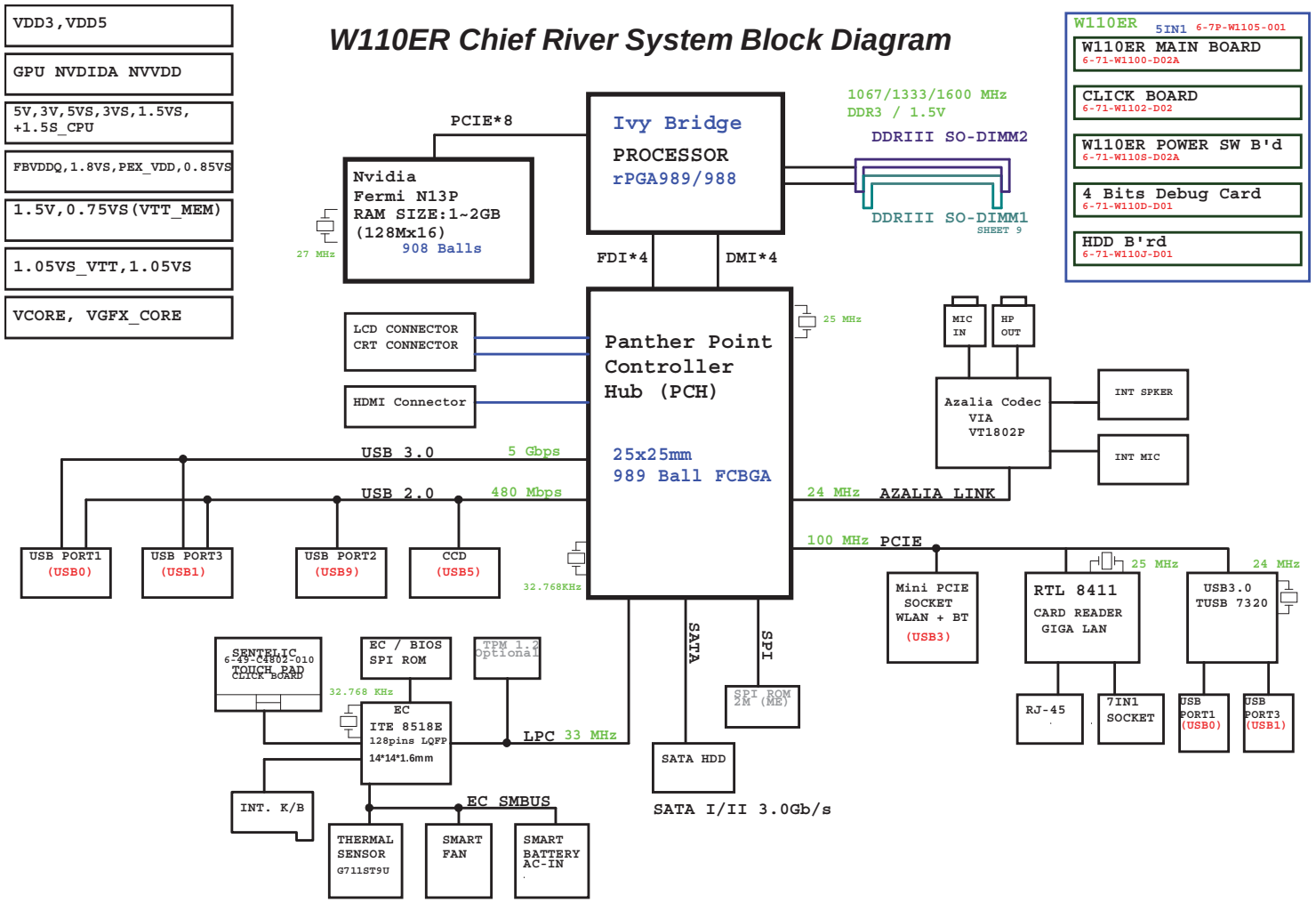
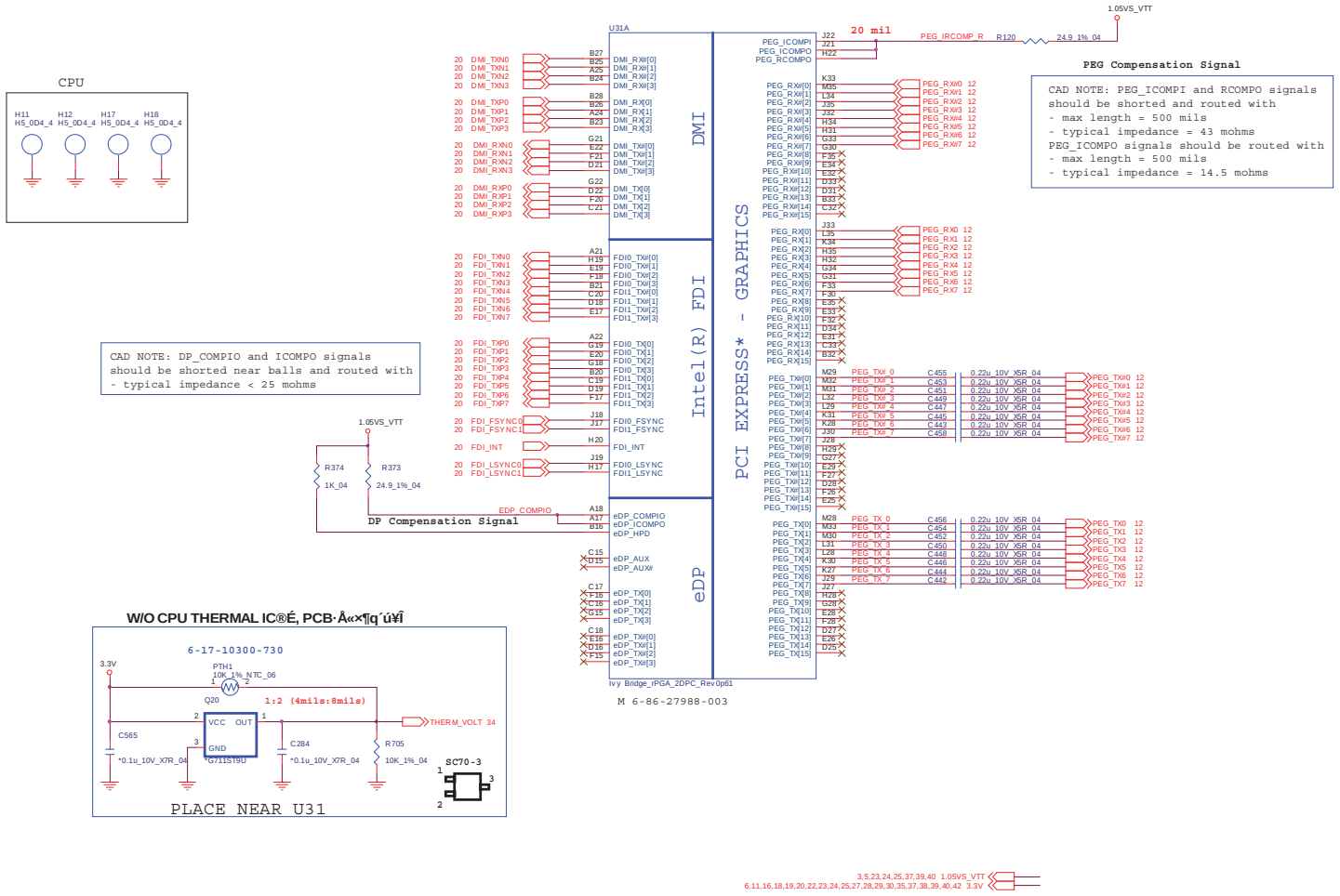
System Block Diagram

Sheet 1 of 48
System Block Diagram



Processor 1/7 - DMI, FDI, PEG

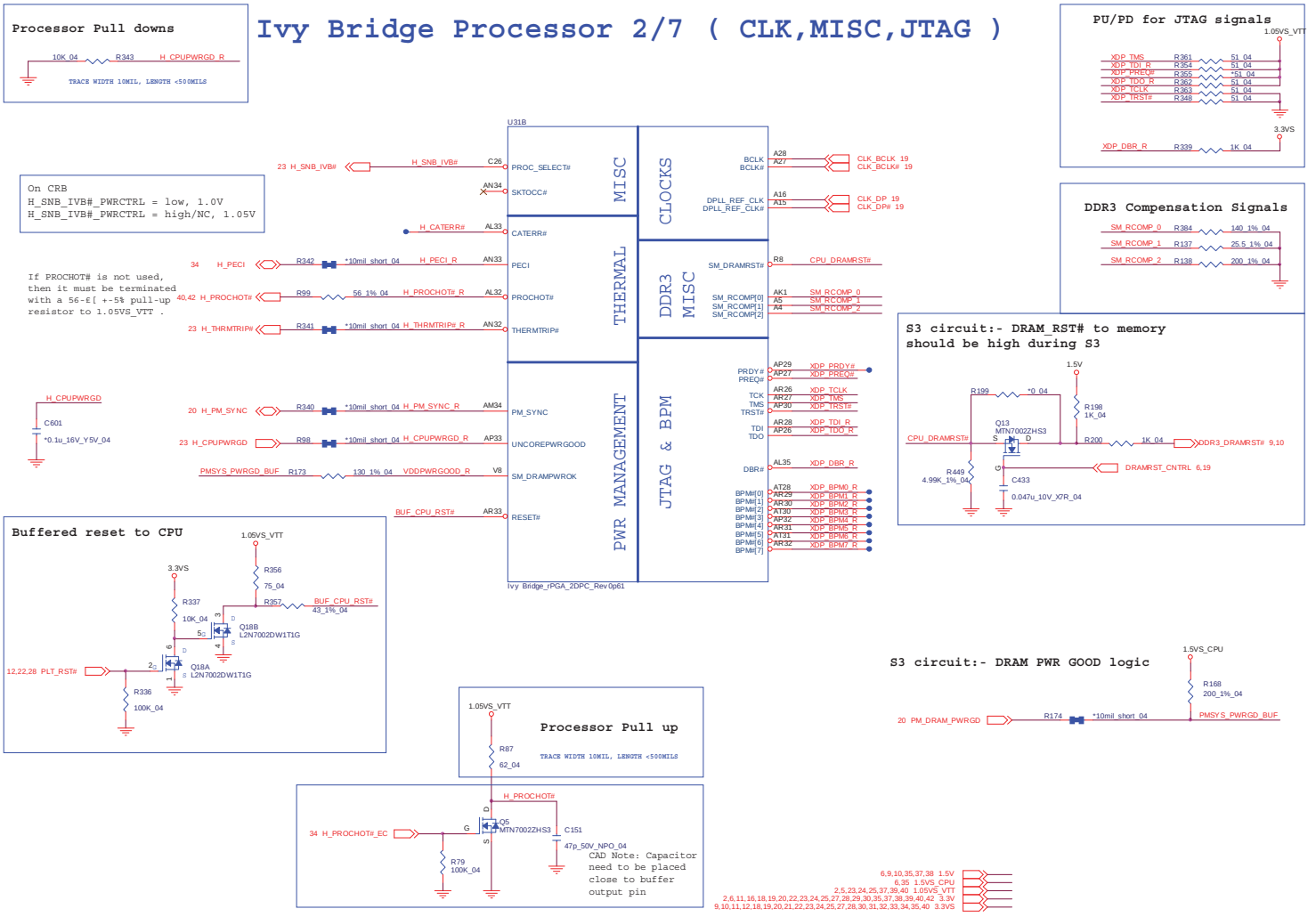
Ivy Bridge Processor 1/7 (DMI,PEG,FDI)



Sheet 2 of 48
Processor 1/7 - DMI, FDI, PEG

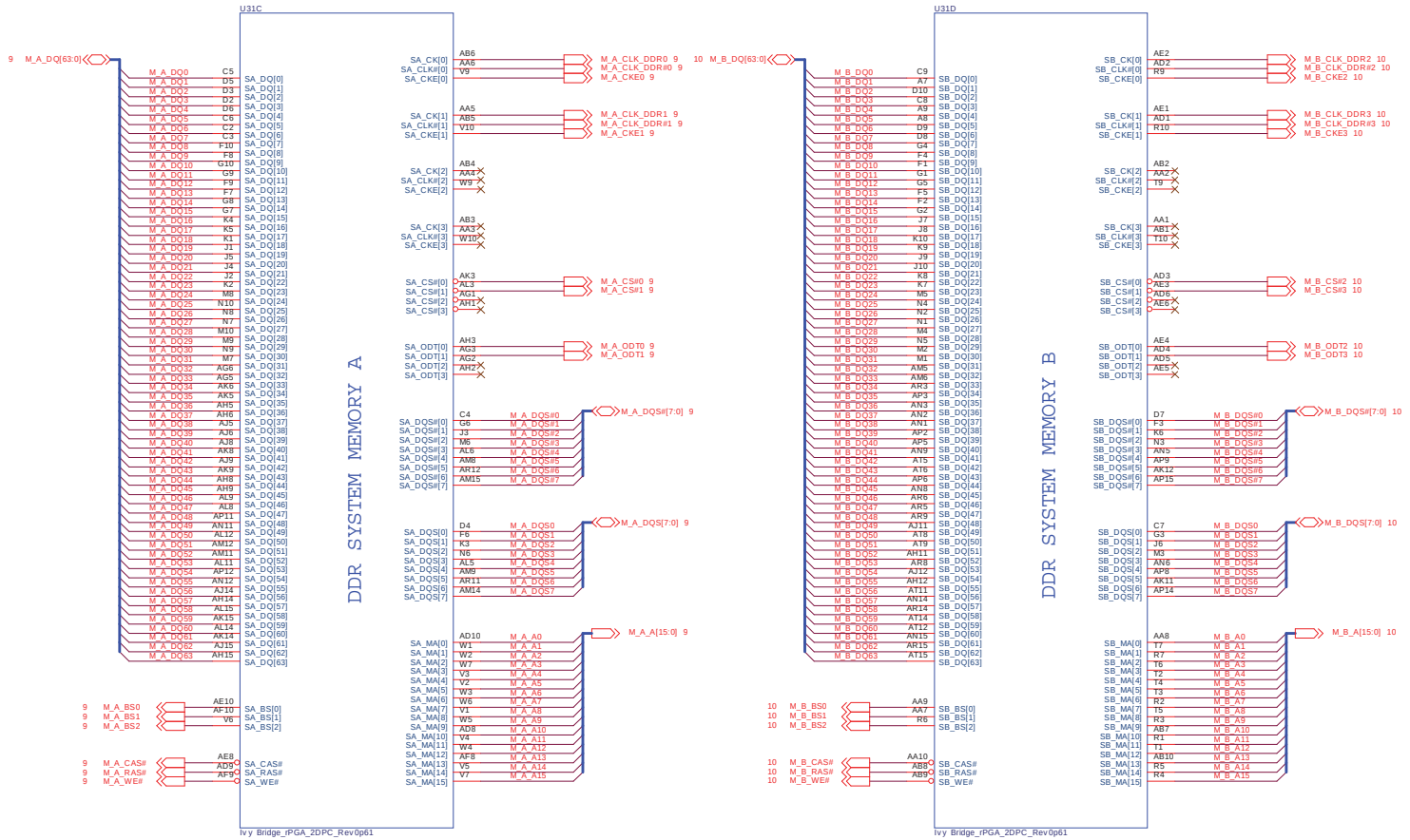
Processor 2/7 - CLK, MISC

Sheet 3 of 48
Processor 2/7 - CLK, MISC



Processor 3/7 - DDR3

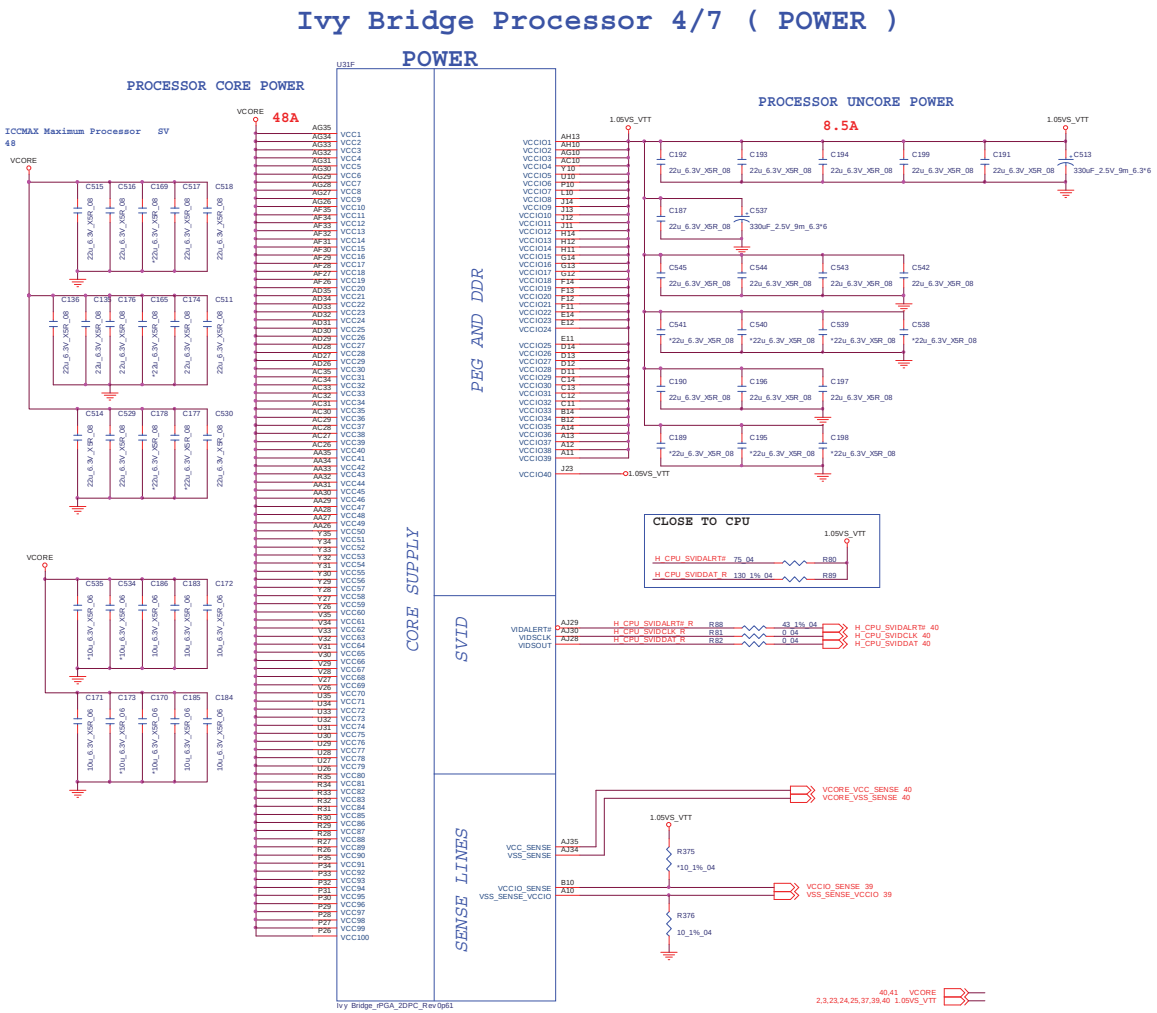
Ivy Bridge Processor 3/7 (DDR3)



Sheet 4 of 48
Processor 3/7 - DDR3

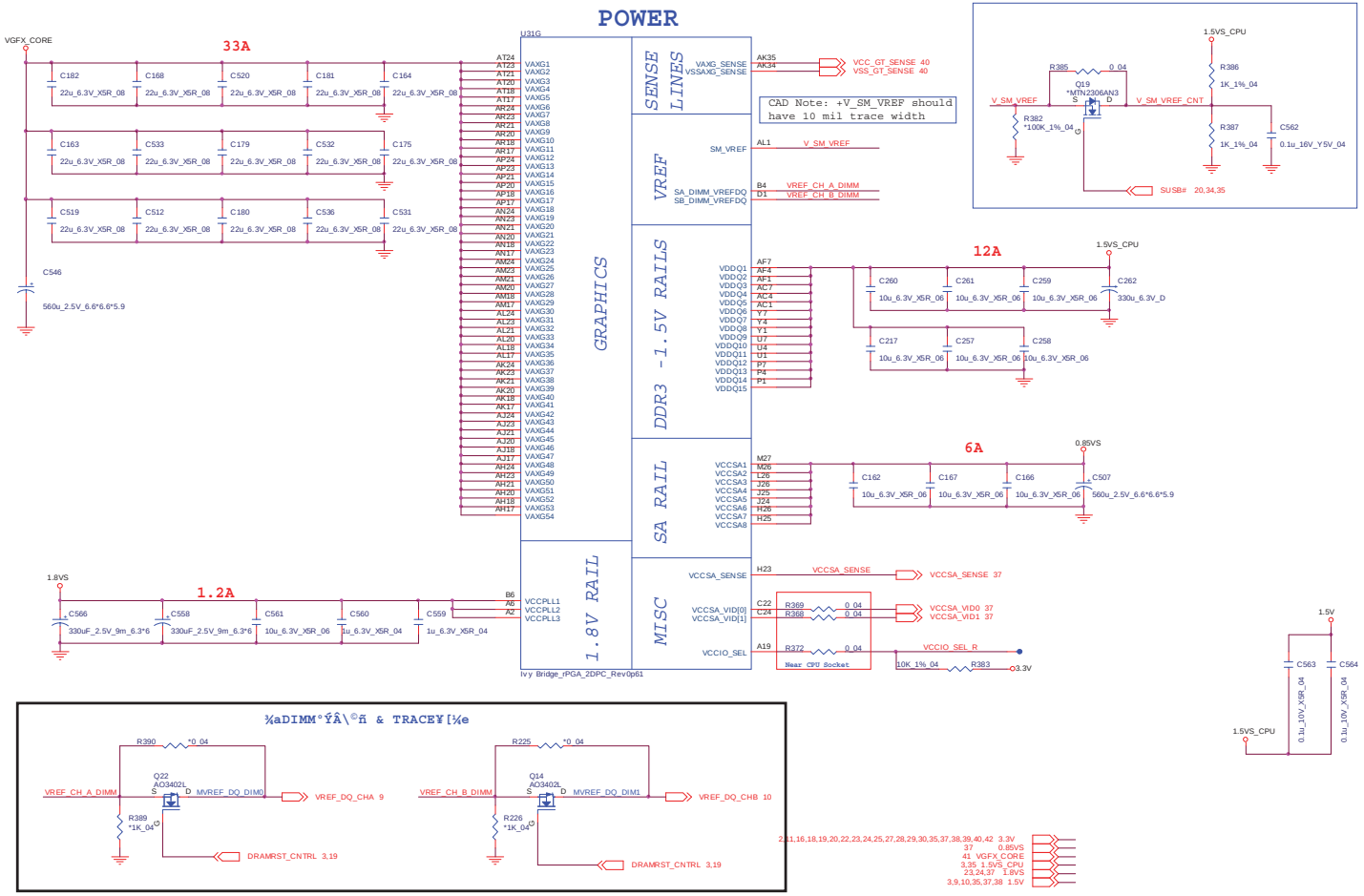
Processor 4/7 - Power

Sheet 5 of 48
Processor 4/7 - Power



Processor 5/7 - GFX PWR

Ivy Bridge Processor 5/7 (GRAPHICS POWER)



Sheet 6 of 48
Processor 5/7 - GFX PWR

Processor 6/7 - GND

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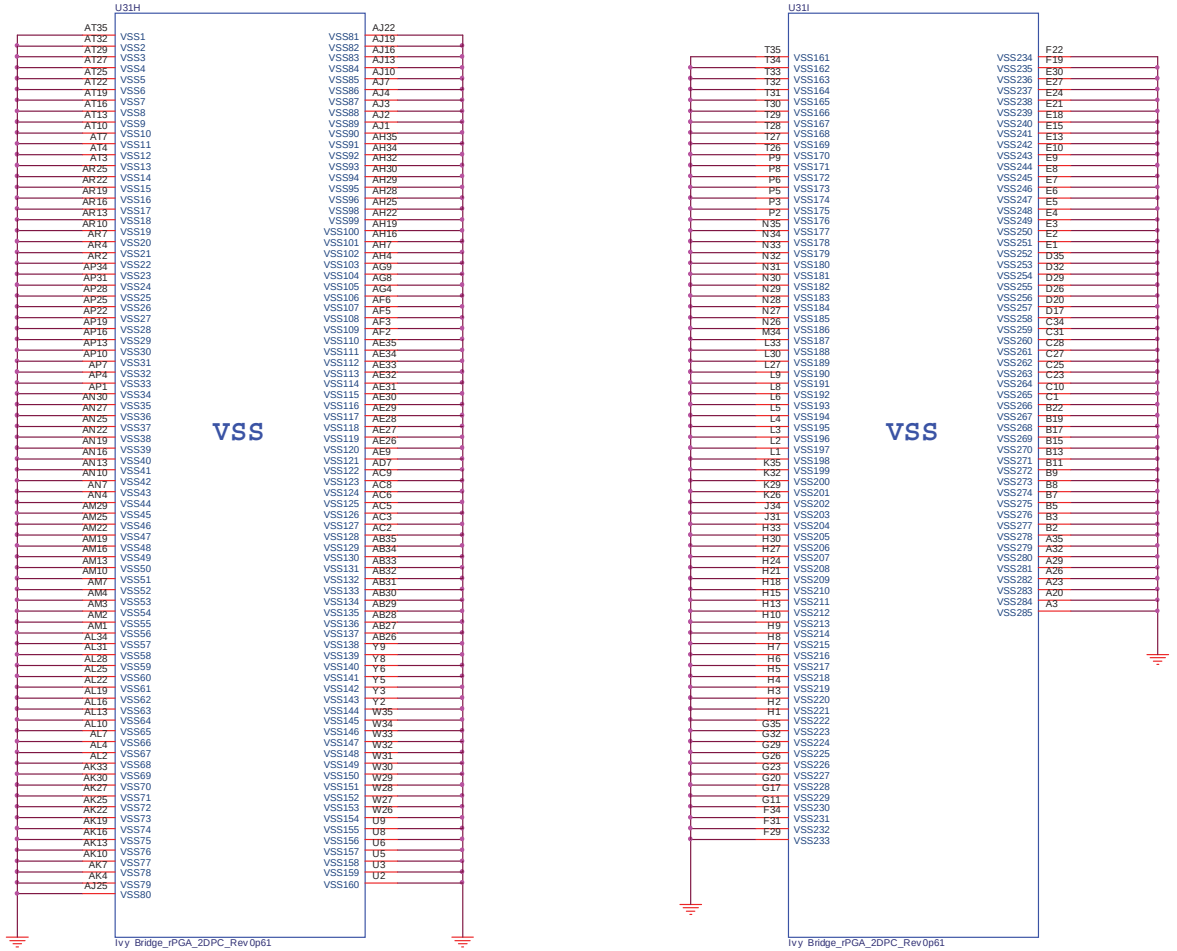
Processor 6/7 - GND

Ivy Bridge Processor 6/7 (GND)

CAD Note: 0 ohm resistor should be placed close to CPU



Processor 7/7 - RSVD

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 R113 *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 R111 *1K_04

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

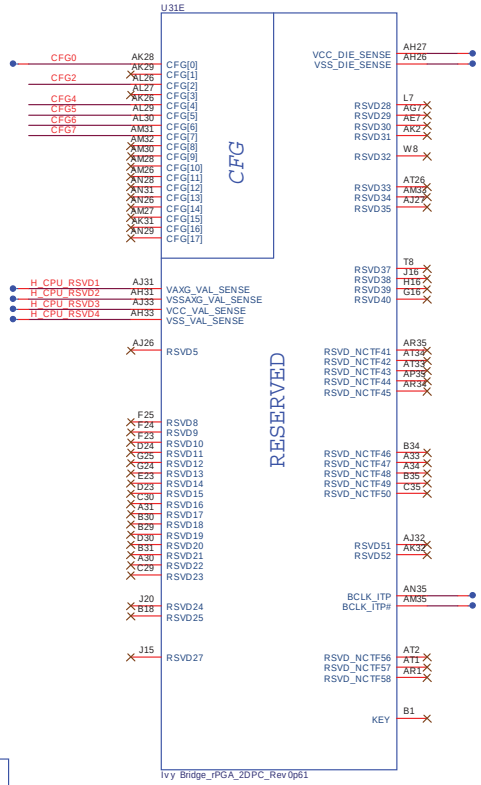
CFG5 R112 *1K_04

CFG6 R106 *1K_04

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

CFG7 R105 *1K_04

Ivy Bridge Processor 7/7 (RESERVED)



Sheet 8 of 48
Processor 7/7 - RSVD

DDR3 SO-DIMM_0

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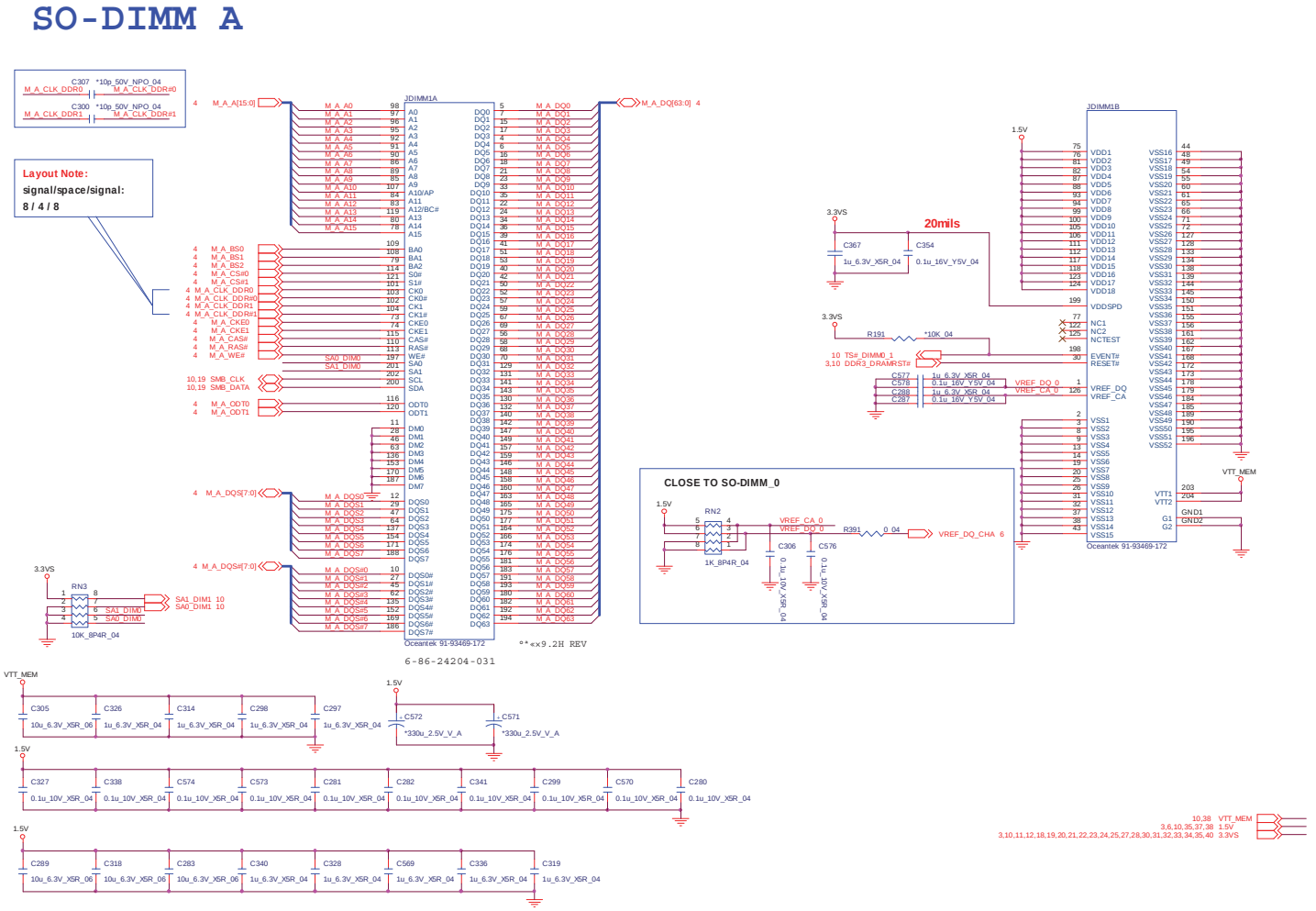
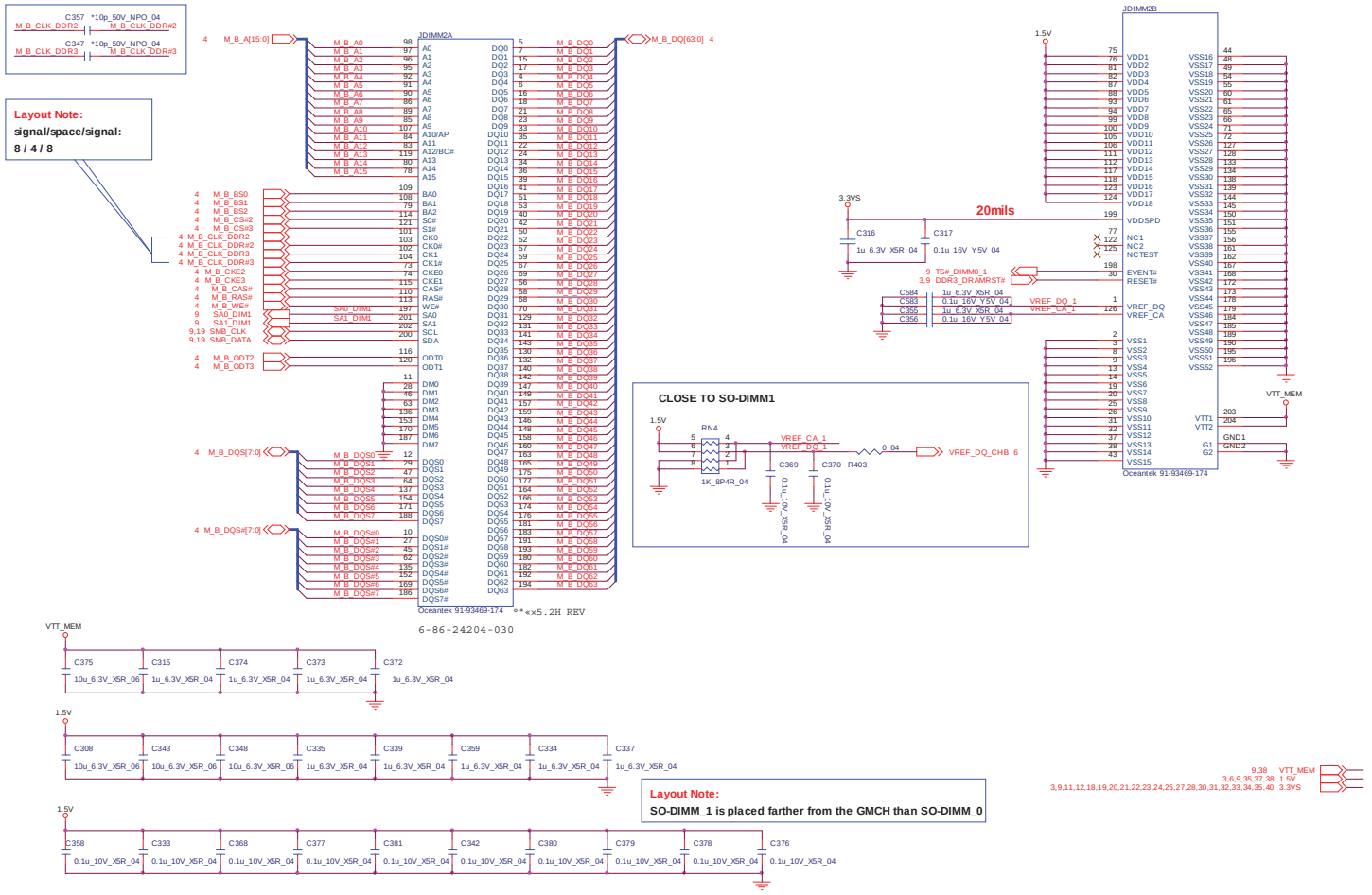
DDR3 SO-DIMM_0



DDR3 SO-DIMM_1

SO-DIMM B



Sheet 10 of 48
DDR3 SO-DIMM_1

PANEL, INVERTER, CRT

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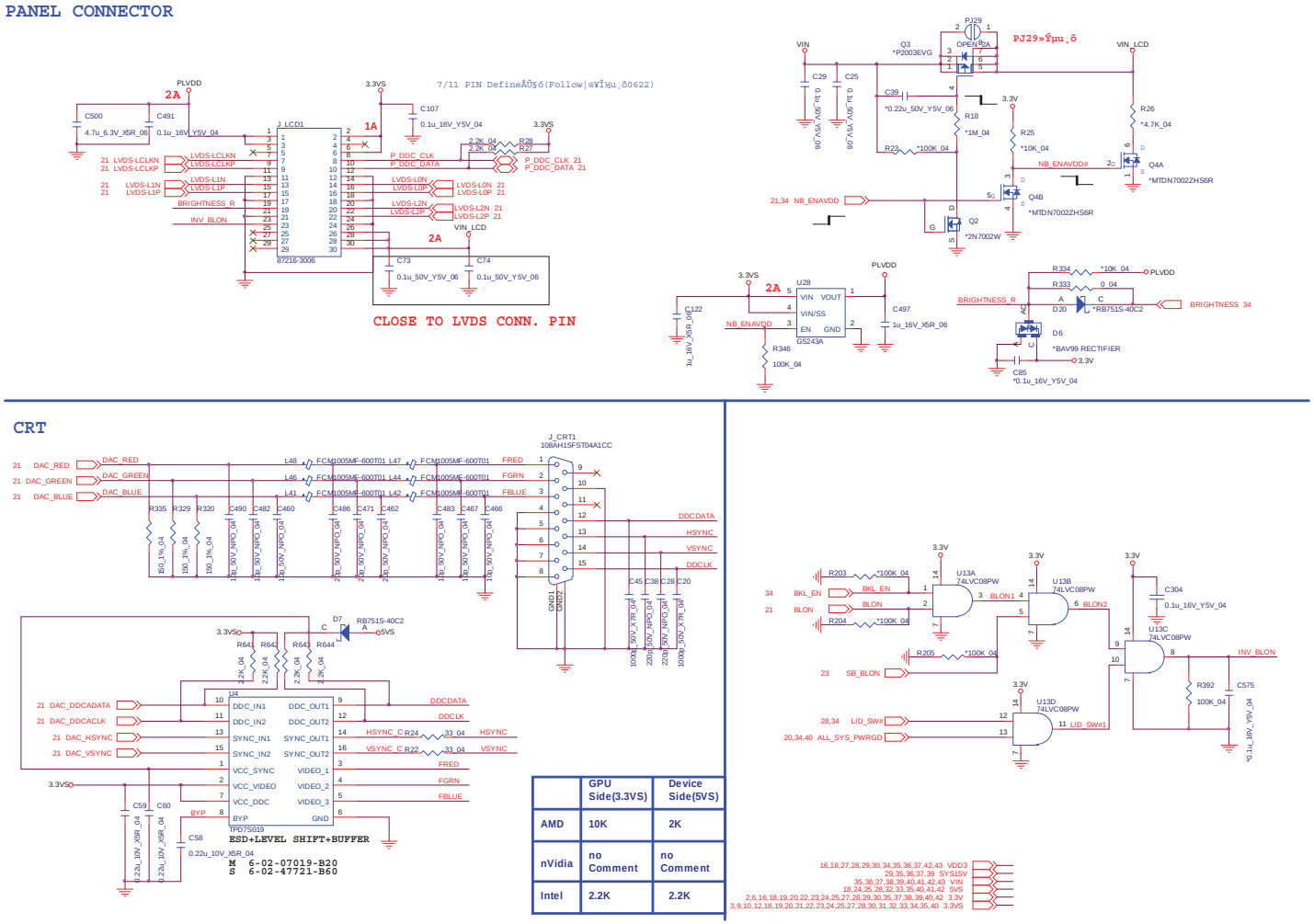
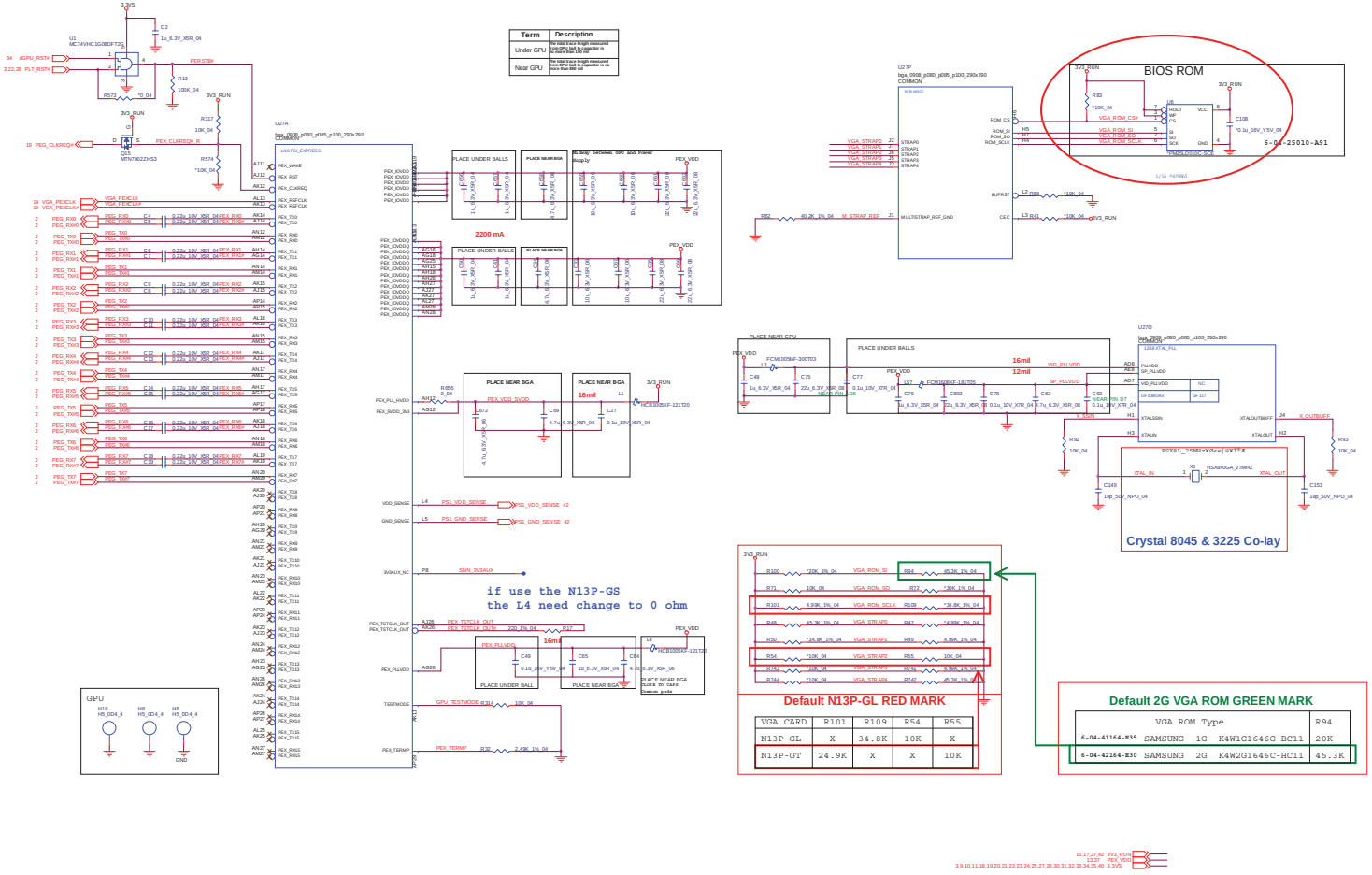
PANEL, INVERTER, CRT



	GPU Side(3.3VS)	Device Side(5VS)
AMD	10K	2K
nVidia	no Comment	no Comment
Intel	2.2K	2.2K

VGA PCI-E Interface



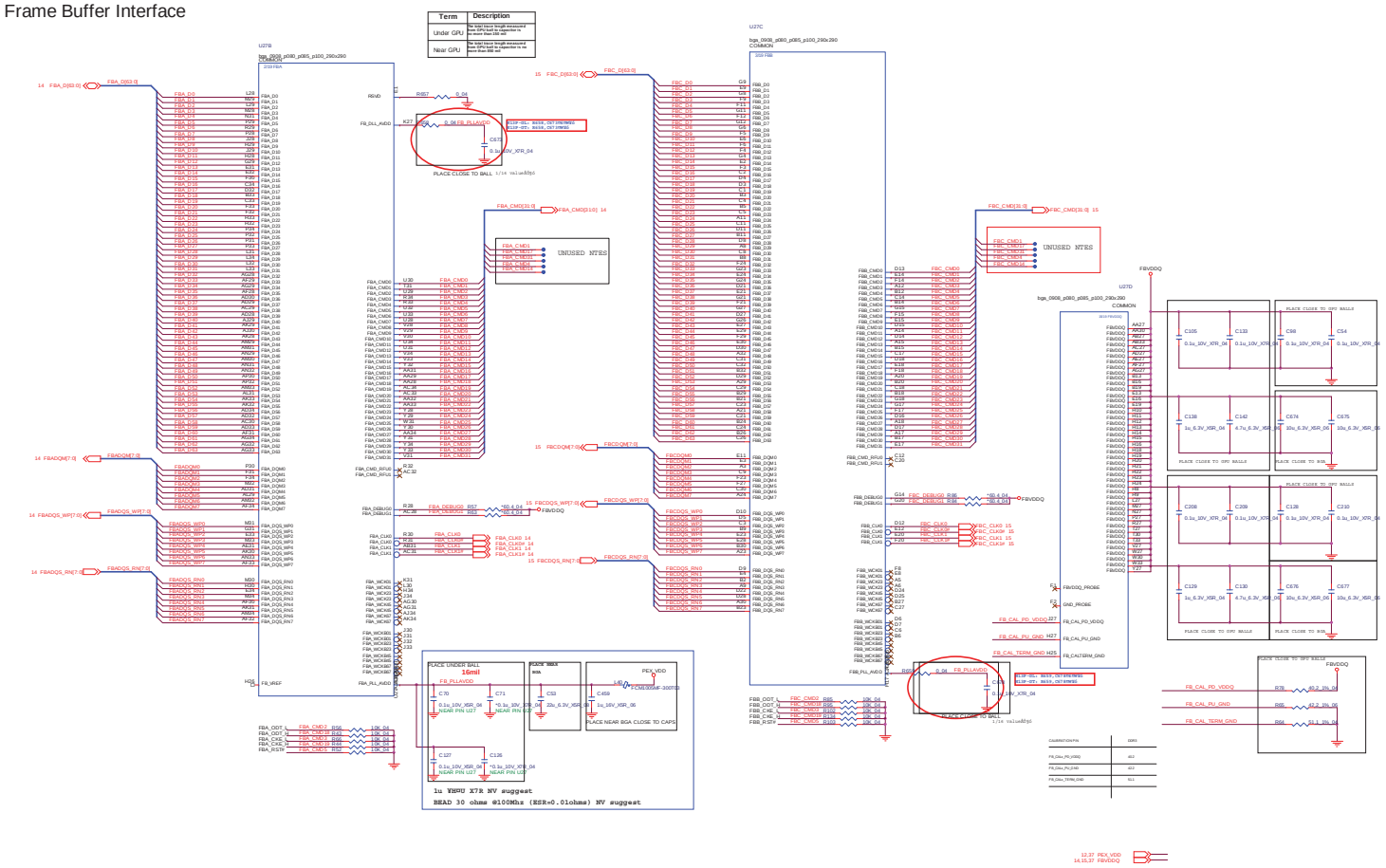
Sheet 12 of 48
VGA PCI-E Interface

B.Schematic Diagrams

VGA Frame Buffer Interface

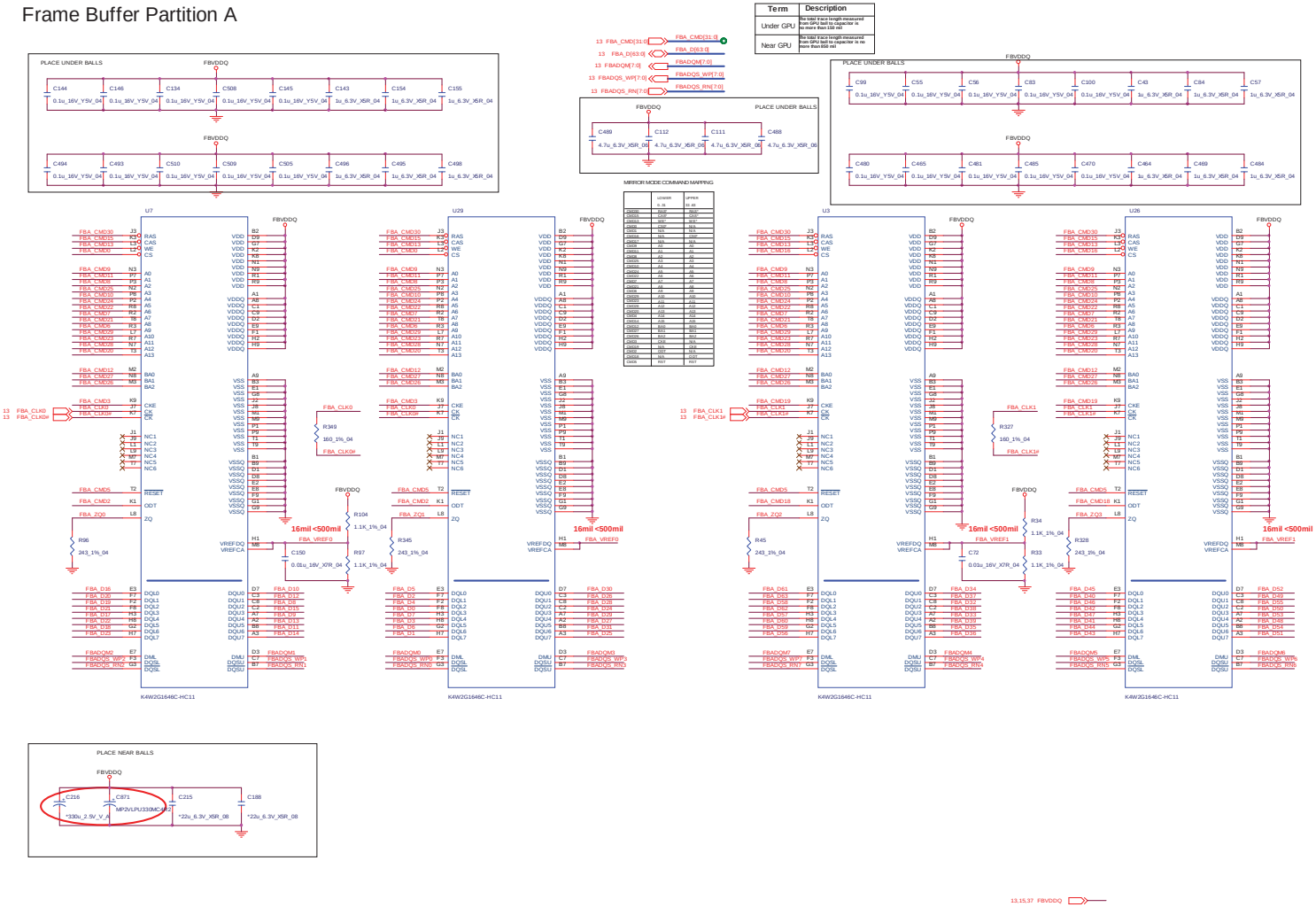
Sheet 13 of 48
VGA Frame Buffer Interface

Frame Buffer Interface



VGA Frame Buffer A

Frame Buffer Partition A



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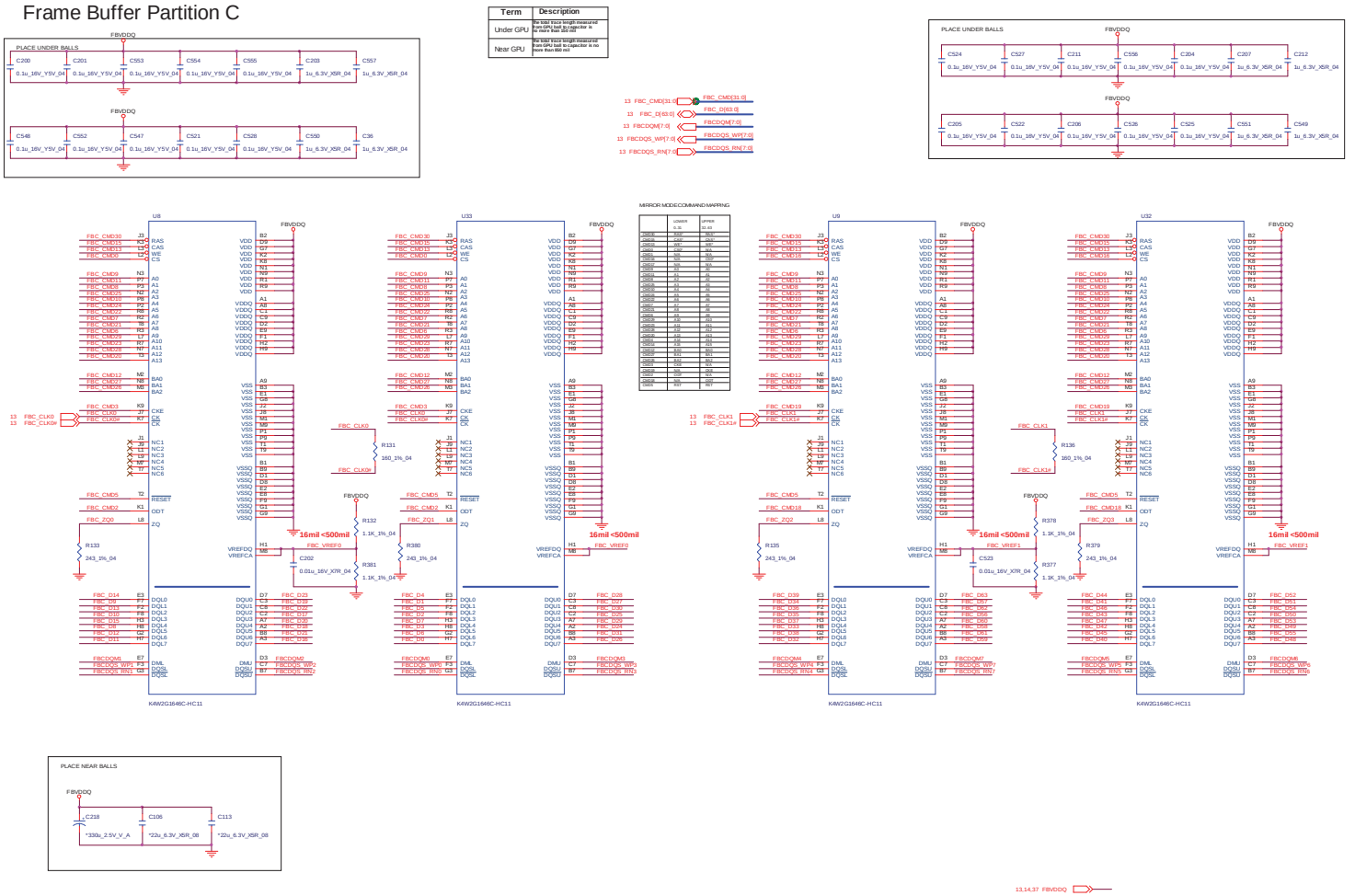
VGA Frame Buffer A

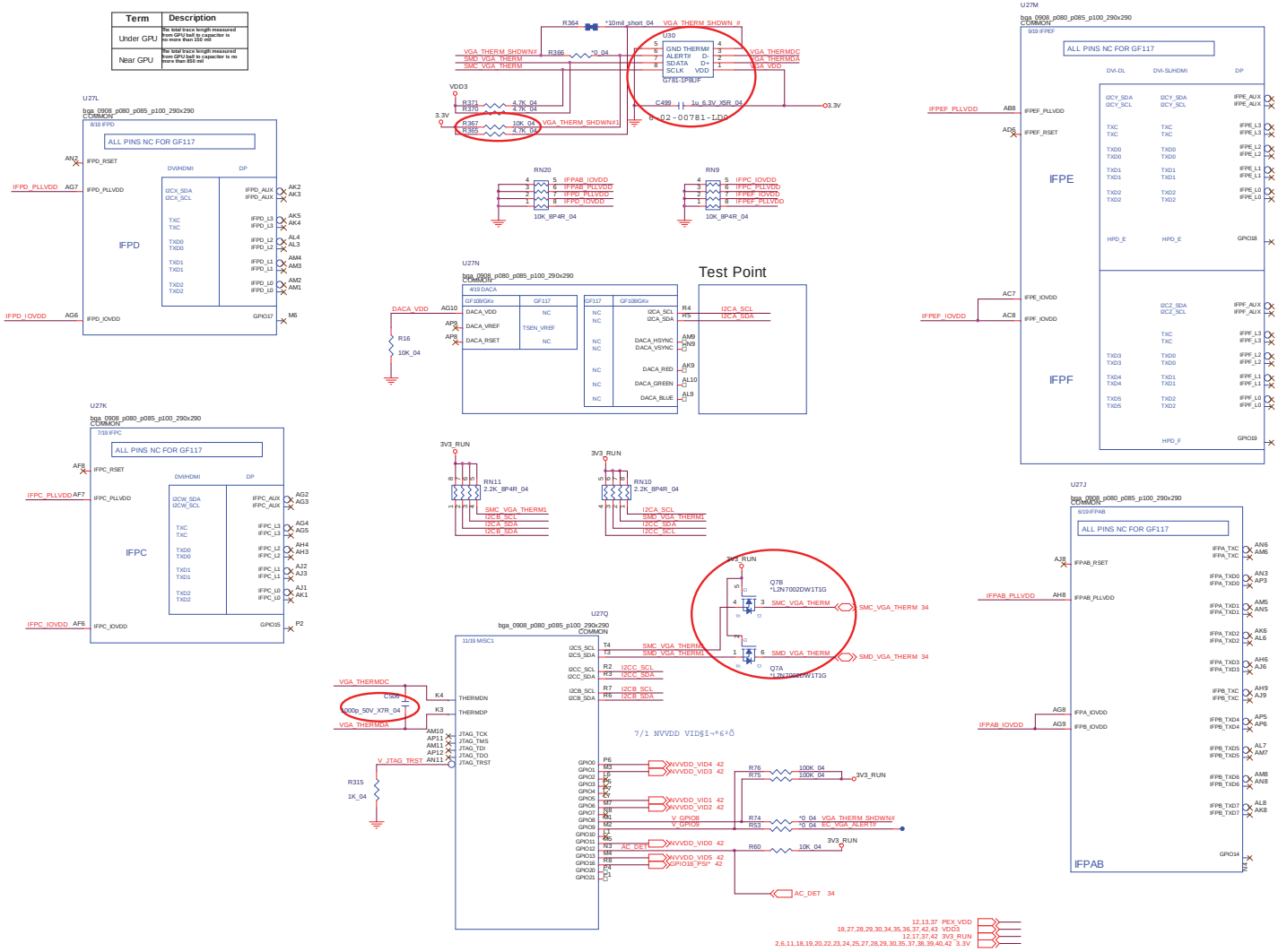
VGA Frame Buffer C

Sheet 15 of 48
VGA Frame Buffer C

Frame Buffer Partition C



VGA I/O



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VGA I/O

VGA NVVDD Cecoupling

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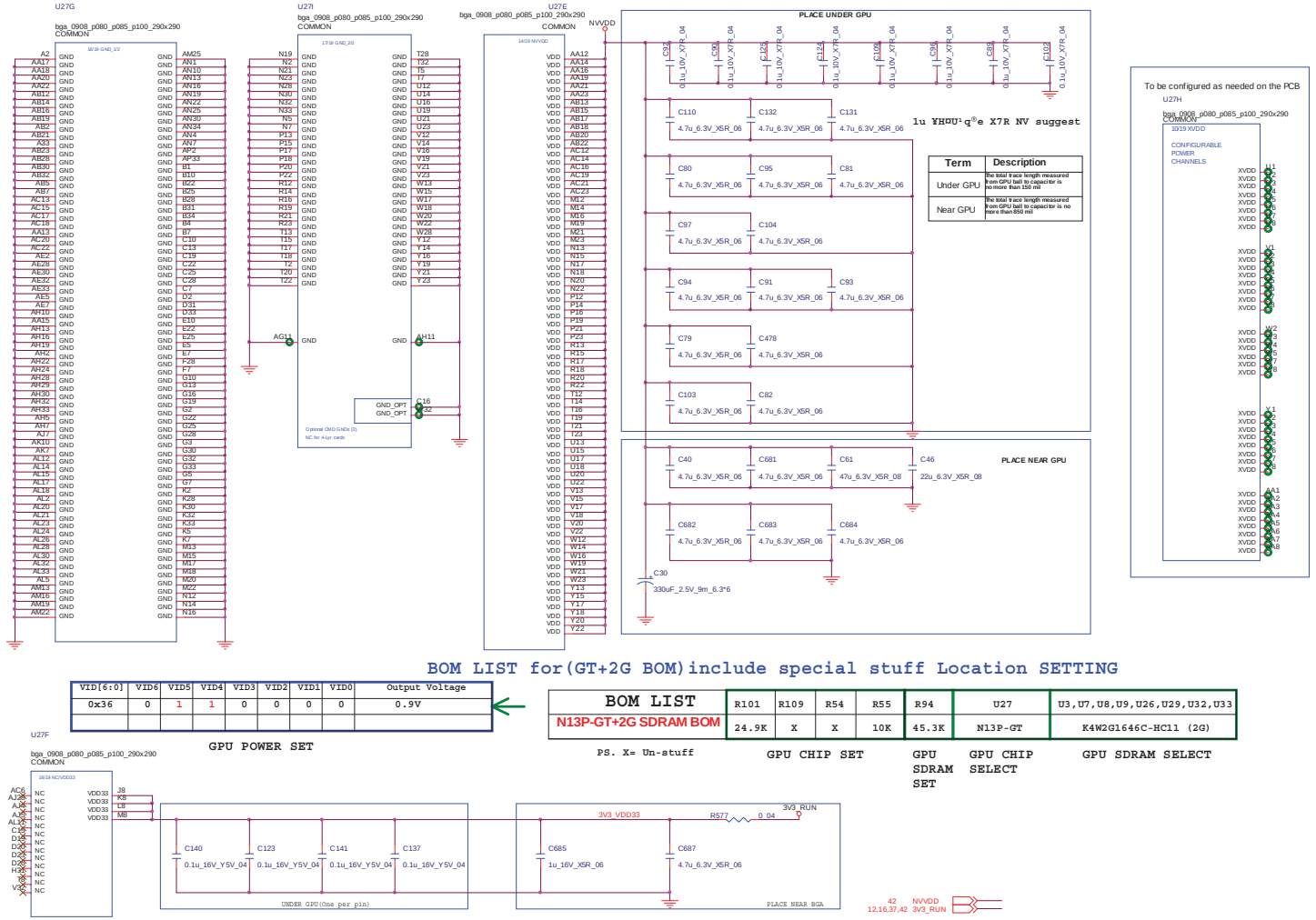
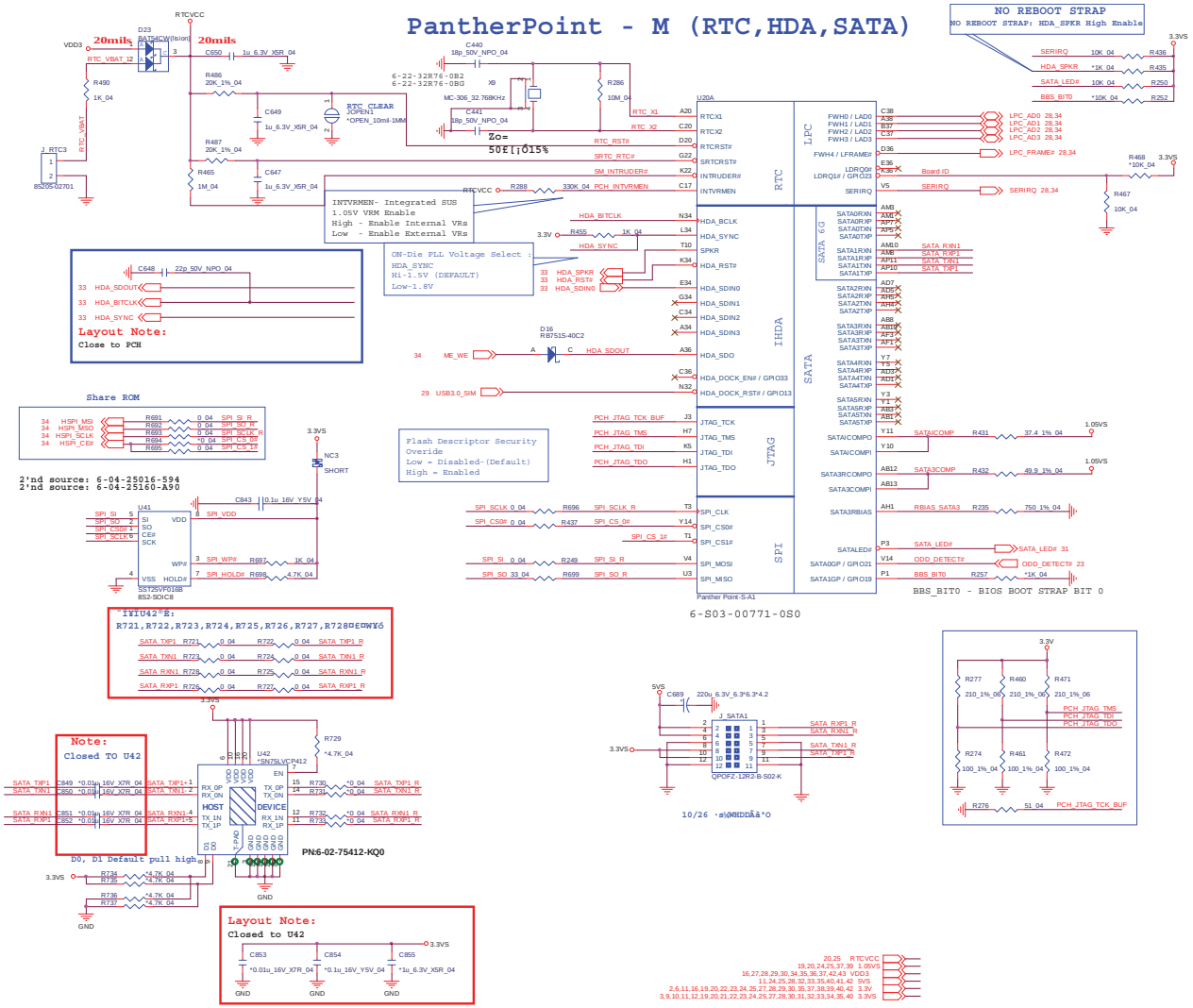
VGA NVVDD Cecoupling



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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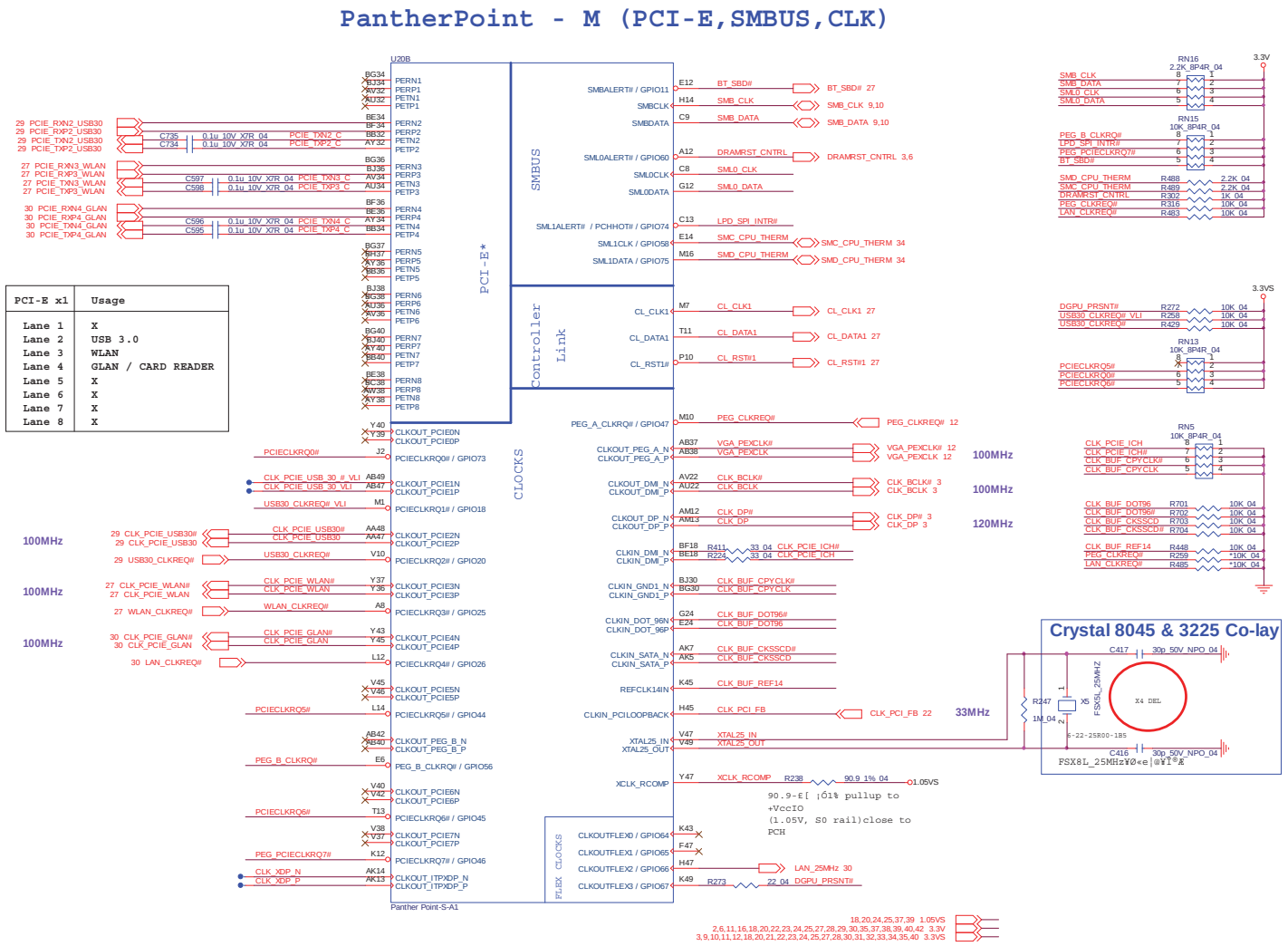
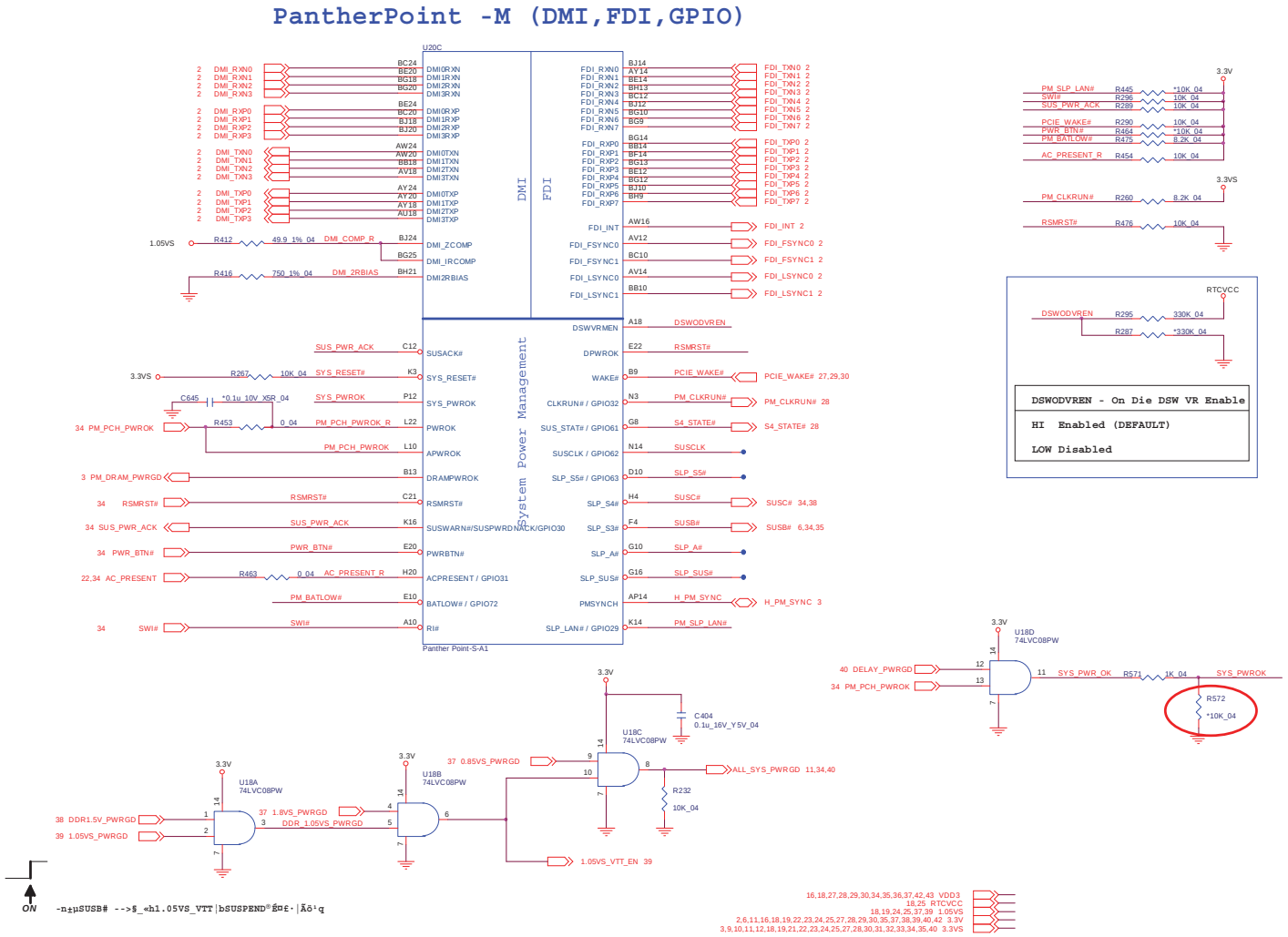
PCH 2/9 - PCIE, SMBUS, CLK



PCI-E x1	Usage
Lane 1	X
Lane 2	USB 3.0
Lane 3	WLAN
Lane 4	GLAN / CARD READER
Lane 5	X
Lane 6	X
Lane 7	X
Lane 8	X

PCH 3/9 - DMI, FDI, PWRGD



Sheet 20 of 48
PCH 3/9 - DMI, FDI, PWRGD

PCH 4/9 - LVDS, DDI, CRT

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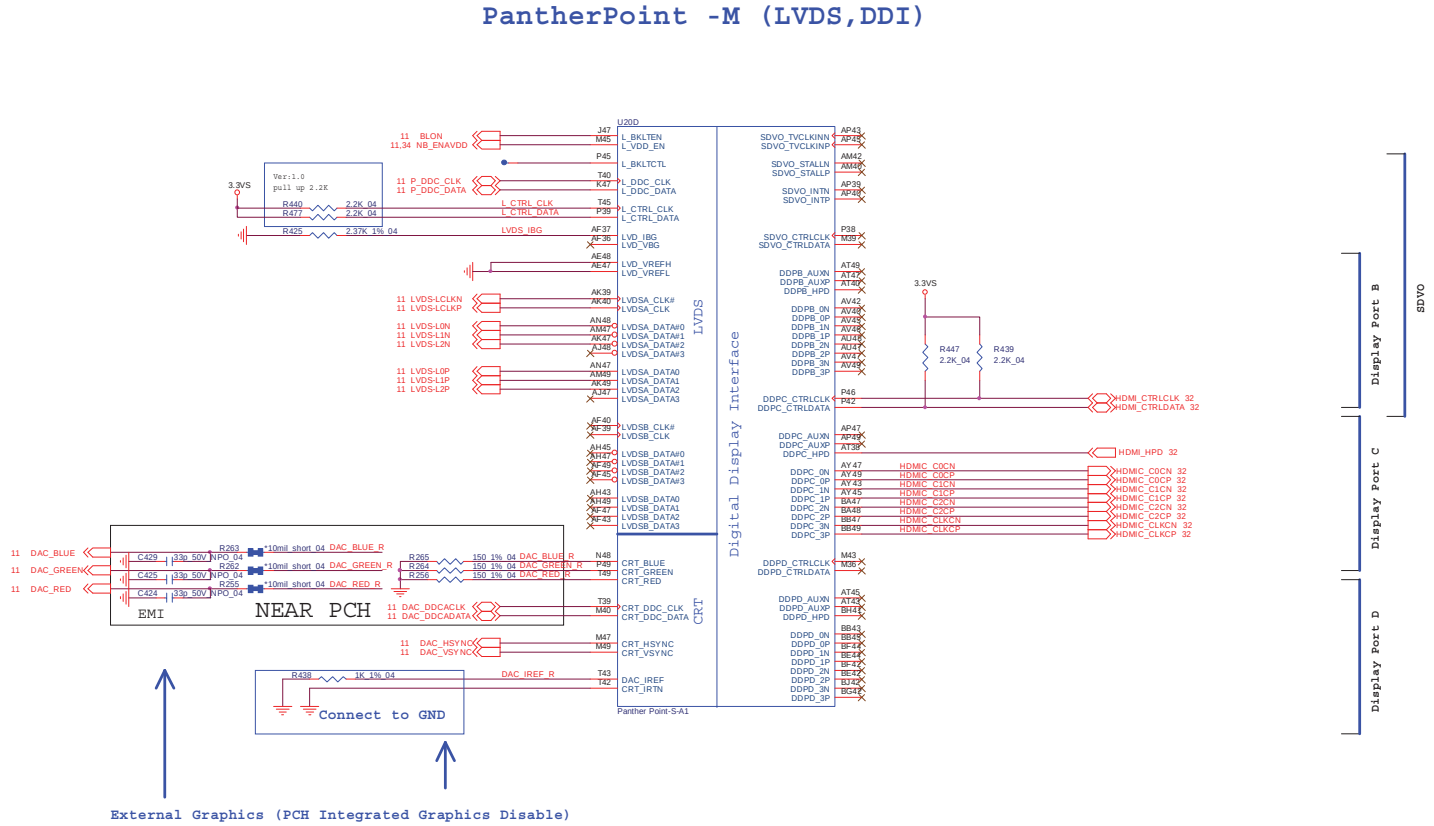
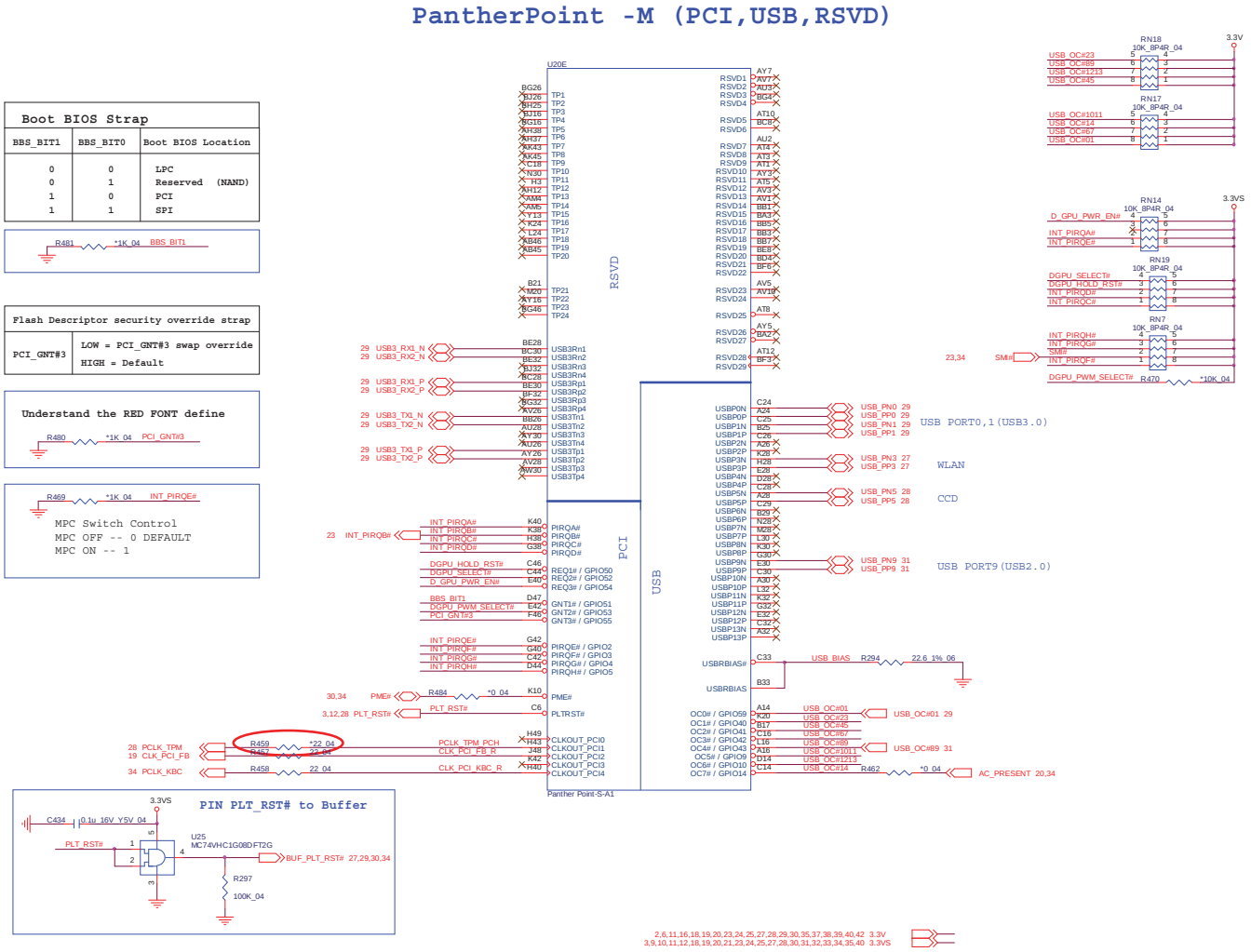
PCH 4/9 - LVDS, DDI, CRT



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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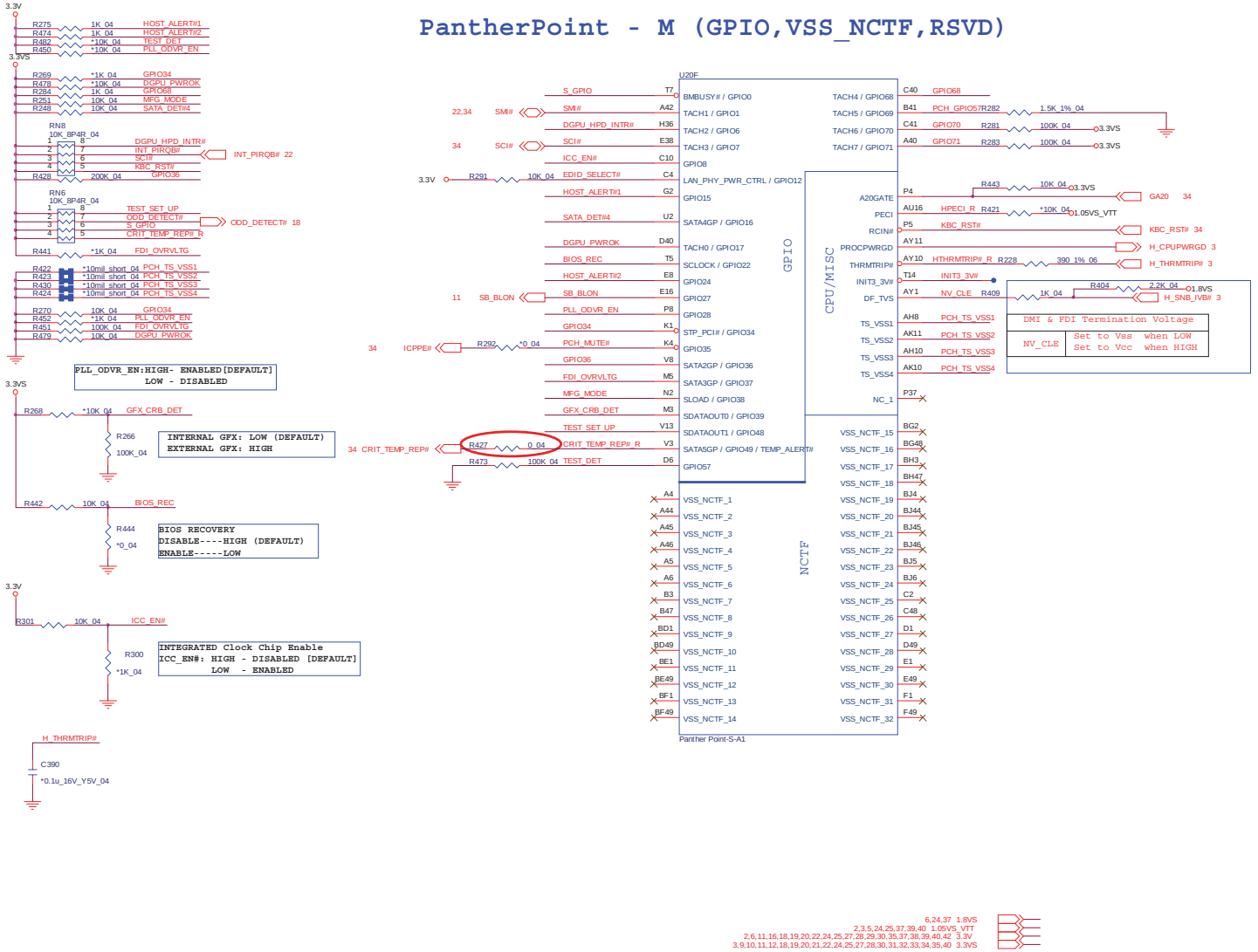
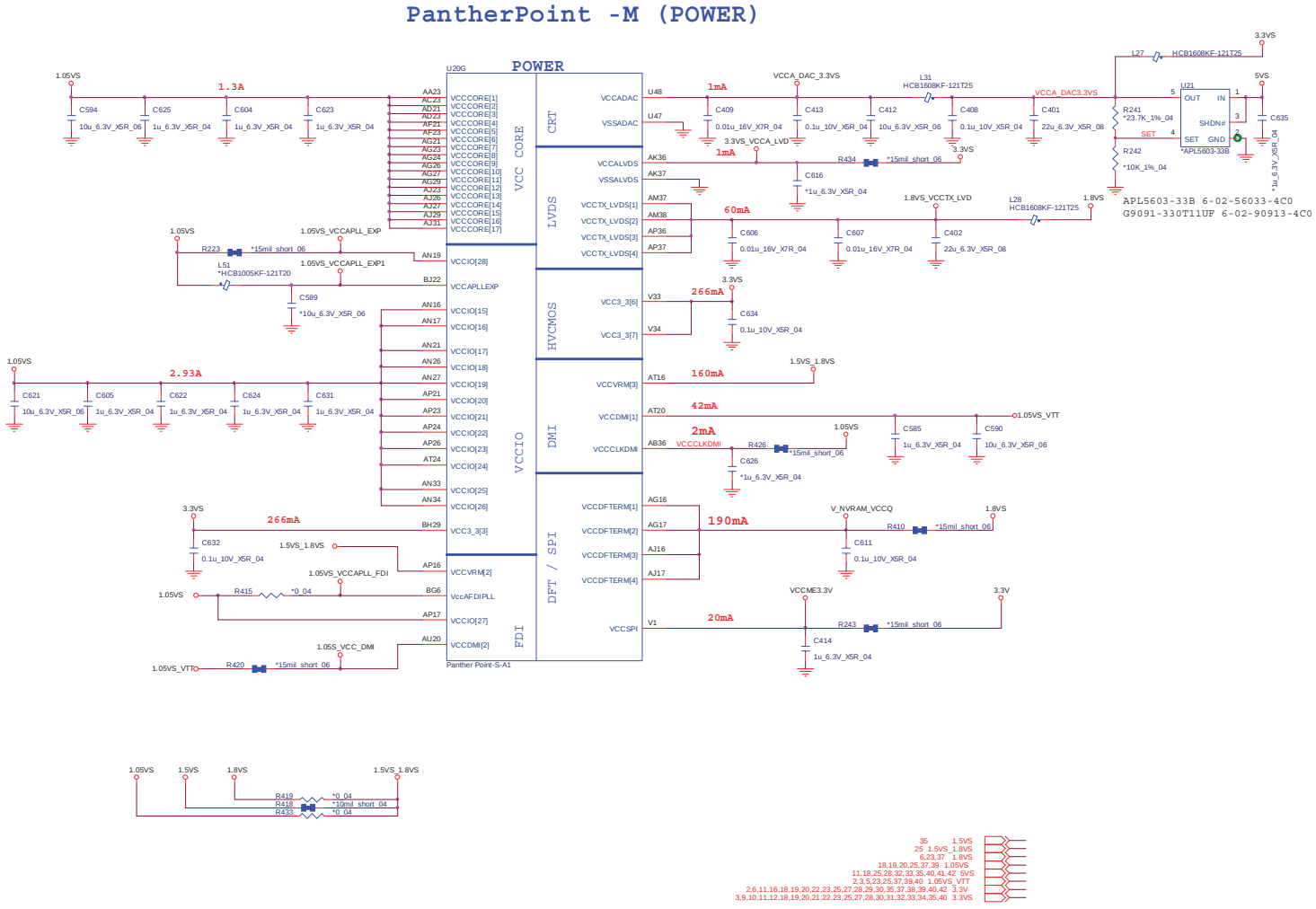
PCH 6/9 - GPIO, CPU



PCH 7/9 - PWR



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PCH 7/9 - PWR

PCH 8/9 - POWER

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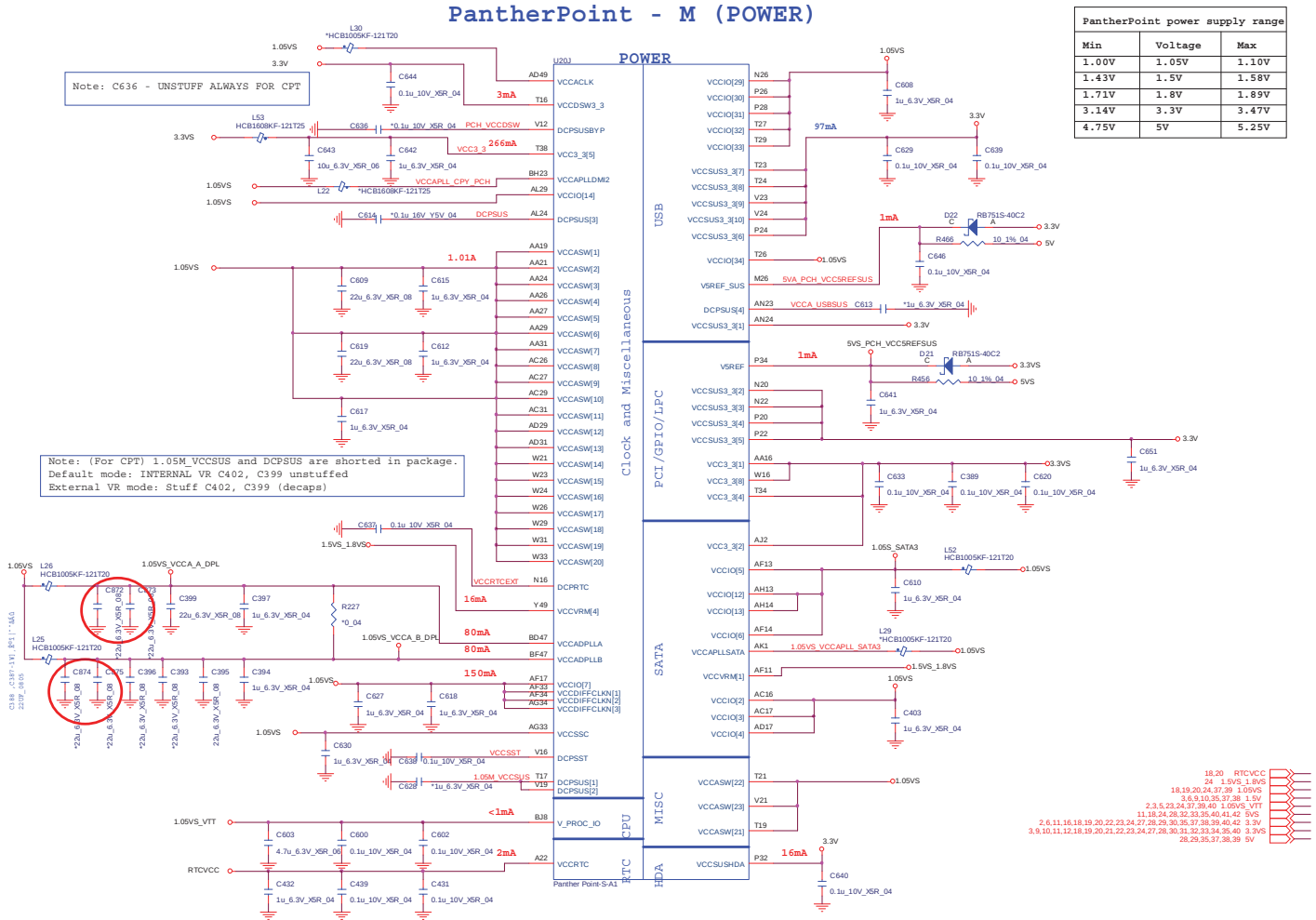
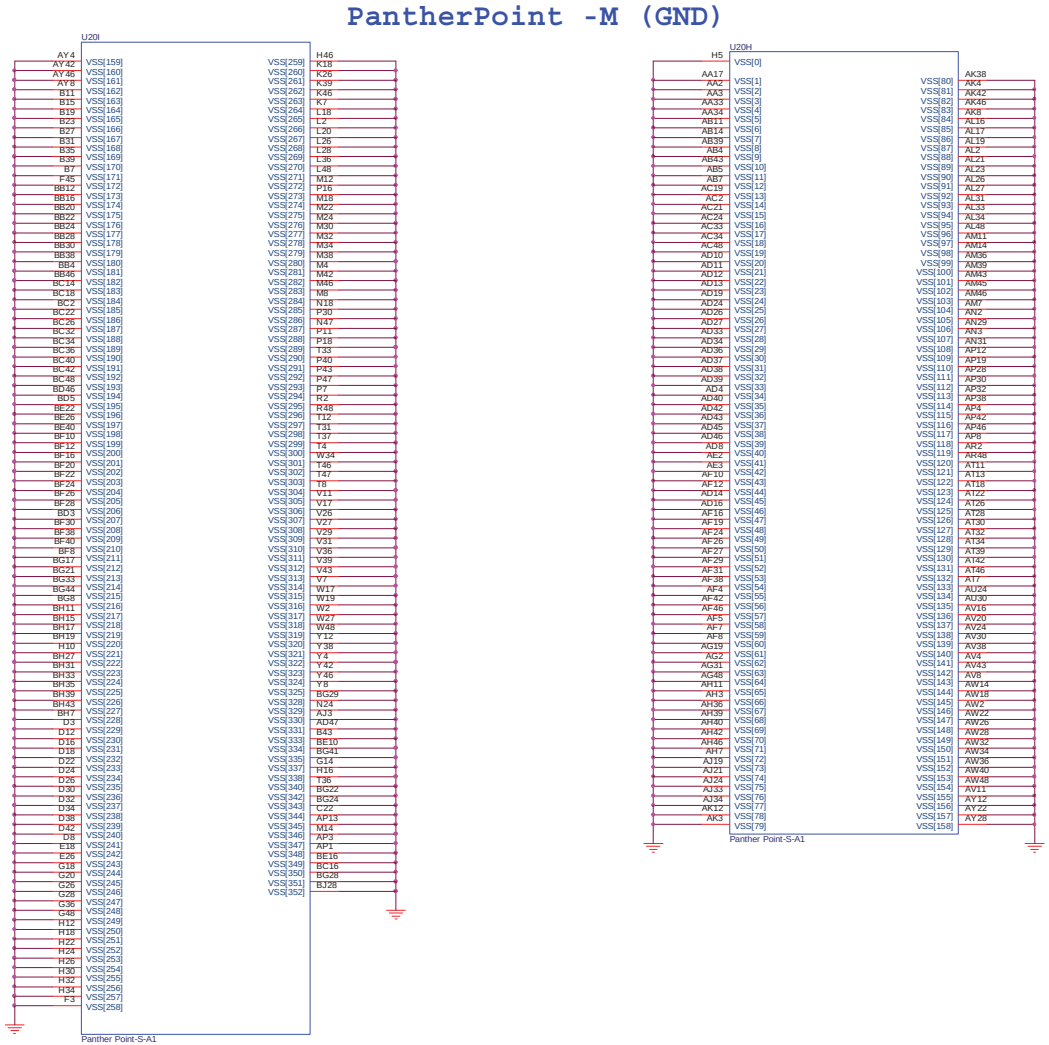
PCH 8/9 - POWER



PantherPoint power supply range		
Min	Voltage	Max
1.00V	1.05V	1.10V
1.43V	1.5V	1.58V
1.71V	1.8V	1.89V
3.14V	3.3V	3.47V
4.75V	5V	5.25V

PCH 9/9 - GND



Voltage Rail	Voltage	S0 Iccmax Current (A)
V_CPU_IO	1.05	1 (mA)
V5REF	5	1 (mA)
V5REF_Sus	5	1 (mA)
Vcc3_3	3.3	0.266
VccADAC3	1.05	1 (mA)
VccADPLLA	1.05	0.08
VccADPLLB	1.05	0.08
VccCore	1.05	1.3
VccDMI	1.1	0.042
VccIO	1.05	2.925
VccASW	1.05	1.01
VccSPI	3.3	0.020
VccDSW3_3	3.3	2 (mA)
VccDFTERM	1.8	0.19
VccSus3_3	3.3	0.097
VccSusHDA	3.3	1 (mA)
VccVRM	1.5	0.16
VccClKDMI	1.05	0.02
VccSSC	1.05	0.095
VccDIFFCLKN	1.05	0.055
VccALVDS	3.3	1 (mA)
VccTX_LVDS	1.8	0.06

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PCH 9/9 - GND

WLAN, 3G, MINI PCIE

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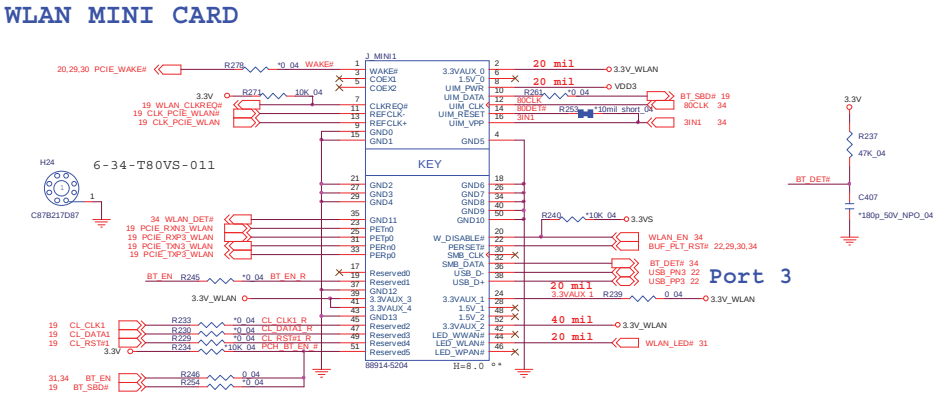
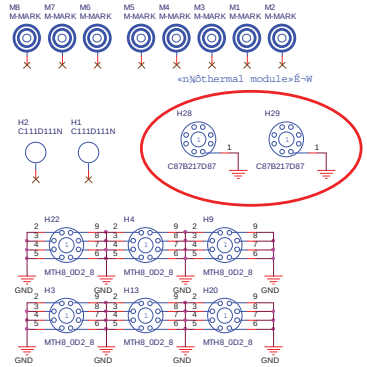
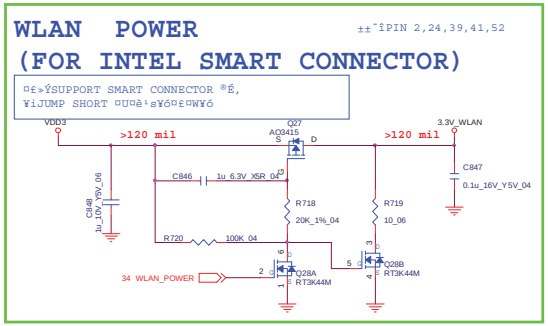
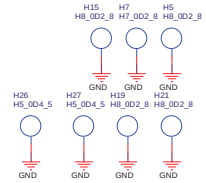
WLAN, 3G, MINI PCIE



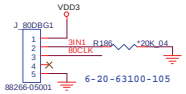


WLAN_PWR Signal default HI for WLAN
1.BIOS Setup HI for Intel PCIE WLAN
2.USB WLAN BIOS Setup LOW for Fn+F10



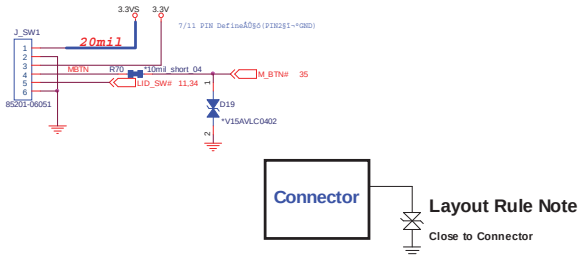


Debug Port

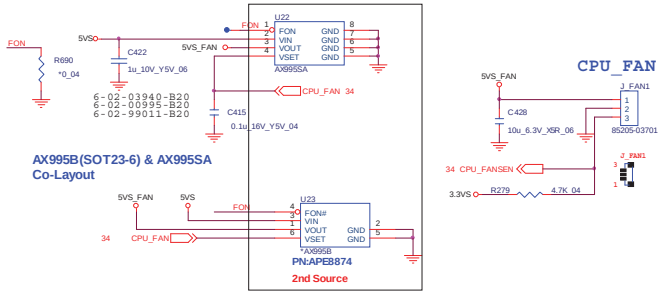


CCD, TPM, MULTI CON

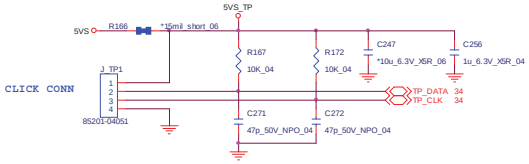
FOR POWER SW BOARD



CPU FAN CONTROL

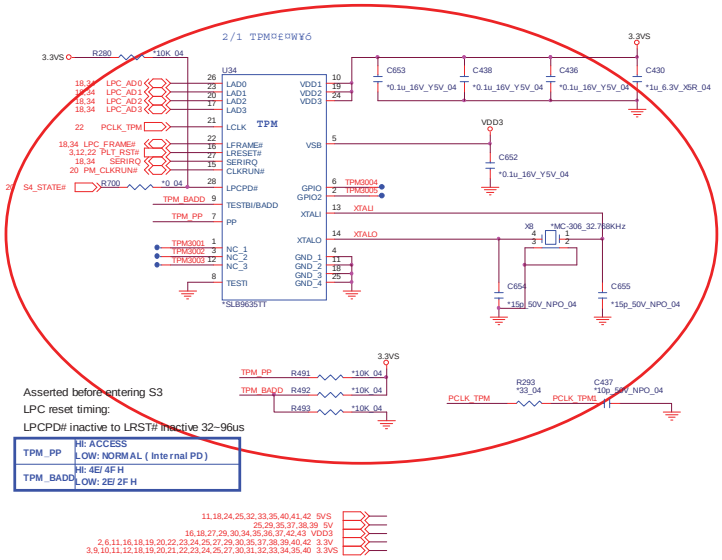


FOR CLICK BOARD



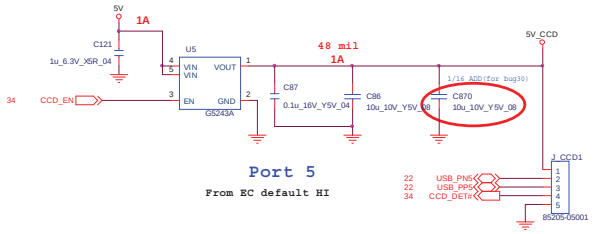
TPM 1.2

TPM Function ON	R459,U34,R280,C653,C438,C436 C430,C652,C654,C655,X8,R492



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

CCD



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CCD, TPM, MULTI CON

USB3.0

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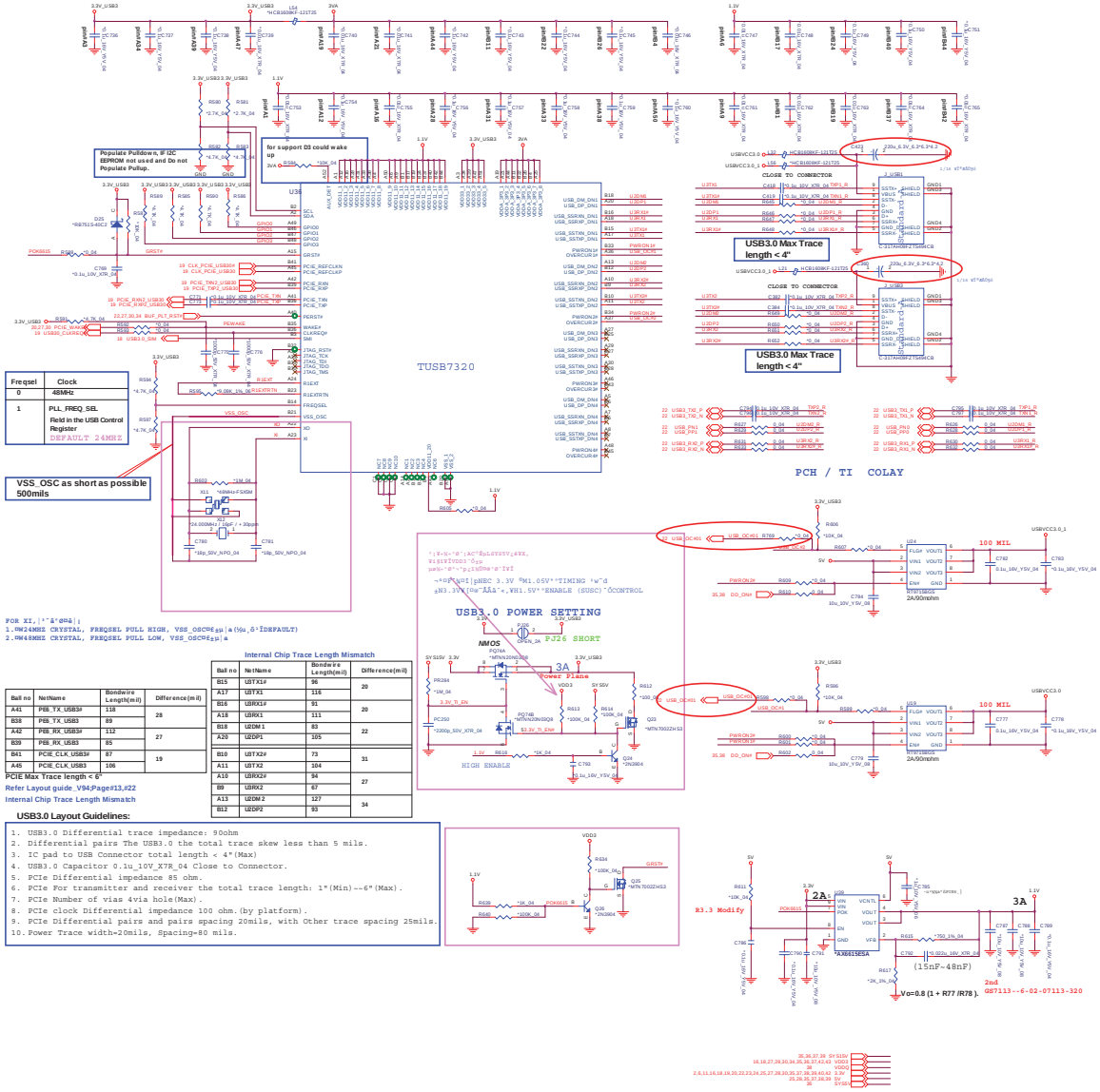
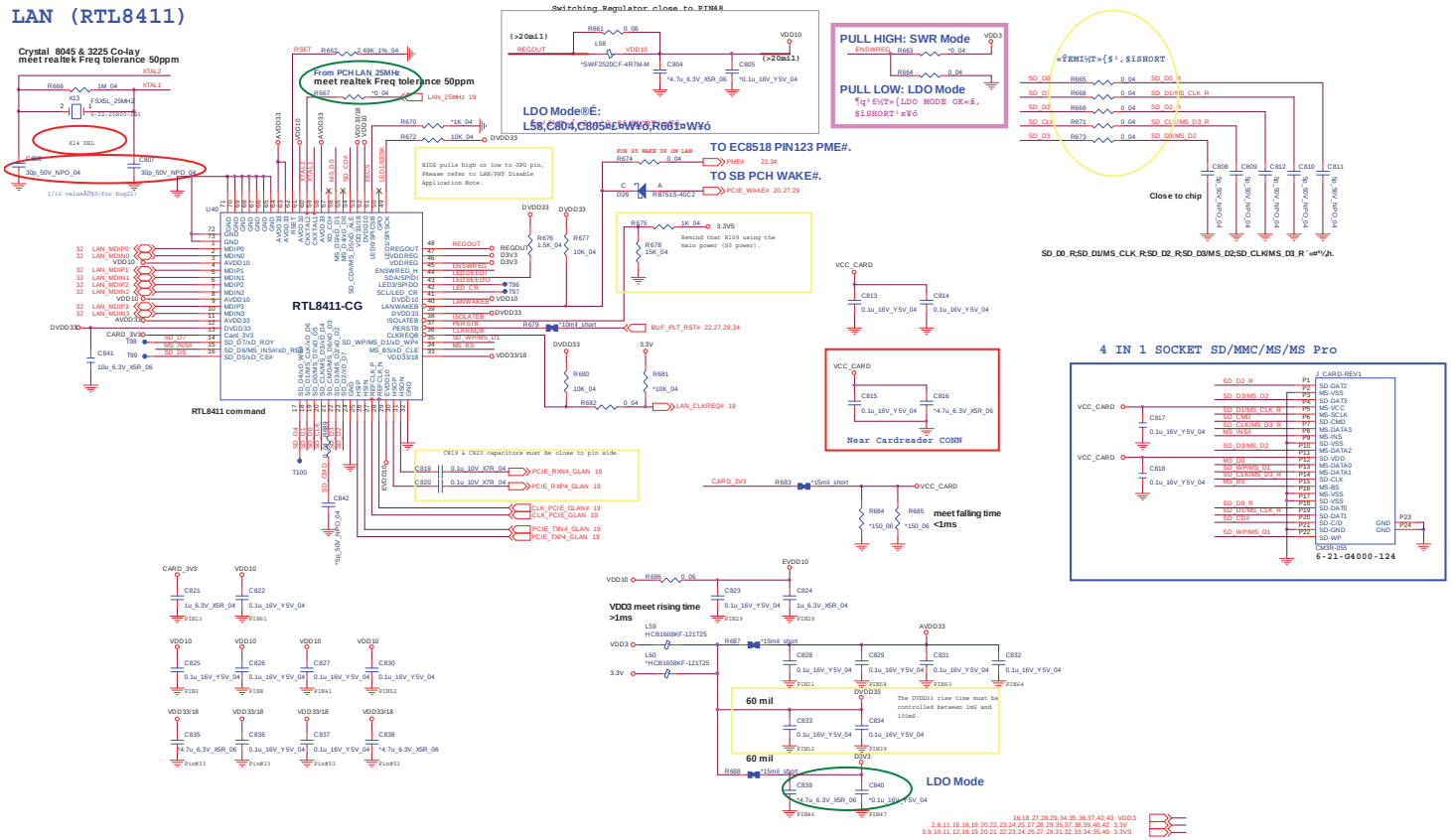
USB3.0



Card Reader, LAN (RTL8411)



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Card Reader, LAN (RTL8411)

B.Schematic Diagrams

LED, USB CHARGE

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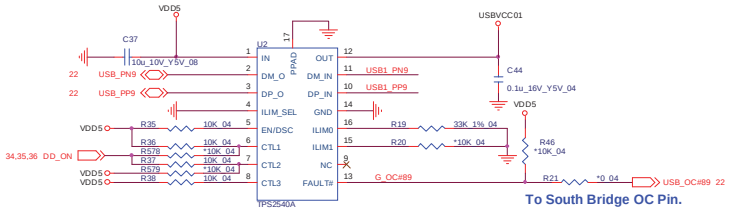
LED, USB CHARGE

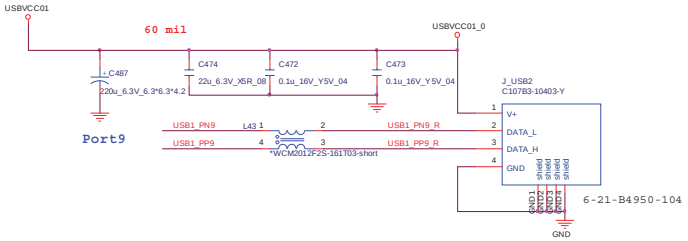
USB Charge Port



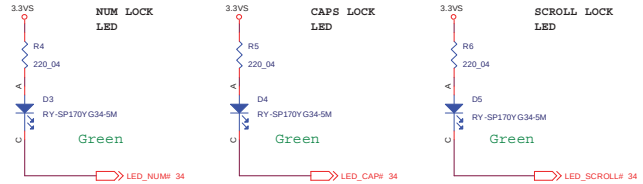
To South Bridge OC Pin.

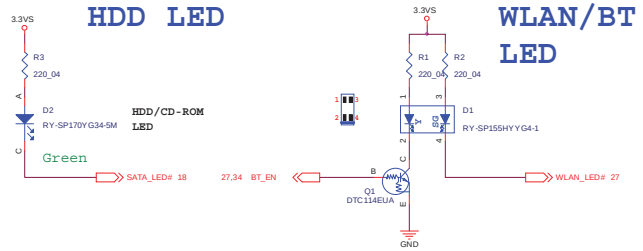
		CTL1	CTL2	CTL3
Mode 1	Power off & Discharge	0	0	0
Mode 2	Power off & Charge	0	1	1
Mode 3	Power off & Charge	1	0	1
Mode 4	Power on & Charge	1	1	1

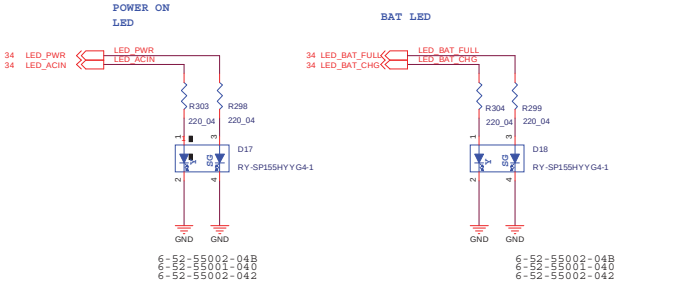
CTL1	CTL2	CTL3:	0	0	0-----> Out discharge, power switch Off
CTL1	CTL2	CTL3:	0	x	1-----> Dedicated charging port, auto-detect
CTL1	CTL2	CTL3:	1	0	1-----> Dedicated charging port, Divider Mode only
CTL1	CTL2	CTL3:	1	1	1-----> Charging downstream port, BC1.2.

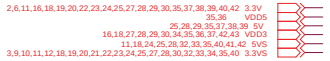


LED

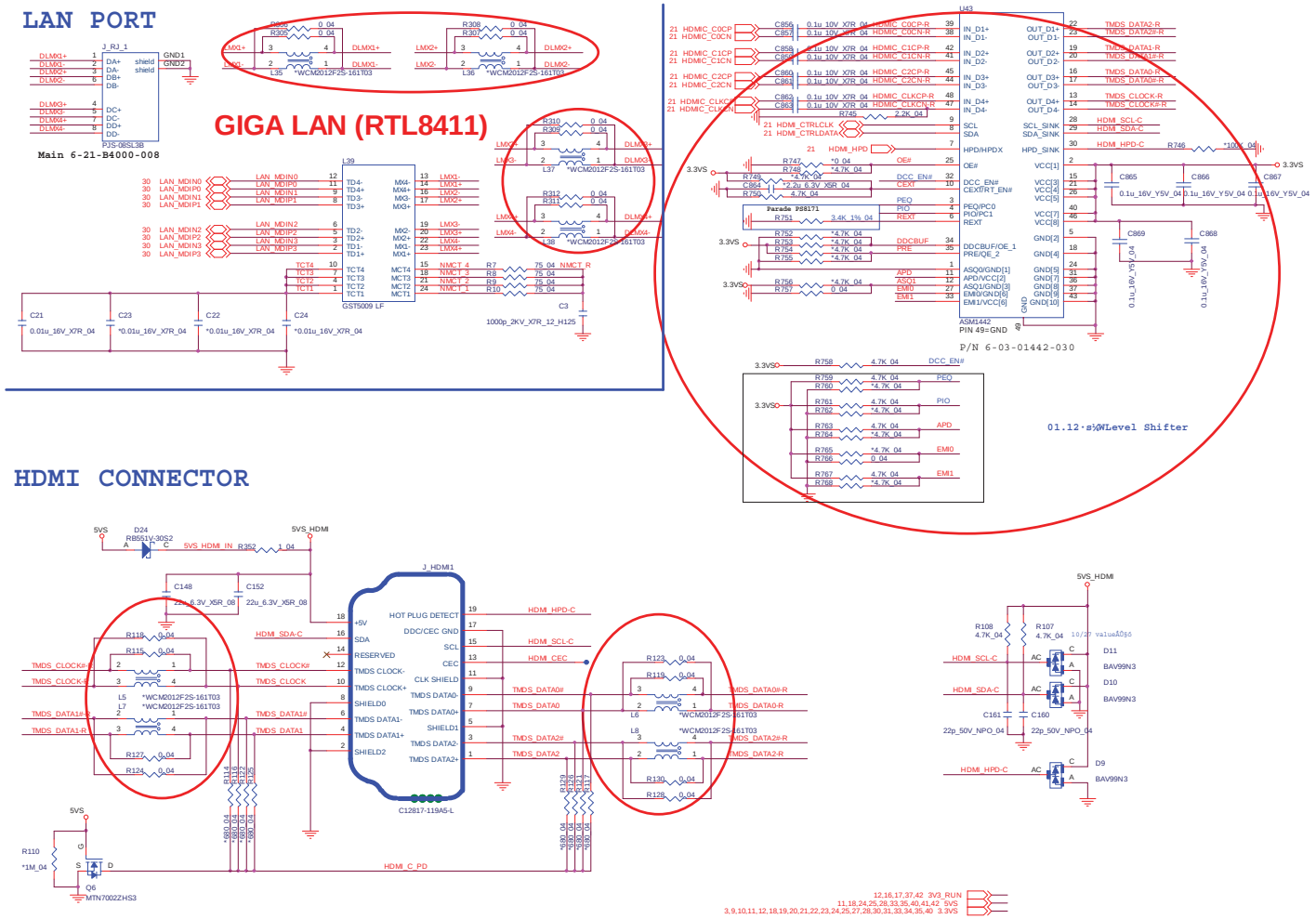








HDMI, RJ45



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HDMI, RJ45

AUDIO CODEC VT1802P

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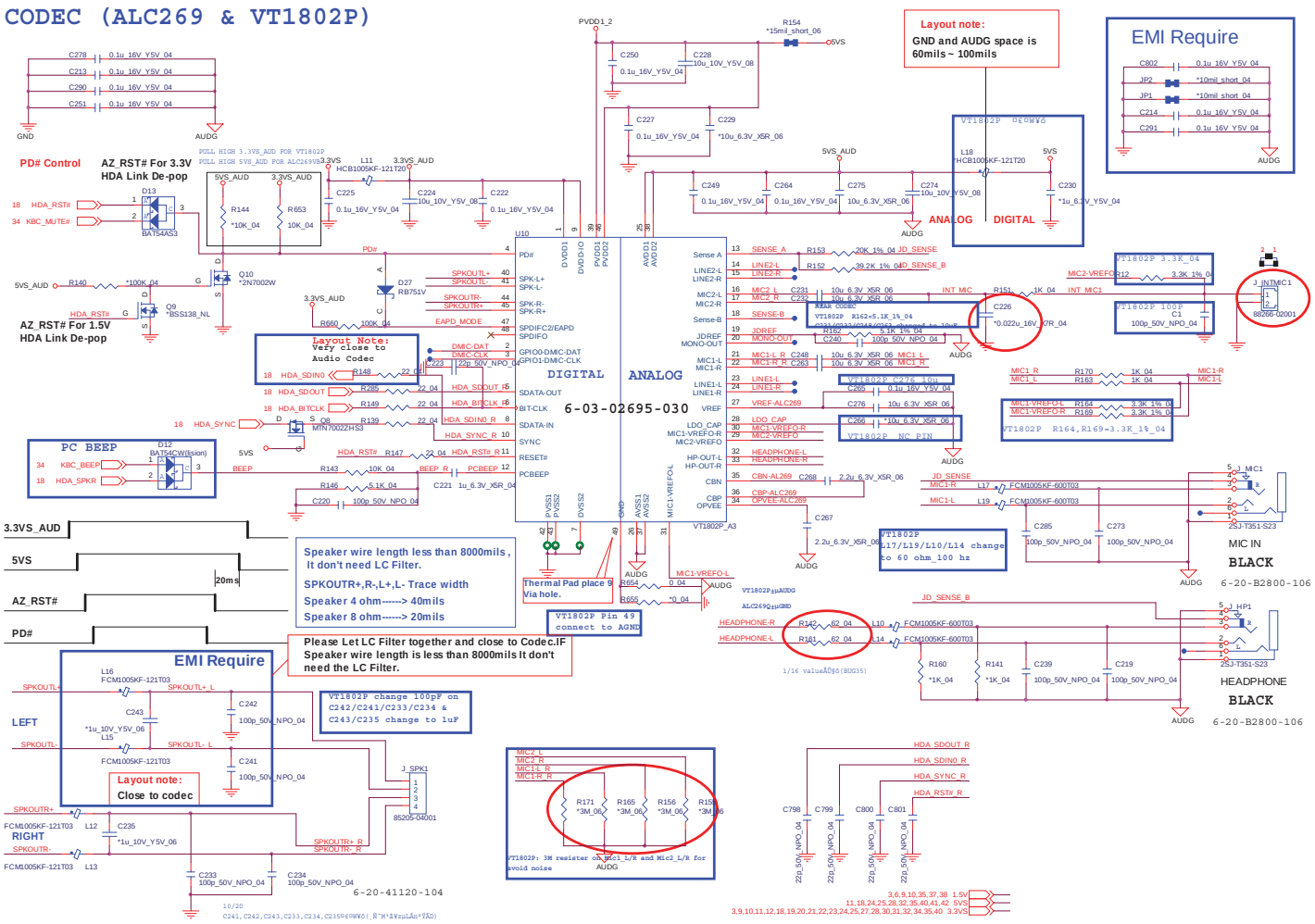
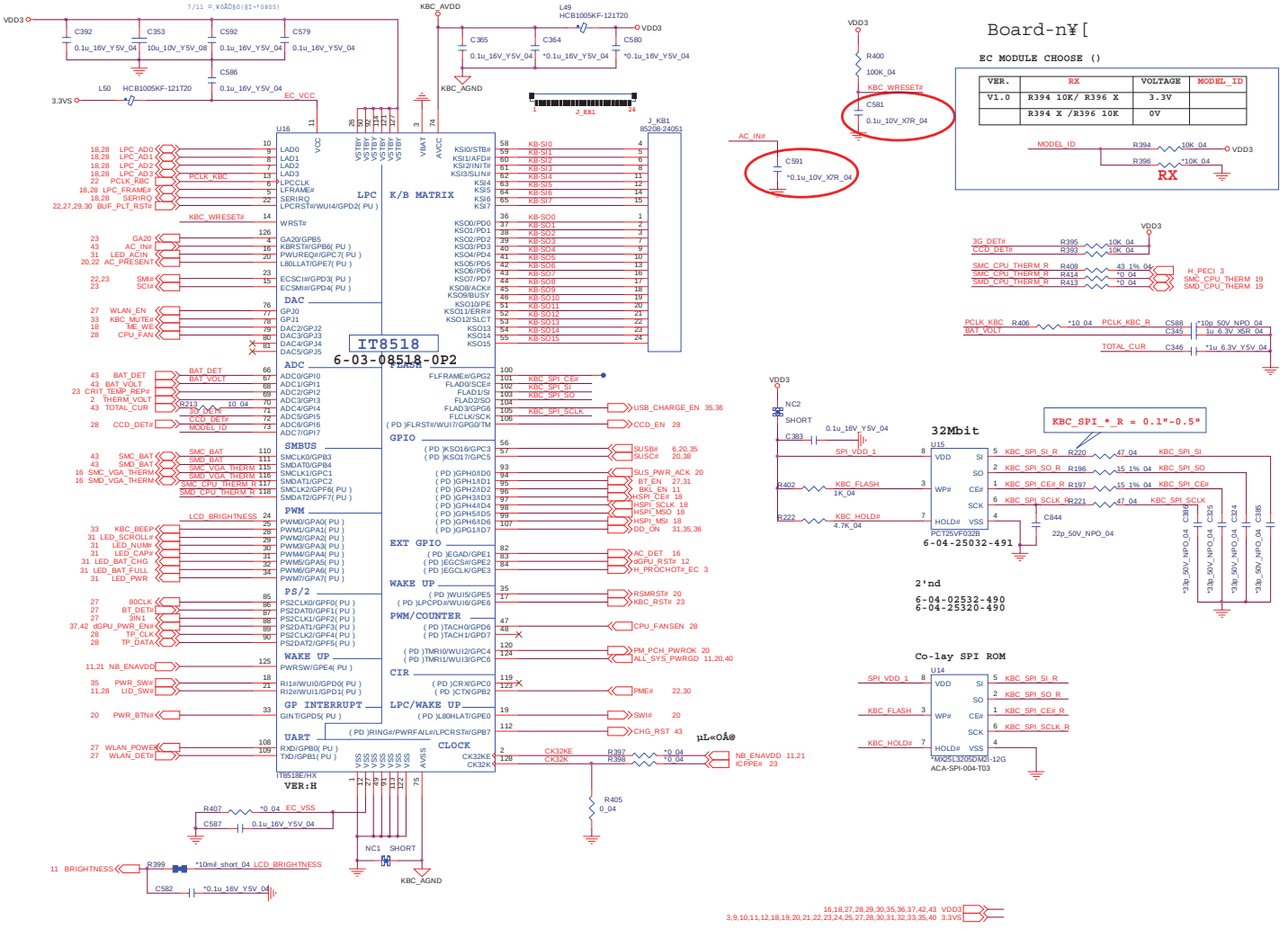
AUDIO CODEC
VT1802P



KBC-ITE IT8518E



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KBC-ITE IT8518E

5VS, 3VS, 3.3VM, 1.5VS CPU

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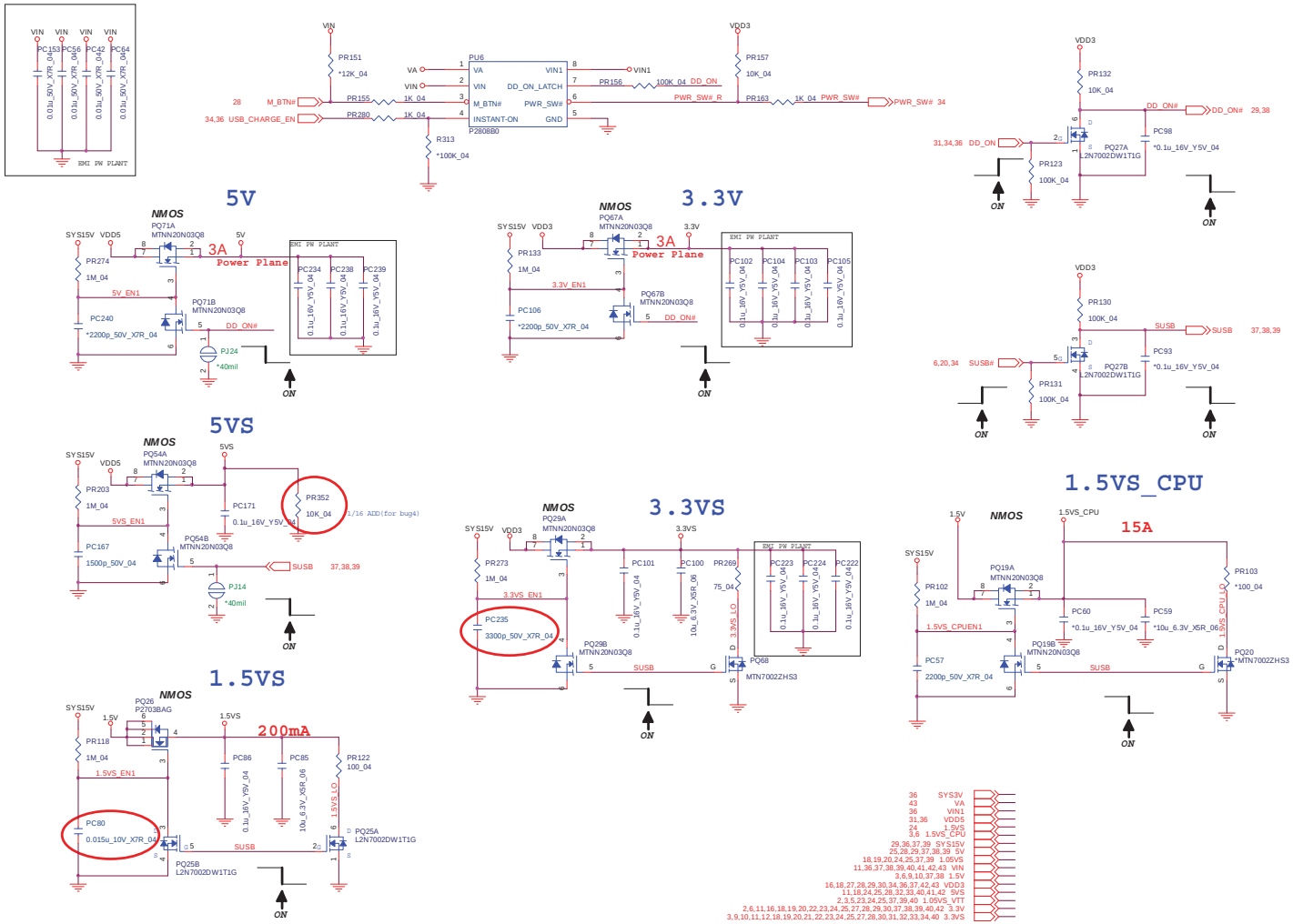
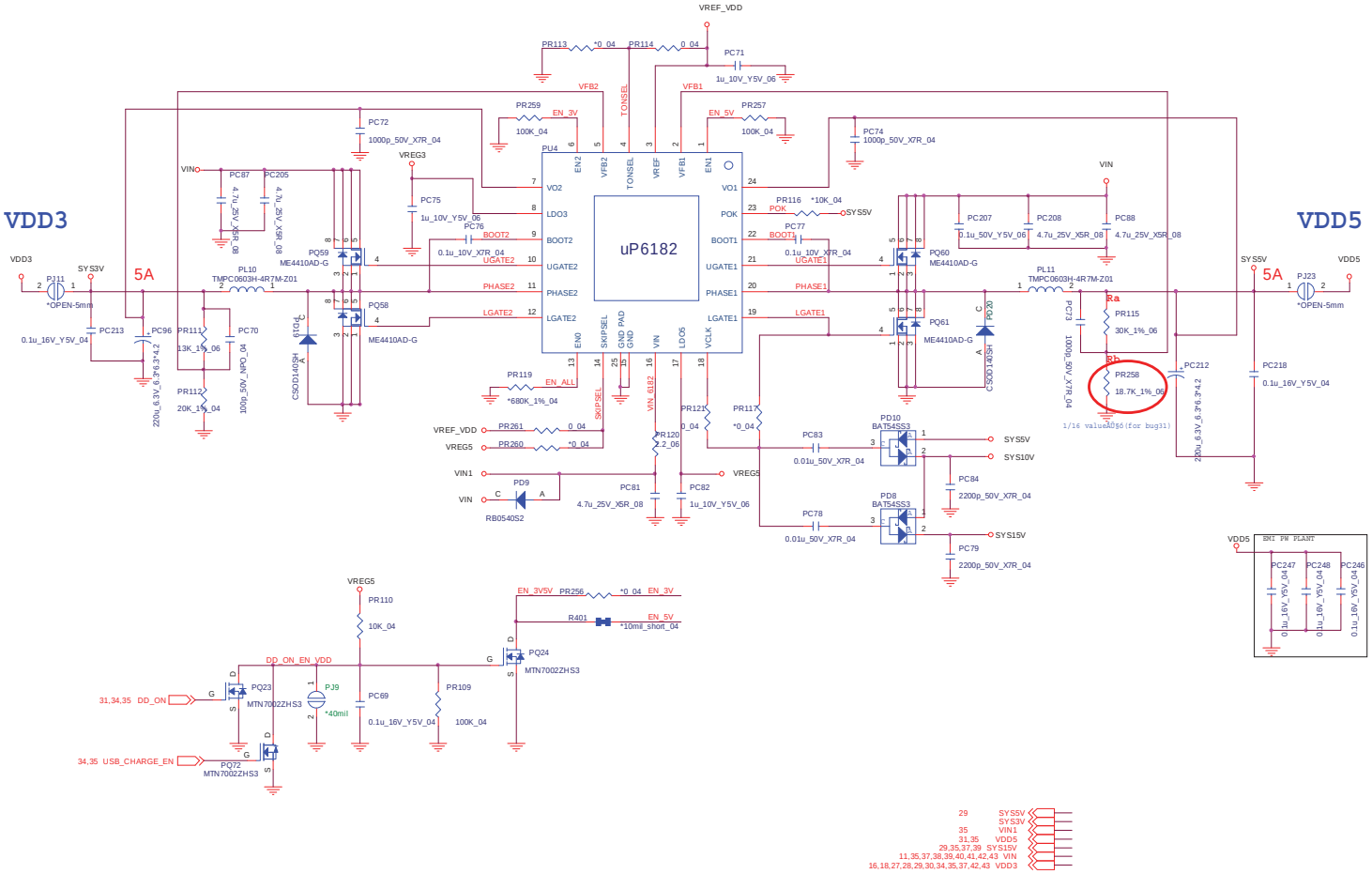
5VS, 3VS, 3.3VM, 1.5VS CPU



VDD3, VDD5



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VDD3, VDD5

Power 0.85VS, 1.8VS

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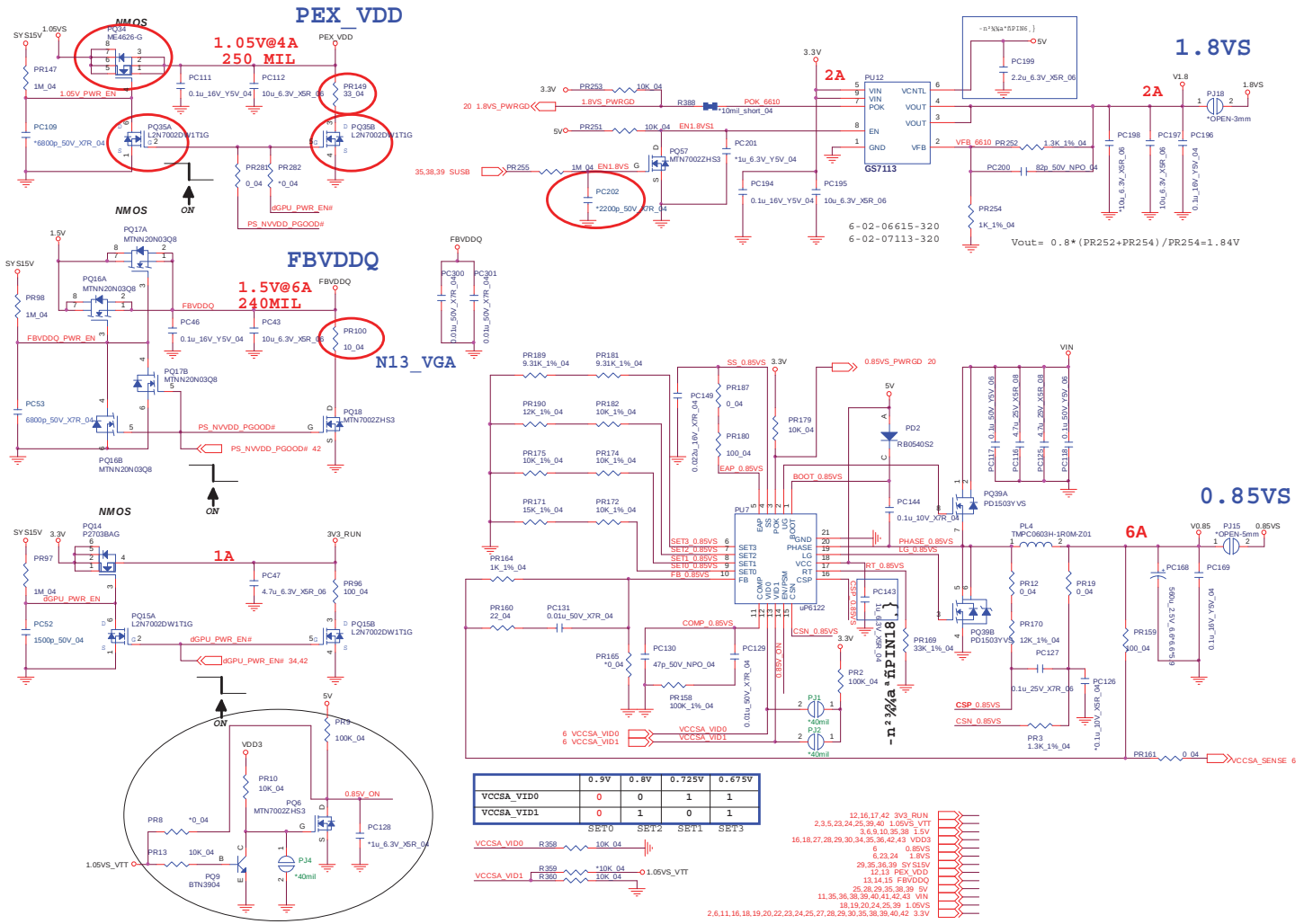
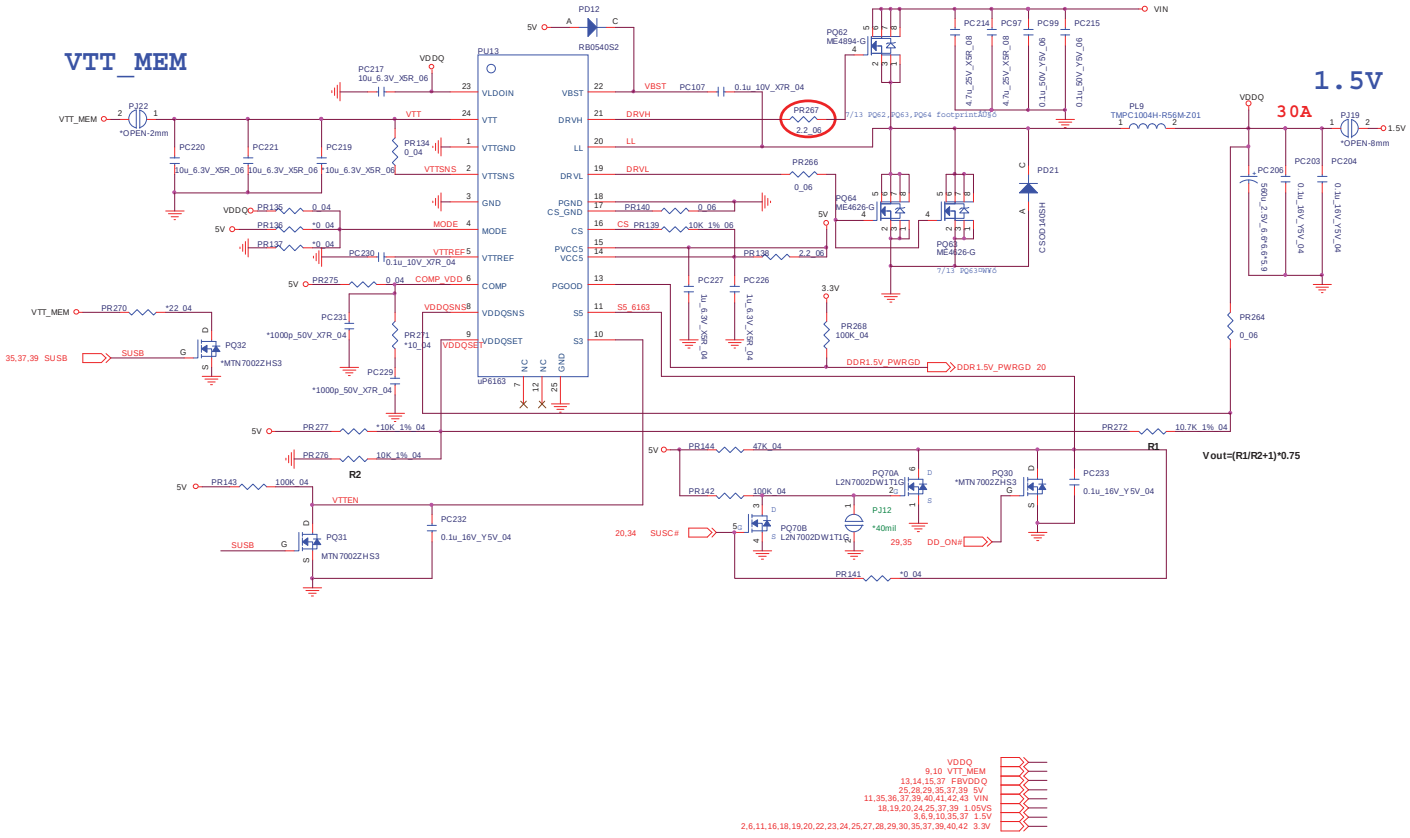
Power 0.85VS, 1.8VS



POWER 1.5V



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POWER 1.5V

POWER 1.05VS/1.05VS VTT

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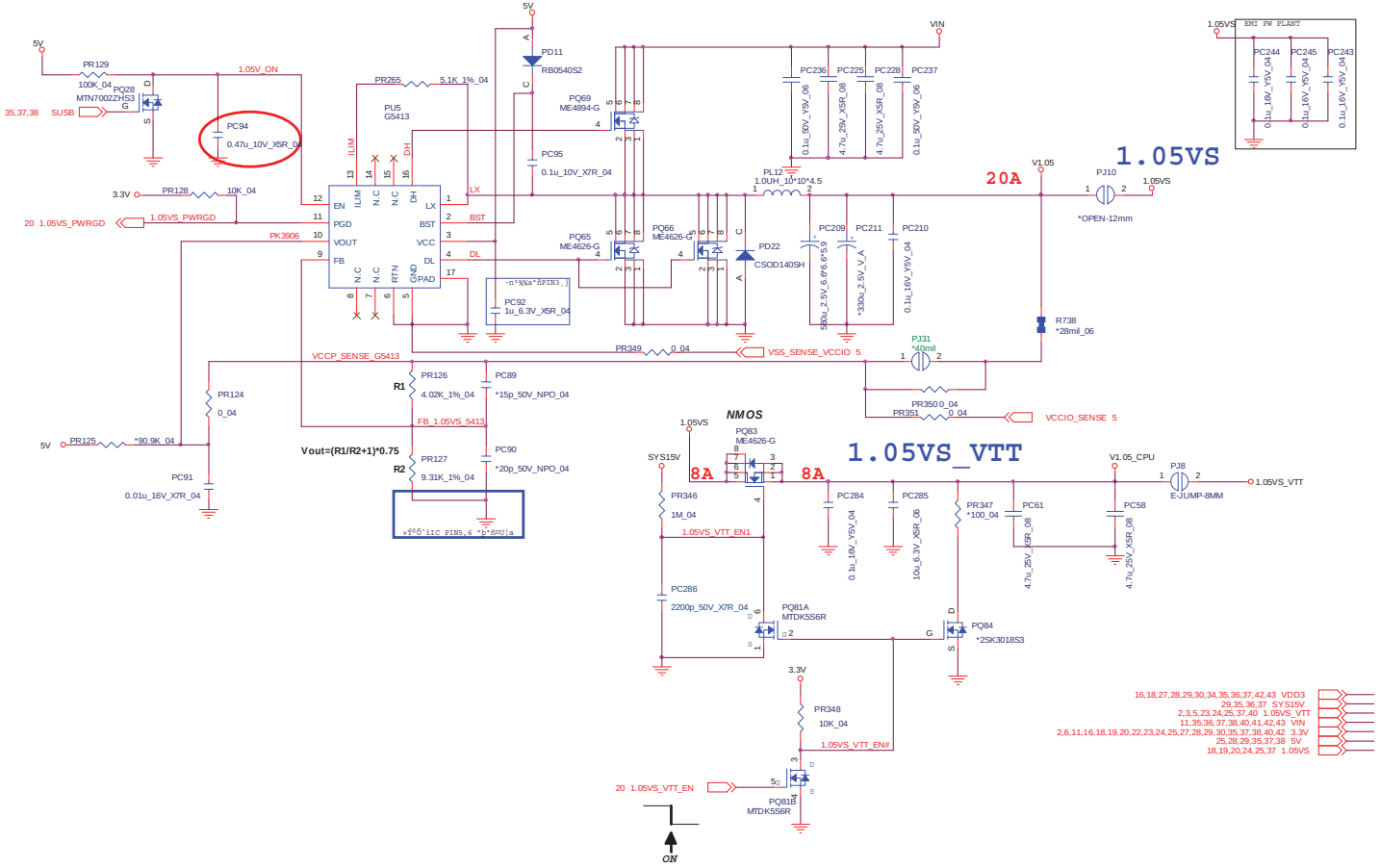
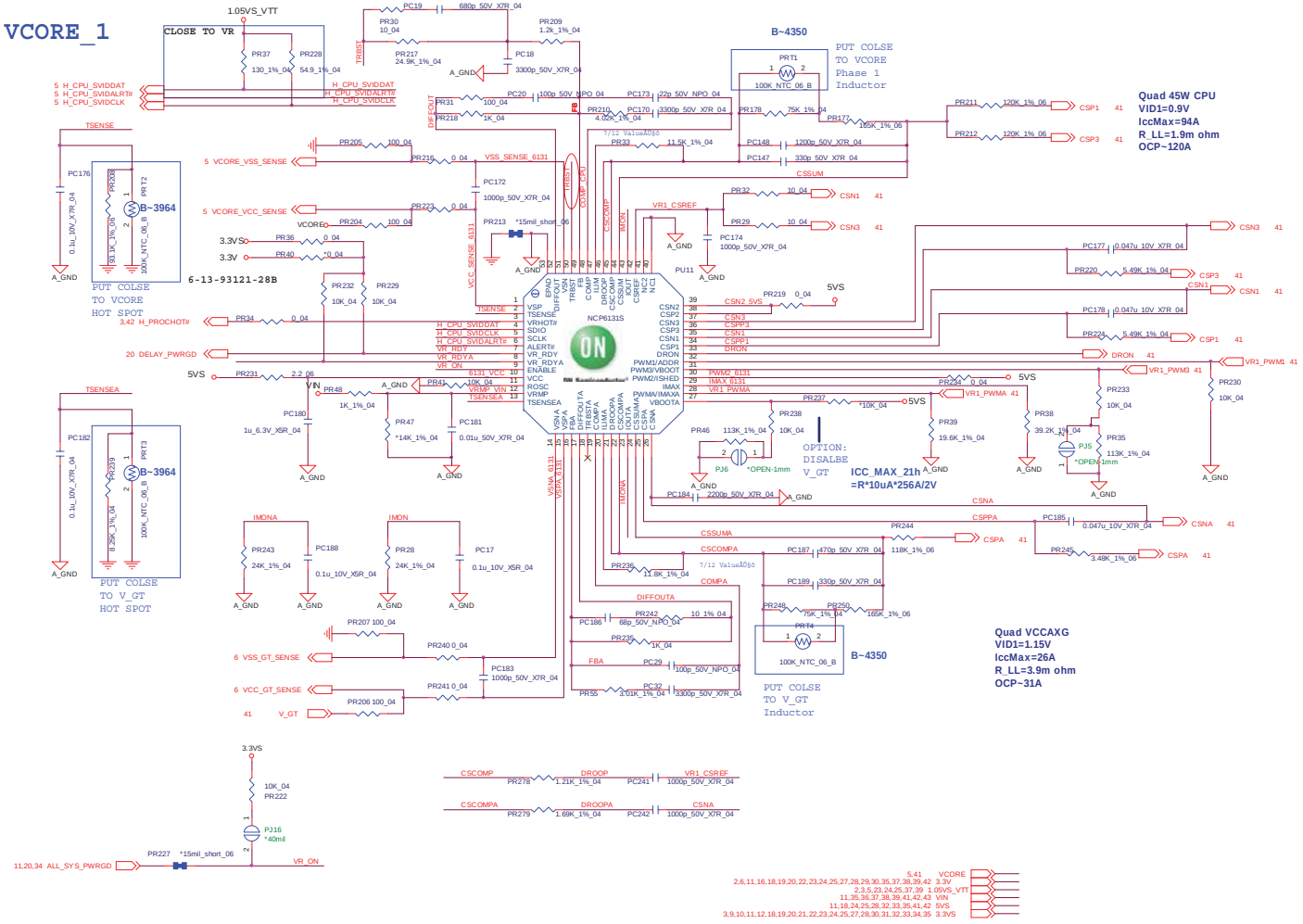
POWER 1.05VS/
1.05VS VTT



POWER VCORE1



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POWER VCORE1

POWER VCORE2

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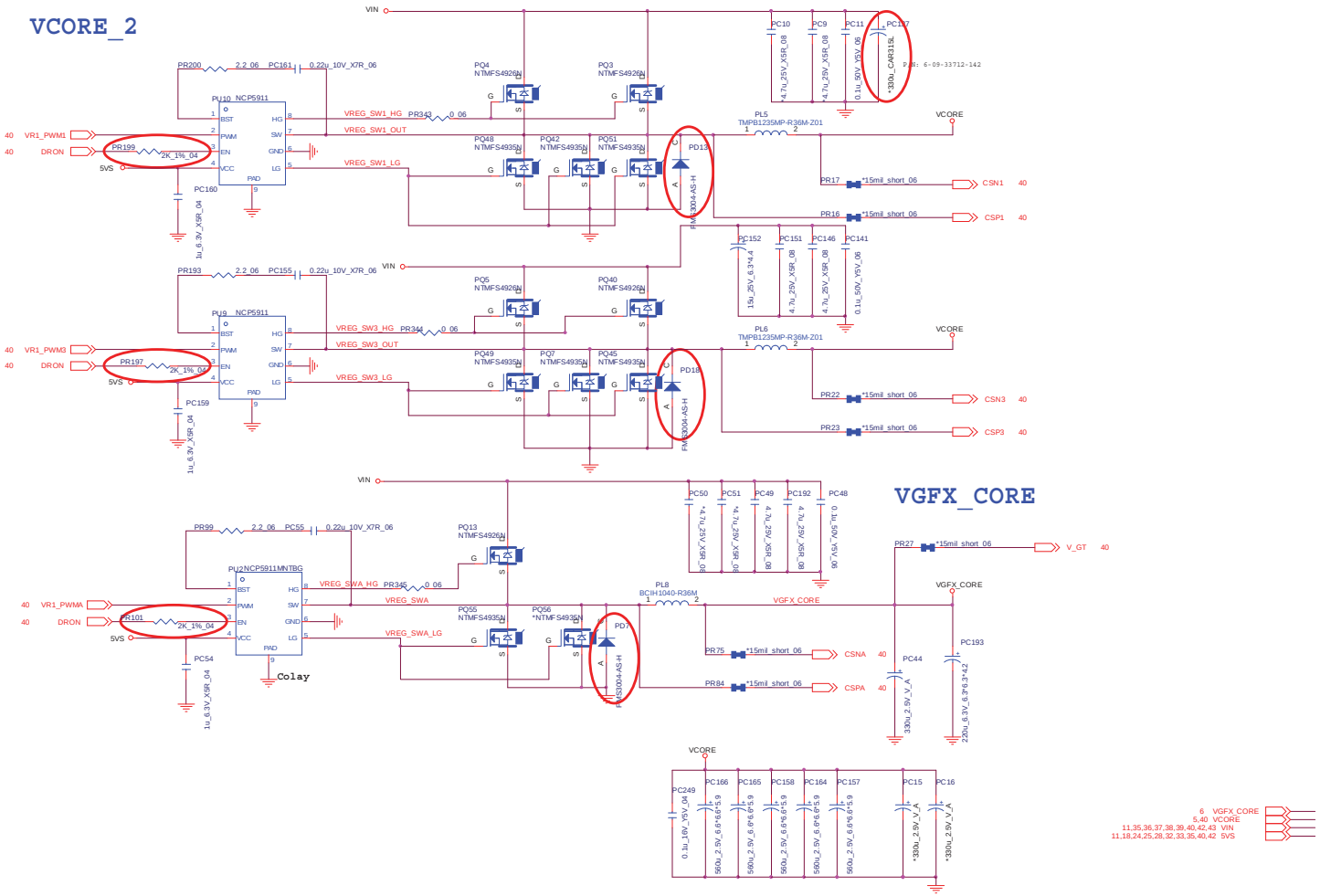
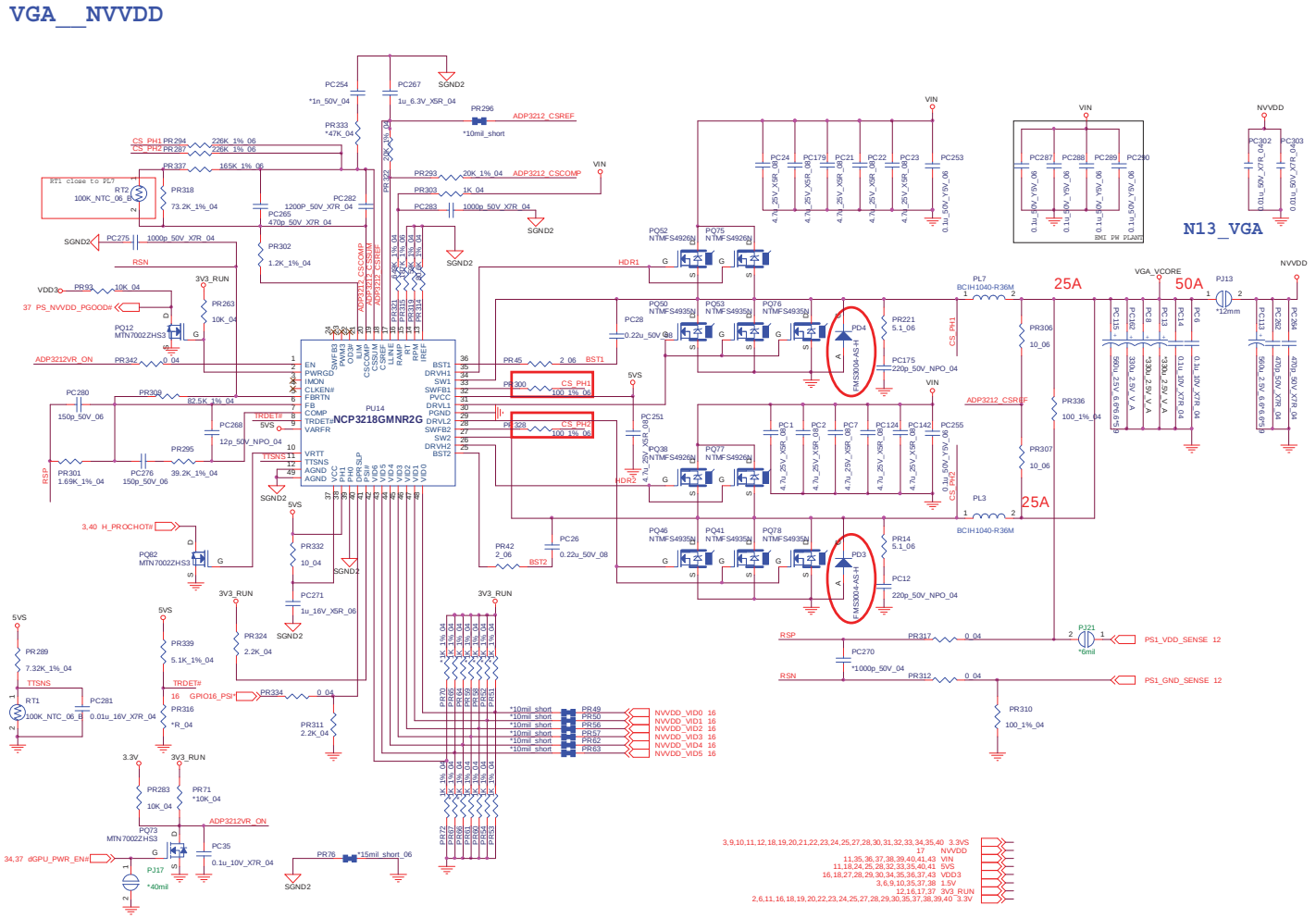
POWER VCORE2



Power VGA NVVDD



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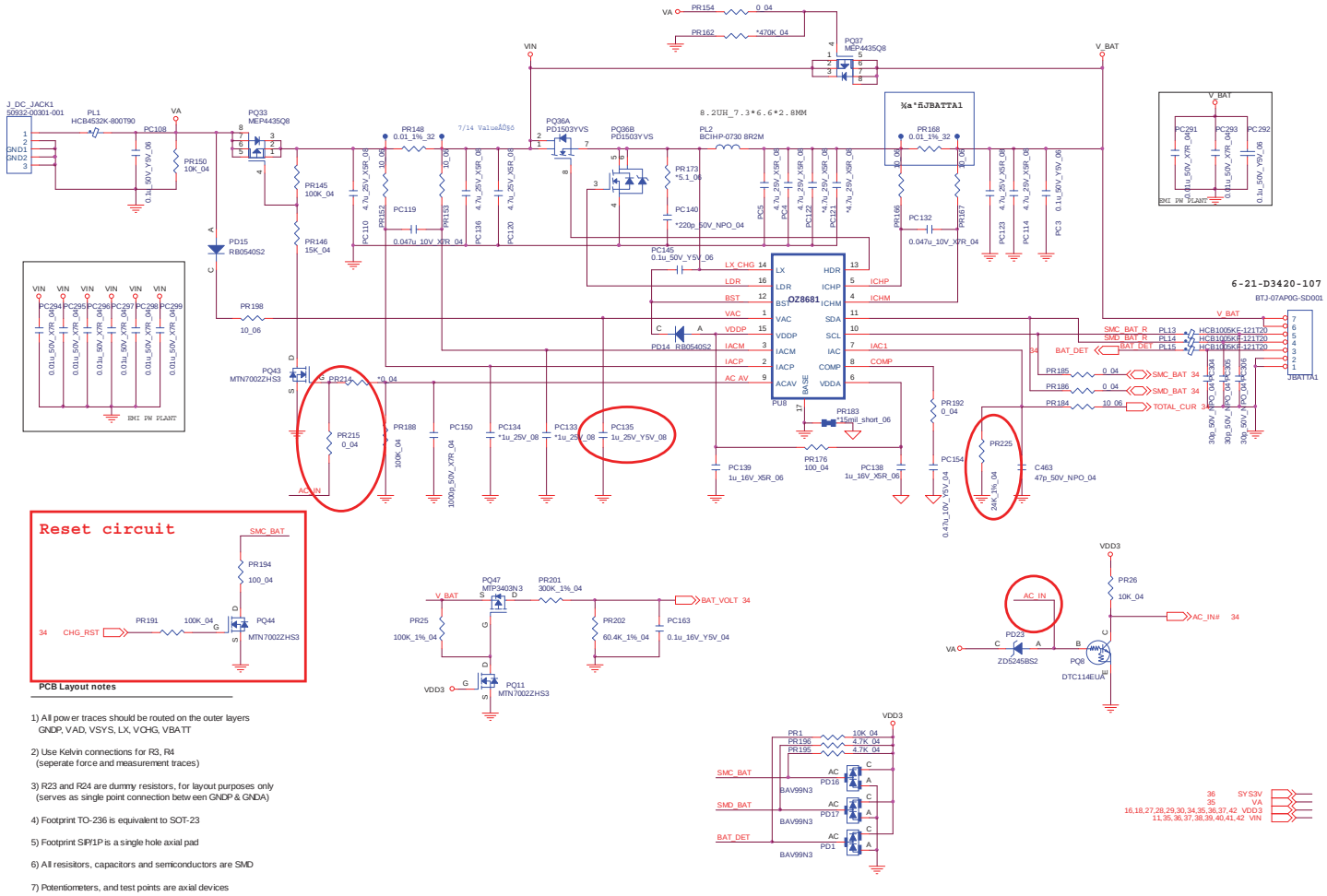
Power VGA NVVDD

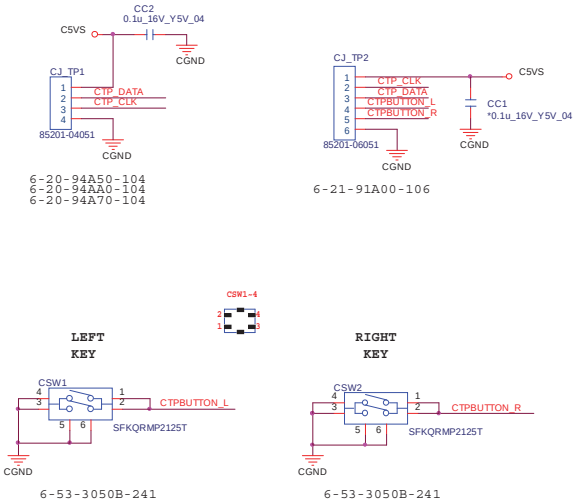
AC IN, CHARGER

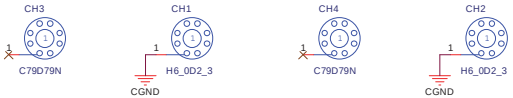
Sheet 43 of 48
AC IN, CHARGER



CLICK BOARD

CLICK BOARD





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CLICK BOARD

POWER SW BOARD

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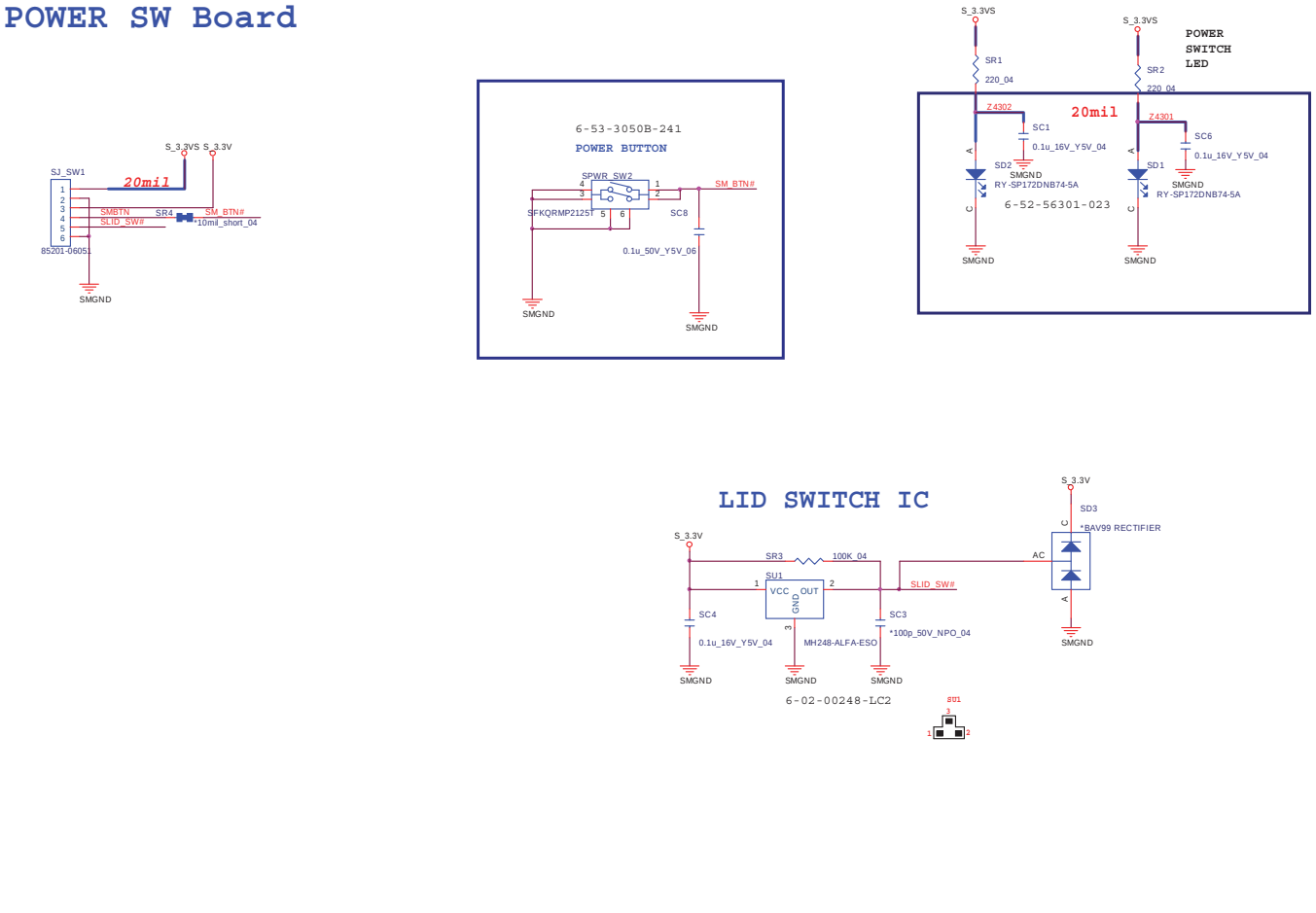
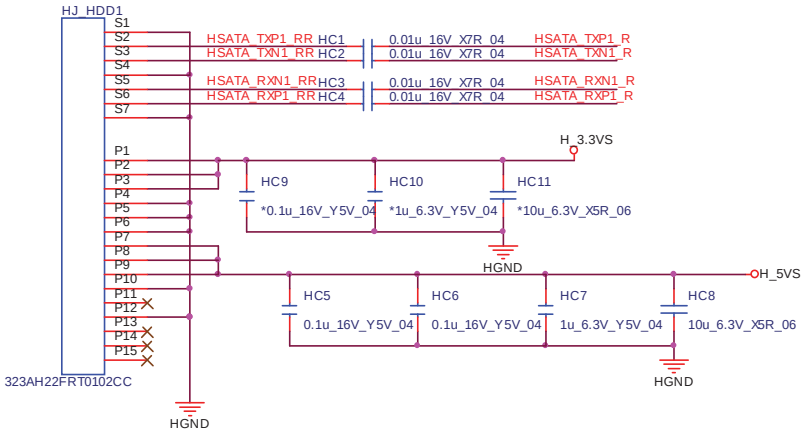
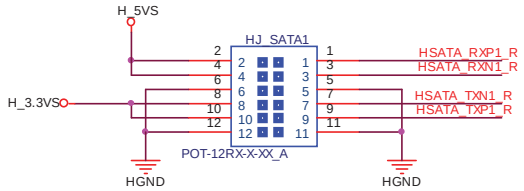
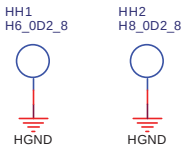
POWER SW
BOARD



HDD BOARD







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HDD BOARD

Power Diagram

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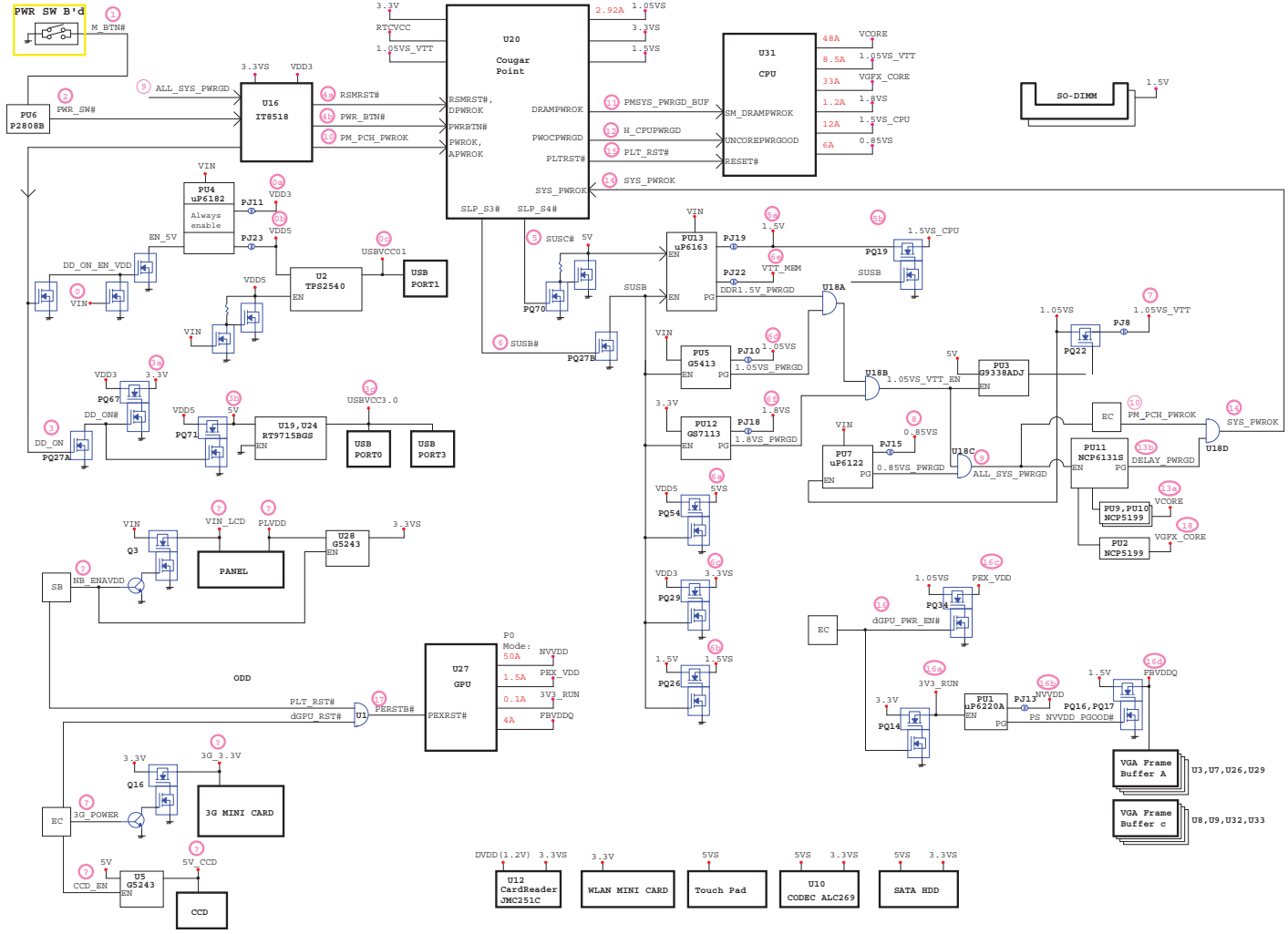
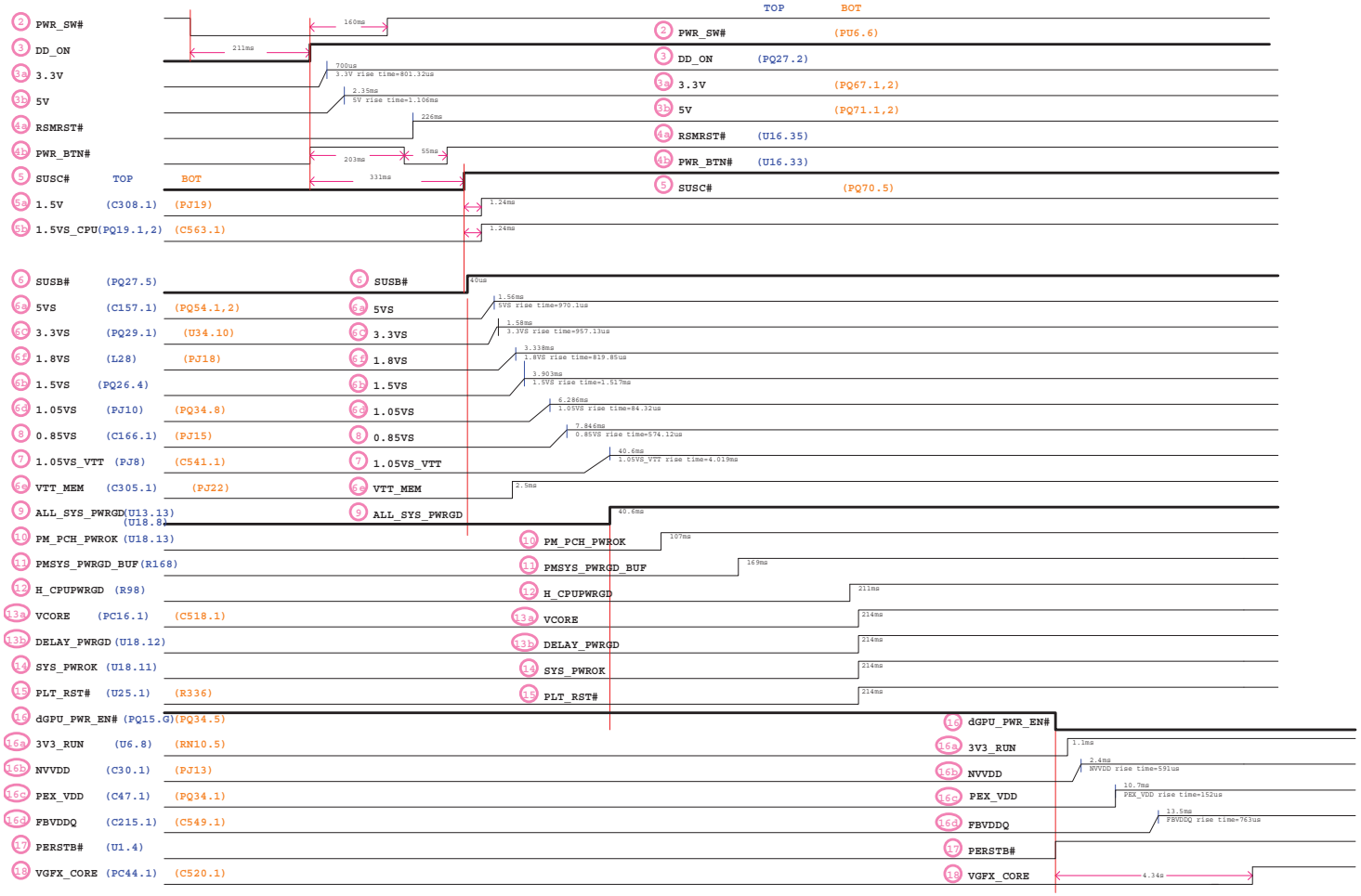
Power Diagram



Power On SEQ



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Power On SEQ

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.