMBLY	
PAGE DETAIL	Power Supply: NVDD Phase 1, 2

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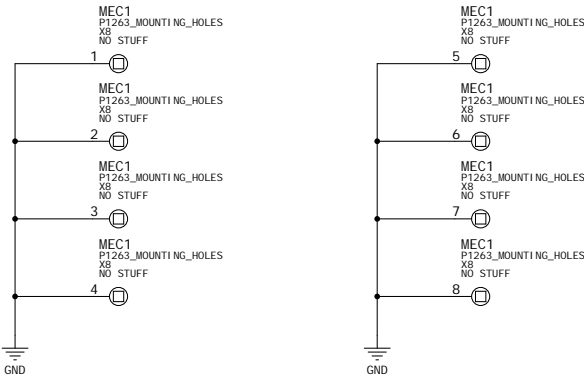


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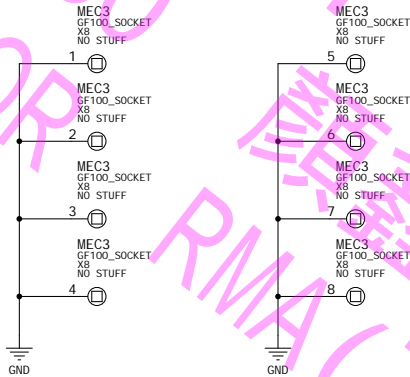
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Thermal /Mechanical

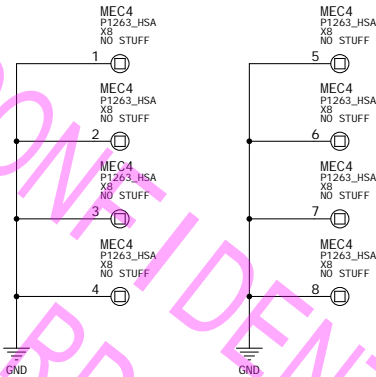
BASEPLATE MOUNTING HOLES



SOCKET (FOR LAB USE ONLY)

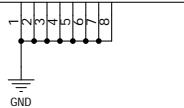


FANSINK HOLE

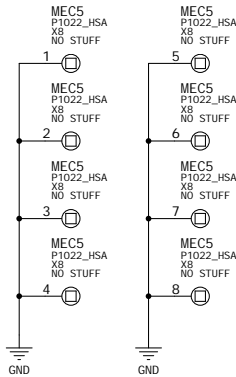
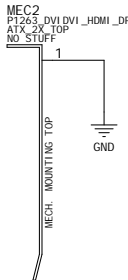


BOARD STIFFENER

8 connected mounting pins



MEC6
GPU_STIFFENER_GF100
8PINS
NO STUFF



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ASSEMBLY	P1263 GF110-040 1280MB GDDR5 32Mx32 DVI-I/DUAL+HDMI+DP
PAGE DETAIL	Thermal, Mechanical

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