

SERVICE MANUAL

W251HPQ/W251HPQ-C/W251HNQ/W251HNQ-C/W255HP/W255HN/W258HPQ/W258HPQ-C/W258HNQ

notebook



Notebook Computer

**W251HPQ/W251HPQ-C/W251HNQ/W251HNQ-C/W255HP/
W255HN/W258HPQ/W258HPQ-C/W258HNQ**

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 **W251HPQ/W251HPQ-C/W251HNQ/W251HNQ-C/W255HP/W255HN/W258HPQ/W258HPQ-C/W258HNQ** 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, 474A (90W) 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.

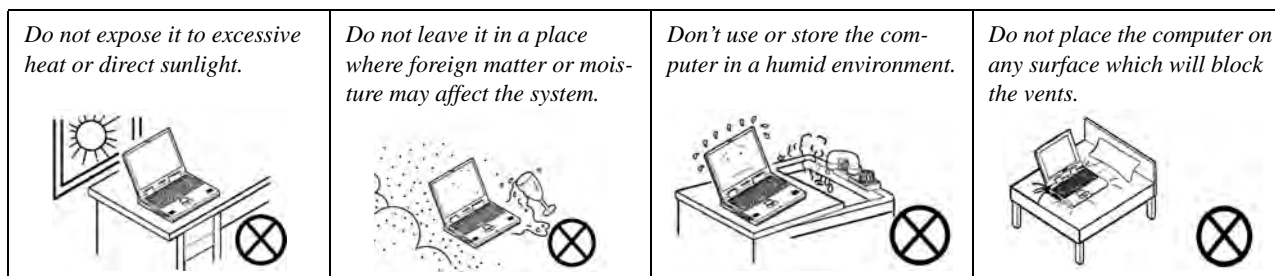
Instructions for Care and Operation

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

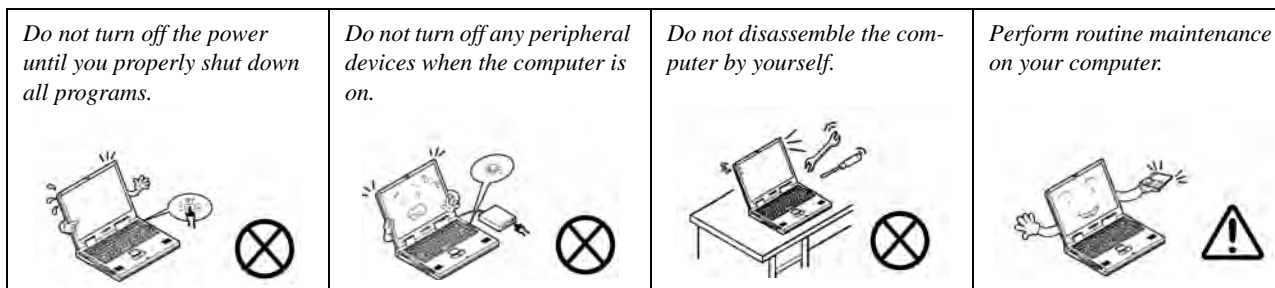
1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.



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.

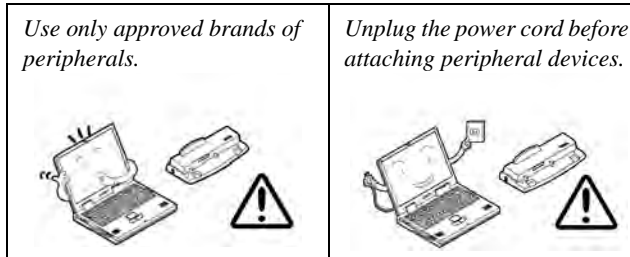


3. **Follow the proper working procedures for the computer.** Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.



Preface

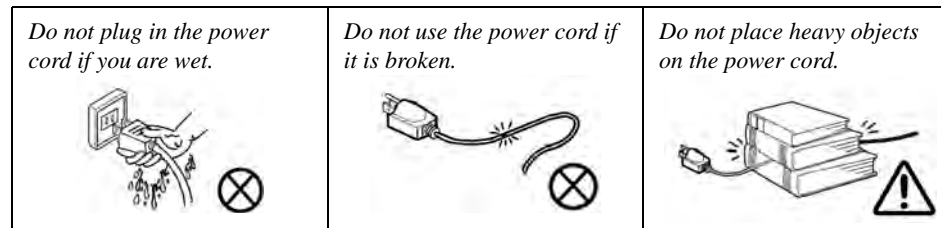
4. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
5. **Take care when using peripheral devices.**



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".

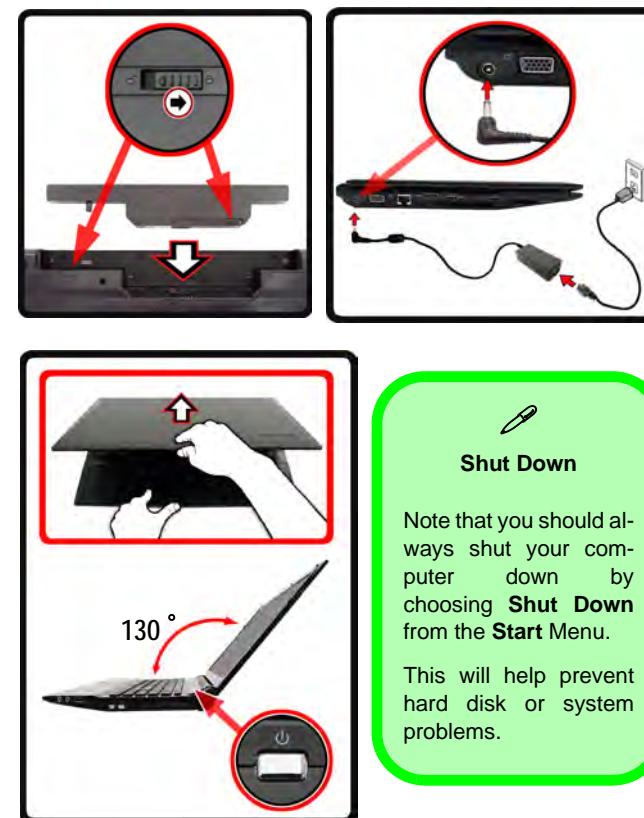


Figure 1
Opening the Lid/LCD/
Computer with AC/DC
Adapter Plugged-In

Contents

Introduction1-1

Overview	1-1
Specifications	1-2
External Locator - Top View with LCD Panel Open	1-4
External Locator - Front & Right Side Views	1-5
External Locator - Left Side & Rear View	1-6
External Locator - Bottom View	1-7
Mainboard Overview - Top (Key Parts)	1-8
Mainboard Overview - Bottom (Key Parts)	1-9
Mainboard Overview - Top (Connectors)	1-10
Mainboard Overview - Bottom (Connectors)	1-11

Disassembly2-1

Overview	2-1
Maintenance Tools	2-2
Connections	2-2
Maintenance Precautions	2-3
Disassembly Steps	2-4
Removing the Battery	2-5
Removing the Hard Disk Drive	2-6
Removing the Optical (CD/DVD) Device	2-8
Removing the System Memory (RAM)	2-9
Removing and Installing a Processor	2-11
Removing the 3.75G Module	2-14
Removing the Wireless LAN Module	2-15
Removing the Keyboard	2-16

Part ListsA-1

Part List Illustration Location	A-2
Top (W251HPQ,W251HNQ)	A-3
Top (W255HP,W255HN)	A-4

Top (W258HPQ,W258HNQ)	A-5
Bottom	A-6
SATA BLU RAY COMBO	A-7
DVD DUAL	A-8
LCD	A-9
.....	A-10

Schematic Diagrams.....B-1

System Block Diagram	B-2
Processor 1/7-DMI, FDI, PEG	B-3
Processor 2/7- CLK, MISC	B-4
Processor 3/7- (DDR3)	B-5
Processor 4/7- Power	B-6
Processor 5/7- GFX PWR	B-7
Processor 6/7- GND	B-8
Processor 7/7- RSVD	B-9
DDR3 SO-DIMM_0	B-10
DDR3 SO-DIMM_1	B-11
PANEL, INVERTER, CRT	B-12
VGA PCI-E Interface	B-13
VGA Frame Buffer Interface	B-14
VGA Frame Buffer A	B-15
VGA Frame Buffer C	B-16
VGA I/O	B-17
VGA NVVDD Cecoupling	B-18
PCH 1/9- RTC, HDA, SATA	B-19
PCH 2/9- PCIE, SMBUS, CLK	B-20
PCH 3/9- DMI, FDI, PWRGD	B-21
PCH 4/9- LVDS, DDI, CRT	B-22
PCH 4/9- OCI, USB, RSVD	B-23
PCH 6/9- GPIO, CPU	B-24

Preface

PCH 7/9- PWR	B-25
PCH 8/9 POWER	B-26
PCH 3/9- GRD	B-27
WLAN 3G MINI PCIE	B-28
CCD, TPM, MULTI CON	B-29
USB2.0, USB3.0 NEC	B-30
Card Reader (JMC251 C)	B-31
SATA ODD, LED, USB CHARGE	B-32
HDMI, RJ45	B-33
AUDIO CODEC ALC269	B-34
KBC-ITE IT8518E	B-35
5VS, 3VS, 3.3VM, 1.5VS CPU	B-36
VDD3, VDD5	B-37
Power 0.85VS, 1.8VS, PEX VDD	B-38
POWER 1.5V/1.05VS/0.75V	B-39
POWER VCORE1	B-40
POWER VCORE2	B-41
Power VGA NVVDD	B-42
AC IN, CHARGER	B-43
AUDIO BOARD	B-44
CLICK BOARD	B-45
W251HPQ POWER SW BOARD	B-46
W270HU BRIDGE ODD BOARD	B-47
W270HU POWER SW BOARD	B-48
Power Diagram	B-49
Power On SEQ	B-50

Updating the FLASH ROM BIOS..... C-1

To update the FLASH ROM BIOS you must: C-1

Download the BIOS	C-1
Unzip the downloaded files to a bootable CD/DVD/ or USB Flash drive	C-1


Set the computer to boot from the external drive	C-1
Use the flash tools to update the BIOS	C-2
Restart the computer (booting from the HDD)	C-2

Chapter 1: Introduction

Overview

This manual covers the information you need to service or upgrade the **W251HPQ/W251HPQ-C/W251HNQ/W251HNQ-C/W255HP/W255HN/W258HPQ/W258HPQ-C/W258HNQ** 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 **W251HPQ/W251HPQ-C/W251HNQ/W251HNQ-C/W255HP/W255HN/W258HPQ/W258HPQ-C/W258HNQ** 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

i7-2820QM (2.30GHz)

8MB L3 Cache, 32nm, DDR3-1600MHz, TDP 45W

i7-2720QM (2.20GHz)

6MB L3 Cache, 32nm, DDR3-1600MHz, TDP 45W

i7-2630QM (2.00GHz)

6MB L3 Cache, 32nm, DDR3-1333MHz, TDP 45W

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

BIOS

One 32Mb SPI Flash ROM

AMI BIOS

LCD

W251HNQ/W251HNQ-C/W255HN/W258HNQ

15.6" (39.62cm) HD/ HD+ FHD LCD

W251HPQ/W251HPQ-C/W255HP/W258HPQ/W258HPQ-C

15.6" (39.62cm) HD/ HD+ LCD

Video Adapter

W251HNQ/W251HNQ-C/W255HN/W258HNQ

Intel® GMA HD and NVIDIA® GeForce GT540M

Supports NVIDIA® Optimus Technology

Intel Integrated GPU (Intel® GMA HD):

Microsoft DirectX®10.1 Compatible

NVIDIA Discrete GPU (NVIDIA® GeForce GT540M):

2GB GDDR3 Video RAM

Microsoft DirectX®11 Compatible

W251HPQ/W251HPQ-C/W255HP/W258HPQ/W258HPQ-C

Intel® GMA HD and NVIDIA® GeForce GT 520M

Supports NVIDIA® Optimus Technology

Intel Integrated GPU (Intel® GMA HD):

Microsoft DirectX®10.1 Compatible

NVIDIA Discrete GPU (NVIDIA® GeForce GT520M):

1GB GDDR3 Video RAM

Microsoft DirectX®11 Compatible

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.)

Security

BIOS Password

Security (Kensington® Type) Lock Slot

Audio

High Definition Audio Compliant Interface
 THX TruStudio Pro
 2 * Built-In Speakers
 Built-In Microphone

Interface

One USB 2.0 Port
 Two USB 3.0 Ports
 One eSATA Port
 One HDMI-Out Port
 One Headphone-Out Jack
 One Microphone-In Jack
 One RJ-45 LAN Jack
 One External Monitor Port
 One DC-in Jack

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** (Serial) HDD

Communication

Built-In Gigabit Ethernet LAN
(Factory Option) 1.3M/2.0M Pixel USB PC Camera Module
(Factory Option) **3.75G/HSPA Mini-Card** Module

WLAN/ Bluetooth Half Mini-Card Modules:

(Factory Option) Intel® Centrino® Advanced-N 6230 Wireless LAN **(802.11a/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)** + Bluetooth **3.0**
(Factory Option) Third-Party Wireless LAN **(802.11b/g/n)**

Keyboard

Full-size "WinKey" keyboard (with numeric keypad)

Pointing Device

Built-in Touchpad (scrolling key functionality integrated)

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

Mini Card Slots

Slot 1 for **WLAN** Module or **WLAN and Bluetooth** Combo Module
(Factory Option) Slot 2 for **3.75G/HSPA** Module

Environmental Spec**Temperature**

Operating: 5°C - 35°C
 Non-Operating: -20°C - 60°C

Relative Humidity

Operating: 20% - 80%
 Non-Operating: 10% - 90%

Power

Full Range AC/DC Adapter
 AC Input: 100 - 240V, 50 - 60Hz
 DC Output: 19V, 4.74A **(90W)**

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

Dimensions & Weight

374mm (w) * 250mm (d) * 14.3 - 37.2mm (h)
 2.6kg with ODD & 48.84WH Battery

Introduction

Figure 1
Top View

1. PC Camera
(Optional)
2. LCD
3. Power Button
4. LED Status
Indicators
5. Keyboard
6. Built-In
Microphone
7. 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 Indicator

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

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 3.0 Ports
6. Vent
7. e-SATA Port
8. Multi-in-1 Card Reader

LEFT SIDE VIEW



Figure 5
Rear View

1. Security Lock Slot
2. Battery

REAR VIEW



External Locator - Bottom View

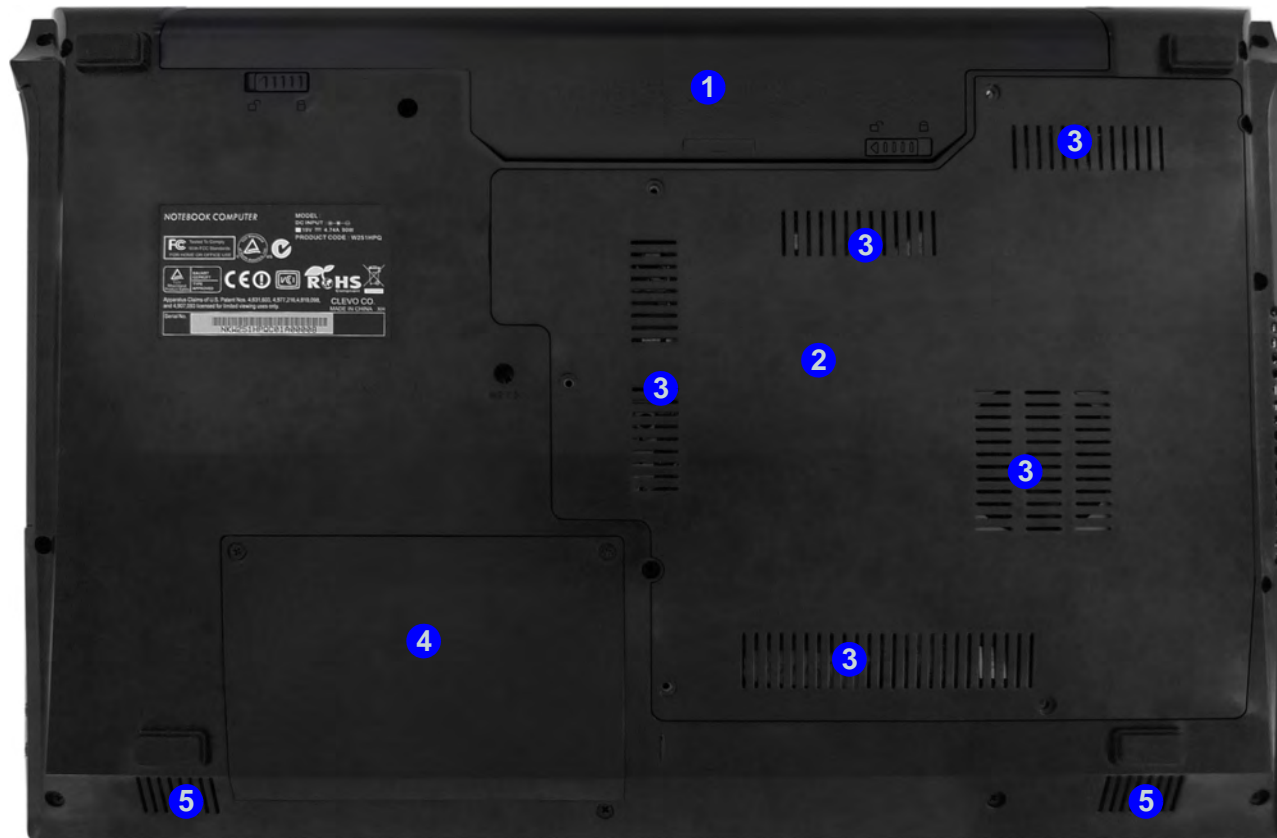


Figure 6
Bottom View

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



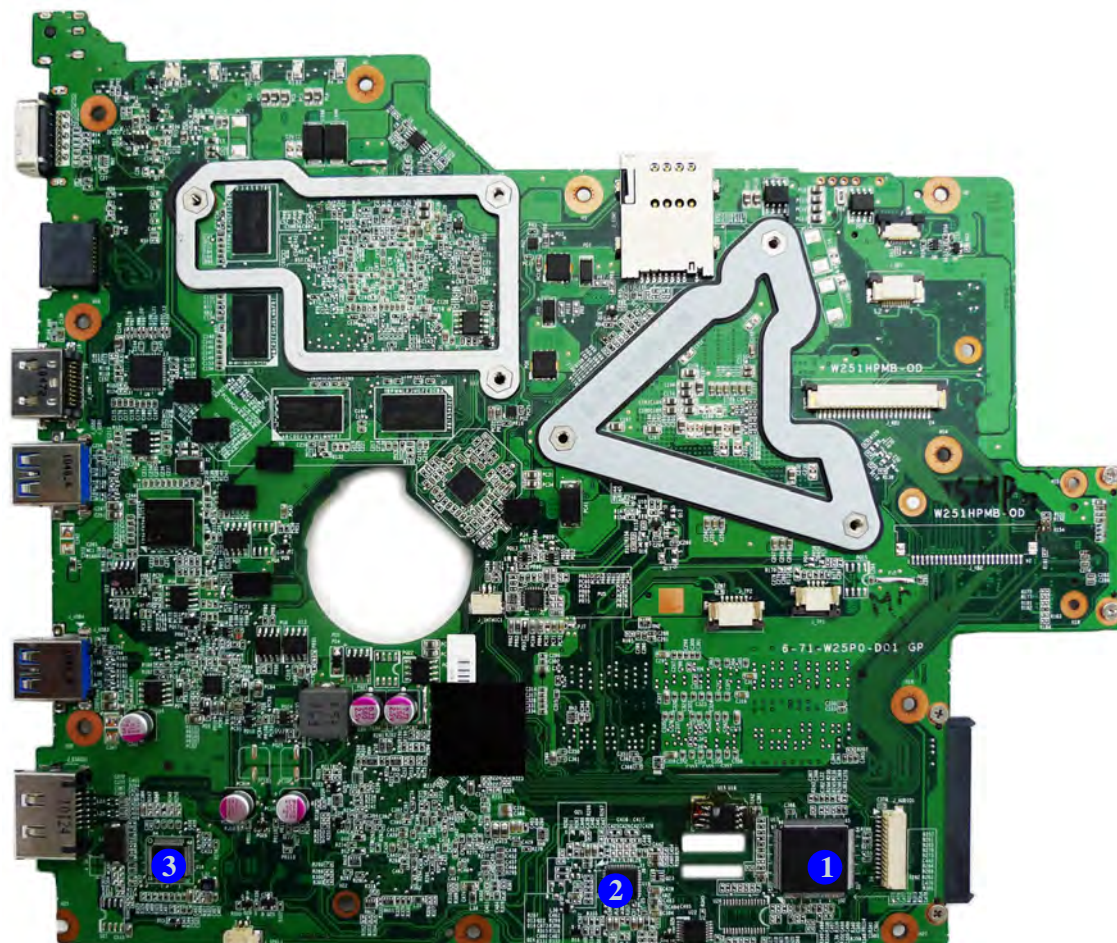
Overheating

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

Figure 7
**Mainboard Top
Key Parts**

1. KBC-ITE IT8518
2. Audio Codec
ALC269
3. JMICRO JMC251 C

Mainboard Overview - Top (Key Parts)



Mainboard Overview - Bottom (Key Parts)

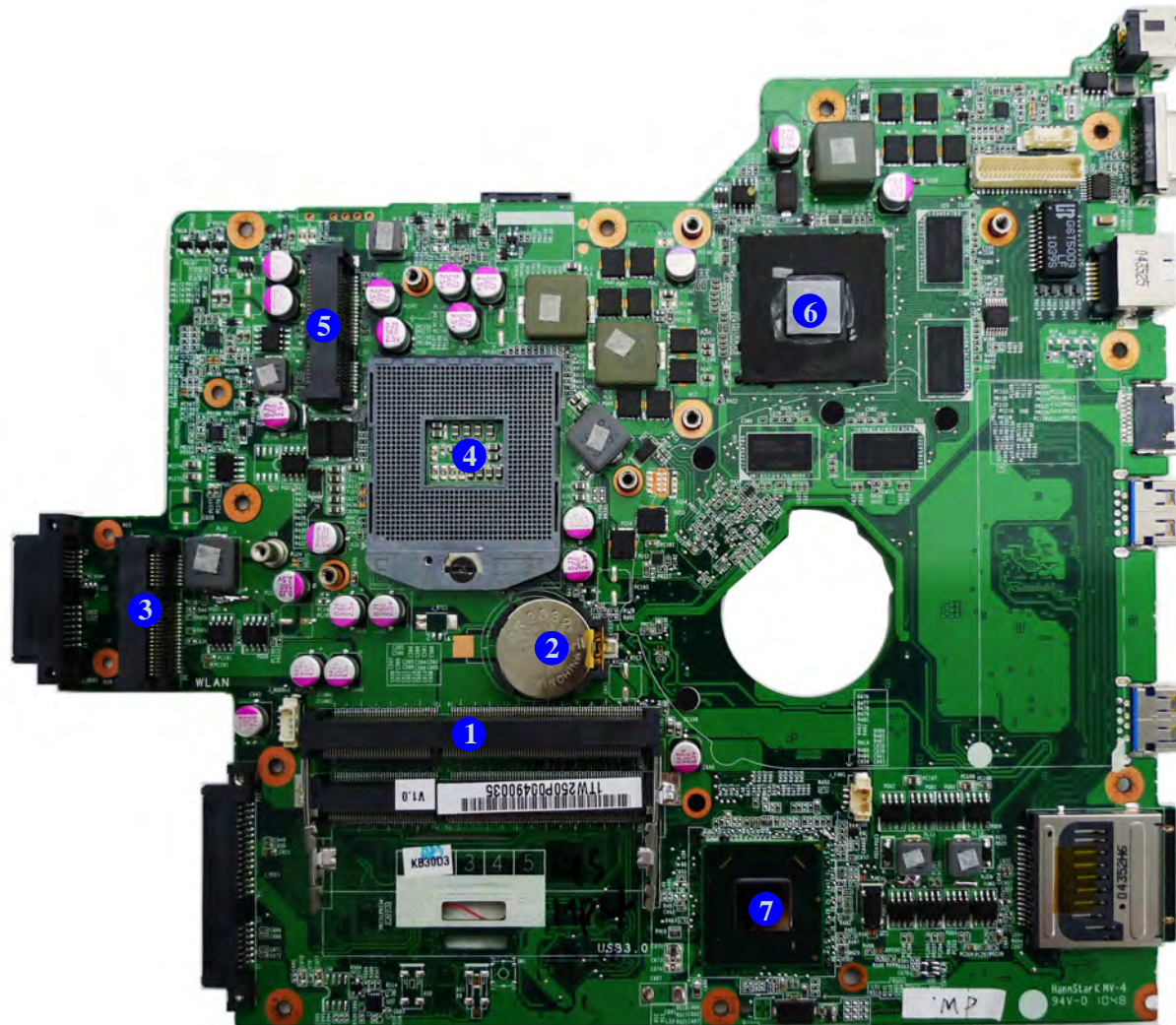


Figure 8
**Mainboard Bottom
Key Parts**

1. Memory Slots
DDR3 SO-DIMM
2. CMOS Battery
3. Mini-Card
Connector (WLAN
Module)
4. CPU Socket (no
CPU installed)
5. Mini-Card
Connector (3G
Module)
6. nVIDIA VGA
7. Platform Controller
Hub

Introduction

Figure 9
**Mainboard Top
Connectors**

1. HDMI-Out Port
2. USB Port 3.0
3. eSATA Port
4. Speaker Cable Connector
5. Microphone Cable Connector
6. Audio Board Connector
7. TouchPad Cable Connector 1
8. TouchPad Cable Connector 2
9. Keyboard Cable Connector
10. Switch Board Cable Connector
11. SIMLOCK

Mainboard Overview - Top (Connectors)

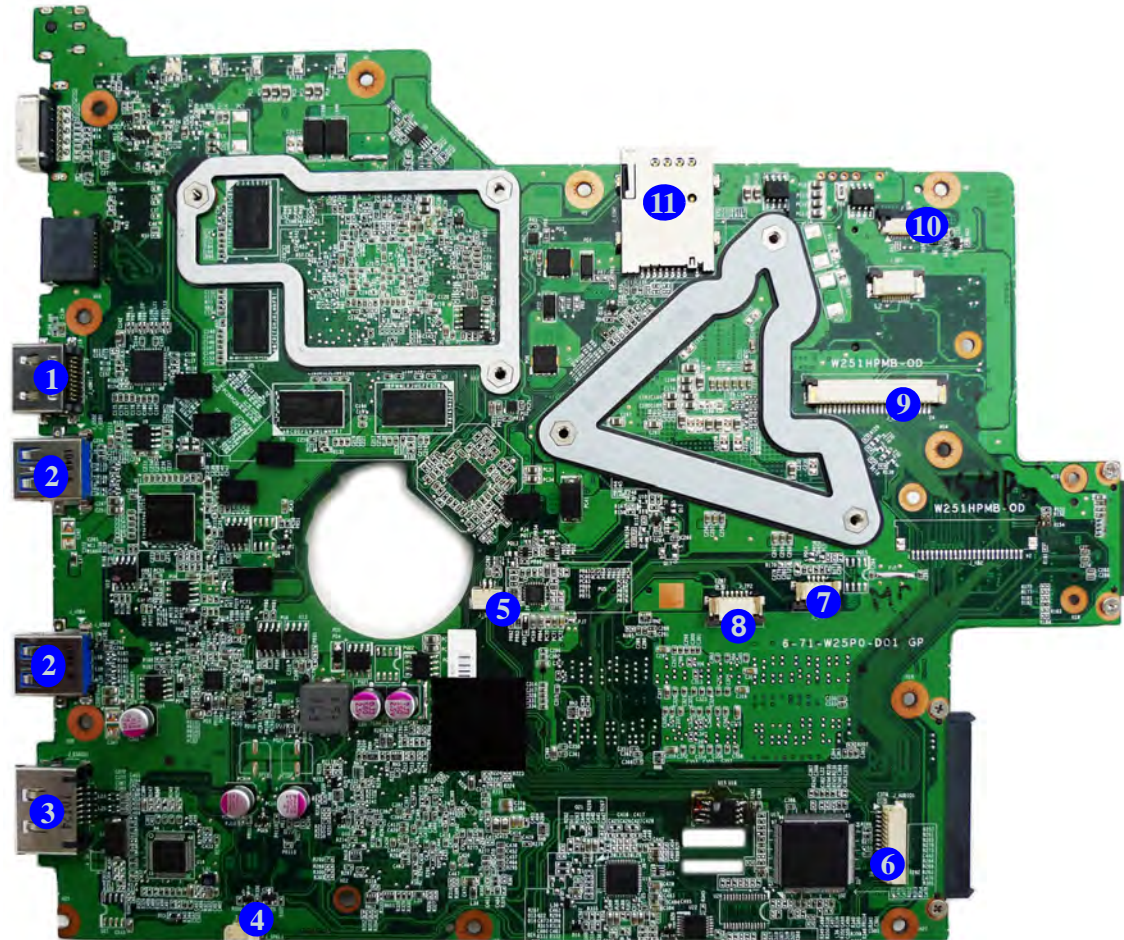
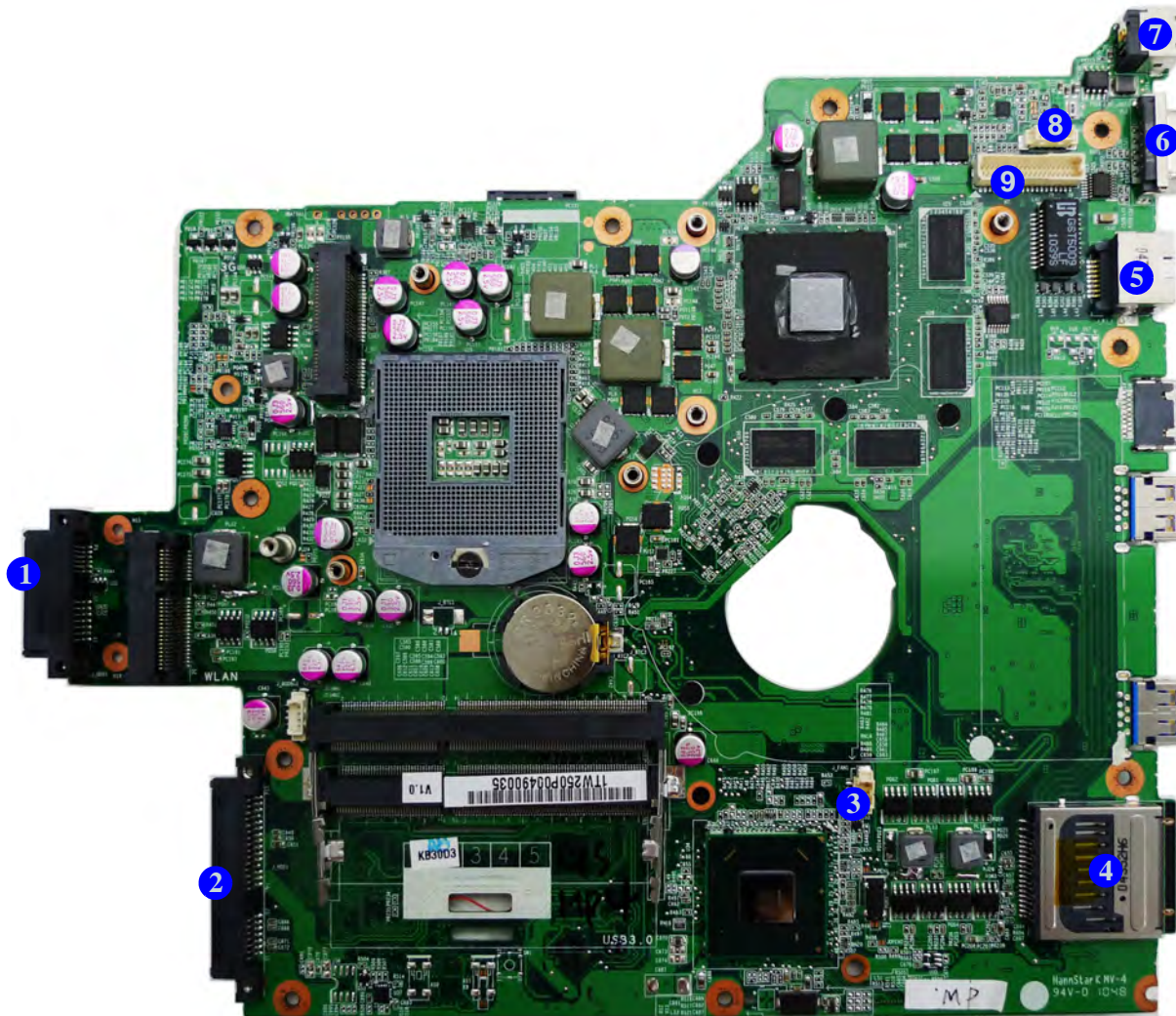


Figure 10
**Mainboard Bottom
Connectors**

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




Chapter 2: Disassembly

Overview

This chapter provides step-by-step instructions for disassembling the **W251HPQ/W251HPQ-C/W251HNQ/W251HNQ-C/W255HP/W255HN/W258HPQ/W258HPQ-C/W258HNQ** 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](#)

To remove the System Memory:

1. Remove the battery [page 2 - 5](#)
2. Remove the system memory [page 2 - 9](#)

To remove and install a Processor:

1. Remove the battery [page 2 - 5](#)
2. Remove the processor [page 2 - 11](#)
3. Install the processor [page 2 - 13](#)

To remove the 3.75G Module:

1. Remove the battery [page 2 - 5](#)
2. Remove the 3.75G module [page 2 - 14](#)

To remove the Wireless LAN Module:

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

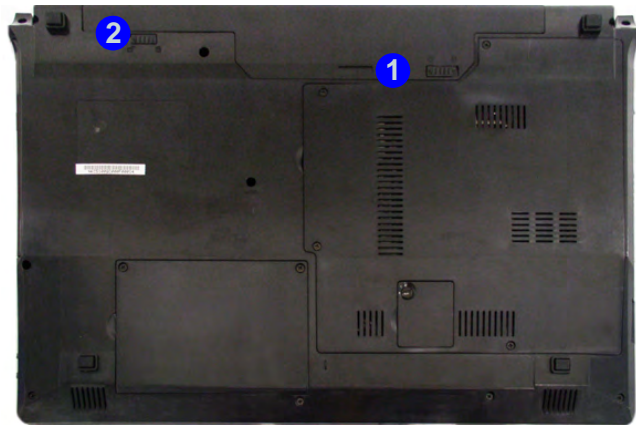
To remove the Keyboard:

1. Remove the battery [page 2 - 5](#)
2. Remove the keyboard [page 2 - 16](#)

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*).

a.



b.

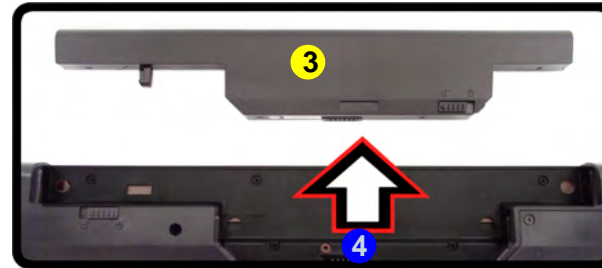


Figure 1
Battery Removal

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



3. Battery

Disassembly

Figure 2
**HDD Assembly
Removal**

Removing the Hard Disk Drive

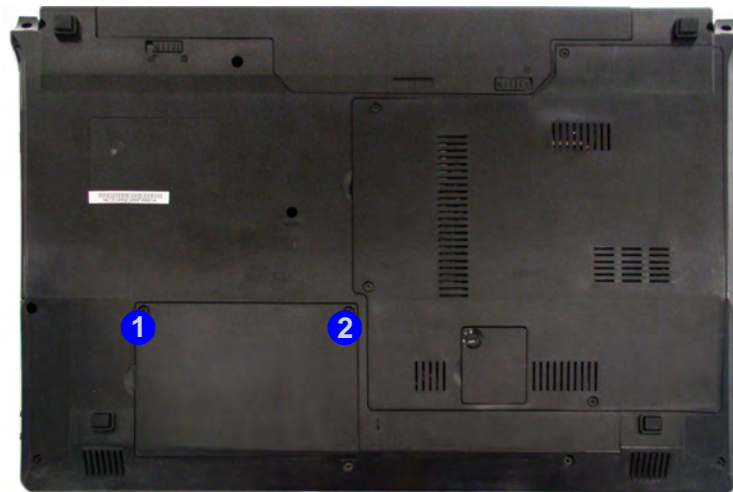
The hard disk drive can be taken out to accommodate other 2.5" serial (SATA) hard disk drives with a height of 9.5mm (h). Follow your operating system's installation instructions, and install all necessary drivers and utilities (as outlined in **Chapter 4 of the User's Manual**) when setting up a new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

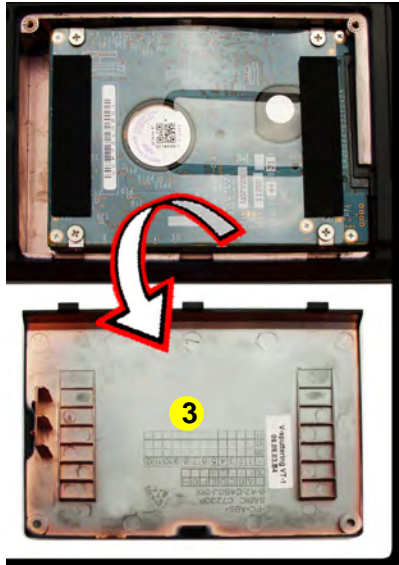
You have backed up any data you want to keep from your old HDD.

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

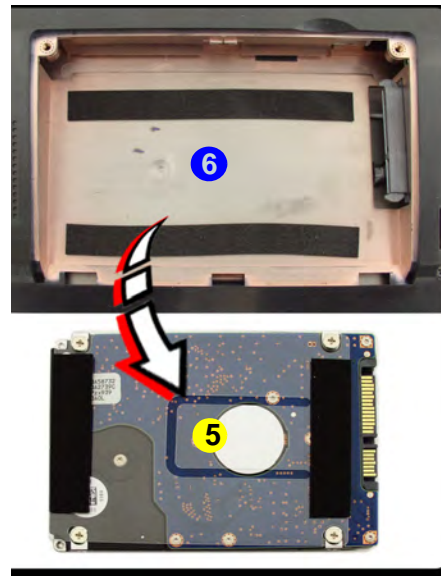
If you have access to the internet, download the latest application and hardware driver updates for the operating system you plan to install. Copy these to a removable medium.

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 assembly **5** out of the bay **6** (*Figure 3d*).
6. Remove the screw **7** - **10** and the mylar cover **11** from the hard disk **12** (*Figure 3e*).
7. Reverse the process to install a new hard disk (do not forget to replace all the screws and covers).

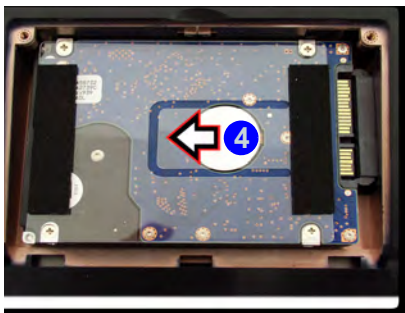
b.



d.



c.



e.

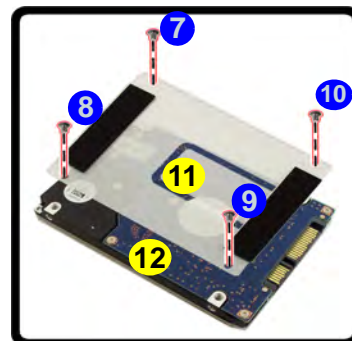


Figure 3
**HDD Assembly
Removal (cont'd.)**

- 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 mylar cover.



- 3. HDD Bay Cover
- 5. HDD Assembly
- 11. Mylar Cover
- 12. HDD

- 4 Screws

Disassembly

Figure 4
**Optical Device
Removal**

- Remove the screw at point ①.
- Use a screwdriver to carefully push out the optical device at point ②.

Removing the Optical (CD/DVD) Device

- Turn **off** the computer, remove the battery ([page 2 - 5](#)) and hard disk ([page 2 - 6](#)).
- Remove the screw at point ① ([Figure 4a](#)).
- Use a screwdriver to carefully push out the optical device ③ at point ② ([Figure 4b](#)).
- 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).
- Restart the computer to allow it to automatically detect the new device.

a.



b.



3. Optical Device

- 1 Screw

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 5a](#)).
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 **5**, and remove the cover ([Figure 5b](#)).
5. The RAM modules will be visible at point **6** on the mainboard.

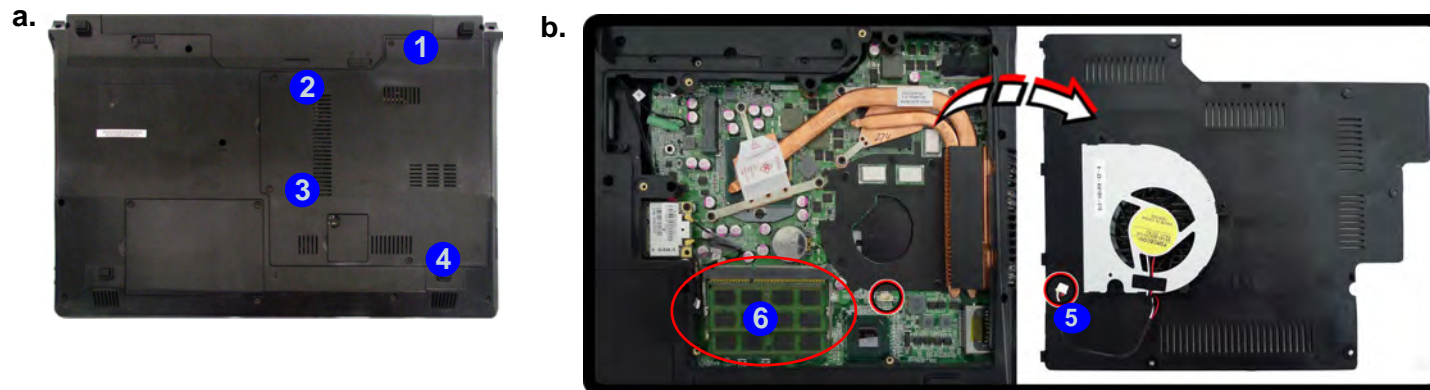


Figure 5
RAM Module Removal

- Remove the screws from the component bay cover.
- The RAM modules will be visible at point **5** on the mainboard.
- 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 Screws

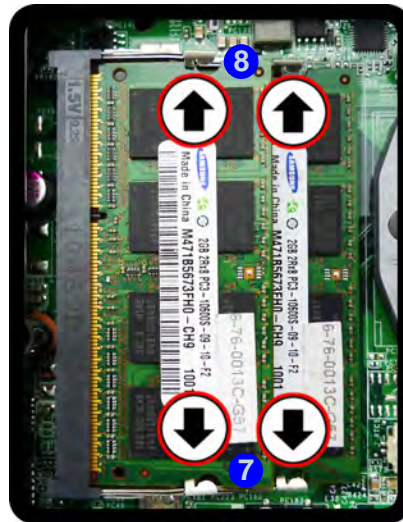
Disassembly

Figure 6
**RAM Module
Removal (cont'd)**

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

6. Gently pull the two release latches (7 & 8) on the sides of the memory socket in the direction indicated by the arrows (*Figure 5c*). The RAM module 9 will pop-up (*Figure 5d*), and you can then remove it.
7. Pull the latches to release the second module if necessary.
8. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
9. 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.
10. Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
11. Replace the component bay cover and the screws (see [page 2 - 9](#)).
12. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.

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.



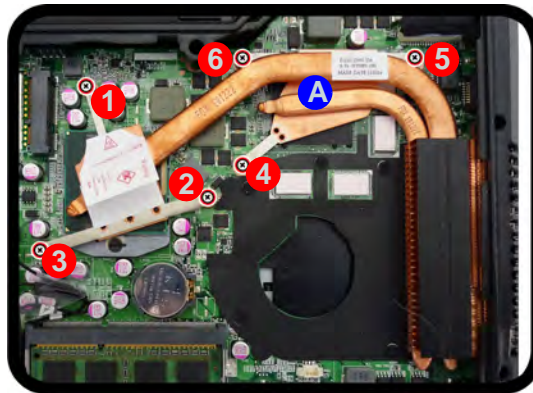
- 9 RAM

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 7a](#)).
3. Loosen the CPU heat sink screws in the order **6**, **5**, **4**, **3**, **2** & **1** (the reverse order as indicated on the label [Figure 7a](#)).
4. Grip the heat sink tab and carefully lift the heat sink **7** up and off the computer ([Figure 7b](#)).

a.



b.

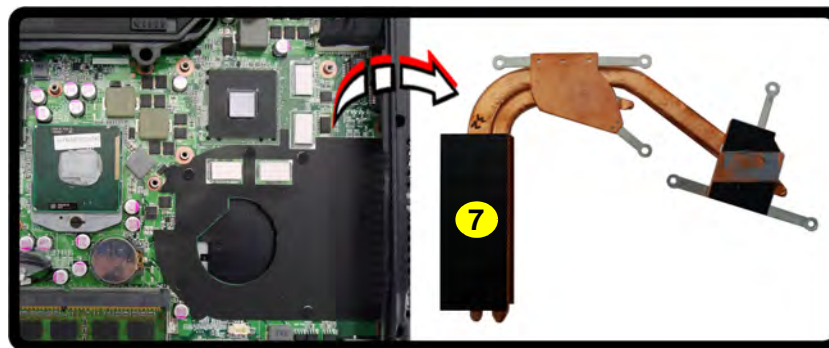


Figure 7
Processor Removal

- 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.




7. Heat Sink

- 6 Screws

Disassembly

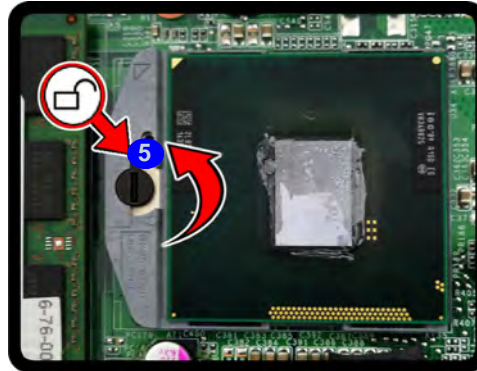
Figure 8
Processor Removal
(cont'd)

5. Turn the release latch **5** towards the unlock symbol  to release the CPU (*Figure 8d*).
6. Carefully (it may be hot) lift the CPU **6** up and out of the socket (*Figure 8e*).
7. Reverse the process to install a new CPU.
8. When re-inserting the CPU, pay careful attention to the pin alignment, it will fit only one way (DO NOT FORCE IT!).

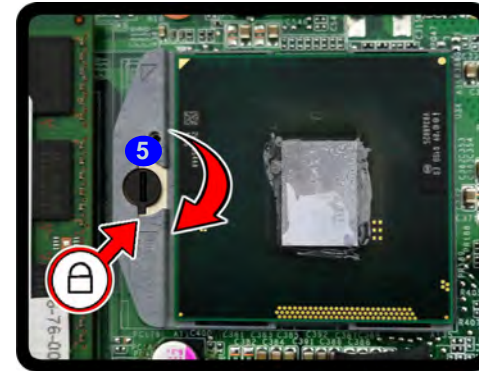
c. Turn the release latch to unlock the CPU.

d. Lift the CPU out of the socket.

c.

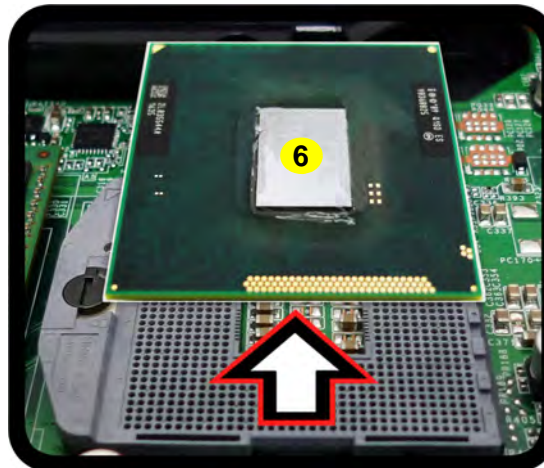


Unlock



Lock

d.




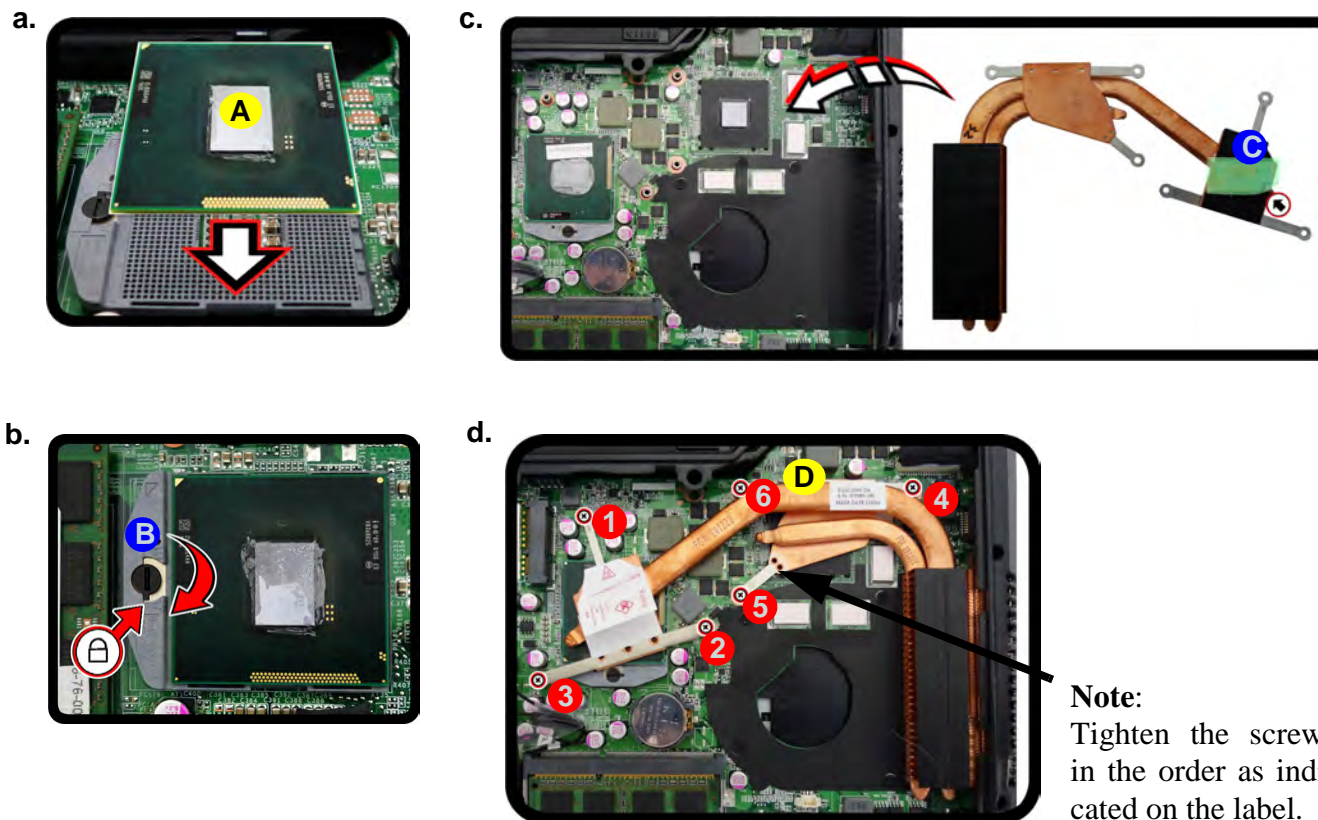
Caution

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

Processor Installation Procedure

1. Insert the CPU **A** (**Figure 9a**), 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 9b**).
2. **Remove the sticker** **C** (**Figure 9c**) from the heat sink.
3. Insert the heat sink **D** as indicated in **Figure 9d**.
4. Tighten the CPU heat sink screws in the order **1**, **2**, **3**, **4**, **5** & **3** (the order as indicated on the label and **Figure 9d**).
5. 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 indi-
cated on the label.

- A. CPU
D. Heat Sink
- 3 Screws

Figure 9
**Processor
Installation**

- a. Insert the CPU.
- b. Turn the release latch to-
wards the lock symbol.
- c. Remove the sticker from
the heat sink and insert
the heat sink.
- d. Tighten the screws.

Disassembly

Figure 10
3G Module Removal

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

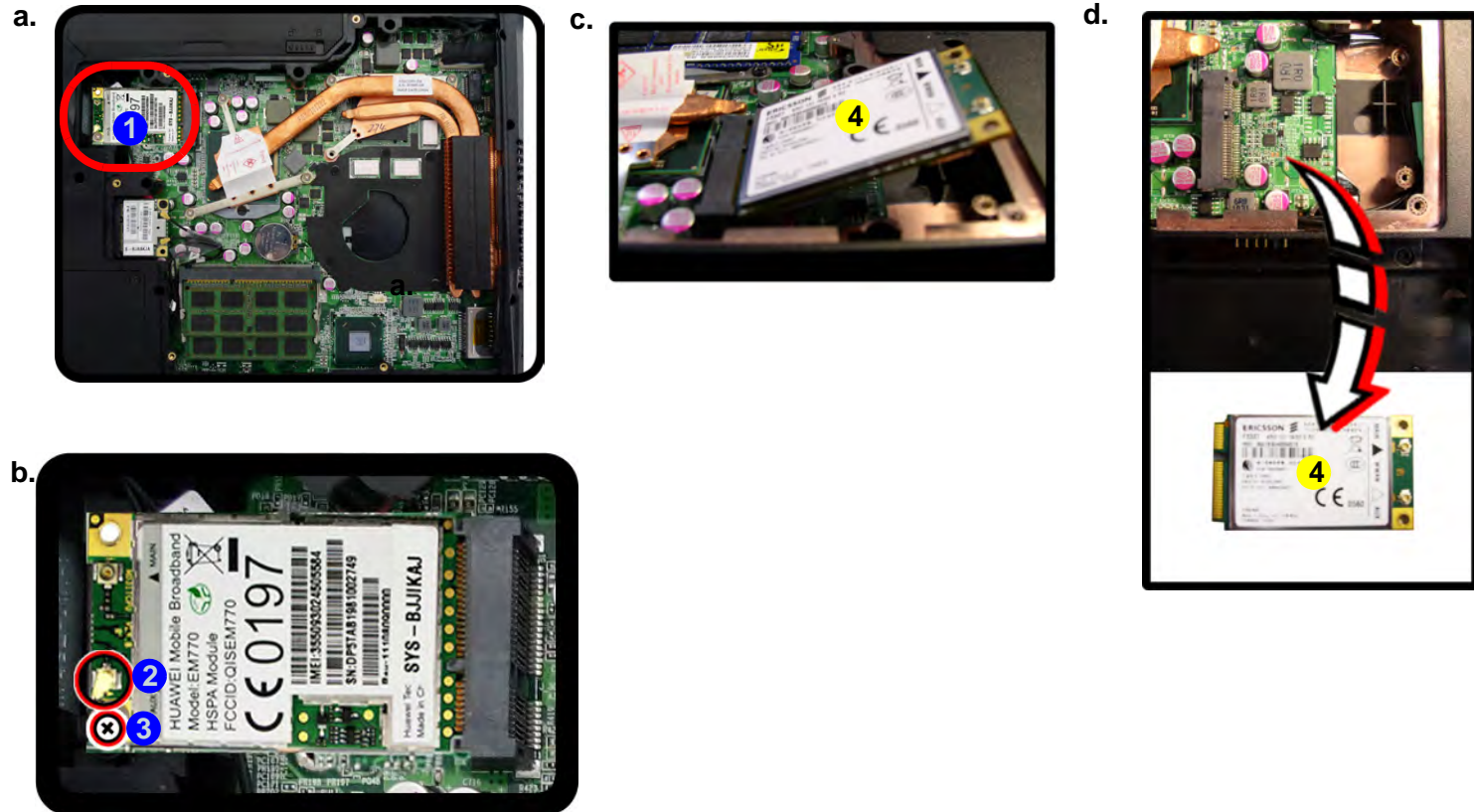
Note: Make sure you reconnect the antenna cable to socket.

4. 3.75G Module

- 1 Screw

Removing the 3.75G Module

- Turn **off** the computer, turn it over, and remove the battery ([page 2 - 5](#)) and the component bay cover ([page 2 - 9](#)).
- The 3.75G module will be visible at point **1** on the mainboard ([Figure 10a](#)).
- Carefully disconnect the cable **2**, and then remove the screw **3** ([Figure 10b](#)).
- The 3.75G module **4** ([Figure 10c](#)) will pop-up, and you can remove it from the computer ([Figure 10d](#)).



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 cables **2** - **3**, and then remove the screw **4** ([Figure 11b](#)).
4. The Wireless LAN module **4** ([Figure 11c](#)) will pop-up, and you can remove it from the computer.

a.



c.



b.



Figure 11
**Wireless LAN
Module Removal**

- a. Locate the WLAN.
- b. Disconnect the cable and remove the screw.
- c. The WLAN module will pop up.

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



4. Wireless LAN Module

- 2 Screw

Disassembly

Figure 12
Keyboard Removal

- a. Remove screws from the bottom of the computer. Press at points 5 to un-snap the LED cover module 6.
 - b. Remove the LED cover module and screws from the keyboard.
 - c. Carefully lift the keyboard up and disconnect the keyboard ribbon cable from the locking collar socket.
 - d. Remove the keyboard.
1. Turn **off** the computer, and remove the battery ([page 2 - 5](#)).
 2. Remove screws 1 - 4 from the bottom of the computer. Press at points 5 to un-snap the LED cover module 6 (you may need to use the Eject Pin Tool to do this ([Figure 12a](#))).
 3. Remove the LED cover module 6 and screws 7 - 11 from the keyboard ([Figure 12b](#)).
 4. Carefully lift the keyboard up, being careful not to bend the keyboard ribbon cable 12. Disconnect the keyboard ribbon cable 12 from the locking collar socket 13 ([Figure 12c](#)).
 5. Carefully lift up the keyboard 14 ([Figure 12d](#)) off the computer.

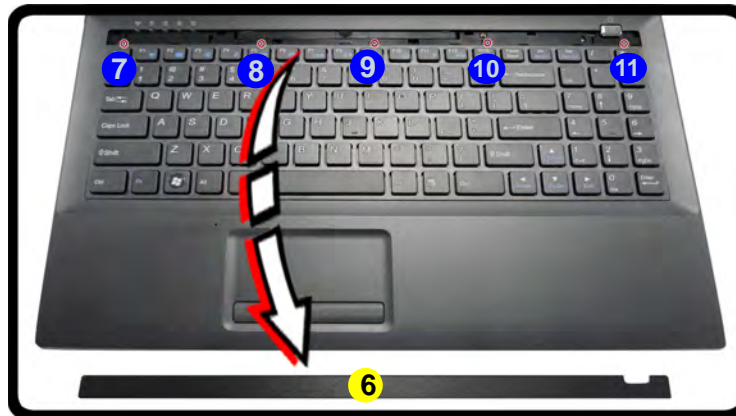
a.



c.



b.



d.



Keyboard Tabs

Re-Inserting the Keyboard

When re-inserting the keyboard firstly align the **four** keyboard tabs at the bottom ([Figure 12c](#)) at the bottom of the keyboard with the slots in the case.

6. LED Cover Module
14. Keyboard

- 9 Screws

Appendix A:Part Lists

This appendix breaks down the *W251HPQ/W251HPQ-C/W251HNQ/W251HNQ-C/W255HP/W255HN/W258HPQ/W258HPQ-C/W258HNQ* 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	W251HPQ/W251HPQ-C/ W251HNQ/W251HNQ-C	W255HP/W255HN	W258HPQ/W258HPQ-C/ W258HNQ
Top	<i>page A - 3</i>		
Top		<i>page A - 4</i>	
Top			<i>page A - 5</i>
Bottom	<i>page A - 6</i>		
SATA BLU RAY COMBO	<i>page A - 7</i>		
DVD Dual Drive	<i>page A - 8</i>		
LCD	<i>page A - 9</i>		

Top (W251HPQ,W251HNQ)

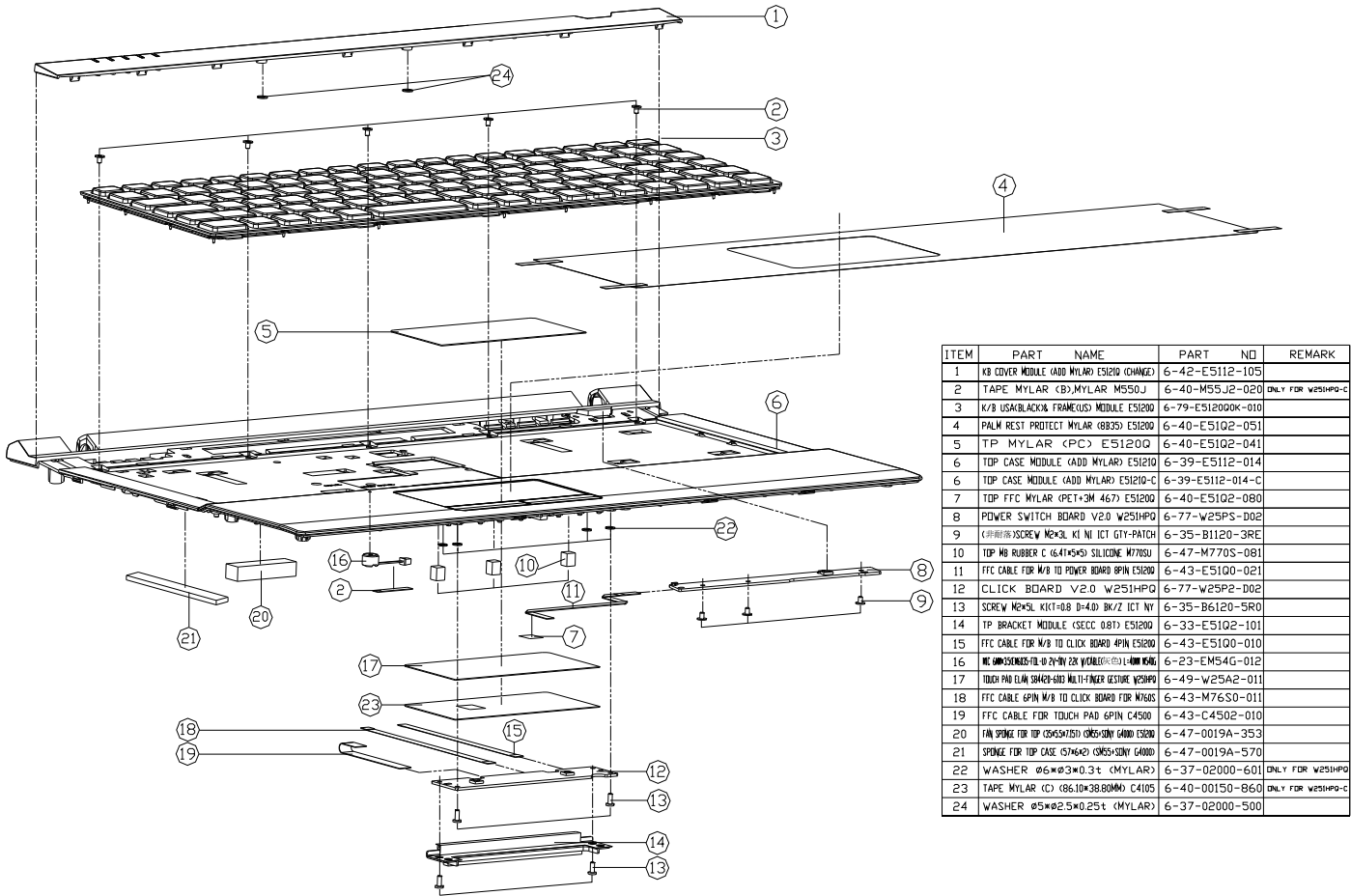


Figure A - 1
Top
(W251HPQ,W251H
NQ)

A.Part Lists

This exploded view diagram illustrates the assembly of the 15.6-inch laptop. The components are numbered 1 through 17:

- 1: Top bezel/frame
- 2: Keyboard
- 3: Keyboard plate
- 4: Keyboard plate
- 5: Keyboard plate
- 6: Bottom bezel/frame
- 7: Bottom bezel/frame
- 8: Bottom bezel/frame
- 9: Bottom bezel/frame
- 10: Bottom bezel/frame
- 11: Bottom bezel/frame
- 12: Bottom bezel/frame
- 13: Bottom bezel/frame
- 14: Bottom bezel/frame
- 15: Bottom bezel/frame
- 16: Bottom bezel/frame
- 17: Bottom bezel/frame

ITEM	PART	NAME	PART	NO	REMARK
1	KB	COVER MODULE ES125	6-42	E5158-101	
2	SCREW	M4X25L K1 BK/2 ICT N1635 1-03	6-35	B6120-2RB	
3	K/B	USABLEBLACK FRAMEWORK MODULE ES1200	6-79	E51200K-01	
4	CLICK	BUTTON PLATE (PC+ABS) ES125	6-42	E5152-062	
5	TOUCH PAD	SLAN 04483500 N111-FINGER CHESIVE V25P0	6-49	W25A2-01	
6	TOP CASE	MODULE ES125	6-39	E5152-012	
7	TOP FFC	MYLAR (PET+3M 467) ES120	6-40	E5102-080	
8	POWER SWITCH	BOARD V20 W25HPQ	6-77	W25PS-01	
9	CONNECTOR	SCREW M2X1 K1 IN ICT G17-PATCH	6-35	B1120-3RE	
10	FFC CABLE	FOR W/B TO POWER BOARD SPIN ES120	6-43	E5100-021	
11	CLICK	BOARD V2.0 W25HPQ	6-77	W25P2-012	
12	SCREW	M2X5L K111-08 B=40 BK/2 ICT N1	6-35	B6120-500	
13	FFC CABLE	FOR W/B TO CLICK BOARD SPIN ES120	6-43	E5100-010	
14	MECHANISMS	FOR W/B TO 2PIN 2X V20A0101 L1000 M40	6-23	EM54G-012	
15	FFC CABLE	6PIN W/B TO CLICK BOARD FOR M165	6-43	M76S0-011	
16	FFC CABLE	FOR TOUCH PAD SPIN C4500	6-43	C4502-010	
17	SPRING	FOR TOP C4500/2500 C4500/3000 C4500	6-47	-0019A-353	
18	FAVORITE	FOR TOP C4500 C4500/3000 C4500/3500 C4500	6-47	-0019A-570	

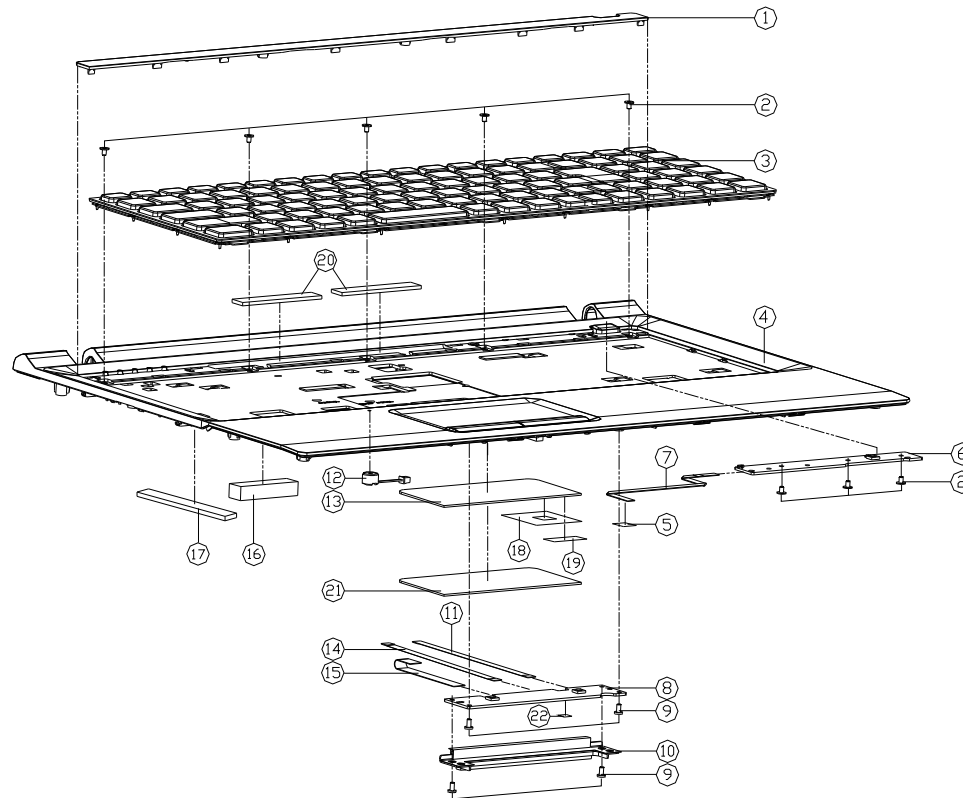
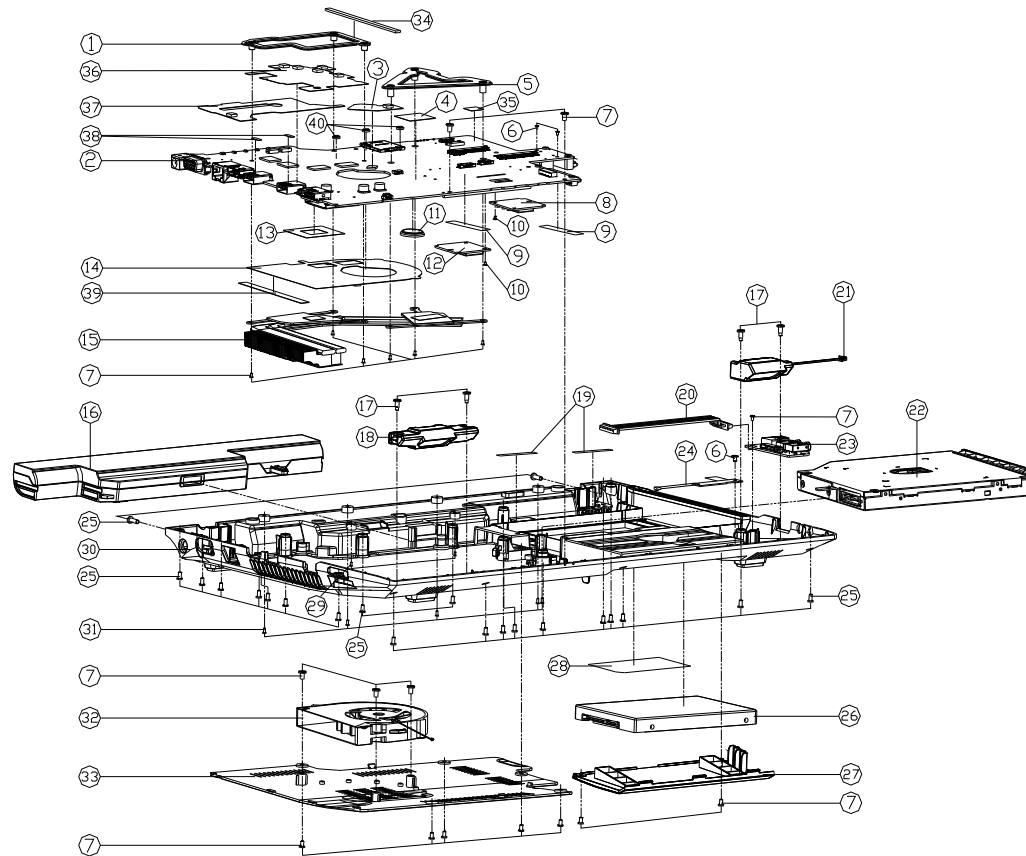


Figure A - 3
Top
(W258HPQ,W258H
NQ)

ITEM	PART	NAME	PART	NO	REMARK
1	KB COVER PC-ABS(CM6140)	E51280	6-42-E5182-011		
2	(参照品) ISCREW NEXOL KT IN GT1 GTY-PATCH		6-35-B1120-3RE		
3	K/B USABLACKBOX FRAME(CSU) MODULE E51280		6-79-E512000K-010		
4	TOP CASE MODULE E51280 (CHARGE)		6-39-E5182-013		
4	TOP CASE MODULE E51280-C (CHARGE SPONGE)		6-39-E5182-012-C		
5	TOP FFC MYLAR (PET+3M 467)	E51200	6-40-E5102-080		
6	POWER SWITCH BOARD V2.0 W25HPQ		6-77-W25PS-D02-A		
7	FFC CABLE FOR M/B TO POWER BOARD SPIN E51280		6-43-E5100-021		
8	CLICK BOARD V2.0 W51HPQ		6-77-W25P2-D02		
9	(参照品) ISCREW NEXOL L BZ GT1 GTY-PATCH (IN-B4)		6-35-C6120-4RB		
10	TP BRACKET MODULE E51280		6-39-E5182-100		
11	FFC CABLE FOR M/B TO TOP CLICK BOARD 4PIN E51280		6-43-E5100-010		
12	MC (参照品) SPONGE FOR 2PIN 2IN 2IN (CLICK BOARD) 1.0MM NEXOL		6-23-EM546-012		
13	TOUCH PAD CLIM 3442X40 40MM MULTI-TOUCH GESTURE W25HPQ		6-49-W25A2-011		
14	FFC CABLE 6PIN M/B TO CLICK BOARD FOR W6A5		6-43-M7650-011		
15	FFC CABLE FOR TOUCH PAD 6PIN C4500		6-43-C4502-010		
16	SPONGE FOR TOP (C65472) C6555-5555Y C4500 E51280		6-47-0019A-353		
17	FOAM SPONGE FOR TOP CASE C67462 C6555-5555Y C4500		6-47-0019A-19A		
18	TP MYLAR FPC PET E5128Q		6-40-E5182-020		ONLY FOR W25HPQ
19	AL FOIL FOR PET E5128Q		6-47-E5182-020		ONLY FOR W25HPQ
20	RUBBER CUSHION SPONGE CLICKER RUBBER MOUNT TO W25HPQ		6-47-W25P3-030		
21	TAPE MYLAR (C) C66100-38.80MM) C4105		6-40-00150-860		ONLY FOR W25HPQ
22	SPONGE FOR TOP CASE C67462 C6555-5555Y C4500		6-40-00150-10E		ONLY FOR W25HPQ

Bottom

Figure A - 4
Bottom



ITEM	PART NAME	PART NO	REMARK
1	VGA SUPPORTER SECC B7130	6-33-B713S-010	
2	MAIN BOARD VER 00P-02 VER 0.0 W/DO W25HP	6-77-W25PO-002	
2	MAIN BOARD VER 00P-02 VER 0.0 W/DO W25HP	6-77-W25PO-002-I	
2	MAIN BOARD VER 00P-02 VER 0.0 W/DO W25HP	6-77-W25PO-002-N	
2	MAIN BOARD VER 00P-02 VER 0.0 W/DO W25HP	6-77-W25PO-002-IN	
3	W/O C HUB MODULE FOR W25HP	6-40-W25PS-300	
4	MAIN BOARD VER 00P-02 VER 0.0 W/DO W25HP	6-40-C450S-030	
5	CPU SUPPORT BRACKET SECC W25HP	6-33-W25PS-011	
6	SCREW NOKL KI BZ KT NY (00-445.81-04)	6-35-B6120-3RD	
7	SCREW W25HSL KI BK/Z ICT NY	6-35-B6125-5RA	
8	W/O C HUB MODULE FOR W25HP	6-88-W76CE-7001	OPTION
8	W/O C HUB MODULE FOR W25HP	6-88-P170F-4210	OPTION
8	W/O C HUB MODULE FOR W25HP	6-88-C55SF-5300	OPTION
8	W/O C HUB MODULE FOR W25HP	6-88-W76CE-8705	OPTION
8	W/O C HUB MODULE FOR W25HP	6-88-W76CE-4220	OPTION
8	W/O C HUB MODULE FOR W25HP	6-88-P170F-4200	OPTION
9	TAPE MYLAR (C)MYLAR M550J	6-40-M55J2-030	
10	SCREW NOKL KI NI ICT NY (00-445.81-04)	6-35-B1120-3RE	
11	BATTERY 3V 220MA BBKCR0328 (X15)	6-23-6A2B2-030	
12	CPU COVER MODULE FOR W25HP	6-88-W25HP-2410	OPTION
13	W/O C HUB MODULE FOR W25HP	6-40-M660S-091	
14	W/O C HUB MODULE FOR W25HP	6-40-W25PS-400	
15	CPU/VGA HEATING MODULE W25HP	6-31-W25HN-101	
16	W/O C HUB MODULE FOR W25HP	6-87-C480S-4P42	OPTION
16	W/O C HUB MODULE FOR W25HP	6-87-E412S-4D7	OPTION
16	W/O C HUB MODULE FOR W25HP	6-87-E412S-4Y4	OPTION
17	SCREW NOKL KI NI ICT NY FOR SPEAKER	6-35-Z1120-6R2	
18	W/O C HUB MODULE FOR W25HP	6-23-W25SP-020	
19	TAPE MYLAR (C)MYLAR M550J	6-40-M55J2-020	
20	W/O C HUB MODULE FOR W25HP	6-43-E510D-031	
21	W/O C HUB MODULE FOR W25HP	6-23-W25SP-010	
22	DATA DVD SUPER MULTI ASSY OPTION	6-79-E512000-000	
22	DATA BLU-RAY COMBO ASSY OPTION	6-79-W25HPV-010	
22	DATA DVD SUPER MULTI ASSY E51200	6-79-W2518400-010	
22	W/O HDD ASSY E51200	6-79-E512000-000	
23	AUDIO BOARD V2.0 W25HP	6-77-W25PB-002	
24	SCREW NOKL KI BK/Z NY ICT	6-23-W25PS-030	
25	SCREW W25HSL KI BK/Z NY ICT	6-35-B6125-8RD	
26	W/O HDD ASSY E51200	6-79-E512000-J-000	
26	W/HDD ASSY E51200	6-79-E512000-J-000	
27	HDD COVER PCABSCM6140 W25HP	6-42-W25PJ-011	
27	HDD COVER PCABSCM6140 W25HP	6-42-W25PJ-011-C	
28	PRODUCT LABEL FOR W25HP	6-45-W25HP03-010	
28	PRODUCT LABEL FOR W25HP	6-45-W25HP03-010	
28	PRODUCT LABEL FOR W25HP	6-45-W25HP03-010	
28	PRODUCT LABEL FOR W25HP	6-45-W25HP03-010	
28	PRODUCT LABEL FOR W25HP	6-45-W25HP03-010	
29	SCREW NOKL KI NI ICT NY (00-445.81-04)	6-35-C2120-3RD	
30	BOTTOM CASE MODULE W25HP	6-39-W25P3-011	
30	BOTTOM CASE MODULE W25HP	6-39-W25P3-011-C	
31	SCREW NOKL KI BK/Z NY ICT	6-35-B6120-5RD	
32	W/O C HUB MODULE FOR W25HP	6-23-W25PS-010	
33	CPU COVER MODULE W25HP	6-42-W25SP-101	
33	CPU COVER MODULE W25HP	6-42-W25SP-101-C	
34	SPONGE (00-45-5) SWS FOR MB TOP	6-47-0019A-906	
35	AMI BIOS LABEL W240BU	6-45-W240BUS-010	
36	W/O C HUB MODULE FOR W25HP	6-40-W25PS-100	
37	W/O C HUB MODULE FOR W25HP	6-40-W25PS-200	
38	GASKET (9*5*0.5) M720S	6-47-0019A-807	
39	SPONGE (00-45-5) SWS FOR MB BOTTOM	6-47-0019A-807	
40	W/O C HUB MODULE FOR W25HP	6-47-W25PS-010	

SATA BLU RAY COMBO

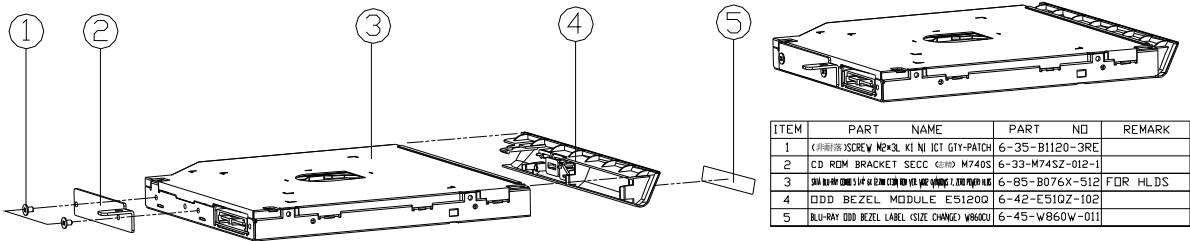
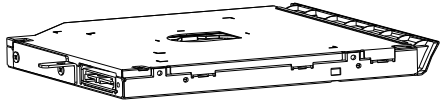
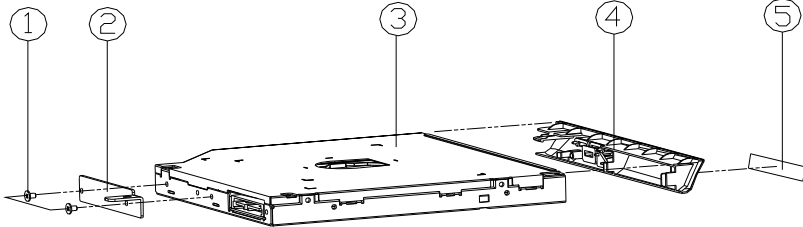


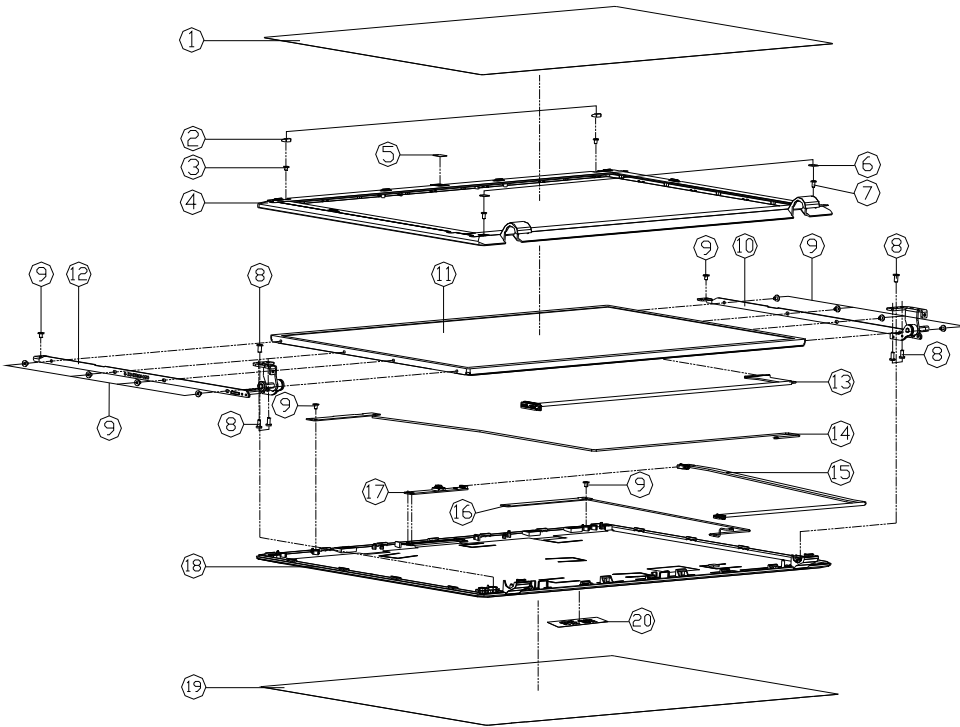
Figure A - 5
SATA BLU RAY
COMBO

Figure A - 6
DVD DUAL



ITEM	PART NAME	PART NO.	REMARK
1	非開閉型 SCREW M2x3 KI NI ICT GY-PATCH	6-35-B1120-3R	
2	CD RM BRACKET SECC (Zn) M74QS	6-33-M74S2-012-I	
3	JAPAN SMD LED L5F 8mm 20mA 0.05W (赤色) 1個/パック	6-85-A078X-105	FOR PLDS
3	JAPAN SMD LED L5F 8mm 20mA 0.05W (緑色) 1個/パック	6-85-A078X-109	FOR FLDS
3	JAPAN SMD LED L5F 8mm 20mA 0.05W (青白色) 1個/パック	6-85-A078X-109	FOR TSST
4	ODD BEZEL MODULE ES12QO	6-42-E51QZ-T02	
5	MULTI DDD BEZEL LABEL (SIZE CHANGE)	6-45-WB600-011	

LCD



ITEM	PART NAME	PART NO	REMARK
1	LCD FRONT COVER PROTECTION FILM (PET-3000) (ES200)	6-40-ES101-030	
2	LCD FRONT COVER SCREW RUBBER SLICER (ES200)	6-47-ES108-011	
3	SCREW NEXOL KI RZ ICT NY (00-045.01-04)	6-35-B6120-3RD	
4	LCD FRONT COVER MODULE (ES1200) (CHANGE)	6-39-ES101-012	
5	CCD LENS PMMA (ES1200)	6-42-ES101-031	
6	W/O CCD LENS PMMA (ES1200)	6-42-ES101-040	
7	FRONT COVER NYLAR PC FOR SCREW (ES1200)	6-40-ES108-011	
8	SCREW NEXOL KI RZ ICT NY (00-045.01-04)	6-35-B6125-5RD	
9	SCREW NEXOL KI RZ ICT NY (00-045.01-04)	6-35-B1120-3RE	
10	LCD HINGE R SK7 (ES1200) (SINHER)	6-33-ES101-010	
11	LCD 15.6" HD LG IPS6000-TLAP GLARE TYPE (6-50-LA157-L03)	6-50-LA155-DD3	
12	LCD 15.6" HD LG IPS6000-TLAP GLARE TYPE (6-50-LA157-L03)	6-50-LA157-L03	
13	LCD 15.6" HD LG IPS6000-TLAP GLARE TYPE (6-50-LA157-L09)	6-50-LA155-L09	
14	LCD 15.6" HD LG IPS6000-TLAP GLARE TYPE (6-50-LA157-L03)	6-50-LA157-L03	
15	LCD 15.6" HD LG IPS6000-TLAP GLARE TYPE (6-50-LA157-L09)	6-50-LA157-L09	
16	LCD 15.6" HD LG IPS6000-TLAP GLARE TYPE (6-50-LA157-L03)	6-50-LA157-L03	
17	LCD 15.6" HD LG IPS6000-TLAP GLARE TYPE (6-50-LA157-L09)	6-50-LA157-L09	
18	LCD 15.6" HD LG IPS6000-TLAP GLARE TYPE (6-50-LA157-L03)	6-50-LA157-L03	
19	LCD 15.6" HD LG IPS6000-TLAP GLARE TYPE (6-50-LA157-L09)	6-50-LA157-L09	
20	LCD 15.6" HD LG IPS6000-TLAP GLARE TYPE (6-50-LA157-L03)	6-50-LA157-L03	

Figure A - 7
LCD

Appendix B: Schematic Diagrams

This appendix has circuit diagrams of the *W251HPQ/W251HPQ-C/W251HNQ/W251HNQ-C/W255HP/W255HN/W258HPQ/W258HPQ-C/W258HNQ* 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>PCH 1/9- RTC, HDA, SATA - Page B - 19</i>	<i>5VS, 3VS, 3.3VM, 1.5VS CPU - Page B - 36</i>
<i>Processor 1/7-DMI, FDI, PEG - Page B - 3</i>	<i>PCH 2/9- PCIE, SMBUS, CLK - Page B - 20</i>	<i>VDD3, VDD5 - Page B - 37</i>
<i>Processor 2/7- CLK, MISC - Page B - 4</i>	<i>PCH 3/9- DMI, FDI, PWRGD - Page B - 21</i>	<i>Power 0.85VS, 1.8VS, PEX VDD - Page B - 38</i>
<i>Processor 3/7- (DDR3) - Page B - 5</i>	<i>PCH 4/9- LVDS, DDI, CRT - Page B - 22</i>	<i>POWER 1.5V/1.05VS/0.75V - Page B - 39</i>
<i>Processor 4/7- Power - Page B - 6</i>	<i>PCH 4/9- OCI, USB, RSVD - Page B - 23</i>	<i>POWER VCORE1 - Page B - 40</i>
<i>Processor 5/7- GFX PWR - Page B - 7</i>	<i>PCH 6/9- GPIO, CPU - Page B - 24</i>	<i>POWER VCORE2 - Page B - 41</i>
<i>Processor 6/7- GND - Page B - 8</i>	<i>PCH 7/9- PWR - Page B - 25</i>	<i>Power VGA NVVDD - Page B - 42</i>
<i>Processor 7/7- RSVD - Page B - 9</i>	<i>PCH 8/9 POWER - Page B - 26</i>	<i>AC IN, CHARGER - Page B - 43</i>
<i>DDR3 SO-DIMM_0 - Page B - 10</i>	<i>PCH 3/9- GRD - Page B - 27</i>	<i>AUDIO BOARD - Page B - 44</i>
<i>DDR3 SO-DIMM_1 - Page B - 11</i>	<i>WLAN 3G MINI PCIE - Page B - 28</i>	<i>CLICK BOARD - Page B - 45</i>
<i>PANEL, INVERTER, CRT - Page B - 12</i>	<i>CCD, TPM, MULTI CON - Page B - 29</i>	<i>W251HPQ POWER SW BOARD - Page B - 46</i>
<i>VGA PCI-E Interace - Page B - 13</i>	<i>USB2.0, USB3.0 NEC - Page B - 30</i>	<i>W270HU BRIDGE ODD BOARD - Page B - 47</i>
<i>VGA Frame Buffer Interface - Page B - 14</i>	<i>Card Reader (JMC251 C) - Page B - 31</i>	<i>W270HU POWER SW BOARD - Page B - 48</i>
<i>VGA Frame Buffer A - Page B - 15</i>	<i>SATA ODD, LED, USB CHARGE - Page B - 32</i>	<i>Power Diagram - Page B - 49</i>
<i>VGA Frame Buffer C - Page B - 16</i>	<i>HDMI, RJ45 - Page B - 33</i>	<i>Power On SEQ - Page B - 50</i>
<i>VGA I/O - Page B - 17</i>	<i>AUDIO CODEC ALC269 - Page B - 34</i>	
<i>VGA NVVDD Cecoupling - Page B - 18</i>	<i>KBC-ITE IT8518E - Page B - 35</i>	

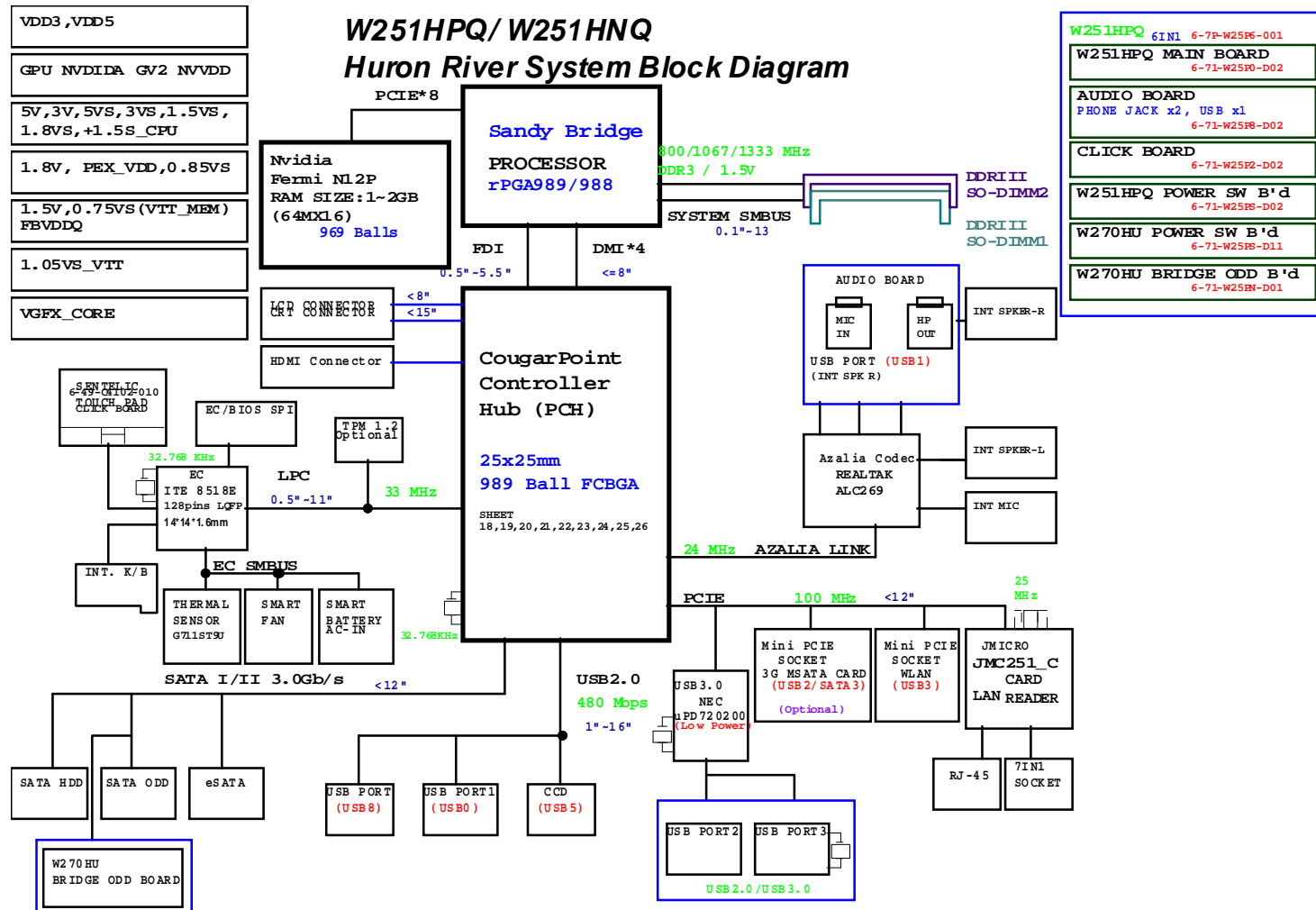
Table B - 1
**SCHEMATIC
DIAGRAMS**



Version Note

The schematic diagrams in this chapter are based upon version 6-7P-W25p6-001. If your mainboard (or other boards) are a later version, please check with the Service Center for updated diagrams (if required).

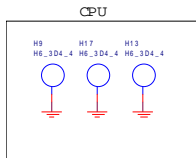
System Block Diagram



Sheet 1 of 49
System Block
Diagram

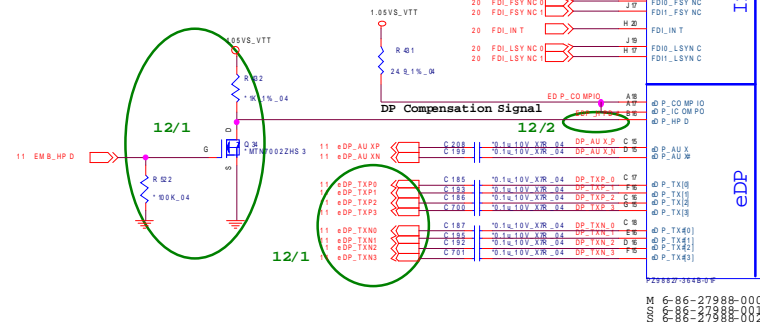
Processor 1/7-DMI, FDI, PEG

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



H0 H17 H13
H6_3D4_4 H6_3D4_4 H6_3D4_4

CAD NOTE: DP_CMPIO and ICOMPO signals should be shorted near balls and routed with - typical impedance < 25 mohms



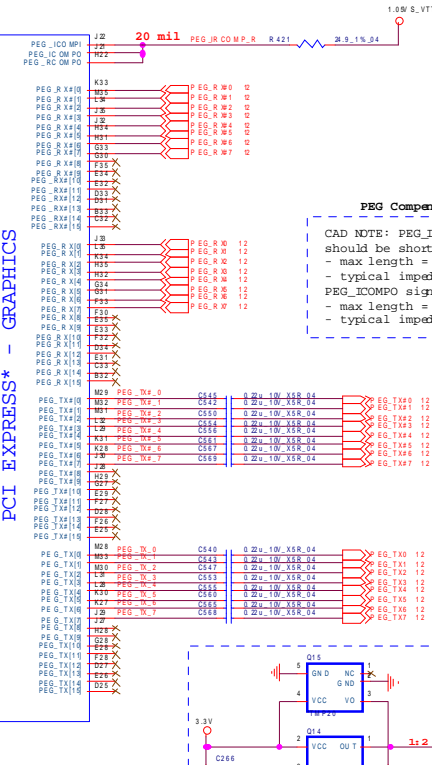
DMI

FDI

Intel (R) FDI

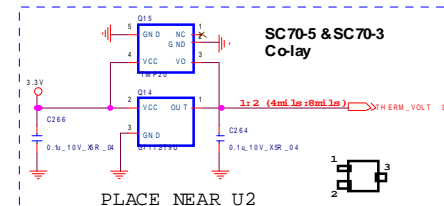
eDP

PCI EXPRESS* - GRAPHICS



PEG Compensation Signal

CAD NOTE: PEG_ICOMPI and RCOMP signals should be shorted and routed with - max length = 500 mils - typical impedance = 43 mohms PEG_ICOMPO signals should be routed with - max length = 500 mils - typical impedance = 14.5 mohms



PLACE NEAR U2

Sheet 2 of 49
Processor 1/7-DMI,
FDI, PEG

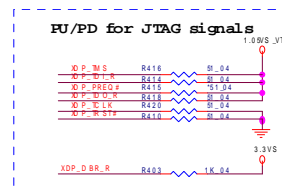
Processor 2/7- CLK, MISC

B.Schematic Diagrams

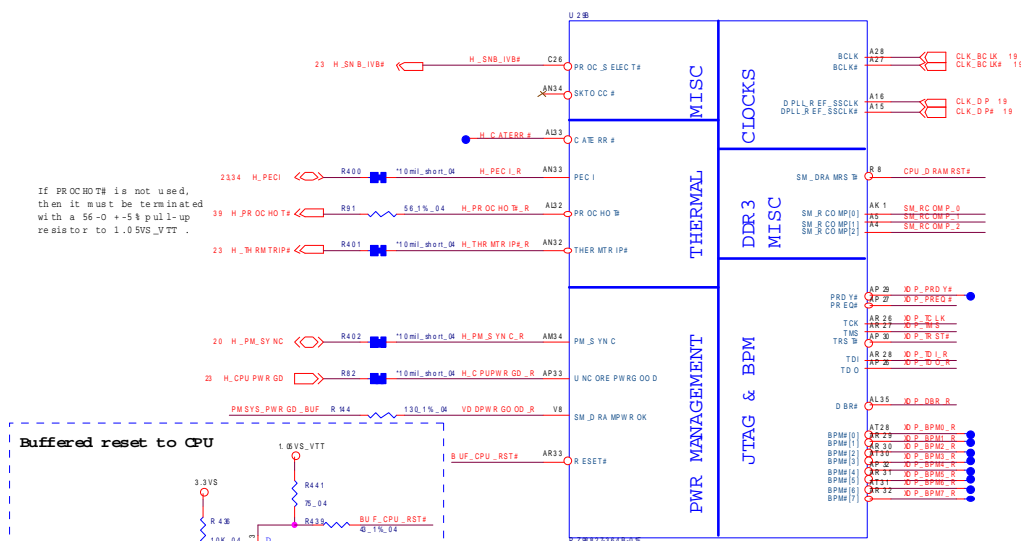
Processor Pull downs

The diagram shows a horizontal red line representing a trace. On the left, a red ground symbol is connected to the trace. A resistor, represented by a zigzag line, is placed on the trace. Above the resistor, the text "10K_Ω" is written in blue. To the right of the resistor, the text "R399" is written in blue. Further to the right on the trace, the text "H_CPU PWR GD_R" is written in red. Below the trace, the text "TRACE WIDTH 10MIL, LENGTH <50MILS" is written in blue.

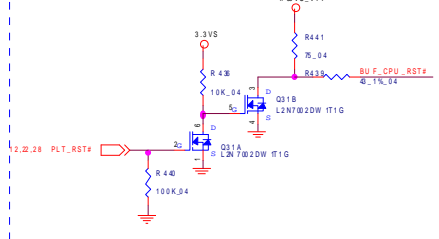
Sandy Bridge Processor 2/7 (CLK,MISC,JTAG)



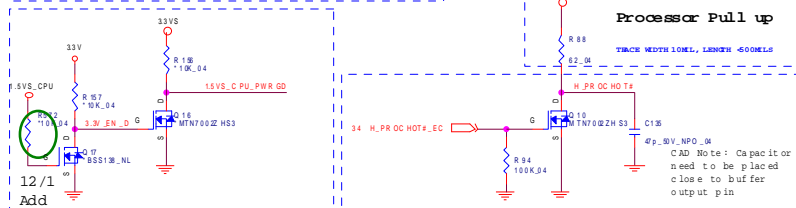
DDR3 Compensation Signals



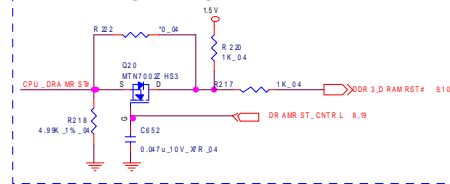
Buffered reset to CPU



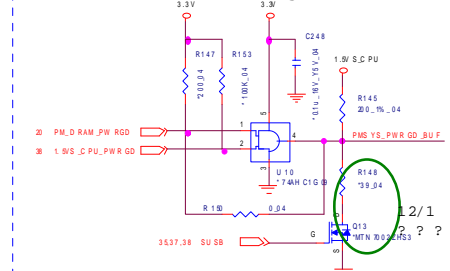
Processor Pull up



S3 circuit:- DRAM_RST# to memory should be high during S3

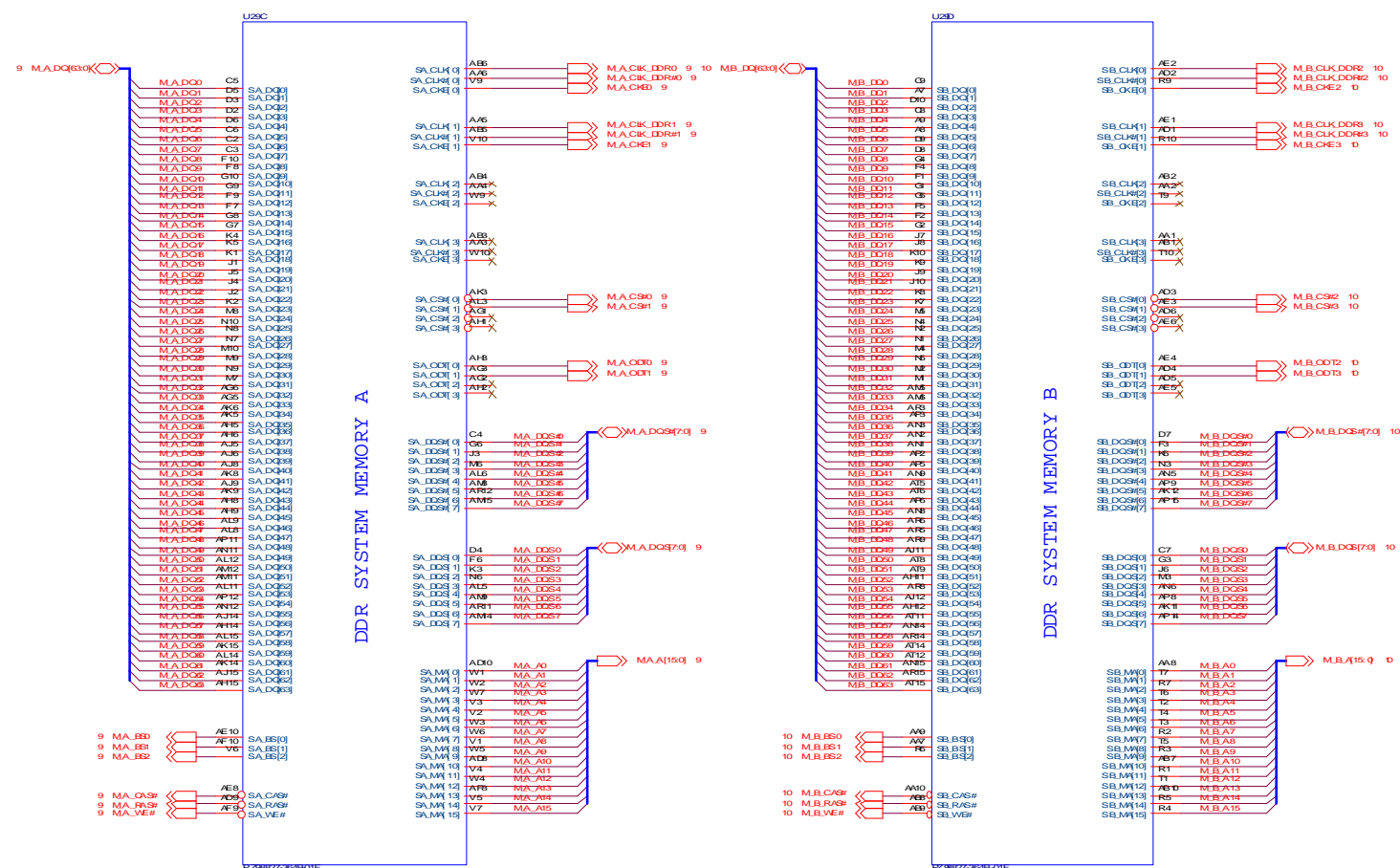


S3 circuit:- DRAM PWR GOOD logic



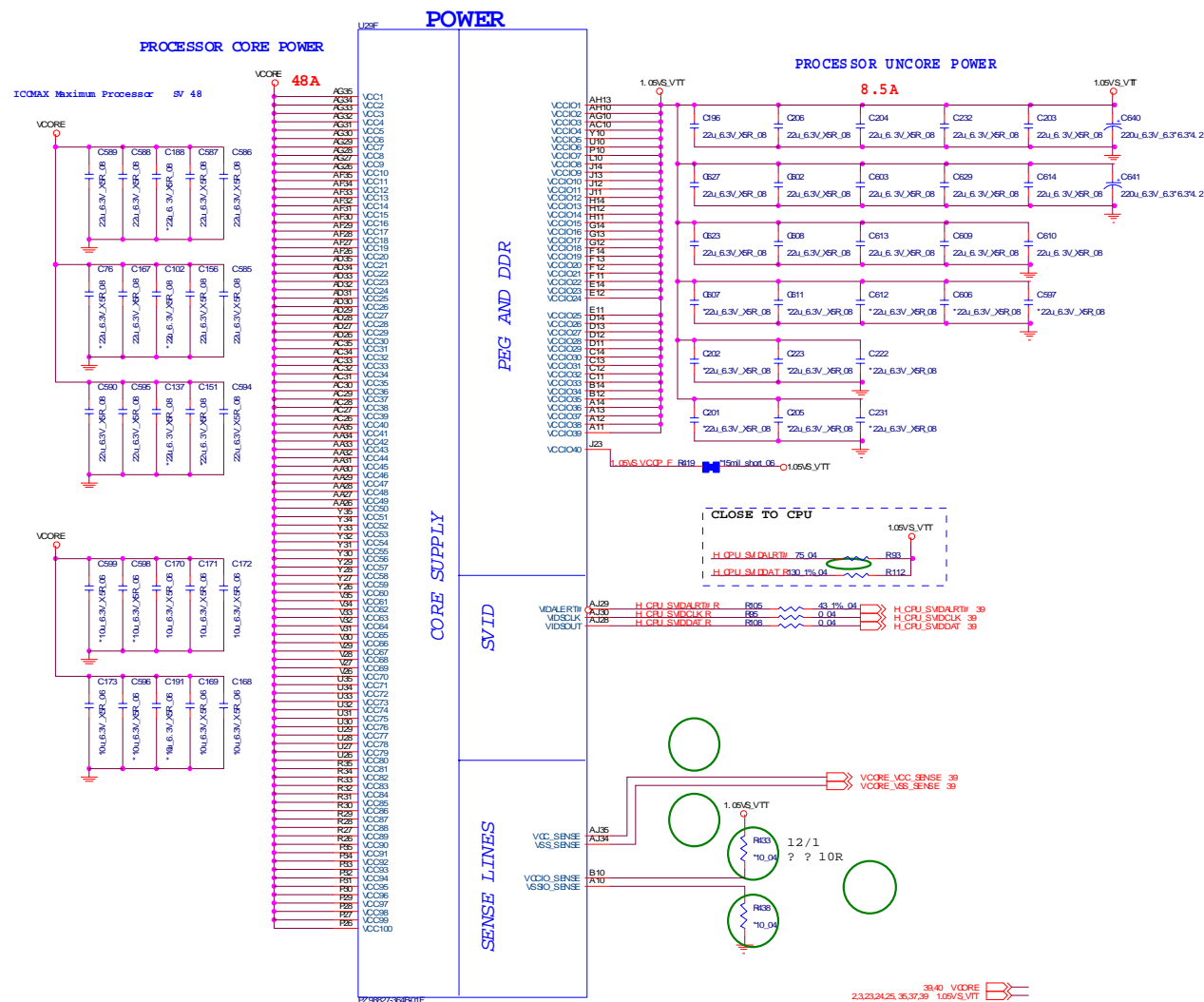
Processor 3/7- (DDR3)

Sandy Bridge Processor 3/7 (DDR3)

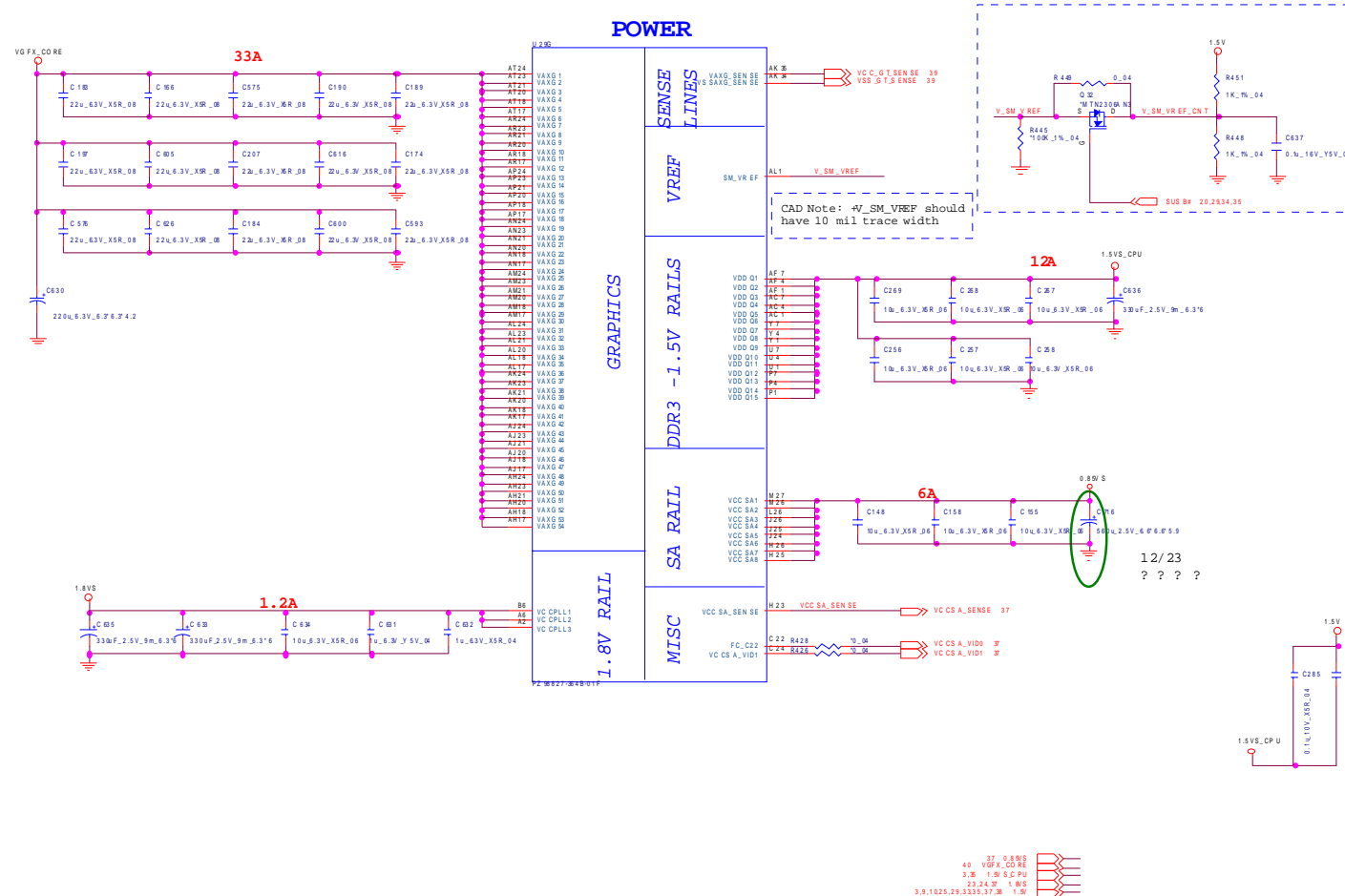


Sheet 4 of 49
Processor 3/7-
(DDR3)

Sandy Bridge Processor 4/7 (POWER)



Sandy Bridge Processor 5/7 (GRAPHICS POWER)



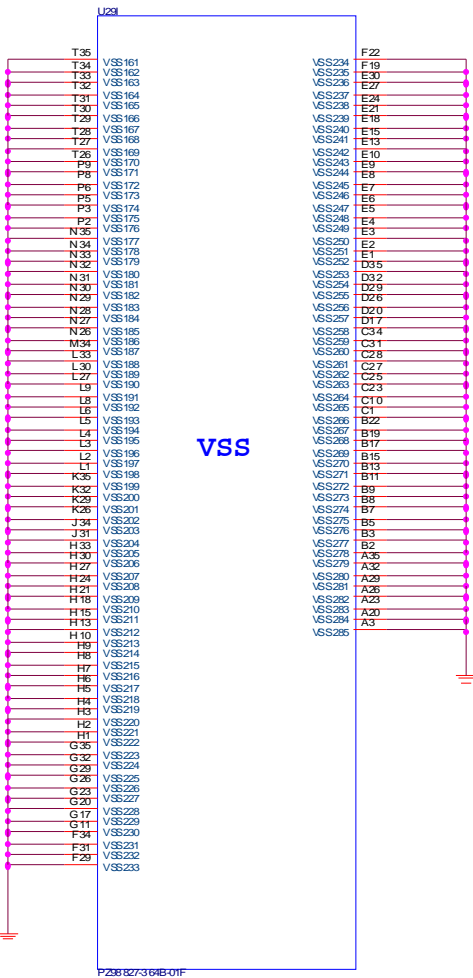
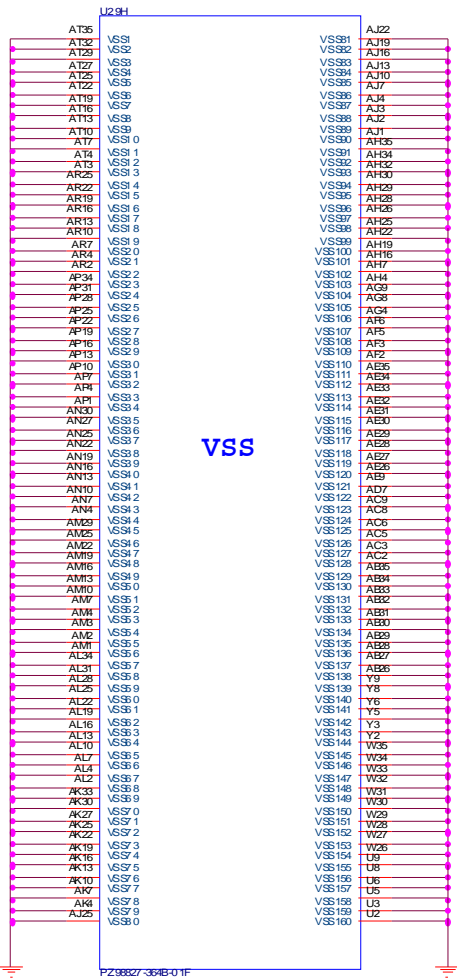
Schematic Diagrams

Processor 6/7- GND

Sandy Bridge Processor 6/7 (GND)

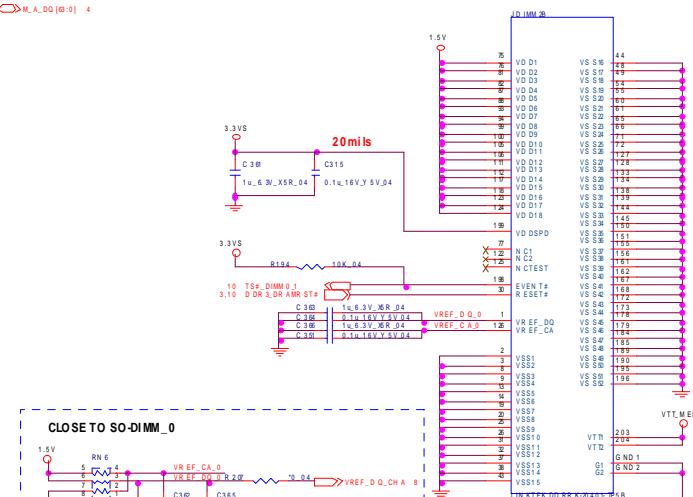
CAD Note: 0 ohm resistor
should be placed close
to CPU

Sheet 7 of 49
Processor 6/7- GND



Schematic Diagrams

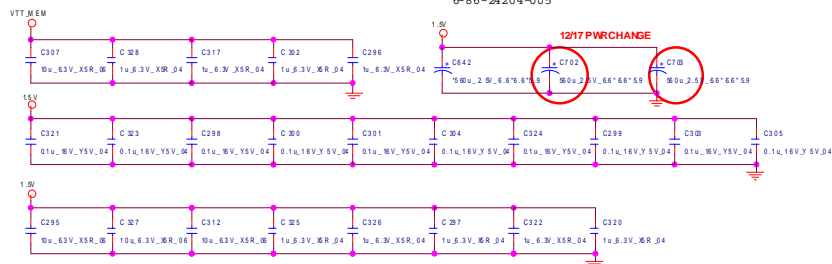
DDR3 SO-DIMM_0

[illegible]

B.Schematic Diagrams

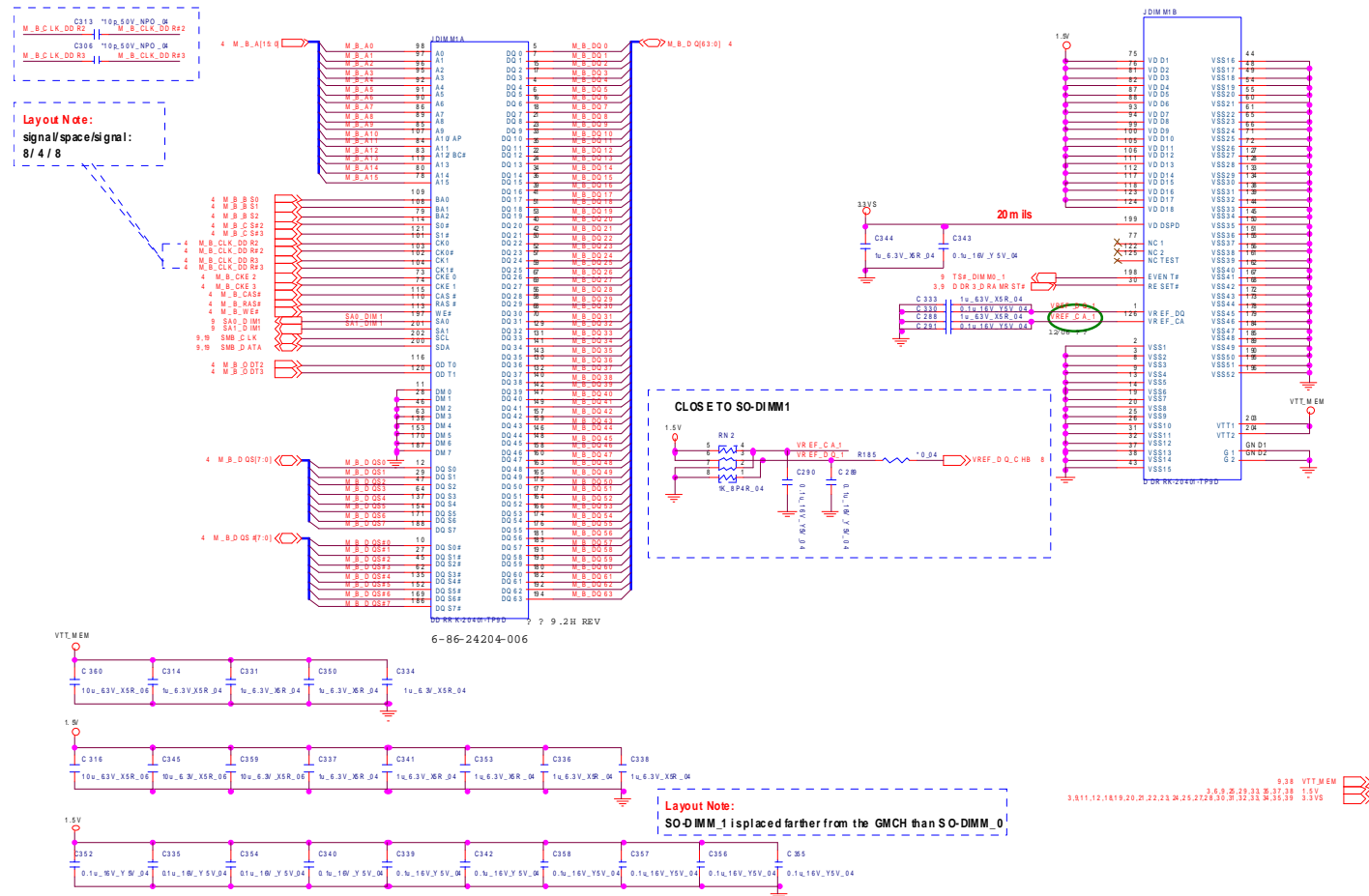
Sheet 9 of 49
DDR3 SO-DIMM_0

6-86-24204-005

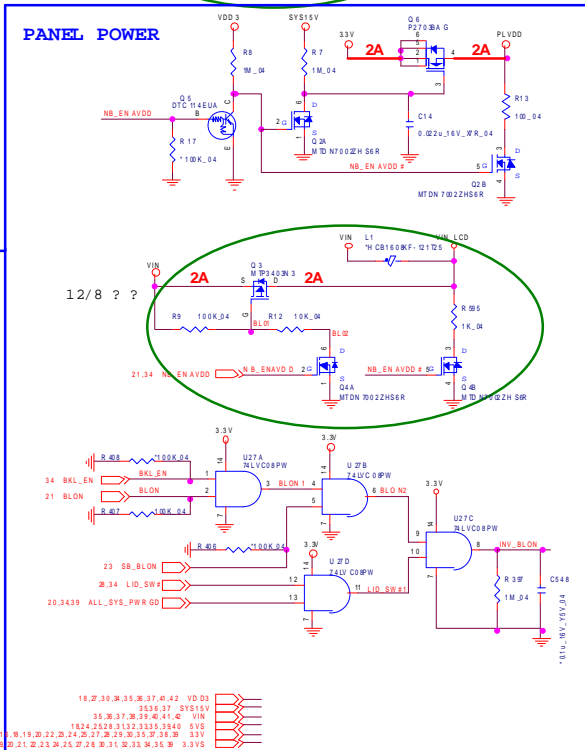
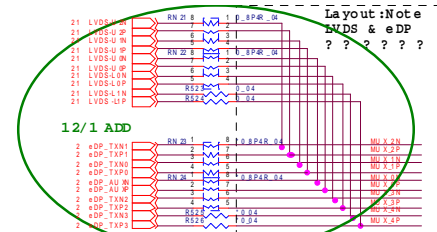
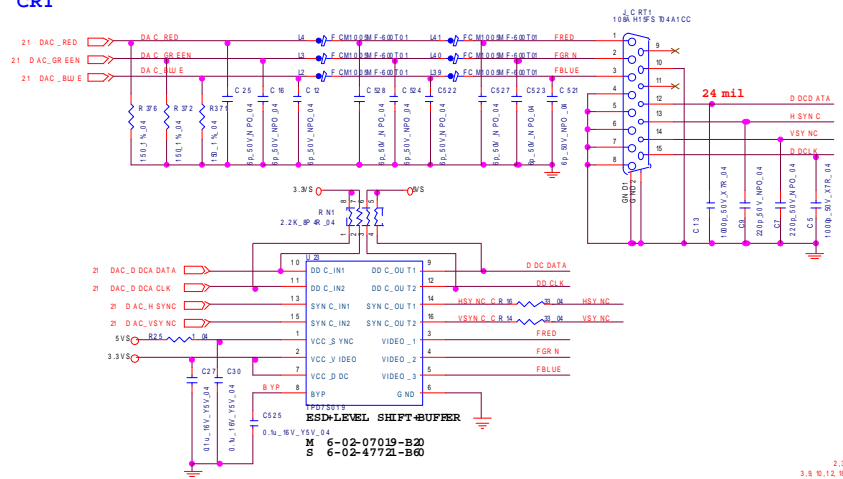
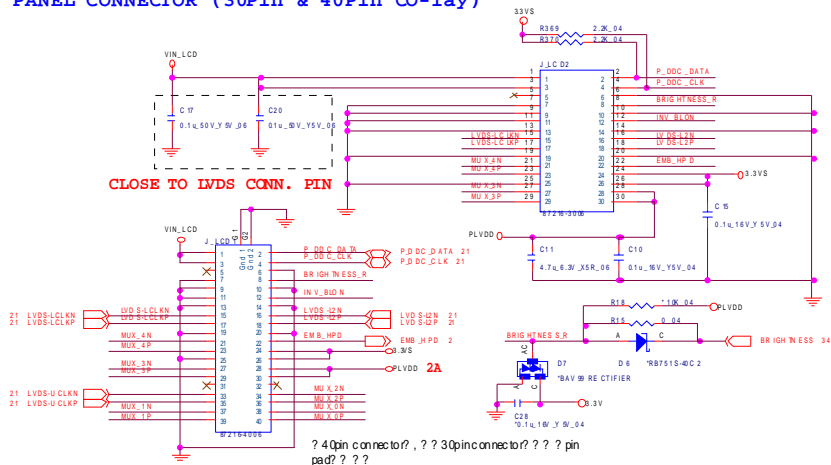


3,10,11,12,18,19,20,21,22,23,24,25,27,28,30,31,32,33,34,35,39 10,38 VTT_MEM 1.5V 3.3VS

SO-DIMM B



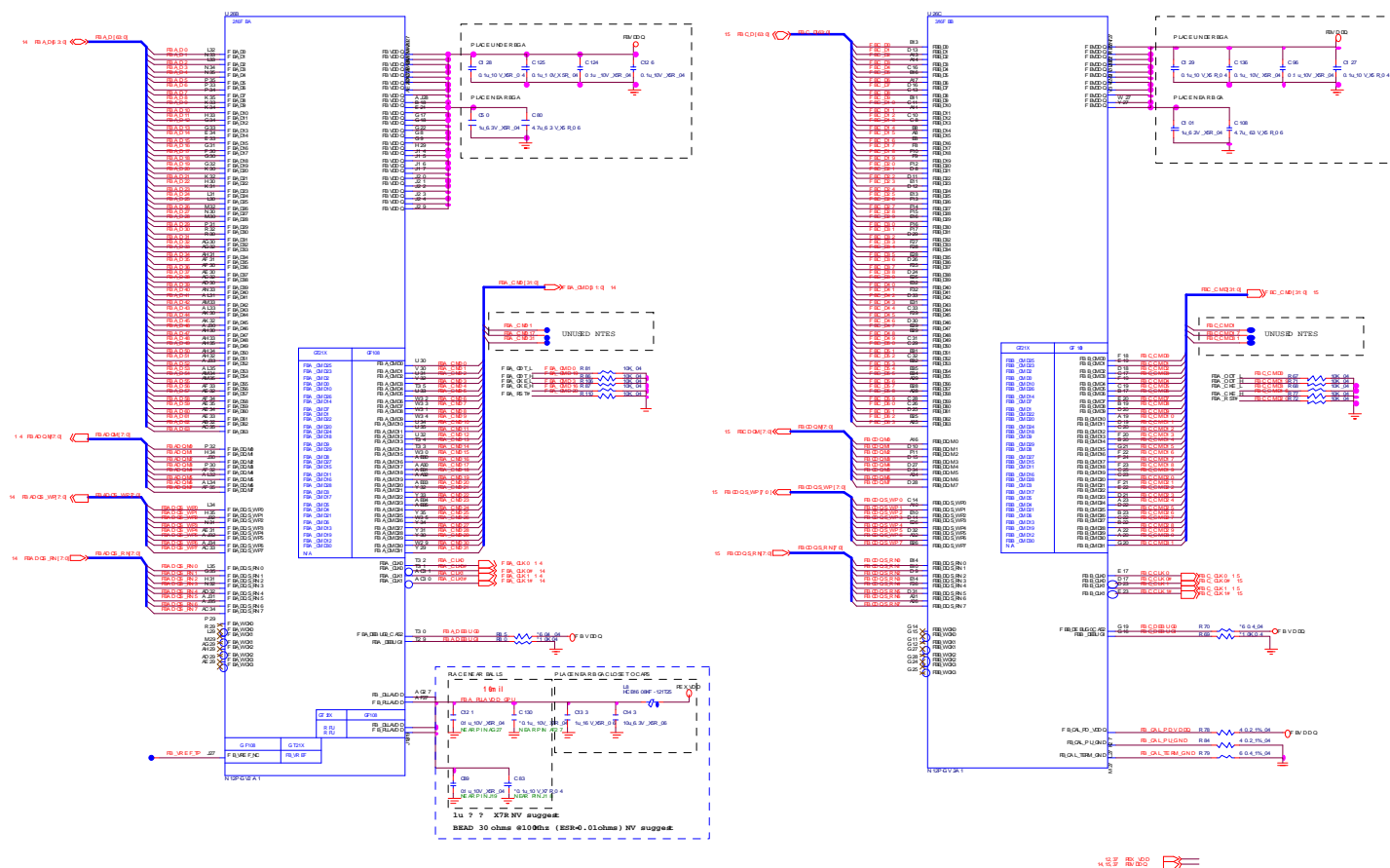
Sheet 11 of 49
PANEL, INVERTER,
CRT





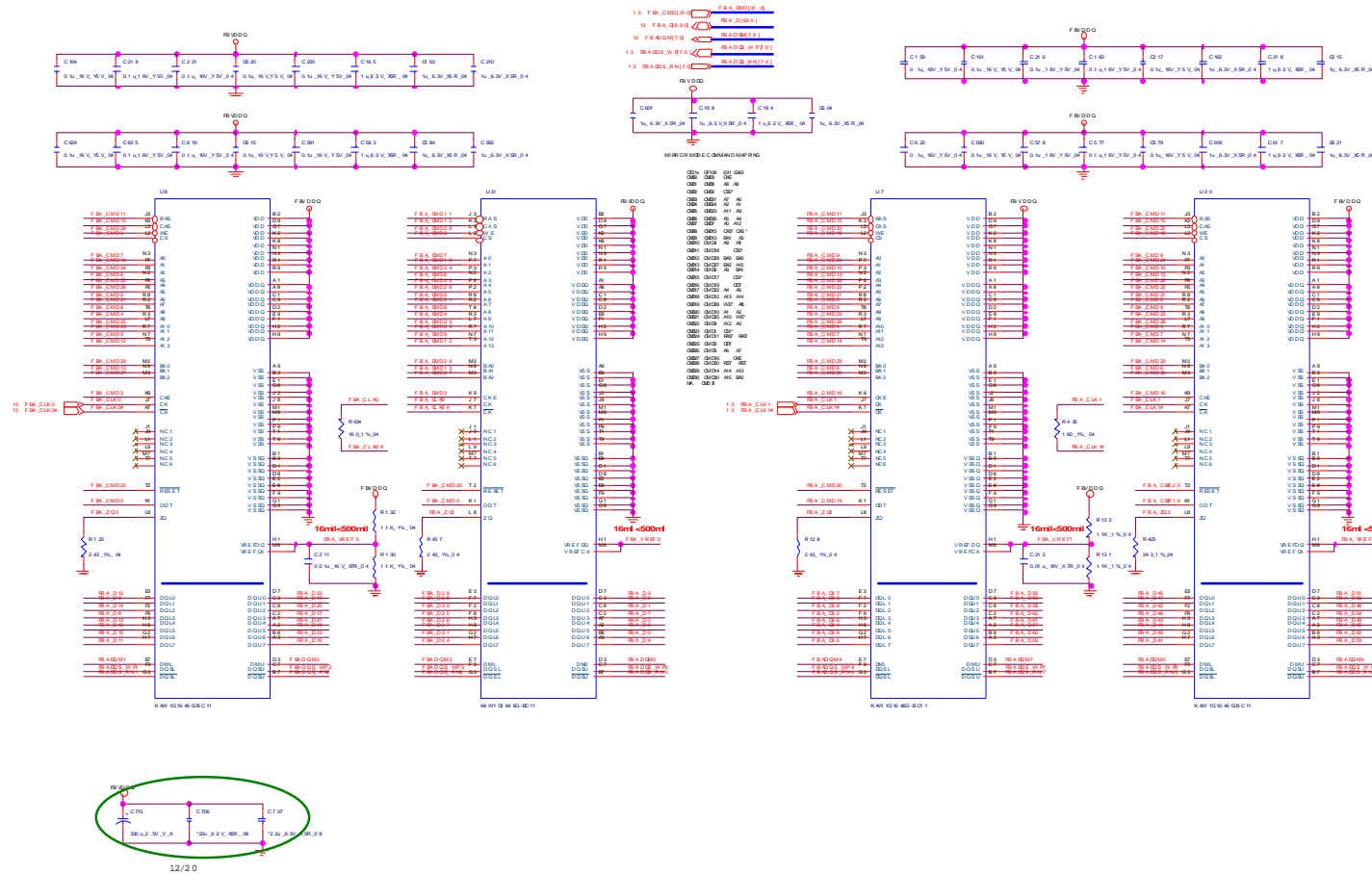
VGA Frame Buffer Interface

Frame Buffer Interface



VGA Frame Buffer A

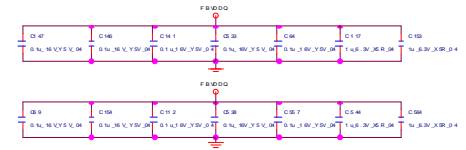
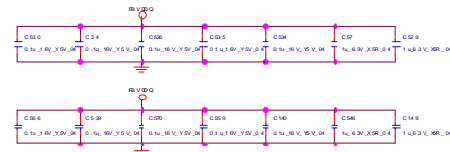
Frame Buffer Partition A



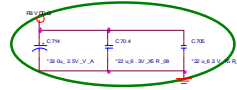
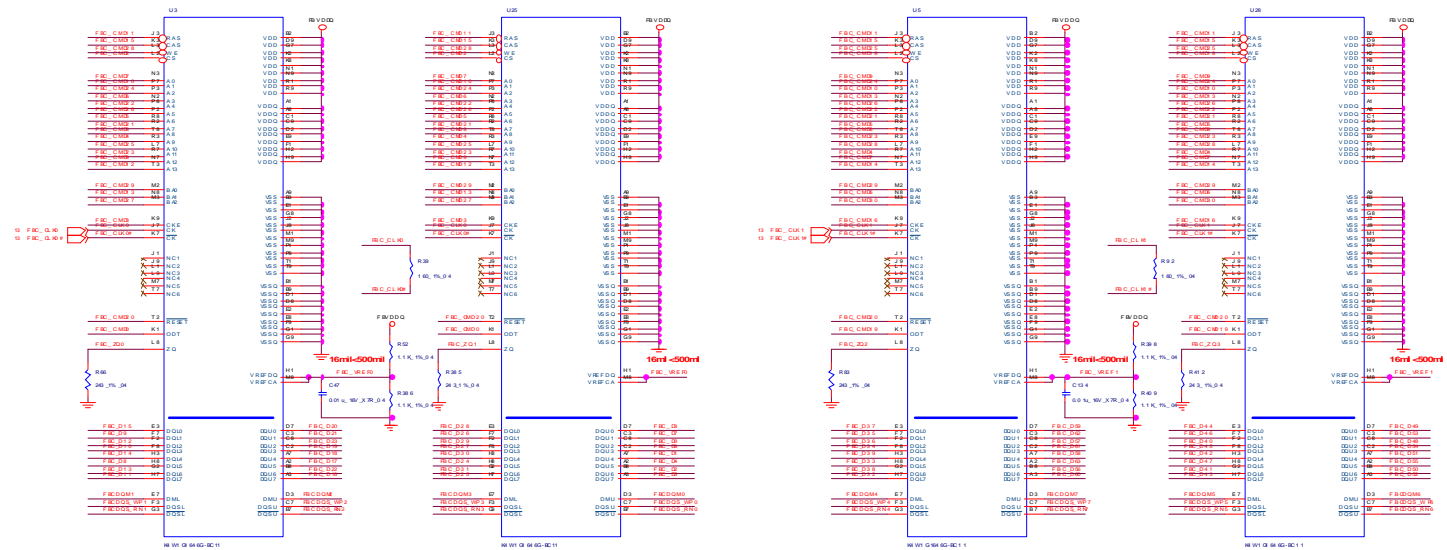
Sheet 14 of 49
VGA Frame Buffer
A

VGA Frame Buffer C

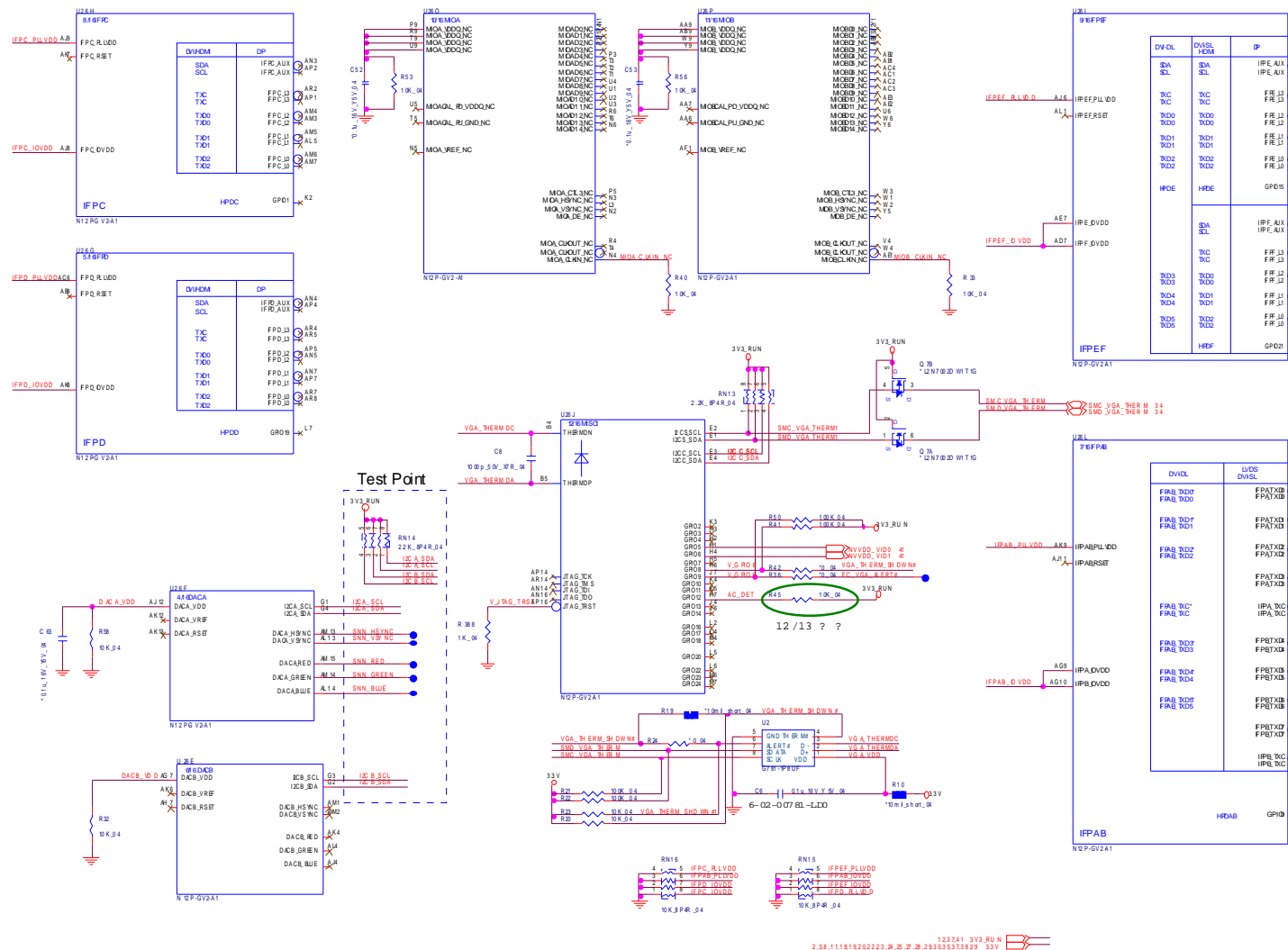
Frame Buffer Partition C



Sheet 15 of 49
VGA Frame Buffer
C



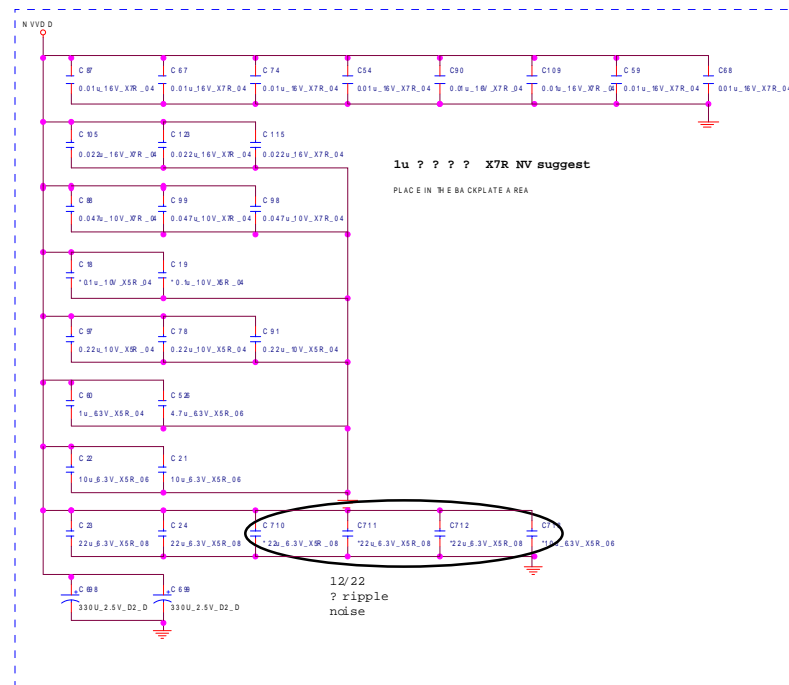
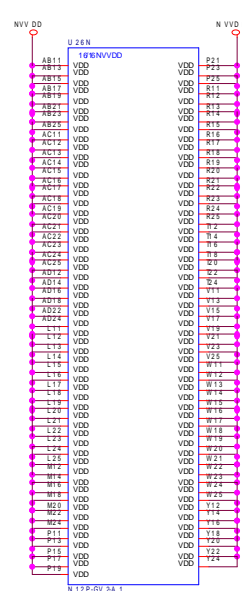
VGA I/O



Sheet 16 of 49
VGA I/O

VGA NVVDD Cdecoupling

Sheet 17 of 49
VGA NVVDD
Cecoupling



BOM LIST for(GS+2G BOM & GV2+1G BOM)include special stuff Location SETTING

BOM LIST	R29	R378	R47	R46	PR137	PR136	PR135	PR134	PR142	PR141	PR140	PR139	R379	U26	U3, U5, U7, U8, U25, U28, U30, U31
GS+2G SDRAM BOM	15K	X	X	24.9K	12K	15K	12.7K	15K	10K	12.7K	10K	11.8K	45.3K	N12P-GS QS	K4W2G1646C-BC11(2G)
GV2+1GSDRAM BOM	X	15K	30K	X	12K	15K	12K	16.2K	10K	11.8K	11.5K	10K	20K	N12P-GV2-AL MP	K4W1G1646G-BC11(1G)

PS. X= Un-stuff

GPU CHIP SET

GPU POWER SET

GPU
SDRA
SET

```
GPU CHI
SELECT
```

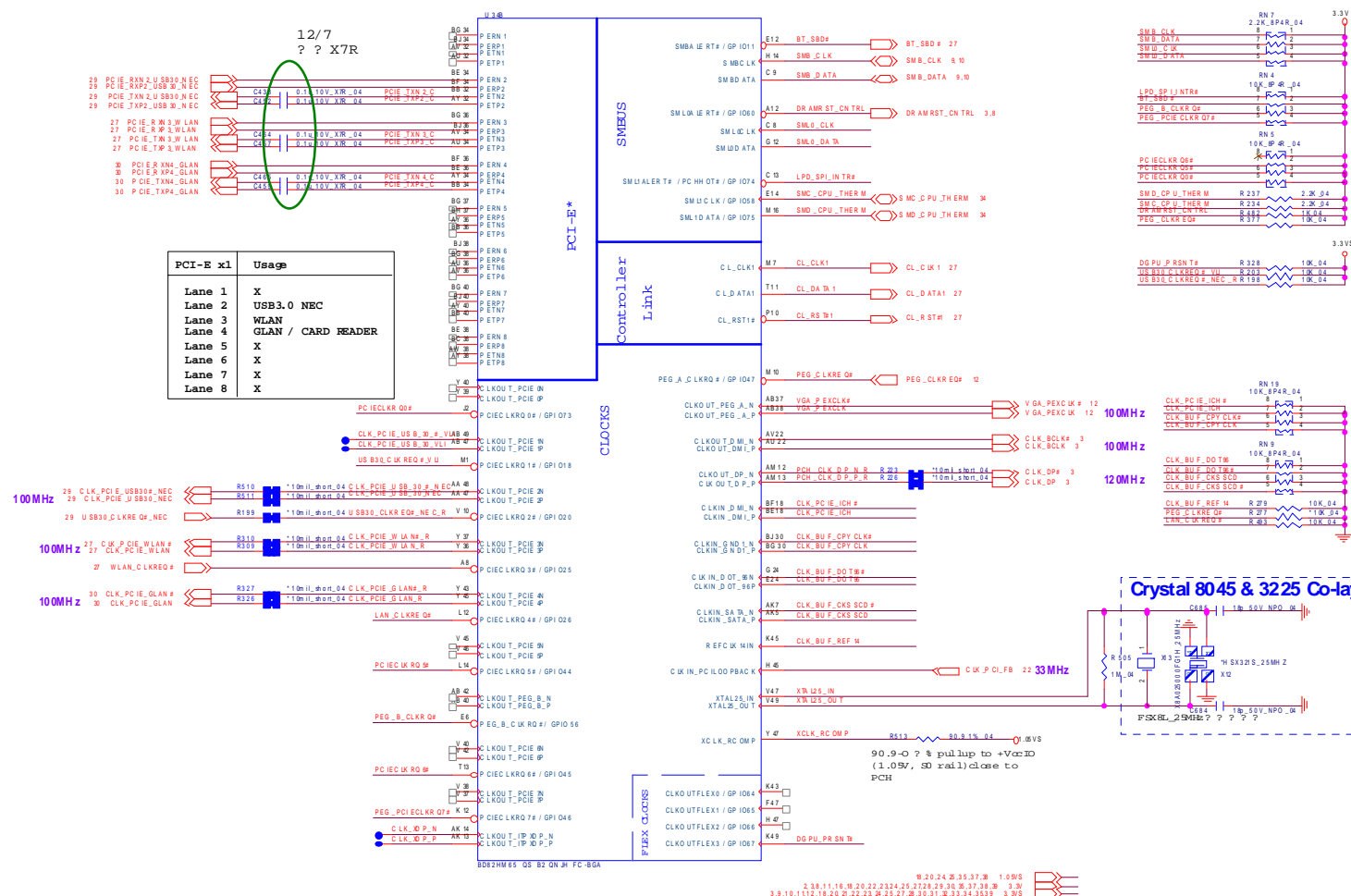
GPU SDRAM SELECT

Schematic Diagrams

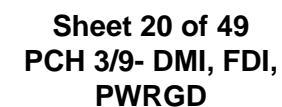


B.Schematic Diagrams

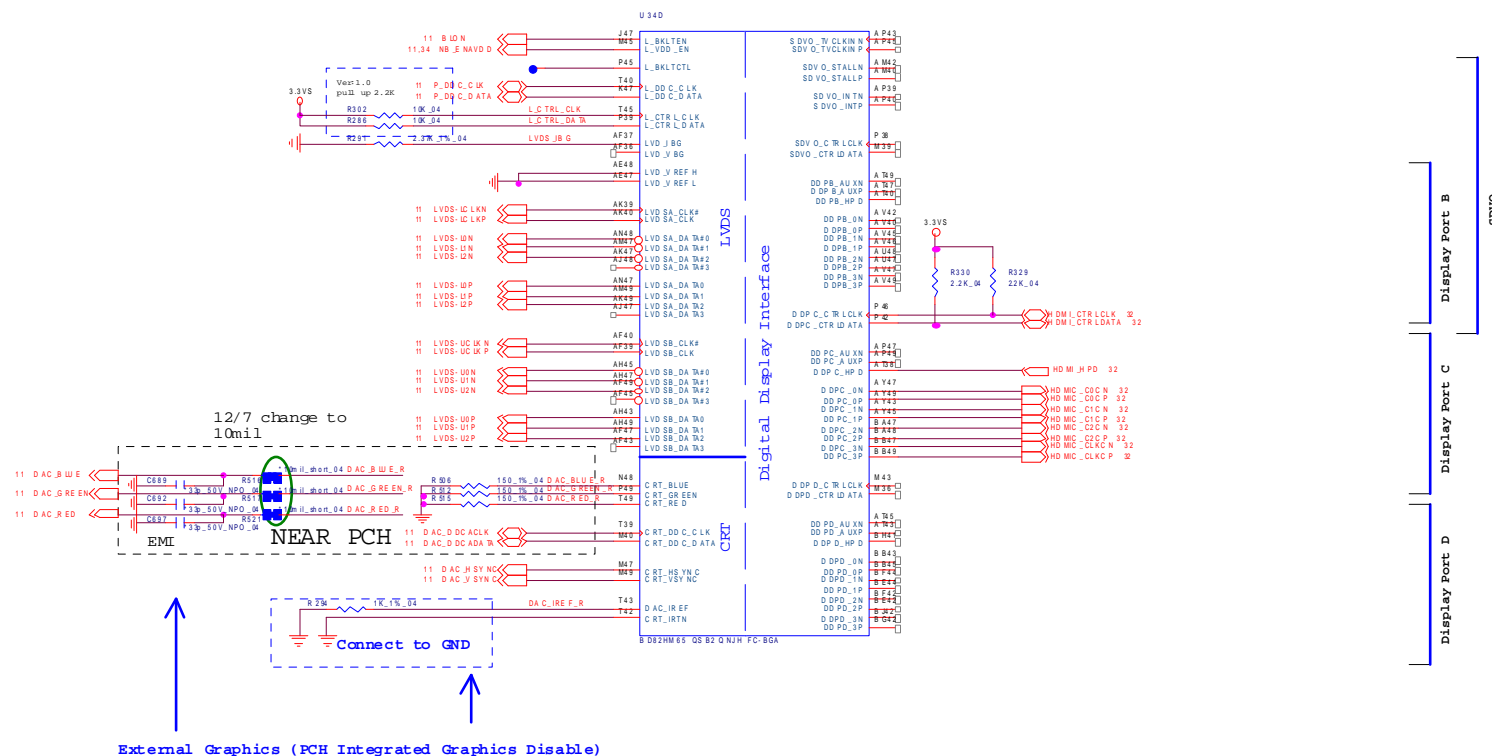
CougarPoint - M (PCI-E,SMBUS,CLK)



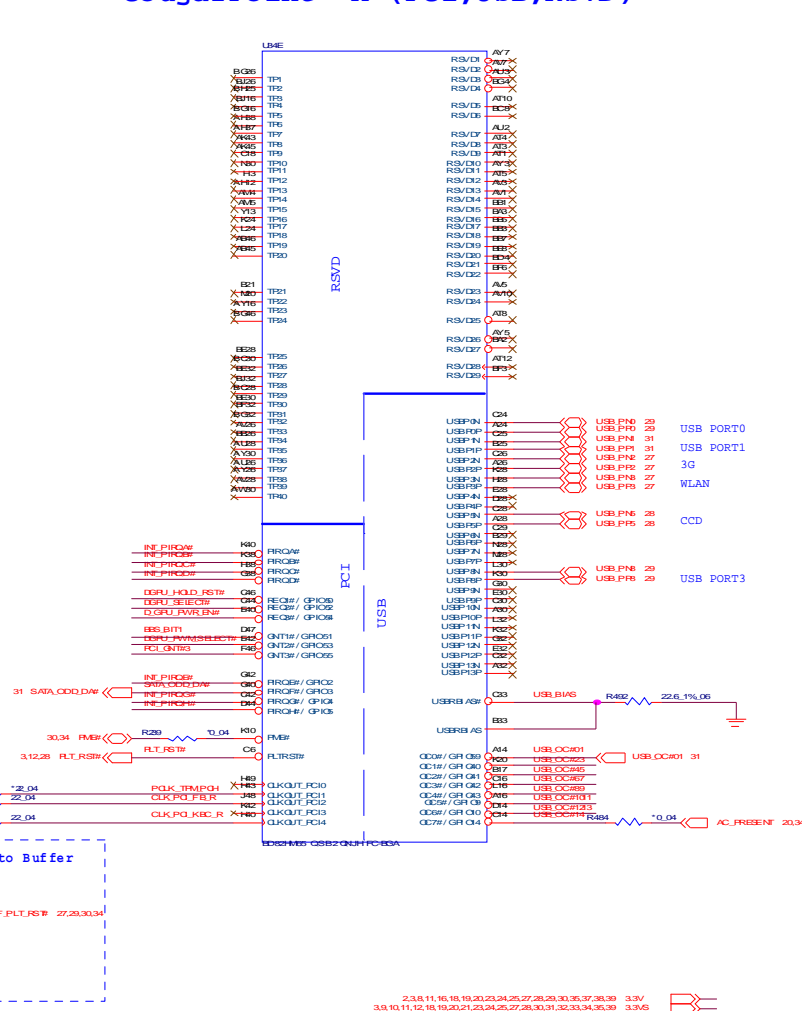
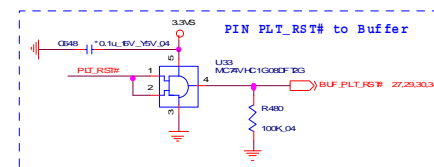
CougarPoint -M (DMI,FDI,GPIO)



CougarPoint -M (LVDS,DDI)

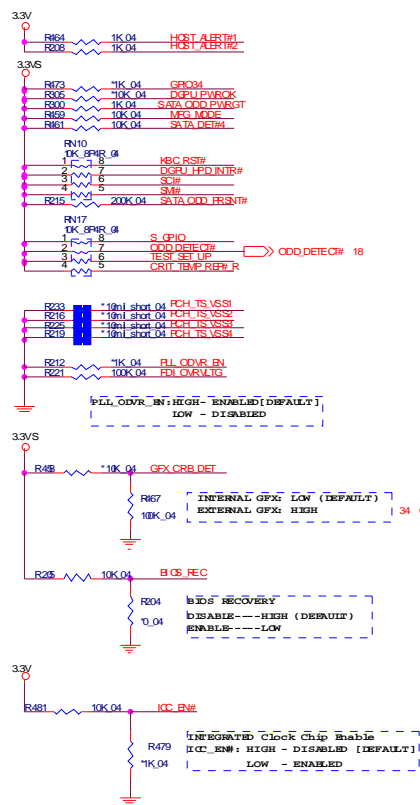


CougarPoint -M (PCI,USB,RSVD)



B.Schematic Diagrams

Sheet 23 of 49
PCH 6/9- GPIO,
CPU



Pin-to-pin connection diagram for the iB2000 module.

GPIO/MISC:

- S_GPIO1 (T7) to BMLBUSY# / G103
- SM# (A6) to TACH1 / GPIO1
- DGPU_HPD_INTR# (H36) to TACH2 / GPIO6
- SCI# (C38) to TACH8 / GPIO7
- ICG_BW# (C10) to TACH7 / GPIO7
- GPIO8
- BDND_SELECT# (C4) to LAN_PHY_PWR_CTRL / GPIO2
- HOST_ALERT# (G2) to GPIO15
- SATA_DET# (U2) to SATA4P / GPIO16
- DGPU_PWROK (D40) to TACH0 / GPIO17
- BLOS_REC (T5) to SCLDOK / GPIO22
- HOST_ALERT# (EB) to GPIO24 / MEM_LED
- SB_BLON (E16) to GPIO27
- PLI_COV_ELN (R8) to GPIO28
- GPIO34 (K1) to STP_PG# / GPIO34
- PCI_MUTE# (V6) to GPIO35
- SATA_ODD_FRST# (V6) to SATA2P / GPIO36
- FDI_CHLVLTG (M5) to SATA3P / GPIO37
- MFG_MODE (N2) to SLOAD / GPIO38
- GPIO_CBB_DET (M3) to SDATAOUT0 / GPIO39
- TEST_SET_UP (V13) to SDATAOUT1 / GPIO48
- CRIT_TEMP_REF# (V2) to SATA5P / GPIO49
- TEST_DET (D6) to GPIO57

CPU/MISC:

- P4 to A203AE
- PECD to AUTHREQ_R (R222) to G200_34
- P5 to KBC_RST#
- PCIN# to AY11
- PROCWRGD to AY0
- THRMIR_F# to INT3_3# (R221) to G200_34
- DF_TV5 to AY1
- TS_VSS# to AHK1
- TS_VSS2 to AH0
- TS_VSS3 to AH0
- TS_VSS4 to AH0
- TS_VSS5 to AH0
- TS_VSS6 to AH0
- TS_VSS7 to AH0
- TS_VSS8 to AH0
- TS_VSS9 to AH0
- TS_VSS10 to AH0
- TS_VSS11 to AH0
- TS_VSS12 to AH0
- TS_VSS13 to AH0
- TS_VSS14 to AH0
- TS_VSS15 to AH0
- TS_VSS16 to AH0
- TS_VSS17 to AH0
- TS_VSS18 to AH0
- TS_VSS19 to AH0
- TS_VSS20 to AH0
- TS_VSS21 to AH0
- TS_VSS22 to AH0
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- TS_VSS95 to AH0
- TS_VSS96 to AH0
- TS_VSS97 to AH0
- TS_VSS98 to AH0
- TS_VSS99 to AH0
- TS_VSS100 to AH0

NCTF:

- VSS_NCTF_1 (A4)
- VSS_NCTF_2 (A5)
- VSS_NCTF_3 (A6)
- VSS_NCTF_4 (A7)
- VSS_NCTF_5 (A8)
- VSS_NCTF_6 (A9)
- VSS_NCTF_7 (B0)
- VSS_NCTF_8 (B1)
- VSS_NCTF_9 (B2)
- VSS_NCTF_10 (B3)
- VSS_NCTF_11 (B4)
- VSS_NCTF_12 (B5)
- VSS_NCTF_13 (B6)
- VSS_NCTF_14 (B7)
- VSS_NCTF_15 (B8)
- VSS_NCTF_16 (B9)
- VSS_NCTF_17 (B0)
- VSS_NCTF_18 (B1)
- VSS_NCTF_19 (B2)
- VSS_NCTF_20 (B3)
- VSS_NCTF_21 (B4)
- VSS_NCTF_22 (B5)
- VSS_NCTF_23 (B6)
- VSS_NCTF_24 (B7)
- VSS_NCTF_25 (B8)
- VSS_NCTF_26 (B9)
- VSS_NCTF_27 (B0)
- VSS_NCTF_28 (B1)
- VSS_NCTF_29 (B2)
- VSS_NCTF_30 (B3)
- VSS_NCTF_31 (B4)
- VSS_NCTF_32 (B5)
- VSS_NCTF_33 (B6)
- VSS_NCTF_34 (B7)
- VSS_NCTF_35 (B8)
- VSS_NCTF_36 (B9)
- VSS_NCTF_37 (B0)
- VSS_NCTF_38 (B1)
- VSS_NCTF_39 (B2)
- VSS_NCTF_40 (B3)
- VSS_NCTF_41 (B4)
- VSS_NCTF_42 (B5)
- VSS_NCTF_43 (B6)
- VSS_NCTF_44 (B7)
- VSS_NCTF_45 (B8)
- VSS_NCTF_46 (B9)
- VSS_NCTF_47 (B0)
- VSS_NCTF_48 (B1)
- VSS_NCTF_49 (B2)
- VSS_NCTF_50 (B3)
- VSS_NCTF_51 (B4)
- VSS_NCTF_52 (B5)
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- VSS_NCTF_55 (B8)
- VSS_NCTF_56 (B9)
- VSS_NCTF_57 (B0)
- VSS_NCTF_58 (B1)
- VSS_NCTF_59 (B2)
- VSS_NCTF_60 (B3)
- VSS_NCTF_61 (B4)
- VSS_NCTF_62 (B5)
- VSS_NCTF_63 (B6)
- VSS_NCTF_64 (B7)
- VSS_NCTF_65 (B8)
- VSS_NCTF_66 (B9)
- VSS_NCTF_67 (B0)
- VSS_NCTF_68 (B1)
- VSS_NCTF_69 (B2)
- VSS_NCTF_70 (B3)
- VSS_NCTF_71 (B4)
- VSS_NCTF_72 (B5)
- VSS_NCTF_73 (B6)
- VSS_NCTF_74 (B7)
- VSS_NCTF_75 (B8)
- VSS_NCTF_76 (B9)
- VSS_NCTF_77 (B0)
- VSS_NCTF_78 (B1)
- VSS_NCTF_79 (B2)
- VSS_NCTF_80 (B3)
- VSS_NCTF_81 (B4)
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- VSS_NCTF_86 (B9)
- VSS_NCTF_87 (B0)
- VSS_NCTF_88 (B1)
- VSS_NCTF_89 (B2)
- VSS_NCTF_90 (B3)
- VSS_NCTF_91 (B4)
- VSS_NCTF_92 (B5)
- VSS_NCTF_93 (B6)
- VSS_NCTF_94 (B7)
- VSS_NCTF_95 (B8)
- VSS_NCTF_96 (B9)
- VSS_NCTF_97 (B0)
- VSS_NCTF_98 (B1)
- VSS_NCTF_99 (B2)
- VSS_NCTF_100 (B3)

SATA:

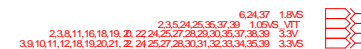
- C40 SATA_ODD_PWRGT to SATA_ODD_PWRGT 31
- B41 PCH_GPIO6_R165 to 1.5K 1% 0.1
- C41 GPIO70 to R167 to 1.5K 1% 0.1
- A40 GPIO71 to R166 to 1.5K 1% 0.1

DM1 & FDI Termination Voltage

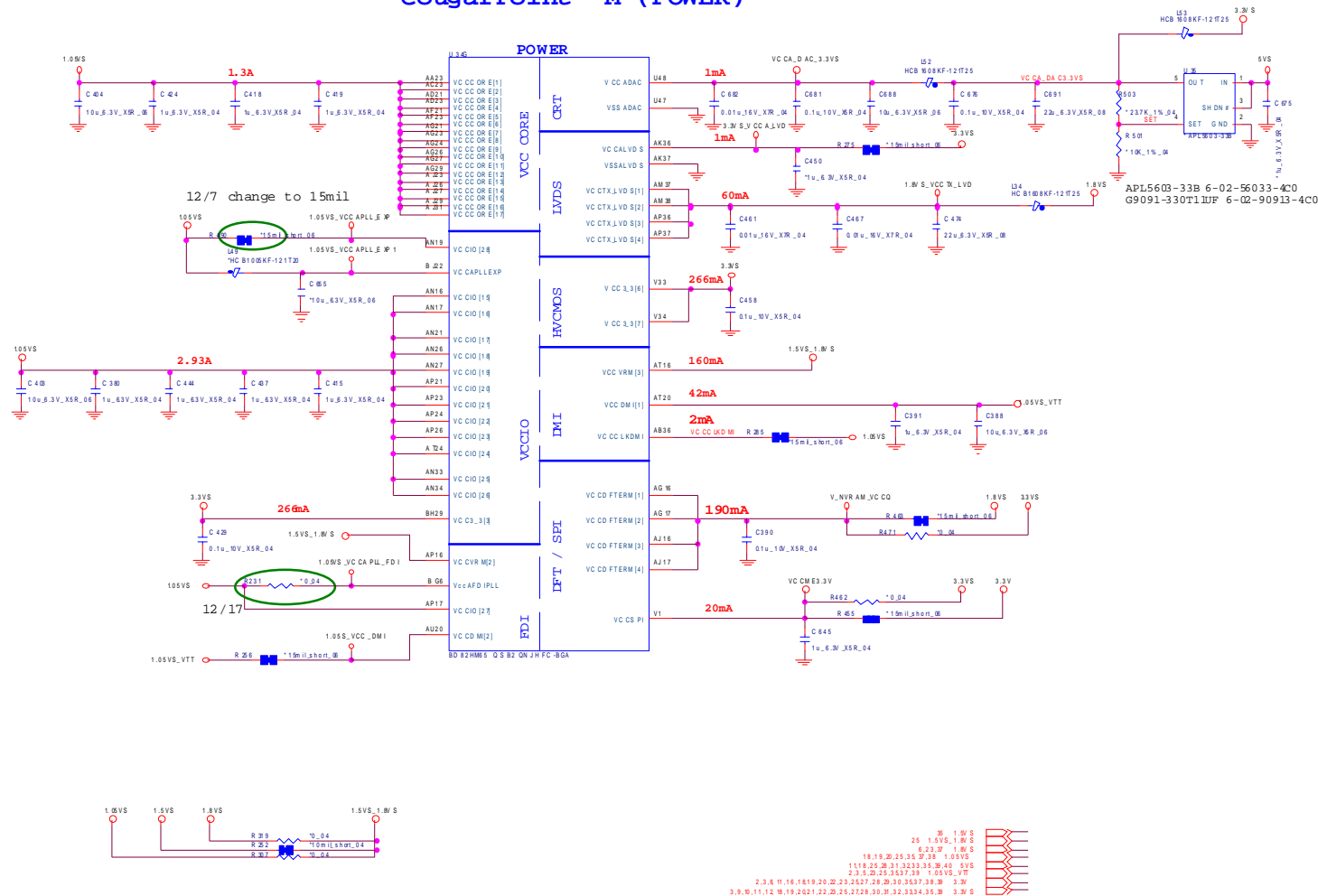
Set to Vcc when LOW
Set to Vcc when HIGH

Table:

Module Pin	Target Board Pin
A4	VSS_NCTF_1
A5	VSS_NCTF_2
A6	VSS_NCTF_3
A7	VSS_NCTF_4
A8	VSS_NCTF_5
A9	VSS_NCTF_6
B0</	

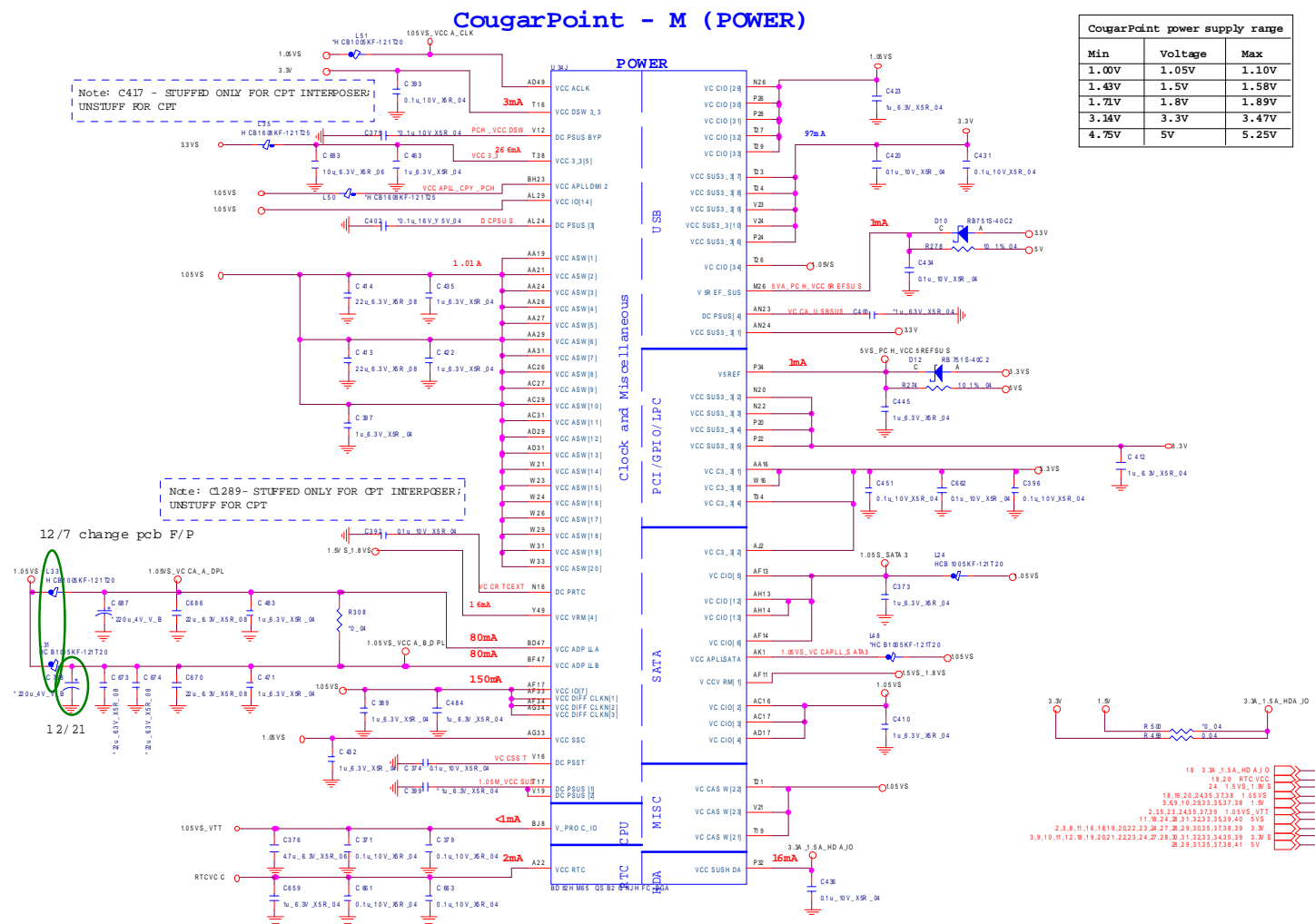


CougarPoint -M (POWER)

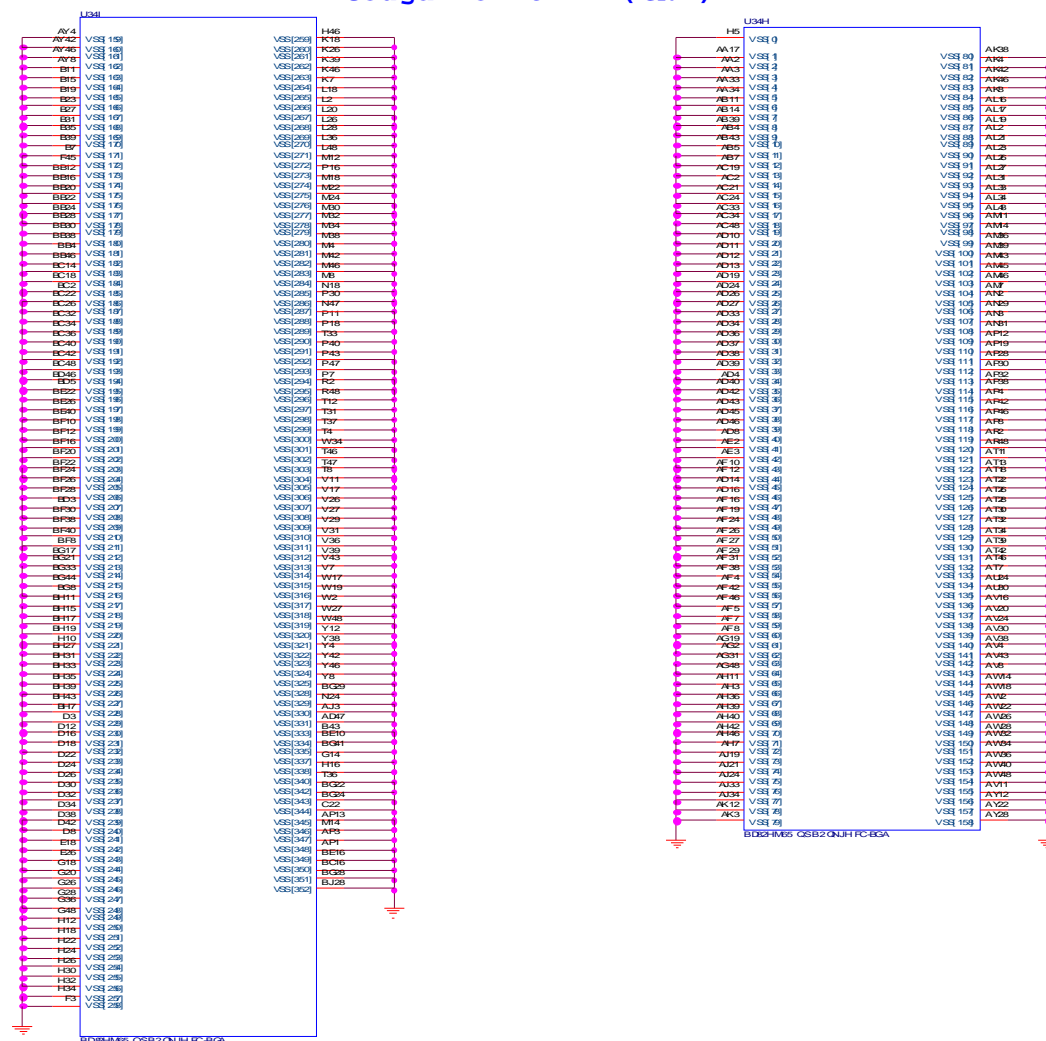


B.Schematic Diagrams

Sheet 25 of 49
PCH 8/9 POWER



CougarPoint -M (GND)

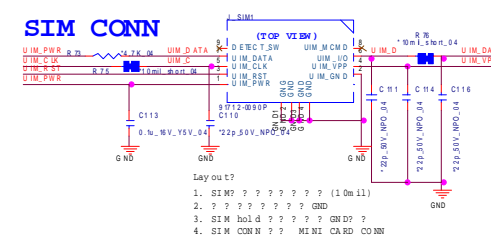
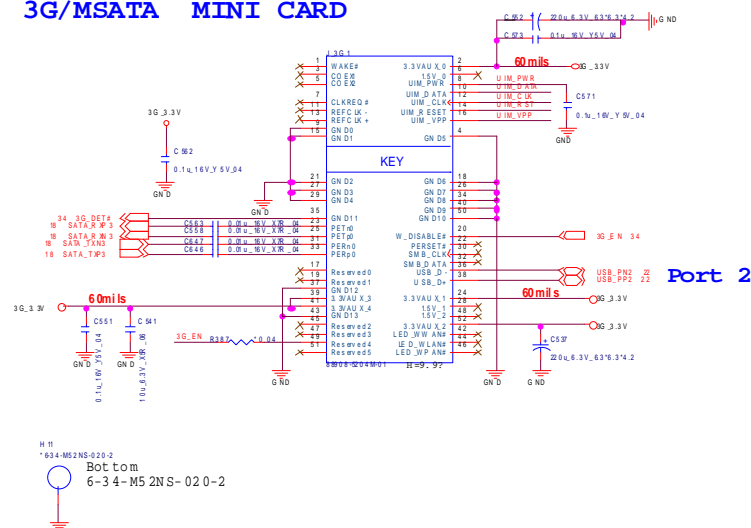


Voltage Rail	Voltage	90 Ecmx	Current (A)
V_CPU10	1.05	1	1 (mA)
VREF	5	1	1 (mA)
VREF_Sus	5	1	1 (mA)
Van3_3	3.3	0.266	
VADAC3	1.05	1	1 (mA)
VADAPLLA	1.05	0.08	
VADAPLLB	1.05	0.08	
VadCore	1.05	1.3	
VDMF	1.1	0.042	
VdIO	1.05	2.925	
VdASW	1.05	1.01	
VdSEI	3.3	0.20	
VdSN3_3	3.3	2	2 (mA)
VdPFTERM	1.8	0.19	
VdSus3_3	3.3	0.097	
VdSUSHDA	3.3	1	1 (mA)
VdVFE	1.5	0.16	
VdCIRKDI	1.05	0.02	
VdSCT	1.05	0.095	
VdDIFFCKN	1.05	0.055	
VdALDVS	3.3	1	1 (mA)
VdTX_LVDS	1.8	0.06	

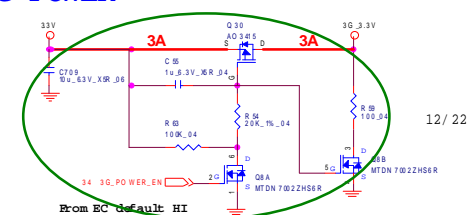
Sheet 26 of 49
PCH 3/9- GRD

WLAN 3G MINI PCIE

3G/MSATA MINI CARD

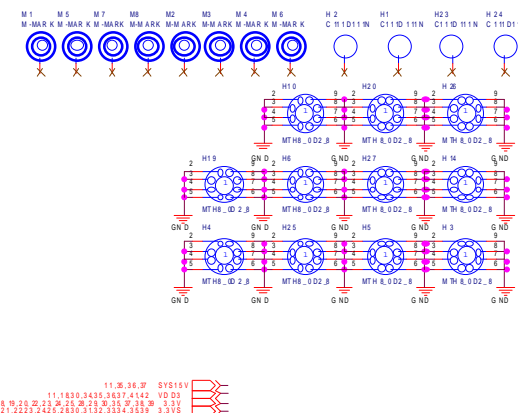
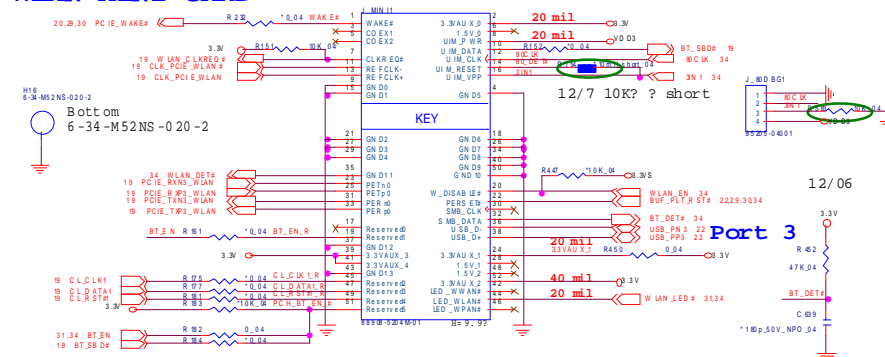


3G POWER



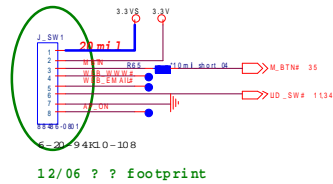
Sheet 27 of 49
WLAN 3G MINI
PCIE

WLAN MINI CARD



CCD, TPM, MULTI CON

FOR POWER SW BOARD



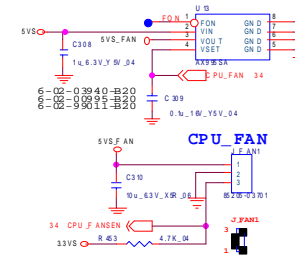
FOR OPTIMUS FUNCTION

12/14 DEL

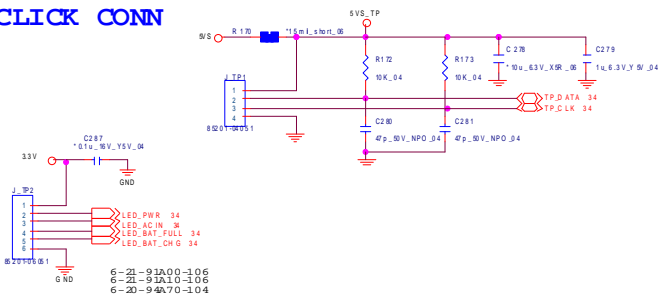
FOR TOUCH SENSOR BOARD

12/14 DEL

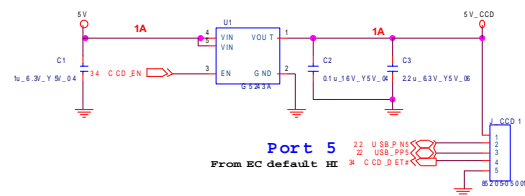
CPU FAN CONTROL



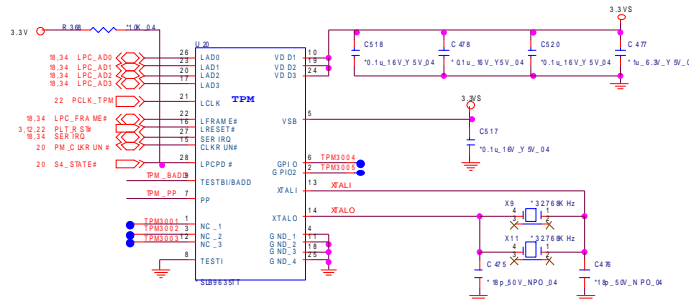
CLICK CONN



CCD



TPM 1.2



Assorted before using S3
LPC reset timing:

LPCPD# inactive to LRST#inactive 32-96us

TPM_PP HI: ACCESS
LO: NORMAL (internal PD)
TPM_BAD# HI: 4B 4FH
LO: 2B 2FH

TPM_PP HI: ACCESS
LO: NORMAL (internal PD)
TPM_BAD# HI: 4B 4FH
LO: 2B 2FH

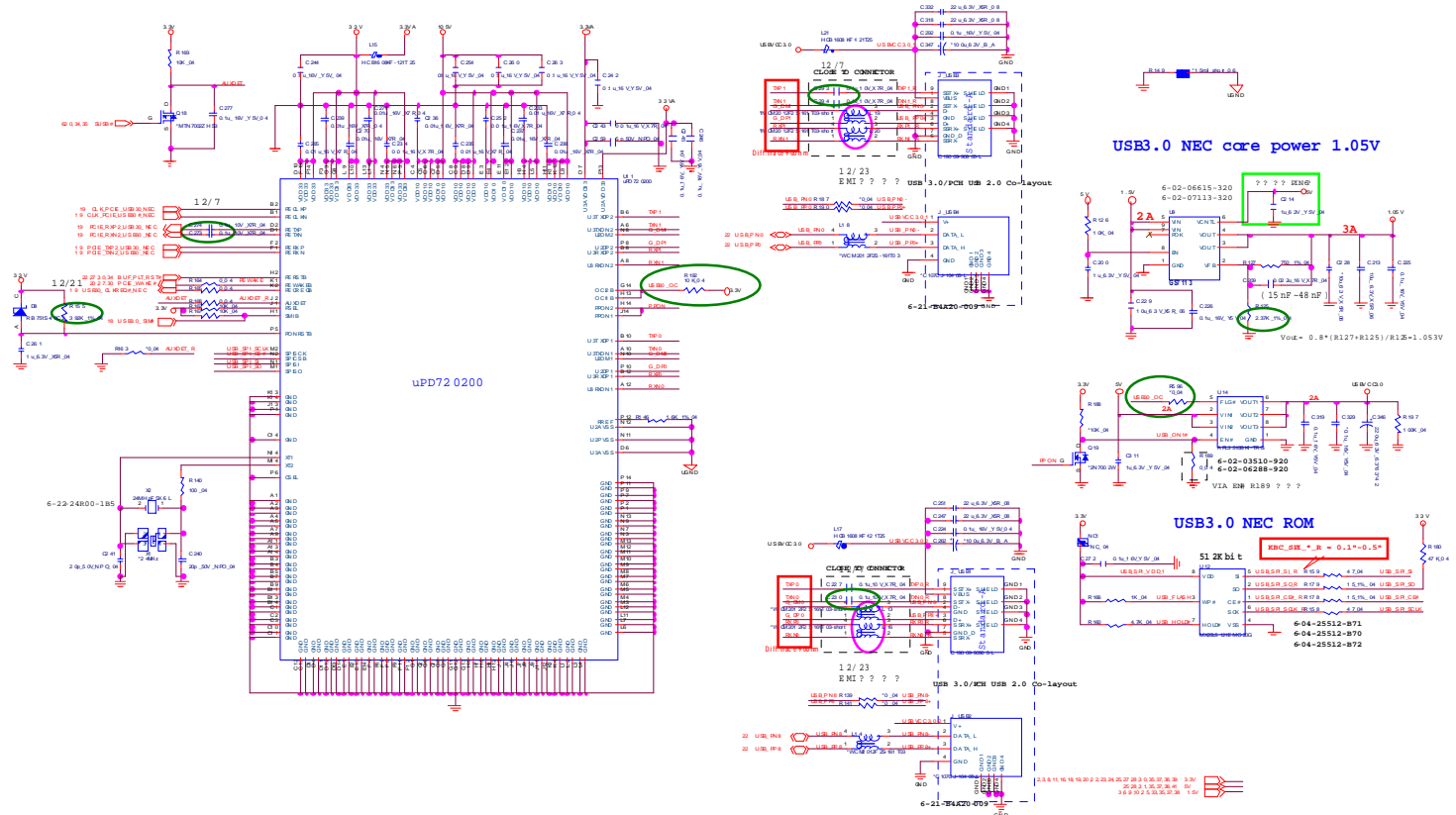
11,18,24,25,32,33,34,35,40,5V5
2,3,8,11,16,18,19,20,22,24,25,27,30,31,32,33,34,35,39,5V5

Sheet 28 of 49
CCD, TPM, MULTI
CON

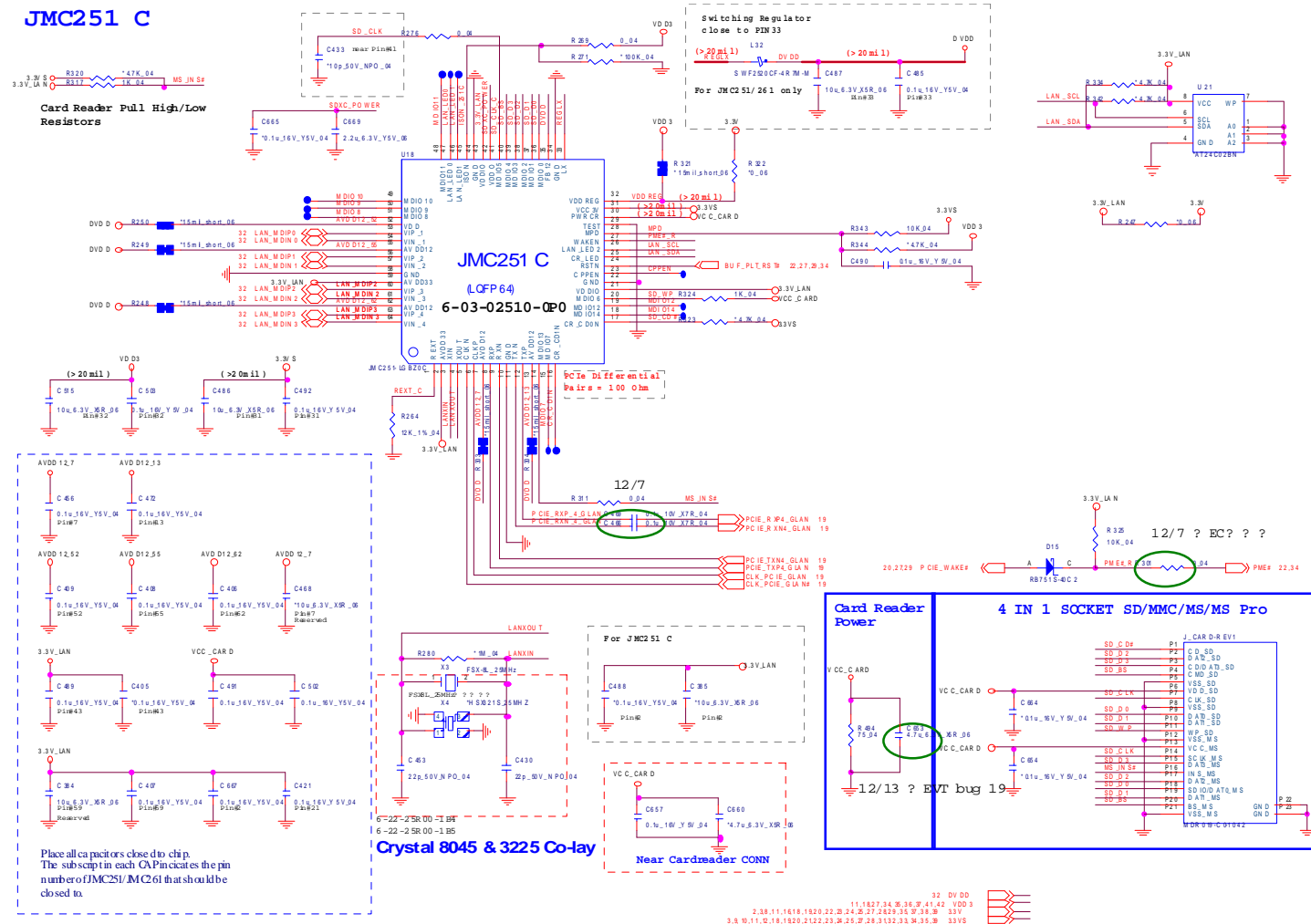
Schematic Diagrams

USB2.0, USB3.0 NEC

Sheet 29 of 49
USB2.0, USB3.0
NEC



Card Reader (JMC251 C)

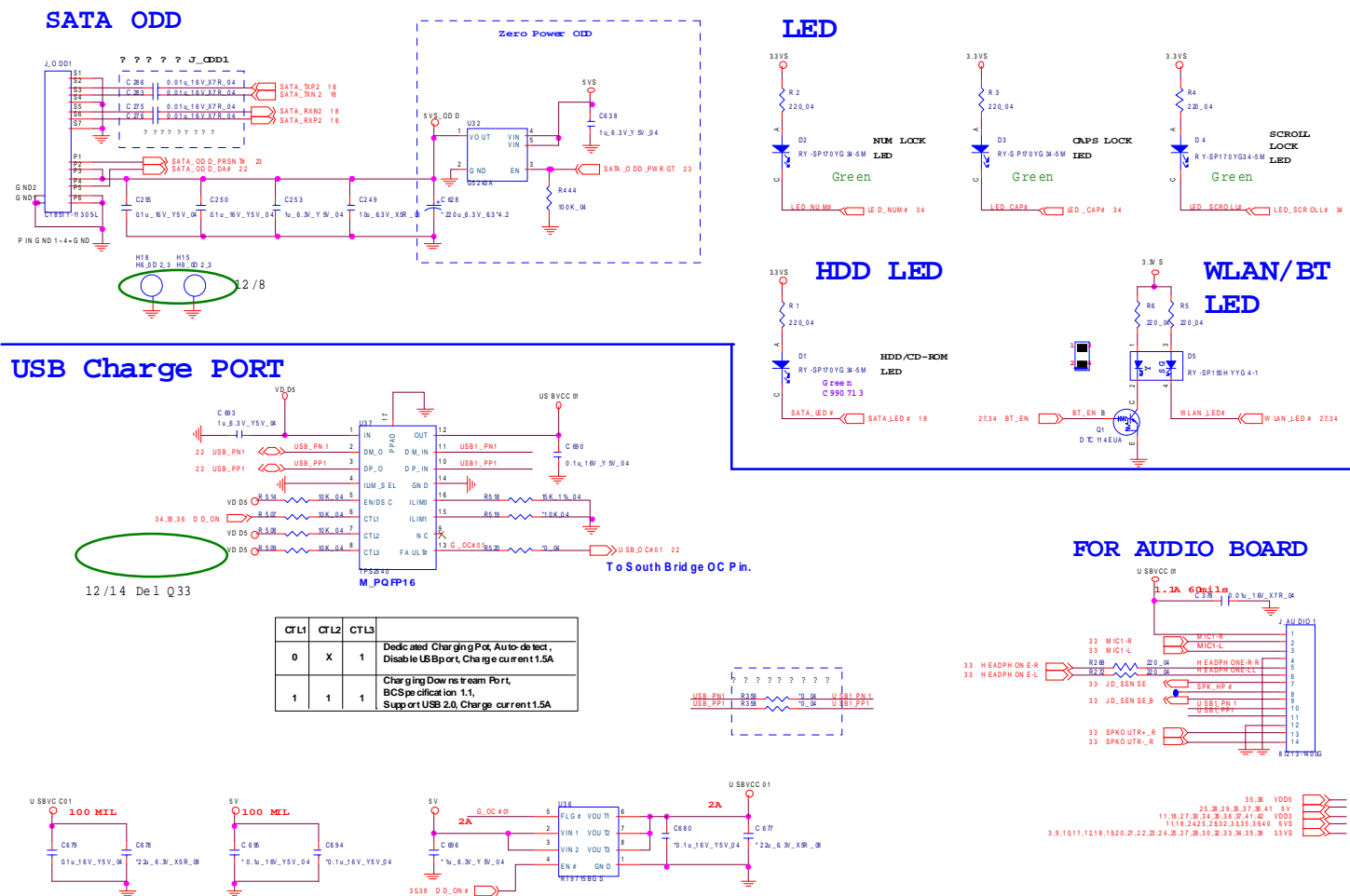


Sheet 30 of 49
Card Reader
(JMC251 C)

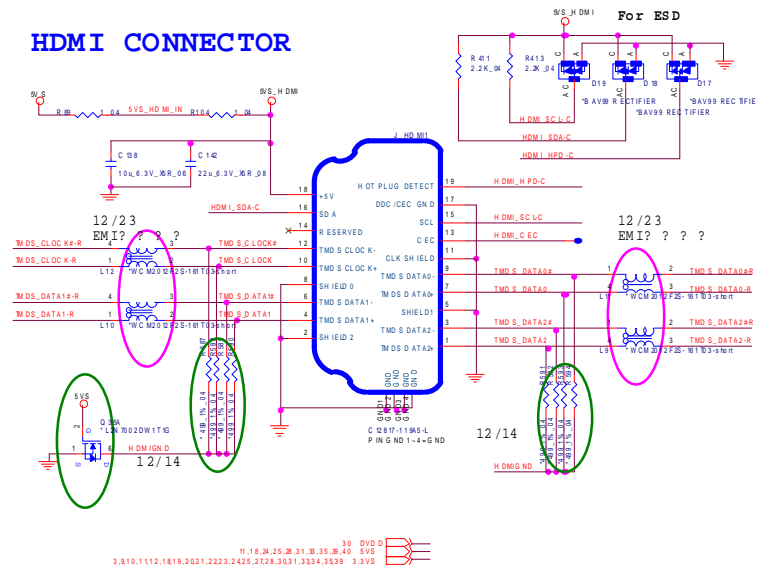
Schematic Diagrams

SATA ODD, LED, USB CHARGE

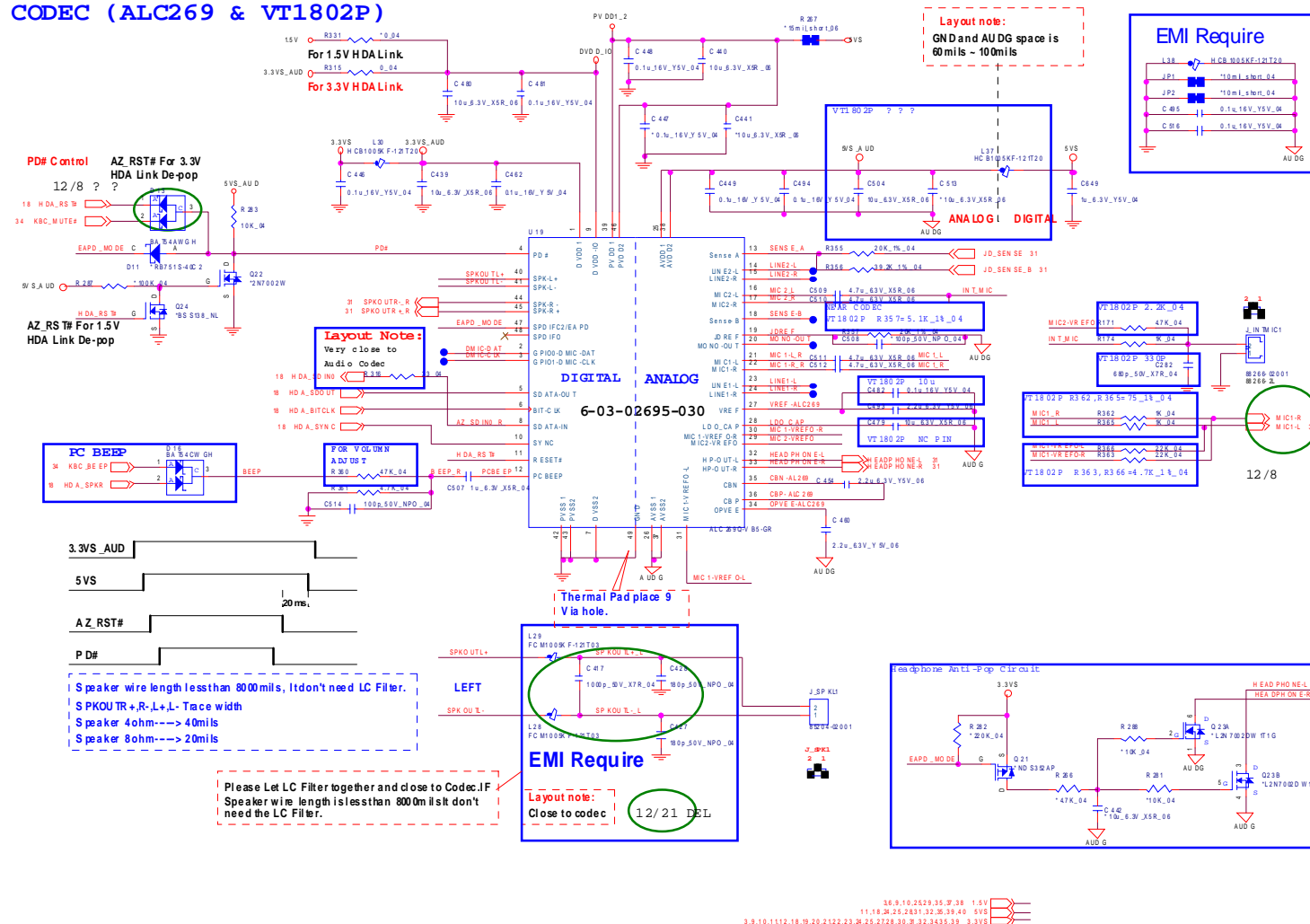
Sheet 31 of 49
SATA ODD, LED,
USB CHARGE



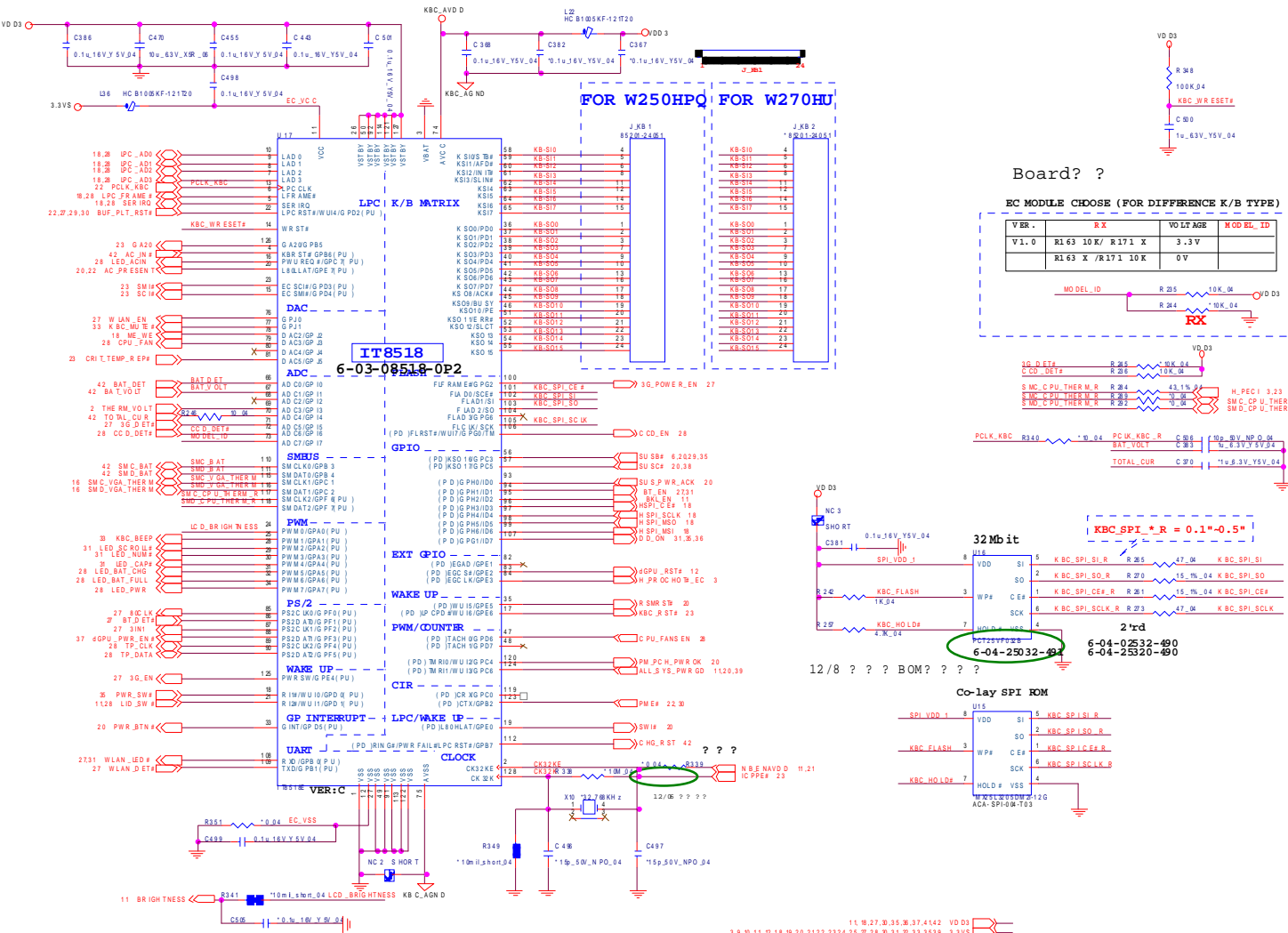
HDMI, RJ45 B - 33



CODEC (ALC269 & VT1802P)

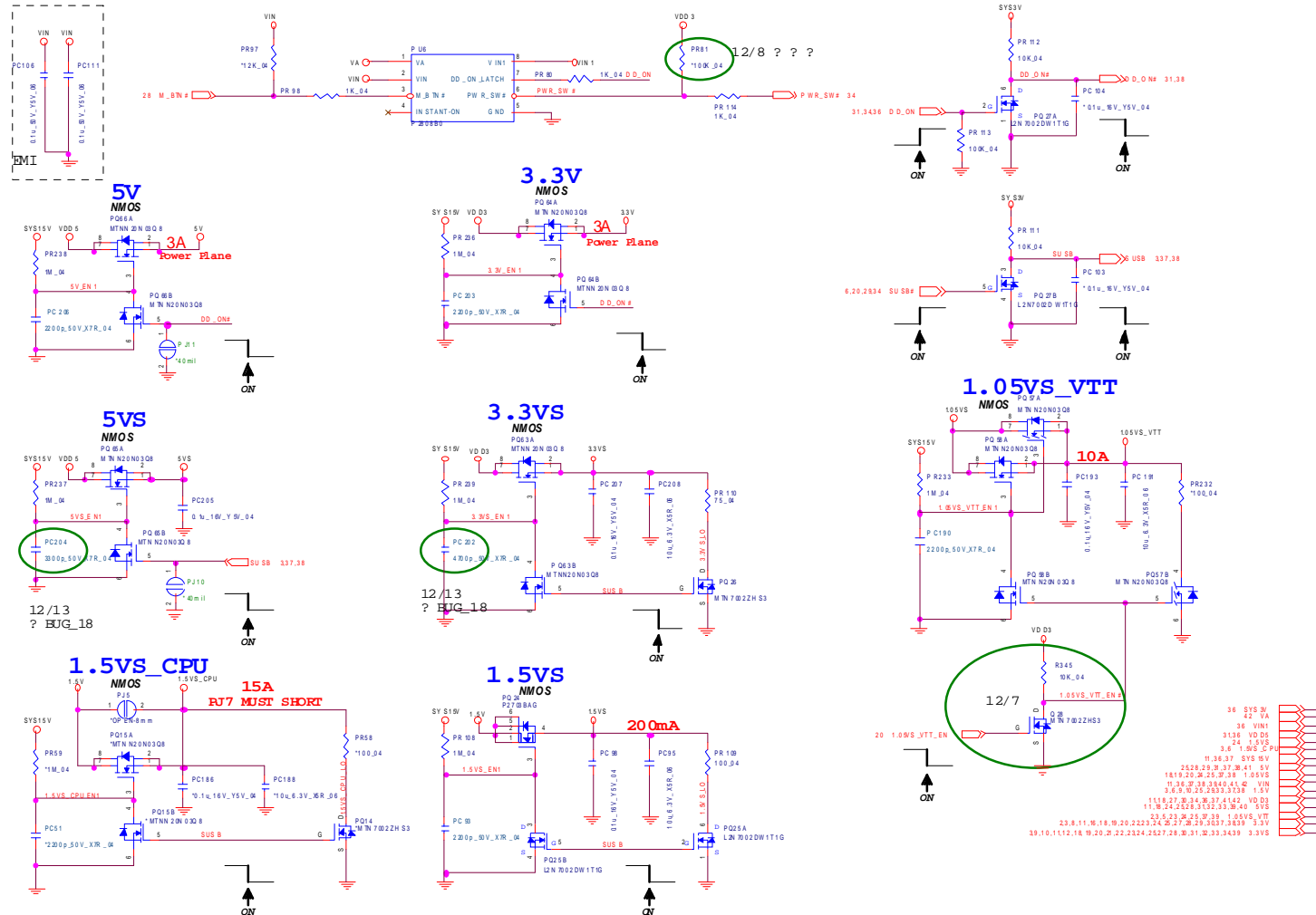


KBC-ITE IT8518E



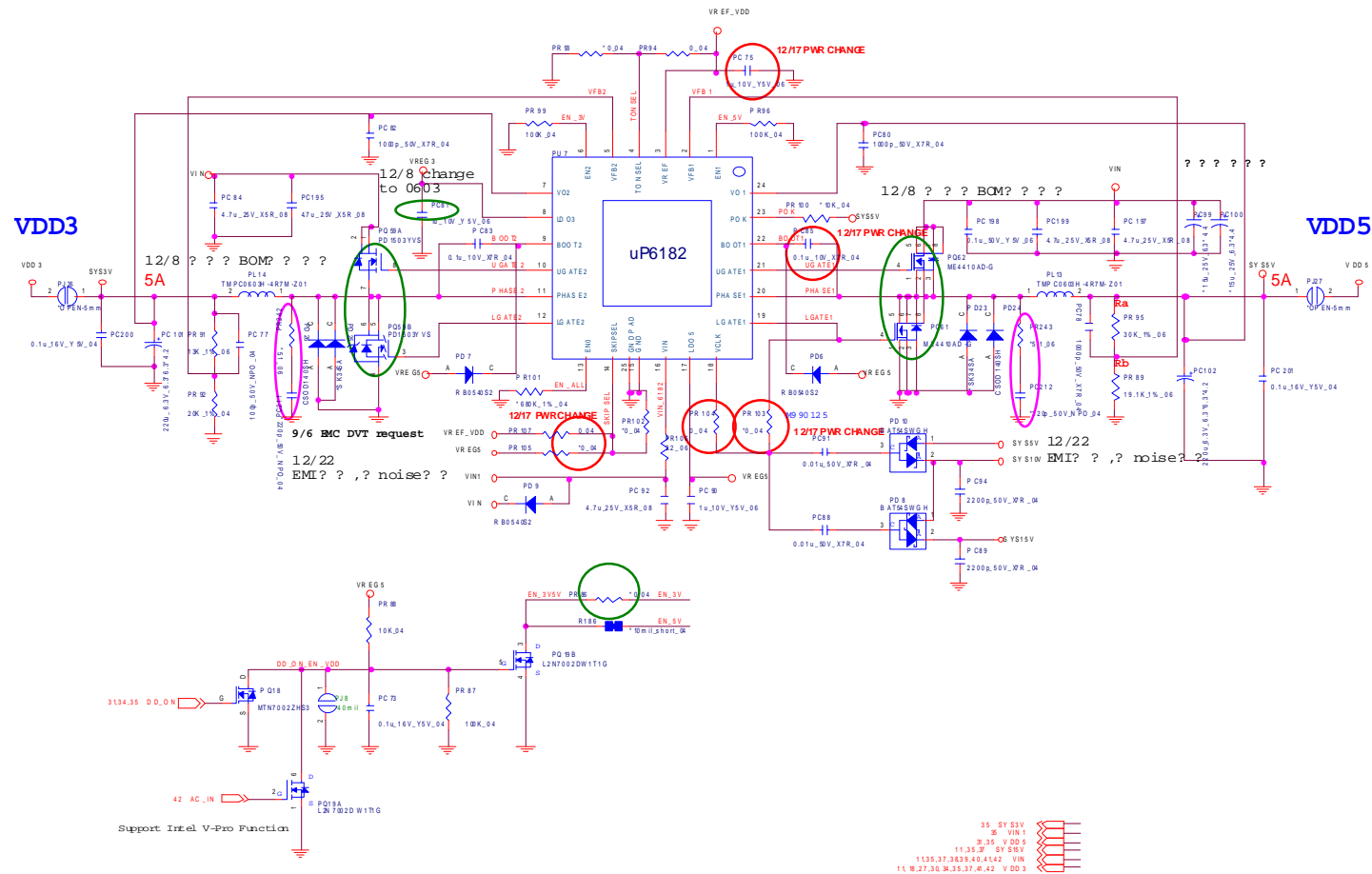
Schematic Diagrams

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



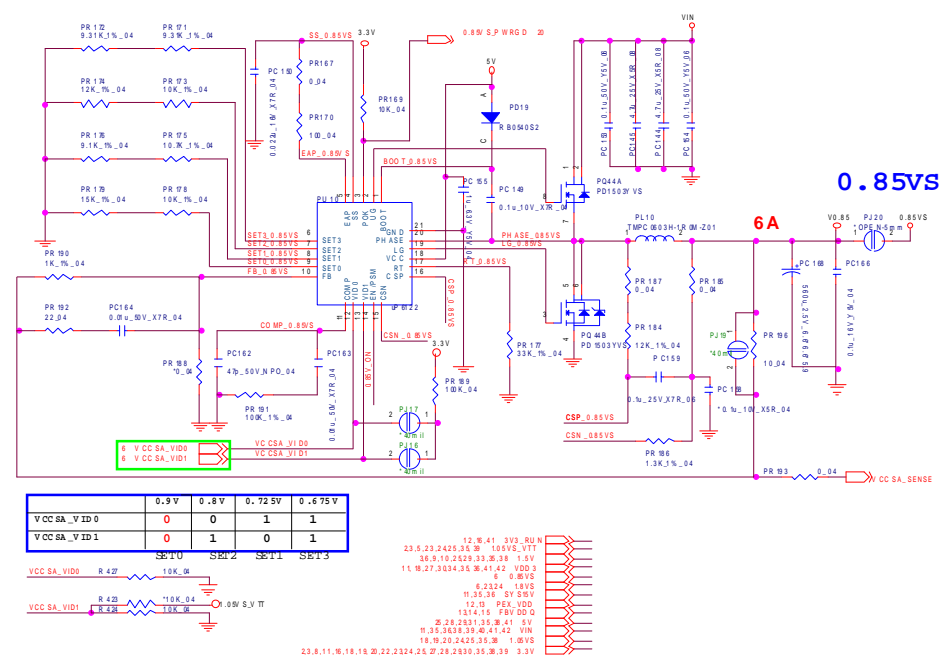
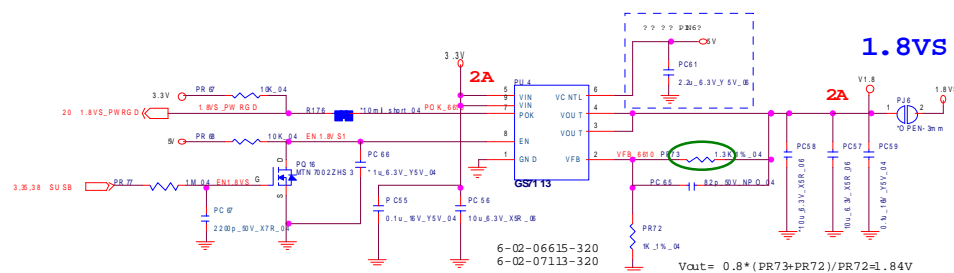
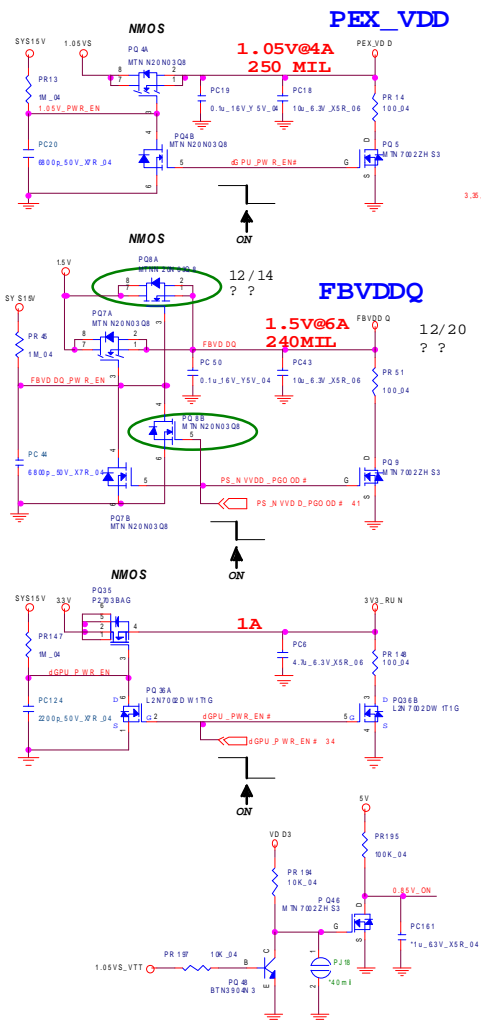
Sheet 35 of 49
5VS, 3VS, 3.3VM,
1.5VS CPU

B. Schematic Diagrams

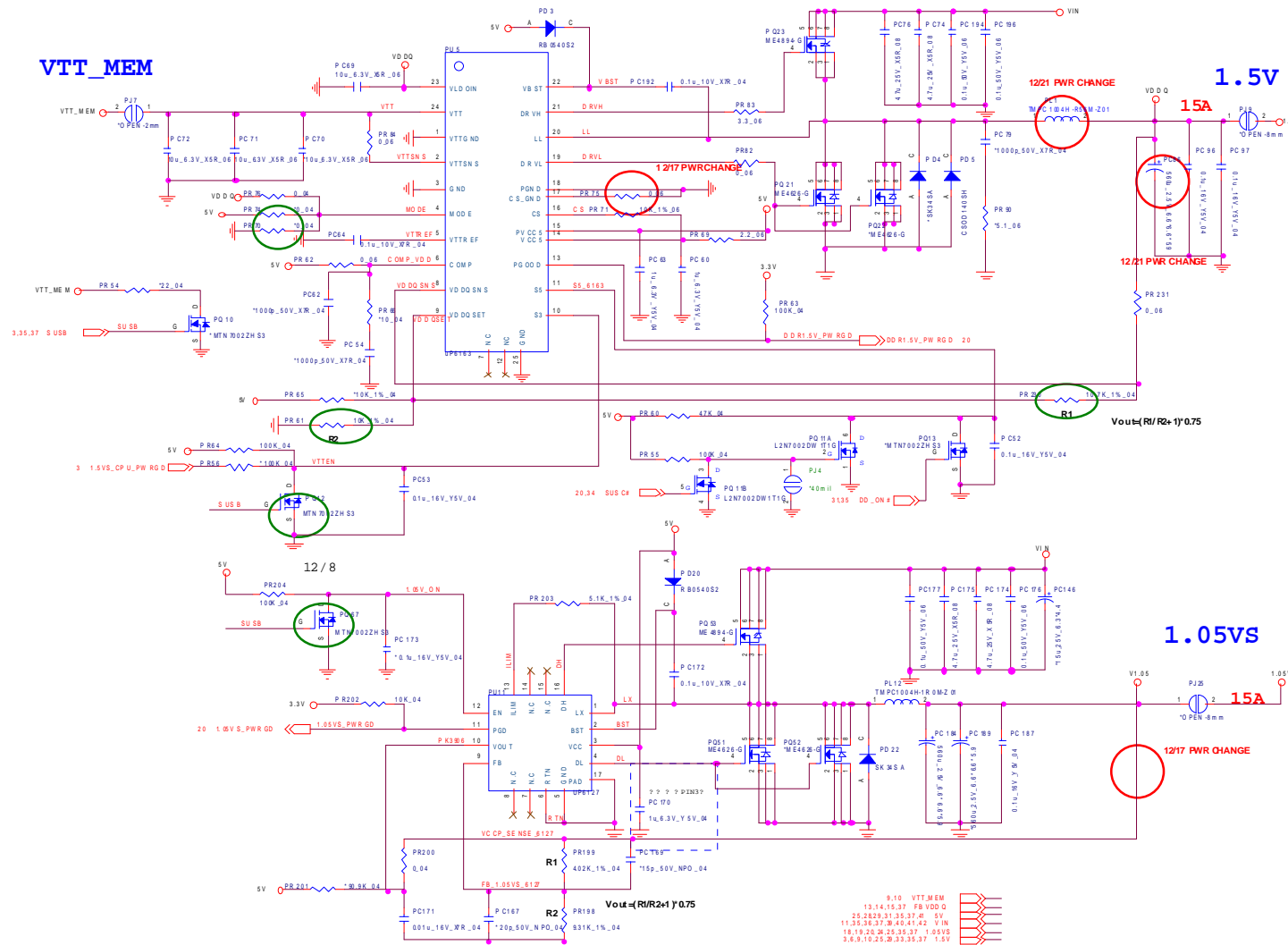


Power 0.85VS, 1.8VS, PEX VDD

Sheet 37 of 49
Power 0.85VS,
1.8VS, PEX VDD



POWER 1.5V/1.05VS/0.75V

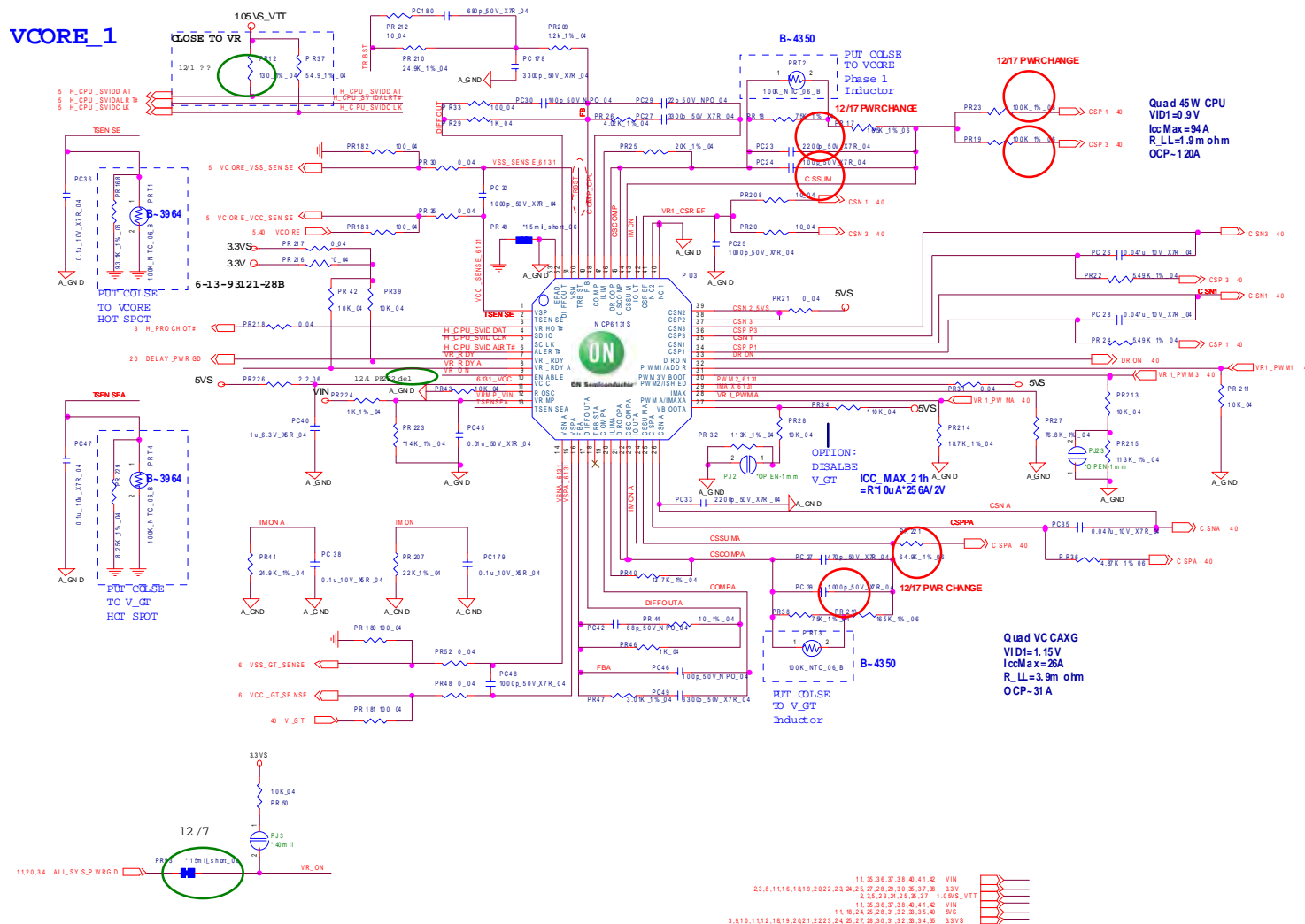


Sheet 38 of 49
POWER 1.5V/
1.05VS/0.75V

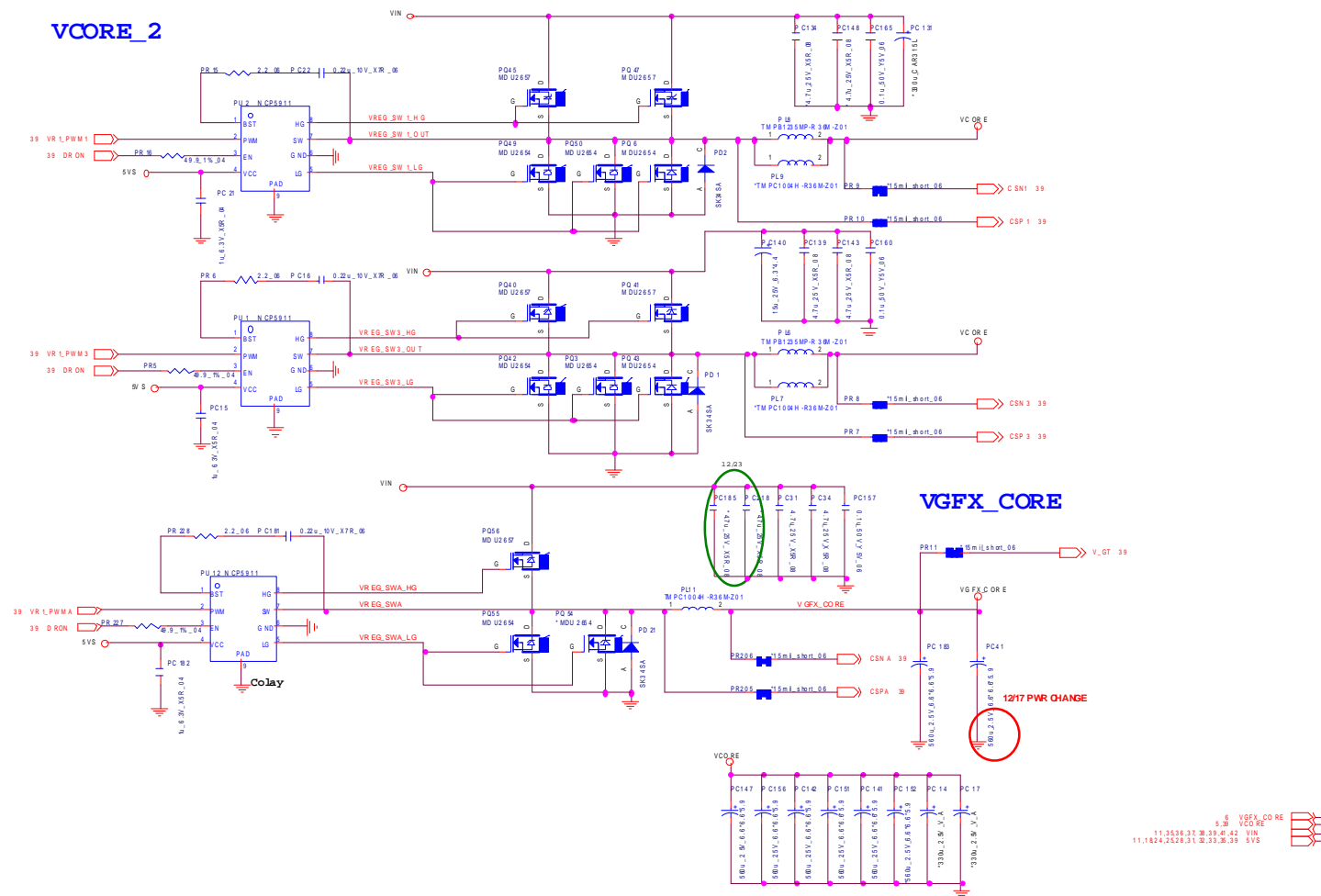
POWER VCORE1

B.Schematic Diagrams

Sheet 39 of 49
POWER VCORE1

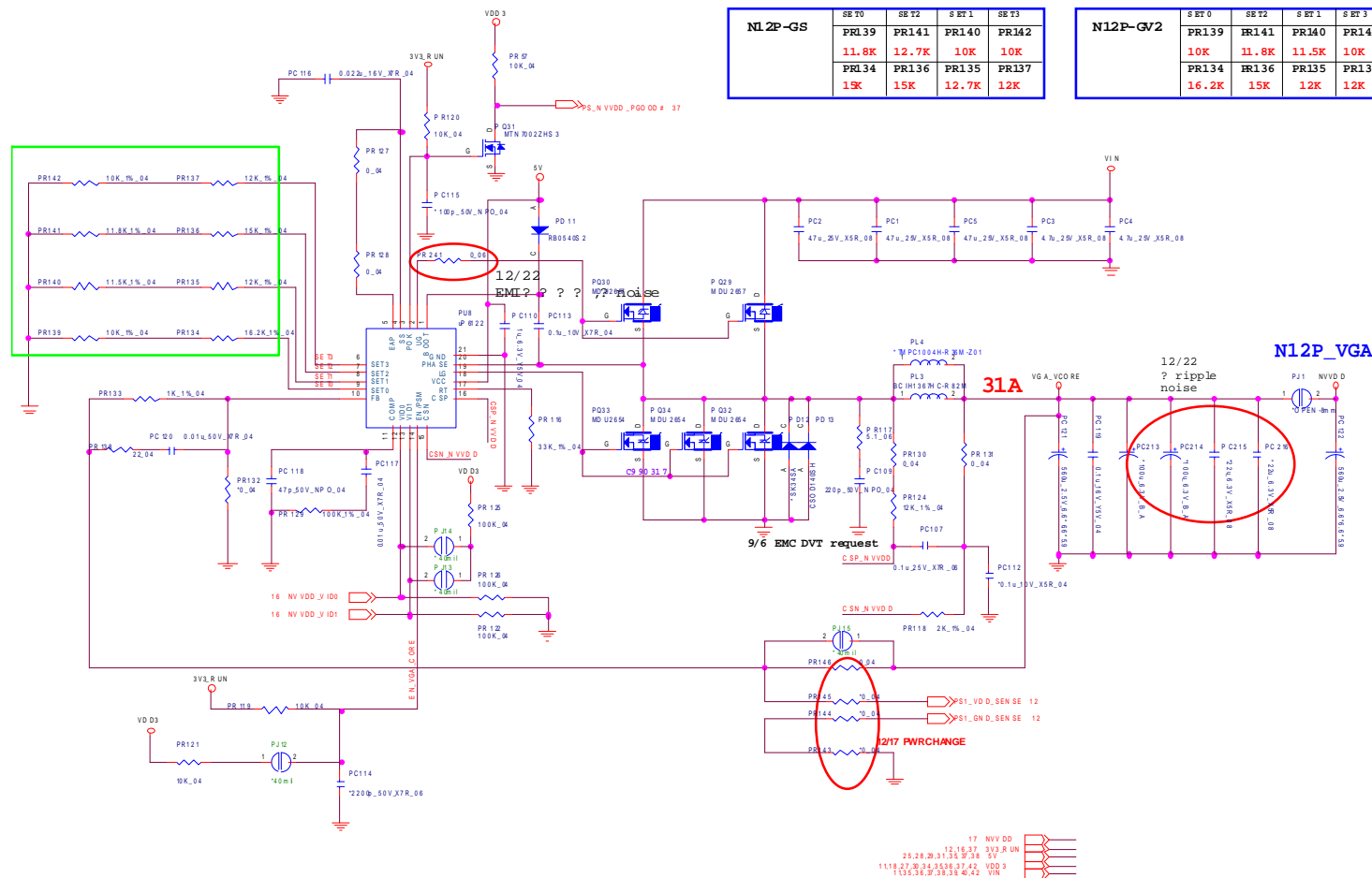


POWER VCORE2 B - 41

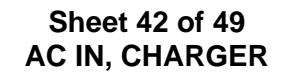


Power VGA NVVDD

Sheet 41 of 49
Power VGA NVVDD



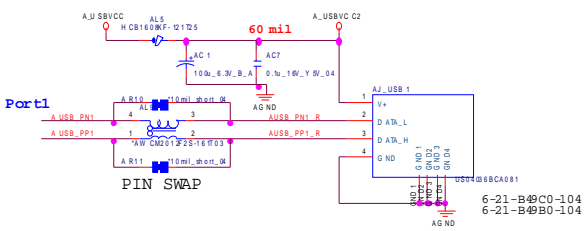
AC IN, CHARGER B - 43



Schematic Diagrams

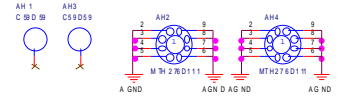
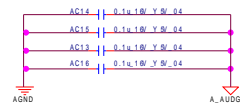
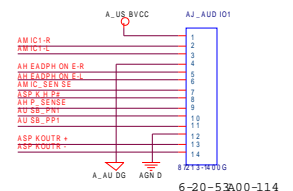
AUDIO BOARD

USB PORT

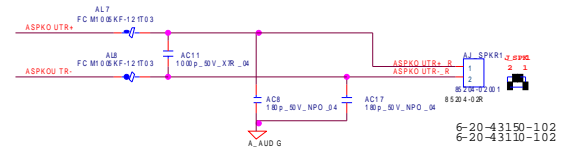
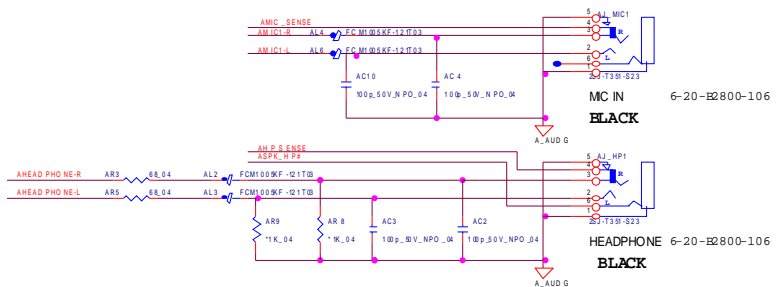


TO M/B

Sheet 43 of 49
AUDIO BOARD

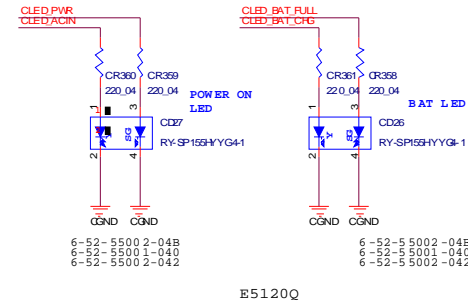
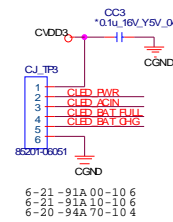
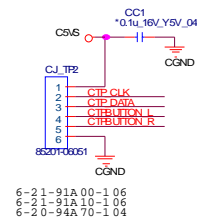
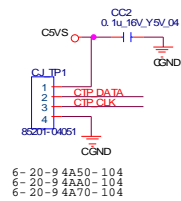


AUDIO JACK

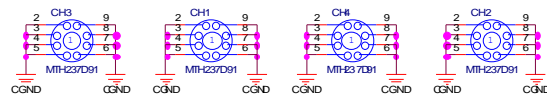
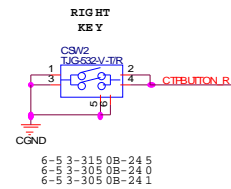
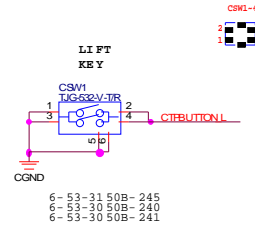


CLICK BOARD

CLICK BOARD

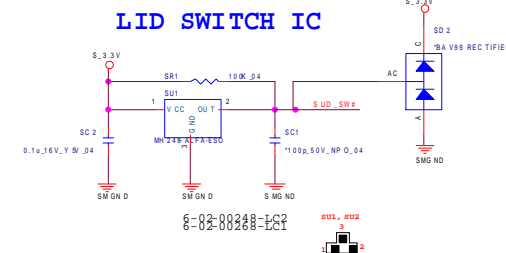
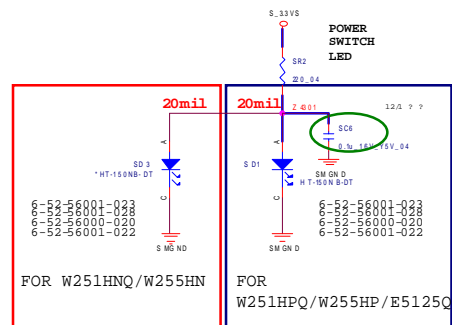
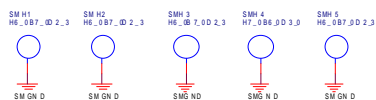


E5120Q



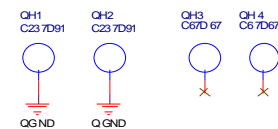
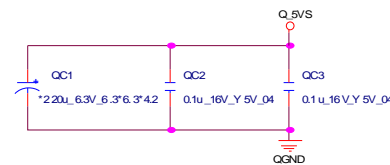
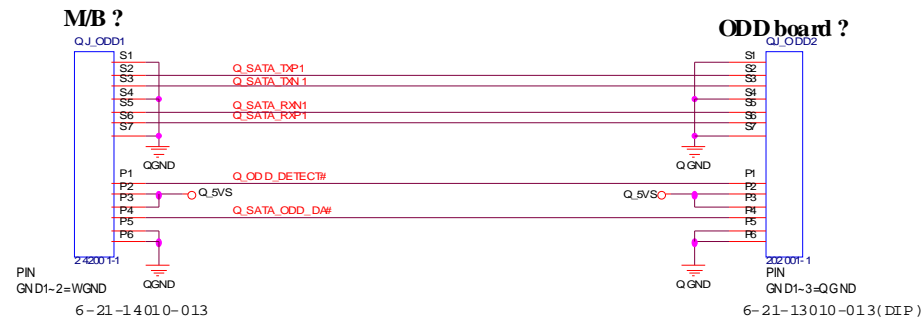
B.Schematic Diagrams

POWER SW & LED

[illegible]

W270HU BRIDGE ODD BOARD

ODD BOARD FOR W270HU

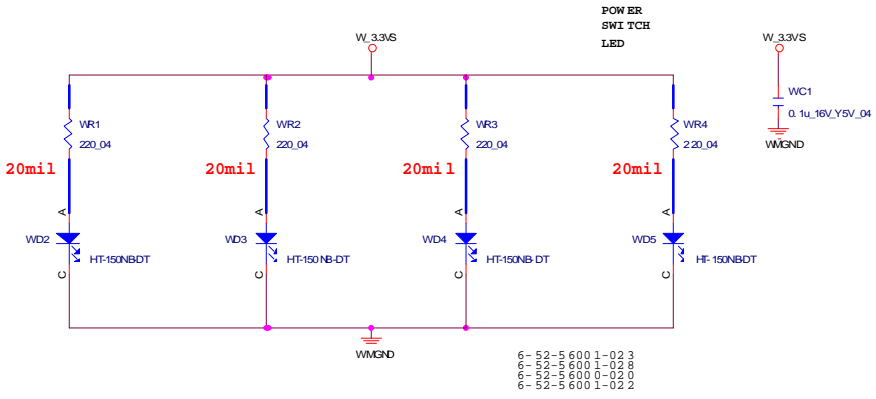


Sheet 46 of 49
W270HU BRIDGE
ODD BOARD

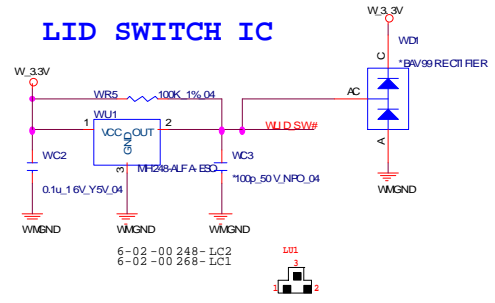
Schematic Diagrams

W270HU POWER SW BOARD

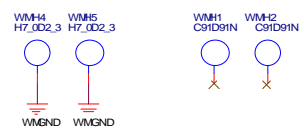
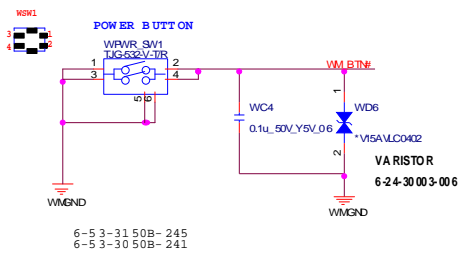
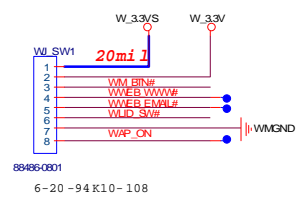
POWER SW & LED



LID SWITCH IC



Sheet 47 of 49
W270HU POWER
SW BOARD

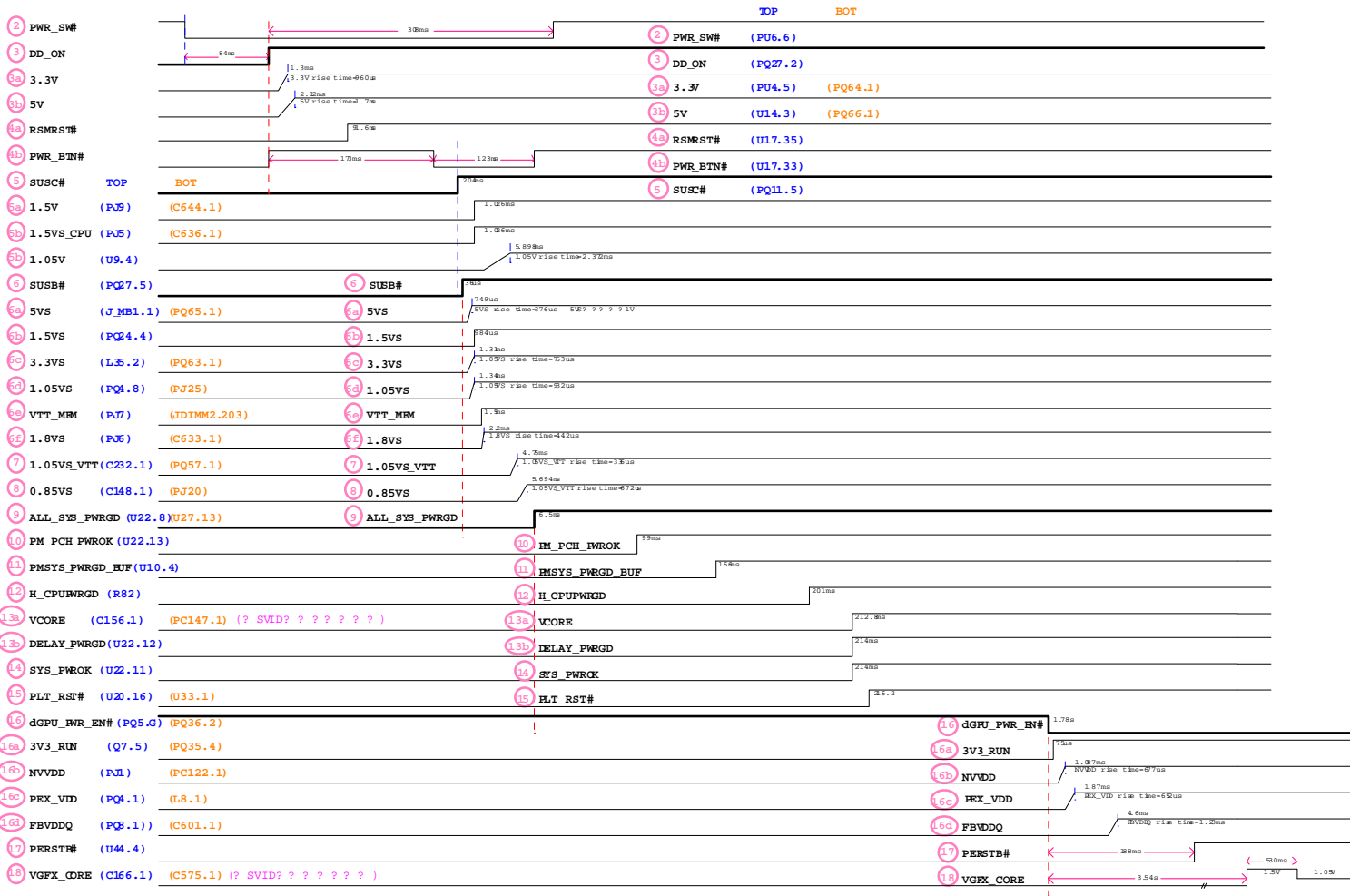


Sheet 48 of 49
Power Diagram

Schematic Diagrams

Power On SEQ

Sheet 49 of 49
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).

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 **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.