

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

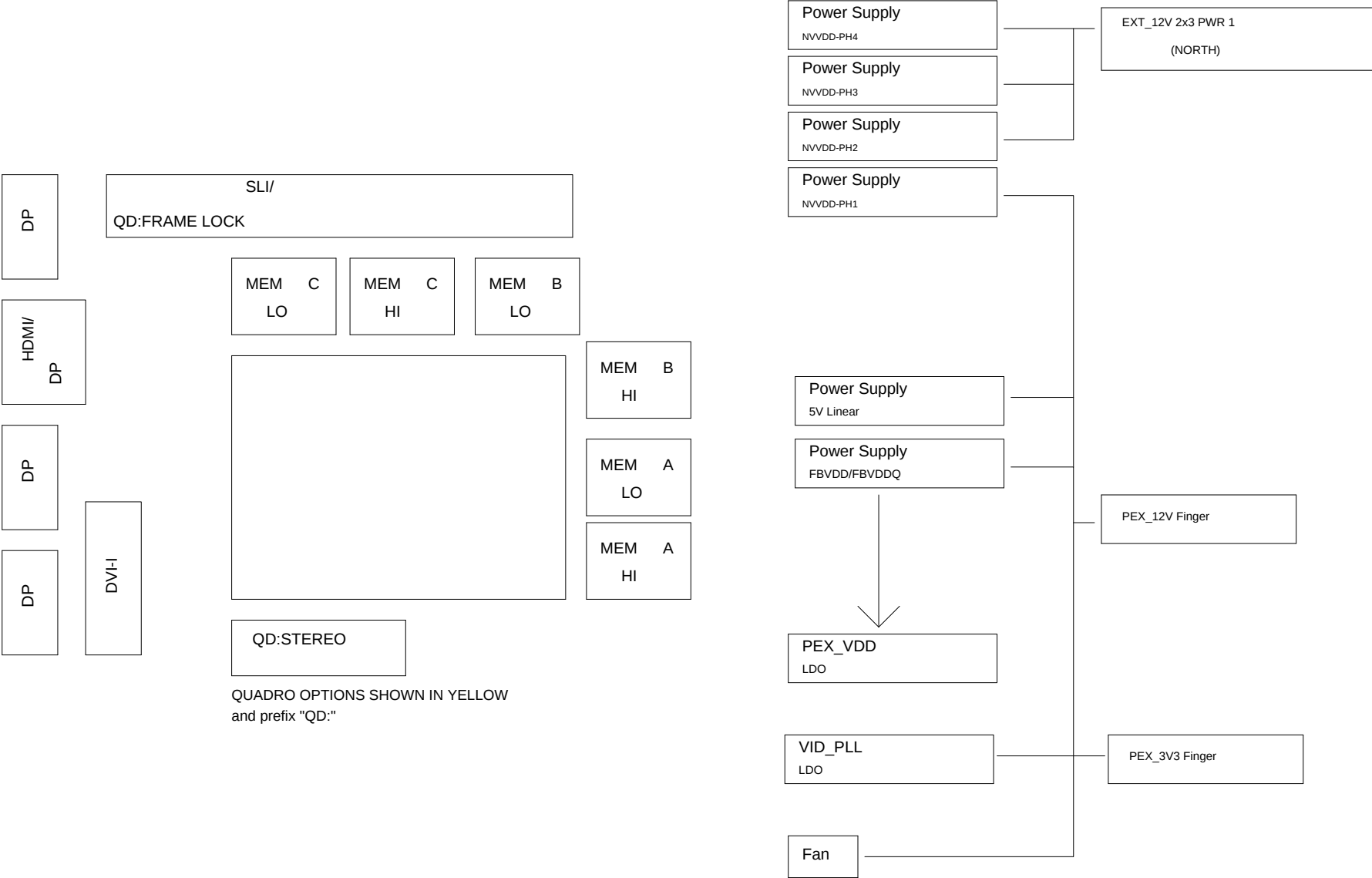
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MS-V320

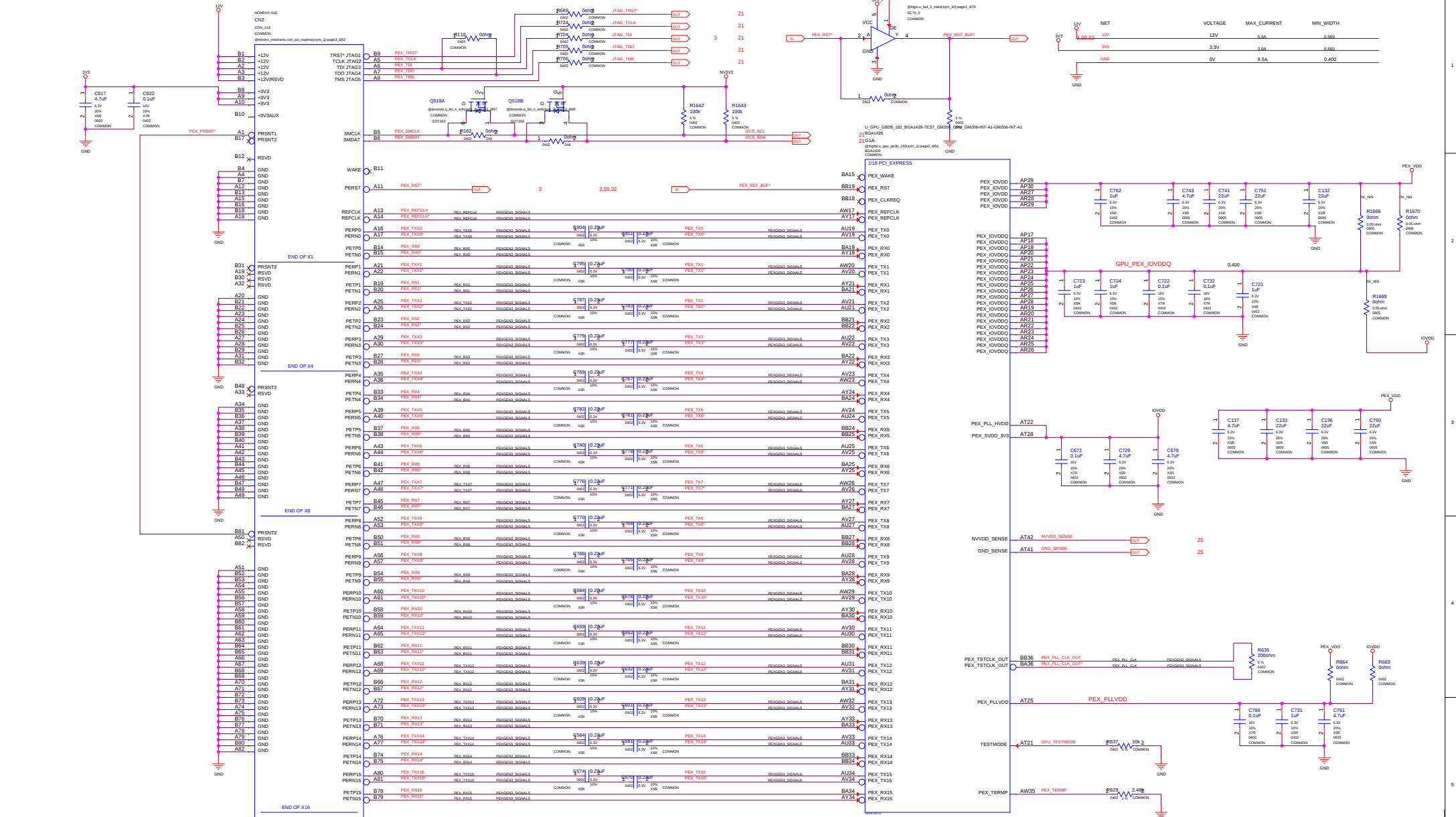
Size Custom	Document Description 01_Table of Contents	Rev 6.0
Date: Monday, February 02, 2015		Sheet 1 of 34

Block Diagram

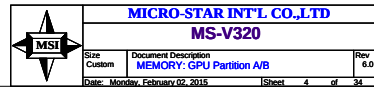


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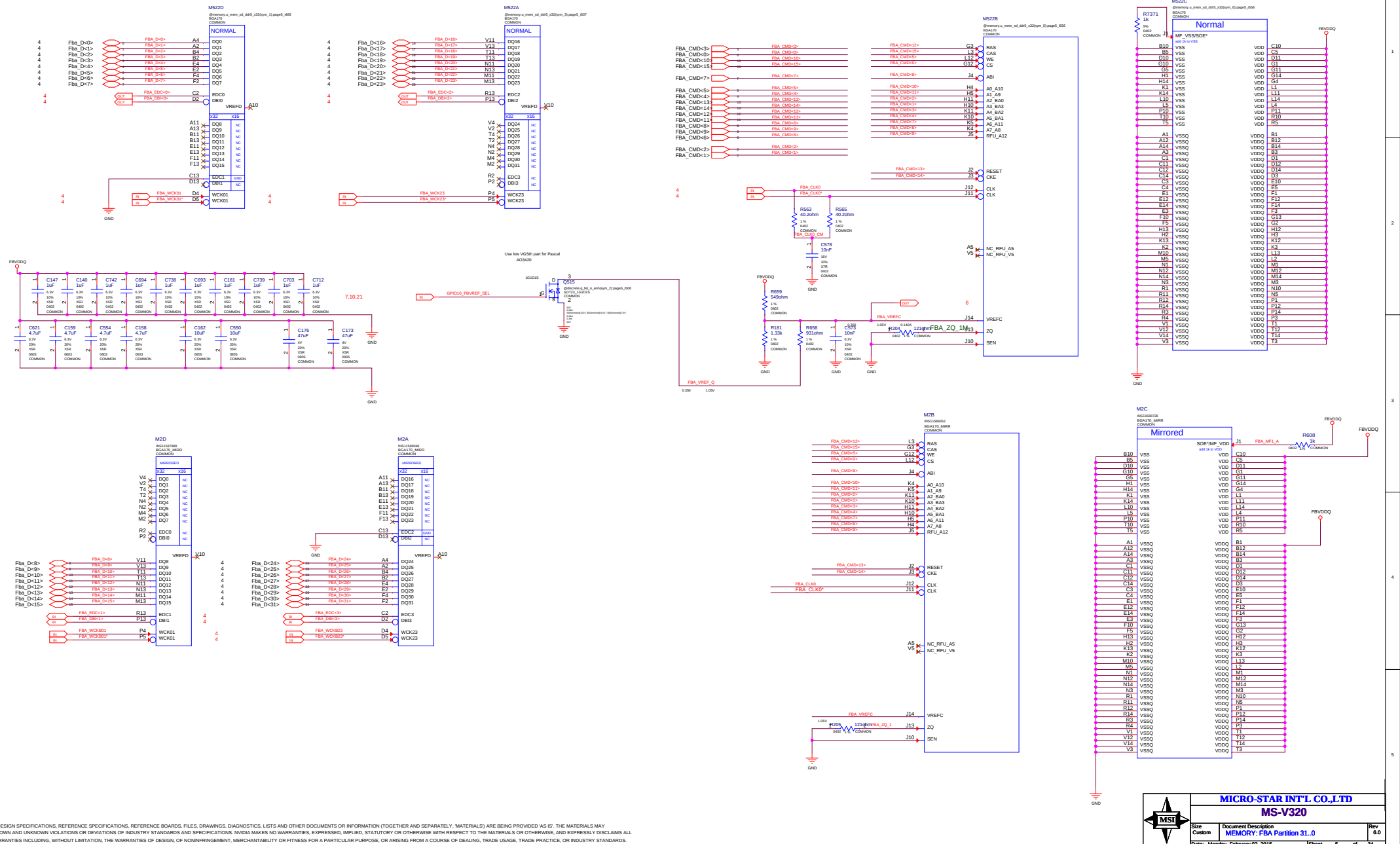
PCI Express



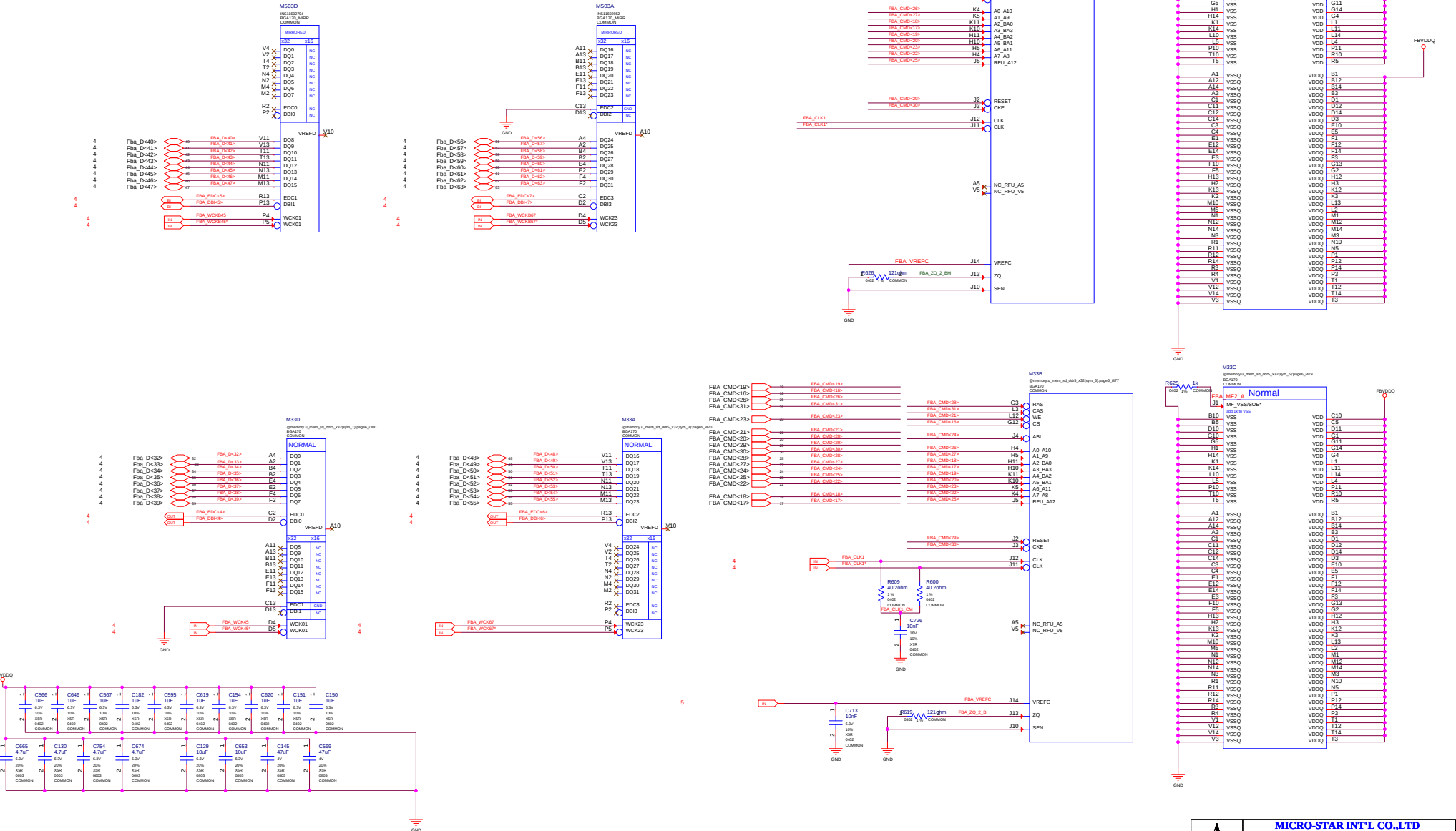
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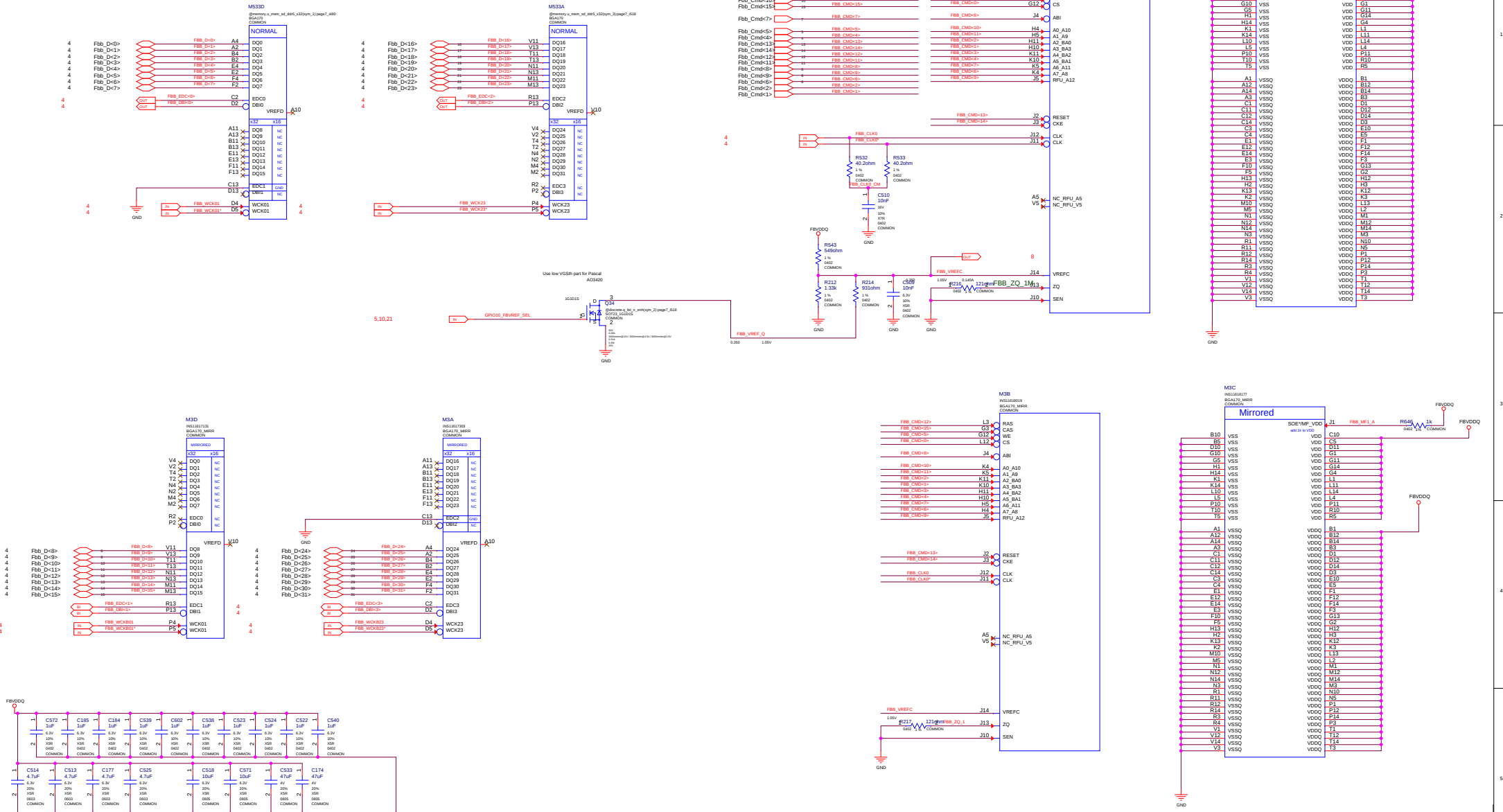
MEMORY: FBA Partition 31..0



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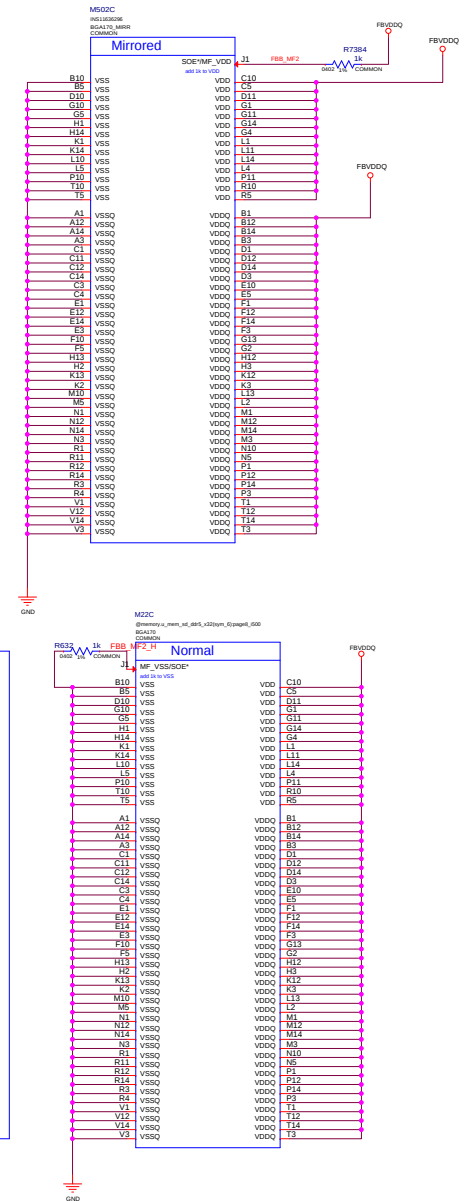
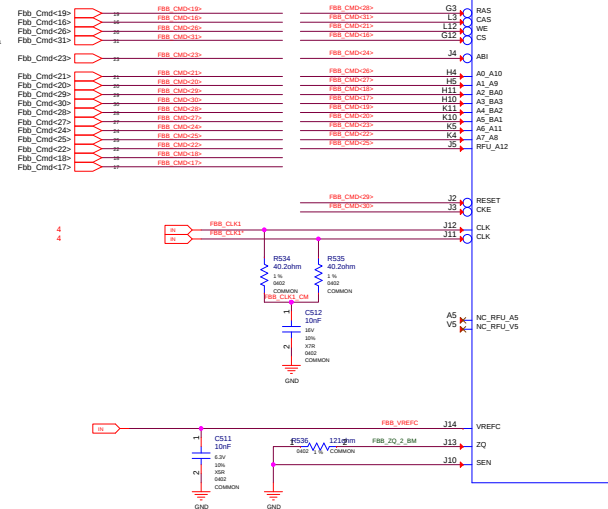
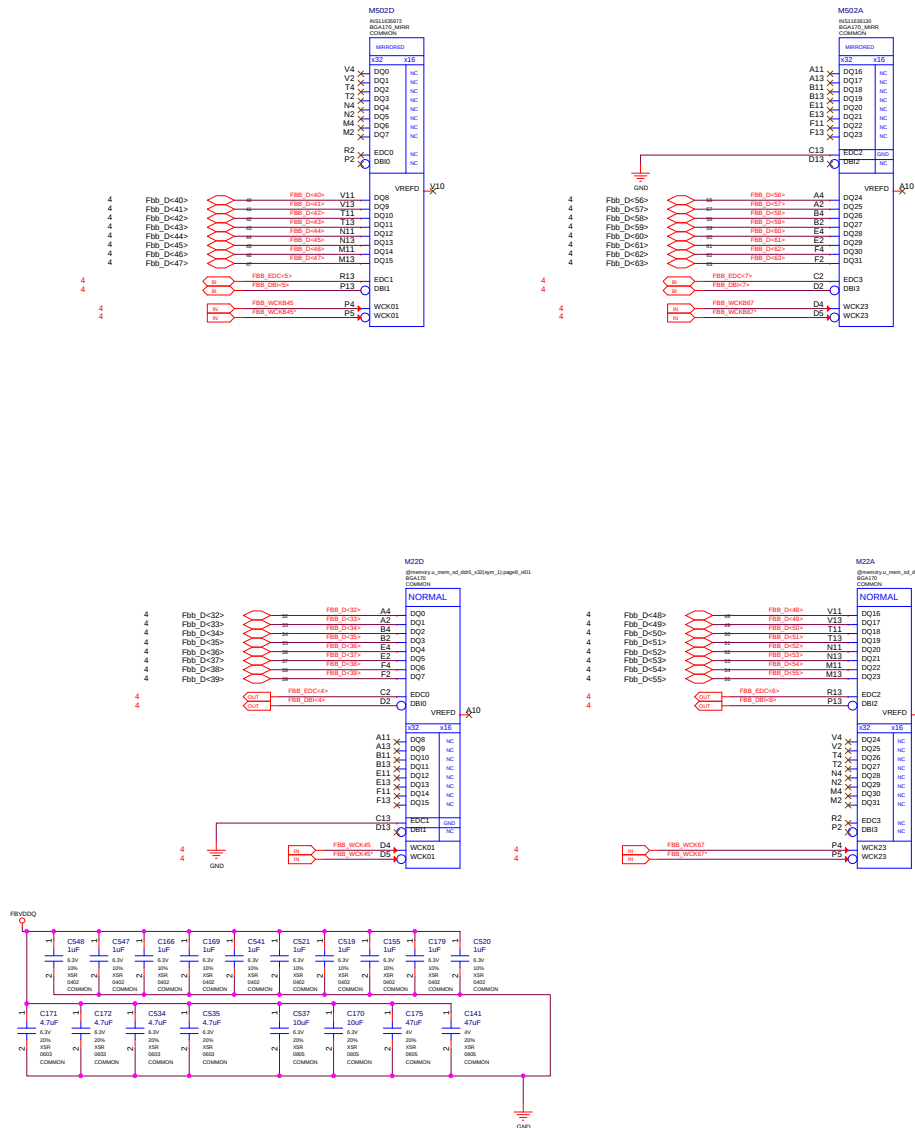


MEMORY: FBB Partition 31..0



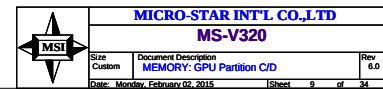
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MEMORY: FBB Partition 63.32

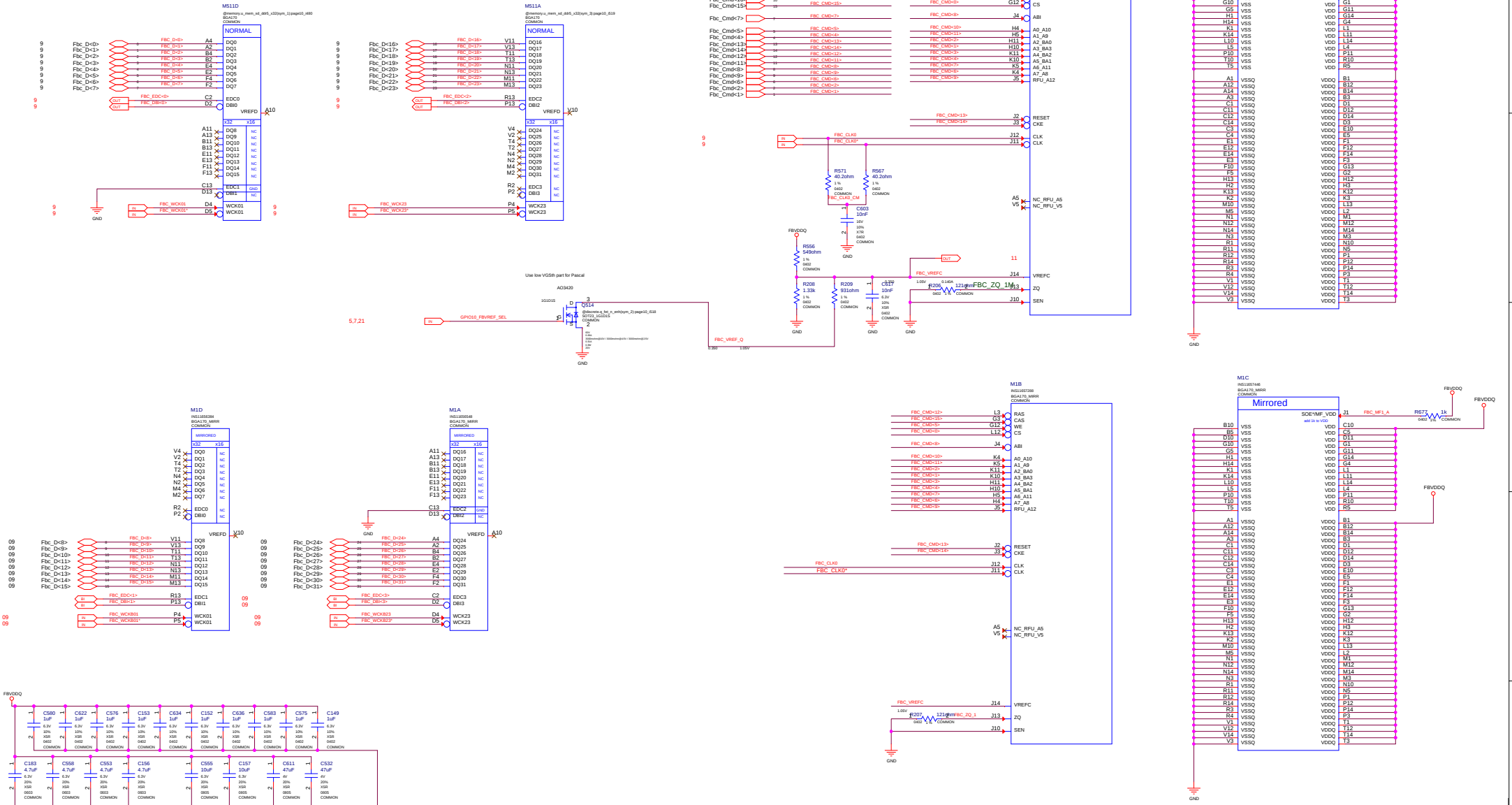


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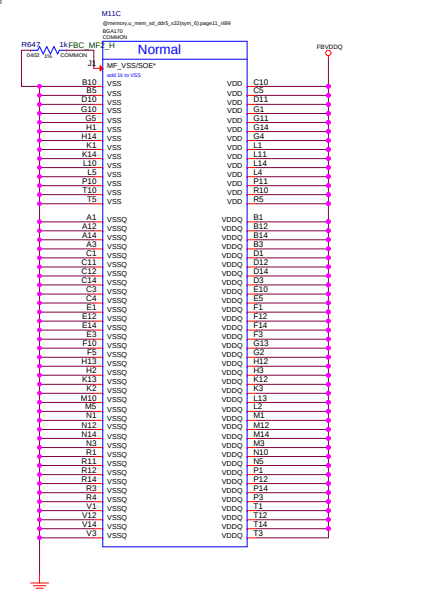
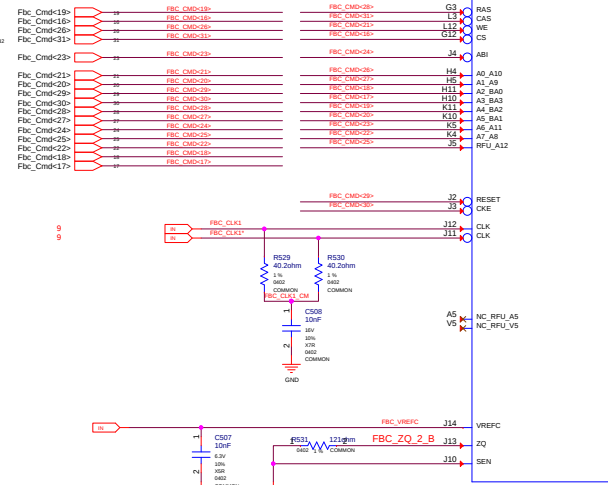
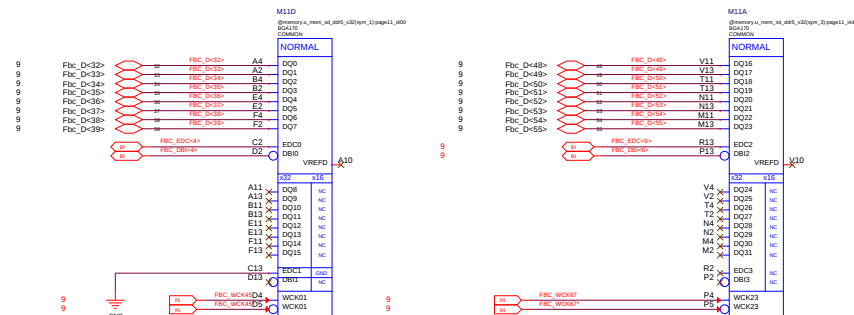
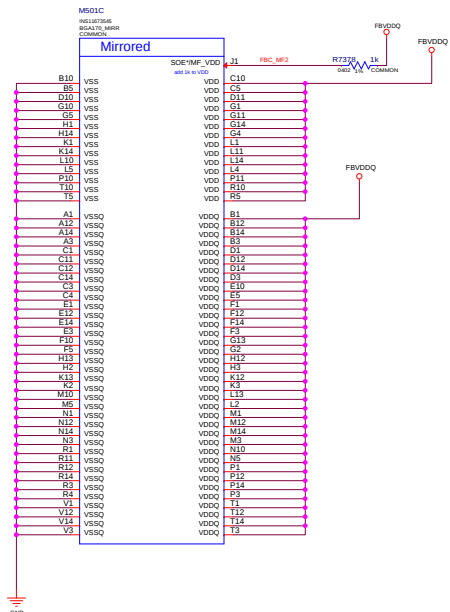
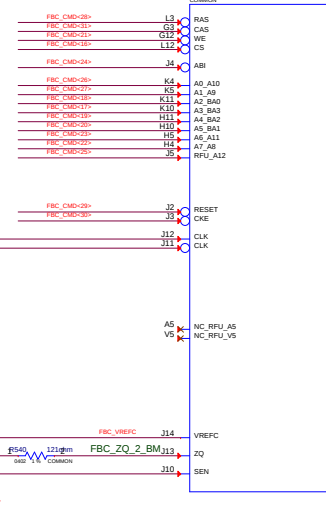
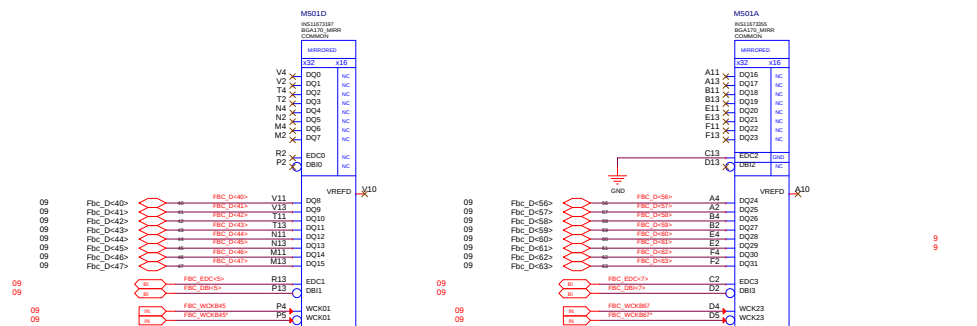


MEMORY: FBC Partition 31..0



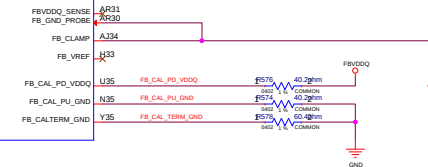
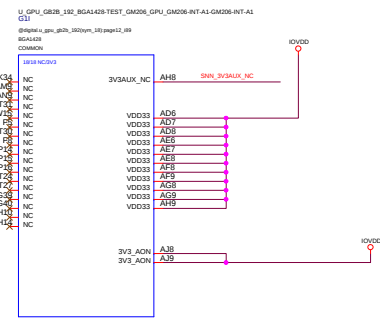
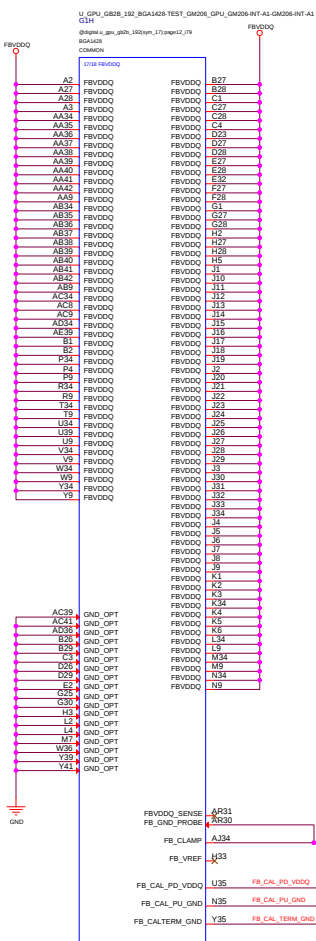
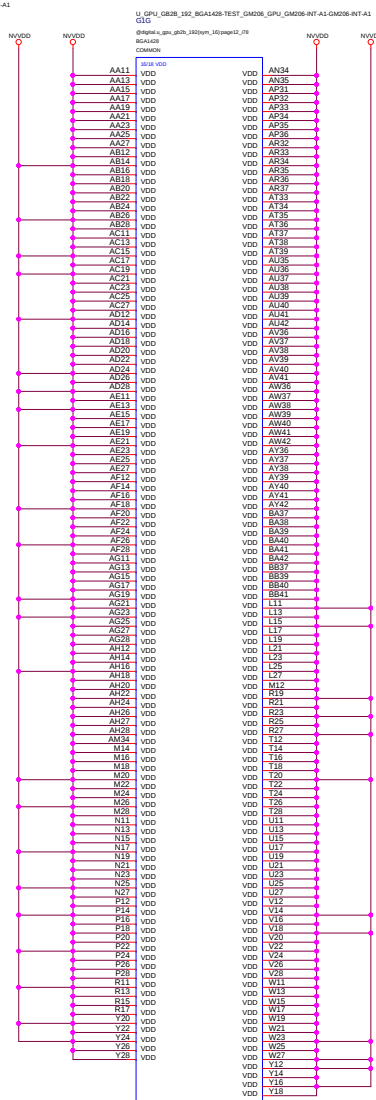
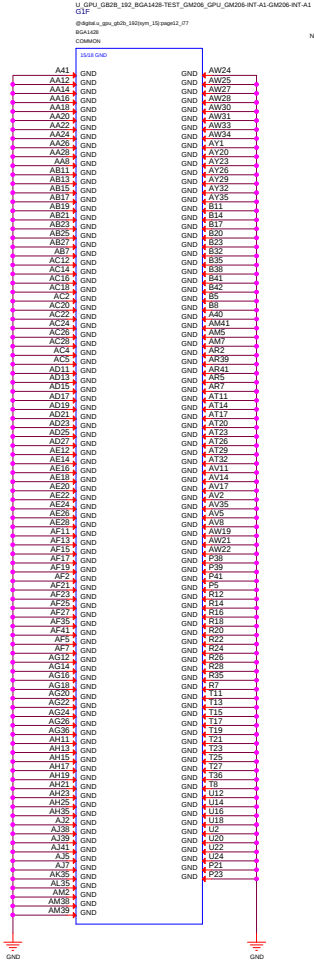
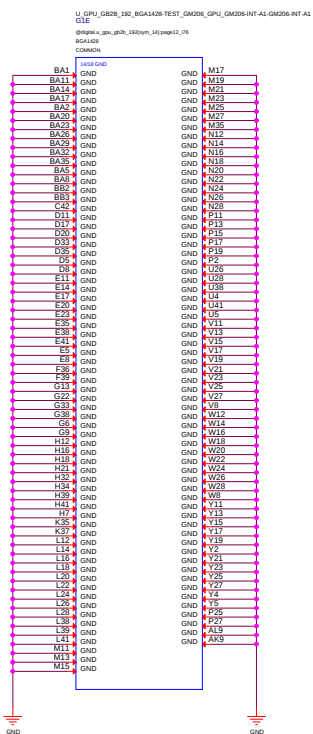
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MEMORY: FBC Partition 63..32



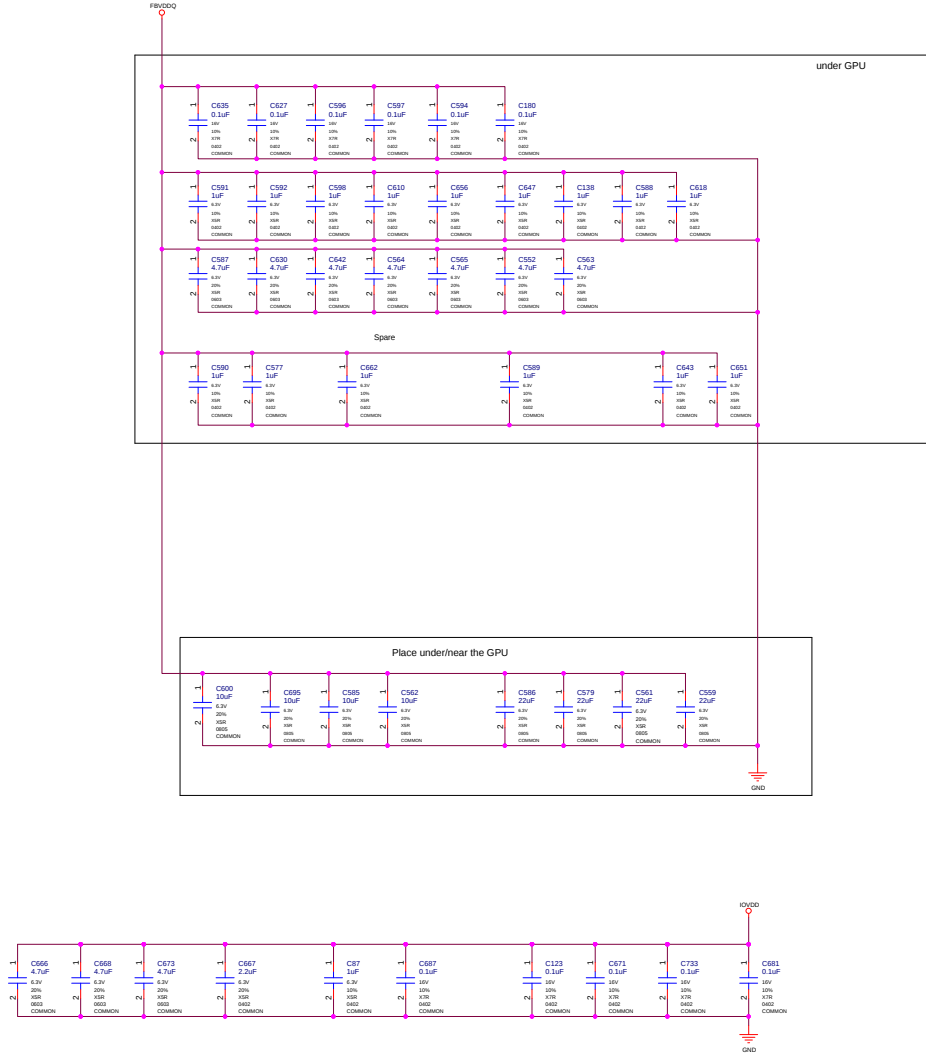
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GPU PWR and GND

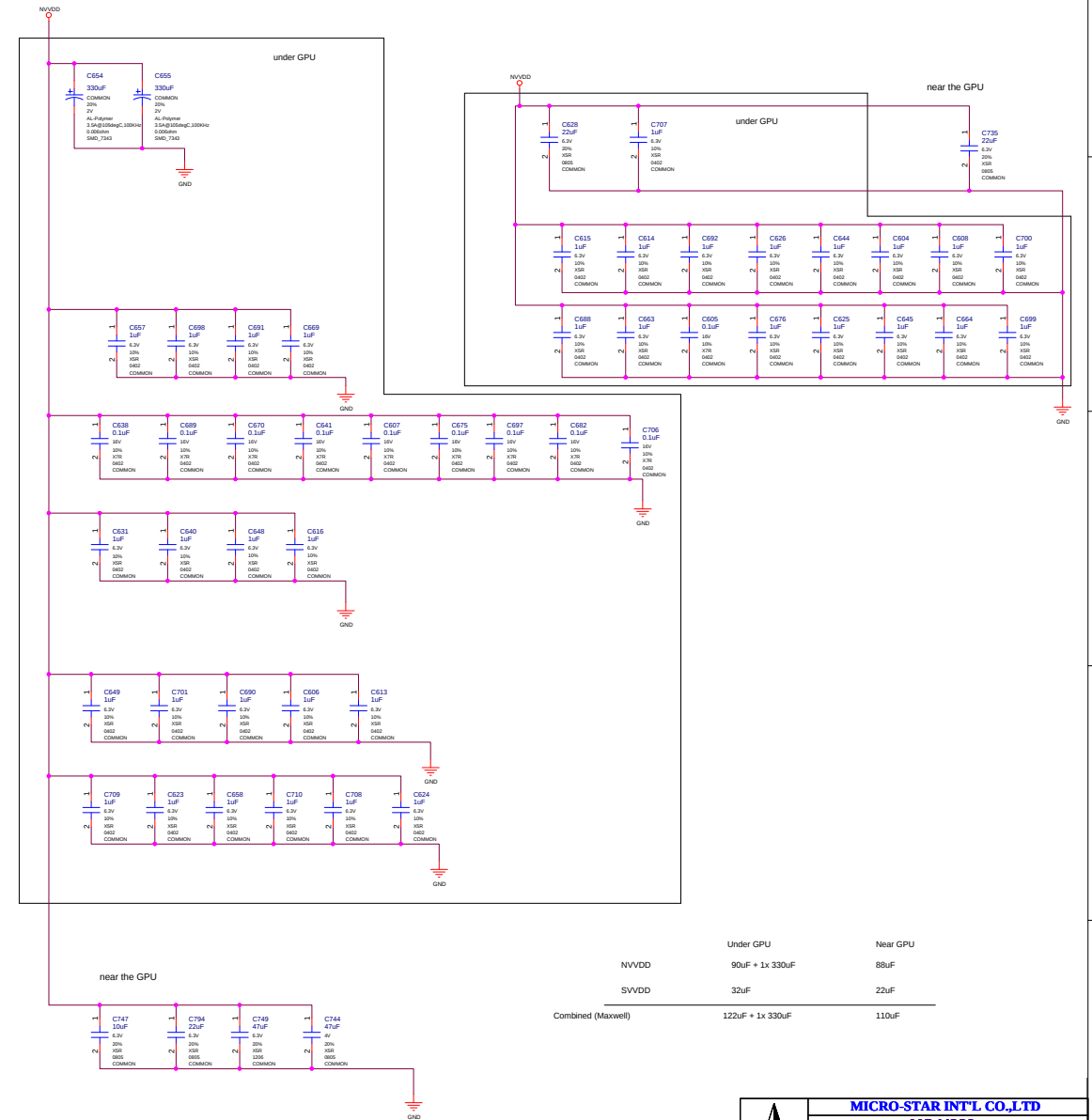


GPU Decoupling

FBVDDQ

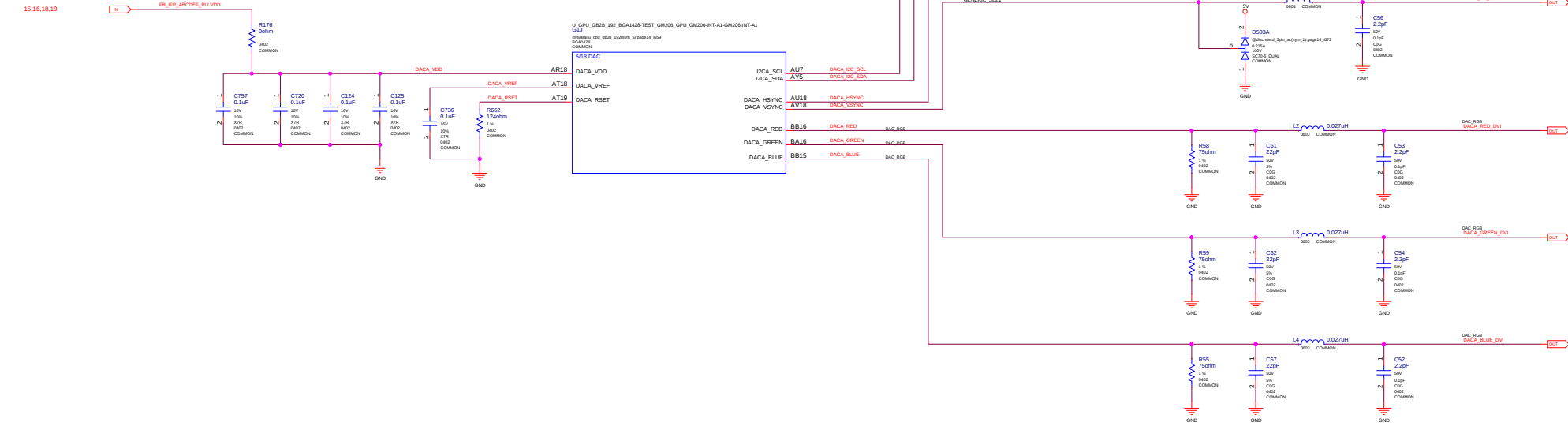


NVVDD



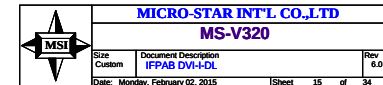
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DACA Interface

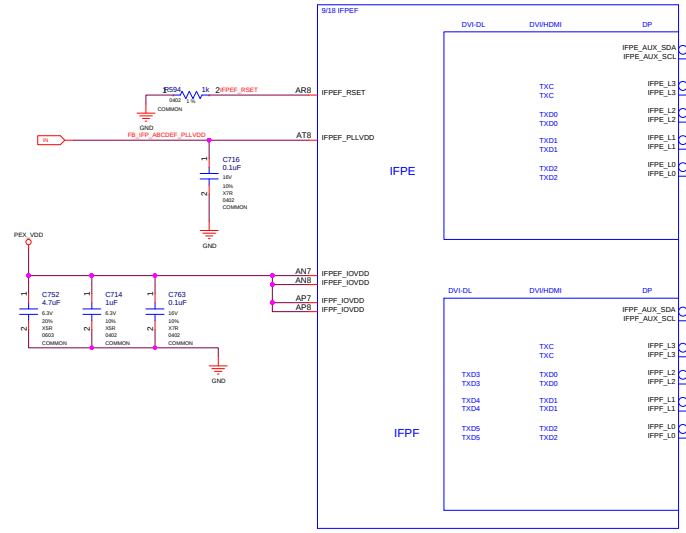
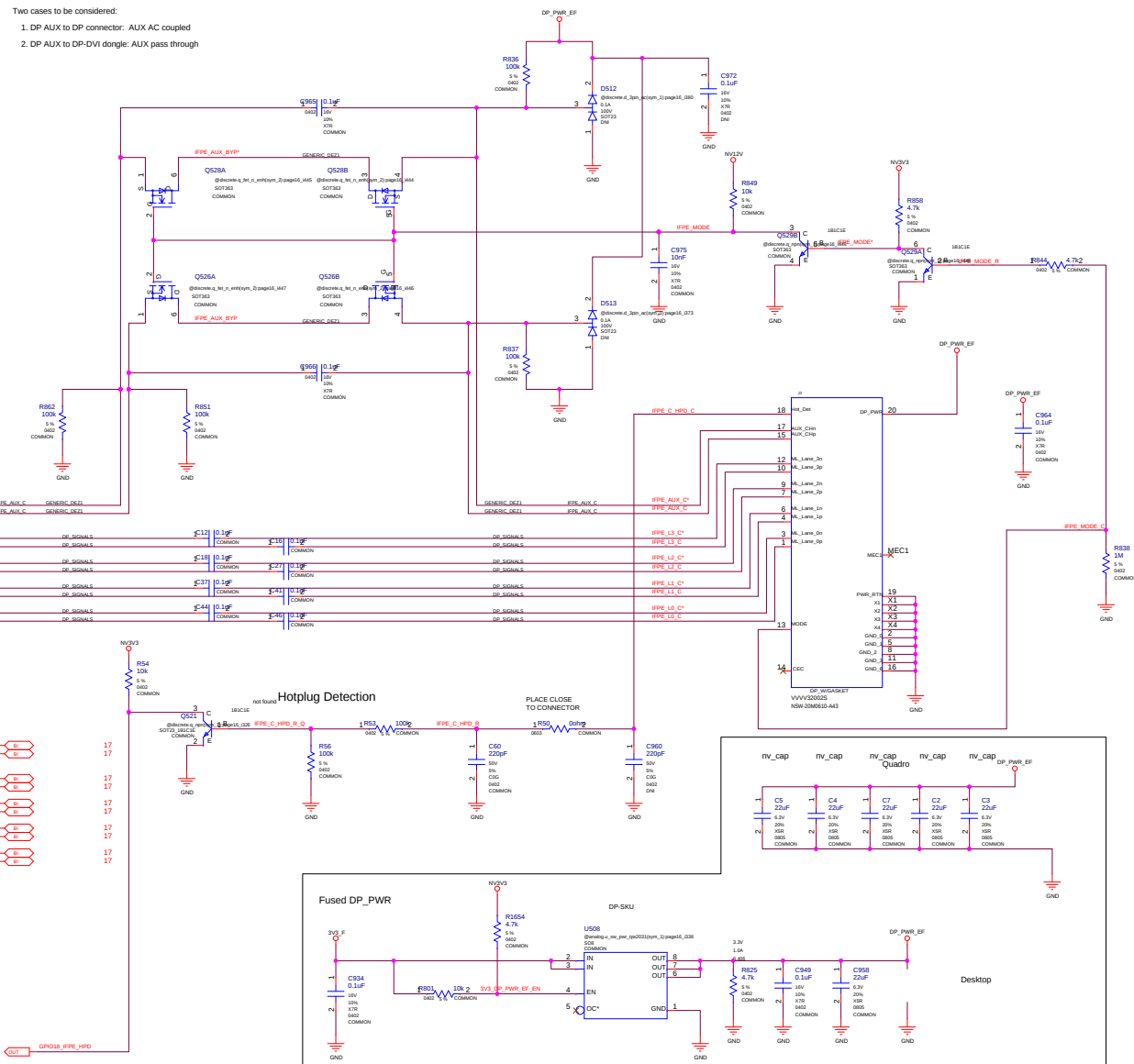


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			MS-V320	
Size	Custom	Document Description	DACA Interface	
Date:	Monday, February 02, 2015	Sheet	14	of 34
		Rev	6.0	



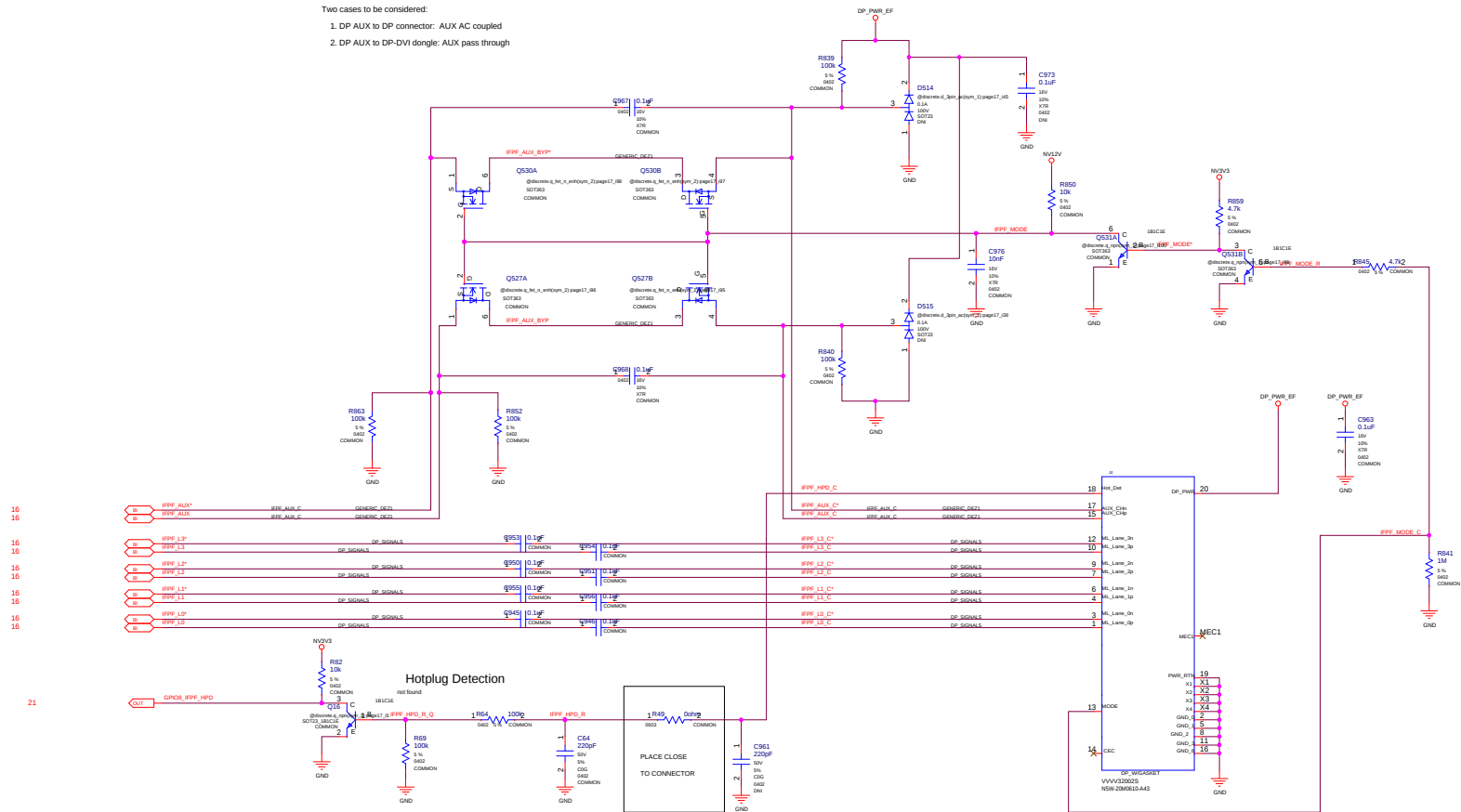
1. DP AUX to DP connector: AUX AC coupled
2. DP AUX to DP-DVI dongle: AUX pass through



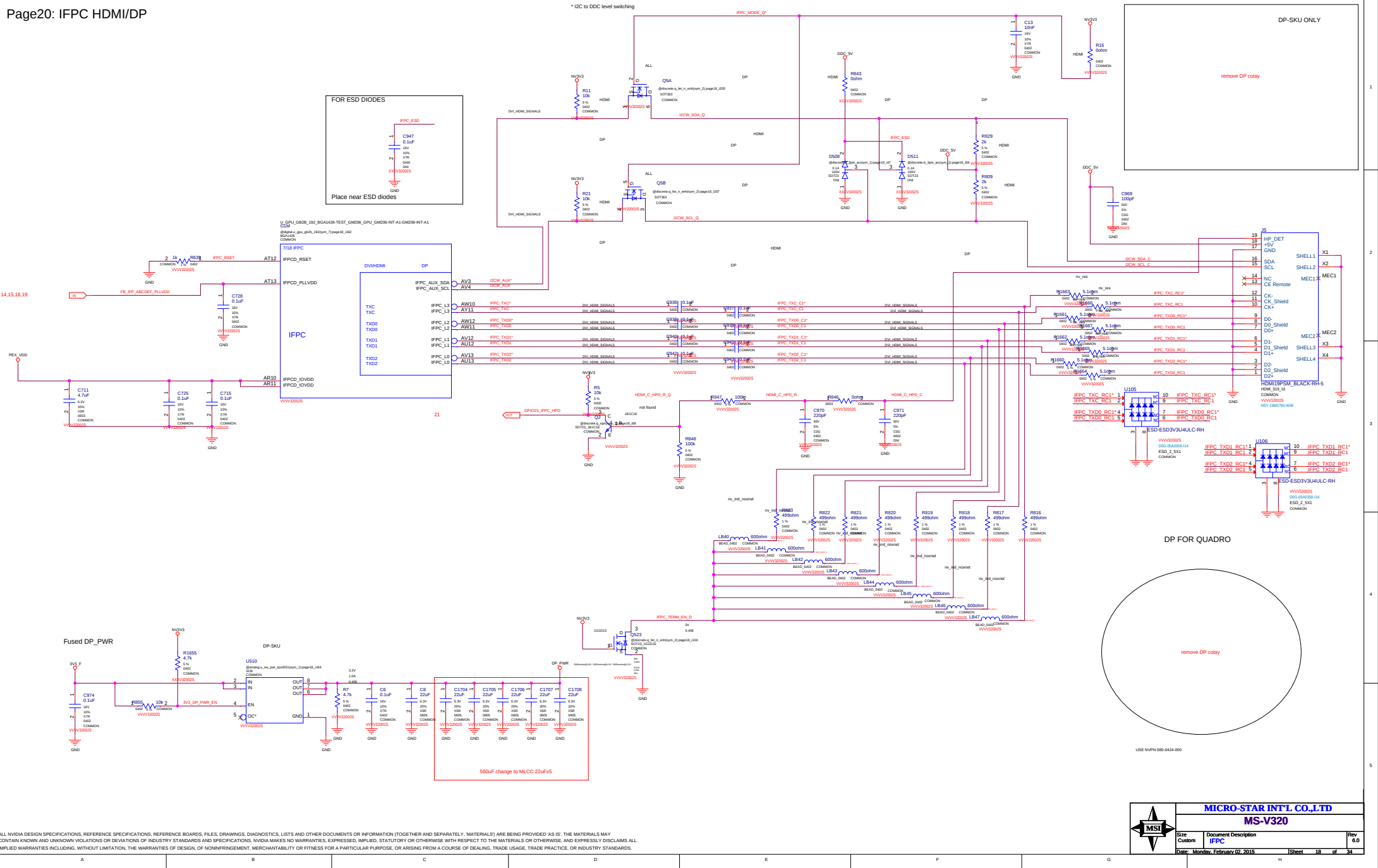
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Two cases to be considered:

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

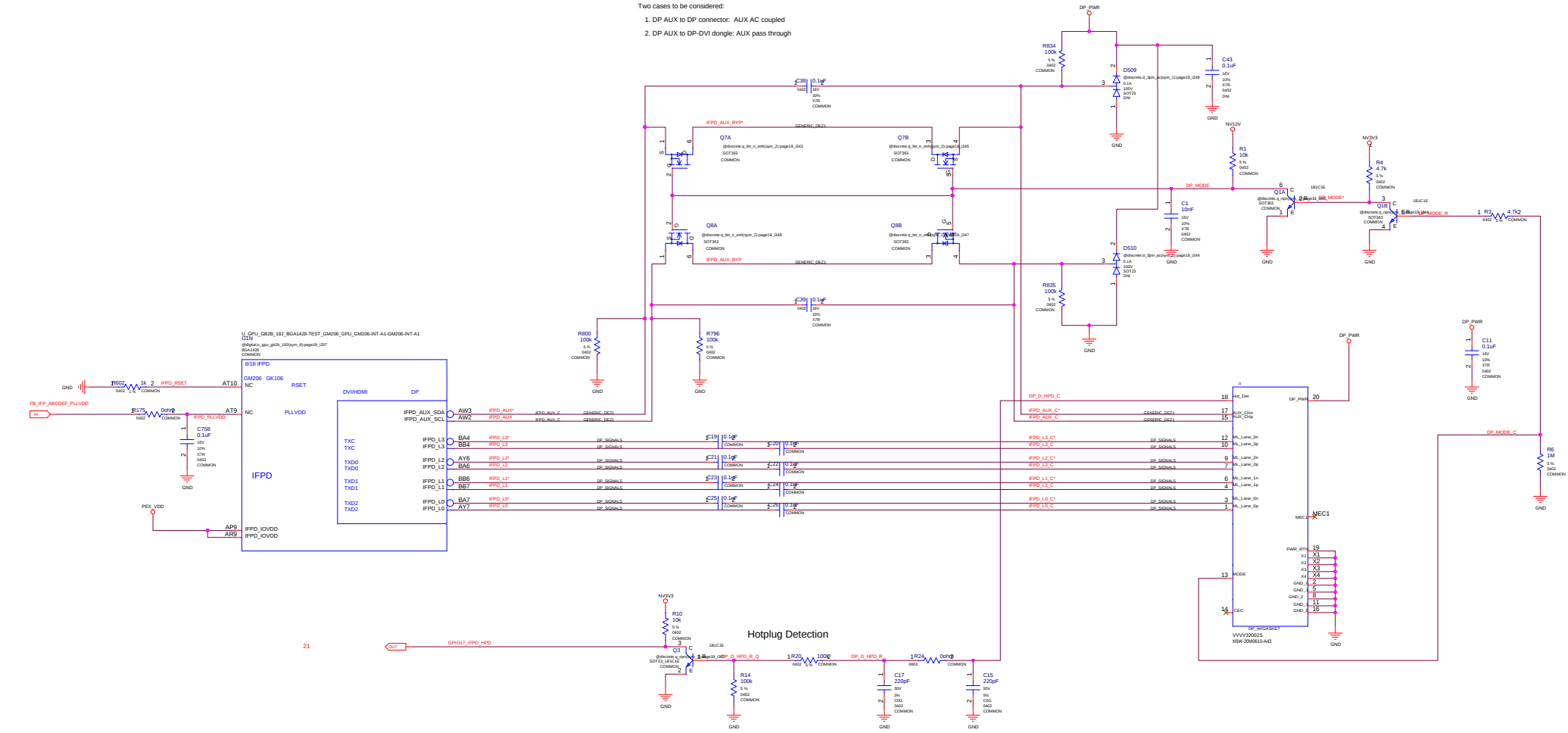


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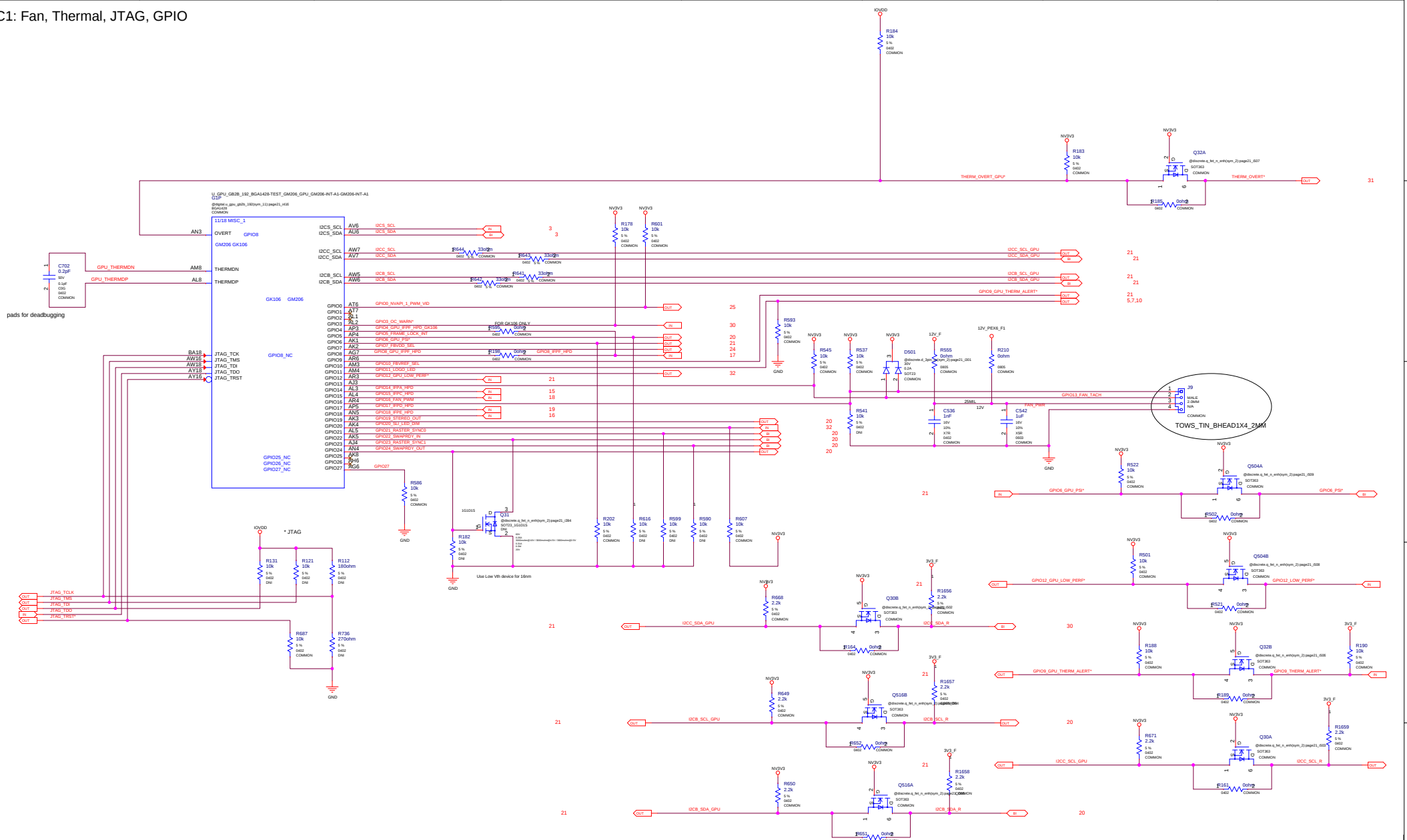
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MISC1: Fan, Thermal, JTAG, GPIO



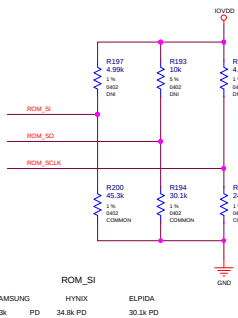
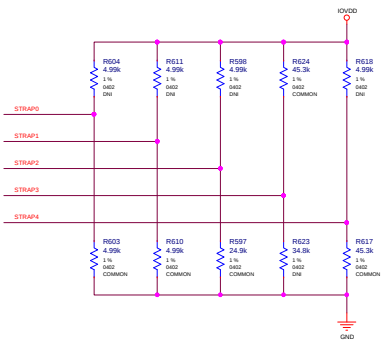
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MISC2: ROM, XTAL, Straps

	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*

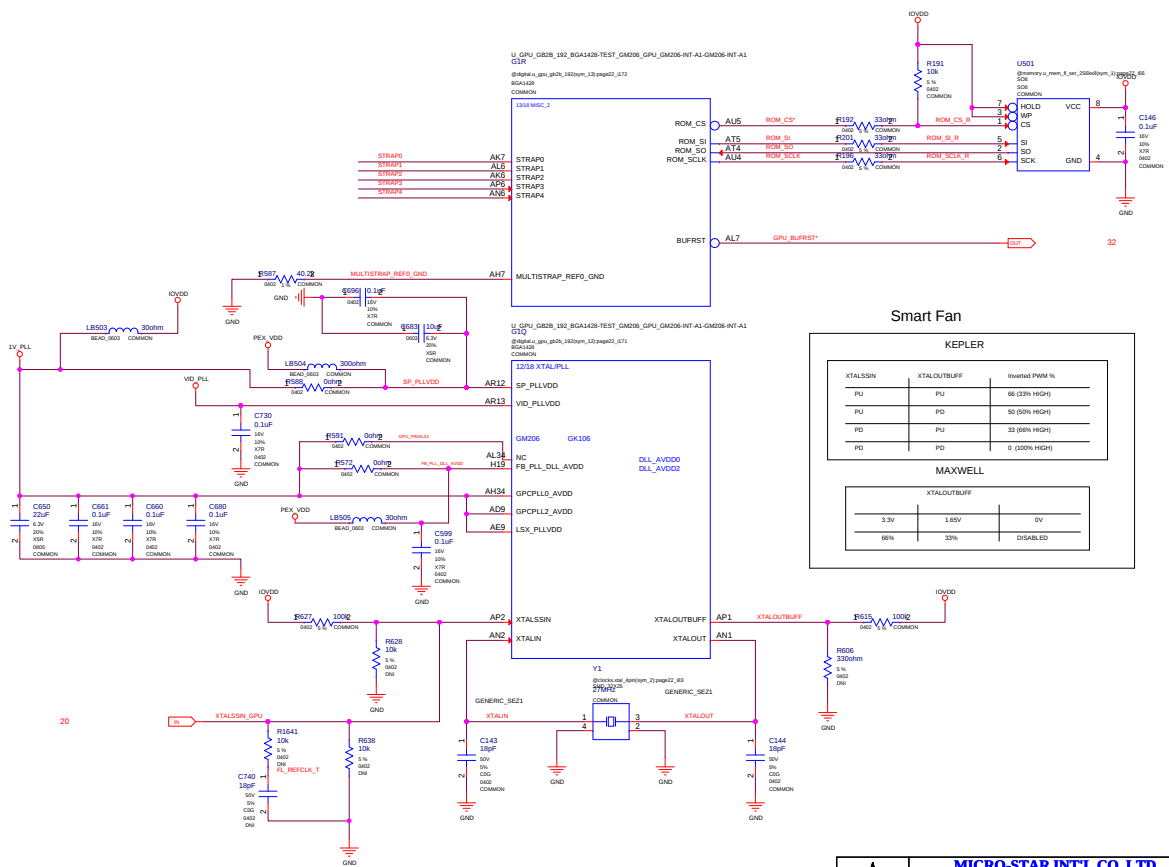
MULTI_STRAP_REF0_GND	
BINARY PRODUCTION	NC
BINARY BRICKUP	NC
MULTI-LEVEL	40.2k 1% TO GND

MAXWELL		
3.3V	1.65V	0V
GCH ISLAND ENABLED	GCH DEBUG MODE	GCH ISLAND DISABLED



ROM_SI		
SAMSUNG	HYNIX	ELPIDA
45.3k	PD	30.1k PD

	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 %
FU	FU	66 (33% HIGH)
FU	PD	50 (50% HIGH)
PD	FU	33 (66% HIGH)
PD	PD	0 (100% HIGH)
MAXWELL		
XTALOUTBUFF		
3.3V	1.65V	0V
66%	33%	DISABLED

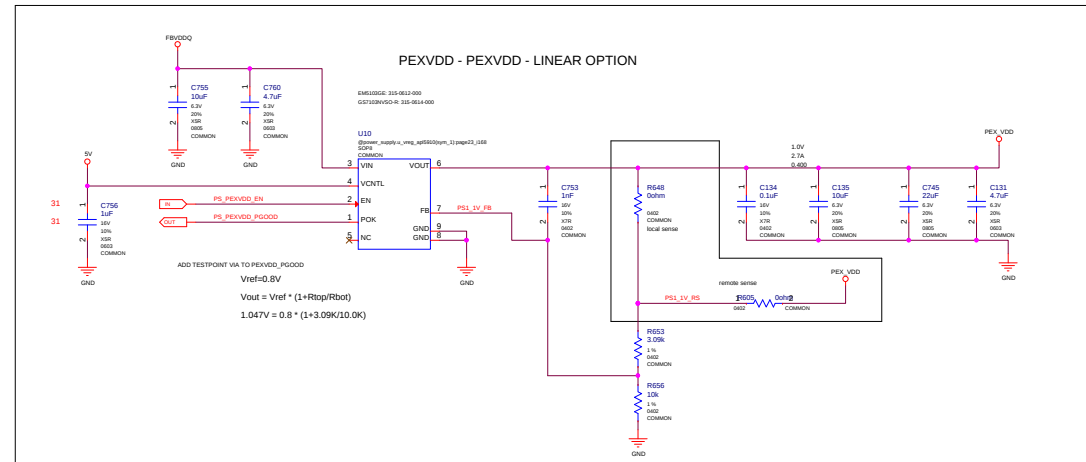
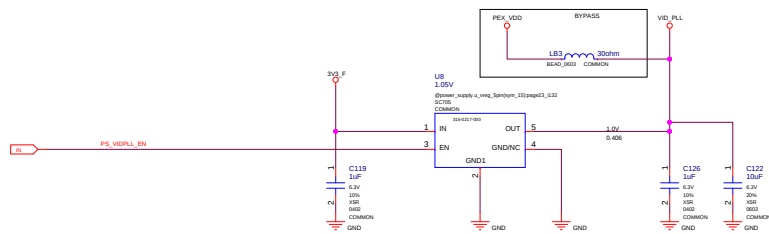
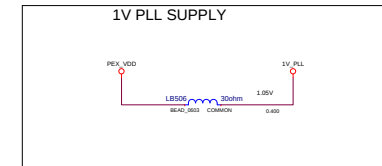
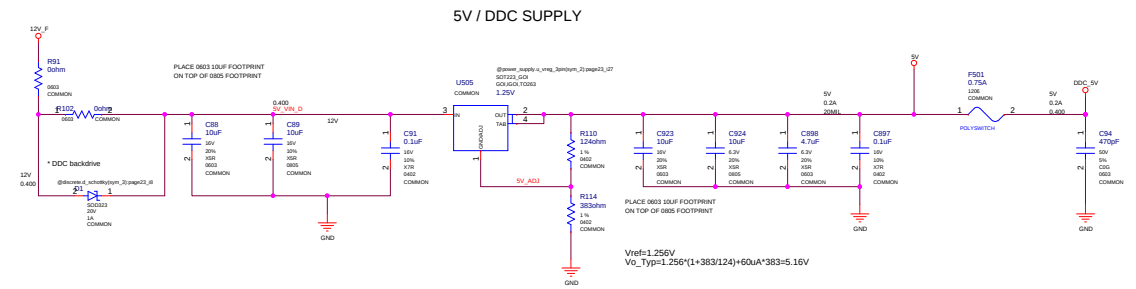
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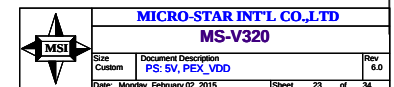
MS-V320

Size	Custom	Document Description	MISC2:ROM,XTAL, Straps	Rev	6.0
Date: Monday, February 02, 2015				Sheet	22 of 34

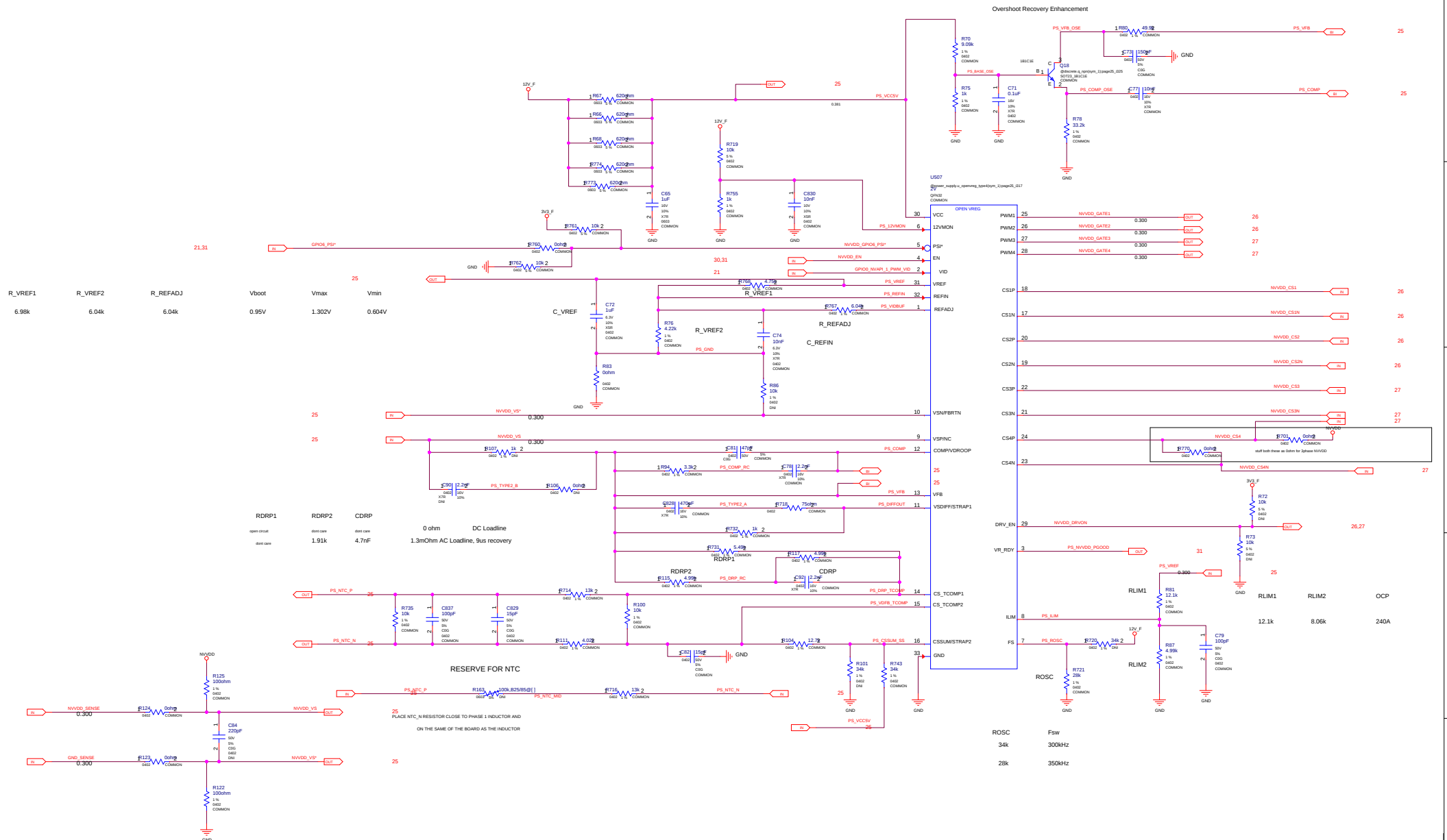
PS: 5V, PEX_VDD



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PS: NVVDD Controller



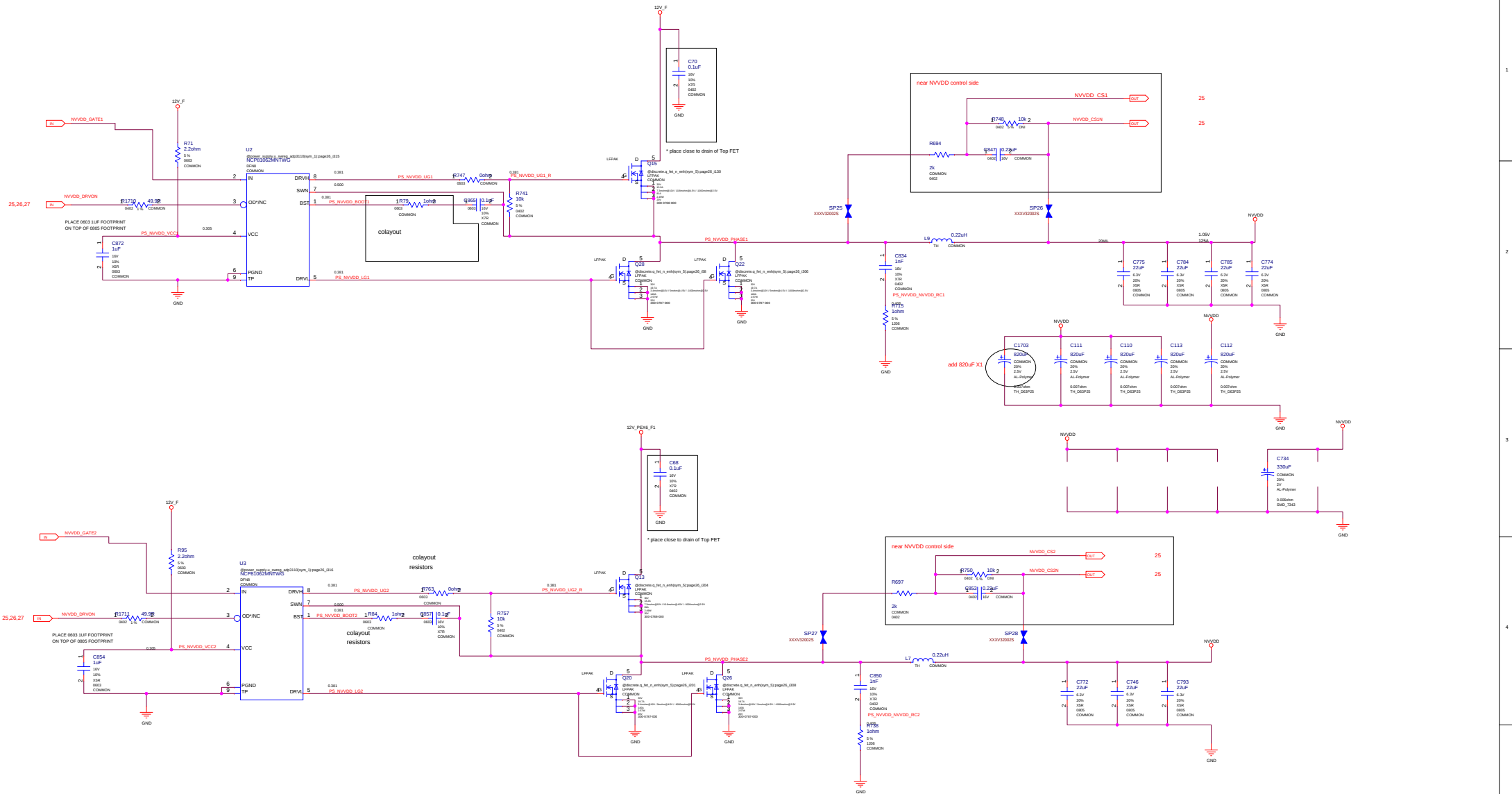
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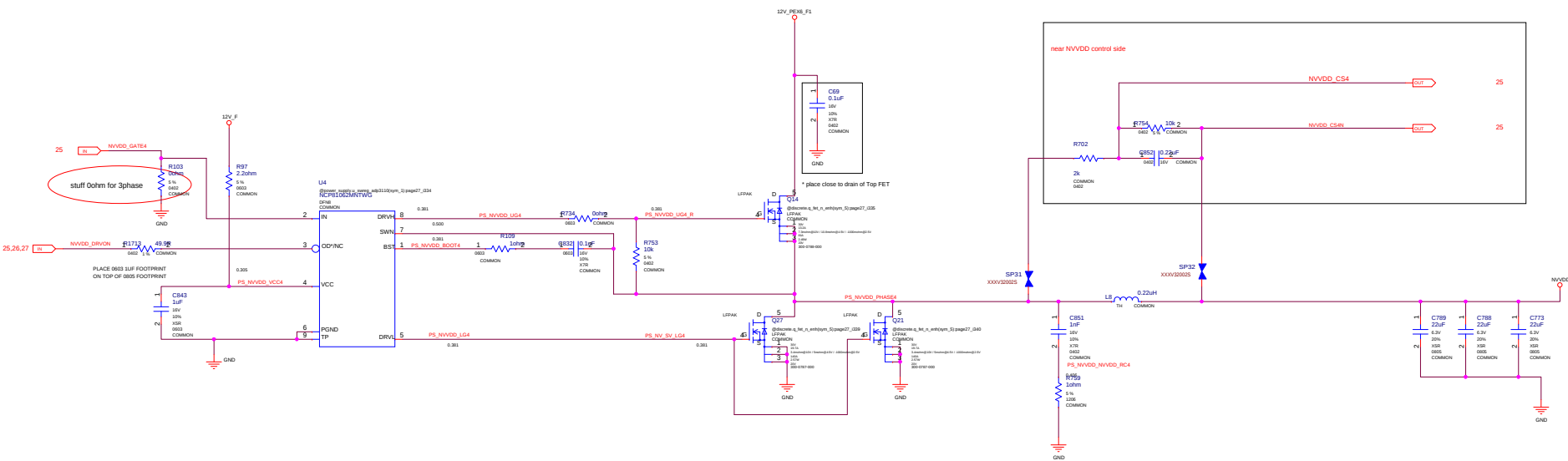
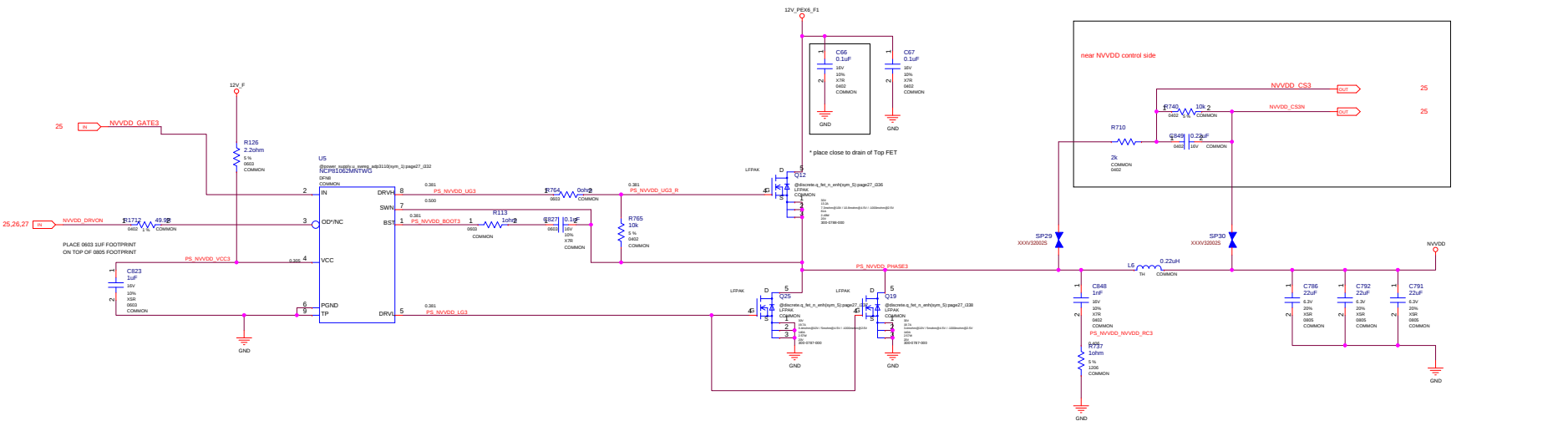
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PS: NVVDD Phase 1,2



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PS: NVVDD Phase 3,4



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Size	Document Description	Rev															
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Date: Monday, February 02, 2015		Sheet 28 of 34															
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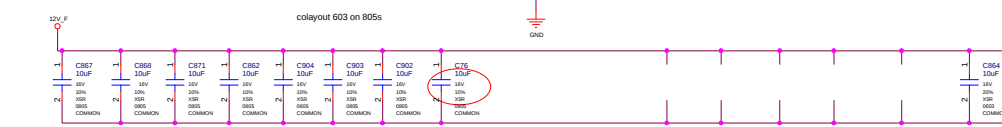
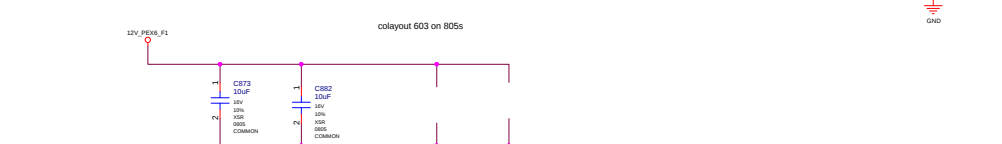
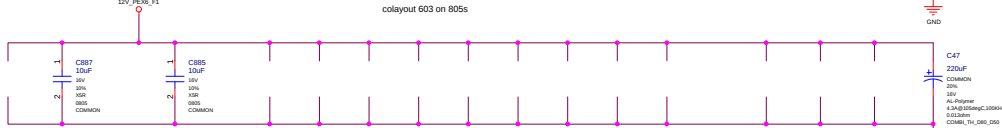
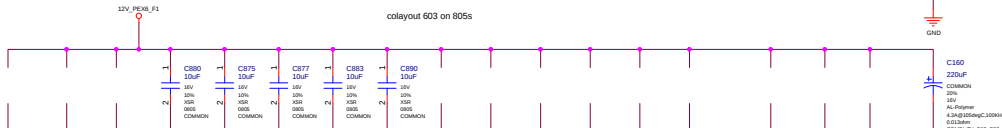
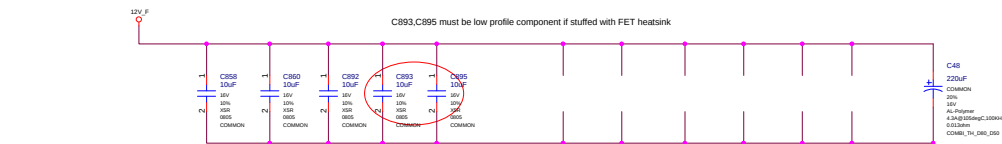
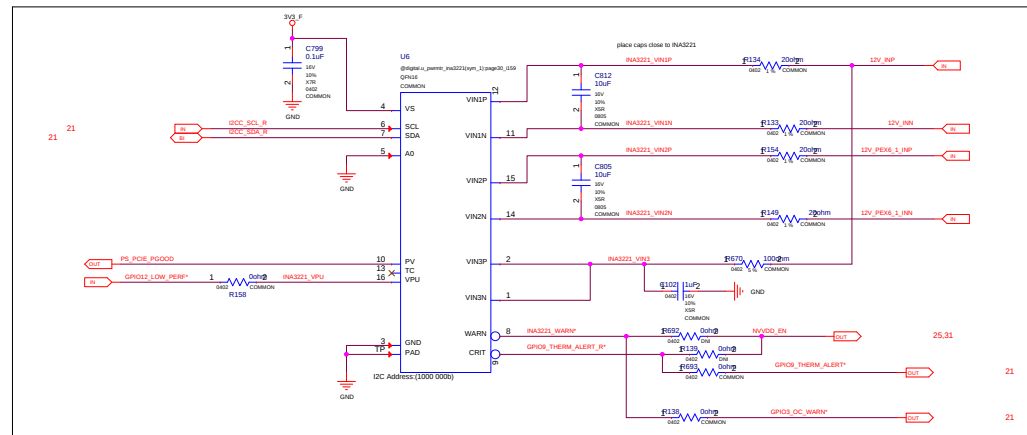
PS: NVVDD OVR2+1 POWER

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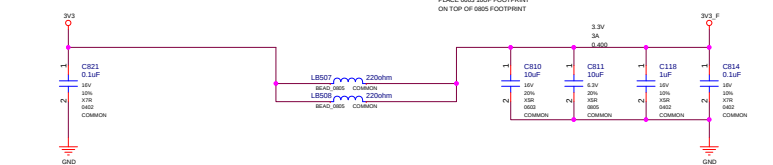


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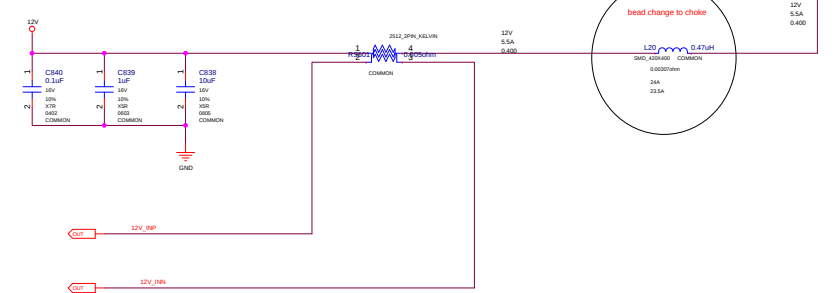
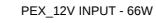
PS: Inputs, Filtering, and Monitoring



C76 must be low profile component if stuffed with FET heatsink

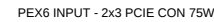


PLACE 0603 10UF FOOTPRINT
ON TOP OF 0605 FOOTPRINT

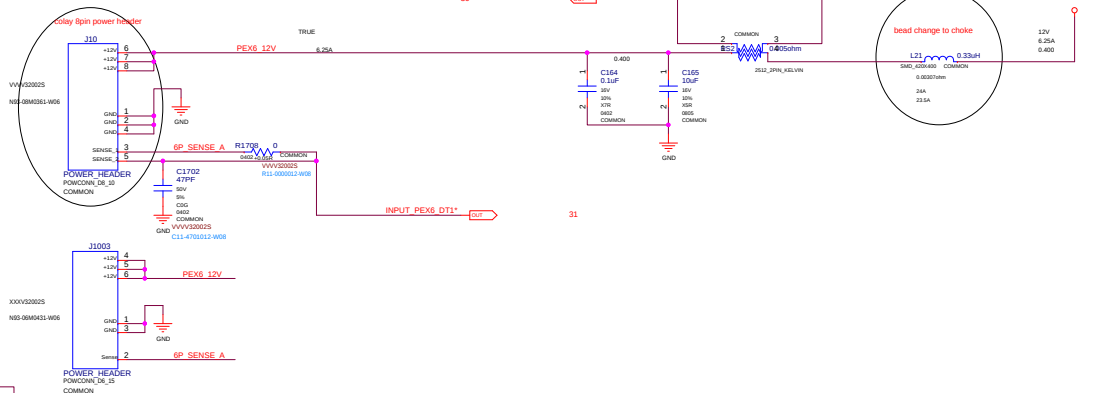


bead change to choke

1



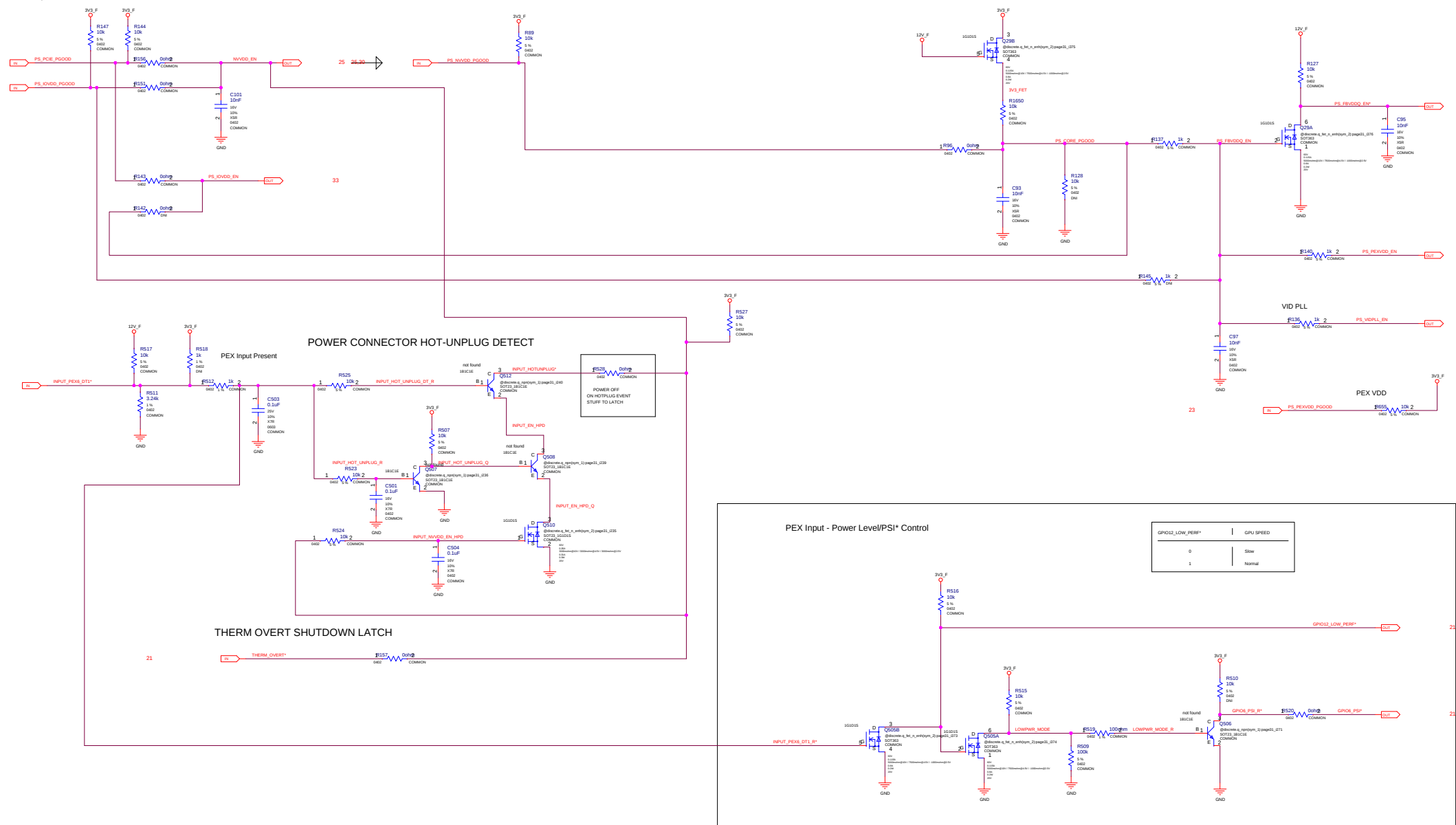
PLACE ON NORTH SIDE



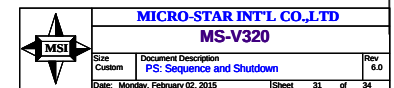
bead change to

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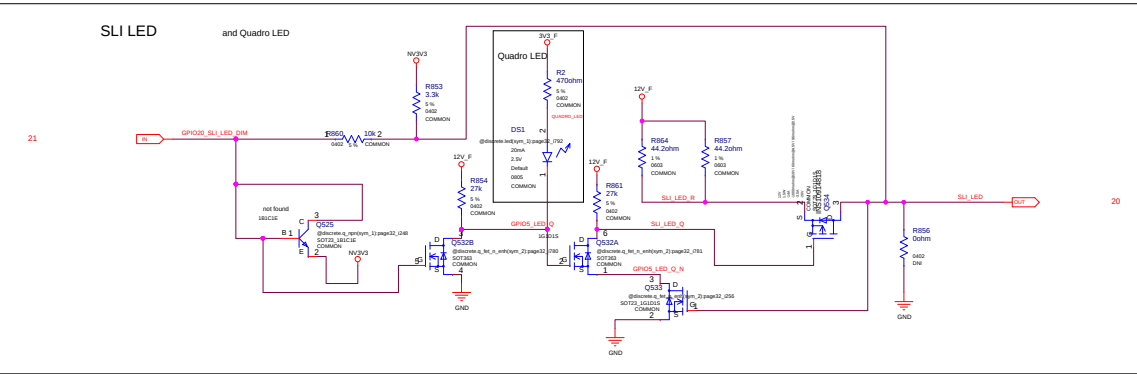
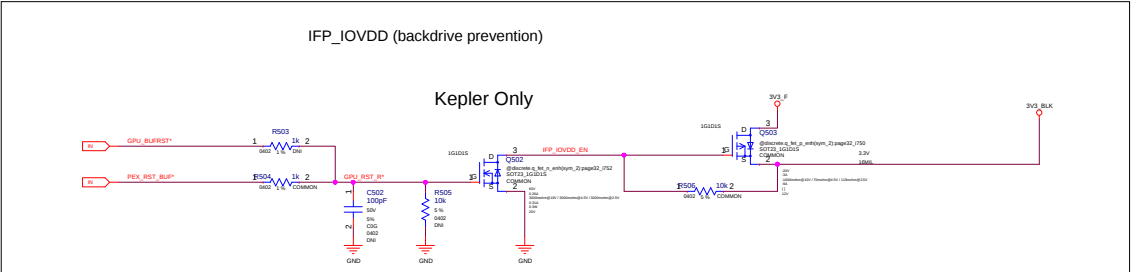
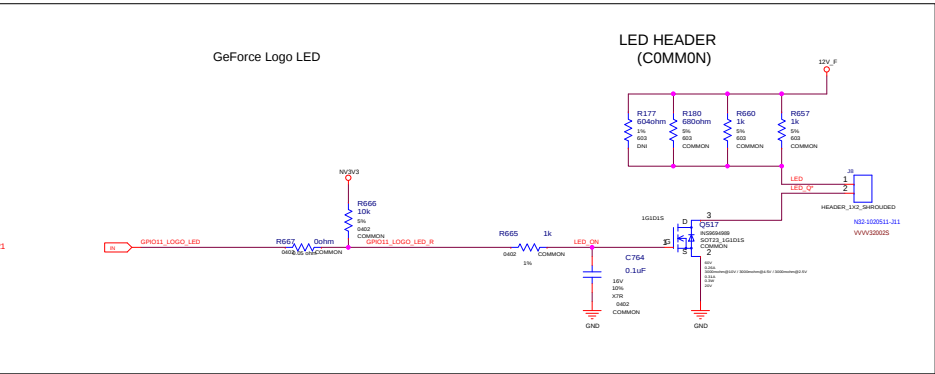
PS: Sequence and Shutdown



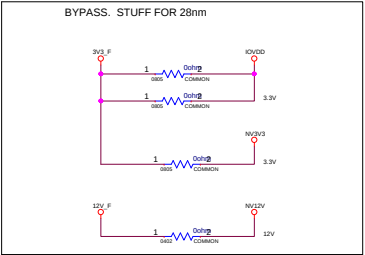
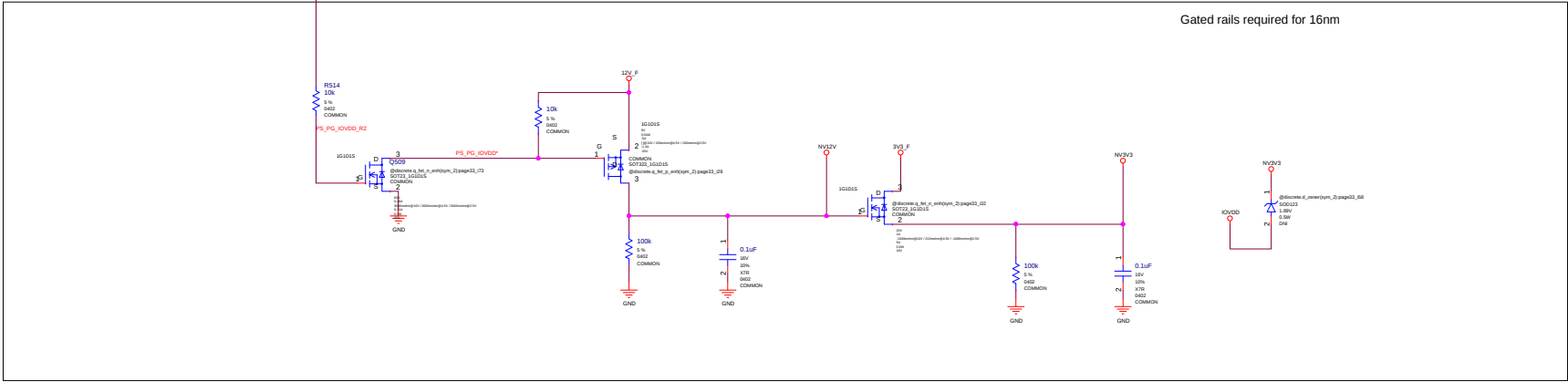
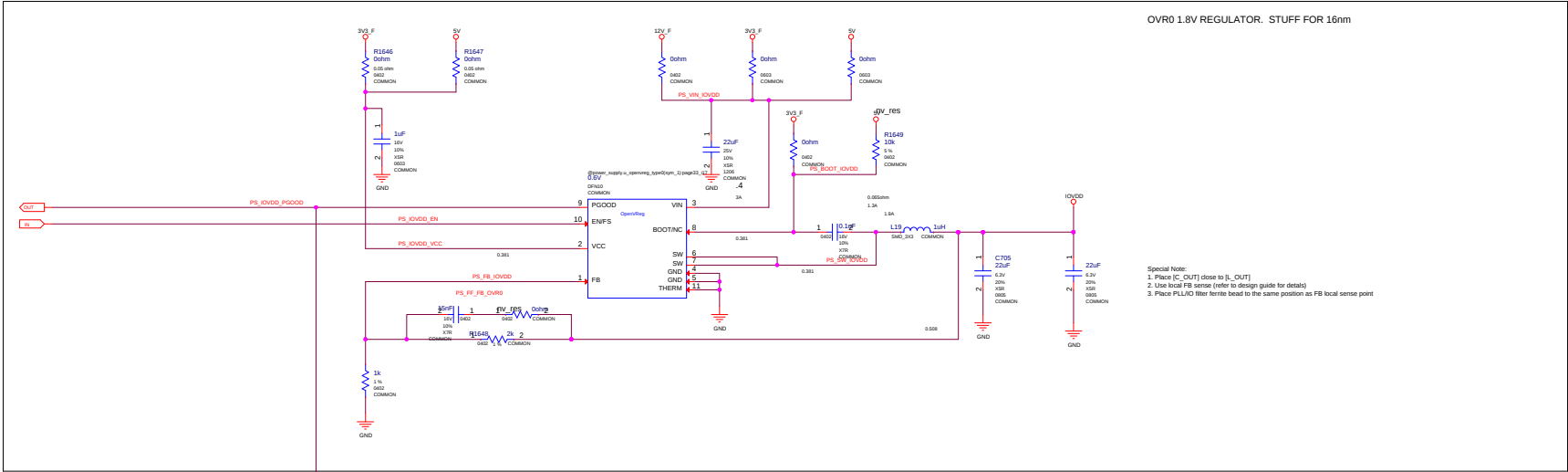
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LEDs



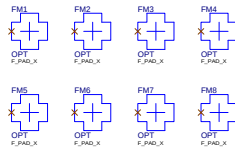
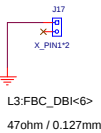
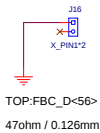
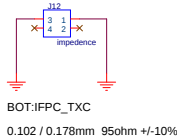
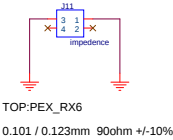
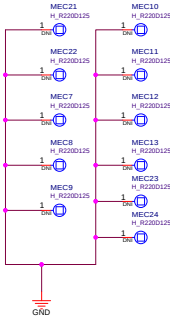
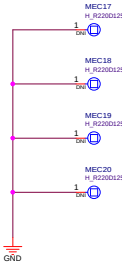
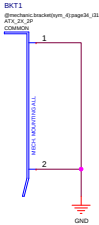
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Mechanical: Bracket/Thermal Solution

Brackets:



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