GA102 DT SKU P-BOARD

350W, FH Std PCB, 384b, GDDR6X x8
DP + DP + DP + HDMI/DP

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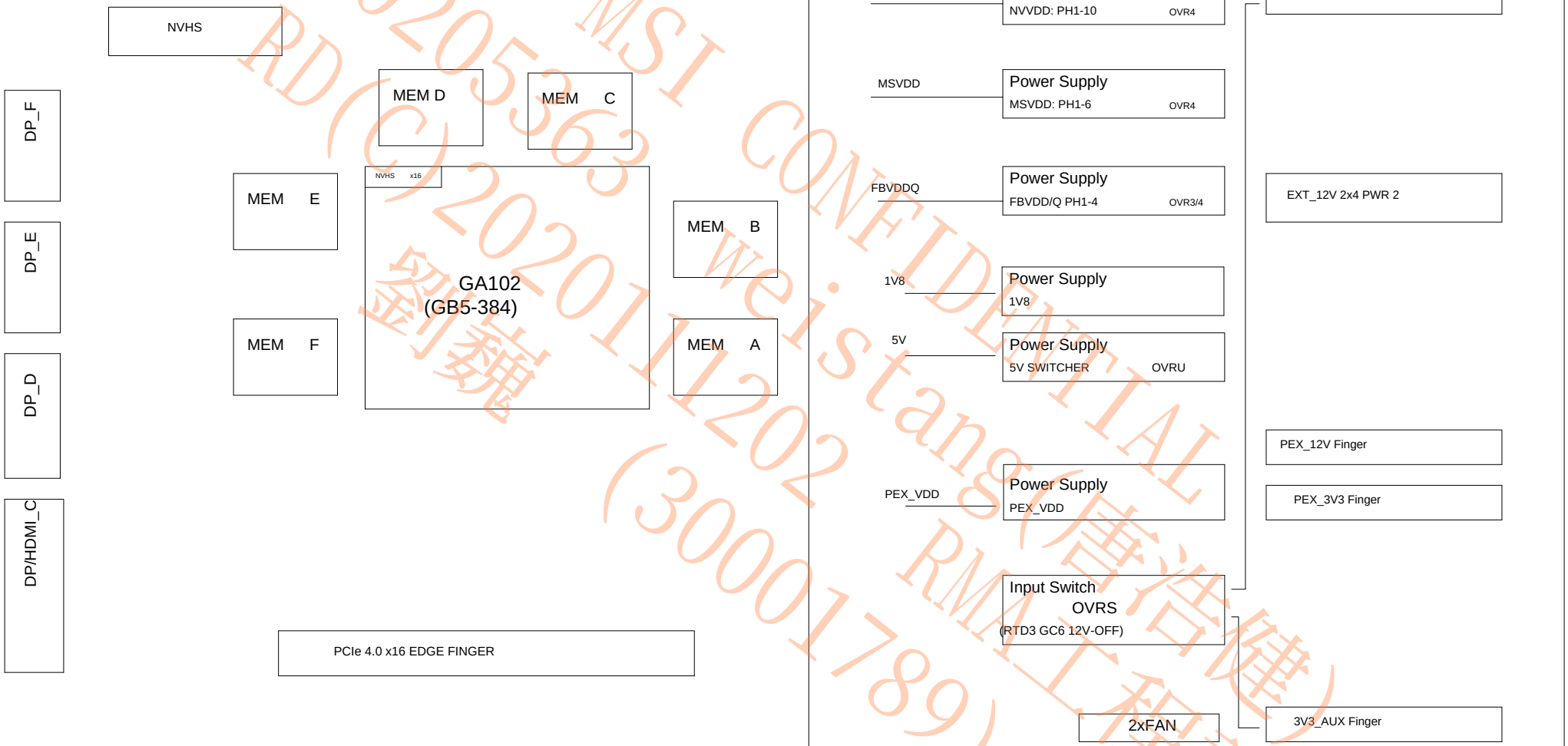
Block Diagram



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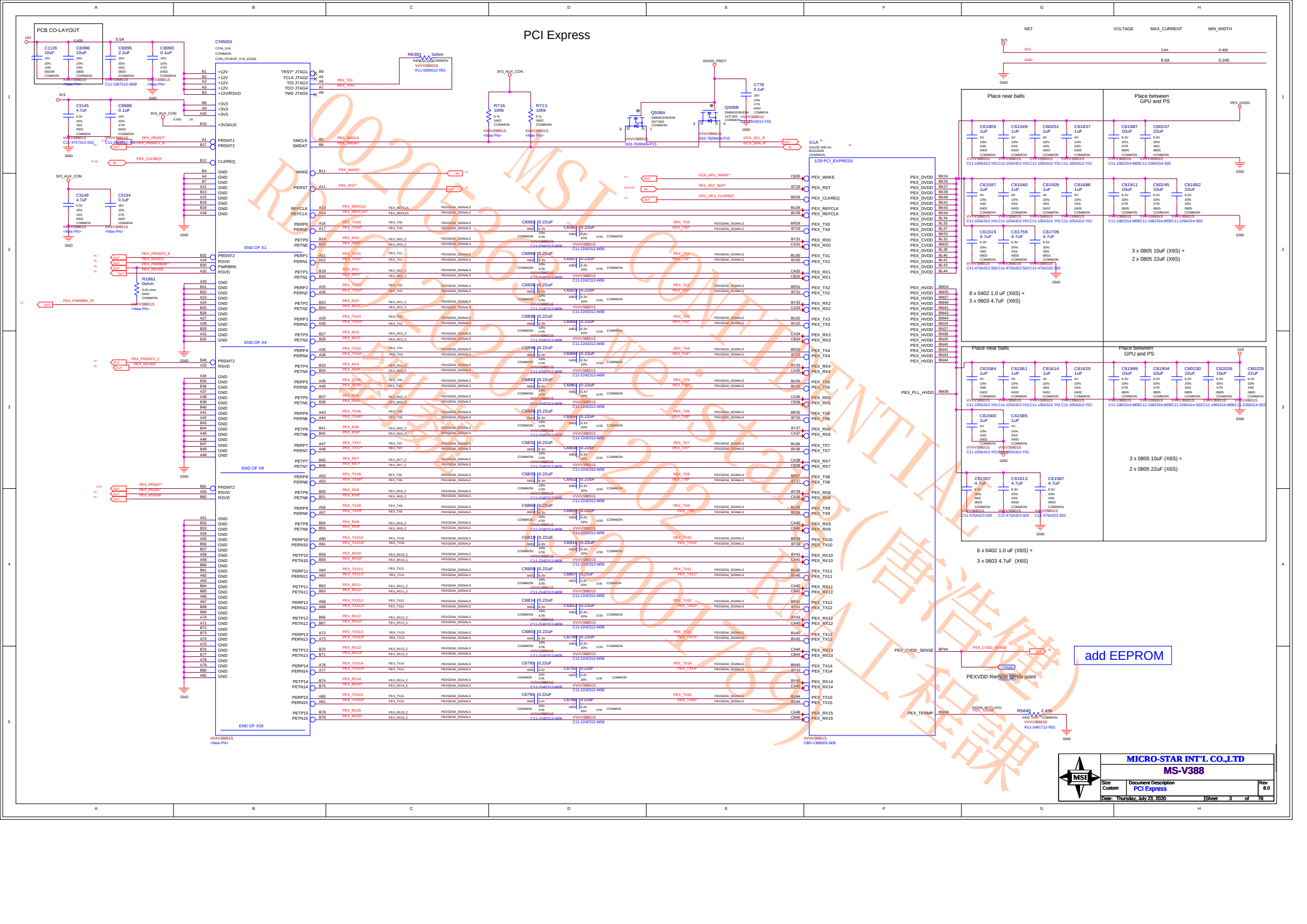
PCI Express
PCB CO-LAYOUT
CN5001
END OF X1
END OF X4
END OF X8
END OF X16
1/29 PCI_EXPRESS
Place near balls
Place between GPU and PS
3 x 0805 10uF (X6S) +
2 x 0805 22uF (X6S)
8 x 0402 1.0 uF (X6S) +
3 x 0603 4.7uF (X6S)
6 x 0402 1.0 uF (X6S) +
3 x 0603 4.7uF (X6S)
add EEPROM
PEXVDD Remote sense point
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PCI Express
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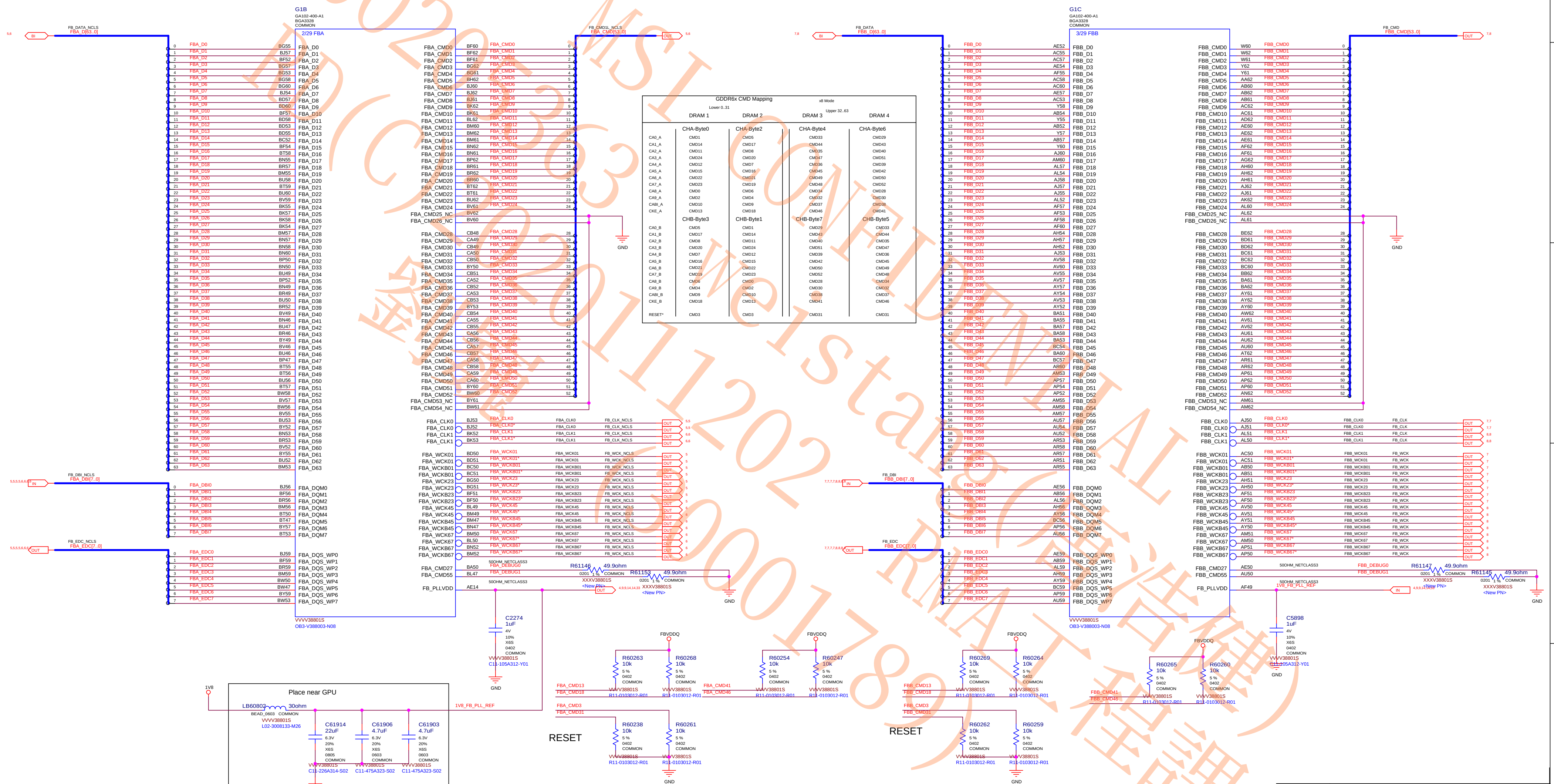
MEMORY: GPU Partition A/B



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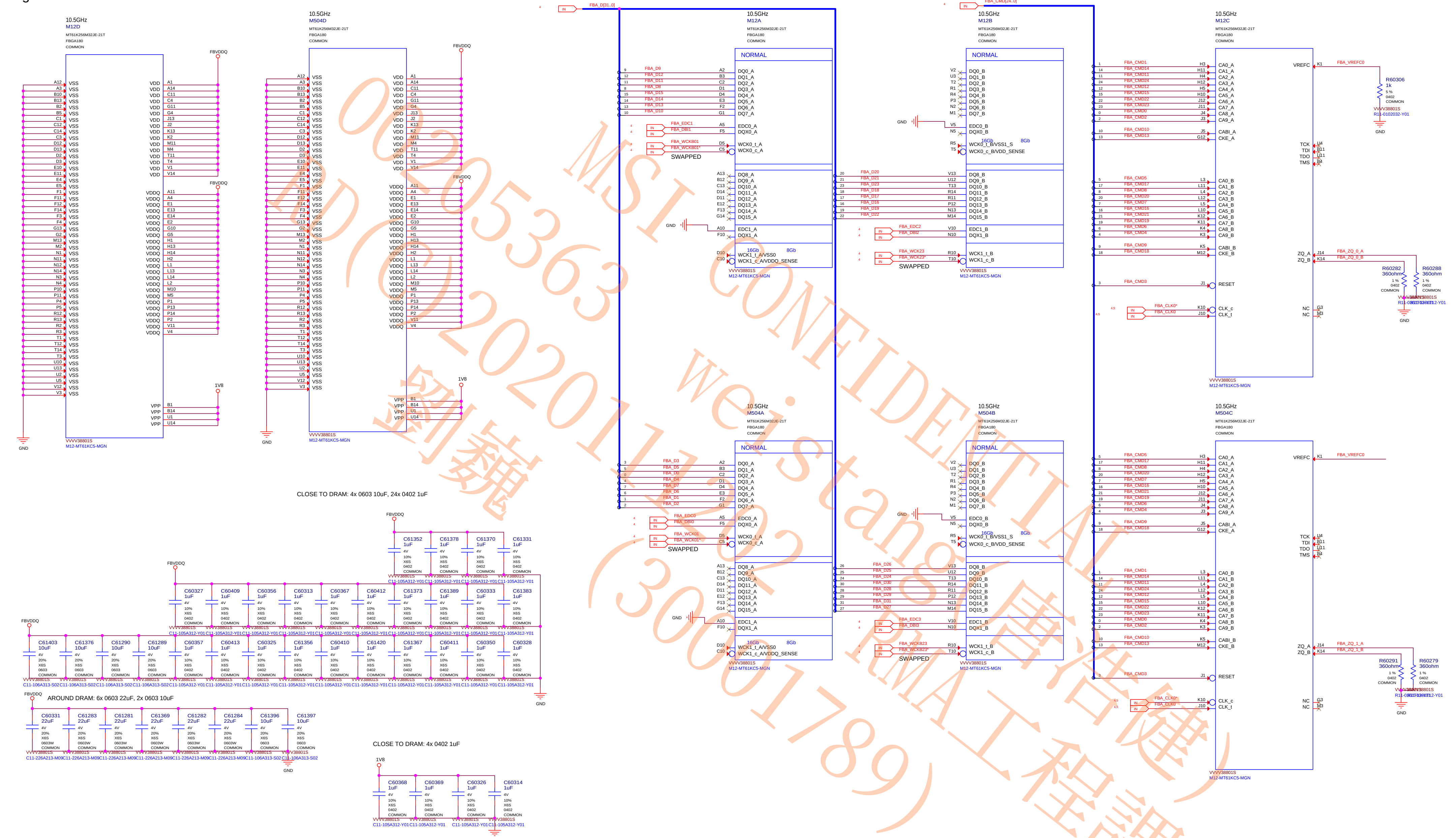
Page5: MEMORY: FBA Partition 31..0



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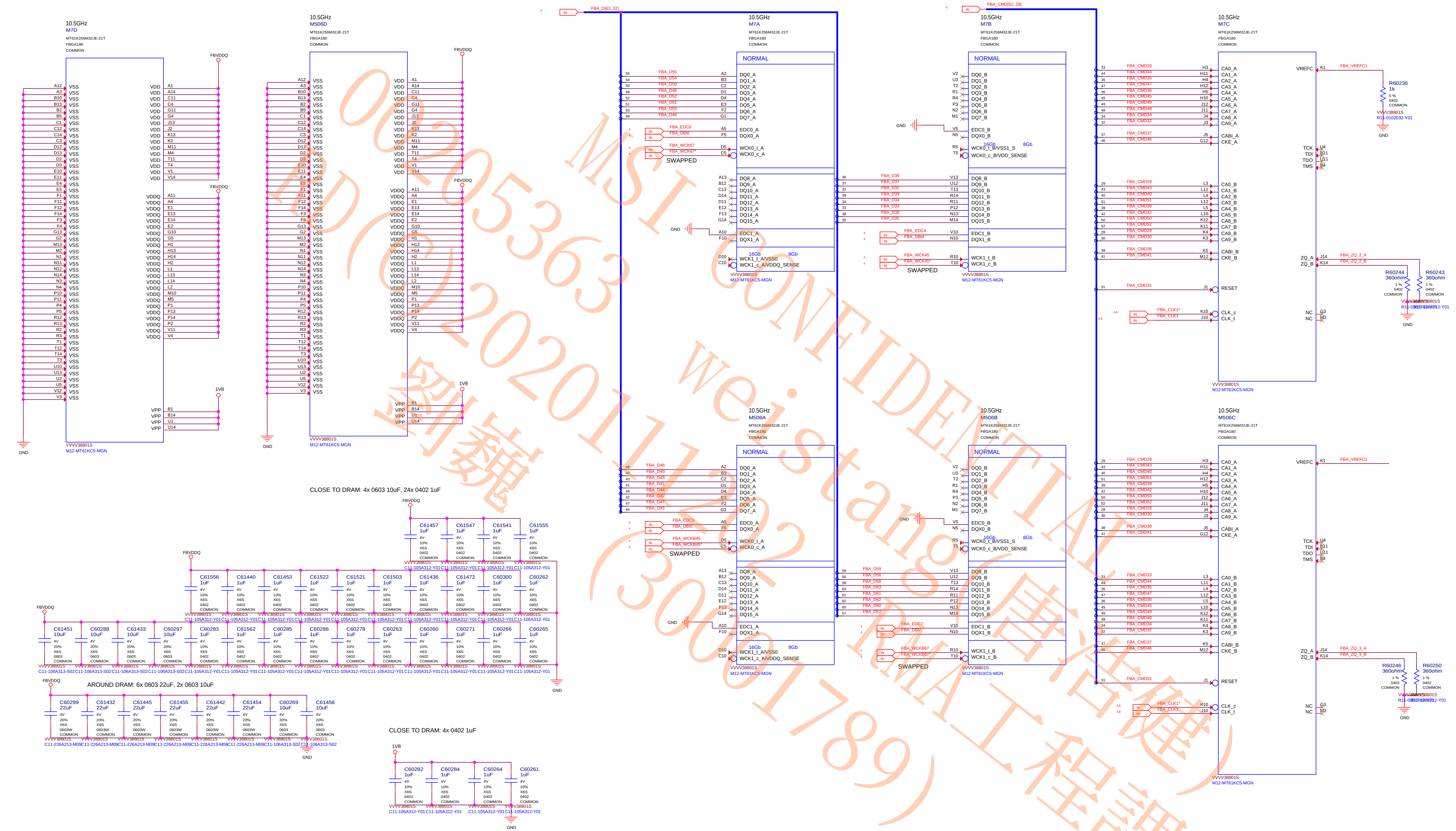
Page6: MEMORY: FBA Partition 63..32



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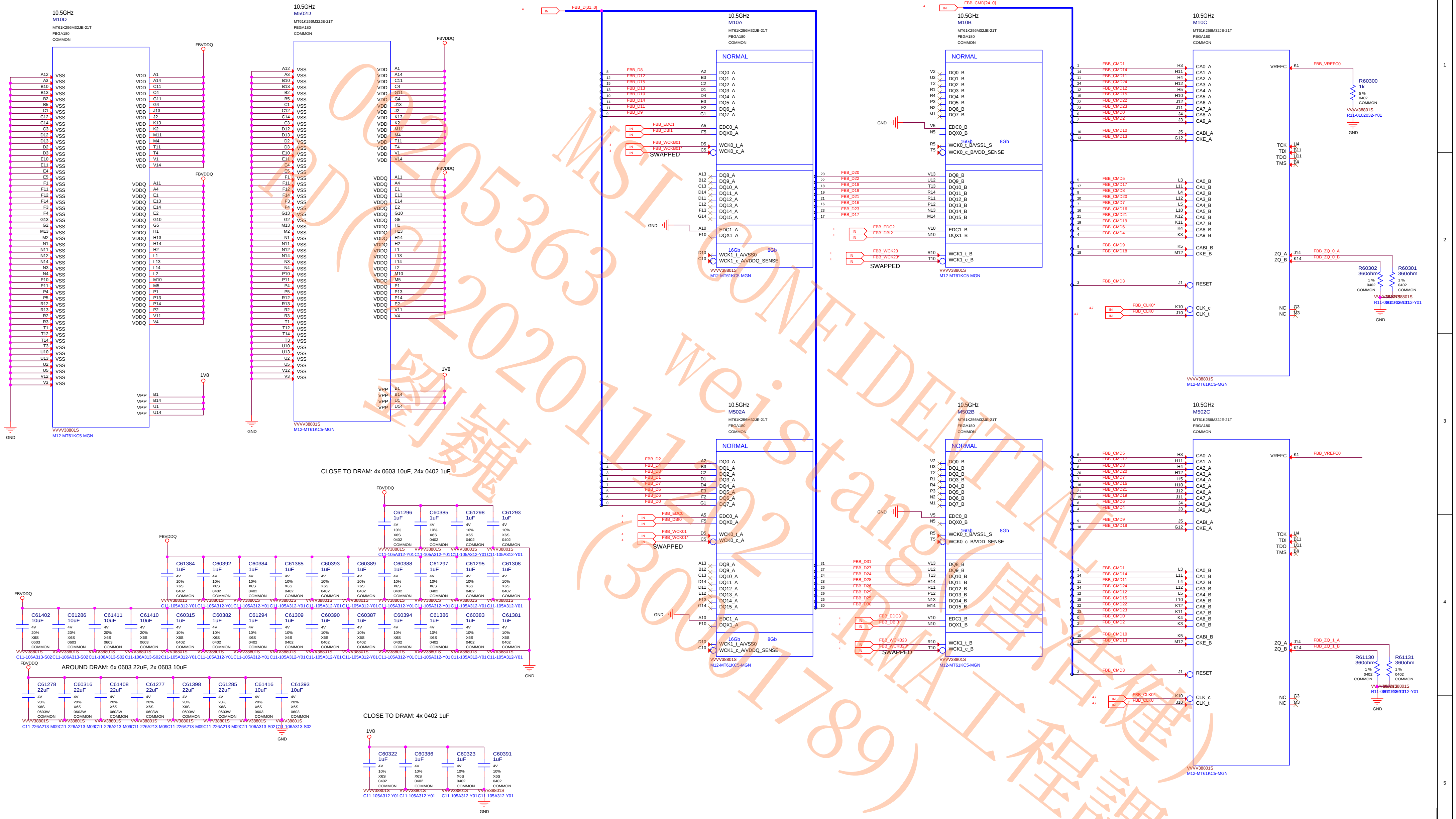
Page7: MEMORY: FBB Partition 31..0



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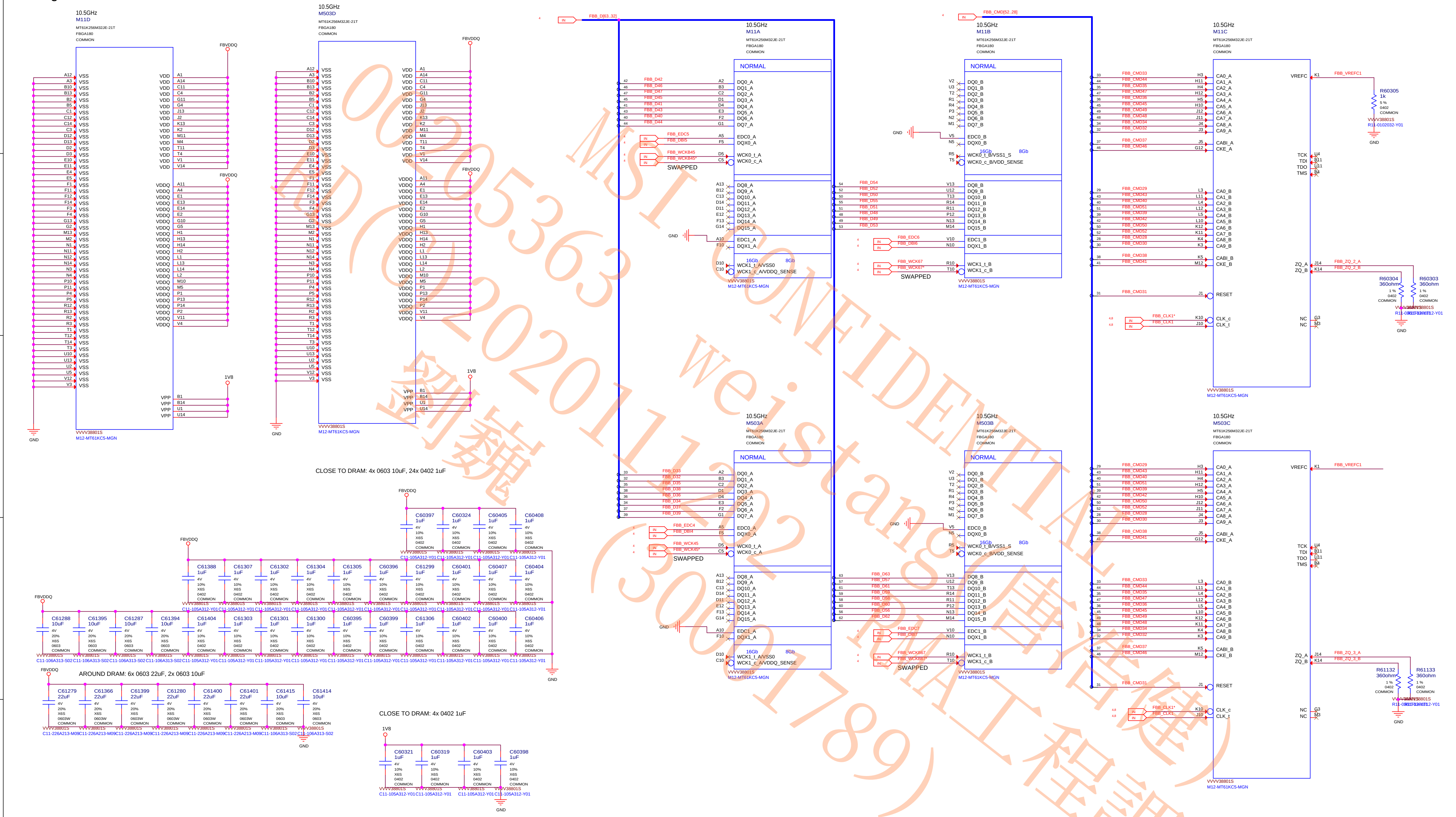
Page8: MEMORY: FBB Partition 63..32



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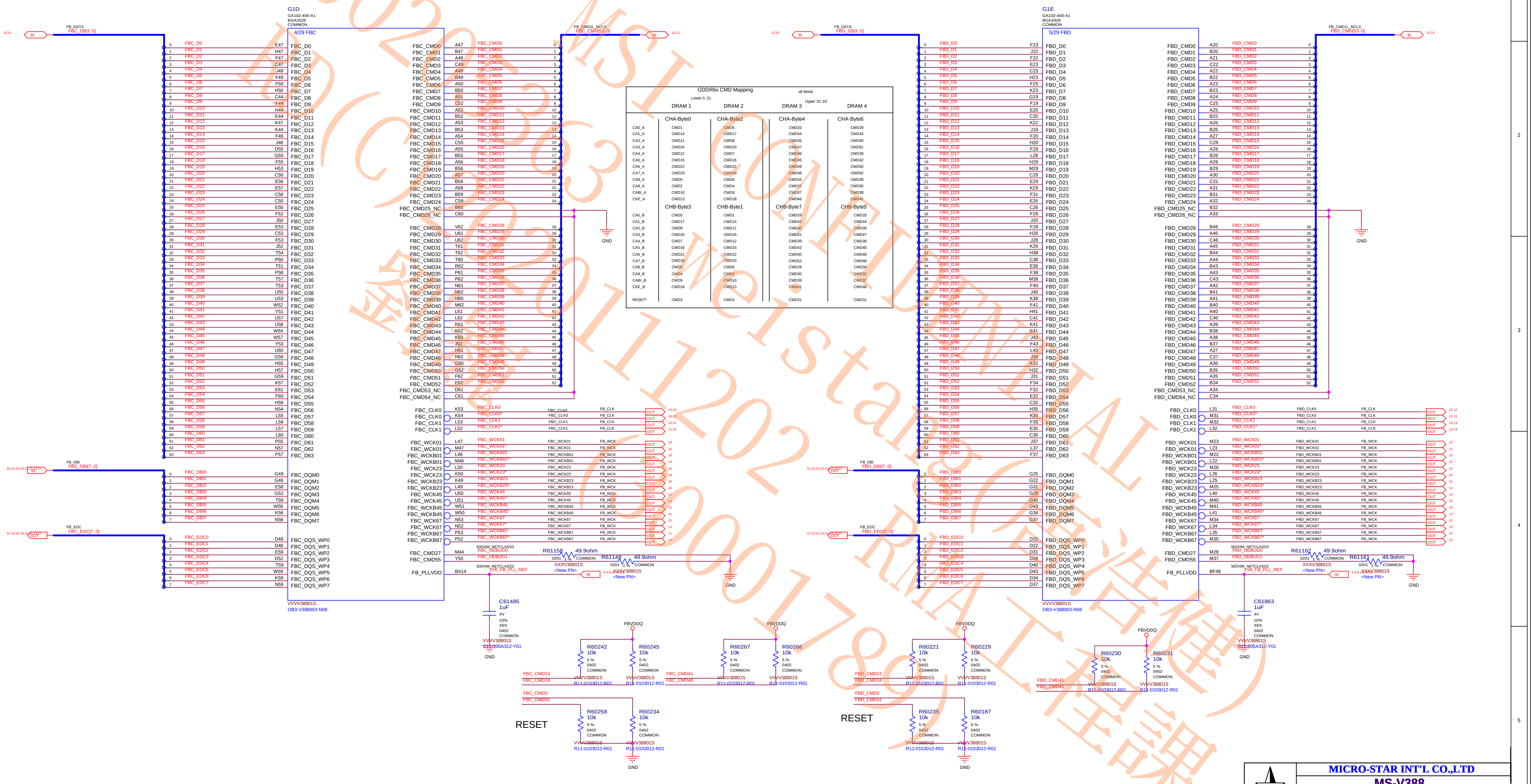
MEMORY: GPU Partition C/D



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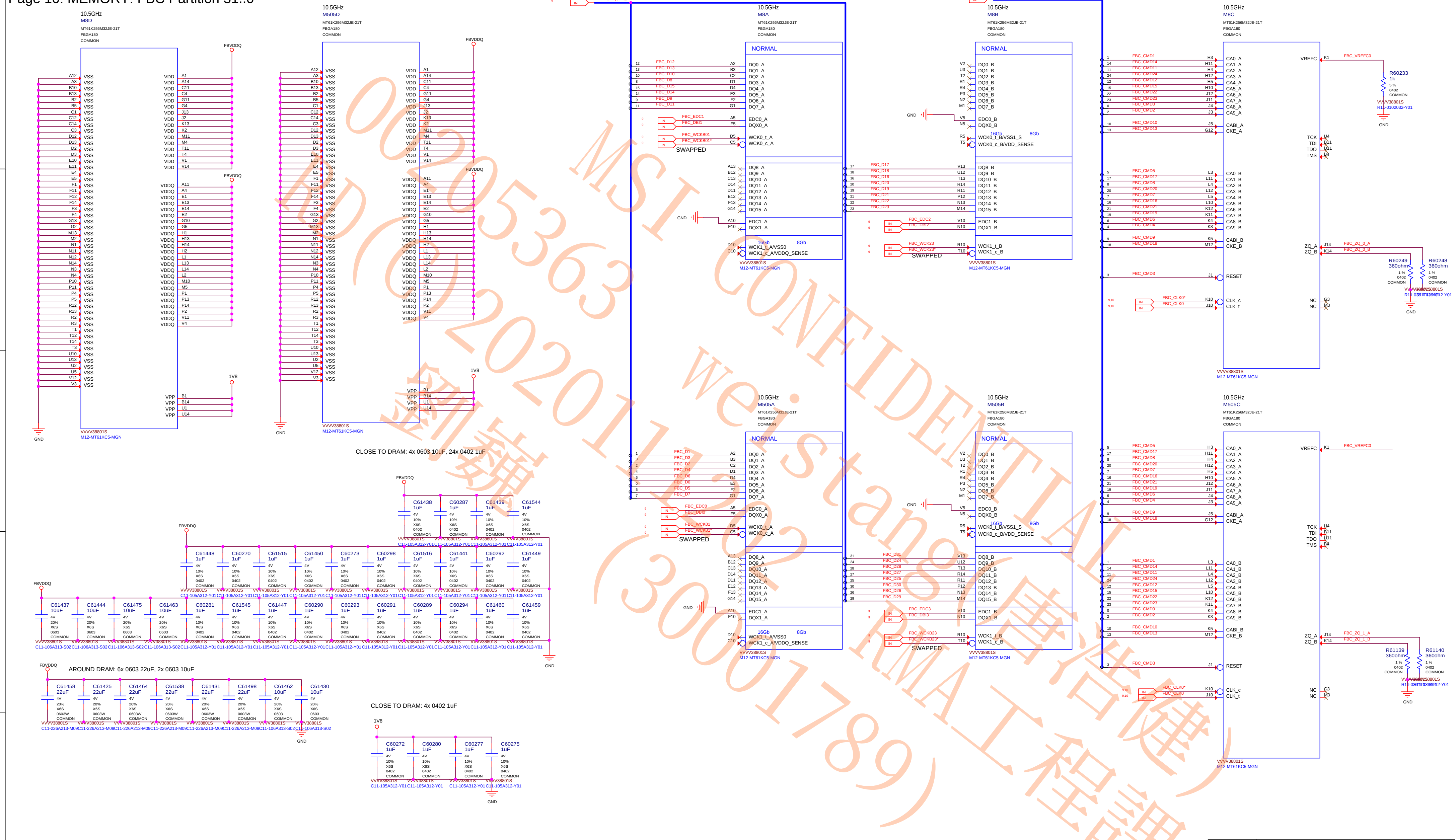
Page 10: MEMORY: FBC Partition 31..0



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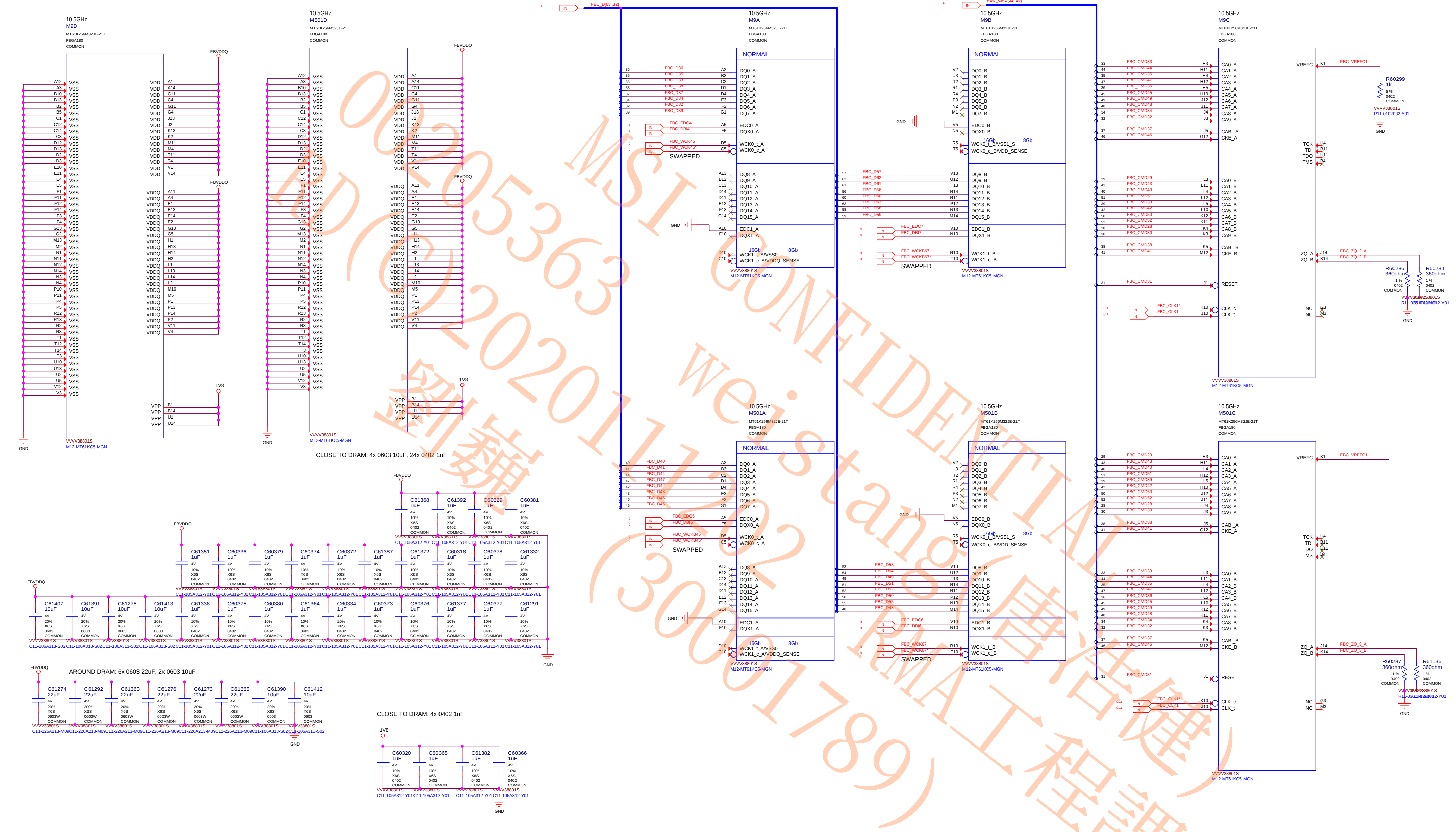
Page 11: MEMORY: FBC Partition 63..32



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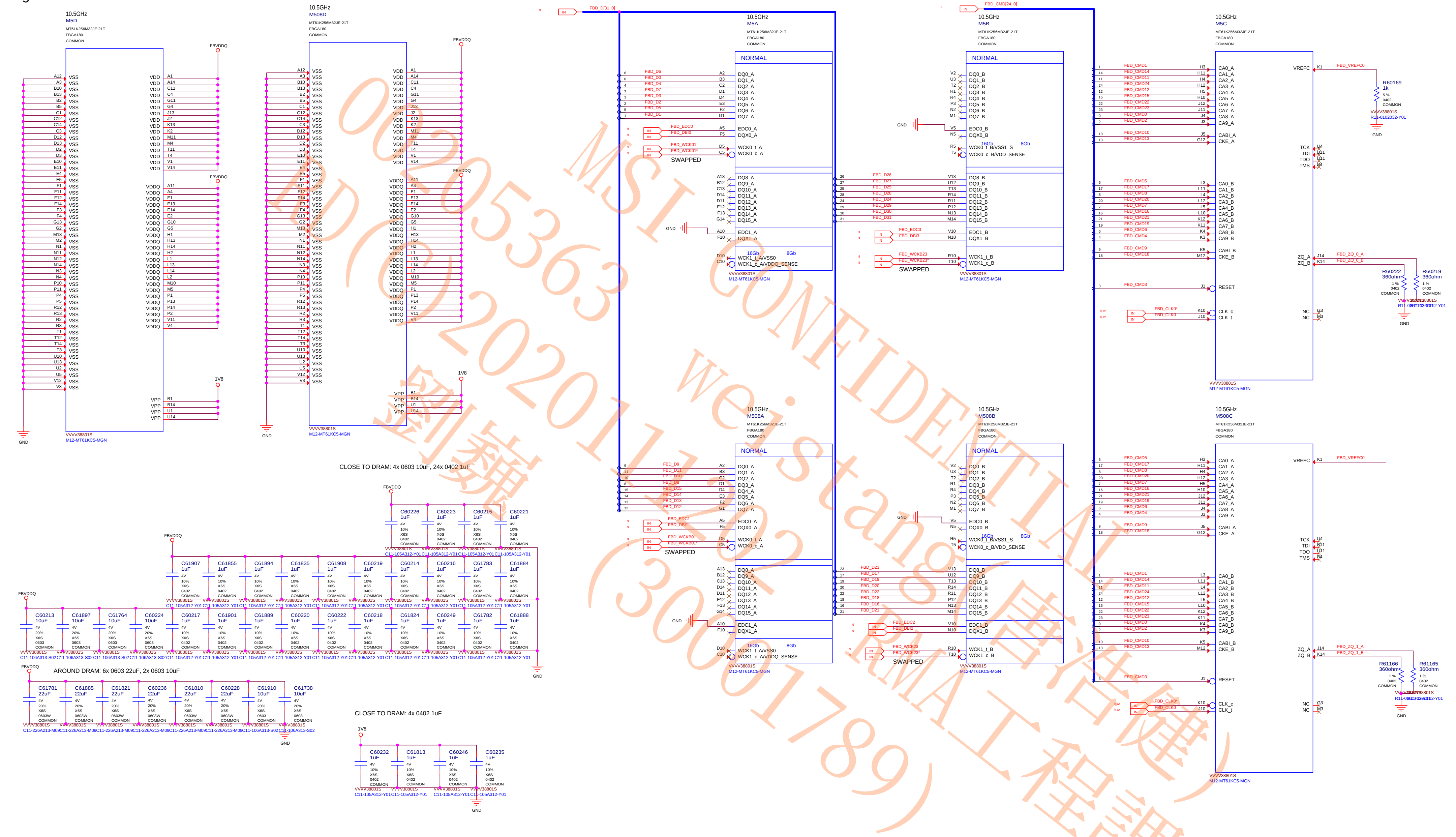
Page 12: MEMORY: FBD Partition 31..0



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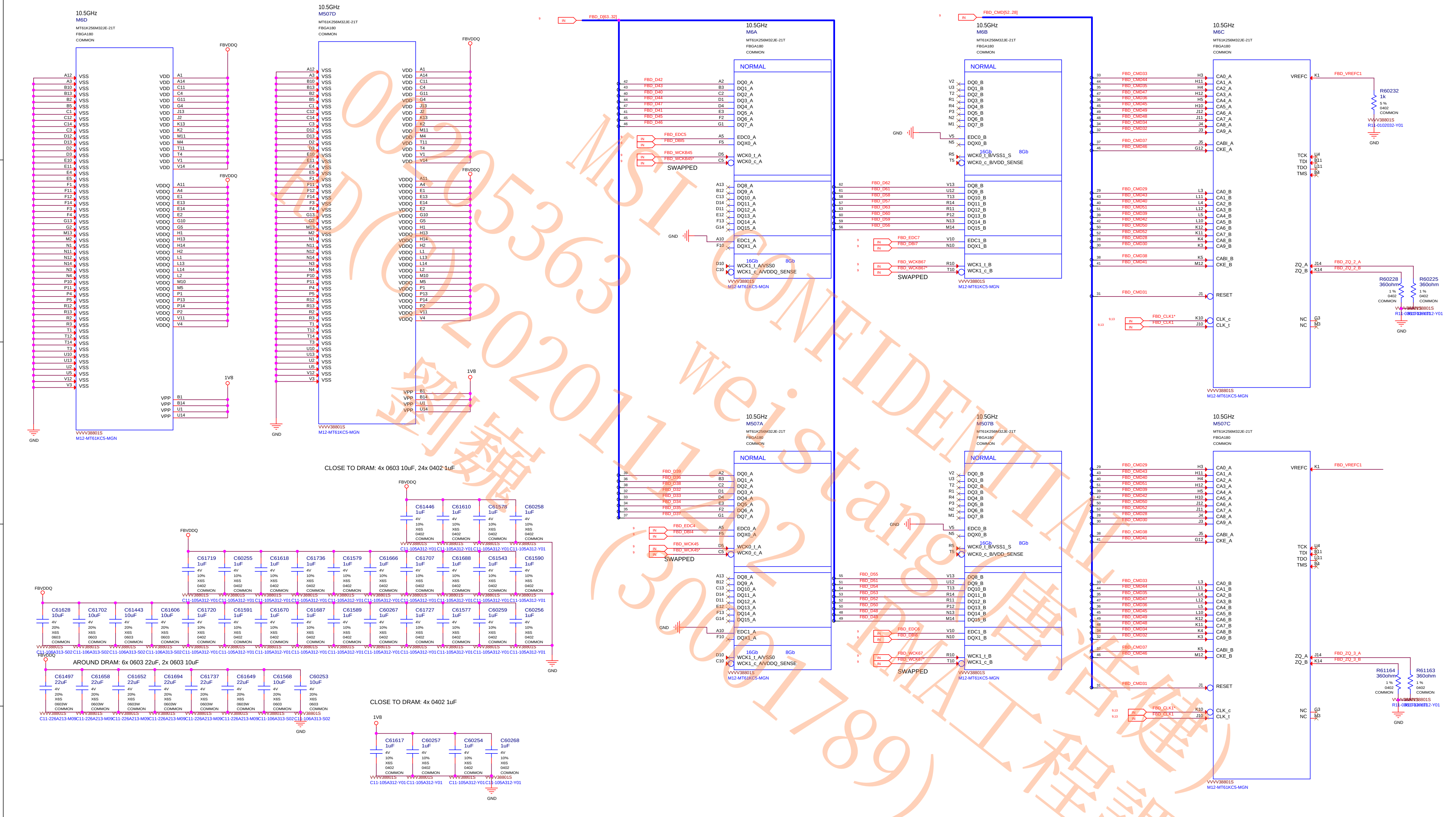
Page 13: MEMORY: FBD Partition 63..32



10.5GHz M6D MT61K256M32JE-21T FBGA180 COMMON
10.5GHz M507D MT61K256M32JE-21T FBGA180 COMMON
10.5GHz M6A MT61K256M32JE-21T FBGA180 COMMON
10.5GHz M6B MT61K256M32JE-21T FBGA180 COMMON
10.5GHz M6C MT61K256M32JE-21T FBGA180 COMMON
10.5GHz M507A MT61K256M32JE-21T FBGA180 COMMON
10.5GHz M507B MT61K256M32JE-21T FBGA180 COMMON
10.5GHz M507C MT61K256M32JE-21T FBGA180 COMMON
FBD_D[63..32]
FBD_CMD[52..28]
NORMAL
SWAPPED
FBVDDQ
1V8
GND
CLOSE TO DRAM: 4x 0603 10uF, 24x 0402 1uF
AROUND DRAM: 6x 0603 22uF, 2x 0603 10uF
CLOSE TO DRAM: 4x 0402 1uF

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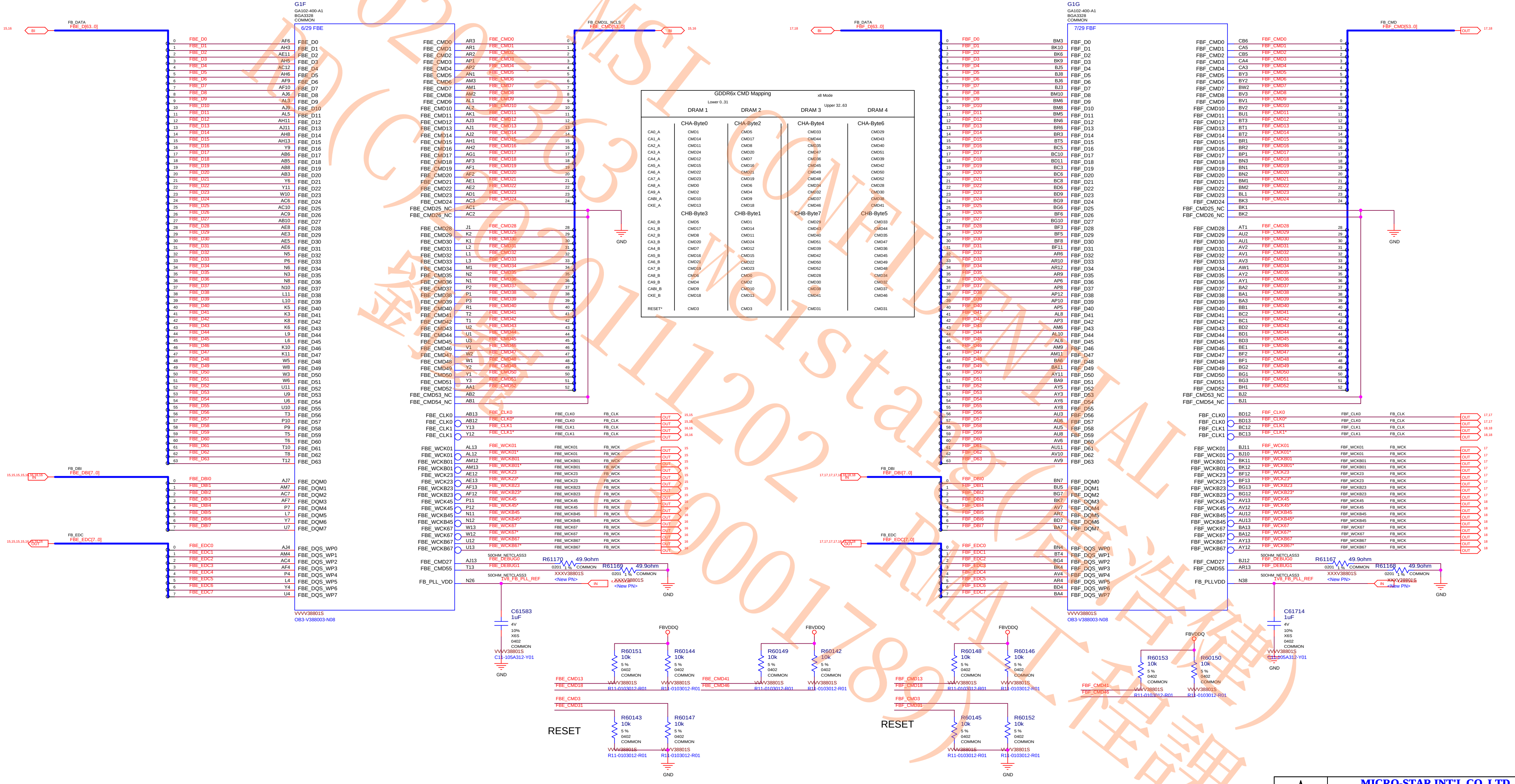
MEMORY: GPU Partition E/F



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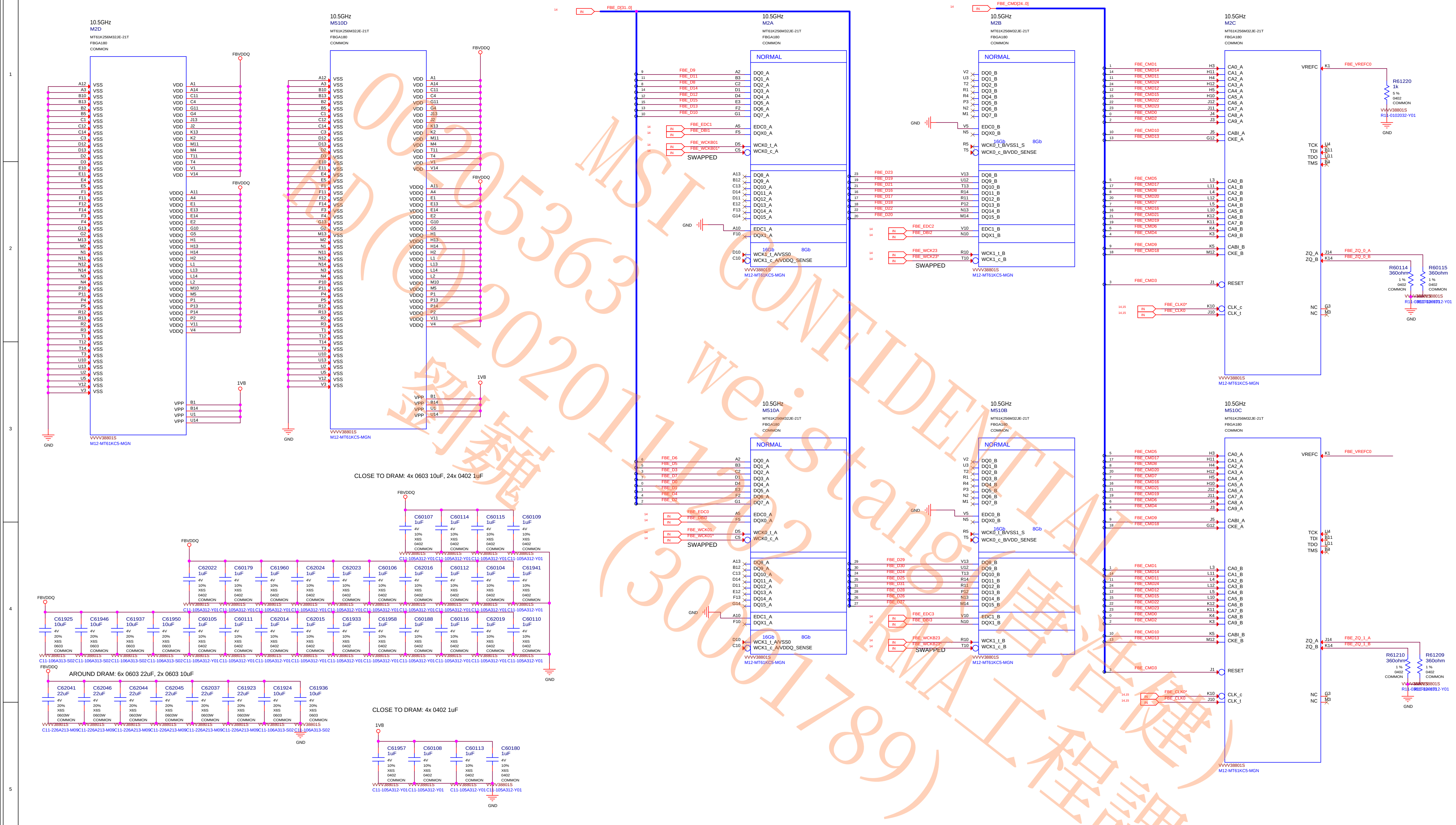
Page 15: MEMORY: FBE Partition 31..0



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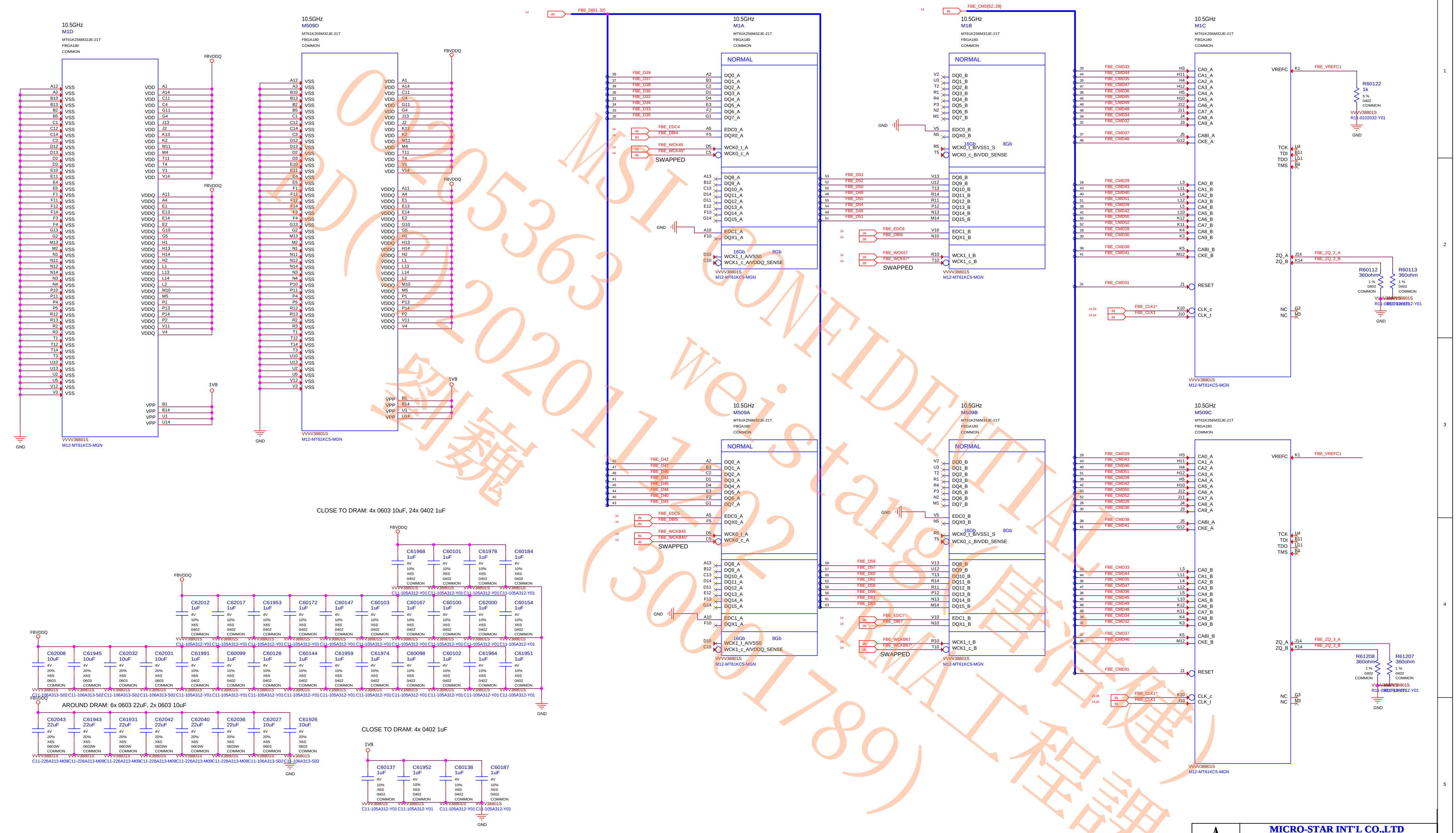
Page 16: MEMORY: FBE Partition 63..32



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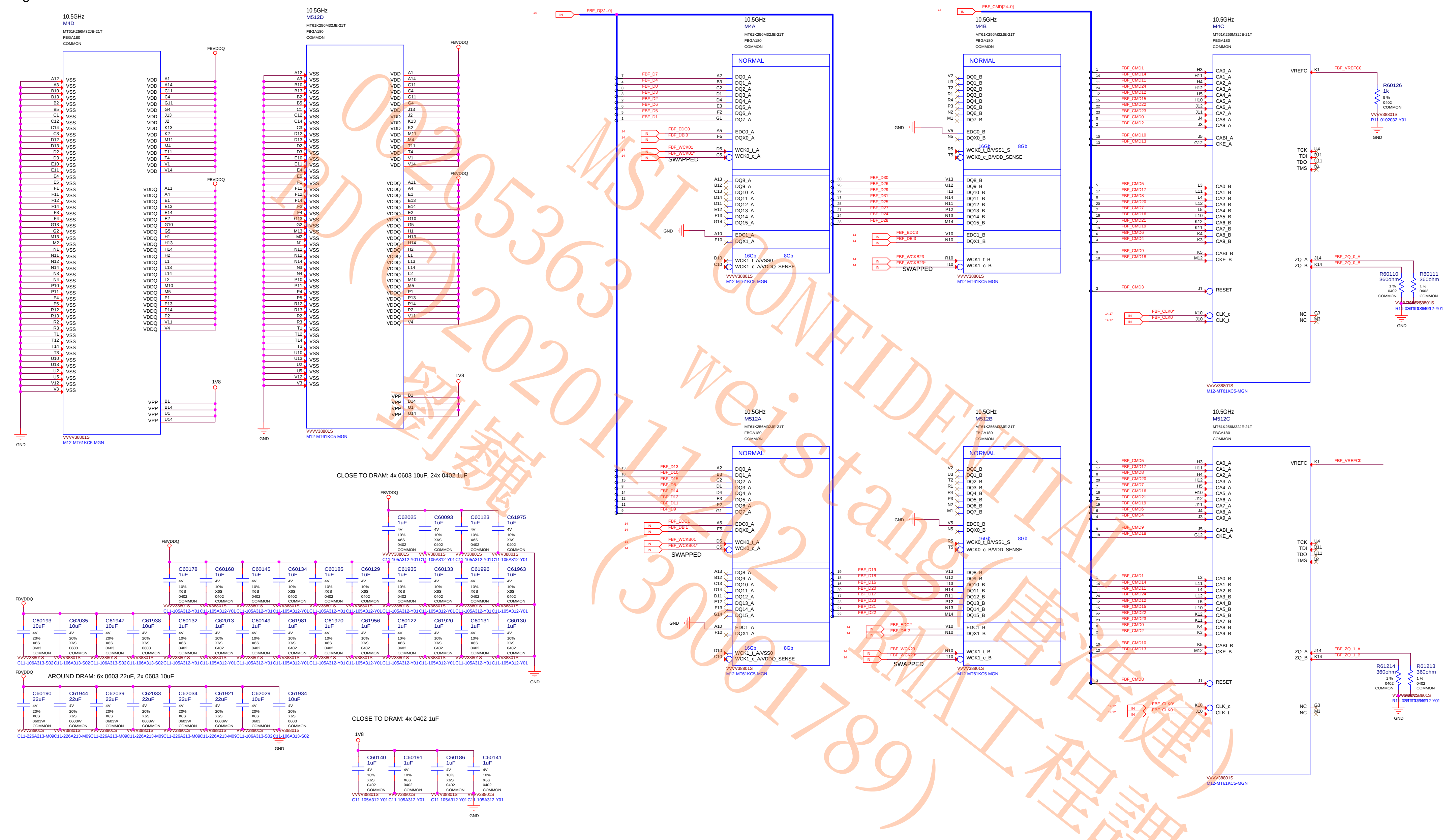
Page 17: MEMORY: FBF Partition 31..0



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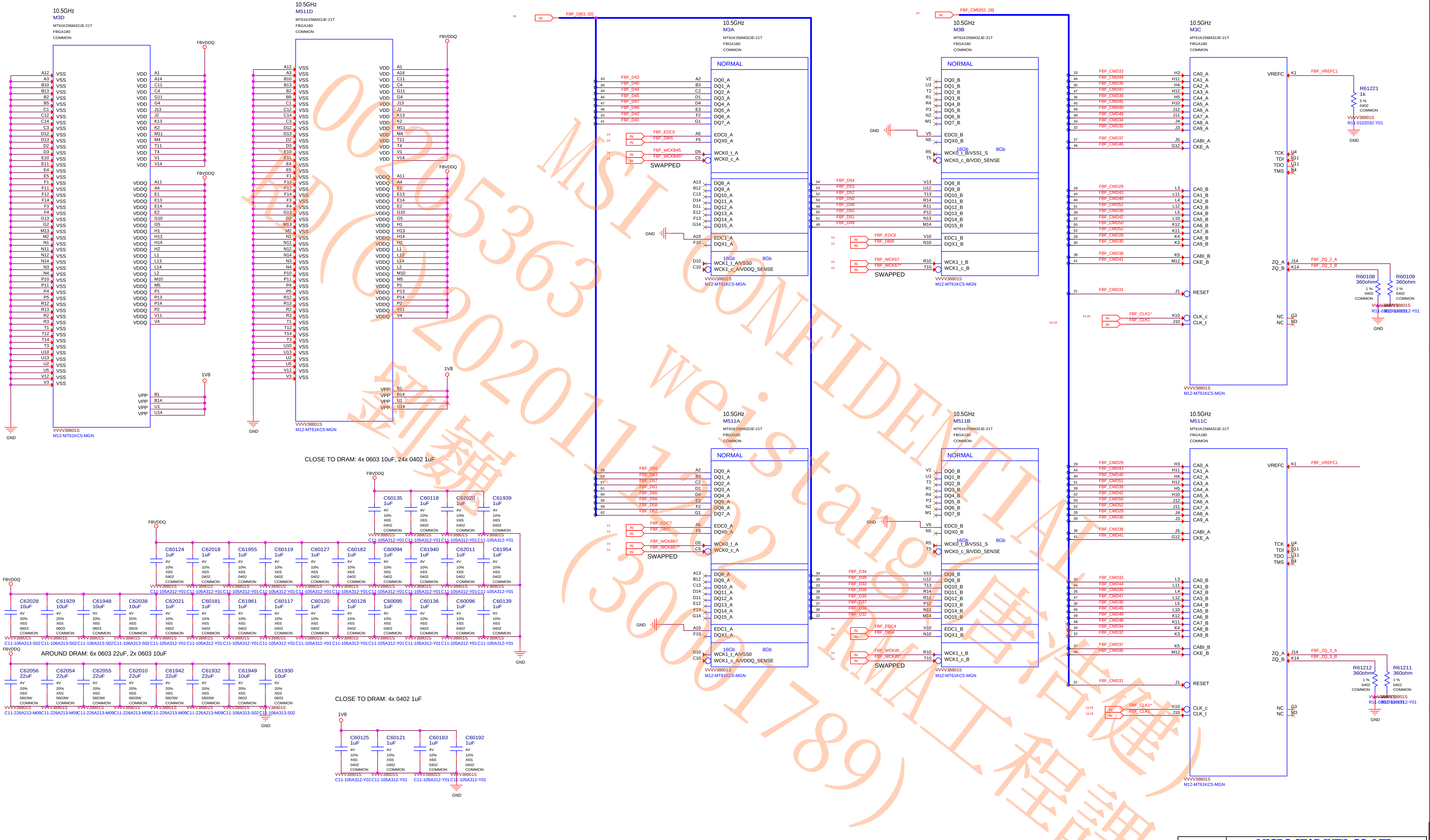
Page 18: MEMORY: FBF Partition 63..32



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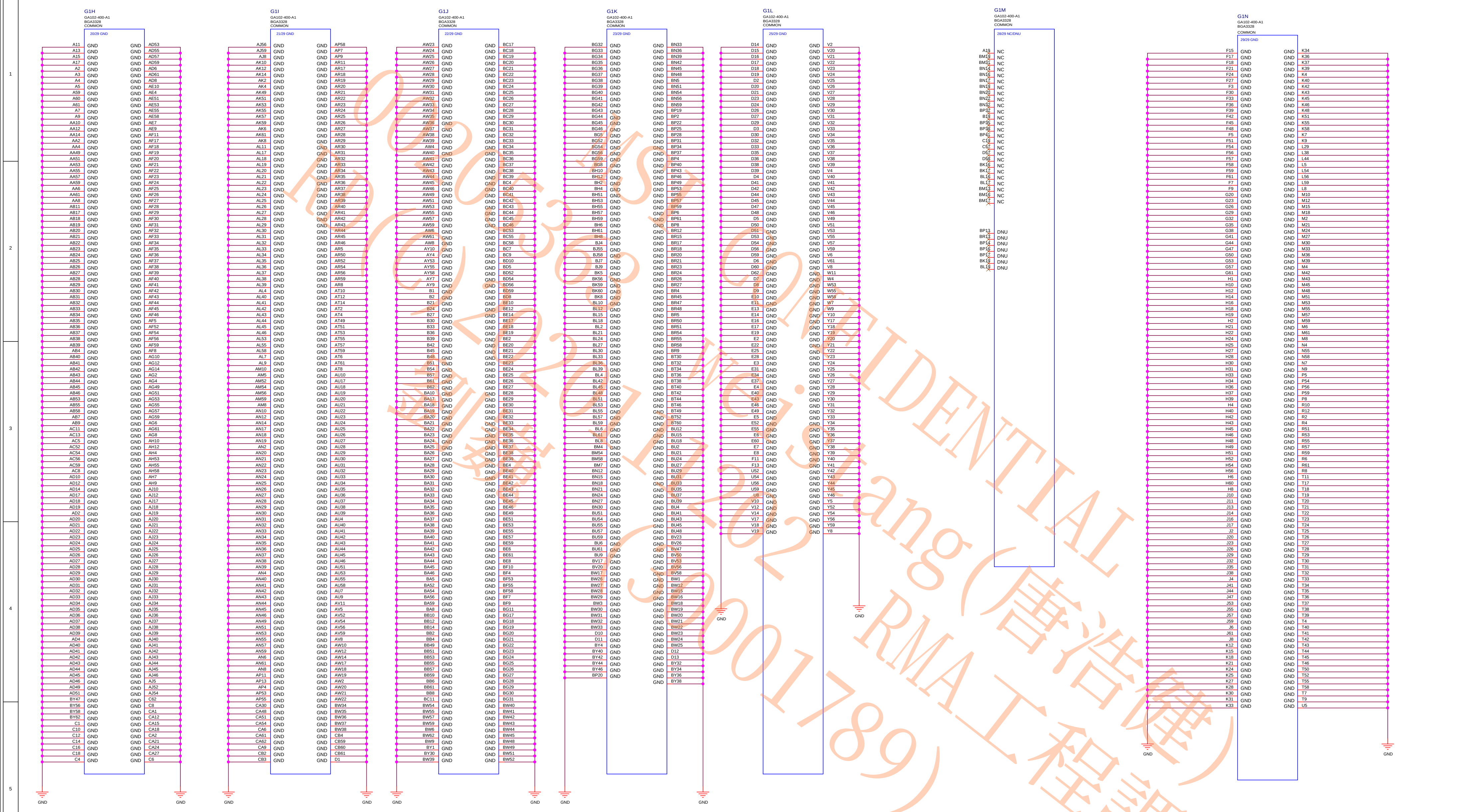
GPU GND, RFUs & RSVD



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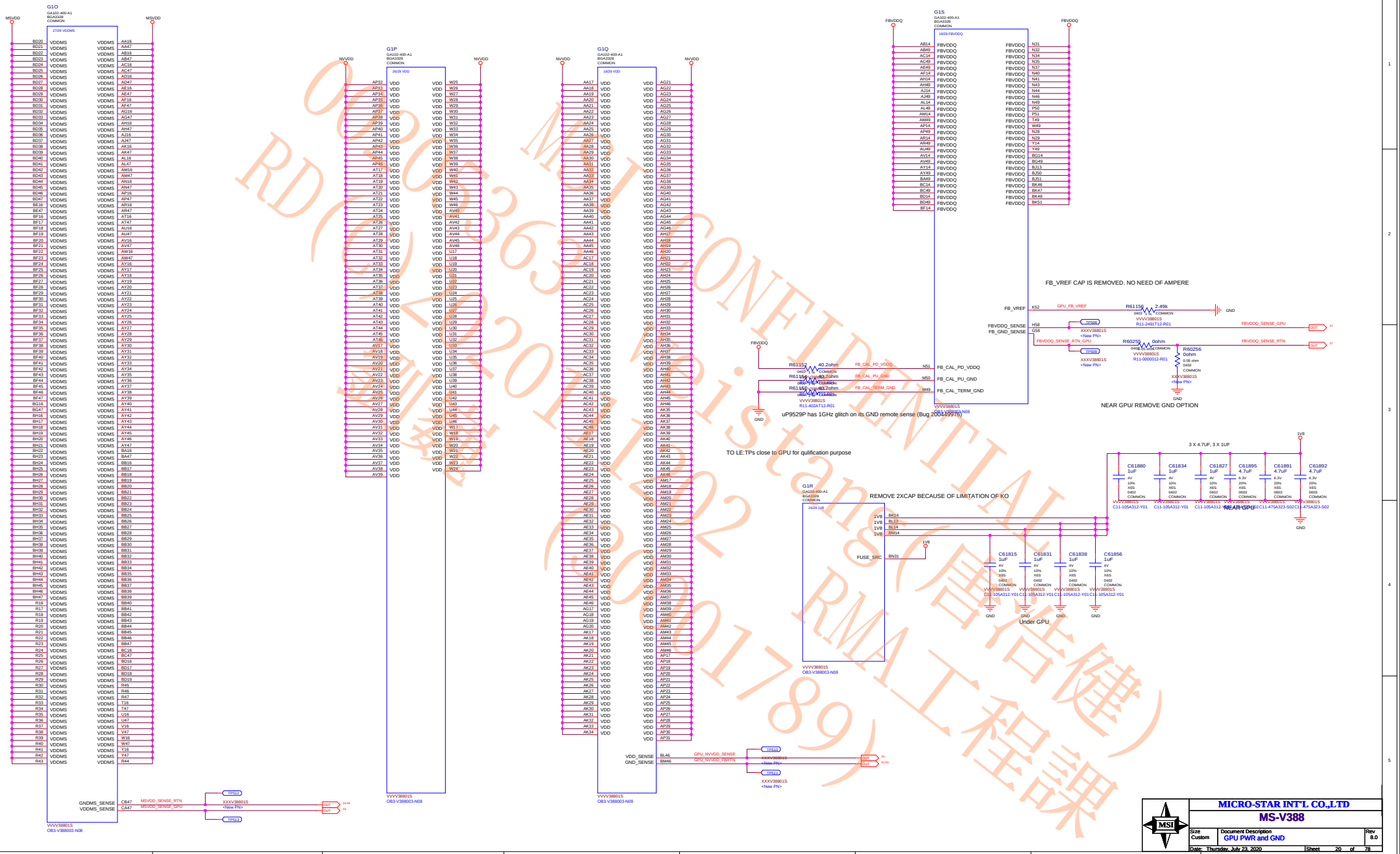
GPU PWR and GND



NVVDD

UNDER GPU

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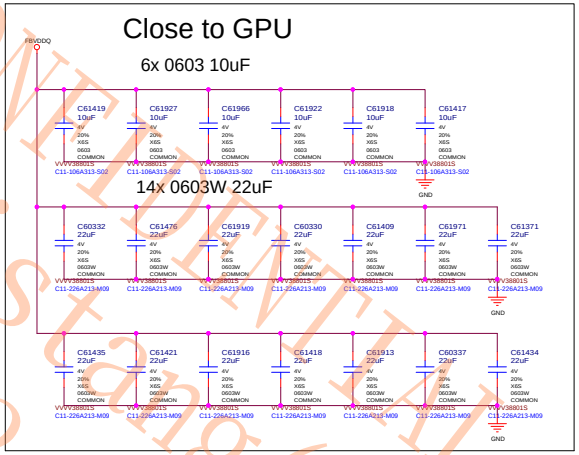
FBVDDQ

Under GPU

Close to GPU



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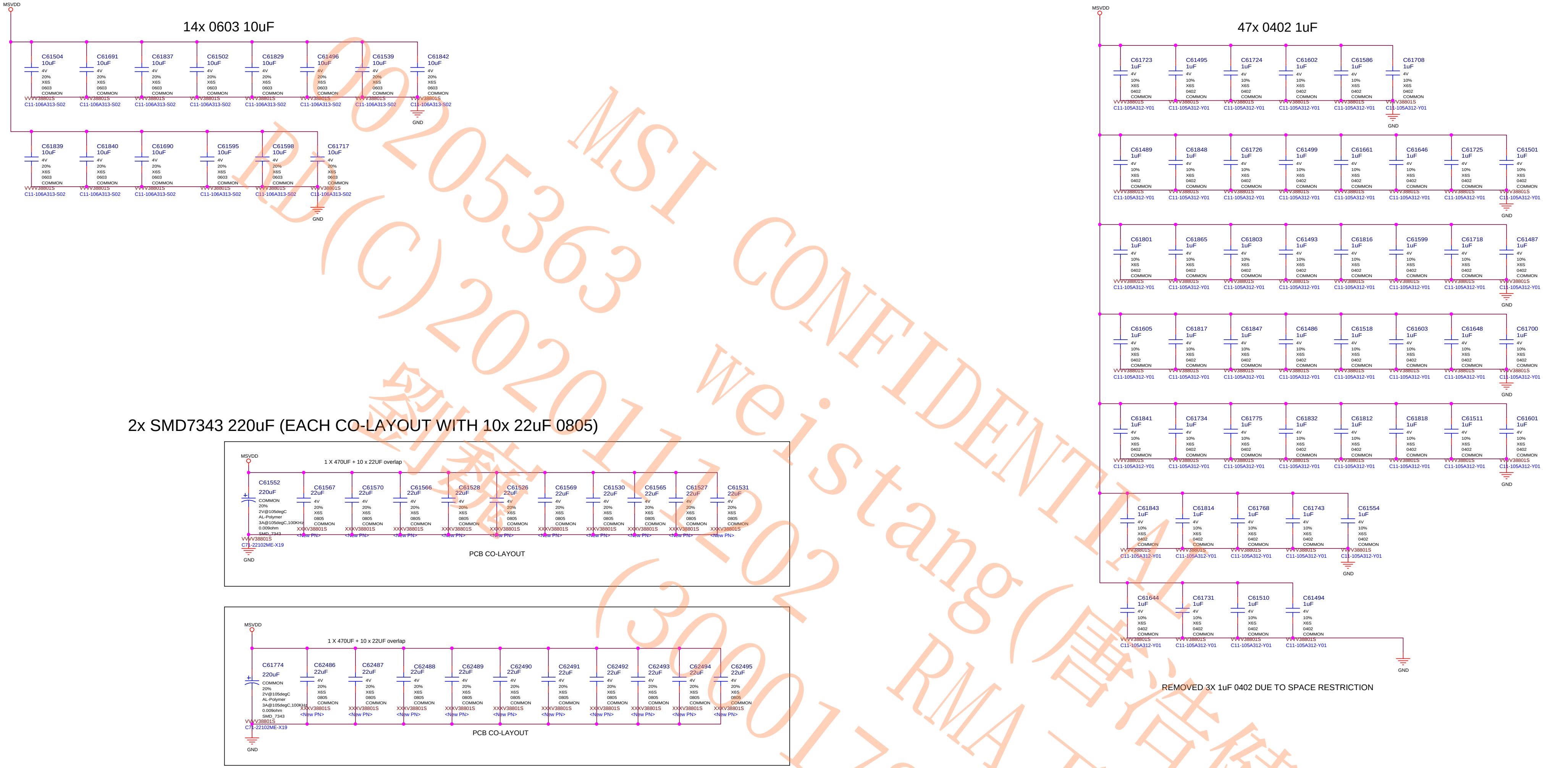
Page 23: GPU: MSVDD DECOUPLING

MSVDD

UNDER GPU



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BLANK

MSI	MICRO-STAR INT'L CO.,LTD	
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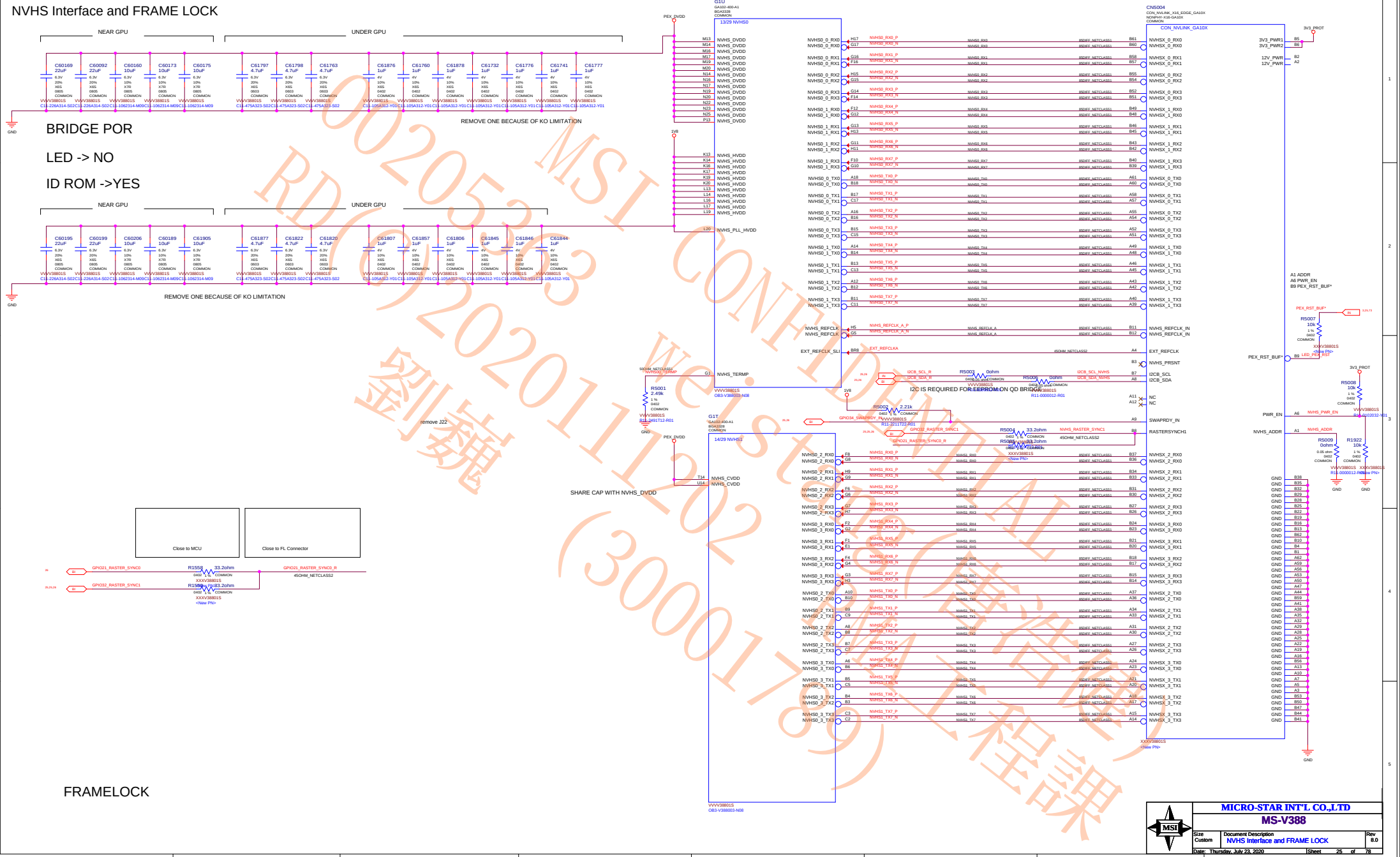
NVHS Interface and FRAME LOCK
NEAR GPU
UNDER GPU
BRIDGE POR
LED -> NO
ID ROM ->YES
REMOVE ONE BECAUSE OF KO LIMITATION
Remove J22
SHARE CAP WITH NVHS_DVDD
Close to MCU
Close to FL Connector
FRAMELOCK
I2C IS REQUIRED FOR EEPROM ON QD BRIDGE
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NVHS Interface and FRAME LOCK
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MISC1: Fan, Thermal, JTAG, GPIO, STEREO

I2CS PU VALUE TO BE UPDATED
IOVDD_PROT
G1V
GA102-400-A1
BGA3328
COMMON
15/29 MISC1
I2CS_SCL
I2CS_SDA
I2CC_SCL
I2CC_SDA
I2CB_SCL
I2CB_SDA
TS_VREF
THERMDN
THERMDP
ADC_IN
JTAG_TCK
JTAG_TMS
JTAG_TDI
JTAG_TDO
JTAG_TRST
NVJTAG_SEL
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
GPIO32
GPIO33
GPIO34
GPIO35
remove GPIO5_FRAME_LOCK_INT
remove GPIO19_STEREO_OUT
remove GPIO20_FL_SYNC_GPU
remove GPIO31_X_LOGO_LED_WHITE_DRV
remove GPIO35_NORTH_LOGO_LED_RED_DRV
GENERIC_SPACING1
45OHM_NETCLASS2
VVVV38801S
OB3-V388003-N08
R5068 2.21k
R5072 2.21k
R5073 2.21k
R5077 2.21k
R5081 2.21k
R5083 2.21k
R5060 33.2ohm
R5062 33.2ohm
R5063 33.2ohm
R5070 33.2ohm
R5064 33.2ohm
R5071 33.2ohm
LEVEL SHIFT TO 3V3
Q505A
DMN61D9UDW
SOT363
Q505B
R706 0ohm
R709 0ohm
3V3_SEQ
R704 10k
R710 10k
C5464 2.2nF
R5053 10k
GND
1V8
* JTAG
R5055 10k
R5056 10k
R5058 182ohm
R5054 10k
R5057 274ohm
R1787 100k
R1788 100k
C2149 0.1uF
Q66
LS3018NG-3T3R
SOT323_1G1D1S
PU AT NVHS PAGE
R5082 100k
R5085 10k
R5084 100k
remove STEREO J23
<New PN>

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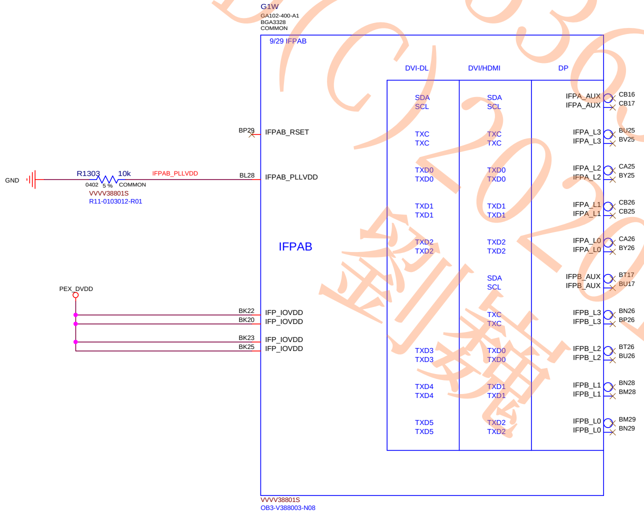
IFPA UNUSED, IFPB UNUSED



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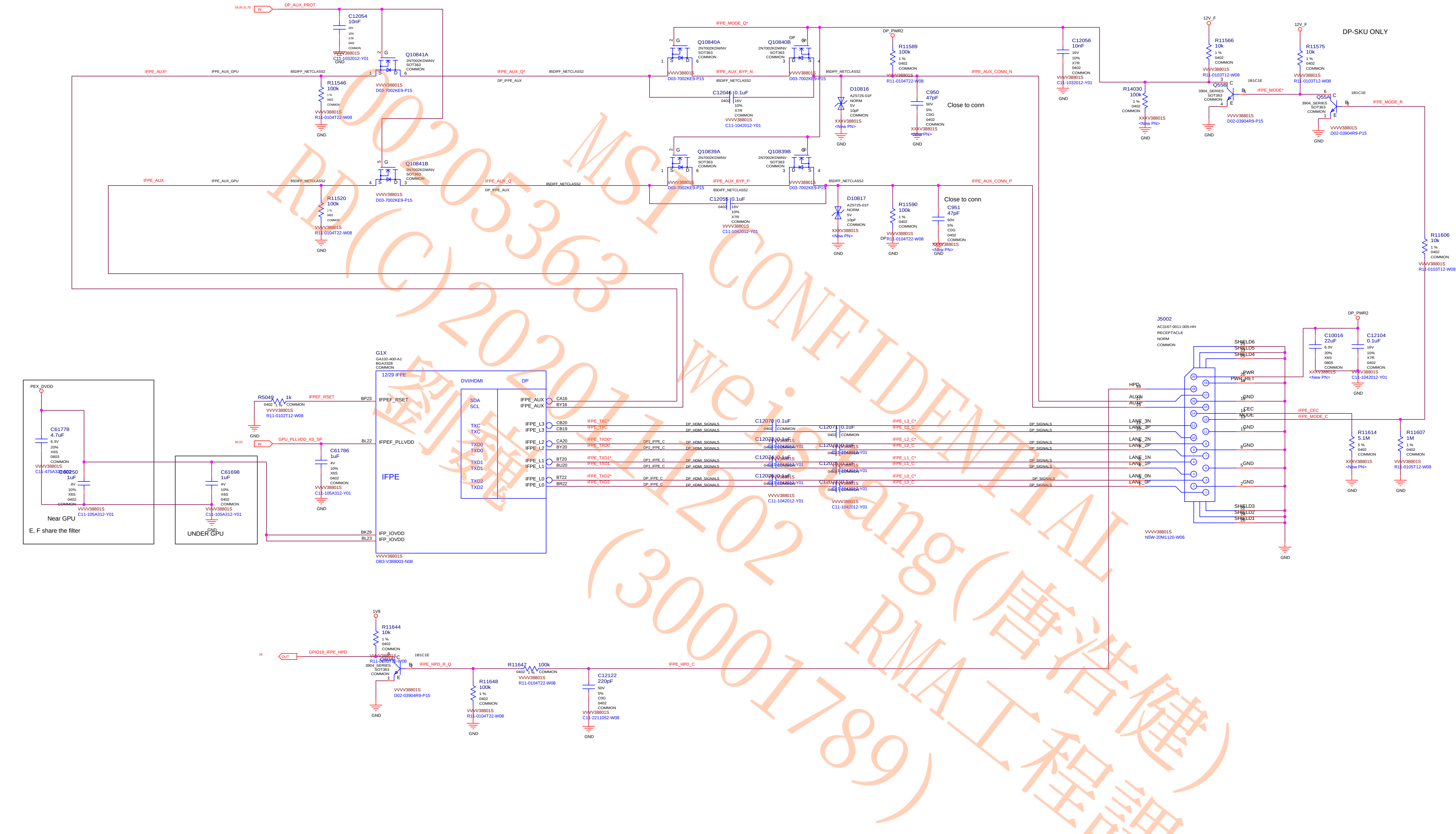
IFPE DP



DP-SKU ONLY
DP_AUX_PROT
IFPE_AUX*
IFPE_AUX
IFPE_AUX_GPU
IFPE_AUX_Q*
IFPE_AUX_Q
IFPE_MODE_Q*
IFPE_AUX_BYP_N
IFPE_AUX_BYP_P
IFPE_AUX_CONN_N
IFPE_AUX_CONN_P
IFPE_MODE*
IFPE_MODE_R
IFPE_MODE_C
IFPE_CEC
DP_PWR2
12V_F
C12054 10nF
Q10841A 2N7002KDWNV SOT363 COMMON
Q10841B 2N7002KDWNV SOT363 COMMON
Q10840A 2N7002KDWNV SOT363 COMMON
Q10840B 2N7002KDWNV SOT363 COMMON
Q10839A 2N7002KDWNV SOT363 COMMON
Q10839B 2N7002KDWNV SOT363 COMMON
R11546 100k
R11520 100k
R11589 100k
R11590 100k
R14030 100k
R11566 10k
R11575 10k
R11606 10k
R11614 5.1M
R11607 1M
C12046 0.1uF
C12055 0.1uF
C12056 10nF
C950 47pF
C951 47pF
D10816 AZ5725-01F
D10817 AZ5725-01F
Q55B 3904_SERIES SOT363 COMMON
Q55A 3904_SERIES SOT363 COMMON
Close to conn
J5002 AC3167-0011-005-HH RECEPTACLE NORM COMMON
C10016 22uF
C12104 0.1uF
HPD
AUXN
AUXP
LANE_3N
LANE_3P
LANE_2N
LANE_2P
LANE_1N
LANE_1P
LANE_0N
LANE_0P
PWR
PWR_RET
CEC
MODE
GND
SHIELD1
SHIELD2
SHIELD3
SHIELD4
SHIELD5
SHIELD6
G1X GA102-400-A1 BGA3328 COMMON
12/29 IFPE
DVI/HDMI
DP
IFPEF_RSET
IFPEF_PLLVDD
IFPE
IFP_IOVDD
SDA
SCL
TXC
TXD0
TXD1
TXD2
IFPE_AUX
IFPE_L3
IFPE_L2
IFPE_L1
IFPE_L0
R5049 1k
IFPEF_RSET
GPU_PLLVDD_XS_SP
C61786 1uF
PEX_DVDD
C61778 4.7uF
C60250 1uF
C61698 1uF
Near GPU
E, F share the filter
UNDER GPU
IFPE_TXC*
IFPE_TXC
IFPE_TXD0*
IFPE_TXD0
IFPE_TXD1*
IFPE_TXD1
IFPE_TXD2*
IFPE_TXD2
IFPE_L3_C*
IFPE_L3_C
IFPE_L2_C*
IFPE_L2_C
IFPE_L1_C*
IFPE_L1_C
IFPE_L0_C*
IFPE_L0_C
C12070 0.1uF
C12071 0.1uF
DP_SIGNALS
DP_HDMI_SIGNALS
1V8
R11644 10k
GPIO18_IFPE_HPD
IFPE_HPD_R_Q
IFPE_HPD_C
R11647 100k
R11648 100k
C12122 220pF

Watermark: MSI CONFIDENTIAL — 00205363 RD (C)2020/11/20 weiseng(唐浩健) (30001789) RMA工程課 劉鍊

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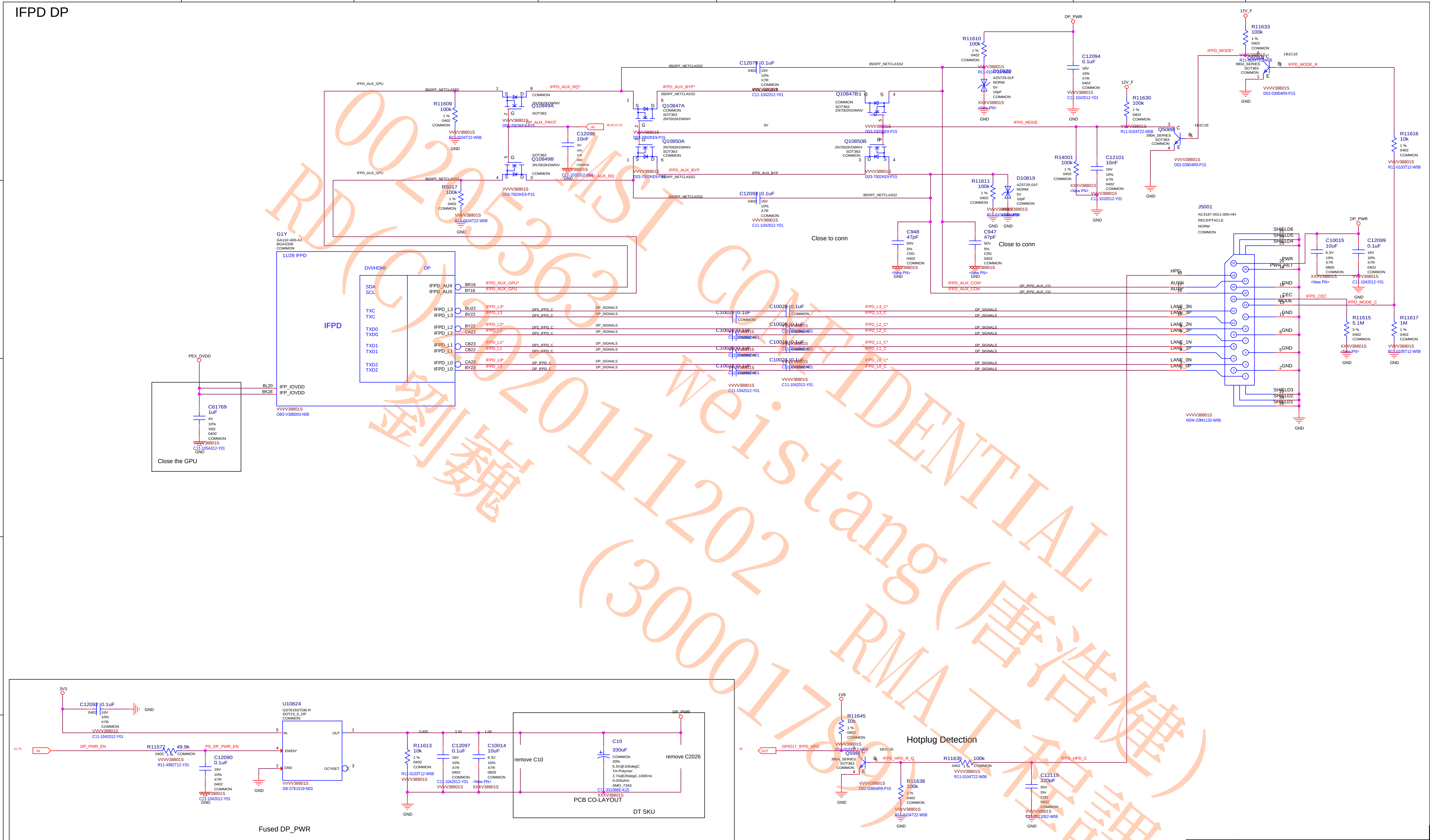
IFPD DP



IFPD DP
G1Y
GA102-400-A1
BGA3328
11/29 IFPD
IFPD
DVI/HDMI
DP
IFPD_AUX
IFPD_L3
IFPD_L2
IFPD_L1
IFPD_L0
IFP_IOVDD
PEX_DVDD
C61769 1uF
Close the GPU
Q10849A
Q10849B
Q10847A
Q10847B
Q10850A
Q10850B
2N7002KDWNV
R11609 100k
R5017 100k
R11610 100k
R11611 100k
R14001 100k
R11630 100k
R11633 100k
R11616 10k
R11615 5.1M
R11617 1M
C12096 10nF
C12079 0.1uF
C12093 0.1uF
C12094 0.1uF
C12101 10nF
C948 47pF
C947 47pF
D10820
D10819
AZ5725-01F
Close to conn
Q5088
Q5099
3904_SERIES
IFPD_MODE
IFPD_MODE_R
IFPD_MODE_C
IFPD_CEC
DP_PWR
12V_F
J5001
AC3167-0011-005-HH
RECEPTACLE
HPD
AUXN
AUXP
LANE_3N
LANE_3P
LANE_2N
LANE_2P
LANE_1N
LANE_1P
LANE_0N
LANE_0P
PWR
PWR_RET
CEC
MODE
SHIELD1
SHIELD2
SHIELD3
SHIELD4
SHIELD5
SHIELD6
C10015 10uF
C12099 0.1uF
GND
3V3
C12092 0.1uF
U10824
GS7615STDB-R
SOT23_5_DP
IN
EN/EN*
GND
OUT
OC*/ISET
R11572 49.9k
PS_DP_PWR_EN
DP_PWR_EN
C12090 0.1uF
R11613 10k
C12097 0.1uF
C10014 10uF
remove C10
C10 330uF
remove C2026
PCB CO-LAYOUT
DT SKU
Fused DP_PWR
1V8
R11645 10k
GPIO17_IFPD_HPD
IFPD_HPD_R_Q
R11635 100k
IFPD_HPD_C
R11638 100k
C12119 220pF
Hotplug Detection

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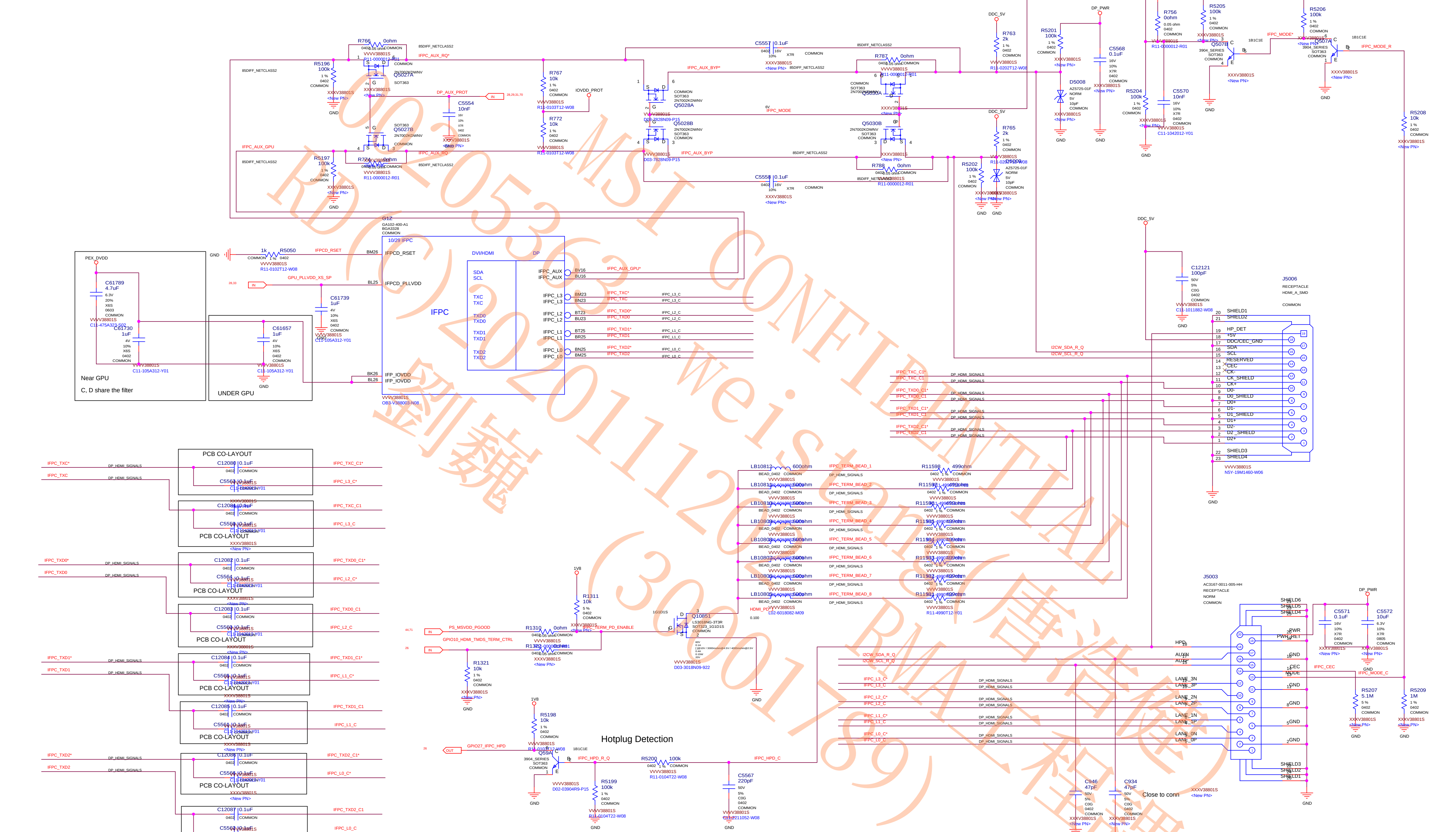
IFPC HDMI/DP



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Custom	IFPC HDMI/DP	8.0

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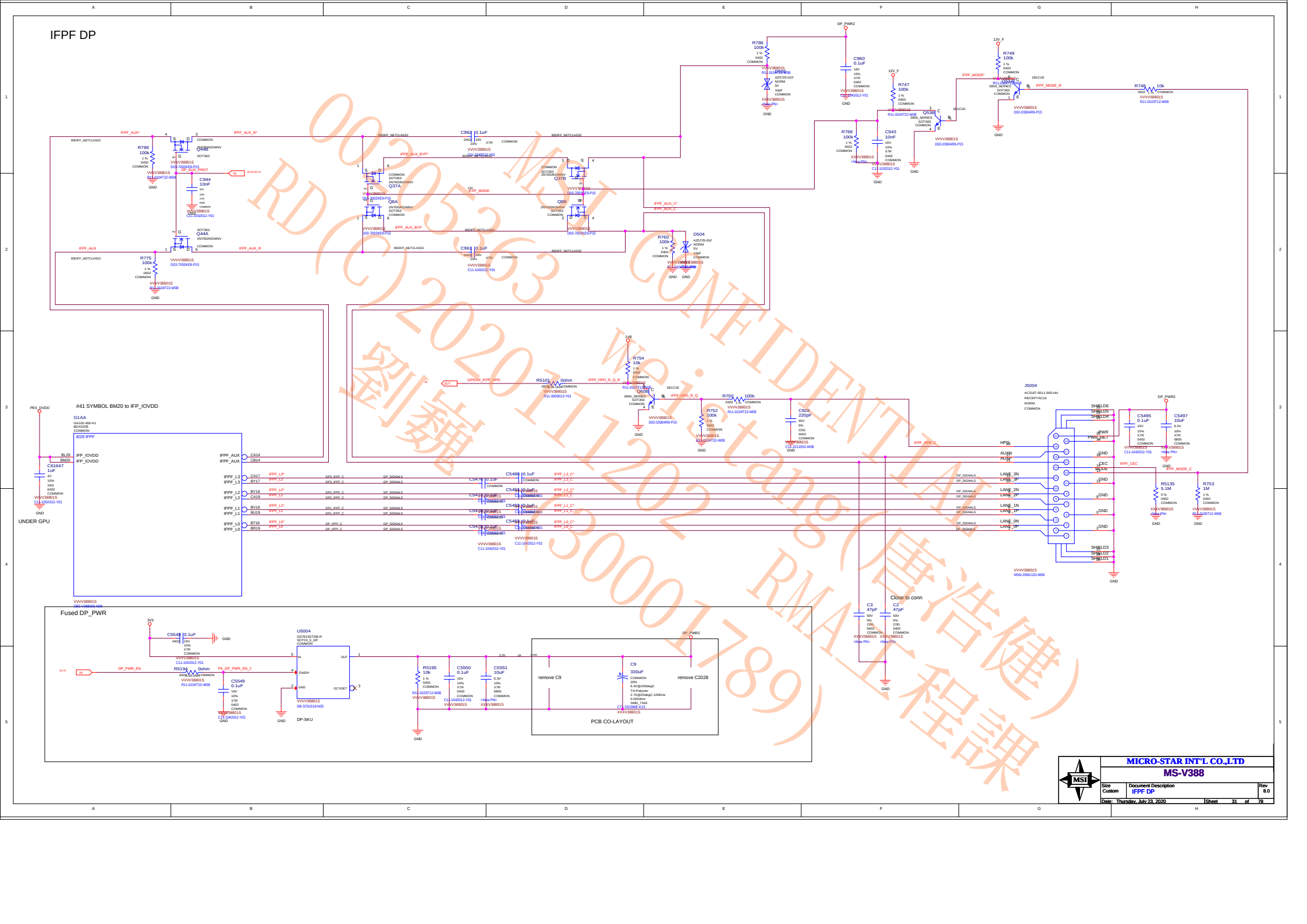
IFPF DP
Fused DP_PWR
UNDER GPU
#41 SYMBOL BM20 to IFP_IOVDD
8/29 IFPF
DP-SKU
PCB CO-LAYOUT
remove C9
remove C2028
Close to conn
MICRO-STAR INT'L CO.,LTD
MS-V388
IFPF DP
Size Custom
Rev 8.0
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MISC: ROM, Straps

STRAP2	STRAP1	STRAP0	RAMCFG[4:0]		
L	L	L	00000	RAMCFG MICRON 8Gb 19Gbps	
L	H	L	00010	RAMCFG TBD	
H	L	L	00100	RAMCFG TBD	
H	L	H	00101	RAMCFG TBD	
H	L	H	00101	RAMCFG MICRON 8Gb 21Gbps	DEFAULT

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

ROM_SO	ROM_SI	ROM_SCLK	SMARTFAN[2:0],FS_OVERT	1:ENABLE 0:DISABLE	
H	H	H	0111	FS_OVERT ENABLE	DEFAULT
L	L	L	0000	FS_OVERT DISABLE	

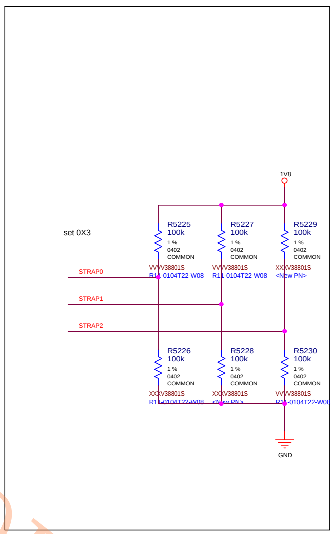
1:SMB_ALT_ADDR ENABLE
0:SMB_ALT_ADDR DISABLE

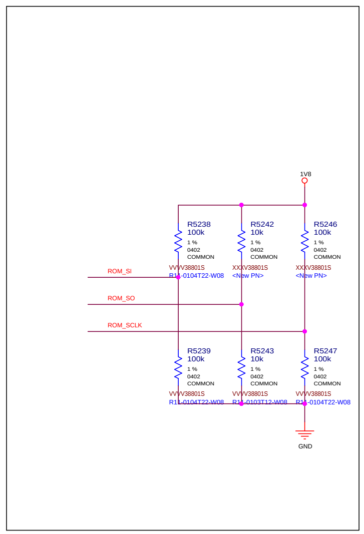
1:DEVID_SEL REBRAND
0:DEVID_SEL ORIGNAL

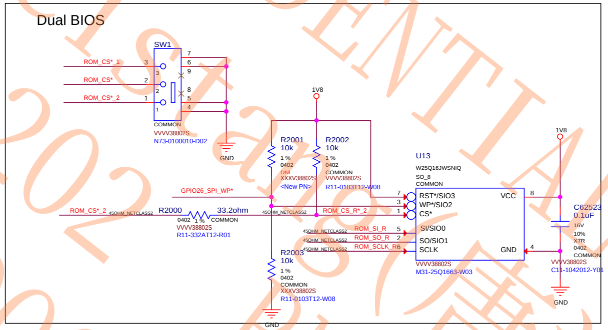
1:PCIE_CFG LOW POWER
0:PCIE_CFG HIGH POWER

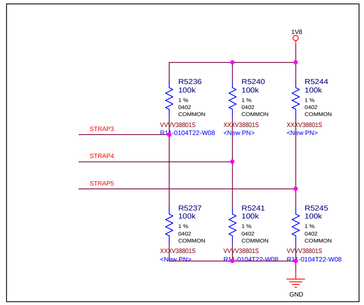
1:VGA_DEVICE ENABLE
0:VGA_DEVICE DISABLE

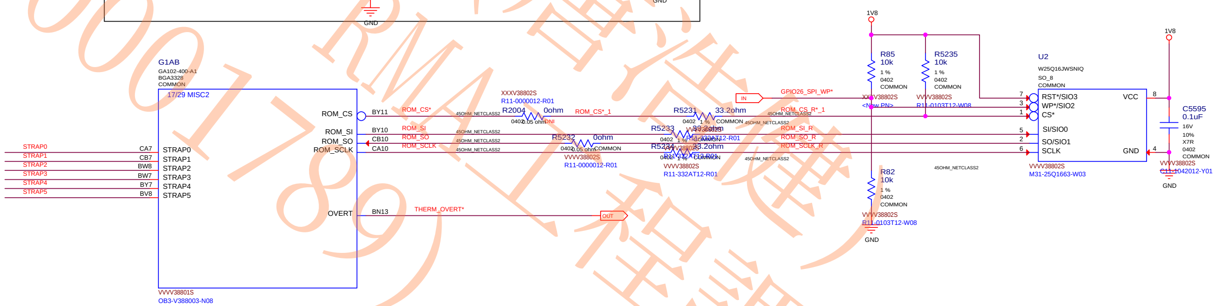
STRAP5	STRAP4	STRAP3	SMB_ALT_ADDR	DEVID_SEL	PCIE_CFG	VGA_DEVICE	
M	H	H	1	1	1	1	
M	H	L	1	1	1	0	
M	L	H	1	1	0	1	
M	L	L	1	1	0	0	
L	H	M	1	0	1	1	
L	M	H	1	0	1	0	
L	M	L	1	0	0	1	
L	L	M	1	0	0	0	
H	H	H	0	1	1	1	
H	H	L	0	1	1	0	
H	L	H	0	1	0	1	
H	L	L	0	1	0	0	
L	H	H	0	0	1	1	
L	H	L	0	0	1	0	
L	L	H	0	0	0	1	Default
L	L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











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Custom	MISC: ROM, Straps	8.0

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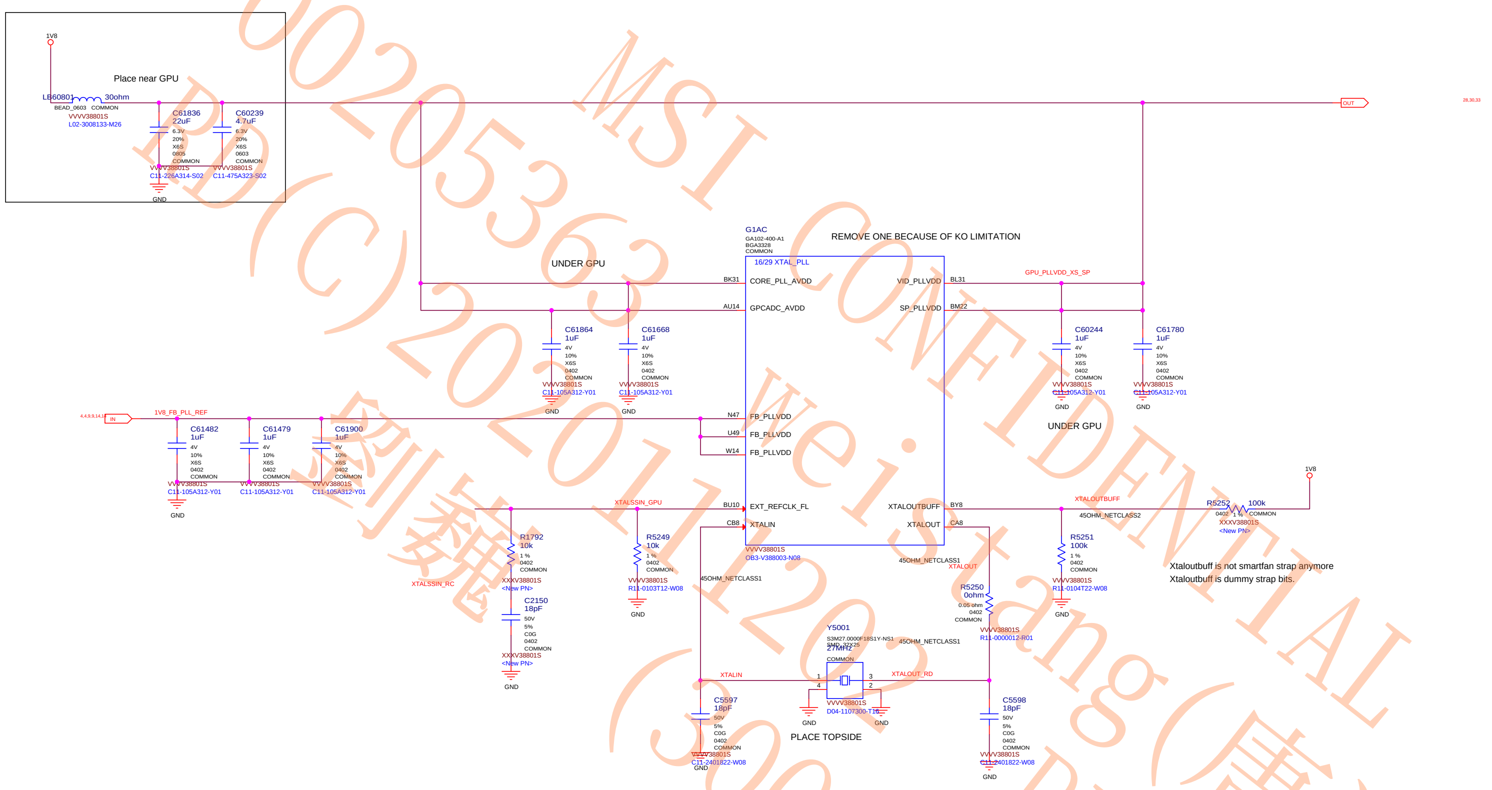
MISC: XTAL. PLL



Place near GPU
1V8
LB60801 30ohm
BEAD_0603 COMMON
VVVV38801S
L02-3008133-M26
C61836 22uF
C60239 4.7uF
C11-226A314-S02
C11-475A323-S02
GND
G1AC
GA102-400-A1
BGA3328
COMMON
16/29 XTAL_PLL
REMOVE ONE BECAUSE OF KO LIMITATION
UNDER GPU
BK31 CORE_PLL_AVDD
AU14 GPCADC_AVDD
VID_PLLVDD BL31
SP_PLLVDD BM22
GPU_PLLVDD_XS_SP
C61864 1uF
C61668 1uF
C60244 1uF
C61780 1uF
C11-105A312-Y01
1V8_FB_PLL_REF
IN
OUT
N47 FB_PLLVDD
U49 FB_PLLVDD
W14 FB_PLLVDD
C61482 1uF
C61479 1uF
C61900 1uF
XTALSSIN_GPU
BU10 EXT_REFCLK_FL
CB8 XTALIN
XTALOUTBUFF BY8
XTALOUT CA8
VVVV38801S
OB3-V388003-N08
XTALOUTBUFF
45OHM_NETCLASS2
R5252 100k
XXXV38801S
<New PN>
R1792 10k
R5249 10k
R11-0103T12-W08
R5251 100k
R11-0104T22-W08
XTALSSIN_RC
C2150 18pF
45OHM_NETCLASS1
XTALOUT
R5250 0ohm
R11-0000012-R01
Y5001
27MHz
XTALIN
XTALOUT_RD
C5597 18pF
C5598 18pF
C11-2401822-W08
D04-1107300-T16
PLACE TOPSIDE
Xtaloutbuff is not smartfan strap anymore
Xtaloutbuff is dummy strap bits.

MICRO-STAR INT'L CO.,LTD

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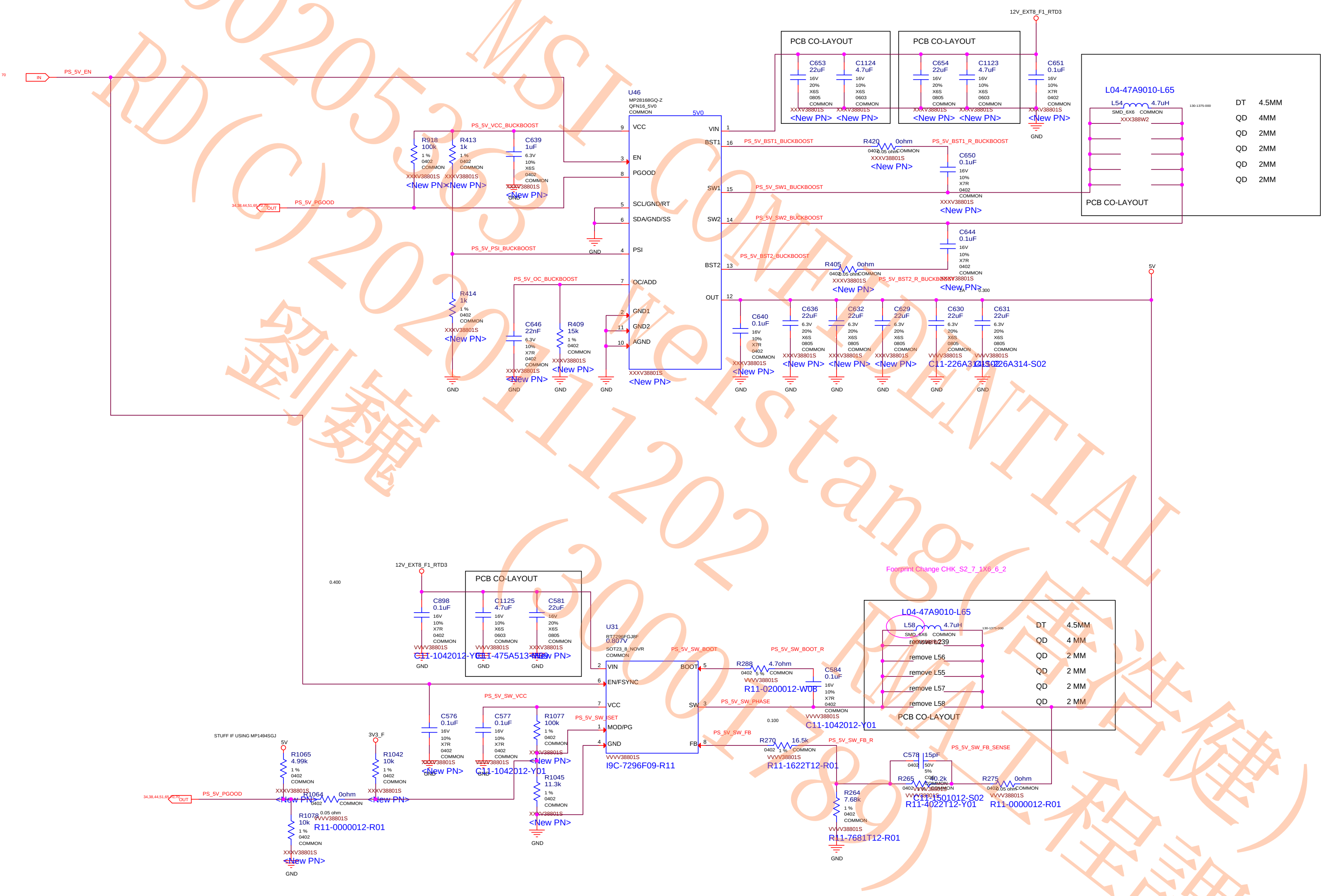
PS: 5V, 5V_BACKUP



PS_5V_EN
PS_5V_PGOOD
PS_5V_VCC_BUCKBOOST
PS_5V_PSI_BUCKBOOST
PS_5V_OC_BUCKBOOST
PS_5V_BST1_BUCKBOOST
PS_5V_BST1_R_BUCKBOOST
PS_5V_SW1_BUCKBOOST
PS_5V_SW2_BUCKBOOST
PS_5V_BST2_BUCKBOOST
U46
MP28168GQ-Z
QFN16_5V0
VCC
EN
PGOOD
SCL/GND/RT
SDA/GND/SS
PSI
OC/ADD
GND1
GND2
AGND
VIN
BST1
SW1
SW2
BST2
OUT
PCB CO-LAYOUT
L04-47A9010-L65
L54 4.7uH
DT 4.5MM
QD 4MM
QD 2MM
12V_EXT8_F1_RTD3
5V
GND
<New PN>
U31
RT7296FGJ8F
SOT23_8_NOVR
VIN
EN/FSYNC
VCC
MOD/PG
GND
BOOT
SW
FB
PS_5V_SW_BOOT
PS_5V_SW_BOOT_R
PS_5V_SW_VCC
PS_5V_SW_PHASE
PS_5V_SW_FB
PS_5V_SW_FB_R
PS_5V_SW_FB_SENSE
L58 4.7uH
Footprint Change CHK_S2_7_1X6_6_2
STUFF IF USING MP1494SGJ
3V3_F
I9C-7296F09-R11
C11-1042012-Y01
R11-0200012-W08
R11-1622T12-R01
R11-7681T12-R01
R11-4022T12-Y01
R11-0000012-R01

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MS-V388	
Size: Custom	Document Description: PS: 5V, 5V_BACKUP
Rev	8.0
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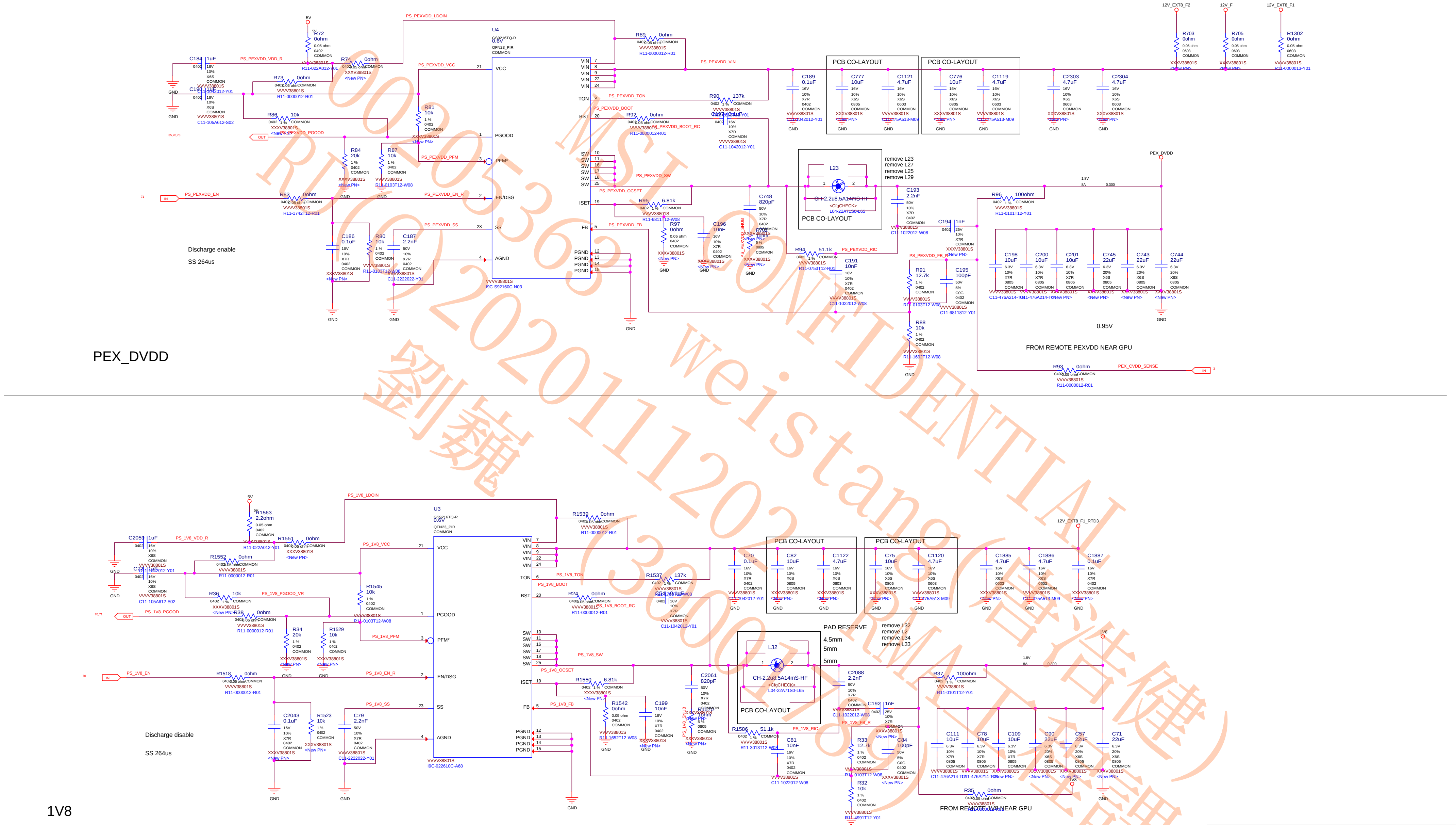
PS: PEX_DVDD 1V8 Rail



PEX_DVDD
U4
VCC
VIN
TON
BST
PGOOD
PFM*
EN/DSG
SW
ISET
SS
FB
AGND
PGND
PS_PEXVDD_LDOIN
PS_PEXVDD_VDD_R
PS_PEXVDD_VCC
PS_PEXVDD_VIN
PS_PEXVDD_TON
PS_PEXVDD_BOOT
PS_PEXVDD_PGOOD
PS_PEXVDD_EN
PS_PEXVDD_PFM
PS_PEXVDD_EN_R
PS_PEXVDD_SS
PS_PEXVDD_SW
PS_PEXVDD_OCSET
PS_PEXVDD_FB
Discharge enable
SS 264us
PCB CO-LAYOUT
remove L23
remove L27
remove L25
remove L29
L23
CH-2.2u8.5A14mS-HF
0.95V
FROM REMOTE PEXVDD NEAR GPU
PEX_CVDD_SENSE
12V_EXT8_F2
12V_F
12V_EXT8_F1
1V8
U3
PS_1V8_LDOIN
PS_1V8_VDD_R
PS_1V8_VCC
PS_1V8_TON
PS_1V8_BOOT
PS_1V8_PGOOD
PS_1V8_EN
PS_1V8_PFM
PS_1V8_EN_R
PS_1V8_SS
PS_1V8_SW
PS_1V8_OCSET
PS_1V8_FB
Discharge disable
SS 264us
PAD RESERVE
4.5mm
5mm
5mm
remove L32
remove L2
remove L34
remove L33
L32
CH-2.2u8.5A14mS-HF
FROM REMOTE 1V8 NEAR GPU
12V_EXT8_F1_RTD3
GND

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MS-V388		
Size: Custom	Document Description: PS: PEX_DVDD 1V8 Rail	Rev: 8.0
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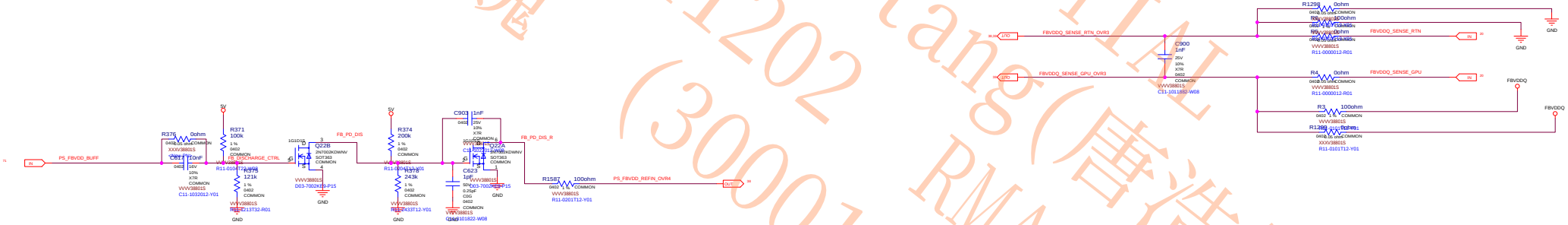
BLANK

MSI	MICRO-STAR INT'L CO.,LTD	
	MS-V388	
Size: Custom	Document Description: BLANK	Rev: 8.0
Date: Wednesday, July 22, 2020	Sheet 36 of 78	

PS: FBVDD Controller OVR3



FOR DT SKU

MICRO-STAR INT'L CO.,LTD

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Size	Document Description	Rev
Custom	FBVDD Controller OVR3	8.0

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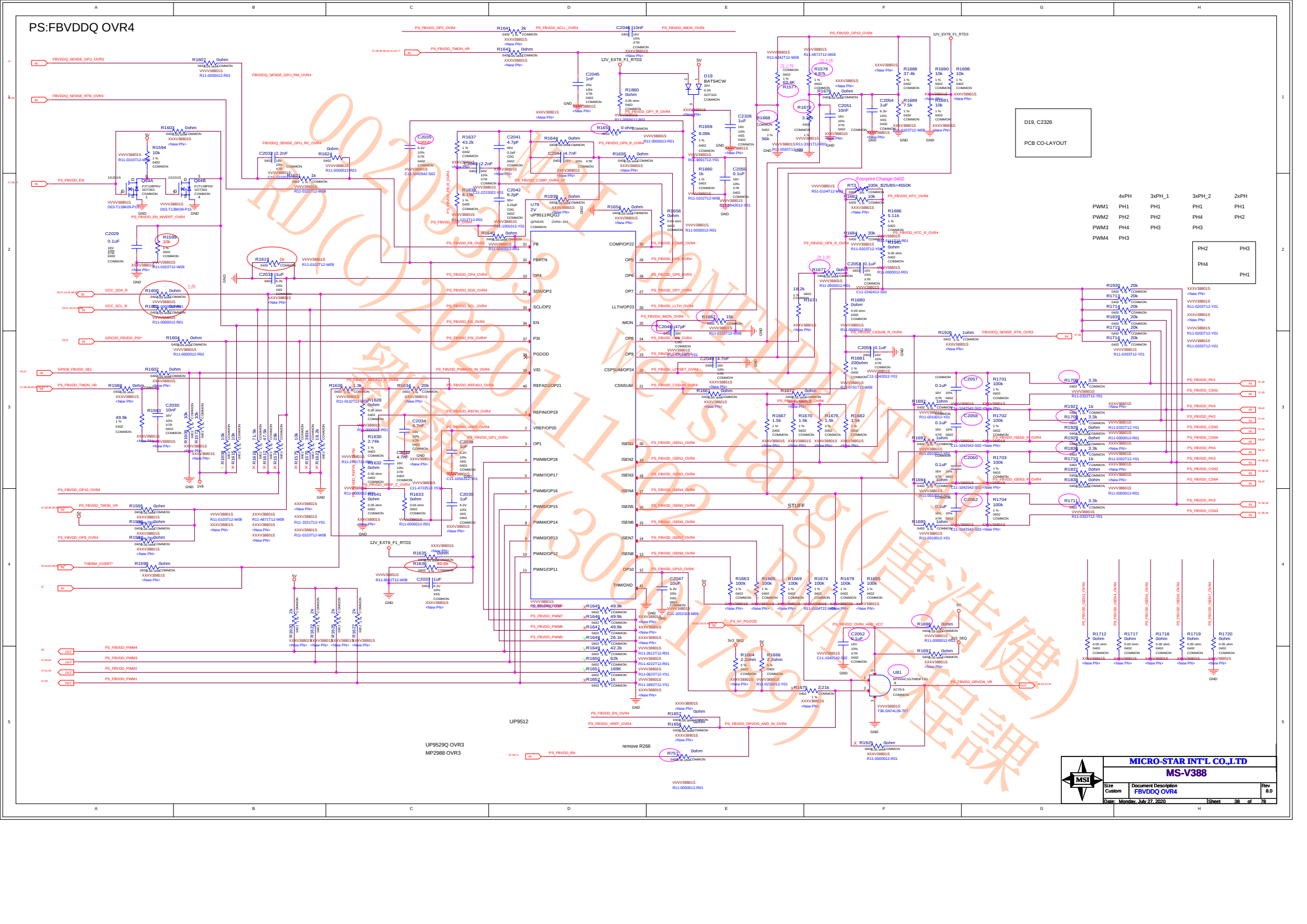
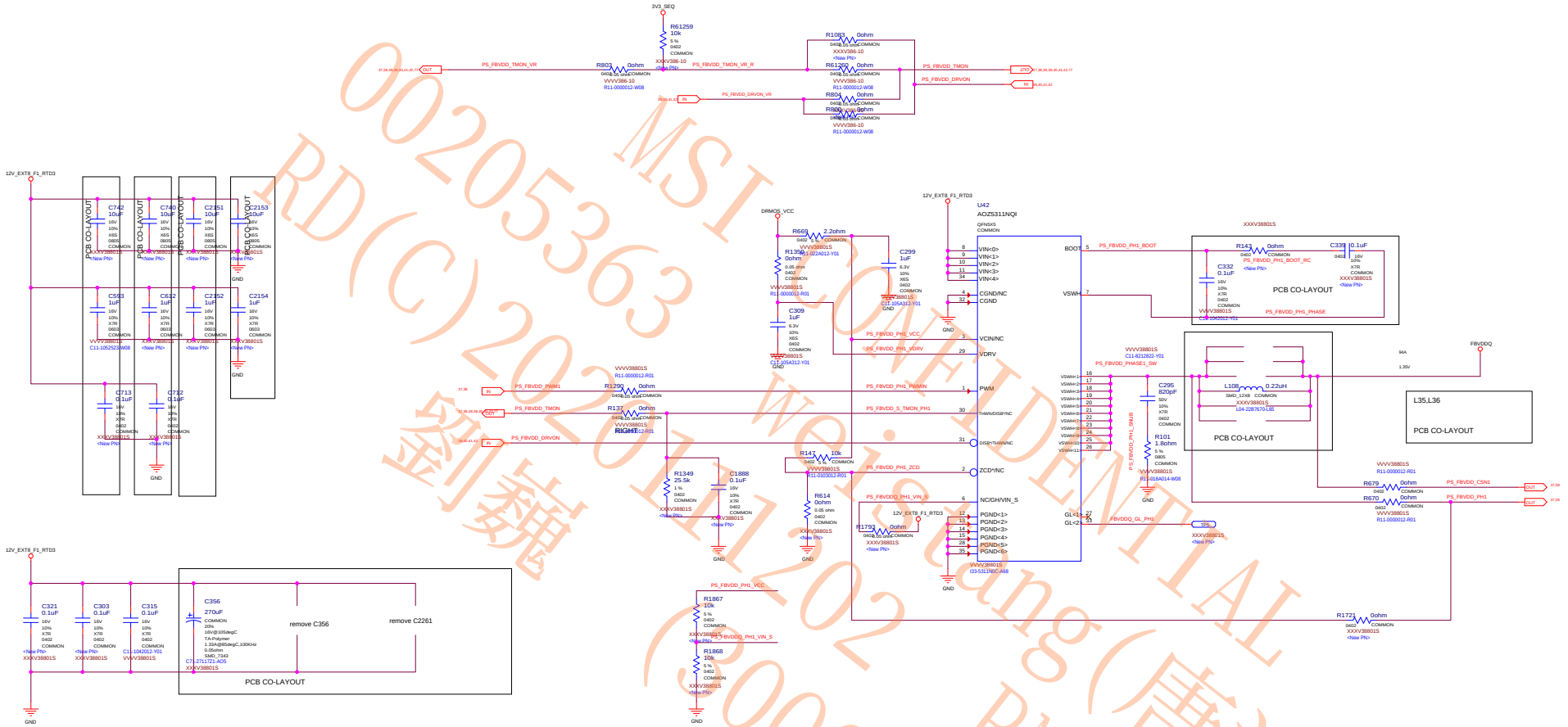
PS:FBVDDQ OVR4



PS: FBVDD PH1



MICRO-STAR INT'L CO.,LTD	
MS-V388	
Size: Custom	Document Description: PS: FBVDD PH1
Rev: 8.0	
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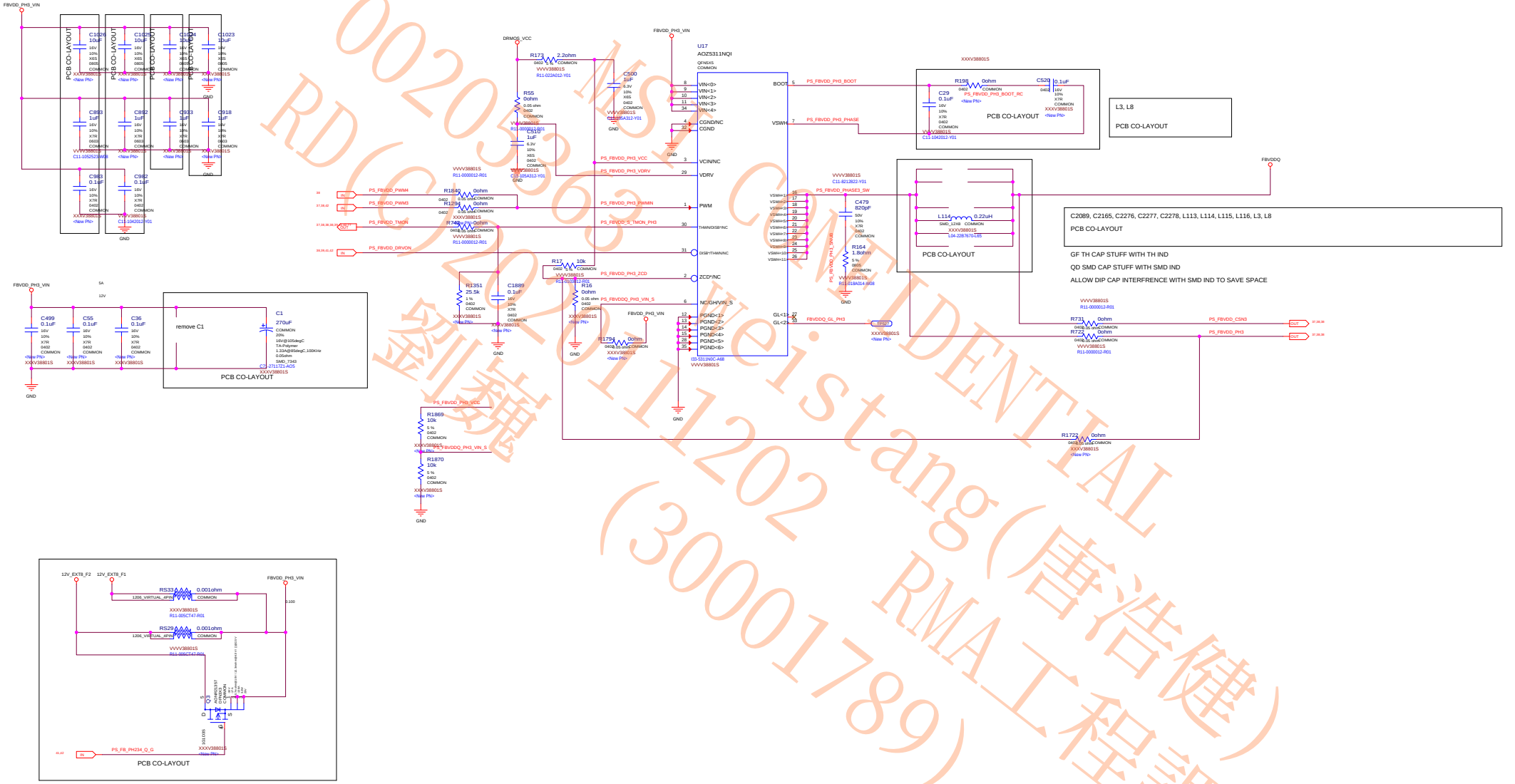
PS: FBVDD PH3



FBVDD PH3 INPUT ANTI-BACKDRIVE

MICRO-STAR INT'L CO.,LTD		
MS-V388		
Size: Custom	Document Description: PS: FBVDD PH3	Rev: 8.0
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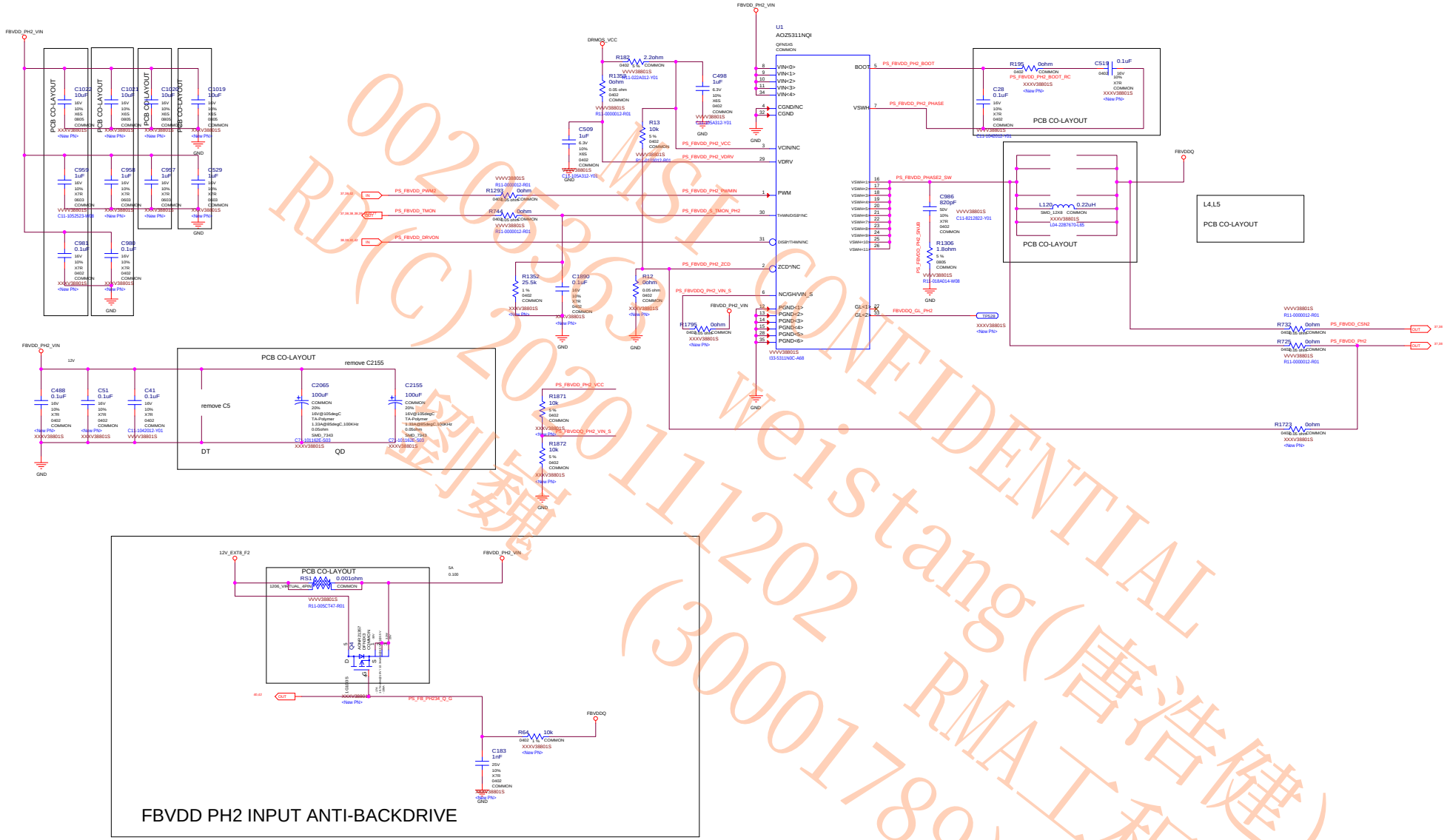
PS: FBVDD PH2



MICRO-STAR INT'L CO.,LTD	
MS-V388	
Size: Custom	Document Description: PS: FBVDD PH2
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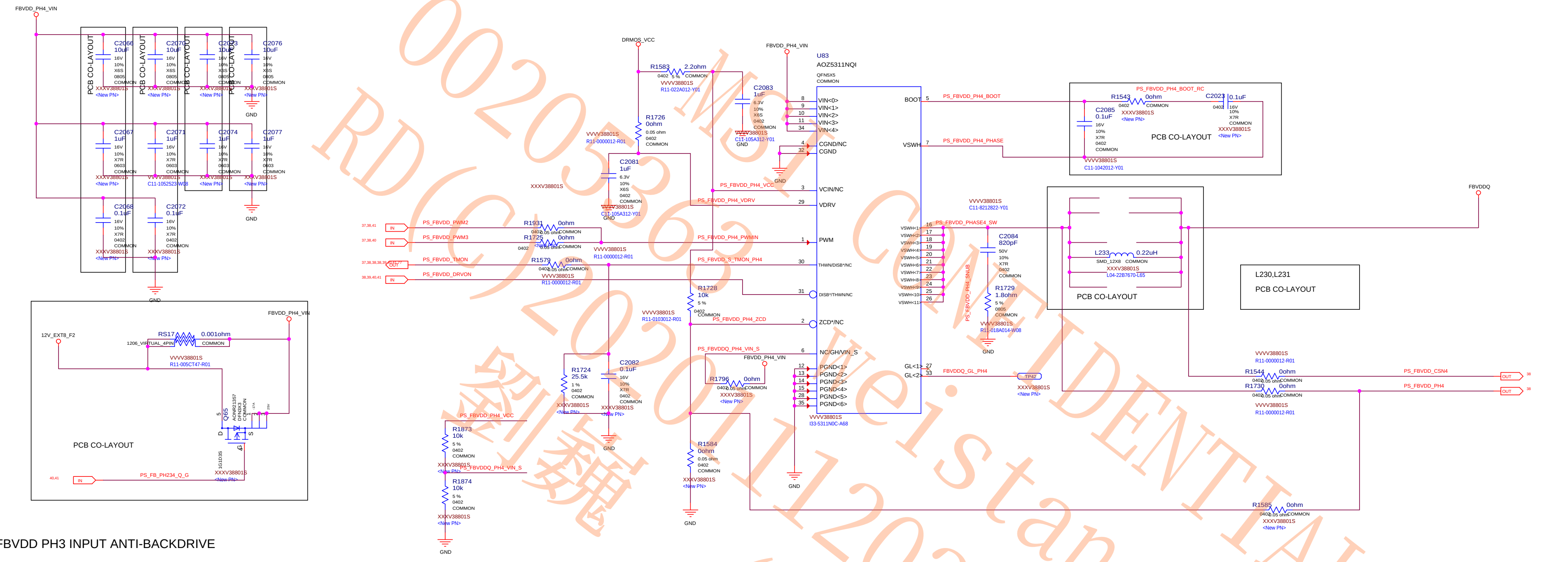
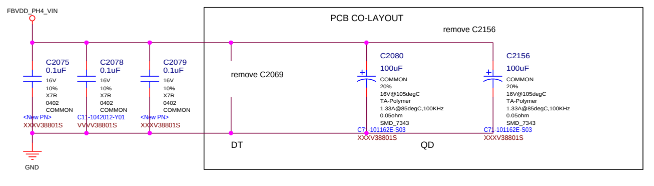
PS: FBVDD PH4



FBVDD_PH4_VIN
PCB CO-LAYOUT
C2066 10uF
C2070 10uF
C2073 10uF
C2076 10uF
C2067 1uF
C2071 1uF
C2074 1uF
C2077 1uF
C2068 0.1uF
C2072 0.1uF
GND
DRMOS_VCC
R1583 2.2ohm
R1726 0ohm
C2081 1uF
C2083 1uF
U83
AOZ5311NQI
VIN<0>
VIN<1>
VIN<2>
VIN<3>
VIN<4>
CGND/NC
CGND
VCIN/NC
VDRV
PWM
THWN/DISB*/NC
DISB*/THWN/NC
ZCD*/NC
NC/GH/VIN_S
PGND<1>
PGND<2>
PGND<3>
PGND<4>
PGND<5>
PGND<6>
BOOT
VSWH
GL<1>
GL<2>
PS_FBVDD_PWM2
PS_FBVDD_PWM3
PS_FBVDD_TMON
PS_FBVDD_DRVON
R1931 0ohm
R1725 0ohm
R1579 0ohm
R1728 10k
R1724 25.5k
C2082 0.1uF
R1796 0ohm
R1873 10k
R1874 10k
R1584 0ohm
PS_FBVDD_PH4_BOOT
PS_FBVDD_PH4_PHASE
PS_FBVDD_PH4_BOOT_RC
R1543 0ohm
C2023 0.1uF
C2085 0.1uF
PS_FBVDD_PHASE4_SW
C2084 820pF
R1729 1.8ohm
L233 0.22uH
FBVDDQ
L230,L231
PCB CO-LAYOUT
R1544 0ohm
R1730 0ohm
R1585 0ohm
PS_FBVDD_CSN4
PS_FBVDD_PH4
FBVDDQ_GL_PH4
TP42
12V_EXT8_F2
RS17 0.001ohm
Q65
PS_FB_PH234_Q_G

FBVDD PH3 INPUT ANTI-BACKDRIVE



MICRO-STAR INT'L CO.,LTD

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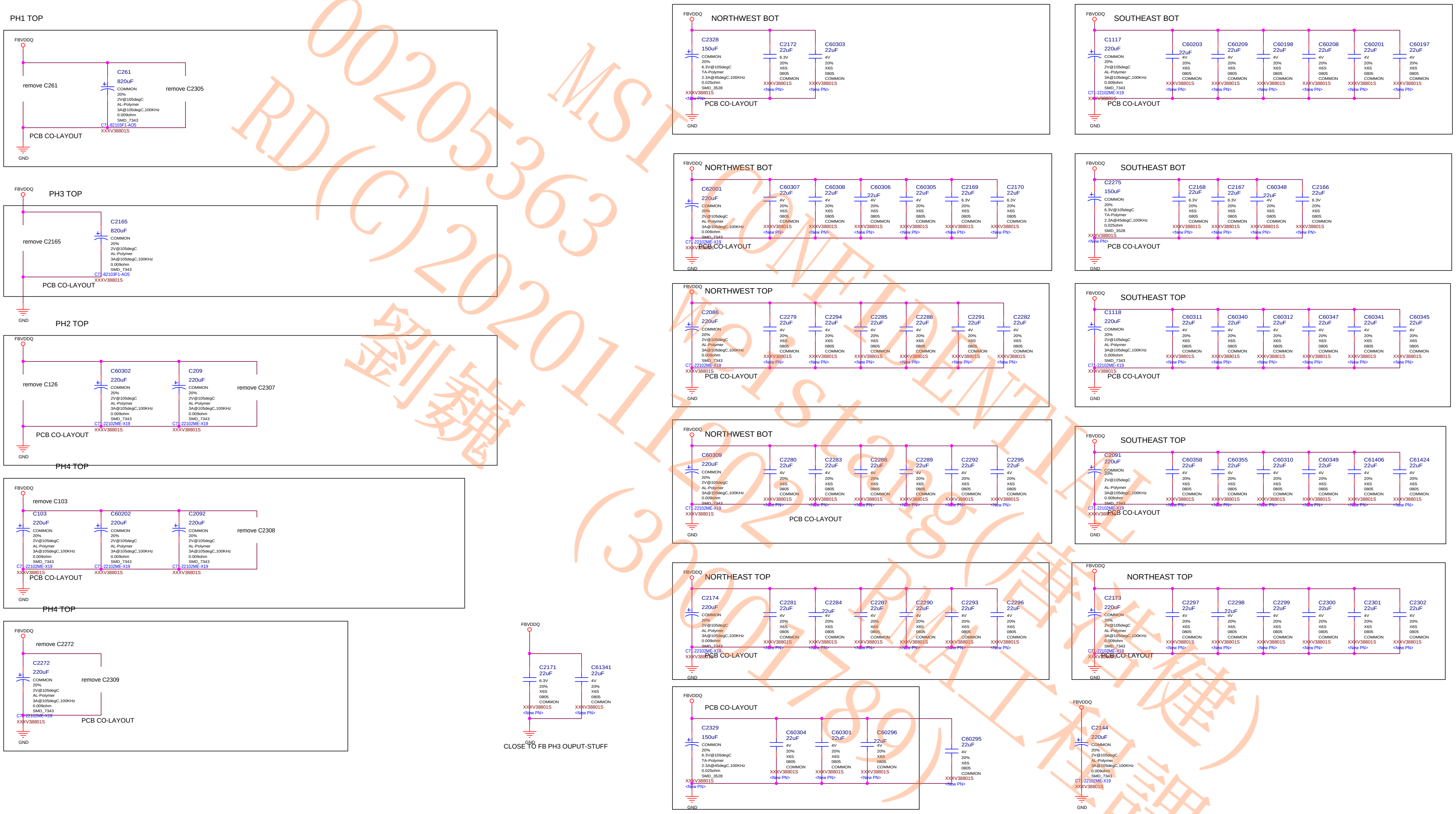
PS: FBVDD OUTPUT CAP

REFER TO PCB FOR BOM STUFFING



MICRO-STAR INT'L CO.,LTD

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Size	Document Description	Rev
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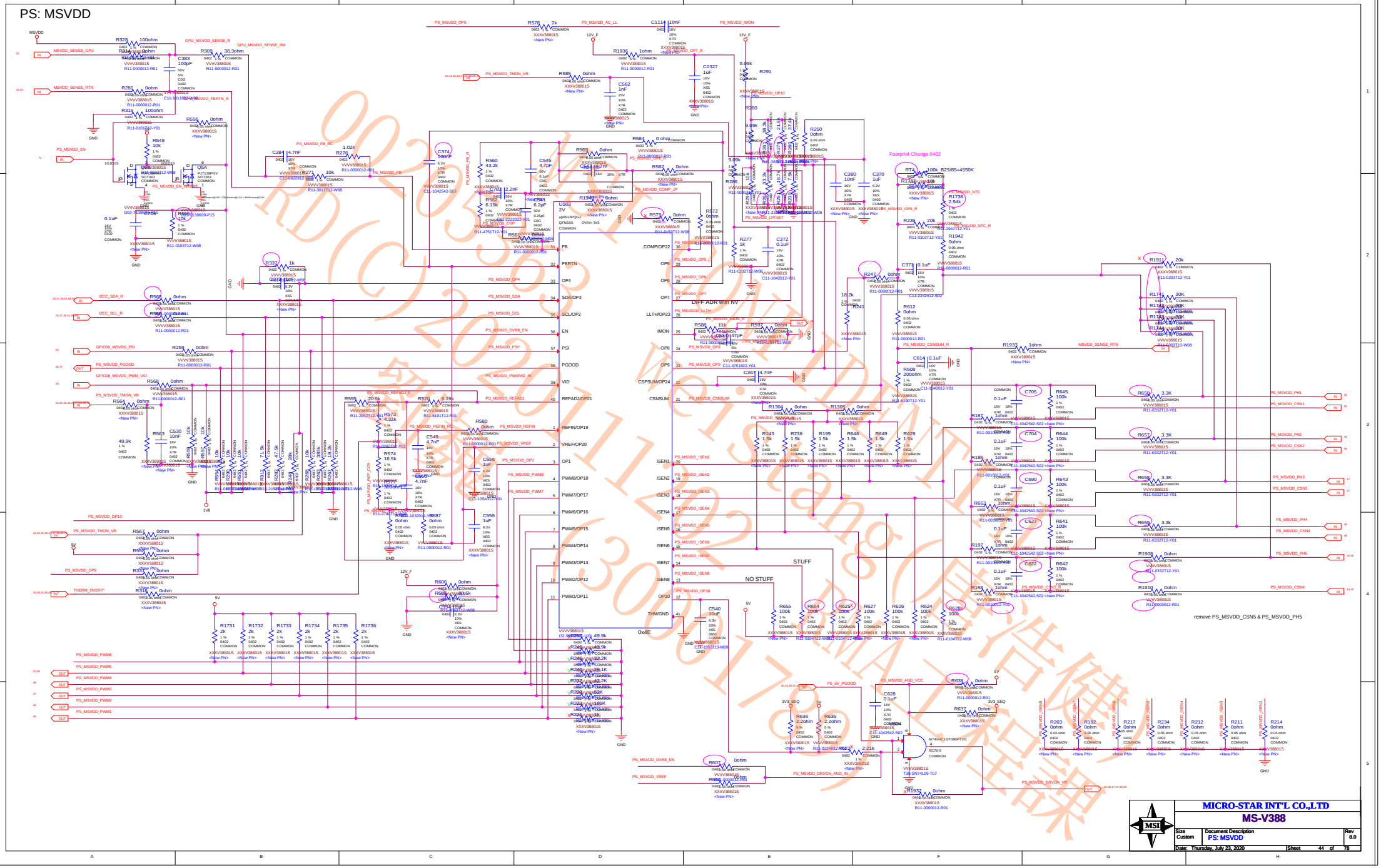
PS: MSVDD
DIFF ADR with NV
STUFF
NO STUFF
remove PS_MSVDD_CSN5 & PS_MSVDD_PH5
Footprint Change 0402
MICRO-STAR INT'L CO.,LTD
MS-V388
PS: MSVDD
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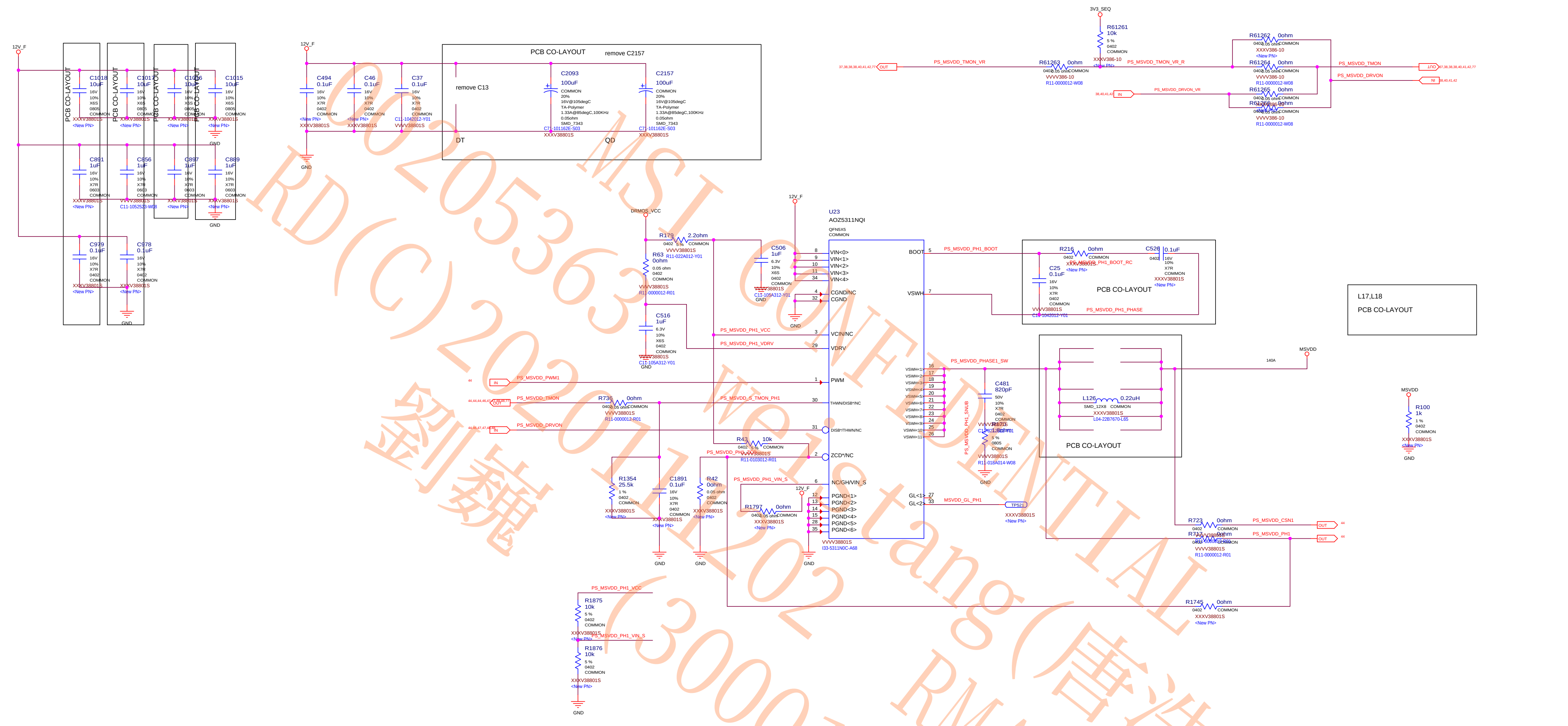
PS: MSVDD Phase 1



12V_F
PCB CO-LAYOUT
C1018 10uF
C1017 10uF
C1016 10uF
C1015 10uF
C891 1uF
C856 1uF
C897 1uF
C889 1uF
C979 0.1uF
C978 0.1uF
C494 0.1uF
C46 0.1uF
C37 0.1uF
remove C13
remove C2157
C2093 100uF
C2157 100uF
DT
QD
GND
3V3_SEQ
R61261 10k
R61262 0ohm
R61263 0ohm
R61264 0ohm
R61265 0ohm
R61266 0ohm
PS_MSVDD_TMON_VR
PS_MSVDD_TMON_VR_R
PS_MSVDD_TMON
PS_MSVDD_DRVON_VR
PS_MSVDD_DRVON
DRMOS_VCC
R179 2.2ohm
R63 0ohm
C506 1uF
C516 1uF
U23
AOZ5311NQI
QFN5X5
VIN<0>
VIN<1>
VIN<2>
VIN<3>
VIN<4>
CGND/NC
CGND
VCIN/NC
VDRV
PWM
THWN/DISB*/NC
DISB*/THWN/NC
ZCD*/NC
NC/GH/VIN_S
PGND<1>
PGND<2>
PGND<3>
PGND<4>
PGND<5>
PGND<6>
BOOT
VSWH
GL<1>
GL<2>
PS_MSVDD_PH1_BOOT
PS_MSVDD_PH1_BOOT_RC
PS_MSVDD_PH1_PHASE
PS_MSVDD_PH1_VCC
PS_MSVDD_PH1_VDRV
PS_MSVDD_PWM1
PS_MSVDD_S_TMON_PH1
PS_MSVDD_PH1_VIN_S
PS_MSVDD_PHASE1_SW
MSVDD_GL_PH1
R216 0ohm
C526 0.1uF
C25 0.1uF
PCB CO-LAYOUT
L17,L18
PCB CO-LAYOUT
MSVDD
L126 0.22uH
SMD_12X8
C481 820pF
R736 0ohm
R43 10k
R1354 25.5k
C1891 0.1uF
R42 0ohm
R1797 0ohm
R100 1k
R723 0ohm
R717 0ohm
PS_MSVDD_CSN1
PS_MSVDD_PH1
R1745 0ohm
R1875 10k
R1876 10k
TP521

MICRO-STAR INT'L CO.,LTD			
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Size: Custom	Document Description: PS: MSVDD Phase 1		Rev: 8.0
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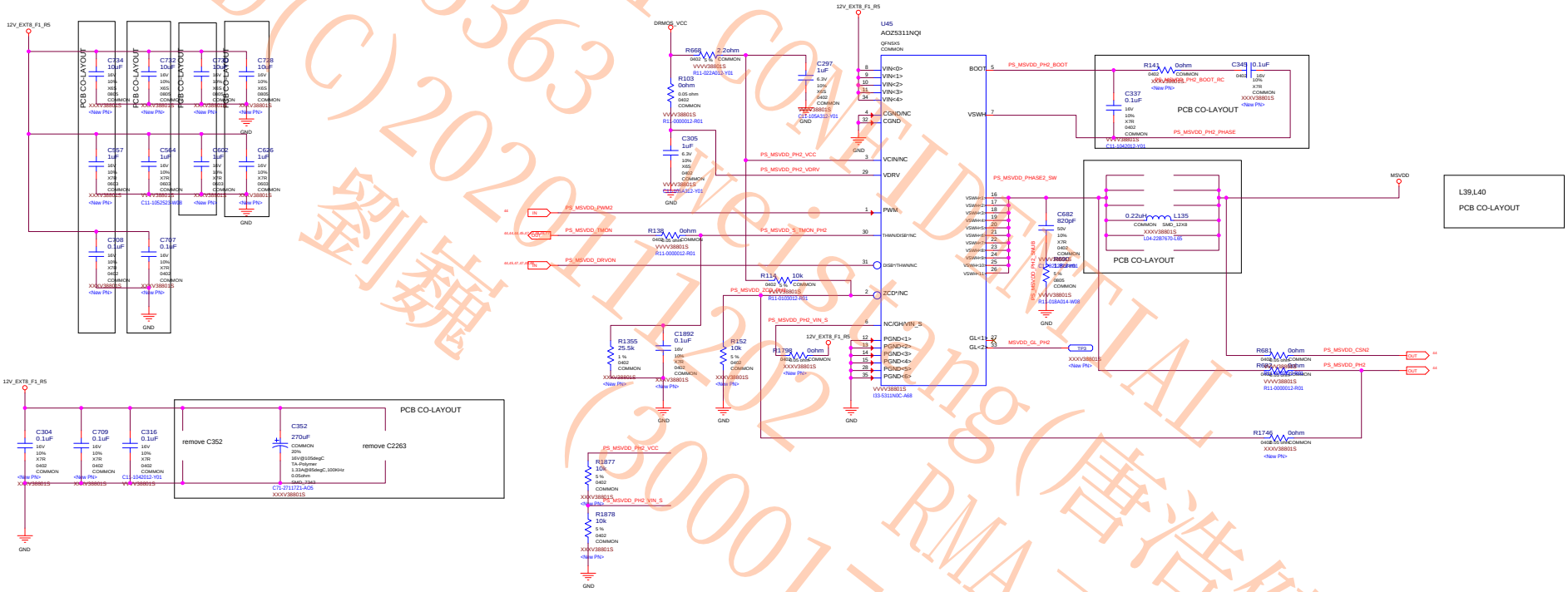
PS: MSVDD PH 2



MICRO-STAR INT'L CO.,LTD

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Custom	PS: MSVDD PH 2	8.0

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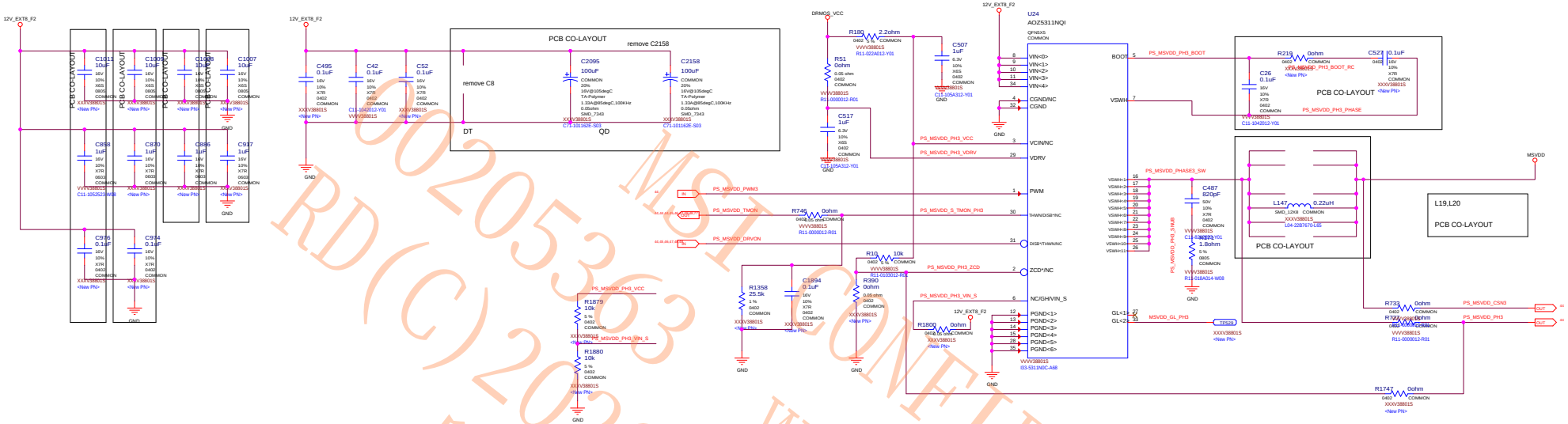
PS:MSVDD Phase 3, 5



MICRO-STAR INT'L CO.,LTD		
MS-V388		
Size: Custom	Document Description: PS:MSVDD Phase 3, 5	Rev: 8.0
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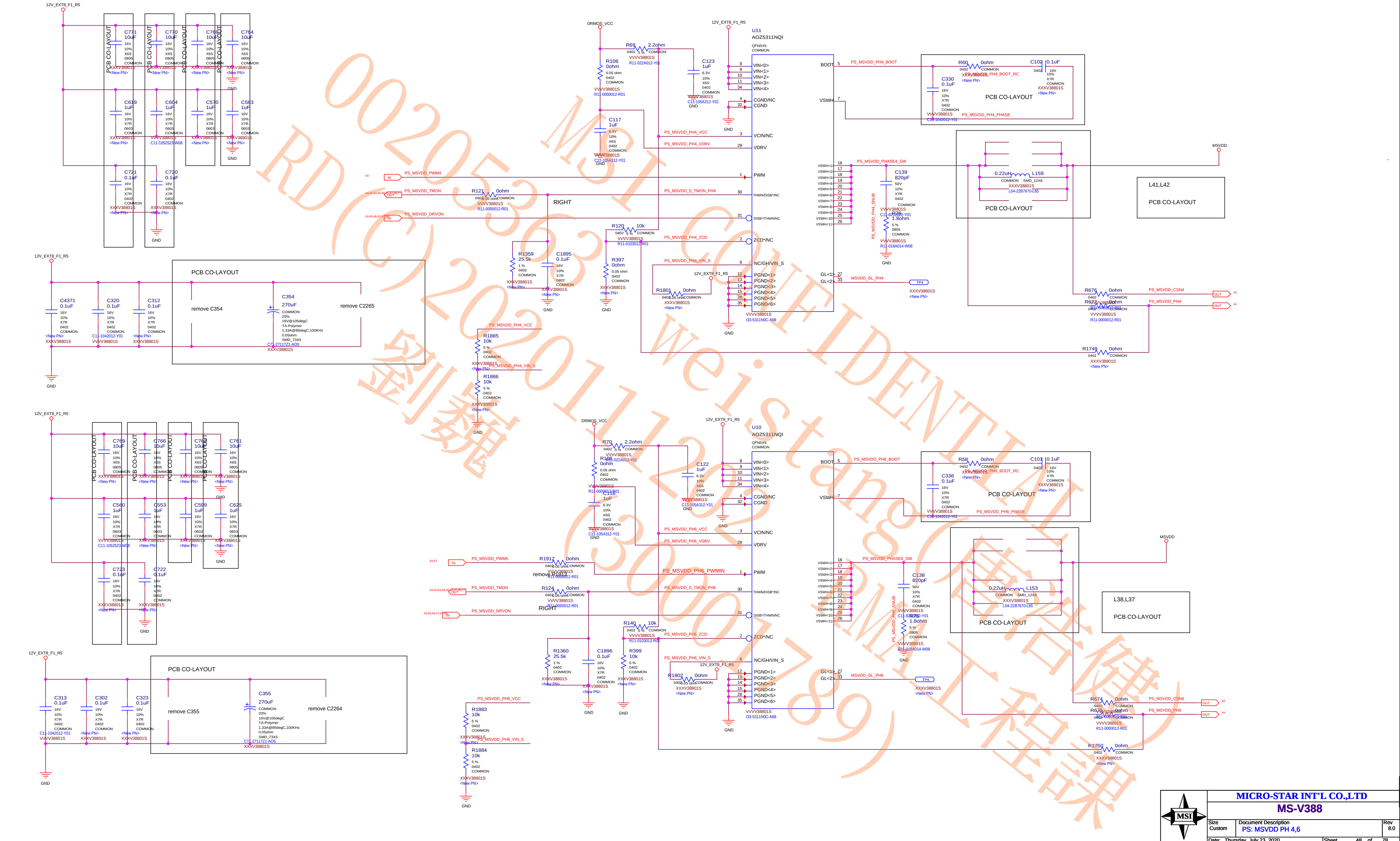
PS: MSVDD PH 4,6



12V_EXT8_F1_R5
PCB CO-LAYOUT
C771 10uF
C770 10uF
C768 10uF
C764 10uF
C619 1uF
C604 1uF
C570 1uF
C583 1uF
C721 0.1uF
C720 0.1uF
GND
C4371 0.1uF
C320 0.1uF
C312 0.1uF
remove C354
C354 270uF
remove C2265
DRMOS_VCC
R69 2.2ohm
R108 0ohm
C117 1uF
C123 1uF
U11
AOZ5311NQI
QFN5X5
VIN<0>
VIN<1>
VIN<2>
VIN<3>
VIN<4>
CGND/NC
CGND
VCIN/NC
VDRV
PWM
THWN/DISB*/NC
DISB*/THWN/NC
ZCD*/NC
NC/GH/VIN_S
PGND<1>
PGND<2>
PGND<3>
PGND<4>
PGND<5>
PGND<6>
BOOT
VSWH
GL<1>
GL<2>
PS_MSVDD_PWM4
PS_MSVDD_TMON
PS_MSVDD_DRVON
PS_MSVDD_PH4_VCC
PS_MSVDD_PH4_VDRV
PS_MSVDD_S_TMON_PH4
PS_MSVDD_PH4_ZCD
PS_MSVDD_PH4_VIN_S
PS_MSVDD_PH4_BOOT
PS_MSVDD_PH4_BOOT_RC
PS_MSVDD_PH4_PHASE
PS_MSVDD_PHASE4_SW
PS_MSVDD_PH4_SNUB
MSVDD_GL_PH4
R121 0ohm
RIGHT
R120 10k
R1359 25.5k
C1895 0.1uF
R397 0ohm
R1801 0ohm
R1885 10k
R1886 10k
R60 0ohm
C102 0.1uF
C330 0.1uF
C139 820pF
R76 1.8ohm
L159 0.22uH
MSVDD
L41,L42
PCB CO-LAYOUT
R676 0ohm
R677 0ohm
R1749 0ohm
PS_MSVDD_CSN4
PS_MSVDD_PH4
TP4
C769 10uF
C766 10uF
C762 10uF
C761 10uF
C560 1uF
C553 1uF
C599 1uF
C625 1uF
C723 0.1uF
C722 0.1uF
C313 0.1uF
C302 0.1uF
C323 0.1uF
remove C355
C355 270uF
remove C2264
R70 2.2ohm
R109 0ohm
C118 1uF
C122 1uF
U10
AOZ5311NQI
PS_MSVDD_PWM6
PS_MSVDD_PH6_PWMIN
PS_MSVDD_PH6_VCC
PS_MSVDD_PH6_VDRV
PS_MSVDD_S_TMON_PH6
PS_MSVDD_PH6_ZCD
PS_MSVDD_PH6_VIN_S
PS_MSVDD_PH6_BOOT
PS_MSVDD_PH6_BOOT_RC
PS_MSVDD_PH6_PHASE
PS_MSVDD_PHASE6_SW
PS_MSVDD_PH6_SNUB
MSVDD_GL_PH6
R1912 0ohm
remove R1912
R124 0ohm
R140 10k
R1360 25.5k
C1896 0.1uF
R399 10k
R1802 0ohm
R1883 10k
R1884 10k
R58 0ohm
C101 0.1uF
C336 0.1uF
C138 820pF
R75 1.8ohm
L153 0.22uH
L38,L37
R674 0ohm
R675 0ohm
R1750 0ohm
PS_MSVDD_CSN6
PS_MSVDD_PH6
TP6

MICRO-STAR INT'L CO.,LTD

MS-V388

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Custom	PS: MSVDD PH 4,6	8.0

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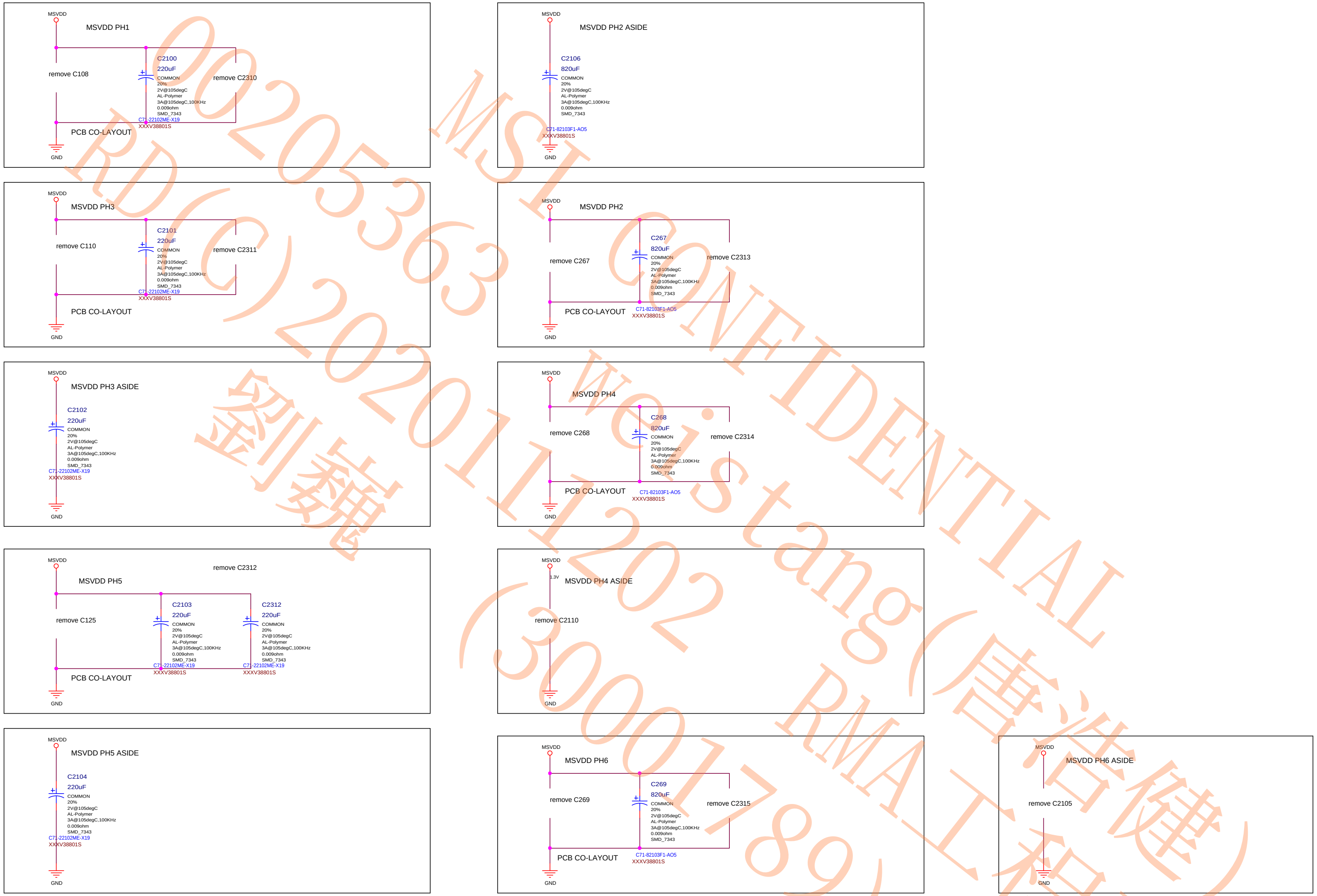
PS:MSVDD OUTPUT CAP (TOP)

REFER TO PCB FOR BOM STUFFING



MSVDD
MSVDD PH1
C2100
220uF
COMMON
20%
2V@105degC
AL-Polymer
3A@105degC,100KHz
0.009ohm
SMD_7343
C71-22102ME-X19
XXXV38801S
remove C108
remove C2310
PCB CO-LAYOUT
GND
MSVDD PH2 ASIDE
C2106
820uF
C71-82103F1-AO5
MSVDD PH3
C2101
remove C110
remove C2311
MSVDD PH2
C267
remove C267
remove C2313
MSVDD PH3 ASIDE
C2102
MSVDD PH4
C268
remove C268
remove C2314
MSVDD PH5
remove C2312
C2103
C2312
remove C125
MSVDD PH4 ASIDE
3.3V
remove C2110
MSVDD PH5 ASIDE
C2104
MSVDD PH6
C269
remove C269
remove C2315
MSVDD PH6 ASIDE
remove C2105

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Size: Custom	Document Description: PS:MSVDD OUTPUT CAP (TOP)	Rev: 8.0
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MS-V388		
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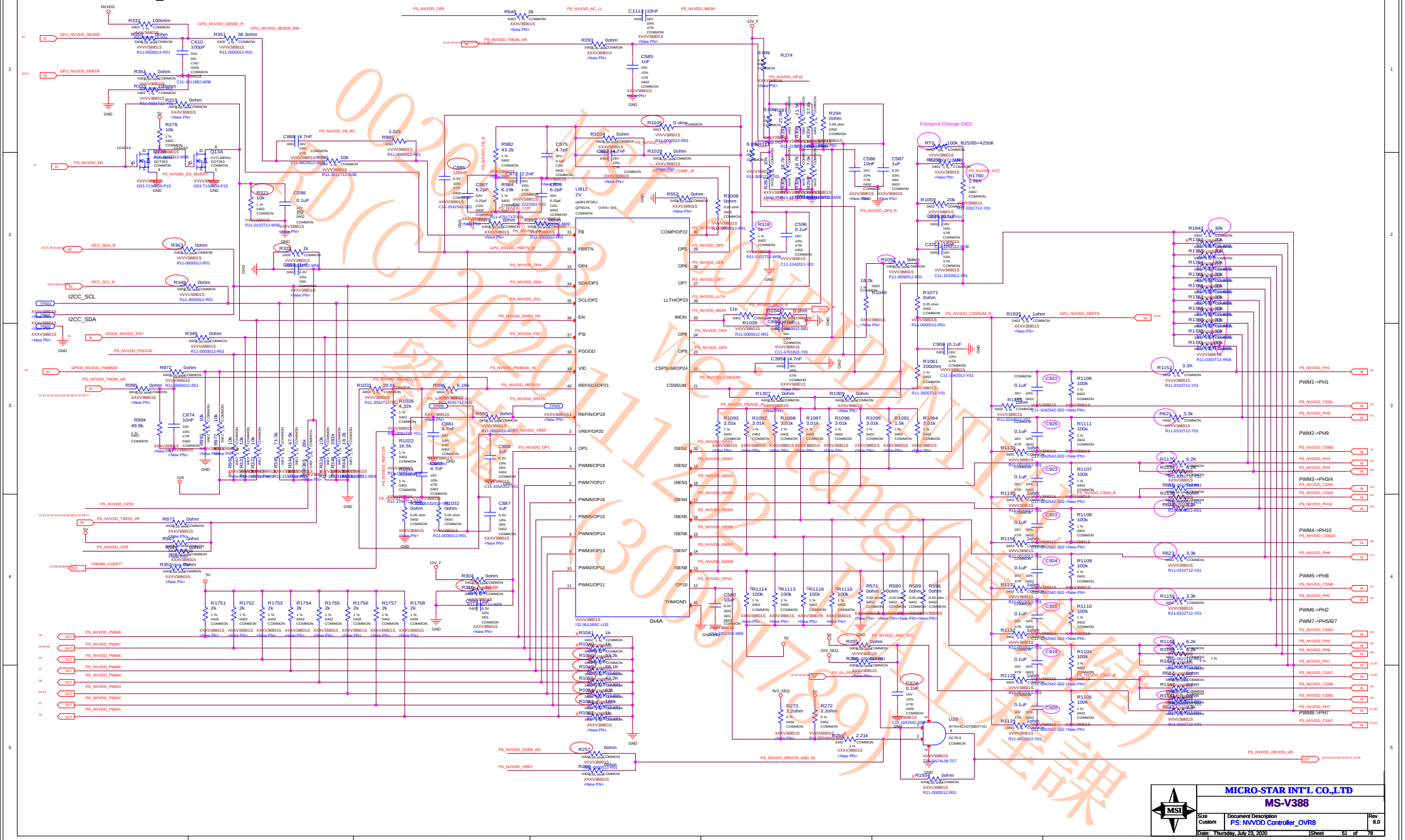
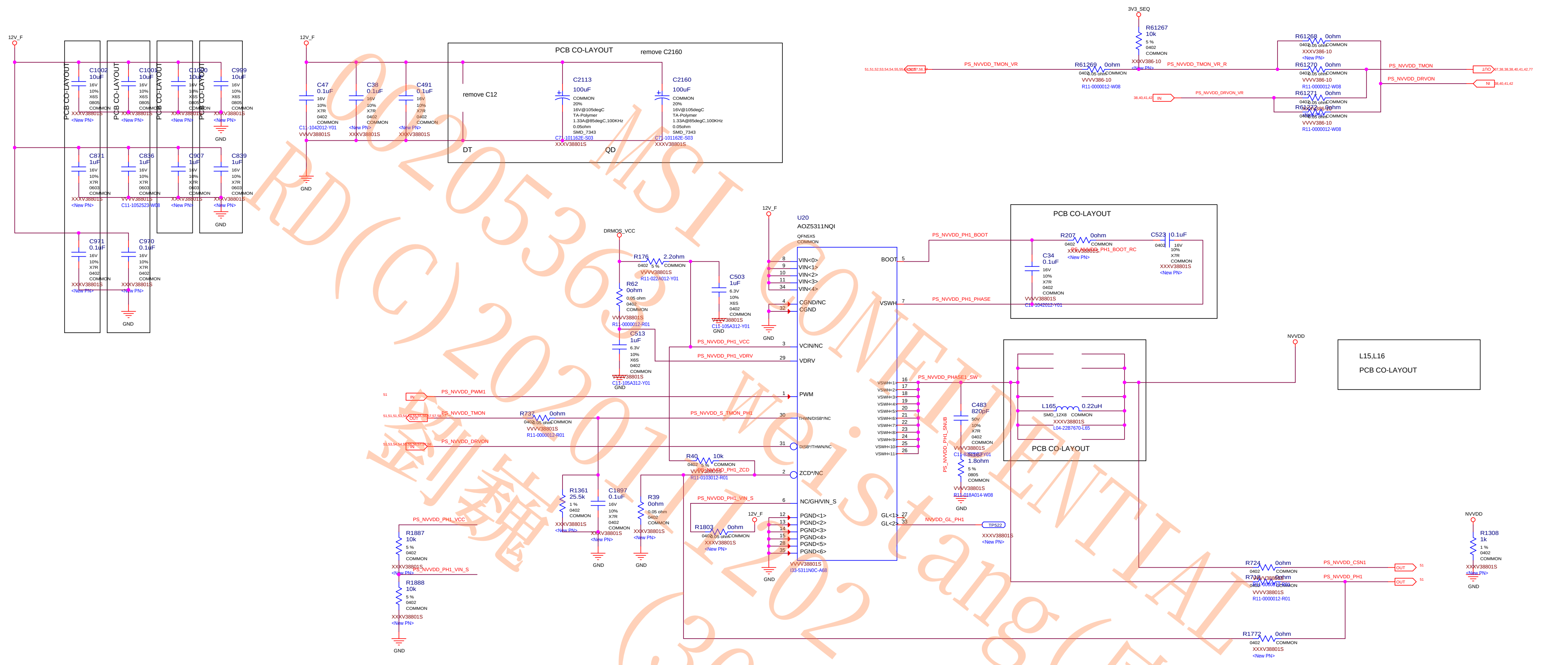
PS: NVVDD Controller_OVR8



PS: NVVDD Phase 1



12V_F
PCB CO-LAYOUT
C1002 10uF
C1001 10uF
C1000 10uF
C999 10uF
C871 1uF
C836 1uF
C907 1uF
C839 1uF
C971 0.1uF
C970 0.1uF
C47 0.1uF
C38 0.1uF
C491 0.1uF
remove C12
remove C2160
C2113 100uF
C2160 100uF
DT
QD
GND
3V3_SEQ
R61267 10k
R61269 0ohm
R61268 0ohm
R61270 0ohm
R61271 0ohm
R61272 0ohm
PS_NVVDD_TMON_VR
PS_NVVDD_TMON_VR_R
PS_NVVDD_DRVON_VR
PS_NVVDD_TMON
PS_NVVDD_DRVON
U20
AOZ5311NQI
QFN5X5
DRMOS_VCC
R176 2.2ohm
R62 0ohm
C503 1uF
C513 1uF
VIN<0>
VIN<1>
VIN<2>
VIN<3>
VIN<4>
CGND/NC
CGND
VCIN/NC
VDRV
PWM
THWN/DISB*/NC
DISB*/THWN/NC
ZCD*/NC
NC/GH/VIN_S
PGND<1>
PGND<2>
PGND<3>
PGND<4>
PGND<5>
PGND<6>
BOOT
VSWH
GL<1>
GL<2>
PS_NVVDD_PWM1
PS_NVVDD_PH1_VCC
PS_NVVDD_PH1_VDRV
PS_NVVDD_S_TMON_PH1
PS_NVVDD_PH1_ZCD
PS_NVVDD_PH1_VIN_S
PS_NVVDD_PH1_BOOT
PS_NVVDD_PH1_BOOT_RC
PS_NVVDD_PH1_PHASE
PS_NVVDD_PHASE1_SW
PS_NVVDD_PH1_SNUB
NVVDD_GL_PH1
R737 0ohm
R40 10k
R1361 25.5k
C1897 0.1uF
R39 0ohm
R1803 0ohm
R1887 10k
R1888 10k
R207 0ohm
C523 0.1uF
C34 0.1uF
C483 820pF
R2163 1.8ohm
L165 0.22uH
L15,L16 PCB CO-LAYOUT
NVVDD
R724 0ohm
R728 0ohm
R1772 0ohm
R1308 1k
PS_NVVDD_CSN1
PS_NVVDD_PH1
TP522

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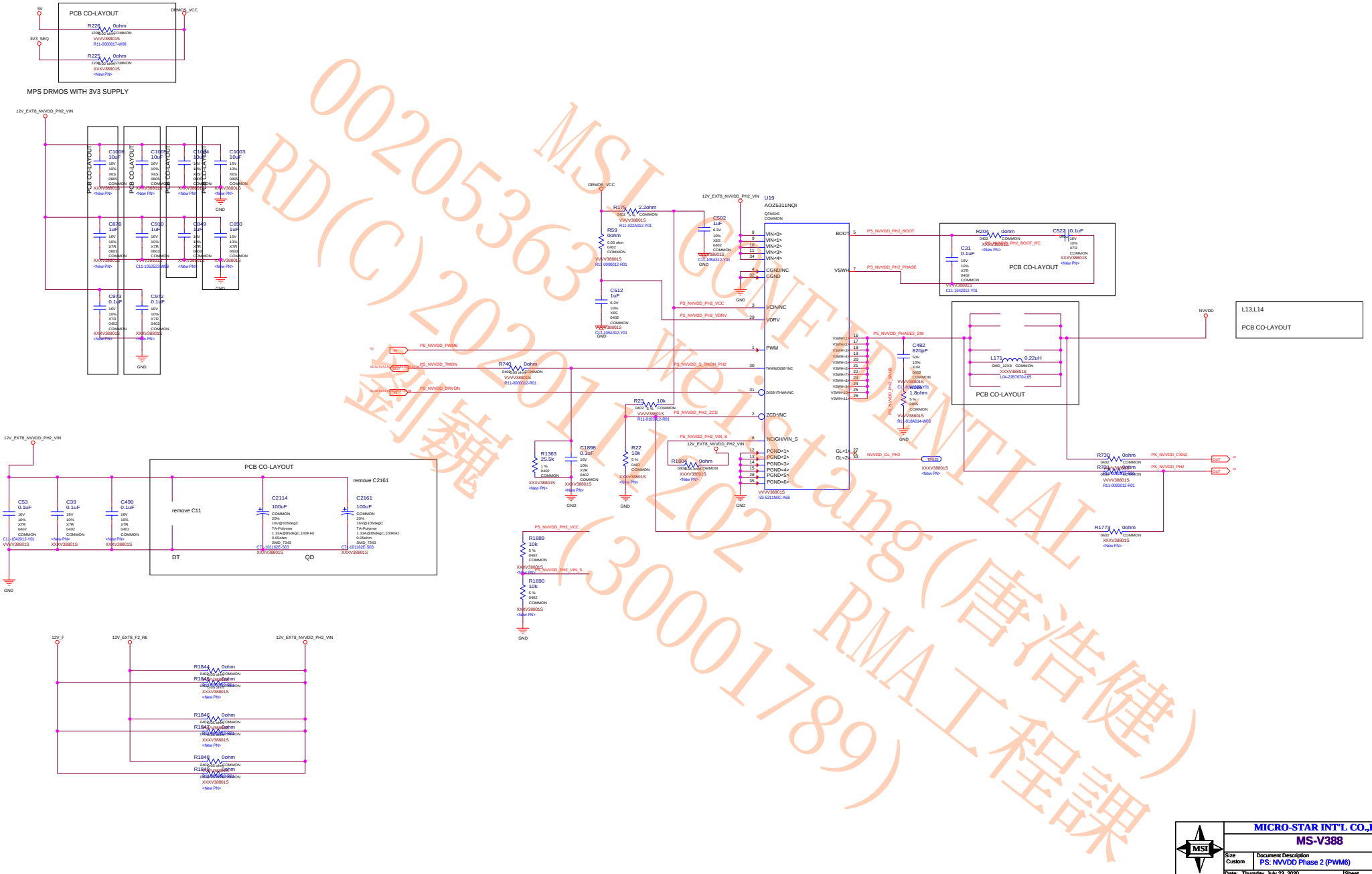
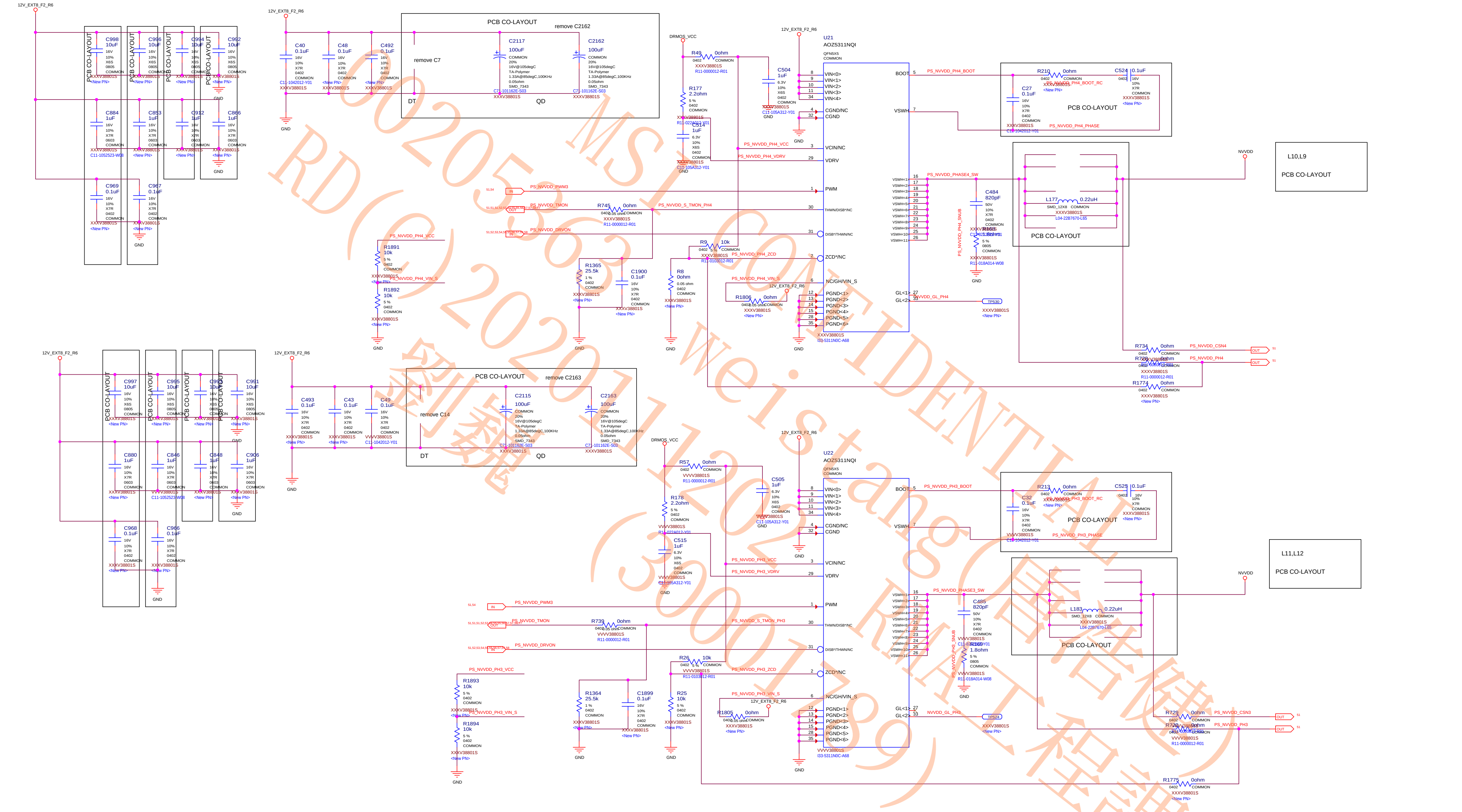
PS: NVVDD Phase 2 (PWM6)



PS: NVVDD Phase 3 (PWM3), PHASE4 (PWM3)



12V_EXT8_F2_R6
PCB CO-LAYOUT
remove C2162
remove C7
DT
QD
C2117 100uF
C2162 100uF
DRMOS_VCC
U21
AOZ5311NQI
VIN<0>
VIN<1>
VIN<2>
VIN<3>
VIN<4>
CGND/NC
CGND
VCIN/NC
VDRV
PWM
THWN/DISB*/NC
DISB*/THWN/NC
ZCD*/NC
NC/GH/VIN_S
PGND<1>
PGND<2>
PGND<3>
PGND<4>
PGND<5>
PGND<6>
BOOT
VSWH
GL<1>
GL<2>
PS_NVVDD_PH4_BOOT
PS_NVVDD_PH4_PHASE
PS_NVVDD_PHASE4_SW
PS_NVVDD_PH4_VCC
PS_NVVDD_PH4_VDRV
PS_NVVDD_PWM3
PS_NVVDD_TMON
PS_NVVDD_DRVON
PS_NVVDD_S_TMON_PH4
PS_NVVDD_PH4_ZCD
PS_NVVDD_PH4_VIN_S
PS_NVVDD_GL_PH4
L177 0.22uH
L10,L9
NVVDD
PS_NVVDD_CSN4
PS_NVVDD_PH4
remove C2163
remove C14
C2115 100uF
C2163 100uF
U22
AOZ5311NQI
PS_NVVDD_PH3_BOOT
PS_NVVDD_PH3_PHASE
PS_NVVDD_PHASE3_SW
PS_NVVDD_PH3_VCC
PS_NVVDD_PH3_VDRV
PS_NVVDD_S_TMON_PH3
PS_NVVDD_PH3_ZCD
PS_NVVDD_PH3_VIN_S
NVVDD_GL_PH3
L183 0.22uH
L11,L12
PS_NVVDD_CSN3
PS_NVVDD_PH3
GND

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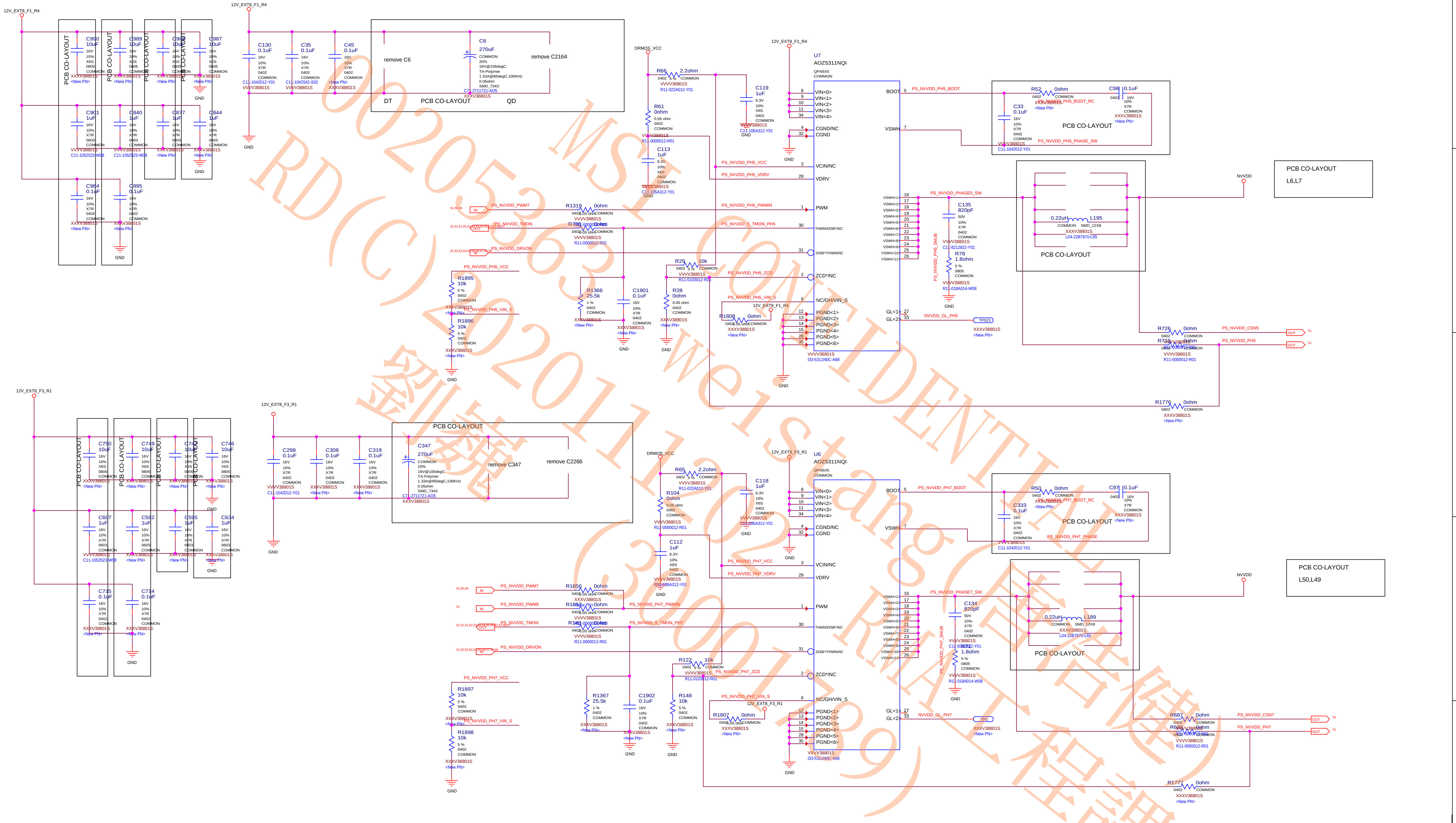
PS: NVVDD PH 5(PWM4), PH7(PWM8/4)



12V_EXT8_F1_R4
12V_EXT8_F3_R1
DRMOS_VCC
NVVDD
U7
AOZ5311NQI
U6
AOZ5311NQI
PCB CO-LAYOUT
remove C6
remove C2164
remove C347
remove C2266
DT
QD
PCB CO-LAYOUT L6,L7
PCB CO-LAYOUT L50,L49
PS_NVVDD_PH5_BOOT
PS_NVVDD_PH5_PHASE_SW
PS_NVVDD_PH5_VCC
PS_NVVDD_PH5_VDRV
PS_NVVDD_PWM7
PS_NVVDD_TMON
PS_NVVDD_DRVON
PS_NVVDD_PH5_ZCD
PS_NVVDD_PH5_VIN_S
PS_NVVDD_PH5_PWMIN
PS_NVVDD_S_TMON_PH5
PS_NVVDD_PHASE5_SW
NVVDD_GL_PH5
PS_NVVDD_CSN5
PS_NVVDD_PH5
PS_NVVDD_PH7_BOOT
PS_NVVDD_PH7_PHASE
PS_NVVDD_PH7_VCC
PS_NVVDD_PH7_VDRV
PS_NVVDD_PWM8
PS_NVVDD_PH7_PWMIN
PS_NVVDD_S_TMON_PH7
PS_NVVDD_PH7_ZCD
PS_NVVDD_PH7_VIN_S
PS_NVVDD_PHASE7_SW
NVVDD_GL_PH7
PS_NVVDD_CSN7
PS_NVVDD_PH7
BOOT
VSWH
VIN<0>
VIN<1>
VIN<2>
VIN<3>
VIN<4>
CGND/NC
CGND
VCIN/NC
VDRV
PWM
THWN/DISB*/NC
DISB*/THWN/NC
ZCD*/NC
NC/GH/VIN_S
PGND<1>
PGND<2>
PGND<3>
PGND<4>
PGND<5>
PGND<6>
GL<1>
GL<2>
GND

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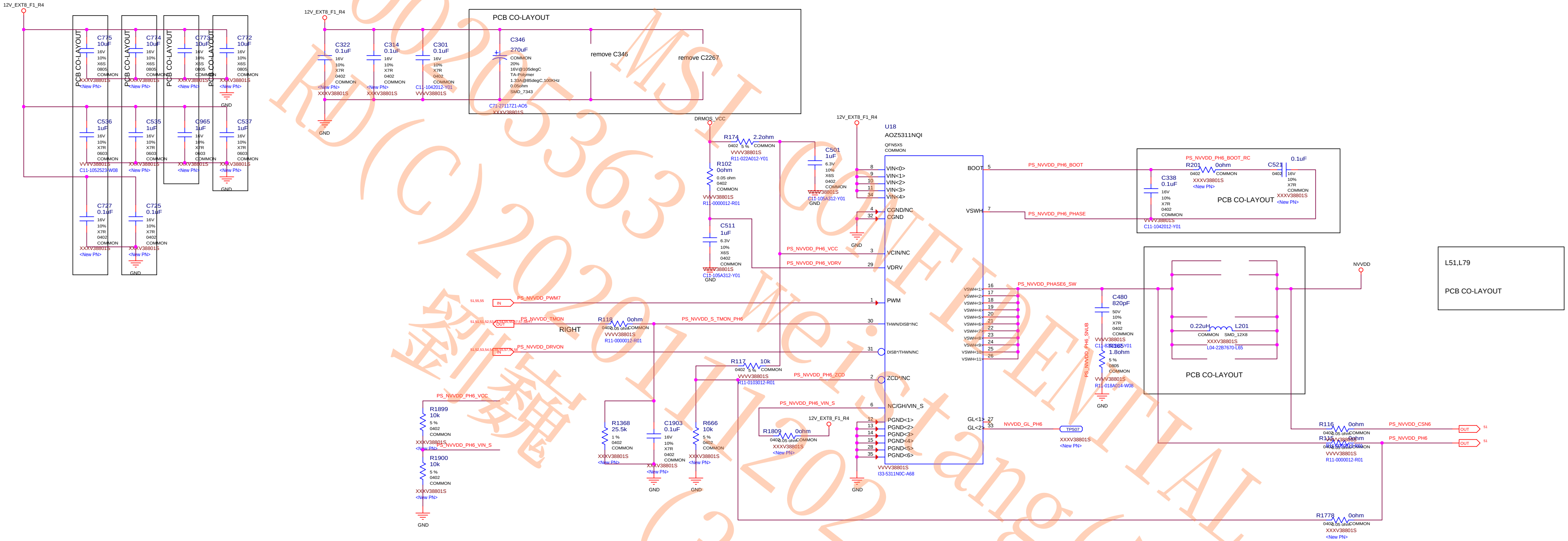
PS: NVVDD Phase 6(PWM4)



12V_EXT8_F1_R4
PCB CO-LAYOUT
C775 10uF
C774 10uF
C773 10uF
C772 10uF
C536 1uF
C535 1uF
C965 1uF
C537 1uF
C727 0.1uF
C725 0.1uF
C322 0.1uF
C314 0.1uF
C301 0.1uF
C346 270uF
remove C346
remove C2267
GND
DRMOS_VCC
R174 2.2ohm
R102 0ohm
C501 1uF
C511 1uF
U18
AOZ5311NQI
VIN<0>
VIN<1>
VIN<2>
VIN<3>
VIN<4>
CGND/NC
CGND
VCIN/NC
VDRV
PWM
THWN/DISB*/NC
DISB*/THWN/NC
ZCD*/NC
NC/GH/VIN_S
PGND<1>
PGND<2>
PGND<3>
PGND<4>
PGND<5>
PGND<6>
BOOT
VSWH
GL<1>
GL<2>
PS_NVVDD_PWM7
PS_NVVDD_TMON
PS_NVVDD_DRVON
PS_NVVDD_S_TMON_PH6
RIGHT
R118 0ohm
R117 10k
R1368 25.5k
C1903 0.1uF
R666 10k
R1899 10k
R1900 10k
R1809 0ohm
PS_NVVDD_PH6_VCC
PS_NVVDD_PH6_VDRV
PS_NVVDD_PH6_ZCD
PS_NVVDD_PH6_VIN_S
PS_NVVDD_PH6_BOOT
PS_NVVDD_PH6_PHASE
PS_NVVDD_PH6_BOOT_RC
R201 0ohm
C338 0.1uF
C521 0.1uF
PS_NVVDD_PHASE6_SW
C480 820pF
R165 1.8ohm
0.22uH L201
NVVDD
L51,L79
NVVDD_GL_PH6
TP507
R116 0ohm
R115 0ohm
R1772 0ohm
PS_NVVDD_CSN6
PS_NVVDD_PH6

MICRO-STAR INT'L CO.,LTD		
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Size: Custom	Document Description: PS: NVVDD Phase 6(PWM4)	Rev: 8.0
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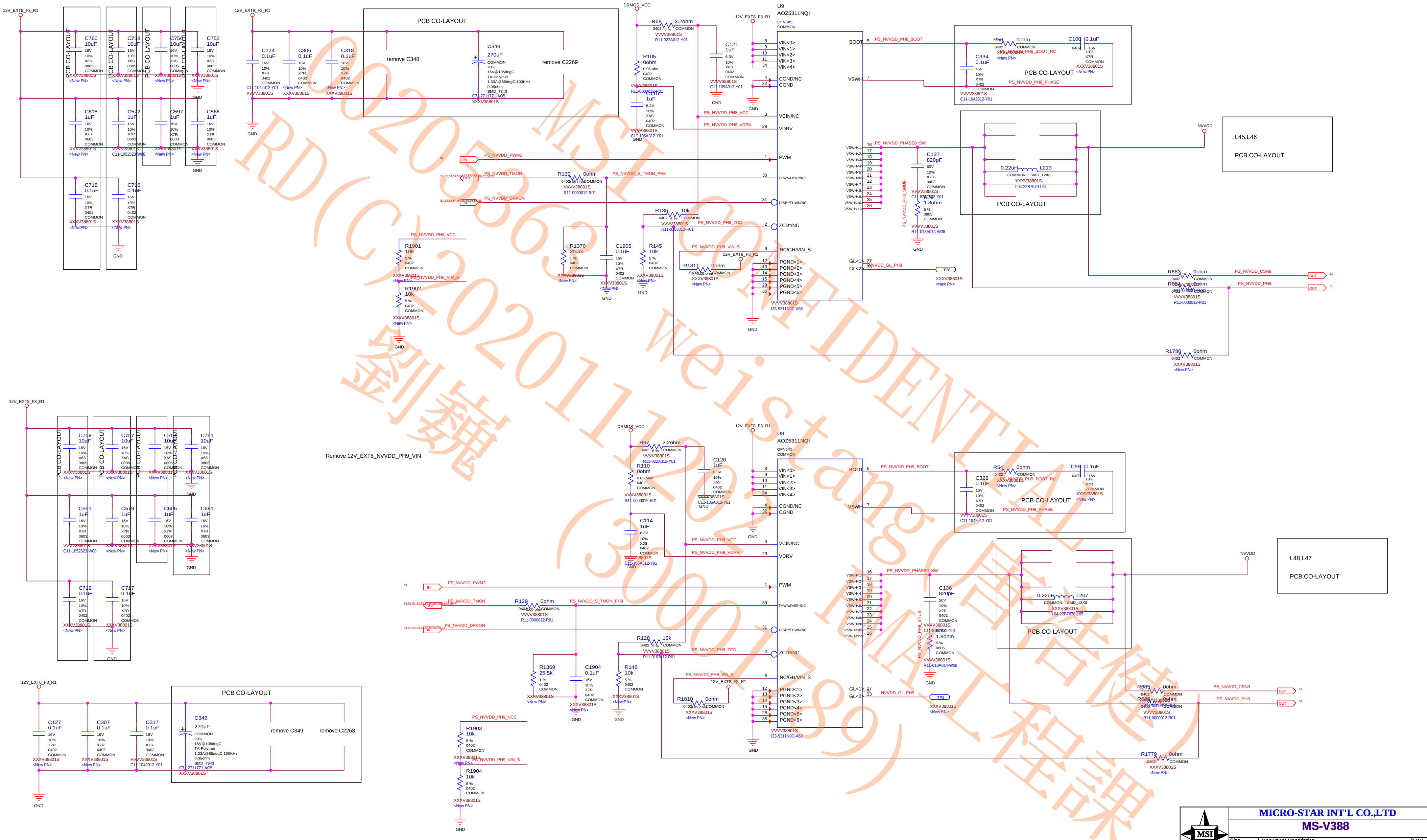
PS: NVVDD PH 8 (PWM5), PH 9(PWM2)



MICRO-STAR INT'L CO.,LTD		
MS-V388		
Size: Custom	Document Description: PS: NVVDD PH 8 (PWM5), PH 9(PWM2)	Rev: 8.0
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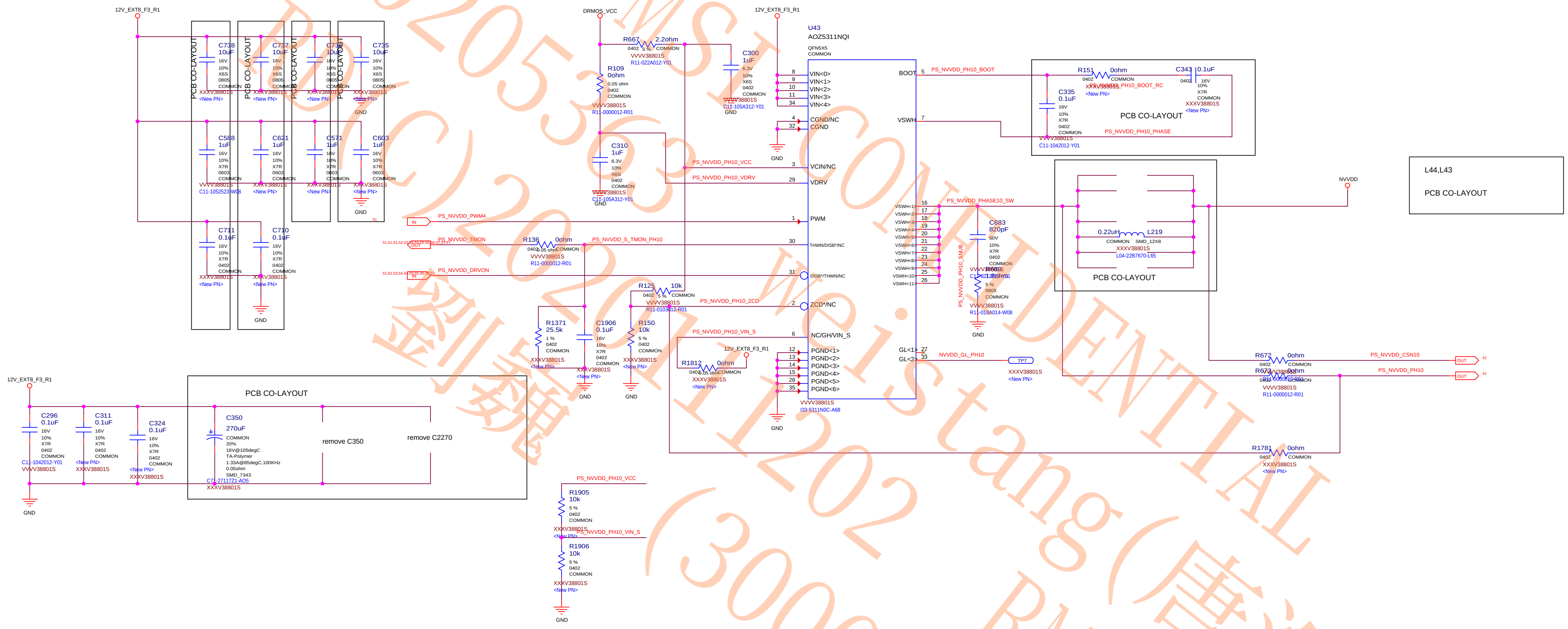
PS: NVVDD Phase 10 (PWM7)



12V_EXT8_F3_R1
DRMOS_VCC
U43
AOZ5311NQI
QFN5X5
COMMON
BOOT
VSWH
VIN<0>
VIN<1>
VIN<2>
VIN<3>
VIN<4>
CGND/NC
CGND
VCIN/NC
VDRV
PWM
THWN/DISB#/NC
DISB#/THWN/NC
ZCD#/NC
NC/GH/VIN_S
PGND<1>
PGND<2>
PGND<3>
PGND<4>
PGND<5>
PGND<6>
GL<1>
GL<2>
PS_NVVDD_PH10_BOOT
PS_NVVDD_PH10_BOOT_RC
PS_NVVDD_PH10_PHASE
PS_NVVDD_PHASE10_SW
PS_NVVDD_PH10_VCC
PS_NVVDD_PH10_VDRV
PS_NVVDD_PWM4
PS_NVVDD_TMON
PS_NVVDD_S_TMON_PH10
PS_NVVDD_DRVON
PS_NVVDD_PH10_ZCD
PS_NVVDD_PH10_VIN_S
NVVDD_GL_PH10
PS_NVVDD_CSN10
PS_NVVDD_PH10
NVVDD
PCB CO-LAYOUT
L44,L43
PCB CO-LAYOUT
L219 0.22uH
C683 820pF
R151 0ohm
C343 0.1uF
C335 0.1uF
R667 2.2ohm
R109 0ohm
C300 1uF
C310 1uF
R136 0ohm
R125 10k
R1371 25.5k
C1906 0.1uF
R150 10k
R1812 0ohm
R672 0ohm
R1781 0ohm
R1905 10k
R1906 10k
C738 10uF
C737 10uF
C735 10uF
C588 1uF
C621 1uF
C571 1uF
C603 1uF
C711 0.1uF
C710 0.1uF
C296 0.1uF
C311 0.1uF
C324 0.1uF
C350 270uF
remove C350
remove C2270
TP7
GND

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PS: NVVDD OUTPUT CAP(TOP)

REFER TO PCB FOR BOM STUFFING


NVVDD PH4
remove C128
C2138
220uF
remove C2316
PCB CO-LAYOUT
NVVDD PH1
C2143
220uF
NVVDD PH5
remove C2128
remove C264
C264
820uF
remove C2323
PCB CO-LAYOUT
NVVDD PH4 ASIDE
C2139
220uF
NVVDD PH1 ASIDE
NVVDD PH6
C104
820uF
remove C104
remove C2320
PCB CO-LAYOUT
C2134
820uF
remove C107
NVVDD PH3
C107
220uF
C2140
220uF
remove C2317
PCB CO-LAYOUT
NVVDD PH7
remove C262
C262
820uF
remove C2321
PCB CO-LAYOUT
remove C265
C265
820uF
remove C2324
PCB CO-LAYOUT
remove C105
NVVDD PH3 ASIDE
C105
220uF
C2141
220uF
remove C2318
PCB CO-LAYOUT
NVVDD PH7
remove C2131
remove C266
C266
820uF
remove C2325
PCB CO-LAYOUT
remove C106
NVVDD PH2
C106
220uF
C2142
220uF
remove C2319
PCB CO-LAYOUT
NVVDD PH8
remove C263
C263
820uF
remove C2322
PCB CO-LAYOUT
NVVDD
GND
COMMON
20%
2V@105degC
AL-Polymer
3A@105degC,100KHz
0.009ohm
SMD_7343
C71-22102ME-X19
C71-82103F1-AO5
XXXV38801S

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MSI	MICRO-STAR INT'L CO.,LTD	
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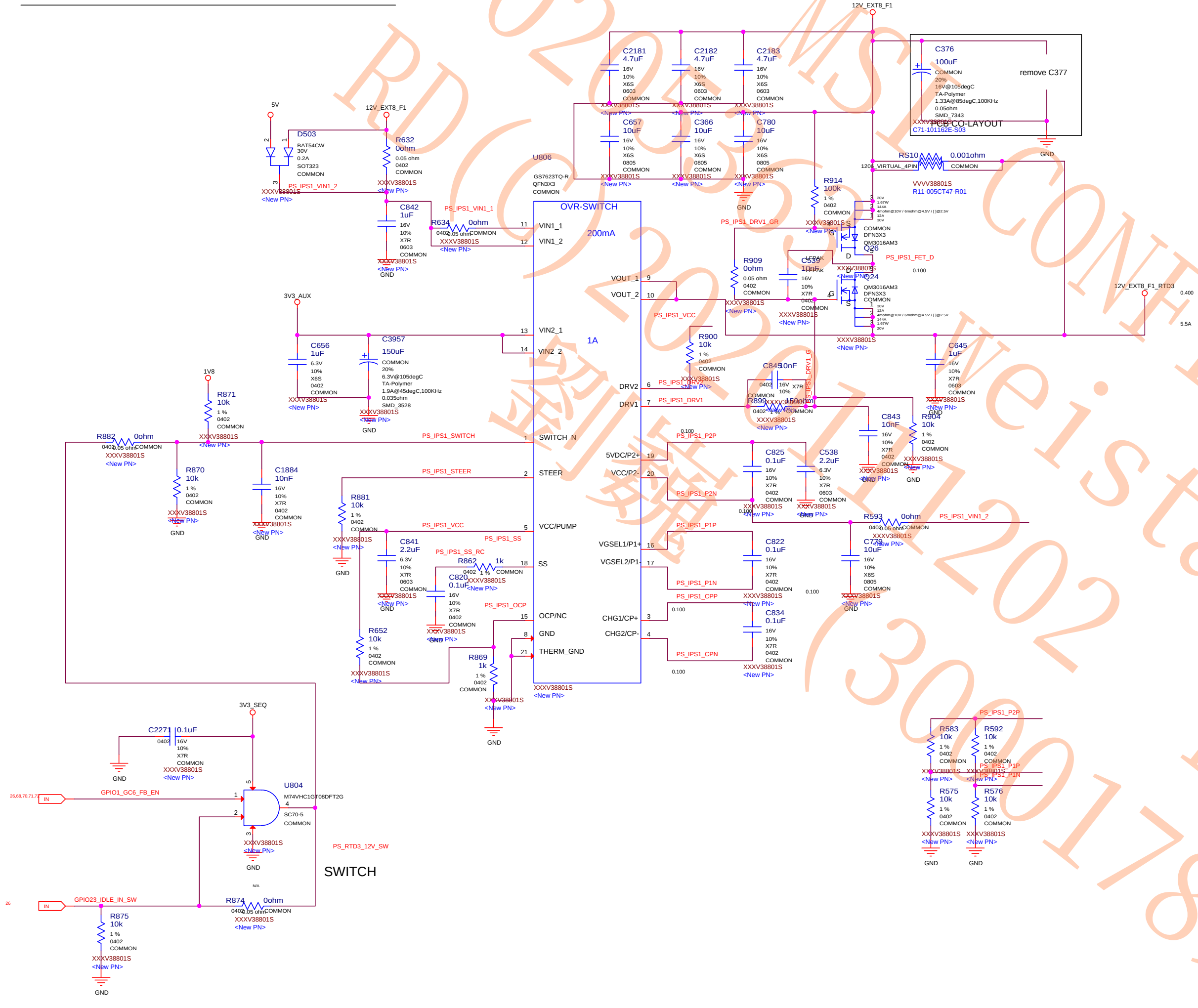
PS: INPUT SWITCH RTD3

AND GATE LOGIC FOR P-BOARD

GPIO1	GPIO23	SWITCH	VOUT
0	0	0	12V_F
0	1	0	12V_F
1	0	0	12V_F
1	1	1	3V3A



12V_EXT8_F1
C2181 4.7uF
C2182 4.7uF
C2183 4.7uF
C376 100uF
remove C377
PCB CO-LAYOUT
C657 10uF
C366 10uF
C780 10uF
R510 0.001ohm
U806
G5762TQ-R
QFN3X3
OVR-SWITCH
VIN1_1
VIN1_2
200mA
VOUT_1
VOUT_2
VIN2_1
VIN2_2
1A
DRV2
DRV1
SWITCH_N
STEER
VCC/PUMP
SS
OCP/NC
GND
THERM_GND
5VDC/P2+
VCC/P2-
VGSEL1/P1+
VGSEL2/P1-
CHG1/CP+
CHG2/CP-
D503 BAT54CW
R632 0ohm
C842 1uF
R634 0ohm
C656 1uF
C3957 150uF
R871 10k
R882 0ohm
R870 10k
C1884 10nF
R881 10k
C841 2.2uF
R862 1k
C820 0.1uF
R652 10k
R869 1k
R914 100k
Q26 QM3016AM3
Q24 QM3016AM3
R909 0ohm
C530 100nF
R900 10k
C845 10nF
R895 150ohm
C843 10nF
R904 10k
C645 1uF
C825 0.1uF
C538 2.2uF
R593 0ohm
C779 10uF
C822 0.1uF
C834 0.1uF
R583 10k
R592 10k
R575 10k
R576 10k
3V3_SEQ
C2271 0.1uF
U804
M74VHC1G08DFT2G
SC70-5
GPIO1_GC6_FB_EN
GPIO23_IDLE_IN_SW
R874 0ohm
R875 10k
PS_RTD3_12V_SW
SWITCH

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Size: Custom	Document Description: PS: INPUT SWITCH RTD3	Rev: 8.0
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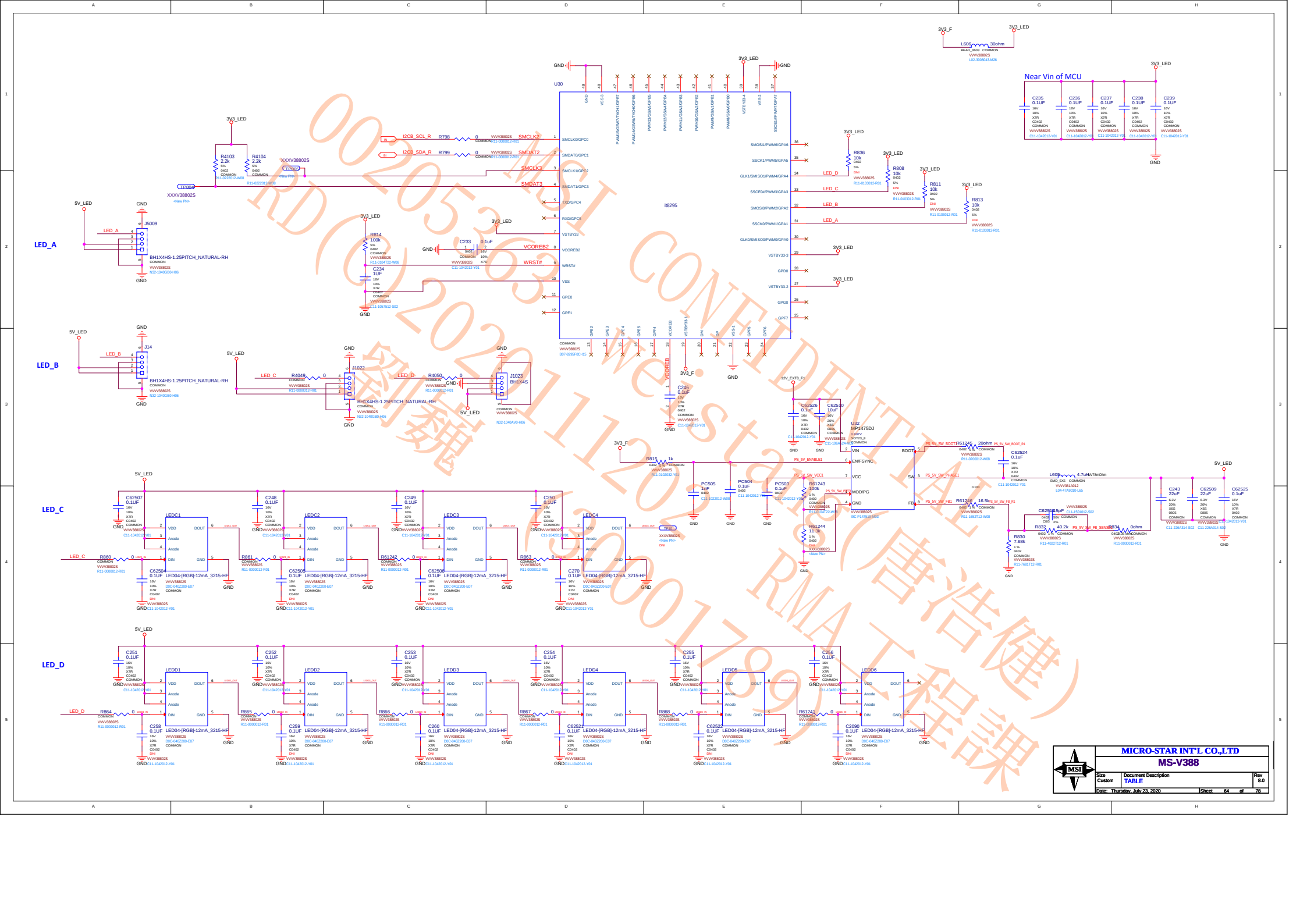
LED_A
LED_B
LED_C
LED_D
Near Vin of MCU
MICRO-STAR INT'L CO.,LTD
MS-V388
Size
Custom
Document Description
TABLE
Rev
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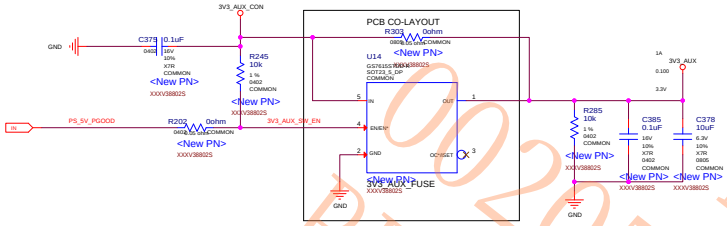
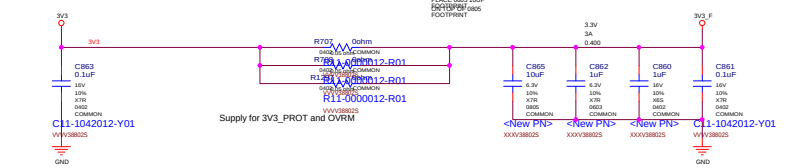
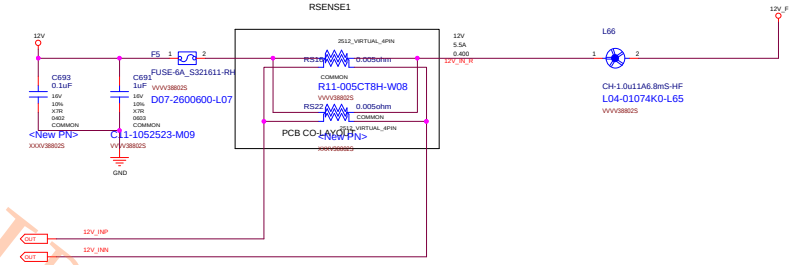
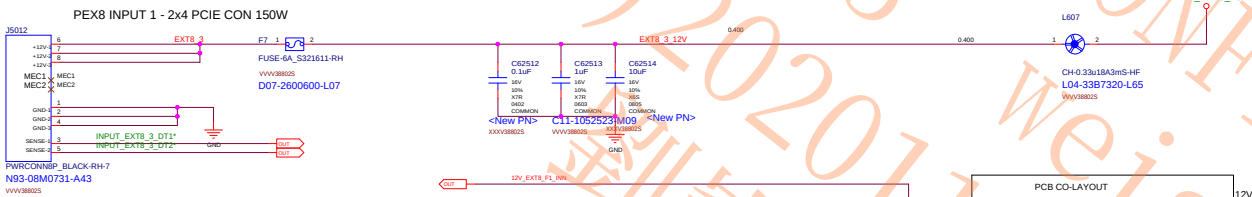
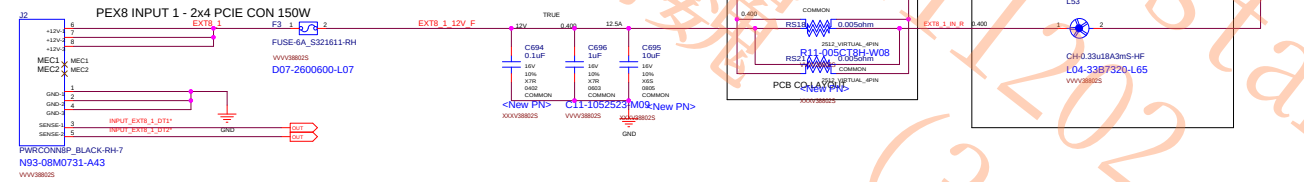
PS: Inputs, Filtering, and Monitoring

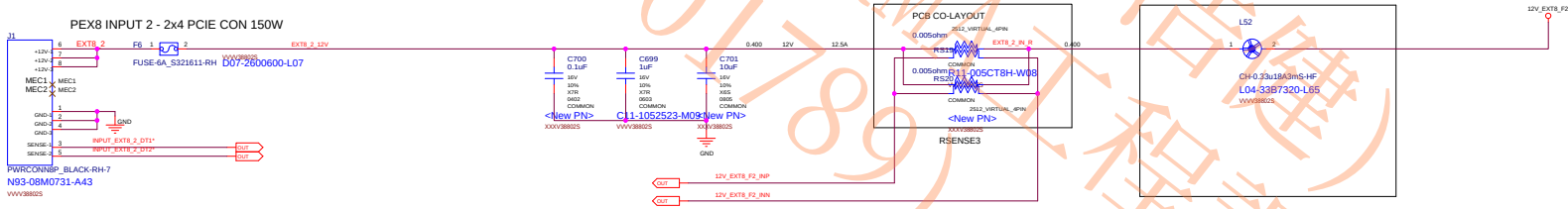












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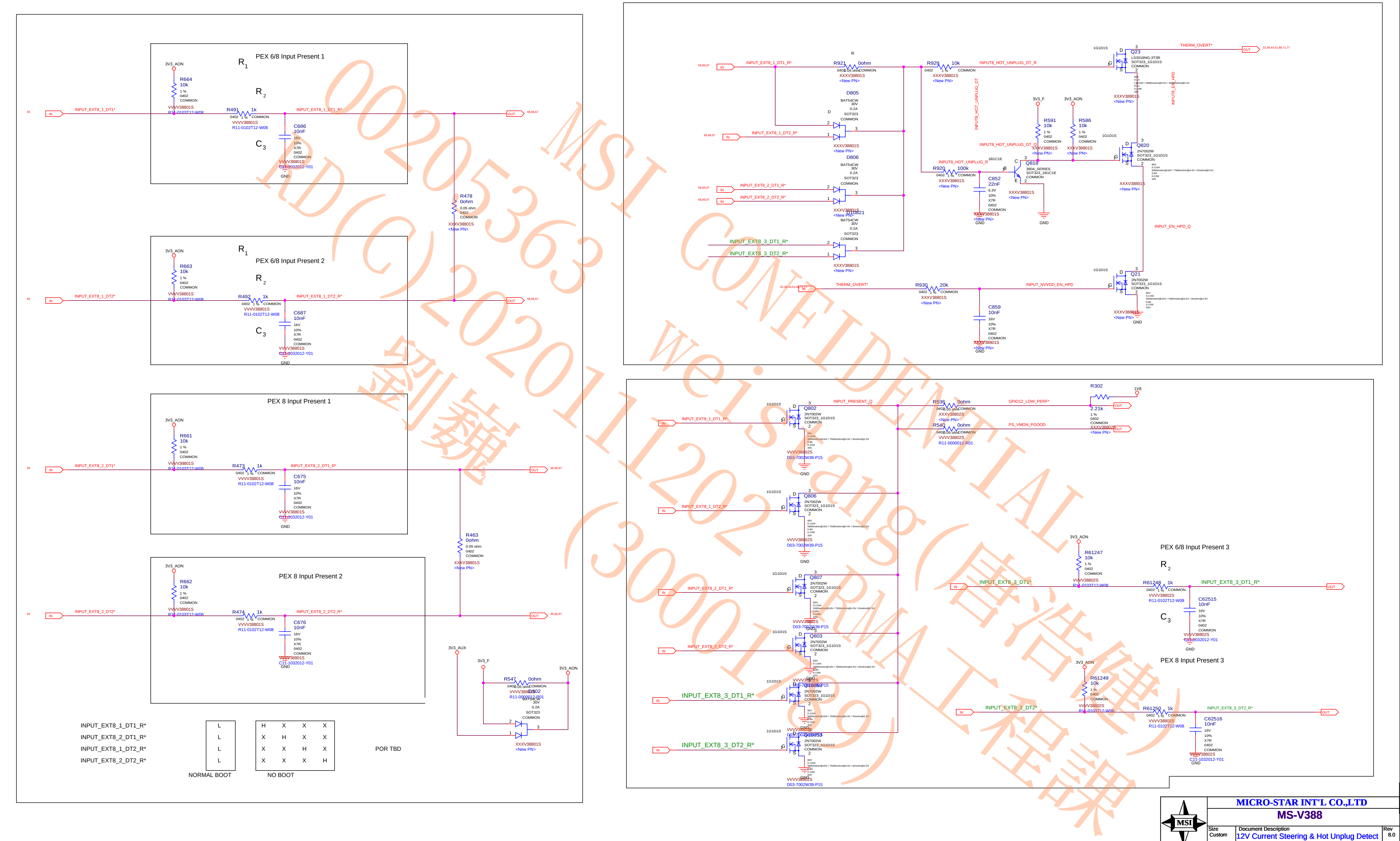
PS: 12V Current Steering & Hot Unplug Detect



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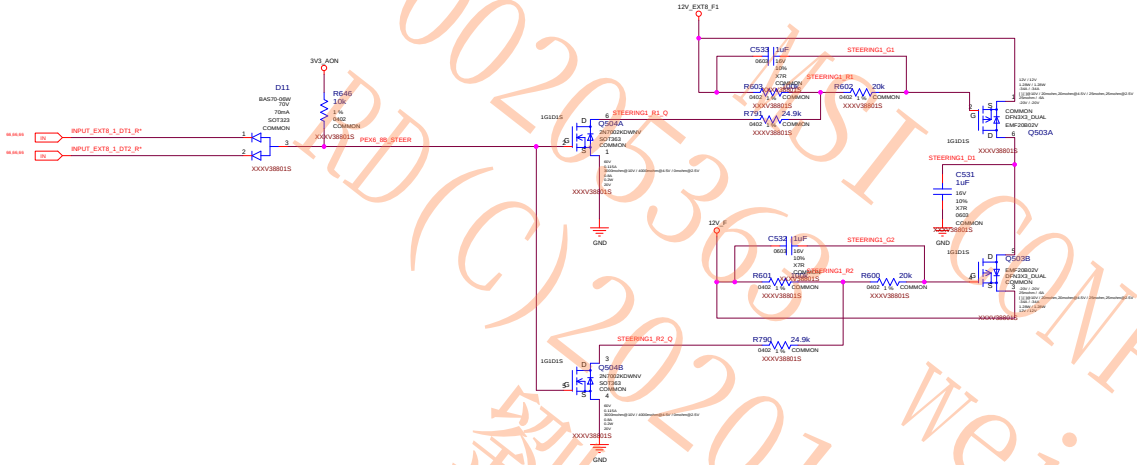
PS: Discrete Steering

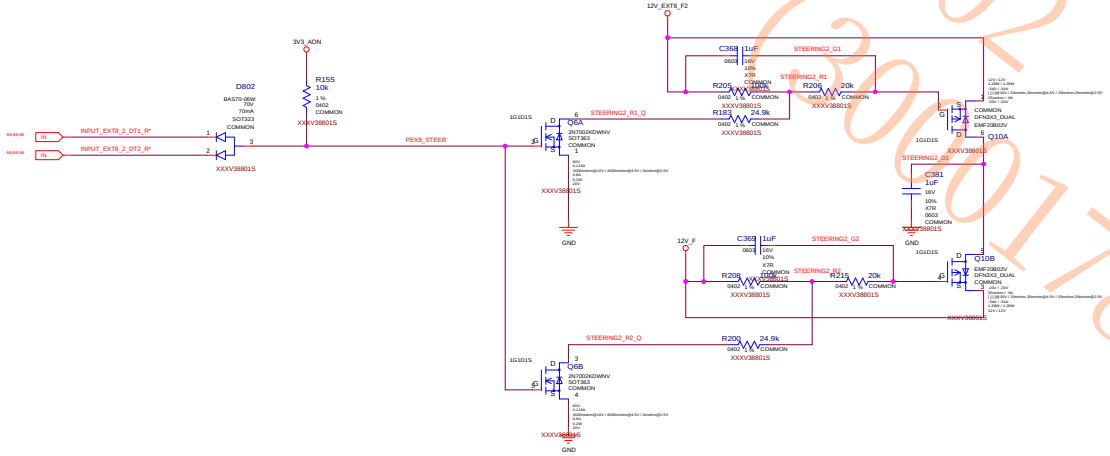
12V CURRENT STEERING (UNDER POWER BOOT):

PEX12V AND 12V_EXT8_F1



NO STUFF BY DEFAULT REF ONLY

PEX12V AND 12V_EXT8_F2



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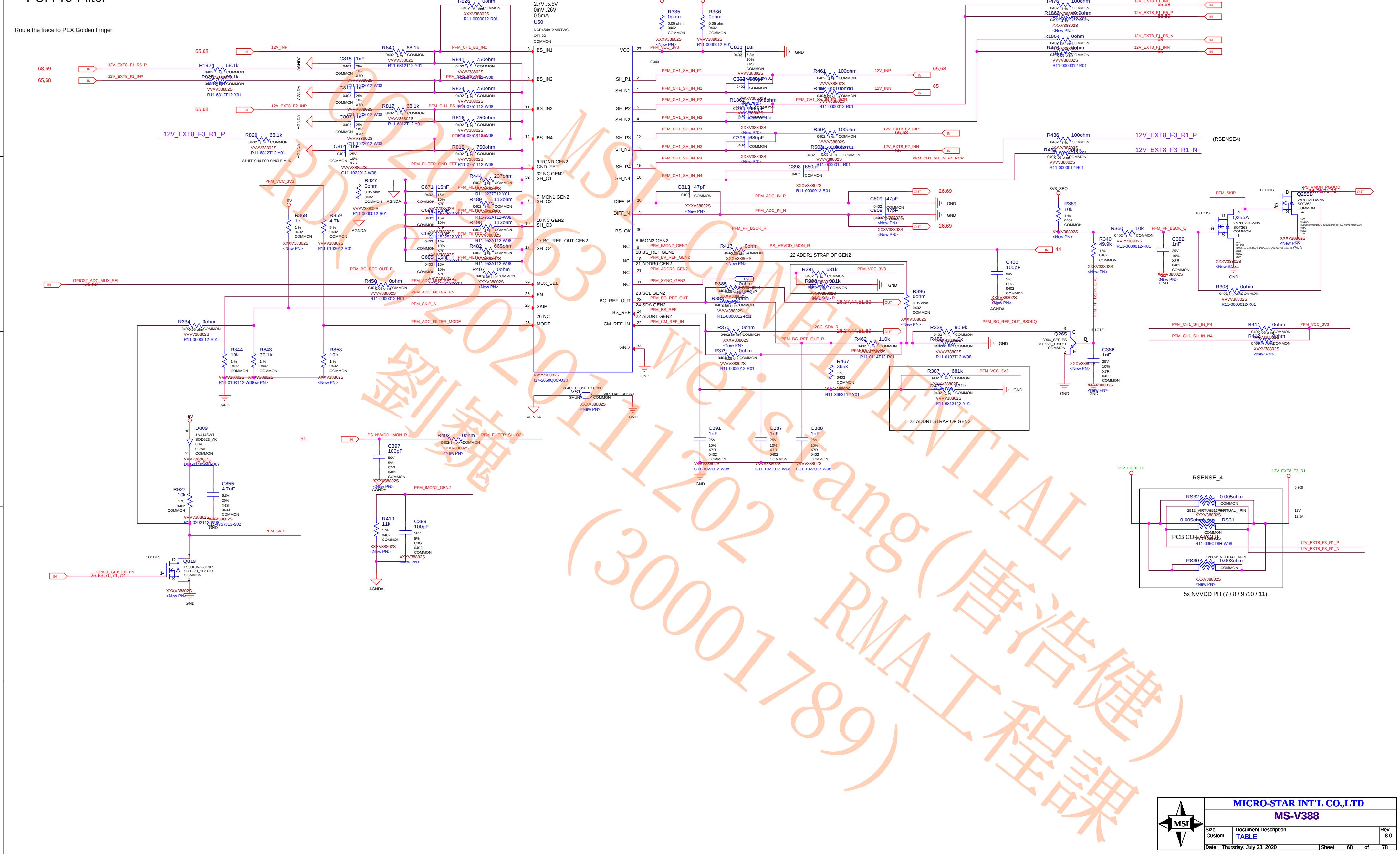
PS: Pre-Filter

Route the trace to PEX Golden Finger



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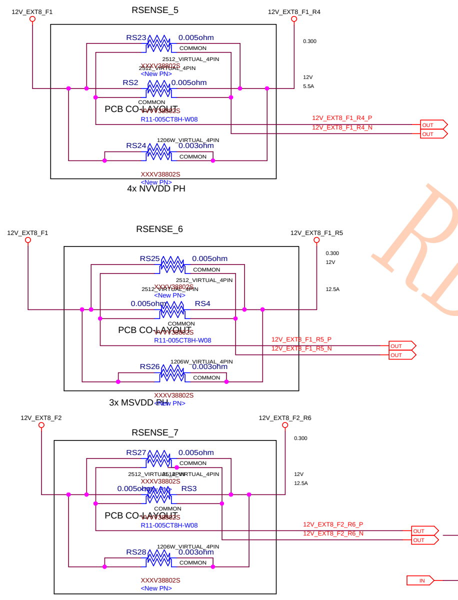
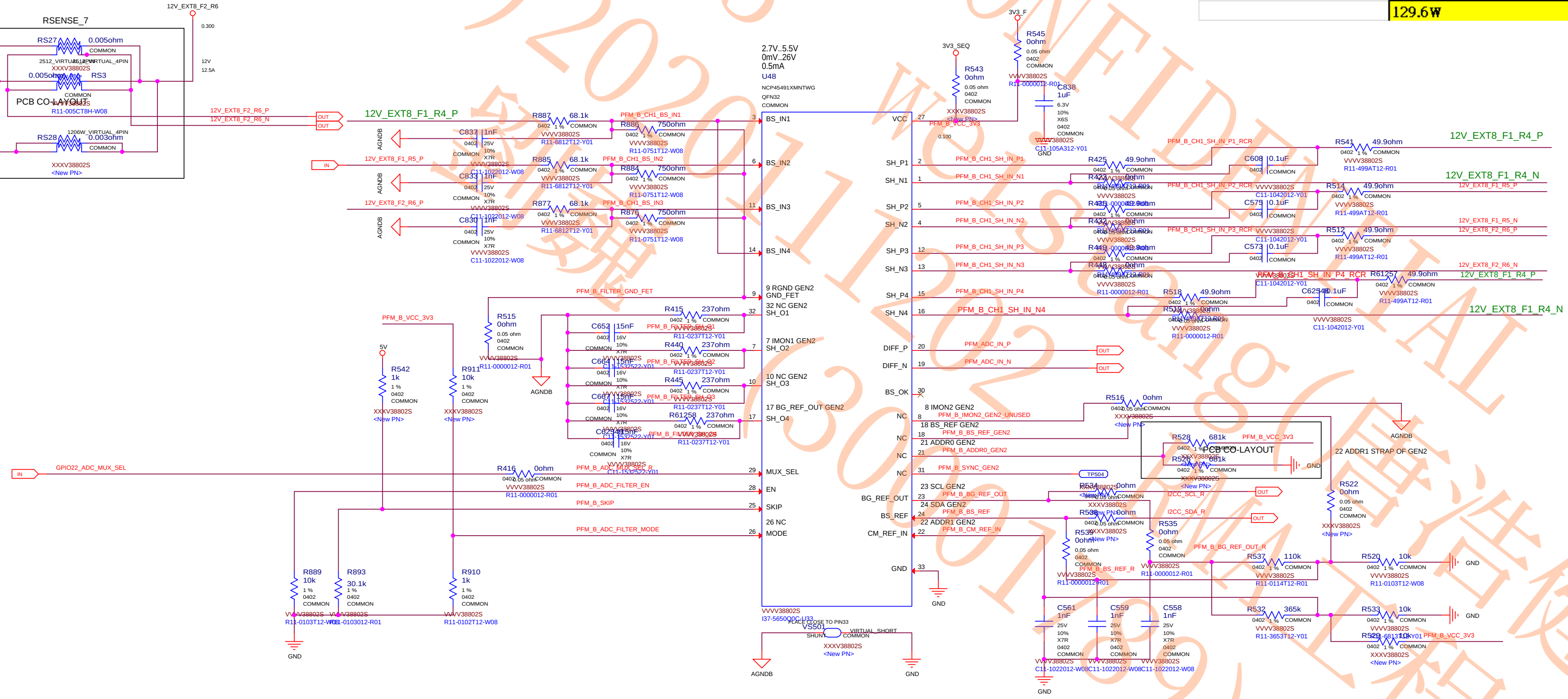
PS: Pre-Filter B



RSENSE_5
12V_EXT8_F1
12V_EXT8_F1_R4
RS23 0.005ohm
RS2 0.005ohm
RS24 0.003ohm
PCB CO-LAYOUT
12V_EXT8_F1_R4_P
12V_EXT8_F1_R4_N
4x NVVDD PH
RSENSE_6
12V_EXT8_F1
12V_EXT8_F1_R5
RS25 0.005ohm
RS4 0.005ohm
RS26 0.003ohm
12V_EXT8_F1_R5_P
12V_EXT8_F1_R5_N
3x MSVDD PH
RSENSE_7
12V_EXT8_F2
12V_EXT8_F2_R6
RS27 0.005ohm
RS3 0.005ohm
RS28 0.003ohm
12V_EXT8_F2_R6_P
12V_EXT8_F2_R6_N

BUS	connect A	connect B	connect C
(RSENSE1)	(RSENSE2)	(RSENSE3)	(RSENSE4)
12V_F	NET NAME: F1	NET NAME: F2	NET NAME: 12V_EXT8_F3_R1
FB 4	PEXVDD	FB-2(左	
MSVDD1		FB-3	
NVVDD1	(RSENSE2)	MSVDD3(左	NVVDD7
	NET NAME:12V_EXT8_F1_RTD	MSVDD5(左	NVVDD8
	FB 1	(RSENSE7)	NVVDD9
	5V	NET NAME: 12V_EXT8_F2_R6	NVVDD10
	1V8	NVVDD2(左	NVVDD11
	(RSENSE6)	NVVDD3(左	
	NET NAME:12V_EXT8_F1_R5	NVVDD4(左	
	MSVDD2		
	MSVDD4		
52.8W	MSVDD6	73.5+27+30=130.5W	122.5W
	(RSENSE5)		
	NET NAME: 12V_EXT8_F1_R4		
	NVVDD5- F1-R4		
	NVVDD6-F1-R4		
	129.6W		80W/6=13.3W/270W/11=24.5W



U48
NCP45491XMNTWG
QFN32
2.7V..5.5V
0mV..26V
0.5mA
BS_IN1
BS_IN2
BS_IN3
BS_IN4
VCC
SH_P1
SH_N1
SH_P2
SH_N2
SH_P3
SH_N3
SH_P4
SH_N4
DIFF_P
DIFF_N
BS_OK
MUX_SEL
EN
SKIP
MODE
BG_REF_OUT
BS_REF
CM_REF_IN
GND
12V_EXT8_F1_R4_P
12V_EXT8_F1_R4_N
PCB CO-LAYOUT
22 ADDR1 STRAP OF GEN2
GPIO22_ADC_MUX_SEL
AGNDB
GND

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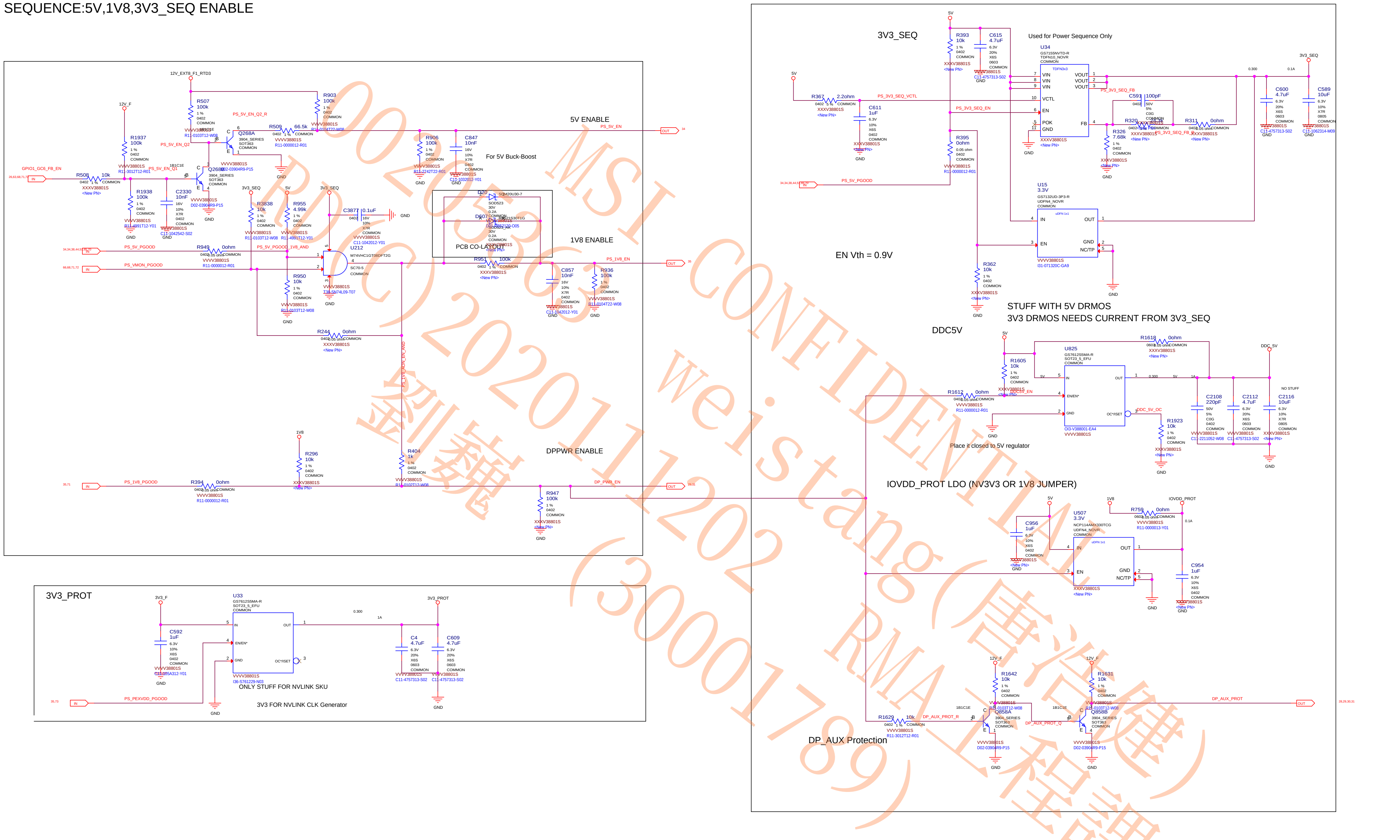
SEQUENCE:5V,1V8,3V3_SEQ ENABLE



MICRO-STAR INT'L CO.,LTD	
MS-V388	
Size: Custom	Document Description: SEQUENCE:5V,1V8,3V3_SEQ ENABLE
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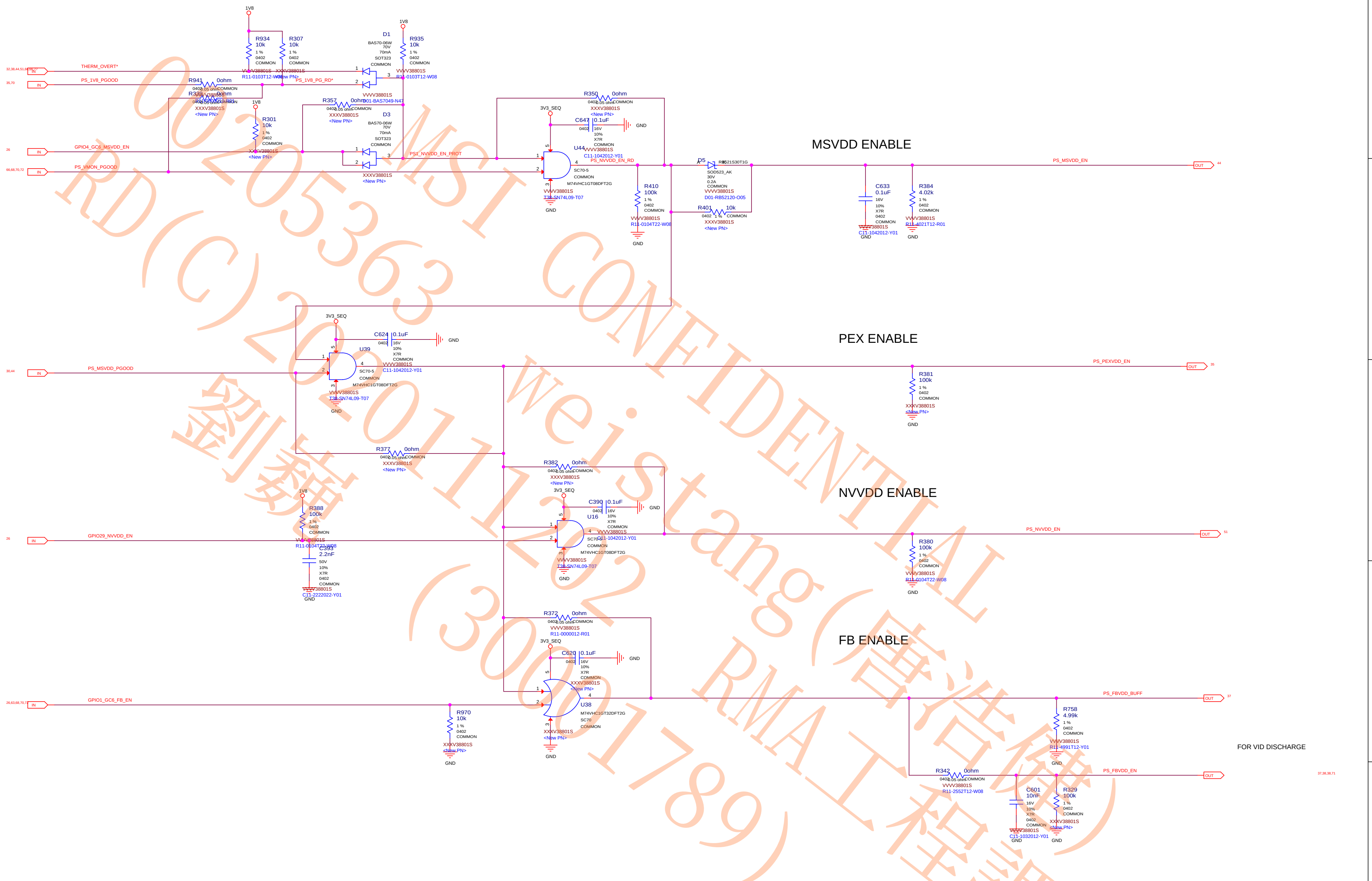
SEQUENCE:NV,PEX,FB ENABLE



MICRO-STAR INT'L CO.,LTD

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Size	Document Description	Rev
Custom	SEQUENCE:NV,PEX,FB ENABLE	8.0

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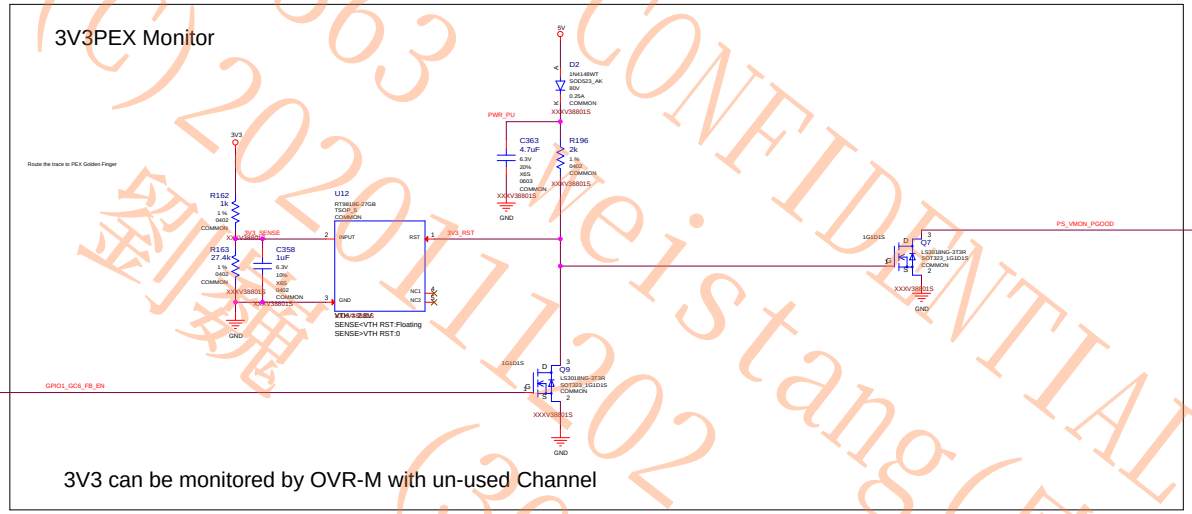
Sequence: 3V3 MONITOR



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Size: Custom	Document Description: Sequence: 3V3 MONITOR		Rev: 8.0
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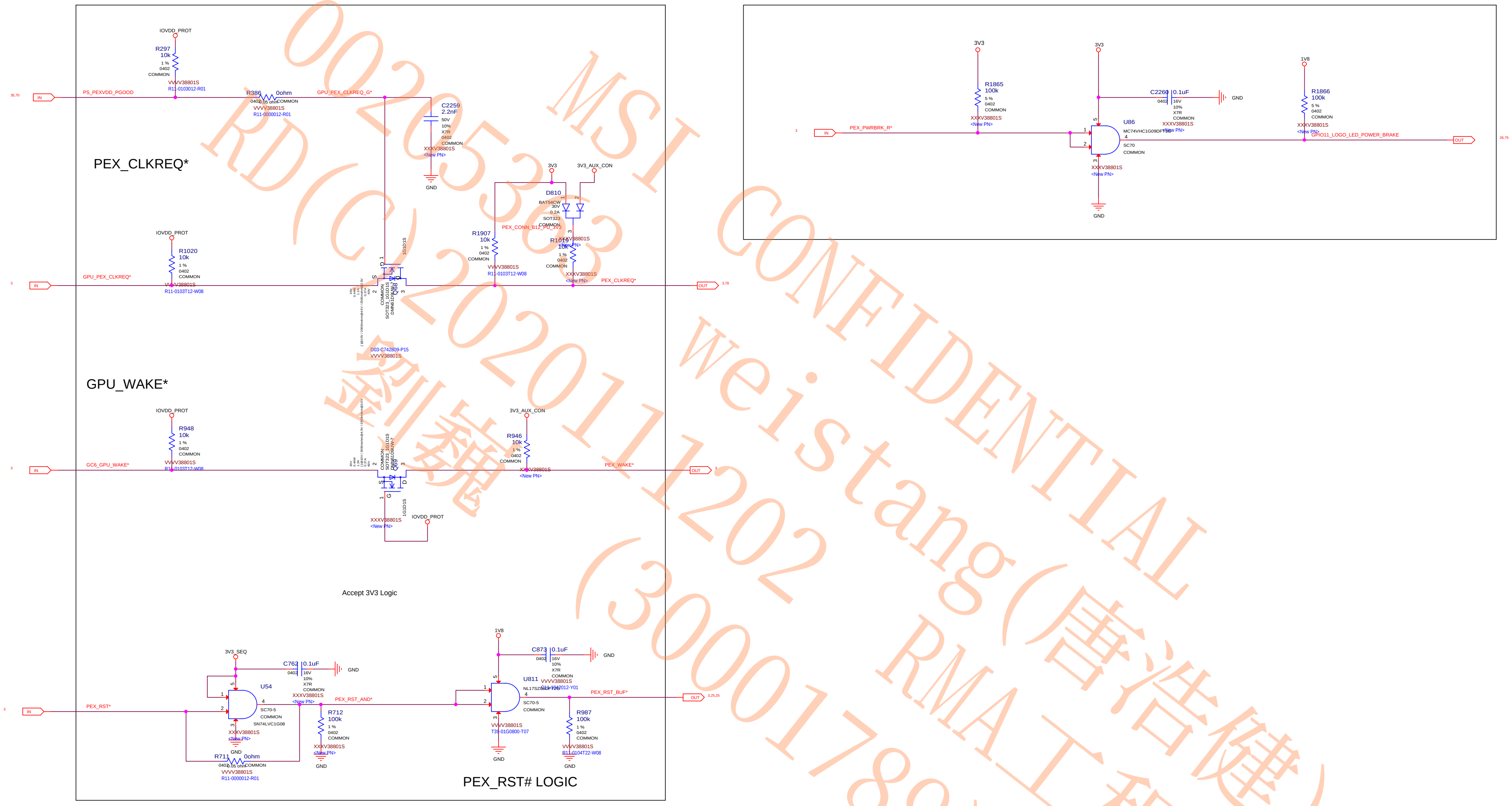
SEQUENCE:MISC


PEX_CLKREQ*
IOVDD_PROT
R297
10k
1 %
0402
COMMON
R386 0ohm
PS_PEXVDD_PGOOD
GPU_PEX_CLKREQ_G*
C2259
2.2nF
50V
10%
X7R
0402
COMMON
GND
3V3
3V3_AUX_CON
D810
BAT54CW
30V
0.2A
SOT323
R1907
10k
R1019
100k
PEX_CONN_R12_PU_3V
GPU_PEX_CLKREQ*
R1020
10k
PEX_CLKREQ*
OUT
IN
D03-C742809-P15
GPU_WAKE*
R948
10k
R946
10k
GC6_GPU_WAKE*
PEX_WAKE*
IOVDD_PROT
Accept 3V3 Logic
PEX_RST# LOGIC
3V3_SEQ
C762 0.1uF
16V
X7R
U54
SC70-5
SN74LVC1G08
PEX_RST*
PEX_RST_AND*
R712
100k
R711 0ohm
1V8
C873 0.1uF
U811
PEX_RST_BUF*
R987
100k
GND
3V3
R1865
100k
5 %
C2260 0.1uF
U86
MC74VHC1G09DFT1G
SC70
R1866
100k
1V8
PEX_PWRBRK_R*
GPIO11_LOGO_LED_POWER_BRAKE
<New PN>

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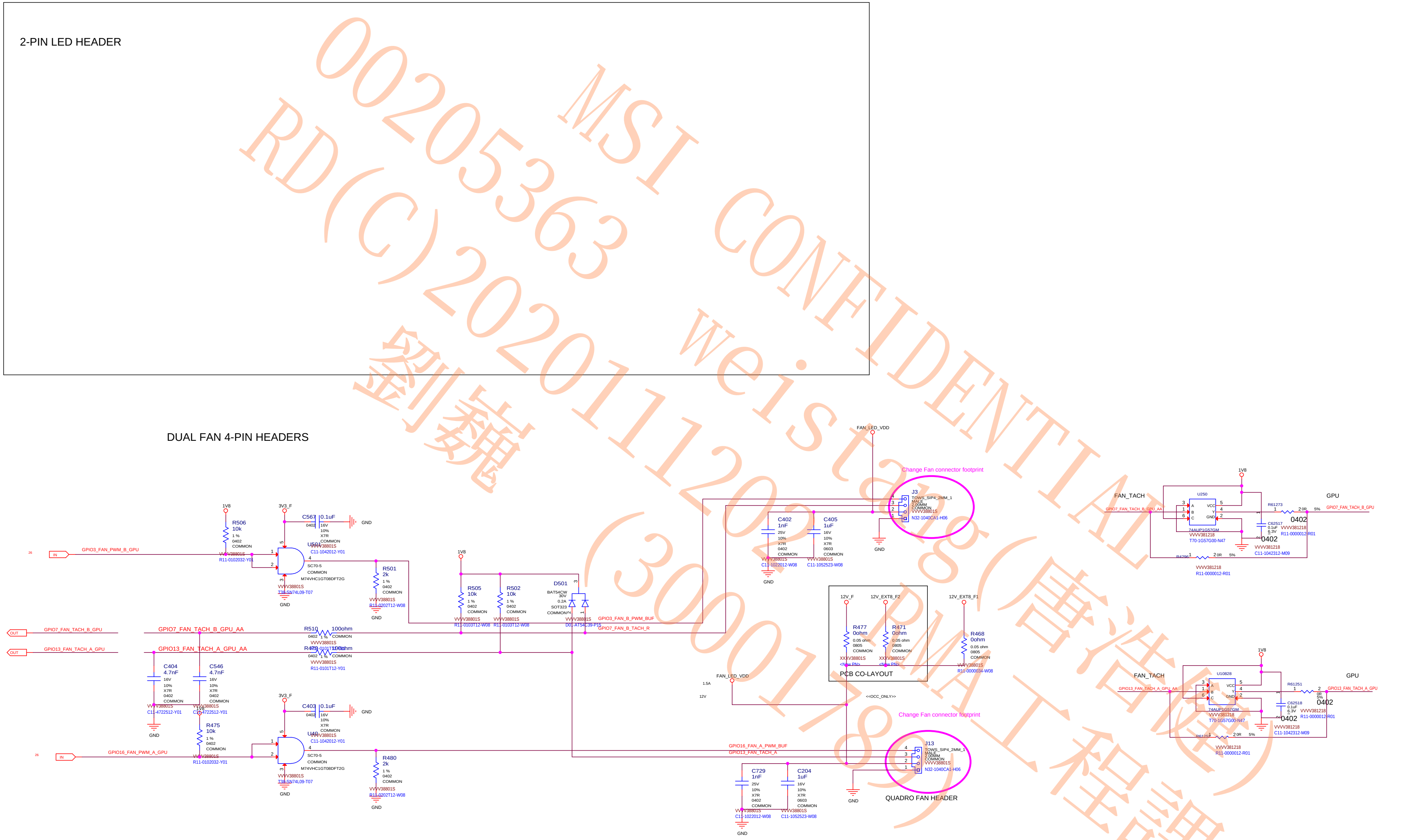
MISC: LED & FAN



2-PIN LED HEADER
DUAL FAN 4-PIN HEADERS
GPIO3_FAN_PWM_B_GPU
GPIO7_FAN_TACH_B_GPU
GPIO13_FAN_TACH_A_GPU
GPIO16_FAN_PWM_A_GPU
GPIO7_FAN_TACH_B_GPU_AA
GPIO13_FAN_TACH_A_GPU_AA
GPIO3_FAN_B_PWM_BUF
GPIO7_FAN_B_TACH_R
GPIO16_FAN_A_PWM_BUF
GPIO13_FAN_TACH_A
FAN_LED_VDD
R506 10k
R505 10k
R502 10k
R501 2k
R480 2k
R475 10k
R510 100ohm
R471 0ohm
R477 0ohm
R468 0ohm
C567 0.1uF
C403 0.1uF
C402 1nF
C405 1uF
C404 4.7nF
C546 4.7nF
C729 1nF
C204 1uF
D501
BAT54CW
J3
J13
U250
U10828
Change Fan connector footprint
PCB CO-LAYOUT
QUADRO FAN HEADER
FAN_TACH
GPU
12V_F
12V_EXT8_F2
12V_EXT8_F1
1V8
3V3_F
GND

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MISC: RGBW LED REF

CONNECTOR SIZE TO FIT LAYOUT
ALL CIRCUIT NO STUFF BY DEFAULT
ALINGN WITH PASH
IF ADDTIONAL POWER CONSUPTION R NEEDED, IT SHOULD BE ON LED MOD.

1: 12V
2: BLUE
3: GREEN
4: RED
5: WHITE

WHITE DRIVE

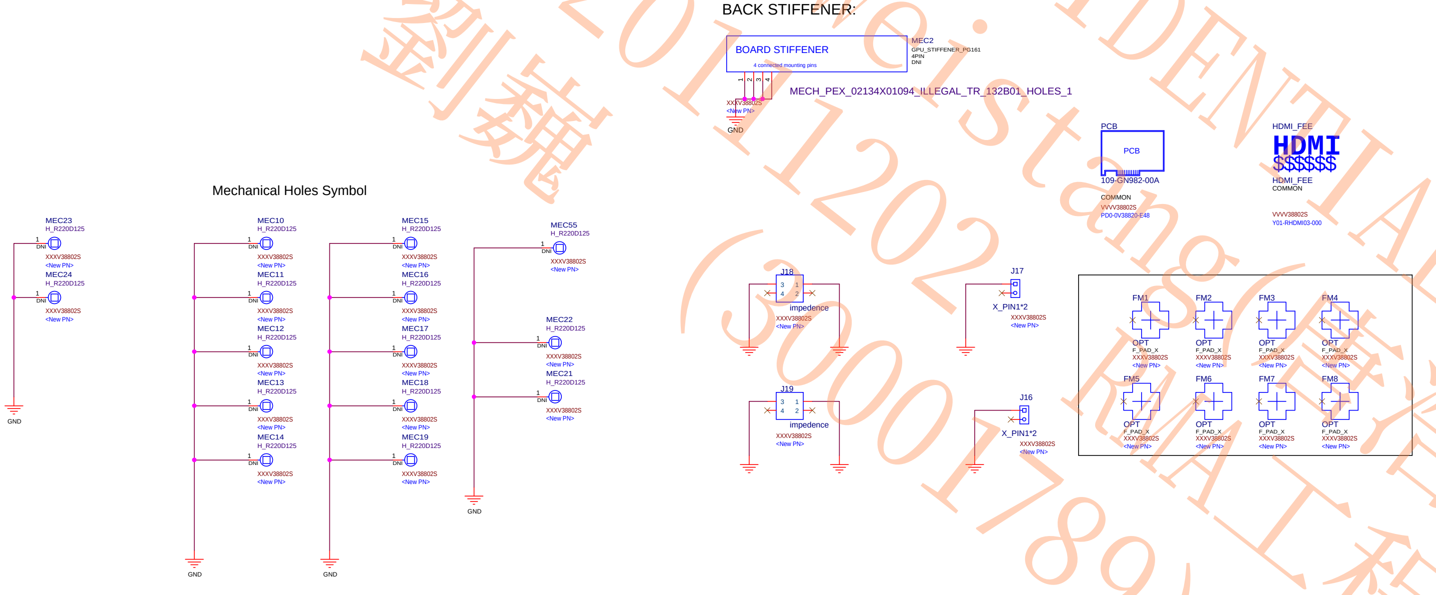
LOGO LED RED

RED DRIVE

GREEN DRIVE

BLUE DRIVE

Mechanical: Mounting holes



BACK STIFFENER:
BOARD STIFFENER
4 connected mounting pins
MEC2
GPU_STIFFENER_PG161
4PIN
DNI
MECH_PEX_02134X01094_ILLEGAL_TR_132B01_HOLES_1
XXXV38802S
<New PN>
GND
PCB
109-GN982-00A
COMMON
VVVV38802S
PD0-0V38820-E48
HDMI_FEE
HDMI
$$$$$$
HDMI_FEE
COMMON
VVVV38802S
Y01-RHDMI03-000
Mechanical Holes Symbol
MEC23
H_R220D125
MEC24
H_R220D125
MEC10
MEC11
MEC12
MEC13
MEC14
MEC15
MEC16
MEC17
MEC18
MEC19
MEC55
MEC22
MEC21
H_R220D125
DNI
XXXV38802S
<New PN>
GND
J18
impedence
J19
impedence
J17
X_PIN1*2
J16
X_PIN1*2
FM1
FM2
FM3
FM4
FM5
FM6
FM7
FM8
OPT
F_PAD_X
XXXV38802S
<New PN>

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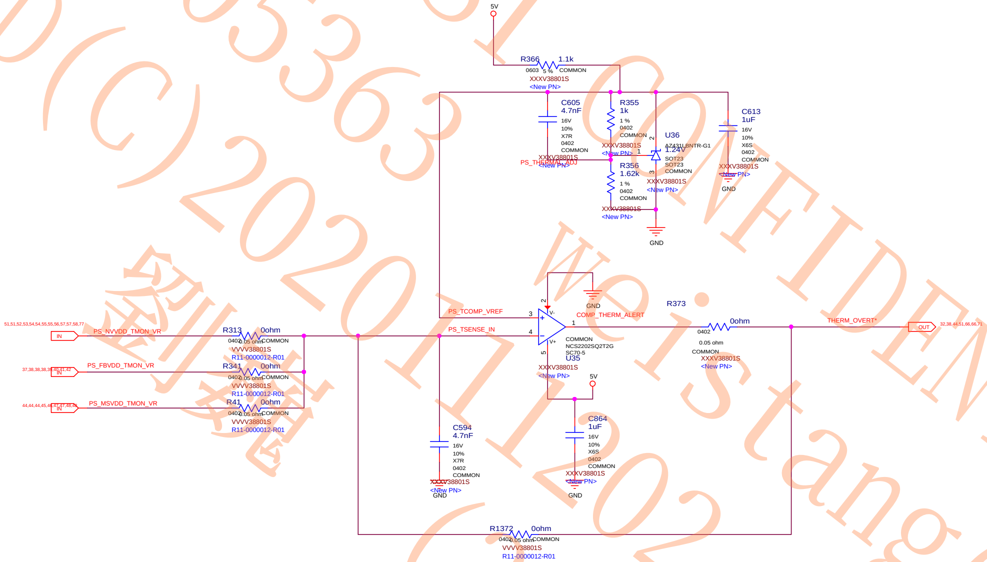
VR THERMAL PROTECTION



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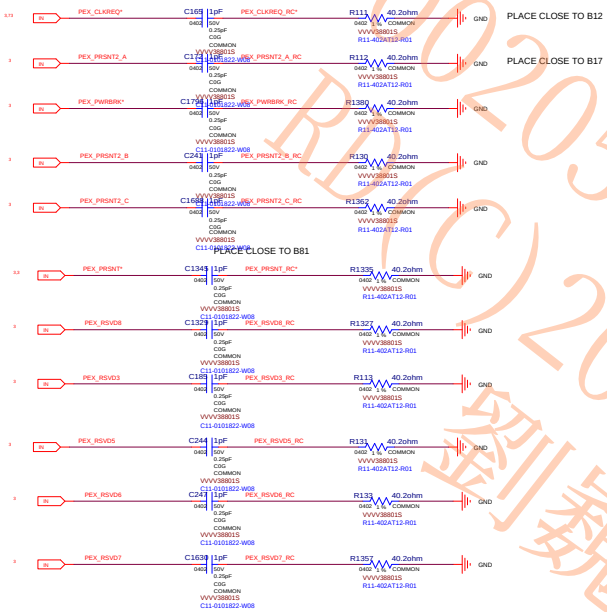
PCI TERM



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