Notebook Computer

P750DM / P751DM / P750DM-G / P751DM-G

Service Manual
Preface

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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 P750DM / P751DM / P750DM-G / P751DM-G series notebook PC.

The following information is included:

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

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

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

1. Do not use this product near water, for example near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
2. Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electrical shock from lightning.
3. Do not use the telephone to report a gas leak in the vicinity of the leak.
4. Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.
5. This product is intended to be supplied by a Listed Power Unit with an AC Input of 100 - 240V, 50 - 60Hz, DC Output of 19.5V, 11.8A (230 Watts) minimum AC/DC Adapter.
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.
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.**

   ![Image of peripheral device handling]

   **Use only approved brands of peripherals.**

   **Unplug the power cord before attaching peripheral devices.**

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**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.

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**Warning**

Before you undertake any upgrade procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines and power cord). You must 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 Disc
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 (make sure you use the adapter when first setting up the computer, as to safeguard the computer during shipping the battery will be locked to not power the system until first connected to the AC/DC adapter).
6. Use one hand to raise the lid/LCD to a comfortable viewing angle (do not to exceed 135 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

Introduction .........................................................1-1
  Overview ..............................................................1-1
  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

Disassembly .........................................................2-1
  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 M.2 SSD Module .......................................2-9
  Removing the Primary System Memory (RAM) ....................2-10
  Removing the System Memory (RAM) from Under the Keyboard .2-12
  Removing and Installing the Processor ..............................2-14
  Removing the Wireless LAN Module ...............................2-17
  Wireless LAN, Combo, 3G & LTE Module Cables .................2-18
  Removing the M.2 SATA Module .....................................2-19
  Removing and Installing the Video Card ...........................2-21
  Removing the Mainboard .............................................2-23

Part Lists .............................................................A-1
  Part List Illustration Location .........................................A-2
  Top .................................................................................A-3
  Bottom ..........................................................................A-4
  LCD - Samsung ...............................................................A-5
  LCD - Chimei .................................................................A-6
  LCD - Sharp .................................................................A-7
  MB ..................................................................................A-8
  VGA .................................................................................A-9
  HDD ................................................................................A-10

Schematic Diagrams..............................................B-1
  Block Diagram ...........................................................B-2
  Processor 1/5 .................................................................B-3
  Processor 2/5 .................................................................B-4
  Processor 3/5 .................................................................B-5
  Processor 4/5 .................................................................B-6
  Processor 5/5 .................................................................B-7
  DDR4 CHA SO-DIMM_0 ...................................................B-8
  DDR4 CHA SO-DIMM_1 ...................................................B-9
  DDR4 CHB SO-DIMM_0 ...................................................B-10
  DDR4 CHB SO-DIMM_1 ...................................................B-11
  Panel, Inverter, CRT ......................................................B-12
  Display Port A ..............................................................B-13
  Display Port B ..............................................................B-14
  HDMI ..........................................................................B-15
  MXM PCI-E .................................................................B-16
  Lynix Point 1/7 ..............................................................B-17
  Lynix Point 2/7 ..............................................................B-18
  Lynix Point 3/7 ..............................................................B-19
  Lynix Point 4/7 ..............................................................B-20
  Lynix Point 5/7 ..............................................................B-21
<table>
<thead>
<tr>
<th>Component</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lynix Point 6/7</td>
<td>B-22</td>
</tr>
<tr>
<td>Lynix Point 7/7</td>
<td>B-23</td>
</tr>
<tr>
<td>USB + eSATA, USB Charging</td>
<td>B-24</td>
</tr>
<tr>
<td>CCD, USB Port3</td>
<td>B-25</td>
</tr>
<tr>
<td>M.2 3G+USB &amp; WLAN+BT</td>
<td>B-26</td>
</tr>
<tr>
<td>M.2 PCIE4X SSD1 &amp; SSD2</td>
<td>B-27</td>
</tr>
<tr>
<td>Realtek ALC892</td>
<td>B-28</td>
</tr>
<tr>
<td>PCM1861 + TAS5766DCA</td>
<td>B-29</td>
</tr>
<tr>
<td>Subwoofer</td>
<td>B-30</td>
</tr>
<tr>
<td>Audio Jack</td>
<td>B-31</td>
</tr>
<tr>
<td>EC IT8587</td>
<td>B-32</td>
</tr>
<tr>
<td>Second EC IT8587</td>
<td>B-33</td>
</tr>
<tr>
<td>Backlight Keyboard</td>
<td>B-34</td>
</tr>
<tr>
<td>LID SW, Fan, LED Conn</td>
<td>B-35</td>
</tr>
<tr>
<td>TP, FP, Multi-Con</td>
<td>B-36</td>
</tr>
<tr>
<td>LAN E2400</td>
<td>B-37</td>
</tr>
<tr>
<td>PS8338B + PS8330B</td>
<td>B-38</td>
</tr>
<tr>
<td>TBT</td>
<td>B-39</td>
</tr>
<tr>
<td>Power</td>
<td>B-40</td>
</tr>
<tr>
<td>TPS65982</td>
<td>B-41</td>
</tr>
<tr>
<td>Cardreader RTS5250</td>
<td>B-42</td>
</tr>
<tr>
<td>TPM SLB9655TT &amp; NPCT420</td>
<td>B-43</td>
</tr>
<tr>
<td>VCCIO / 1P0A</td>
<td>B-44</td>
</tr>
<tr>
<td>DDR 1.2V/0.6VS/VCCPLL_OC</td>
<td>B-45</td>
</tr>
<tr>
<td>VDD3, VDD5</td>
<td>B-46</td>
</tr>
<tr>
<td>12V, 5VS, 3.3VS, 3.3VA</td>
<td>B-47</td>
</tr>
<tr>
<td>5VS_2</td>
<td>B-48</td>
</tr>
<tr>
<td>VCore / VCCGT</td>
<td>B-49</td>
</tr>
<tr>
<td>VCore Output Stage</td>
<td>B-50</td>
</tr>
<tr>
<td>VCCSA / VCCGT</td>
<td>B-51</td>
</tr>
<tr>
<td>Power Charger, DC-In</td>
<td>B-52</td>
</tr>
<tr>
<td>P750DM HDD Board</td>
<td>B-53</td>
</tr>
<tr>
<td>P750DM Power LED Board</td>
<td>B-54</td>
</tr>
<tr>
<td>P750DM Click Board</td>
<td>B-55</td>
</tr>
<tr>
<td>P750DM Audio Board</td>
<td>B-56</td>
</tr>
<tr>
<td>P750DM Charge LED Board</td>
<td>B-57</td>
</tr>
<tr>
<td>P750DM LID Switch Board</td>
<td>B-58</td>
</tr>
<tr>
<td>P750DM Finger Sensor Board</td>
<td>B-59</td>
</tr>
<tr>
<td>P770DM Charge LED Board</td>
<td>B-60</td>
</tr>
<tr>
<td>P750DM BOT LED Board</td>
<td>B-61</td>
</tr>
<tr>
<td>P775DM Power LED Board</td>
<td>B-62</td>
</tr>
<tr>
<td>Power On Sequence</td>
<td>B-63</td>
</tr>
</tbody>
</table>

**Updating the FLASH ROM BIOS**

C-1
Chapter 1: Introduction

Overview

This manual covers the information you need to service or upgrade the P750DM / P751DM / P750DM-G / P751DM-G 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 User’s Manual. That manual is shipped with the computer.

Operating systems (e.g. Windows 8.1, etc.) have their own manuals as do application software (e.g. word processing and database programs). If you have questions about those programs, you should consult those manuals.

The P750DM / P751DM / P750DM-G / P751DM-G 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 note the warning and safety information indicated by the “✎” symbol.

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

Processor Options
Intel® Core™ i7 Processor
i7-6700K (4.00GHz)*
8MB L3 Cache, 14nm, DDR4-2133MHz, TDP 91W

Intel® Core™ i5 Processor
i5-6600K (3.50GHz)*
6MB L3 Cache, 14nm, DDR4-2133MHz, TDP 91W
i5-6500 (3.20GHz)
6MB L3 Cache, 14nm, DDR4-2133MHz, TDP 65W
i5-6400 (2.70GHz)
6MB L3 Cache, 14nm, DDR4-2133MHz, TDP 65W
*Support Intel® XTU over-clocking technology

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

Video Adapter Options
NVIDIA® GeForce GTX 980M PCIe Video Card
8GB GDDR5 Video RAM on board

NVIDIA® GeForce GTX 970M PCIe Video Card
6GB GDDR5 Video RAM

NVIDIA® GeForce GTX 965M PCIe Video Card
4GB GDDR5 Video RAM

Core Logic
Intel® Z170 Chipset

BIOS
AMI BIOS (64Mb SPI Flash-ROM)

Memory
Four 260 Pin SO-DIMM Sockets Supporting DDR4 2133MHz Memory
(The real memory operating frequency depends on the FSB of the processor.)
Memory Expandable from 4GB (minimum) up to 64GB (maximum)

Pointing Device
Built-In Touchpad (scrolling key functionality integrated)

Keyboard
Full Color Illuminated Full-size Winkey Keyboard (with numeric keypad and anti-ghost keys)

Audio
High Definition Audio Compliant Interface
S/PDIF Digital Output
Two Speakers
Sound Blaster Audio
ANSP™ 3D Sound Technology on Headphone Output
Built-In Array Microphone
External 7.1CH Audio Output Supported by Headphone, Microphone, Line-In and S/PDIF Out Jacks

Storage
Two changeable 2.5" (6cm) 7.0mm (h)/ 9.5mm (h) SATA (Serial) Hard Disk Drives/Solid State Drives (SSD) supporting RAID level 0/1
*(Factory Option) Two M.2 SATA 2280 SSDs supporting RAID level 0/1
Or
*(Factory Option) Two M.2 PCIe Gen3 x4 2280 SSDs supporting RAID level 0/1

Security
Security (Kensington® Type) Lock Slot
BIOS Password
*(Factory Option) Fingerprint Reader Module
*Trusted Platform Module 2.0
Introduction

Overview

1. Interface
   - One USB 3.1 Port/Thunderbolt Port
   - Three USB 3.0 Ports
   - One eSATA/Powered 3.0 USB Port
   - One HDMI-Out Port
   - Two DisplayPorts (1.2)
   - One S/PDIF Out Jack
   - One Microphone-In Jack
   - One Line-In Jack
   - One RJ-45 LAN Jack
   - One DC-In Jack

2. M.2 Slots
   - Slot 1 for Combo WLAN and Bluetooth Module
   - Slot 2 for SATA or PCIe Gen3 x4 SSD
   - Slot 3 for SATA or PCIe Gen3 x4 SSD
   - Slot 4 for 3G/4G Module
   - Note: (Factory Option) LTE-1/LTE-2 Antenna

3. Communication
   - Built-In Gigabit Ethernet LAN
   - 2.0M FHD PC Camera Module
   - (Factory Option - Model A Only) M.2 3042 3G/4G Module

4. WLAN/Bluetooth M.2 Modules:
   - (Factory Option) Intel® Wireless-N 7265 Wireless LAN (802.11b/g/n) + Bluetooth 4.0
   - (Factory Option) Intel® Wireless-AC 3165 Wireless LAN (802.11ac) + Bluetooth 4.0
   - (Factory Option) Intel® Wireless-AC 8260 Wireless LAN (802.11ac) + Bluetooth 4.1
   - (Factory Option) Qualcomm® Atheros Killer™ Wireless-AC 1535 Wireless LAN (802.11ac) + Bluetooth 4.1
   - (Factory Option) Third-Party Wireless LAN 802.11b/g/n + Bluetooth 4.0

5. Card Reader
   - Embedded Multi-In-1 Push-Push Card Reader
   - MMC (MultiMedia Card) / RS MMC
   - SD (Secure Digital) / Mini SD / SDHC/ SDXC (up to UHS-II)

6. Environmental Spec
   - Temperature
     - Operating: 10°C - 35°C
     - Non-Operating: -20°C - 60°C
   - Relative Humidity
     - Operating: 20% - 80%
     - Non-Operating: 10% - 90%

7. Power
   - Removable 8-cell Smart Lithium-Ion Battery Pack, 82WH
   - Full Range AC/DC Adapter
     - AC Input: 100 - 240V, 50 - 60Hz
     - DC Output: 19.5V, 11.8A (230W)
     - (Factory Option) DC Output: 19.5V, 16.9A (330W)

8. Dimensions & Weight
   - 386mm (w) * 262mm (d) * 7 - 35.7mm (h)
   - 3.4kg (Barebone System with Video Card and 82WH Battery)
1. Built-In PC Camera
2. PC Camera LED
3. Built-In Microphone
4. LCD
5. Speakers
6. Power Button
7. LED Indicators
8. Keyboard
9. TouchPad and Buttons
10. Fingerprint Reader (Optional)
External Locator - Front & Right Side Views

**Figure 2**
Front Views
1. Light Bar
2. LED Power Indicators

**Figure 3**
Right Side Views
1. USB 3.0 Port
2. S/PDIF-Out Jack
3. Headphone Jack
4. Microphone Jack
5. Line-In Jack
6. Security Lock Slot
Introduction

1. RJ-45 LAN Jack
2. USB 3.0 Ports
3. USB 3.1 Port
4. Multi-in-1 Card Reader
5. Combined eSATA/Powered USB 3.0 Port

Figure 4
Left Side View

1. Vent/Fan Intake
2. HDMI-Out Port
3. Display Ports
4. DC-In Jack
External Locator - Bottom View

**Figure 6**  
**Bottom View**

1. Vent  
2. Component Bay Cover  
3. Battery  
4. HDD Bay

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**Overheating**

To prevent your computer from overheating, make sure nothing blocks the vent/fan intakes while the computer is in use.
Mainboard Overview - Top (Key Parts)

1. Memory Slots
   DDR3L SO-DIMM
2. Platform
   Controller Hub
Mainboard Overview - Bottom (Key Parts)

1. KBC ITE IT8587
2. VGA-Card Connector
3. CPU Socket (no CPU installed)
4. Memory Slots DDR3L SO-DIMM (Primary)
5. Hard Disk Connector
1. RJ-45 LAN Jack
2. USB 3.0 Port
3. USB 3.1 Ports
4. Multi-in-1 Card Reader
5. USB 3.0 Port / e-SATA
6. KB LED Connector
7. WLAN Card Connector
8. Button LED Connector
9. TP FFC Cable Connector
10. Panel Cable Connector
11. Keyboard Cable Connector
12. Battery Connector
13. S/PDIF-Out Jack
14. Headphone Jack
15. Microphone Jack
16. Line-In Jack
Mainboard Overview - Bottom (Connectors)

1. HDMI-Out Port
2. Display Port
3. DC-In Jack
4. VGA Fan Cable Connector
5. 3G / mSATA Connector
6. CMOS Battery
7. SSD Connector
8. CPU Fan Cable Connector
Introduction
Chapter 2: Disassembly

Overview

This chapter provides step-by-step instructions for disassembling the P750DM / P751DM / P750DM-G / P751DM-G 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 \( \mathbb{\text{}} \) 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 \( \mathbb{\text{}} \) will also provide any possible helpful information. A box with a \( \mathbb{\text{}} \) contains warnings.

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

<table>
<thead>
<tr>
<th>Connections</th>
<th>Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locking collar sockets for ribbon connectors</td>
<td>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.</td>
</tr>
<tr>
<td>Pressure sockets for multi-wire connectors</td>
<td>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.</td>
</tr>
<tr>
<td>Pressure sockets for ribbon connectors</td>
<td>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.</td>
</tr>
<tr>
<td>Board-to-board or multi-pin sockets</td>
<td>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.</td>
</tr>
</tbody>
</table>
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.
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.

<table>
<thead>
<tr>
<th>To remove the Battery:</th>
<th>To remove the WLAN Module:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Remove the battery</td>
<td>1. Remove the battery</td>
</tr>
<tr>
<td></td>
<td>page 2 - 5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>To remove the HDD:</th>
<th>To remove and install the M.2 SATA Module:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Remove the battery</td>
<td>1. Remove the battery</td>
</tr>
<tr>
<td>page 2 - 5</td>
<td>page 2 - 5</td>
</tr>
<tr>
<td>2. Remove the HDD</td>
<td>2. Remove the system memory</td>
</tr>
<tr>
<td>page 2 - 6</td>
<td>page 2 - 10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>To remove the M.2 SSD:</th>
<th>To remove and install the Video Card:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Remove the battery</td>
<td>1. Remove the battery</td>
</tr>
<tr>
<td>page 2 - 5</td>
<td>page 2 - 5</td>
</tr>
<tr>
<td>2. Remove the HDD</td>
<td>2. Remove the video card</td>
</tr>
<tr>
<td>page 2 - 6</td>
<td>page 2 - 21</td>
</tr>
<tr>
<td>3. Remove the M.2 SSD</td>
<td>3. Install the video card</td>
</tr>
<tr>
<td>page 2 - 9</td>
<td>page 2 - 22</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>To remove the Primary System Memory:</th>
<th>To remove the Mainboard:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Remove the battery</td>
<td>1. Remove the battery</td>
</tr>
<tr>
<td>page 2 - 5</td>
<td>page 2 - 5</td>
</tr>
<tr>
<td>2. Remove the system memory</td>
<td>2. Remove the HDD</td>
</tr>
<tr>
<td>page 2 - 10</td>
<td>page 2 - 6</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>To remove the System Memory under the Keyboard:</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>1. Remove the battery</td>
<td>1. Remove the battery</td>
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<tr>
<td>page 2 - 5</td>
<td>page 2 - 5</td>
</tr>
<tr>
<td>2. Remove the keyboard</td>
<td>2. Remove the system memory</td>
</tr>
<tr>
<td>page 2 - 5</td>
<td>page 2 - 12</td>
</tr>
<tr>
<td>3. Remove the system memory</td>
<td>4. Remove the system memory</td>
</tr>
<tr>
<td>page 2 - 13</td>
<td>page 2 - 10</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>To remove and install the Processor:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Remove the battery</td>
<td>1. Remove the battery</td>
</tr>
<tr>
<td>page 2 - 5</td>
<td>page 2 - 5</td>
</tr>
<tr>
<td>2. Remove the system memory</td>
<td>2. Remove the HDD</td>
</tr>
<tr>
<td>page 2 - 10</td>
<td>page 2 - 6</td>
</tr>
<tr>
<td>3. Remove the processor</td>
<td>3. Remove the M.2 SSD</td>
</tr>
<tr>
<td>page 2 - 14</td>
<td>page 2 - 9</td>
</tr>
<tr>
<td>4. Install the processor</td>
<td>4. Remove the system memory</td>
</tr>
<tr>
<td>page 2 - 16</td>
<td>page 2 - 10</td>
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</table>

<table>
<thead>
<tr>
<th>To remove and install the Video Card:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
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<td>1. Remove the battery</td>
</tr>
<tr>
<td>page 2 - 5</td>
<td>page 2 - 5</td>
</tr>
<tr>
<td>2. Remove the video card</td>
<td>2. Remove the video card</td>
</tr>
<tr>
<td>page 2 - 21</td>
<td>page 2 - 21</td>
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</table>

<table>
<thead>
<tr>
<th>To remove the Mainboard:</th>
<th></th>
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<tbody>
<tr>
<td>1. Remove the battery</td>
<td>1. Remove the battery</td>
</tr>
<tr>
<td>page 2 - 5</td>
<td>page 2 - 5</td>
</tr>
<tr>
<td>2. Remove the HDD</td>
<td>2. Remove the HDD</td>
</tr>
<tr>
<td>page 2 - 6</td>
<td>page 2 - 6</td>
</tr>
<tr>
<td>3. Remove the M.2 SSD</td>
<td>3. Remove the M.2 SSD</td>
</tr>
<tr>
<td>page 2 - 9</td>
<td>page 2 - 9</td>
</tr>
<tr>
<td>4. Remove the system memory</td>
<td>4. Remove the system memory</td>
</tr>
<tr>
<td>page 2 - 10</td>
<td>page 2 - 10</td>
</tr>
<tr>
<td>5. Remove the keyboard</td>
<td>5. Remove the keyboard</td>
</tr>
<tr>
<td>page 2 - 12</td>
<td>page 2 - 12</td>
</tr>
<tr>
<td>6. Remove the processor</td>
<td>6. Remove the processor</td>
</tr>
<tr>
<td>page 2 - 14</td>
<td>page 2 - 14</td>
</tr>
<tr>
<td>7. Remove the wireless LAN</td>
<td>7. Remove the wireless LAN</td>
</tr>
<tr>
<td>page 2 - 17</td>
<td>page 2 - 17</td>
</tr>
<tr>
<td>8. Remove the M.2 SATA</td>
<td>8. Remove the M.2 SATA</td>
</tr>
<tr>
<td>page 2 - 19</td>
<td>page 2 - 19</td>
</tr>
<tr>
<td>9. Remove the video card</td>
<td>9. Remove the video card</td>
</tr>
<tr>
<td>page 2 - 21</td>
<td>page 2 - 21</td>
</tr>
<tr>
<td>10. Remove the mainboard</td>
<td>10. Remove the mainboard</td>
</tr>
<tr>
<td>page 2 - 23</td>
<td>page 2 - 23</td>
</tr>
</tbody>
</table>
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. Lift the battery in the direction of the arrow 3.
5. Lift the battery 4 out of the compartment (Figure 1c).

Figure 1
Battery Removal

a. Slide the latch and hold in place.
b. Lift the battery up toward the direction of the arrow.
c. Lift the battery out.
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 7mm/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.

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).
3. Remove the hard disk bay cover by sliding the cover at point 3 (Figure 2b).

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.
4. Lift the hard disk bay cover (4) off the computer (Figure 3c).
5. Slightly lift and pull the HDD-2 assembly (if available) in the direction of the arrow (5) to remove the hard disk assembly (6) (Figure 3d).
6. Slightly lift and pull the HDD-1 assembly in the direction of the arrow (7) to remove the hard disk assembly (8) (Figure 3e).
7. Remove screws (9 - 12) and the adhesive cover (13) from the hard disk (14) (Figure 3f).
8. Reverse the process to install a new hard disk (do not forget to replace all the screws and covers).

Disassembly

Figure 3
HDD Assembly Removal (cont’d.)

- HDD Bay Cover
- HDD-2 Assembly
- HDD-1 Assembly
- Adhesive Cover
- HDD
- 4 Screws
Disassembly

**Hard Disk Size Note (Foam Rubber Insert)**

Note that the hard disks pictured on the following pages are all 9.5mm(H) hard disk drives. In some cases 7mm(H) hard disk drives will be installed.

---

**Figure 4**

Foam Rubber Insert for 7mm(H) HDDs

- If you are replacing a 9.5mm(H) HDD with a 7mm(H) HDD then insert the foam rubber insert.

- If you are replacing a 7mm(H) HDD with a 9.5mm(H) HDD then remove the foam rubber insert.
Removing the M.2 SSD Module

Note that the SSD (if installed) is beside the HDD bay.

1. Turn off the computer, and turn it over, remove the battery (page 2 - 5).
2. Remove the screw 1 from the SSD (Figure 5a).
3. The SSD module 2 will pop-up (Figure 5b).
4. Lift the SSD module 2 up and off the computer (Figure 5c).
5. Reverse the process to install a new SSD (make sure that the hexagonal screw 3 is in the correct location depending upon the size of the module).
Disassembly

Removing the Primary System Memory (RAM)

The computer has four memory sockets for 204 pin Small Outline Dual In-line (SO-DIMM) DDR 3L type memory modules. The total memory size is automatically detected by the POST routine once you turn on your computer.

Note that four SO-DIMMs are only supported by Quad-Core CPUs; Dual-Core CPUs support two SO-DIMMs maximum.

Two primary memory sockets are located under component bay cover (the bottom case cover), and two secondary memory sockets are located under the keyboard (not user upgradable). If you are installing only two RAM modules then they should be installed in the primary memory sockets under the component bay cover.

Note that the RAM located under the keyboard is not user upgradable.

Memory Upgrade Process

1. Turn off the computer, and turn it over, remove the battery (page 2 - 5).
2. Remove screws 1 - 4.
3. Slide the bottom cover until the cover and case indicators are aligned (Figure 6a).

- Note that the size of screw 4 is M2.5 x 8L.
4. Lift the component bay cover (6) off the computer case. The modules will be visible at point 7 (Figure 7c).
5. Gently pull the two release latches (8 & 9) on the sides of the memory socket(s) in the direction indicated below (Figure 7d).
6. The RAM module (10) will pop-up, and you can remove it (Figure 7e).
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’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.
10. Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
11. Replace the bay cover and screws.
12. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.

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.
Disassembly

Removing the System Memory (RAM) from Under the Keyboard

The computer has four memory sockets for 204 pin Small Outline Dual In-line (SO-DIMM) DDR 3L type memory modules. The total memory size is automatically detected by the POST routine once you turn on your computer.

Two primary memory sockets are located under component bay cover (the bottom case cover), and two secondary memory sockets are located under the keyboard. If you are installing only two RAM modules then they should be installed in the primary memory sockets under the component bay cover.

Memory Upgrade Process

1. Turn off the computer, and turn it over, remove the battery (page 2 - 5).
2. Remove screws 1 - 4 and component bay cover 5 (Figure 8a).
3. Remove screws 6 - 7 from the bottom of the computer (Figure 8b).
4. Open it up with the LCD on a flat surface before pressing at point 8 to release the keyboard module (use an eject stick 9 to do this with a diameter no bigger than 2.5mm) while releasing the keyboard in the direction of the arrow 10 as shown (Figure 8c).

Figure 8
Keyboard Removal

a. Remove the screws and component bay cover.
b. Remove the screws.
c. Eject the keyboard using a special eject stick to push the keyboard out while releasing the keyboard as shown.

5. Top Cover Module
9. Eject Stick
• 6 Screws
5. Carefully lift the keyboard \textbf{11} up, being careful not to bend the keyboard ribbon cables \textbf{12} - \textbf{14}.
6. Disconnect the keyboard ribbon cables \textbf{12} - \textbf{14} from the locking collar socket \textbf{15} by using a small flat-head screwdriver to pry the locking collar pins \textbf{16} away from the base (\textit{Figure 9d}).
7. Remove the keyboard and the memory sockets \textbf{17} & \textbf{18} will be visible.
8. Gently pull the two release latches (\textbf{19} & \textbf{20}) on the sides of the memory socket(s) in the direction indicated below.
9. The RAM module \textbf{21} will pop-up, and you can remove it.
10. Pull the latches to release the second module if necessary.
11. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
12. 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.
13. Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
14. Replace the bay cover and screws.
15. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.

\textit{Figure 9}

\textbf{RAM Module Removal}

\textbf{d.} Lift the keyboard up, and disconnect the keyboard ribbon cable from the locking collar socket.
\textbf{e.} Remove the keyboard and the memory sockets will be visible.
\textbf{f.} Pull the two release latches on the sides of the memory socket(s) in the direction indicated.

\textbf{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.
Removing and Installing the Processor

Processor Removal Procedure

1. Turn off the computer, remove the battery (page 2 - 5), and component bay cover (page 2 - 10).
2. Remove screws 1 - 8 from the heat sink unit in the order indicated on the label (i.e. screw 8 first through to screw 1 last Figure 10a).
3. Carefully (it may be hot) remove the heat sink unit 9 (Figure 10b).

Note:
Loosen the screws in the reverse order 8-7-6-5-4-3-2-1 as indicated.
4. Press down and hold the latch $\text{10}$ (with the latch held down you will be able to release it).
5. Move the latch $\text{10}$ and bracket $\text{11}$ fully in the direction indicated to unlock the CPU (*Figure 11c*).
6. Carefully (it may be hot) lift the CPU (A) up out of the socket (*Figure 11d*).
7. See page 2 - 16 for information on inserting 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!).

**Figure 11**
Processor Removal (cont’d)

- c. Move the latch and bracket fully in the direction indicated to unlock the CPU.
- d. Lift the CPU out of the socket.

---

**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.

A. CPU
Processor Installation Procedure

1. Insert the CPU A; pay careful attention to the pin alignment (Figure 12a), it will fit only one way (DO NOT FORCE IT!).
2. Move the bracket B and latch C fully in the direction indicated to lock the CPU.
3. Apply the thermal grease D to the top of the CPU as shown (Figure 12b).
4. **Remove the sticker E** (Figure 12c) from the heat sink unit (if it is a new unit).
5. Insert the heat sink unit F as indicated in Figure 12c.
6. Tighten the CPU heat sink screws in the order 1 - 8 (the order as indicated on the label and Figure 12d).
7. Replace the CPU fan, component bay cover and tighten the screws (page 2 - 14).

**Note:**
Tighten the screws in the order 1-2-3-4-5-6-7-8 as indicated.
Removing the Wireless LAN Module

1. Turn off the computer, remove the battery (page 2 - 5) and the keyboard (page 2 - 12).
2. The Wireless LAN module will be visible at point 1 under the keyboard (Figure 13a).
3. Carefully disconnect cables 2 - 3, then remove screw 4 from the module socket (Figure 13b).
4. The Wireless LAN module 5 will pop-up (Figure 13c).
5. Lift the Wireless LAN module (Figure 13d) up and off the computer.

Figure 13
Wireless LAN Module Removal

- a. The Wireless LAN module will be visible at point 1 under the keyboard.
- b. Disconnect the cables and remove the screw.
- c. The WLAN module will pop up.
- d. Lift the WLAN module out.

WLAN Module
- 1 Screw
Disassembly

**Wireless LAN, Combo, 3G & LTE Module Cables**

Note that the cables for connecting to the antennae on WLAN, WLAN & Bluetooth Combo, 3G and LTE modules are not labelled. The cables/covers (each cable will have either a black or transparent cable cover) are color coded for identification as outlined in the table below.

<table>
<thead>
<tr>
<th>Module Type</th>
<th>Antenna Type</th>
<th>Cable Color</th>
<th>Cable Cover Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLAN/WLAN &amp; Bluetooth Combo</td>
<td>WM 1</td>
<td>Black</td>
<td>Transparent</td>
</tr>
<tr>
<td></td>
<td>WM 2</td>
<td>Gray</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WM 3</td>
<td>White</td>
<td></td>
</tr>
<tr>
<td>LTE Broadband</td>
<td>LTE 1</td>
<td>Black</td>
<td>Black</td>
</tr>
<tr>
<td></td>
<td>LTE 2</td>
<td>Gray</td>
<td></td>
</tr>
<tr>
<td>3G Broadband</td>
<td>3G 1</td>
<td>Black</td>
<td>Black</td>
</tr>
<tr>
<td></td>
<td>3G 2</td>
<td>Gray</td>
<td></td>
</tr>
</tbody>
</table>

Cable 1 is usually connected to antenna 1 (Main) on the module, and cable 2 to antenna 2 (Aux).
Removing the M.2 SATA Module

1. Turn off the computer, remove the battery (page 2 - 5), and component bay cover (page 2 - 10).
2. Locate the module; it is visible at point 1 (Figure 14a).
3. Carefully remove the screw 2 from the module (Figure 14b).
4. The MSATA module 3 will pop-up (Figure 14c).
5. Lift the MSATA module 3 up and off the computer (Figure 14d).
6. Reverse the process to install a new SSD (make sure that the hexagonal screw 4 is in the correct location).

Figure 14
M.2 SATA Module Removal

a. Locate the module.
b. Remove the screw.
c. The module will pop-up.
d. Lift the module up off the socket.

3. MSATA Module
   - 1 Screw
Disassembly

**M.2 SATA Module Installation**

1. Place the thermal pad a on the computer as shown (Figure 15a).
2. Insert the module b in the computer. Make sure that the hexagonal screw c is in the correct location (Figure 15b).
3. Tighten the screw d to secure it in place (Figure 15c).

---

**Thermal Pad**

Make sure you place the thermal pad's adhesive side down onto the computer surface as illustrated.

The usage of the thermal pad will depend upon the thickness of the module being used.
- If you are using the thinner module, then apply the whole thermal pad provided on the computer.
- If you are using the thicker module, separate the pad into its two parts. Use the larger part and place the adhesive side onto the computer (discard the smaller part that you have separated).
Removing and Installing the Video Card

Video Card Removal Procedure
1. Turn off the computer, turn it over and remove the battery (page 2 - 5) and component cover (page 2 - 10).
2. Remove screws 1 - 8 from the heat sink unit in the order indicated on the label (i.e. screw 8 first through to screw 1 last) (Figure 16a).
3. Carefully (it may be hot) remove the heat sink unit 9 (Figure 16b).
4. Remove screws 10 & 11 from the video card. The video card 12 will pop up (Figure 16c).
5. Remove the video card 12 (Figure 16d).

a. b. c. d.

Figure 16
Video Card Removal Procedure
a. Remove the screws in the correct order.
b. Carefully remove the heat sink units.
c. Remove the video card screws. The video card will pop up.
d. Remove the video card.

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

Heat Sink Screw Removal and Insertion
Remove the screws from the heat sink in the order indicated here: 8-7-6-5-4-3-2-1.
When tightening the screws, make sure that they are tightened in the order: 1-2-3-4-5-6-7-8.

9. Heat Sink Units
12. Video Card
• 10 Screws
Disassembly

Installing a New Video Card

1. Prepare to fit the video card into the slot by holding it at about a 30° angle (Figure 17e).
2. The card needs to be fully into the slot, and the video card and socket have a guide-key and pin which align to allow the card to fit securely (Figure 17f).
3. Fit the connectors firmly into the socket, straight and evenly.

4. DO NOT attempt to push one end of the card in ahead of the other.
5. The card’s pin alignment will allow it to only fit one way. **Make sure the module is seated as far into the socket as it will go.** DO NOT FORCE the card; it should fit without much pressure.
6. Secure the card with screws (10 & 11) (Figure 16 on page 2 - 21).
7. Place the heat sink back on the card, and secure the screws in the order indicated in Figure 16 on page 2 - 21.
8. Reinsert the component bay cover, and secure with the screws as indicated in Figure 8 on page 2 - 12.

---

Figure 17

Installing a New Video Card

e. Insert the video card at a 30 degree angle.
f. Fit the connectors straight and even, and secure the card with the screws.

Caution

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

12. Video Card

- 2 Screws
Removing the Mainboard

1. Turn off the computer, remove the battery (page 2 - 5), HDD (page 2 - 6), M.2 SSD (page 2 - 9), RAM (page 2 - 10), CPU (page 2 - 14), WLAN (page 2 - 17), M.2 SATA (page 2 - 19), and keyboard (page 2 - 12).
2. Carefully disconnect cables 1 - 5 (Figure 18a).
3. Lift the top case 6 up and off the computer (Figure 18b).
4. Release the rear ports 7 - 9 from the bottom case, and carefully lift the main board as shown (Figure 18c).
5. Remove the main board 10 from the bottom case 11 (Figure 18d).

Figure 18
Mainboard Removal

a. The Wireless LAN module will be visible at point 1 under the keyboard
b. Disconnect the cables and remove the screw.
c. The WLAN module will pop up.
d. Lift the WLAN module out.

6. Top Case
10. Main Board
11. Bottom Case
Disassembly
Appendix A: Part Lists

This appendix breaks down the P750DM / P751DM / P750DM-G / P751DM-G 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*

<table>
<thead>
<tr>
<th>Parts</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top</td>
<td>page A - 3</td>
</tr>
<tr>
<td>Bottom</td>
<td>page A - 4</td>
</tr>
<tr>
<td>LCD - Samsung</td>
<td>page A - 5</td>
</tr>
<tr>
<td>LCD - Chimei</td>
<td>page A - 6</td>
</tr>
<tr>
<td>LCD - Sharp</td>
<td>page A - 7</td>
</tr>
<tr>
<td>MB</td>
<td>page A - 8</td>
</tr>
<tr>
<td>VGA</td>
<td>page A - 9</td>
</tr>
<tr>
<td>HDD</td>
<td>page A - 10</td>
</tr>
</tbody>
</table>
Part Lists

LCD - Samsung

<table>
<thead>
<tr>
<th>ITEM</th>
<th>PART NAME</th>
<th>PART NO.</th>
<th>REMARK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FRONT COVER PROTECTION LID P57020</td>
<td>6-40-P7000-060</td>
<td></td>
</tr>
<tr>
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Figure A - 3
LCD - Samsung
Part Lists

LCD - Sharp

Figure A - 5

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LCD - Sharp A - 7
Part Lists

HDD

Figure A - 8
HDD

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<th>ITEM</th>
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<td>SCREW M6</td>
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A - 10 HDD
Appendix B: Schematic Diagrams

This appendix has circuit diagrams of the P750DM / P751DM / P750DM-G / P751DM-G notebook’s PCB’s. The following table indicates where to find the appropriate schematic diagram.

<table>
<thead>
<tr>
<th>Diagram - Page</th>
<th>Diagram - Page</th>
<th>Diagram - Page</th>
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<tbody>
<tr>
<td>Block Diagram - Page B - 2</td>
<td>Lynix Point 7/7 - Page B - 23</td>
<td>VCCIO / IP6A - Page B - 44</td>
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<tr>
<td>Processor 1/5 - Page B - 3</td>
<td>USB + eSATA, USB Charging - Page B - 24</td>
<td>DDR 1.2V/0.6V/3.3V/VCCPLL_OC - Page B - 45</td>
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<tr>
<td>Processor 2/5 - Page B - 4</td>
<td>CCD, USB Port3 - Page B - 25</td>
<td>VDD3, VDD5 - Page B - 46</td>
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<td>Processor 3/5 - Page B - 5</td>
<td>M2 3G+USB &amp; WLAN+BT - Page B - 26</td>
<td>12V, 5V, 3.3V, 3.3VA - Page B - 47</td>
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<td>Processor 4/5 - Page B - 6</td>
<td>M2 PCIe4x SSD1 &amp; SSD2 - Page B - 27</td>
<td>5V, 2 - Page B - 48</td>
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<td>Realtek ALC892 - Page B - 28</td>
<td>VCore / VCCGT - Page B - 49</td>
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<td>DDR4 CHA SO-DIMM_0 - Page B - 8</td>
<td>PCM1861 + TAS5766DCA - Page B - 29</td>
<td>VCore Output Stage - Page B - 50</td>
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<td>VCCSA / VCCGT - Page B - 51</td>
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<td>Power Charger, DC-In - Page B - 52</td>
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<td>EC IT8587 - Page B - 32</td>
<td>P750DM HDD Board - Page B - 53</td>
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<tr>
<td>Panel, Inverter, CRT - Page B - 12</td>
<td>Second EC IT8587 - Page B - 33</td>
<td>P750DM Power LED Board - Page B - 54</td>
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<tr>
<td>Display Port A - Page B - 13</td>
<td>Backlight Keyboard - Page B - 34</td>
<td>P750DM Click Board - Page B - 55</td>
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<td>Display Port B - Page B - 14</td>
<td>LID SW, Fan, LED Conn - Page B - 35</td>
<td>P750DM Audio Board - Page B - 56</td>
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<tr>
<td>HDMI - Page B - 15</td>
<td>TP, FP, Multi-Con - Page B - 36</td>
<td>P750DM Charge LED Board - Page B - 57</td>
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<tr>
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<td>LAN E2400 - Page B - 37</td>
<td>P750DM LID Switch Board - Page B - 58</td>
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<td>P750DM Finger Sensor Board - Page B - 59</td>
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<td>P775DM Power LED Board - Page B - 62</td>
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<td>Cardreader RTS5250 - Page B - 42</td>
<td>Power On Sequence - Page B - 63</td>
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<td>Lynix Point 6/7 - Page B - 22</td>
<td>TPM SLB9655TT &amp; NPCT420 - Page B - 43</td>
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Table B - 1

The schematic diagrams in this chapter are based upon version 6-7P-P75DB-001. If your mainboard (or other boards) are a later version, please check with the Service Center for updated diagrams (if required).
Schematic Diagrams

DDR4 CHB SO-DIMM_1
Display Port A

PLEASE CLOSE TO CONNECTOR

Display Port A

Sheet 12 of 62
Display Port A
HDMI
CCD, USB Port3

Sheet 24 of 62
CCD, USB Port3
M.2 3G+USB & WLAN+BT

3G CARD / USB3

W/O 3G 時此區上件

W/ 3G 時此區上件

3G POWER

WLAN+BT
Second EC IT8587

Backlight KB 15"

Backlight KB 17"

Sheet 32 of 62
Second EC IT8587
如果不预留EC pin 控制PCA9622, OE# 要pull low.
DDR 1.2V/0.6VS/VCCPLL_OC

1.2V/0.6VS

VTT_MEM

1A

1.2V

VDDQ 16A

Sheet 44 of 62
DDR 1.2V/0.6VS/
VCCPLL_OC

VCCPLL_OC

FOR DCK 1.8V

Schematic Diagrams

B.Schematic Diagrams

B. Schematic Diagrams
Schematic Diagrams

Power Charger, DC-In

Sheet 51 of 62
Power Charger, DC-In

SMART CHARGER

B - 52  Power Charger, DC-In
It is strongly recommended that the TESD_GND has a dedicated connection to the system chassis or cable shield.
P750DM Charge LED Board

Sheet 56 of 62
P750DM Charge LED Board
**NOTE:** MODE
MODE = HIGH (NC), USB MODE = LOW, SPI MODE

**NOTE:** CLK_SEL
CLK_SEL = HIGH (NC), FREQ = 12MHz Crystal, CLK_SEL = LOW, FREQ = 48MHz OSC

**GU1**
/g2/g3/g4/g5
!!DMFWP!DP/
P750DM BOT LED Board
Schematic Diagrams

P775DM Power LED Board

Sheet 61 of 62
P775DM Power LED Board

B. Schematic Diagrams

B - 62  P775DM Power LED Board
Power On Sequence

S5 S4 Power on

S3 Power on

Sheet 62 of 62
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](http://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 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.