PG180-A02

256b GDDR6 x16
TALL DP + DP + DP + HDMI/DP + USB

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base on V372-02S change for D18 Z
1. P.23 remove SLI & BRIDGE_LED_VDD & SLI_BRG_PRST*
2. P.52 remove LED change FAN connector
3. P.53 remove LED
4. P.38&44 add FUSE
5. P.5~14 mem add < >
6. P.53 LED use V336-0D
7. P.32 remove
8. P.35~38 dual MOS
9. P.33 change dual MOS
10. P.43 remove
11. P.31 change to UP1666
12. P.21 remove colay DP

2019/06/17
1.add NV link

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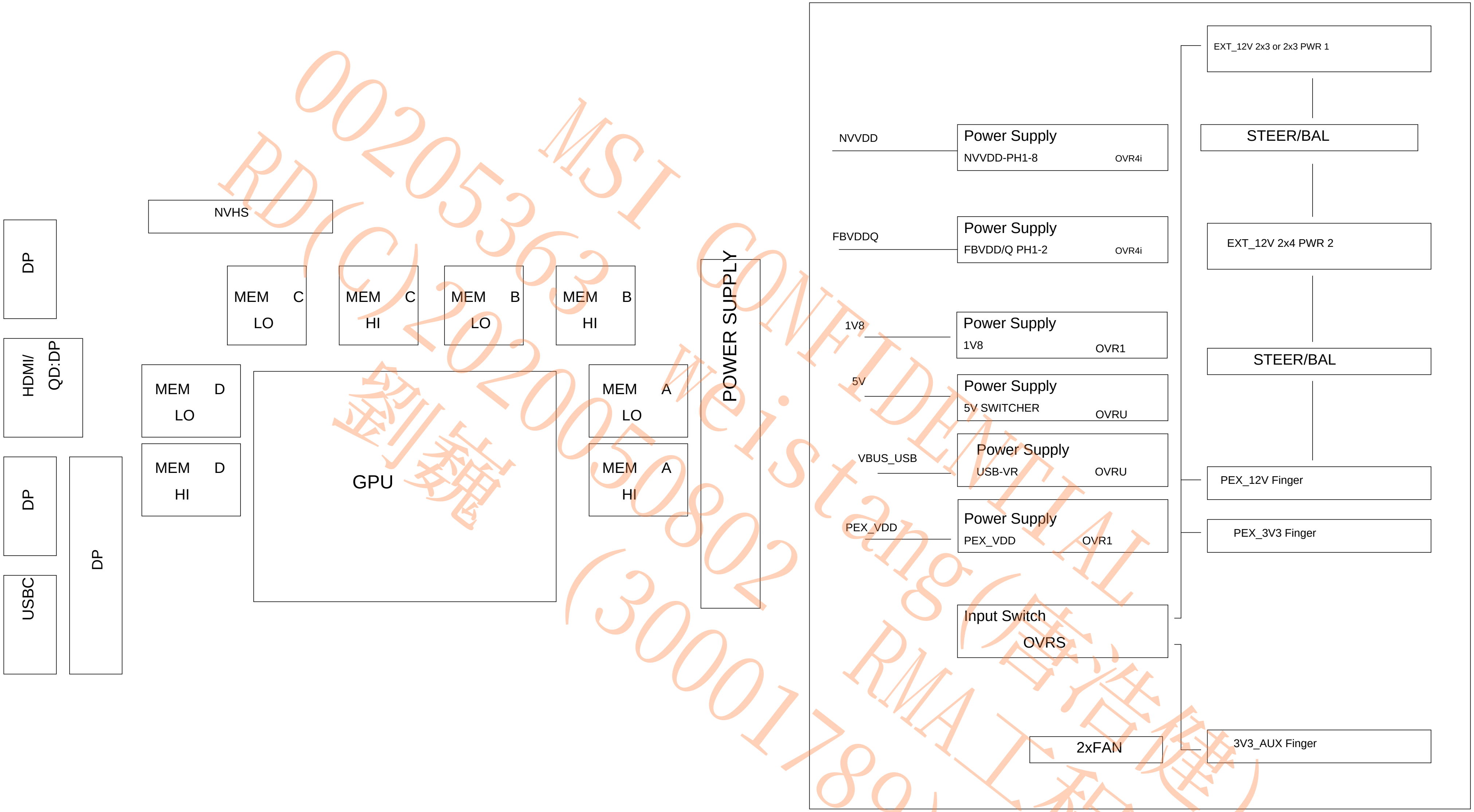
Page2: Block Diagram



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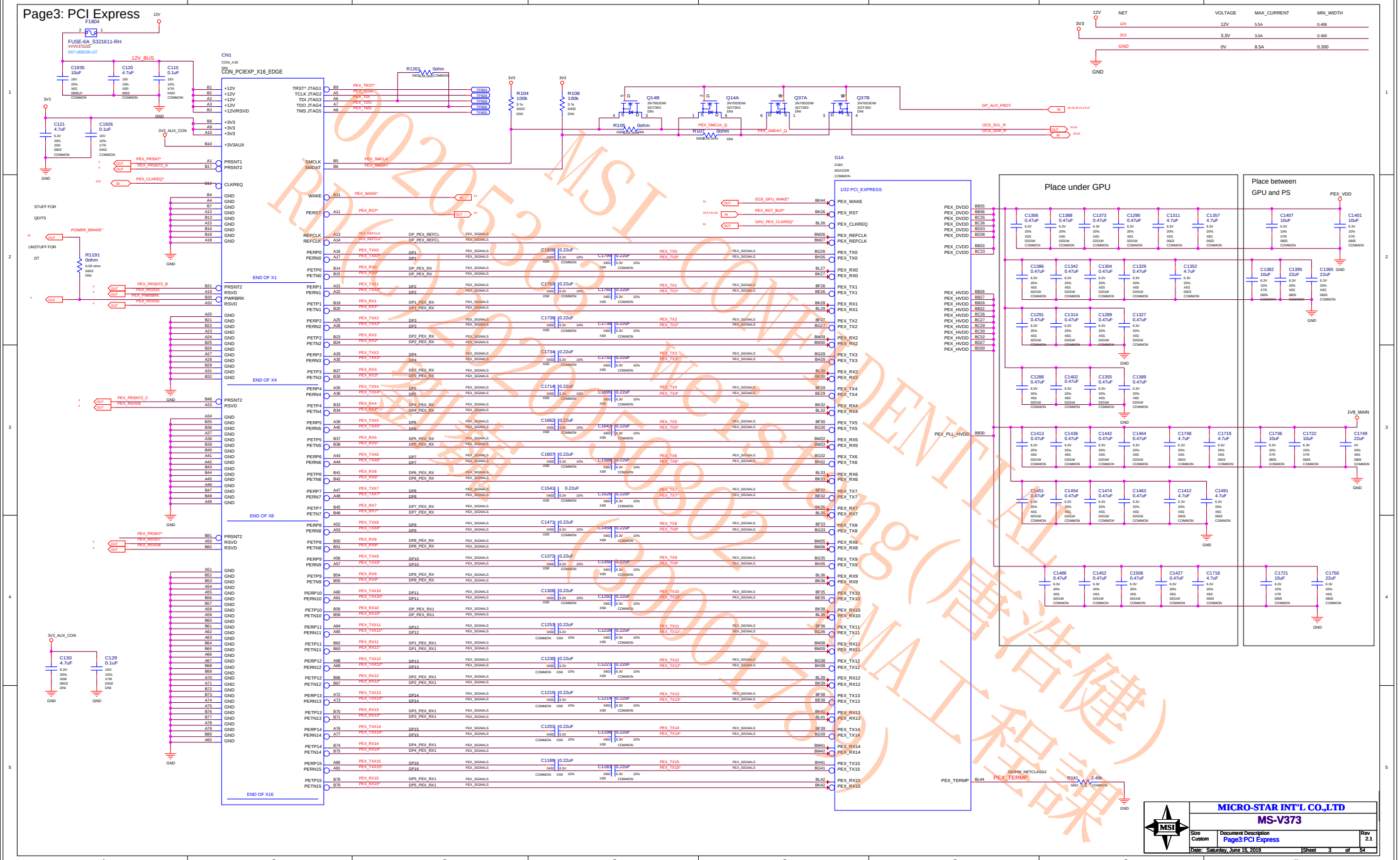
Page3: PCI Express



NET	VOLTAGE	MAX_CURRENT	MIN_WIDTH
12V	12V	5.5A	0.406
3V3	3.3V	3.0A	0.400
GND	0V	8.5A	0.300

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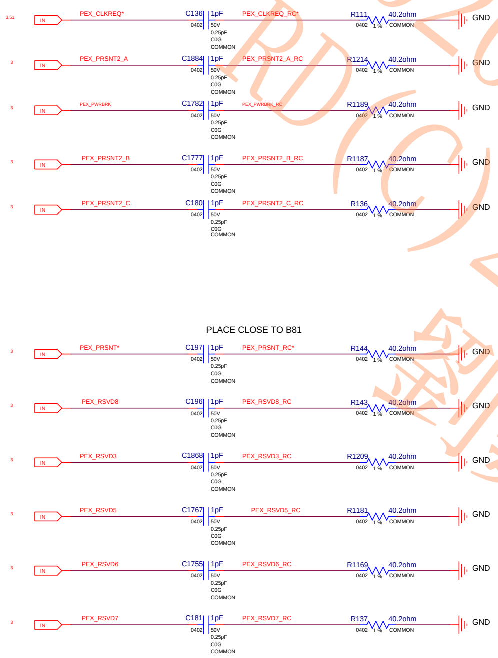
Page4: PCI Termination



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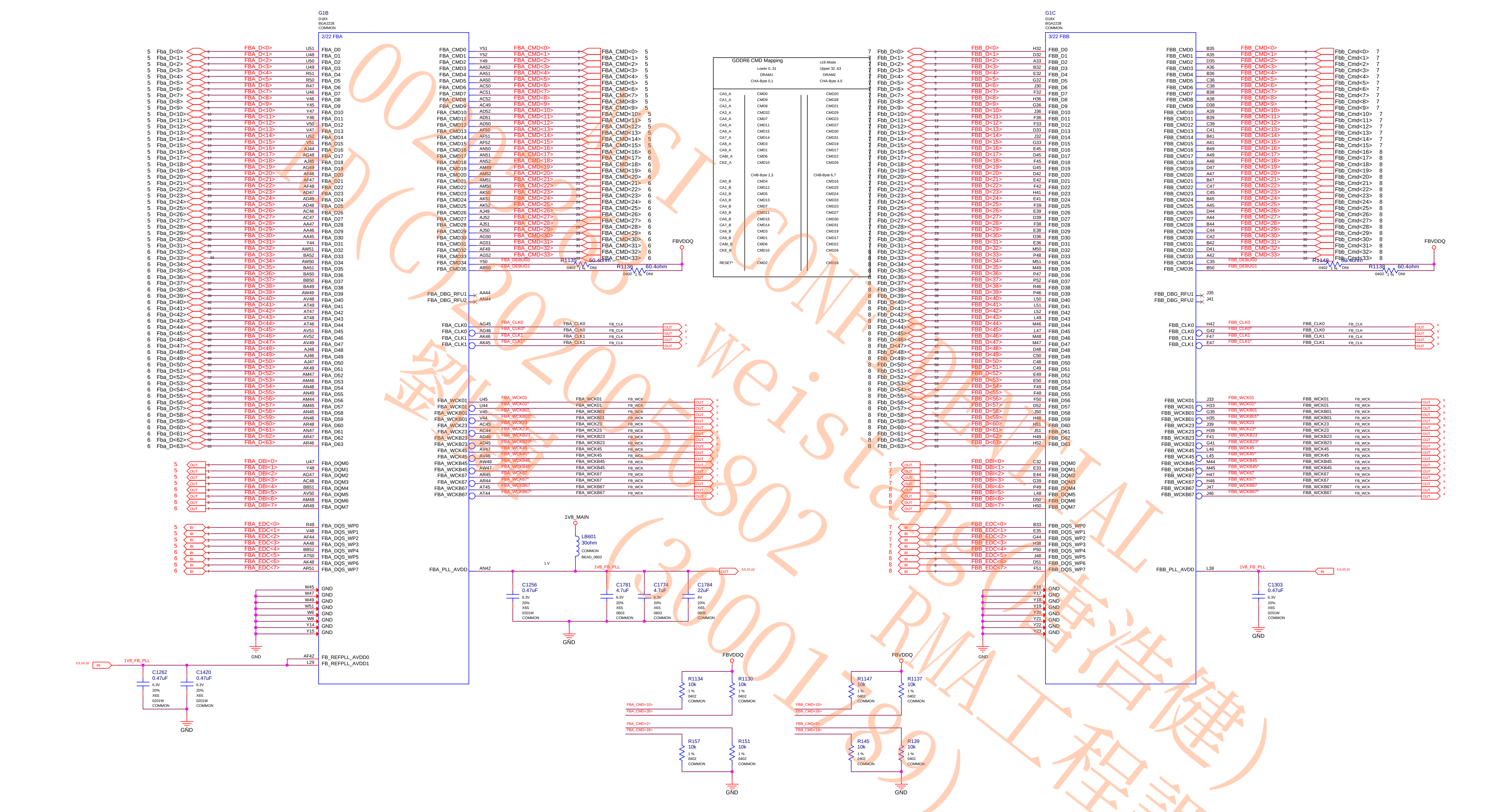
Page5: MEMORY: GPU Partition A/B



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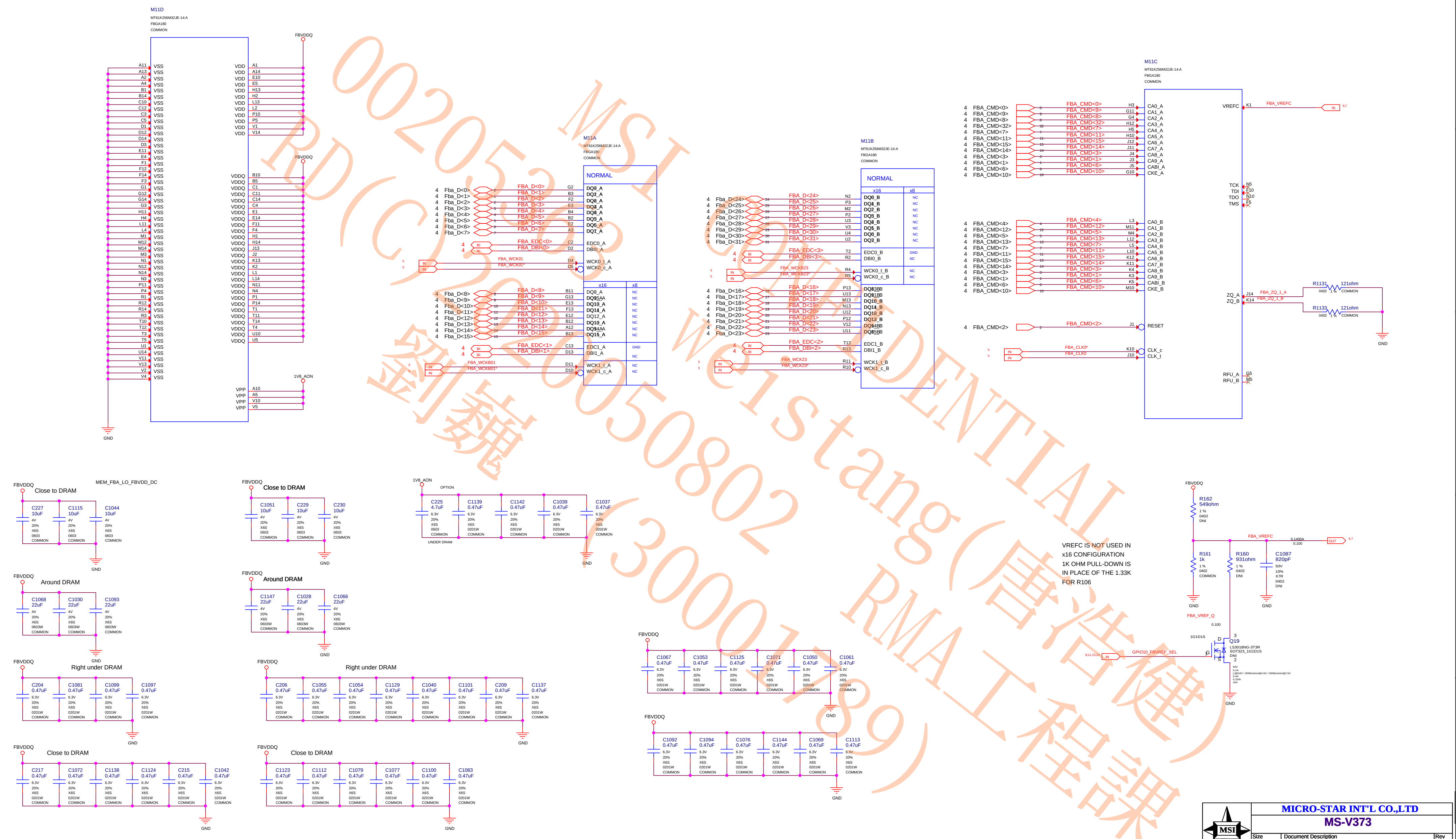
Page6: MEMORY: FBA Partition 31..0



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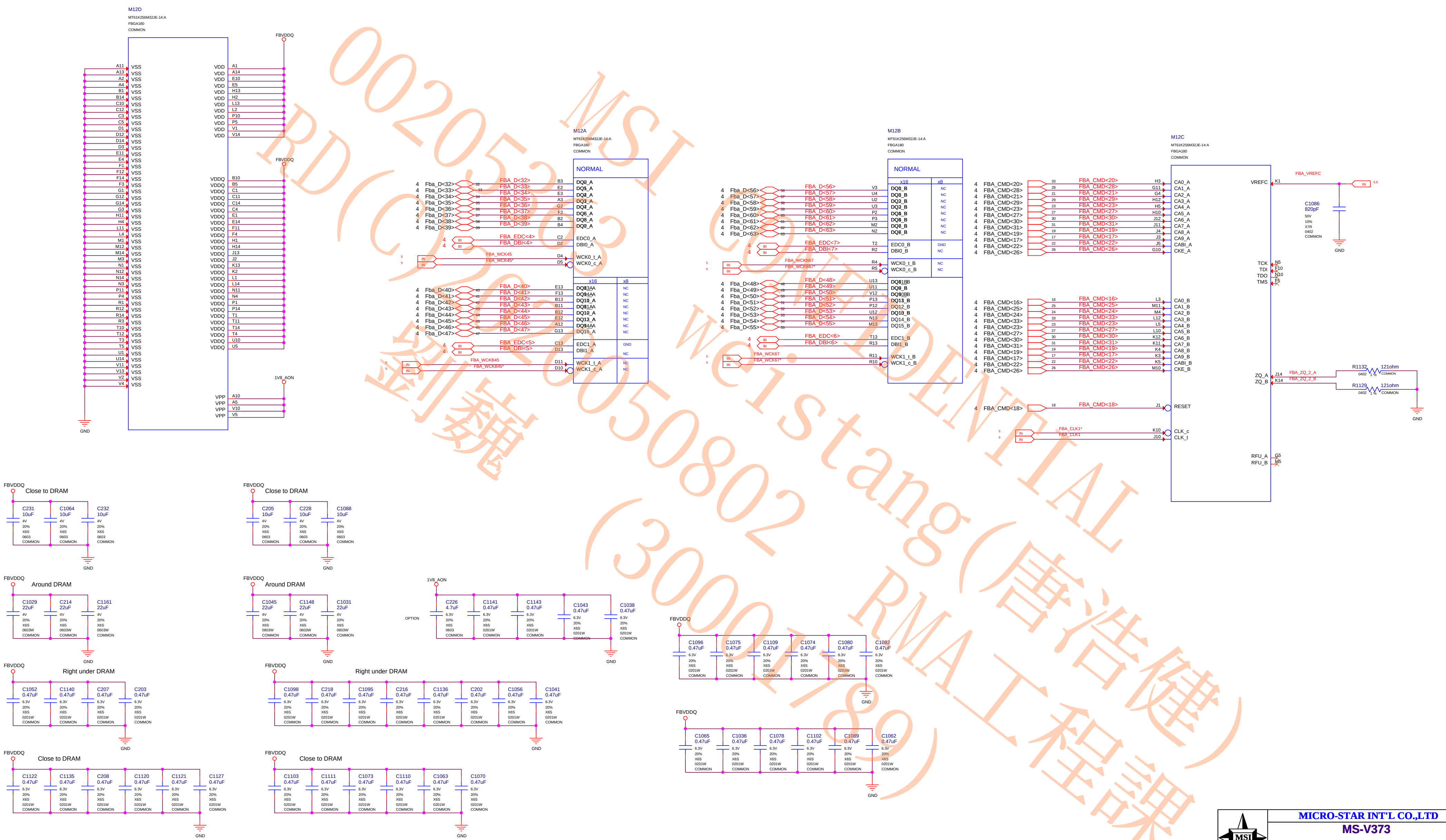
Page7: MEMORY: FBA Partition 63..32



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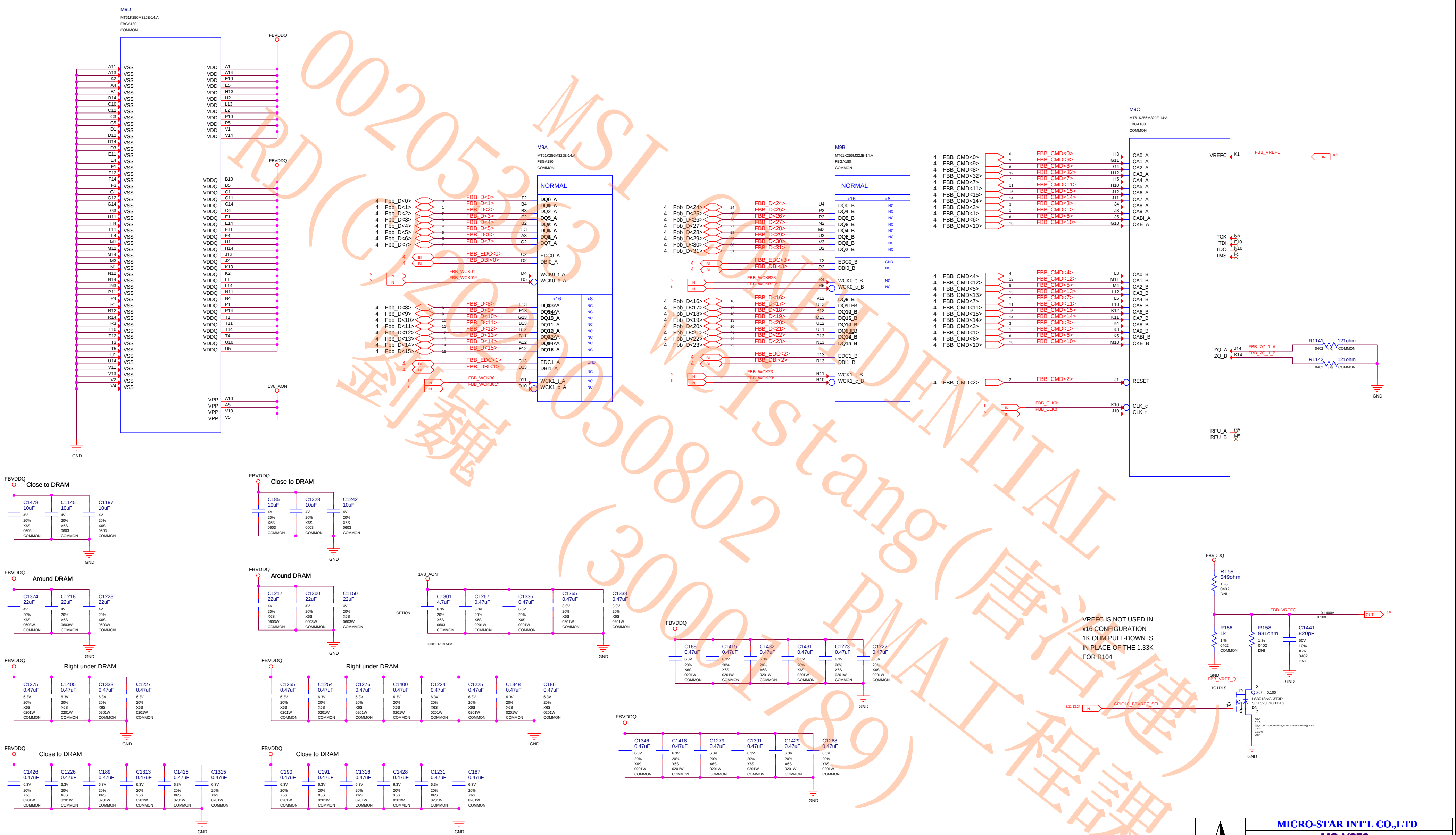
Page8: MEMORY: FBB Partition 31..0



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Page9: MEMORY: FBB Partition 63..32

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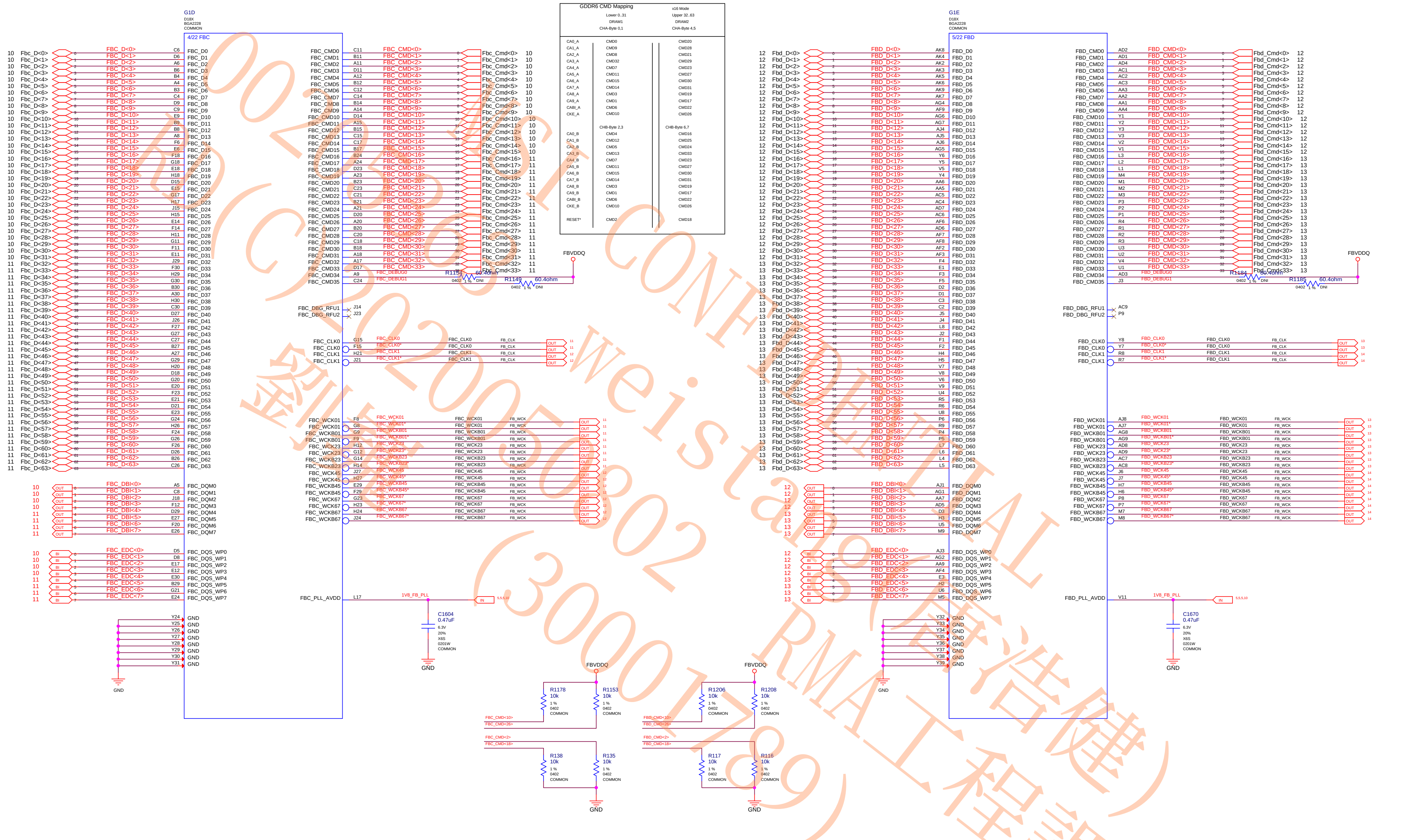
Page10: MEMORY: GPU Partition C/D



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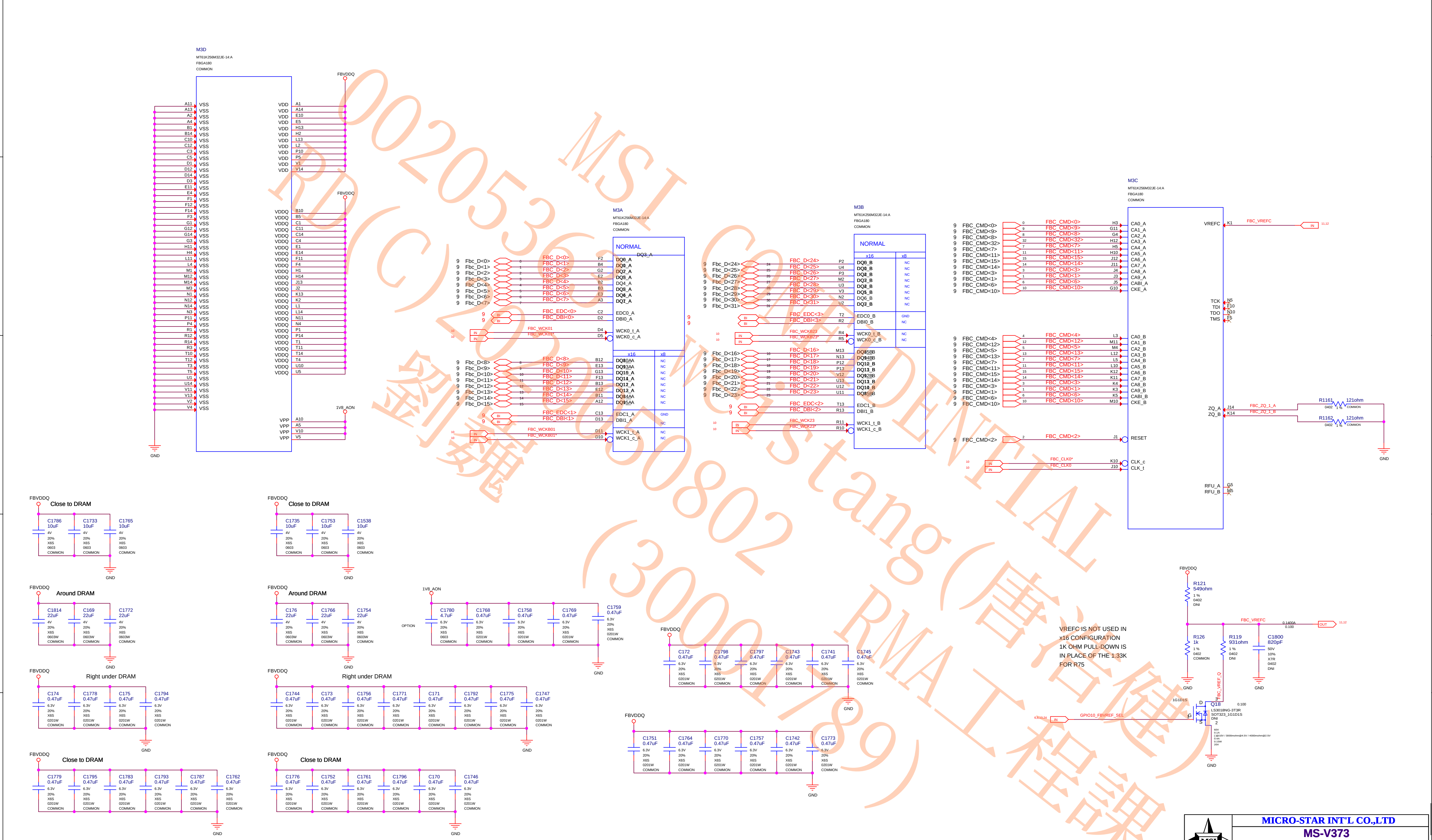
Page11: MEMORY: FBC Partition 31..0



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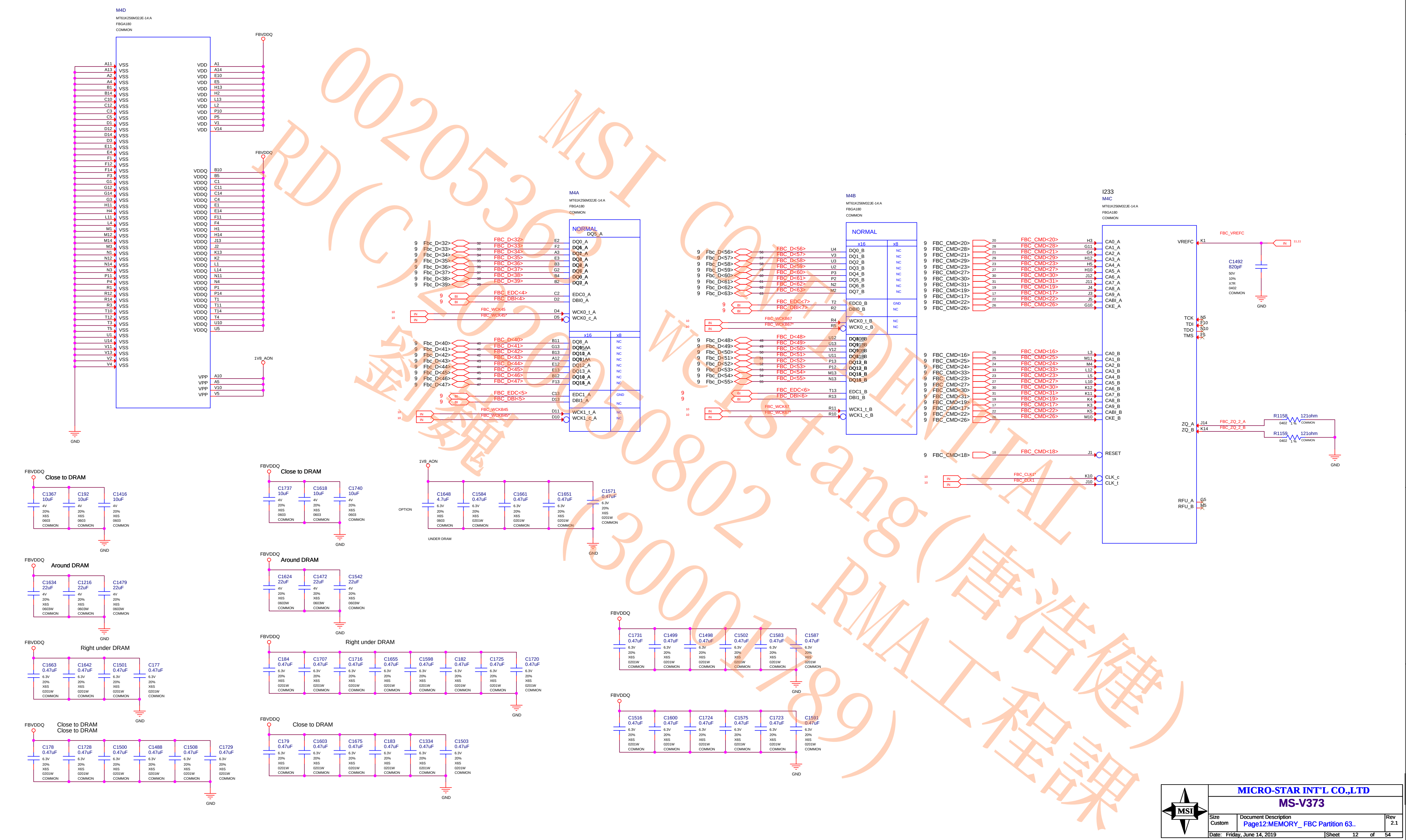
Page12: MEMORY: FBC Partition 63..32



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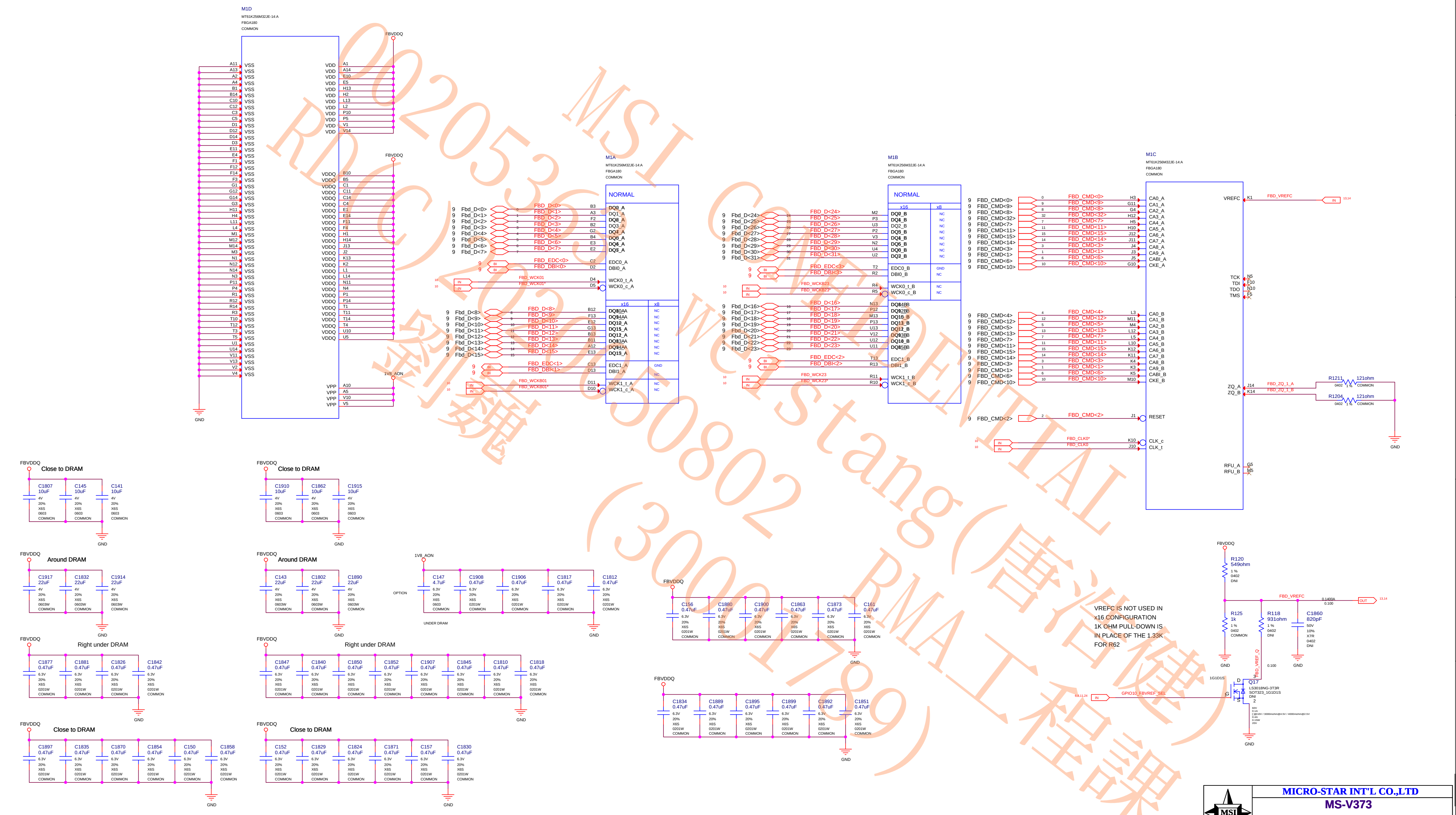
Page13: MEMORY: FBD Partition 31..0



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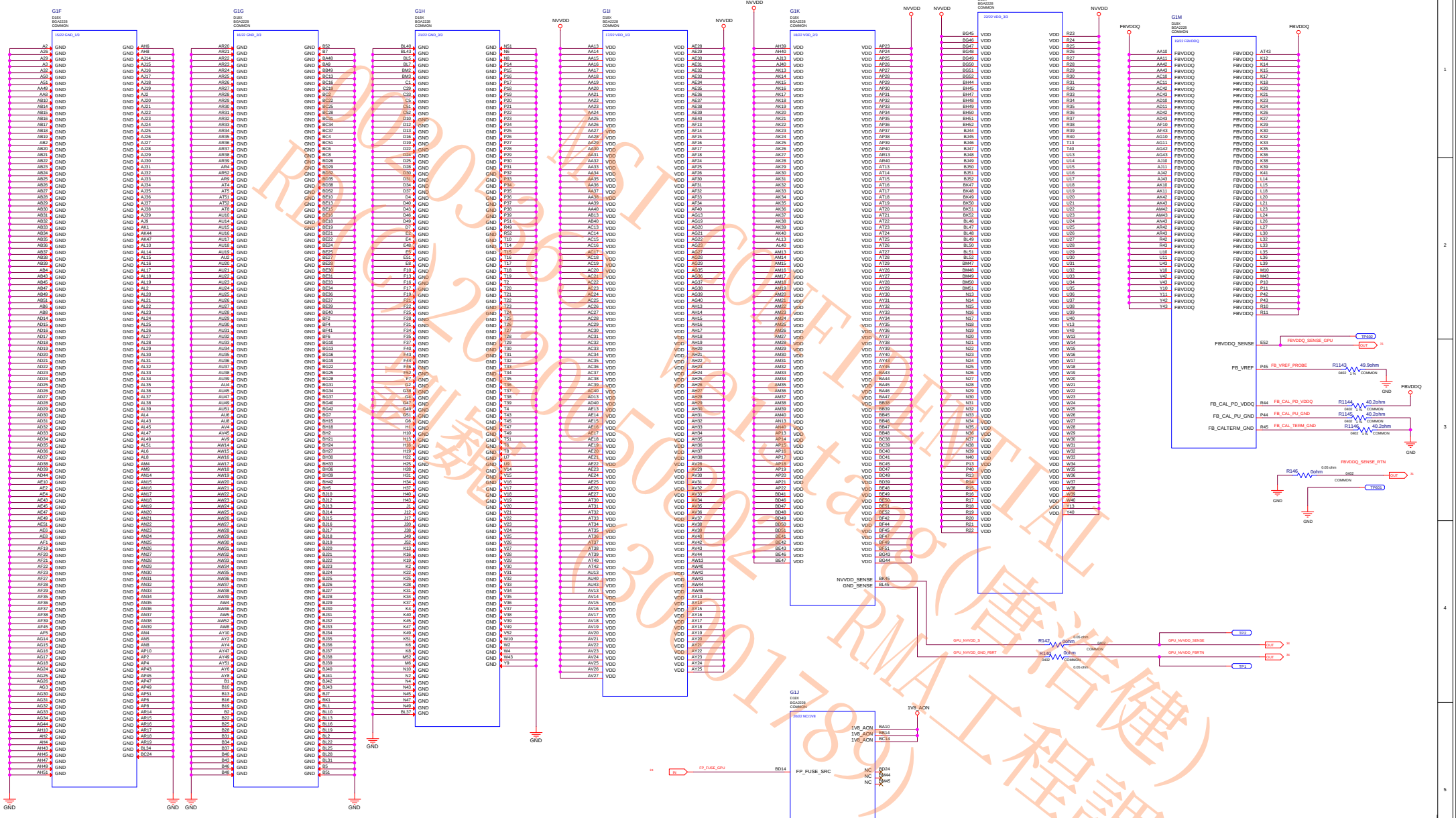
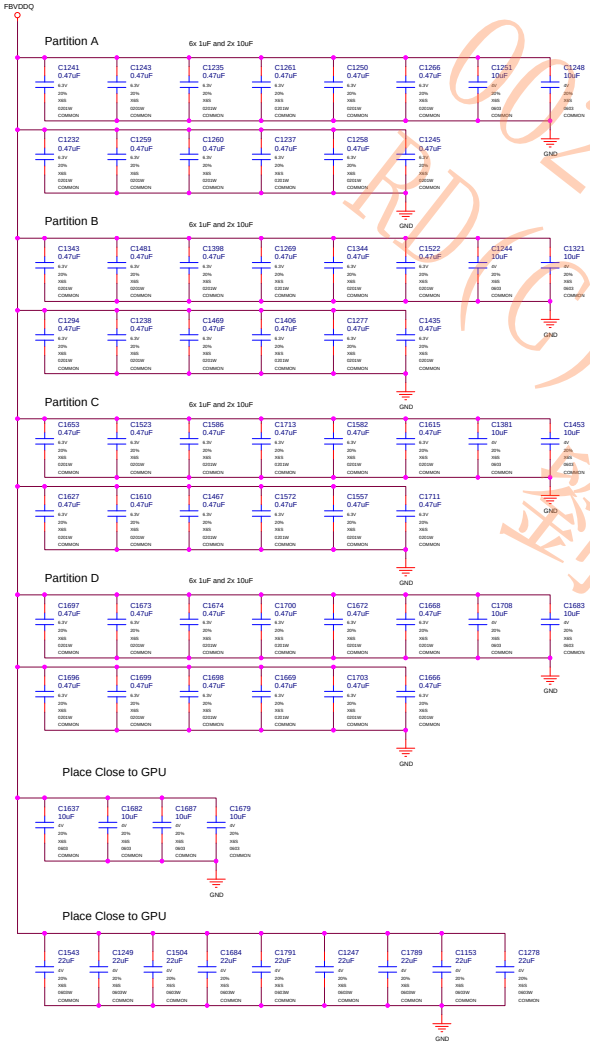
Page15: GPU PWR and GND



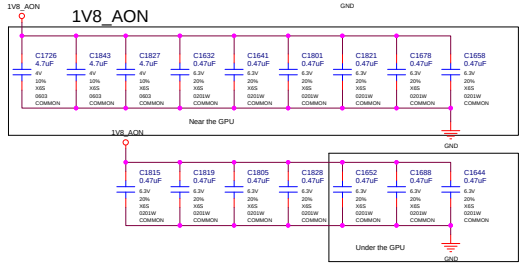
Page16: GPU Decoupling

FBVDDQ

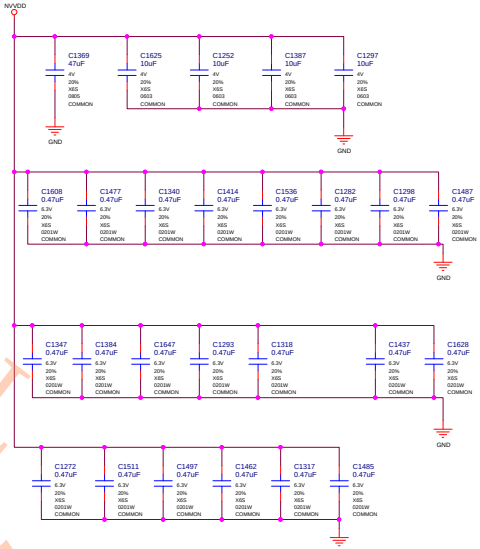


NVVDD

1V8_AON



NVVDD



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Page17: GPU Decoupling

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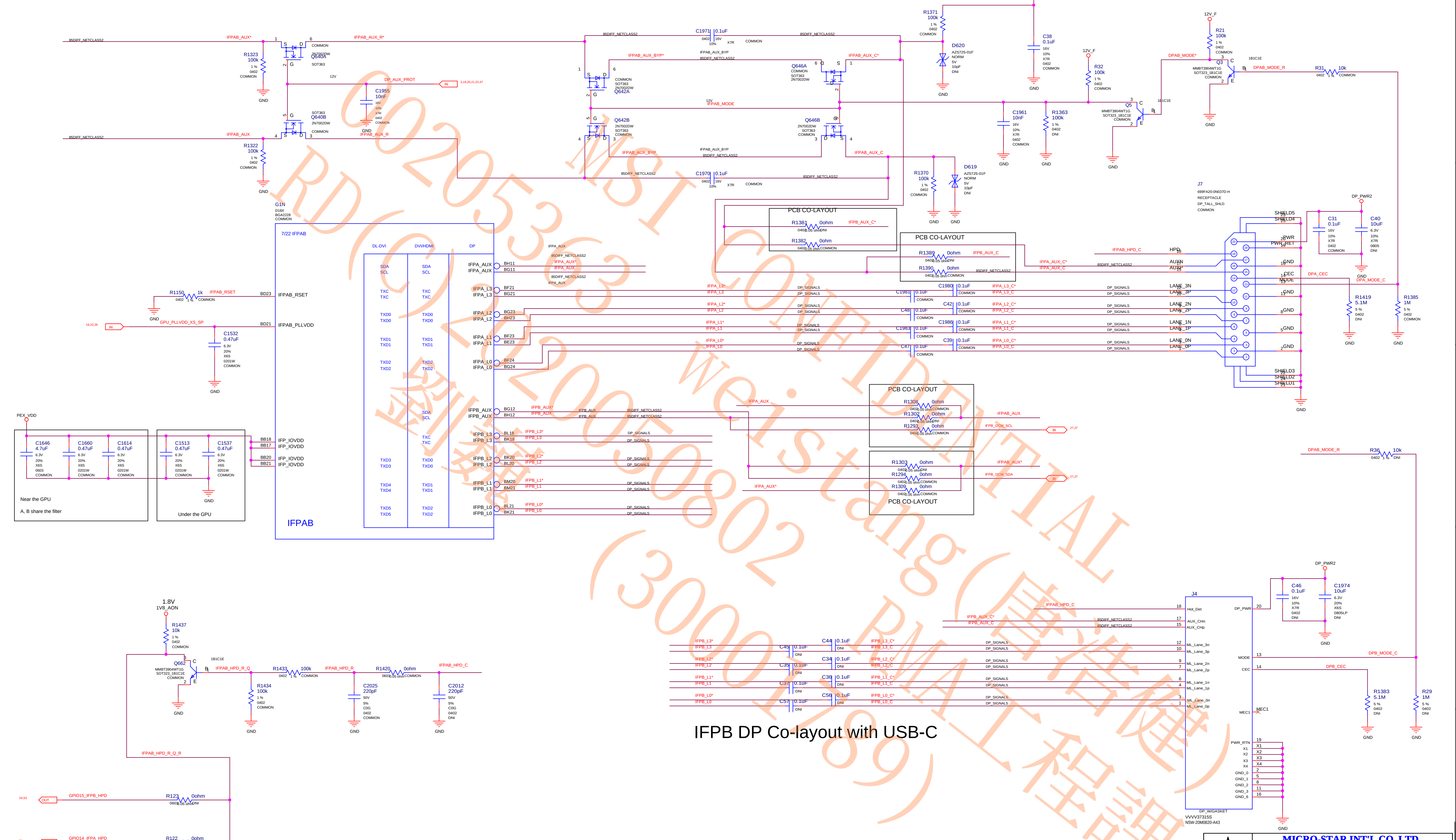
PAGE 18: IFPAB Tall-DP



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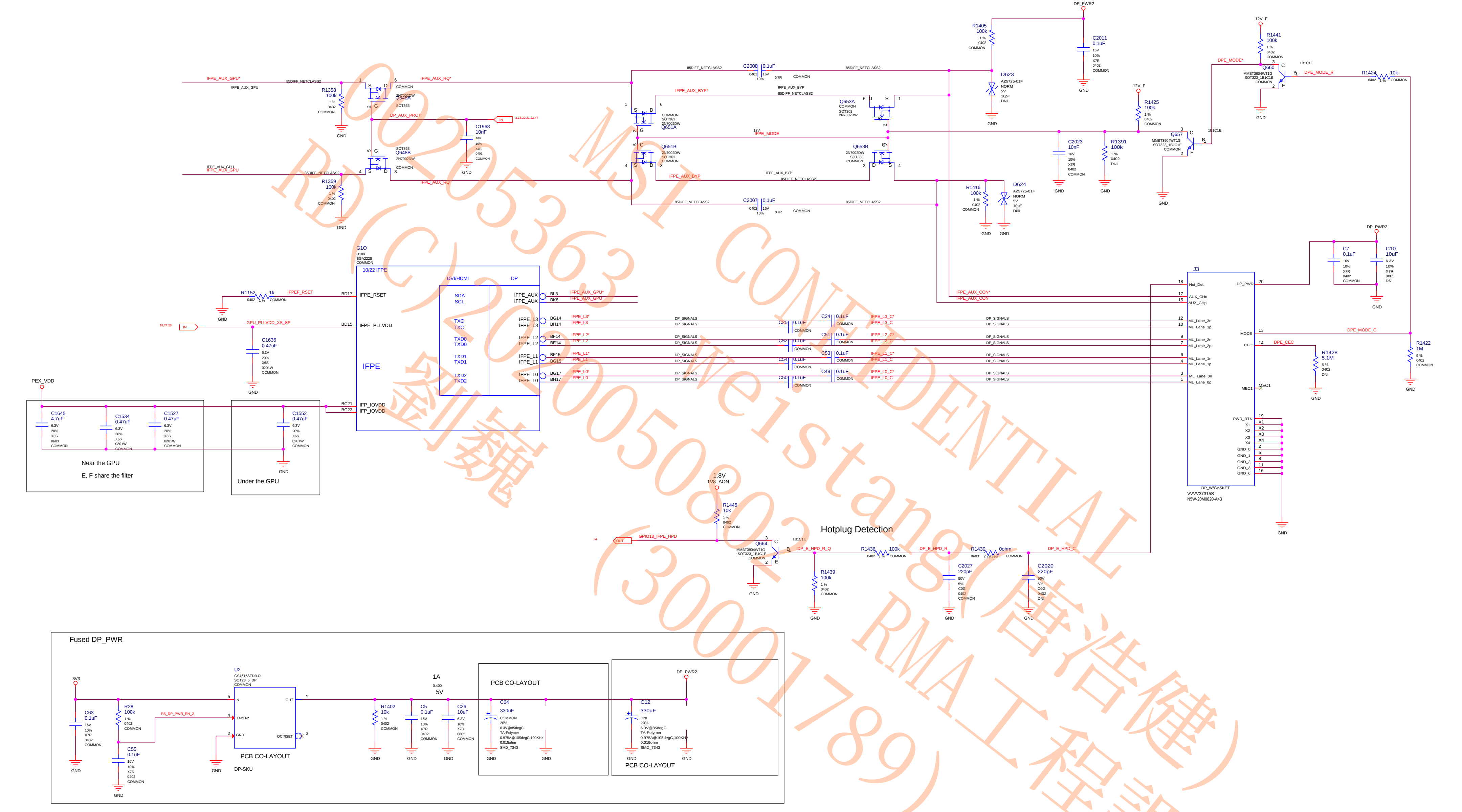
PAGE 19: IFPE DP



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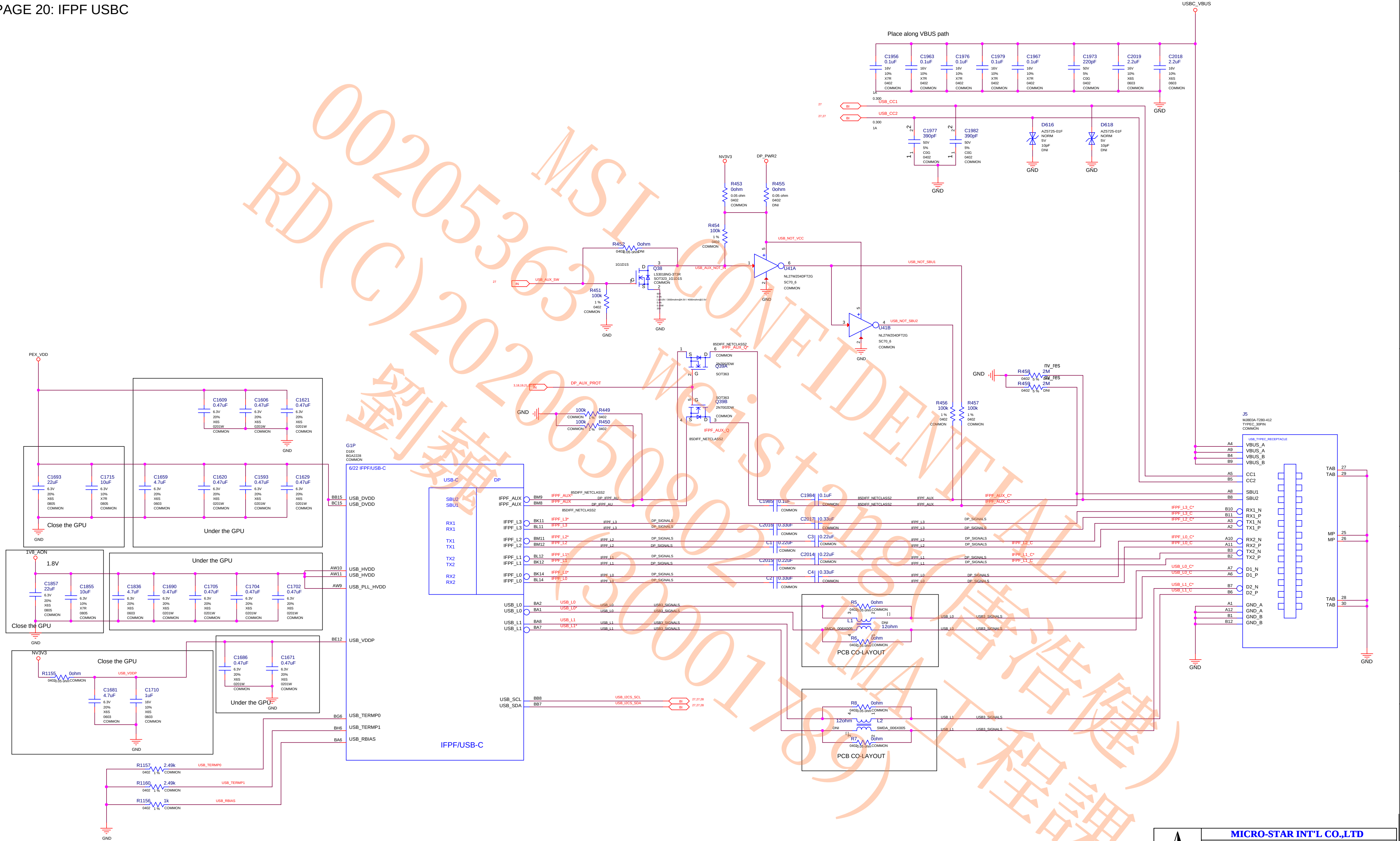
PAGE 20: IFPF USBC



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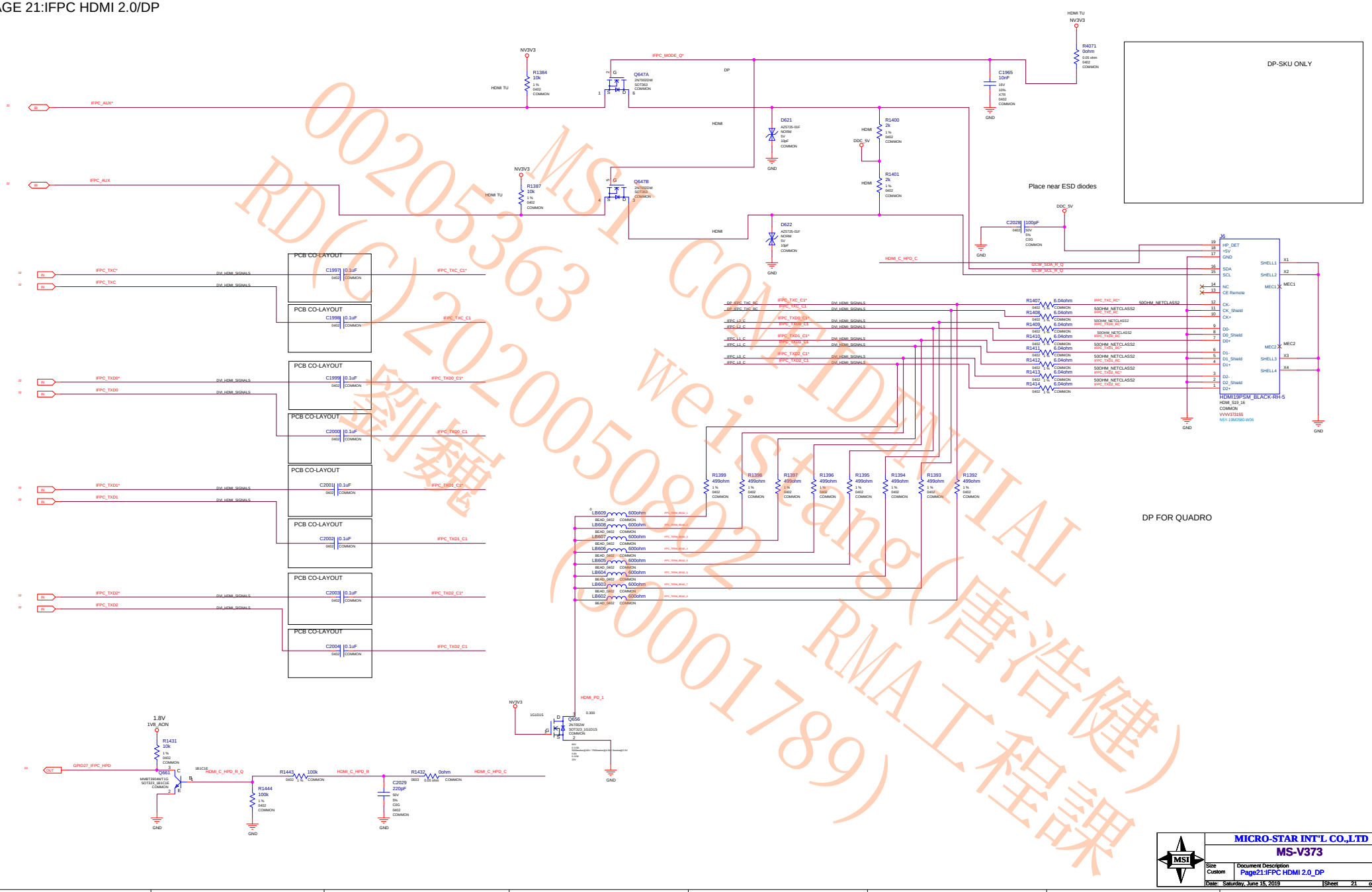
PAGE 21:IFPC HDMI 2.0/DP



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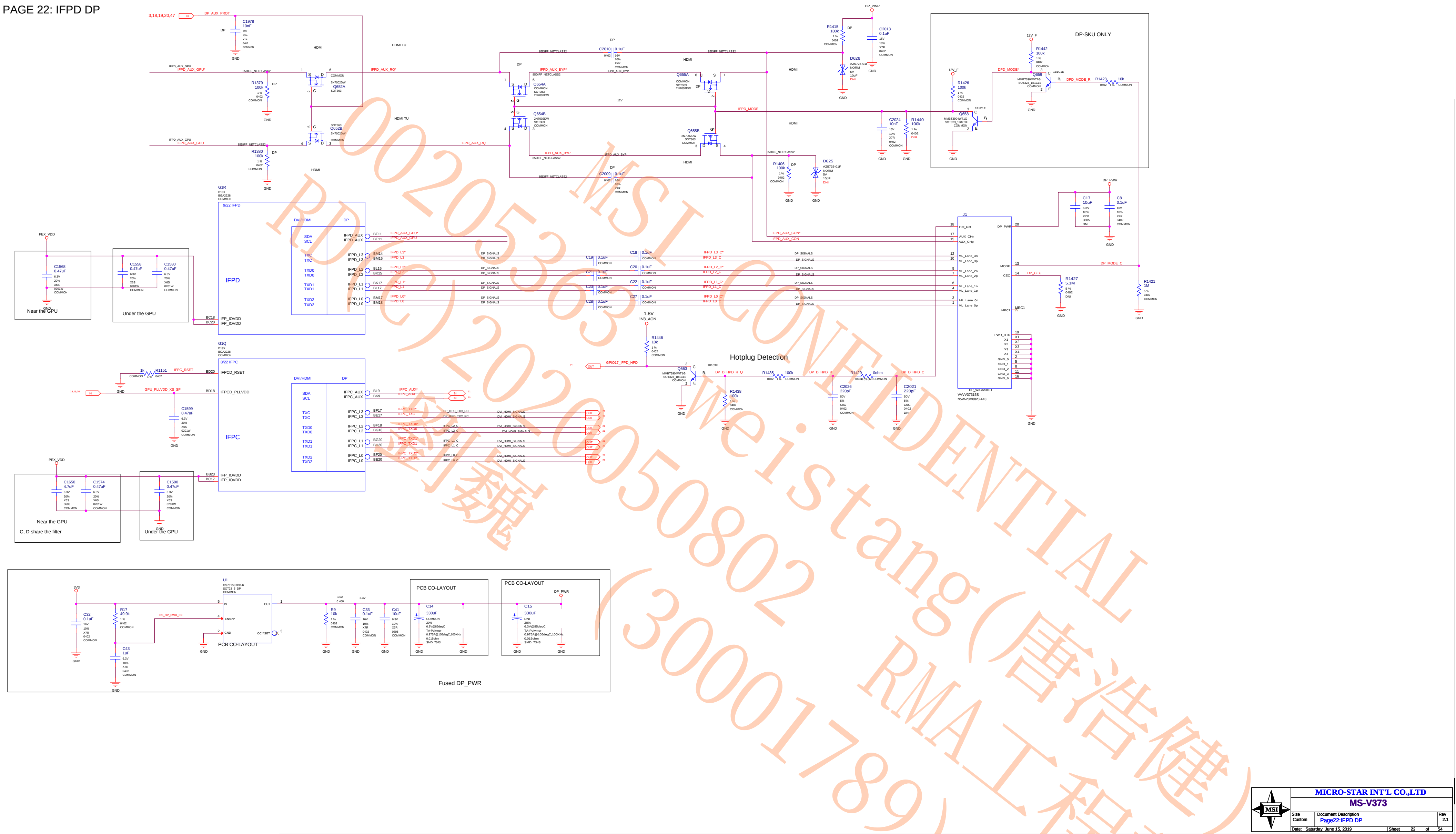
PAGE 22: IFPD DP



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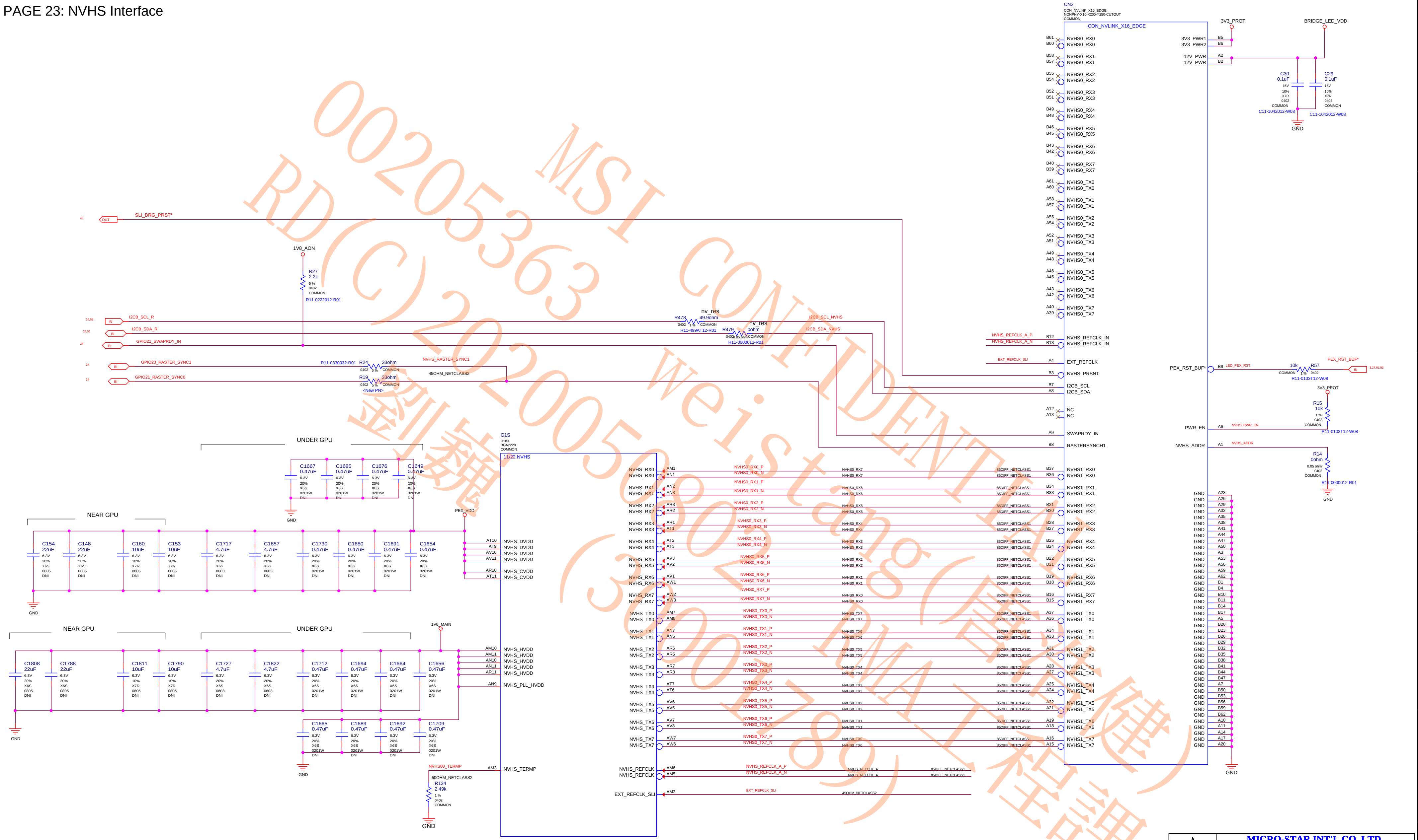
PAGE 23: NVHS Interface



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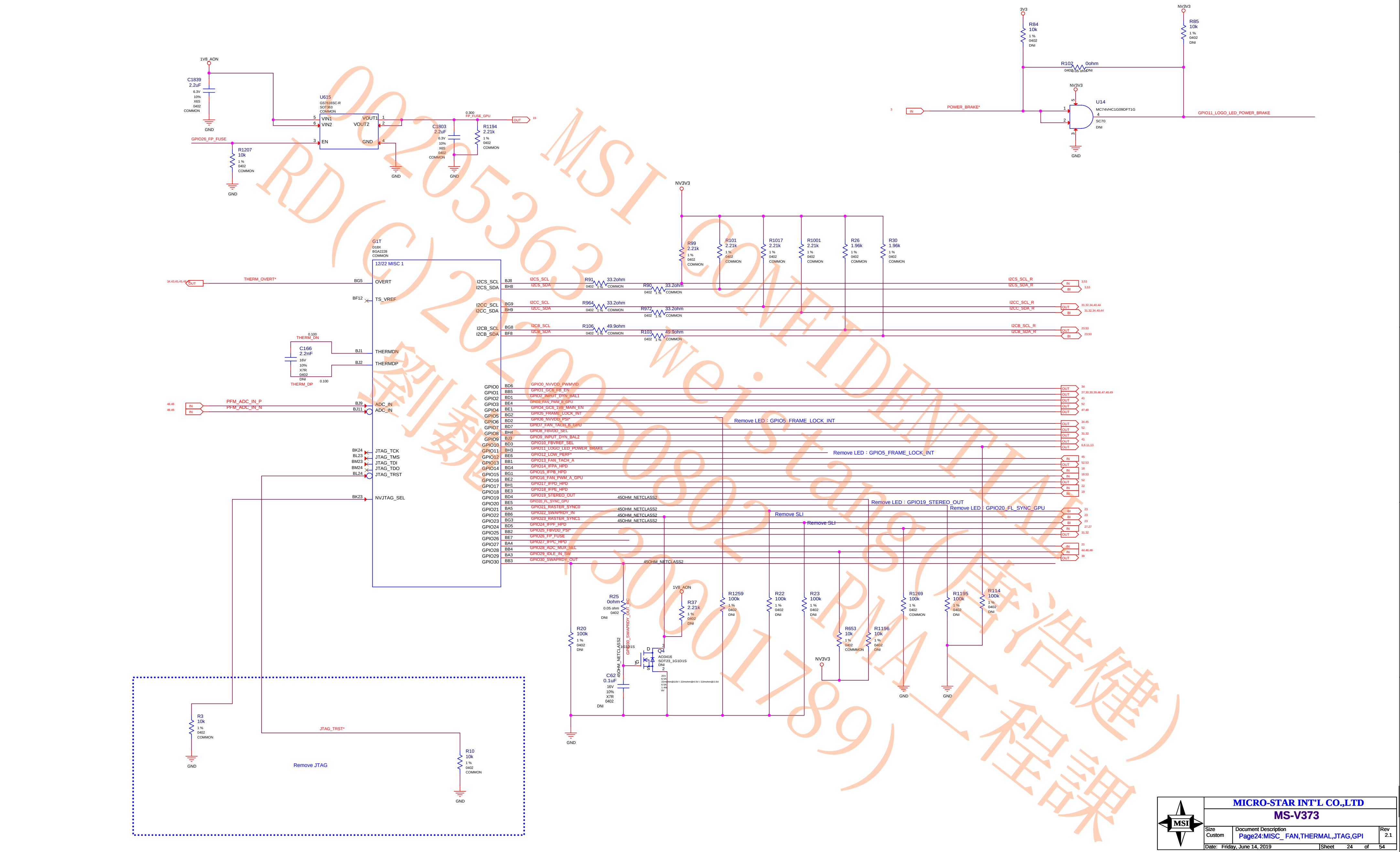
PAGE 24: MISC: Fan, Thermal, JTAG, GPIO, STEREO



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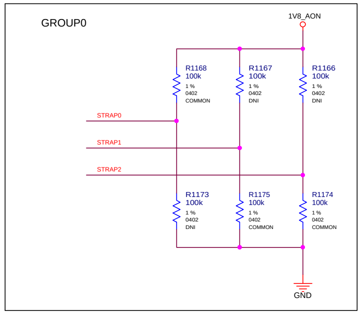
PAGE 25: MISC: ROM, Straps

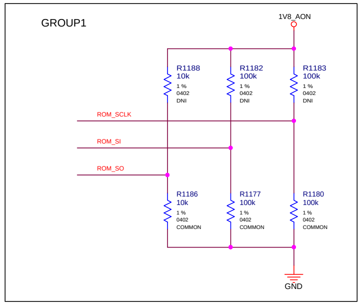
H=High :Tied to 1.8V
M=Middle:Tied to 0.9V
L=Low :Tied to 0V

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

RAMCFG[4:0]	DENSITY	WIDTH	VENDOR
00000	8Gb	256-bit	Samsung
00001	8Gb	256-bit	Micron
00010	8Gb	256-bit	Hynix
00110	16Gb	256-bit	Samsung
00111	16Gb	256-bit	Samsung



ROM_SO	ROM_SI	ROM_SCLK	DUMMY[2:0],FS_OVERT	1:ENABLE 0:DISABLE	
L	L	L	XXX1	FS_OVERT ENABLE	DEFAULT
L	L	M	XXX0	FS_OVERT DISABLE	



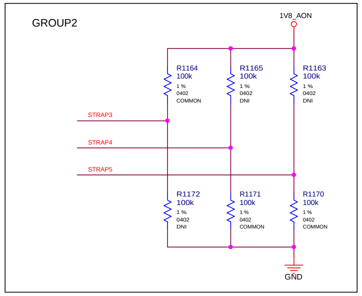
STRAP5	STRAP4	STRAP3	SMB_ALT_ADDR	DEVID_SEL	PCIE_CFG	VGA_DEVICE	
M	H	H	1	1	1	1	
M	H	L	1	1	1	0	
M	L	H	1	1	0	1	
M	L	L	1	1	0	0	
L	H	M	1	0	1	1	
L	M	H	1	0	1	0	
L	M	L	1	0	0	1	
L	L	M	1	0	0	0	
H	H	H	0	1	1	1	
H	H	L	0	1	1	0	
H	L	H	0	1	0	1	
H	L	L	0	1	0	0	
L	H	H	0	0	1	1	
L	H	L	0	0	1	0	
L	L	H	0	0	0	1	Default
L	L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

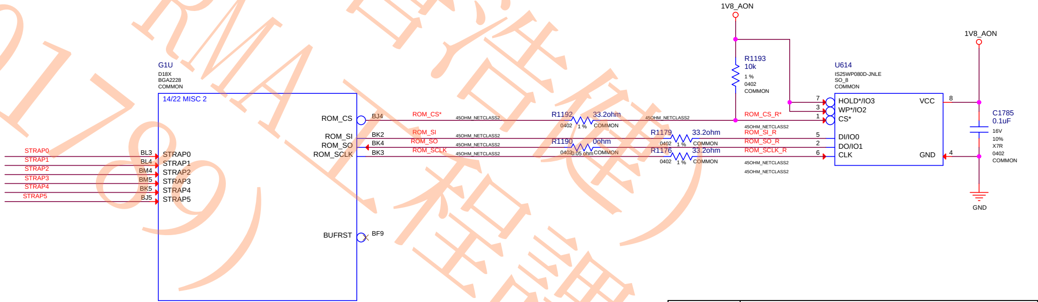
1:SMB_ALT_ADDR ENABLE
0:SMB_ALT_ADDR DISABLE

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





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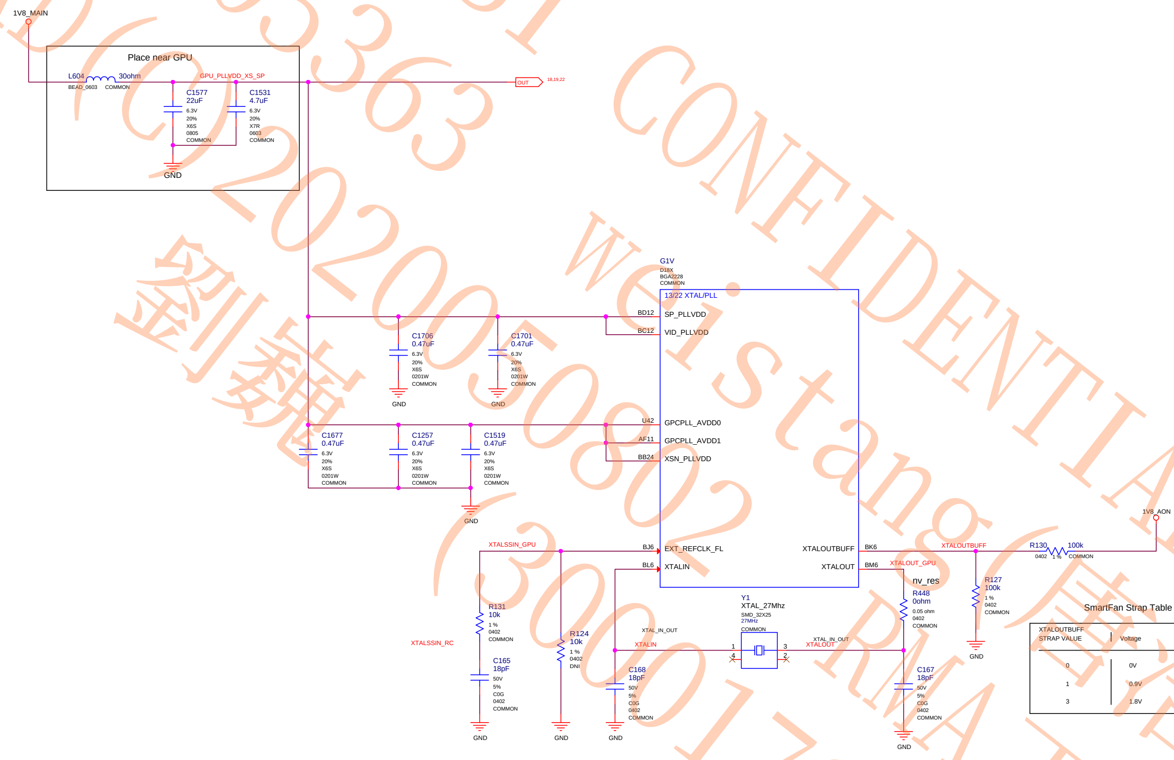
PAGE 26: MISC: XTAL. PLL



SmartFan Strap Table

XTALOUTBUFF STRAP VALUE	Voltage	Inverted SmartFan PWM %
0	0V	GPIO DISABLED
1	0.9V	33% PWM
3	1.8V	66% PWM

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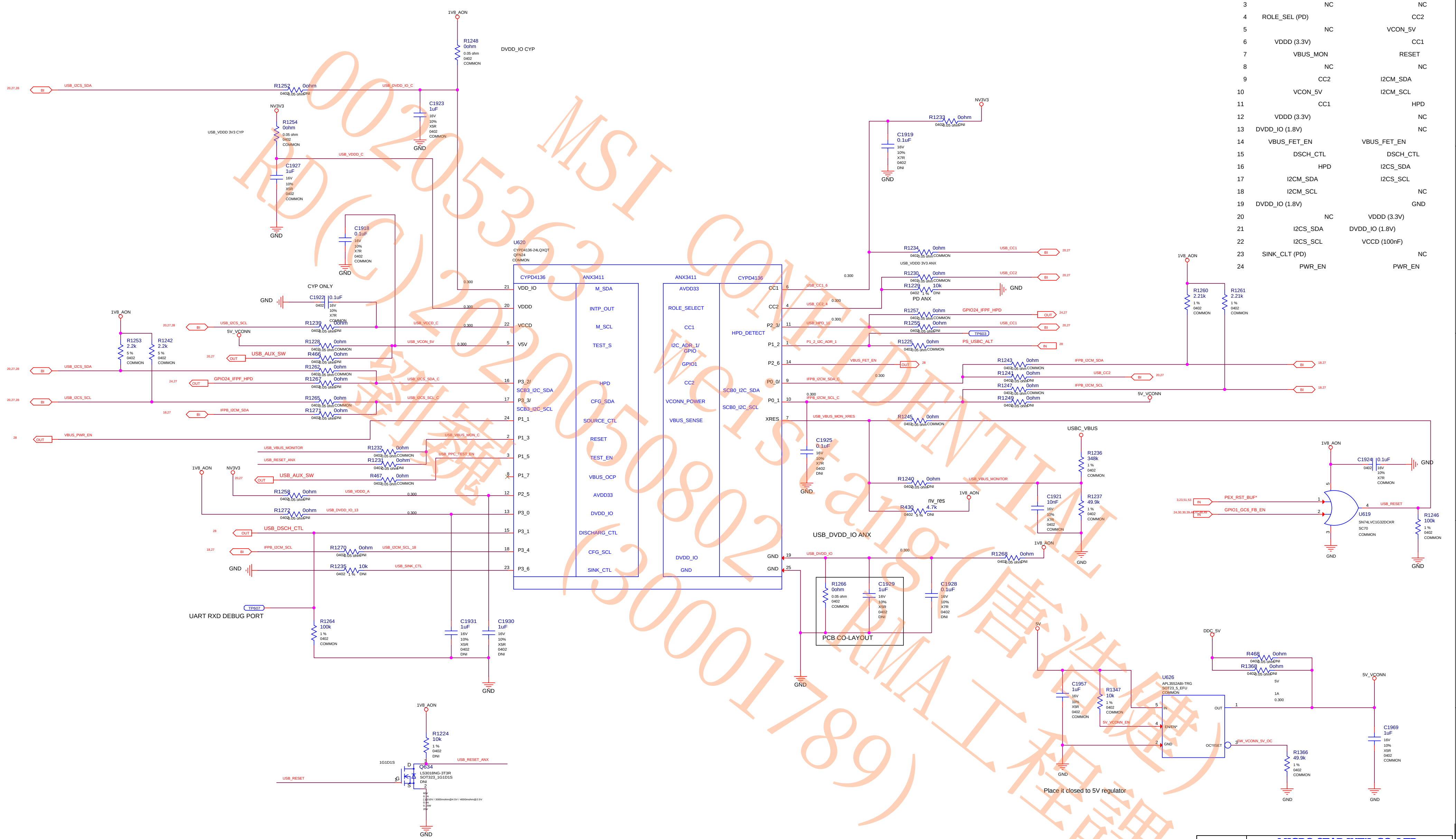
PAGE 27: MISC: USB PPC

PIN	ANX	CYP
1	TP	TP
2	RESET	VBUS_MON
3	NC	NC
4	ROLE_SEL (PD)	CC2
5	NC	VCON_5V
6	VDDD (3.3V)	CC1
7	VBUS_MON	RESET
8	NC	NC
9	CC2	I2CM_SDA
10	VCON_5V	I2CM_SCL
11	CC1	HPD
12	VDDD (3.3V)	NC
13	DVDD_IO (1.8V)	NC
14	VBUS_FET_EN	VBUS_FET_EN
15	DSCH_CTL	DSCH_CTL
16	HPD	I2CS_SDA
17	I2CM_SDA	I2CS_SCL
18	I2CM_SCL	NC
19	DVDD_IO (1.8V)	GND
20	NC	VDDD (3.3V)
21	I2CS_SDA	DVDD_IO (1.8V)
22	I2CS_SCL	VCCD (100nF)
23	SINK_CLT (PD)	NC
24	PWR_EN	PWR_EN



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PAGE 28: PS: USB VR

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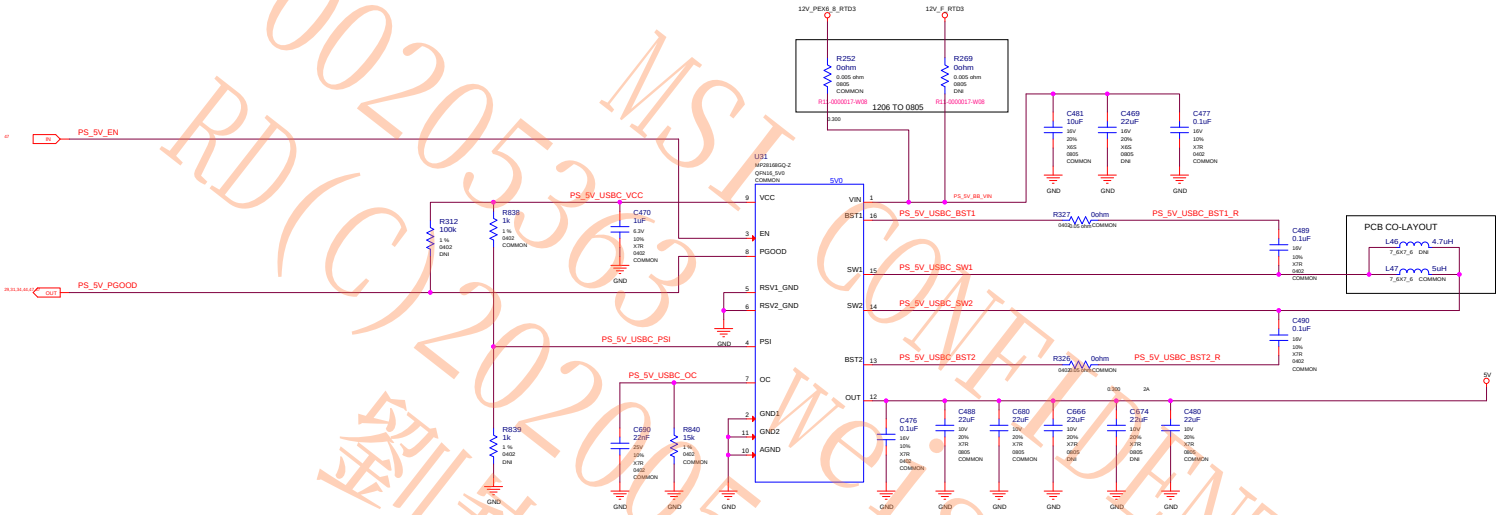
PAGE 29: PS: 5V, 5V_BACKUP



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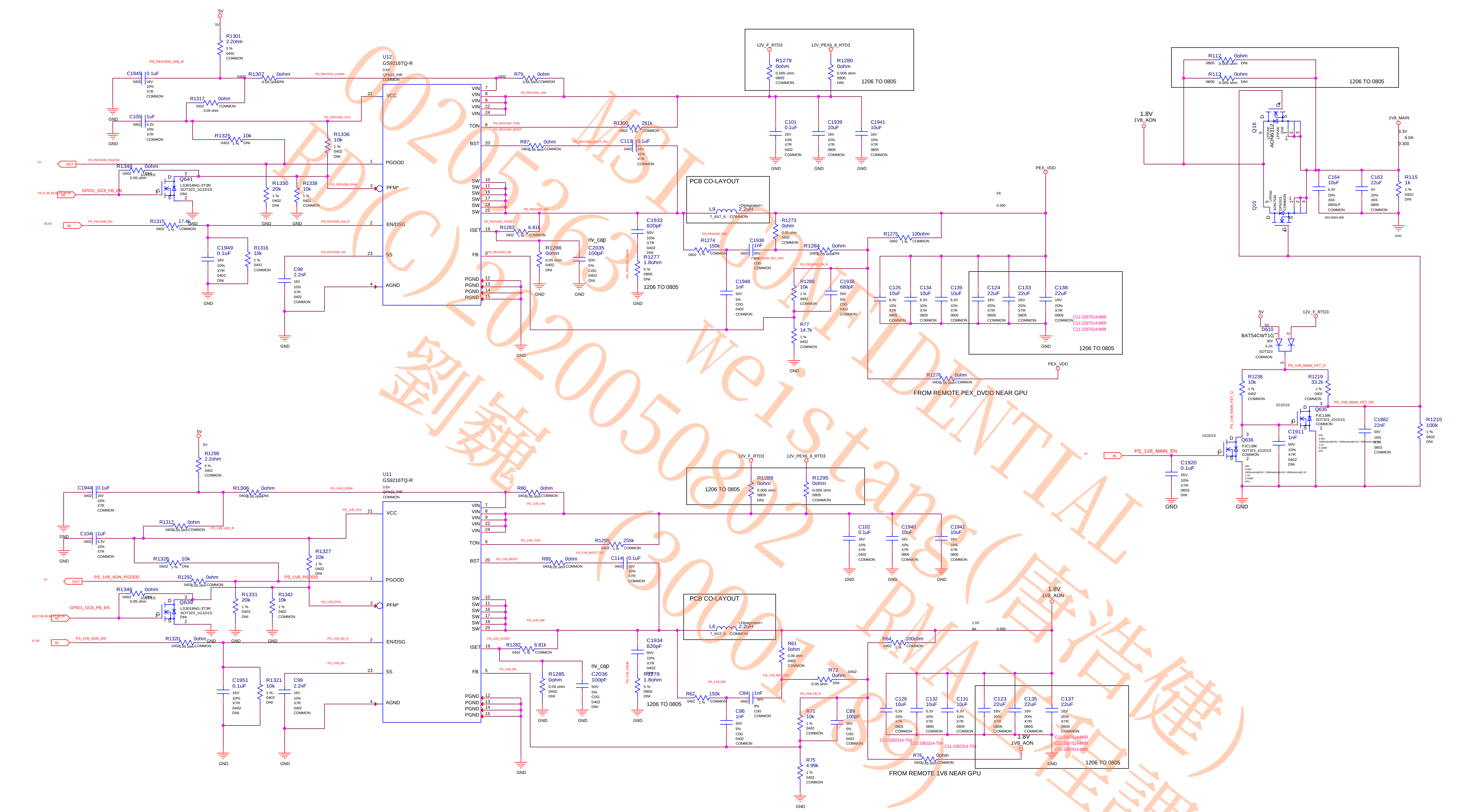
PAGE 30: PS: PEXVDD, 1V8



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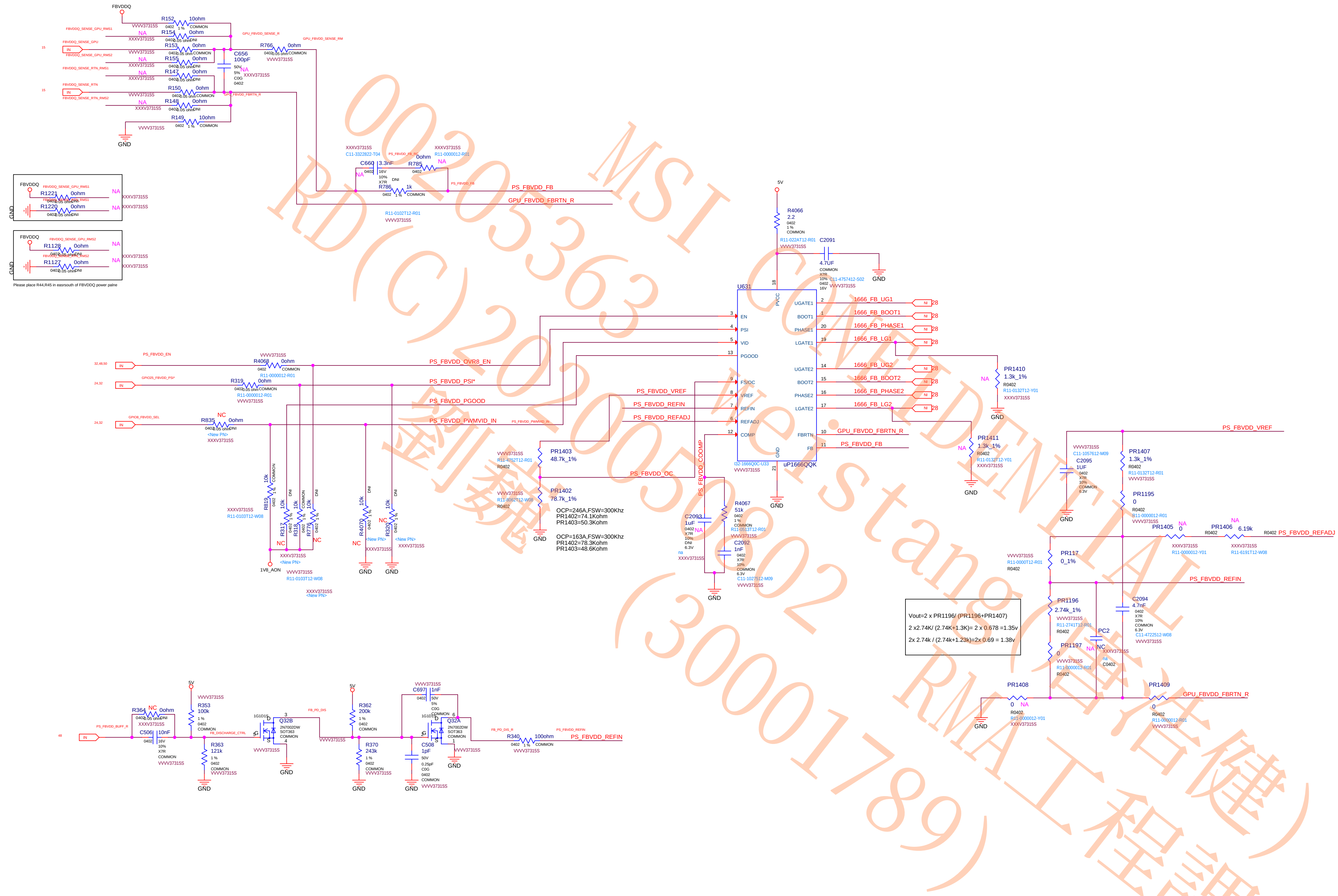
PAGE 31: PS: FBVDD Controller



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PAGE 32: PS: FBVDD Controller OVR3

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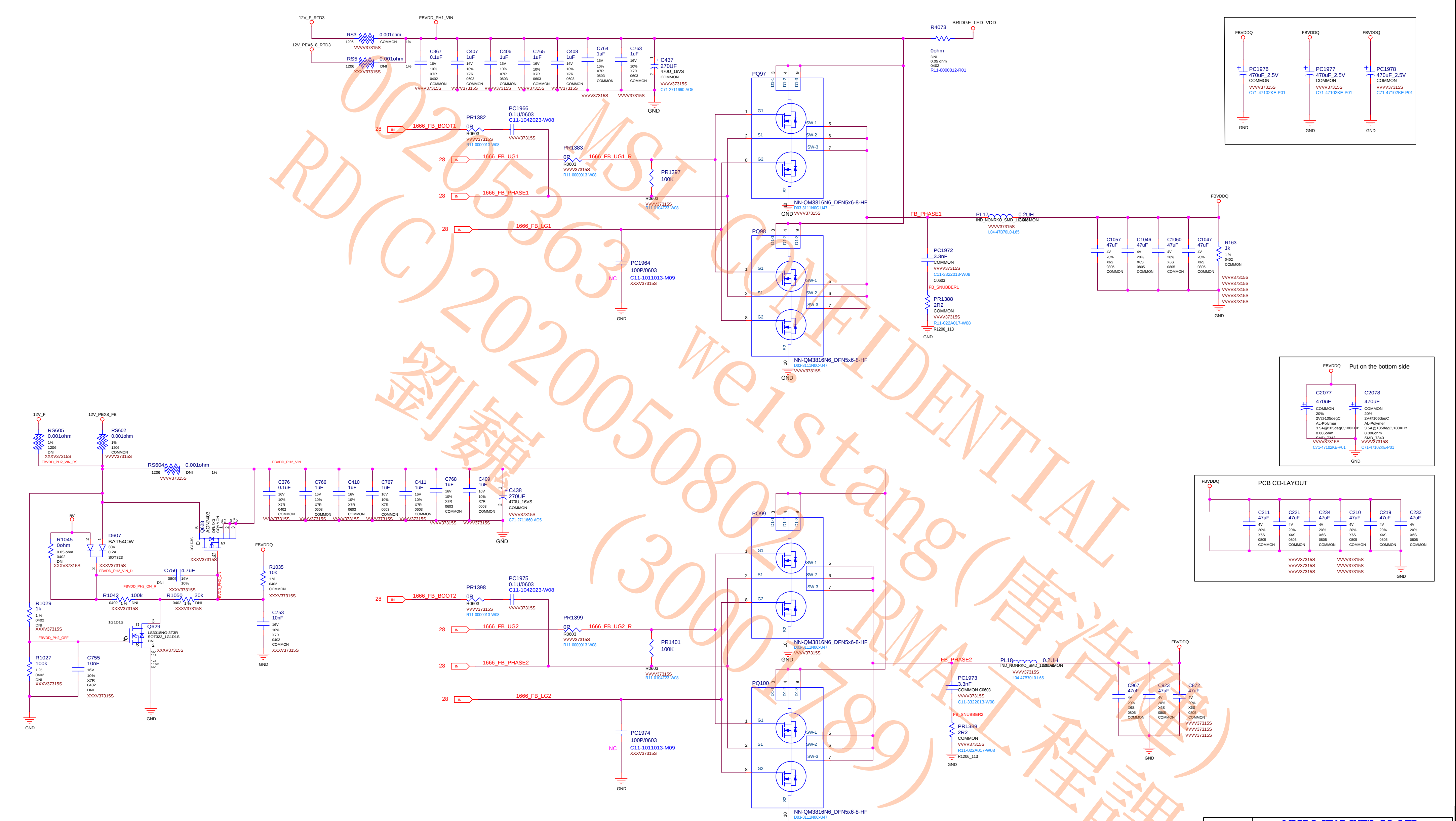
PAGE 33: PS: FBVDD Phase 1, 2



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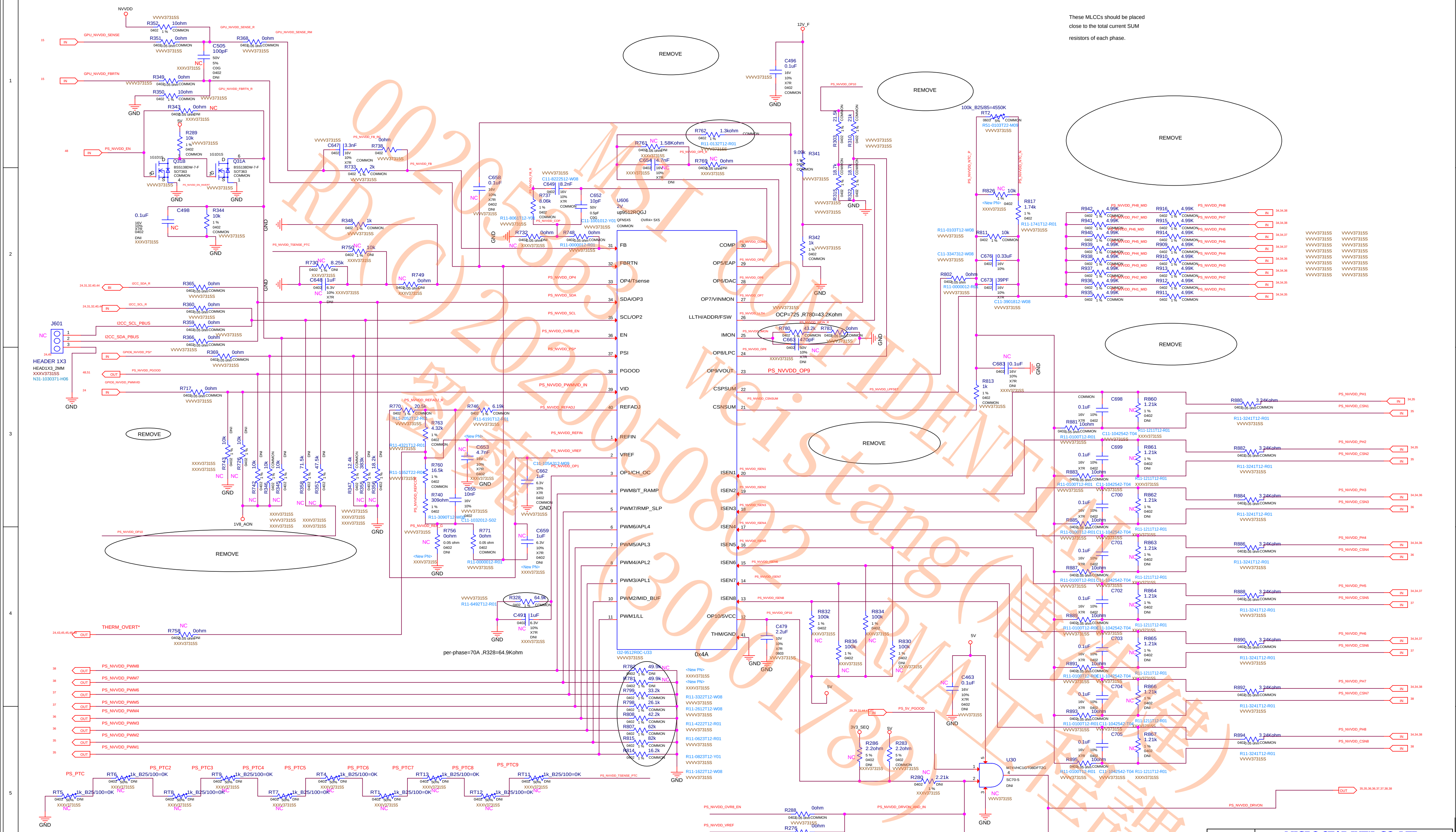
PAGE 34: PS: NVVDD Controller OVR8



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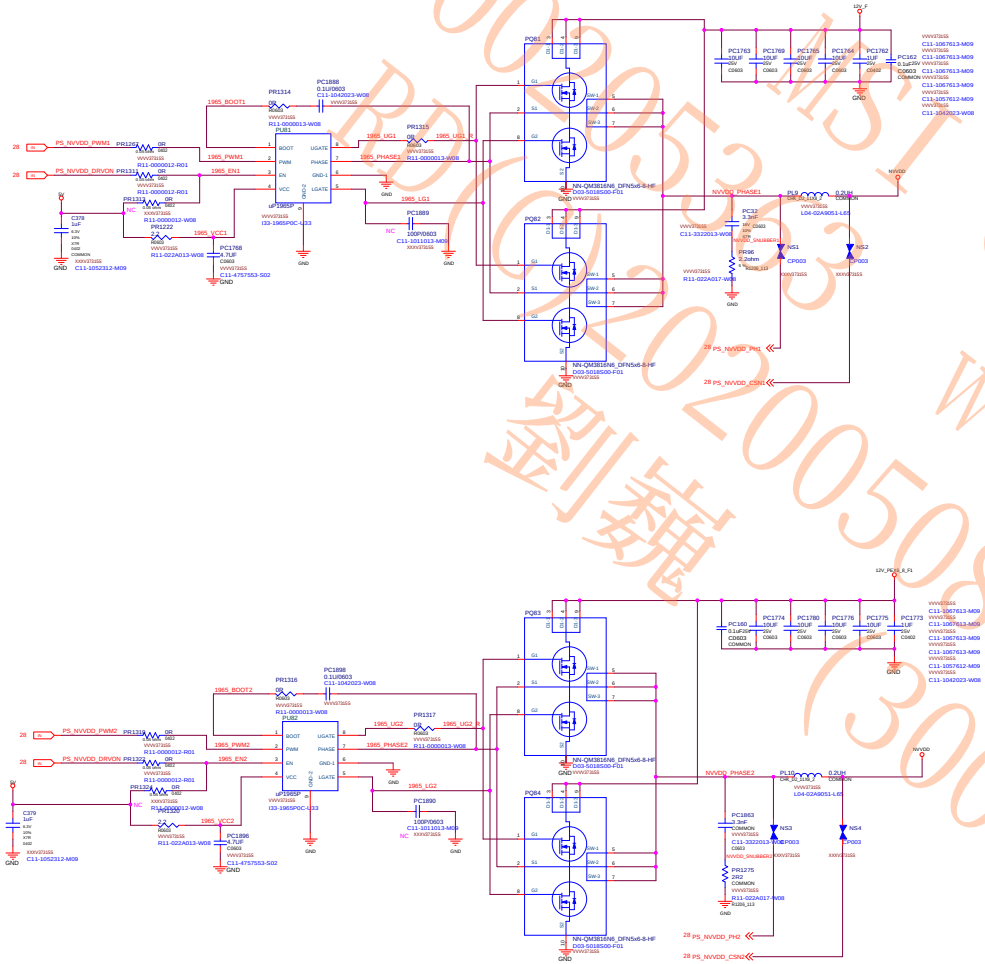
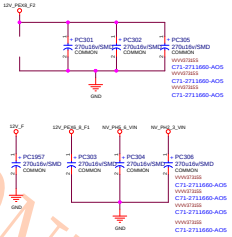
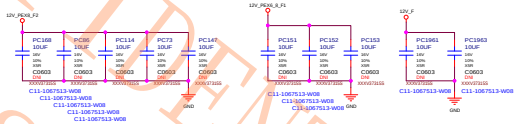


EXT_12V Input CAP



Backup



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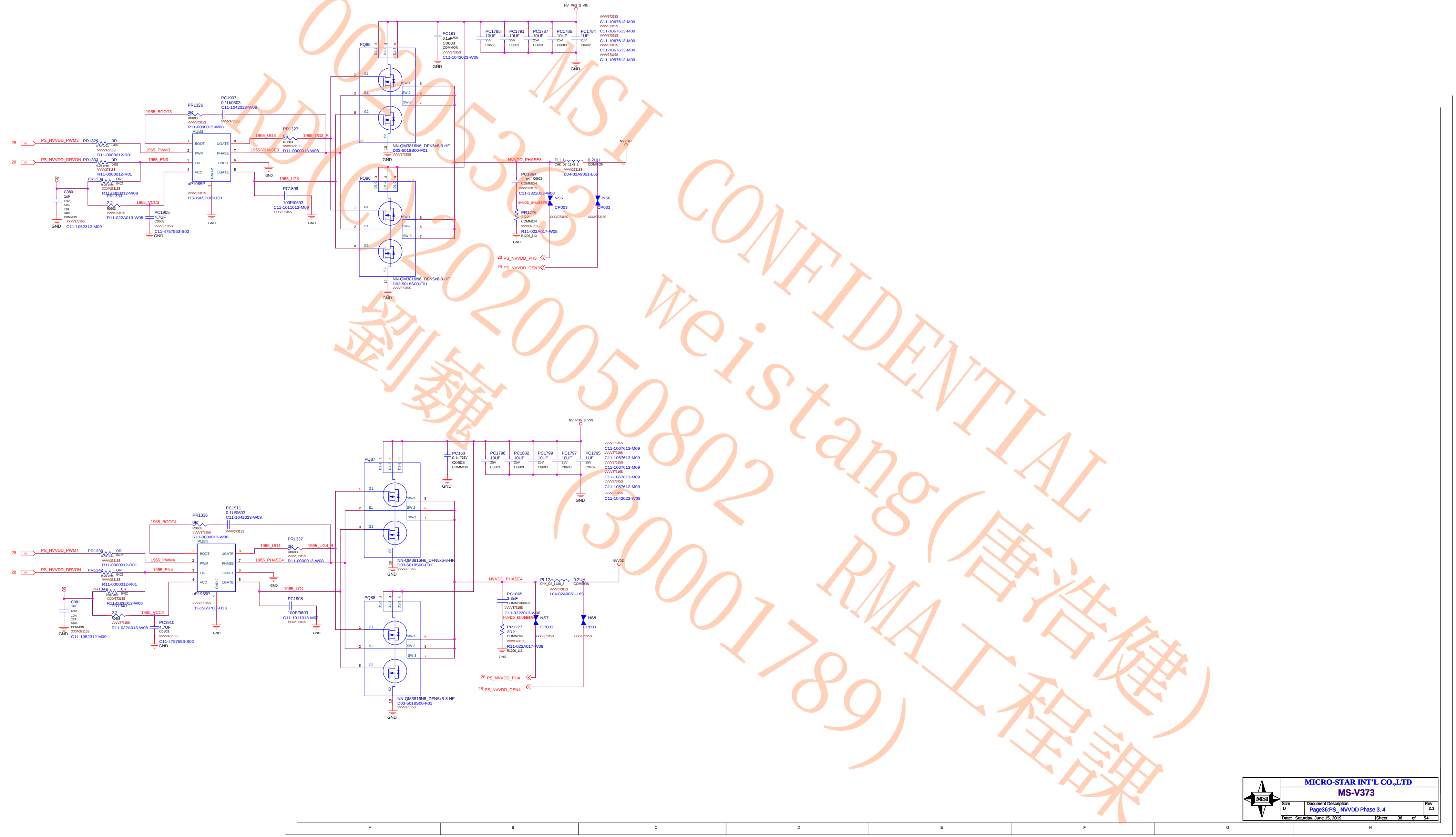
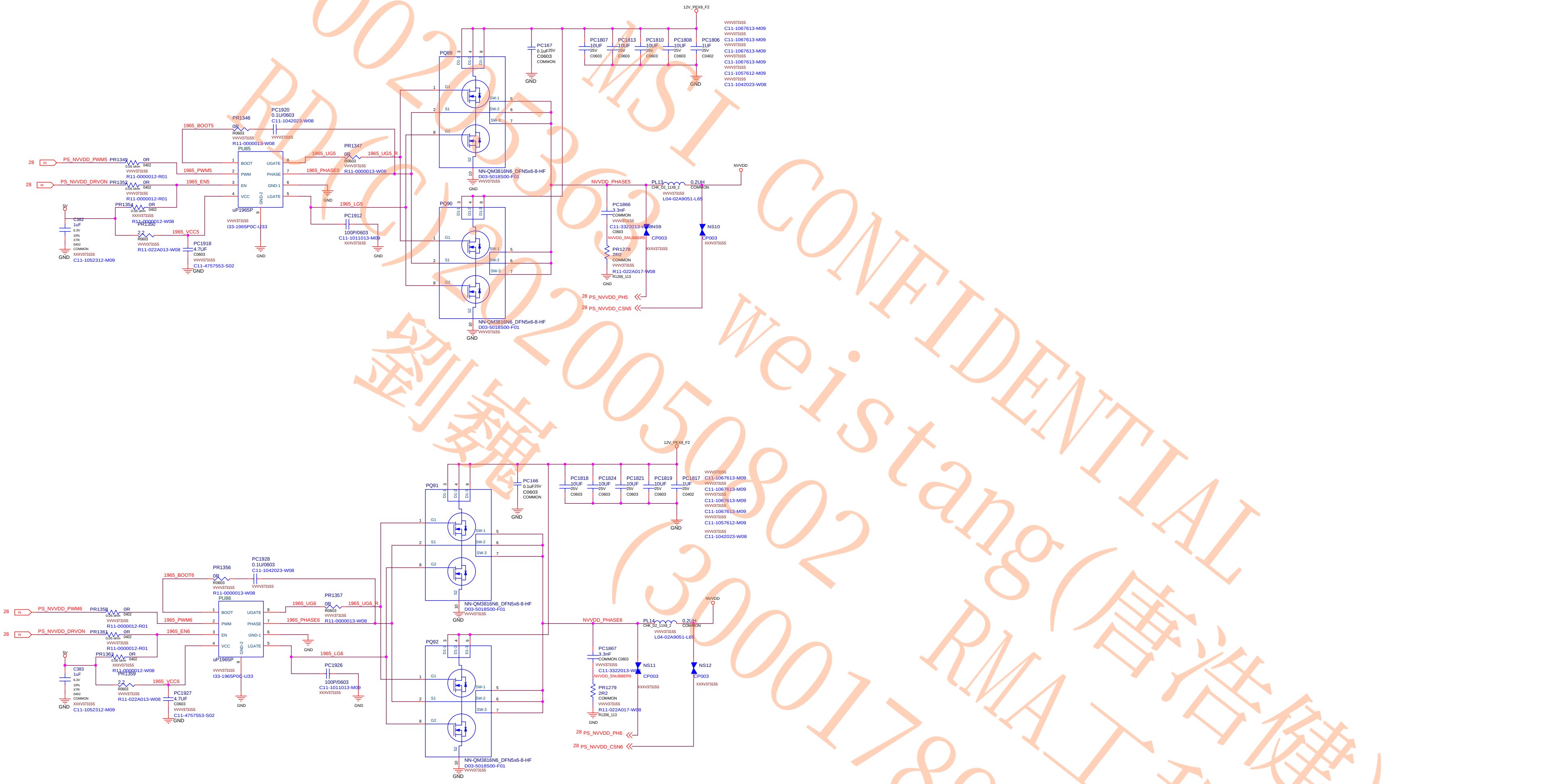
PAGE 36: PS: NVVDD Phase 3, 4



PAGE 37: PS: NVVDD Phase 5, 6



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D	Page37:PS_ NVVDD Phase 5, 6	2.1

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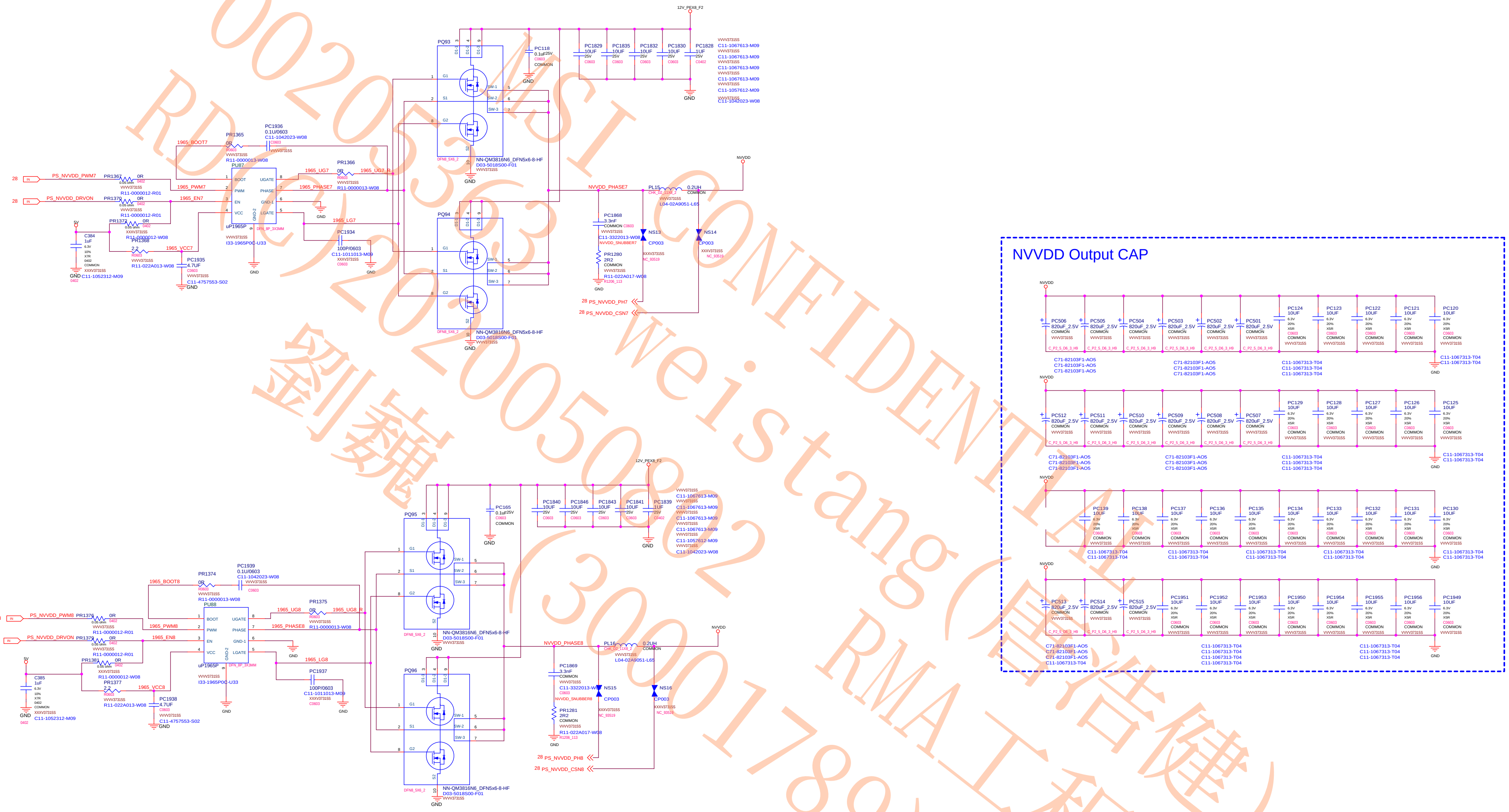
PAGE 38: PS:NVVDD Phase 7, 8



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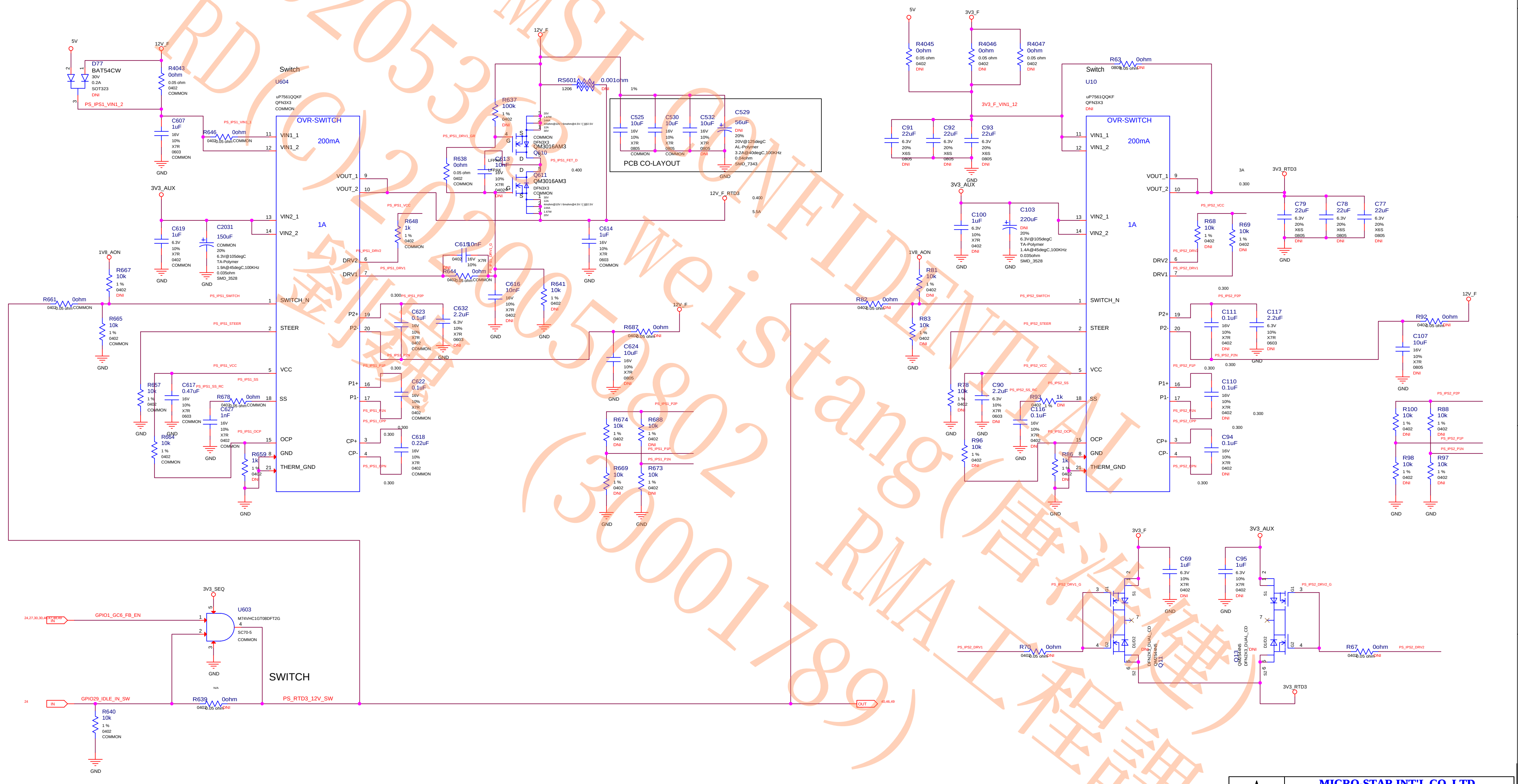
AND GATE LOGIC FOR P-BOARD

GPIO1	GPIO29	SWITCH	VOUT
0	0	0	12V_F
0	1	0	12V_F
1	0	0	12V_F
1	1	1	3V3A

AND GATE LOGIC FOR P-BOARD

GPIO1	GPIO29	SWITCH	VOUT
0	0	0	3V3
0	1	0	3V3
1	0	0	3V3
1	1	1	3V3A



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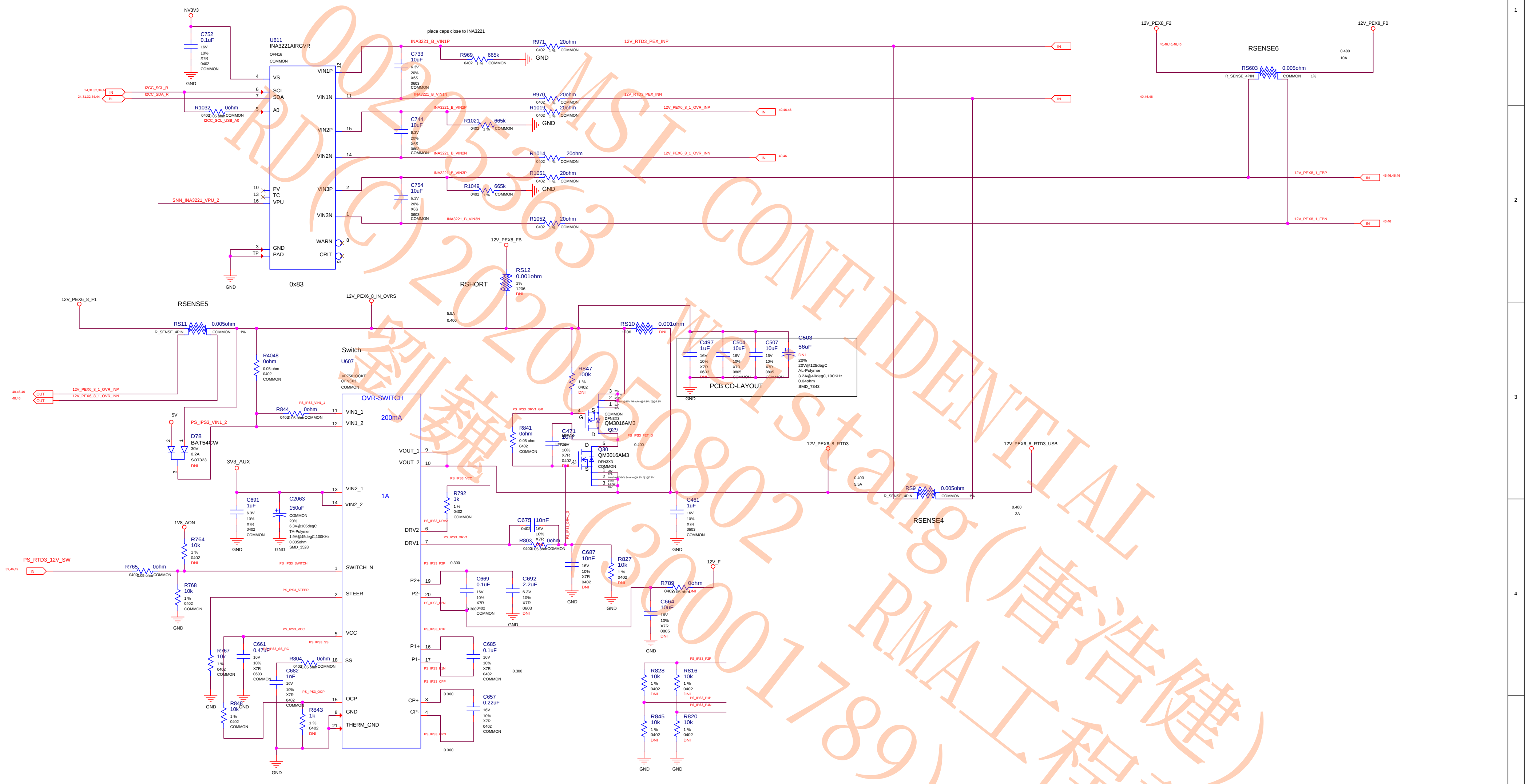
PAGE 40: PS: INPUT SWITCH RTD3 USB



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PAGE 41: PS: INPUT SWITCH Rail Balance

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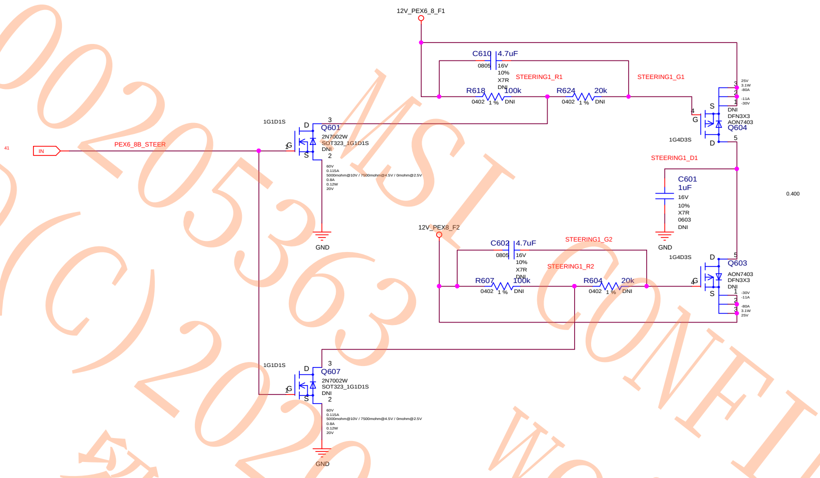
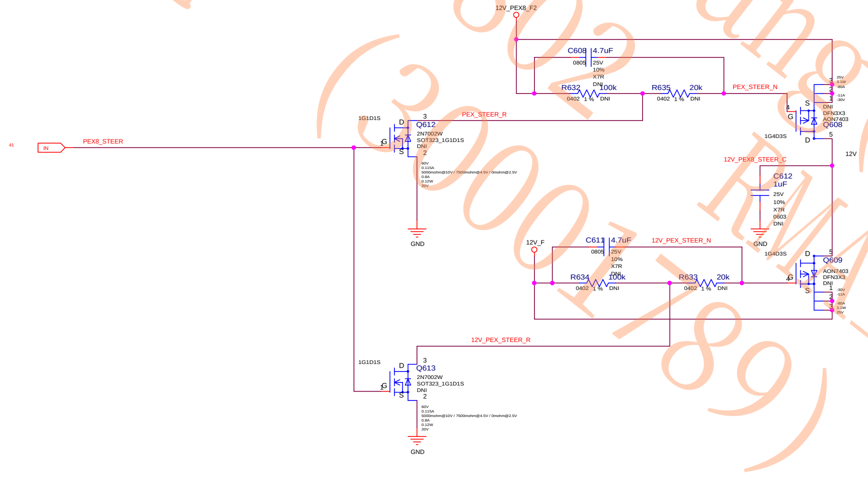
12V CURRENT STEERING (UNDER POWER BOOT):

GUIDES CURRENT FROM PEX EDGE TO PEX 6/8 PIN INPUT AREA



12V CURRENT STEERING (UNDER POWER BOOT):

GUIDES CURRENT FROM PEX EDGE TO PEX 8 PIN INPUT AREA



PAGE 43: PS: VR THERMAL PROTECTION

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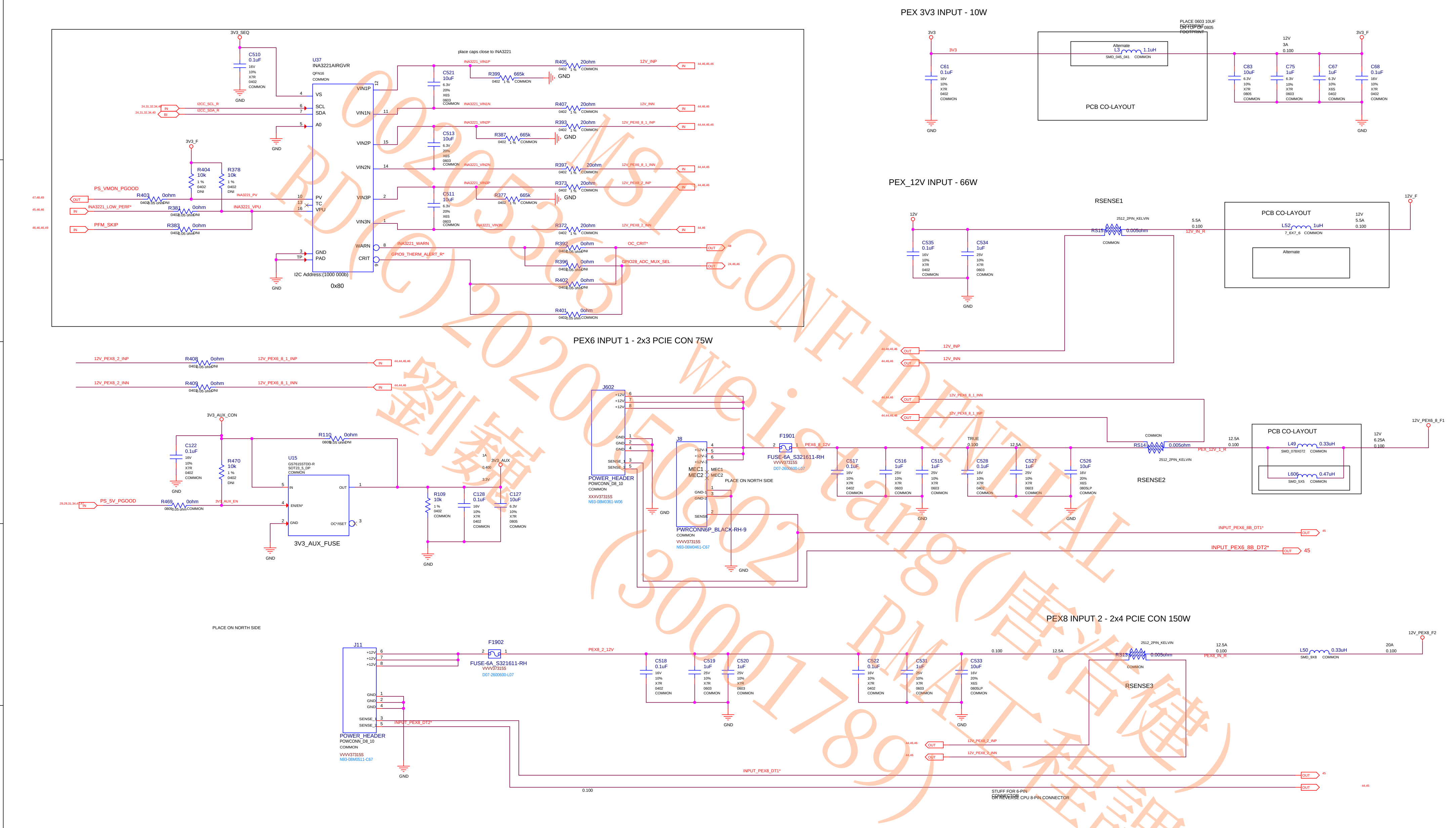
PAGE 44: PS: Inputs, Filtering, and Monitoring



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Size: Custom	Document Description: Page44:PS_ INPUTS, FILTERING AND		Rev: 2.1
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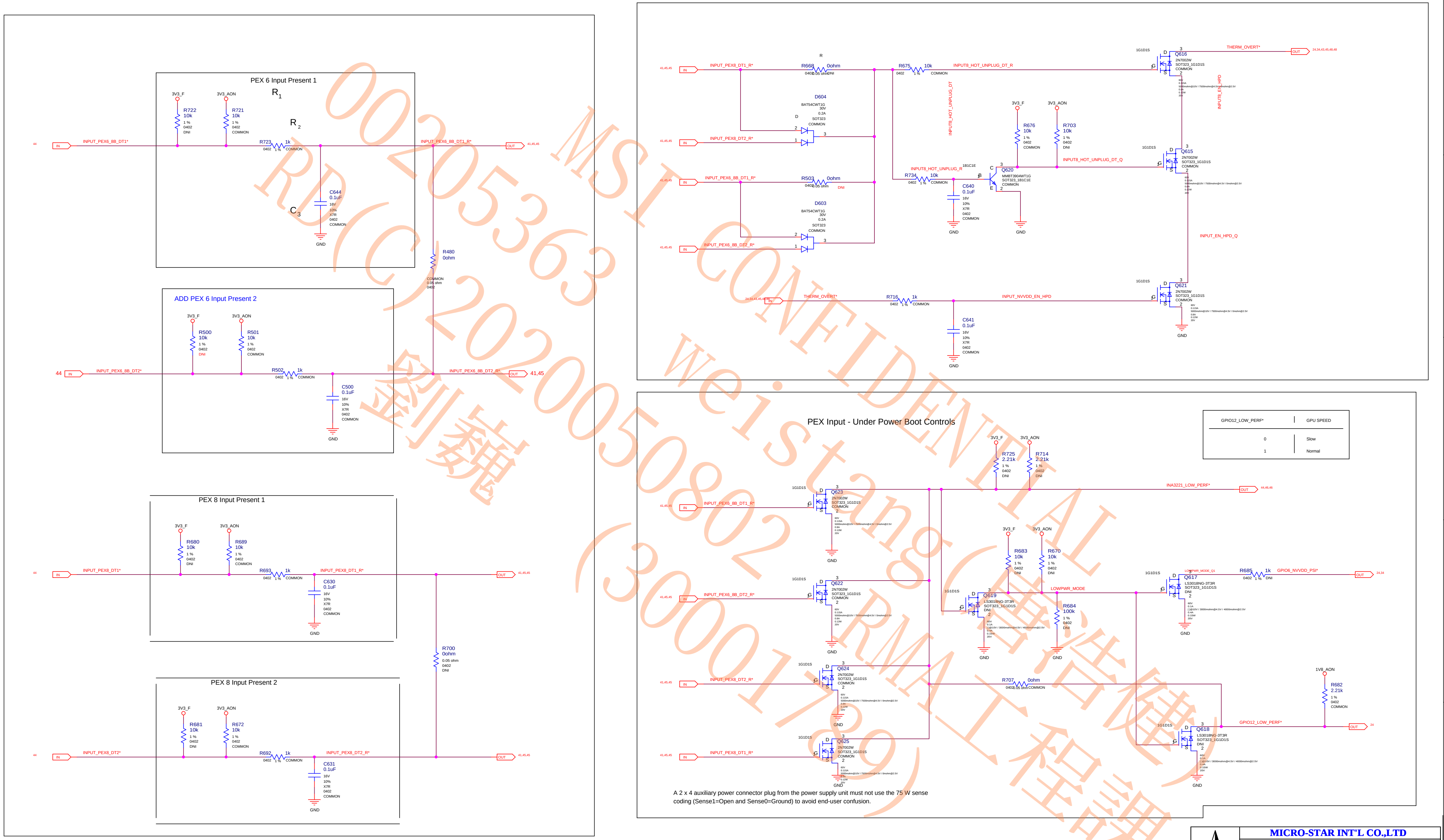
PAGE 45: PS: Current Steering, Hot Unplug Detect



GPIO12_LOW_PERF*	GPU SPEED
0	Slow
1	Normal

A 2 x 4 auxiliary power connector plug from the power supply unit must not use the 75 W sense coding (Sense1=Open and Sense0=Ground) to avoid end-user confusion.

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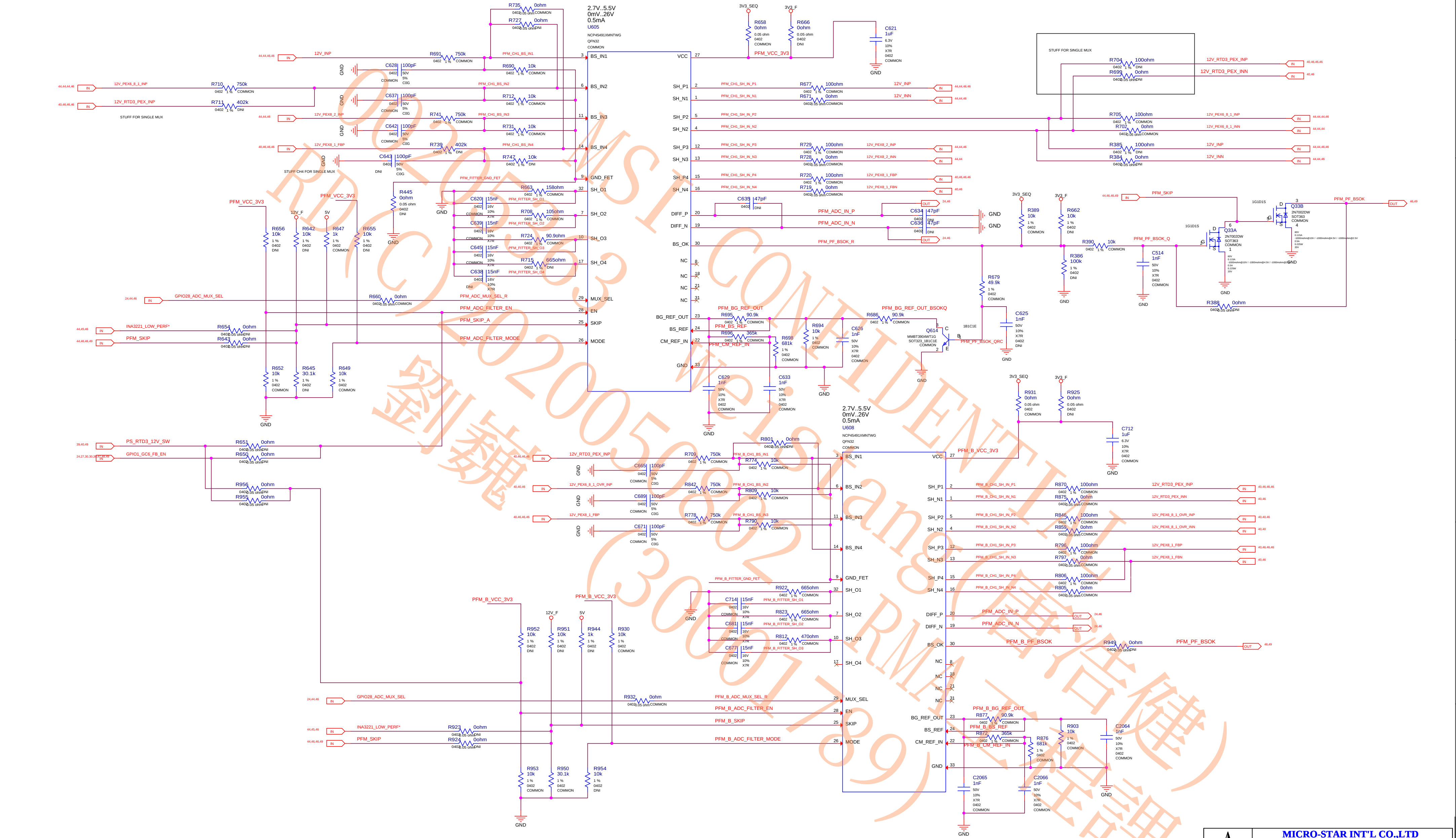
PAGE46; PS: Pre-Filter



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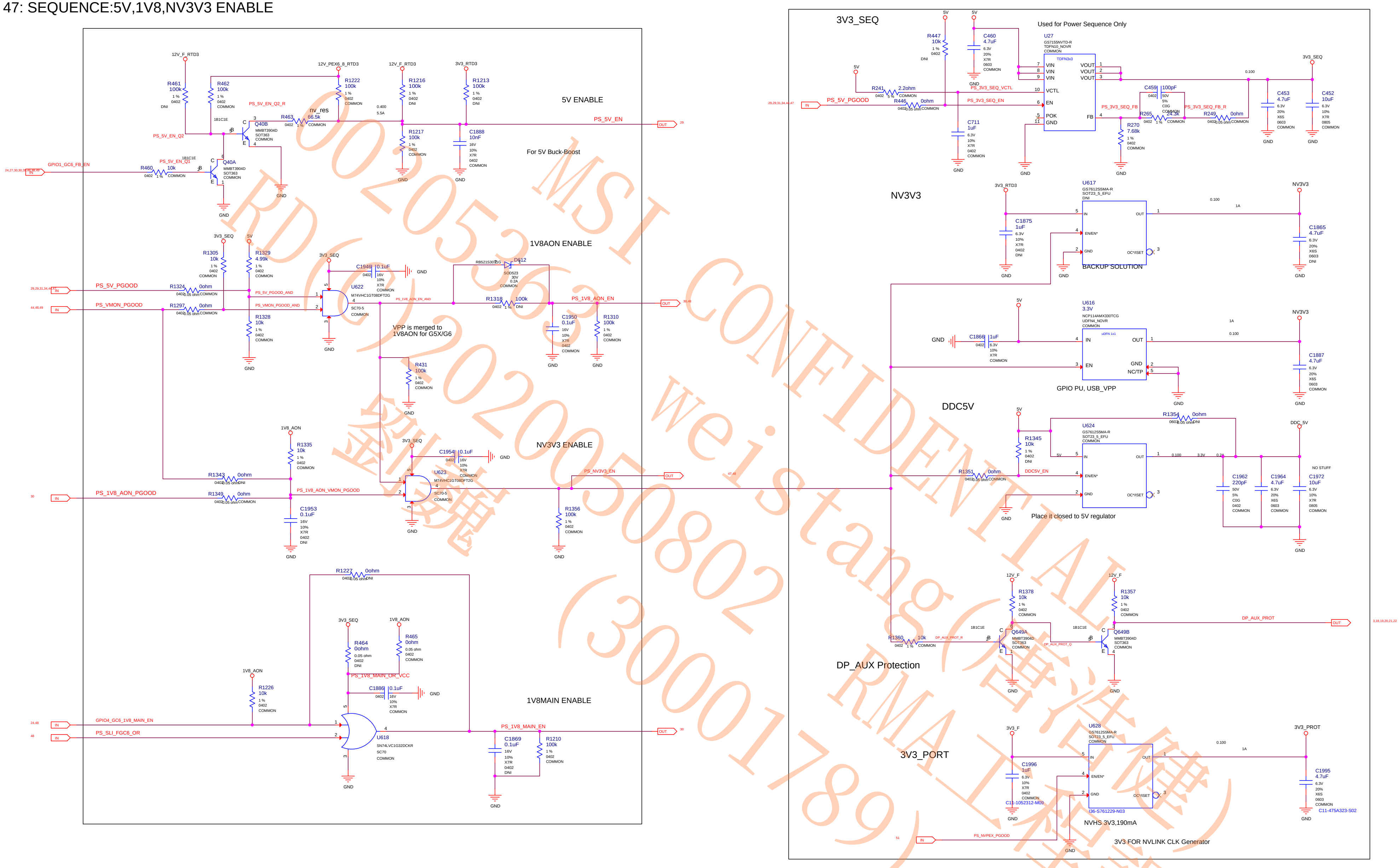
PAGE 47: SEQUENCE:5V,1V8,NV3V3 ENABLE



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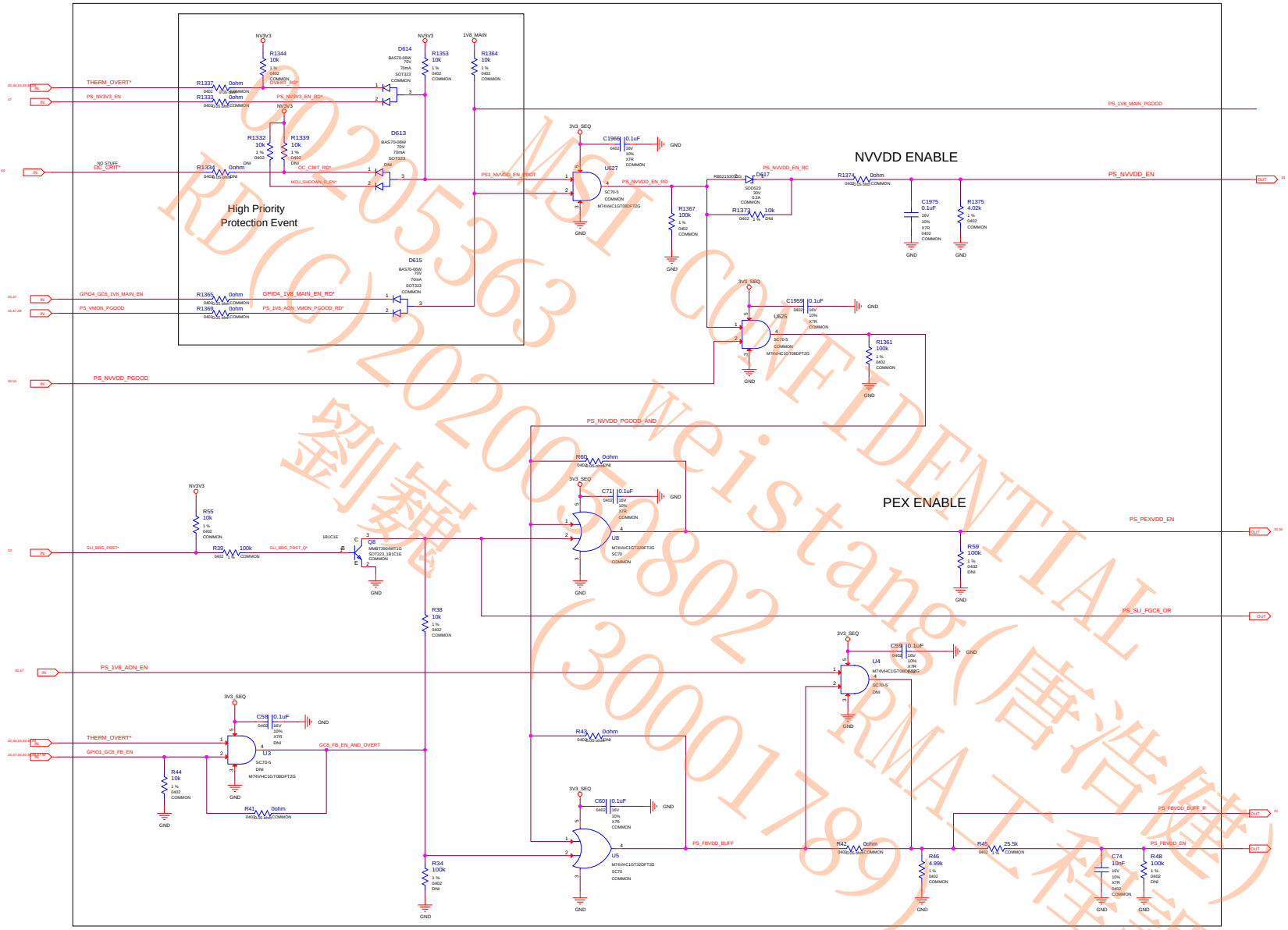
PAGE 48: SEQUENCE:NV,PEX,FB ENABLE



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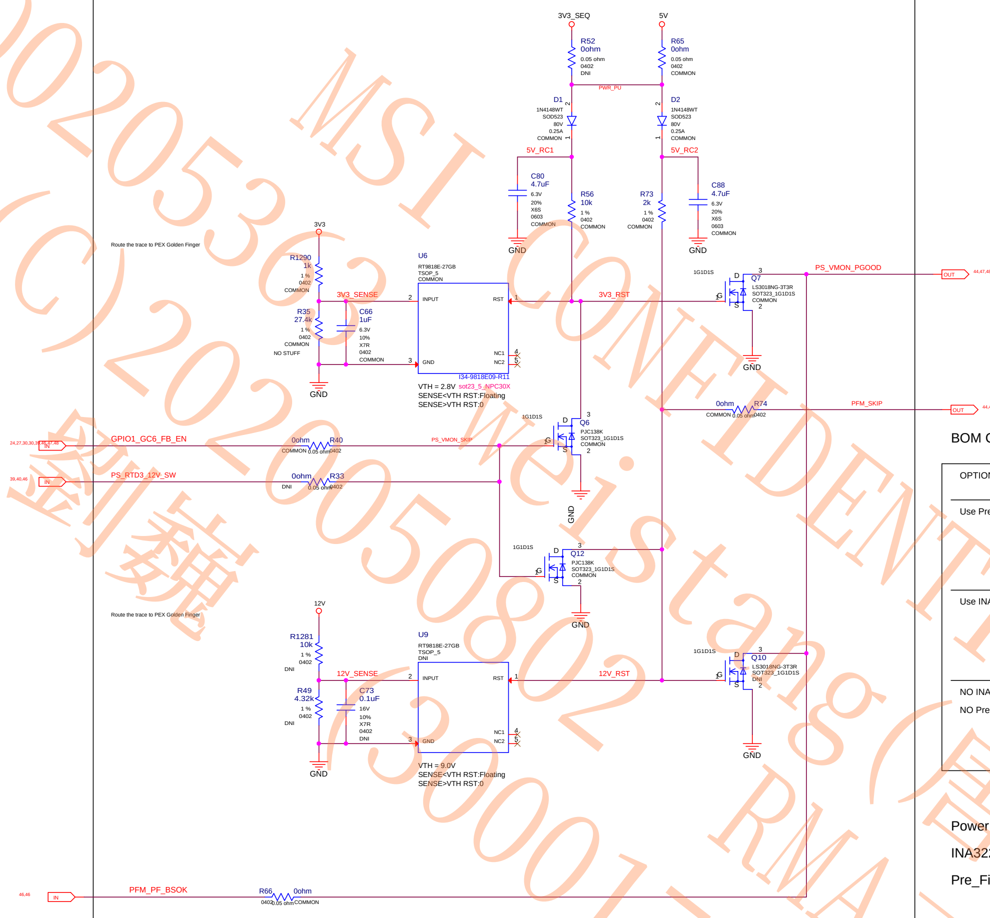
PCIE Voltage Monitor



Signal	Direction	Function
3V3	INPUT	Sense the 3V3 Voltage from PCIE golden finger
12V	INPUT	Sense the 12V Voltage from PCIE golden finger
PS_VMON_PGOOD	OPEN-DRAIN	Floating(H) once both 3V3 and 12V reach Vth
GC6_FB_EN	INPUT	Indicator for RTD3/GC6 residence,Use to Mask the VMON_PGOOD
PS_PF_SKIP	INPUT	From INA3221(VPU) or Pre-filter(SKIP)
PS_PF_BSOK	INPUT	From INA3221(PV) or Pre-filter(BS_OK)
PS_RTD3_12V_SW	INPUT	GC6_FB_EN && IDLE_IN_SW

BOM Configuration

OPTIONS	PEX3V3_SENSE	PEX12V_SENSE	OTHER_12V_SENSE
Use Pre-Filter	Pre-Filter NO STUFF U12 NO STUFF Q3,Q5 NO STUFF D15	Pre-Filter NO STUFF U13 NO STUFF Q4	Pre-Filter
Use INA3221	Voltage_Monitor	INA3221 NO STUFF U12 NO STUFF Q4	INA3221
NO INA3221 NO Pre-Filter	Voltage_Monitor	Voltage_Monitor	N/A

Power Supply

INA3221:3V3_SEQ

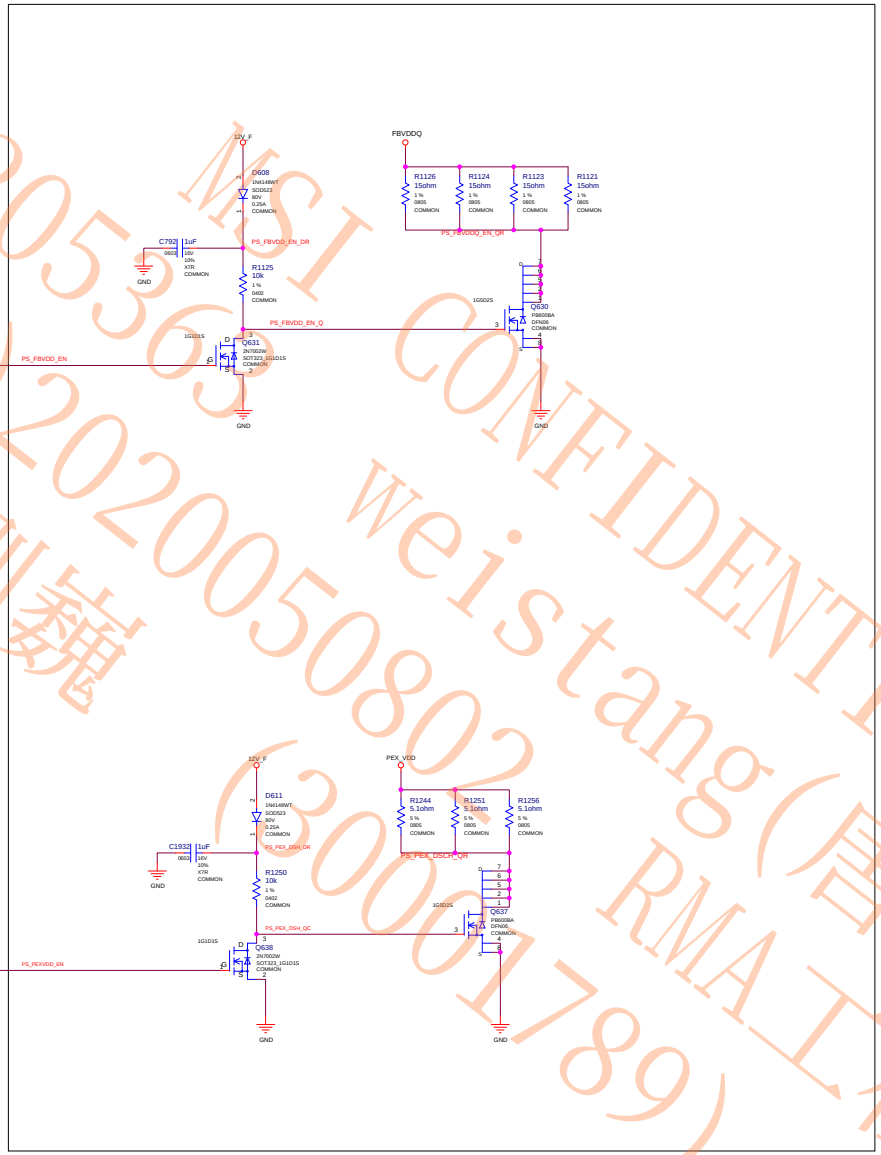
Pre_Filter(ADC_MUX):3V3(PEX)

Dual Pre-Filter case:

Only use the Primary Pre-Filter to sense 3V3PEX

and All Input 12Vs

PAGE 50: SEQUENCE:DISCHARGE



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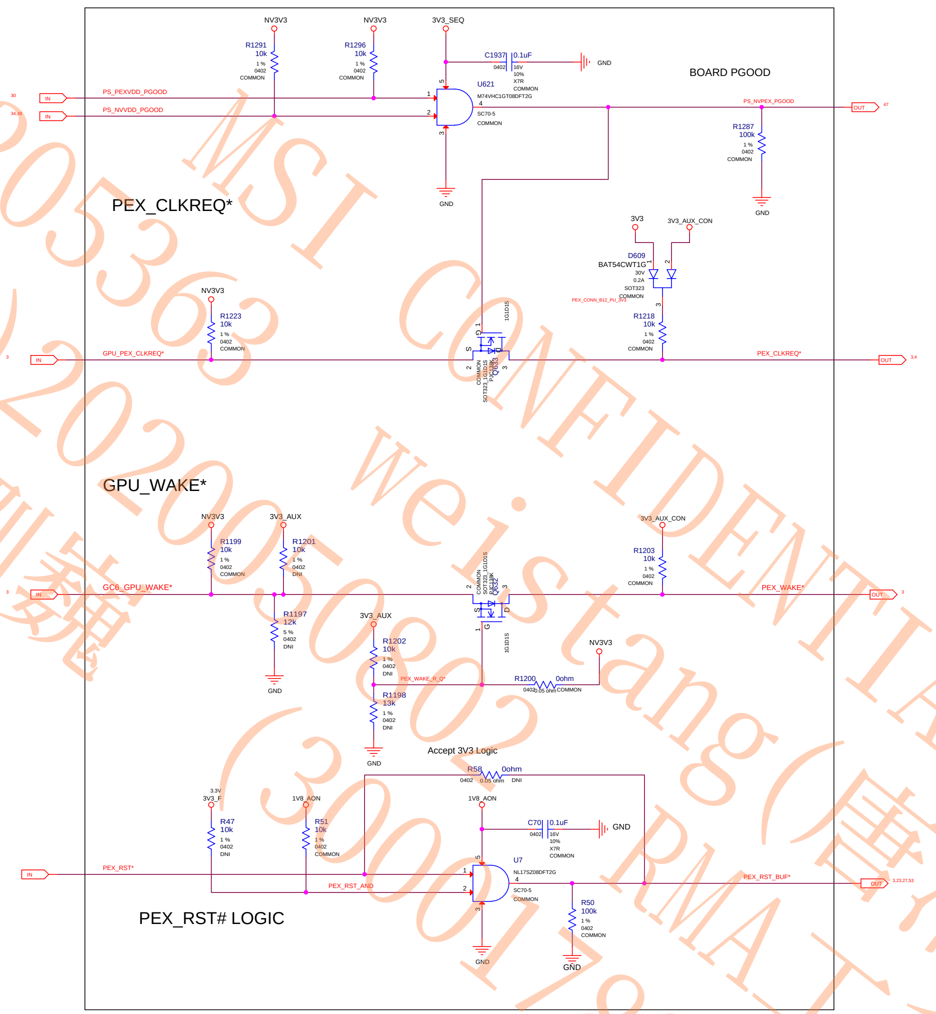

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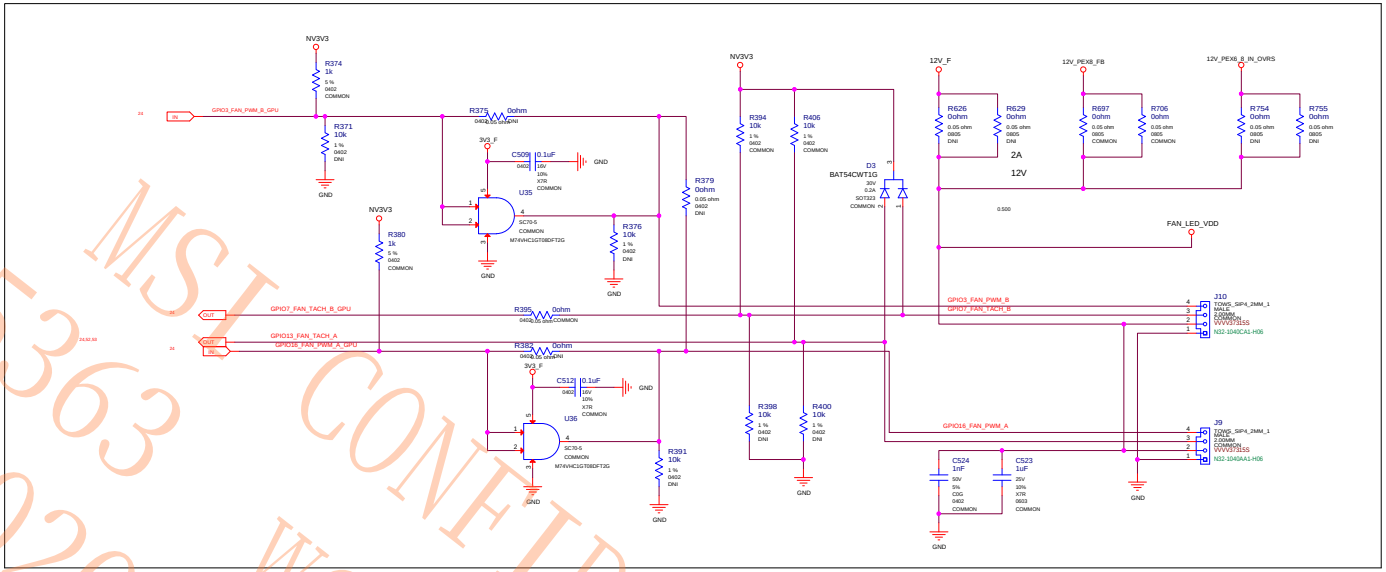
PAGE 52: LED & FAN HEADERS



LED BOOST

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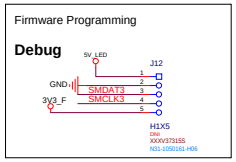

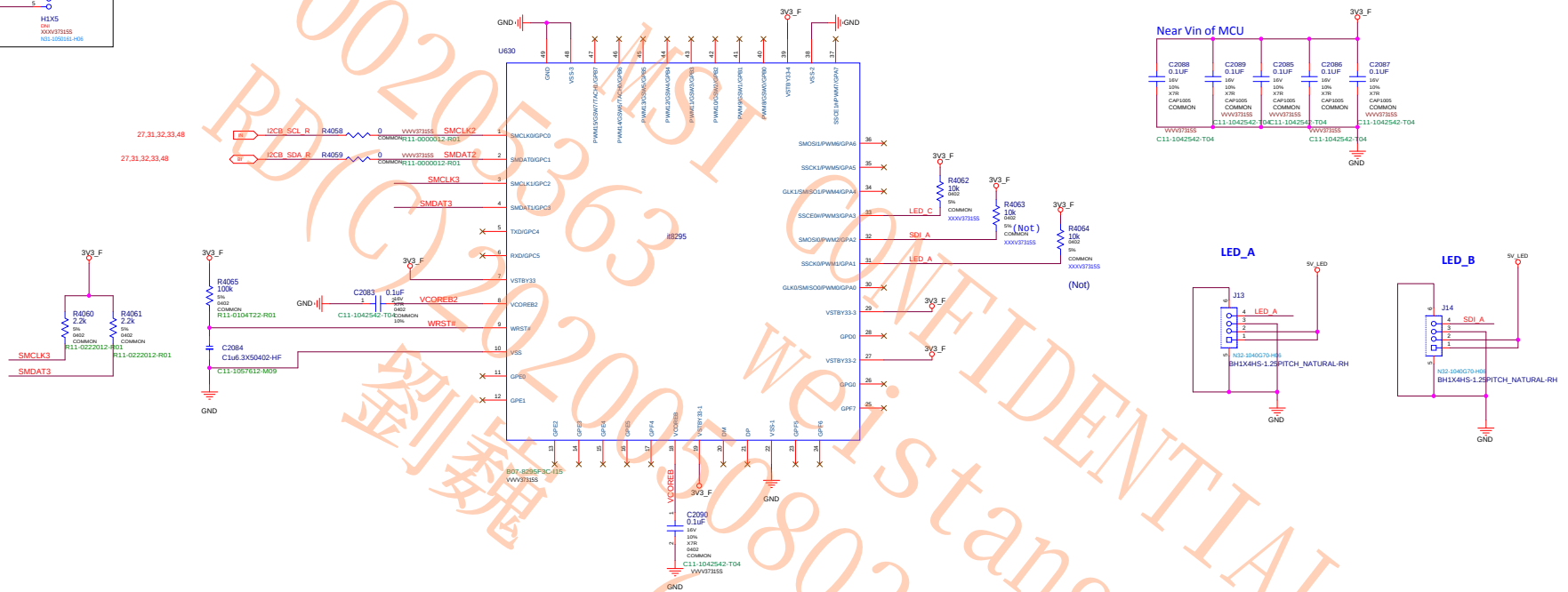

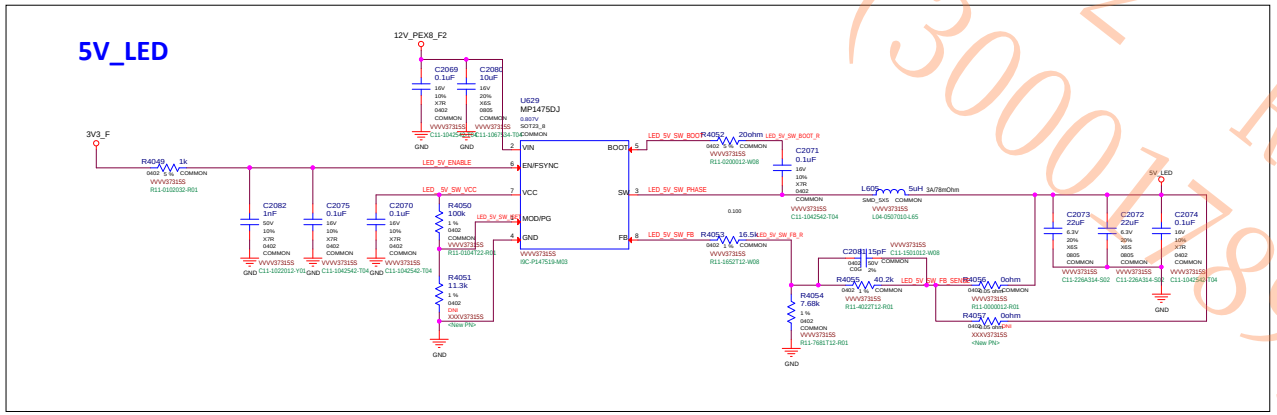

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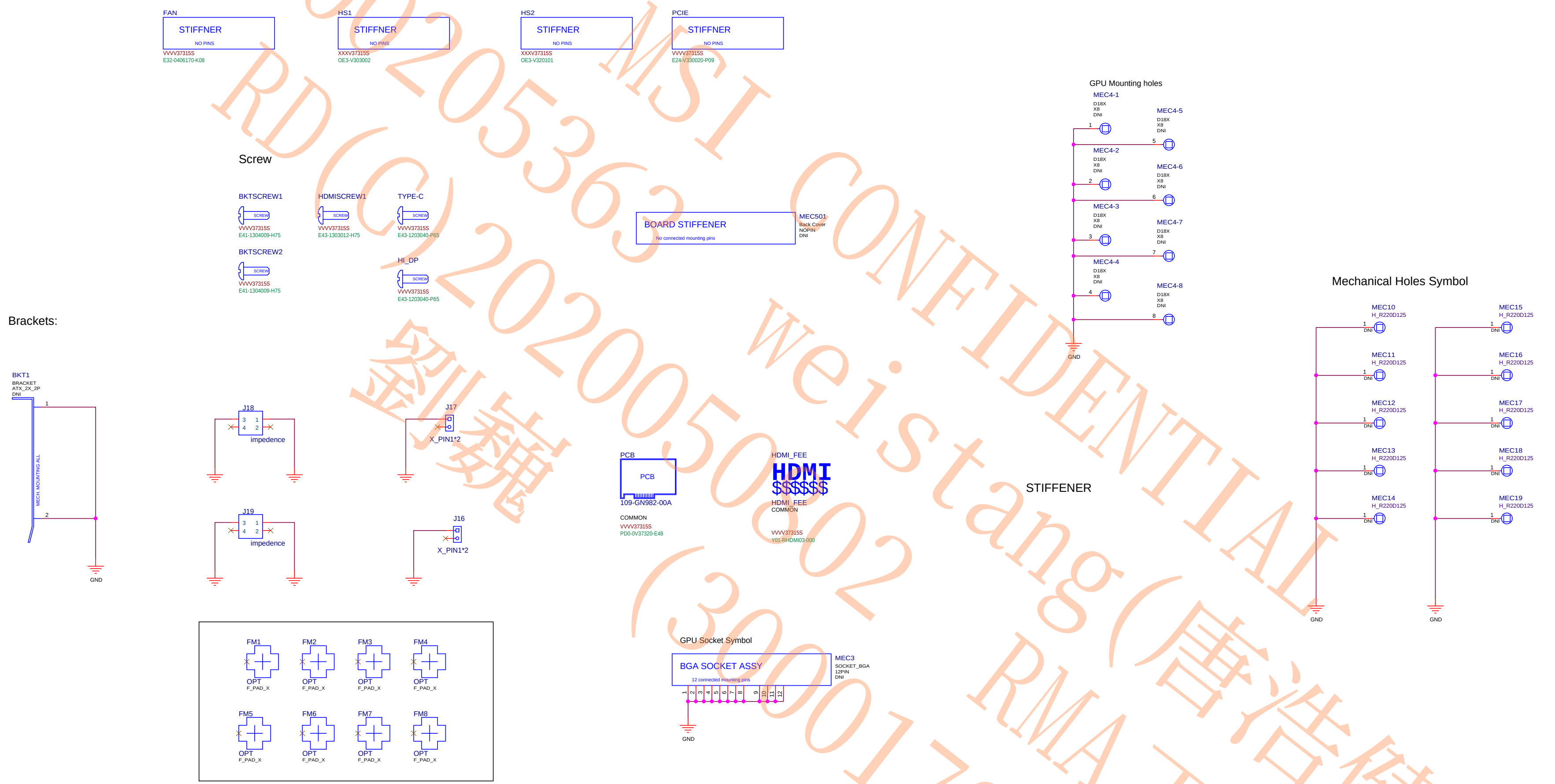
PAGE 54:MECHANICAL;BRACKET/THERMAL SOLUTION



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