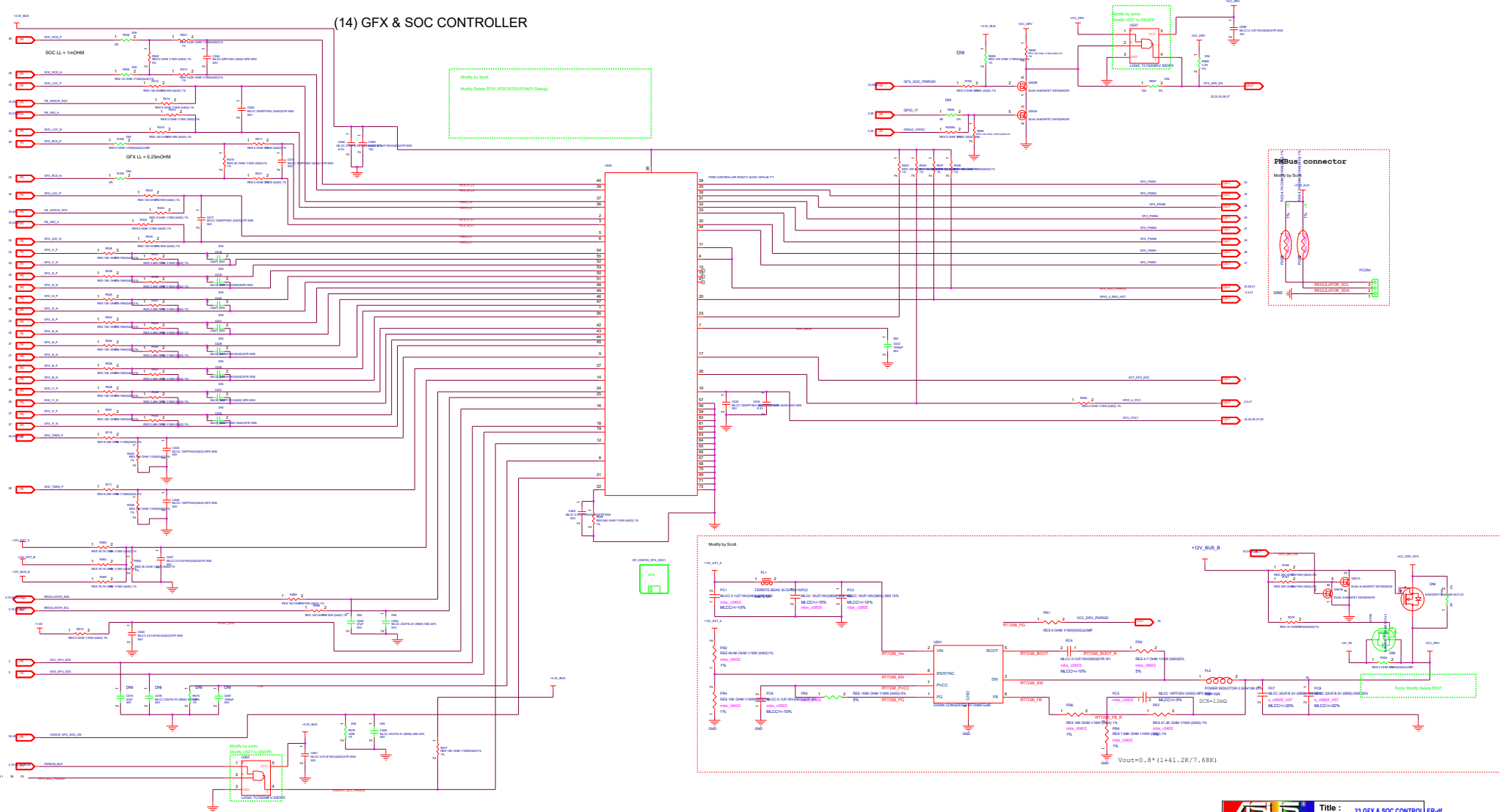
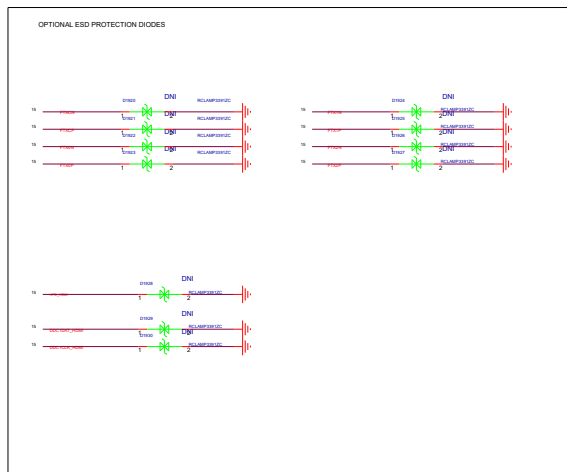
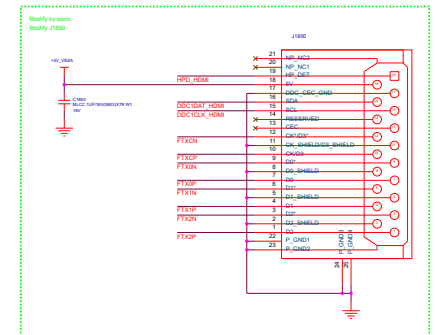
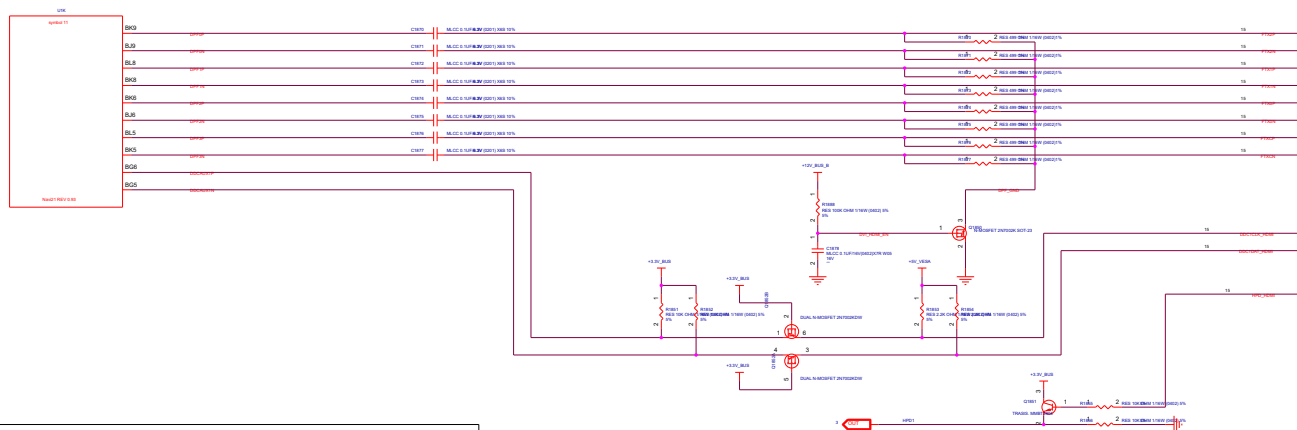
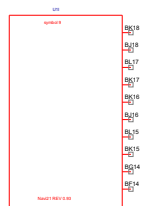
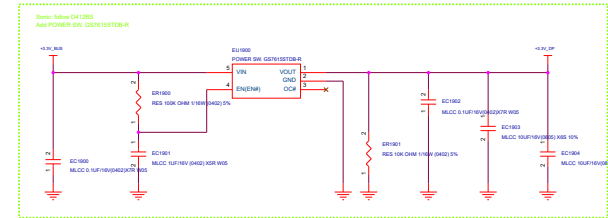
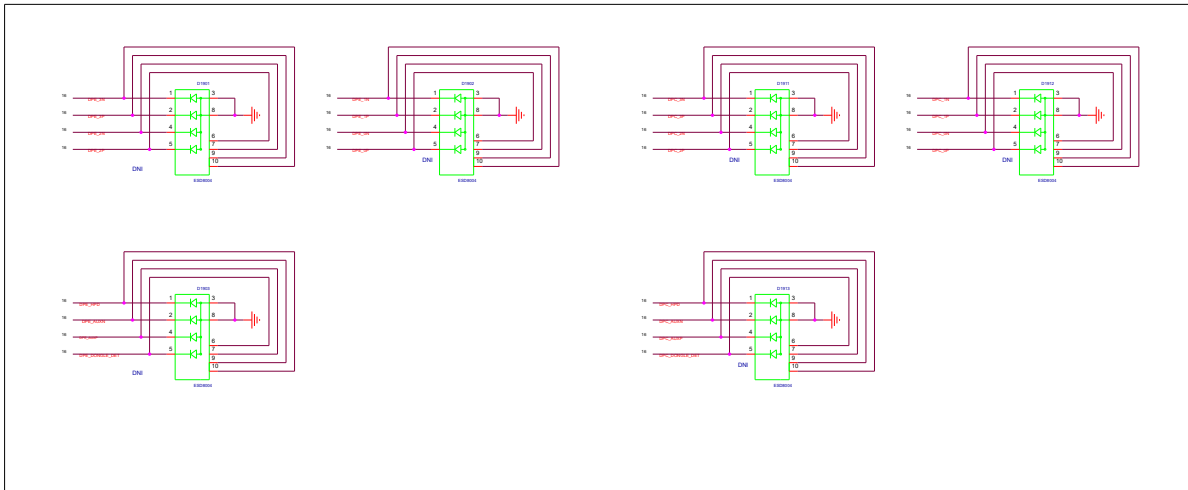
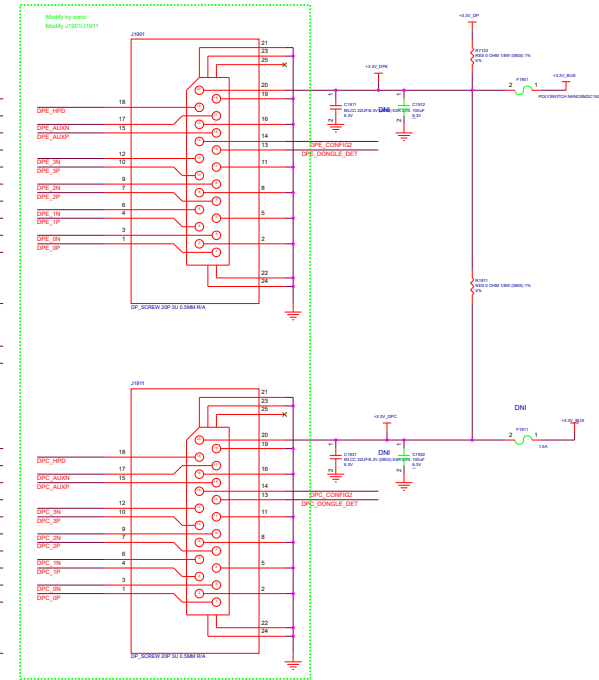
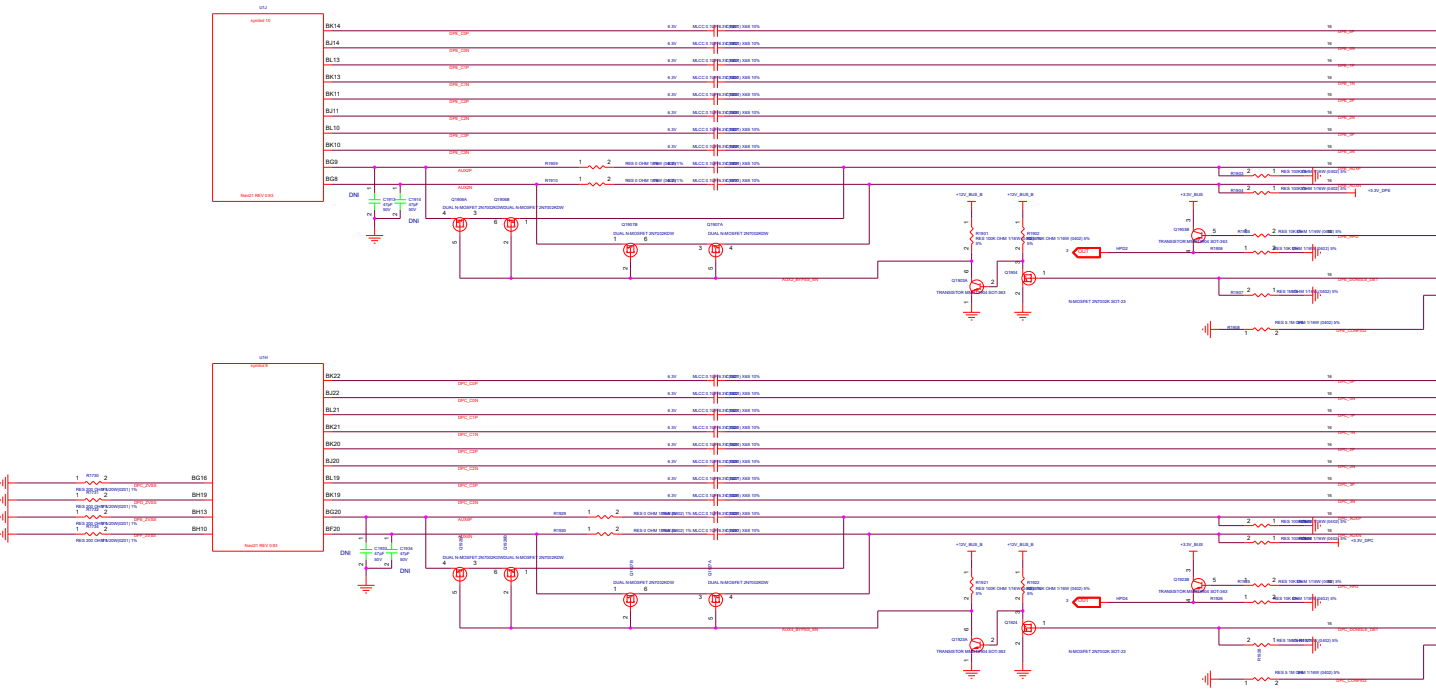
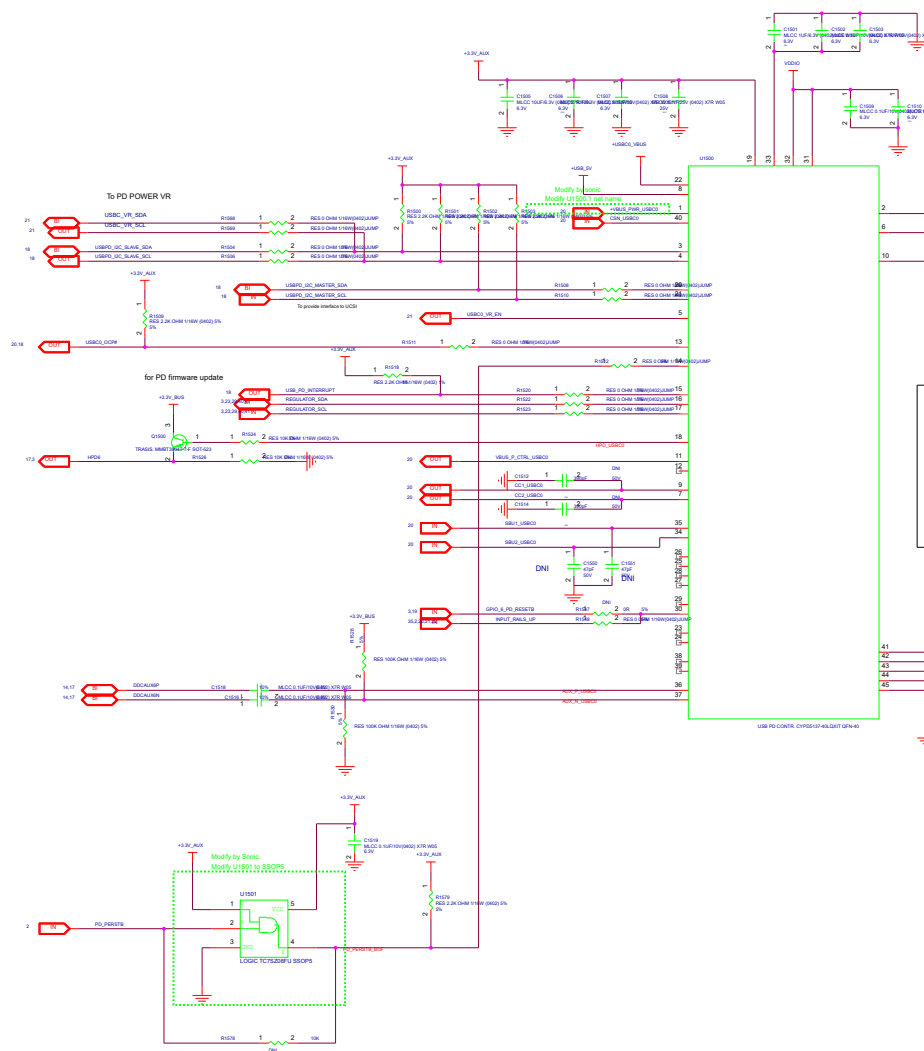
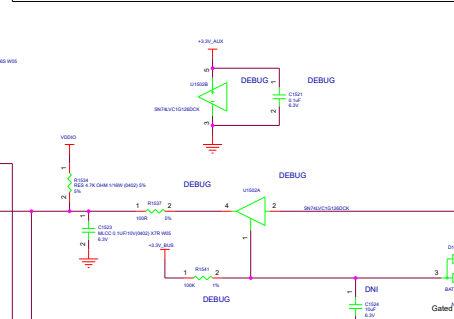


(14) GFX & SOC CONTROLLER

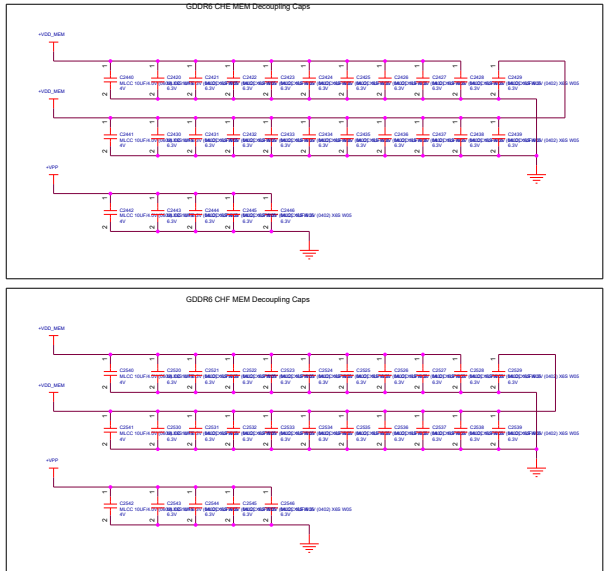
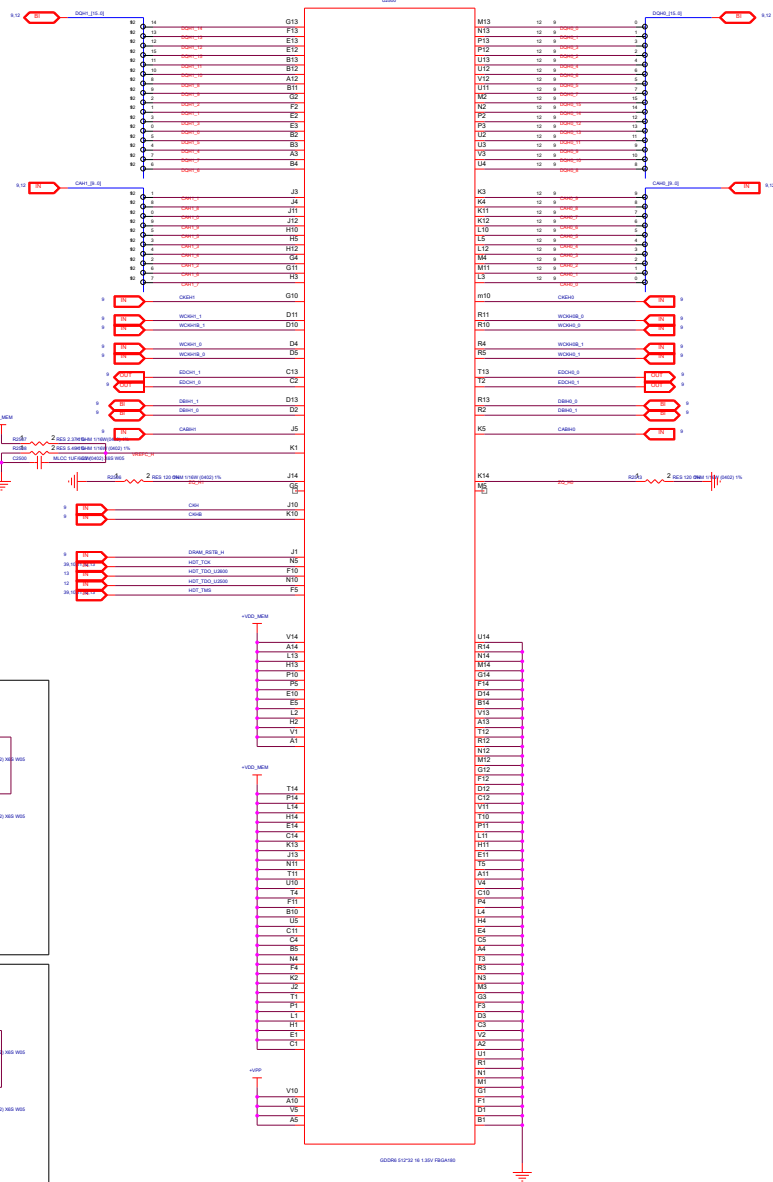
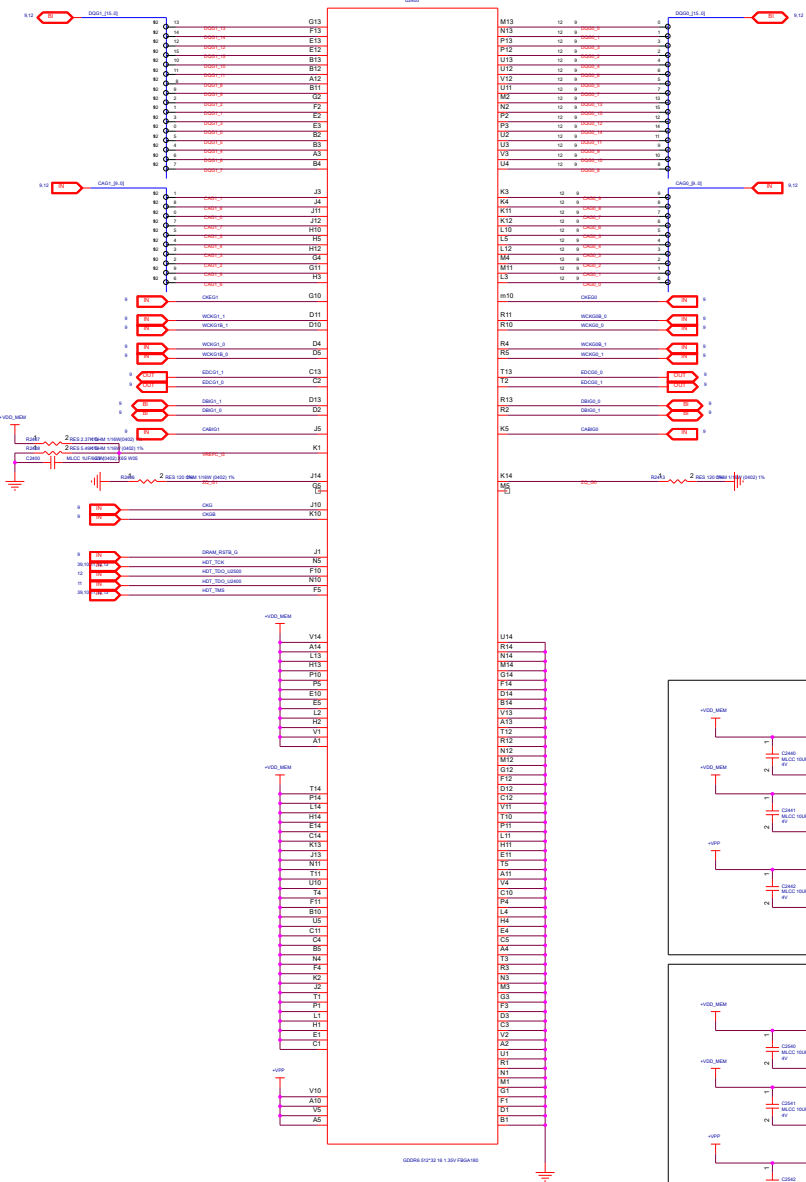








| CCG5 | Navi10 | Note |
|------|--|-----------------------------------|
| SCB1 | SDA/SCL | Firmware update/SMU |
| SCB2 | USBPD_I2C_SLAVE_SDA/SCL USBC_VR_SDA/SCL | Navi10 MUX/PD_Regulator/re-driver |
| SCB3 | USBPD_I2C_MASTER_SDA/SCL | UCSI |



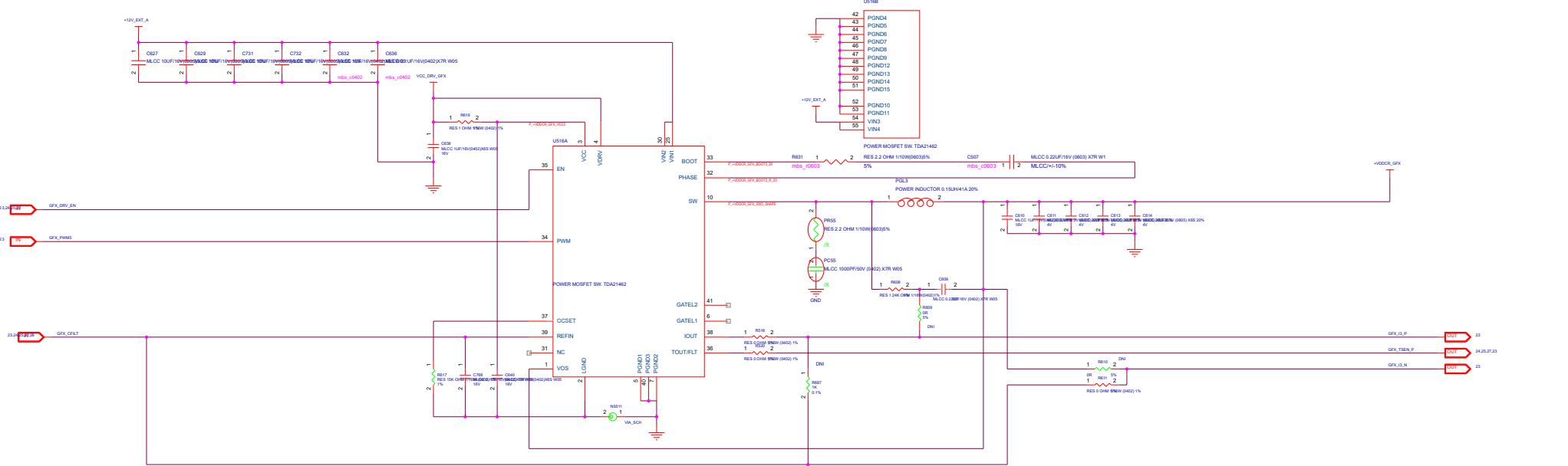
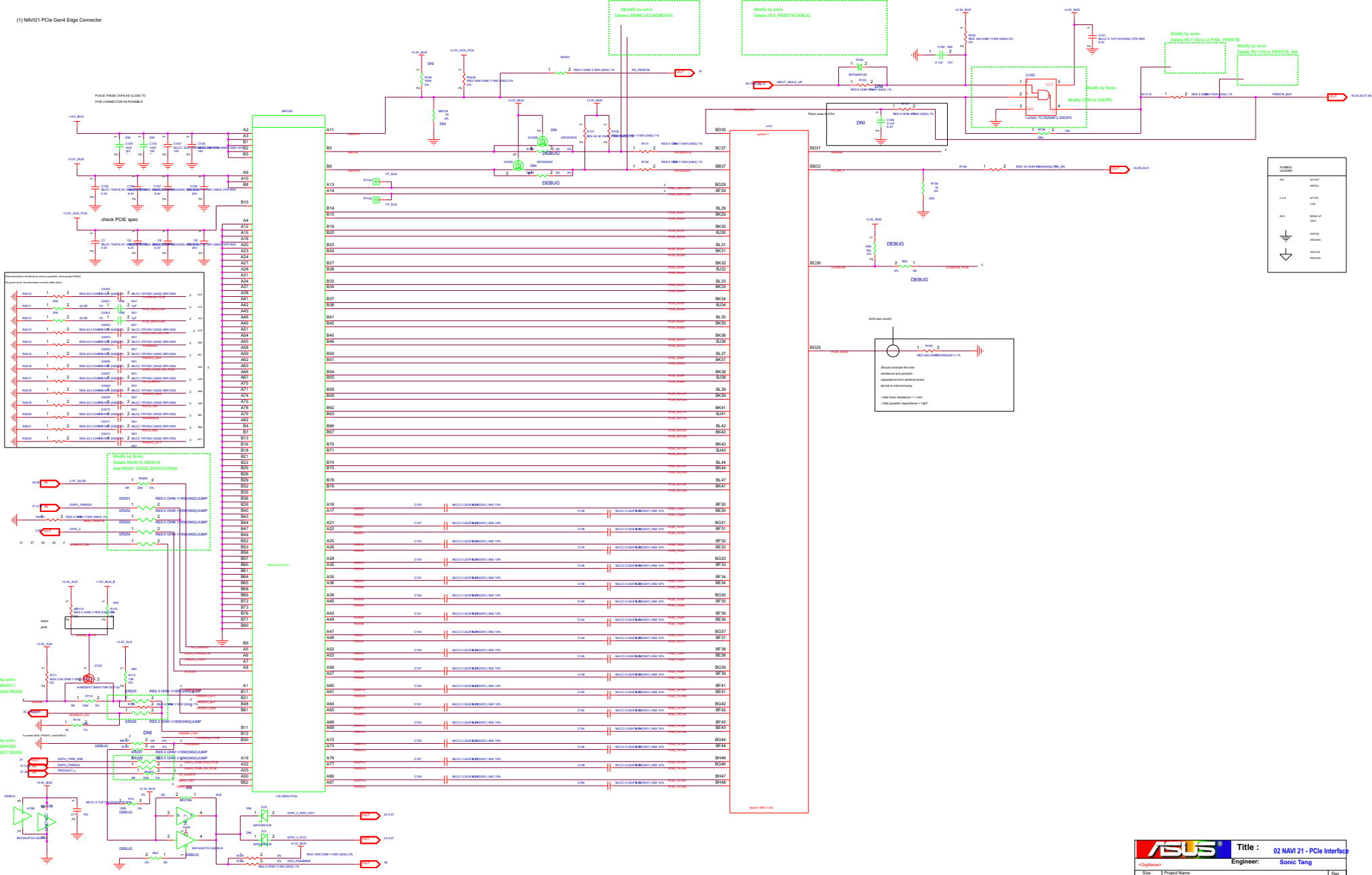
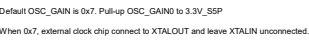


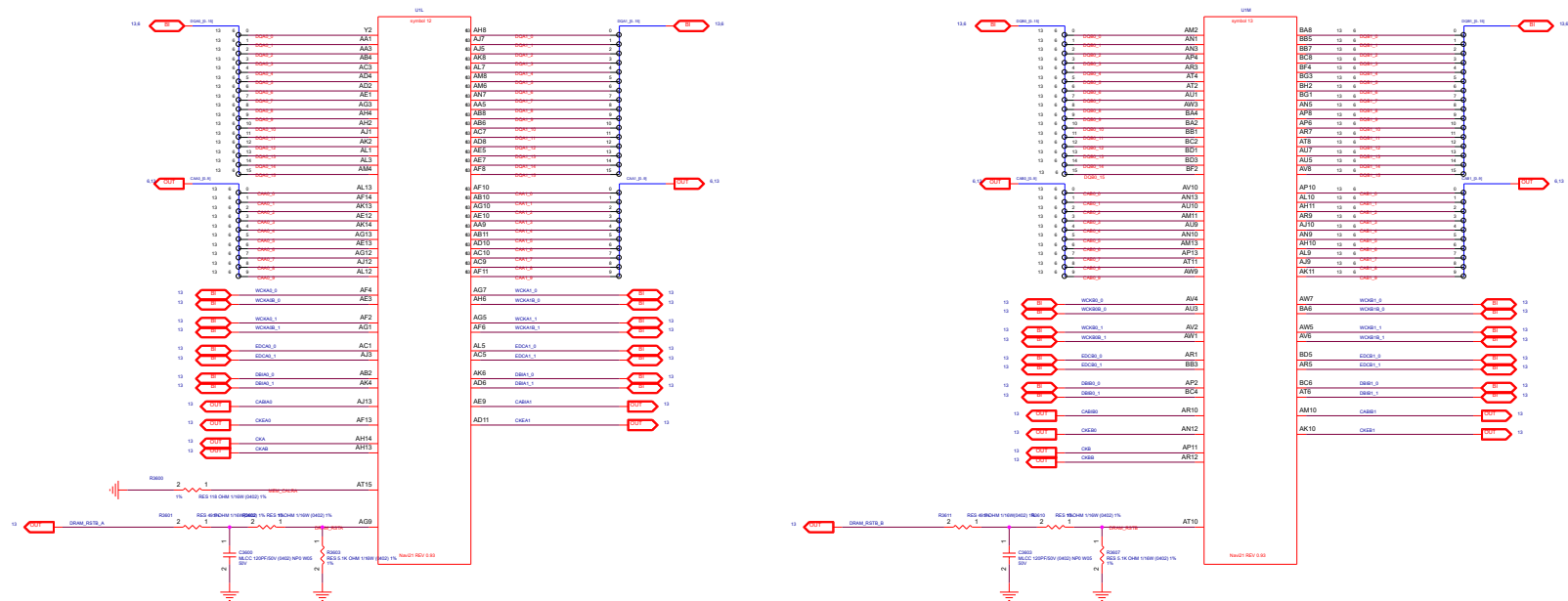
TABLE OF CONTENTS

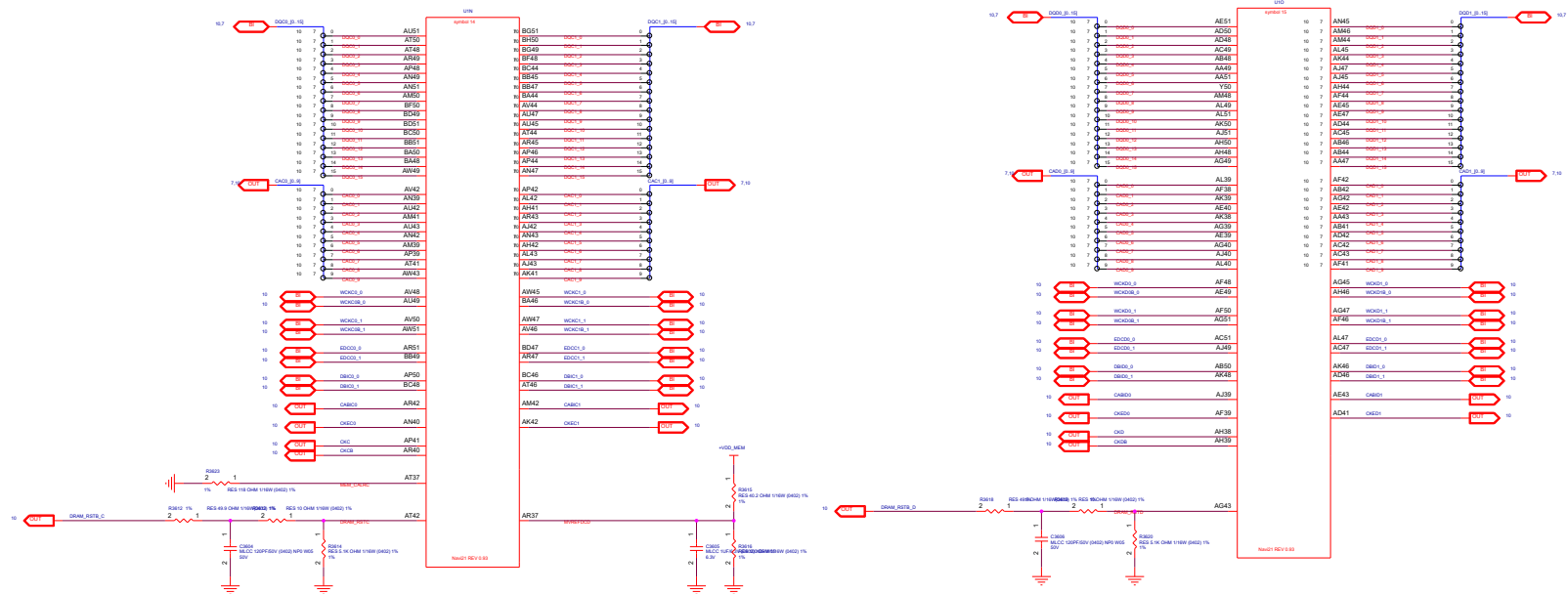
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|-----------|------------|-----------|------------|
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| 2 | page2 | 27 | page27 |
| 3 | page3 | 28 | page28 |
| 4 | page4 | 29 | page29 |
| 5 | page5 | 30 | page30 |
| 6 | page6 | 31 | page31 |
| 7 | page7 | 32 | page32 |
| 8 | page8 | 33 | page33 |
| 9 | page9 | 34 | page34 |
| 10 | page10 | 35 | page35 |
| 11 | page11 | 36 | page36 |
| 12 | page12 | 37 | page37 |
| 13 | page13 | 38 | page38 |
| 14 | page14 | 39 | page39 |
| 15 | page15 | 40 | page40 |
| 16 | page16 | 41 | page41 |
| 17 | page17 | 42 | page43 |
| 18 | page18 | | |
| 19 | page19 | | |
| 20 | page20 | | |
| 21 | page21 | | |
| 22 | page22 | | |
| 23 | page23 | | |
| 24 | page24 | | |
| 25 | page25 | | |

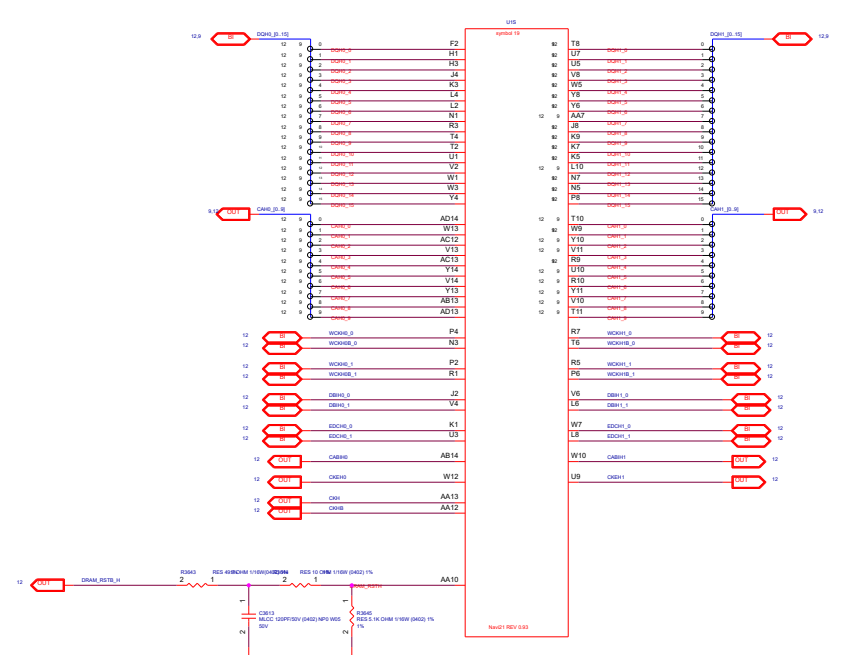


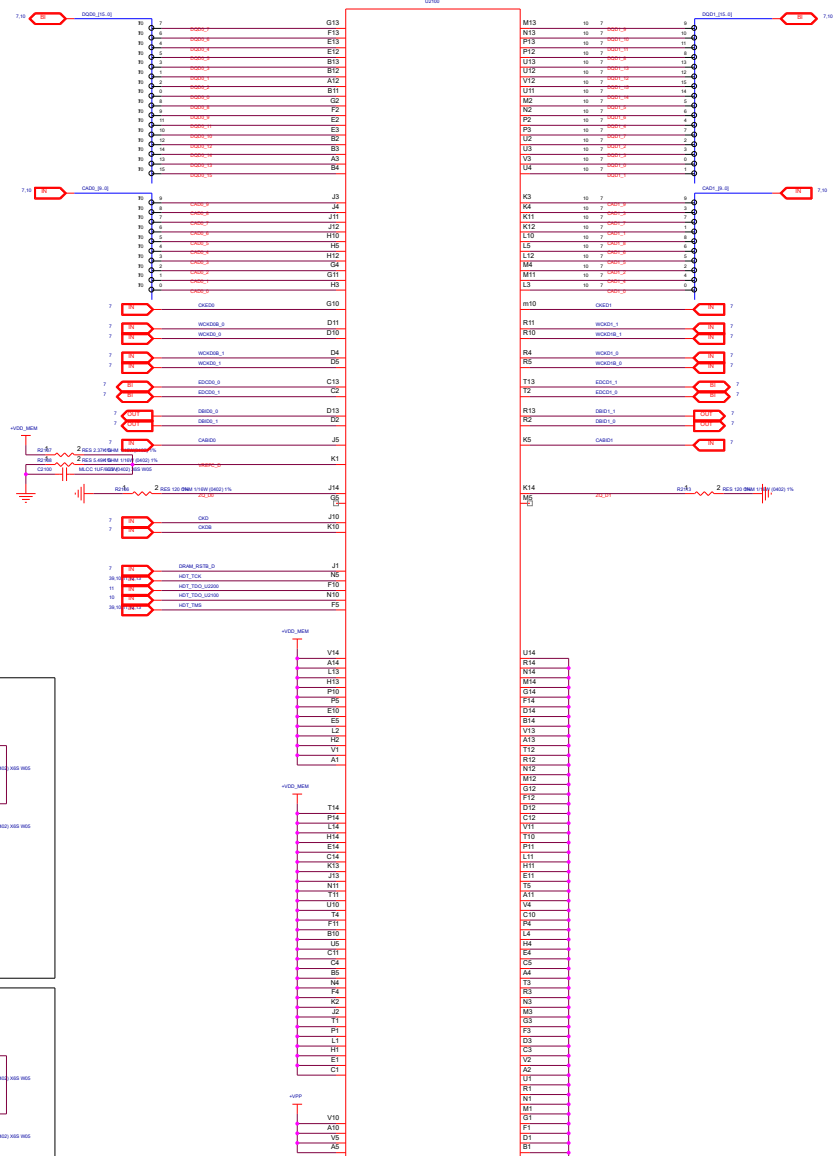
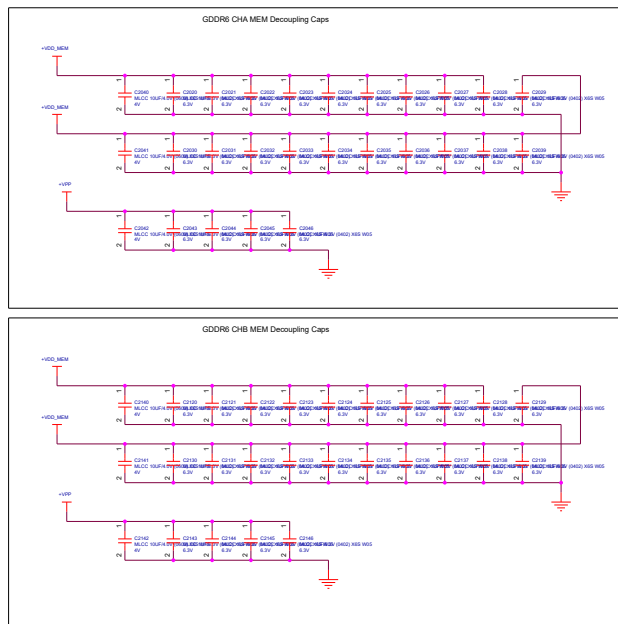
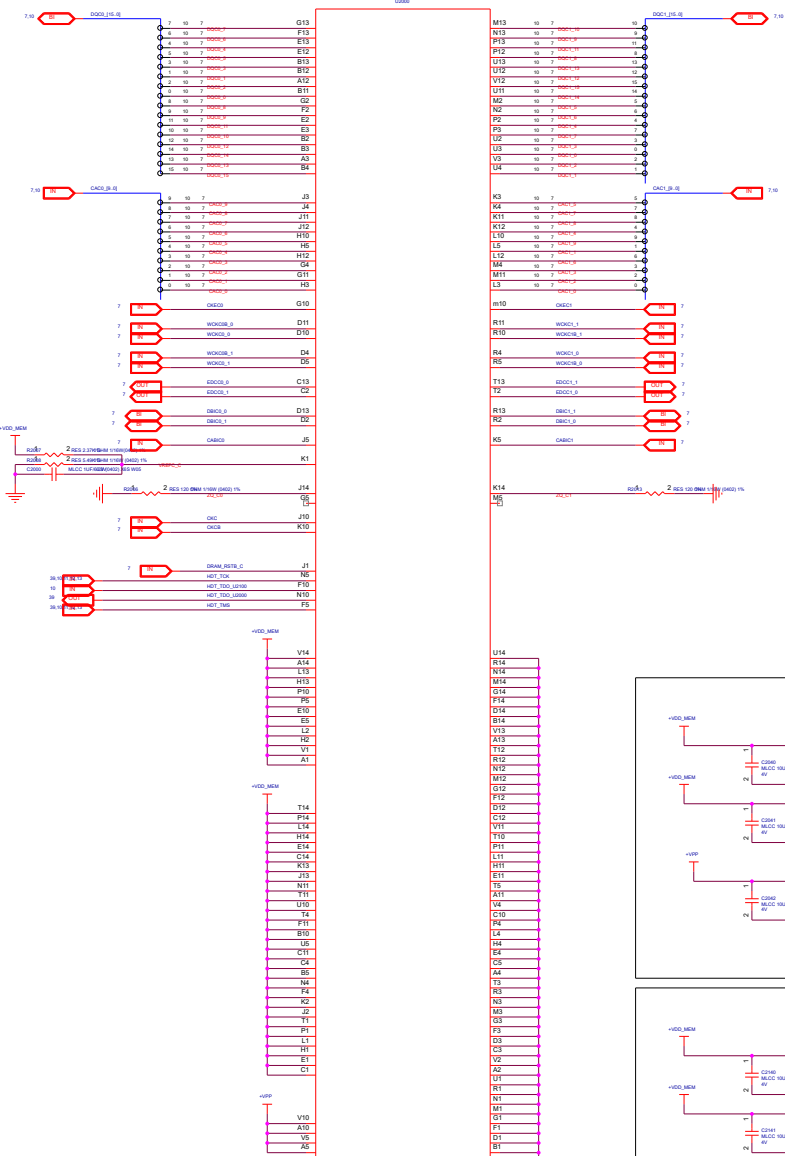


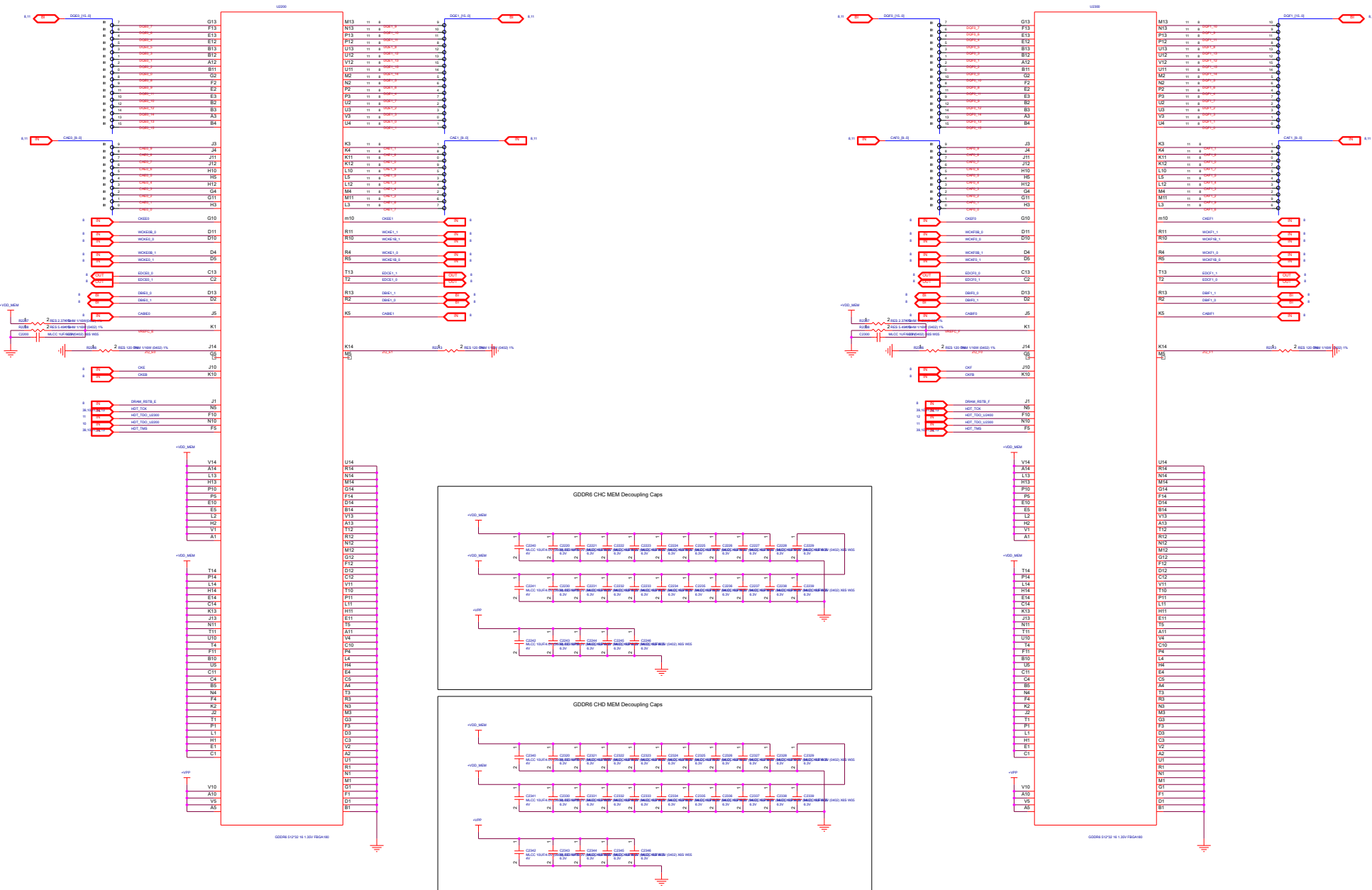




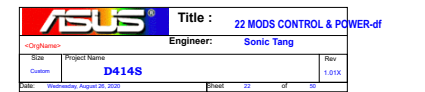


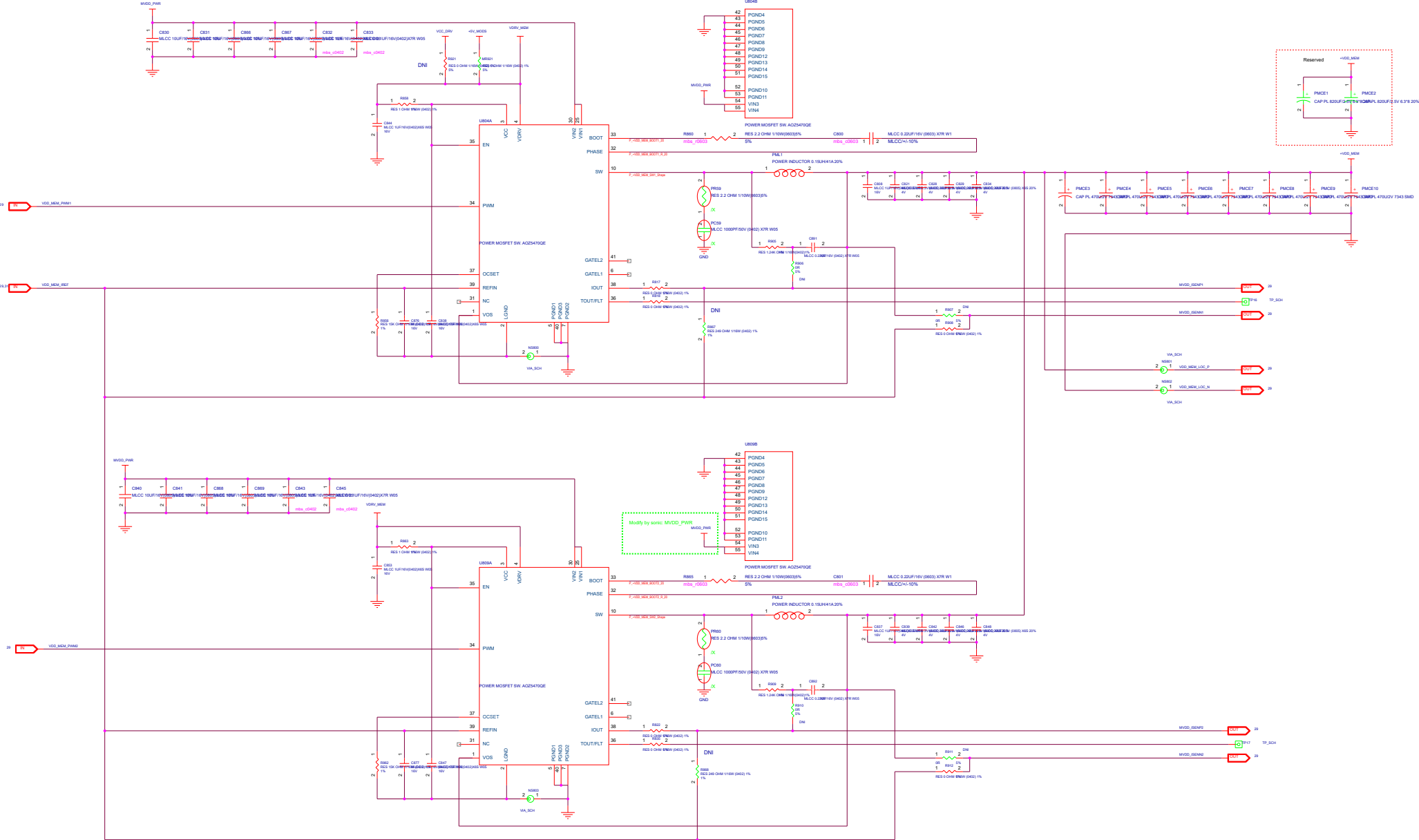


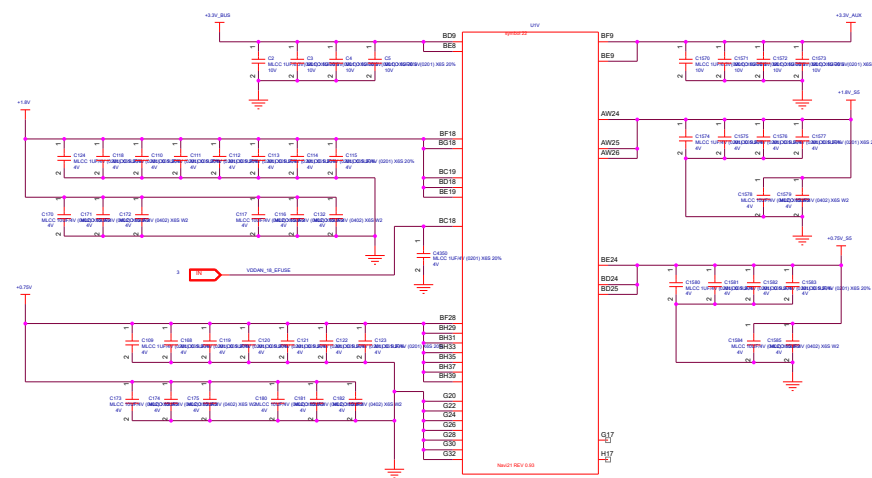




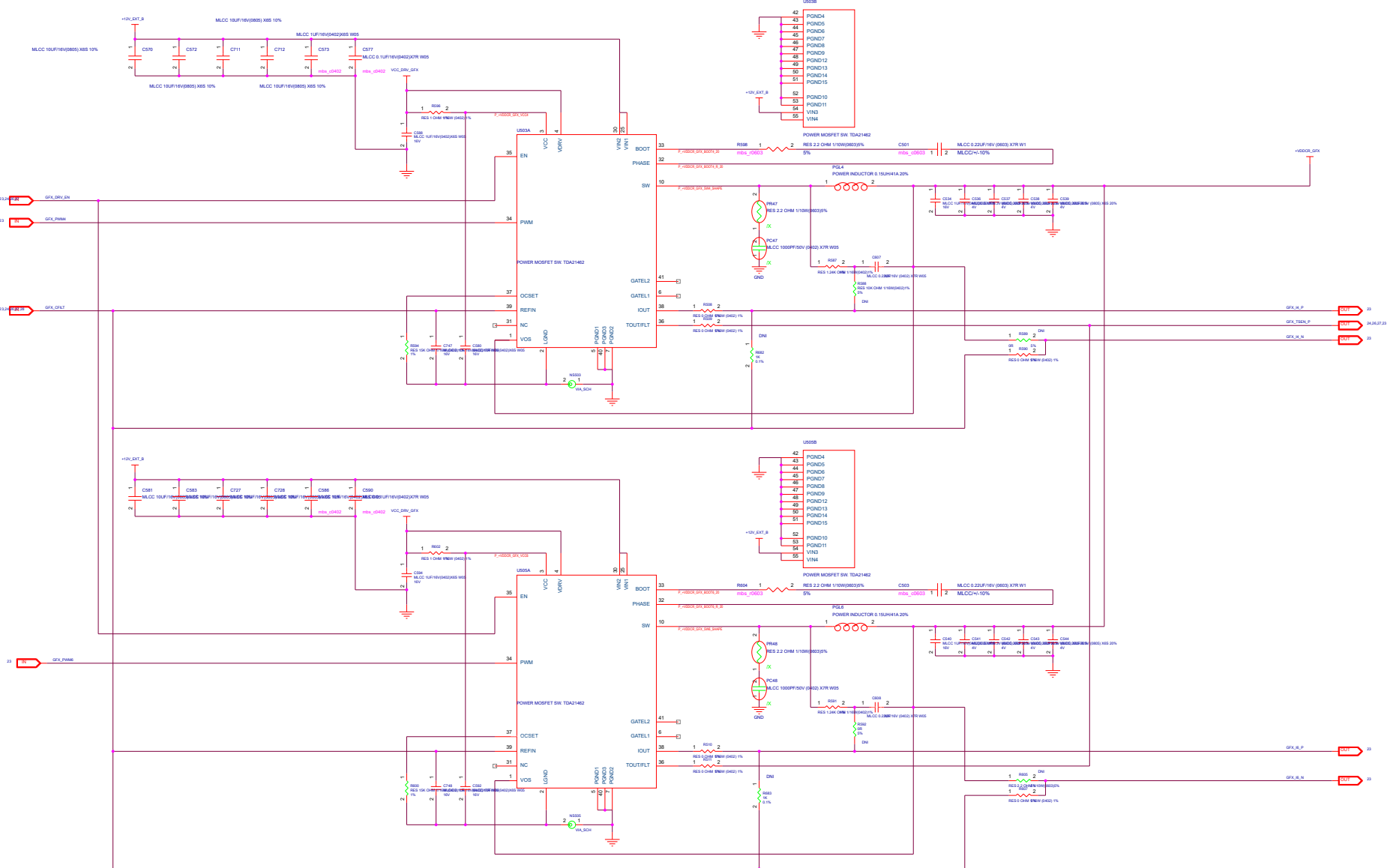




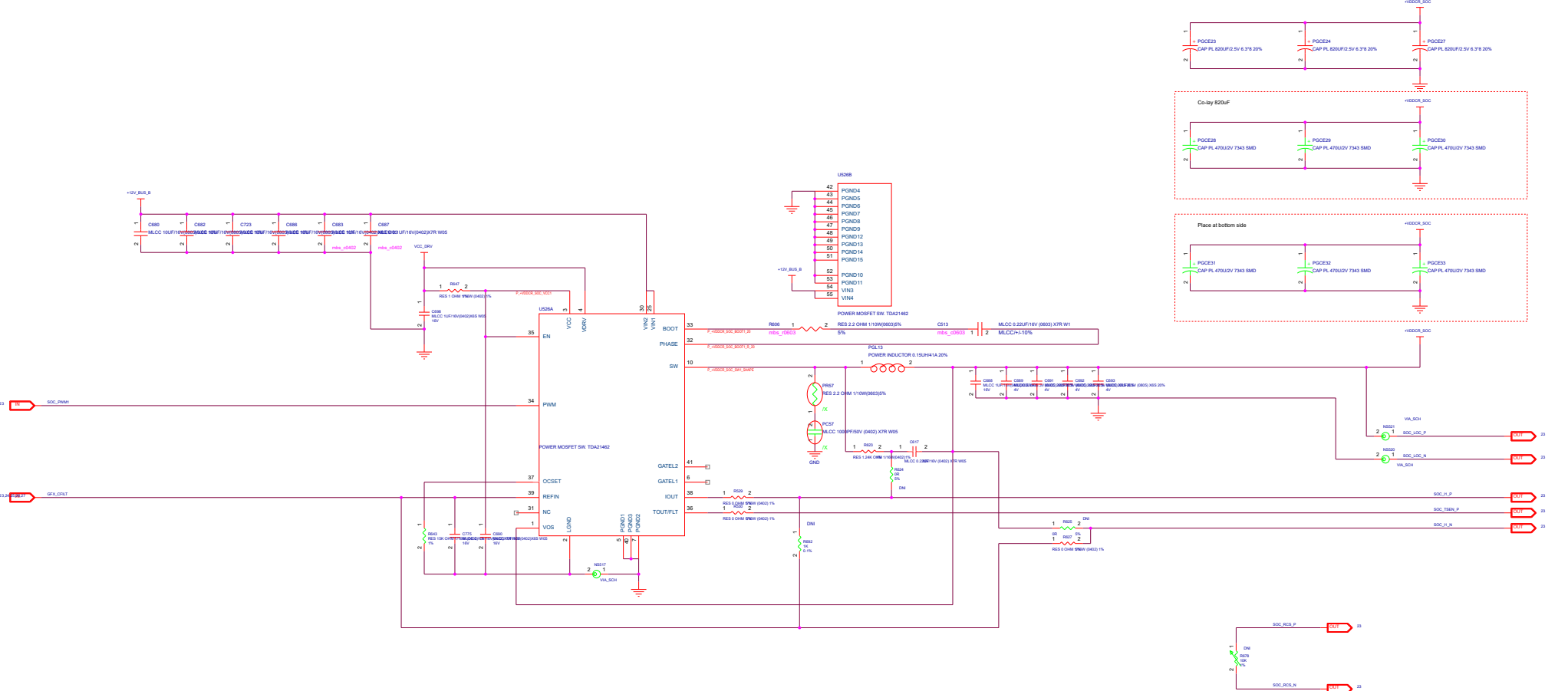




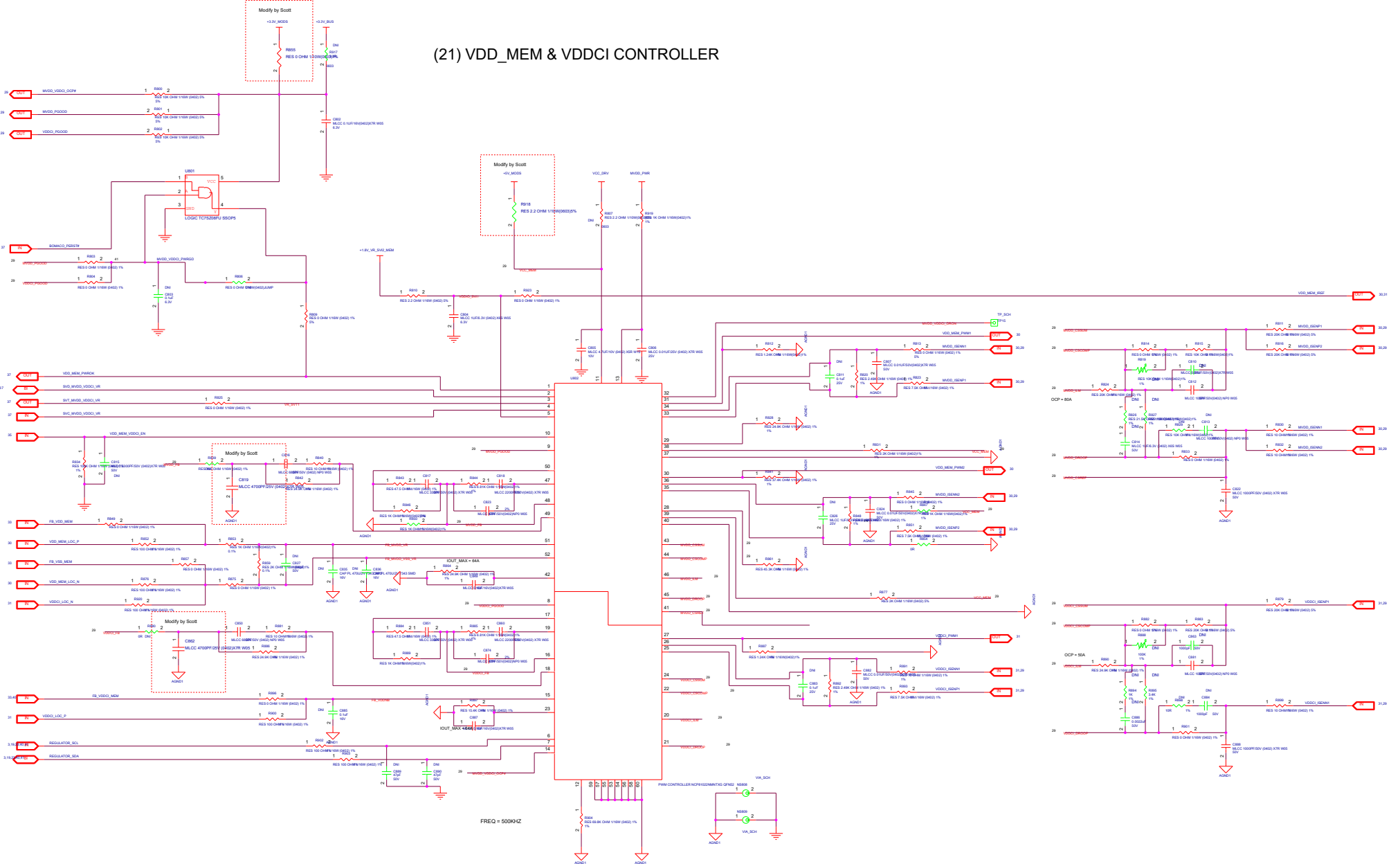








(21) VDD_MEM & VDDCI CONTROLLER



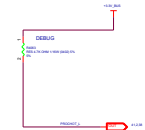
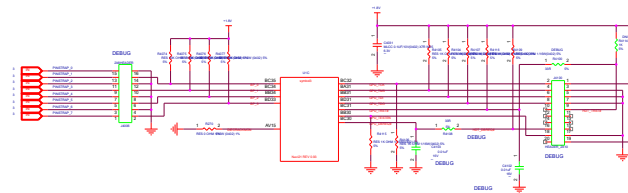
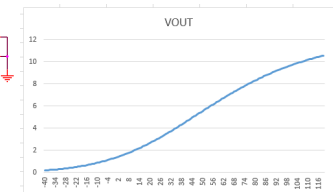


Table 4. Address Pin and Slave Addresses

| DEVICE TWO-WIRE ADDRESS | A0 PIN CONNECTION |
|-------------------------|-------------------|
| 1001000 | Ground |
| 1001001 | V+ |
| 1001010 | SDA |
| 1001011 | SCL |



THERMAL SENSOR FOR VOOMEM POWER STAGES



Study by name

THERMAL SENSOR FOR GFX POWER STAGES

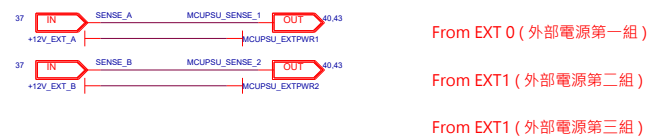
| | | | |
|----|------|-------------|--|
| 1 | -000 | Apr 1 2020 | Fig 20: Change U7100 to 507722 package part 2488274611G for multi-mounting |
| 2 | -000 | Apr 1 2020 | Fig 3640: Correct net name GPIO_5_RES1_HCF9 to GPIO_5_RES1_HCF1 |
| 3 | -000 | Apr 1 2020 | Fig 20: Change C1103 to dual WCOFET part 222000001G |
| 4 | -000 | Apr 1 2020 | Fig 38: Change R504 to 68.8K |
| 5 | -000 | Apr 6 2020 | Fig 30: DMI R1552, Install R1550, Change R1563 to 48.8K |
| 6 | -000 | Apr 6 2020 | Fig 30: Install a 150uF cap on C1389 |
| 7 | -000 | Apr 6 2020 | Fig 20: Change R1572 to 1uF and Change R1586 to 48.8K |
| 8 | -000 | Apr 6 2020 | Fig 38: Add R1577 and R1578 (DMS) option |
| 9 | -000 | Apr 6 2020 | Fig 38: Add R4154 (DEBUG) |
| 10 | -000 | Apr 6 2020 | Fig 18: Add R78 (DMS) |
| 11 | -000 | Apr 14 2020 | Fig 3: Change R20 to 1k |
| 12 | -000 | Apr 28 2020 | Fig 23: Change R536, R538, R540, R542, R544, R546, R548, R551 to 10k, change R537, R539, R541, R543, R545, R547, R549, R552 to 2.48k |
| 13 | -000 | Apr 28 2020 | Fig 23: Change C511 to 330uF and C504 to 82uF |
| 14 | -000 | Apr 28 2020 | Fig 2: Change PCM connector to Gen4 Pin: 6VAP0P006 |
| 15 | -000 | Apr 28 2020 | Fig 23: Change GPU Load line R552, R517, R531 to 50ohm and R519 to 2k |
| 16 | -000 | Apr 28 2020 | Fig 40: Install D4010 |
| 17 | -000 | Apr 27 2020 | Fig 28: Add C855 |
| 18 | -000 | Apr 27 2020 | Fig 30: Change C7114 from 455A01070G5 to 429K01070G5 |
| 19 | -000 | Apr 27 2020 | Fig 3,2,3,37,38: Add circula to use GENERICA, GENERICS_GENLX_VSYNC to control fan power, GPU power, and LED |
| 20 | -000 | Apr 27 2020 | Fig 30: Add R1555 |
| 21 | -000 | Apr 28 2020 | Fig 36,2,3,38: Add Clamp (Waterpump) circuit for AD bootstrapper being bug |
| 22 | -000 | Apr 28 2020 | Fig 23: DMI R705 |
| 23 | -000 | Apr 28 2020 | Fig 30: GND-VDDAN_VSB0 |
| 24 | -000 | Apr 28 2020 | Fig 41: Change UK300 to 2530023100 |
| 25 | -000 | Apr 28 2020 | Fig 5: Add MR123 option to GND_XGMI_REFCLKIN |
| 26 | -000 | May 1 2020 | Fig 41: add UK4000 POWER_3.3V_AUX option |
| 27 | -000 | May 1 2020 | Fig 101101212: Change memory chips to Samsung 16Gbps Pin: 23H415C7LMB16 |
| 28 | -000 | May 4 2020 | Fig 30: Change R7120 to 39.2k |
| 29 | -000 | May 4 2020 | Fig 30: DMI R7117 |
| 30 | -000 | May 6 2020 | Fig 28: Add R684, MR584, MR584 for SOC power option |
| 31 | -000 | May 6 2020 | Fig 2: DMI R4210, R4211, C4210, C4211 for PCM Tx jitter |
| 32 | -000 | May 7 2020 | Fig 3: Change SOC_R50, R53 to 5.1K, following D412 |
| 33 | -000 | May 7 2020 | Fig 30: Add R4381 Power pin delay options |
| 34 | -000 | May 7 2020 | Fig 21: Add 12V_BUS power option for 3V_12V MLAN input |
| 35 | -000 | May 7 2020 | Fig 30: Add C170, C171, C172 oh = 1.8V and C173, C174, C175 oh = 0.75V |
| 36 | -000 | May 7 2020 | Fig 30: DMI C1384 |
| 37 | -000 | May 6 2020 | Fig 14: Change R1537 to 100R |
| 38 | -000 | May 6 2020 | Fig 2: Change PCM Tx AC coupling caps to M55 type |
| 39 | -000 | May 6 2020 | Fig 3: Change C81 to 885 type |
| 40 | -000 | May 10 2020 | Fig 3: Change MOD_S_ACTIVE_H to MODS_S_ACTIVE_H_BUF |
| 41 | -000 | May 12 2020 | Fig 30: Change TP5D5220 to TP5D5221 |
| 42 | -000 | May 18 2020 | Fig 20: Change C1586 to 4.7uF |



Power



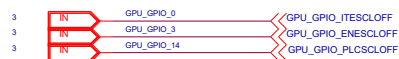
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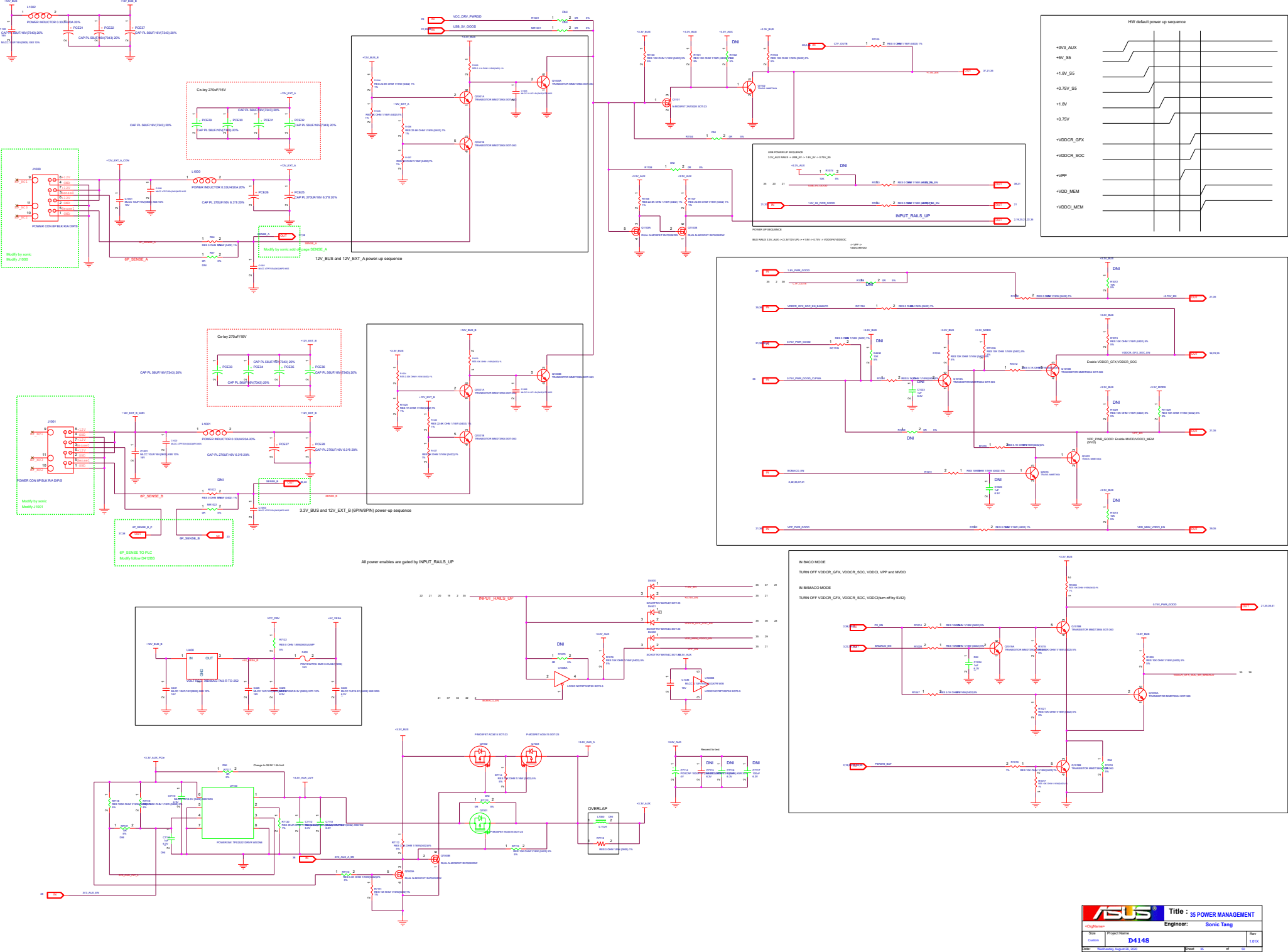


I2C

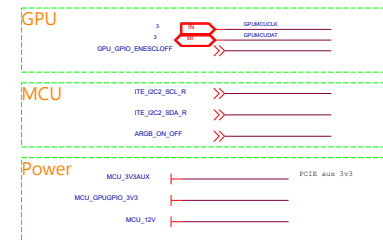
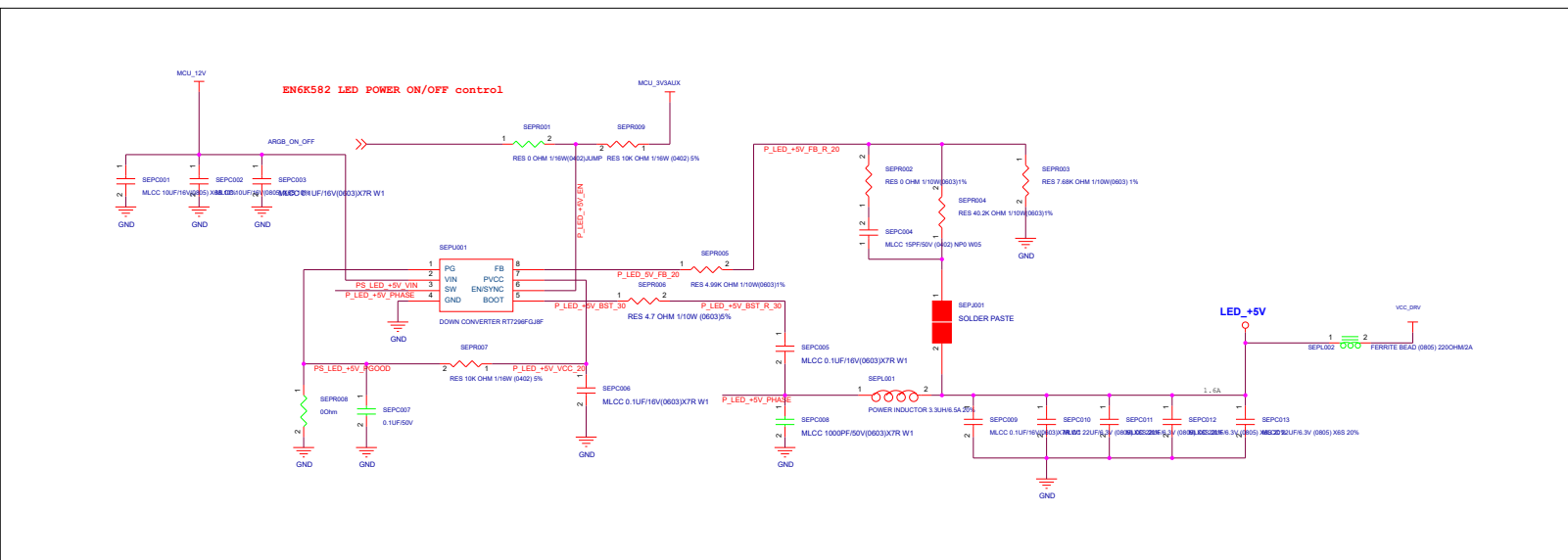
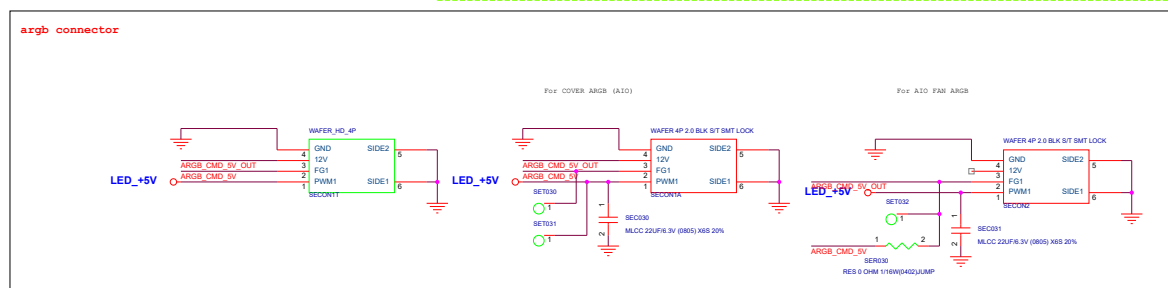
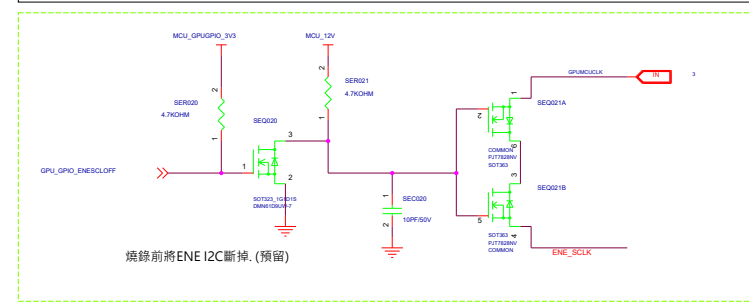
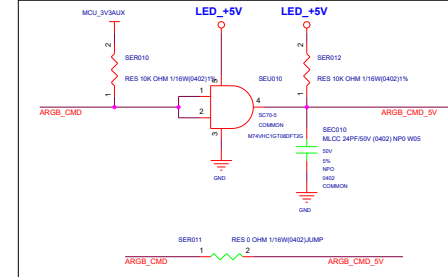
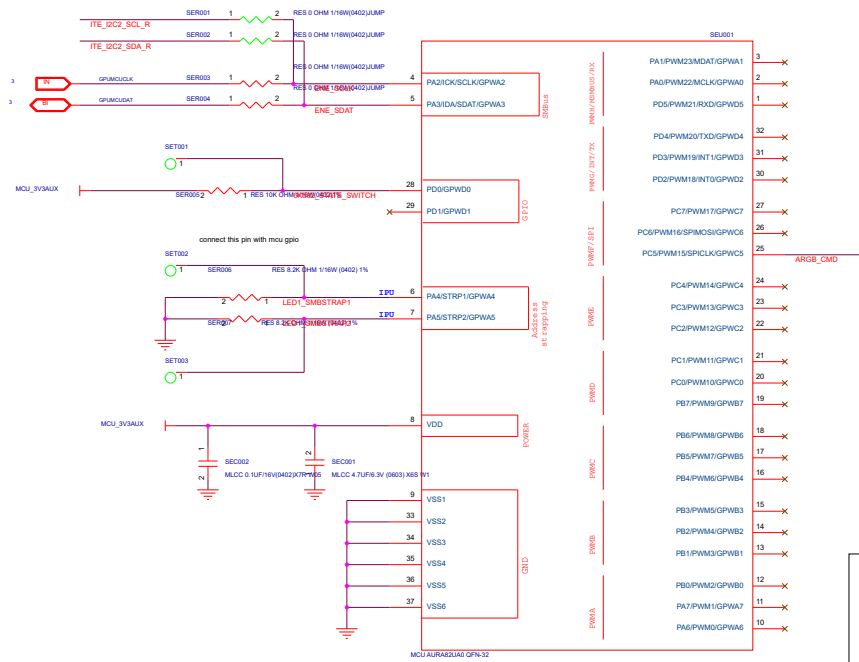


GPU_GPIO

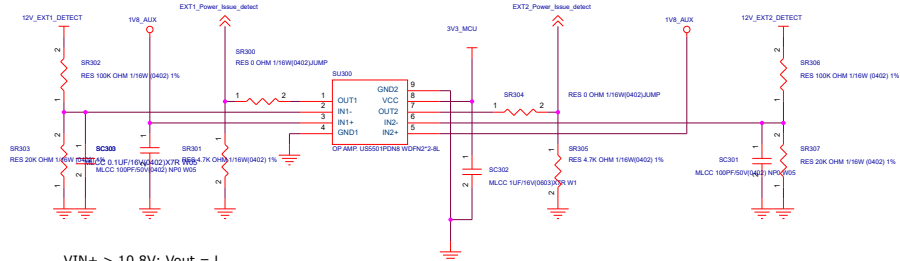








EXT1



VIN+ > 10.8V: Vout = L

VIN+ < 10.8V: Vout = H

10.8V x 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



MCU_3V3AUX

pcie 3v3 aux

3V3_MCU

MCUPSU_EXT1NR1

MCUPSU_EXT1NR2

EXT12V INPUT

EXT POWER connected DETECT PIN

MCUPSU_SENSE_1

MCUPSU_SENSE_2

OUPUT: AS ITE8915 INPUT

EXT1_Power_Issue_Detect

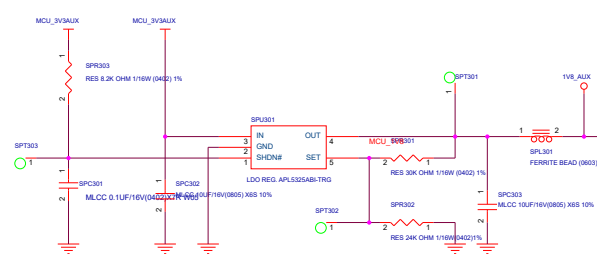
EXT1_Power_Issue_Detect

from ite8915

ITE_EXT1_ISSUE_LED

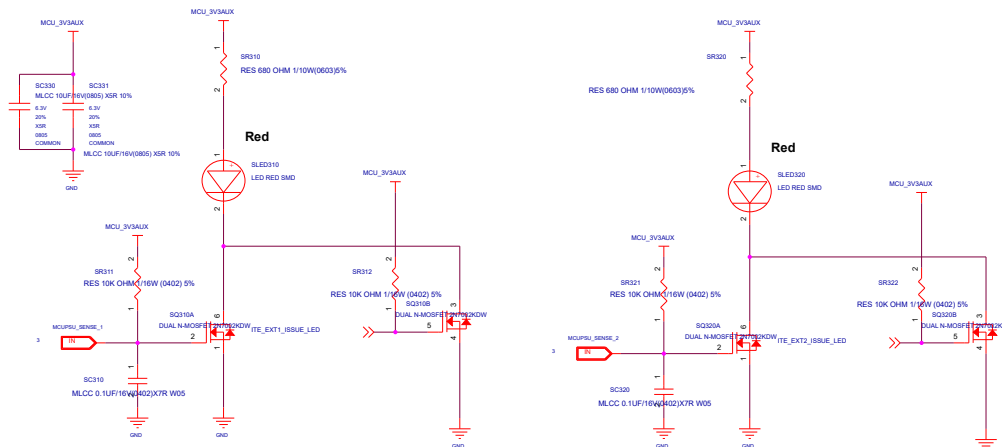
ITE_EXT2_ISSUE_LED

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

PCB MADE IN CHINA

LOG03
EMI_D33005_H
EMI_D33005_H



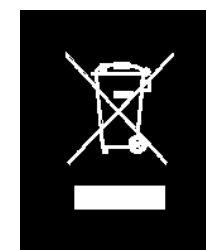
LOG010
MARK_L
S_MARK_L



LOG04
FCC
FCC

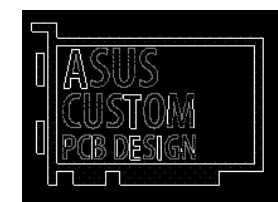


LOG011
WEEE_LOGO
WEEE_LOGO



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

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

LOG012
SFIS
SFIS

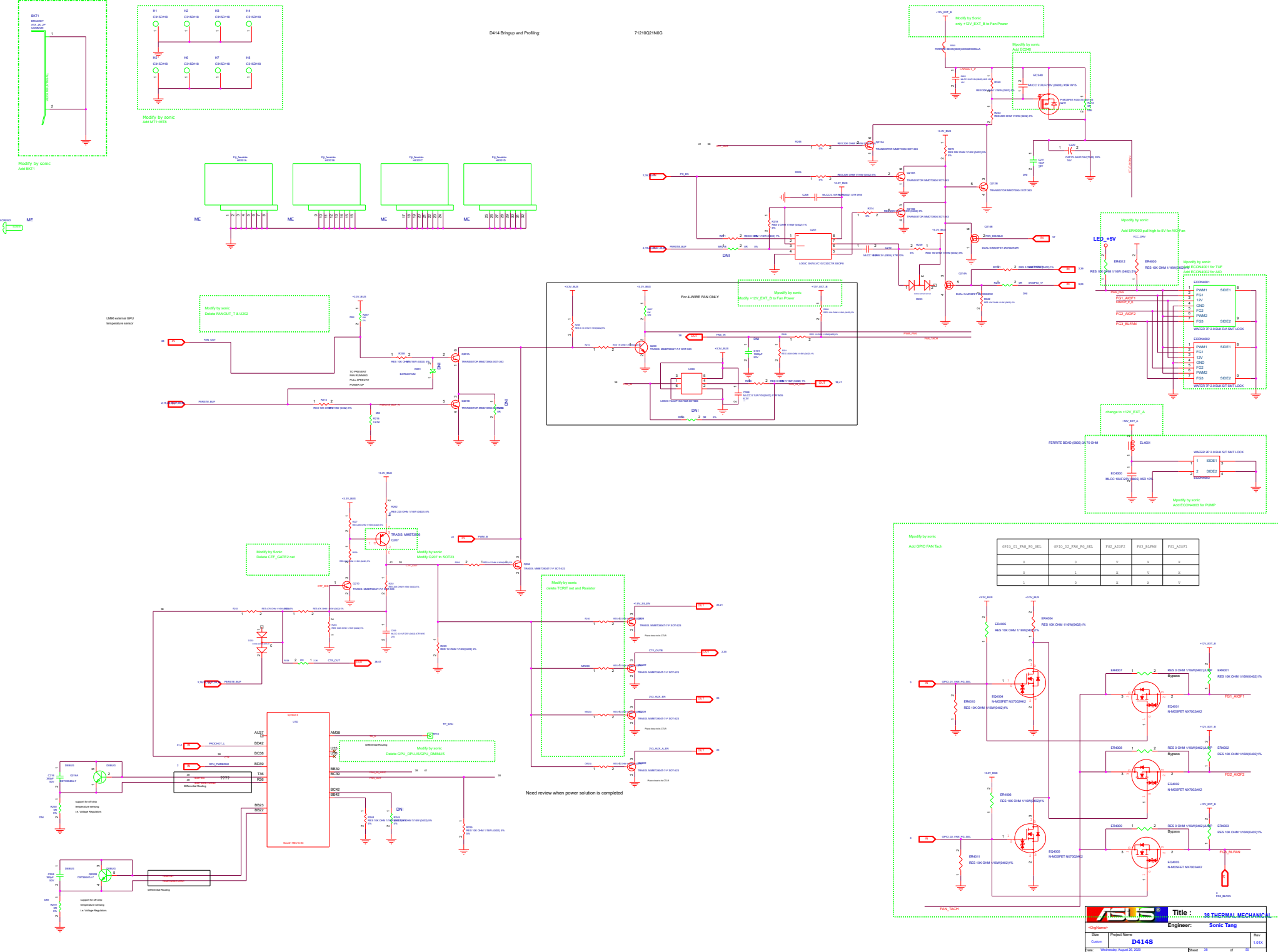
SFIS

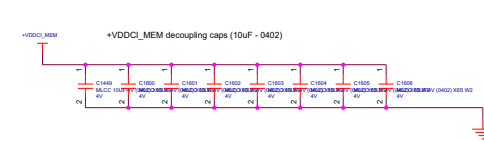
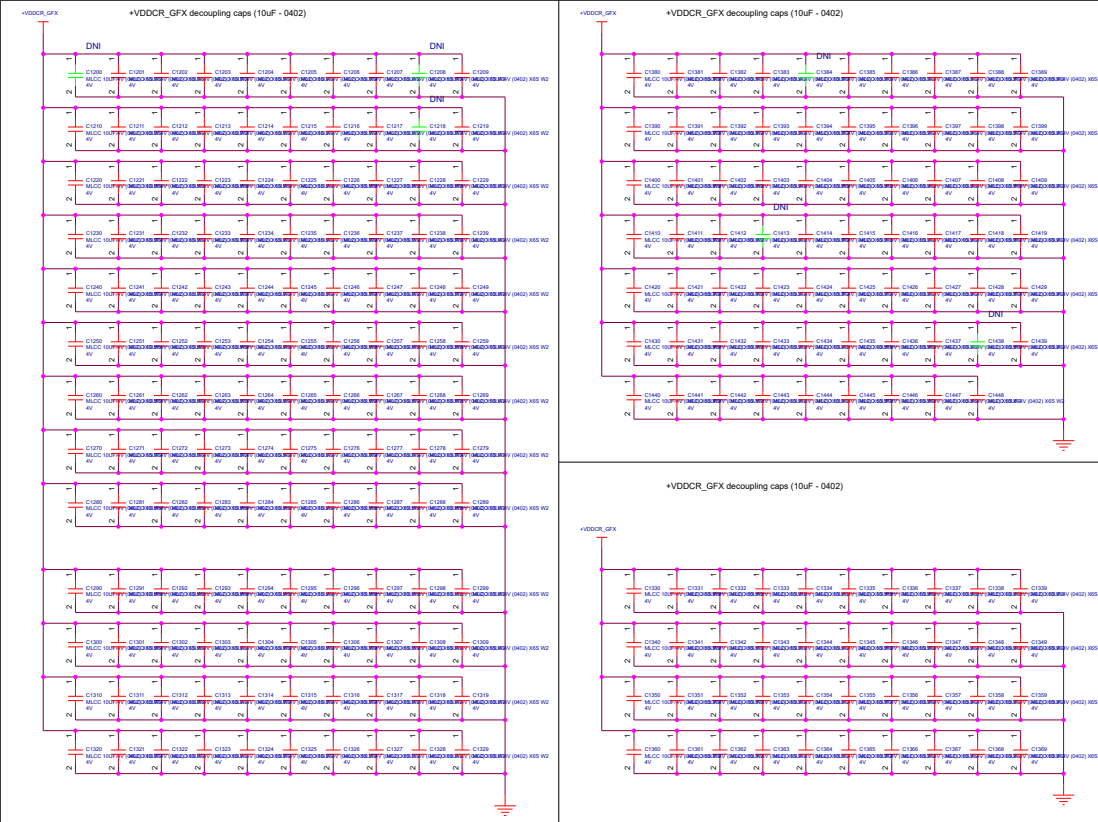
LOG07
KC_R_R_LOGO
KC_R_R_LOGO



M1
PCB_Ruler_ASUS
PCB_RULER_ASUS

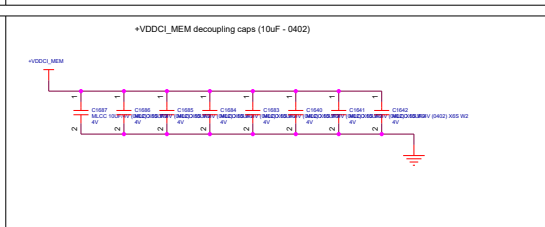
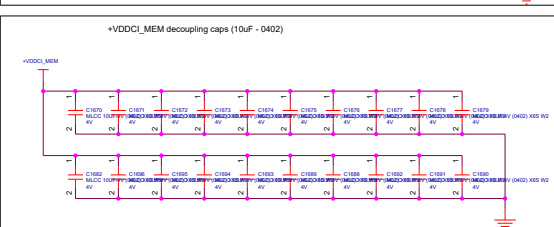
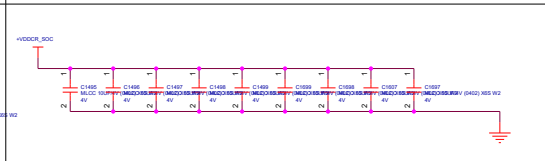
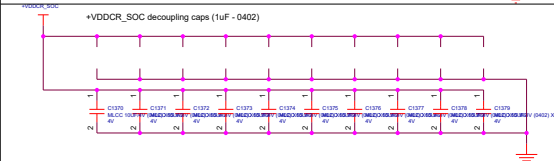
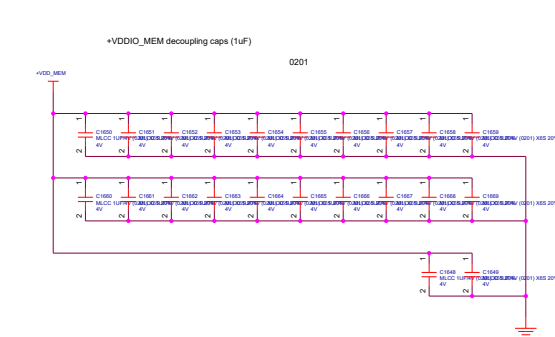
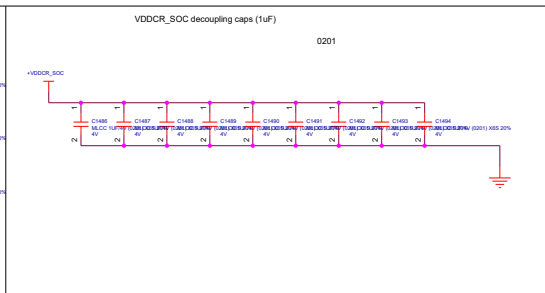
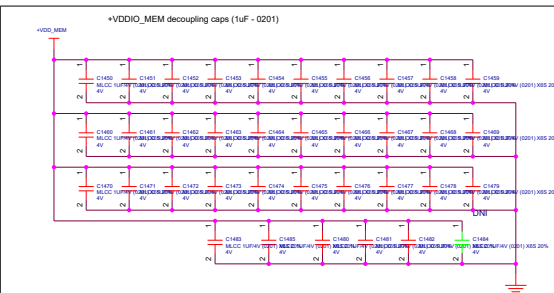
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| | | Title : XX ASUS PCB Logo | |
| <OrigName> | | Engineer: Sonic Tang | |
| Size A3 | Project Name D414S | Rev 1.01X | |
| Date: Wednesday, August 26, 2020 | Sheet 50 | of 50 | |

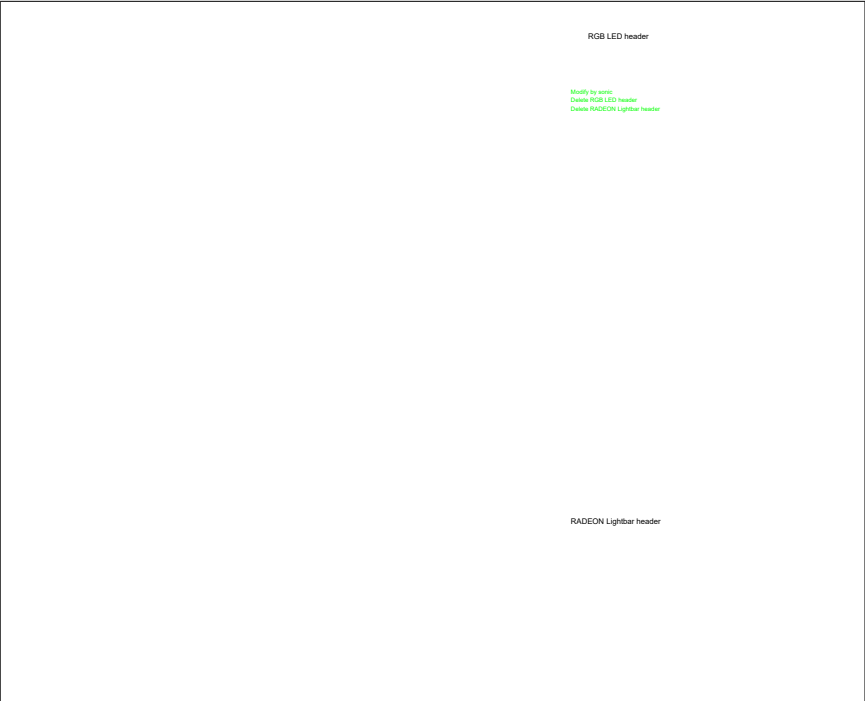
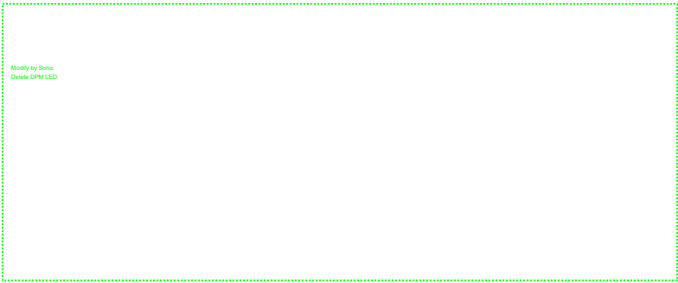
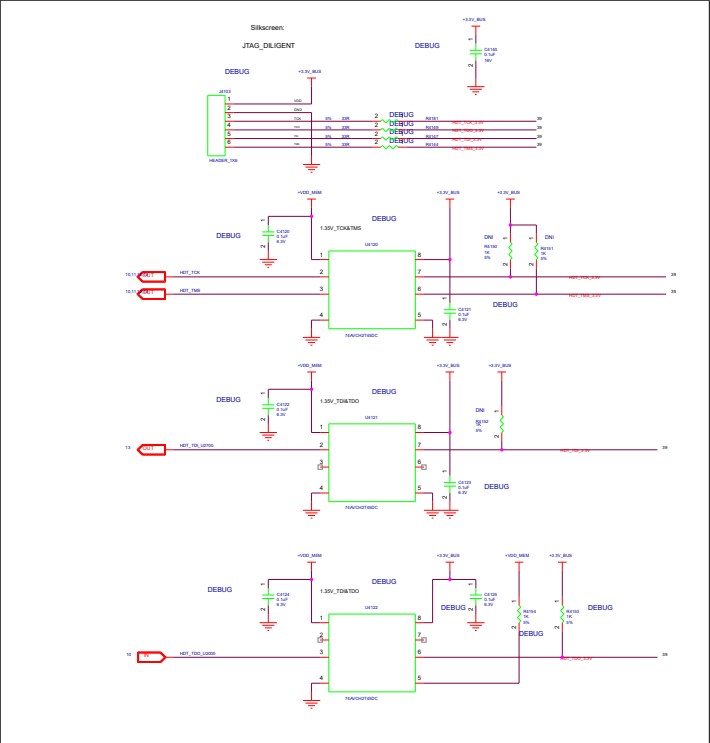




DNI these six caps to match SLT board and keep the design consistent across SKUs

C1218
C1208
C1200
C1438
C1413
C1384





FOR PI DAUGHTER CARD
Modify by sonic
Delete PI DAUGHTER CARD

Layout Guide Line

1. FBS_PnRX_I, FBS_PnRX, FBS_PnTX 距離其他net至少20mils space.
2. 紫色框內, 全部都要參考FBSTGND.
3. 隔離電感儘量靠近Connector, 接到PLC可拉一般正常線寬, 間隔20mils space.

