



Preface

Notebook Computer

P177SM-A

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 *P177SM-A* 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.

CAUTION

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

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

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Removal Warning

When removing any cover(s) and screw(s) for the purposes of device upgrade, remember to replace the cover(s) and screw(s) before restoring power to the system.

Also note the following when the cover is removed:

- Hazardous n ing parts.
- Keep away from moving fan blades

Power Safety Warning

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

- 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.



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%.

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Battery Disposal

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

Caution

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

Battery Level

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

Related Documents

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

User's Manual on 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 tighten the screws.
- 4. Securely attach any peripherals you want to use with the computer (e.g. keyboard and mouse) to their ports.
- 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.
- Use one hand to raise the lid/LCD to a comfortable viewing angle (do not to exceed 130 degrees); use the other hand (as illustrated in *Figure 1*) to support the base of the computer (Note: Never lift the computer by the lid/LCD).
- 7. Press the power button to turn the computer "on".



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

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Chapter 1: Introduction

Overview

This manual covers the information you need to service or upgrade the *P177SM-A* 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 7*, 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 *P177SM-A* 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 "Ds" symbol.

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

Specifications

CP 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.

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

Processor Options

Intel® Core™ i7 Processor

i7-4930MX (3.00GHz) 8MB L3 Cache, 22nm, DDR3L-1600MHz, TDP 57W

Intel® Core™ i7 Processor

i7-4900MQ (2.80GHz)

8MB L3 Cache, 22nm, DDR3L-1600MHz, TDP 47W

i7-4800MQ (2.70GHz), i7-4700MQ (2.40GHz)

6MB L3 Cache, 22nm, DDR3L-1600MHz, TDP 47W i7-4600M (2.90GHz)

4MB L3 Cache, 22nm, DDR3L-1600MHz, TDP 37W

Intel® Core™ i5 Processor

i5-4330M (2.80GHz), i5-4300M (2.60GHz), i5-4200M (2.50GHz)

3MB L3 Cache, 22nm, DDR3L-1600MHz, TDP 37W Intel® Core™ i3 Processor

i3-4100M (2.50GHz), i3-4000M (2.40GHz) 3MB L3 Cache, 22nm, DDR3L-1600MHz, TDP 37W

LCD

17.3" (43.94cm) FHD LCD

Memory

Four 204 Pin SO-DIMM Sockets Supporting DDR3L 1600MHz Memory

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

Memory Expandable up to 16GB/32GB

Note: Four SO-DIMMs are only supported by Quad-Core CPUs; Dual-Core CPUs support two SO-DIMMs maximum

Core Logic

Intel® HM87 Express Chipset

Security

Security (Kensington® Type) Lock Slot BIOS Password (Factory Option) Fingerprint Reader Module (Factory Option) TPM 1.2

Storage

(Factory Option) One 12.7mm(h) Optical Device Type Drive (Super Multi Drive/Blu-Ray Combo Drive/Blu-Ray Writer Drive)

Two Changeable 2.5" (h) SATA (Serial) Hard Disk Drives (HDDs)/SSDs supporting RAID Level 0/1

 $(\mbox{Factory Option})$ Two mSATA Solid State Drives (SSD) supporting RAID Level 0/1

BIOS

AMI BIOS (48Mb SPI Flash-ROM)

Video Adapter

Intel® Integrated GPU and NVIDIA® Discrete GPU

Supports Microsoft Hybrid Graphics

Intel Integrated GPU

Intel HD Graphics 4600

Dynamic Frequency (Intel Dynamic Video Memory Technology for up to **1.7GB**) Microsoft DirectX® 11 Compatible

NVIDIA® Discrete GPU

NVIDIA® GeForce GTX 860M PCIe Video Card

4GB GDDR5 Video RAM on board Microsoft DirectX® 11.1 Compatible

NVIDIA® GeForce GTX 870M PCIe Video Card

6GB GDDR5 Video RAM on board Microsoft DirectX® 11.1 Compatible

NVIDIA® GeForce GTX 880M PCIe Video Card

8GB GDDR5 Video RAM on board

Microsoft DirectX® 11.1 Compatible

Pointing Device

Built-in **Illuminated** Touchpad (scrolling key functionality integrated)

Keyboard

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

Audio

High Definition Audio Compliant Interface S/PDIF Digital Output Two Speakers One Sub Woofer Built-In Microphone Sound Blaster Audio ANSP™ 3D sound technology on headphone output

Mini-Card Slots

Slot 1 for WLAN Module or Combo WLAN and Bluetooth Module Slots 2 & 3 for mSATA SSD

Card Reader

Embedded Multi-In-1 Push-Push Card Reader MMC (MultiMedia Card) / RS MMC SD (Secure Digital) / Mini SD / SDHC/ SDXC MS (Memory Stick) / MS Pro / MS Duo

Interface

Two USB 3.0 Ports (Including one AC/DC Powered USB port) One USB 2.0 Port One eSATA Port (USB 3.0 Port Combined) One HDMI-Out Port One DisplayPort (1.1a) One Mini DisplayPort One S/PDIF Out Jack One Microphone-In Jack One Headphone/Speaker-Out Jack One Microphone-In Jack One Line-In Jack One Mini-IEEE1394a Port One RJ-45 LAN Jack One DC-In Jack Communication

Built-In Gigabit Ethernet LAN 2,0M FHD PC Camera Module

WLAN/ Bluetooth Half Mini-Card Modules:

(Factory Option) Intel® Centrino® Ultimate-N 6300 Wireless LAN (802.11a/g/n) (Factory Option) Intel® Wireless-AC 7260 Wireless LAN (802.11a/c) + Bluetooth 4.0 (Factory Option) Intel® Wireless-N 7260 Wireless LAN (802.11b/g/n) + Bluetooth 4.0 (Factory Option) Wireless LAN (802.11b/g/n) + Bluetooth 4.0 (Factory Option) Wireless LAN (802.11a/b/g/n) + Bluetooth 4.0 Environmental Spec Temperature

Operating: 5°C - 35°C Non-Operating: -20°C - 60°C **Relative Humidity** Operating: 20% - 80% Non-Operating: 10% - 90%

Power

Removable 8-cell Smart Lithium-Ion Battery Pack, 76.96WH

Full Range AC/DC Adapter AC Input: 100 - 240V, 50 - 60Hz DC Output: 19.5V, 11.8A (**230W**)

Dimensions & Weight

414mm (w) * 286mm (d) * 25.3 - 46.1mm (h) Around 4.1kg with Battery and ODD

Note: External 7.1CH Audio Output Supported by Headphone, Microphone, Line-In and S/PDIF Out Jacks

External Locator - Top View with LCD Panel Open

Figure 1 **Top View**

- 1. Built-In PC Camera
- 2. PC Camera LED
- 3. Built-In Microphone
- 4. LCD
- 5. Speakers
- 6. LED Indicators
- 7. Power Button
- 8. Illuminated Keyboard
- 9. TouchPad and Buttons
- 10. Fingerprint Reader (**Optional**)

Note that the Illuminated Touchpad has a defined valid operational area of sensitivity indicated within the sensor area of the illustration below.





External Locator - Front & Right side Views



Figure 2 **Front Views**

1. LED Power Indicators

- 1. Optical Device Drive Bay
- 2. Emergency Eject Hole
- 3. Headphone Jack
- 4. Microphone Jack
- 5. S/PDIF-Out Jack
- 6. Line-In Jack
- 7. USB 2.0 Port



External Locator - Left Side & Rear View

Figure 4 Left Side View

- 1. Mini-IEEE 1394a Port
- 2. RJ-45 LAN Jack
- 3. USB 3.0 Port / USB Charge
- 4. USB 3.0 Port
- 5. Combined eSATA/ Powered USB 3.0 Port
- 6. Multi-in-1 Card Reader



Figure 5 **Rear View**

- 1. Vent/Fan Intake
- 2. Display Port
- 3. HDMI-Out Port
- 4. Mini Display Port
- 5. DC-In Jack
- 6. Security Lock Slot



1 - 6 External Locator - Left Side & Rear View

External Locator - Bottom View



Figure 6 **Bottom View**

- 1. Sub Woofer
- 2. Fan Outlet/Intake
- 3. Component Bay Cover
- 4. Primary HDD Bay
- 5. Secondary HDD Bay
- 6. Battery



Mainboard Overview - Top (Key Parts)

Figure 7 Mainboard Top Key Parts

- 1. Platform
- Controller Hub
- 2. Audio Codec
- 3. KBC ITE IT8587



Mainboard Overview - Bottom (Key Parts)



Figure 8 Mainboard Bottom Key Parts

- 1. VGA-Card
- Connector
- 2. CPU Socket (no CPU installed)
- 3. Memory Slots DDR3L SO-DIMM (Primary)
- 4. Hard Disk Connector
- 5. MSATA Connector

Mainboard Overview - Top (Connectors)

Figure 9 Mainboard Top Connectors

- 1. USB 3.0 Port / e-SATA
- 2. Multi-in-1 Card Reader
- 3. KB LED Connector
- 4. TP LED Cable Connector
- 5. LED 4 Cable Connector
- 6. TouchPad Cable Connector
- 7. MSATA Cable Connector
- 8. LED 3 Cable Connector
- 9. Keyboard Cable Connector
- 10. Audio Cable Connector
- 11. LCD Cable Connector
- 12. eDP Cable Connector



Mainboard Overview - Bottom (Connectors)



Figure 10 Mainboard Bottom Connectors

- 1. DC-In Jack
- 2. Mini Display Port
- 3. HDMI-Out Port
- 4. Display Port
- 5. VGA Fan Cable Connector
- 6. Sub Woofer Cable Connector
- 7. CPU Fan Cable Connector
- 8. USB 3.0 Ports
- 9. RJ-45 LAN Jack
- 10. Mini-IEEE 1394a Port

Chapter 2: Disassembly

Overview

This chapter provides step-by-step instructions for disassembling the *P177SM-A* 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 *m* will also provide any possible helpful information. A box with a *m* contains warnings.

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



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Information

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 replac- ing 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 pli- ers to gently lift the connector away from its socket. When re- placing 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.

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Power Safety Warning

Before you undertake any upgrade procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines and power cord). You must 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 from the Primary Bay:		
1. Remove the battery	page 2 - 5	
2. Remove the HDD	page 2 - 6	
To remove the SSD:		
1. Remove the battery	page 2 - 5	
2. Remove the HDD	page 2 - 6	
3. Remove the SSD	page 2 - 9	

To remove the Optical Device:

1.	Remove the battery	page 2 - 5
2.	Remove the Optical device	page 2 - 10

To remove the HDD from the Secondary Bay:

1.	Remove the battery	page 2 - 5
2.	Remove the Optical device	page 2 - 10
3.	Remove the HDD	page 2 - 12

To remove the Primary System Memory:

1.	Remove the battery	page 2 - 5
2.	Remove the system memory	page 2 - 14

2. Remove the system memory

To remove the Secondary System Memory:

1.	Remove the battery	page 2 - 5	
2.	Remove the keyboard	page 2 - 16	
3.	Remove the system memory	page 2 - 16	
Тс	romovo the WI AN Module:		
IC	remove the wLAN Module.		
1.	Remove the battery	page 2 - 5	
2.	Remove the keyboard	page 2 - 16	
3.	Remove the wireless LAN	page 2 - 18	
To remove the MSATA Module:			
1.	Remove the battery	page 2 - 5	
2	Remove the MSATA	page 2 - 20	
To remove and install a Processor:			
1.	Remove the battery	page 2 - 5	
2.	Remove the processor	page 2 - 21	
3.	Install the processor	page 2 - 23	
To remove and install a Video Card:			
1.	Remove the battery	page 2 - 5	
2.	Remove the video card	page 2 - 24	
3.	Install the video card	page 2 - 26	
To remove the CCD:			
1.	Remove the battery	page 2 - 5	
2.	Remove the CCD	page 2 - 27	

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. The battery may be levered up at point (3) (*Figure 1b*).
- 5. Lift the battery **4** out of the compartment (*Figure 1c*).









c.

Figure 1 Battery Removal

- a. Slide the latch and hold in place.
- b. Slide the battery out in the direction of the arrow.c. Lift the battery out.



Figure 2 HDD Assembly Removal

- a. Locate the HDD bay cover and remove the screws.
- b. Remove the hard disk bay cover by levering the cover at point 3.

4.Hard Disk Bay Cover

• 2 Screws

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.

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 4 by levering the cover at point 3 (*Figure 2b*).



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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.

2 - 6 Removing the Hard Disk Drive

4. Slide the HDD assembly in the direction of the arrow (4) (*Figure 3c*).

d.

- 5. Remove the hard disk assembly **5** (*Figure 3d*).
- 6. Remove screws 6 & 7 and the insulation plate 8 (*Figure 3e*).
- 7. Reverse the process to install a new hard disk (do not forget to replace all the screws and covers).







Figure 3 HDD Assembly Removal (cont'd.)

- c. Slide the HDD assembly in the direction of the arrow.
- d. Remove the hard disk assembly.
- e. Remove the screws and the insulation plate.



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.





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

Figure 4 Foam Rubber Insert for 7mm(H) HDDs

2.Disassembly

Figure 5 SSD Removal

a. Remove the screws.

plate and screw.

ule.

b. Remove the shielding

c. Remove the SSD mod-

Removing the SSD

- 1. Turn off the computer, and remove the battery (page 2 5) and hard disk (page 2 9).
- 2. Remove the screws (1) from the shielding plate (*Figure 5a*).
- 3. Remove the SSD shielding plate 2 and remove the screw 3 from the SSD (*Figure 5b*).
- 4. The SSD module 4 will pop-up and you can remove it from the computer (*Figure 5c*).
- 5. Reverse the process to install a new SSD.











Figure 6 Optical Device Removal

- a. Locate the secondary hard disk bay cover and remove the screws.
- b. Remove the cover and screw.
- c. Push the optical device out off the computer at point 6.

Removing the Optical (CD/DVD) Device

- 1. Turn off the computer, and remove the battery (page 2 5).
- 2. Locate the **secondary** hard disk bay cover and remove screws (1 & 2) (*Figure 6a*).
- 3. Remove the hard disk bay cover **3** and screw at point **4** (*Figure 6b*).
- 4. Use a screwdriver to carefully push out the optical device **5** out of the bay at point **6** (*Figure 6d*).

C.

5. Reverse the process to install any new optical (CD/DVD) device.







• 3 Screws



- 6. Carefully pry the bezel **8** off the optical device at point **7** (*Figure 7d*).
- 7. Separate the bezel 8 and the optical device.
- 8. Reverse the process to attach the front bezel **8** with the new optical device at point **9** (*Figure 7f*).
- 9. 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).
- 10. Replace the component bay cover and tighten the screws.
- 11. Restart the computer to allow it to automatically detect the new device.







Figure 7 Optical Device Removal (cont'd.)

- d. Pry the bezel off the optical device.
- e. Separate the bezel and optical device
- f. Install the front bezel.



Removing the Optical (CD/DVD) Device 2 - 11

Figure 8 Secondary HDD Assembly Removal

a. Remove the screws from the secondary HDD assembly. 2.

b.

- b. Slide the secondary HDD assembly in the direction of the arrow.
- c. Lift the secondary HDD assembly up and out of the bay.

Removing the Hard Disk from the Secondary HDD Bay

Note that the **secondary** hard disk (if installed) is located under the optical device bay (CD/DVD).

- 1. Turn off the computer, and turn it over, remove the battery (page 2 5) and optical device (page 2 10).
 - Remove screws 1 3 from the secondary HDD assembly (*Figure 8a*).
- 3. Slide the secondary HDD assembly in the direction of the arrow (4) (it will not move fully out of the bay *Figure 8a*).
- 4. Lift the secondary HDD assembly **5** up and out of the bay (in the reverse direction of the arrow **4** *Figure 8c*).











2 - 12 Removing the Hard Disk from the Secondary HDD Bay
5. Remove screws 6 - 9 and the insulation plate 10 from the hard disk 11 (*Figure 9d*).



- 6. Reverse the process to install a new disk (make sure you install the insulation plate).
- 7. Slide the HDD assembly into the bay at an angle as illustrated.
- 8. Make sure the insulation plate slides under the HDD bay guide at point 12.
- 9. Slide the assembly in the direction of the arrow (13) and secure the assembly with the screws.









d. Remove the screws and the insulation plate.

Figure 10 RAM Module Removal

- a. Remove the screws.
- b. Remove the screws at the rear of the computer
- c. Slide the bottom cover until the cover and case indicators are aligned.

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 (see *"Memory" on page 1 - 2*). 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 (see "Memory" on page 1 - 2 for full details).

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 at the bottom of the computer (*Figure 10a*).
- 3. Remove screws **5 6** at the rear of the computer (*Figure 10b*).
- 4. Slide the bottom cover in the direction of the arrow **7** until the cover & case indicators **8** are aligned (*Figure 10c*).



2 - 14 Removing the Primary System Memory (RAM)

- 5. Lift the component bay cover 9 off the computer case. The modules will be visible at point (1) (*Figure 11d*).
- 6. Gently pull the two release latches (11 & 12) on the sides of the memory socket(s) in the direction indicated below (*Figure 11e*).
- 7. The RAM module (13) will pop-up, and you can remove it (*Figure 11f*).
- 8. Pull the latches to release the second module if necessary.
- 9. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
- 10. 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.
- 11. Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
- 12. Replace the bay cover and screws.
- 13. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.





Figure 11 RAM Module Removal (cont'd.)

- d. Lift the component bay cover off the computer case. The modules will be visible at point **10**.
- e. Gently pull the two release latches on the sides of the memory socket(s) in the direction indicated below.
- f. The RAM module will pop-up, and you can remove it.





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 the Primary System Memory (RAM) 2 - 15

Figure 12 RAM Module Removal

- a. Remove the top cover module.
- b. Remove the screws.c. Carefully lift the key-
- board up, being careful not to bend the keyboard ribbon cable.

R

A. Top Cover Module

B. Keyboard

• 5 Screws

Removing the Secondary System Memory (RAM)

Memory Upgrade Process

- 1. Turn off the computer, and turn it over, remove the battery (page 2 5), and component bay cover (page 2 14).
- 2. Remove the top cover module (A) (*Figure 12a*).
- 3. Remove screws (1) (5) (Figure 12a).
- 4. Carefully lift the keyboard **B** up, being careful not to bend the keyboard ribbon cable **6** (*Figure 12c*).









2 - 16 Removing the Secondary System Memory (RAM)

- Disconnect the keyboard ribbon cable 6 and LED ribbon cable 7 from the locking collar socket 8 & 9 by using 5 a small flat-head screwdriver to pry the locking collar pins away from the base. (Figure 13e).
- 6. Remove the keyboard and the memory sockets (1) & (1) will be visible (*Figure 13f*).
- 7. Gently pull the two release latches (12 & 13) on the sides of the memory socket(s) in the direction indicated below (Figure 13g).
- 8. The RAM module **14** will pop-up, and you can remove it.
- 9. Pull the latches to release the second module if necessary.
- 10. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
- 11. 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.
- 12. Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
- 13. Replace the bay cover and screws.
- 14. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.





Figure 13 **RAM Module** Removal (cont'd.)

- e. Disconnect the kevboard ribbon cable and LED ribbon cable from the locking collar socket by using a small flathead screwdriver to pry the locking collar pins away from the base.
- f. Remove the keyboard and the memory sockets will be visible.
- q. Gently pull the two release latches on the sides of the memory socket(s) in the direction indicated.





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



Figure 14 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. pop up. d. Lift the WLAN module

Removing the Wireless LAN Module

- 1. Turn off the computer, remove the battery (page 2 5) and the keyboard (page 2 16).
- 2. The Wireless LAN module will be visible at point 1 under the keyboard (*Figure 14a*).
 - Carefully disconnect cables (2) (3), then remove screw (4) from the module socket (*Figure 14b*).
- 4. The Wireless LAN module **5** will pop-up (*Figure 14c*).
- Lift the Wireless LAN module (Figure 14d) up and off the computer.





d.







- 3. 5.
- c. The WLAN module will
- out.

2 - 18 Removing the Wireless LAN Module

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.

Module Type	Antenna Type	Cable Color	Cable Cover Type	
WLAN/WLAN & Bluetooth Combo	WM 1	Black	Transparent	
	WM 2	Gray		
	WM 3	White		
LTE Broadband	LTE 1	Black	Black	
	LTE 2	Gray		
3G Broadband	3G 1	Black	Black	
	3G 2	Gray		

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

Figure 15 **MSATA Module** Removal

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

a.

b.

01/24/2013

FM: DM50104

Removing the MSATA Module

- 1. Turn off the computer, remove the battery (page 2 5), and component bay cover (page 2 14).
- 2. Locate the module, it is visible at point (1) (*Figure 15a*).
- 3. Carefully remove the screw 2 from the module (*Figure 15b*).
- 4. Lift the module 3 up and off the computer (*Figure 15b*).





C.







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 14).
- 2. Remove screws 1 4 from the heat sink unit in the order indicated on the label (i.e screw 4 first through to screw 1 last *Figure 16a*).
- 3. Carefully (it may be hot) remove the heat sink unit 5 (Figure 16b).



5

TIT

Note: Loosen the screws in the reverse order 4-3-2-1 as indicated on the label.

Figure 16 **Processor Removal Procedure**

a. Remove the screws in the correct order.b. Carefully remove the heat sink unit.

CPU Warning

damaging the contact

the CPU, it is necessary to first remove the

WLAN module from

the computer.

2.Disassembly



Removing and Installing the Processor 2 - 21

- Figure 17 Processor Removal (cont'd)
- 4. Turn the release latch 6 towards the unlock symbol \square , to release the CPU (*Figure 17c*).

5. Carefully (it may be hot) lift the CPU A up out of the socket (Figure 17d).

6. See *page 2 - 23* for information on inserting a new CPU.

C.

d.

- 7. 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.



Unlock



Lock





A. CPU

2 - 22 Removing and Installing the Processor

Processor Installation Procedure

a.

- 1. Insert the CPU **A**, pay careful attention to the pin alignment (*Figure 18a*), it will fit only one way (DO NOT FORCE IT!), and turn the release latch **B** towards the lock symbol ∩ (*Figure 18b*).
- 2. Remove the sticker (C) (*Figure 18c*) from the heat sink unit (if it is a new unit).
- 3. Insert the heat sink unit **D** as indicated in *Figure 18c*.
- 4. Tighten the CPU heat sink screws in the order 1, 2, 3 & 4 (the order as indicated on the label and *Figure* 18d).
- 5. Replace the CPU fan, component bay cover and tighten the screws (page 2 21).

C.

Figure 18 **Processor Installation**

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



2.Disassembly

Figure 19 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.



subject to high temperatures. Allow the area time to cool before removing these parts.

8. Heat Sink Unit 11. Video Card

• 9 Screws

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 14).
- Remove screws 1 7 from the heat sink unit in the order indicated on the label (i.e screw 7 first through to screw 1 last) (*Figure 19a*).
- 3. Carefully (they may be hot) remove the heat sink unit (8) (*Figure 19b*).
- 4. Remove screws 9 & 10 from the video card and the video card 11 will pop up (*Figure 19c*).

d

5. Remove the video card (11) (Figure 19d).







Note:

Please use a flat head screwdriver to remove screws 9 & 10.



2 - 24 Removing and Installing the Video Card

b.

For video card (N15E-GX) additional removal procedure

- 6. Remove screws (12 (15) from the video card assembly (*Figure 20e*).
- 7. Separate the shielding plate **16** from the video card **1** (*Figure 19d*).



f.



Figure 20 Video Card Removal Procedure (cont'd.)

e. Remove the screws.f. Separate shielding plate and video card.



Figure 21 Installing a New Video Card

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

Installing a New Video Card

- 1. Prepare to fit the video card (11) into the slot by holding it at about a 30° angle (*Figure 21e*).
- 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 21f*).
- 3. Fit the connectors firmly into the socket, straight and evenly.



e.

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.





Note:

Take special care that the speaker cable is not hindering the video card during installation.





- 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** (none of the gold colored contact should be showing). DO NOT FORCE the card; it should fit without much pressure.
- 6. Secure the card with screws (7) & (8) (Figure 21 on page 2 26).
- 7. Place the heat sink back on the card, and secure the screws in the order indicated in Figure 21 on page 2 26.
- 8. Attach the video card fan and secure with the screws as indicated in Figure 19 on page 2 24.
- 9. Reinsert the component bay cover, and secure with the screws as indicated in Figure 12 on page 2 16.



2 - 26 Removing and Installing the Video Card

Removing the CCD

- 1. Turn off the computer, remove the battery (page 2 5).
- 2. Remove the rubbers and screws 1 6 (*Figure 22a*).
- 3. Run your fingers around the inner frame of the LCD panel at the points indicated by the arrows (A) (D) (*Figure 22b*).
- 4. Carefully Remove the LCD panel **7** off (*Figure 22c*).
- 5. Disconnect the cable (8) (*Figure 22d*).
- 6. Remove the CCD module 9 off (*Figure 22e*).



Figure 22 CCD Module Removal

- a. Remove the rubbers and screws.
- b. Run your fingers around the inner frame of the LCD panel at the points indicated by the arrow.
 c. Remove the LCD panel.
- d. Disconnect the cable.
- e. Remove the CCD module.

D

LCD Front Panel
 CCD Module

6 Rubber and Screws

Figure 23 **Top Cover Removal**

- a. Disconnect the cable connectors and lift the the wires from its holder.
- b. Disconnect the cables
- and remove the screws.
- c. Remove the fan unit(s).

Removing the Top Cover

- Turn off the computer, remove the battery (page 2 5), component bay cover (page 2 14), and keyboard (page 2 16).
- 2. Disconnect the cable connectors (1 (3) and carefully lift the corresponding wires at the point (4) from the holder as indicated by the arrows (A) (C) (*Figure 23a*).
- 3. Turn the computer over, remove the fan cables (5 & 6) and screws (7 (13) (*Figure 22b*).
- 4. Remove the fan unit(s) **14** off the computer (*Figure 22c*).







- 5. Remove screws (15 35 (*Figure 24d*).
- 6. Lift the top cover at point 36 (Figure 24e).
- 7. Carefully separate the top cover **37** from the bottom case **39** in the direction of the arrow at point **38**. The hinge cover **40** will automatically be released from its holder (*Figure 24f*).
- 8. Reverse the process to install the top cover (do not forget to replace all the screws, hinge cover and bottom case).

37

37



Figure 24 Top Cover Removal (cont'd)

- d. Remove the screws.
- e. Lift the LCD panel.
- f. Separate the top cover from the bottom case of the computer.



Appendix A: Part Lists

This appendix breaks down the *P177SM-A* 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

Parts		
Top with Fingerprint	page A - 3	
Top without Fingerprint	page A - 4	
Bottom (N15E-GX)	page A - 5	
Bottom (N15P-GX)	page A - 6	
LCD	page A - 7	
СОМВО	page A - 8	
DVD-Dual Drive	page A - 9	

A - 2 Part List Illustration Location

Top with Fingerprint



Figure A - 1 **Top with Fingerprint**

Top without Fingerprint



Figure A - 2 **Top without Fingerprint**



Bottom (N15E-GX)



Figure A - 3 Bottom (N15E-GX)







Figure A - 5 LCD

СОМВО







DVD-Dual Drive

Figure A - 7 **DVD-Dual Drive**



Part Lists

Part Lists

Appendix B: Schematic Diagrams

This appendix has circuit diagrams of the *P177SM-A* notebook's PCB's. The following table indicates where to find the appropriate schematic diagram.

Diagram - Page	Diagram - Page	Diagram - Page	Diagram - Page	
Block Diagram - Page B - 2	Lynix Point 2/9 - Page B - 21	DDR 1.35V/0.75VS PCH 1.5V - Page B - 40	P150 2nd HDD Board - Page B - 59	I able B - I Schematic
Processor 1/7 - Page B - 3	Lynix Point3/9 - Page B - 22	VDD3, VDD5 - Page B - 41	Indicatory LED Board - Page B - 60	Diagrams
Processor 2/7 - Page B - 4	Lynix Point 4/9 - Page B - 23	5V, 5VS, 3.3V, 3.3VS, 1.5VS - Page B - 42	Function LED Board - Page B - 61	Diagramo
Processor 3/7 - Page B - 5	Lynix Point 5/9 - Page B - 24	Power 1.05VS - Page B - 43	2nd mSATA Board - Page B - 63	
Processor 4/7 - Page B - 6	Lynix Point 6/9 - Page B - 25	LED 5V - Page B - 44	Power on / S4 Resume Seq Page B - 64	
Processor 5/7 - Page B - 7	Lynix Point 7/9 - Page B - 26	Power V-Core 1 - Page B - 45	S3 Resume Seq Page B - 65	
Processor 6/7 - Page B - 8	Lynix Point 8/9 - Page B - 27	AC_In, Charger - Page B - 46	Into S3 Sequence - Page B - 66	
Processor 7/7 - Page B - 9	Lynix Point 9/9 - Page B - 28	<i>TPM - Page B - 47</i>	Into S4 Sequence - Page B - 67	
DDR3 CHA SO-DIMM_0 - Page B - 10	USB+eSATA, USB Charging - Page B - 29	Audio Board - Page B - 48		
DDR3 CHA SO-DIMM_1 - Page B - 11	USB 2.0, CCD, Mini PCIE, LID - Page B - 30	P150 ODD Board - Page B - 49		P
DDR3 CHB SO-DIMM_1 - Page B - 12	LED, Hotkey, LID SW, Fan - Page B - 31	P150 Click Board - Page B - 50		
DDRIII CHB SO-DIMM_0 - Page B - 13	RJ 45 - Page B - 32	Power LED Board - Page B - 51		Version Note
MXM PCI-E - Page B - 14	Codec Realtek ALC892 - Page B - 33	Function LED Board - Page B - 52		The schematic dia-
Panel, Inverter, CRT - Page B - 15	APA2607-TPA2008D2 - Page B - 34	Indicatory LED Board - Page B - 53		are based upon version
PS8625 - Page B - 16	KBC-ITE IT8587A - Page B - 35	P170 2nd HDD Board - Page B - 54		6-7P-P15SG-0A3. If
1394a_XI02221 - Page B - 17	Backlight Keyboard - Page B - 36	Power & LED Board - Page B - 55		er boards) are a later
Display Port - Page B - 18	mSATA, FAN, TP, FP, MULTI-CON - Page B - 37	P170 Click Board - Page B - 56		version, please check with the Service Center
HDMI - Page B - 19	Card Reader RTL8411 - Page B - 38	P150 Fingerprint Board - Page B - 57		for updated diagrams
Lynix Point 1/9 - Page B - 20	USB 3.0 - Page B - 39	P170 Fingerprint Board - Page B - 58		(if required).

Block Diagram



Processor 1/7



Processor 2/7



Sheet 3 of 66 Processor 2/7

Processor 3/7



Sheet 4 of 66 Processor 3/7

Processor 4/7

B.Schematic Diagrams



B - 6 Processor 4/7

Processor 5/7



Processor 6/7



Sheet 7 of 66 Processor 6/7
Schematic Diagrams

Processor 7/7



DDR3 CHA SO-DIMM_0



DDR3 CHA SO-DIMM_1



DDR3 CHB SO-DIMM_1



DDRIII CHB SO-DIMM_0



B.Schematic Diagrams

MXM PCI-E



Panel, Inverter, CRT

Sheet 14 of 66 Panel, Inverter, CRT



PS8625







Display Port



Sheet 17 of 66 Display Port

HDMI



HDMI

B.Schematic Diagrams

Lynix Point 1/9



Lynix Point 2/9



Lynix Point3/9



Lynix Point 4/9



Sheet 22 of 66 Lynix Point 4/9

Lynix Point 5/9

B.Schematic Diagrams



Lynix Point 6/9



Lynix Point 6/9 B - 25

Lynix Point 7/9



Sheet 25 of 66 Lynix Point 7/9

Lynix Point 8/9



Lynix Point 9/9



USB+eSATA, USB Charging



USB 2.0, CCD, Mini PCIE, LID



LED, Hotkey, LID SW, Fan









Codec Realtek ALC892



Sheet 32 of 66 Codec Realtek ALC892 **B.Schematic Diagrams**

APA2607-TPA2008D2



Sheet 33 of 66 APA2607-TPA2008D2

B-34 APA2607-TPA2008D2

KBC-ITE IT8587A



B.Schematic Diagrams

KBC-ITE IT8587A B - 35

Backlight Keyboard



mSATA, FAN, TP, FP, MULTI-CON



Card Reader RTL8411



B - 38 Card Reader RTL8411

USB 3.0



DDR 1.35V/0.75VS PCH 1.5V



VDD3, VDD5



Schematic Diagrams





Power 1.05VS



Sheet 42 of 66 Power 1.05VS


Power V-Core 1



AC_In, Charger



ТРМ



Audio Board



Sheet 47 of 66 Audio Board

P150 ODD Board



B.Schematic Diagrams

P150 ODD Board B - 49

P150 Click Board



Sheet 49 of 66 P150 Click Board

Power LED Board



Board

Function LED Board

B.Schematic Diagrams

Sheet 51 of 66 **Function LED**

B - 52 Function LED Board

Indicatory LED Board



P170 2nd HDD Board



Power & LED Board



P170 Click Board



P150 Fingerprint Board



P170 Fingerprint Board



P150 2nd HDD Board



B.Schematic Diagrams

Indicatory LED Board



Sheet 59 of 66 Indicatory LED Board

B - 60 Indicatory LED Board

Function LED Board



Mini-DP



2nd mSATA Board



Sheet 63 of 66 Power on / S4 Resume Seq.

Power on / S4 Resume Seq.

B.Schematic Diagrams

B - 64 Power on / S4 Resume Seq.

S3 Resume Seq.



Sheet 64 of 66 S3 Resume Seq. Sheet 65 of 66 Into S3 Sequence

Into S3 Sequence



B - 66 Into S3 Sequence

Into S4 Sequence



Schematic Diagrams

BIOS Update

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 <u>www.clevo.com.tw</u> 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.

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BIOS Version

Make sure you download the latest correct version of the BIOS appropriate for the computer model you are working on.

You should only download BIOS versions that are V1.01.XX or higher as appropriate for your computer model.

Note that BIOS versions are not backward compatible and therefore you may not downgrade your BIOS to an older version after upgrading to a later version (e.g if you upgrade a BIOS to ver 1.01.05, you MAY NOT then go back and flash the BIOS to ver 1.01.04).

Use the flash tools to update the BIOS

- 1. Make sure you are not loading any memory management programs such as HIMEM by holding the **F8** key as you see the message "**Starting MS-DOS**". You will then be prompted to give "**Y**" or "**N**" responses to the programs being loaded by DOS. Choose "N" for any memory management programs.
- 2. You should now be at the DOS prompt e.g: DISK C:\> (C is the designated drive letter for the CD/DVD drive/USB flash drive).
- 3. Type the following command at the DOS prompt:

C:\> Flash.bat

- 4. The utility will then proceed to flash the BIOS.
- 5. You should then be prompted to press any key to restart the system or turn the power off, and then on again but make sure you remove the CD/DVD/USB flash drive from the CD/DVD drive/USB port before the computer restarts.

Restart the computer (booting from the HDD)

- 1. With the CD/DVD/USB flash drive removed from the CD/DVD drive/USB port the computer should restart from the HDD.
- 2. Press F2 as the computer restarts to enter the BIOS.
- 3. Use the arrow keys to highlight the **Exit** menu.
- 4. Select Load Setup Defaults (or press F3) and select "Yes" to confirm the selection.
- 5. Press F4 to save any changes you have made and exit the BIOS to restart the computer.

Your computer is now running normally with the updated BIOS

You may now enter the BIOS and make any changes you require to the default settings.