

PG150-C03

384b GDDR6 x16

TALL DP + DP + DP + HDMI/DP + USB

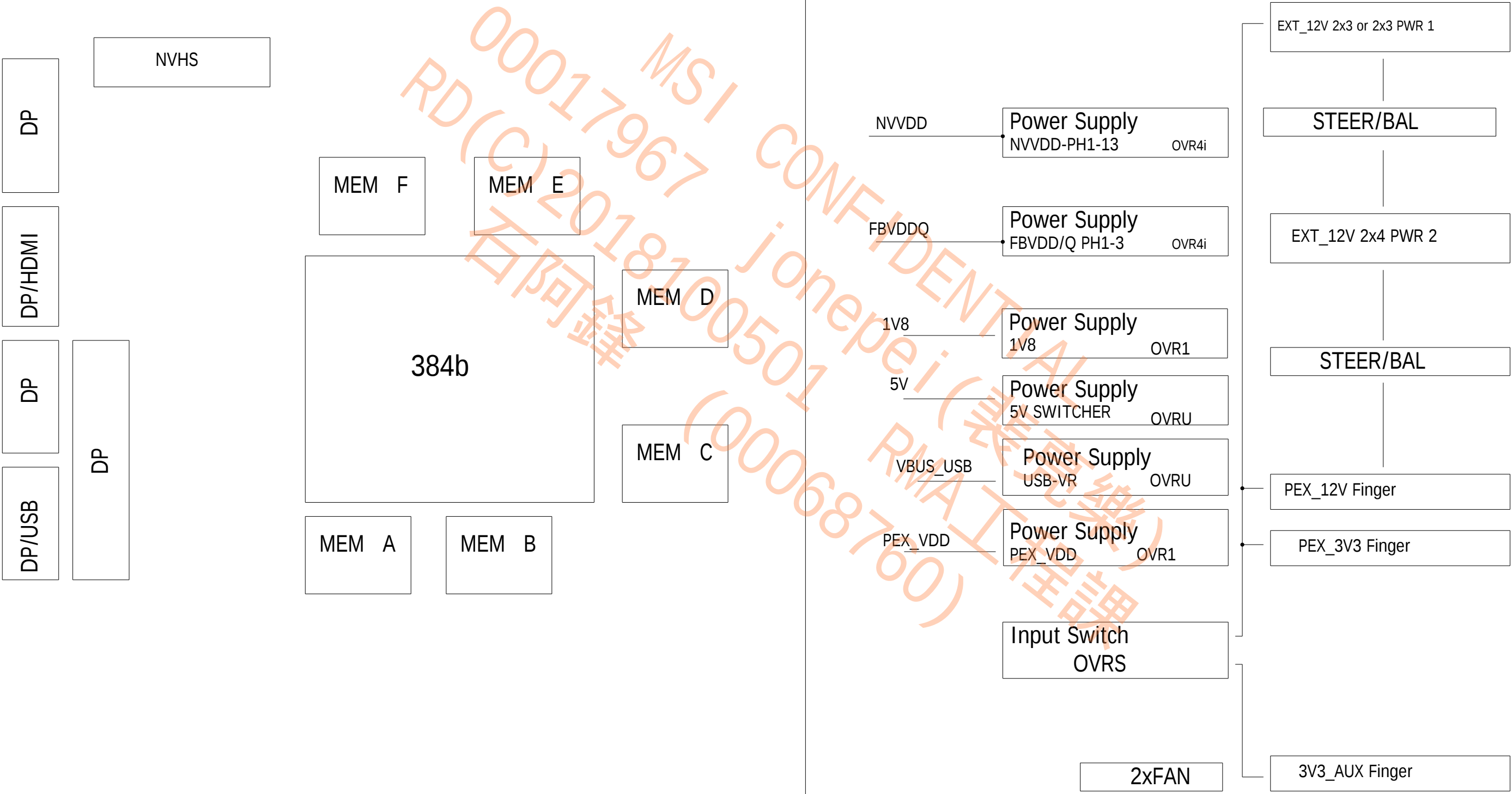
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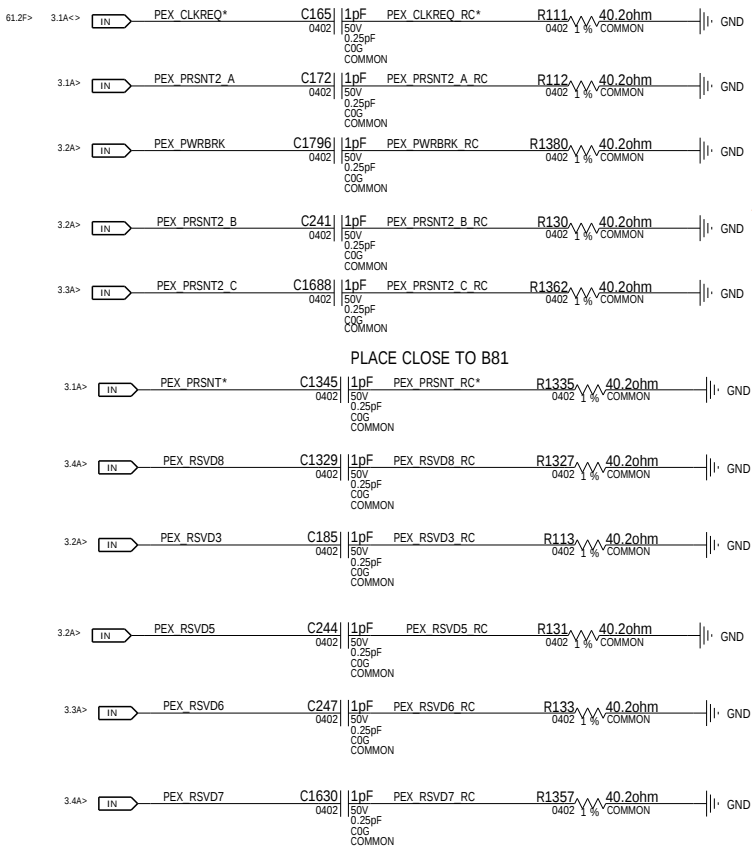
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Block Diagram



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PCI TERM



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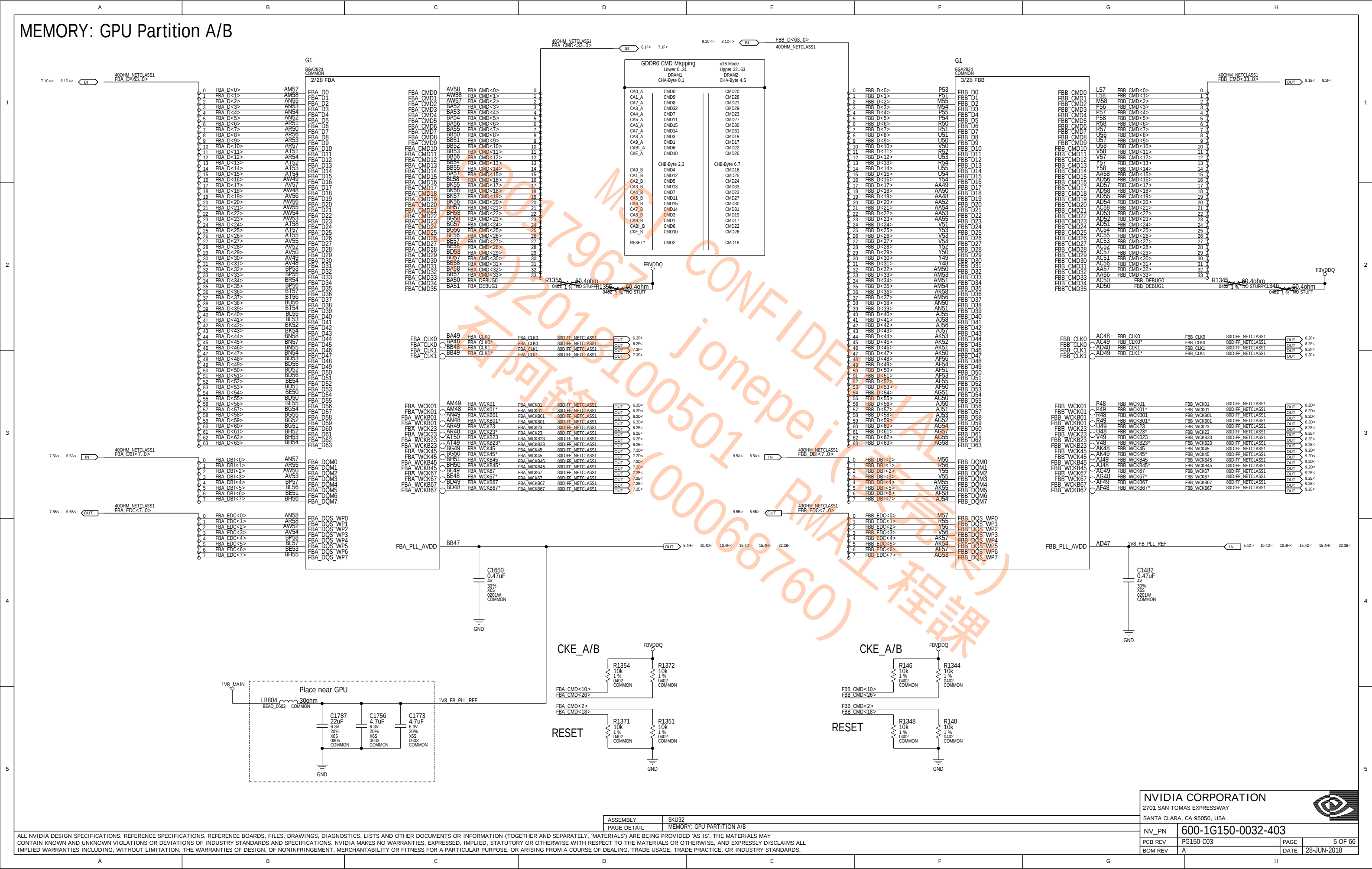
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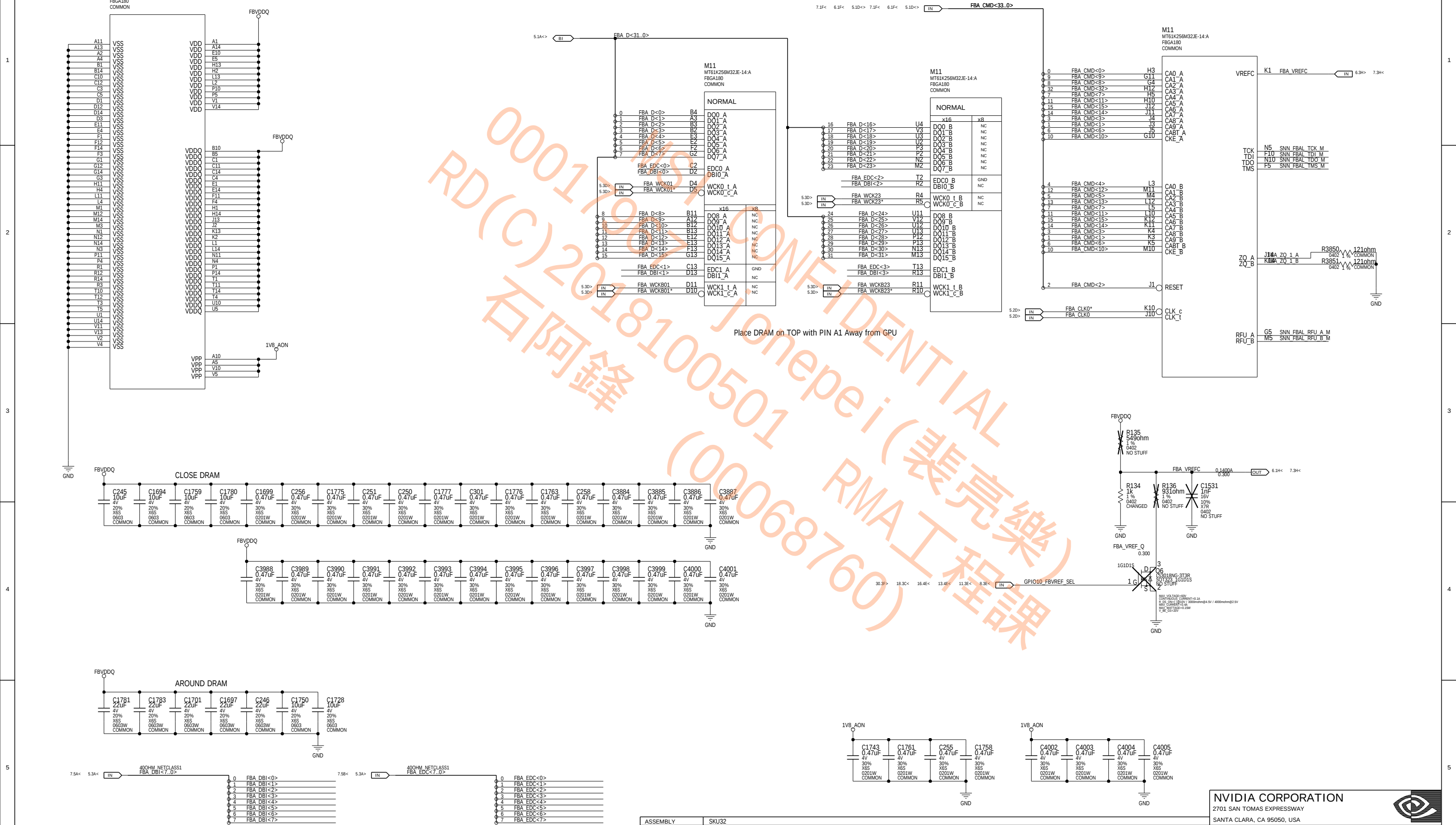
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MEMORY: GPU Partition A/B



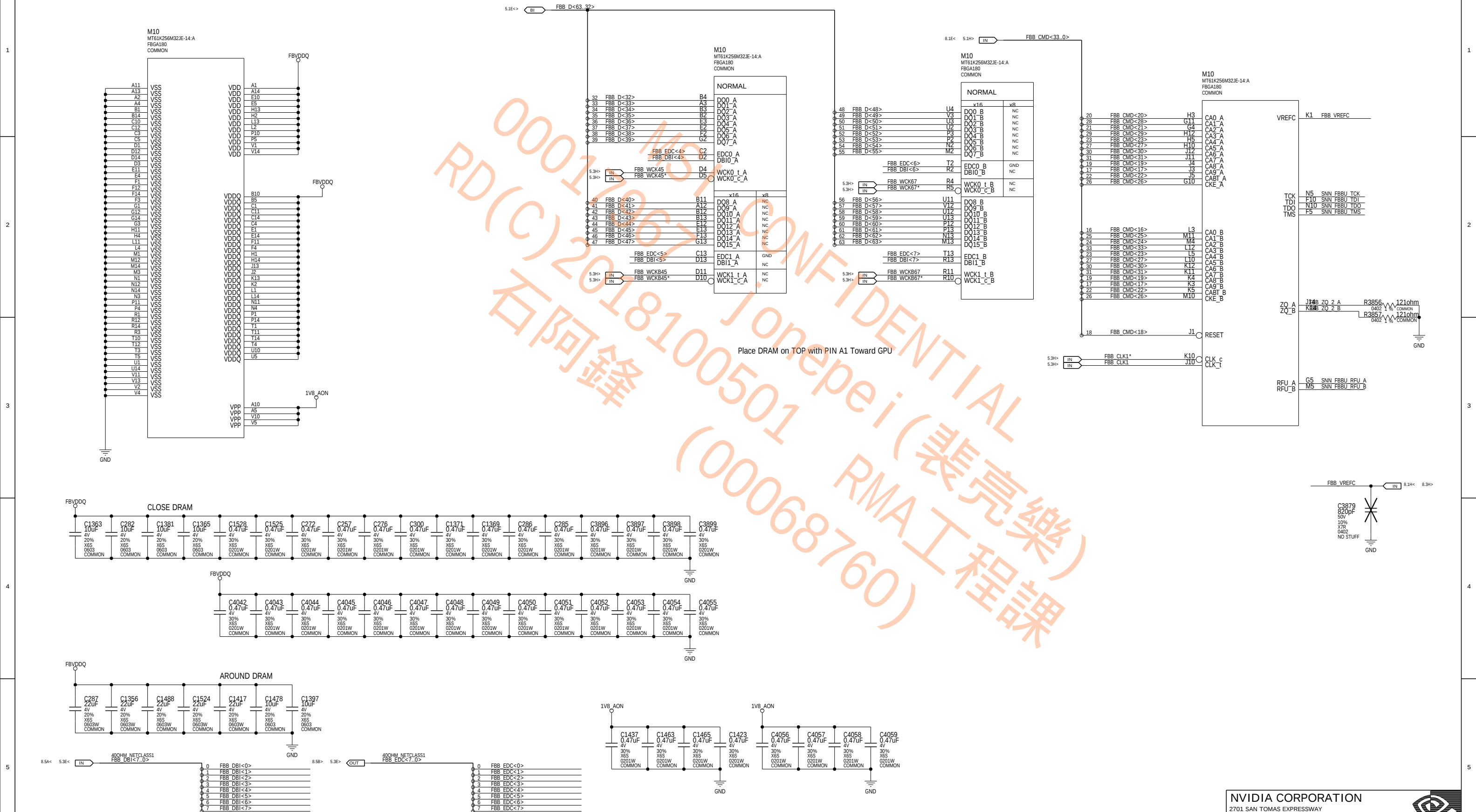
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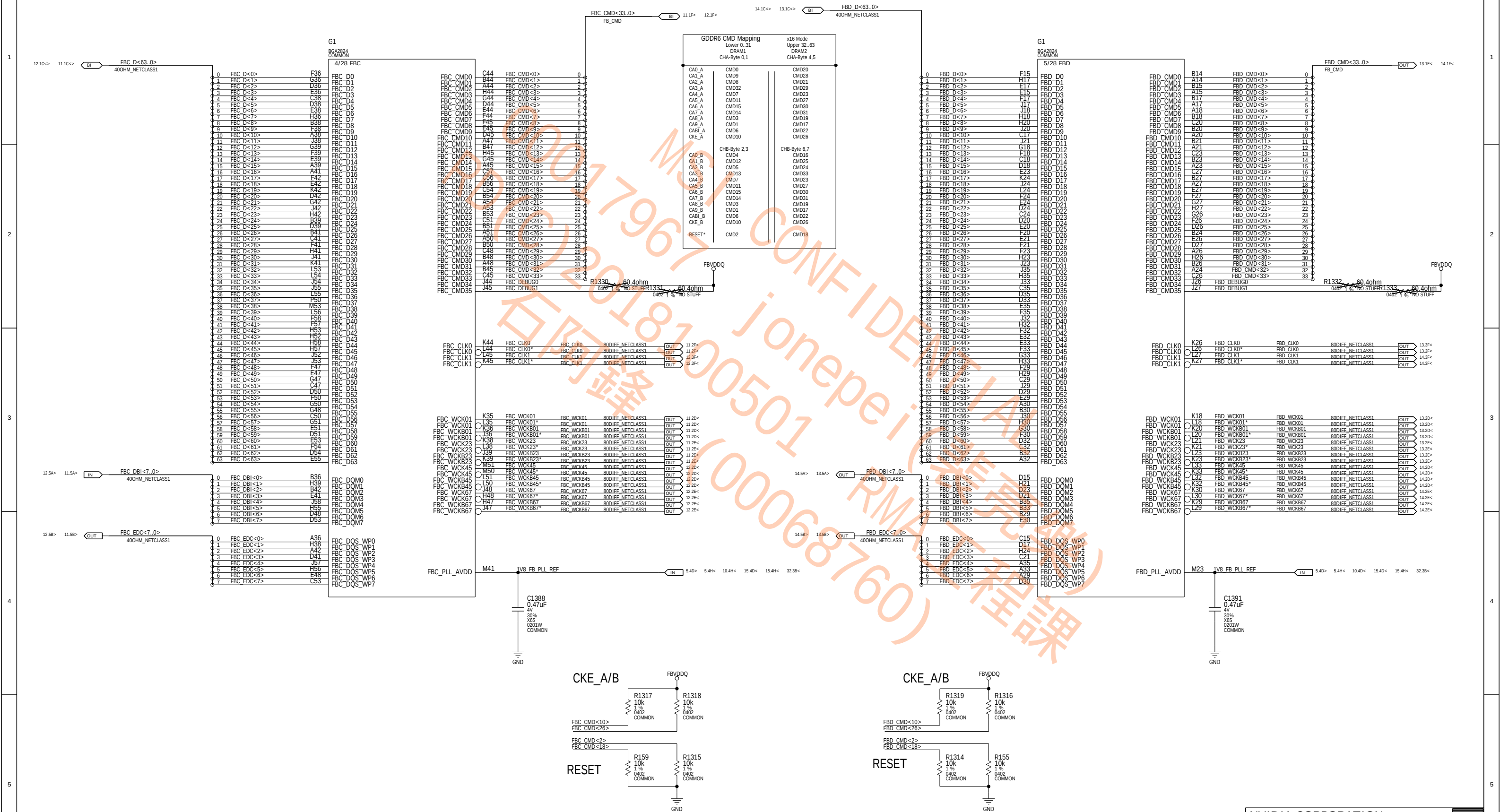
MEMORY: FBA Partition 31..0



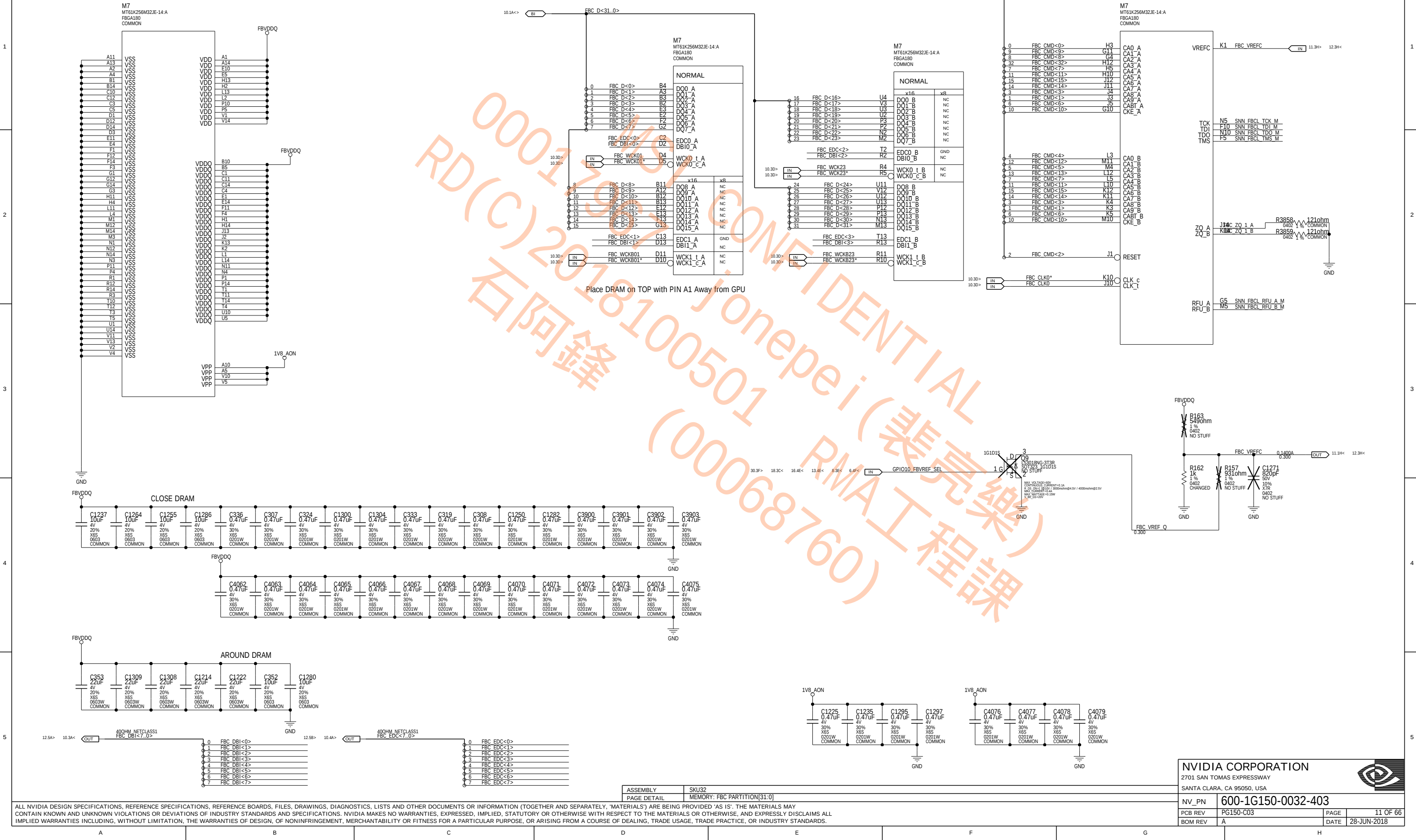
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MEMORY: FBB Partition 63..32

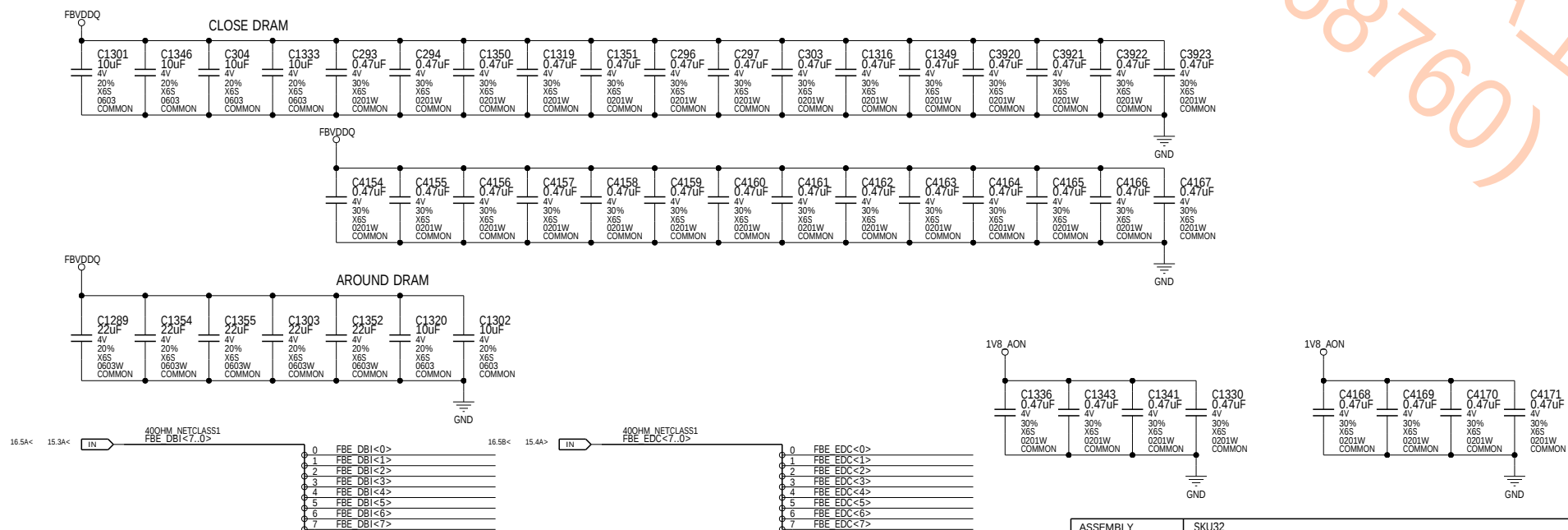
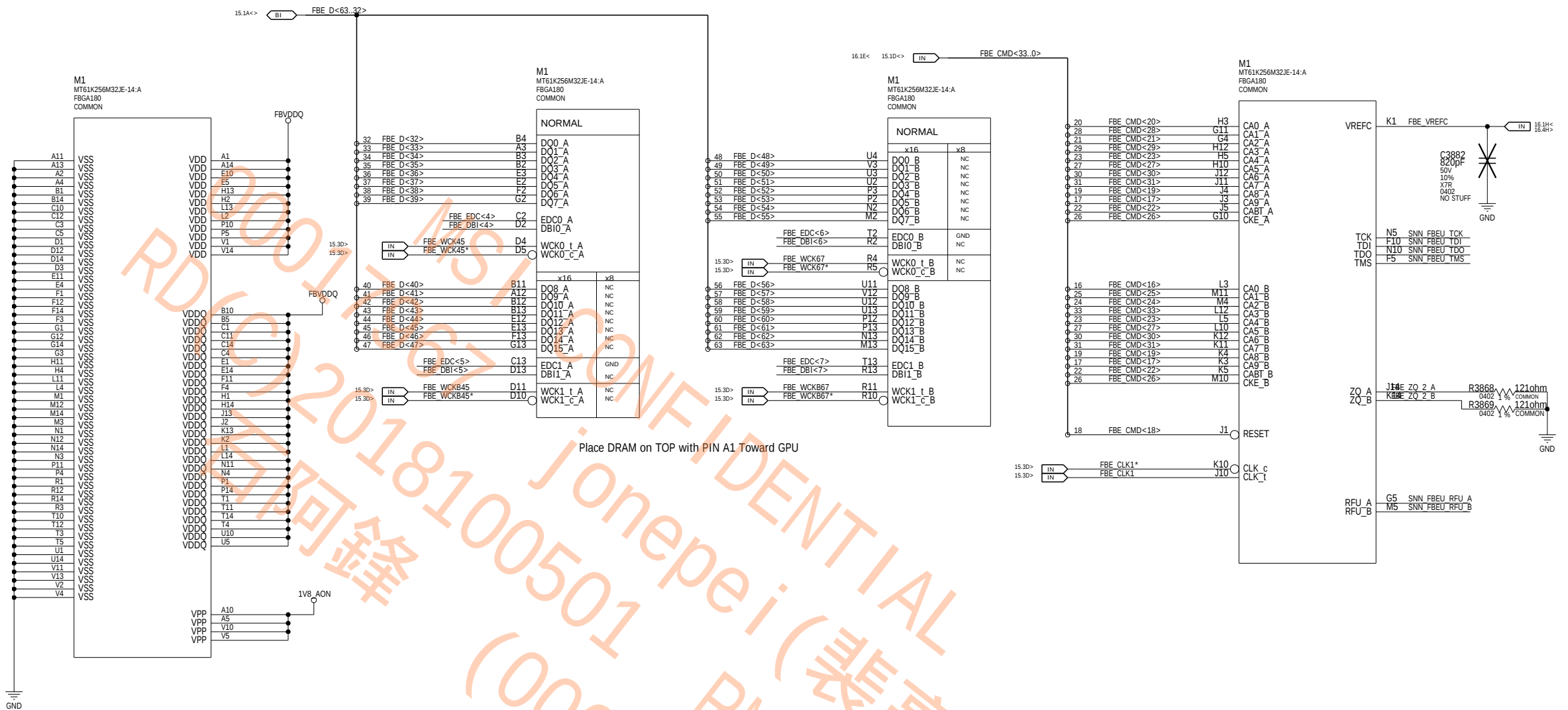




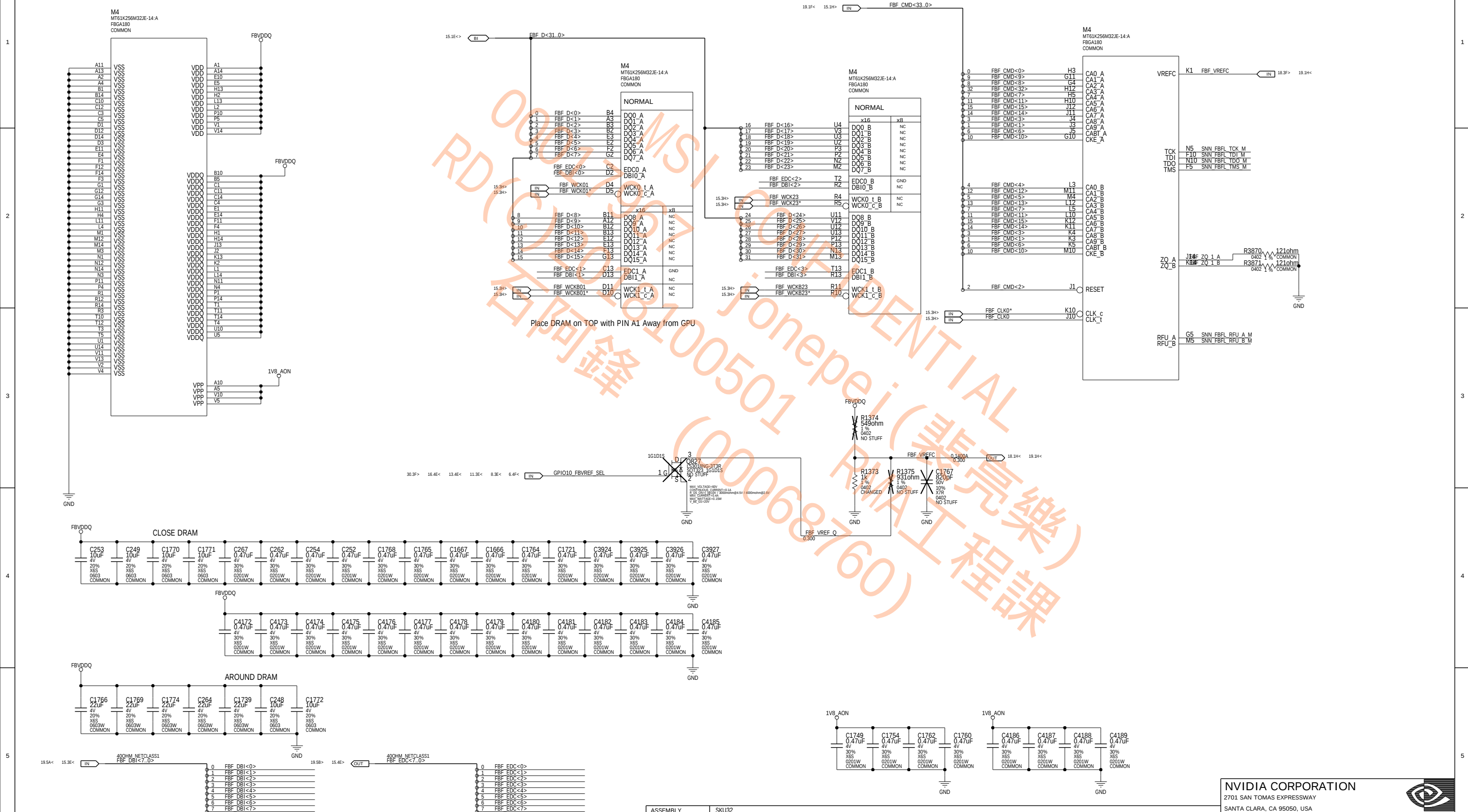
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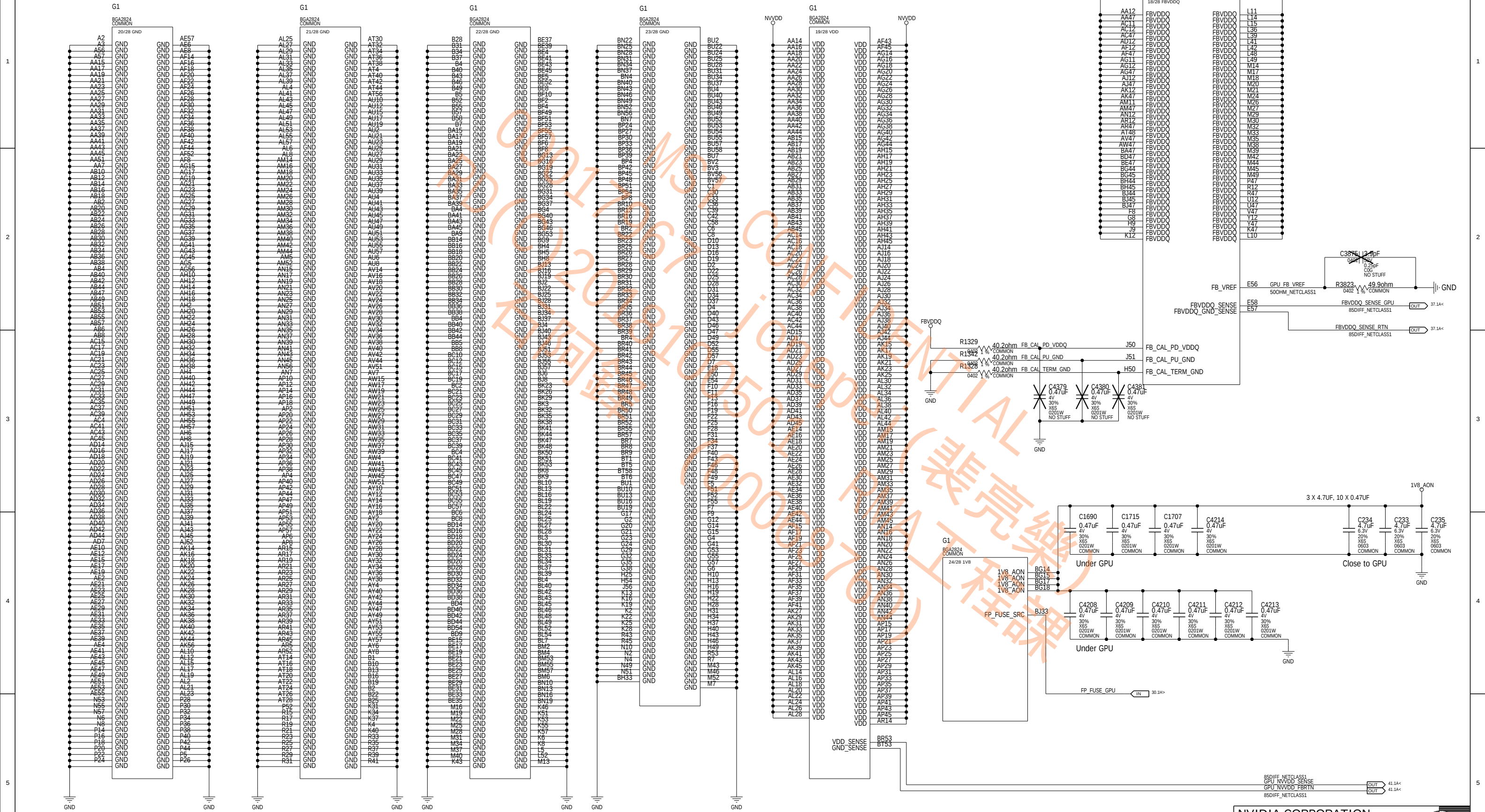
MEMORY: FBE Partition 63..32



MEMORY: FBF Partition 31..0



GPU PWR and GND



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ASSEMBLY	SKU32
PAGE DETAIL	GPU PWR AND GND

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GPU PWR GND NCs



ASSEMBLY	SKU32
PAGE DETAIL	GPU PWR, GND and NCs

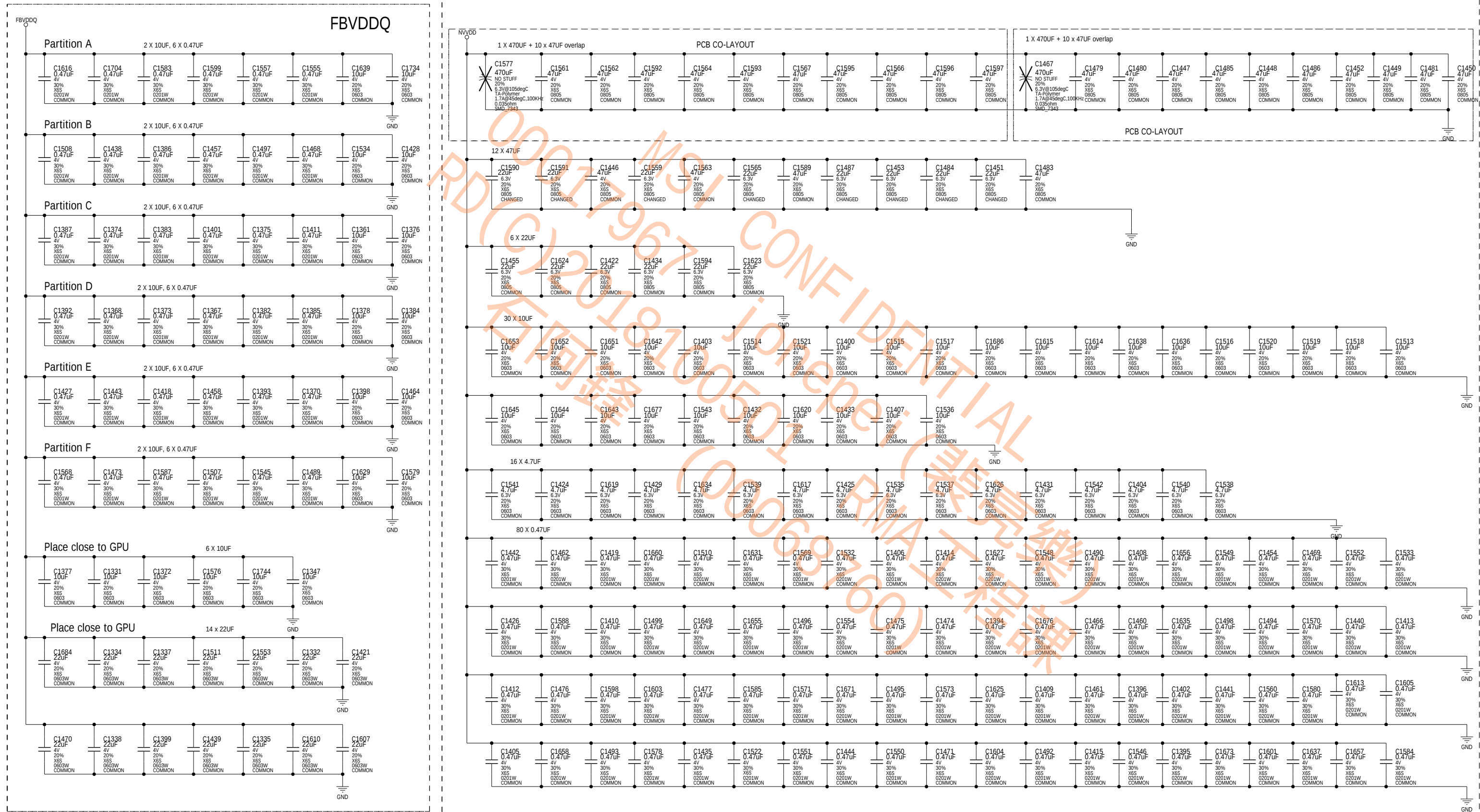
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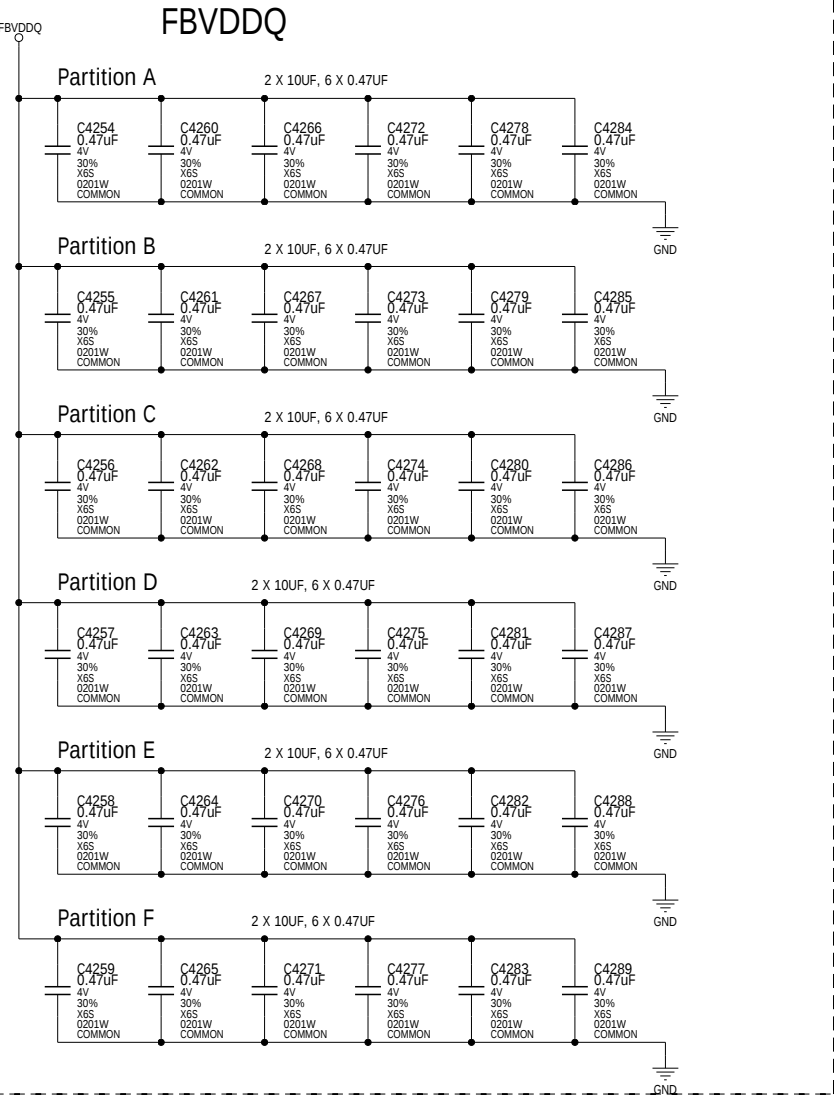
GPU Decoupling

NVVD

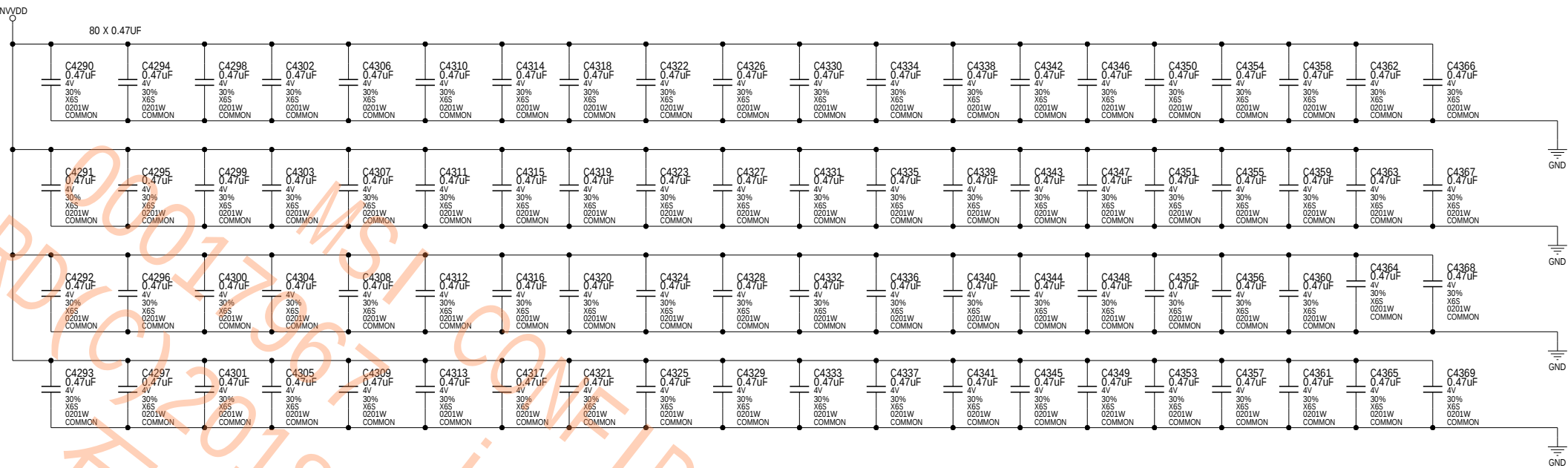


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GPU Decoupling

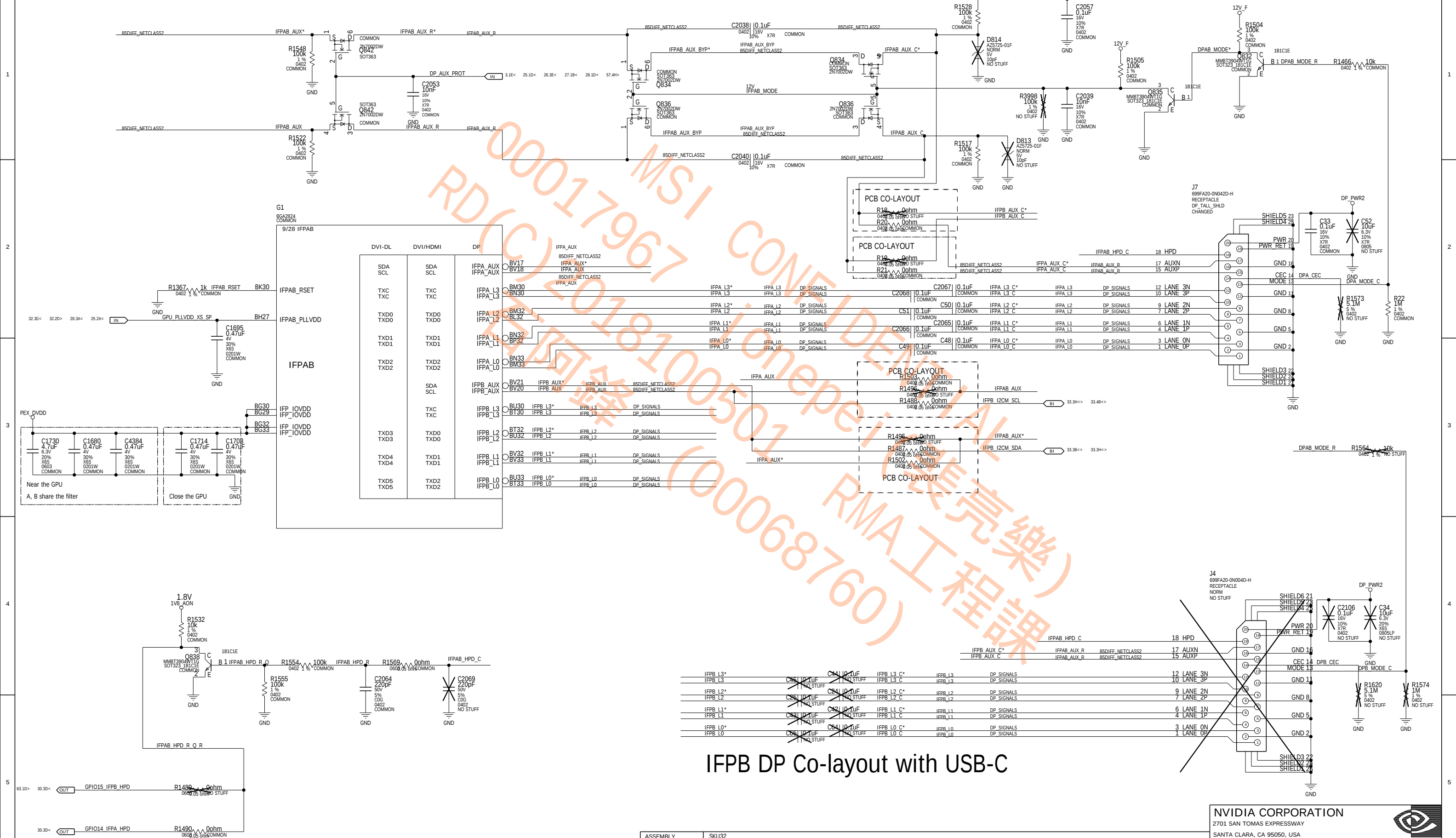


NVVD



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IFPAB TALL-DP



IFPB DP Co-layout with USB-C

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IFPE DP

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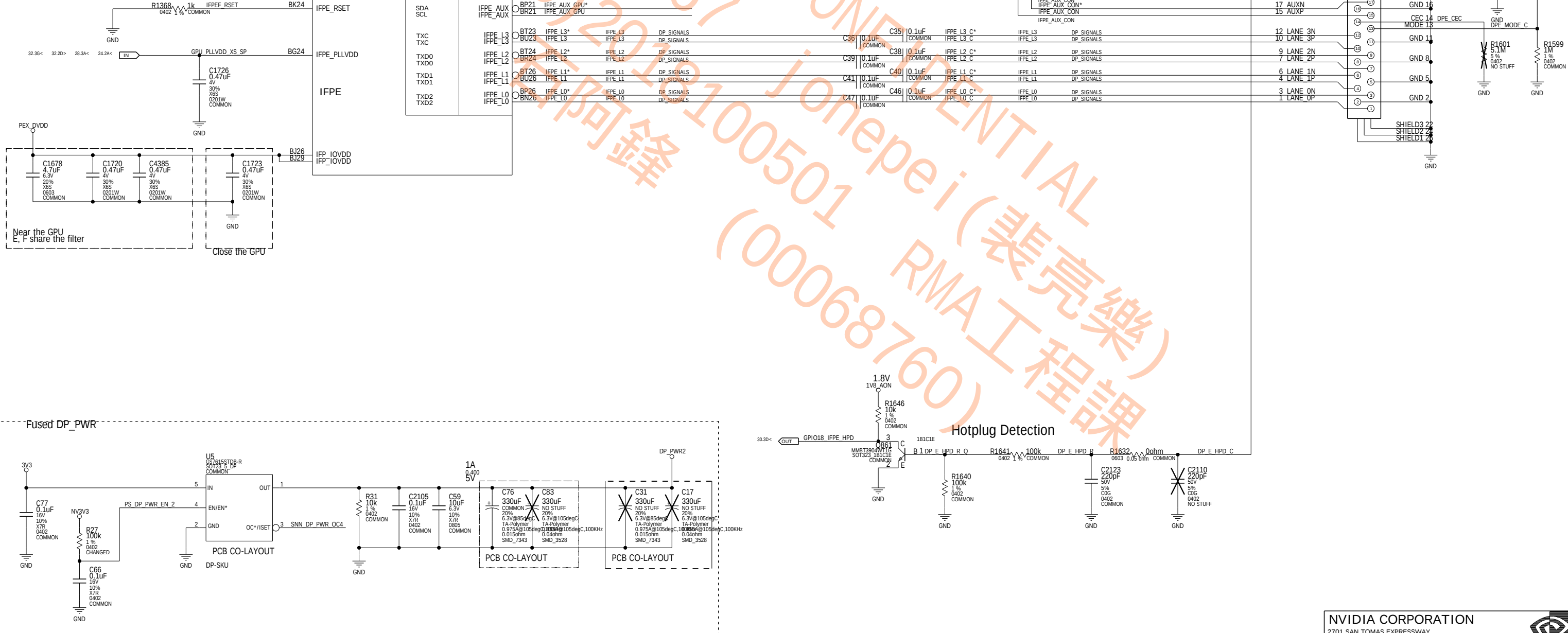
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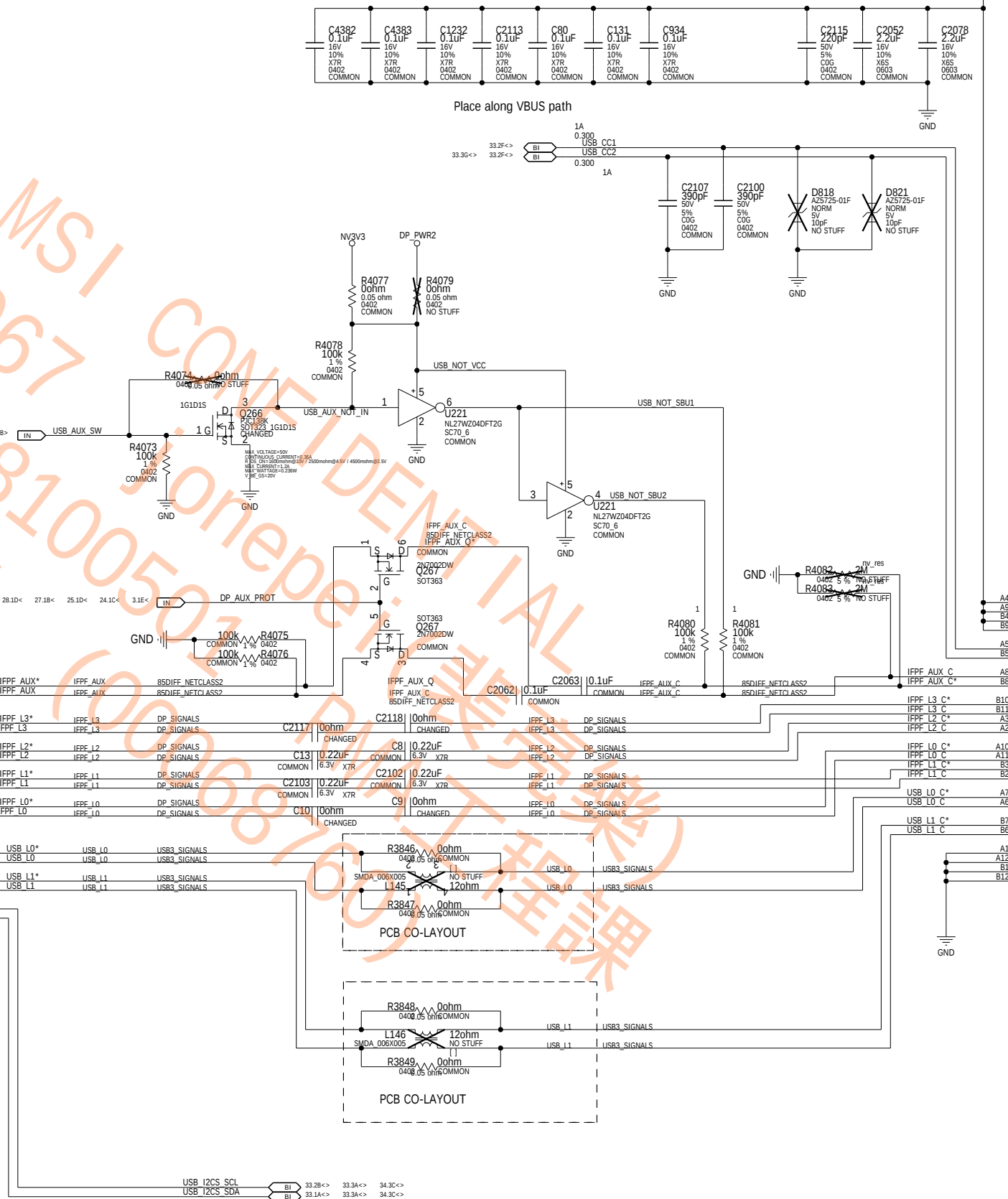
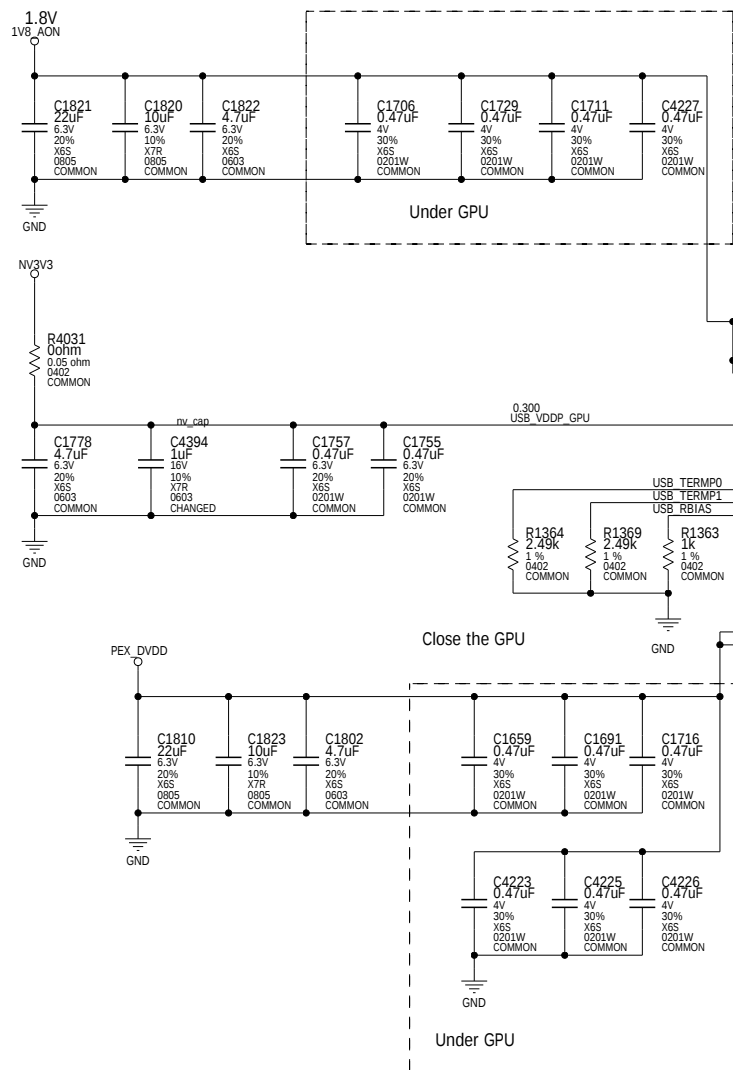
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IFPF USBC



ASSEMBLY	SKU32
PAGE DETAIL	IFPF USB

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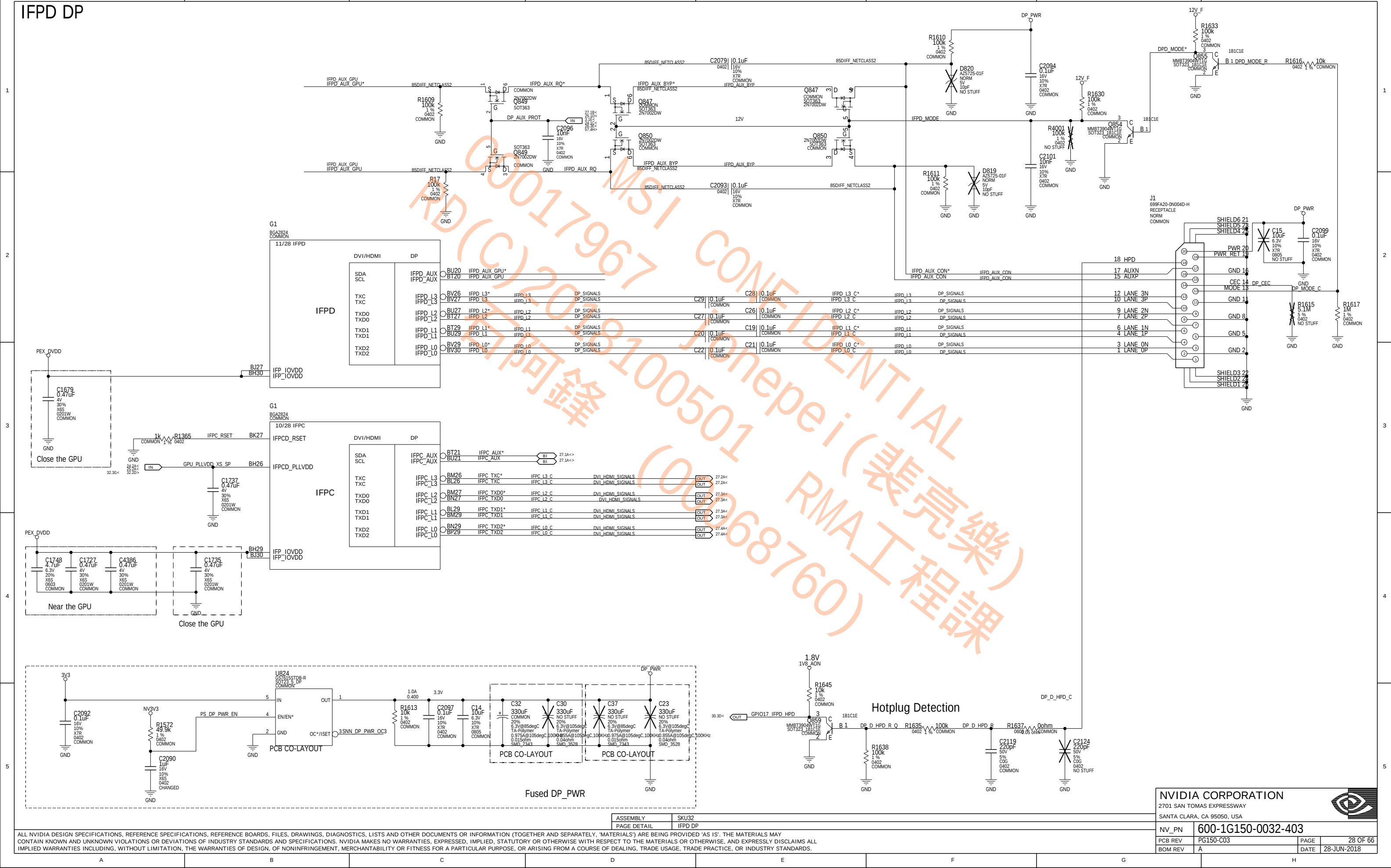
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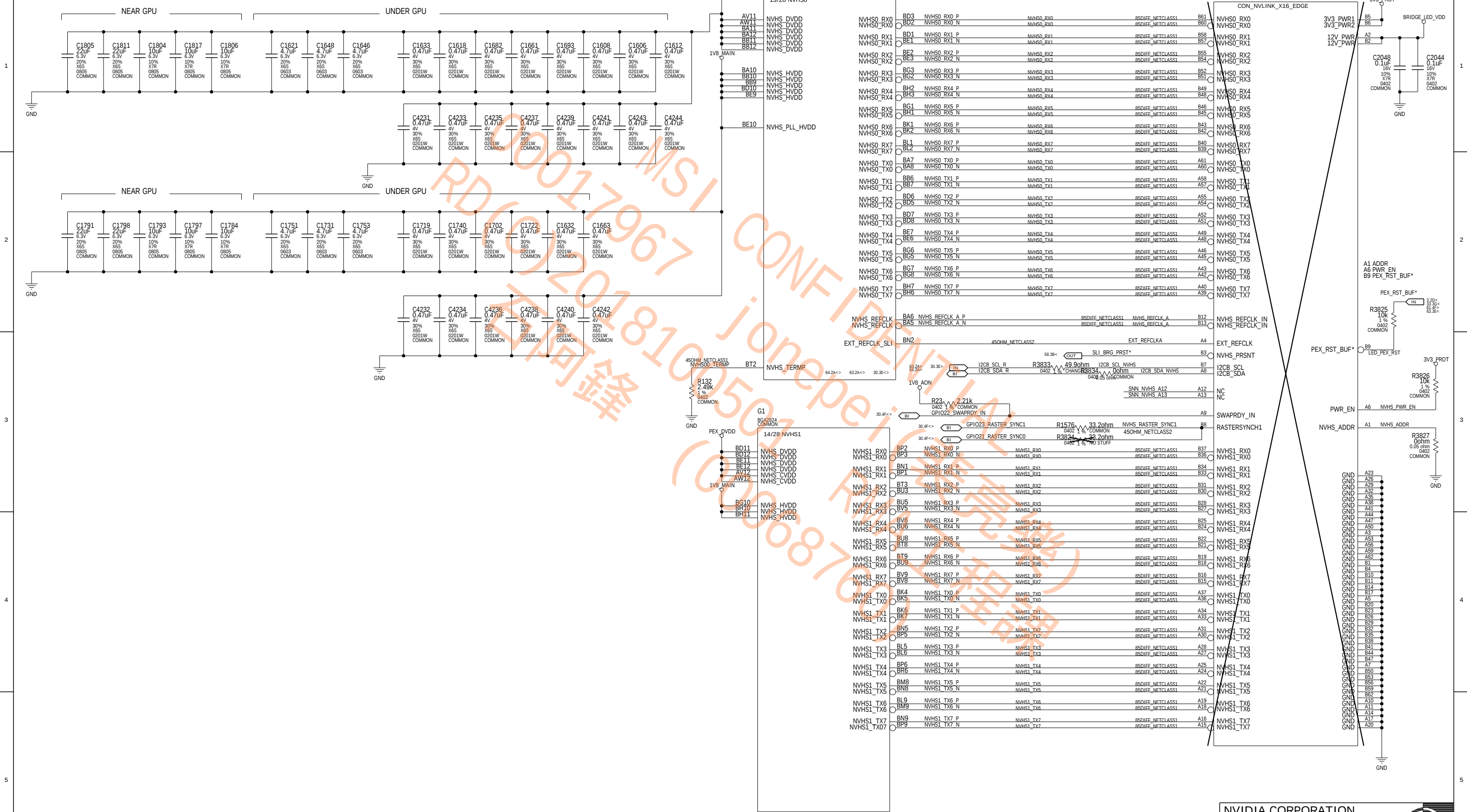
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IFPD DP



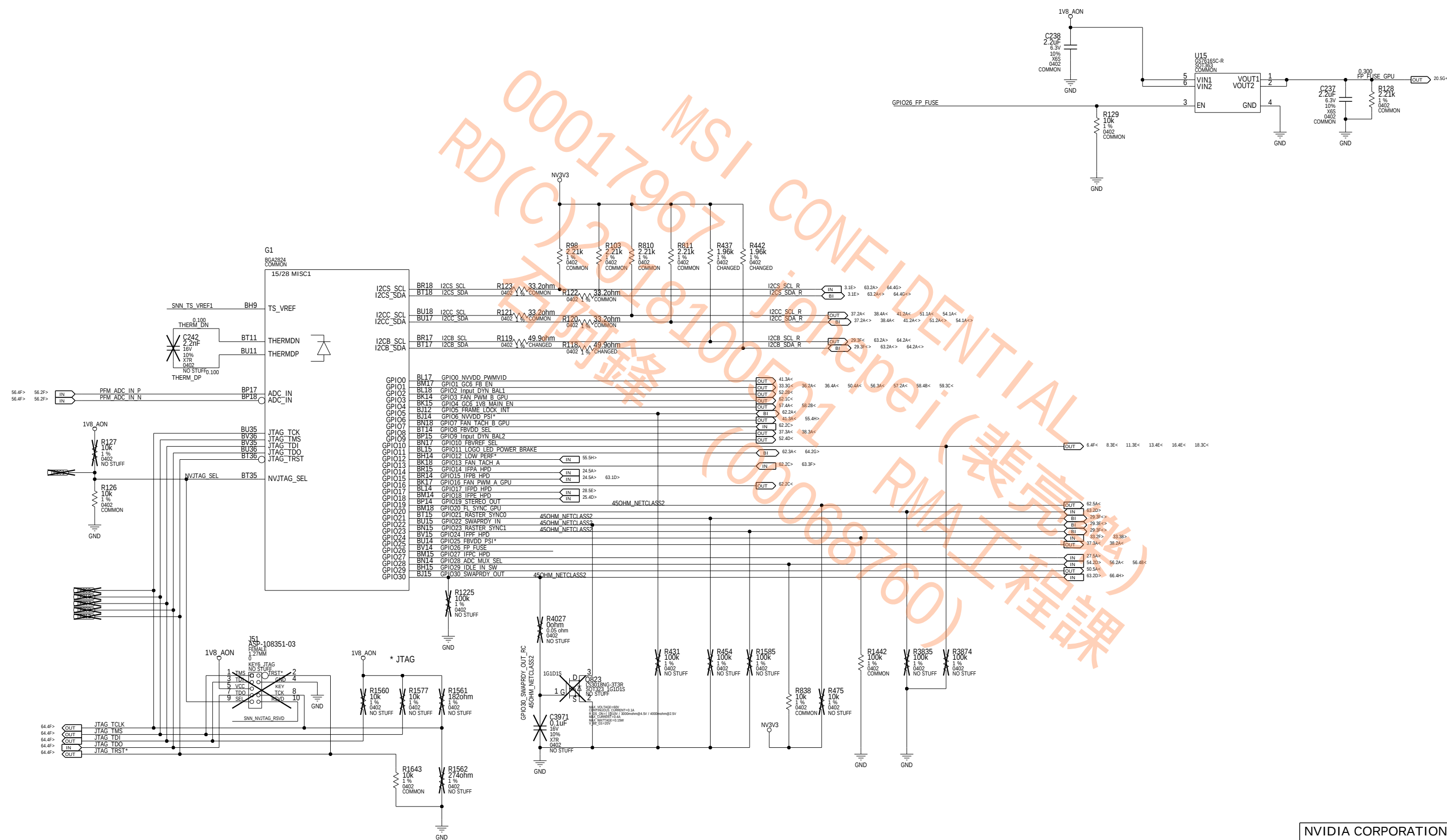
NVHS Interface and FRAME LOCK



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MISC1: Fan, Thermal, JTAG, GPIO, STEREO

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4
5



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ASSEMBLY	SKU32
PAGE DETAIL	MISC: THERMAL, JTAG, GPIO, STEREO

MISC2: ROM, Straps

STRAP2	STRAP1	STRAPO	RAMCFG[4:0]
L	L	L	00000
L	L	H	00001
L	H	L	00010
L	H	H	00011
H	L	L	00100
H	L	H	00101
H	H	L	00110
H	H	H	00111
L	L	M	01000
L	M	L	01001

DEFAULT

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

ROM_SO	ROM_SI	ROM_SCLK	DUMMY[2:0],FS_OVERT
L	L	L	XXX1
L	L	H	XXX0

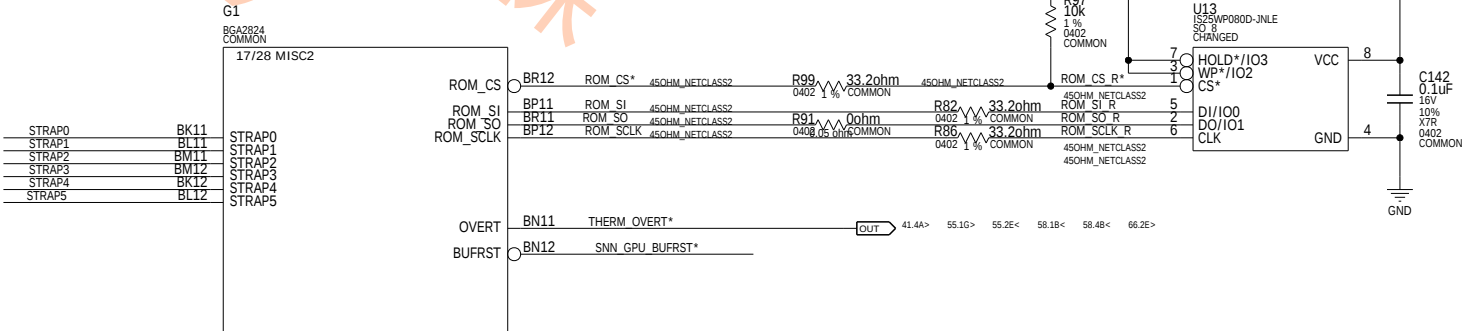
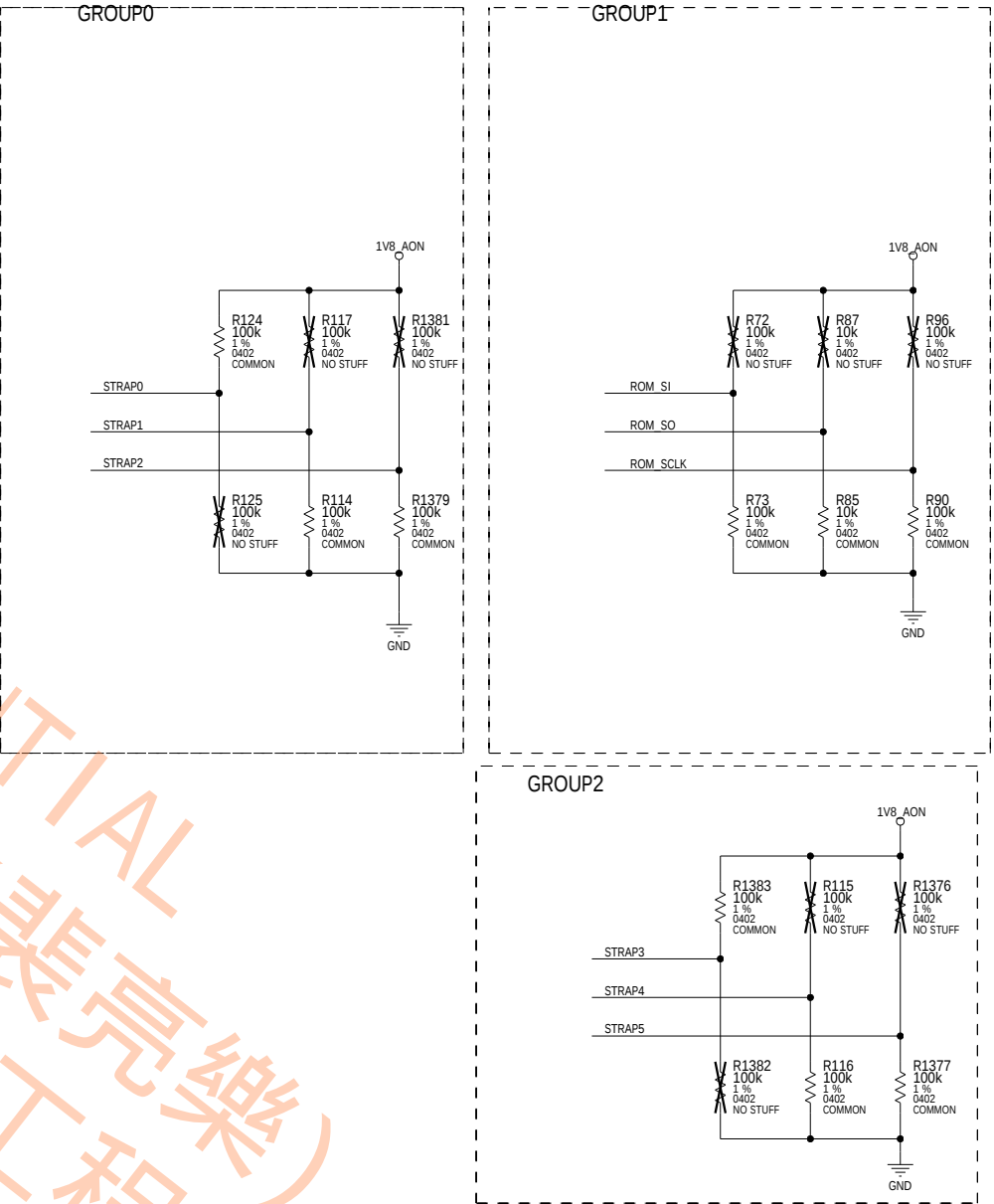
DEFAULT

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
L	L	L	0	0	0	0

Default

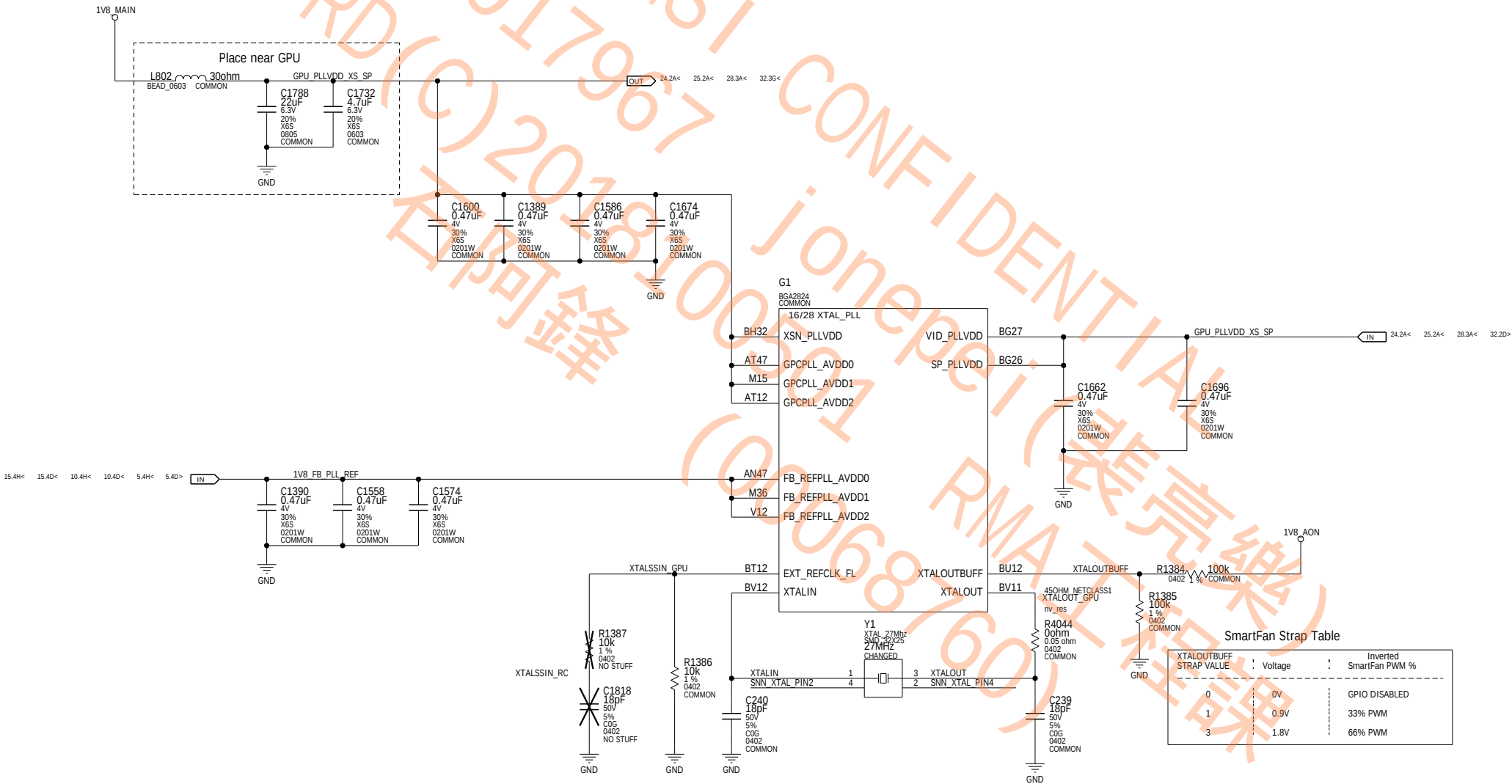
SKU 200

1:SMB_ALT_ADDR ENABLE
0:SMB_ALT_ADDR DISABLE
1:DEVID_SEL REBRAND
0:DEVID_SEL ORIGINAL
1:PCIE_CFG LOW POWER
0:PCIE_CFG HIGH POWER
1:VGA_DEVICE ENABLE
0:VGA_DEVICE DISABLE



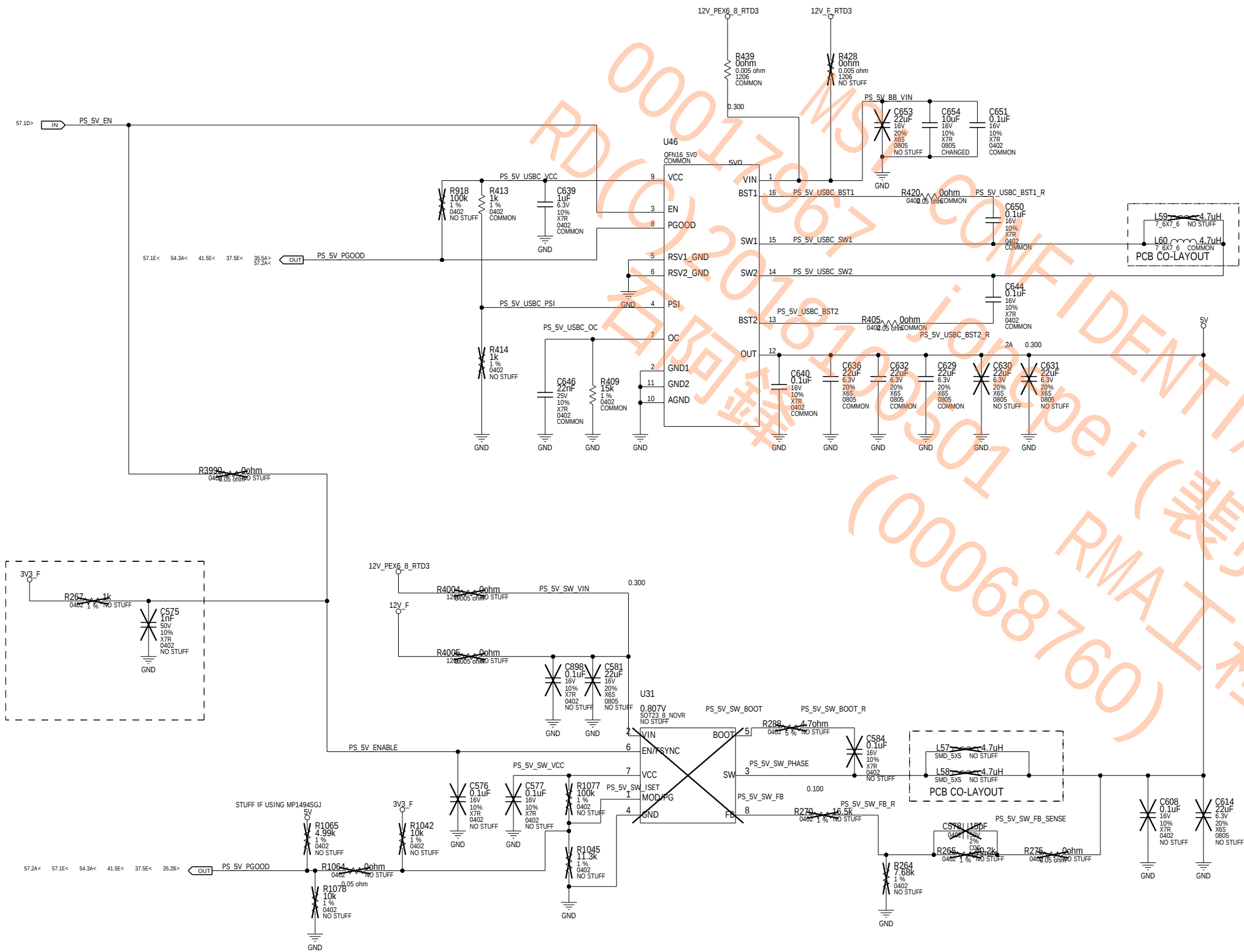
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MISC2: XTAL. PLL

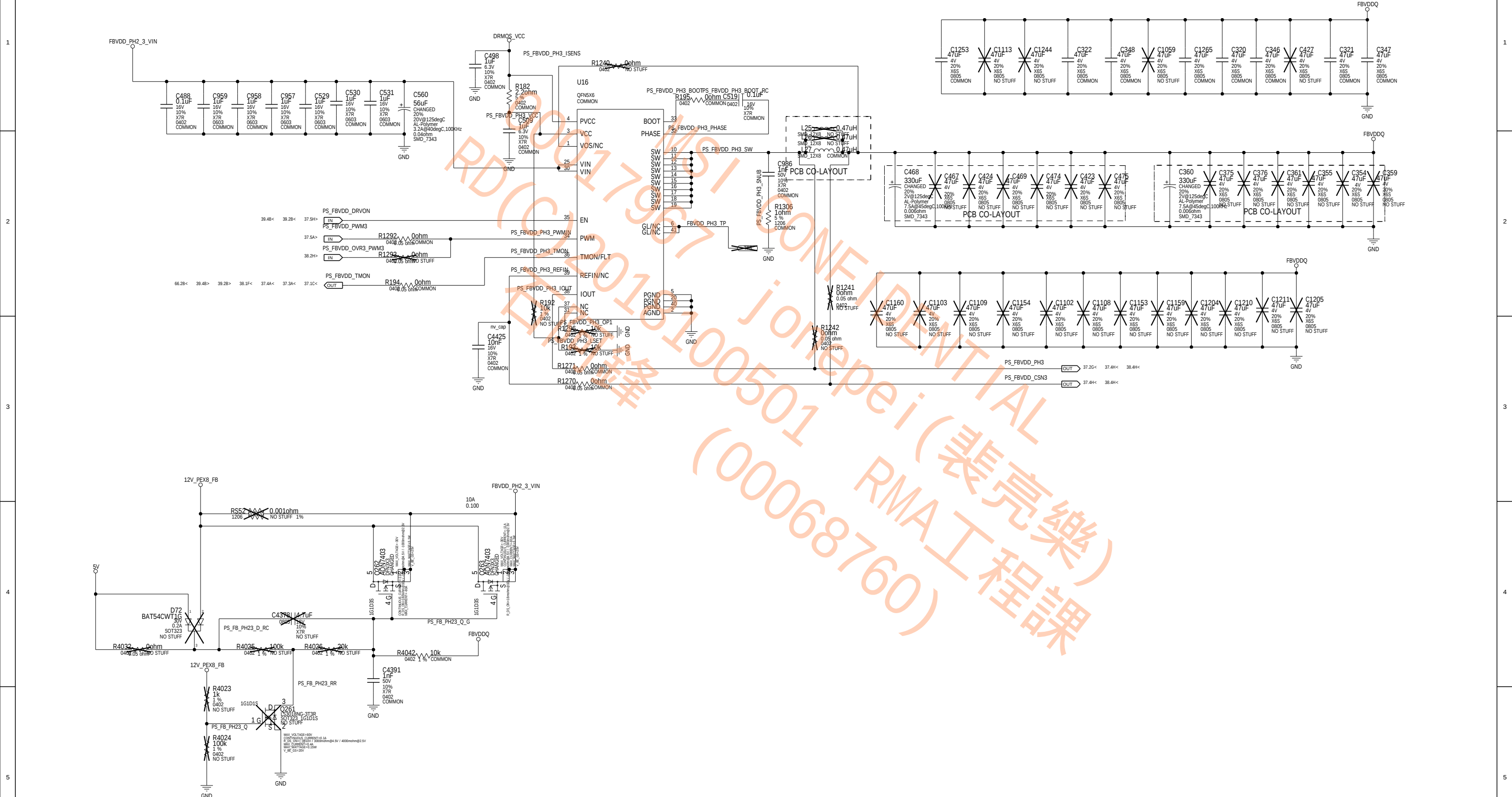


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PS: 5V, 5V_BACKUP

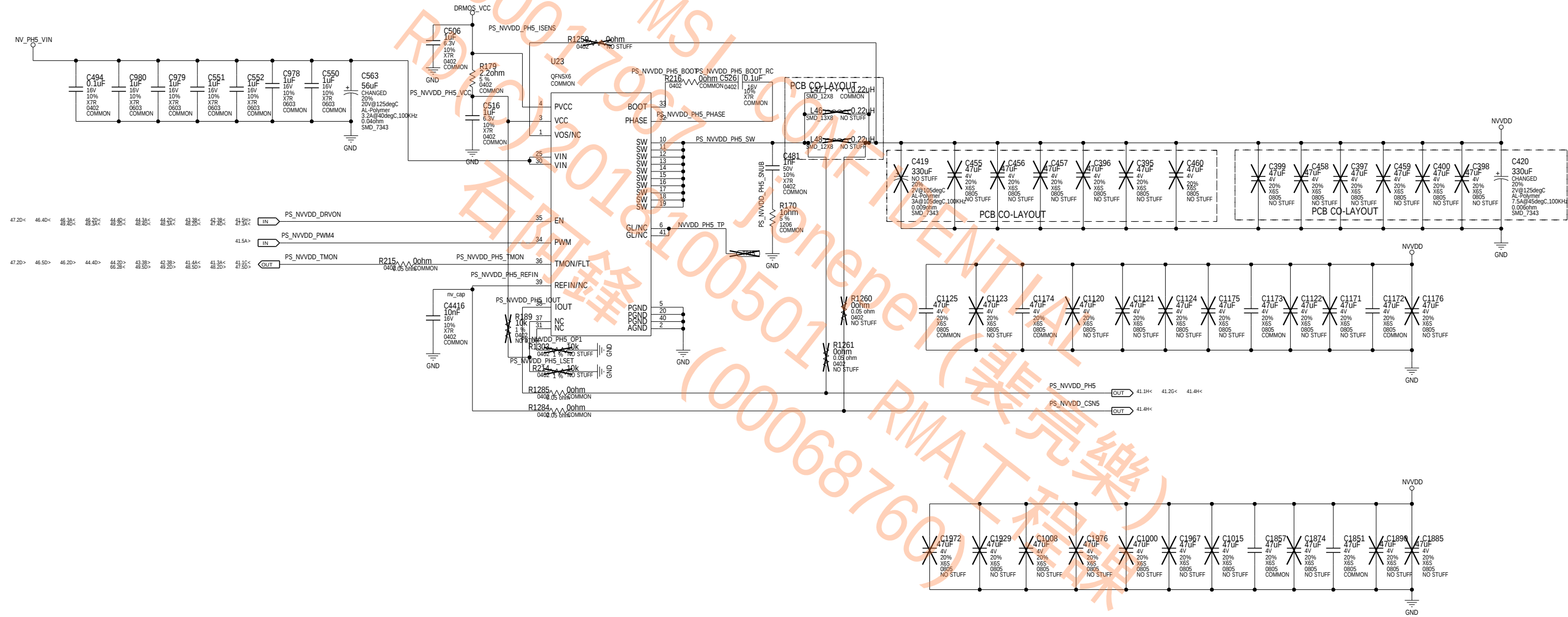


PS: FBVDD PH3



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PS: NVVDD Phase 5



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1



3

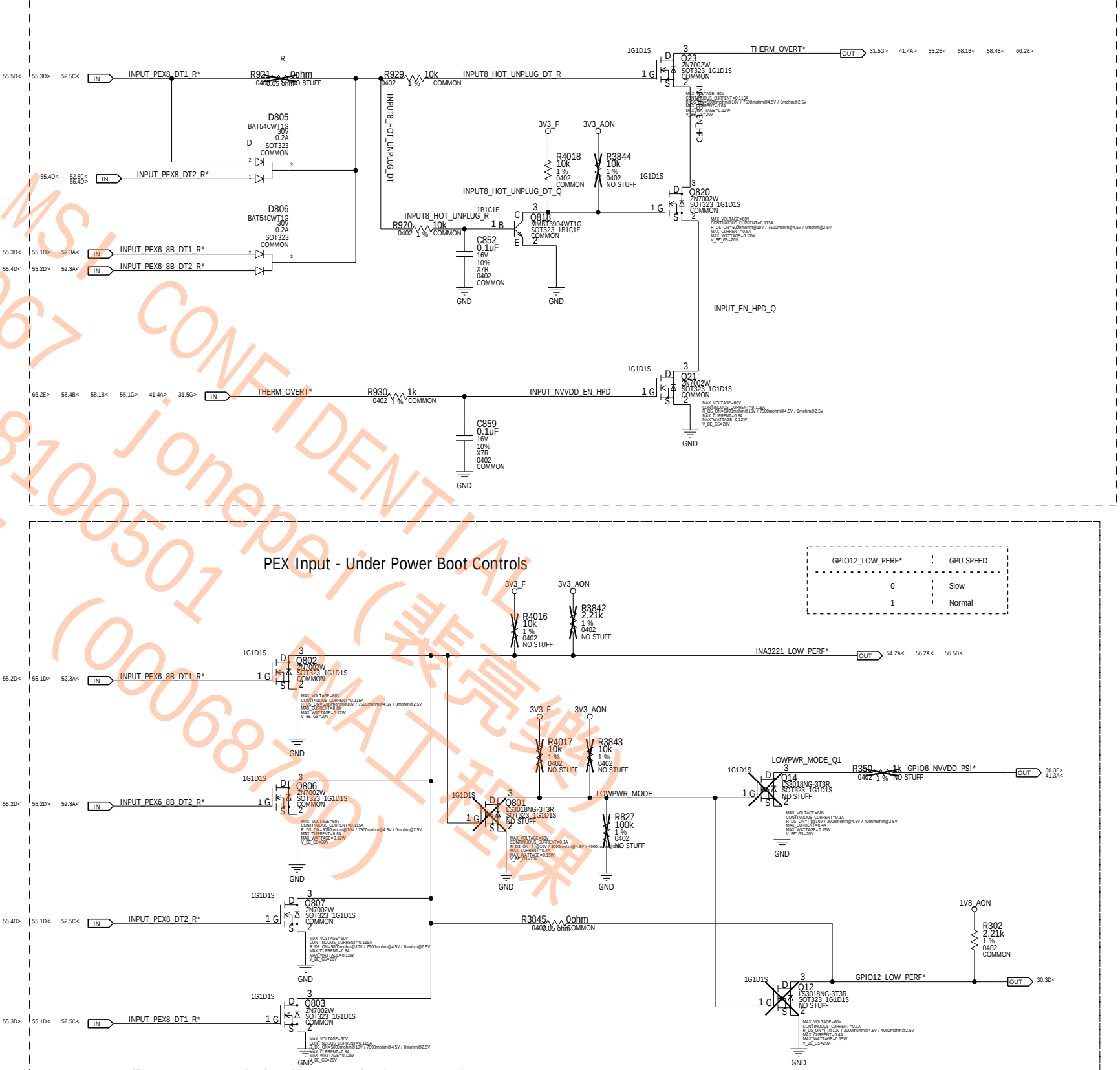
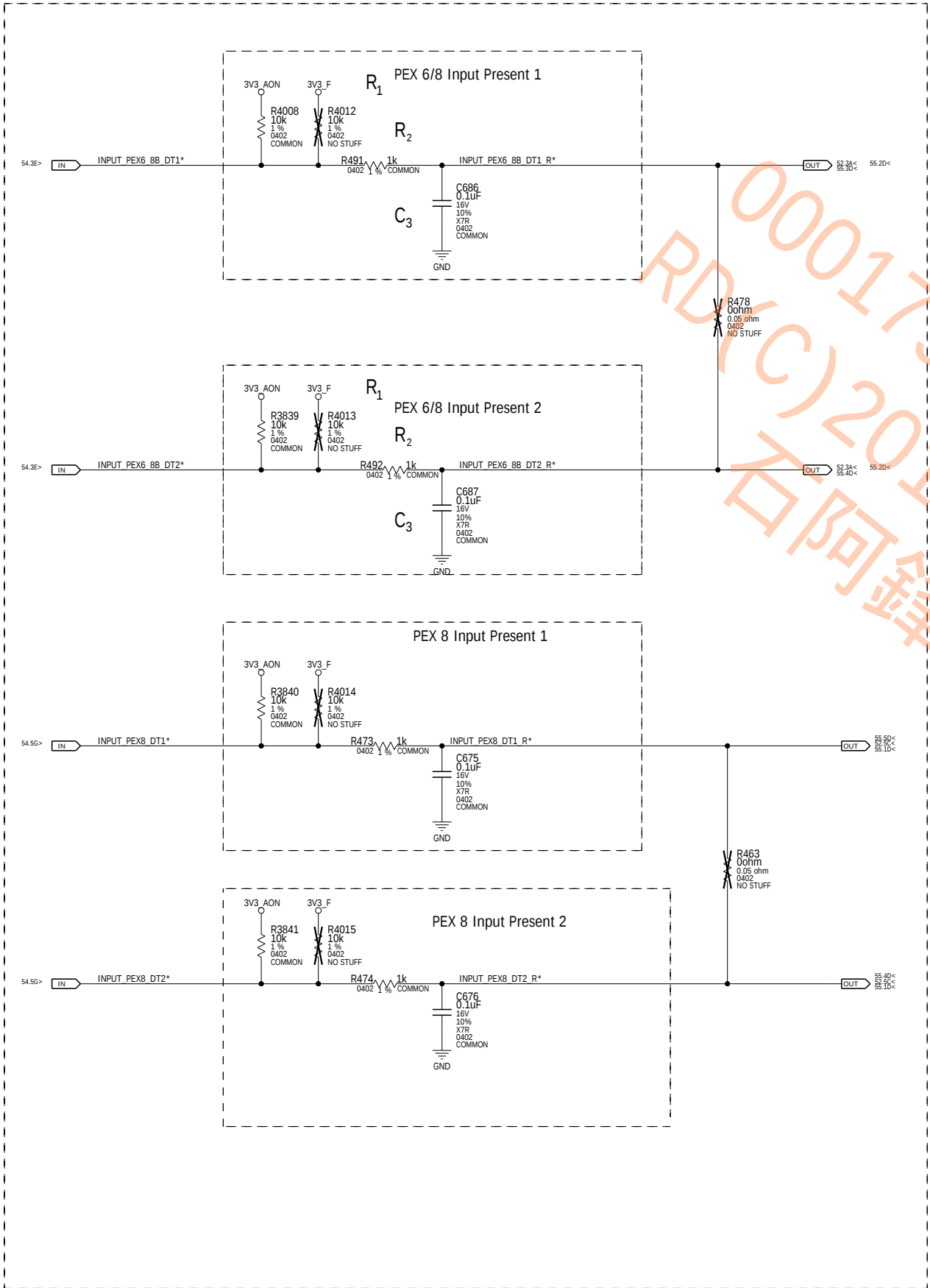
4



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PS: 12V Current Steering & Hot Unplug Detect

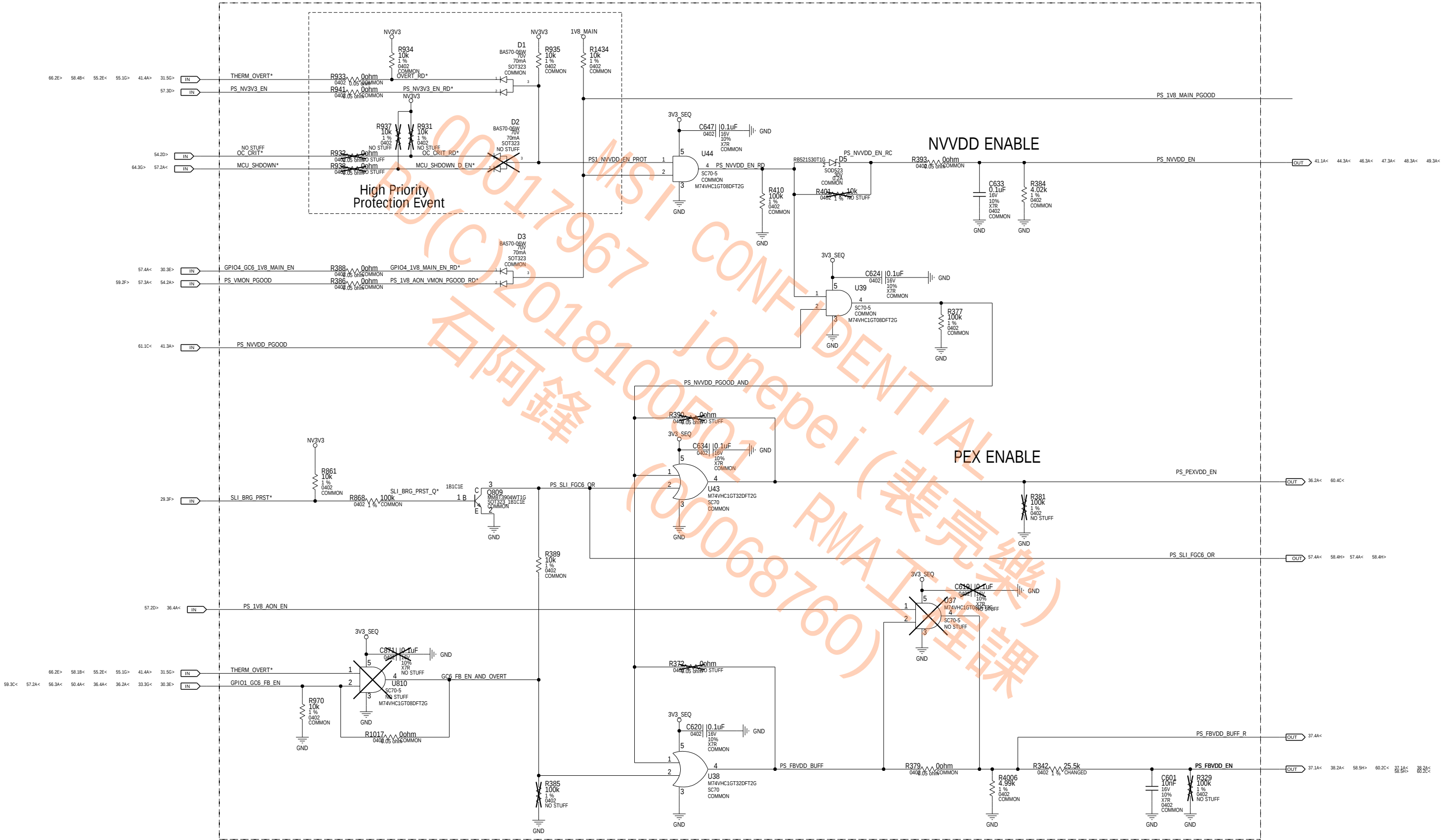


A 2 x 4 auxiliary power connector plug from the power supply unit must not use the 75 W sense coding (Sense1=Open and Sense0=Ground) to avoid end-user confusion.

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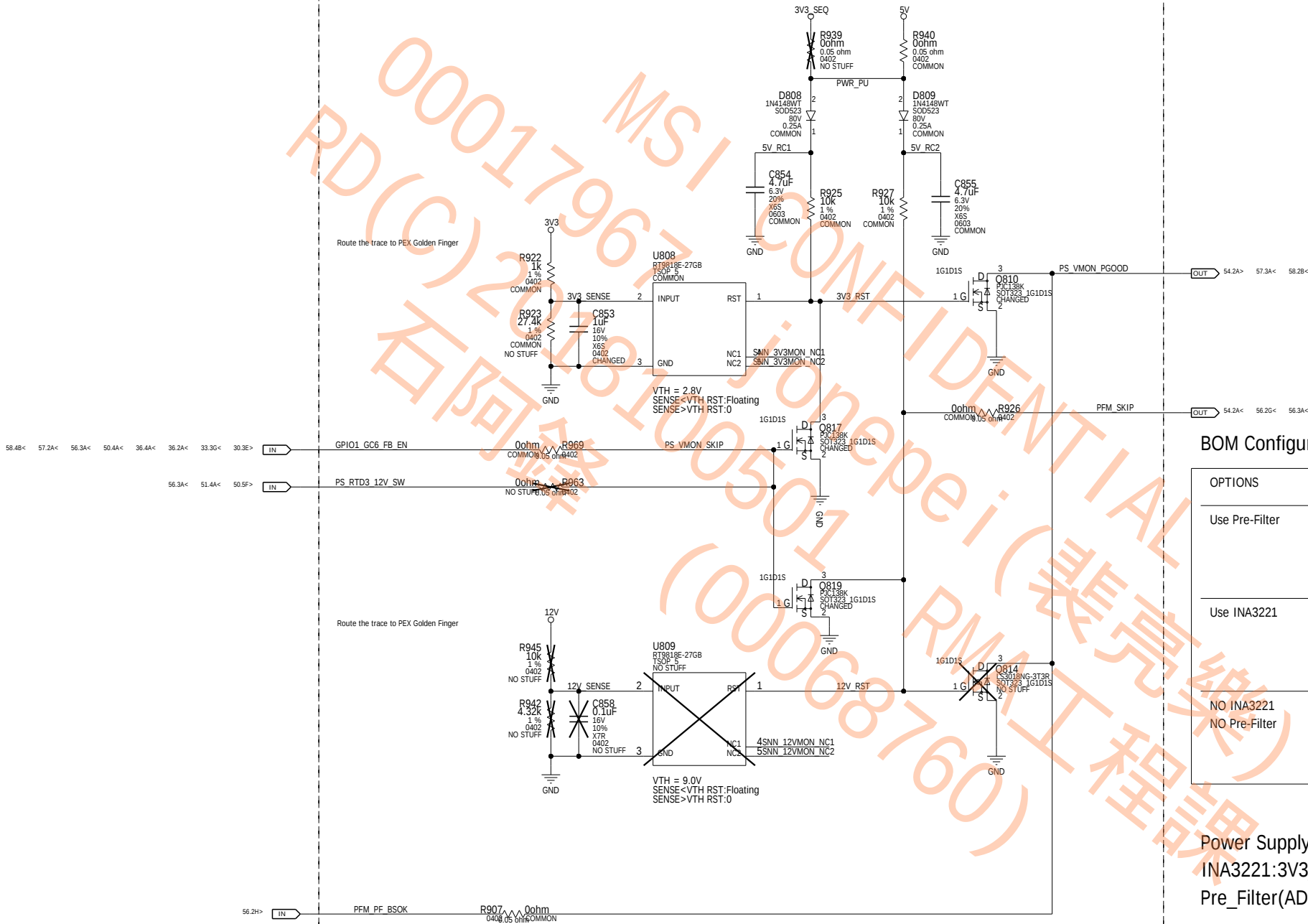
SEQUENCE:NV,PEX,FB ENABLE



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SEQUENCE:PCIE Voltage Monitor

PCIE Voltage Monitor



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

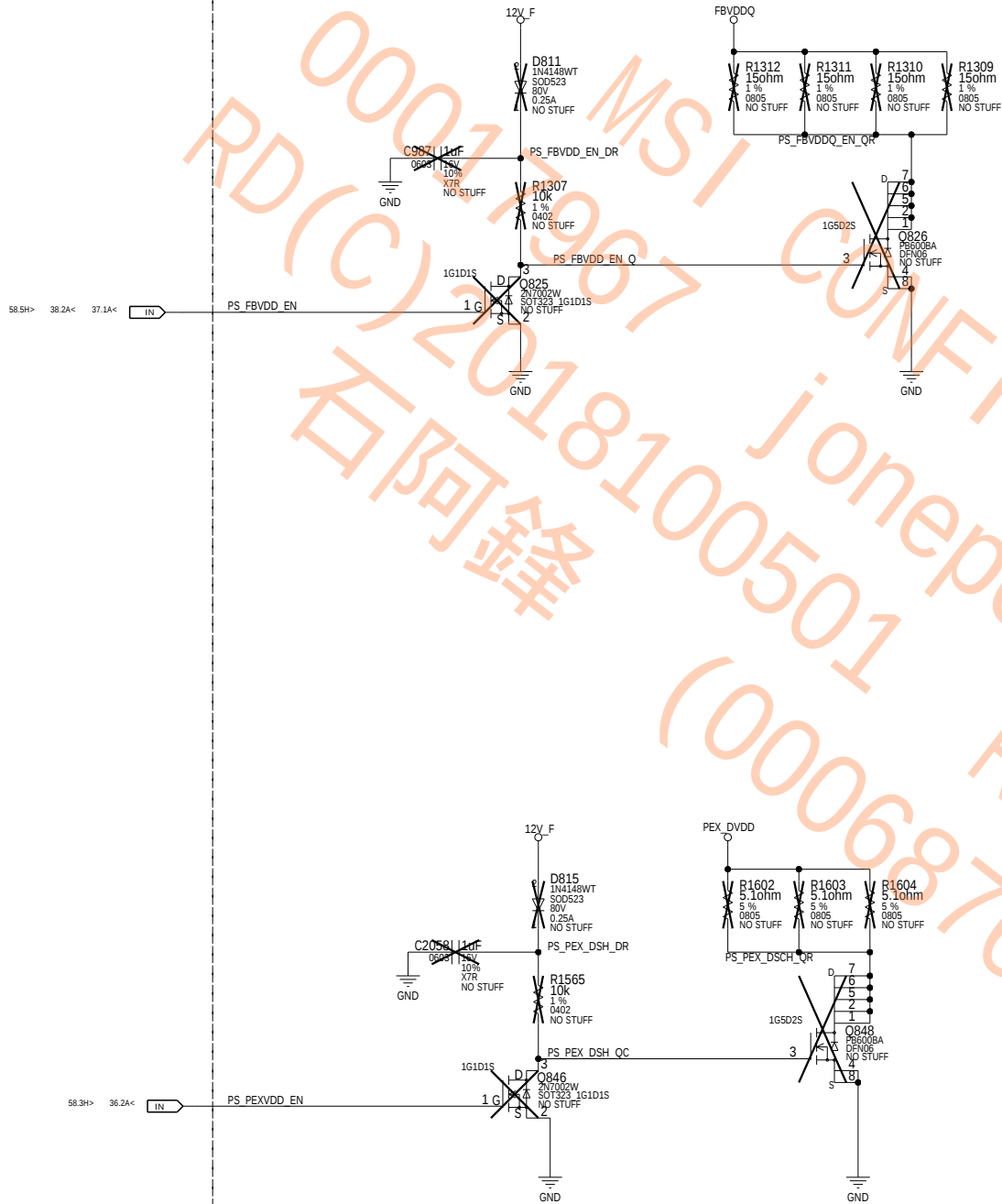
Signal	Direction	Function
3V3	INPUT	Sense the 3V3 Voltage from PCIE golden finger
12V	INPUT	Sense the 12V Voltage from PCIE golden finger
PS_VMON_PGOOD	OPEN-DRAIN	Floating(H) once both 3V3 and 12V reach Vth
GC6_FB_EN	INPUT	Indicator for RTD3/GC6 residence,Use to Mask the VMON_PGOOD
PS_PF_SKIP	INPUT	From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

ASSEMBLY	SKU32
PAGE DETAIL	Sequence: PCIE Voltage Monitor

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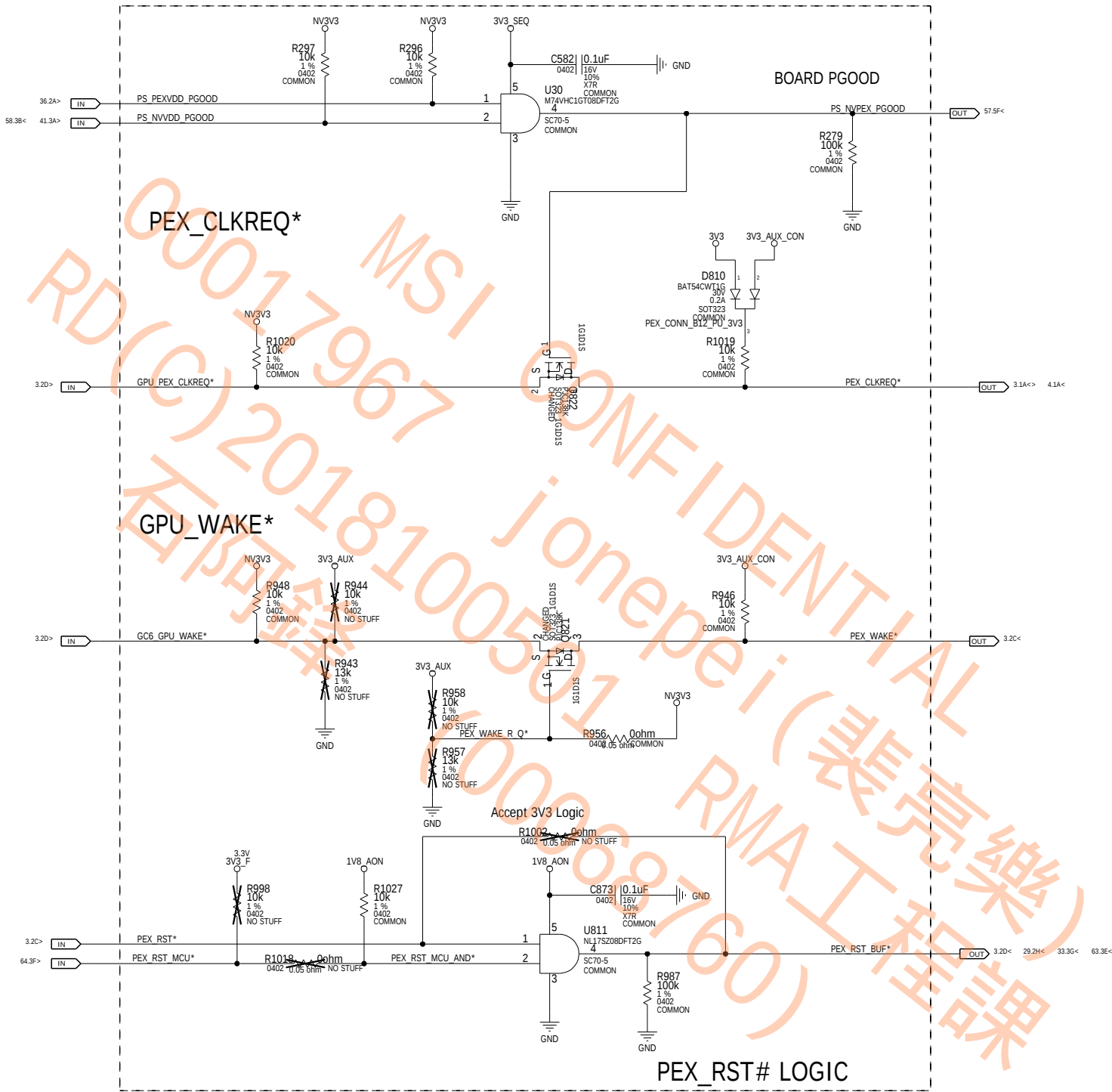
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SEQUENCE:Discharge



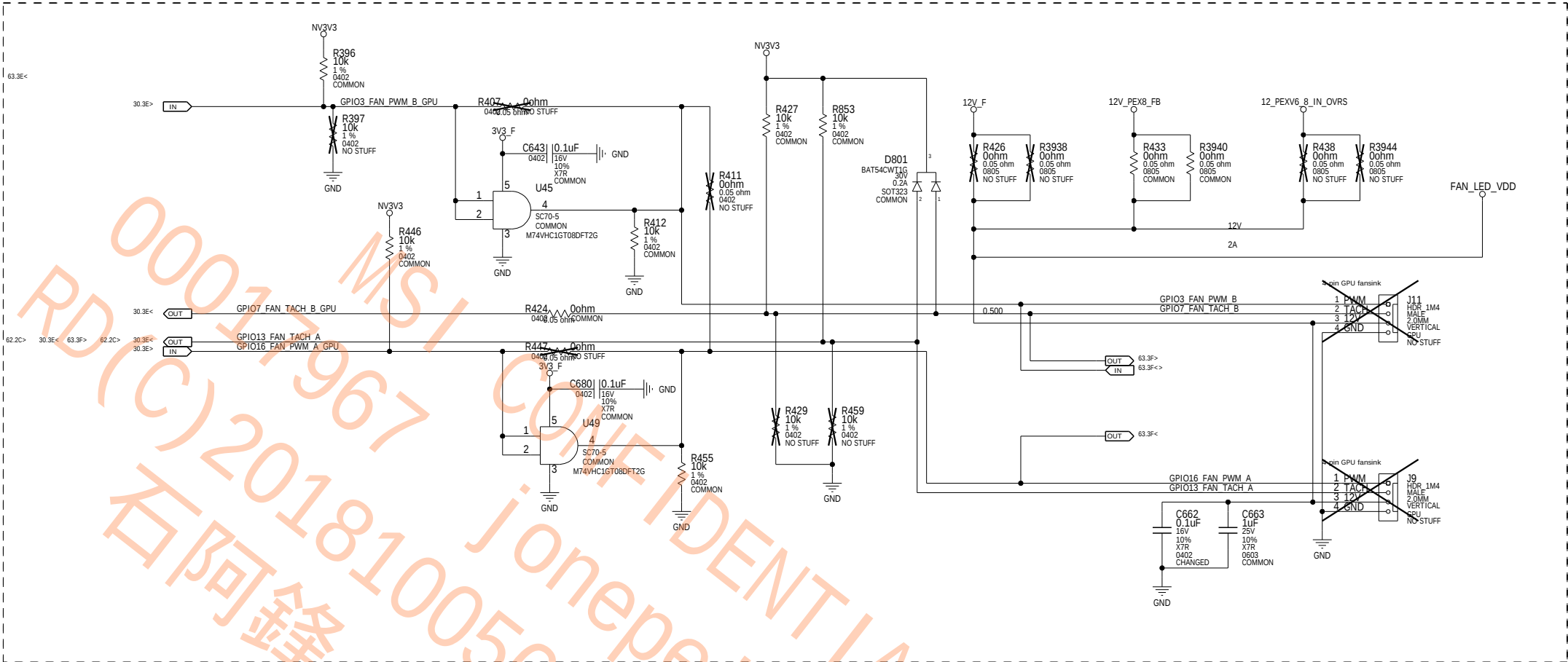
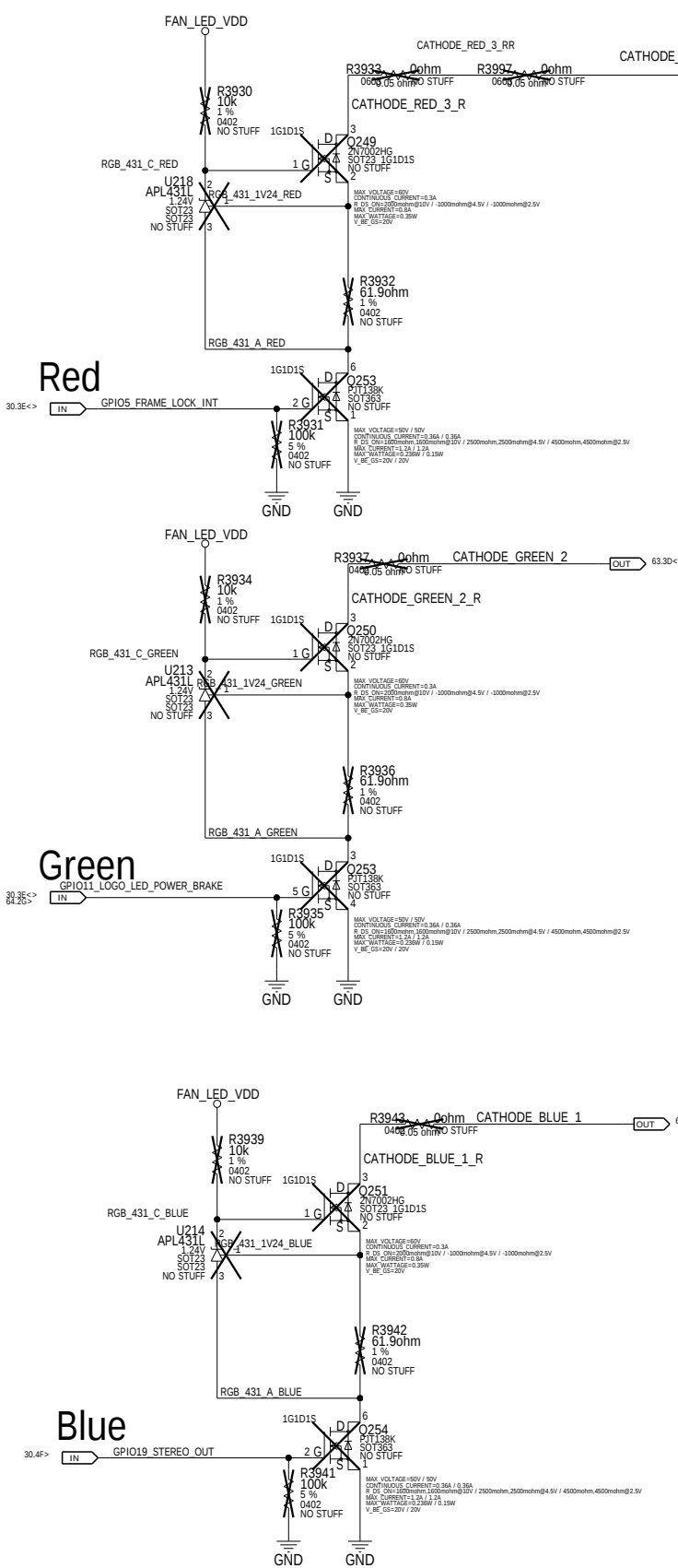
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SEQUENCE:MISC

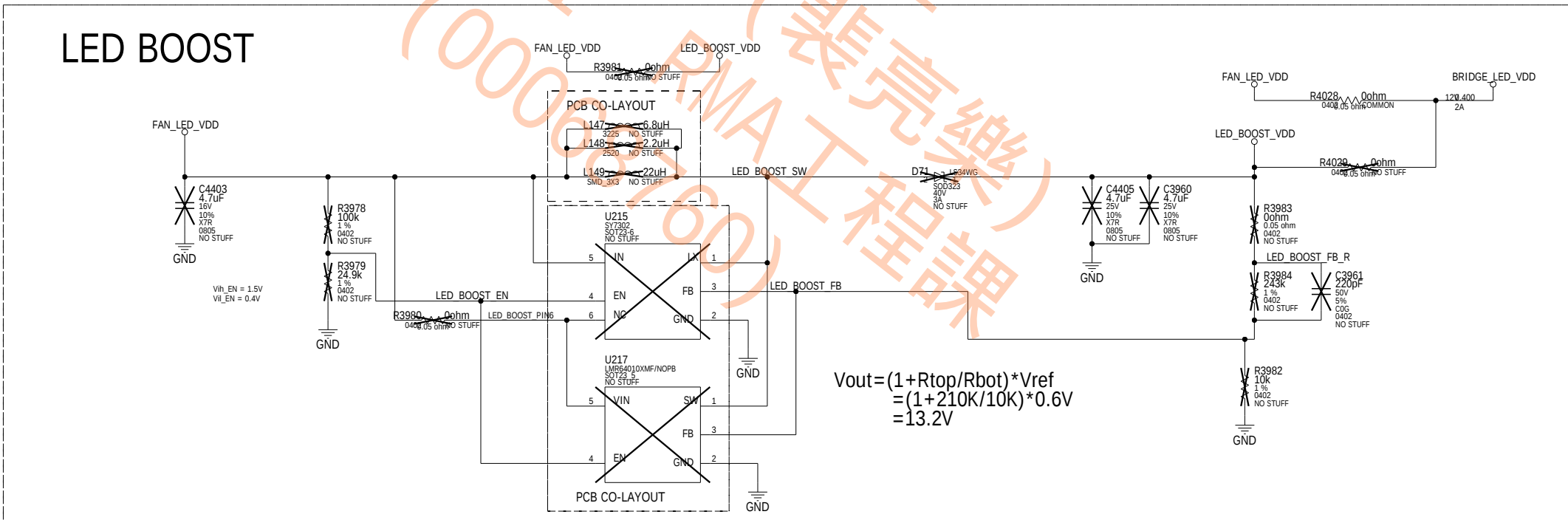


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MISC: FAN & LED1



LED BOOST



$$V_{out} = (1 + R_{top}/R_{bot}) * V_{ref}$$
$$= (1 + 210K/10K) * 0.6V$$
$$= 13.2V$$

MISC: LED2

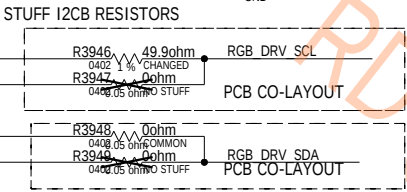
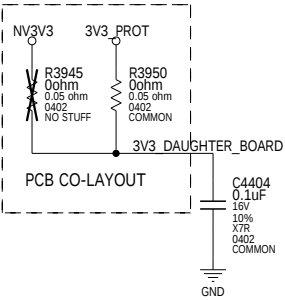
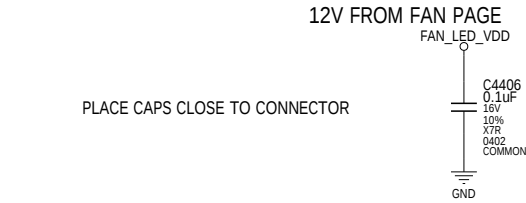
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2

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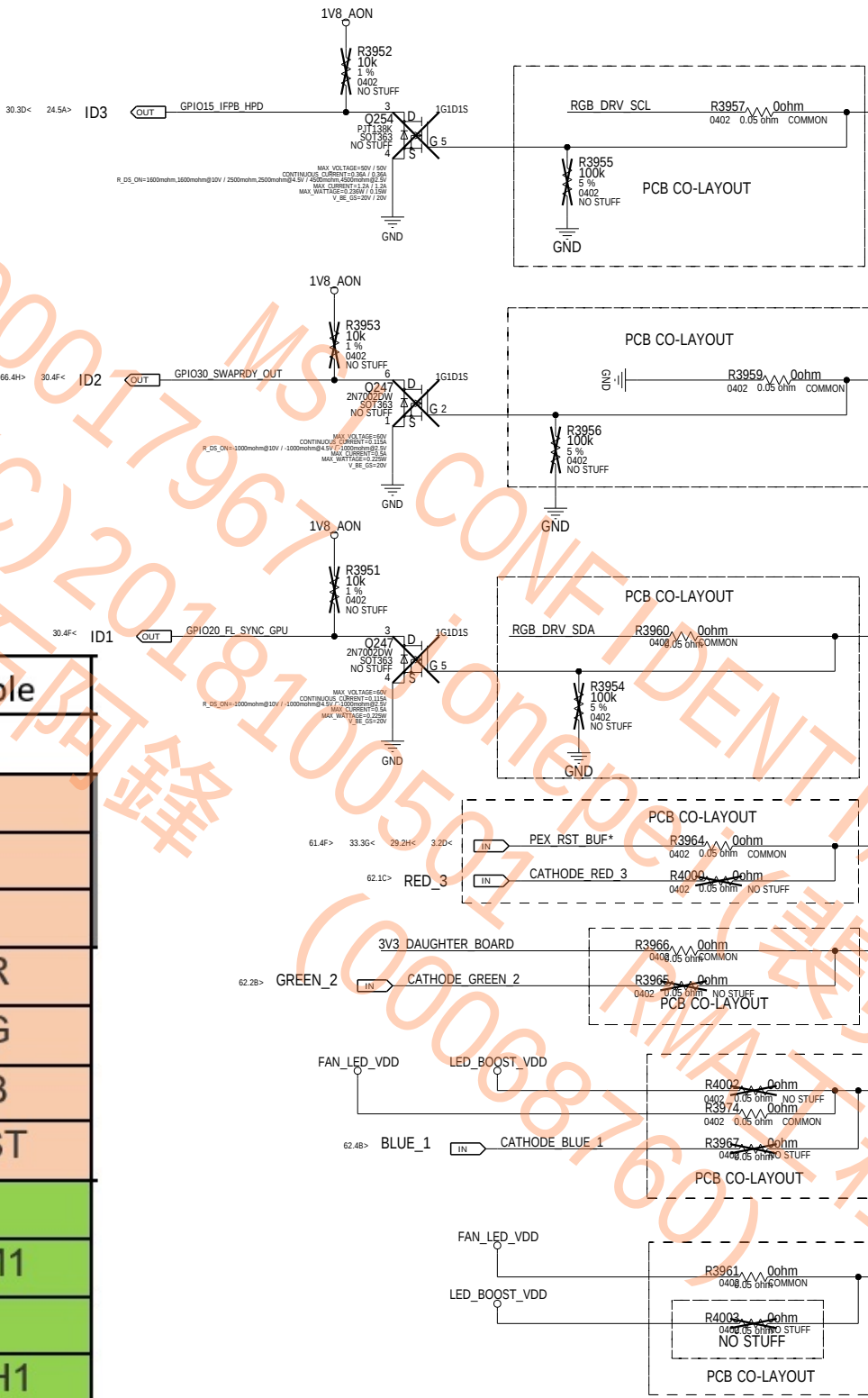
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5



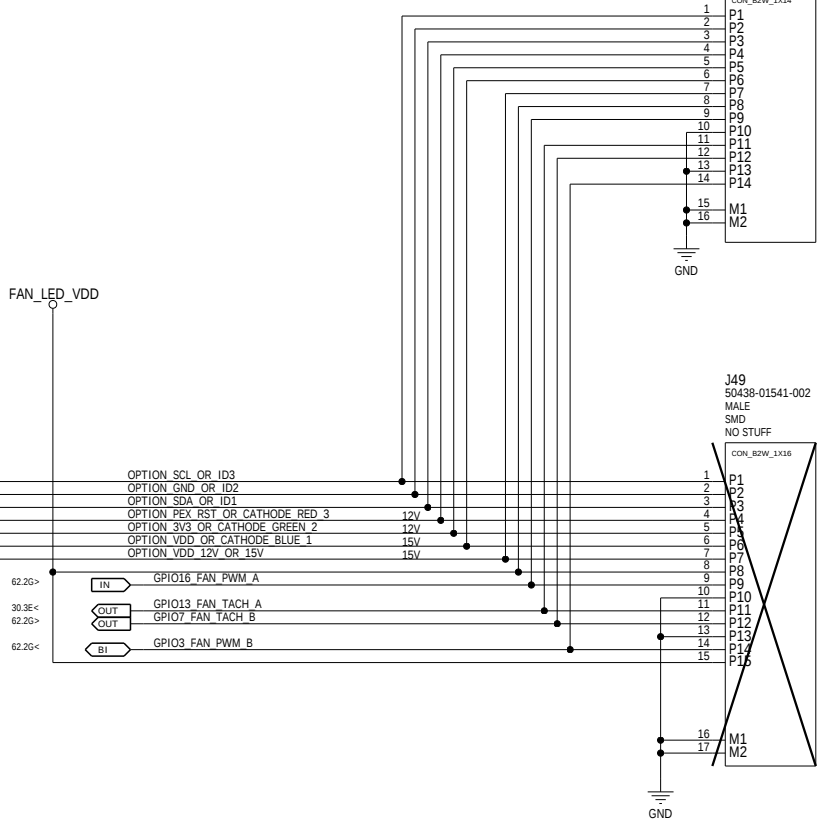
8-bit I2C Address of MCU on Daughter Board: 0x92

MCU Solution		For ONE ZONE RGB/cable	
PIN SEQ	Pin Name	PIN SEQ	Pin Name
1	I2C_SCL	1	ID3
2	GND	2	ID2
3	I2C_SDA	3	ID1
4	PEX_RST_BUF*	4	DRIVE3/R
5	NV3V3	5	DRIVE2/G
6	12V/BOOST	6	DRIVE1/B
7	12V	7	12V/BOOST
8	12V	8	12V
9	FAN_PWM1	9	FAN_PWM1
10	GND	10	GND
11	FAN_TACH1	11	FAN_TACH1
12	FAN_TACH2	12	FAN_TACH2
13	GND	13	GND
14	FAN_PWM2	14	FAN_PWM2
		15	12V



14-PIN STRAIGHT PRIMARY SOURCE -> 080-1586-000: ACES \$0.115
14-PIN STRAIGHT SECOND SOURCE -> 080-1600-000: WIESON \$0.2

FOR MCU SOLUTION



FOR ONE ZONE RGB SOLUTION

15-PIN STRAIGHT PRIMARY SOURCE -> 080-1617-000: ACES \$0.1165
15-PIN STRAIGHT SECOND SOURCE -> 080-1628-000: WIESON \$0.23

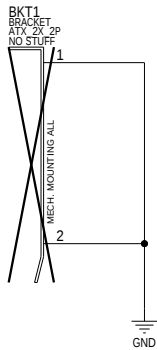
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ASSEMBLY	SKU32
PAGE DETAIL	MISCL: LED 2

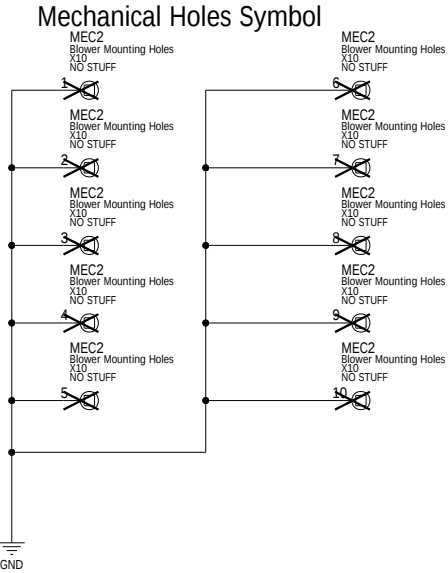
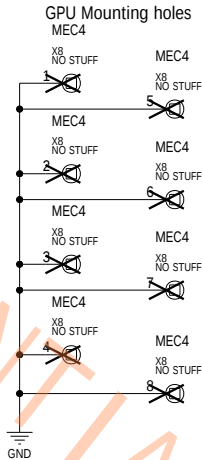
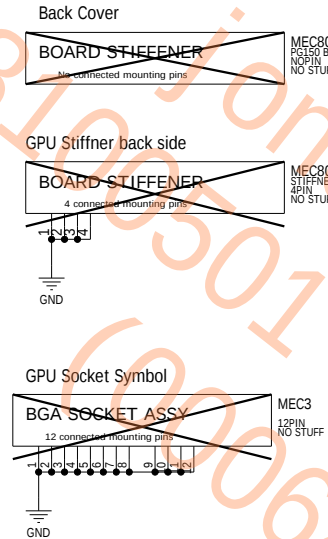
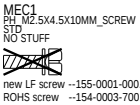
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Mechanical: Bracket/Thermal Solution

Brackets:

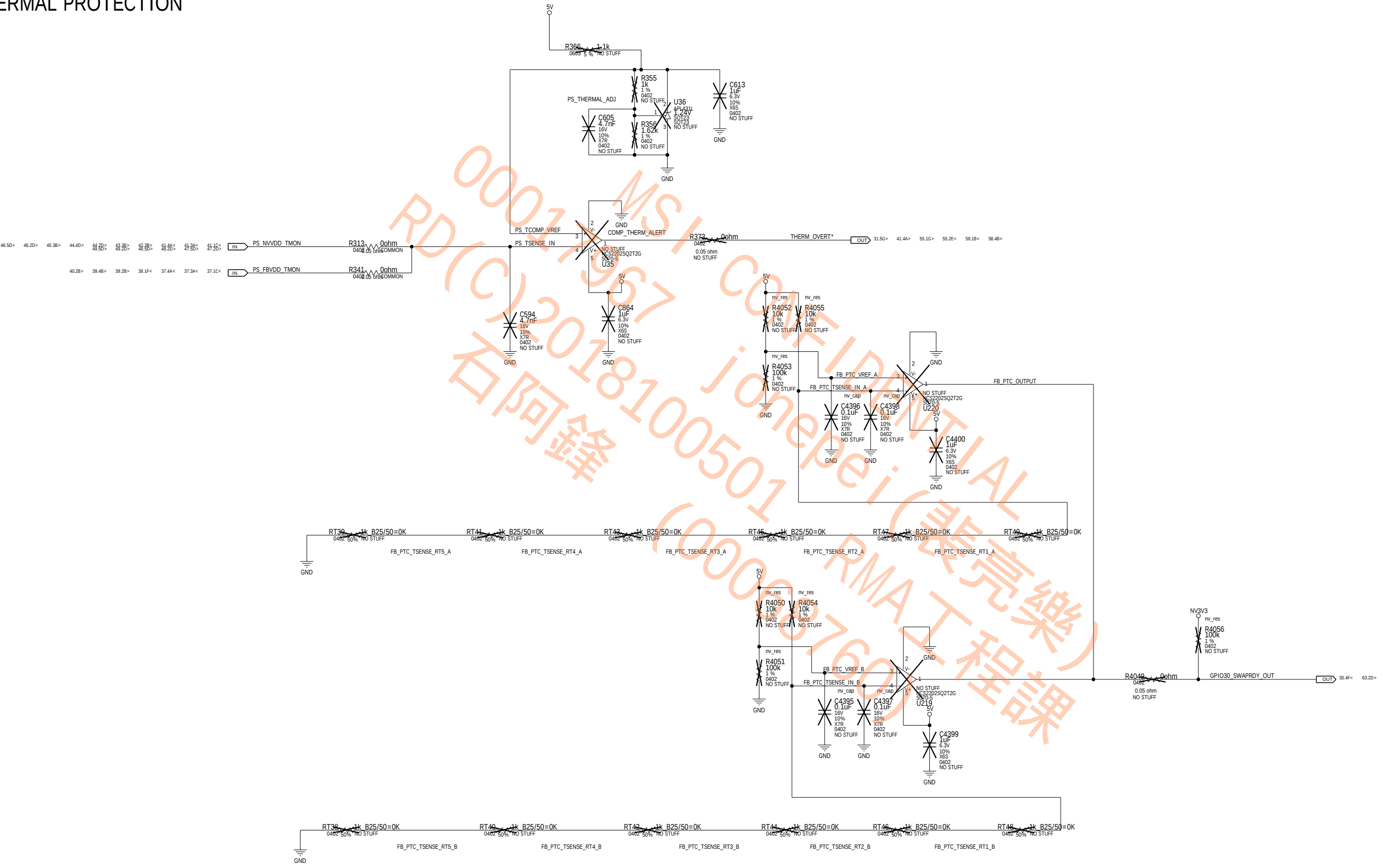


Bracket Screw



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VR THERMAL PROTECTION



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