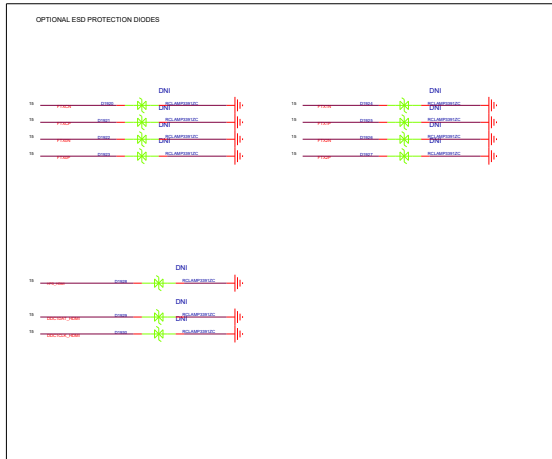
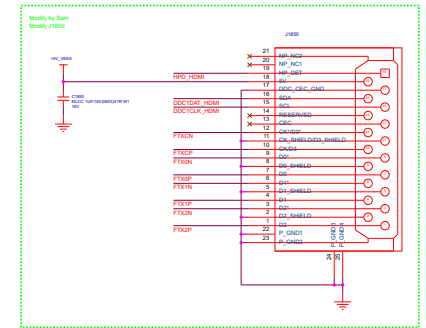
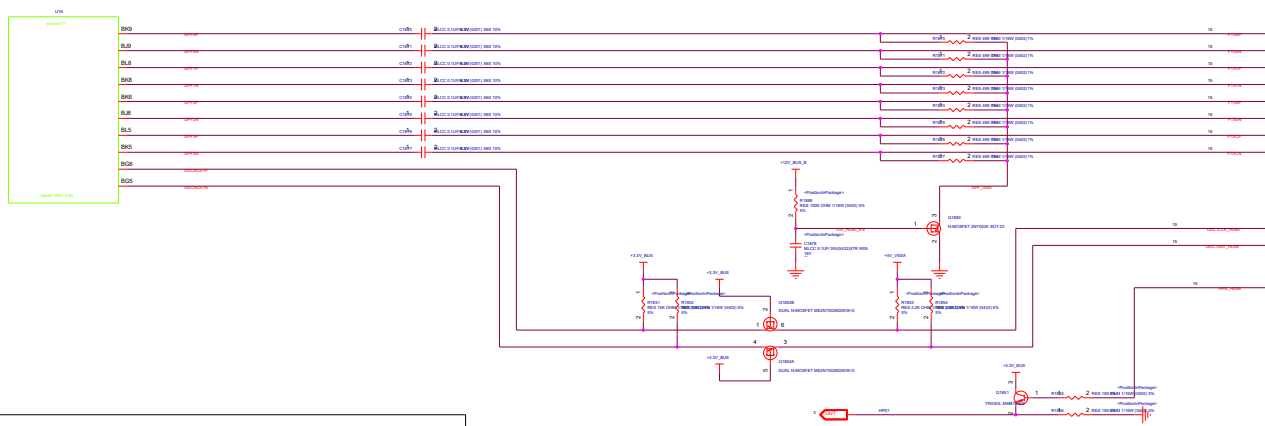
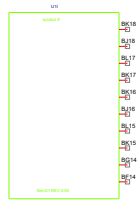
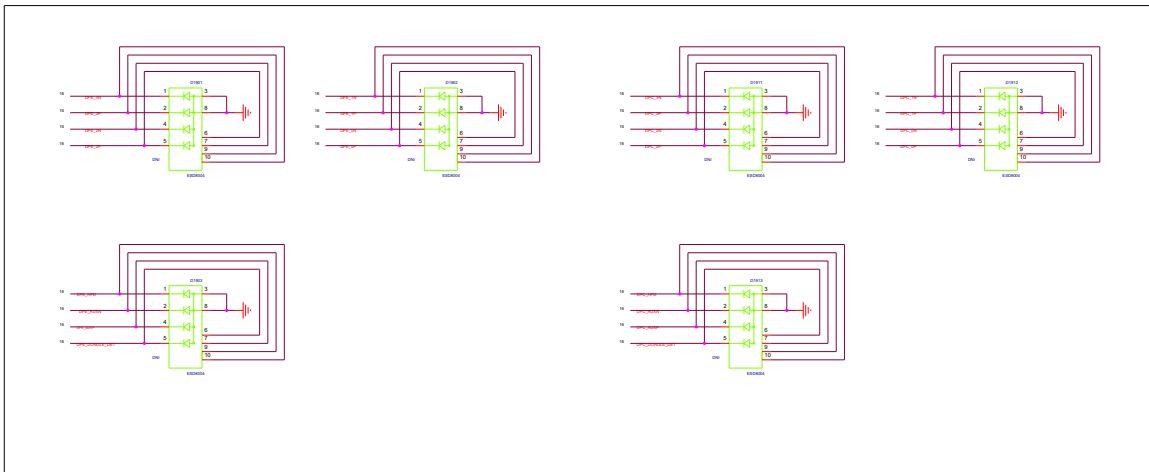
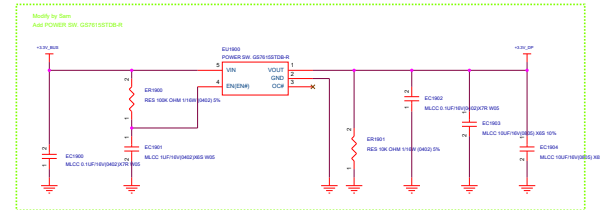
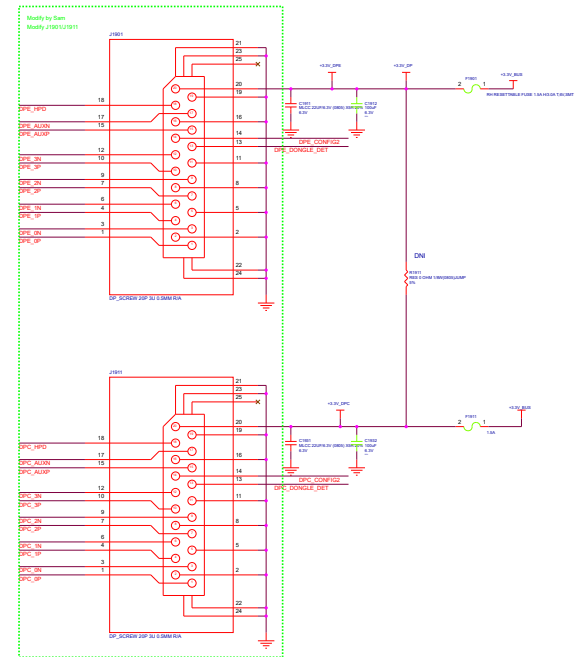
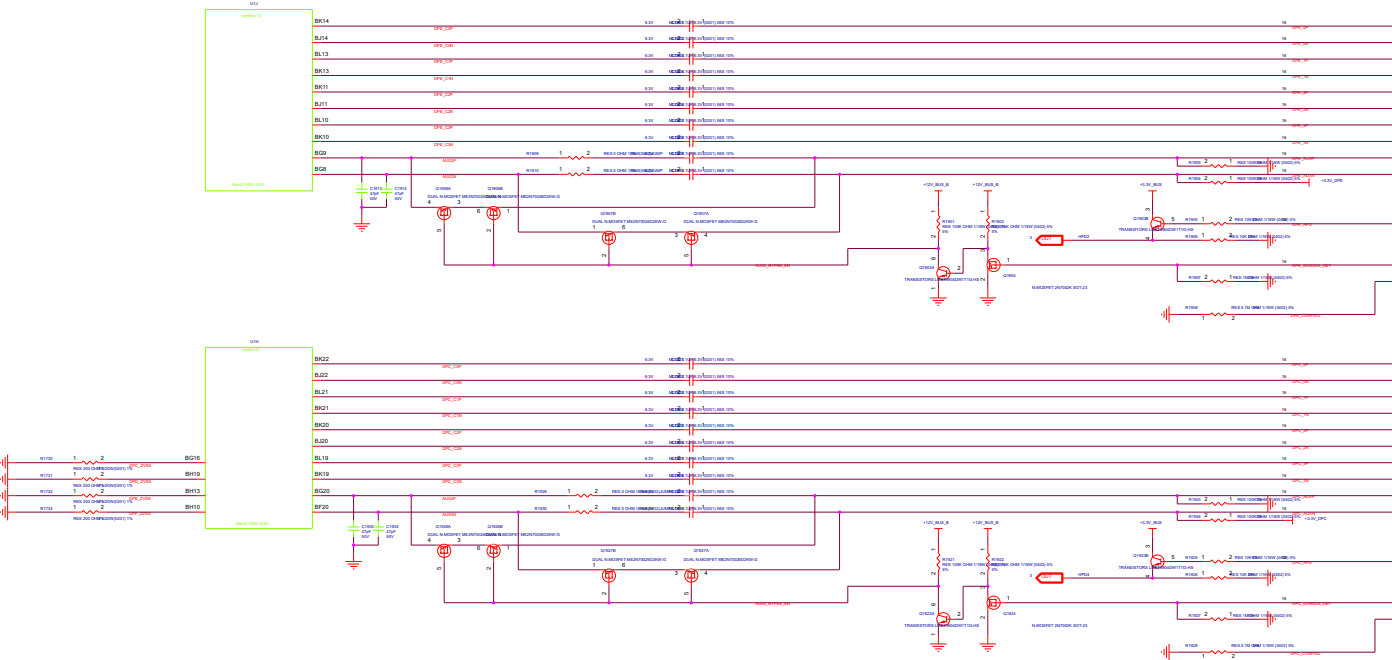
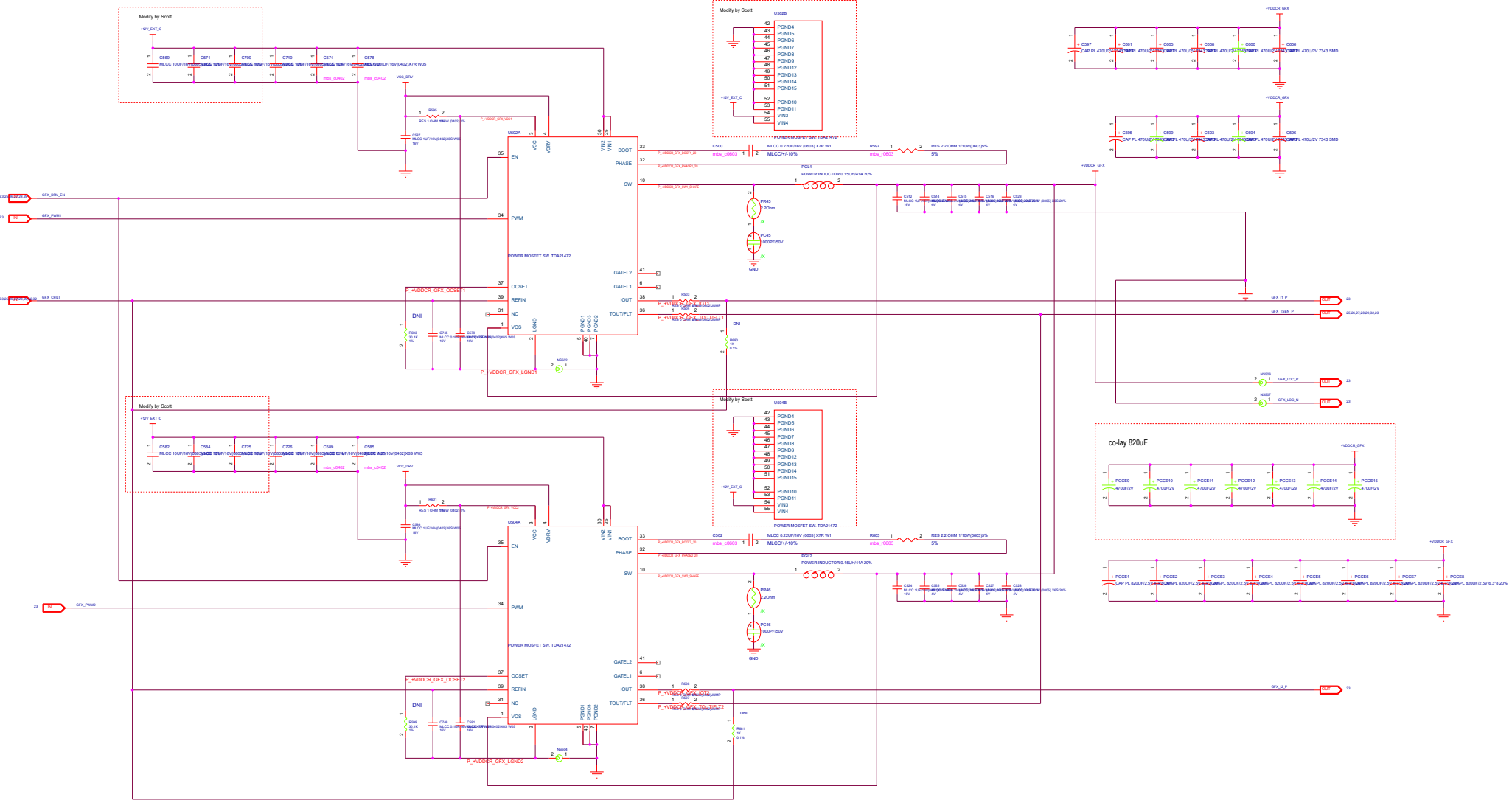
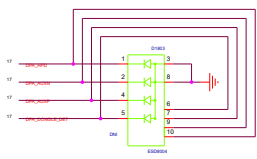
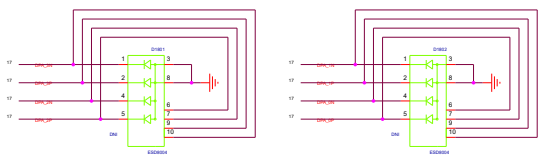
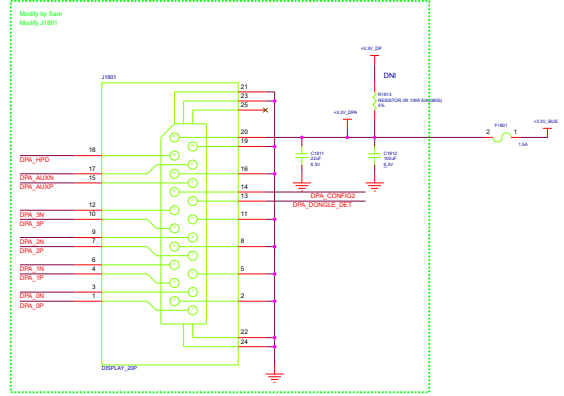
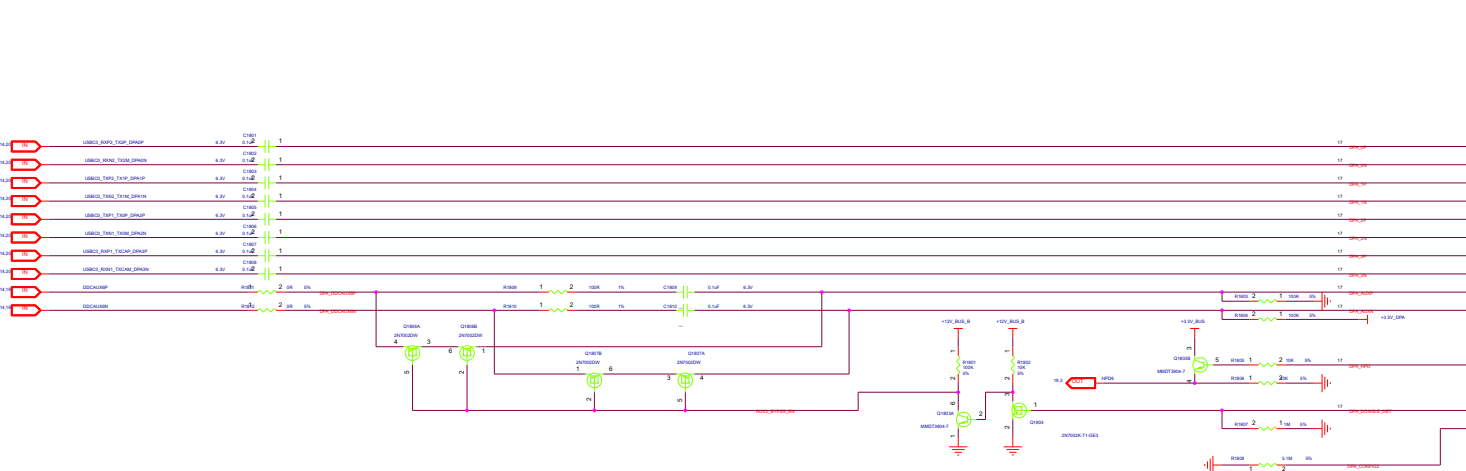




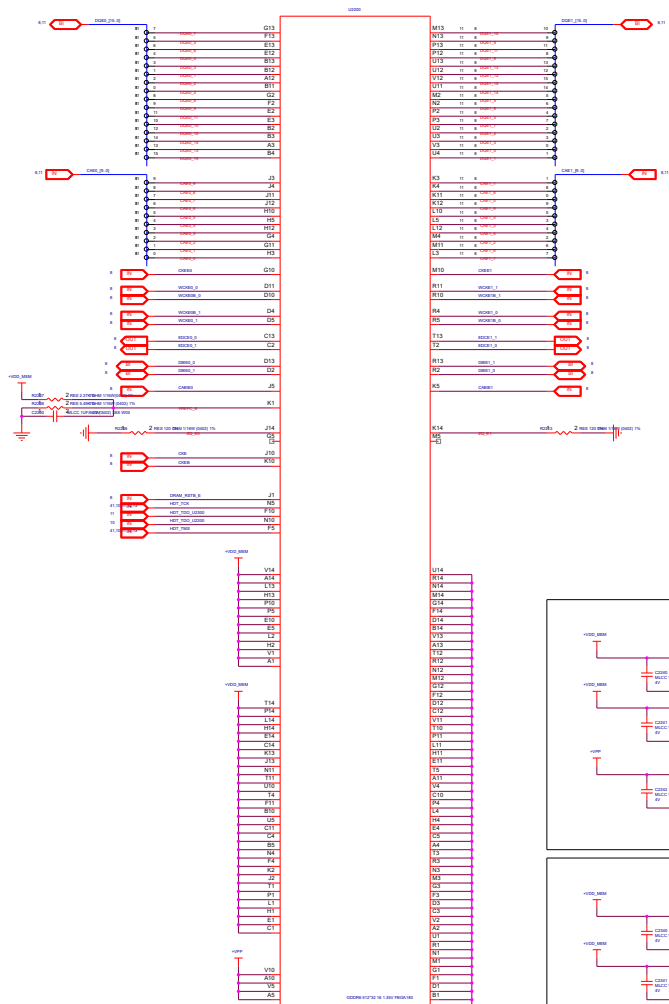




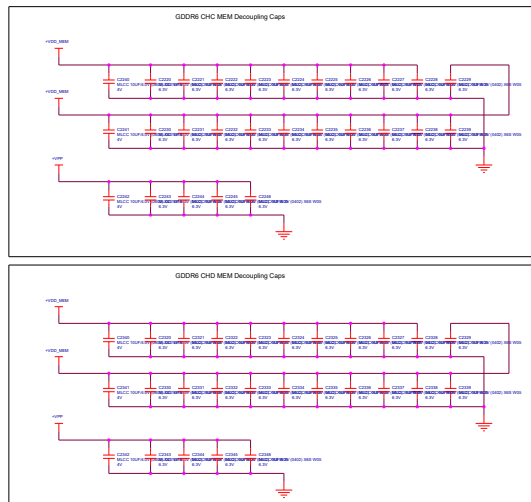
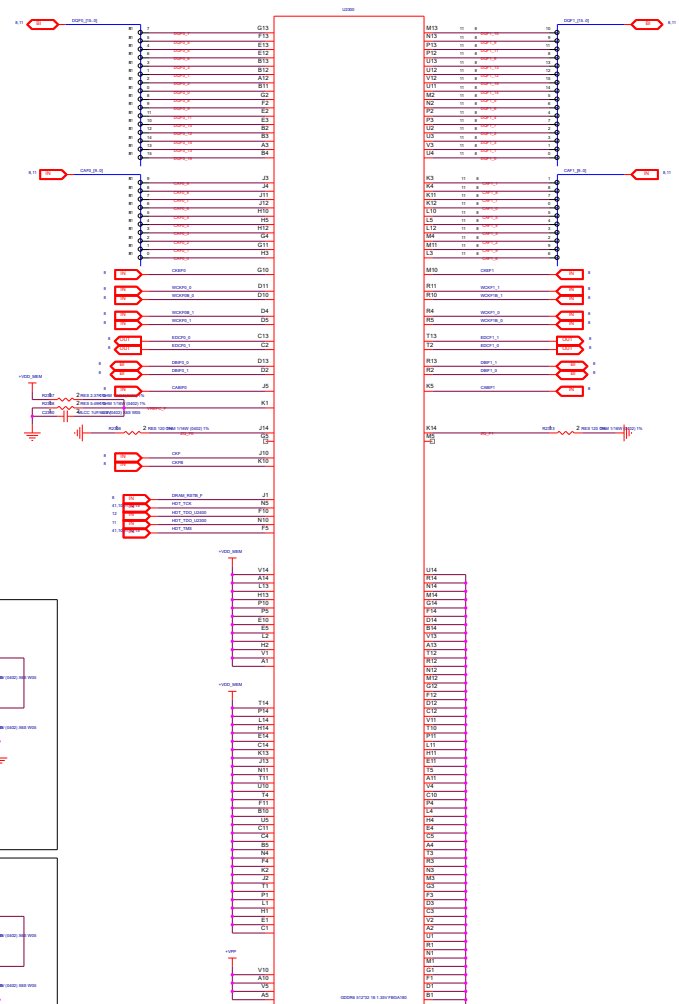




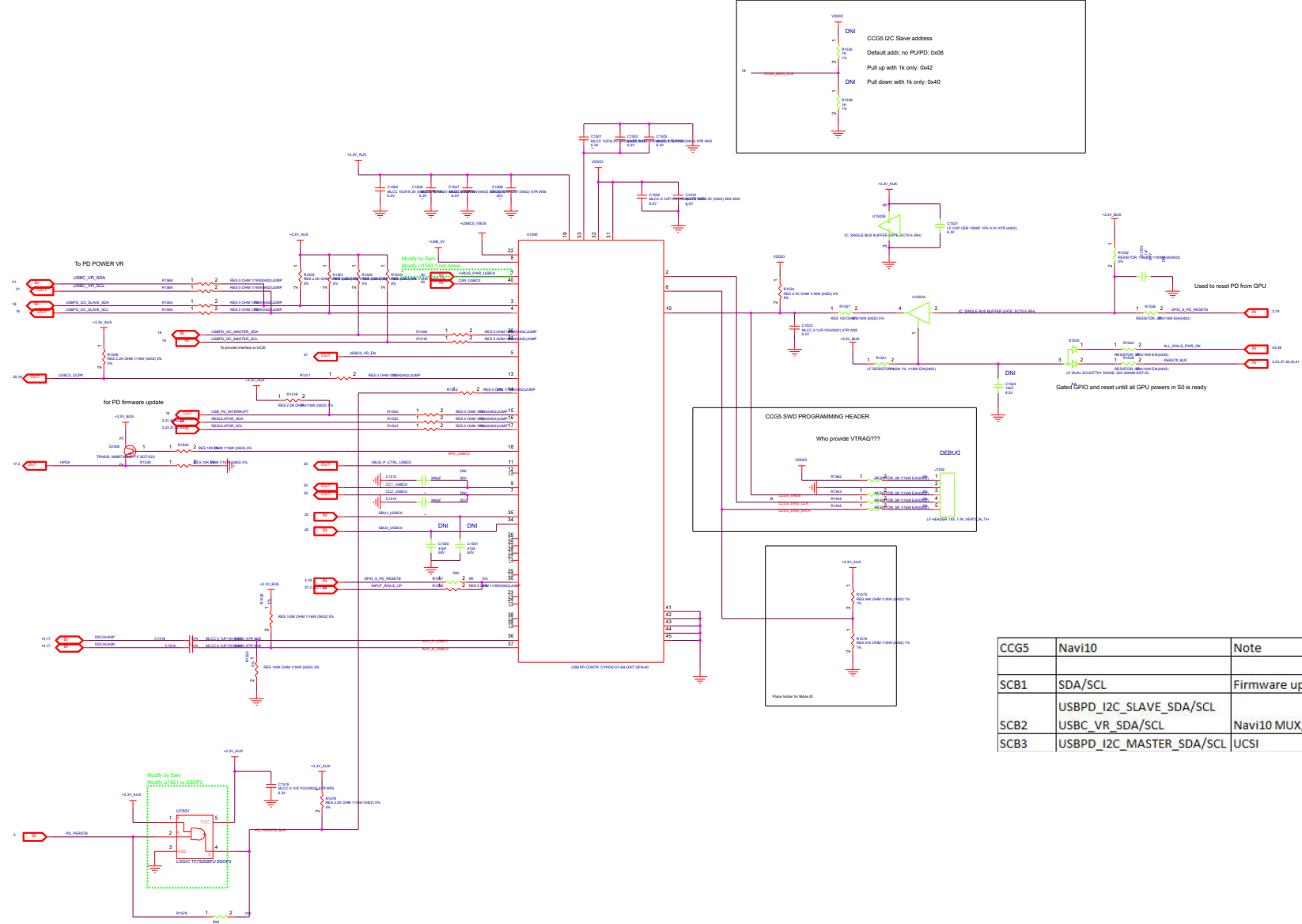
ASIC CH0 -> MEM CHA
ASIC CH1 -> MEM CHB



ASIC CH0 -> MEM CHA
ASIC CH1 -> MEM CHB

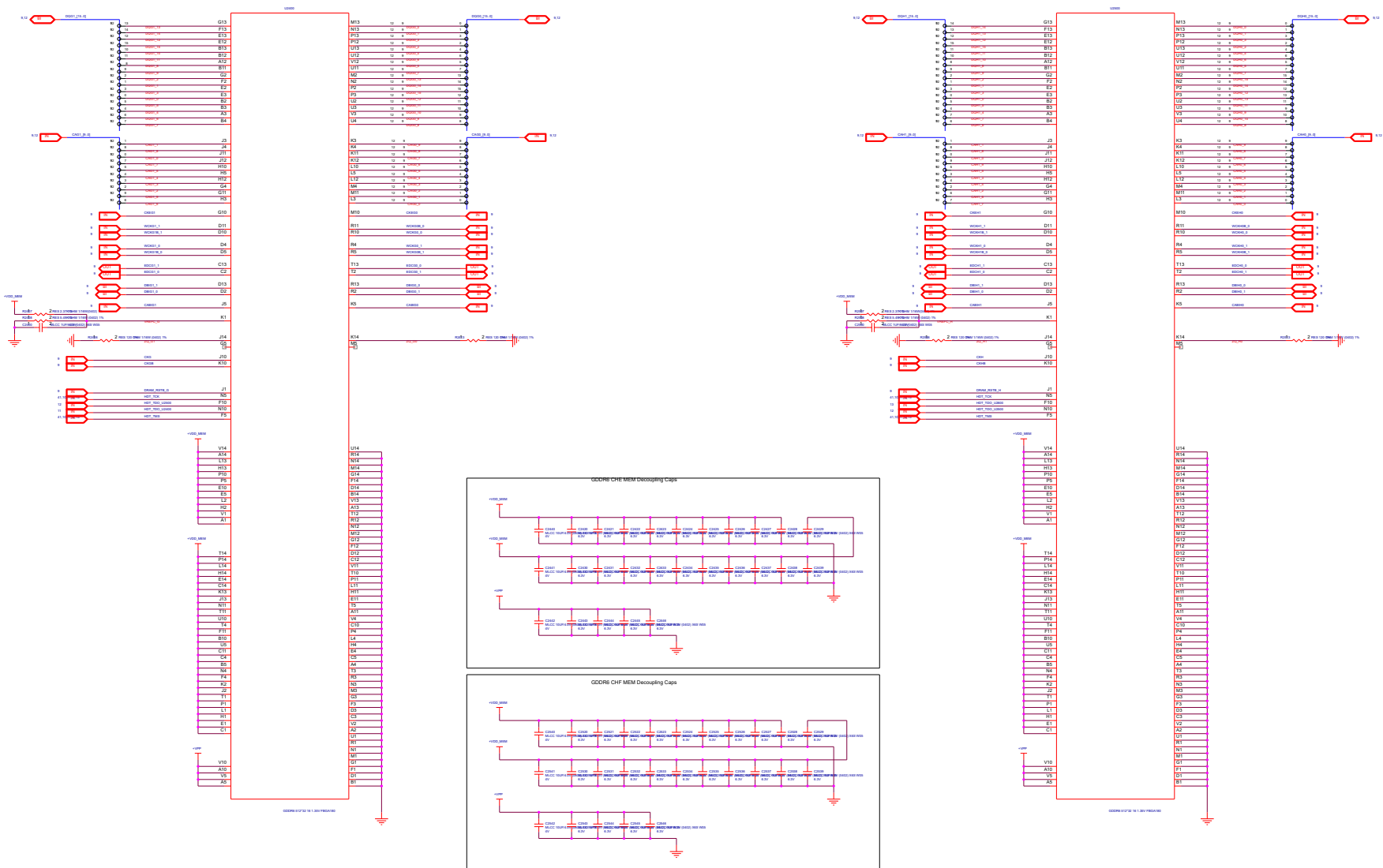


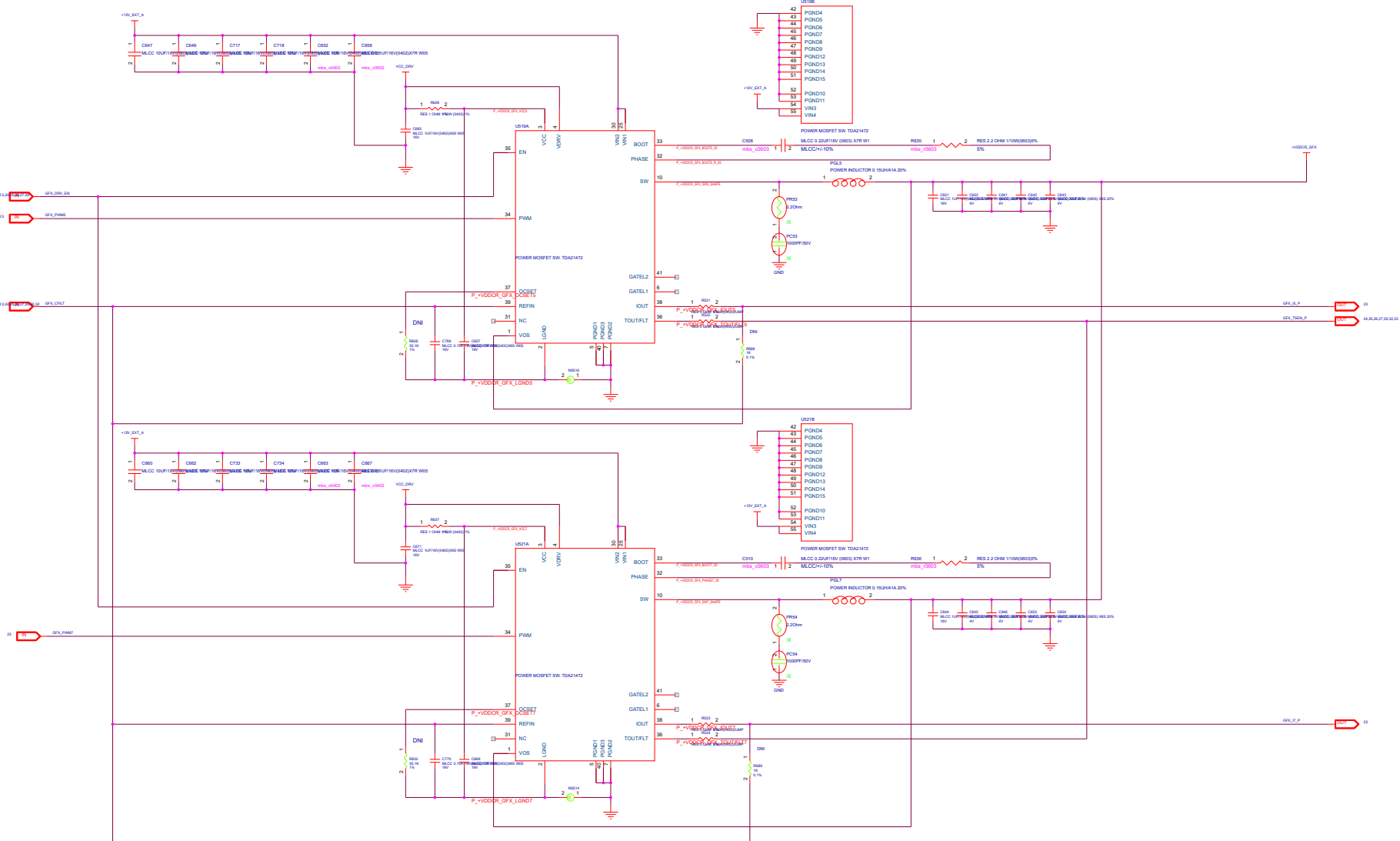
for GPU DP/USB COMBY PHY

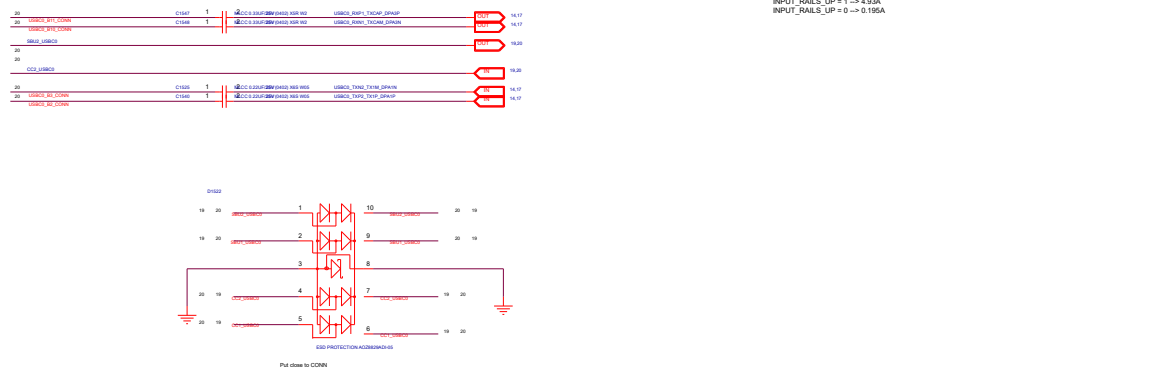
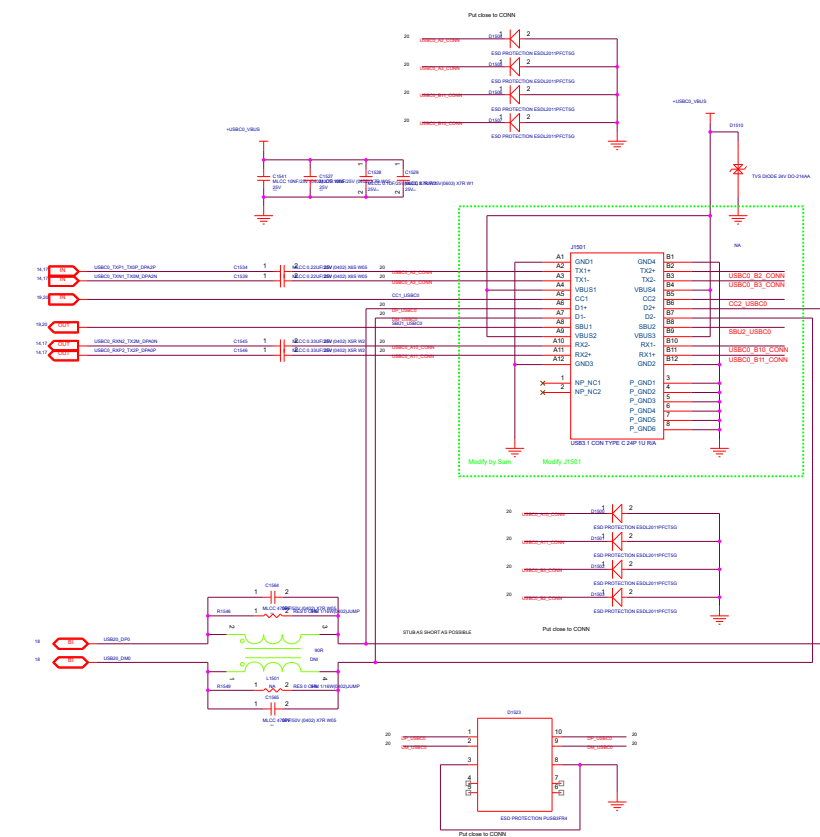
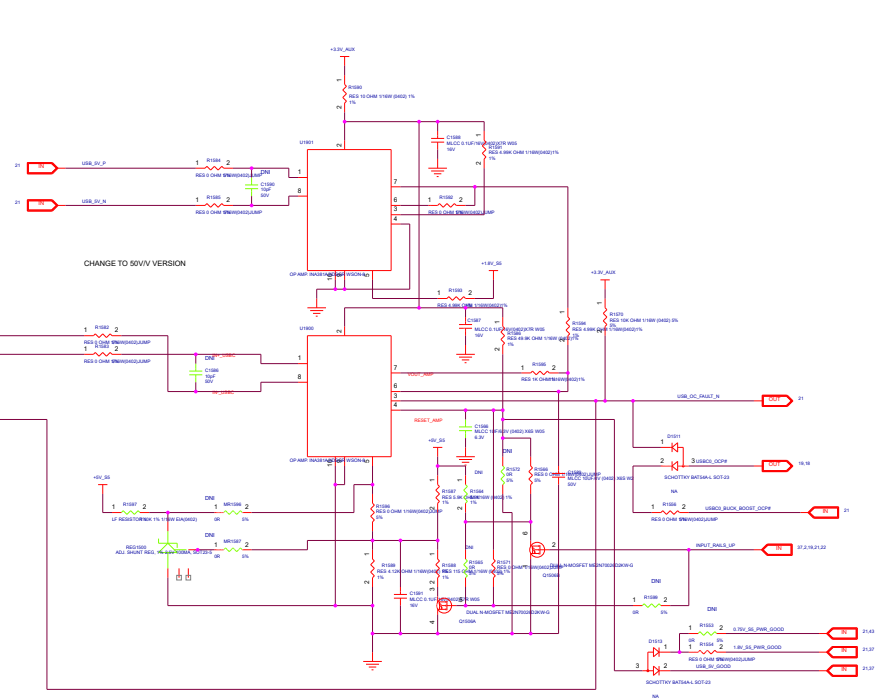
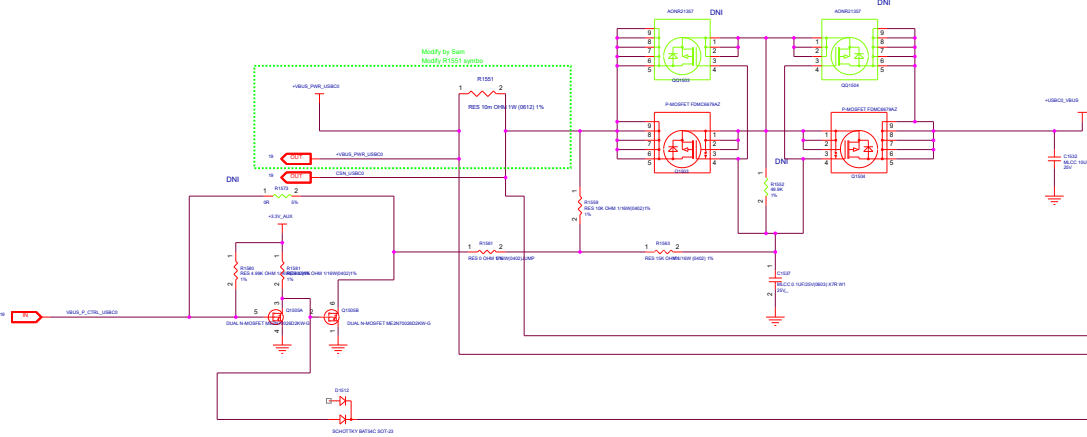


ASIC CH0 -> MEM CHB
ASIC CH1 -> MEM CHA

ASIC CH0 -> MEM CHB
ASIC CH1 -> MEM CHA



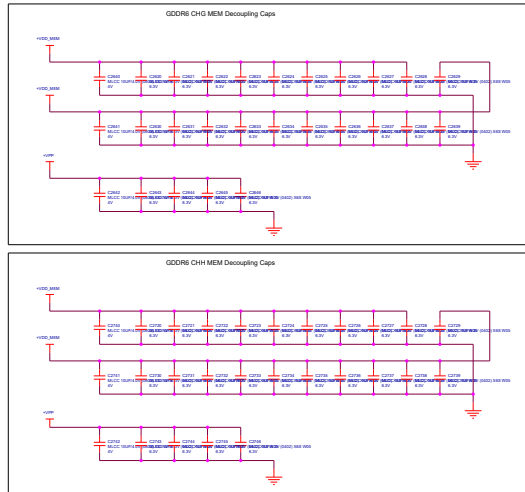
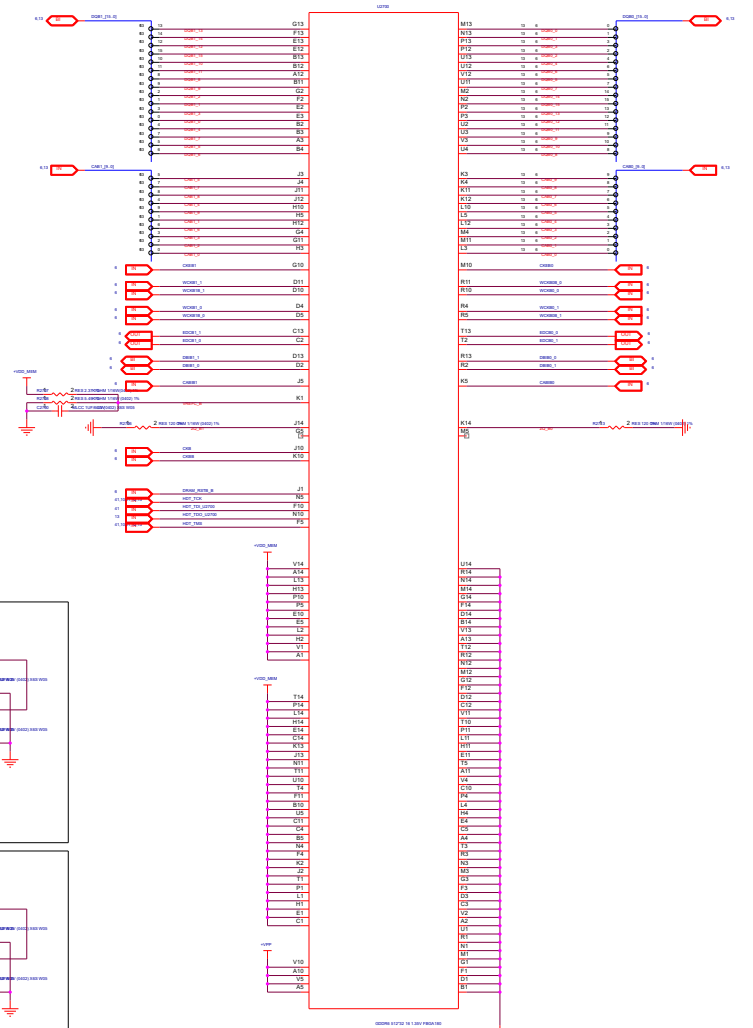
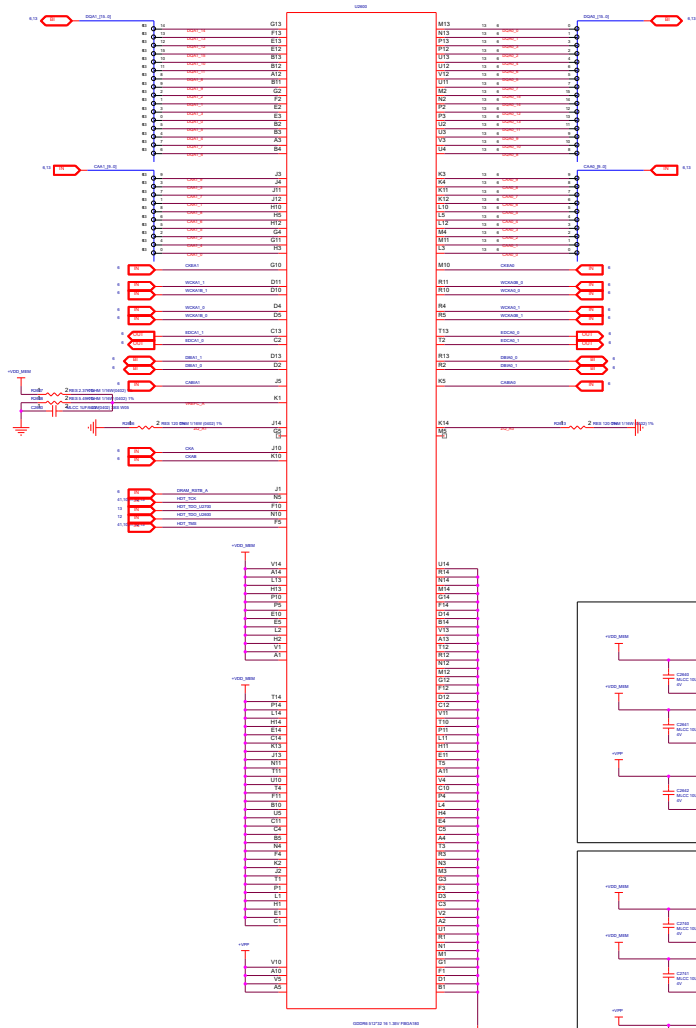




INPUT_RAILS_UP = 1 → 4.93A
INPUT_RAILS_UP = 0 → 0.195A

ASIC CH0 -> MEM CHB
ASIC CH1 -> MEM CHA

ASIC CH0 -> MEM CHB
ASIC CH1 -> MEM CHA



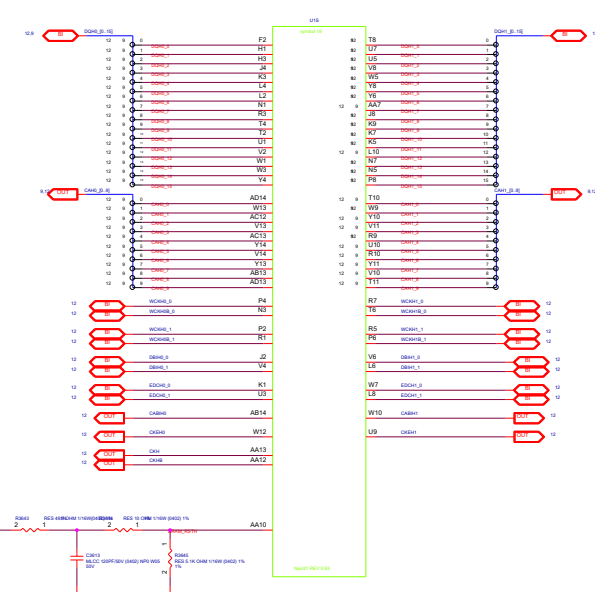
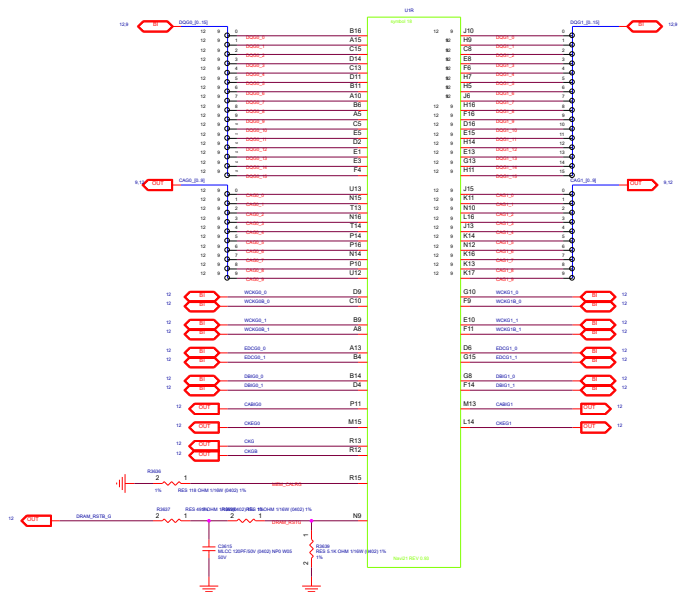
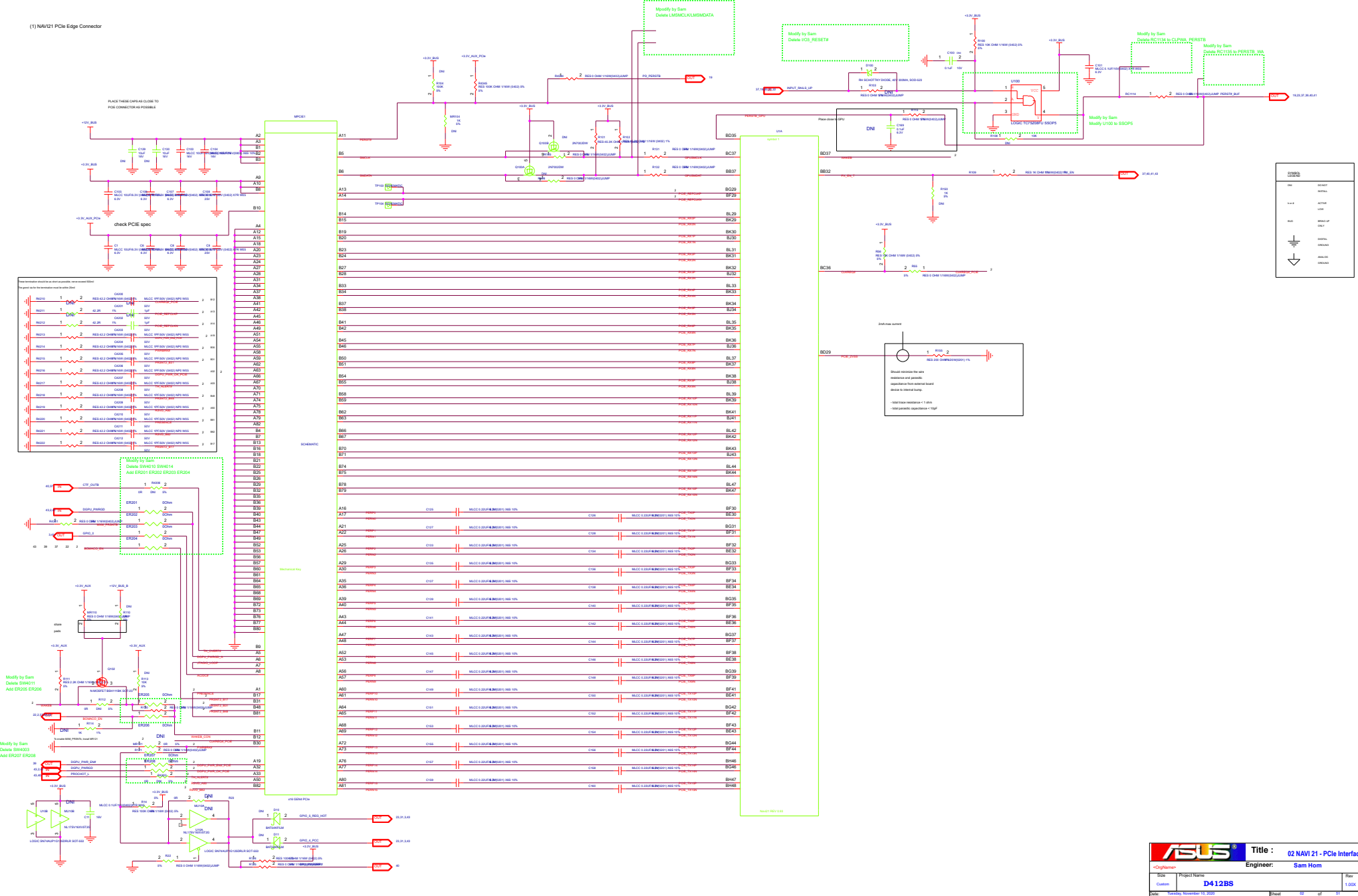
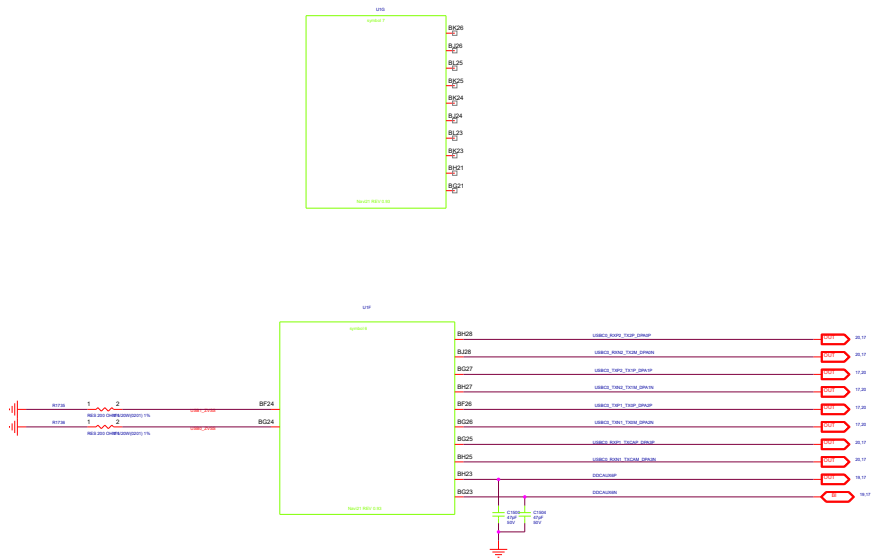


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SHEET NO.	SHEET NAME	SHEET NO.	SHEET NAME
1	TOC	26	GFX PHASES 8&9
2	NAVI 21 - PCIe Interface	27	GFX PHASES 11
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4	NAVI 21 XTAL	29	GFX PHASES 3&10
5	XGMI	30	SOC PHASE 1&2
6	NAVI 21 MEM CH AB	31	VDD_MEM & VDDCI CONTROLLER
7	NAVI 21 MEM CH CD	32	VDD_MEM PHASES 1&2
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9	NAVI 21 MEM CH GH	34	NAVI 21 DECAPS
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11	GDDR6 MEM CH EF	36	NAVI 21 POWER and GND
12	GDDR6 MEM CH GH	37	POWER_MANAGEMENT
13	GDDR6 MEM CH AB	38	ClampWA
14	NAVI21 TMDPA - USB-C	39	SViZ & BxMACD
15	NAVI21 TMDPF - HDMI	40	THERMAL
16	NAVI21 TMOPC&E - DP	41	DPM_Status_LED & GDDR6_JTAG
17	NAVI21 TMDPA	42	PI Debug
18	NAVI21 USB	43	DEBUG
19	PD Controller	44	History
20	USB-C PORT 1		
21	USB_SV_1.8V_0.75V		
22	MODS CONTROL & POWER		
23	GFX & SOC CONTROLLER		
24	GFX PHASES 1&2		
25	GFX PHASES 4&6		

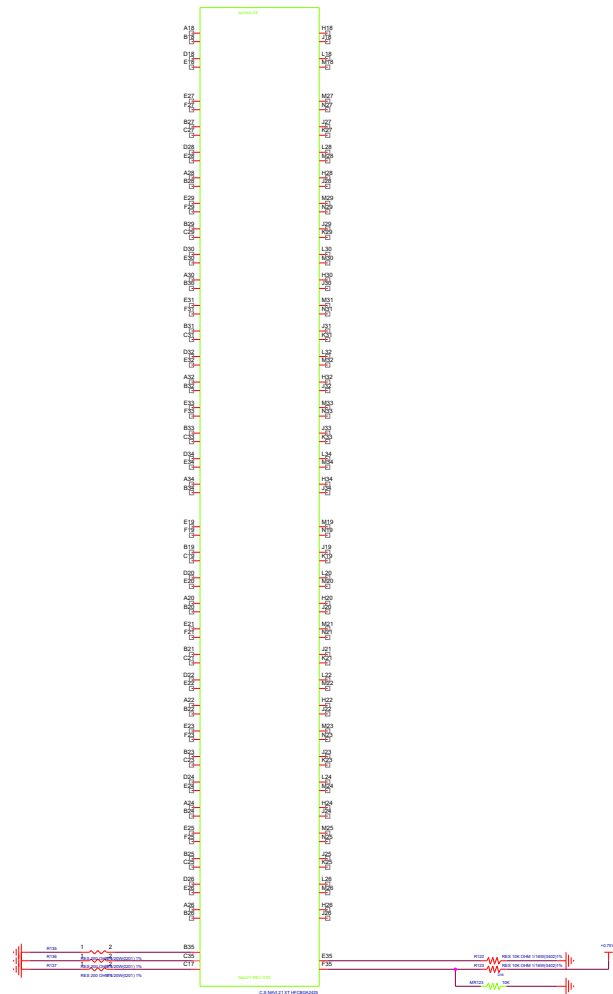


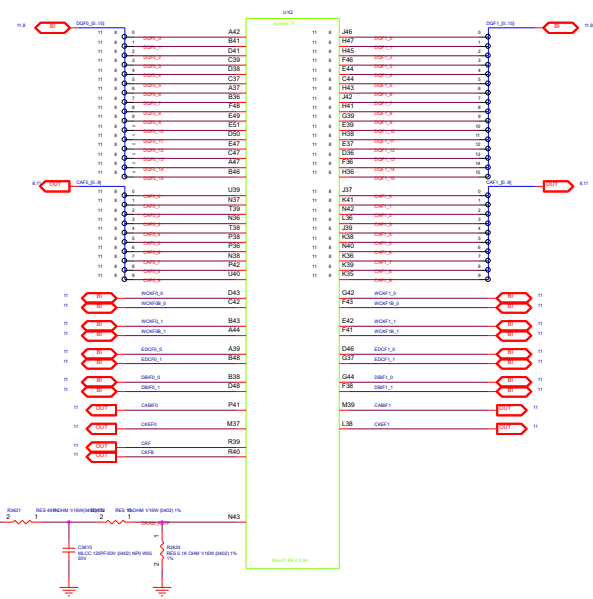
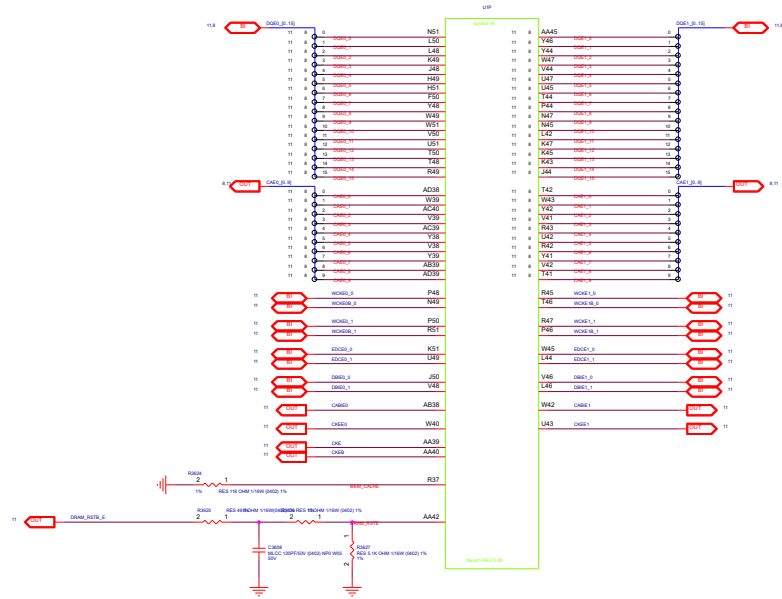




Top View

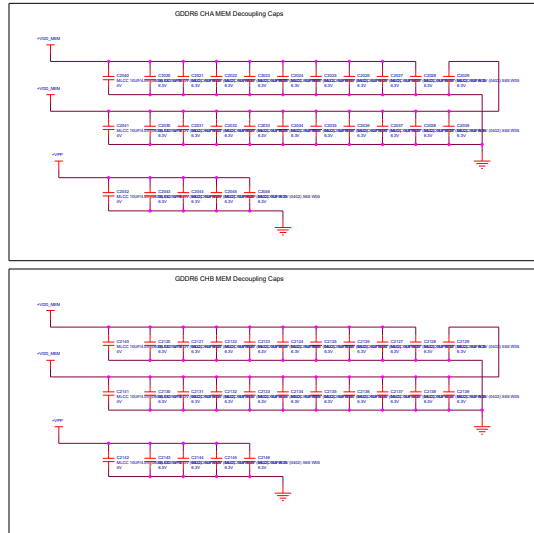
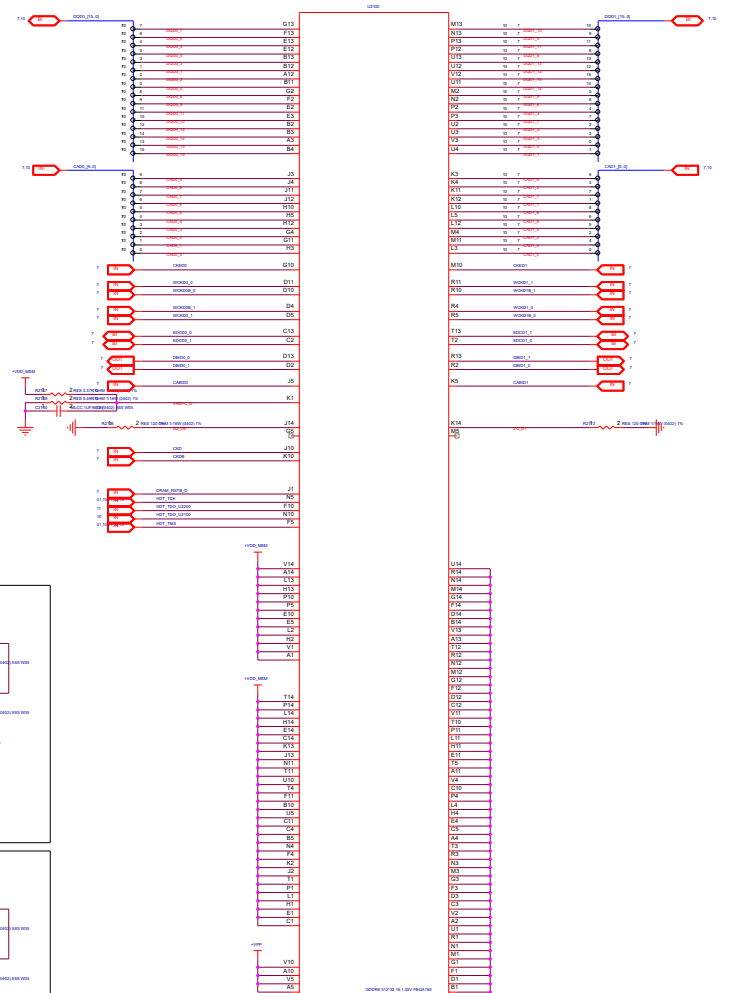
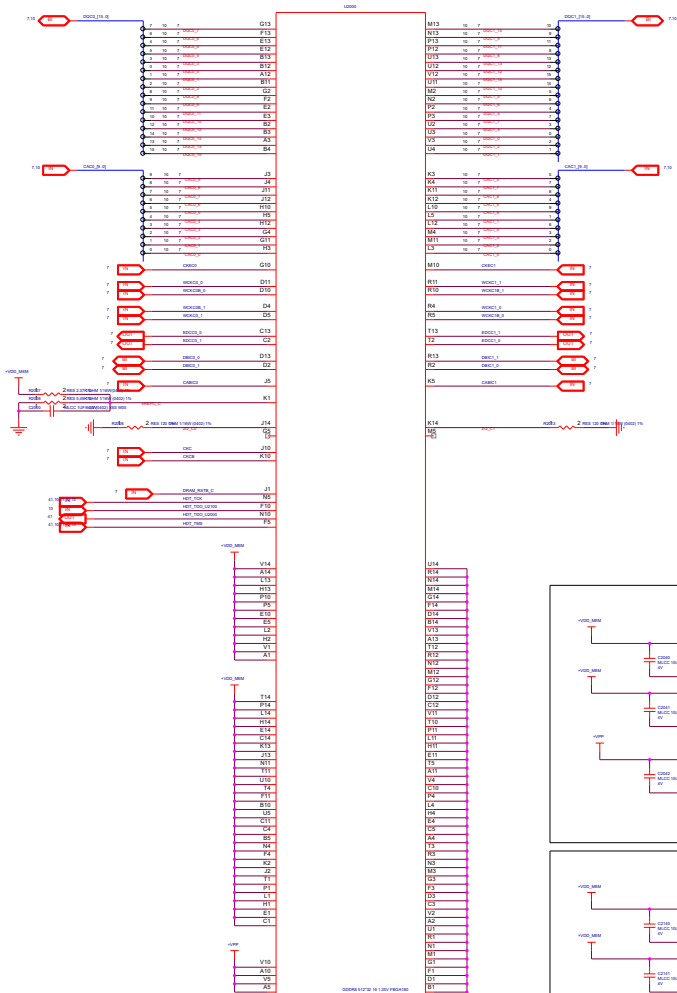
CS# (IO1) 1 2 3 4 5 6 7 8 VCC HOLD# (IO3) SCLK Si (IO0)



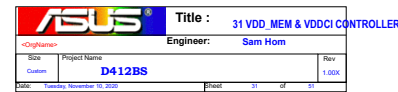


ASIC CH0 -> MEM CHA
ASIC CH1 -> MEM CHB

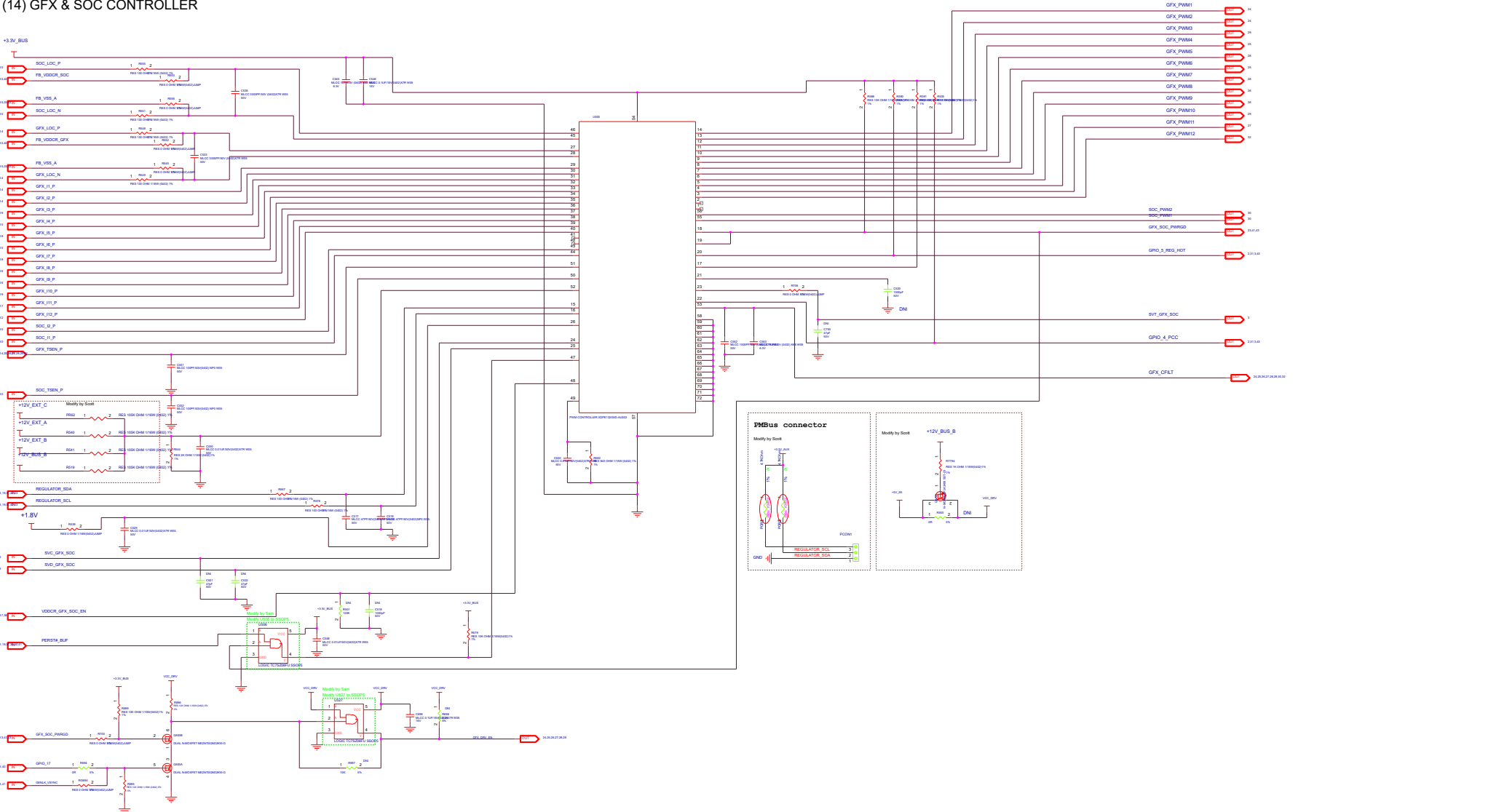
ASIC CH0 -> MEM CHA
ASIC CH1 -> MEM CHB



(21) VDD_MEM & VDDCI CONTROLLER

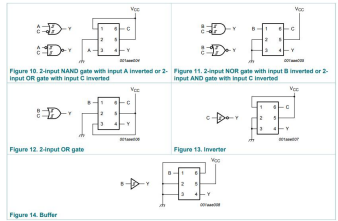


(14) GFX & SOC CONTROLLER



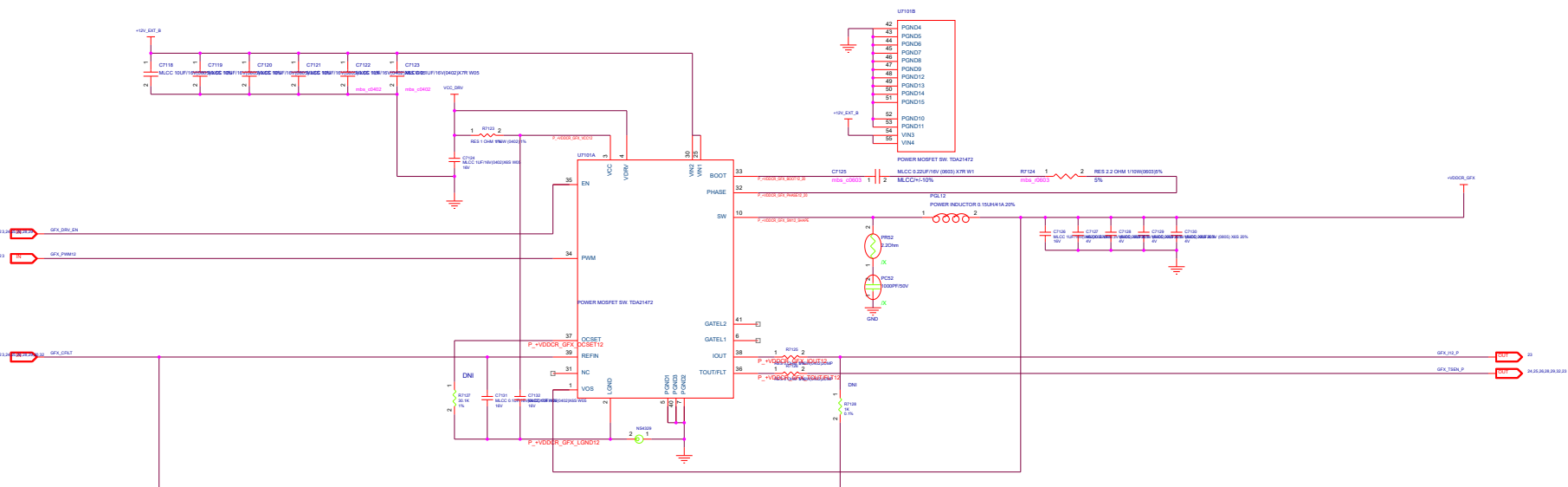
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Delete OC1112QC1113QC1115QC1114QC1115QC1119

Modify by Scott
Delete UC1115UC1116UC1115UC1115UC1115UC1114
UC1115UC1115UC1115UC1115UC1119

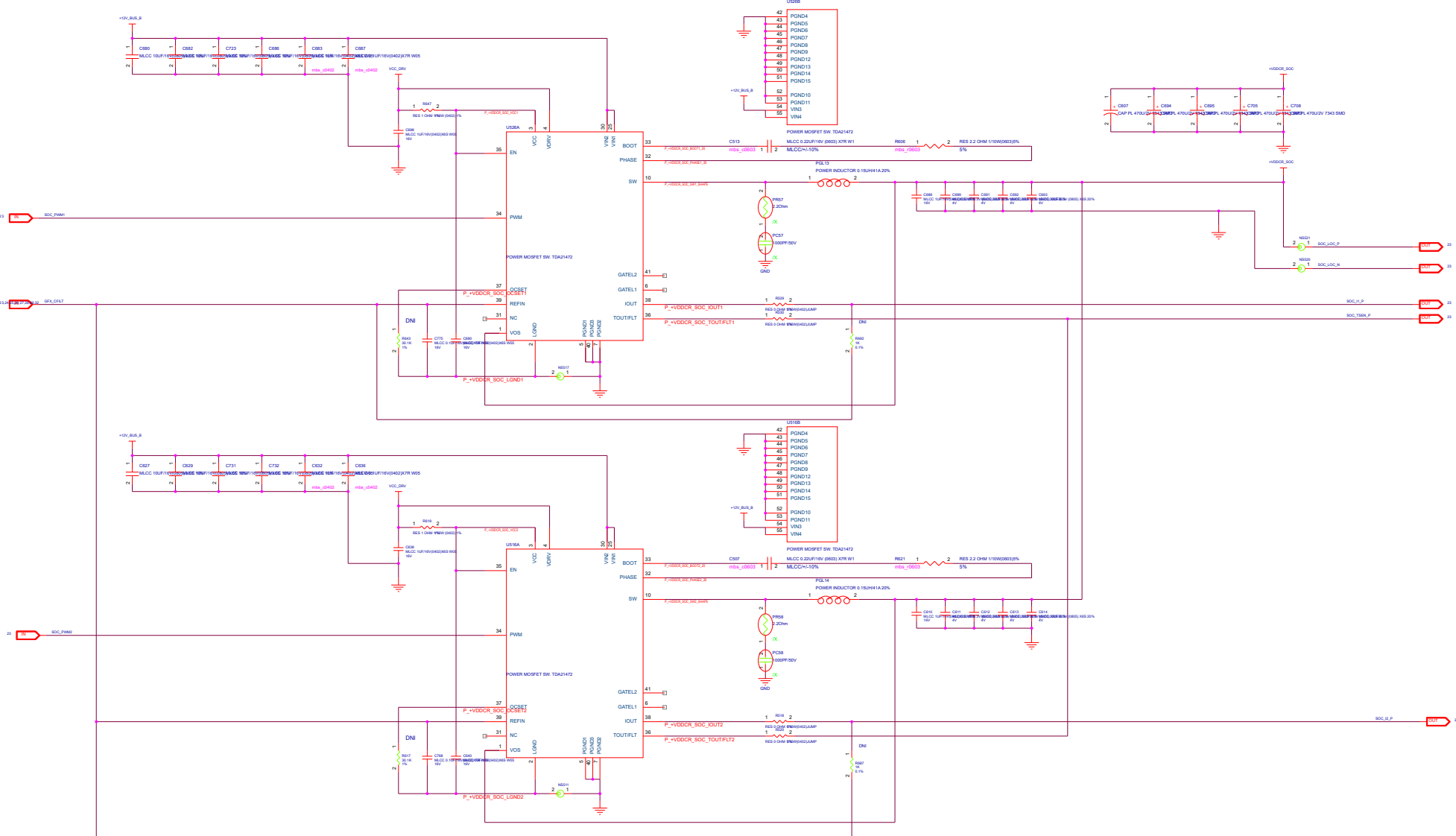


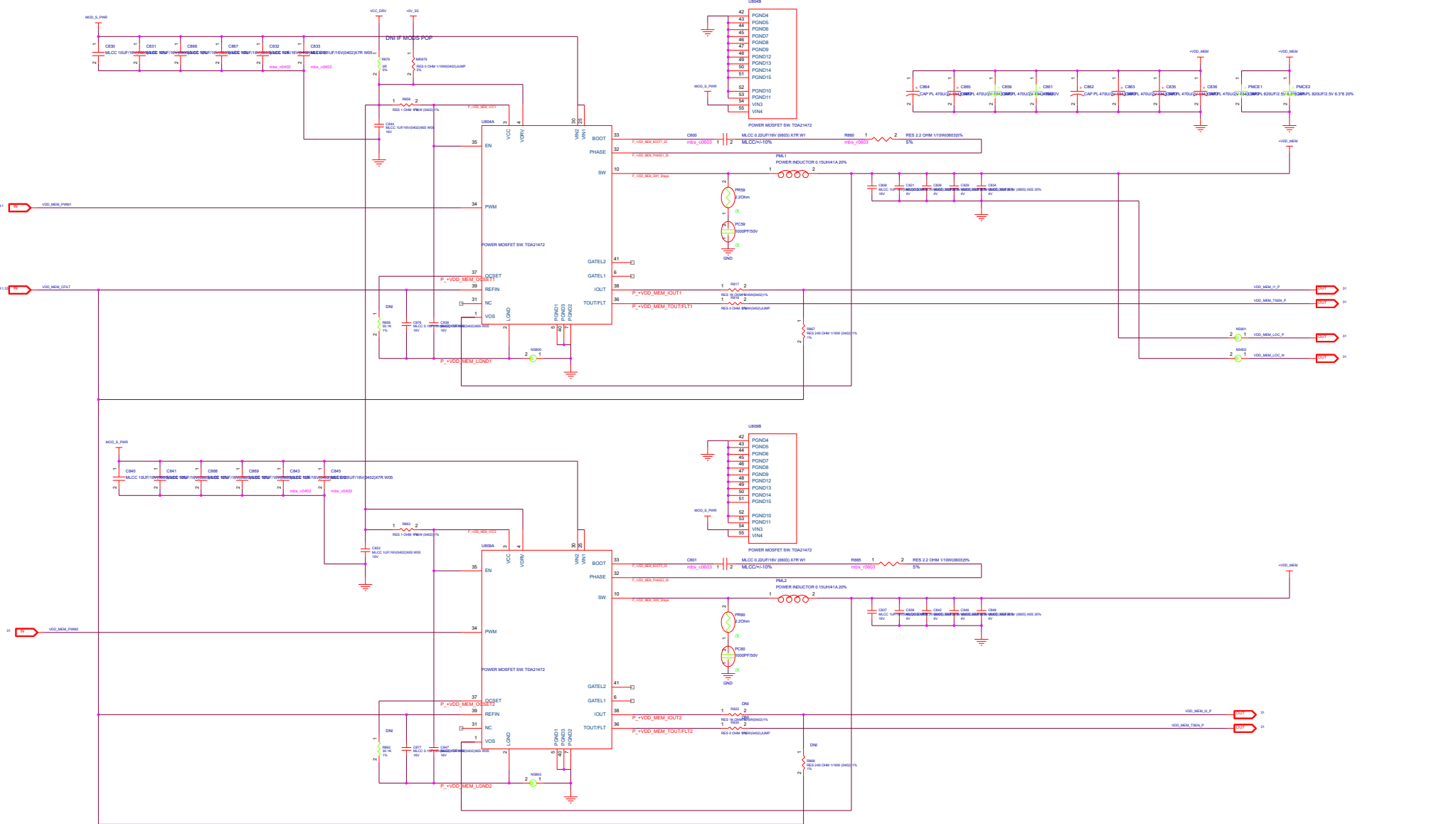
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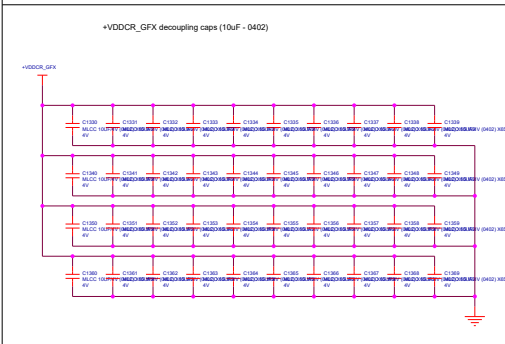
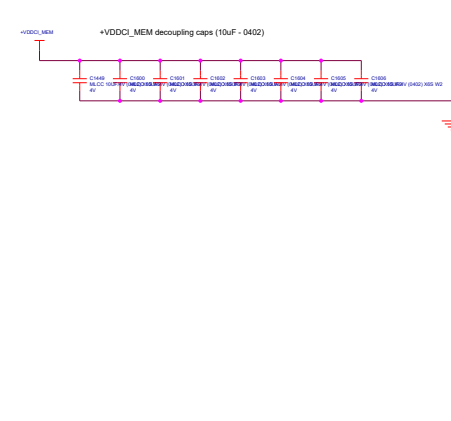
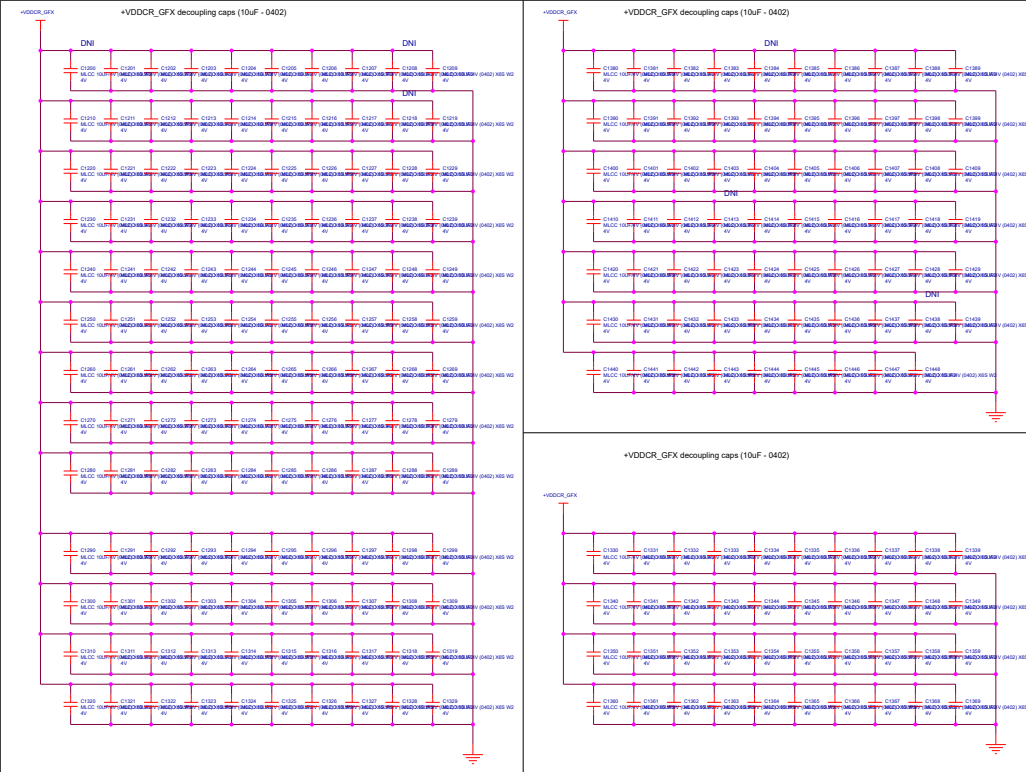






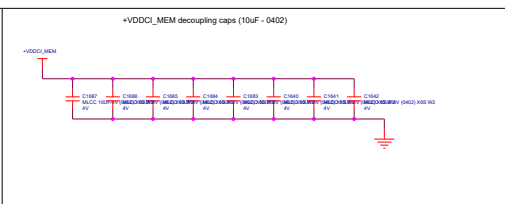
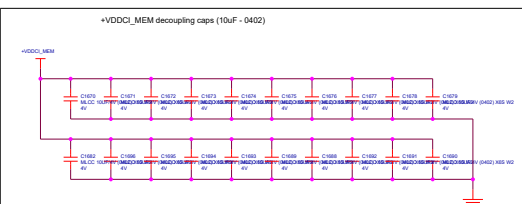
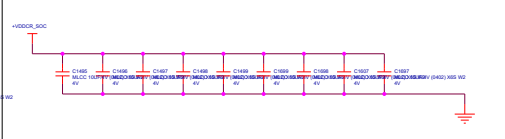
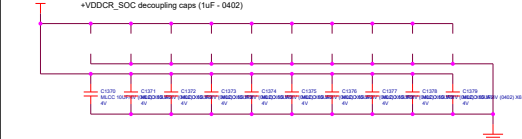
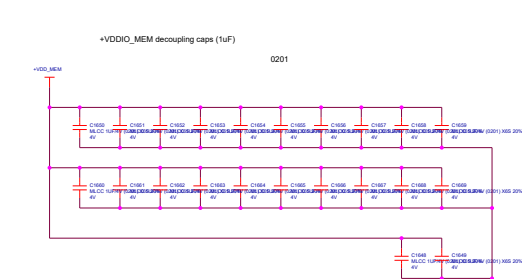
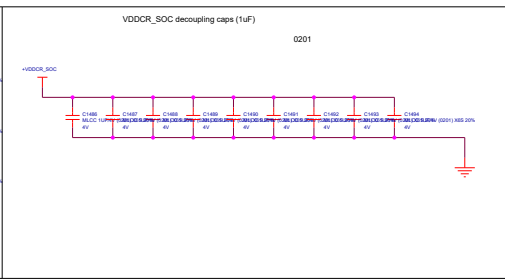
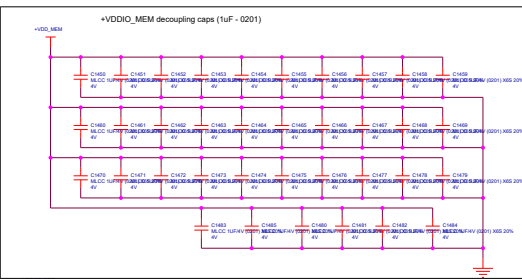


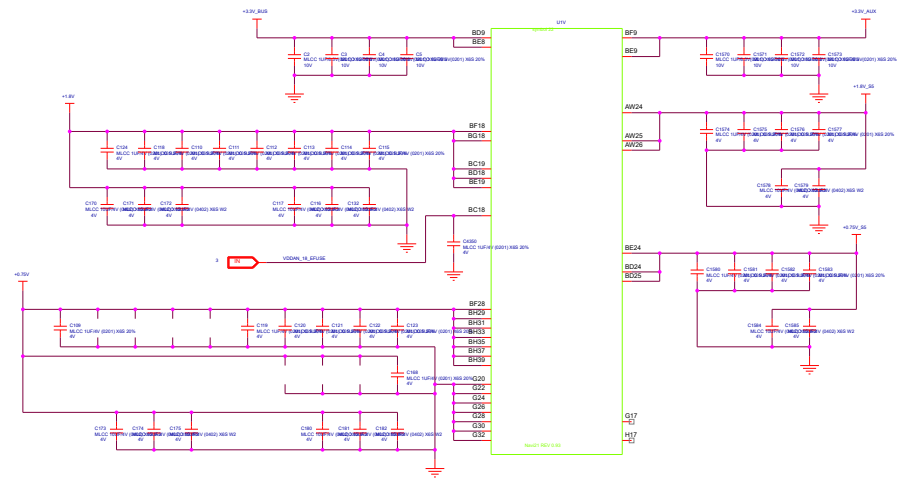




DNI these six caps to match SLT board and keep the design consistent across SKUs

C1218
C1208
C1200
C1438
C1413
C1384





FOR PI DAUGHTER CARD
Modify by Sam
Delete PI DAUGHTER CARD

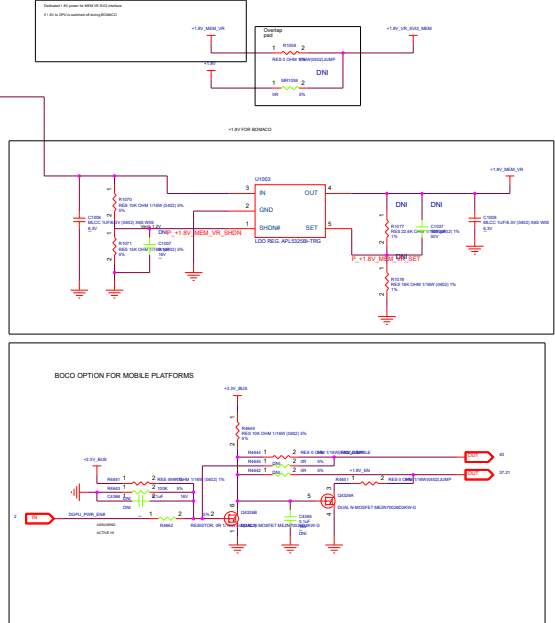
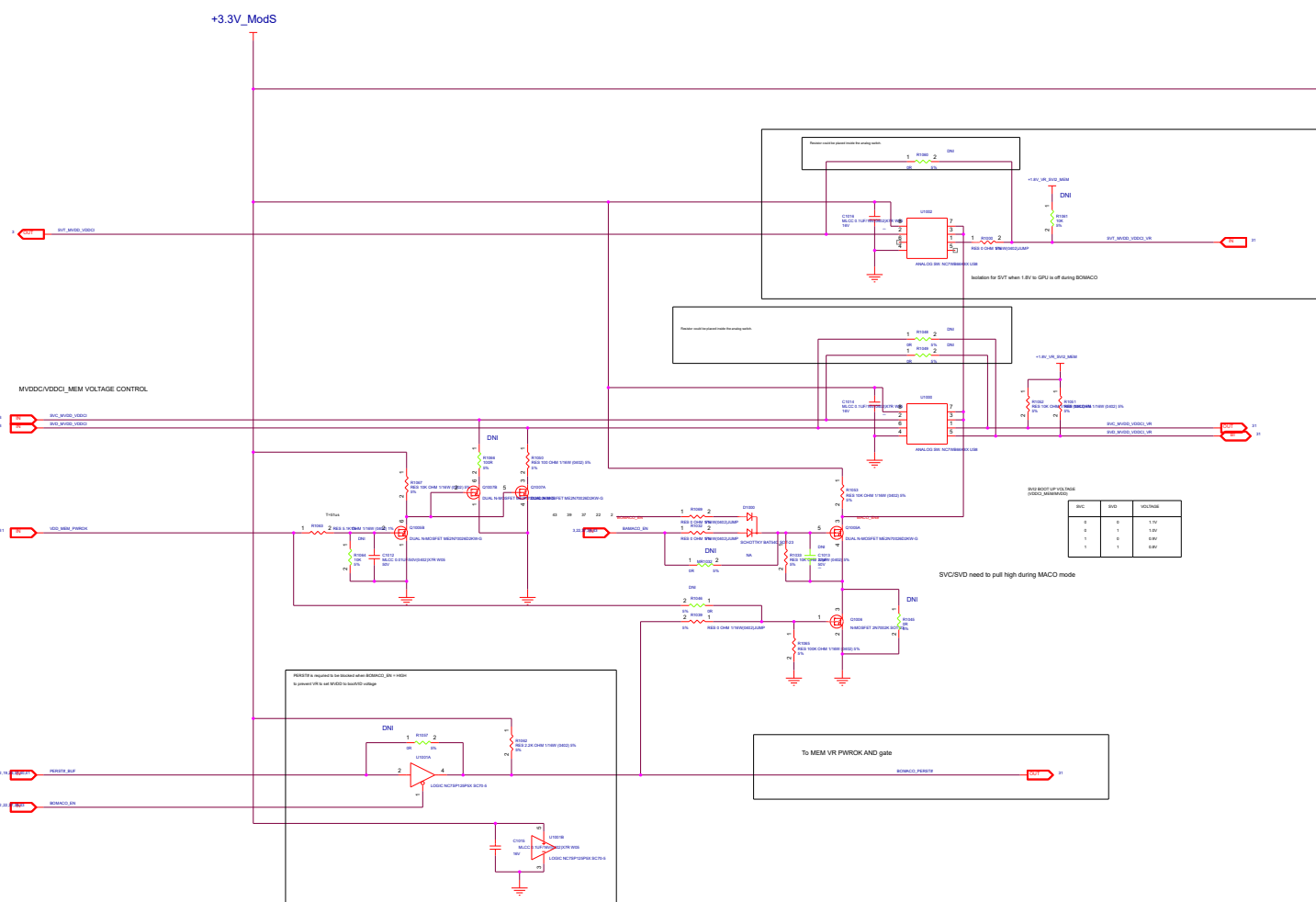


Table 3 Power Rails Status at BAMACO Mode

Power Rail at ASIC	Used logic	ON/OFF Status
VDDCR_GFX	GFX IP, SDMA, GFXCLK CLKIP	OFF
VDDCR_SOC	SYS IPs	OFF
VDDCI_MEM	MEM PHY	OFF
VDDIO_MEM	MEM PHY	ON
MVDDC/MVDDQ/VPP	DRAM	ON
VDDCR_BACO	NBIO/THM/MP1/USB	ON
VDDIO_PCIE	PCIe PHY	ON
VDDAN_C	PHY	ON
VDDAN_18	PLL, PHY, etc	ON
VDDIO_18	1.8V GPIO, I2C, etc	ON
VDDIO_33	3.3V GPIO	ON
VDDAN * EFUSE	EFUSE	ON
VDDCR_S5	USB	ON

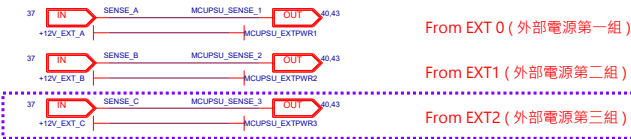
Table 3 Power Rails Status at BOMACO Mode

Power Rail at ASIC	Used logic	ON/OFF Status for BOMACO-A
VDDCR_GFX	GFX IP, SDMA, GFXCLK CLKIP	OFF
VDDCR_SOC	SYS IPs	OFF
VDDCI_MEM	MEM PHY	OFF
VDDIO_MEM	MEM PHY	ON
MVDDC/MVDDQ/VPP	DRAM	ON
VDDCR_BACO	NBIO/THM/MP1/USB	OFF
VDDIO_PCIE	PCIe PHY	OFF
VDDAN_C	PHY	OFF
VDDAN_18	PLL, PHY, etc	OFF
VDDIO_18	1.8V GPIO, I2C, etc	OFF
VDDIO_33	3.3V GPIO	OFF
VDDAN * EFUSE	EFUSE	OFF
VDDCR_S5	USB	ON

Power



PSU DETECT INPUT

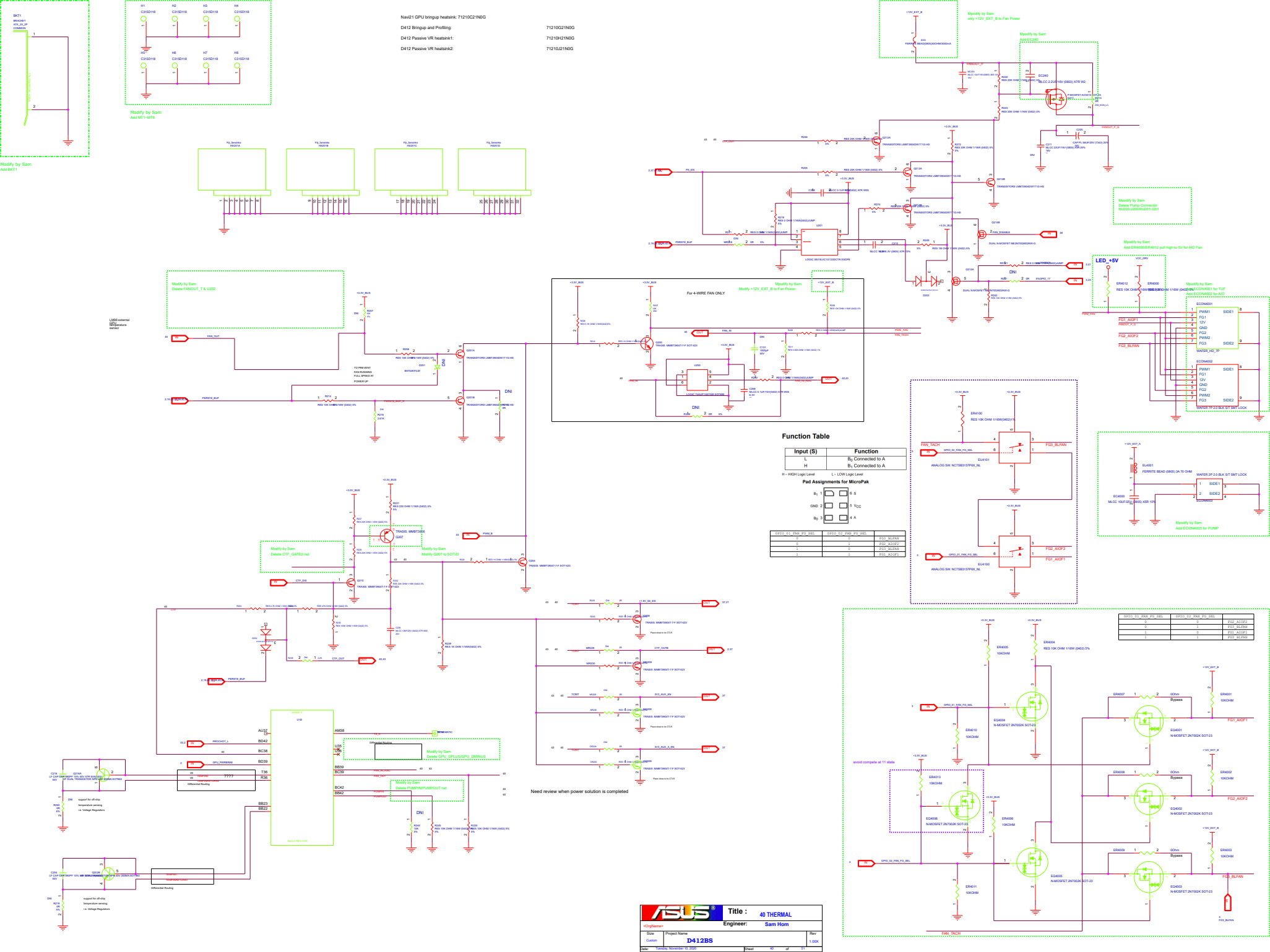


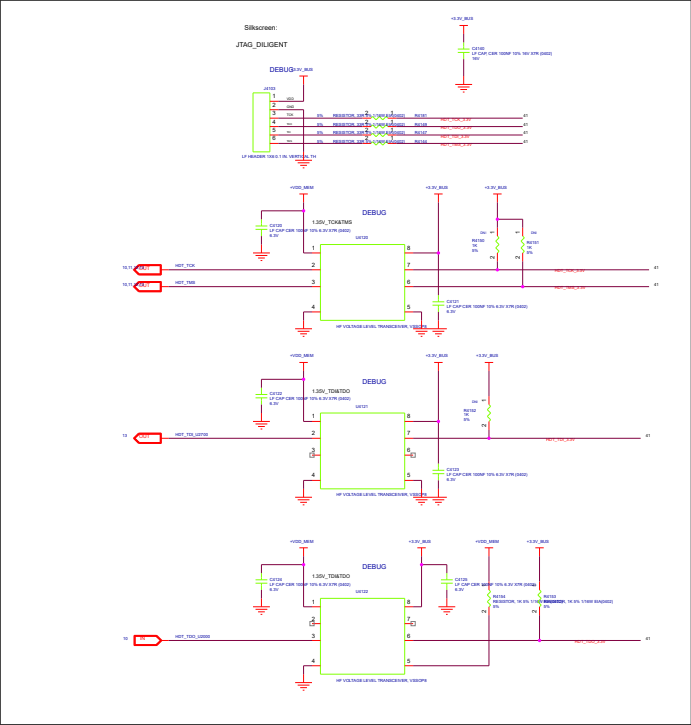
I2C



GPU_GPIO



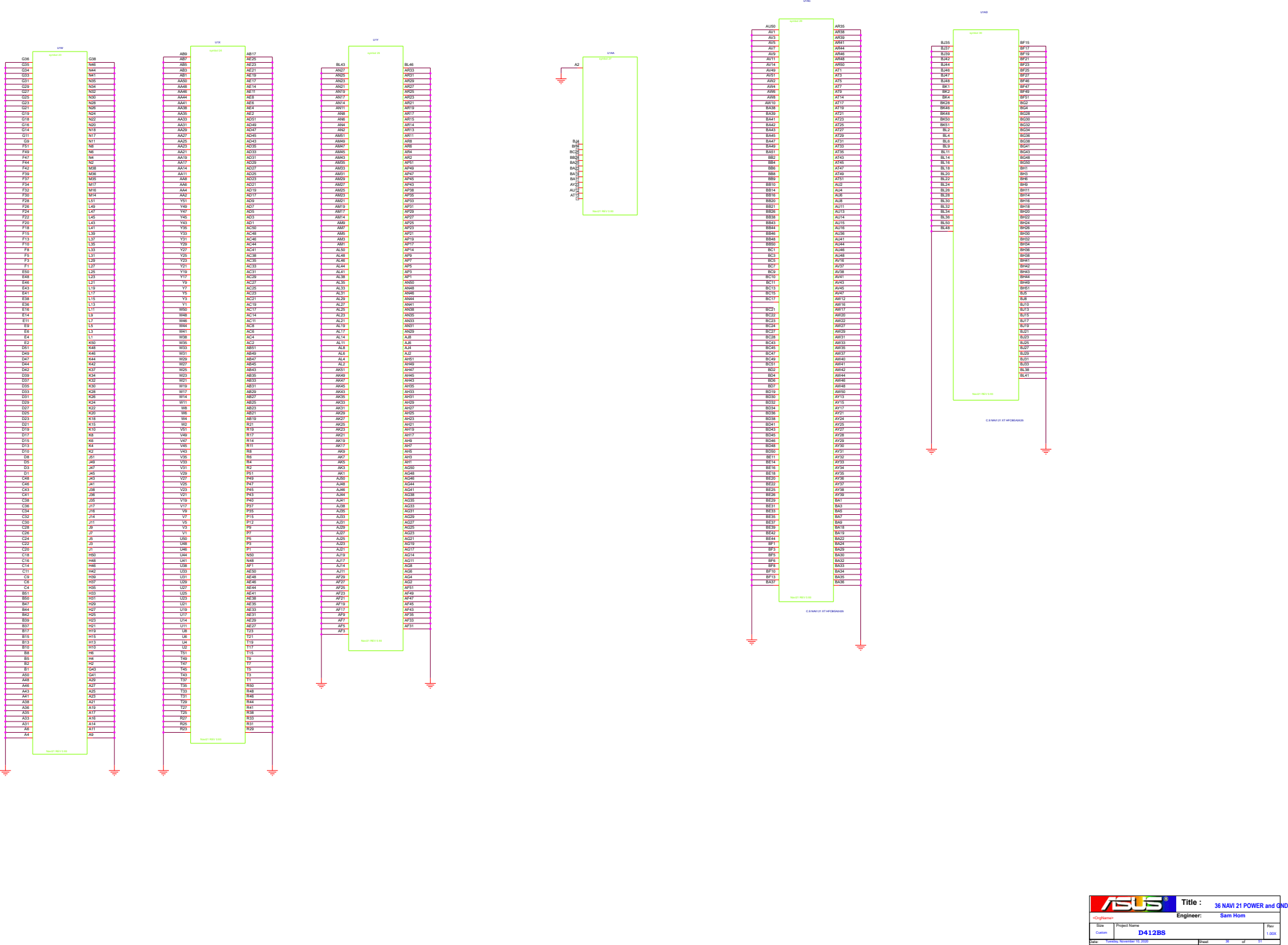


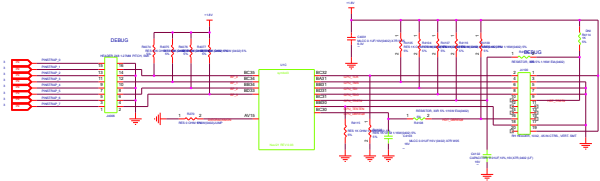
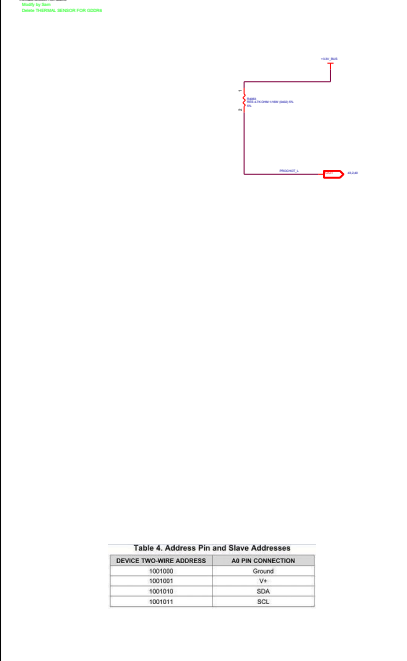
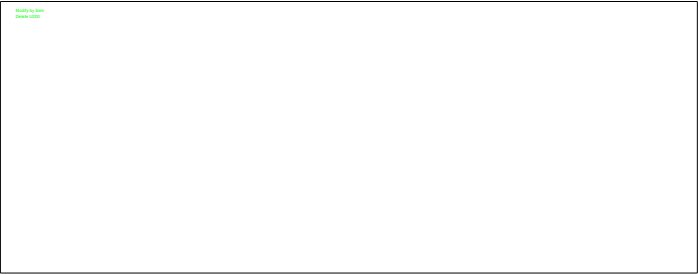
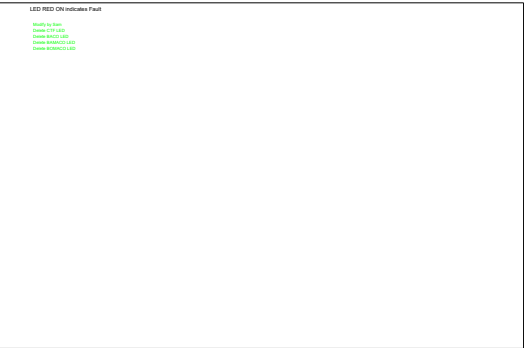
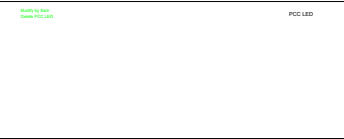


Modify by Sam
Delete DPM LED



Modify by Sam
Delete FDS LED Header
Delete RADEON Lightbar Header





Modify to User
Enable THRMAL_SENSOR FOR VDDOTX

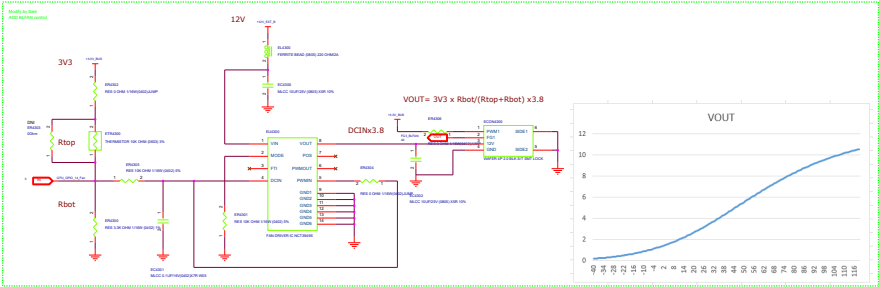
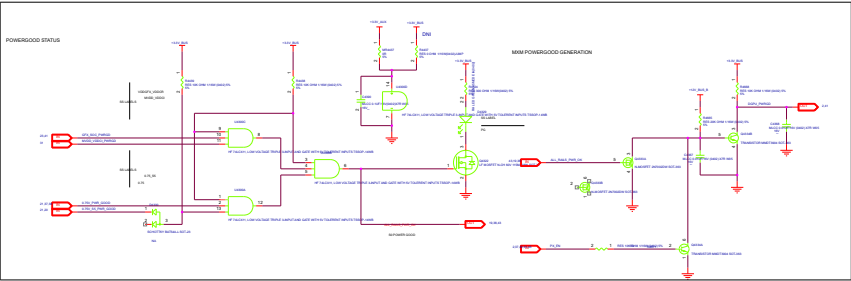
THRMAL_SENSOR FOR VDDOTX

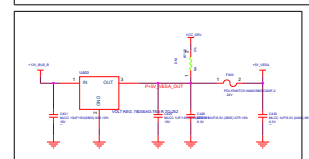
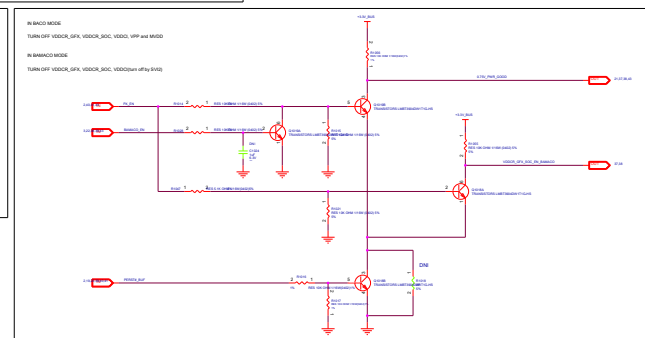
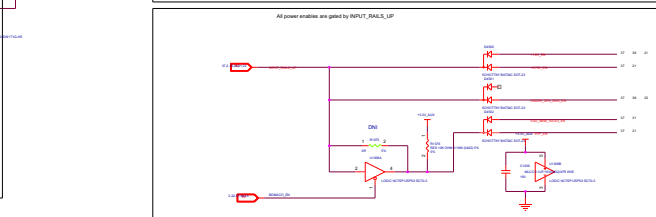
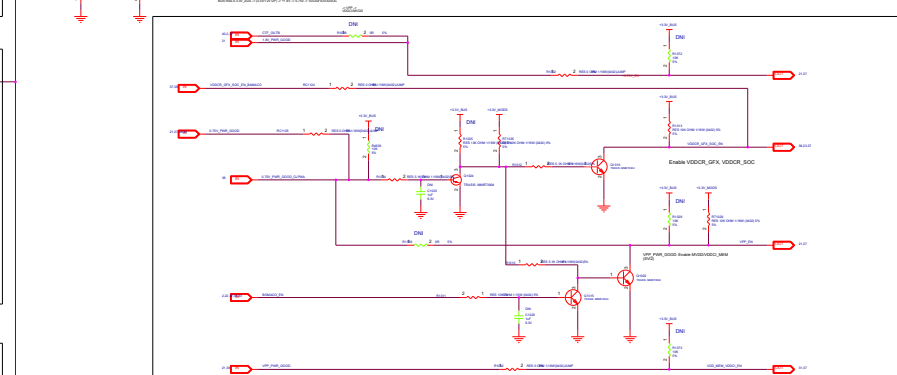
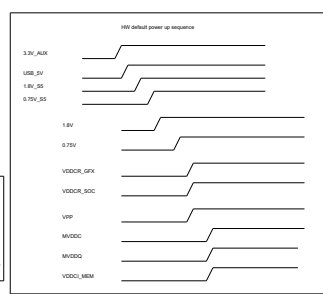
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Modify to User
Enable THRMAL_SENSOR FOR VDDOTX

THRMAL_SENSOR FOR VDDOTX

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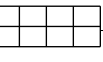
POWER FLOW



+12V_EXT_A 8Pin
(150W/12.5A Max)



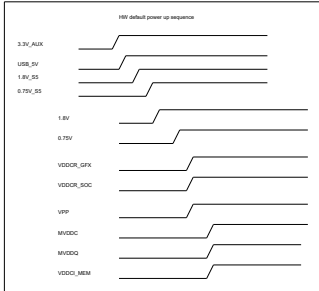
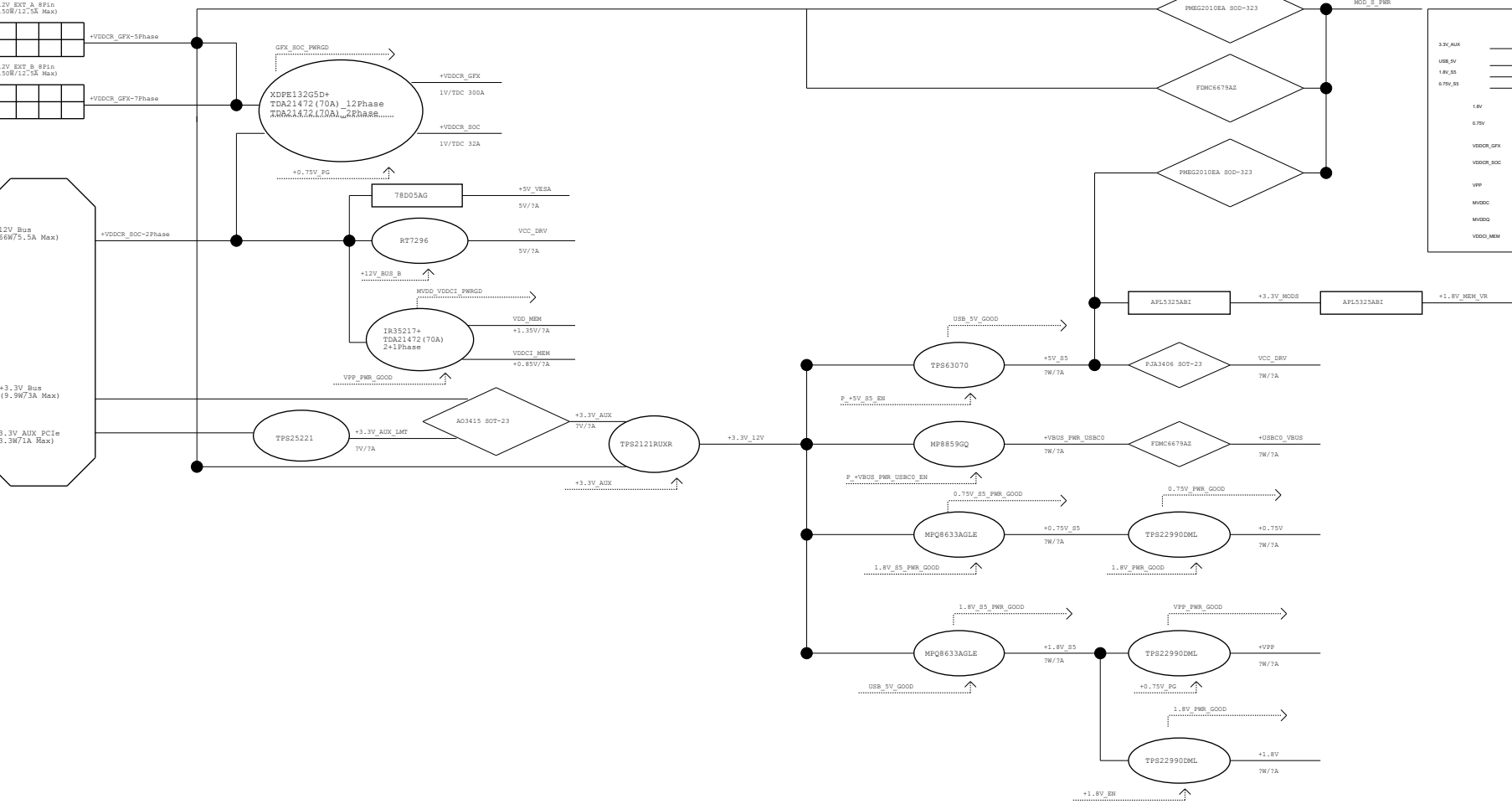
+12V_EXT_B 8Pin
(150W/12.5A Max)



+12V_Bus
(66W/5.5A Max)

+3.3V_Bus
(9.9W/3A Max)

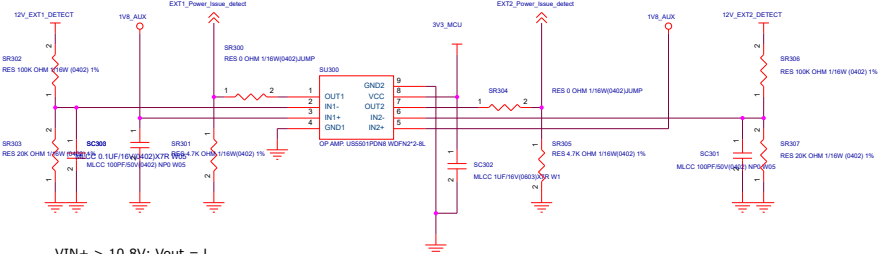
+3.3V_AUX_PCIE
(3.3W/1A Max)



3. 阿薩電感儘量靠近Connector, 接到PLC可拉一般正常線寬, 間隔20mils space.

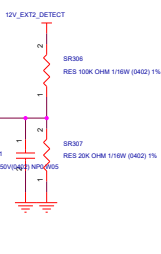


EXT1

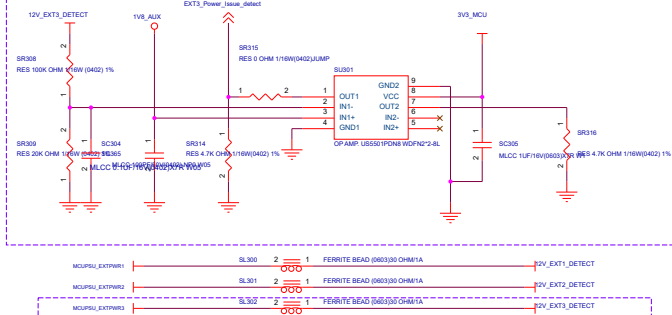

 $V_{IN} > 10.8V: V_{out} = L$
 $V_{IN} < 10.8V: V_{out} = H$
 $10.8V \times 20Kohm / (100Kohm + 20Kohm) = 1.8V$

SR301/SR311, 若僅需做一組連接座偵測, 其他零件可以移除, 但SR301/SR310/SR328需上件4.7K

EXT2



EXT3



pcie 3v3 aux

EXT12V INPUT

EXT POWER connected DETECT PIN

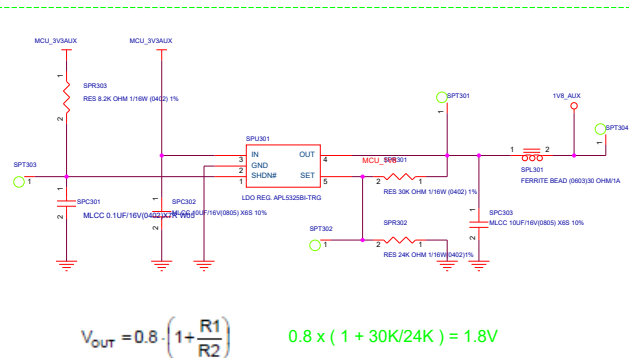
from ite8915

 ITE_EXT1_ISSUE_LED
 ITE_EXT2_ISSUE_LED
 ITE_EXT3_ISSUE_LED

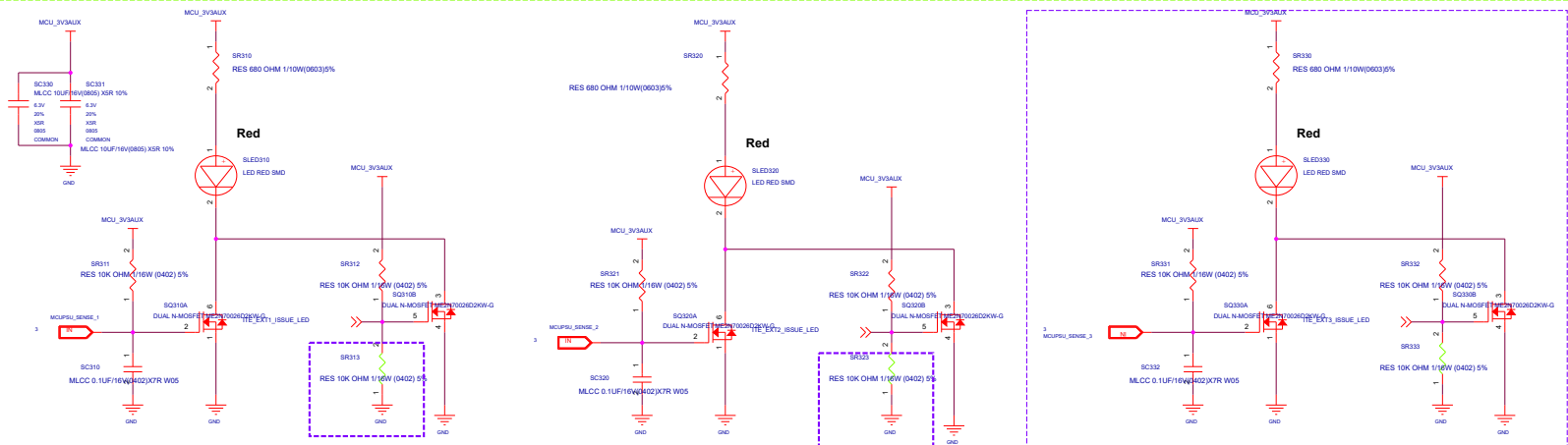
OUPUT: AS ITE8915 INPUT

 EXT1_Power_Issue_detect
 EXT2_Power_Issue_detect
 EXT3_Power_Issue_detect

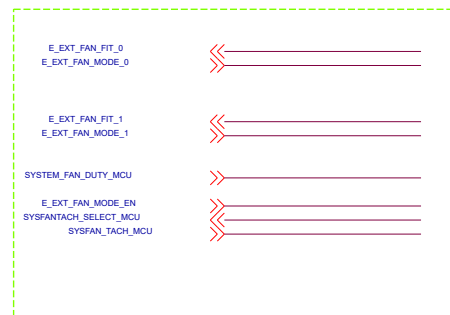
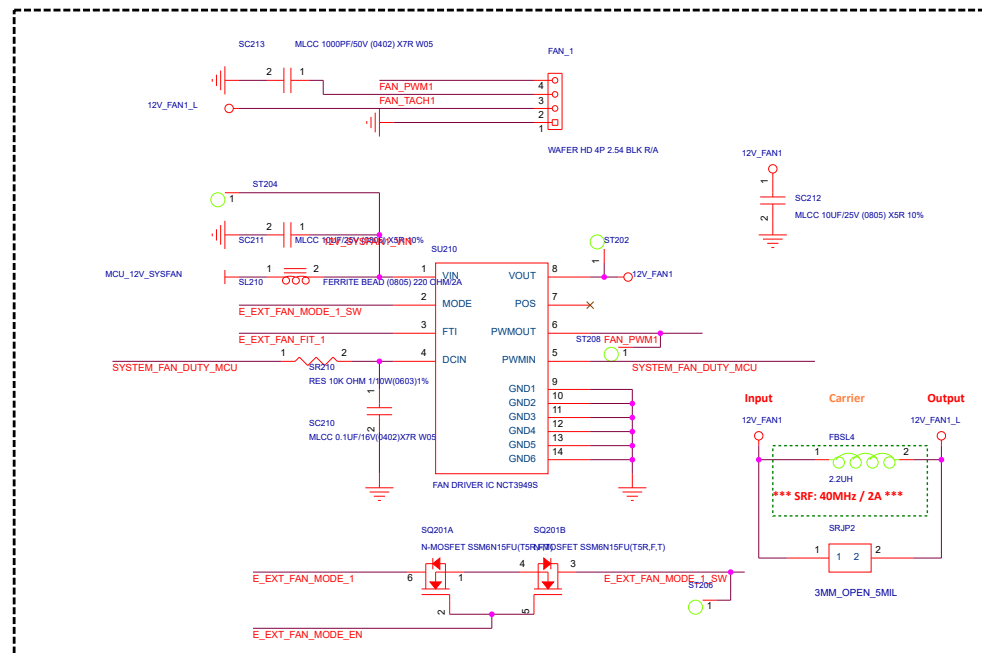
1v8_ref



$$V_{out} = 0.8 \cdot \left(1 + \frac{R1}{R2} \right) = 0.8 \times (1 + 30K/24K) = 1.8V$$



1. EXT power is not connected, the led is always on
2. EXT power is connected
- EXT 12V is over 10.8V, the led turns off
- EXT 12v is below 10.8V, the led blink



ASUS VGA PCB Logo

LOG01
CE
CE



LOG08
UKRAINE
UKRAINE



LOG02
VCCI
VCCI



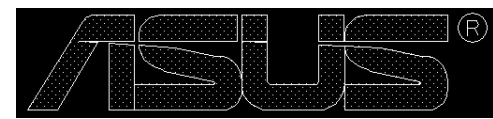
LOG09
PCB MADE IN CHINA
PCB_MADE_IN_CHINA



LOG03
EMI_D33005_H
EMI_D33005_H



LOG010
MARK_L
S_MARK_L



LOG04
FCC
FCC

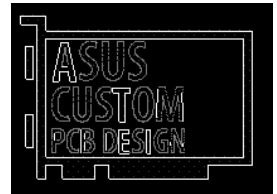


LOG011
WEEE_LOGO
WEEE_LOGO



ASUS Re-design logo
Do not place this on reference board

LOG013
ASUS
CUSTOM
PCB DESIGN
ASUS_CUSTOM_PCB



LOG05
RCM
RCM



LOG06
CAN ICES-3 (B) /NMB-3 (B)
CAN_ICES_3B_NMB_3B



LOG012
SFIS
SFIS



LOG07
KC_R_R_LOGO
KC_R_R_LOGO



M1
PCB_RULER_ASUS
PCB_RULER_ASUS