

P1263-A03

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

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Block Diagram

- Power Sequence
- 5V

3V3

12V_F

12V_PEX6_EXT1

12V_PEX6_EXT2

NVVDD

FBVDD/FBVDDQ

PEX_VDD
- Always On

- Always On

- Always On

- Always On

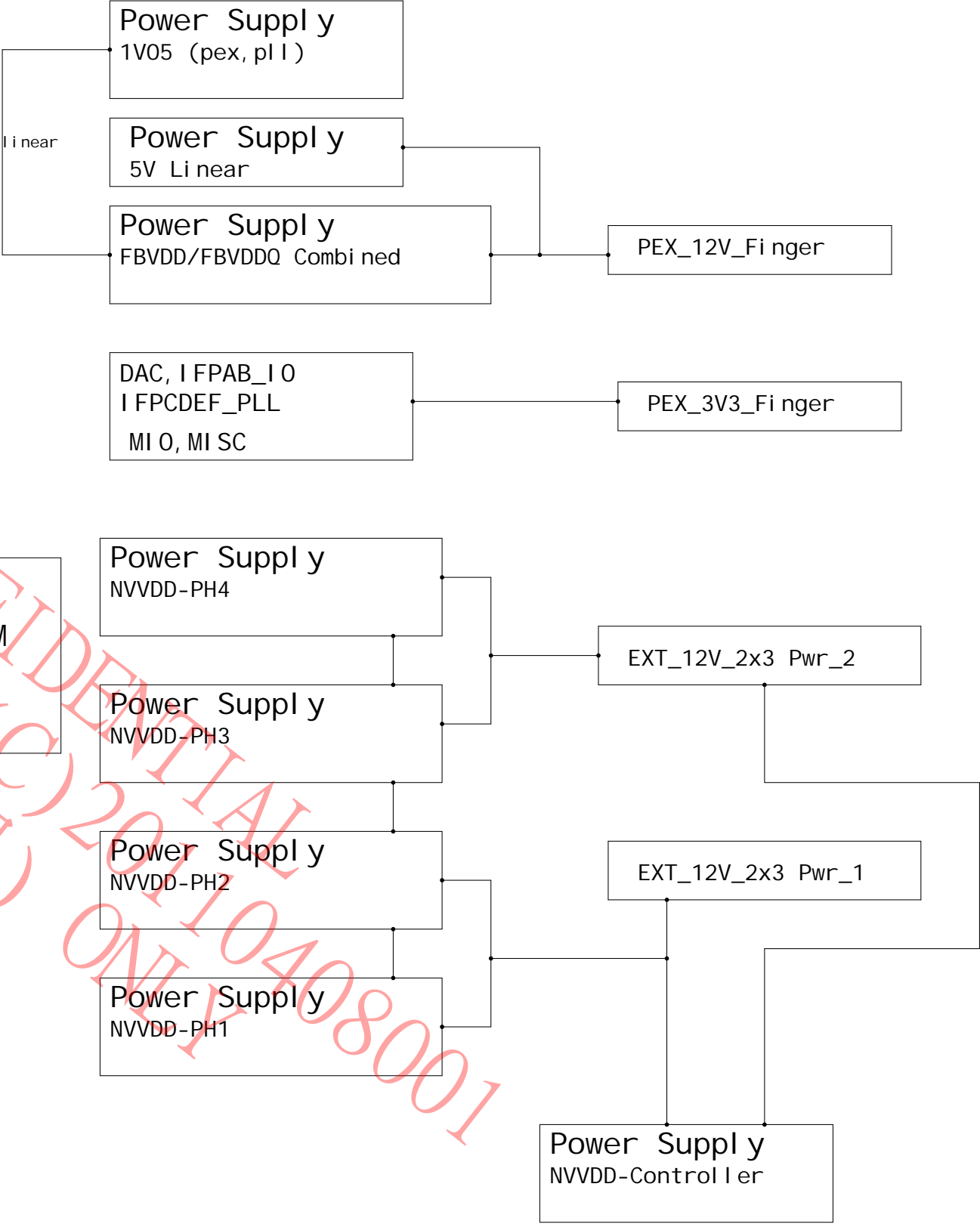
- Always On

- Input_Pex_Power_Rail_Enable

+ Thermal_Shutdown

-NVVDD_PG00D

-Following FBVDDQ



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12V

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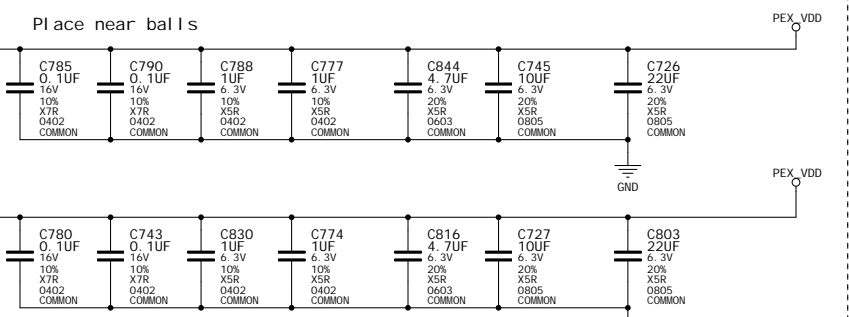
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CN2 NONPHY-X16

CON_X16

CON_PCI_EXP_X16_EDGE

NO STUFF

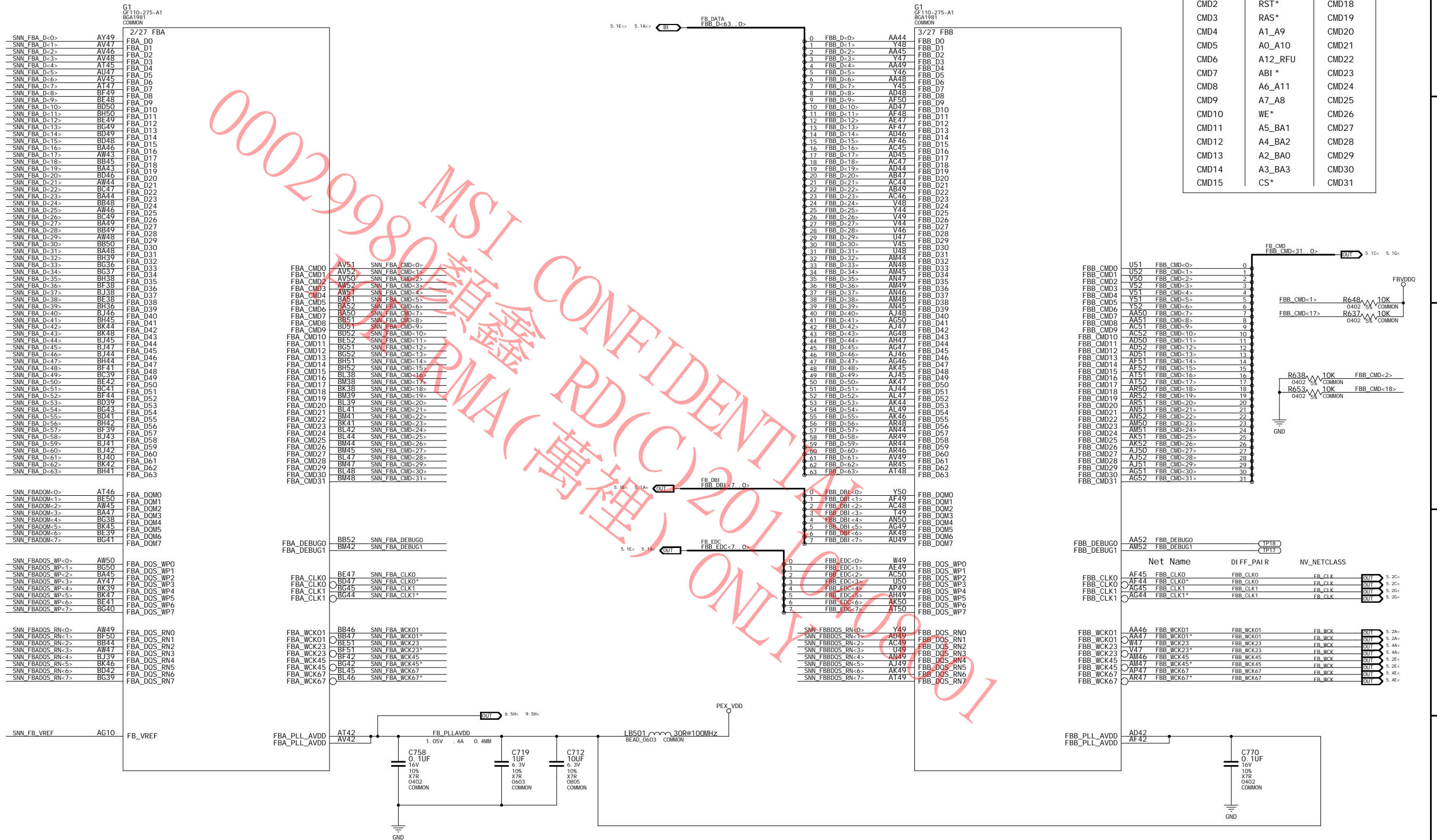


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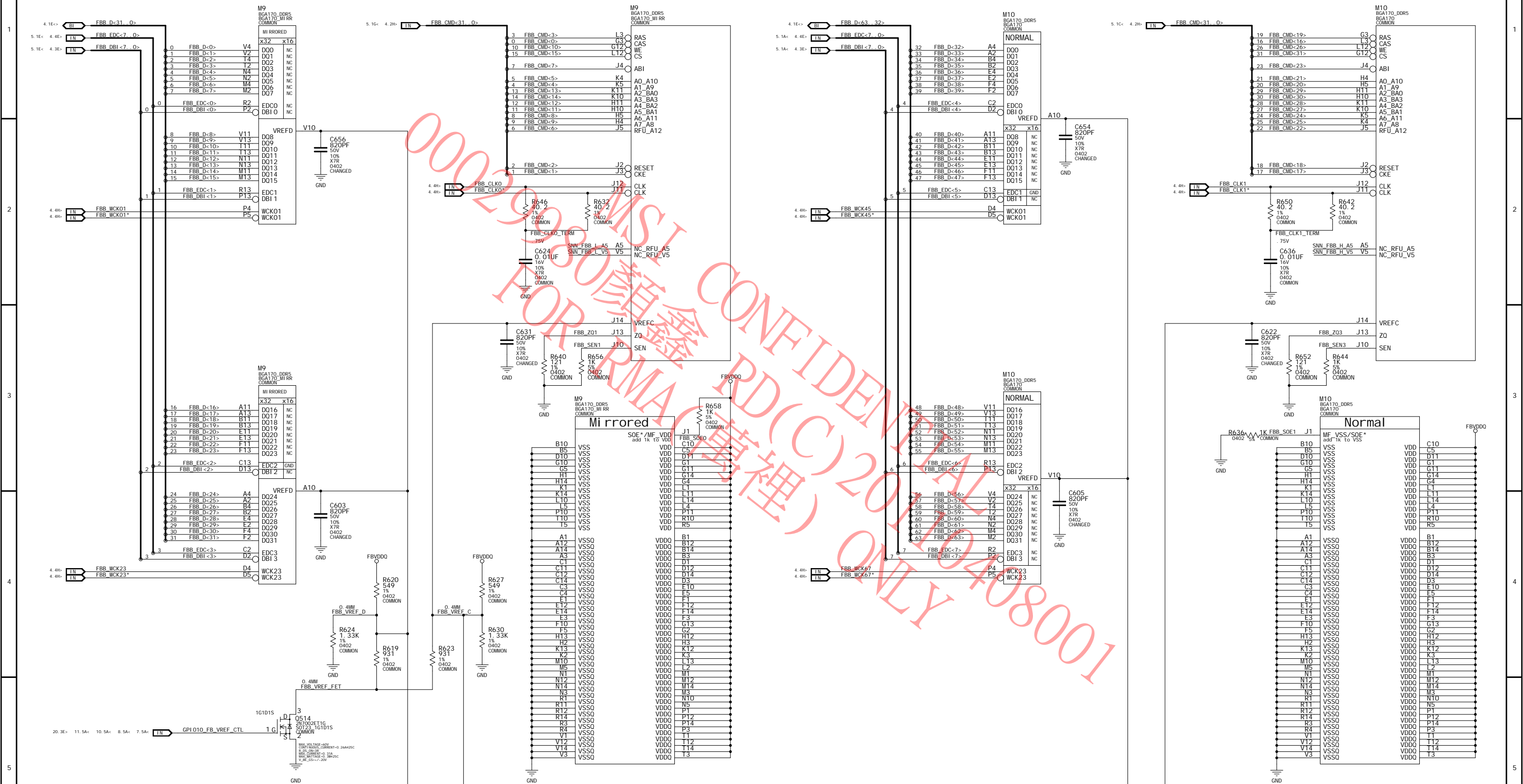
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GPU Framebuffer: Partition A/B

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	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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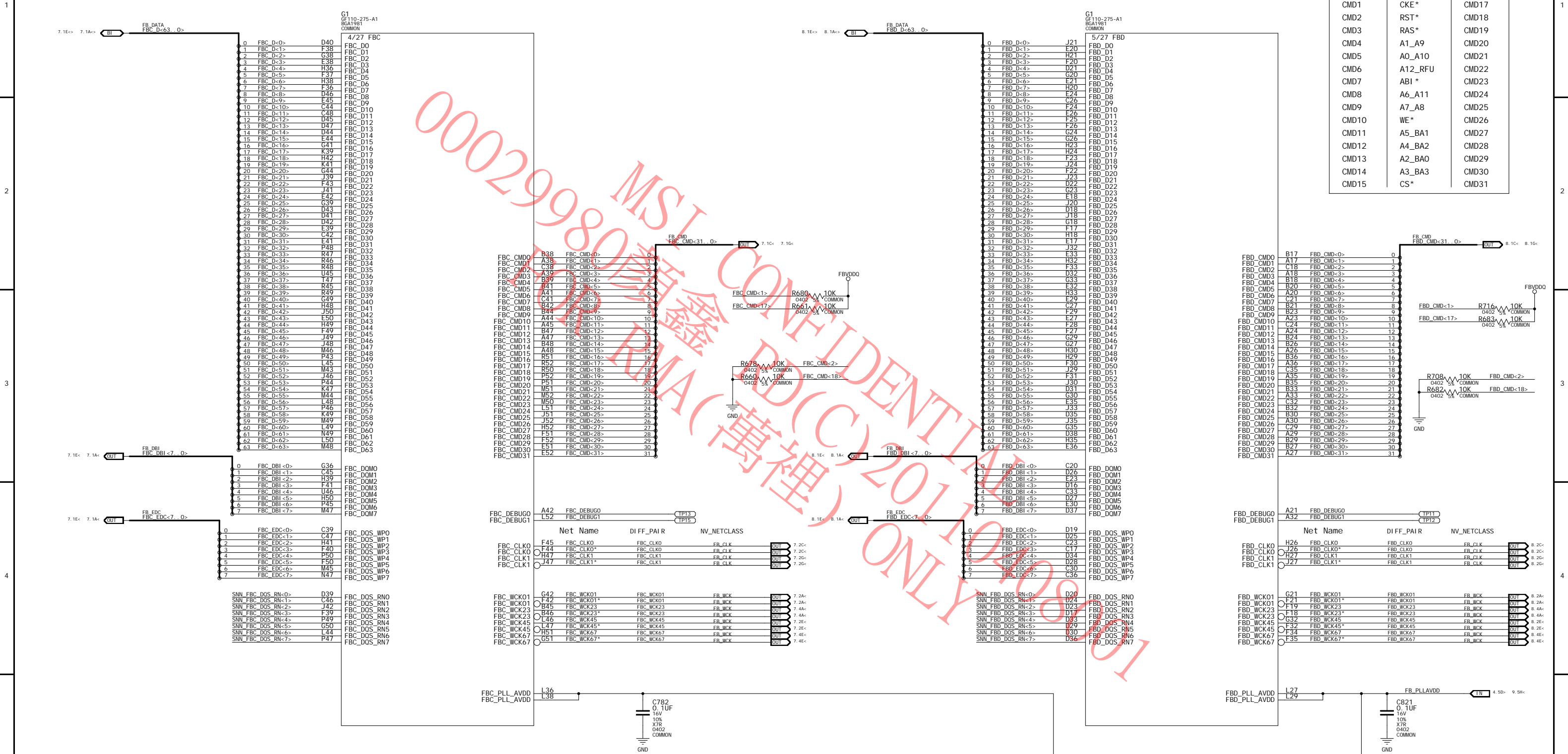
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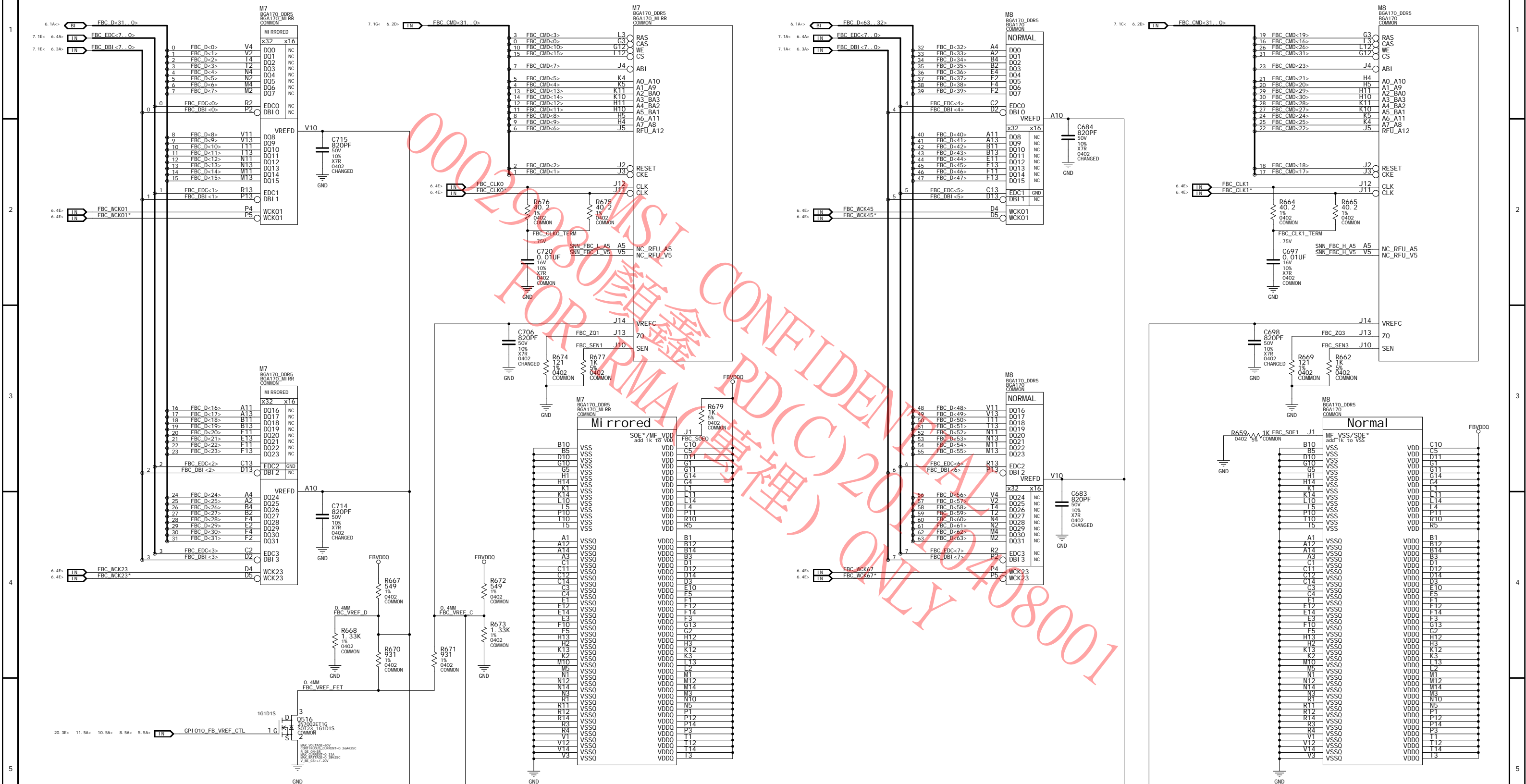
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GPU Framebuffer: Parti ti on C/D

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	AB1 *	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: FBC Partition



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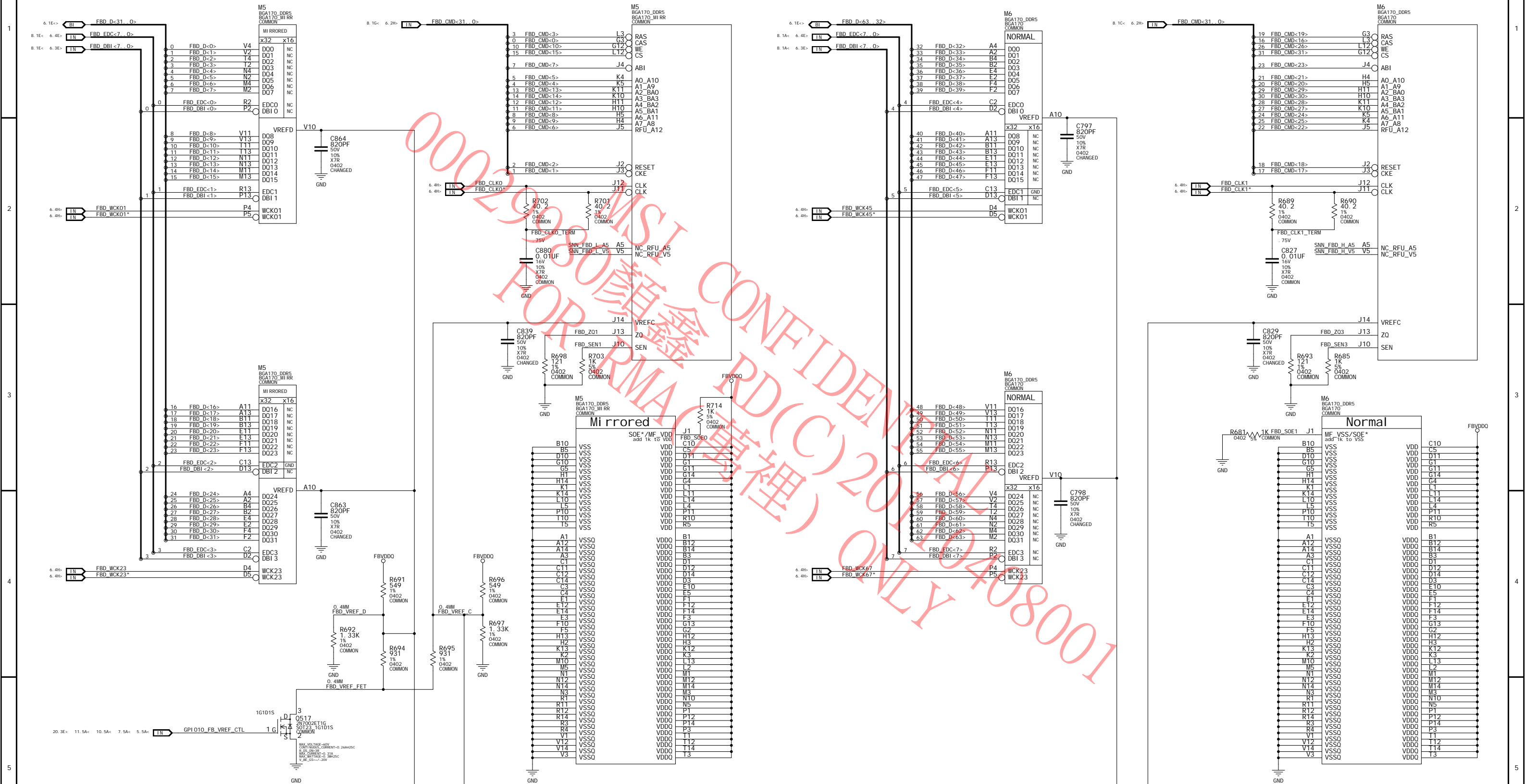
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MEMORY: FBD Parti ti on



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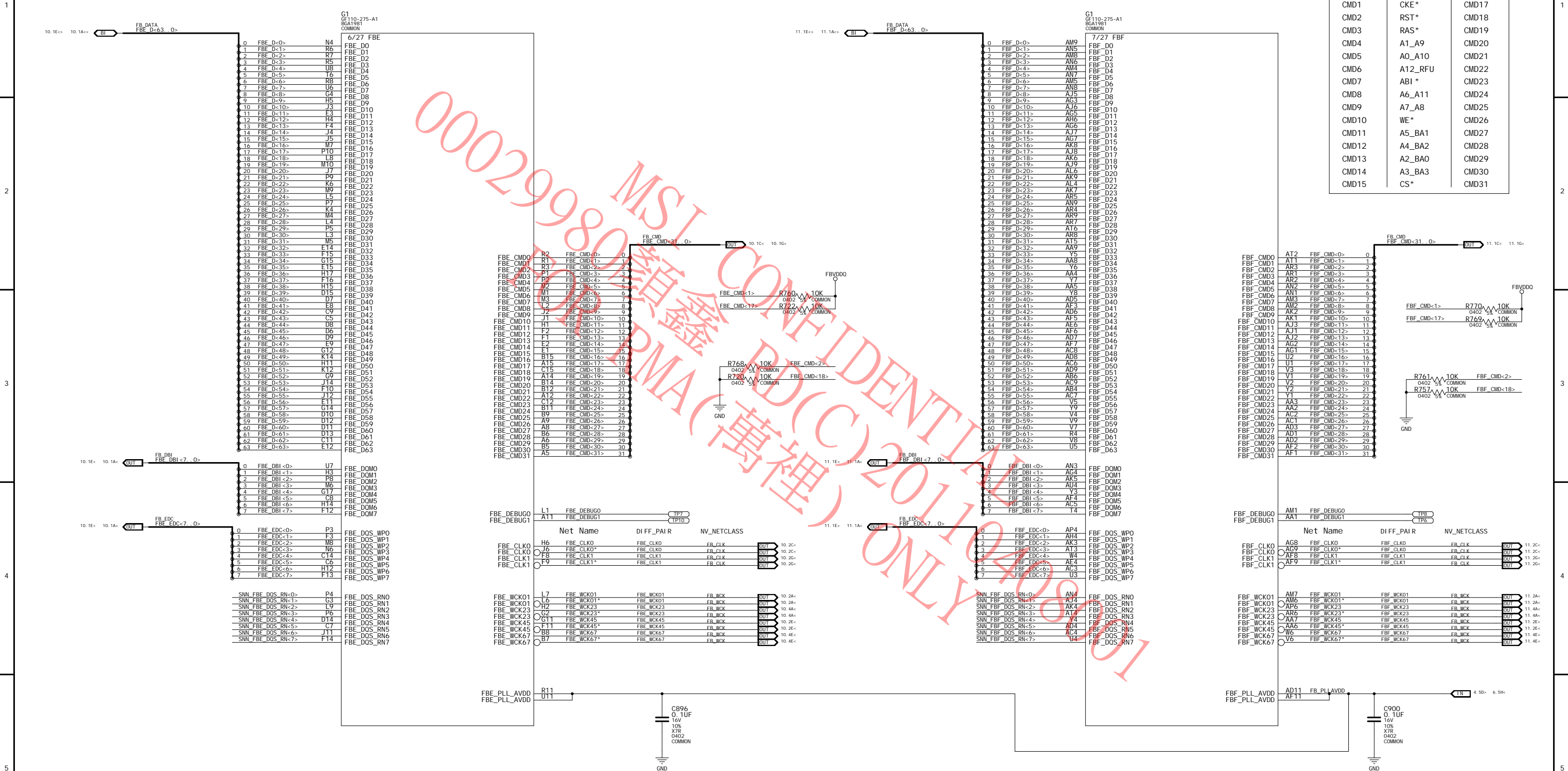
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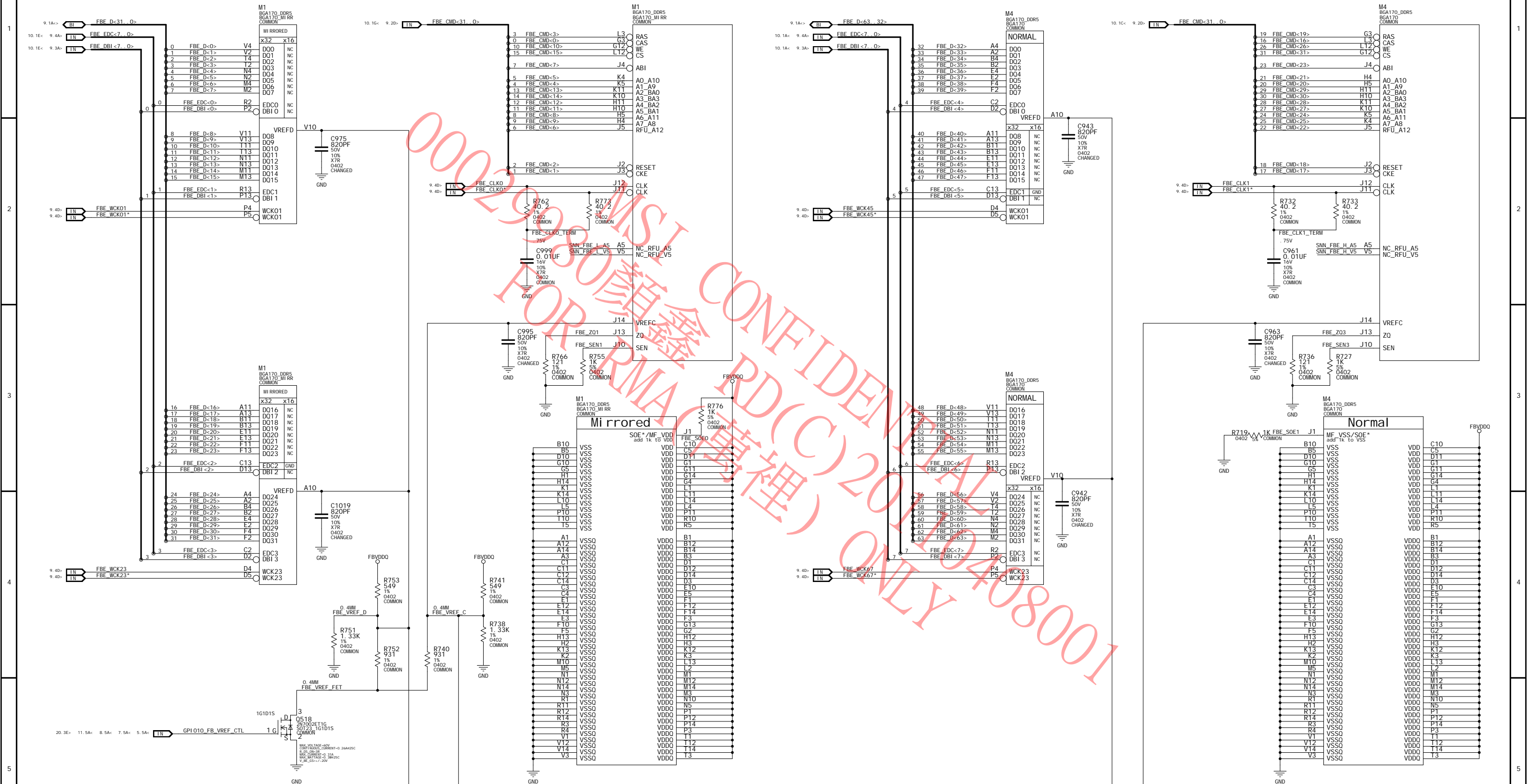
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GPU Framebuffer: Parti ti on E/F

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	AB1 *	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: FBE Parti ti on



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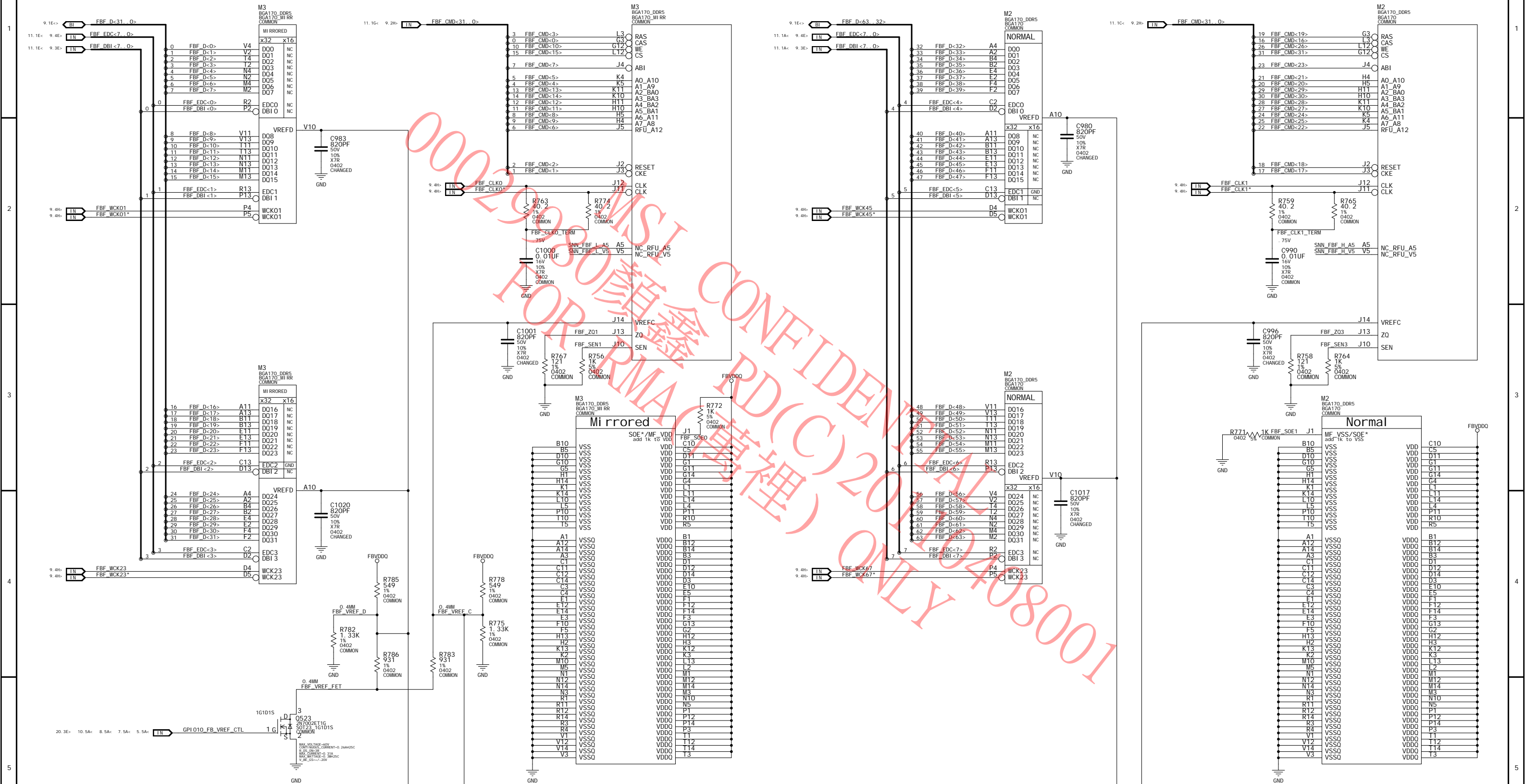


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MEMORY: FBF Parti ti on



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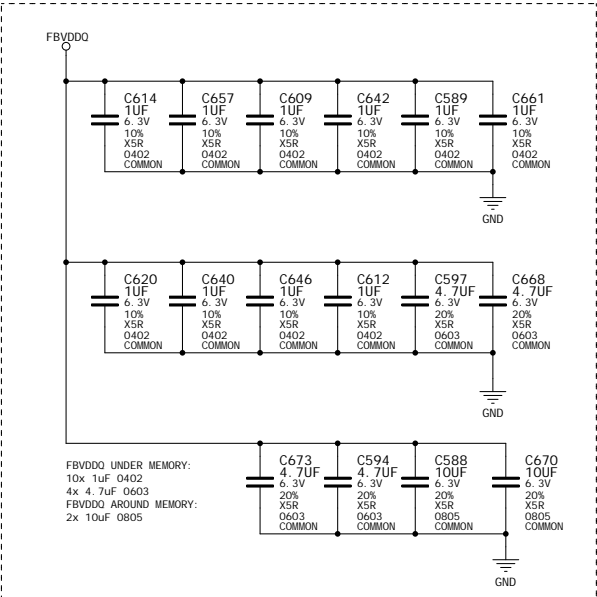
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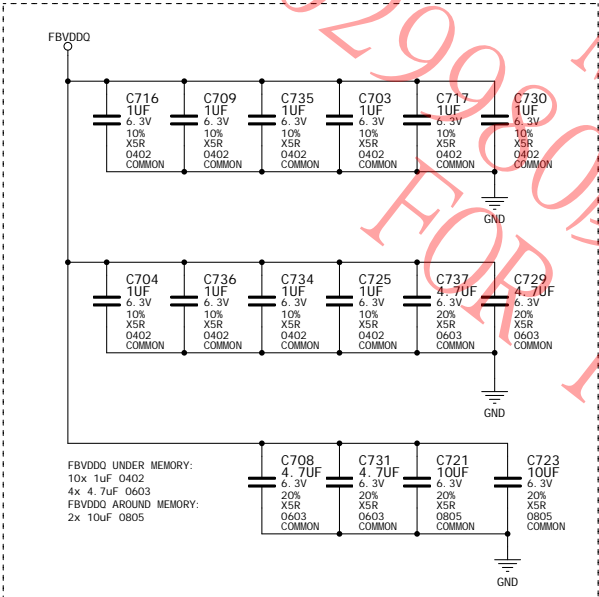
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GDDR5 Memory Decoupling

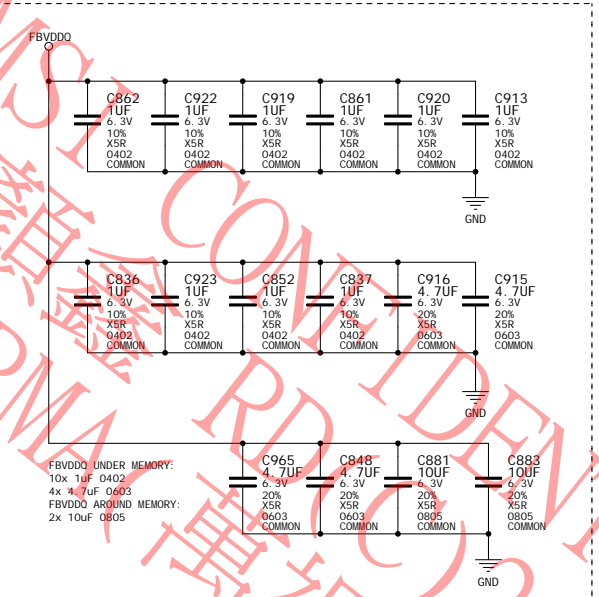
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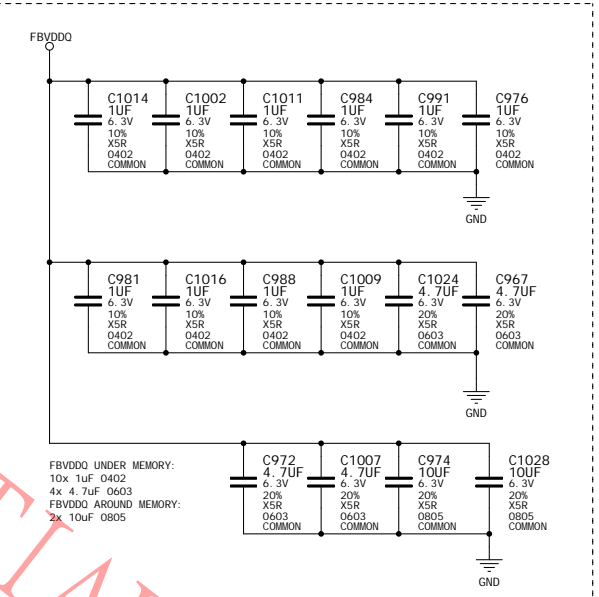
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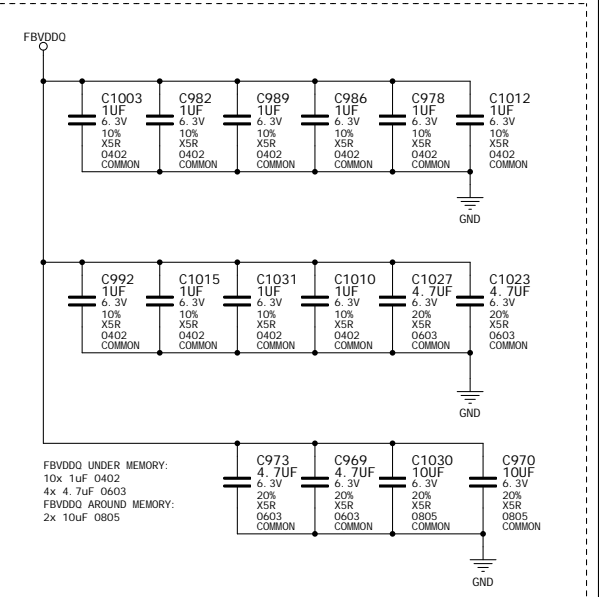
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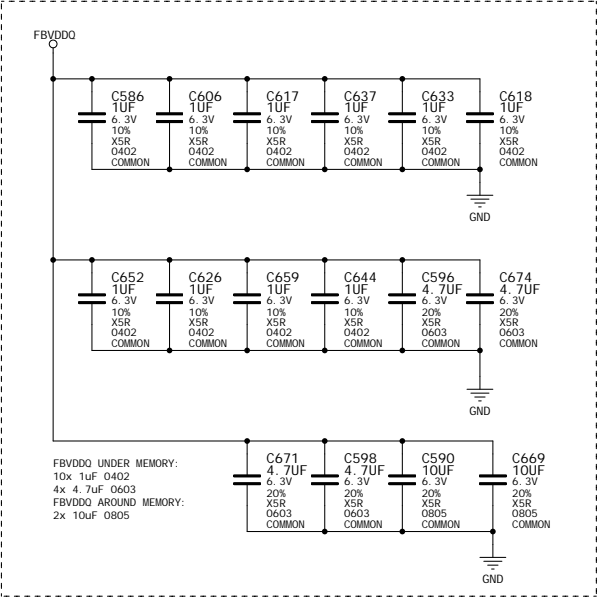
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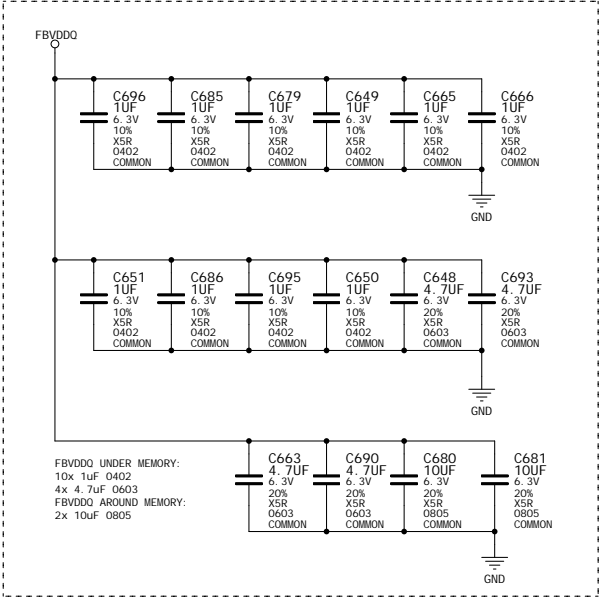
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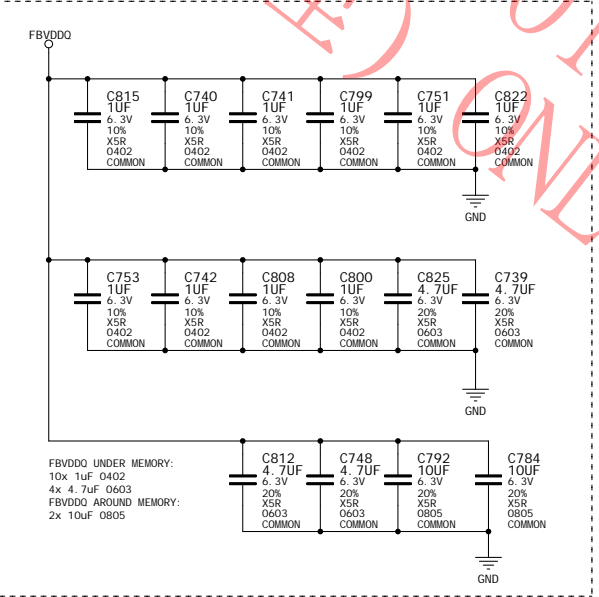
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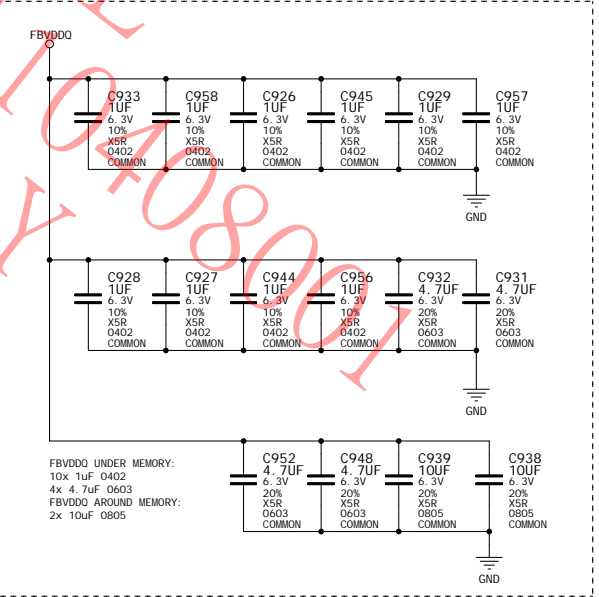
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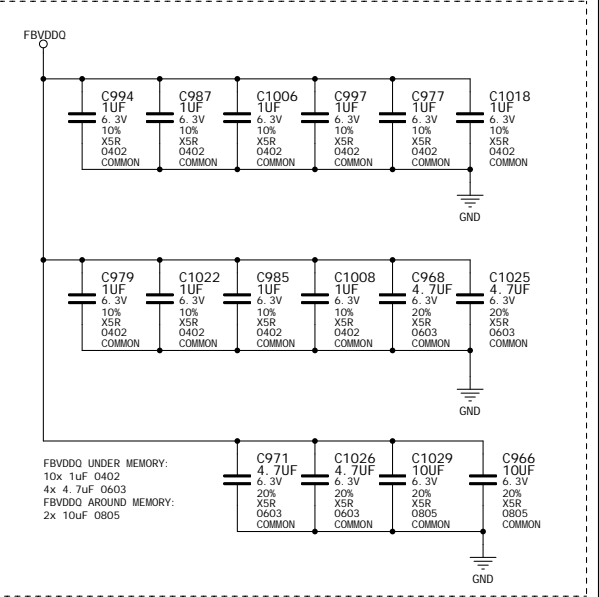
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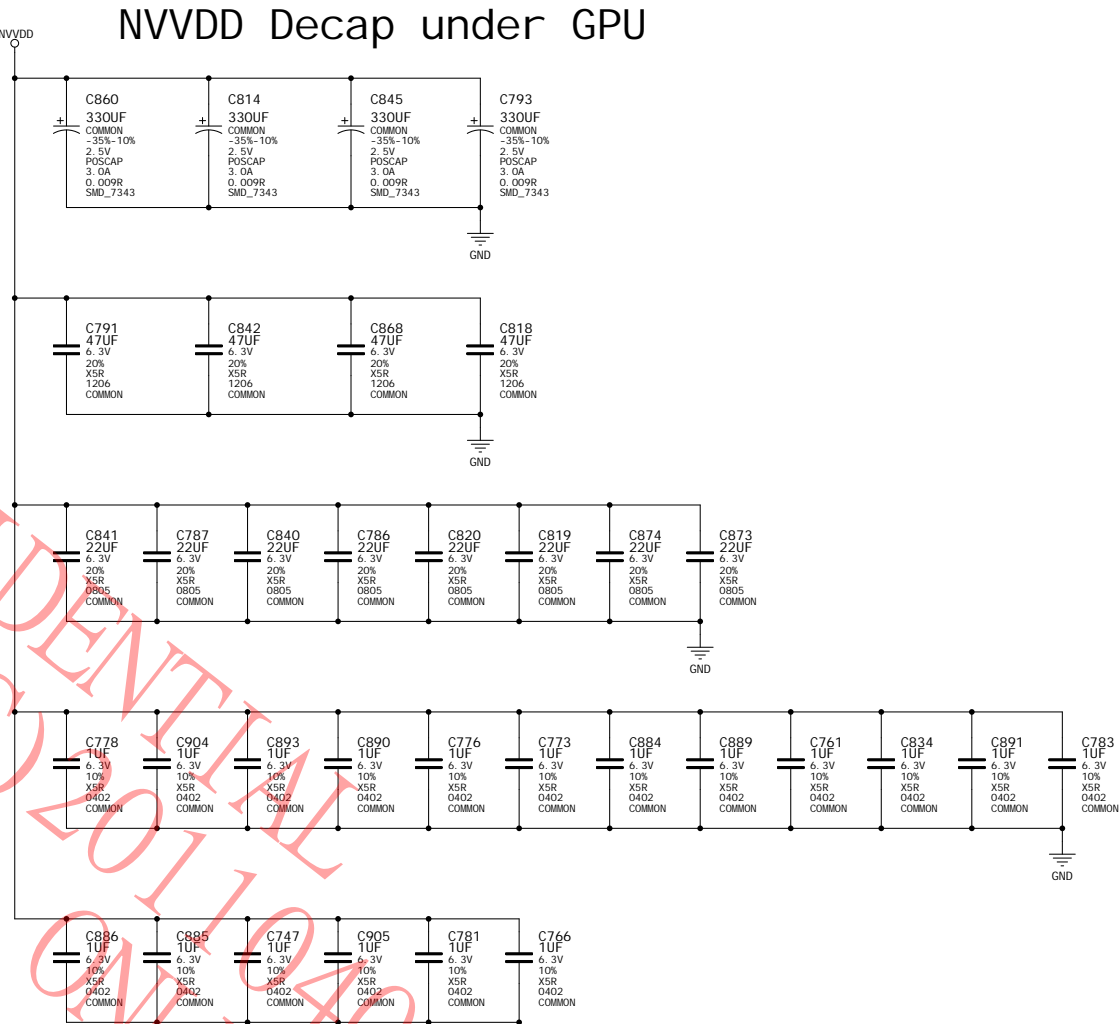
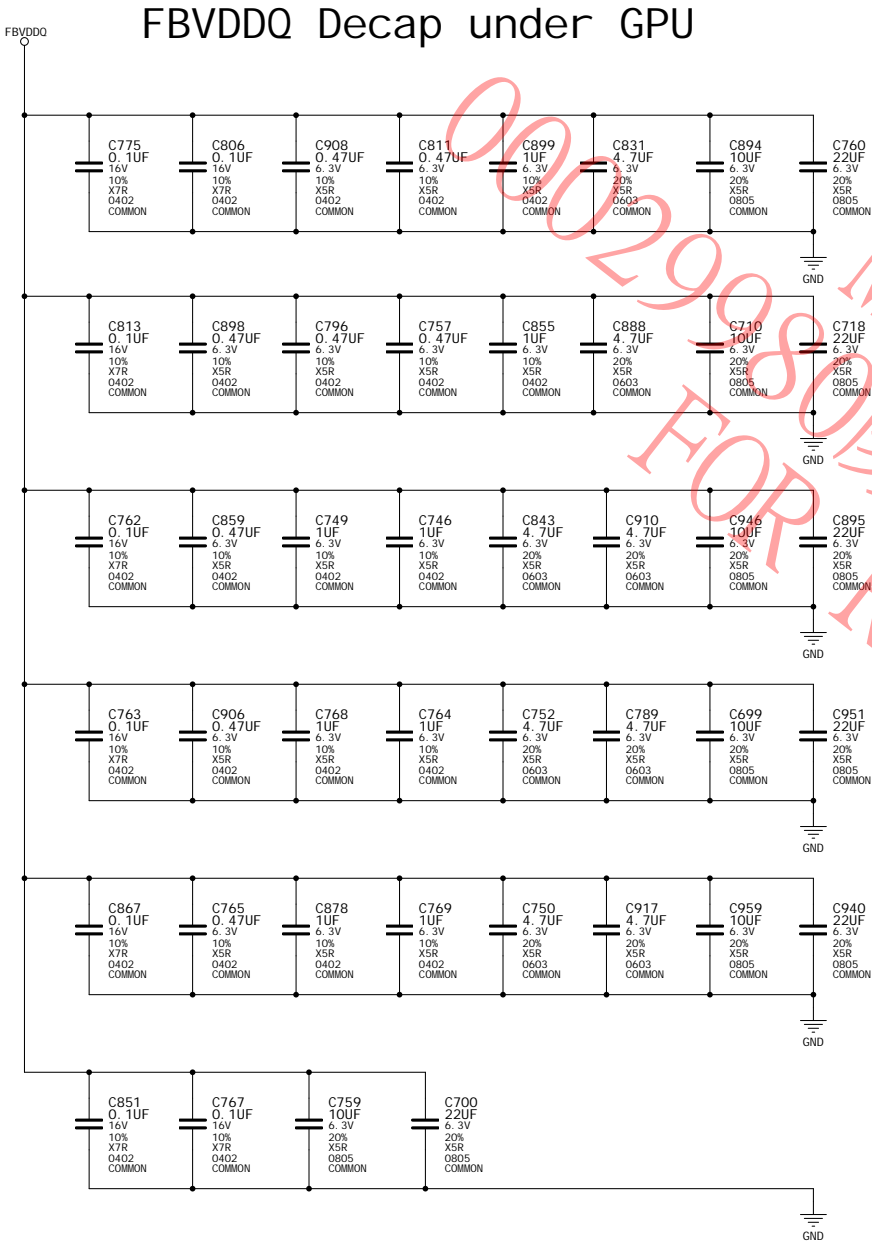


ASSEMBLY	P1263 GF110-040 1280MB GDDR5 32Mx32 DV1-I/DUAL+HDMI+DP
PAGE DETAIL	GDDR5 Memory Decoupling

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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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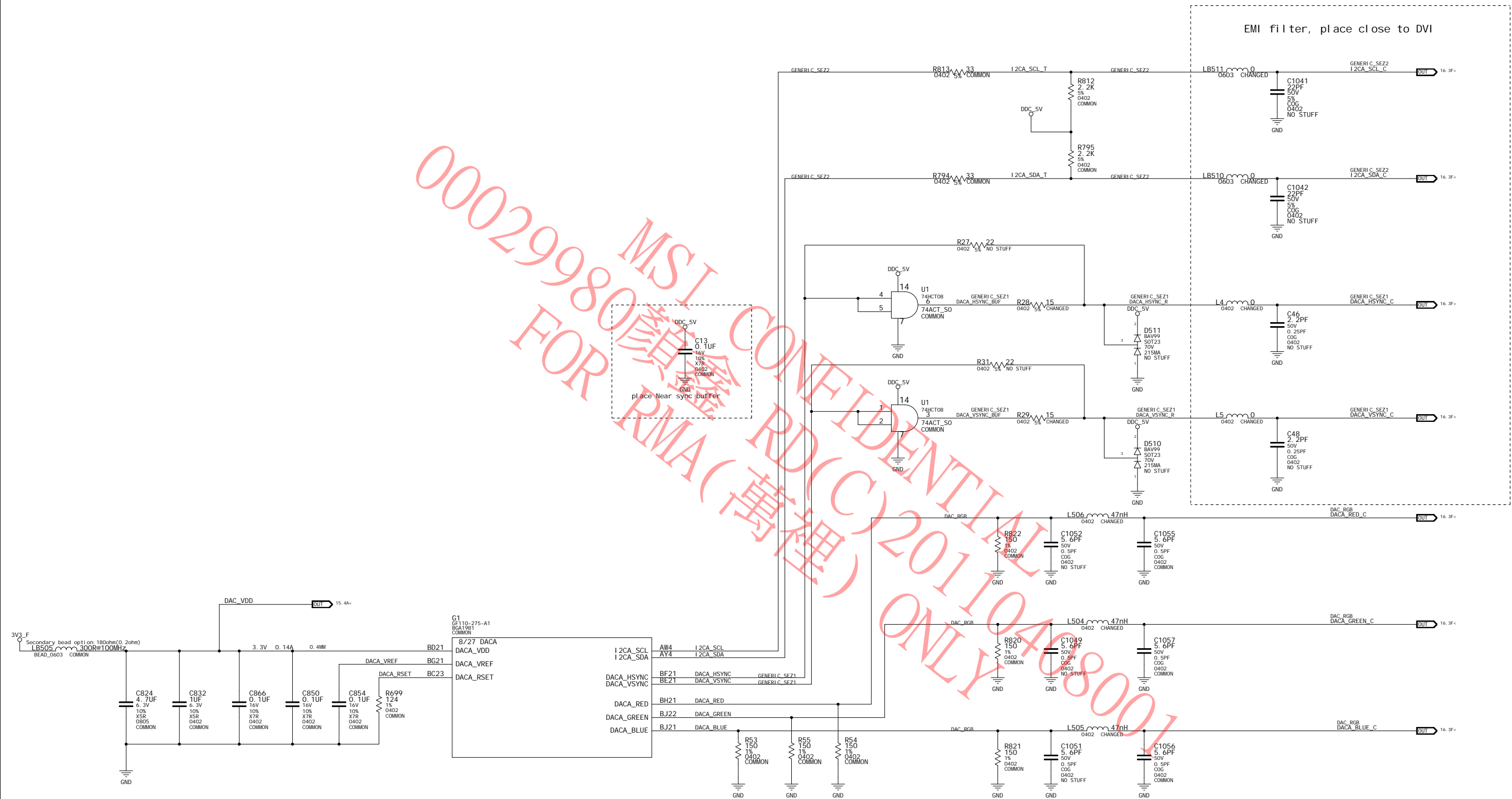
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PAGE DETAIL GPU Decoupling(NVVDD, FBVDDQ)

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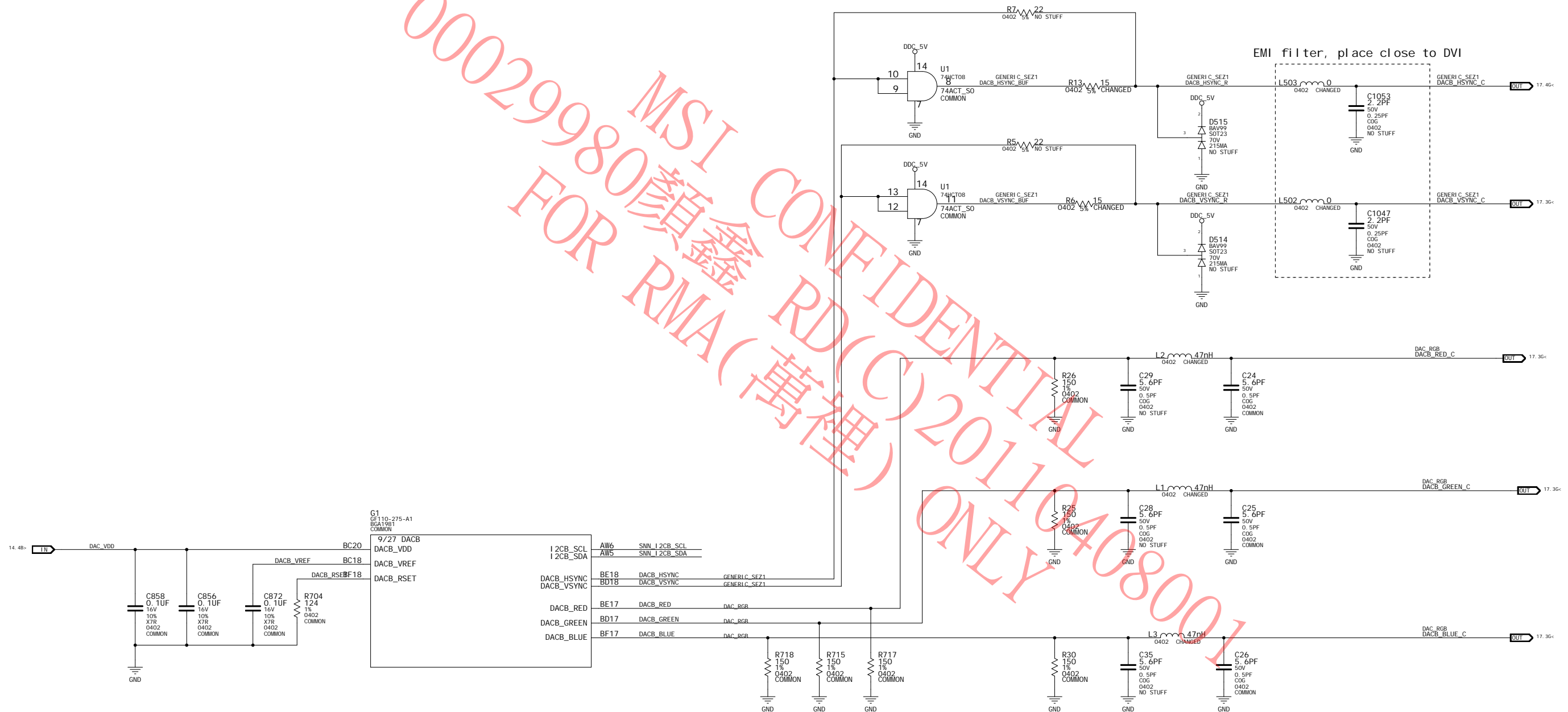
Display: DACA (South DVI -I Lower)



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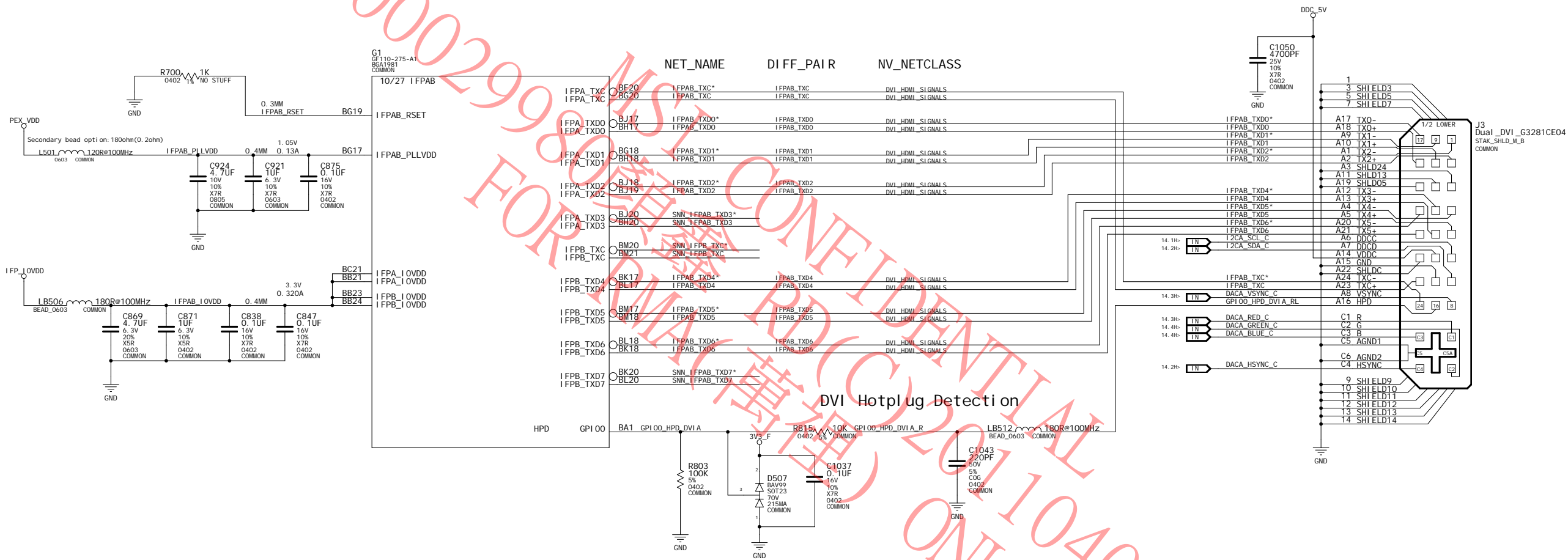
Display: DACB (South DVI -I Upper)



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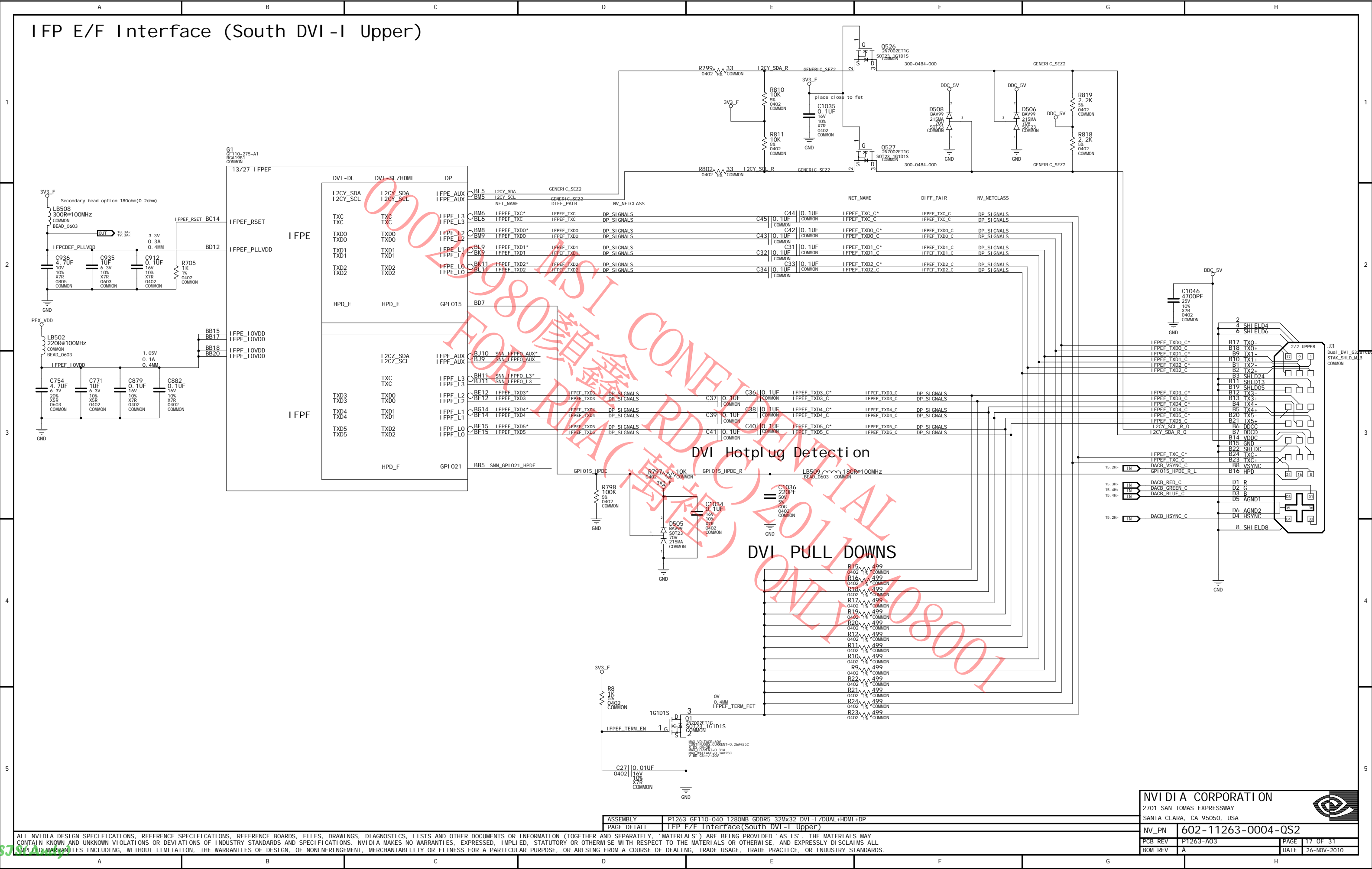
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I FP A/B Interface (South DVI -I Lower)



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

1
2
3
4
5



DVI Hotplug Detection

DVI PULL DOWNS

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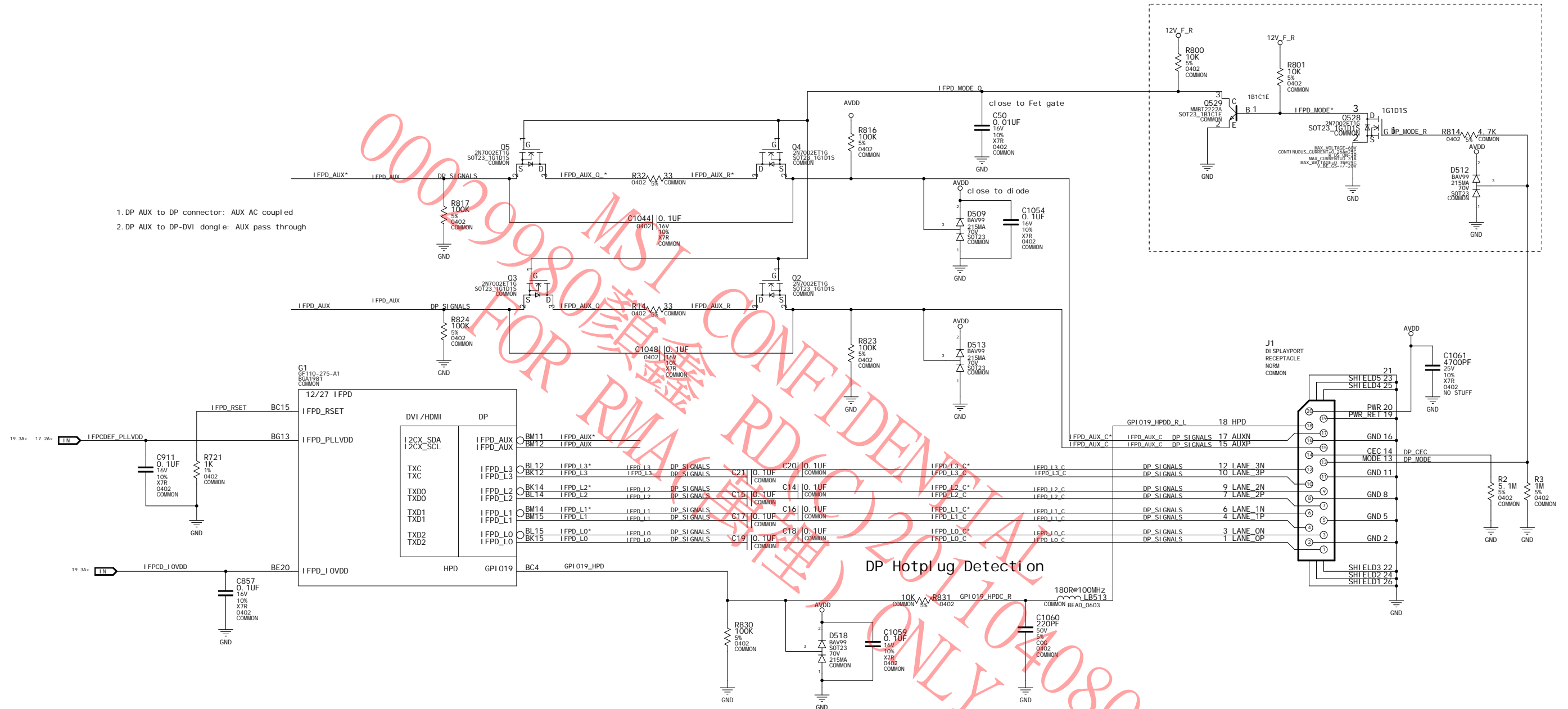
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ASSEMBLY	P1263 GF110-040 1280MB GDDR5 32Mx32 DVI-I/DUAL+HDMI+DP
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I FPD, (North DP)

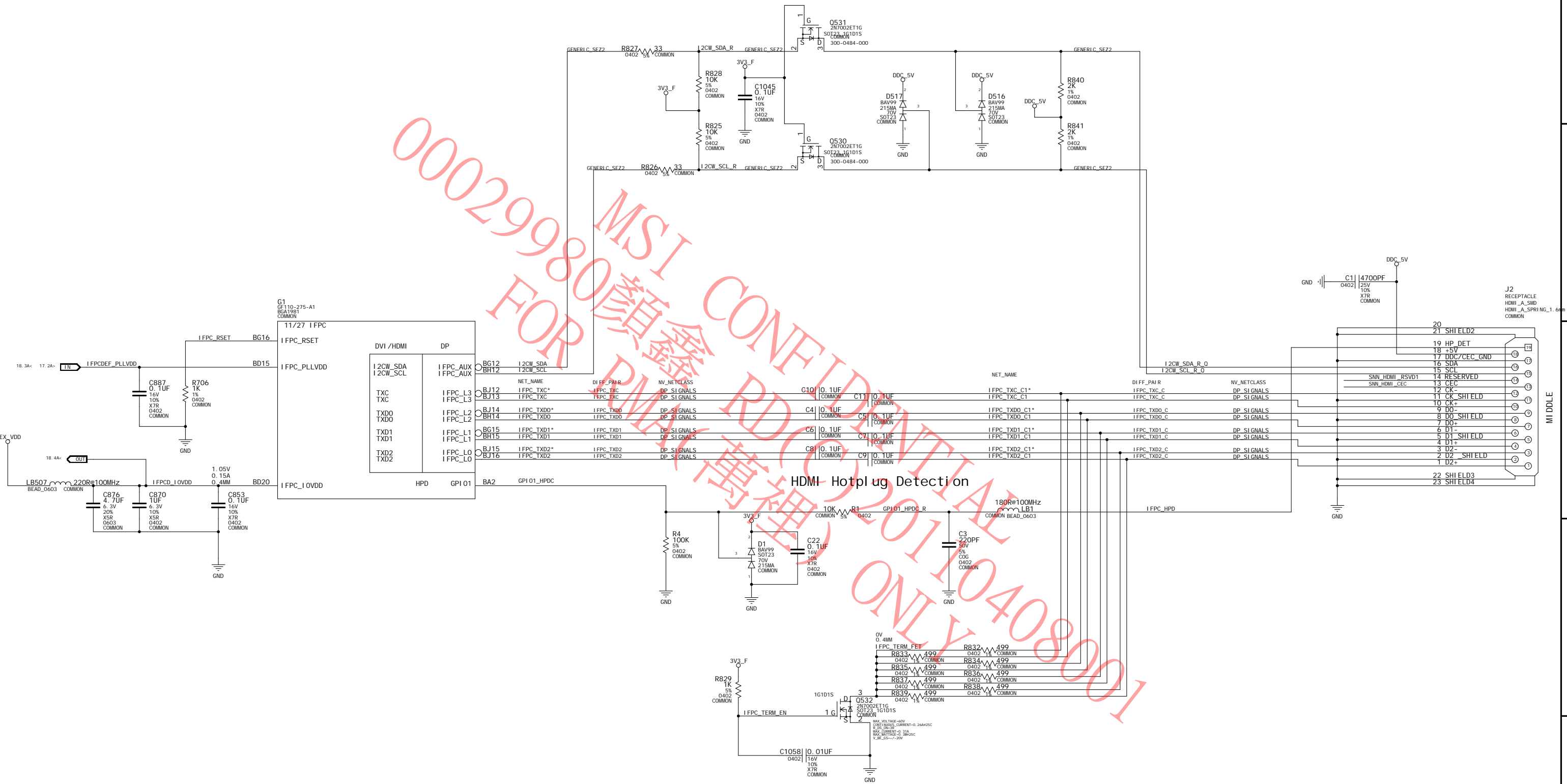


ASSEMBLY	
PAGE DETAIL	1 FPD (North DP)

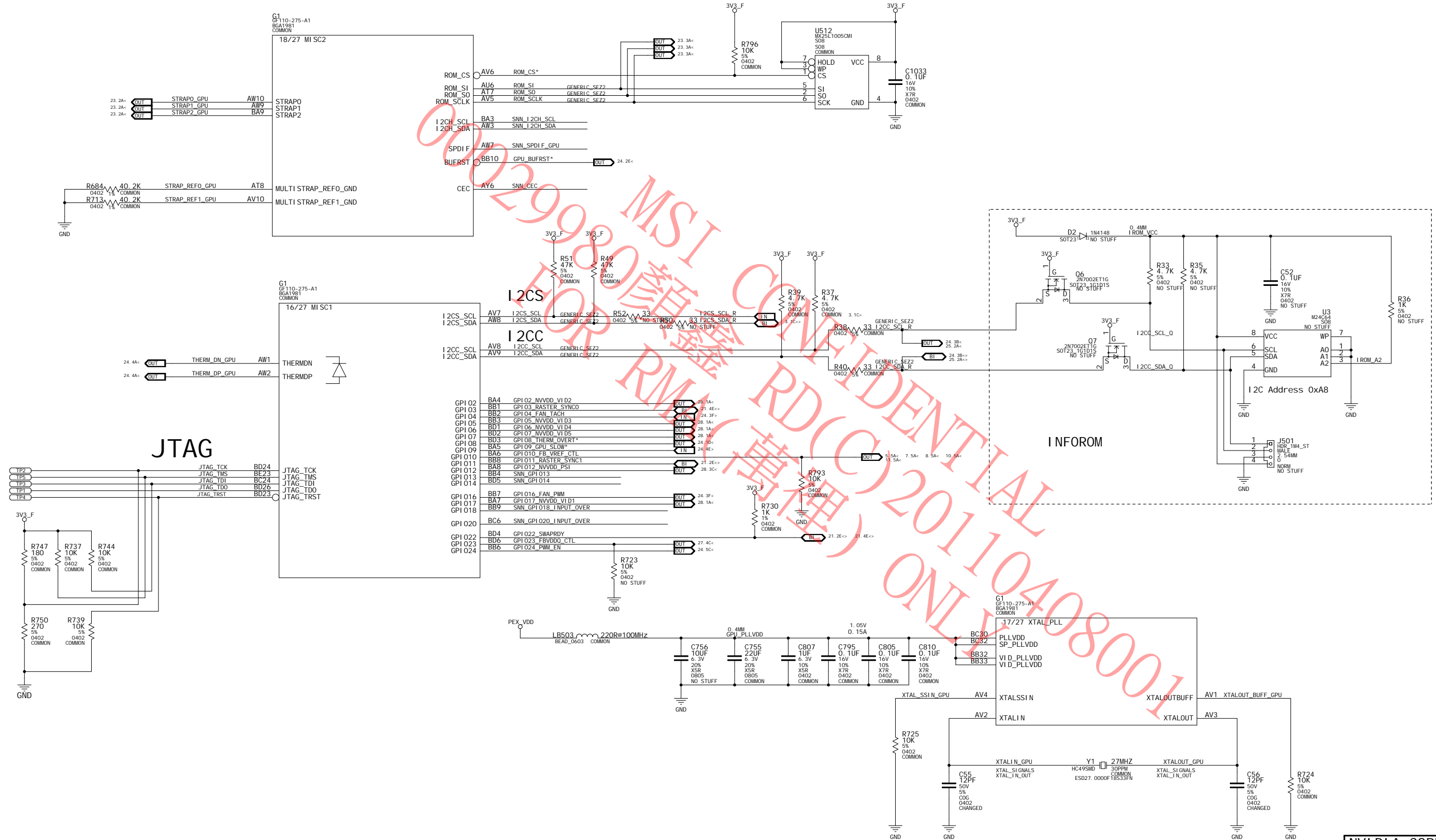
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I FPC Interface (Mi d HDMI)



MISC: GPIO, I2C, ROM, and XTAL



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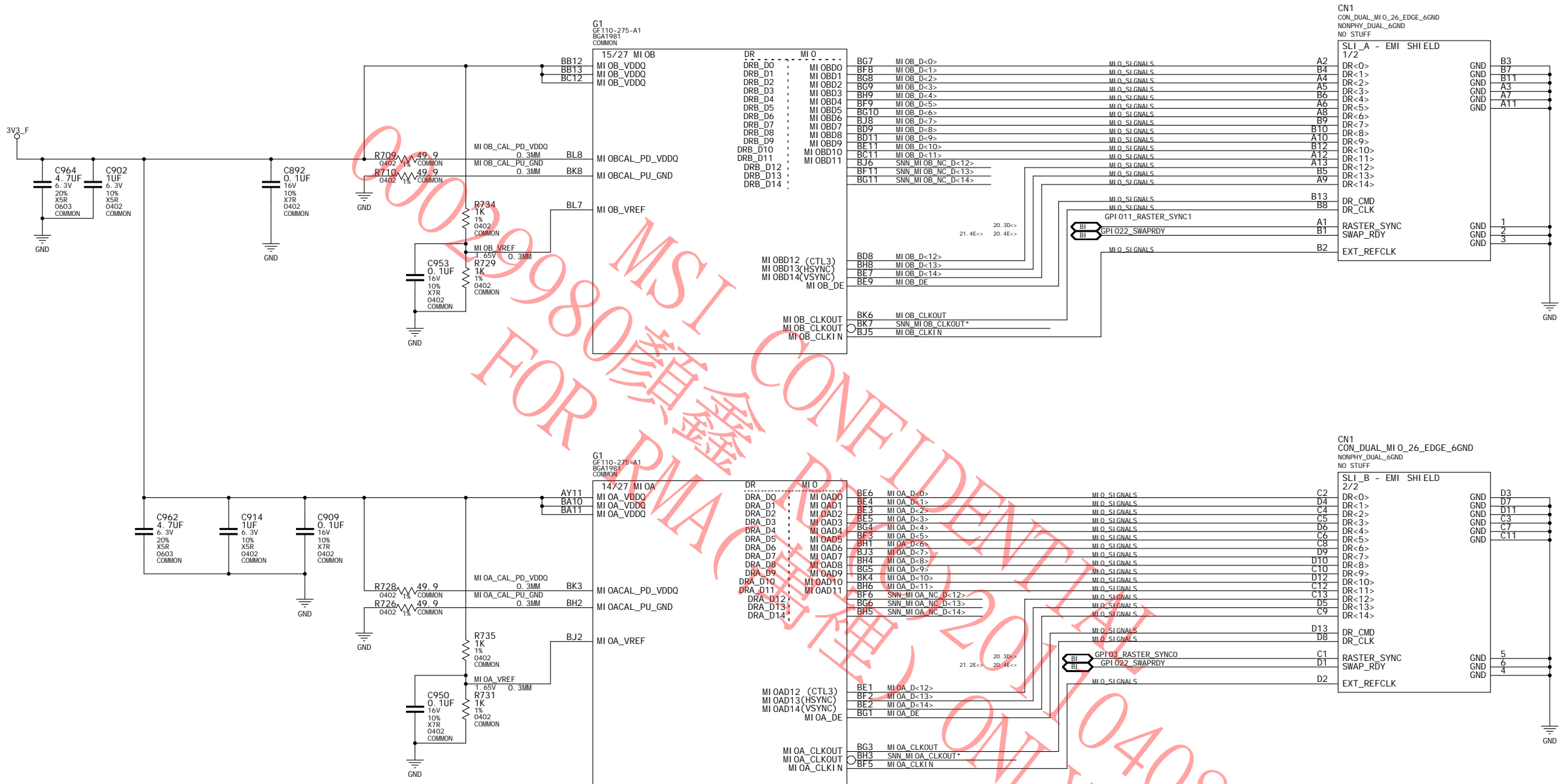
NV_PN	602-11263-0004-QS2
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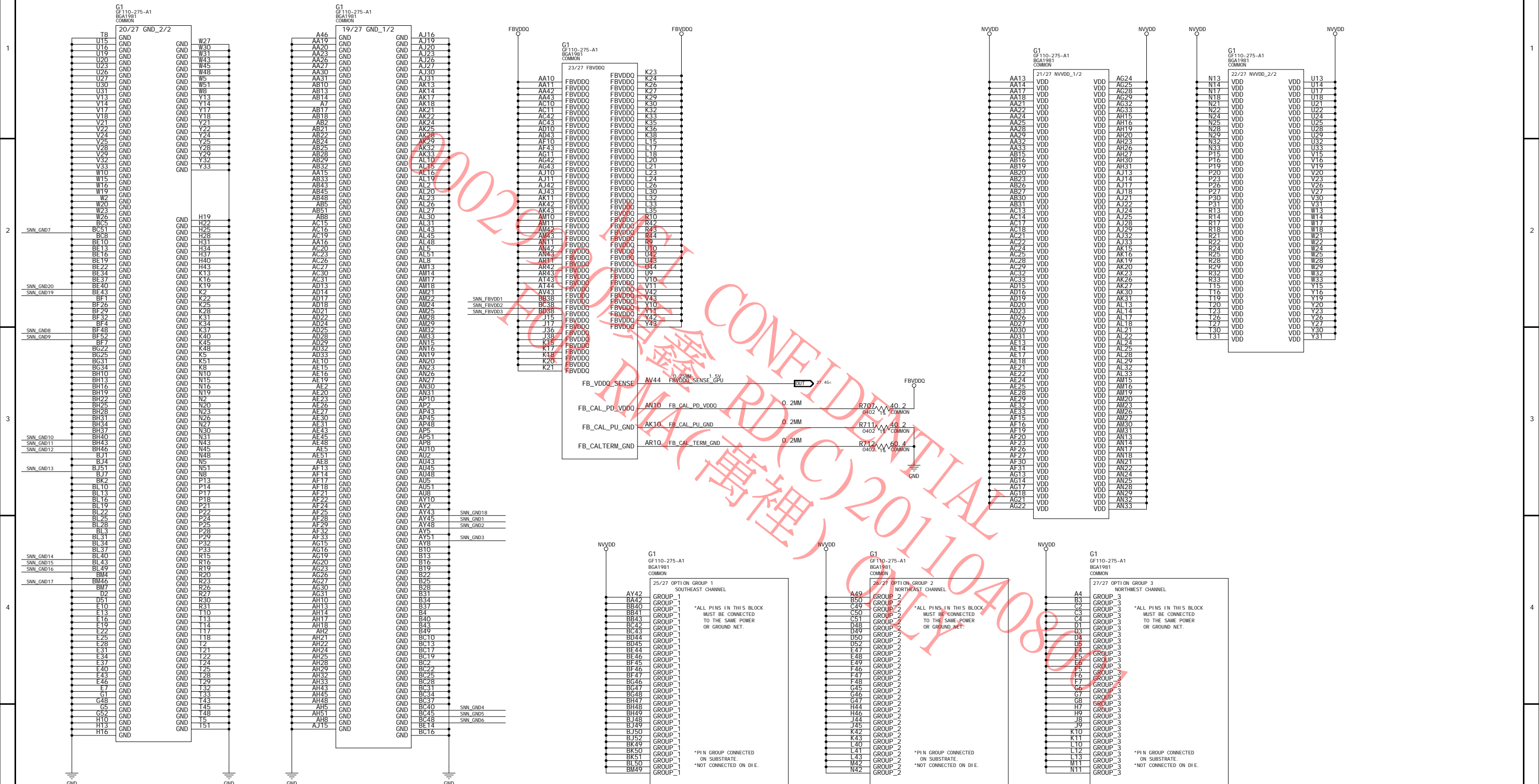
BOM REV	A	DATE	26-NOV-2010
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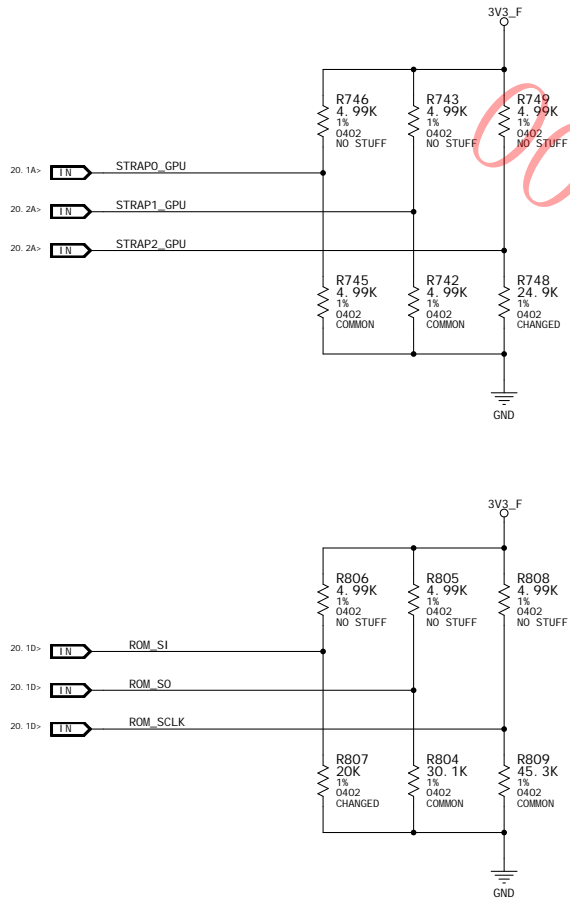
Mul ti -use IO(MI O) Interface



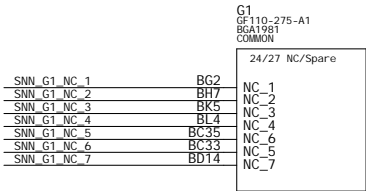
GPU POWER CONNECTIONS



GPU Strapping Configuration

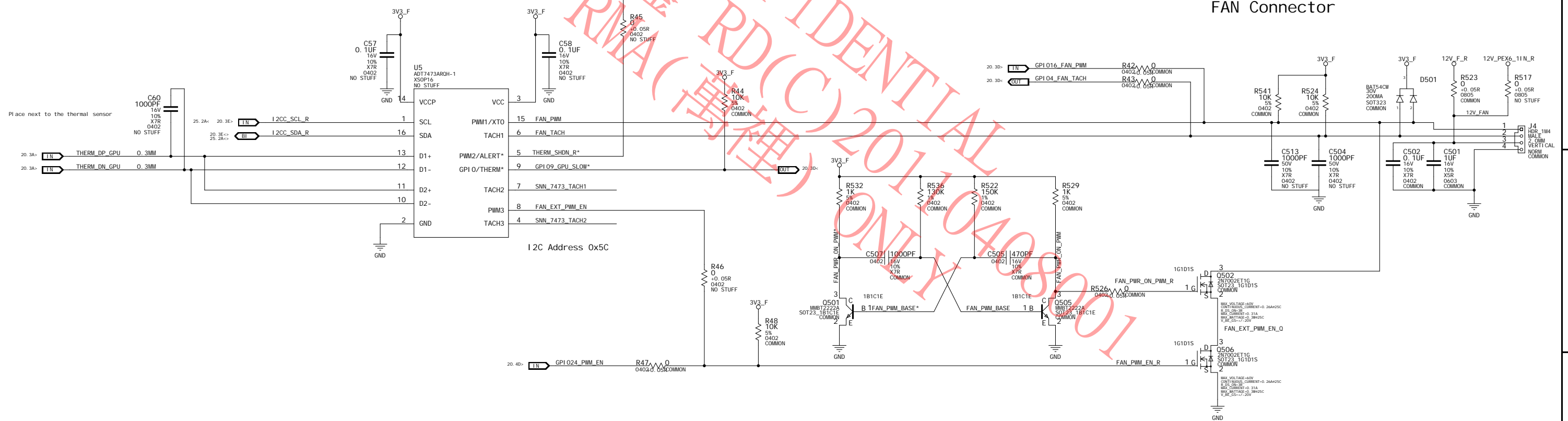
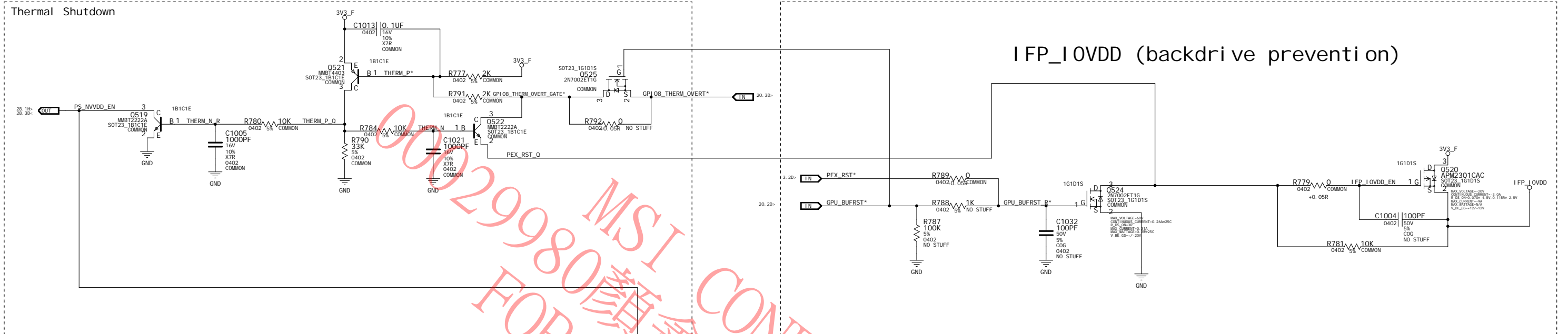


ROM_SI	RAMCFG[0]	0010 32Mx32 GDDR5 320-bit Hynix
	RAMCFG[1]	0011 32Mx32 GDDR5 320-bit Samsung
	RAMCFG[2]	0110 64Mx32 GDDR5 320-bit Hynix
	RAMCFG[3]	0111 64Mx32 GDDR5 320-bit Samsung
ROM_SO	VGA_DEVICE	1 0=Disabled(3D Only) 1=Enabled(VGA Display Device)
	SMB_ALT_ADDR	0
	FB[0]_BAR_SIZE	1 128MB 30k PD
	XCLK_417	0
ROM_SCLK	PEX_PCL_EN_TERM100	1 ENABLE 0 DISABLED
	SLOT_CLK_CFG	1 ENABLE 45K PD
	SUB_VENDOR	1 Dedicated BIOS
	PCI_DEVICE_EXT	0 0x108
STRAP0	USER_BIT [3:0]	0000 : => 5K PD Default
STRAP1	3GIO_PADCFG_LUT_ADR	0000 : =>5K PD Desktop Default
STRAP2	PCI_DEVICE [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

MI SC: THERMAL/BACKDRIVE



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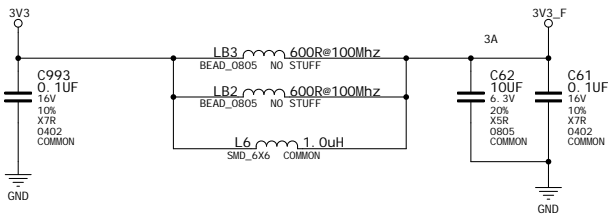
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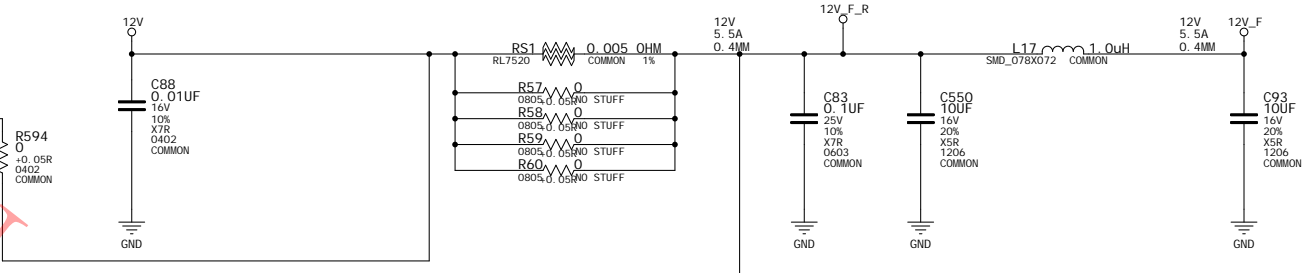
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Power Supply: PEX PS INPUT, DETECTION LOGIC

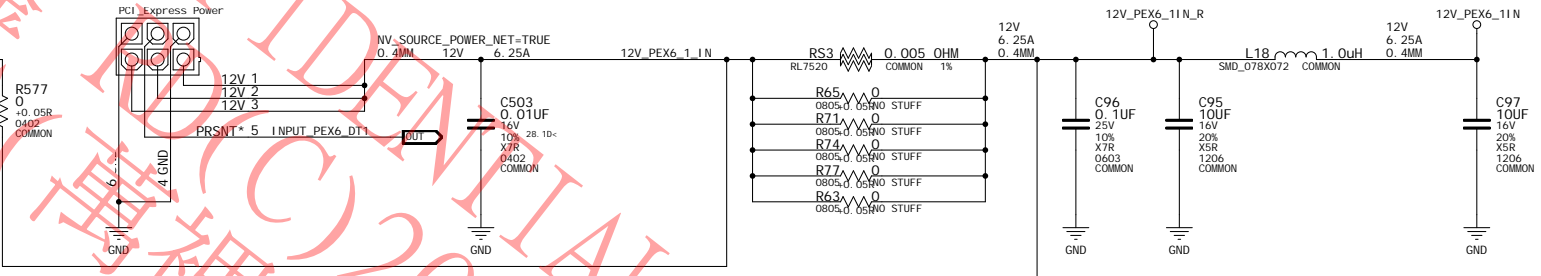
PEX_3V3 INPUT - 10W



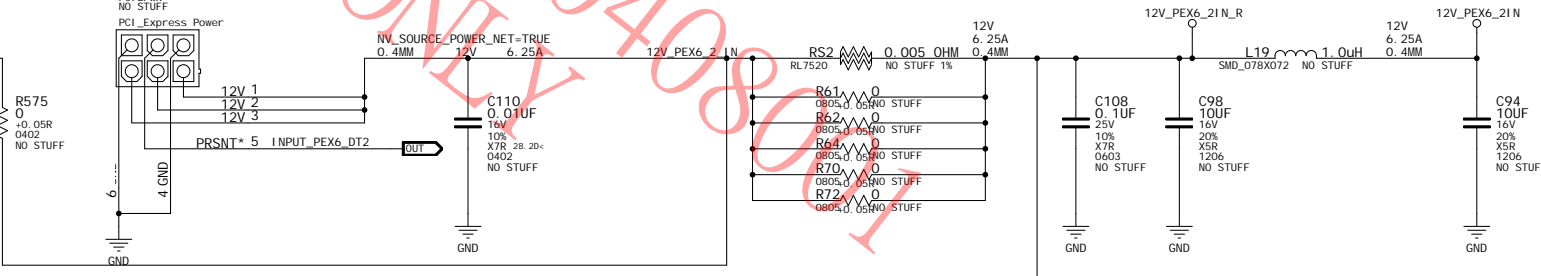
PEX_12V INPUT - 66W



PEX6 INPUT 1 - 2x3 PCIE CON 75W



PEX6 INPUT 2 - 2x3 PCIE CON 75W



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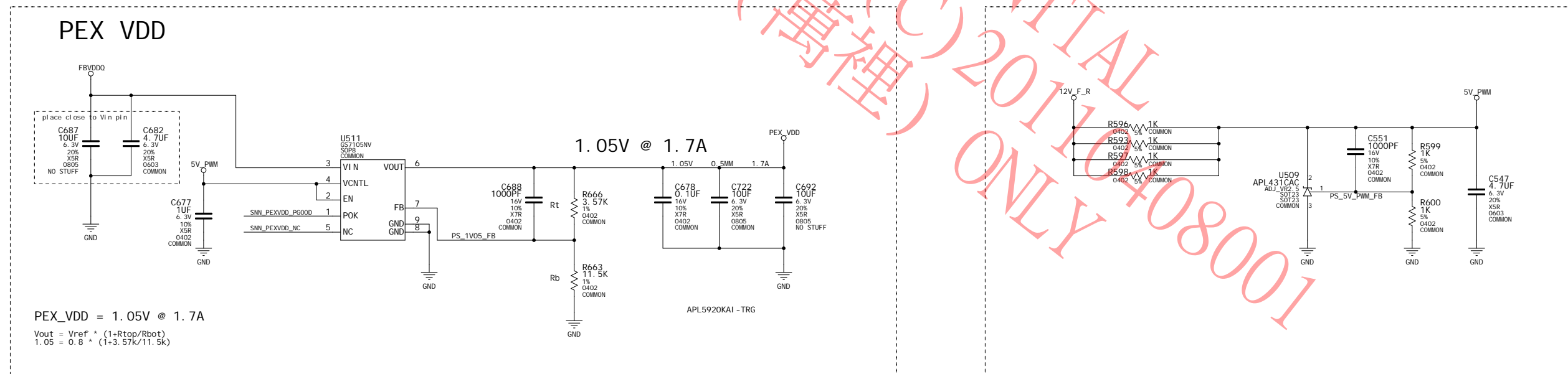
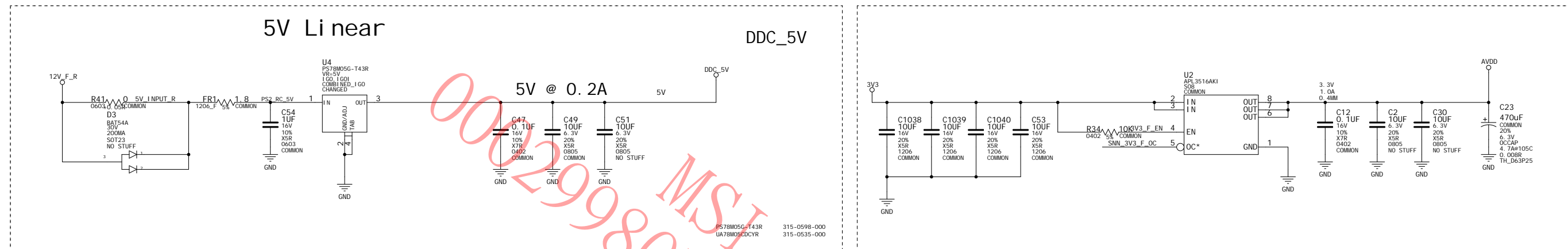
ASSEMBLY	P1263 GF110-040 1280MB GDDR5 32Mx32 DVI-I / DUAL+HDMI +DP
PAGE DETAIL	Power Supply: PEX PS INPUT, DETECTION LOGIC

NV_PN	602-11263-0004-QS2
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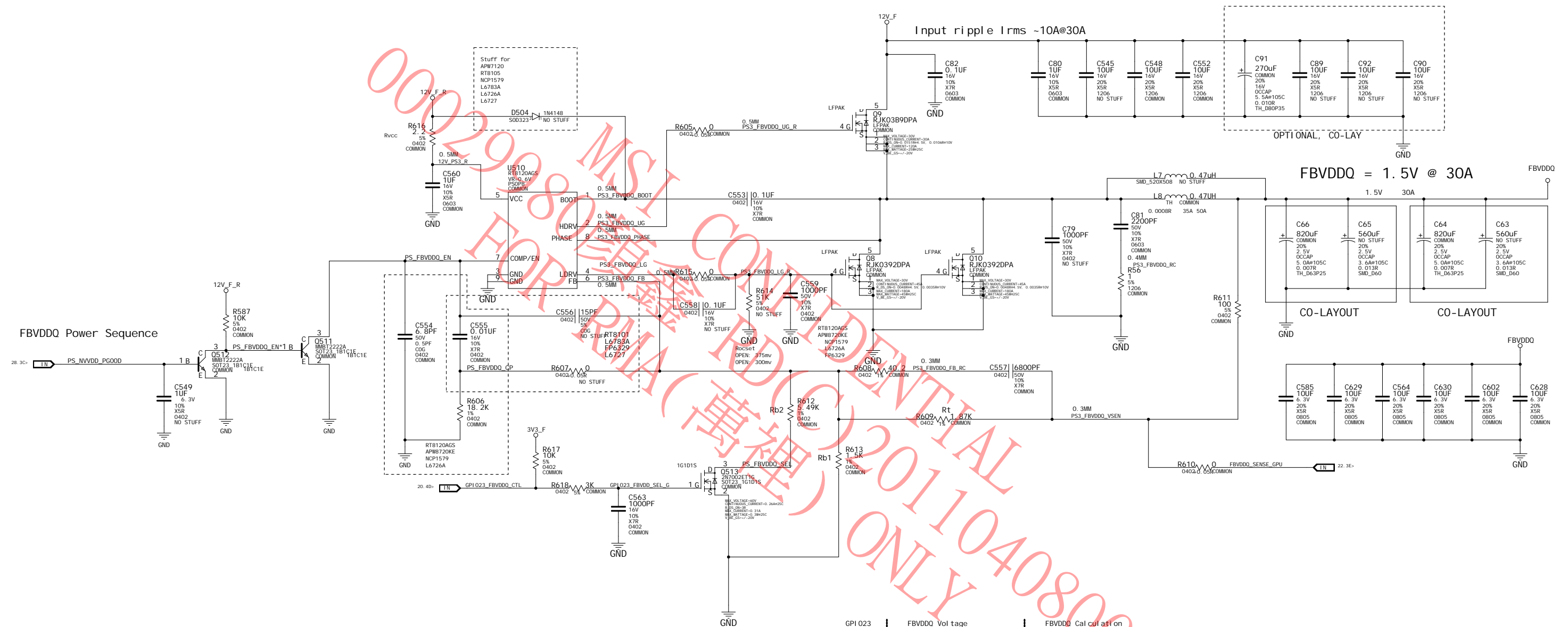
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DATE	26-NOV-2010

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Power Supply: DDC5V, PEX_VDD, 5V_PWM, AVDD



Power Supply: FBVDDQ



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

		Vref	
RT8120A	300KHz	0.6V	1.5%
APW8720KE	300KHz	0.5V	1%
APW7120K	300KHz	0.8V	
RT8101	300KHz	0.8V	
RT8105	300KHz	0.8V	
NCP1579	275KHz	0.8V	

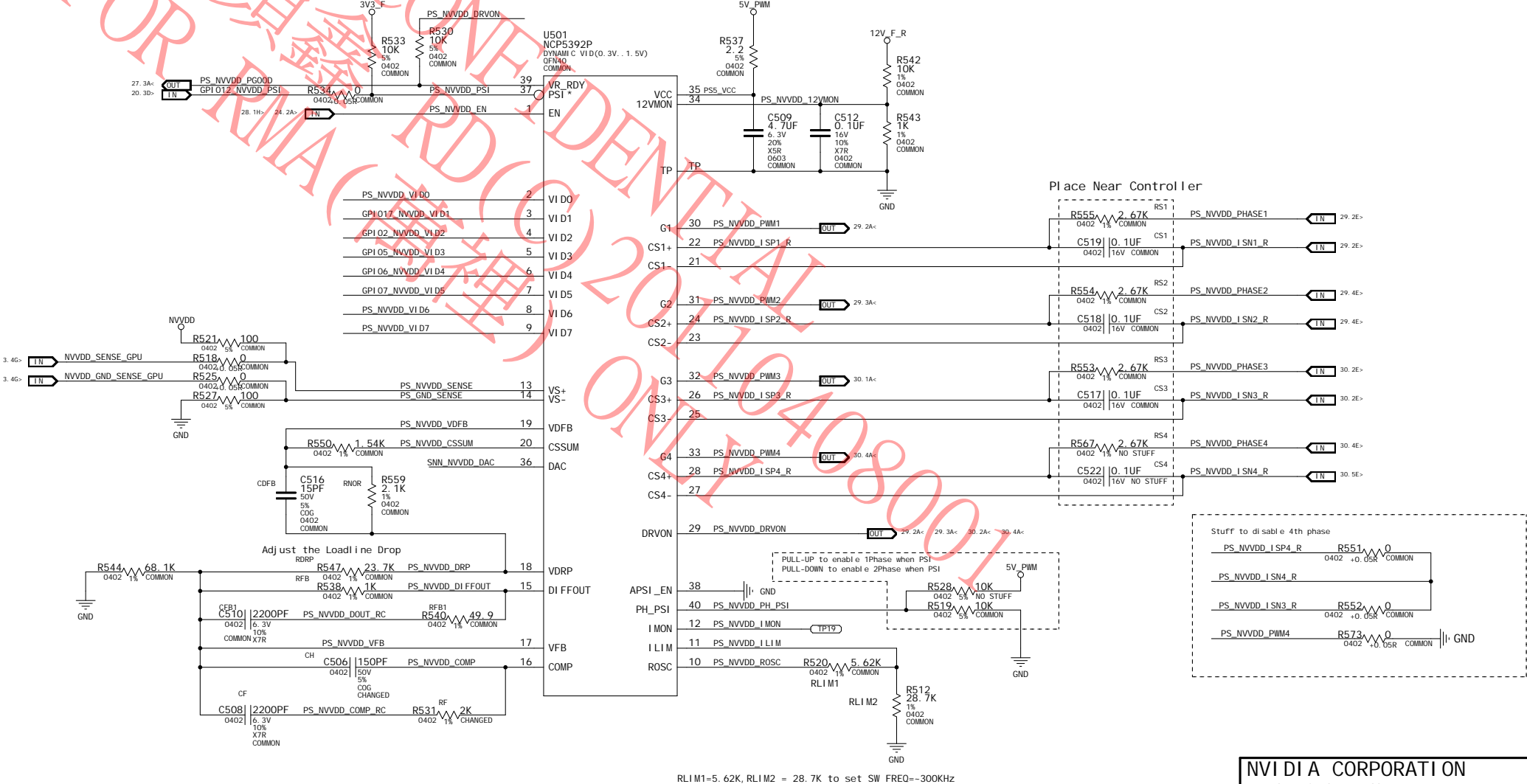
Power Supply: NVVDD Controller

BootVoltage 0.9V

NVVDD POWER SEQUENCE

VID Table

GPI07 VID_5	GPI06 VID_4	GPI05 VID_3	GPI02 VID_2	GPI017 VID_1	VRM11.0 VID Setting
0	0	0	0	1	1.2000V
0	0	0	1	0	1.1875V
0	0	0	1	1	1.1750V
0	0	1	0	0	1.1625V
0	0	1	0	1	1.1500V
0	0	1	1	0	1.1375V
0	0	1	1	1	1.1250V
0	1	0	0	0	1.1125V
0	1	0	0	1	1.1000V
0	1	0	1	0	1.0875V
0	1	0	1	1	1.0750V
0	1	1	0	0	1.0625V
0	1	1	0	1	1.0500V
0	1	1	1	0	1.0375V
0	1	1	1	1	1.0250V
1	0	0	0	0	1.0125V
1	0	0	0	1	1.0000V
1	0	0	1	0	0.9875V
1	0	0	1	1	0.9750V
1	0	1	0	0	0.9625V
1	0	1	0	1	0.9500V
1	0	1	1	0	0.9375V
1	0	1	1	1	0.9250V
1	1	0	0	0	0.9125V
1	1	0	0	1	0.9000V
1	1	0	1	0	0.8875V
1	1	0	1	1	0.8750V
1	1	1	0	0	0.8625V
1	1	1	0	1	0.8500V
1	1	1	1	0	0.8375V
1	1	1	1	1	0.8250V



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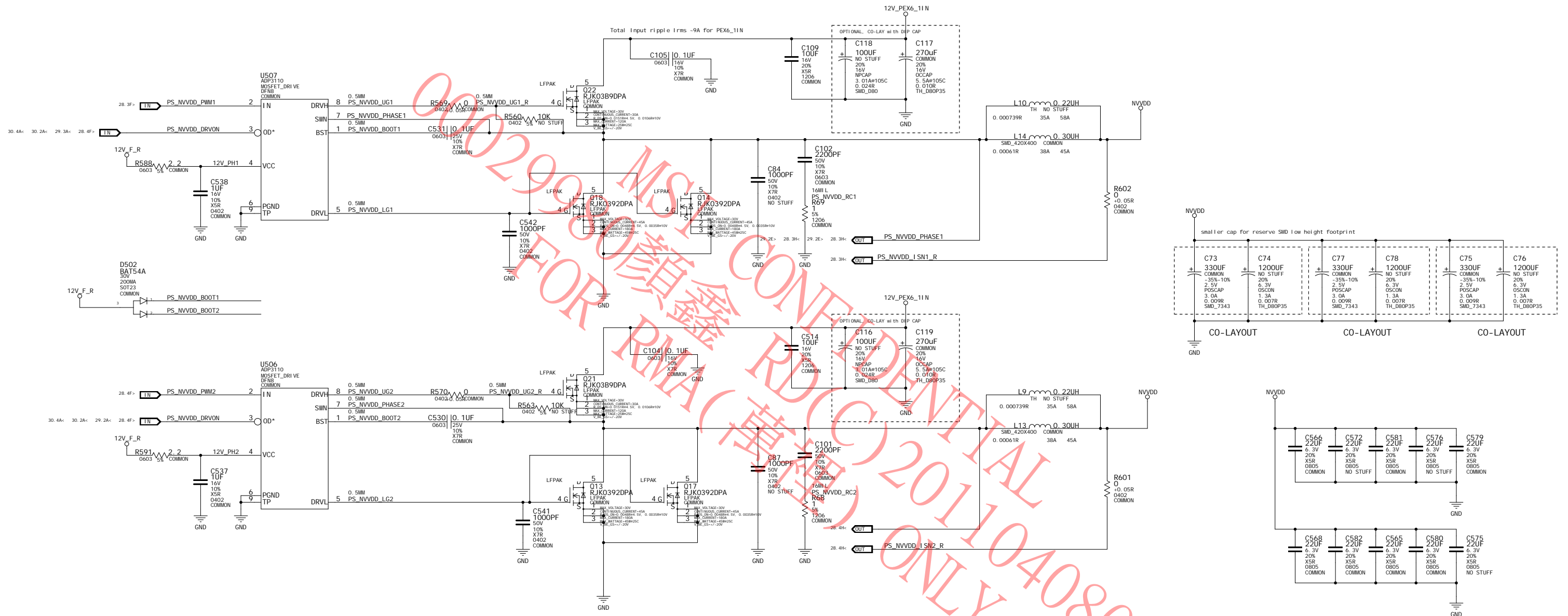


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Power Supply: NVVDD PHASE 1, 2



ASSEMBLY	
PAGE DETAIL	Power Supply: NVDD Phase 1, 2

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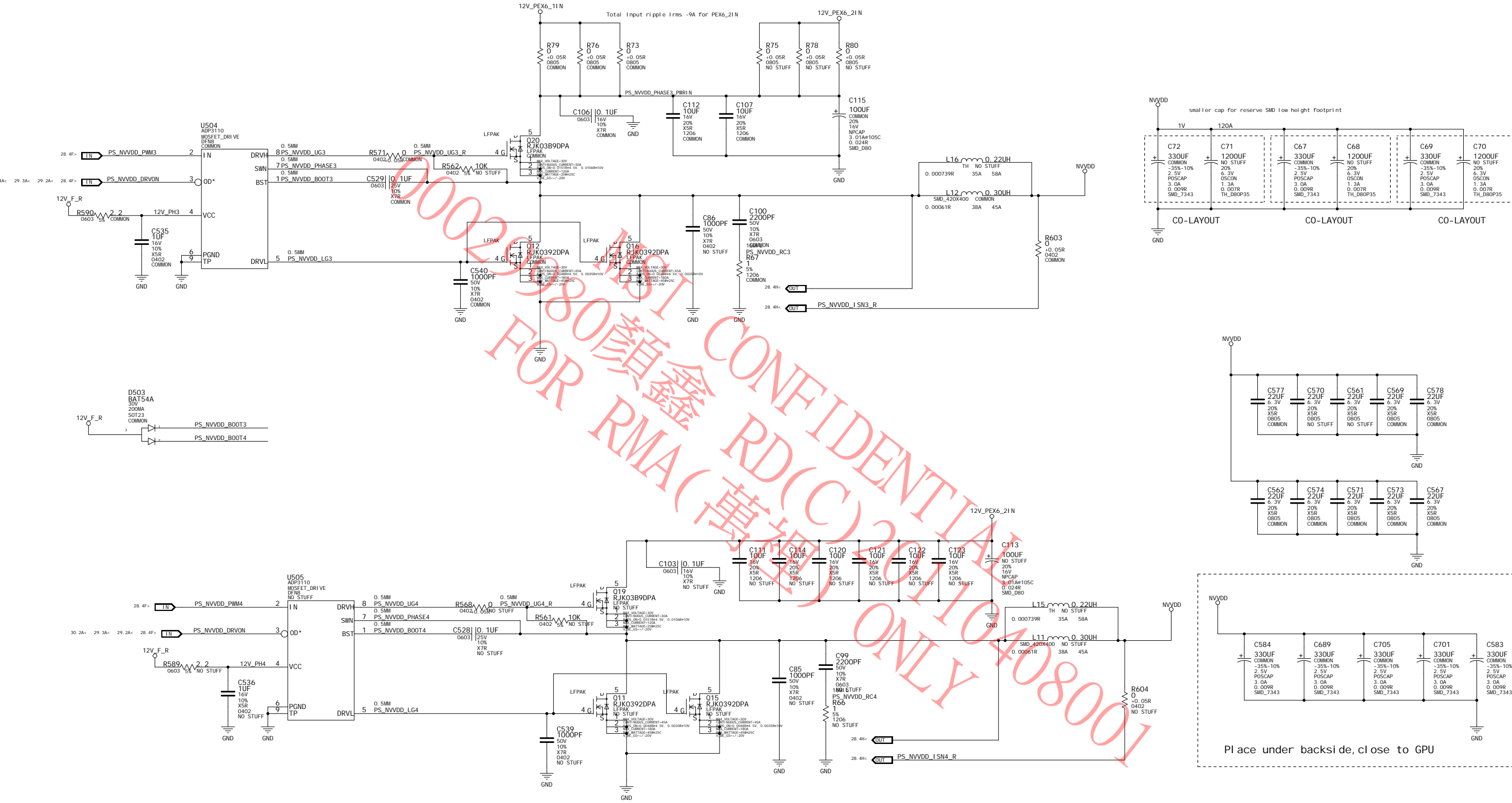
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Power Supply: NVVDD PHASE 3.4



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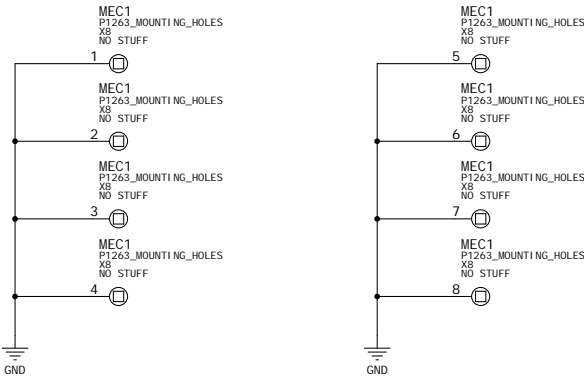
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ASSEMBLY	
PAGE DETAIL	Power Supply: NVVDD Phase 3, 4

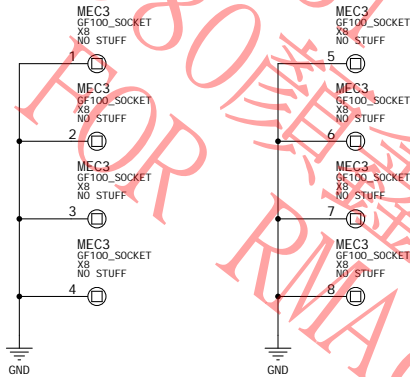
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Thermal /Mechanical

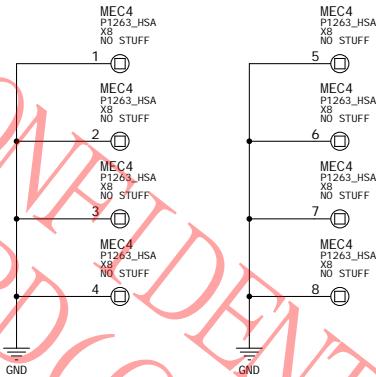
BASEPLATE MOUNTING HOLES



SOCKET (FOR LAB USE ONLY)

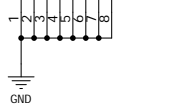


FANSINK HOLE

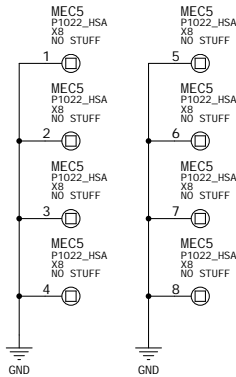
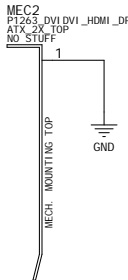


BOARD STIFFENER

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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