
Notebook PC User's Guide

Model: W840DI

First Edition: September 2008

NOTICE

Specifications and information found in this manual are subject to change **without** notice. Any changes therefore will be incorporated in future editions. The manufacturer assumes **no** responsibility for errors or omissions in this document.

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Standards

The following standards are adopted throughout this manual:

- Notebook in **boldface** (with or without capitalization) refers to the notebook computer that you have purchased.

- **Boldface** type is also used to highlight **important information** in this document.

- Whenever extra caution is called for, the information will be boxed in a dark frame preceded by "**Note:**" or "**Warning:**"

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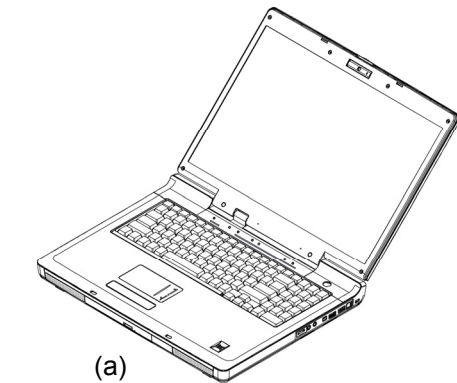
APPENDIX A - AGENCY REGULATORY NOTICESA-1

Chapter 1 Before You Begin

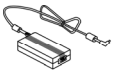
Please read this section before you start using your computer.

1.1 Checking What You Received

Your **notebook** package should contain the following items:



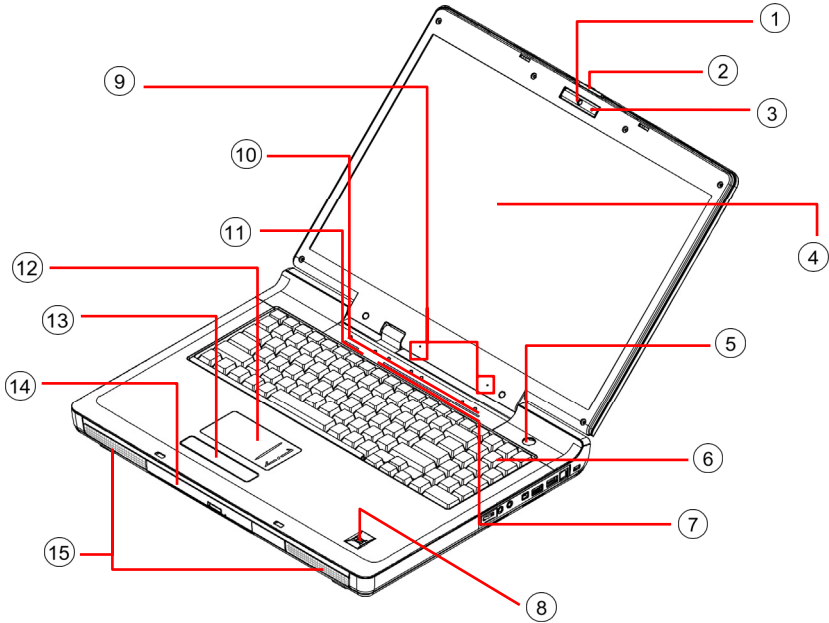
- (a) **The Notebook.**
- (b) AC Adapter.
- (c) AC Power Cord.
- (d) CD Disc (Including Drivers, and User's Guide).
- (e) Battery Pack.



Note: You should keep the original factory carton and packing materials in case you need to ship the unit back for servicing.

1.2 Examining Your Computer

Before you start using your computer, you need to get acquainted with your **notebook's** main features and interfaces:



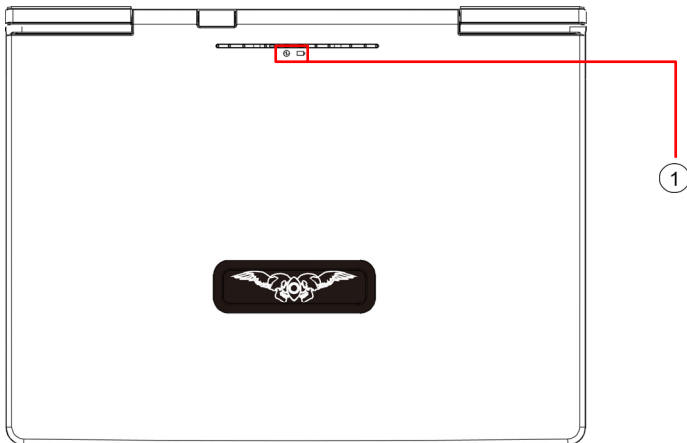
Panoramic View

① Web Cam	⑨ Two Internal Microphones
② LCD Latch	⑩ Seven Status LEDs
③ Web Cam LED	⑪ Two System Finger-Touch Buttons
④ LCD Screen	⑫ Touch Pad
⑤ Power Button & Power LED	⑬ Two Click Buttons
⑥ Keyboard	⑭ ODD Drive
⑦ Seven Media Finger-Touch Buttons	⑮ Two Speakers
⑧ Fingerprint Reader	

Note: The keyboard is with backlight design. When the system is powered on, you can press key combination (F_n+F10) to activate and deactivate the keyboard backlight function.

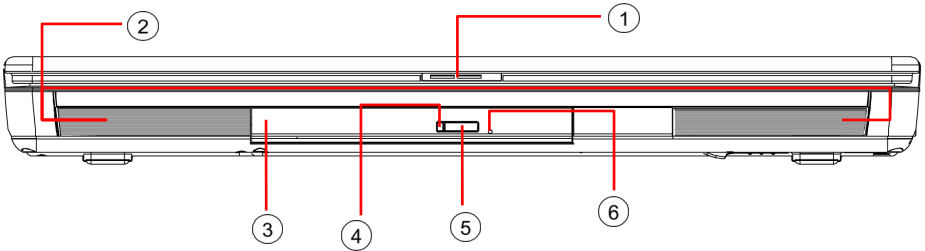
For details on <Fn> Function keys, please refer to *Chapter 1.13*.

Note: Press this key combination (F_n+F4) to power on and power off the Web Cam module. After powering on the Web Cam, you need to activate its function through Windows™.



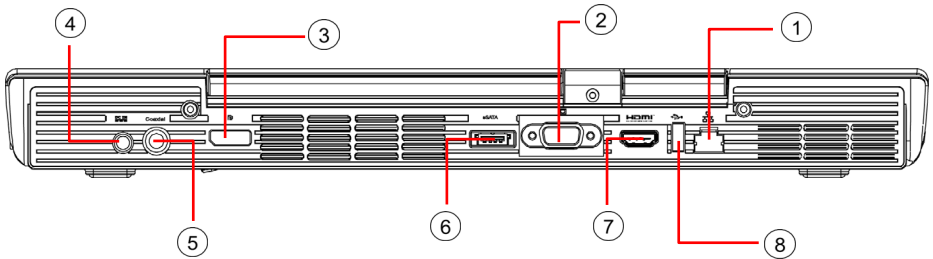
Top View

① Two System LEDs



Front View

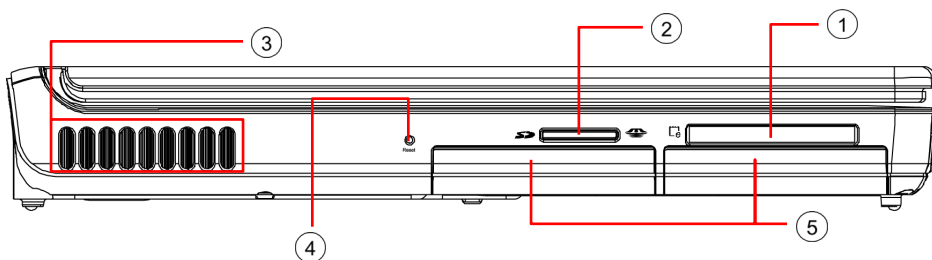
① LCD Latch	④ ODD LED
② Two Speakers	⑤ Eject Button
③ ODD Drive	⑥ Emergency Hole



Rear View

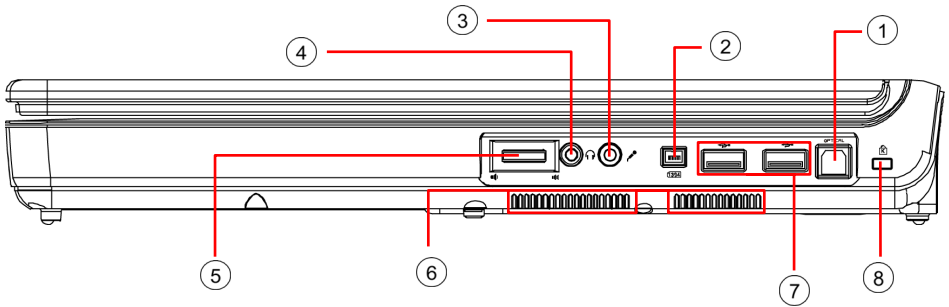
① RJ45 LAN Connector	⑤ TV-In Connector
② VGA Connector	⑥ USB/ e-SATA Connector
③ Display Port Connector (Optional)	⑦ HDMI Connector
④ DC Jack	⑧ USB Connector

Note: This **USB/ e-SATA Connector** supports connection to industry stand USB devices or e-SATA devices.



Left View

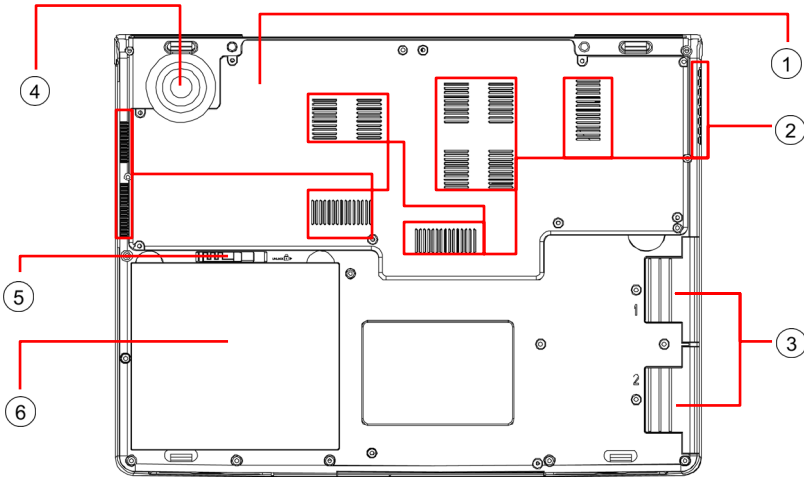
① PCI Express Card Slot	④ CMOS Reset Switch
② Media Card Slot (for SD/ MMC/ MS Cards)	⑤ Two HDD Doors
③ Ventilation Holes	



Right View

① SPDIF-Out Connector	⑤ Volume Dial
② IEEE1394 Connector	⑥ Ventilation Holes
③ Microphone Jack	⑦ USB Connectors
④ Headphone Jack	⑧ Kensington Lock

Note: Push the **Volume Dial** toward the headphone connector to increase audio volume. Push it in the opposite direction to decrease audio volume. To adjust the audio volume to your desired level, you need to repeatedly “push the dial to one direction and then let it go” until the desired audio volume is reached.

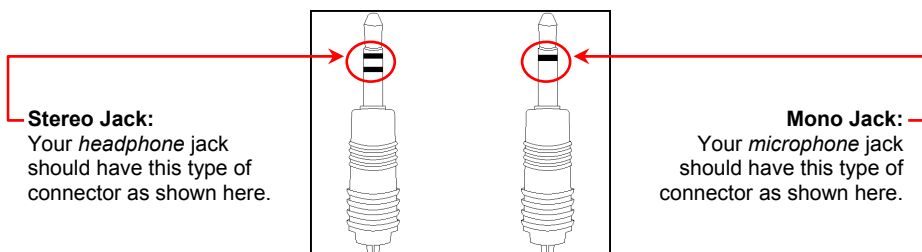


Bottom View

① Compartment Door	④ Woofer
② Ventilation Holes	⑤ Battery Latch
③ Two HDD Doors	⑥ Battery Pack

Warning: For better ventilation of heat generated and gathered inside the system unit, you are advised not to block the ventilation holes. For **notebook** with ventilation holes on the system chassis, please avoid putting system unit on fabric surfaces when it is powered on. Fabric surfaces not only tend to block the ventilation holes located on the system chassis, fabric threads (especially from carpets and rugs) would invariably come off and get inside the system unit which in turn would deteriorate the overall performance of the system's ventilation.


Note: Some external USB devices consume more power than this system unit can provide. In this case, these USB devices have their own power cords. To make sure this kind of USB devices can function properly, please connect these devices to the AC source first before connecting to the system unit.



Two Types of Audio Jack

1.3 The Power LED

The **Power LED** is located on the **power button** (*Chapter 1.6*) and is used to indicate the power status of your system unit. The table below illustrates how the **Power LED** behaves in different situations.


	Off		The system is off or in hibernation mode.
	Blue	Steady on	<ul style="list-style-type: none"> The system is running on AC power and the battery is not inserted, or The battery is fully charged.
		Blinking	The system is in Sleep mode.
	Amber	Steady on	The battery is charging.
		Blinking once per 3 seconds	The battery is in use (discharging) and the system is not connected to AC power.
		Blinking once per second	The battery energy level is down to 10%, or less.
		Blinking steady in high frequency	The system is not connected to AC power and the battery level is below 5%, representing insufficient power to turn on the system.
	Purple (steady on)		The battery is not charging or fails.


Note: For the exact location of the **Power LED**, please refer to **Panoramic View** in *Chapter 1.2*.

For details on **Sleep** and **Hibernate**, please refer to **Power Options** in the **Control Panel** of your Microsoft Windows operating system.

1.4 The Two System LEDs

The two **System LEDs** provide an alternate way to indicate power status of your system unit as also provided by the **Power LED** as described in *Chapter 1.3*. The table below illustrates how these two **System LEDs** behave in different situations.

	Off		The system is off or in hibernation mode.
	Blue	Steady on	<ul style="list-style-type: none"> The system is running on AC power and the battery is not inserted, or The battery is fully charged.
		Blinking	The system is in Sleep mode.

	Off		The system is off or in hibernation mode.
	Amber	Steady on	The battery is charging.
		Blinking once per 3 seconds	The battery is in use (discharging) and the system is not connected to AC power.
		Blinking once per second	The battery energy level is down to 10%, or less.
	Blinking steady in high frequency	The system is not connected to AC power and the battery level is below 5%, representing insufficient power to turn on the system.	

Incidentally when both LEDs are lit up steady in their respective colors, the battery pack is either not charging or fails. In this situation, the **Power LED** will also lit up in purple.

Note: These **Two System LEDs** are located at rear side of the LCD display. For the exact location, please refer to the **Top View** diagram in *Chapter 1.2*.

For more details on **Sleep** and **Hibernate**, please refer to **Power Options** in the **Control Panel** of your Microsoft Windows operating system.

1.5 The Seven Status LEDs



The Media Finger-Touch Button LED

The LED would be lit (in a slightly different way though) in the below two conditions:

- This LED would be indefinitely “on” when the **seven media finger-touch buttons** are disabled. This LED would be “off” when these buttons are re-enabled again.
- This LED would be momentarily “on” when the **seven media finger-touch buttons** are enabled and when any of these buttons are pressed/touched.

For the locations and definitions of these **seven media finger-touch buttons**, please refer to *Chapter 1.2* and *Chapter 1.8* respectively. For details on how to disable these buttons, please refer to *Chapter 1.13*.



The Wireless LAN LED

The LED would be lit when the wireless LAN module is powered on. For details on how to power on the wireless LAN module, please refer to *Chapter 1.13*.



The AC Adapter LED

The LED would be lit when the system is connected to an AC adapter.



The HDD/ODD LED

The LED would be lit when the system is accessing the hard disk drive and/or optical drive.



The Touch Pad LED

The LED would be lit when the touch pad function is activated. For details on how to switch off and to switch on the touch pad function, please refer to *Chapter 1.13*.



The Caps Lock LED

The LED would be lit when the keyboard is in **Caps Lock** mode. In this mode, all characters you type are in uppercase.



The Num Lock LED

The LED would be lit when the keyboard is in **Num Lock** mode. In this mode, the embedded numeric keypads can be used.

Note: The **Seven Status LEDs** are located near the topside of keyboard. For exact location, please refer to the **Panoramic View** diagram in *Chapter 1.2*.

1.6 The Power Button



Power Button

This **Power Button** is programmable by the user. For details on how to program this button, please refer to **Power Options** in the **Control Panel** of your **Windows™ System**.

Note: The **Power Button** is located near the right side of the keyboard. For exact location, please refer to the **Panoramic View** diagram in *Chapter 1.2*.

1.7 The Two System Finger-Touch Buttons



Internet Button

Press this button to activate the internet function.



Email Button

Press this button to activate the email function.

Note: The **Two Finger-Touch Buttons** are “finger-touch sensitive” and are located near the top of keyboard. For exact location, please refer to the **Panoramic View** diagram in *Chapter 1.2*.

In order to take the full advantage of the two buttons (**Internet Button**, **Email Button**), you are requested to perform the below one-time registration procedure after installing Windows™ Vista™ operating system. Skip these steps if you have completed this procedure before.

- In the driver CD disc, you can find two execution programs: “**32-hotstart.reg**”, and “**64-hotstart.reg**”. They are respectively for 32-bit and 64-bit Windows™ Vista™ operating systems.
- Start the registration process by double clicking on the appropriate execution program. Then follow the instructions to complete the process.
- Reboot the system to activate the internet and email functions.

1.8 The Seven Media Finger-Touch Buttons

**Play/Pause Button**

Press this button to play or pause media playback.

**Stop Button**

Press this button to stop media playback.

**Previous Track Button**

Press this button to skip to the previous track/chapter of media playback.

**Next Track Button**

Press this button to skip to the next track/chapter of media playback.

MUSIC**Music Button**

Press this button to run the **Music Program**.

DVD**DVD Button**

Press this button to run the **DVD Program**.

TV**TV Button**

Press this button to run the **TV Program**.

Note: The **Seven Finger-Touch Buttons** are “finger-touch sensitive” and are located near the top of keyboard. For exact location, please refer to the **Panoramic View** diagram in *Chapter 1.2*.

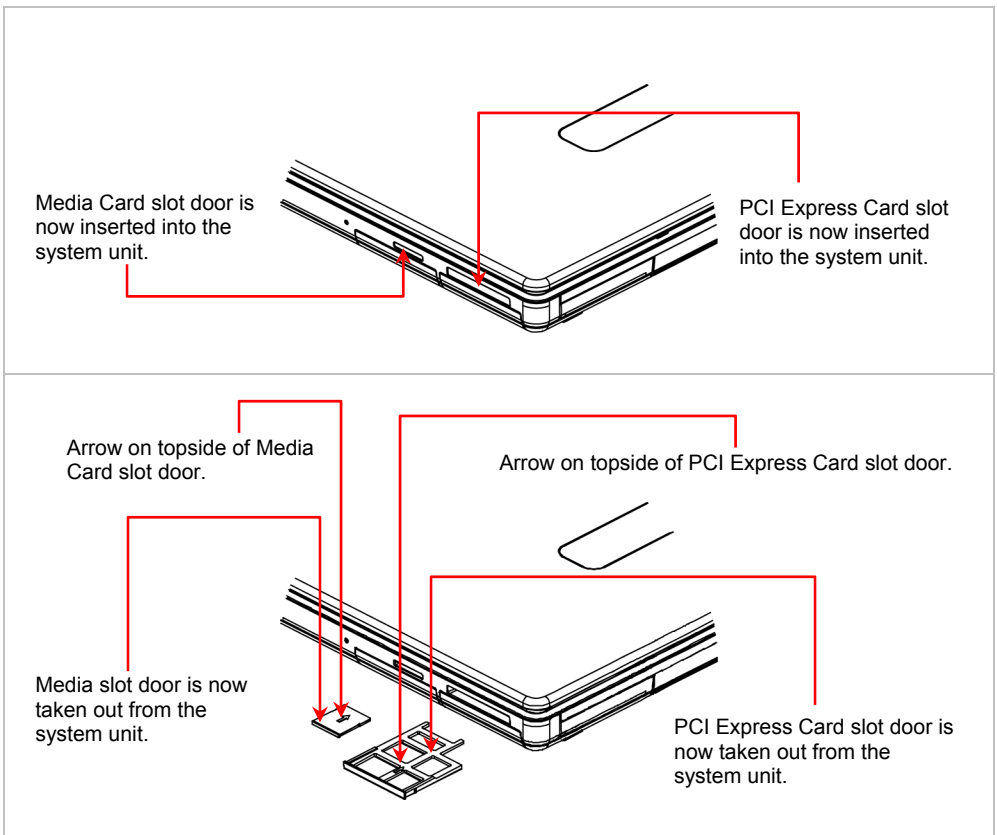
In order to prevent the functions these “finger-touch sensitive” buttons from being unintentionally triggered on, you may like to disable this buttons by pressing key combination (*Fn+F11*). If required, you can press key combination (*Fn+F11*) again to re-enable these buttons. For details on how to disable these buttons, please refer to *Chapter 1.13*.

Note: The system supports **Windows™ MCE**, and **Windows™ Vista** operating systems. **Windows™ MCE** supports full media center features. Both **Windows™ Vista Home Premium** and **Windows™ Vista Ultimate** include the full media center features as supported by **Windows™ MCE**. If you decide to use either one of these two **Windows Vista™ (Windows™ Vista Home Premium and Windows™ Vista Ultimate)** versions, you can enjoy full media center features at the same time while you are working on your **notebook**. Otherwise (with other operating systems), you need to install software like **Cyberlink™ PowerCinema**.

In order to take the full advantage of the three buttons (**Music Button**, **DVD Button**, **TV Button**), you are requested to perform the below one-time registration procedure after installing **Windows™ Vista™** operating system. Skip these steps if you have completed this procedure before.

- In the driver CD disc, you can find two execution programs: “**32-hotstart.reg**”, and “**64-hotstart.reg**”. They are respectively for 32-bit and 64-bit **Windows™ Vista™** operating systems.
- Start the registration process by double clicking on the appropriate execution program. Then follow the instructions to complete the process.
- Reboot the system to activate the music, DVD, and TV functions.

1.9 Attention On PCI Express And Media Card Slots



Please observe below safety measures:

- When PCI Express Card is not inserted into the PCI Express Card slot, make sure this slot is covered by the "PCI Express Card slot door" as supplied together with this **notebook**. The purpose of this "PCI Express Card slot door" is to prevent foreign matters from entering into the system unit through this slot, when PCI Express Card is not inserted. When inserting this "PCI Express Card slot door", please make sure the arrow is on the topside as shown above. Inserting this door upside down may cause damage to your **notebook**.

- When no card (SD/ MMC/ MS Cards) is inserted into the media slot, make sure this slot is covered by the “media slot door” as supplied together with this **notebook**. The purpose of this “media slot door” is to prevent foreign matters from entering into the system unit through this slot, when no card is inserted. When inserting this “media slot door”, please make sure the arrow is on the topside as shown above. Inserting this door upside down may cause damage to your **notebook**.

1.10 Operating Temperature

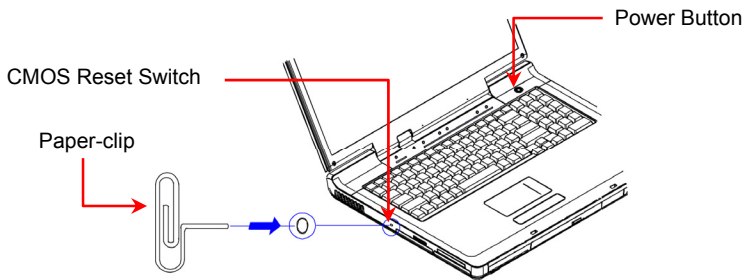
Operating Temperature : 10°C to 35°C.

1.11 Resetting Your System

Your system provides you an **overclock** option whereby you can choose to increase the overall system performance by **overclocking** the speed of the CPU processor.

If you have chosen to **overclock** and are experiencing system's instability, you can perform the steps below to reset your system:

- Press the **power button** at least for four seconds to power off system.
- Take a paper clip, bend its end, and have it poked into this **CMOS reset switch** as shown below. This effectively resets all CMOS settings to factory default settings: including and especially resetting the system back to without **overclocking**.
- Press the **Power Button** to boot up system. Press [**F2**] during the system boot-up to get into the **BIOS** Setups.
- Go into the **Main Setup** to reset time and date.



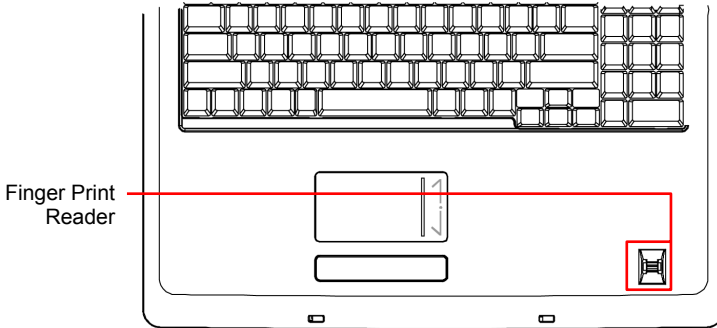
There is even a quicker way to reset your system, if you fail to boot up the system (especially when it is caused by system **overclocking**). System registers your successive boot up failures. When it comes to the fourth successive boot up failure, system would reset the CMOS settings before proceeding into the boot up. This effectively resets all CMOS settings to factory default settings: including and especially resetting the system back to without **overclocking**. Then go into **BIOS** to reset time and date as described above.

Warning: All devices and chipsets (that the system uses) operate relatively error-free within their valid operating ranges. When you choose to **overclock** your system, you are allowing these devices and chipsets to operate outside their valid ranges; thus exposing your system to the **potential risks** of system's instability, and/or **shortening the lifespan of the system unit**. When you choose to **overclock** your system, **there is no guarantee that such **potential risks** would not occur to your system.**

Your system is factory preset without **overclocking**. To **overclock** your system, perform the steps below:

- 1) Press the **Power Button** to boot up system. Press [**F2**] during the system boot-up to get into the BIOS Setup.
- 2) Go into the **Advanced Setup** to increase the value of **Processor Multiplier State**.
- 3) Go into **Exit Setup** to **Exit Saving Changes**.

1.12 The Fingerprint Reader



Rather than solely relying on traditional password to prevent from unauthorized access, this fingerprint reader offers your **notebook** an extra layer of protection. In order to take advantage on the functions and features of this fingerprint reader, you need to install the fingerprint reader program that comes along with the driver CD disc. In brief, this fingerprint reader together with the supplied program guards against unauthorized access to your **notebook**'s Windows® operating system as well as individual folders and data files. For more details on how to enroll your finger print images and set up the securities, please read the fingerprint reader user's guide after you have installed the supplied program.

Important: This fingerprint reader, like all security measures, if improperly implemented can put your system and data into jeopardy---specifically making them no longer accessible. Therefore after installing the supplied program, you are requested to thoroughly go through fingerprint reader user's guide before implementing the fingerprint reader into your notebook.

1.13 The <Fn> Key

The <Fn> Function Key is located near the bottom-left corner of the keyboard. This key is used together with other keys to activate certain pre-defined functions. To activate these functions, press and hold down <Fn> together with the keys described below:



Sleep Switch

Press this key combination ($Fn+F1$) to enter sleep mode. In sleep mode, the LCD display and selected devices would be switched off for less energy consumption.



Wireless LAN Switch

Press this key combination ($Fn+F2$) to power on and power off the **Wireless LAN** module. Powering on the **Wireless LAN** by pressing this key combination ($Fn+F2$) does not automatically activate the **Wireless LAN** function. After powering on, you need to activate the **Wireless LAN** function through Windows™. The main purpose of this key combination ($Fn+F2$) is to provide you a quick way to turn off the power of **Wireless LAN** when entering venues like airplanes, airports, and hospitals where the usage of **Wireless LAN** is prohibited or not advisable.



LCD/CRT/TV Switch

Press this key combination ($Fn+F3$) to switch between LCD only, CRT only, TV only, LCD/CRT simultaneously, and LCD/TV simultaneously.



Web Cam Switch

Press this key combination ($Fn+F4$) to power on and power off the Web Cam module. After powering on the Web Cam, you need to activate its function through Windows™.



Touch Pad Switch

Press this key combination ($Fn+F5$) to switch off and to switch on the touch pad function. When the touch pad function is switched off, the touch pad device still can work temporarily for three to five seconds during system reboots into Windows™ operating system, or resumes from standby or hibernation.

**Mute/ Un-mute Switch**

Press this key combination ($Fn+F6$) to mute and to un-mute audio volume.

**Brightness Decreasing**

Press this key combination ($Fn+F7$) to decrease brightness of LCD display.

**Brightness Increasing**

Press this key combination ($Fn+F8$) to increase brightness of LCD display.

**Bluetooth Switch**

Press this key combination ($Fn+F9$) to power on and power off the **Bluetooth®** module. Powering on the **Bluetooth®** by pressing this key combination ($Fn+F9$) does not automatically activate the **Bluetooth®** function. After powering on, you need to activate the **Bluetooth®** function through Windows™. The main purpose of this key combination ($Fn+F9$) is to provide you a quick way to turn off the power of **Bluetooth®** when entering venues like airplanes, airports, and hospitals where the usage of **Bluetooth®** is prohibited or not advisable.

**Keyboard Backlight Switch**

Press this key combination ($Fn+F10$) to turn off the **keyboard backlight** and to switch between available backlight colors: red, green, and blue.

**Media Function Switch**

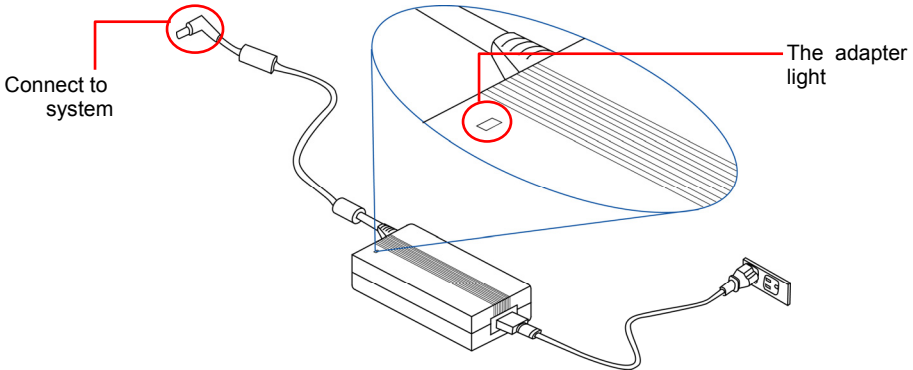
Press this key combination ($Fn+F11$) to disable or enable the **Seven Media Finger-touch Buttons**. When these buttons are disabled, the **Seven Status LED** would be lit. Press ($Fn+F11$) again to enable these buttons; and the **Seven Status LED** would be off. For details on status of **Seven Status LED**, please refer to *Chapter 1.5*. For details on the **media buttons**, please refer to *Chapter 1.8*.

- Note:** The proper way to activate **Wireless LAN**, and **Bluetooth®** is as below:
- 1) Press this combination ($F_n + F_2$) to power on **Wireless LAN**.
 - 2) Press key combination ($F_n + F_9$) to power on **Bluetooth®**.
 - 3) Activate the application programs in Windows™.

The effective range of the system **Bluetooth®** is 10 meters.

Note: The **keyboard backlight** is dim and is not noticeable when the ambient brightness is high. The **keyboard backlight** consumes electrical power. If you need to ration your battery power, you may like to deactivate this feature by pressing the ($F_n + F_{10}$) combination.

1.14 The AC Adapter



Once the adapter is connected to a wall socket, the light on the adapter would be on immediately. In this case when the adapter is connected to the system unit, adapter starts providing power to the system unit as well as charging the batteries.

1.15 Power Conservation For Dual VGA Configuration

Your system supports both single and dual (two) VGA configurations; whereby depending on configuration of the system you purchased, it can be equipped with either single VGA card or dual VGA cards. For the sake of better expression, the paragraph below will refer “system with single VGA card” and “system with dual VGA cards” respectively as **single VGA system** and **dual VGA system**.

Please be aware that **dual VGA system** consumes more electrical power that **single VGA system**. For better power conservation, when a **dual VGA system** is powered by the battery pack (that is not powered by external AC power as shown in *Chapter 1.14*), system would automatically switch to single VGA mode operation. Once the AC adapter is connected to system, system would automatically resume its normal dual VGA mode operation.

Chapter 2 Battery

2.1 Battery Pack

Your **notebook** is equipped with a high-energy rechargeable **Lithium Ion (Li-Ion)** battery pack. Battery life will vary depending on the product configuration, product model, applications loaded on the product, power management settings of the product, and the product features used by the customer. As with all batteries, the maximum capacity of this battery will decrease with time and usage.

2.2 Recharging The Battery Pack

Your **notebook** supports both on-line and off-line recharge. Follow the procedure below to recharge battery:

- Make sure the battery pack is installed in the **notebook**.
- Connect the AC adapter to the **notebook** and to an electrical outlet.

The **Two System LEDs** are available to reflect system status as well as battery status. For details on the **System LEDs**, please refer to *Chapter 1.4*. When the notebook is OFF, a depleted Li-Ion battery will take three hours to recharge.

2.3 Questions and Answers:

Q: I can feel a mild heat next to the battery pack. Is it normal?

A: The battery will generate heat during recharging and discharging. There is a protection circuit inside the **notebook** to prevent overheating. User needs not to worry.

Q: My battery operation time is not as long as it should be. Why?

A: The battery is heat sensitive and can only be charged to its maximum if the battery and its environmental temperature remain within 15-25°C (59-77°F). The more the temperature deviates from this range during recharging, the less chance there is for the battery to be fully charged. In order to recharge the pack to its full capacity, users are requested to cool down the unit by unplugging the AC Adapter. Wait until it is cooled down. Then plug in the AC Adapter to start recharging again.

Q: I did not use my spare battery for a few days. Even though it was fully recharged, there wasn't as much power left as a newly charged one. Why?

A: The batteries will self-discharge (1% per day for Li-Ion) when they are not being recharged. To make sure a battery pack is fully charged, recharge before use. Always keep the battery inside the **notebook** and have the AC adapter connected whenever possible.

Q: I did not use my spare battery for months. I have problem in recharging it.

A: If you happen to leave your battery pack to go through an extended period of self-discharge, say more than three months, the battery voltage level will become too low and needs to be **Pre-Charged** (to bring the battery voltage level high enough) before it automatically (for Li-Ion only) resumes its normal **Fast Charge**. **Pre-Charge** may take 30 minutes. **Fast Charge** usually takes 2~3 hours.

2.4 Battery Maintenance

To maintain the battery pack's maximum capacity, you should occasionally let the **notebook** deplete its battery power completely before recharging.

To carry out a complete depletion of the battery, disconnect the AC adapter and let your **notebook** consume the remaining battery power. To speed up the depletion, use the HDD as much as possible, and the LCD should be set as bright as possible. When the battery is empty, wait for the **notebook** to cool down (especially the battery). The temperature should be within 15-25°C (59-77°F). Then insert the AC adapter to recharge the battery.

2.5 Power Consumption

The **Windows™** operating system has incorporated the latest state-of-the-art **ACPI (Advanced Configuration Power Interface)** power management methodology. In order to fully utilize the power of your battery packs, it would be a good idea for you to spend sometime to acquire a basic understanding of the power management concept from your operating system.

In **Windows™ Operating Systems**, you can go through **Power Options** of the **Control Panel** according to the version of **Windows™ Operating System** the **notebook** applies. We shall not describe them in details.

2.6 Reducing Power Consumption

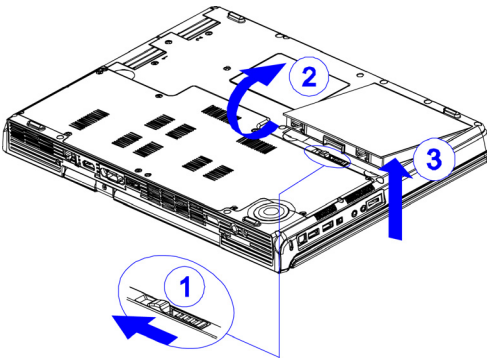
Although your **notebook** (together with the operating system) is capable of power conservation, there are measures you can take to reduce the power consumption:

- Use the AC power whenever possible.
- Lower the intensity of the LCD backlight. A very bright screen translates to higher power usage.
- Try to use the HDD drive to read and write files, instead of using the external USB FDD.

Note: Whenever system is powered on or powered off, make sure the battery pack is installed in the battery pack compartment.

2.7 Removing The Battery Pack

This battery pack can easily be removed and replaced. Make sure that the computer is properly shutdown before changing the battery pack. If you would like to change the battery pack while power is on, make sure this battery pack is not the only electrical source to the system unit. Follow the steps below to remove the battery pack.



- Have the system properly shutdown.
- Flip the system upside down as shown.
- Push the battery latch to unlock position as shown by #1.
- The battery pack would pop up as shown by #2.
- Remove the battery pack as shown by #3.

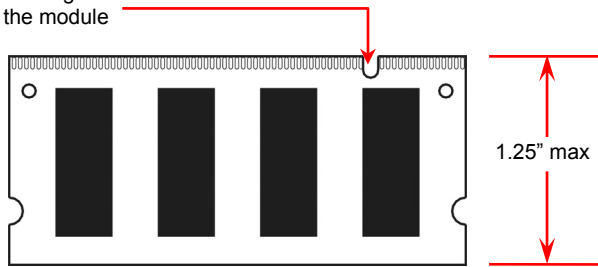
To insert the battery pack, reverse the steps above.

Chapter 3 Memory

Your **notebook** is equipped with a configurable memory unit. The industry standard **JEDEC PC3-8500S (DDR3-1067) S.O.DIMM** memory module sockets are available for memory upgrade to 4096MB. The table below illustrates some of the possible ways system memory can be configured.

Total Memory	Socket#1	Socket#2
512MB	0MB	512MB
512MB	512MB	0MB
1024MB	0MB	1024MB
1024MB	512MB	512MB
1024MB	1024MB	0MB
1536MB	512MB	1024MB
1536MB	1024MB	512MB
2048MB	1024MB	1024MB
3072MB	1024MB	2048MB
3072MB	2048MB	1024MB
4096MB	2048MB	2048MB

Groove for indicating the orientation of the module



DDR3 S.O. DIMM Memory Module

Note: Depend on the edition of Windows operating system your **notebook** applies, the minimum memory requirement would vary. It is recommended that if you use Windows Vista™ operating system, your system memory should be at least 1024MB.

3.1 Limitation Of 32-bit Windows™ OS

Below description applies to 32-bit Windows™ OS only, unless otherwise specified. 32-bit Windows™ OS is confined to the limitation of 4GB (2^{32-1}) of addressable memory space.

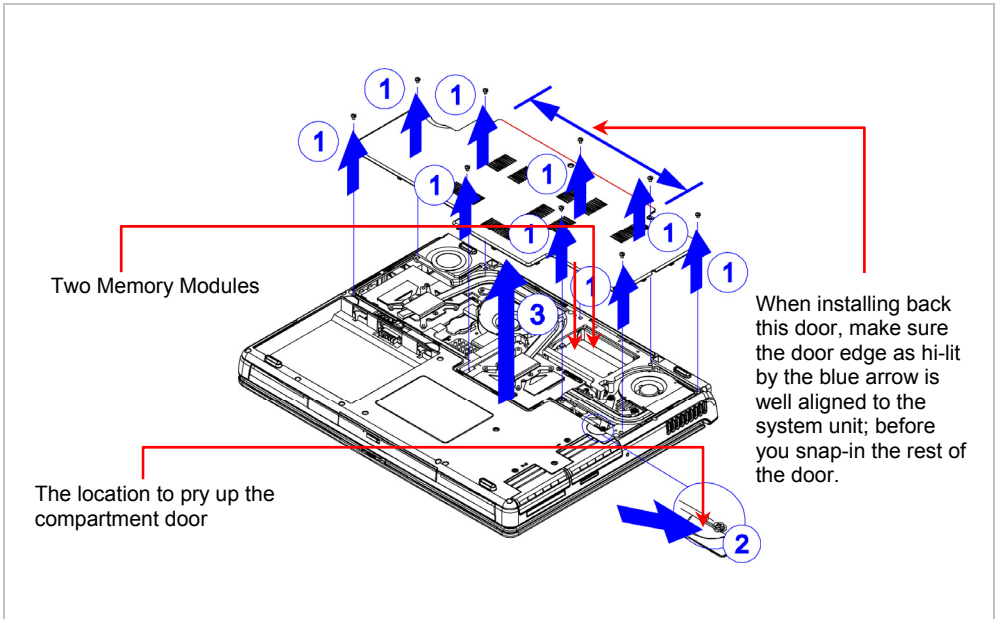
This would not be an issue when you use Windows™ to view the system memory. That is when you have installed 4GB memory as listed above, Windows™ would report the system memory to be 4GB.

However, if you use other application programs, the reported “available memory size” can be somewhat smaller than the total amount of memory you have installed. When this situation occurs, the reported system memory is overlapped by the video memory and appeared to roughly equal to 4GB minus the total video memory taken up by the video memory of VGA cards. Your system supports single and dual VGA card configurations. So the amount of overlapping really depends on the quantity and the size of video memory you have installed in the system.

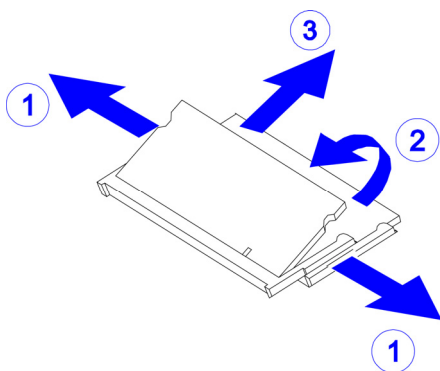
There is no such limitation in 64-bit Windows™ OS.

3.2 Removing Memory Modules

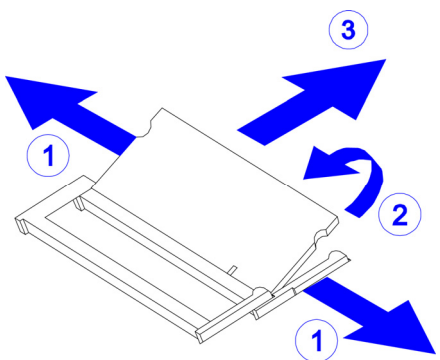
Below is the procedure on how to remove the memory modules.



- Make sure the system is properly shutdown.
- Flip the system upside down as shown.
- Remove the battery pack as shown in **Chapter 2**.
- Remove the nine screws as shown by **#1**.
- Gently pry up the compartment door from the location as shown **#2**.
- Remove the compartment door as shown by **#3**.
- You can see two memory sockets with one socket overlapping the other socket.



- Press the spring-locks sideways as shown by #1.
- The first memory module would pop up as shown by #2.
- Remove the first memory module.

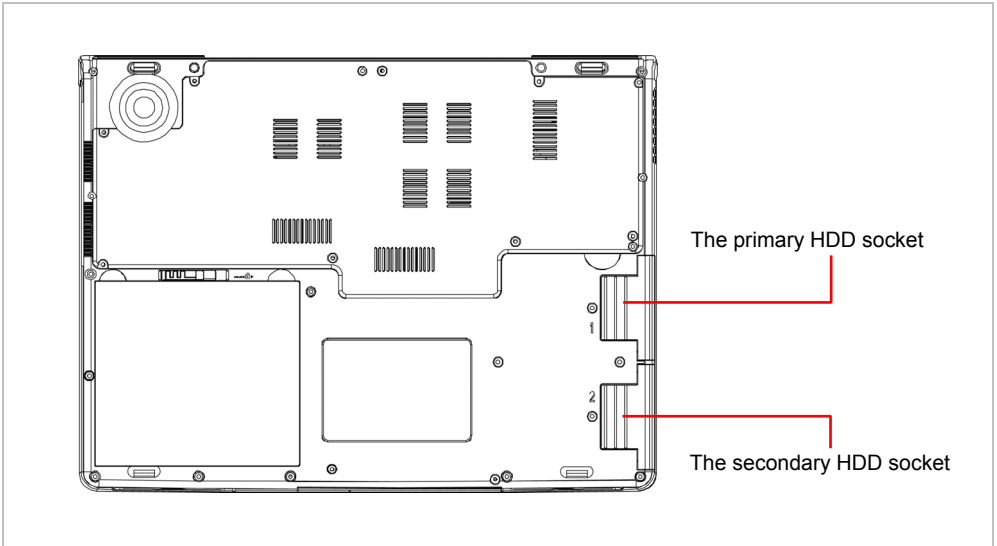


- Press the spring-locks sideways as shown by #1.
- The second memory module would pop up as shown by #2.
- Remove the second memory module as shown by #3.

To insert the memory modules, reverse the steps above.

Chapter 4 The HDD Drives

4.1 The Two HDD Sockets



Your **notebook** is equipped with two sets of HDD socket. These sockets support industry standard 2.5"/9.5mm SATA-1 Gen1i (1.5Gb/s) and SATA-2 Gen2i (3.0Gb/s) hard disk drives.

4.2 For RAID Users

Your **notebook** supports **RAID 0** and **RAID 1** technology. In order to take advantage of this capability, you need to perform the below one-time procedure before installing Windows™ Vista™ operating system:

- Install two SATA HDDs into the two HDD sockets.
- Insert “Windows™ Vista™ SP1 OS” into the ODD drive.
- Boot up system. Press F2 during boot up to enter BIOS Setup.
- In BIOS Setup, set the **SATA Mode Selection** in **Advanced** menu to “**RAID Enable**”.
- In BIOS Setup, press F10 to save change and then exit BIOS Setup.
- When system display “Intel(R) Matrix Storage Manager” screen, press <Ctrl+I> simultaneously to enter Configuration Utility.
- Follow instruction to complete the **RAID** setup.
- Boot up and install Windows™ Vista™ from the ODD drive.

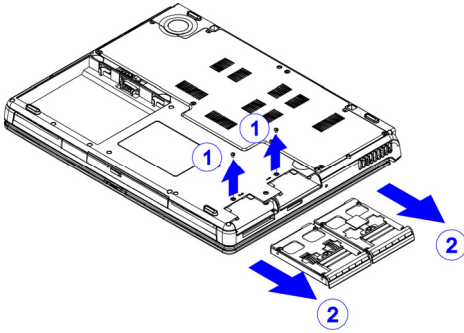
4.3 *For Non-RAID Users*

With the exception that you are going to install two Windows bootable HDD drives into these sockets, in general there is no need to distinguish which socket is **primary socket** and vice versa. Below are the three major scenarios:

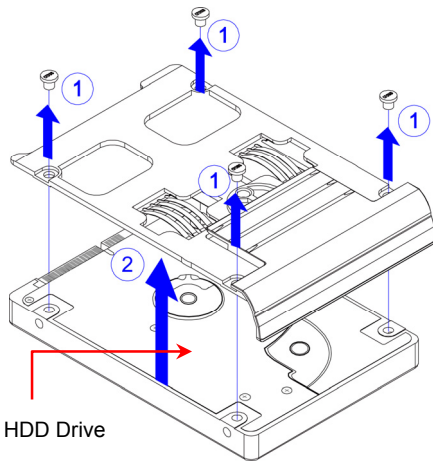
- **One Windows bootable HDD drive:** You are at your liberty to use either one of the two sockets. But **primary socket** is your preferred choice for the bootable HDD drive.
- **One Windows bootable HDD drive and another Windows non-bootable HDD drive:** You are at your liberty to use either one of the two sockets for the bootable HDD drive. Again **primary socket** is your preferred choice for the bootable HDD drive.
- **Both HDD drives are Windows bootable:** Choose the HDD drive you want to have the system boot up from and have this drive installed on the **primary socket**.

4.4 Removing The Hard Disk Drives

Below is the procedure on how to remove the hard disk drives.



- Make sure the system is properly shutdown.
- Flip the system upside down as shown.
- Remove the battery pack as shown in **Chapter 2**.
- Remove the two screws as shown by **#1**.
- Remove the two HDD drives as shown by **#2**.



- Remove the four screws as shown by **#1**.
- Before removing the HDD module, first remove the HDD door as shown by **#2**.

To insert the HDD drive, reverse the steps above.

Appendix A - Agency Regulatory Notices

A.1 Safety Instructions



CAUTION: Please read these safety instructions carefully.



CAUTION: Please keep this User's Manual for future reference.



CAUTION: Please disconnect this equipment from AC outlet before cleaning. DO NOT use liquid or sprayed detergent for cleaning. Use a clean moistened cloth.



CAUTION: The wall socket used should be positioned near the equipment and should be easily accessible.



CAUTION: Please keep this equipment free from humidity.



CAUTION: Place the equipment on a reliable surface at all times. A drop or fall can cause severe damage.



WARNING: The openings of the enclosure are for air ventilation and are meant to protect the equipment from overheating. DO NOT COVER THE VENTILATION OPENINGS.



CAUTION: Verify the voltage of the power source before connecting the unit to any power outlet.



WARNING: DO NOT step on or place anything over the power cord.



CAUTION: All cautions and warnings on the equipment should be noted.



WARNING: If the equipment is not used for a long period of time, disconnect the equipment from the power source to avoid damage from power spikes.



WARNING: NEVER pour any liquid into any openings; a fire or electrical shock is possible.



WARNING: For safety reasons, other than pre-designated ports, doors, and the equipment should be opened only through qualified service personnel.



CAUTION: If one of the following situations should arise, the equipment should be checked by an authorized technician:

- a. The power cord or plug is damaged.
 - b. Liquid has penetrated into the equipment.
 - c. The equipment has been exposed to excessive moisture.
 - d. The equipment does not work well, or you fail to get it to work according to user's manual.
 - e. The equipment has been dropped or damaged.
 - f. The equipment has obvious signs of breakage.
-
-



CAUTION: DO NOT LEAVE THE EQUIPMENT IN TEMPERATURES BELOW -20°C(-4°F) OR ABOVE 60°C(140°F). IT MAY CAUSE DAMAGE TO THE EQUIPMENT.



WARNING: This computer contains an internal lithium battery-powered real-time circuit. There is a risk of explosion and injury if the battery is incorrectly replaced or handled. Do not attempt to recharge, disassembled, immerse in water, or dispose of it in fire. Replacement should be done through your notebook dealer.



WARNING: THE CD-ROM/DVD-ROM IN THIS NOTEBOOK EMPLOYS A LASER SYSTEM.

- a. To ensure proper use of this product, please read the relevant instructions carefully and retain for future reference.
 - b. Should the unit ever require maintenance, contact your local dealer.
 - c. Use of controls, adjustments or the performance of procedures other than those specified may result in hazardous radiation exposure.
 - d. To prevent direct exposure to Laser Beam, do no try to open the enclosure.
-



CAUTION: The internal CD-ROM/DVD-ROM drive is classified as a **CLASS 1 LASER PRODUCT**. Label is located on the outside of the CD-ROM/DVD-ROM drive with the following wordings:

CLASS 1 LASER PRODUCT
KLASSE 1 LASER PRODUKT



WARNING: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.
Explosionsgefahr bei unsachgemäßen Austausch der Batterie. Ersatz nur durch denselben oder einem vom Hersteller empfohlenem ähnlichen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.



WARNING: Your **notebook** contains a Ni-MH or Li-Ion battery pack. There is a risk of fire and chemical burn if the battery pack is handled improperly. Do not disassemble, crush, puncture, short external contact, dispose of in water or fire, or expose it to temperature higher than 60°C.



WARNING: Handle the battery pack very carefully. Avoid touching the metal leads on the connector of the battery case.



CAUTION: Use only approved AC Adapter with your notebook. Using the wrong type of AC Adapter may cause serious damage to your notebook.



CAUTION: The AC Adapter can accept a line voltage ranging from 100V to 240V and is compatible with most international power sources. If you are unsure whether your power source is compatible, please contact the local dealer for assistance.



CAUTION: For continued protection against risk of fire, Replace only with same type and rating of fuse.



CAUTION: If the computer is not sold to German area, please use only the local recognized power supply cords that are recommended by the manufacturer.



WARNING: Don't expose your **notebook** to excessive heat or coldness (frost). Don't drop, spill fluids or open the exterior of the case. This can damage the **notebook** and void the warranty.



Caution: This notebook computer contains a certified optical module that is equivalent as a **Class 1 LASER PRODUCT**.



Caution: According to ANSI/NFPA 70 of the National Electrical Code (NEC) Section 820.93, make sure that your CATV system installer has connected the Co-axial cable shield to the grounding system of the building, as close to the point of cable entry as practical. The common or earthed side of the connected (SELV) circuits and any accessible metal parts should be connected to the screen of coaxial cable.

A.2 Agency Notice

Federal Communications Commission Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or television technician for help.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by the manufacturer responsible for compliance may void the user's authority to operate the equipment.

Cables

Connections to this device must be made with shielded cables with metallic RFI/EMI connector hoods to maintain compliance with FCC Rules and Regulations.

FCC RF Radiation Exposure Statement

- This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
- This equipment complies FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.
- If this device is going to be operated in 5.15 ~5.25GHz frequency range, then it is restricted in indoor environment only.

USA and Canada Safety Requirements And Notices

The FCC with its action in ET Docket 93-62 has adopted a safety standard for human exposure to radio frequency (RF) electromagnetic energy emitted by FCC certified equipment. The Intel PRO/Wireless LAN MiniPCI Adapter products meet the Human Exposure limits found in OET Bulletin 65, 2001, and ANSI/IEEE C95.1, 1992. Proper operation of this radio according to the instructions found in this manual will result in exposure substantially below the FCC's recommended limits.

The following safety precautions should be observed:

- Do not touch or move antenna while the unit is transmitting or receiving.
- Do not hold any component containing the radio such that the antenna is very close or touching any exposed parts of the body, especially the face or eyes, while transmitting.
- Do not operate the radio or attempt to transmit data unless the antenna is connected; if not, the radio may be damaged.

Use in specific environments:

- The use of wireless devices in hazardous locations is limited by the constraints posed by the safety directors of such environments.
- The use of wireless devices on airplanes is governed by the Federal Aviation Administration (FAA).
- The use of wireless devices in hospitals is restricted to the limits set forth by each hospital.

Antenna use:

- In order to comply with FCC RF exposure limits, low gain integrated antennas should be located at a minimum distance of 20 cm (8 inches) or more from the body of all persons.
- High-gain, wall-mount, or mast-mount antennas are designed to be professionally installed and should be located at a minimum distance of 30 cm (12 inches) or more from body of all persons. Please contact your professional installer, VAR, or antenna manufacturer for proper installation requirements.

Explosive Device Proximity Warning

Warning: Do not operate a portable transmitter (such as a wireless network device) near unshielded blasting caps or in an explosive environment unless the device has been modified to be qualified for such use.

Use On Aircraft Caution

Caution: Regulations of the FCC and FAA prohibit airborne operation of radio-frequency wireless devices because their signals could interfere with critical aircraft instruments.

Canadian Notice

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Avis Canadien

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Canada Radio Frequency Interference Requirements

This Class B digital apparatus complies with Canadian ICES-003, Issue 2, and RSS-210, Issue 4 (Dec. 2000).

“To prevent radio interference to the licensed service, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment (or its transmit antenna) that is installed outdoors is subject to licensing.”

Cet appareil numérique de la classe B est conforme à la norme NMB-003, No. 2, et CNR-210, No. 4 (Dec. 2000).

“Pour empêcher que cet appareil cause du brouillage au service faisant l’objet d’une licence, il doit être utilisé à l’intérieur et devrait être placé loin des fenêtres afin de fournir un écran de blindage maximal. Si le matériel (ou son antenne d’émission) est installé à l’extérieur, il doit faire l’objet d’une licence.”

European Union Notice

Product with the CE Marking comply with the EMC Directive (2004/108/EC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community and if this product has telecommunication functionality, the R&TTE Directive (1999/5/EC).

Compliance with these directives implies conformity to the following European Norms (in parentheses are the equivalent international standards and regulations):

- EN55022 (CISPR 22)— Electromagnetic Interference
- EN55024 (IEC61000-4-2,3,4,5,6,8,11)— Electromagnetic Immunity
- EN61000-3-2— (IEC61000-3-2)-Power Line Harmonics
- EN61000-3-3— (IEC61000-3-3)-Power Line Flicker
- EN60950 (IEC60950) — Product Safety

For devices with built-in wireless equipment, the following additional standards apply:

- ETSI301489-17: General Emissions for Radio Equipment
- EN60950: Safety
- ETSI300328-2: Technical Requirements for Radio Equipment

CE Caution: Due to the fact that the frequencies used by 802.11b/802.11g wireless LAN devices may not yet be harmonized in all countries, 802.11b/802.11g products are designed for use only in specific countries or regions, and are not allowed to be operated in countries or regions other than those of designated use. As a user of these products, you are responsible for ensuring that the products are used only in the countries or regions for which they were intended and for verifying that they are configured with the correct selection of frequency and channel for the country or region of use. And deviation from permissible settings and restrictions in the country or region of use could be an infringement of local law and may be punished as such.

The wireless LAN device can currently be used indoors only in the following departments of mainland France.

01	Ain	36	Indre	69	Rhône
02	Aisne	37	Indre et Loire	70	Haute Saône
03	Allier	39	Jura	71	Saône et Loire
05	Hautes Alpes	41	Loir et Cher	72	Sarthe
08	Ardennes	42	Loire	75	Paris
09	Ariège	45	Loiret	77	Seine et Marne
10	Aube	50	Manche	78	Yvelines
11	Aude	54	Meurthe et Moselle	79	Deux Sèvres
12	Aveyron	55	Meuse	82	Tarn et Garonne
16	Charente	57	Moselle	84	Vaucluse
19	Corrèze	58	Nièvre	86	Vienne
2A	Corse Sud	59	Nord	88	Vosges
2B	Haute Corse	60	Oise	89	Yonne
21	Côte d'Or	61	Orne	90	Territoire de Belfort
24	Dordogne	63	Puy du Dôme	91	Essonne
25	Doubs	64	Pyrénées Atlantique	92	Hauts de Seine
26	Drôme	65	Haute Pyrénées	93	Seine St Denis
27	Eure	66	Pyrénées Orientales	94	Val de Marne
32	Gers	67	Bas Rhin		
35	Ille et Vilaine	68	Haut Rhin		

The wireless LAN device cannot currently be used in any departments of mainland France other than those listed above.

Maximum allowable EIRP 802.11b wireless LAN cards in the mainland departments of France not shown in the table above are as follows: (See the ART website at www.art-tecom.fr for information on the French overseas territories.)

Frequency Ranges (MHz)	Indoors	Outdoors
2400 – 2446.5	10 mW	Not permitted
2446.5 – 2483.5	100 mW	100 mW on private property with Ministry of Defense approval

Japanese Notice

本装置は、第二種情報装置（住宅地域またはその隣接した地域において使用されるべき情報装置）で住宅地域での電波障害防止を目的とした情報処理装置等電波障害自主規制協議会（VCCI）基準に適合しております。

しかし、本装置をラジオ、テレビジョン受信機に、近接してご使用になると、受信障害の原因となることがあります。本書の説明にしたがって正しい取り扱いをしてください。

DGT Statement

根據交通部 低功率管理辦法 規定：

- 第十四條 經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。
- 第十七條 低功率射頻電機之使用不得影響飛航安全及干擾合法通信，經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。
- 第二十條 輸入、製造低功率射頻電機之公司、商號或使用者違反本辦法規定，擅自使用或變更無線電頻率、電功率者，除依電信法規定處罰外，電信總局並得撤銷其型式認證證明或型式認證標籤。

U.S. Regulations Governing the Use of Modems

This equipment complies with Part 68 of the FCC Rules. On this equipment is a label that contains, among other information, the FCC registration number and **Ringer Equivalence Number (REN)** for this equipment. You must, upon request, provide this information to your telephone company.

If your telephone equipment harms the telephone network, the Telephone Company may discontinue your service temporarily. If possible, they will notify in advance. But, if advance notice is not practical, you will be notified as soon as possible. You will be informed of your right to file a complaint with the FCC.

Your telephone company may make changes in its facilities, equipment, operations, or procedures that could affect proper operation of your equipment. If they do, you will be notified in advance to give you an opportunity to maintain uninterrupted telephone service.

The FCC prohibits this equipment to be connected to party lines or coin-telephone service.

In the event that this equipment should fail to operate properly, disconnect the equipment from the phone line to determine if it is causing the problem. If the problem is with the equipment, discontinue use and contact your dealer or vendor.

The FCC also requires the transmitter of a FAX transmission be properly identified (per FCC Rules Part 68, Sec 68.381 (C) (3)).

Japanese Modem Notice

本製品を日本で使用する場合は必ず日本国モードでご使用ください。他国のモードをご使用になると電気通信事業法(技術基準)に違反する行為となります。なお、ご購入時は初期値が日本国モードとなっておりますので、そのままご利用ください。

U.K. Modem Compliance Information

This modem is approved by the secretary of state at the Department of Trade and Industry for connection to a single exchange line of the public switched telephone network run by certain licensed public telecommunication operators or system connected there to (Direct exchange lines only, not shared service or 1-1 carrier systems).

This modem is also suitable for connection to **P**riate **A**utomatic **B**ranch **E**xchange (**PABX**), which return secondary proceeding indication.

If this modem is to be used with a PBX which has extension wiring owned by BT, connection of the modem the PBX can only be carried out by BT; or by the authorized maintainer of the PBX unless the authorized maintainer has been given 14 days written notice that the connection is to be made by another person; and that period of notification has expired.

This modem is suitable for use only on telephone lines proved with Loop Disconnect or Multi-Frequency Dialing Facilities.

Users of this modem are advised that the approval is for connection to the **PSTN** via the telephone line interface supplied with it. Connection of a modem to the **PSTN** by any other means will invalidate the approval.

There is no guarantee of correct working in all circumstances. Any difficulties should be referred to your supplier.

Some network operators require that intended users of their network request permission to connect and for the installation of an appropriate socket.

The **R**inger **E**quivalence **N**umber (**REN**) of this modem is 1. **REN** is guide to the maximum number of apparatus that can simultaneously be connected to one telephone line. The **REN** value of each apparatus is added together, and should not exceed 4. Unless otherwise marked, a telephone is assumed to have a **REN** of 1.

This modem is only approved for use of the following facilities:

- Storage of telephone numbers for retrieval by a predator mined code.
- Initial proceed indication detection.
- Automatic calling / automatic answering.
- Tone detection.
- Loud-speaking facility.

This modem is not approved for connection to U.K./private speech-band services. This modem does not support an automatic re-dial function. Any other usage will invalidate the approval of your modem, if as a result, it then ceases to conform to the standards against which approval was granted. The approval of this modem is invalidated if the apparatus is subject to modification in any material way not authorized by the **BABT** or if it is used with, or connected to external software that have not been formally accepted by **BABT**.

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