

PG132-A02

370W, FH Std PCB, 384b, GDDR6x 2CH X16
DP + DP + DP + HDMI/DP

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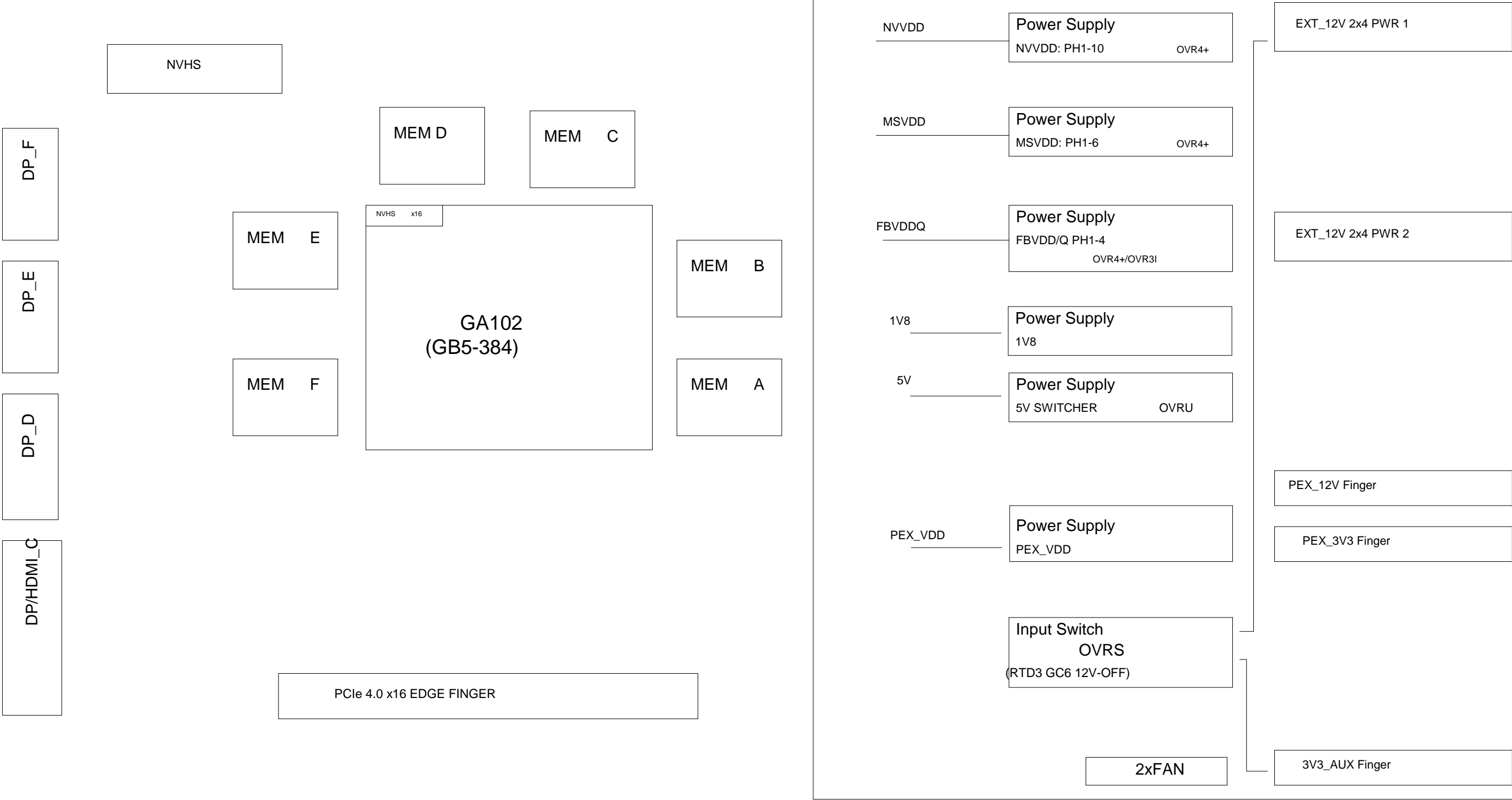
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Block Diagram



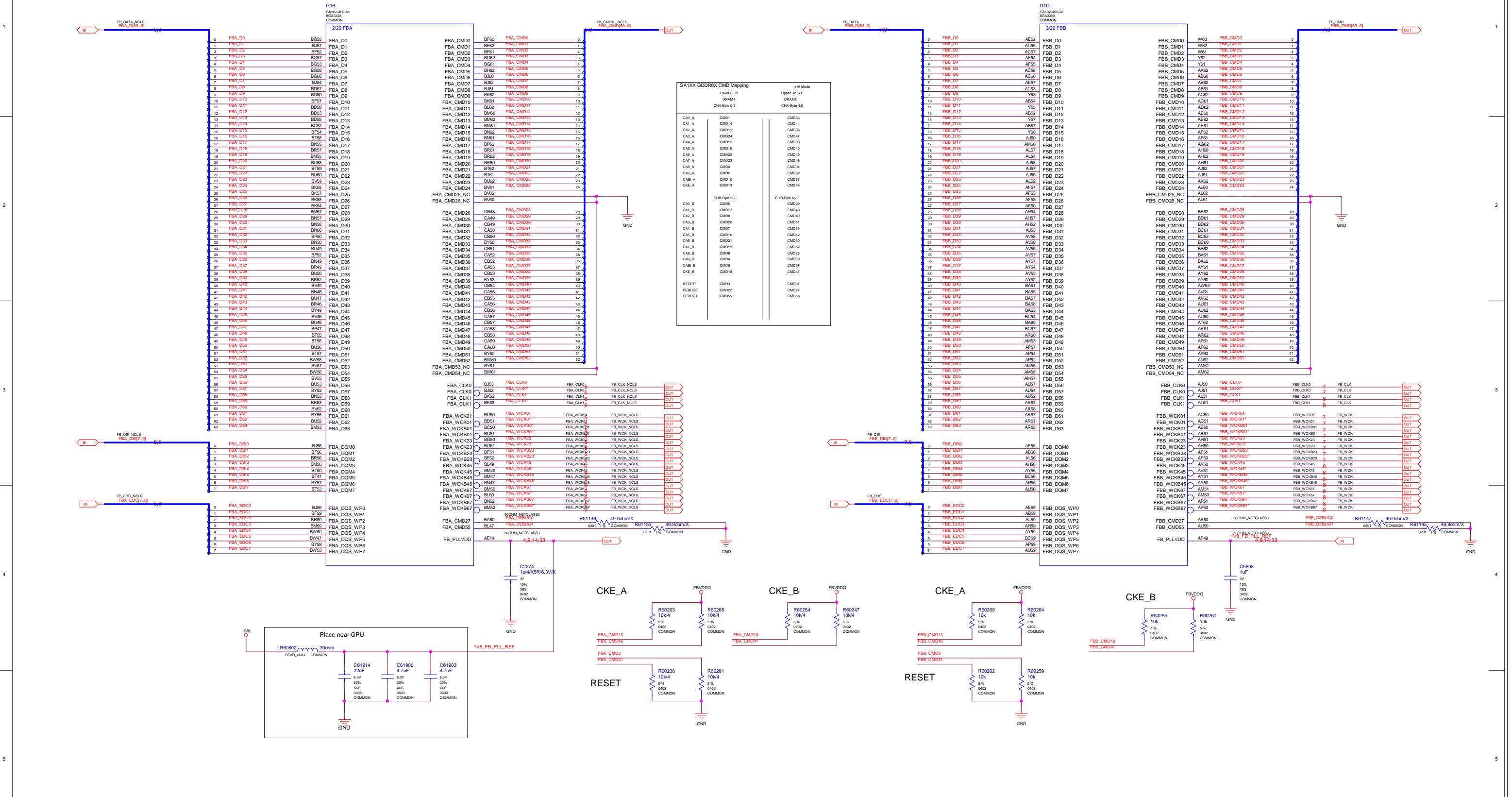
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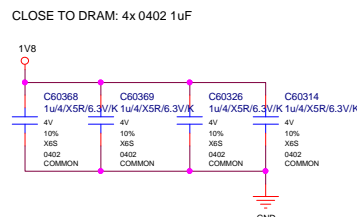
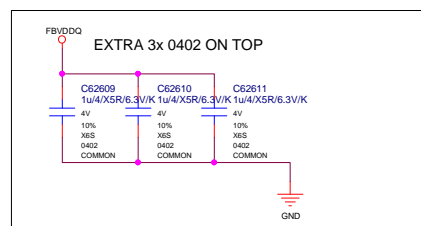
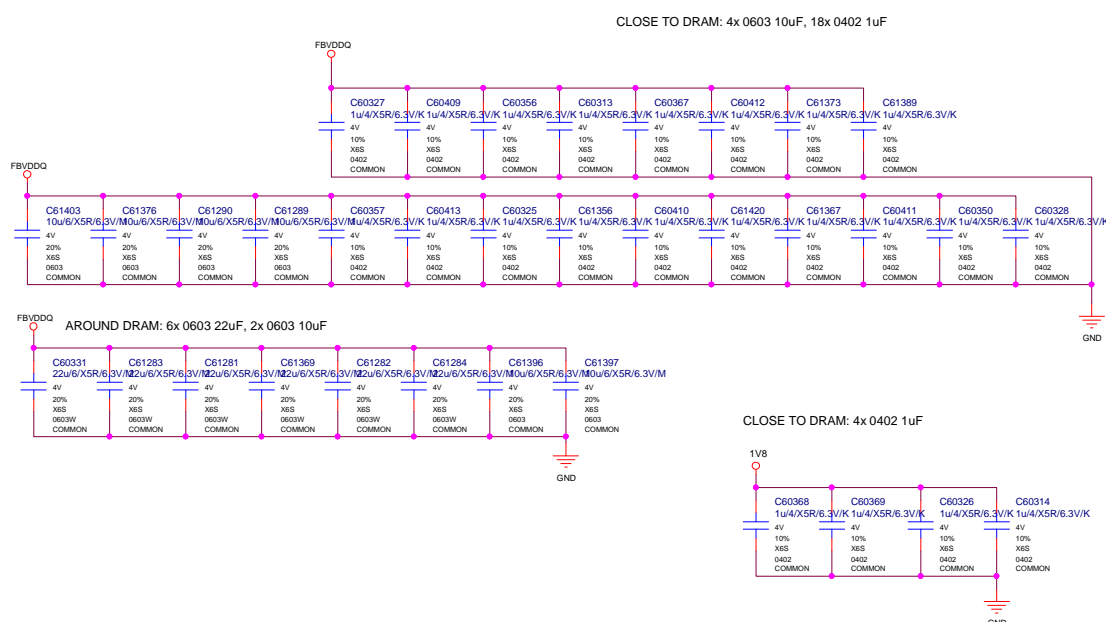
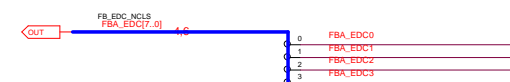
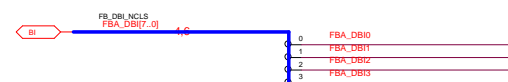
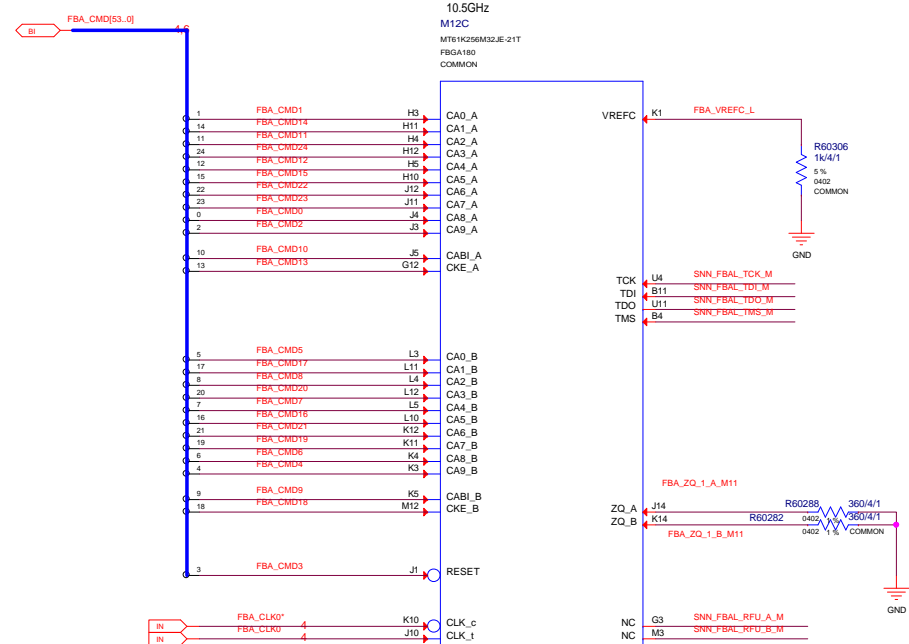
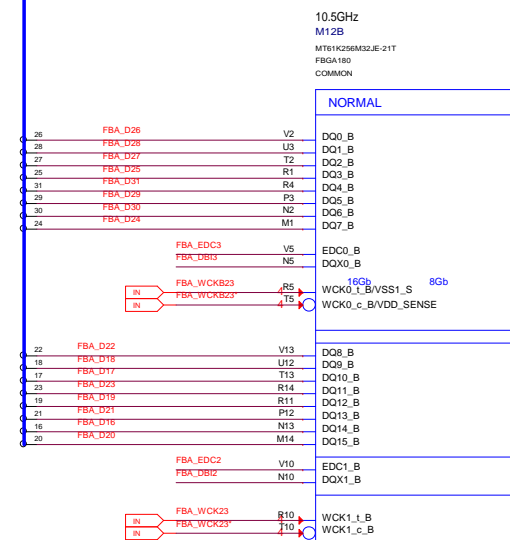
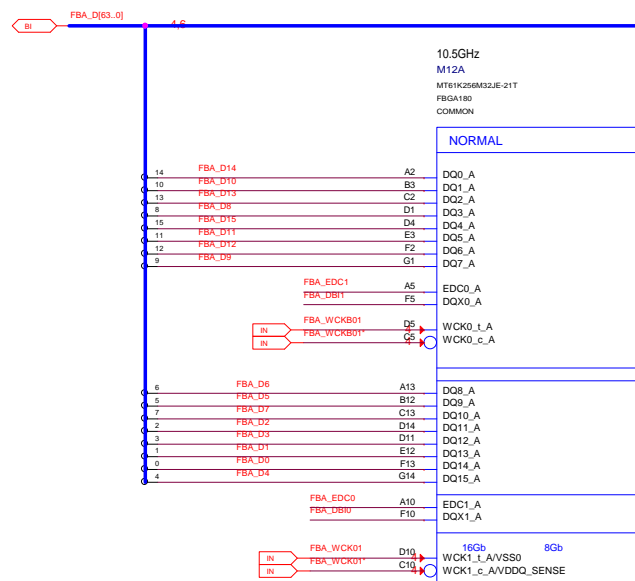
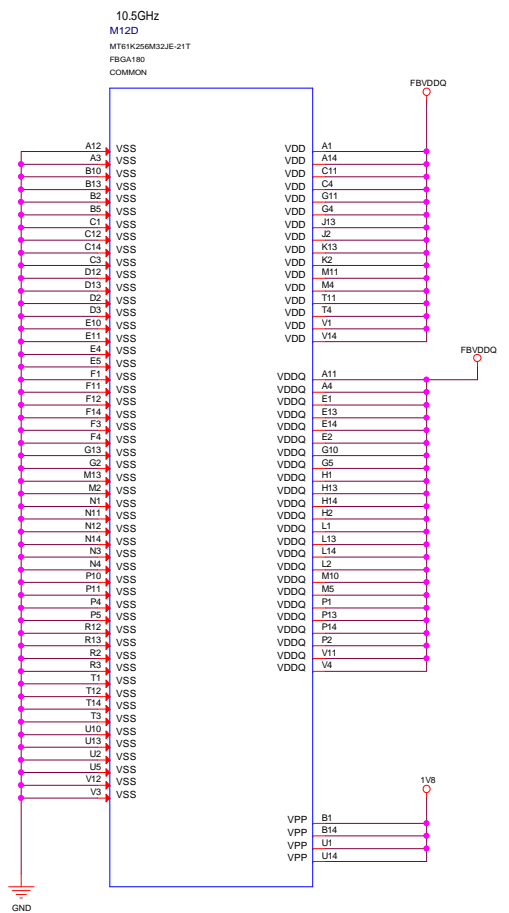
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BLOCK DIAGRAM

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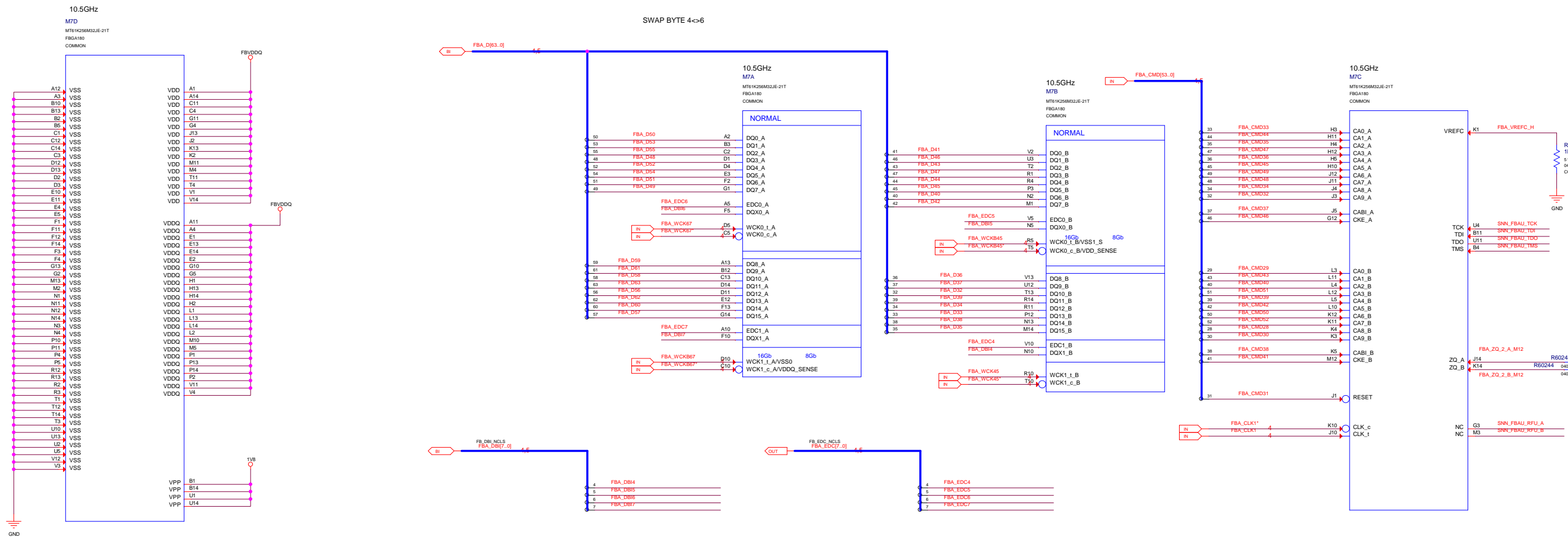
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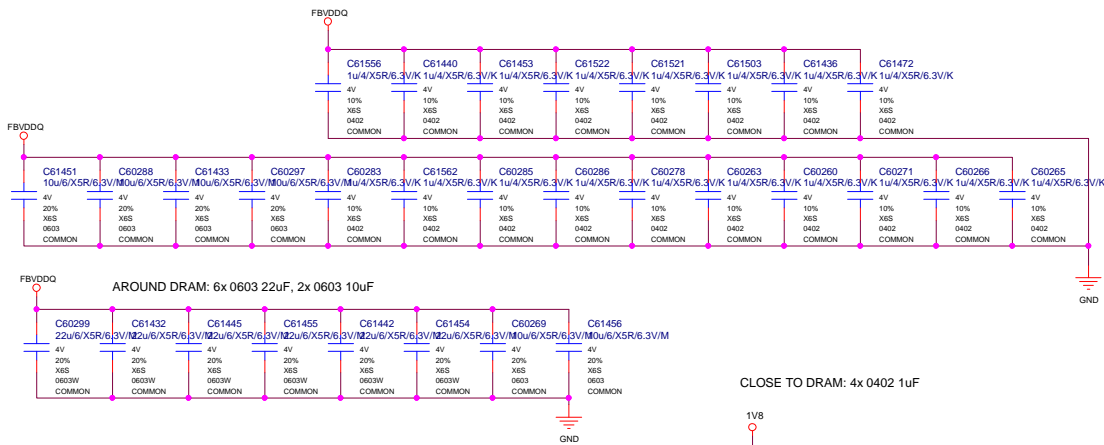
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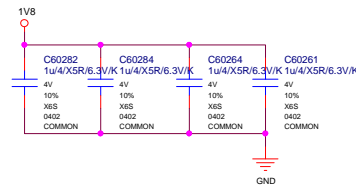
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CLOSE TO DRAM: 4x 0603 10uF, 18x 0402 1uF



CLOSE TO DRAM: 4x 0402 1uF

ASSEMBLY
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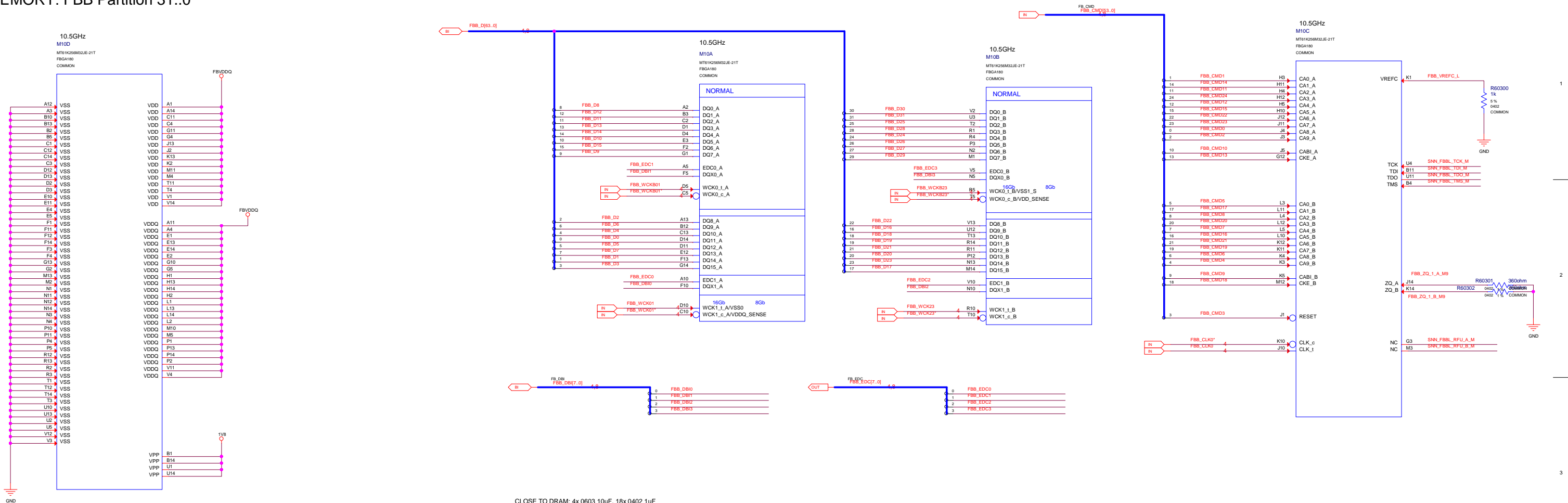
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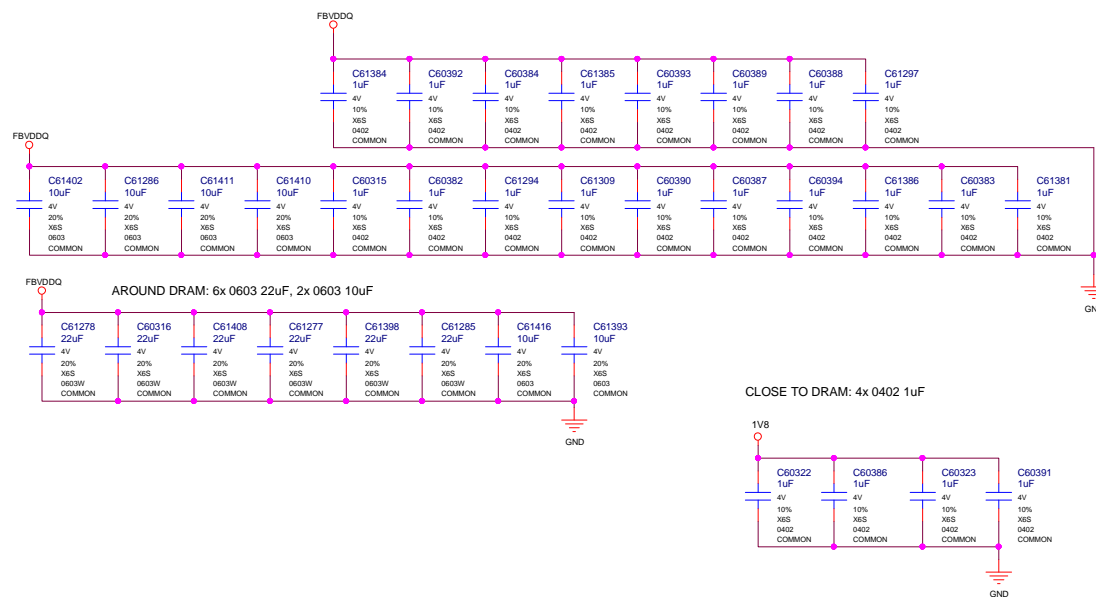
GIGABYTE

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MEMORY: FBB Partition 31..0

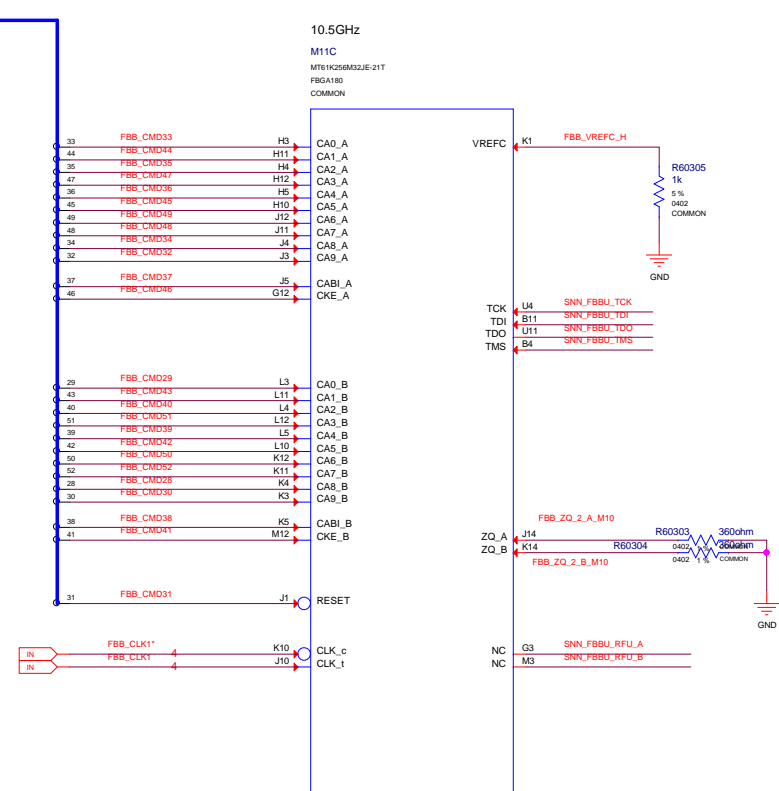
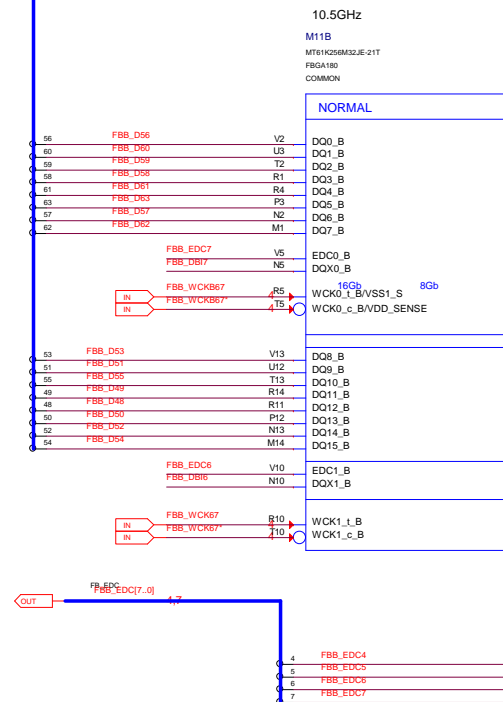
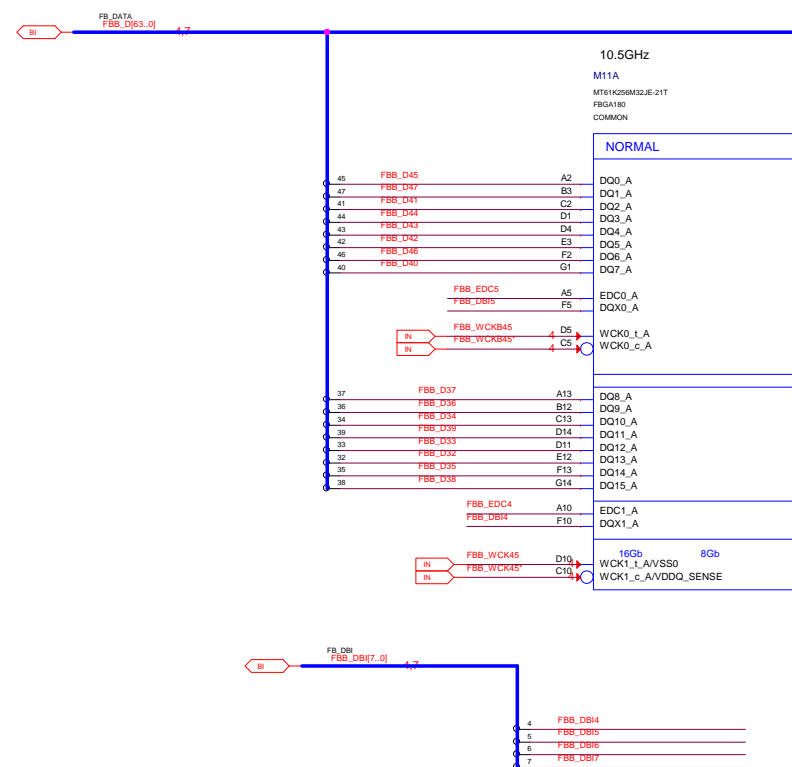
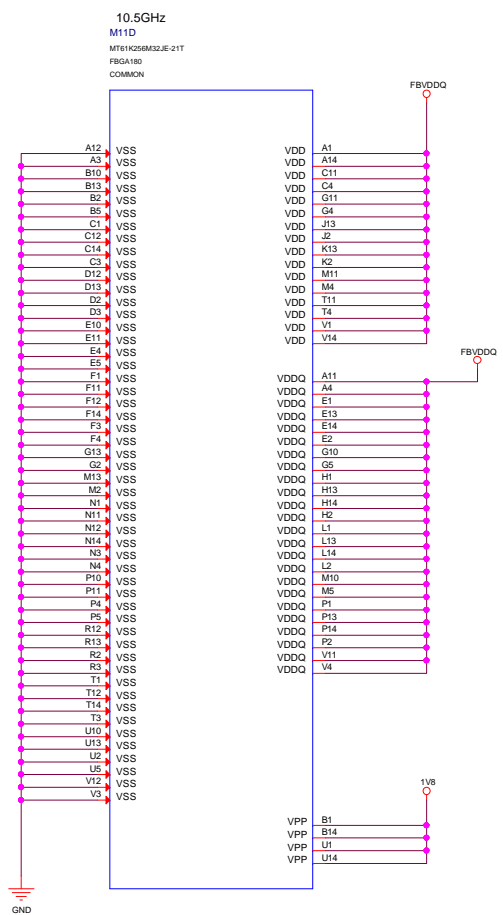


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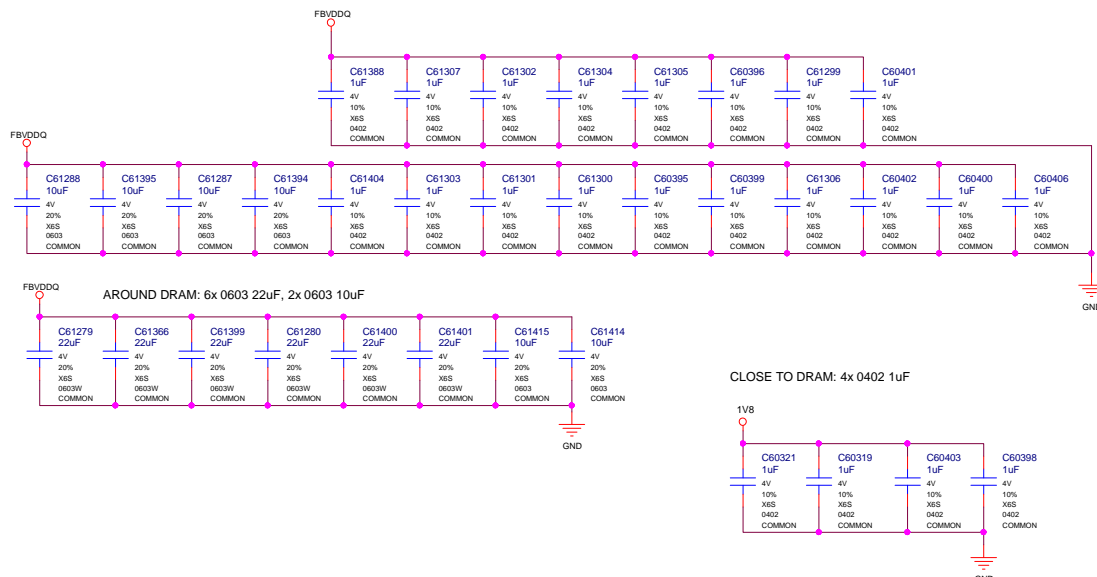


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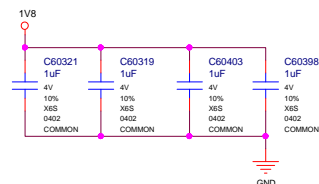
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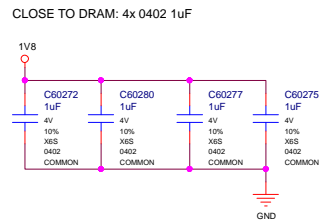
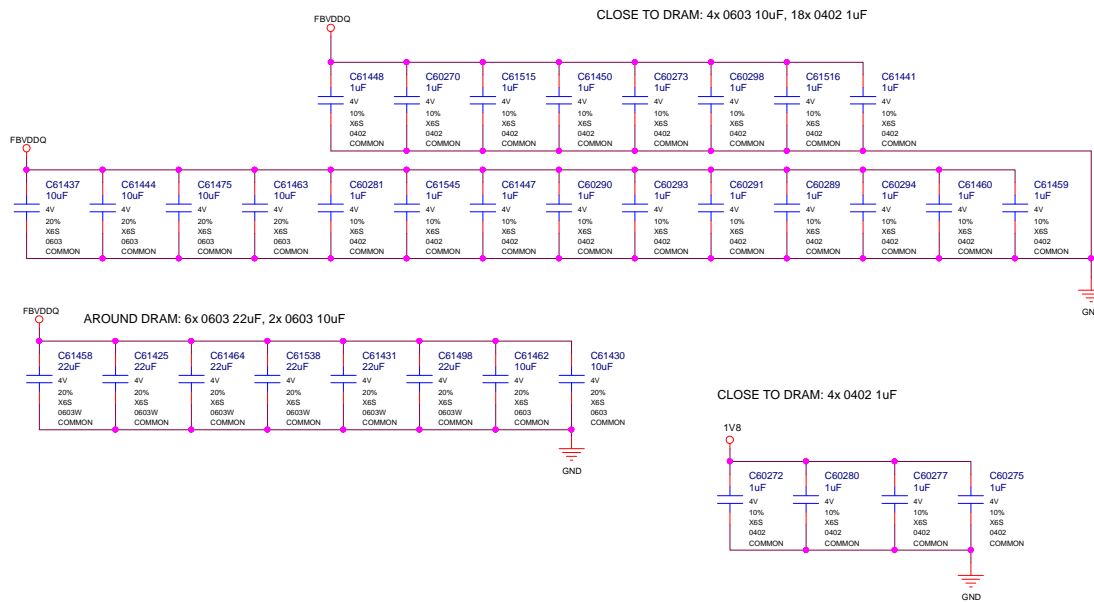
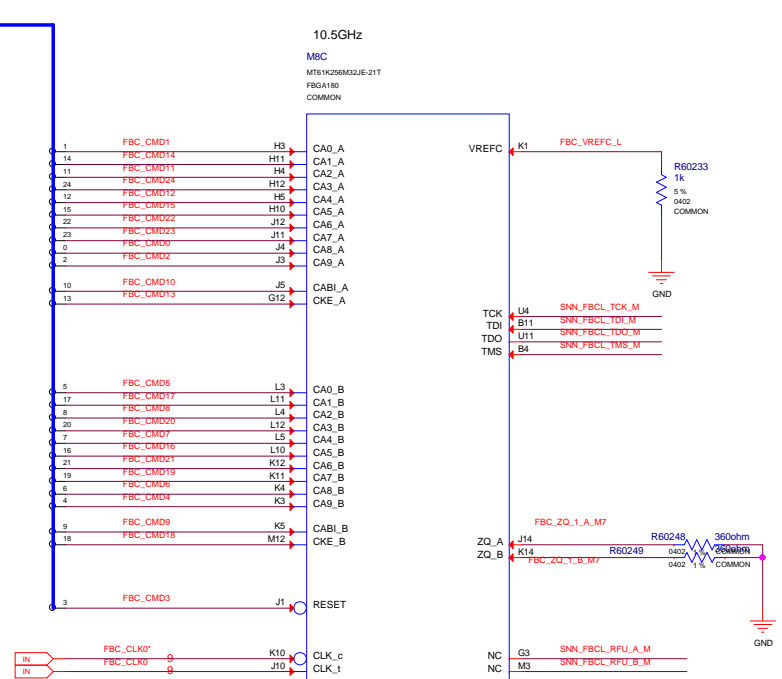
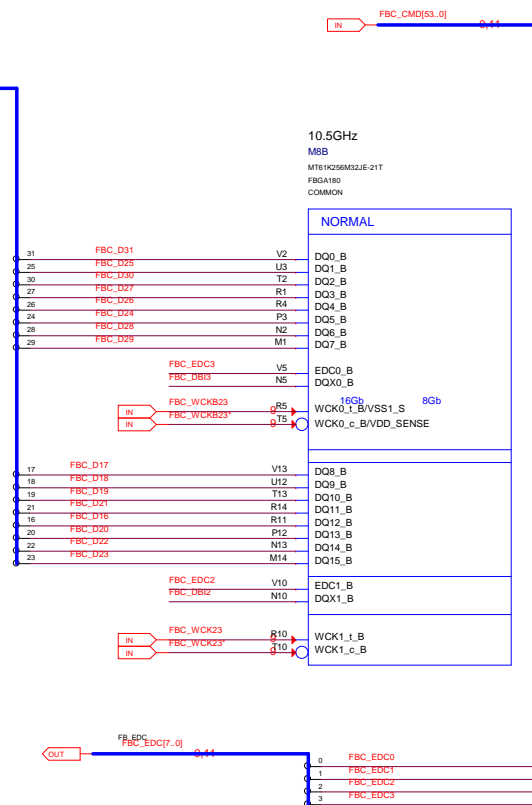
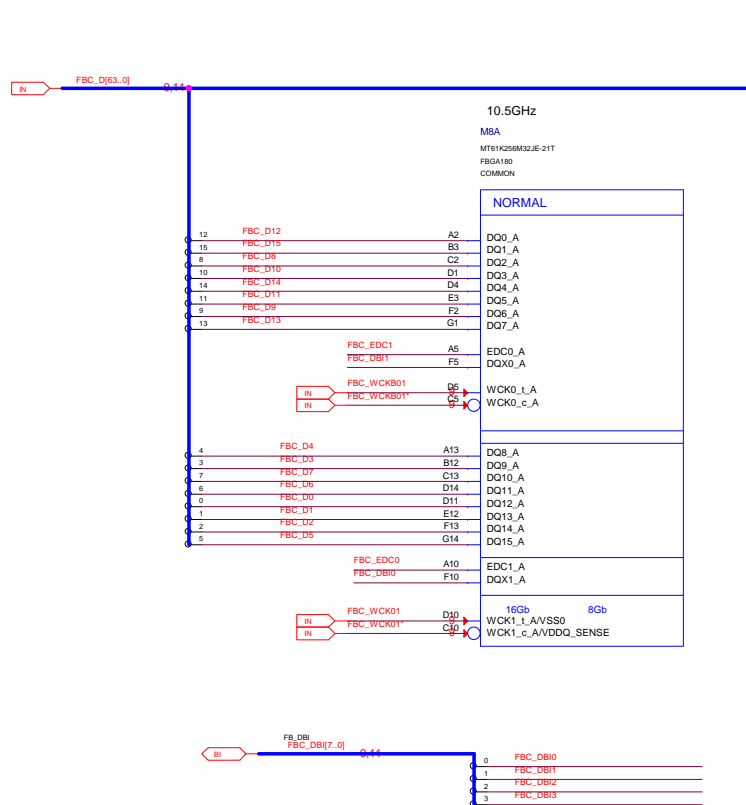
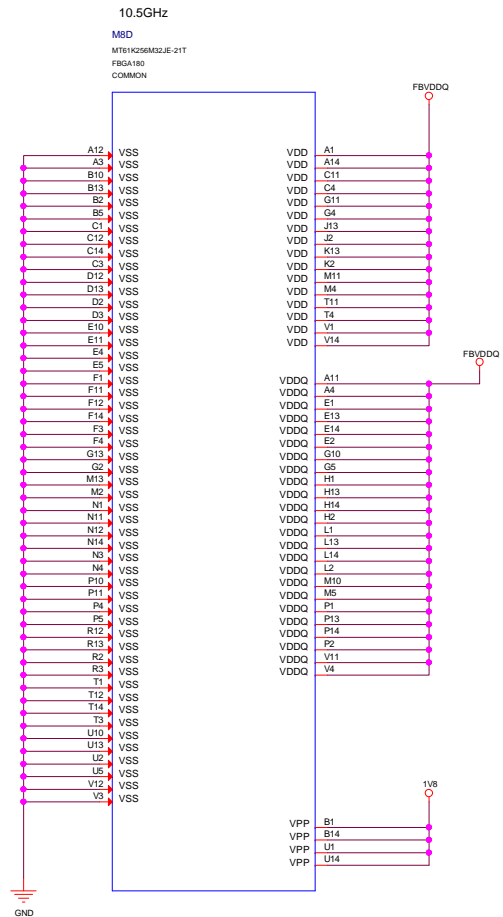
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CLOSE TO DRAM: 4x 0402 1uF



MEMORY: FBC Partition 31..0



10.5GHz

MSD

MT61K262MS2JE-21T
F802180
COMMON

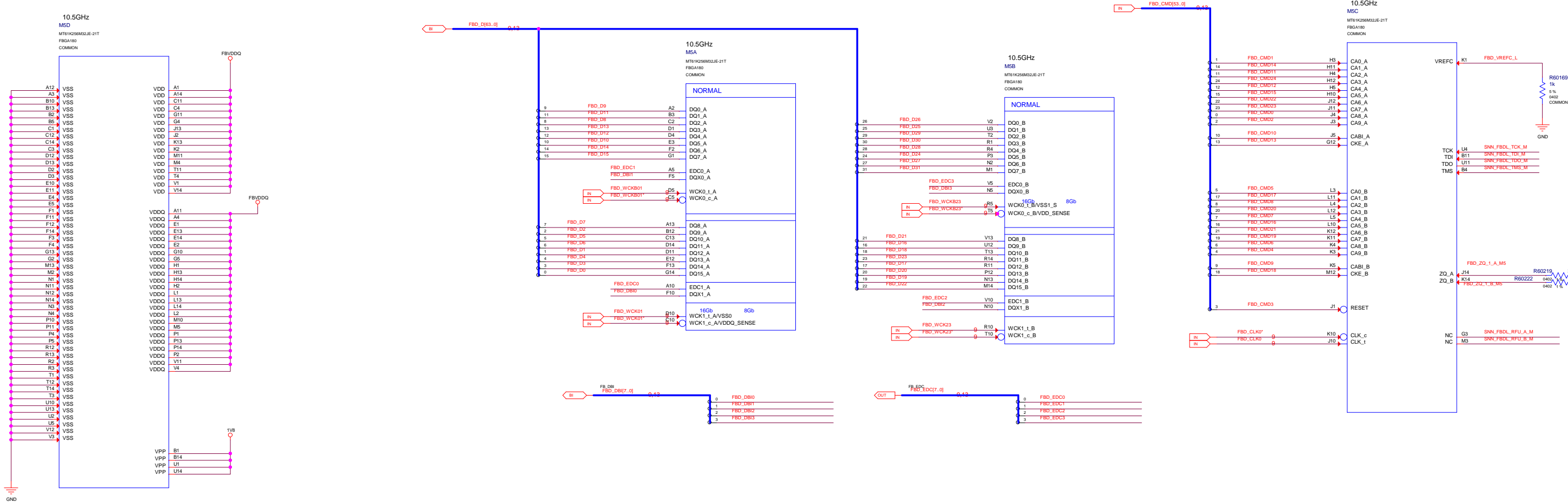
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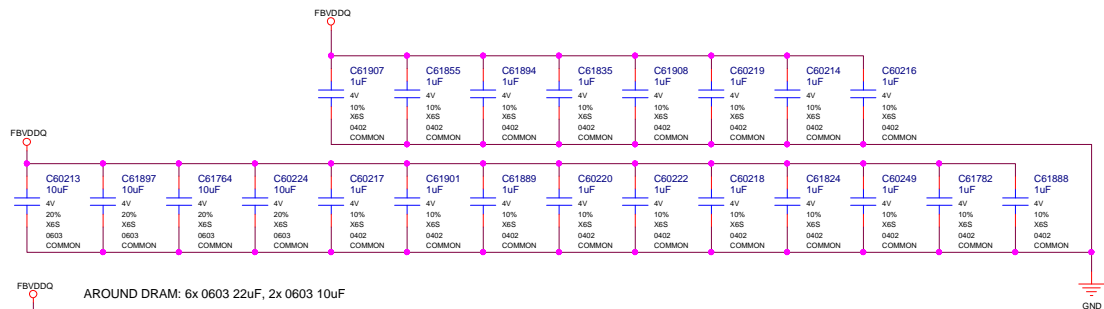
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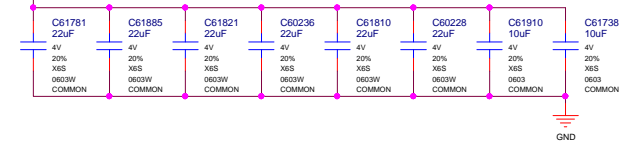
MEMORY: FBD Partition 31..0



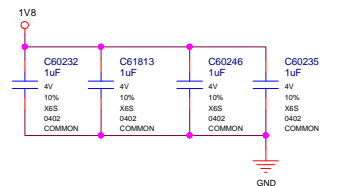
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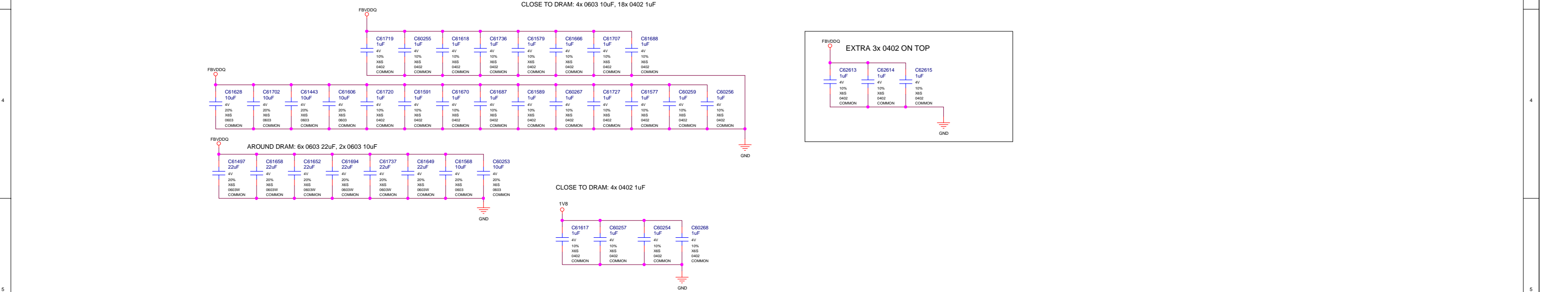
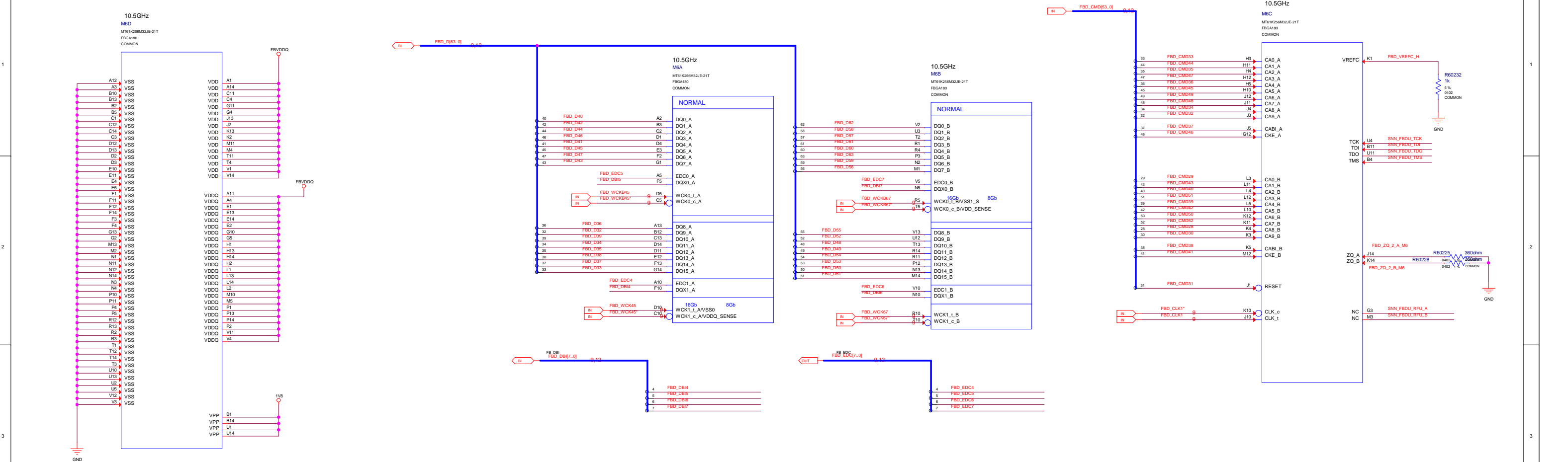
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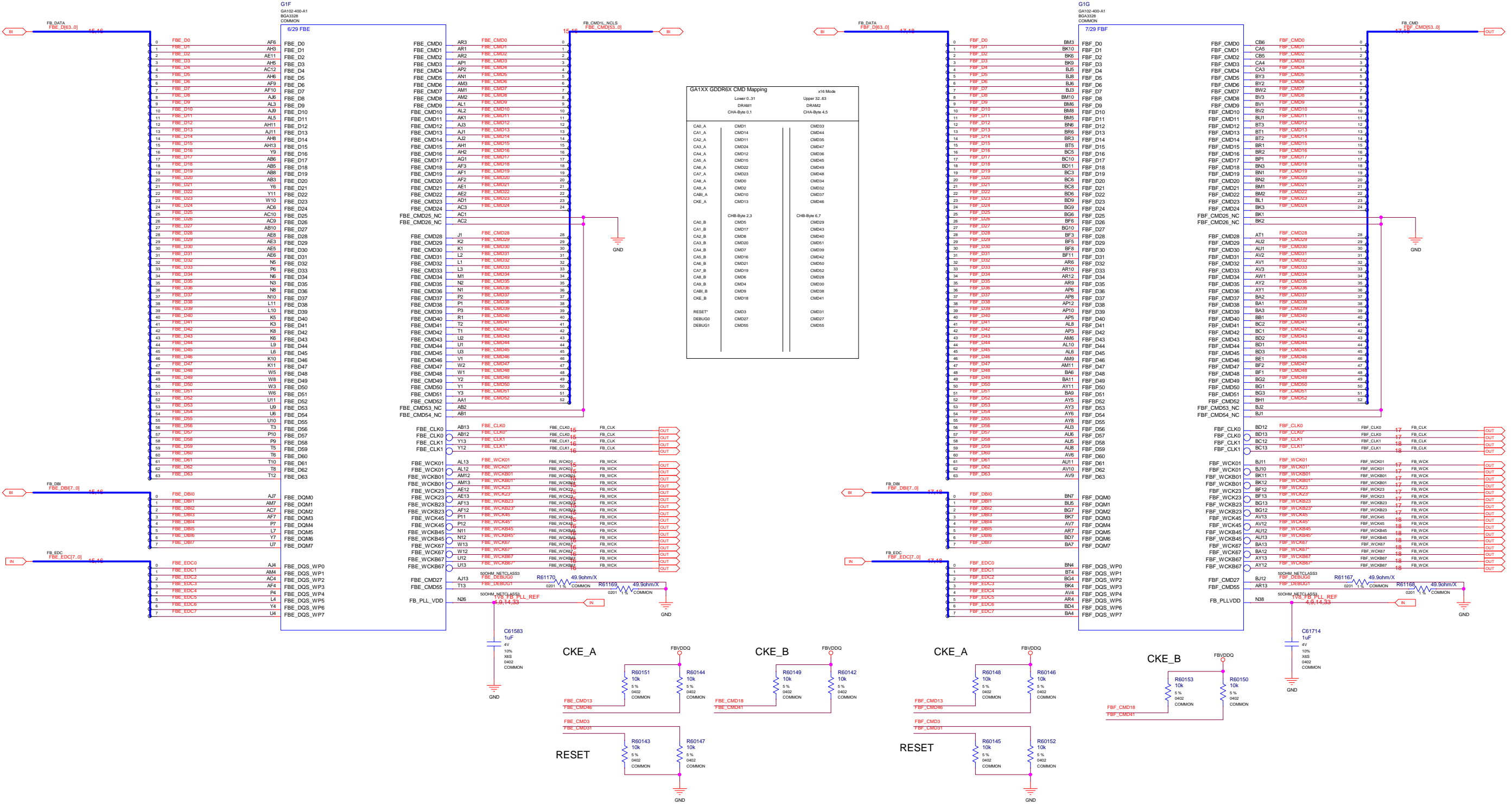
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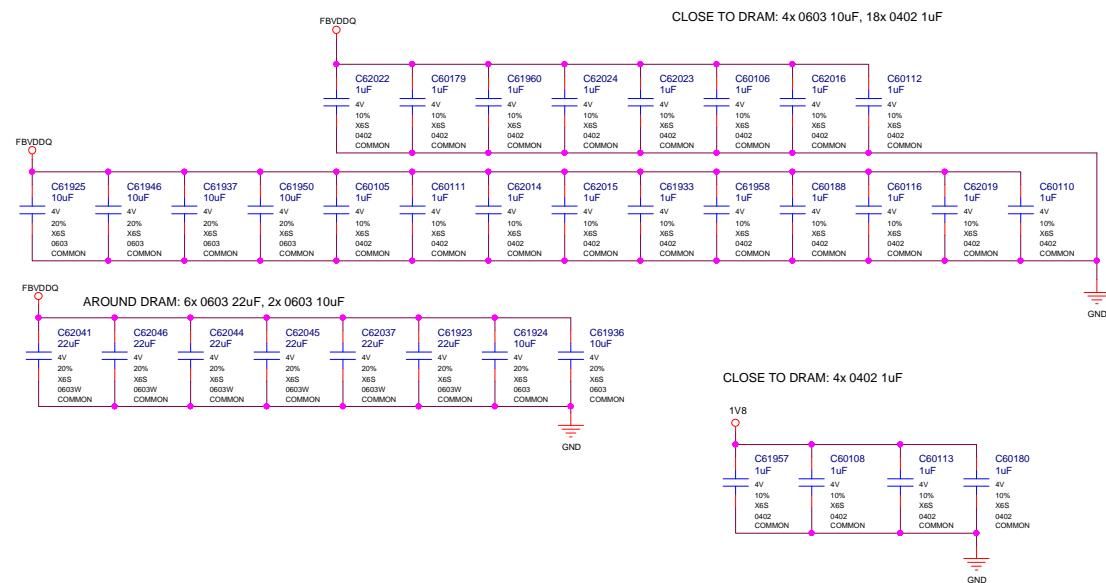
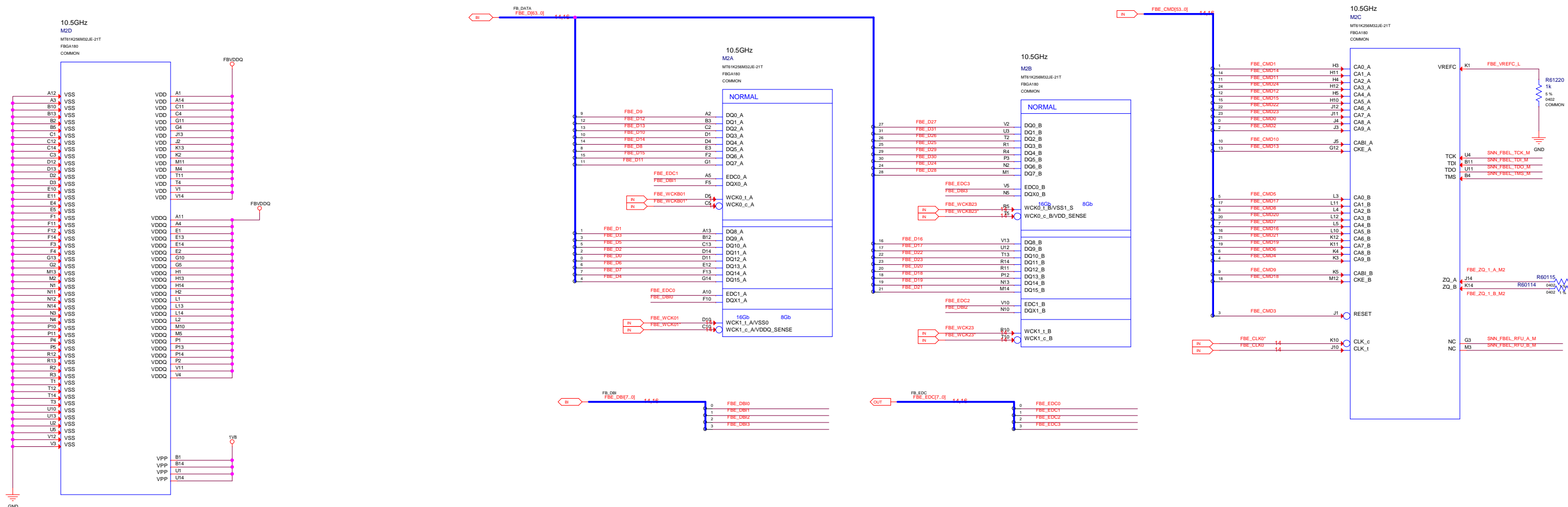
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MEMORY: GPU Partition E/F



MEMORY: FBE Partition 31..0



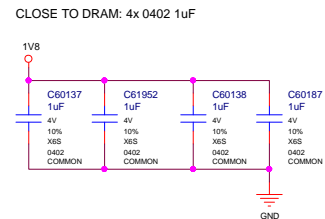
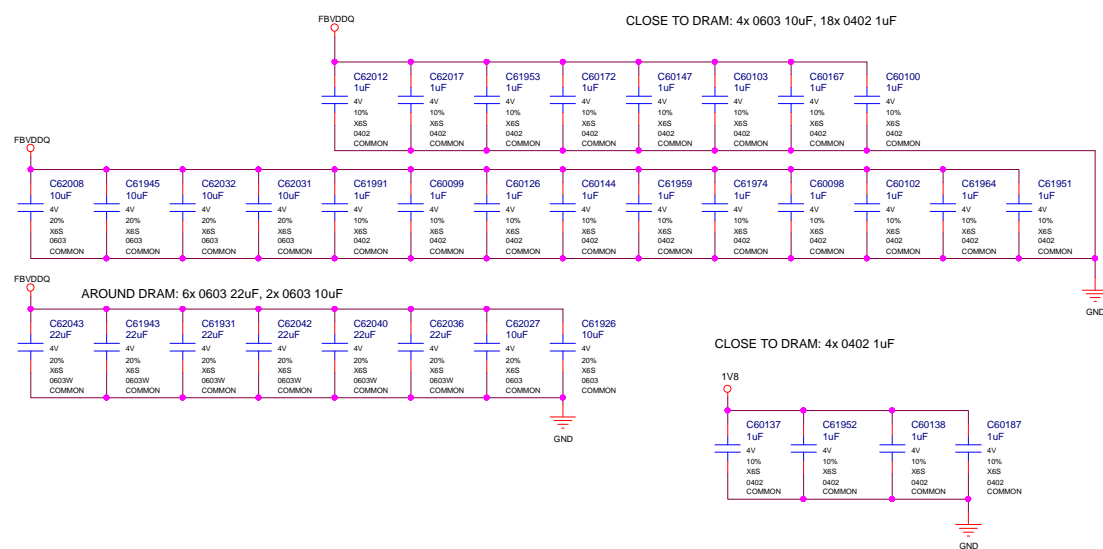
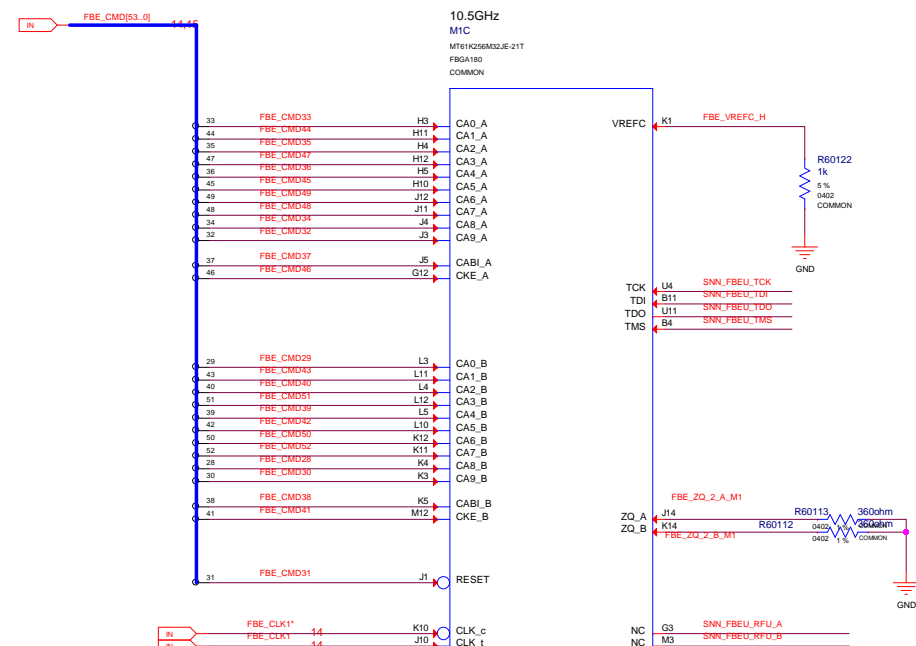
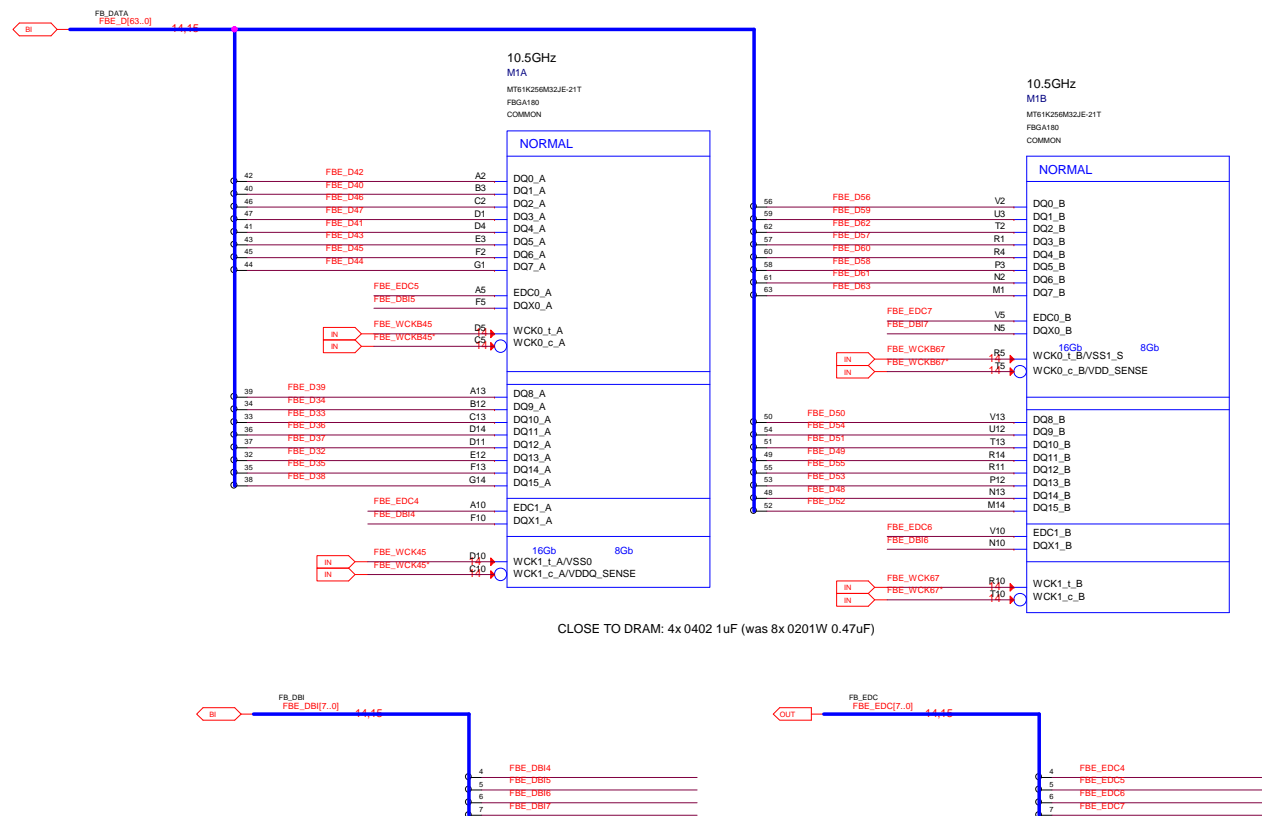
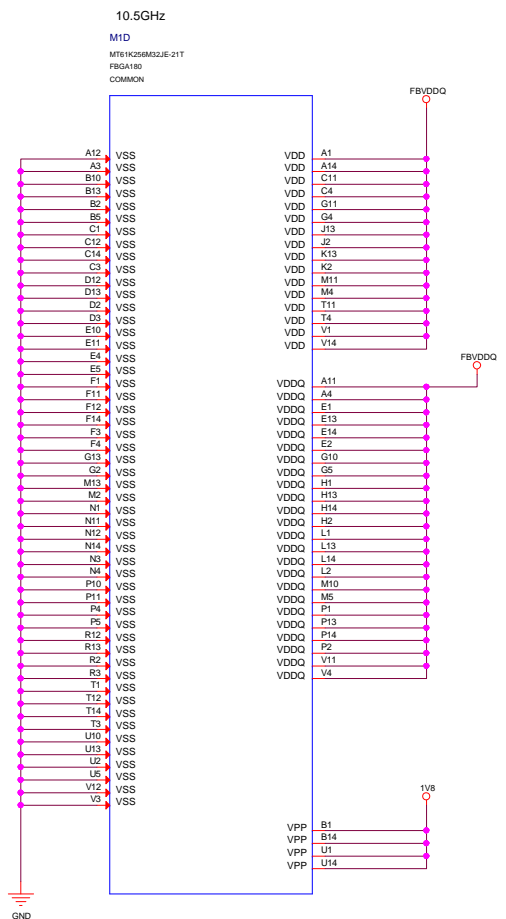
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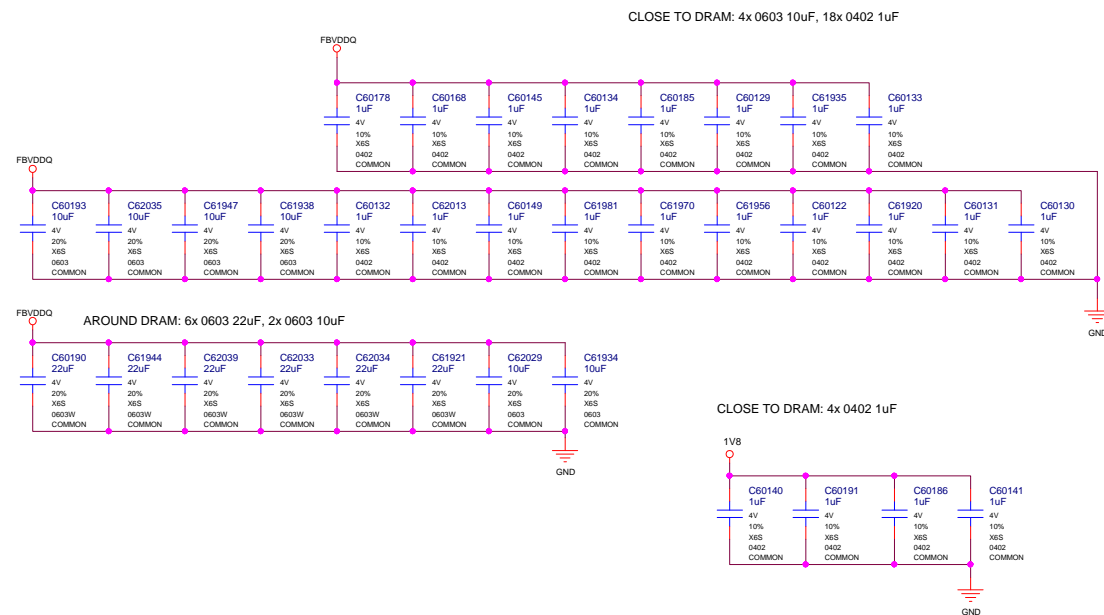
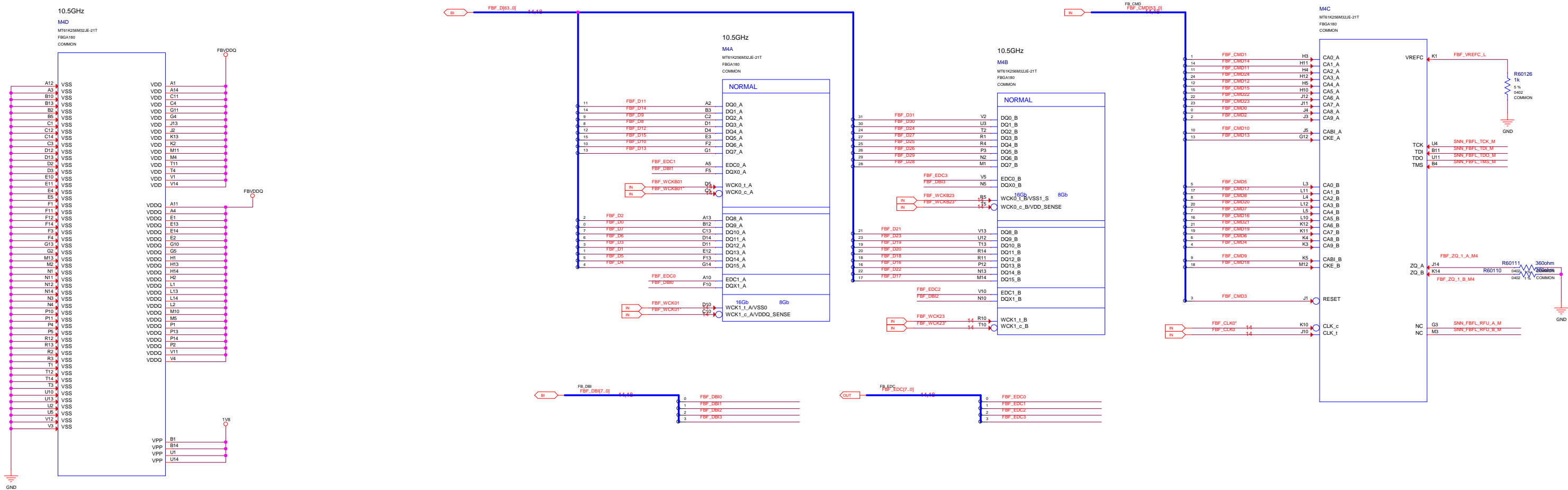
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MEMORY: FBE Partition 63..32



MEMORY: FBF Partition 31..0

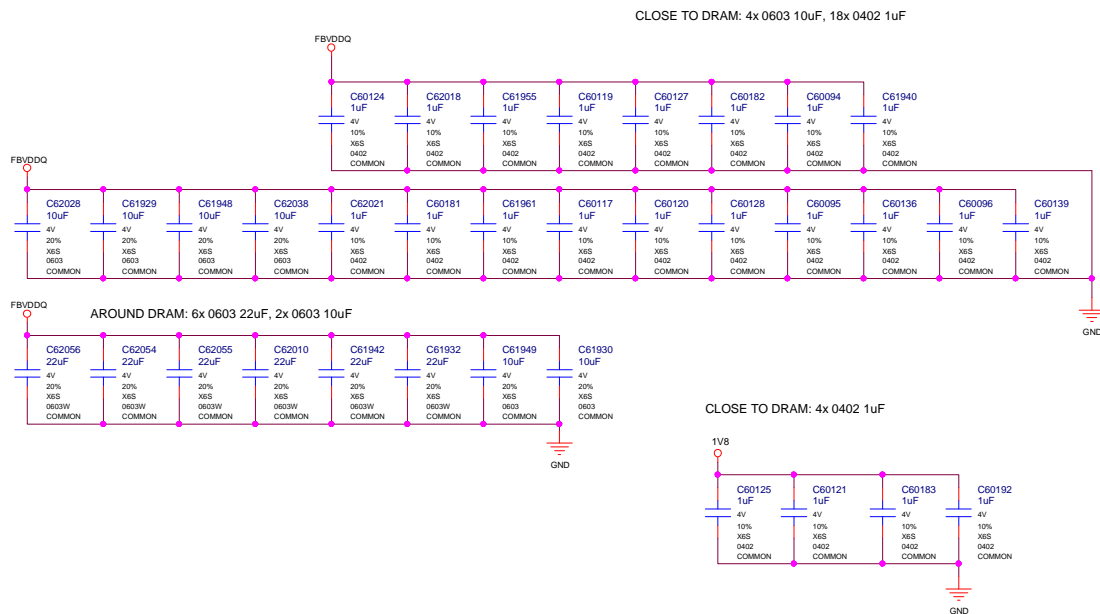
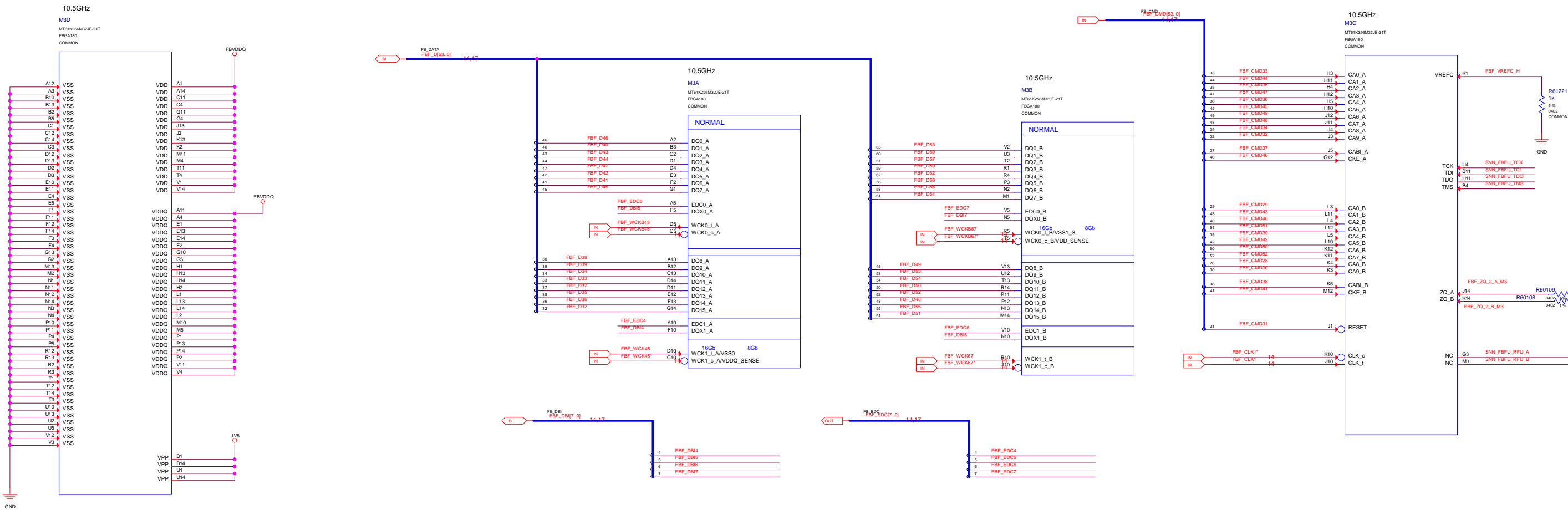


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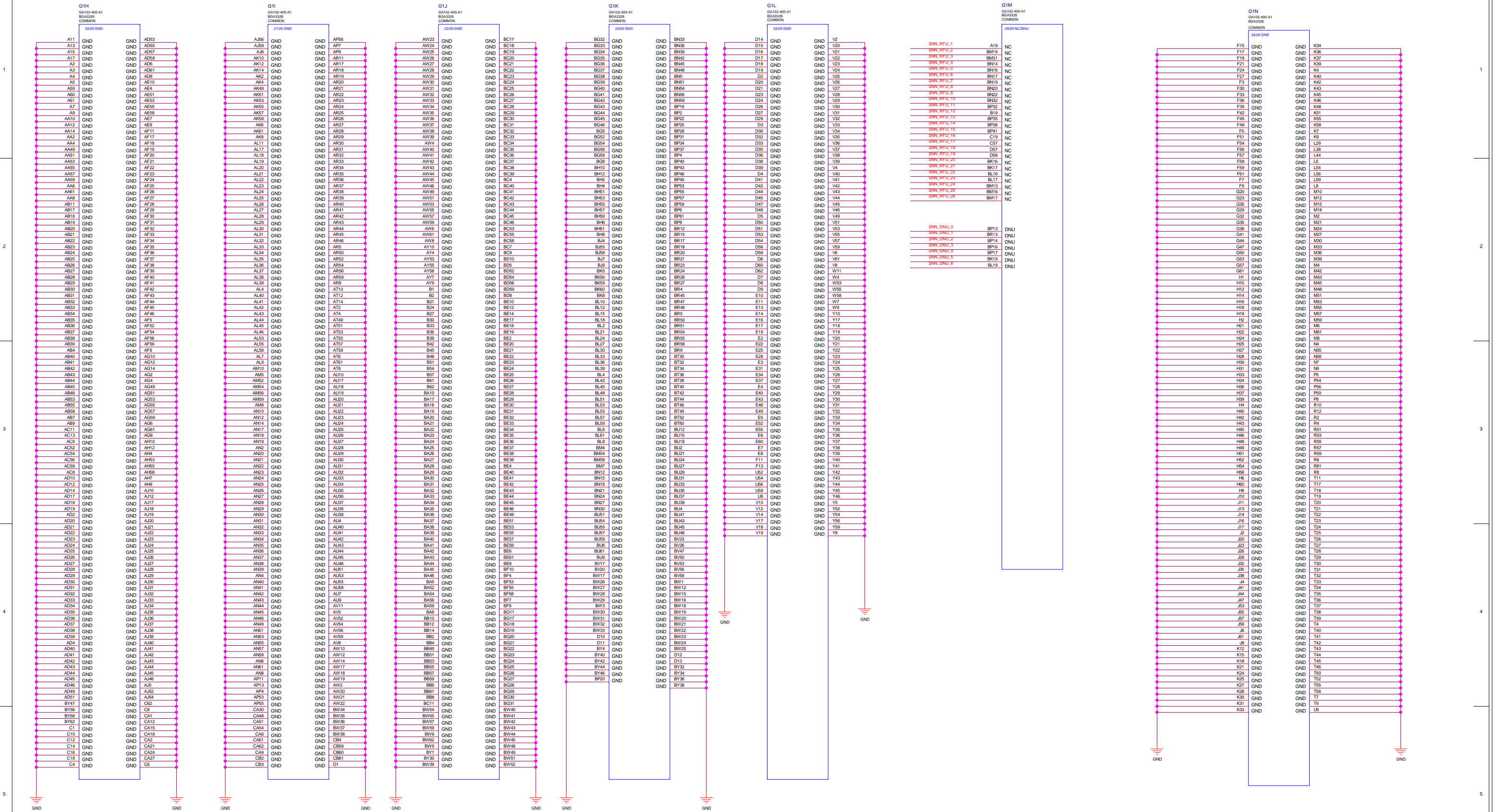
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MEMORY: FBF Partition 63..32



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GPU GND, RFUs & RSVD



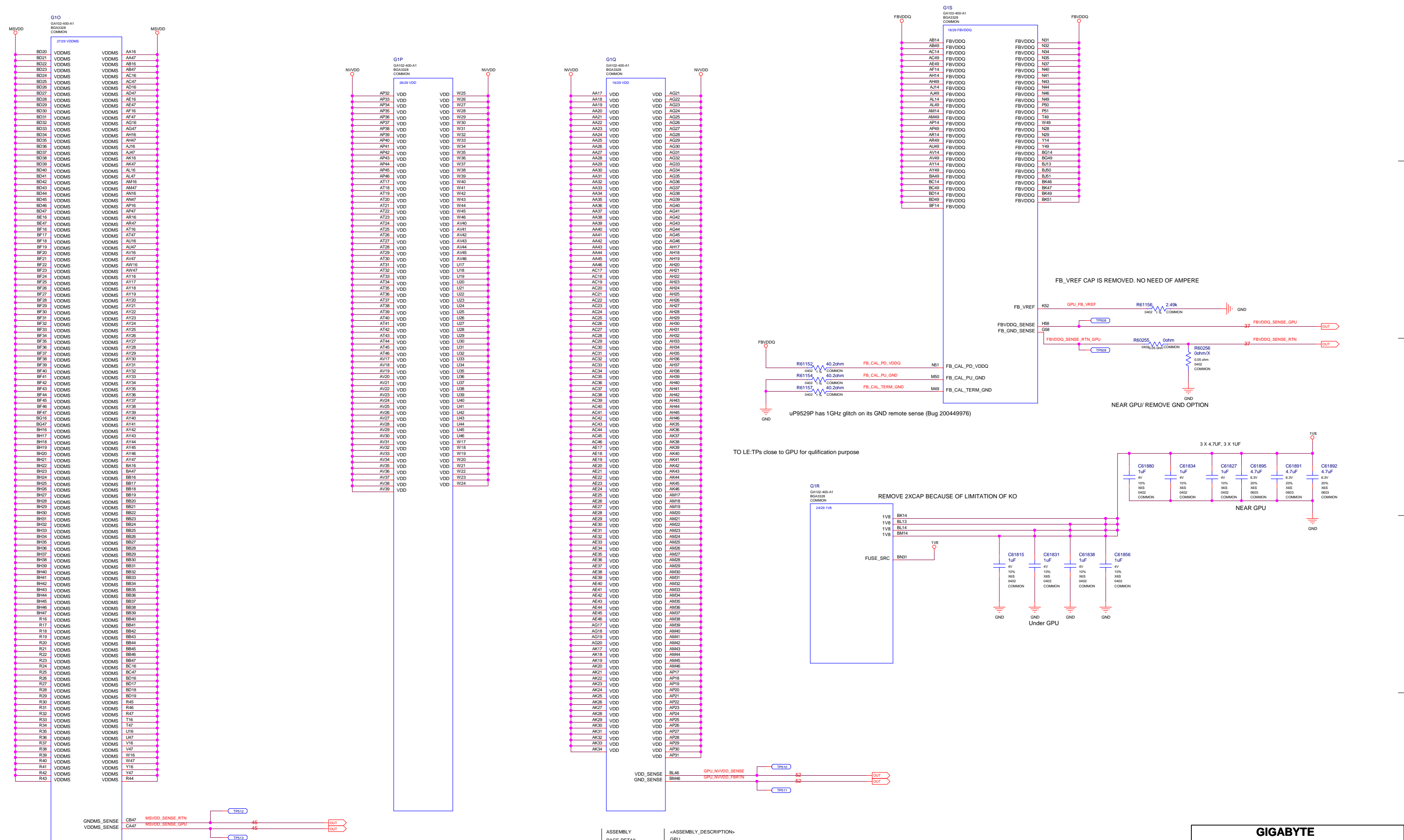
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ASSEMBLY
PAGE DETAIL

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GPU GND, RFUs & RSVD

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Title GPU GND, RFUs & RSVD			
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GPU PWR and GND



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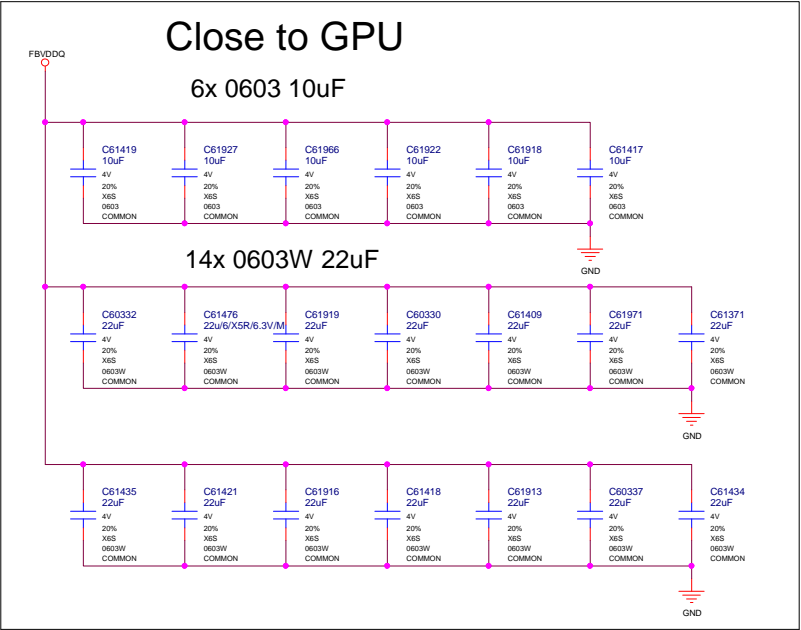
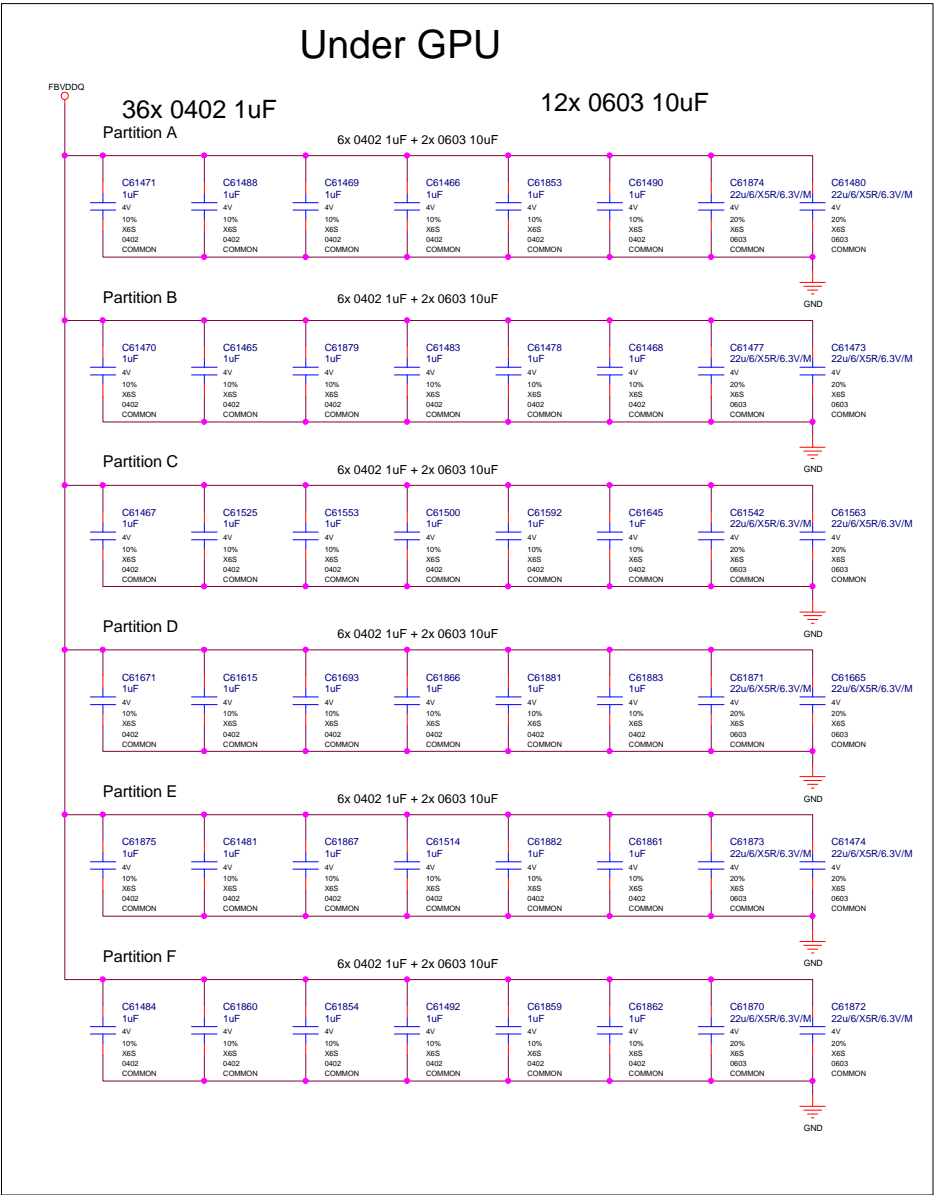
NVVDD UNDER GPU



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GPU DECOUPLING NVVDD

FBVDDQ



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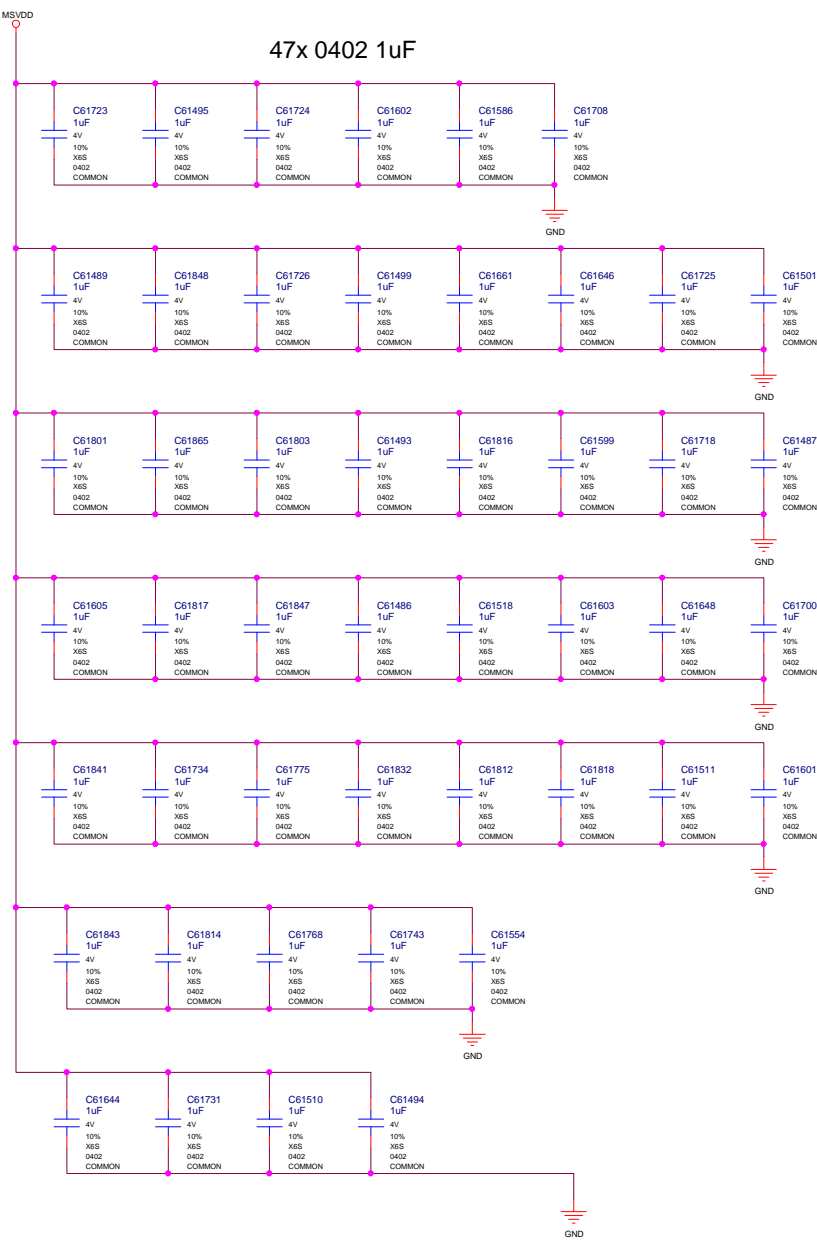
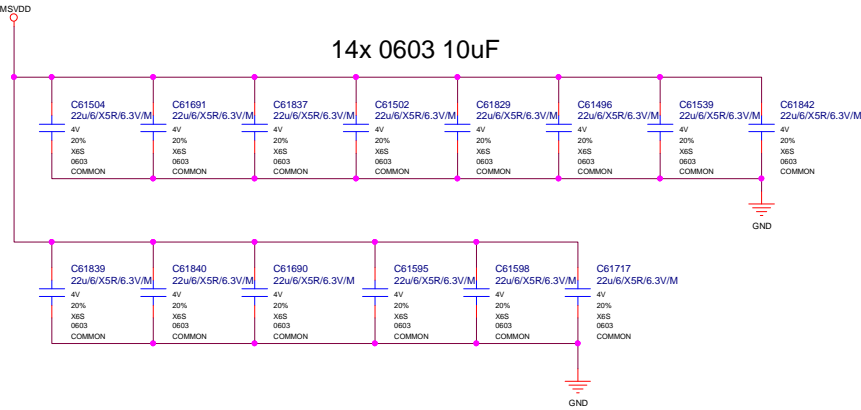
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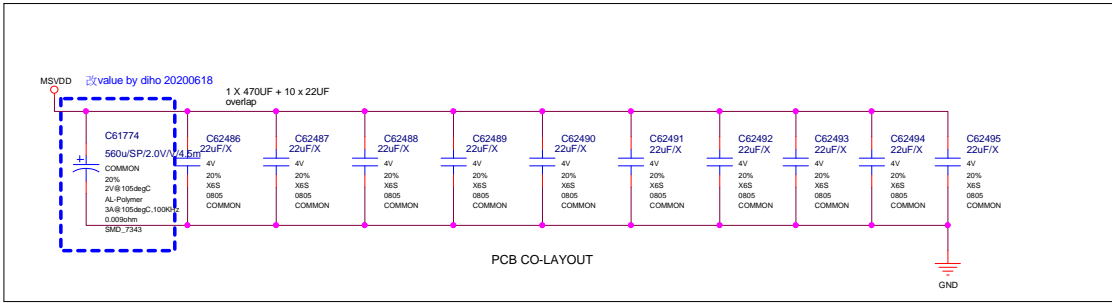
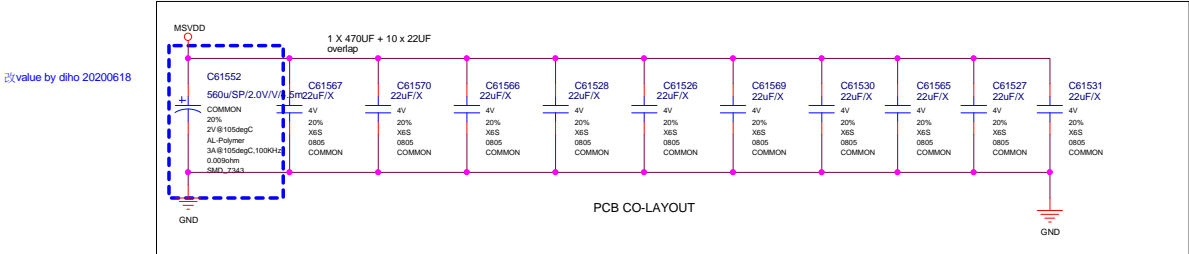
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Page 22: GPU: FBVDD DECOUPLING			
Size	Custom	Document Number	Rev
		GV-N3080AORUS X-10GD	1.0
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MSVDD

UNDER GPU



2x SMD7343 220uF (EACH CO-LAYOUT WITH 10x 22uF 0805)



REMOVED 3X 1uF 0402 DUE TO SPACE RESTRICTION

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ASSEMBLY
PAGE DETAIL

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GPU DECOUPLING MSVDD

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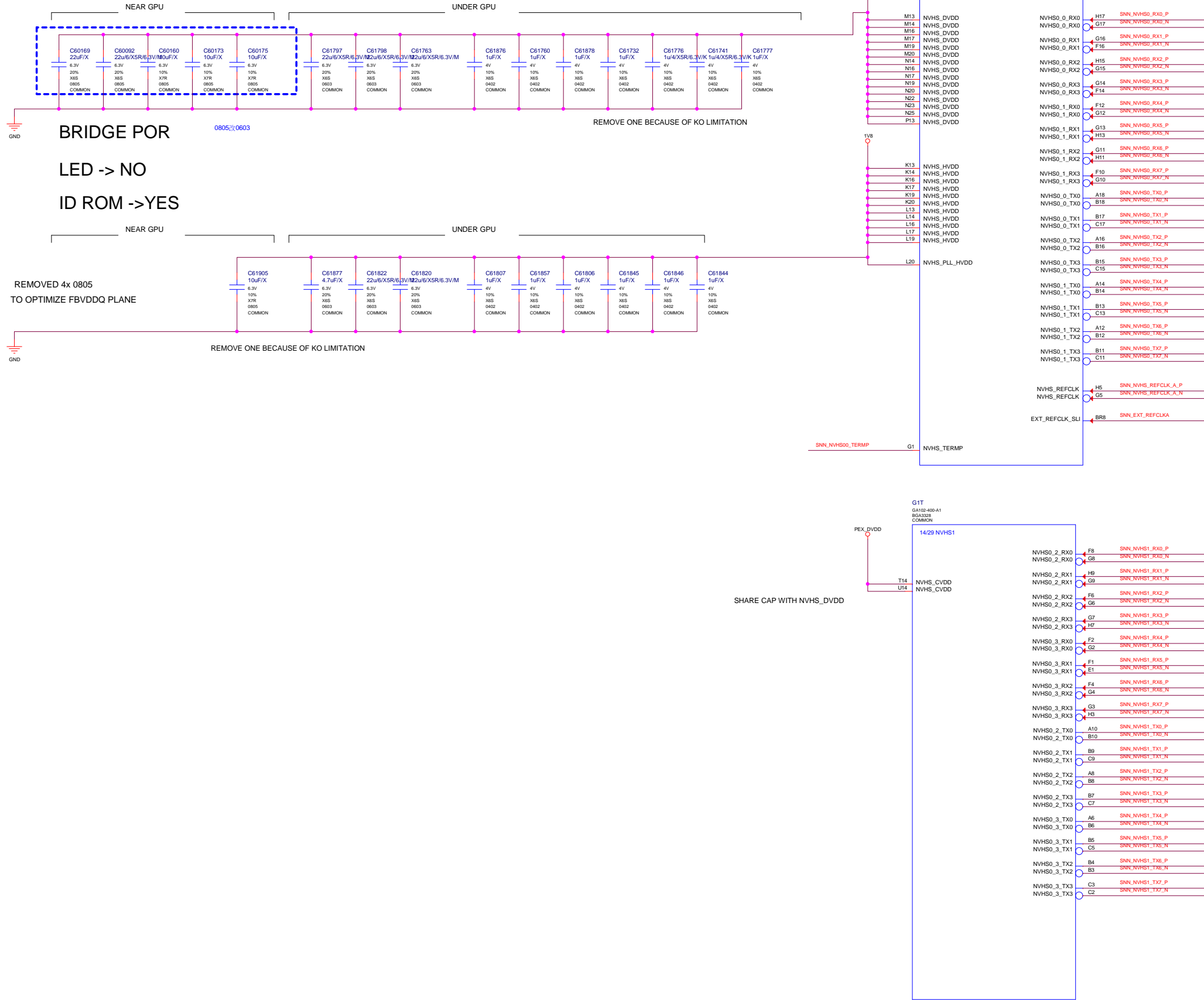
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Size	Custom	Document Number GV-N3080AORUS X-10GD	
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NVHS Interface and FRAME LOCK



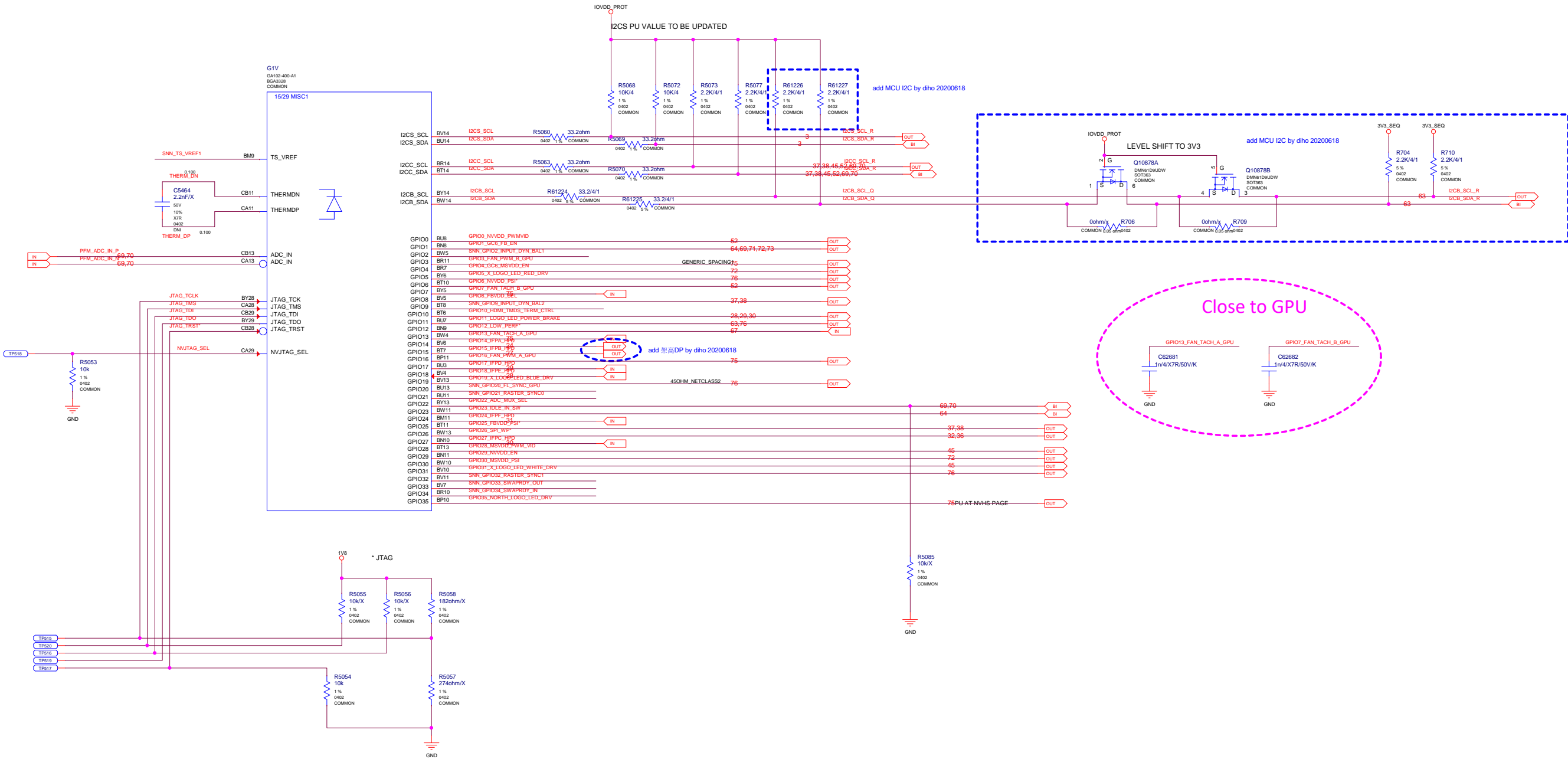
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Title NVHS Interface and FRAME LOCK			
Size Custom	Document Number GV-N3080AORUS X-10GD		Rev 1.0
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MISC1: Fan, Thermal, JTAG, GPIO, STEREO



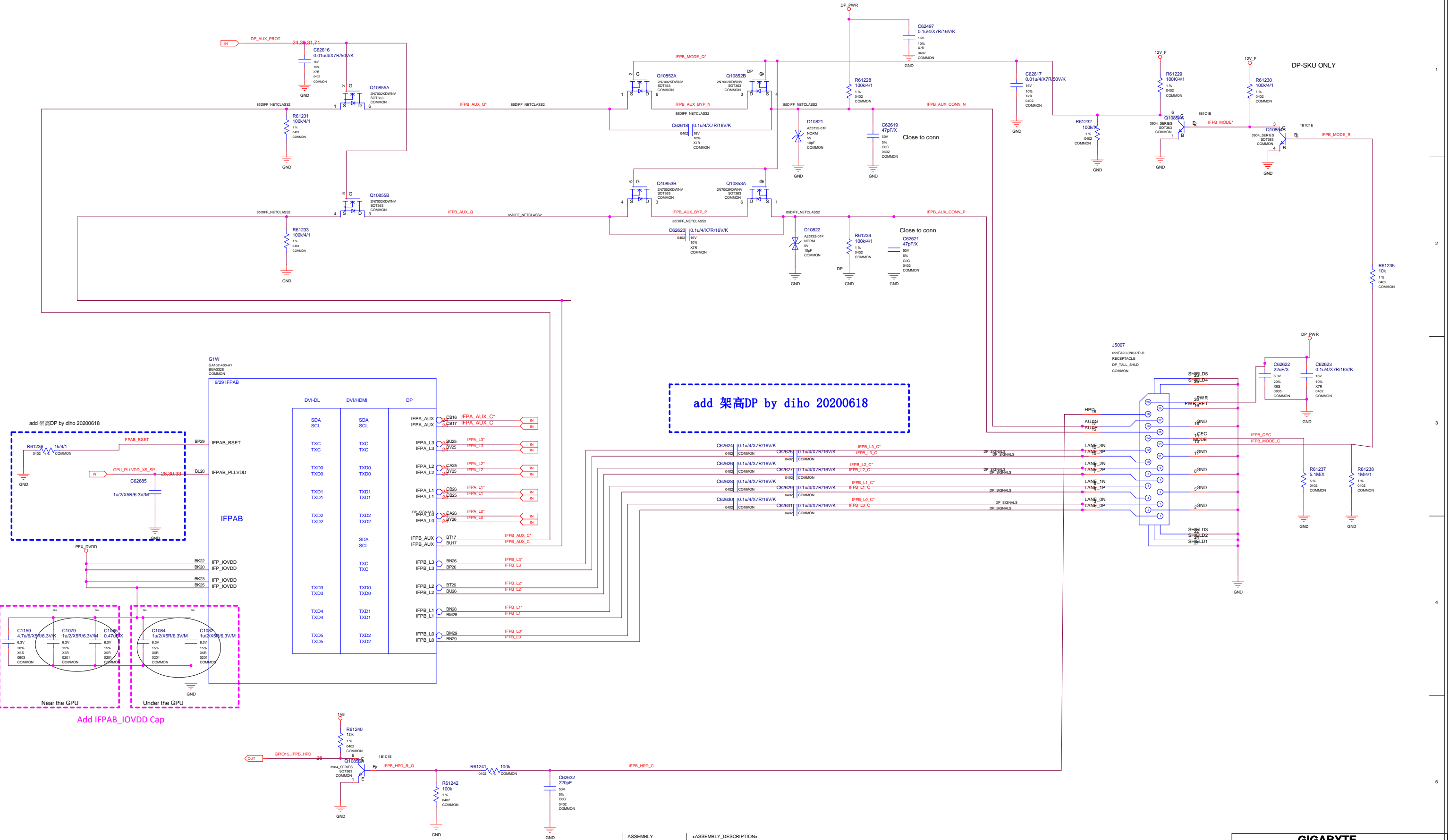
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ASSEMBLY
PAGE DETAIL

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MISC: THERMAL, JTAG, GPIO

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MISC1: Fan, Thermal, JTAG, GPIO, STEREO			
Size	Document Number	Rev	
Custom	GV-N3080AORUS X-10GD	1.0	
Date:	Monday, September 28, 2020	Sheet	26 of 80

IFPA UNUSED, IFPB UNUSED



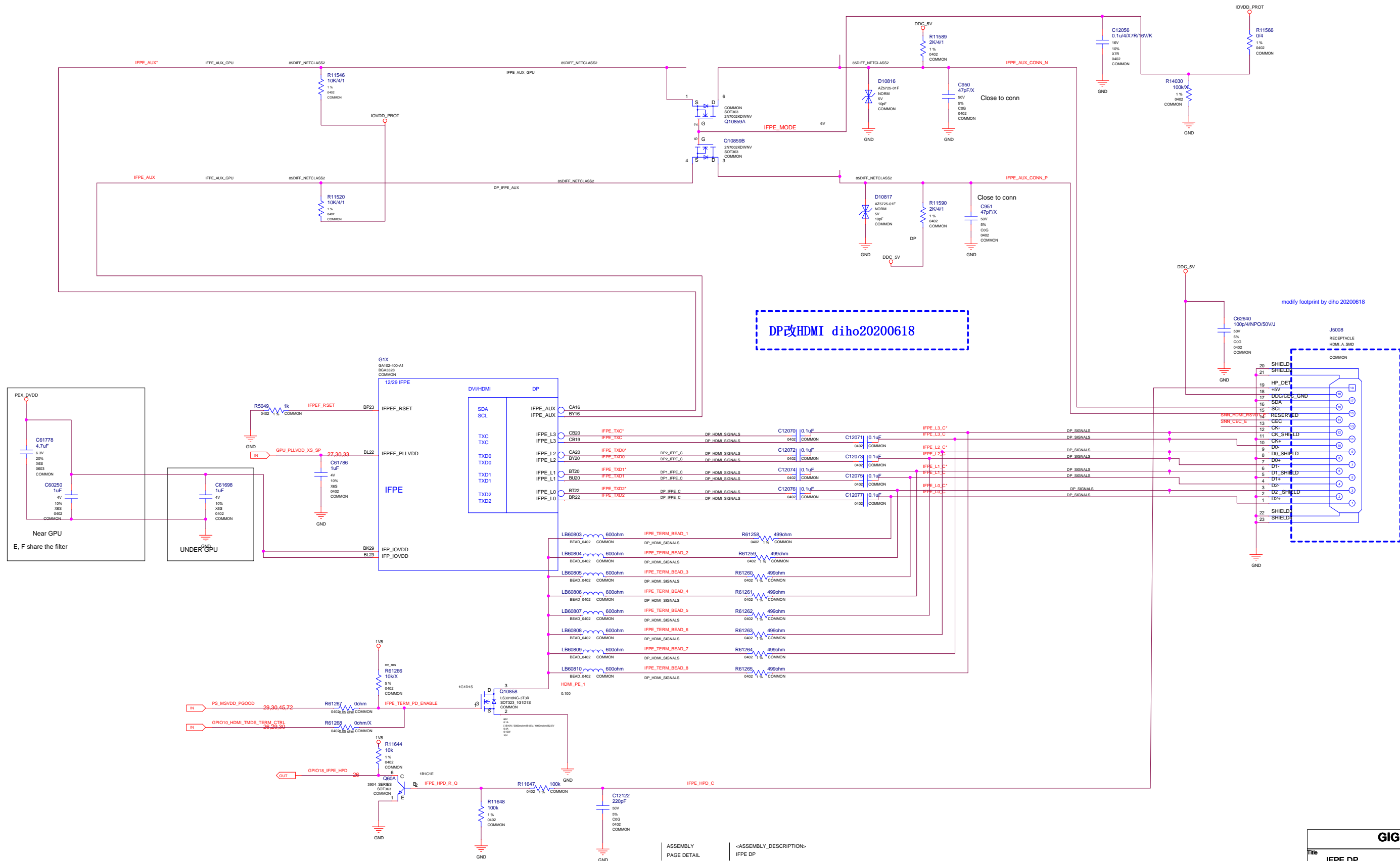
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Size Custom	Document Number GV-N3080AORUS X-10GD		Rev 1.0
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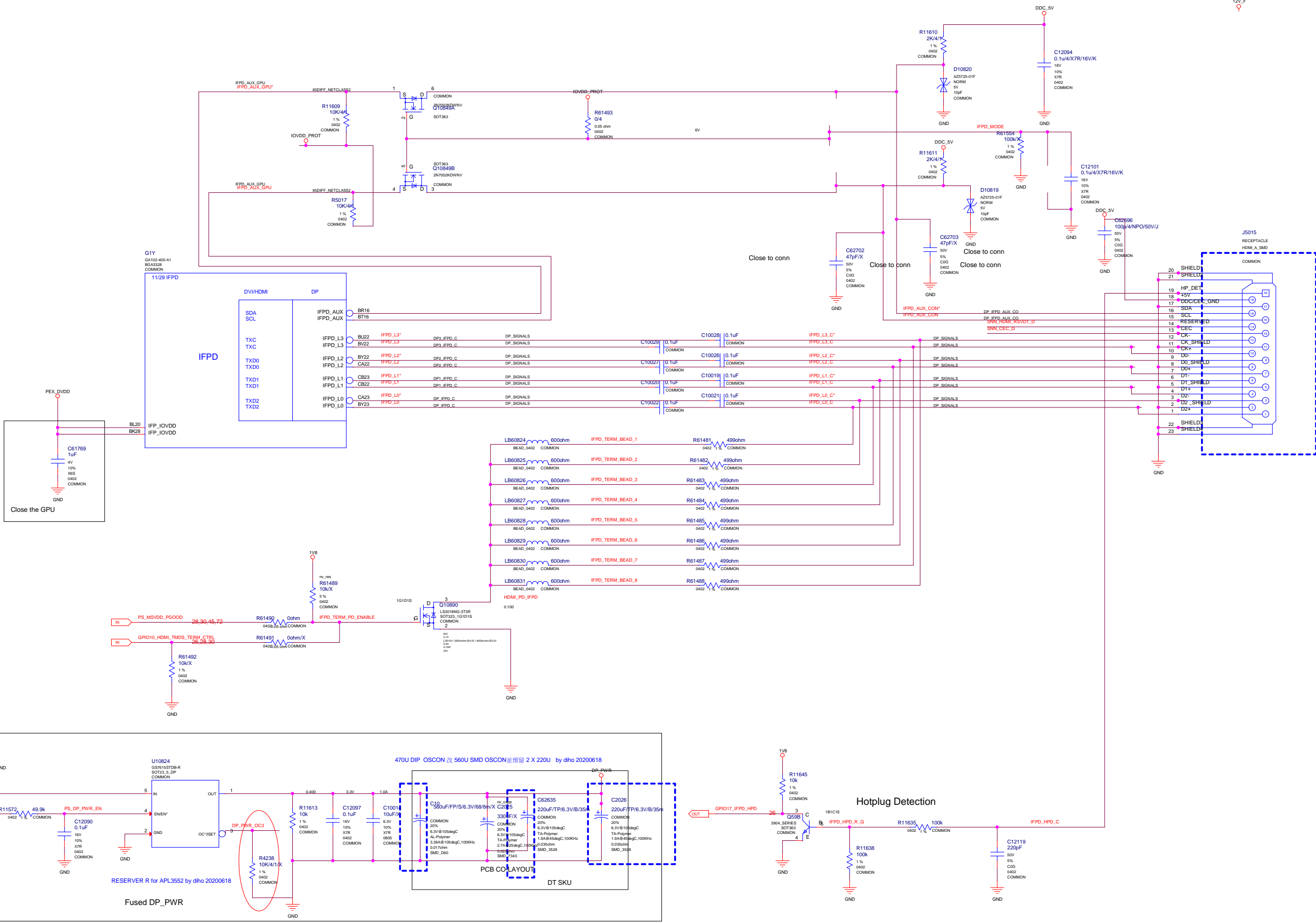
IFPE DP



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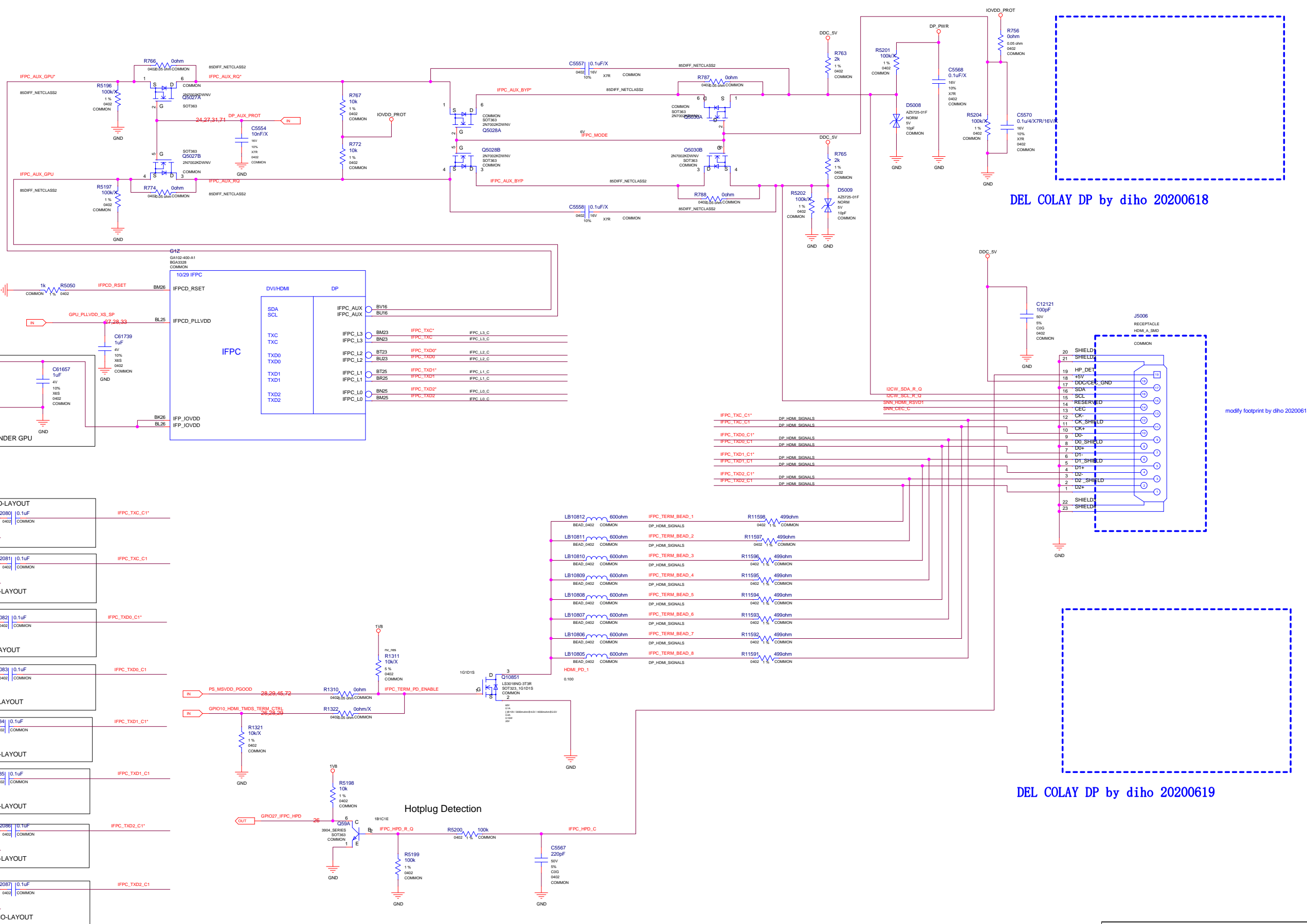
IFPD DP



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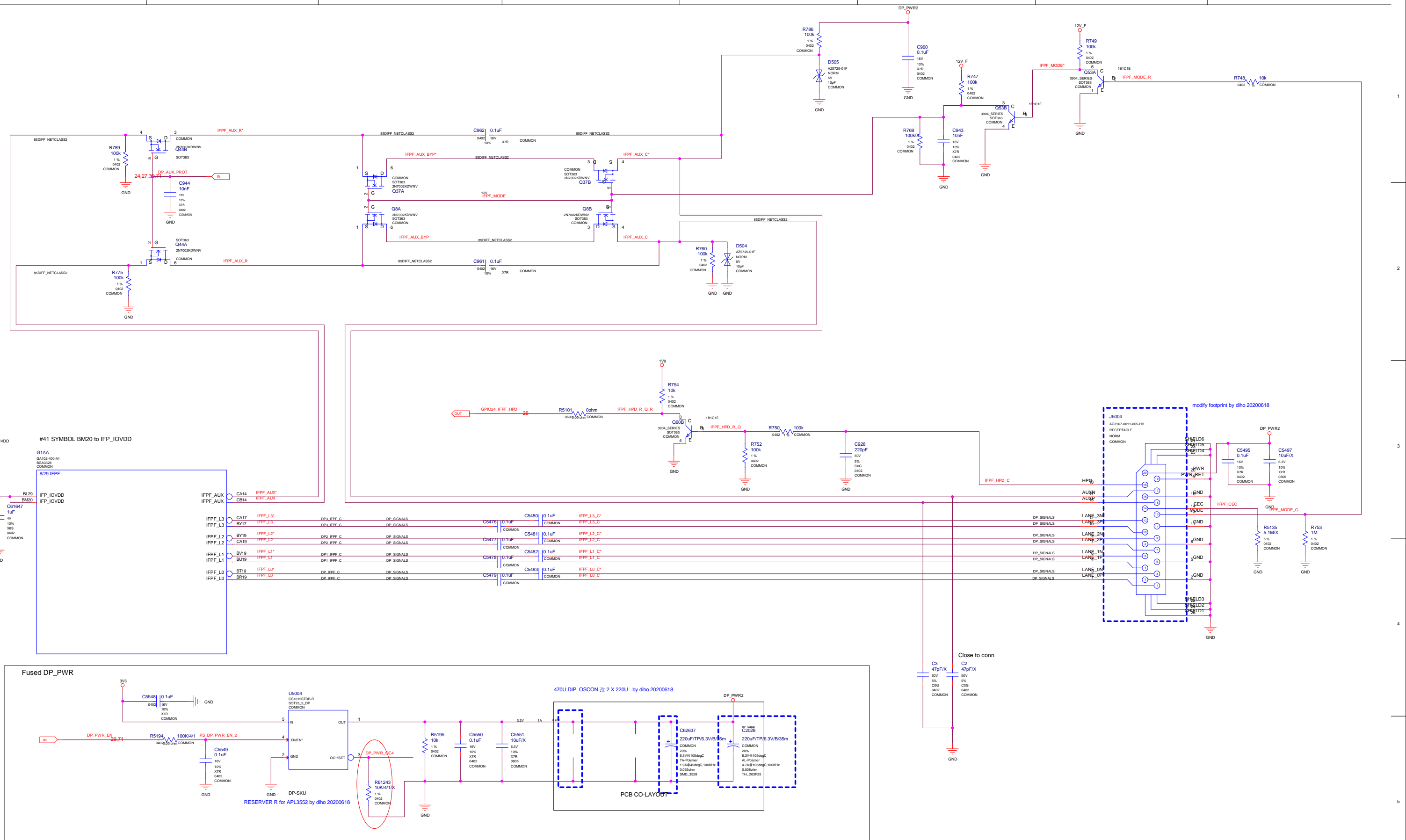
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IFPC HDMI/DP



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Title IFPC HDMI			
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GIGABYTE			
Title			
IFPF DP			
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MISC: ROM, Straps

GROUP0	STRAP2	STRAP1	STRAP0	RAMCFG[4:0]	
	L	L	L	00000	RAMCFG MICRON 8Gb G6X 19Gbps x16 (161-0430-900)
	H	L	L	00100	RAMCFG MICRON 8Gb G6X 19Gbps x8 (161-0430-900)
	H	L	H	00101	RAMCFG MICRON 8Gb G6X 21Gbps x8 (161-0431-900)
	L	L	M	01000	RAMCFG MICRON 8Gb G6X 20Gbps x16 (161-0424-900)
	L	L	H	00001	RAMCFG MICRON 8Gb G6X 21Gbps x16 (161-0431-900)
	L	M	H	01010	RAMCFG MICRON 8Gb G6X 19Gbps x16 (161-0430-900)

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

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	

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

<-A01 PCB

<-OLD

<-LATEST A02 PCB

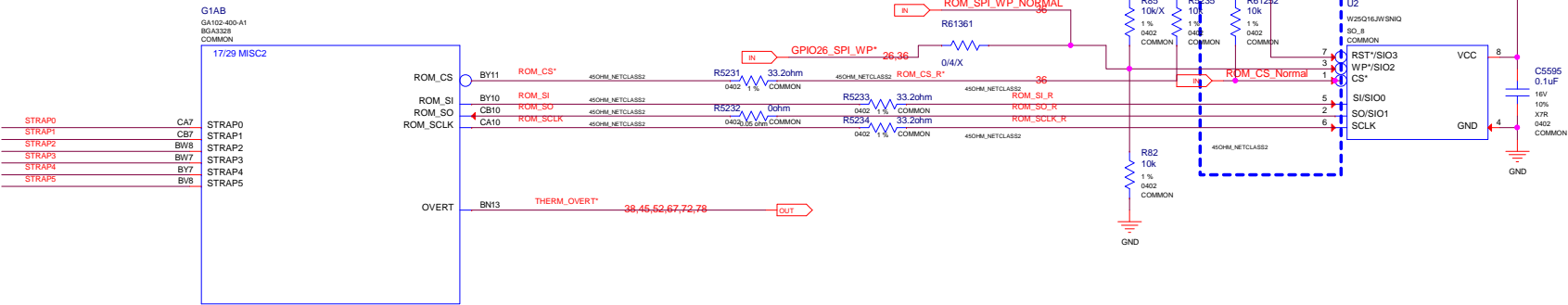
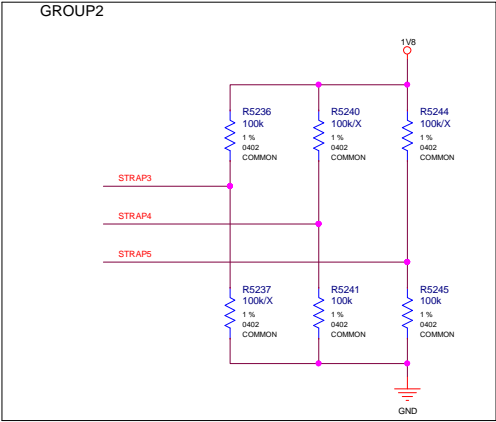
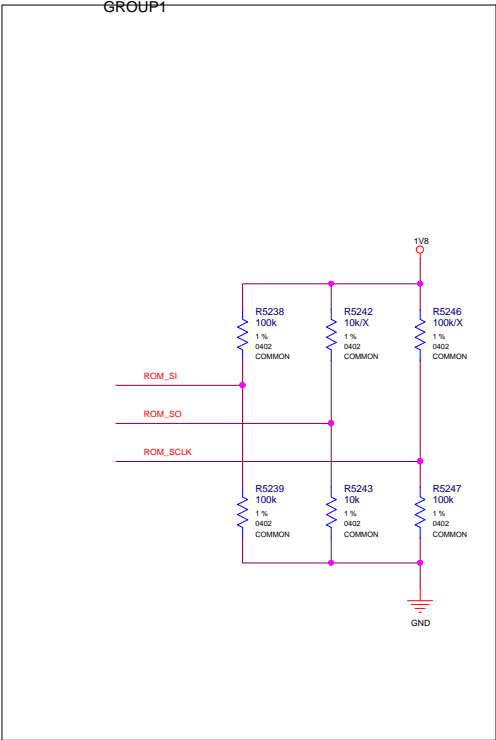
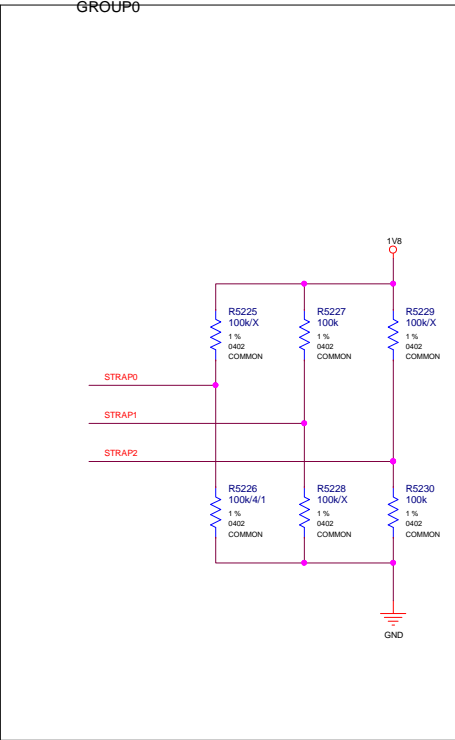
1:SMB_ALT_ADDR ENABLE
0:SMB_ALT_ADDR DISABLE

1:DEVID_SEL REBRAND
0:DEVID_SEL ORIGNAL

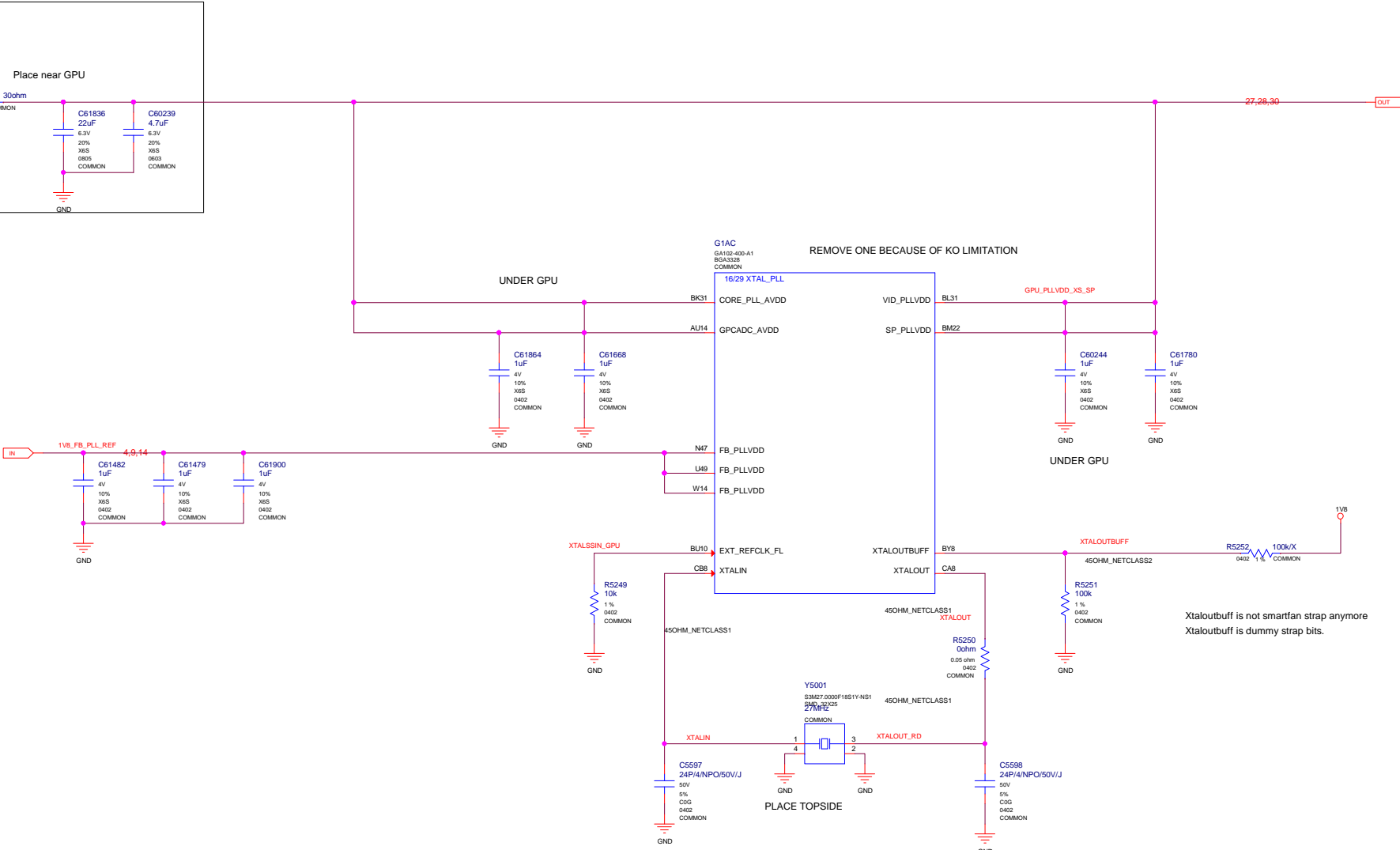
1:PCIE_CFG LOW POWER
0:PCIE_CFG HIGH POWER

1:VGA_DEVICE ENABLE
0:VGA_DEVICE DISABLE

Default



MISC: XTAL. PLL



Xtaloutbuff is not smartfan strap anymore
Xtaloutbuff is dummy strap bits.

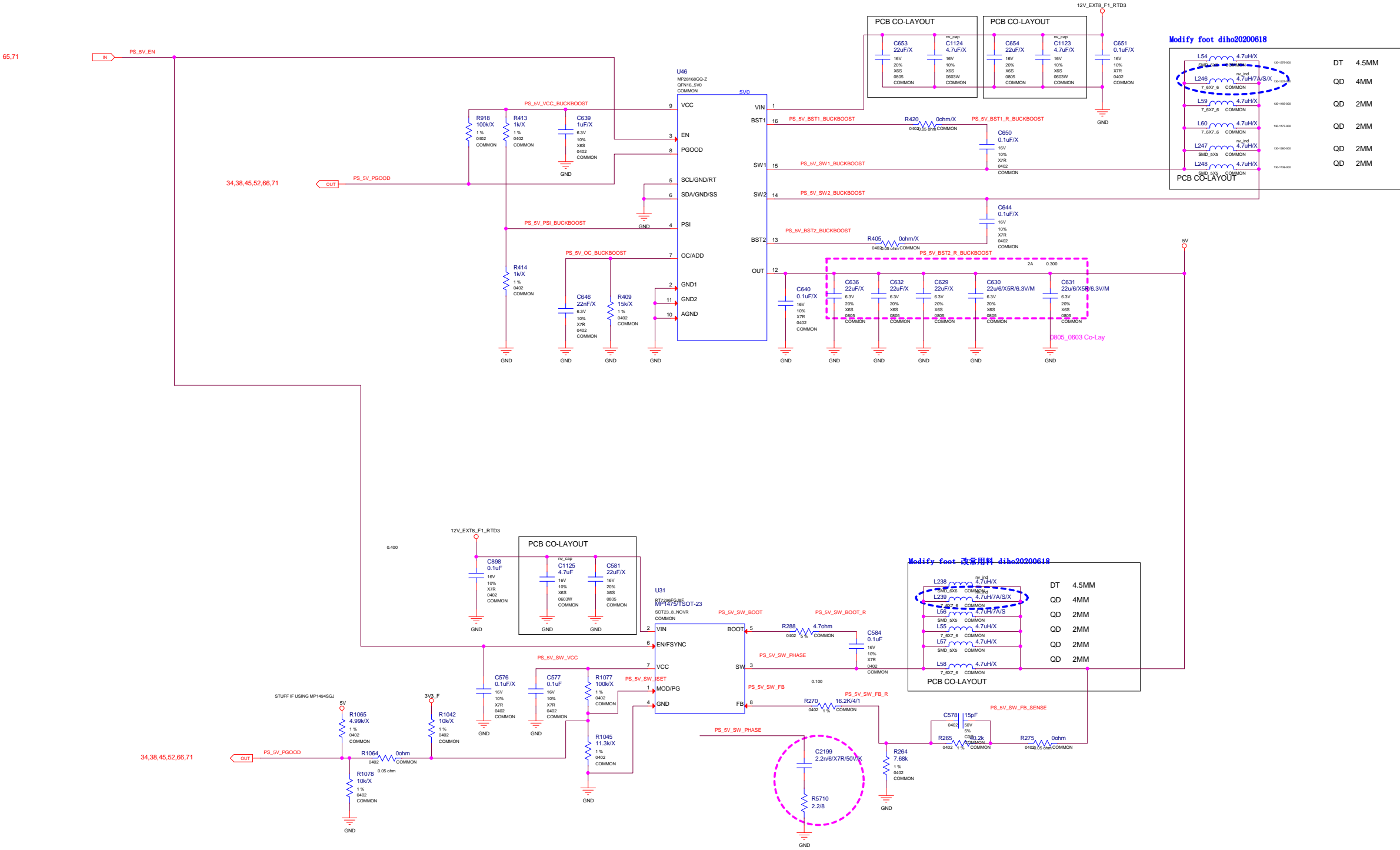
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PAGE DETAIL

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MISC. XTAL, PLL
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Title MISC: XTAL. PLL			
Size Custom	Document Number GV-N3080AORUS X-10GD		Rev 1.0
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PS: 5V, 5V_BACKUP

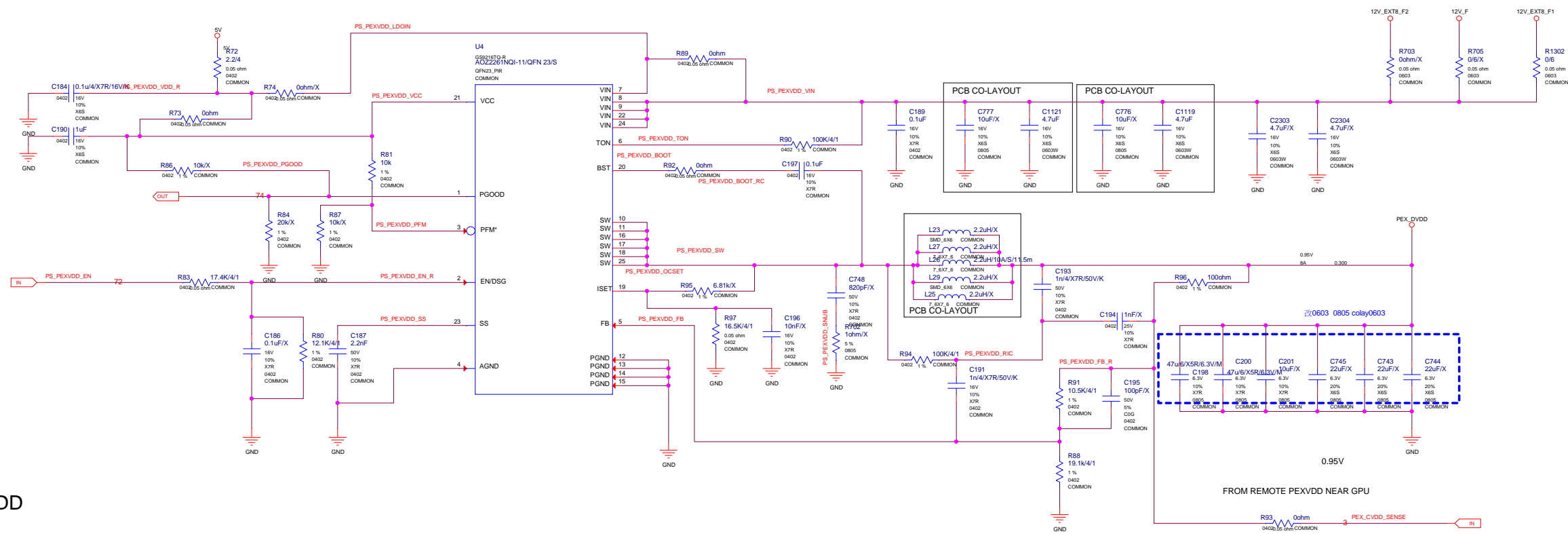


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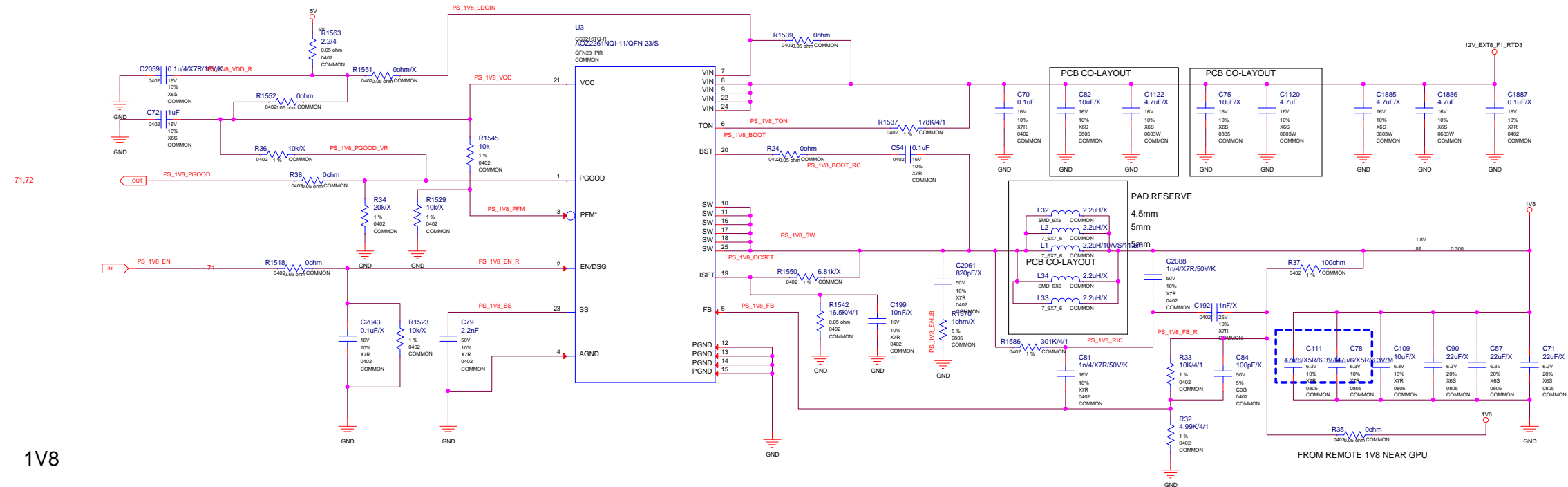
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PS: 5V

GIGABYTE			
Title PS: 5V, 5V_BACKUP			
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PS: PEX_DVDD 1V8 Rail



PEX_DVDD



1V8

ASSEMBLY	<ASSEMBLY_DESCRIPTION>
PAGE DETAIL	PS: PEX_DVDD and 1V8

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GIGABYTE			
Title PS: PEX_DVDD 1V8 Rail			
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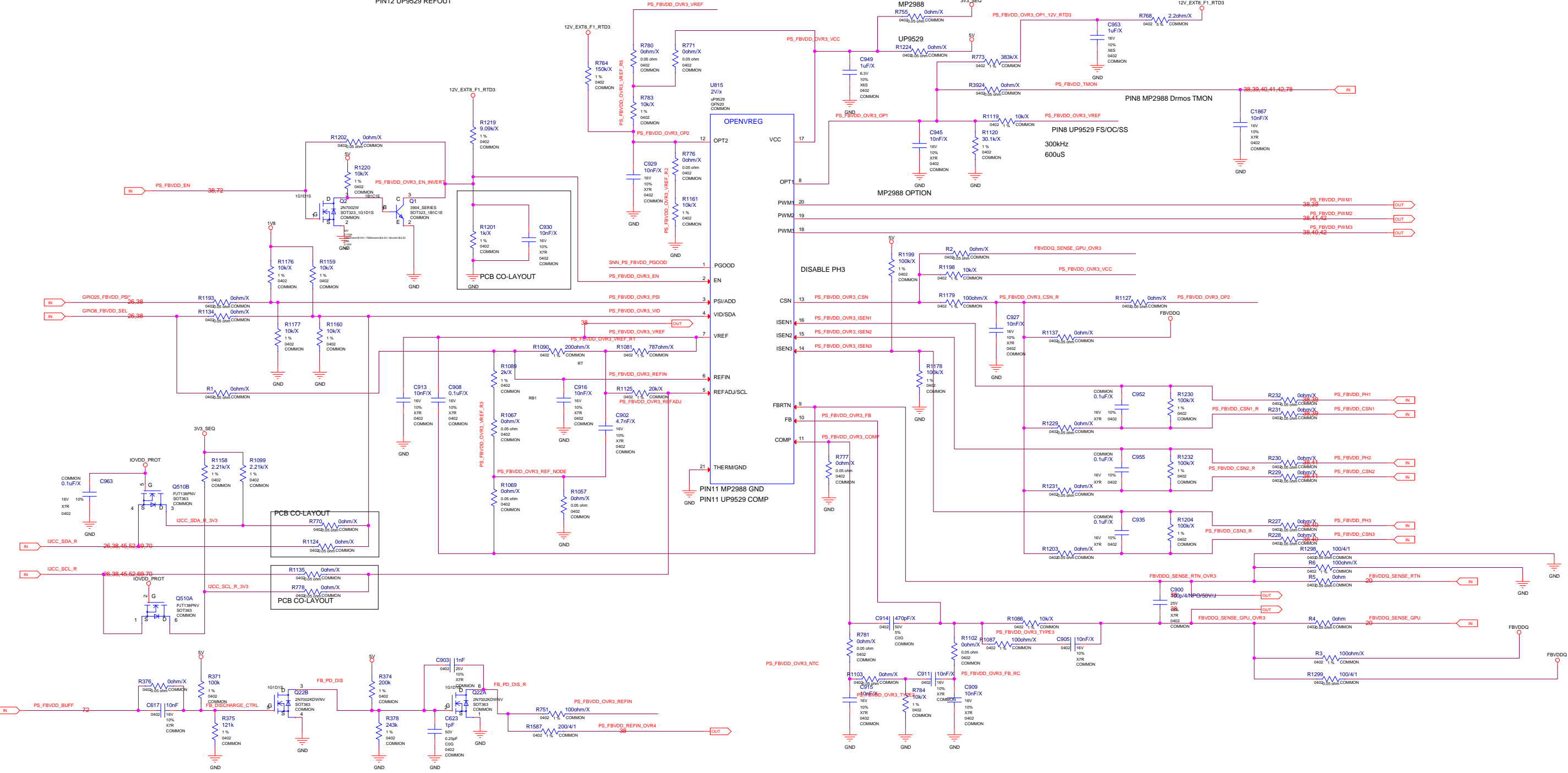
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DUAL BIOS			
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PS: FBVDD Controller OVR3

PIN12 MP2988 VIN SENSE 1/16 DIVIDER
PIN12 UP9529 REFOUT



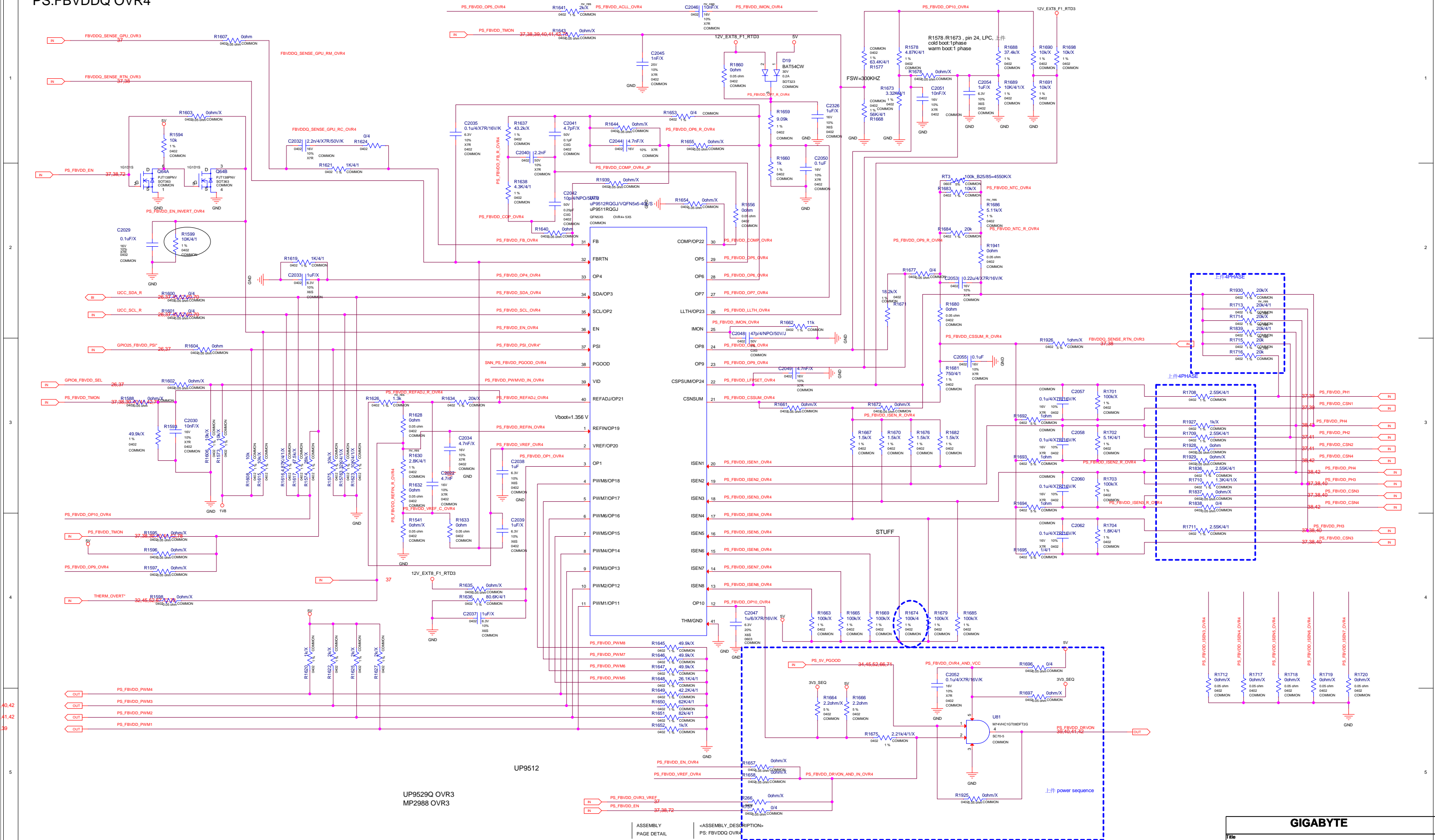
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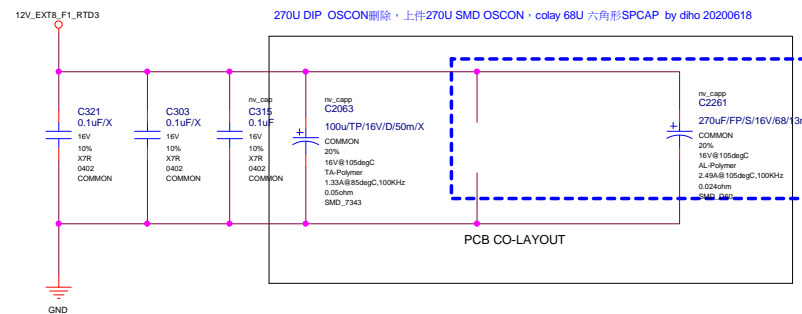
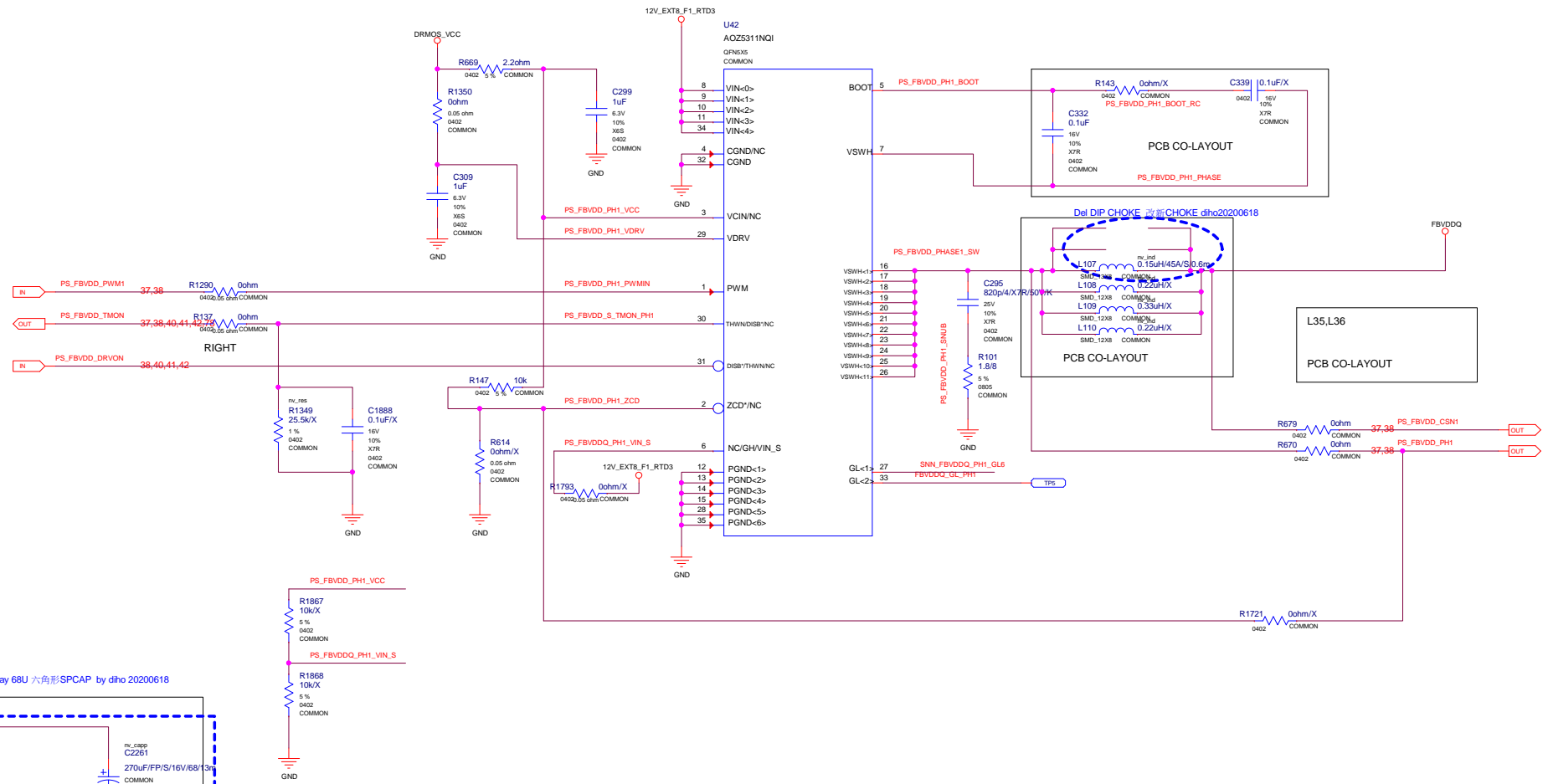
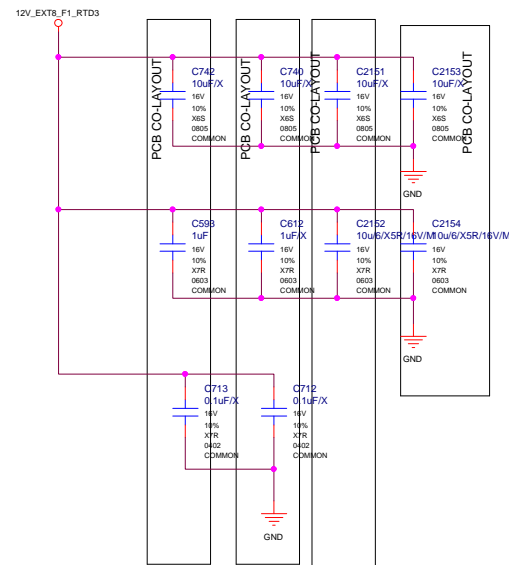
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PS: FBVDD Controller OVR3			
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PS:FBVDDQ OVR4



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PS: FBVDD PH1



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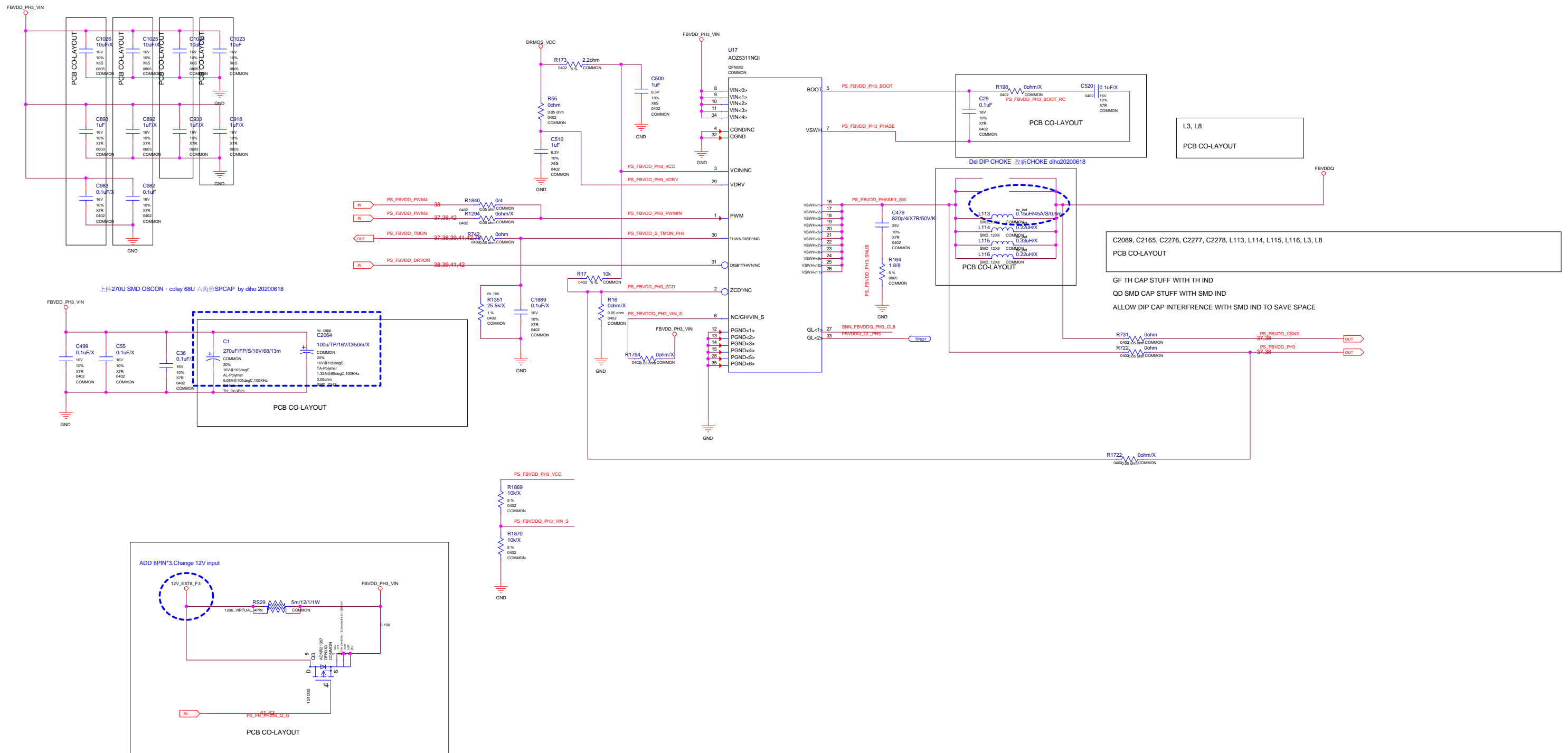
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GIGABYTE

Title			
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PS: FBVDD PH3



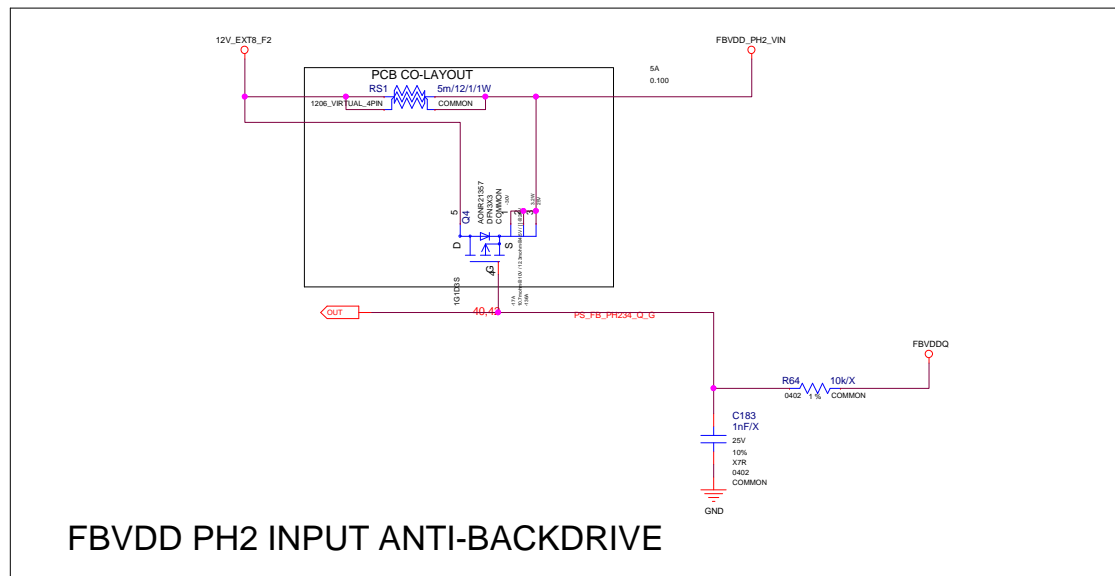
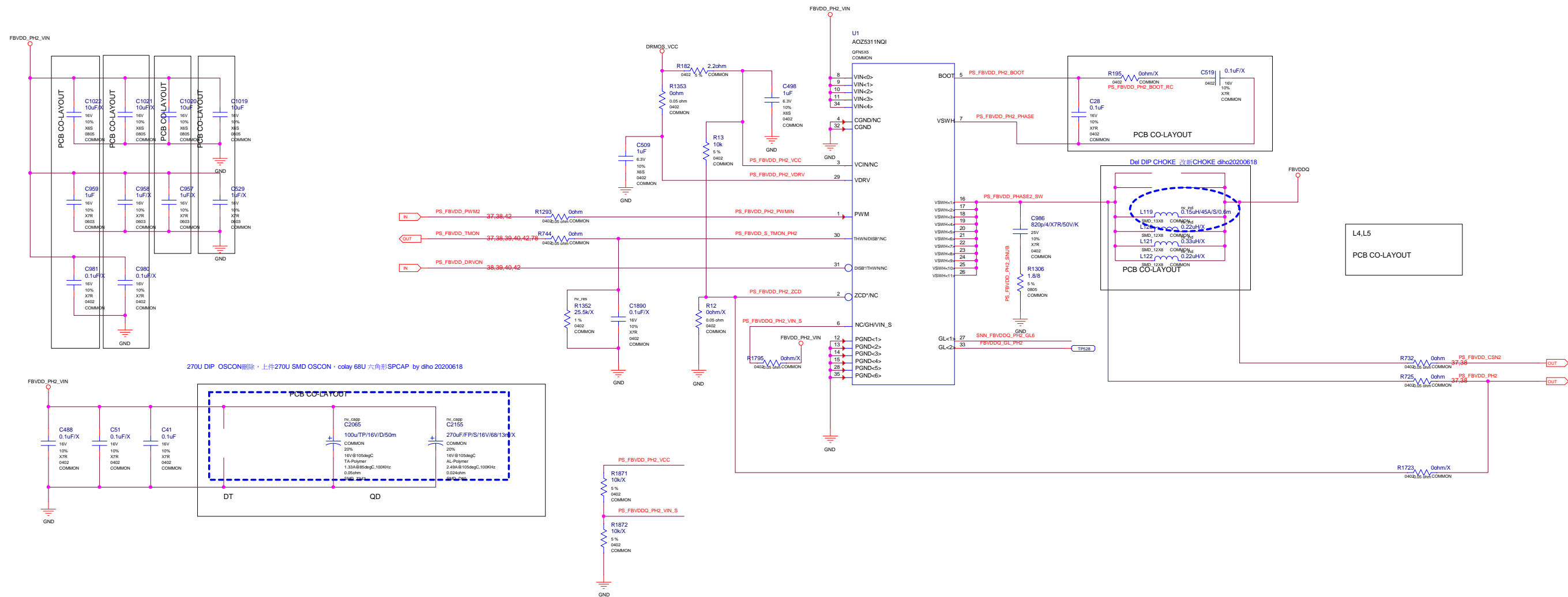
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Size Custom	Document Number GV-N3080AORUS X-10GD		Rev 1.0
Date:	Monday, September 28, 2020	Sheet 40 of 80	

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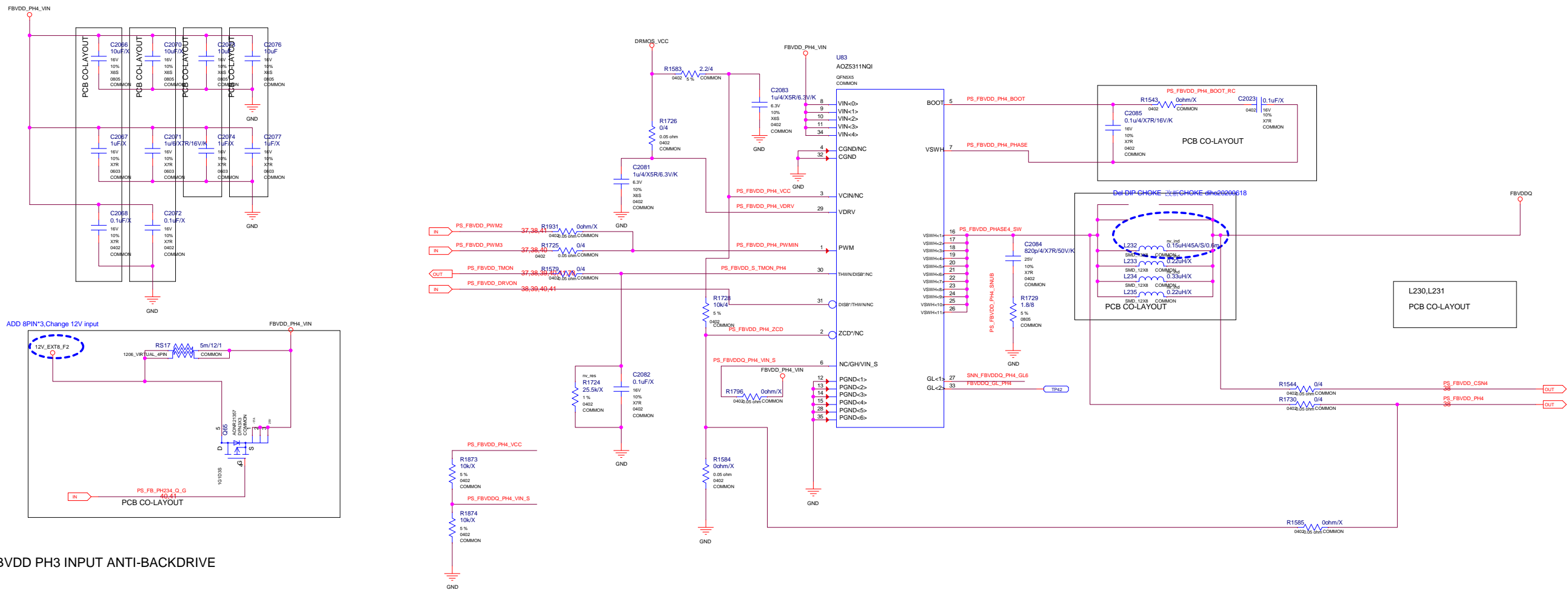
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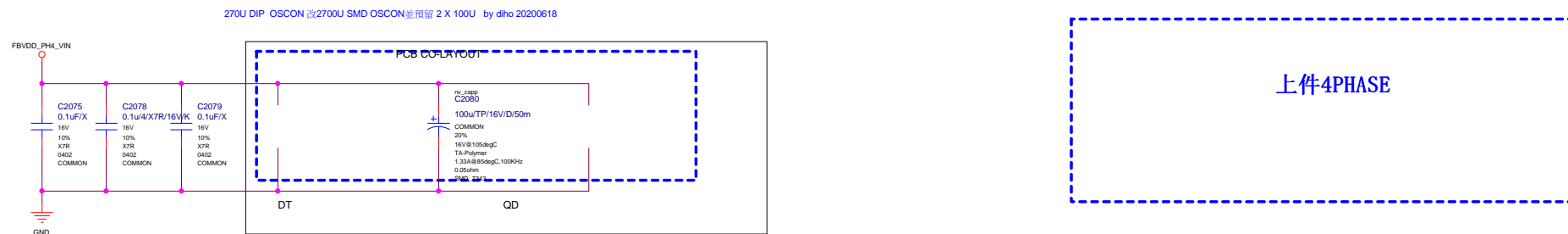
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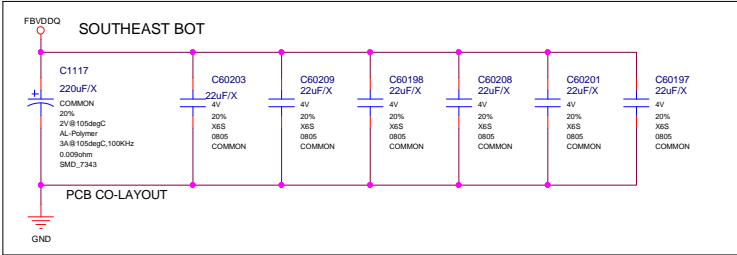
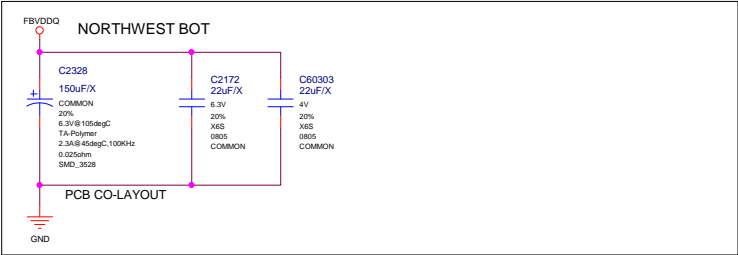
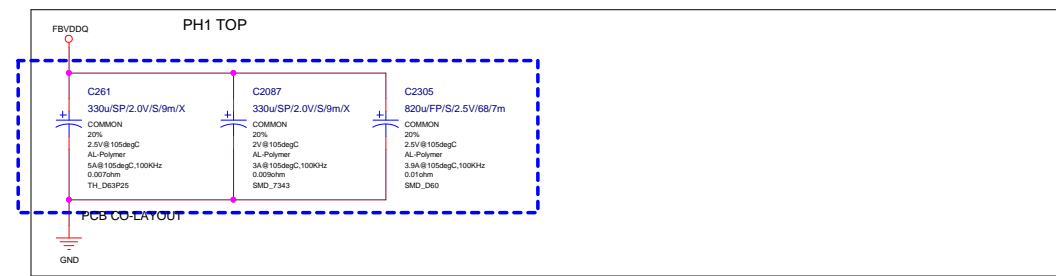


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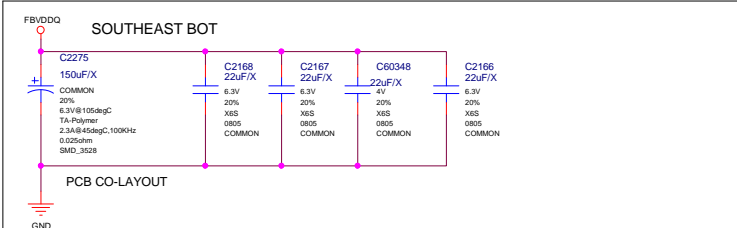
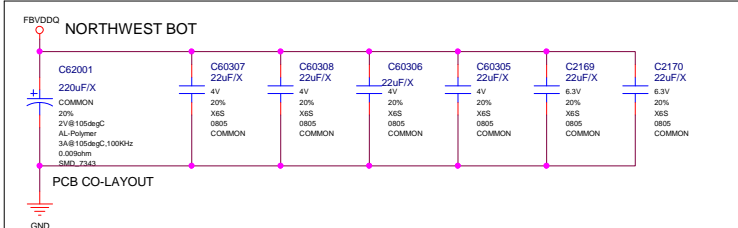
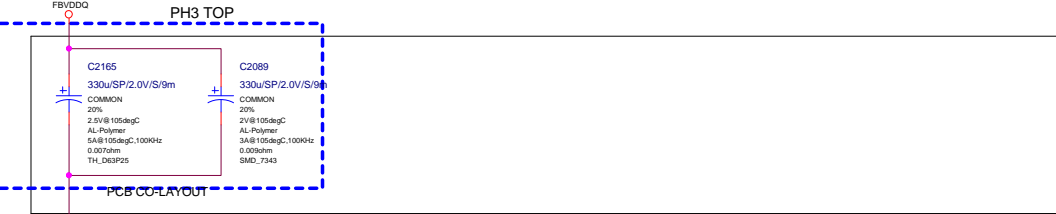
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3x 820uF TH FBVDD OUTPUT BULK CAPS

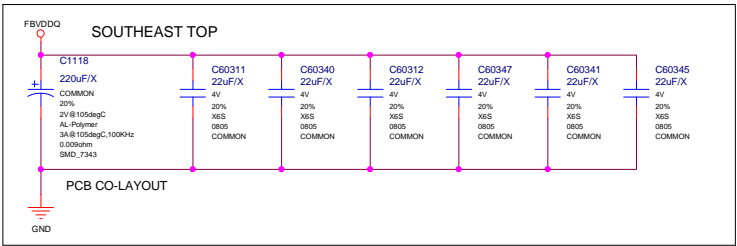
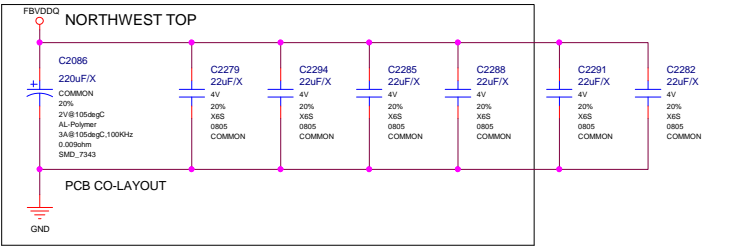
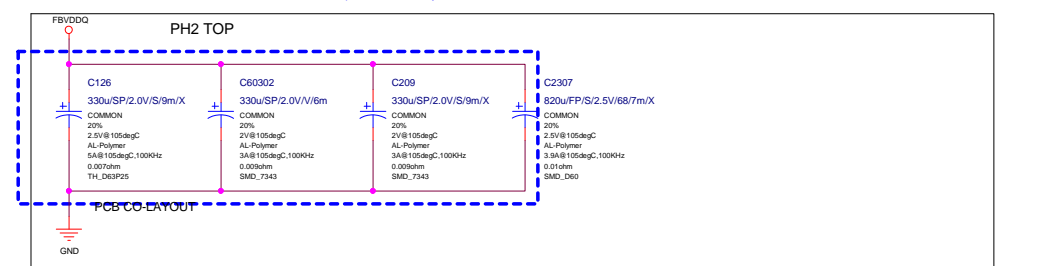
820U DIP OSCON 改330U 預留在BOT，原SMD OSCON改常用footprint上件820U by diho 20200619



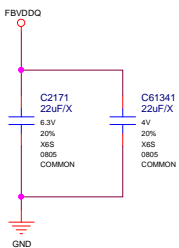
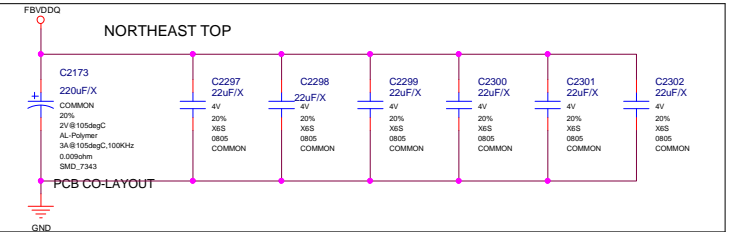
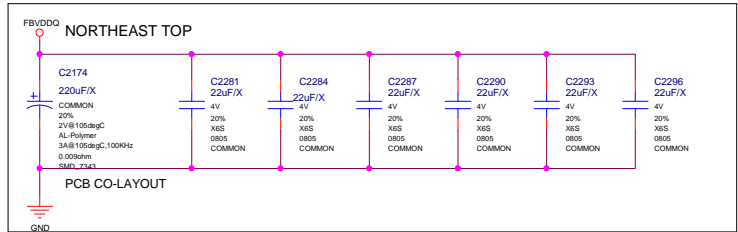
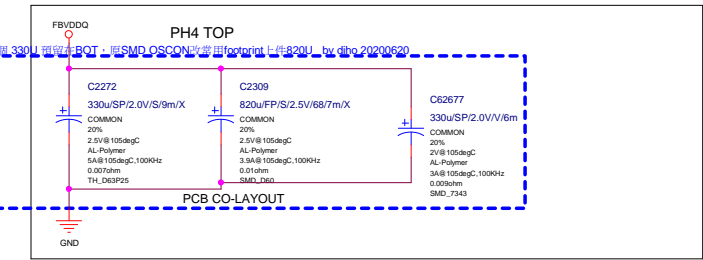
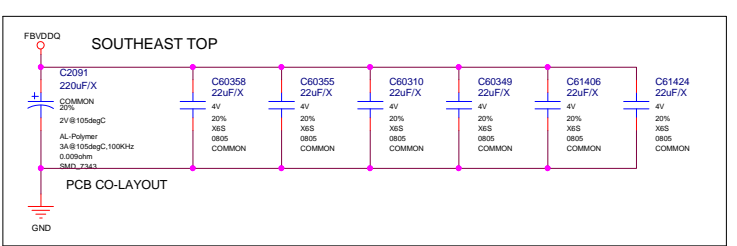
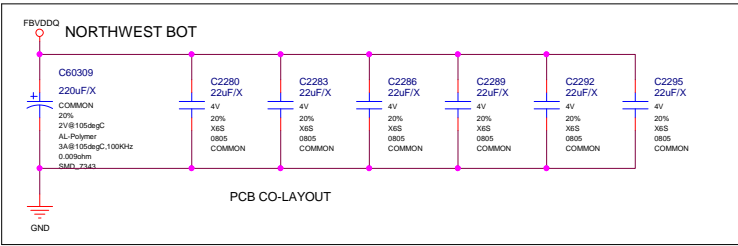
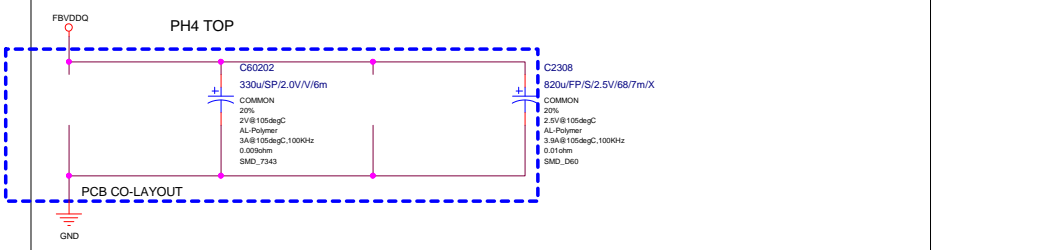
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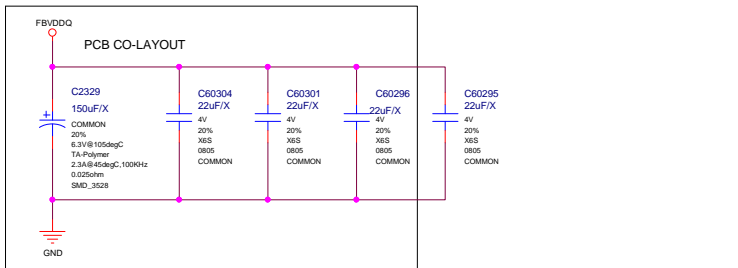
820U DIP OSCON 改330U 預留在BOT，原SMD OSCON改常用footprint上件820U by diho 20200619



820U DIP OSCON 改330U 預留在BOT，原SMD OSCON改常用footprint上件820U by diho 20200619



CLOSE TO FB PH3 OUTPUT STUFF



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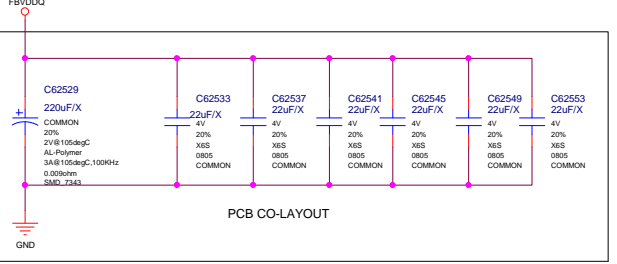
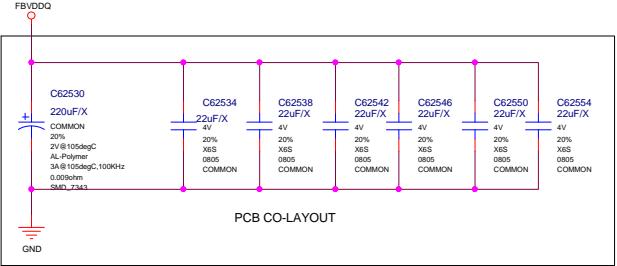
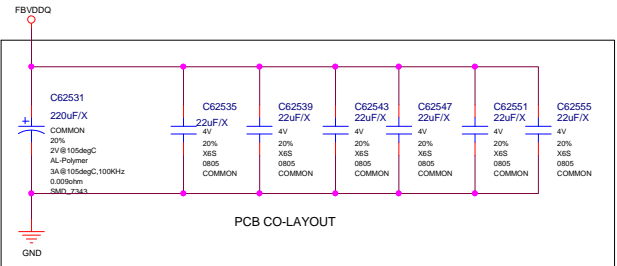
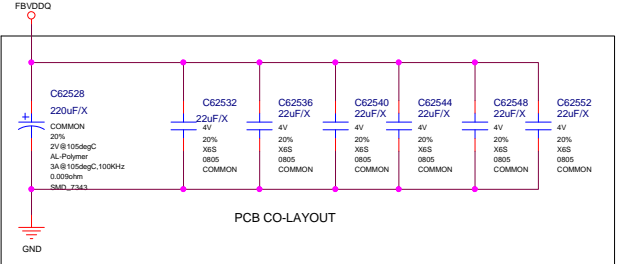
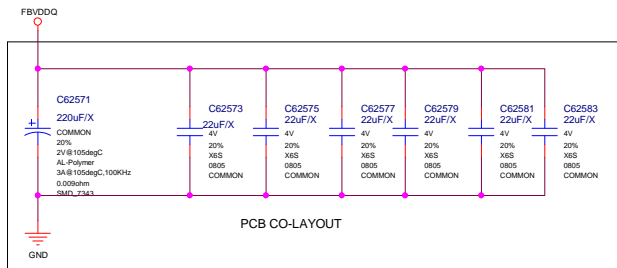
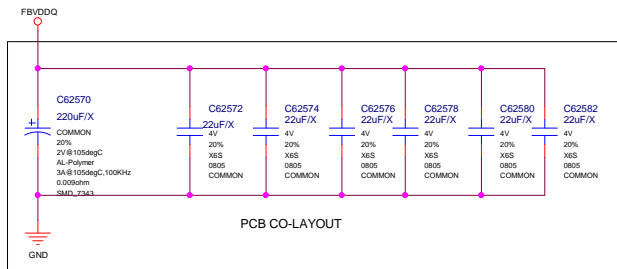
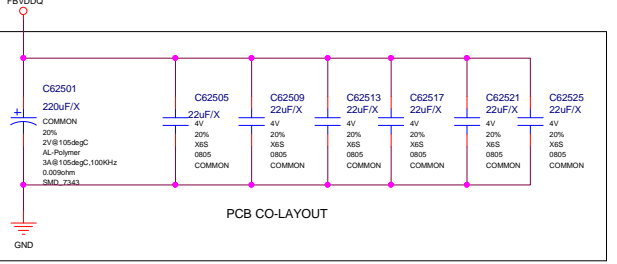
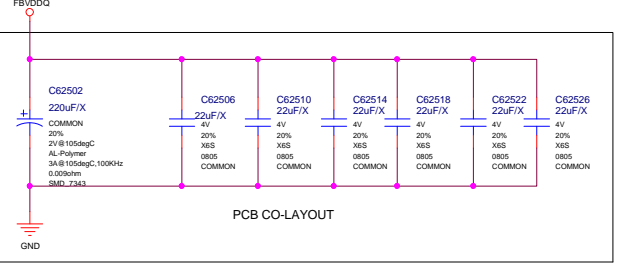
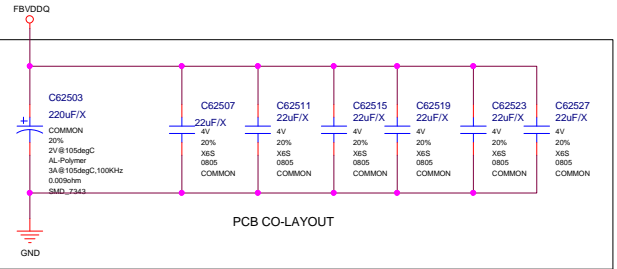
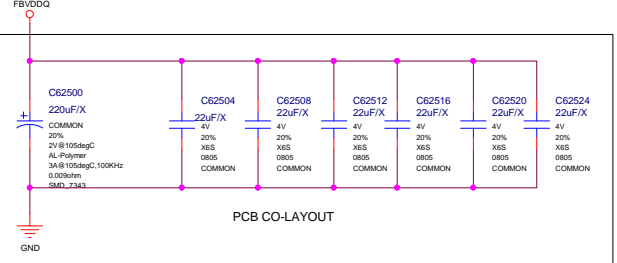
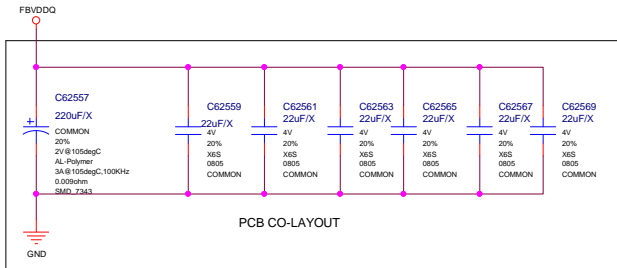
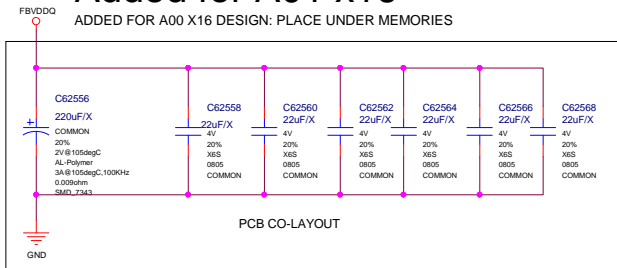
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Size	Document Number		Rev
Custom	GV-N3080AORUS X-10GD		1.0
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Added for A01 x16

ADDED FOR A00 X16 DESIGN: PLACE UNDER MEMORIES



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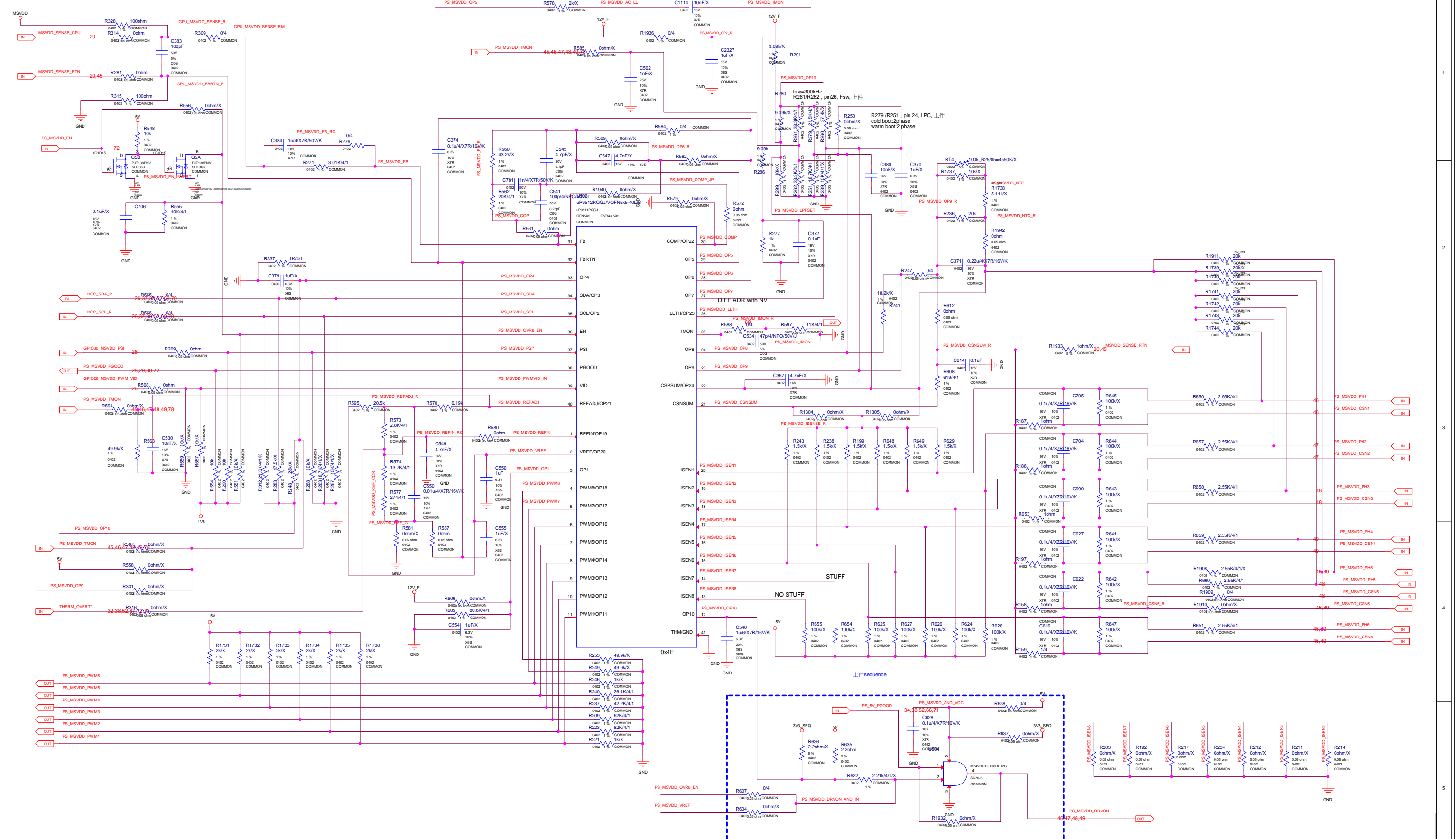
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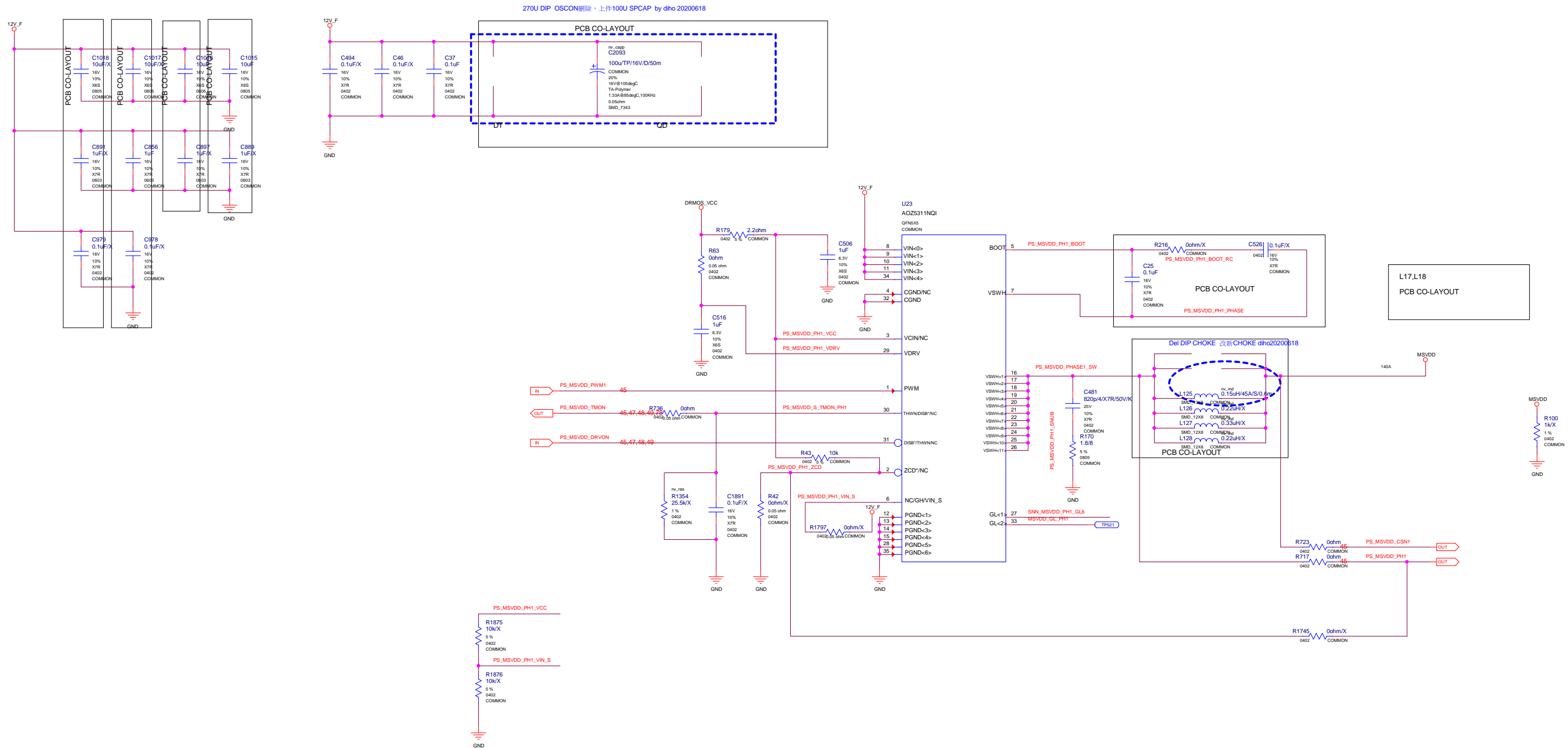


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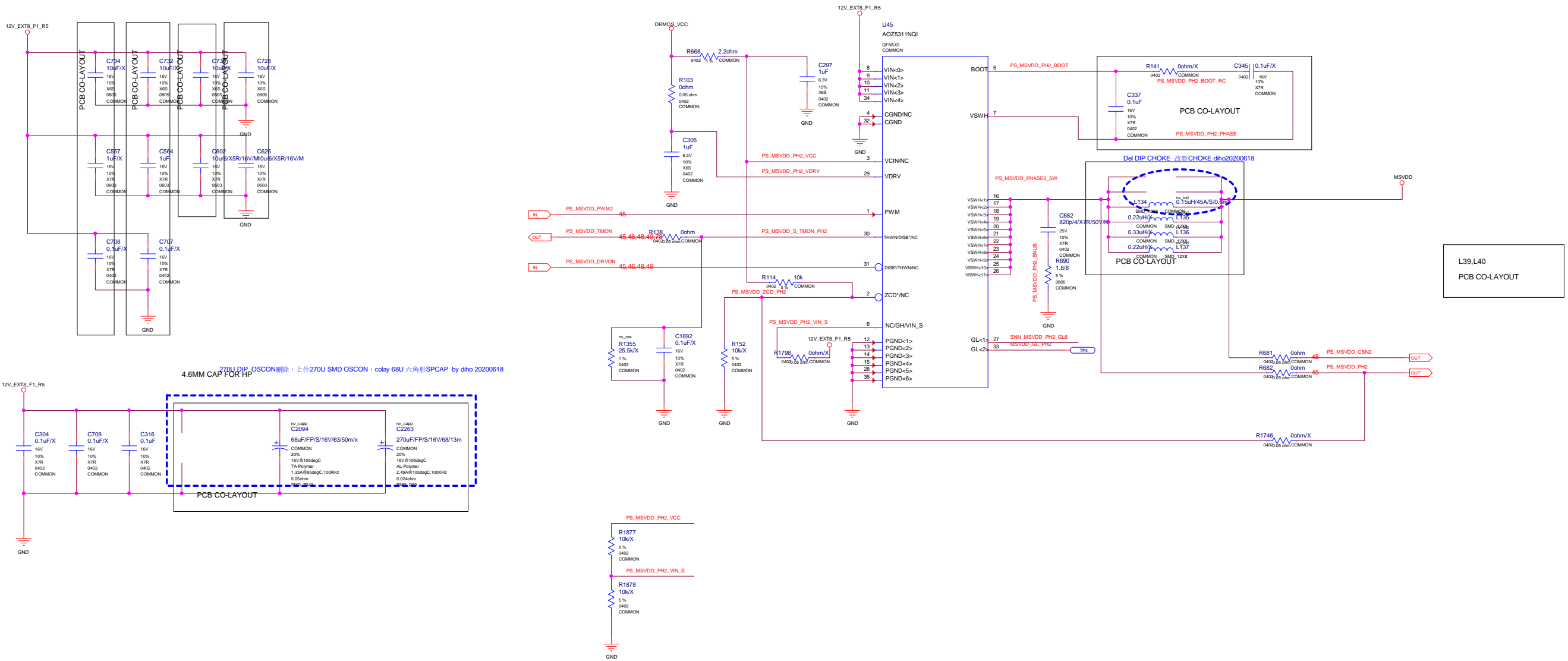
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Date:	Monday, September 28, 2020	Sheet 46 of 80

PS: MSVDD Phase 1



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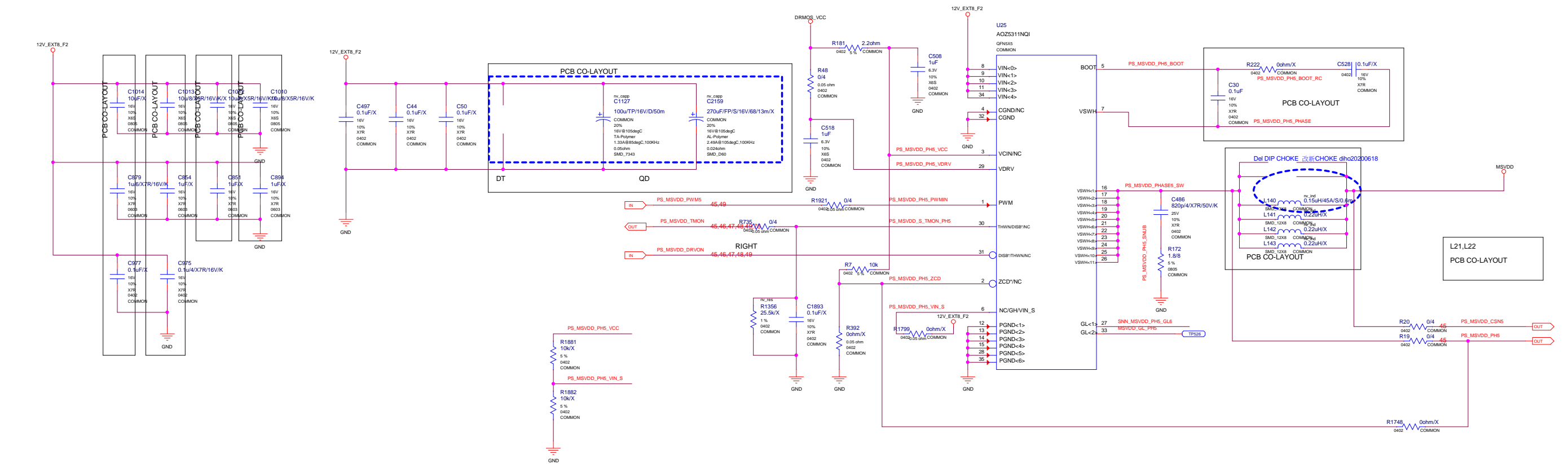
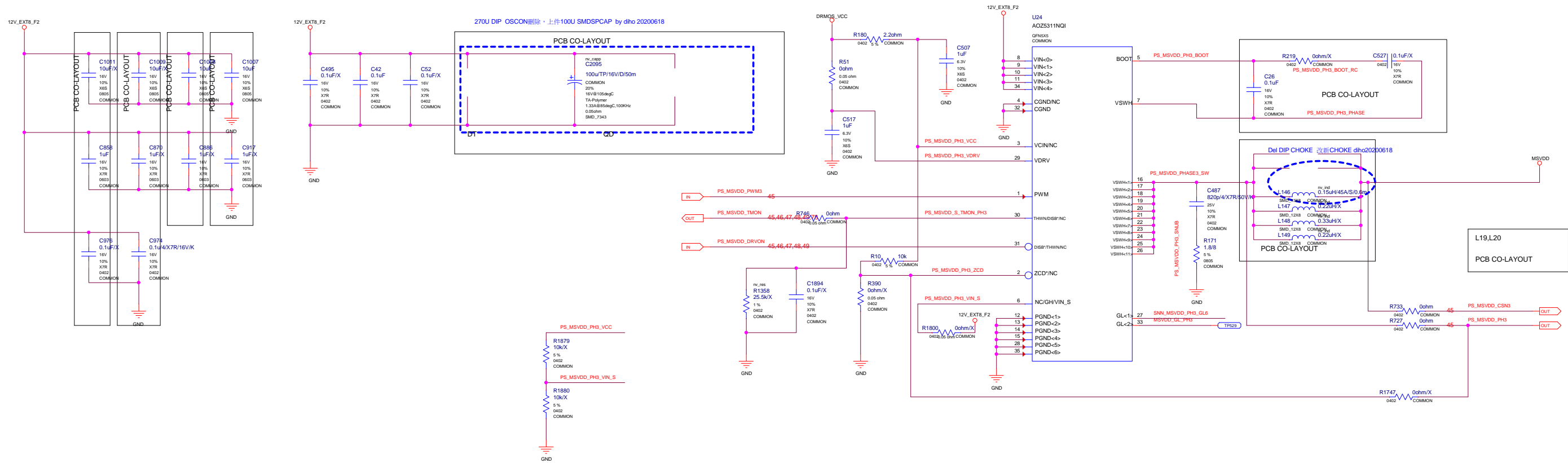


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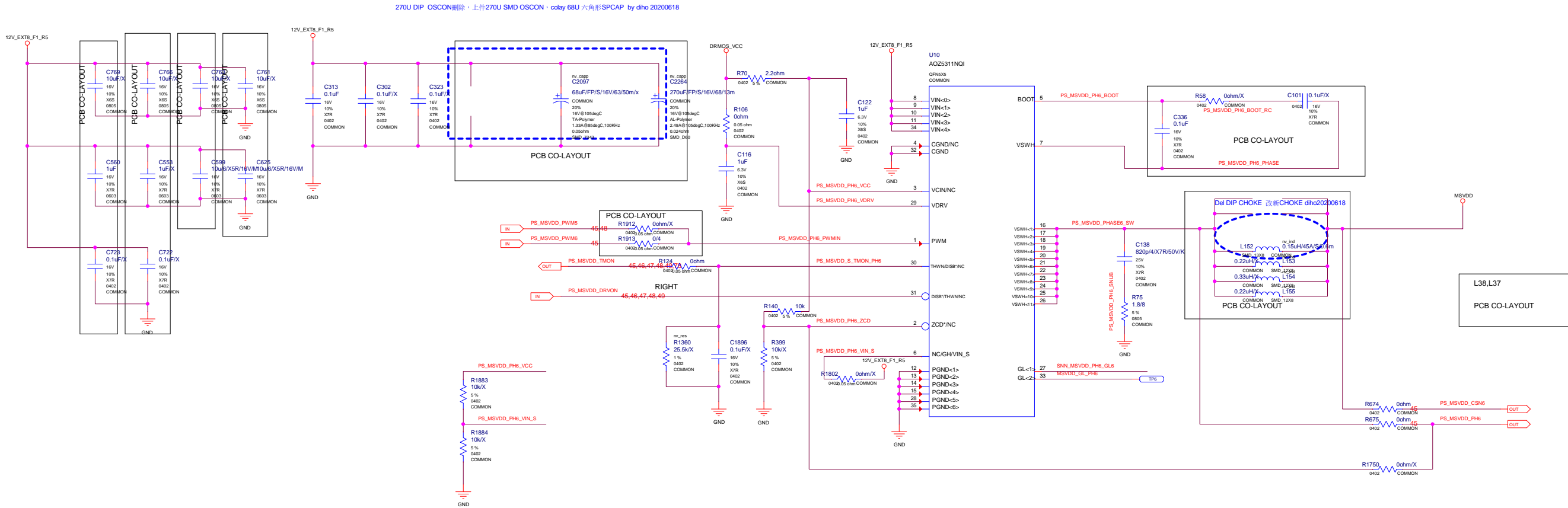
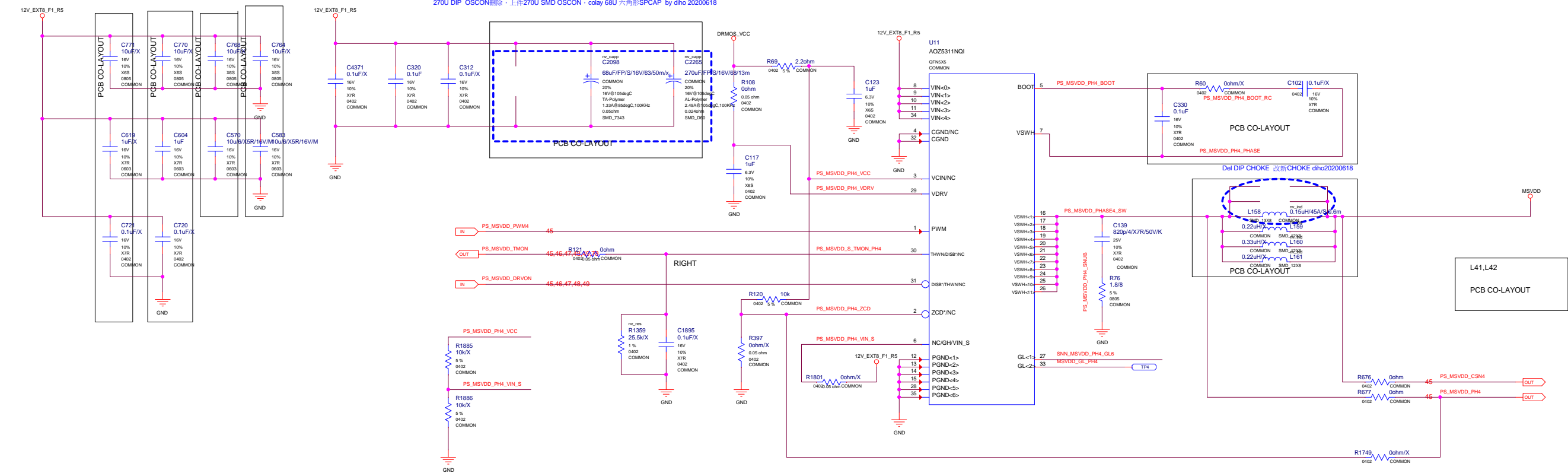
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PS: MSVDD PH 4,6



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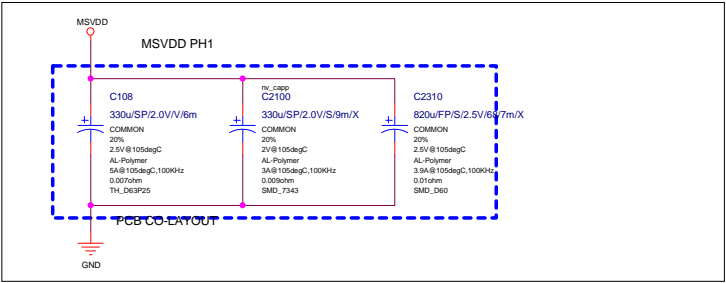
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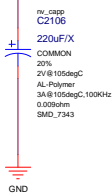
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PS:MSVDD OUTPUT CAP (TOP)

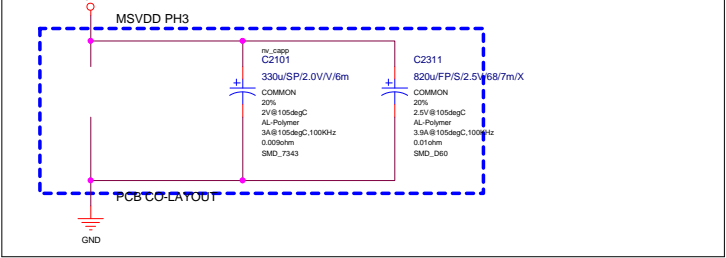
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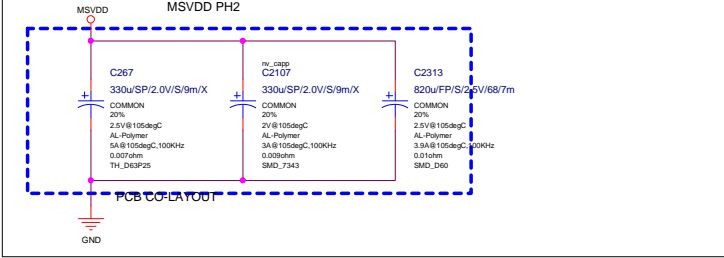
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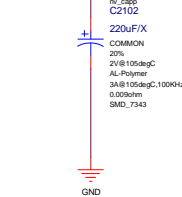
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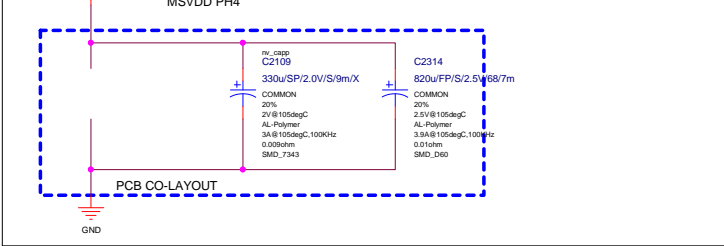
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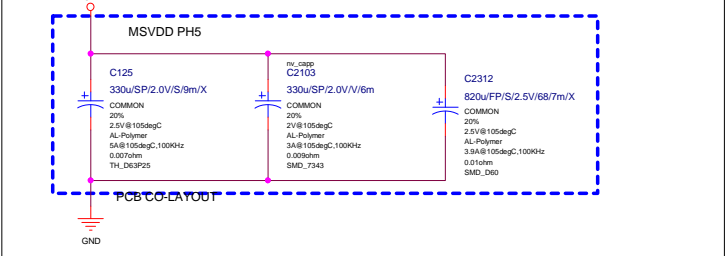
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820U DIP OSCON 改330U 預留在BOT・原SMD OSCON改常用footprint上件820U by diho 20200619



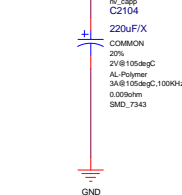
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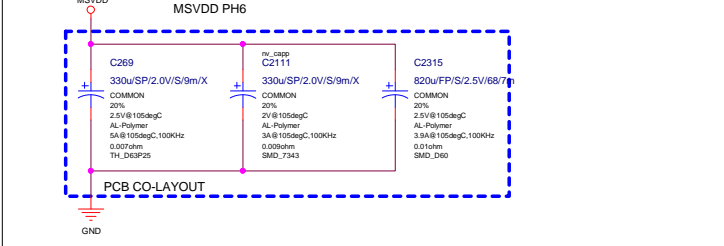
MSVDD PH4 ASIDE



MSVDD PH5 ASIDE



820U DIP OSCON 改330U 預留在BOT・原SMD OSCON改常用footprint上件820U by diho 20200619



MSVDD PH6 ASIDE



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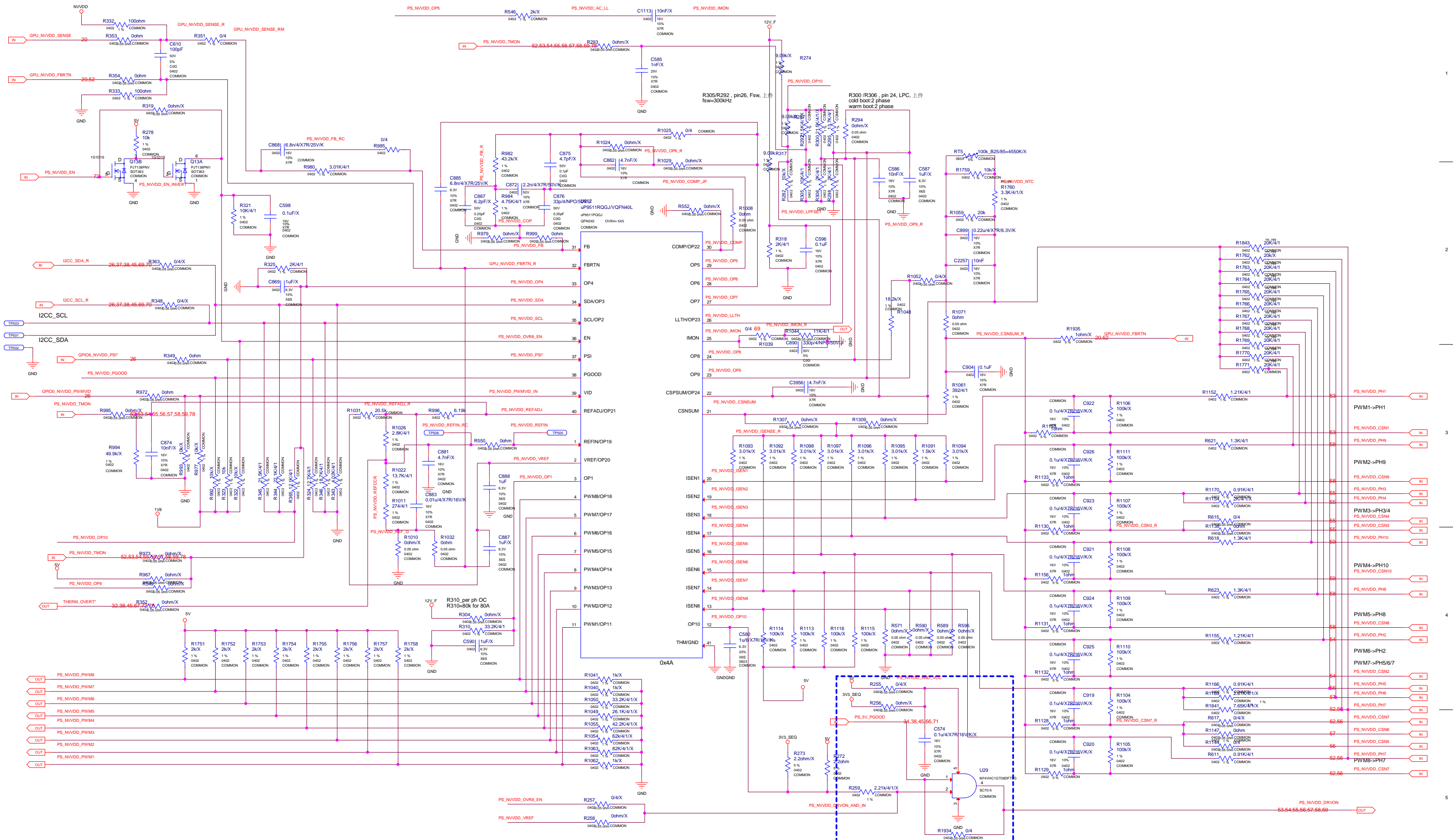
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PS: NVVDD Controller_OVR8



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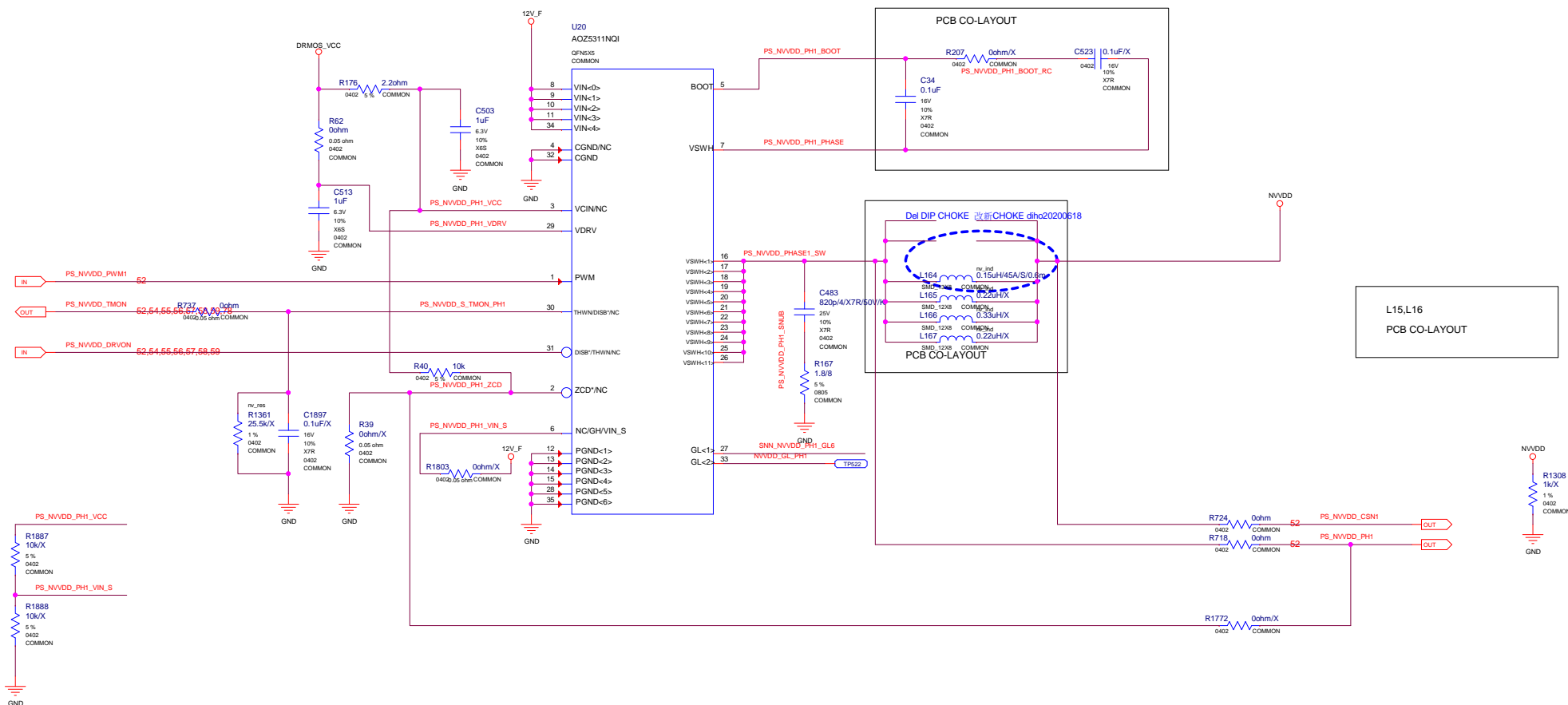
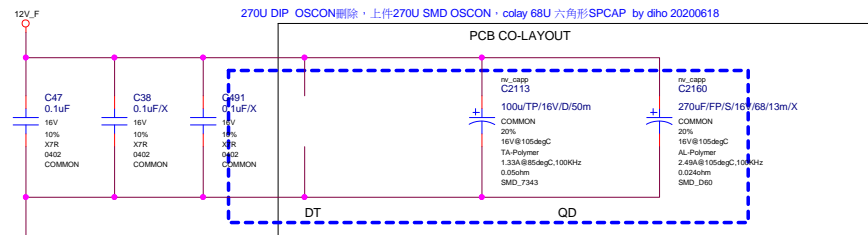
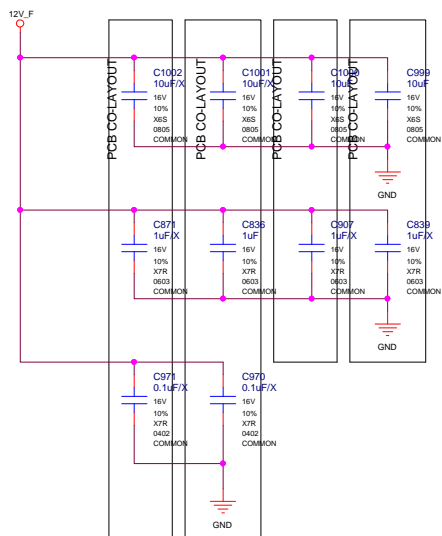
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PS: NVVDD Phase 1



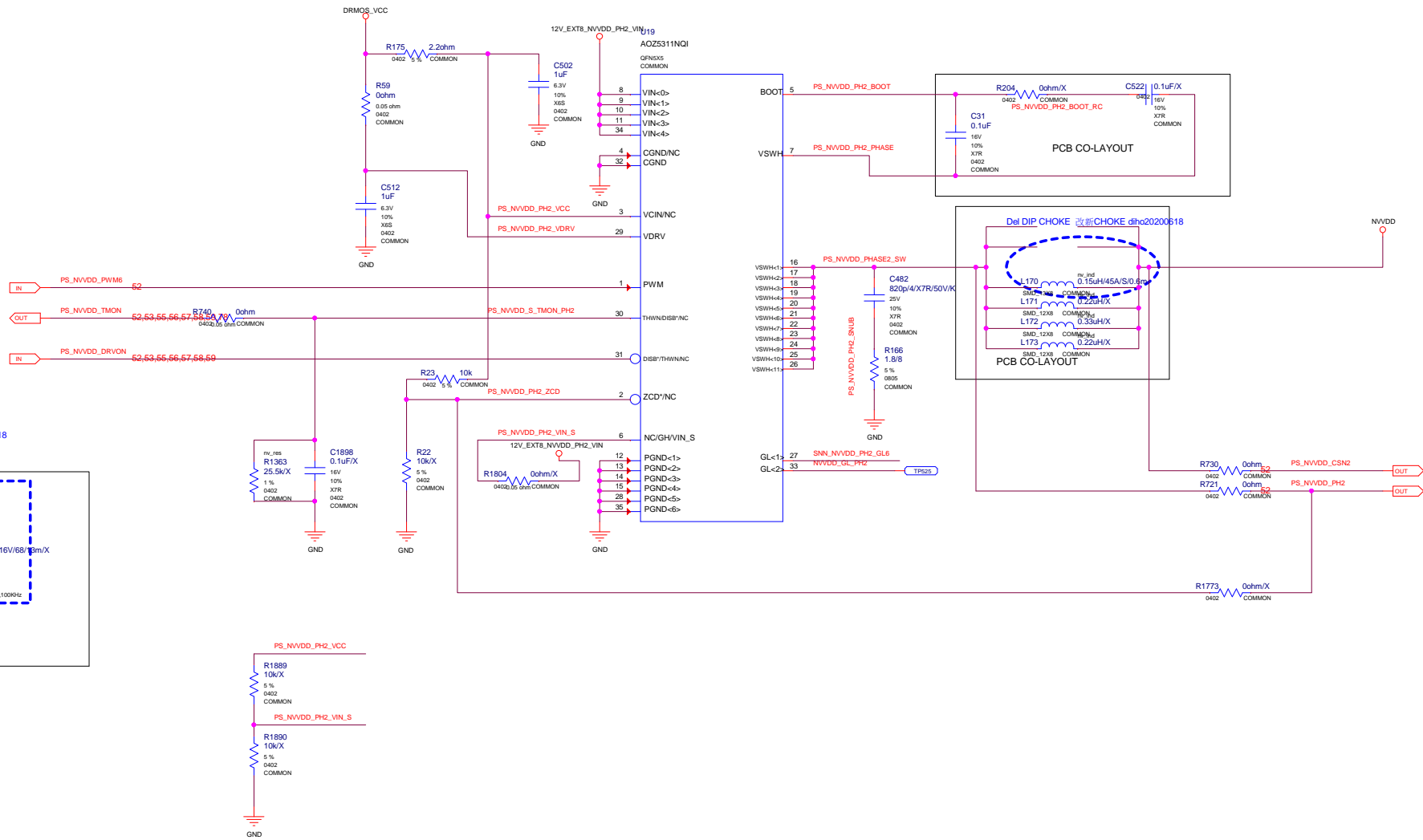
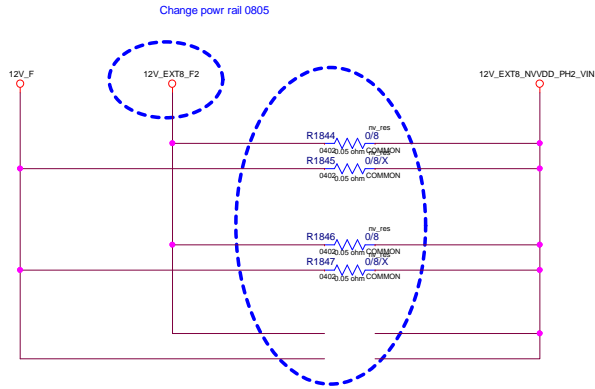
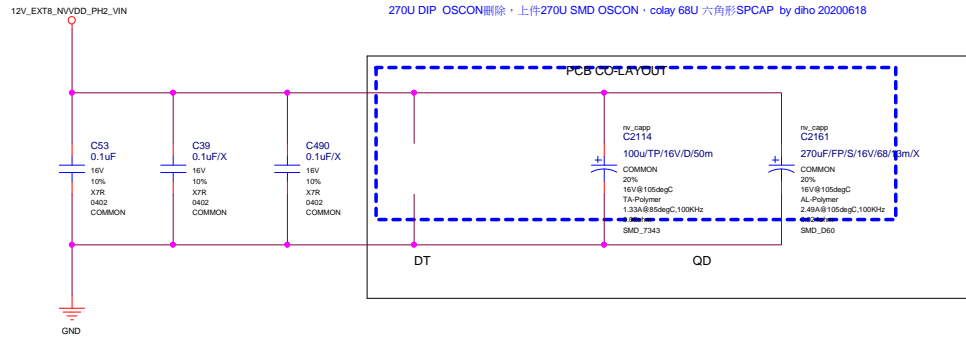
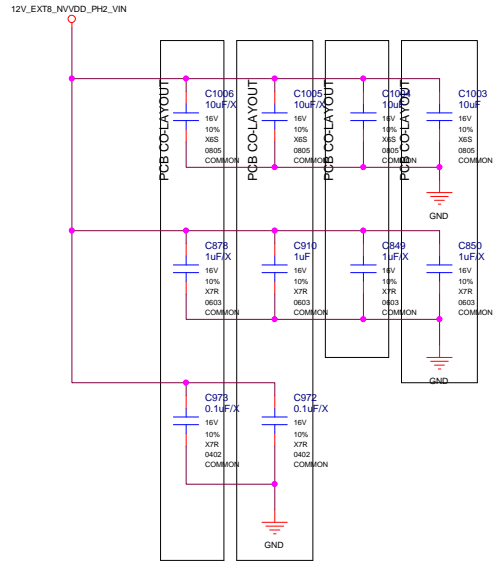
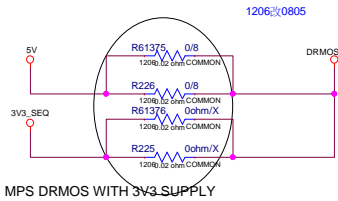
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PS: NVVDD PH1
(PWM1)
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Title PS: NVDD Phase 1			
Size Custom	Document Number GV-N3080AORUS X-10GD		Rev 1.0
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PS: NVVDD Phase 2



L13,L14
PCB CO-LAYOUT

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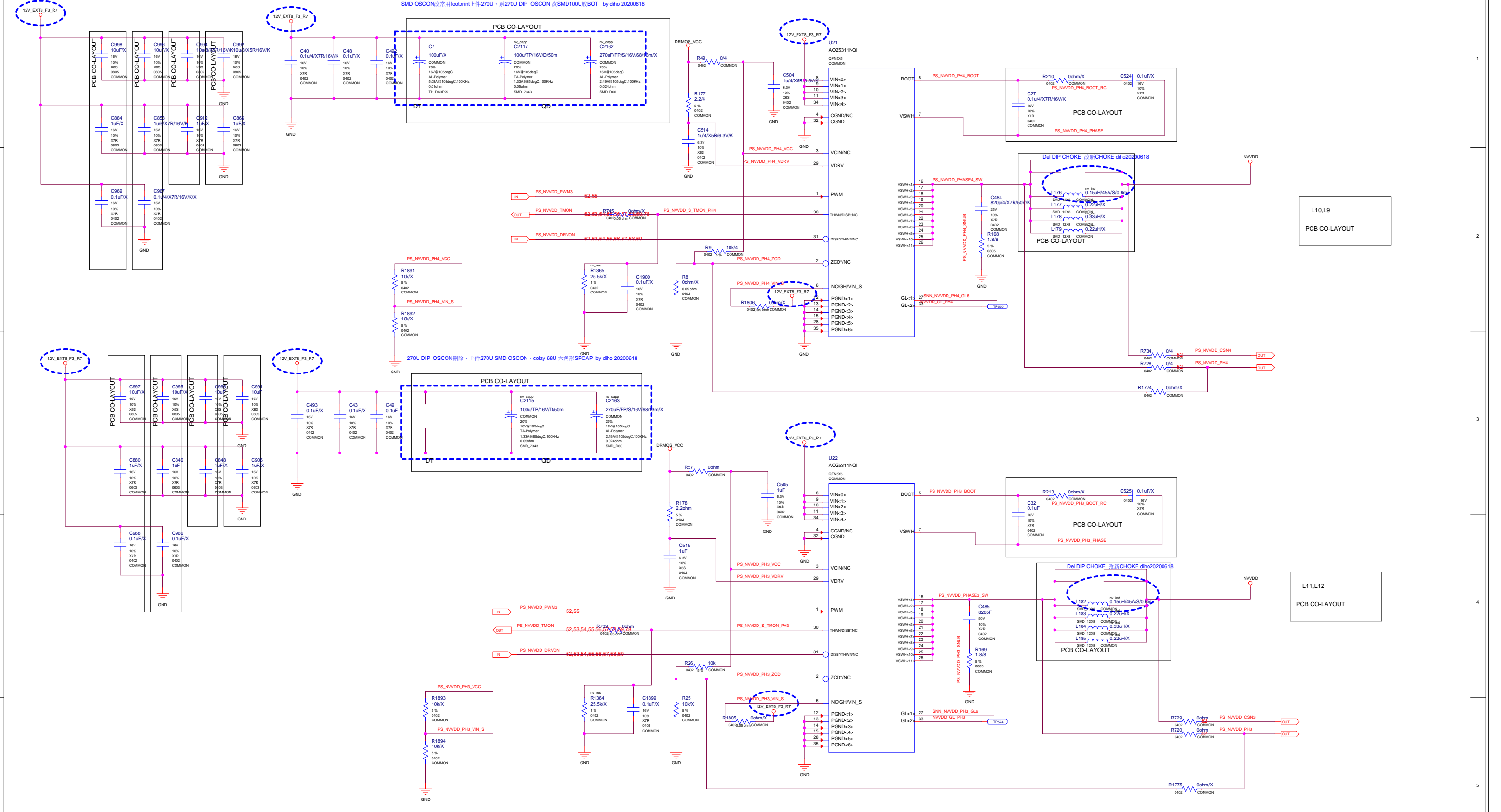
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Size Custom	Document Number GV-N3080AORUS X-10GD		Rev 1.0
Date: Monday, September 28, 2020		Sheet 54 of 80	

PS: NVVDD Phase 3 (PWM6), PHASE 4(PWM2)

SMD OSCON改常用footprint上件270U・脚270U DIP OSCON改SMD100U改BOT by dho 20200618



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GIGABYTE			
Title PS: NVVDD Phase 3,4			
Size Custom	Document Number GV-N3080AORUS X-10GD		Rev 1.0
Date: Monday, September 28, 2020	Sheet 55	of 80	

PS: NVVDD PH 5(PWM2), PH7(PWM3)

270U DIP OSCON删除，上件270U SMD OSCON，colay 68U 六角形SPCAP by dho 20200618

ADD 8PIN*3.Change 12V input

270U DIP OSCON删除，上件270U SMD OSCON，colay 68U 六角形SPCAP by dho 20200618

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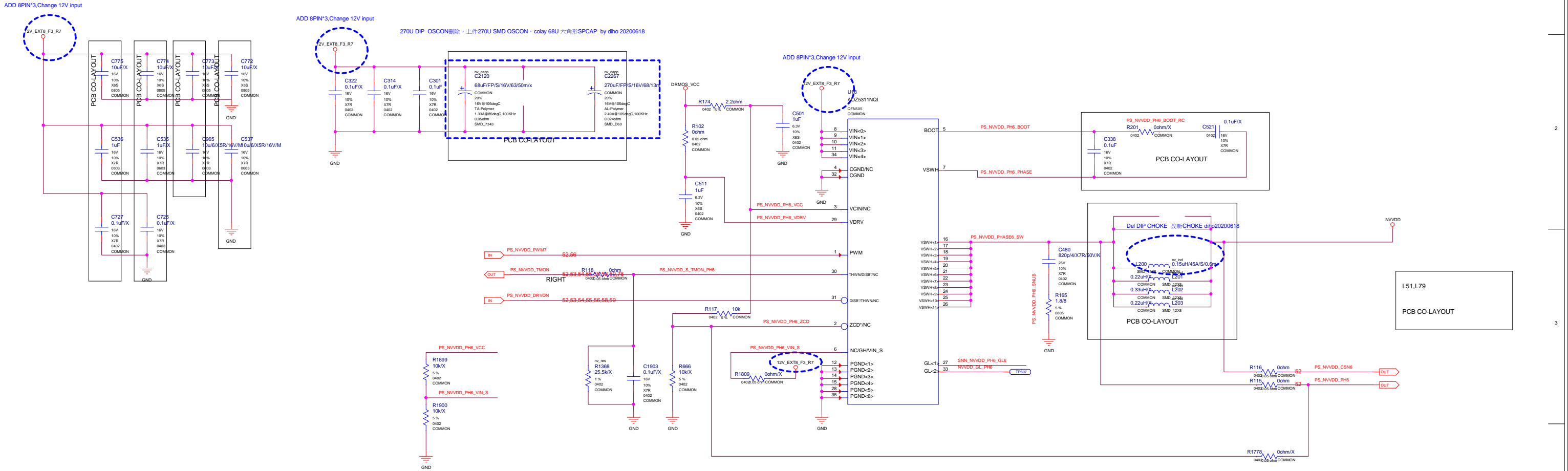
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PH7(PWM6)

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Title PS: NVVDD Phase 5,7		
Size Custom	Document Number GV-N3080AORUS X-10GD	Rev 1.0
Date: Monday, September 28, 2020 Sheet 56 of 80		

PS: NVVDD Phase 6(PWM7)



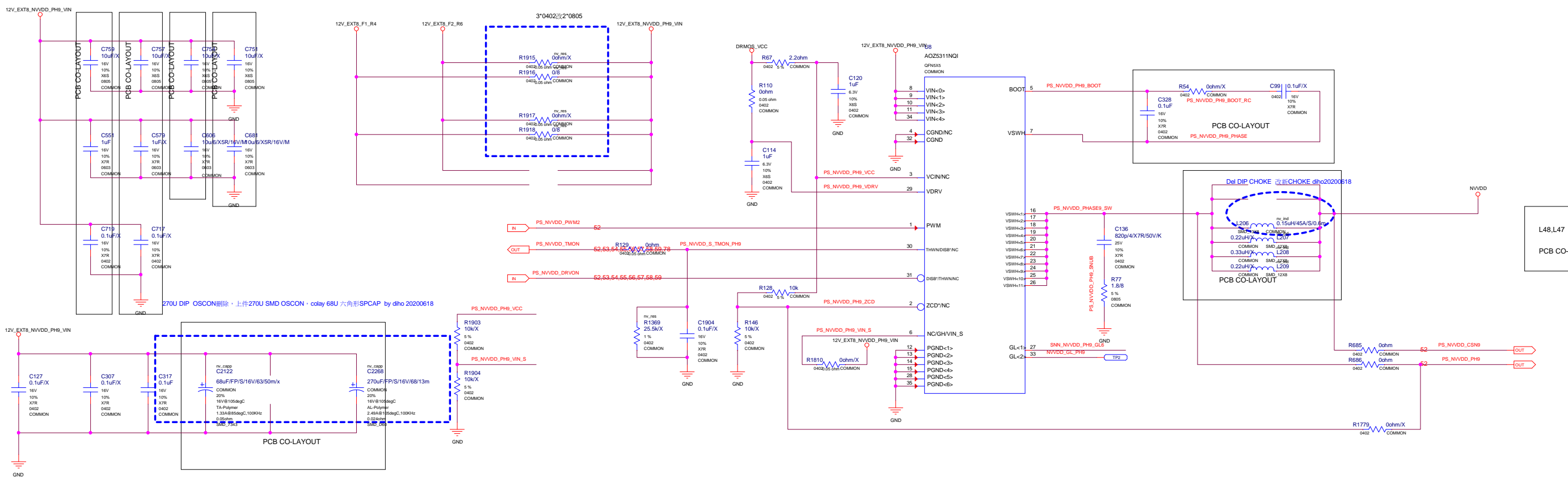
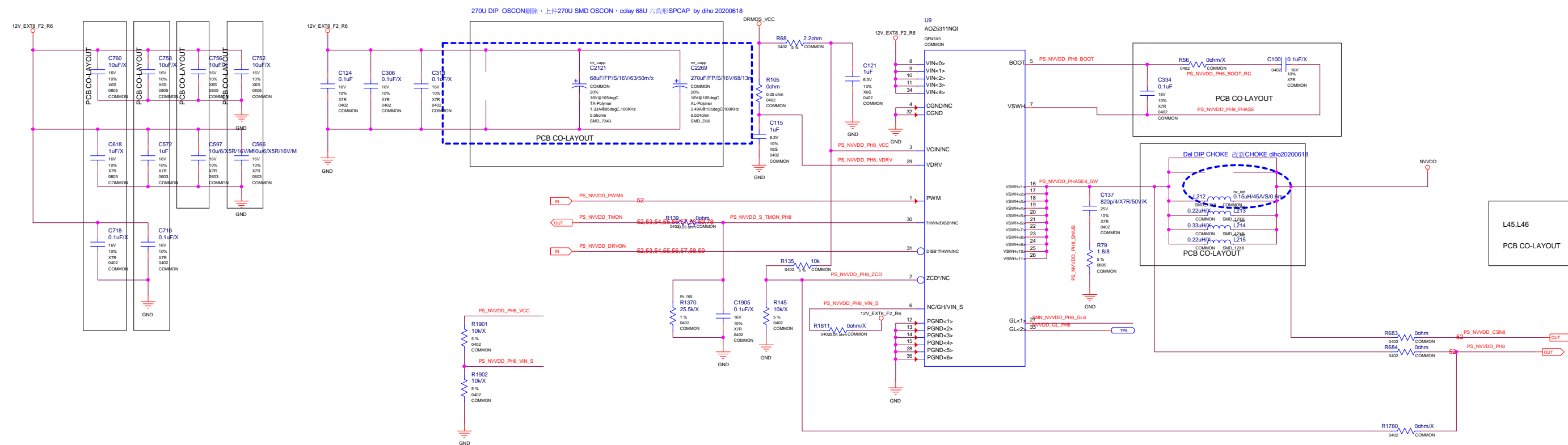
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(PWM7)

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Title PS: NVVDD Phase6			
Size Custom	Document Number GV-N3080AORUS X-10GD		Rev 1.0
Date: Monday, September 28, 2020		Sheet 57	of 80

PS: NVVDD PH 8 (PWM5), PH 9(PWM8)



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Size	Document Number		Rev
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2																				
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5																				
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GIGABYTE																				
Title COLAY NOTE																				
Size Custom	Document Number GV-N3080AORUS X-10GD	Rev 1.0																		
Date: Monday, September 28, 2020	Sheet 60	of 80																		
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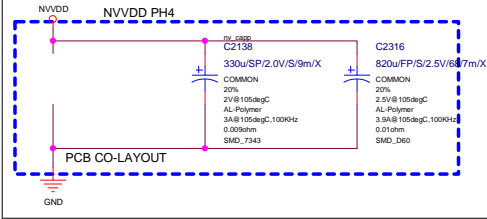
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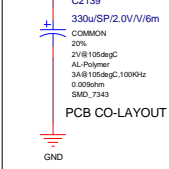
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Size	Document Number		Rev
Custom	GV-N3080AORUS X-10GD		1.0
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PS: NVVDD OUTPUT CAP(TOP)

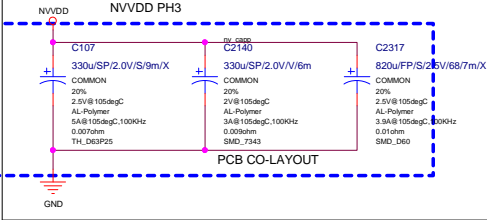
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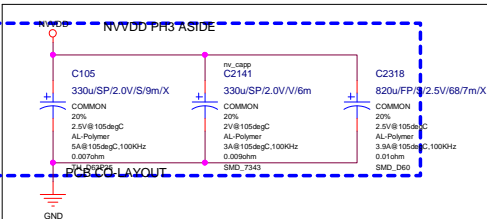
NVVDD PH4 ASIDE



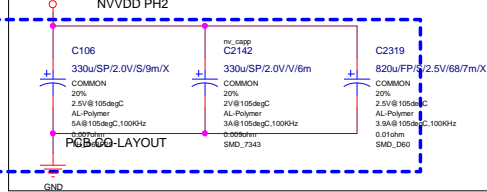
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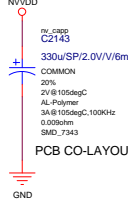
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820U DIP OSCON 改330U 預留在BOT・原SMD OSCON改常用footprint上件820U by dtho 20200619



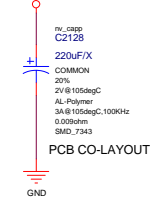
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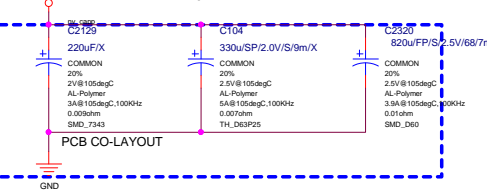
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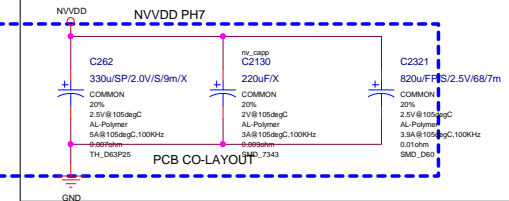
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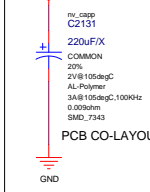
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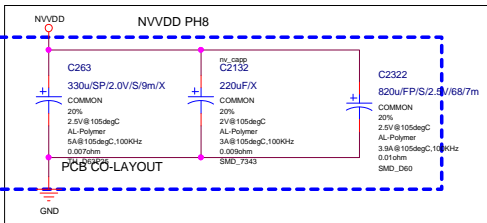
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NVVDD PH7

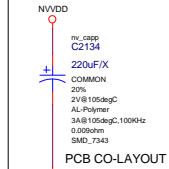
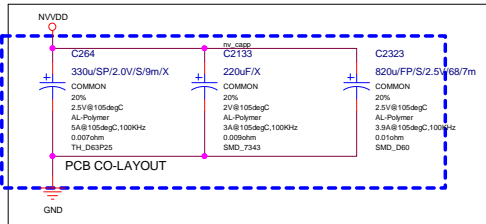


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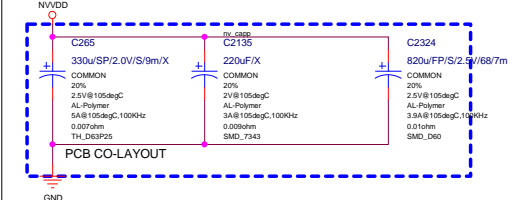


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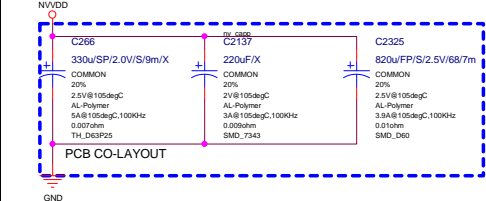
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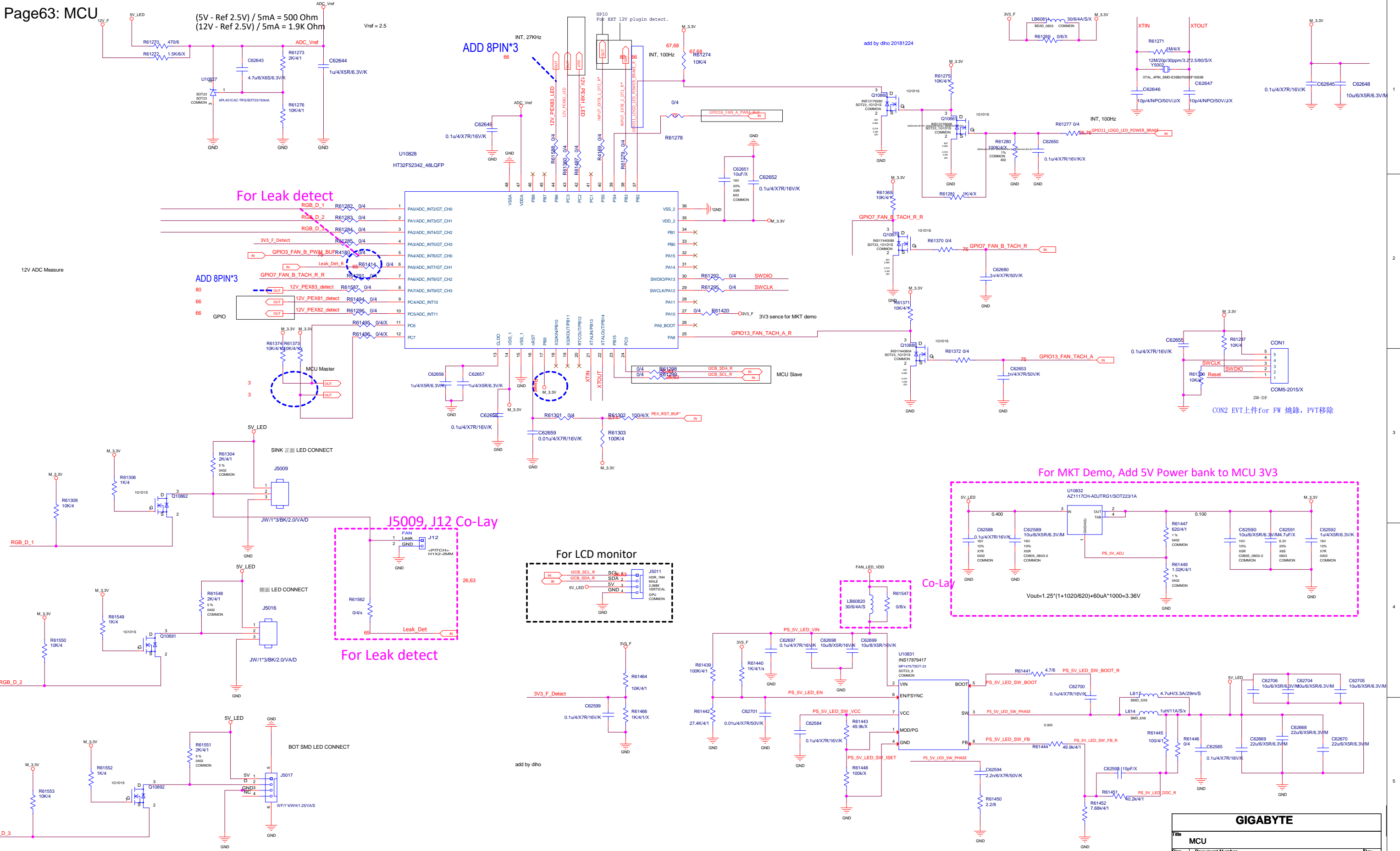
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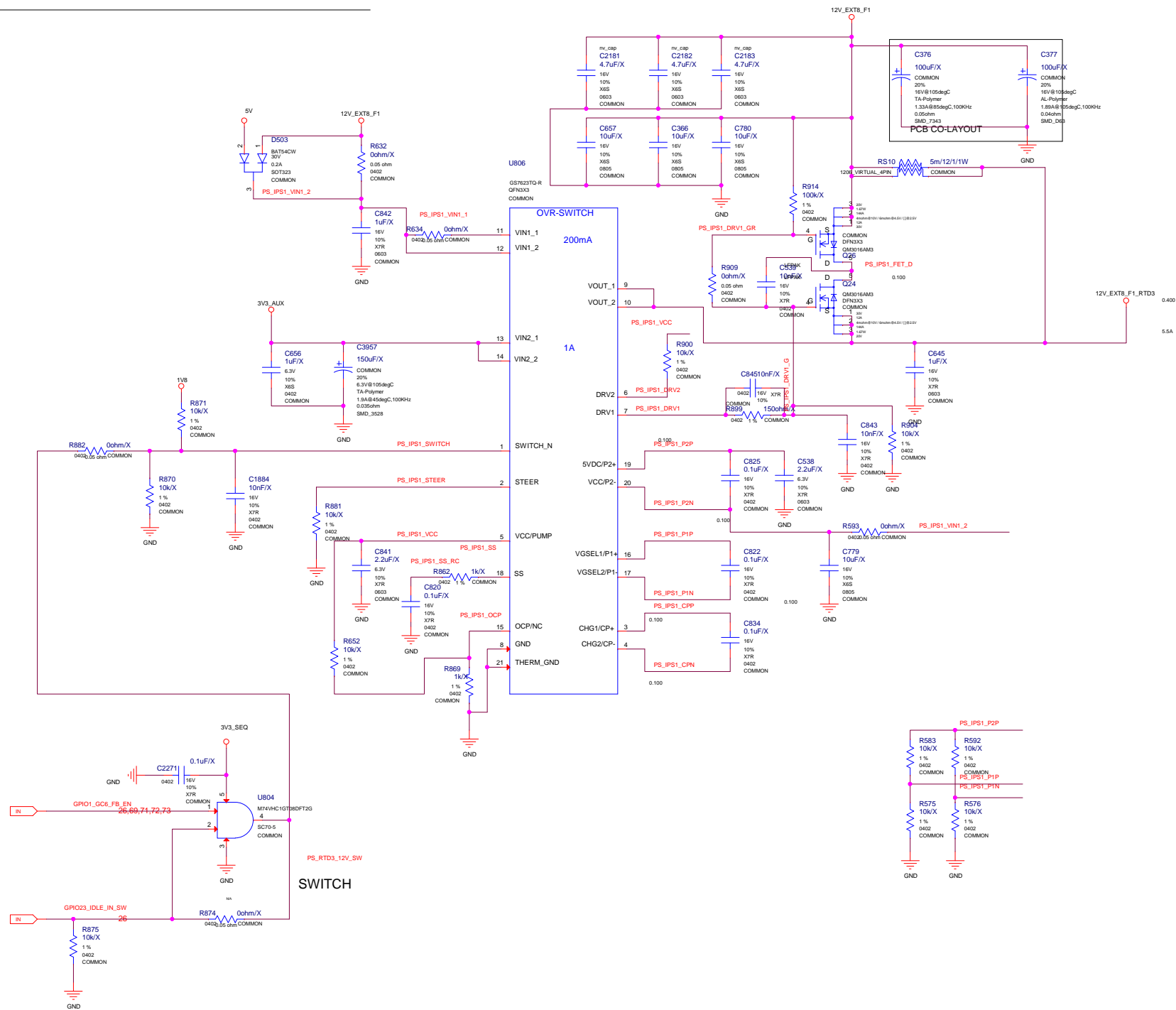
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Size	Document Number	Rev	
Custom	GV-N3080AORUS X-10GD	1.0	
Date:	Monday, September 28, 2020	Sheet	62 of 80



PS: INPUT SWITCH RTD3

AND GATE LOGIC FOR P-BOARD

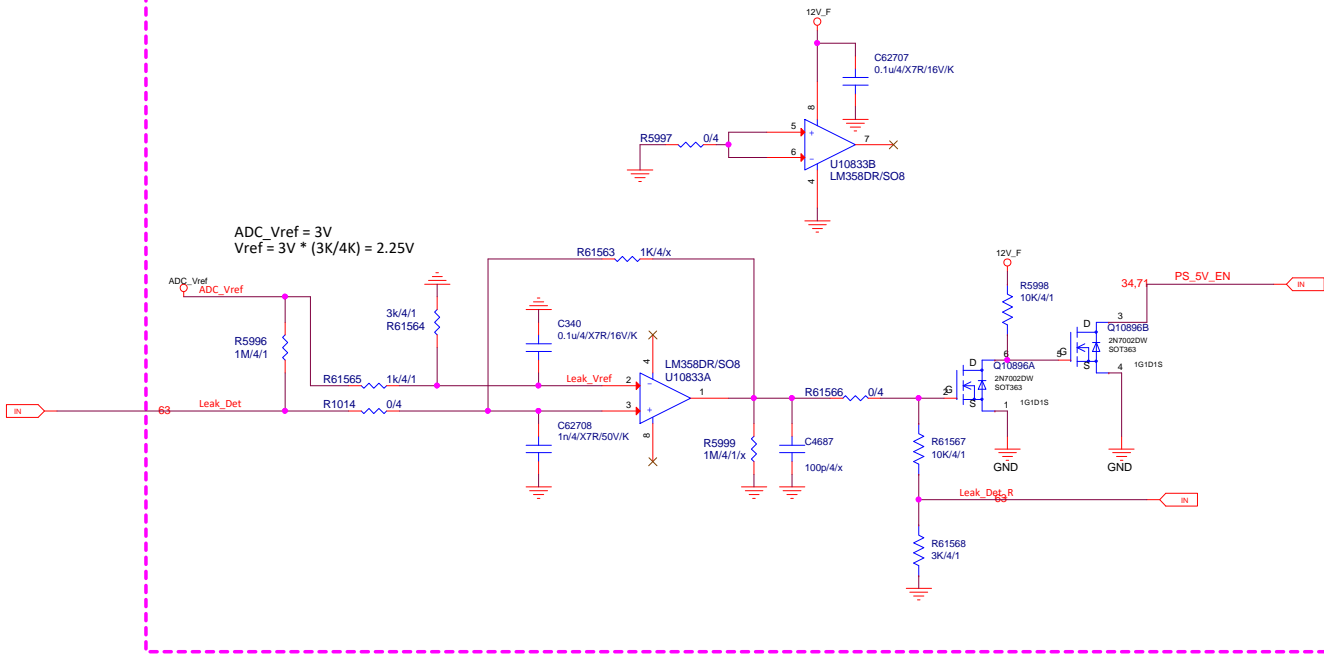
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0	1	0	12V_F
1	0	0	12V_F
1	1	1	3V3A



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PAGE DETAIL	PS: INPUT SWITCH RTD3

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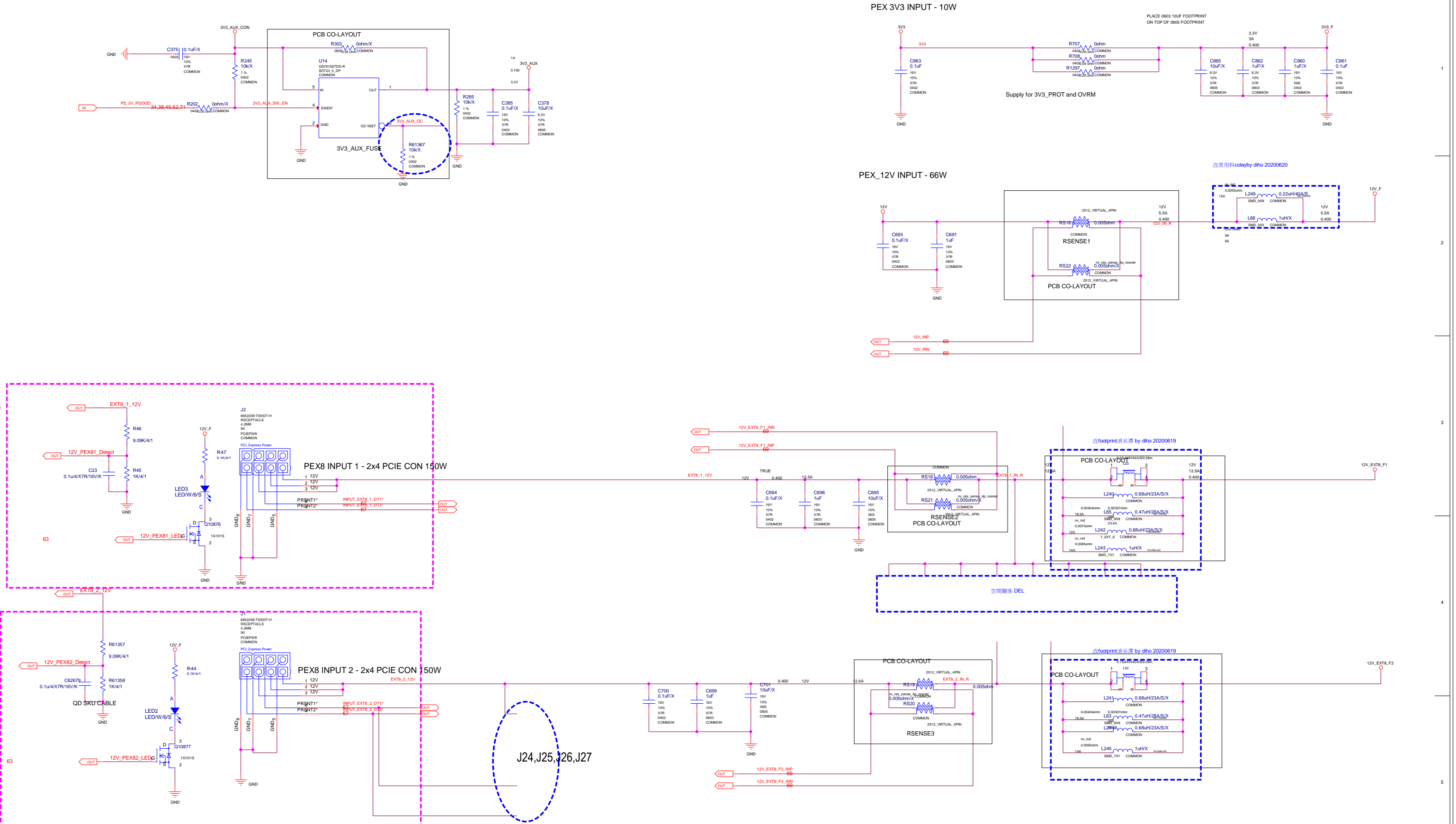


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Date: Monday, September 28, 2020		Sheet 65 of 80	

PS: Inputs, Filtering, and Monitoring

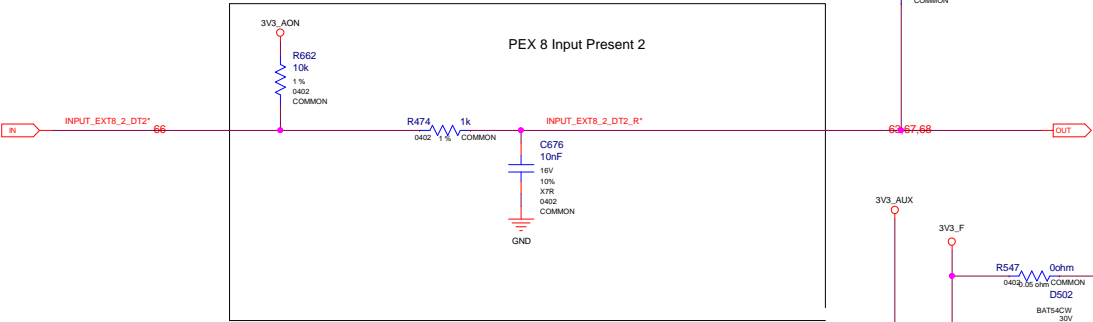
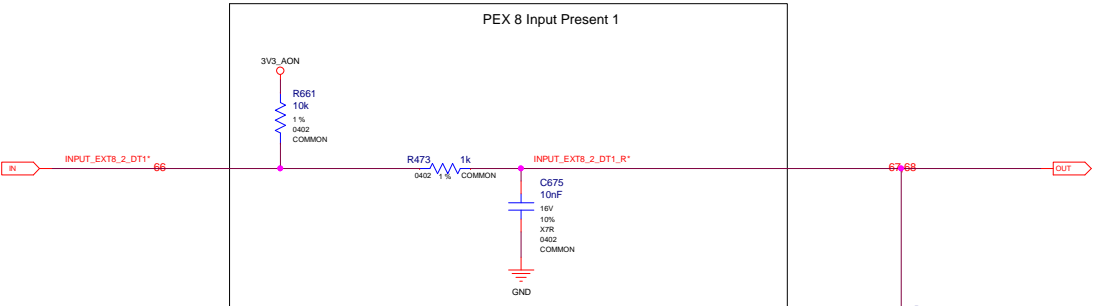
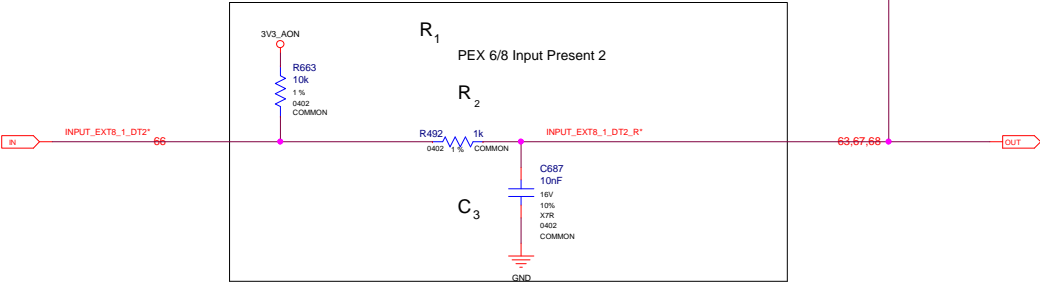
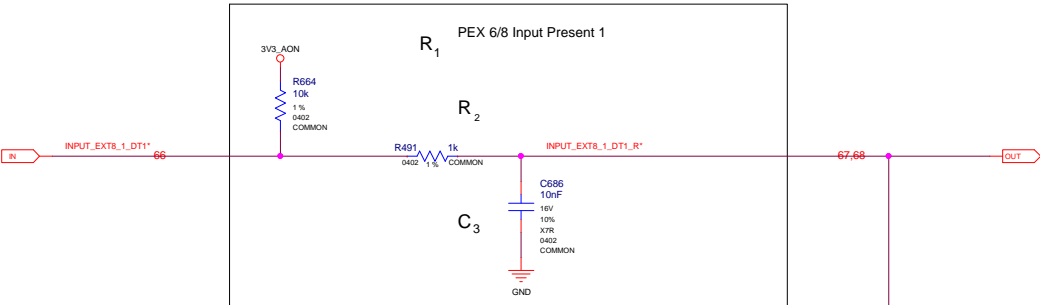


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Date: Monday, September 28, 2020	Sheet 66	of 80	

PS: 12V Current Steering & Hot Unplug Detect

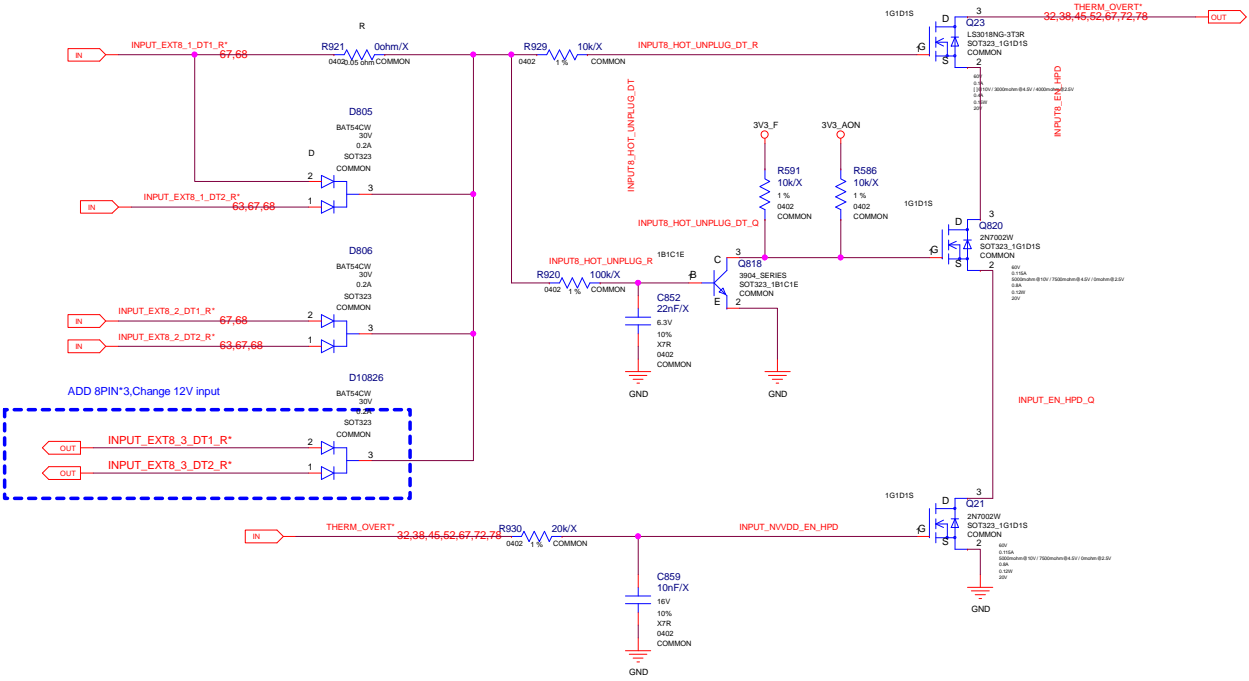


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INPUT_EXT8_2_DT1_R*	L	X	H	X	X
INPUT_EXT8_1_DT2_R*	L	X	X	H	X
INPUT_EXT8_2_DT2_R*	L	X	X	X	H

NORMAL BOOT

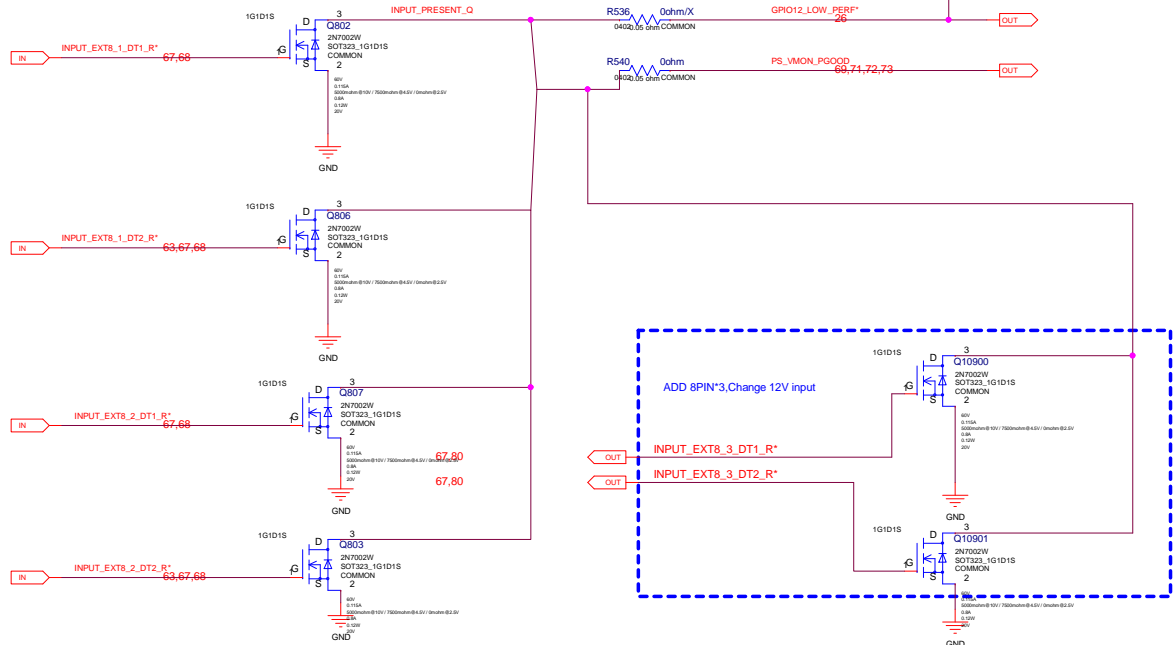
NO BOOT

POR TBD



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.

GPU12_LOW_PERF*	GPU SPEED
0	Slow
1	Normal



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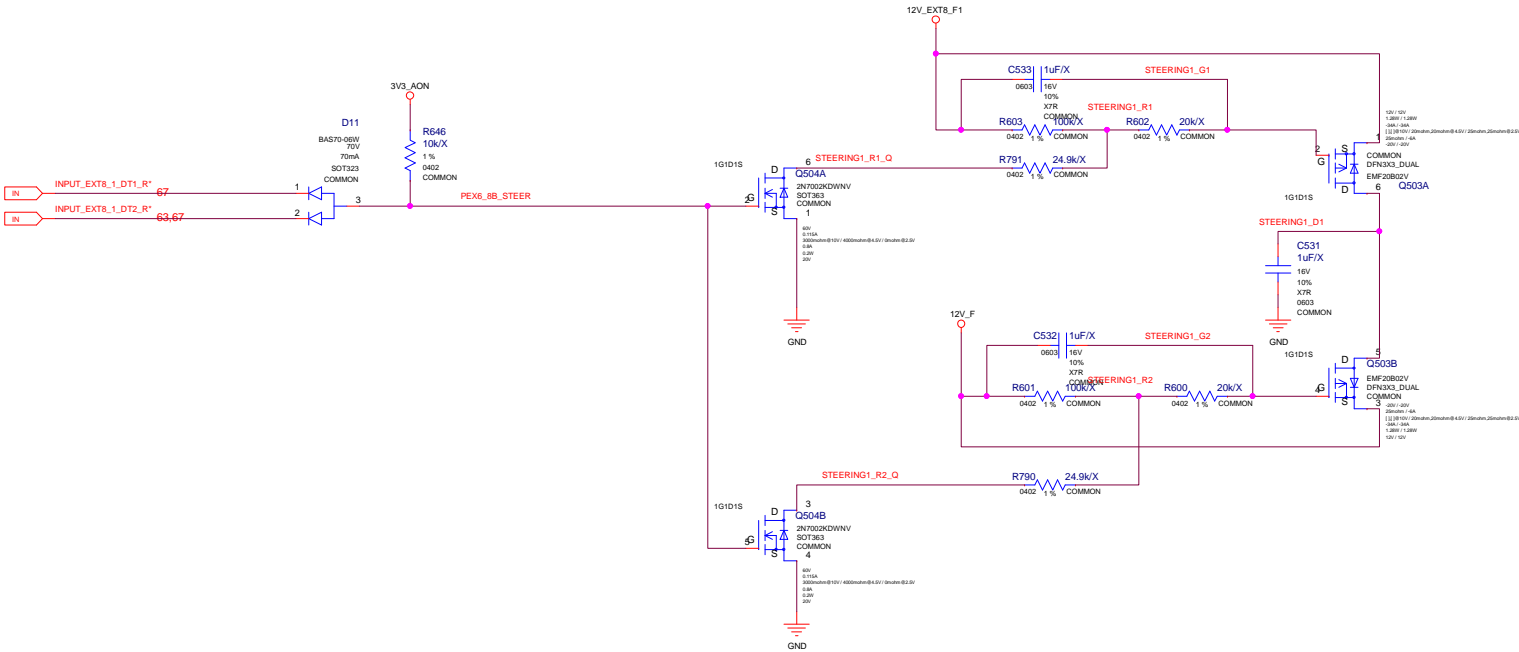
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PS: HOT UNPLUG

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Title PS: 12V Current Steering & Hot Unplug Detect			
Size Custom	Document Number GV-N3080AORUS X-10GD	Rev 1.0	
Date: Monday, September 28, 2020	Sheet 67	of 80	

PS: Discrete Steering

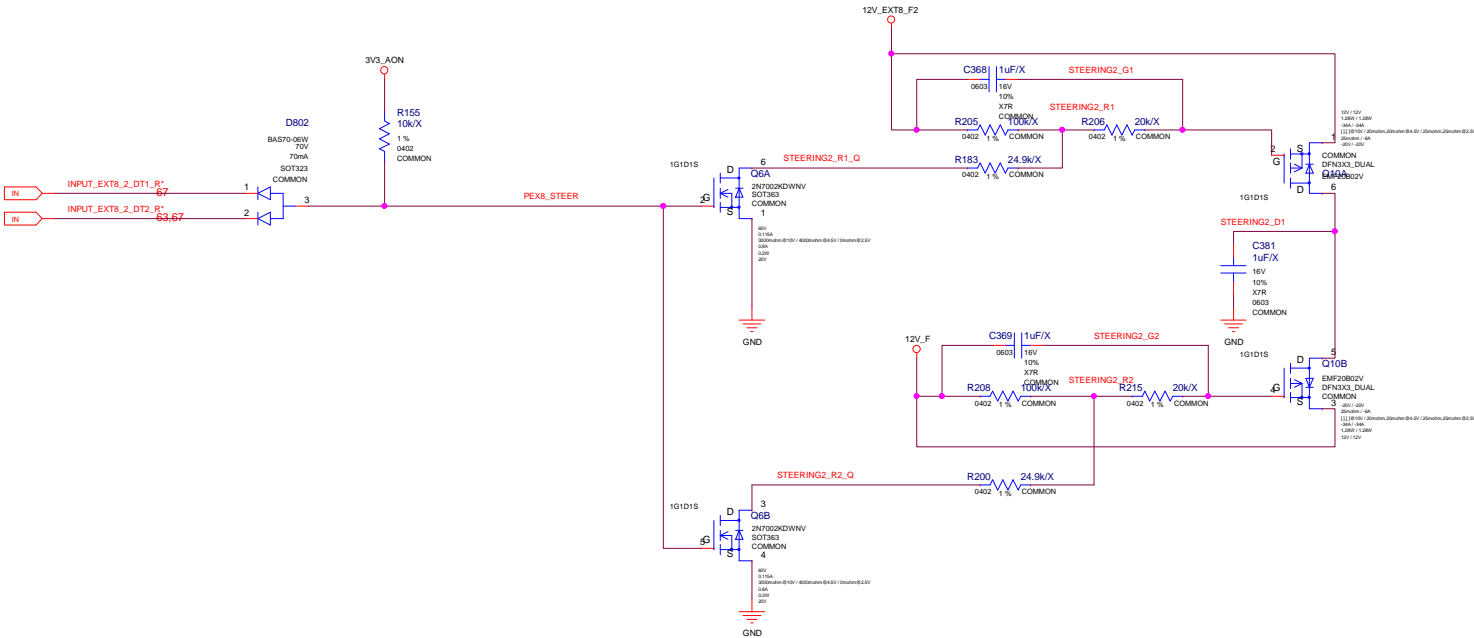
12V CURRENT STEERING (UNDER POWER BOOT):

PEX12V AND 12V_EXT8_F1



NO STUFF BY DEFAULT REF ONLY

PEX12V AND 12V_EXT8_F2



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ASSEMBLY
PAGE DETAIL
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PS: Discrete Power Steering

GIGABYTE			
Title			
PS: Discrete Steering			
Size	Document Number		Rev
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PS: Pre-Filter

Route the trace to PEX Golden Finger

STUFF IF USING 2XMUX

2.7V, 5.5V
0mV, 26V
0.5mA
U50
NCP45491MMNTVG
GPN32
COMMON

PLACE CLOSE TO PIN33
VS1
SHUNT
VIRTUAL SHORT

ASSEMBLY
PAGE DETAIL

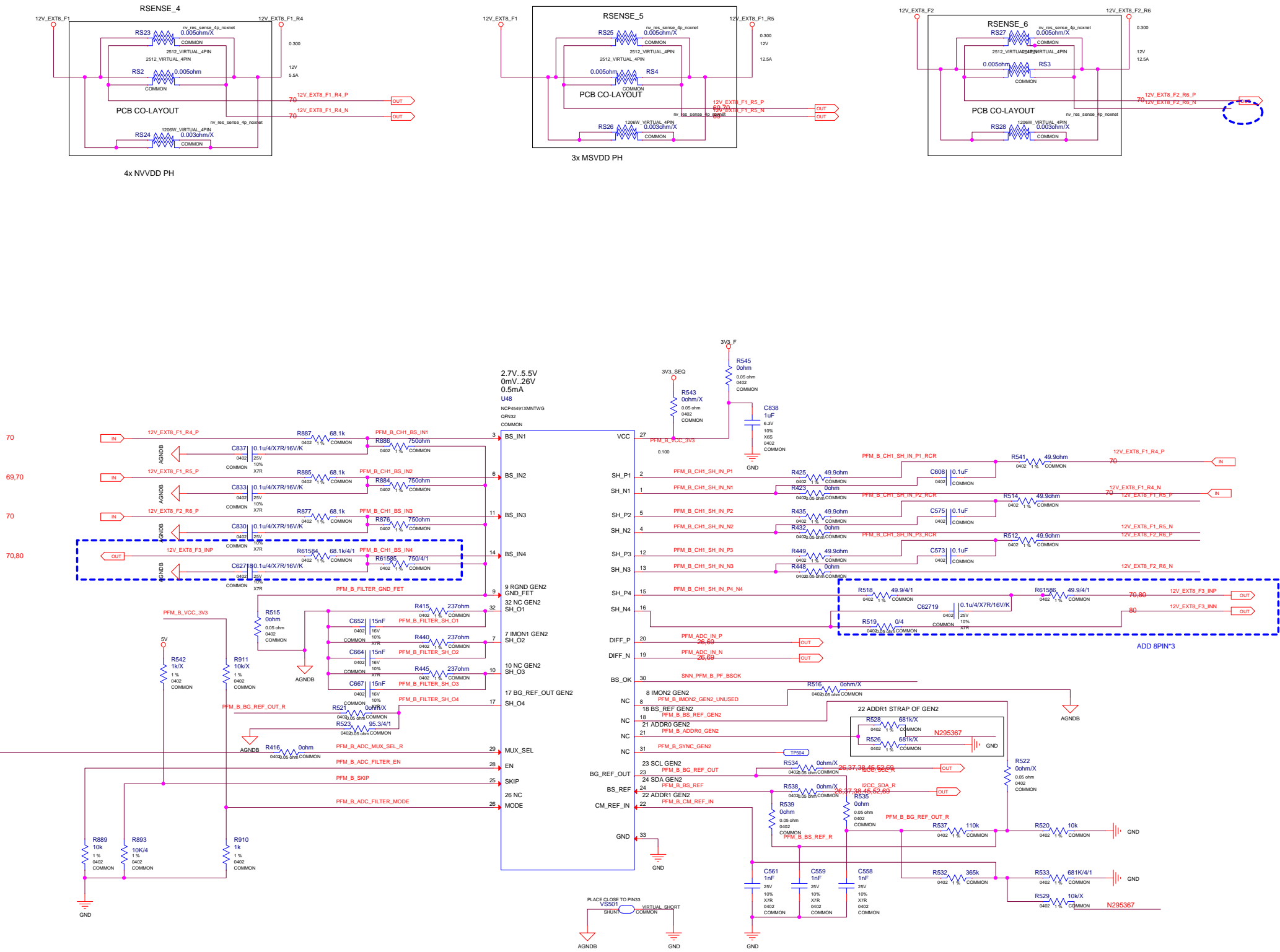
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PS: PREFILTER

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Title PS: Pre-Filter		
Size Custom	Document Number GV-N3080AORUS X-10GD	Rev 1.0
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PS: Pre-Filter B



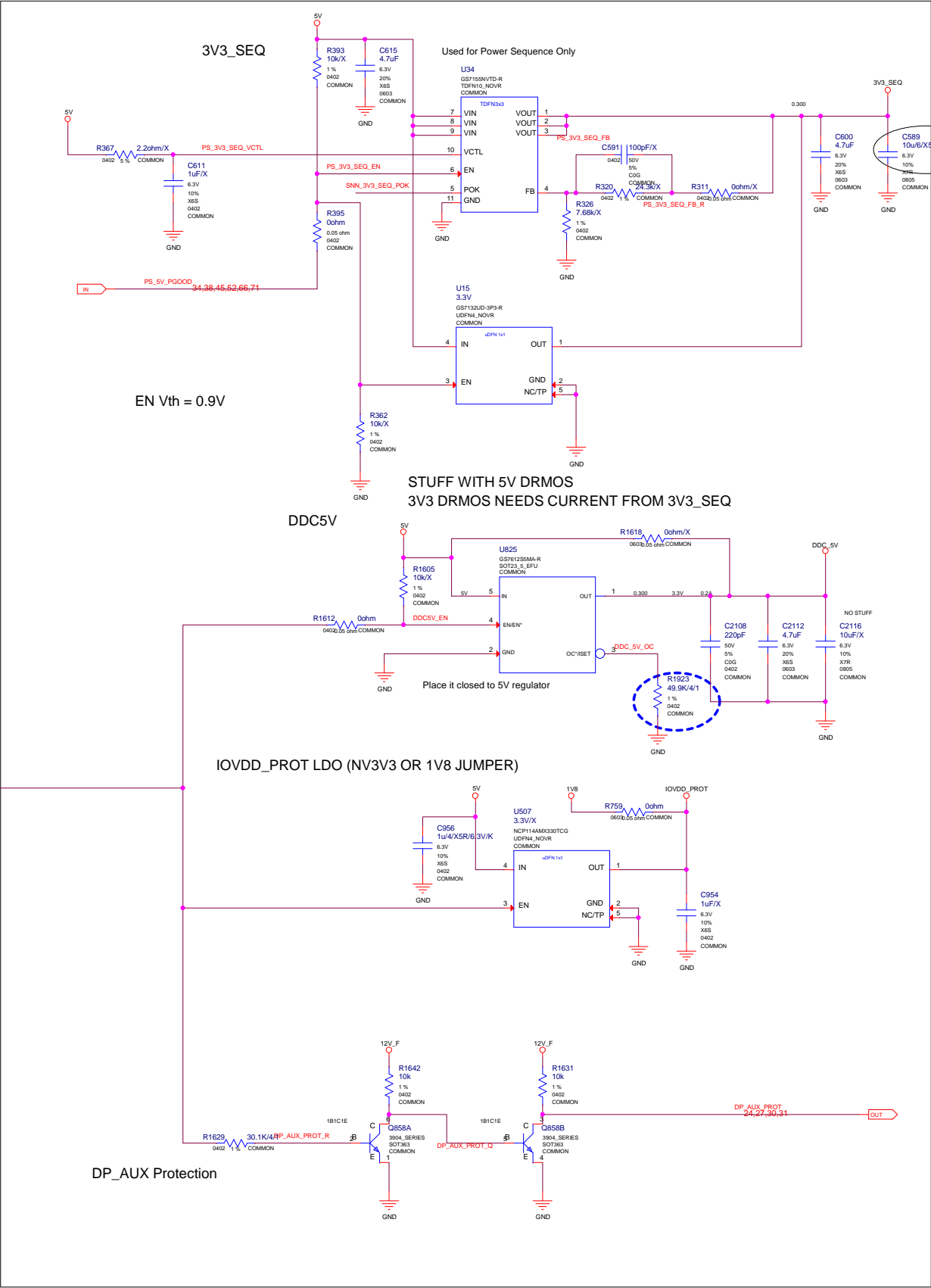
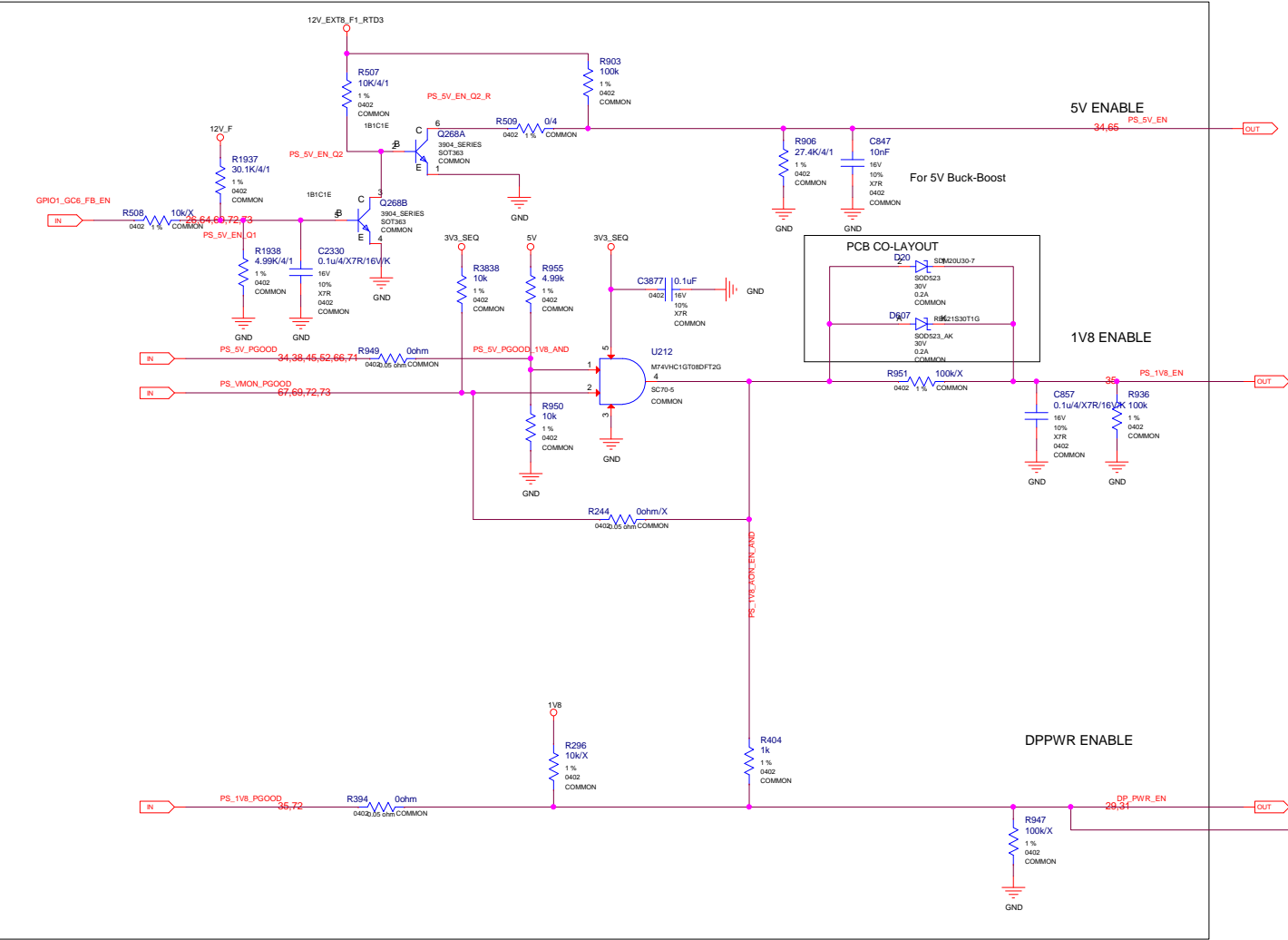
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PS: PRE-FILTER B

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Title PS: Pre-Filter B			
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Date: Monday, September 28, 2020	Sheet 70	of 80	

SEQUENCE:5V,1V8,3V3_SEQ ENABLE

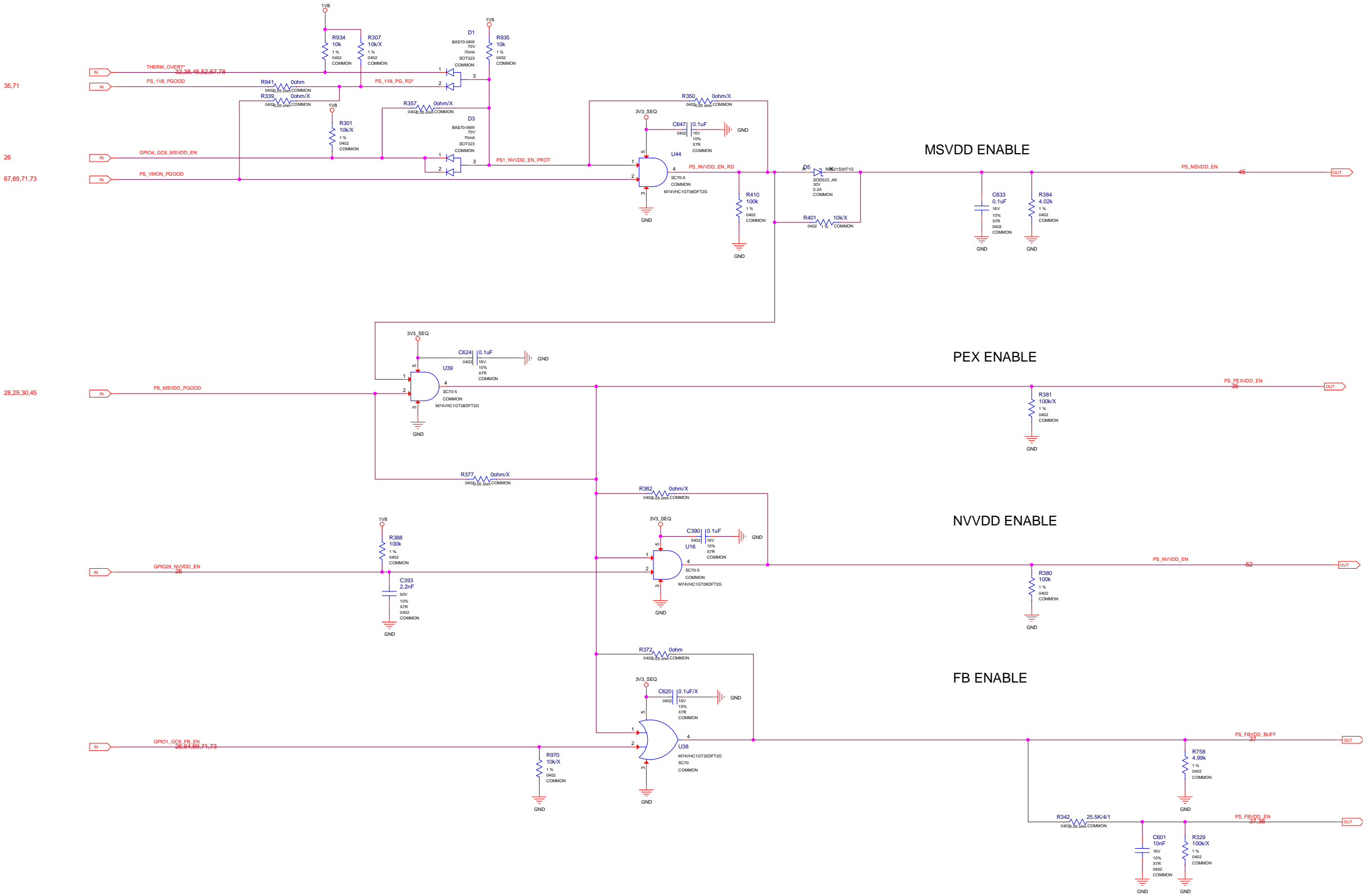


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Size	Document Number	Rev	
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SEQUENCE:NV,PEX,FB ENABLE



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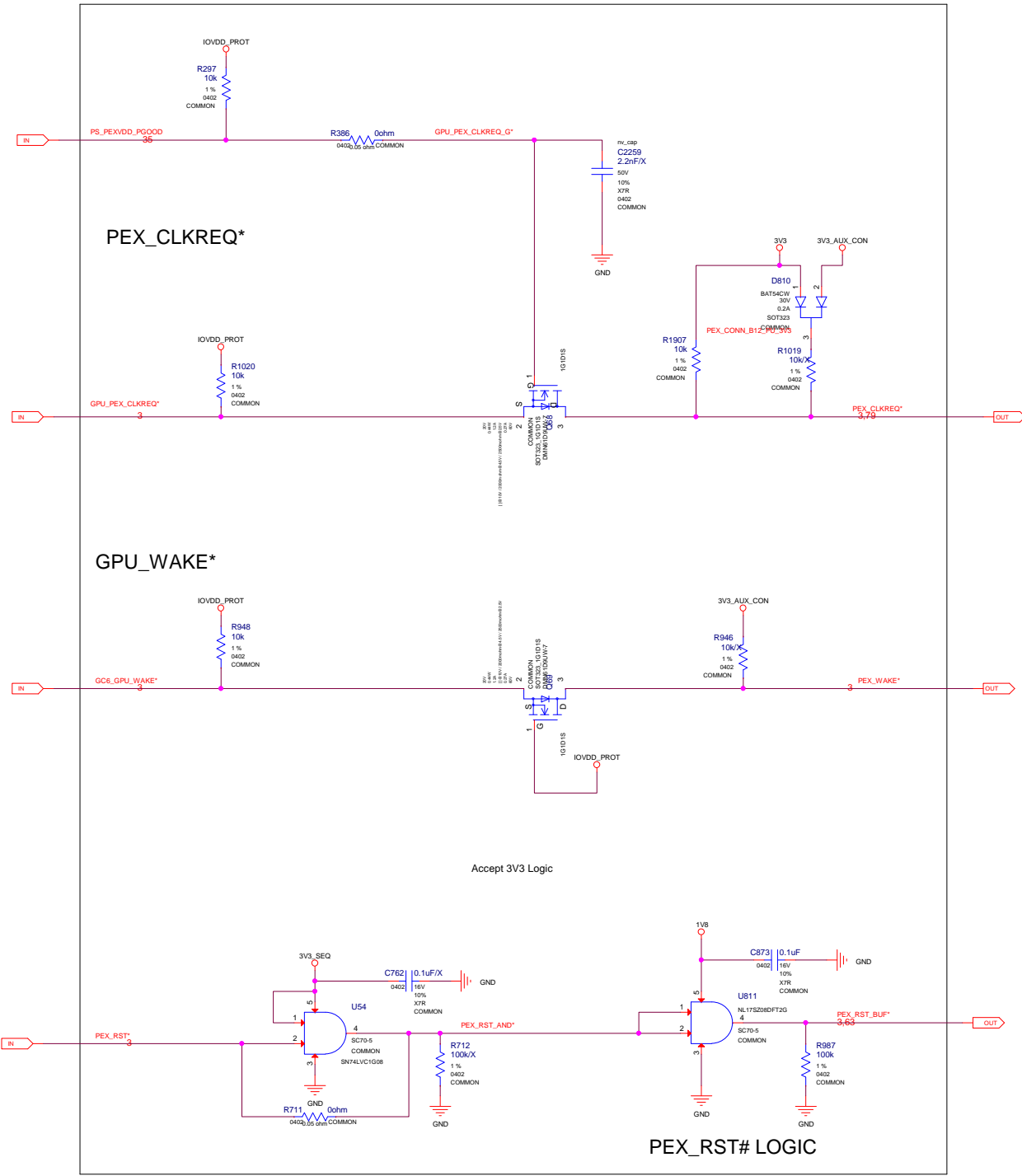
Title			SEQUENCE:NV,PEX,FB ENABLE
Size	Custom	Document Number	GV-N3080AORUS X-10GD
Date	Monday, September 28, 2020	Sheet	72 of 80
		Rev	1.0



Route the trace to PEX Golden Finger

3V3 can be monitored by OVR-M with un-used Channel

SEQUENCE:MISC

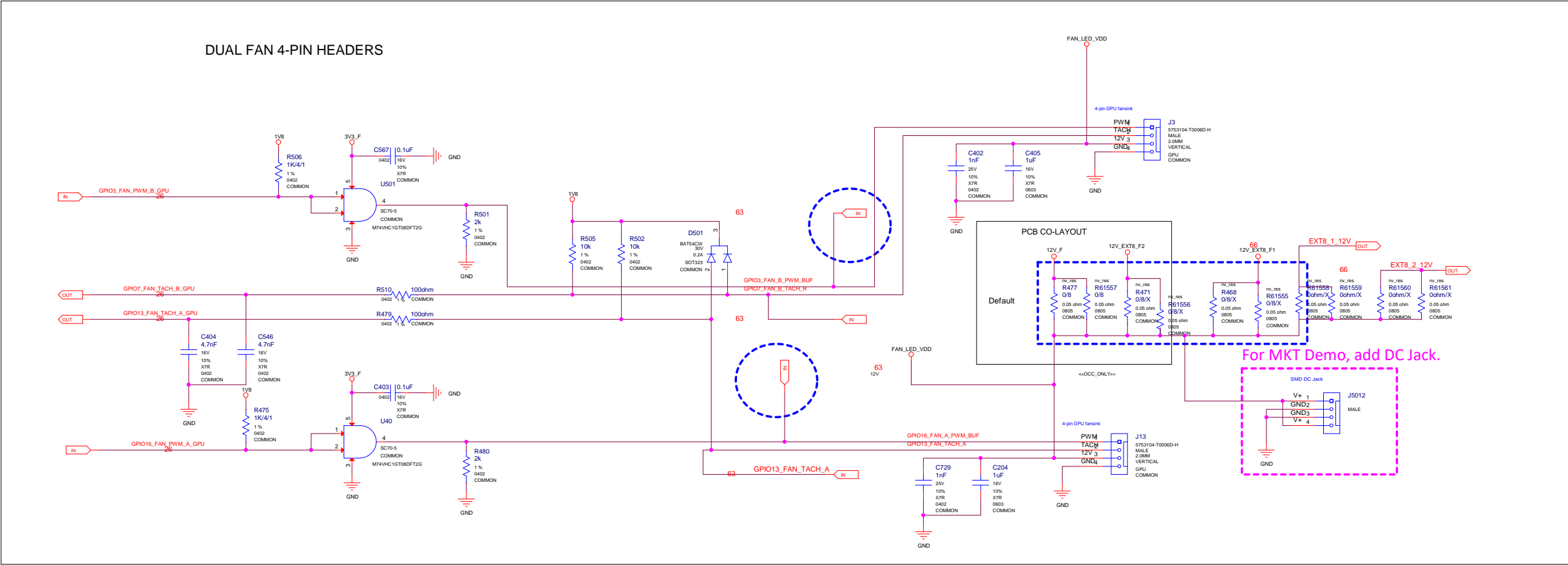
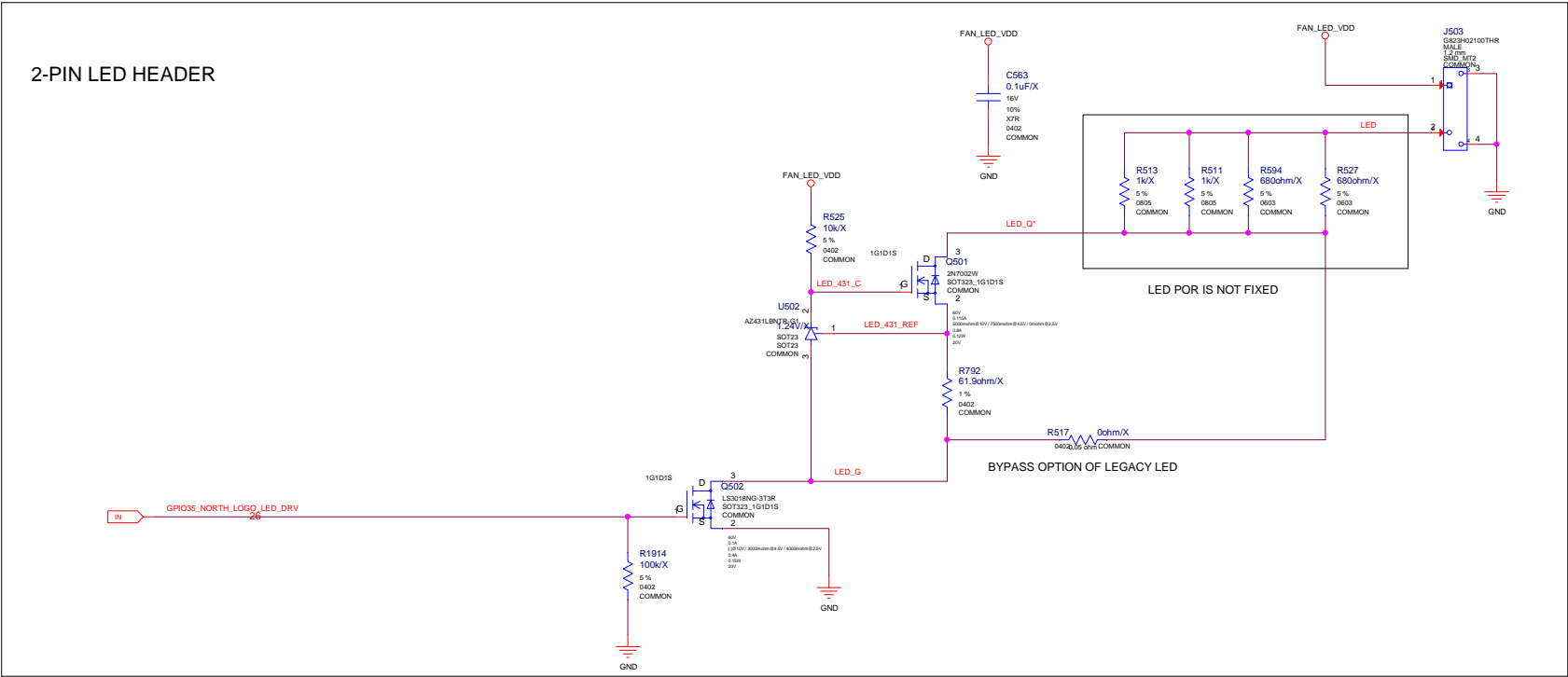


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Size	Document Number		Rev
Custom	GV-N3080AORUS X-10GD		1.0
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MISC: LED & FAN

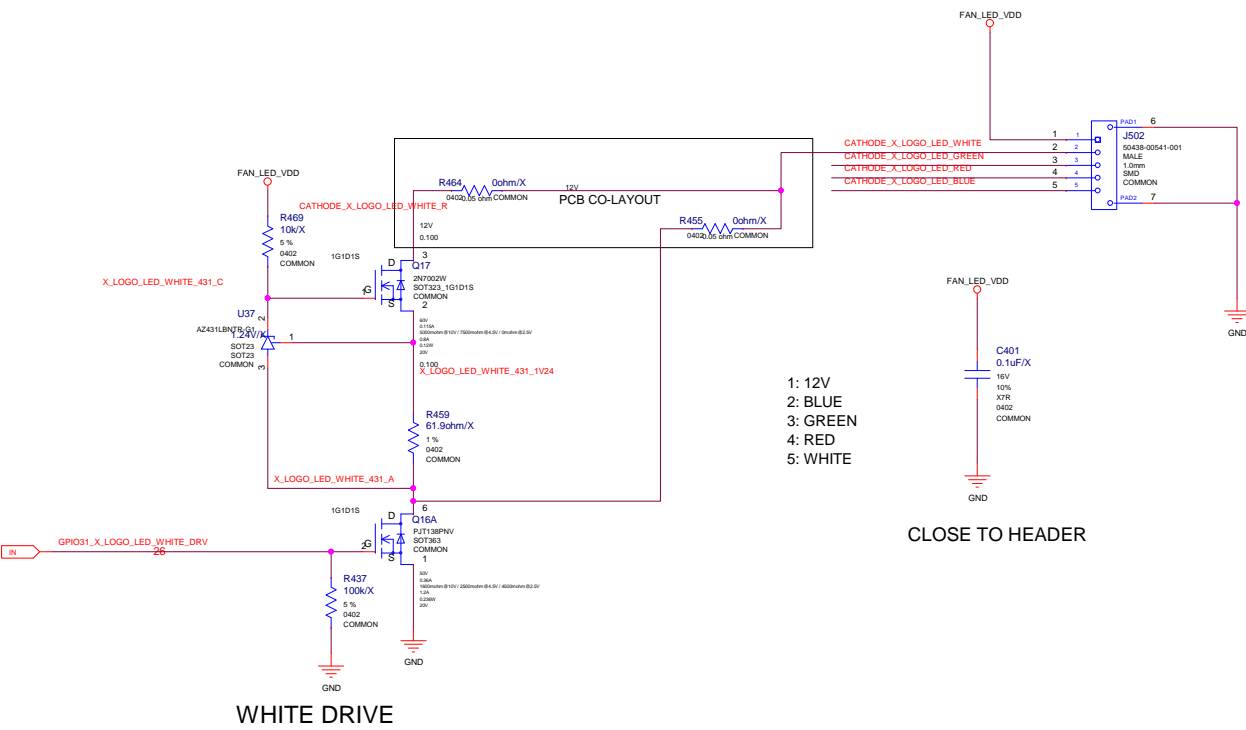


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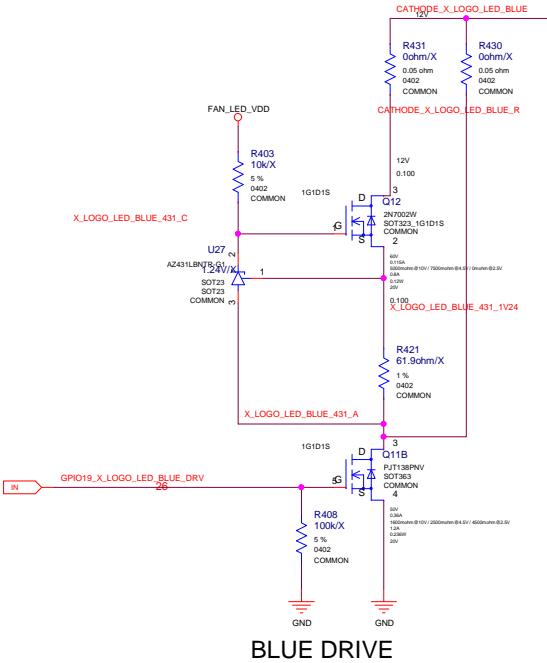
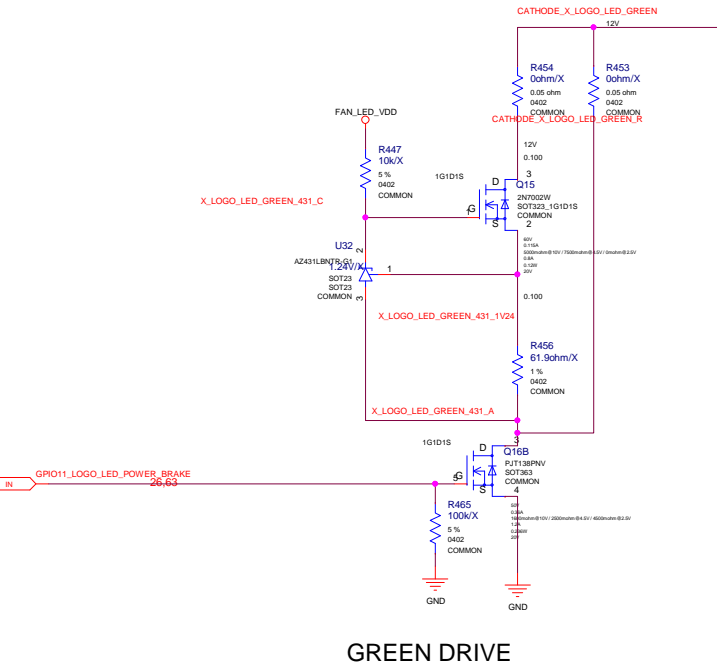
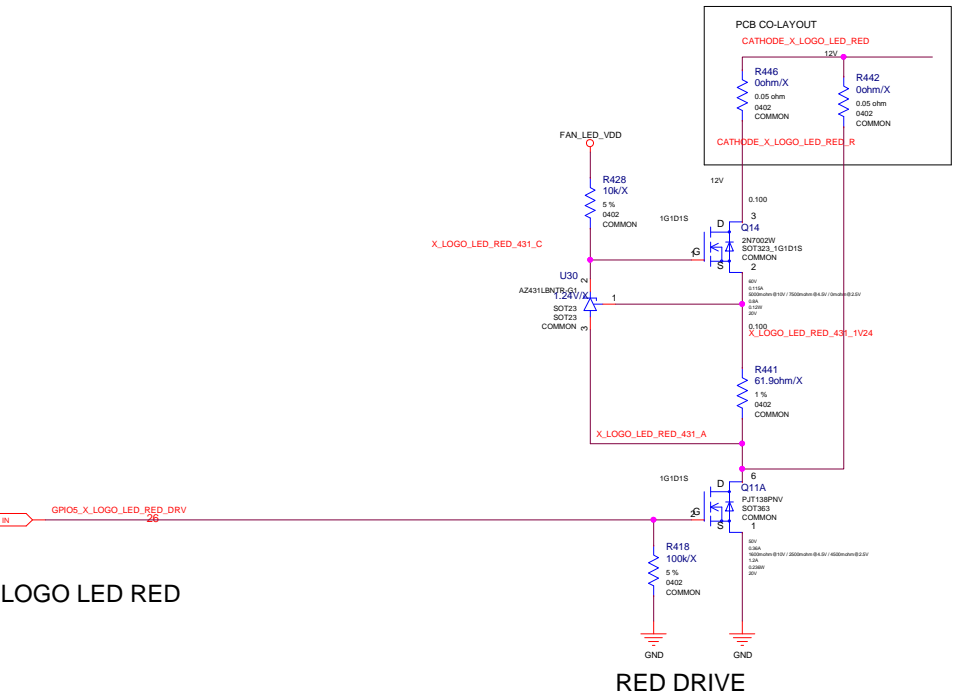
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MISC: LED & FAN

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Title			
MISC: LED & FAN			
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MISC: RGBW LED REF



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



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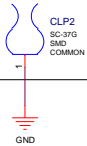
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Title MISC: RGBW LED REF			
Size Custom	Document Number GV-N3080AORUS X-10GD		Rev 1.0
Date: Monday, September 28, 2020		Sheet 76 of 80	

Mechanical: Mounting holes

BKT SINK

改常用螺絲孔 by dho 20190619

GPU SINK

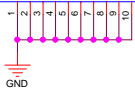


MOS 螺絲孔

BOARD STIFFENER

MEC33

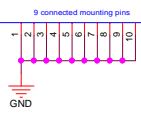
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COMMON



BOARD STIFFENER

MEC21

MH-C236D118-10
COMMON



BOARD STIFFENER

MEC27

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COMMON



BOARD STIFFENER

MEC24

MH-C236D125-10
COMMON



BOARD STIFFENER

MEC28

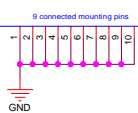
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BOARD STIFFENER

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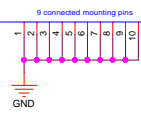
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BOARD STIFFENER

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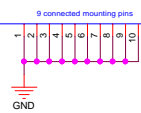
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BOARD STIFFENER

MEC34

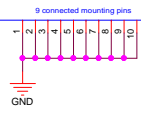
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BOARD STIFFENER

MEC39

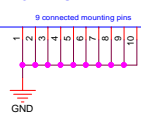
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BOARD STIFFENER

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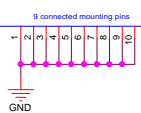
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BOARD STIFFENER

MEC35

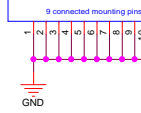
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BOARD STIFFENER

MEC36

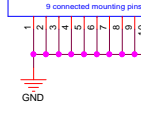
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COMMON



BOARD STIFFENER

MEC37

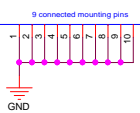
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BOARD STIFFENER

MEC41

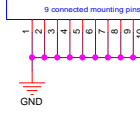
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BOARD STIFFENER

MEC42

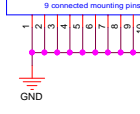
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COMMON



BOARD STIFFENER

MEC43

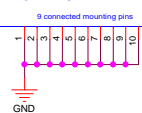
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BOARD STIFFENER

MEC38

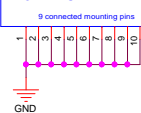
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BOARD STIFFENER

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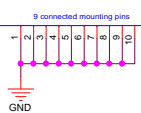
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BOARD STIFFENER

MEC45

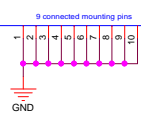
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BOARD STIFFENER

MEC46

MH-C236D118-10
COMMON

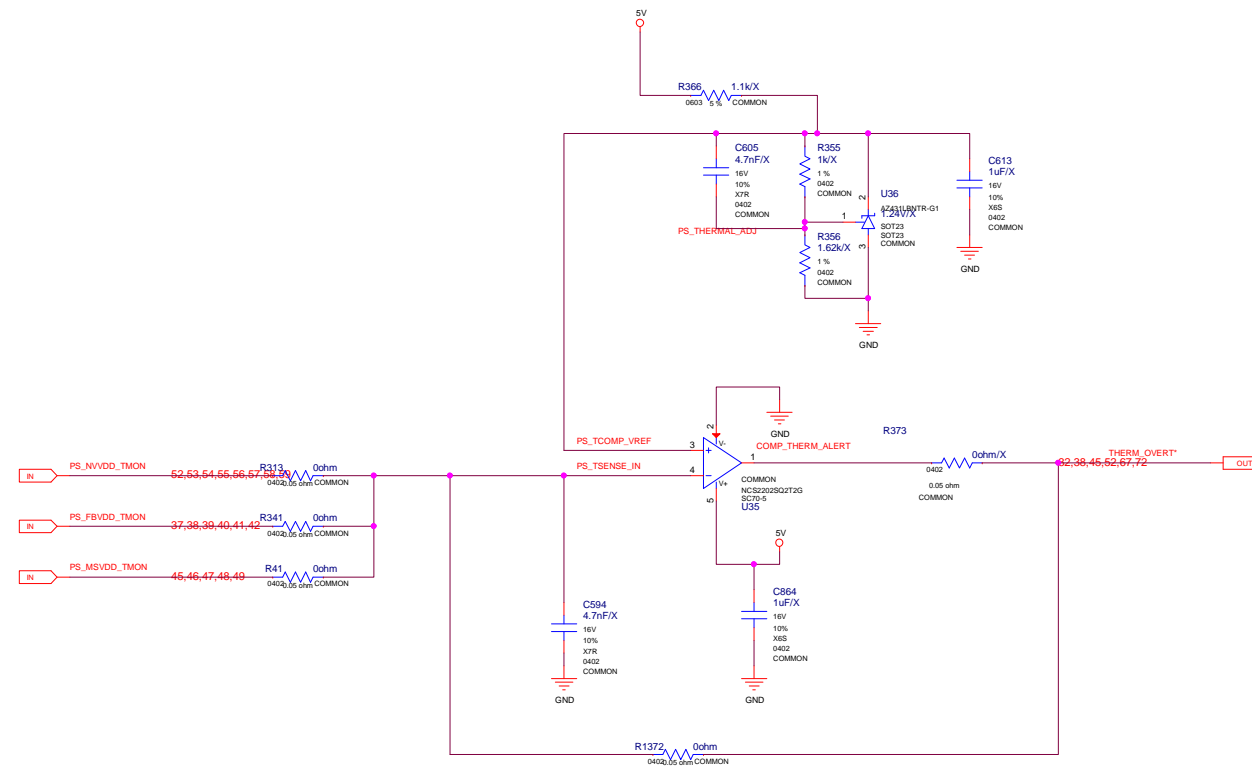


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GIGABYTE

Title			
Mechanical: Mounting holes			
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VR THERMAL PROTECTION



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VR Thermal
Protection

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PCI TERM

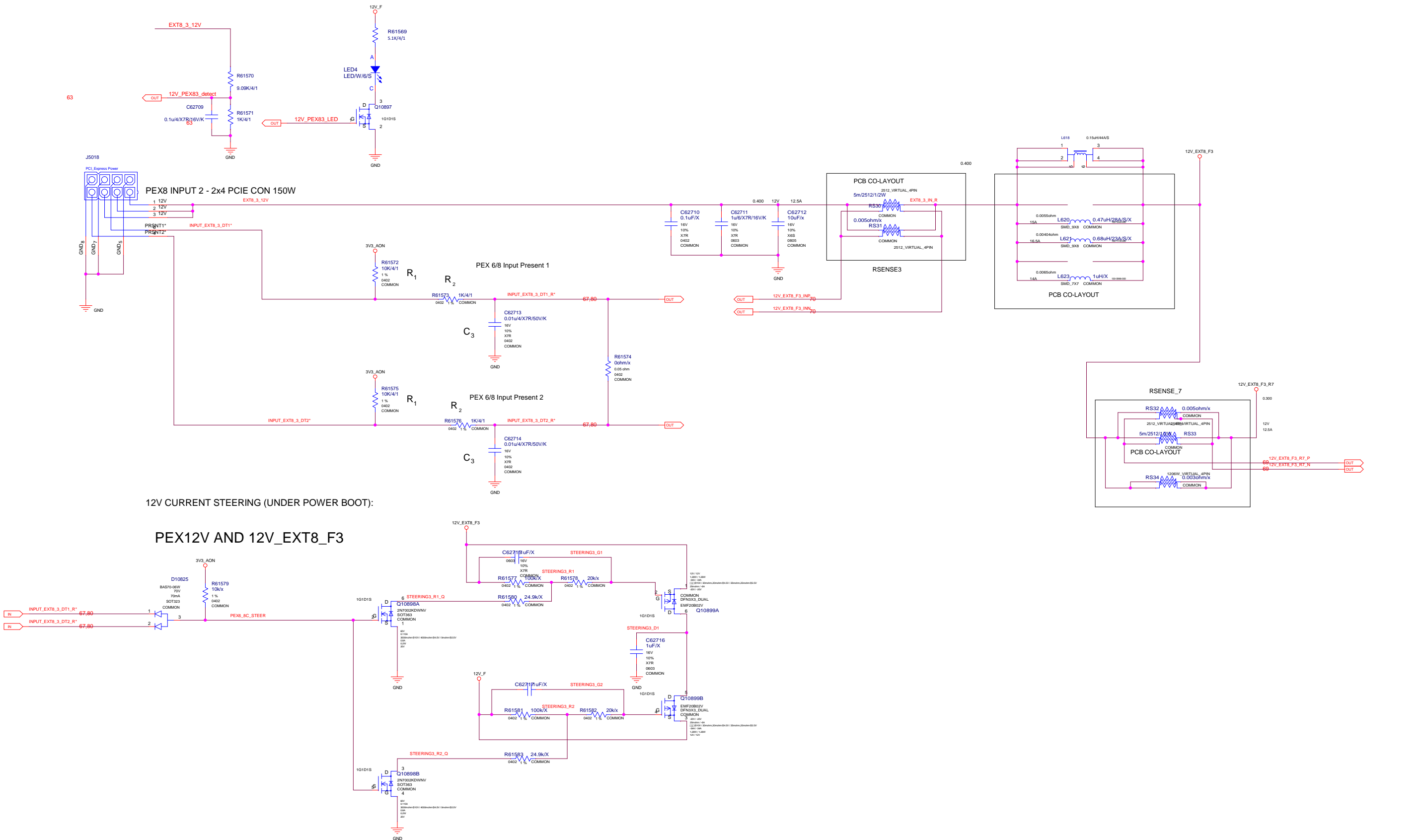


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