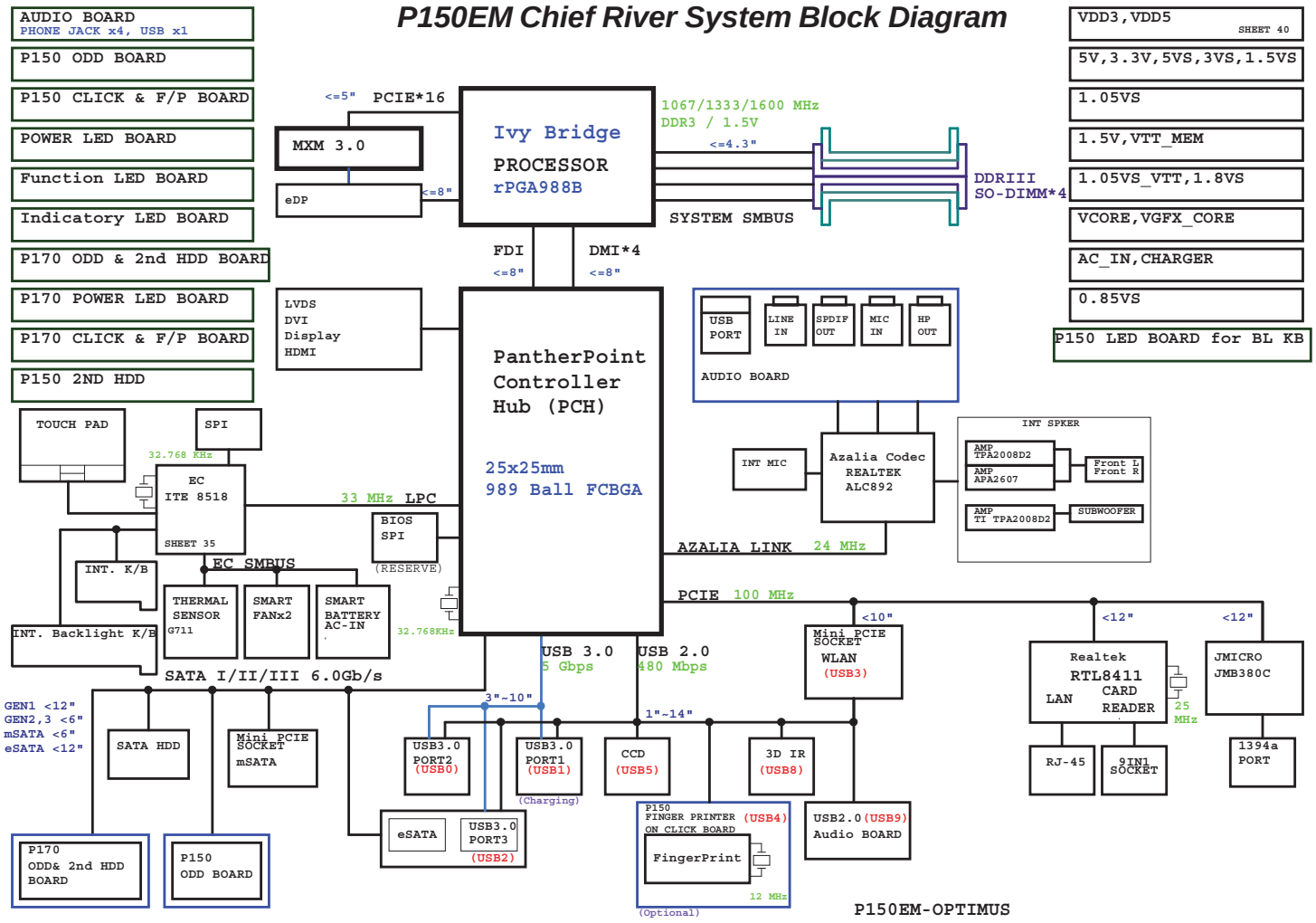
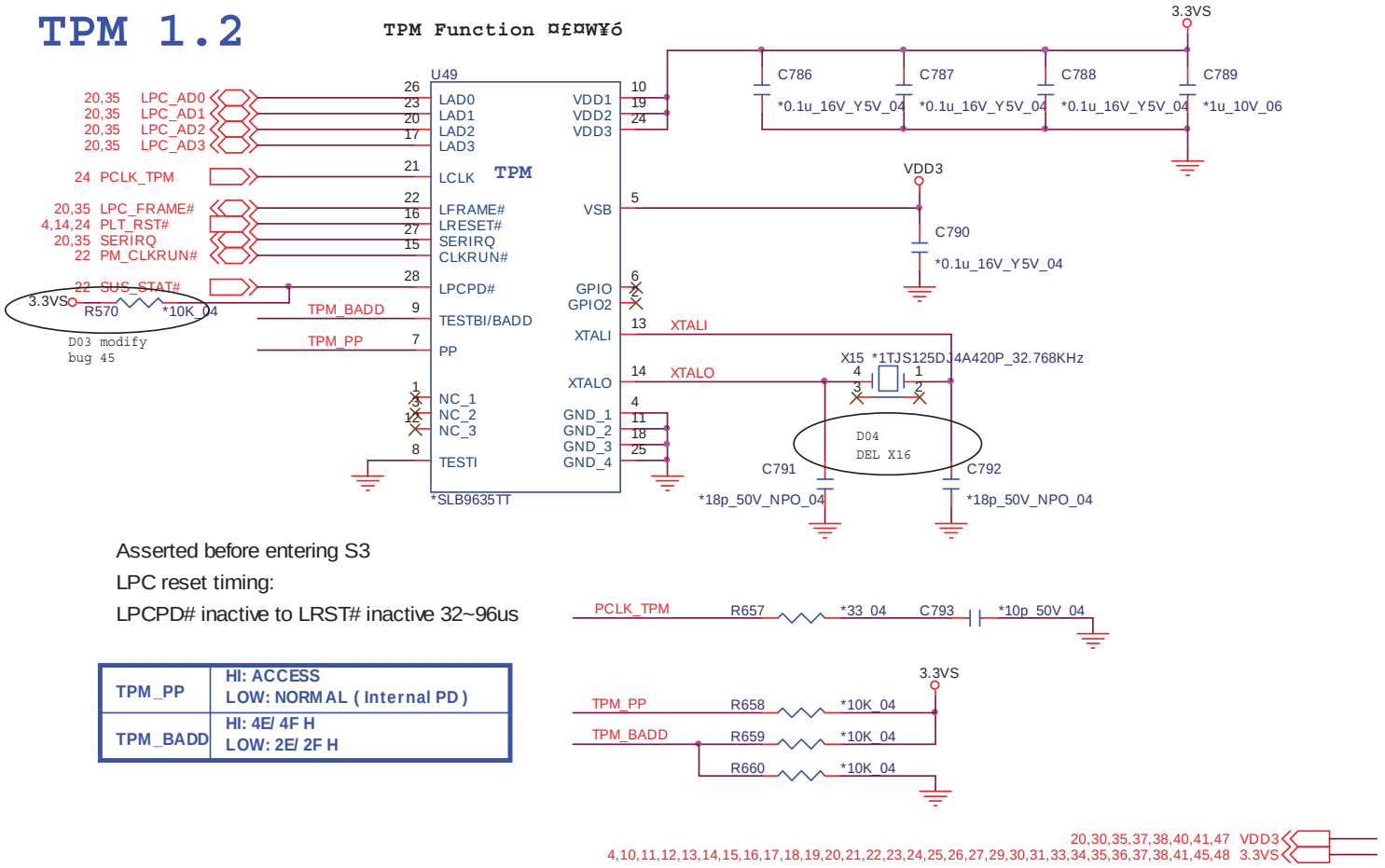
System Block Diagram

Sheet 1 of 61
System Block Diagram



TPM



Asserted before entering S3

LPC reset timing:

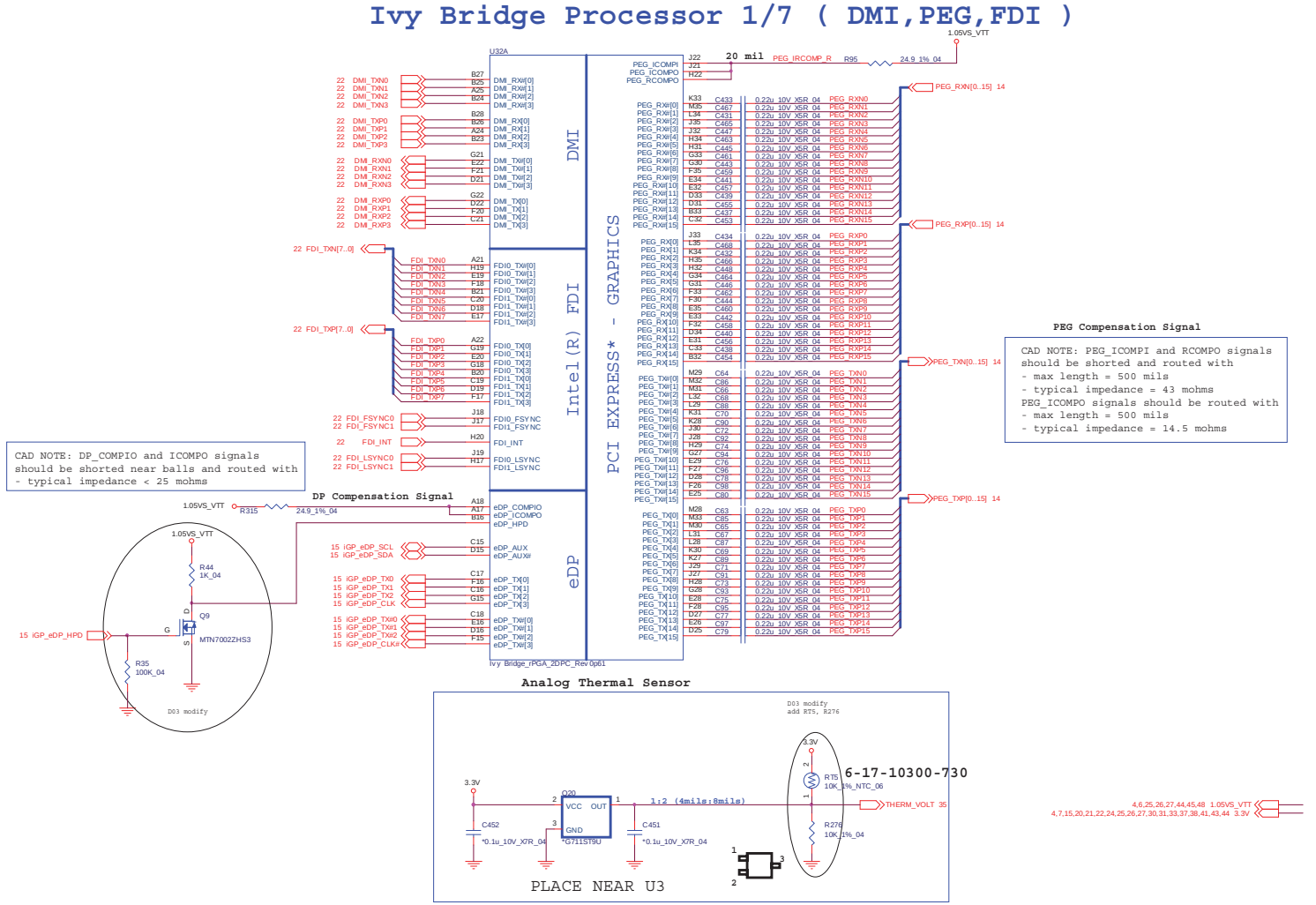
LPCPD# inactive to LRST# inactive 32~96us

TPM_PP	HI: ACCESS LOW: NORMAL (Internal PD)
TPM_BADD	HI: 4E/ 4F H LOW: 2E/ 2F H

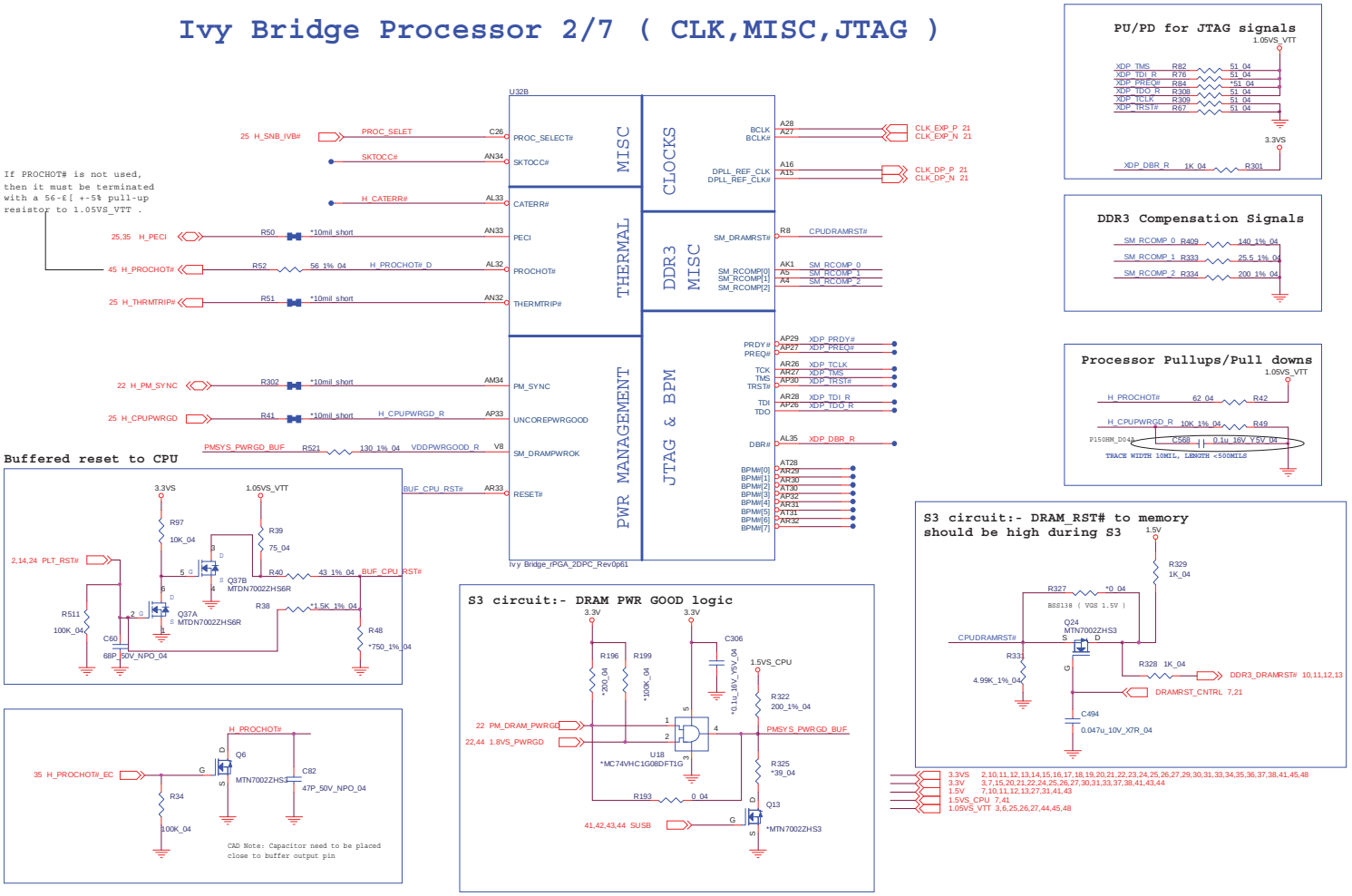
Sheet 2 of 61
TPM

Processor 1/7

Sheet 3 of 61
Processor 1/7



Processor 2/7

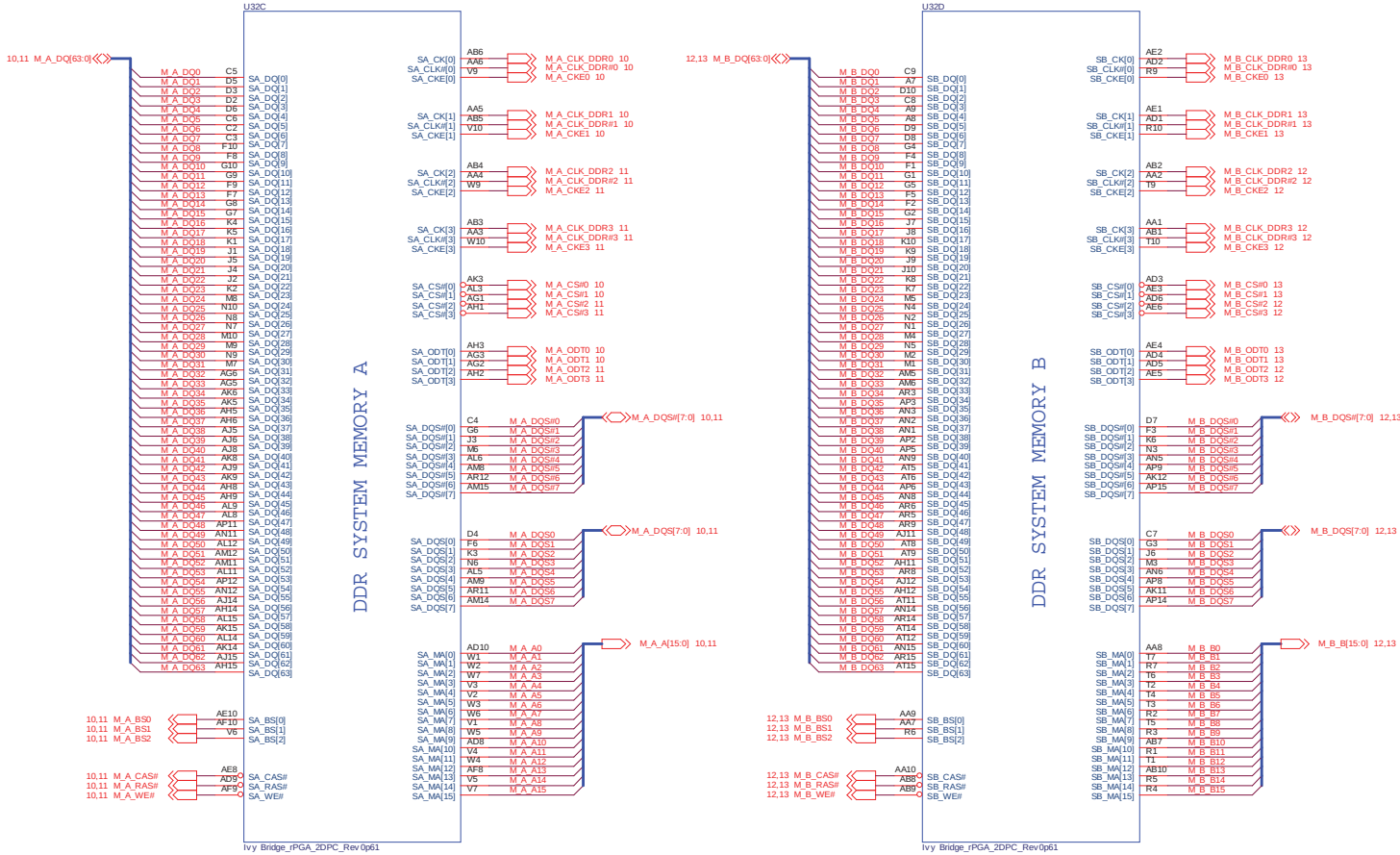


Sheet 4 of 61
Processor 2/7

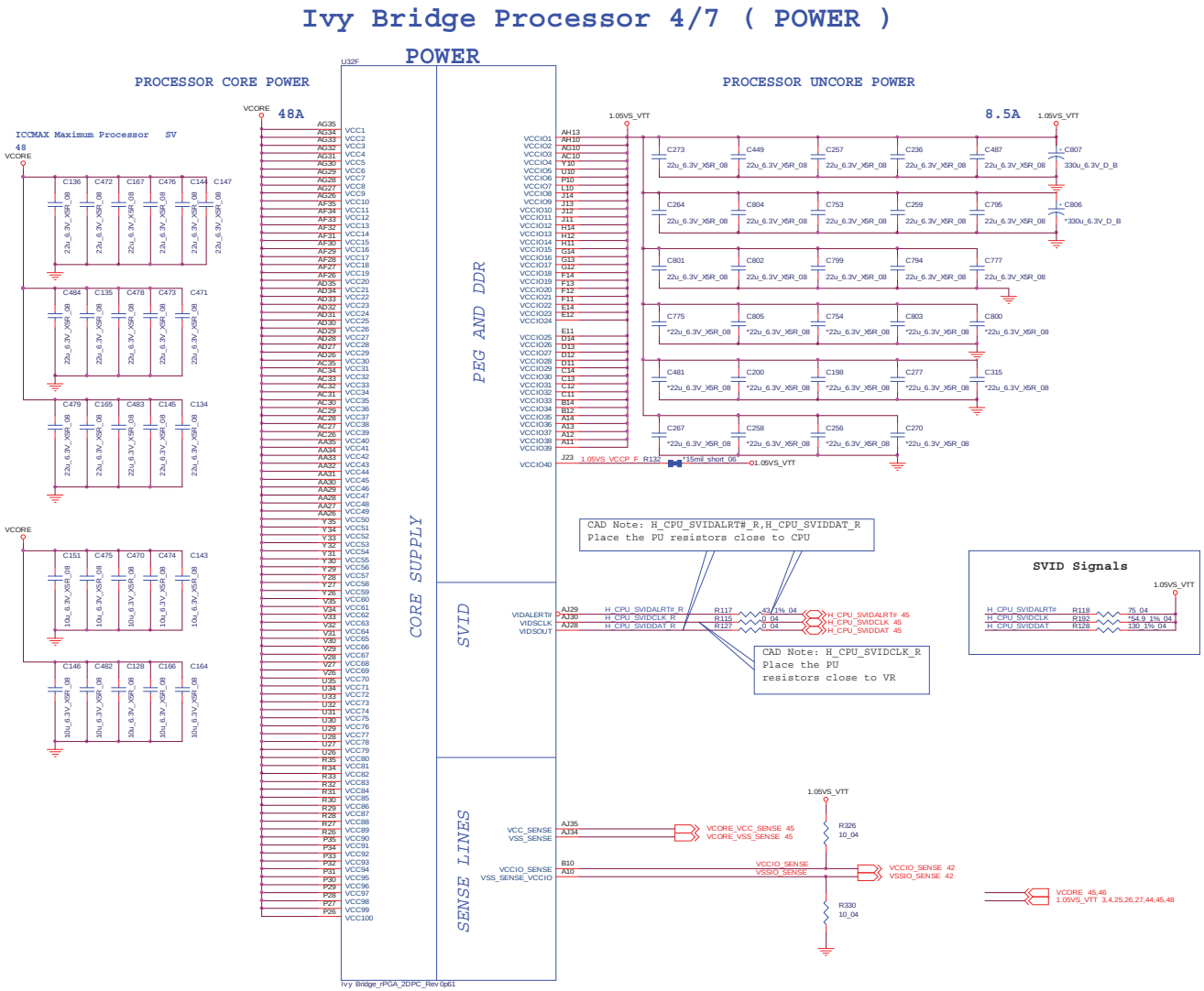
Processor 3/7

Sheet 5 of 61
Processor 3/7

Ivy Bridge Processor 3/7 (DDR3)

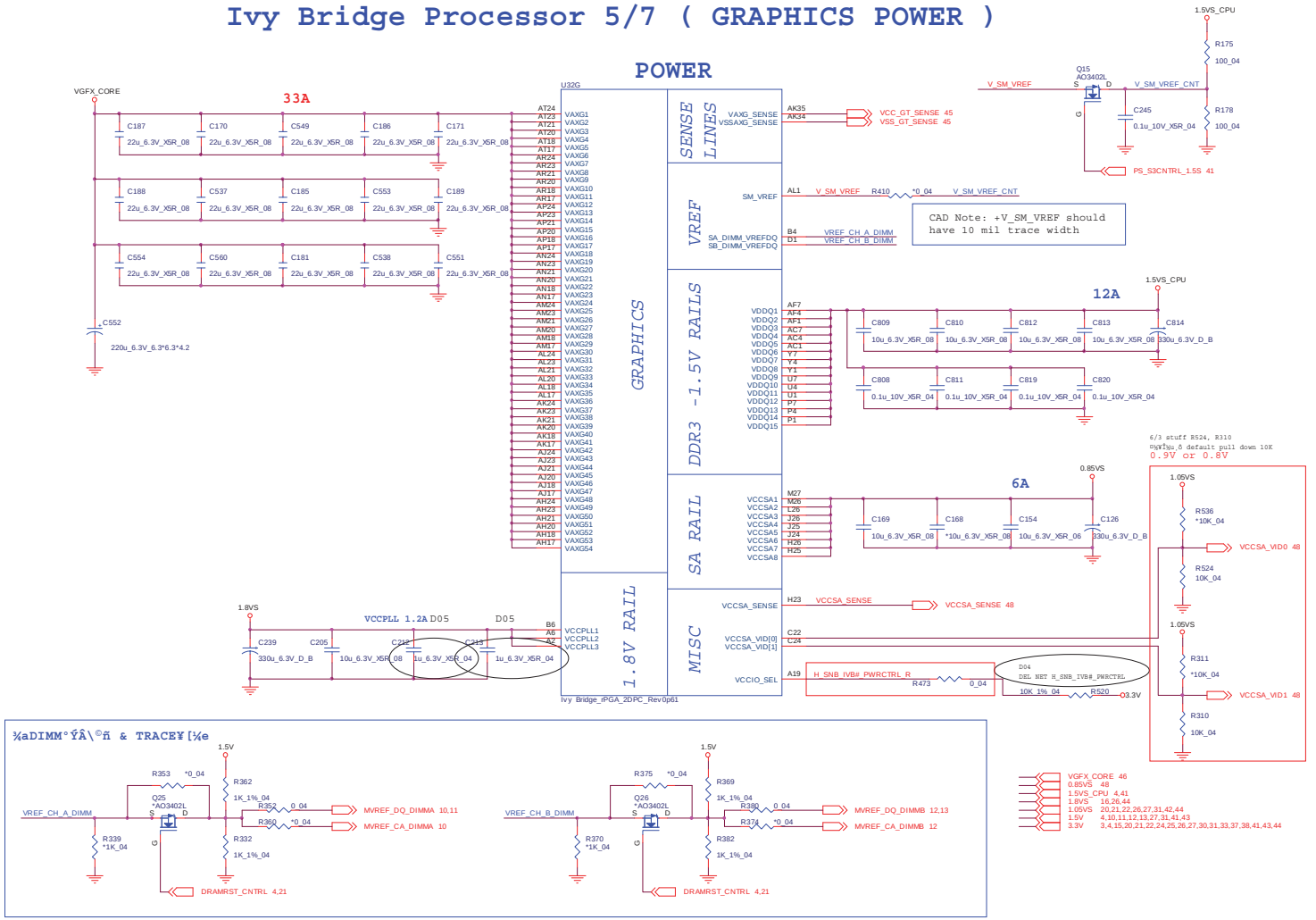


Processor 4/7



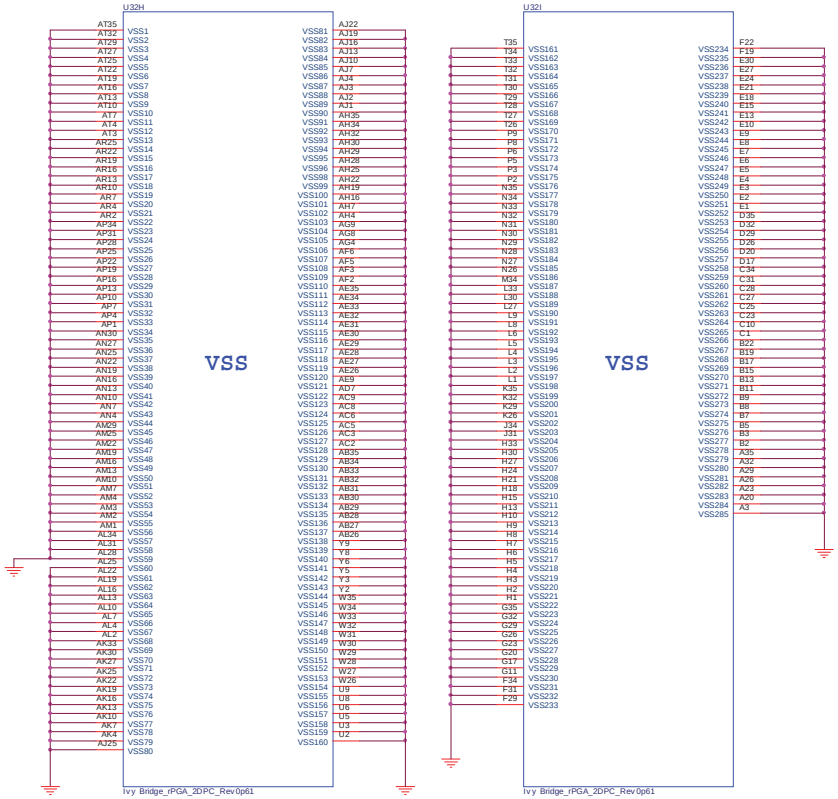
Processor 5/7

Sheet 7 of 61
Processor 5/7



Processor 6/7

Ivy Bridge Processor 6/7 (GND)



26,37,41 1.5VS

2,4,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,29,30,31,33,34,35,36,37,38,41,45,48 3.3VS

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Processor 6/7

Processor 7/7

Sheet 9 of 61
Processor 7/7

Ivy Bridge Processor 7/7 (RESERVED)

CFG Straps for Processor

PEG Static Lane Reversal - CFG2 is for the 16x	
CFG2	1:(Default) Normal Operation; Lane # definition matches socket pin map definition 0:Lane Reversed

CFG2 R83 *1K_04

Display Port Presence Strap	
CFG4	1:(Default) Disabled; No Physical Display Port attached to Embedded Display Port 0:Enabled; An external Display Port device is connected to the Embedded Display Port

CFG4 R81 1K_04 PANEL_SEL 23

D04
Add net PANEL_SEL

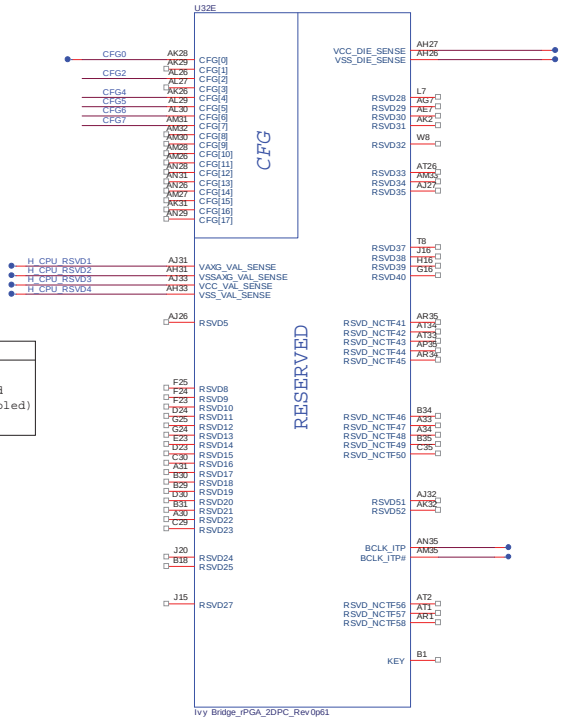
PCIE Port Bifurcation Straps	
CFG[6:5]	11: (Default) x16 - Device 1 functions 1 and 2 disabled 10: x8, x8 - Device 1 function 1 enabled ; function 2 disabled 01: Reserved - (Device 1 function 1 disabled ; function 2 enabled) 00: x8,x4,x4 - Device 1 functions 1 and 2 enabled

CFG5 R77 *1K_04

CFG6 R74 *1K_04

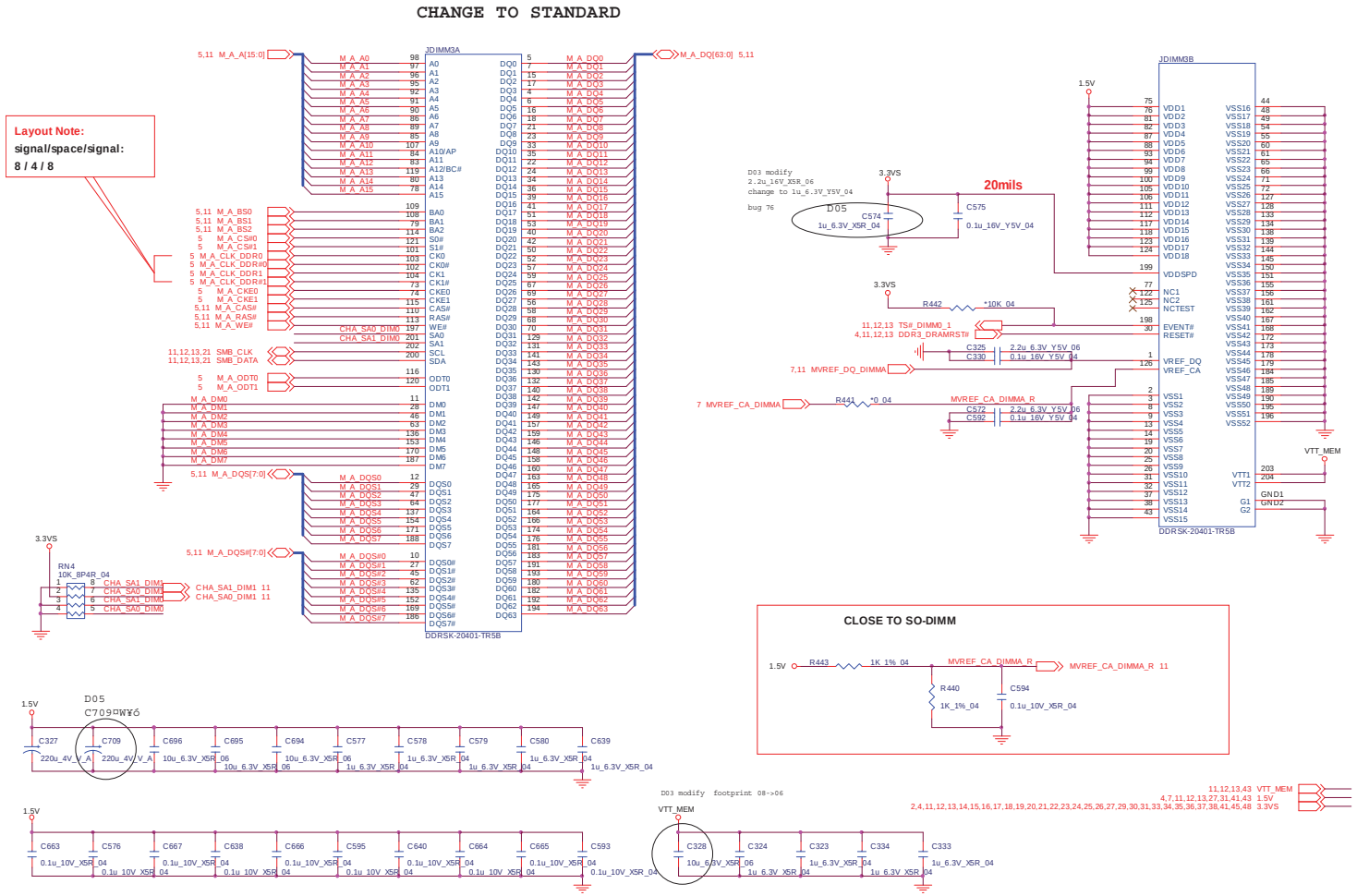
PEG DEFER TRAINING	
CFG7	1: (Default) PEG Train immediately following xxRESETB de assertion 0: PEG Wait for BIOS for training

CFG7 R73 *1K_04



DDRIII CHA SO-DIMM_0

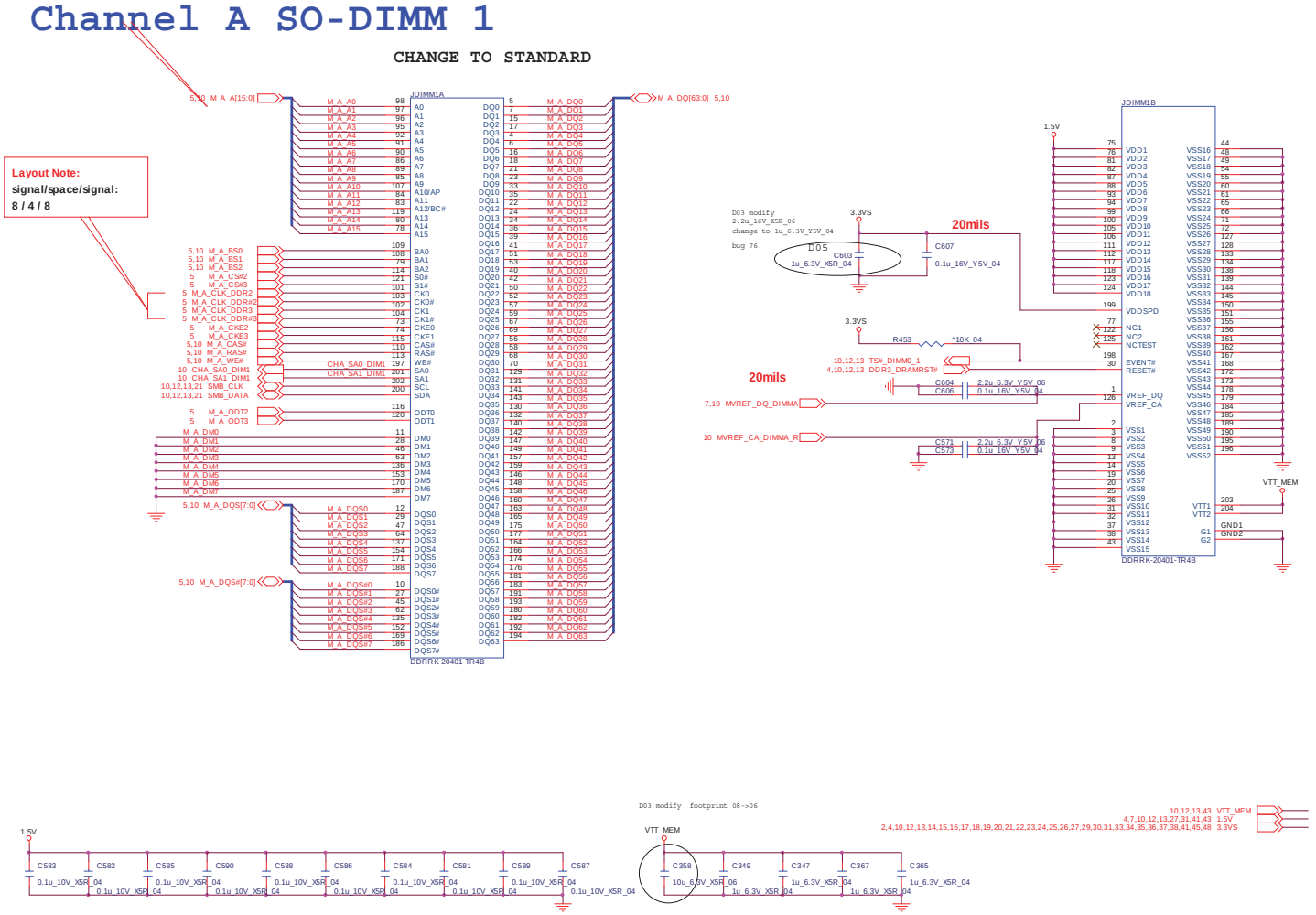
Channel A SO-DIMM 0



Sheet 10 of 61
DDRIII CHA SO-DIMM _0

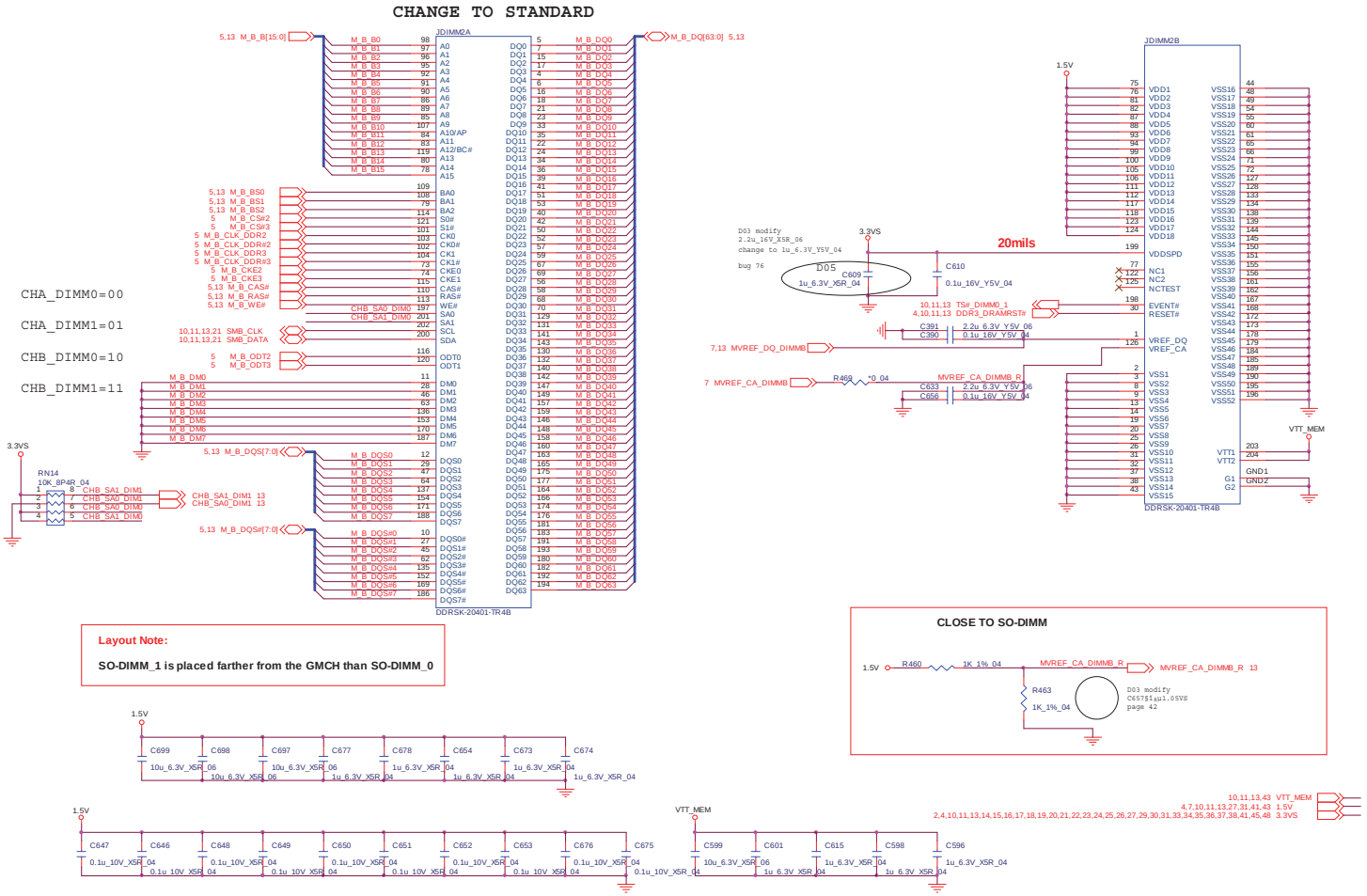
DDRIII CHA SO-DIMM_1

Sheet 11 of 61
DDRIII CHA SO-DIMM _1



DDRIII CHB SO-DIMM_0

Channel B SO-DIMM 0



Sheet 12 of 61
DDRIII CHB SO-DIMM _0

B.Schematic Diagrams

DDRIII CHB SO-DIMM_1

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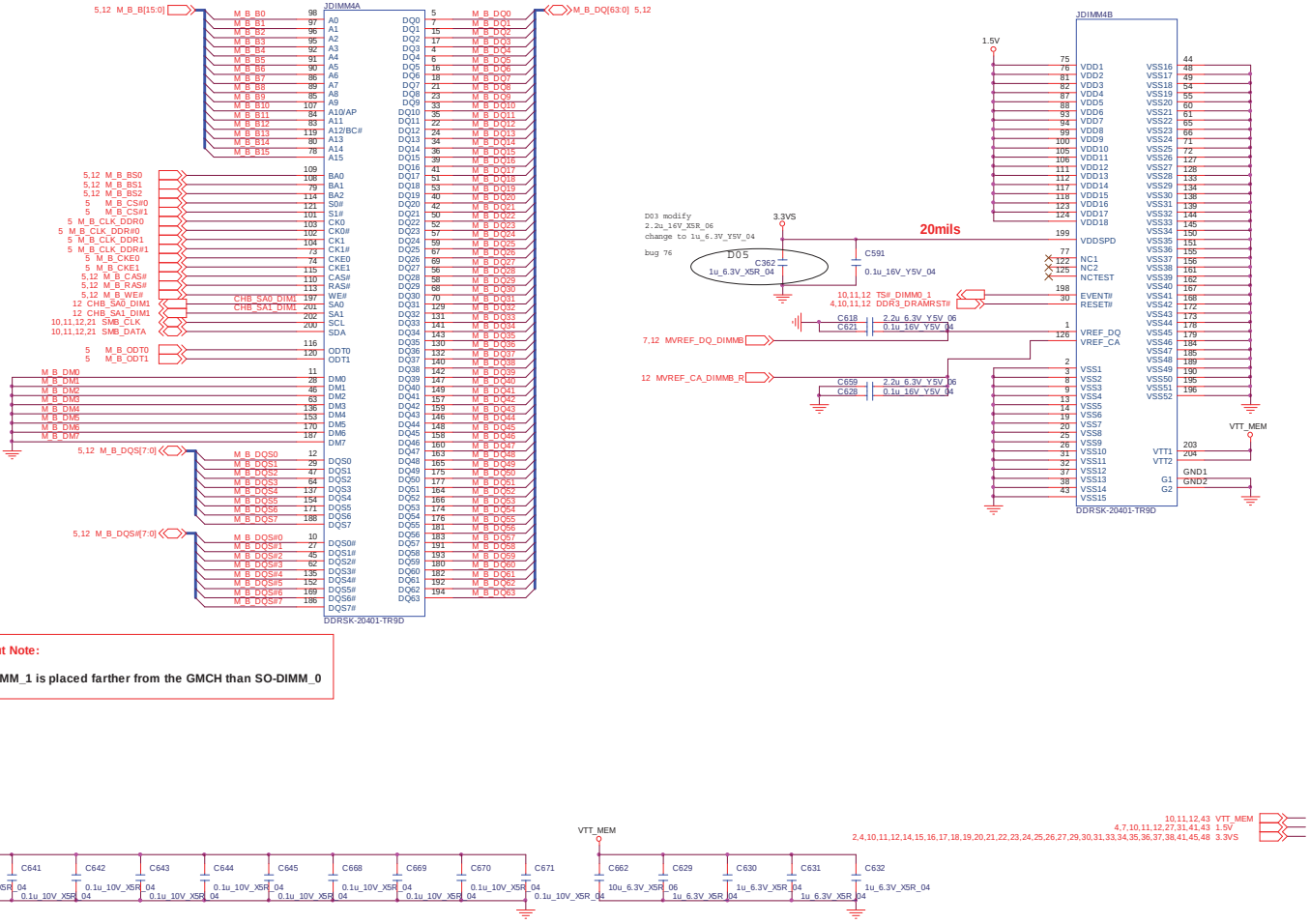
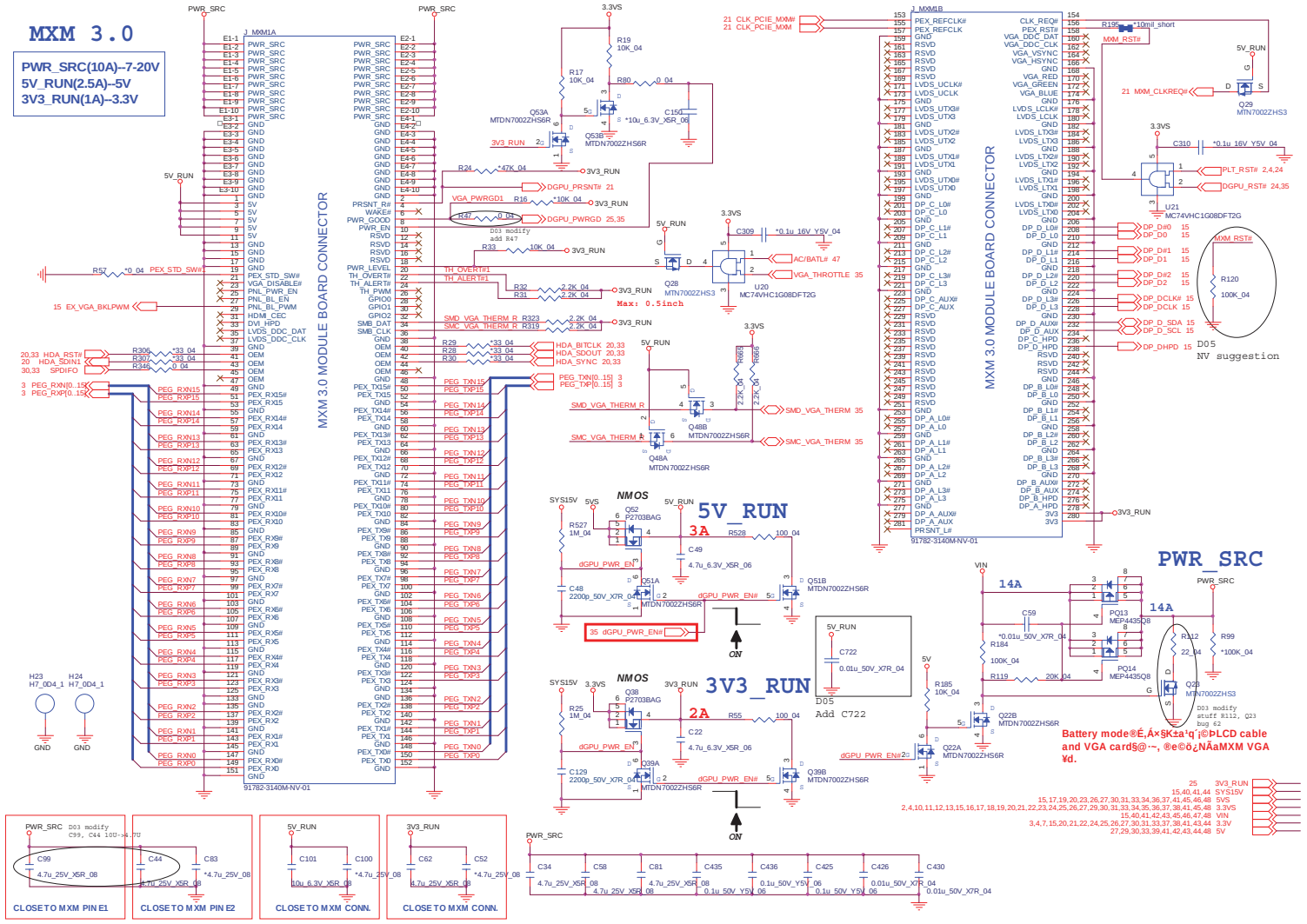
DDRIII CHB SO-DIMM _1

Channel B SO-DIMM 1

CHANGE TO STANDARD



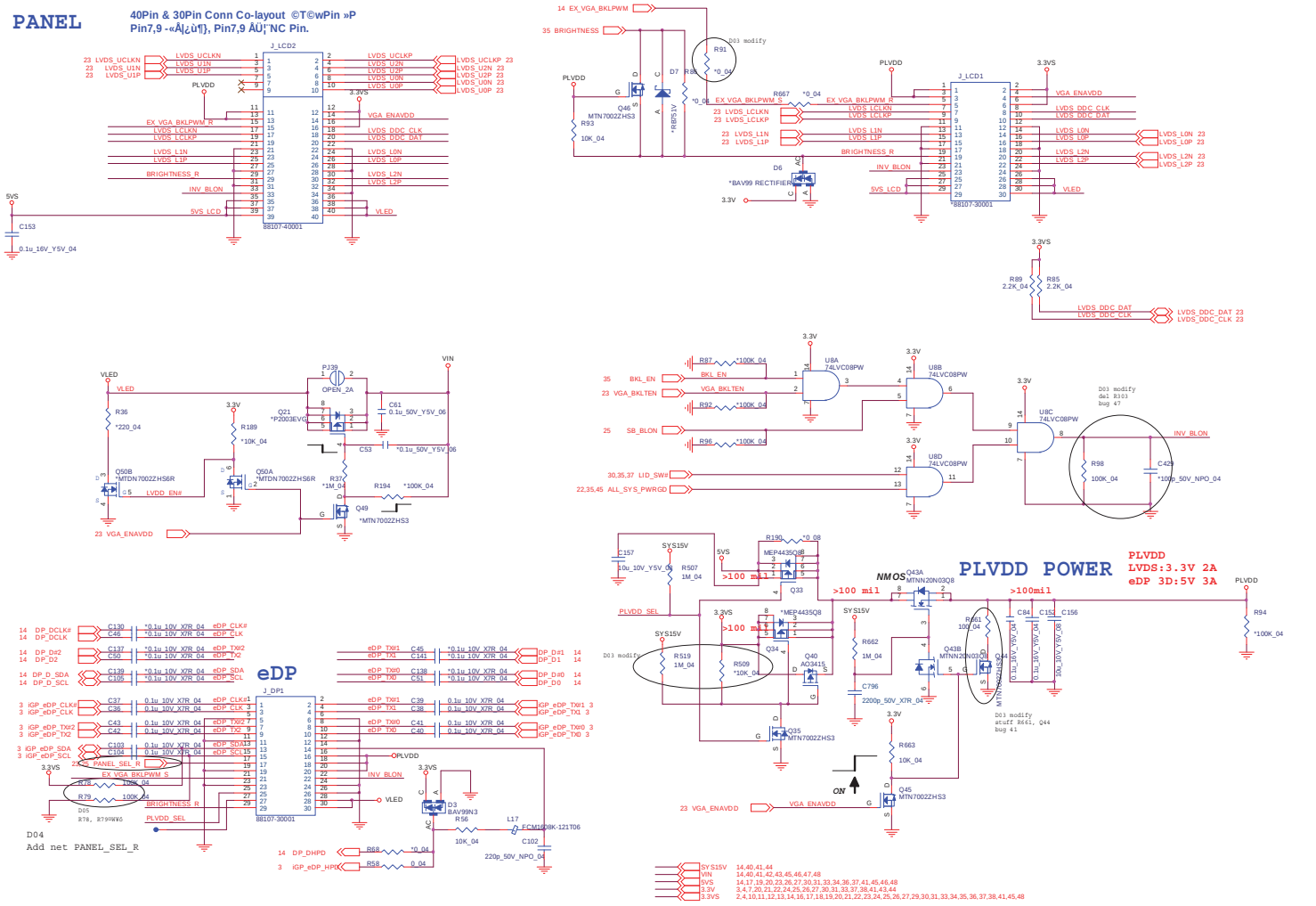
MXM PCI-E



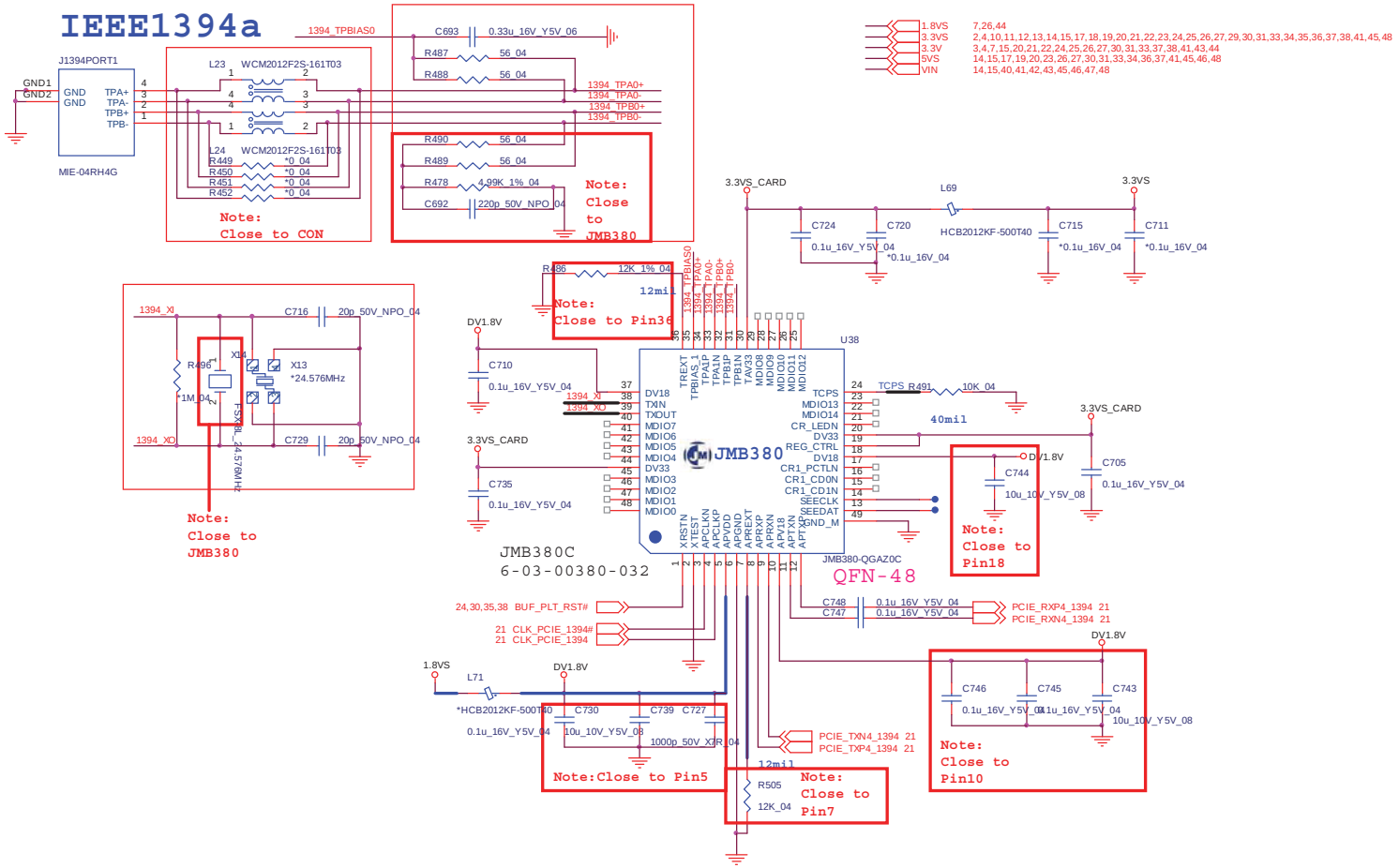
Sheet 14 of 61
MXM PCI-E

Panel, Inverter, CRT

Sheet 15 of 61
Panel, Inverter, CRT



1394_JMB380C



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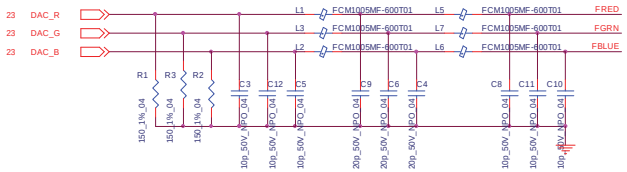
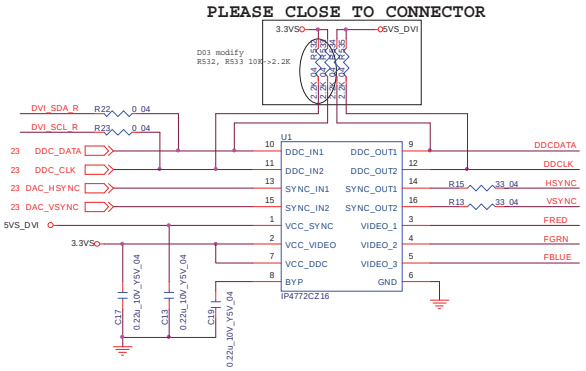
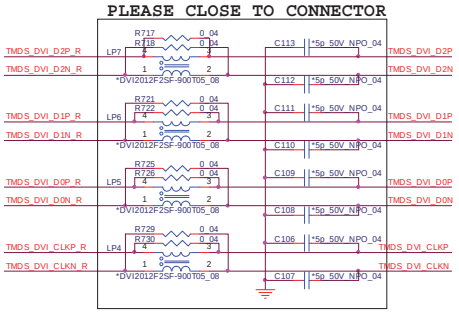
1394_JMB380C

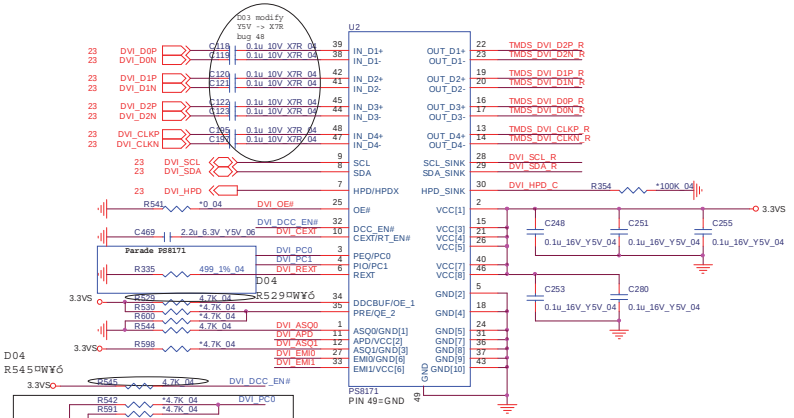
DVI

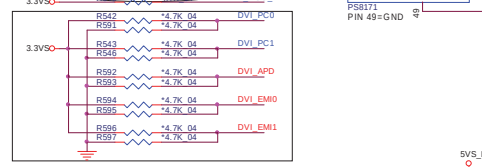
Sheet 17 of 61
DVI

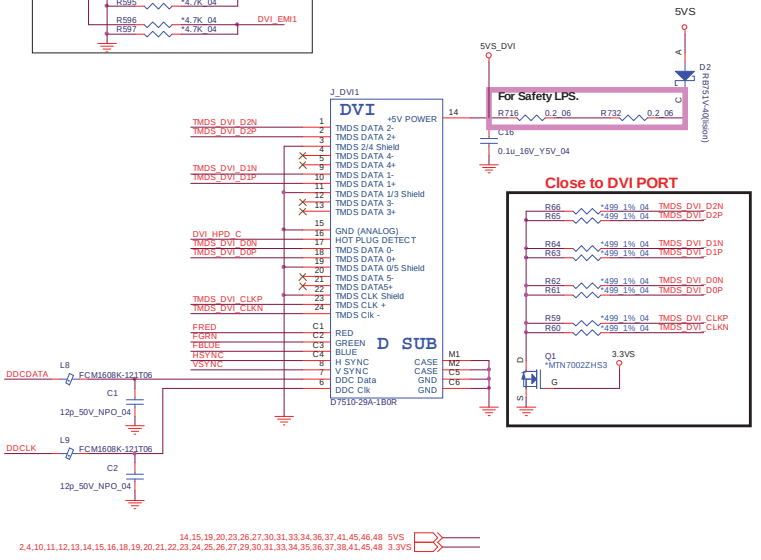






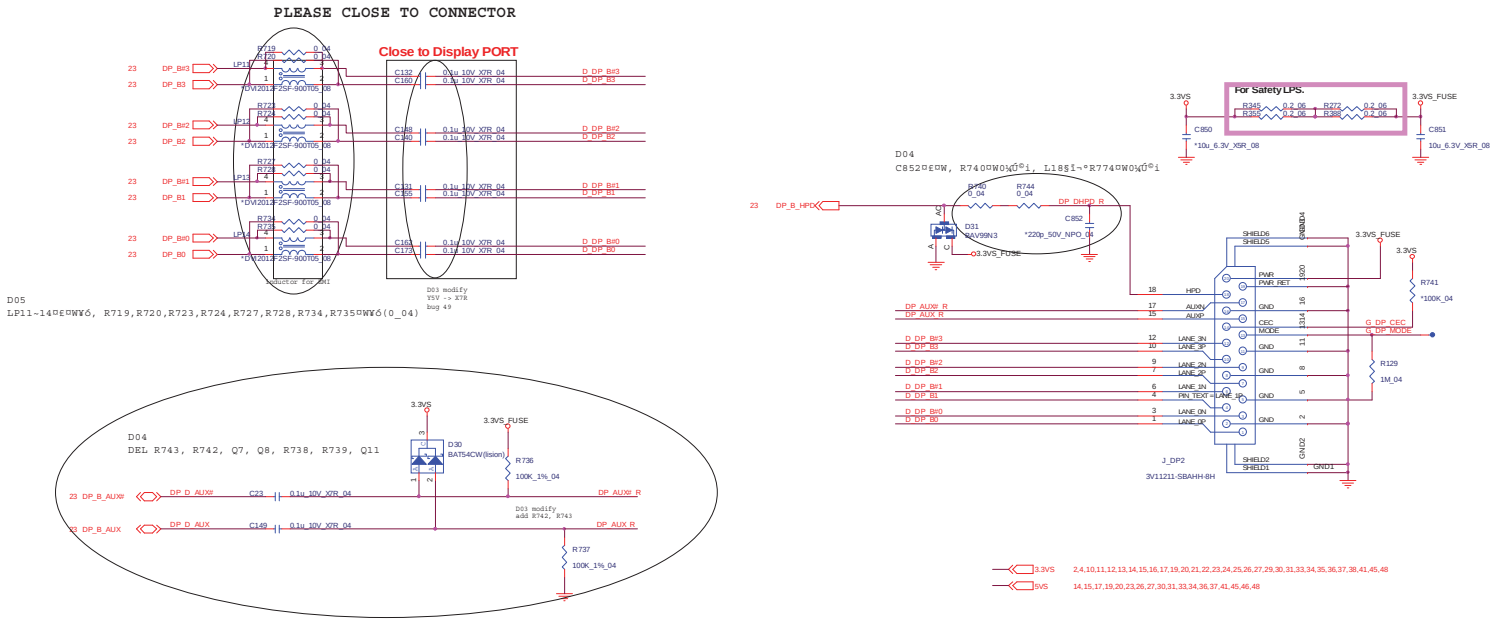






Display Port

dGPU DISPLAY PORT



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Display Port

HDMI

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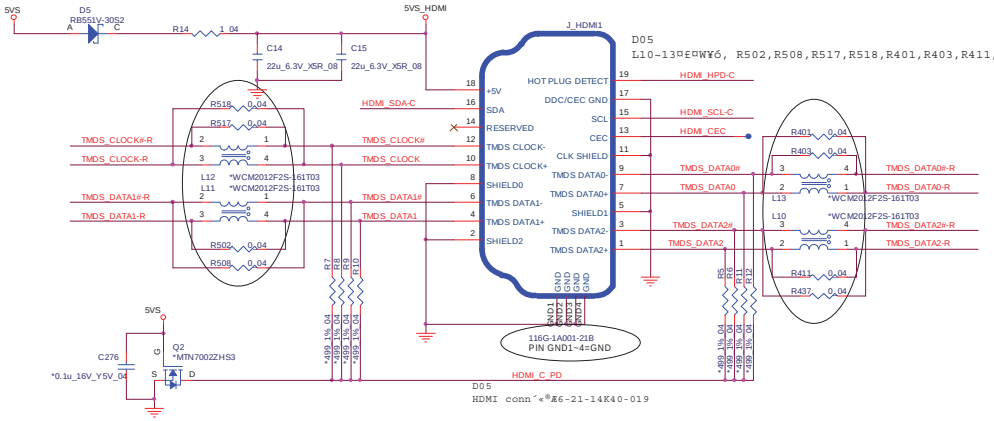
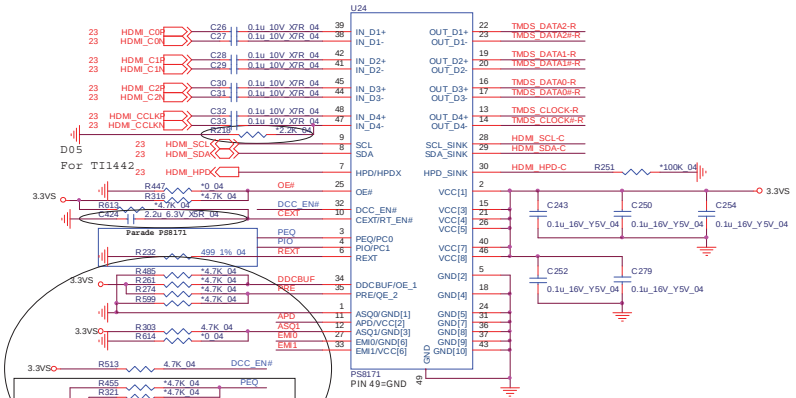
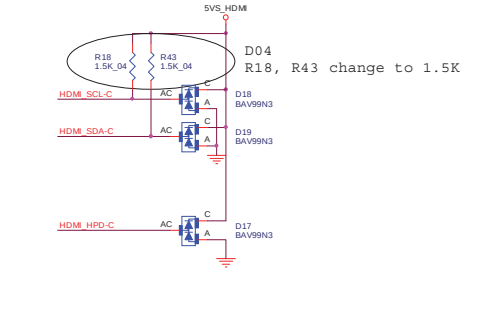
HDMI

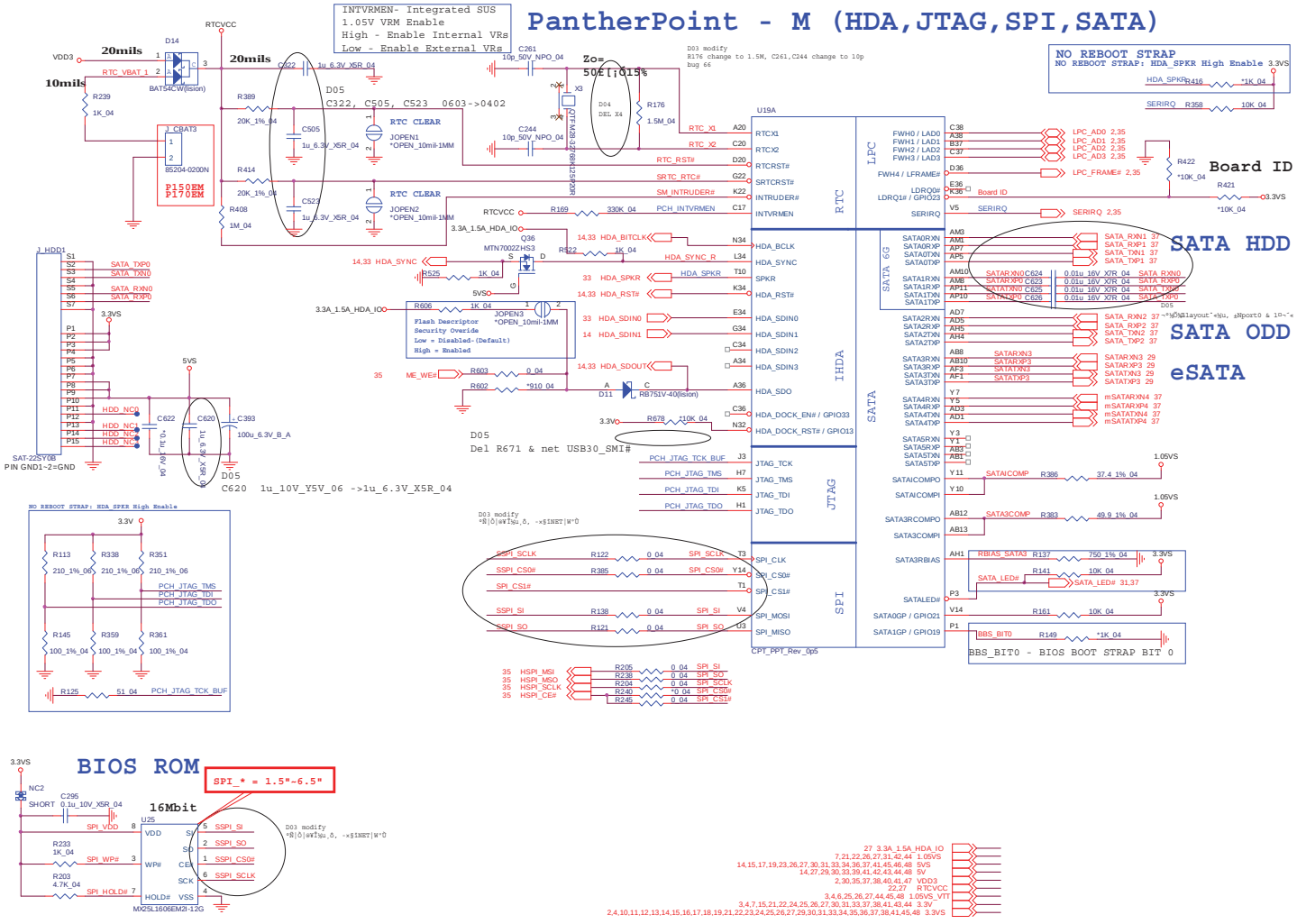
HDMI CONNECTOR







PCH 1/9 - RTC, HDA, SATA



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PCH 1/9 - RTC, HDA, SATA

B.Schematic Diagrams

PCH 2/9 - PCIE, SMBUS, CLK

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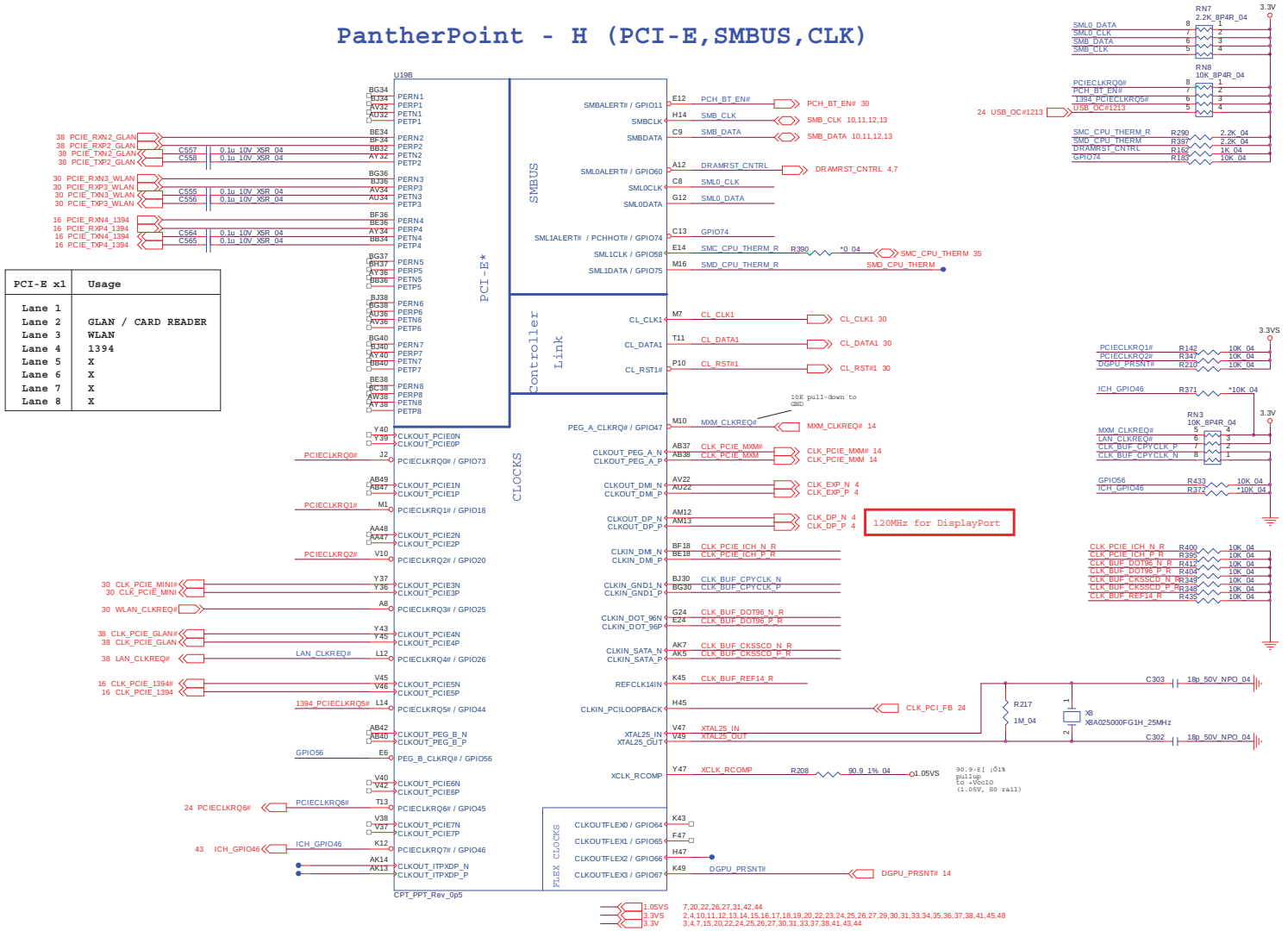
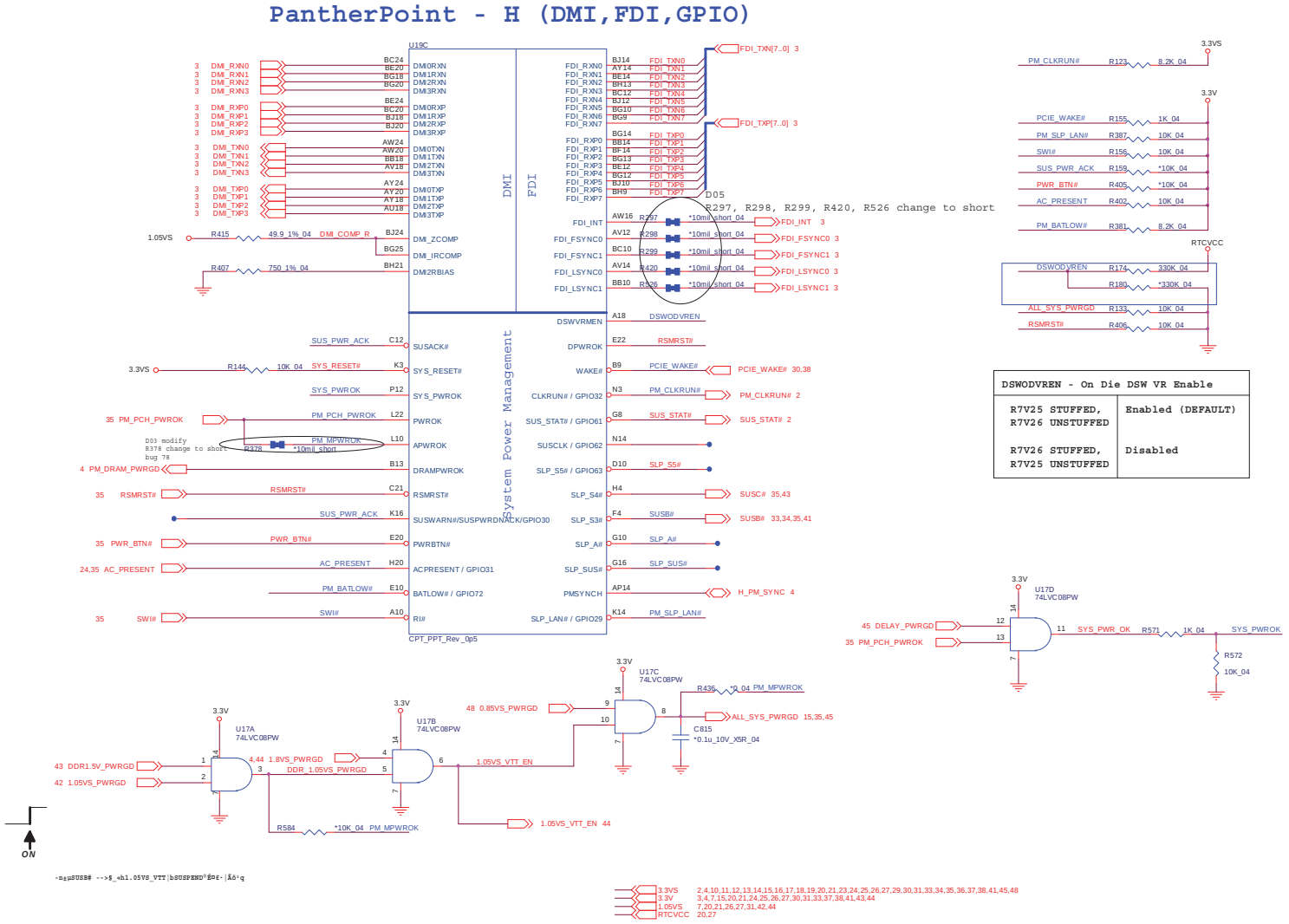
PCH 2/9 - PCIE, SMBUS, CLK



PCH3/9 - DMI, FDI, PWRGD



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PCH 3/9 - DMI, FDI, PWRGD

PCH 4/9 - LVDS, DDI, CRT

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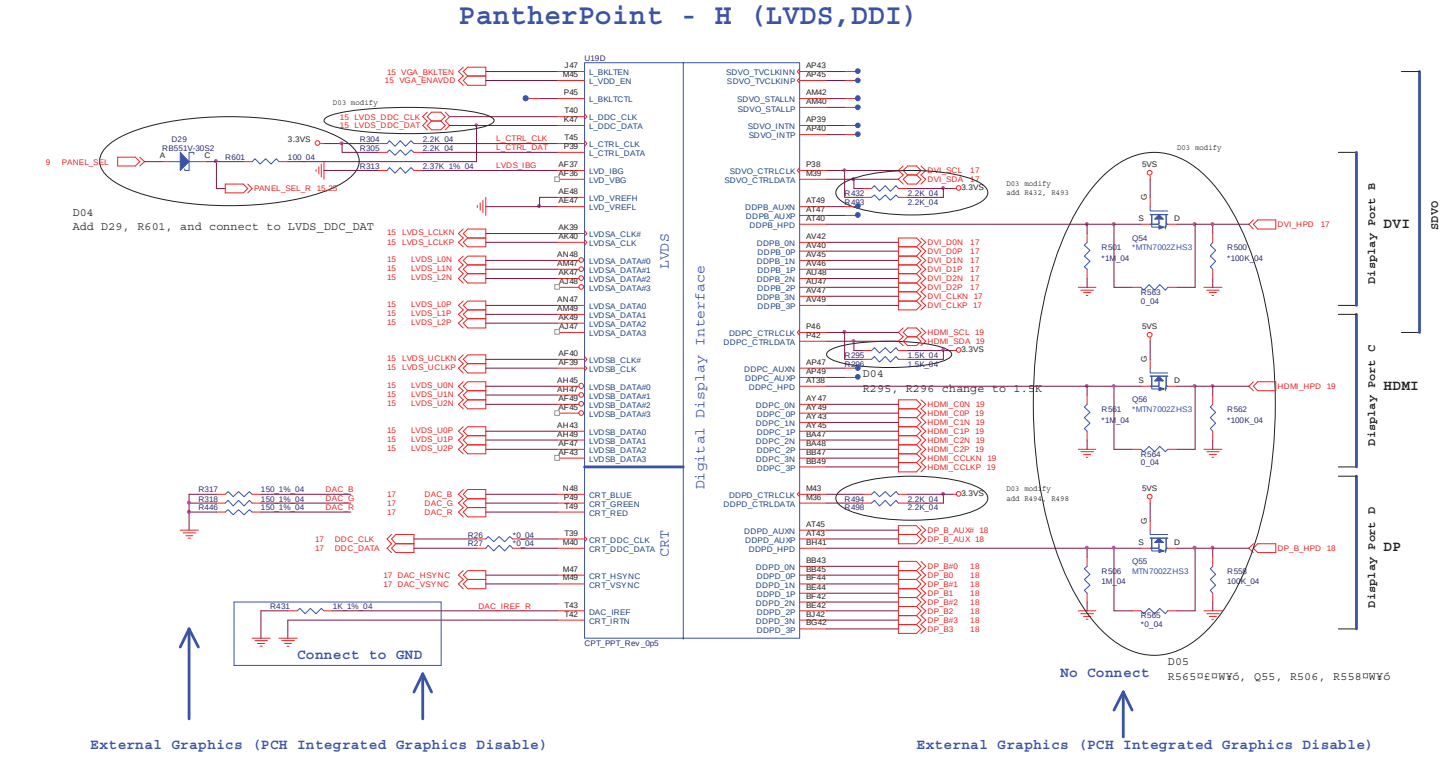
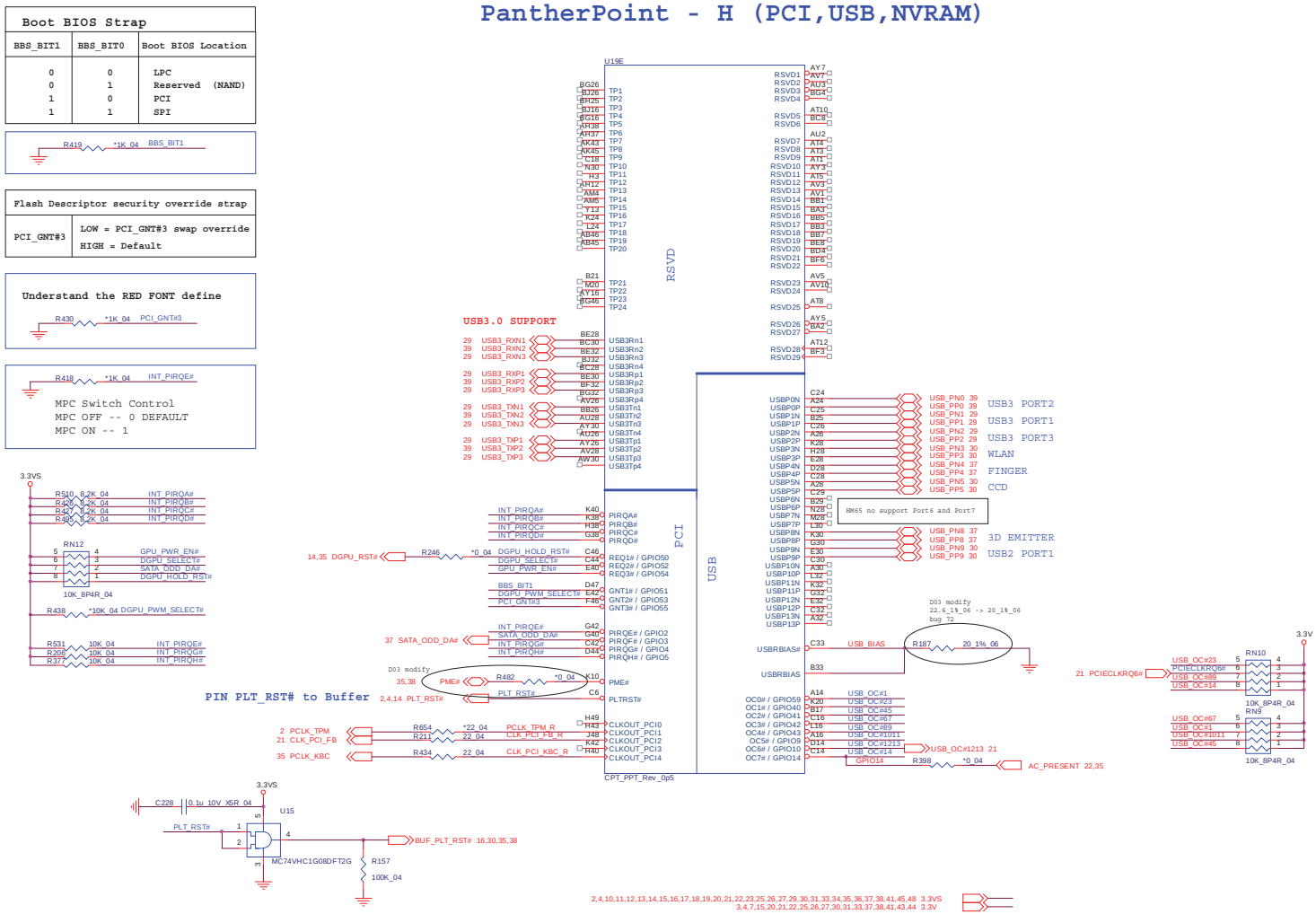
PCH 4/9 - LVDS, DDI, CRT



PCH 5/9 - PCI, USB, RSVD



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PCH 5/9 - PCI, USB, RSVD

PCH 6/9 - GPIO, CPU

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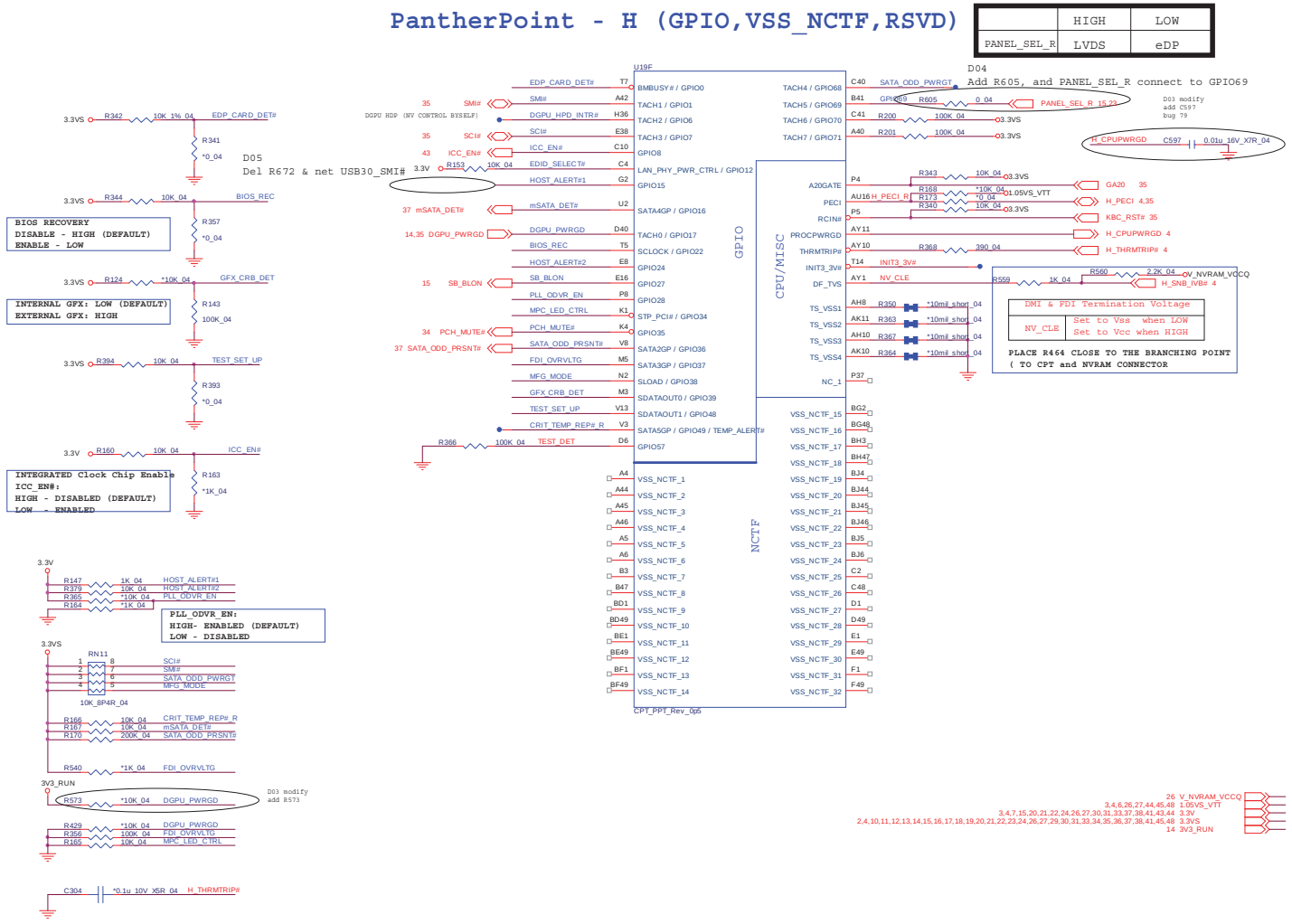
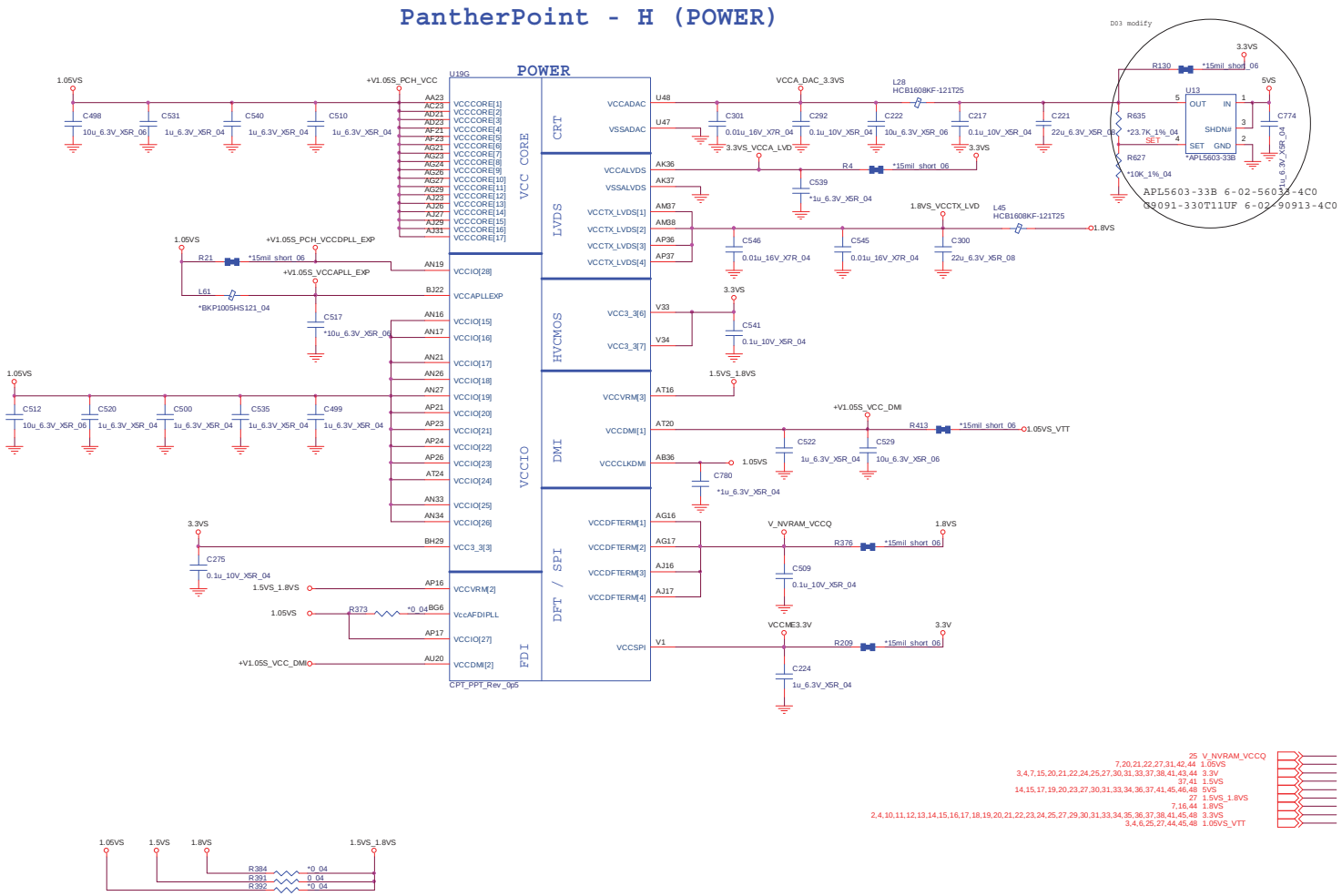
PCH 6/9 - GPIO, CPU



PCH 7/9 - Power



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PCH 7/9 - Power

B.Schematic Diagrams

PCH 8/9 - Power

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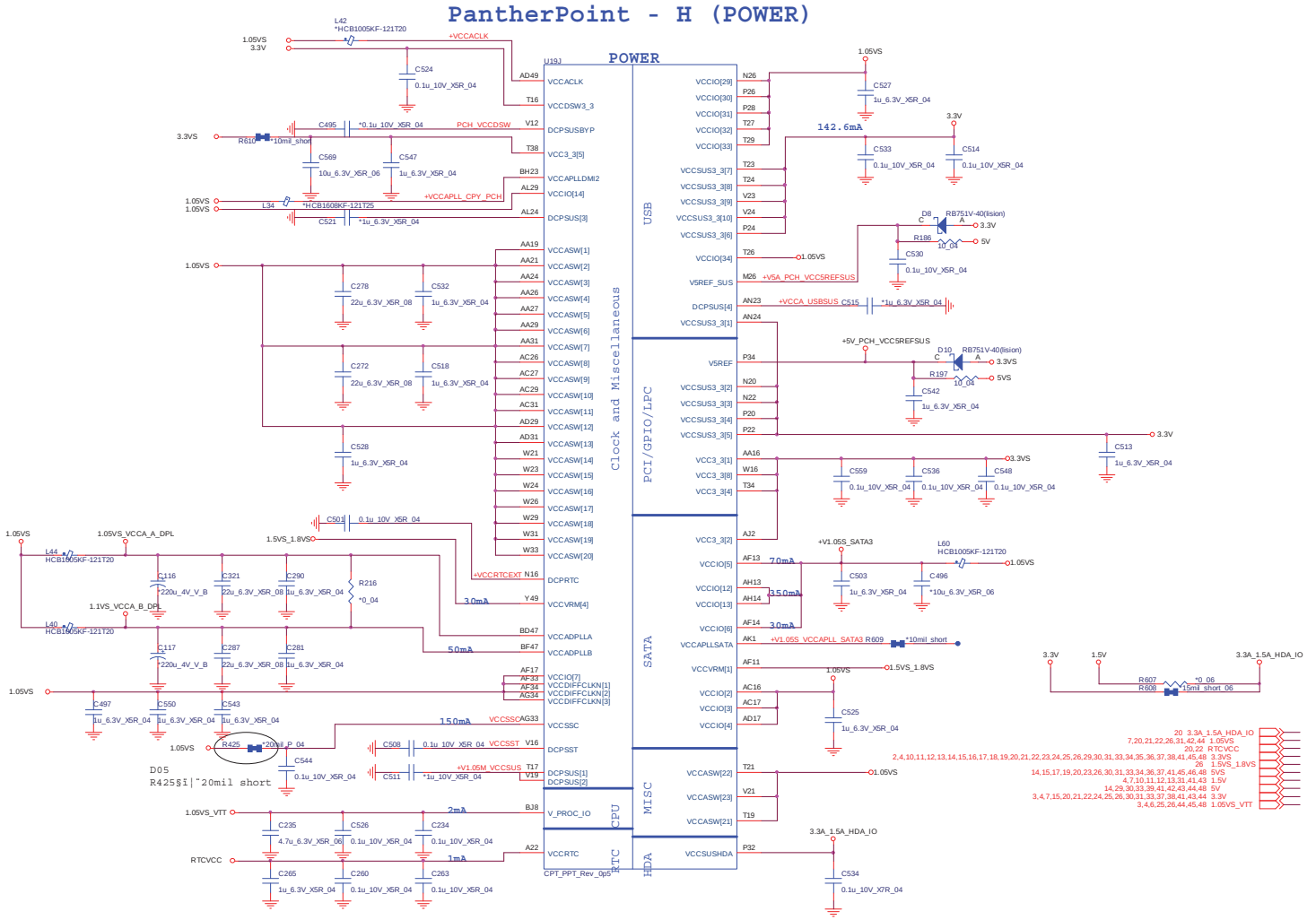
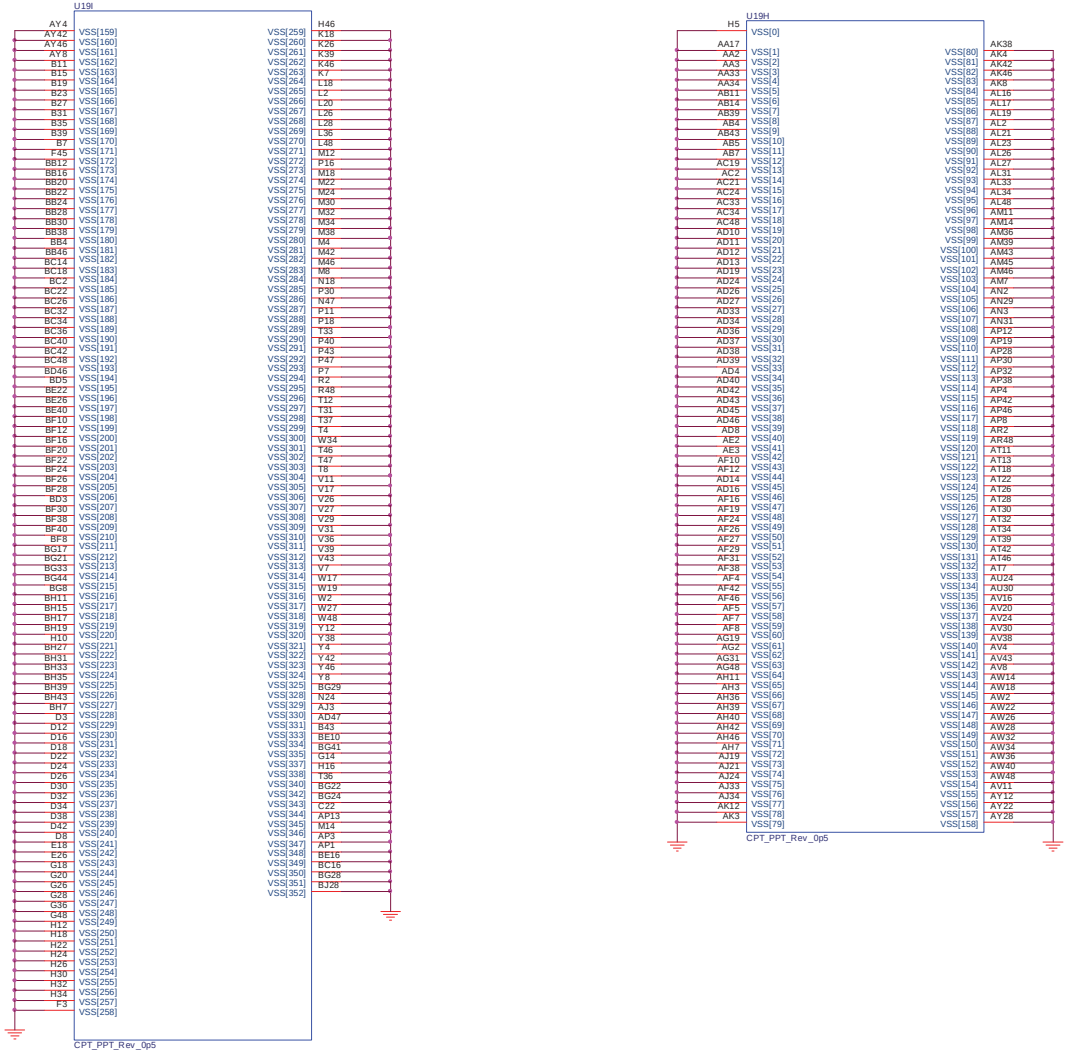
PCH 8/9 - Power



PCH 9/9 - GND

PantherPoint - H (GND)



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PCH 9/9 - GND

USB+eSATA, USB Charging

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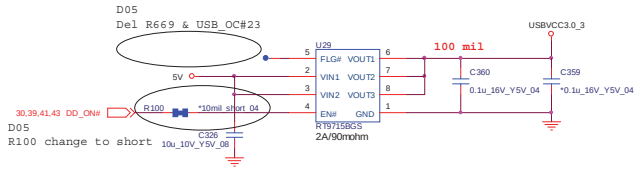
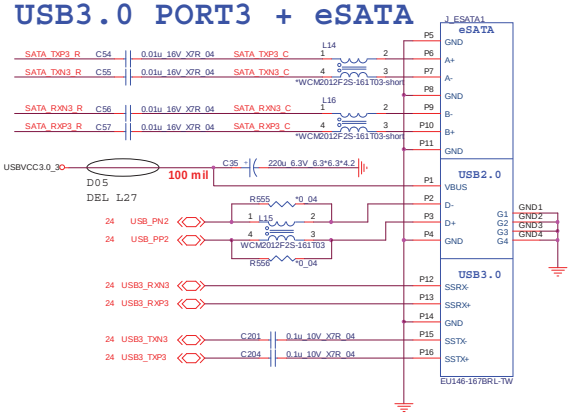
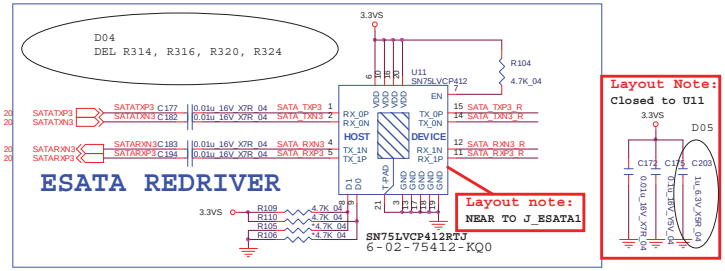
USB+eSATA, USB Charging

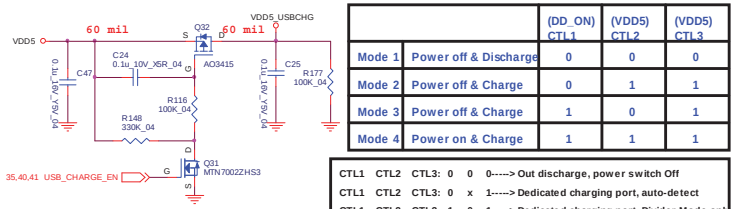


USB3.0 PORT3 + eSATA



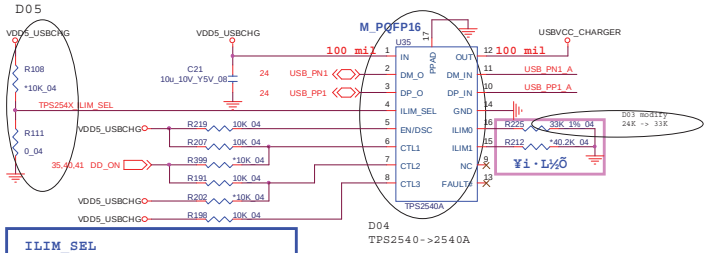


TPS2540 USB Charging PORT



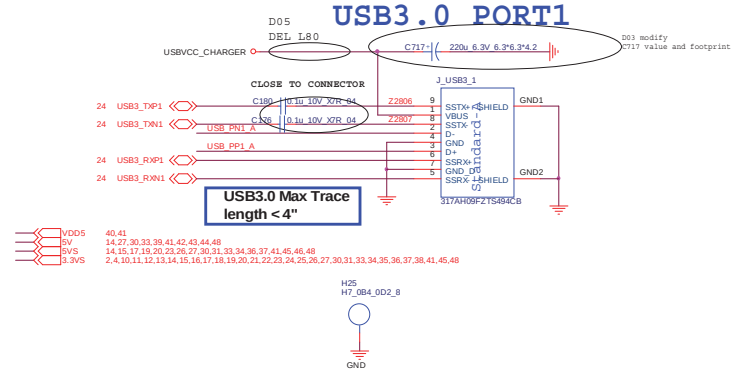
		(DD_ON) CTL1	(VDD5) CTL2	(VDD5) CTL3
Mode 1	Power off & Discharge	0	0	0
Mode 2	Power off & Charge	0	1	1
Mode 3	Power off & Charge	1	0	1
Mode 4	Power on & Charge	1	1	1

CTL1 CTL2 CTL3: 0 0 0----> Out discharge, power switch Off
CTL1 CTL2 CTL3: 0 x 1----> Dedicated charging port, auto-detect
CTL1 CTL2 CTL3: 1 0 1----> Dedicated charging port, Divider Mode only
CTL1 CTL2 CTL3: 1 1 1----> Charging downstream port, BC1.2.

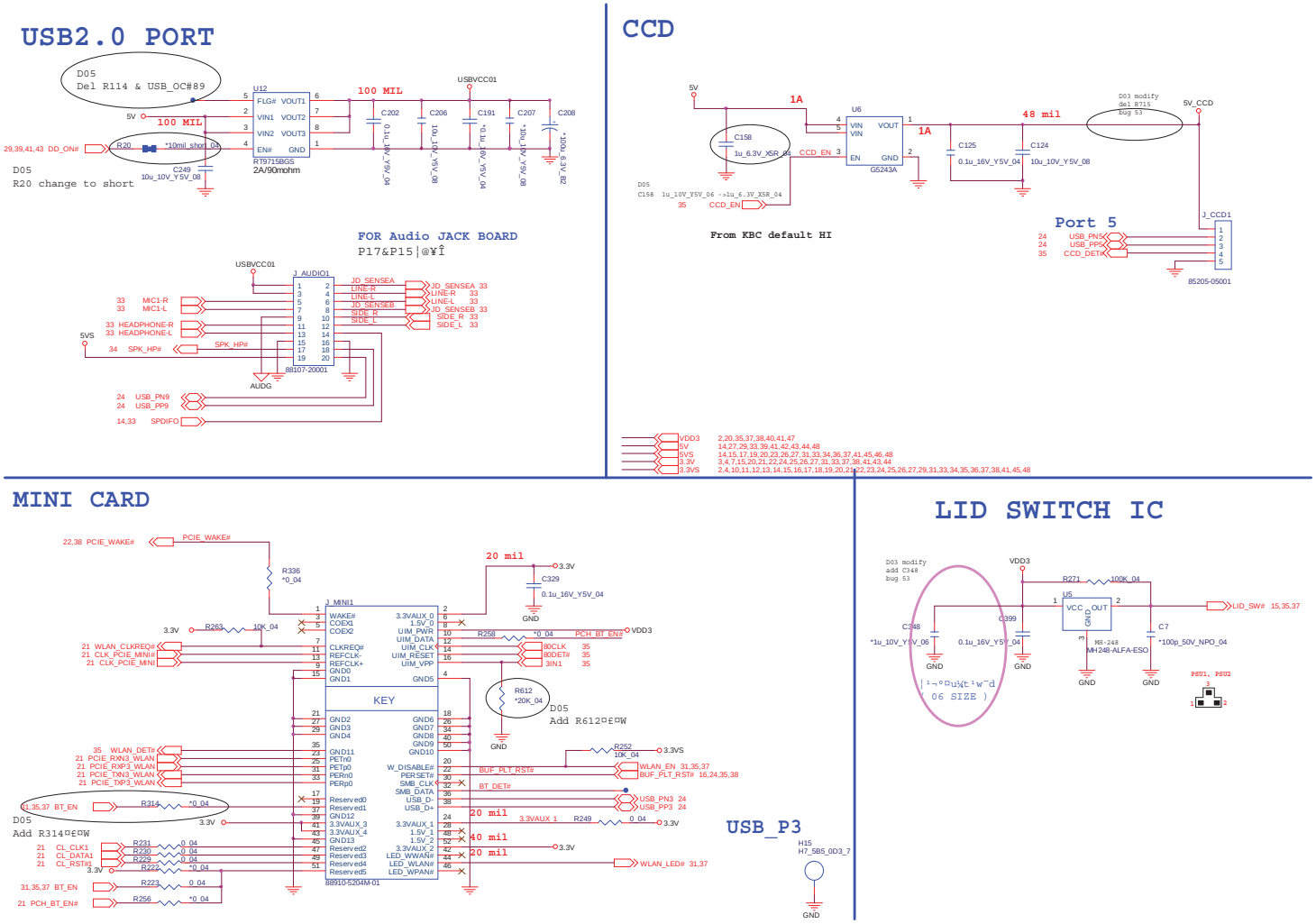


ILIM_SEL
(FOR TPS2543/TPS2540 ¦³¤£¦P)
ILIM_SEL=HI , FOR TPS2543
ILIM SEL=LOW, FOR TPS2540A

USB3.0 PORT1



USB 2.0, CCD, Mini PCIE, LID



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USB 2.0, CCD,
Mini PCIE, LED

LED, Hotkey, LID SW, Fan

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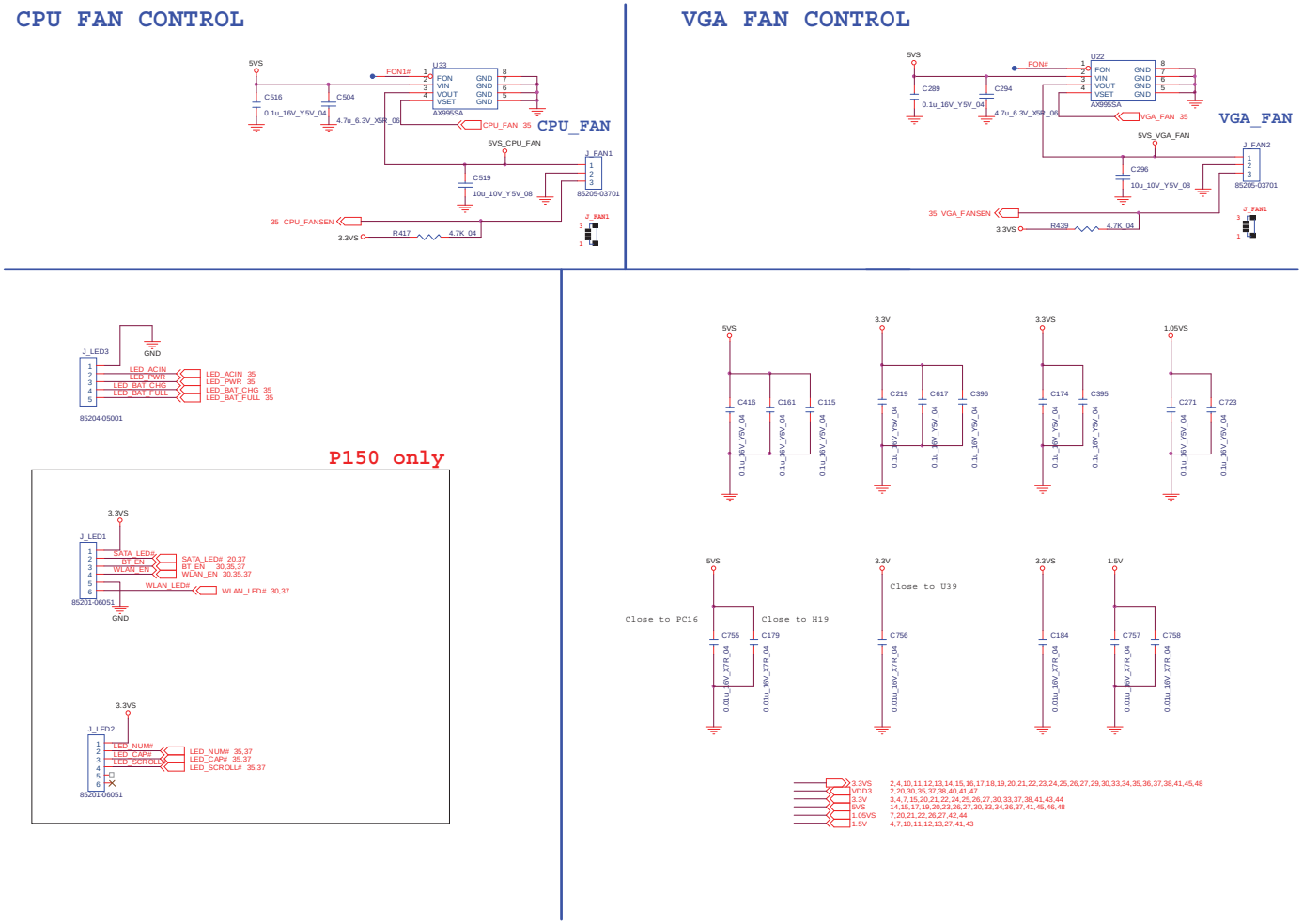
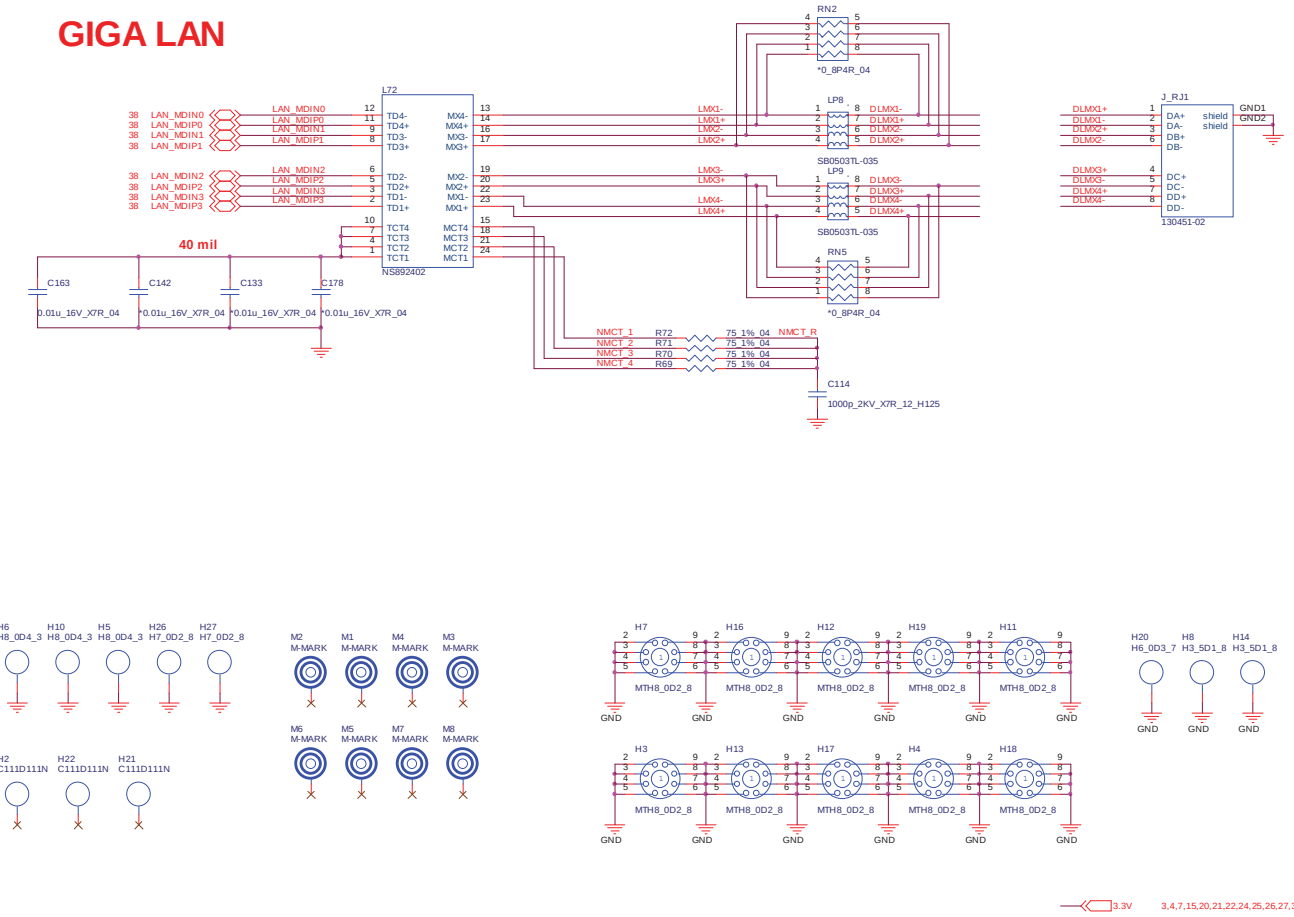
LED, Hotkey, LID SW, Fan



RJ 45



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RJ 45

Codec Realtek ALC892

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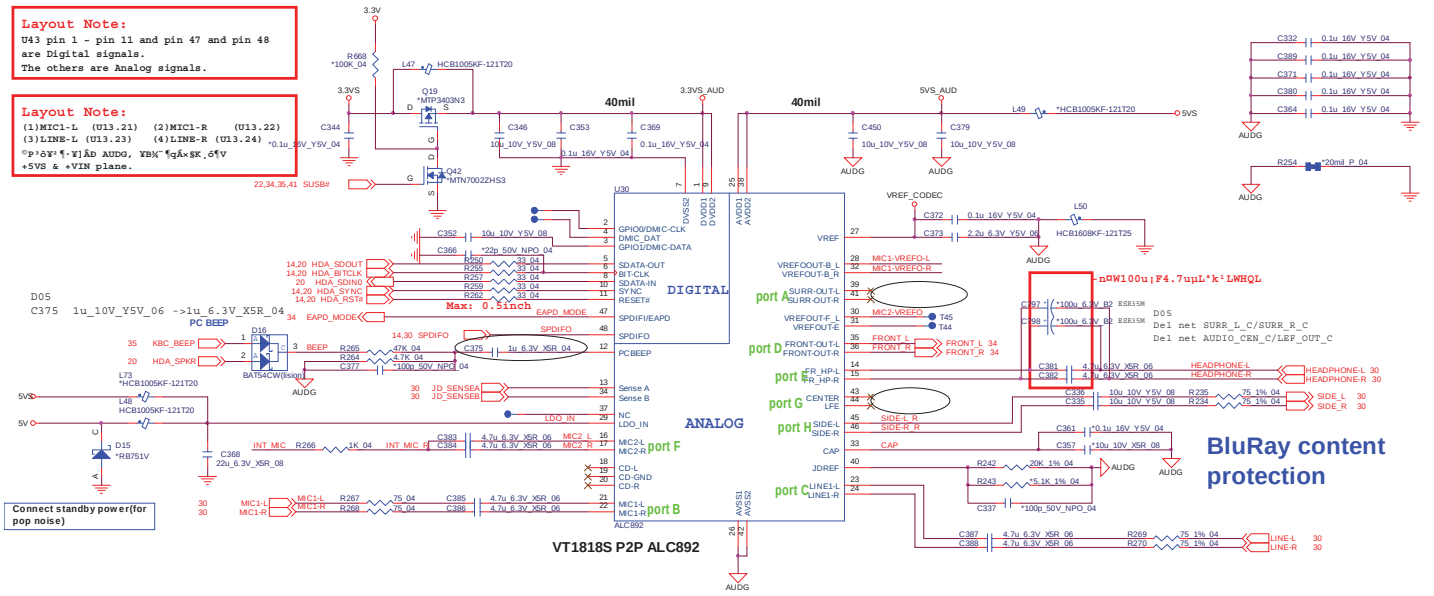
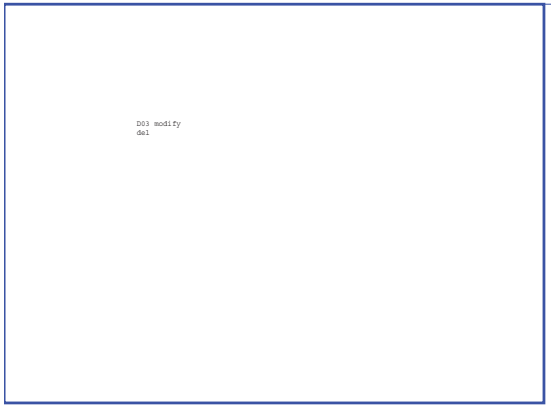
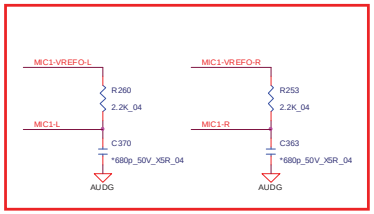
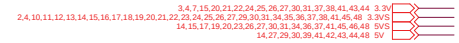
Codec Realtek ALC892

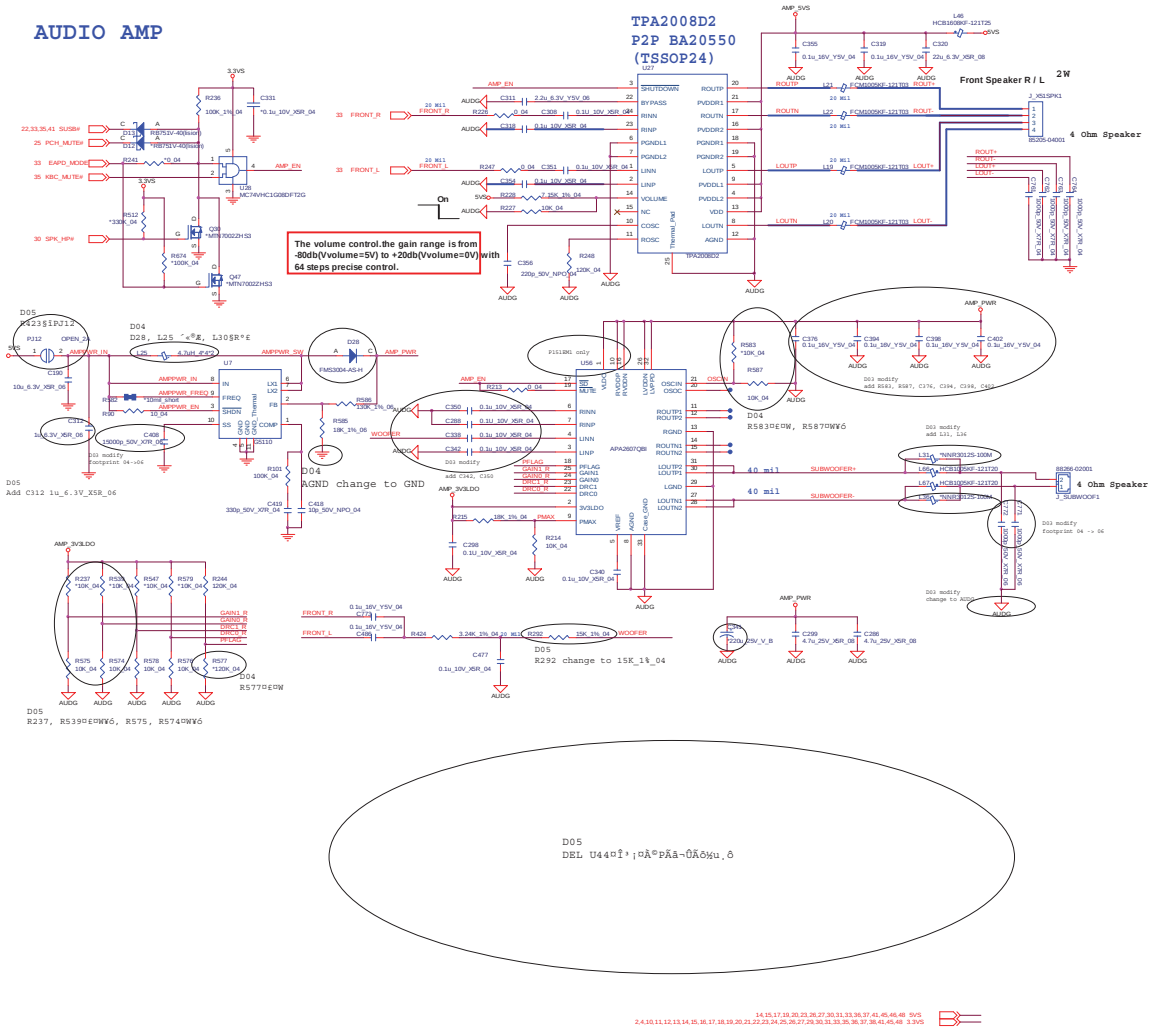








APA2607-TPA2008D2



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APA2607-
TPA2008D2

KBC-ITE IT8518E

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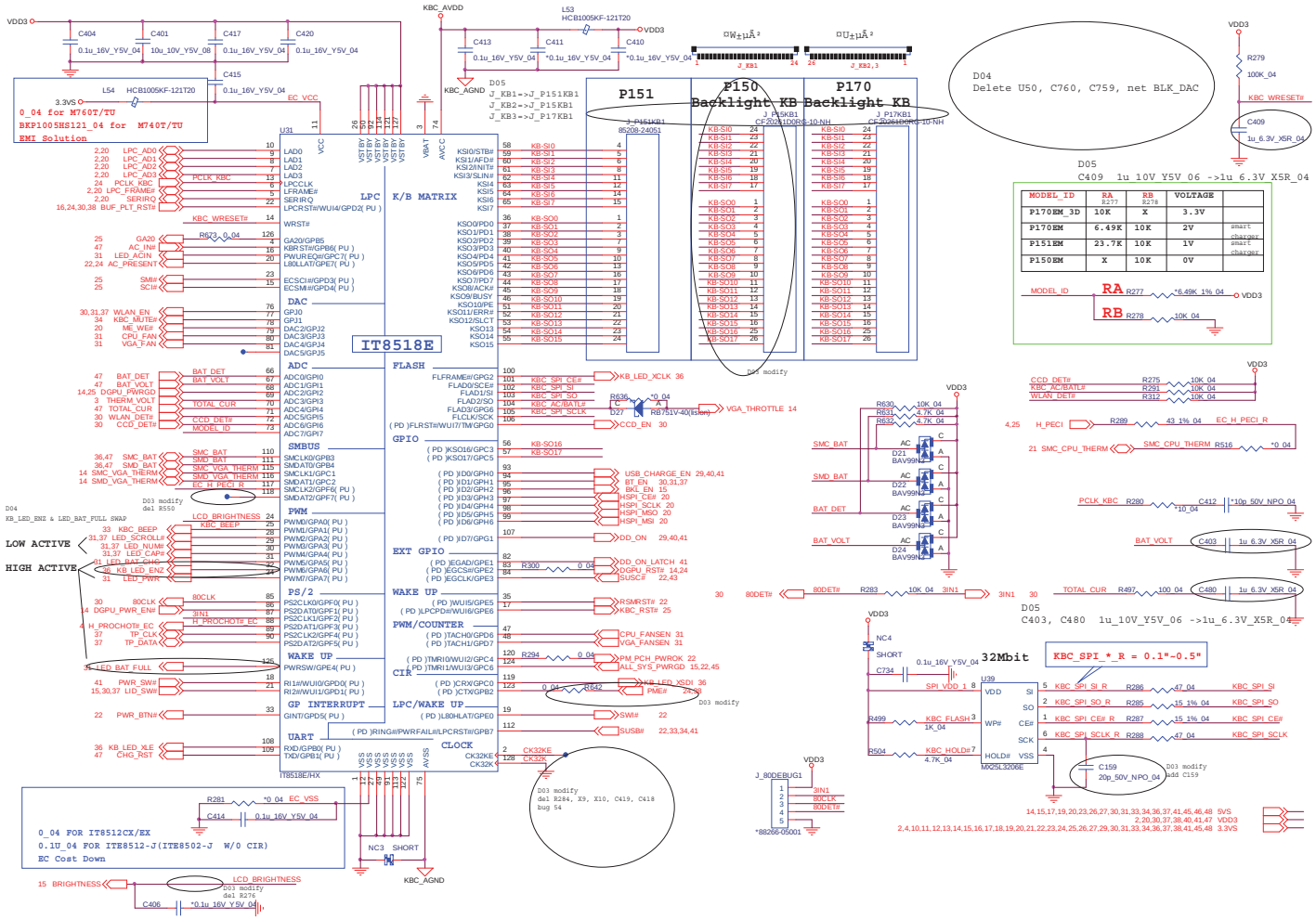
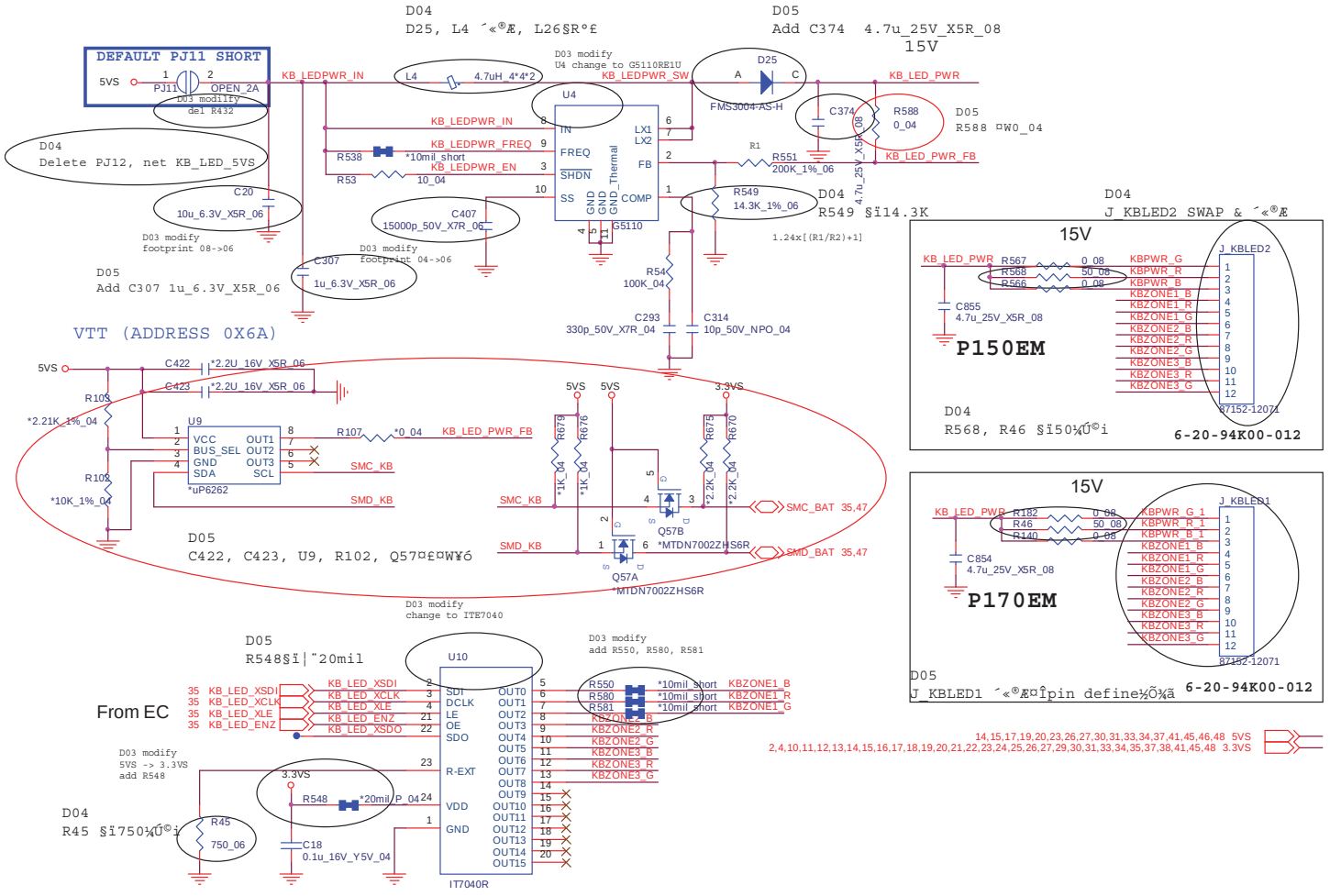
KBC-ITE IT8518E



Backlight Keyboard



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Backlight
Keyboard

B.Schematic Diagrams

mSATA, FAN, TP, FP, MULTI-CON

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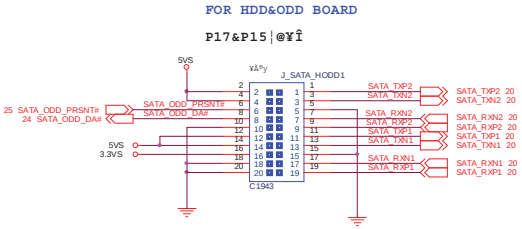
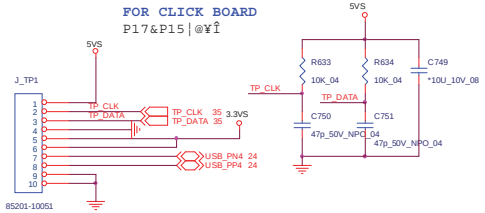
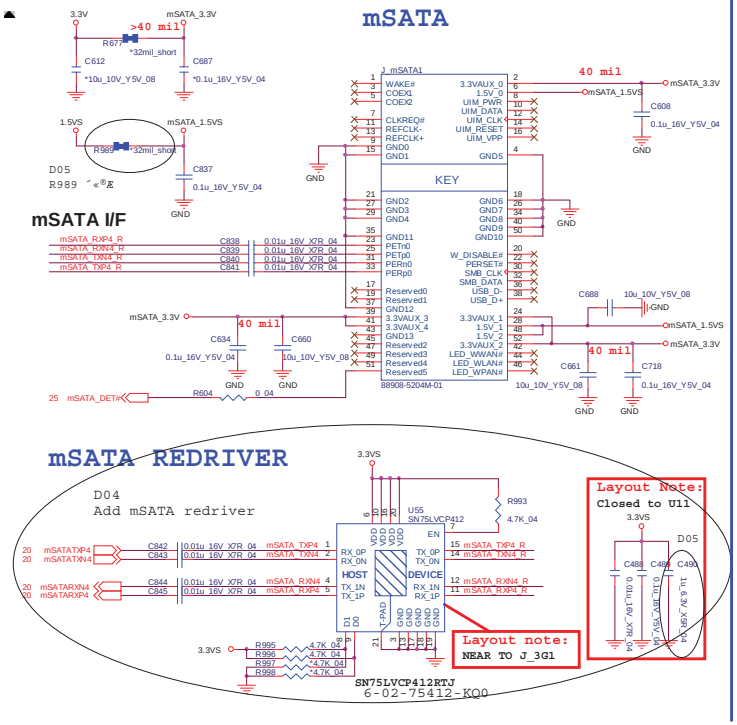
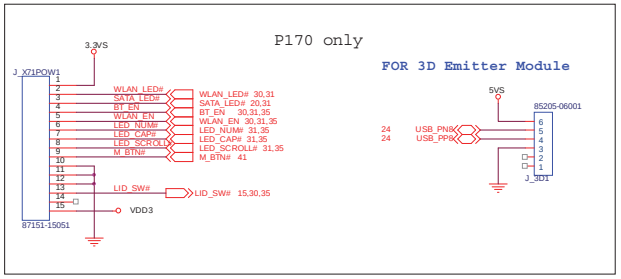
mSATA, FAN, TP, FP, MULTI-CON

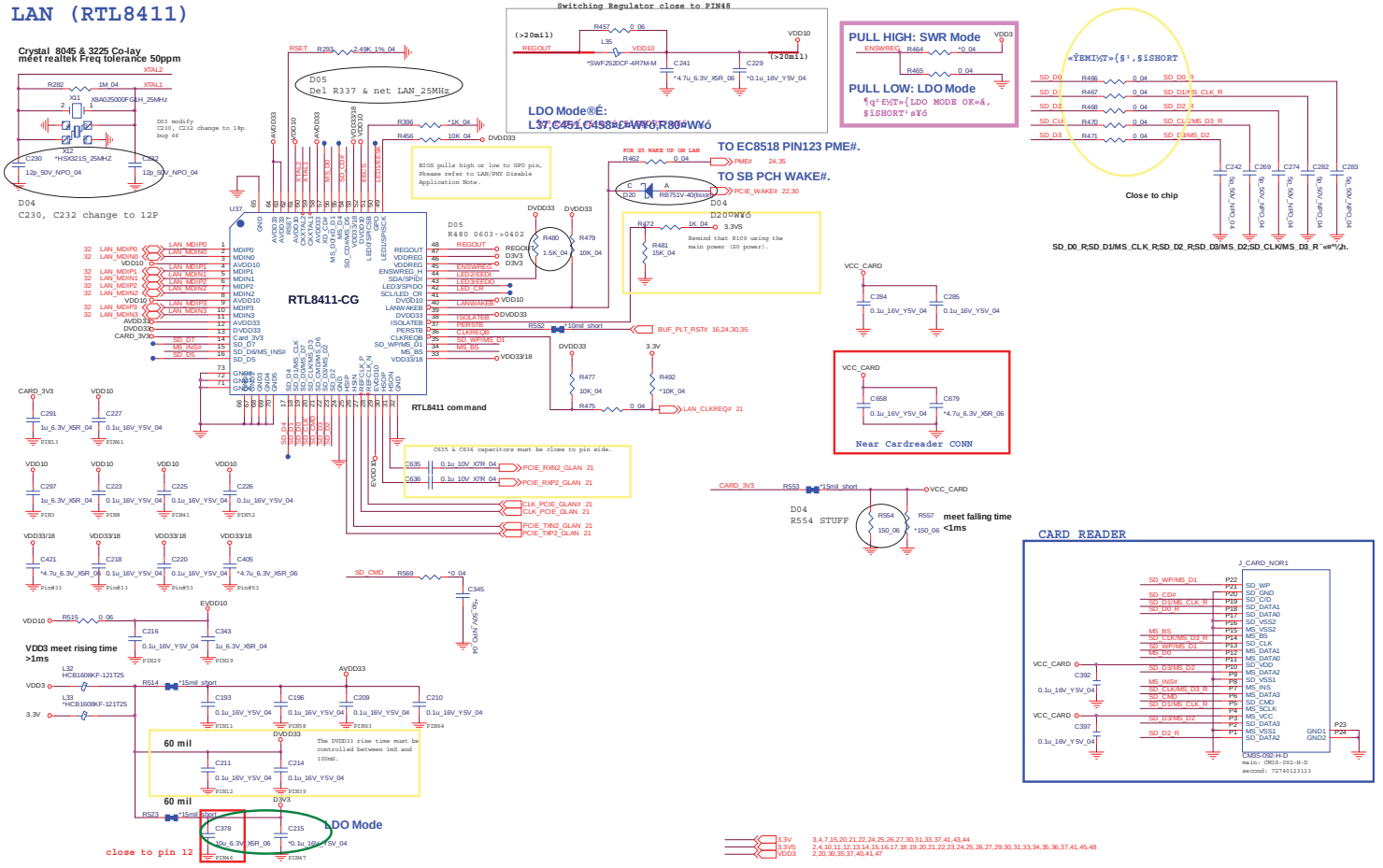








Card Reader RTL8411



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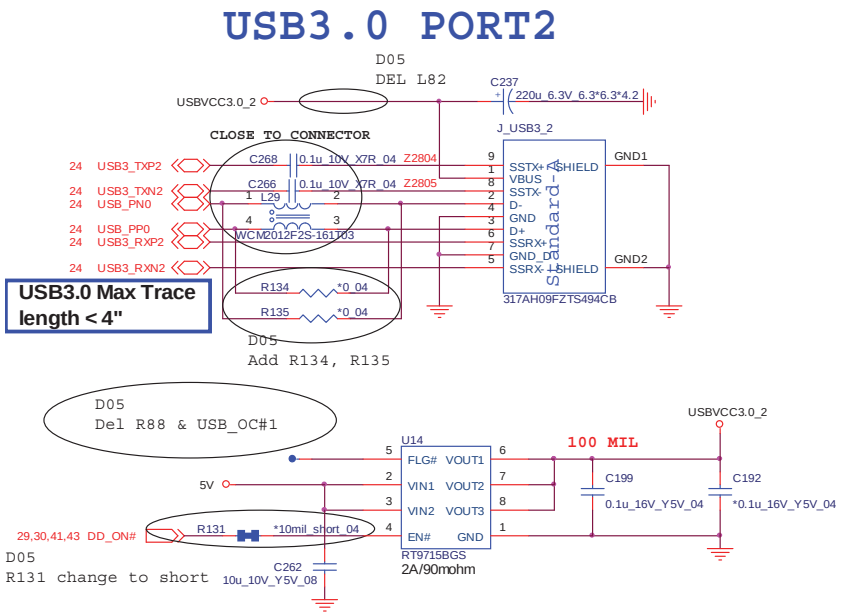
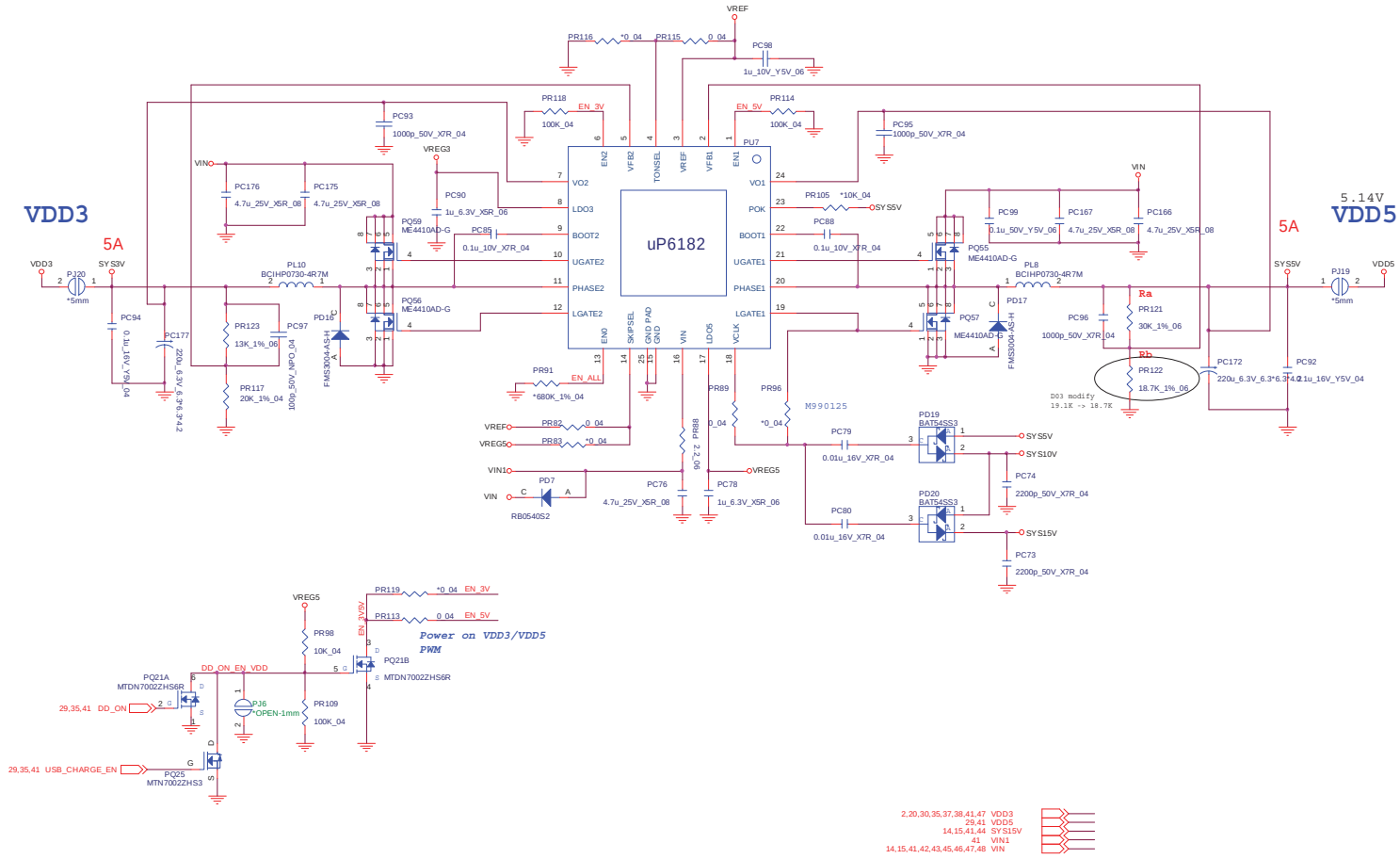
Card Reader
RTL8411

USB 3.0

Sheet 39 of 61
USB 3.0



VDD3, VDD5



Sheet 40 of 61
VDD3, VDD5

5VS, 3.3VS, 1.5VS

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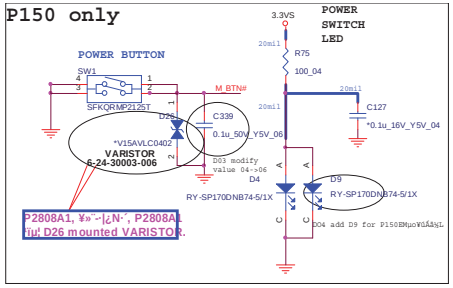
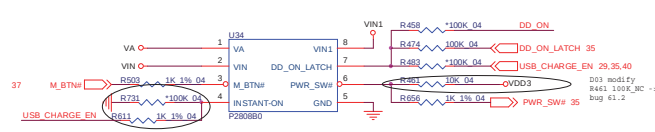
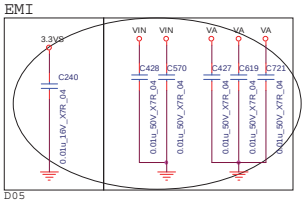
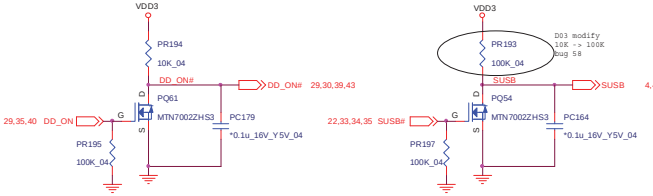
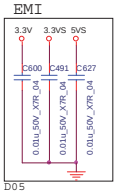
5VS, 3.3VS, 1.5VS

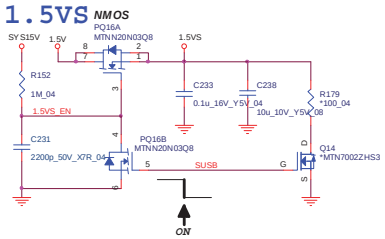


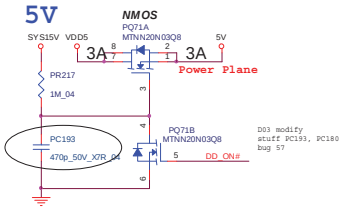


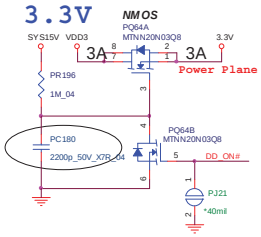


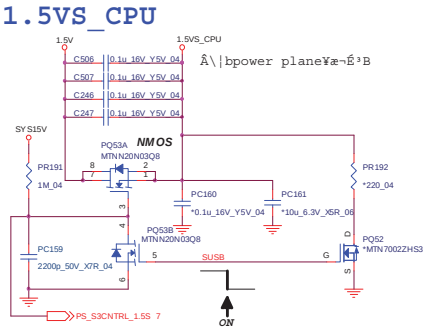


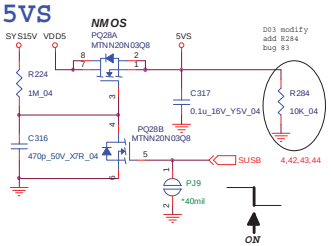


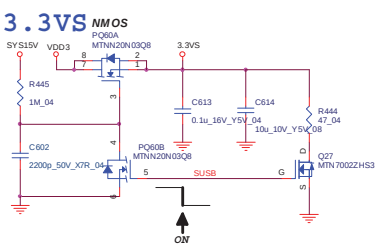


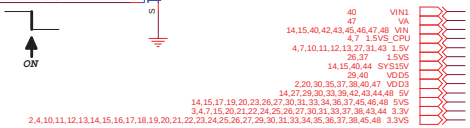




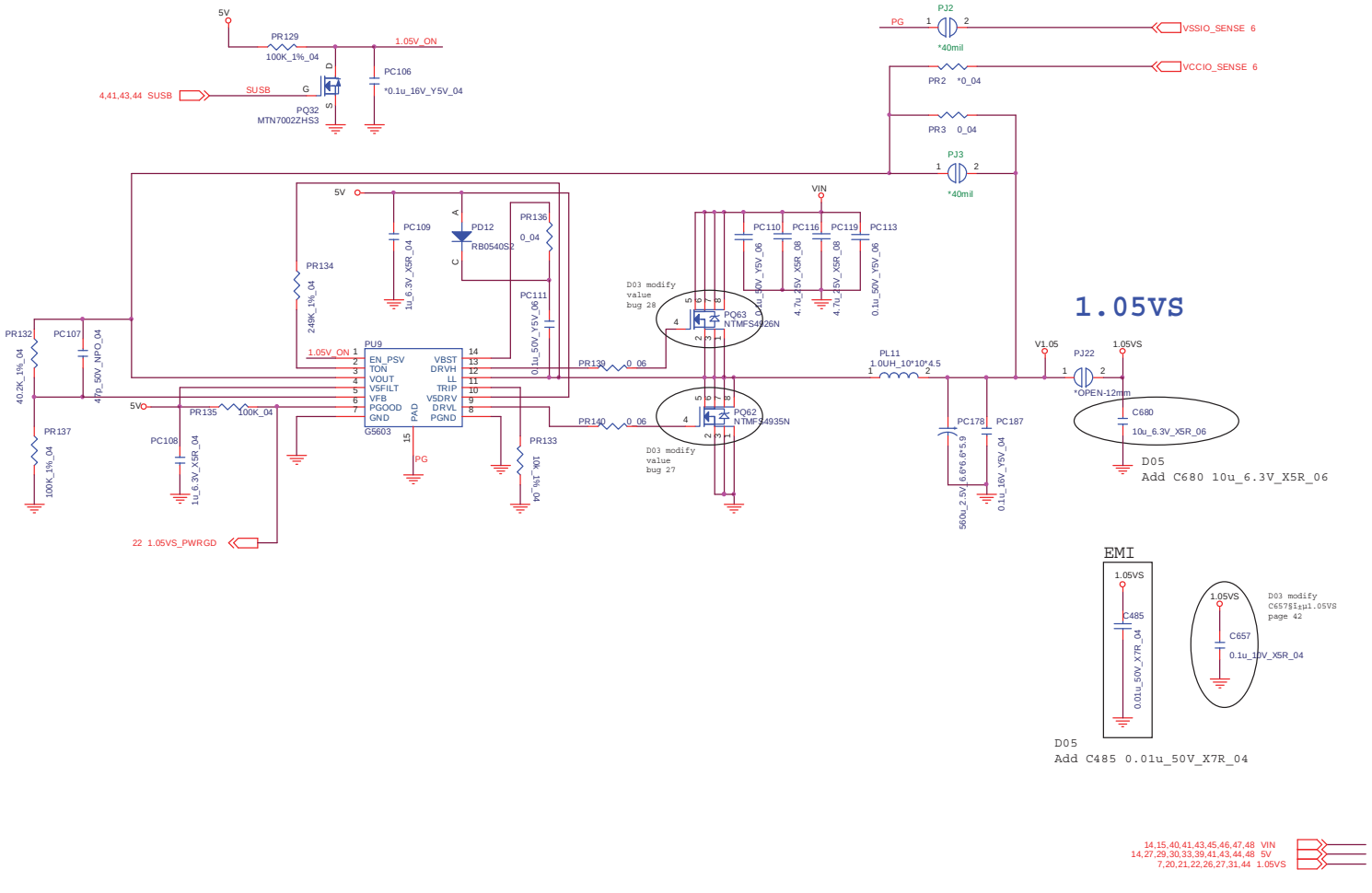








Power 1.05VS



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Power 1.05VS

Power 1.5V/VTT_MEM

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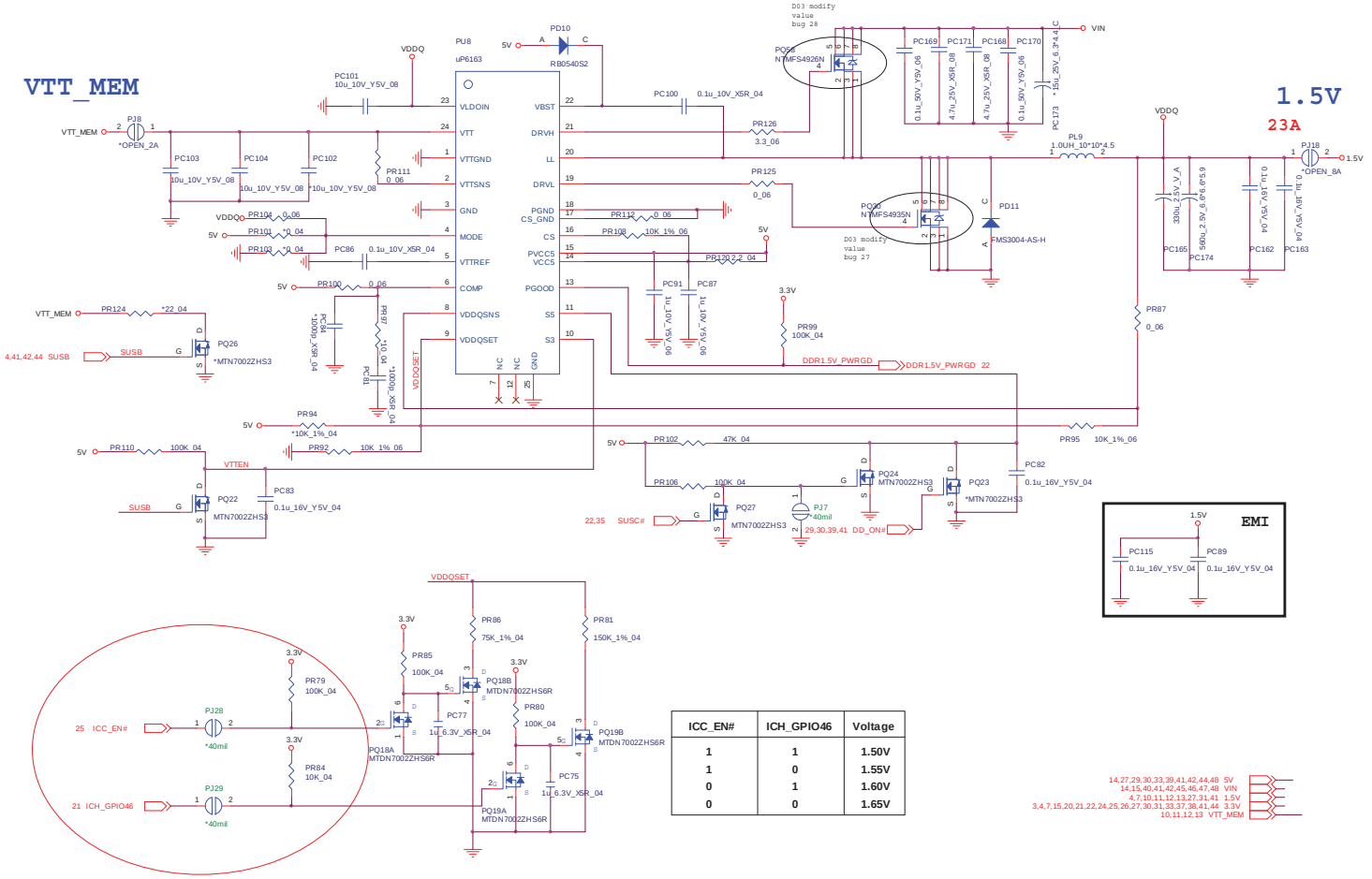
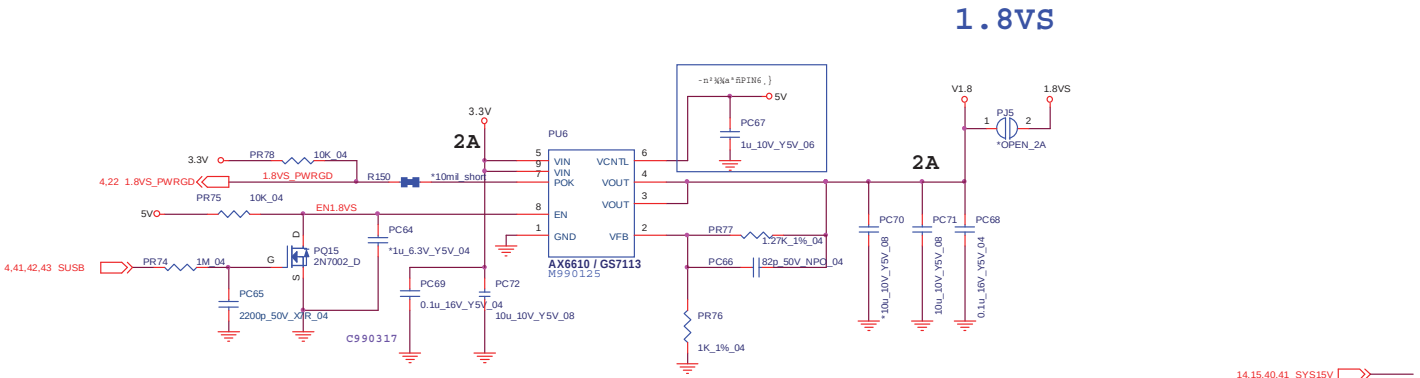
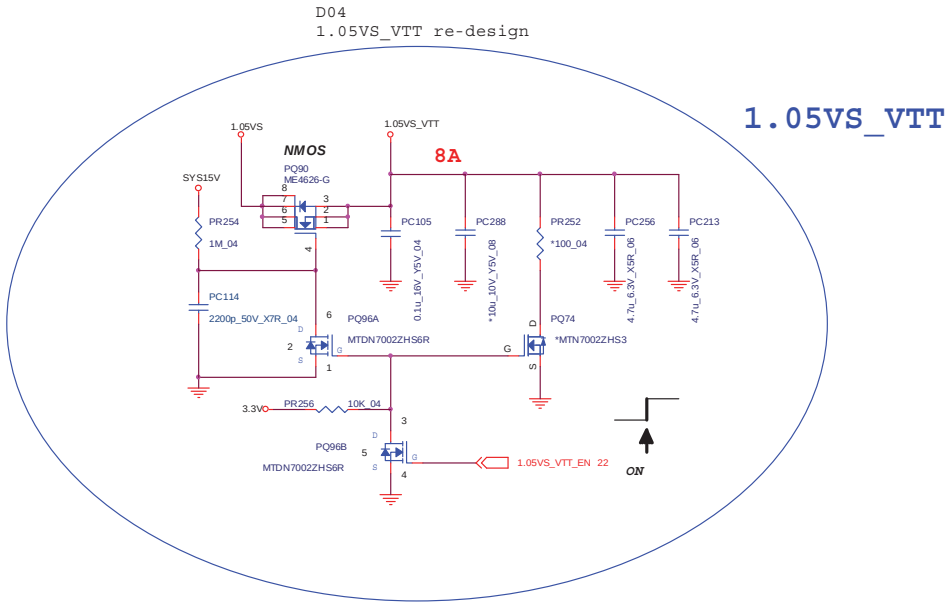
Power 1.5V/
VTT_MEM



ICC_EN#	ICH_GPIO46	Voltage
1	1	1.50V
1	0	1.55V
0	1	1.60V
0	0	1.65V

Power 1V, 1.8VS





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Power 1V, 1.8VS

Power V-Core 1

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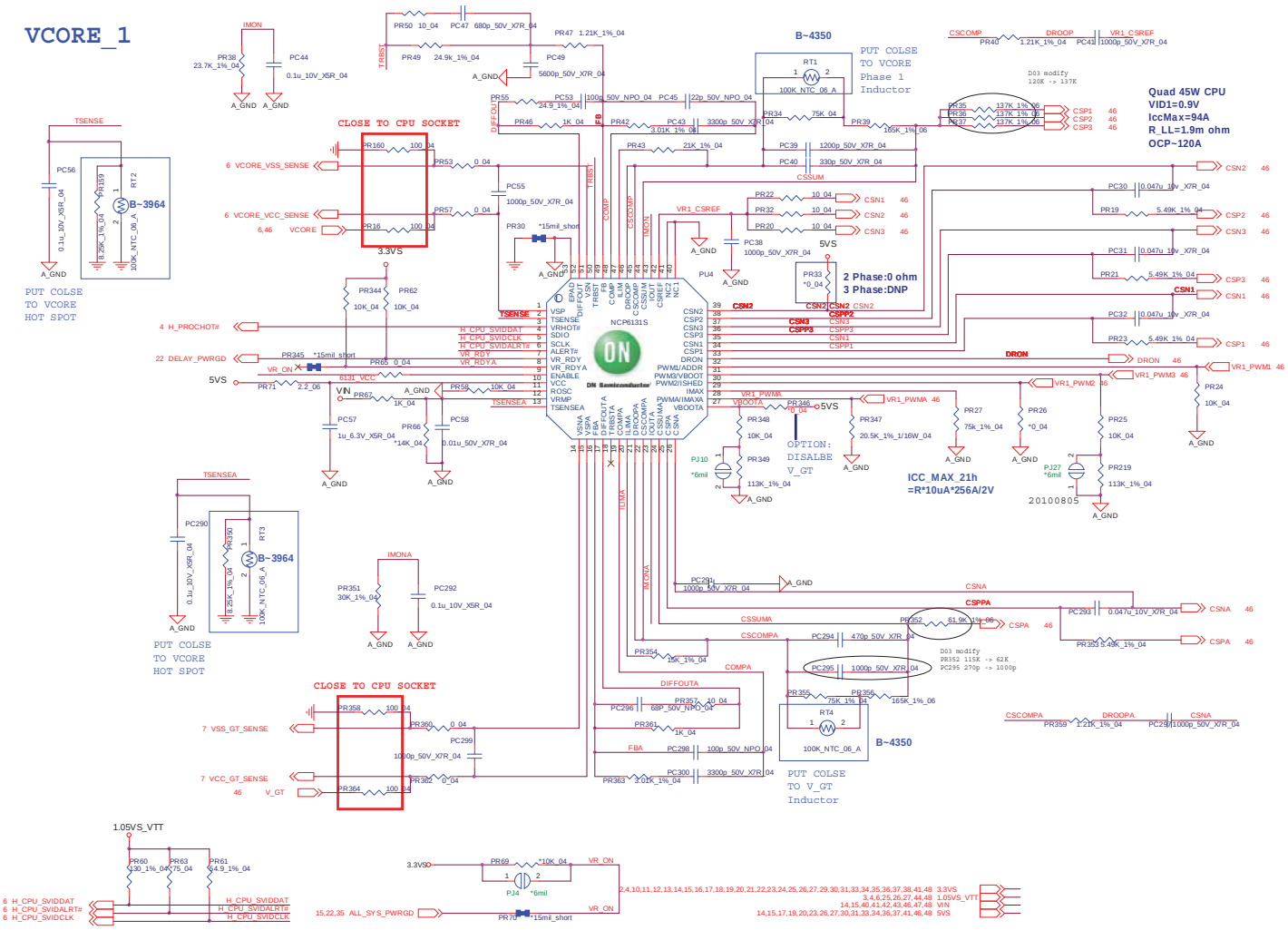
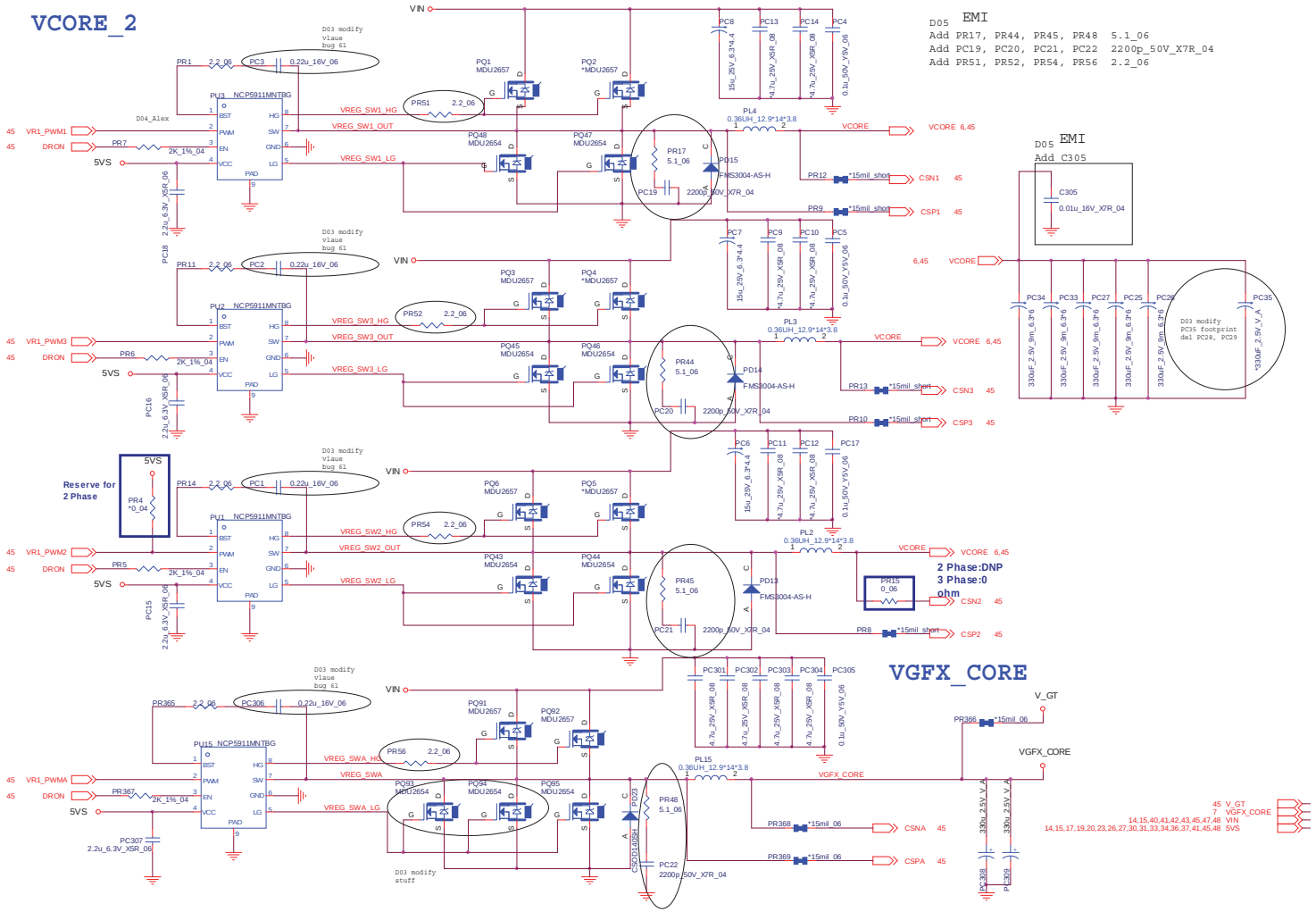
Power V-Core 1



Power V-Core 2



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Power V-Core 2

AC_In, Charger

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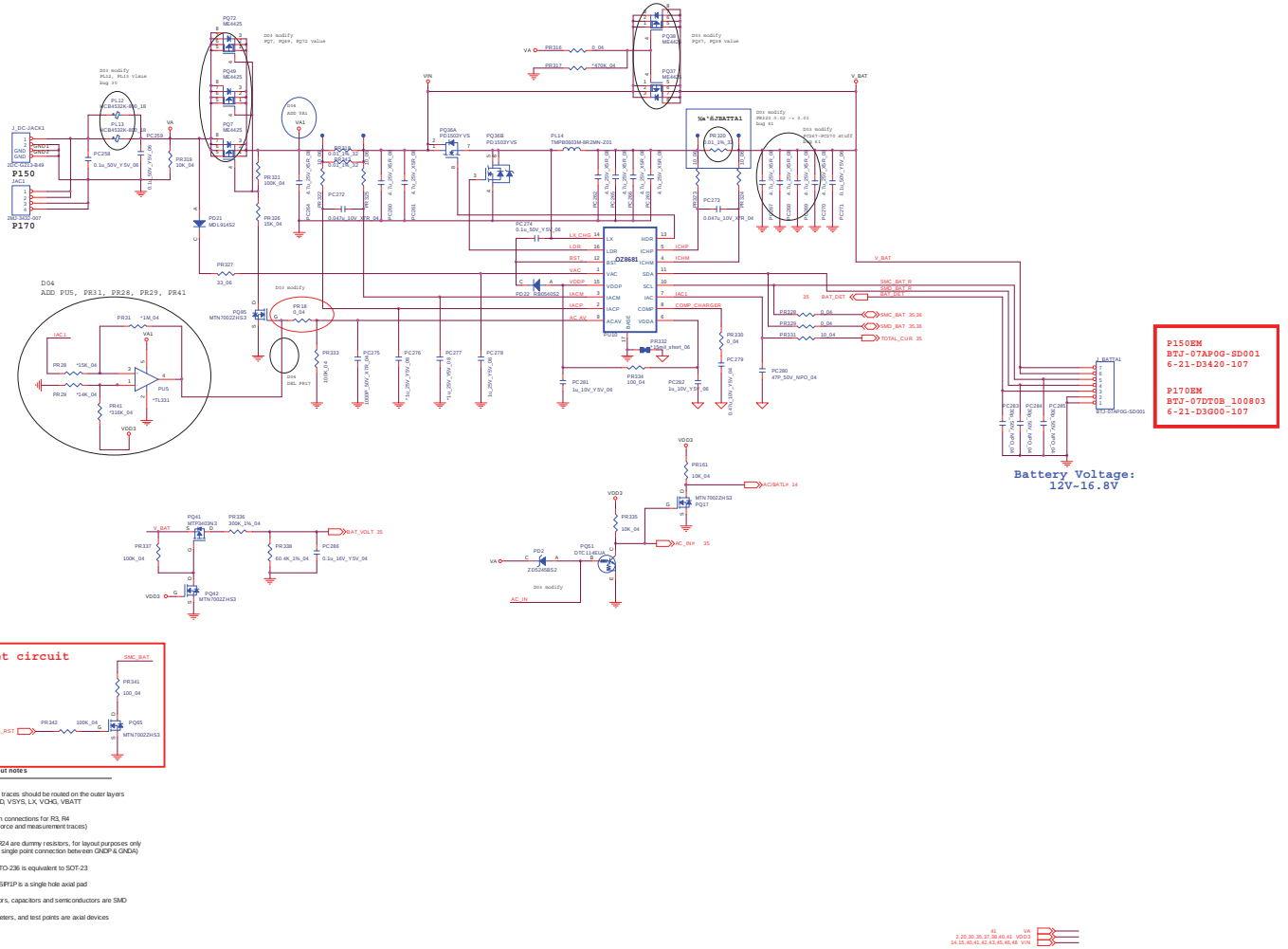
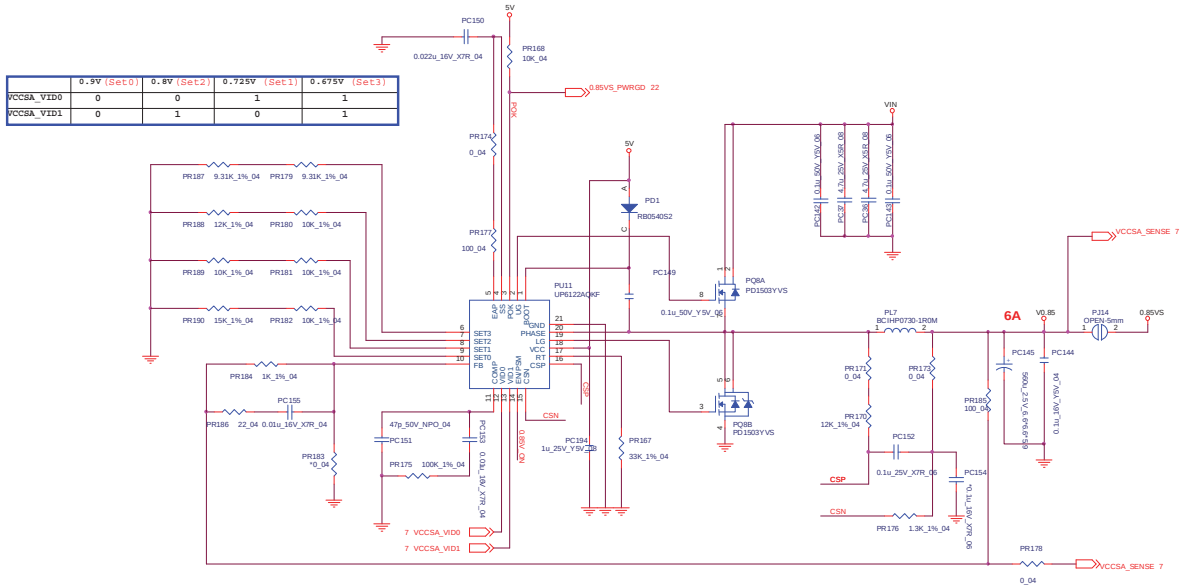
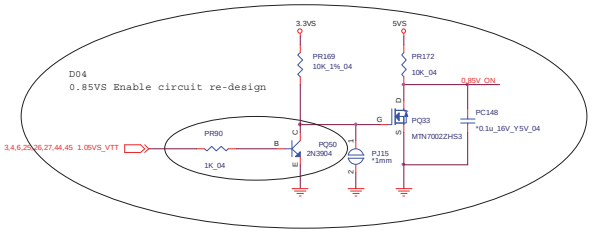
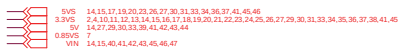
AC_In, Charger



Power 0.85VS







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Power 0.85VS

Audio Board

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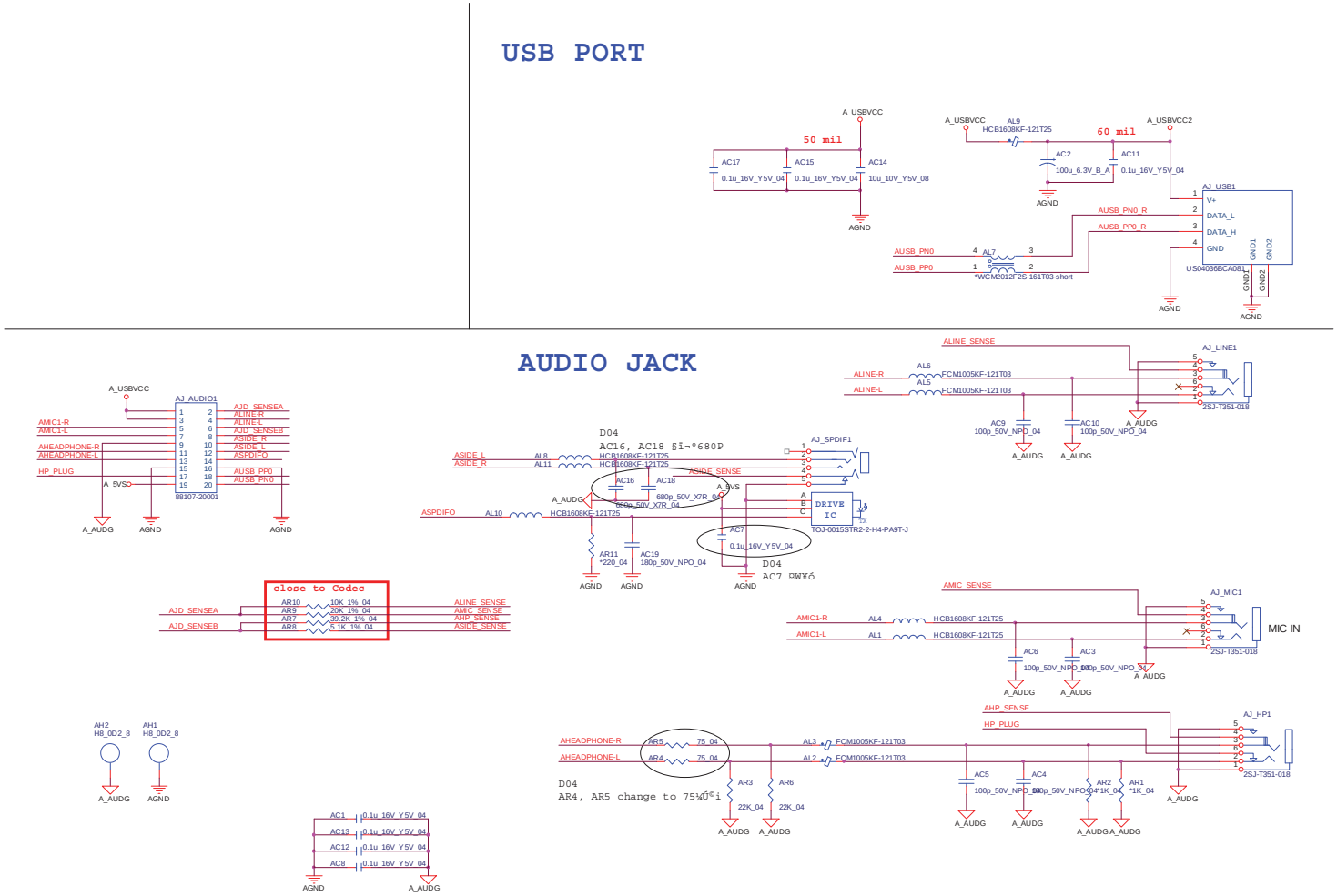
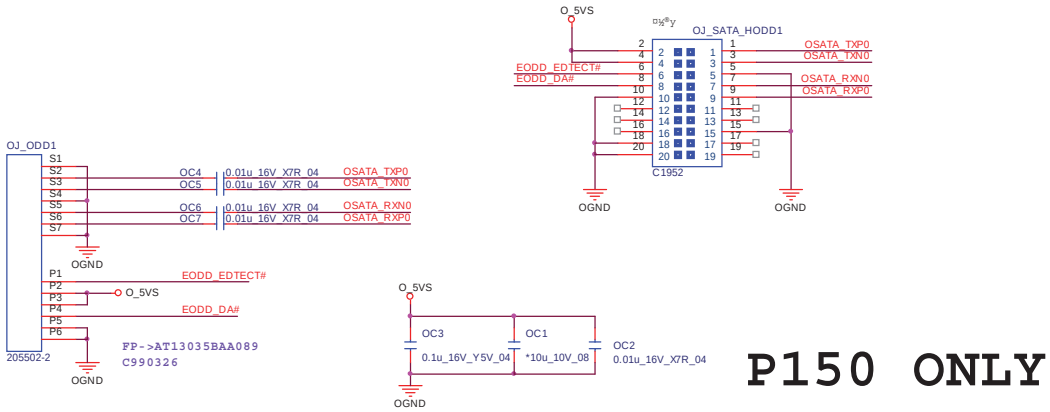
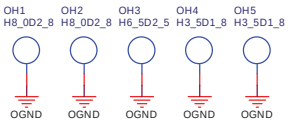
Audio Board



P150 ODD Board



P150 ONLY



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P150 ODD Board

P150 Click Board

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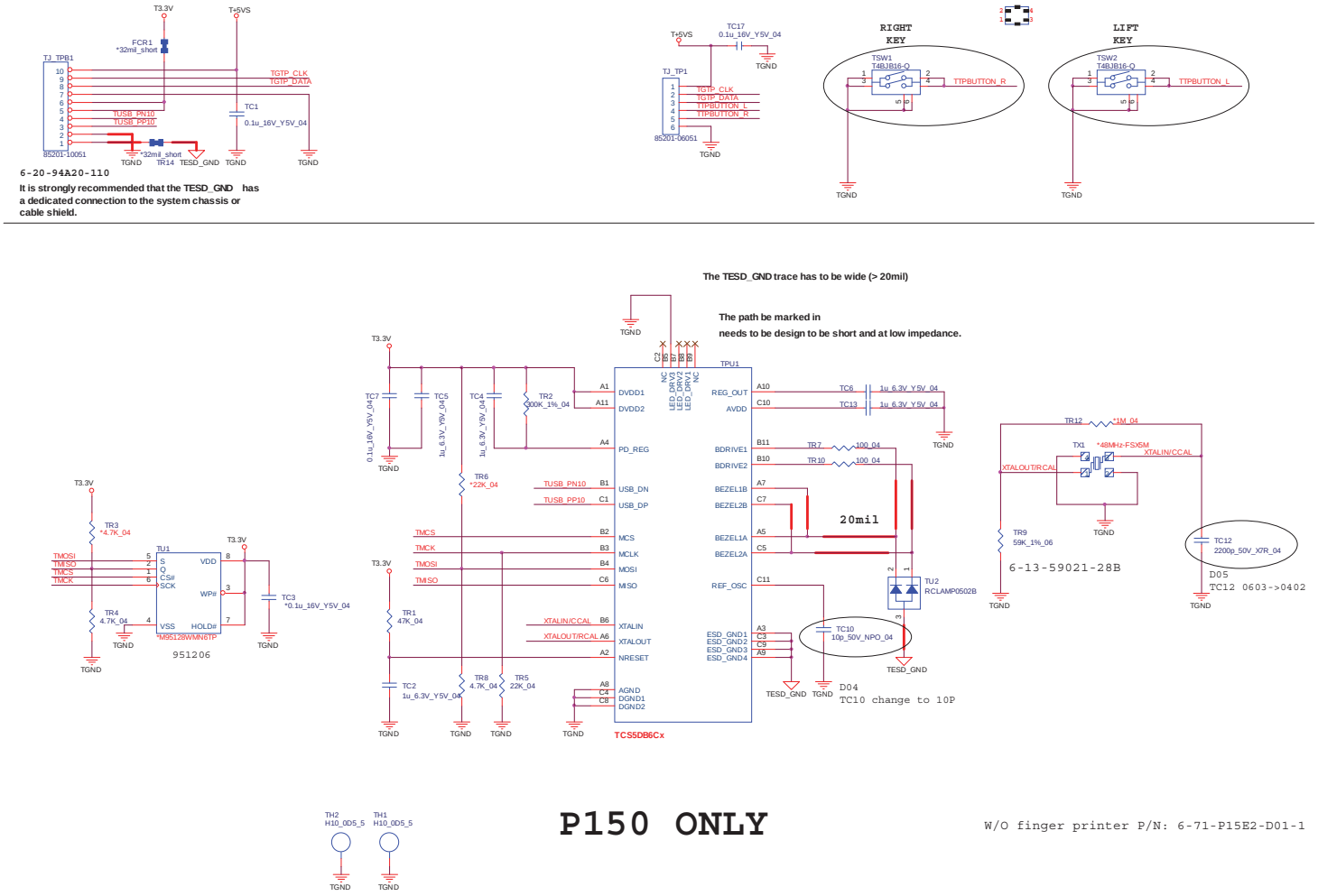
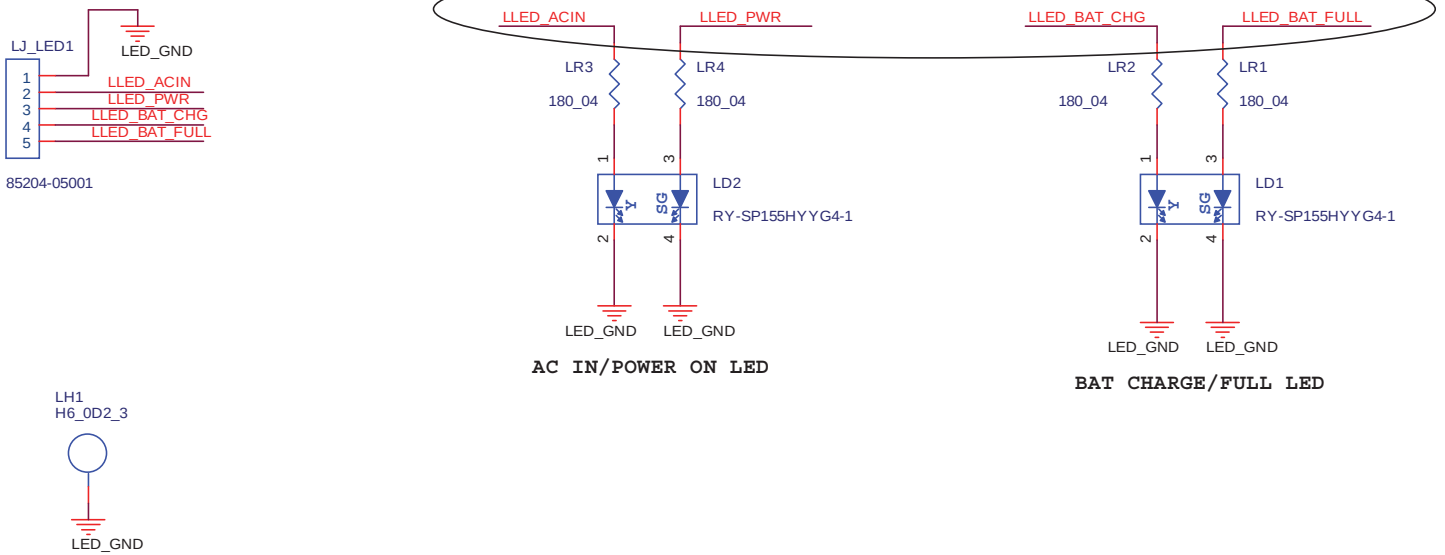
P150 Click Board



P150 LED 1 Board



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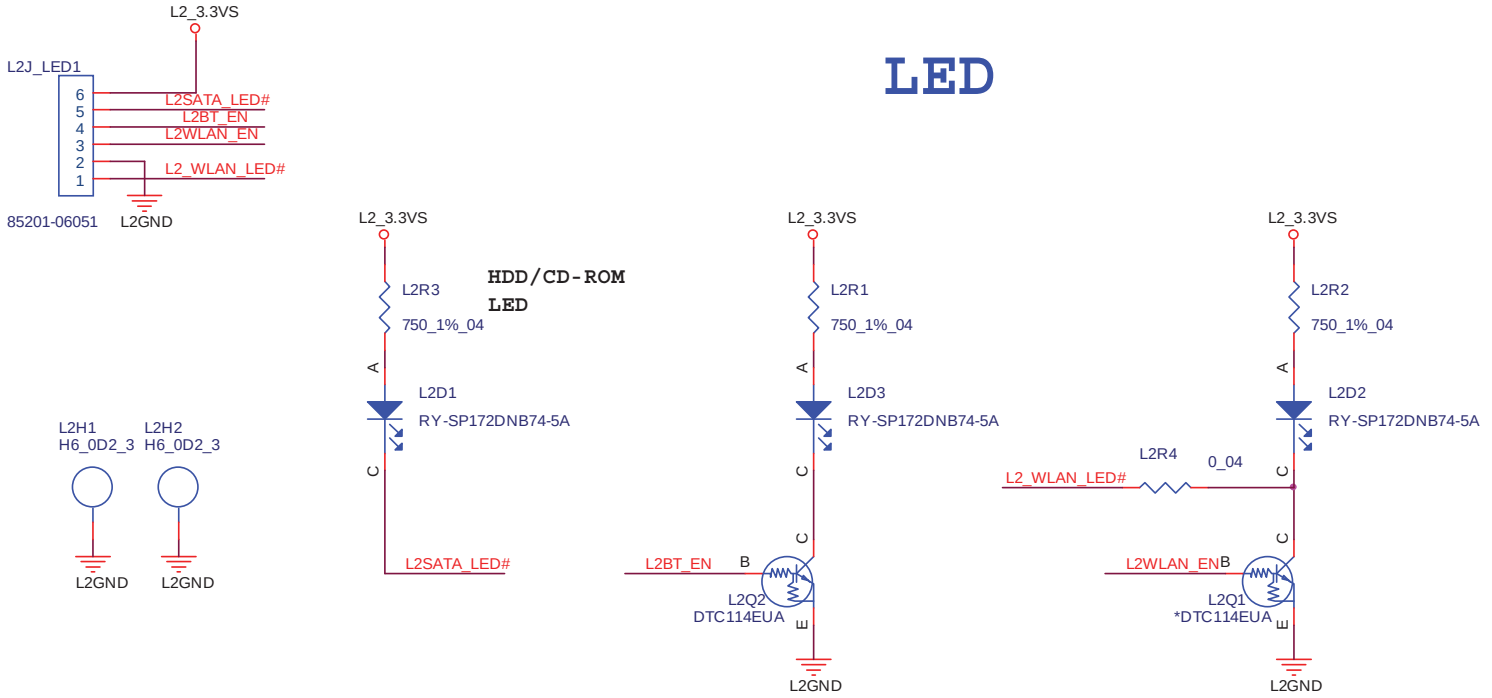
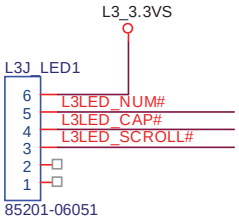
P150 LED 1 Board

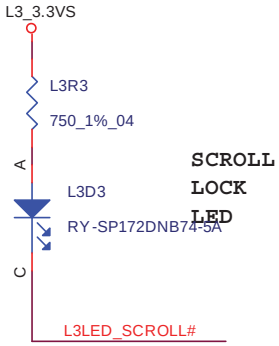
P150 LED 2 Board

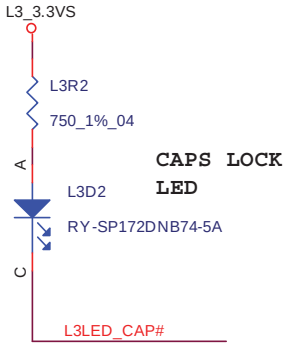
Sheet 53 of 61
P150 LED 2 Board

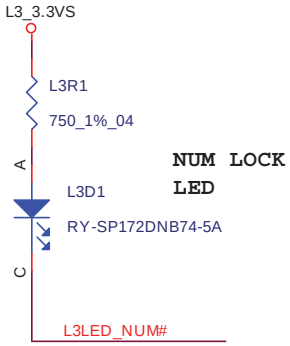


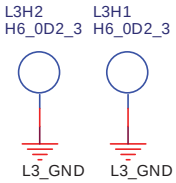
P150 LED 3 Board











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P150 LED 3 Board

P170 HDD & ODD Board

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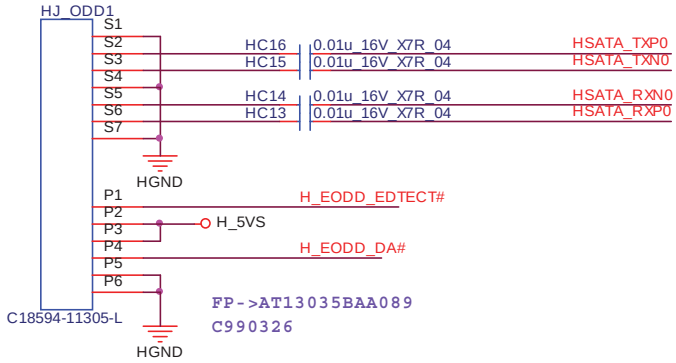
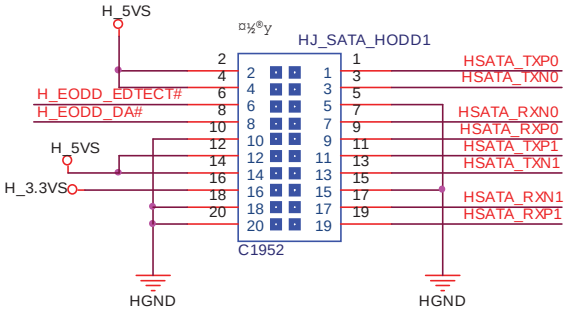
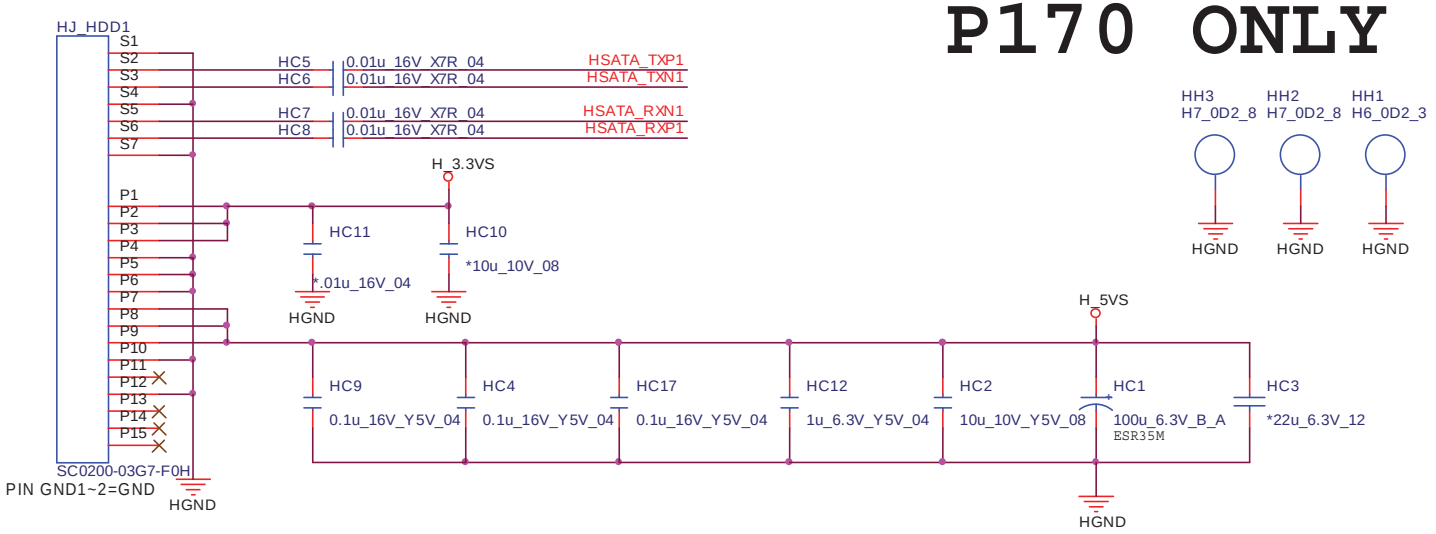
P170 HDD& ODD Board

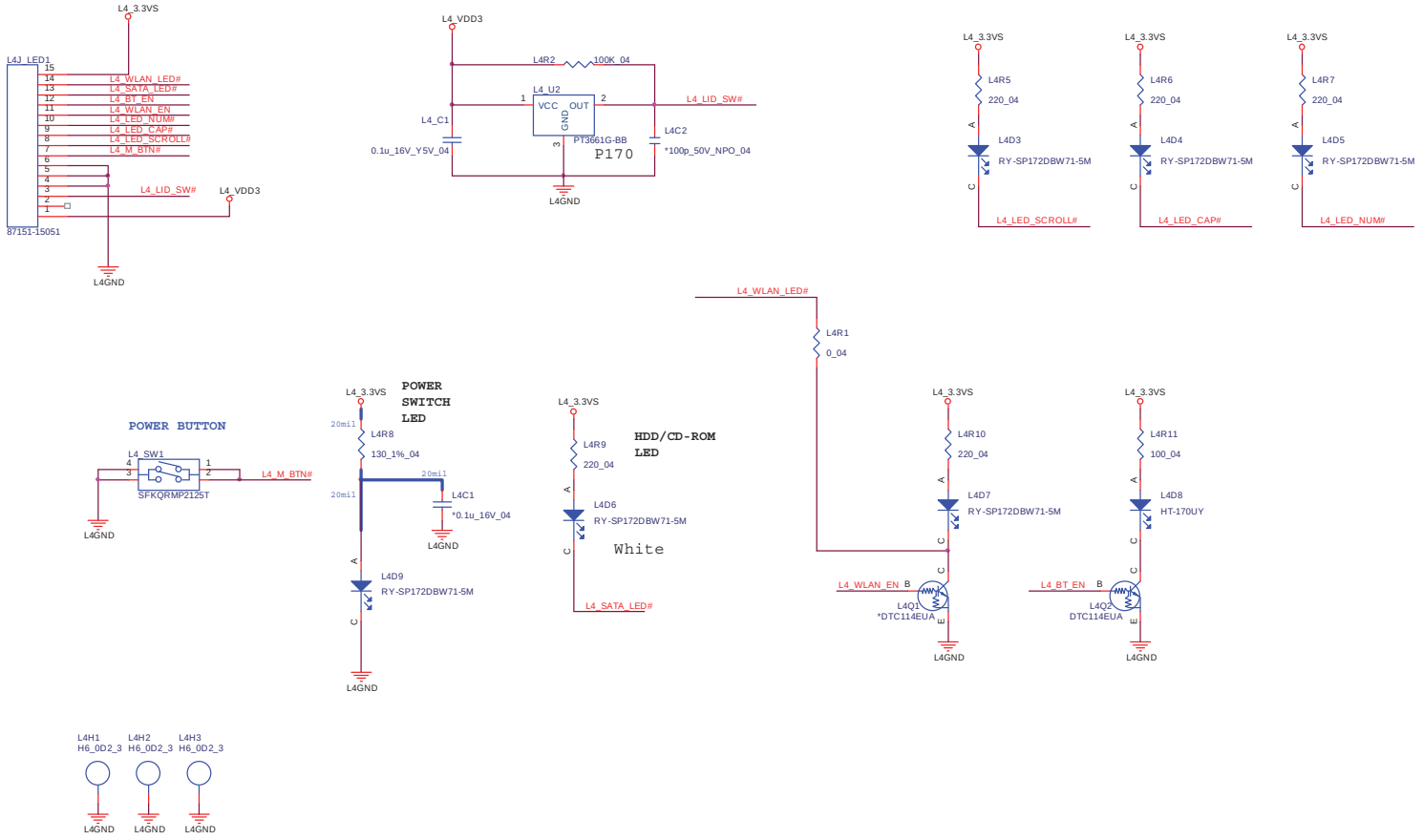






P170 ONLY

P170 LED Board



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P170 LED Board

P170 Click Board

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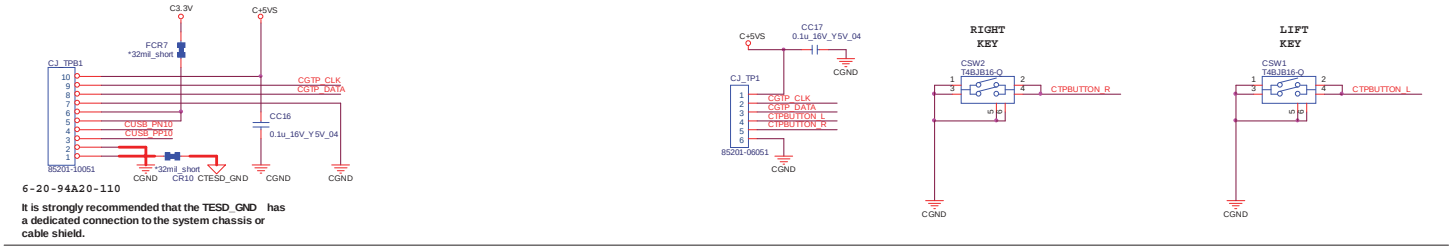
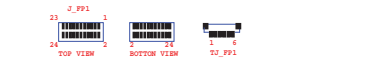
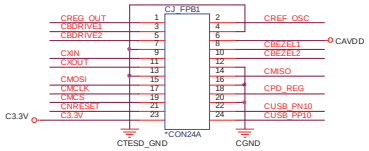
P170 Click Board

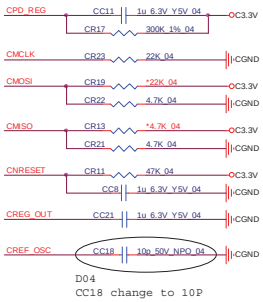


P170 ONLY

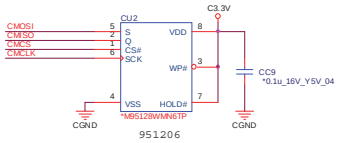


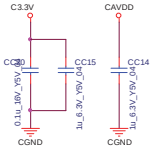


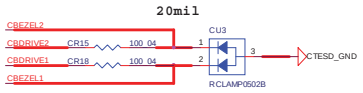
Place Botton

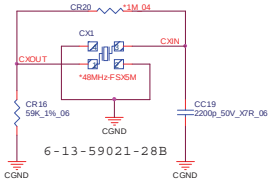


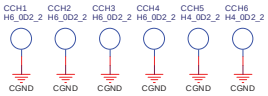
D04
CC18 change to 10P



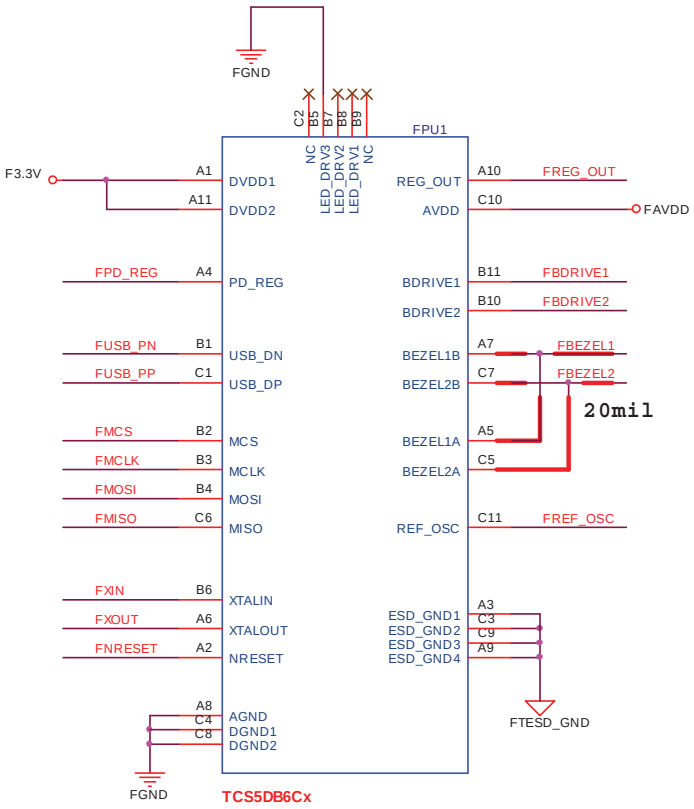


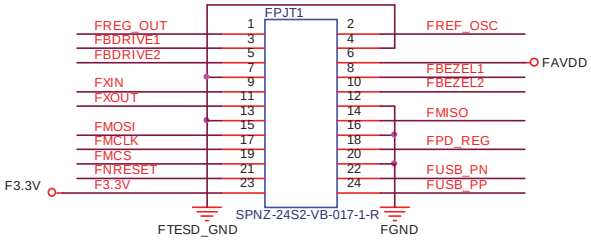






P170 Fingerprint Board





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P170 Fingerprint Board

P170 ONLY

P150 HDD Board

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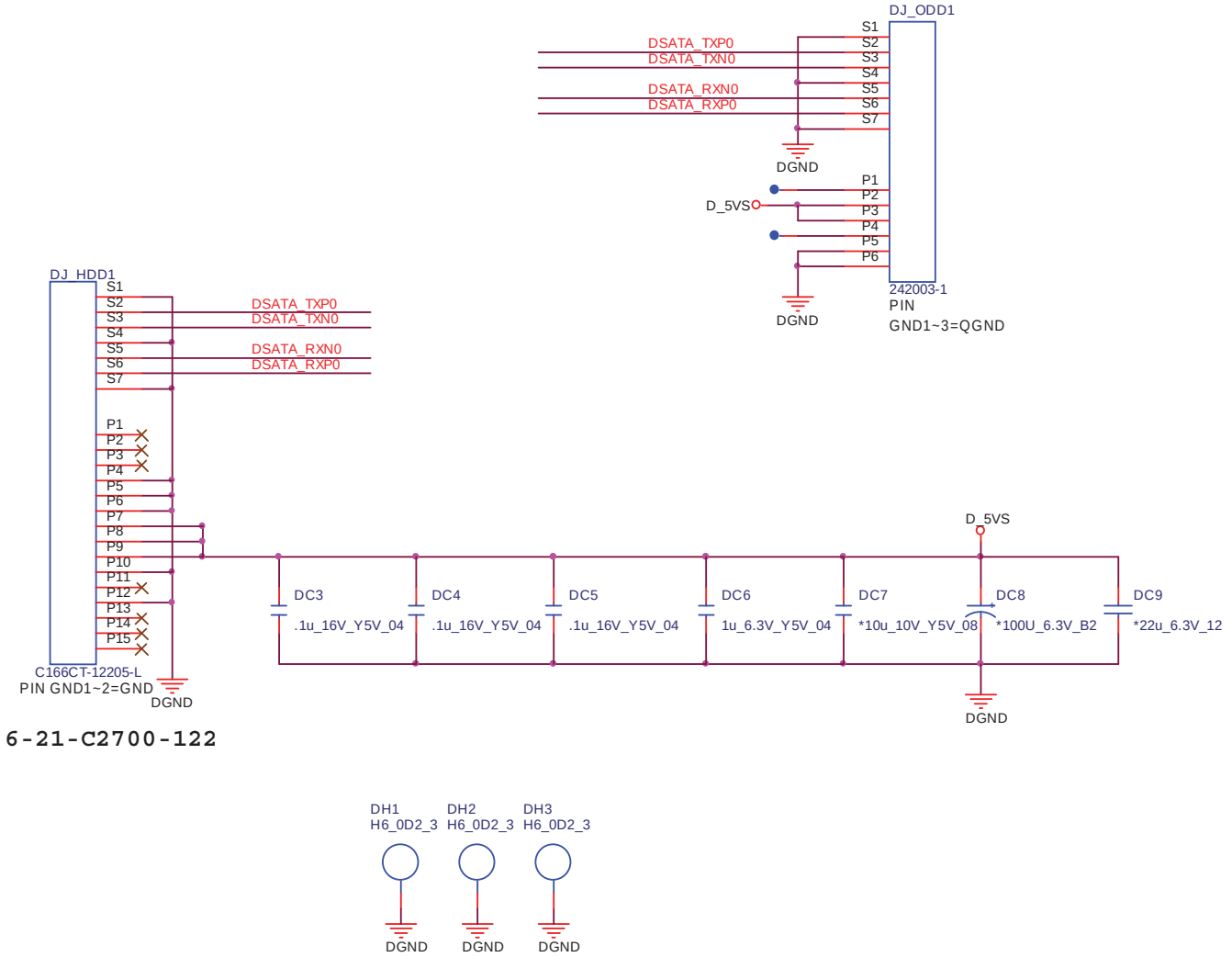
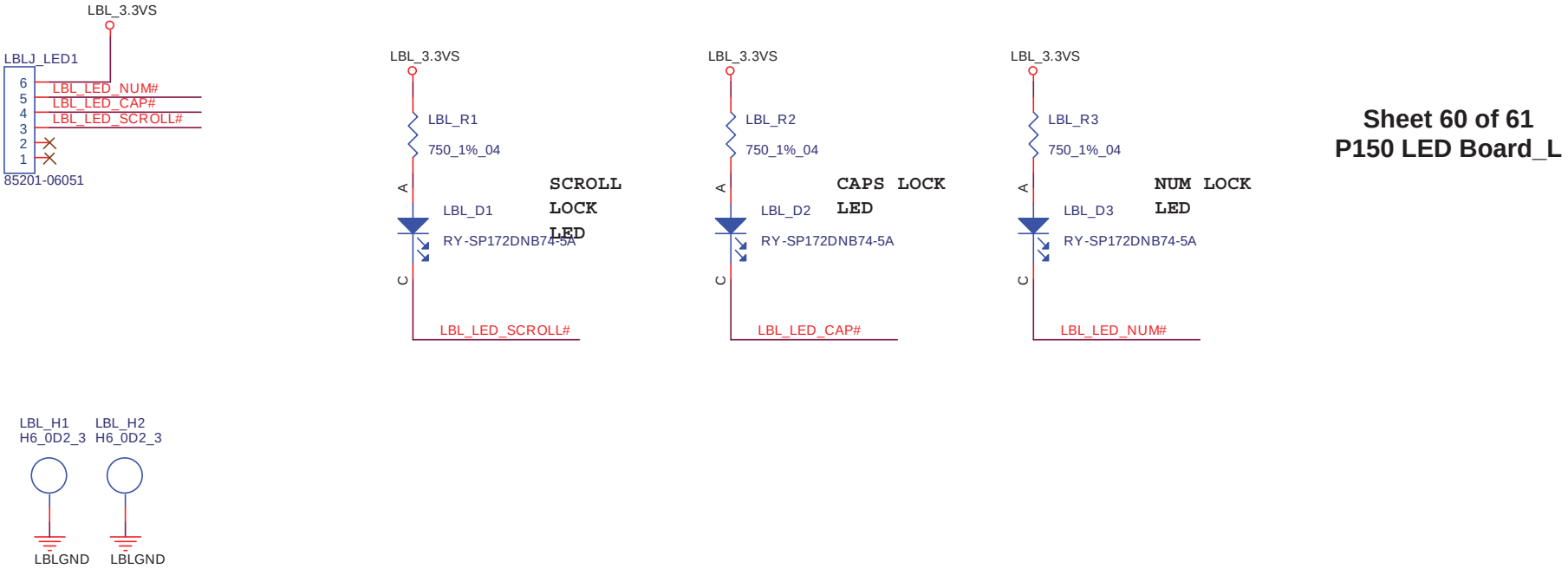
P150 HDD Board



P150 LED Board_L



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P150 LED Board_L

P150 LED Board_R

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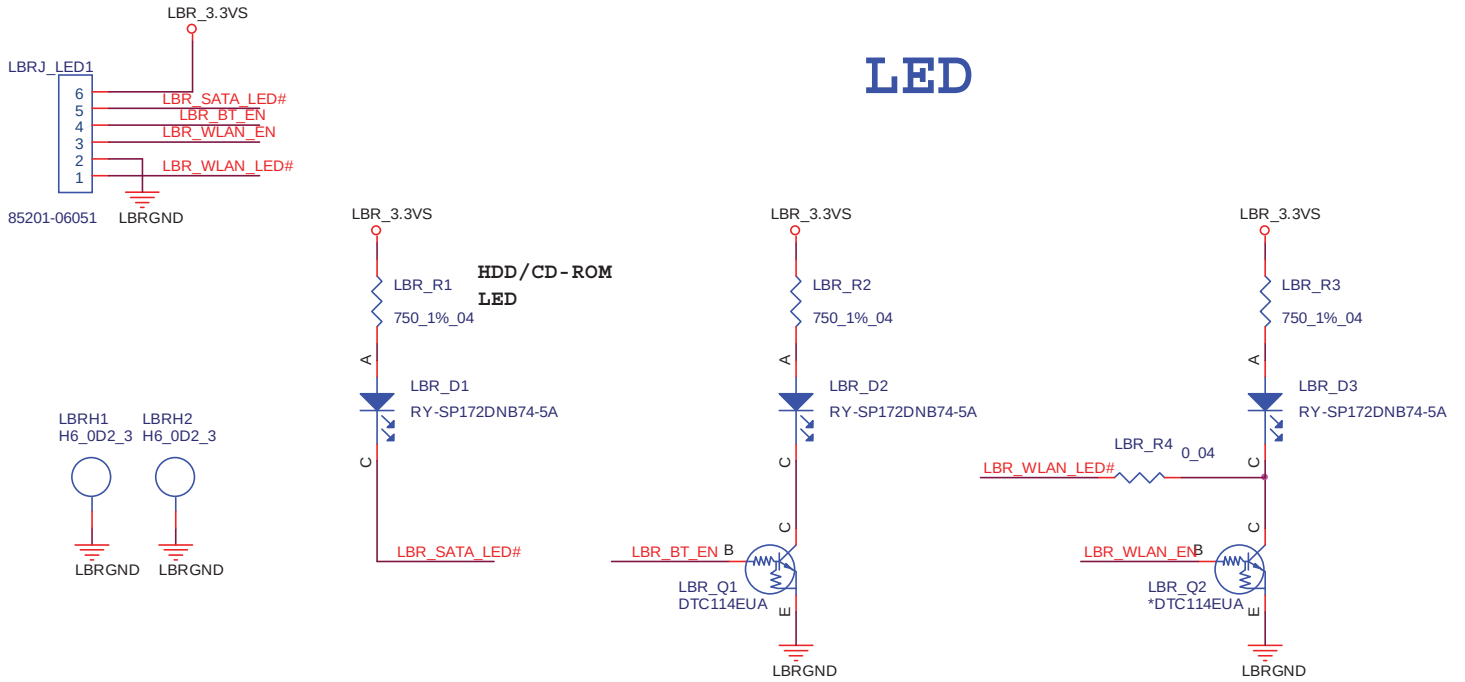
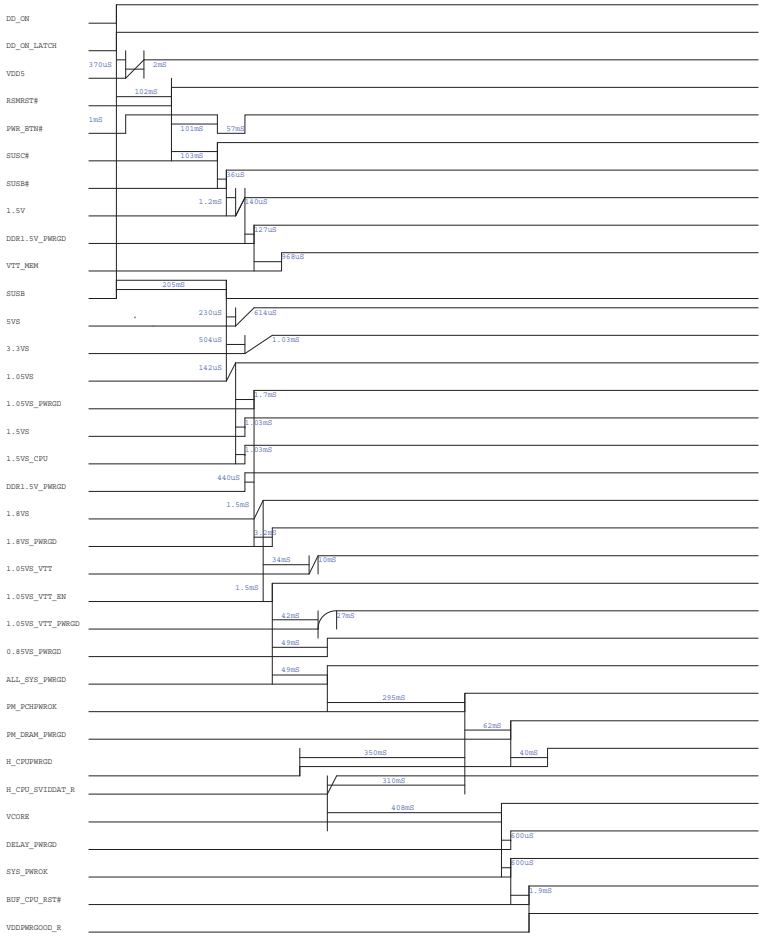
P150 LED Board_R



Power on Sequence

P150EM_D02 POWER on SEQUENCE



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Power on Sequence

Appendix C:Updating the FLASH ROM BIOS

To update the FLASH ROM BIOS, you must:

- Download the BIOS update from the web site.
- Unzip the files onto a bootable CD/DVD/USB Flash Drive.
- Reboot your computer from an external CD/DVD/USB Flash Drive.
- Use the flash tools to update the flash BIOS using the commands indicated below.
- Restart the computer booting from the HDD and press **F2** at startup enter the BIOS.
- Load setup defaults from the BIOS and save the default settings and exit the BIOS to restart the computer.
- After rebooting the computer you may restart the computer again and make any required changes to the default BIOS settings.

Download the BIOS

1. Go to **www.clevo.com.tw** and point to **E-Services** and click **E-Channel**.
2. Use your user ID and password to access the appropriate download area (BIOS), and download the latest BIOS files (the BIOS file will be contained in a batch file that may be run directly once unzipped) for your computer model (**see sidebar for important information on BIOS versions**).

Unzip the downloaded files to a bootable CD/DVD/ or USB Flash drive

1. Insert a bootable CD/DVD/USB flash drive into the CD/DVD drive/USB port of the computer containing the downloaded files.
2. Use a tool such as Winzip or Winrar to unzip all the BIOS files and refresh tools to your bootable CD/DVD/USB flash drive (you may need to create a bootable CD/DVD with the files using a 3rd party software).

Set the computer to boot from the external drive

1. With the bootable CD/DVD/USB flash drive containing the BIOS files in your CD/DVD drive/USB port, restart the computer and press **F2** (in most cases) to enter the BIOS.
2. Use the arrow keys to highlight the **Boot** menu.
3. Use the "+" and "-" keys to move boot devices up and down the priority order.
4. Make sure that the CD/DVD drive/USB flash drive is set first in the boot priority of the BIOS.
5. Press **F4** to save any changes you have made and exit the BIOS to restart the computer.

BIOS Version

Make sure you download the latest correct version of the BIOS appropriate for the computer model you are working on.

You should only download BIOS versions that are V1.01.XX or higher as appropriate for your computer model.

Note that BIOS versions are not backward compatible and therefore **you may not downgrade your BIOS to an older version** after upgrading to a later version (e.g if you upgrade a BIOS to ver 1.01.05, you **MAY NOT** then go back and flash the BIOS to ver 1.01.04).

Use the flash tools to update the BIOS

1. Make sure you are not loading any memory management programs such as HIMEM by holding the **F8** key as you see the message "**Starting MS-DOS**". You will then be prompted to give "**Y**" or "**N**" responses to the programs being loaded by DOS. Choose "N" for any memory management programs.
2. You should now be at the DOS prompt e.g: DISK **C**:\> (C is the designated drive letter for the CD/DVD drive/USB flash drive).
3. **Type the following command** at the DOS prompt:

   C:\> Flash.bat

4. The utility will then proceed to flash the BIOS.
5. You should then be prompted to press any key to restart the system or turn the power off, and then on again but make sure you remove the CD/DVD/USB flash drive from the CD/DVD drive/USB port before the computer restarts.

Restart the computer (booting from the HDD)

1. With the CD/DVD/USB flash drive removed from the CD/DVD drive/USB port the computer should restart from the HDD.
2. Press **F2** as the computer restarts to enter the BIOS.
3. Use the arrow keys to highlight the **Exit** menu.
4. Select **Load Setup Defaults** (or press **F3**) and select "**Yes**" to confirm the selection.
5. Press **F4** to save any changes you have made and exit the BIOS to restart the computer.

Your computer is now running normally with the updated BIOS

You may now enter the BIOS and make any changes you require to the default settings.