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REV	VARIANT	NVPN	ASSEMBLY
B	BASE	600-11025-BASE-SCH	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO. STUFF ASSEMBLY NOTES AND BOM NOT FINAL
1	SKU0000	602-11025-0000-300	DT, GF100-050, 659/2000, 1024MB - 32Mx32 GDDR5, DVI-I + DVI-I + mHDMI
2	SKU0001	602-11025-0001-300	DT, GF100-050, 659/2000, 1024MB - 32Mx32 GDDR5, DVI-I + DVI-I + mHDMI
3	SKU0002	602-11025-0002-300	DT, GF100-030, 659/2000, 1280MB - 32Mx32 GDDR5, DVI-I + DP + mHDMI
4	SKU0003	602-11025-0003-300	DT, GF100-030, 659/2000, 1280MB - 32Mx32 GDDR5, DVI-I + DP + mHDMI
5	SKU0004	602-11025-0004-300	DT, GF100-300, 659/2000, 1280MB - 32Mx32 GDDR5, DVI-I + DVI-I + mHDMI
6	SKU0005	602-11025-0005-300	DT, GF100-050, 659/2000, 1024MB - 32Mx32 GDDR5, DVI-I + DVI-I + VENT
7	SKU0006	602-11025-0006-300	DT, GF100-030, 659/2000, 1280MB - 32Mx32 GDDR5, DVI-I + DVI-I + mHDMI
8	SKU0007	602-11025-0007-300	DT, GF100-030, 659/2000, 1280MB - 32Mx32 GDDR5, DVI-I + DVI-I + mHDMI
9	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>
10	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>
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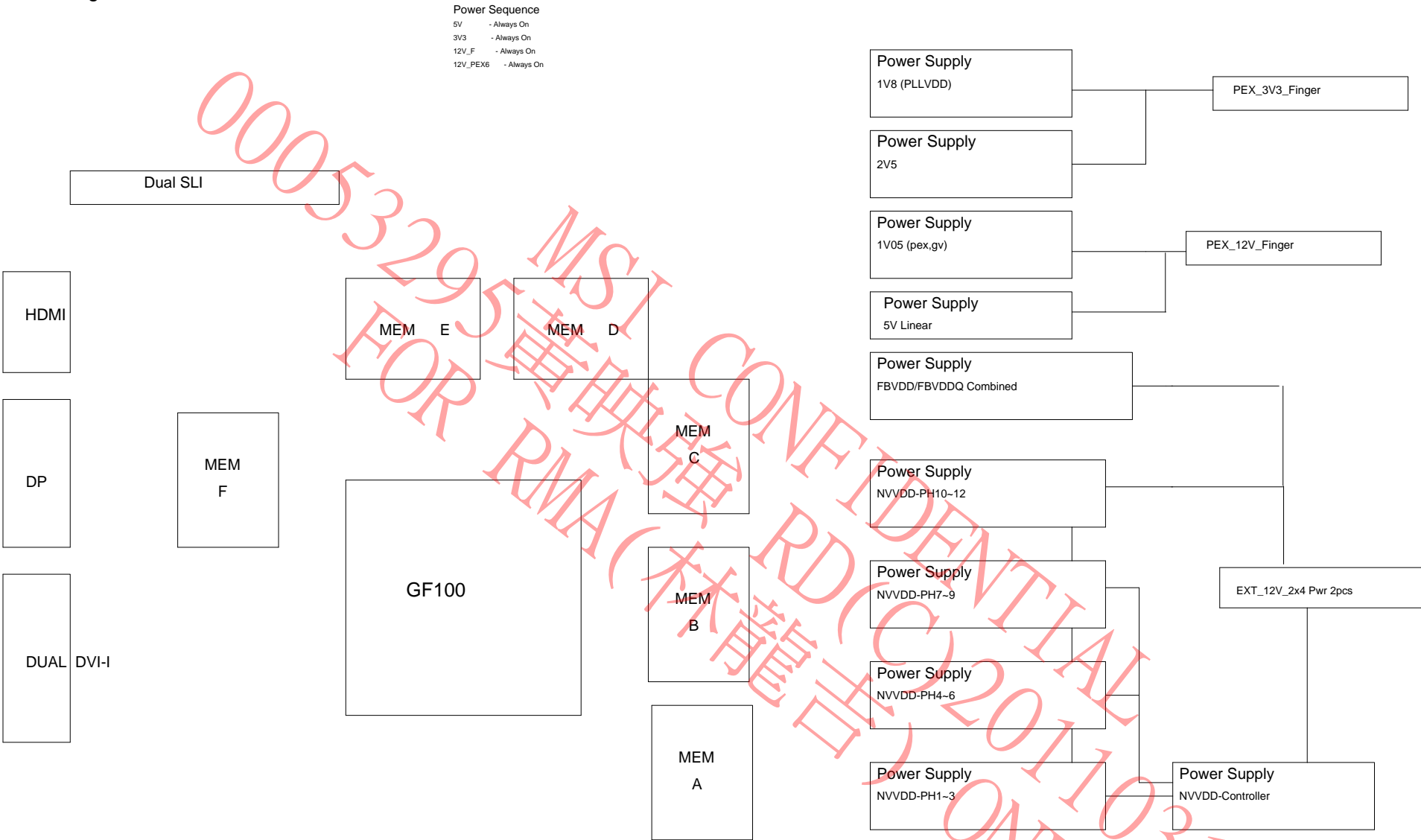
ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO. STUFF ASSEMBLY NOTES AND BOM NOT FINAL
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Block Diagram



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PCI Express

6/10:remove R910,R940,R928,R927,R908



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Framebuffer A,B: GPU Section

G1B

BGA_1801_FBB_P100_455V42S

COMMON

327 FBA

FBA D-0>

FBA D-1>

FBA D-2>

FBA D-3>

FBA D-4>

FBA D-5>

FBA D-6>

FBA D-7>

FBA D-8>

FBA D-9>

FBA D-10>

FBA D-11>

FBA D-12>

FBA D-13>

FBA D-14>

FBA D-15>

FBA D-16>

FBA D-17>

FBA D-18>

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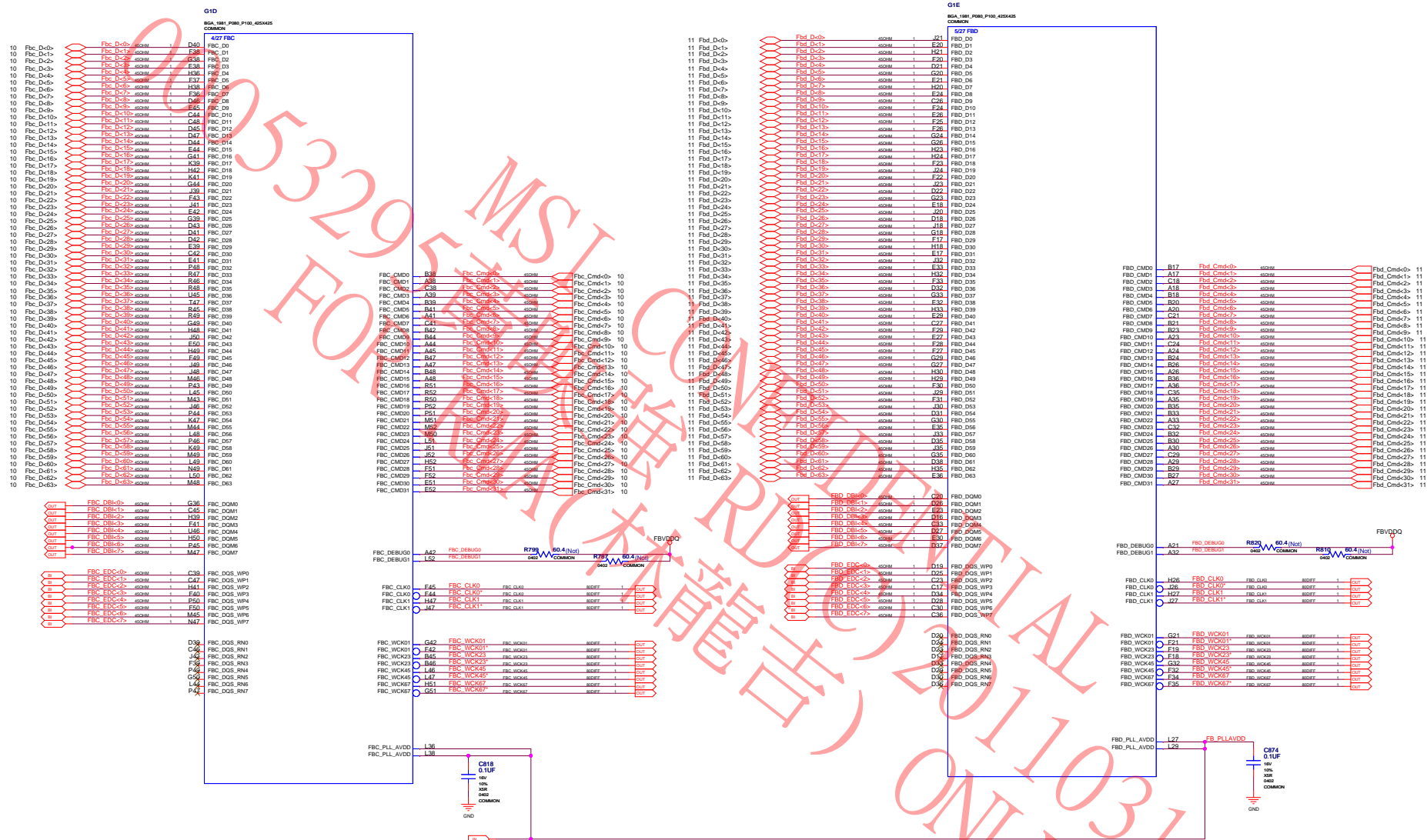
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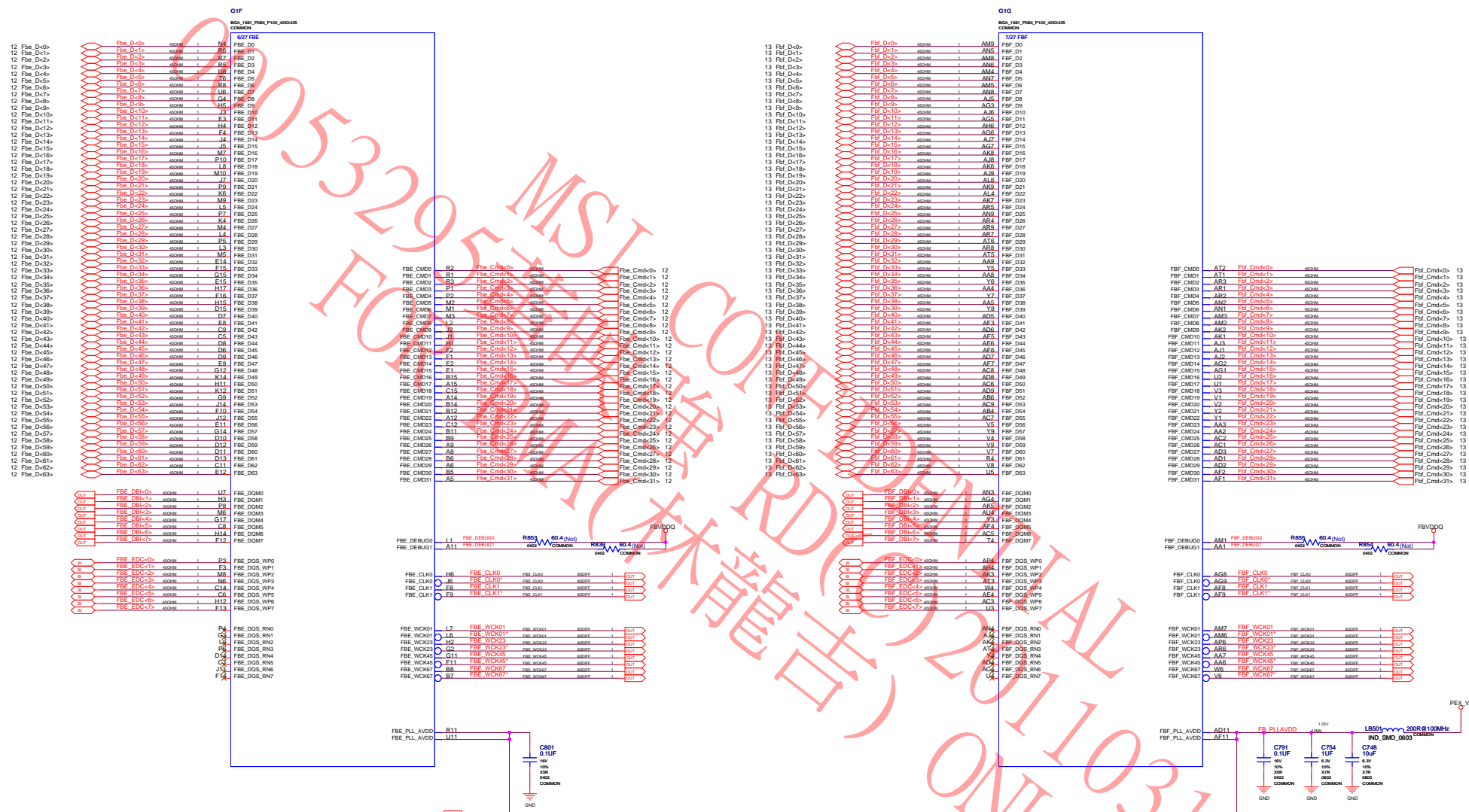
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FBA D-269>

Framebuffer C,D: GPU Section



Framebuffer E,F: GPU Section



GPU Power and GND

G1H

BGA_1981_P080_P100_45X45S COMMON		
1927 GND_12		
AA6	GND	AA16
AA12	GND	AA19
AA20	GND	AA20
AA23	GND	AA23
AA26	GND	AA26
AA27	GND	AA27
AA30	GND	AA30
AA31	GND	AA31
AB10	GND	AB10
AB13	GND	AB13
AB14	GND	AB14
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AB32	GND	AB32
AB32	GND	AB32
AA15	GND	AA15
AB33	GND	AB33
AB4	GND	AB4
AB45	GND	AB45
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AD28	GND	AD28
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AD33	GND	AD33
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AE30	GND	AE30
AE31	GND	AE31
AE43	GND	AE43
AE45	GND	AE45
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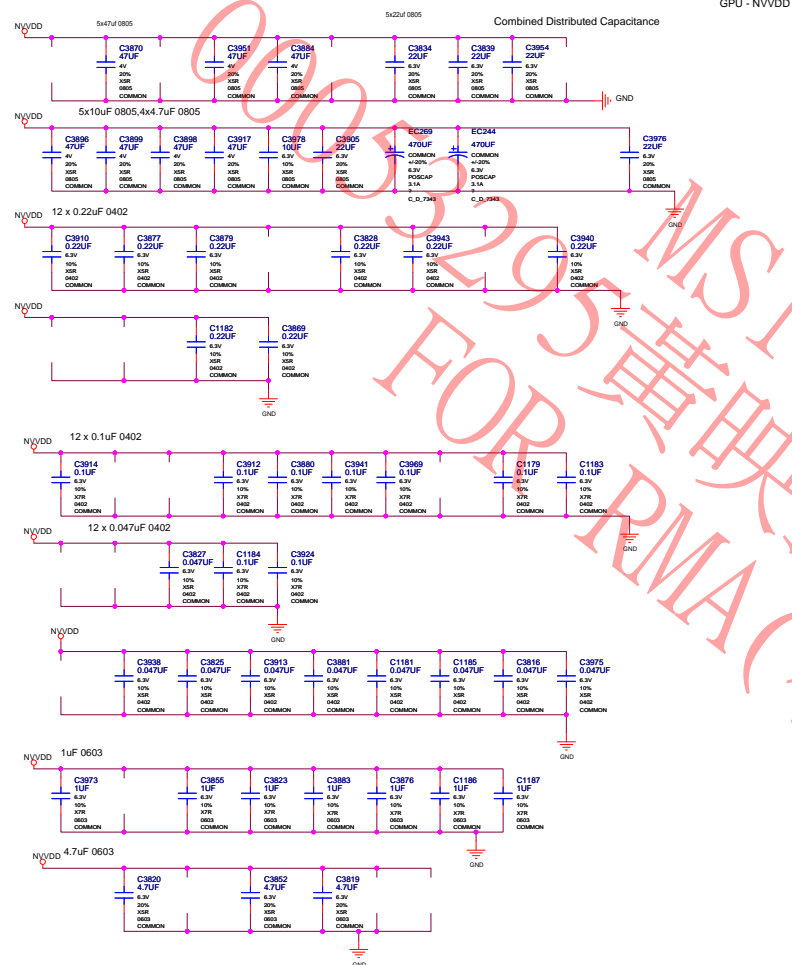
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G1I

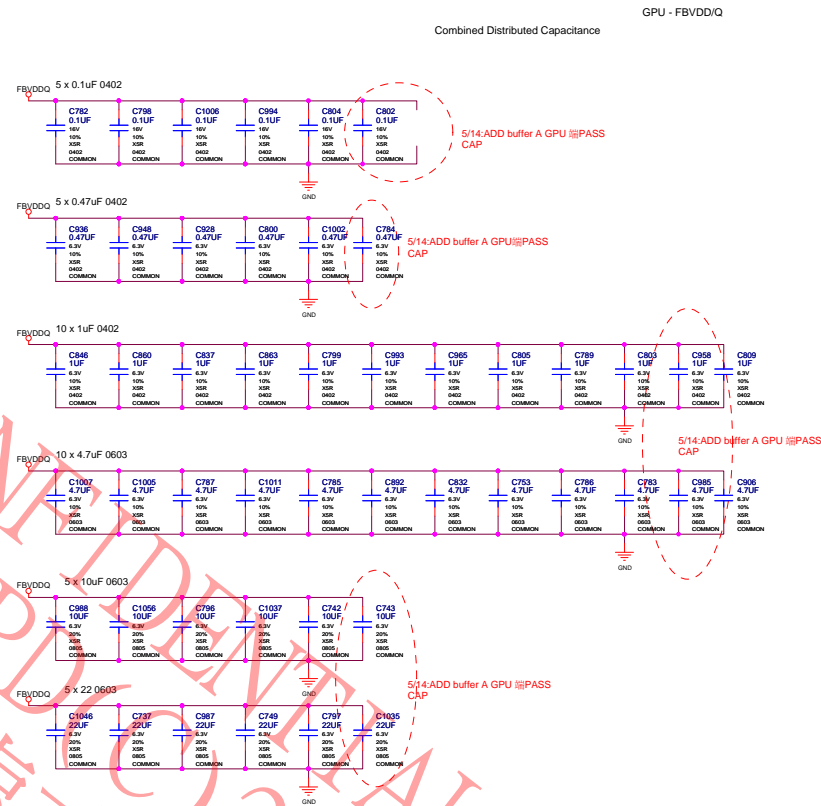
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U23	GND	U143
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U27	GND	U145
U30	GND	U155
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Decoupling: GPU (NVVDD, FBVDDQ)

Decoupling for NVVDD (under GPU)



Decoupling for FBVDDQ (under GPU)



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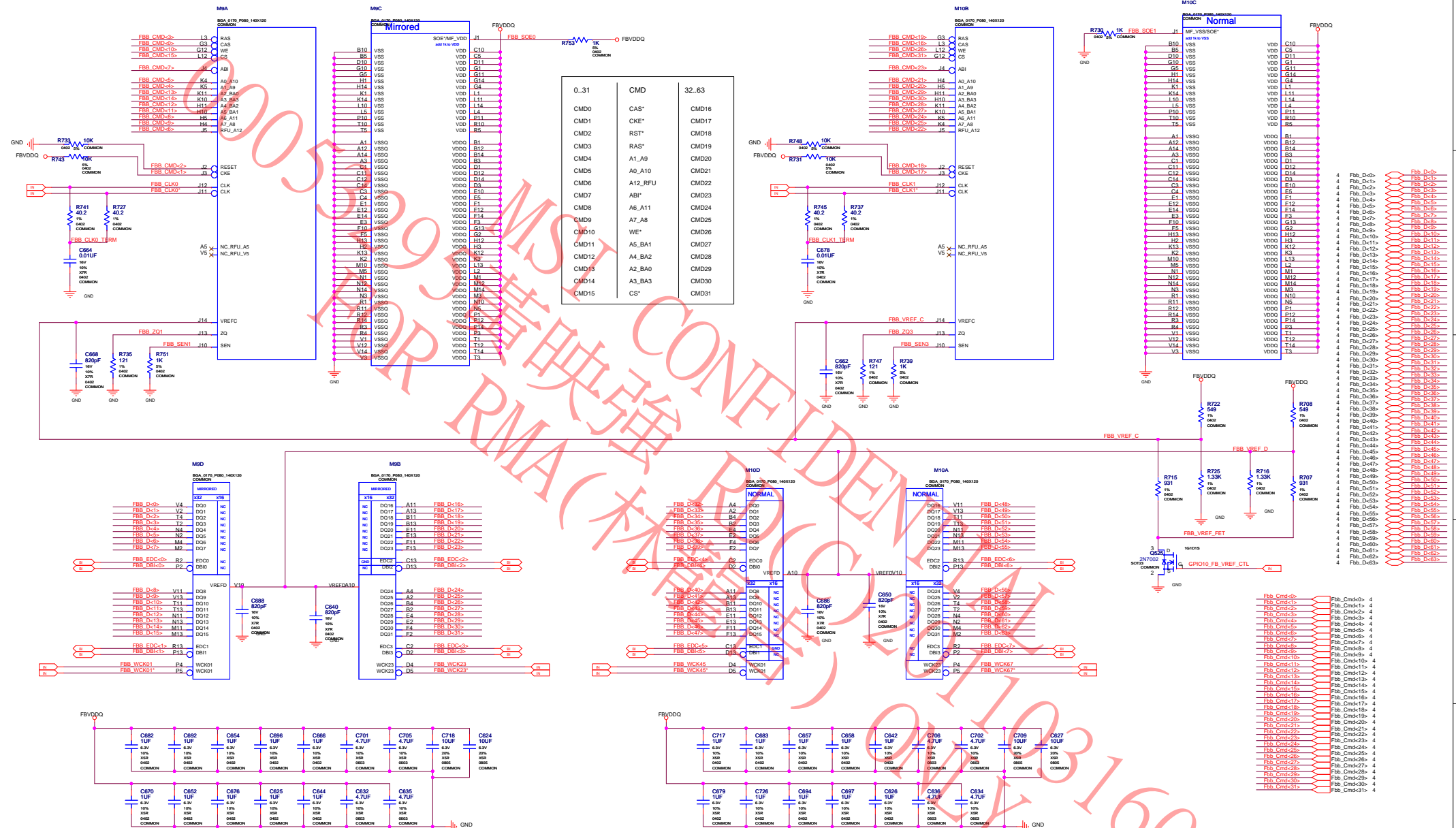


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Framebuffer B: Memory Section

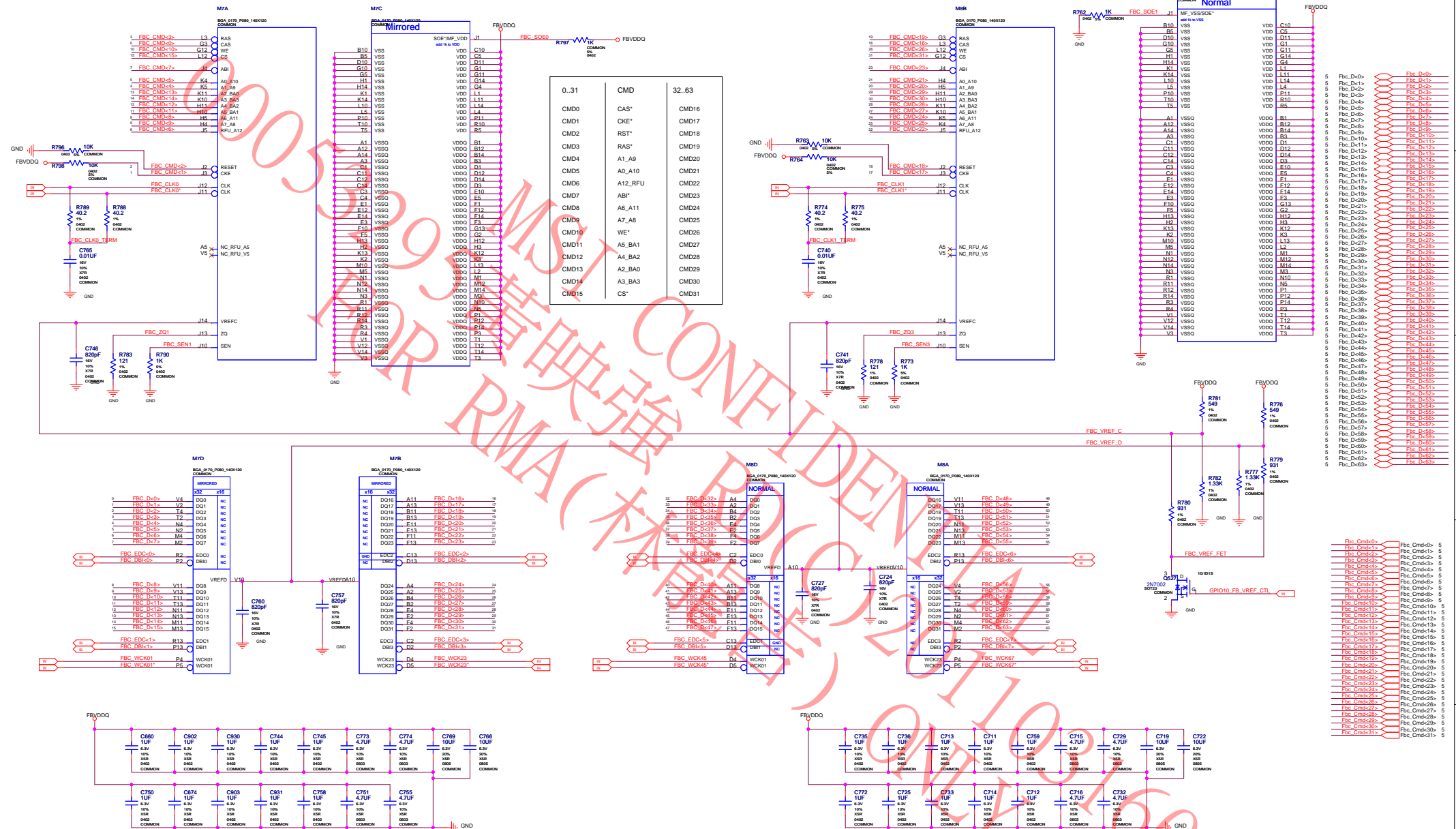
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Framebuffer C: Memory Section

Hynix 32MX32 2000MHZ: 161-0063-100
SAMSUNG 32MX32 2000MHZ: 161-0051-600



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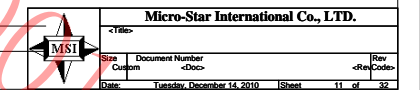
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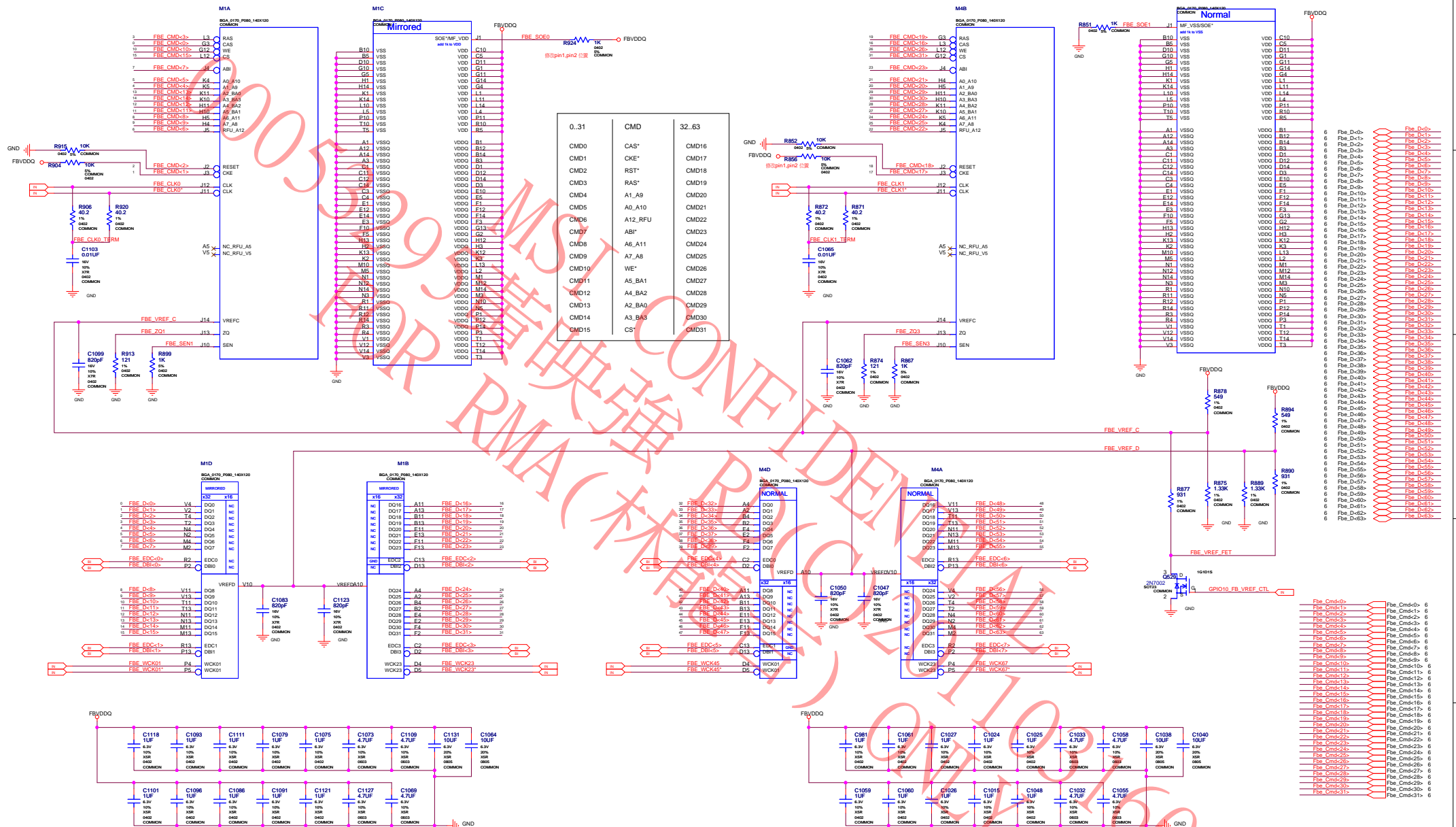
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Hynix 32MX32 2000MHZ: 161-0063-100
SAMSUNG 32MX32 2000MHZ: 161-0051-600



Framebuffer E: Memory Section

SAMSUNG 32MX32 2000MHZ: 161-0051-600



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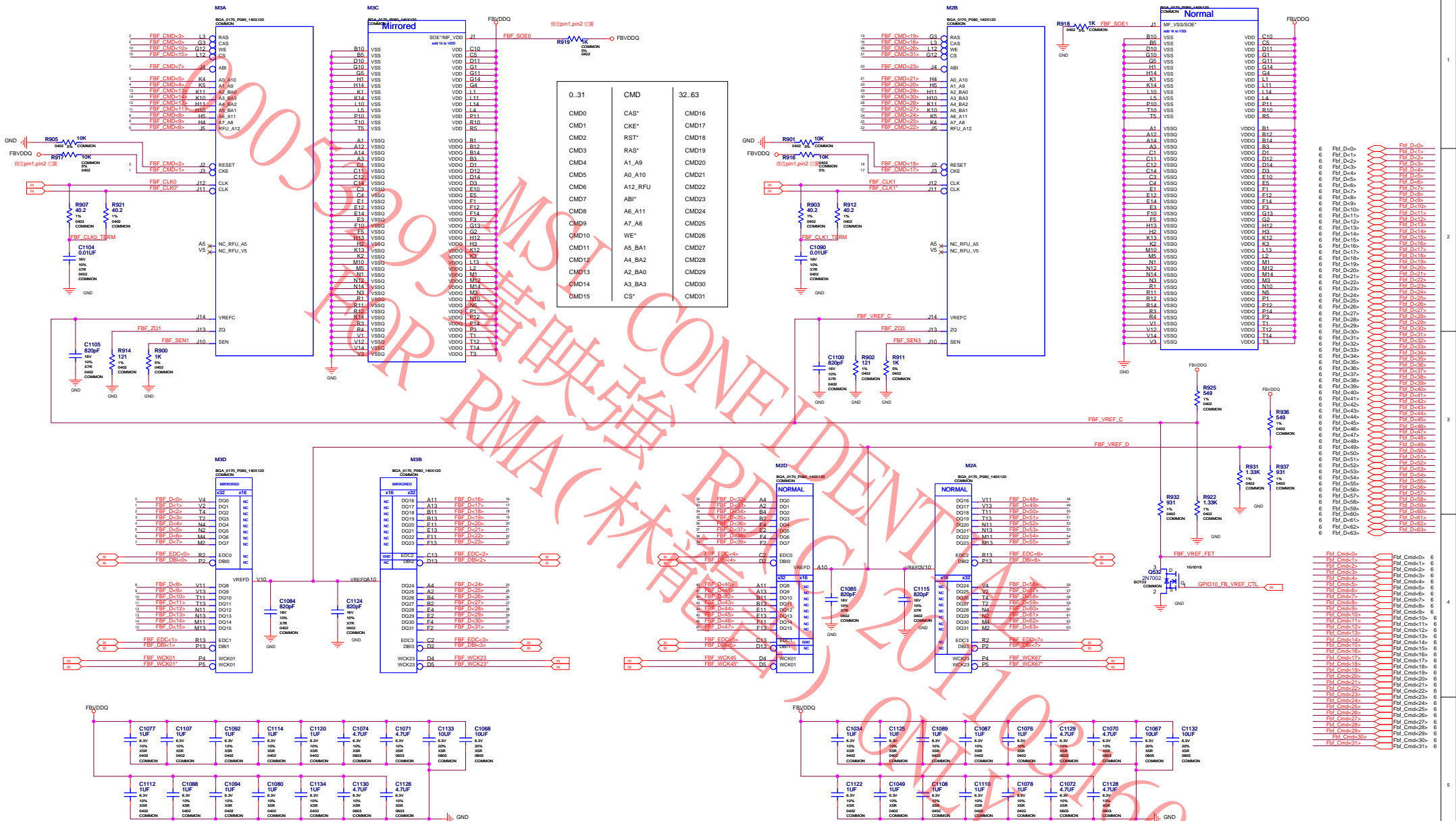
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Date:	Tuesday, December 14, 2010		Sheet	12 of	32

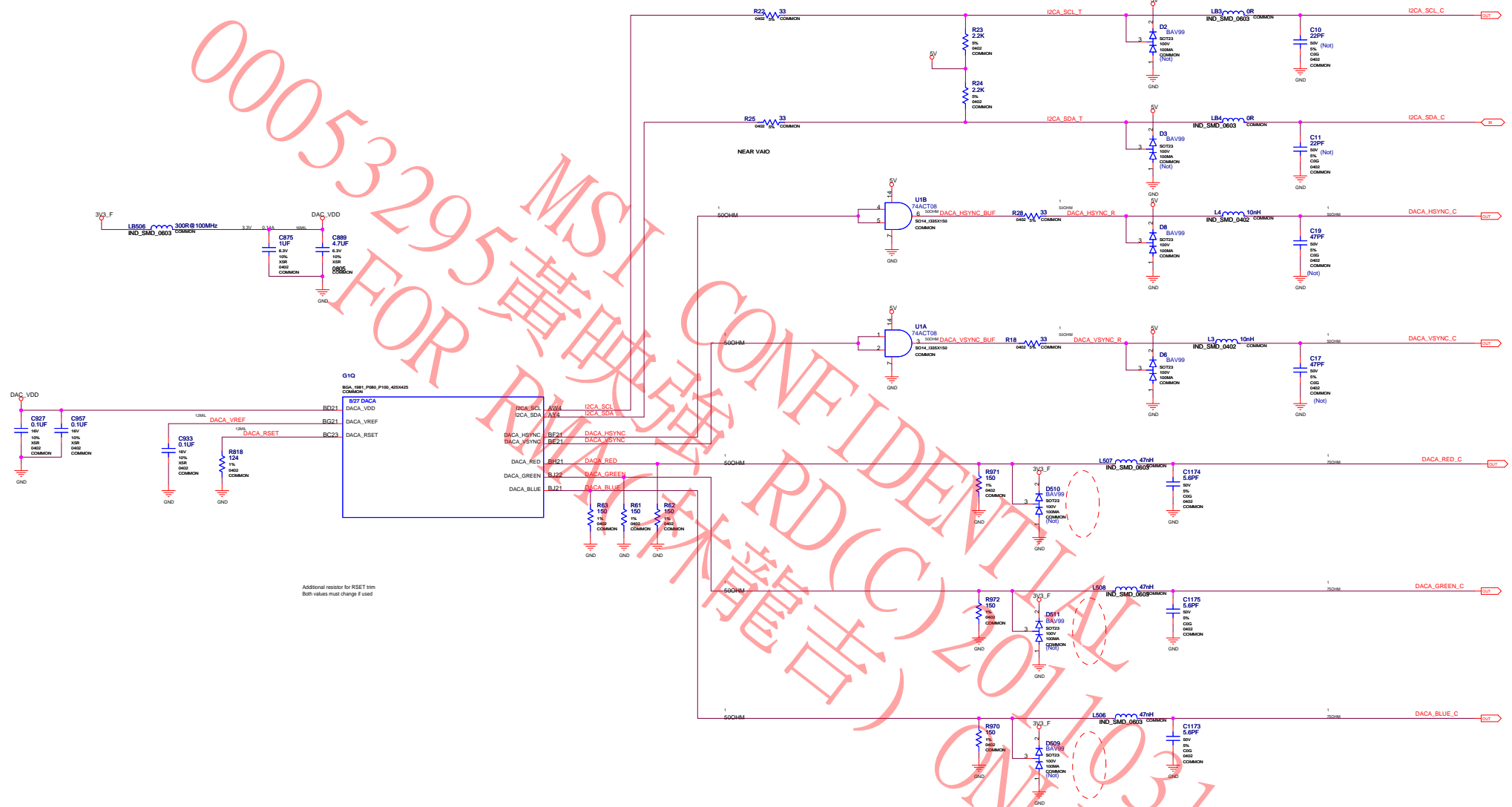
Framebuffer F: Memory Section

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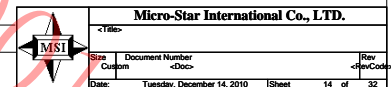


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Framebuffer F: Memory Section

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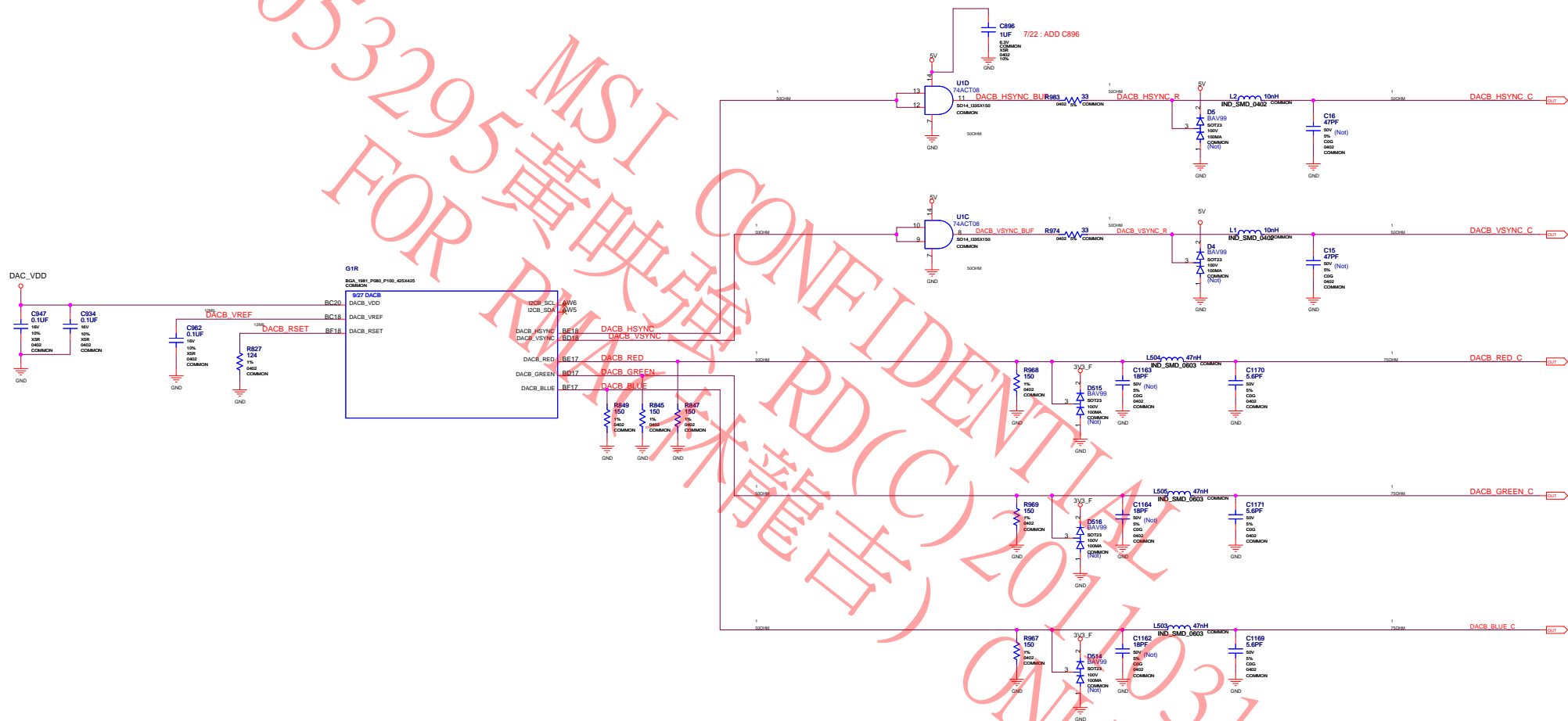


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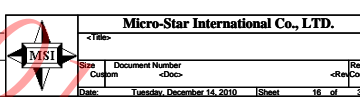
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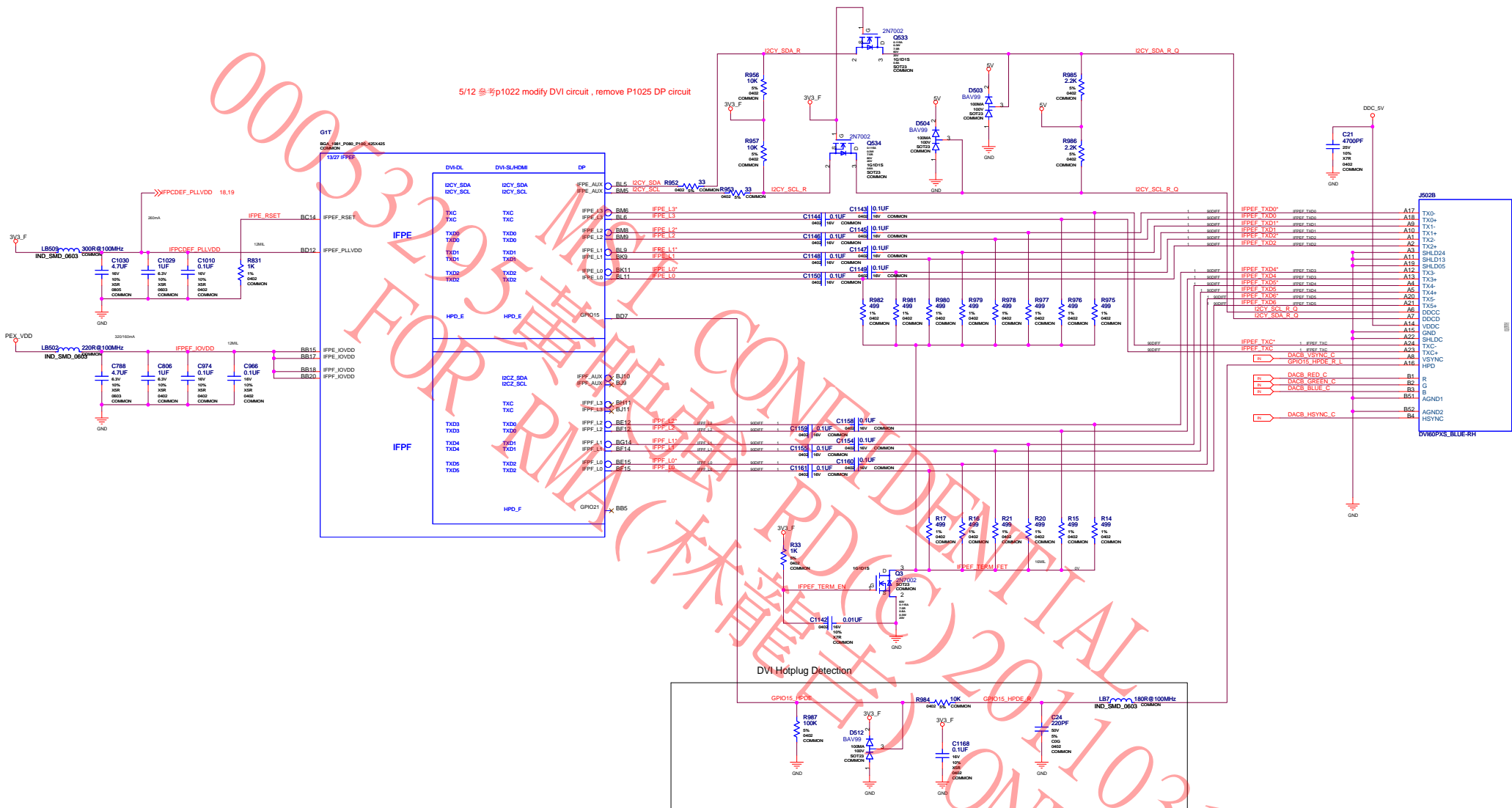
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IFPEF for Middle DVI-I or DP



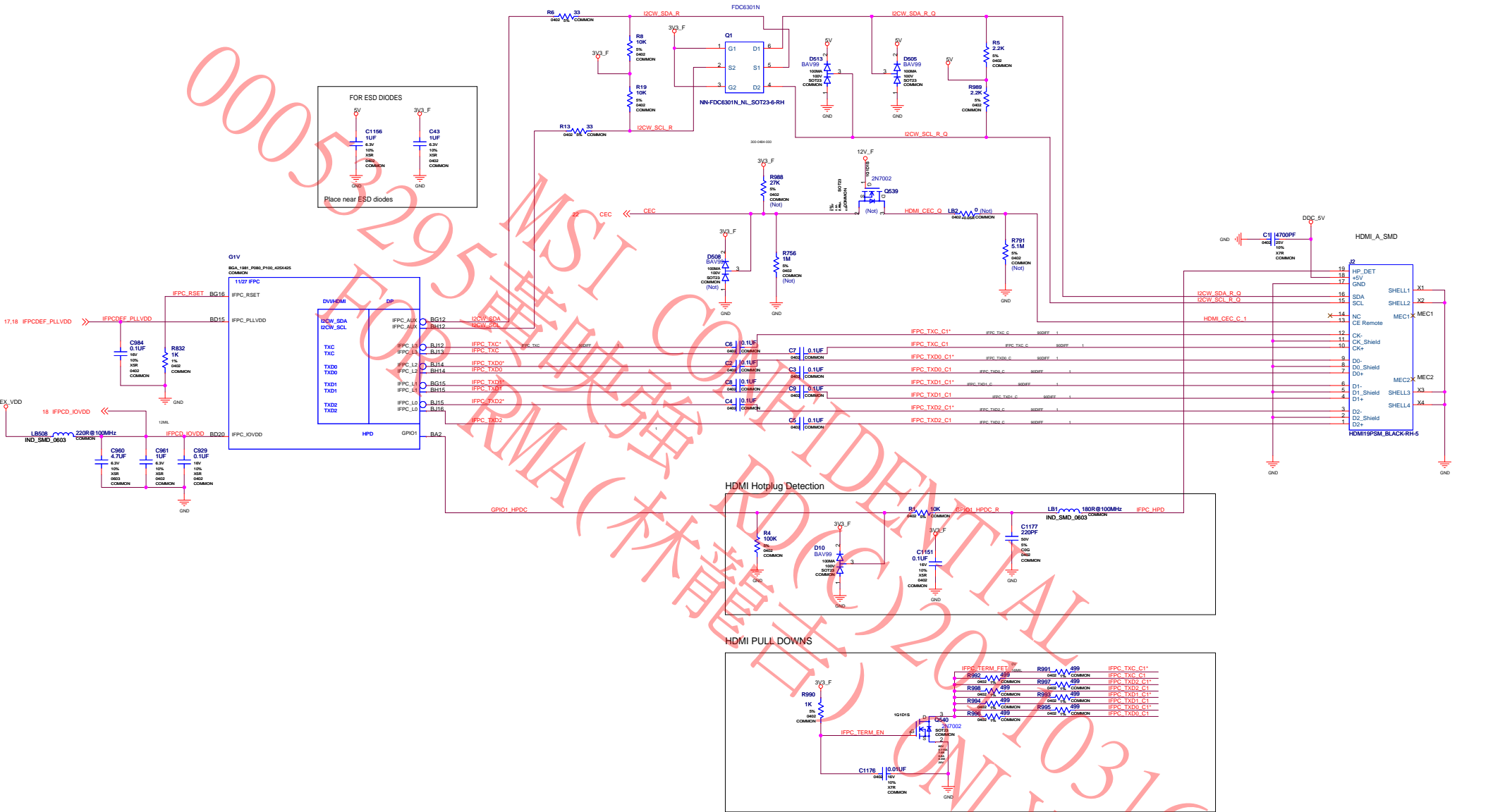
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Micro-Star International Co., LTD.

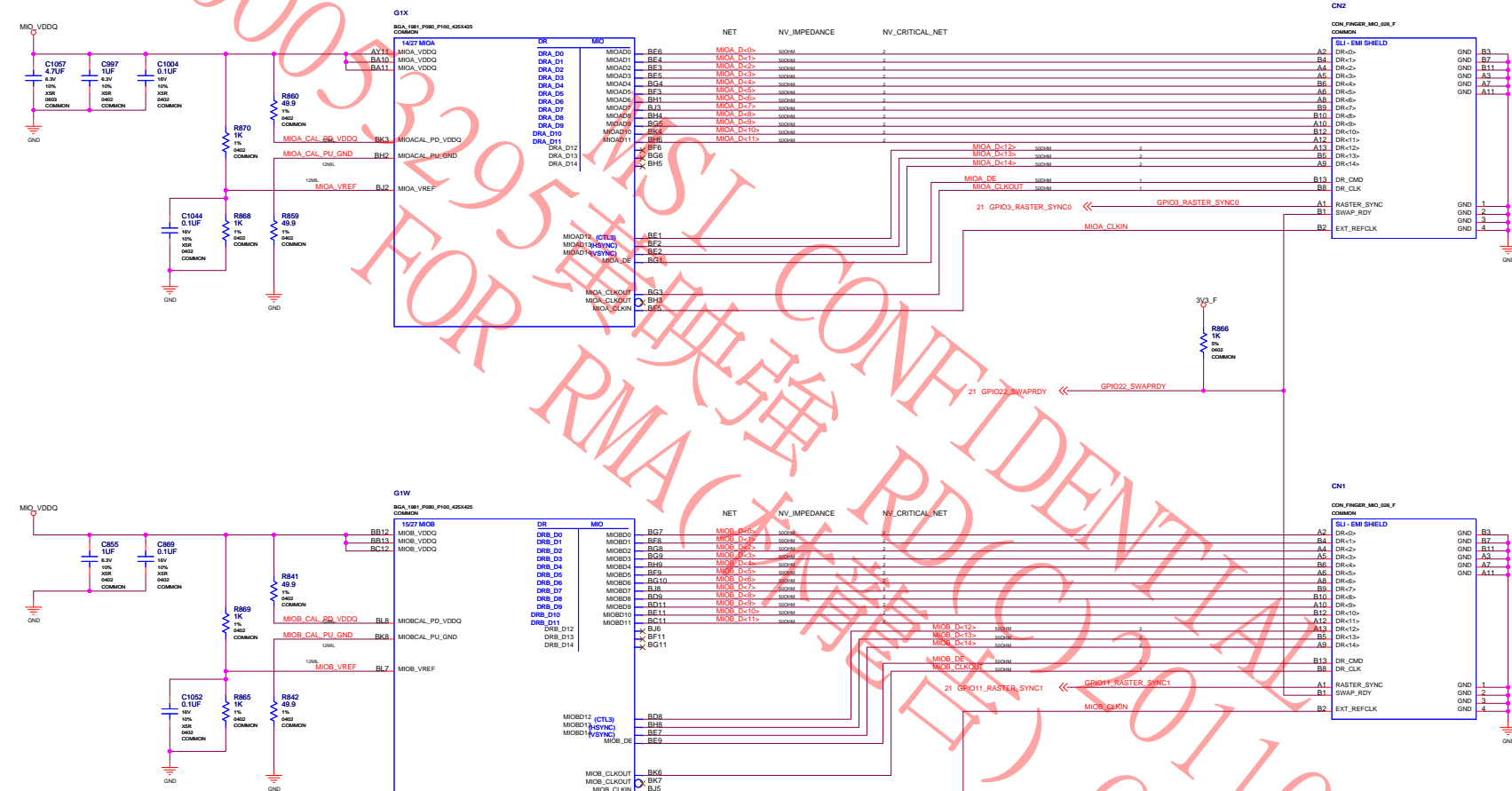


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IFP_C: miniHDMI (NORTH)




Connectors: DR Interface (Dual SLI)



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PAGE DETAIL	Connectors: DR Interface (Dual SLI)

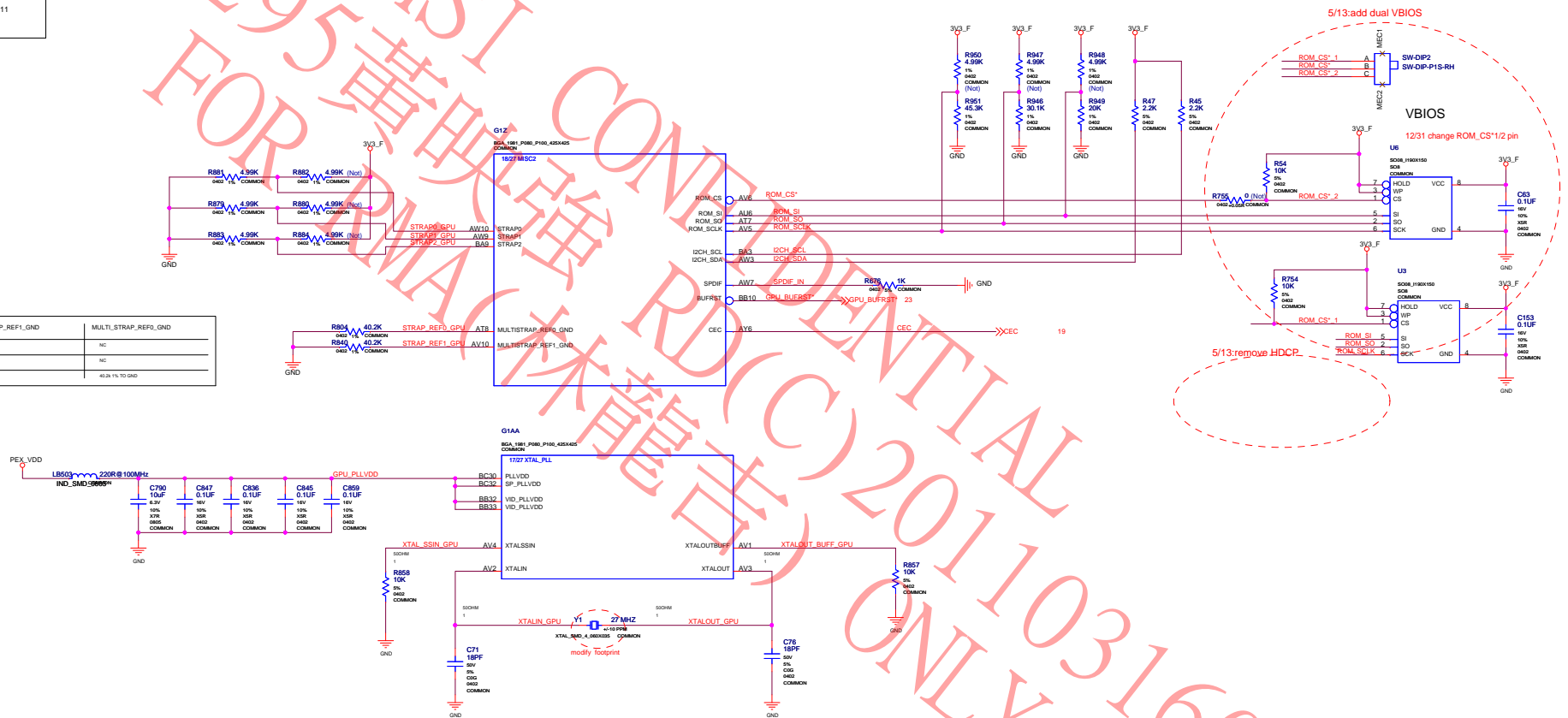
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BIOS ROM, HDCP ROM, STRAPPING OPTIONS


STRAP0	USER_BIT [3..0]	0000 => 5K PD	
STRAP1	3GIO_PADCFG_LUT_ADR	0000 => 5K PD	0000 Desktop
STRAP2	PCI_DEVID [3:0]	0000 => 5K PD	For 0x06C0

	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

	MULTI_STRAP_REF1_GND	MULTI_STRAP_REF0_GND
BINARY PRODUCTION	40.2k 1% TO GND	NC
BINARY BRINGUP	NC	NC
MULTILEVEL	40.2k 1% TO GND	40.2k 1% TO GND



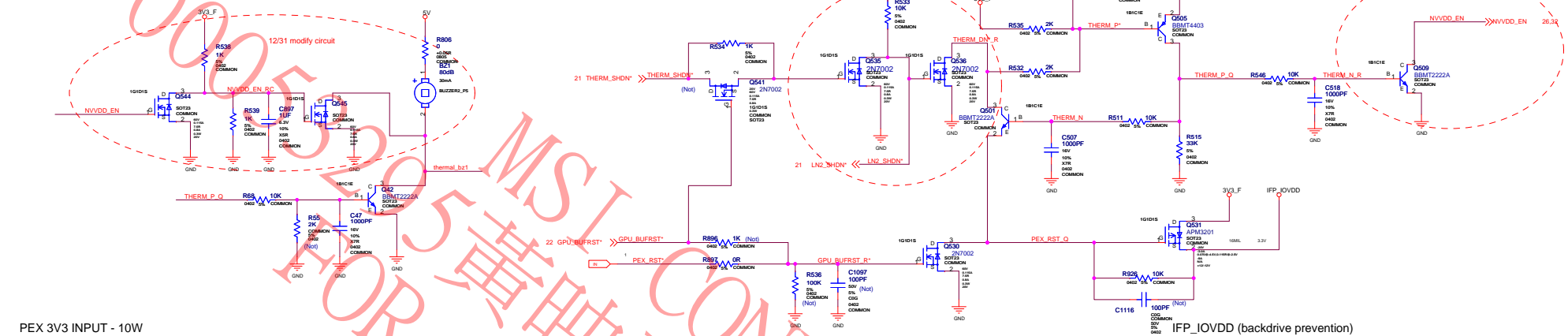
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PAGE DETAIL	BIOS ROM, HDCP ROM, STRAPPING OPTIONS

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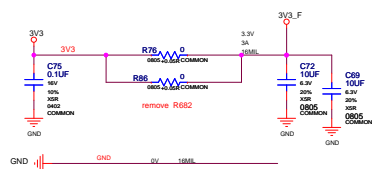
Power Supply: PEX PS INPUT,DETECTION LOGIC,THERM SHUTDOWN LATCH / IFP_IOVDD

Connector Power State Table

2x3 Connector	Power	STATE
Connected	150W	Full Perf
Not Connected	75W	Board Off

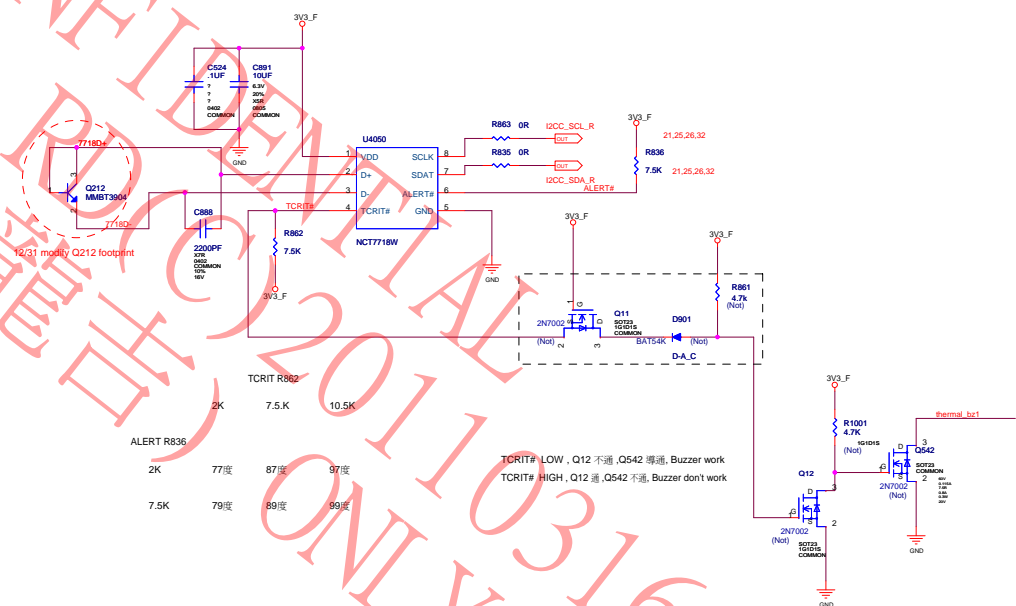
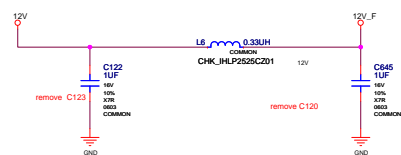


PEX 3V3 INPUT - 10W



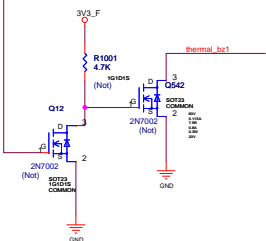
MUST BE ATTACHED AND POWERED TO START BOARD

PEX_12V INPUT - 66W

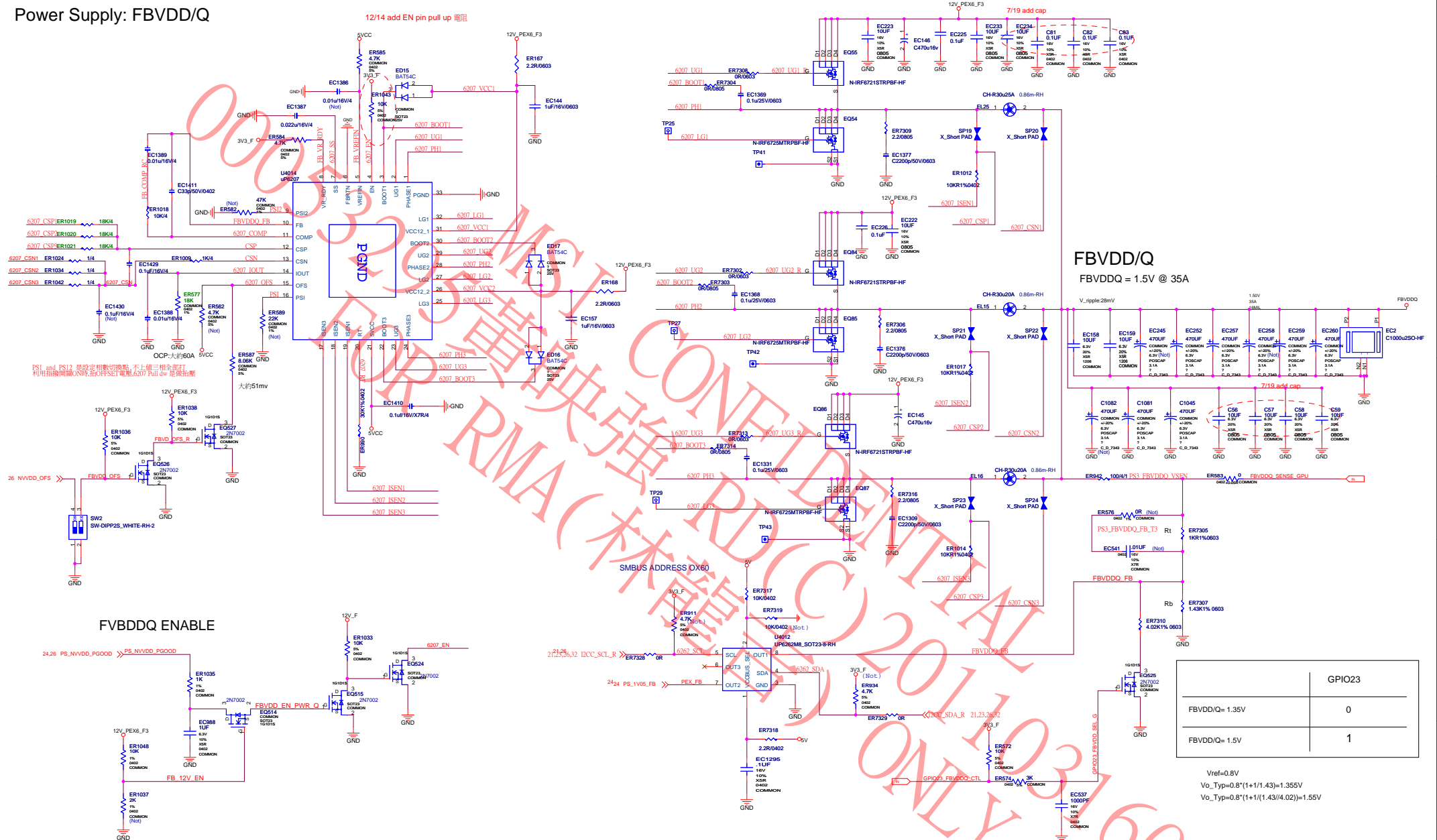


ALERT R836			
2K	77度	87度	97度
7.5K	79度	89度	99度

TCRIT# LOW , Q12 不通 ,Q542 導通, Buzzer work
TCRIT# HIGH , Q12 通 ,Q542 不通, Buzzer don't work



Power Supply: FBVDD/Q



	GPIO23
FBVDD/Q= 1.35V	0
FBVDD/Q= 1.5V	1

Vref=0.8V

$$V_{o_Typ} = 0.8 \cdot (1 + 1/1.43) = 1.355V$$
$$V_{o_Typ} = 0.8 * (1 + 1 / (1.43 / 4.02)) = 1.55V$$


VID Table

The diagram illustrates the power management circuitry for a 28nm ARMv8 SoC. It shows the internal structure of the PMIC, including the NVDD, VDD, and VDDIO rails, and their connections to the SoC pins. Key components include resistors (ER1000, ER1001, etc.), capacitors (C1000, C1001, etc.), and a PMIC block (U4064). The diagram is labeled with 'SMBUS ADDRESS 0X8C' and 'up6208 要上R1072'. It also includes a table of components and their values, and a note about the total load current.

Component List:

Ref	Value	Ref	Value
ER1000	10K/04	ER1001	10K/04
ER1002	10K/04	ER1003	10K/04
ER1004	10K/04	ER1005	10K/04
ER1006	10K/04	ER1007	10K/04
ER1008	10K/04	ER1009	10K/04
ER1010	10K/04	ER1011	10K/04
ER1012	10K/04	ER1013	10K/04
ER1014	10K/04	ER1015	10K/04
ER1016	10K/04	ER1017	10K/04
ER1018	10K/04	ER1019	10K/04
ER1020	10K/04	ER1021	10K/04
ER1022	10K/04	ER1023	10K/04
ER1024	10K/04	ER1025	10K/04
ER1026	10K/04	ER1027	10K/04
ER1028	10K/04	ER1029	10K/04
ER1030	10K/04	ER1031	10K/04
ER1032	10K/04	ER1033	10K/04
ER1034	10K/04	ER1035	10K/04
ER1036	10K/04	ER1037	10K/04
ER1038	10K/04	ER1039	10K/04
ER1040	10K/04	ER1041	10K/04
ER1042	10K/04	ER1043	10K/04
ER1044	10K/04	ER1045	10K/04
ER1046	10K/04	ER1047	10K/04
ER1048	10K/04	ER1049	10K/04
ER1050	10K/04	ER1051	10K/04
ER1052	10K/04	ER1053	10K/04
ER1054	10K/04	ER1055	10K/04
ER1056	10K/04	ER1057	10K/04
ER1058	10K/04	ER1059	10K/04
ER1060	10K/04	ER1061	10K/04
ER1062	10K/04	ER1063	10K/04
ER1064	10K/04	ER1065	10K/04
ER1066	10K/04	ER1067	10K/04
ER1068	10K/04	ER1069	10K/04
ER1070	10K/04	ER1071	10K/04
ER1072	10K/04	ER1073	10K/04
ER1074	10K/04	ER1075	10K/04
ER1076	10K/04	ER1077	10K/04
ER1078	10K/04	ER1079	10K/04
ER1080	10K/04	ER1081	10K/04
ER1082	10K/04	ER1083	10K/04
ER1084	10K/04	ER1085	10K/04
ER1086	10K/04	ER1087	10K/04
ER1088	10K/04	ER1089	10K/04
ER1090	10K/04	ER1091	10K/04
ER1092	10K/04	ER1093	10K/04
ER1094	10K/04	ER1095	10K/04
ER1096	10K/04	ER1097	10K/04
ER1098	10K/04	ER1099	10K/04
ER1100	10K/04	ER1101	10K/04
ER1102	10K/04	ER1103	10K/04
ER1104	10K/04	ER1105	10K/04
ER1106	10K/04	ER1107	10K/04
ER1108	10K/04	ER1109	10K/04
ER1110	10K/04	ER1111	10K/04
ER1112	10K/04	ER1113	10K/04
ER1114	10K/04	ER1115	10K/04
ER1116	10K/04	ER1117	10K/04
ER1118	10K/04	ER1119	10K/04
ER1120	10K/04	ER1121	10K/04
ER1122	10K/04	ER1123	10K/04
ER1124	10K/04	ER1125	10K/04
ER1126	10K/04	ER1127	10K/04
ER1128	10K/04	ER1129	10K/04
ER1130	10K/04	ER1131	10K/04
ER1132	10K/04	ER1133	10K/04
ER1134	10K/04	ER1135	10K/04
ER			

Tota Load Current : $L/DCR \cdot K = R_s \cdot C_{sum}/L$
K大約1.2~1.8倍(以1.4)

Imax1 R愈小, 單相數電流越大
2K \rightarrow 5.1K 40A

並聯提高PWM CLK 277K-->400KHz

Channel Current: $R_s \cdot C_s = K \cdot L / DCR$
K大約2~10(以5)

ER1126	3KR150402	(NC)	PWM_OUT12
ER1127	3KR150402	(NC)	PWM_OUT12
ER1128	3KR150402	(NC)	PWM_OUT34
ER1129	3KR150402	(NC)	PWM_OUT34
ER1130	3KR150402	(NC)	PWM_OUT56
ER1131	3KR150402	(NC)	PWM_OUT56
ER1132	3KR150402	(NC)	PWM_OUT78
ER1133	3KR150402	(NC)	PWM_OUT78
ER1134	3KR150402	(NC)	PWM_OUT9A
ER1135	3KR150402	(NC)	PWM_OUT9A
ER1136	3KR150402	(NC)	PWM_OUTBC
ER1137	3KR150402	(NC)	PWM_OUTBC

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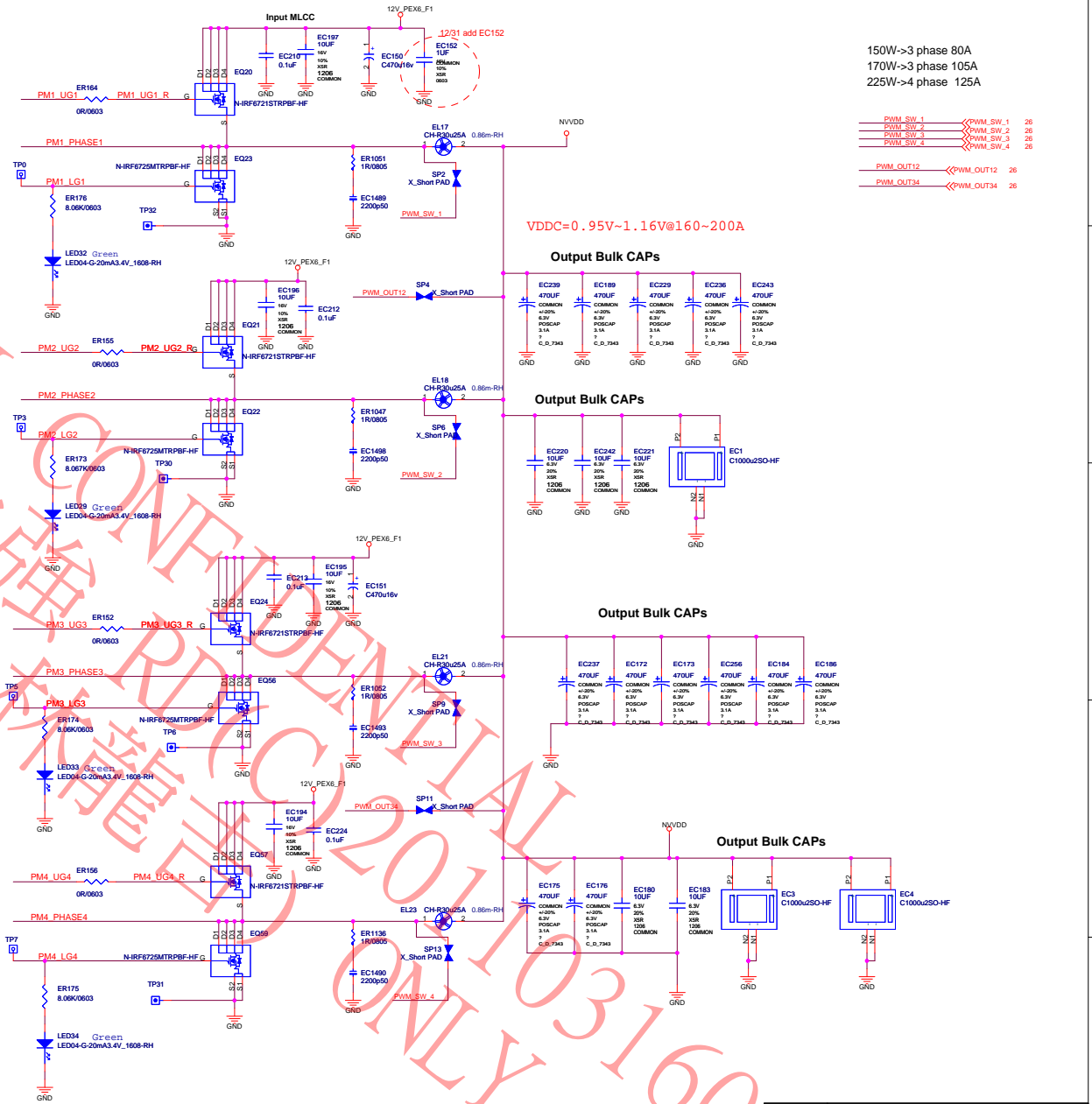
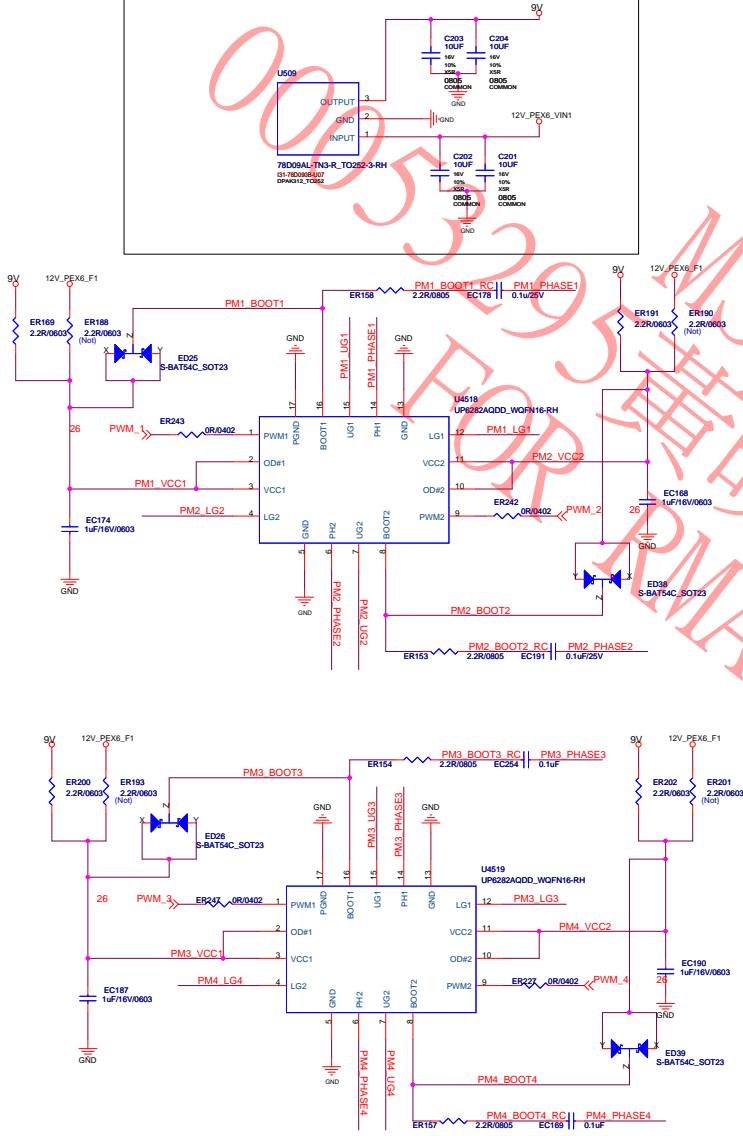


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Power Supply: NVVDD PHASE 1,~4

9V POWER SUPPLY FOR DRIVER

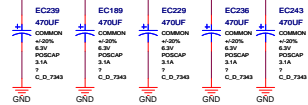


150W->3 phase 80A
170W->3 phase 105A
225W->4 phase 125A

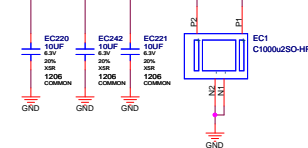
PWM_SW_1 <-> PWM_SW_1 26
PWM_SW_2 <-> PWM_SW_2 26
PWM_SW_3 <-> PWM_SW_3 26
PWM_SW_4 <-> PWM_SW_4 26
PWM_OUT12 <-> PWM_OUT12 26
PWM_OUT34 <-> PWM_OUT34 26

VDDC=0.95V~1.16V@160~200A

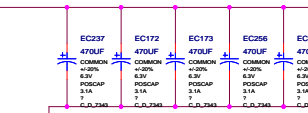
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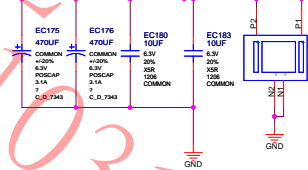
Output Bulk CAPs



Output Bulk CAPs



Output Bulk CAPs

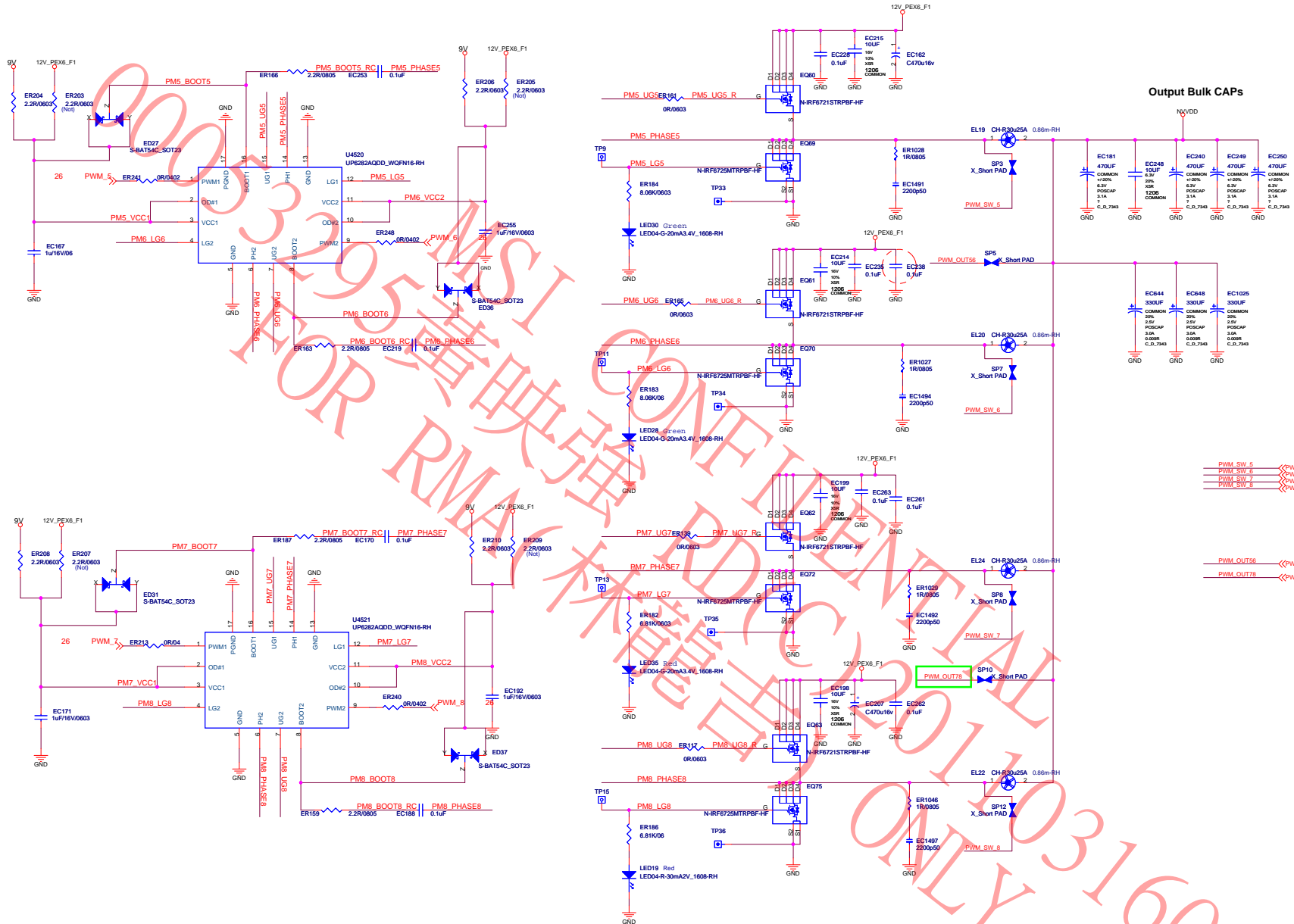


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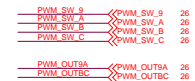
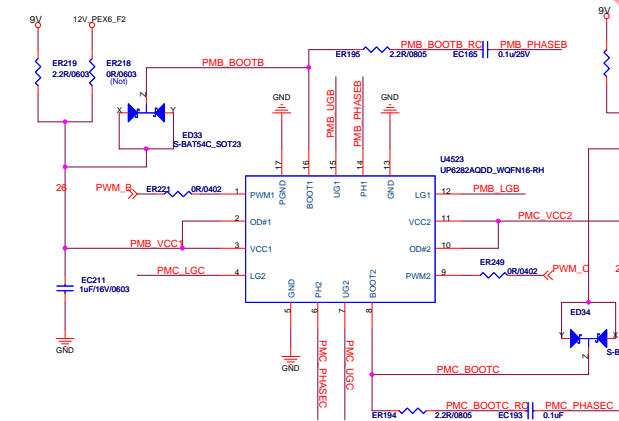
Power Supply: NVVDD PHASE 5-8

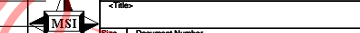


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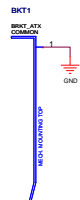


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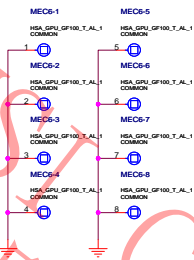
Manual BOM Change

Bracket and Assembly

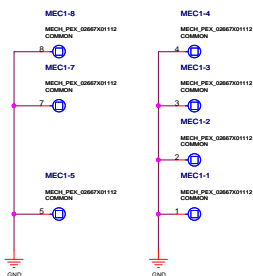
Bracket with DVI, DP, MiniDVI 151-10001-0001-000
Bracket with DVI, DP, MiniDVI 151-10001-0002-000



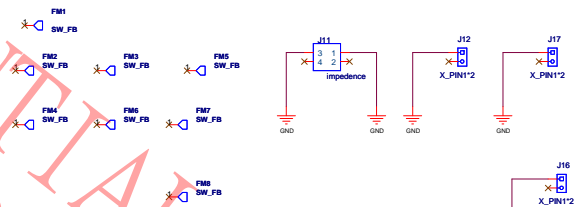
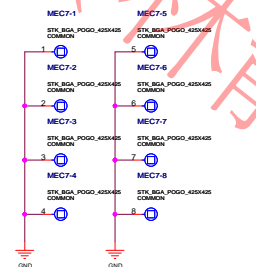
GPU Stiffener



THERMAL/MECHANICAL HOLES



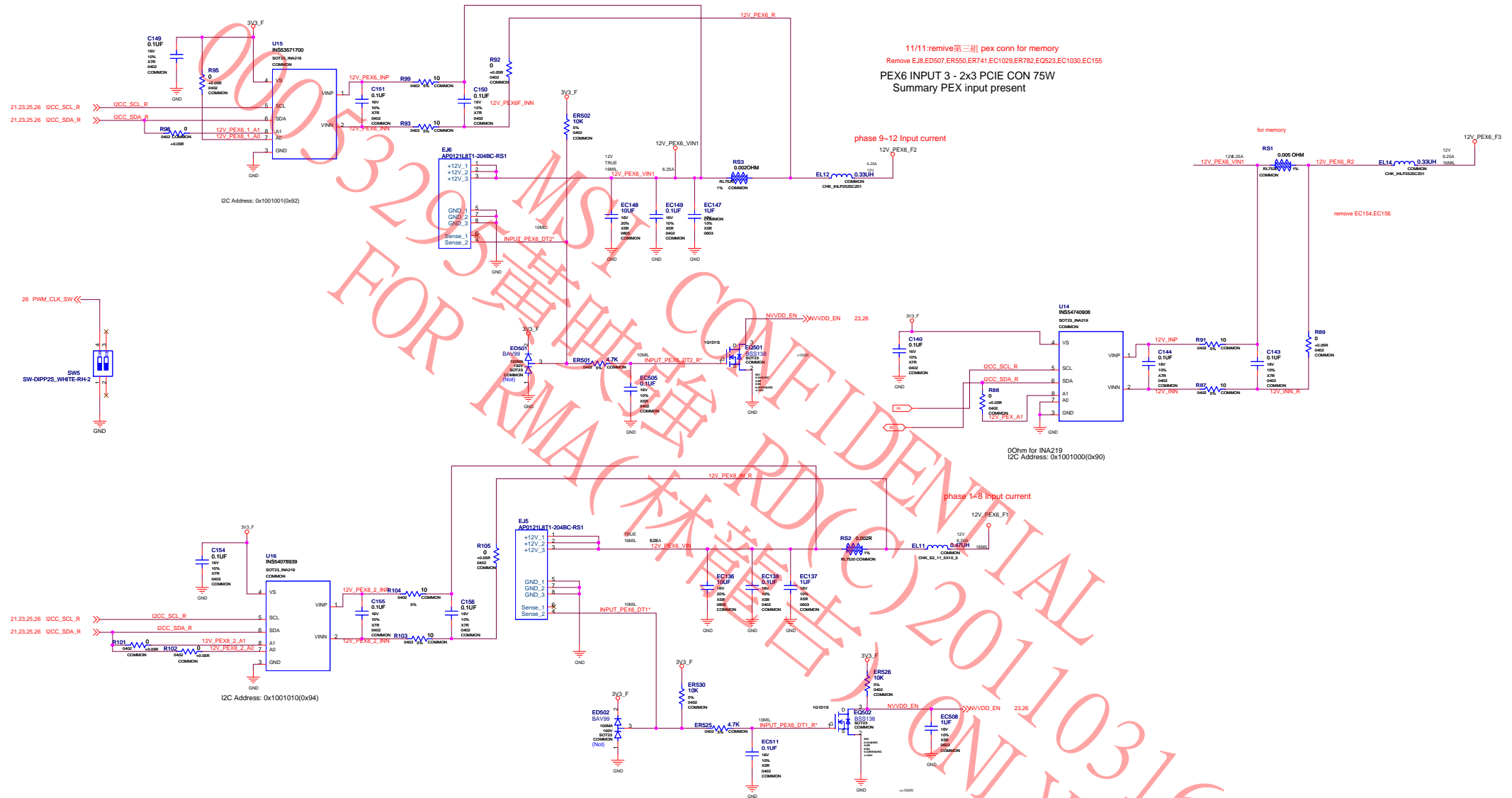
BOARD STIFFENER



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Power Input



ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
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