

PG301 A02

Comanche 192b GDDR5, <150W, 2-way SLI  
Tall DVI-I + DP + DP + DP/HDMI + DP

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V320-2.0 change item:

- Page15:DVI add esd
- Page18:remove DP colay
- Page20:HDMI add esd
- Page21:4pin housing colay 6pin housing
- Page25:NVVDD enable phase4
- Page27:Add phase4
- Page29:remove colay NVVDD power solution
- Page30: 12V input bead change to choke  
6pin power con colay 8pin con  
remove 0603 MLCC colay
- Page32:stuff logo LED

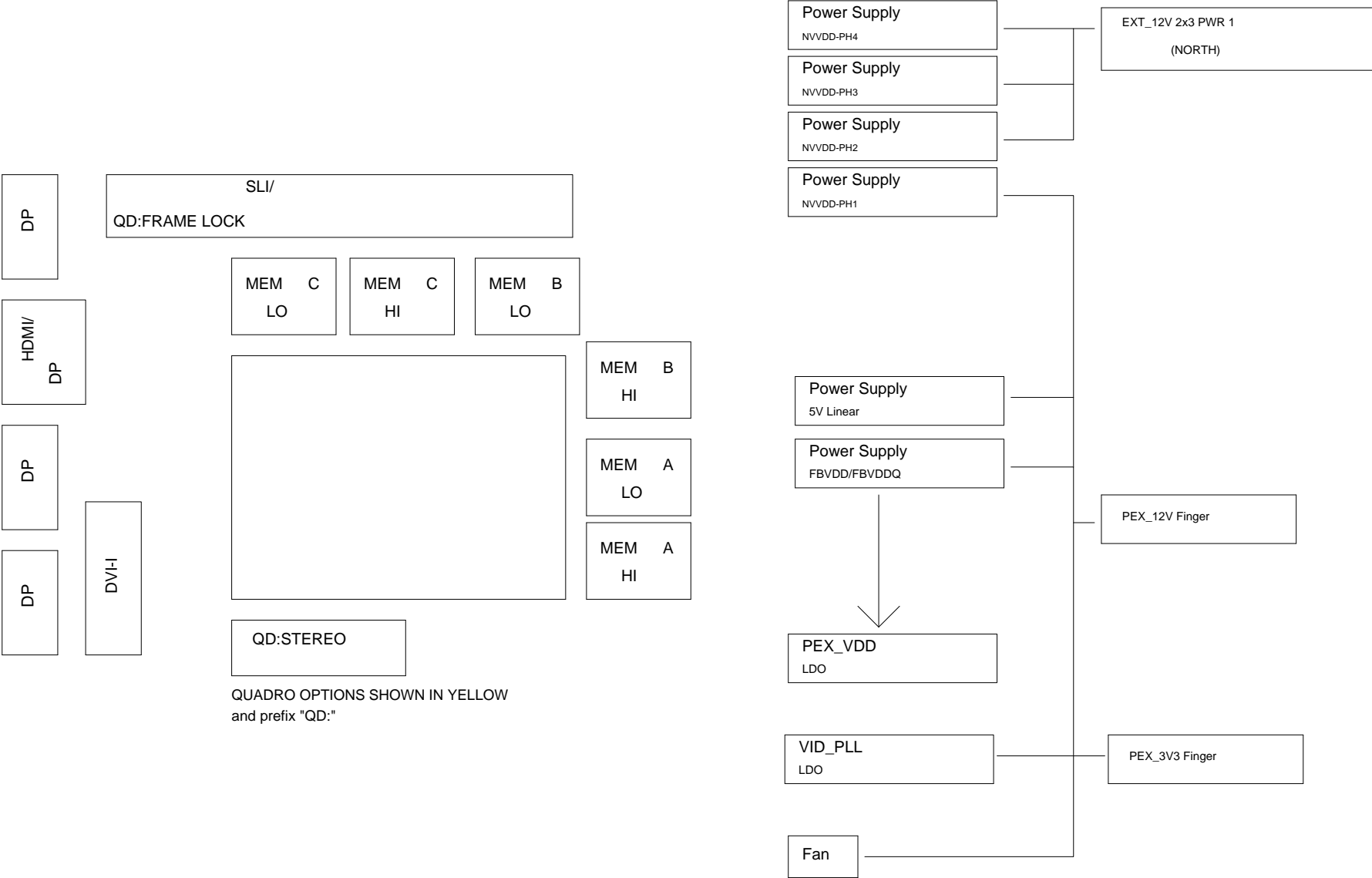
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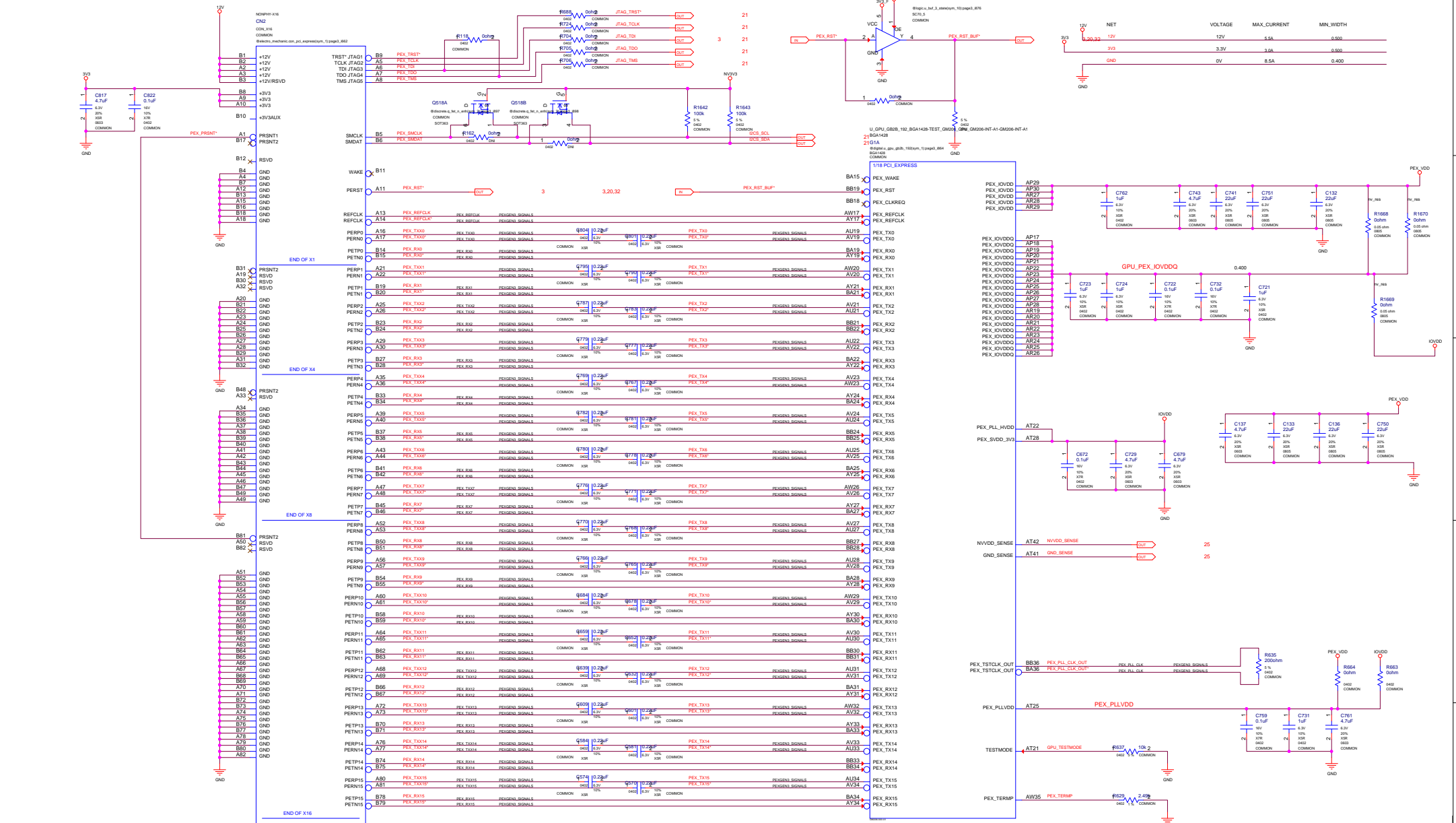
Block Diagram



QUADRO OPTIONS SHOWN IN YELLOW  
and prefix "QD:"

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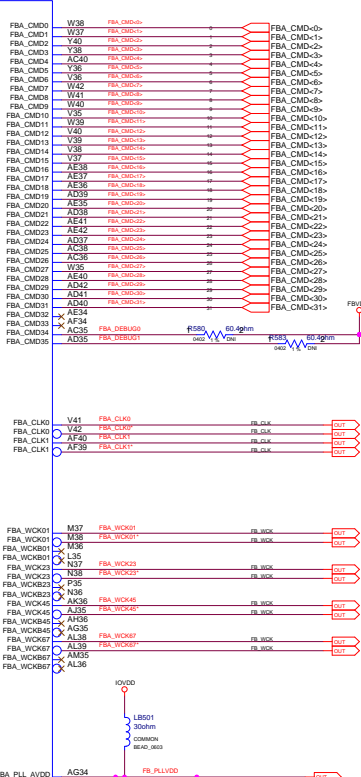
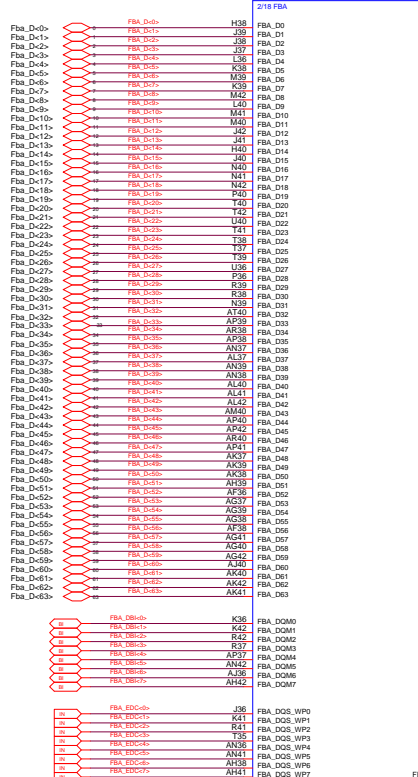
# PCI Express



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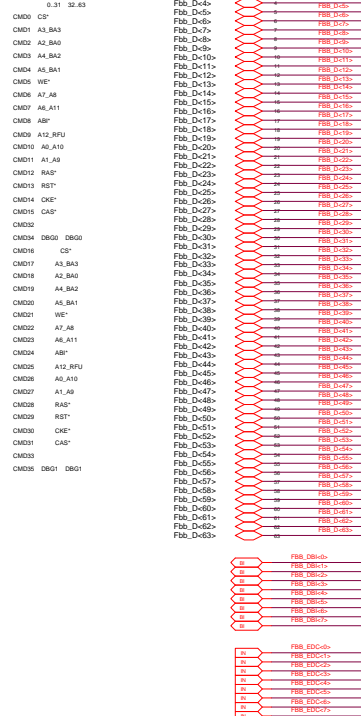
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 Q1C18  
 Bspaper: gsm\_pcb\_1802mm\_3page1\_17805  
 BGA1426

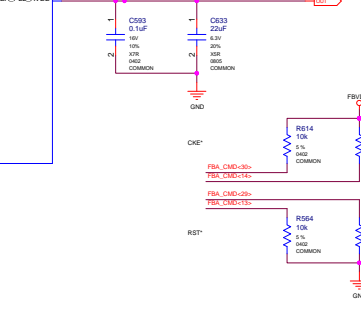
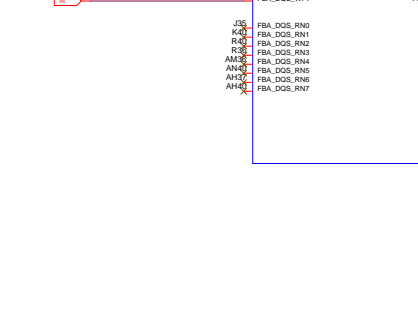
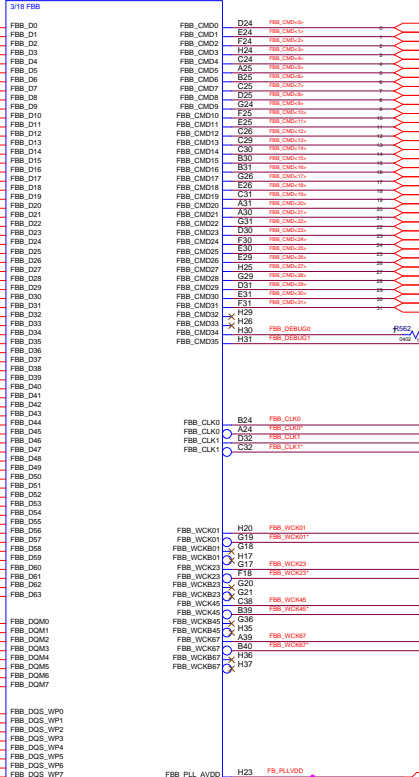


## GDDR5\_BGA170\_MIRROR

0.31 32.83

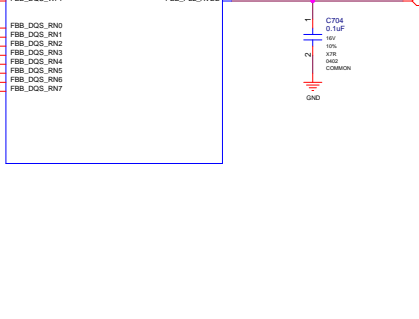
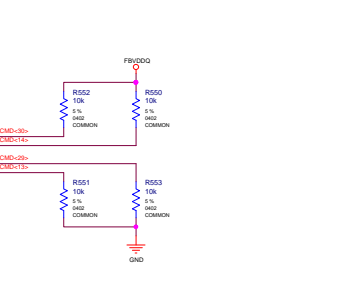


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## GDDR5\_BGA170\_MIRROR

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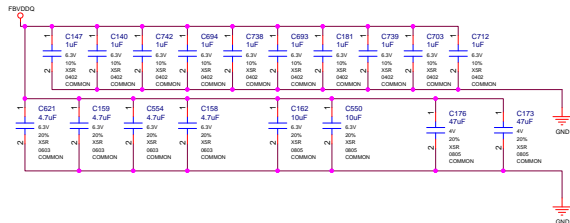
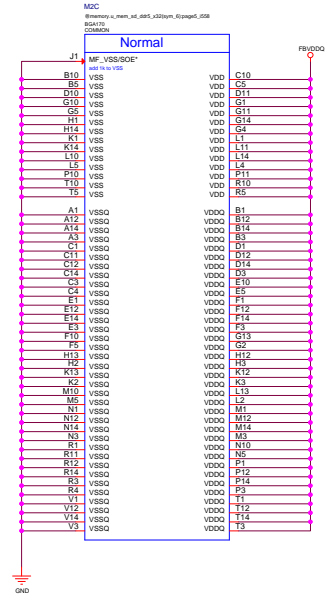
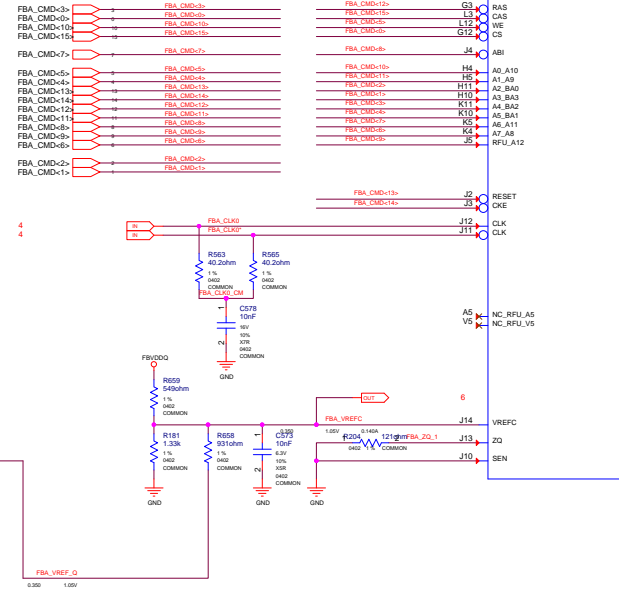
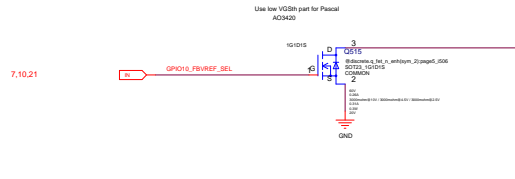
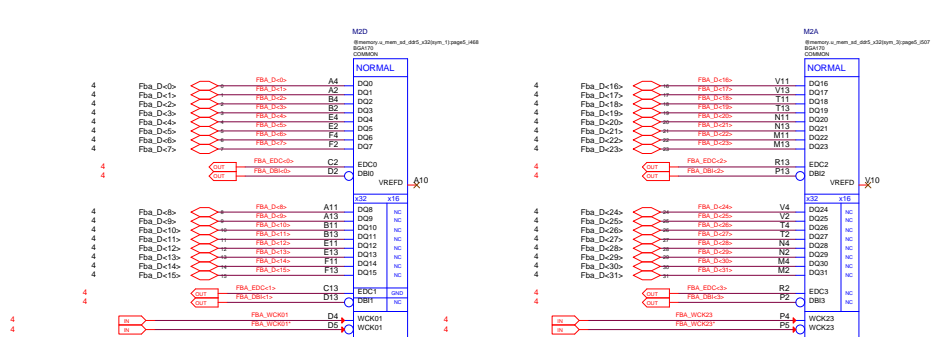


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# MEMORY: FBA Partition 31..0



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MEMORY: FBC Partition 31..0

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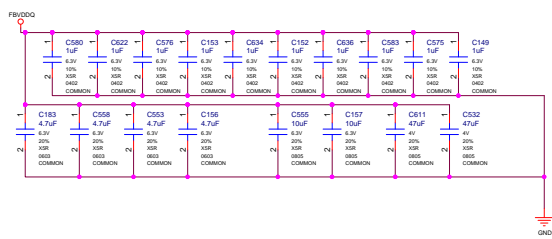
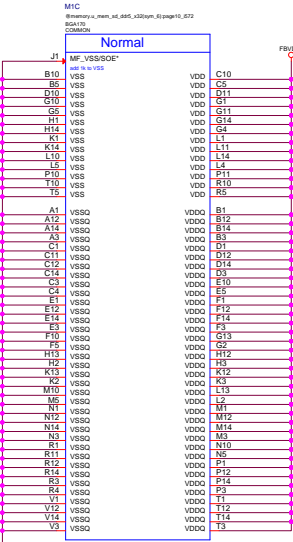
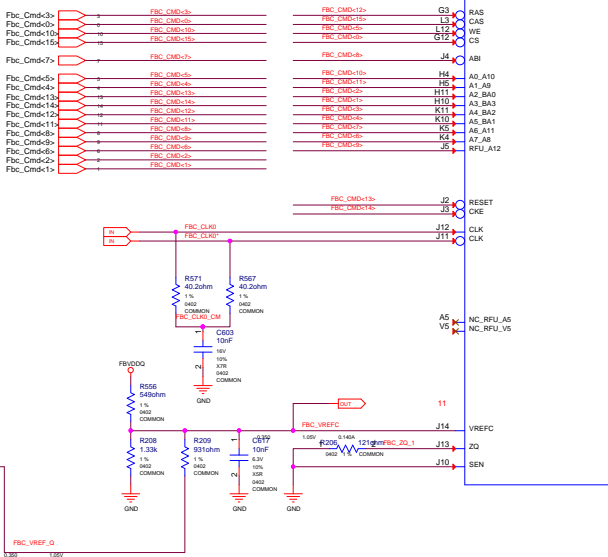
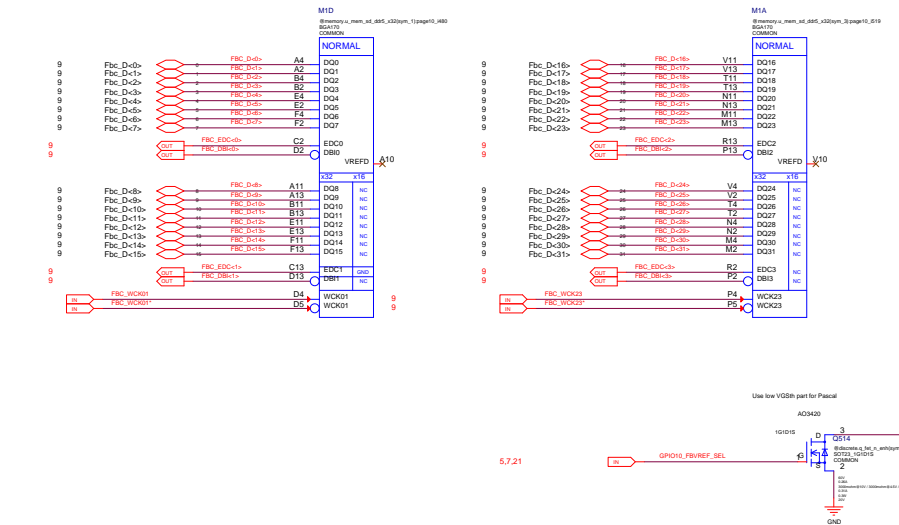
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3

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5

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## GPU PWR and GND

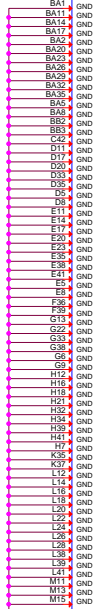
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G11

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BGA1428

COMMON



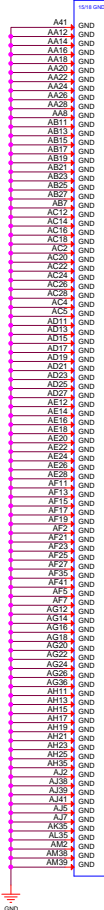
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COMMON



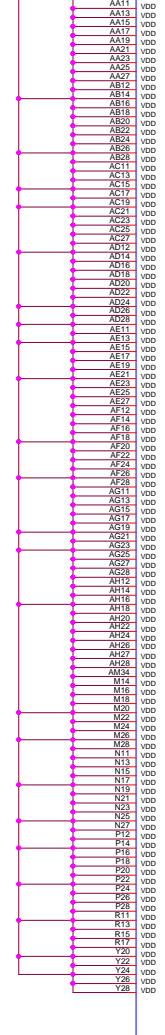
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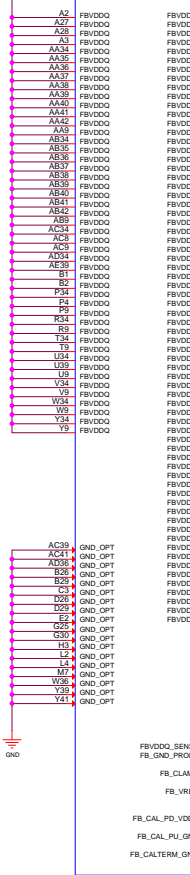
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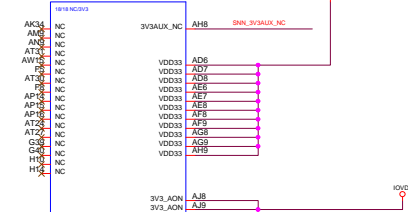
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BGA1428

COMMON



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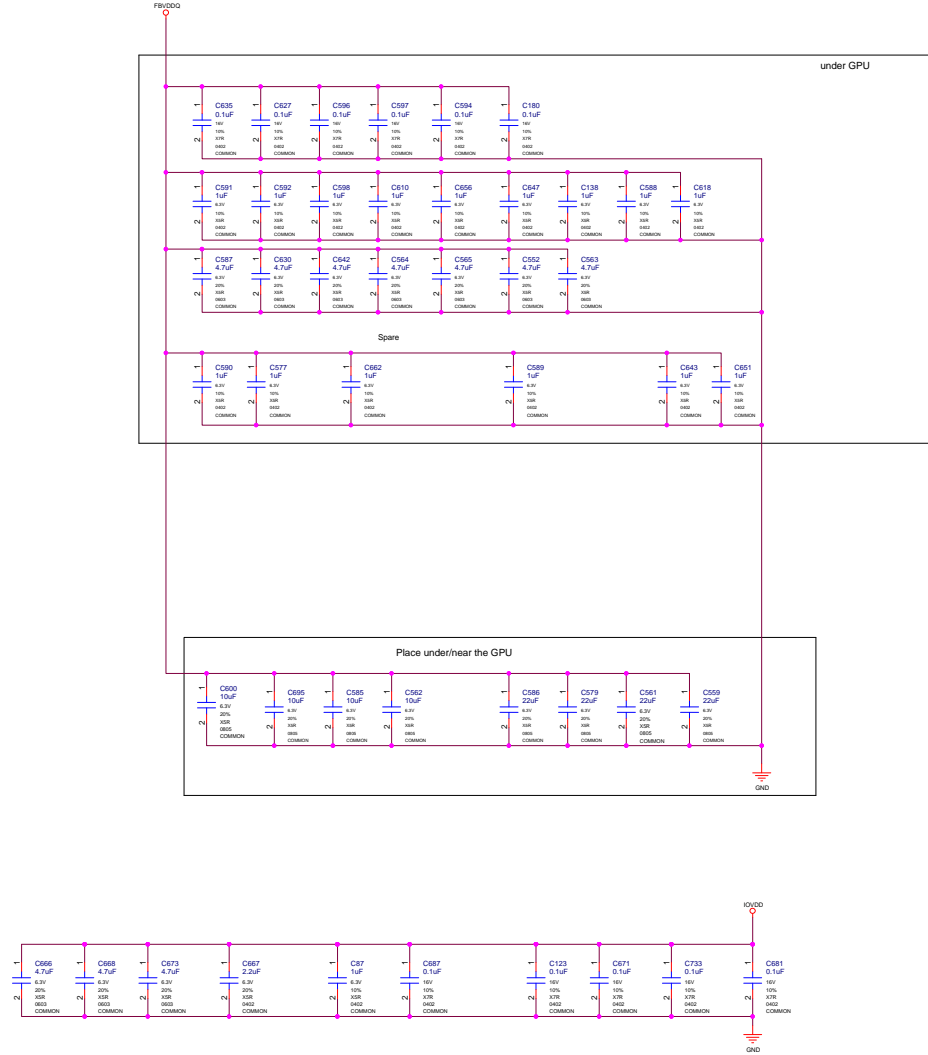
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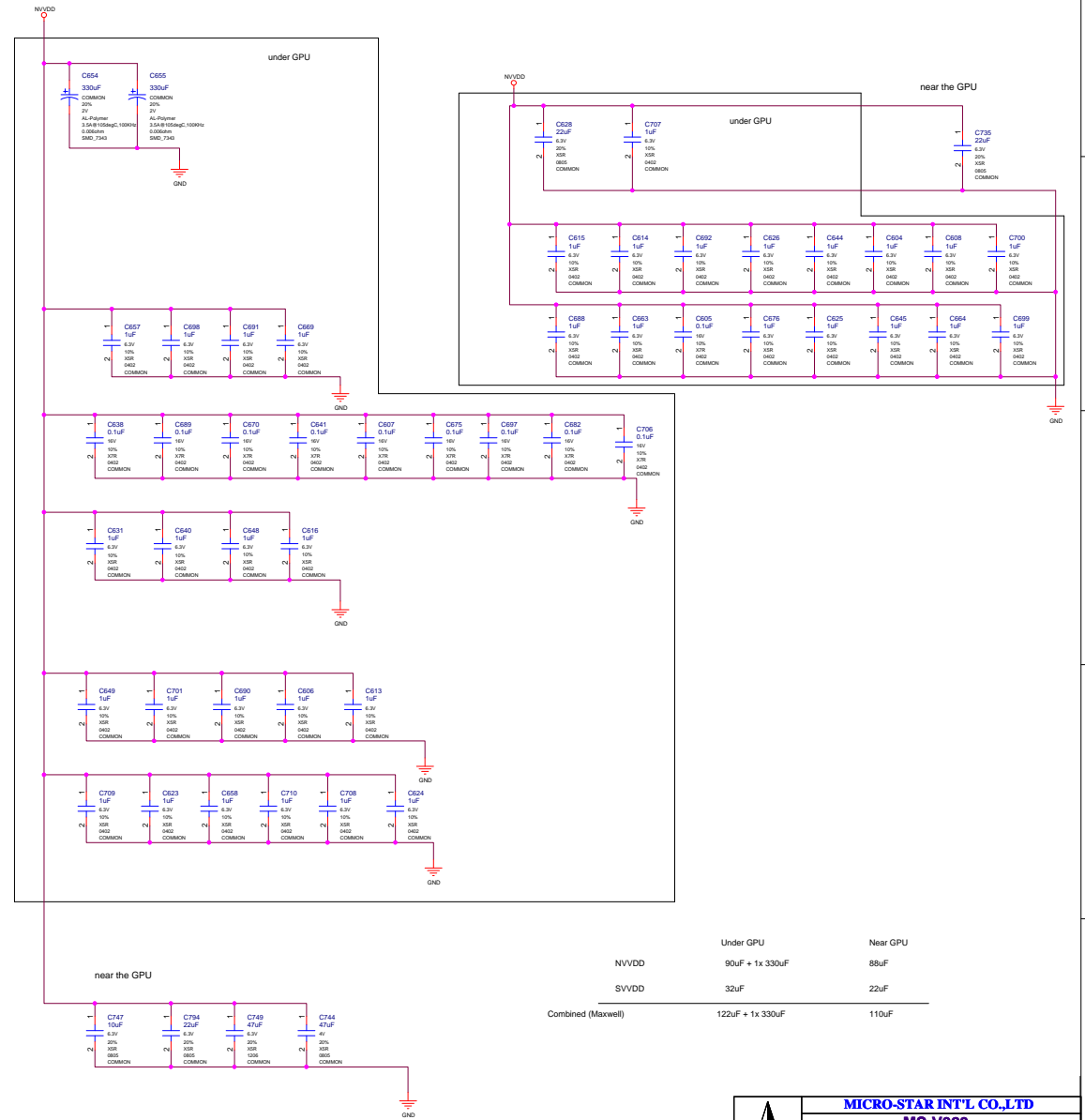
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## GPU Decoupling

FBVDDQ



NVVDD



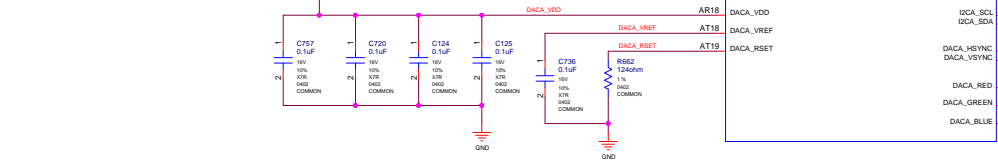
	Under GPU	Near GPU
NVVDD	90uF + 1x 330uF	88uF
SVVDD	32uF	22uF
Combined (Maxwell)	122uF + 1x 330uF	110uF

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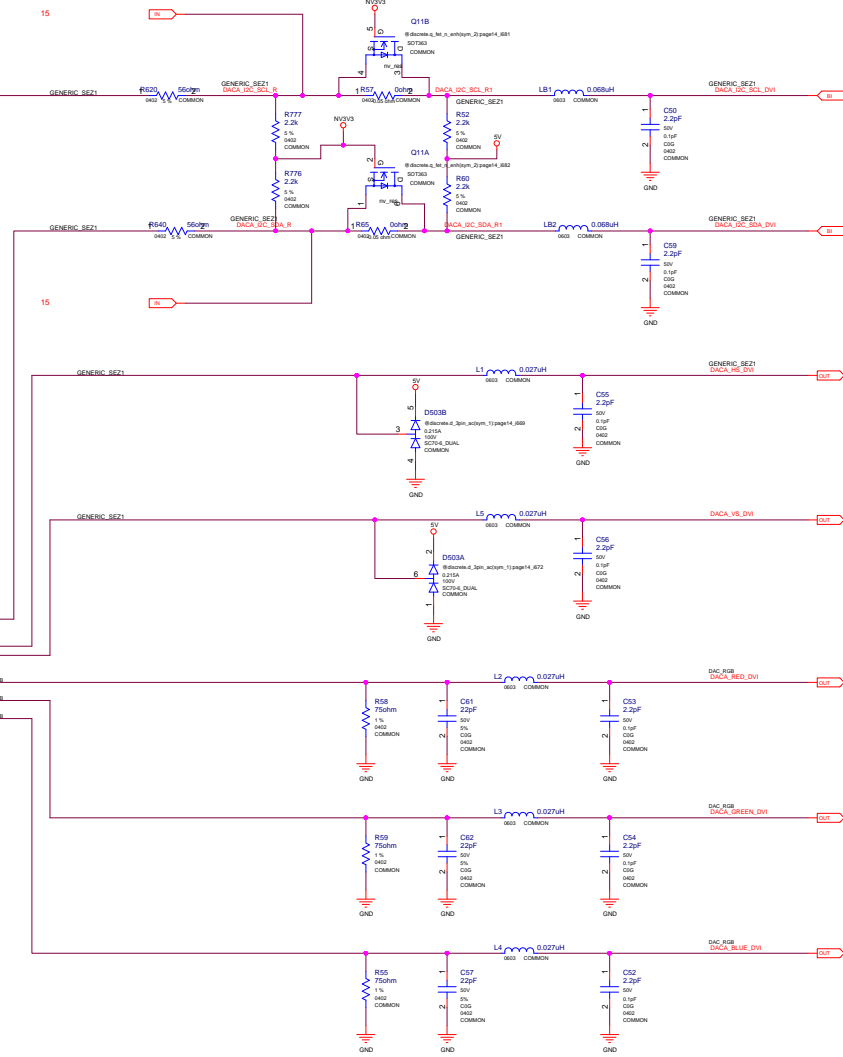
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DACA Interface

15,16,18,19



DACA_SCL	AU7	DACA_DC_SCL
DACA_SDA	AY5	DACA_DC_SDA
DACA_HEYNC	AU8	DACA_HEYNC
DACA_VSYNC	AY8	DACA_VSYNC
DACA_RED	BB16	DACA_RED
DACA_GREEN	BA16	DACA_GREEN
DACA_BLUE	BB15	DACA_BLUE



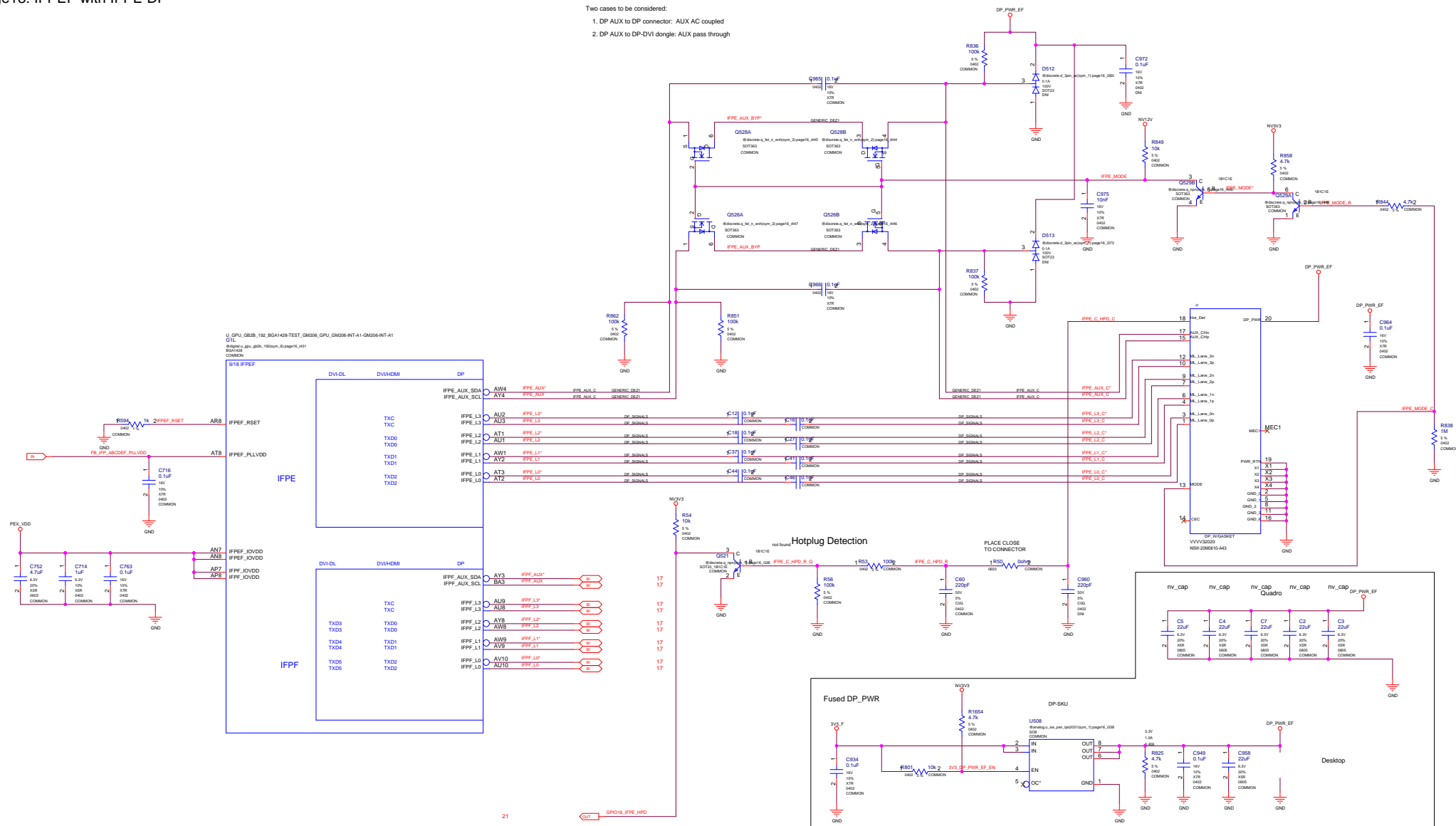
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Two cases to be considered:

1. DP AUX to DP connector: AUX AC coupled
2. DP AUX to DP-DVI dongle: AUX pass through

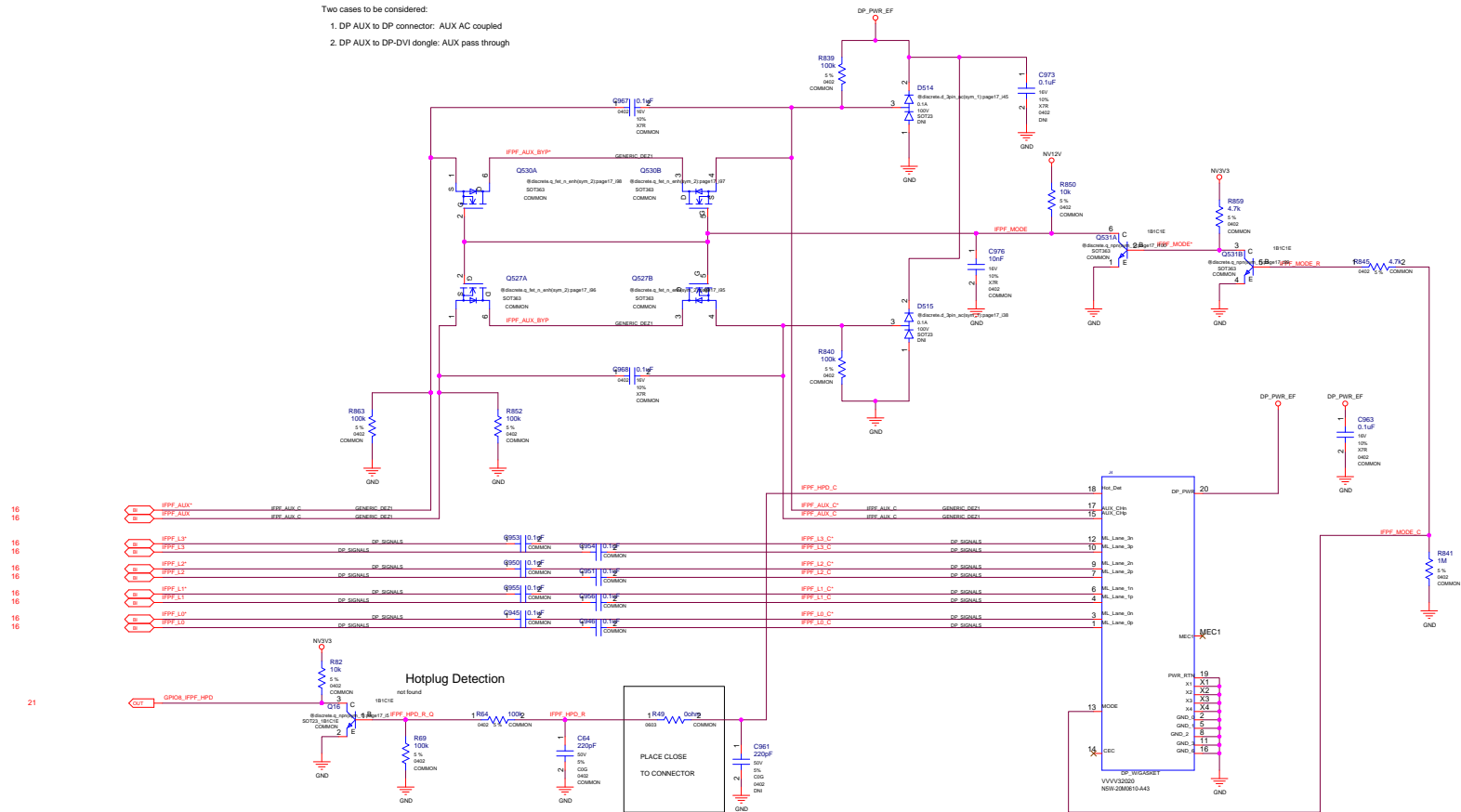


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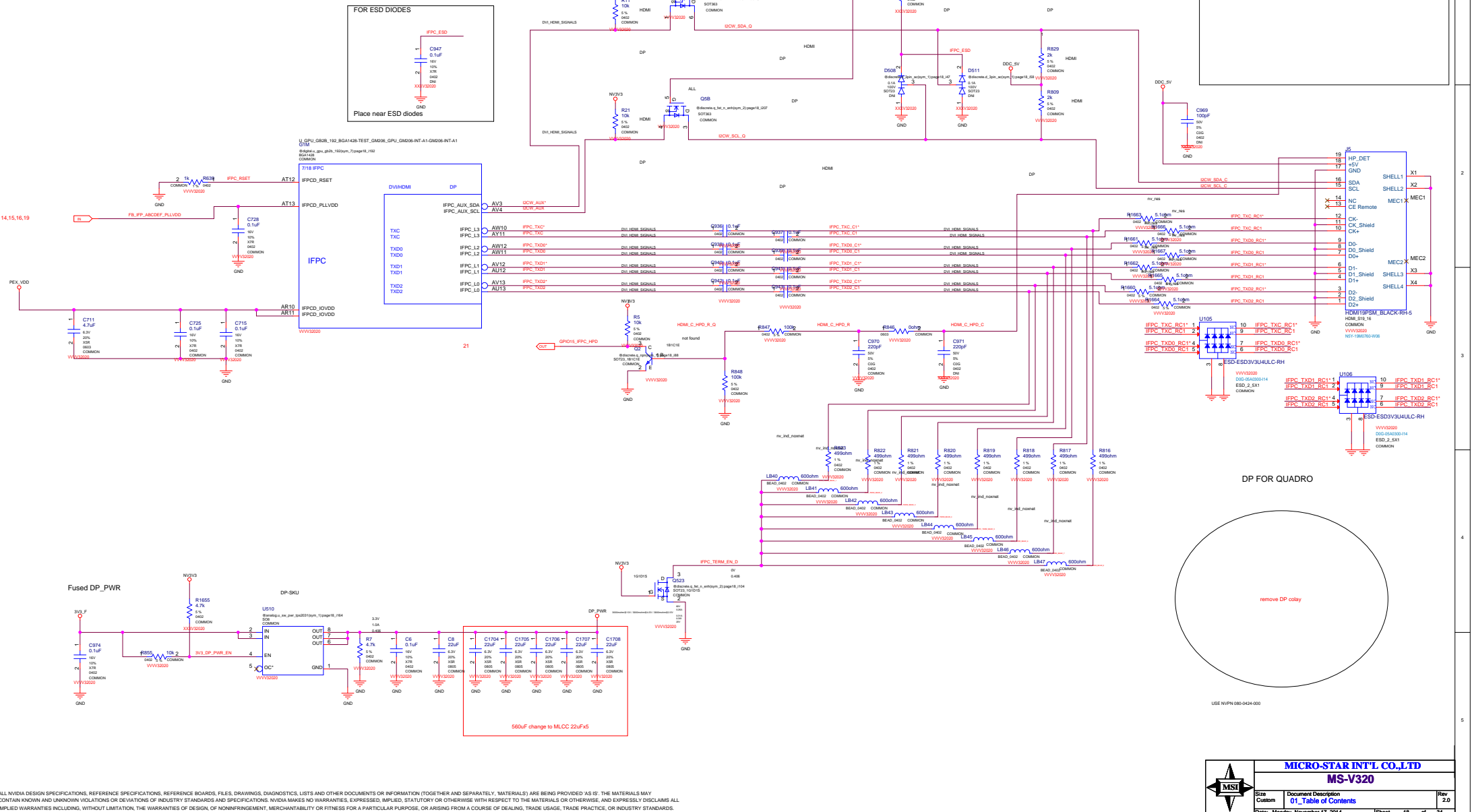


Two cases to be considered:

1. DP AUX to DP connector: AUX AC coupled
2. DP AUX to DP-DVI dongle: AUX pass through

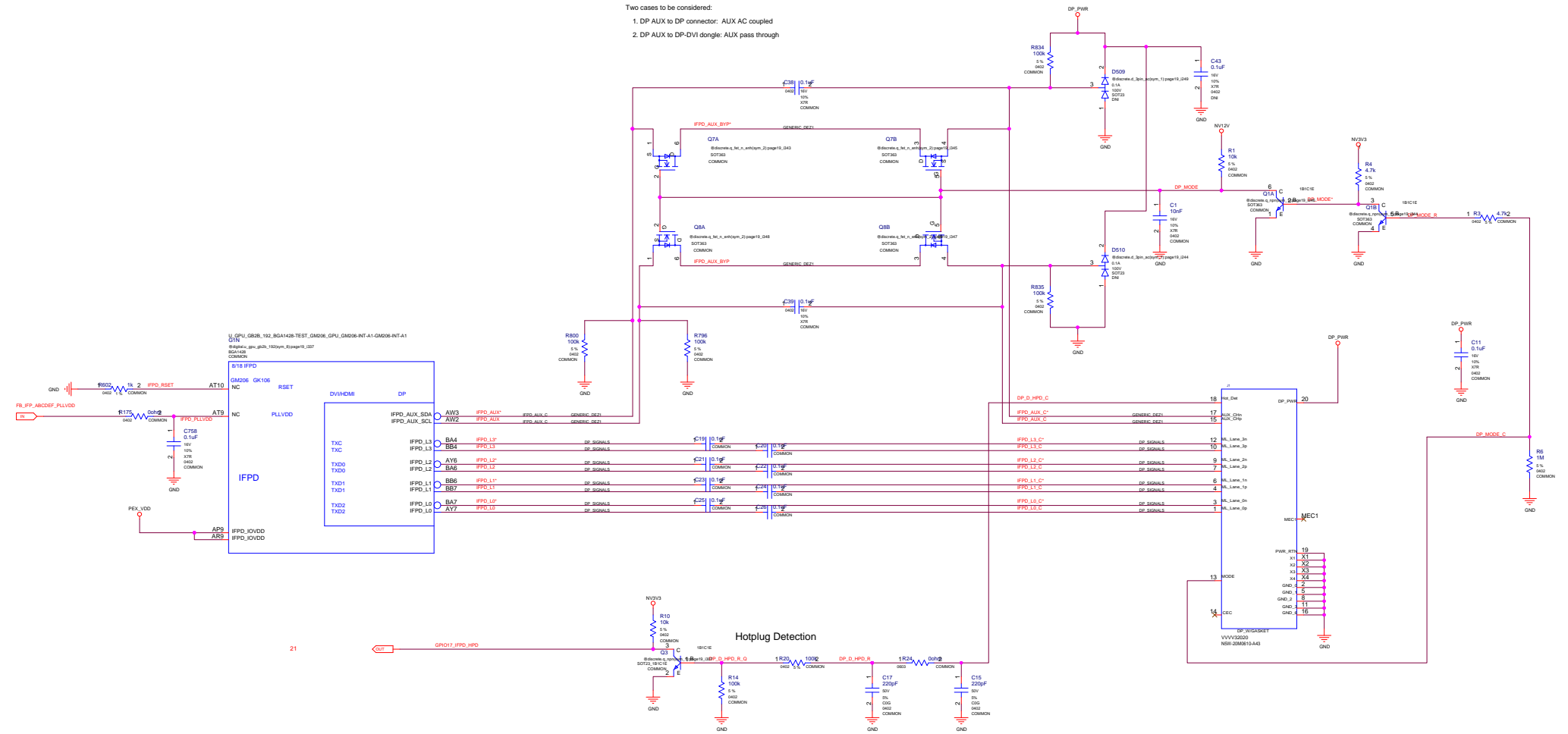


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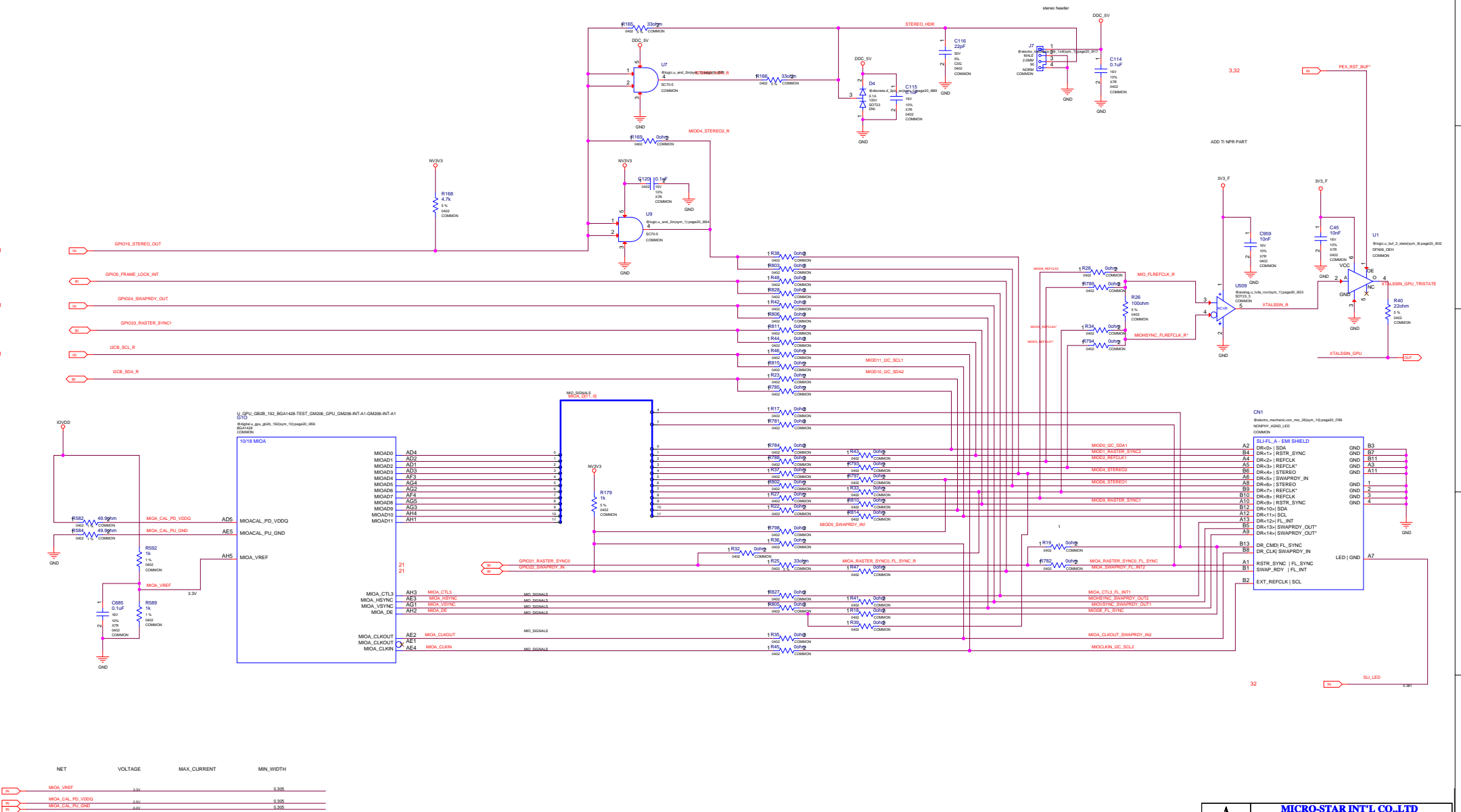
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- Two cases to be considered:
1. DP AUX to DP connector: AUX AC coupled
  2. DP AUX to DP-DVI dongle: AUX pass through



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## MIOA/SLI Interface



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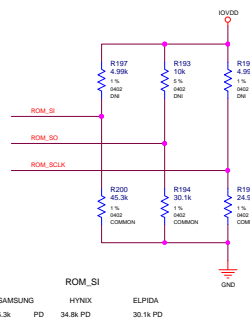
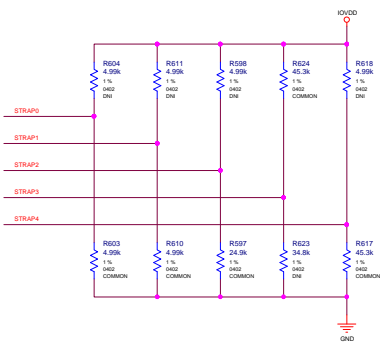


MISC2: ROM, XTAL, Straps

	KEPLER	MAXWELL
STRAP0	USER_BIT [3:0]*	
STRAP1	3GIO_PADCFG_LUT_ADR*	
STRAP2	PCI_DEVID [3:0]*	
STRAP3	SOR_EXPOSED [3:0]*	
STRAP4	DP_PLL_VDD_33V*	
	PEX_MAX_SPEED*	
	PEX_SPD_CHANGE_GEN3*	
	*	
ROM_SI	RAMCFG[0]*	RAMCFG[0]*
	RAMCFG[1]*	RAMCFG[1]*
	RAMCFG[2]*	RAMCFG[2]*
	RAMCFG[3]*	RAMCFG[3]*
ROM_SO	VGA_DEVICE*	VGA_DEVICE*
	SMB_ALT_ADDR*	SMB_ALT_ADDR*
	FB[0]_APERTURE_SIZE*	PCIE_CFG*
	FB[1]_APERTURE_SIZE*	DEVID_SEL*
ROM_SCLK	PEX_PLL_EN_TERM100*	SOR0_EXPOSED*
	PCI_DEVID_EXT[5]*	SOR1_EXPOSED*
	SUB_VENDOR*	SOR2_EXPOSED*
	PCI_DEVID_EXT[4]*	SOR3_EXPOSED*

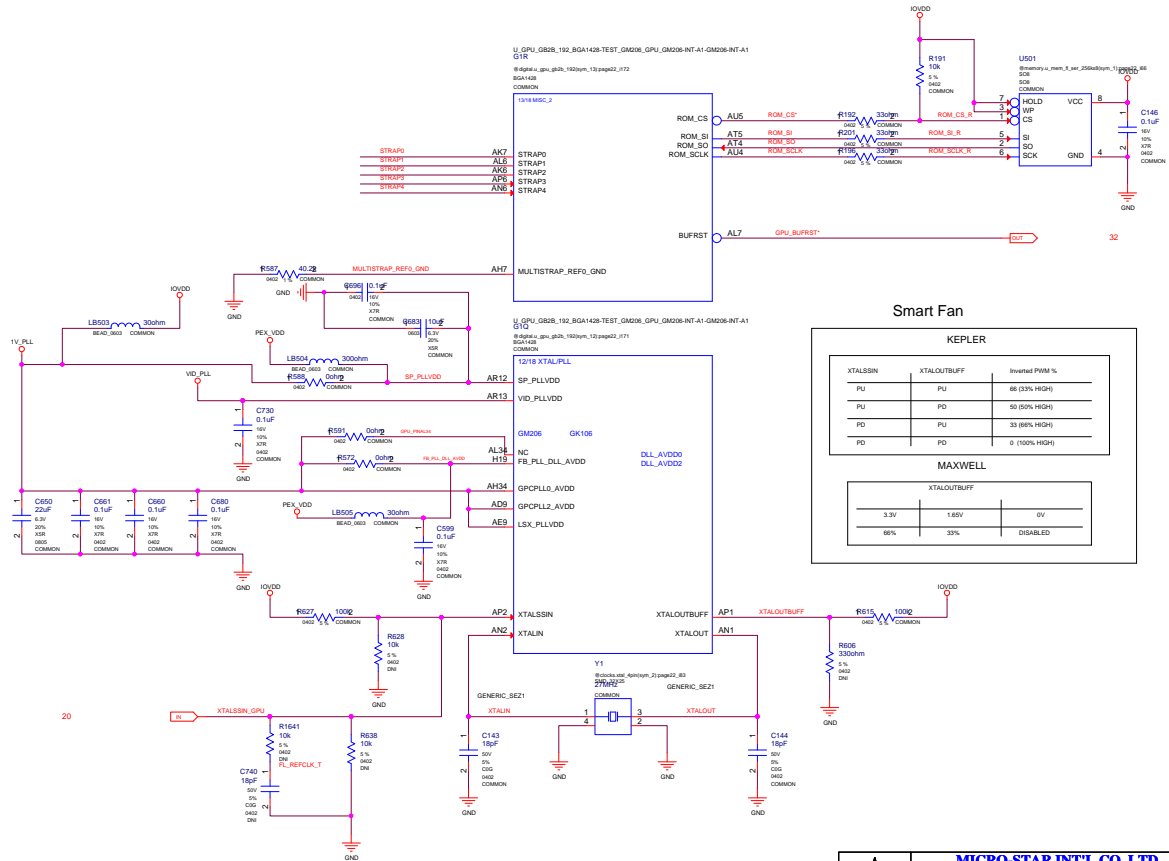
MULTI_STRAP_REF0_GND	
BINARY PRODUCTION	NC
BINARY BRINGUP	NC
MULTI-LEVEL	40.2k 1% to GND

MAXWELL		
3.3V	1.65V	0V
G06+ISLAND ENABLED	G06+DEBUG MODE	G06+ISLAND DISABLED



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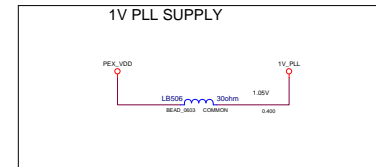
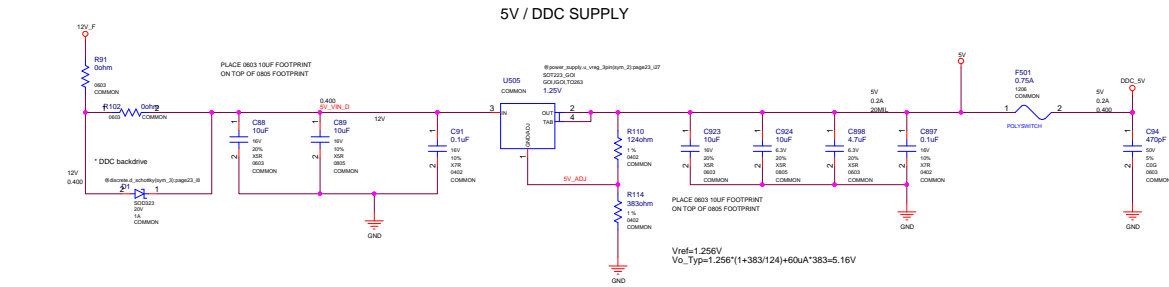
	GND	3V3
5k	0000	1000
10k	0001	1001
15k	0010	1010
20k	0011	1011
25k	0100	1100
30k	0101	1101
35k	0110	1110
45k	0111	1111



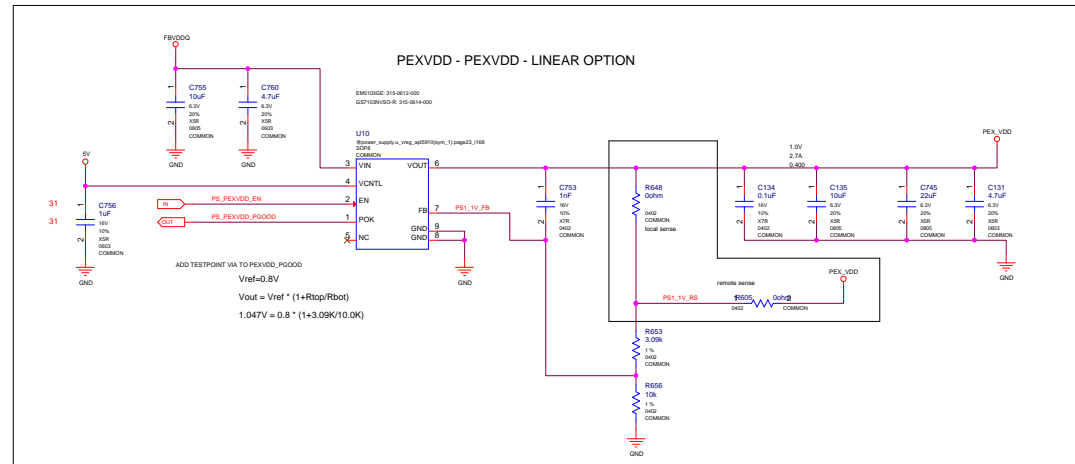
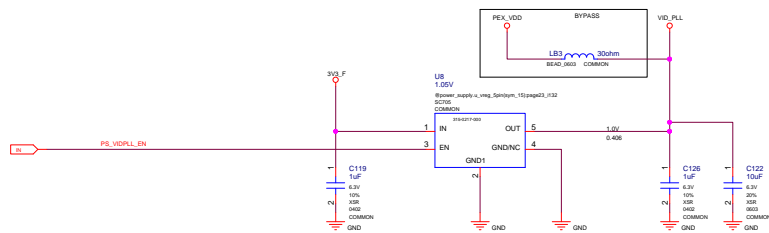
Smart Fan		
KEPLER		
XTALSSIN	XTALOUTBUFF	Inverted PWM %
PU	PU	66 (33% HIGH)
PD	PD	50 (50% HIGH)
PD	PU	33 (66% HIGH)
PD	PD	0 (100% HIGH)
MAXWELL		
XTALOUTBUFF		
3.3V	1.65V	0V
66%	33%	DISABLED

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# PS: 5V, PEX\_VDD



## VID PLL SUPPLY



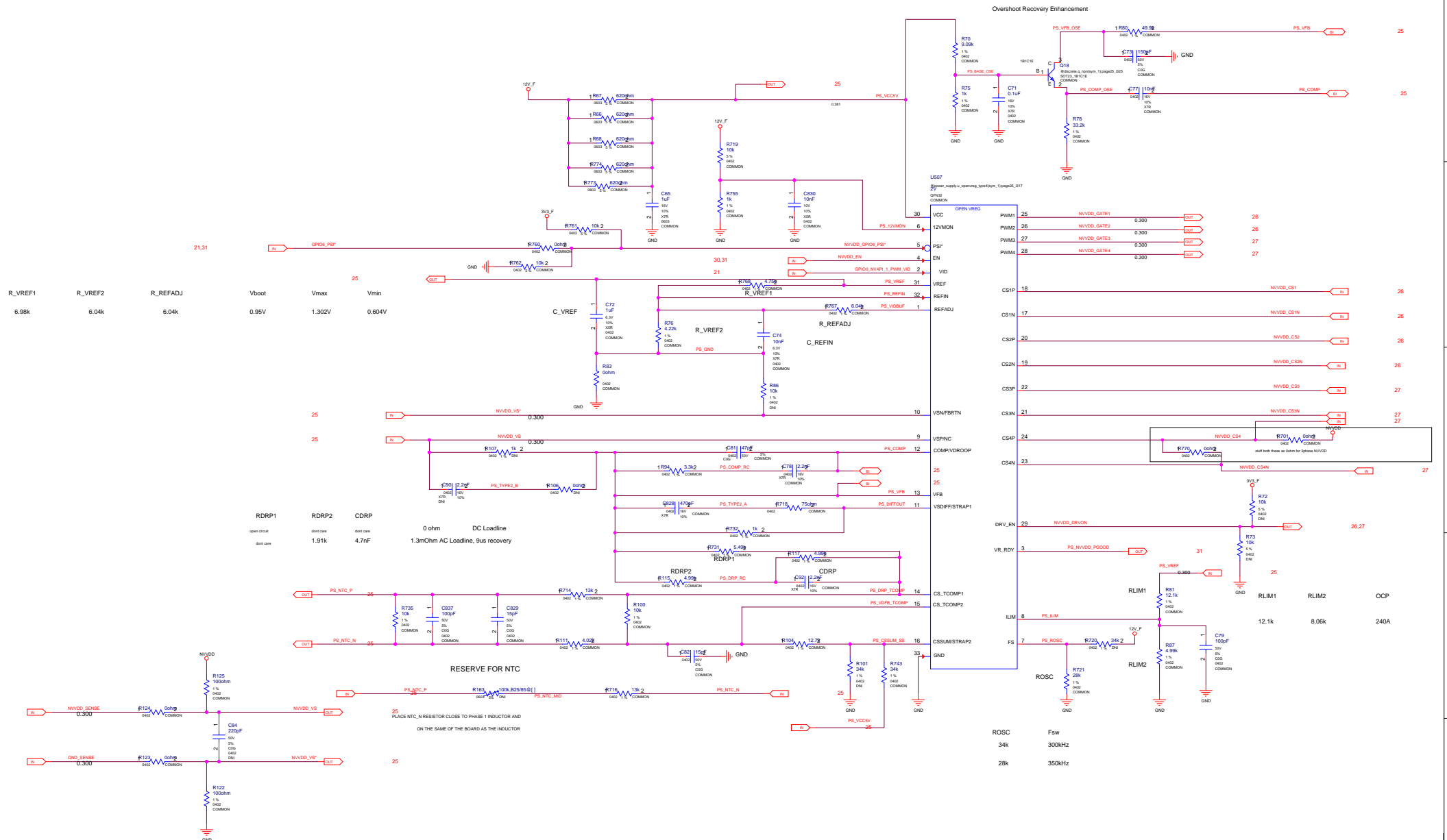
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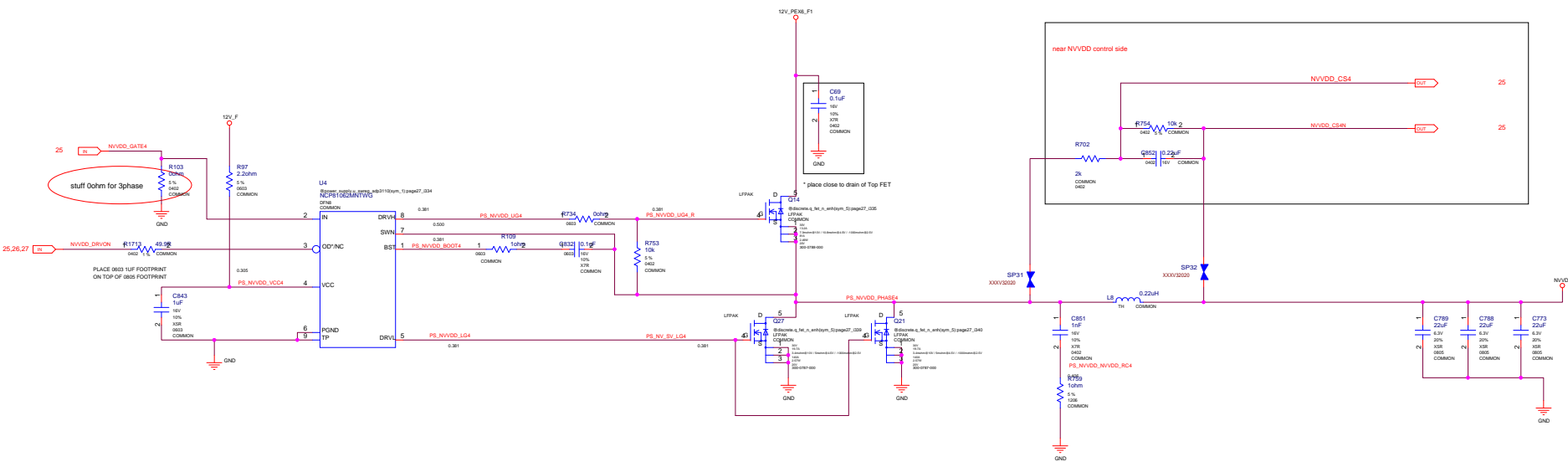
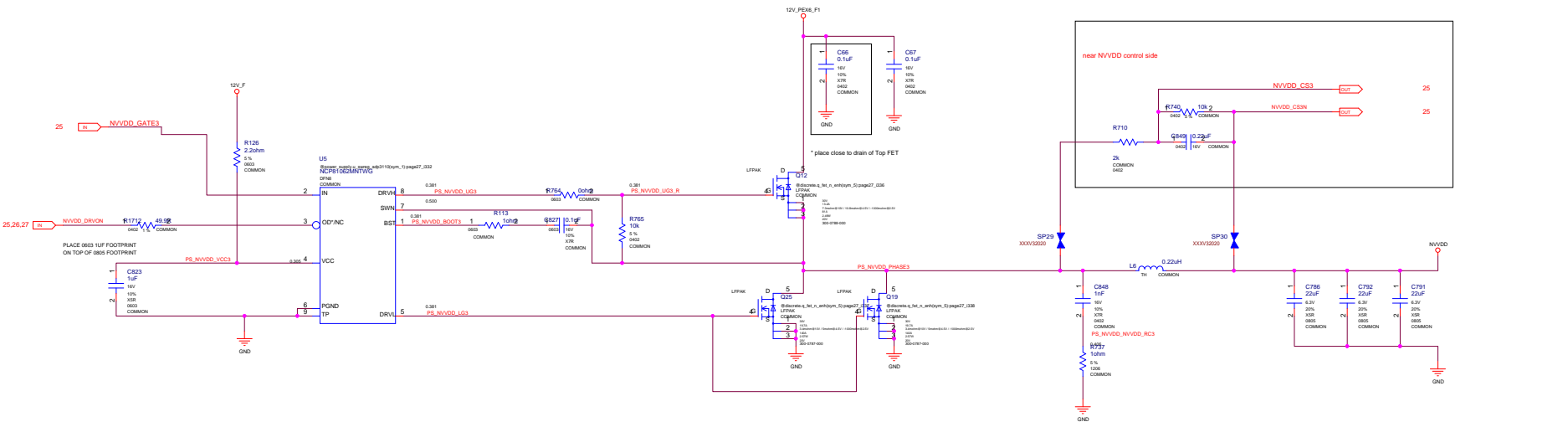
## PS: NVVDD Controller



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## PS: NVVDD Phase 3,4



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PS: NVVDD OVR2+1 POWER

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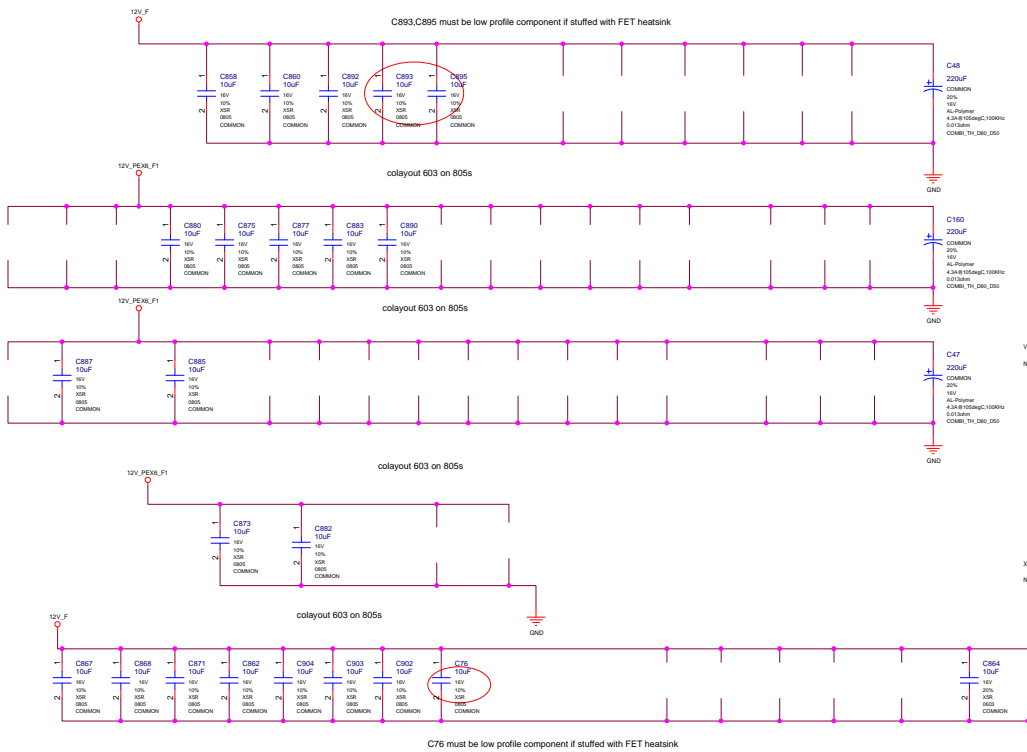
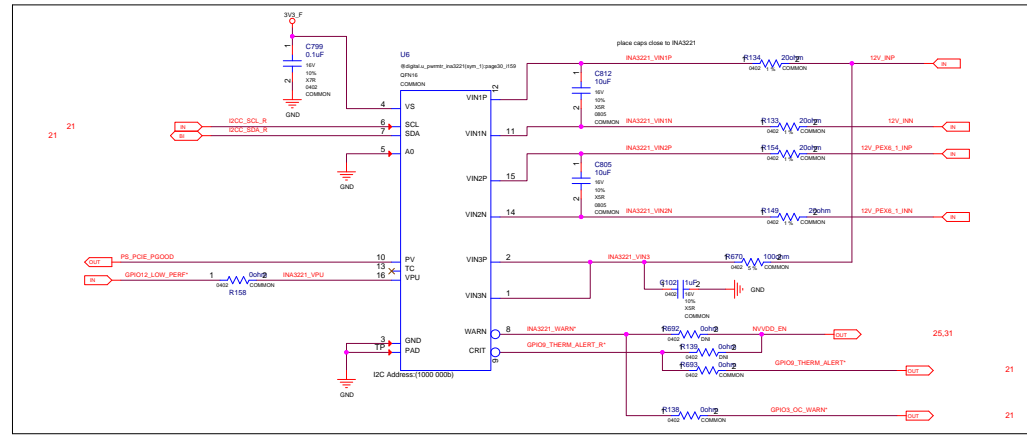
5

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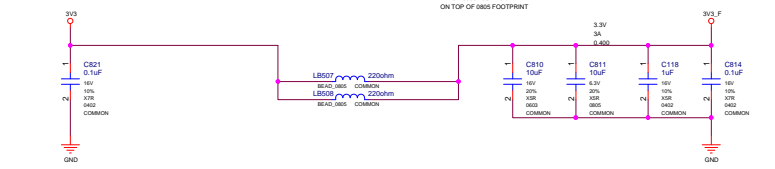
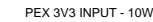


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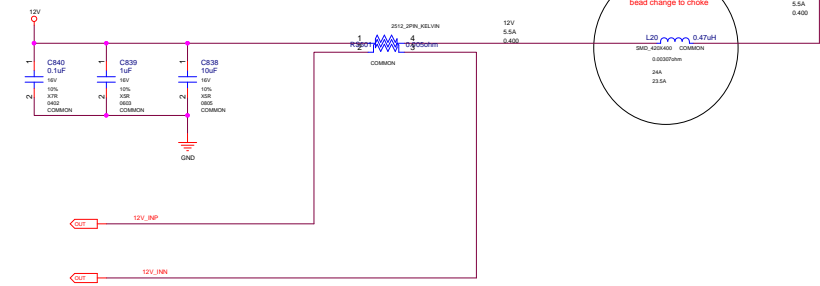
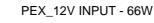
## PS: Inputs, Filtering, and Monitoring



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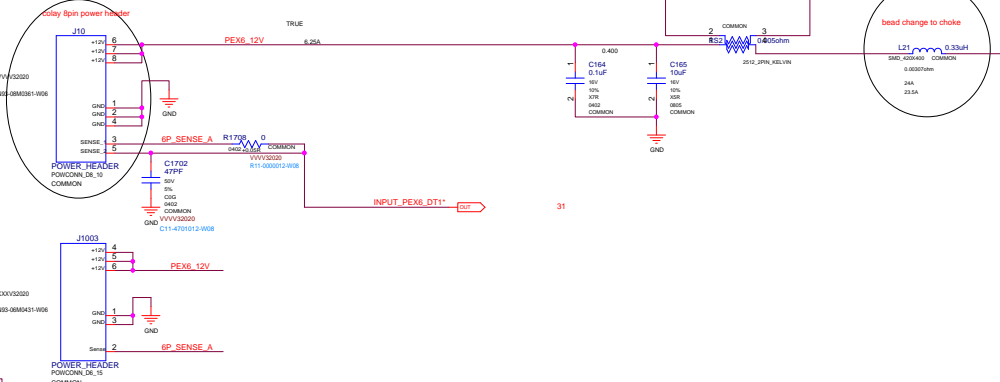
PLACE 0803 10UF FOOTPRINT  
ON TOP OF 0805 FOOTPRINT



head change to choke

PEX6 INPUT - 2x3 PCIE CON 75W

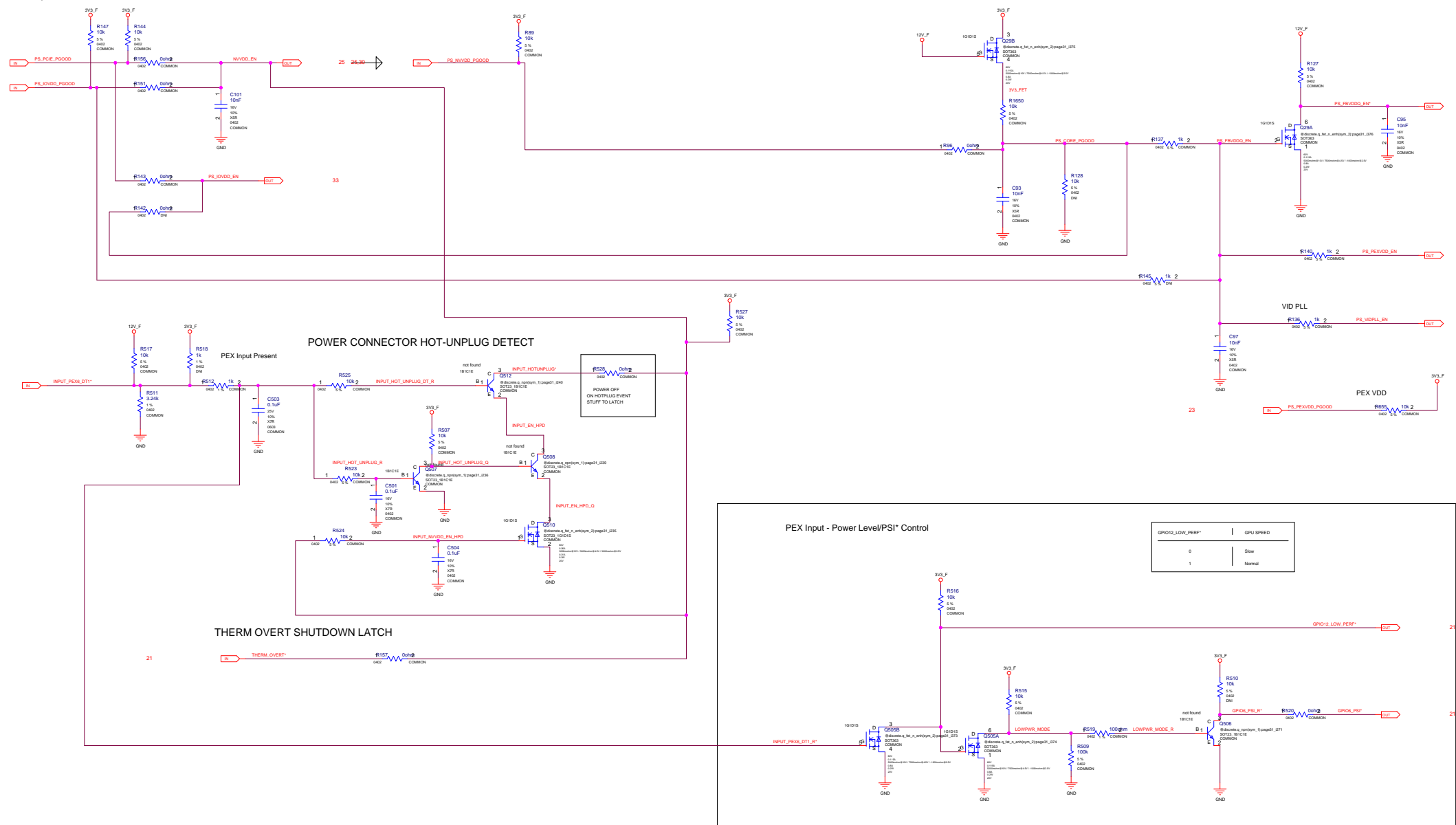
PLACE ON NORTH SIDE



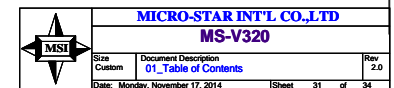
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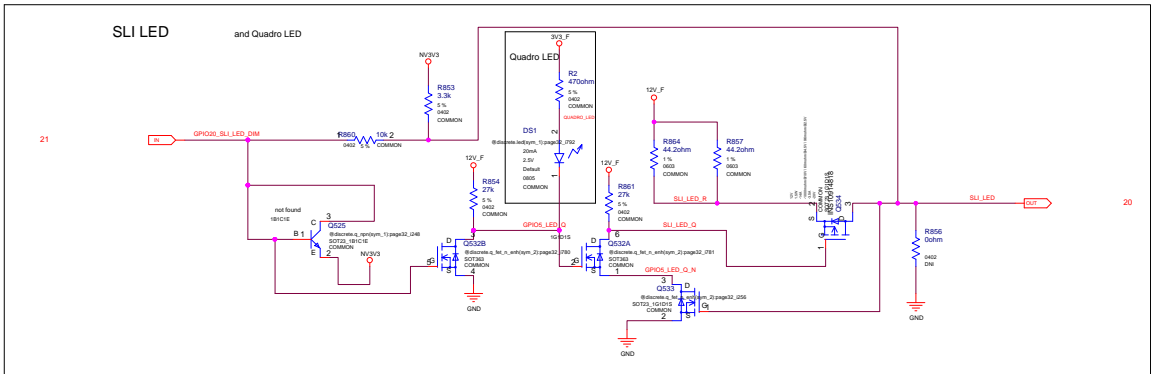
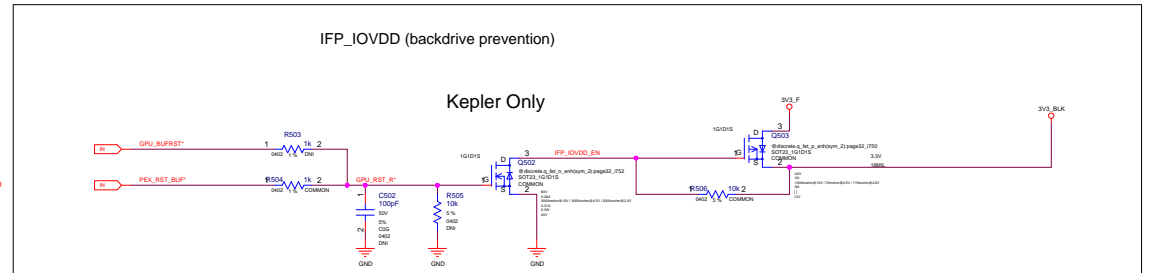
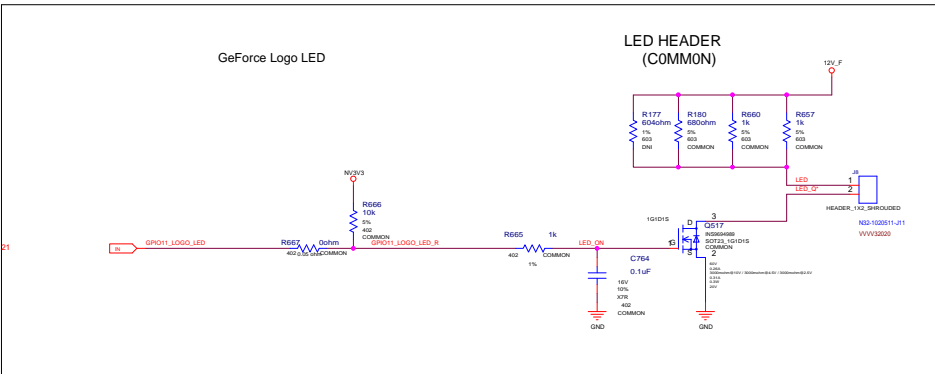
## PS: Sequence and Shutdown



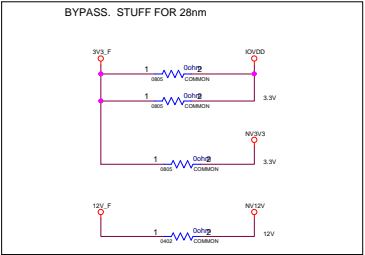
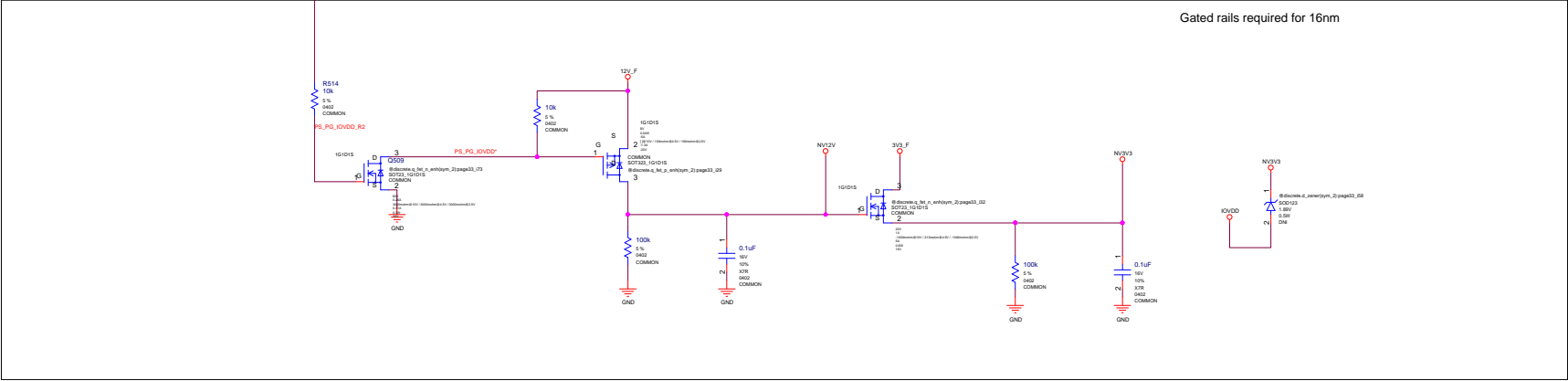
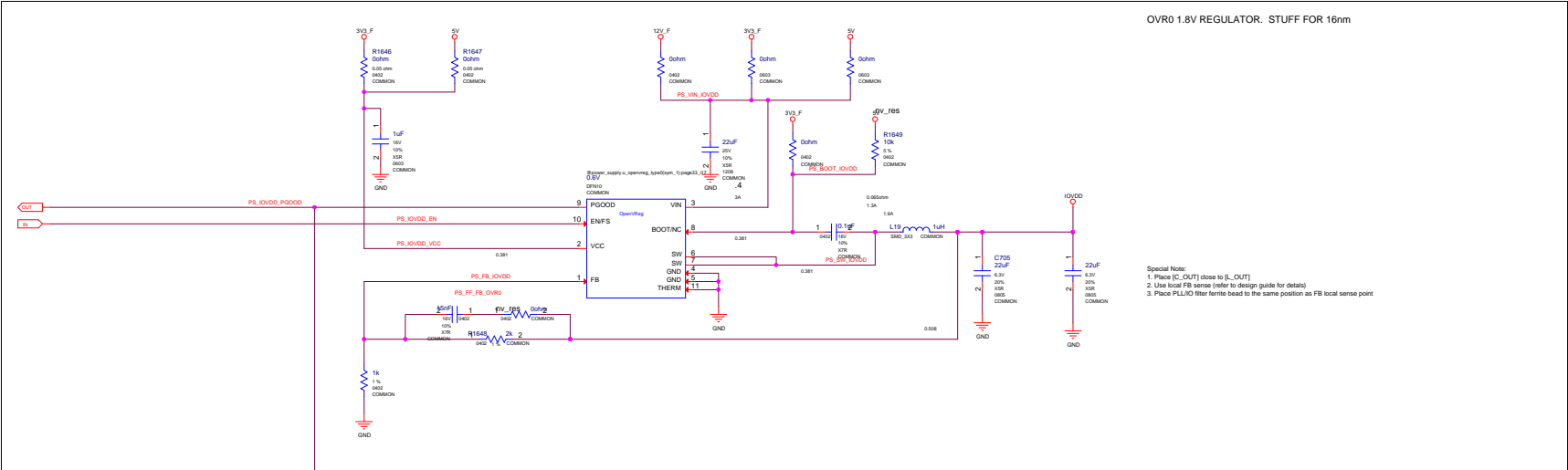
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LEDs



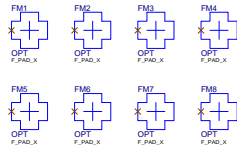
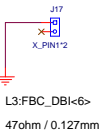
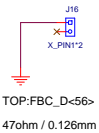
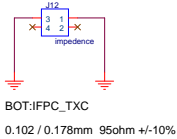
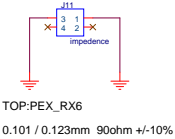
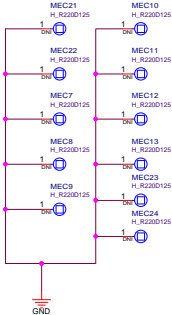
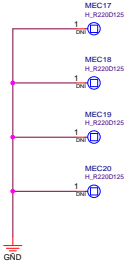
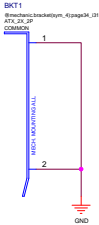




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Mechanical: Bracket/Thermal Solution

Brackets:



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