P2010-A02

75W/100W GK107/GF108 128-BIT GDDR5 in x32/x16 MODE
DVI-I-DL + DVI-D-DL/HDMI +mHDMI/DP

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2012/07/05 MS-V280-1.0 changed list

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14	Remove colay HDMI (J5)
17	Remove 2pin fan control,add 4pin fan control X2,remove all bumper
18	Romove U501 PEX_VDD / U503 PEX_PLL / U3
21	Change FBVDDQ PWM to UP1529
21	Add PSI control circuit
22	Change PWM to 4-phase (ON Semiconductor/NCP5395GMNR2G)
25	Add 6262 voltage control circuit,thermal shutdown circuit and NVVDD power sequence

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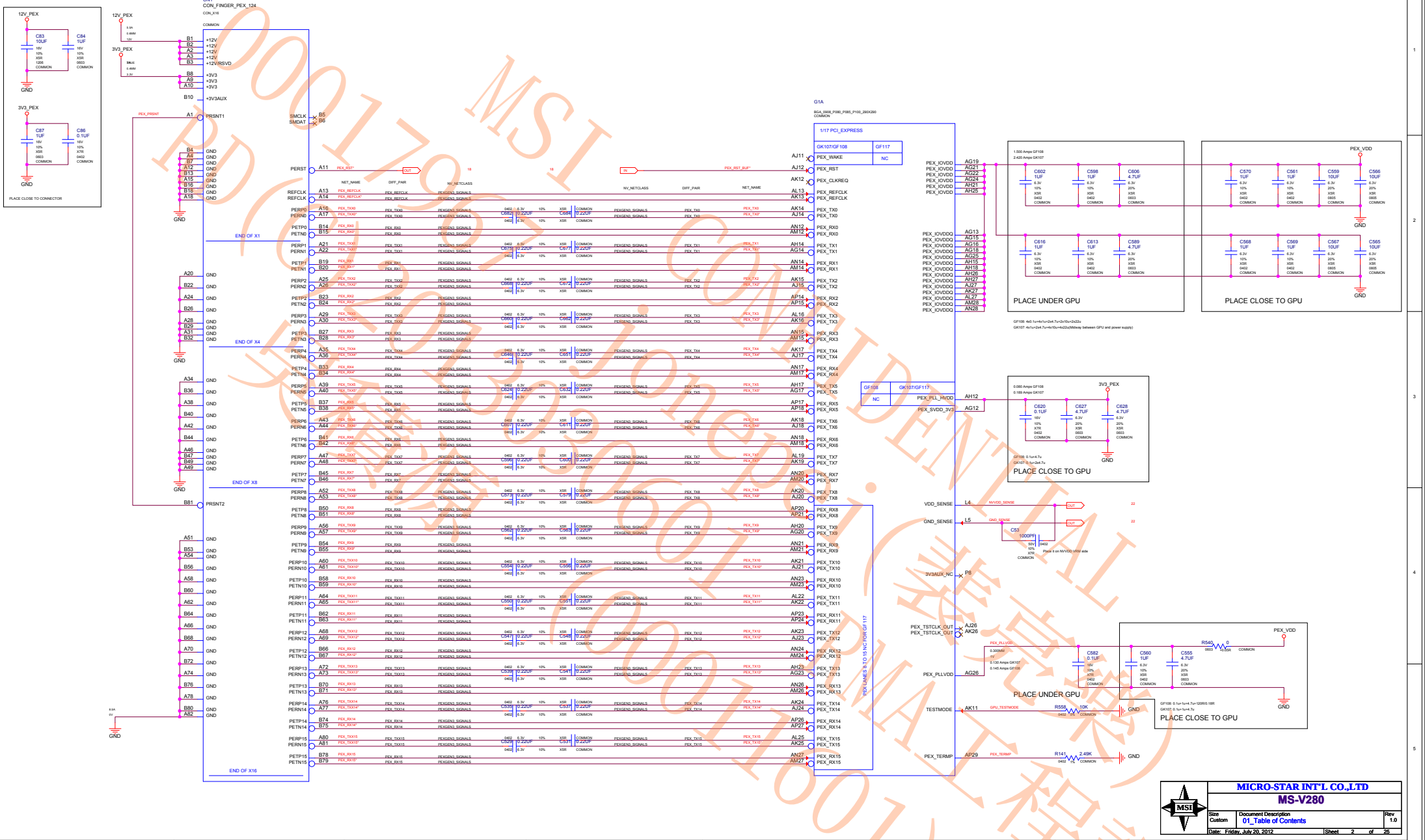
PCI Express


CN1
CON_FINGER_PEX_124
12V_PEX
3V3_PEX
PRSNT1
PRSNT2
PERST
REFCLK
PERP0
PERN0
PETP0
PETN0
END OF X1
END OF X4
END OF X8
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G1A
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PEX_WAKE
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PEX_CLKREQ
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PEX_TX0
PEX_RX0
PEX_IOVDD
PEX_IOVDDQ
PEX_PLL_HVDD
PEX_SVDD_3V3
VDD_SENSE
GND_SENSE
3V3AUX_NC
PEX_TSTCLK_OUT
PEX_PLLVDD
TESTMODE
PEX_TERMP
PLACE UNDER GPU
PLACE CLOSE TO GPU
PLACE CLOSE TO CONNECTOR
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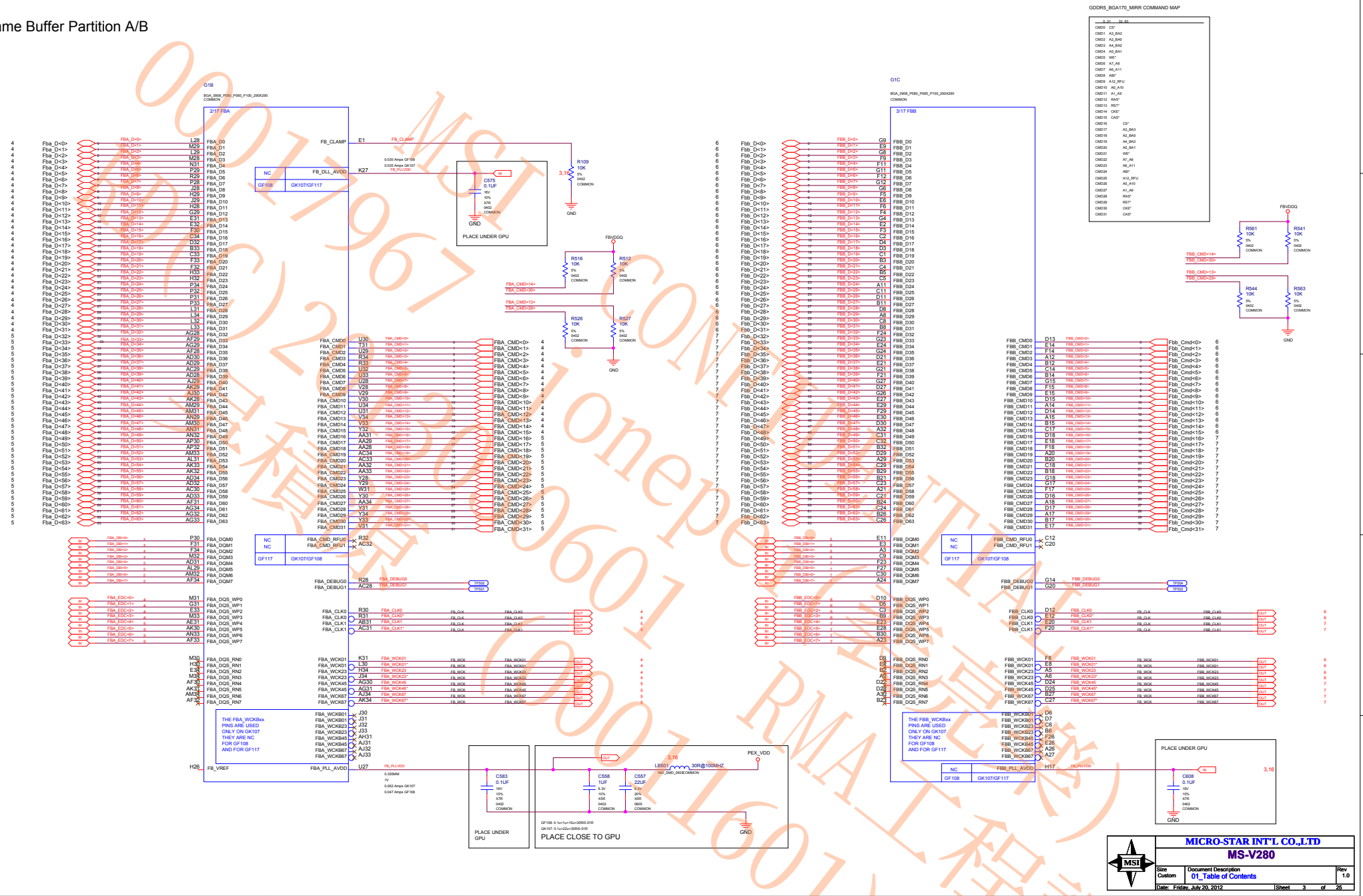
GPU Frame Buffer Partition A/B



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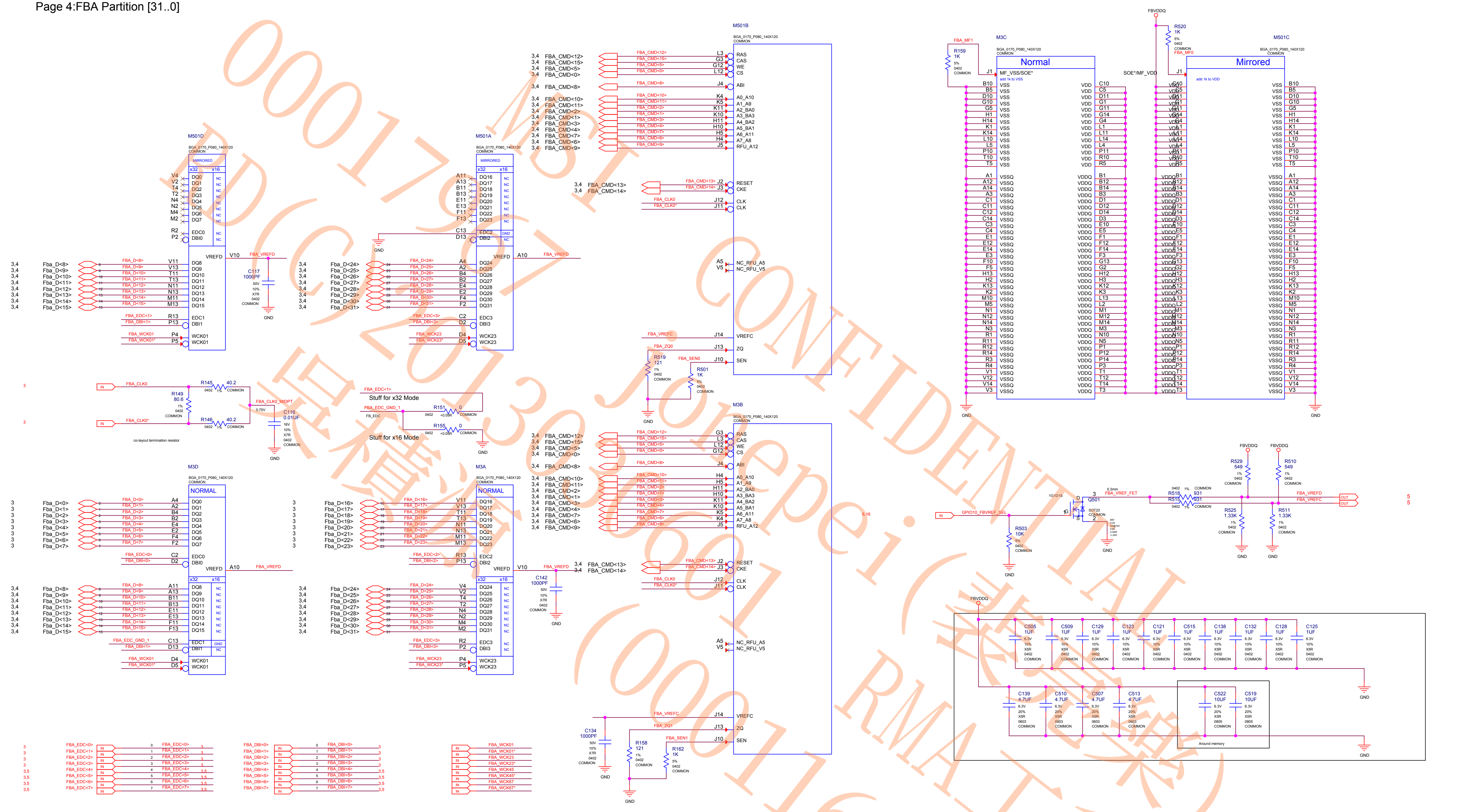
Page 4:FBA Partition [31..0]



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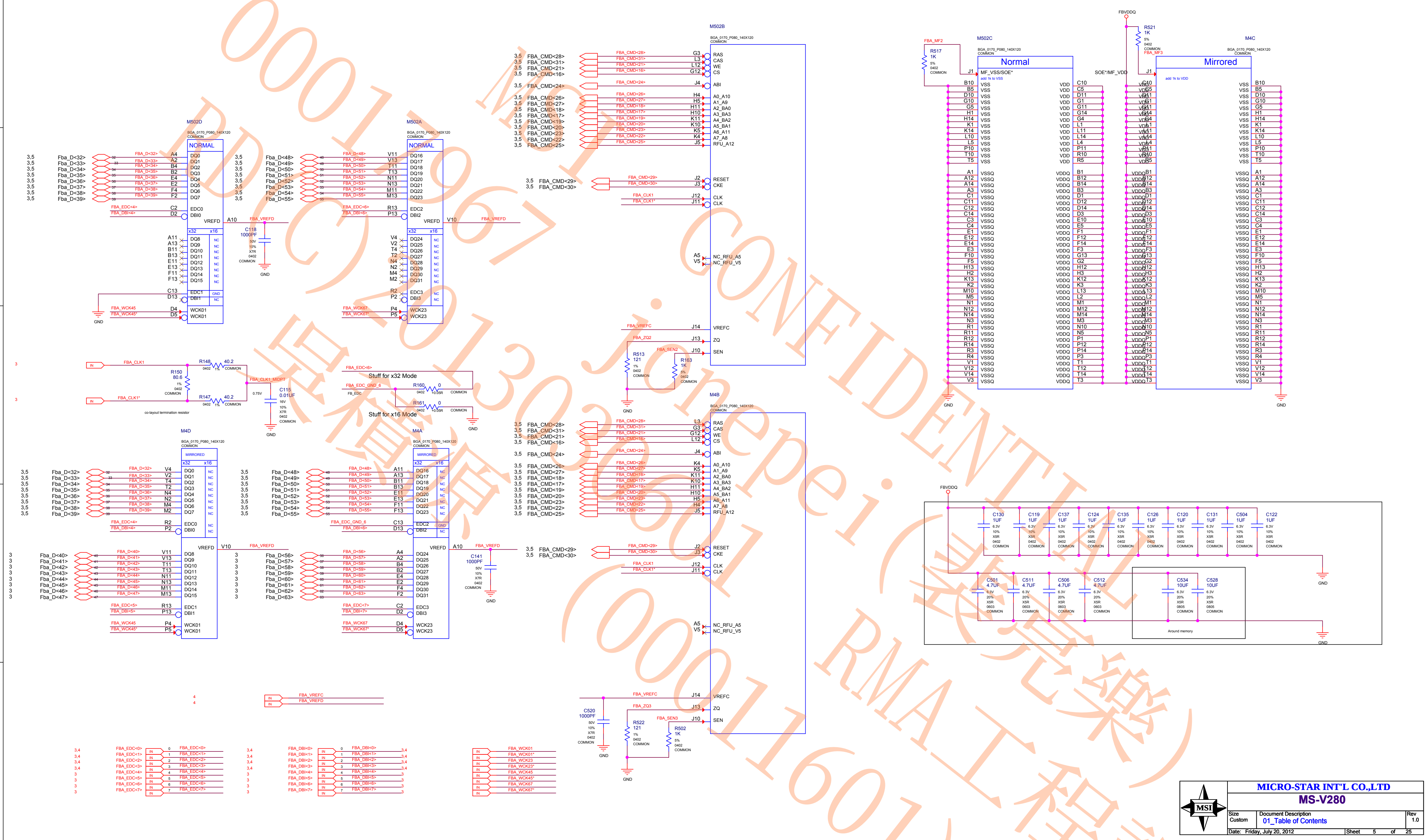
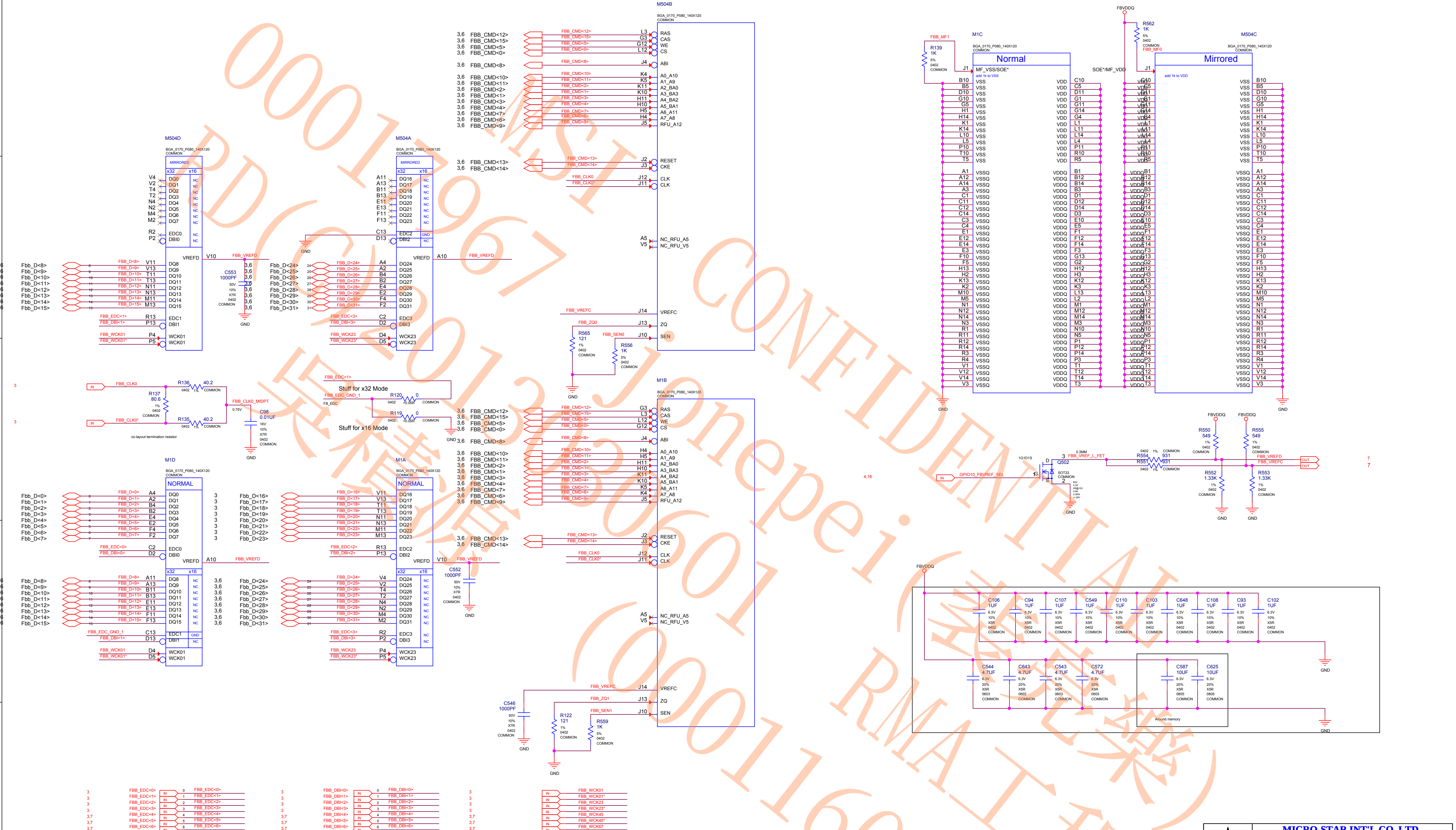
Page 5:FBA Partition[63..32]



Page 6:FBB Partition [31..0]



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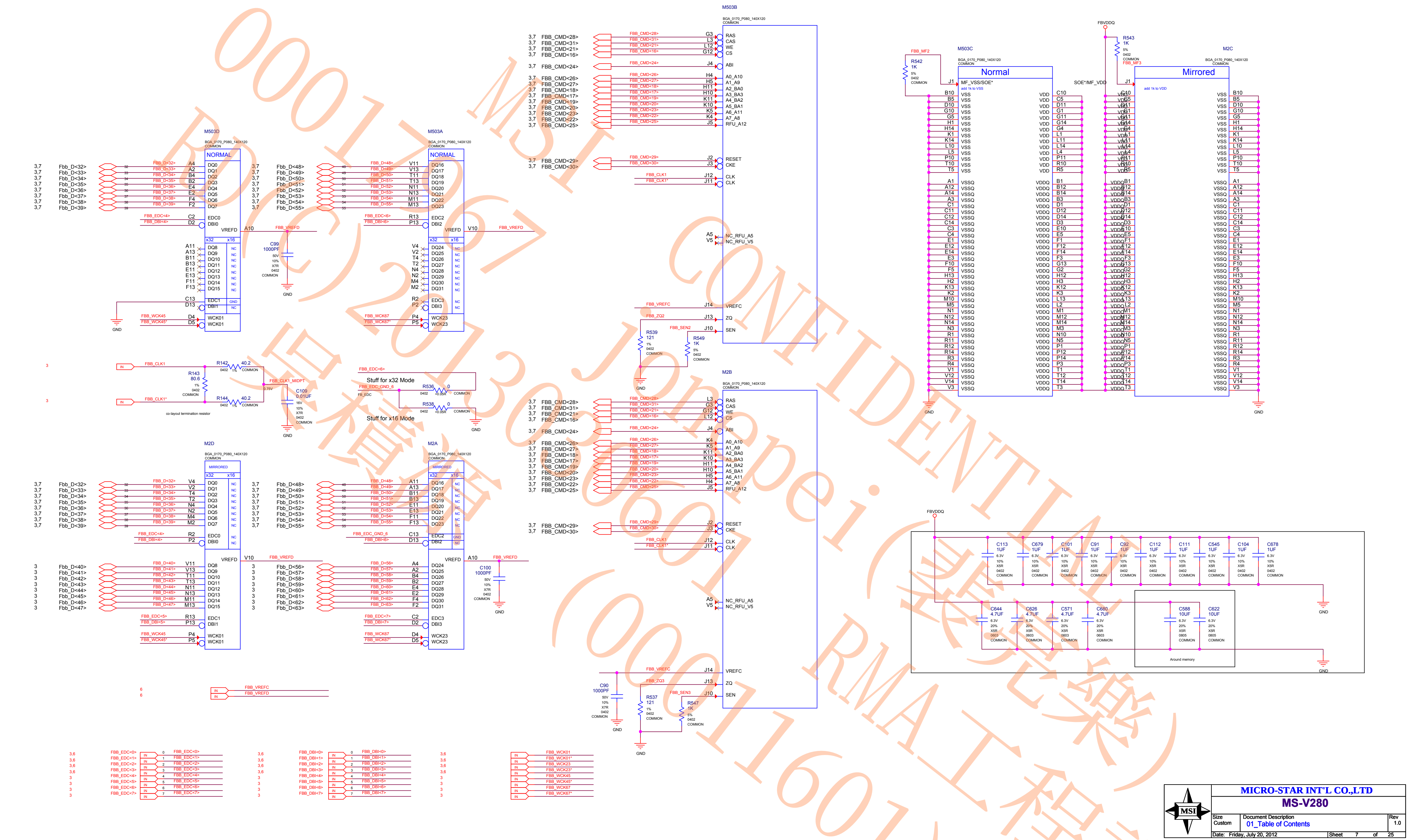
Page 7:FBB Partition [63..32]



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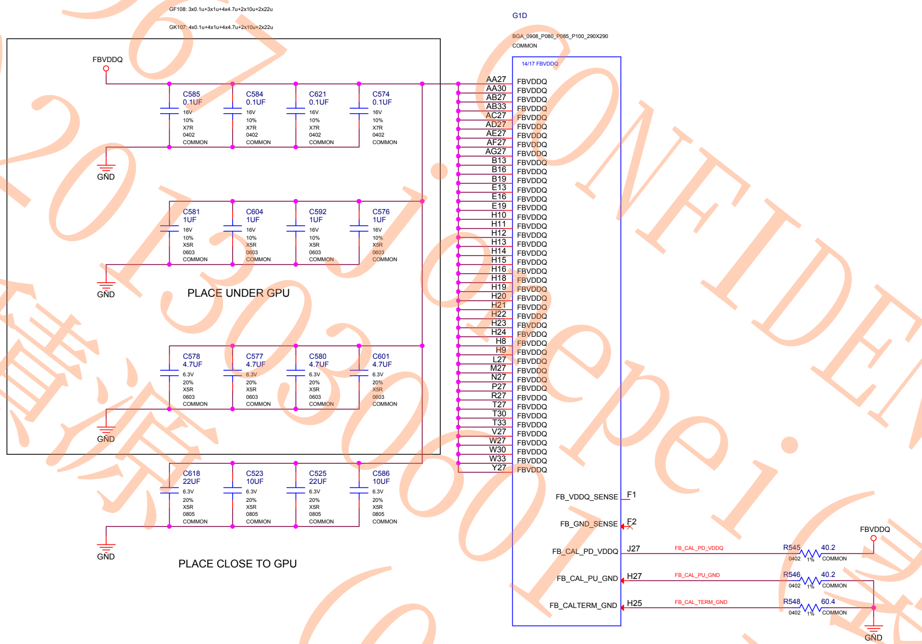
FB Decoupling



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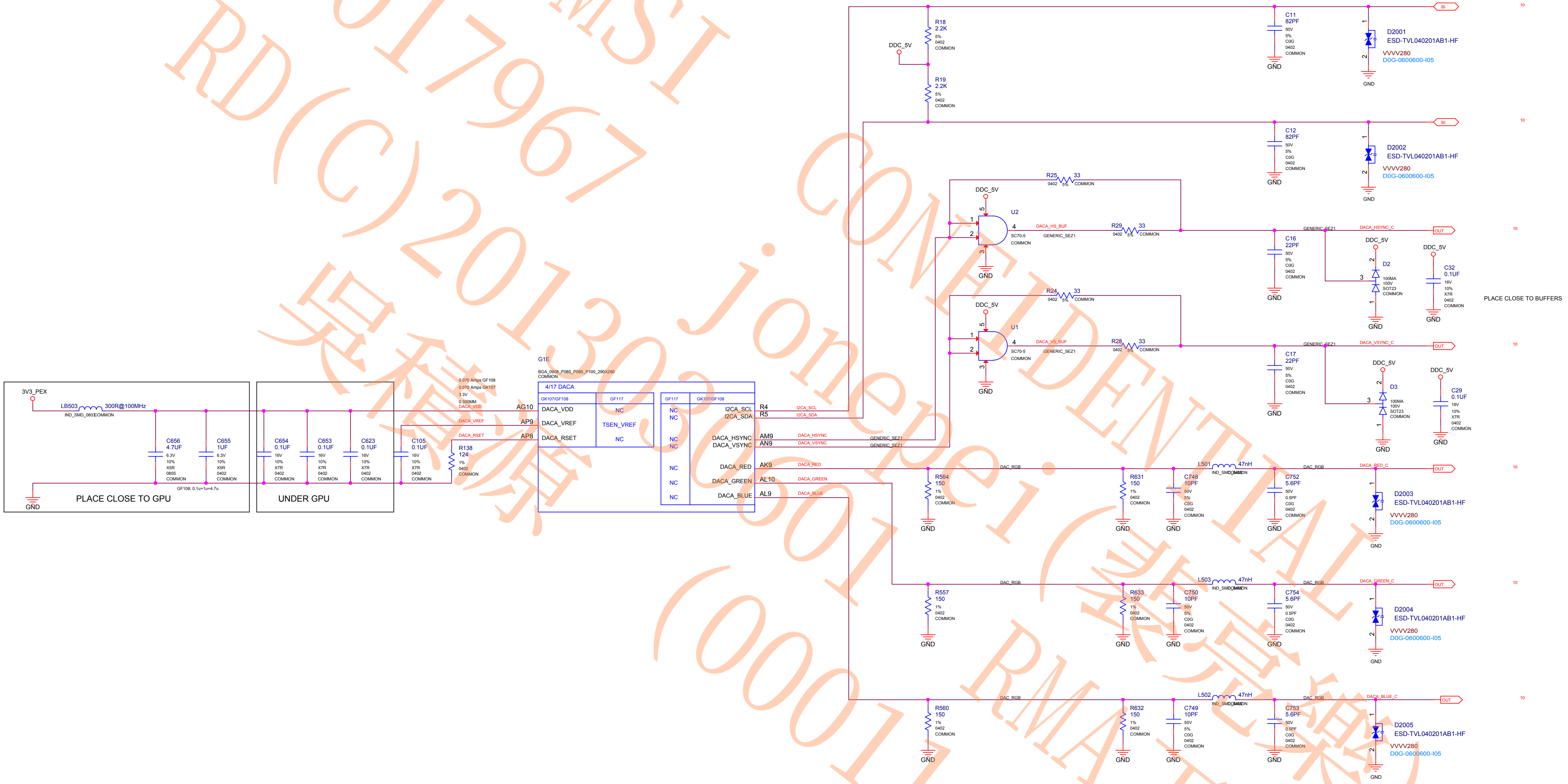
DACA VGA



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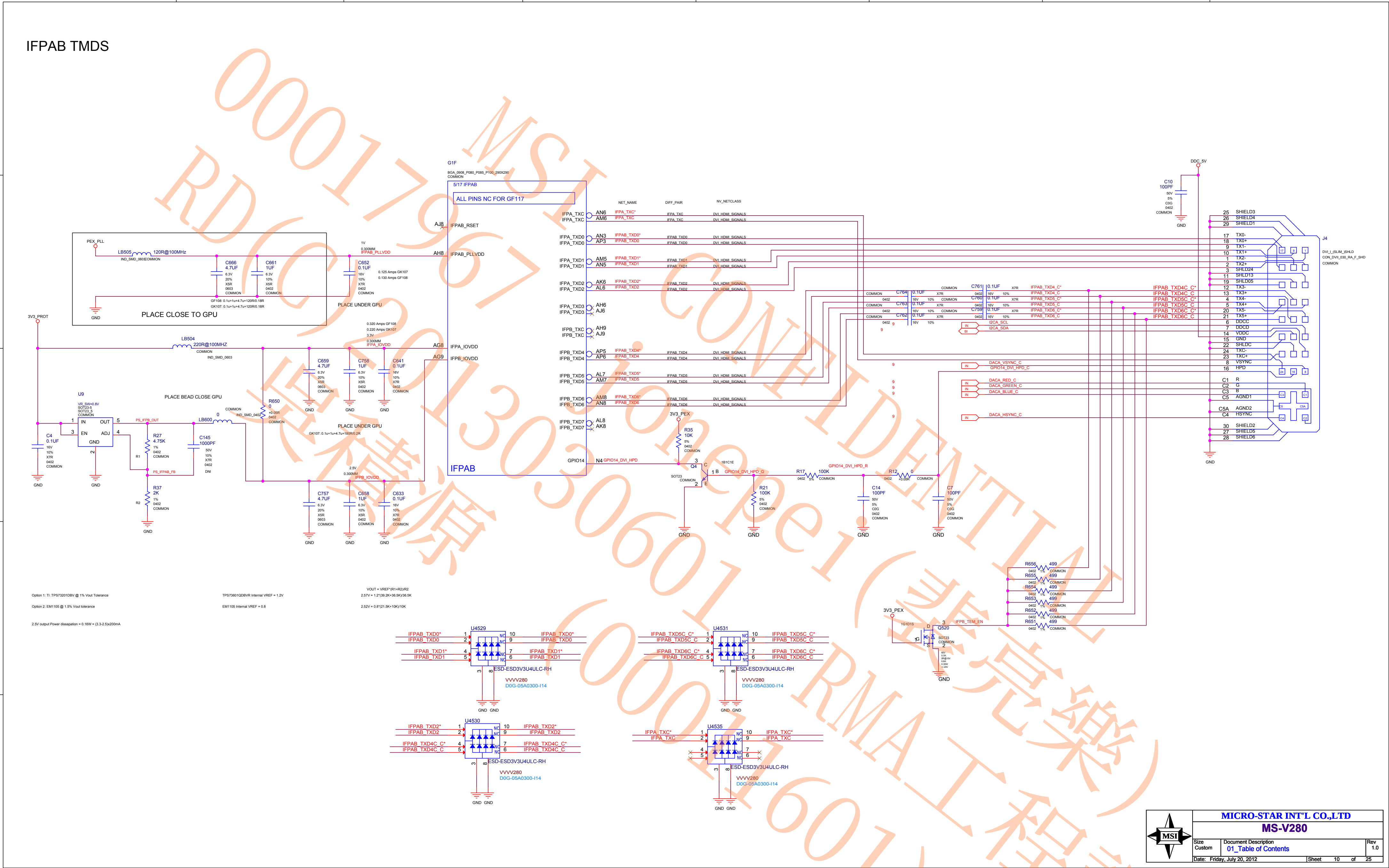
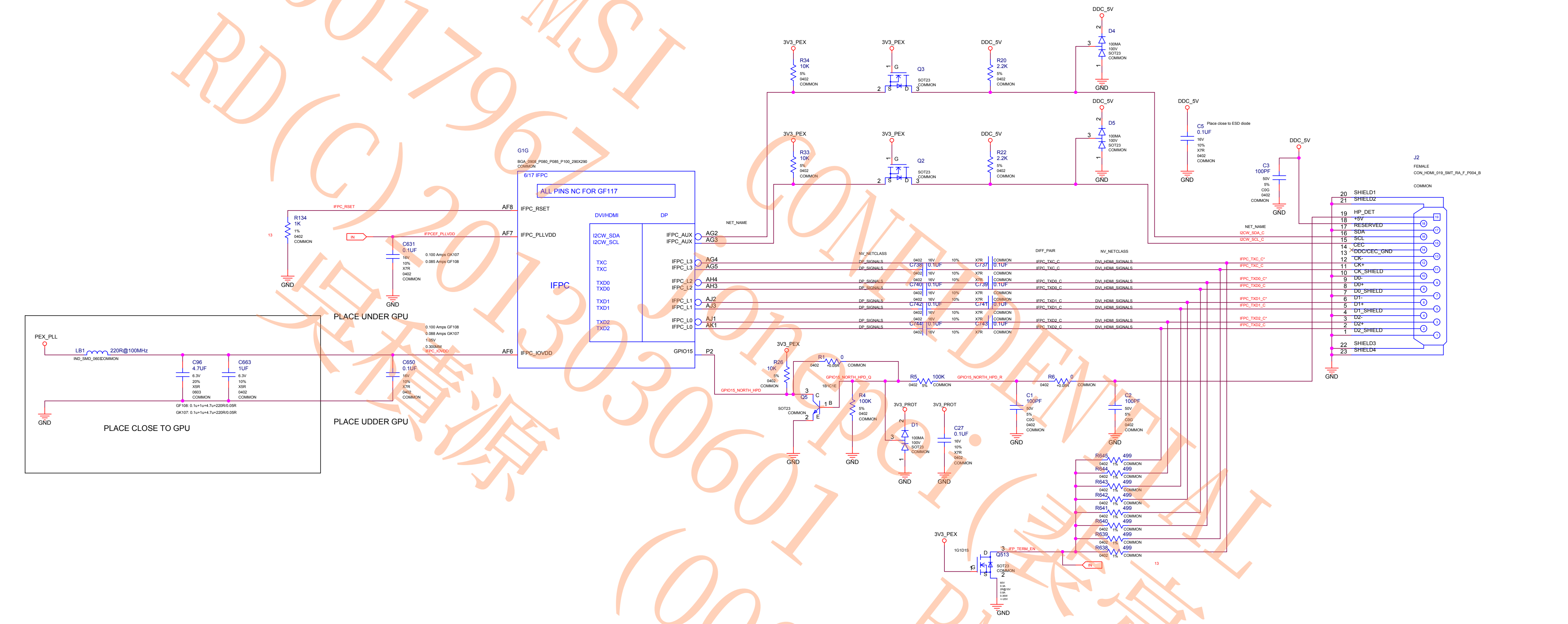


IFPC mHDMI



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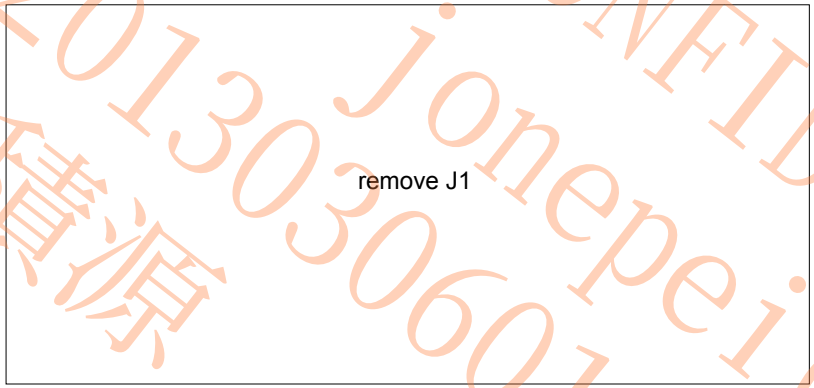
IFPC DP



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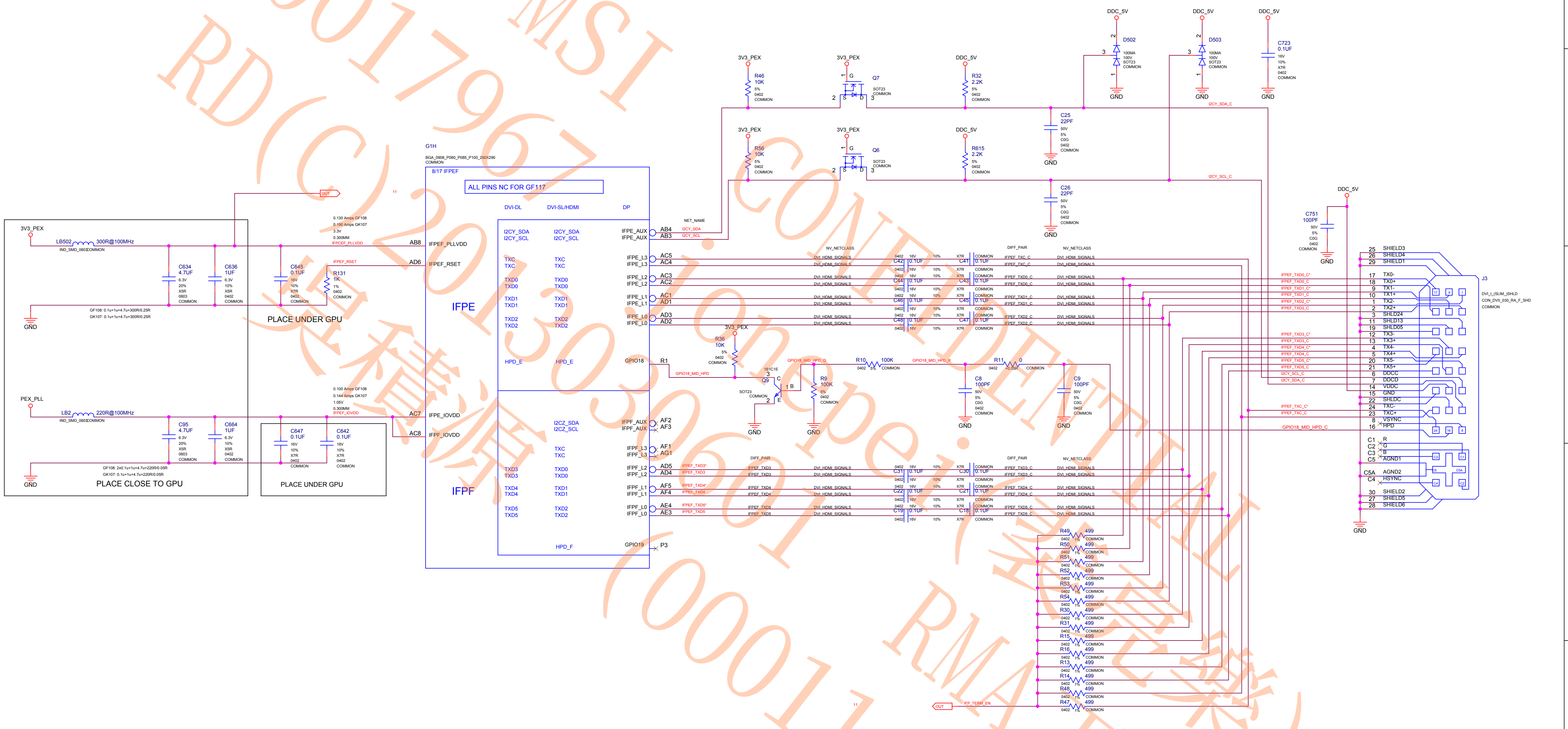
IFPEF TMDS



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IFPE Long HDMI

remove J5

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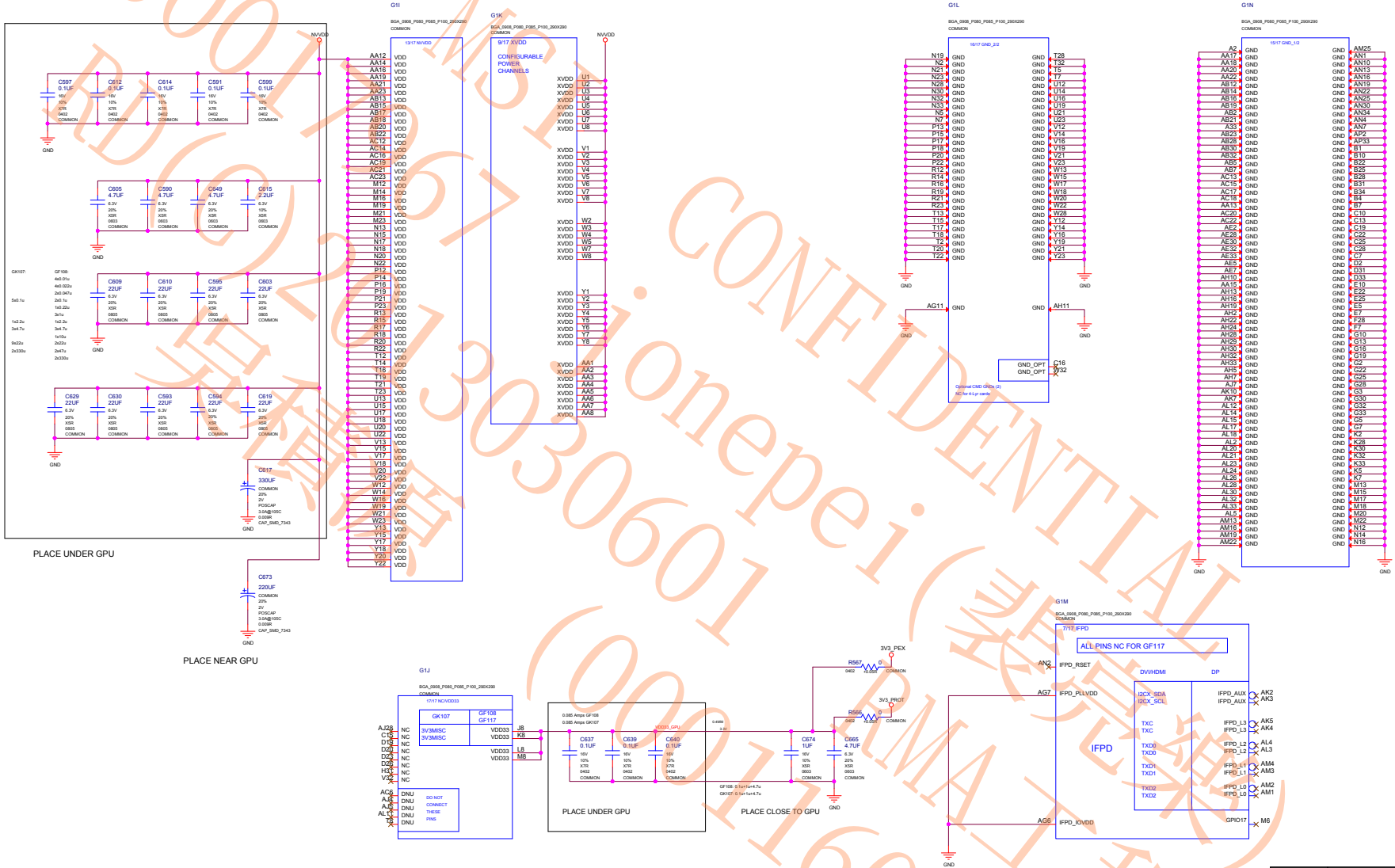
Core Decoupling,GPU_VDD_3V3



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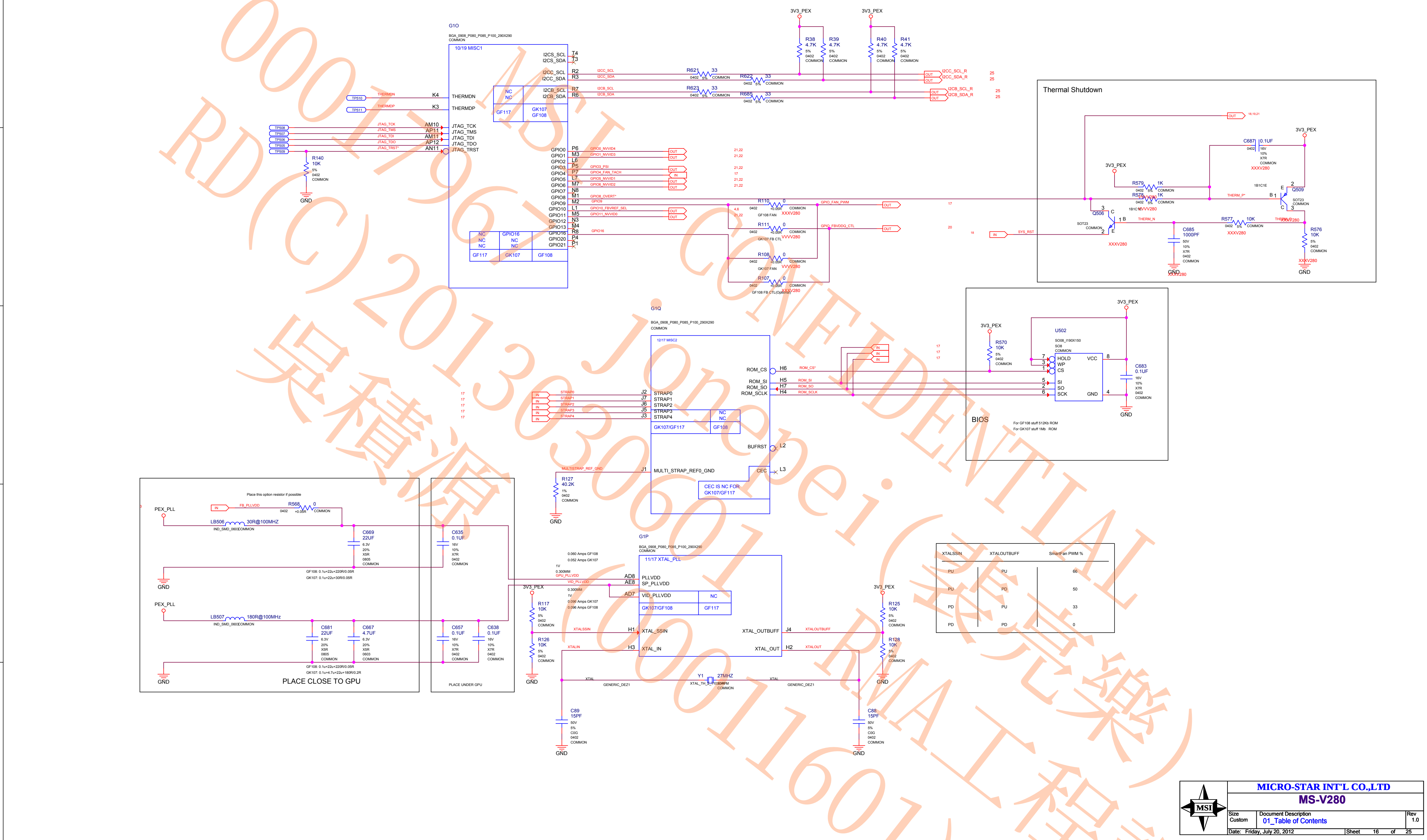
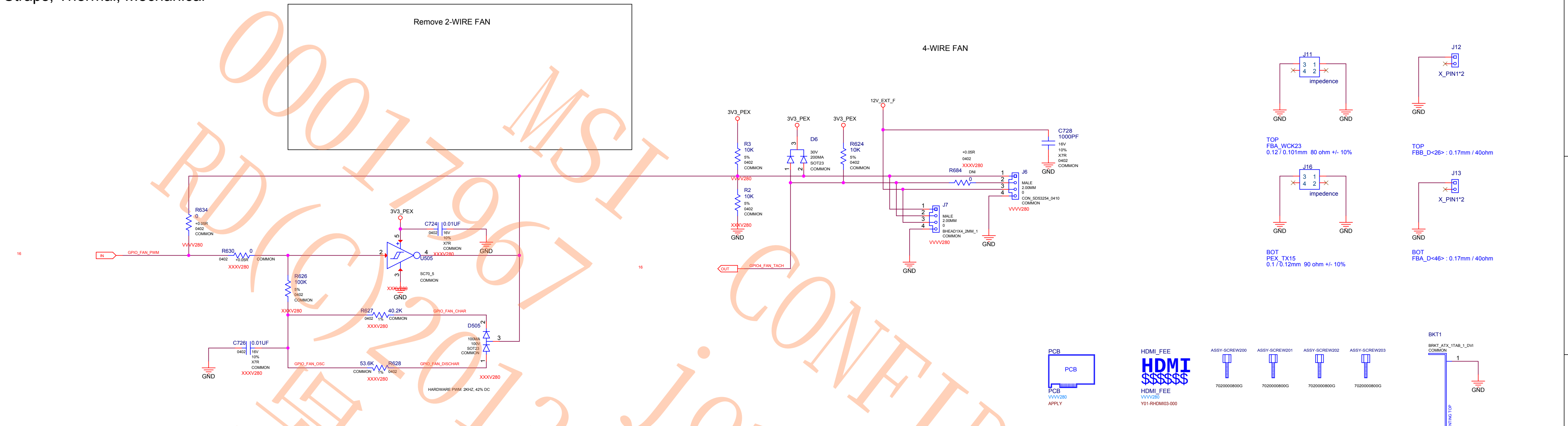
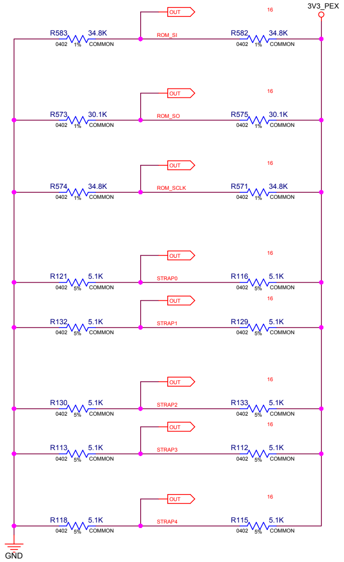
Misc Interfaces



Straps, Thermal, Mechanical





GK107 Straps

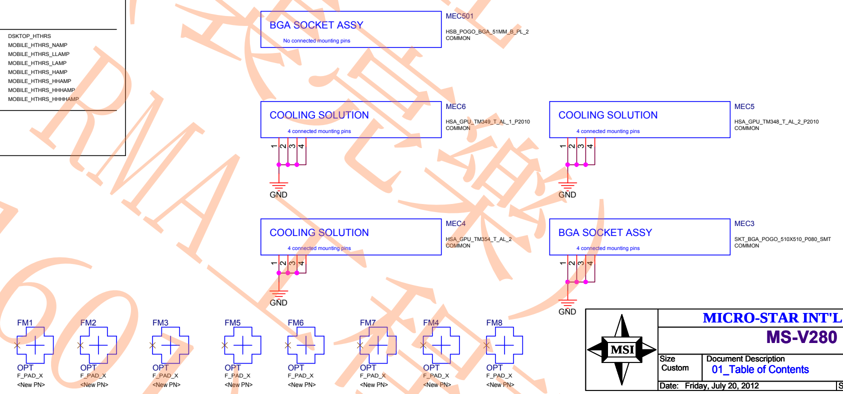
Bit	Signal	Values			
03:	RAMCFG[3]	0000	64Mx16 128bit	1000	64Mx16 64bit
		0001	64Mx16 128bit Micron	1001	64Mx16 64bit Micron
02:	RAMCFG[2]	0010	64Mx16 128bit Hynix	1010	64Mx16 64bit Hynix
		0011	64Mx16 128bit Samsung	1011	64Mx16 64bit Samsung
01:	RAMCFG[1]	0100	128Mx16 128bit	1100	128Mx16 64bit
		0101	128Mx16 128bit Micron	1101	128Mx16 64bit Micron
00:	RAMCFG[0]	0110	128Mx16 128bit Hynix	1110	128Mx16 64bit Hynix
		0111	128Mx16 128bit Samsung	1111	128Mx16 64bit Samsung
03:	FB[1]	01	128MB		
02:	FB[0]				
01:	SMB_ALT_ADDR	0	DISABLED	1	ENABLED
00:	VGA_DEVICE	0	DISABLED	1	ENABLED
03:	PCI_DEVID_EXT	0	INIT		
02:	SUB_VENDOR	0	NO_BIOS	1	BIOS
01:	PCI_DEVID_EXT_BIT5	0	INIT		
00:	PEX_PLL_EN_TERM100	0	DISABLED	1	ENABLED
03:	USER[3]	0000	INIT		
02:	USER[2]				
01:	USER[1]				
00:	USER[0]				
03:	3GIO_PADCFG_LUT_ADR[3]	0000	DSKTOP_DEFAULT	1000	DSKTOP_HTHRS
		0001	MOBILE_DEFAULT	1001	MOBILE_HTHRS_NAMP
02:	3GIO_PADCFG_LUT_ADR[2]	0010	MOBILE_NTHRS_LLAMP	1010	MOBILE_HTHRS_LLAMP
		0011	MOBILE_NTHRS_LAMP	1011	MOBILE_HTHRS_LAMP
01:	3GIO_PADCFG_LUT_ADR[1]	0100	MOBILE_NTHRS_HAMP	1100	MOBILE_HTHRS_HAMP
		0101	MOBILE_NTHRS_HHAMP	1101	MOBILE_HTHRS_HHAMP
00:	3GIO_PADCFG_LUT_ADR[0]	0110	MOBILE_NTHRS_HHHAMP	1110	MOBILE_HTHRS_HHHAMP
		0111	MOBILE_NTHRS_HHHHAMP	1111	MOBILE_HTHRS_HHHHAMP
03:	PCI_DEVID[3]	0000	GK107-400-A1		
02:	PCI_DEVID[2]	0110	GK107-450-A1		
01:	PCI_DEVID[1]				
00:	PCI_DEVID[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
02:	PCIE_SPEED_CHANGE_GEN3	0	DISABLED	1	ENABLED
01:	PCIE_MAX_SPEED	0	GEN1	1	GEN23
00:	DP_PLL_VDD_3V3	0	USE1V8	1	USE3V3

GF108 Straps

Bit	Signal	Values			
03:	RAMCFG[3]	0000	64Mx16 128bit	1000	64Mx16 64bit
		0001	64Mx16 128bit Micron	1001	64Mx16 64bit Micron
02:	RAMCFG[2]	0010	64Mx16 128bit Hynix	1010	64Mx16 64bit Hynix
		0011	64Mx16 128bit Samsung	1011	64Mx16 64bit Samsung
01:	RAMCFG[1]	0100	128Mx16 128bit	1100	128Mx16 64bit
		0101	128Mx16 128bit Micron	1101	128Mx16 64bit Micron
00:	RAMCFG[0]	0110	128Mx16 128bit Hynix	1110	128Mx16 64bit Hynix
		0111	128Mx16 128bit Samsung	1111	128Mx16 64bit Samsung
03:	XCLK_417	0	DISABLED	1	ENABLED
02:	FB[0]	1	128MB		
01:	SMB_ALT_ADDR	0	DISABLED	1	ENABLED
00:	VGA_DEVICE	0	DISABLED	1	ENABLED
03:	PCI_DEVID_EXT	0	GF108-450-A1		
02:	SUB_VENDOR	0	NO_BIOS	1	BIOS
01:	SLOT_CLK_CFG	0	DISABLED	1	ENABLED
00:	PEX_PLL_EN_TERM100	0	DISABLED	1	ENABLED
03:	USER[3]	0000	INIT		
02:	USER[2]				
01:	USER[1]				
00:	USER[0]				
03:	3GIO_PADCFG_LUT_ADR[3]	0000	DSKTOP_DEFAULT	1000	DSKTOP_HTHRS
		0001	MOBILE_DEFAULT	1001	MOBILE_HTHRS_NAMP
02:	3GIO_PADCFG_LUT_ADR[2]	0010	MOBILE_NTHRS_LLAMP	1010	MOBILE_HTHRS_LLAMP
		0011	MOBILE_NTHRS_LAMP	1011	MOBILE_HTHRS_LAMP
01:	3GIO_PADCFG_LUT_ADR[1]	0100	MOBILE_NTHRS_HAMP	1100	MOBILE_HTHRS_HAMP
		0101	MOBILE_NTHRS_HHAMP	1101	MOBILE_HTHRS_HHAMP
00:	3GIO_PADCFG_LUT_ADR[0]	0110	MOBILE_NTHRS_HHHAMP	1110	MOBILE_HTHRS_HHHAMP
		0111	MOBILE_NTHRS_HHHHAMP	1111	MOBILE_HTHRS_HHHHAMP
03:	PCI_DEVID[3]	1	GF108-450-A1		
02:	PCI_DEVID[2]				
01:	PCI_DEVID[1]				
00:	PCI_DEVID[0]				

Multilevel Straps

0000	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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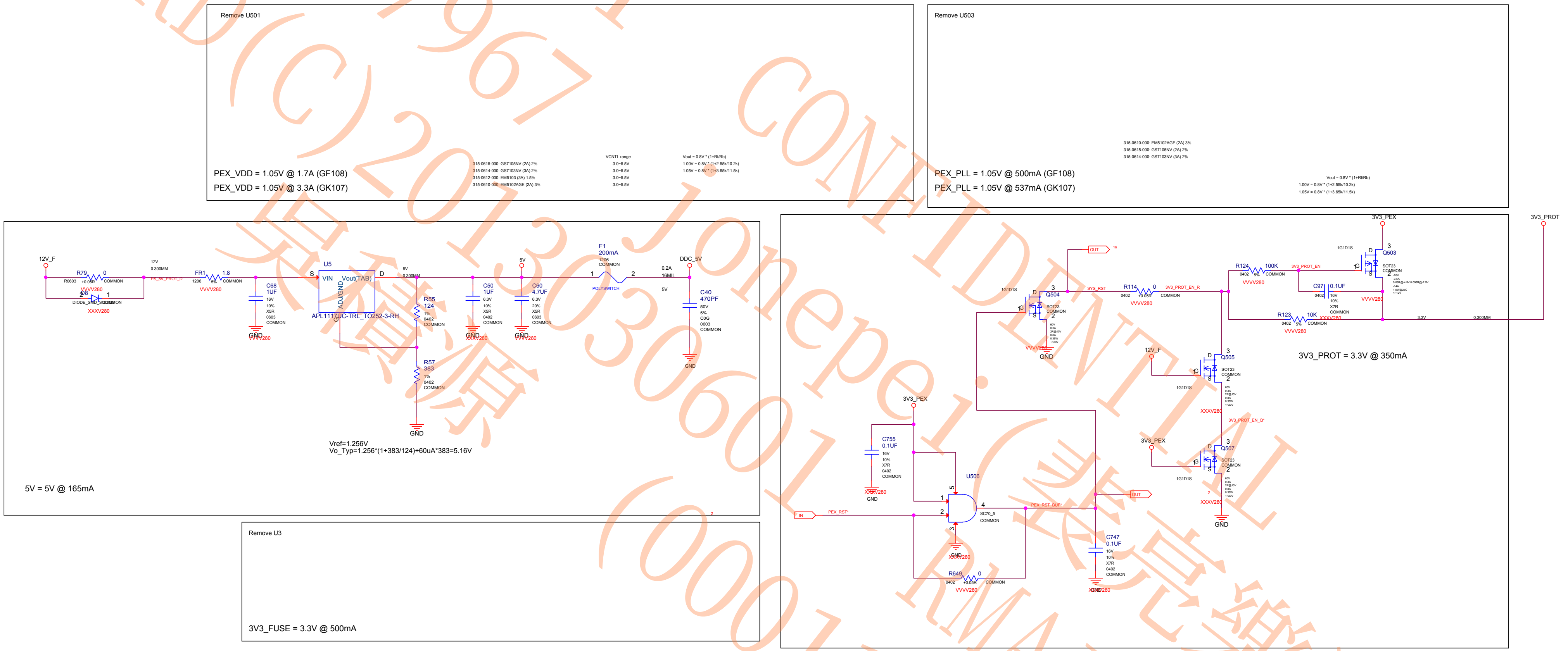
Power Supply I: Misc Power



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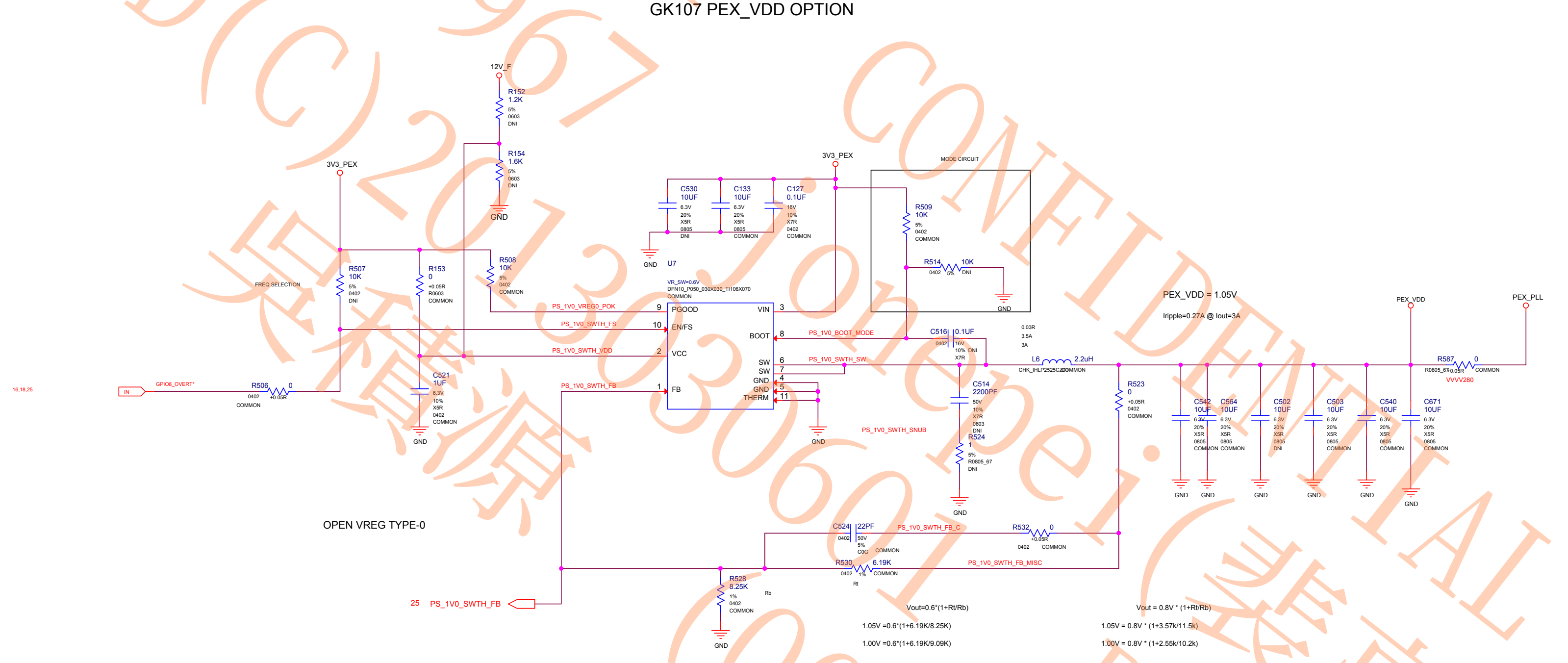
Power Supply II: PEX_VDD



25 PS_1V0_SWTH_FB

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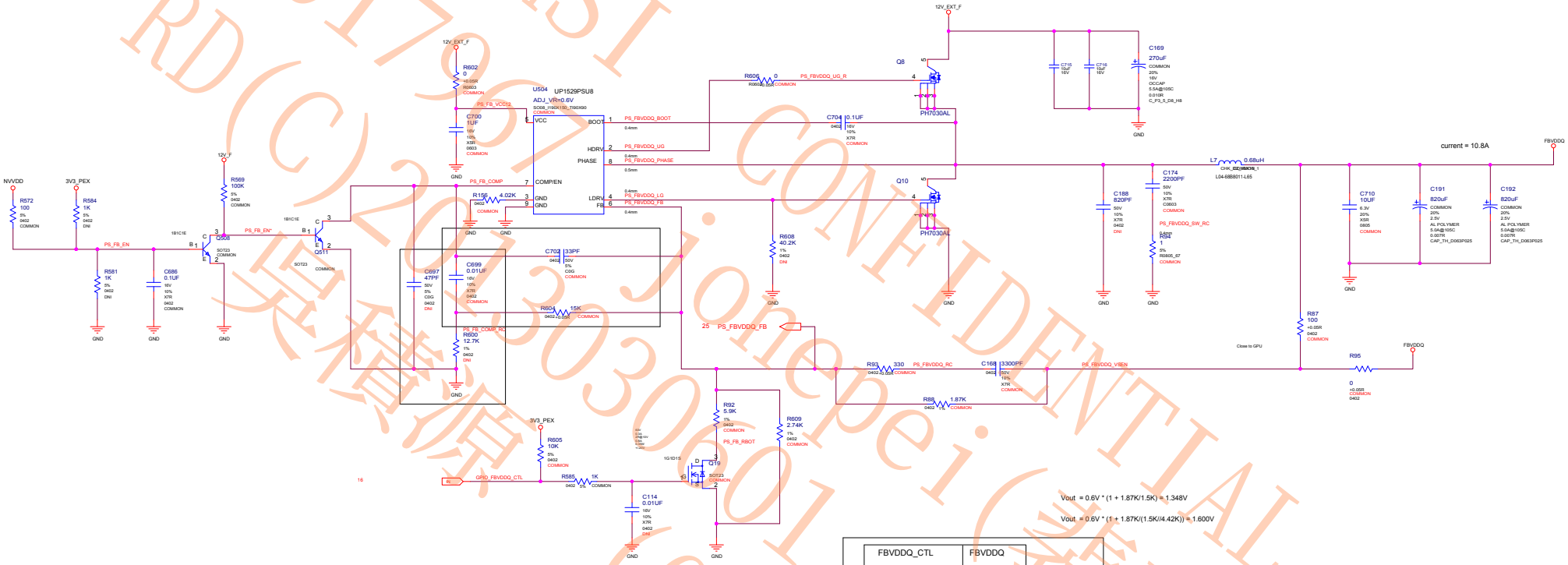
FBVDDQ



FBVDDQ_CTL	FBVDDQ	
0	1.35V	
1	1.5V	<= DEFAULT

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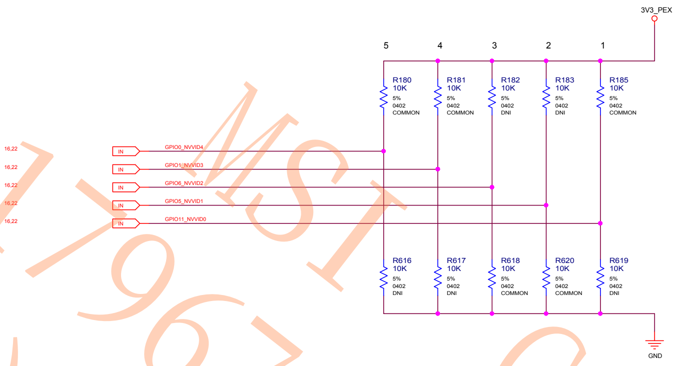
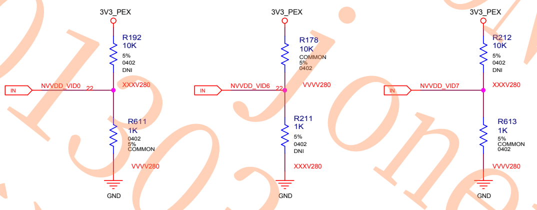
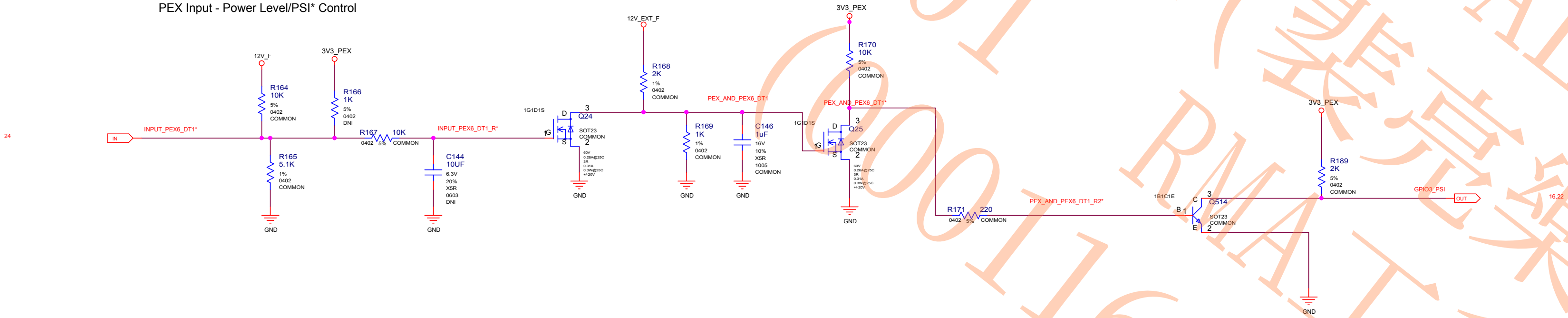
VID Table

GPIO4 VID_5	GPIO3 VID_4	GPIO2 VID_3	GPIO1 VID_2	GPIO0 VID_1	VOUT
0	0	0	0	0	1.2125V
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





PEX Input - Power Level/PSI* Control



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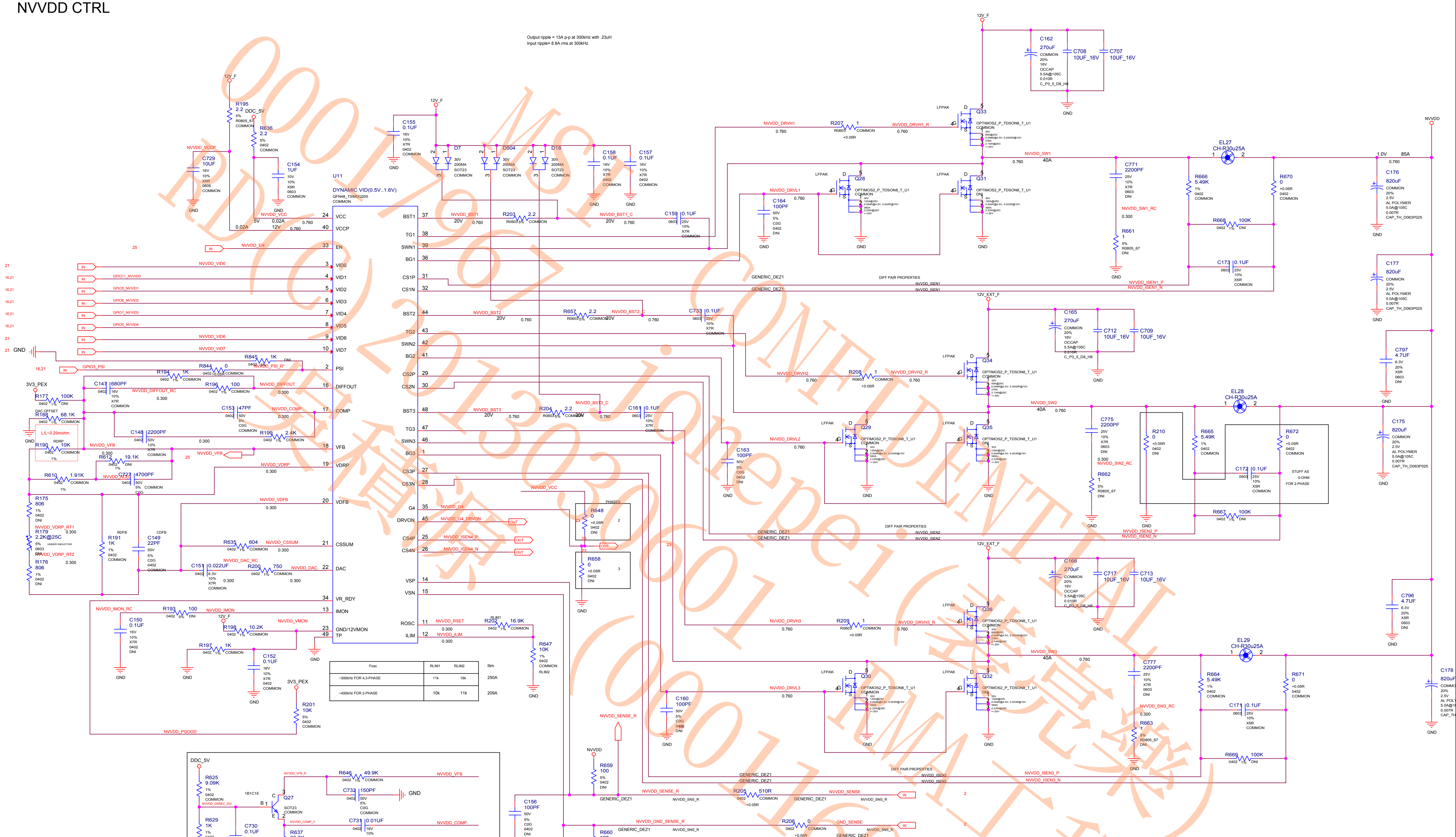
NVVDD CTRL



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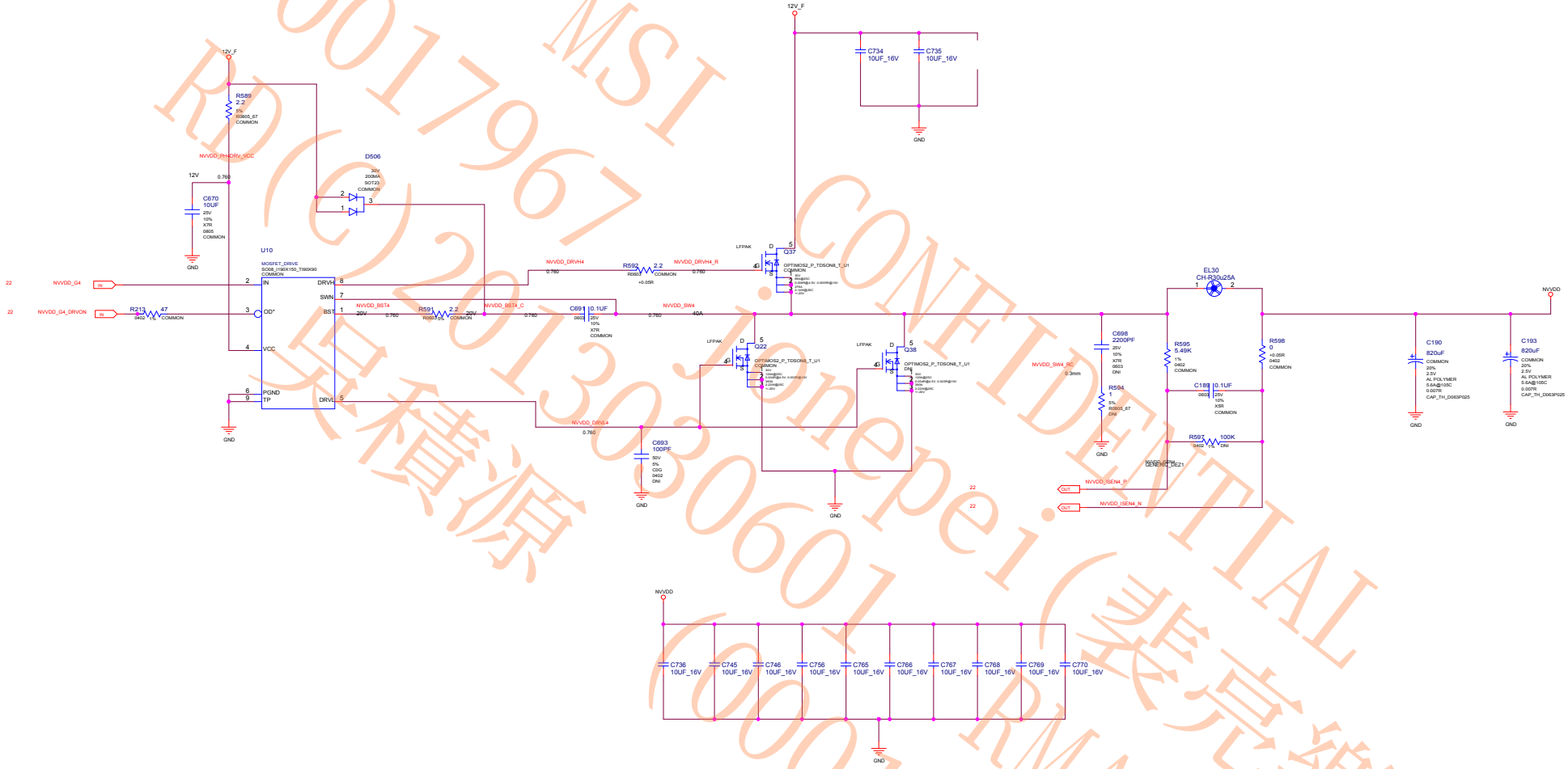
NVVDD Phase 4



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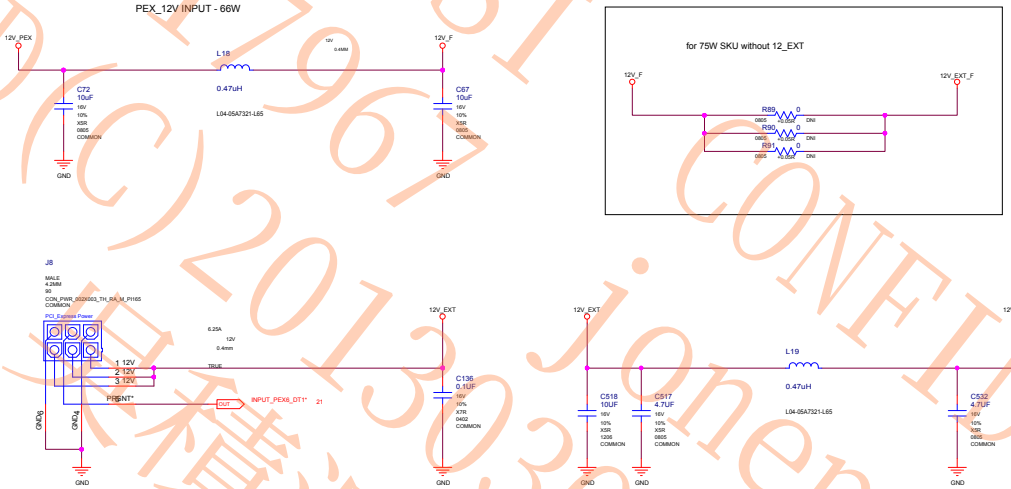
12V EXT / 12V PEX Power Select Circuit



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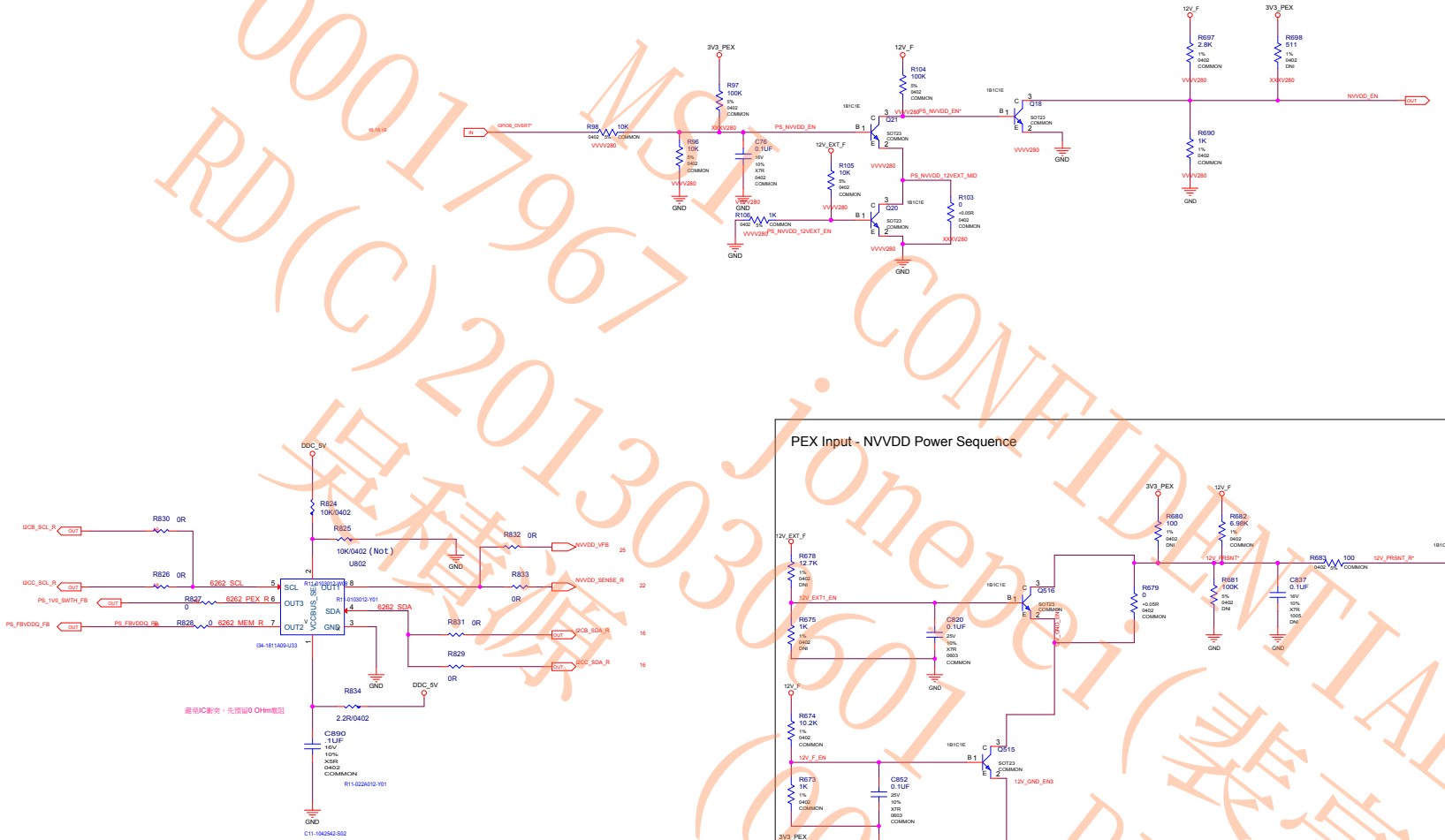
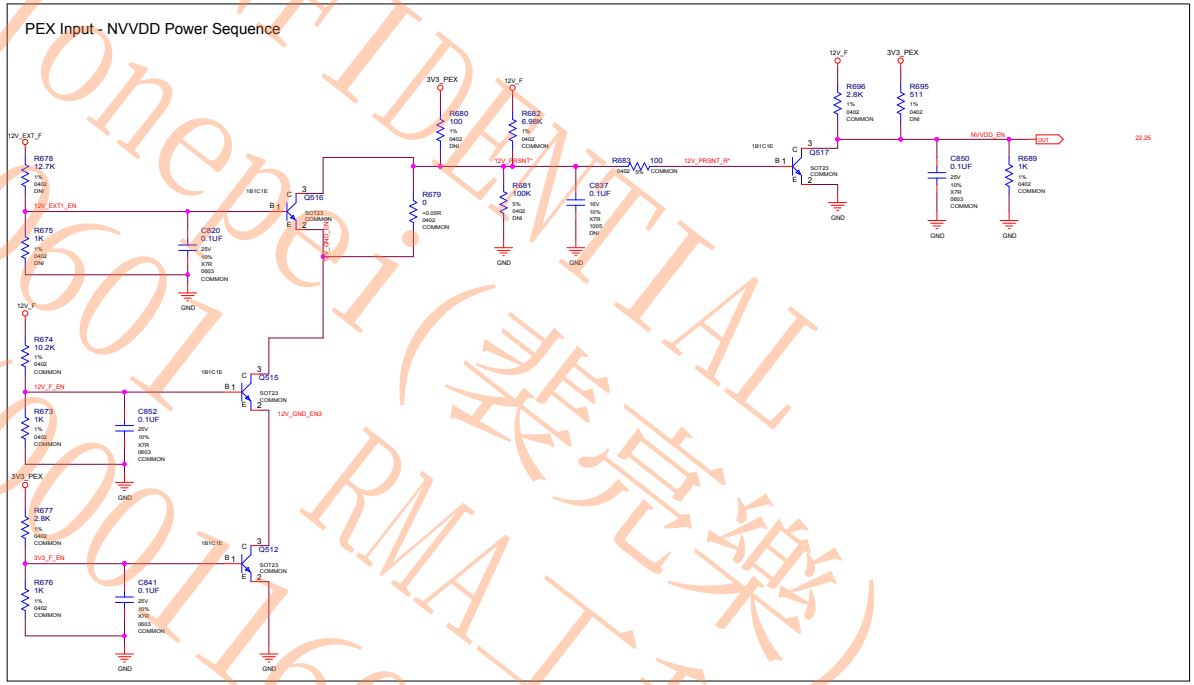
PS: Shutdown & 6262

THERM OVERT SHUTDOWN LATCH



PEX Input - NVVDD Power Sequence



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