

GA102/NP, GeForce SKU P-BOARD
450W/600W, 384BITS, GDDR6X, x16 24GB
DP+DP+DP+HDMI

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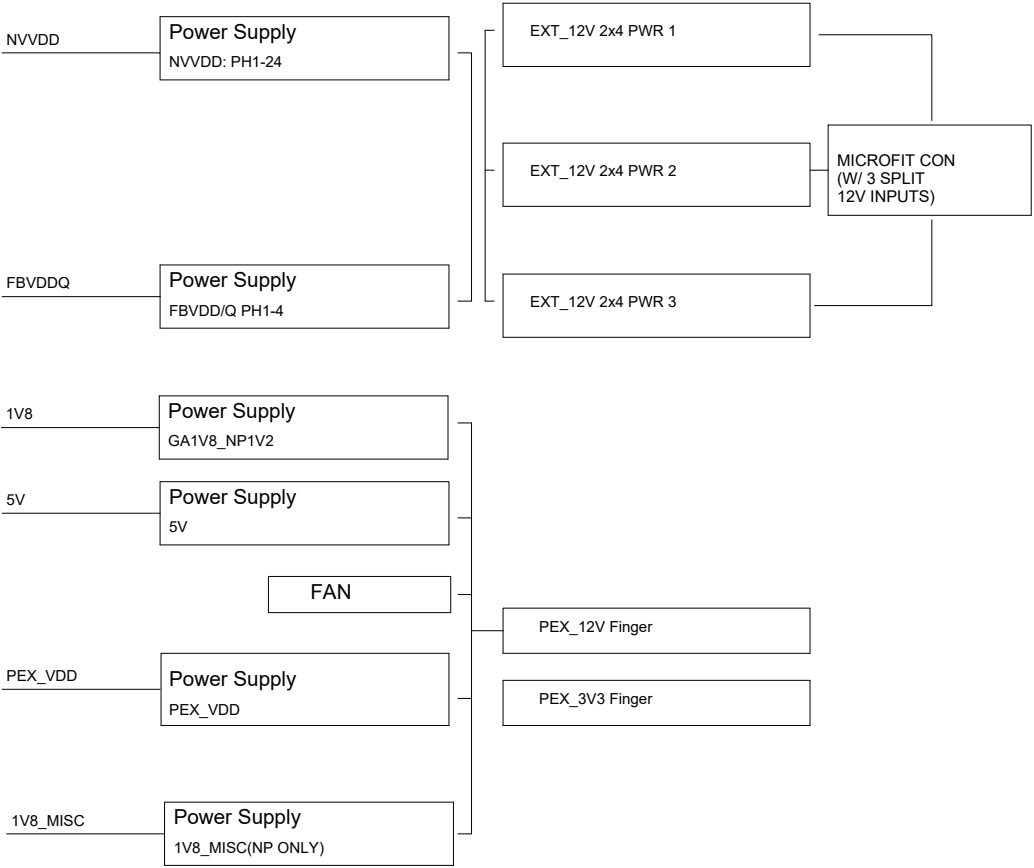
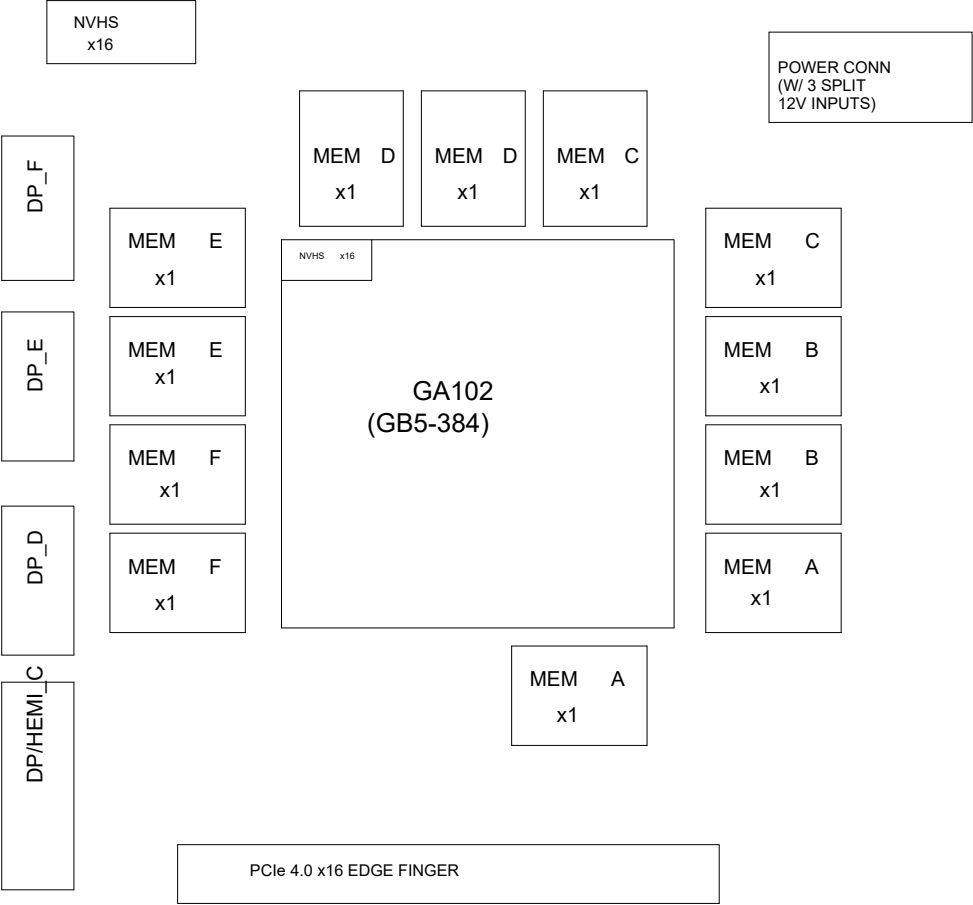
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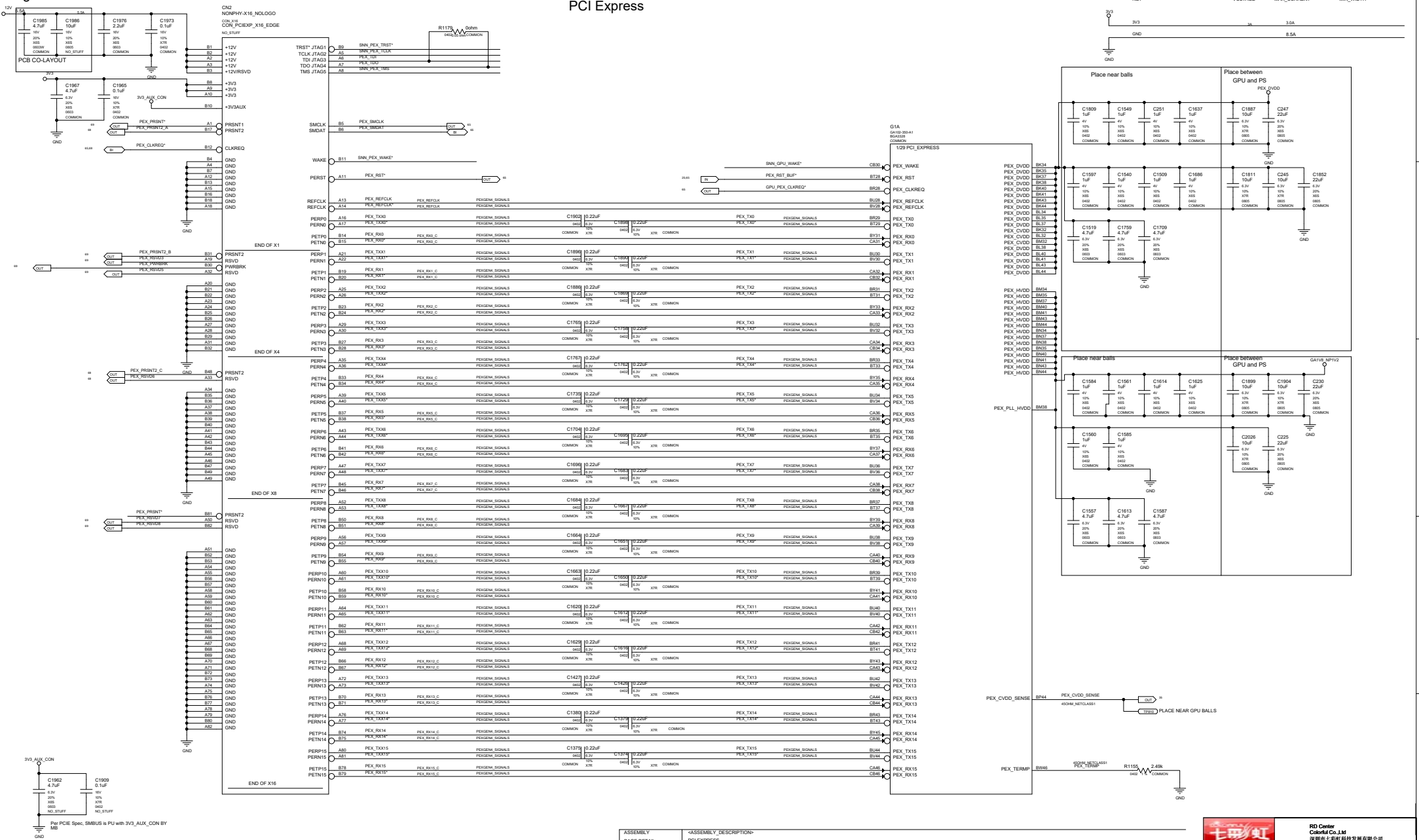
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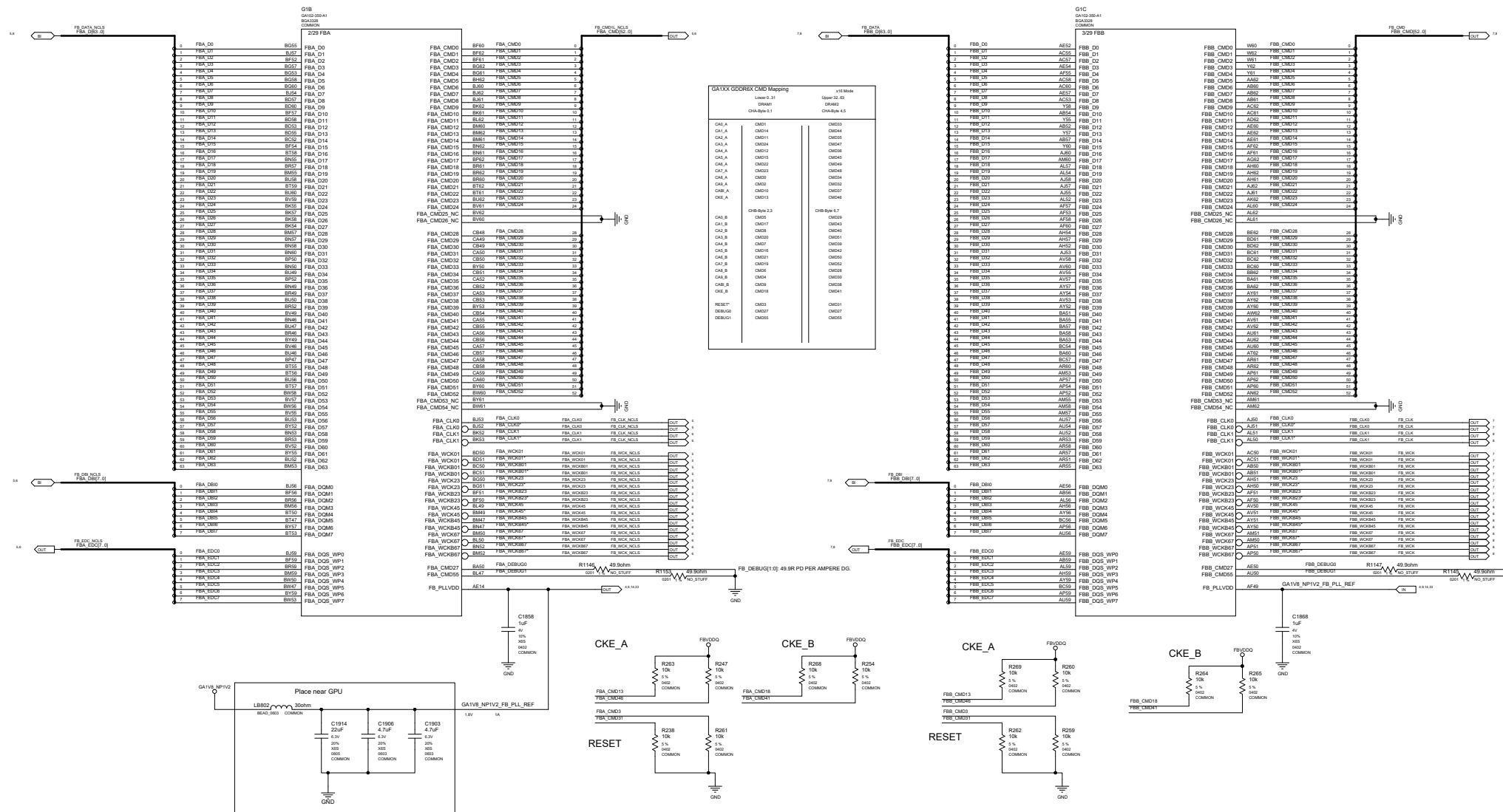


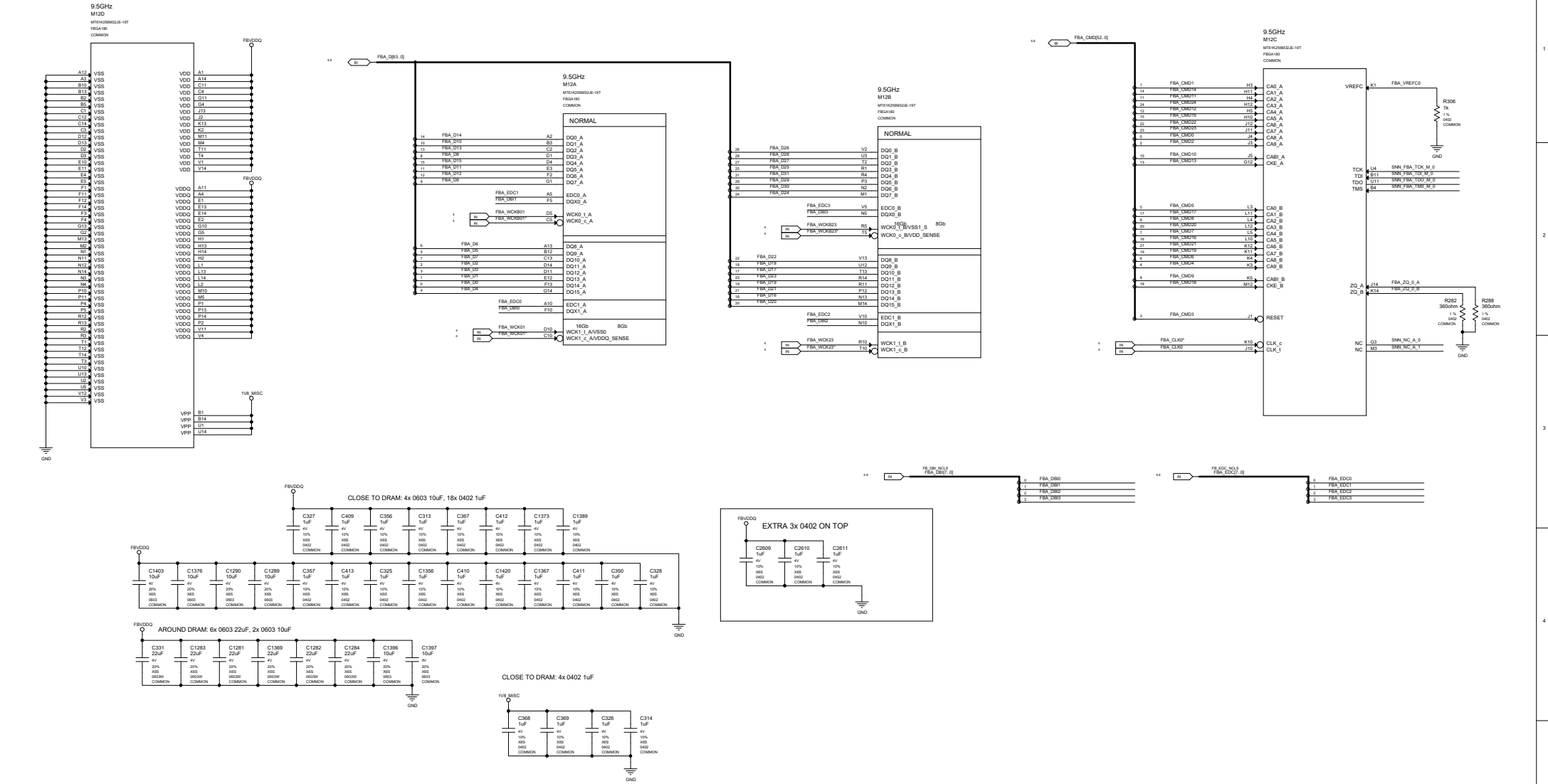
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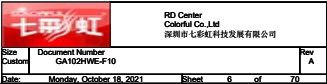


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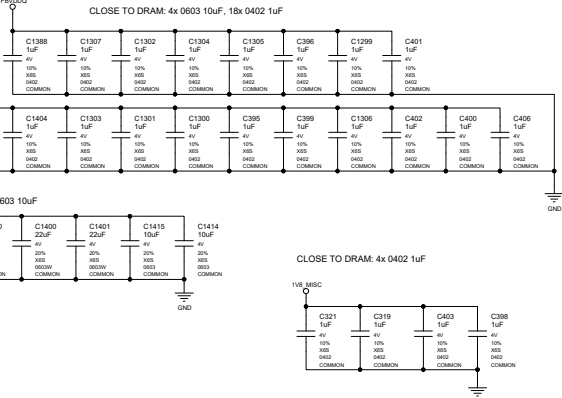



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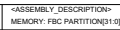
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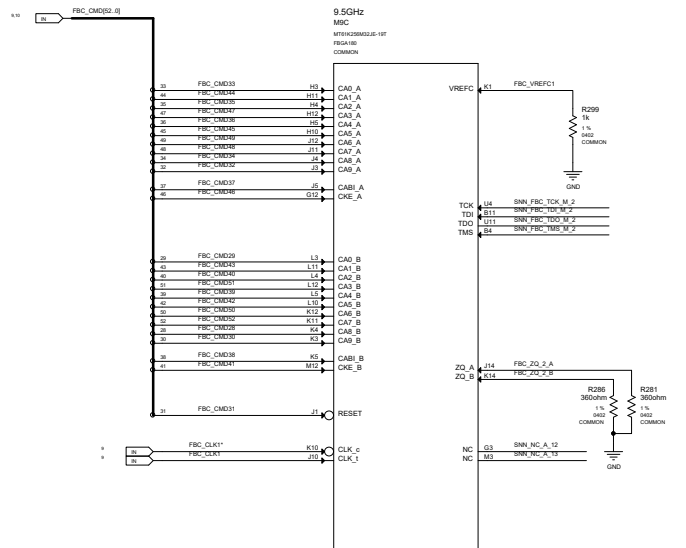
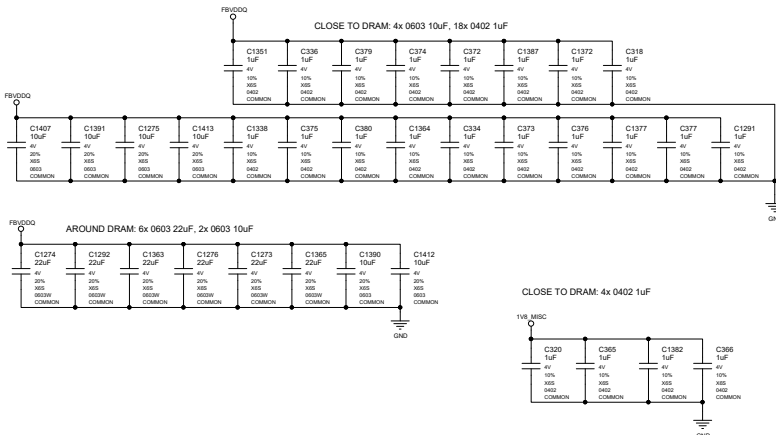







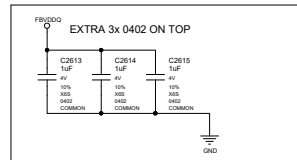
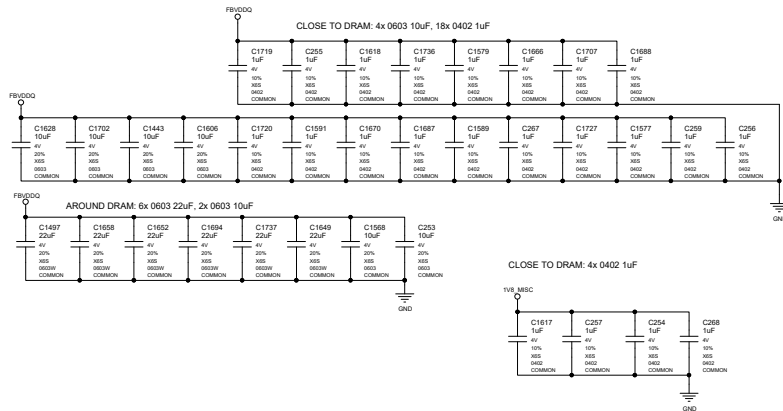
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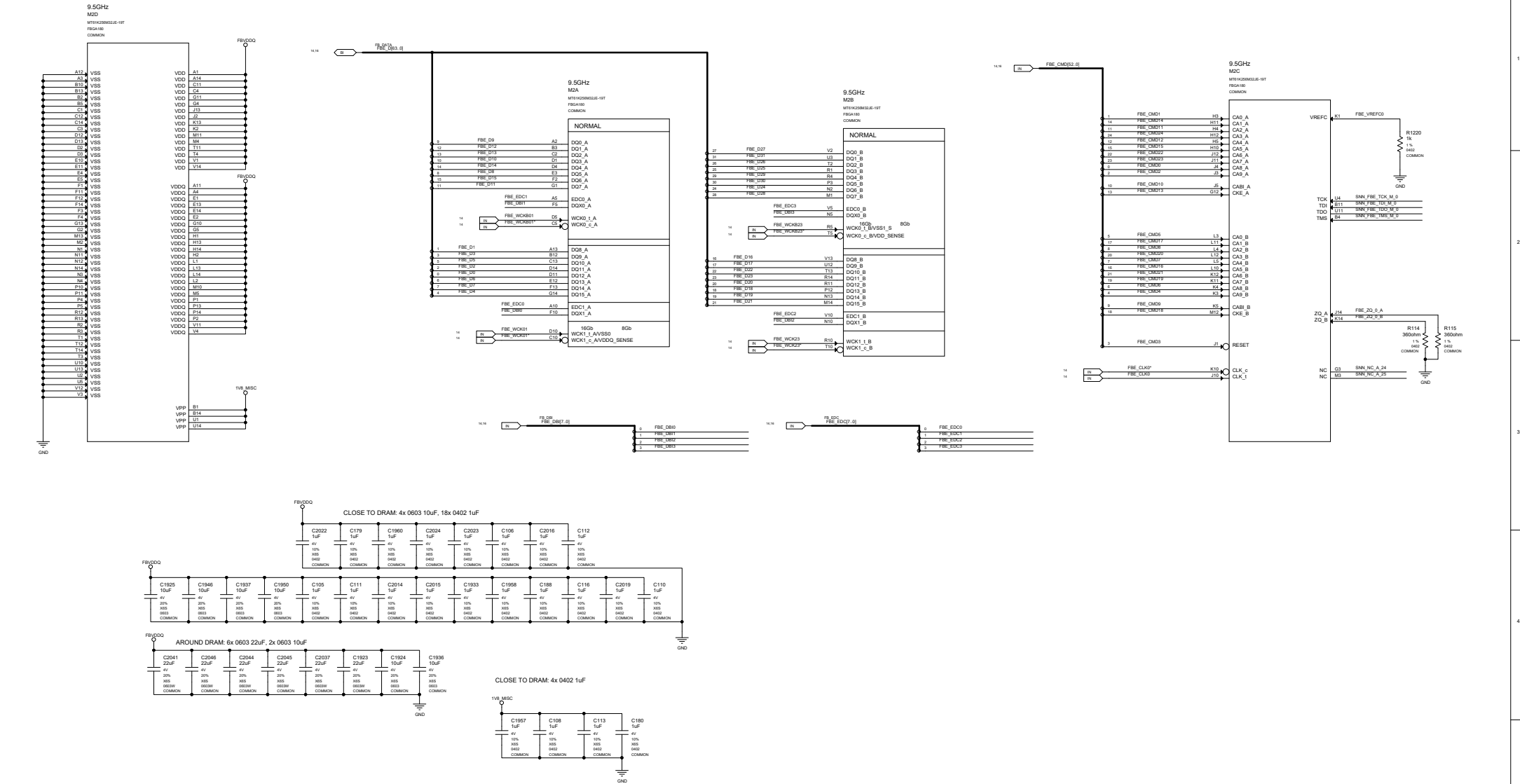
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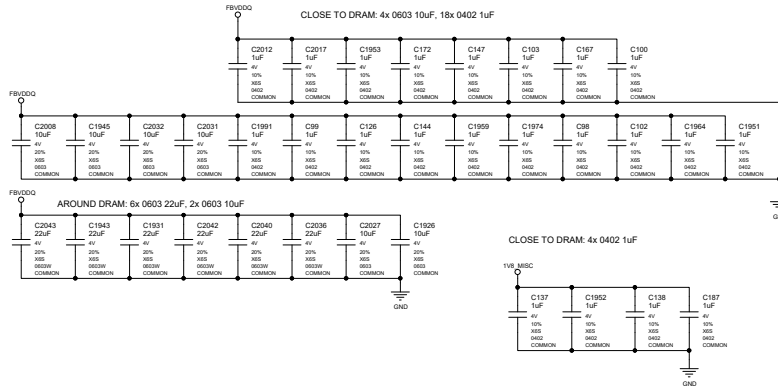





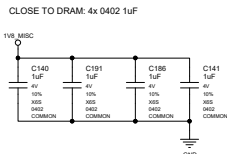
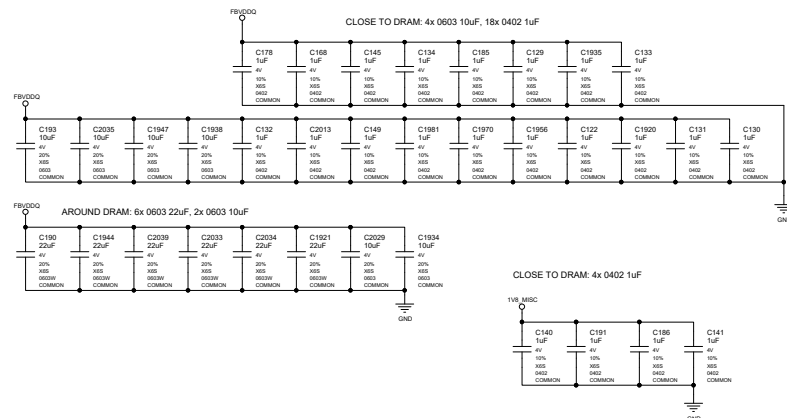
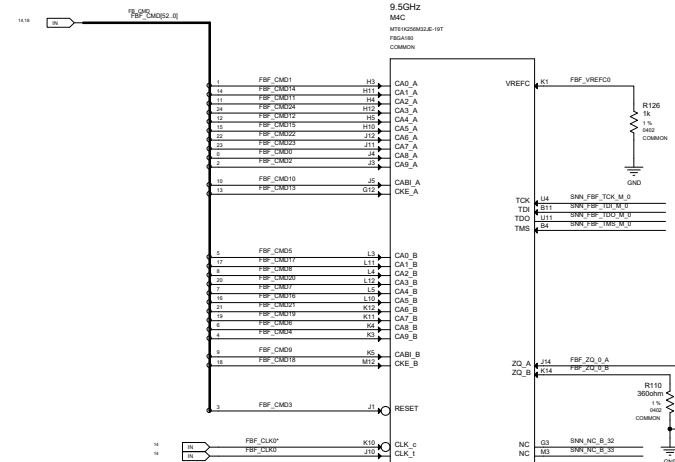
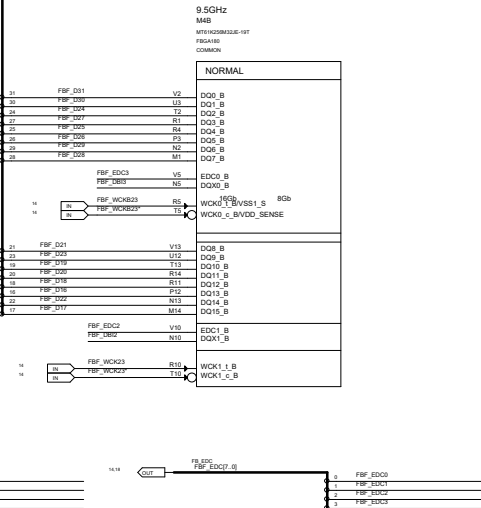
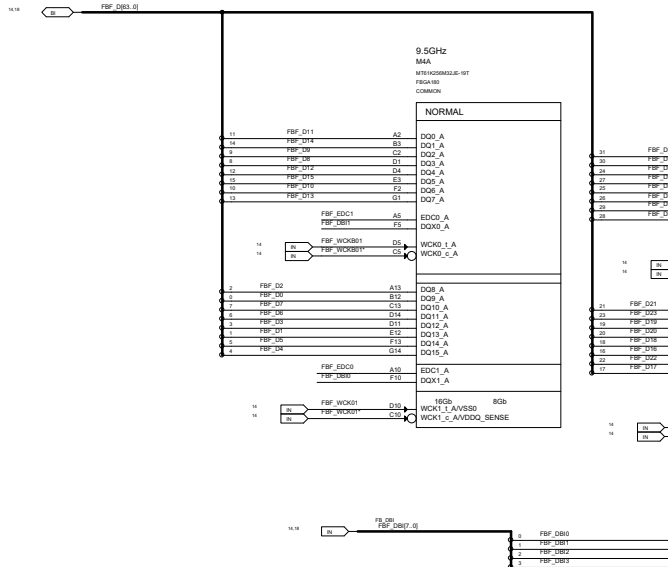
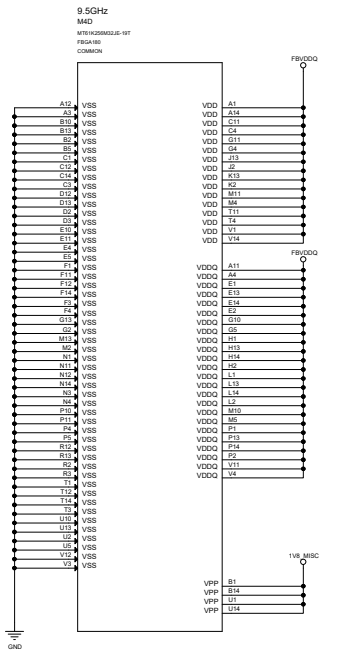
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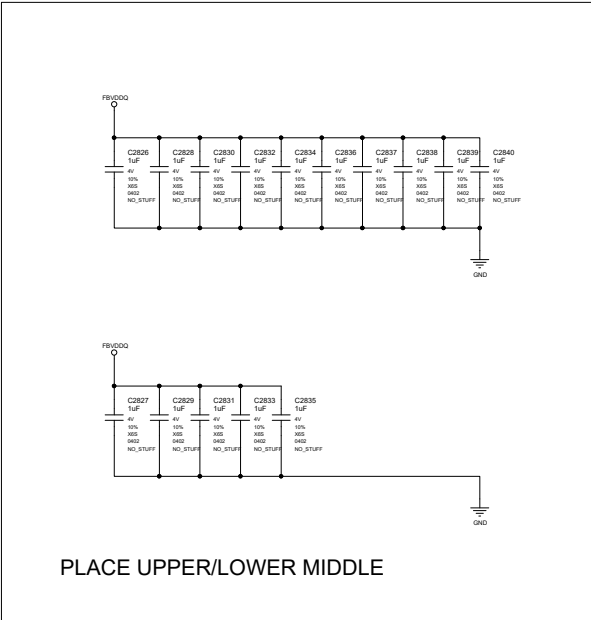
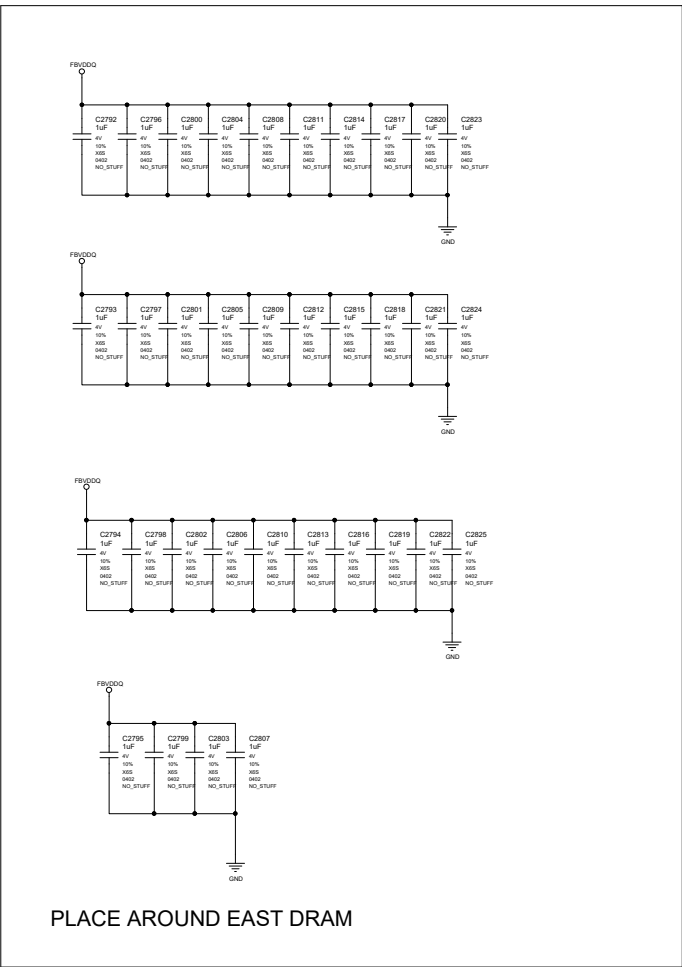
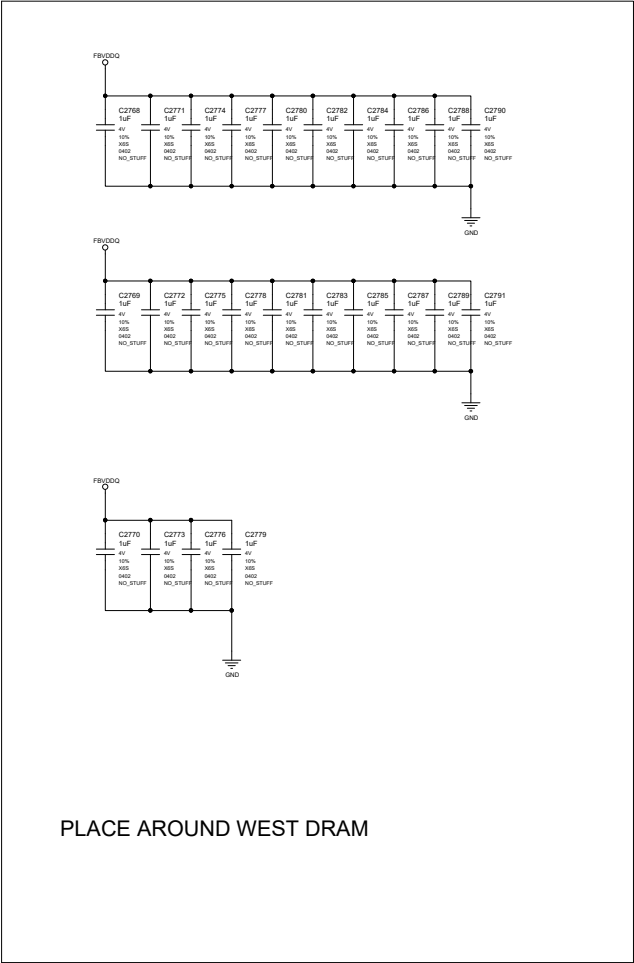
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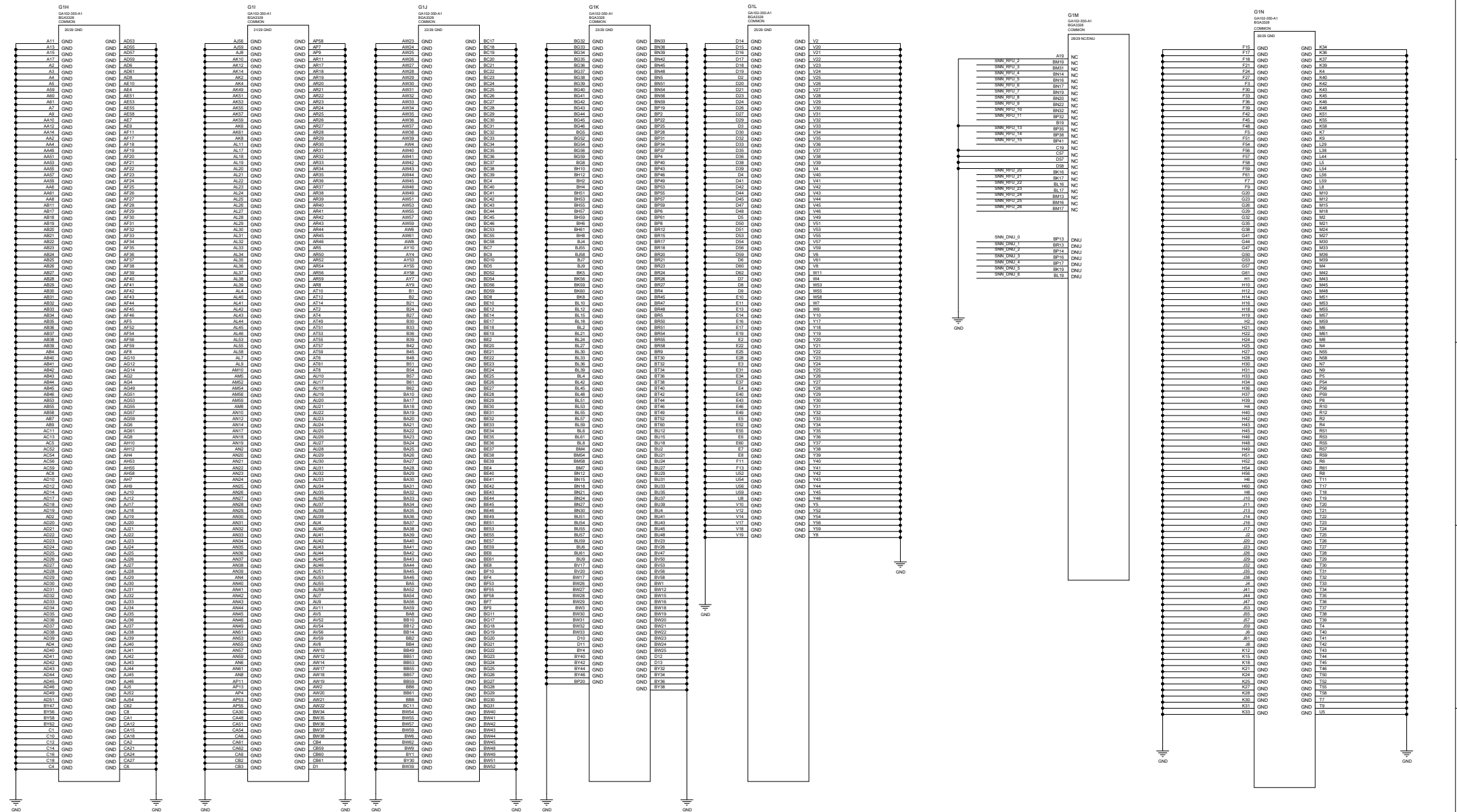


PER SI REQUIREMENT, RESERVE MORE 0402 1UF AROUND DRAM



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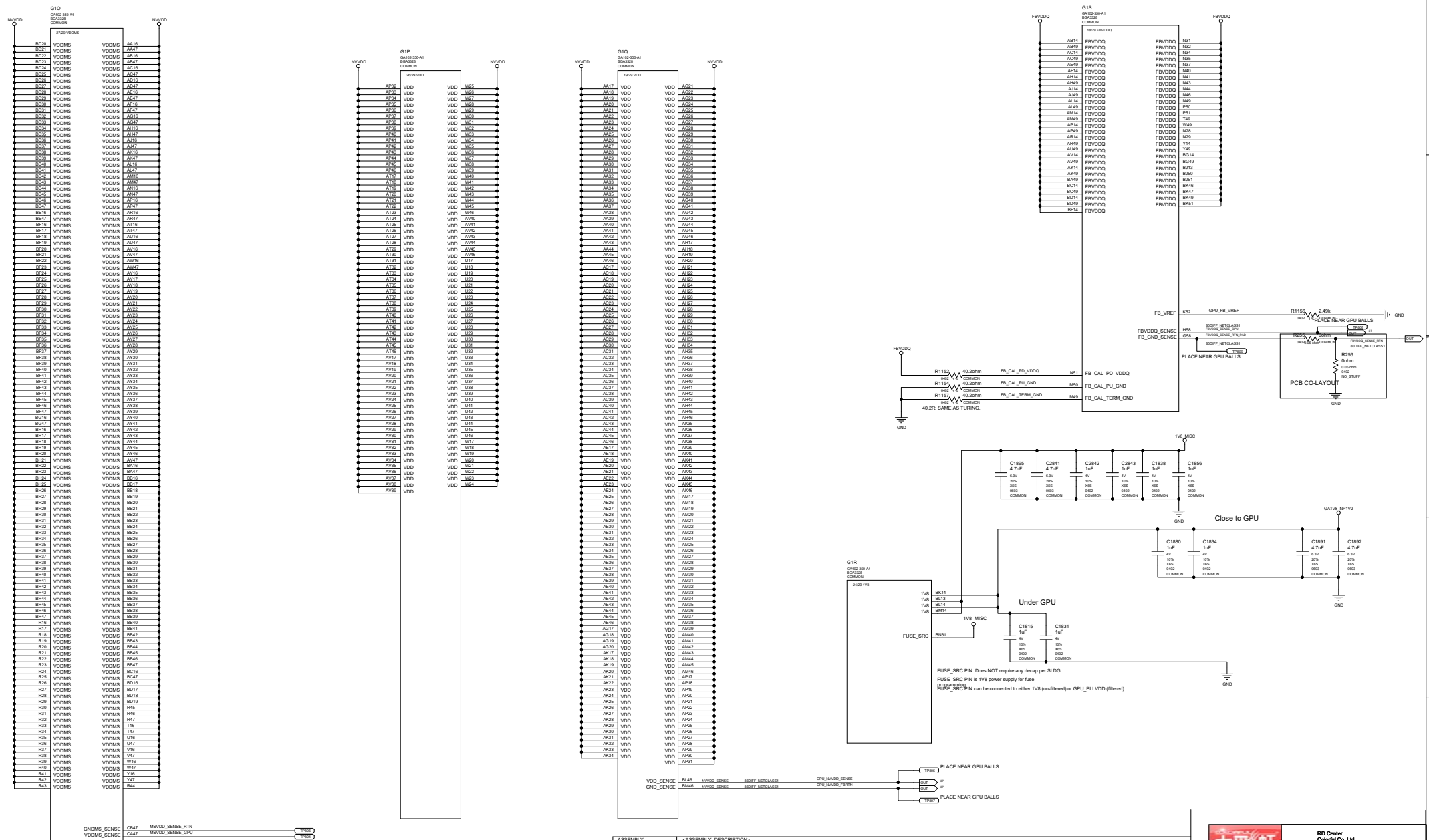
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Rev A

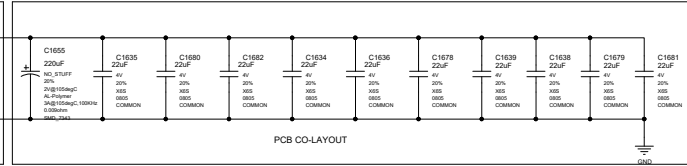
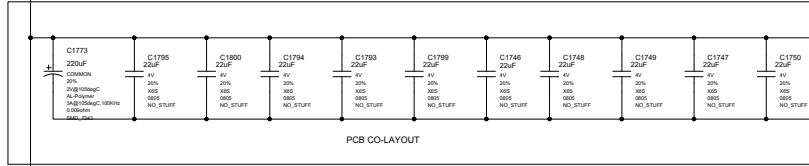
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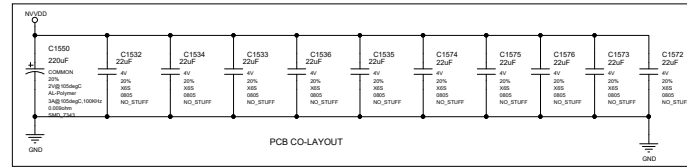
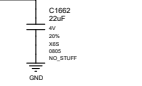
NVVDD

UNDER GPU

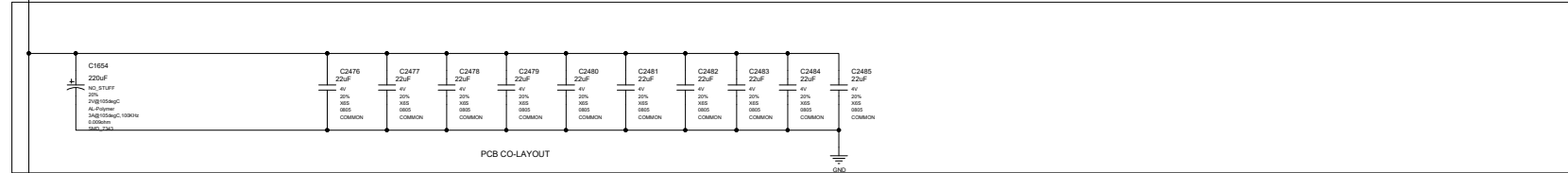
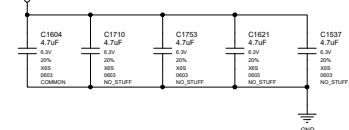
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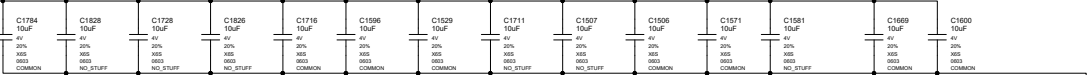
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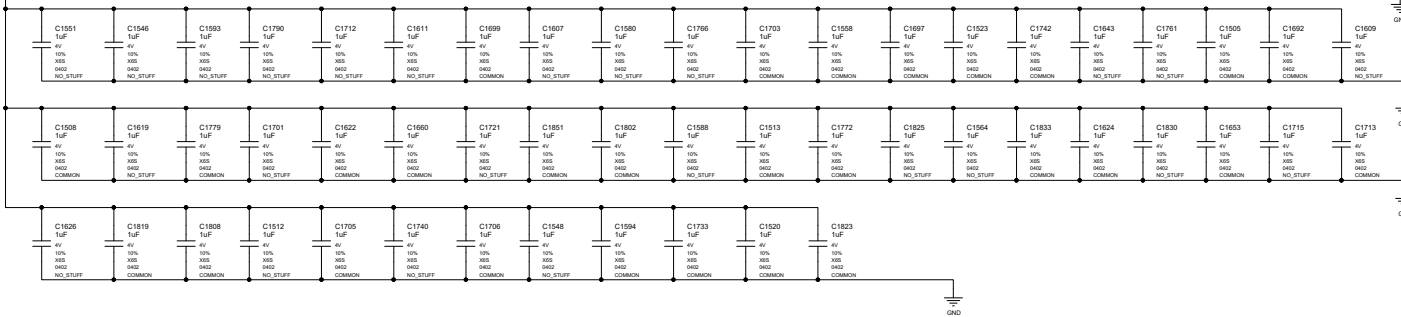
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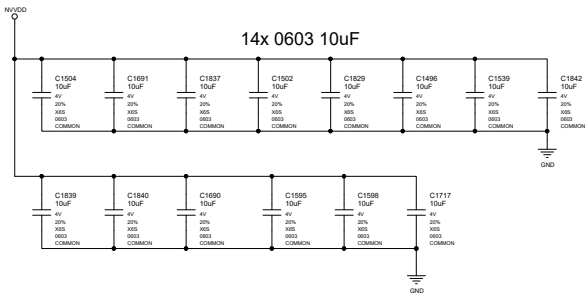
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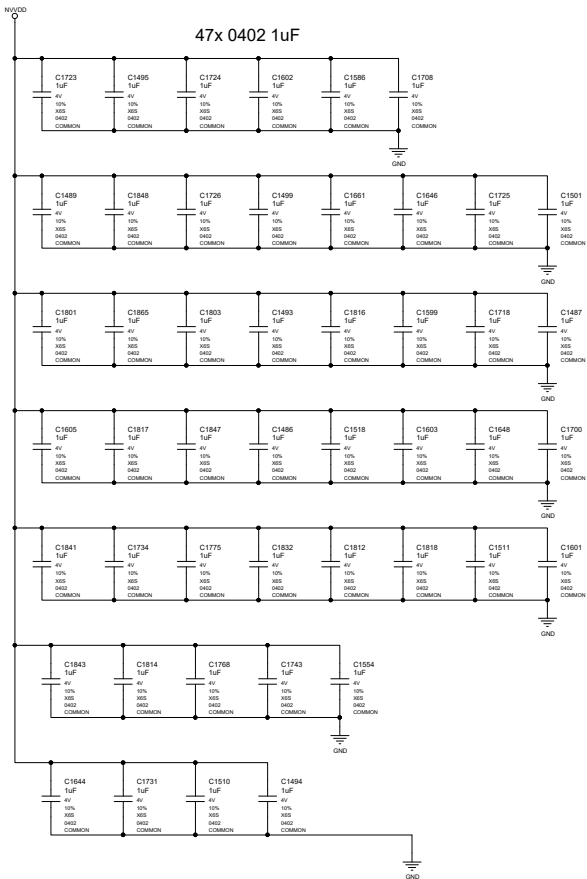
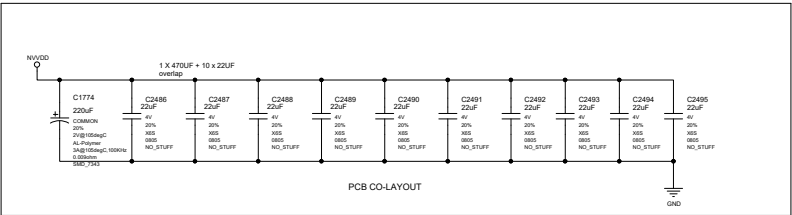
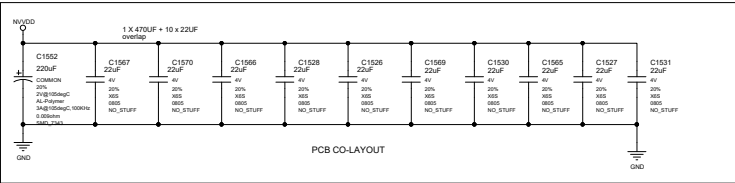
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UNDER GPU

NVVDD



2x SMD7343 330uF (EACH CO-LAYOUT WITH 10x 22uF 0805)



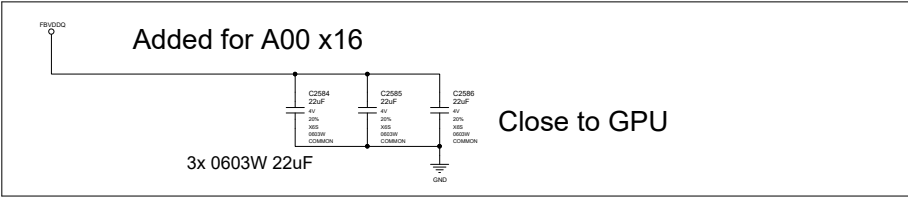
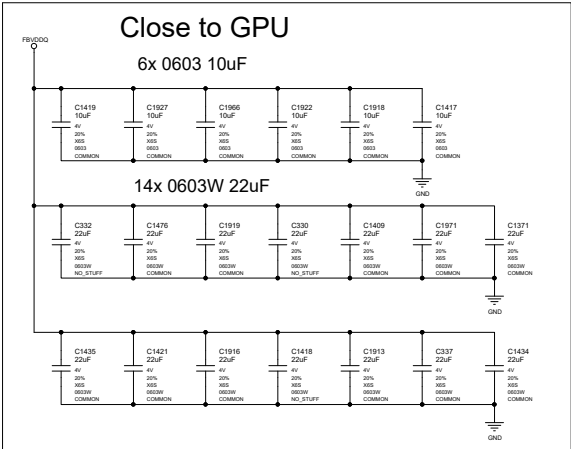
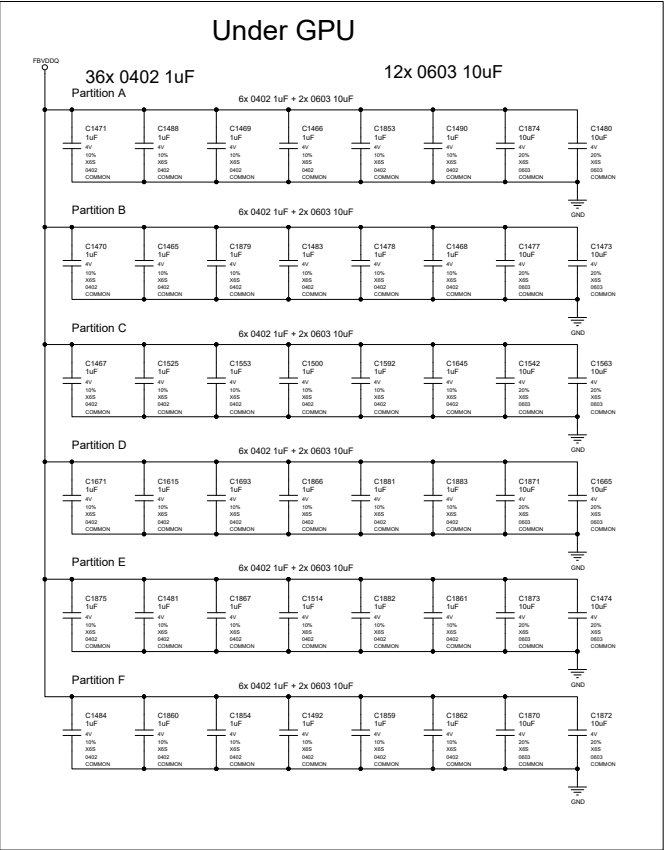
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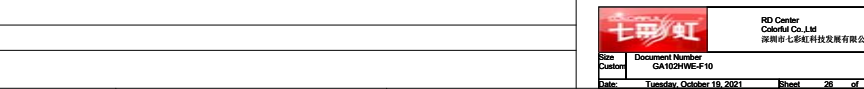
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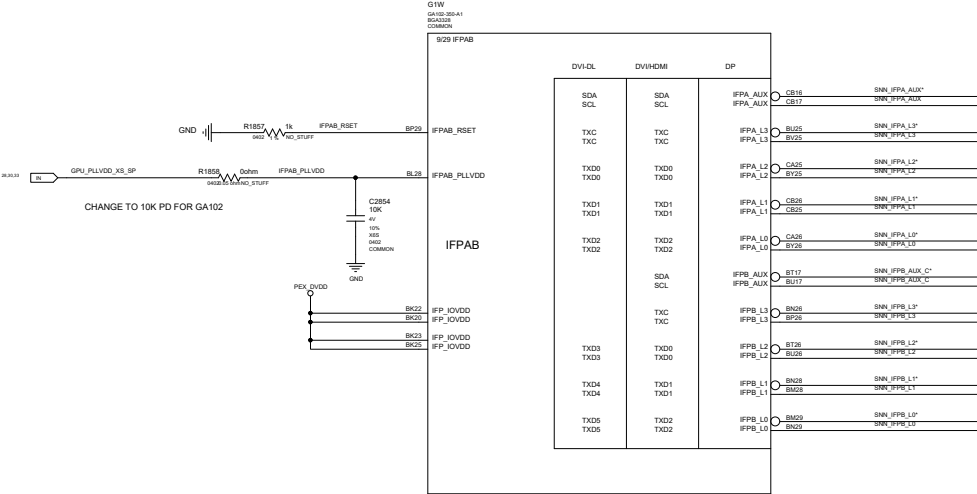


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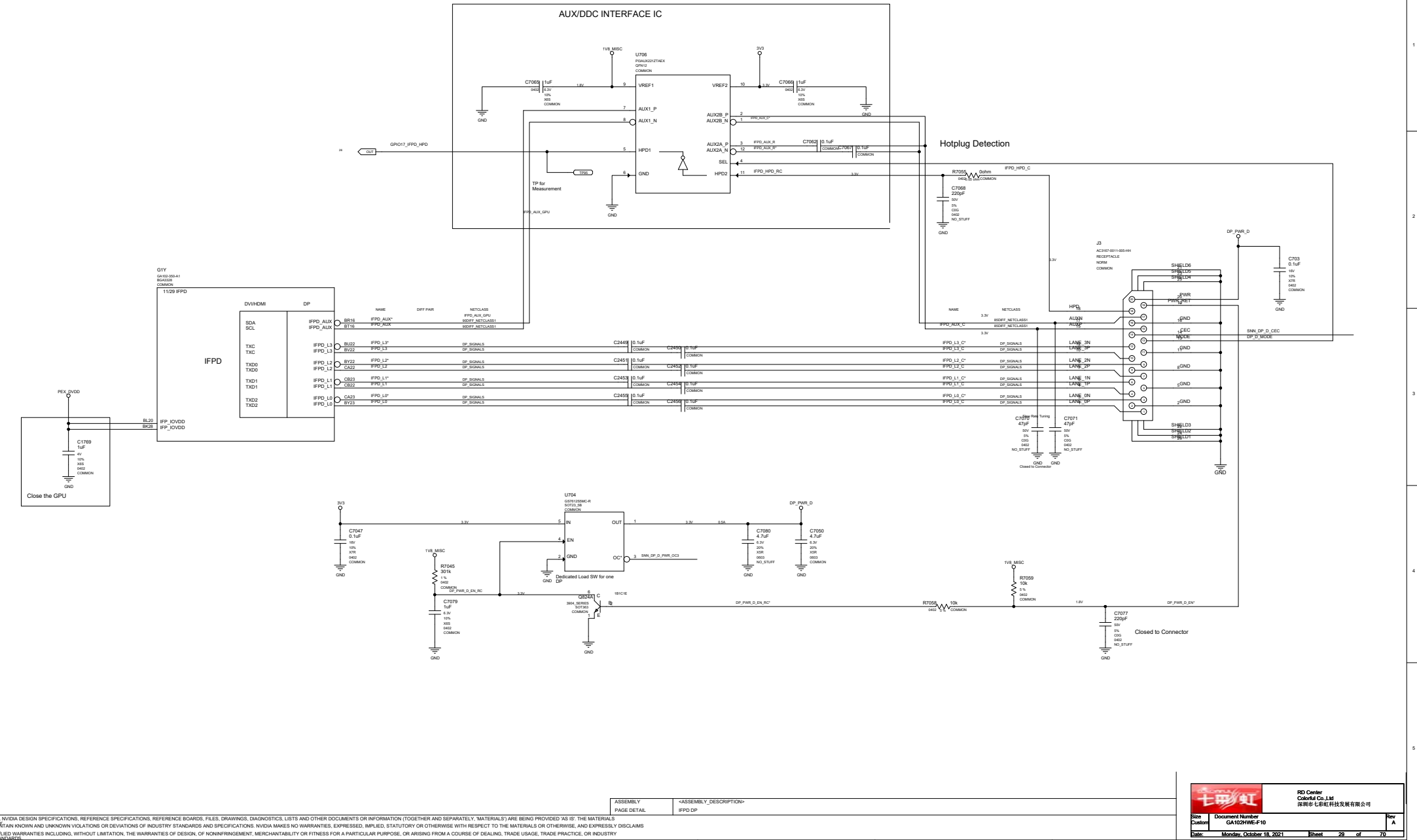
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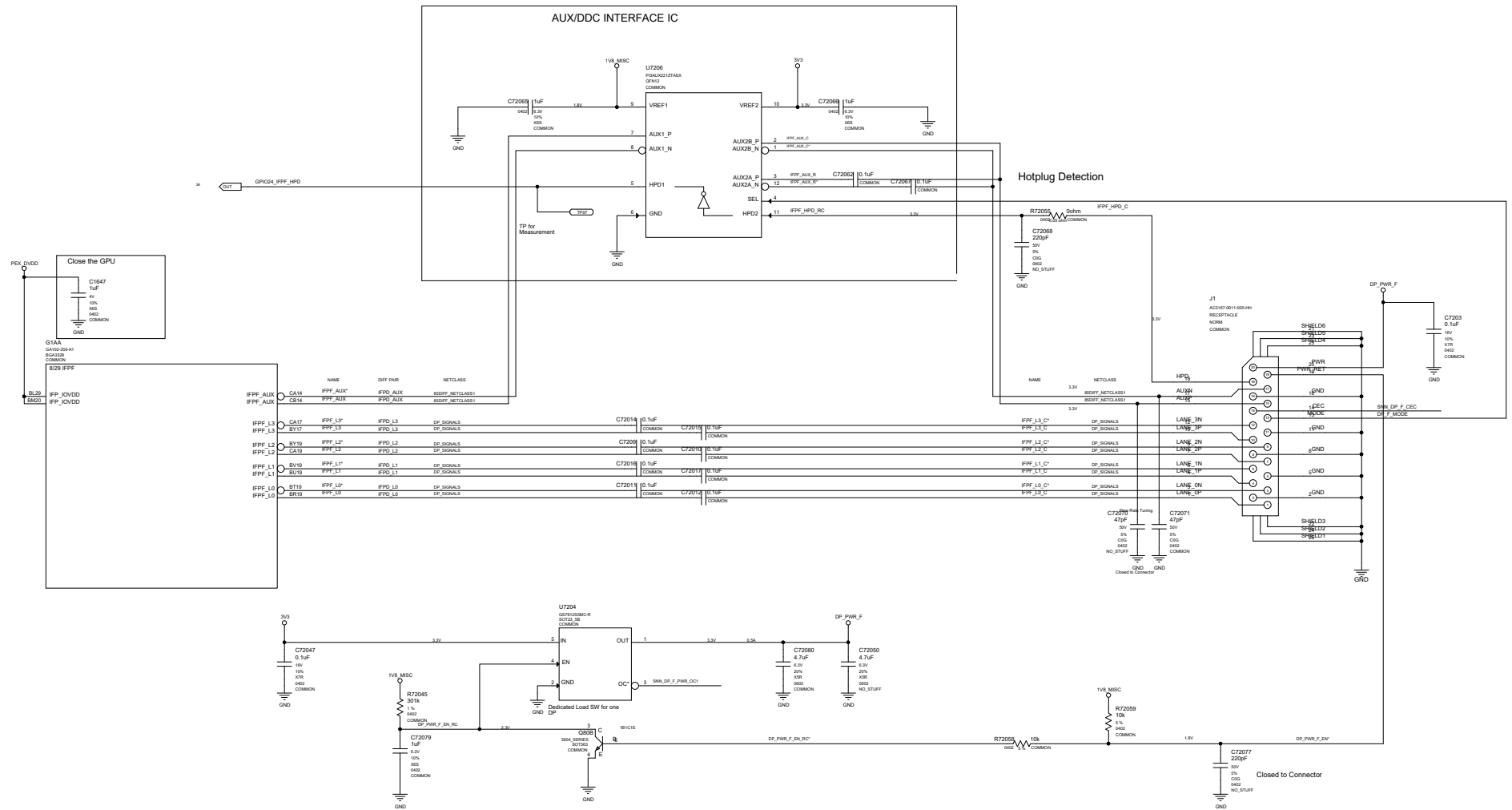
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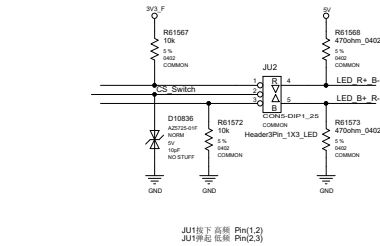
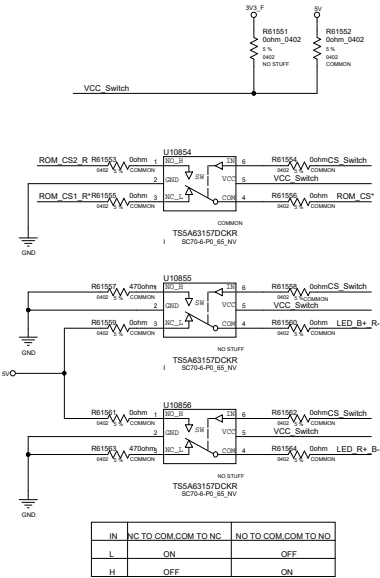
GROUP0			
STRAP2	STRAP1	STRAP0	RAMCFG[4:0]
L	L	H	00001
L	H	L	00010
L	H	H	00011
L	M	H	01010
H	H	H	00111

GROUP1			
ROM_SO	ROM_SI	ROM_SCLK	SMARTFAN[2:0].FS_OVERT
L	M	L	1001

GROUP2						
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	L	1	0	0	1
L	L	M	1	0	0	0
H	H	H	0	1	1	1
H	H	L	0	1	0	1
H	L	H	0	1	0	0
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

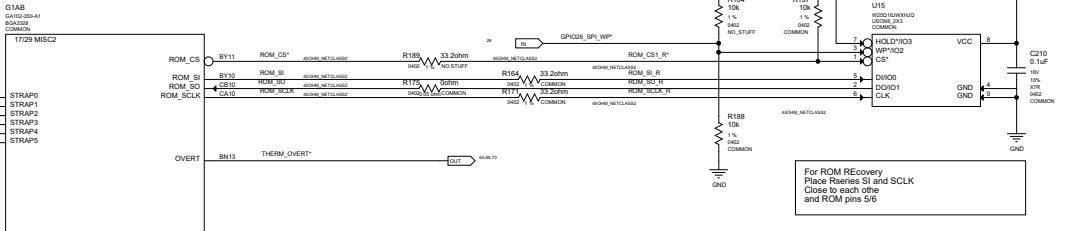
- 1:SMB_ALT_ADDR ENABLE
0:SMB_ALT_ADDR DISABLE
- 1:DEVID_SEL REBRAND
0:DEVID_SEL ORIGINAL
- 1:PCIE_CFG LOW POWER
0:PCIE_CFG HIGH POWER
- 1:VGA_DEVICE ENABLE
0:VGA_DEVICE DISABLE

For NP, Middle Level should be 0.6V
H=High :Tied to 1.8V
M=Middle:Tied to 0.9V
L=Low :Tied to 0V



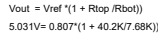
Default
SKU 200


STRAP0	STRAP1	STRAP2	STRAP3	STRAP4	STRAP5
CA7	CB7	CB8	BW7	BW8	BW9



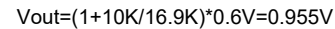
For ROM Recovery
Place Resistor SI and SCLK
Close to each other
and ROM pins 5/6

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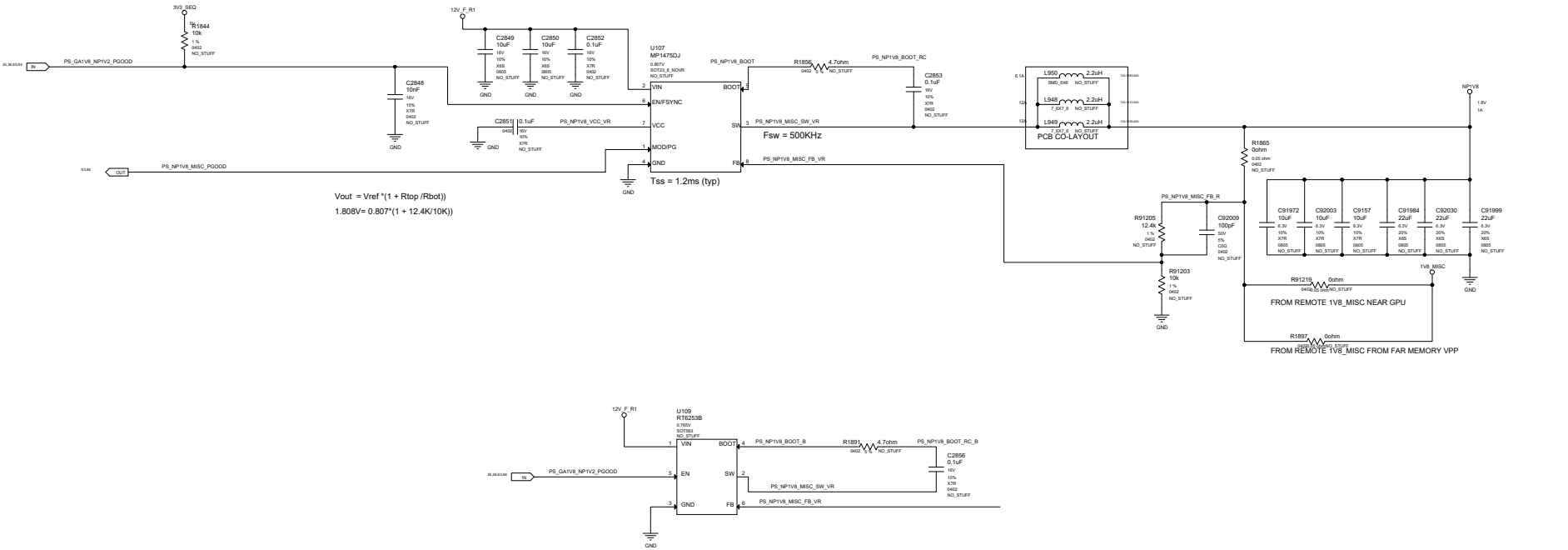
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Size Custom	Document Number GA102HW-E F10			Rev A
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$$V_{out} = (1 + 10K/4.99K) * 0.6V = 1.802V$$

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ASSEMBLY
PAGE DETAIL

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PS:NP1V8(NP ONLY), 1V8_MISC



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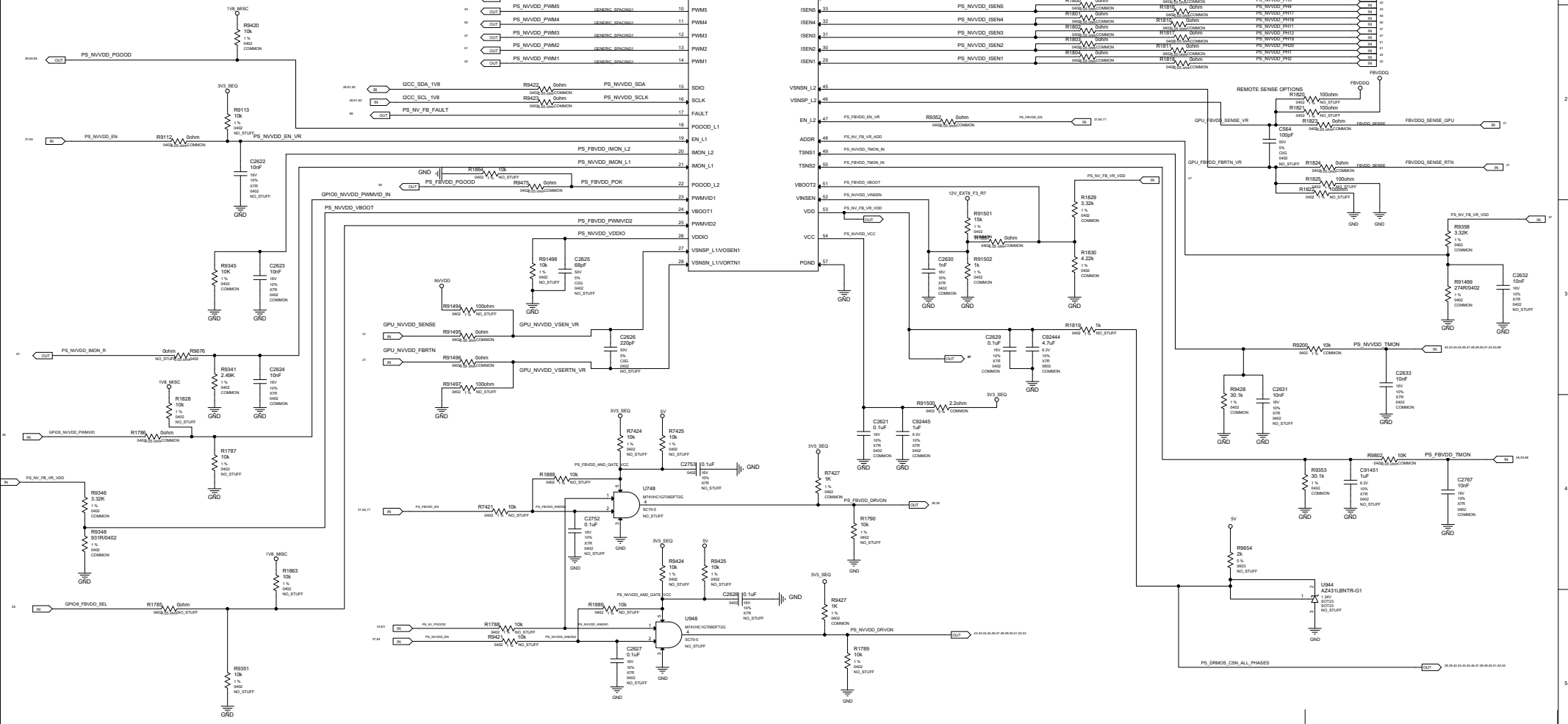
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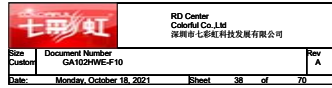
Rev
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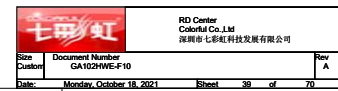
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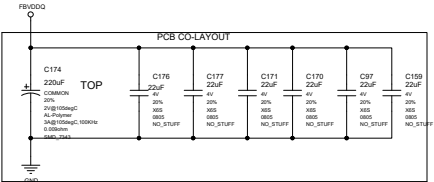


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Size A4	Document Number RD-NV06DF0-T10	Rev A																		
<table><tr><td>Date</td><td>Monday, October 18, 2021</td><td>Sheet</td><td>37</td><td>of</td><td>70</td></tr></table>										Date	Monday, October 18, 2021	Sheet	37	of	70					
Date	Monday, October 18, 2021	Sheet	37	of	70															

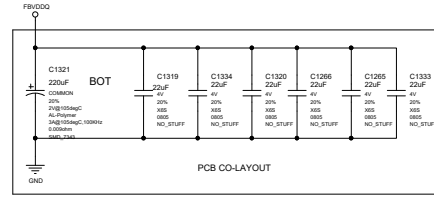
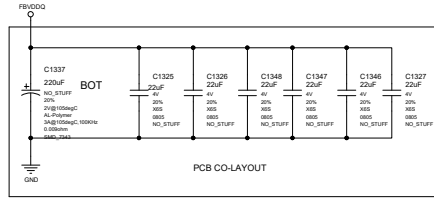




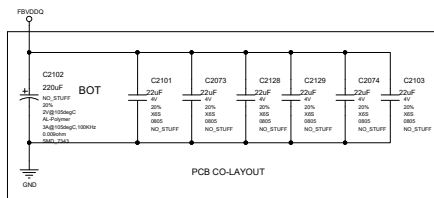
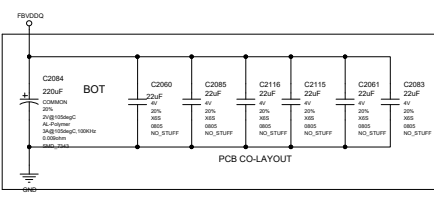
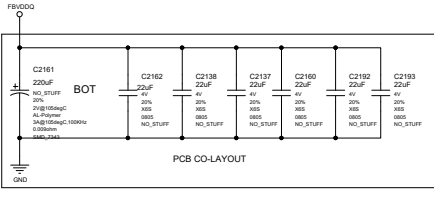
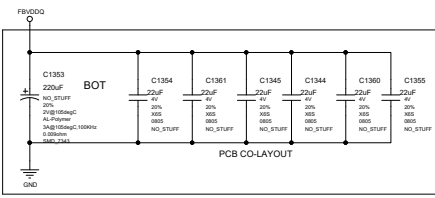
PLACE NEAR POWER SUPPLY
8x SMD7343 330uF CO-LAYOUT WITH 48x 0805 22uF



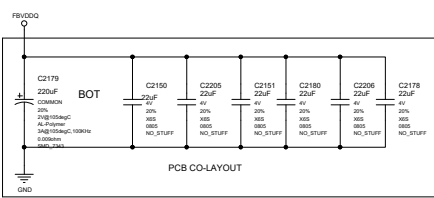
TOP WEST OF PCB



BACK WEST OF PCB



BACK EAST OF PCB

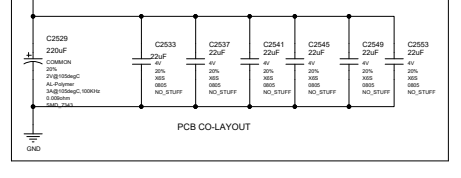
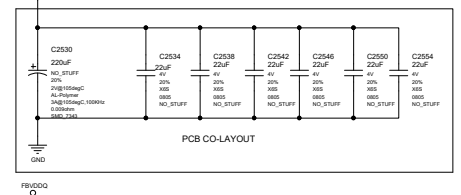
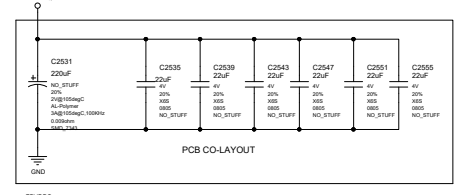
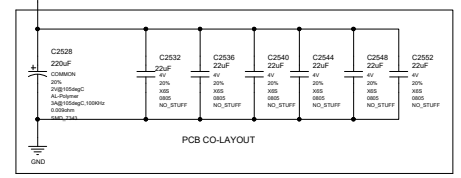
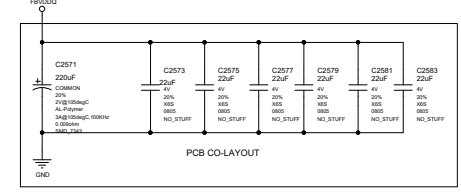
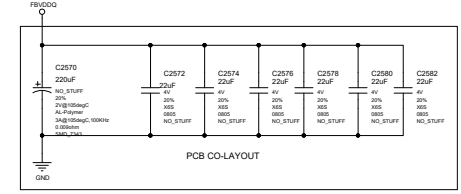
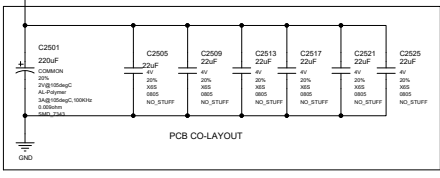
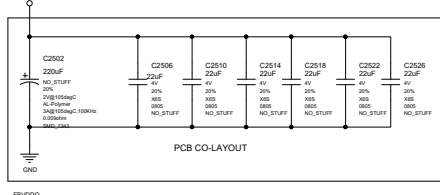
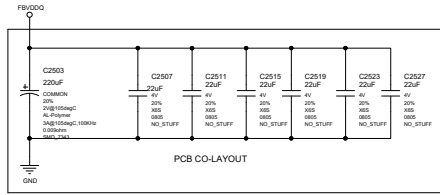
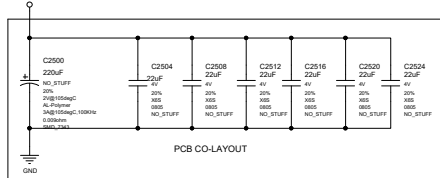
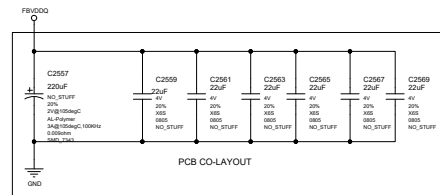
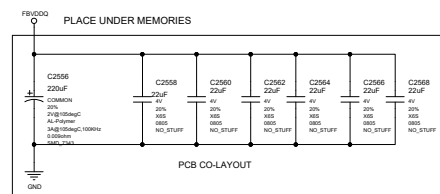
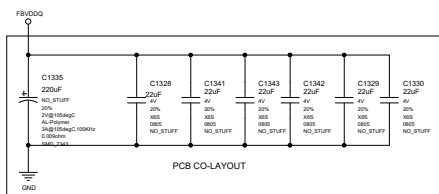
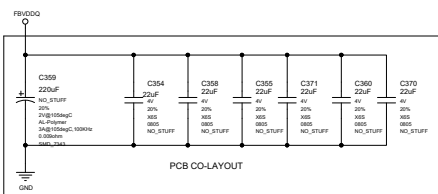
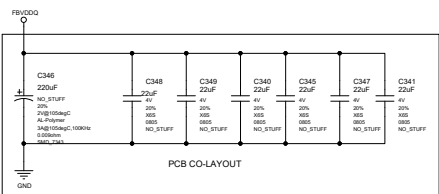
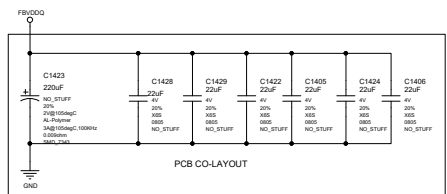
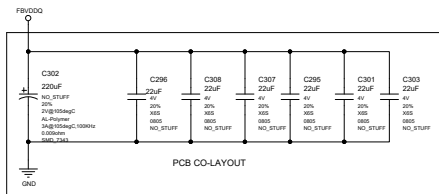
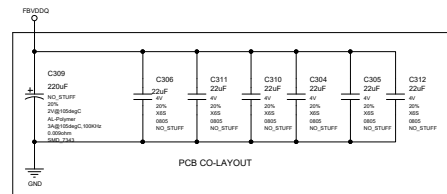
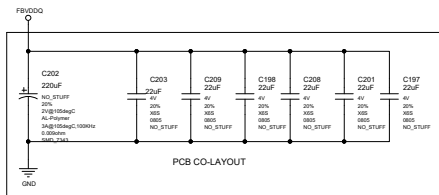
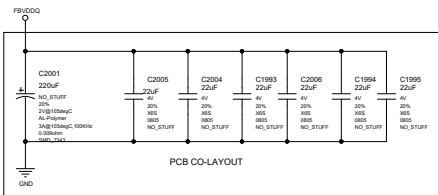


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PLACE NEAR MEMORY

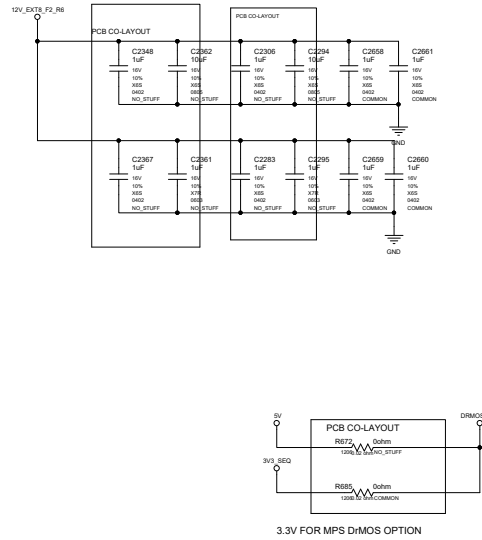


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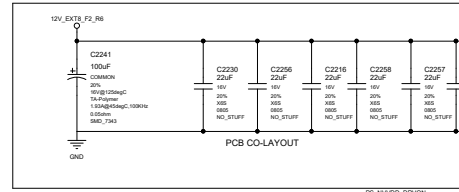


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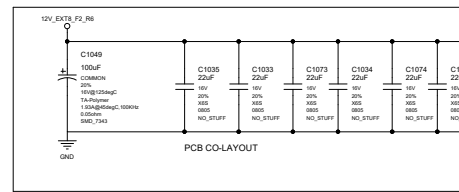
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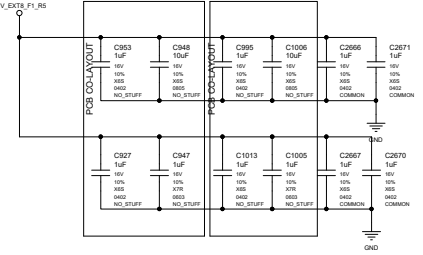
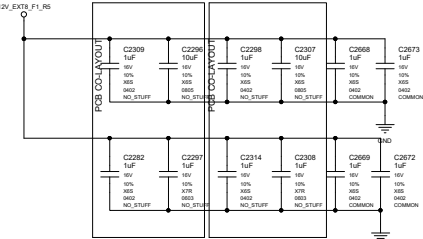


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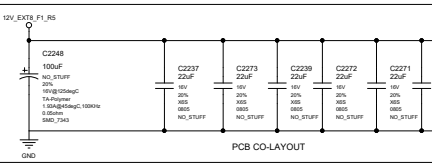
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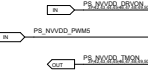
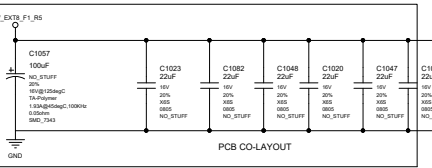


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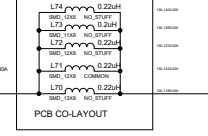
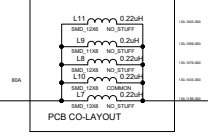
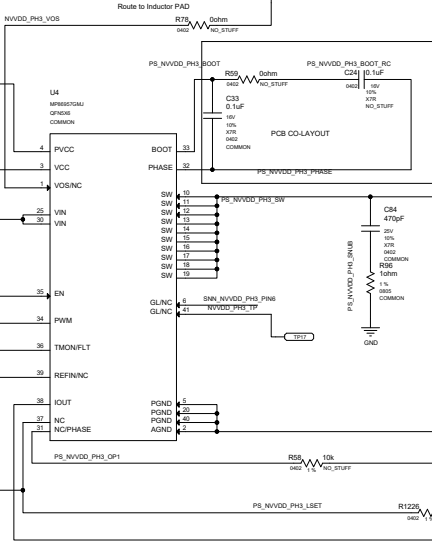


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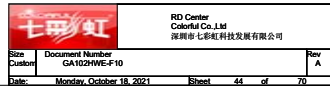
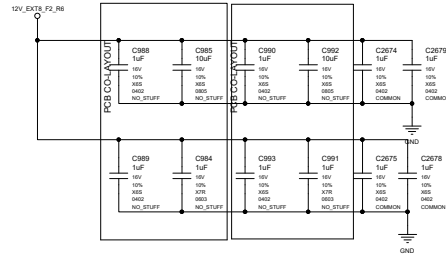


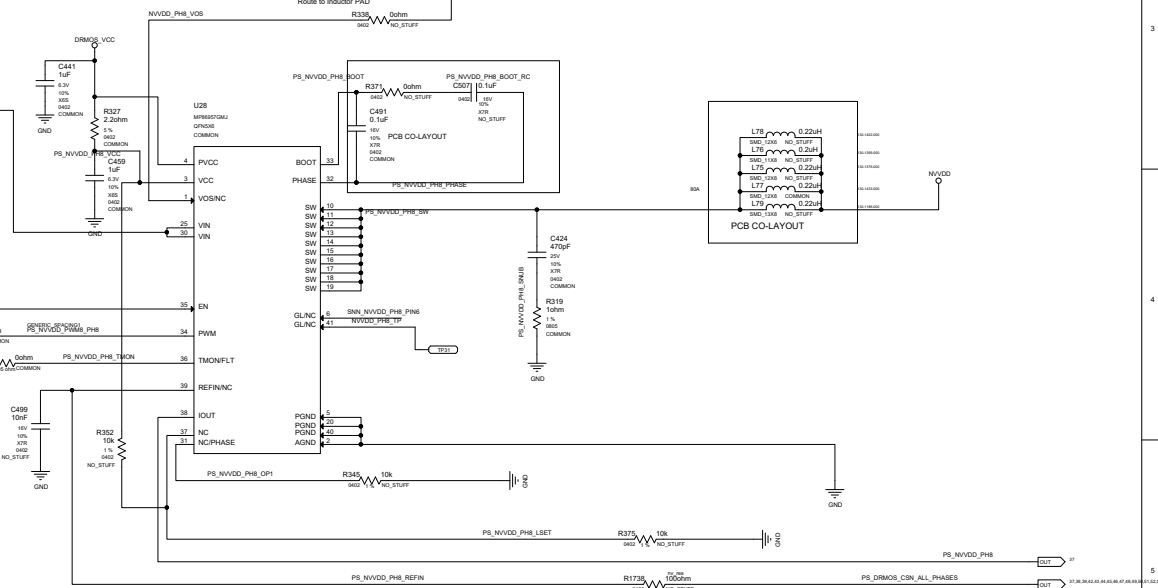
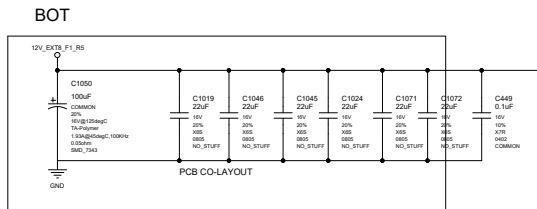
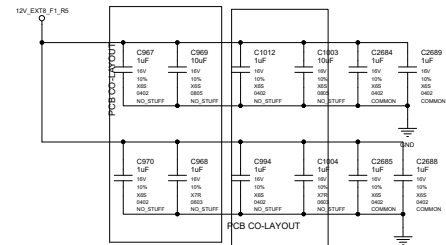
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PAGE DETAIL	PS: NVVDD PH3, PH4 (PWM5)

ASSEMBLY	ASSEMBLY DESCRIPTION
PAGE DETAIL	PS: NVVDD PH3, PH4 (PWM5)




七彩虹		RD Center Colorful Co., Ltd. 深圳市七彩虹科技发展有限公司	
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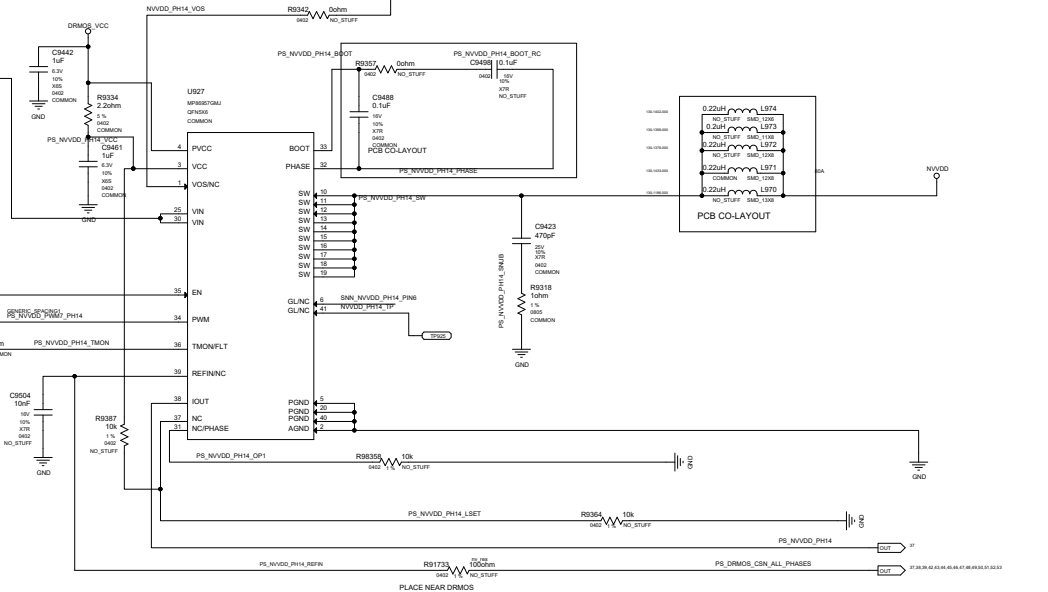
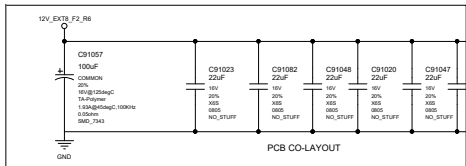
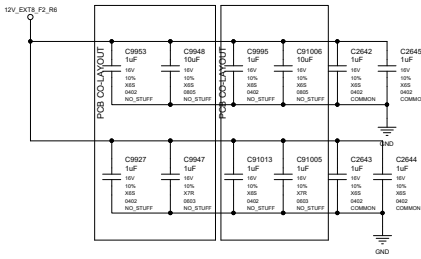




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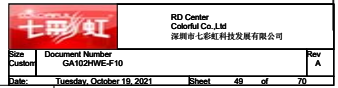


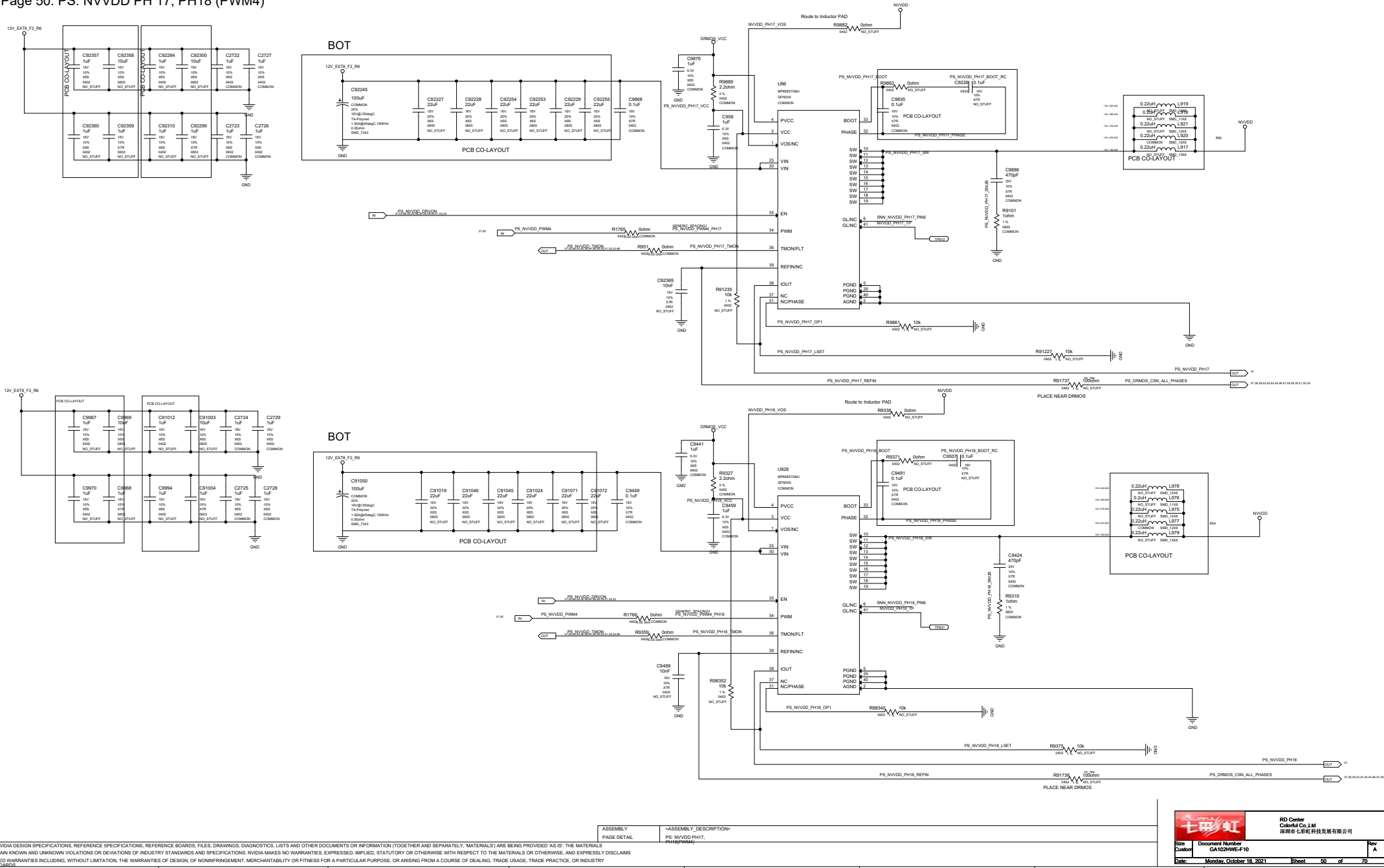
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Size Custom	Document Number GA102HWE-F10		Rev A
Date	Monday, October 18, 2021	Sheet	47 of 70



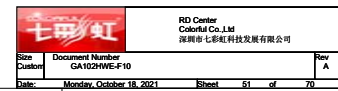
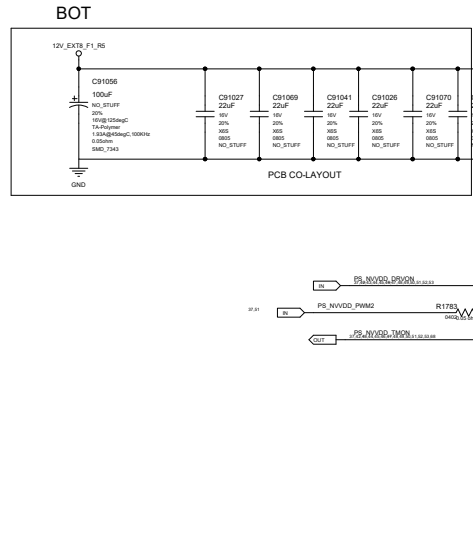
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PAGE DETAIL	PS: NVVDD PH13, PH14 (PWM)

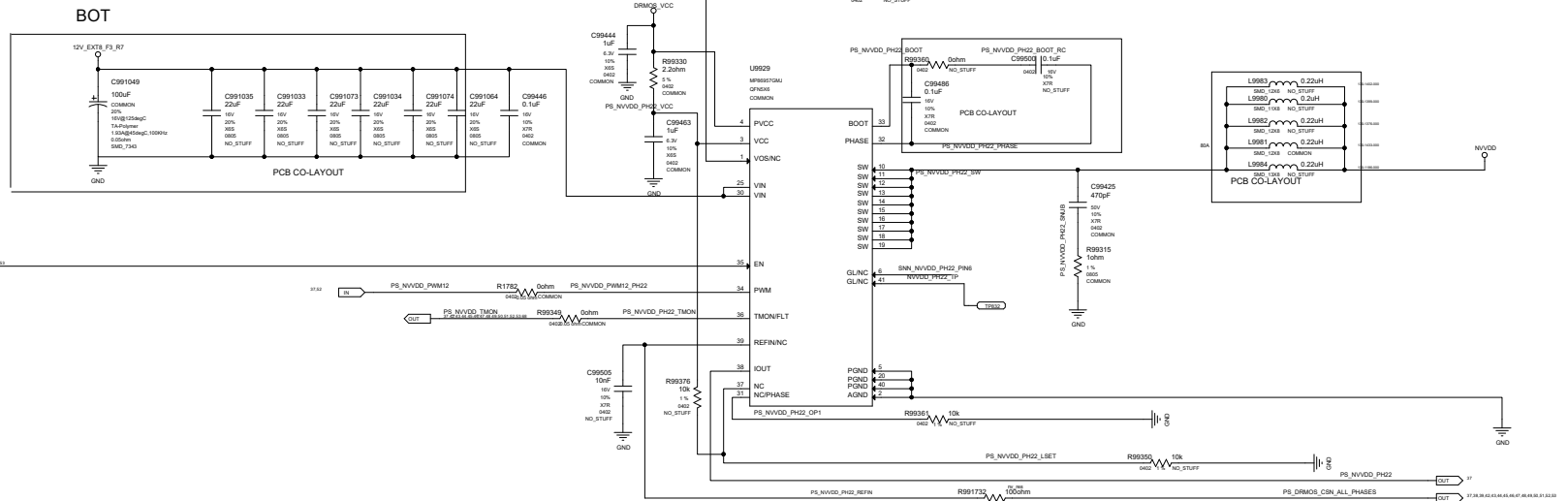
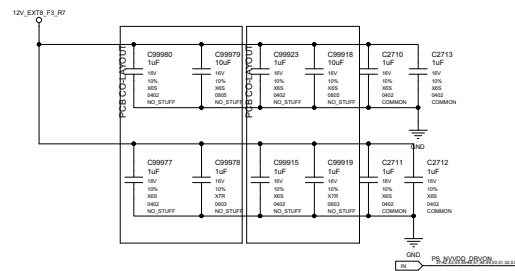
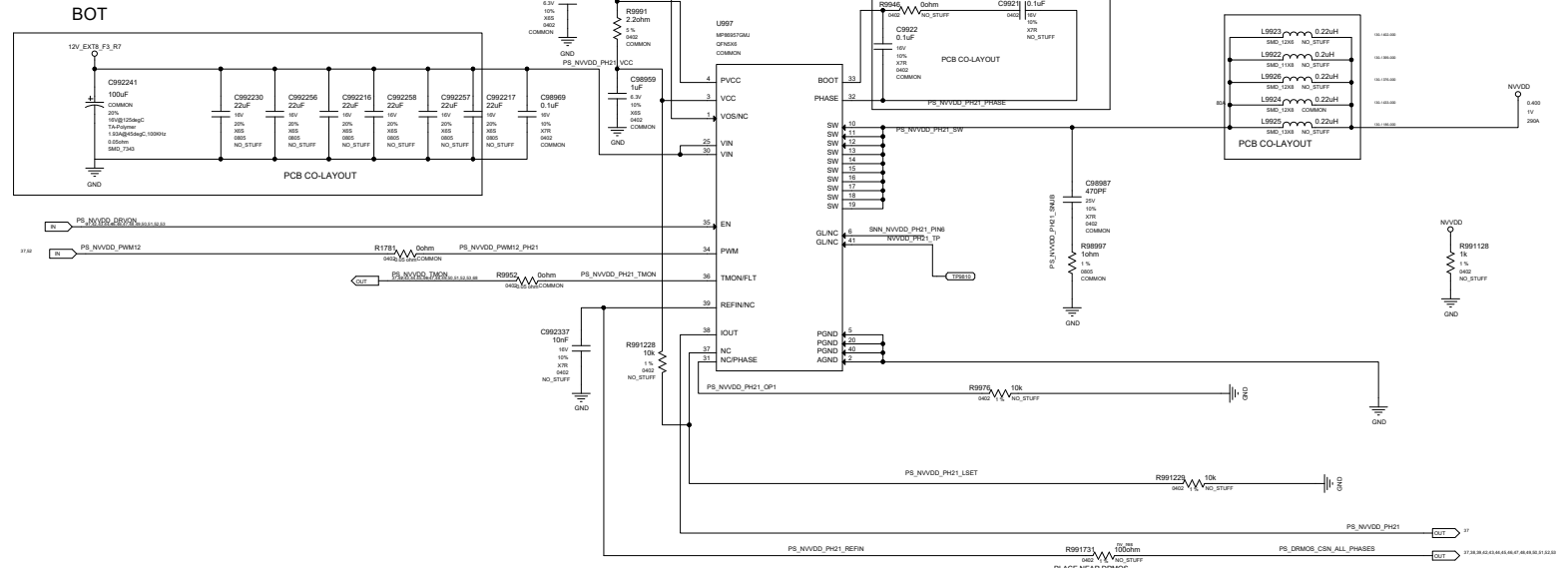
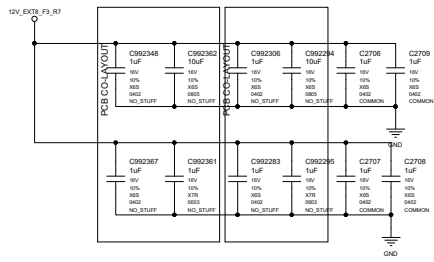
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Size Custom	Document Number GA102HWE-F10		Rev A
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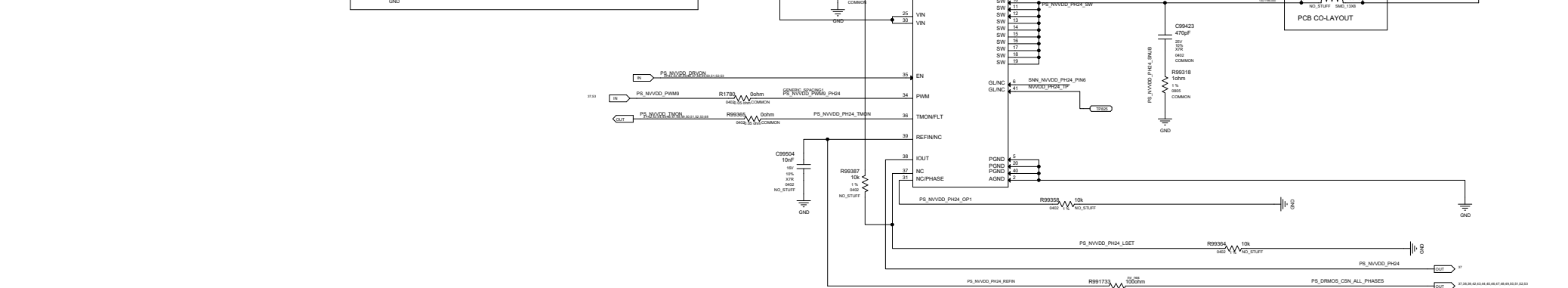
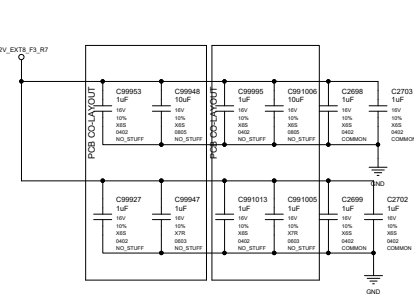
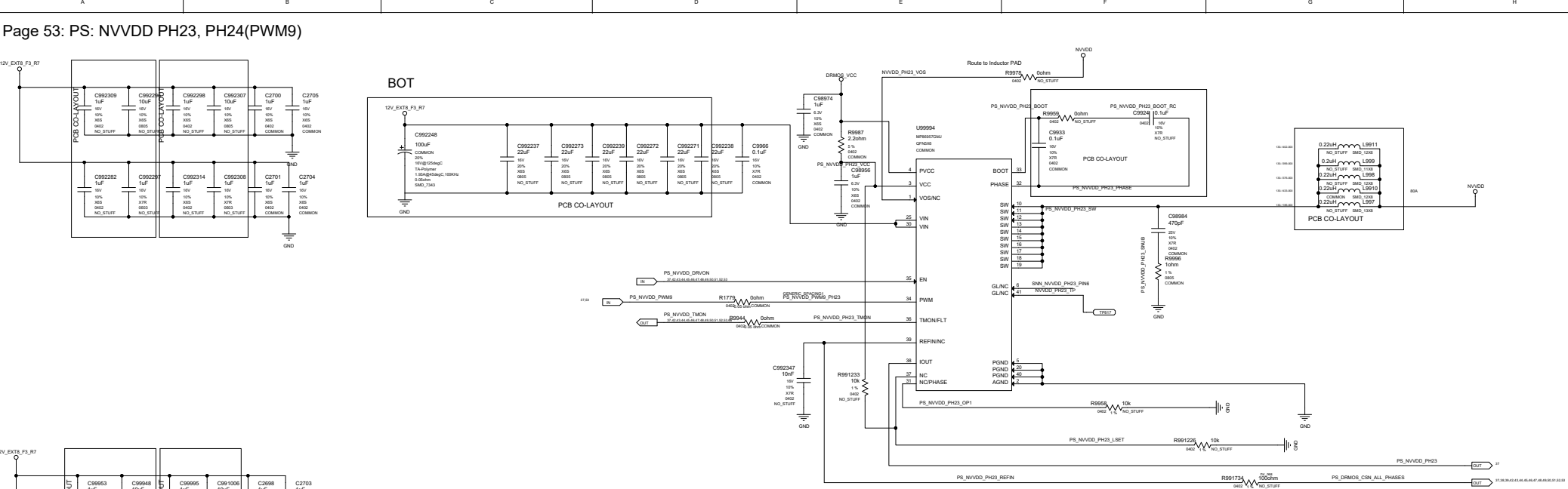
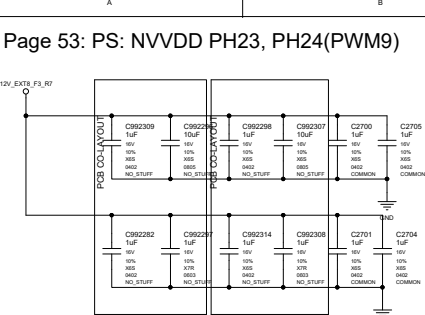




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PAGE DETAIL	PS:NVDD PH21, PH22(PWM12)

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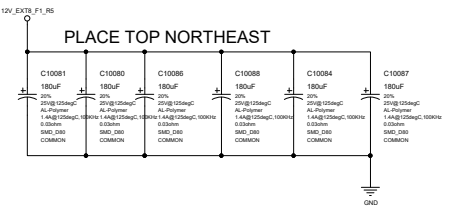
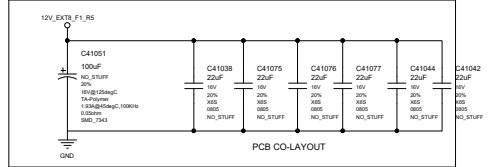
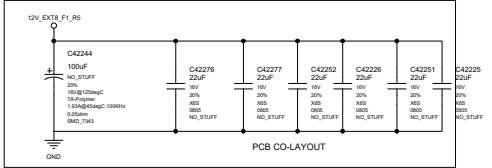
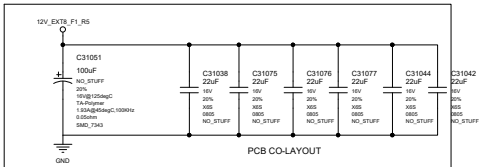
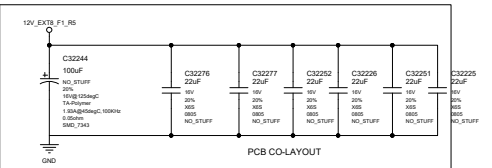
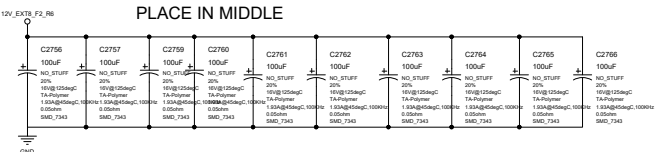
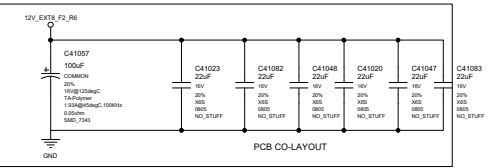
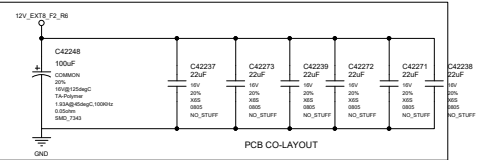
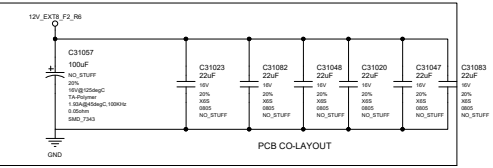
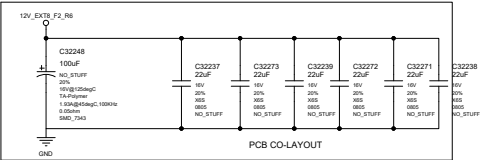
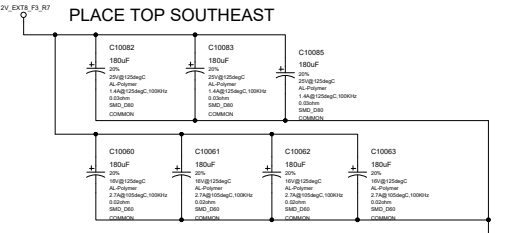
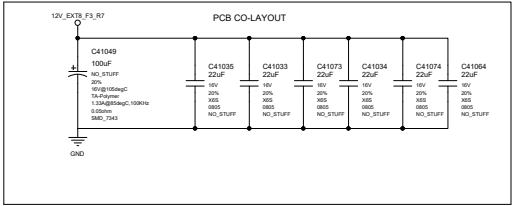
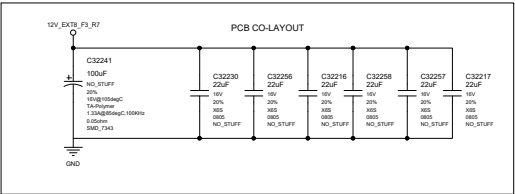
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PAGE DETAIL	PS: NVDD PH23,PH24(PWM9)

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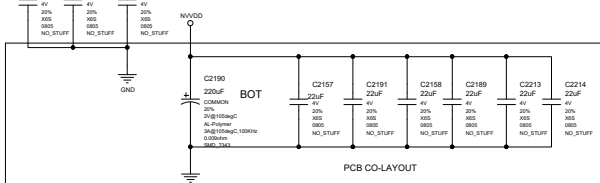
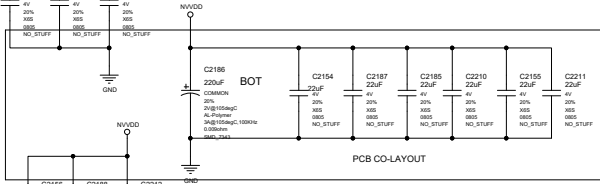
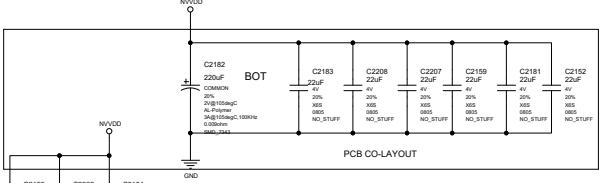
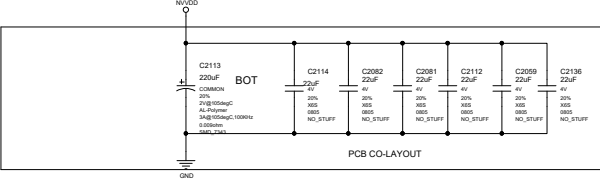
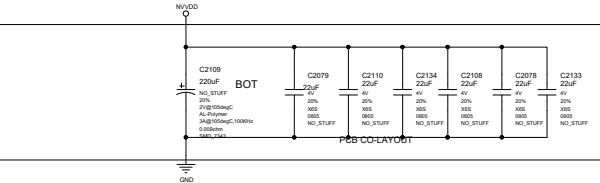
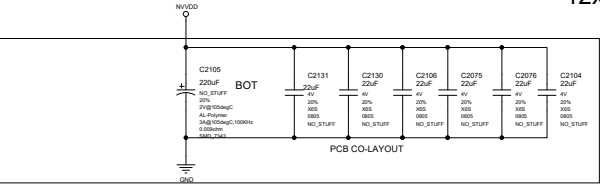
PS: INPUT CAP



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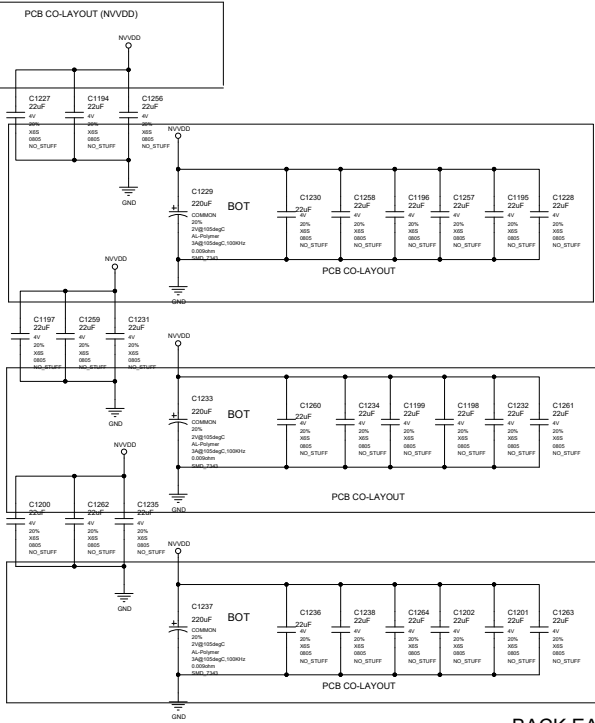
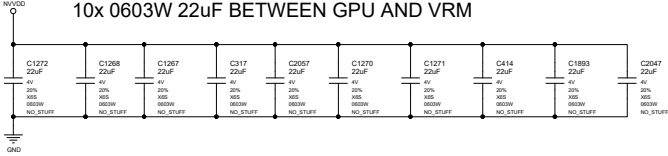
Size Custom Document Number CA102YWE-F-10 Rev A Date: Monday, October 18, 2021 Sheet 54 of 70

12x SMD7343 330uF CO-LAYOUT WITH 72x 0805 22uF

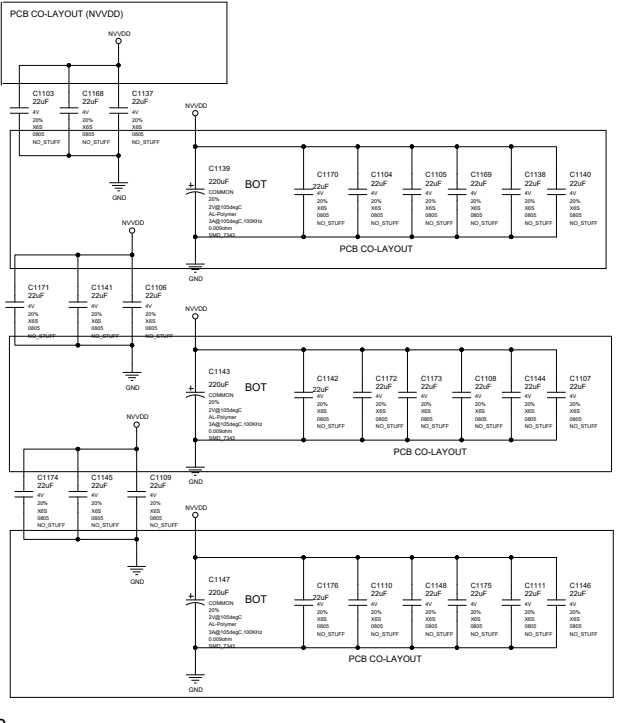


BACK WEST OF PCB

10x 0603W 22uF BETWEEN GPU AND VRM




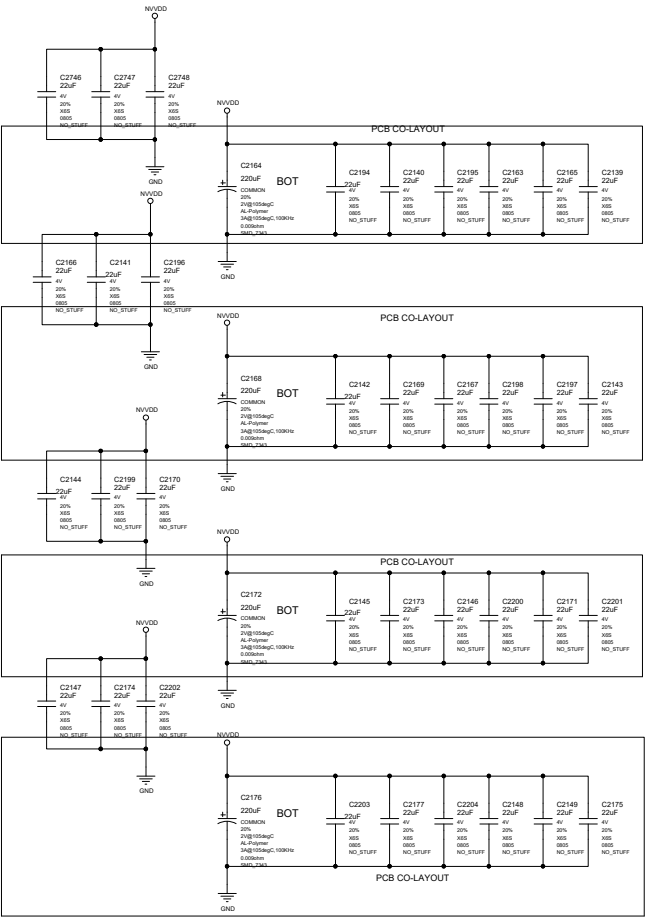
BACK EAST OF PCB



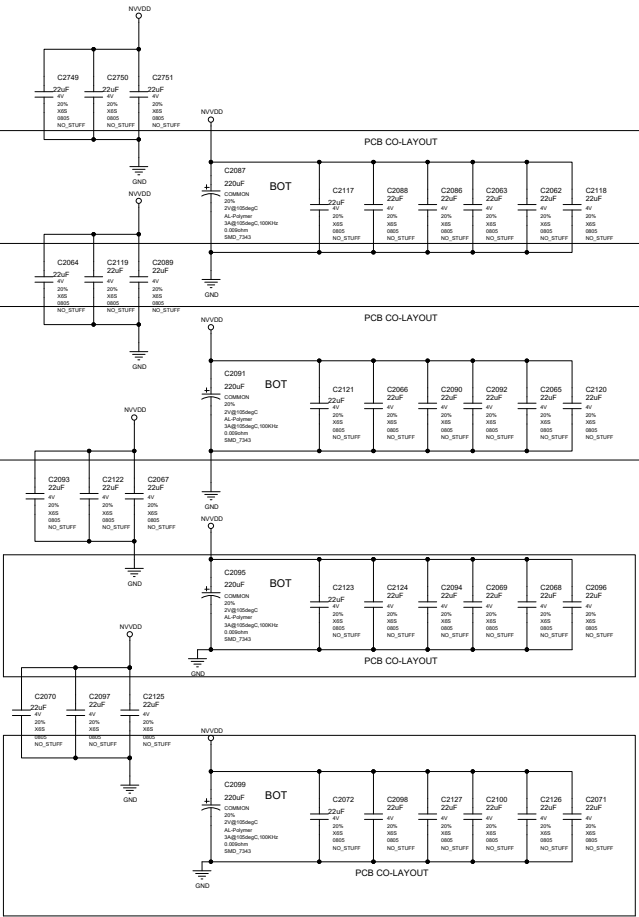
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ASSEMBLY PAGE DETAIL	ASSEMBLY DESCRIPTION PS: NVVDD OUTPUT CAP(1/5)
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BACK WEST OF PCB



BACK WEST OF PCB

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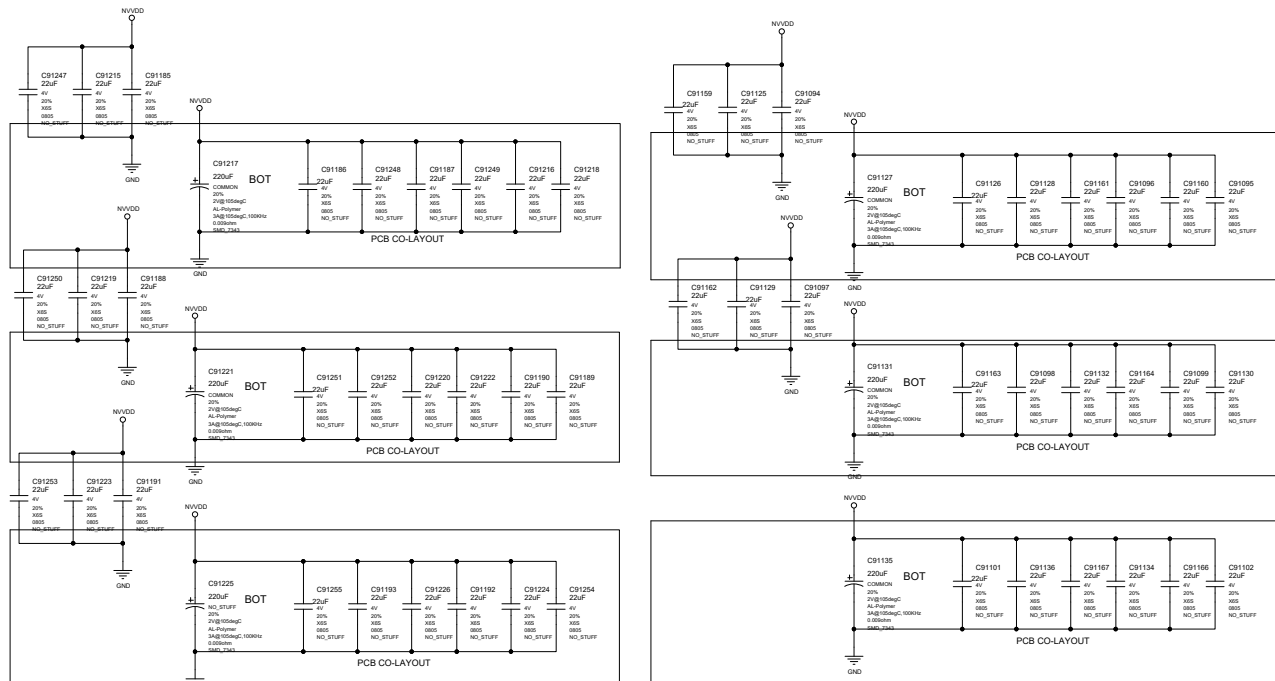
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PAGE DETAIL	PS: NVDD OUTPUT CAP (2/5)

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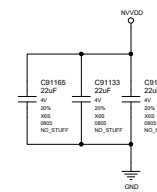


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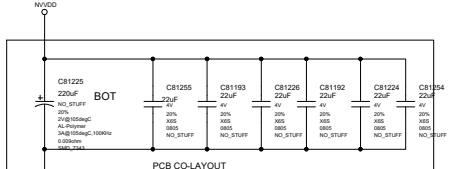
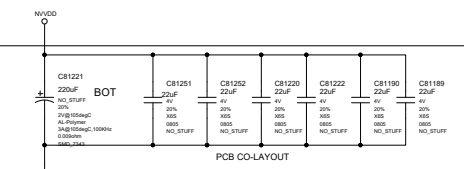
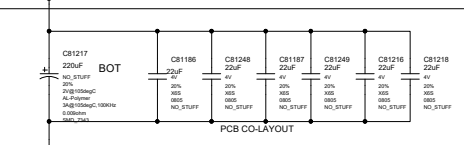
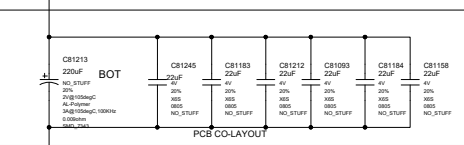
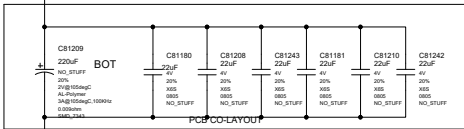
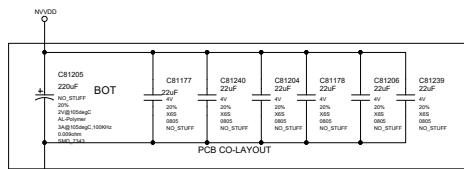
BACK EAST OF PCB



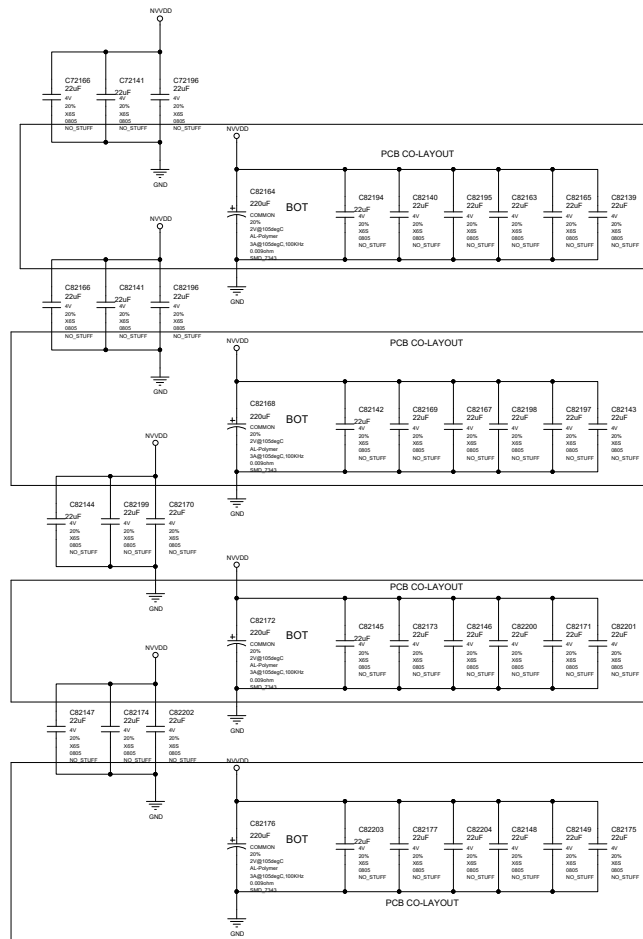
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ASSEMBLY	ASSEMBLY DESCRIPTION
PAGE DETAIL	PS: NVVDD OUTPUT CAP(4/5)

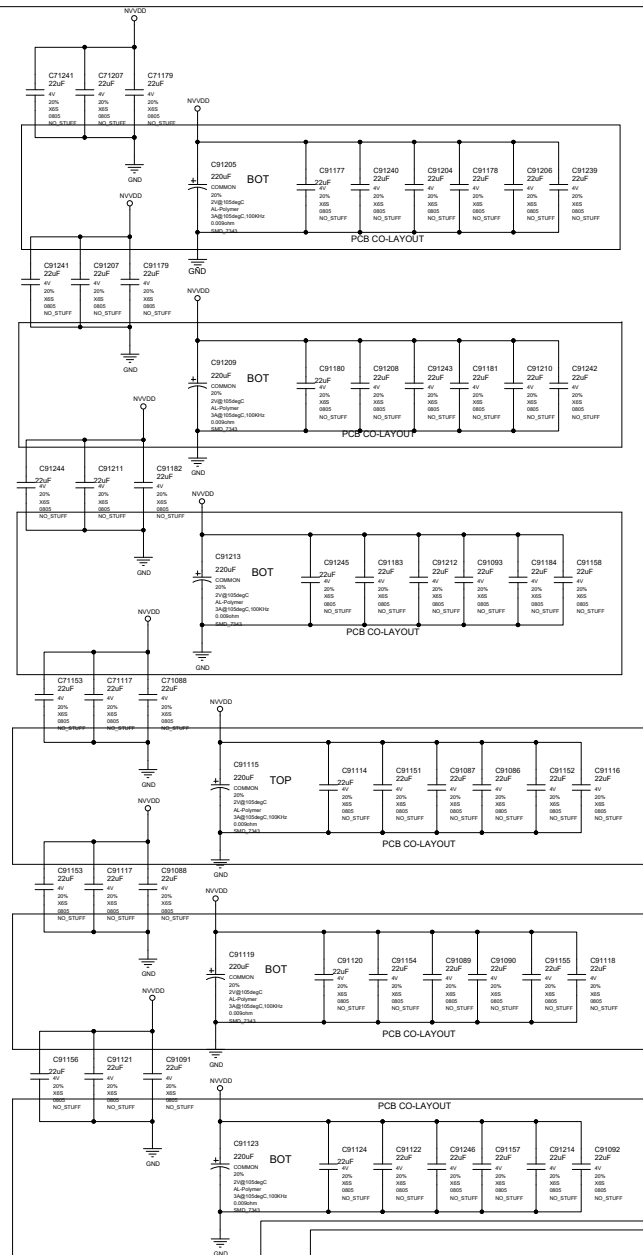
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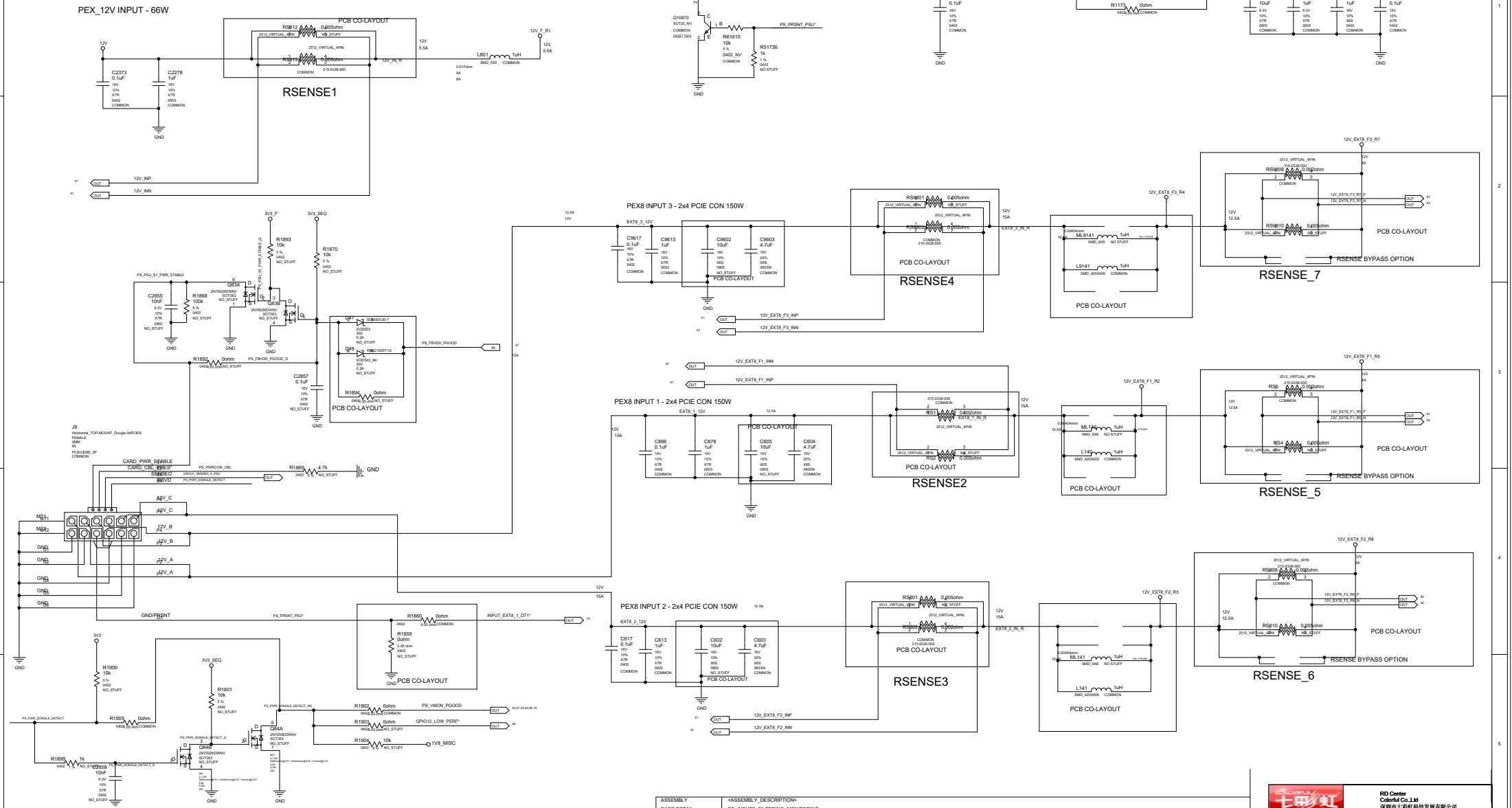
Reserve NVVDD Decoupling



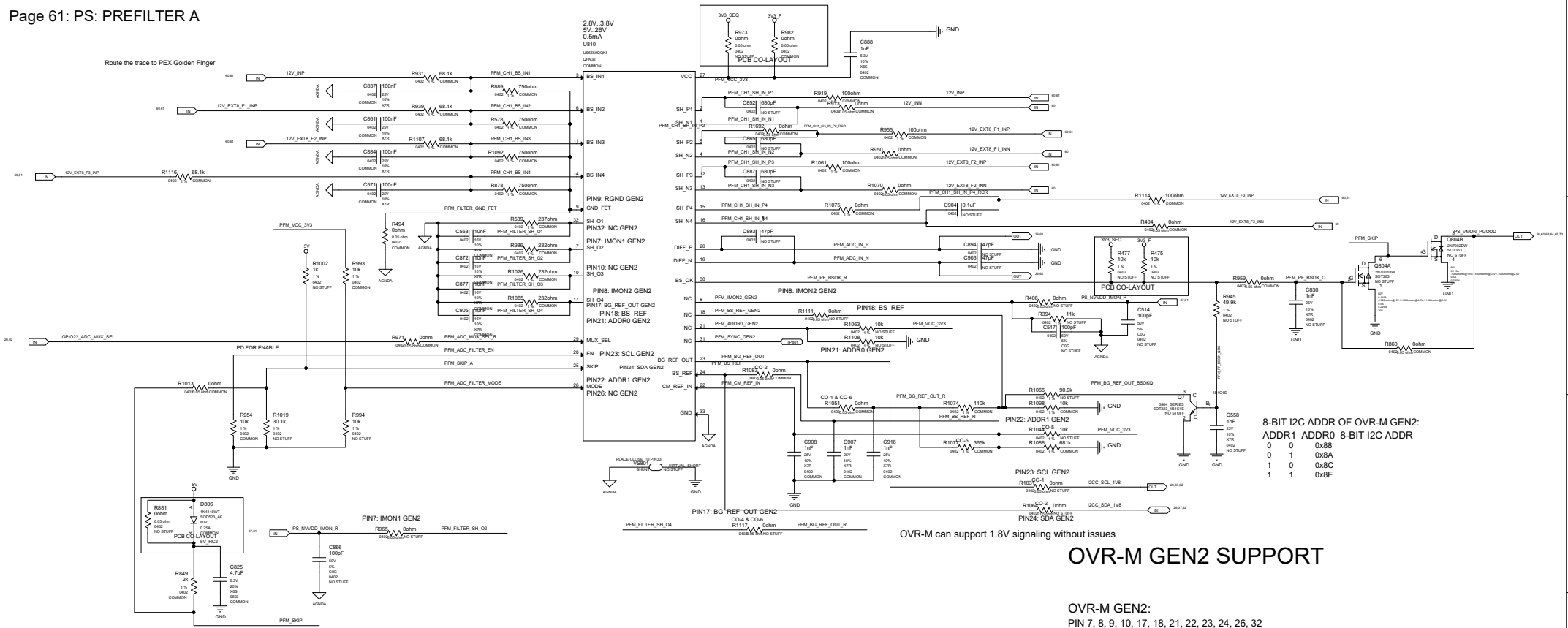
BACK WEST OF PCB



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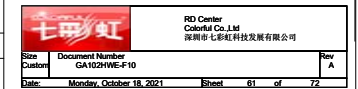
OVR-M can support 1.8V signaling without issues

OVR-M GEN2 SUPPORT

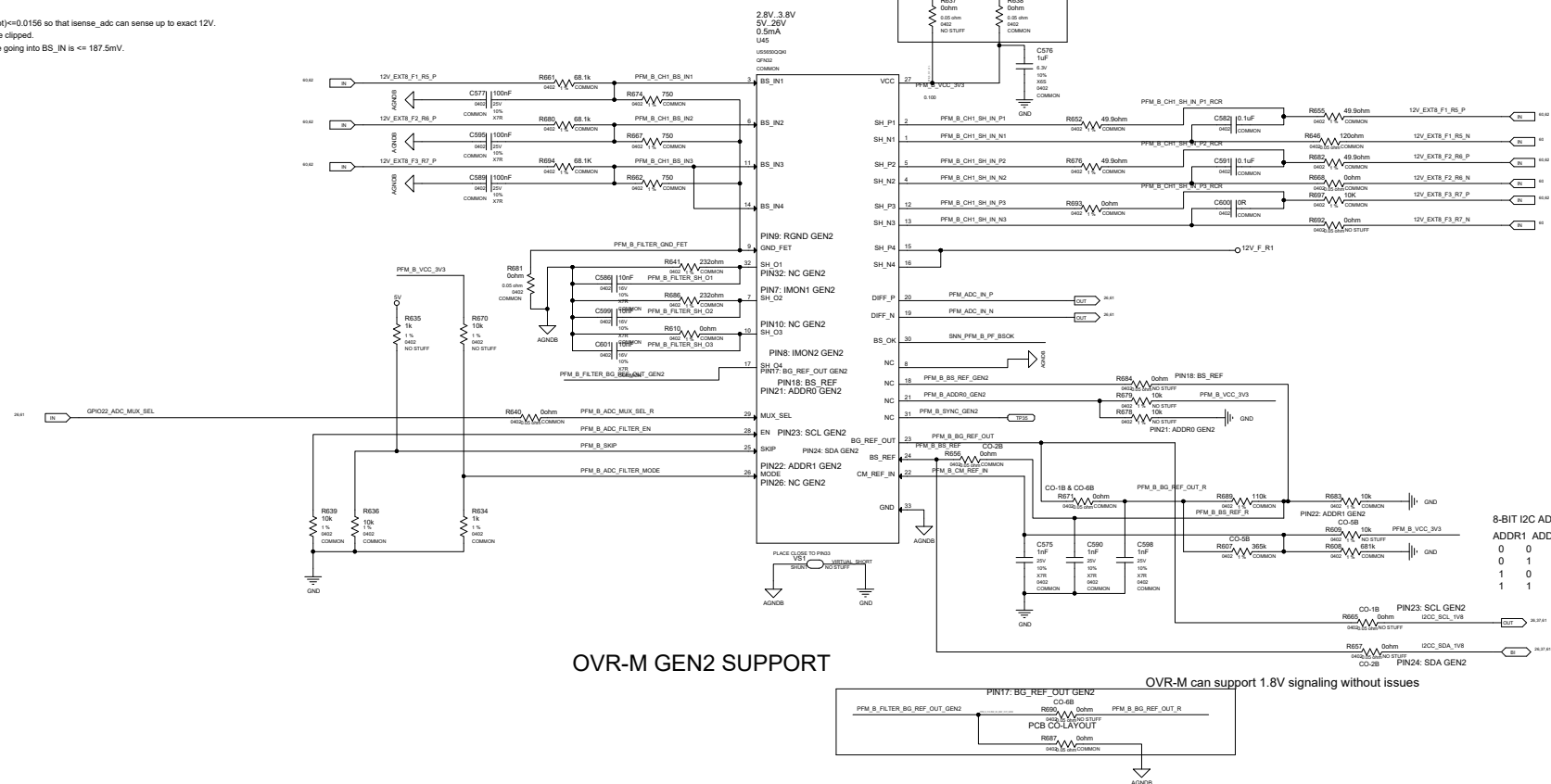
OVR-M GEN2:
PIN 7, 8, 9, 10, 17, 18, 21, 22, 23, 24, 26, 32
are different from GEN1 OVRM,

ASSEMBLY	<ASSEMBLY_DESCRIPTION>
PAGE DETAIL	PS: PREFILTER A

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BUS: $R_{bot}/(R_{top}+R_{bot}) \leq 0.0156$ so that `isense_adc` can sense up to exact 12V.
Anything higher will be clipped.
Make sure the voltage going into BS_IN is $\leq 187.5mV$.



OVR-M GEN2 SUPPORT

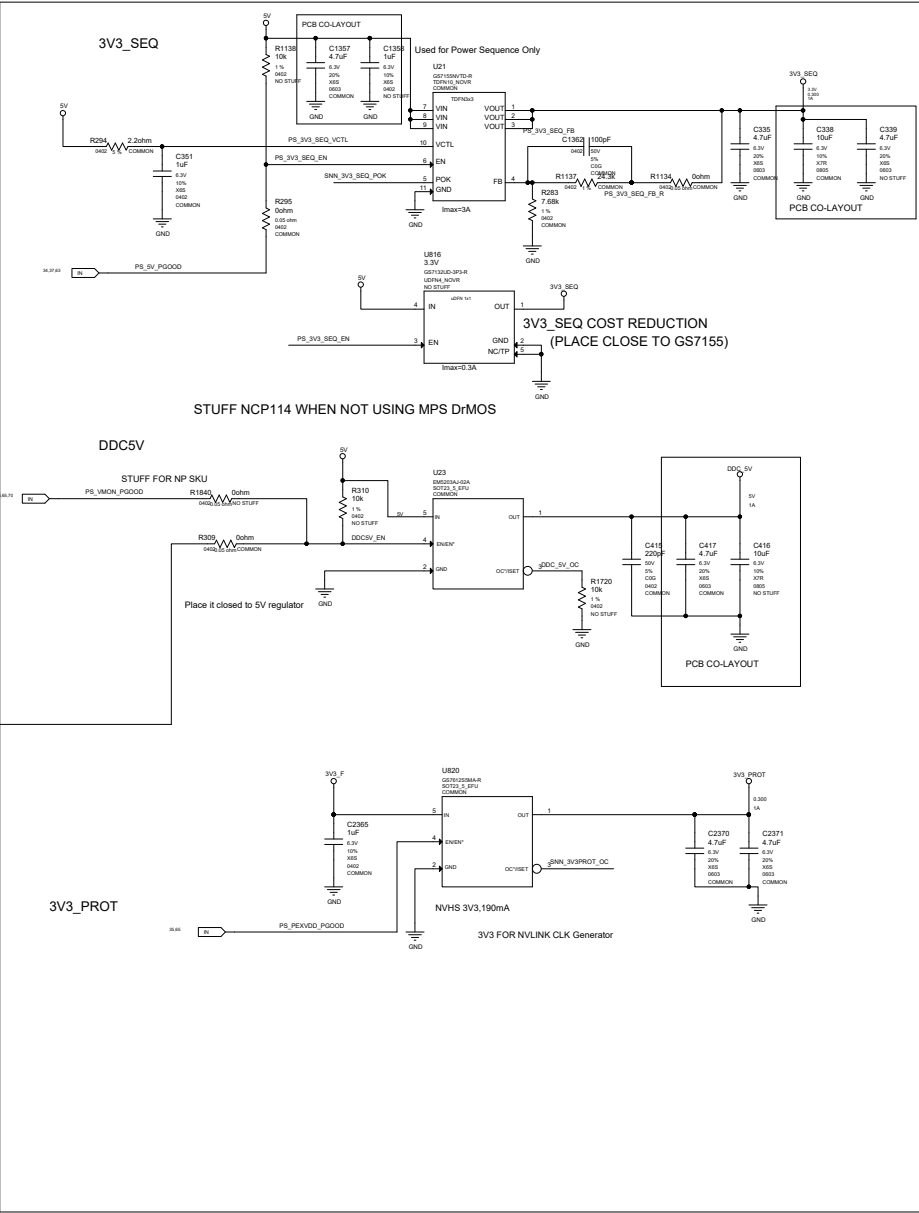
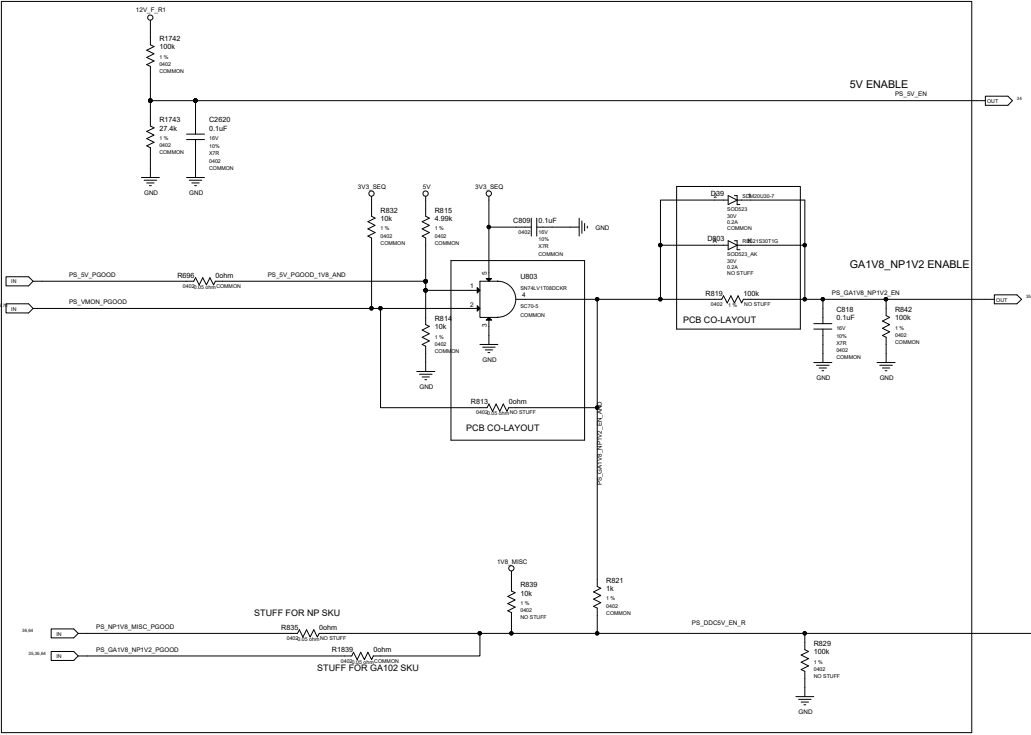
OVR-M can support 1.8V signaling without issues

OVR-M GEN2:

PIN 7, 8, 9, 10, 17, 18, 21, 22, 23, 24, 26, 32
are different from GEN1 OVRM,

ASSEMBLY	<ASSEMBLY_DESCRIPTION>
PAGE DETAIL	PS: PREFILTER B

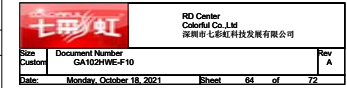
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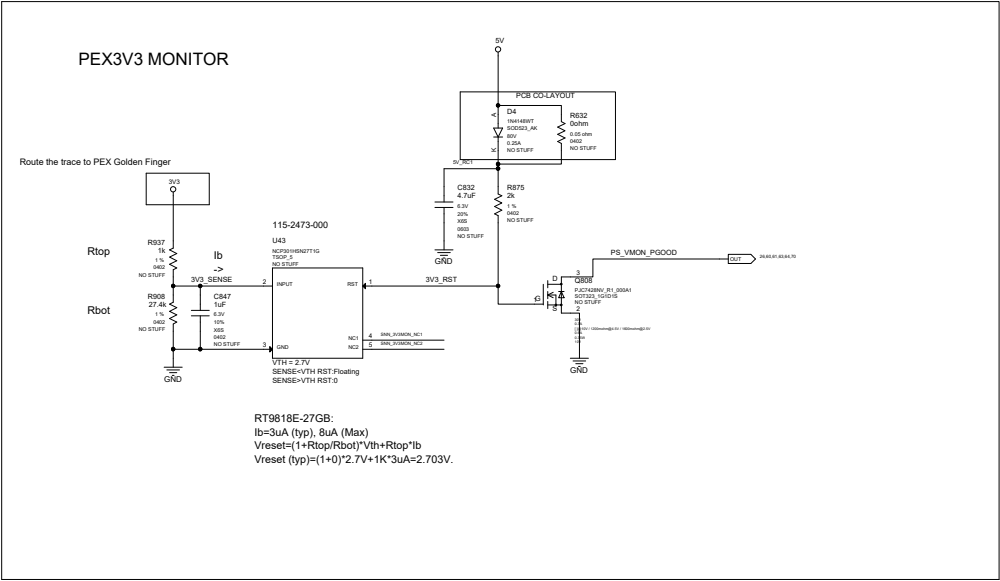
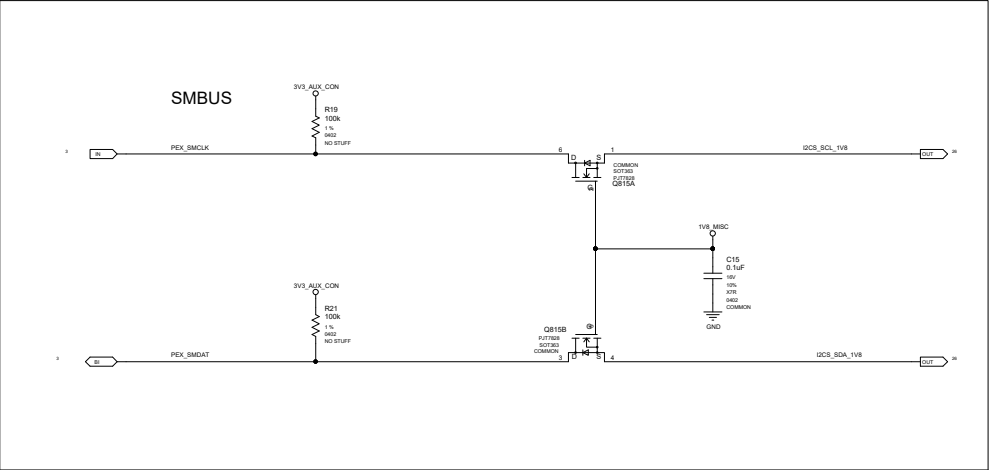
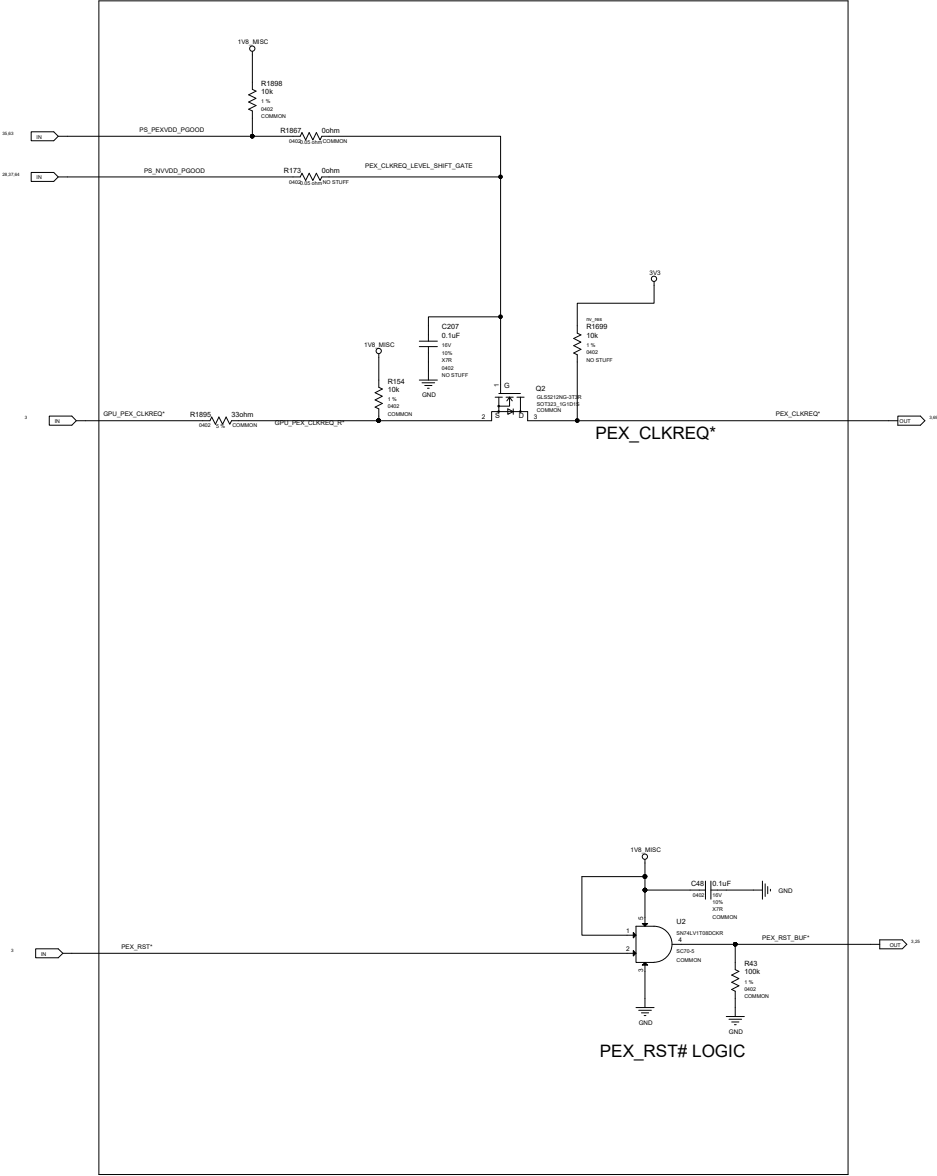


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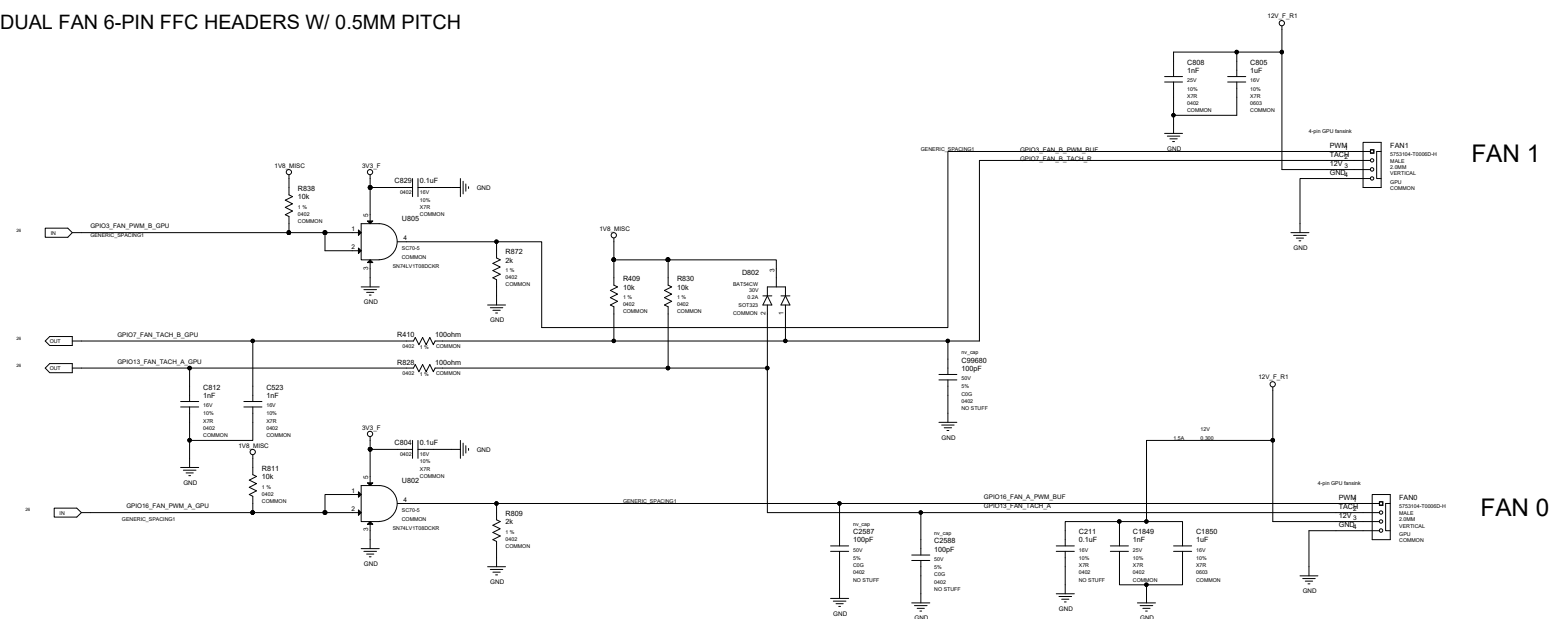


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DUAL FAN 6-PIN FFC HEADERS W/ 0.5MM PITCH




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ASSEMBLY PAGE DETAIL
FAN & NORTH LOGO LED

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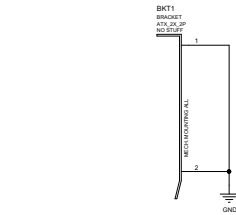
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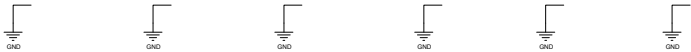


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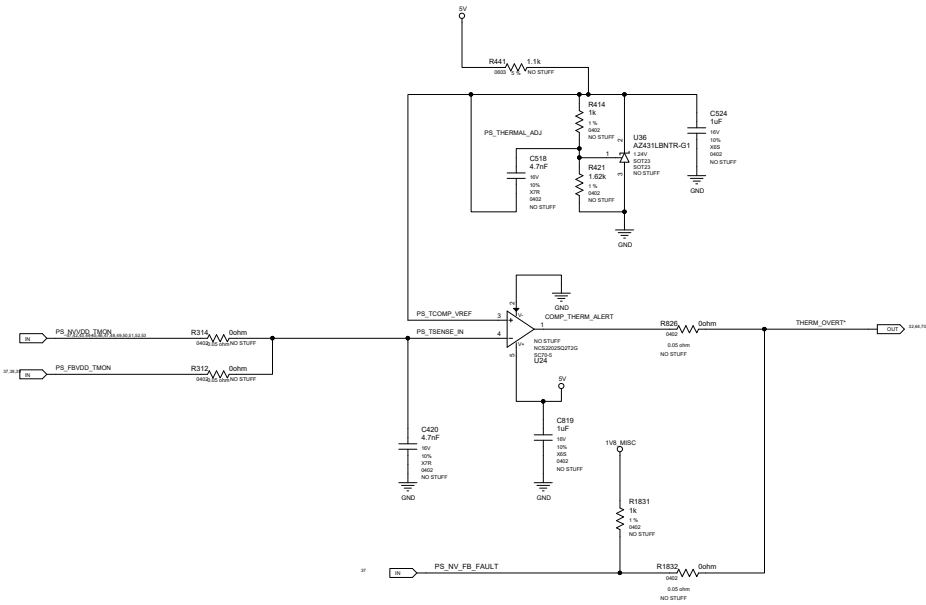
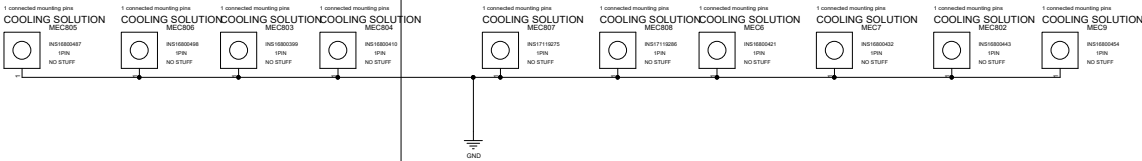
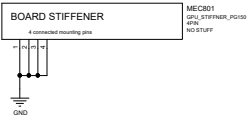
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BOT: 3x RETENTION SPRINGS




MOUNTING HOLES



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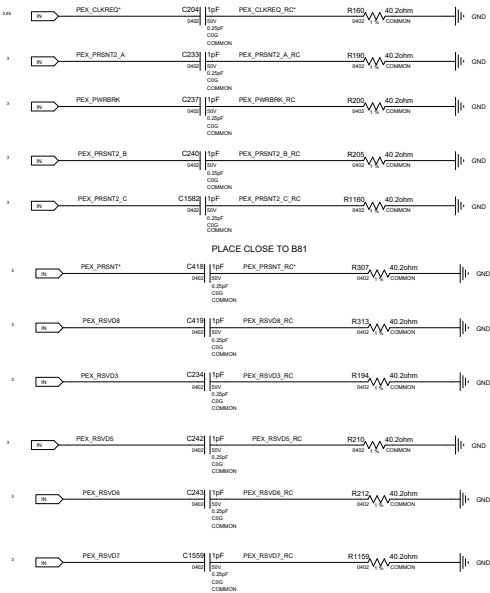
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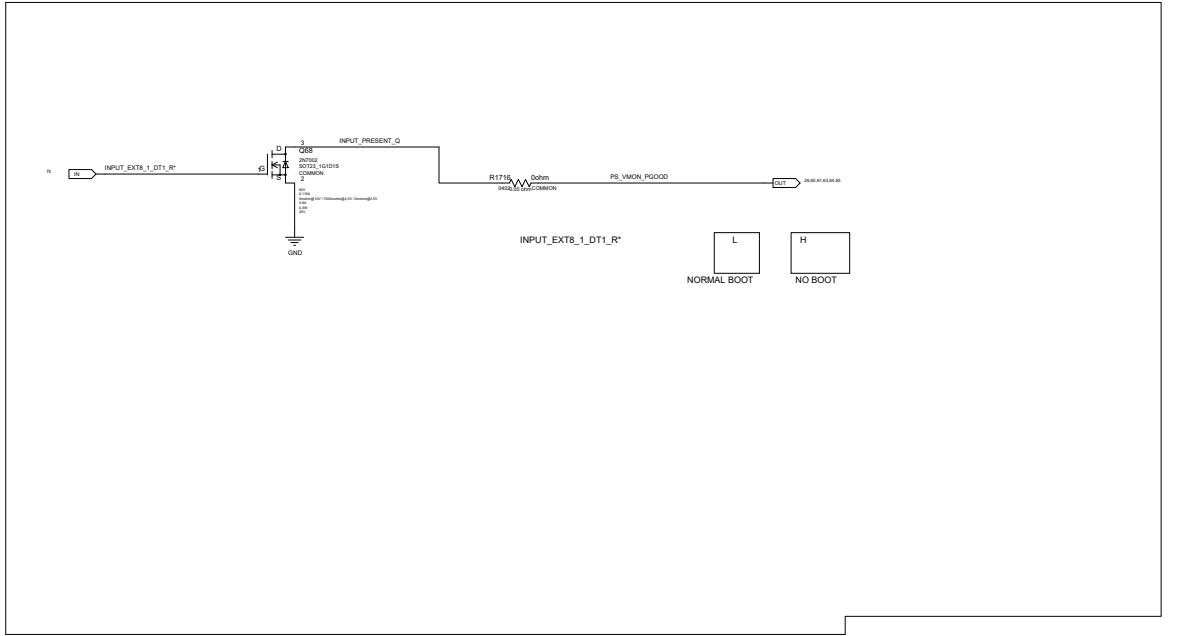
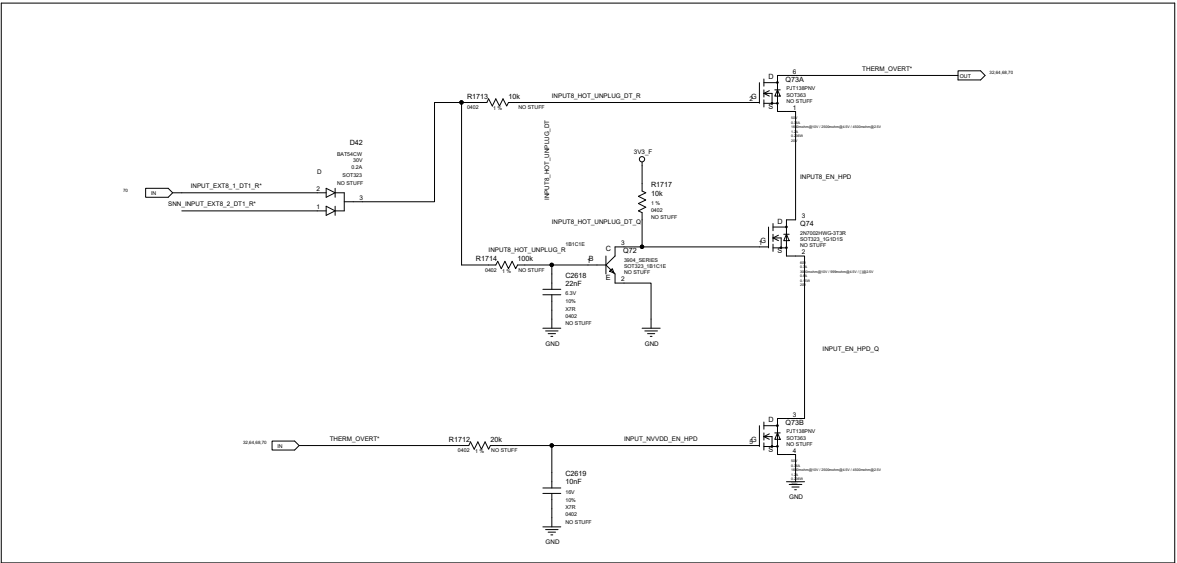
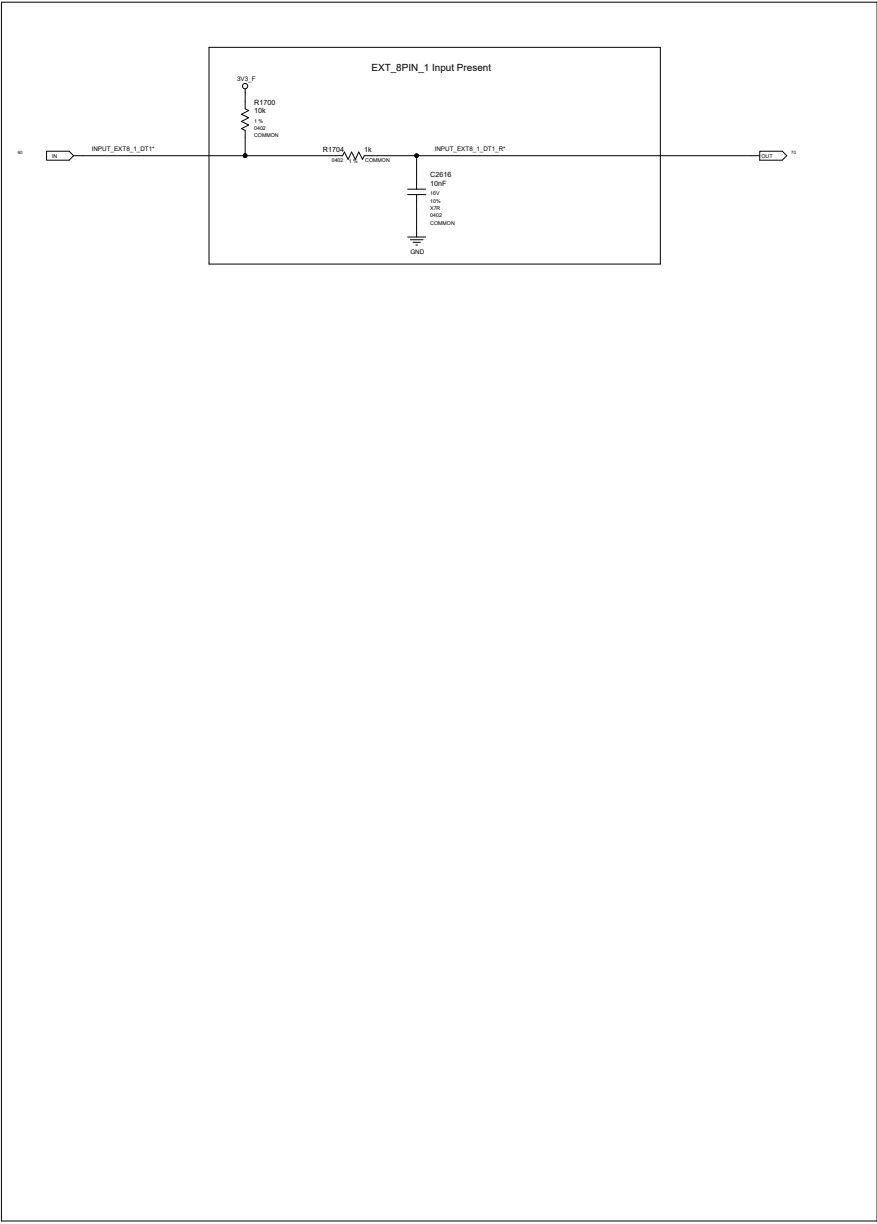
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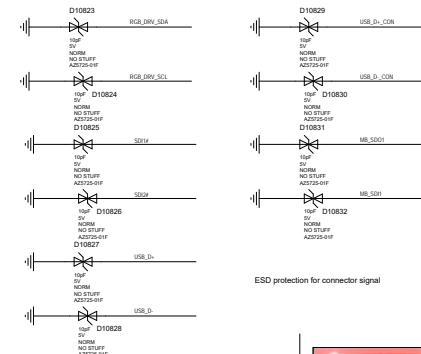
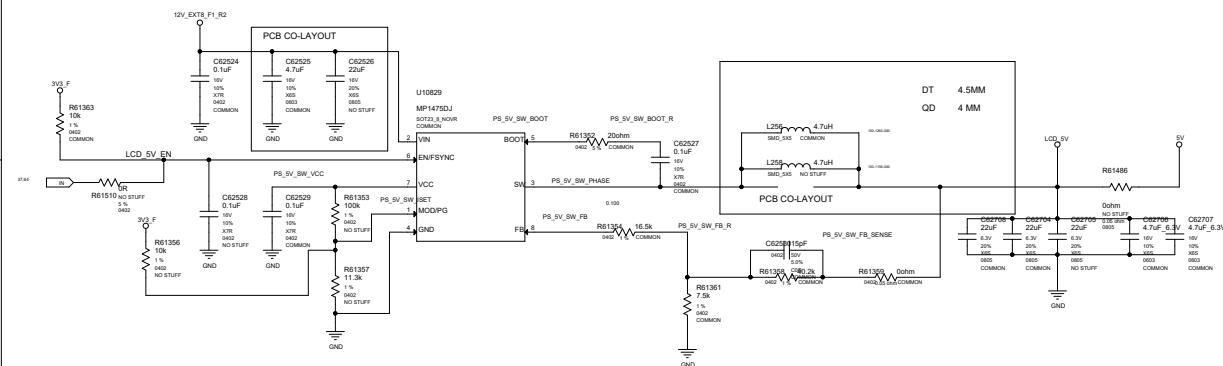
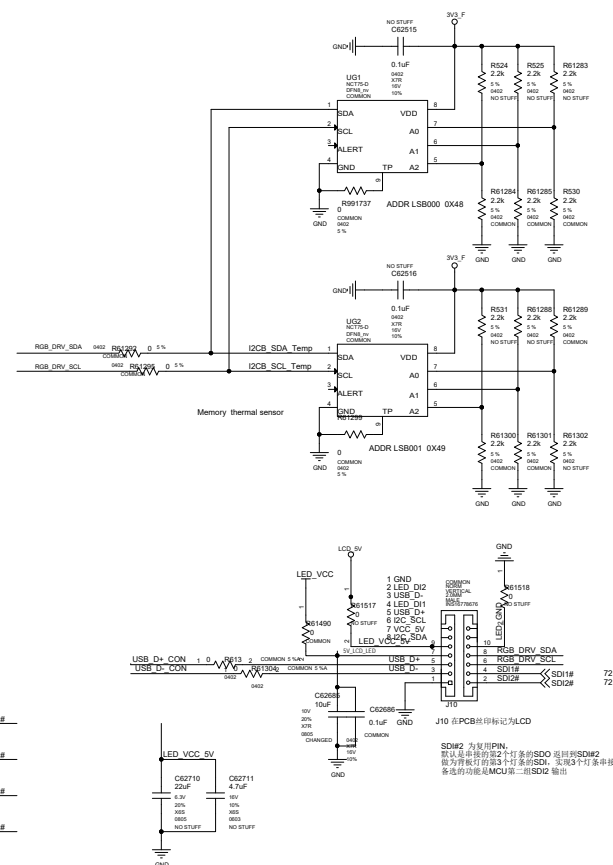
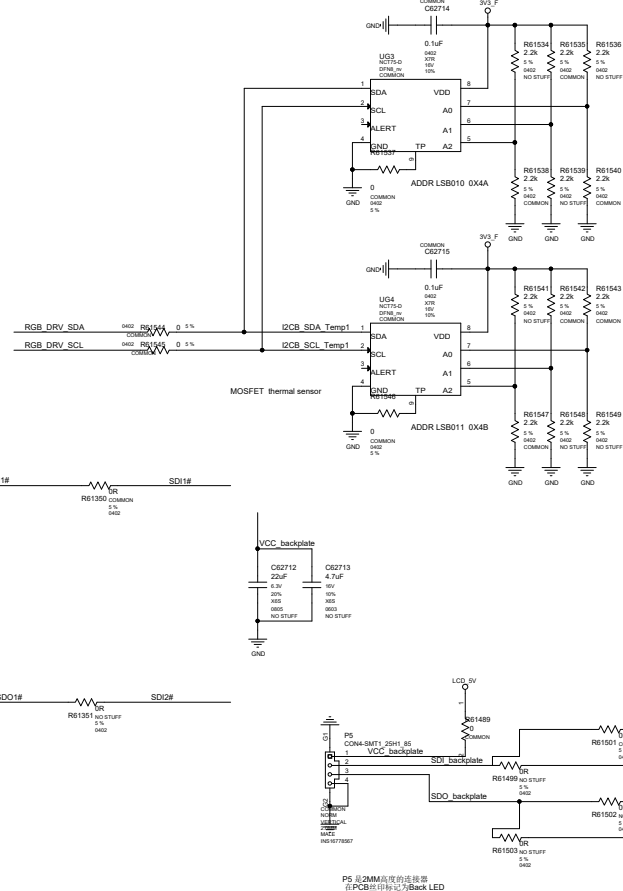
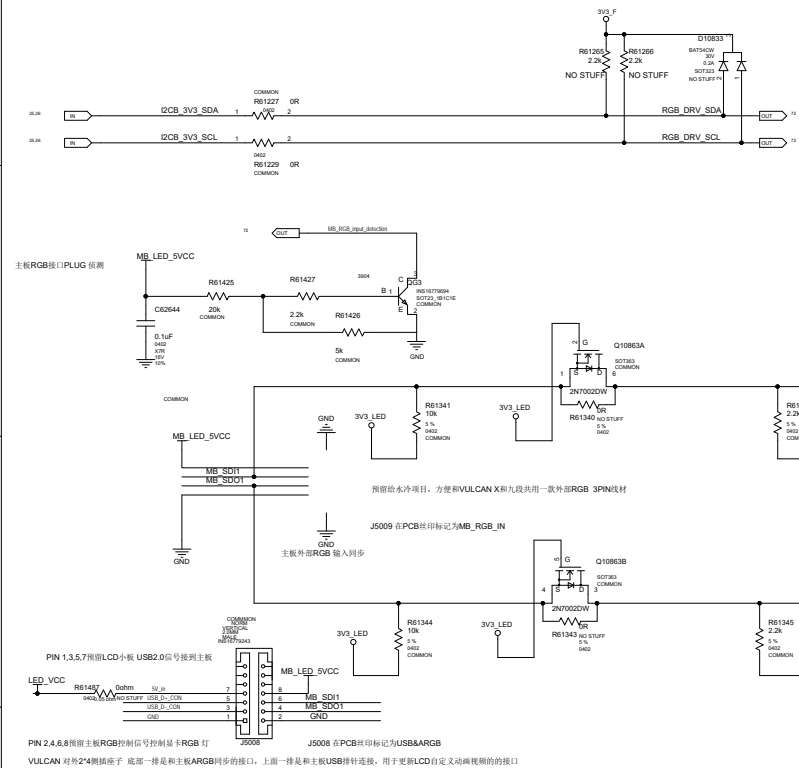


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MISC: RGBW LED REF



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