

SERVICE MANUAL

W243HUQ/W244HUQ Series



Notebook Computer
W243HUQ/W244HUQ
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 **W243HUQ/W244HUQ** 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

Preface

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 (**65W**) 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.

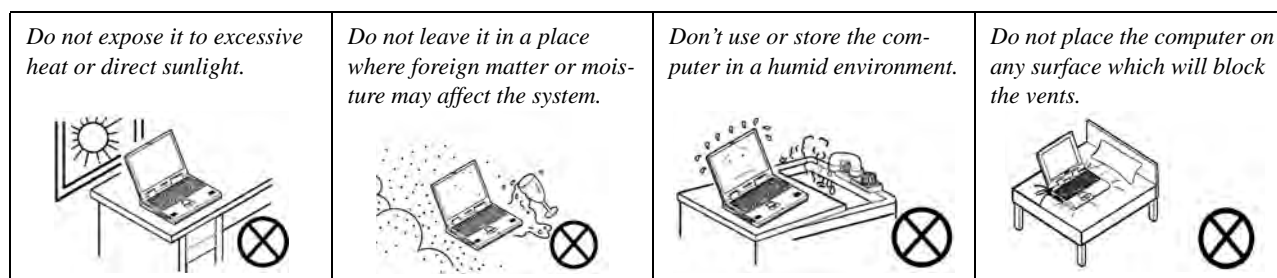
Instructions for Care and Operation

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

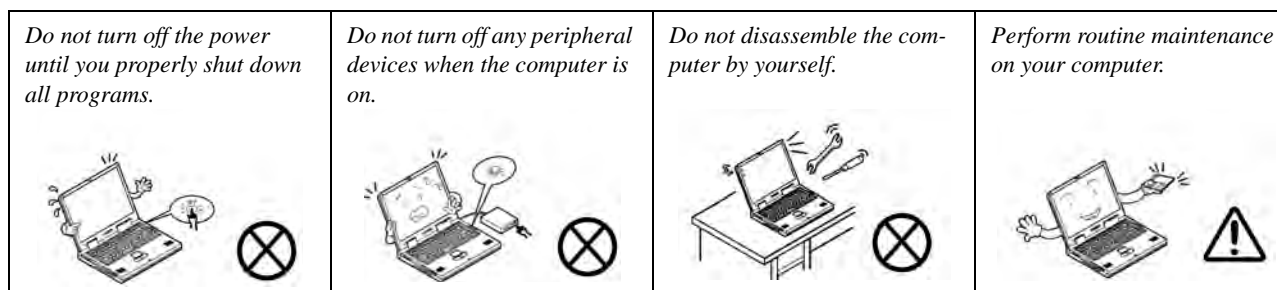
1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.



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.

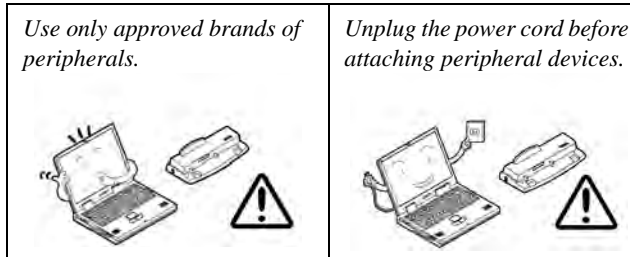


3. **Follow the proper working procedures for the computer.** Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.



Preface

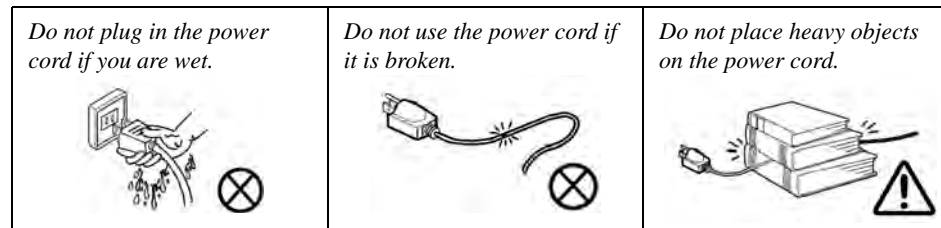
4. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
5. **Take care when using peripheral devices.**



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). It is advisable to also remove your battery in order to prevent accidentally turning the machine on.

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.

Preface

Related Documents

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

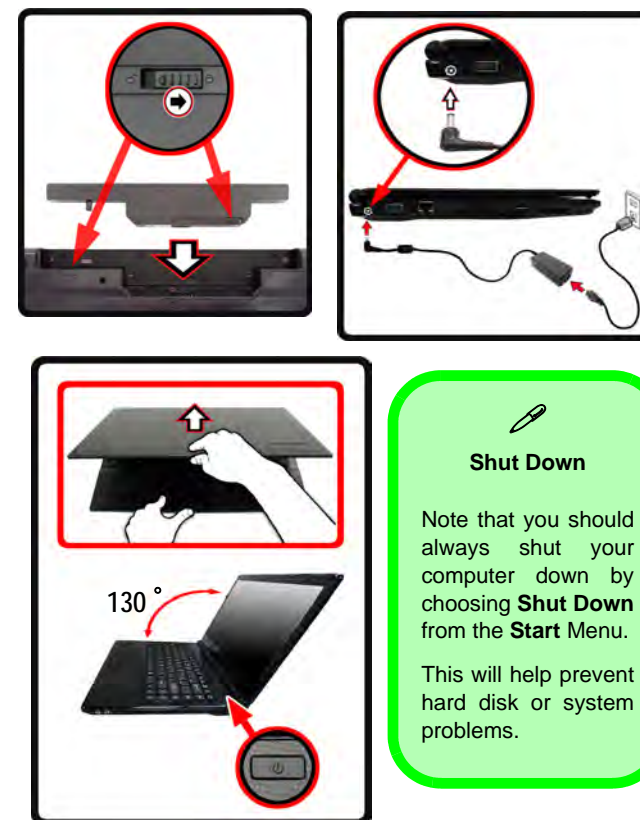
User's Manual on CD/DVD

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



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Set the computer to boot from the external drive	C-1
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Chapter 1: Introduction

Overview

This manual covers the information you need to service or upgrade the **W243HUQ/W244HUQ** 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. *Windows Vista/ 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 **W243HUQ/W244HUQ** 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.

Introduction

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

i7-2620M (2.70GHz)

4MB L3 Cache, 32nm, DDR3-1333MHz, TDP 35W

Intel® Core™ i5 Processor

i5-2540M (2.60GHz), i5-2520M (2.50GHz),

i5-2410M (2.30GHz)

3MB L3 Cache, 32nm, DDR3-1333MHz, TDP 35W

Intel® Core™ i3 Processor

i3-2310M (2.10GHz)

3MB L3 Cache, 32nm, DDR3-1333MHz, TDP 35W

Core Logic

Intel® HM65 Chipset

LCD

14" (35.56cm) HD TFT LCD

Memory

Two 204 Pin SO-DIMM Sockets Supporting **DDR3 1066/1333MHz** Memory

Memory Expandable up to 8GB

Video Adapter

Intel® HM65 Integrated Video

Shared Memory Architecture of up to **1748MB**

MS DirectX® 10 compatible

BIOS

One 32Mb SPI Flash ROM

AMI BIOS

Security

Security (Kensington® Type) Lock Slot

BIOS Password

Storage

(**Factory Option**) One Changeable 12.7mm(h) Optical Device Type Drive (Super Multi Drive Module or Blu-Ray Combo Drive Module)

One Changeable 2.5" 9.5 mm (h) SATA HDD

Audio

High Definition Audio Compliant Interface

2 * Built-In Speakers

Built-In Microphone

Communication

Built-In Gigabit Ethernet LAN

(**Factory Option**) 300K/1.3M Pixel USB PC Camera Module

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

WLAN/ Bluetooth Half Mini-Card Modules:

(**Factory Option**) Intel® Centrino® Wireless-N 100 (**802.11b/g/n**)

(**Factory Option**) Intel® Centrino® Wireless-N 130 Wireless LAN (**802.11b/g/n**) + Bluetooth 3.0

(**Factory Option**) Intel® Centrino® Wireless-N 1030 Wireless LAN (**802.11b/g/n**) + Bluetooth 3.0

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

(**Factory Option**) Third-Party Wireless LAN (**802.11b/g/n**) + Bluetooth 3.0

Keyboard

"WinKey" keyboard (with embedded numeric keypad)

Pointing Device

Built-in Touchpad

Mini Card Slots

Slot 1 for **WLAN** Module or Combo **WLAN and Bluetooth** Module

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

Interface

Three USB 2.0 Ports
One HDMI-Out Port
One Headphone-Out Jack
One Microphone-In Jack
One RJ-45 LAN Jack
One DC-in Jack
One External Monitor Port

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

Power

6 Cell Smart Lithium-Ion Battery Pack, 48.84WH
(Factory Option) 6 Cell Smart Lithium-Ion Battery Pack,
62.16WH
(Factory Option) 4 Cell Smart Lithium-Ion Battery Pack,
32.56WH

Full Range AC/DC Adapter
AC Input: 100 - 240V, 50 - 60Hz
DC Output: 19V, 3.42A or 18.5V, 3.5A **(65W)**

Energy Star 5.0 Compliant

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) * 238mm (d) * 13.9 - 31.8mm (h)
2.0 kg (with 48.84WH Battery and ODD)
Or
341mm (w) * 238.5mm (d) * 16 - 34mm (h)
2.0 kg (with 48.84WH Battery and ODD)

Introduction

Figure 1
Top View

1. PC Camera
(Optional)
2. LCD
3. Power Button
4. Hot-Key Buttons
5. LED Status
Indicators
6. Keyboard
7. Built-In
Microphone
8. Touchpad &
Buttons

External Locator - Top View with LCD Panel Open



External Locator - Front & Right Side Views

FRONT VIEW



Figure 2
Front View

1. LED Power Indicators

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

Introduction

External Locator - Left Side & Rear View

Figure 4
Left Side View

1. DC-In Jack
2. External Monitor Port
3. RJ-45 LAN Jack
4. HDMI-Out Port
5. USB 2.0 Port
6. Vent
7. USB 2.0 Port
8. Multi-in-1 Card Reader

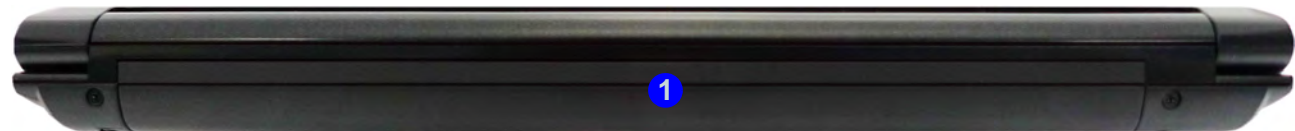
LEFT SIDE VIEW



Figure 5
Rear View

1. Battery

REAR VIEW



External Locator - Bottom View

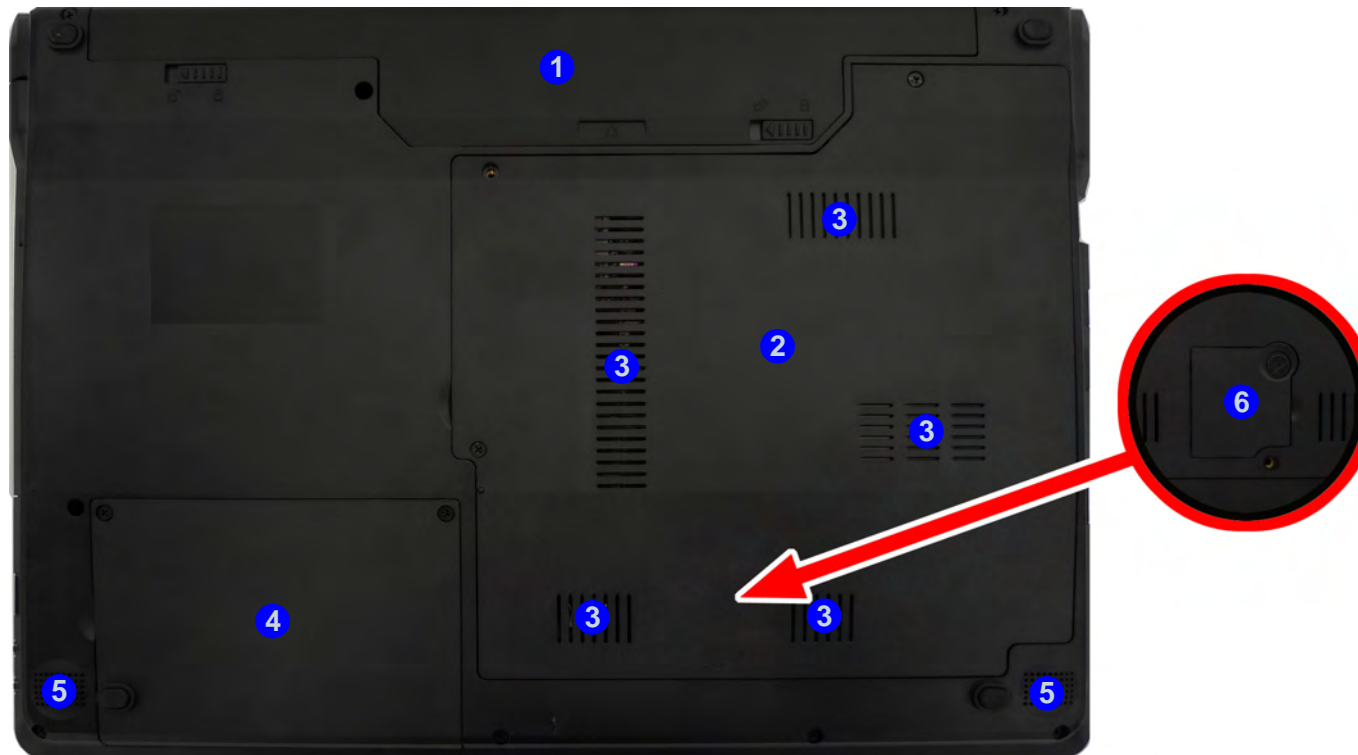


Figure 6
Bottom View

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



Overheating

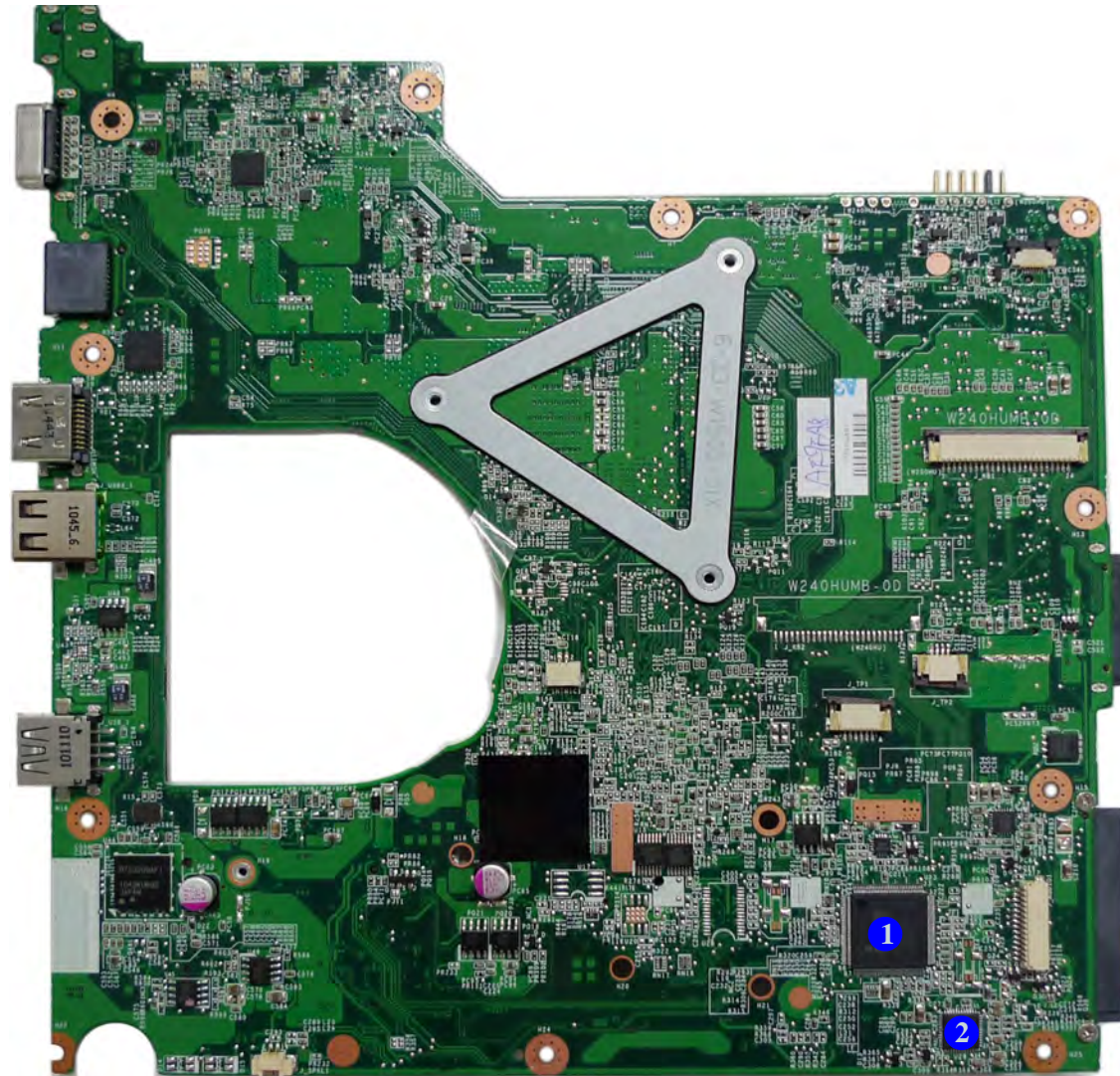
To prevent your computer from overheating, make sure nothing blocks any vent while the computer is in use.

Introduction

Figure 7
Mainboard Top
Key Parts

1. KBC-ITE IT8518
2. Audio Codec
ALC269

Mainboard Overview - Top (Key Parts)



Mainboard Overview - Bottom (Key Parts)

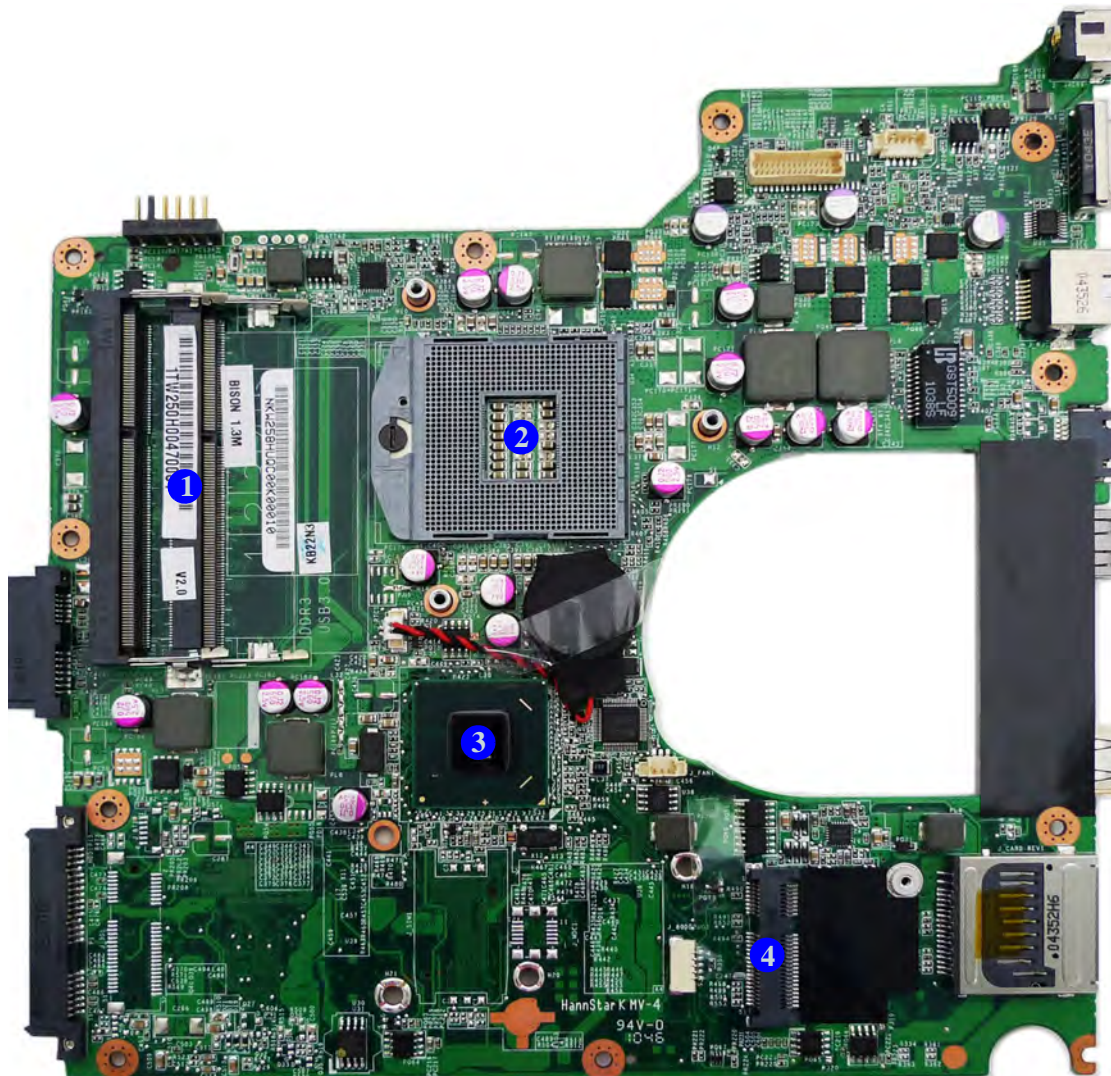


Figure 8
**Mainboard Bottom
Key Parts**

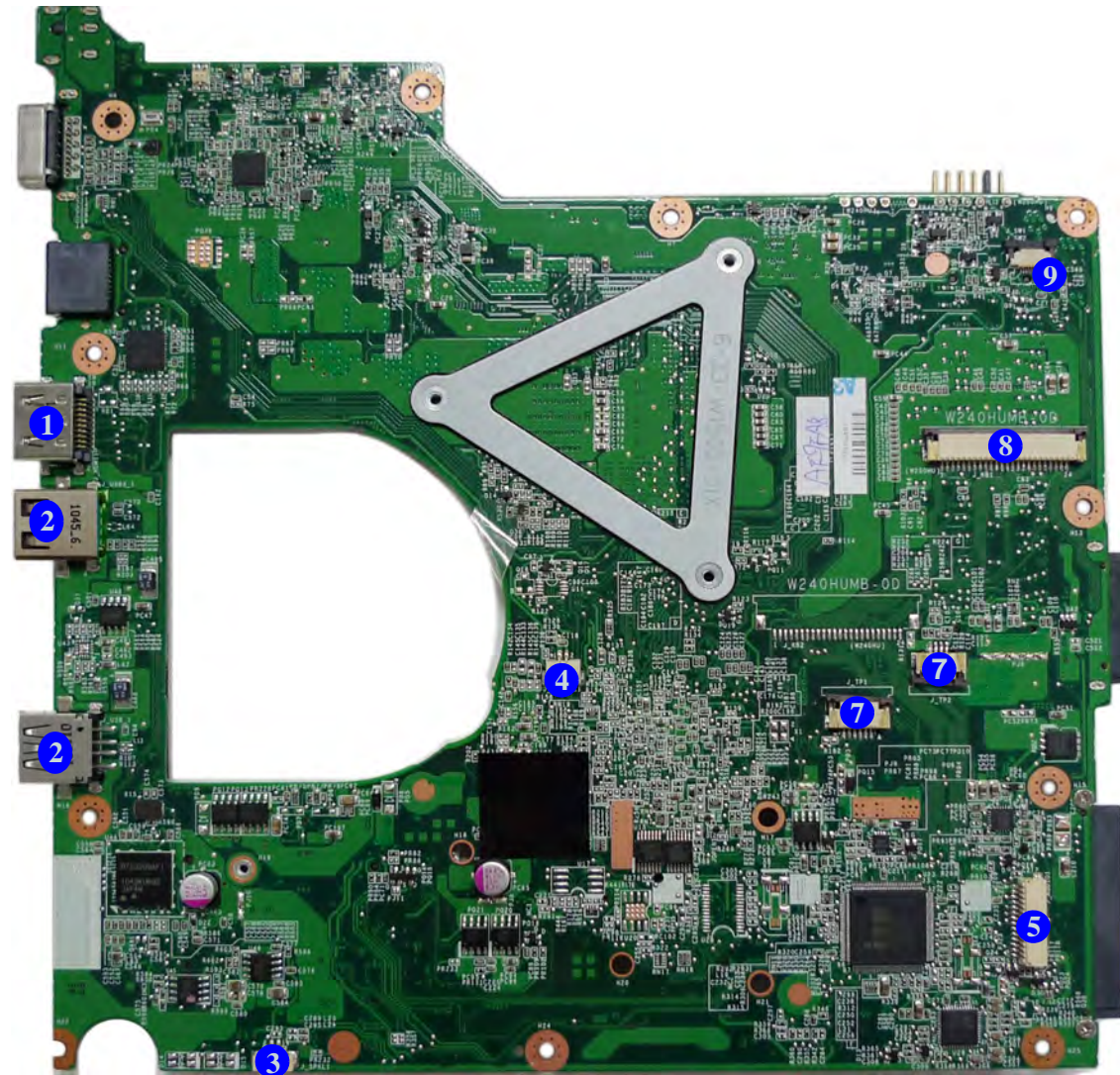
1. Memory Slots
DDR3 SO-DIMM
2. CPU Socket (no
CPU installed)
3. Platform Controller
Hub
4. Mini-Card
Connector (WLAN
Module)

Introduction

Figure 9
**Mainboard Top
Connectors**

1. HDMI-Out Port
2. USB Ports 2.0
3. Speaker Cable Connector
4. Microphone Cable Connector
5. Audio Board Connector
6. TouchPad Cable Connector 1
7. TouchPad Cable Connector 2
8. Keyboard Cable Connector
9. Switch Board Cable Connector

Mainboard Overview - Top (Connectors)



Mainboard Overview - Bottom (Connectors)

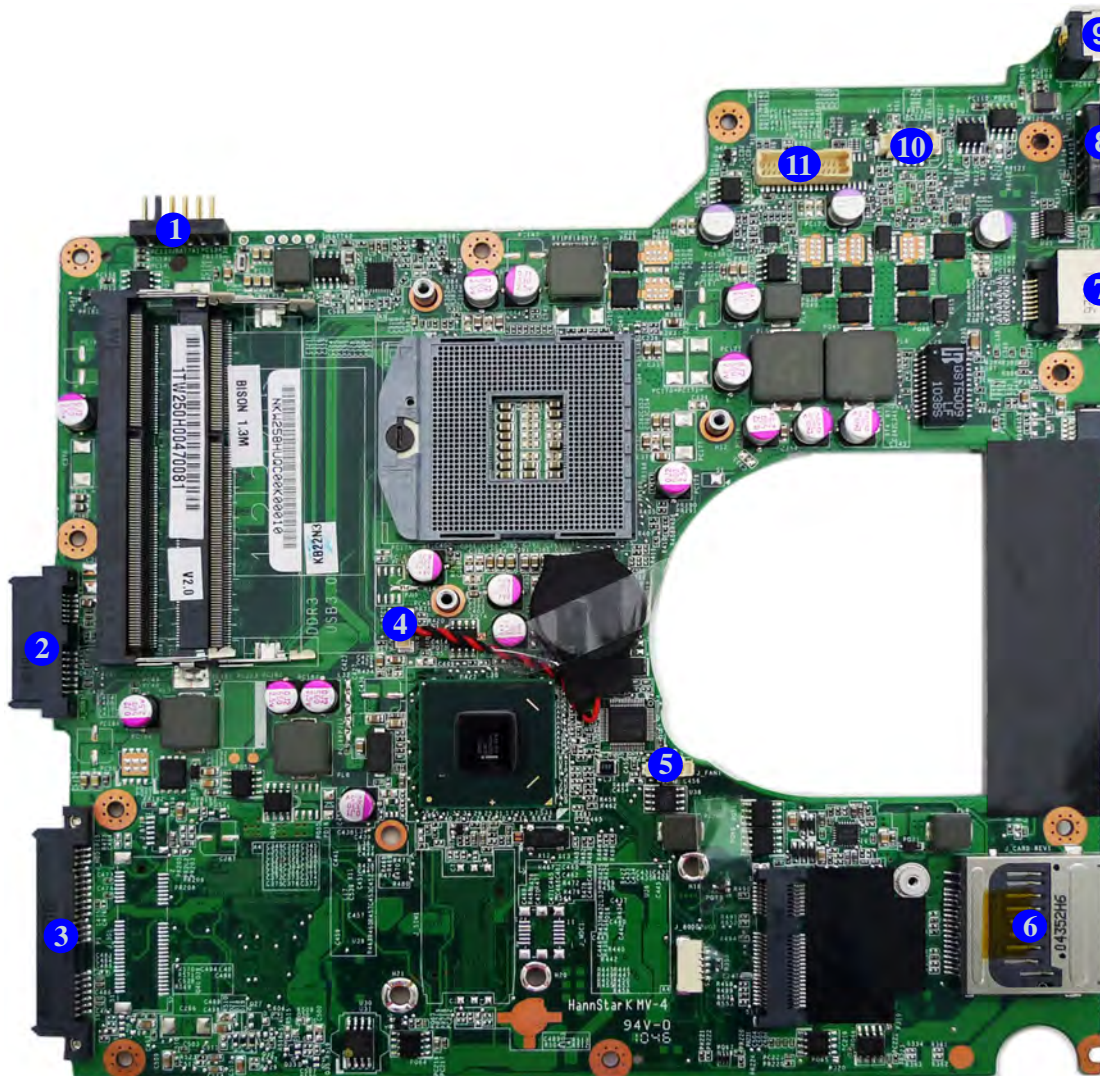


Figure 10
**Mainboard Bottom
Connectors**

1. Battery Connector
2. ODD Connector
3. HDD Connector
4. CMOS Battery Connector
5. CPU Fan Cable Connector
6. Multi-in-1 Card Reader
7. RJ-45 LAN Jack
8. External Monitor Port
9. DC-In Jack
10. CCD Cable Connector
11. LCD Cable Connector


Chapter 2: Disassembly



Overview

This chapter provides step-by-step instructions for disassembling the **W243HUQ/W244HUQ** 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.


Information

Warning

Disassembly

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.

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.



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). It is advisable to also remove your battery in order to prevent accidentally turning the machine on.

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](#)
3. Removing and installing the ODD Bezel [page 2 - 9](#)

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:

1. Remove the battery [page 2 - 5](#)
2. Remove the WLAN module [page 2 - 15](#)

To remove the 3.75G Module:

1. Remove the battery [page 2 - 5](#)
2. Remove the 3.75G module [page 2 - 16](#)

To remove the Keyboard:

1. Remove the battery [page 2 - 5](#)
2. Remove the keyboard [page 2 - 17](#)

To remove the Top Case module:

1. Remove the battery [page 2 - 5](#)
2. Remove the HDD [page 2 - 6](#)
3. Remove the system memory [page 2 - 9](#)
4. Remove the processor [page 2 - 12](#)
5. Remove the WLAN module [page 2 - 15](#)
6. Remove the 3.75G module [page 2 - 16](#)
7. Remove the keyboard [page 2 - 17](#)
8. Remove the Top Case 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*).

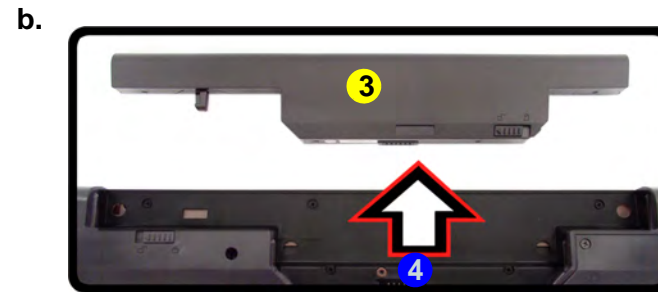
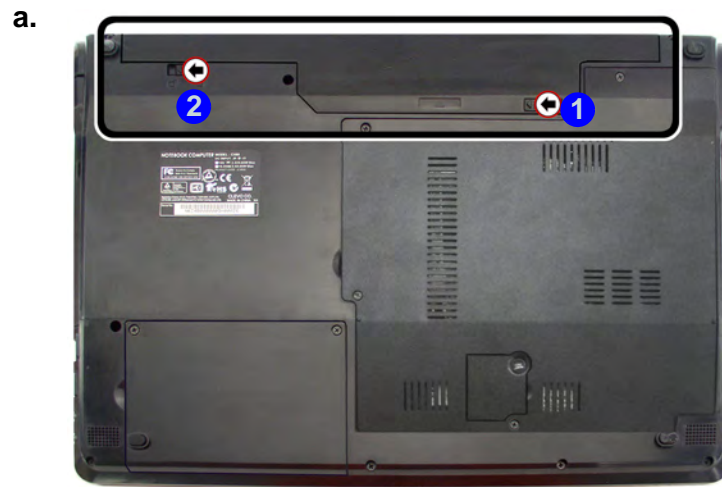
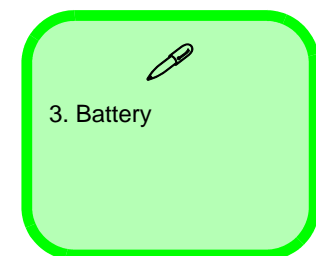


Figure 1
Battery Removal

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



Disassembly

Figure 2
**HDD Assembly
Removal**

Removing the Hard Disk Drive

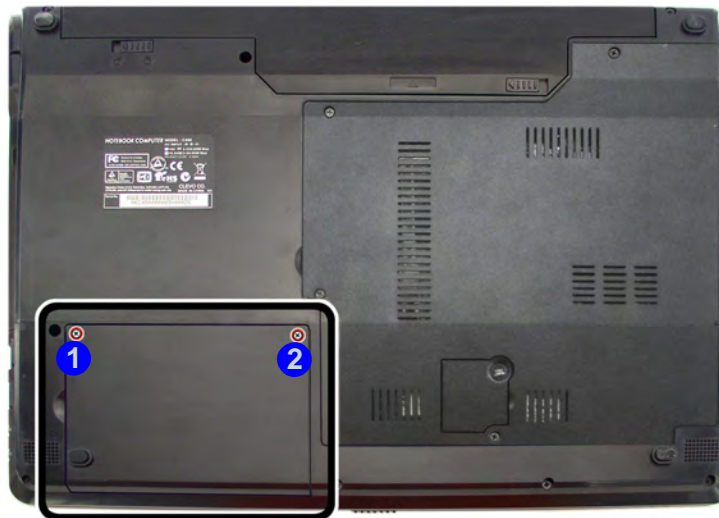
The hard disk drive can be taken out to accommodate other 2.5" serial (SATA) hard disk drives with a height of 9.5mm (h). Follow your operating system's installation instructions, and install all necessary drivers and utilities (as outlined in **Chapter 4 of the User's Manual**) when setting up a new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

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

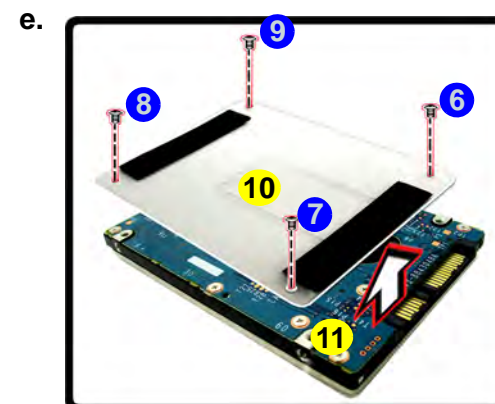
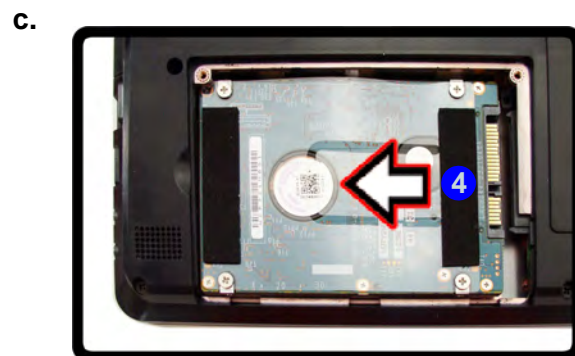
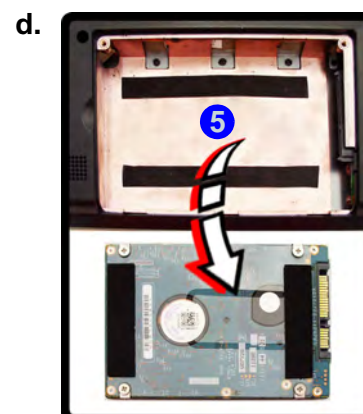
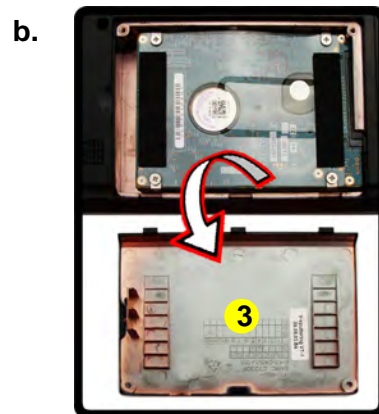


Figure 3
**HDD Assembly
Removal (cont'd.)**

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



3. HDD Bay Cover
10. Mylar Cover
11. HDD

- 4 screws

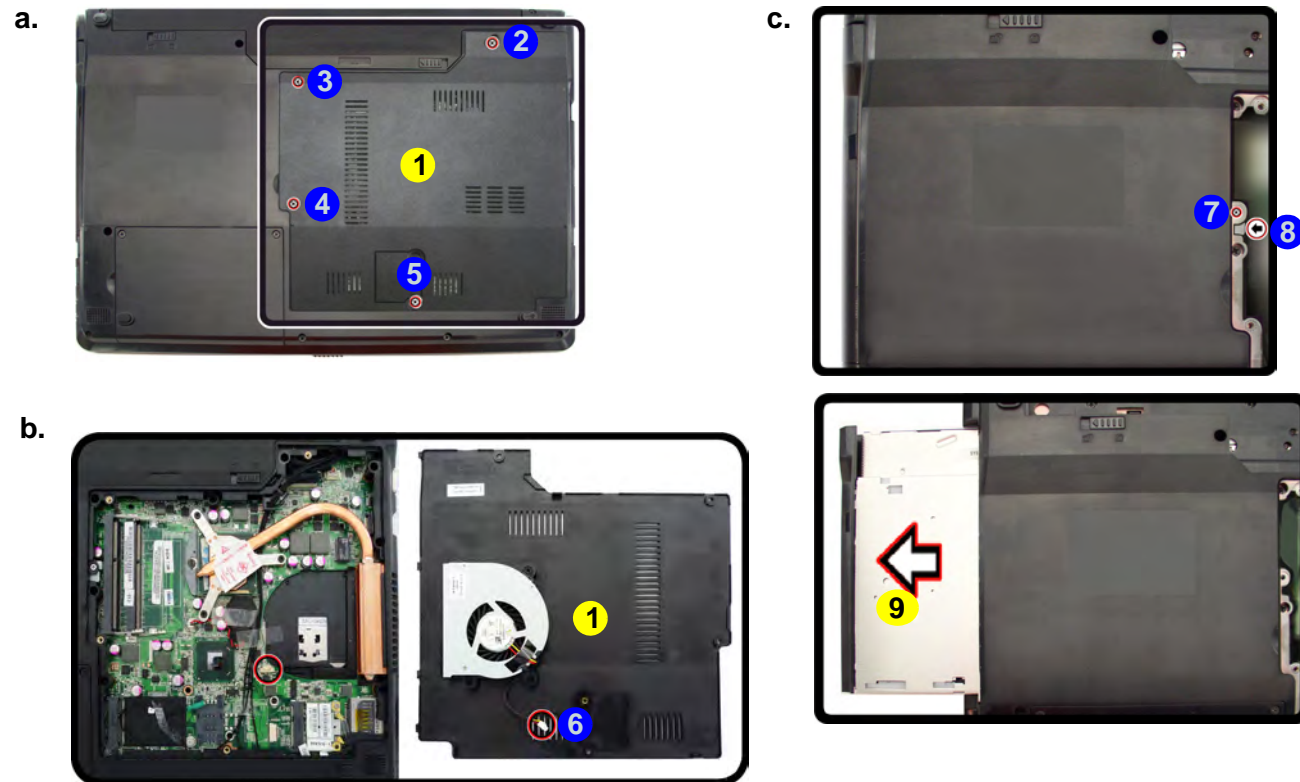
Disassembly

Figure 4
Optical Device Removal

- a. Remove the screws.
- b. Remove the cover.
- c. Remove the screw and push the optical device out off the computer at point 8.

Removing the Optical (CD/DVD) Device

1. Turn **off** the computer, and remove the battery ([page 2 - 5](#)).
2. Locate the RAM & CPU bay cover **1**, and remove screws **2** - **5** ([Figure 4a](#)).
3. Carefully (**a fan and cable are attached to the under side of the cover**) lift up the bay cover.
4. Carefully disconnect the fan cable **6**, and remove the cover **1** ([Figure 4b](#)).
5. Remove the screw at point **7**, and use a screwdriver to carefully push out the optical device **9** at point **8** ([Figure 4c](#)).
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. Restart the computer to allow it to automatically detect the new device.



1. Component Bay Cover
9. Optical Device

- 5 screws

Removing and installing the ODD Bezel

1. Turn **off** the computer, remove the battery and remove the ODD([page 2 - 5](#)).
2. Carefully unsnap the ODD Bezel **1** from ODD in the direction of the arrow **2**.



3. Snap the bezel onto the ODD at points **3** and **4**.



Figure 5
ODD Bezel

- a. Unsnap the ODD Bezel in the direction of the arrow **2**.
- b. Snap the bezel onto the ODD at points **3** and **4**.



1. ODD Bezel

Disassembly

Figure 6
RAM Module Removal

- Locate the memory socket.
- Pull the release latches.
- Remove the module.



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.



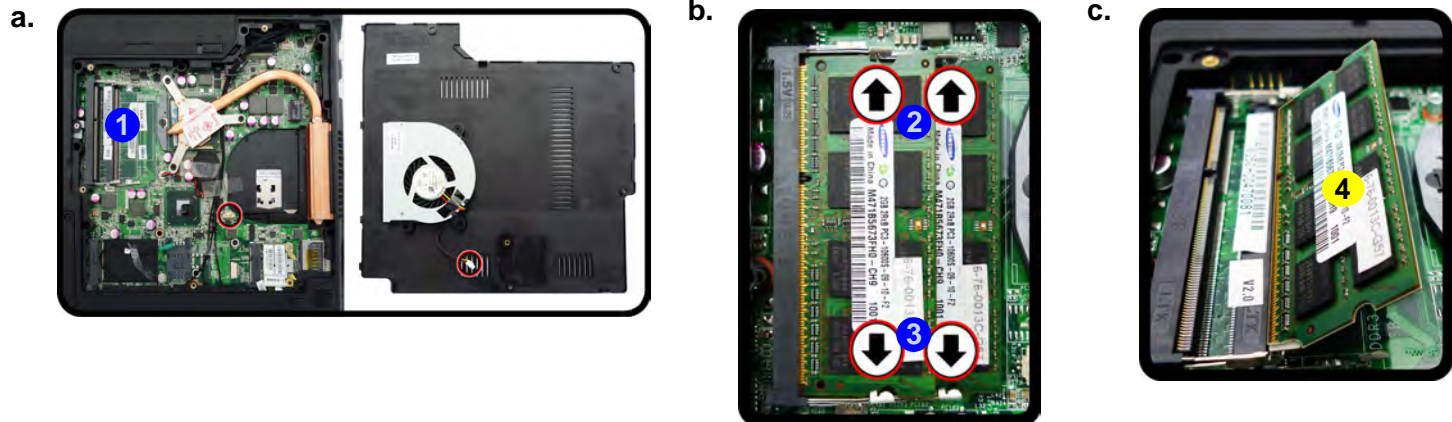
4. RAM Module

Removing the System Memory (RAM)

The computer has two memory sockets for 200 pin Small Outline Dual In-line Memory Modules (SO-DIMM) supporting **DDR3** 1066/1333MHz. The main memory can be expanded up to 8GB. The SO-DIMM modules supported are 1GB, 2GB and 4GB and **DDR3** Modules. The total memory size is automatically detected by the POST routine once you turn on your computer.

Memory Upgrade Process

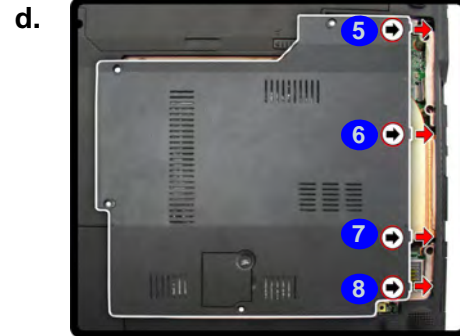
- Turn **off** the computer, remove the battery ([page 2 - 5](#)) and the component bay cover ([page 2 - 8](#)).
- The RAM modules will be visible at point **1** on the main board ([Figure 6a](#)).
- Gently pull the two release latches (**2** & **3**) on the sides of the memory socket in the direction indicated by the arrows ([Figure 6b](#)).



- The RAM module **4** will pop-up ([Figure 6c](#)), and you can then remove it.
- Pull the latches to release the second module if necessary.
- Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
- The module's pin alignment will allow it to only fit one way. Make sure the module is seated as far into the slot as it will go. **DO NOT FORCE** the module; it should fit without much pressure.
- Press the module in and down towards the mainboard until the slot levers click into place to secure the module.

Figure 7
**RAM Module
Removal (cont'd.)**

d. Properly re-insert the bay cover pins.



9. Replace the bay cover and screws (**make sure you reconnect the fan cable before screwing down the bay cover**).
Note that there are four ⑤ - ⑧ cover pins which need to be aligned with slots in the case, to insure a proper cover fit, before screwing down the bay cover (*Figure 7d*).

10. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.

Disassembly

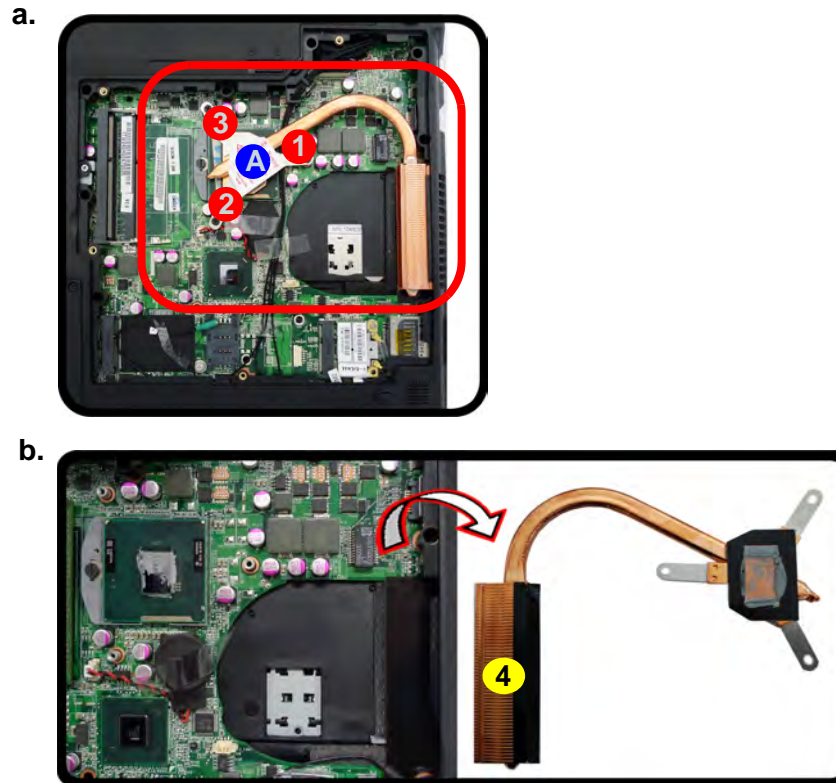
Figure 8
Processor Removal

- a. The CPU heat sink will be visible at point **A**. Remove the screws from the CPU heatsink.
- b. Grip the heat sink tab and carefully lift the heat sink up and off the computer.

Removing and Installing a Processor

Processor Removal Procedure

1. Turn **off** the computer, turn it over, and 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. Loosen the CPU heat sink screws in the order **3**, **2** & **1** (the reverse order as indicated on the label [Figure 8a](#)).
4. Grip the heat sink tab and carefully lift the heat sink **4** up and off the computer ([Figure 8b](#)).



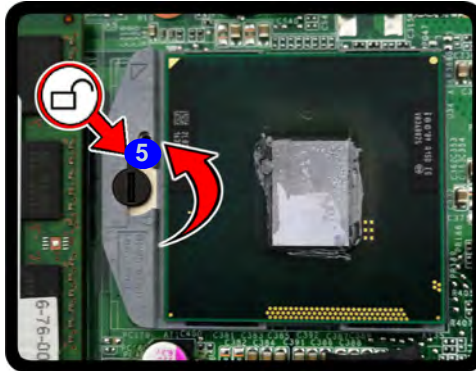
4. Heat Sink

- 3 screws

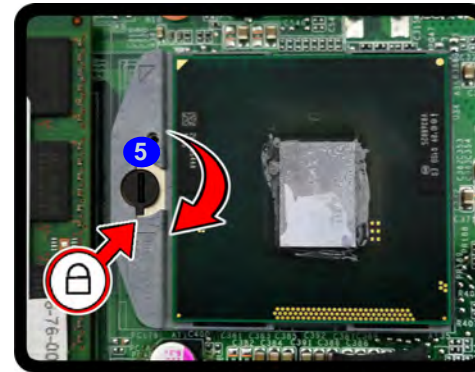
Figure 9
Processor Removal
(cont'd)

- c. Turn the release latch to unlock the CPU.
- d. Lift the CPU out of the socket.

c.

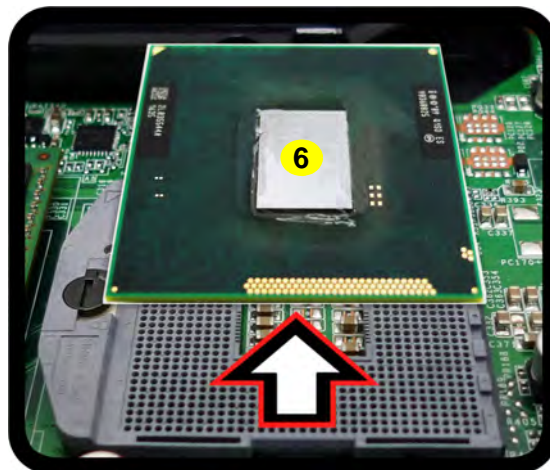


Unlock



Lock

d.



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.




6. CPU

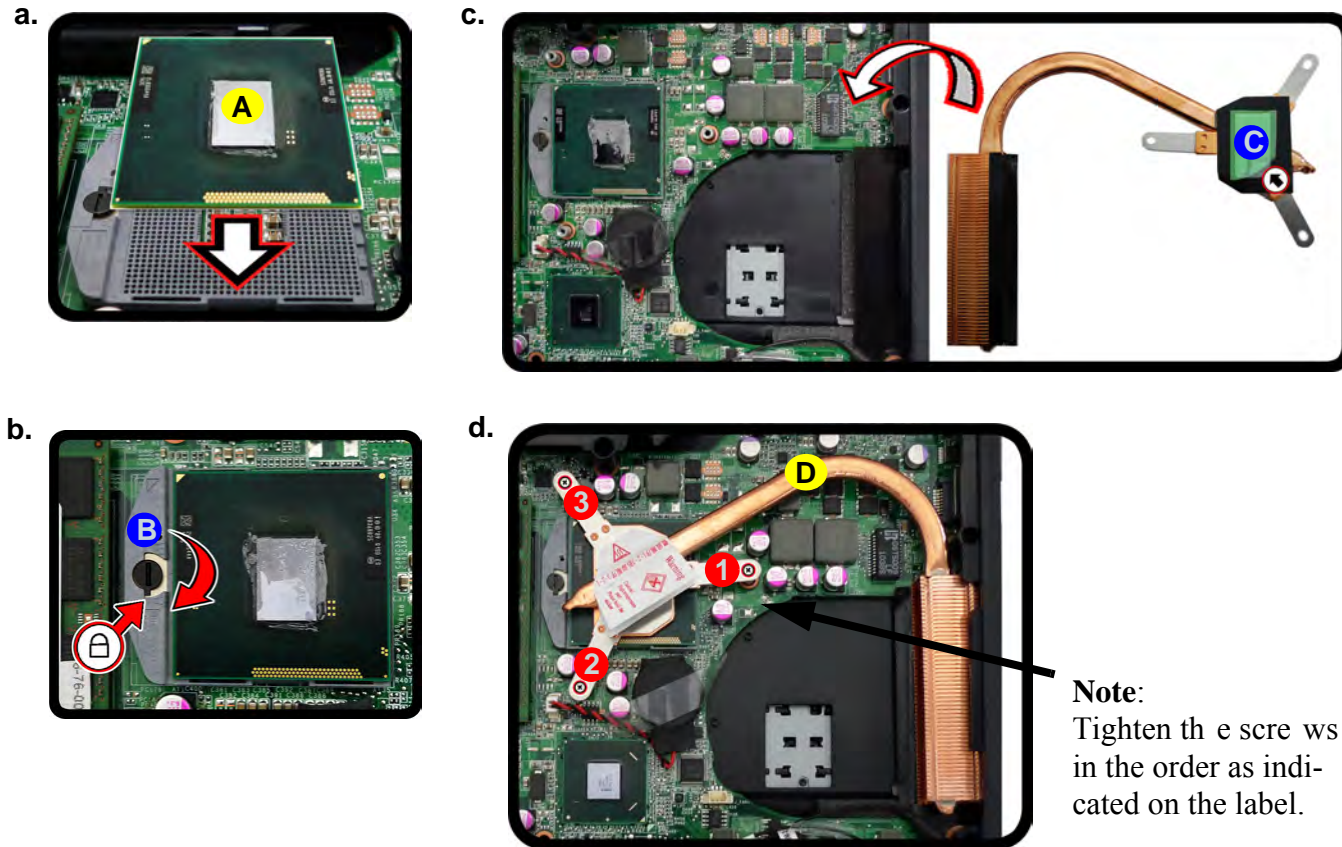
Disassembly

Figure 10
**Processor
Installation**


- Insert the CPU.
- Turn the release latch towards the lock symbol.
- Remove the sticker from the heat sink and insert the heat sink.
- Tighten the screws.

Processor Installation Procedure

- 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*).
- Remove the sticker **C**** (*Figure 10c*) from the heat sink.
- Insert the heat sink **D** as indicated in *Figure 10d*.
- Tighten the CPU heat sink screws in the order **1**, **2** & **3** (the order as indicated on the label and *Figure 10d*).
- Replace the component bay cover (don't forget to replace the fan cable) and tighten the screws (*page 2 - 9*).



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

- 
- A. CPU
D. Heat Sink
- 3 screws

Removing the Wireless LAN Module

1. Turn **off** the computer, turn it over, and remove the battery ([page 2 - 5](#)) and the component bay cover ([page 2 - 9](#)).
2. The Wireless LAN module will be visible at point **1** on the mainboard ([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 ([Figure 11d](#)).

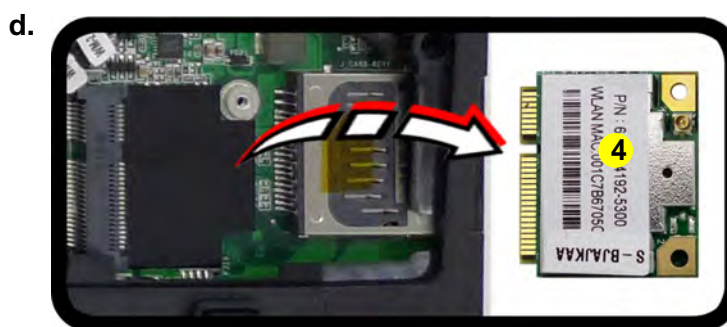
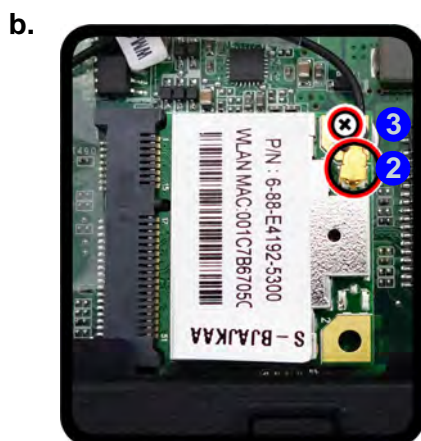
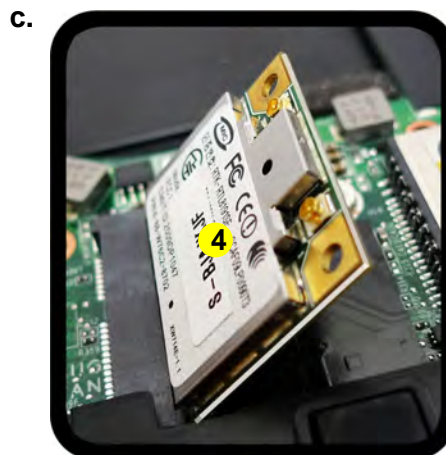
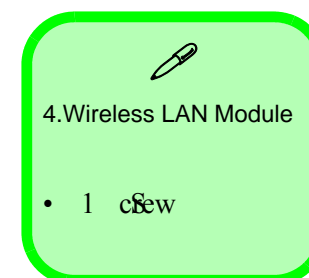


Figure 11
**Wireless LAN
Module Removal**

- Locate the WLAN.
- Disconnect the cable and remove the screw.
- The WLAN module will pop up.
- Remove the Wireless LAN module.

Note: Make sure you reconnect the antenna cable to the “1 + 2” socket ([Figure 11b](#)).



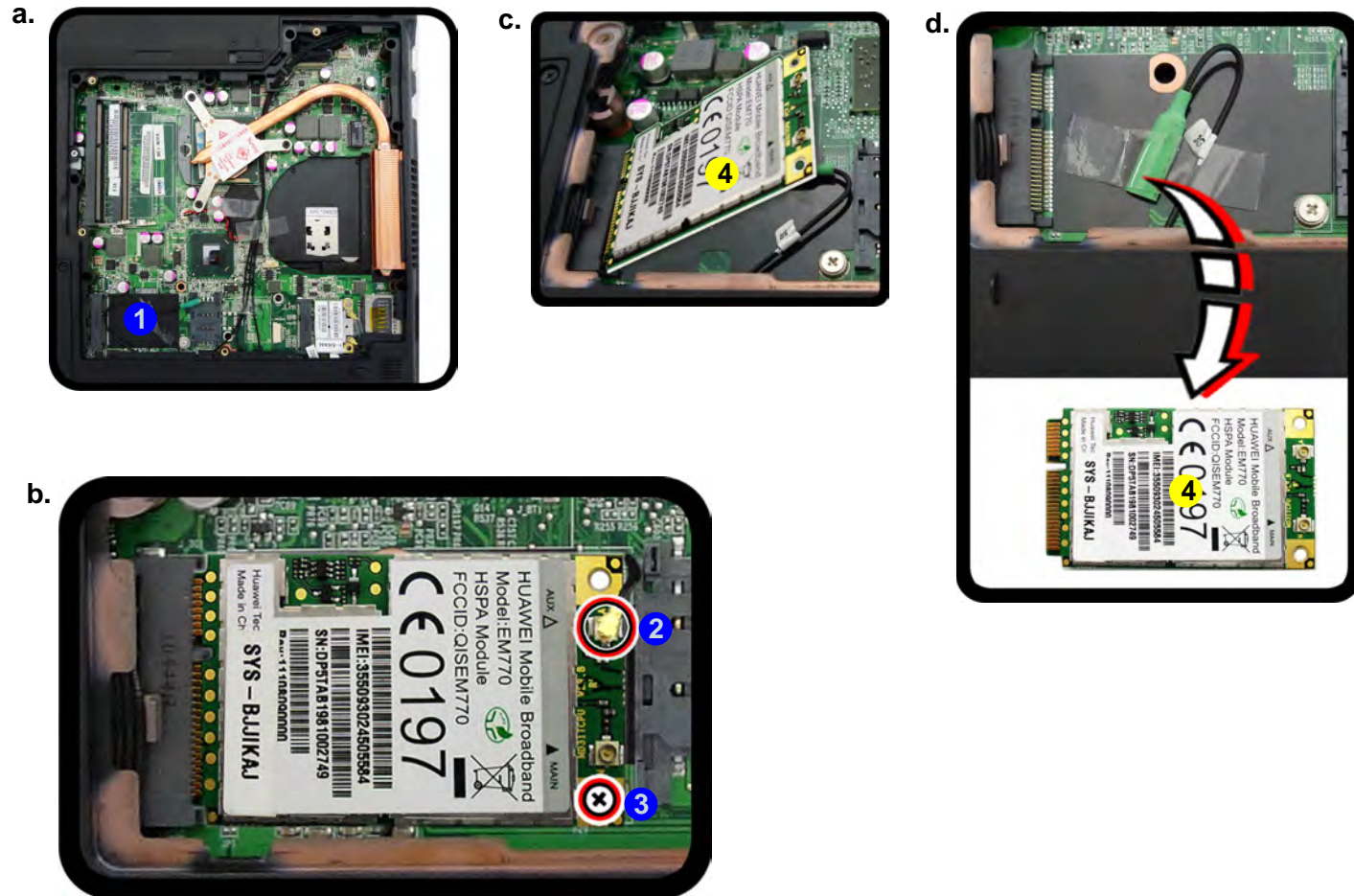
Disassembly

Figure 12
**3.75G Module
Removal**

- Remove the cover.
- Disconnect the cable and remove the screw.
- The 3.75G module will pop up.
- Lift the 3.75G module out.

Removing the 3.75G Module

- Turn **off** the computer, remove the battery ([page 2 - 5](#)) and the component bay cover ([page 2 - 8](#)).
- The 3.75G module will be visible at point **1** on the mainboard.
- Carefully disconnect the cable **2**, then remove the screw **3** from the module socket.
- The 3.75G module **4** will pop-up.
- Lift the 3.75G module ([Figure 12d](#)) up and off the computer.



4. 3.75G Module.

- 1 screw

Removing the Keyboard

1. Turn **off** the computer, and remove the battery ([page 2 - 5](#)), and the component bay cover ([page 2 - 8](#))
2. Remove screws **1** - **2** from the bottom of the computer and use the Eject Pin Tool to carefully push out the keyboard at point **3**
3. Carefully lift the keyboard up, being careful not to bend the keyboard ribbon cable.

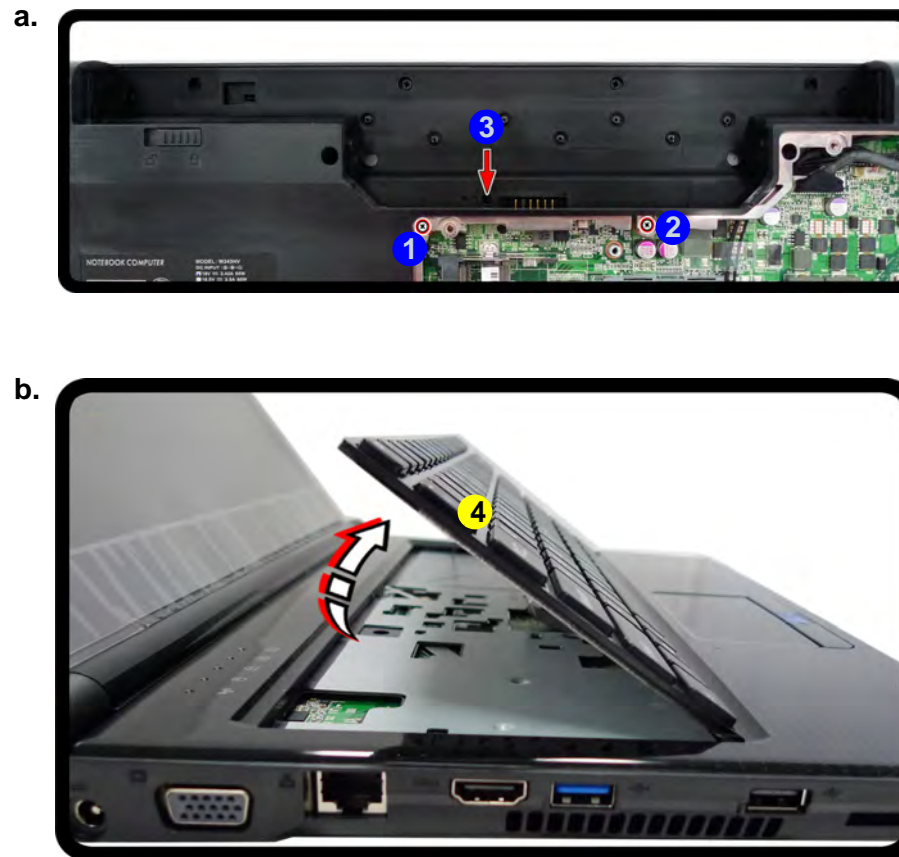


Figure 13
Keyboard Removal

- a. Remove screws from the bottom of the computer and use the Eject Pin Tool to push out the keyboard at point **3**.
- b. Carefully lift the keyboard up.



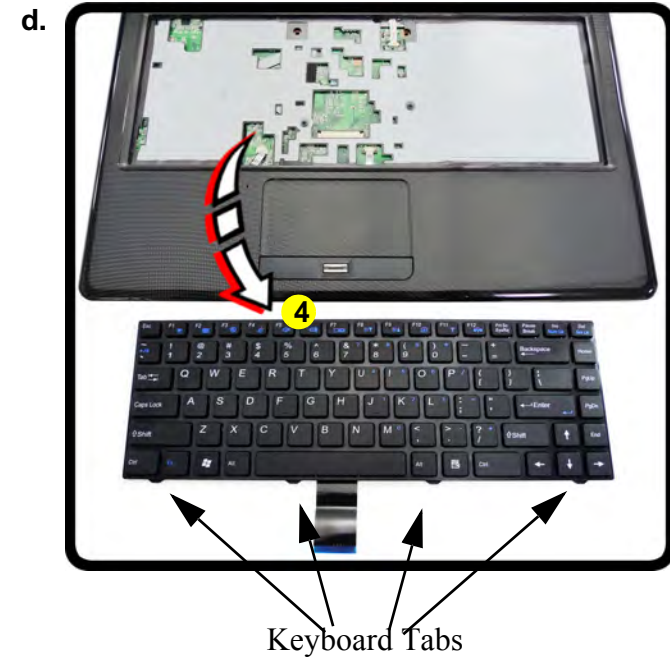
4. Keyboard

- 2 screws

Disassembly


Figure 14
Keyboard Removal
(cont'd)

- c. Carefully lift the keyboard up and disconnect the keyboard ribbon cable from the locking collar socket.
 - d. Remove the keyboard.
4. Disconnect the keyboard ribbon cable **5** from the locking collar socket **6** (*Figure 13c*)
 5. Carefully lift up the keyboard **4** (*Figure 13d*) off the computer.



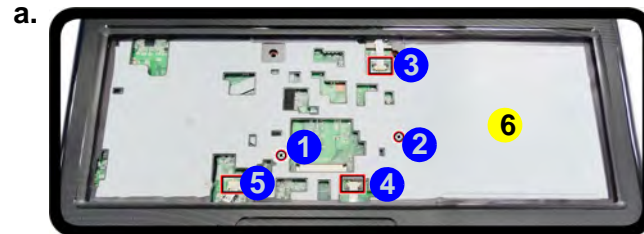

Re-Inserting the Keyboard

When re-inserting the keyboard firstly align the **four** keyboard tabs at the bottom (*Figure 14d*) at the bottom of the keyboard with the slots in the case.


6. Keyboard

Removing the Top Case module

1. Turn **off** the computer, and remove the battery ([page 2 - 5](#)), remove the HHD ([page 2 - 6](#)), remove the ODD ([page 2 - 8](#)), remove the Memory ([page 2 - 10](#)), remove Processor ([page 2 - 12](#)), remove the WLAN ([page 2 - 15](#)) and the remove Keyboard ([page 2 - 17](#)).
2. Remove screws **1** - **2** and carefully disconnect the cables **3** - **5** from the Top Case module **6**..



3. Remove screws **7** - **26** from the bottom of the computer and use the Eject Pin Tool to carefully push out the hinge cover at point **27**.

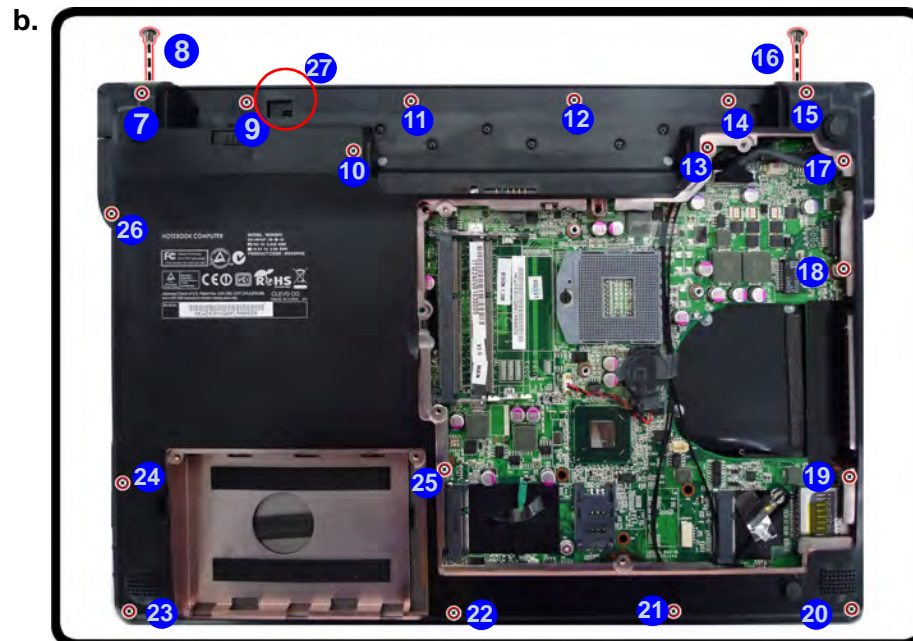


Figure 15
Top Case module Removal

- a. Remove screws and the cables.
- b. Remove screws from the bottom of the computer and use the Eject Pin Tool to push out the keyboard at point **27**.



6. Top Case module

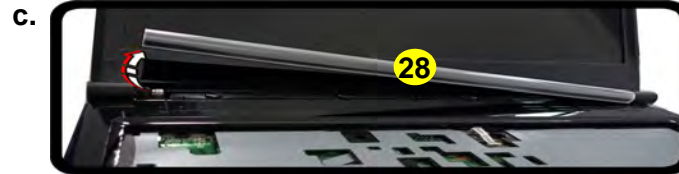
- 23 screws

Disassembly

Figure 16
**Top Case module
Removal (cont'd)**

- c. Remove the hinge cover.
- d. Remove the top case module.

4. Carefully lift up the hinge cover **28** off the computer.



5. Carefully unsnap the top case **29** from computer at point **30**.



28. Hinge cover
29. TopCase module

Appendix A:Part Lists

This appendix breaks down the *W243HUQ/W244HUQ* 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	W243HUQ	W244HUQ
Top	<i>page A - 3</i>	
Bottom (w/ 3G)	<i>page A - 4</i>	
Bottom (w/o 3G)	<i>page A - 5</i>	
SATA BLU-RAY COMBO	<i>page A - 6</i>	
SATA DVD SUPER MULTI	<i>page A - 7</i>	
LCD	<i>page A - 8A</i>	<i>page A - 9</i>
HDD	<i>page A - 10</i>	

Top

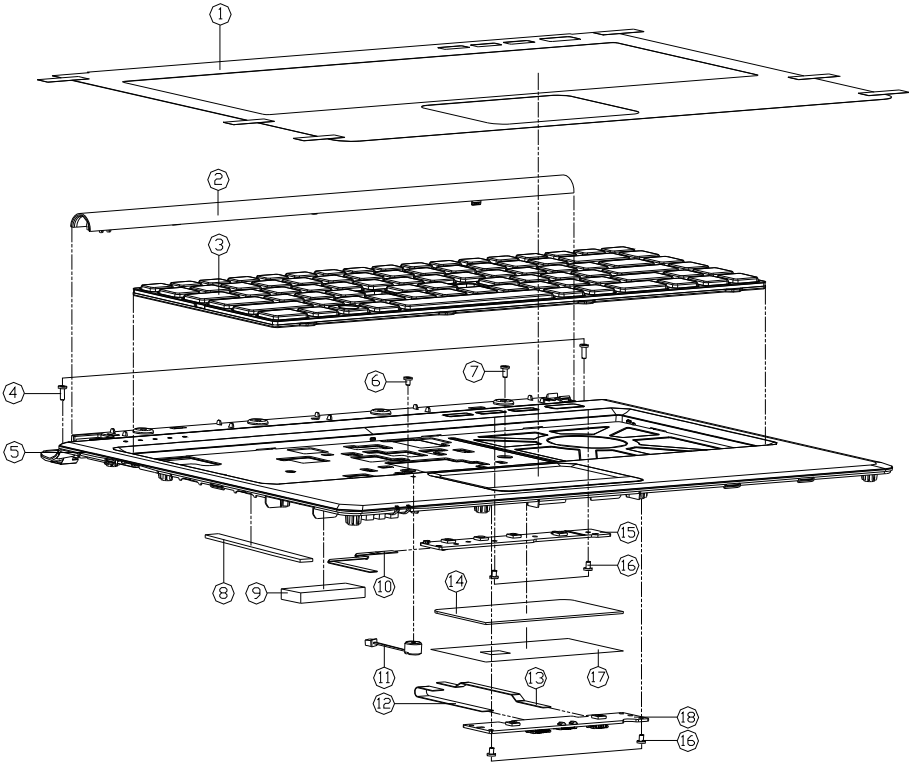


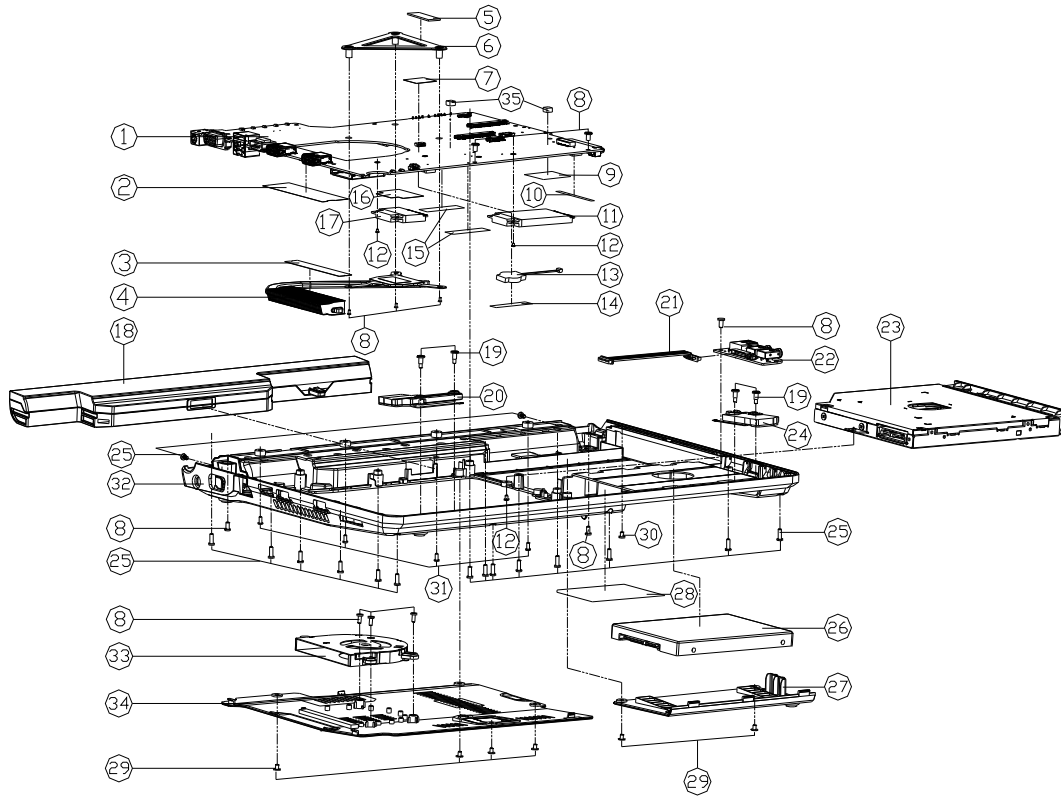
Figure A - 1
Top

ITEM	PART NAME	PART NO	REMARK
1	TOP CASE PROTECT MYLAR (8825) W244HUJ	6-40-W2448-031	
2	HINGE COVER (ABS+PC) W244HUJ	6-42-W2442-071	
3	IMR MODULE W244HUJ	6-79-W243HUJ0K-010	
4	SCREW M2.5*BL K1 BK/Z NY ICT	6-35-B6125-BR0	
5	TOP CASE IMR MODULE W244HUJ	6-39-W2442-012	
6	TOP CASE IMR MODULE W244HUJ-C	6-39-W2442-012-C	
7	SCREW M2.5*3L K1 BZ ICT NY	6-35-B6125-3R0	
8	SCREW M2.5*5L K1 BK/Z ICT NY	6-35-B6125-5RA	
9	SPRING FOR TOP CASE (57642) (385-385) 6400	6-47-0019A-570	
10	FOAM SPRING FOR TOP CASE (57642) (385-385) 6400	6-47-0019A-353	
11	FFC CABLE FOR W/B TO POWER BOARD C4500	6-43-C4500-031	
12	FFC CABLE FOR TOUCH PAD 6PIN C4500	6-23-EM54G-012	
13	FFC CABLE FOR W/B TO CLICK BOARD C4500	6-43-C4500-022	
14	TOUCH PAD SYNAPTICS TM-0146-003 C4800	6-49-C4802-010	
15	POWER SWITCH BOARD V2.0 C4509	6-77-E510S-D02-A	
16	SCREW M2*XL K1 NI ICT NY (08-045,01-04)	6-35-B1120-3RE	
17	TAPE MYLAR (C) (8610*38.80MM) C4105	6-40-00150-860	
18	CLICK BOARD V1.0 W240BU	6-77-W2402-D01	

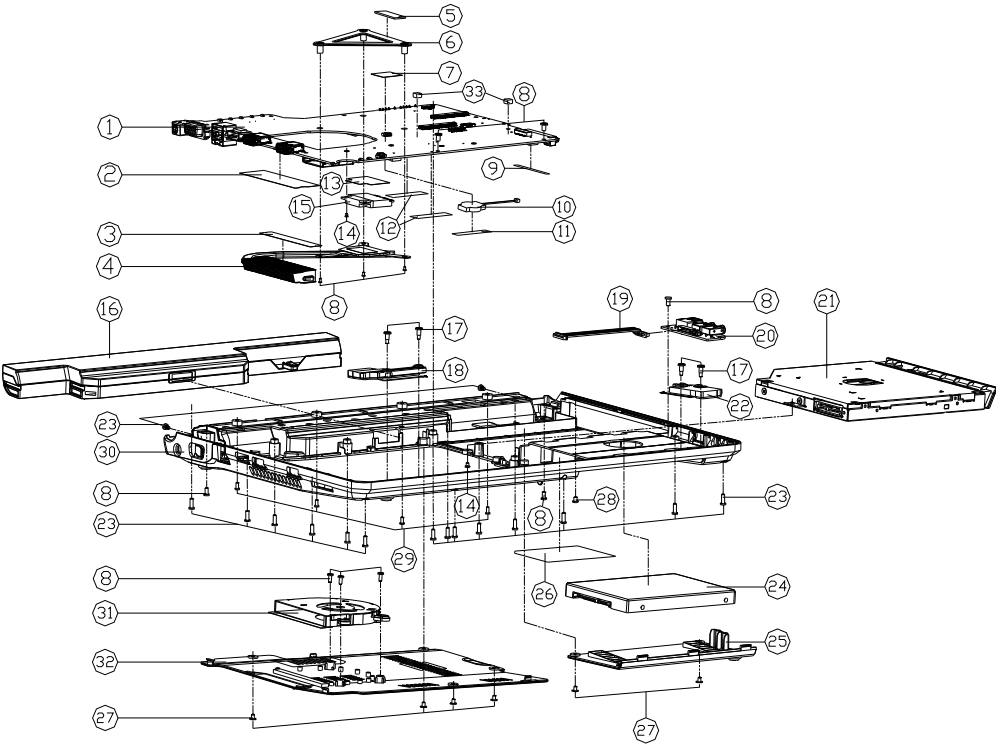
Bottom with 3G

A.Part Lists

Figure A - 2
**Bottom with SIM
(W240HUQ/
W241HUQ/
W245HUQ Series)**

[illegible]

Bottom without 3G



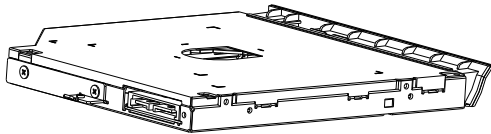
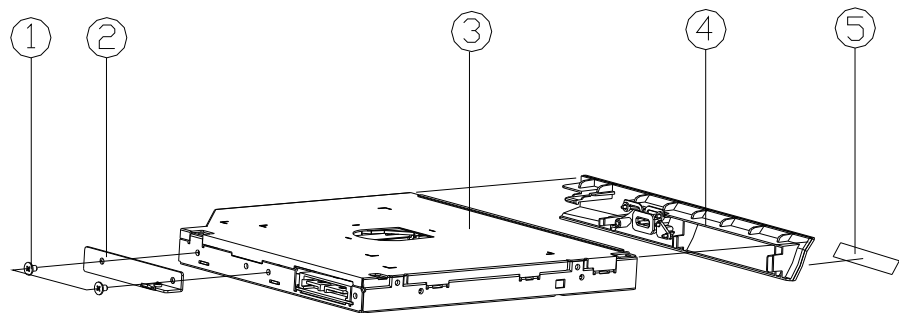
ITEM	PART NAME	PART NO	REMARK
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-1	FOR V24H4U
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-2	FOR V24H4U
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-3	FOR V24H4U
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-4	FOR V24H4U
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-5	FOR V24H4U
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-6	FOR V24H4U
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-7	FOR V24H4U
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-8	FOR V24H4U
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-9	FOR V24H4U
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-10	FOR V24H4U
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-11	FOR V24H4U
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-12	FOR V24H4U
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-13	FOR V24H4U
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-14	FOR V24H4U
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-15	FOR V24H4U
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-16	FOR V24H4U
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-17	FOR V24H4U
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-18	FOR V24H4U
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-19	FOR V24H4U
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-20	FOR V24H4U
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-21	FOR V24H4U
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-22	FOR V24H4U
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-23	FOR V24H4U
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-24	FOR V24H4U
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-25	FOR V24H4U
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-26	FOR V24H4U
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-27	FOR V24H4U
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-28	FOR V24H4U
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-29	FOR V24H4U
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-30	FOR V24H4U
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-31	FOR V24H4U
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-32	FOR V24H4U
1	MAIN BOARD V24H V24H V24H V24H	6-77-V24H-V24H-33	FOR V24H4U

Figure A - 3
Bottom without 3G

A.Part Lists

SATA BLU-RAY COMBO

Figure 4
SATA BLU-RAY
COMBO



ITEM	PART NAME	PART NO	REMARK
1	SCREW M2*3L K1 NI ICT NY (DD=04.5,DT=0.4)	6-35-B1120-3RE	
2	ODD BRACKET SECC C4500	6-33-C450Z-010	
3	SATA BLU-RAY COMBO'S ODD OR DVD-RW CCM FOR DVD-RW READING / BURNING / DVD-RW READING / BURNING	6-85-B076X-S12	
3	SATA BLU-RAY COMBO'S ODD OR DVD-RW CCM FOR DVD-RW READING / BURNING / DVD-RW READING / BURNING	6-85-B076X-P10	
4	ODD BEZEL MODULE W244HUQ	6-42-W244Z-101	
5	BLU-RAY ODD BEZEL LABEL (SIZE CHANGE) W860CU	6-45-W860W-011	

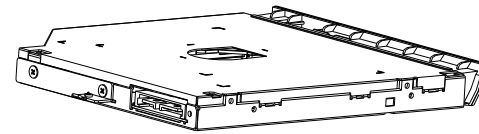
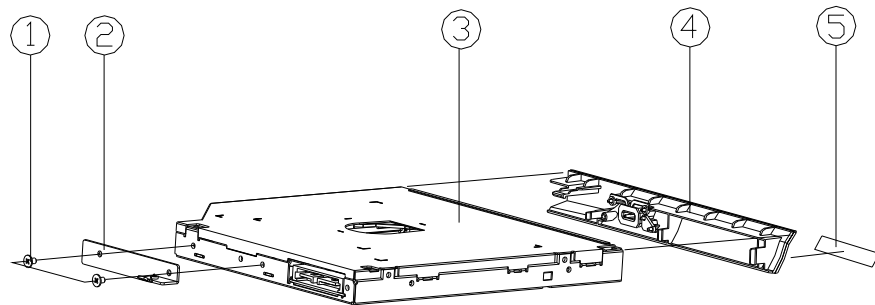
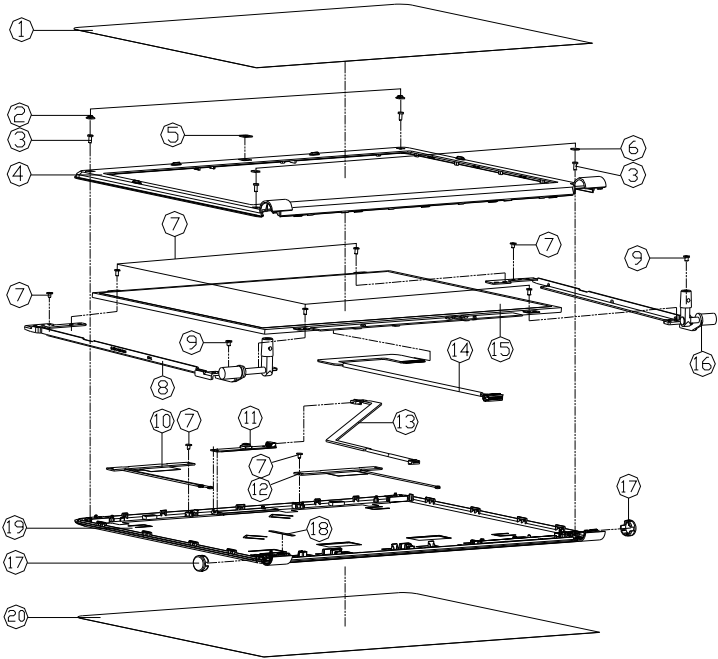


Figure 5
**SATA DVD SUPER
MULTI**

ITEM	PART NAME	PART NO	REMARK
1	SCREW M2X3L KI NI ICT NY (DD=045,D7=0.4)	6-35-B1120-3R1	
2	DODD BRACKET SECC C4500	6-23-C4502-0RE	
3	SWITCH SPST 1PST 16VDC 1A/250VAC 10MM DIA 4 PIN 0.8X2.5X9.5 (SOLDER TAIL)	6-85-A078X-T09	
4	DODD BEZEL MODULE W244HUO	6-42-W2442-101	
5	SUPER MULTI DODD BEZEL LABEL (SIZE CHANGE)	6-45-W860Q-01I	

LCD (W243HUQ)

Figure A - 6
LCD (W243HUQ)



ITEM	PART	NAME	PART NO	REMARK
1	LCD FRONT COVER PROTECTION FILM	RETICOR 0.05	6-40-C4501-011	
2	LCD FRONT COVER SCREW RUBBER SLIP	CSB	6-47-C4501-031	
3	SCREW M4xL 10 IN 10T NY 100-H40J1-45		6-35-B1120-4RA	
4	LCD FRONT COVER MODULE	C41060	6-39-C4161-012	
5	CCD LENS PMMA M810L		6-42-M8101-011	
6	CCD LENS PMMA E51200		6-42-E5101-031	
7	FRONT COVER PC FOR SCREW C4500		6-40-C4501-071	
8	SCREW M5xL 10 IN 10T NY 100-H40J1-45		6-35-B1120-3RE	
9	LCD HINGE -L SECC C41060		6-33-C4161-011-1	
10	LCD HINGE -R SECC C41060		6-33-C4161-030	FOR UP4500 ONLY
11	SCREW M5xL 10 IN 10T NY 100-H40J1-45		6-35-C2125-3R0	
12	SCREW M5xL 10 IN 10T NY 100-H40J1-45		6-23-7C244-020	
13	WIRE CAMERA CHARGE FOR CHARGE FOR CHARGE		6-88-W150C-5100	OPTION
14	WIRE CAMERA CHARGE FOR CHARGE FOR CHARGE		6-88-E510C-4901	OPTION
15	WIRE CAMERA CHARGE FOR CHARGE FOR CHARGE		6-23-7C480-010	
16	WIRE CAMERA CHARGE FOR CHARGE FOR CHARGE		6-43-C4501-011	
17	WIRE CAMERA CHARGE FOR CHARGE FOR CHARGE		6-43-C4161-012-4	
18	WIRE CAMERA CHARGE FOR CHARGE FOR CHARGE		6-50-J8136-800	
19	WIRE CAMERA CHARGE FOR CHARGE FOR CHARGE		6-50-J8136-L02	
20	LCD HINGE -R SECC C41060		6-33-C4161-021-1	
21	HINGE COSMETIC RING ABS PA727 C4500		6-42-C4508-012	
22	TAPE MYLAR (B)MYLAR M550J		6-40-M55J2-020	
23	LCD BACK COVER (B)MODULE W243HUQ		6-39-W2431-020	FOR W243HUQ
24	LCD BACK COVER MODULE W243HUQ-C		6-39-W2431-020-C	FOR W243HUQ-C
25	BACK COVER PROTECTION FILM	RETICOR 0.05	6-40-C4501-020	

LCD (W244HUQ)

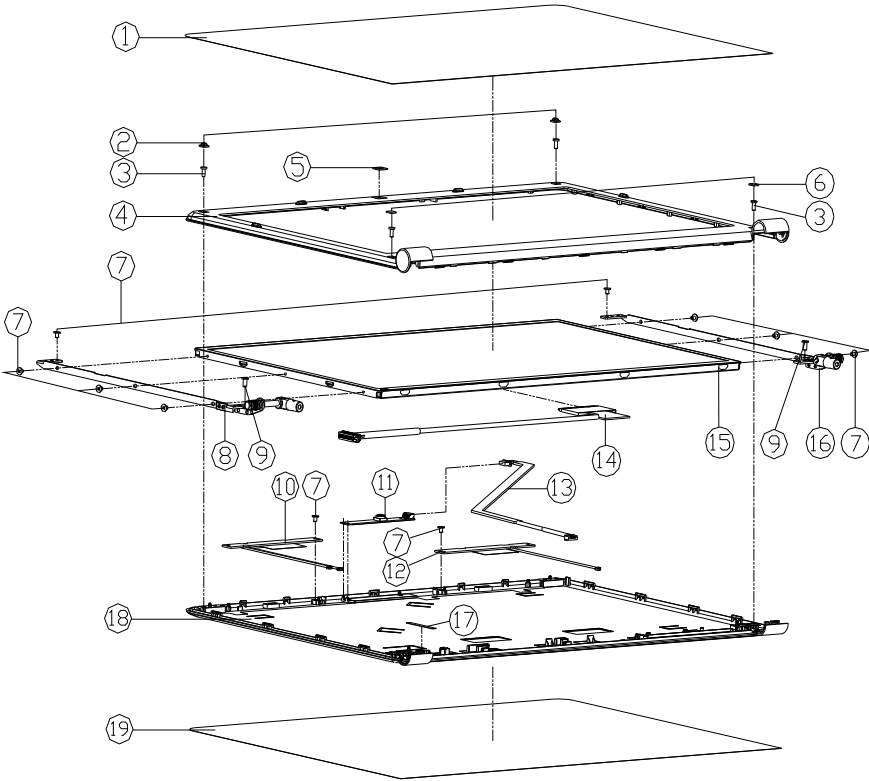
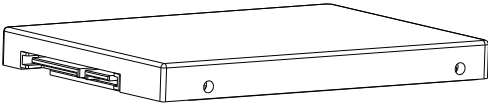
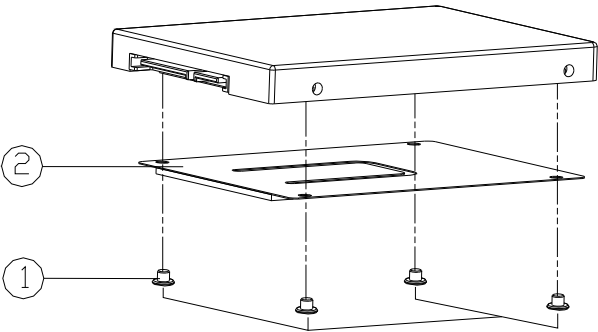


Figure A - 7
LCD (W244HUQ)

ITEM	PART NAME	PART NO	REMARK
1	LCD FRONT COVER PROTECTION MODULE (W244HUQ)	6-40-C4501-011	
2	LCD FRONT COVER SCREW RUBBER SLIPON C450	6-47-C4501-031	
3	SCREW M4xL K10T-08 B-40 BK/Z ICT NY	6-35-B6120-5R0	
4	LCD FRONT COVER MODULE W244HUQ	6-39-W2441-011	
5	CCD LENS PMMA M810L	6-42-M8101-011	
6	CCD LENS PMMA E5120Q	6-42-E5101-031	
7	FRONT COVER PC FOR SCREW C4500	6-40-C4501-071	
8	SCREW M4xL K1 NY ICT NY (00-045.01-04)	6-35-B1120-3RE	
9	LCD HINGE L SECC W244HUQ	6-33-W2441-020	
10	SCREW M2.5xL K1 BK/Z ICT NY-	6-35-B6125-5RA	
11	SCREW M2.5xL K1 BK/Z ICT NY-	6-23-7W244-020	
12	LCD CAMERA CHERRY FIX CRYSTAL 138 6AA V00000	6-88-W150C-5100	OPTION
13	LCD CAMERA CHERRY FIX CRYSTAL 138 6AA V00000	6-88-E510C-4901	OPTION
14	WIRE CABLE FOR CCD SP 30150M C4500	6-23-7E412-010	
15	WIRE CABLE FOR CCD SP 30150M C4500	6-43-C4501-011	
16	WIRE CABLE FOR LCD 300M CHANGE (DND C4500)	6-43-C4801-052	FOR LCD CHINESE PANEL
17	WIRE CABLE FOR LCD 300M CHANGE (DND C4500)	6-43-W2441-010-A	FOR LCD HONGKONG (CN) PANEL
18	LCD HINGE R SECC W244HUQ	6-50-JB152-D00	
19	LCD HINGE R SECC W244HUQ	6-50-JB152-B00	
20	LCD HINGE R SECC W244HUQ	6-50-JB152-L04	
21	LCD HINGE R SECC W244HUQ	6-33-W2441-010	
22	TAPE MYLAR (CB) MYLAR M550J	6-40-M55J2-020	
23	LCD BACK COVER (MR) MODULE W244HUQ	6-39-W2441-021	
24	LCD BACK COVER (MR) MODULE W244HUQ	6-39-W2441-021-C	
25	BACK COVER PROTECTION MODULE (W244HUQ)	6-40-C4501-020	

HDD

Figure A - 8
HDD



ITEM	PART NAME	PART NO	REMARK
1	SCREW M3*2.5L KI NI ICT NY 無鉛	6-35-B1130-2R5	
2	HDD MYLAR (PET+CR) C4500 (無鉛)	6-40-C450J-010	

Appendix B: Schematic Diagrams

This appendix has circuit diagrams of the **W243HUQ/W244HUQ** notebook's PCB's. The following table indicates where to find the appropriate schematic diagram.

Diagram - Page	Diagram - Page	Diagram - Page
<i>System Block Diagram - Page B - 2</i>	<i>CougarPoint - M 6/9 - Page B - 19</i>	<i>Power 0.85VS - Page B - 36</i>
<i>CPU 1/7 (DMI, PEG, FDI) - Page B - 3</i>	<i>CougarPoint - M 7/9 - Page B - 20</i>	<i>Power V-Core1 - Page B - 37</i>
<i>CPU 2/7 (CLK, MISC, JTAG) - Page B - 4</i>	<i>CougarPoint - M 8/9 - Page B - 21</i>	<i>Power V-Core2 - Page B - 38</i>
<i>CPU 3/7 (DDR3) - Page B - 5</i>	<i>CougarPoint - M 9/9 - Page B - 22</i>	<i>Charger, DC In - Page B - 39</i>
<i>CPU 4/7 (Power) - Page B - 6</i>	<i>New Card, Mini PCIE - Page B - 23</i>	<i>Click Board - Page B - 40</i>
<i>CPU 5/7 (Graphics Power) - Page B - 7</i>	<i>CCD, 3G, TPM - Page B - 24</i>	<i>Audio Board/USB - Page B - 41</i>
<i>CPU 6/7 (GND) - Page B - 8</i>	<i>Card Reader/LAN JMC251C - Page B - 25</i>	<i>Power Switch & LID Board - Page B - 42</i>
<i>CPU 7/7 (RESERVED) - Page B - 9</i>	<i>LAN (JMC251C), SATA HDD, ODD - Page B - 26</i>	
<i>DDR3 SO-DIMM_0 - Page B - 10</i>	<i>USB 2.0 Connector - Page B - 27</i>	
<i>DDR3 SO-DIMM_1 - Page B - 11</i>	<i>KBC-ITE IT8518 - Page B - 28</i>	
<i>LVDS, Inverter - Page B - 12</i>	<i>LED, MDC, BT - Page B - 29</i>	
<i>HDMI, CRT - Page B - 13</i>	<i>Audio Codec ALC269 - Page B - 30</i>	
<i>CougarPoint - M 1/9 - Page B - 14</i>	<i>USB, Fan, TP, Multi-Conn - Page B - 31</i>	
<i>CougarPoint - M 2/9 - Page B - 15</i>	<i>5VS, 3VS, 1.05VS, 1.5VS_CPU - Page B - 32</i>	
<i>CougarPoint - M 3/9 - Page B - 16</i>	<i>VDD3, VDD5 - Page B - 33</i>	
<i>CougarPoint - M 4/9 - Page B - 17</i>	<i>Power 1.5V/0.75V/1.8VS - Page B - 34</i>	
<i>CougarPoint - M 5/9 - Page B - 18</i>	<i>Power 1.05VS - Page B - 35</i>	

Table B - 1
**SCHEMATIC
DIAGRAMS**

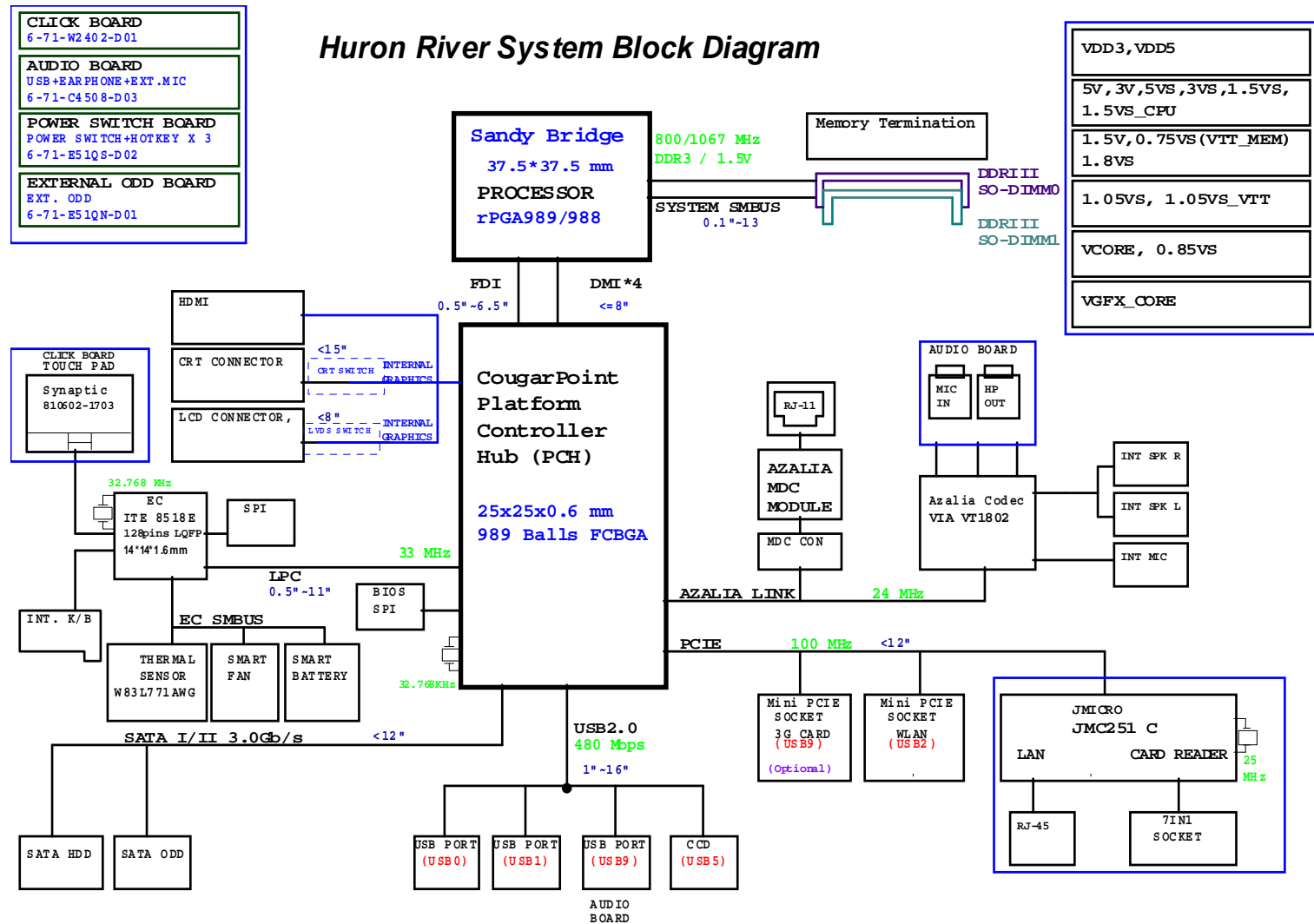


Version Note

The schematic diagrams in this chapter are based upon version 6-7P-W24H5-002. 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 43
System Block
Diagram



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



FU/PD for JTAG signals

10.5V_S_VTT

R46 51_04 J0_P_TMS

R48 51_04 J0_P_TD0_R

R49 51_04 J0_P_TD1_R

R50 51_04 J0_P_TD2_R

R51 51_04 J0_P_TD3_R

R52 51_04 J0_P_TCK

R53 51_04 J0_P_TST

3.3V_S

R407 1K_04 J0_P_DBR_R

[illegible]

1.05V_VTT

H_P.RO.CH0.T# R410 52 0.4

H_C.P.U.P.W.R.G.D.# R412 10K 0.4

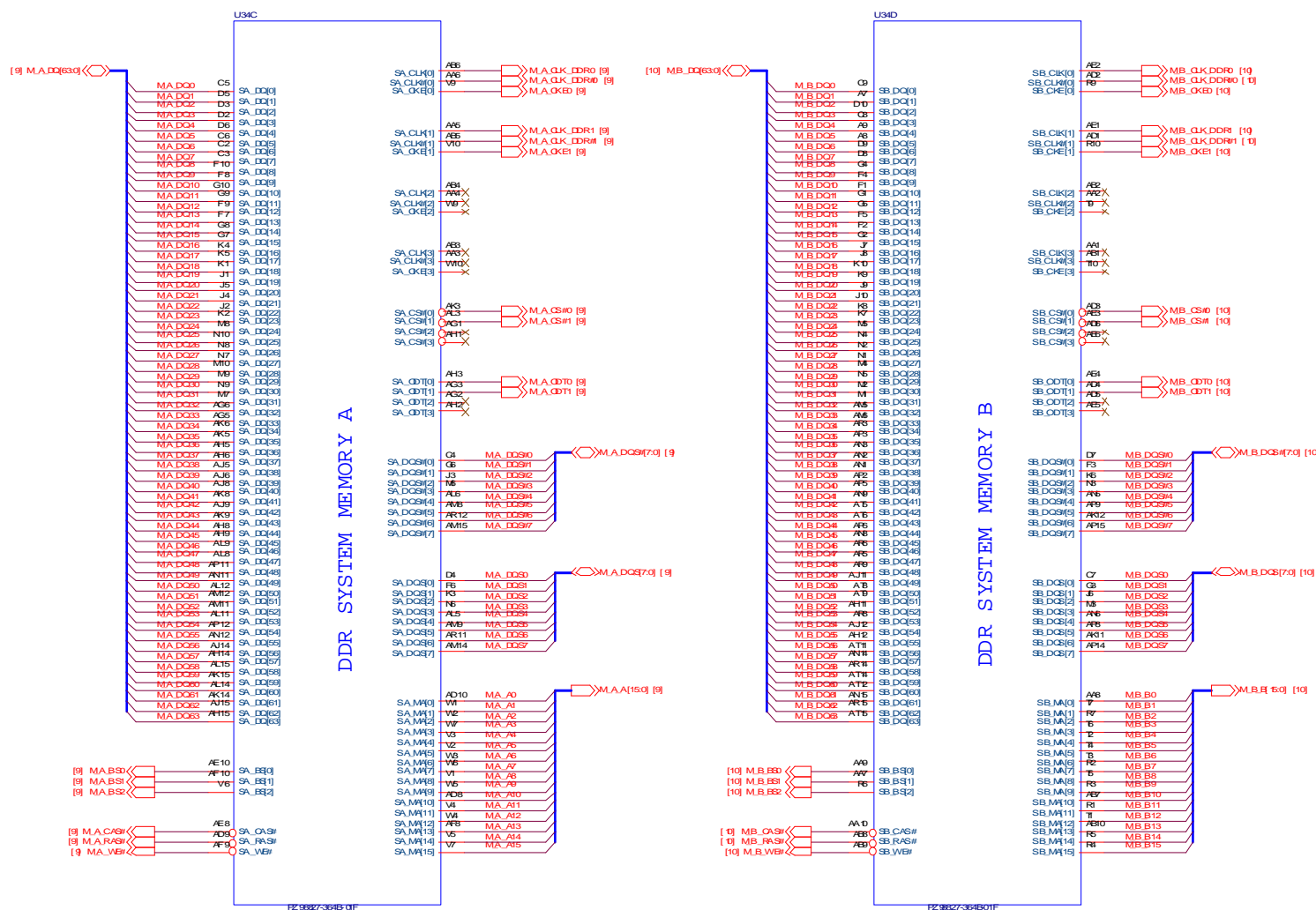
R585 1.01V 10V X7R 0.4

11/03

[illegible][illegible]

B - 4 CPU 2/7 (CLK, MISC, JTAG)

Sandy Bridge Processor 3/7 (DDR3)

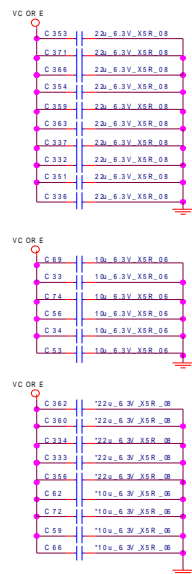


Sheet 4 of 43
CPU 3/7
(DDR3)

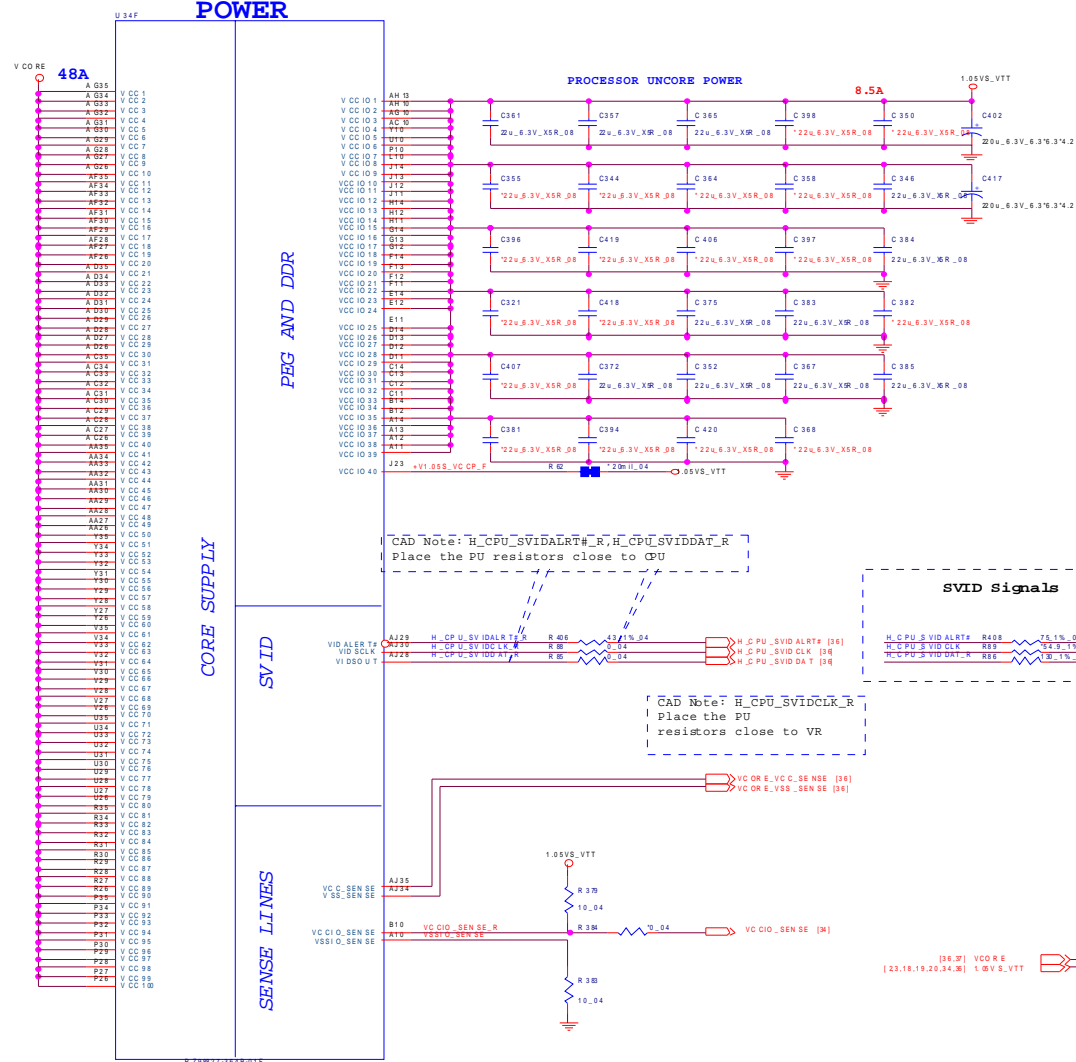
B.Schematic Diagrams

Sandy Bridge Processor 4/7

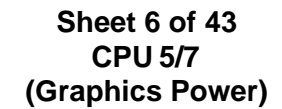
POWER



Sheet 5 of 43
CPU 4/7
(Power)



Sandy Bridge Processor 5/7 (GRAPHICS POWER)



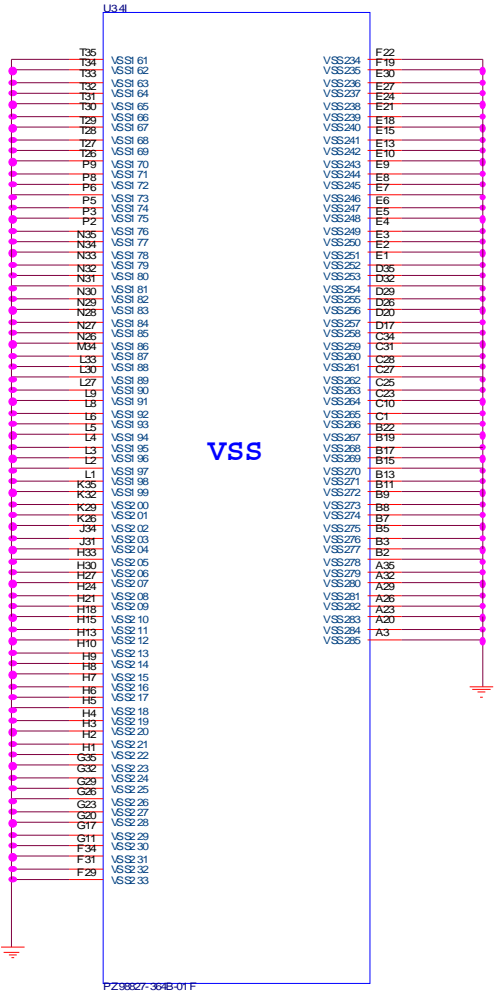
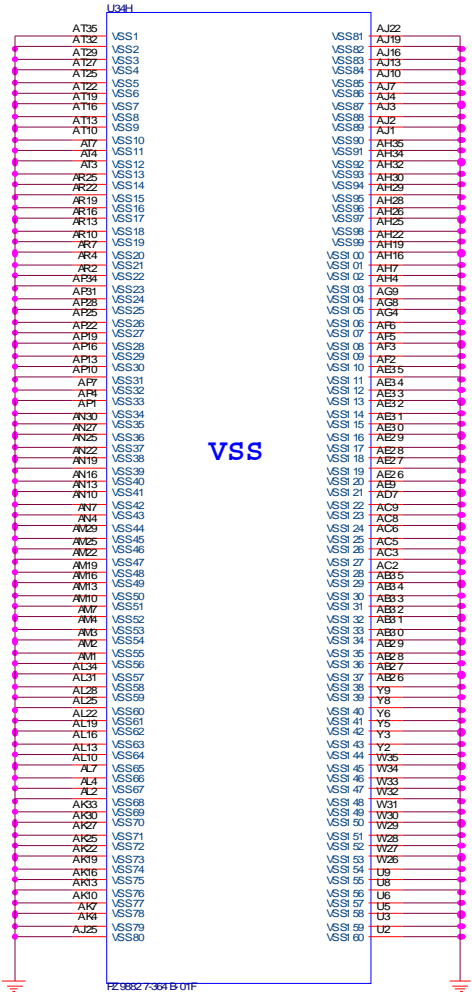
Schematic Diagrams

CPU 6/7 (GND)

Sandy Bridge Processor 6/7 (GND)

Sheet 7 of 43
CPU 6/7 (GND)

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



CPU 7/7 (RESERVED)

Sandy Bridge Processor 7/7
(RESERVED)

CFG Straps for Processor

PEG Static Lane Reversal - CFG2 is for the 16x

CFG2	1:(Default) Normal Operation/ Lane # definition matches socket pin map definition 0:Lane Reversed
------	--

CFG2 R111 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 R110 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
----------	--

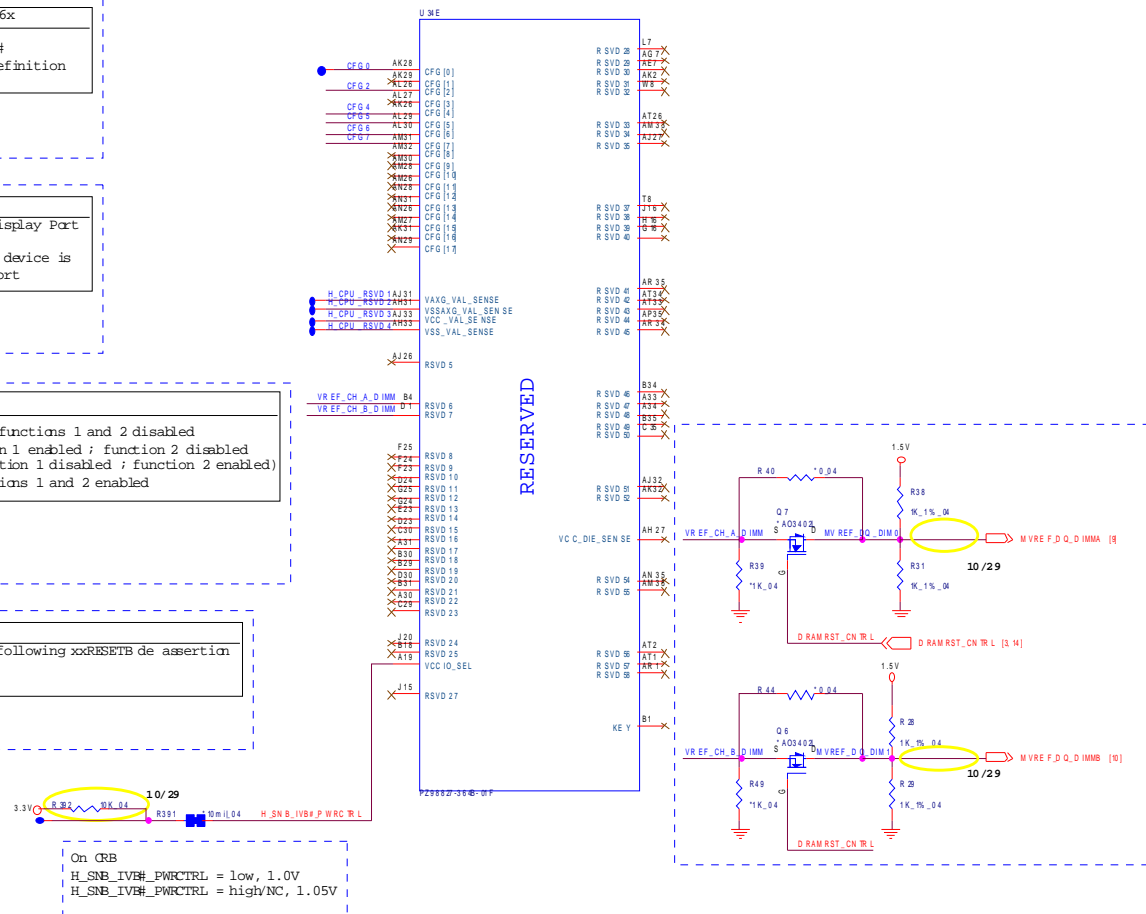
CFG5 R88 1K,04

CFG6 R89 1K,04

PEG DEFER TRAINING

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

CFG7 R87 1K,04

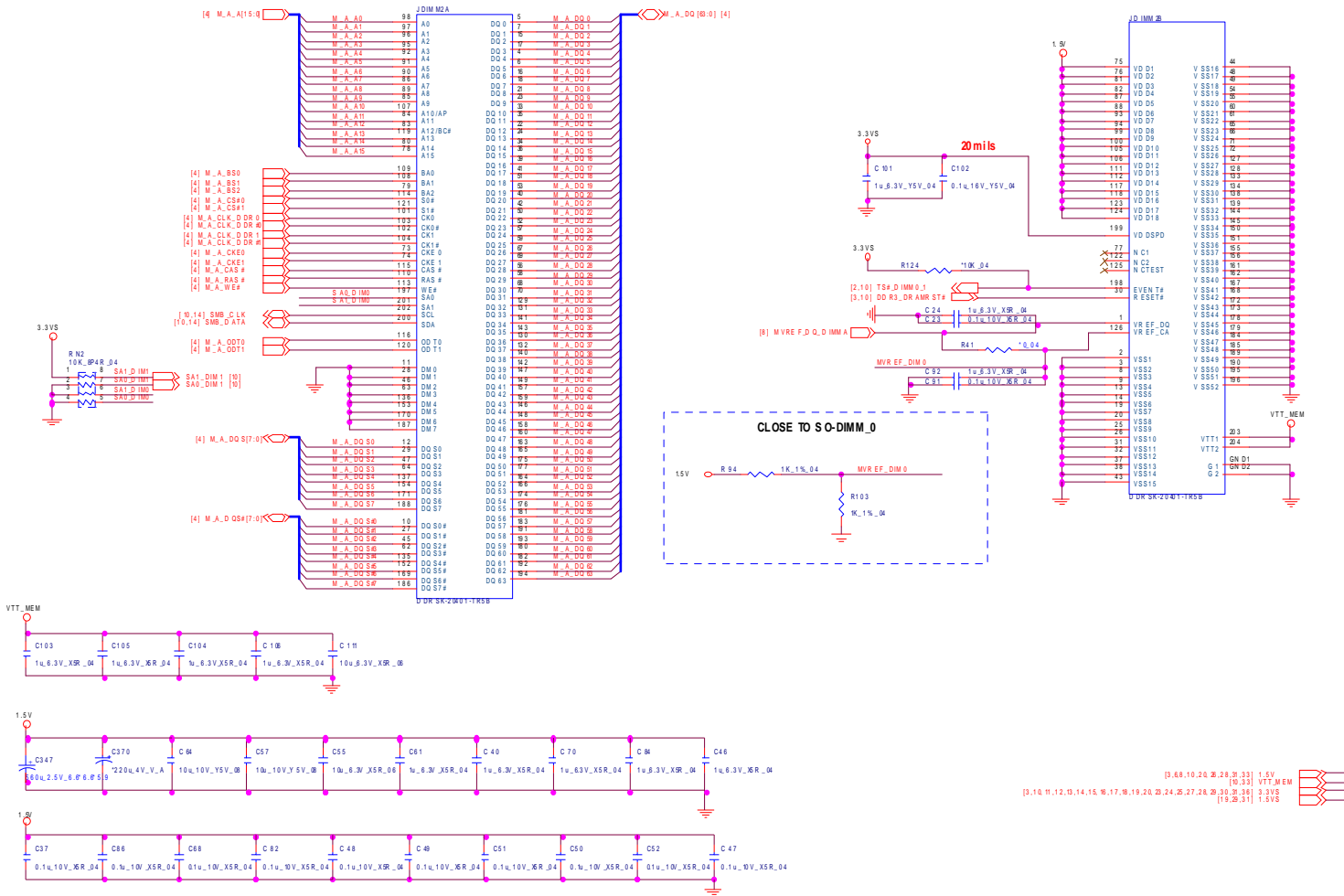
Sheet 8 of 43
CPU 7/7
(RESERVED)

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DDR3 SO-DIMM_0

SO-DIMM A

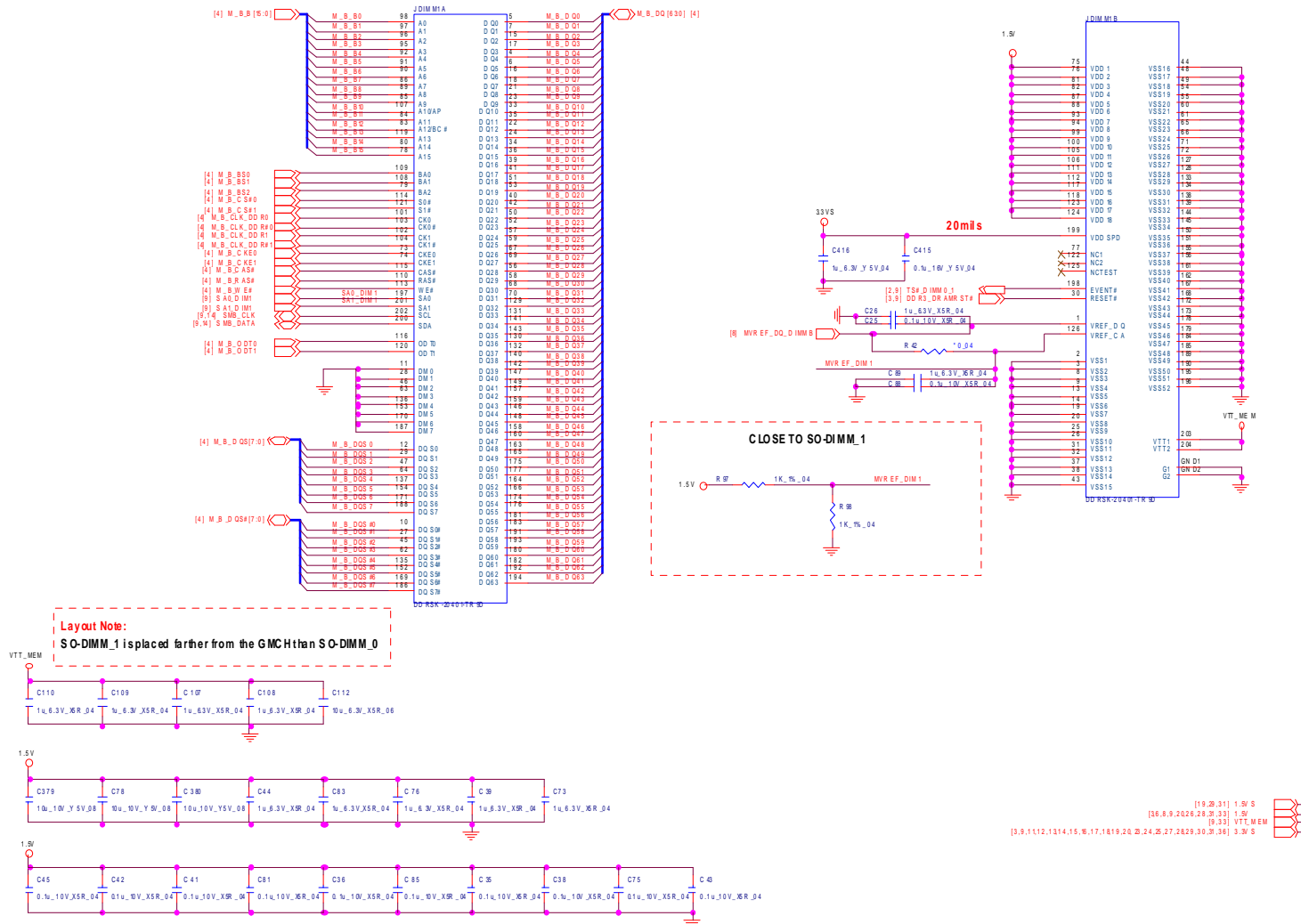
CHANGE TO STANDARD



DDR3 SO-DIMM_1

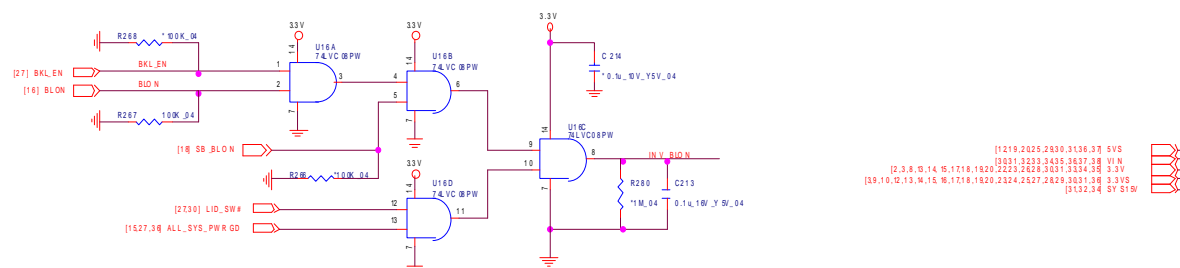
SO-DIMM B

CHANGE TO STANDARD



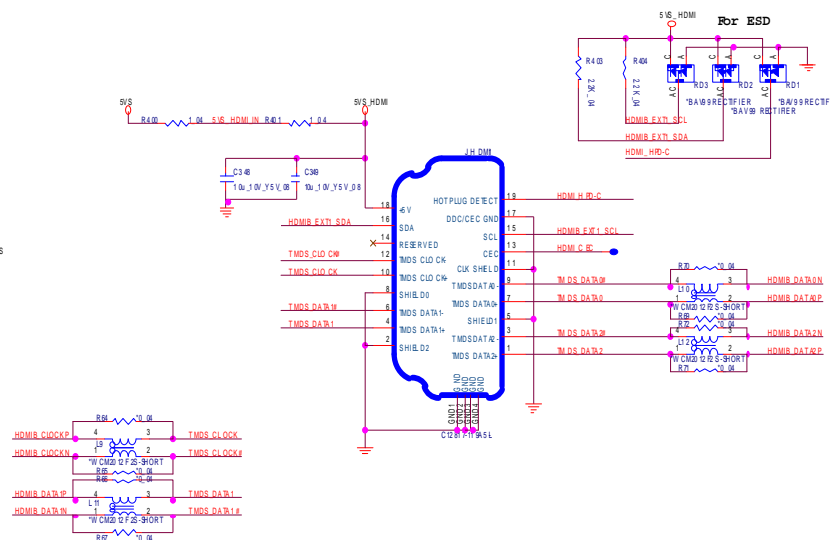
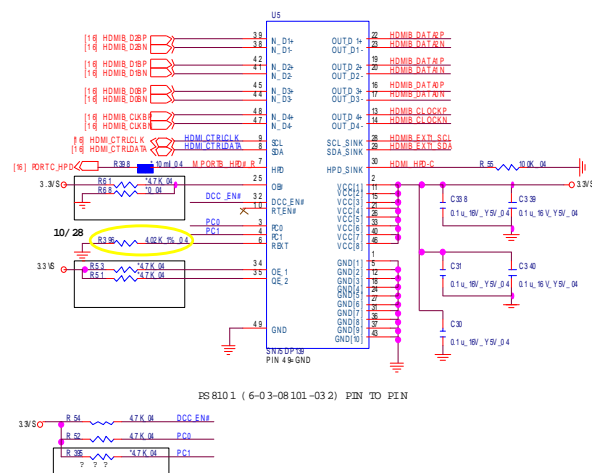
B.Schematic Diagrams

Sheet 11 of 43
LVDS, Inverter



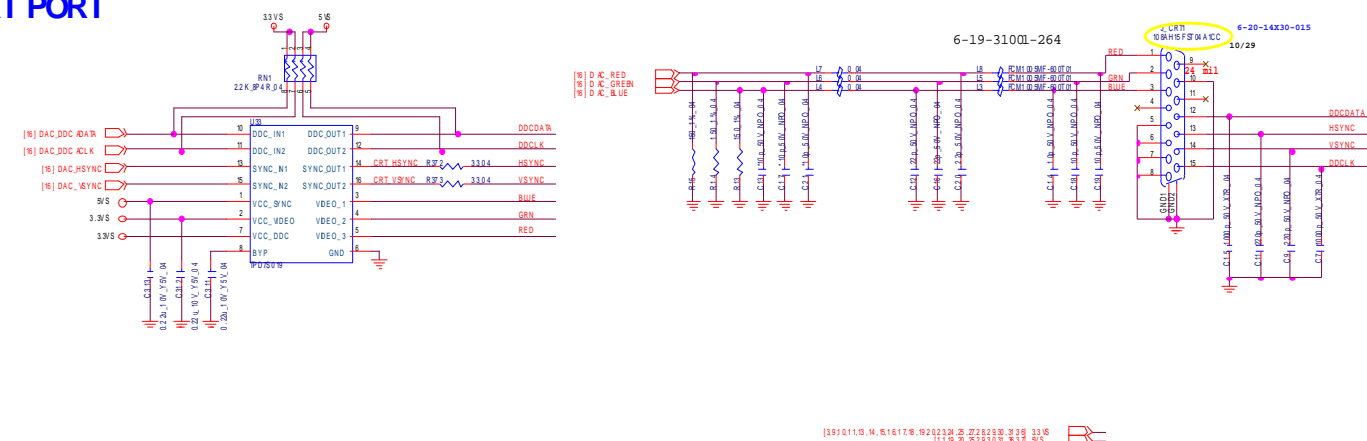
HDMI PORT

FOR INTEL GRAPHIC



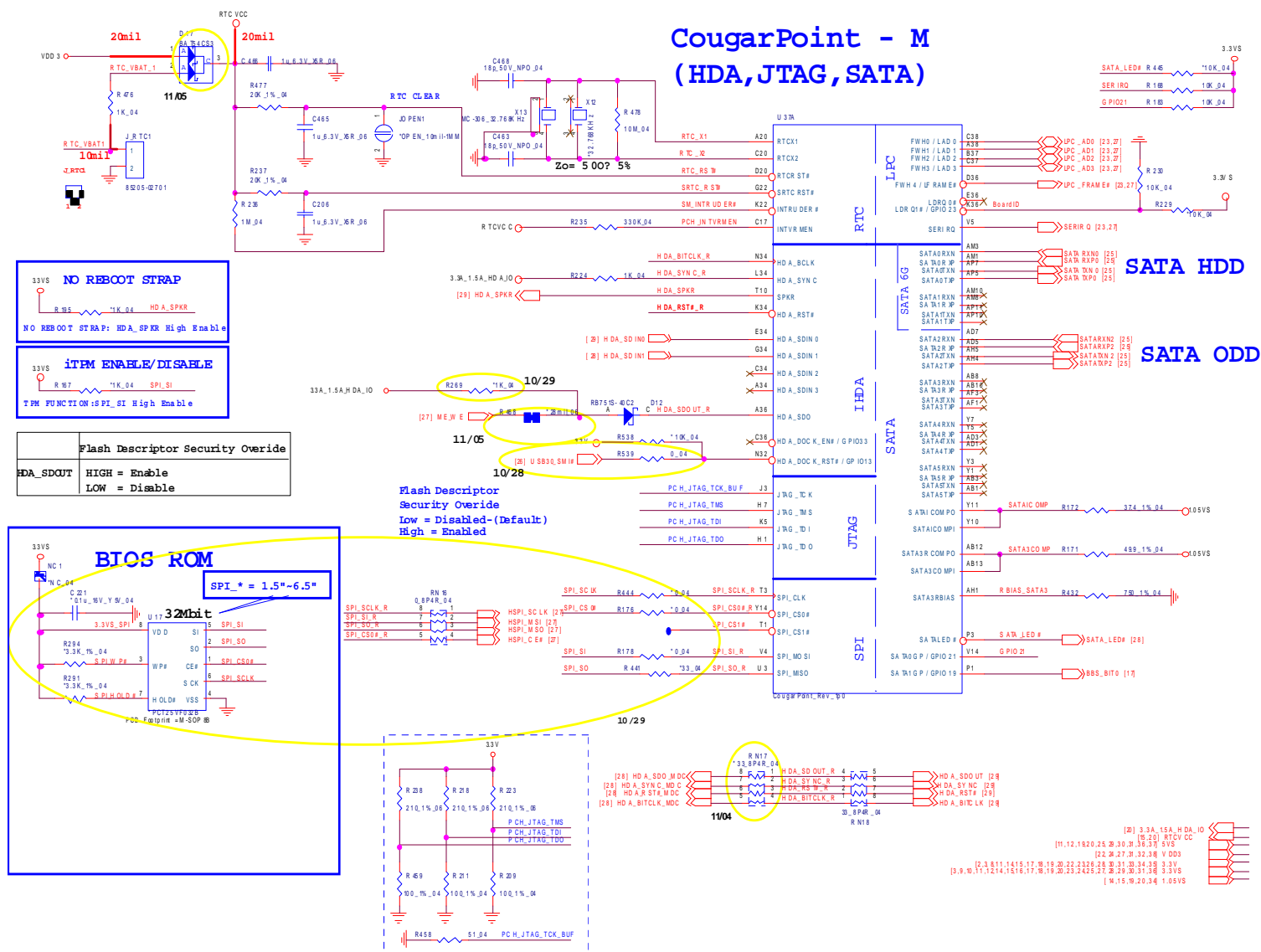
Sheet 12 of 43
HDMI, CRT

CRT PORT



B.Schematic Diagrams

CougarPoint - M
(HDA,JTAG,SATA)



CougarPoint - M (PCI-E,SMBUS,CLK)

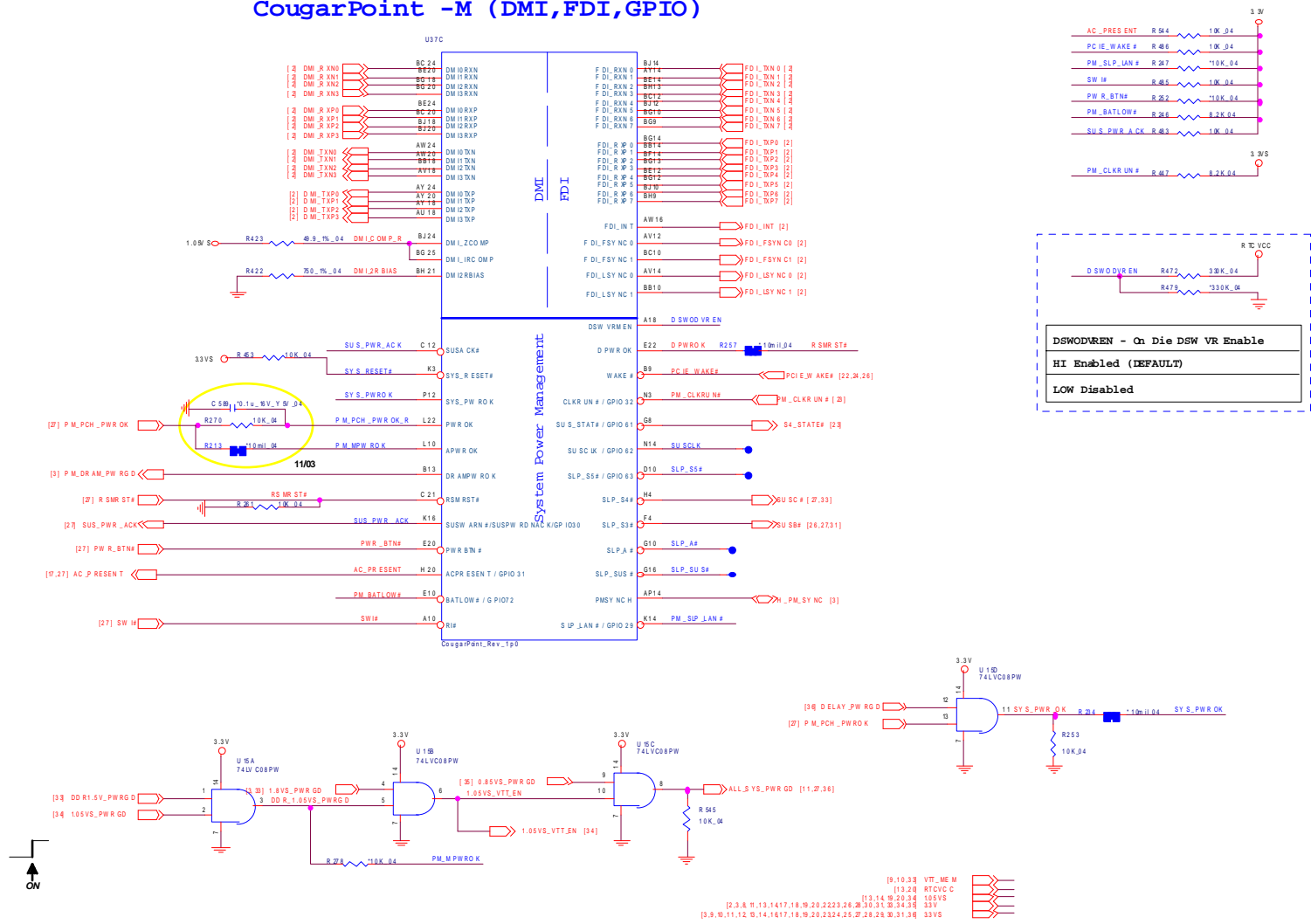


Schematic Diagrams

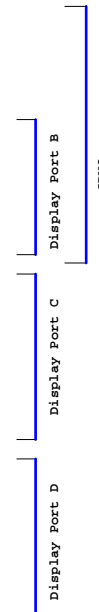
CougarPoint - M 3/9

CougarPoint -M (DMI,FDI,GPIO)

Sheet 15 of 43
CougarPoint - M 3/9



CougarPoint -M
(LVDS,DDI,CRT)

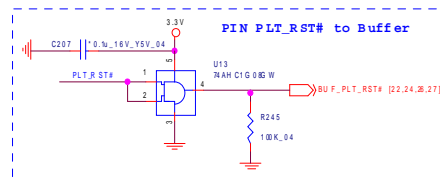
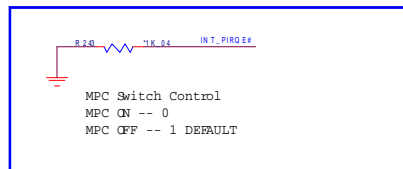
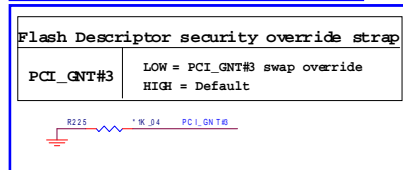
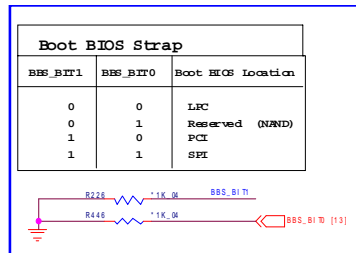


Sheet 16 of 43
CougarPoint - M 4/9

Schematic Diagrams

CougarPoint - M 5/9

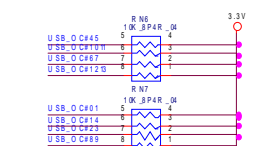
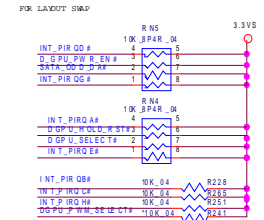
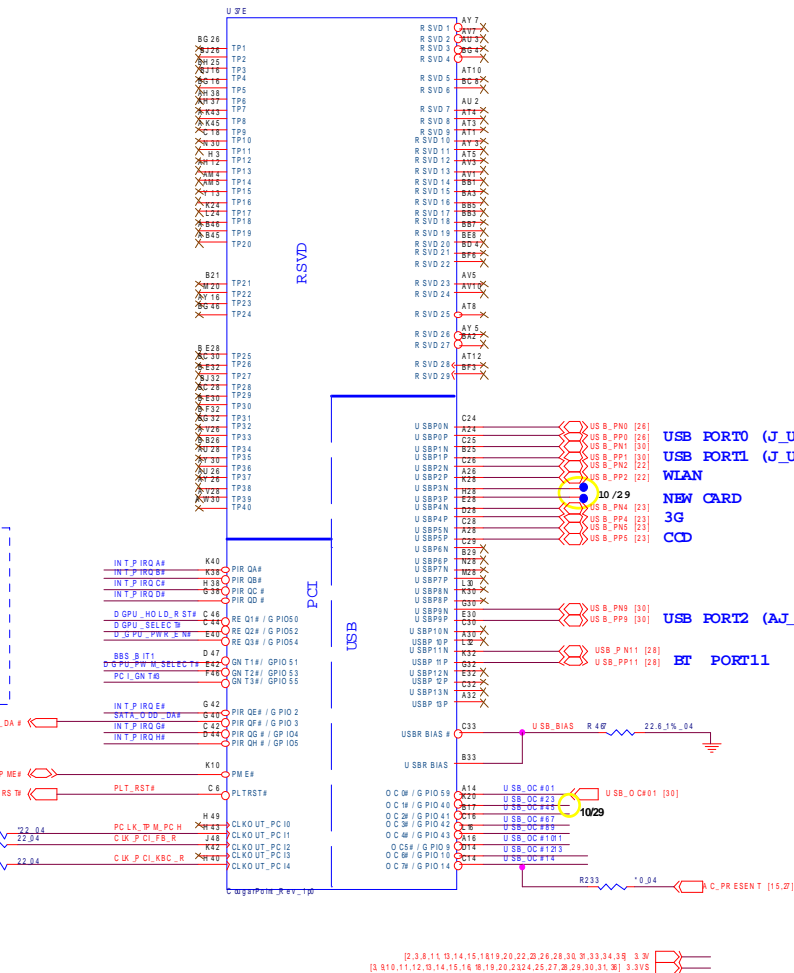
Sheet 17 of 43
CougarPoint - M 5/9



[25] SA#_D0D0A#
[27] P ME#
[3,23] PLT_RST#

[23] CLK_TPM
[14] CLK_PC1_FB
[27] CLK_KBC

CougarPoint -M (PCI,USB,NVRAM)



BIDS RECOVERY
DISABLE---R349 NO STUFF (DEFAULT)
ENABLE---R349 STUFF

Internal GFX: Low (Default)
External GFX: High

INTEGRATE CLOCK
DISABLE---R465 NO STUFF (DEFAULT)
ENABLE---R465 STUFF

33V

R482 1K_04 HOST_ALERT#1
 R24 1K_04 HOST_ALERT#2
 R481 *0K_04 GPIO_0 10/28

3.3V5

RNB
 1 1K_04 SC#H
 2 SW#H
 3 SW#H
 4 *0K_04 KB_CS#5

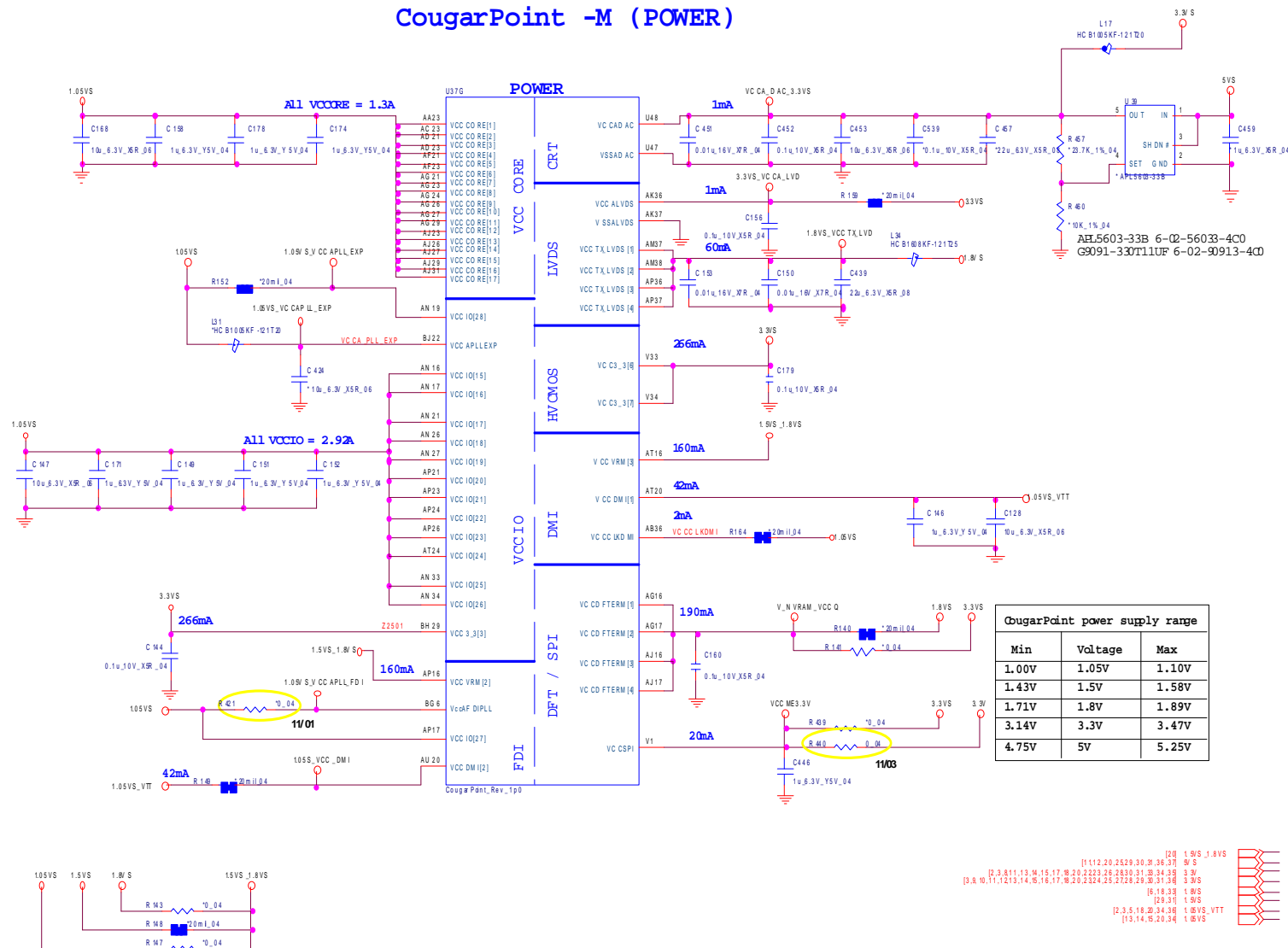
R175 10K_0M S_GPIO
 R355 20K_04 SATA_00_P#EN#A
 R24 10K_0M DGPU_HPD_INTR#
 R180 1K_04 SATA_00_D_PWD#D
 R265 *0K_04 GPIO34
 R48 10K_0M CRIT_TEMP#R#
 R48 10K_04 DEFPW#R#OK#
 R180 10K_0M SATA_DET#4

R194 *0K_04 PLL_OVR_EN
 R201 10K_04 FDI_OVR_VLTO

[2,3,5,19,20,34,36] 1.05VS_VTT
[6,19,33] 1.8VS
[2,3,8,11,13,14,15,17,19,20,22,23,26,28,30,31,33,34,35] 3.3V
[3,9,10,11,12,13,14,15,16,17,19,20,23,24,25,27,28,29,30,31,36] 3.3VS

CougarPoint - M 7/9

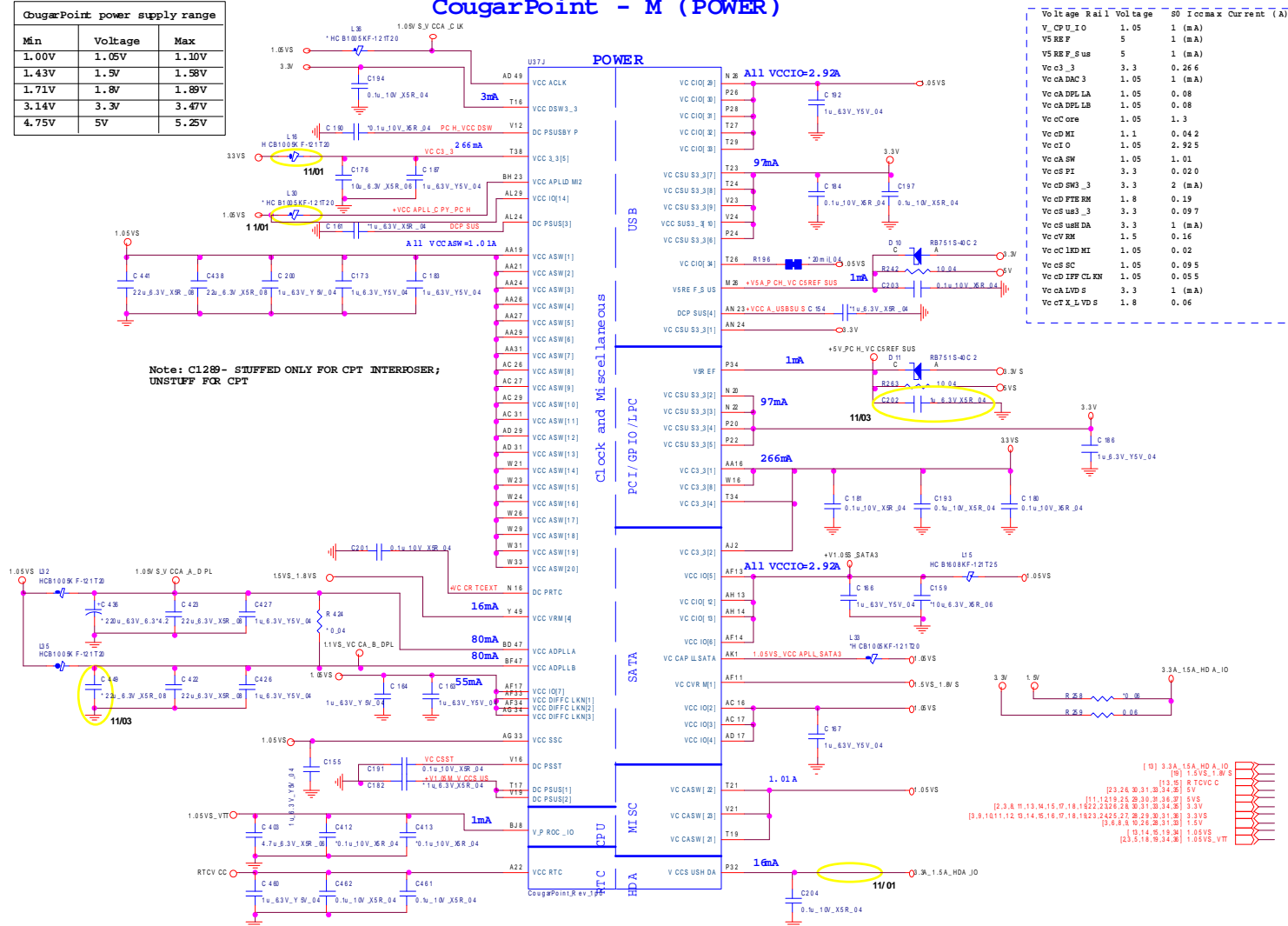
CougarPoint -M (POWER)



CougarPoint - M 8/9

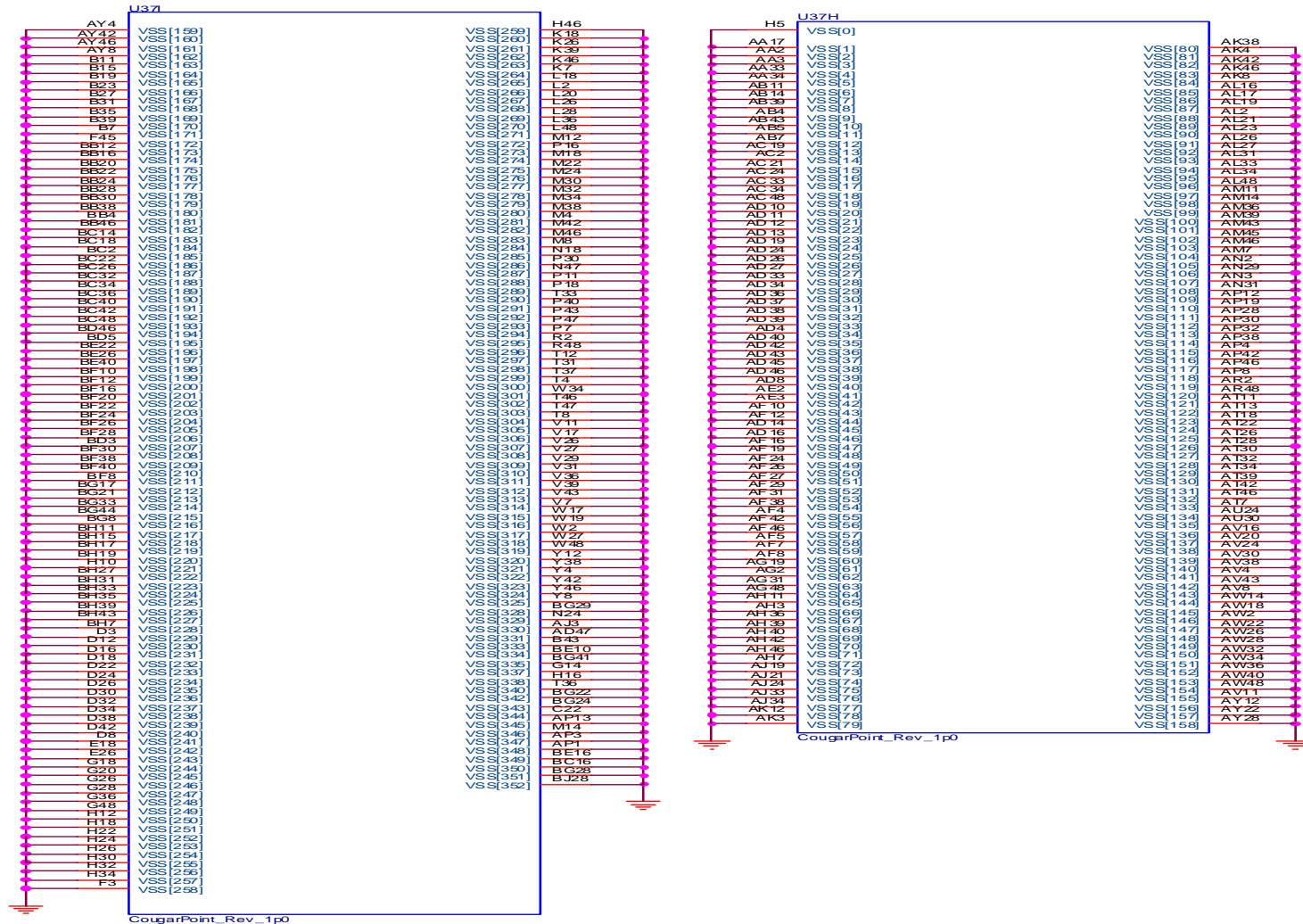
CougarPoint power supply range		
Min	Voltage	Max
1.00V	1.05V	1.10V
1.43V	1.5V	1.58V
1.71V	1.8V	1.89V
3.14V	3.3V	3.47V
4.75V	5V	5.25V

CougarPoint - M (POWER)



CougarPoint - M 9/9

CougarPoint -M (GND)



NEW CARD(Port 3)

10 / 29

The diagram illustrates the USB-C connector wiring for the Raspberry Pi 5. It shows the connection of the 20-pin USB-C plug to the 40-pin Raspberry Pi 5 header. Key components include a 10kΩ pull-up resistor (R40) on D+ and a 20kΩ pull-down resistor (R41) on D-. The diagram also shows the connection of the 3.3V power pin to the 3.3V pin of the header. The USB-C plug is labeled with pin numbers 1 through 20. The Raspberry Pi 5 header is labeled with pin numbers 1 through 40. The diagram includes labels for various signals such as D+, D-, GND, VBUS, and various control signals like WAKE#, COER#, CLKREQ#, and various data lines. The diagram is a detailed schematic showing the electrical connections between the USB-C plug and the Raspberry Pi 5 header.

10/29

[3,6,8,9,10,20,26,28,31,33] 1.5V
[19,29,31] 1.5VS
[2,3,8,11,13,14,15,17,18,19,20,23,26,28,30,31,33,34,35] 3.3V
[3,9,10,11,12,13,14,15,16,17,18,19,20,23,24,25,27,28,29,30,31,36] 3.3VS
[13,24,27,31,32,38] VDD3

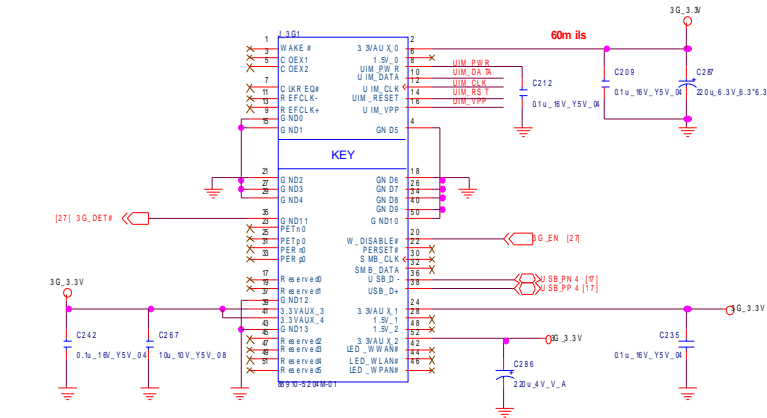
Sheet 22 of 43
New Card, Mini
PCIE

Schematic Diagrams

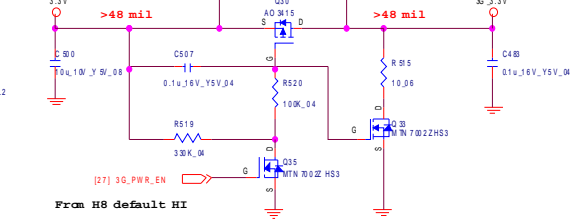
CCD, 3G, TPM

MINI CARD 3G(Port 6)

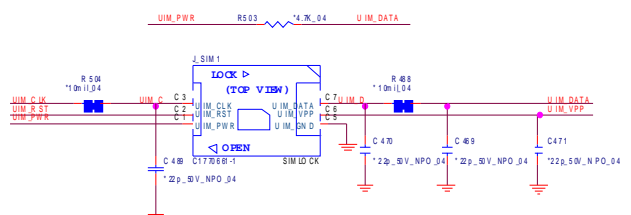
Sheet 23 of 43
CCD, 3G, TPM



3G POWER

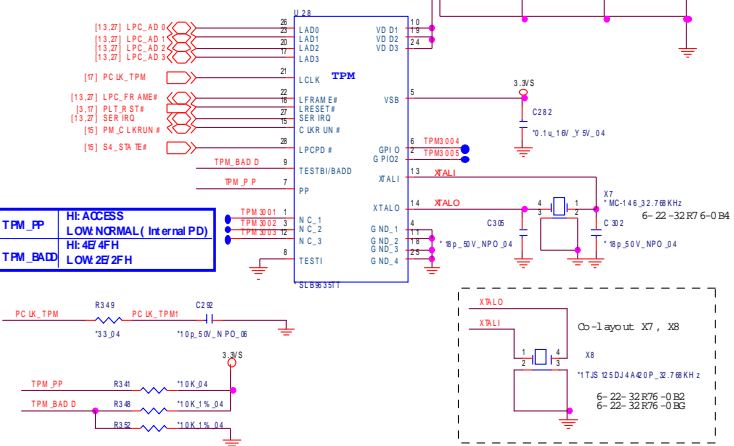


SIM CONN

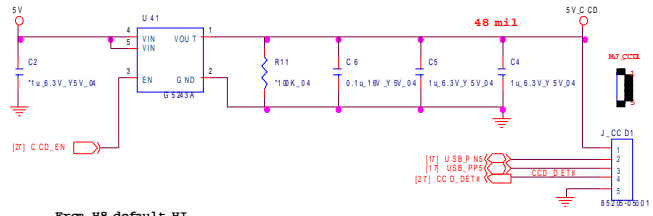


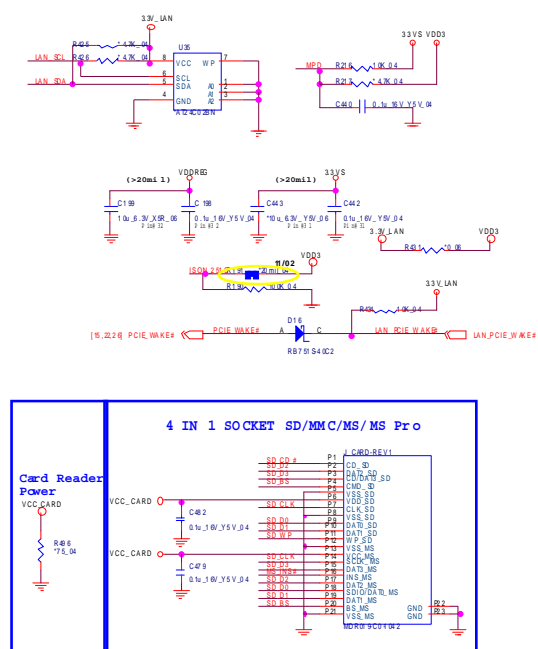
TPM 1.2

Asses the before entering S3
LPC reset timing:
LPCPD# inactive to LRST# inactive 32-96us



CCD





1.2V

1A

10k

10k

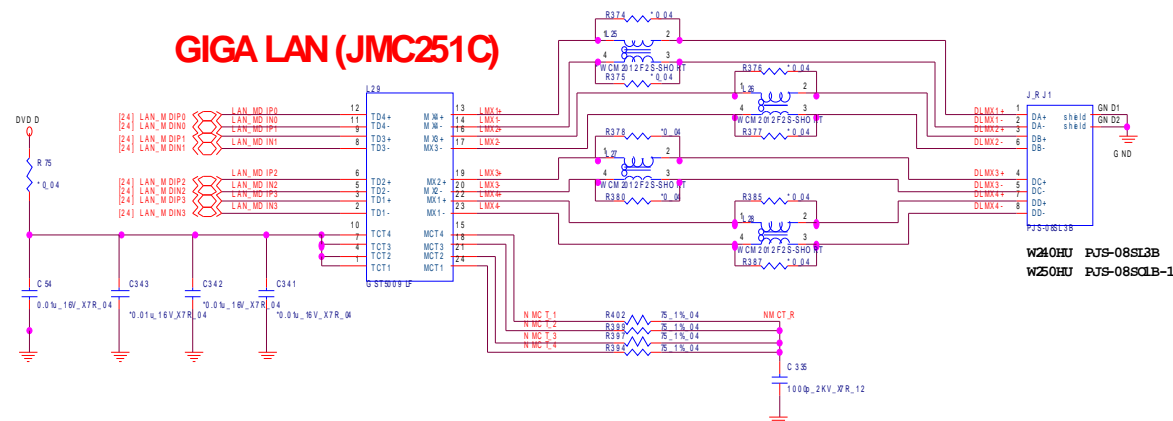
10k

1.2V

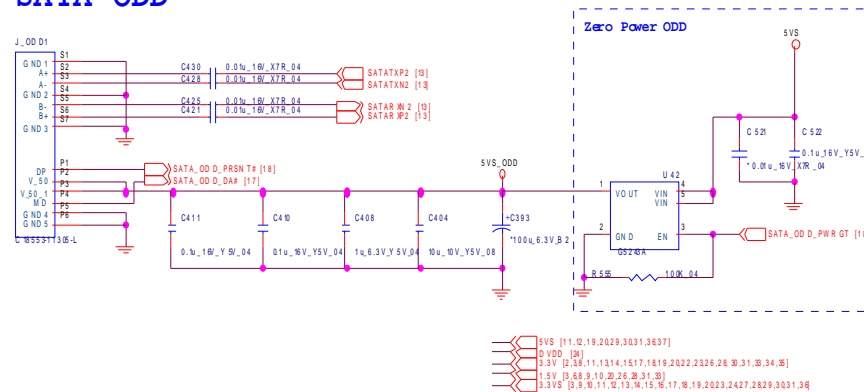
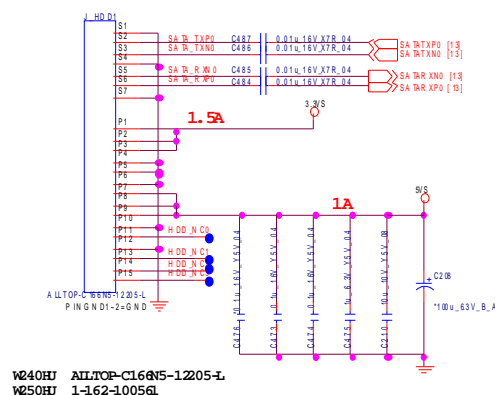
10/29

[022273, 0238, VD03
[29, 071123, 14, 051617, 08, 2022325, 20, 2823036, 38, 3, 30, 1
0.649, 10, 20, 2823036, 38, 3, 30, 1
10, 20, 2823036, 38, 3, 30, 1

GIGA LAN (JMC251C)

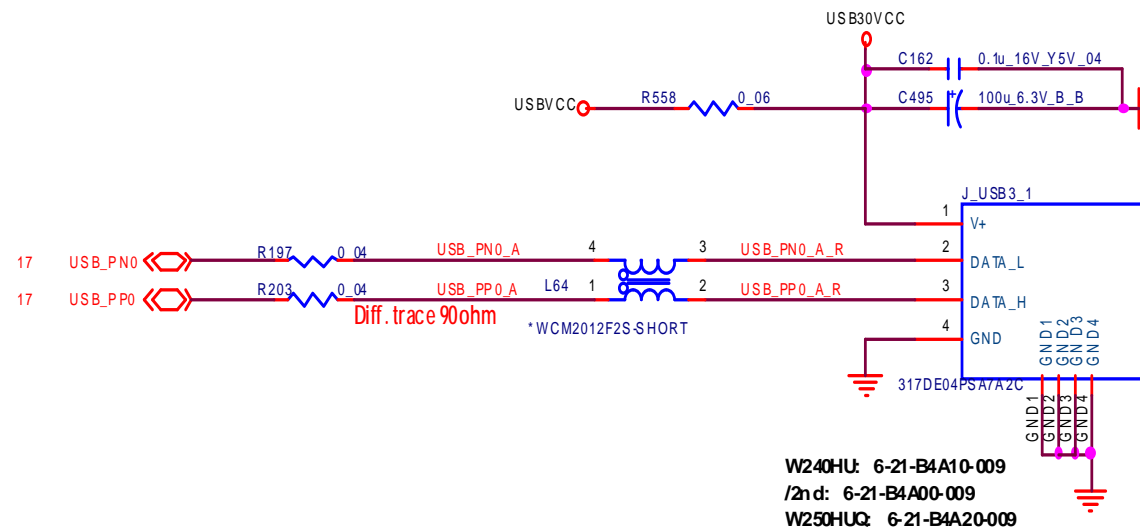


Sheet 25 of 43
LAN(JMC251C),
SATA HDD, ODD



USB 2.0 Connector

PCH USB 2.0 Coonnector

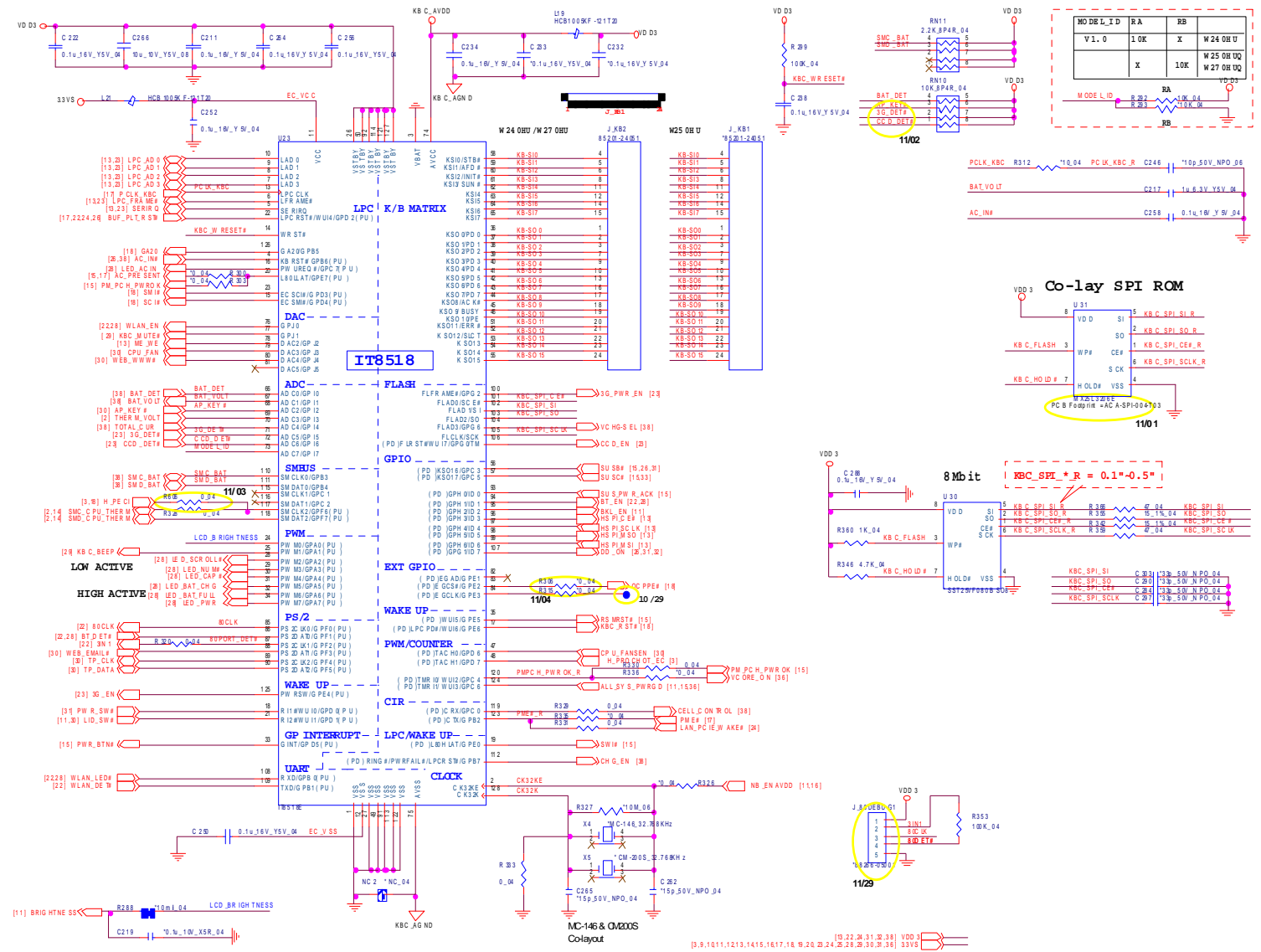


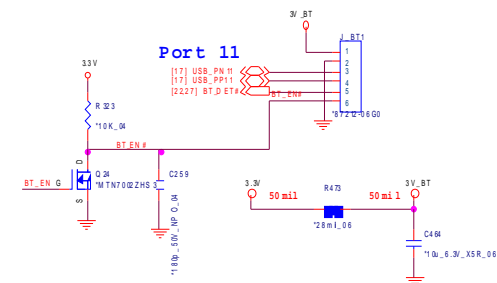
30 USBVCC

Schematic Diagrams

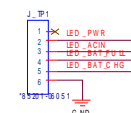
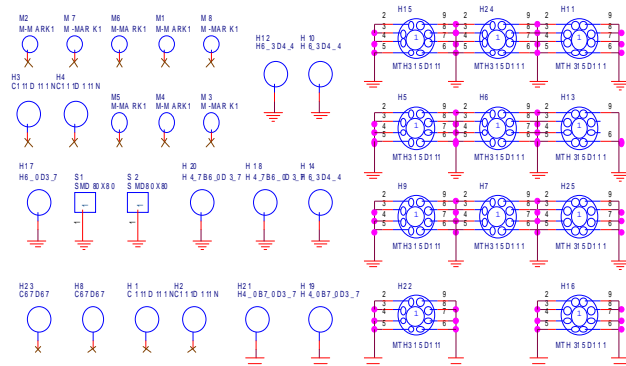
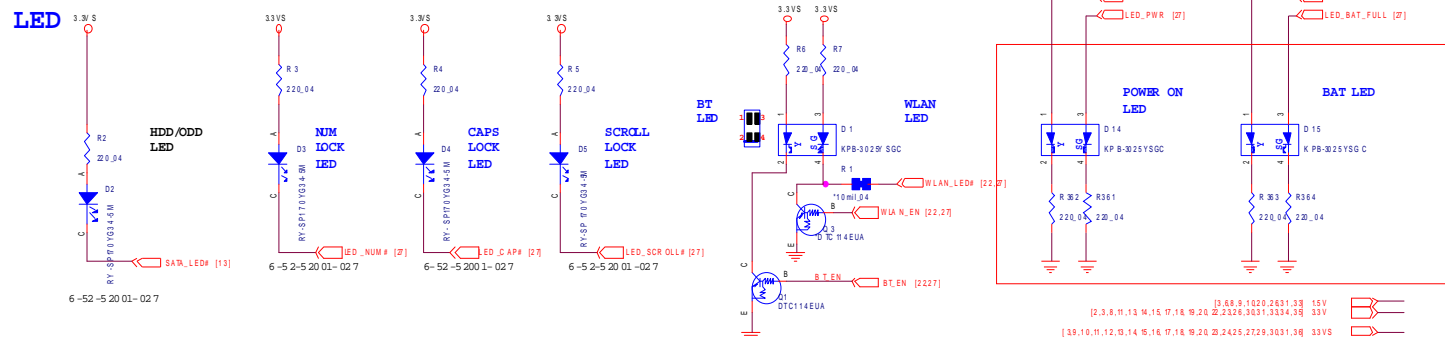
KBC-ITE IT8518

Sheet 27 of 43
KBC-ITE IT8518



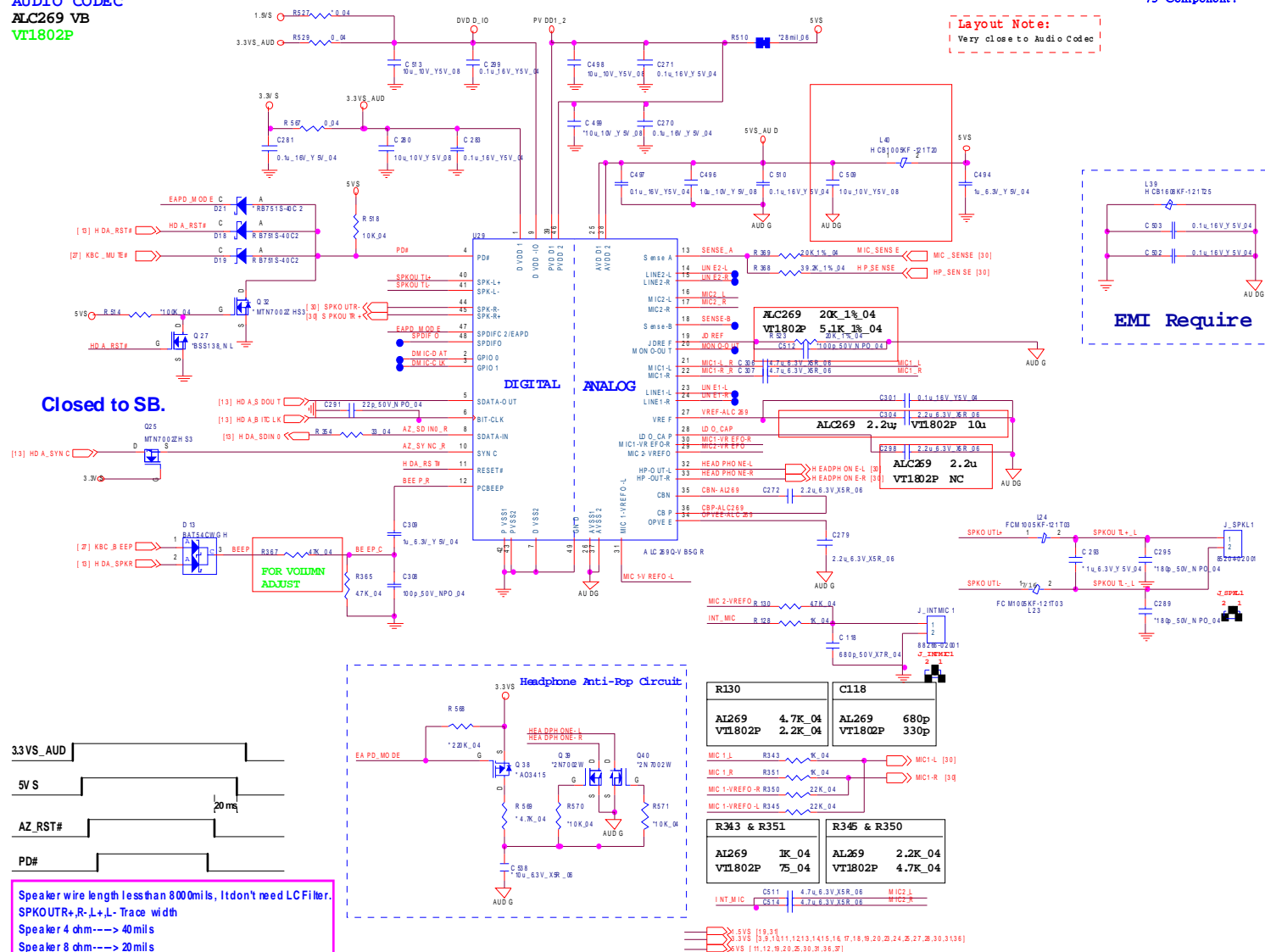


B.Schematic Diagrams

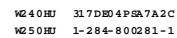


AUDIO CODEC
ALC269 VB
VT1802P

Layout Note:
Very close to Audio Codec



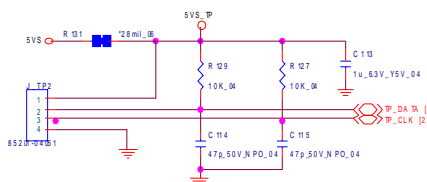
USB 2.0



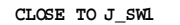
POWER SWITCH B'd CONN



CLICK B'd CONN



If system has AP ON function, uses J_SW1
If system has no AP ON function, uses J_SW2

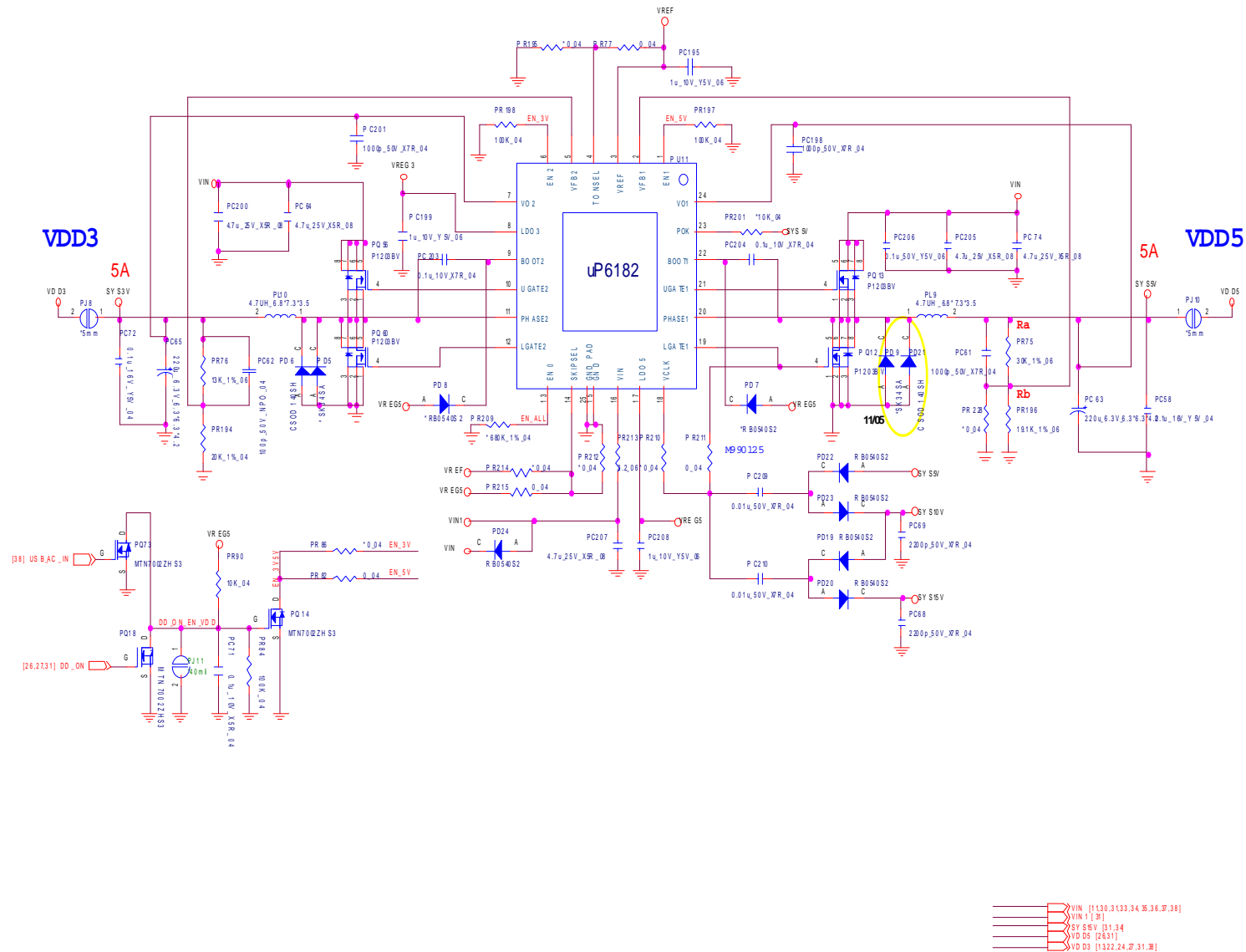


B.Schematic Diagrams

Sheet 31 of 43
5VS, 3VS, 1.05VS,
1.5VS CPU



VDD3, VDD5

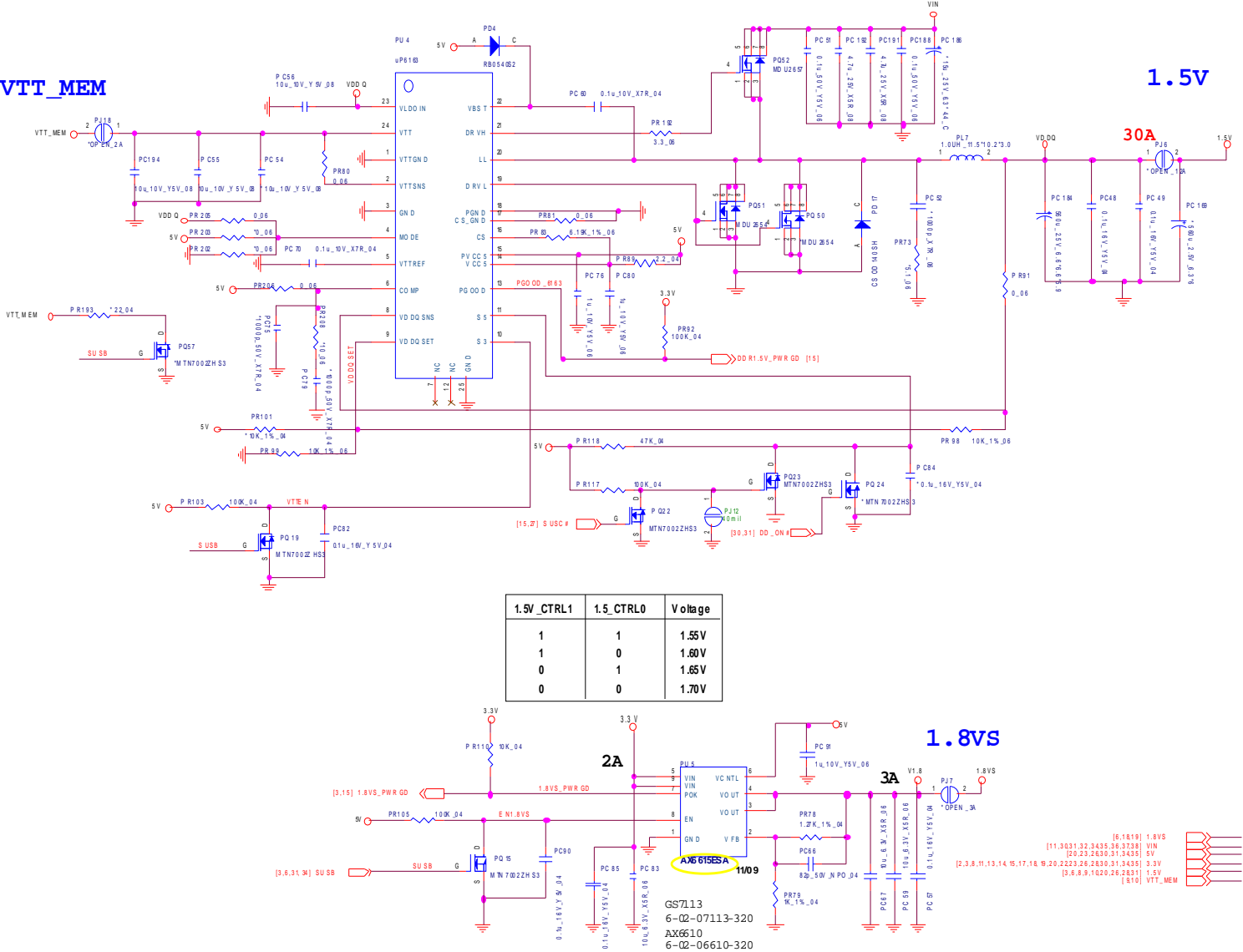


Sheet 32 of 43
VDD3, VDD5

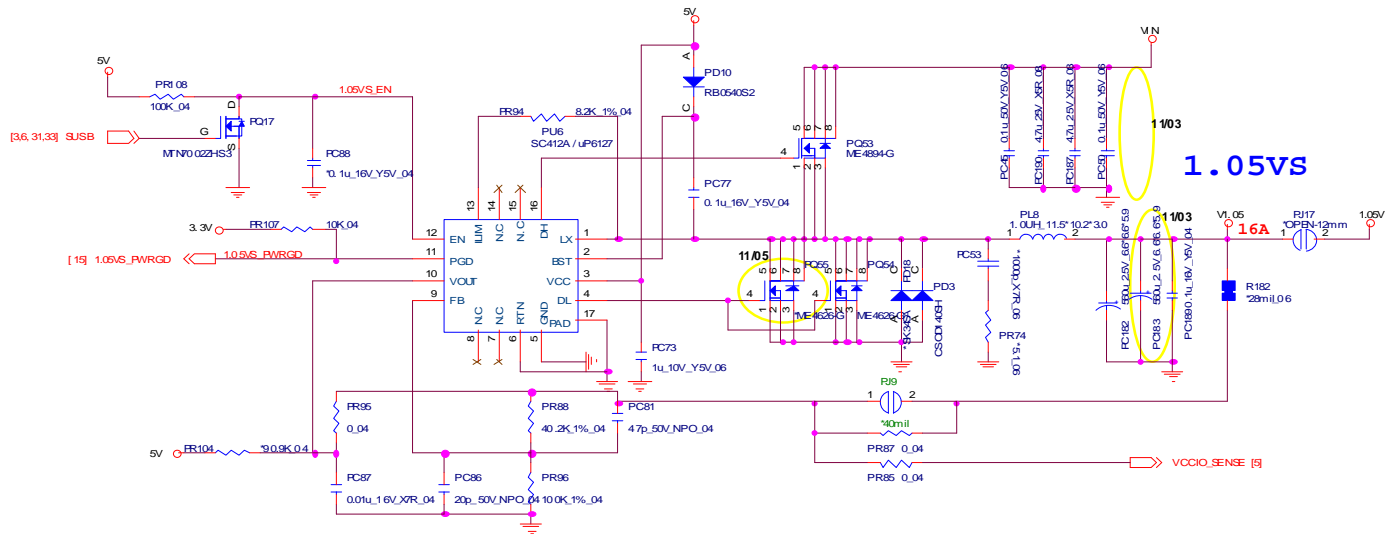
Schematic Diagrams

Power 1.5V/0.75V/1.8VS

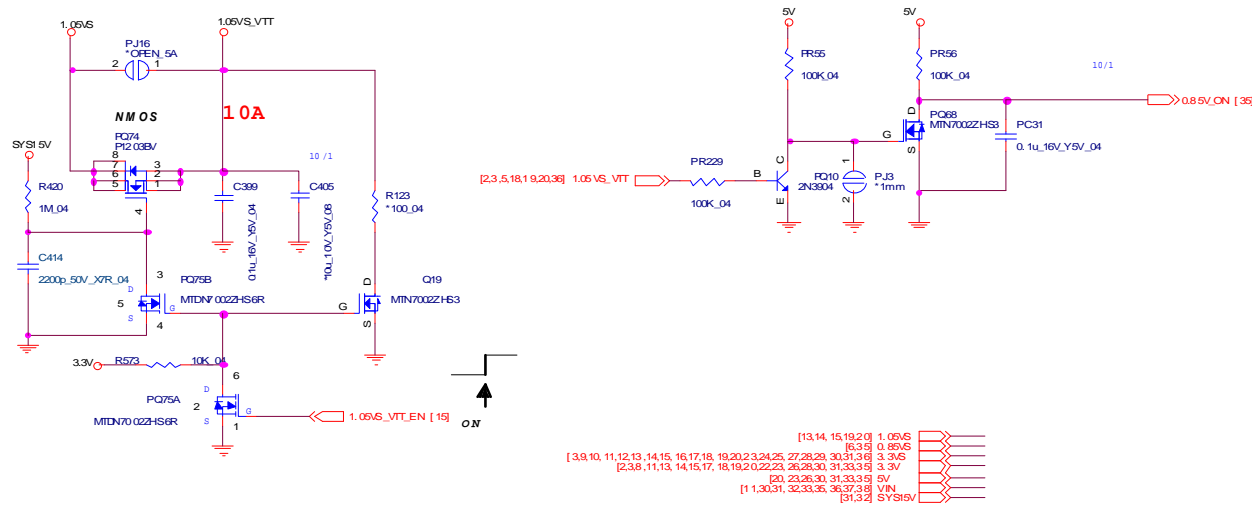
Sheet 33 of 43
Power 1.5V/0.75V/
1.8VS



Power 1.05VS



1.05VS_VTT

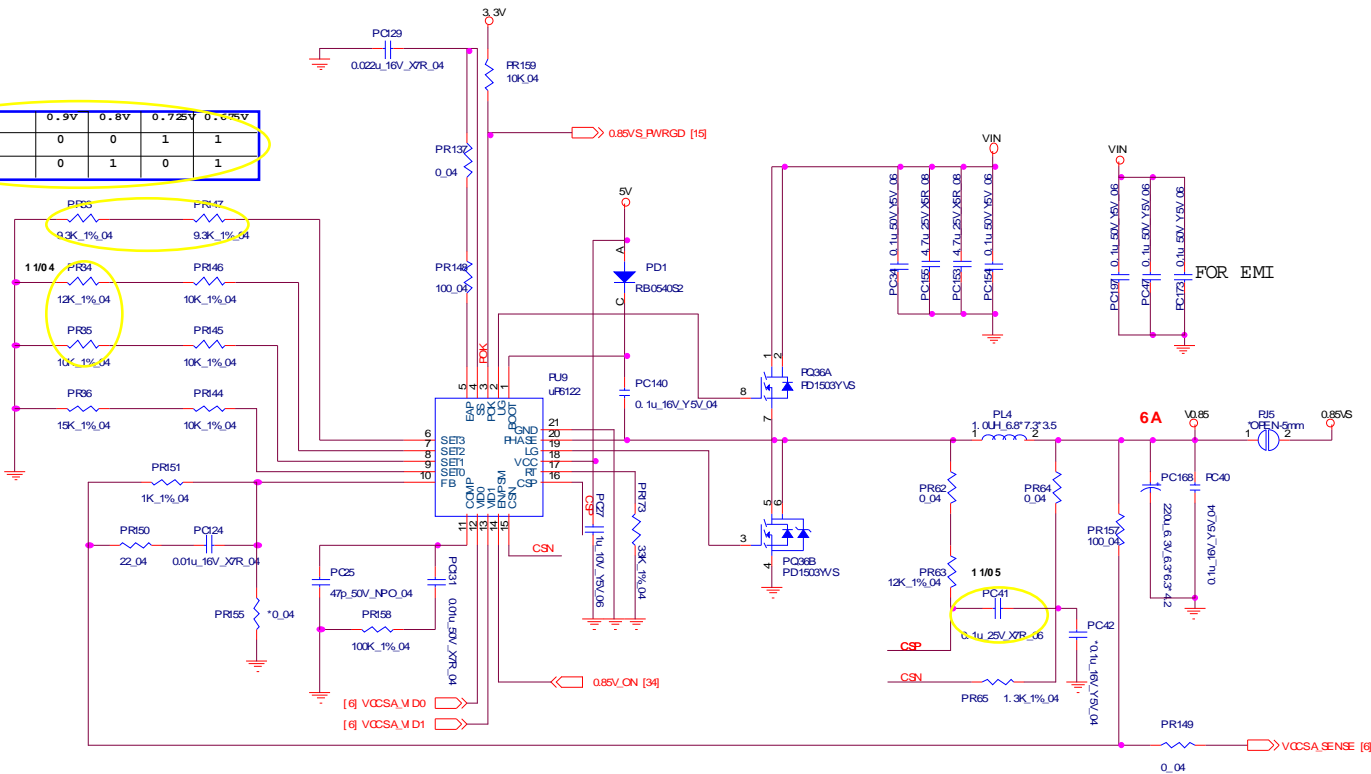


Schematic Diagrams

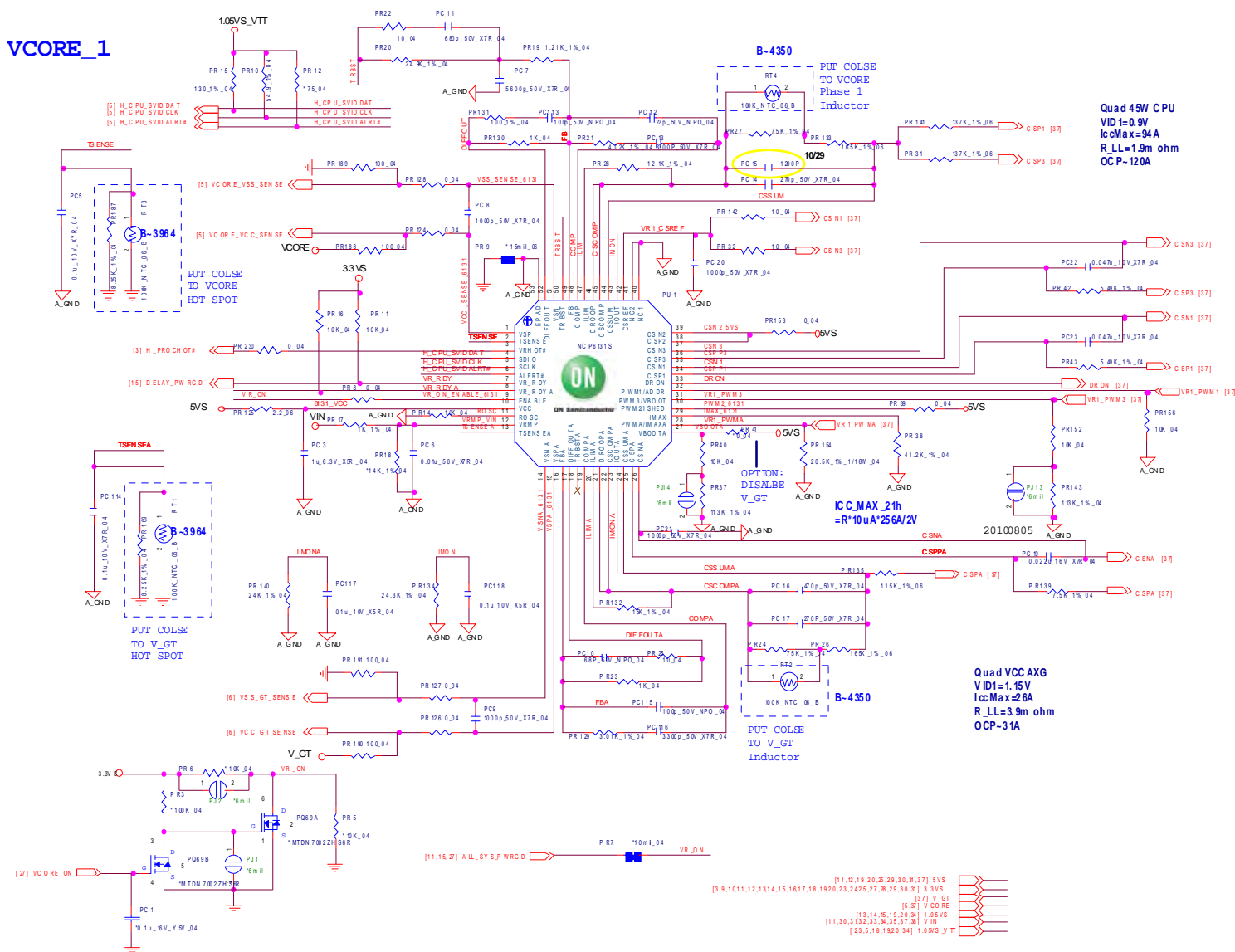
Power 0.85VS

Sheet 35 of 43
Power 0.85VS

	0.9V	0.8V	0.725V	0.645V
VCCSA_VIDD	0	0	1	1
VCCSA_VIDL	0	1	0	1



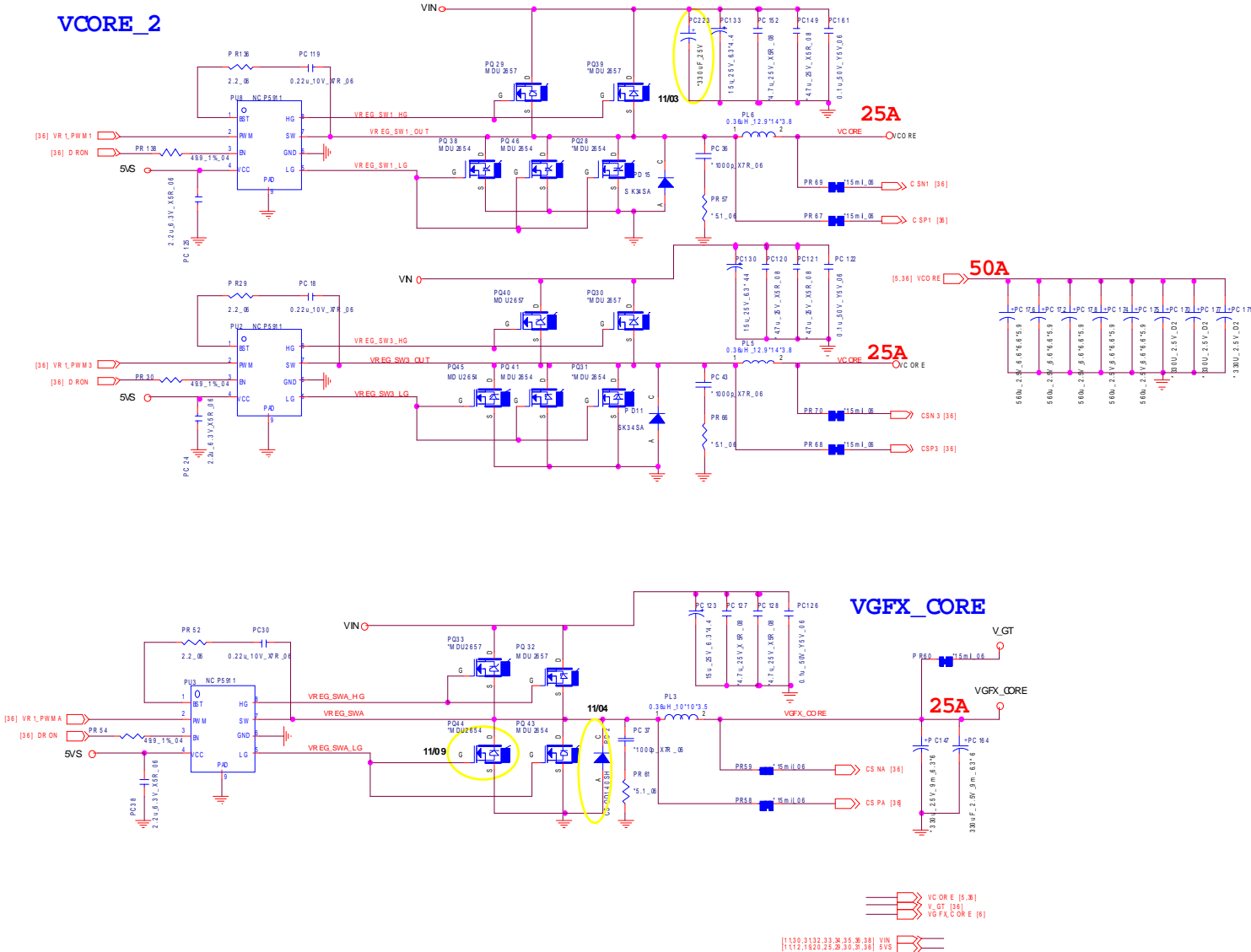
VCORE 1



Schematic Diagrams

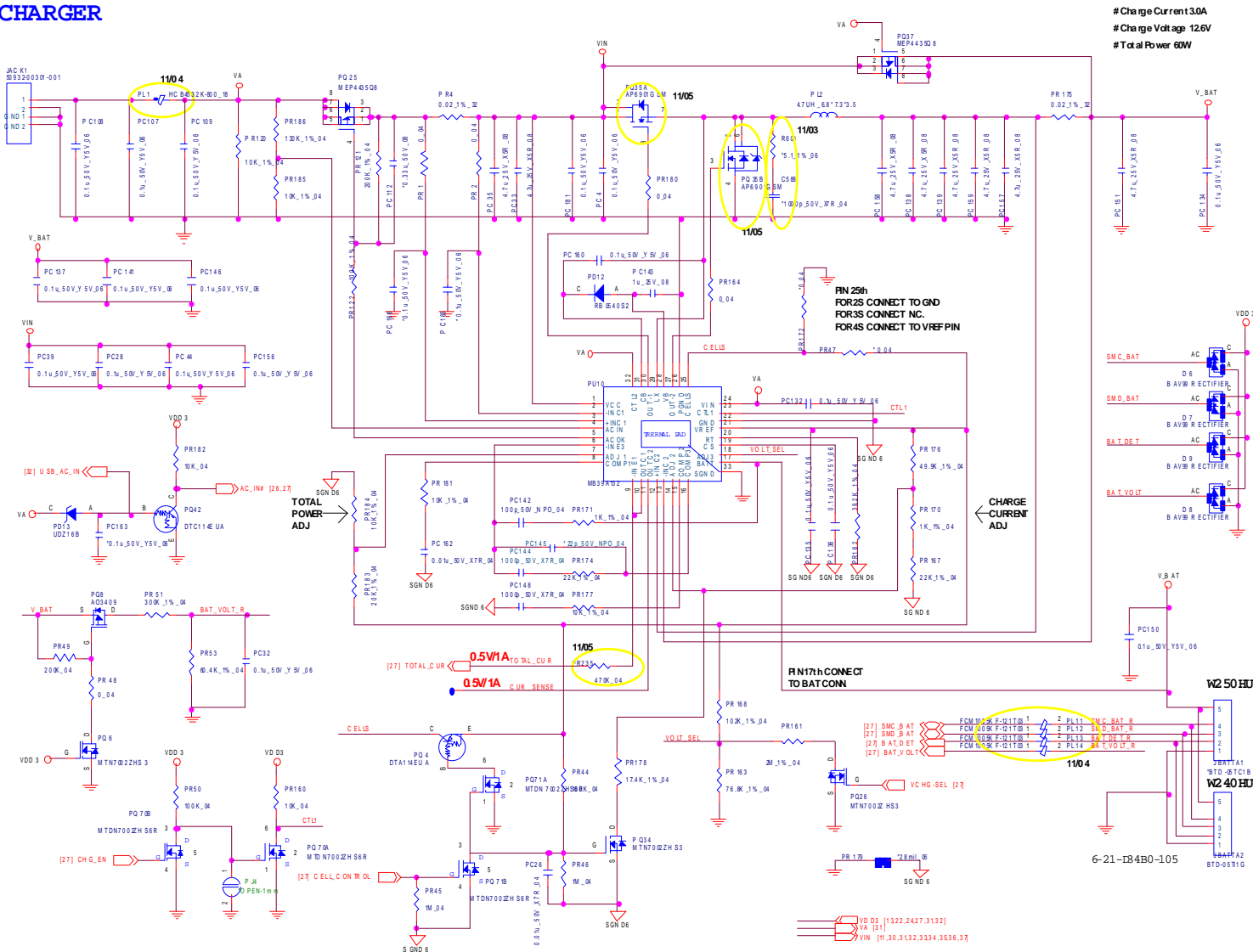
Power V-Core2

Sheet 37 of 43
Power V-Core2



Charger, DC In

CHARGER

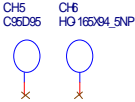
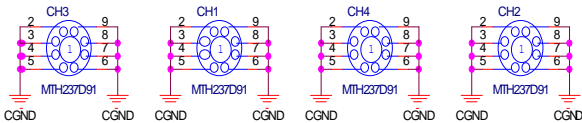
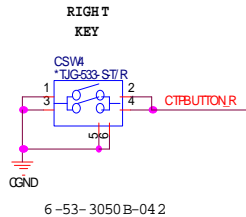
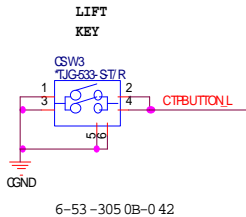
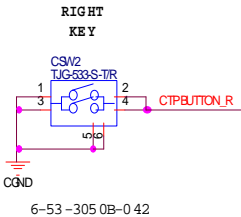
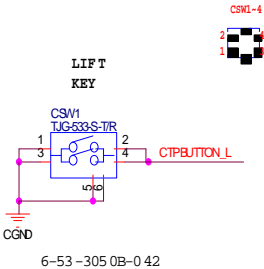
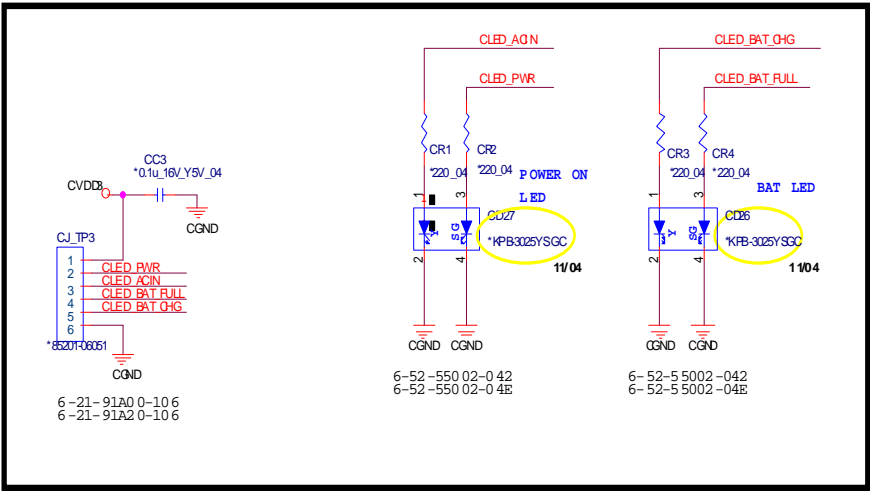
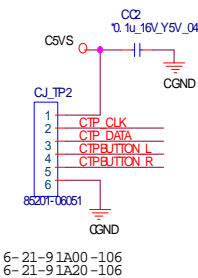
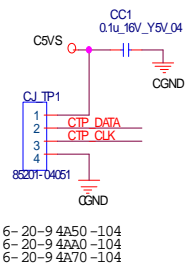


Schematic Diagrams

Click Board

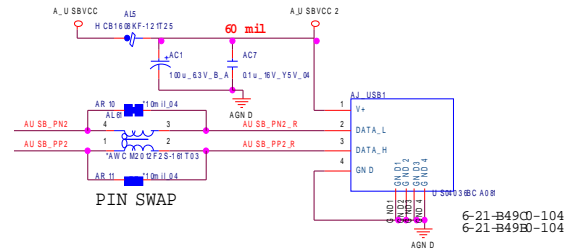
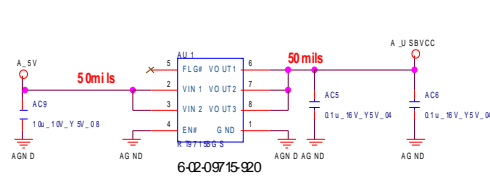
CLICK BOARD

Sheet 39 of 43
Click Board

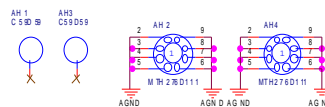
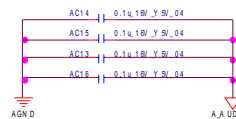
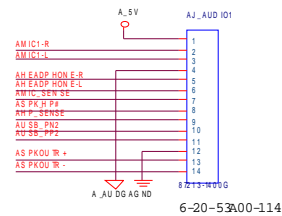


Audio Board/USB

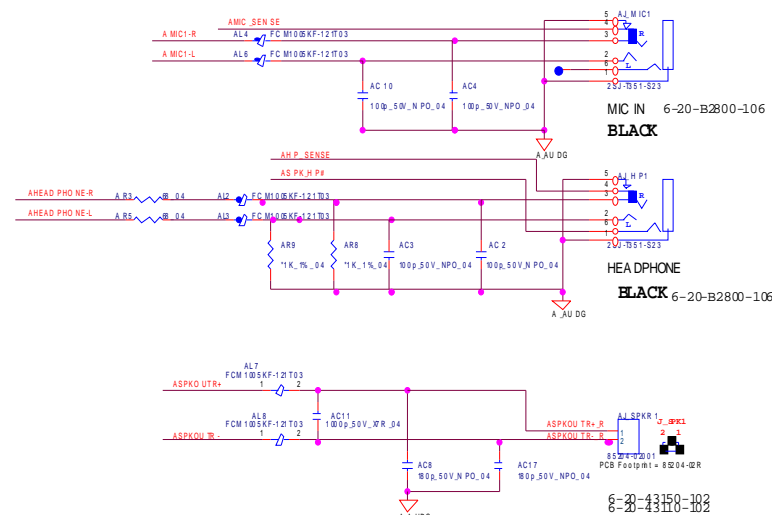
USB PORT



TO M/B



AUDIO JACK



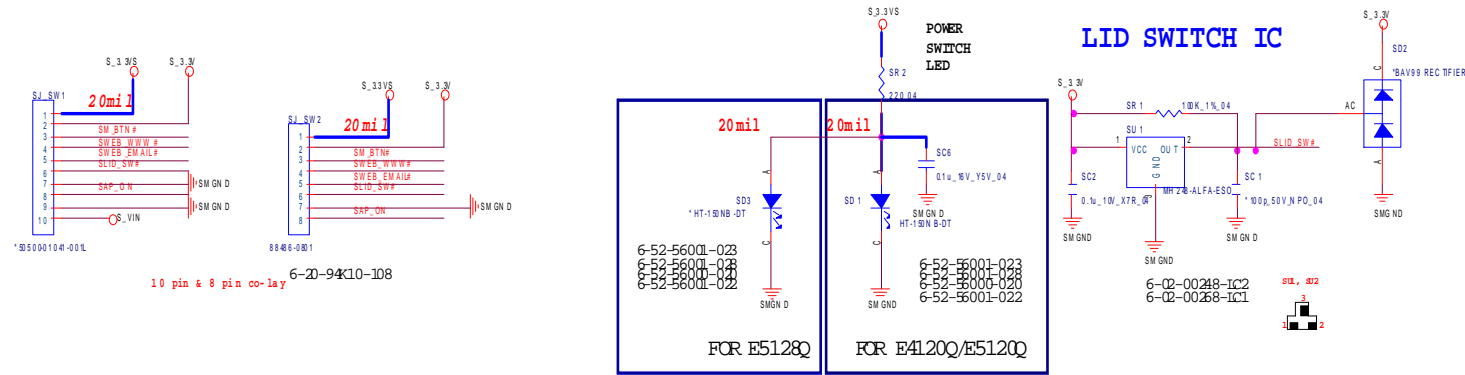
Sheet 40 of 43
Audio Board/USB

Schematic Diagrams

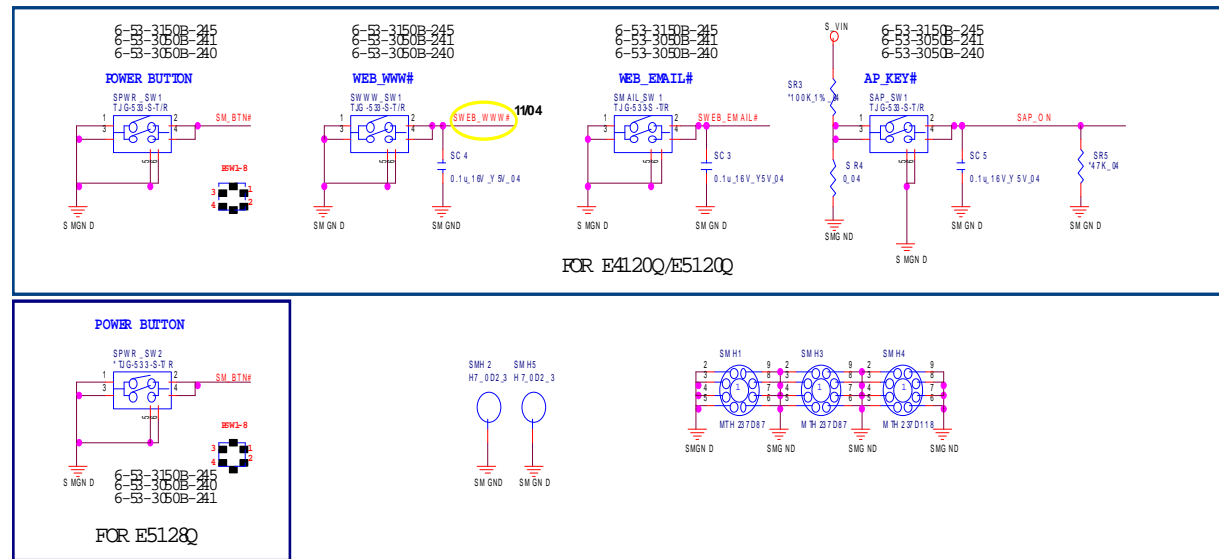
Power Switch & LID Board

POWER SW & LED & HOT KEY

Sheet 41 of 43
Power Switch & LID Board



HOT KEY



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 flashdrive 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 **F10** 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).

BIOS Update

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 **F9**) and select “**Yes**” to confirm the selection.
5. Press **F10** 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.