SERVICE MANUAL

W540EU

notebook

Notebook Computer

W540EU

Service Manual

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About this Manual

This manual is intended for service personnel who have completed sufficient training to undertake the maintenance and inspection of personal computers.

It is organized to allow you to look up basic information for servicing and/or upgrading components of the ***W540EU*** series notebook PC.

The following information is included:

Chapter 1, Introduction, provides general information about the location of system elements and their specifications.
Chapter 2, Disassembly, provides step-by-step instructions for disassembling parts and subsystems and how to upgrade elements of the system.

Appendix A, Part Lists
Appendix B, Schematic Diagrams
Appendix C, Updating the FLASH ROM BIOS

IMPORTANT SAFETY INSTRUCTIONS

Follow basic safety precautions, including those listed below, to reduce the risk of fire, electric shock and injury to persons when using any electrical equipment:

1. Do not use this product near water, for example near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
2. Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electrical shock from lightning.
3. Do not use the telephone to report a gas leak in the vicinity of the leak.
4. Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.
5. This product is intended to be supplied by a Listed Power Unit with an AC Input of 100 - 240V, 50 - 60Hz, DC Output of 19V, 3.42A or 18.5V, 3.5A (**65** Watts) minimum AC/DC Adapter.

CAUTION

This Computer's Optical Device is a Laser Class 1 Product

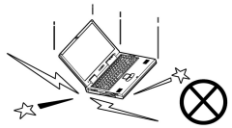
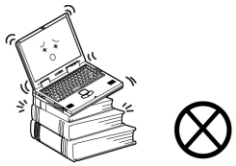
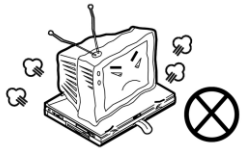
FCC Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
This device may not cause harmful interference.
This device must accept any interference received, including interference that may cause undesired operation.

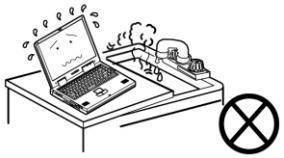
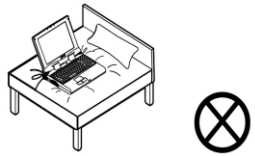
Instructions for Care and Operation

The notebook computer is quite rugged, but it can be damaged. To prevent this, follow these suggestions:

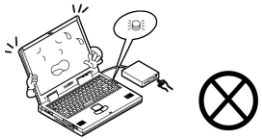
1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.

Do not expose the computer to any shock or vibration.	*Do not place it on an unstable surface.*	*Do not place anything heavy on the computer.*
		

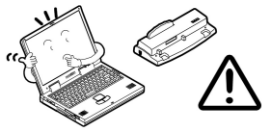
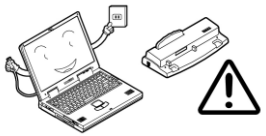
2. **Keep it dry, and don't overheat it.** Keep the computer and power supply away from any kind of heating element. This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.

Do not expose it to excessive heat or direct sunlight.	*Do not leave it in a place where foreign matter or moisture may affect the system.*	*Don't use or store the computer in a humid environment.*	*Do not place the computer on any surface which will block the vents.*
			

3. **Follow the proper working procedures for the computer**. Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.

Do not turn off the power until you properly shut down all programs.	*Do not turn off any peripheral devices when the computer is on.*	*Do not disassemble the computer by yourself.*	*Perform routine maintenance on your computer.*
			

4. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
5. **Take care when using peripheral devices**.

Use only approved brands of peripherals.	*Unplug the power cord before attaching peripheral devices.*
	

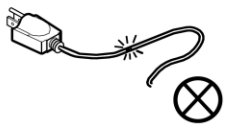
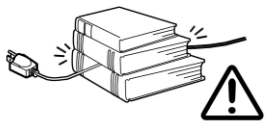
Power Safety

The computer has specific power requirements:

- Only use a power adapter approved for use with this computer.
- Your AC adapter may be designed for international travel but it still requires a steady, uninterrupted power supply. If you are unsure of your local power specifications, consult your service representative or local power company.
- The power adapter may have either a 2-prong or a 3-prong grounded plug. The third prong is an important safety feature; do not defeat its purpose. If you do not have access to a compatible outlet, have a qualified electrician install one.
- When you want to unplug the power cord, be sure to disconnect it by the plug head, not by its wire.
- Make sure the socket and any extension cord(s) you use can support the total current load of all the connected devices.
- Before cleaning the computer, make sure it is disconnected from any external power supplies.

Power Safety Warning

Before you undertake any upgrade procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines and power cord). It is advisable to also remove your battery in order to prevent accidentally turning the machine on.

Do not plug in the power cord if you are wet.	*Do not use the power cord if it is broken.*	*Do not place heavy objects on the power cord.*
		

Battery Precautions

- Only use batteries designed for this computer. The wrong battery type may explode, leak or damage the computer.
- Do not continue to use a battery that has been dropped, or that appears damaged (e.g. bent or twisted) in any way. Even if the computer continues to work with a damaged battery in place, it may cause circuit damage, which may possibly result in fire.
- Recharge the batteries using the notebook's system. Incorrect recharging may make the battery explode.
- Do not try to repair a battery pack. Refer any battery pack repair or replacement to your service representative or qualified service personnel.
- Keep children away from, and promptly dispose of a damaged battery. Always dispose of batteries carefully. Batteries may explode or leak if exposed to fire, or improperly handled or discarded.
- Keep the battery away from metal appliances.
- Affix tape to the battery contacts before disposing of the battery.
- Do not touch the battery contacts with your hands or metal objects.

Battery Guidelines

The following can also apply to any backup batteries you may have.

- If you do not use the battery for an extended period, then remove the battery from the computer for storage.
- Before removing the battery for storage charge it to 60% - 70%.
- Check stored batteries at least every 3 months and charge them to 60% - 70%.

Battery Disposal

The product that you have purchased contains a rechargeable battery. The battery is recyclable. At the end of its useful life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for recycling options or proper disposal.

Caution

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used battery according to the manufacturer's instructions.

Battery Level

Click the battery icon  in the taskbar to see the current battery level and charge status. A battery that drops below a level of 10% will not allow the computer to boot up. Make sure that any battery that drops below 10% is recharged within one week.

Related Documents

You may also need to consult the following manual for additional information:

User's Manual on CD/DVD

This describes the notebook PC's features and the procedures for operating the computer and its ROM-based setup program. It also describes the installation and operation of the utility programs provided with the notebook PC.

System Startup

1. Remove all packing materials.
2. Place the computer on a stable surface.
3. Insert the battery and make sure it is locked in position.
4. Securely attach any peripherals you want to use with the computer (e.g. keyboard and mouse) to their ports.
5. Attach the AC/DC adapter to the DC-In jack at the rear of the computer, then plug the AC power cord into an outlet, and connect the AC power cord to the AC/DC adapter.
6. Use one hand to raise the lid/LCD to a comfortable viewing angle (do not exceed 130 degrees); use the other hand (as illustrated in Figure 1) to support the base of the computer (**Note**: **Never** lift the computer by the lid/LCD).
7. Press the power button to turn the computer "on".

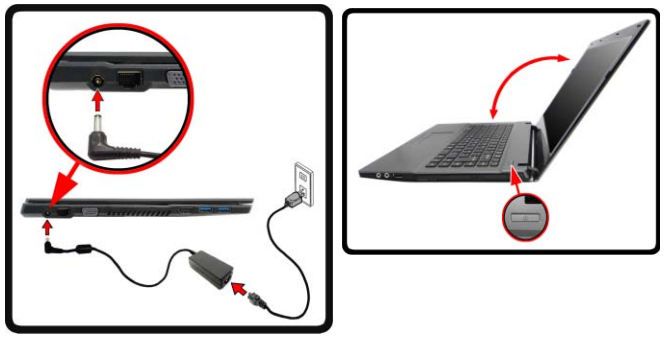


Figure 1
Opening the Lid/LCD/ Computer with AC/DC Adapter Plugged-In

Shut Down

Note that you should always shut your computer down by choosing **Shut Down** from the **Start** Menu.

This will help prevent hard disk or system problems.

Contents

Chapter 1: Introduction

Overview

This manual covers the information you need to service or upgrade the ***W540EU*** series notebook computer. Information about operating the computer (e.g. getting started, and the *Setup* utility) is in the *User's Manual*. Information about drivers (e.g. VGA & audio) is also found in the *User's Manual*. The manual is shipped with the computer.

Operating systems (e.g. *Window 7*, etc.) have their own manuals as do application softwares (e.g. word processing and database programs). If you have questions about those programs, you should consult those manuals.

The ***W540EU*** series notebook is designed to be upgradeable. See ***Disassembly on page 2 - 1*** for a detailed description of the upgrade procedures for each specific component. Please take note of the warning and safety information indicated by the "  " symbol.

The balance of this chapter reviews the computer's technical specifications and features.

Specifications

Latest Specification Information

The specifications listed here are correct at the time of sending them to the press. Certain items (particularly processor types/speeds) may be changed, delayed or updated due to the manufacturer's release schedule. Check with your service center for more details.

CPU

The CPU is not a user serviceable part. Accessing the CPU in any way may violate your warranty.

Processor Options

Intel® Core™ i7 Processor

i7-3612QM (2.10GHz)

6MB L3 Cache, **22nm**, DDR3-1600MHz, TDP 35W

i7-3520M (2.90GHz)

4MB L3 Cache, **22nm**, DDR3-1600MHz, TDP 35W

Intel® Core™ i5 Processor

i5-3360M (2.80GHz), i5-3320M (2.60GHz), i5-3210M (2.50GHz)

3MB L3 Cache, **22nm**, DDR3-1600MHz, TDP 35W

Intel® Core™ i3 Processor

i3-3110M (2.40GHz)

3MB L3 Cache, **22nm**, DDR3-1600MHz, TDP 35W

Core Logic

Intel® HM77 Chipset

BIOS

64Mb SPI Flash ROM

AMI BIOS

Memory

Two 204 Pin SO-DIMM Sockets Supporting **DDR3 1333/ 1600MHz** Memory

Memory Expandable up to 8GB

(The real memory operating frequency depends on the FSB of the processor.)

LCD

14" (35.56cm) HD TFT LCD

Video Adapter

Intel HD Graphics 4000

Dynamic Frequency (Intel Dynamic Video Memory Technology for up to **1.7GB**)

Microsoft DirectX®11 Compatible

Security

Security (Kensington® Type) Lock Slot

BIOS Password

Trusted Platform Module v1.2

Audio

High Definition Audio Compliant Interface

2 * Built-In Speakers

Built-In Microphone

Storage

(**Factory Option**) One Changeable 9.5mm(h) Optical Device Type Drive (Super Multi Drive Module or Blu-Ray Combo Drive Module)

One Changeable 2.5" 9.5mm (h) SATA HDD

(**Factory Option**) Dummy ODD

(**Factory Option**) One mSATA Solid State Drive (SSD)

Pointing Device

Built-in Touchpad

Keyboard

“WinKey” keyboard (with embedded numeric keypad)

Interface

One HDMI-Out Port

One Headphone-Out Jack

One Microphone-In Jack

One RJ-45 LAN Jack

One External Monitor Port

One USB 2.0 Port

Two USB 3.0 Ports

One DC-in Jack

Mini Card Slots

Slot 1 for WLAN Module or Combo WLAN and Bluetooth Module

(**Factory Option**) Slot 2 for 3.75G/HSPA Module OR mSATA **SSD**

Card Reader

Embedded Multi-In-1 Card Reader

- MMC (MultiMedia Card) / RS MMC
- SD (Secure Digital) / Mini SD / SDHC/ SDXC
- MS (Memory Stick) / MS Pro / MS Duo

Communication

Built-In Gigabit Ethernet LAN

(**Factory Option**) 2M Pixel HD PC Camera Module

(**Factory Option**) 3.75G/HSPA Mini-Card Module

WLAN/ Bluetooth Half Mini-Card Modules:

(**Factory Option**) Intel® Centrino® Wireless-N 2230 Wireless LAN (**802.11b/g/n**) + Bluetooth 4.0

(**Factory Option**) Intel® Centrino® Wireless-N 135 Wireless LAN (**802.11b/g/n**) + Bluetooth 4.0

(**Factory Option**) Third-Party Wireless LAN (**802.11b/g/n**)

(**Factory Option**) Third-Party Wireless LAN (**802.11b/g/n**) + Bluetooth 4.0

Power

6 Cell Smart Lithium-Ion Battery Pack, 48.84WH

(**Factory Option**) 6 Cell Smart Lithium-Ion Battery Pack, 62.16WH

Full Range AC/DC Adapter

AC Input: 100 - 240V, 50 - 60Hz

DC Output: 19V, 3.42A or 18.5V, 3.5A (**65W**)

Environmental Spec

Temperature

Operating: 5°C - 35°C

Non-Operating: -20°C - 60°C

Relative Humidity

Operating: 20% - 80%

Non-Operating: 10% - 90%

Dimensions & Weight

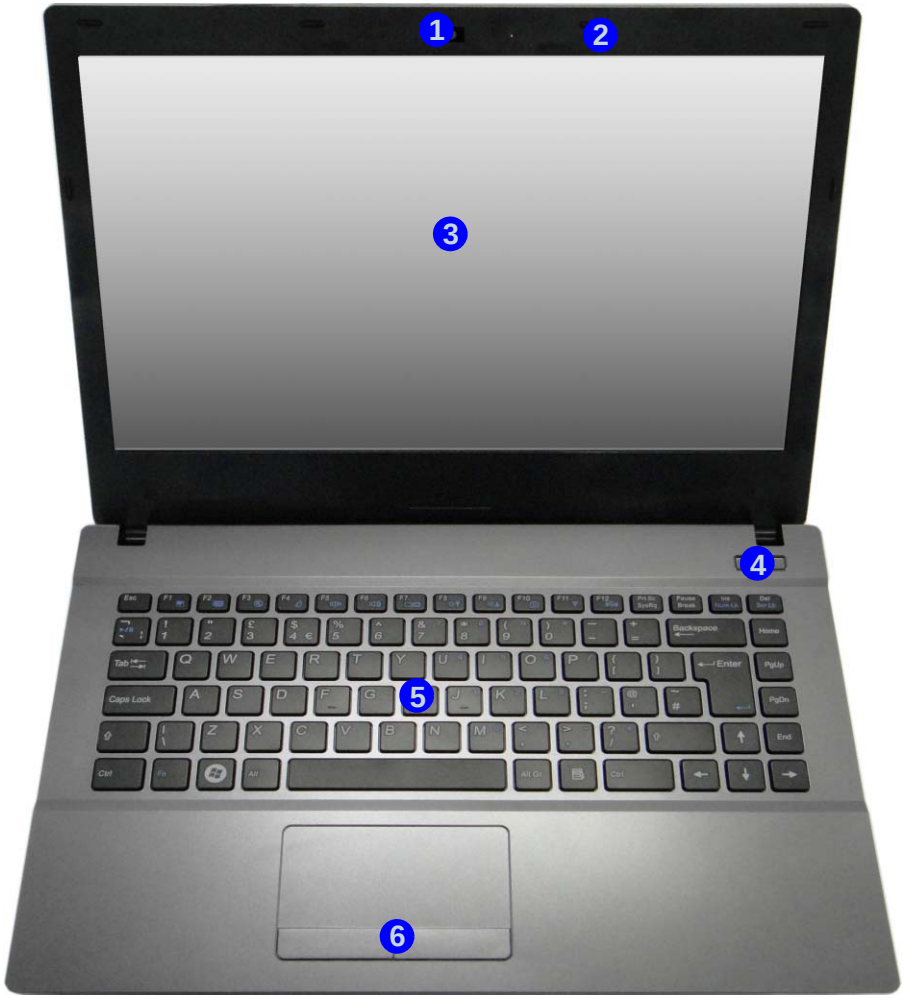
340mm (w) * 241mm (d) * 11 - 25.4mm (h) (Height Excluding Battery Area)

2.15 kg (with 48.84WH Battery and ODD)

External Locator - Top View with LCD Panel Open

Figure 1
Top View

1. PC Camera (**Optional**)
2. Built-In Microphone
3. LCD
4. Power Button
5. Keyboard
6. Touchpad & Buttons



External Locator - Front & Right Side Views

FRONT VIEW

Figure 2
Front View

1. LED Power Indicator
2. Multi-in-1 Card Reader

RIGHT SIDE VIEW

Figure 3
Right Side View

1. Microphone-In Jack
2. Headphone-Out Jack
3. USB 2.0 Port
4. Optical Device Drive Bay
5. Emergency Eject Hole
6. Security Lock Slot

External Locator - Left Side & Rear View

Figure 4
Left Side View

1. DC-In Jack
2. RJ-45 LAN Jack
3. External Monitor Port
4. Vent
5. HDMI-Out Port
6. USB 3.0 Ports

LEFT SIDE VIEW

Figure 5
Rear View

1. Battery

REAR VIEW

External Locator - Bottom View

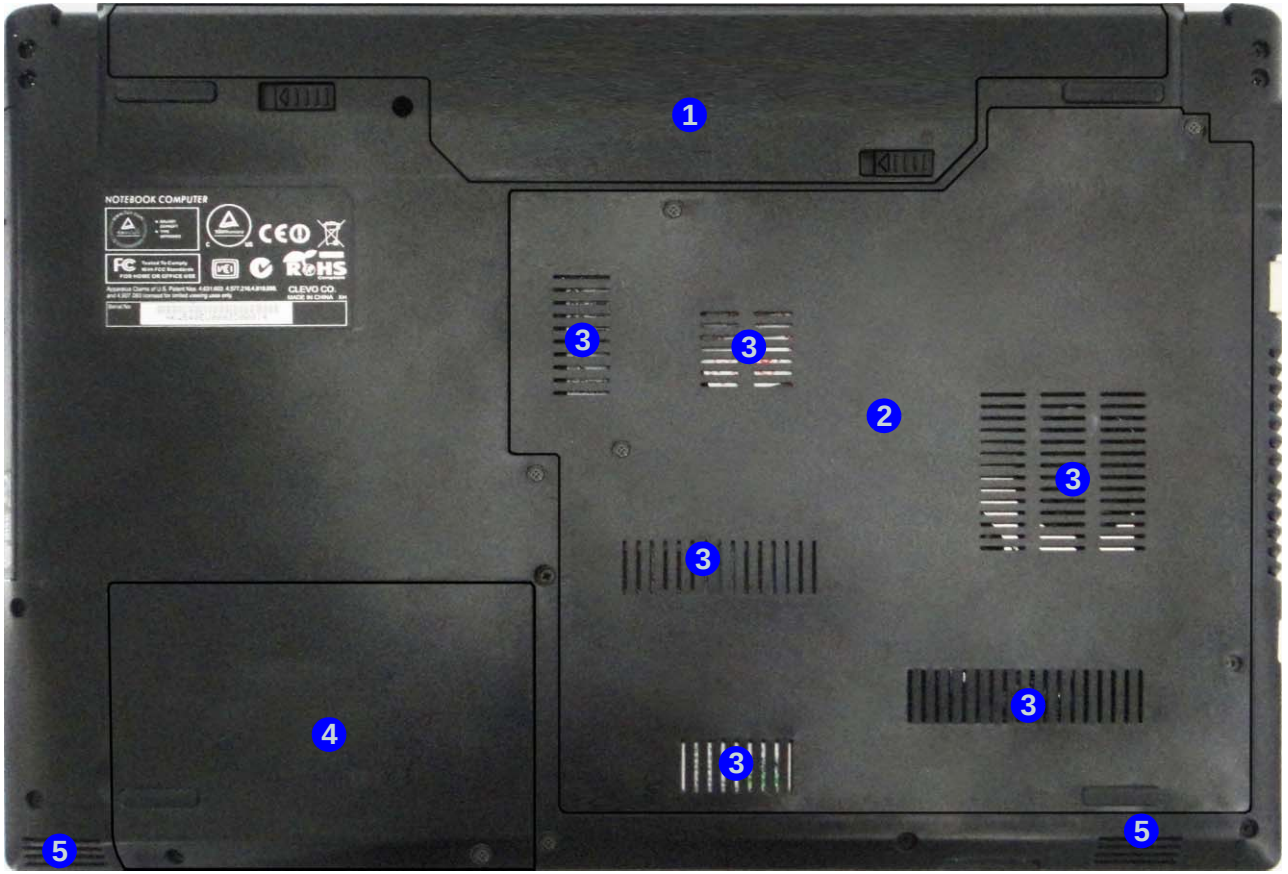


Figure 6
Bottom View

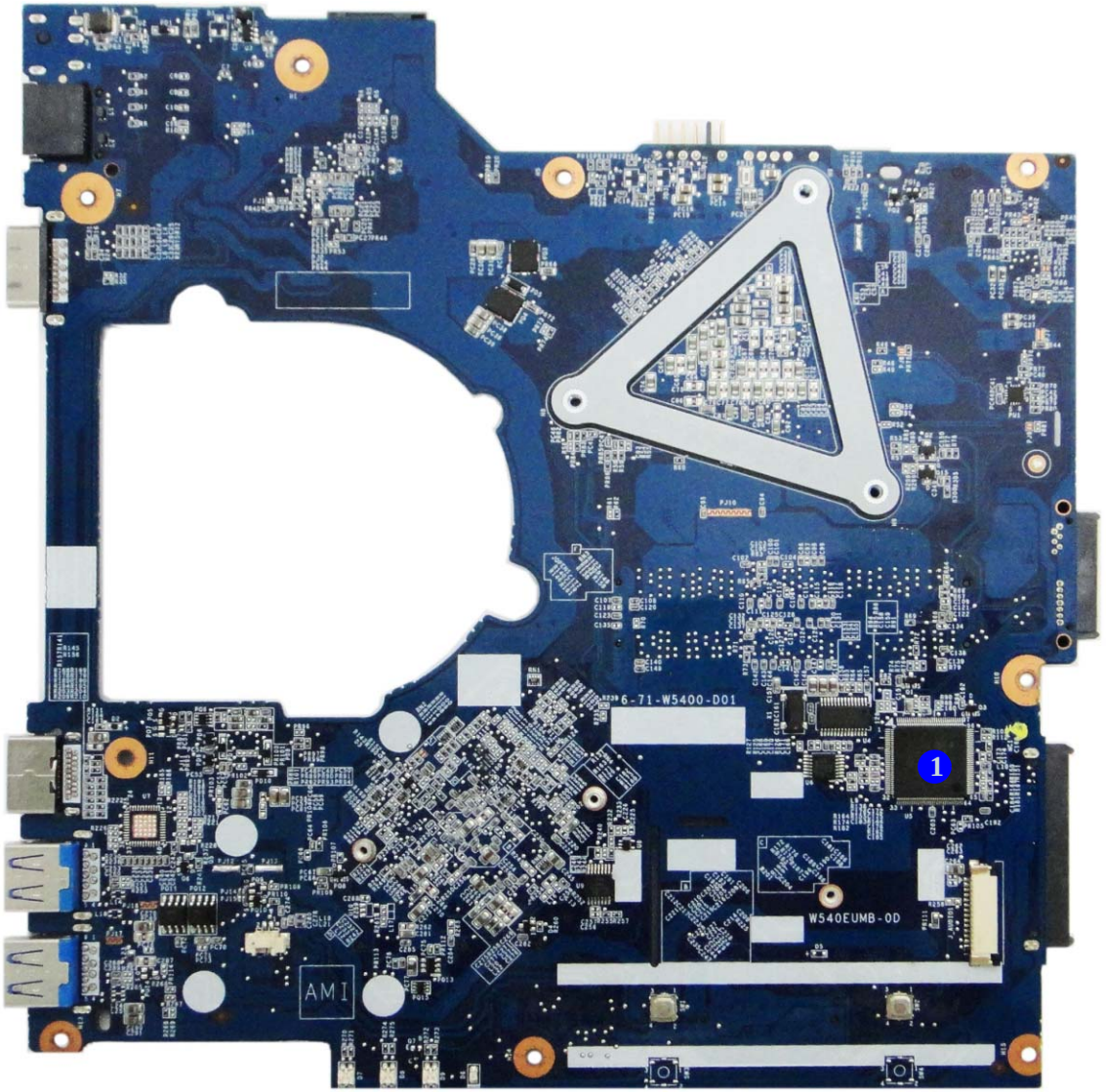
1. Battery
2. Component Bay Cover
3. Vent
4. Hard Disk Bay Cover
5. Speakers

Overheating

To prevent your computer from overheating, make sure nothing blocks any vent while the computer is in use.

Mainboard Overview - Top (Key Parts)

Figure 7
Mainboard Top Key Parts



1. KBC-ITE IT8518
2.

Mainboard Overview - Bottom (Key Parts)

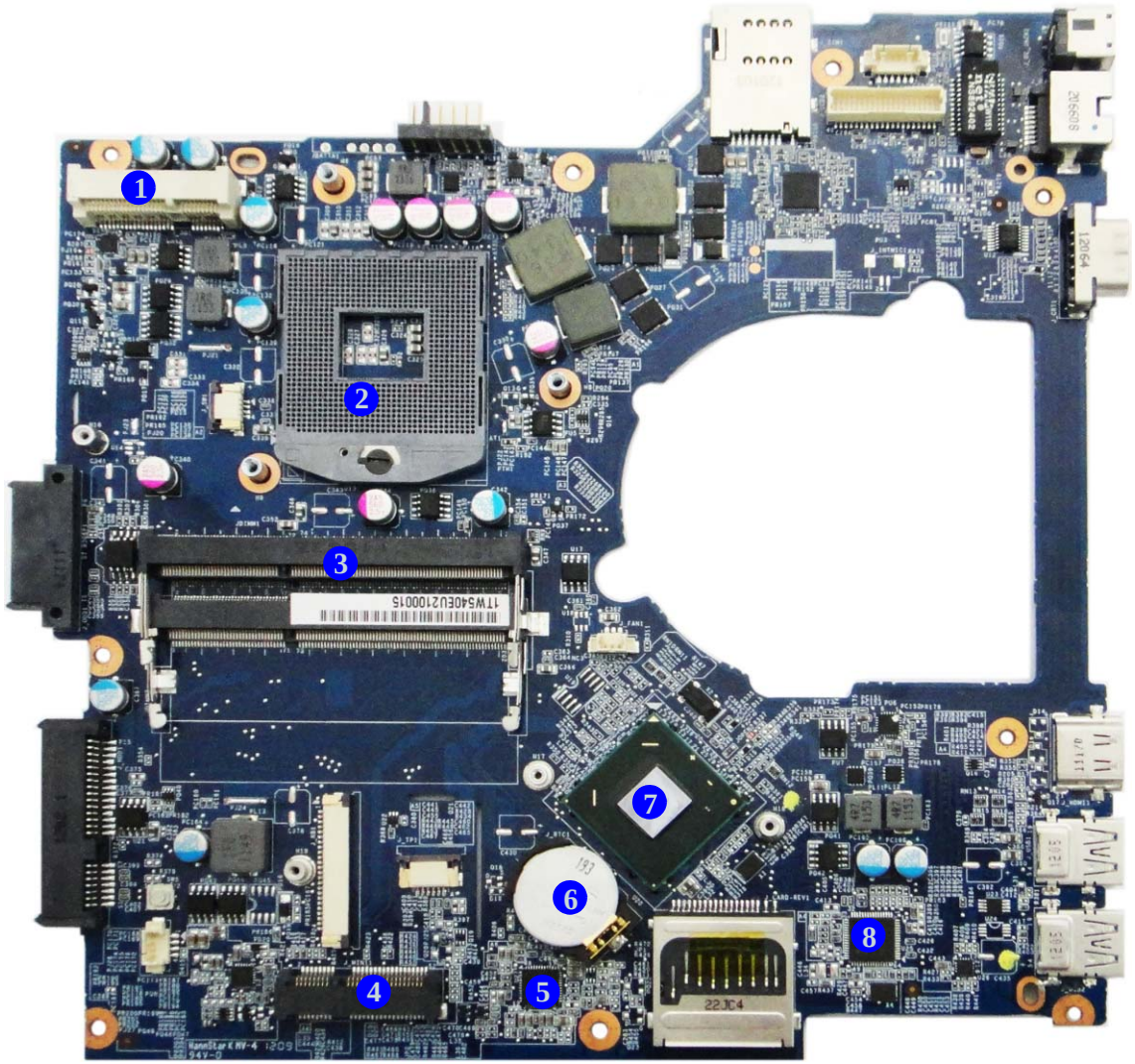


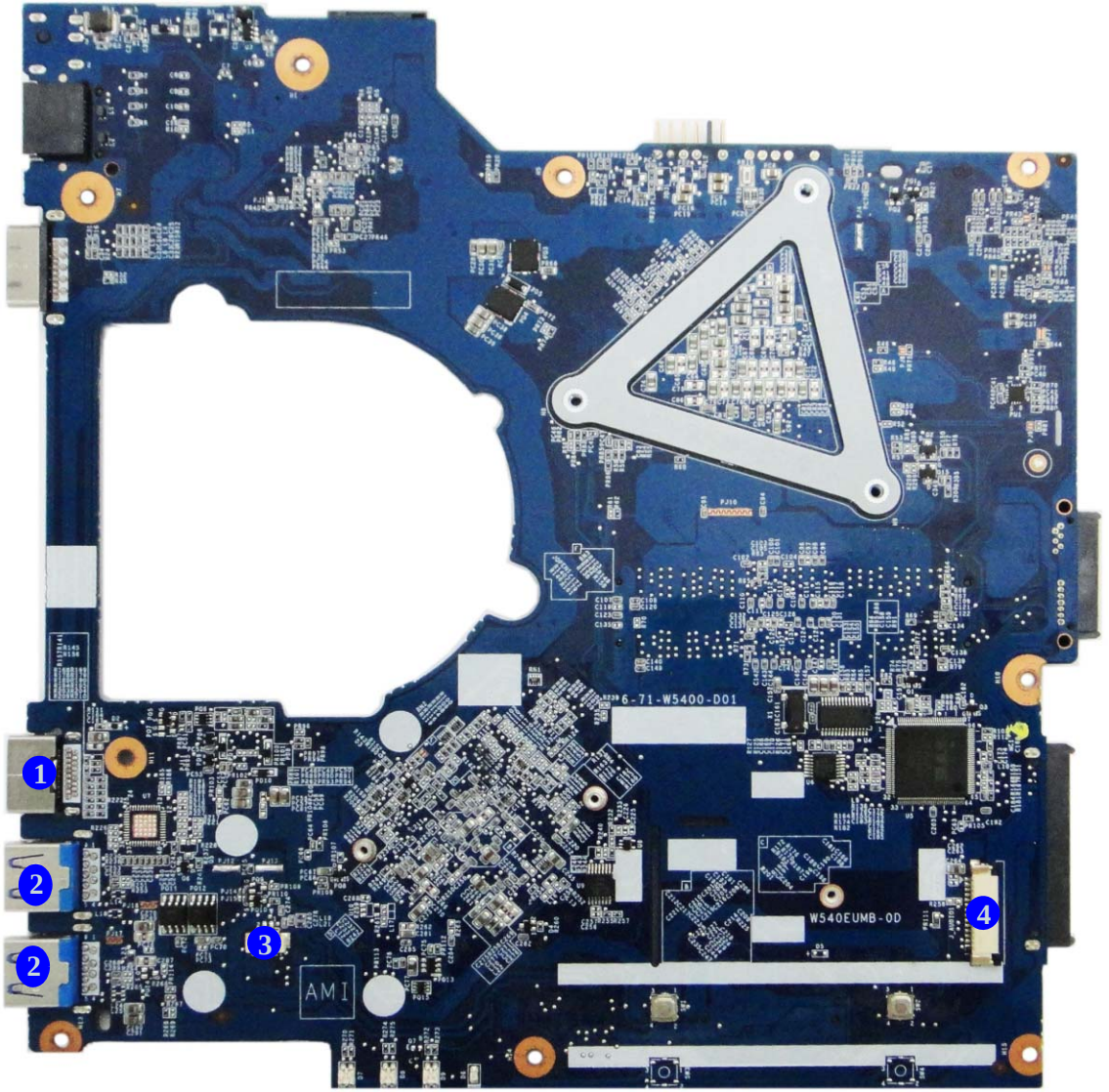
Figure 8
Mainboard Bottom Key Parts

1. Mini-Card Connector (3G Module)
2. CPU Socket (no CPU installed)
3. Memory Slots DDR3 SO-DIMM
4. Mini-Card Connector (WLAN Module)
5. Audio Codec VIA VT1802P
6. CMOS Battery
7. Platform Controller Hub
8. RTL8411 Card Reader + LAN

Mainboard Overview - Top (Connectors)

Figure 9
Mainboard Top Connectors

1. HDMI-Out Port
2. USB Port 3.0
3. Speaker Cable Connector
4. Audio Board Cable Connector



Mainboard Overview - Bottom (Connectors)

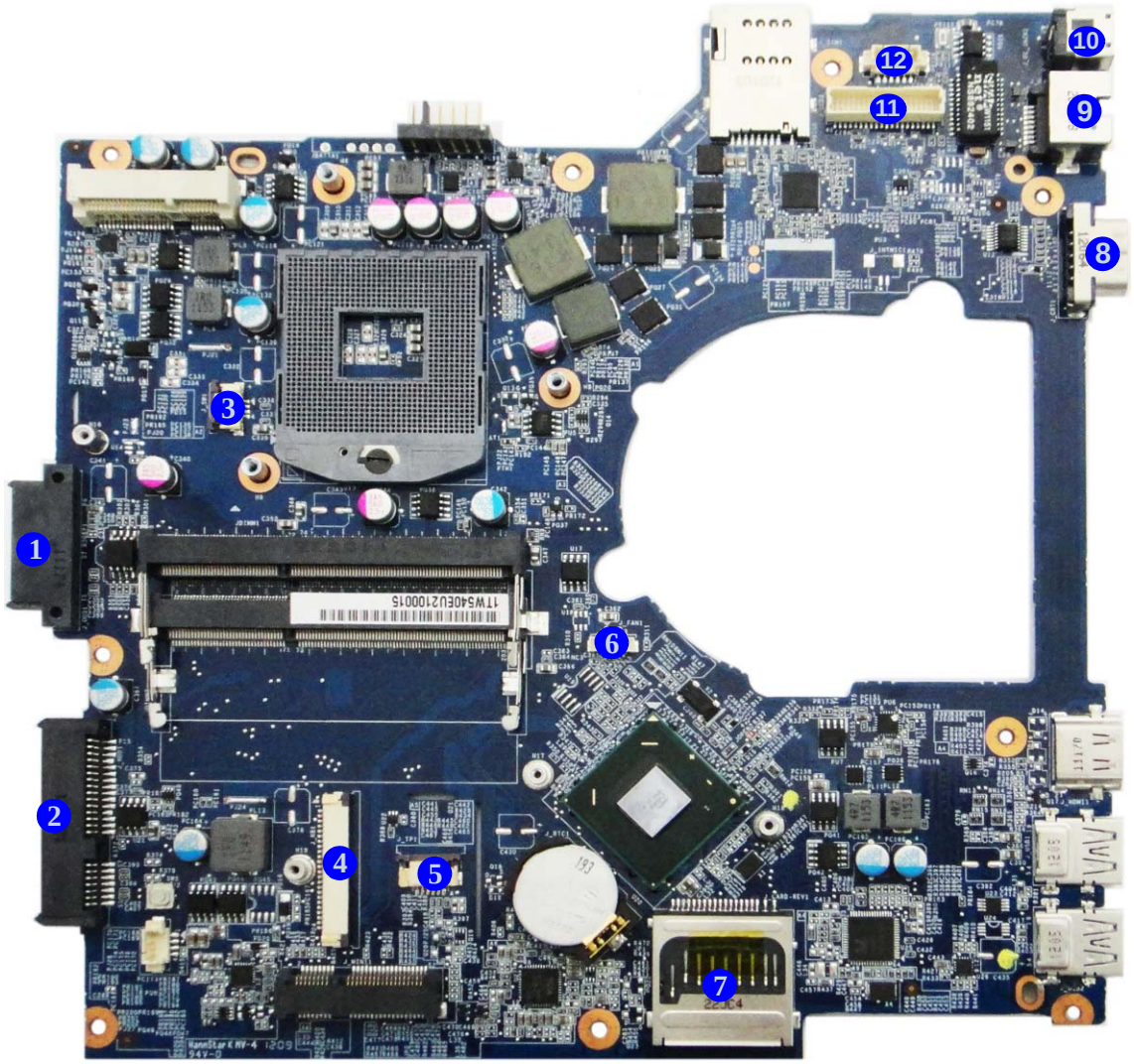


Figure 10
Mainboard Bottom Connectors

1. ODD Connector
2. HDD Connector
3. Power Button Cable Connector
4. Keyboard Cable Connector
5. TouchPad Cable Connector
6. Fan Cable Connector
7. Multi-in-1 Card Reader
8. External Monitor Port
9. RJ-45 LAN Jack
10. DC-In Jack
11. LCD Cable Connector
12. CCD Cable + INT MIC Connector

Chapter 2: Disassembly

Overview

This chapter provides step-by-step instructions for disassembling the ***W540EU*** series notebook's parts and subsystems. When it comes to reassembly, reverse the procedures (unless otherwise indicated).

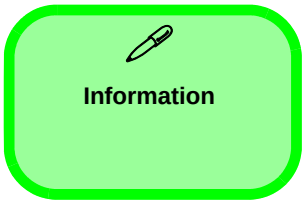
We suggest you completely review any procedure before you take the computer apart.

Procedures such as upgrading/replacing the RAM, optical device and hard disk are included in the User's Manual but are repeated here for your convenience.

To make the disassembly process easier each section may have a box in the page margin. Information contained under the figure # will give a synopsis of the sequence of procedures involved in the disassembly procedure. A box with a  lists the relevant parts you will have after the disassembly process is complete. **Note**: The parts listed will be for the disassembly procedure listed ONLY, and not any previous disassembly step(s) required. Refer to the part list for the previous disassembly procedure. The amount of screws you should be left with will be listed here also.

A box with a  will also provide any possible helpful information. A box with a  contains warnings.

An example of these types of boxes are shown in the sidebar.



NOTE: All disassembly procedures assume that the system is turned **OFF**, and disconnected from any power supply (the battery is removed too).

Maintenance Tools

The following tools are recommended when working on the notebook PC:

- M3 Philips-head screwdriver
- M2.5 Philips-head screwdriver (magnetized)
- M2 Philips-head screwdriver
- Small flat-head screwdriver
- Pair of needle-nose pliers
- Anti-static wrist-strap

Connections

Connections within the computer are one of four types:

Locking collar sockets for ribbon connectors	To release these connectors, use a small flat-head screwdriver to gently pry the locking collar away from its base. When replacing the connection, make sure the connector is oriented in the same way. The pin1 side is usually not indicated.
Pressure sockets for multi-wire connectors	To release this connector type, grasp it at its head and gently rock it from side to side as you pull it out. Do not pull on the wires themselves. When replacing the connection, do not try to force it. The socket only fits one way.
Pressure sockets for ribbon connectors	To release these connectors, use a small pair of needle-nose pliers to gently lift the connector away from its socket. When replacing the connection, make sure the connector is oriented in the same way. The pin1 side is usually not indicated.
Board-to-board or multi-pin sockets	To separate the boards, gently rock them from side to side as you pull them apart. If the connection is very tight, use a small flat-head screwdriver - use just enough force to start.

Maintenance Precautions

The following precautions are a reminder. To avoid personal injury or damage to the computer while performing a removal and/or replacement job, take the following precautions:

1. **Don't drop it**. Perform your repairs and/or upgrades on a stable surface. If the computer falls, the case and other components could be damaged.
2. **Don't overheat it**. Note the proximity of any heating elements. Keep the computer out of direct sunlight.
3. **Avoid interference**. Note the proximity of any high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage components and/or data. You should also monitor the position of magnetized tools (i.e. screwdrivers).
4. **Keep it dry**. This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.
5. **Be careful with power**. Avoid accidental shocks, discharges or explosions.
   - Before removing or servicing any part from the computer, turn the computer off and detach any power supplies.
   - When you want to unplug the power cord or any cable/wire, be sure to disconnect it by the plug head. Do not pull on the wire.
6. **Peripherals** – Turn off and detach any peripherals.
7. **Beware of static discharge**. ICs, such as the CPU and main support chips, are vulnerable to static electricity. Before handling any part in the computer, discharge any static electricity inside the computer. When handling a printed circuit board, do not use gloves or other materials which allow static electricity buildup. We suggest that you use an anti-static wrist strap instead.
8. **Beware of corrosion**. As you perform your job, avoid touching any connector leads. Even the cleanest hands produce oils which can attract corrosive elements.
9. **Keep your work environment clean**. Tobacco smoke, dust or other air-born particulate matter is often attracted to charged surfaces, reducing performance.
10. **Keep track of the components**. When removing or replacing any part, be careful not to leave small parts, such as screws, loose inside the computer.

Power Safety Warning

Before you undertake any upgrade procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines and power cord). It is advisable to also remove your battery in order to prevent accidentally turning the machine on.

Cleaning

Do not apply cleaner directly to the computer, use a soft clean cloth.
Do not use volatile (petroleum distillates) or abrasive cleaners on any part of the computer.

Disassembly Steps

The following table lists the disassembly steps, and on which page to find the related information. **PLEASE PERFORM THE DISASSEMBLY STEPS IN THE ORDER INDICATED.**

To remove the Battery:

1. Remove the battery *page 2 - 5*

To remove the HDD:

1. Remove the battery *page 2 - 5*
2. Remove the HDD *page 2 - 6*

To remove the Optical Device:

1. Remove the battery *page 2 - 5*
2. Remove the Optical device *page 2 - 8*

To remove the System Memory:

1. Remove the battery *page 2 - 5*
2. Remove the system memory *page 2 - 10*

To remove and install a Processor:

1. Remove the battery *page 2 - 5*
2. Remove the processor *page 2 - 12*
3. Install the processor *page 2 - 14*

To remove the Wireless LAN Module & Keyboard:

1. Remove the battery *page 2 - 5*
2. Remove the WLAN & keyboard *page 2 - 15*

To remove the 3.75G Module:

1. Remove the battery *page 2 - 5*
2. Remove the 3.75G module *page 2 - 18*

To remove the CCD Module:

1. Remove the battery *page 2 - 5*
2. Remove the CCD module *page 2 - 19*

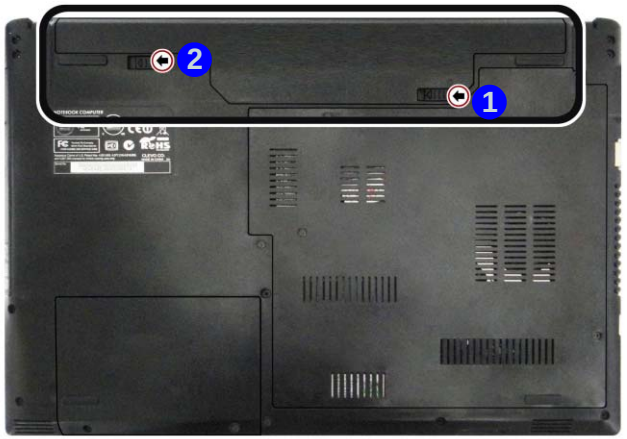
Removing the Battery

1. Turn the computer **off**, and turn it over.
2. Slide the latch 1 in the direction of the arrow (***Figure 1a***).
3. Slide the latch 2 in the direction of the arrow, and hold it in place (***Figure 1a***).
4. Slide the battery 3 in the direction of the arrow 4 (***Figure 1b***).

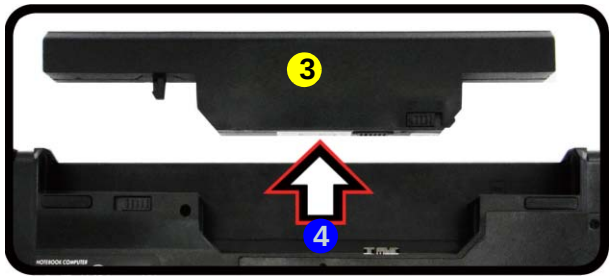
Figure 1
Battery Removal

a. Slide the latch and hold it in place.
b. Slide the battery in the direction of the arrow.

a.



b.



3. Battery

Removing the Hard Disk Drive

The hard disk drive can be taken out to accommodate other 2.5" serial (SATA) hard disk drives with a height of 9.5mm (h). Follow your operating system's installation instructions, and install all necessary drivers and utilities (as outlined in **Chapter 4 of the User's Manual**) when setting up a new hard disk.

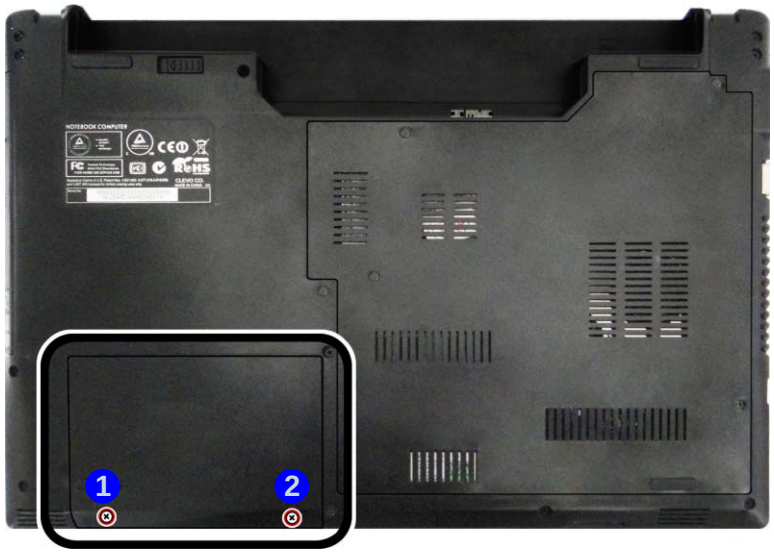
Figure 2
HDD Assembly Removal

a. Locate the HDD bay cover and remove the screws.

Hard Disk Upgrade Process

1. Turn **off** the computer, and remove the battery (*page 2 - 5*).
2. Locate the hard disk bay cover and remove screws 1 & 2 (*Figure 2a*).

a.



- 2 Screws

HDD System Warning

New HDD's are blank. Before you begin make sure:

You have backed up any data you want to keep from your old HDD.

You have all the CD-ROMs and FDDs required to install your operating system and programs.

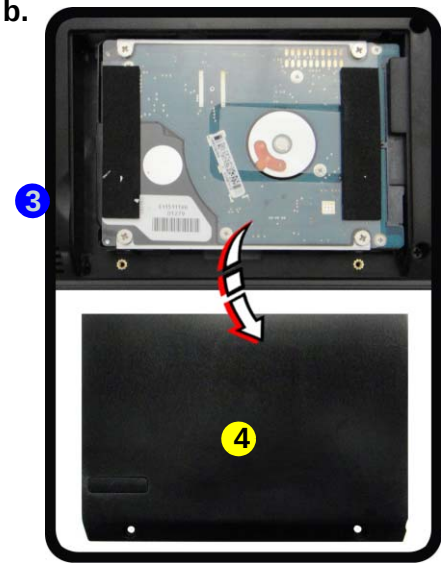
If you have access to the internet, download the latest application and hardware driver updates for the operating system you plan to install. Copy these to a removable medium.

3. Lift the hard disk bay cover from point 3 (*Figure 3b*).
4. Remove the hard disk bay cover 4 (*Figure 3b*).
5. Grip the tab and slide the hard disk assembly in the direction of arrow 5 (*Figure 3c*).
6. Lift the hard disk assembly 6 out of the bay 7 (*Figure 3d*).
7. Remove the screw 8 - 9 and the adhesive cover 10 from the hard disk 11 (*Figure 3e*).
8. Reverse the process to install a new hard disk (do not forget to replace all the screws and bay cover).

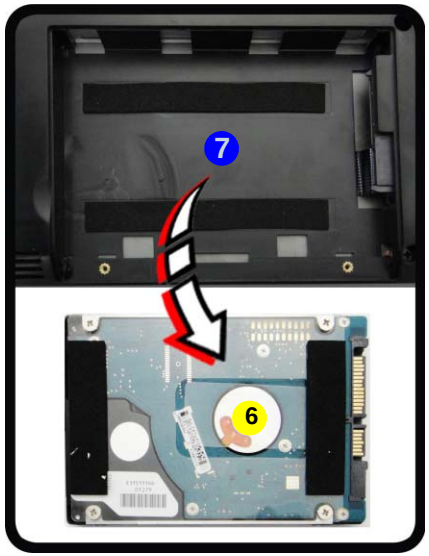
Figure 3
HDD Assembly Removal (cont'd.)

b. Remove the HDD bay cover.
c. Grip the tab and slide the HDD assembly in the direction of the arrow.
d. Lift the HDD assembly out of the bay.
e. Remove the screws and adhesive cover.

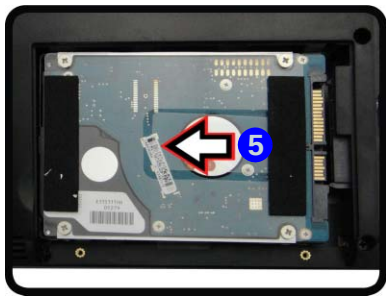
b.



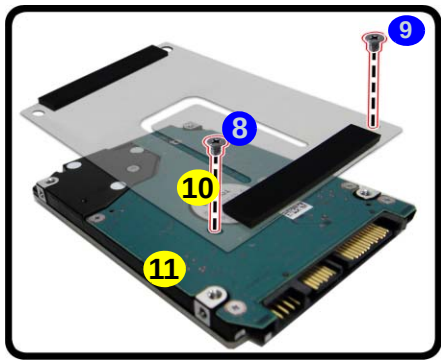
d.



c.



e.



3. HDD Bay Cover
5. HDD Assembly
11. Adhesive Cover
12. HDD

- 2 Screws

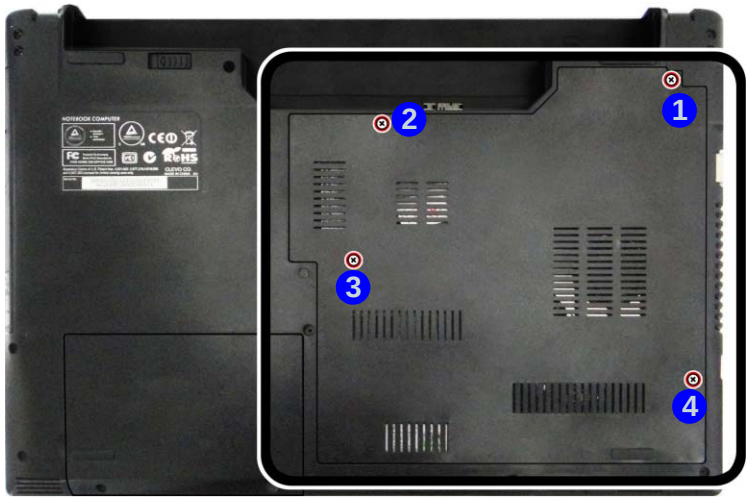
Figure 4
Optical Device Removal

a. Remove the screws.
b. Remove the component bay cover.

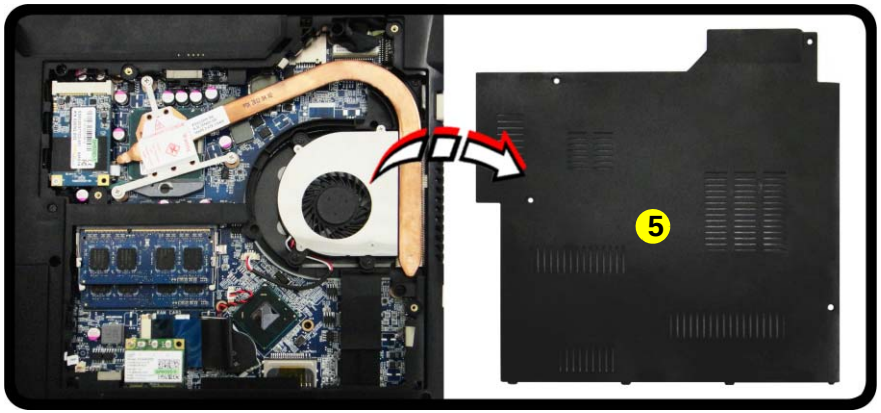
Removing the Optical (CD/DVD) Device

1. Turn **off** the computer, and remove the battery (*page 2 - 5*).
2. Locate the component bay cover and remove screws 1 - 4 (*Figure 4a*).
3. Remove the component bay cover 5 (*Figure 4b*).

a.



b.



3. Component Bay Cover

- 4 Screws

4. Remove the screw at point 6 (*Figure 5c*).
5. Use a screwdriver to carefully push out the optical device 8 at point 7 (*Figure 5d*).
6. Insert the new device and carefully slide it into the computer (the device only fits one way. DO NOT FORCE IT; The screw holes should line up).
7. Replace the component bay cover and screws.
8. Restart the computer to allow it to automatically detect the new device.

Figure 5
Optical Device Removal (cont'd.)

a. Remove the screw at point 6.
b. Use a screwdriver to carefully push out the optical device at point 7.

c.

d.

8. Optical Device

- 1 Screw

Figure 6
RAM Module Removal

a. Remove the screws from the component bay cover.
b. Remove the component bay cover. The RAM modules will be visible at point 6 on the mainboard.

Removing the System Memory (RAM)

The computer has two memory sockets for 204 pin Small Outline Dual In-line Memory Modules (SO-DIMM) supporting DDRIII (DDR3) Up to 1066/1333 MHz. The main memory can be expanded up to 8GB. The SO-DIMM modules supported are 1024MB and 2048MB **DDRIII** Modules. The total memory size is automatically detected by the POST routine once you turn on your computer.

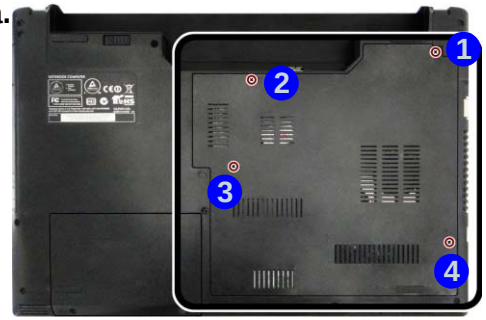
Memory Upgrade Process

1. Turn **off** the computer, turn it over, and remove the battery (*page 2 - 5*).
2. Remove screws 1 - 4 from the component bay cover (*Figure 6a*).
3. Carefully lift up the bay cover 5 .
4. The RAM modules will be visible at point 6 on the mainboard (*Figure 6b*).

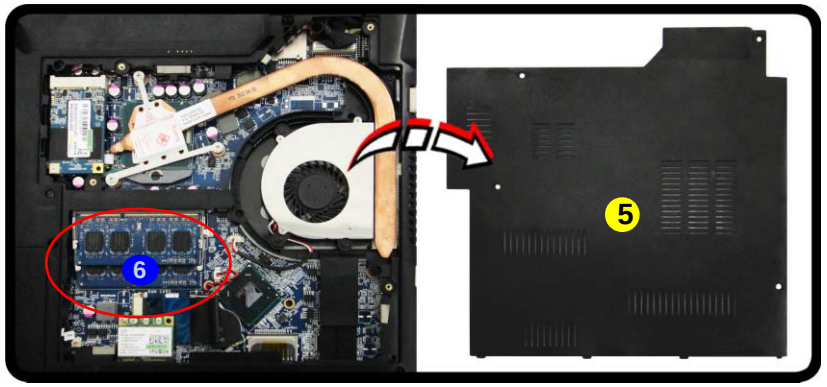
Contact Warning

Be careful not to touch the metal pins on the module's connecting edge. Even the cleanest hands have oils which can attract particles, and degrade the module's performance.

a.



b.



5. Component Bay Cover

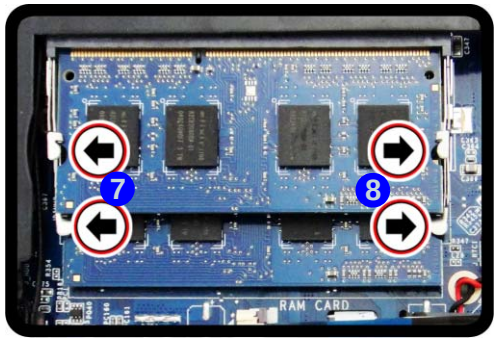
- 4 Screws

5. Gently pull the two release latches (7 & 8) on the sides of the memory socket in the direction indicated by the arrows (***Figure 7c***). The RAM module 9 will pop-up (***Figure 7d***), and you can then remove it.
6. Pull the latches to release the second module if necessary.
7. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
8. The module will only fit one way as defined by its pin alignment. Make sure the module is seated as far into the slot as it will go. DO NOT FORCE IT; it should fit without much pressure.
9. Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
10. Replace the component bay cover and the screws (see ***page 2 - 10***).
11. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.

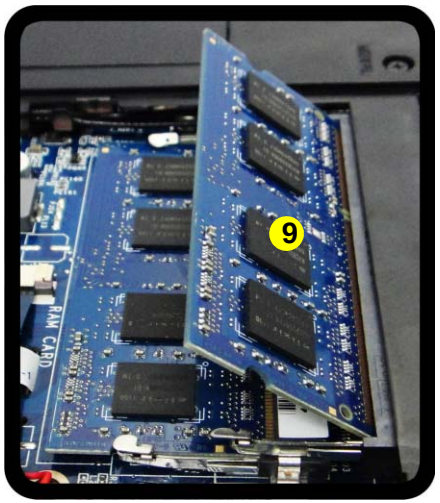
Figure 7
RAM Module Removal (cont'd)

c. Pull the release latches.
d. Remove the module.

c.



d.



Contact Warning

Be careful not to touch the metal pins on the module's connecting edge. Even the cleanest hands have oils which can attract particles, and degrade the module's performance.

Single Memory Module Installation

If your computer has a single memory module, then insert the module into the **Channel 0 (JDIMM1)** socket. In this case this is the **lower memory socket** (the socket closest to the mainboard).

5. RAM

Figure 8
Processor Removal

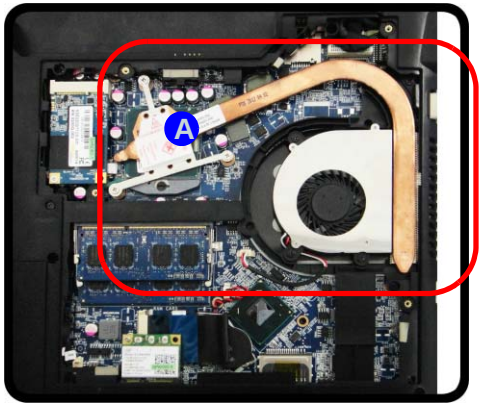
a. Locate the CPU heat sink.
b. Disconnect the cable and remove the screws.
c. Remove the fan.
d. Remove the screws.

Removing and Installing a Processor

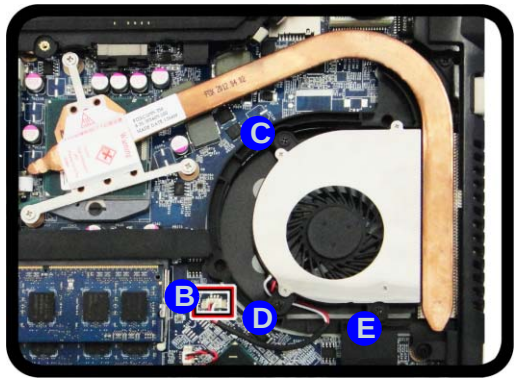
Processor Removal Procedure

1. Turn **off** the computer, turn it over, remove the battery (***page 2 - 5***) and the component bay cover (***page 2 - 8***).
2. The CPU heat sink will be visible at point A (***Figure 8a***).
3. Carefully disconnect the fan cable B ,and then remove the screws C - E(***Figure 8b***).
4. Lift the fan F out of the bay (***Figure 8c***).
5. Loosen the CPU heat sink screws in the order 3, 2 & 1 (the reverse order as indicated on the label ***Figure 8d***.

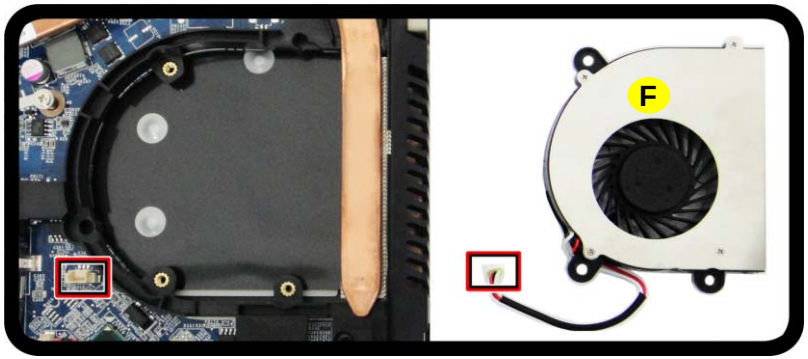
a.



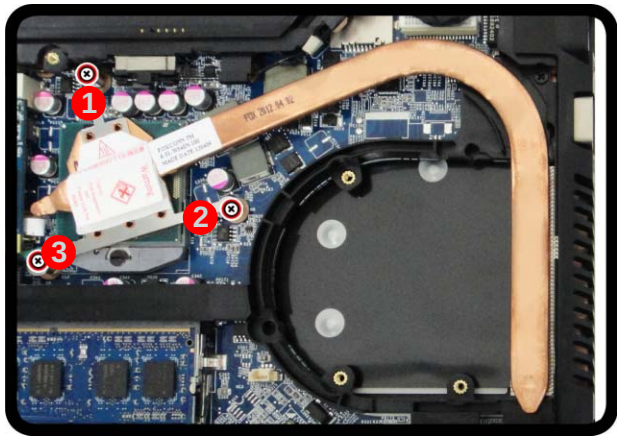
b.



c.



d.



F. Fan

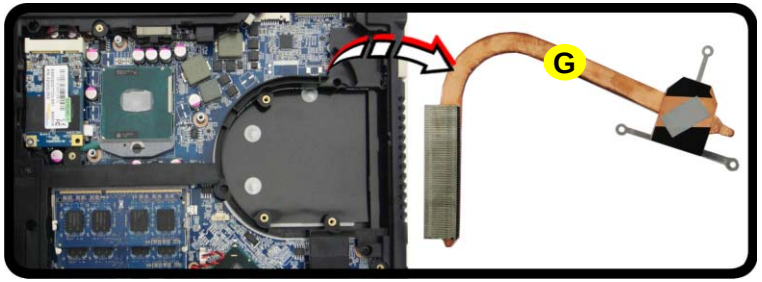
- 3 Screws

6. Carefully (it may be hot) remove the heat sink unit G off the computer (***Figure 9e***).
7. Turn the release latch H towards the unlock symbol to release the CPU (***Figure 9f***).
8. Carefully (it may be hot) lift the CPU I up and out of the socket (***Figure 9g***).
9. Reverse the process to install a new CPU.
10. When re-inserting the CPU, pay careful attention to the pin alignment, it will fit only one way (DO NOT FORCE IT!)

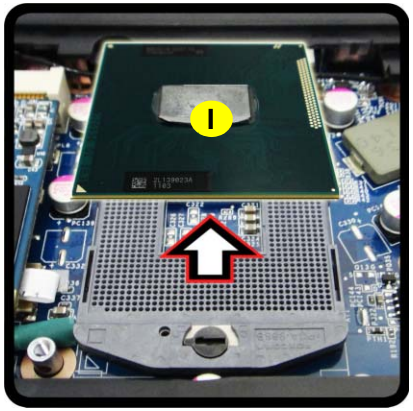
Figure 9
Processor Removal (cont'd)

e. Carefully remove the heat sink unit.
f. Turn the release latch to unlock the CPU.
g. Lift the CPU out of the socket.

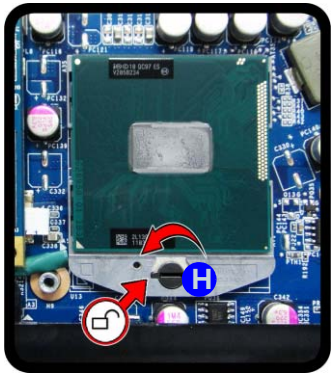
e.

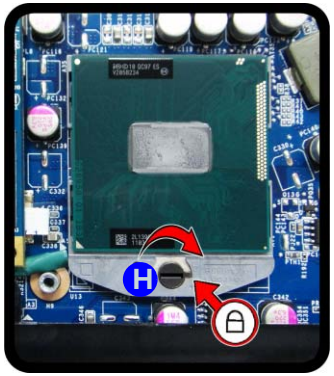


g.



f.





Caution

The heat sink, and CPU area in general, contains parts which are subject to high temperatures. Allow the area time to cool before removing these parts.

G. Heat Sink
I. CPU

- 6 Screws

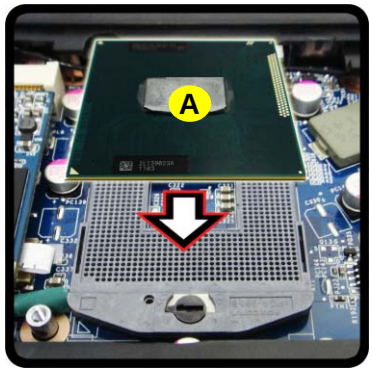
Figure 10
Processor Installation

a. Insert the CPU.
b. Turn the release latch towards the lock symbol.
c. Insert the heat sink.
d. Tighten the screws.

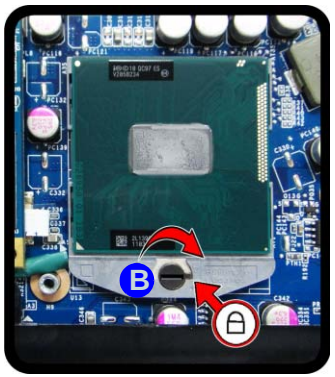
Processor Installation Procedure

1. Insert the CPU A (***Figure 10a***), pay careful attention to the pin alignment, it will fit only one way (DO NOT FORCE IT!), and turn the release latch B towards the lock symbol (***Figure 10b***).
2. **Remove the sticker** C (***Figure 10c***) from the heat sink unit.
3. Insert the heat sink D as indicated in ***Figure 10c***.
4. Tighten the CPU heat sink screws in the order 1, 2 & 3 (the order as indicated on the label and ***Figure 10d***).
5. Replace the CPU fan, component bay cover and tighten the screws (***page 2 - 12***).

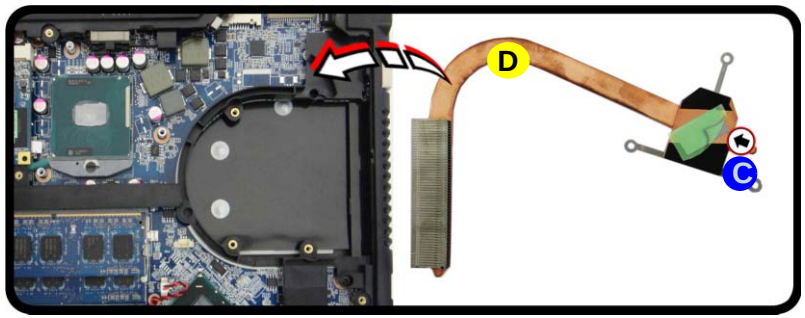
a.



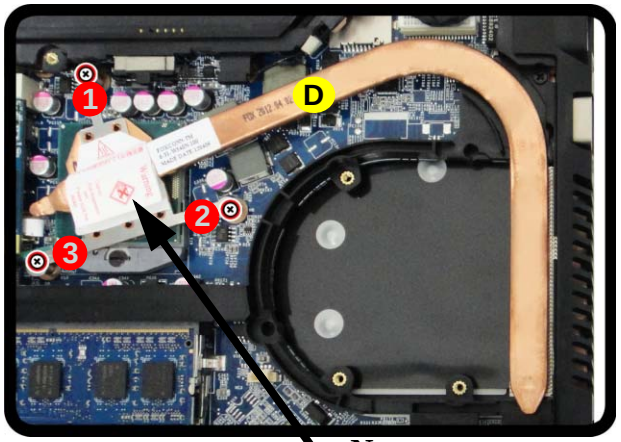
b.



c.



d.



Note:
Tighten the screws in the order as indicated on the label.

A. CPU
D. Heat Sink

- 3 Screws

Removing the Wireless LAN Module and Keyboard

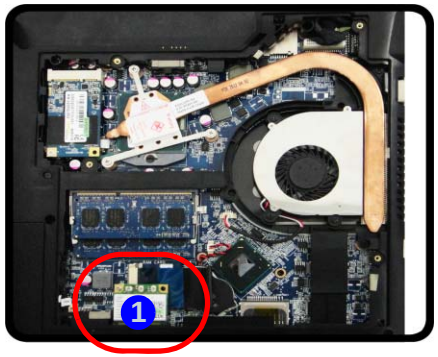
1. Turn **off** the computer, turn it over, remove the battery (***page 2 - 5***) and the component bay cover (***page 2 - 8***).
2. The Wireless LAN module will be visible at point 1 on the mainboard and keyboard ribbon cable under the Wireless LAN module (***Figure 11a***).
3. Carefully disconnect the cable 2, and then remove the screw 3 (***Figure 11b***)
4. The Wireless LAN module 4 (***Figure 11c***) will pop-up, and you can remove it from the computer and the keyboard ribbon cable will be visible at point 5.
5. Careful not to bend the keyboard ribbon cable 6. Disconnect the keyboard ribbon cable from the locking collar socket 7 (***Figure 11d***).

Figure 11
Wireless LAN Module and Keyboard Removal

a. Locate the WLAN.
b. Disconnect the cable and remove the screw.
c. The WLAN module will pop up.
d. Disconnect the keyboard ribbon cable from the locking collar socket.

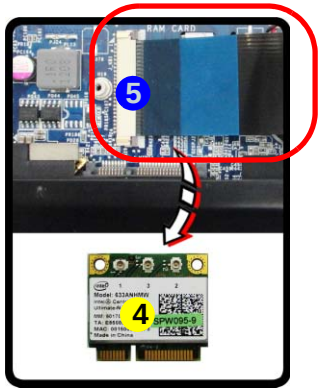
Note: Make sure you reconnect the antenna cable to the "1 + 2" socket (***Figure 11b***).

a.

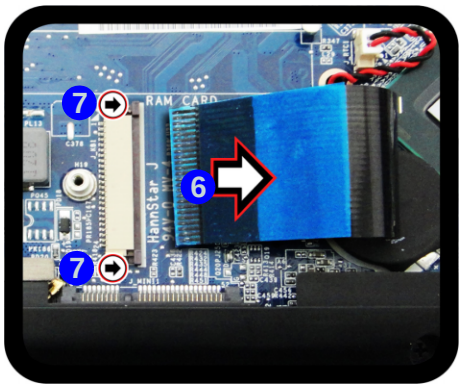


b.

c.



d.



Touchpad Cable

The touchpad cable is underneath the keyboard cable. When disassembling the mainboard, the touchpad cable must be disconnected.

4.Wireless LAN Module

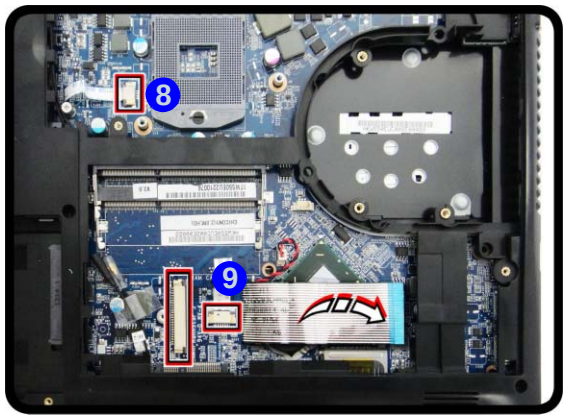
- 1 Screw

Figure 12
Keyboard Removal

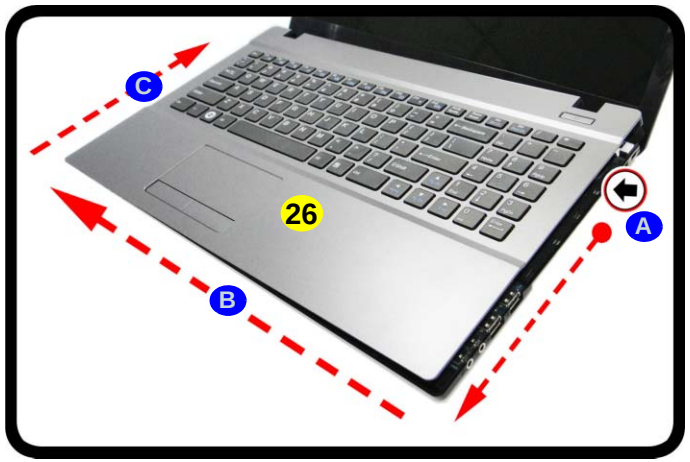
e. Disconnect the cables.
f. Remove the screws.
g. Pry the top case off the bottom case.
h. Separate the top and bottom case.

6. Disconnect cables 8 - 9 (***Figure 12e***).
7. Remove screws 10 - 25 from the bottom case.
8. Turn the computer over, carefully pry the top case 26 off the bottom case at points A - C (***Figure 12g***).
9. Separate the top case 26 up and off the bottom case (***Figure 11h***)

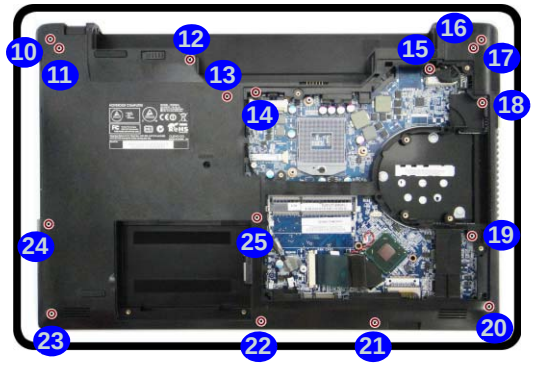
e.



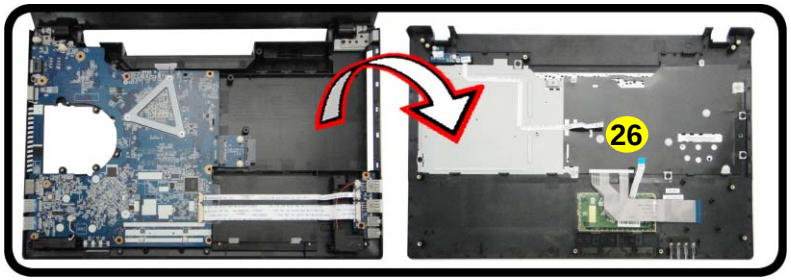
g.



f.



h.



26.Top Case

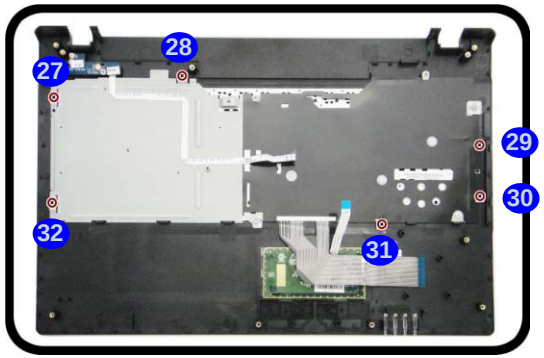
- 16 Screws

10. Remove screws 27 - 32 from the top case.
11. Carefully lift the keyboard shielding plate 26 .
12. Carefully separate the keyboard 26 from the top case (*Figure 11d*).

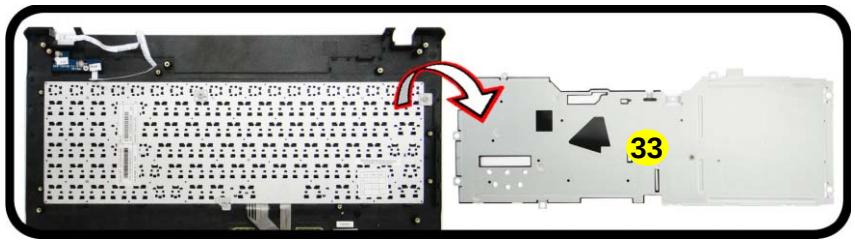
Figure 13
Keyboard Removal (cont'd)

i. Remove the screws.
j. Lift the keyboard shielding plate.
k. Separate the keyboard from the top case.

i.



j.



k.

33.Keyboard Shielding Plate
34.Keyboard

- 6 Screws

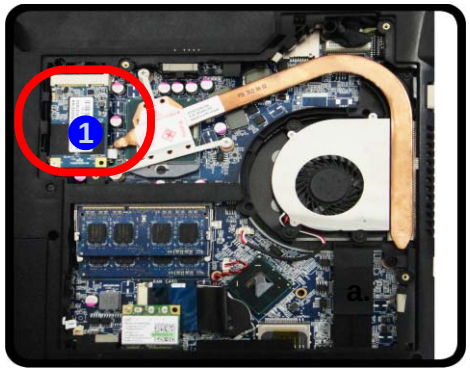
Figure 14
3G Module Removal

a. Locate the 3.75G module.
b. Remove the screw.
c. The module will pop-up.
d. Remove the 3.75G module.

Removing the 3.75G Module

1. Turn **off** the computer, turn it over, remove the battery (***page 2 - 12***) and the component bay cover (***page 2 - 10***).
2. The 3.75G module will be visible at point 1 on the mainboard (***Figure 14a***).
3. Carefully remove the screw 2 (***Figure 14b***).
4. The 3.75G module 3 (***Figure 14c***) will pop-up, and you can remove it from the computer (***Figure 14d***).

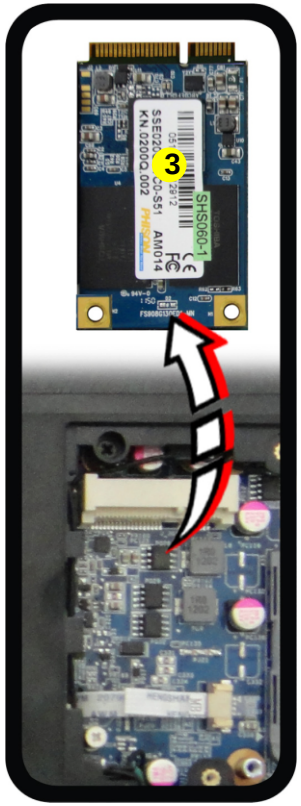
a.



b.

c.

d.



3. 3.75G Module

- 1 Screw

Power Button Cable

The power button cable is underneath the 3G module. When disassembling the mainboard, the power button cable must be disconnected.

Removing the CCD

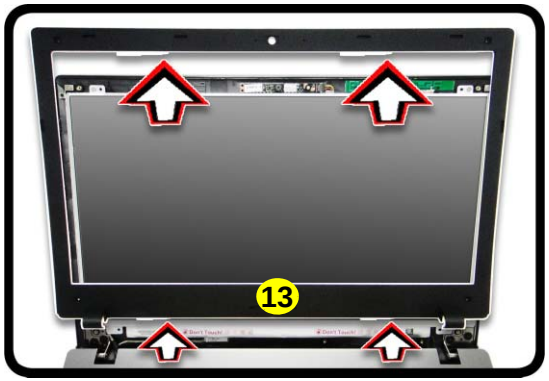
1. Turn **off** the computer, turn it over, and remove the battery (*page 2 - 12*).
2. Carefully remove the rubber screw covers 1 - 4 and screws 5 - 8 from the front cover (*Figure 15a*).
3. Run your fingers around the inner frame of the LCD panel at the points as indicated by the arrows 9 - 12 .
4. Lay the computer down on a flat surface with the top case up forming a 90 degree angle. Push the LCD front cover 13 upwards before carefully lifting it up.
5. Remove the LCD front cover 13 (*Figure 15c*).

Figure 15
CCD Removal

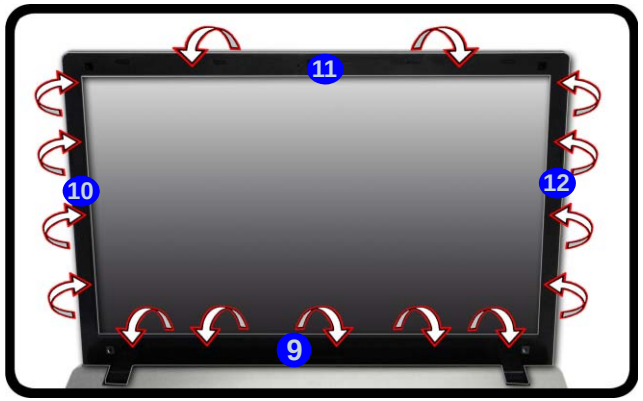
a. Carefully remove the rubber screw covers and screws from the front cover.
k. Run your fingers around the inner frame of the LCD panel at the points indicated by the arrows.
l. Lay the computer down on a flat surface with the top case up forming a 90 degree angle. Push the LCD front panel upwards before carefully lifting it up.
d. Remove the LCD front cover.

a.

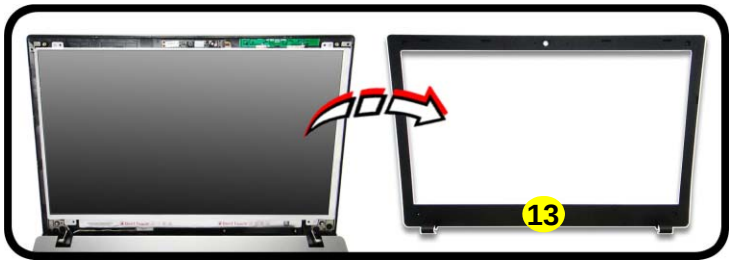
c.



b.



d.



13. LCD Front Cover

- 4 Screws

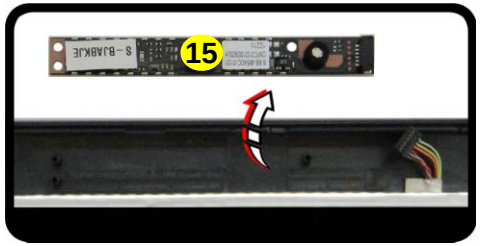
Figure 16
CCD Removal (cont'd)

e. Disconnect the cable.
f. Remove the CCD module.

6. Disconnect the cable 14.
7. Remove the CCD module 15 (***Figure 16f***).
8. Reverse the process to install a new CCD module.

e.

f.



15. CCD Module

Appendix A:Part Lists

This appendix breaks down the ***W540EU*** series notebook's construction into a series of illustrations. The component part numbers are indicated in the tables opposite the drawings.

Note: This section indicates the *manufacturer's* part numbers. Your organization may use a different system, so be sure to cross-check any relevant documentation.

Note: Some assemblies may have parts in common (especially screws). However, the part lists DO NOT indicate the total number of duplicated parts used.

Note: Be sure to check any update notices. The parts shown in these illustrations are appropriate for the system at the time of publication. Over the product life, some parts may be improved or re-configured, resulting in *new* part numbers.

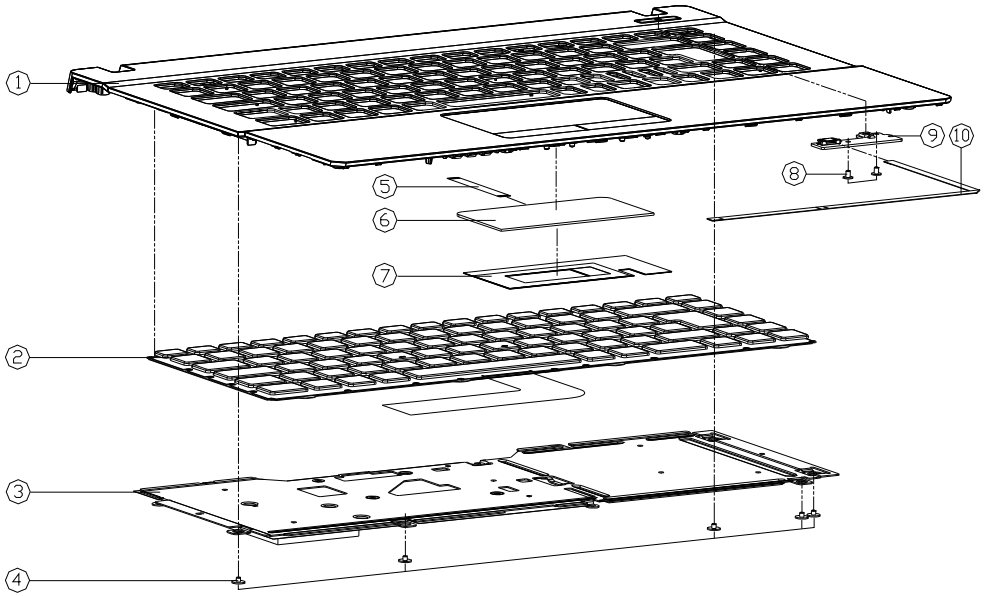
Part List Illustration Location

The following table indicates where to find the appropriate part list illustration.

Table A - 1
Part List Illustration Location

Part	
Top	*page A - 3*
Bottom	*page A - 4*
SATA BLU RAY COMBO	*page A - 5*
DVD Dual Drive	*page A - 6*
Dummy ODD	*page A - 7*
LCD	*page A - 8*

Top

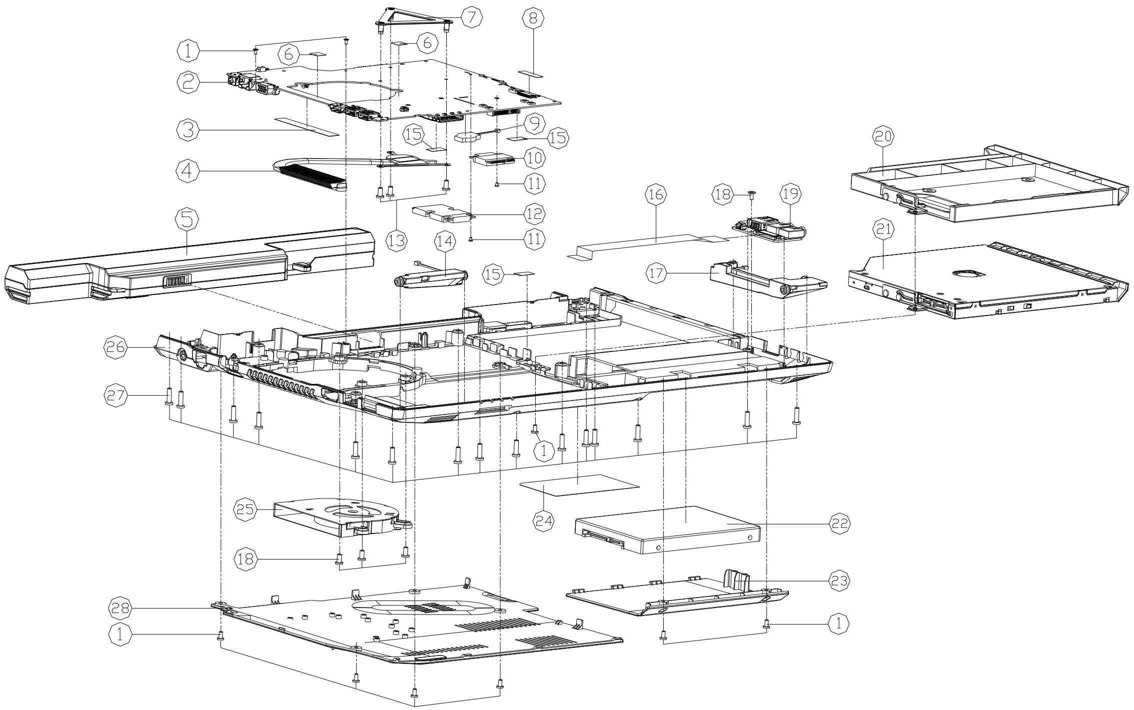


ITEM	PART NAME	PART NO	REMARK
1	TOP CASE PA MODULE W540EU	6-39-W5402-011	
1	TOP CASE PA MODULE W540EU-C	6-39-W5402-011-C	
1	TOP CASE UK MODULE W540EU	6-39-W5402-021	
1	TOP CASE UK MODULE W540EU-C	6-39-W5402-021-C	
1	TOP CASE JP MODULE W540EU	6-39-W5402-041	
1	TOP CASE JP MODULE W540EU-C	6-39-W5402-041-C	
1	TOP CASE US MODULE W540EU	6-39-W5402-031	
1	TOP CASE US MODULE W540EU-C	6-39-W5402-031-C	
2	K/B USA NP-1280305-42B W540EU BLACK ISOLATION WITH VISTA KEY	6-80-W5400-010-1	
3	KB BRACKET MODULE W540EU	6-33-W5402-101	
4	SCREW M2*2L KI BK/Z ICT NY (Ø6,T=0.5)	6-35-B6120-2RC	
5	FFC CABLE FOR MB TO LED_B BOARD 6PIN P1.5DHM	6-43-X5100-013-1	
6	TOUCH PAD SYNAPTICS TM-01146-003 MULTI-GESTURE C4800	6-49-C4802-010	
7	TP TAPE MYLAR PET W540EU	6-40-W5401-010	
8	SCREW M2*3L KI NI ICT NY (OD=Ø4.5,DT=0.4)	6-35-B1120-3RE	
9	POWER SWITCH BOARD V2.0 W540EU	6-77-W540S-D02	
10	FFC CABLE FOR POWER BD TO M/B 4PIN (HD) W540EU	6-43-W5400-011	

Figure A - 1
Top

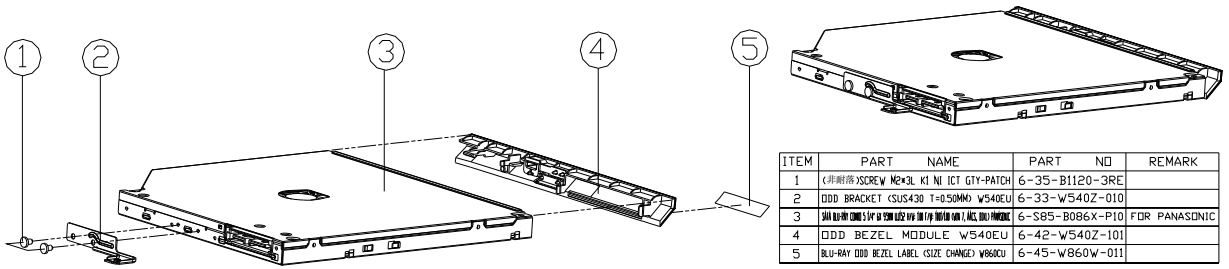
Bottom

Figure A - 2
Bottom



ITEM	PART NAME	PART NO	REMARK
1	SCREW M2*4L KI BZ ICT NY	6-35-B6120-4RA	
2	MAIN BOARD V2.0 (W/3G; W/O TPM) W540EU	6-77-W5400-D02	
2	MAIN BOARD V2.0 (W/O 3G; W/O TPM) W540EU	6-77-W5400-D02-1	
2	MAIN BOARD V2.0 (W/3G; W/TPM) W540EU	6-77-W5400-D02-2	
3	MYLAR FOR MB FIN (74X11X0.15T) (PET+3M 467) W540EU	6-40-W540S-010	
4	CPU HEATSINK MODULE (AL FIN) W540EU	6-31-W540N-101	
5	BAT P S LI 11.1V/5.6AH/62.16WH CASE WITH TEXTURE 3S2P SMP/SDI 980T2087F W540EU	6-87-W540S-4271	(OPTION)
5	BAT P S LI 11.1V/4.4AH/48.84WH CASE WITH TEXTURE 3S2P SMP/LISHEN PSE 980T2084F W540EU	6-87-W540S-4W41	(OPTION)
5	BAT P S LI 11.1V/4.4AH/48.84WH CASE WITH TEXTURE 3S2P GETAC/LISHEN PSE 541385180001 W540EU	6-87-W540S-4U41	(OPTION)
6	MYLAR(10*10*0.15MM) BLACK M860TUE	6-40-M860S-0C0	
7	CPU SUPPORTER FOR HURON RIVER SECC W150HNM	6-33-W150S-011	
8	TOP CASE MYLAR FR83 25*7*0.05 P180HM	6-40-P1802-030	
9	BAT. 20MM 3V 220MAH W/CABLE 55MM BCR2032W5.5KM1GB	6-23-22015-TC0	
10	WLAN+BT COMBO LITEON WCBN601LH-CC (RTL8723AD) 802.11BGN 1X1 PCI-E +BT4.0 LE USB +REALTEK BT SOFTWARE HALF MINI-CARD	6-88-W345F-9400	(OPTION)
10	WLAN+BT COMBO [illegible] (RTL8723AE) 802.11BGN 1X1 PCI-E +BT4.0 LE USB +REALTEK BT SOFTWARE HALF MINI-CARD	6-88-W345F-8700	(OPTION)
10	WLAN LITEON WN6606LH-CC(VL) RTL8188CE-VL 2 ANT. 802.11BGN 1X1 HALF MINI-CARD PCI-E W250HUQ	6-88-W25H2-9400	(OPTION)
10	WLAN AZUREWAVE AW-NE139H RTL8188CE-VL 2 ANT. 802.11BGN 1X1 HALF MINI-CARD PCI-E W250HUQ	6-88-W25H2-7000	(OPTION)
10	WLAN+BT COMBO INTEL WIRELESS-N 2230 (JACKSON PEAK D 2230BNHMW) 2X2 BGN+BT 4.0 LE HALF MINI-CARD PCI-E P170EM	6-88-P17EF-4200	(OPTION)
10	WLAN+BT COMBO INTEL CENTRINO WIRELESS N-135 (CAMDEN PEAK) 1X1 802.11BGN + BT 4.0 LE 135BNHMW HALF MINI-CARD PCI-E W110ER	6-88-W110F-4200	(OPTION)
11	SCREW M2*3L KI NI ICT NY (DD=ø4.5,DT=0.4)	6-35-B1120-3RE	
12	WCDMA ERICSSON F3307 HSPA FULL MINI-CARD USB	6-88-W24HW-2410	(OPTION)
12	MSATA2 SSD 40GB 3.3V 1A (P/N : SSDMAEMC040G2) CONTROLLER PC29AS21BA0 (FLASH 29F64G08CAMDA) INTEL	6-85-D4040-Z00	(OPTION)
13	SCREW M2.5*5L KI NI ICT NY	6-35-B1125-5RA	
14	SPK+CABLE L (27) 1.0W 8? W540EU (IVYTECH)	6-23-5W540-0L1-1	
15	TAPE MYLAR TRANSPARENT (20*10*0.05) P180HM	6-40-P1803-020	
16	FFC CABLE 14P M/B TO (CHANGE) AUDIO BOARD W240BU (HB)	6-43-W2400-012-1	
17	SPK+CABLE R(57) 1.0W 8? W540EU (IVYTECH)	6-23-5W540-0R1-1	
18	SCREW M2.5*5L KI BK/Z ICT NY	6-35-B6125-5RA	
19	AUDIO BOARD V2.0 W540EU	6-77-W5408-D02	
20	DUMMY ODD ASS'Y W540EU	6-79-W540EU0Z-010	(OPTION)
21	SATA BLU-RAY COMBO ASS'Y (OPTION)	6-79-W540EU0W-010	(OPTION)
21	SATA DVD SUPER MULTI ASS'Y (OPTION)	6-79-W540EU0Q-000	(OPTION)
21	W/O ODD ASS'Y W540EU	6-79-W540EU0Z-000	(OPTION)
22	W/O HDD ASS'Y C4800	6-79-C480000J-010	
22	W/HDD ASS'Y E5120Q	6-79-E5120Q0J-020	
23	HDD COVER MODULE W540EU	6-42-W540J-101	
23	HDD COVER MODULE W540EU-C	6-42-W540J-101-C	
24	PRODUCT LABEL FOR W540EU	6-45-W540EU03-010	
25	FAN MODULE W251HUQ	6-31-W25HS-100	
26	BOTTOM CASE MODULE W540EU	6-39-W5403-011	
26	BOTTOM CASE MODULE W540EU-C	6-39-W5403-011-C	
27	SCREW M2.5*8L KI BK/Z NY ICT	6-35-B6125-8R0	
28	CPU COVER MODULE W540EU	6-42-W5408-101	

SATA BLU RAY COMBO

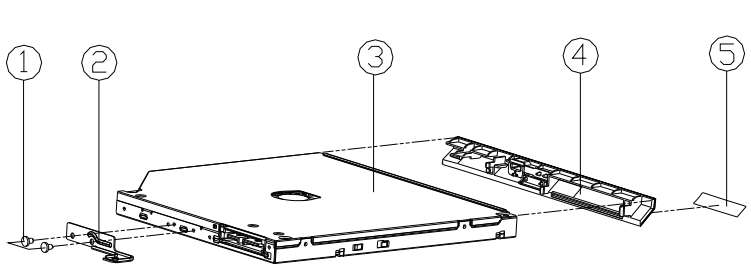


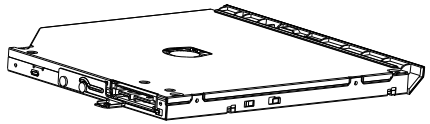
ITEM	PART NAME	PART NO	REMARK
1	(非耐落)SCREW M2*3L K1 NI ICT GTY-PATCH	6-35-B1120-3RE	
2	ODD BRACKET (SUS430 T=0.50MM) W540EU	6-33-W540Z-010	
3	[illegible]	6-S85-B086X-P10	FOR PANASONIC
4	ODD BEZEL MODULE W540EU	6-42-W540Z-101	
5	BLU-RAY ODD BEZEL LABEL (SIZE CHANGE) W860CU	6-45-W860W-011	

Figure A - 3
SATA BLU RAY COMBO

DVD DUAL

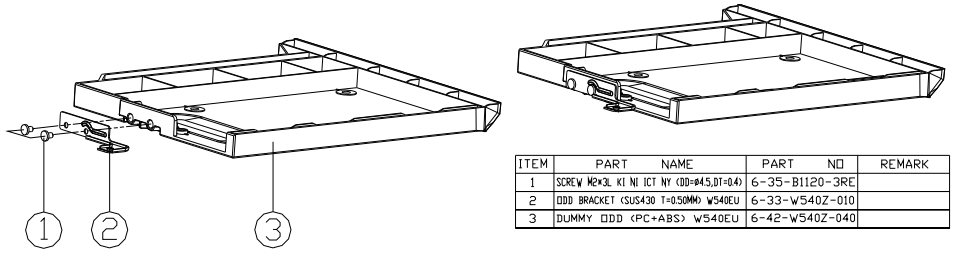
Figure A - 4
DVD DUAL





ITEM	PART NAME	PART NO	REMARK
1	(非耐落)SCREW M2×3L KI NI ICT GTY-PATCH	6-35-B1120-3RE	
2	ODD BRACKET (SUS430 T=0.50MM) W540EU	6-33-W540Z-010	
3	[illegible]	6-85-A088X-P03	FOR PANASONIC
3	[illegible]	6-85-A088X-L00	FOR PLDS
3	[illegible]	6-85-A088X-T04	FOR TSST
4	ODD BEZEL MODULE W540EU	6-42-W540Z-101	
5	SUPER MULTI ODD BEZEL LABEL (SIZE CHANGE)	6-45-W860Q-011	

Dummy ODD

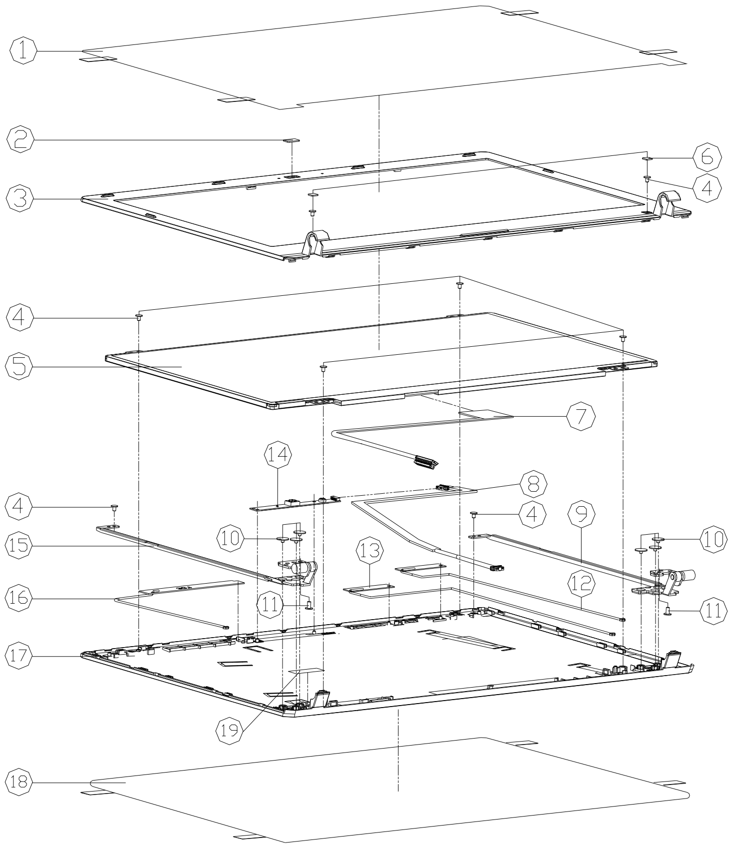


ITEM	PART NAME	PART NO	REMARK
1	SCREW M2*3L KI NI ICT NY (OD=Ø4.5,DT=0.4)	6-35-B1120-3RE	
2	ODD BRACKET (SUS430 T=0.50MM) W540EU	6-33-W540Z-010	
3	DUMMY ODD (PC+ABS) W540EU	6-42-W540Z-040	

Figure A - 5
Dummy ODD

LCD

Figure A - 6
LCD



ITEM	PART NAME	PART NO	REMARK
1	LCD FRONT COVER PROTECTION MYLAR (PET+3M8915) (設變) C4500	6-40-C4501-011	
2	CCD LENS PMMA W540EU	6-42-W5401-010	OPTION
2	W/O CCD LENS PMMA W540EU	6-42-W5401-020	OPTION
3	LCD FRONT COVER MODULE W540EU	6-39-W5401-011	
4	SCREW M2*3L KI NI ICT NY (DD=Ø4.5,DT=0.4)	6-35-B1120-3RE	
5	LCD 14.0" HD CHIMEI N140BGE-L41 GLARE TYPE (LED)3.6MM	6-50-J8136-D02	OPTION
5	LCD 14.0" HD LG LP140WH2-TLA2 (GLARE TYPE) (LED) 3.6MM	6-50-J8136-L05	OPTION
5	LCD 14.0" HD LG LP140WH2-TLQ1 (GLARE TYPE) (LED) 3.6MM	6-50-J8136-L03	OPTION
6	FRONT COVER SCREW RUBBER W540EU	6-47-W5401-010	
7	WIRE CABLE FOR LVDS 195MM (HL/THL CON:HLX09002-HF) W540EU	6-43-W5401-010-C	
8	WIRE CABLE FOR CCD 6P 370MM (HL) W540EU	6-43-W540T-010	
9	LCD HINGE R W540EU	6-33-W5401-0R1	
10	SCREW M2*2L KI BK/Z ICT NY(Ø8,T=0.6)	6-35-B6120-2RE	
11	SCREW M2.5*5L KI BK/Z ICT NY	6-35-B6125-5RA	
12	ANTENNA WIMAX WGT WM2 PCB 2.4G/3.5GHZ/5G WM2=605MM W345EU	6-23-7W345-020-1	
13	ANTENNA WIMAX WGT WM1 PCB 2.4G/3.5GHZ/5G WM1= 700MM W540EU	6-23-7W540-011	
14	UVC CAMERA BISON FIX BN8VU5VKU-000 2M HD 6PIN OV2659 W540EU W/MIC W/LED W540EU FW0606	6-88-W540C-4901	OPTION
14	UVC CAMERA CHICONY FIX CNFC213 2M HD OV2659 W/A-MIC W/LED FW9159 W540EU	6-88-W540C-5101	OPTION
15	LCD HINGE L W540EU	6-33-W5401-0L1	
16	ANTENNA 3G+LTE WGT 3G PCB 0.7G/0.8G/0.9G/1.8G/1.9G/2.1G/2.6GHZ L=590MM W540EU	6-23-7W540-020	
17	LCD BACK COVER MODULE W540EU	6-39-W5401-021	
17	LCD BACK COVER MODULE W540EU-C	6-39-W5401-021-C	
18	LCD BACK COVER PROTECT MYLAR PET W345EU	6-40-W3458-020	
19	TAPE MYLAR (B),MYLAR M550J	6-40-M55J2-020	

Appendix B: Schematic Diagrams

This appendix has circuit diagrams of the ***W540EU*** notebook's PCB's. The following table indicates where to find the appropriate schematic diagram.

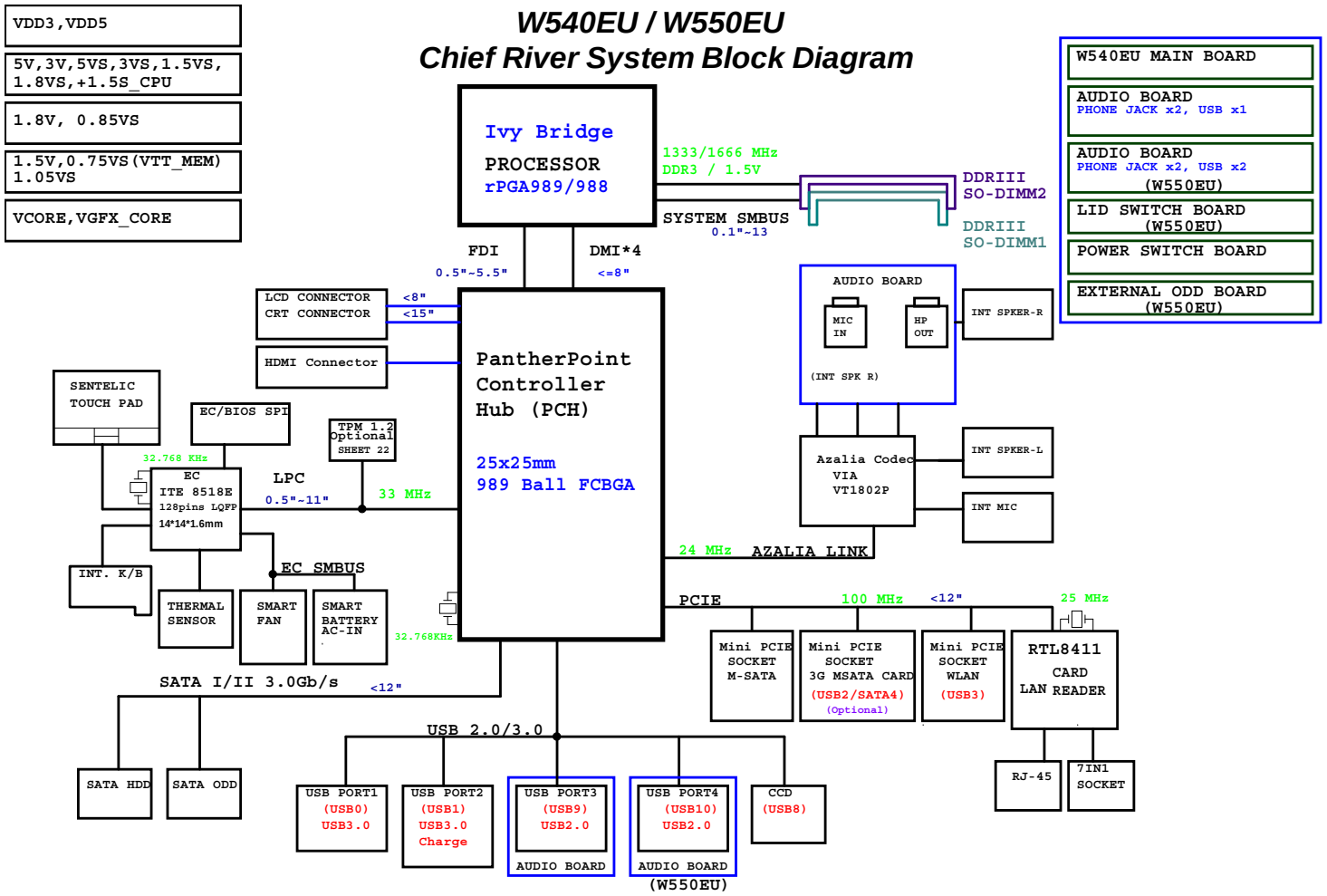
Table B - 1
SCHEMATIC DIAGRAMS

Version Note

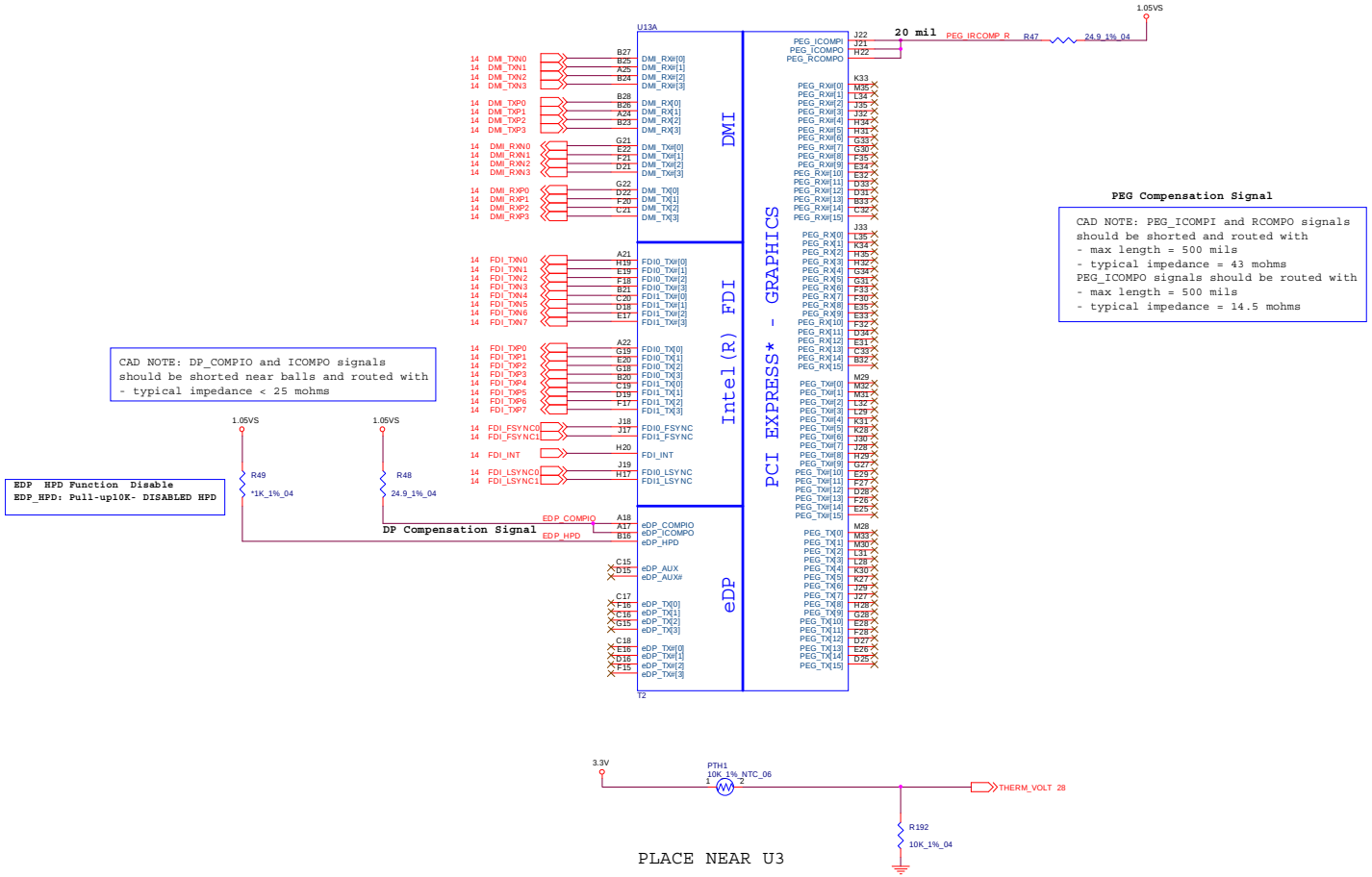
The schematic diagrams in this chapter are based upon version 6-7P-W5406-001. If your mainboard (or other boards) are a later version, please check with the Service Center for updated diagrams (if required).

System Block Diagram

Sheet 1 of 42
System Block Diagram



Processor 1/7-DMI, FDI, PEG

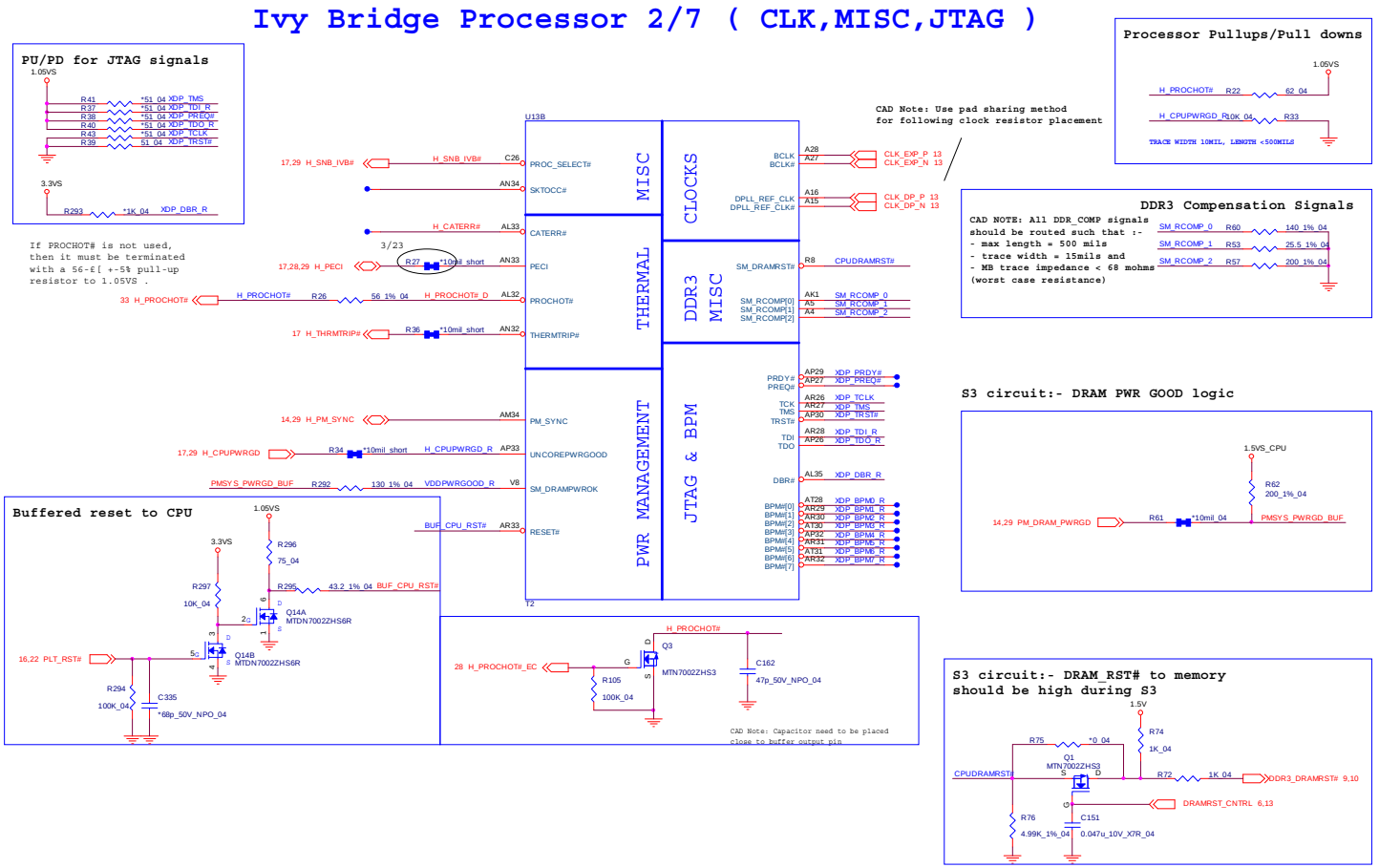


Sheet 2 of 42
Processor 1/7-DMI, FDI, PEG

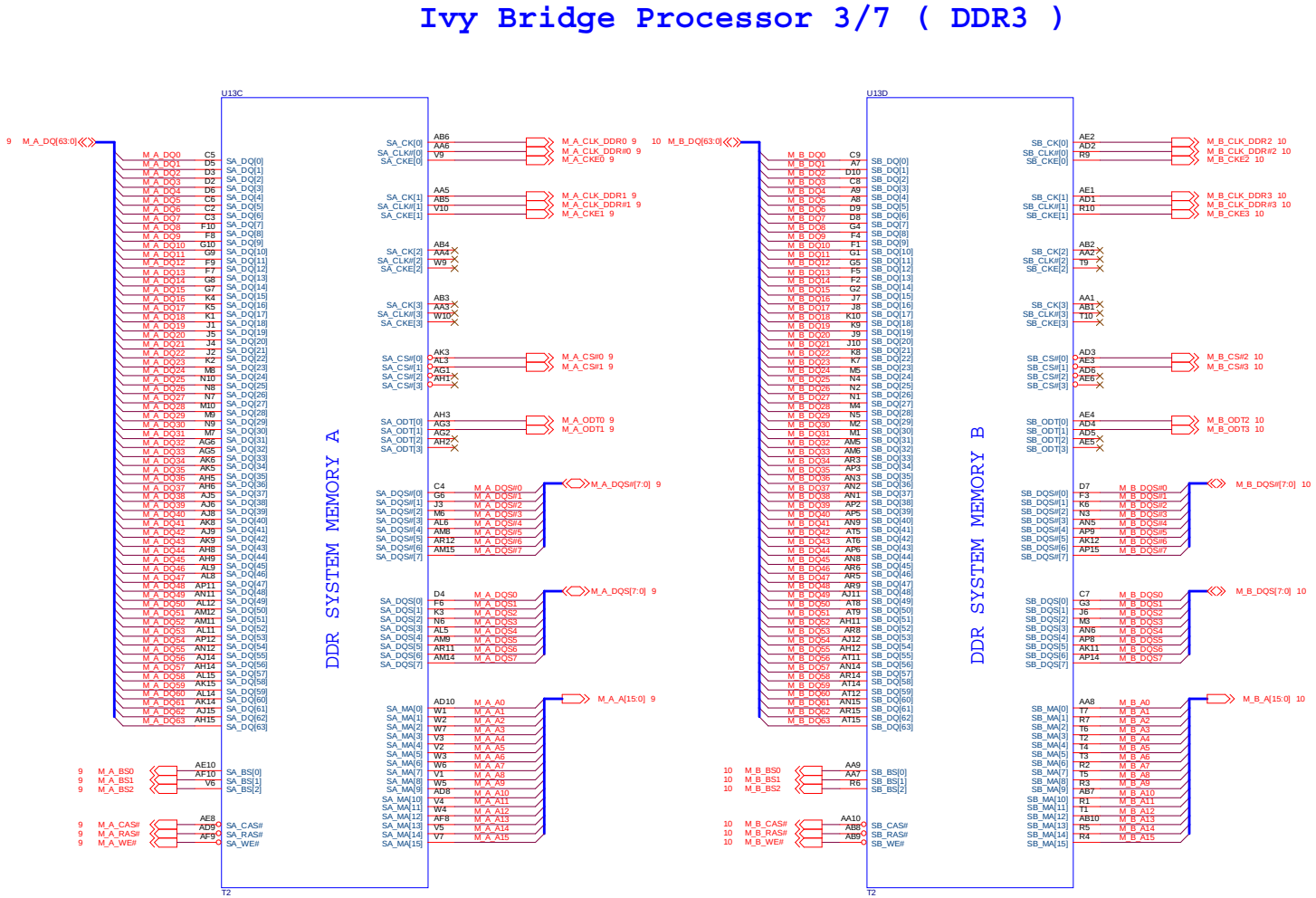
B.Schematic Diagrams

Processor 2/7- CLK, MISC

Sheet 3 of 42
Processor 2/7-CLK, MISC



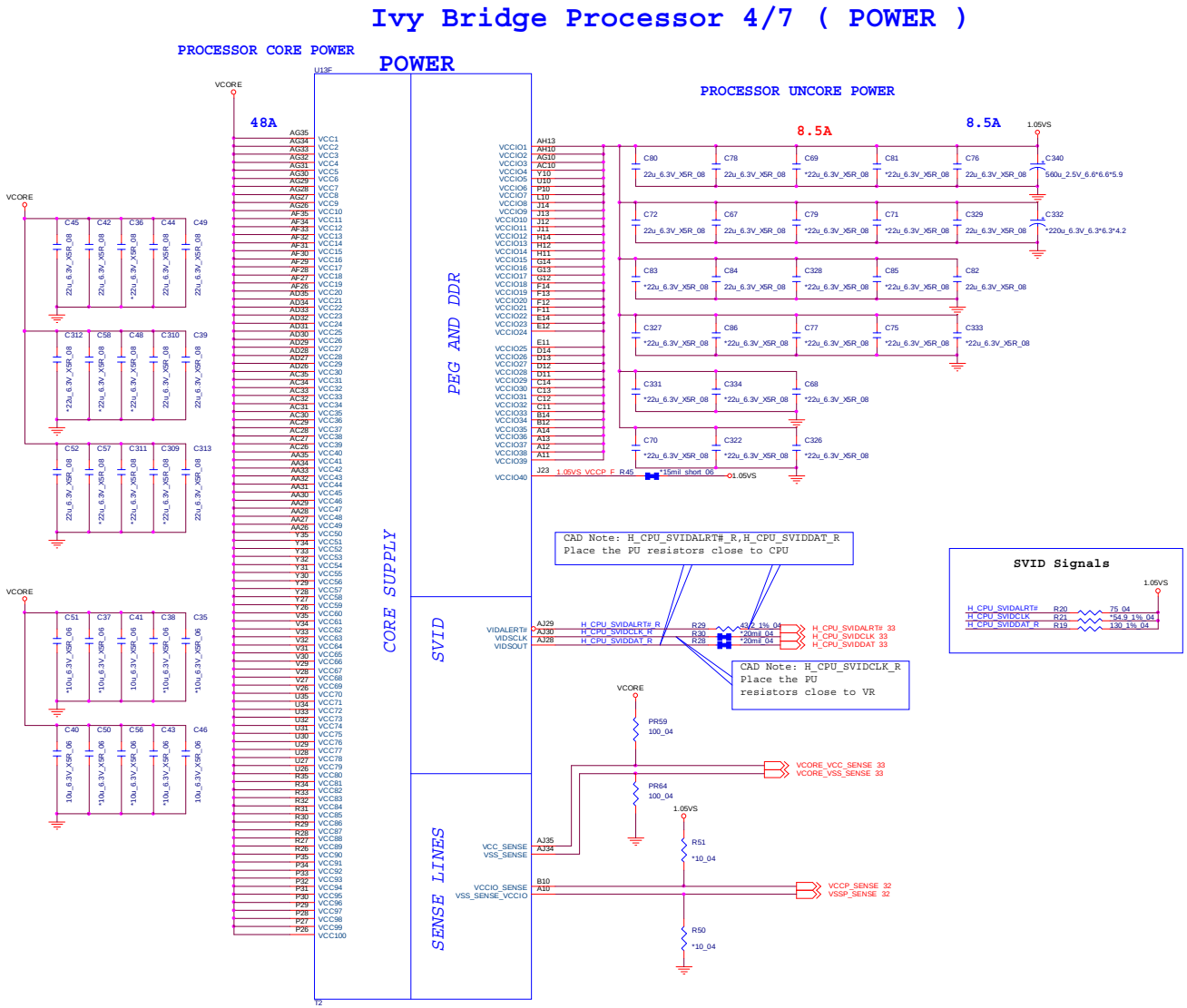
Processor 3/7- (DDR3)



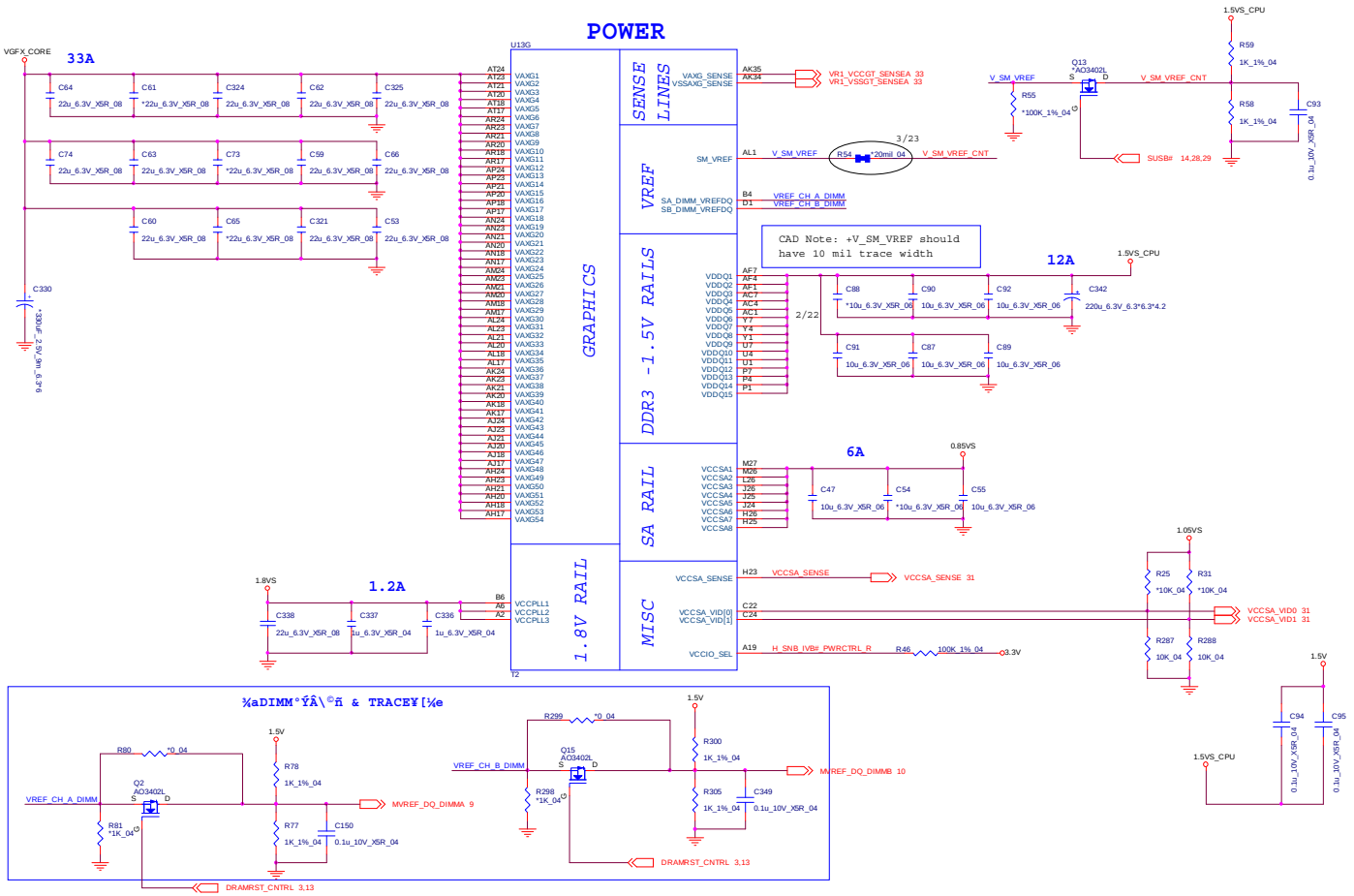
Sheet 4 of 42
Processor 3/7- (DDR3)

Processor 4/7- Power

Sheet 5 of 42
Processor 4/7-Power



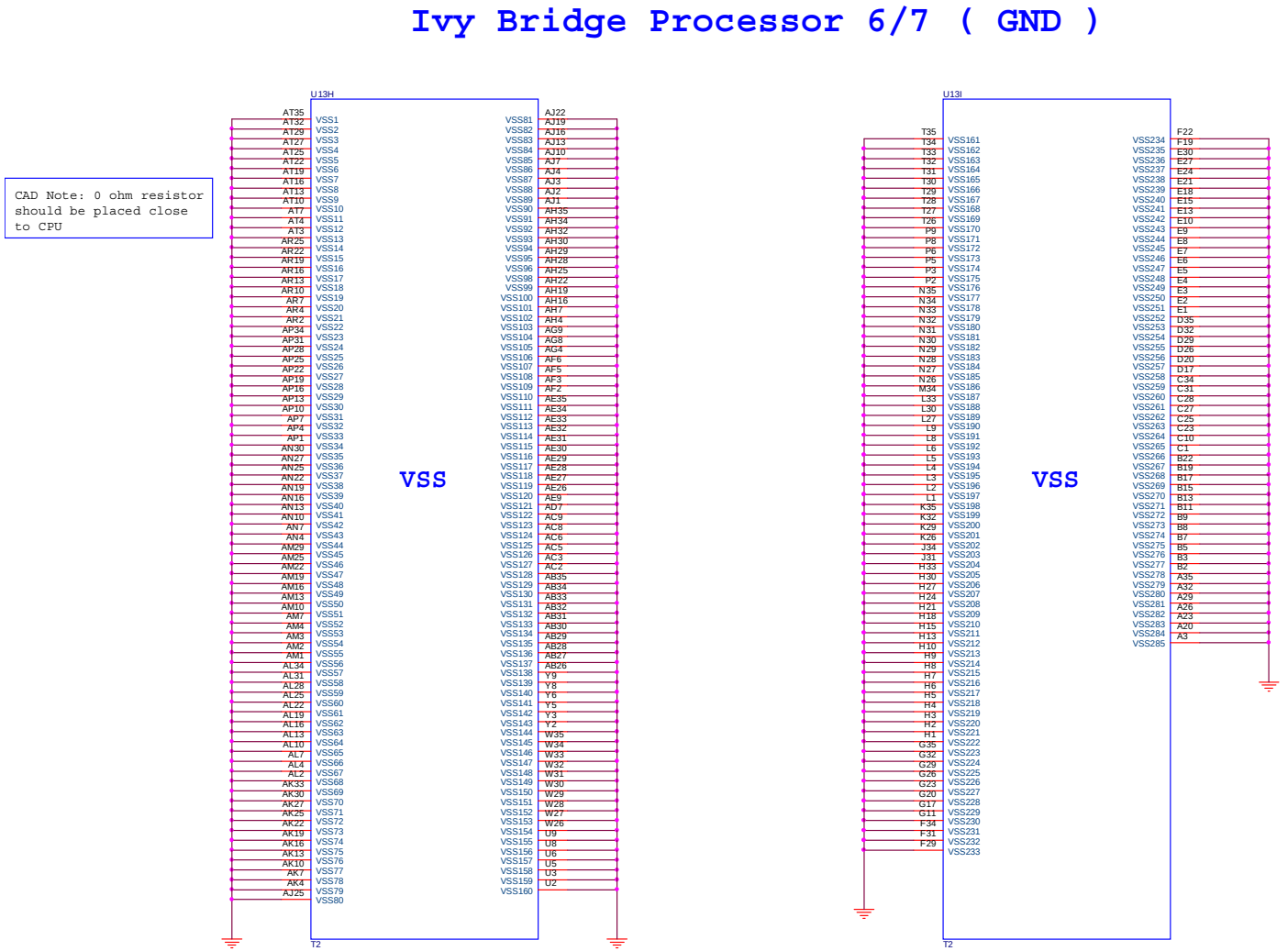
Processor 5/7- GFX PWR



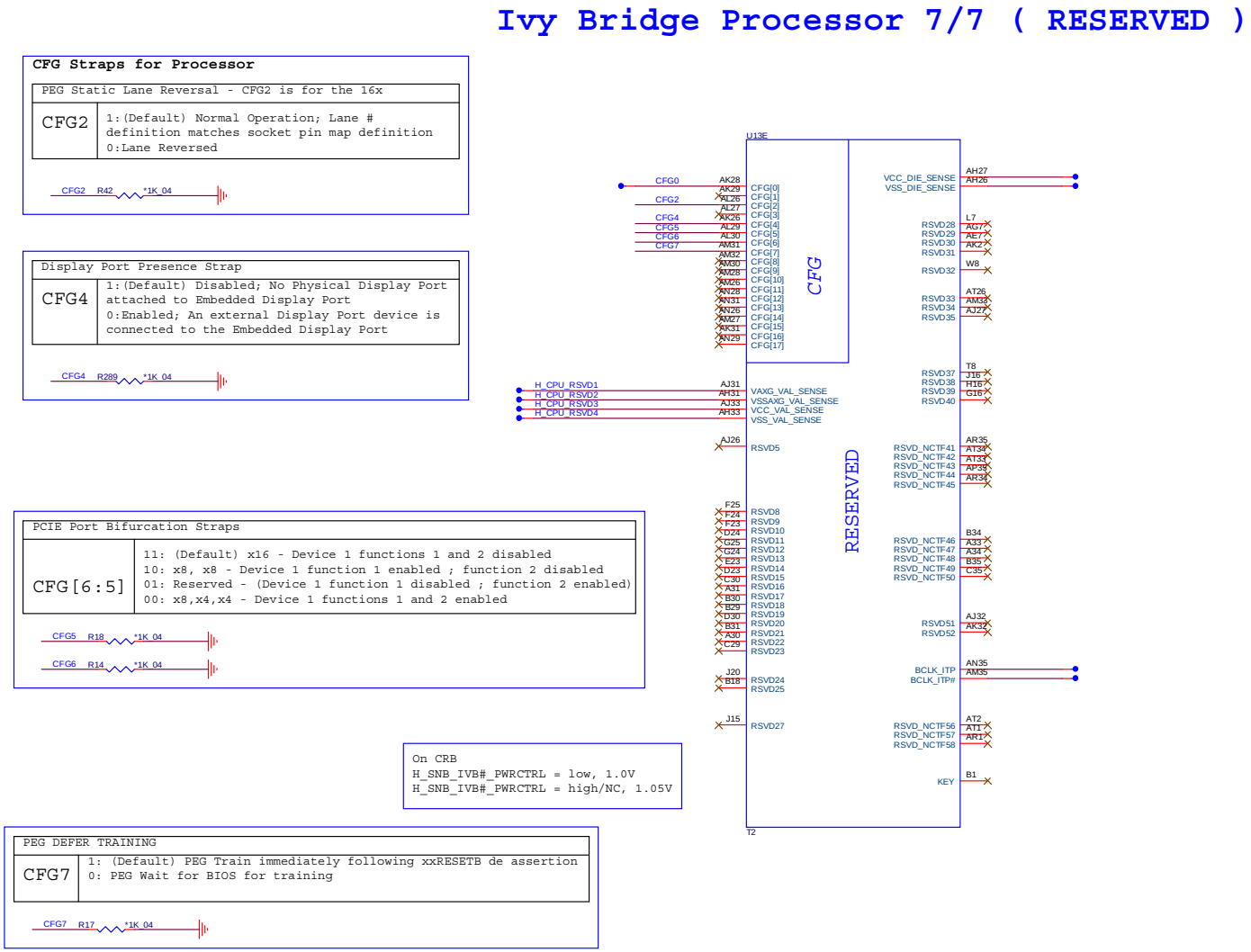
Sheet 6 of 42
Processor 5/7- GFX PWR

Processor 6/7- GND

Sheet 7 of 42
Processor 6/7- GND



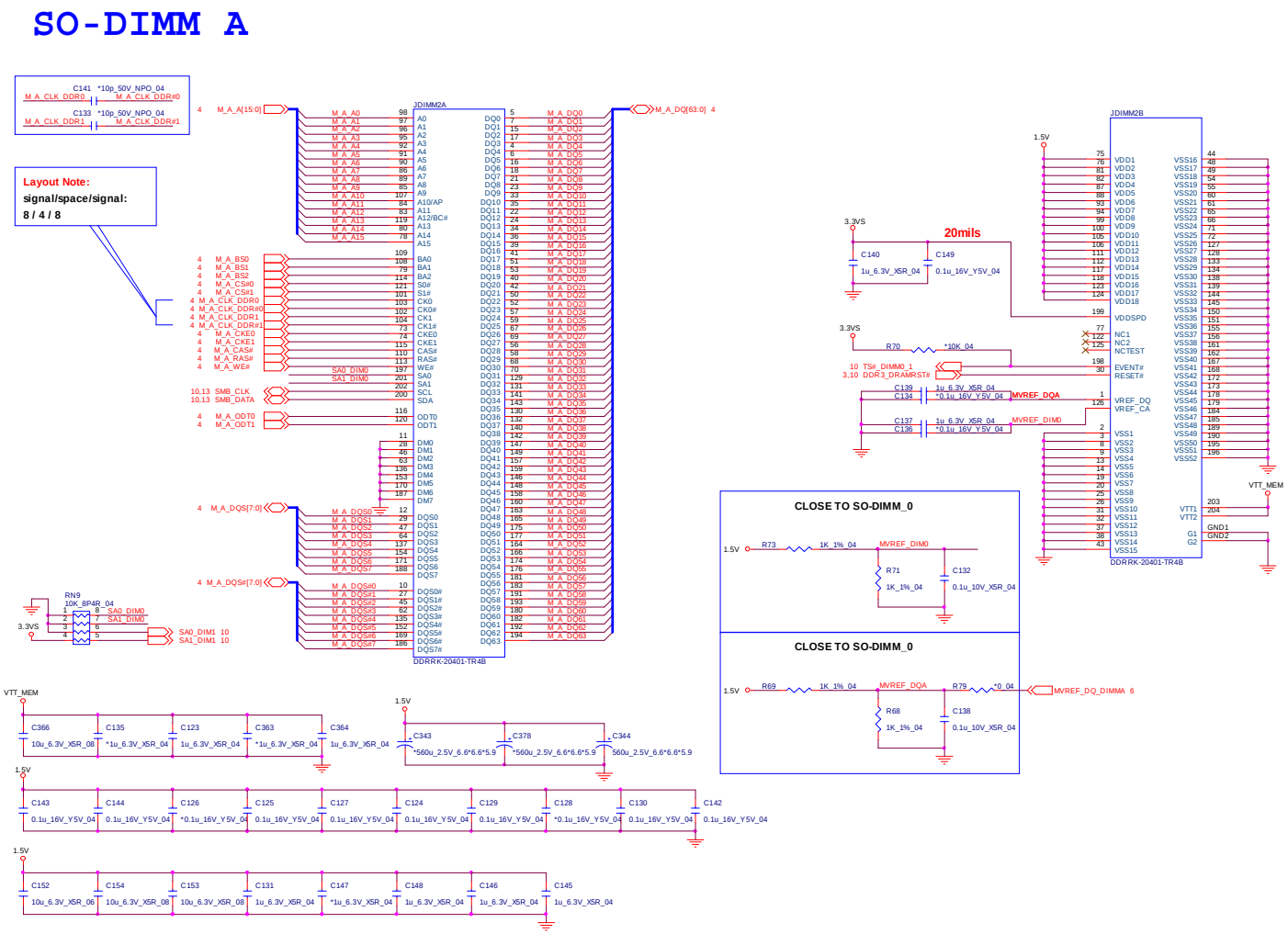
Processor 7/7- RSVD



Sheet 8 of 42
Processor 7/7- RSVD

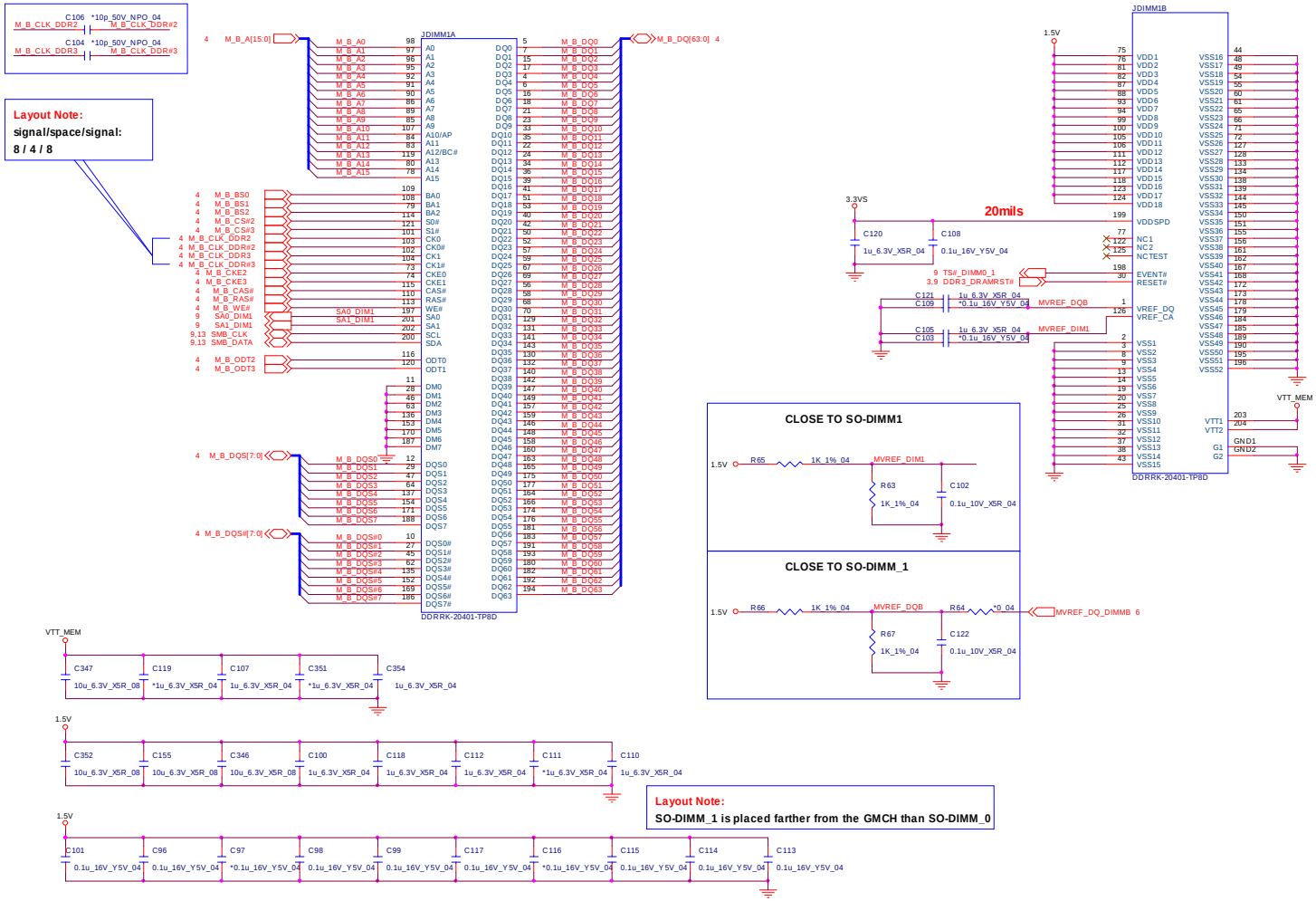
DDR3 SO-DIMM_0

Sheet 9 of 42
DDR3 SO-DIMM_0



DDR3 SO-DIMM_1

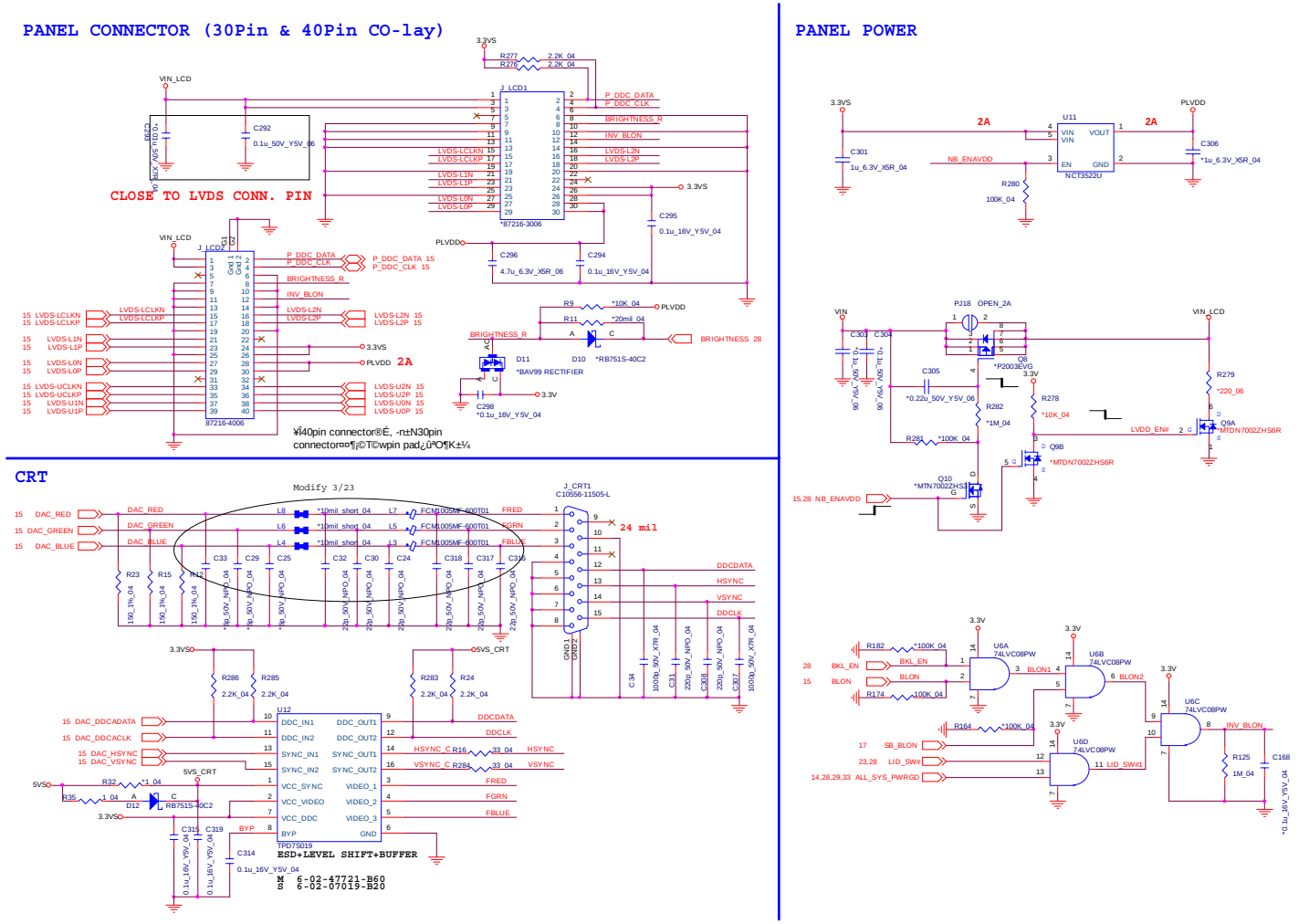
SO-DIMM B



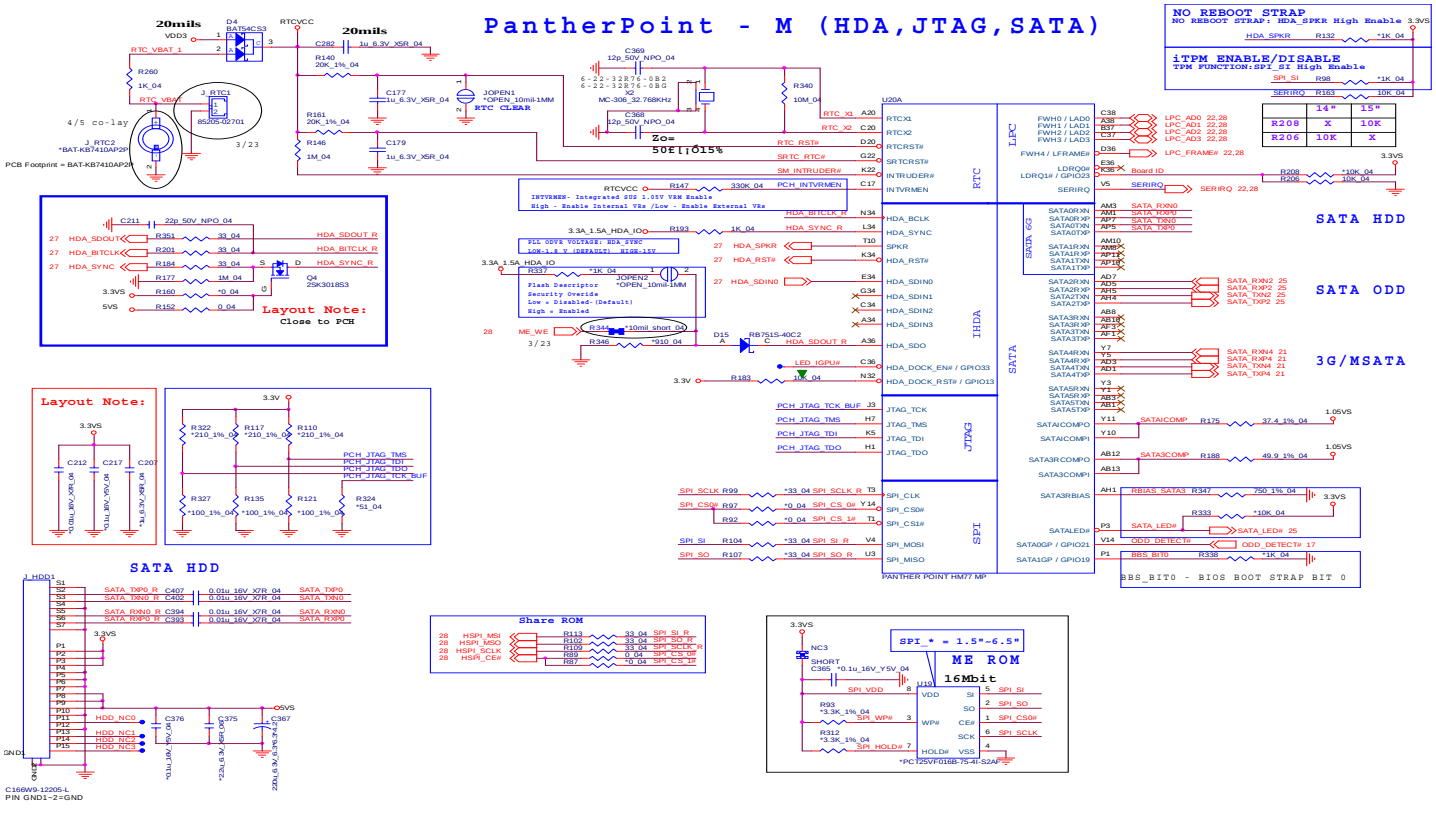
Sheet 10 of 42
DDR3 SO-DIMM_1

PANEL, INVERTER, CRT

Sheet 11 of 42
PANEL, INVERTER, CRT



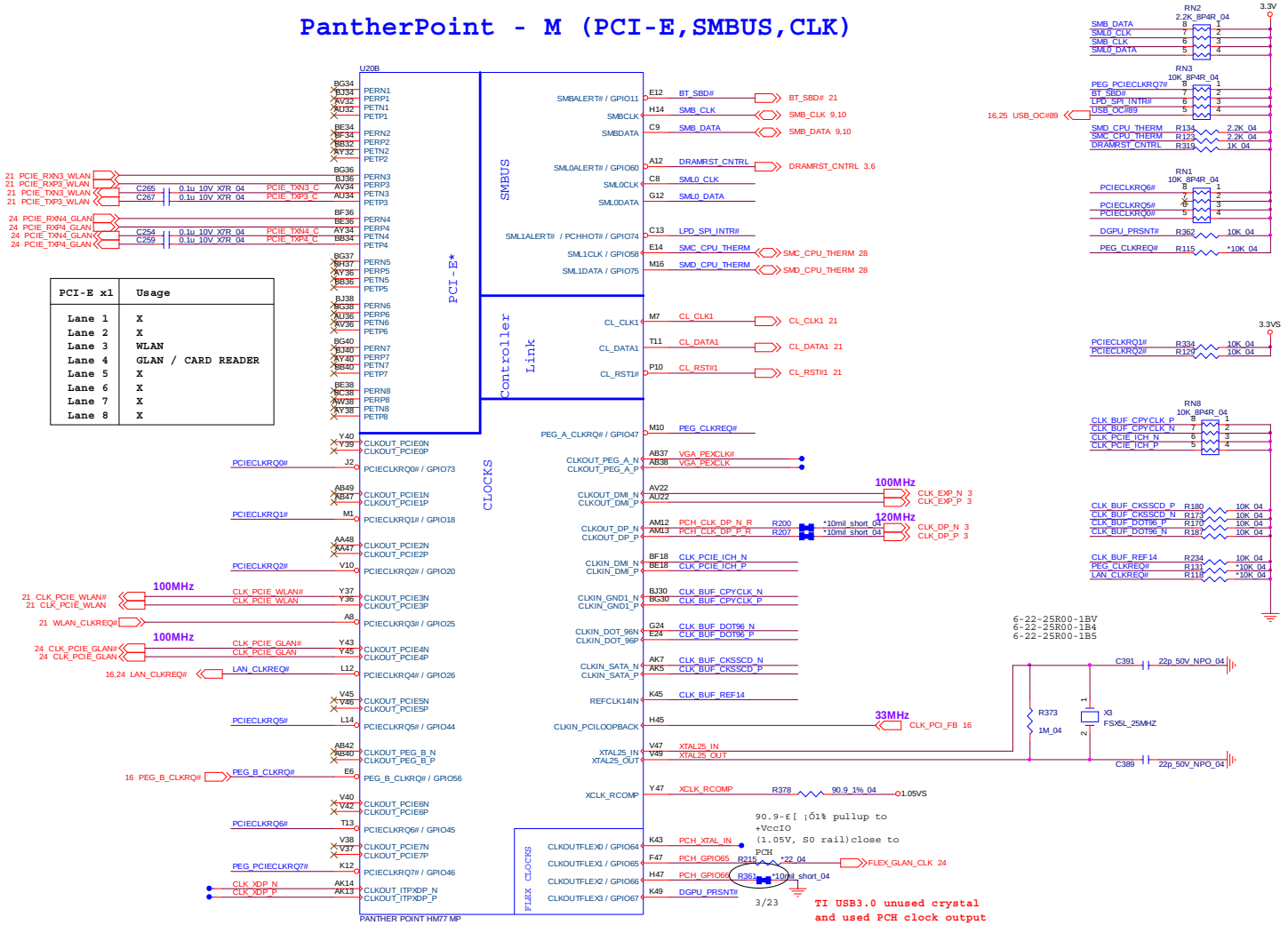
PCH 1/9- RTC, HDA, SATA



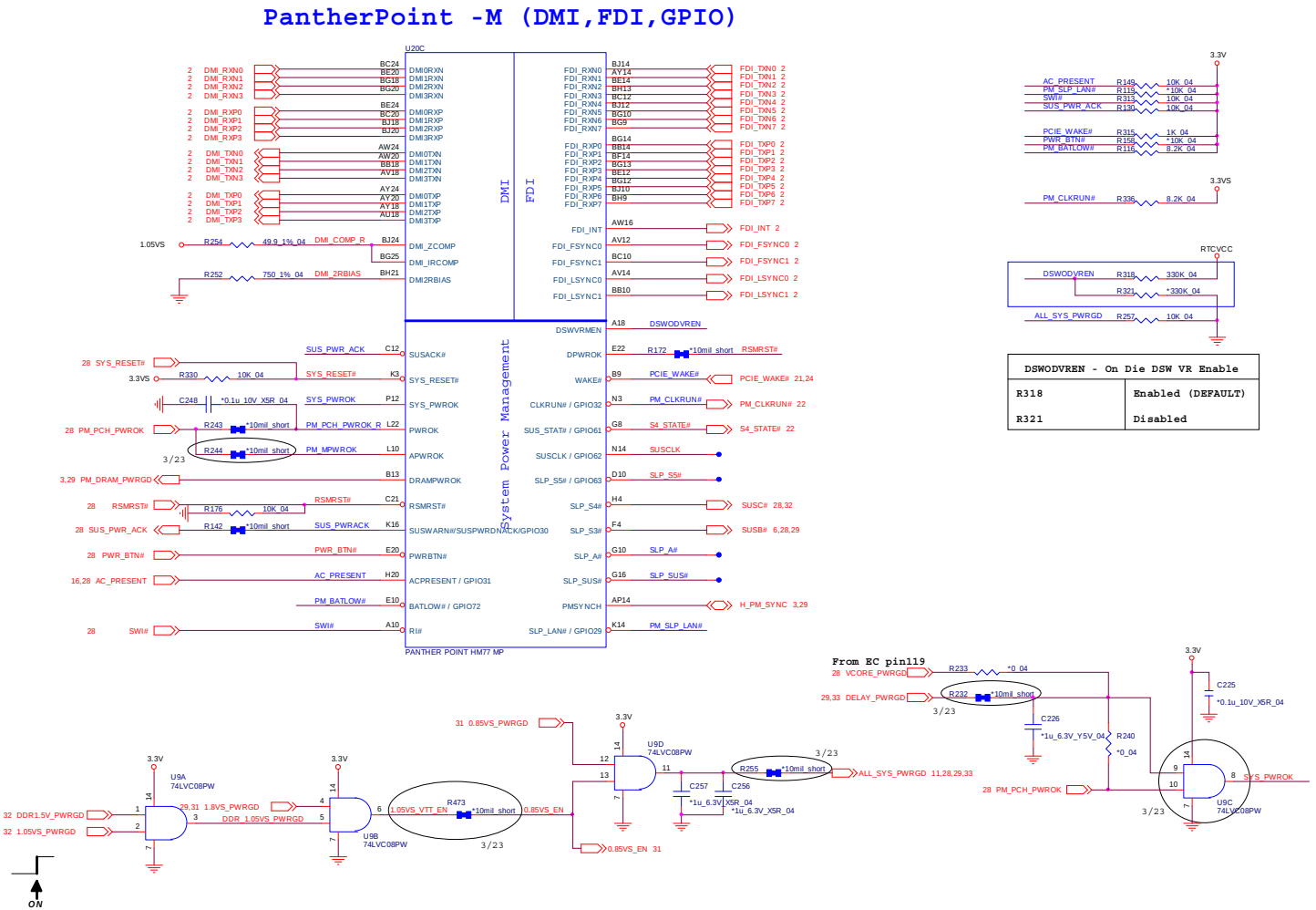
Sheet 12 of 42
PCH 1/9- RTC, HDA, SATA

PCH 2/9- PCIE, SMBUS, CLK

Sheet 13 of 42
PCH 2/9- PCIE, SMBUS, CLK



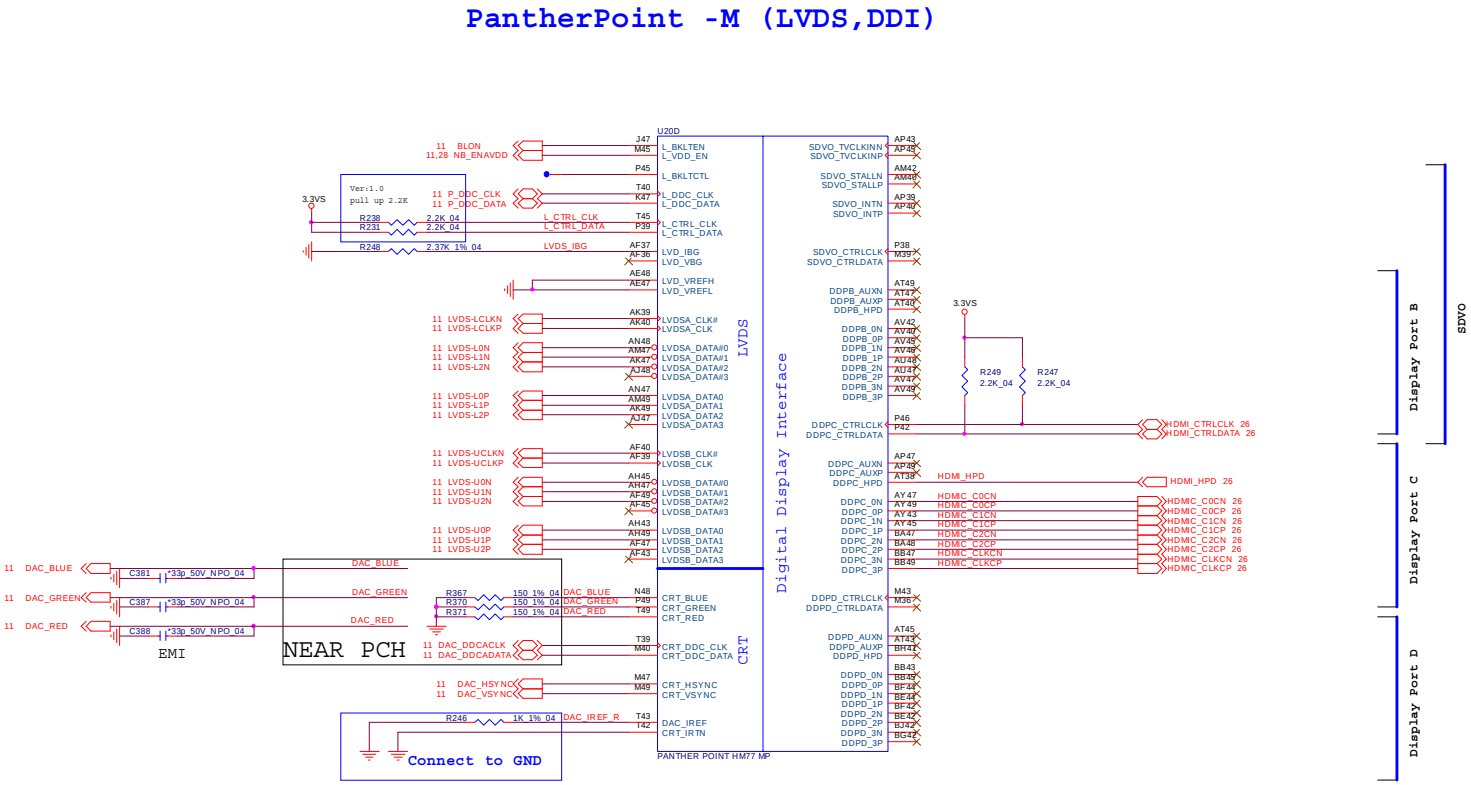
PCH 3/9- DMI, FDI, PWRGD



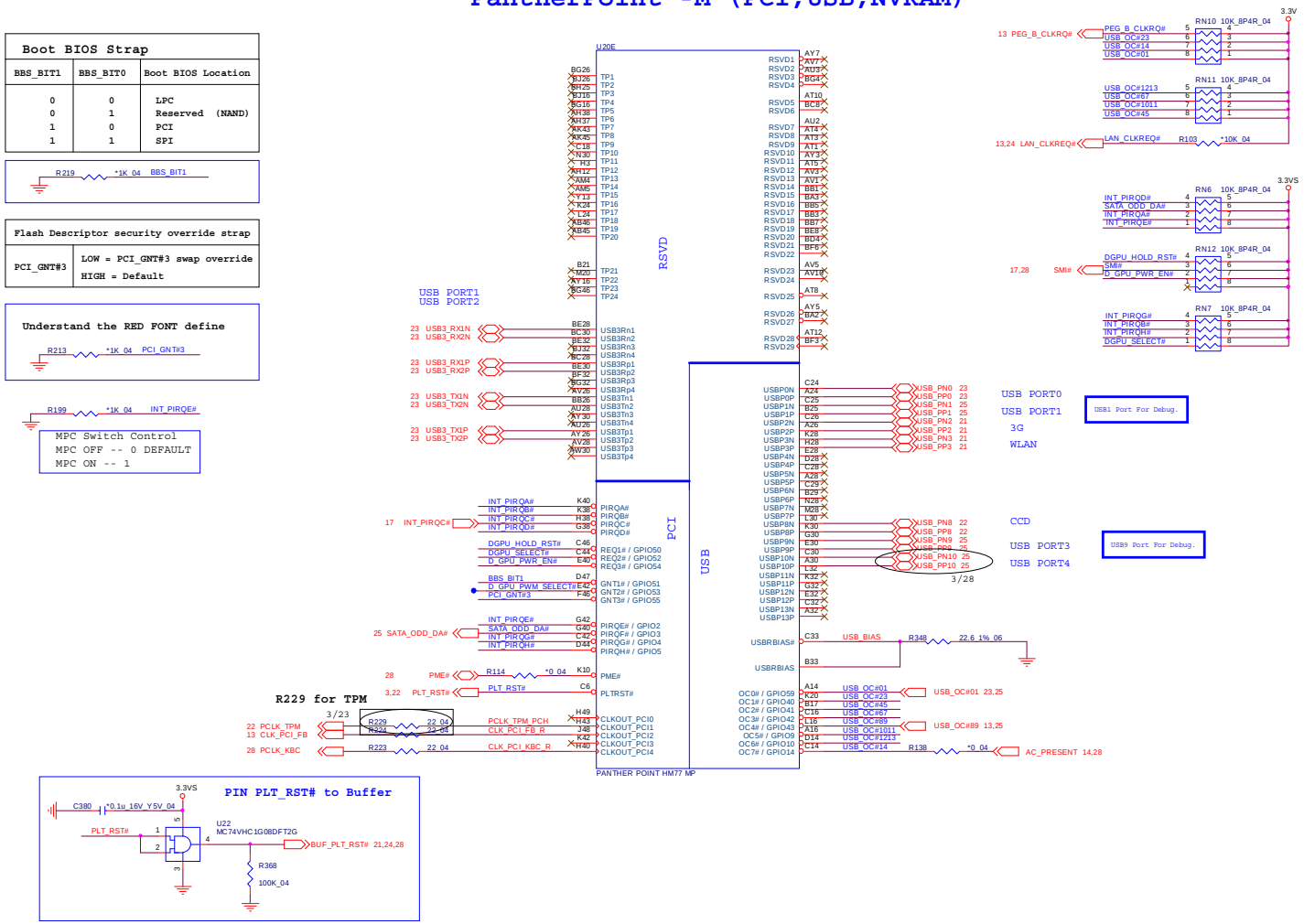
Sheet 14 of 42
PCH 3/9- DMI, FDI, PWRGD

PCH 4/9- LVDS, DDI, CRT

Sheet 15 of 42
PCH 4/9- LVDS, DDI, CRT



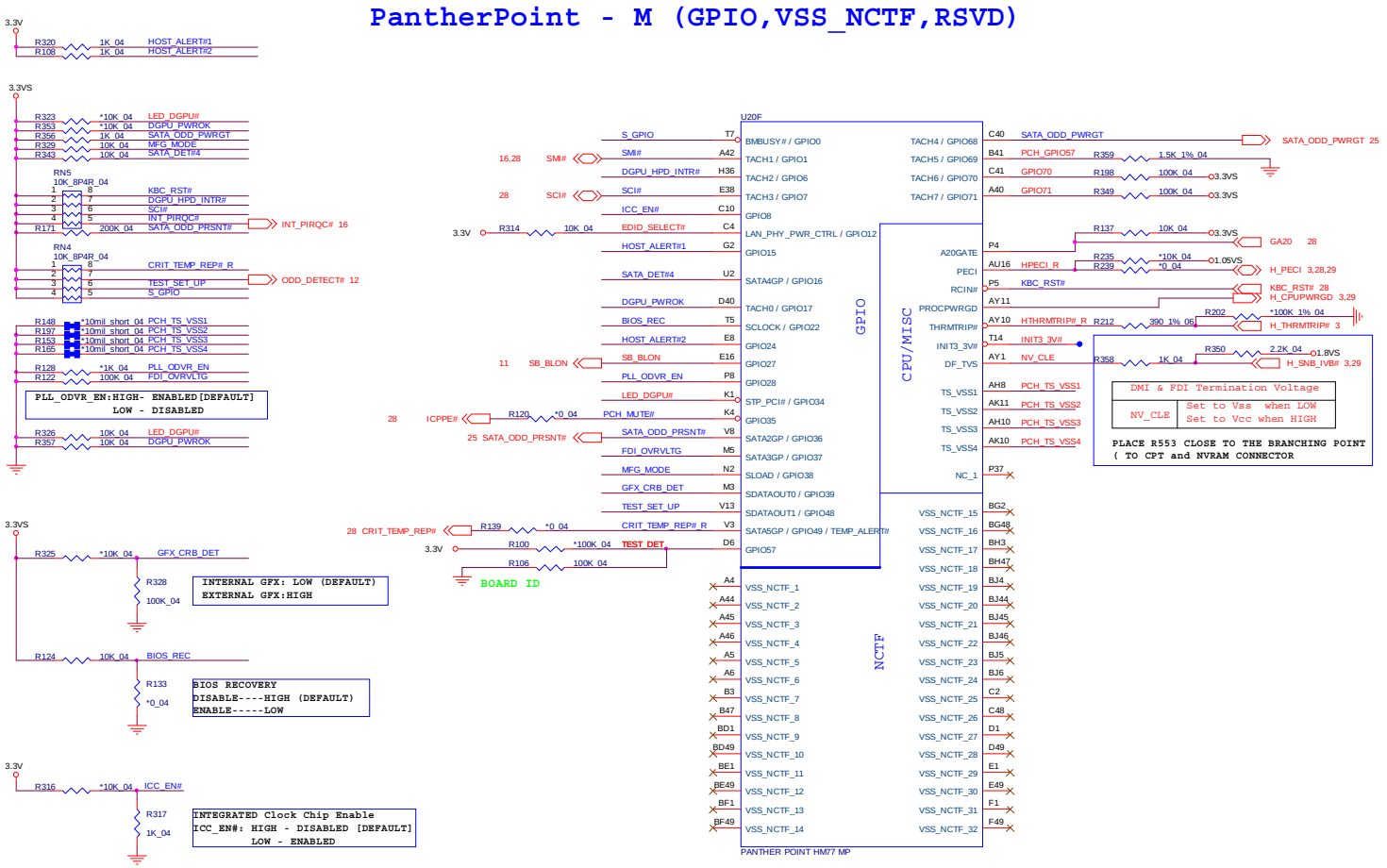
PCH 5/9- PCI, USB, RSVD



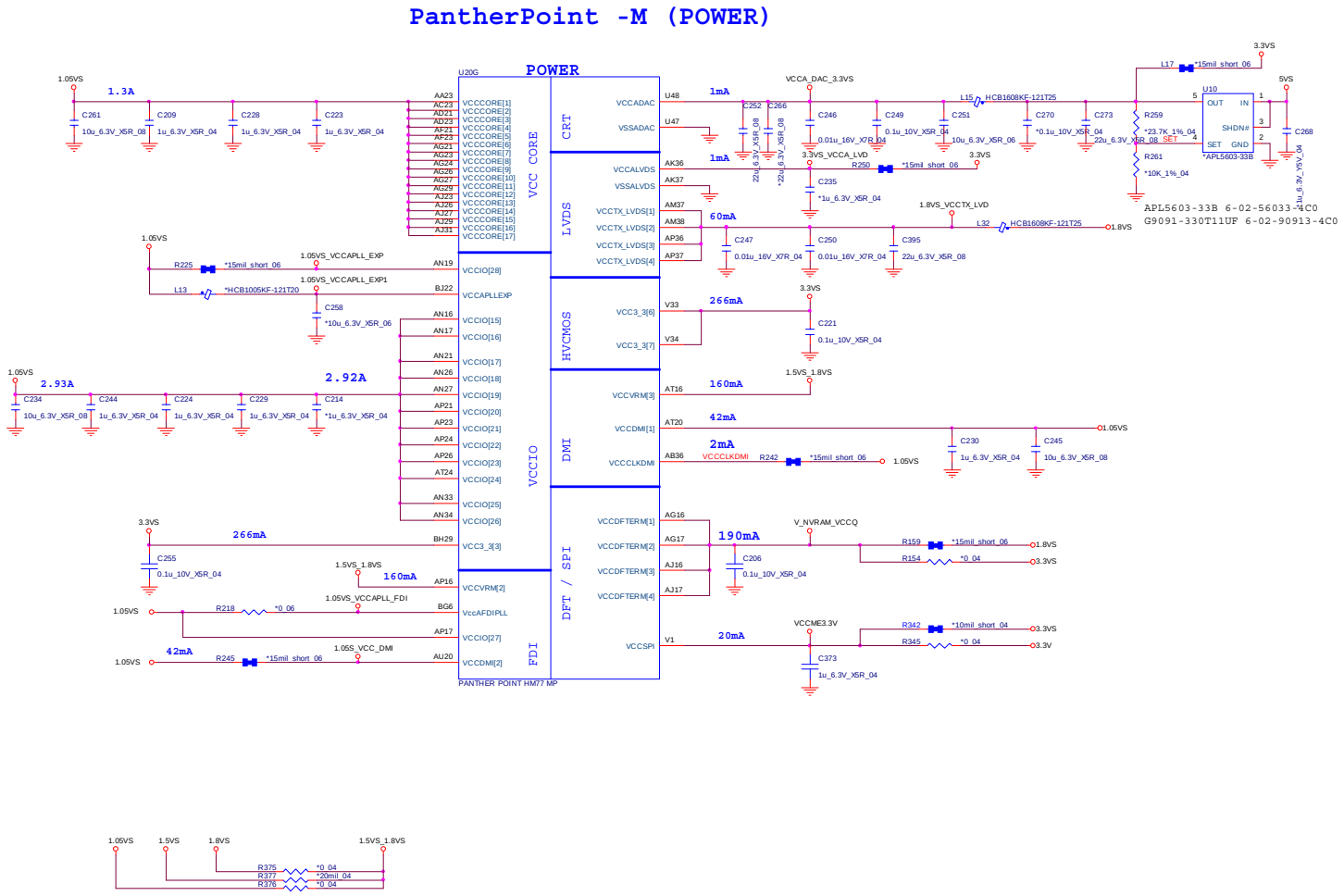
Sheet 16 of 42
PCH 5/9- PCI, USB, RSVD

PCH 6/9- GPIO, CPU

Sheet 17 of 42
PCH 6/9- GPIO, CPU



PCH 7/9- PWR

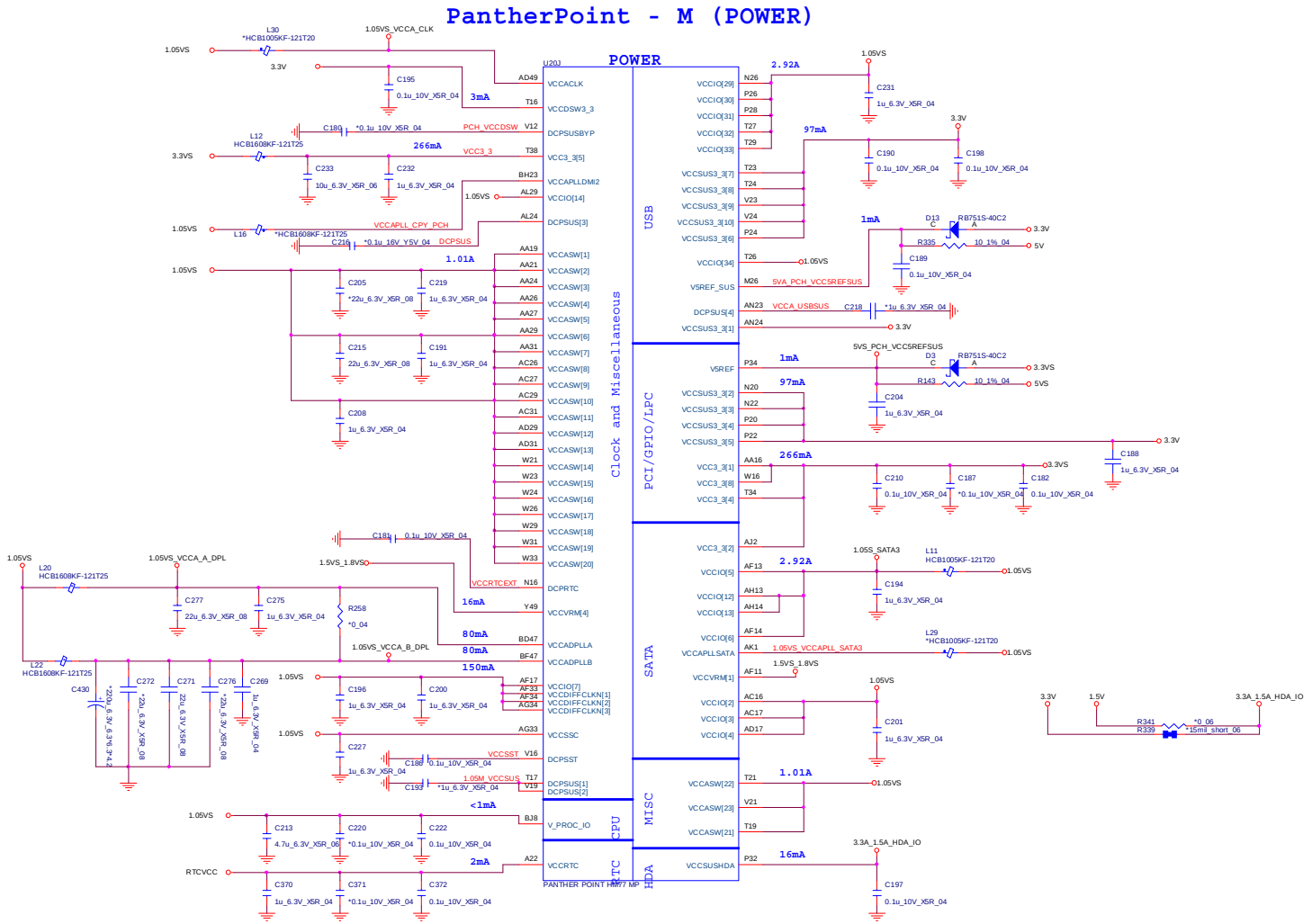


Sheet 18 of 42
PCH 7/9- PWR

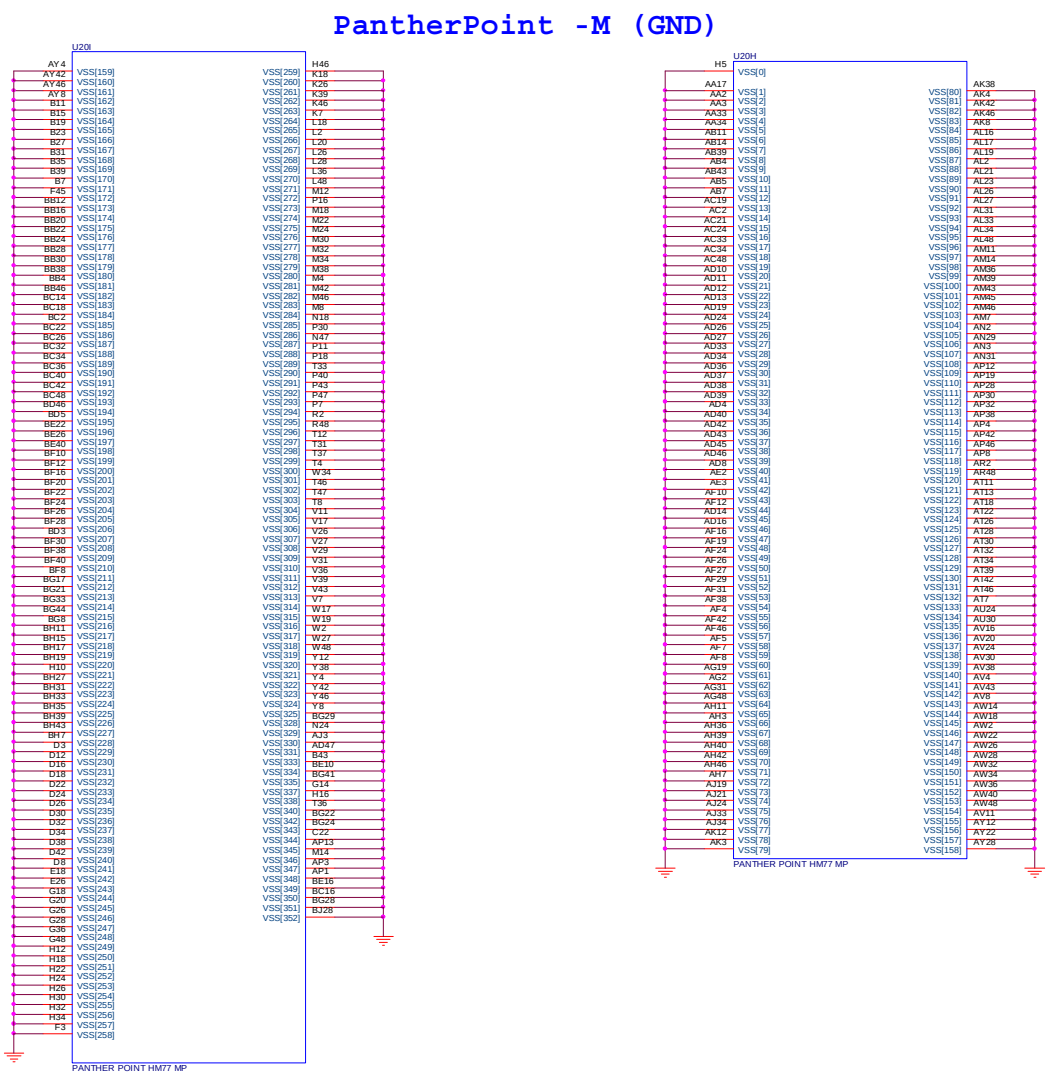
B.Schematic Diagrams

PCH 8/9 POWER

Sheet 19 of 42
PCH 8/9 POWER



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, MSATA

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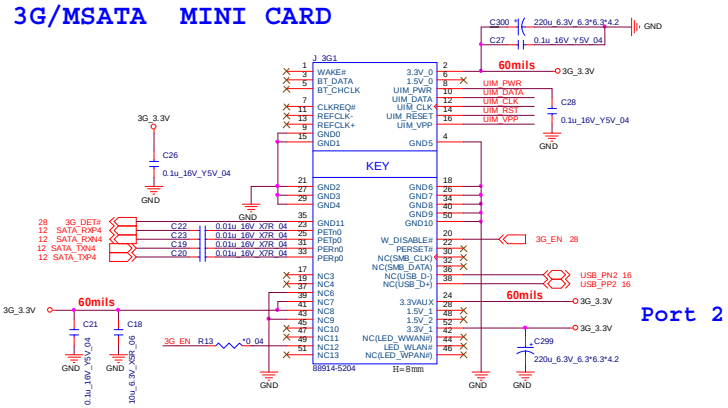
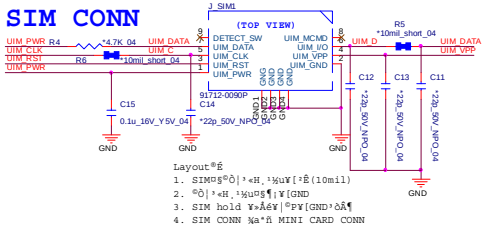
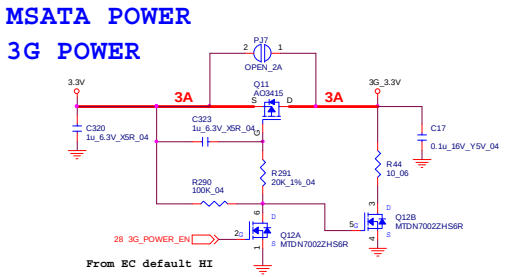
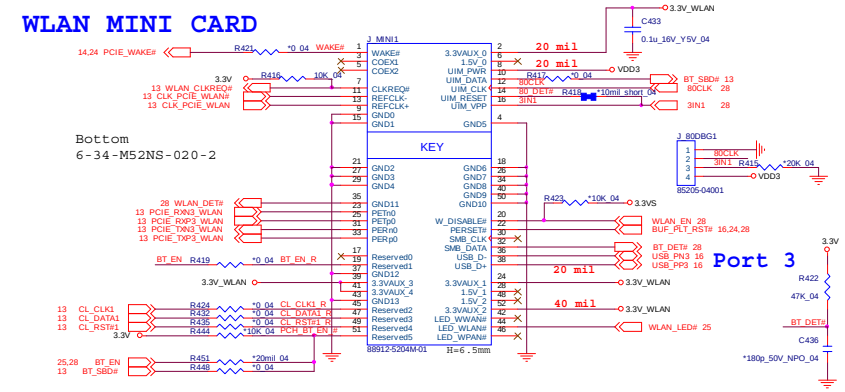
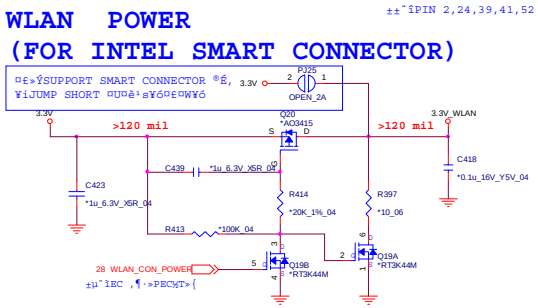
WLAN, 3G, MSATA



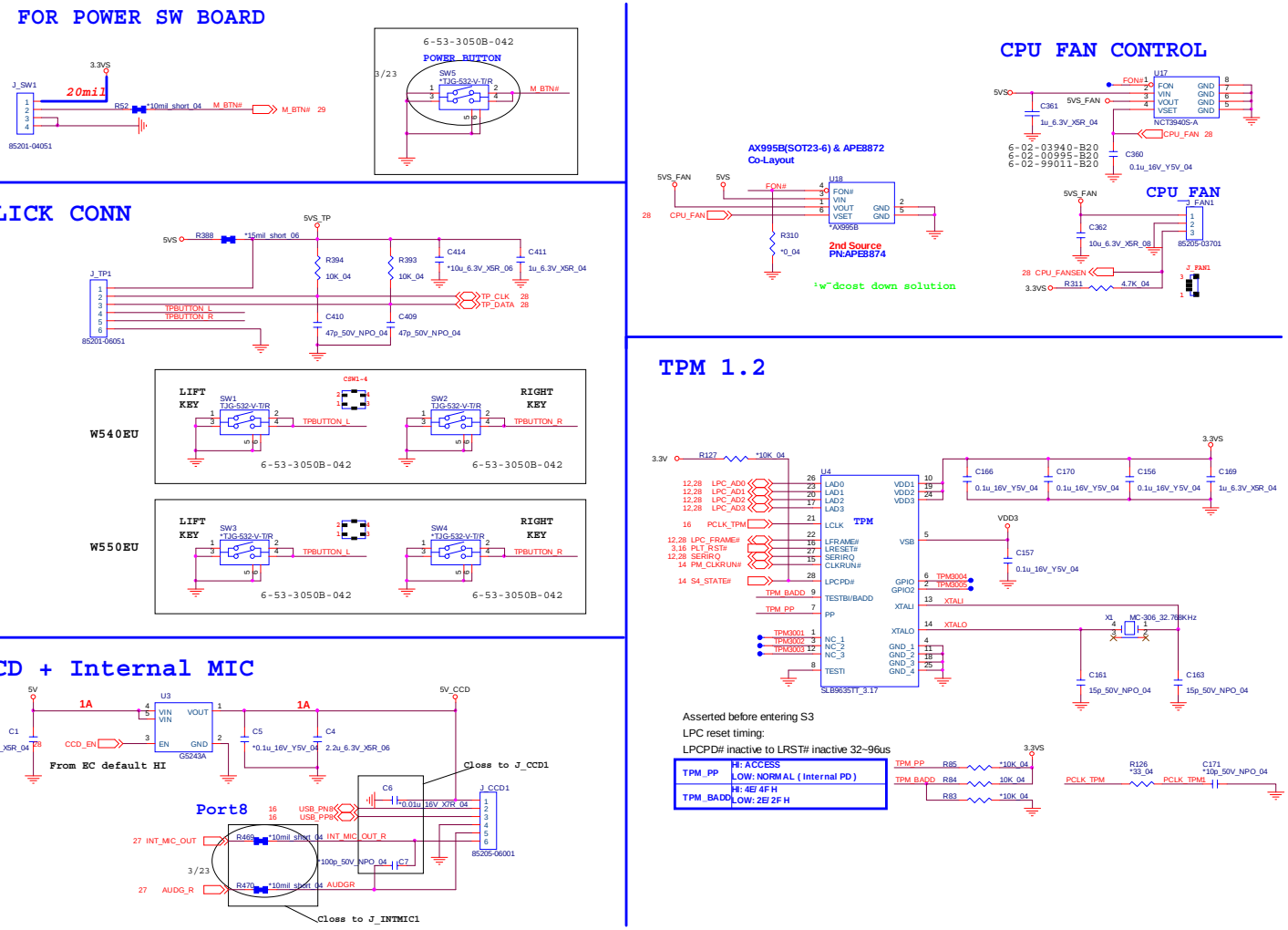








CCD, TPM, FAN, CLICK



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CCD, TPM, FAN, CLICK

USB3.0, LID SWITCH

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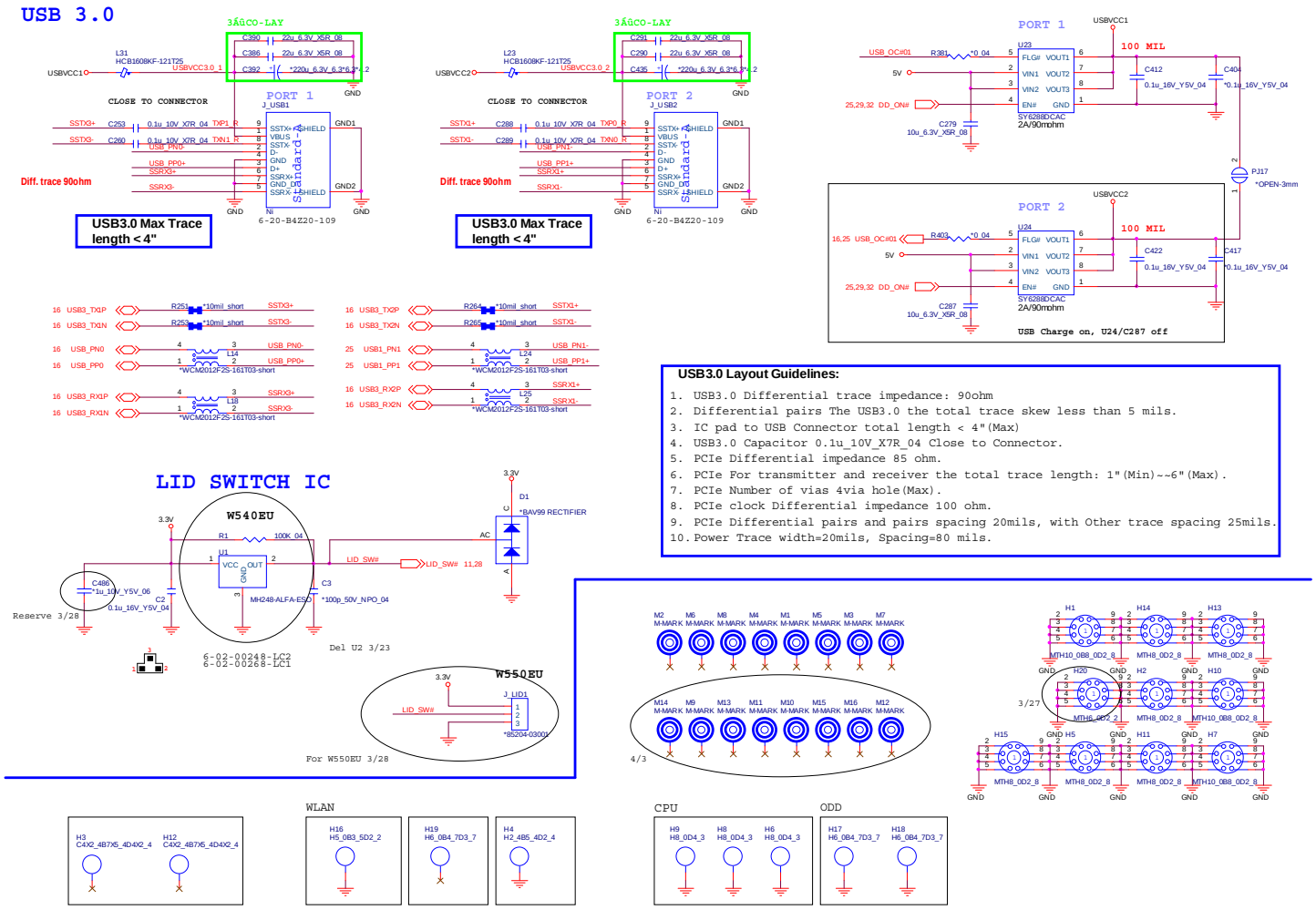
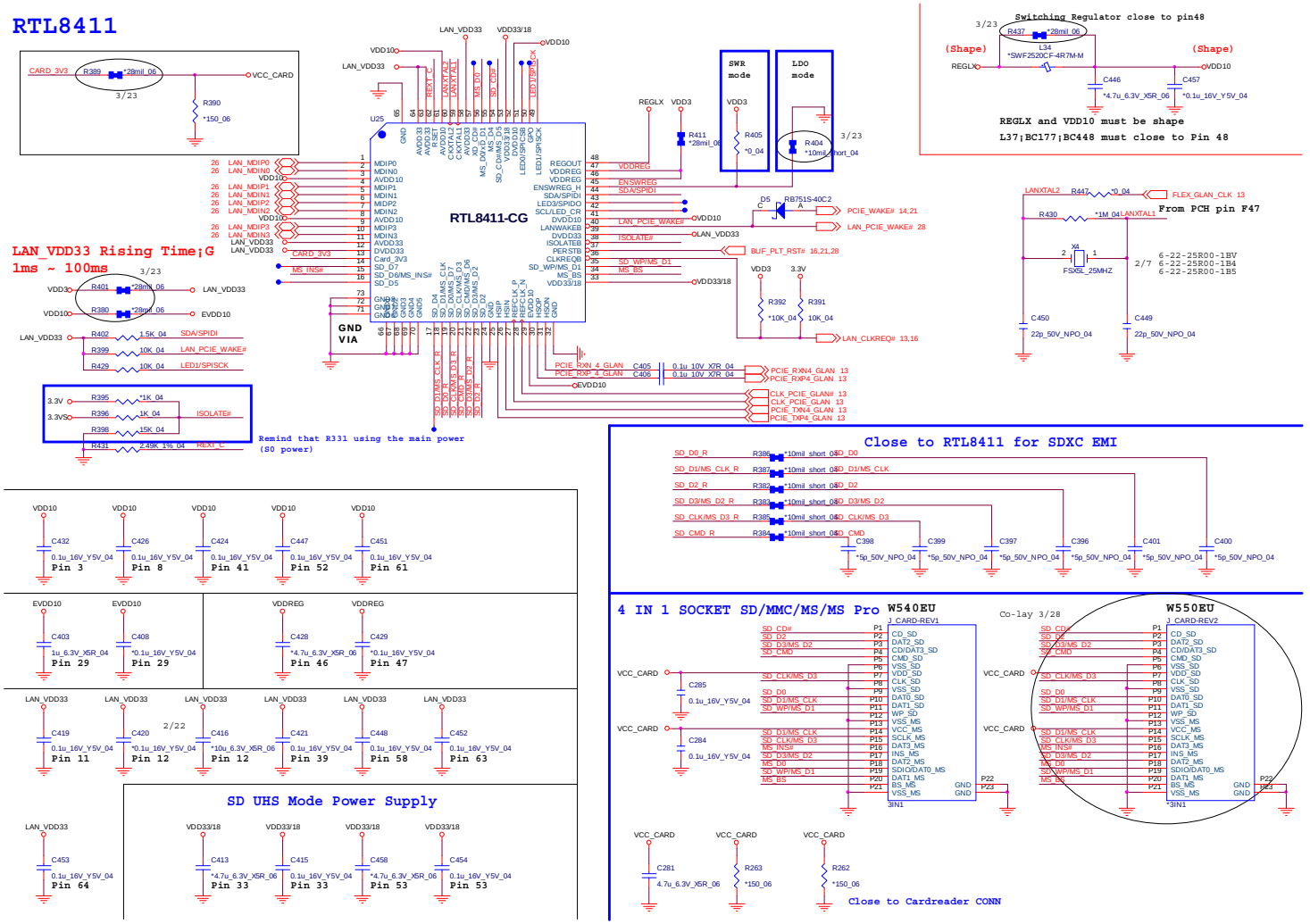
USB3.0, LID SWITCH



Card Reader (RTL8411)



Sheet 24 of 42
Card Reader (RTL8411)

B.Schematic Diagrams

SATA ODD, LED, USB CHARGE

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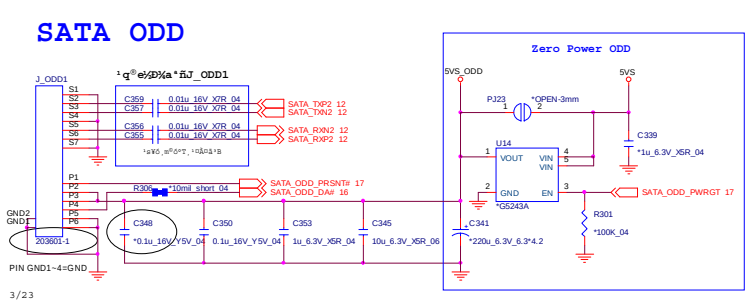
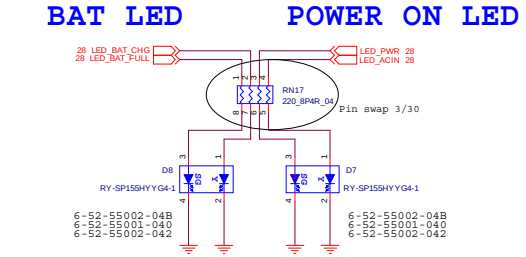
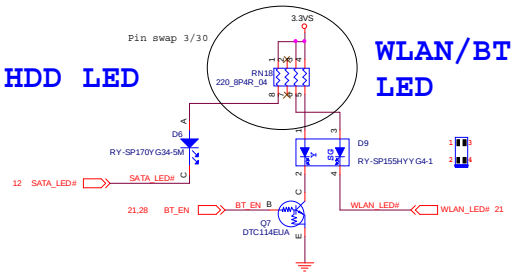
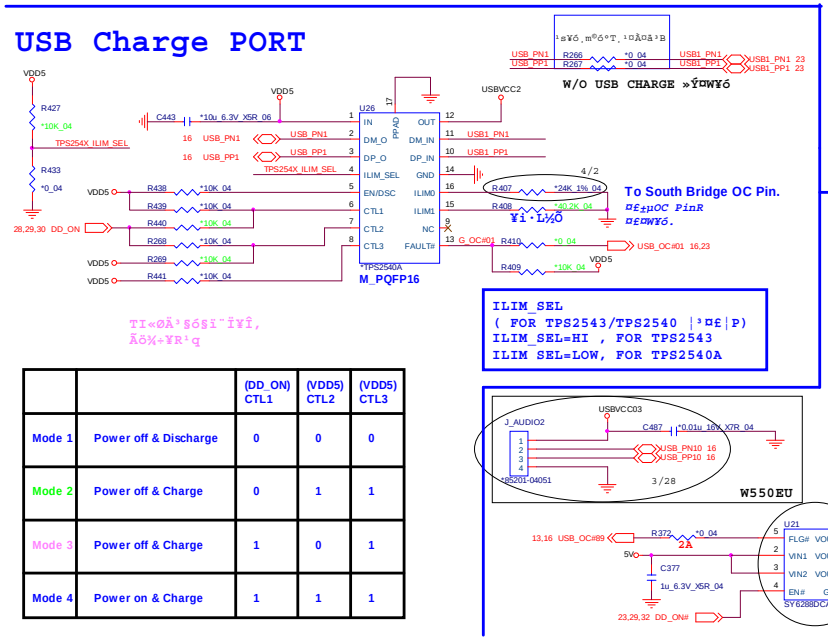
SATA ODD, LED,
USB CHARGE

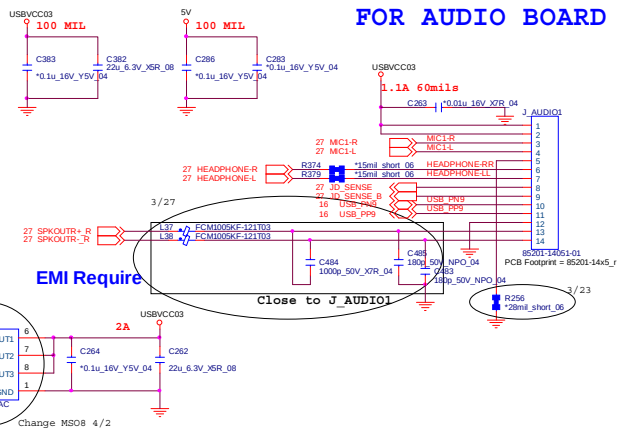




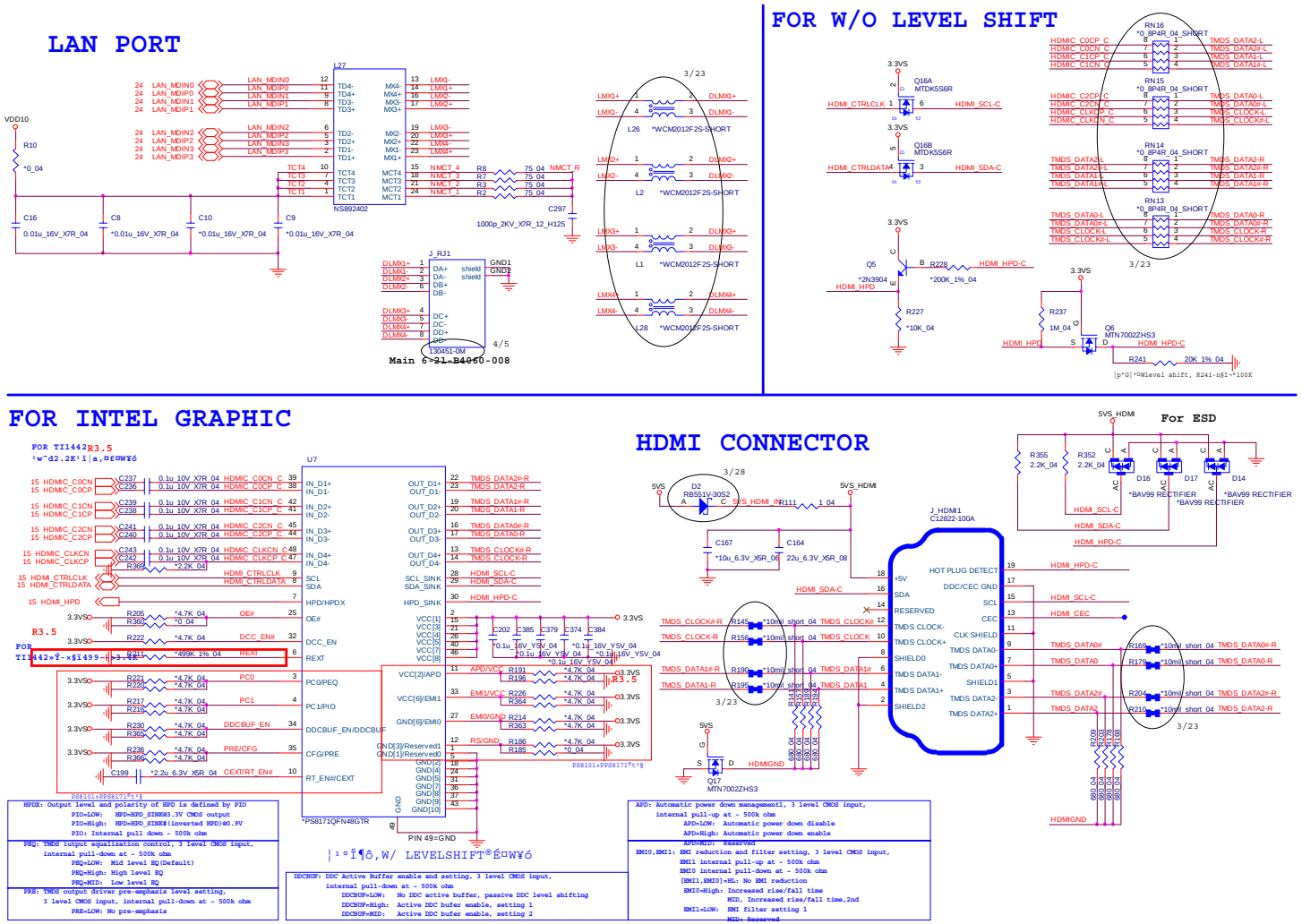




		(DD_ON) CTL1	(VDD5) CTL2	(VDD5) CTL3
Mode 1	Power off & Discharge	0	0	0
Mode 2	Power off & Charge	0	1	1
Mode 3	Power off & Charge	1	0	1
Mode 4	Power on & Charge	1	1	1



HDMI, RJ45



Sheet 26 of 42
HDMI, RJ45

AUDIO CODEC VT1802P

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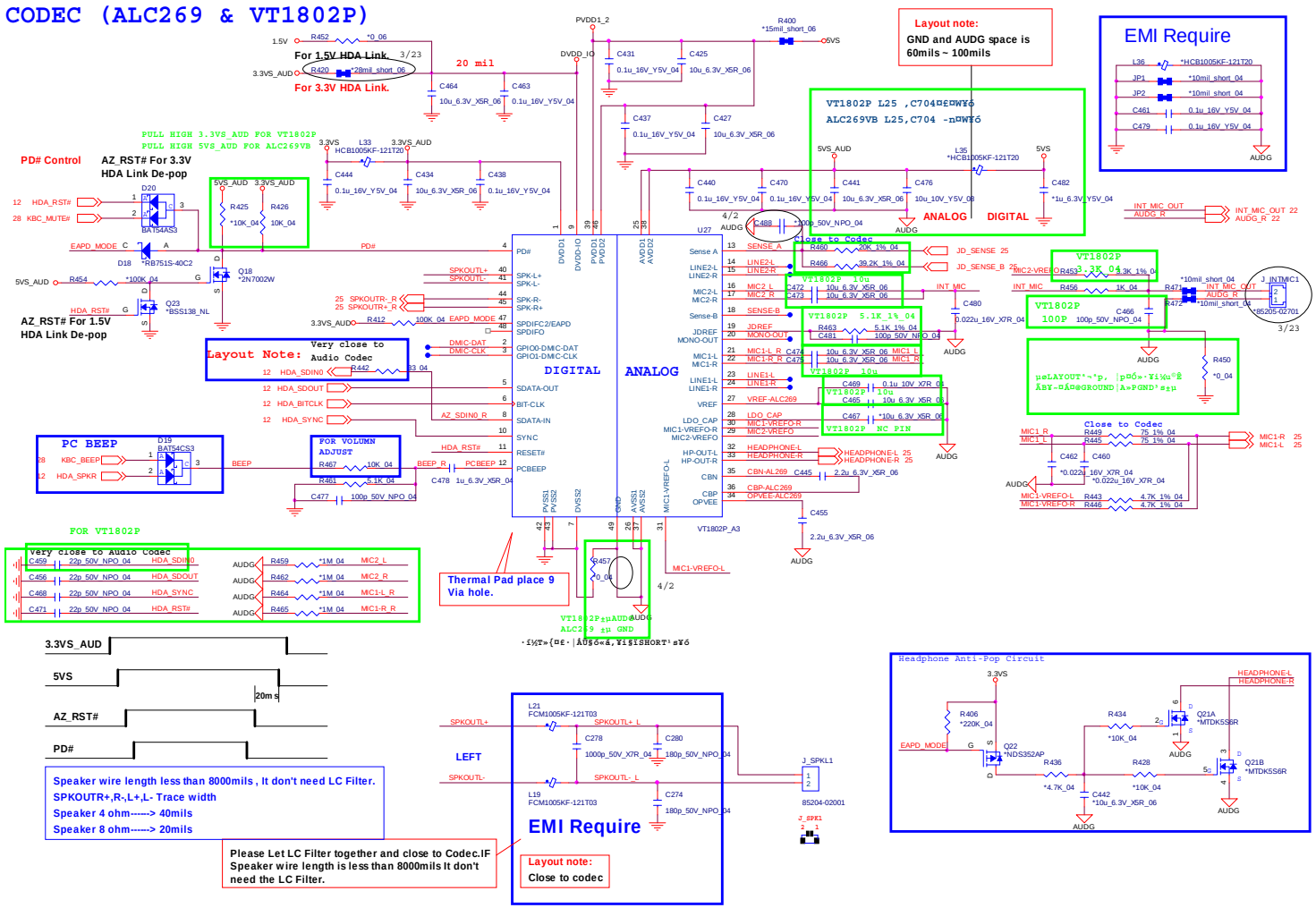
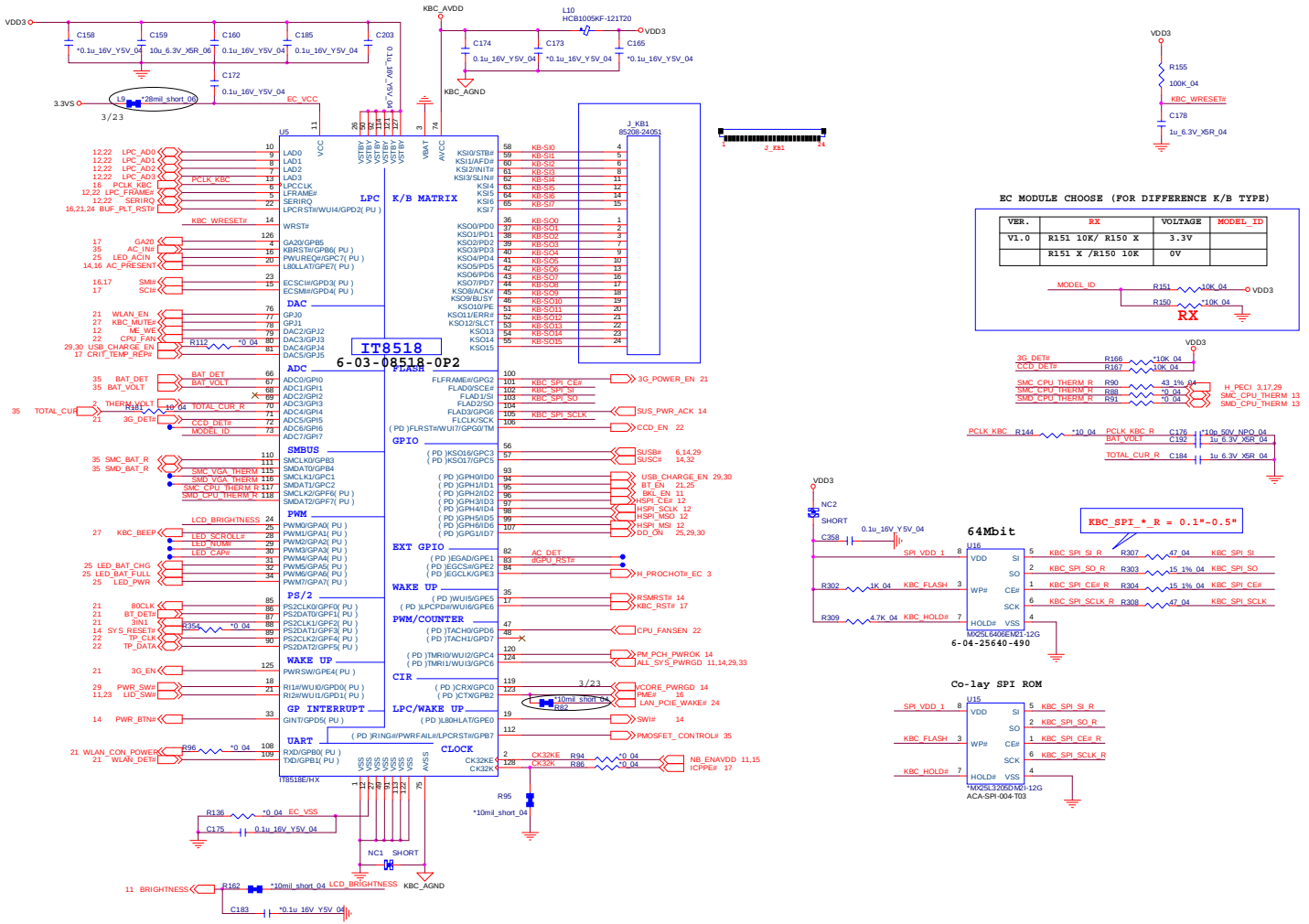
AUDIO CODEC
VT1802P



KBC-ITE IT8518E



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KBC-ITE IT8518E

5VS, 3VS, 1.5VS CPU

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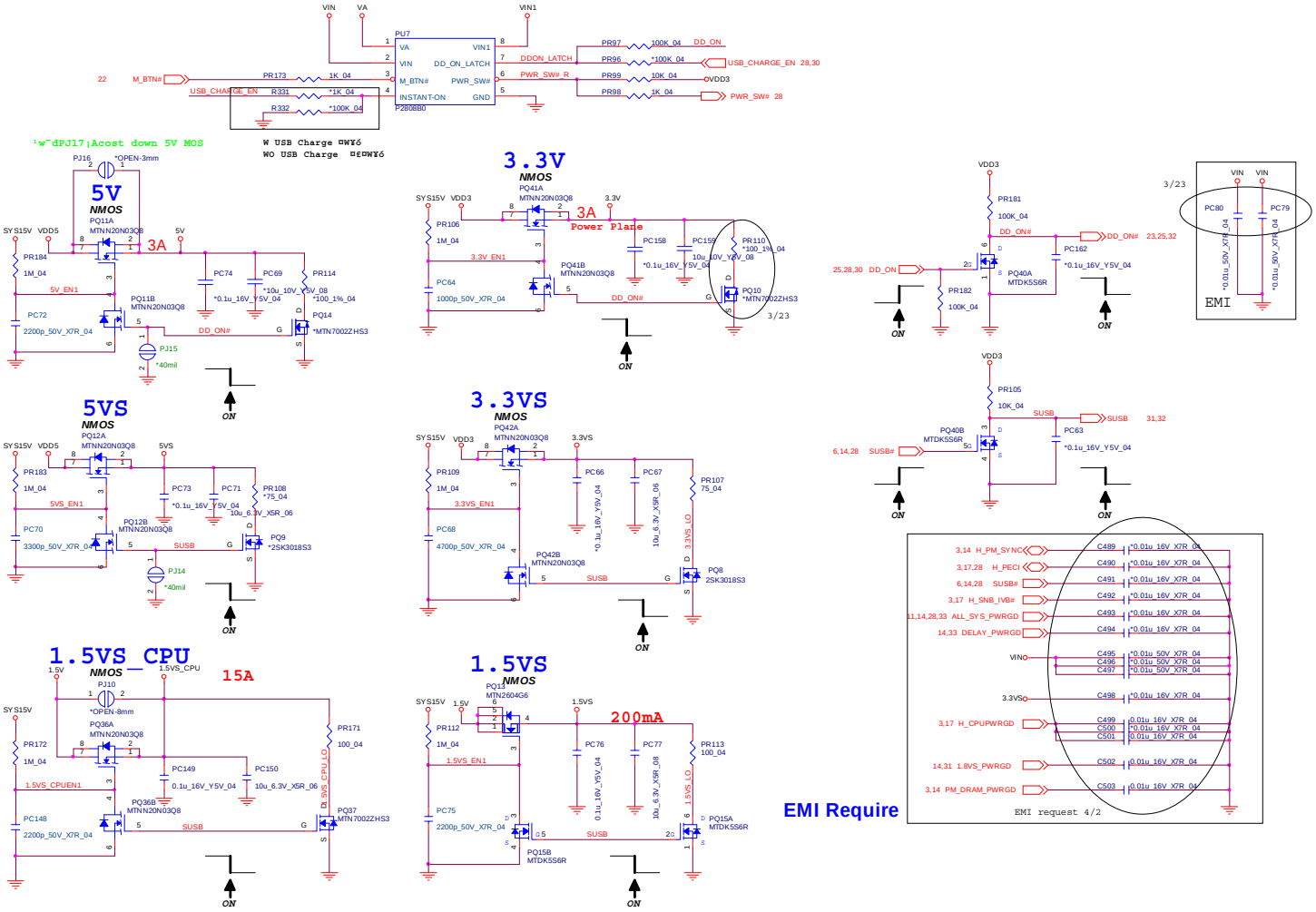
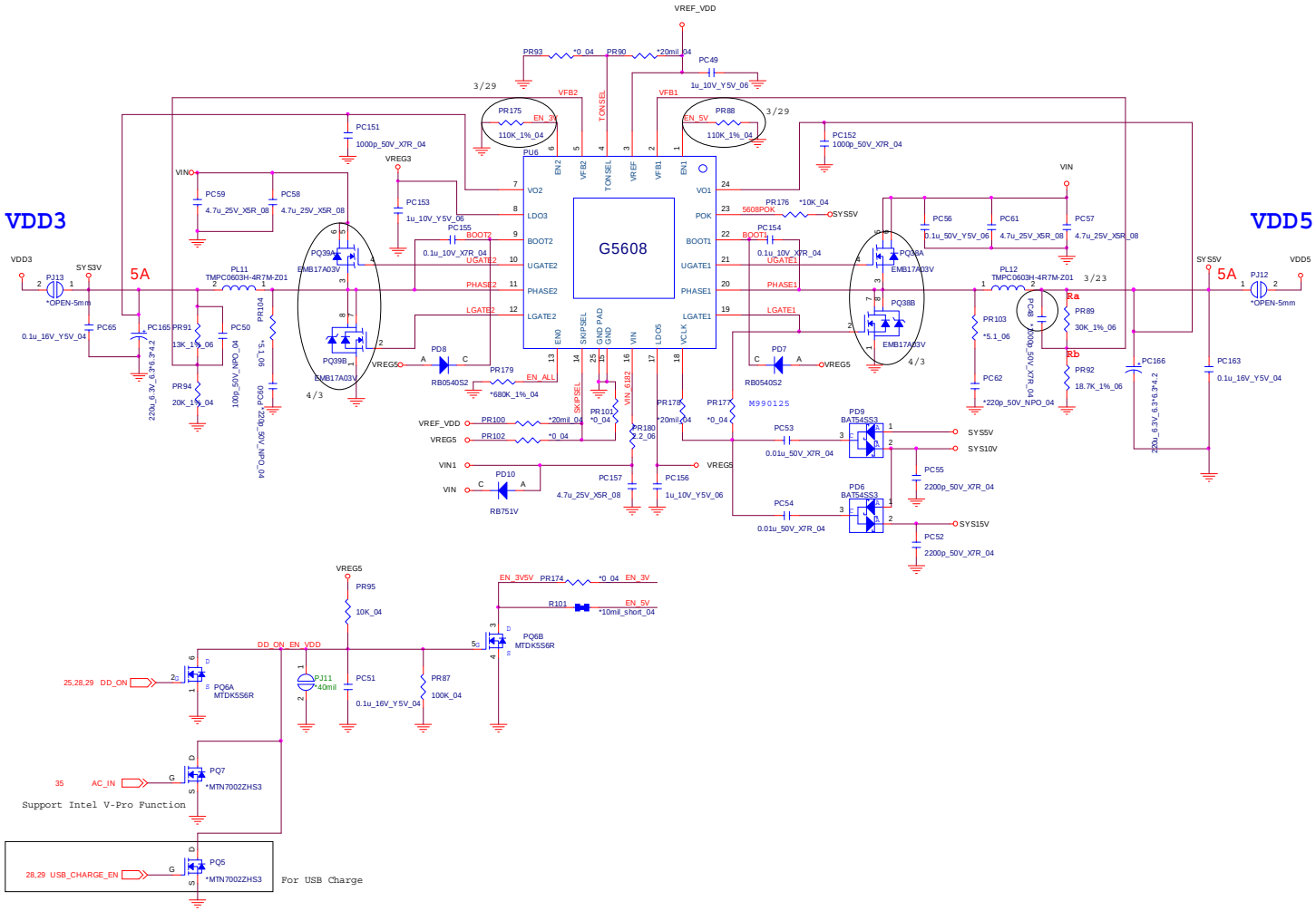
5VS, 3VS, 1.5VS CPU



VDD3, VDD5



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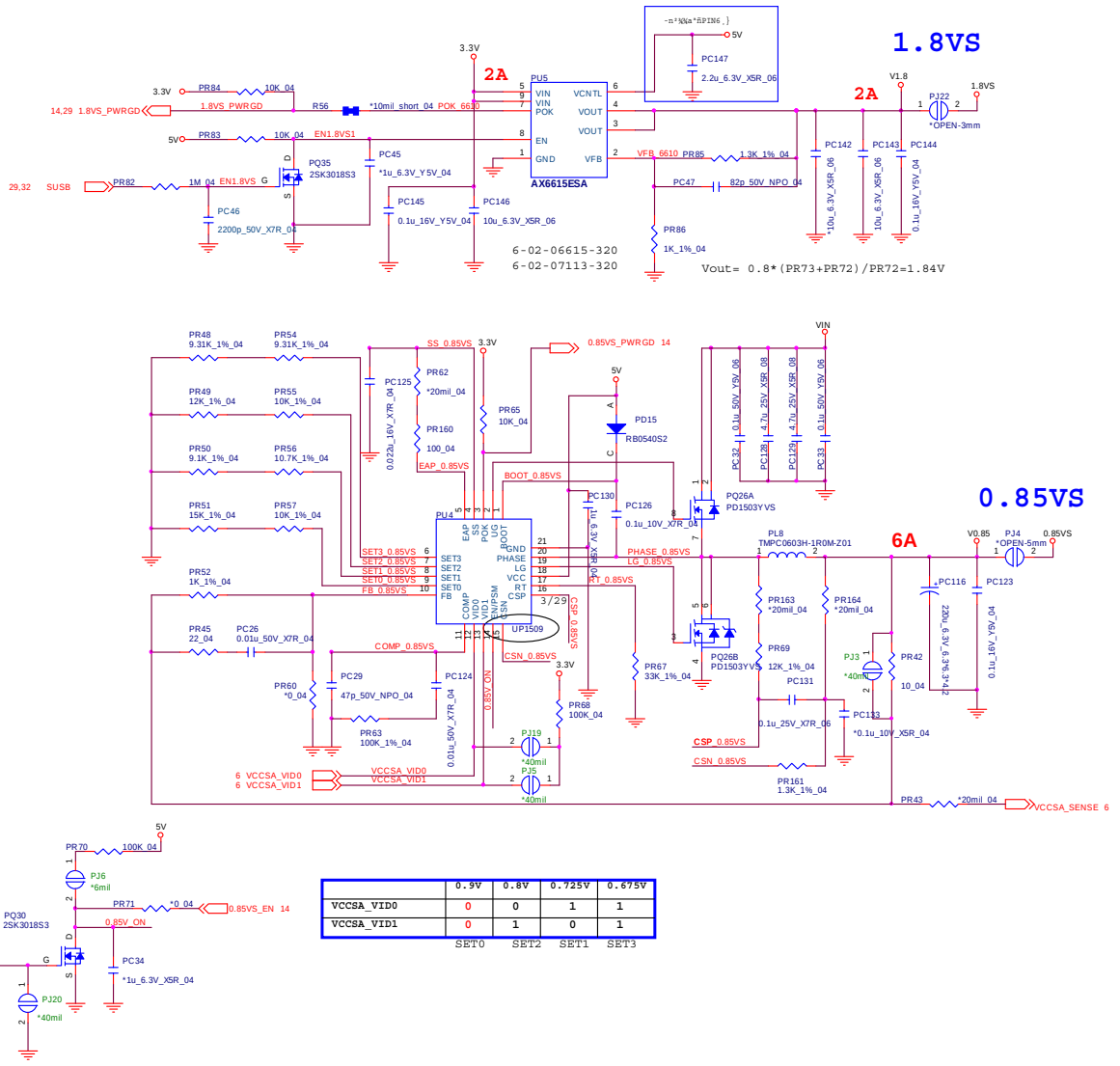
VDD3, VDD5

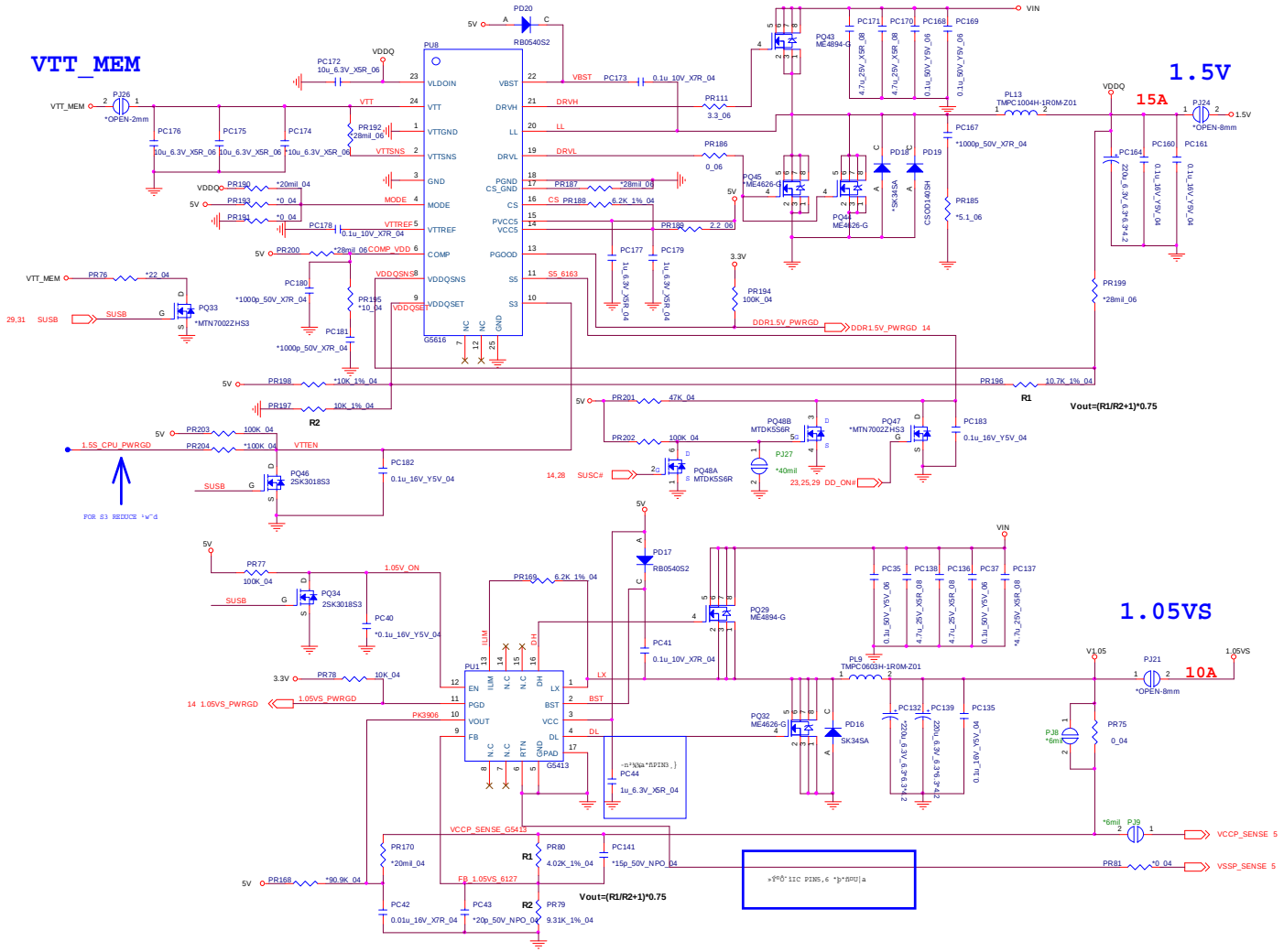
Power 0.85VS, 1.8VS

Sheet 31 of 42
Power 0.85VS, 1.8VS



	0.9V	0.8V	0.725V	0.675V
VCCSA_VID0	0	0	1	1
VCCSA_VID1	0	1	0	1
	SET0	SET2	SET1	SET3

POWER 1.5V/1.05VS



Sheet 32 of 42
POWER 1.5V/
1.05VS

POWER VCORE1

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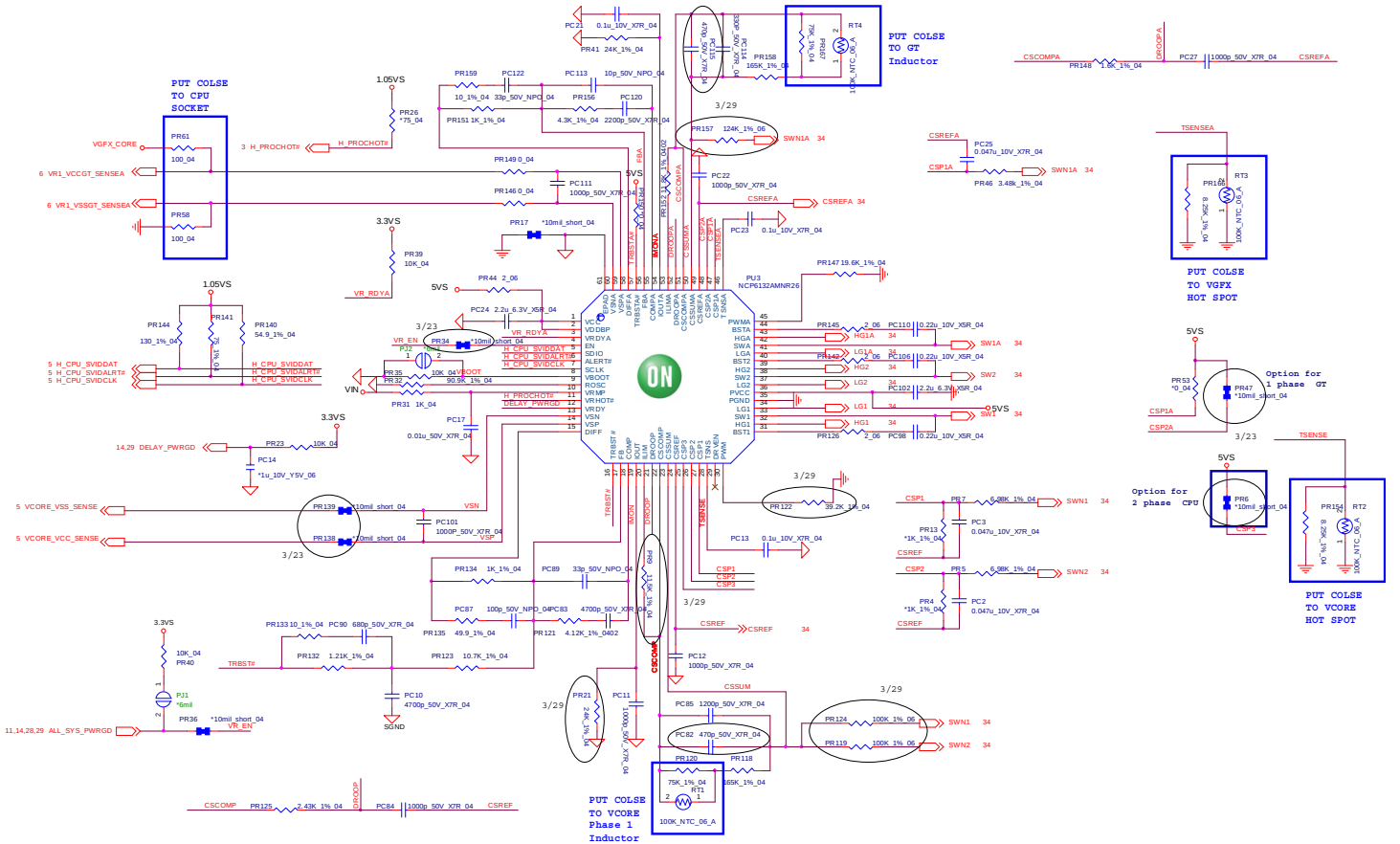
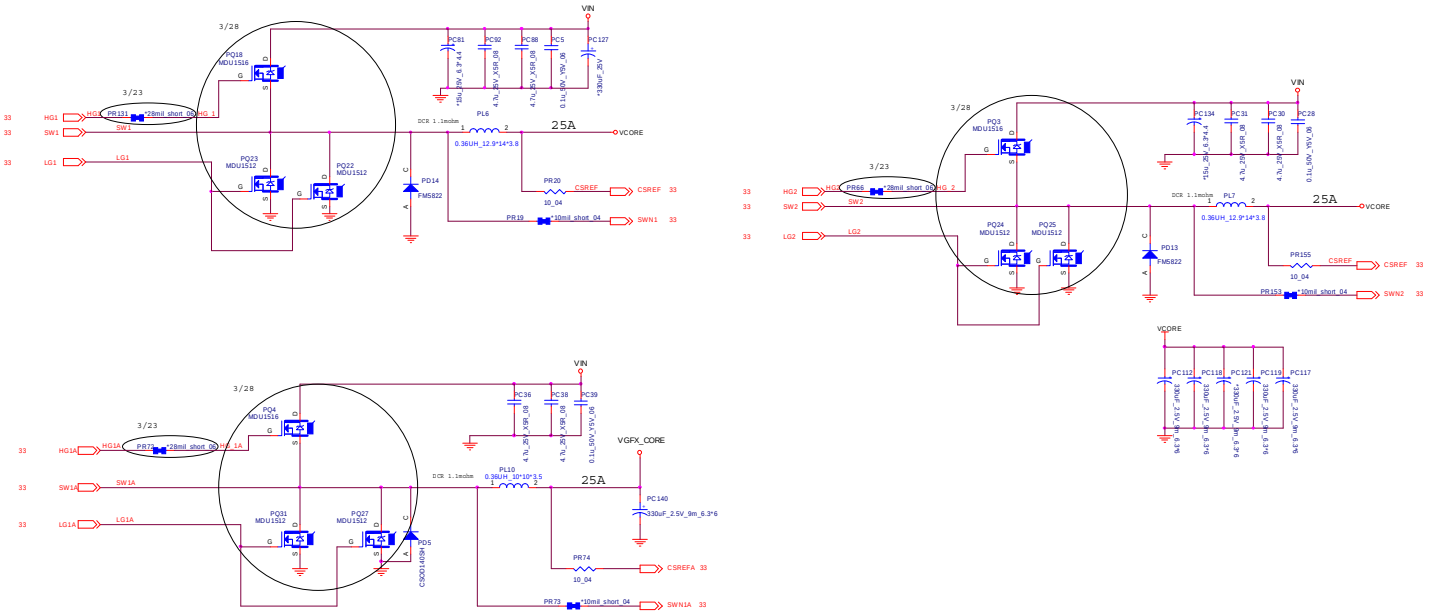
POWER VCORE1



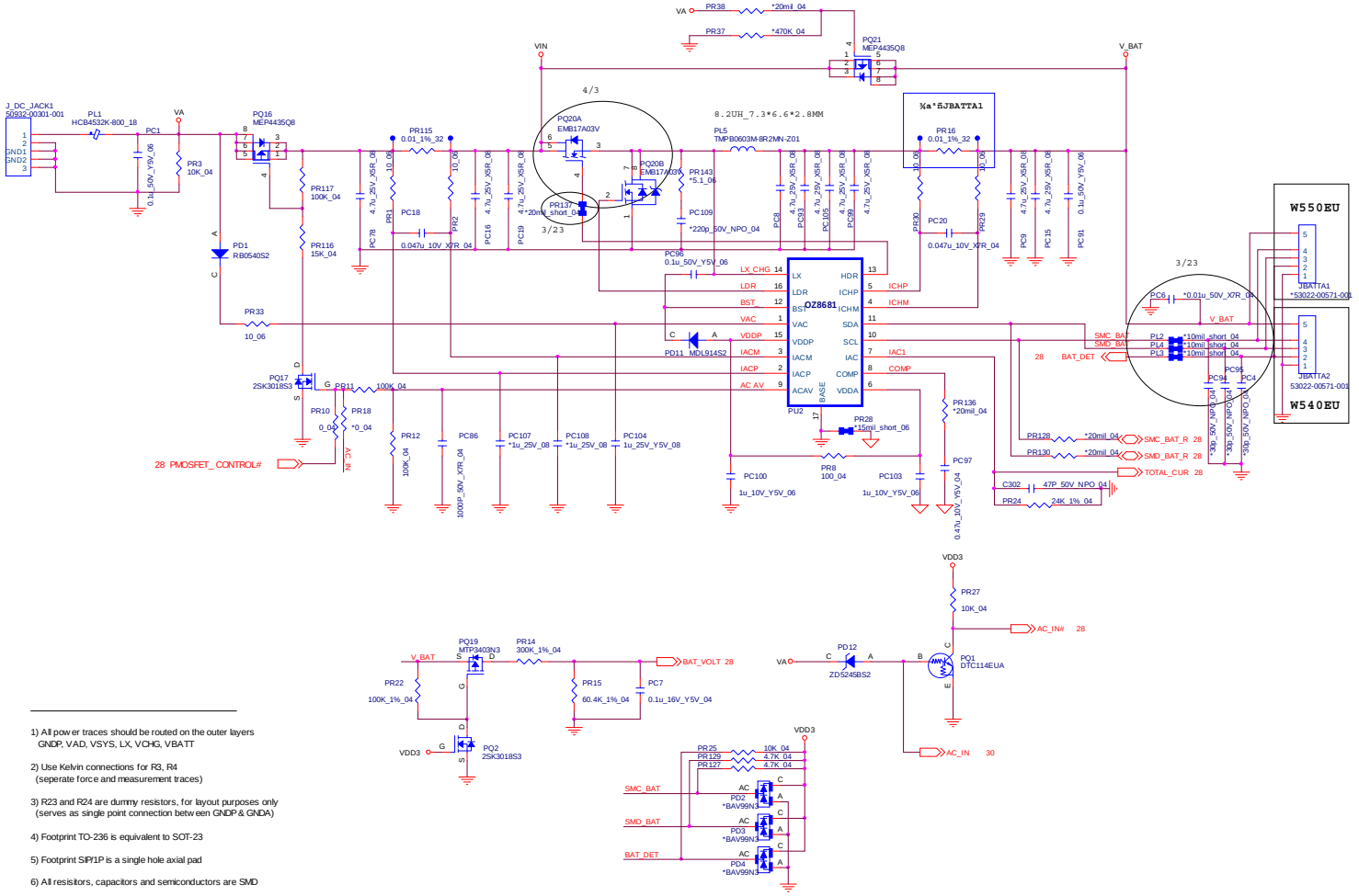
POWER VCORE2



Sheet 34 of 42
POWER VCORE2

AC IN, CHARGER

Sheet 35 of 42
AC IN, CHARGER



1) All power traces should be routed on the outer layers GNDP, VAD, VSYS, LX, VCHG, VBATT

2) Use Kelvin connections for R3, R4 (seperate force and measurement traces)

3) R23 and R24 are dummy resistors, for layout purposes only (serves as single point connection between GNDP & GNDA)

4) Footprint TO-236 is equivalent to SOT-23

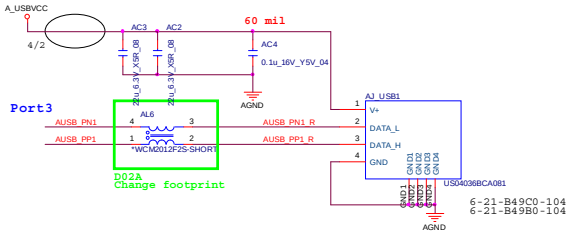
5) Footprint SIP1P is a single hole axial pad

6) All resisitors, capacitors and semiconductors are SMD

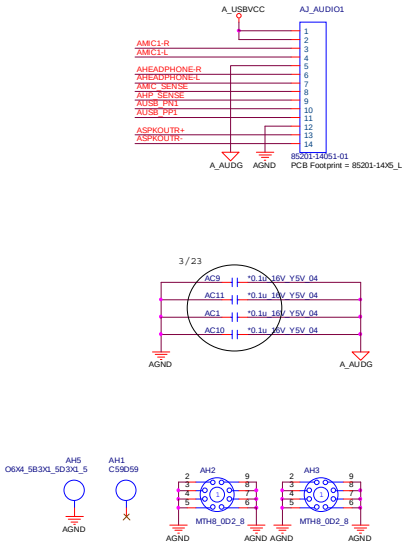
7) Potentiometers, and test points are axial devices

AUDIO BOARD

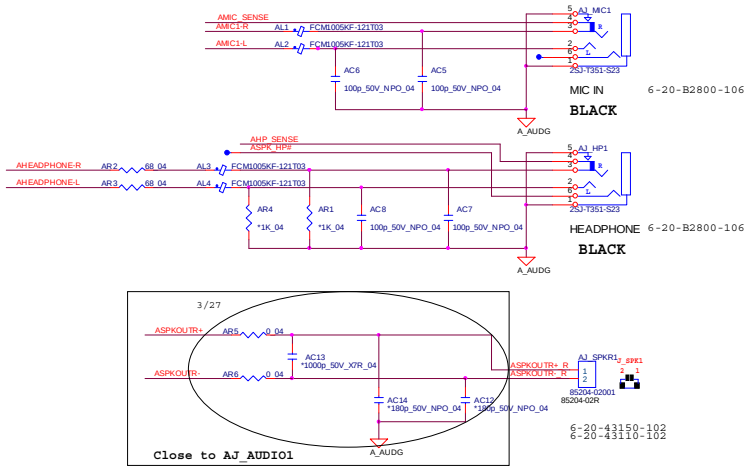
USB PORT



TO M/B



AUDIO JACK



Sheet 36 of 42
AUDIO BOARD

AUDIO BOARD (W550EU)

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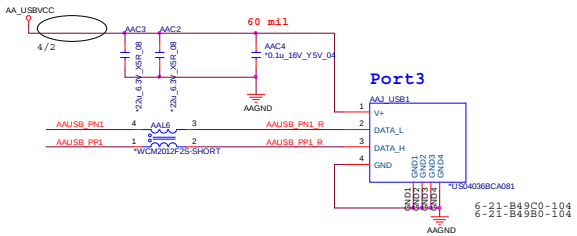
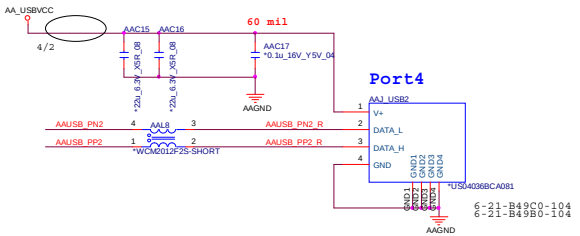
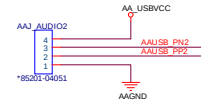
AUDIO BOARD
(W550EU)

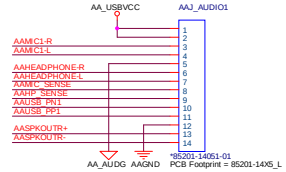
USB PORT

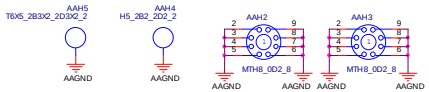




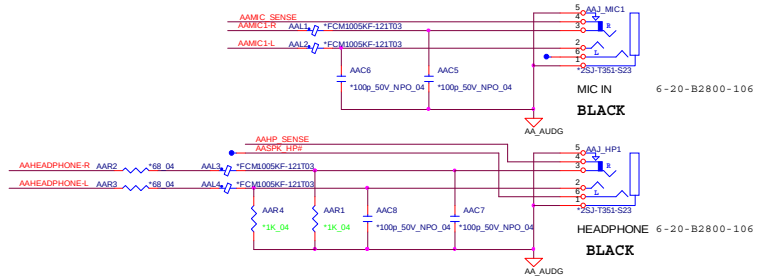
TO M/B

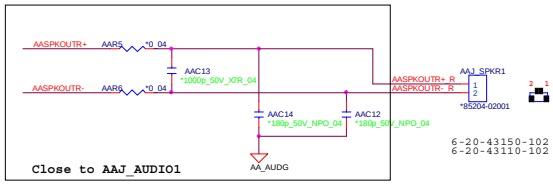






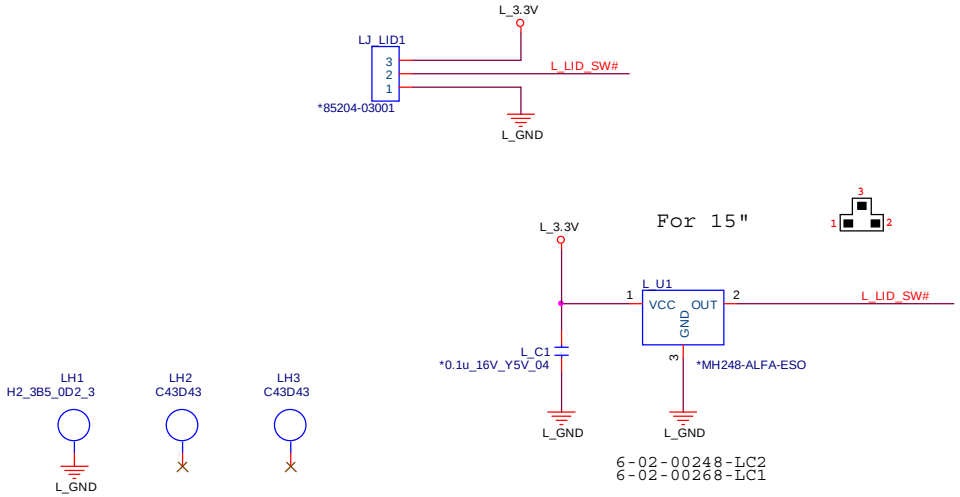
AUDIO JACK





LID SW BOARD (W550EU)

LID SWITCH BOARD



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LID SW BOARD
(W550EU)

POWER SW BOARD

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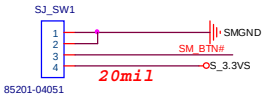
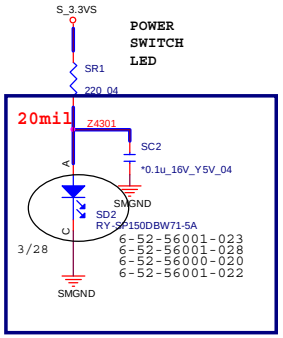
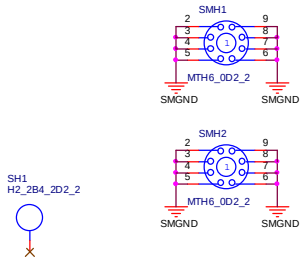
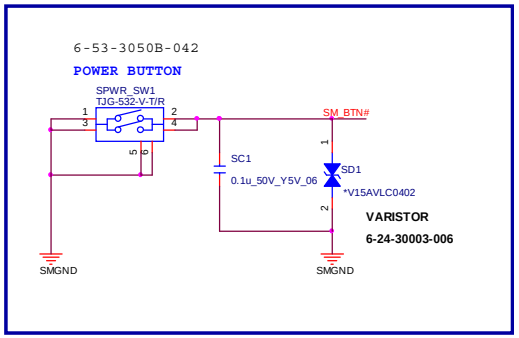
POWER SW
BOARD

POWER SW & LED



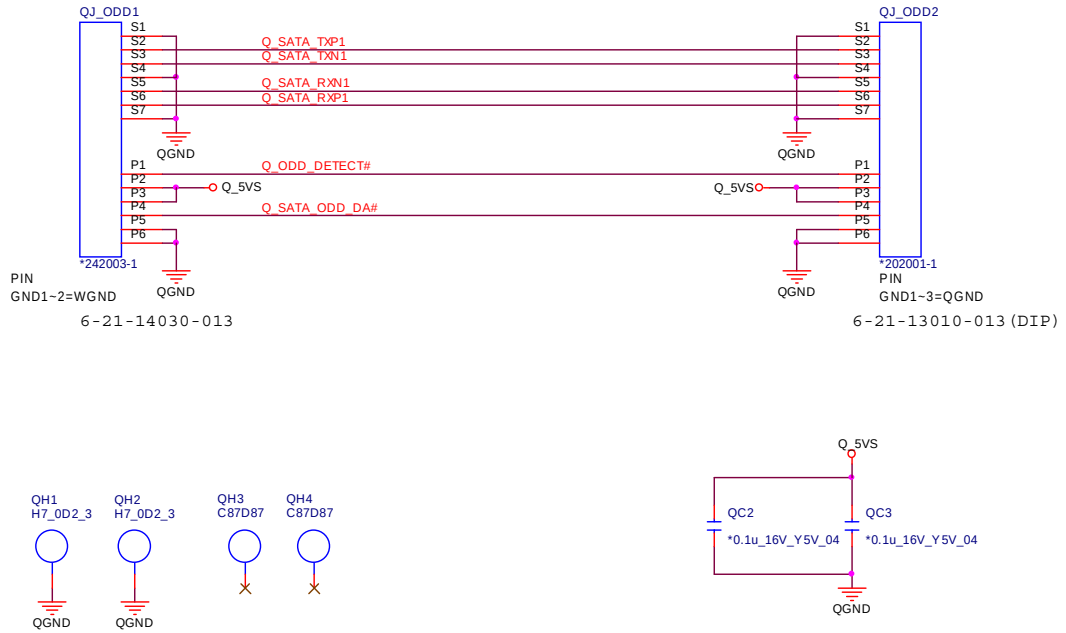






EXTERNAL ODD BOARD

ODD BOARD



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EXTERNAL ODD BOARD

Power Diagram

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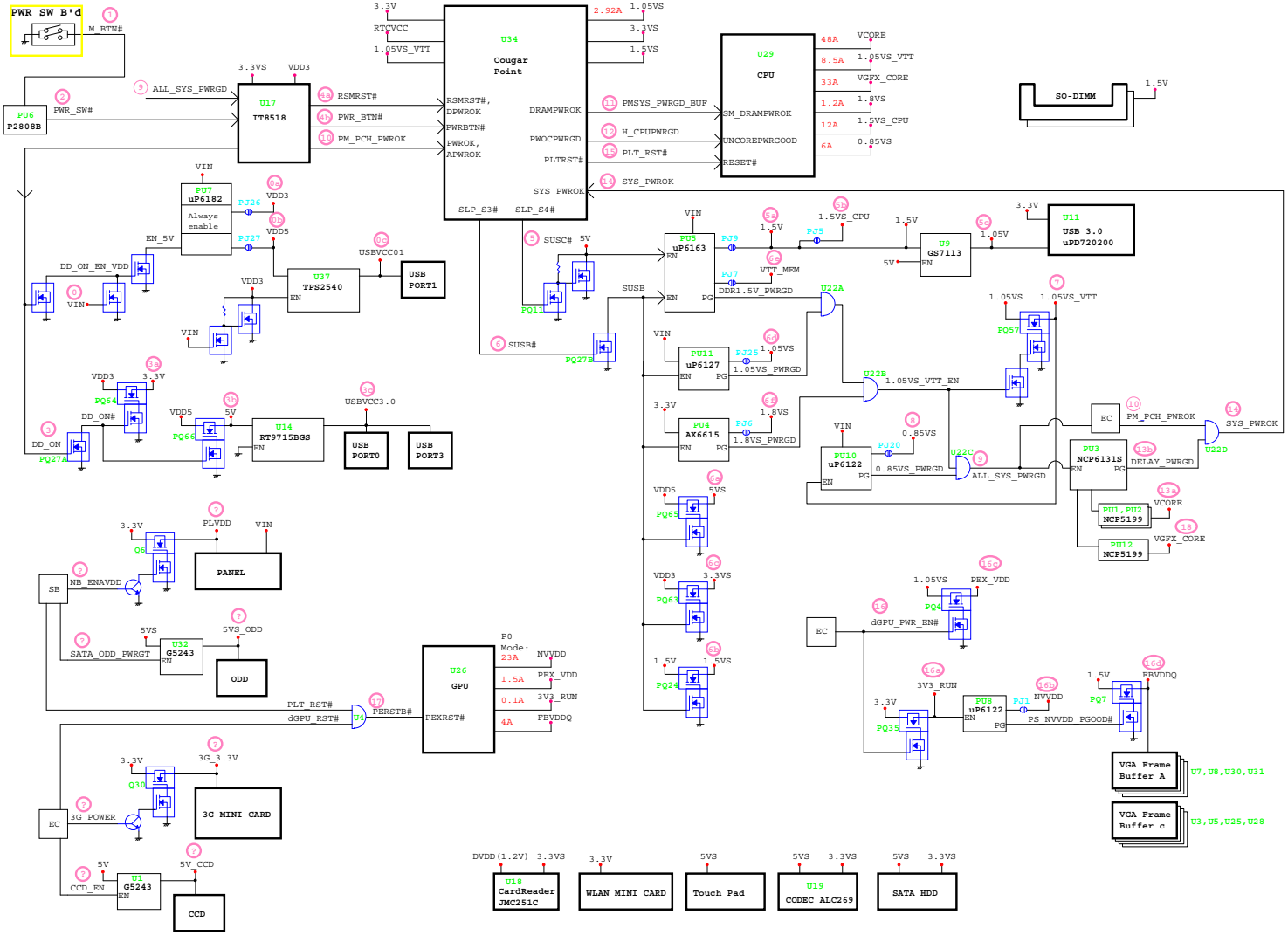
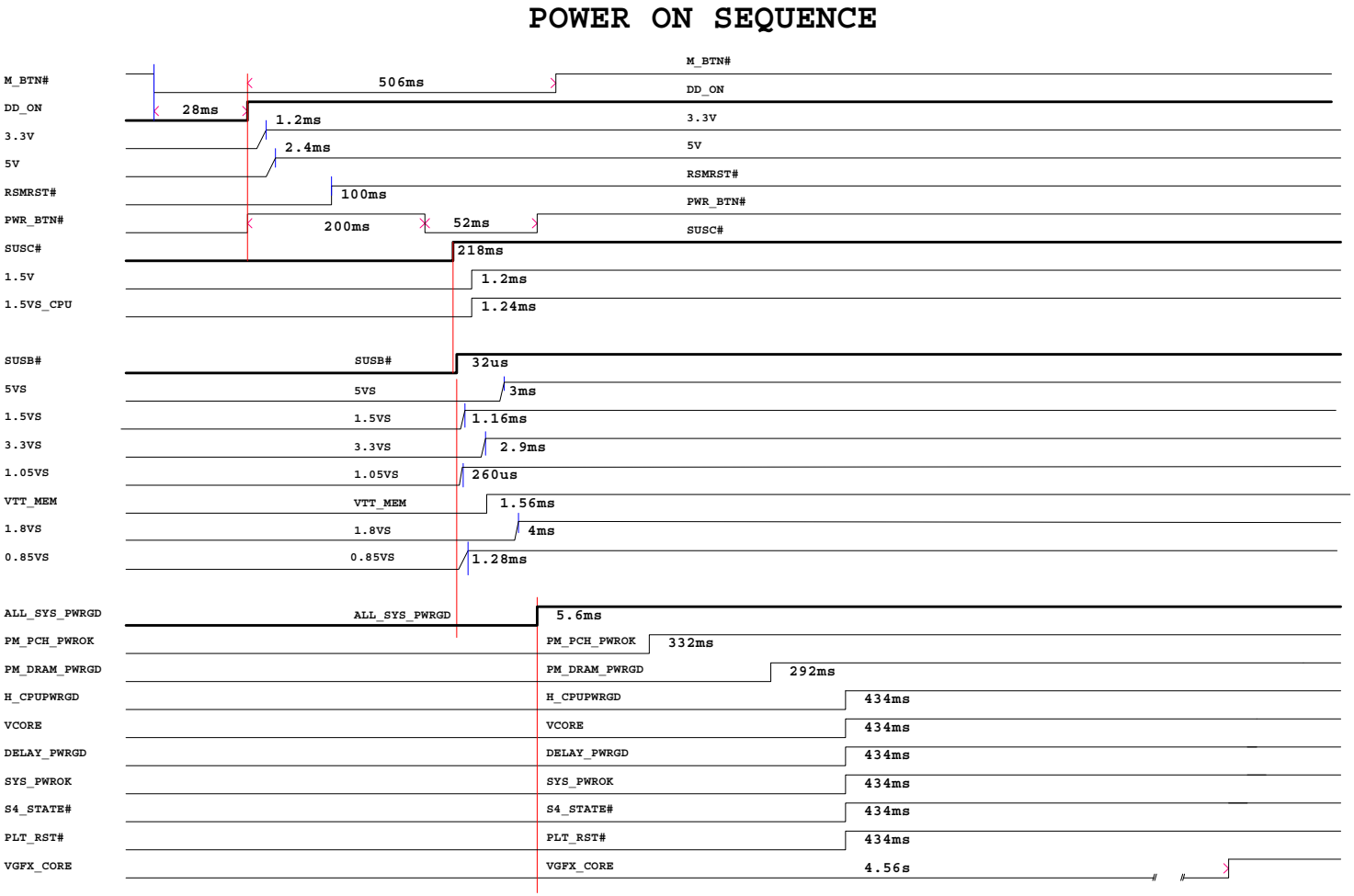
Power Diagram



Power On SEQ



Sheet 42 of 42
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.