NAVI23 GDDR6 4PCS,8L DP/USB-C + DP + HDMI + DP

105-D532xx-00 Rev00B Desktop board(120W TGP)

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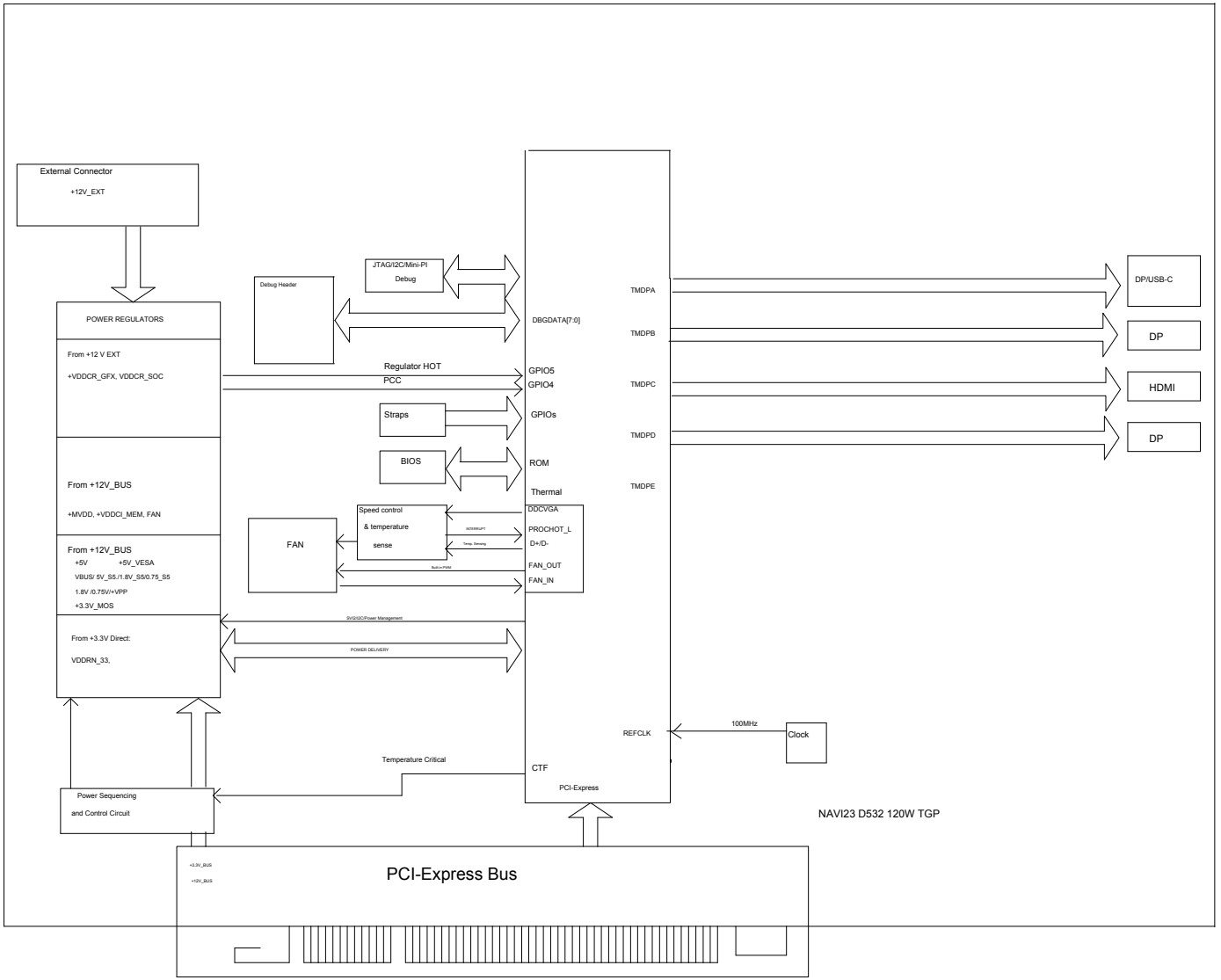

MSI	MICRO-STAR INT'L CO.,LTD	
	MS-V502	
Size: Custom	Document Description: 0002 BLOCK DIAGRAM	Rev: 2.0
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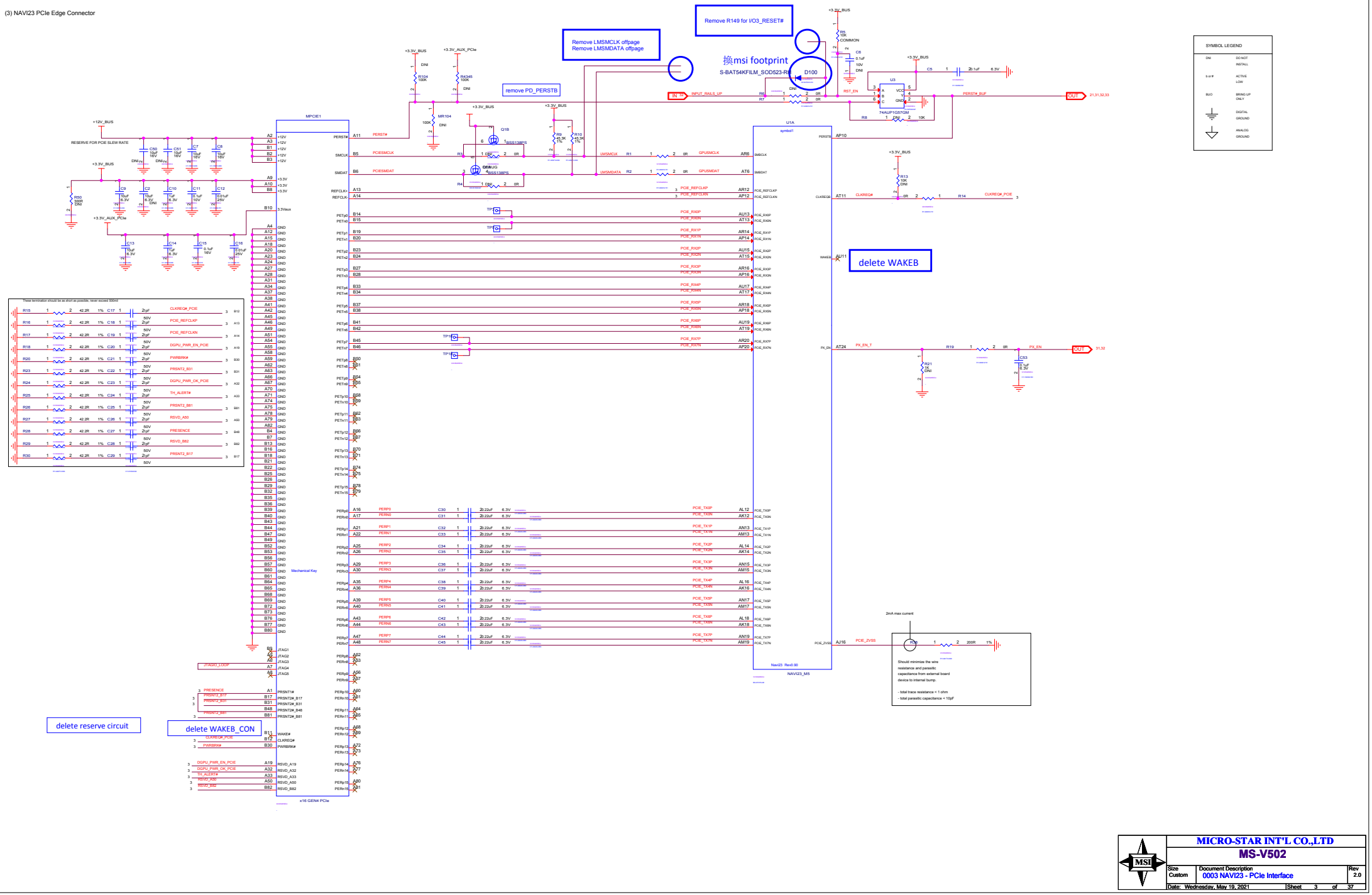

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Size: Custom	Document Description: 0003 NAVI23 - PCIe Interface
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(4) NAVI23 GPIOs & ROM

remove MOD_S_START_H

remove MOD_S_FINISH_H

remove MOD_S_ACTIVE_H_BUF

Remove R152 for GPIO_3_DAQ

Remove off-page

remove GPIO_1, GPIO_2, GPIO_3

Remove GPIO_6

TXIT I2C ADDRESS	RXIT I2C ADDRESS	FUNCTION	I2C BUS	DEVICE
0x30	0x60	VDDCR_GFX/SOC	SCL/SDA	U501/R35217
0x22	0x44	MVDD/VDDCI	SCL/SDA	U701/NCP81022
0x4C	0x98	EXT SENSOR	DDCVGACLK/DATA	U4001/LM96163
0x48	0x90	G6 Temperture	DDCVGACLK/DATA	U4012/MAX31875R0
0x49	0x92	POWER SOC	DDCVGACLK/DATA	U4013/MAX31875R1
0x4A	0x92	POWER GFX	DDCVGACLK/DATA	U4014/MAX31875R2
0x48	0x90	POWER VDDCI	SCL/SDA	U4015/MAX31875R0

+1.8V merge to +1.8V_S5

remove MOD_S_FINISH_H

remove MOD_S_ACTIVE_H_BUF

remove MOD_S_START_H

remove BAMACO_EN

R146,R147,R148
Place them close to U3

Remove EXTERNAL SPI PROGRAMMER HEADER FOR VBIOS

EXTERNAL SPI PROGRAMMER HEADER FOR VBIOS

+1.8V merge to +1.8V_S5

Note: Internal PU/PD at GPIO pad is ~40k strength in 14nm design spec

	User	Internal Default Value	Definition
BIF		0	STRAP_BIF_GEN4_DIS_A 0: PCIe GEN 4 supported 1: PCIe GEN 4 not supported
		0	PINSTRAP_BIF_CLK_PM_EN 0: CLKREQ# power management capability is disabled 1: CLKREQ# power management capability is enabled
		0	PINSTRAP_BIF_LC_TX_SWING 0: Full swing mode 1: Reduced swing mode(half swing)
		0	PINSTRAP_BIF_VGA_DIS 0: VGA controller capacity enabled 1: The device won't be recognised as the system's VGA controller
DCE		0 0 0	PINSTRAP_AUD_PORT_CONN[2:0] Number of audio-capable display outputs 0: All endpoints connected 1: 6 endpoints connected 2: 5 endpoints connected 3: 4 endpoints connected 4: 3 endpoints connected 5: 2 endpoints connected 6: 1 endpoint connected 7: 0 endpoints connected Deafault(PINSTRAP5,PINSTRAR4,PINSTRAR3) = 000
		0 0	PINSTRAP_AUD[1:0] 1: Audio for DisplayPort only 2: Audio for DisplayPort and HDMI if dongle is detected 3: Audio for both DisplayPort and HDMI Deafault(GPIO12,GPIO11) = 11
Platform		0 0 0	PINSTRAP_FIG[1:0] - No definition on NV PINSTRAP_MVDD_FB_DIVIDER_CONFIG 0: Divider does not exist 1: Divider exists
SMU		1 0 1	PINSTRAP_BFI_MEM_AP_SIZE[2:0] Or PINSTRAP_ROM_CONFIG[2:0] 100 - 512KBIT (ST) M25P05A 101 - 1MBIT (ST) (M25P10A) 101 - 2MBIT (ST) M25P20 101 - 4MBIT (ST) M25P40 101 - 8MBIT (ST) M25P80 100 - 512KBIT (CHINGIS) PM25LV512 101 - 1MBIT (CHINGIS) PM25LV010 Deafault(PINSTRAP2,PINSTRAR1,PINSTRAR0) = 101
		0	PINSTRAP_SMBUS_ADDR 0: 0x41h 1: 0x40h
		1	PINSTRAP_BIOS_ROM_EN 0: Disable the external BIOS ROM device 1: Enable the external BIOS ROM device

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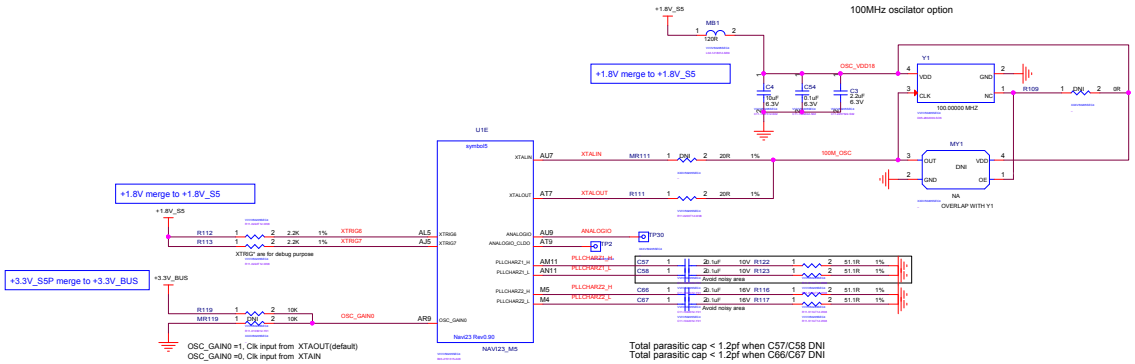

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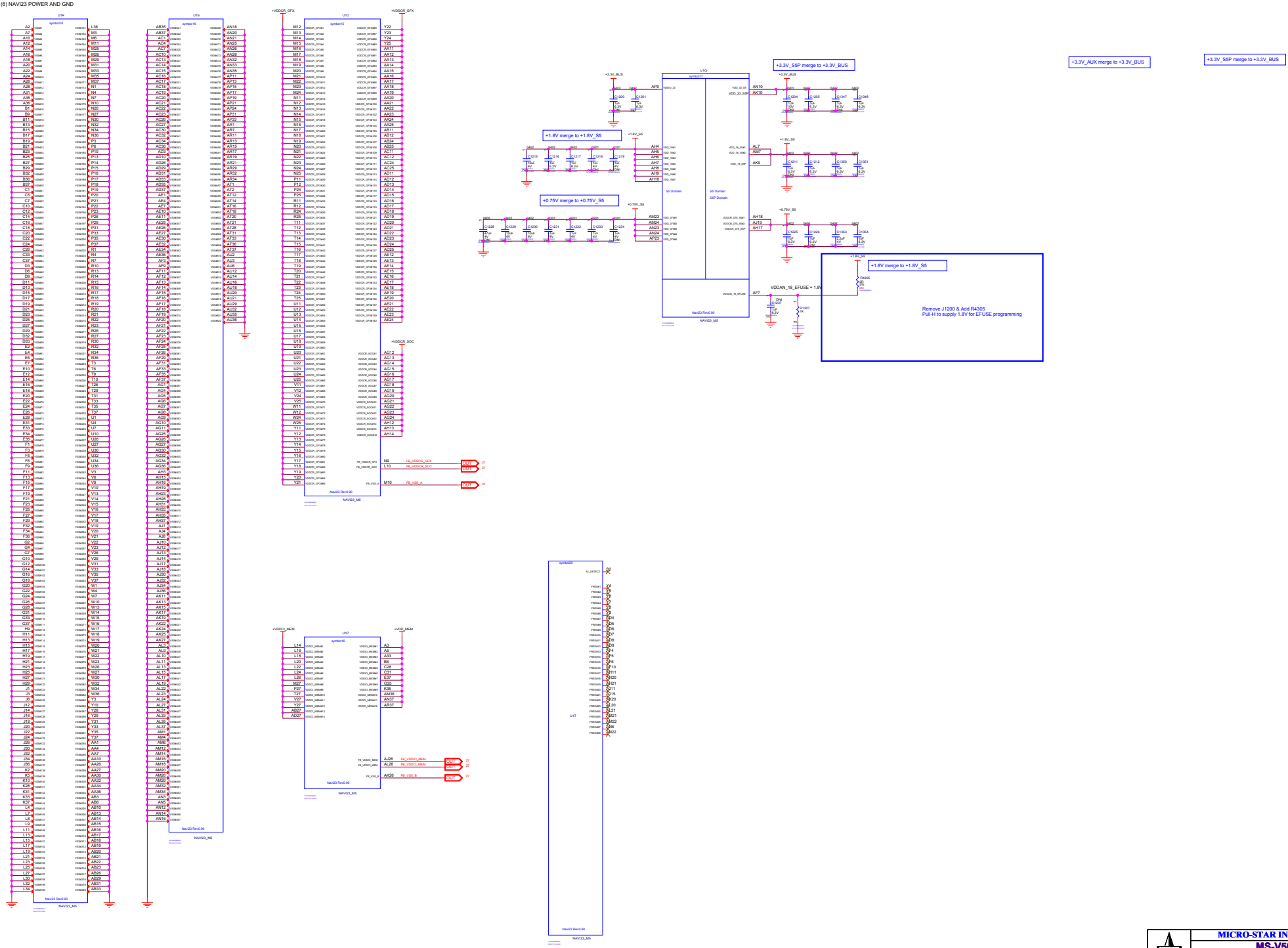
(6) NAVI23 POWER AND GND



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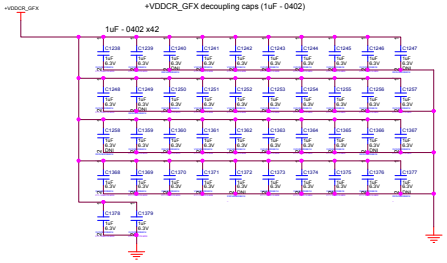

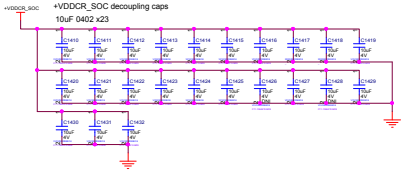

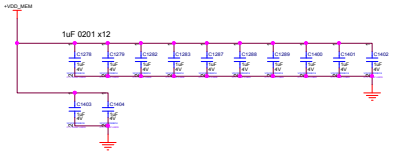

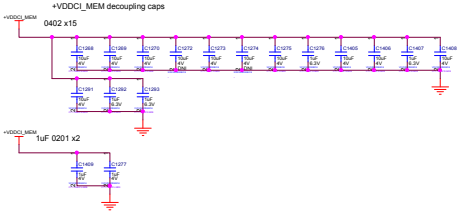

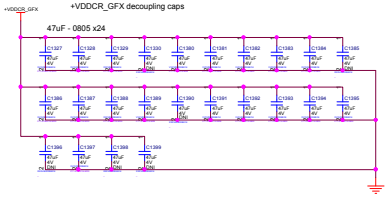

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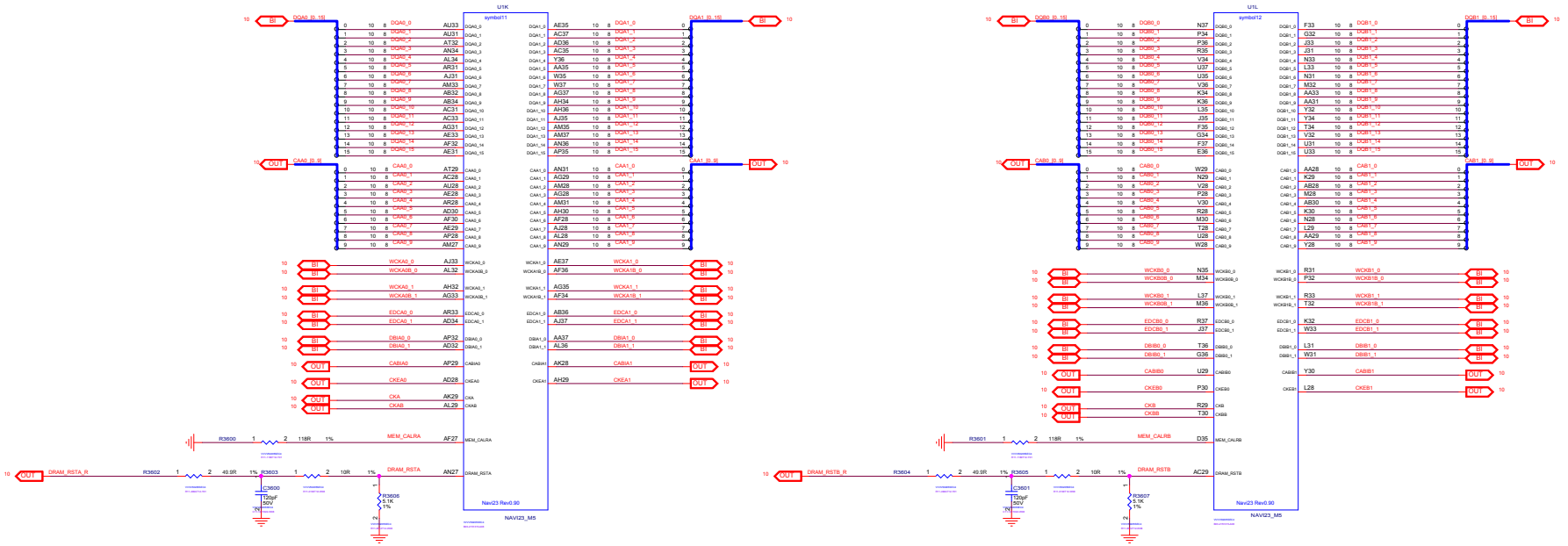
(8) NAVI23 MEM INTERFACE CH A/B



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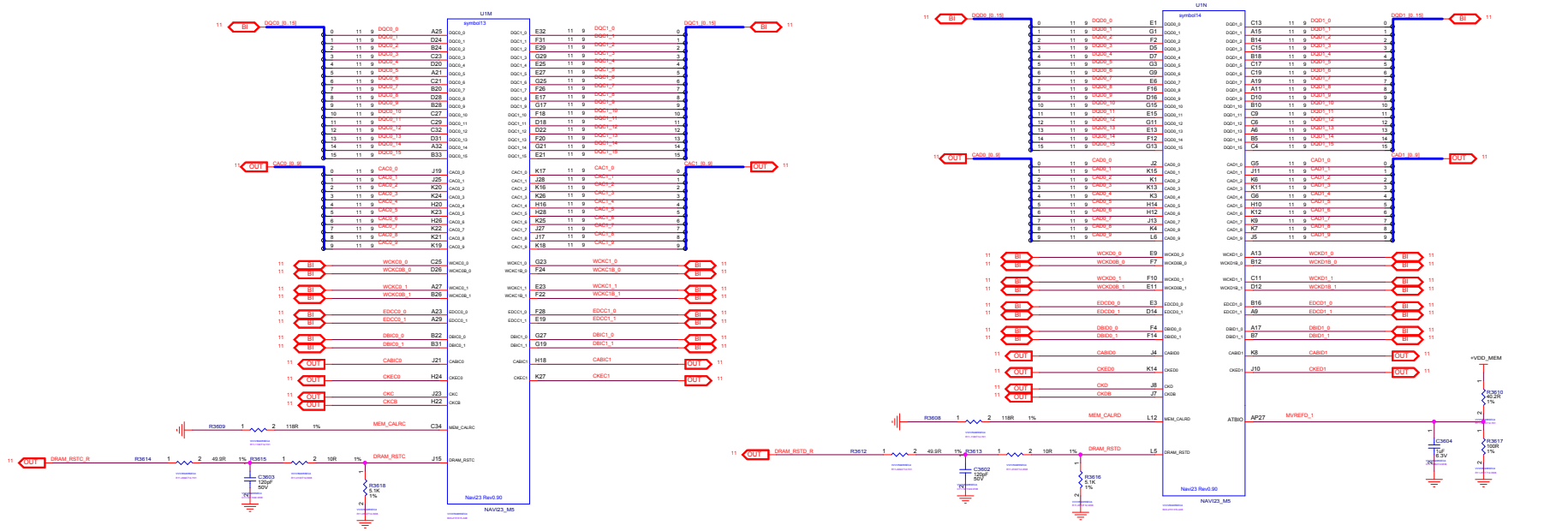
(9) NAVI23 MEM INTERFACE CH C/D



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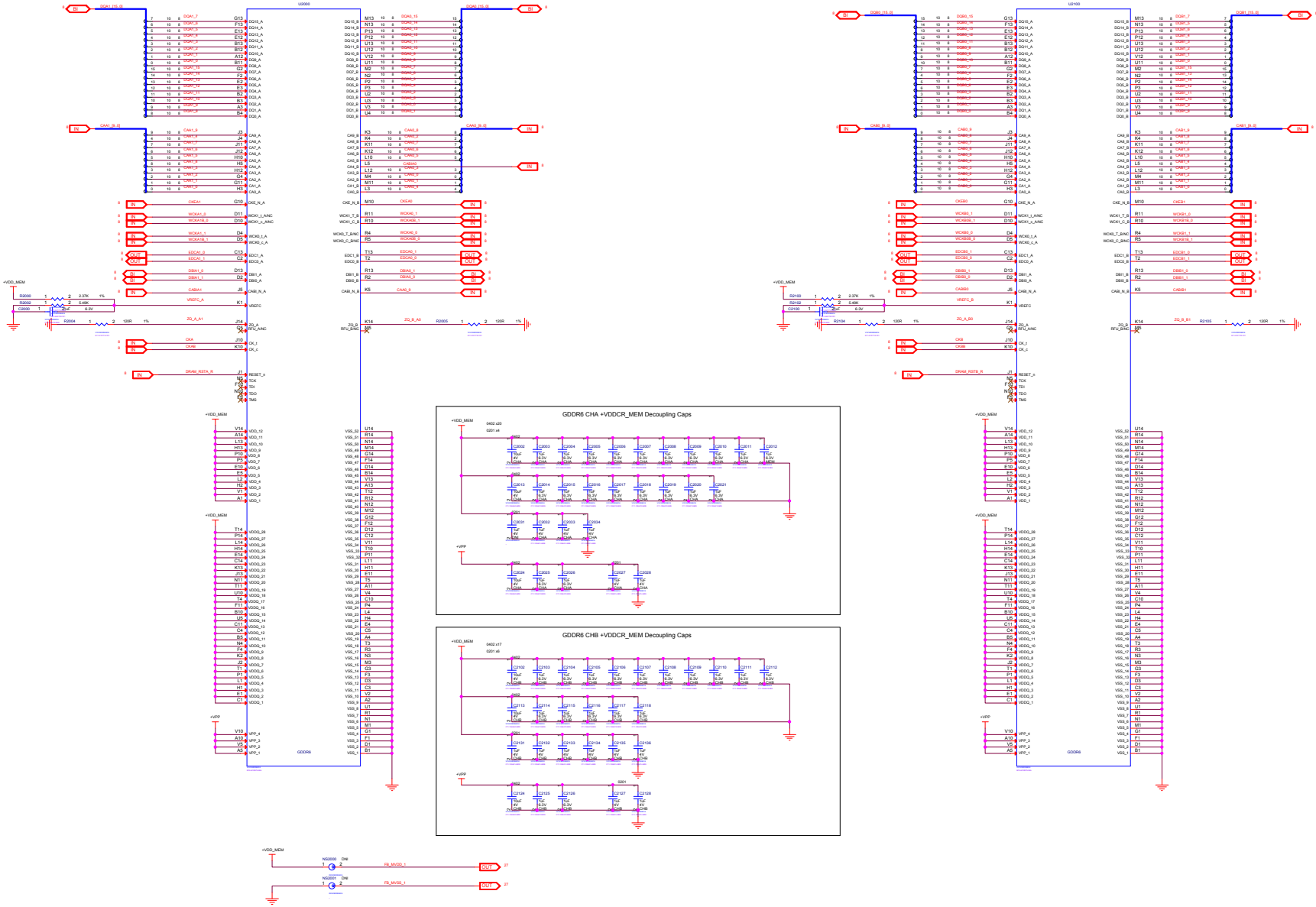

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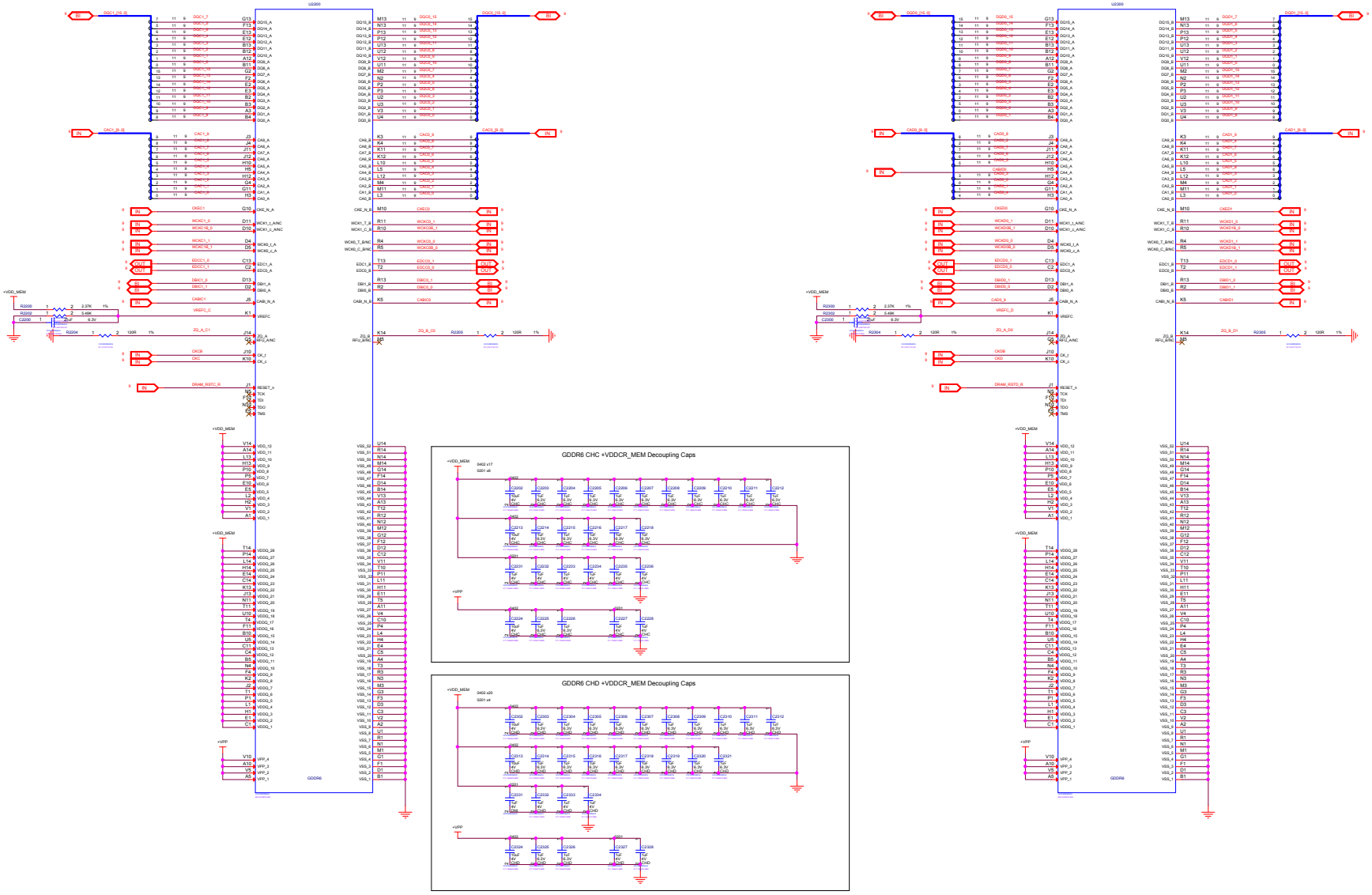

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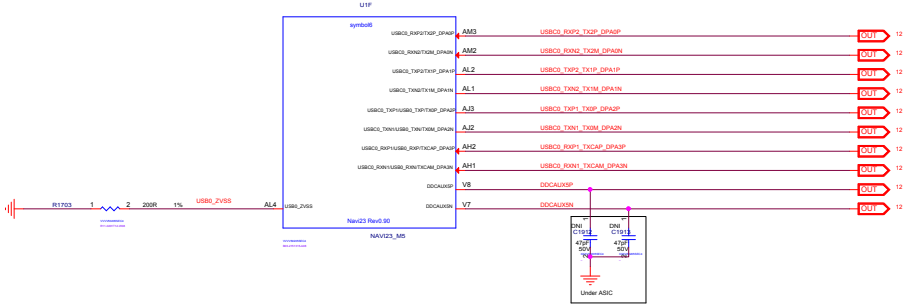
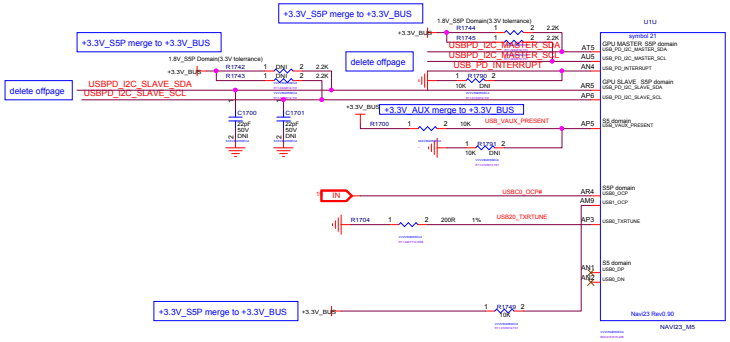
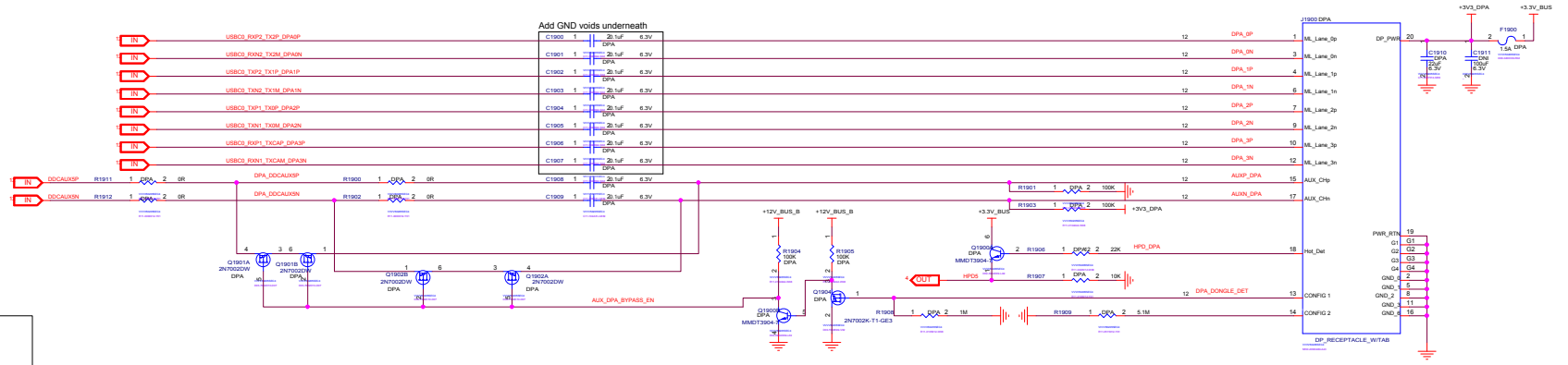
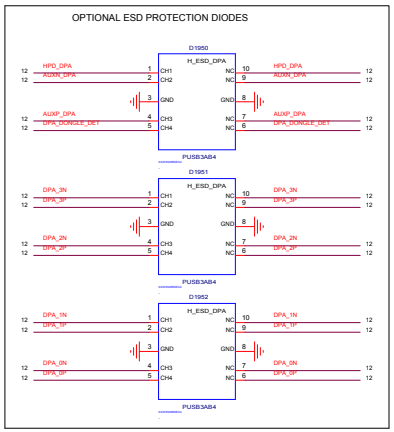
(12) TMDP AB









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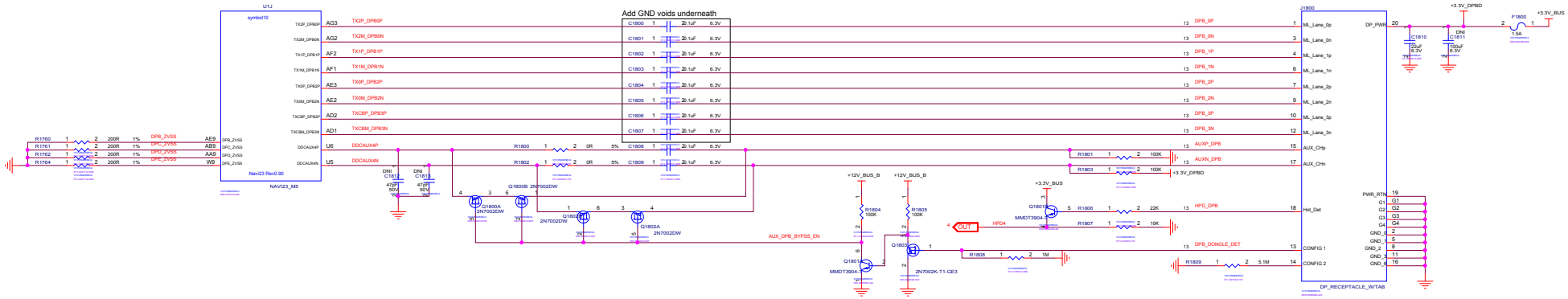

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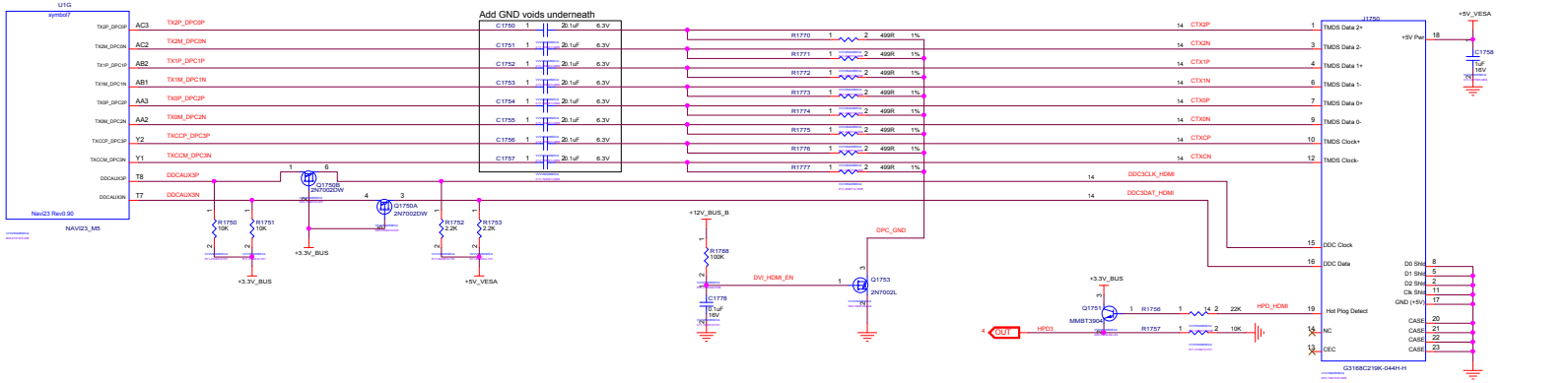

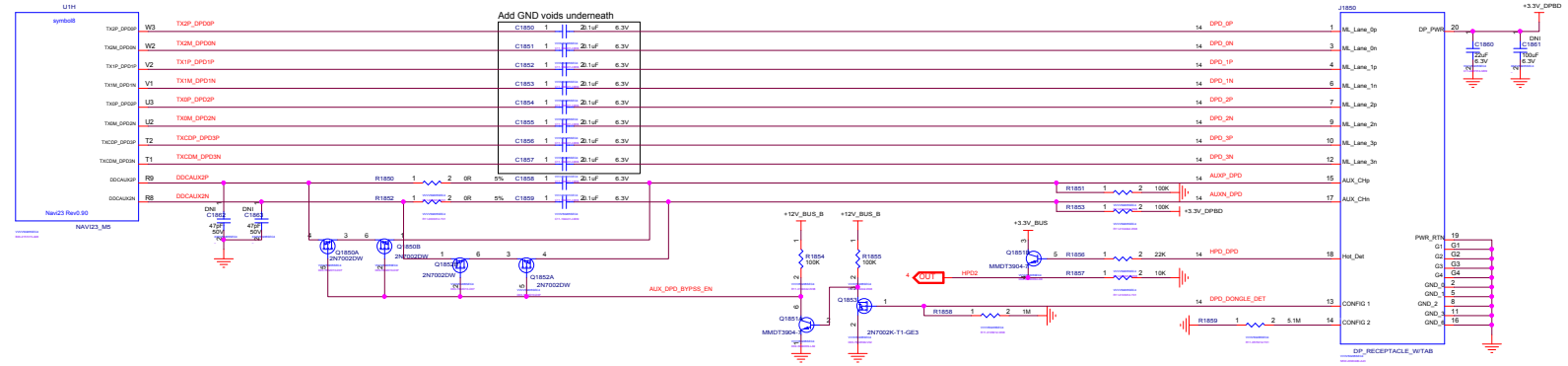

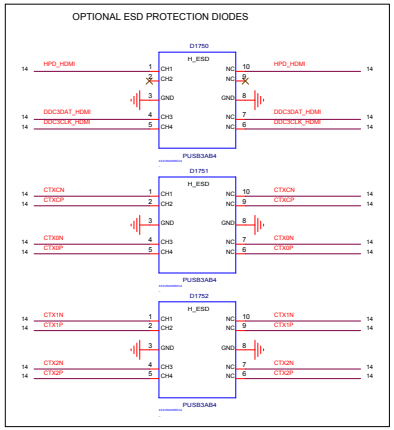

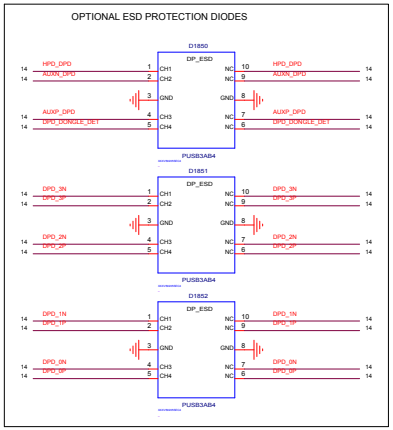

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+3.3V_AUX merge to +3.3V_BUS

remove

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remove

MICRO-STAR INT'L CO.,LTD

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remove

+3.3V_12V merge to +3.3V_BUS

remove

+0.75V merge to +0.75V_S5

+1.8V merge to +1.8V_S5

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Custom	0018 USB_VBUS 5V S5_Rails	2.0

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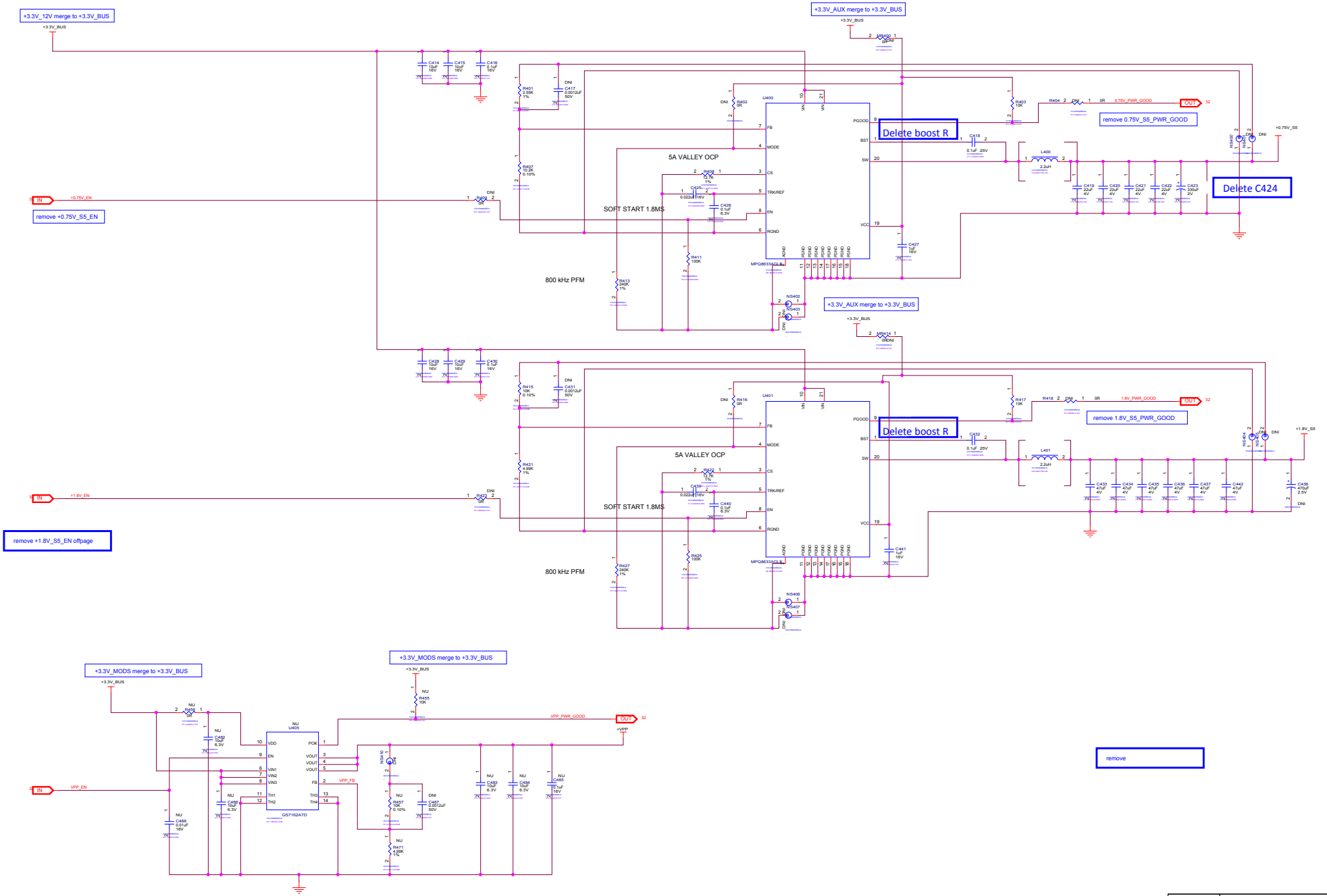

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Size: Custom	Document Description: 0019 REG 1.8V 0.75V VPP	Rev: 2.0
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remove

remove +5V_S5 offpage

MVDD_PWR change to +12V_BUS_B

remove

remove

remove

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Custom	0020 MODS CONTROL & POWER	2.0

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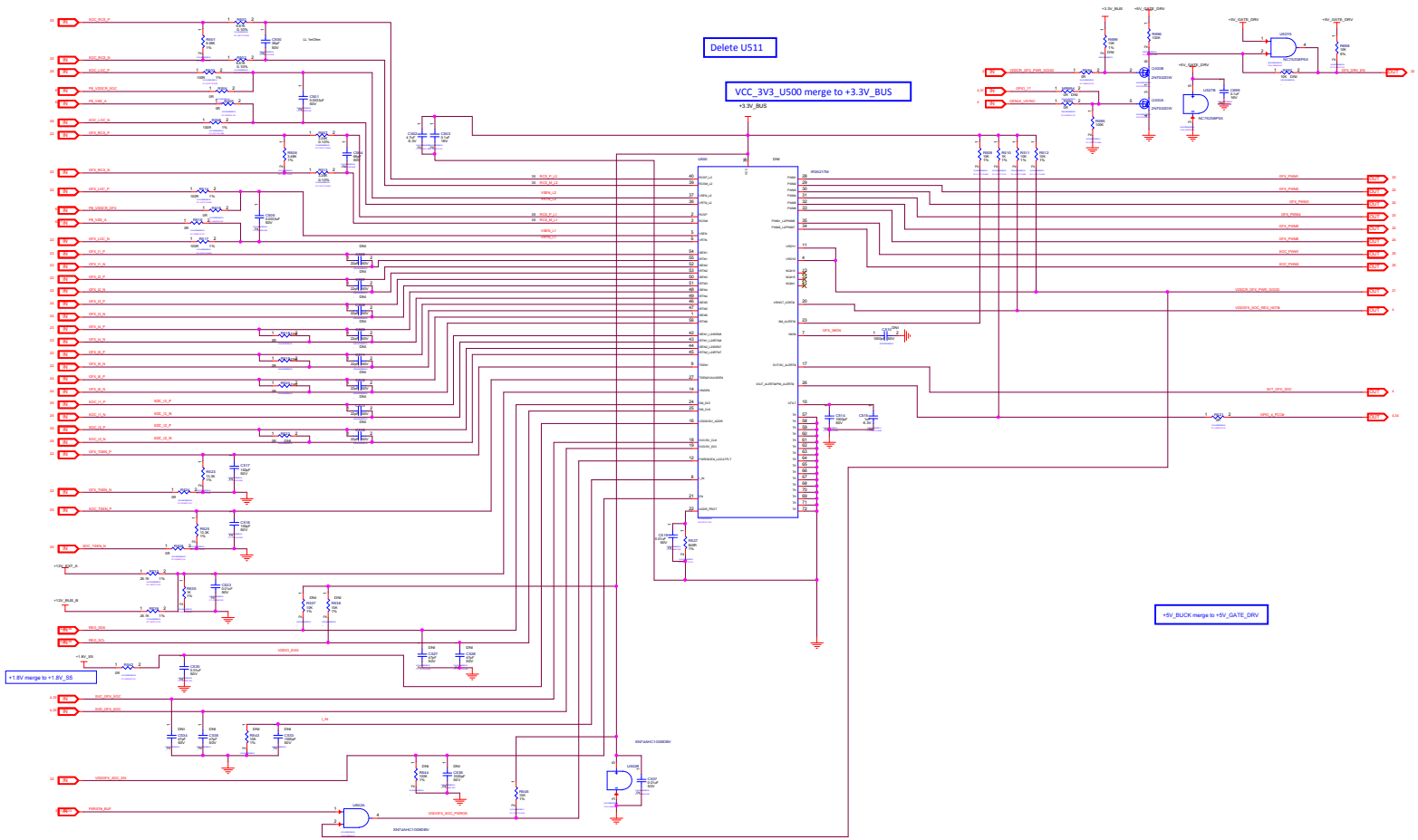

6+2 PHASES：I32-35217HC-I08
5+1 PHASES：I32-35217JC-I08

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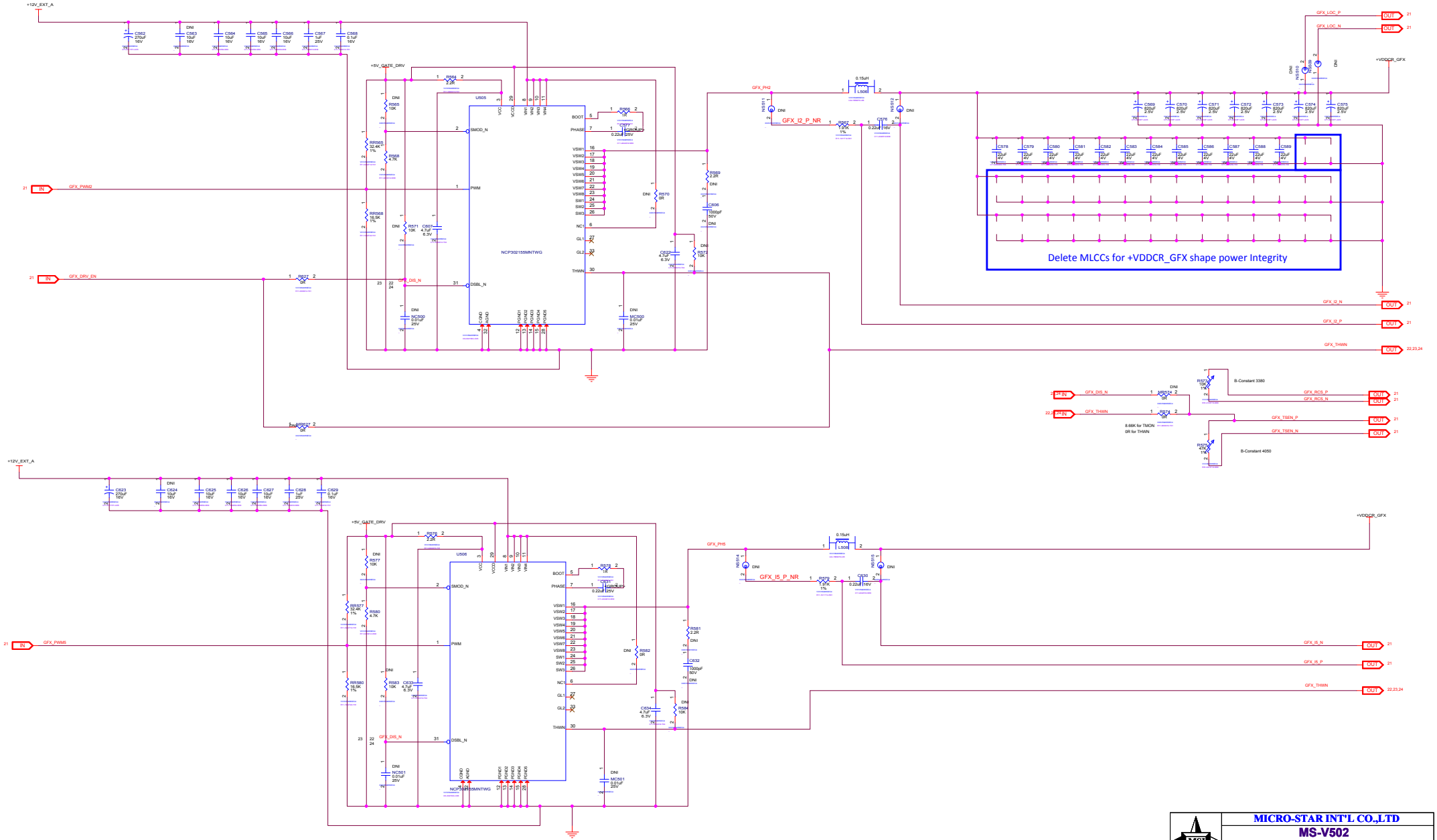

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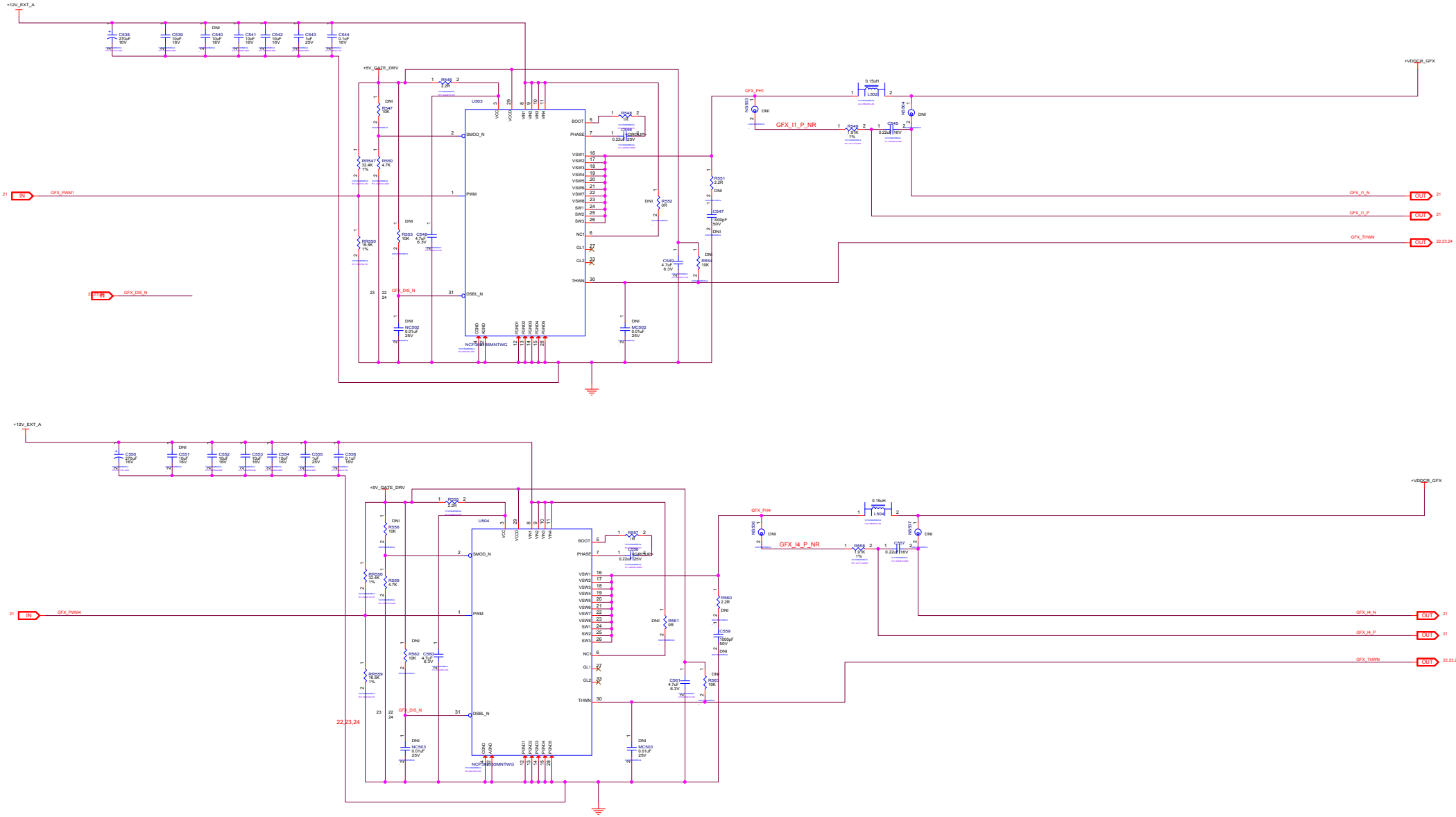

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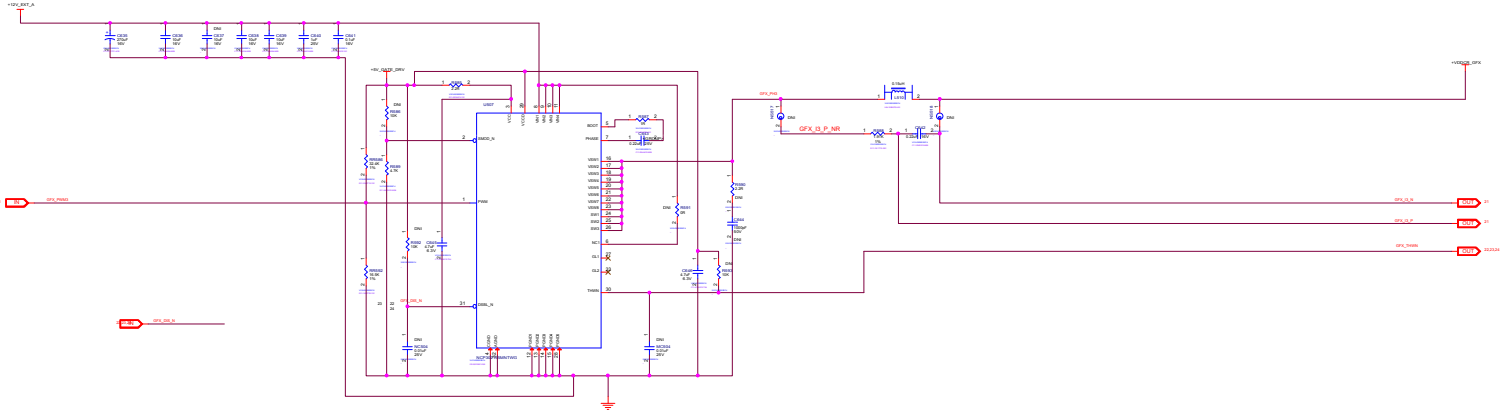

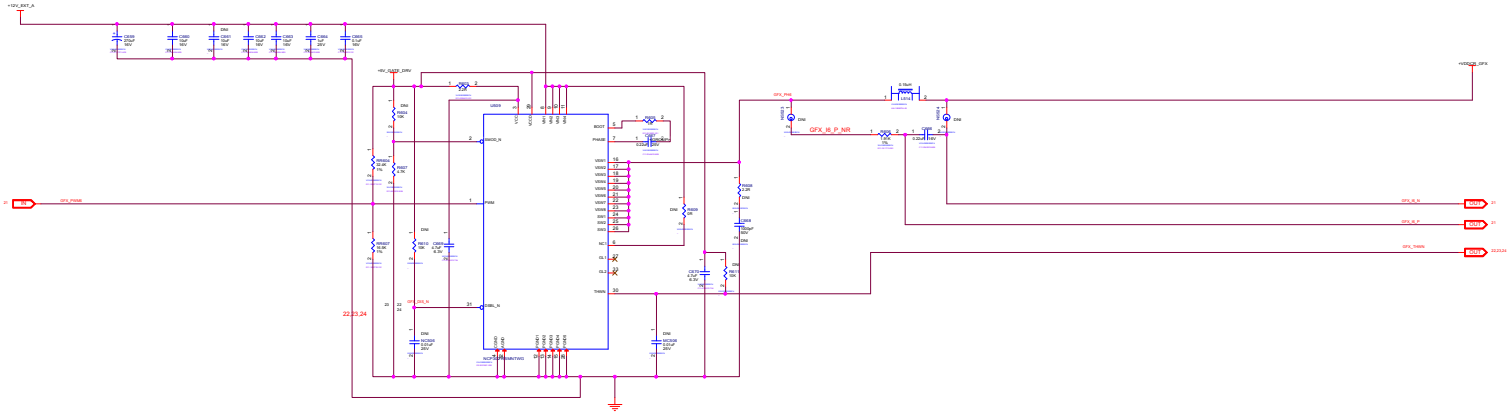

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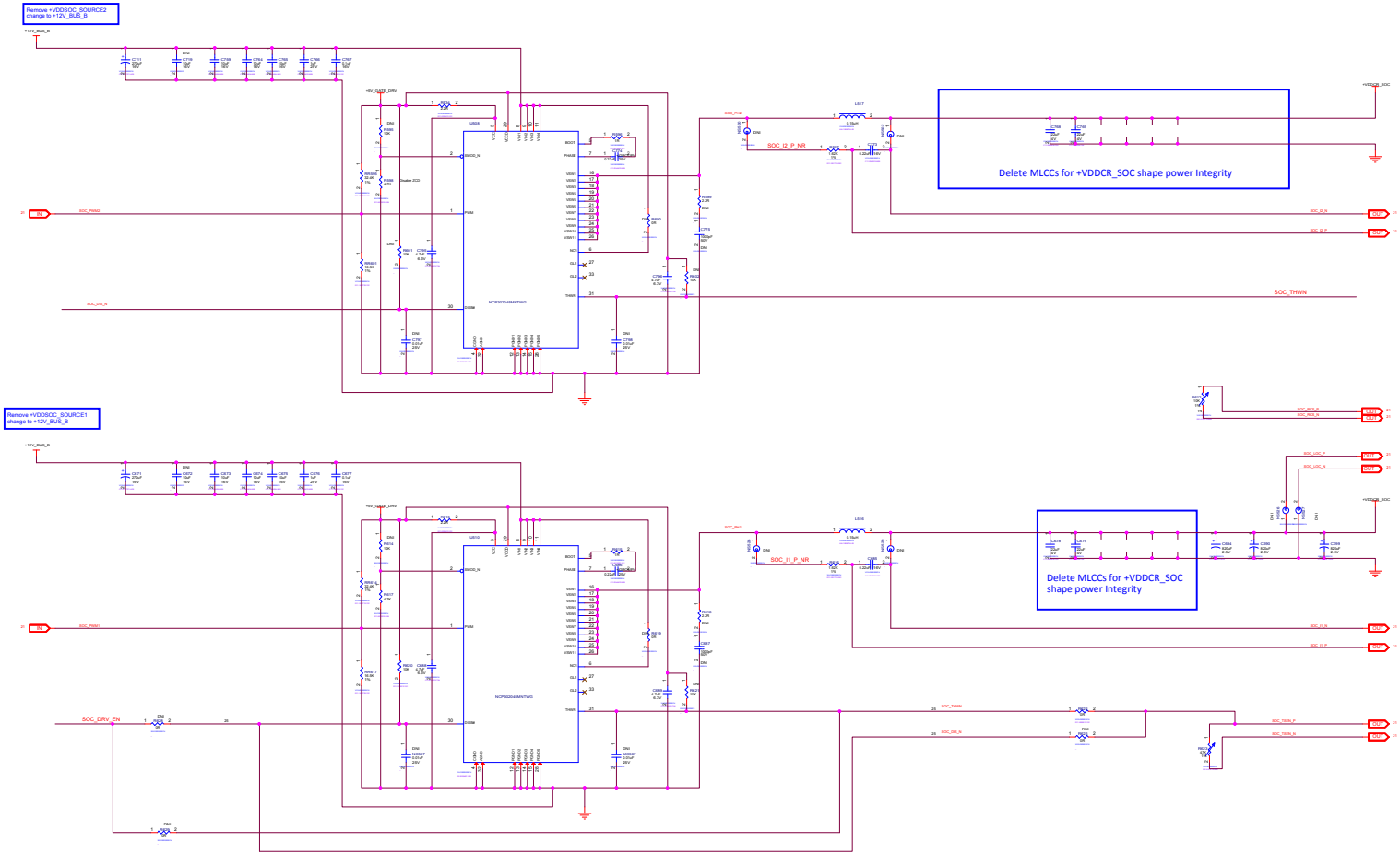

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MS-V502		
Size: D	Document Description: 0025 VDDCR_SOC	Rev: 2.0
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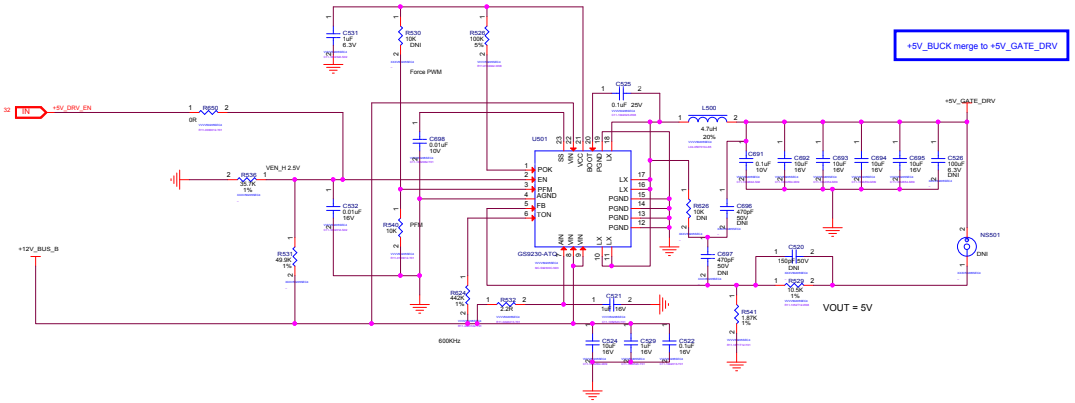

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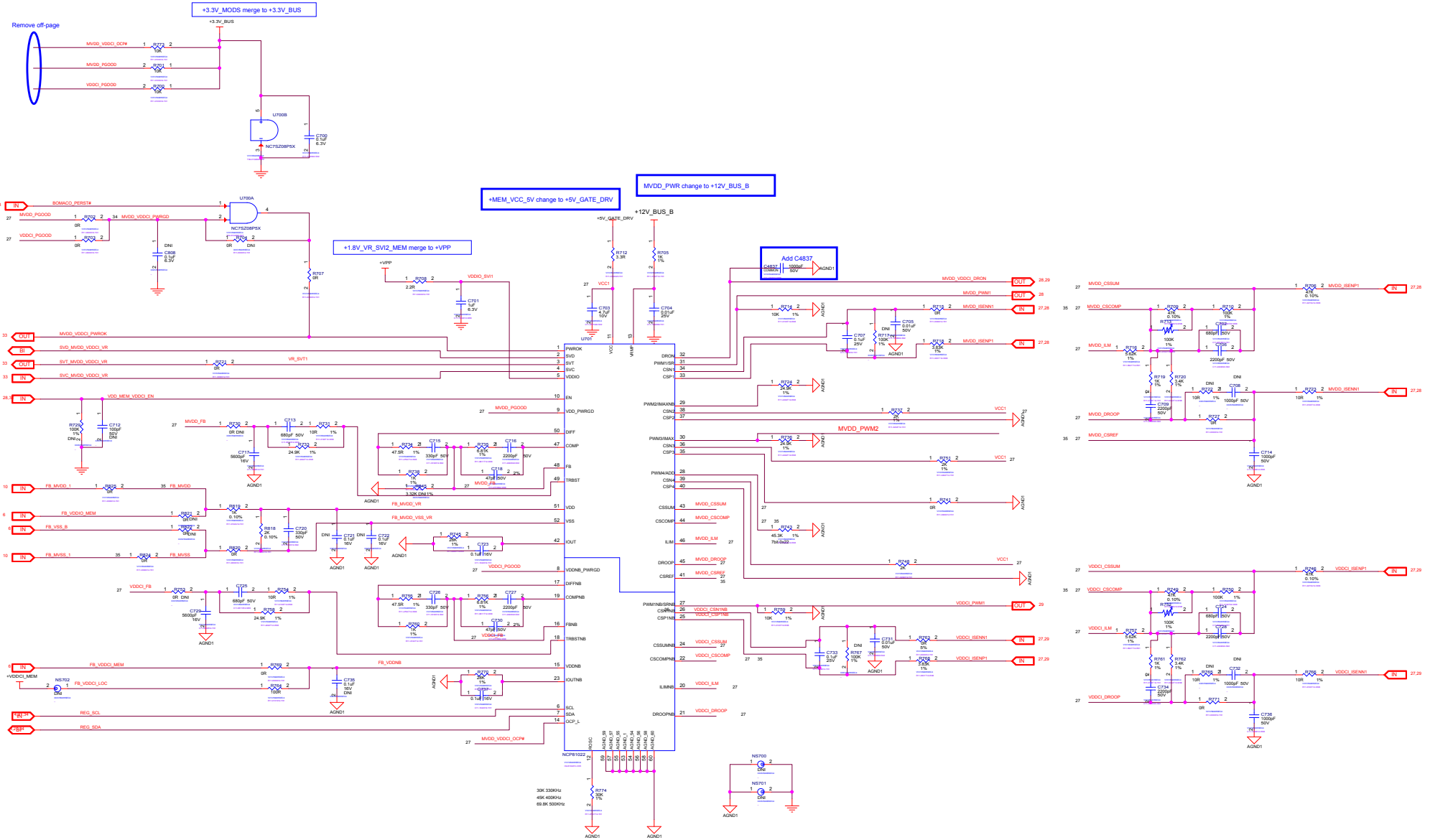

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Size: Custom	Document Description: 0027 MVDD_VDDCI CONTROLLER	Rev: 2.0
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MVDD_PWR change to +12V_BUS_B

add 7343 SMD cap (copied from C438)

+MEM_VCC_5V change to +5V_GATE_DRV

remove +5V_MODS offpage

delete DIP cap X 2

+MEM_VCC_5V change to +5V_GATE_DRV

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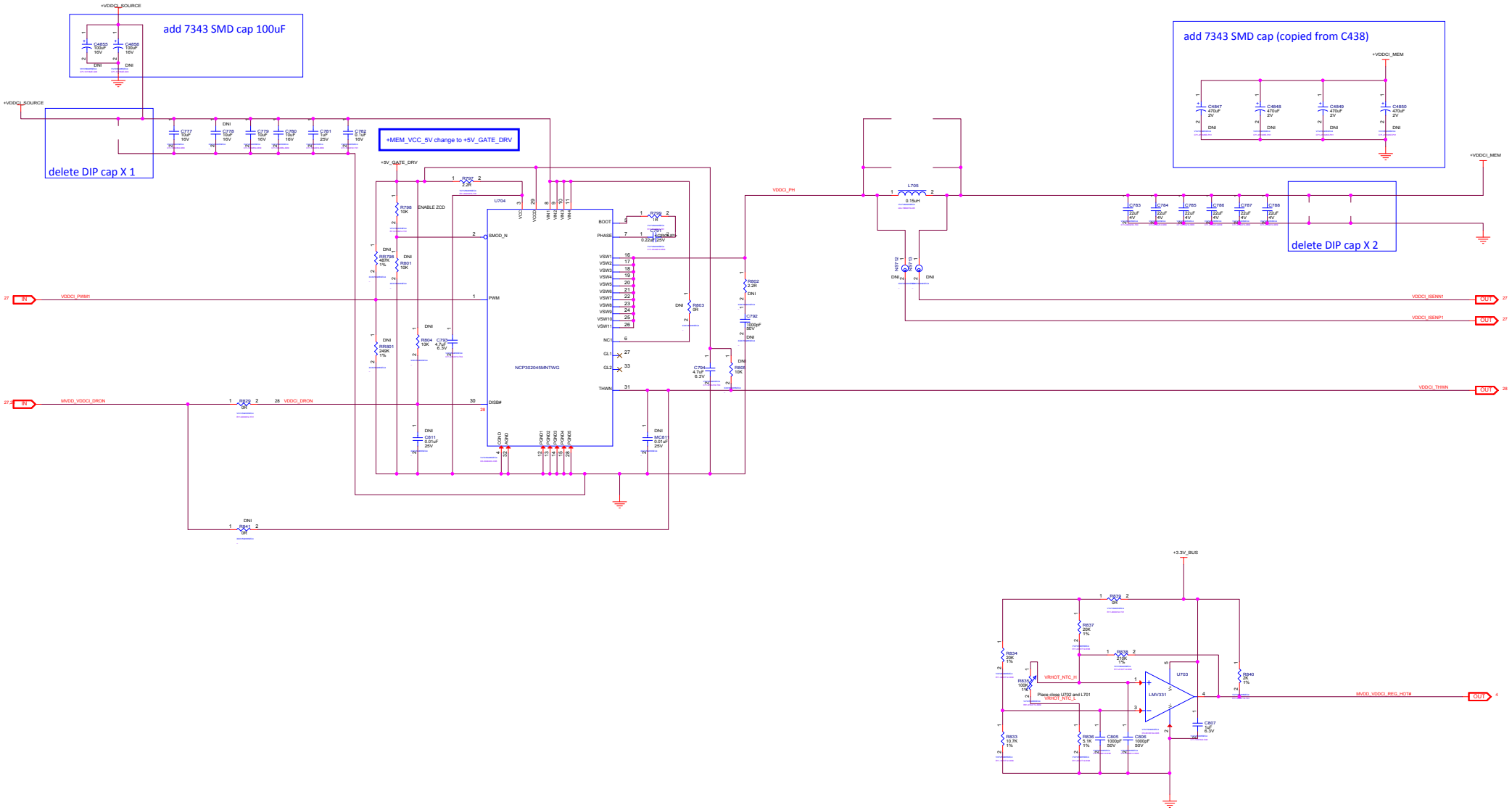

MICRO-STAR INT'L CO.,LTD		
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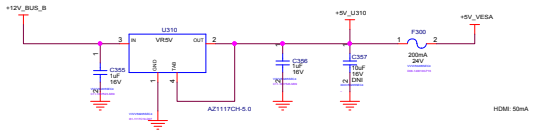
+1.8V FOR BOMACO

remove

+5V_VESA FOR HDMI



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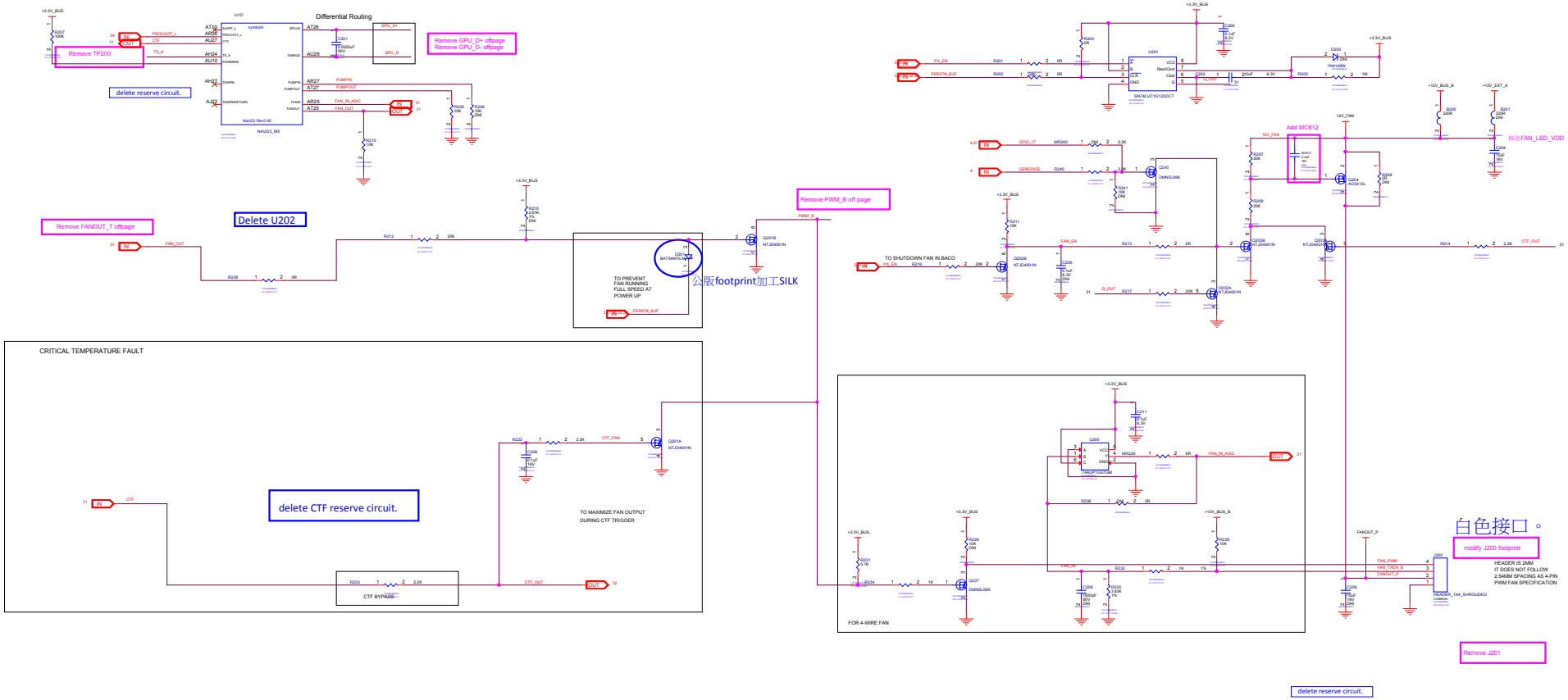
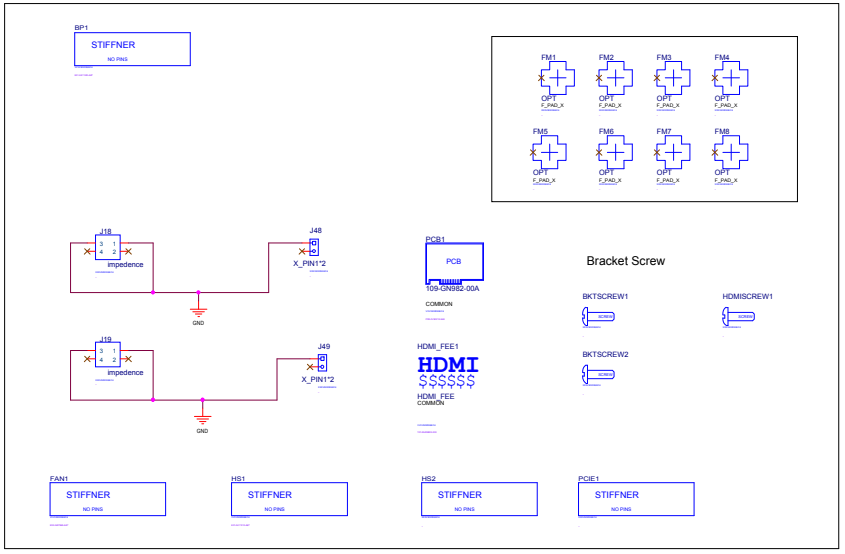
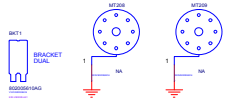
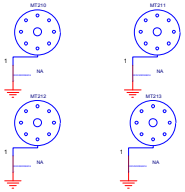




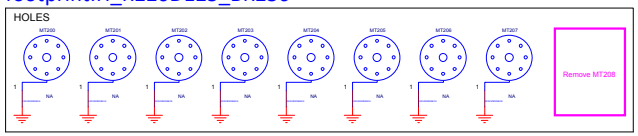
Bracket & Bracket hole: 2pcs
footprint:H_R220D125_BR236



GPU hole: 4pcs
footprint:h_r220d125_br315



footprint:H_R220D125_BR236



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	MS-V502	
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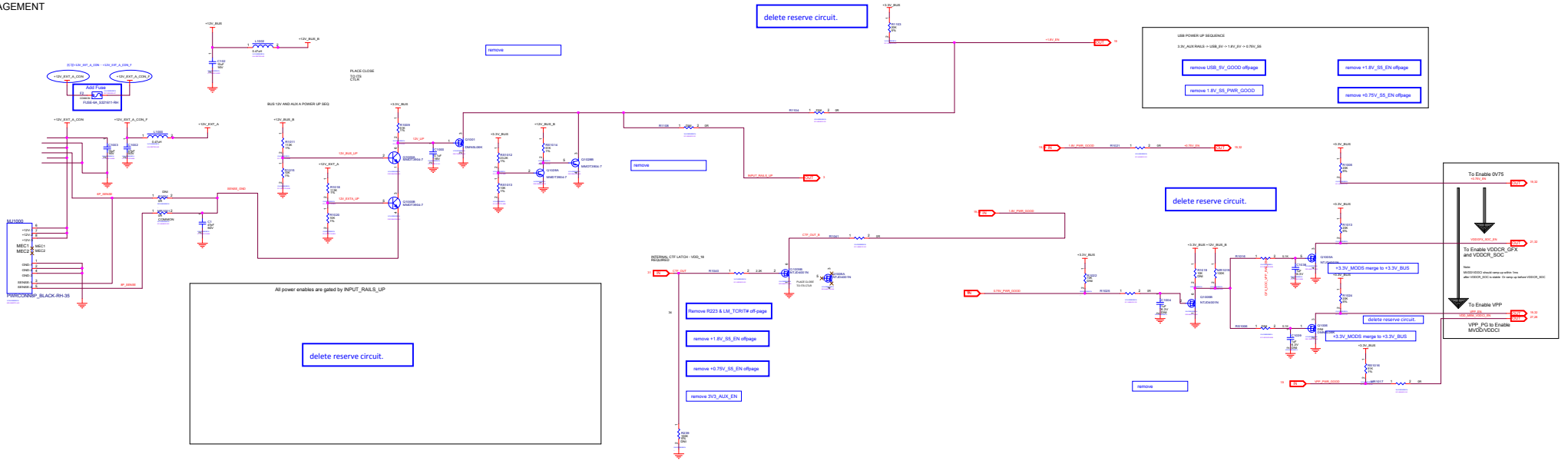

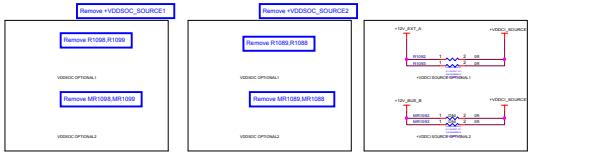

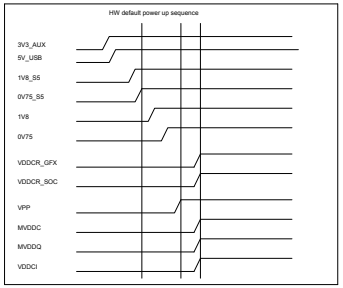

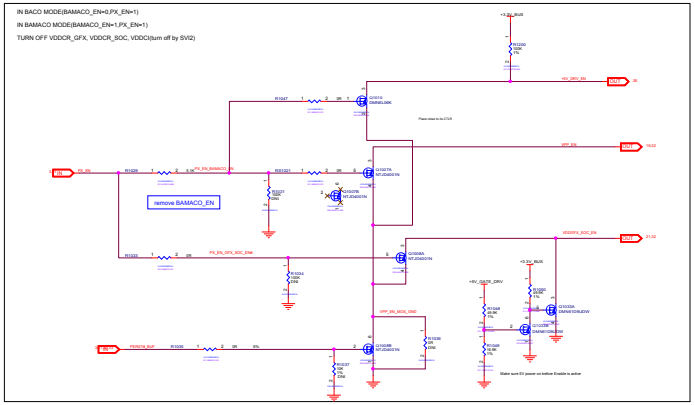

+1.8V_VR_SVI2_MEM merge to +VPP

+3.3V_AUX merge to +3.3V_BUS

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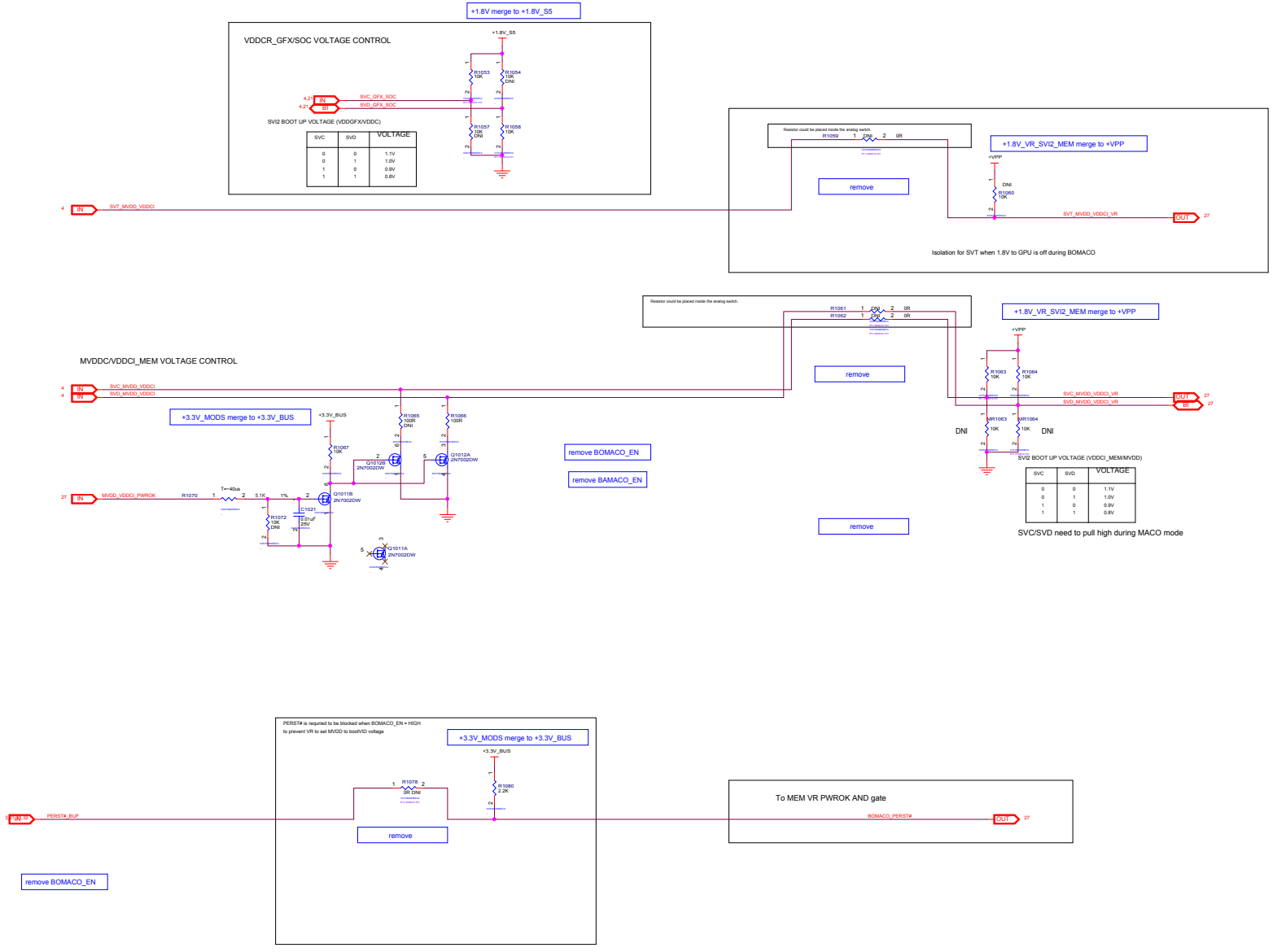
(28) SVI2



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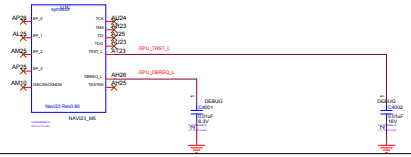
(29) DEBUG CIRCUIT

Delete JTAG

+1.8V merge to +1.8V_S5

JTAG



SWITCHES

Remove

Default: ON

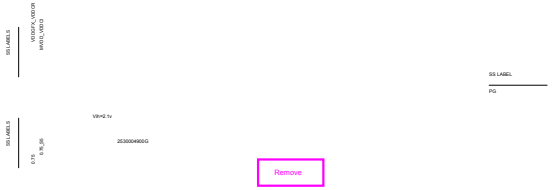
BYPASS CTF

Default: ON

MAXIMIZE FAN

POWERGOOD STATUS

MXM POWERGOOD GENERATION



Remove

S0 POWER GOOD

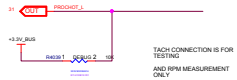
THERMAL SENSOR FOR GDDR6

THERMAL SENSOR FOR SOC

Remove

THERMAL SENSOR FOR GFX

THERMAL SENSOR FOR VDDCI



TACH CONNECTION IS FOR TESTING

AND RPM MEASUREMENT ONLY

Remove

LM96163 FOR BACKUP THERMAL CONTROL

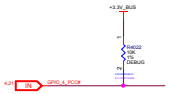
LED LIGHTS

LED RED "ON" INDICATES CTF FAULT

LED YELLOW "ON" INDICATES FANOFF (BACO) MODE

LED YELLOW "ON" INDICATES BAMACO STATE

Remove



LED RED "ON" INDICATES PCC triggered

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Remove PI Debug

AMD

TITLE: NAVI23 DT XT GDDR6 x16 BOARD

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DATE: Tue Jul 07 03:31:54 2020

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REV: 00B

REVISION HISTORY

ENGINEER: Yahyazadeh, Danial

NOTES: NOTE

AMD - PLATFORM HARDWARE ENG
No.669, HUANKE ROAD
SHANGHAI, CHINA 201203

SCH Rev	PCB Rev	Date	REVISION DESCRIPTON
00A	00A	05/18/2020	Initial schematic
00B	00B	06/30/2020	Change all ESD based on EMI's new requirement Add Q1033 related circuit for VDDGFX_SOC_EN control to resolve the potential risk on BACO exit(P32)
		07/06/2020	Change +3.3V_MODS, +5V_MODS, +5V_GATE_DRV circuit(P20,P21)

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Remove LED_CONTROLLER_IT8295