PG410 A01

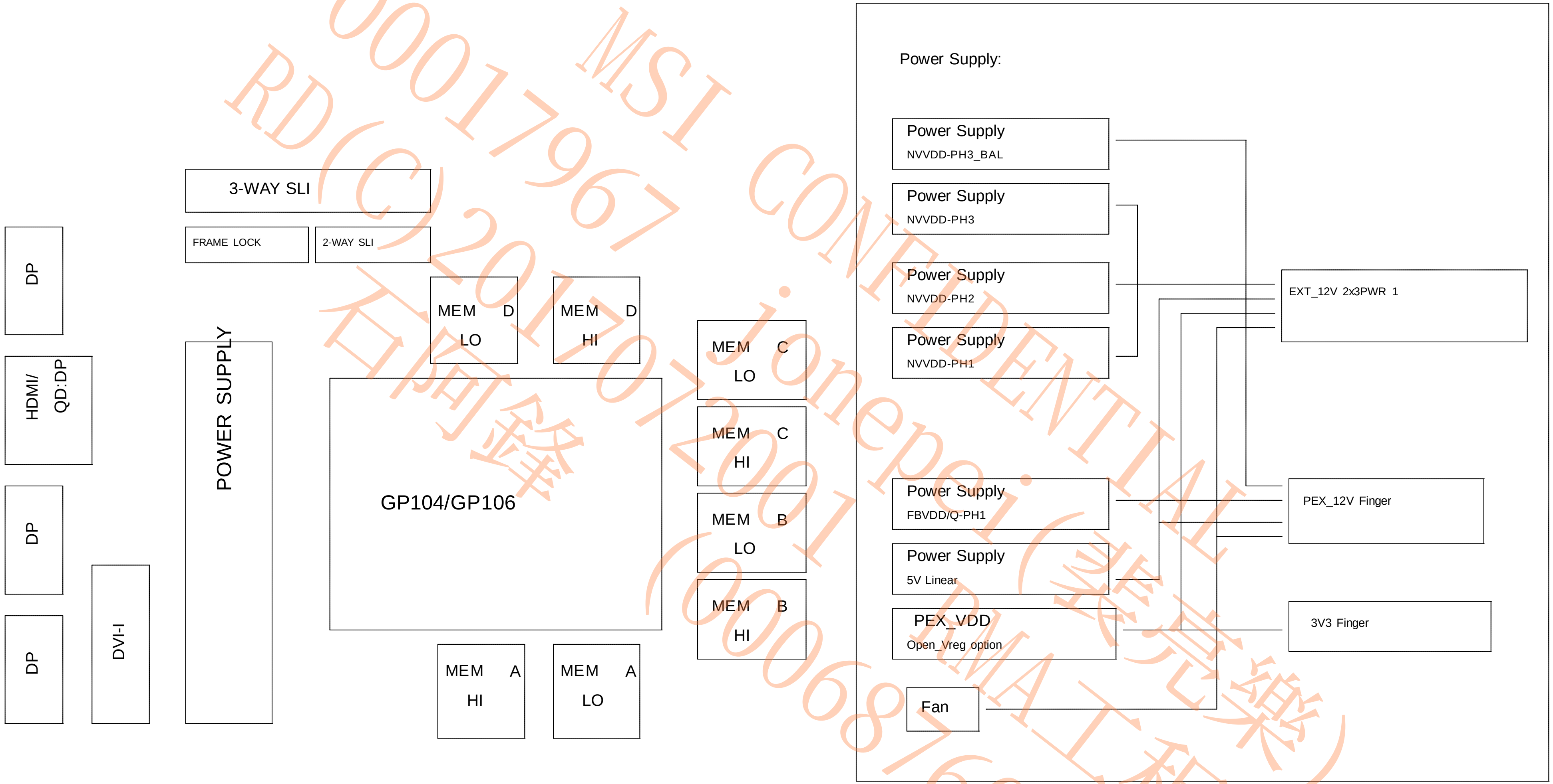
GP106 8GB/4GB GDDR5, 256b, 256Mx32/128MX32
Tall DVI-D + DP + DP + HDMI + HDMI

TABLE OF CONTENTS

V330-7.0 修 PG410版
1．增加金手指
2.PEX 改為 LDO
3.NVVDD/FBVDD 變
4.修 IFPC 為 HDMI

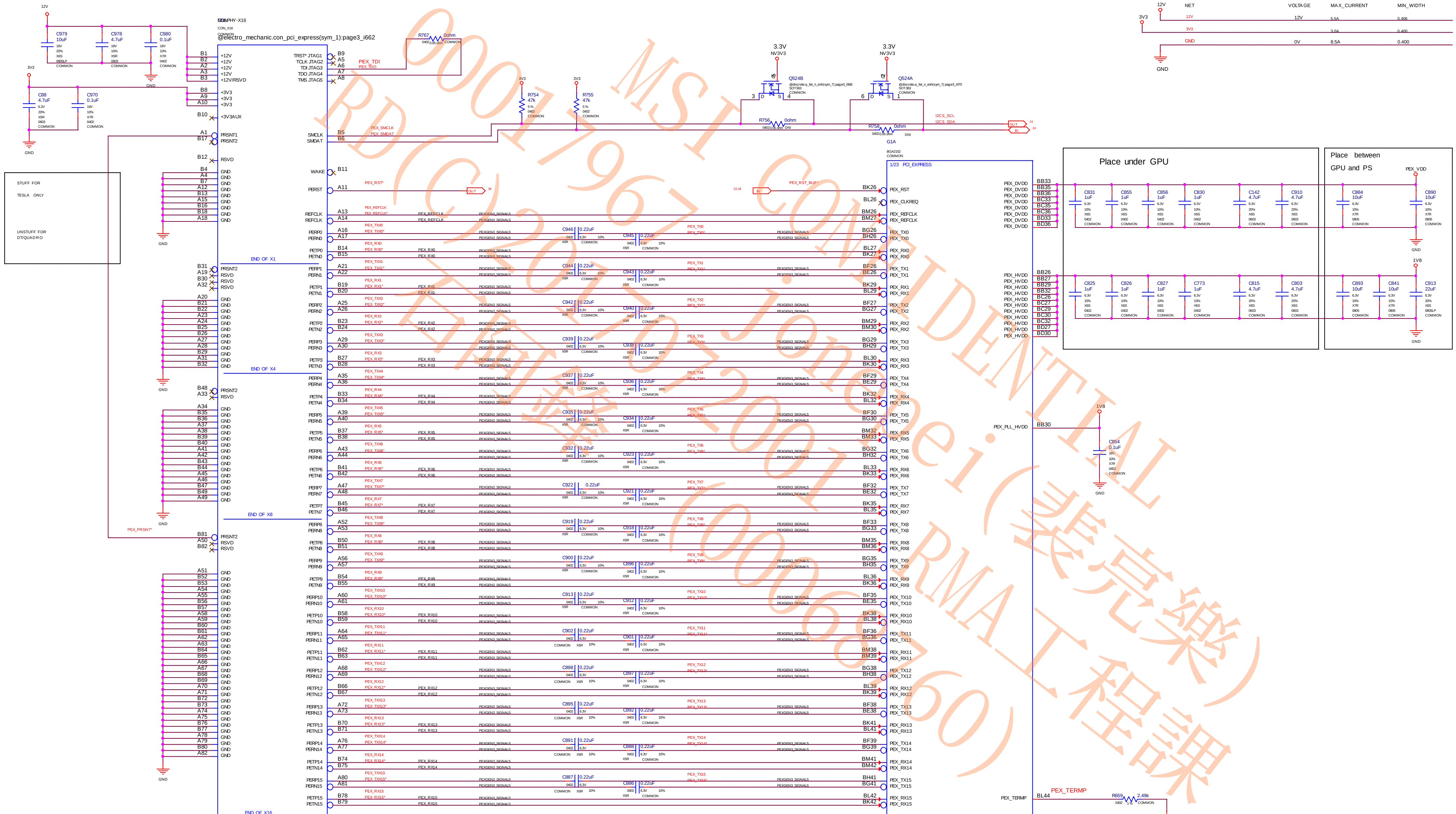
MICRO-STAR INT'L CO.,LTD			
MS-V330			
Size: Custom	Document Description: TABLE		Rev 7.1
Date: Friday, January 06, 2017		Sheet 1 of 37	

Page2: Block Diagram



MICRO-STAR INT'L CO.,LTD	
MS-V330	
Size: Custom	Document Description: BLOCK BIAGRAM
Rev: 7.1	
Date: Friday, January 06, 2017	Sheet 2 of 37

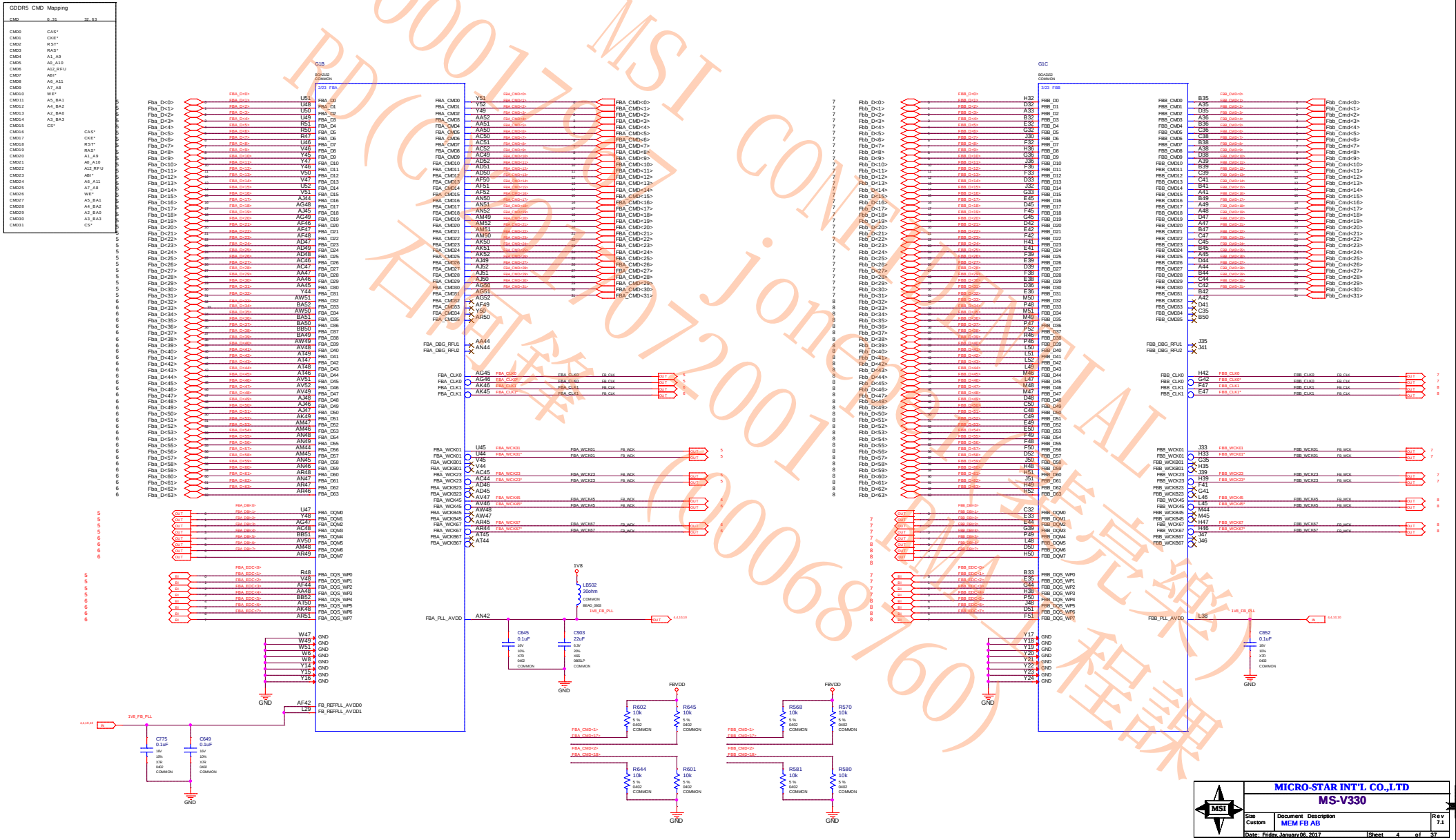
Page3: PCI Express



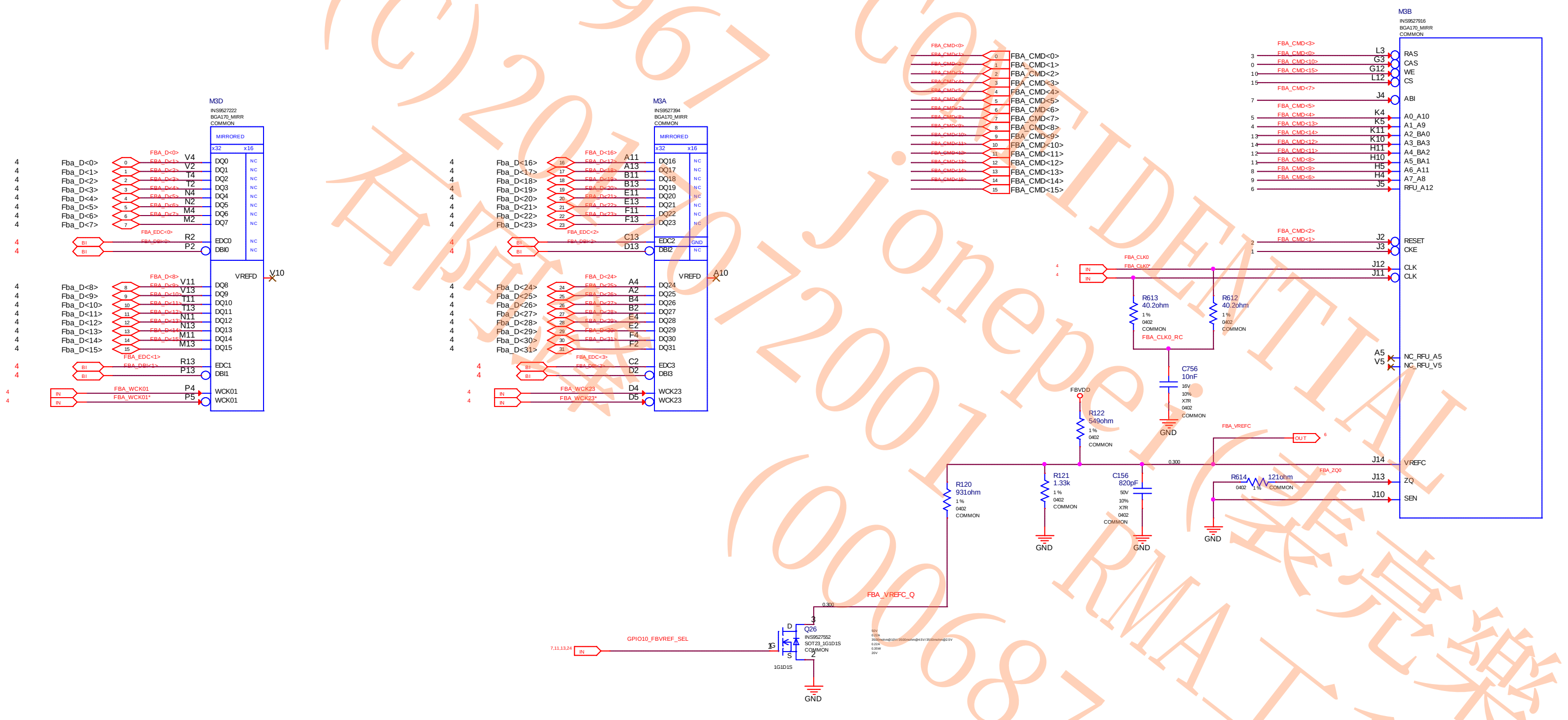
12V
3V3
C979 10uF
C978 4.7uF
C980 0.1uF
C88 4.7uF
C970 0.1uF
GND
STUFF FOR TESLA ONLY
UNSTUFF FOR DT/QUADRO
PCIEPHY-X16
@electro_mechanic.con_pci_express(sym_1):page3_i662
+12V
+12V/RSVD
+3V3
+3V3AUX
PRSNT1
PRSNT2
RSVD
END OF X1
END OF X4
END OF X8
END OF X16
PEX_PRSNT*
TRST* JTAG1
TCLK JTAG2
TDI JTAG3
TDO JTAG4
TMS JTAG5
PEX_TDI
PEX_TDO
R767 0ohm
SMCLK
SMDAT
PEX_SMCLK
PEX_SMDAT
WAKE
PERST
PEX_RST*
REFCLK
PEX_REFCLK
3V3
R754 47k
R755 47k
3.3V NV3V3
Q524B
Q524A
R756 0ohm
R758 0ohm
I2CS_SCL
I2CS_SDA
PEX_RST_BUF*
BGA2152 COMMON
1/23 PCI_EXPRESS
PEX_RST
PEX_CLKREQ
PEX_REFCLK
PEX_DVDD
PEX_HVDD
PEX_PLL_HVDD
PEX_TERMP
R659 2.49k
Place under GPU
Place between GPU and PS
PEX_VDD
1V8
C854 0.1uF
NET
VOLTAGE
MAX_CURRENT
MIN_WIDTH

MICRO-STAR INT'L CO.,LTD		
MS-V330		
Size Custom	Document Description PCIE	Rev 7.1
Date: Friday, January 06, 2017	Sheet 3 of 37	

Page4: MEMORY: GPU Partition A/B



Page5: FRAME BUFFER PARTITION A [31:0]

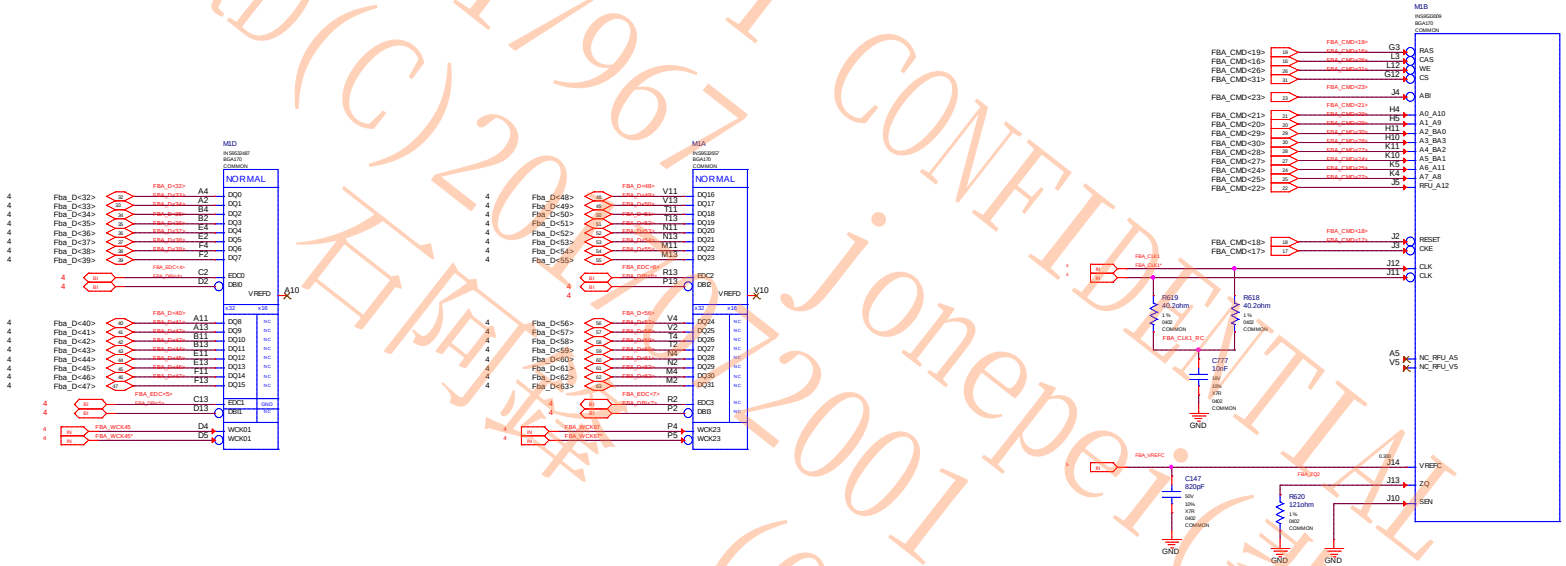


MICRO-STAR INT'L CO.,LTD
MS-V330

Size	Document Description	Rev
Custom	MEM FBA_31-0	7.1

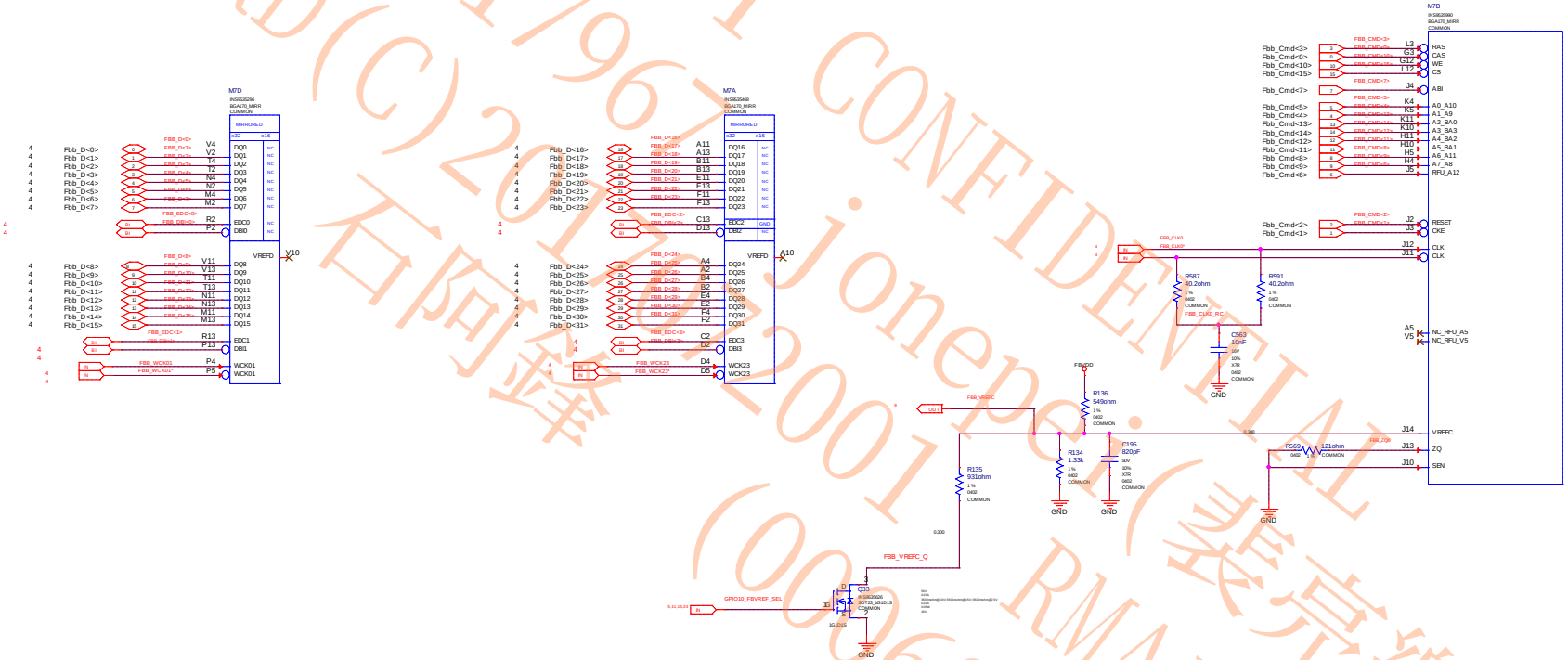
Date: Friday, January 06, 2017 Sheet 5 of 37

Page6: FRAME BUFFER PARTITION A [63:32]



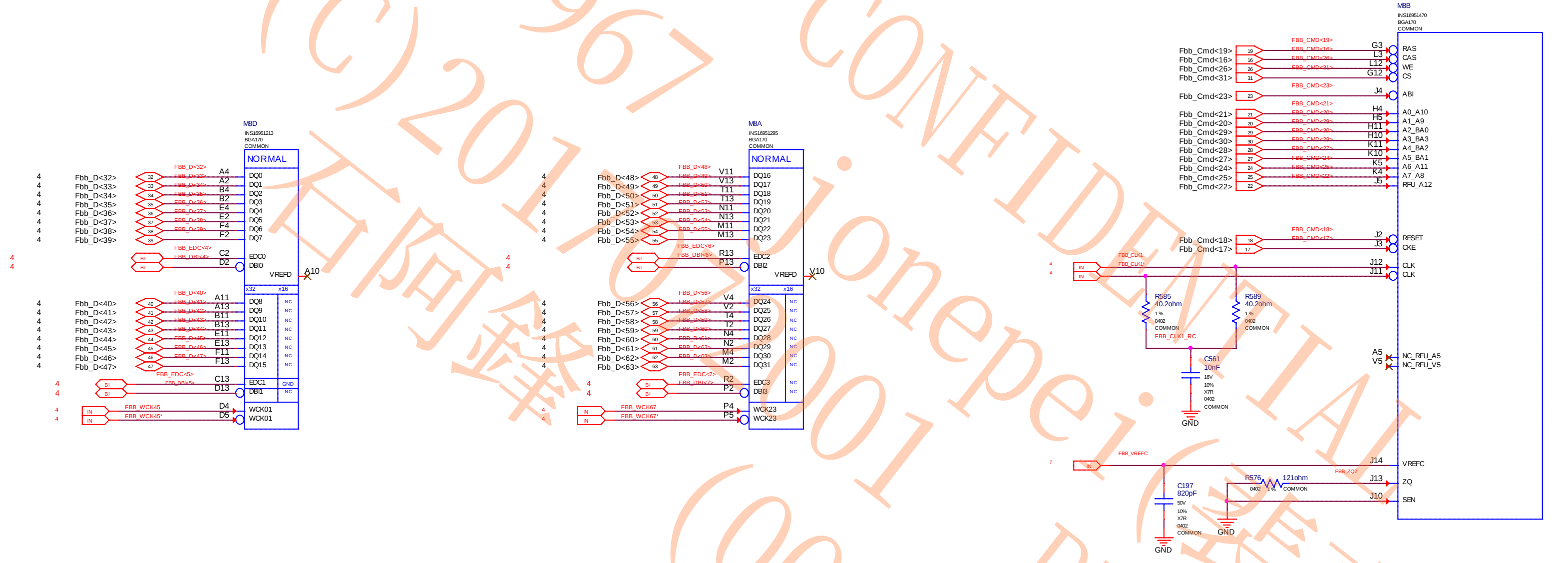
MICRO-STAR INT'L CO.,LTD		
MS-V330		
Size: Custom	Document Description: MEM FBA_63-32	Rev: 7.1
Date: Friday, January 06, 2017	Sheet 6 of 37	

Page7: FRAME BUFFER PARTITION B [31:0]



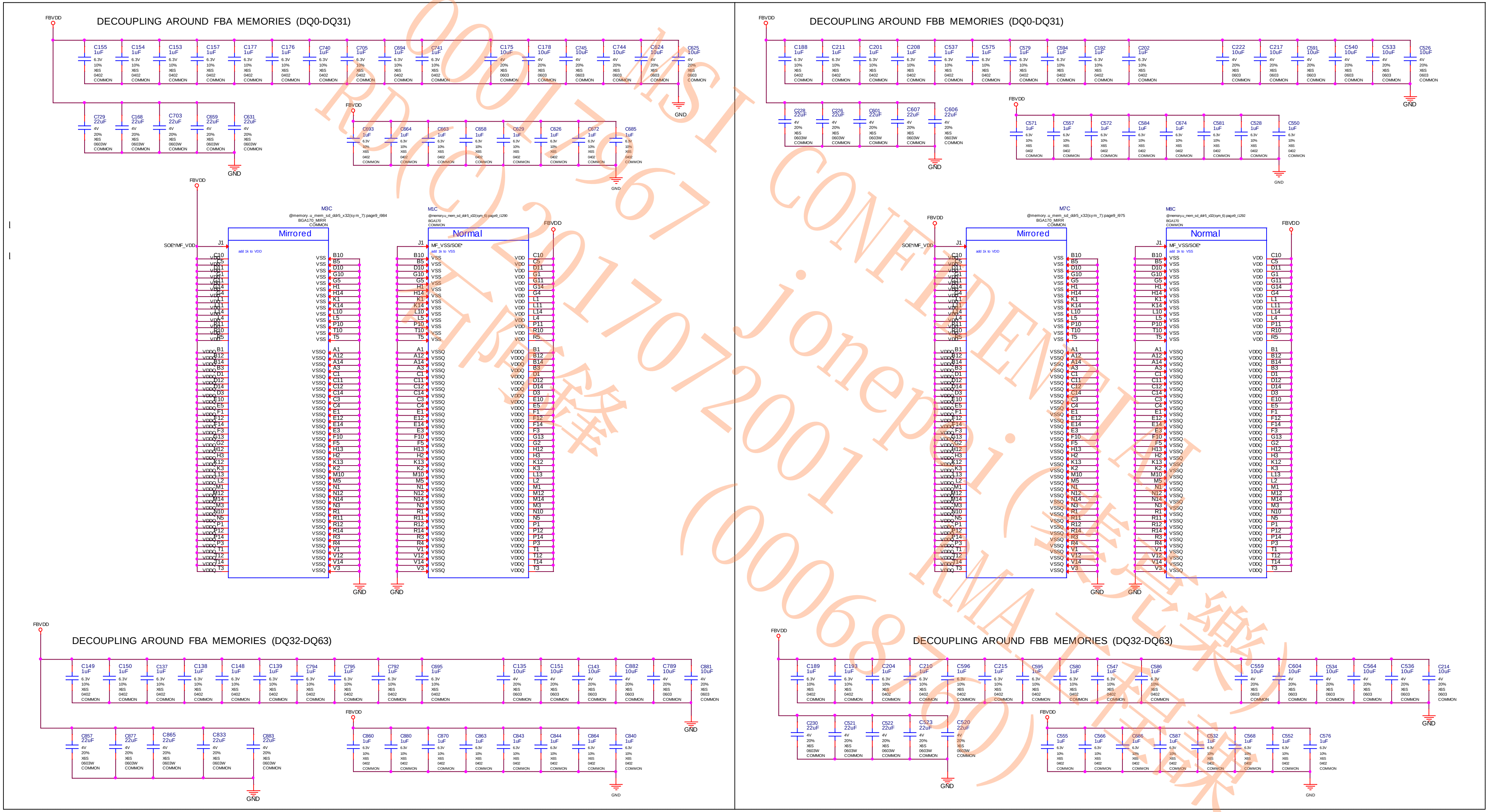
MICRO-STAR INT'L CO.,LTD		
MS-V330		
Size: Custom	Document Description: MEM FBB-31-0	Rev: 7.1
Date: Friday, January 06, 2017	Sheet 7 of 37	

Page8: FRAME BUFFER PARTITION B [63:32]



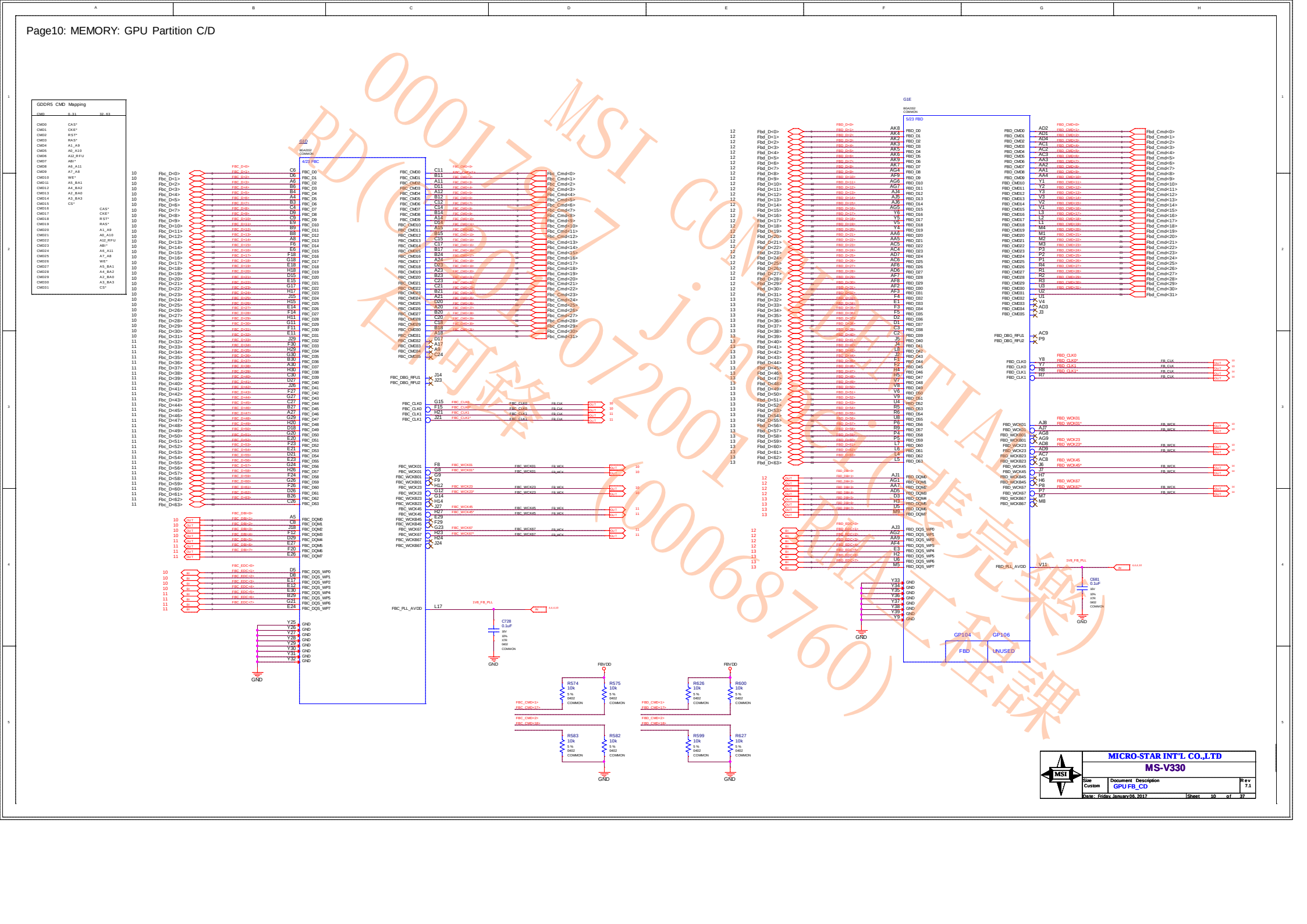
MICRO-STAR INT'L CO.,LTD		
MS-V330		
Size: Custom	Document Description: MEM FBB-63-32	Rev: 7.1
Date: Friday, January 06, 2017	Sheet 8 of 37	

Page9: FRAME BUFFER PARTITION A/B DECOUPLING

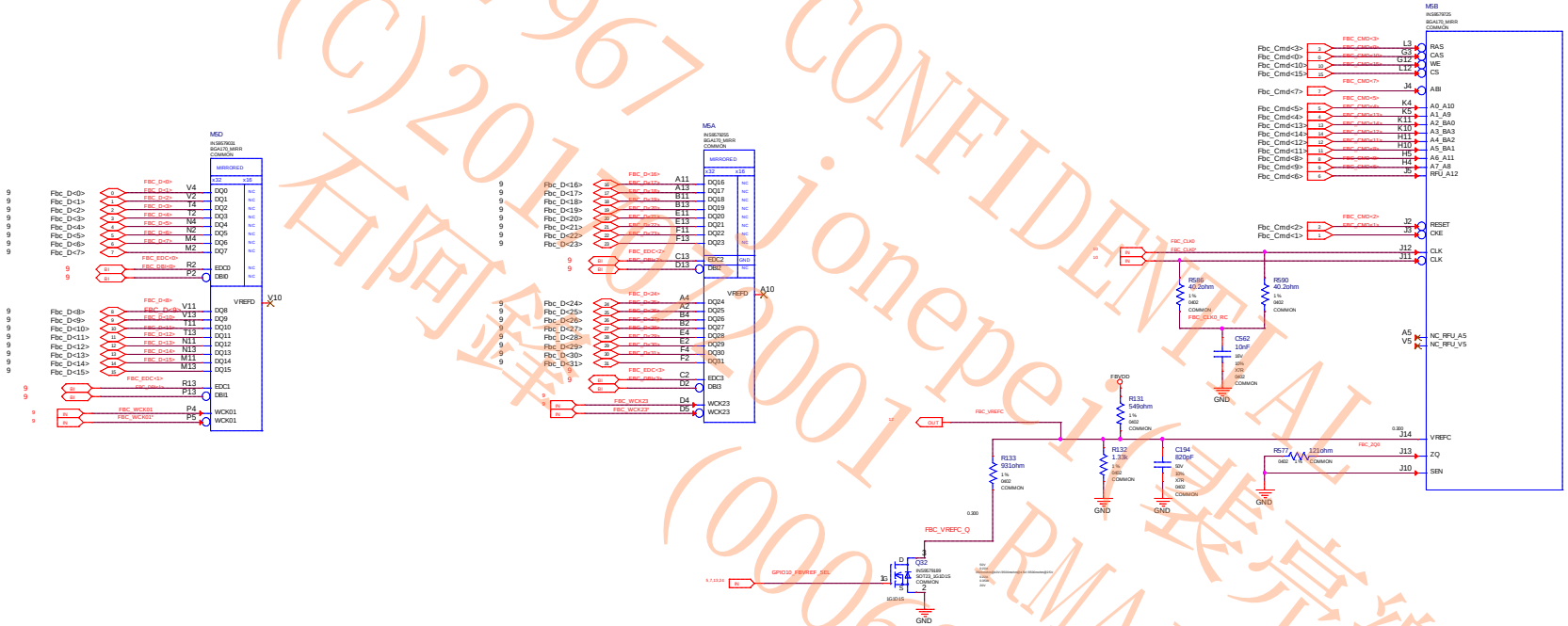


MICRO-STAR INT'L CO.,LTD		
MS-V330		
Size: Custom	Document Description: MEM FB_AB_PWR	Rev: 7.1
Date: Friday, January 06, 2017	Sheet 9 of 37	

Page10: MEMORY: GPU Partition C/D

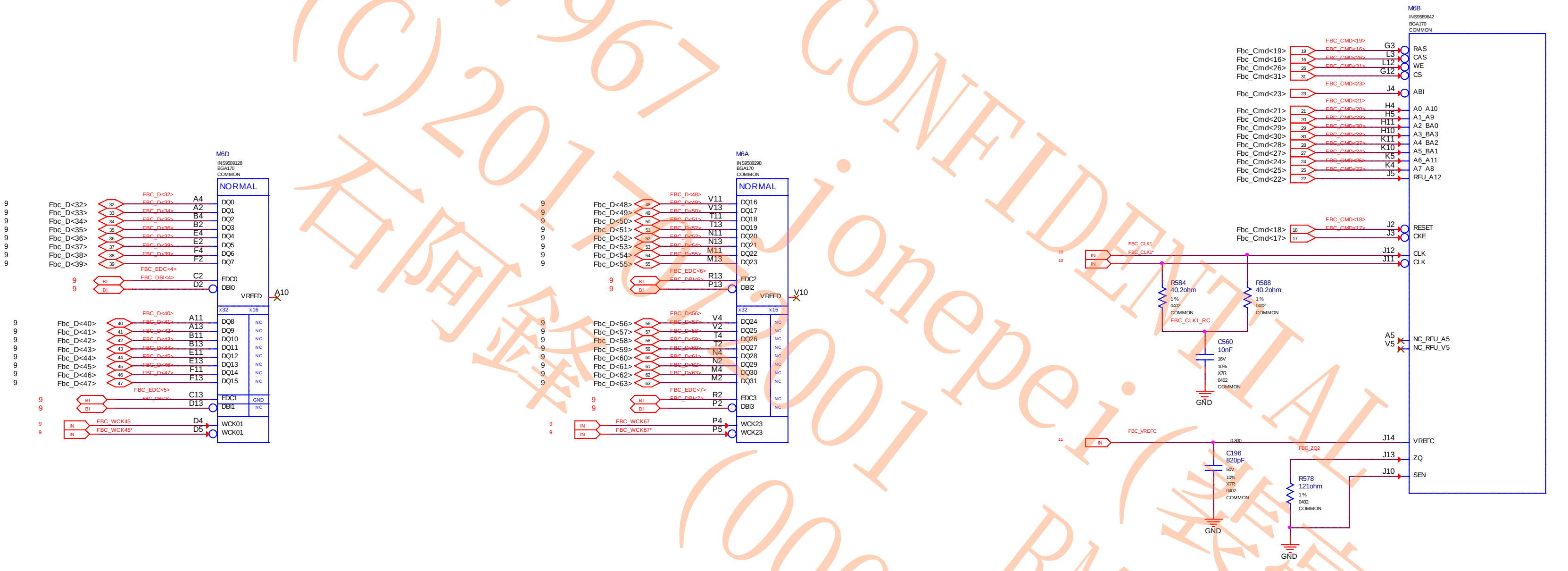


Page11: Frame Buffer Partition C [31:0]



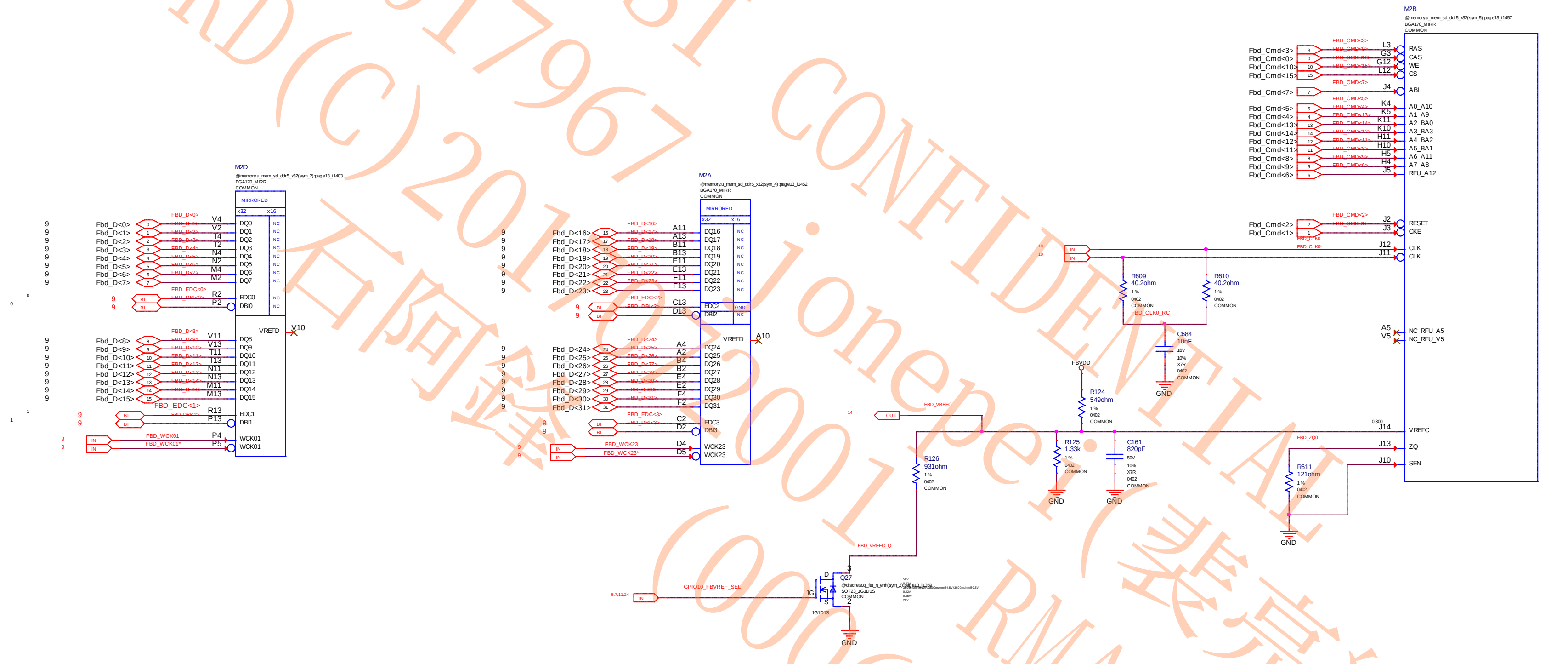
MICRO-STAR INT'L CO.,LTD
MS-V330
Size: Custom
Document Description: MEM FBC -31-0
Rev: 7.1
Date: Friday, January 06, 2017
Sheet 11 of 37

Page12: FRAME BUFFER PARTITION C [63:32]



MICRO-STAR INT'L CO.,LTD		
MS-V330		
Size: Custom	Document Description: MEM FBC -32-63	Rev: 7.1
Date: Friday, January 06, 2017	Sheet 12 of 37	

Page13: FRAME BUFFER PARTITION D[31:0]



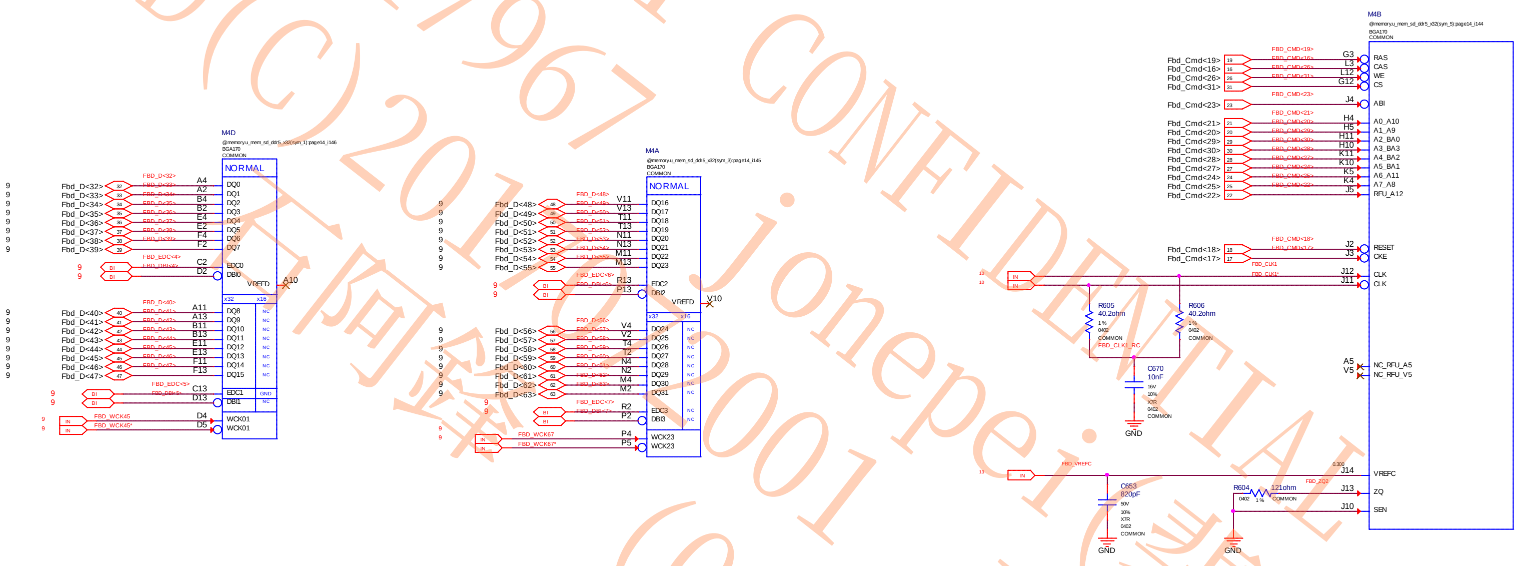
MICRO-STAR INT'L CO.,LTD

MS-V330

Size	Document Description	Rev
Custom	MEM FBD -31-0	7.1

Date: Friday, January 06, 2017 Sheet 13 of 37

Page14: FRAME BUFFER PARTITION D[63:32]



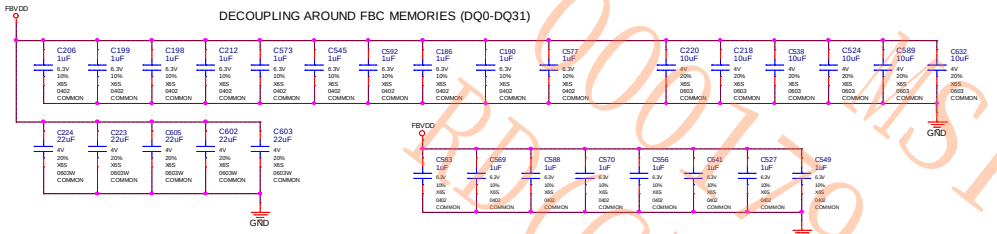
MICRO-STAR INT'L CO.,LTD

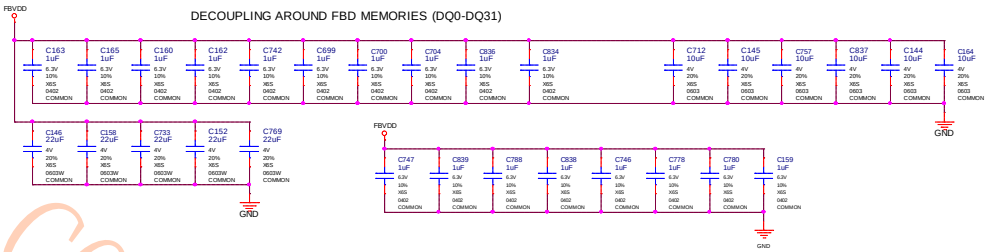
MS-V330

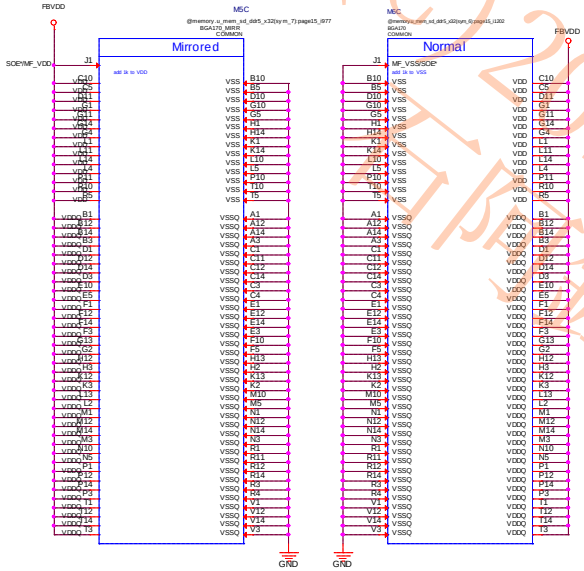
Size	Document Description	Rev
Custom	MEM FBD -32-63	7.1

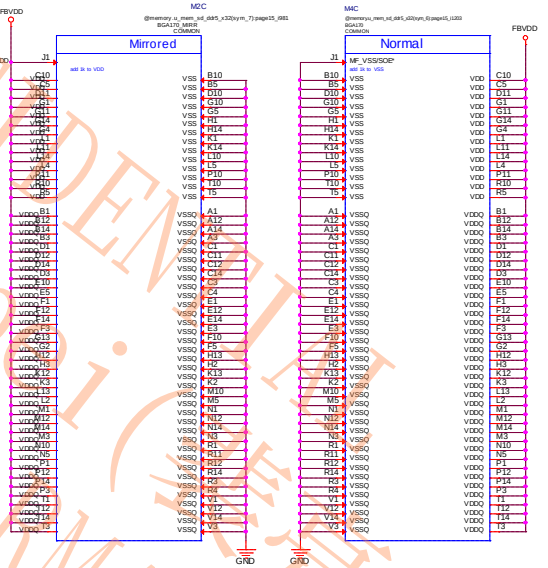
Date: Friday, January 06, 2017 Sheet 14 of 37

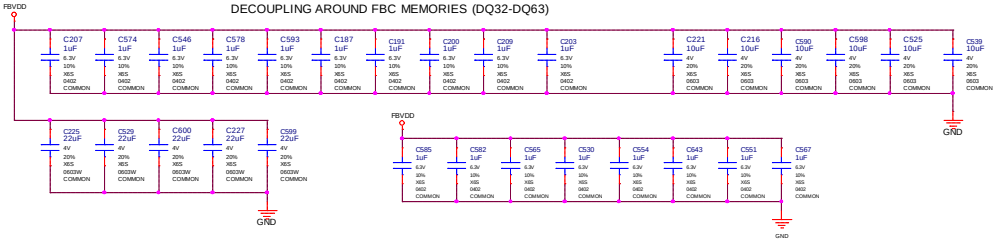
Page15: FRAME BUFFER PARTITION C/D DECOUPLING

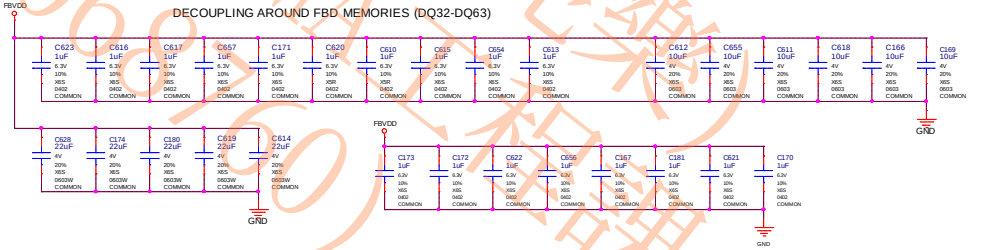






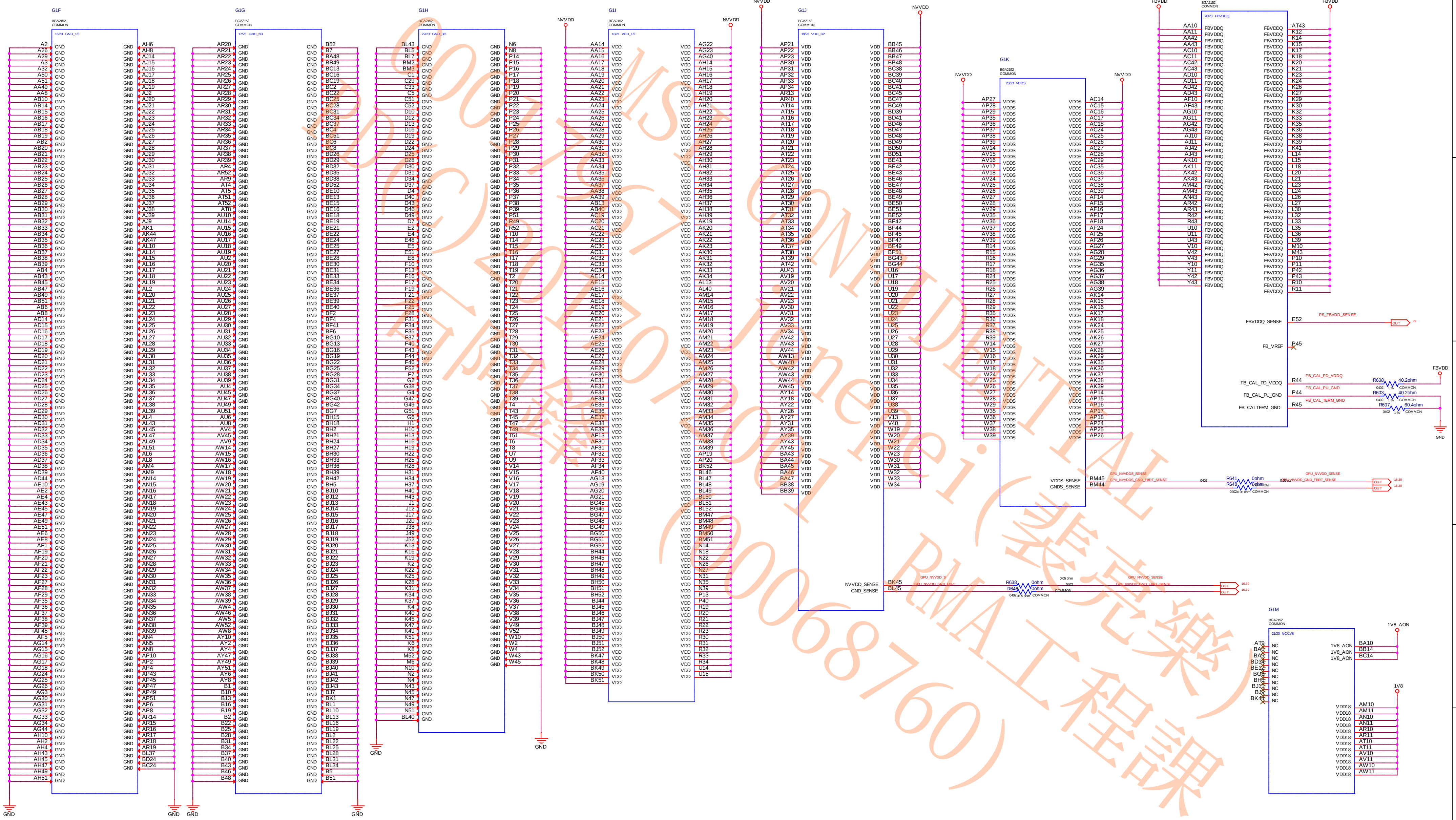






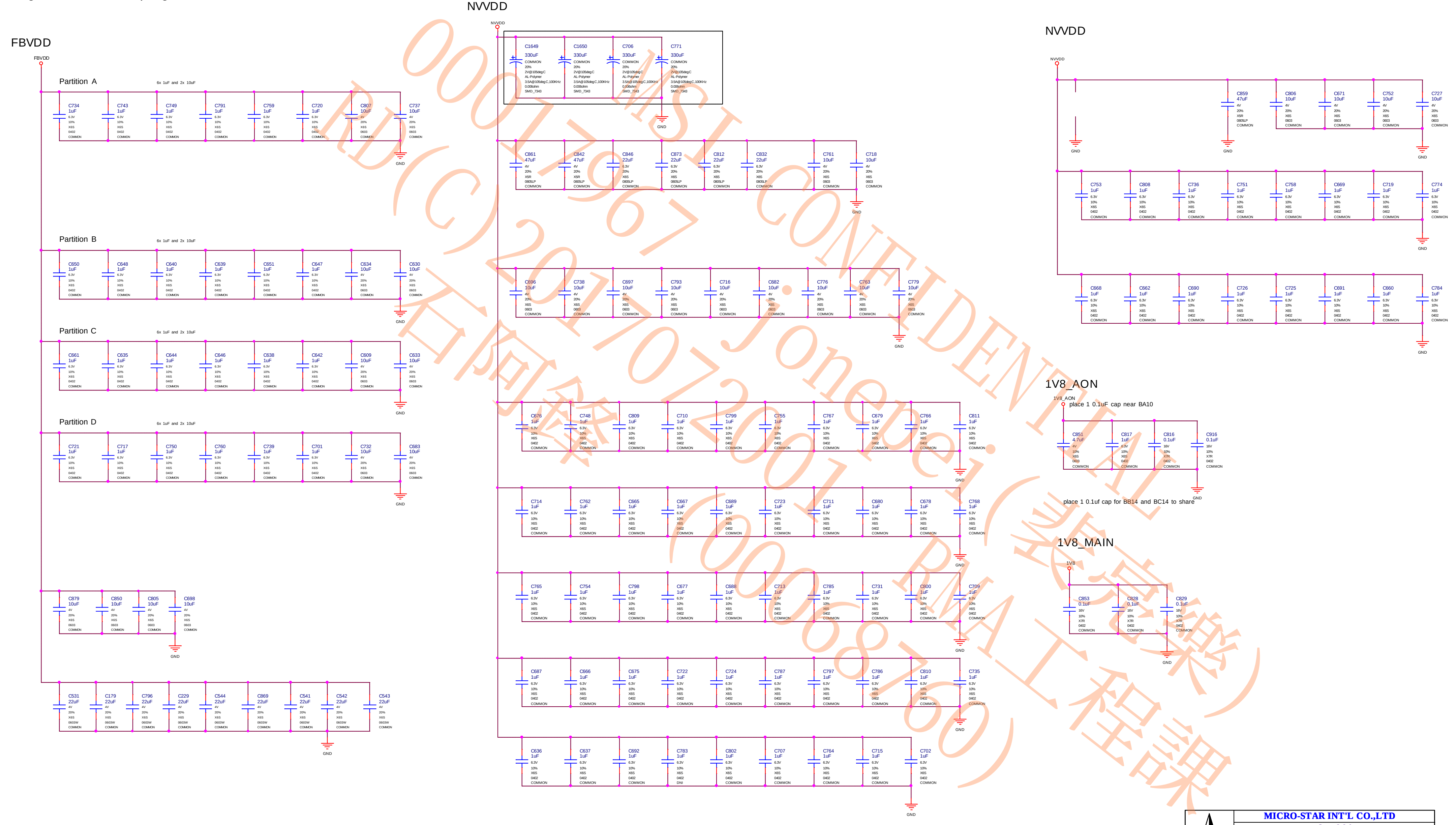
MSI	MICRO-STAR INT'L CO.,LTD	
	MS-V330	
Size: Custom	Document Description: MEM FB CD PWR	Rev: 7.1
Date: Friday, January 06, 2017	Sheet 15 of 37	

Page16: GPU PWR and GND



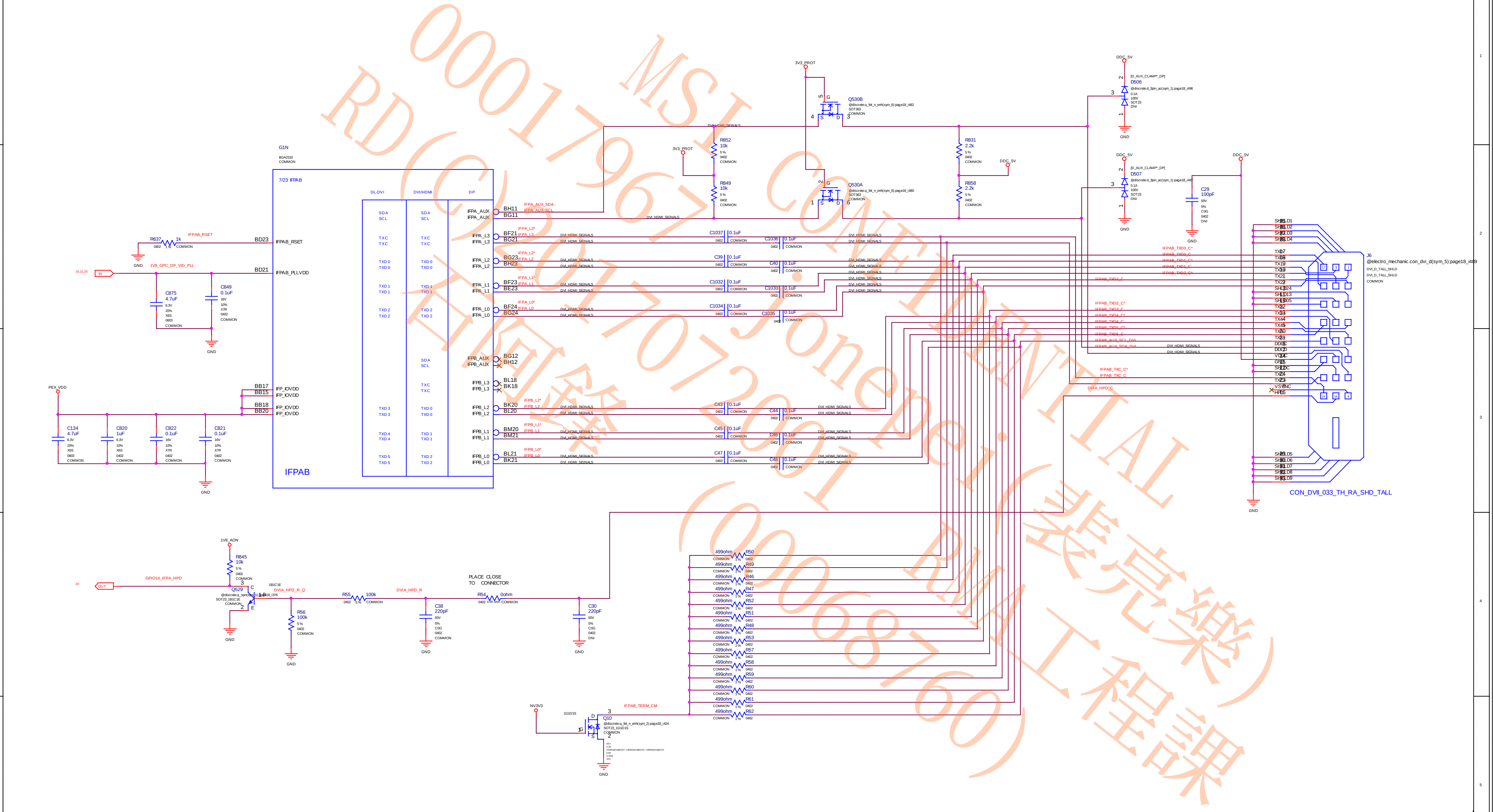
MICRO-STAR INT'L CO.,LTD		
MS-V330		
Size: Custom	Document Description: GPU PWR&GND	Rev 7.1
Date: Friday, January 06, 2017	Sheet 16 of 37	

Page17: GPU Decoupling



MICRO-STAR INT'L CO.,LTD		
MS-V330		
Size: Custom	Document Description: GPU DECOUPLING	Rev 7.1
Date: Friday, January 06, 2017	Sheet 17 of 37	

Page18: IFPAB DVI-D-DL



MICRO-STAR INT'L CO.,LTD

MS-V330

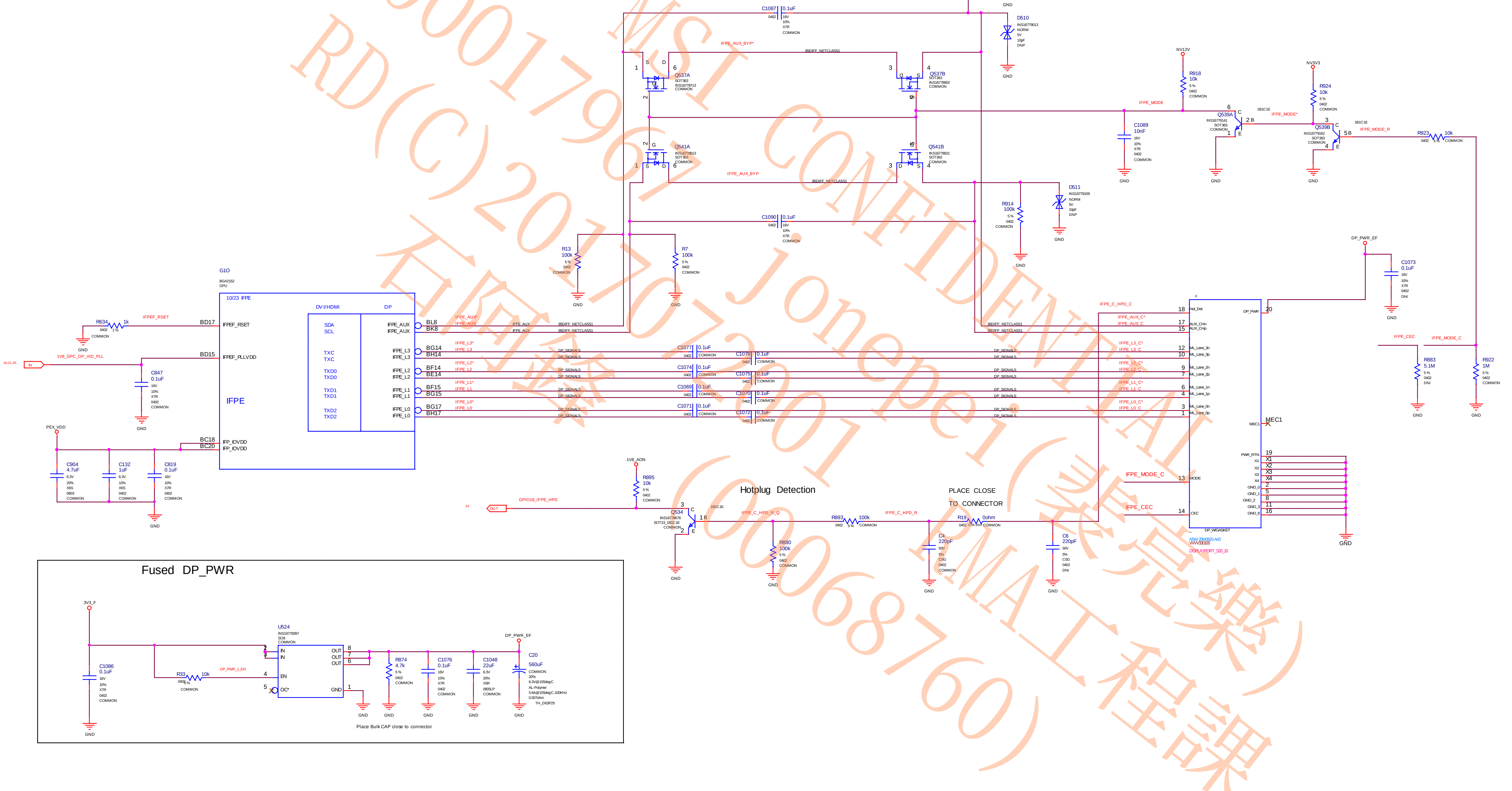
Size: Custom | Document Description: IFPAB | Rev 7.1

Date: Friday, January 06, 2017 | Sheet 18 of 37

Page19: IFPE DP

Two cases to be considered:

1. DP AUX to DP connector: AUX AC coupled
2. DP AUX to DP-DVI dongle: AUX pass through



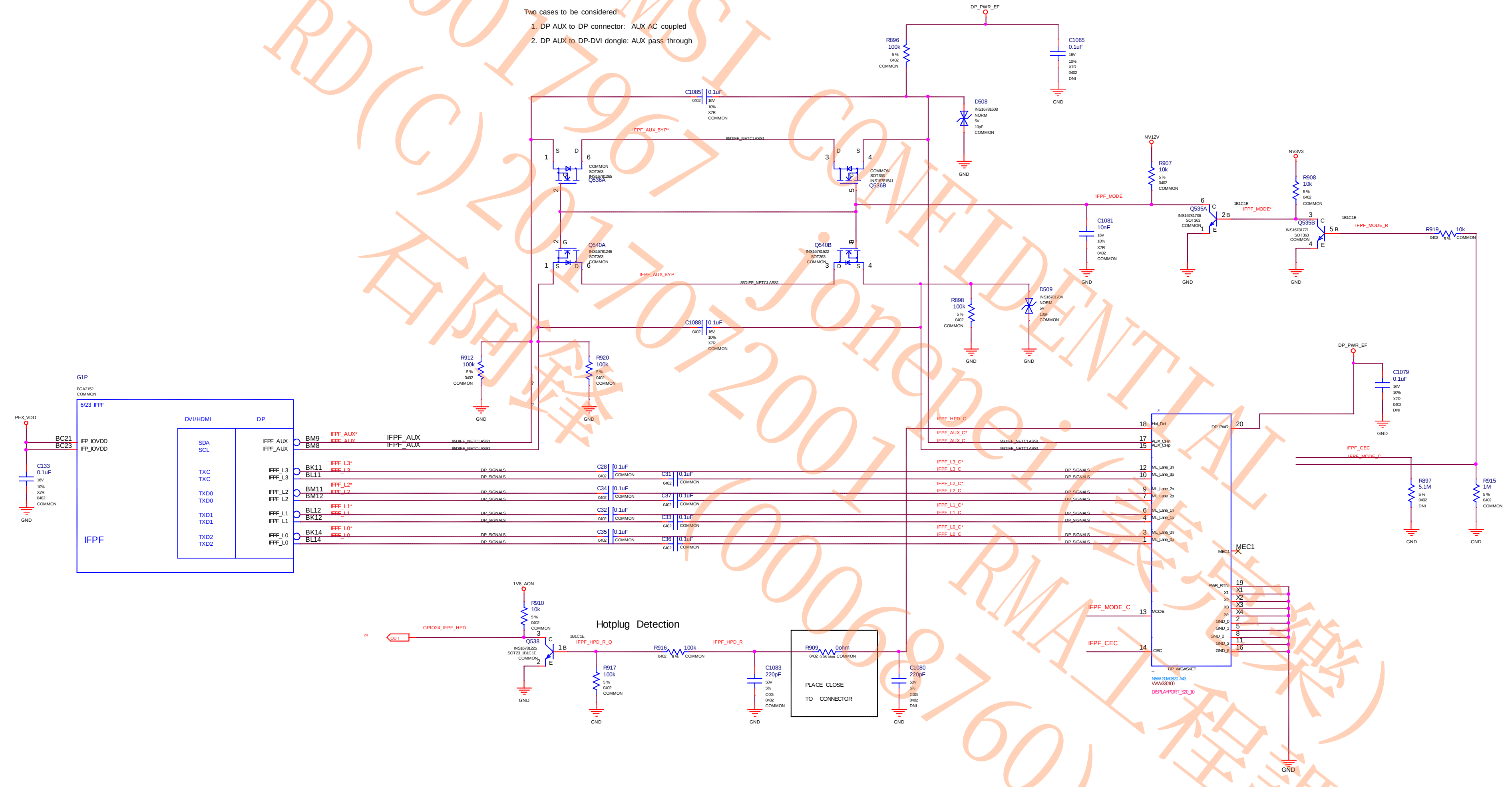
MICRO-STAR INT'L CO.,LTD

MS-V330

Size	Document Description	Rev
Custom	IFPE	7.1

Date: Friday, January 06, 2017 Sheet 19 of 37

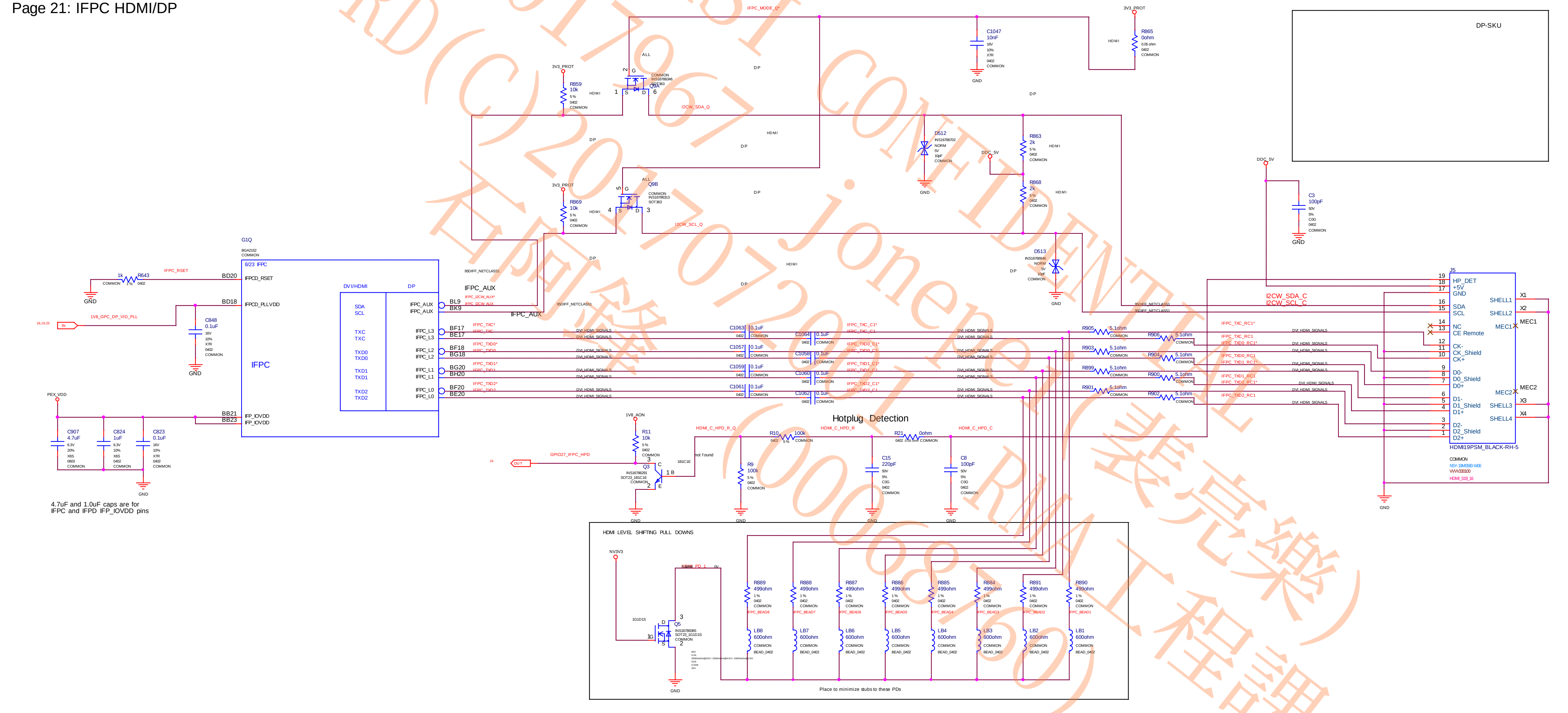
Page 20: IFPF DP



Two cases to be considered:
1. DP AUX to DP connector: AUX AC coupled
2. DP AUX to DP-DVI dongle: AUX pass through
DP_PWR_EF
R896 100k
C1065 0.1uF
C1085 0.1uF
D508
IFPF_AUX_BYP*
Q536A
Q536B
Q540A
Q540B
IFPF_AUX_BYP
NV12V
R907 10k
NV3V3
R908 10k
IFPF_MODE
C1081 10nF
Q535A
Q535B
IFPF_MODE*
IFPF_MODE_R
R919 10k
R898 100k
D509
C1088 0.1uF
R912 100k
R920 100k
G1P
6/23 IFPF
DVI/HDMI
DP
PEX_VDD
C133 0.1uF
BC21
BC23
IFP_IOVDD
SDA
SCL
TXC
TXD0
TXD1
TXD2
IFPF_AUX
IFPF_L3
IFPF_L2
IFPF_L1
IFPF_L0
BM9
BM8
BK11
BL11
BM11
BM12
BL12
BK12
BK14
BL14
IFPF
IFPF_AUX*
IFPF_L3*
IFPF_L2*
IFPF_L1*
IFPF_L0*
C28 0.1uF
C31 0.1uF
C34 0.1uF
C37 0.1uF
C32 0.1uF
C33 0.1uF
C35 0.1uF
C36 0.1uF
IFPF_HPD_C
IFPF_AUX_C*
IFPF_AUX_C
IFPF_L3_C*
IFPF_L3_C
IFPF_L2_C*
IFPF_L2_C
IFPF_L1_C*
IFPF_L1_C
IFPF_L0_C*
IFPF_L0_C
DP_PWR
MEC1
IFPF_MODE_C
IFPF_CEC
DP_PWR_EF
C1079 0.1uF
R897 5.1M
R915 1M
1V8_AON
R910 10k
GPIO24_IFPF_HPD
Q538
Hotplug Detection
IFPF_HPD_R_Q
R917 100k
R916 100k
IFPF_HPD_R
C1083 220pF
R909 0ohm
PLACE CLOSE TO CONNECTOR
C1080 220pF
DISPLAYPORT_S20_10
GND

MICRO-STAR INT'L CO.,LTD		
MS-V330		
Size: Custom	Document Description: IFPF	Rev: 7.1
Date: Friday, January 06, 2017	Sheet 20 of 37	

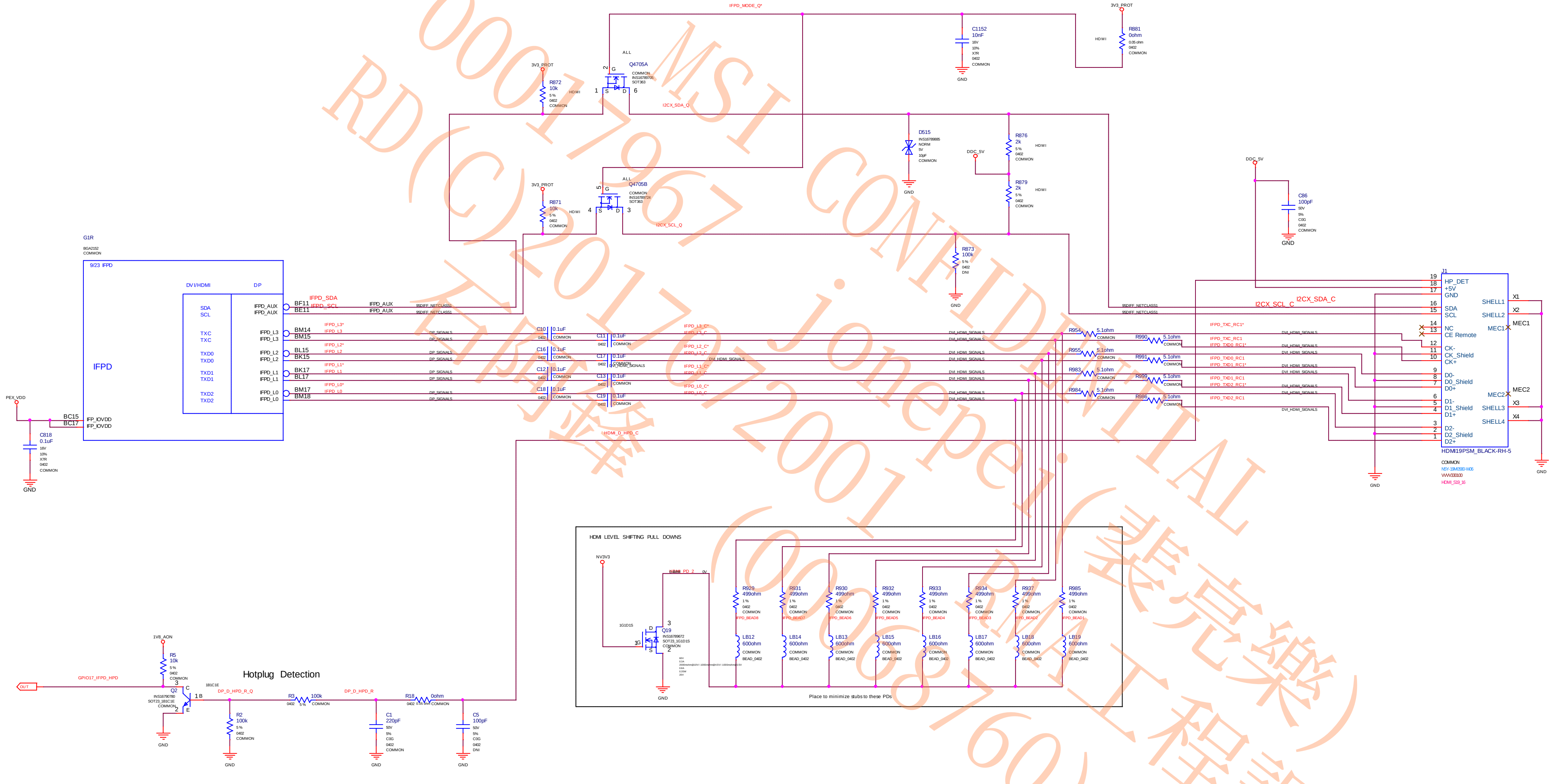
Page 21: IFPC HDMI/DP



DP-SKU
IFPC
G1Q
BGA2152
COMMON
8/23 IFPC
IFPD_RSET
IFPD_PLLVDD
IFP_IOVDD
DVI/HDMI
DP
SDA
SCL
TXC
TXD0
TXD1
TXD2
IFPC_AUX
IFPC_L3
IFPC_L2
IFPC_L1
IFPC_L0
BD20
BD18
BB21
BB23
BL9
BK9
BF17
BE17
BF18
BG18
BG20
BH20
BF20
BE20
IFPC_RSET
1V8_GPC_DP_VID_PLL
PEX_VDD
C907 4.7uF
C824 1uF
C823 0.1uF
C848 0.1uF
R643 1k
GND
4.7uF and 1.0uF caps are for IFPC and IFPD IFP_IOVDD pins
3V3_PROT
R859 10k
R869 10k
Q9A
Q9B
IFPC_MODE_Q*
I2CW_SDA_Q
I2CW_SCL_Q
C1047 10nF
R865 0ohm
D512
D513
DDC_5V
R863 2k
R868 2k
C3 100pF
J5
HP_DET
+5V
GND
SDA
SCL
NC
CE Remote
CK-
CK_Shield
CK+
D0-
D0_Shield
D0+
D1-
D1_Shield
D1+
D2-
D2_Shield
D2+
SHELL1
SHELL2
SHELL3
SHELL4
MEC1
MEC2
X1
X2
X3
X4
HDMI19PSM_BLACK-RH-5
I2CW_SDA_C
I2CW_SCL_C
C1063 0.1uF
C1057 0.1uF
C1059 0.1uF
C1061 0.1uF
C1064 0.1uF
C1058 0.1uF
C1060 0.1uF
C1062 0.1uF
R905 5.1ohm
R906 5.1ohm
R903 5.1ohm
R904 5.1ohm
R899 5.1ohm
R900 5.1ohm
R901 5.1ohm
R902 5.1ohm
Hotplug Detection
1V8_AON
R11 10k
Q3
GPIO27_IFPC_HPD
HDMI_C_HPD_R_Q
HDMI_C_HPD_R
HDMI_C_HPD_C
R10 100k
R21 0ohm
R9 100k
C15 220pF
C8 100pF
HDMI LEVEL SHIFTING PULL DOWNS
NV3V3
Q5
R889 499ohm
R888 499ohm
R887 499ohm
R886 499ohm
R885 499ohm
R884 499ohm
R891 499ohm
R890 499ohm
LB8 600ohm
LB7 600ohm
LB6 600ohm
LB5 600ohm
LB4 600ohm
LB3 600ohm
LB2 600ohm
LB1 600ohm
Place to minimize stubs to these PDs

MICRO-STAR INT'L CO.,LTD		
MS-V330		
Size: Custom	Document Description: IFPC	Rev: 7.1
Date: Friday, January 06, 2017	Sheet 21 of 37	

Page 22: IFPD DP



IFPD_MODE_Q*
3V3_PROT
Q4705A
Q4705B
R872 10k
R871 10k
R881 0ohm
C1152 10nF
I2CX_SDA_Q
I2CX_SCL_Q
D515
R876 2k
R879 2k
DDC_5V
R873 100k
C86 100pF
G1R
IFPD
DVI/HDMI
DP
IFPD_SDA
IFPD_SCL
IFPD_AUX
C818 0.1uF
PEX_VDD
J1
HP_DET
+5V
GND
SDA
SCL
NC
CE Remote
CK-
CK_Shield
CK+
D0-
D0_Shield
D0+
D1-
D1_Shield
D1+
D2-
D2_Shield
D2+
SHELL1
SHELL2
SHELL3
SHELL4
MEC1
MEC2
HDMI19PSM_BLACK-RH-5
I2CX_SCL_C
I2CX_SDA_C
HDMI_D_HPD_C
HDMI LEVEL SHIFTING PULL DOWNS
NV3V3
Q19
R929 499ohm
R931 499ohm
R930 499ohm
R932 499ohm
R933 499ohm
R934 499ohm
R937 499ohm
R985 499ohm
LB12 600ohm
LB14 600ohm
LB13 600ohm
LB15 600ohm
LB16 600ohm
LB17 600ohm
LB18 600ohm
LB19 600ohm
Place to minimize stubs to these PDs
Hotplug Detection
GPIO17_IFPD_HPD
1V8_AON
R5 10k
Q2
R2 100k
R3 100k
R18 0ohm
C1 220pF
C5 100pF
DP_D_HPD_R_Q
DP_D_HPD_R
GND

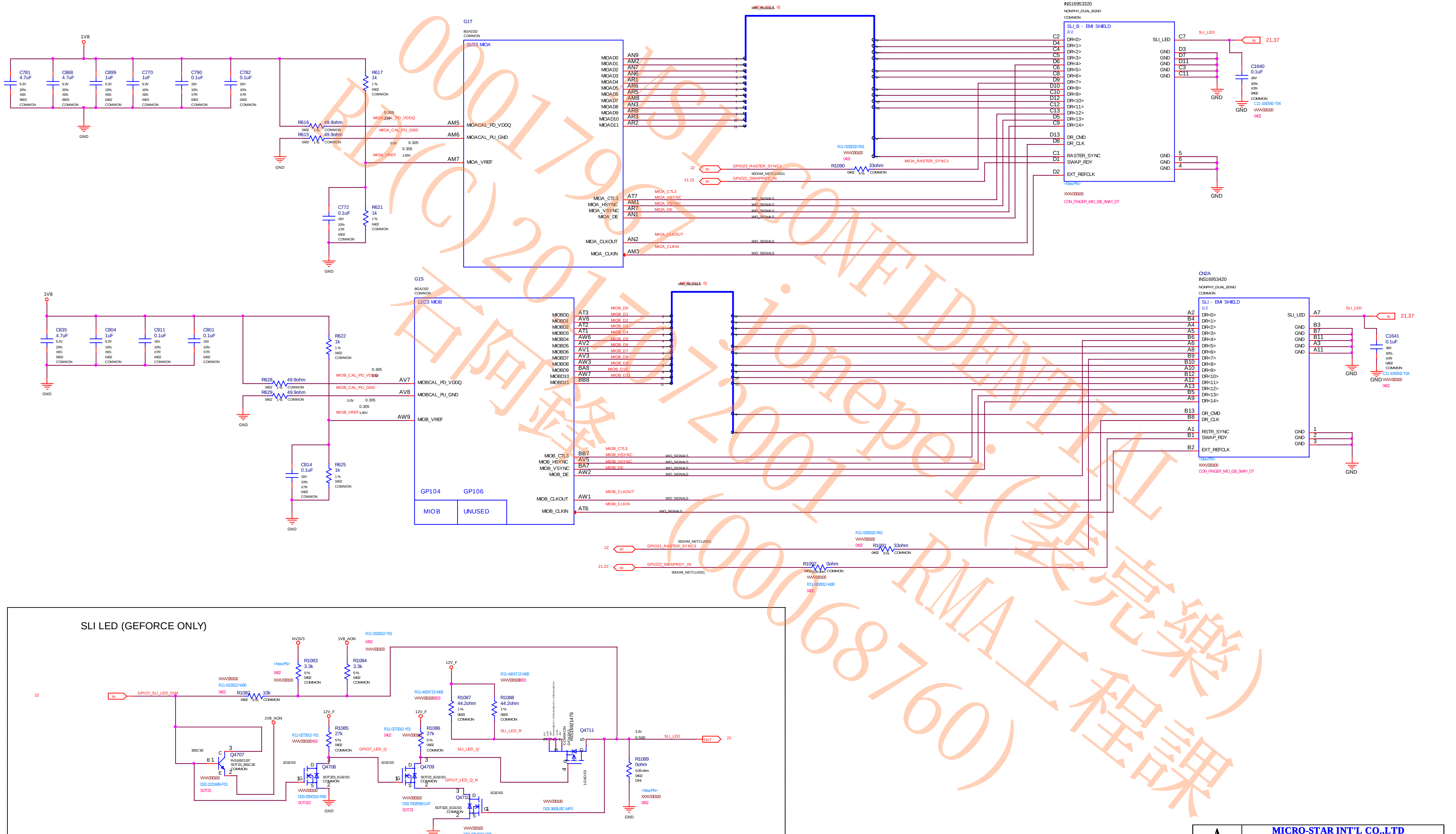
MICRO-STAR INT'L CO.,LTD

MS-V330

Size	Document Description	Rev
Custom	IFPD	7.1

Date: Friday, January 06, 2017 | Sheet 22 of 37

Page 23: MIOA/B Interface and Frame Lock

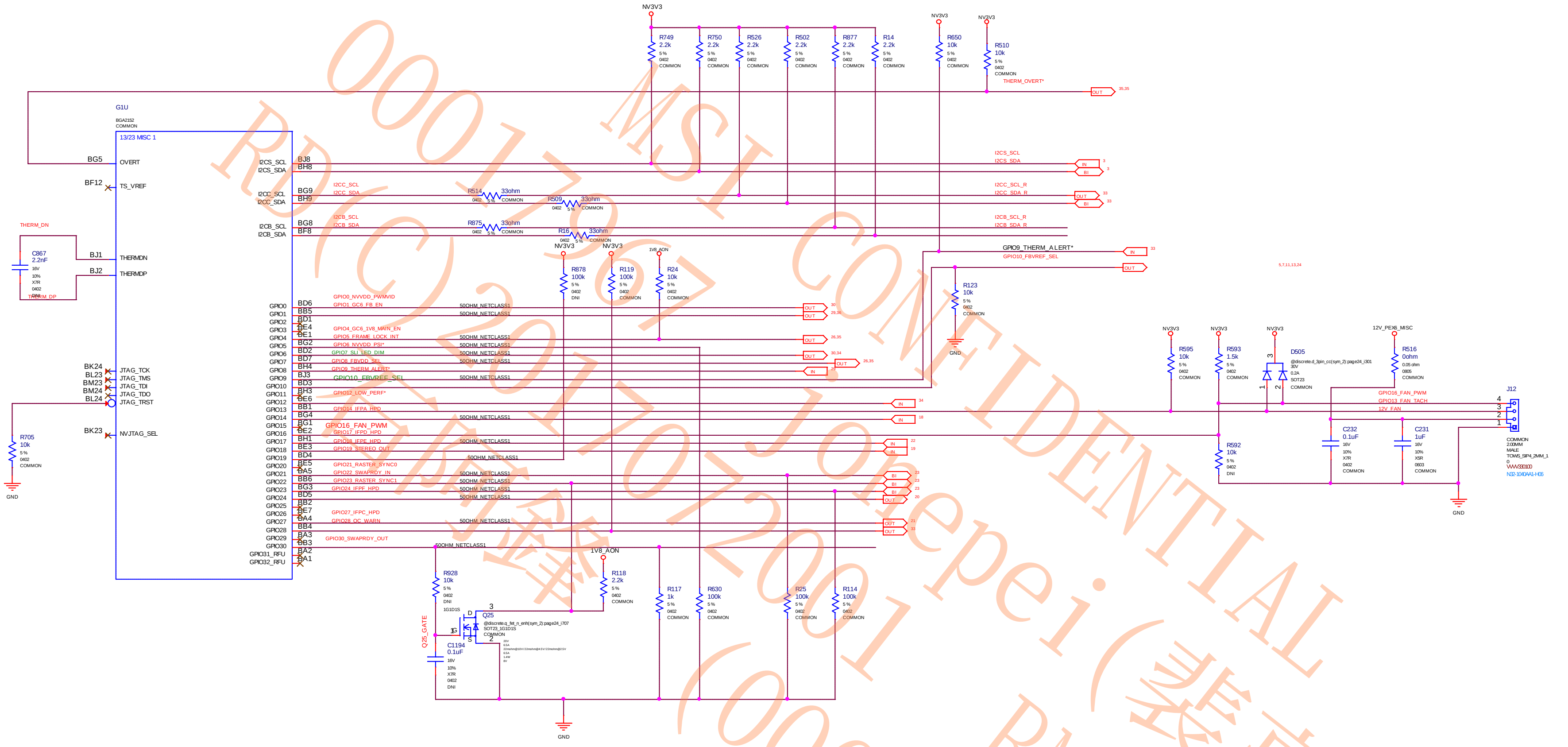


G1T
BGA2152
COMMON
11/23 MIOA
MIOACAL_PD_VDDQ
MIOACAL_PU_GND
MIOA_VREF
MIOA_CTL3
MIOA_HSYNC
MIOA_VSYNC
MIOA_DE
MIOA_CLKOUT
MIOA_CLKIN
G1S
BGA2152
COMMON
12/23 MIOB
MIOBCAL_PD_VDDQ
MIOBCAL_PU_GND
MIOB_VREF
MIOB_CTL3
MIOB_HSYNC
MIOB_VSYNC
MIOB_DE
MIOB_CLKOUT
MIOB_CLKIN
GP104
GP106
MIOB
UNUSED
CN2B
INS16953320
SLI_B - EMI SHIELD
RASTER_SYNC
SWAP_RDY
EXT_REFCLK
CN2A
INS16953420
SLI - EMI SHIELD
RSTR_SYNC
SWAP_RDY
EXT_REFCLK
GPIO23_RASTER_SYNC1
GPIO22_SWAPRDY_IN
GPIO21_RASTER_SYNC0
SLI LED (GEFORCE ONLY)
GPIO7_SLI_LED_DIM
Q4707
Q4708
Q4709
Q4710
Q4711
SLI_LED
1V8
GND

MICRO-STAR INT'L CO.,LTD			
MS-V330			
Size: Custom	Document Description: MIOA/B		Rev 7.1
Date: Friday, January 06, 2017	Sheet 23 of 37		

DFET_SMD_0324033

Page 24: MISC1: Fan, Thermal, JTAG, GPIO



NV3V3
R749 2.2k
R750 2.2k
R526 2.2k
R502 2.2k
R877 2.2k
R14 2.2k
R650 10k
R510 10k
THERM_OVERT*
G1U
13/23 MISC 1
OVERT
TS_VREF
THERMDN
THERMDP
I2CS_SCL
I2CS_SDA
I2CC_SCL
I2CC_SDA
I2CB_SCL
I2CB_SDA
R514 33ohm
R509 33ohm
R875 33ohm
R16 33ohm
THERM_DN
THERM_DP
C867 2.2nF
JTAG_TCK
JTAG_TMS
JTAG_TDI
JTAG_TDO
JTAG_TRST
NVJTAG_SEL
R705 10k
GND
GPIO0
GPIO1
GPIO2
GPIO3
GPIO4
GPIO5
GPIO6
GPIO7
GPIO8
GPIO9
GPIO10
GPIO11
GPIO12
GPIO13
GPIO14
GPIO15
GPIO16
GPIO17
GPIO18
GPIO19
GPIO20
GPIO21
GPIO22
GPIO23
GPIO24
GPIO25
GPIO26
GPIO27
GPIO28
GPIO29
GPIO30
GPIO31_RFU
GPIO32_RFU
GPIO9_THERM_ALERT*
GPIO10_FBVREF_SEL
GPIO16_FAN_PWM
GPIO13_FAN_TACH
12V_FAN
R878 100k
R119 100k
R24 10k
R123 10k
1V8_AON
R928 10k
R118 2.2k
Q25
C1194 0.1uF
Q25_GATE
R117 1k
R630 100k
R25 100k
R114 100k
R595 10k
R593 1.5k
R592 10k
D505
R516 0ohm
12V_PEX8_MISC
C232 0.1uF
C231 1uF
J12

MICRO-STAR INT'L CO.,LTD			
MS-V330			
Size Custom	Document Description FAN		Rev 7.1
Date: Friday, January 06, 2017		Sheet 24 of 37	

Page25: MISC2: ROM, XTAL, Straps

STRAP2	STRAP1	STRAP0	RAMCFG[4:0]
L	L	L	00000
L	L	H	00001
L	H	L	00010
L	H	H	00011
H	H	L	00110
H	H	H	00111
L	L	M	01000

ROM_SO	ROM_SI	ROM_SCLK	SOR_EXPOSED[3:0]	1:ENABLE 0:DISABLE
L	L	L	1111 DEFAULT	SOR0/1/2/3 ENABLE
L	L	H	1110	
L	H	L	1101	
L	H	H	1100	
H	L	L	1011	
H	L	H	1010	
H	H	L	1001	
H	H	H	1000	
L	L	M	0111	
L	M	L	0110	
L	M	H	0101	
L	H	M	0100	
H	L	M	0011	
H	M	L	0010	
H	M	H	0001	
H	H	M	0000	

STRAP5	STRAP4	STRAP3	SMB_ALT_ADDR	DEVID_SEL	PCIE_CFG	VGA_DEVICE
M	H	H	1	1	1	1
M	H	L	1	1	1	0
M	L	H	1	1	0	1
M	L	L	1	1	0	0
L	H	M	1	0	1	1
L	M	H	1	0	1	0
L	M	L	1	0	0	1
L	L	M	1	0	0	0
H	H	H	0	1	1	1
H	H	L	0	1	1	0
H	L	H	0	1	0	1
H	L	L	0	1	0	0
L	H	H	0	0	1	1
L	H	L	0	0	1	0
L	L	H	0	0	0	1 DEFAULT
L	L	L	0	0	0	0

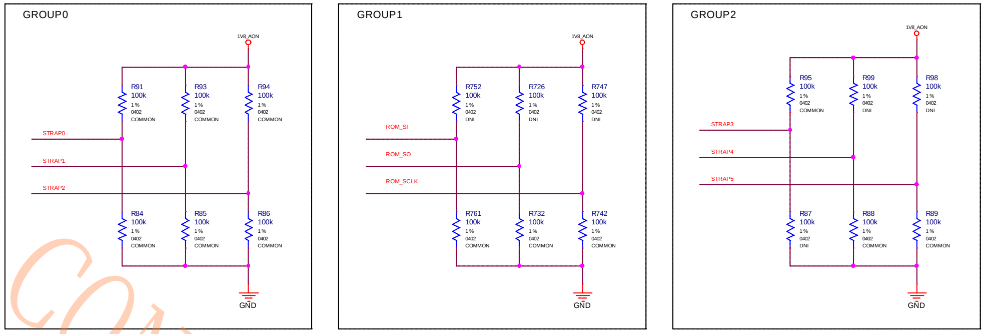
H=High :Tied to 1.8V
M=Middle:Tied to 0.9V
L=Low :Tied to 0V

1:SMB_ALT_ADDR ENABLE
0:SMB_ALT_ADDR DISABLE

1:DEVID_SEL REBRAND
0:DEVID_SEL ORIGNAL

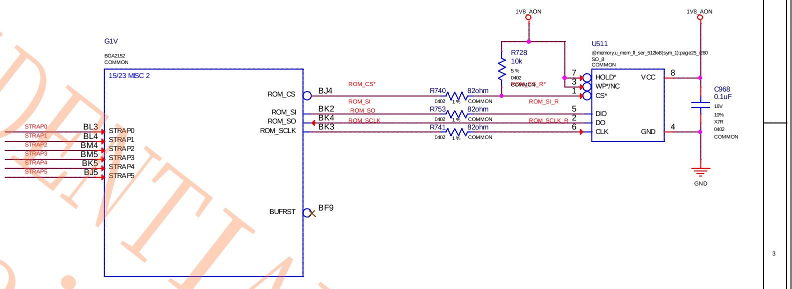
1:PCIE_CFG LOW POWER
0:PCIE_CFG HIGH POWER

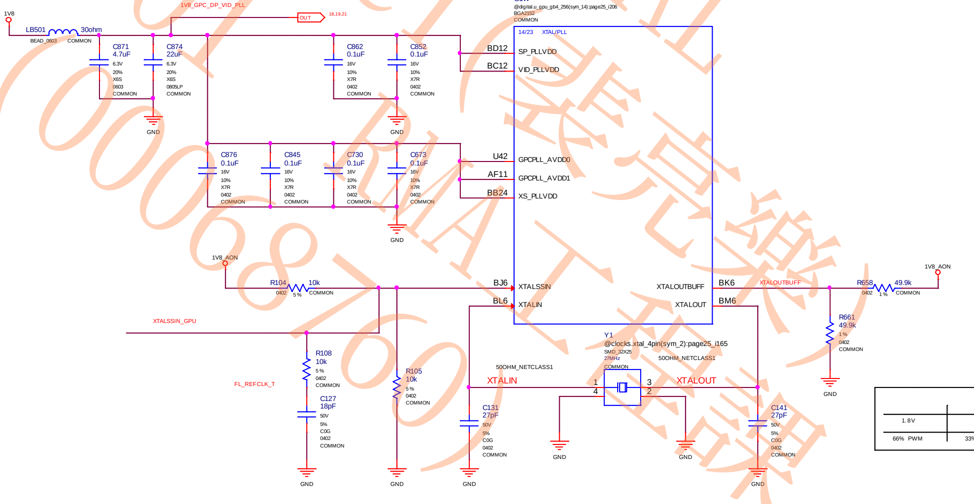
1:VGA_DEVICE ENABLE
0:VGA_DEVICE DISABLE



GROUP0
GROUP1
GROUP2
1V8_AON
STRAP0
STRAP1
STRAP2
ROM_SI
ROM_SO
ROM_SCLK
STRAP3
STRAP4
STRAP5
R91 100k
R93 100k
R94 100k
R84 100k
R85 100k
R86 100k
R752 100k
R726 100k
R747 100k
R761 100k
R732 100k
R742 100k
R95 100k
R99 100k
R98 100k
R87 100k
R88 100k
R89 100k
GND

CFG[3:0]	Config	Width	Vendor
0000	256Mx32	256-bit	Samsung
0001	256Mx32	256-bit	Micron
0010	256Mx32	256-bit	Hynix
0011	Reserved		
0100	Reserved		
0101	Reserved		
0110	Reserved		
0111	Reserved		





1V8
LB501 30ohm
1V8_GPC_DP_VID_PLL
C871 4.7uF
C874 22uF
C862 0.1uF
C852 0.1uF
C876 0.1uF
C845 0.1uF
C730 0.1uF
C673 0.1uF
G1W
14/23 XTAL/PLL
SP_PLLVDD
VID_PLLVDD
GPCPLL_AVDD0
GPCPLL_AVDD1
XS_PLLVDD
XTALSSIN
XTALIN
XTALOUTBUFF
XTALOUT
BD12
BC12
U42
AF11
BB24
BJ6
BL6
BK6
BM6
1V8_AON
R104 10k
XTALSSIN_GPU
R108 10k
C127 18pF
R105 10k
FL_REFCLK_T
Y1
XTALIN
XTALOUT
C131 27pF
C141 27pF
R658 49.9k
R661 49.9k
XTALOUTBUFF
GND

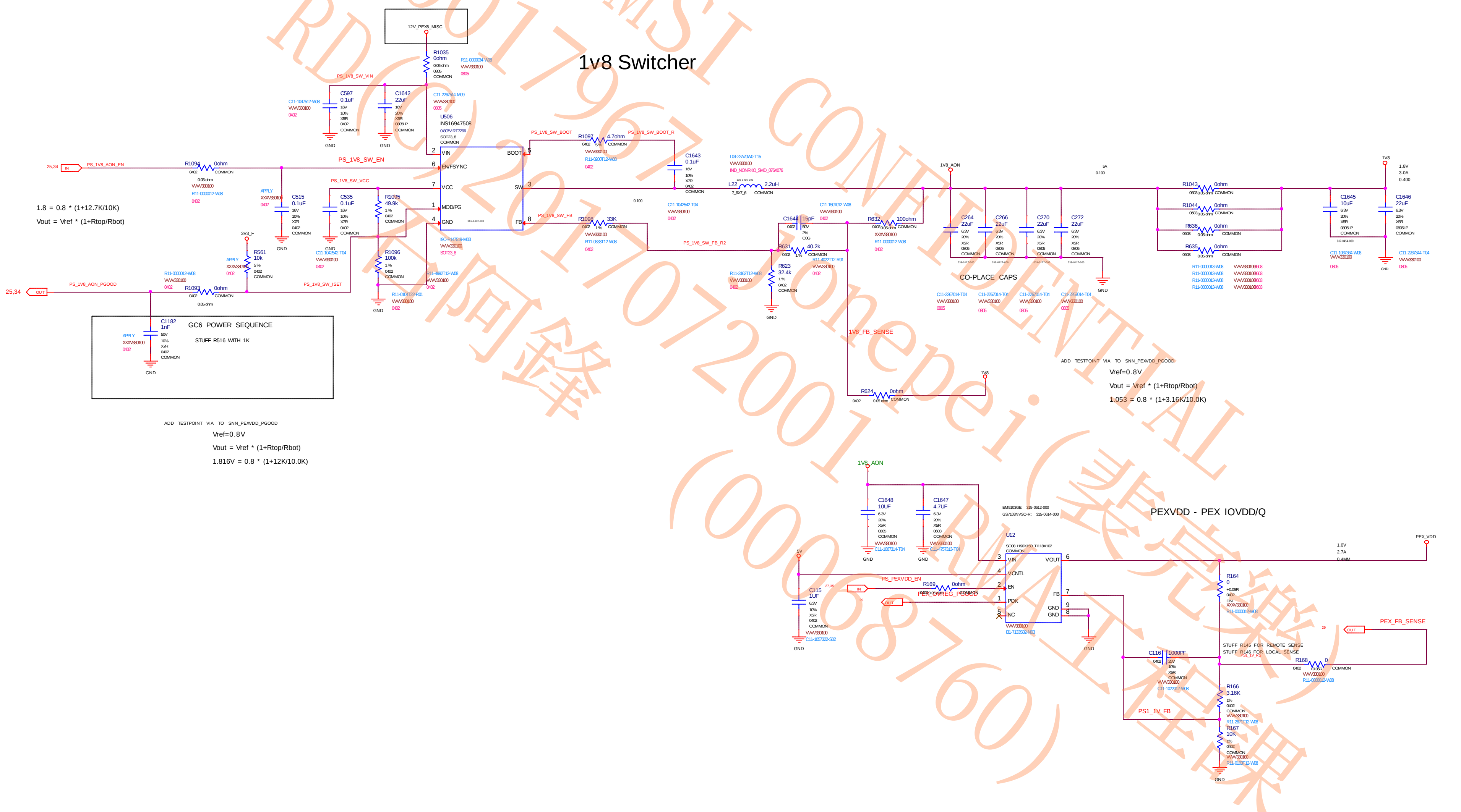
XTALOUTBUFF		
1.8V	0.9V	0V
66% PWM	33% PWM	DISABLED (100%)

MICRO-STAR INT'L CO.,LTD
MS-V330

Size	Document Description	Rev
Custom	STRAPS	7.1

Date: Friday, January 06, 2017 | Sheet 25 of 37

Page26: PS: 1V8 PLL, 1V8_AON


1v8 Switcher
12V_PEX6_MISC
R1035 0ohm
PS_1V8_SW_VIN
C597 0.1uF
C1642 22uF
U506
INS16947508
VIN
EN/FSYNC
VCC
MOD/PG
GND
BOOT
SW
FB
PS_1V8_SW_EN
PS_1V8_AON_EN
R1094 0ohm
PS_1V8_SW_VCC
C515 0.1uF
C535 0.1uF
R1095 49.9k
R1096 100k
PS_1V8_SW_ISET
PS_1V8_SW_BOOT
R1097 4.7ohm
PS_1V8_SW_BOOT_R
C1643 0.1uF
L22 2.2uH
PS_1V8_SW_FB
R1098 33K
PS_1V8_SW_FB_R2
1.8 = 0.8 * (1+12.7K/10K)
Vout = Vref * (1+Rtop/Rbot)
3V3_F
R561 10k
PS_1V8_AON_PGOOD
R1093 0ohm
C1182 1nF
GC6 POWER SEQUENCE
STUFF R516 WITH 1K
ADD TESTPOINT VIA TO SNN_PEXVDD_PGOOD
Vref=0.8V
Vout = Vref * (1+Rtop/Rbot)
1.816V = 0.8 * (1+12K/10.0K)
1V8_AON
C1644 15pF
R631 40.2k
R623 32.4k
R632 100ohm
C264 22uF
C266 22uF
C270 22uF
C272 22uF
CO-PLACE CAPS
1V8_FB_SENSE
R624 0ohm
R1043 0ohm
R1044 0ohm
R636 0ohm
R635 0ohm
C1645 10uF
C1646 22uF
1V8
ADD TESTPOINT VIA TO SNN_PEXVDD_PGOOD
Vref=0.8V
Vout = Vref * (1+Rtop/Rbot)
1.053 = 0.8 * (1+3.16K/10.0K)
PEXVDD - PEX IOVDD/Q
C1648 10UF
C1647 4.7UF
U12
VIN
VCNTL
EN
POK
NC
VOUT
FB
GND
PS_PEXVDD_EN
R169 0ohm
C115 1UF
PEX_VDD
R164 0
PEX_FB_SENSE
STUFF R145 FOR REMOTE SENSE
STUFF R146 FOR LOCAL SENSE
R168 0
C116 1000PF
PS1_1V_FB
R166 3.16K
R167 10K
GND

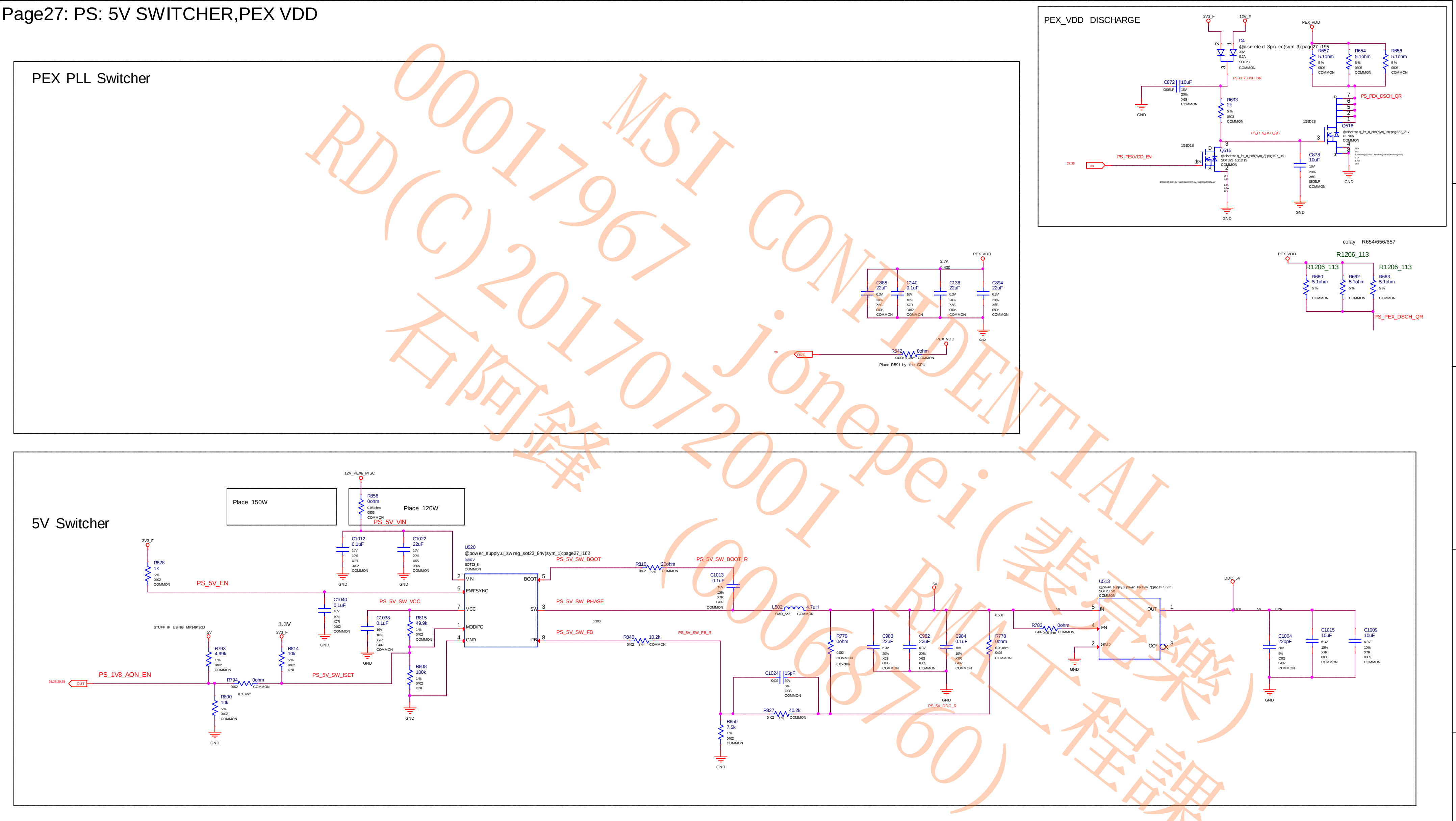
MICRO-STAR INT'L CO.,LTD

MS-V330

Size: Custom | Document Description: 1V8/PEX | Rev 7.1

Date: Friday, January 06, 2017 | Sheet 26 of 37

Page27: PS: 5V SWITCHER,PEX VDD



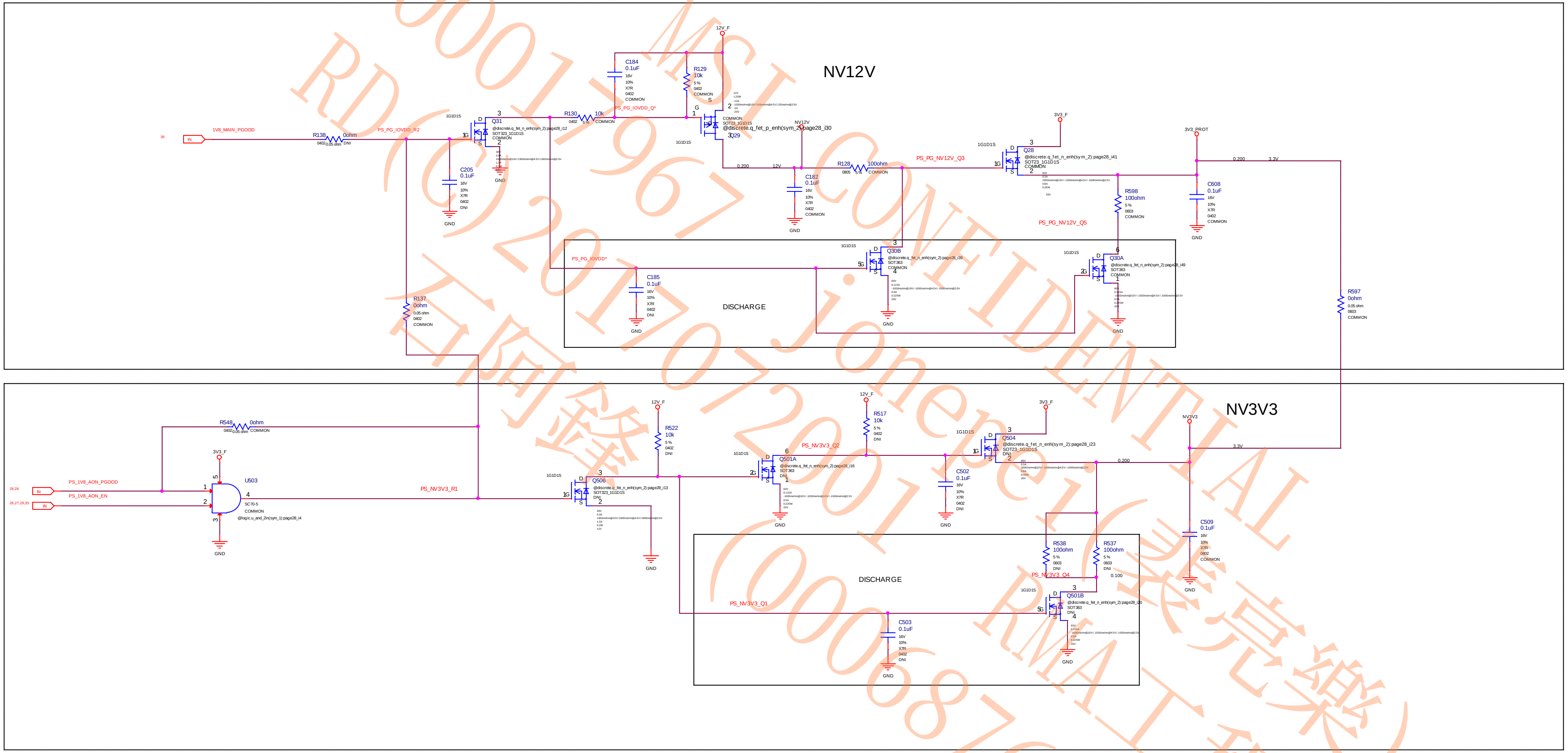
MICRO-STAR INT'L CO.,LTD

MS-V330

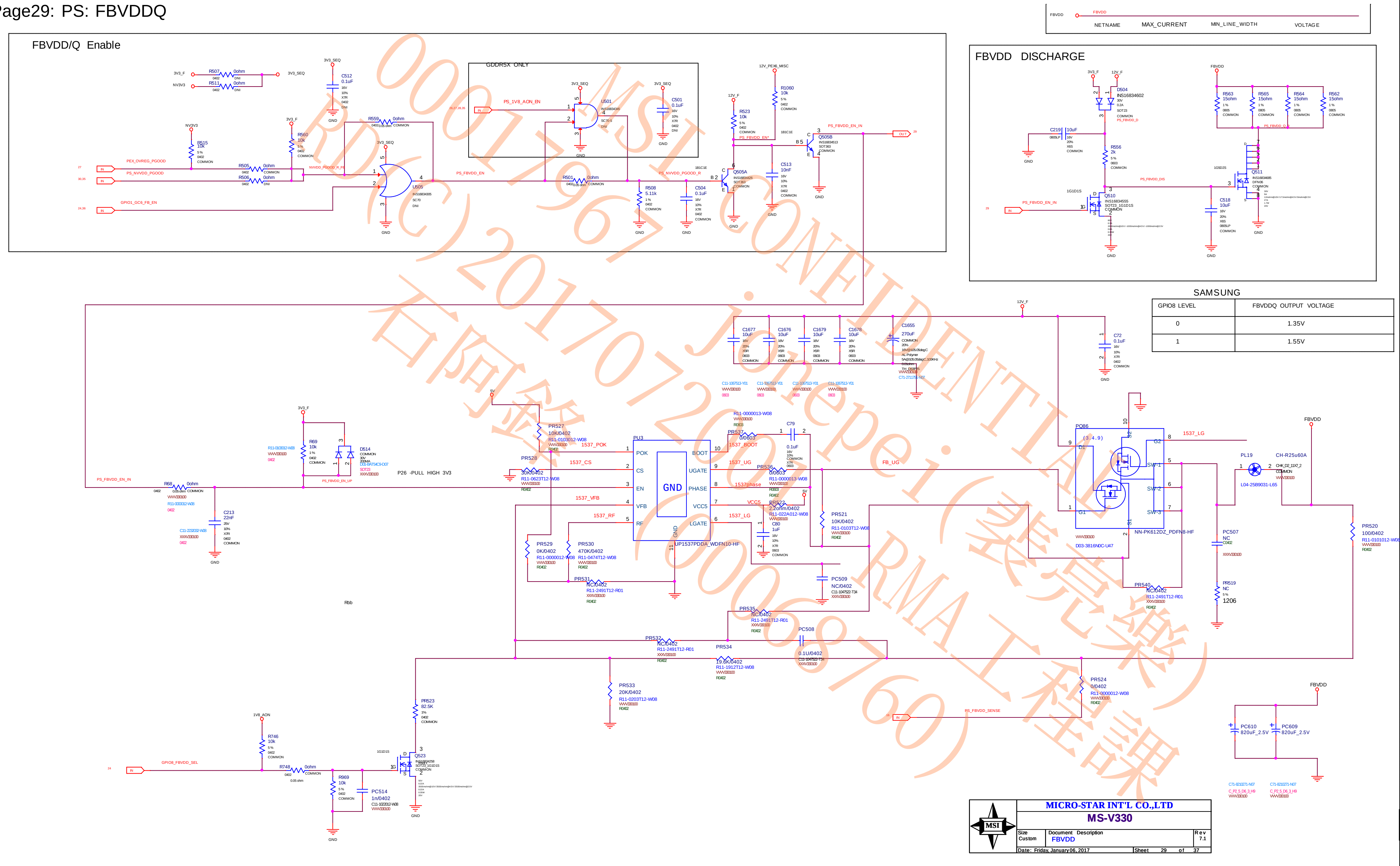
Size	Document Description	Rev
Custom	5V	7.1

Date: Friday, January 06, 2017 Sheet 27 of 37

Page 28:PS: NV3V3, NV12V



Page29: PS: FBVDDQ



SAMSUNG

GPIO8 LEVEL	FBVDDQ OUTPUT VOLTAGE
0	1.35V
1	1.55V

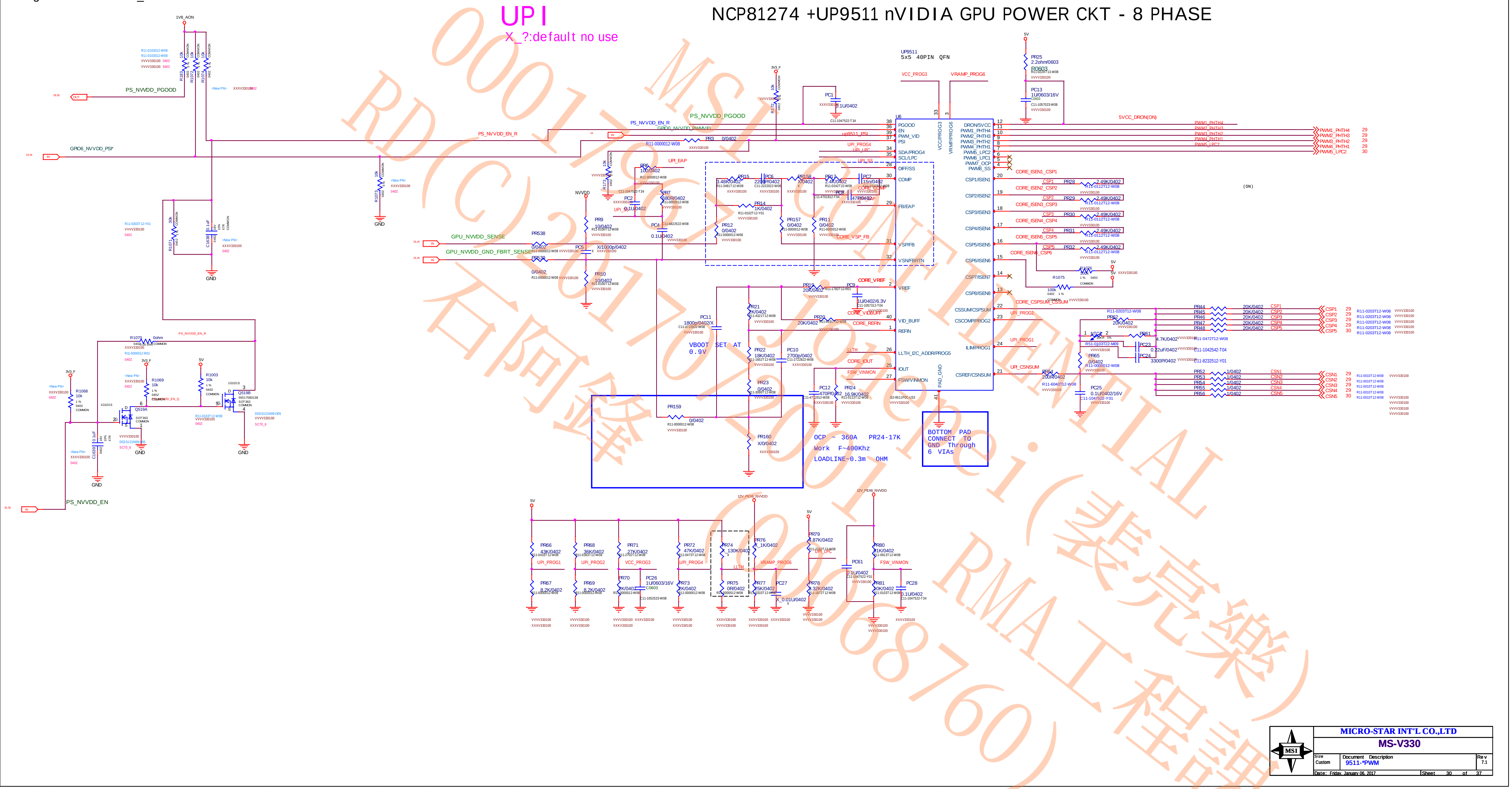
MICRO-STAR INT'L CO.,LTD

MS-V330

Size: Custom | Document Description: FBVDD | Rev 7.1

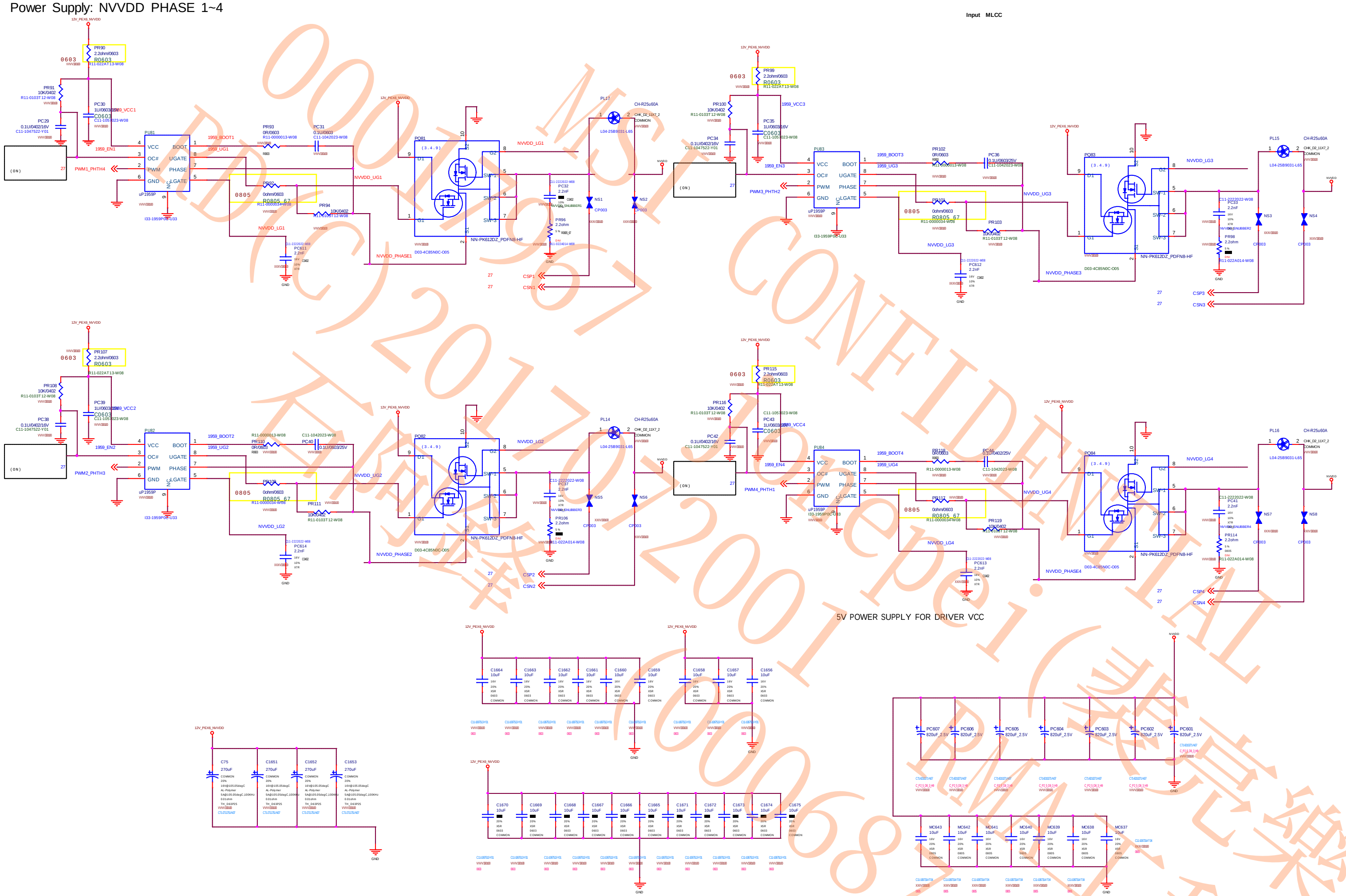
Date: Friday, January 06, 2017 | Sheet 29 of 37

Page27: PS: NVVDD_OVR8



Page29: PS: NVVDD Phase 1-4

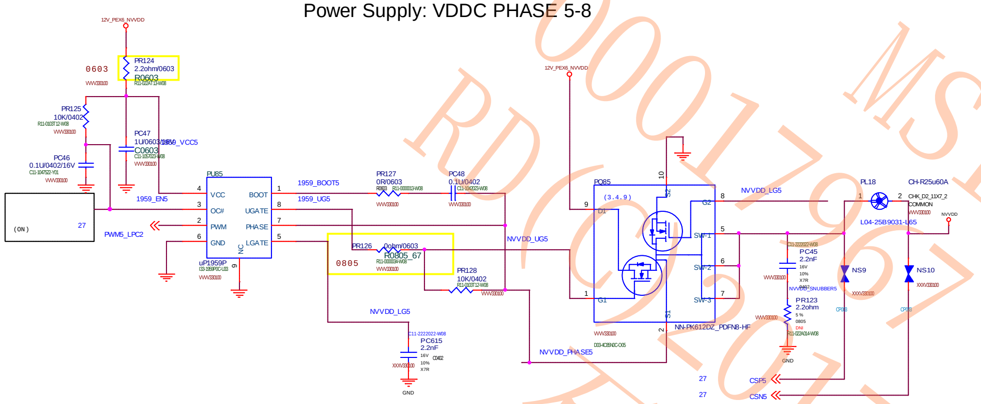
Power Supply: NVVDD PHASE 1~4



MICRO-STAR INT'L CO.,LTD		
MS-V330		
Size: Custom	Document Description: PHASE 1-4	Rev 7.1
Date: Friday, January 06, 2017	Sheet 31 of 37	

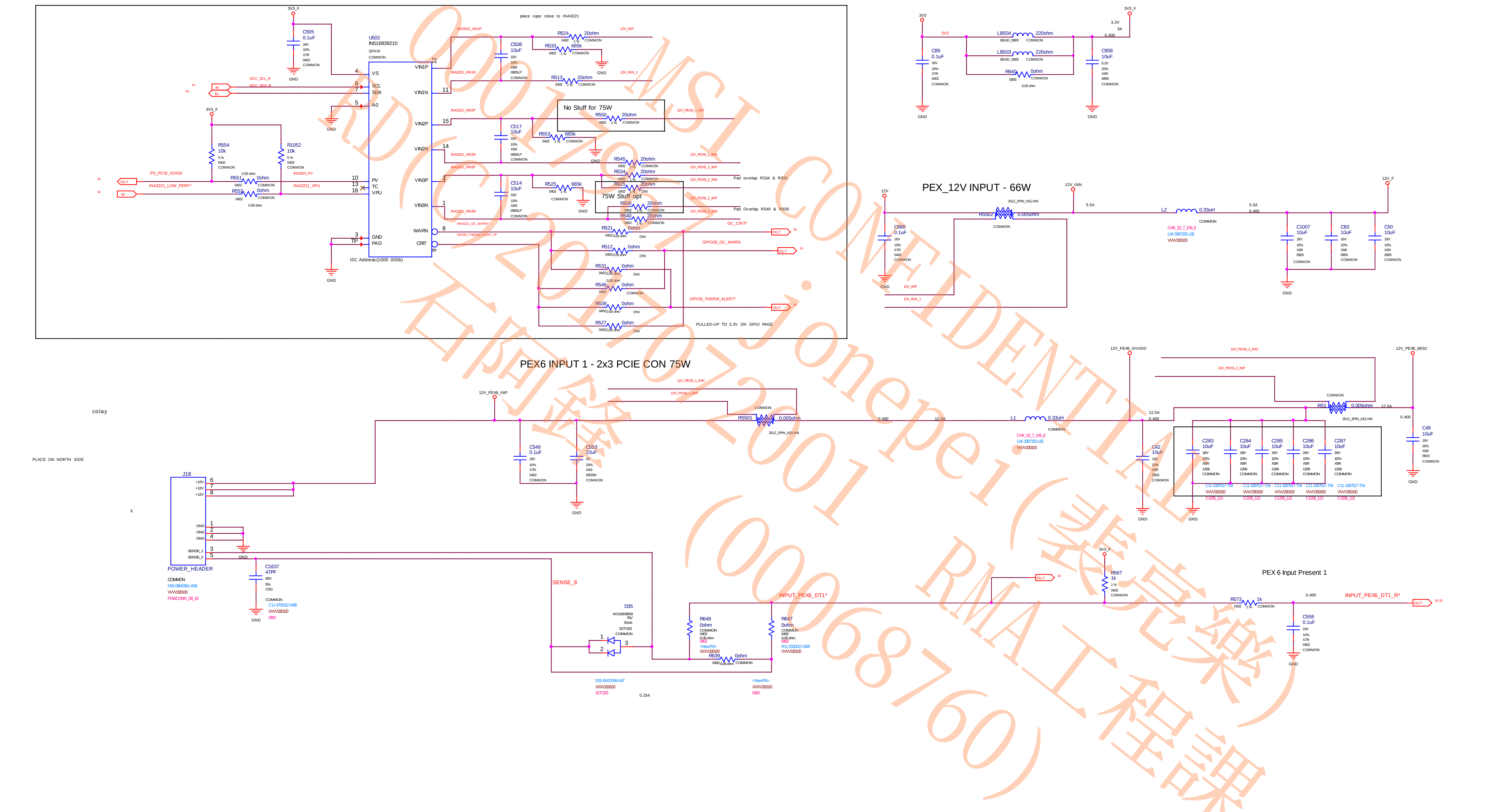
Page30: PS: NVVDD Phase 5 ~8

Power Supply: VDDC PHASE 5-8



MICRO-STAR INT'L CO.,LTD		
MS-V330		
Size: Custom	Document Description: PHASE 5	Rev: 7.1
Date: Friday, January 06, 2017	Sheet 32 of 37	

Page33: PS: Inputs, Filtering, and Monitoring

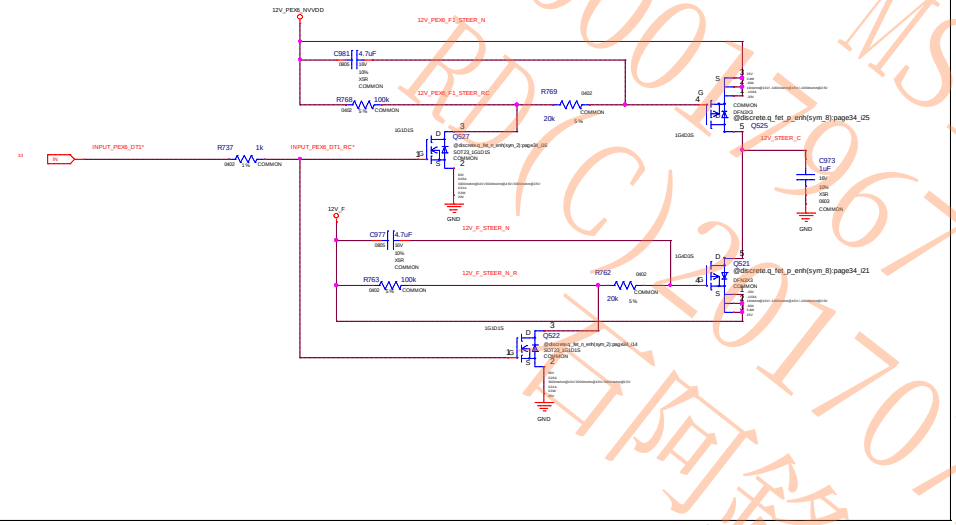


MICRO-STAR INT'L CO.,LTD			
MS-V330			
Size: Custom	Document Description: INPUT		Rev 7.1
Date: Friday, January 06, 2017		Sheet 33 of 37	

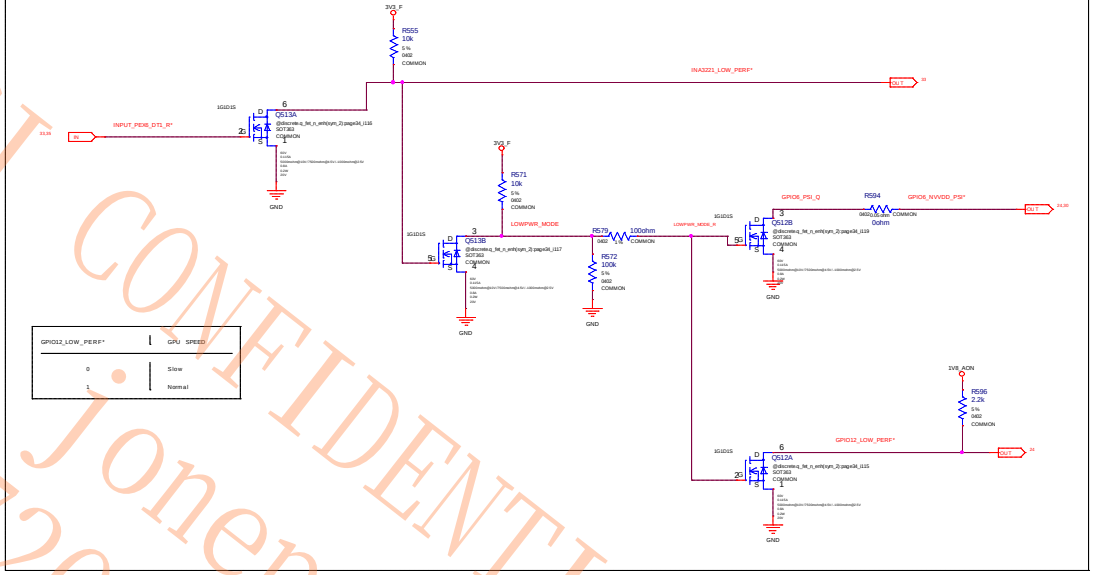
Page34: PS: 12V Current Steering, PSI Control, and LED

12V CURRENT STEERING (UNDER POWER BOOT):

GUIDES CURRENT FROM PEX EDGE TO PEX 6 PIN INPUT AREA



PEX Input - Power Level/PSI* Control



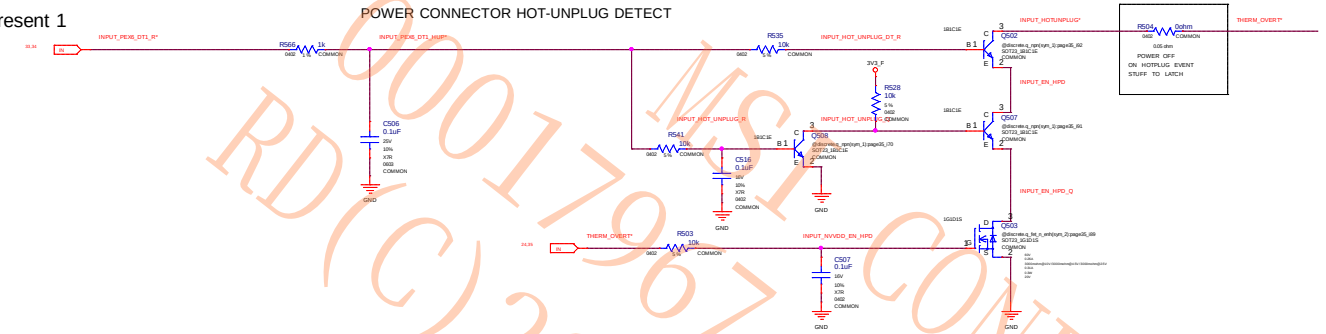
GPIO12_LOW_PERF*	GPU_SPEED
0	Slow
1	Normal

GeForce Logo LED

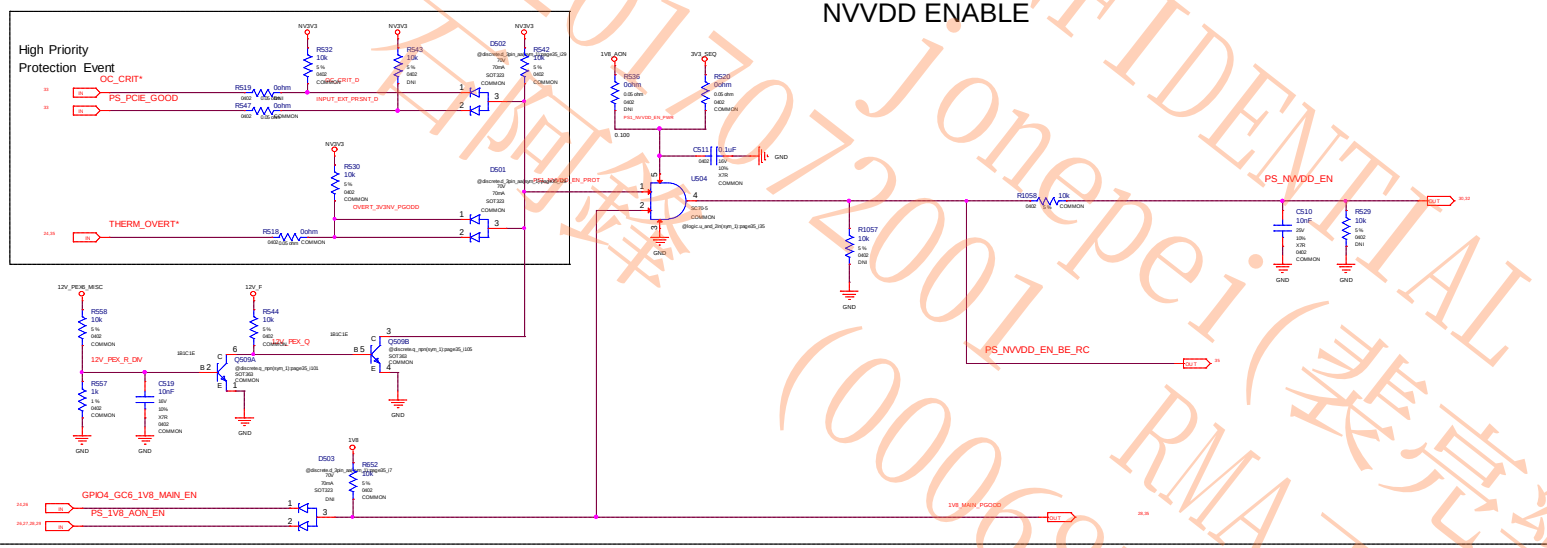
MSI	MICRO-STAR INT'L CO.,LTD	
	MS-V330	
Size: Custom	Document Description: Title = POWER STEERING	Rev: 7.1
Date: Friday, January 06, 2017	Sheet 34 of 37	

PEX Input Present 1

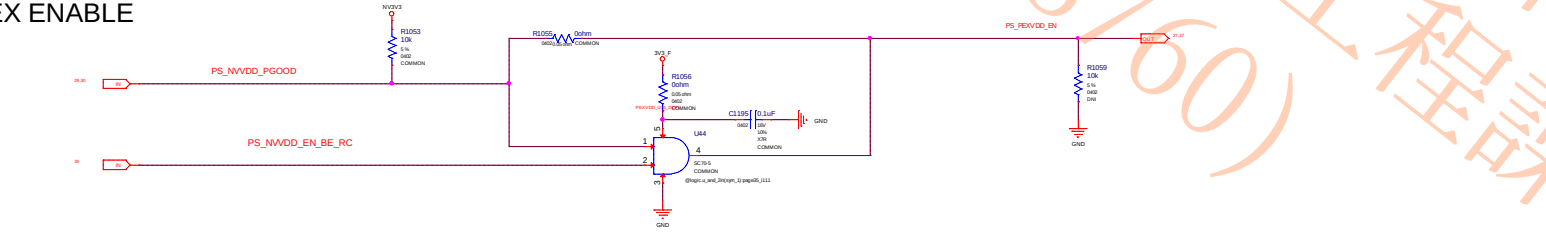
POWER CONNECTOR HOT-UNPLUG DETECT



NVVDD ENABLE

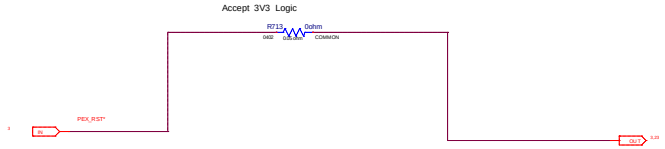


PEX ENABLE



MICRO-STAR INT'L CO.,LTD		
MS-V330		
Size: Custom	Document Description: SEQUENCE	Rev: 7.1
Date: Friday, January 06, 2017	Sheet 35 of 37	

Page38: GC6 MISC



GC6 FB ENABLE

GPU_EVENT*

PEX_CLKREQ*

PEX_RST# LOGIC

MICRO-STAR INT'L CO.,LTD

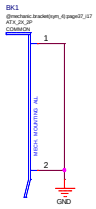
MS-V330

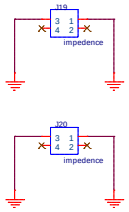
Size	Document Description	Rev
Custom	GC6	7.1

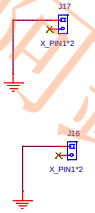
Date: Friday, January 06, 2017 | Sheet 36 of 37

Page40: MECH

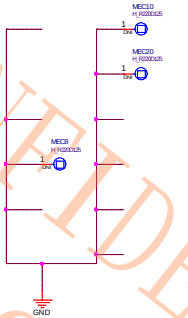
Brackets:



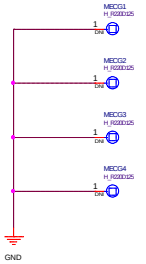


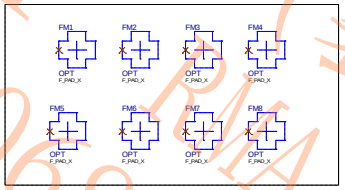


Mechanical Holes Symbol



GPU Stiffner





MSI	MICRO-STAR INT'L CO.,LTD	
	MS-V330	
Size: Custom	Document Description: MECH	Rev: 7.1
Date: Friday, January 06, 2017	Sheet 37 of 37	