

PG174-A01

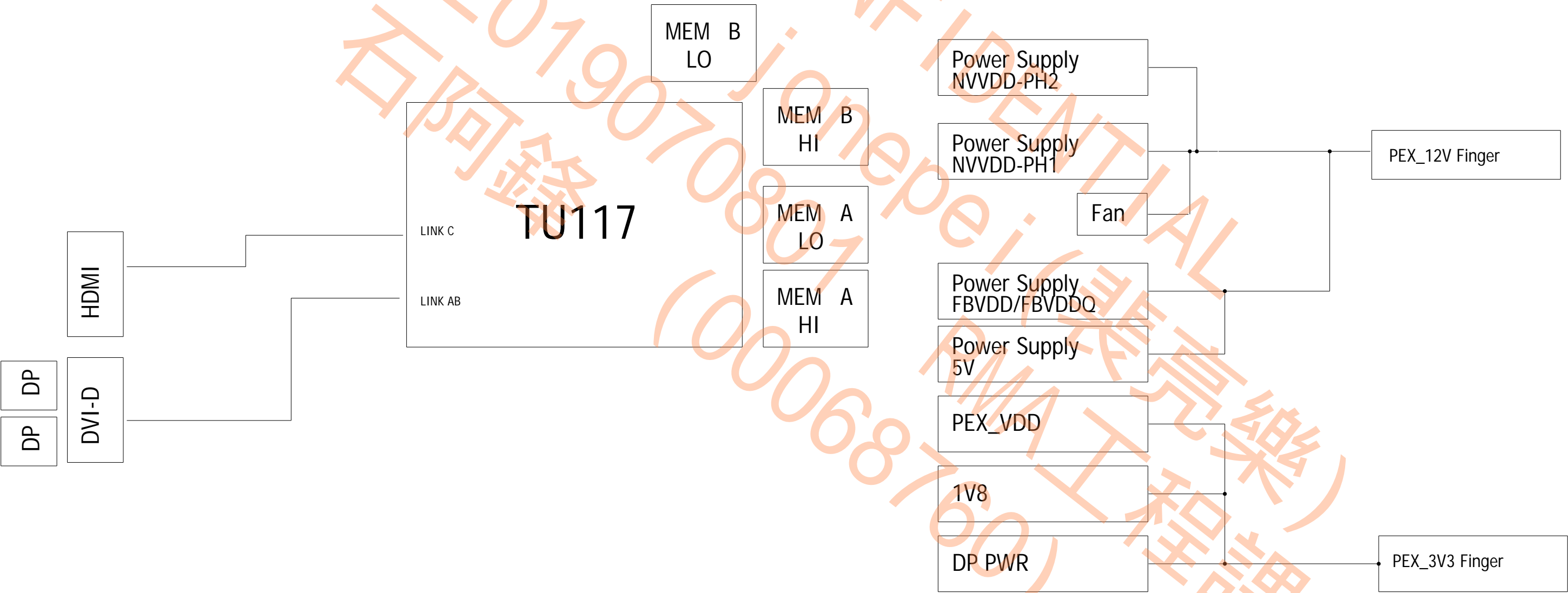
TU117, 128b GDDR5 x32, 75W With Sunflower Cooler  
DVI-D DL+ HDMI

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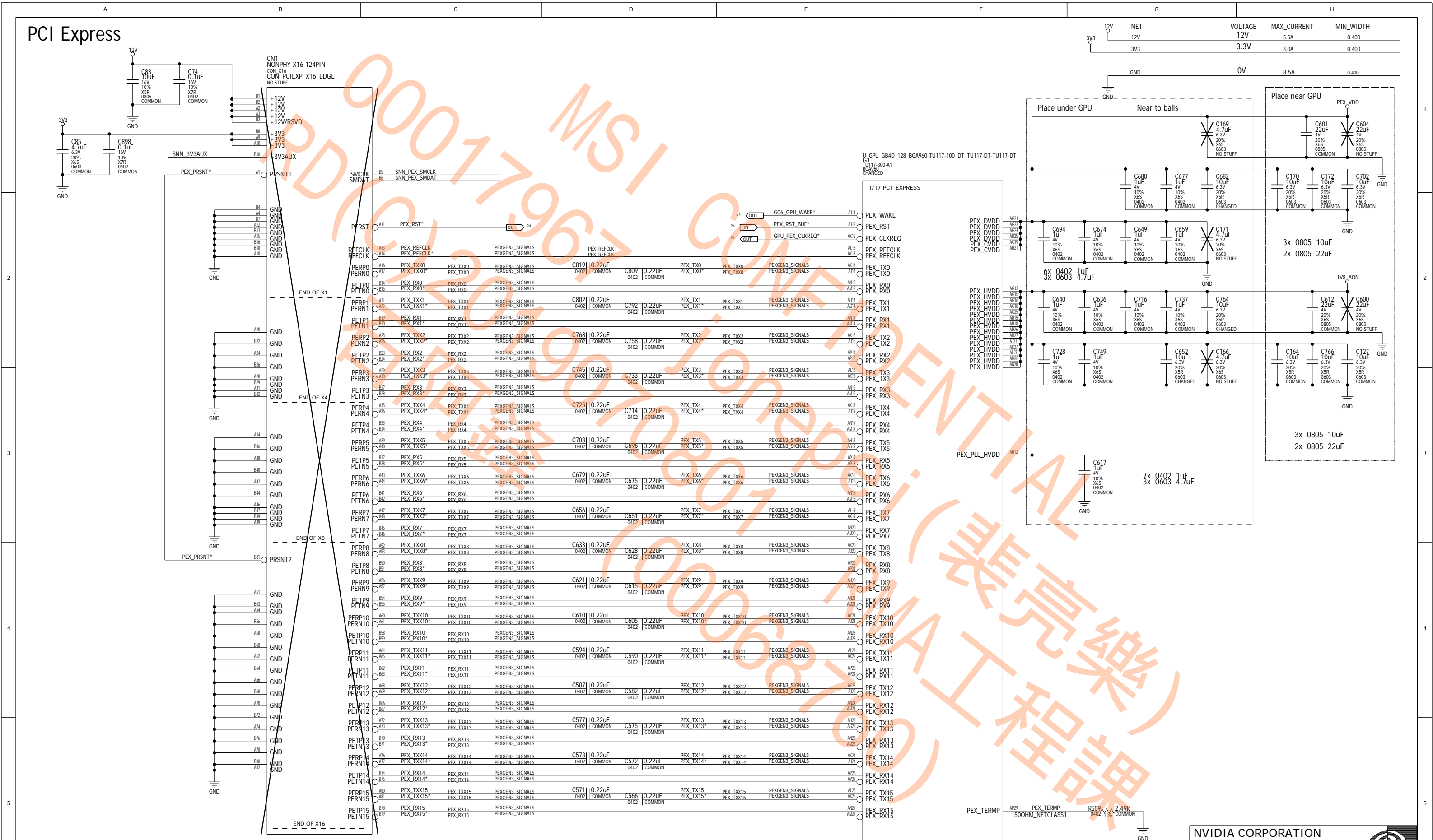
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Block Diagram




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## PCI Express

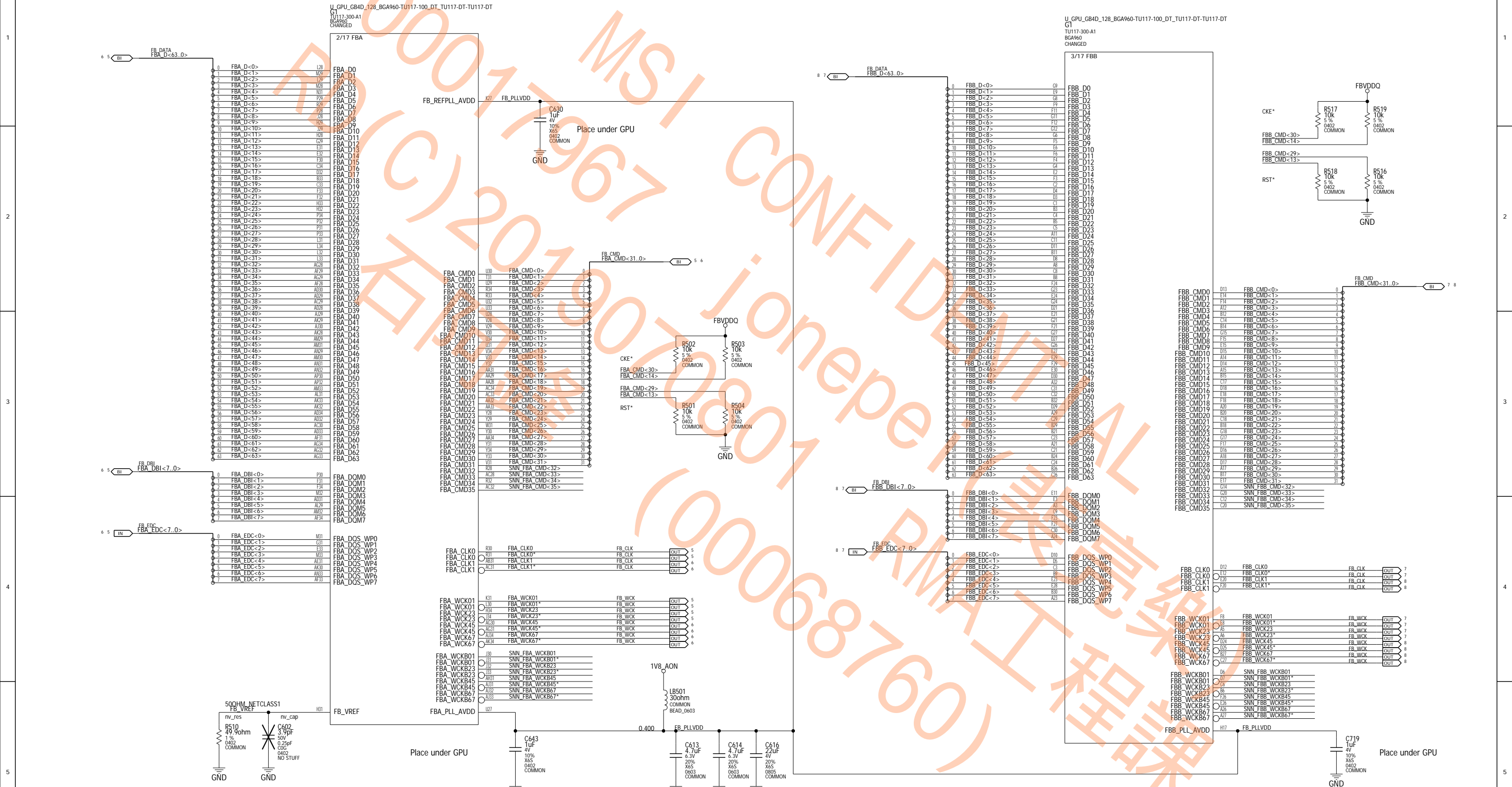


ASSEMBLY	TU117-300, 128b GDDR5, DVI-D-DL + HDMI
PAGE DETAIL	PCI Express

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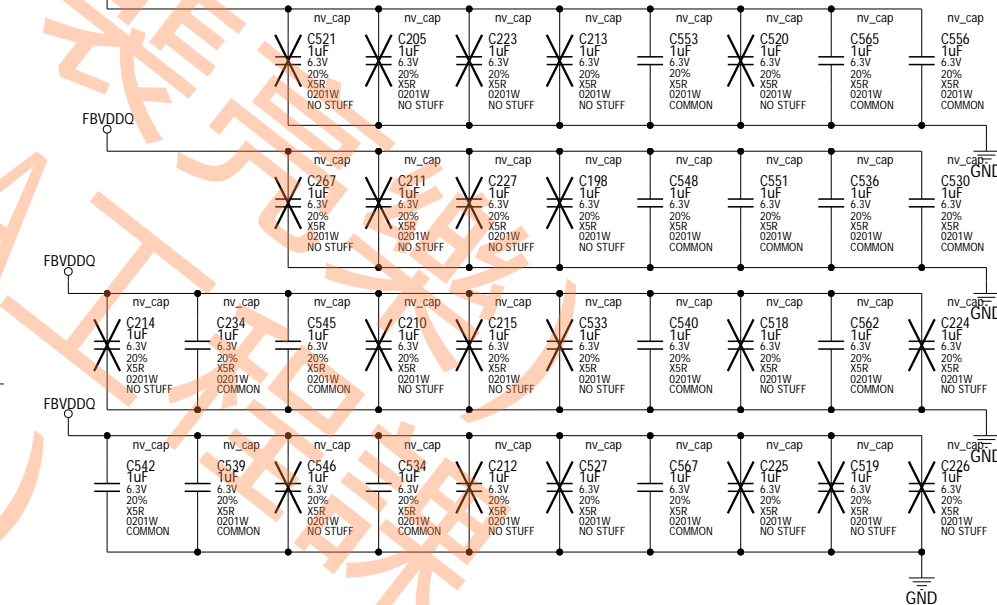
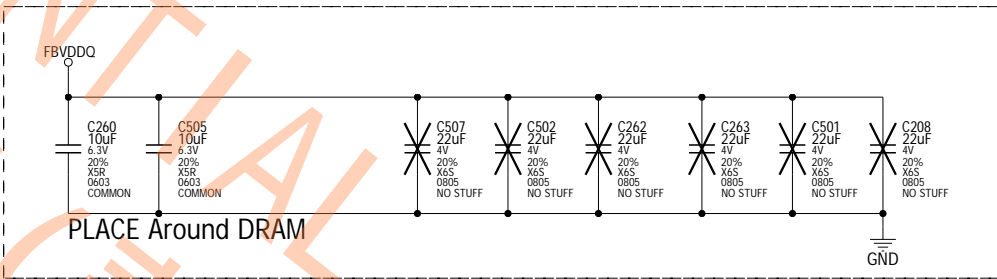
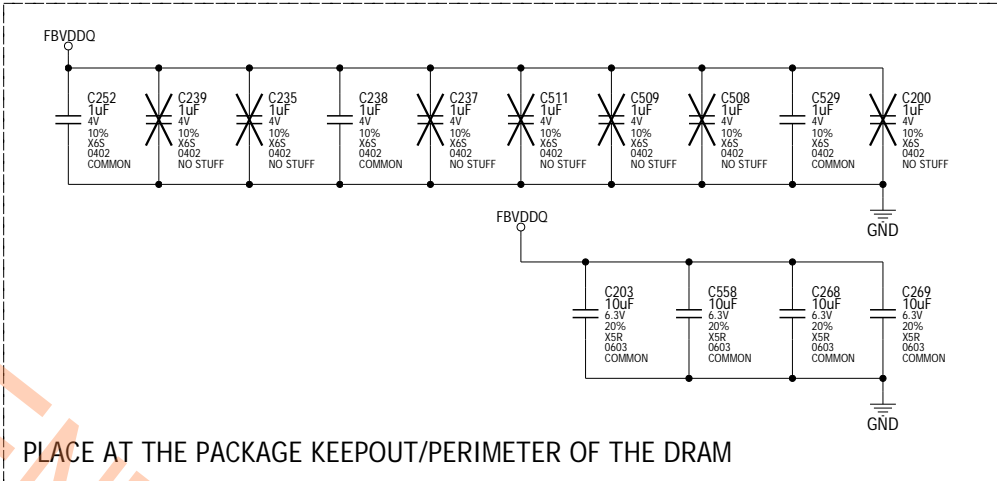
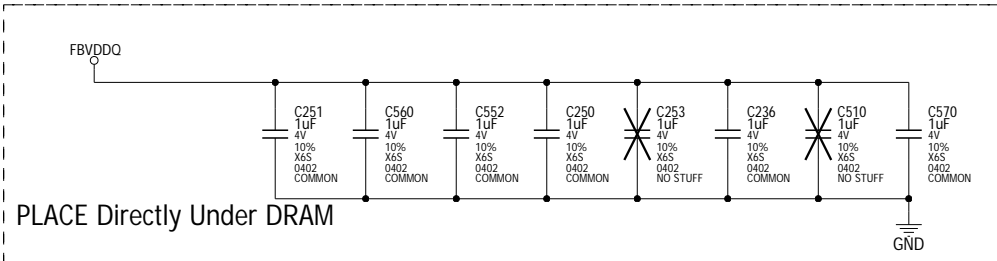
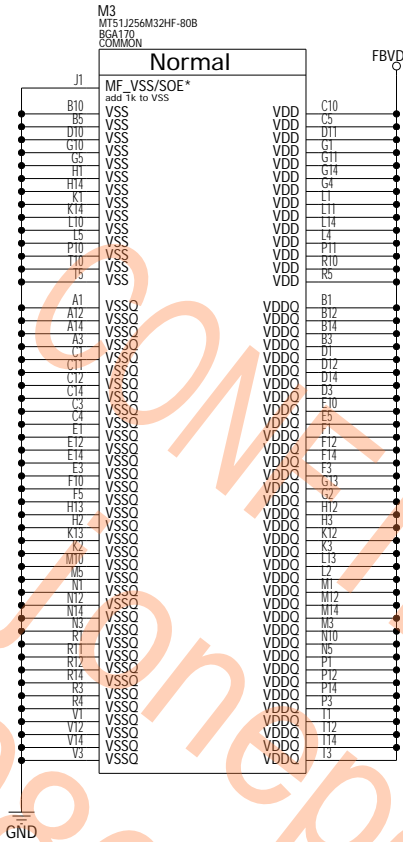
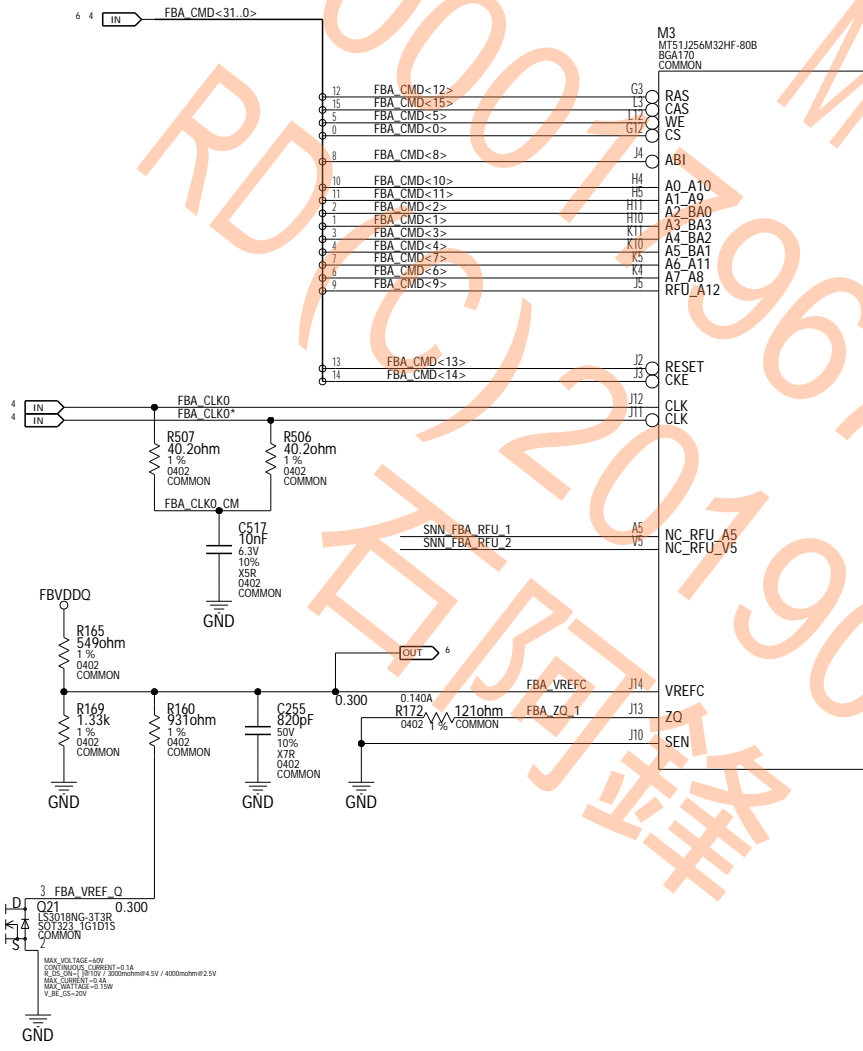
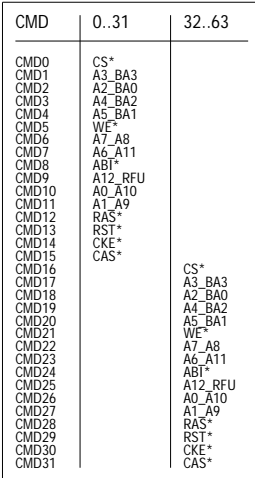
MEMORY: GPU Partition A/B



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MEMORY: FBA Partition 31..0



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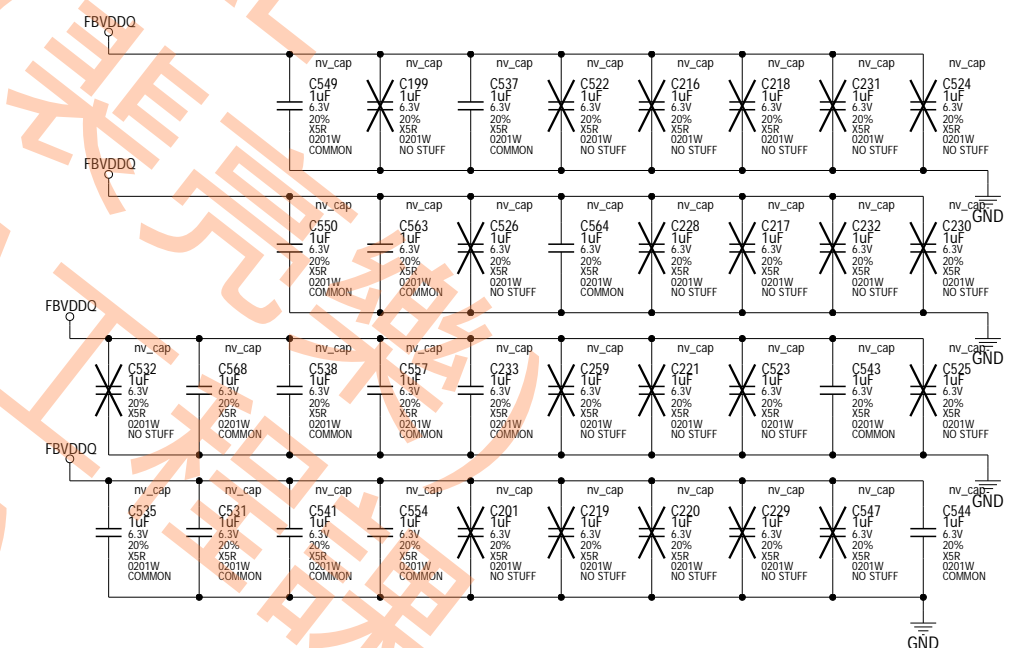
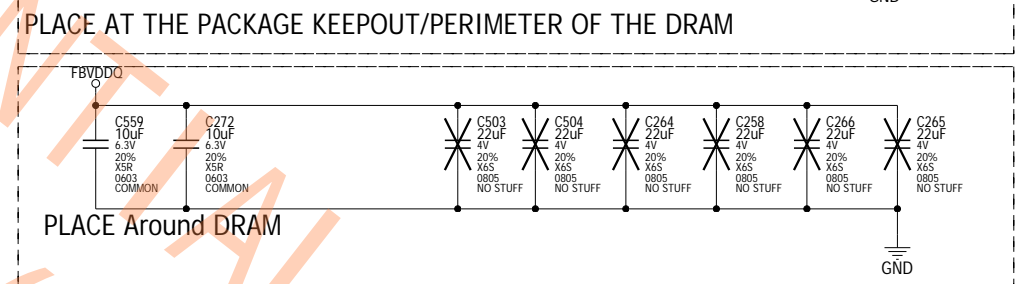
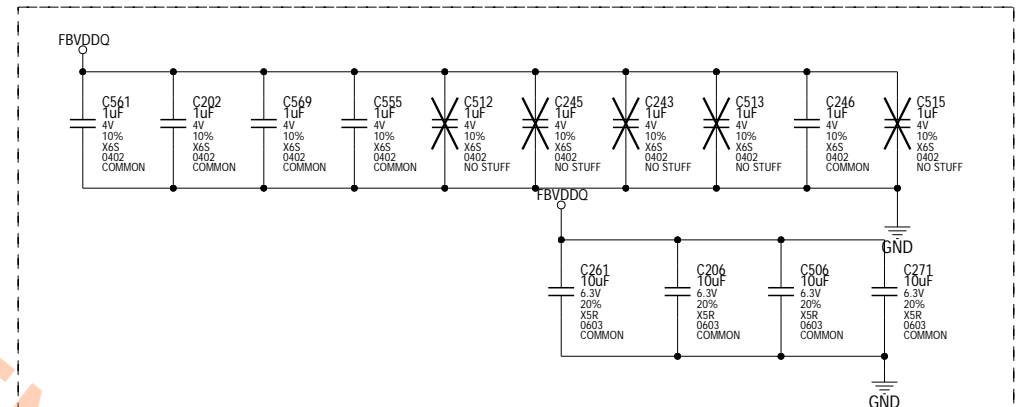
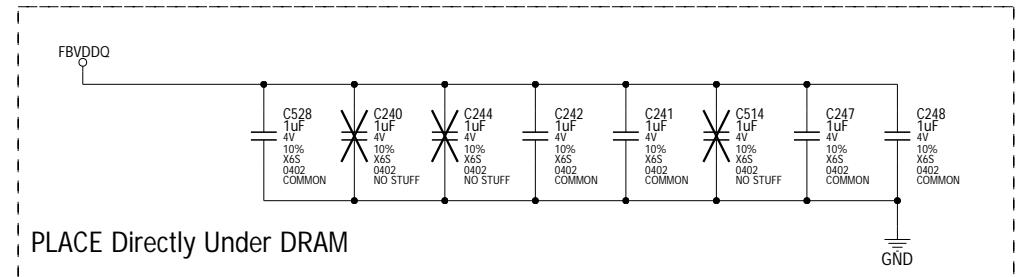
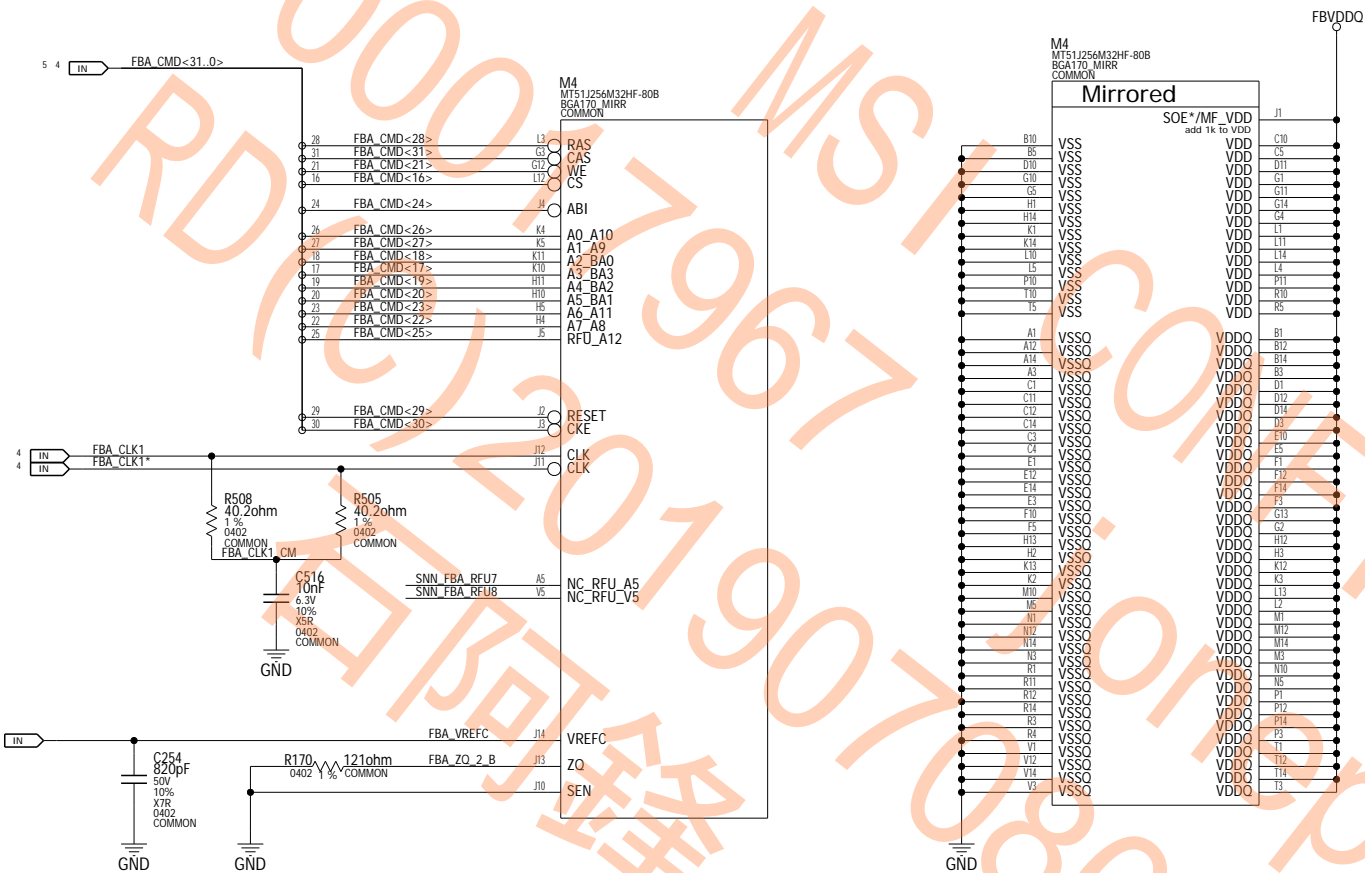
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ASSEMBLY	TU117-300, 128b GDDR5, DVI-D-DL + HDMI
PAGE DETAIL	MEMORY: FBA[31:0]

MEMORY: FBA Partition 63..32

CMD	0..31	32..63
CMD0	CS*	
CMD1	A3..BA3	
CMD2	A2..BA0	
CMD3	A4..BA2	
CMD4	A5..BA1	
CMD5	WE*	
CMD6	A7..A8	
CMD7	A6..A11	
CMD8	AB1	
CMD9	A12..RFU	
CMD10	A0..A10	
CMD11	A1..A9	
CMD12	RAS*	
CMD13	RST*	
CMD14	CKE*	
CMD15	CAS*	
CMD16		CS*
CMD17		A3..BA3
CMD18		A2..BA0
CMD19		A1..BA2
CMD20		A5..BA1
CMD21		WE*
CMD22		A7..A8
CMD23		A6..A11
CMD24		AB1
CMD25		A12..RFU
CMD26		A0..A10
CMD27		A1..A9
CMD28		RAS*
CMD29		RST*
CMD30		CKE*
CMD31		CAS*



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ASSEMBLY	TU117-300, 128b GDDR5, DVI-D-DL + HDMI
PAGE DETAIL	MEMORY: FBA[63:32]

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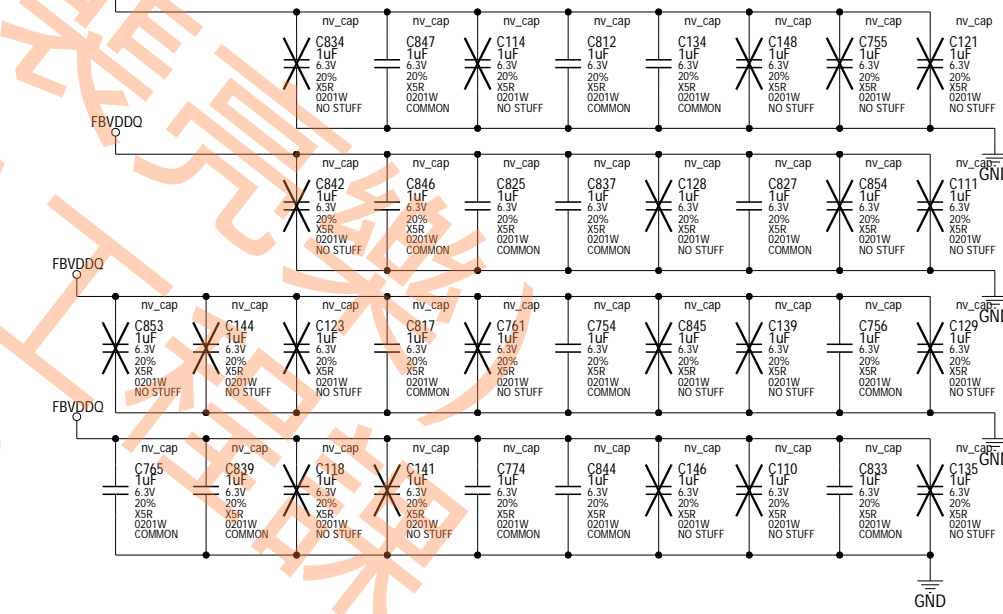
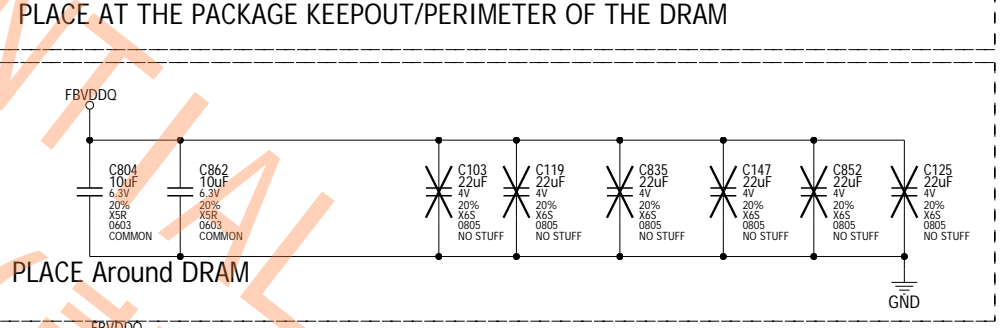
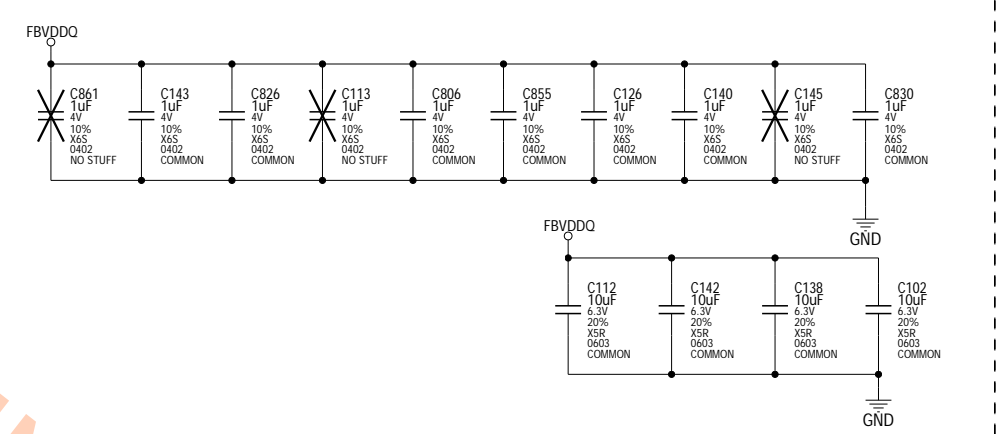
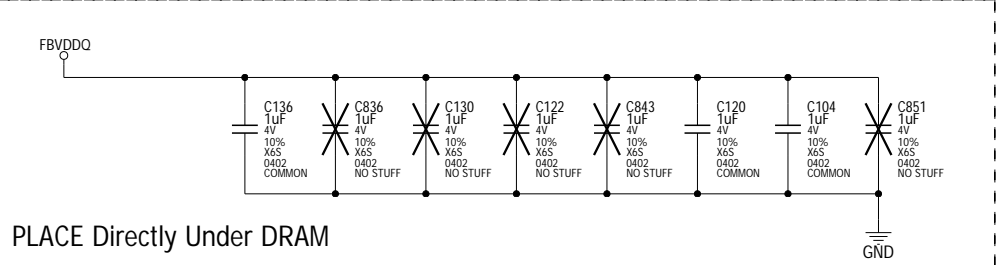
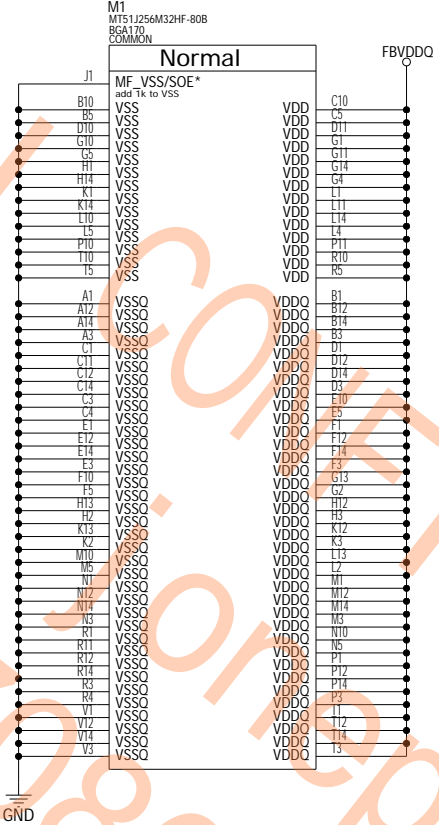
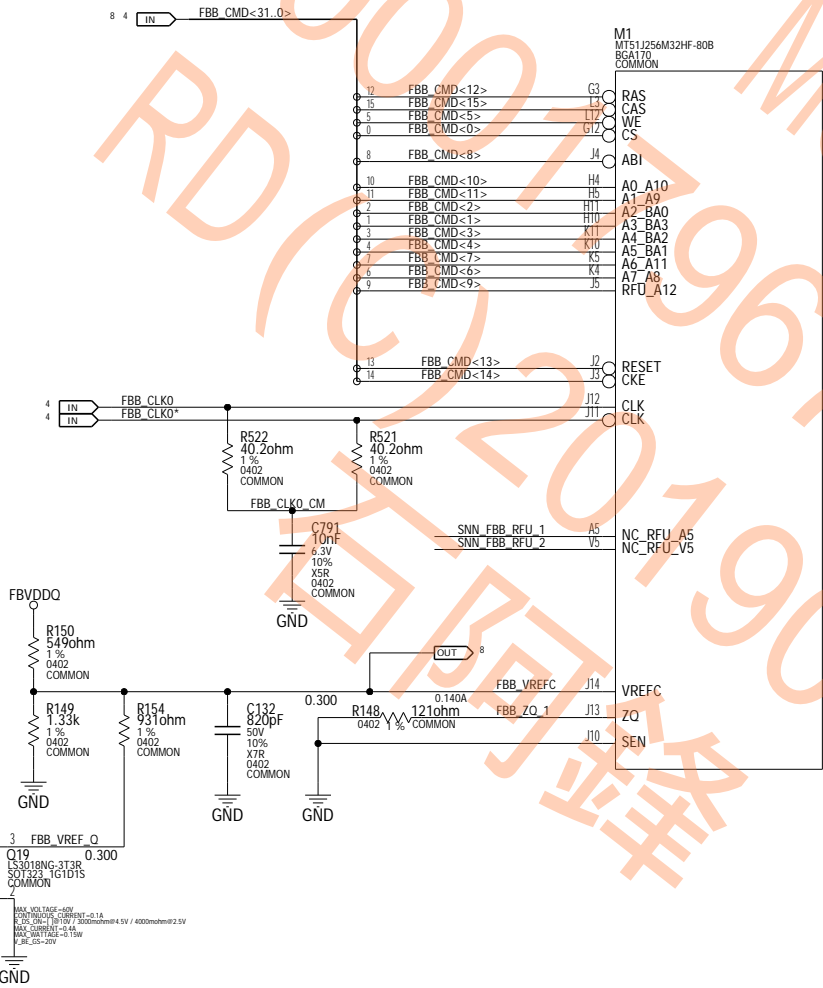


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MEMORY: FBB Partition 31..0

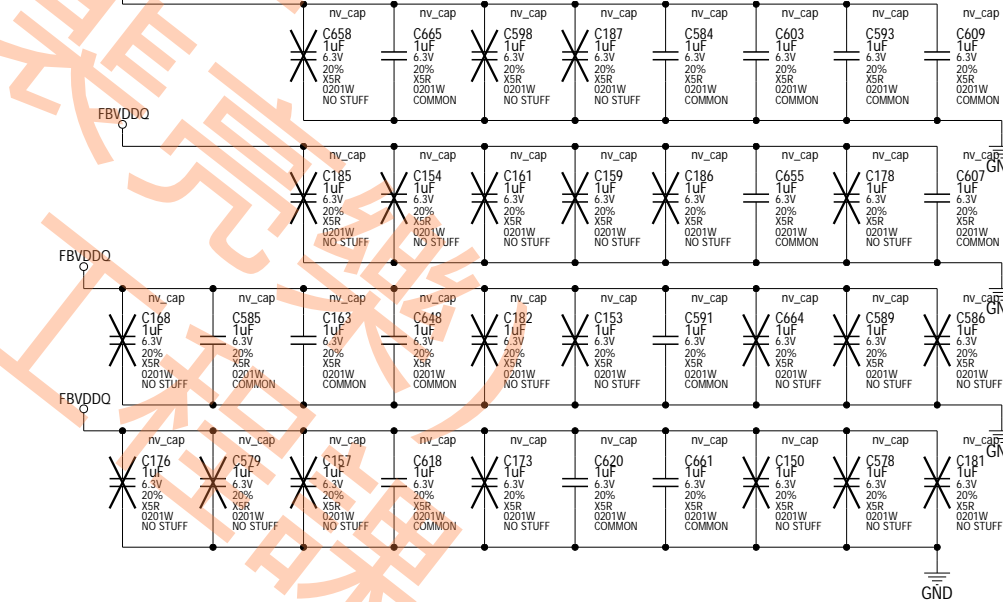
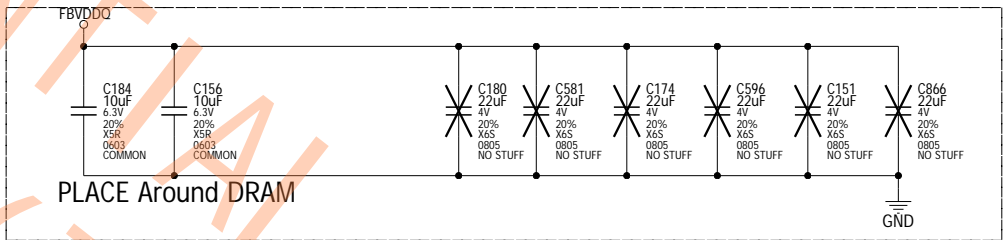
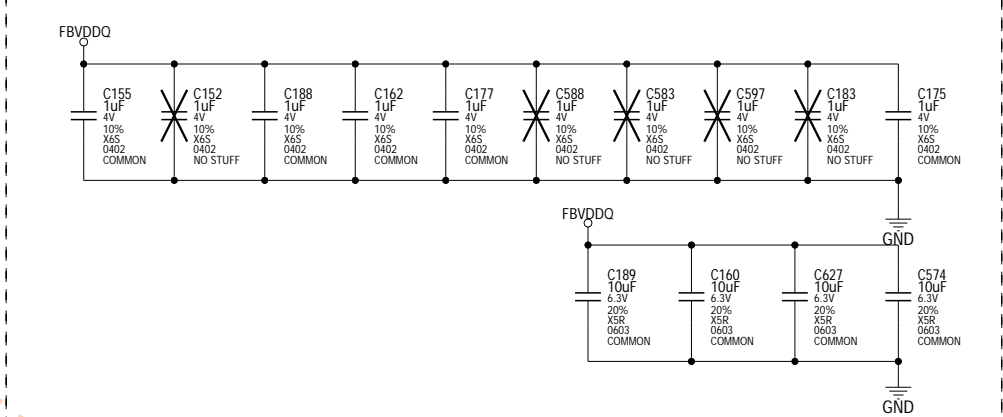
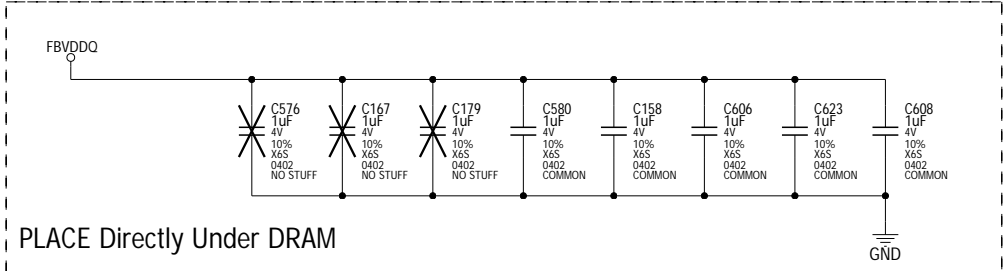
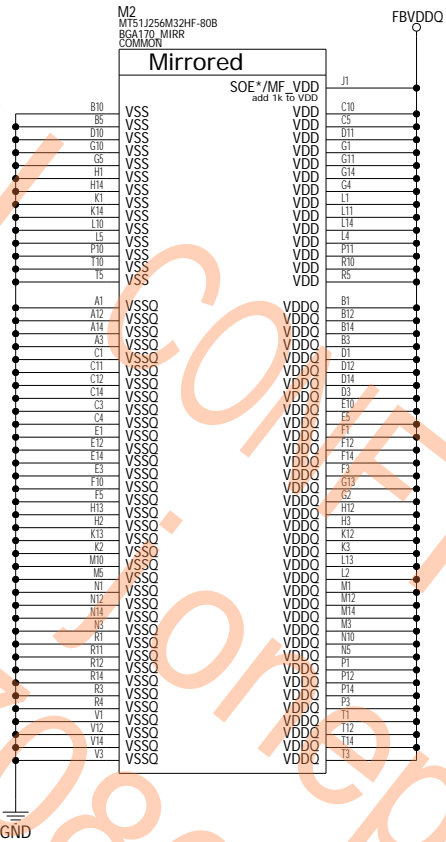
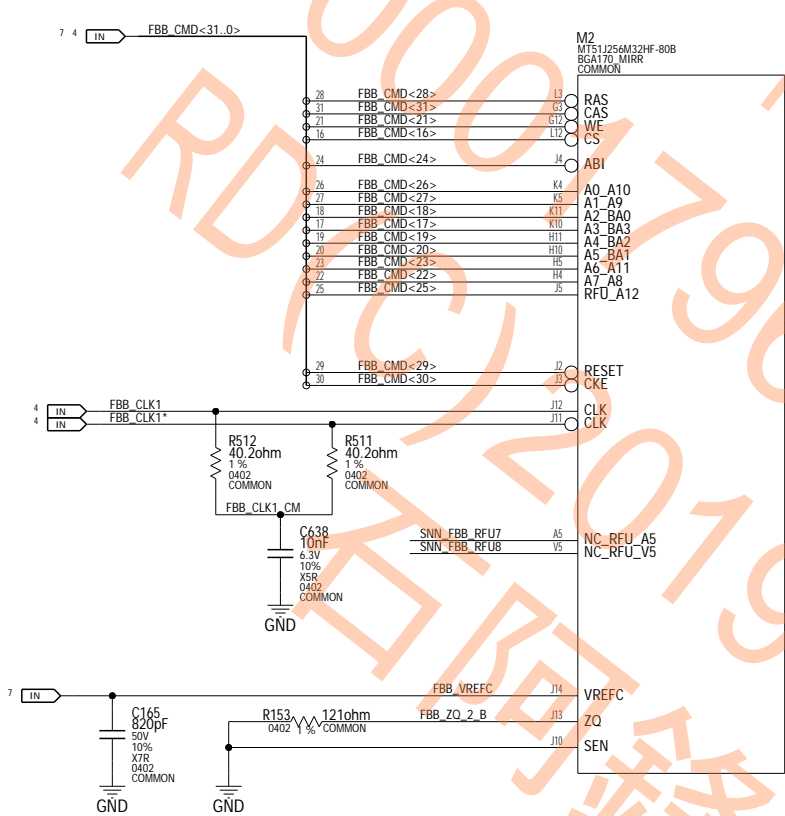
CMD	0..31	32..63
CMD0	CS*	
CMD1	A3_BA3	
CMD2	A2_BA0	
CMD3	A4_BA2	
CMD4	A5_BA1	
CMD5	WE*	
CMD6	A7_A8	
CMD7	A6_A11	
CMD8	AB1*	
CMD9	A12_RFU	
CMD10	A0_A10	
CMD11	A1_A9	
CMD12	RAS*	
CMD13	RST*	
CMD14	CKE*	
CMD15	CAS*	
CMD16		CS*
CMD17		A3_BA3
CMD18		A2_BA0
CMD19		A4_BA2
CMD20		A5_BA1
CMD21		WE*
CMD22		A7_A8
CMD23		A6_A11
CMD24		AB1*
CMD25		A12_RFU
CMD26		A0_A10
CMD27		A1_A9
CMD28		RAS*
CMD29		RST*
CMD30		CKE*
CMD31		CAS*





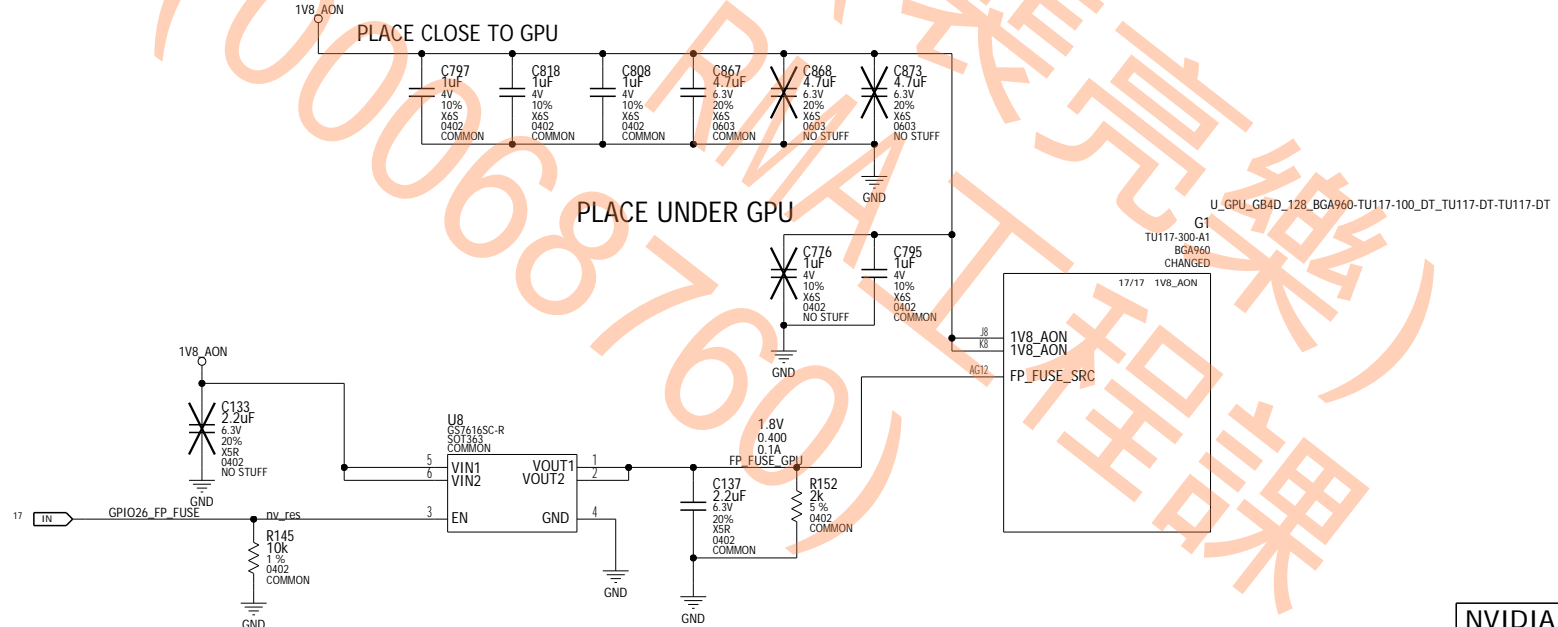
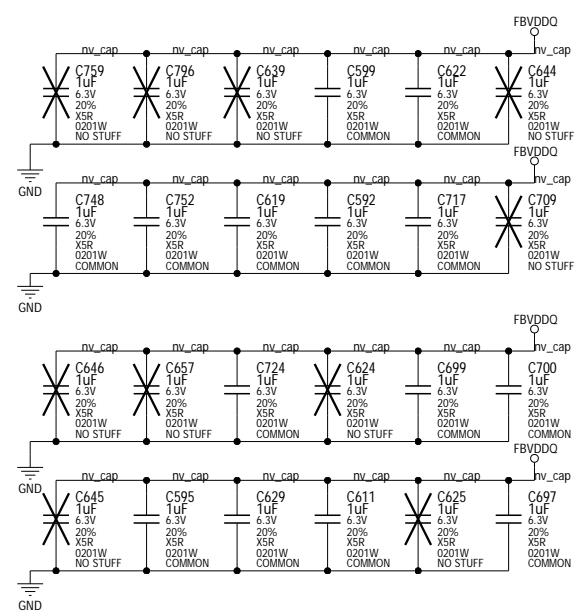
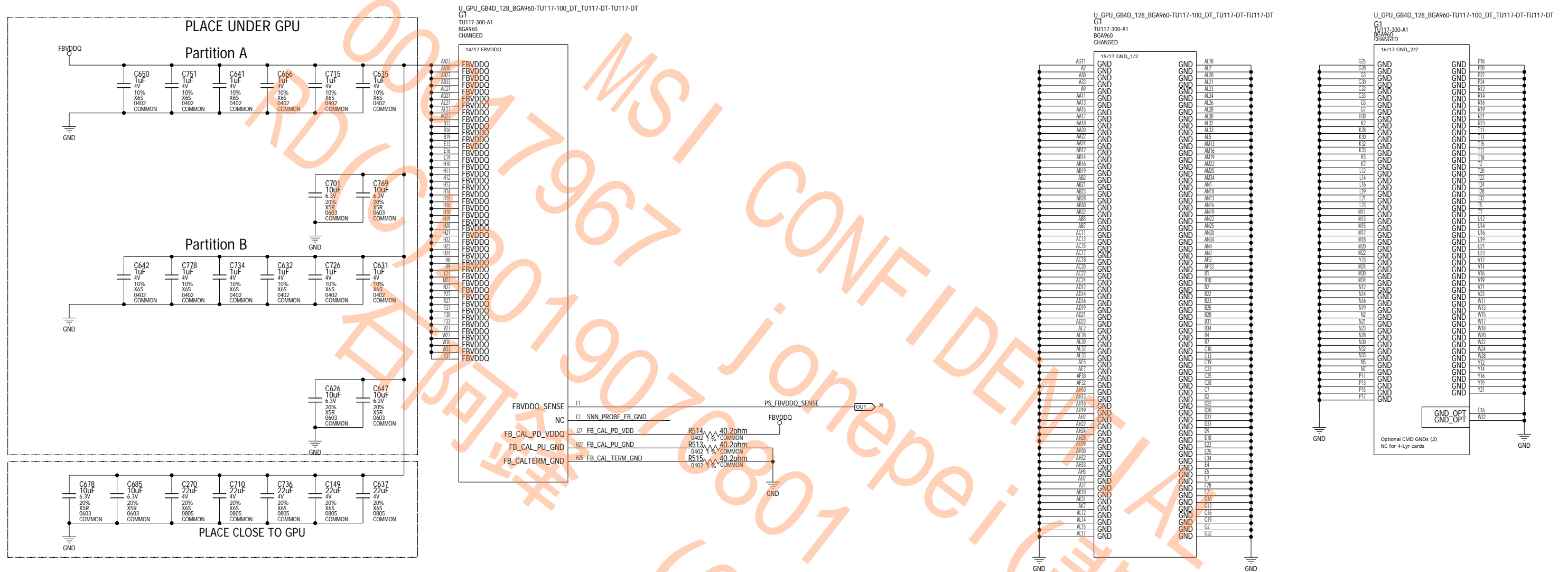
MEMORY: FBB Partition 63..32


CMD	0..31	32..63
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CMD1	A3_BA3	
CMD2	A2_BA0	
CMD3	A4_BA2	
CMD4	A5_BA1	
CMD5	WE*	
CMD6	A7_A8	
CMD7	A6_A11	
CMD8	AB1*	
CMD9	A12_RFU	
CMD10	A0_A10	
CMD11	A1_A9	
CMD12	RAS*	
CMD13	RST*	
CMD14	CKE*	
CMD15	CAS*	
CMD16		CS* BA3
CMD17		A3_BA0
CMD18		A4_BA2
CMD19		A5_BA1
CMD20		WE*
CMD21		A7_A8
CMD22		A6_A11
CMD23		AB1*
CMD24		A12_RFU
CMD25		A0_A10
CMD26		A1_A9
CMD27		RAS*
CMD28		RST*
CMD29		CKE*
CMD30		CAS*
CMD31		





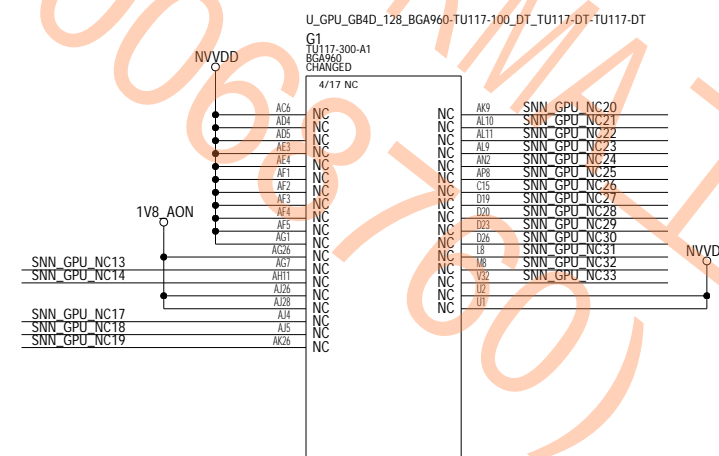
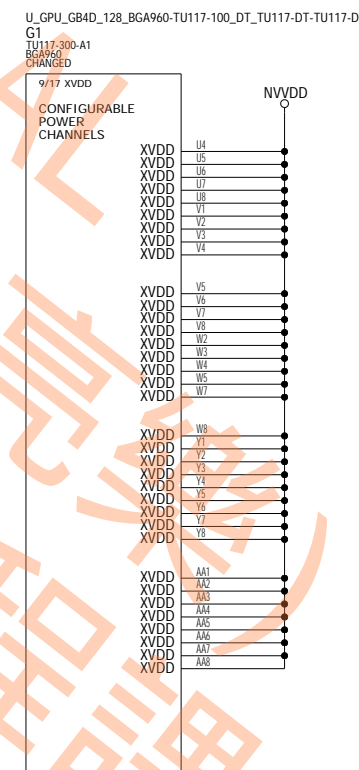
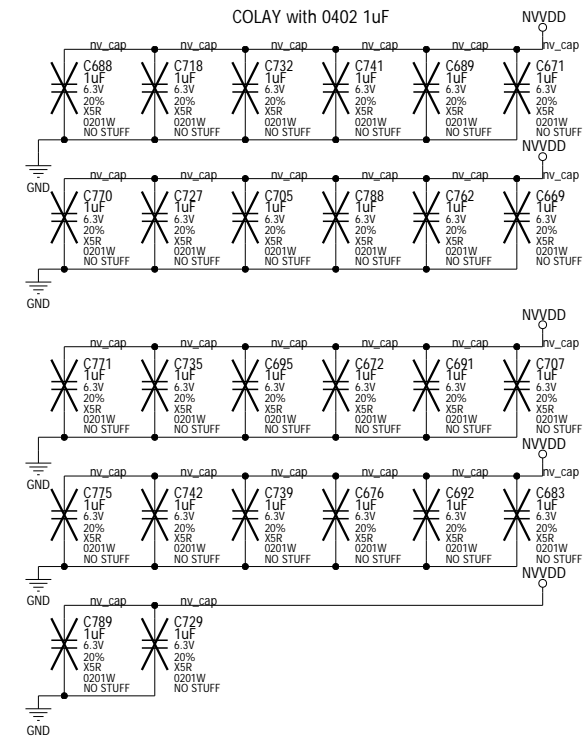
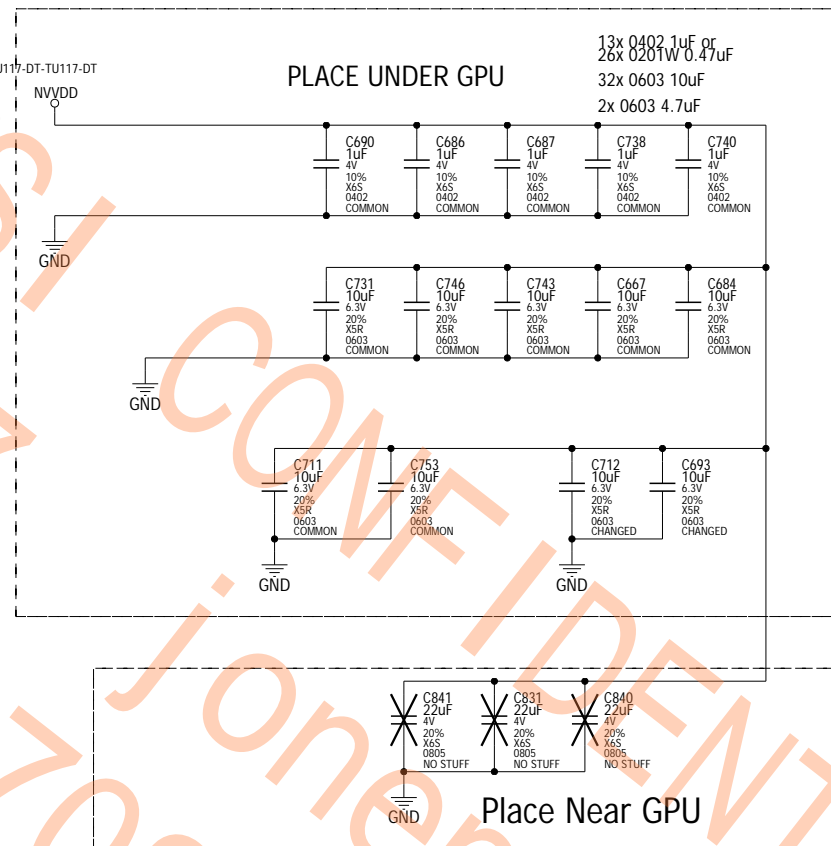
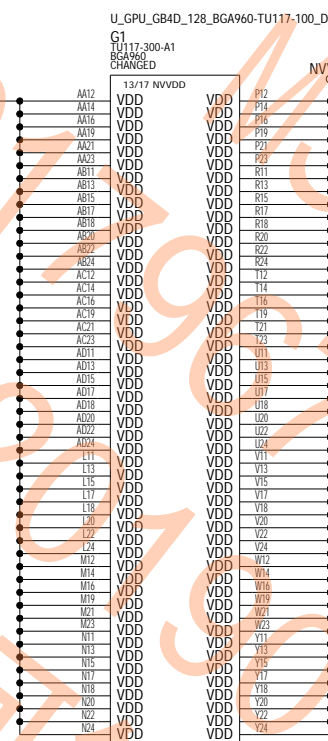
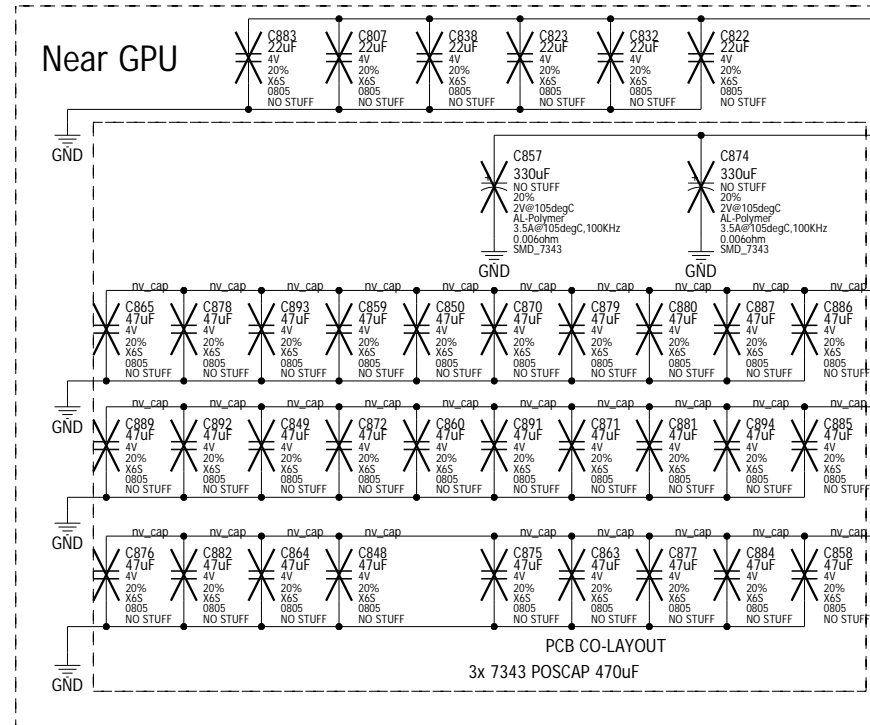
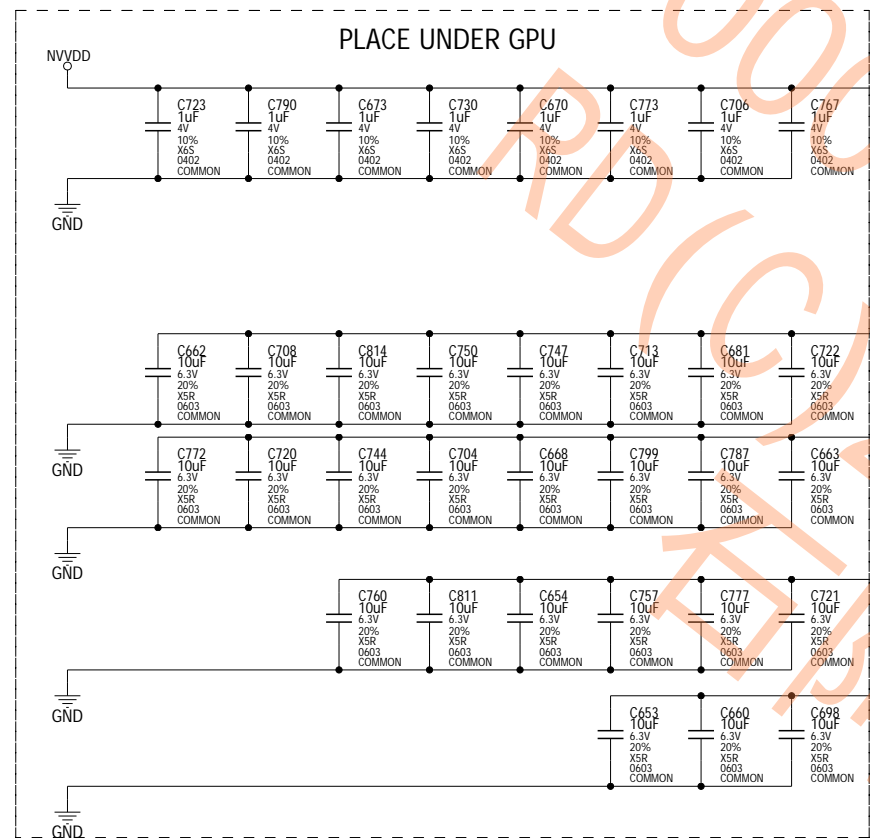
## GPU FBVDDQ & 1V8 Decoupling



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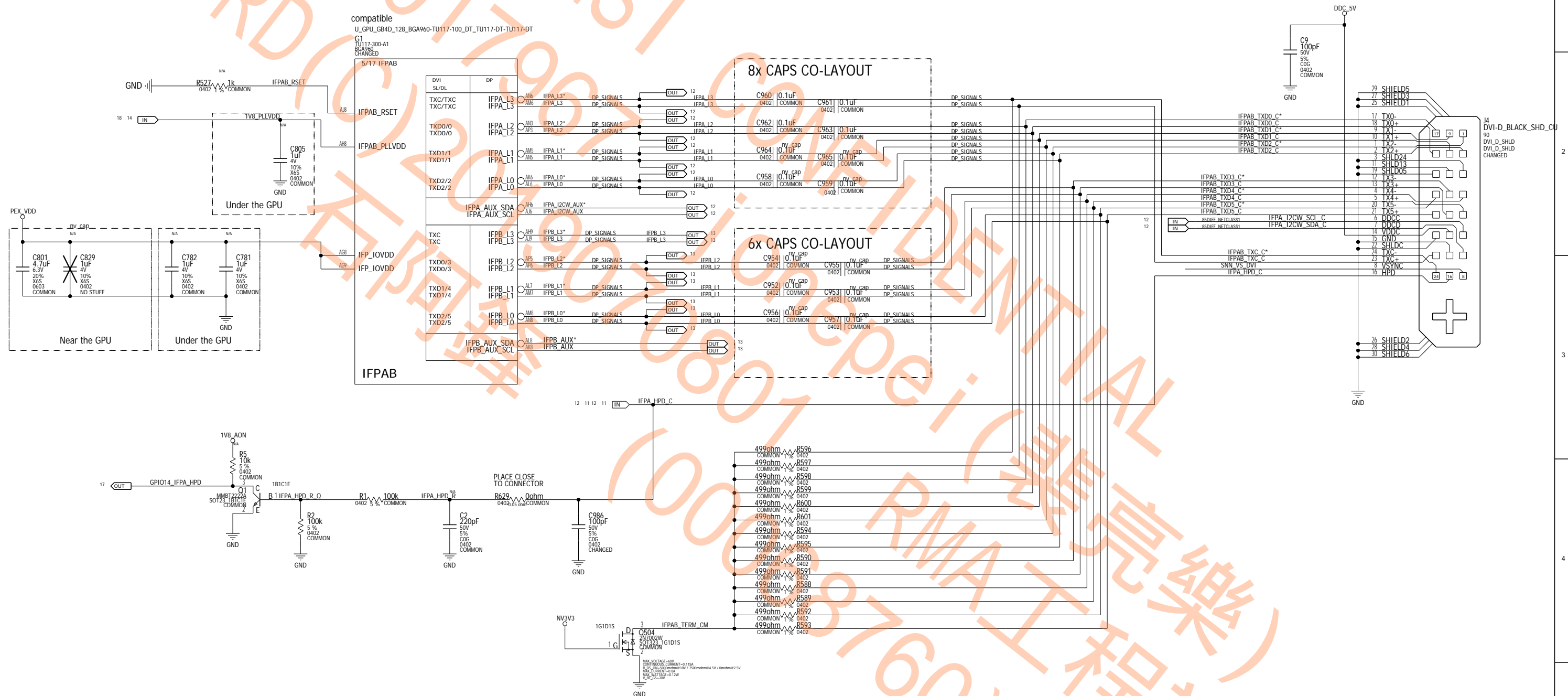
## GPU NVVDD Decoupling



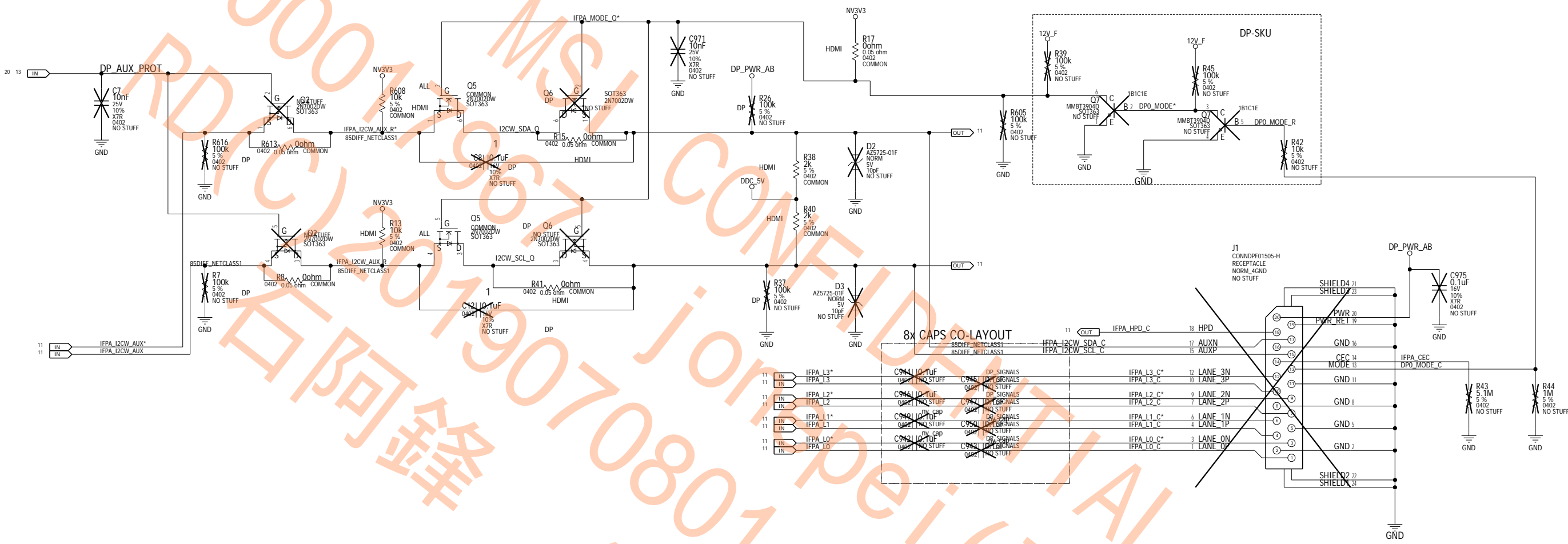
ASSEMBLY	TU117-300, 128b GDDR5, DVI-D-DL + HDMI
PAGE DETAIL	GPU NVVDD DECOUPLING

	PAGE DETAIL	GPU NVIDIA DECOUPLING
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# IFPAB DVI-D-DL CO-LAYOUT WITH 2x DP








# IFPA DP CO-LAYOUT WITH IFPAB DVI-D-DL

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## Page13: IFPB DP

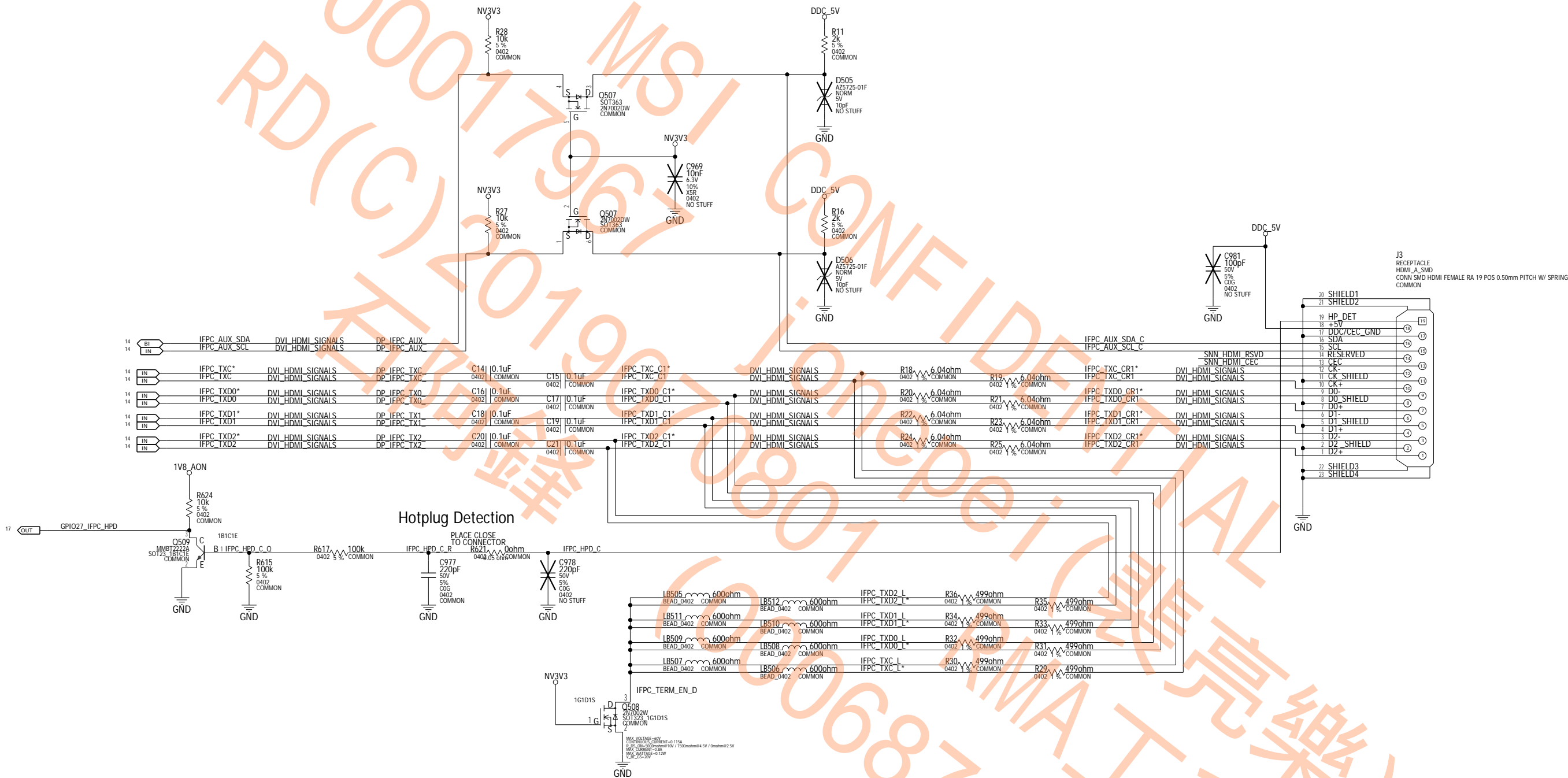


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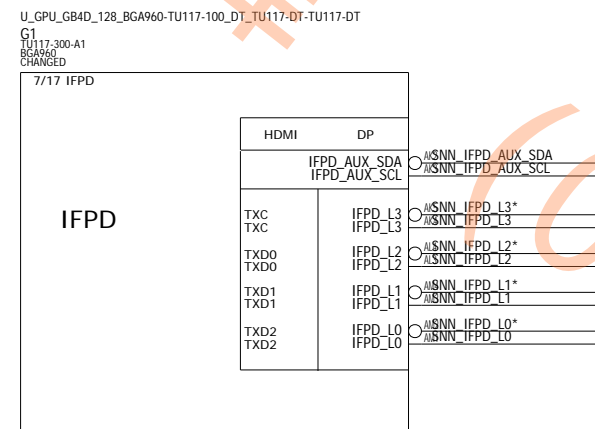
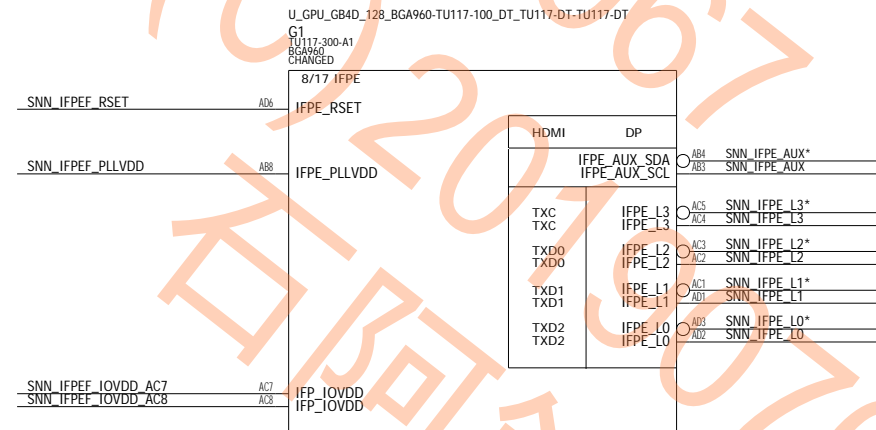


IFPC HDMI

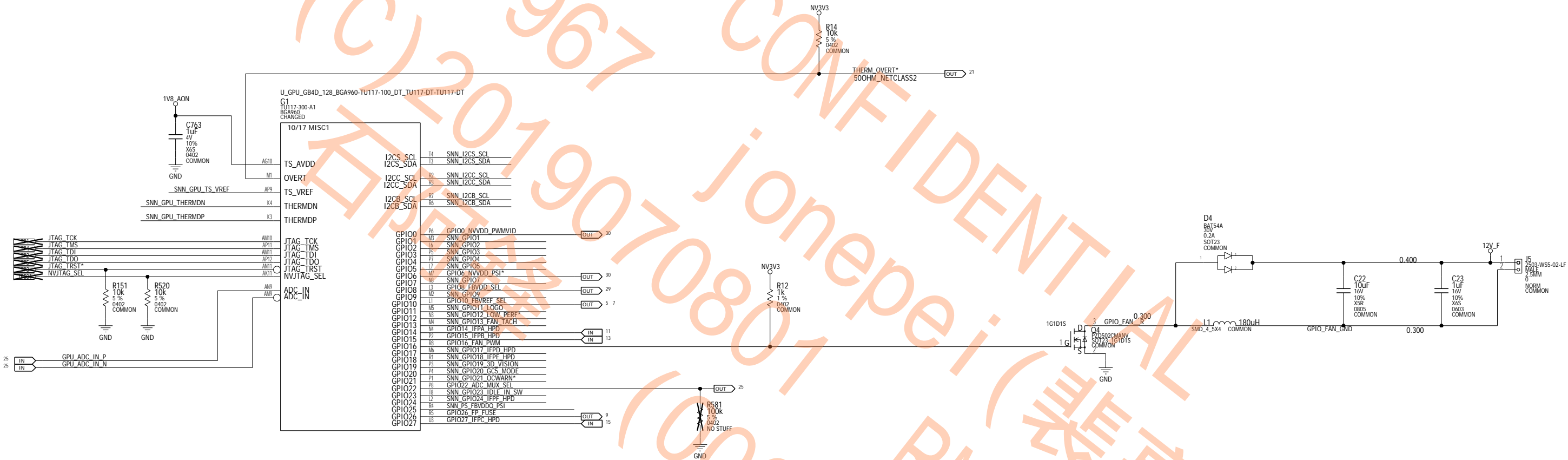


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## IFPDEF UNUSED



MISC1: GPIO, Fan, Thermal, JTAG

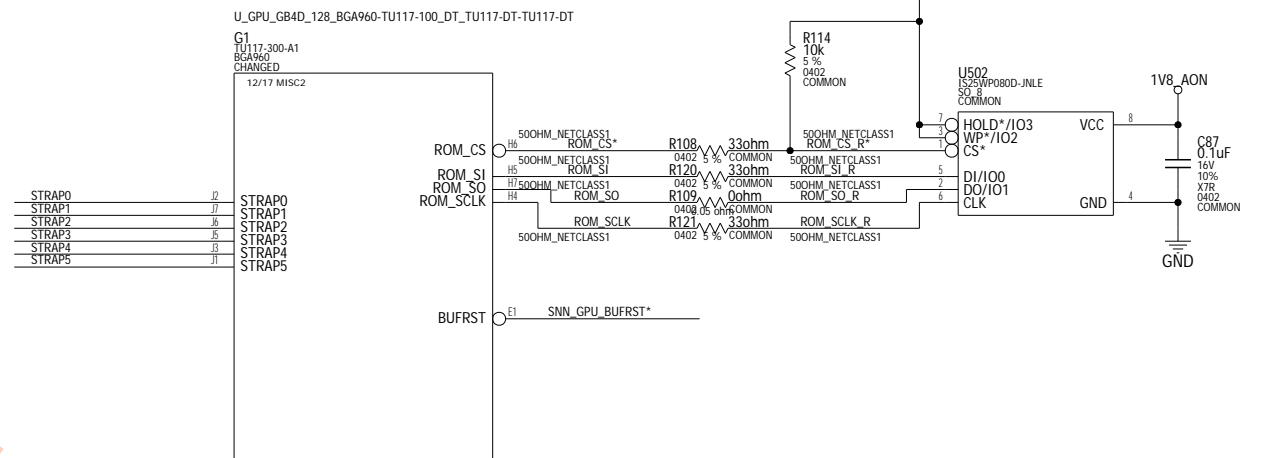
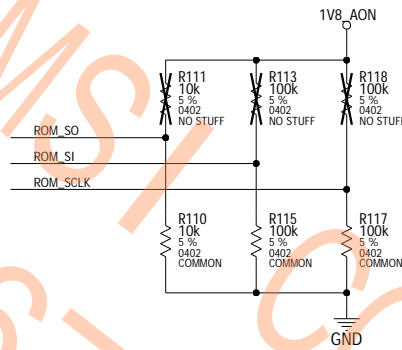


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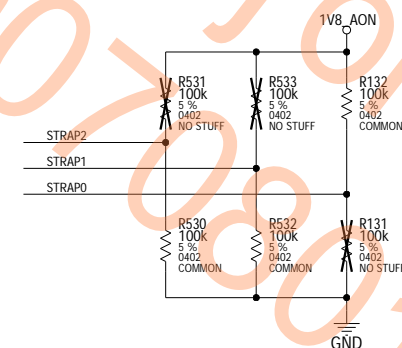
## MISC2: ROM, XTAL, Straps

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	

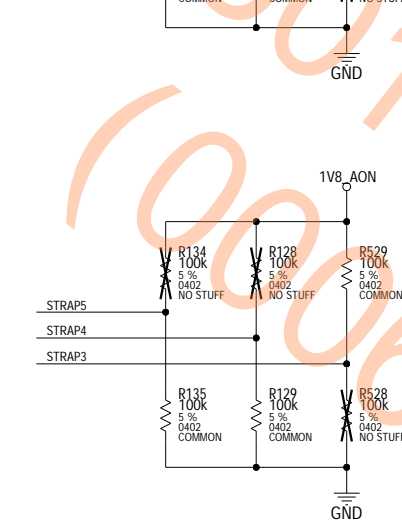


H=High :Tied to 1.8V  
M=Middle:Tied to 0.9V  
L=Low :Tied to 0V

STRAP2	STRAP1	STRAP0	RAMCFG[4:0]	
L	L	L	0000	Samsung 8Gb 256Mx32 K4G80325FC-HC25
L	L	H	0001	Micron 8Gb 256Mx32 MT51J256M32HF-80-B
L	H	L	0010	Hynix 8Gb 256Mx32 H5GC8H24AJR-R2C
L	H	H	0011	Hynix 8Gb 256Mx32 H5GQ8H24MJR-R4C
H	H	L	0110	
H	H	H	0111	
L	L	M	1000	
L	M	L	1001	



STRAP5	STRAP4	STRAP3	SMB_ALT_ADDR	DEVID_SEL	PCI_E_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

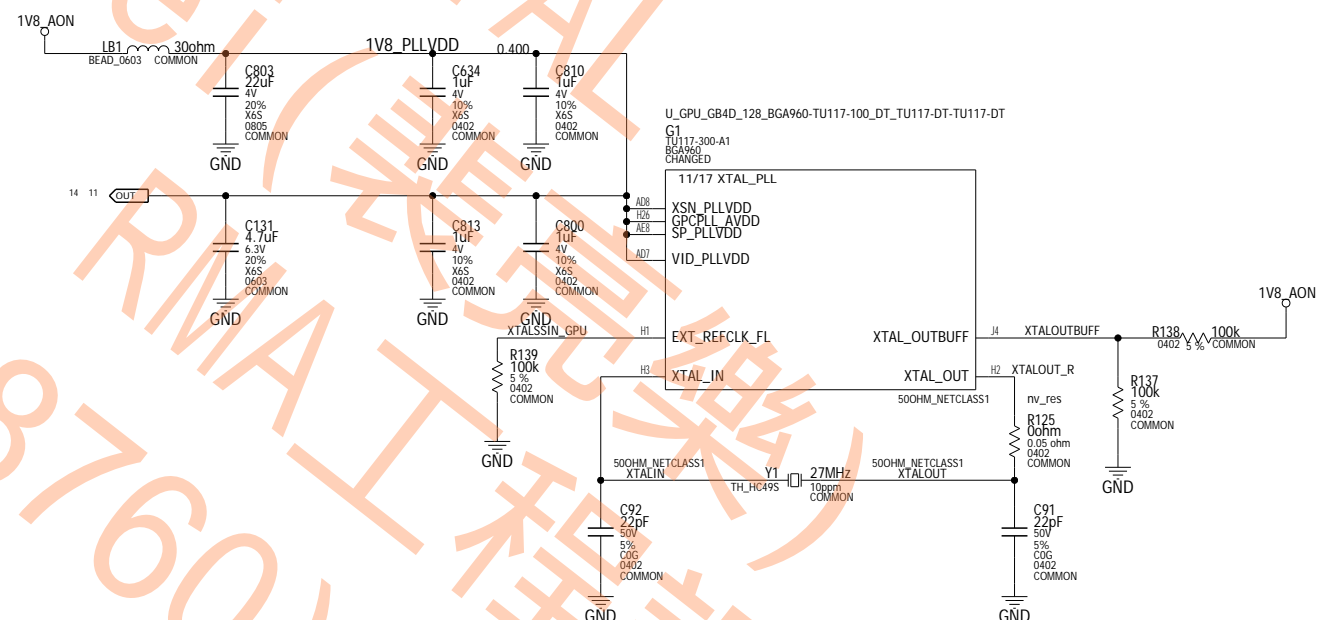
1:DEVID_SEL REBRAND
0:DEVID_SEL ORIGNAL


1:PCIE_CFG LOW POWER
0:PCIE_CFG HIGH POWER

1:VGA_DEVICE ENABLE
0:VGA_DEVICE DISABLE
```

## Smart Fan

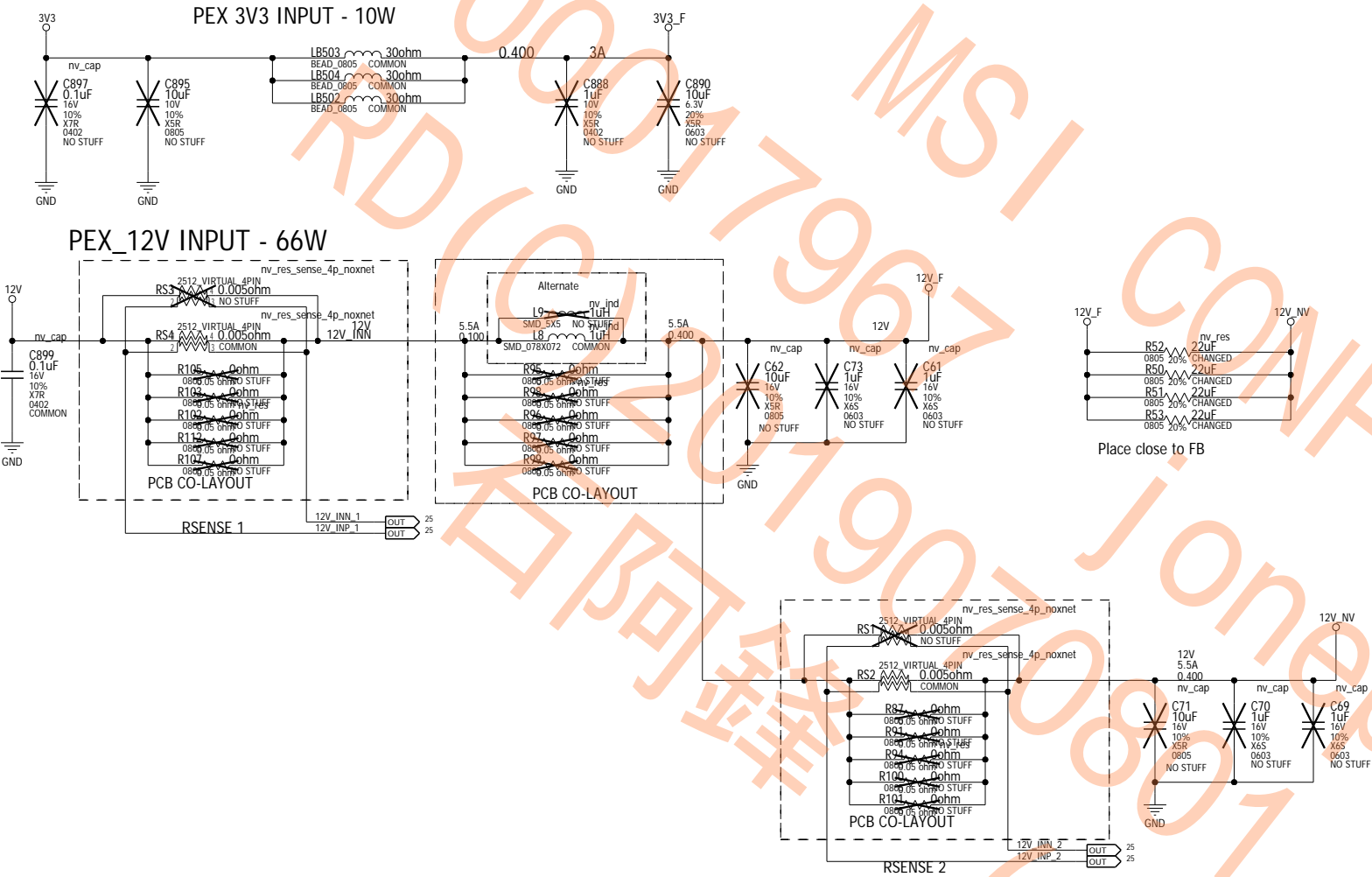
XTALOUTBUFF	Volatge	SmartFan PWM	GPIO/PWM at the FAN
Low	0V	GPIO Disabled	100%
Middle	0.9V	66% PWM	33% PWM (Typical)
High	1.8V	33% PWM	66% PWM



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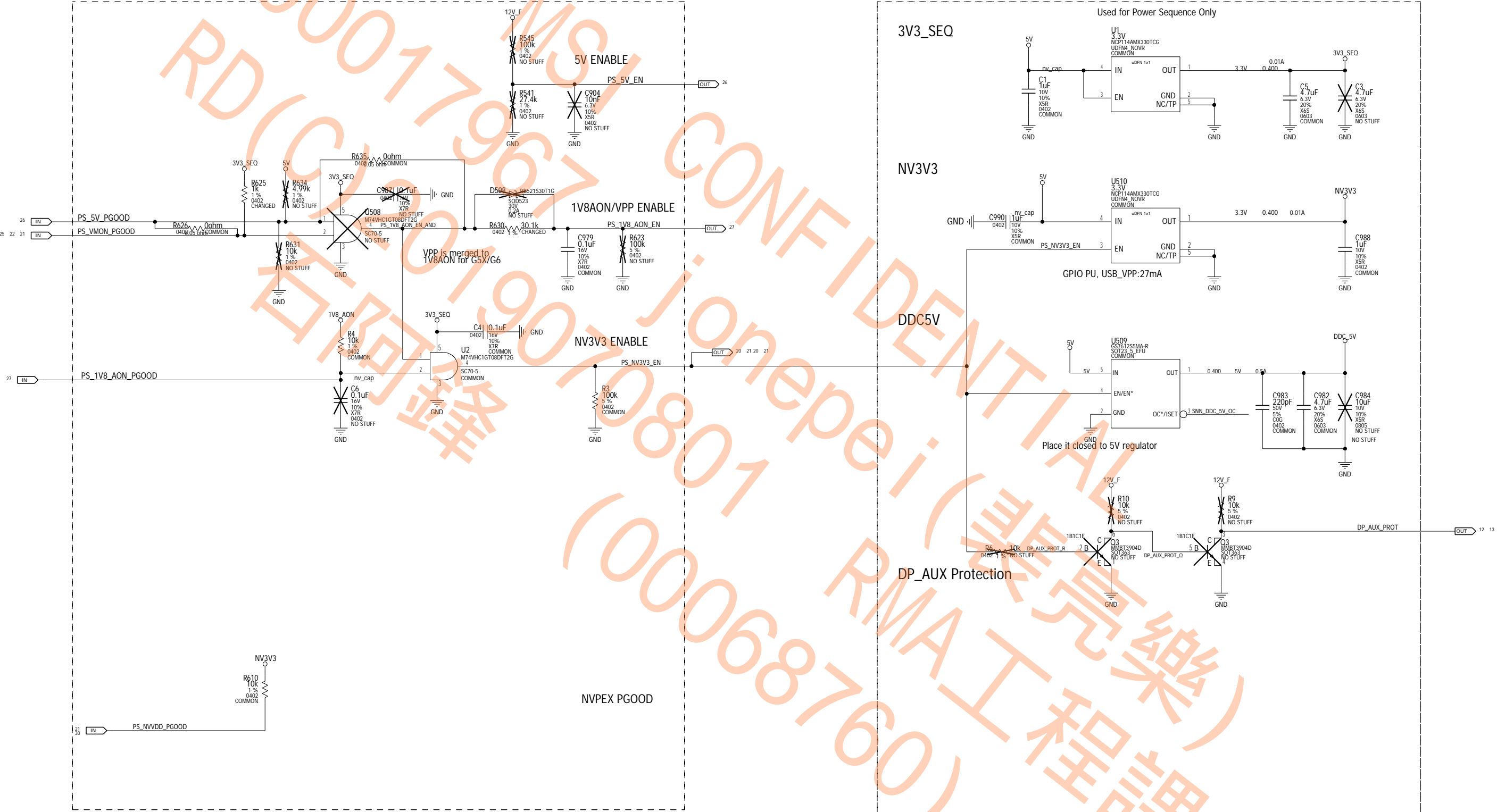
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Power Inputs and Filtering



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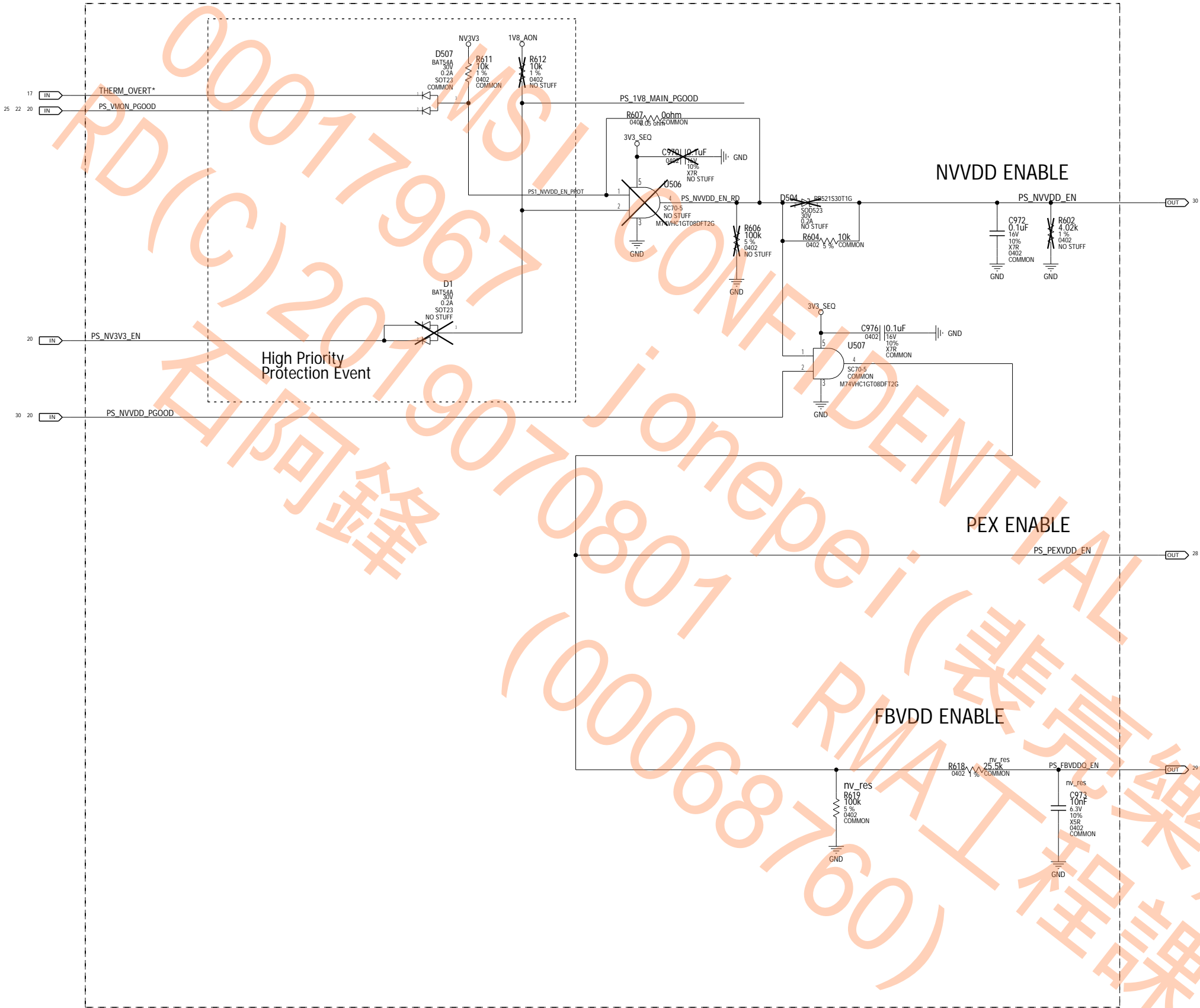
SEQ:5V,1V8,NV3V3 ENABLE



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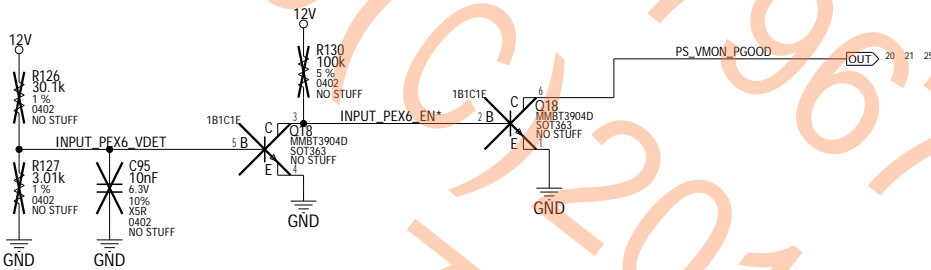
SEQ:NV,PEX,FB ENABLE



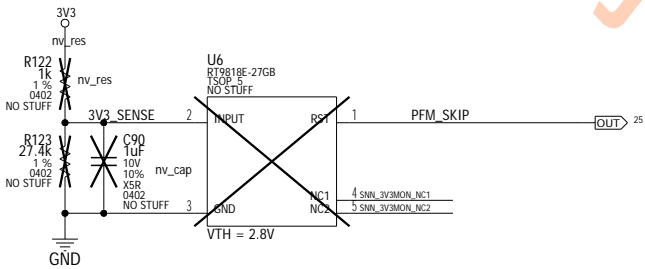
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SEQUENCE:Voltage Monitor



Route the trace to PEX Golden Finger



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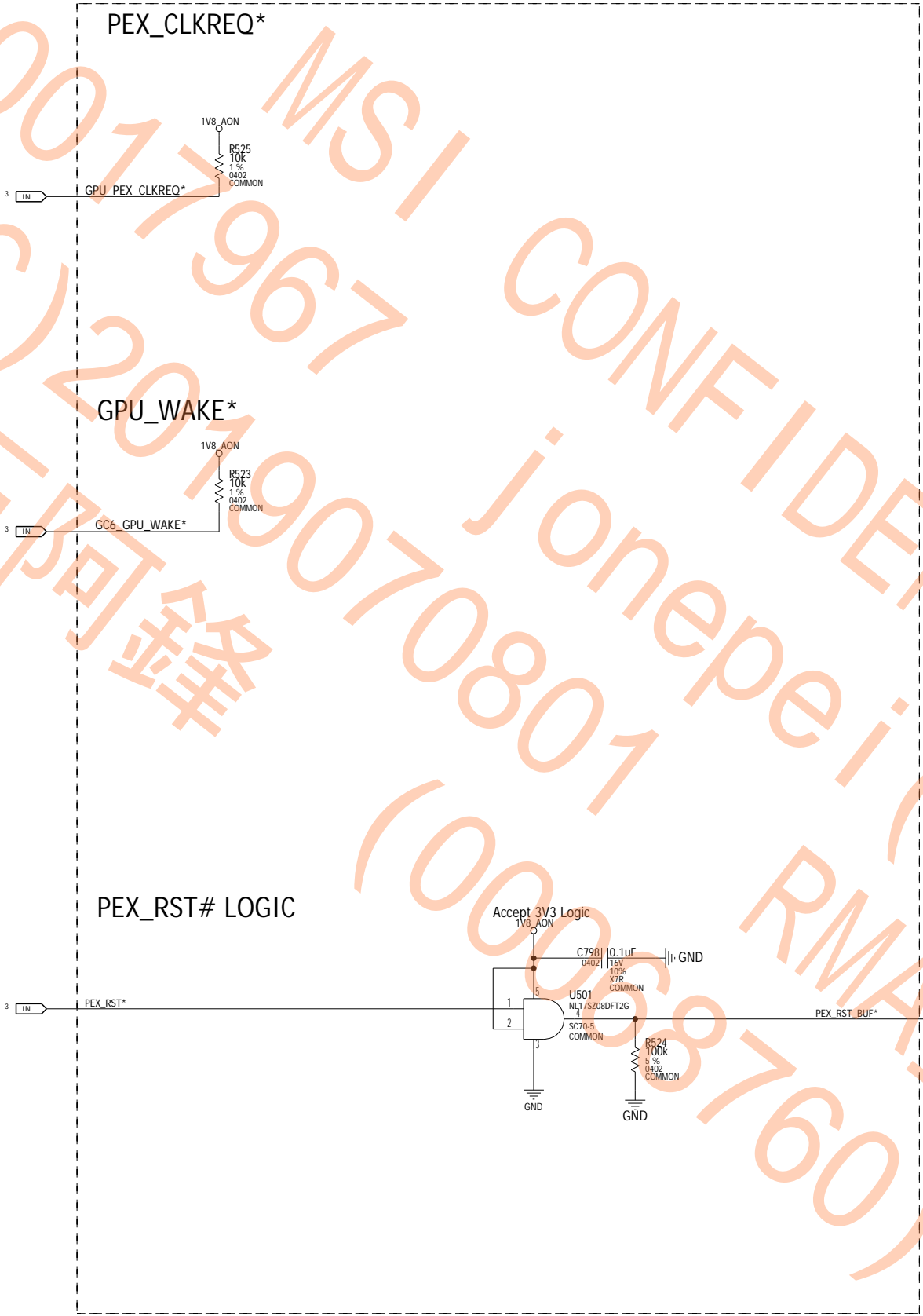
SEQUENCE:Discharge

00017967 MSI CONFIDENTIAL  
RD(C)2019070801 jonepei (裴亮傑)  
石阿鋒 (00068760) RMA工程師

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SEQUENCE:MISC



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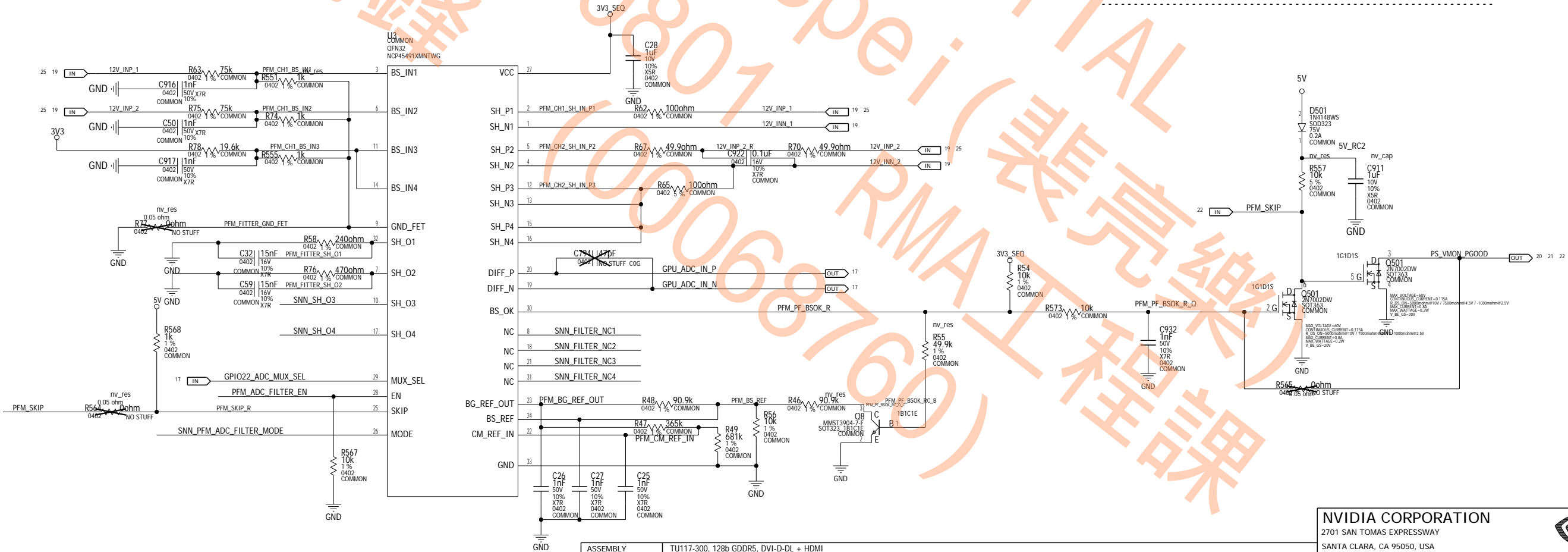
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PWR SENSE

MODE PIN STATUS	MULTIPLEXER OPERATION
LOW	DEVICE A
TRI-STATE(FLOATING)	STAND-ALONE
HIGH	DEVICE B

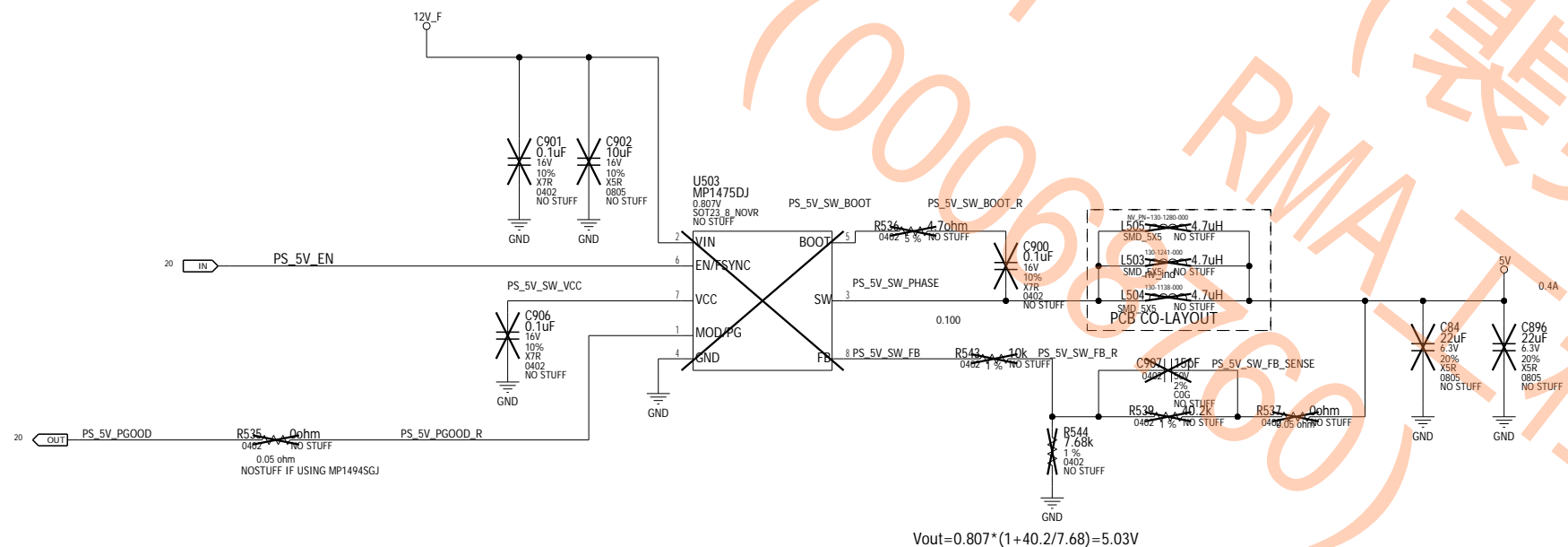
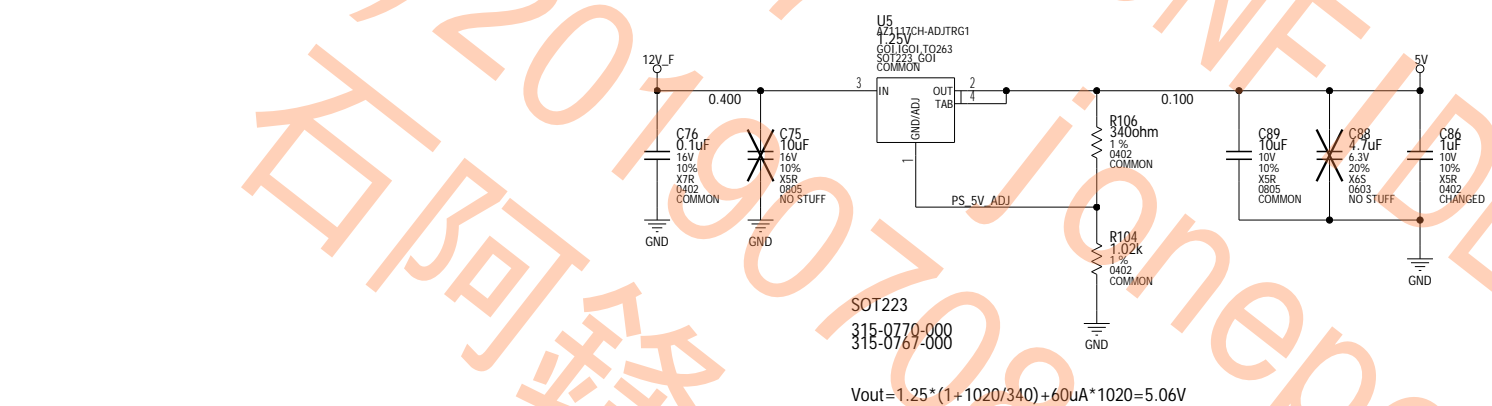
ENABLE PIN STATUS	MULTIPLEXER OPERATION
LOW	FULLY FUNCTIONAL
TRI-STATE(FLOATING)	LIMITED FUNCTION
HIGH	STANDBY



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PS: 5V



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PAGE DETAIL	PS: 5V

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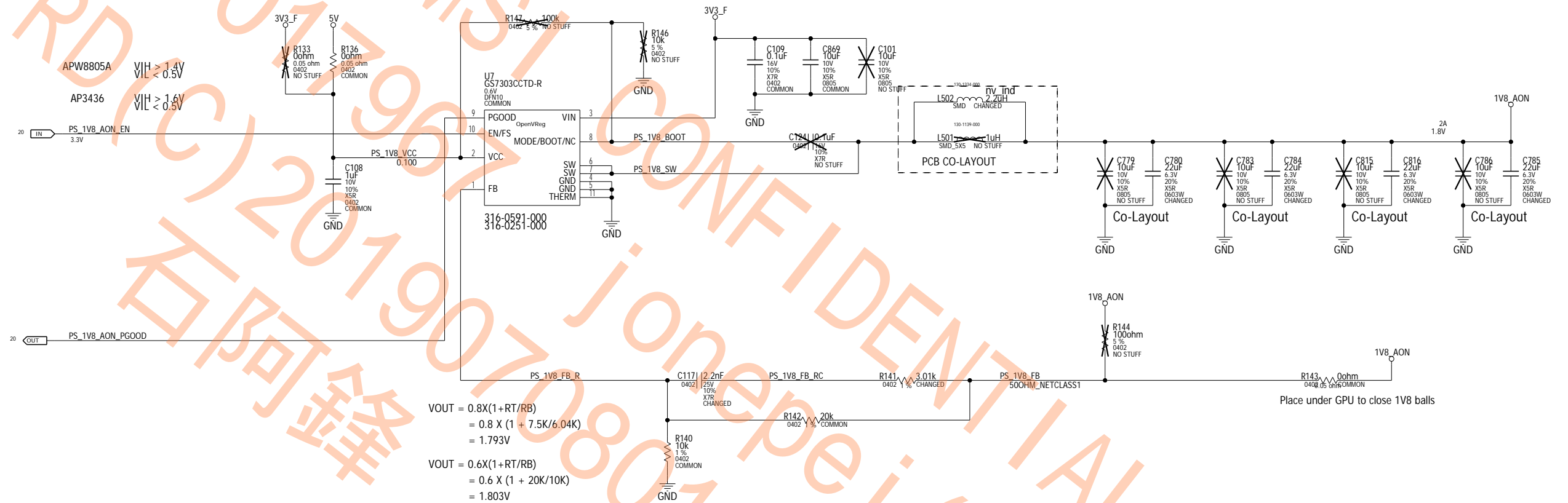
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PS: 1V8



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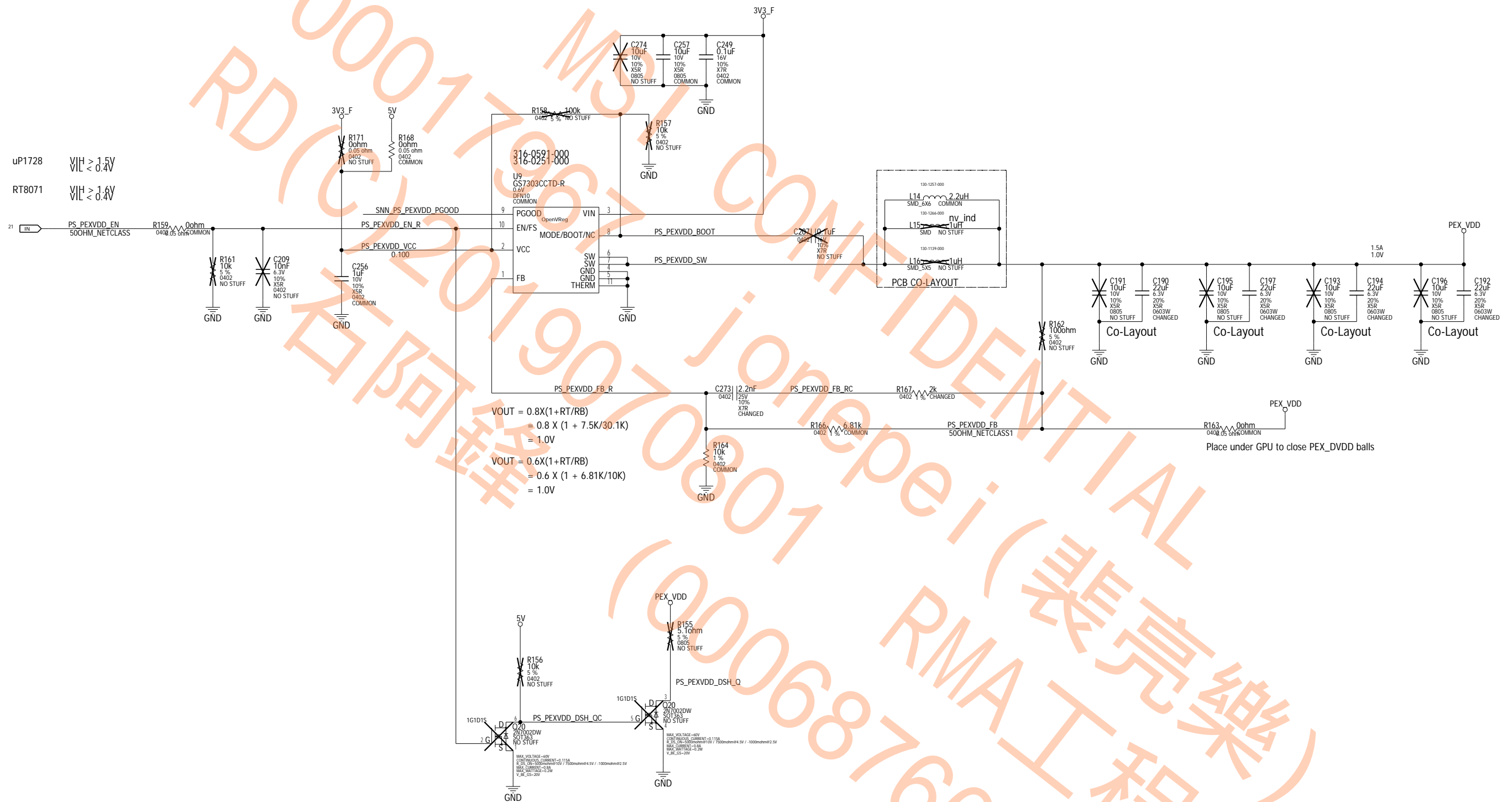
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	PAGE DETAIL	FS. 110
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## PS: PEXVDD



ASSEMBLY	TU117-300, 128b GDDR5, DVI-D-DL + HDMI
PAGE DETAIL	PS: PEXVDD

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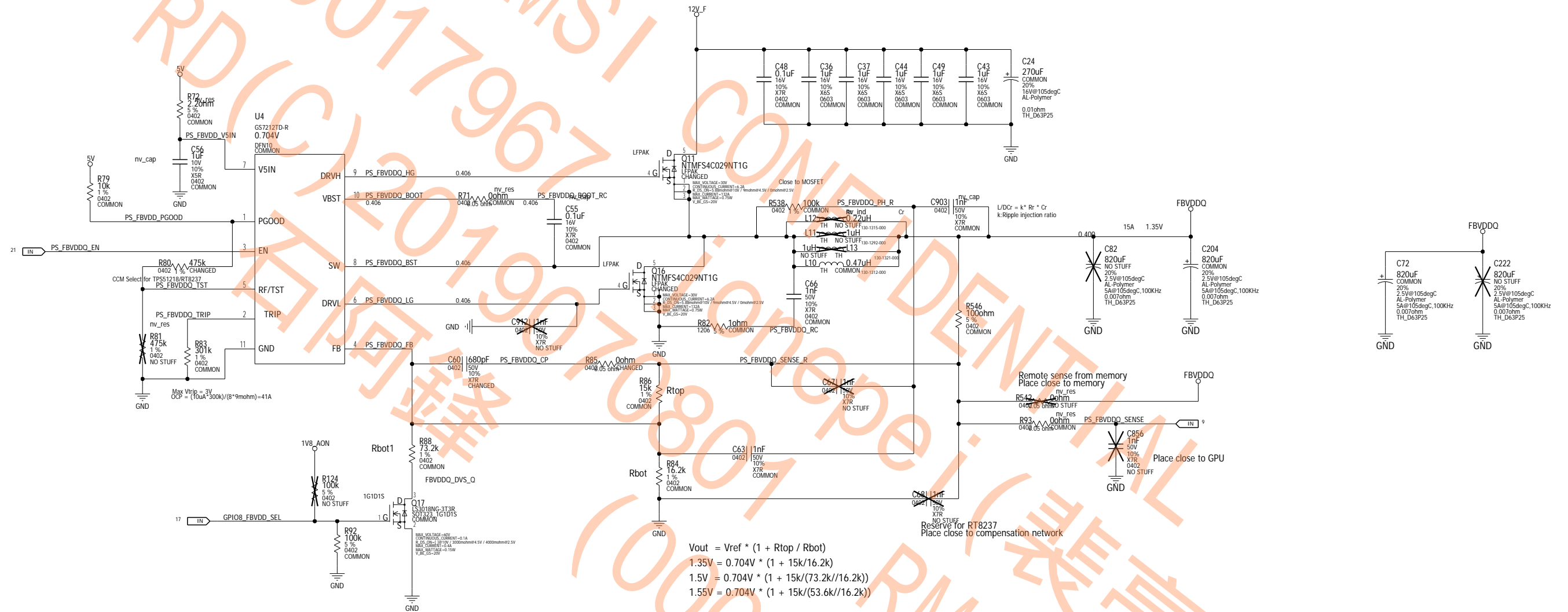
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## PS: FBVDDQ



ASSEMBLY	TU117-300, 128b GDDR5, DVI-D-DL + HDMI
PAGE DETAIL	PS: FBVDDQ

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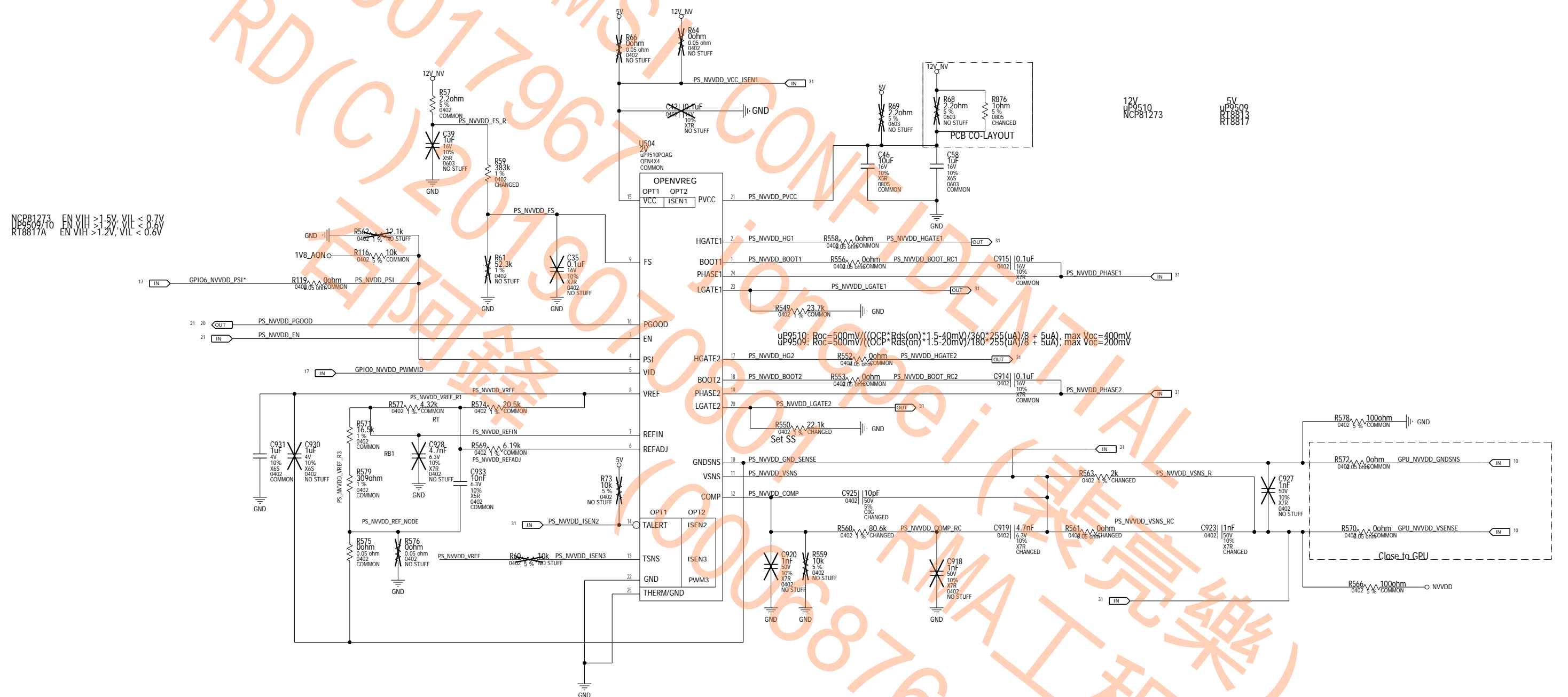
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## PS: NVVDD OVR2+1




NVPN	Name	PVCC(21)	VCC(15)
316-0478-000	NCP81273	12v	I DO OUT
316-0476-000	up 9510	12v	I SENSE
316-0484-000	RT8817A	5v	NC

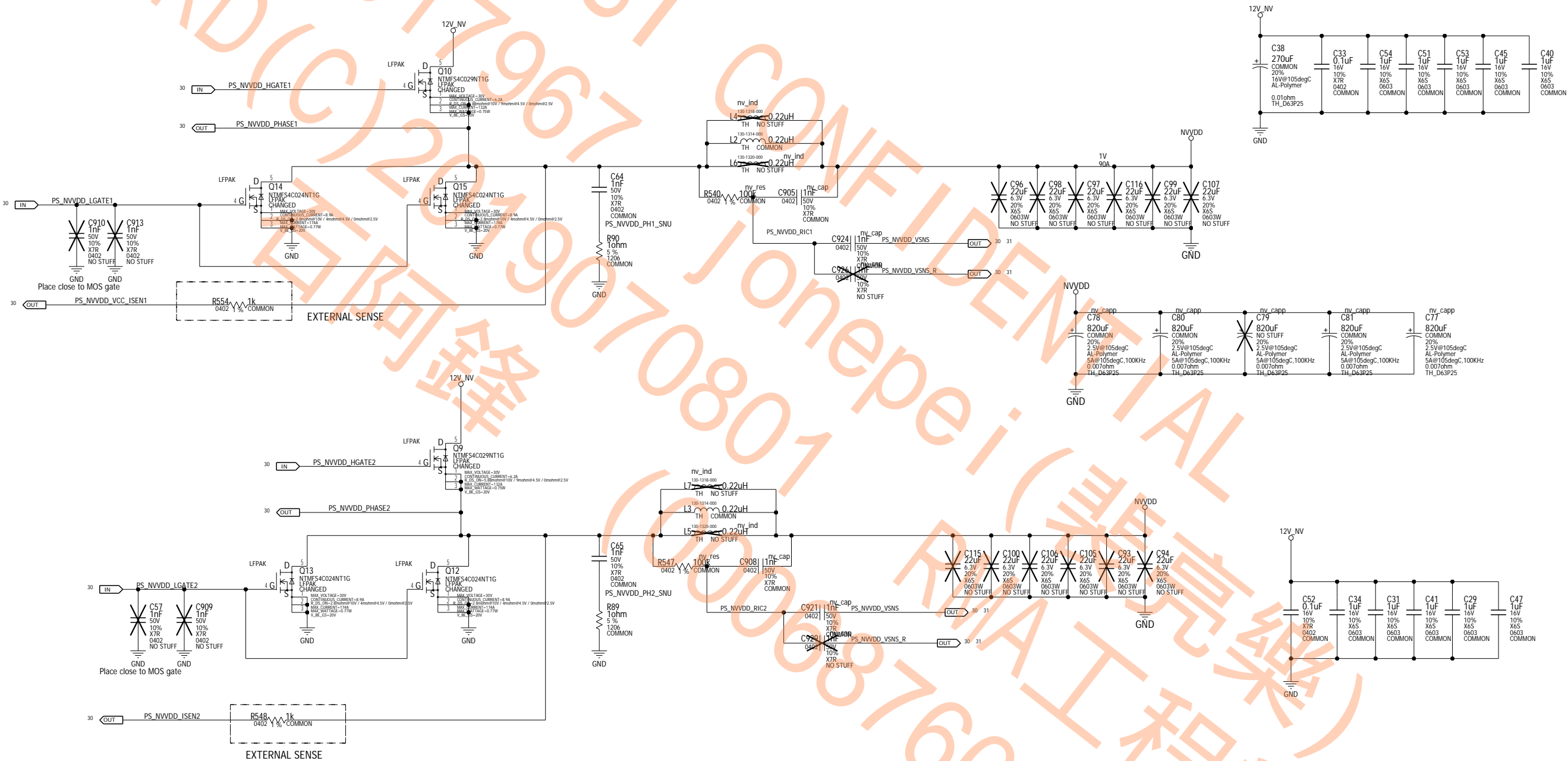
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ASSEMBLY	TU117-300, 128b GDDR5, DVI-D-DL + HDMI
PAGE DETAIL	PS: NVVDD OVR2+1

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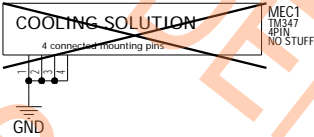
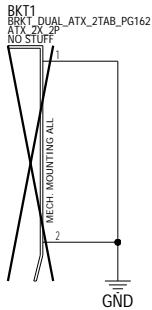
PS: NVVDD Phase 1,2



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Mechanical: Bracket/Thermal Solution

Brackets:



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