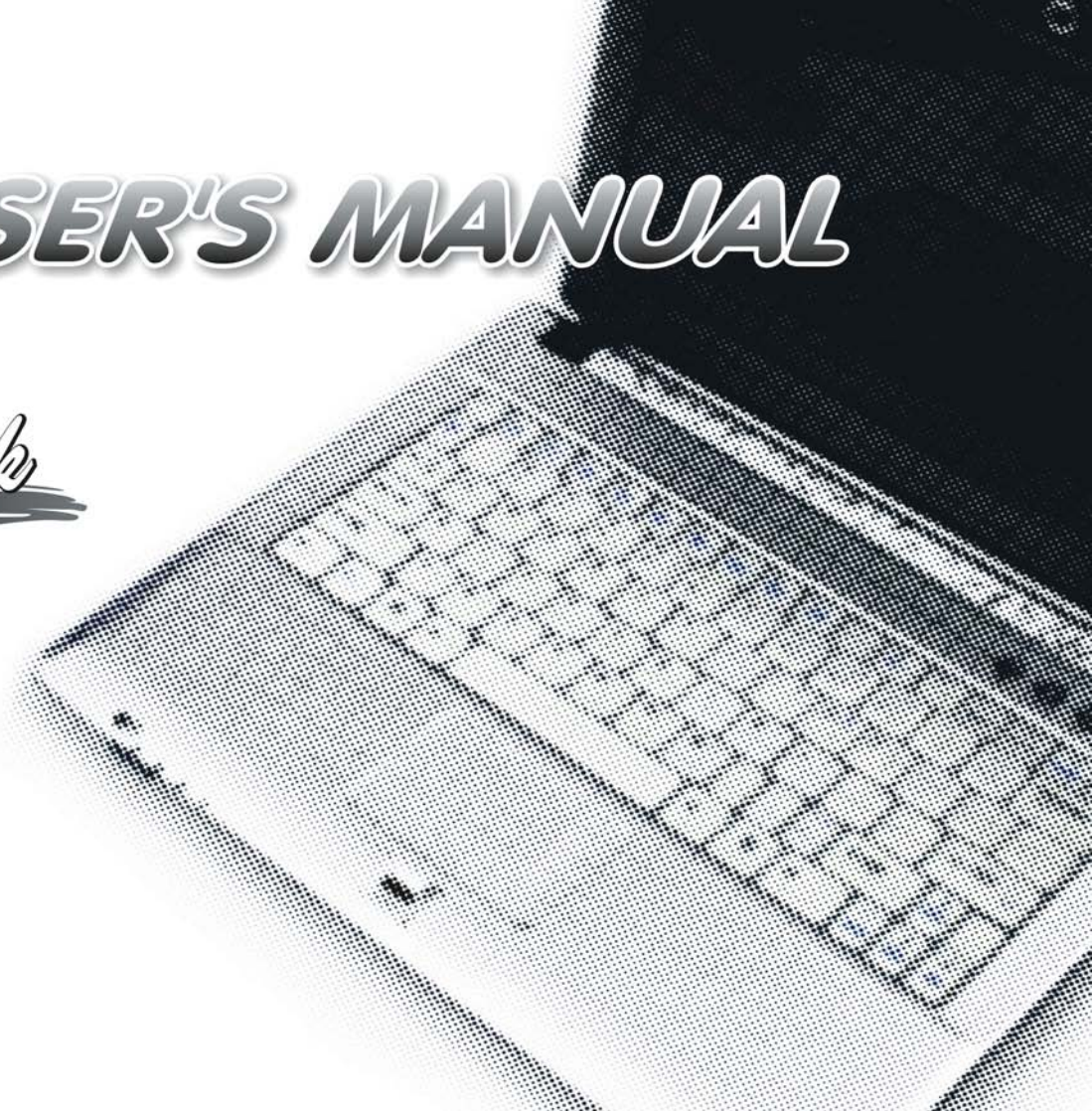


USER'S MANUAL

notebook



Notice

The company reserves the right to revise this publication or to change its contents without notice. Information contained herein is for reference only and does not constitute a commitment on the part of the manufacturer or any subsequent vendor. They assume no responsibility or liability for any errors or inaccuracies that may appear in this publication nor are they in anyway responsible for any loss or damage resulting from the use (or misuse) of this publication.

This publication and any accompanying software may not, in whole or in part, be reproduced, translated, transmitted or reduced to any machine readable form without prior consent from the vendor, manufacturer or creators of this publication, except for copies kept by the user for backup purposes.

Brand and product names mentioned in this publication may or may not be copyrights and/or registered trademarks of their respective companies. They are mentioned for identification purposes only and are not intended as an endorsement of that product or its manufacturer.

©May 2007

Trademarks

This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home or other limited viewing uses only unless otherwise authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

Intel, **Celeron**, and **Intel Core** are trademarks/registered trademarks of Intel Corporation.

FCC Statement (Federal Communications Commission)

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. 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:

- Re orient 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 service representative or an experienced radio/TV technician for help.



Warning

Use only shielded cables to connect I/O devices to this equipment. You are cautioned that changes or modifications not expressly approved by the manufacturer for compliance with the above standards could void your authority to operate the equipment.

If your purchase option includes both **Wireless LAN** and **3.5G** modules, then the appropriate antennas will be installed. Note that In order to comply with FCC RF exposure compliance requirements, the antenna must not be co-located or operate in conjunction with any other antenna or transmitter.

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 this equipment with a telephone line (other than a cordless type) during an electrical storm. There may be a remote risk of electrical shock from lightning.
3. Do not use the telephone to report a gas leak in the vicinity of the leak.
4. Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.
5. This product is intended to be supplied by a Listed Power Unit with an AC Input of 100 - 240V, 50 - 60Hz, DC Output of 19V, 3.42A (65 Watts) minimum AC/DC Adapter.

CAUTION

Always disconnect all telephone lines from the wall outlet before servicing or disassembling this equipment.

**TO REDUCE THE RISK OF FIRE, USE ONLY NO. 26 AWG OR LARGER,
TELECOMMUNICATION LINE CORD**

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

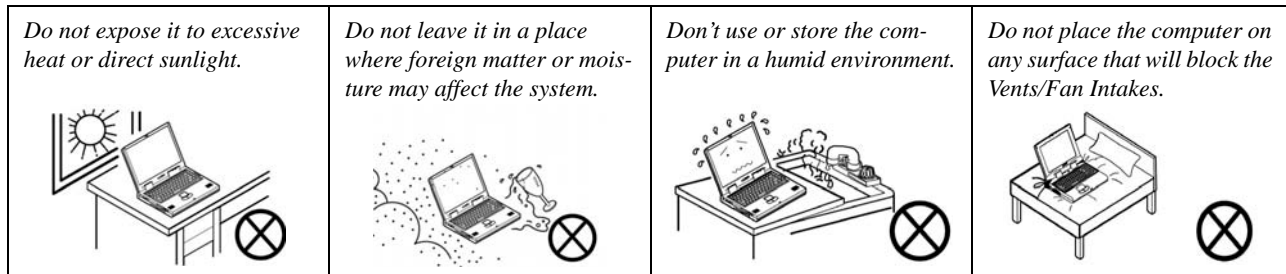
Instructions for Care and Operation

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. **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.
4. **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.

<p><i>Do not turn off the power until you properly shut down all programs.</i></p> 	<p><i>Do not turn off any peripheral devices when the computer is on.</i></p> 	<p><i>Do not disassemble the computer by yourself.</i></p> 	<p><i>Perform routine maintenance on your computer.</i></p> 
--	---	---	---

5. **Take care when using peripheral devices.**

<p><i>Use only approved brands of peripherals.</i></p> 	<p><i>Unplug the power cord before attaching peripheral devices.</i></p> 
--	---

Power Safety

The computer has specific power requirements:



Power Safety Warning

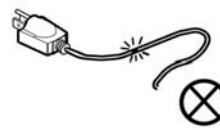
Before you undertake any upgrade procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines). It is advisable to also remove your battery in order to prevent accidentally turning the machine on.

- Only use a power adapter approved for use with this computer.
- Your AC/DC 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 (i.e. AC/DC adapter or car adapter).

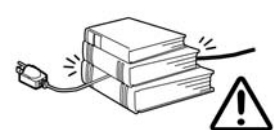
Do not plug in the power cord if you are wet.



Do not use the power cord if it is broken.



Do not place heavy objects on the power cord.



Battery Precautions

- Only use batteries designed for this computer. The wrong battery type may explode, leak or damage the computer.
- Do not remove any batteries from the computer while it is powered on.
- 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 Disposal & Caution

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.

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.

Preface

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.

Servicing

Do not attempt to service the computer yourself. Doing so may violate your warranty and expose you and the computer to electric shock. Refer all servicing to authorized service personnel. Unplug the computer from the power supply. Then refer servicing to qualified service personnel under any of the following conditions:

- When the power cord or AC/DC adapter is damaged or frayed.
- If the computer has been exposed to rain or other liquids.
- If the computer does not work normally when you follow the operating instructions.
- If the computer has been dropped or damaged (do not touch the poisonous liquid if the LCD panel breaks).
- If there is an unusual odor, heat or smoke coming from your computer.



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 turning the computer on.

Travel Considerations

Packing

As you get ready for your trip, run through this list to make sure the system is ready to go:

1. Check that the battery pack and any spares are fully charged.
2. Power off the computer and peripherals.
3. Close the display panel and make sure it's latched.
4. Disconnect the AC/DC adapter and cables. Stow them in the carrying bag.
5. The AC/DC adapter uses voltages from 100 to 240 volts so you won't need a second voltage adapter. However, check with your travel agent to see if you need any socket adapters.
6. Put the notebook in its carrying bag and secure it with the bag's straps.
7. If you're taking any peripherals (e.g. a printer, mouse or digital camera), pack them and those devices' adapters and/or cables.
8. Anticipate customs - Some jurisdictions may have import restrictions or require proof of ownership for both hardware and software. Make sure your documents are prepared.



Power Off Before Traveling

Make sure that your notebook is completely powered off before putting it into a travel bag (or any such container). Putting a notebook which is powered on in a travel bag may cause the vent(s)/fan intake(s)/outlet(s) to be blocked. To prevent your computer from overheating make sure nothing blocks the vent(s)/fan intake(s)/outlet(s) while the computer is in use.

Preface

On the Road

In addition to the general safety and maintenance suggestions in this preface, and Chapter 8: Troubleshooting, keep these points in mind:

Hand-carry the notebook - For security, don't let it out of your sight. In some areas, computer theft is very common. Don't check it with normal luggage. Baggage handlers may not be sufficiently careful. Avoid knocking the computer against hard objects.

Beware of Electromagnetic fields - Devices such as metal detectors & X-ray machines can damage the computer, hard disk, floppy disks, and other media. They may also destroy any stored data - Pass your computer and disks around the devices. Ask security officials to hand-inspect them (you may be asked to turn it on). **Note:** Some airports also scan luggage with these devices.

Fly safely - Most airlines have regulations about the use of computers and other electronic devices in flight. These restrictions are for your safety, follow them. If you stow the notebook in an overhead compartment, make sure it's secure. Contents may shift and/or fall out when the compartment is opened.

Get power where you can - If an electrical outlet is available, use the AC/DC adapter and keep your battery(ies) charged.

Keep it dry - If you move quickly from a cold to a warm location, water vapor can condense inside the computer. Wait a few minutes before turning it on so that any moisture can evaporate.

Developing Good Work Habits

Developing good work habits is important if you need to work in front of the computer for long periods of time. Improper work habits can result in discomfort or serious injury from repetitive strain to your hands, wrists or other joints. The following are some tips to reduce the strain:

- Adjust the height of the chair and/or desk so that the keyboard is at or slightly below the level of your elbow. Keep your forearms, wrists, and hands in a relaxed position.
- Your knees should be slightly higher than your hips. Place your feet flat on the floor or on a footrest if necessary.
- Use a chair with a back and adjust it to support your lower back comfortably.
- Sit straight so that your knees, hips and elbows form approximately 90-degree angles when you are working.
- Take periodic breaks if you are using the computer for long periods of time.



Remember to:

- Alter your posture frequently.
- Stretch and exercise your body several times a day.
- Take periodic breaks when you work at the computer for long periods of time. Frequent and short breaks are better than fewer and longer breaks.



Lighting

Proper lighting and comfortable display viewing angle can reduce eye strain and muscle fatigue in your neck and shoulders.

- Position the display to avoid glare or reflections from overhead lighting or outside sources of light.
- Keep the display screen clean and set the brightness and contrast to levels that allow you to see the screen clearly.
- Position the display directly in front of you at a comfortable viewing distance.
- Adjust the display-viewing angle to find the best position.

LCD Screen Care

To prevent **image persistence** on LCD monitors (caused by the continuous display of graphics on the screen for an extended period of time) take the following precautions:

- Set the *Windows* **Power Plans** to turn the screen off after a few minutes of screen idle time.
- Use a rotating, moving or blank screen saver (this prevents an image from being displayed too long).
- Rotate desktop background images every few days.
- Turn the monitor off when the system is not in use.

Contents

Notice	I	System Map: Left & Right Views	1-12
FCC Statement	II	System Map: Bottom View	1-14
Instructions for Care and Operation	IV	Windows Vista Start Menu & Control Panel	1-15
Power Safety	VI	Video Features	1-16
Battery Precautions	VII	Power Options	1-18
Cleaning	VIII		
Servicing	VIII		
Travel Considerations	IX		
Quick Start Guide			
Overview	1-1		
Advanced Users	1-2		
Beginners and Not-So-Advanced Users	1-2		
Warning Boxes	1-2		
Not Included	1-3		
System Software	1-4		
System Startup	1-5		
System Map: LCD Panel Open	1-6		
LED Indicators	1-7		
Hot Key Buttons & Keyboard	1-8		
Keyboard	1-9		
Function Keys	1-10		
System Map: Front & Rear Views	1-11		
		Features & Components	
		Overview	2-1
		Hard Disk Drive	2-2
		Optical (CD/DVD) Device	2-3
		Loading Discs	2-3
		Handling CDs or DVDs	2-4
		DVD Regional Codes	2-5
		7-in-1 Card Reader	2-6
		ExpressCard Slot	2-7
		Inserting and Removing ExpressCards	2-7
		TouchPad and Buttons/Mouse	2-8
		Function/Hot Key Indicators	2-9
		Audio Features	2-10
		Adding a Printer	2-11
		USB Printer	2-11
		Parallel Printer	2-11

Power Management

Overview	3-1
The Power Sources	3-2
AC/DC Adapter	3-2
Battery	3-2
Turning on the Computer	3-3
Power Plans	3-4
Power-Saving States	3-6
Sleep	3-6
Hibernate	3-7
Shut Down	3-7
Configuring the Power Buttons	3-8
Resuming Operation	3-9
Battery Information	3-10
Battery Power	3-10
Conserving Battery Power	3-11
Battery Life	3-12
New Battery	3-12
Recharging the Battery with the AC/DC Adapter	3-12
Proper handling of the Battery Pack	3-13
Battery FAQ	3-14

Drivers & Utilities

What to Install	4-1
Module Driver Installation	4-1

Driver Installation	4-2
Manual Driver Installation	4-3
Updating/Reinstalling Individual Drivers	4-4
User Account Control (Win Vista)	4-4
Windows Security Message	4-4
New Hardware Found	4-4
Driver Installation Procedure	4-5
Video	4-5
Audio	4-5
Modem	4-5
LAN	4-5
TouchPad	4-6
CardReader	4-6
Hot Key	4-6
PC Camera Module	4-6
Wireless LAN Module	4-6
Bluetooth Module	4-6
3.5G Module	4-6
Fingerprint Reader Module	4-6

BIOS Utilities

Overview	5-1
The Power-On Self Test (POST)	5-2
Failing the POST	5-3
Fatal Errors	5-3

Non-Fatal Errors	5-3
The Setup Program	5-4
Entering Setup	5-4
Setup Screens	5-5
Main Menu	5-6
System Time & Date (Main Menu)	5-6
IDE Channel 0 Master (Main Menu)	5-7
SATA Port 1 (Main Menu)	5-7
System/Extended Memory: (Main Menu)	5-7
Advanced Menu	5-8
Installed O/S: (Advanced Menu)	5-8
IDE PATA+SATA ID Control (Advanced Menu)	5-9
Boot-time Diagnostic Screen: (Advanced Menu)	5-9
Security Menu	5-10
Set Supervisor Password (Security Menu)	5-10
Password on boot: (Security Menu)	5-11
Fixed disk boot sector: (Security Menu)	5-11
Boot Menu	5-12
Exit Menu	5-13

Upgrading The Computer

Overview	6-1
When Not to Upgrade	6-2
Removing the Battery	6-3
Upgrading the Hard Disk Drive	6-4

Upgrading the Optical (CD/DVD) Device	6-6
Upgrading the System Memory (RAM)	6-7
Upgrading the Processor	6-10

Modules & Options

Overview	7-1
PC Camera Module	7-2
802.11 b/g USB WLAN Module	7-11
Bluetooth Module	7-16
3.5G Module	7-20
Fingerprint Reader Module	7-28

Troubleshooting

Overview	8-1
Basic Hints and Tips	8-2
Backup and General Maintenance	8-3
Viruses	8-4
Upgrading and Adding New Hardware/Software	8-5
Problems and Possible Solutions	8-7

Interface (Ports & Jacks)

Notebook Ports and Jacks	A-2
SIS Video Driver Installation	B-1
Video	B-1
Video Memory	B-1

Preface

SIS VGA Control Center	B-2
Attaching Other Displays	B-5
To Enable a Display Setting Mode	D-7

Specifications

Processor	C-1
Core Logic	C-2
LCD	C-2
Memory	C-2
Video Adapter	C-2
Security	C-2
BIOS	C-2
Storage	C-2
Audio	C-2
Keyboard & Pointing Device	C-3
Interface	C-3
Card Reader	C-3
ExpressCard Slot	C-3
Communication	C-3
Power Management	C-4
Power	C-4
Battery	C-4
Environmental Spec	C-4
Dimensions	C-4
& Weight	C-4

Optional	C-5
----------------	-----

Windows XP Information

DVD Regional Codes	D-2
Windows XP Start Menu & Control Panel	D-3
TouchPad and Buttons/Mouse	D-4
Function Keys	D-5
Audio Features	D-6
Video Features	D-7
Attaching Other Displays	D-11
Power Management Features	D-13
Advanced Configuration and Power Interface	D-13
The Power Sources	D-14
AC/DC Adapter	D-14
Battery	D-14
Turning on the Computer	D-15
Power Schemes	D-16
System Power Options	D-18
Hibernate Mode vs. Shutdown	D-18
Stand by Mode vs. Hibernate Mode	D-18
Configuring the Power Button	D-20
Battery Information	D-21
Recharging the Battery with the AC/DC Adapter	D-22
Battery FAQ	D-24
Driver Installation	D-25

Driver Installation Procedure D-28
PC Camera Module D-30
802.11 b/g USB WLAN Module D-37
Bluetooth Module D-39
3.5G Module D-43
Fingerprint Reader D-44


Chapter 1: Quick Start Guide

Overview

This Quick Start Guide is a brief introduction to the basic features of your computer, to navigating around the computer and to getting your system started. The remainder of the manual covers the following:

- **Chapter 2** A guide to using some of the main features of the computer e.g. the **storage devices (hard disk, optical device, 7-in-1 card reader, ExpressCard/34/54), TouchPad & Mouse, Function/Hot Keys, Quick Buttons, Audio & Printer.**
- **Chapter 3** The computer's **power** saving options.
- **Chapter 4** The installation of the **drivers** and utilities essential to the operation or improvement of some of the computer's subsystems.
- **Chapter 5** An outline of the computer's built-in software or **BIOS** (Basic Input Output System).
- **Chapter 6** Instructions for **upgrading** your computer.
- **Chapter 7** A quick guide to the computer's **Wireless LAN, Bluetooth** and **PC Camera** modules (some of which may be **optional** depending on your purchase configuration).
- **Chapter 8** A **troubleshooting** guide.
- **Appendix A** Definitions of the **interface, ports/jacks** which allow your computer to communicate with external devices.
- **Appendix B** Information on the **SIS Video driver controls.**
- **Appendix C** The computer's **specification.**
- **Appendix D** Information on the *Windows XP* OS.

Advanced Users


If you are an advanced user you may skip over most of this Quick Start Guide. However you may find it useful to refer to *“What to Install” on page 4 - 1*, *“BIOS Utilities” on page 5 - 1* and *“Upgrading The Computer” on page 6 - 1* in the User’s Manual. You may also find the notes marked with a  of interest to you.

Beginners and Not-So-Advanced Users




Notes

Check the light colored boxes with the mark above to find detailed information about the computer’s features.

If you are new to computers (or do not have an advanced knowledge of them) then the information contained in this Quick Start Guide should be enough to get you up and running. Eventually you should try to look through all the documentation (more detailed descriptions of the functions, setup and system controls are covered in the remainder of the User’s Manual), but do not worry if you do not understand everything the first time. Keep this manual nearby and refer to it to learn as you go. You may find it useful to refer to the notes marked with a  as indicated in the margin. For a more detailed description of any of the interface ports and jacks see *“Interface (Ports & Jacks)” on page A - 1*.

Warning Boxes

No matter what your level please pay careful attention to the warning and safety information indicated by the  symbol. Also please note the safety and handling instructions as indicated in the *Preface*.

Not Included

Operating Systems (e.g. *Windows Vista/Windows XP*) and applications (e.g. word processing, spreadsheet and database programs) have their own manuals, so please consult the appropriate manuals.



Drivers

If you are installing new system software, or are re-configuring your computer for a different system, you will need to install the drivers listed in **“Drivers & Utilities” on page 4 - 1**. Drivers are programs which act as an interface between the computer and a hardware component e.g. a wireless network module. It is very important that you install the drivers in the order listed in. You will be unable to use most advanced controls until the necessary drivers and utilities are properly installed. If your system hasn't been properly configured (your service representative may have already done that for you); refer to **Chapter 4** for installation instructions.

Ports and Jacks

See **“Notebook Ports and Jacks” on page A - 2** for a description of the interface (ports & jacks) which allow your computer to communicate with external devices, connect to the internet etc.

System Software

Your computer may already come with system software pre-installed. Where this is not the case, or where you are re-configuring your computer for a different system, you will find the following operating systems are supported.

Operating System & Version Supported	Note
*Windows XP Home or Professional Editions	In order to run Windows XP without limitations or decreased performance, your computer requires a minimum 512MB of system memory (RAM)
Windows Vista (32-bit) Home Basic Edition	In order to run Windows Vista without limitations or decreased performance, your computer requires a minimum 1GB of system memory (RAM)

Table 1 - 1 - Model Differences

***Note:** For information on the **Windows XP OS** (specifically power, video and driver information) see **“Windows XP Information” on page D - 1**.

System Startup

1. Remove all packing materials.
2. Place the computer on a stable surface.
3. Securely attach any peripherals you want to use with the notebook (e.g. keyboard and mouse) to their ports.
4. Attach the AC/DC adapter to the DC-In jack on the left of the computer, then plug the AC power cord into an outlet, and connect the AC power cord to the AC/DC adapter.
5. Raise the lid/LCD to a comfortable viewing angle, and press the power button to turn the computer "on".
6. Adjust the LCD panel to a comfortable viewing angle.
7. The LED indicators show the power and battery status of the computer.



Shutdown

Note that you should always shut your computer down by choosing the **Shut Down** command from the **Lock Button Menu** in *Windows Vista*. This will help prevent hard disk or system problems.

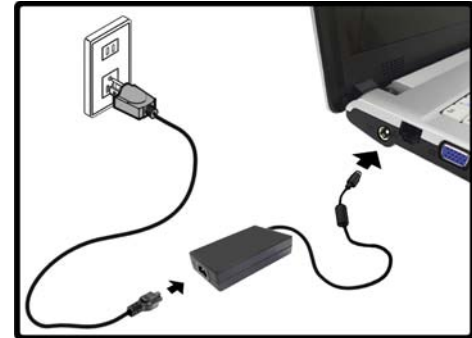


Figure 1 - 1 - AC/DC Adapter In

System Map: LCD Panel Open

Figure 1 - 2
LCD Panel Open

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



Wireless Device Operation Aboard Aircraft

The use of any portable electronic transmission devices aboard aircraft is usually prohibited. Make sure the module(s) are OFF if you are using the computer aboard aircraft.

Use the key combinations to toggle power to the 3.5G/WLAN/Bluetooth modules, and check the LED indicator to see if the modules are powered on or not (see [Table 1 - 5, on page 1 - 10](#) / [Table 1 - 2, on page 1 - 7](#)).



LED Indicators

The two sets of LED indicators (**LED Status Indicators** and **LED Power & Communication Indicators**) on the computer display helpful information about the current status of the computer.






Icon	Color	Description
	Green	Silent Mode Activated (see over)
	Off	Normal Mode Activated (see over)
	Green	Hard Disk Activity
	Green	Number Lock Activated
	Green	Caps Lock Activated
	Green	Scroll Lock Activated (to activate press Fn & Scr Lk)

Table 1 - 2 - LED Status Indicators








Icon	Color	Description
	Orange	DC Power is Plugged In
	Green	The Computer is On
	Blinking Green	The Computer is in Sleep Mode
	Orange	The Battery is Charging
	Green	The Battery is Fully Charged
	Blinking Orange	The Battery Has Reached Critically Low Power Status
	Green	The (optional) Wireless LAN Module is Powered On
	Orange	The (optional) Bluetooth Module is Powered On
	Green	The (optional) 3.5G Module is Powered On

Table 1 - 3 - LED Power & Communication Indicators

Hot Key Buttons & Keyboard

These buttons give instant access to the default Internet browser and e-mail program, and allow you to toggle the **Silent Mode** on/off with one quick button press.

Table 1 - 4 - Hot Key Buttons

Hot Key	Function
	Activate the Default E-Mail Browser
	Activate the Default Internet Program
	Toggle *Silent Mode (for power saving)

*When enabled, **Silent Mode** will reduce fan noise and save power consumption. Note this may reduce computer performance.

The keyboard has a numerical keypad for easy numeric data input, and features Function Keys to allow you to change operational features instantly.

Activate the **Number Lock** feature by pressing the **Num Lk** key at the top right of the keyboard. You may check if **Number Lock** is enabled or not by looking at the LED status indicators.



Other Keyboards

If your keyboard is damaged or you just want to make a change, you can use any standard USB keyboard. The system will detect and enable it automatically. However special functions/AP-Key buttons unique to the system's regular keyboard may not work.

Keyboard

The keyboard has a numerical keypad for easy numeric data input, and features function keys to allow you to change operational features instantly (see *Figure 1 - 3*). See *Table 1 - 5, on page 1 - 10* for full function key combination details.

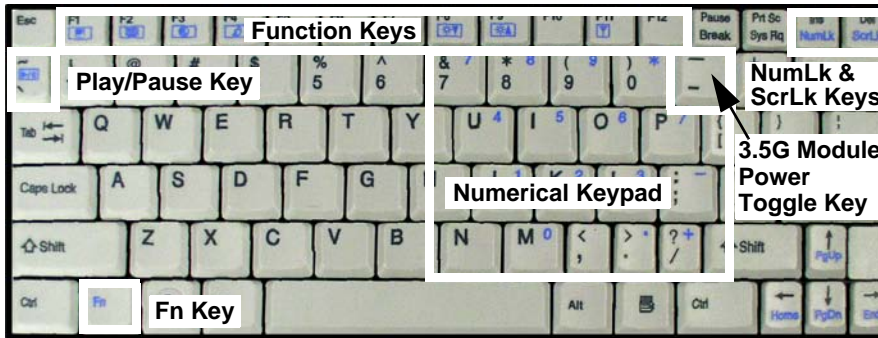


Figure 1 - 3 - Keyboard



Other Keyboards

If your keyboard is damaged or you just want to make a change, you can use any standard USB keyboard. The system will detect and enable it automatically. However special functions/hot-keys unique to the system's regular keyboard may not work.

Function Keys

The function keys (**F1 - F12** etc.) will act as hot keys when pressed while the **Fn** key is held down.


Fn Key	Function	Fn Key	Function
Fn + ~	Play/Pause (in Audio/Video Programs)	Fn + F7	Display Toggle
Fn + 	3.5G Module Power Toggle	Fn + F8	Decrease LCD Brightness
Fn + F1	TouchPad Toggle	Fn + F9	Increase LCD Brightness
Fn + F2	Turn LCD Backlight Off (Press a key to or use TouchPad to turn on)	Fn + F10	PC Camera Module Power Toggle
Fn + F3	Mute Toggle	Fn + F11	Wireless LAN Module Power Toggle
Fn + F4	Sleep Toggle	Fn + F12	Bluetooth Module Power Toggle
Fn + F5	Decrease Audio Volume	Fn + NumLk	Number Lock Toggle
Fn + F6	Increase Audio Volume	Fn + ScrLk	Scroll Lock Toggle

Table 1 - 5 - Function Keys



Special Characters

Some software applications allow the number-keys to be used with **Alt** to produce special characters. These special characters can only be produced by using the numeric keypad. Regular number keys (in the upper row of the keyboard) will not work. Make sure that **NumLk** is on.

System Map: Front & Rear Views

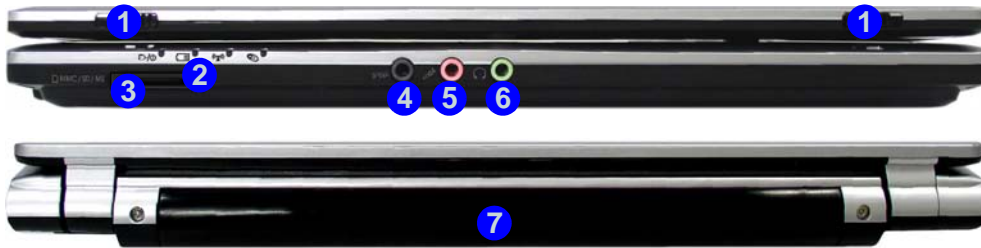


Figure 1 - 4
Front & Rear Views

1. LCD Latches
2. LED Power & Communication Indicators
3. 7-in-1 Card Reader
4. S/PDIF-Out Jack
5. Microphone-In Jack
6. Headphone-Out Jack
7. Battery



7-in-1 Card Reader

The card reader allows you to use the most popular digital storage card formats:

MMC (MultiMedia Card) / SD (Secure Digital) / MS (Memory Stick) /
MS Pro (Memory Stick Pro) / MS Duo (requires PC adapter) /
Mini SD (requires PC adapter) / RS MMC (requires PC adapter)

System Map: Left & Right Views

Figure 1 - 5

Left & Right Views

1. DC-In Jack
2. RJ-45 LAN Jack
3. External Monitor Port
4. Vent/Fan Intake/Outlet
5. 3 * USB 2.0 Ports
6. Optical Device Drive Bay (for CD/DVD Device - see page 2 - 3)
7. RJ-11 Phone Jack
8. Security Lock Slot



Overheating

To prevent your computer from overheating make sure nothing blocks the vent(s)/fan intake(s) while the computer is in use.



Disk Eject Warning

Don't try to eject a CD/DVD while the system is accessing it. This may cause the system to "crash". Stop the disk first then eject it, or press the stop button twice.

CD/DVD Emergency Eject

If you need to manually eject a CD/DVD (e.g. due to an unexpected power interruption) you may push the end of a straightened paper clip into the emergency eject hole. Do not use a sharpened pencil or any object that may break and become lodged in the hole. Don't try to remove a floppy disk/CD/DVD while the system is accessing it. This may cause the system to "crash".



Changing DVD Regional Codes

Go to the **Control Panel** and double-click **Device Manager (Hardware and Sound)**, then click the **+** next to **DVD/CD-ROM drives**. Double-click on the DVD-ROM device to bring up the **Properties** dialog box, and select the **DVD Region** (tab) to bring up the control panel to allow you to adjust the regional code (see "[DVD Regional Codes](#)" on page 2 - 5).

DVD region detection is device dependent, not OS-dependent. You can select your module's region code **5** times. The fifth selection is permanent. This cannot be altered even if you change your operating system or you use the module in another computer.

System Map: Bottom View

Figure 1 - 6
Bottom View

1. Battery
2. Hard Disk Bay Cover (3.5G Module Location)
3. RAM & CPU Bay Cover

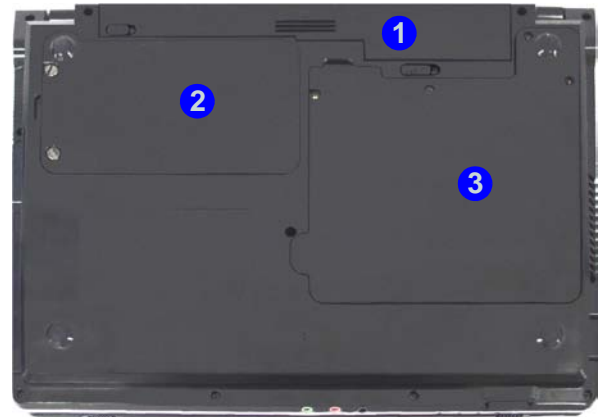


CPU

The CPU is not a user serviceable part. Opening this compartment, or accessing the CPU in any way, may violate your warranty.

Overheating


To prevent your computer from overheating make sure nothing blocks the Vent/Fan Intake while the computer is in use.



Battery Information

Always completely discharge, then fully charge, a new battery before using it. Completely discharge and charge the battery at least once every 30 days or after about 20 partial discharges. See [“Battery Information” on page 3 - 10](#) for full instructions.

Windows Vista Start Menu & Control Panel

Most of the control panels, utilities and programs within *Windows Vista* (and most other *Windows* versions) are accessed from the **Start** menu. When you install programs and utilities they will be installed on your hard disk drive, and a shortcut will usually be placed in the **Start** menu and/or the desktop. Right-click the **Start** menu icon , and then select **Properties** if you want to customize the appearance of the **Start** menu.

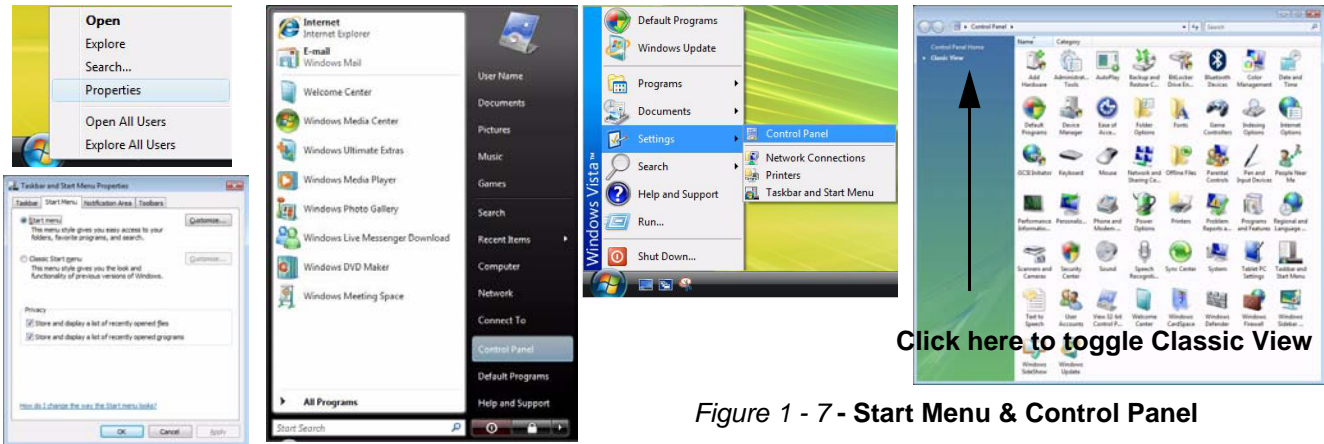


Figure 1 - 7 - Start Menu & Control Panel

In many instances throughout this manual you will see an instruction to open the **Control Panel**. The **Control Panel** is accessed from the **Start** menu, and it allows you to configure the settings for most of the key features in *Windows* (e.g. power, video, network, audio etc.). *Windows Vista* provides basic controls for many of the features, however many new controls are added (or existing ones are enhanced) when you install the drivers listed in *Table 4 - 1, on page 4 - 3*. To see all controls it may be necessary to toggle to Classic View on.


Video Features

You can switch display devices, and configure display options, from the **Display Settings** control panel (in **Personalization**) in *Windows Vista* and/or the *SiS VGA Control Center*. For further information see “*SIS Video Driver Controls*” on page B - 1.

To access *Windows Vista Display Settings*:

1. Click **Start**, and click **Control Panel** (or point to **Settings** and click **Control Panel**).
2. Click **Adjust screen resolution** under the **Appearance and Personalization** menu (or double-click **Personalization > Display Settings**).
3. Move the slider to the preferred setting in **Resolution**: ① (*Figure 1 - 8 on page 1 - 17*).
4. Click the arrow, and scroll to the preferred setting in **Colors**: ② (*Figure 1 - 8 on page 1 - 17*).
5. Click **Advanced Settings** (button) ③ (*Figure 1 - 8 on page 1 - 17*) to bring up the **Advanced Settings** tabs.

To access the *SiS VGA Control Center*:

1. Click **Start**, and click **Control Panel** (or point to **Settings** and click **Control Panel**).
2. Click **SiS VGA Control Center** ④ (or click **Appearance and Personalization > SiS VGA Control Center**).
3. Click the top menu icons to bring up the appropriate control panel to adjust the settings.
4. You can also access **SiS VGA Control Center** by right-clicking the **SIS Tray** taskbar icon , and selecting **Control Center**.

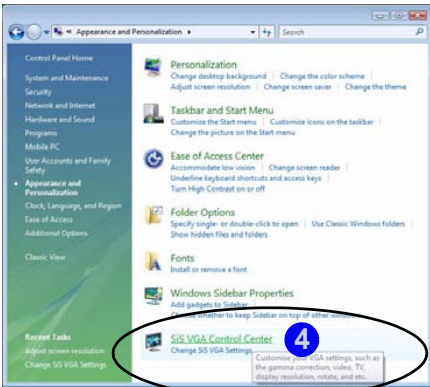
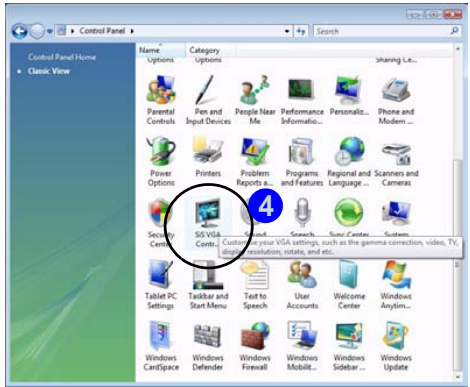
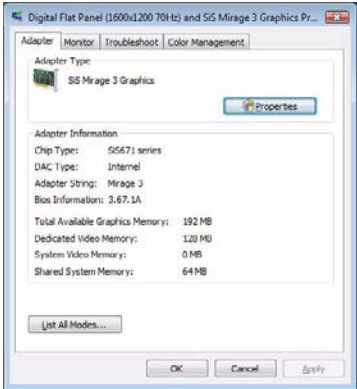
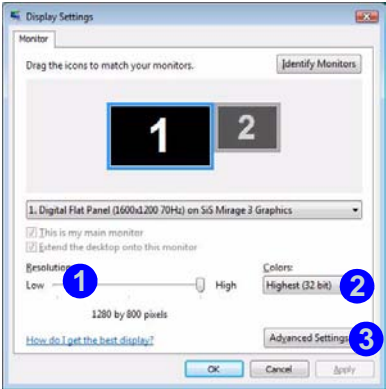


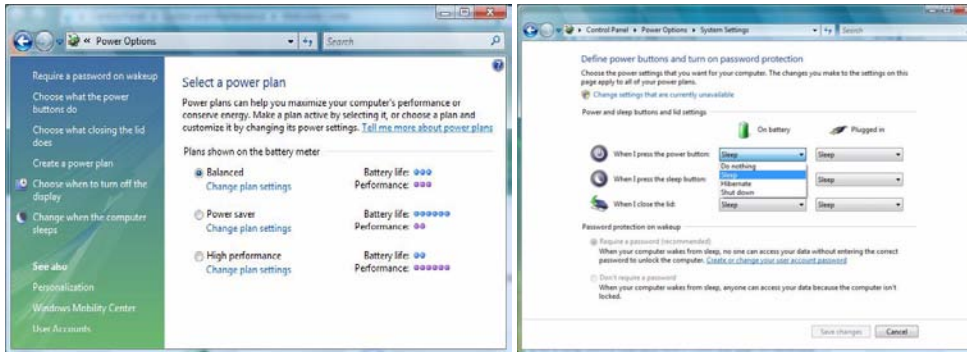
Figure 1 - 8 - Display Settings & SiS VGA Control Center

Power Options

The **Power Options** (**Hardware and Sound** menu) control panel icon in *Windows* (see page *1 - 15*) allows you to configure power management features for your computer. You can conserve power by means of **power plans** and configure the options for the **power button**, **sleep button**, **computer lid (when closed)**, **display** and **sleep mode** from the left menu. Note that the **Power saver** plan may have an affect on computer performance.

Click to select one of the existing plans, or click *Create a power plan* in the left menu and select the options to create a new plan. Click *Change Plan Settings* and click *Change advanced power settings* to access further configuration options.

Pay attention to the instructions on battery care in *“Battery Information” on page 3 - 10*.



Note: **Sleep** is the default power saving state in *Windows Vista*

Figure 1 - 9 - Power Options

Chapter 2: Features & Components

Overview

Read this chapter to learn more about the following main features and components of the computer:

- Hard Disk Drive
- Optical (CD/DVD) Device
- 7-in-1 Card Reader
- ExpressCard Slot
- TouchPad and Buttons/Mouse
- Function/Hot Key Indicators
- Audio Features
- Adding a Printer



Power Safety

Before attempting to access any of the internal components of your computer please ensure that the machine is not connected to the AC power, and that the machine is turned off. Also ensure that all peripheral cables, including phone lines, are disconnected from the computer.

Hard Disk Drive

The hard disk drive is used to store your data in the computer. The hard disk can be taken out to accommodate other 2.5" serial (SATA) hard disk drives (see [“Storage” on page C - 2](#)) with a height of 9.5 mm.

The hard disk is accessible from the bottom of your computer as seen below. For further details see [“Upgrading the Hard Disk Drive” on page 6 - 4](#).



Figure 2 - 1

Hard Disk Location

Optical (CD/DVD) Device

There is a bay for a 5.25" optical (CD/DVD) device (12.7mm height). The actual device will depend on the module you purchased (see *“Storage” on page C - 2*). The optical device is usually labeled **“Drive D:”** and may be used as a boot device if properly set in the **BIOS** (see *“Boot Menu” on page 5 - 12*).

Loading Discs

To insert a CD/DVD, press the open button **1** and carefully place a CD/DVD onto the disc tray with label-side facing up (use just enough force for the disc to click onto the tray’s spindle). Gently push the CD/DVD tray in until its lock “clicks” and you are ready to start. The busy indicator **2** will light up while data is being accessed, or while an audio/video CD, or DVD, is playing. If power is unexpectedly interrupted, insert an object such as a straightened paper clip into the emergency eject hole **3** to open the tray.



Sound Volume Adjustment

How high the sound volume can be set depends on the setting of the volume control within **Windows**. Click the **Volume** icon on the taskbar to check the setting (see *“Audio Features” on page 2 - 10*).

Figure 2 - 2
Optical Device



CD Emergency Eject

If you need to manually eject a CD (e.g. due to an unexpected power interruption) you may push the end of a straightened paper clip into the emergency eject hole. However please do NOT use a sharpened pencil or similar object that may break and become lodged in the hole.

Disk Eject Warning

Don't try to remove a CD/DVD while the system is accessing it. This may cause the system to "crash".

Handling CDs or DVDs

Proper handling of your CDs/DVDs will prevent them from being damaged. Please follow the advice below to make sure that the data stored on your CDs/DVDs can be accessed.

Note the following:

- Hold the CD or DVD by the edges; do not touch the surface of the disc.
- Use a clean, soft, dry cloth to remove dust or fingerprints.
- Do not write on the surface with a pen.
- Do not attach paper or other materials to the surface of the disc.
- Do not store or place the CD or DVD in high-temperature areas.
- Do not use benzene, thinner, or other cleaners to clean the CD or DVD.
- Do not bend the CD or DVD.
- Do not drop or subject the CD or DVD to shock.

DVD Regional Codes

To change the DVD regional codes see *“Changing DVD Regional Codes” on page 1 - 13.*

DVD Regional Coding	
Region	Geographical Location
1	USA, Canada
2	Western Europe, Japan, South Africa, Middle East & Egypt
3	South-East Asia, Taiwan, South Korea, The Philippines, Indonesia, Hong Kong
4	South & Central America, Mexico, Australia, New Zealand
5	N Korea, Russia, Eastern Europe, India & Most of Africa
6	China

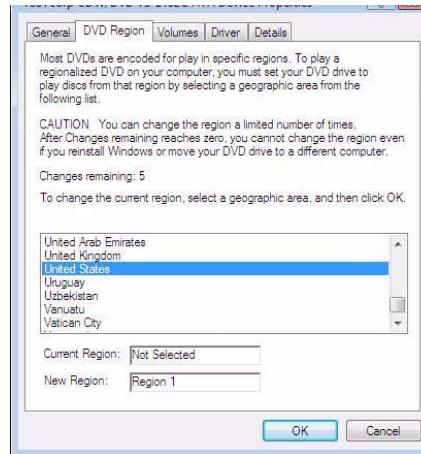


Table 2 - 1
DVD Regional Coding

Figure 2 - 3
DVD Regions



Card Reader Cover

Make sure you keep the rubber cover provided in the card reader when not in use. This will help prevent foreign objects and/or dust getting in to the card reader.

7-in-1 Card Reader

The card reader allows you to use some of the latest digital storage cards. Push the card into the slot and it will appear as a removable device, and can be accessed in the same way as your hard disk (s). Make sure you install the Card Reader driver (see *“CardReader” on page 4 - 6*).

- MMC (MultiMedia Card)
- SD (Secure Digital)
- MS (Memory Stick)
- MS Pro (Memory Stick Pro)
- MS Duo (requires PC adapter*)
- Mini SD (requires PC adapter*)
- RS MMC (requires PC adapter*)

***Note:** The PC adapters are usually supplied with these cards.

Figure 2 - 4
Right View

1. Card Reader



ExpressCard Slot

The computer is equipped with an **ExpressCard/34/54** slot that reads Express Card/34 and ExpressCard/54 formats. ExpressCards are the successors to PCMCIA (PC Cards). Make sure you install the Card Reader driver (see *“CardReader” on page 4 - 6*).

ExpressCard/54 is used for applications which require a larger interface slot, e.g. CompactFlash card reader. The number denotes the card width; 54mm for the Express Card/54 and 34mm for the ExpressCard/34.



ExpressCard Slot Cover

Make sure you keep the rubber cover provided in the ExpressCard slot when not in use. This will help prevent foreign objects and/or dust getting in to the ExpressCard Slot.

Inserting and Removing ExpressCards

- Align the ExpressCard with the slot and push it in until it locks into place (as pictured in the generic figure below).
- To remove an ExpressCard, simply press the card to eject it.



Figure 2 - 5
Left View
1. Express Card Slot

Figure 2 - 6
Inserting & Removing Express Cards



Mouse Driver

If you are using an external mouse your operating system may be able to auto-configure your mouse during its installation or only enable its basic functions. Be sure to check the device's user documentation for details.

TouchPad and Buttons/Mouse

The TouchPad is an alternative to the mouse; however, you can also add a mouse to your computer through one of the USB ports. The TouchPad buttons function in much the same way as a two-button mouse.


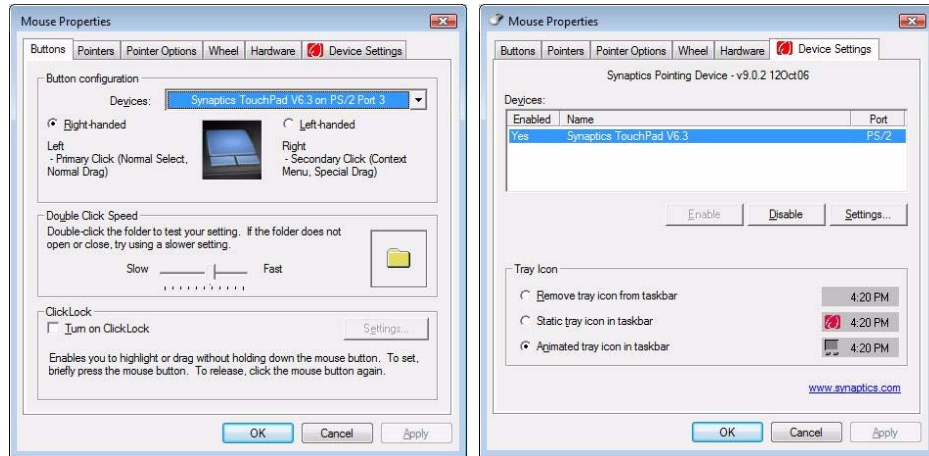

Once you have installed the TouchPad driver (see *“TouchPad” on page 4 - 6*) you can configure the functions by double-clicking the TouchPad driver icon  on the **taskbar**. You may then configure the TouchPad tapping, buttons, scrolling, pointer motion and sensitivity options to your preferences. You will find further information at www.synaptics.com.

Figure 2 - 7
Mouse Properties



Function/Hot Key Indicators

The **function keys** (F1 - F12 etc.) will act as **hot keys** when pressed while the **Fn** key is held down. In addition to the basic function key combinations; visual indicators (see the table below) are available when the hot key utility is installed (see *“Hot Key” on page 4 - 6*). After installing the driver an icon  will appear in the taskbar.


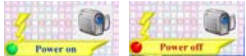

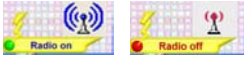

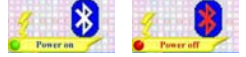



Fn Keys	Function	Fn Keys	Function
Fn + F1	TouchPad Toggle 	Fn + F10	PC Camera Power Toggle 
Fn + F3	Mute Toggle 	Fn + F11	WLAN Module Power Toggle 
Fn + F5/F6	Volume Decrease/ Increase 	Fn + F12	Bluetooth Module Power Toggle 
Fn + F8/F9	Brightness Decrease/ Increase 		*Silent Mode Toggle 

Table 2 - 2
Function/Hot Key
Combo Indicators

*When enabled, **Silent Mode** will reduce fan noise and save power consumption. Note this may reduce computer performance.

Sound Volume Adjustment

The sound volume level is set using the volume control within **Windows** (and the volume function keys on the computer). Click the volume icon in the taskbar to check the setting.

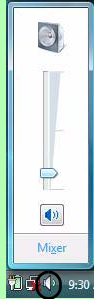


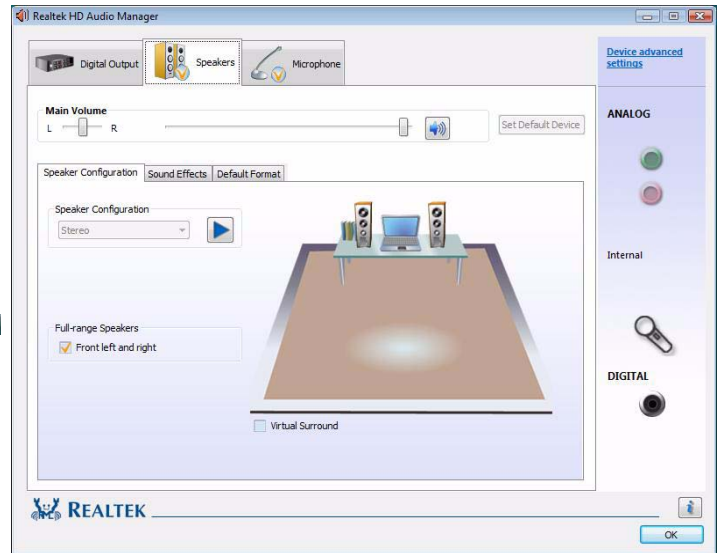
Figure 2 - 8
Realtek Audio Manager

Audio Features

You can configure the audio options on your computer from the **Sound** control panel in **Windows**, or from the **Realtek HD Audio Manager** icon in the taskbar/control panel (right-click the taskbar icon to bring up an audio menu). The volume may also be adjusted by means of the **Fn + F5/F6** key combination.



Right-click the icon to access the menu above.



Adding a Printer

The most commonly used peripheral is a printer. The following conventions will help you to add a printer; however it is always best to refer to the printer manual for specific instructions and configuration options.

USB Printer

Most current printers have a USB interface connection. You may use any one of the ports to connect the printer.

Install Instructions:

1. Set up the printer according to its instructions (unpacking, paper tray, toner/ink cartridge etc.).
2. Turn ON the computer.
3. Turn ON the printer.
4. Connect the printer's USB cable to one of the USB ports on the computer.
5. **Windows** will identify the printer and either load one of its own drivers or ask you to supply one. Follow the on-screen instructions.

Parallel Printer

This is still a very common type of printer. The install instructions are in the sidebar, however you will need to purchase a parallel to USB converter.



Parallel Printer

After setting up the printer attach the parallel cable to the printer.

Connect the printer's parallel cable to the Parallel to USB converter, and then plug the converter into the USB port.

Turn ON the printer, then turn ON the computer.

Windows will identify the printer and either load one of its own drivers or ask you to supply one. Follow the on-screen instructions.

Chapter 3: Power Management

Overview

To conserve power, especially when using the battery, your computer power management conserves power by controlling individual components of the computer (the monitor and hard disk drive) or the whole system. This chapter covers:

- The Power Sources
- Turning on the Computer
- Power Plans
- Power-Saving States
- Configuring the Power Buttons
- Battery Information

The computer uses enhanced power saving techniques to give the operating system (OS) direct control over the power and thermal states of devices and processors. For example, this enables the OS to set devices into low-power states based on user settings and information from applications.



OS Note

Power management functions will vary slightly depending on your operating system. For more information it is best to refer to the user's manual of your operating system.

(**Note:** All pictures used on the following pages are from the *Windows Vista* OS.)

The Power Sources

The computer can be powered by either an AC/DC adapter or a battery pack.

AC/DC Adapter

Use only the AC/DC adapter that comes with your computer. The wrong type of AC/DC adapter will damage the computer and its components.

1. Attach the AC/DC adapter to the DC-in jack on the left of the computer.
2. Plug the AC power cord into an outlet, and then connect the AC power cord to the AC/DC adapter.
3. Raise the lid/LCD to a comfortable viewing angle.
4. Press the power button to turn “On”.

Battery

The battery allows you to use your computer while you are on the road or when an electrical outlet is unavailable. Battery life varies depending on the applications and the configuration you're using. **To increase battery life, let the battery discharge completely before recharging** (see *“How do I completely discharge the battery?” on page 3 - 14*).

We recommend that you do not remove the battery. For more information on the battery, please refer to *“Battery Information” on page 3 - 10*.

Turning on the Computer

Now you are ready to begin using your computer. To turn it on simply press the power button on the front panel.

When the computer is on, you can use the power button as a Sleep/Hibernate hot-key button when it is pressed for less than **4 seconds** (pressing and holding the power button for longer than this will force the computer to shut down). Use **Power Options (Hardware and Sound menu)** control panel in *Windows Vista* to configure this feature.



Forced Off

If the system “hangs”, and the **Ctrl + Alt + Del** key combination doesn’t work, press the power button for **4 seconds**, or longer, to force the system to turn itself off.

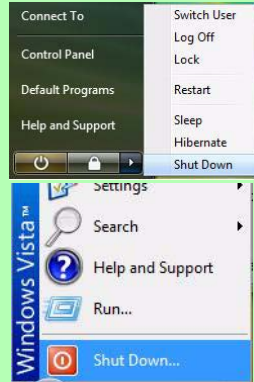
Power Button Sleep

Sleep is the default power mode when the power button is pressed for less than 4 seconds. You may configure the options for the power button from the **Power Options (Hardware and Sound menu)** control panel in *Windows Vista* (see your OS’s documentation, or [“Configuring the Power Buttons” on page 3 - 8](#) for details).



Shut Down

Note that you should always shut your computer down by choosing the **Shut Down** command from the **Lock Button Menu** in *Windows Vista*. This will help prevent hard disk or system problems.





Resuming Operation

See [Table 3 - 1](#), on [page 3 - 9](#) for information on how to resume from a power-saving state.

Password

It is recommended that you enable a password on system resume in order to protect your data.

Power Plans

The computer can be configured to conserve power by means of **power plans**. You can use (or modify) an existing **power plan**, or create a new one.

The settings may be adjusted to set the **display** to turn off after a specified time, and to send the computer into **Sleep** after a period of inactivity.

Click *Change plan settings* and then click *Change advanced power settings* to access further configuration options in **Advanced Settings**.

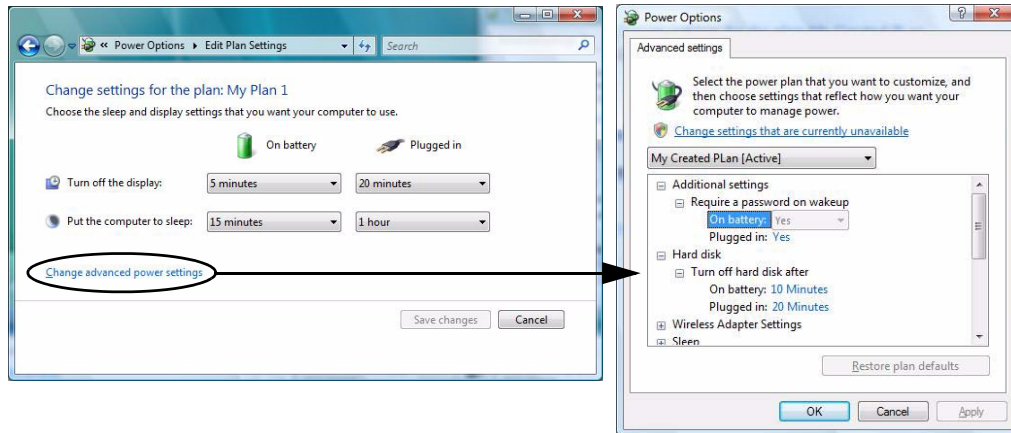


Figure 3 - 1
**Power Plan
Advanced Settings**

Each **Windows power plan** will also adjust the processor performance of your machine in order to save power. This is worth bearing in mind if you are experiencing any reduced performance (especially under DC/battery power).

Choose **High performance** for maximum performance when the computer is powered from an AC power source. Choose the **Power saver** (bear in mind that this scheme may slow down the overall performance of the computer in order to save power) for maximum power saving when the computer is battery (DC power) powered.

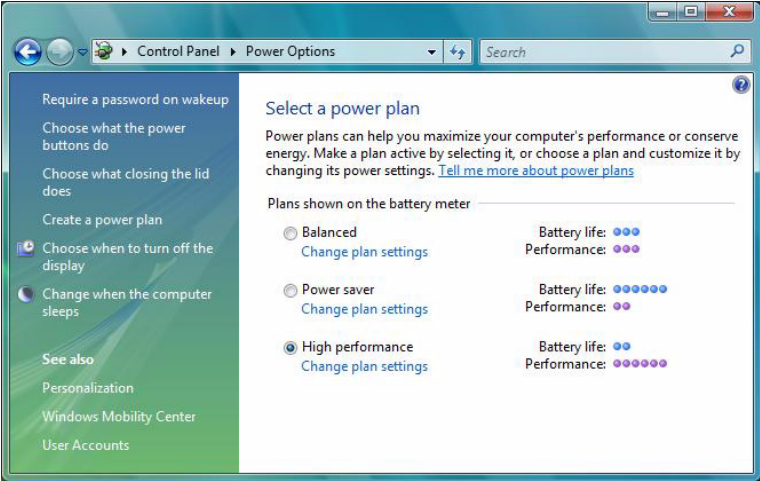




Figure 3 - 2
Power Plans



Power Button

The **Power Button**  in the Start Menu (in Classic View use the Shut Down button ) can be used to send the computer into a power-saving state.

Sleep Mode & Mobile PC Battery

A mobile PC in **Sleep** uses very little battery power.

After an extended period of time the computer will save any open documents and applications to hard disk.

Power-Saving States

You can use power-saving states to stop the computer's operation and restart where you left off. **Sleep** is the default power-saving state in *Windows Vista*.

Earlier versions of *Windows* used Stand By and Hibernate as system power-saving states. *Windows Vista* combines the features of Stand By and Hibernate into the default **Sleep** power-saving state.

Sleep

In **Sleep** all of your work, settings and preferences are saved to memory before the system sleeps. When you are not using your computer for a certain length of time, which you specify in the operating system, it will enter **Sleep** to save power.

The PC wakes from **Sleep within seconds** and will return you to where you last left off (what was on your desktop) without reopening the application(s) and file(s) you last used.

If your mobile PC in **Sleep** is running on battery power the system will use only a minimum amount of power. After an extended period the system will save all the information to the hard disk and shut the computer down before the battery becomes depleted.


Hibernate

Hibernate uses the least amount of power of all the power-saving states and saves all of your information on a part of the hard disk before it turns the system off. If a power failure occurs the system can restore your work from the hard disk; if a power failure occurs when work is saved only to memory, then the work will be lost. **Hibernate** will also return you to where you last left off within seconds. You should put your mobile PC into **Hibernate** if you will not use the computer for a period of time, and will not have the chance to charge the battery.

Shut Down

You should **shut down** the computer if you plan to install new hardware (don't forget to remove the battery and follow all the safety instructions in **Chapter 6**), plan to be away from the computer for several days, or you do not need it to wake up and run a scheduled task. Returning to full operation from **shut down** takes longer than from **Sleep** or **Hibernate**.






Silent Mode

You can use **Silent Mode** to reduce power consumption and fan noise.

Use the **Silent Mode** hot key **FN** to toggle this mode on/off.

On screen visual indicators and the LED indicator  will display the **Silent Mode** status (see [Table 2 - 2, on page 2 - 9](#), and [Table 1 - 3, on page 1 - 7](#)).

Note **Silent Mode** may reduce computer performance.

Figure 3 - 3
Lock Button menu



Password Protection

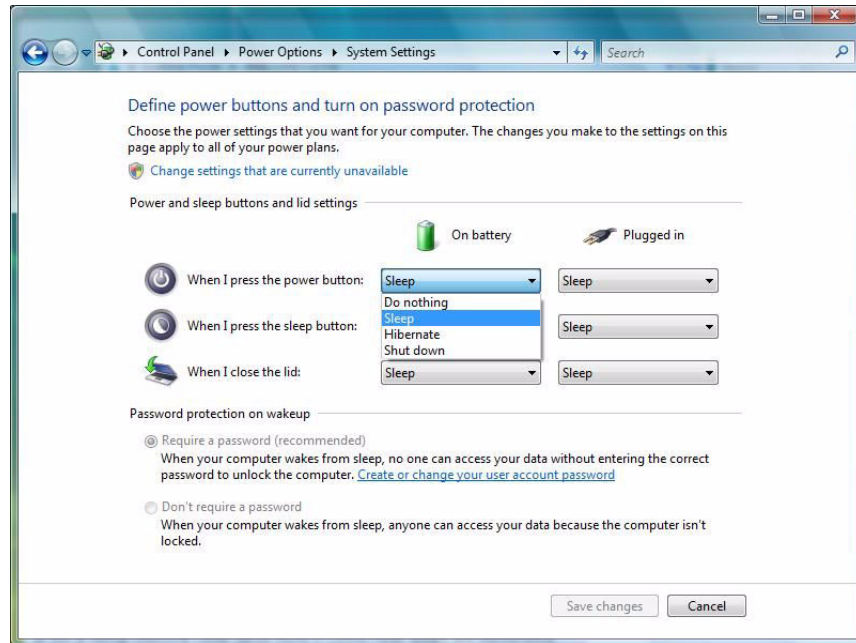
It is recommended that you enable a password on wake up in order to protect your data.

However you can disable this setting from the **Power Options** menu by clicking **Require a password on wakeup** in the left menu, and selecting the options (click **Change settings that are currently unavailable**).

Figure 3 - 4
Power Options
Define Power
Buttons


Configuring the Power Buttons

The power/sleep button (**Fn + F4** key combo) and closed lid may be set to send the computer in to a power-saving state.



Resuming Operation

You can resume operation from power-saving states by pressing the power button, or in some cases pressing the sleep button (**Fn + F4** key combo).



Closing the Lid

If you have chosen to send the computer to **Sleep** when the lid is closed, raising the lid will wake the system up.



Power Status	Icon  Color	To Resume
Power Off	Off	Press the Power Button
Sleep	Blinking Green	Press the Power Button Press the Sleep Button (Fn + F4 Key Combo)
Hibernate	Off (battery) Orange (AC/DC adapter)	Press the Power Button
Display Turned Off	Green	Press a Key or Move the Mouse/Touchpad

Table 3 - 1 Resuming Operation



Power Button

When the computer is on, you can use the power button as a Sleep/Hibernate/Shut Down hot key button when it is pressed for less than **4 seconds** (pressing and holding the power button for longer than this will force the computer to shut down).



Low Battery Warning

When the battery is critically low, immediately connect the AC/DC adapter to the computer or save your work, otherwise, the unsaved data will be lost when the power is depleted.


Figure 3 - 5
Battery Icon (Taskbar) & Battery Advanced Settings

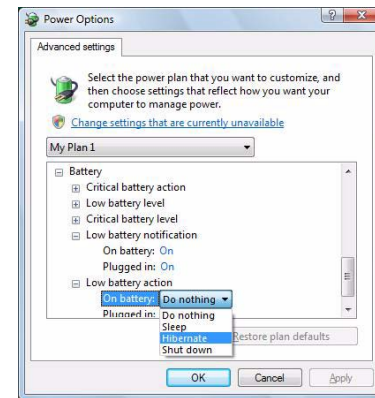
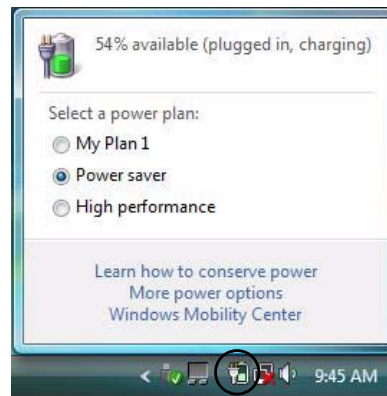
Battery Information

Please follow these simple guidelines to get the best use out of your battery.

Battery Power

Your computer's battery power is dependent upon many factors, including the programs you are running, and peripheral devices attached. You can set actions to be taken (e.g. Shut down, Hibernate etc.), and set critical and low battery levels from **power plan Advanced Settings** (see *Figure 3 - 1 on page 3 - 4*).

Click the battery icon  in the taskbar to see the current battery level and charge status.



Conserving Battery Power

- Use a **power plan** that conserves power (e.g **Power saver**), however note that this may have an affect on computer performance.
- Lower the brightness level of the LCD display. The system will decrease LCD brightness slightly to save power when it is not powered by the AC/DC adapter.
- Reduce the amount of time before the display is turned off.
- Close wireless, Bluetooth, modem or communication applications when they are not being used.
- Disconnect/remove any unnecessary external devices e.g. USB devices, ExpressCards etc.


Windows Mobility Center

The **Windows Mobility Center** control panel provides an easy point of access for information on battery status, power plans used and wireless device status etc.

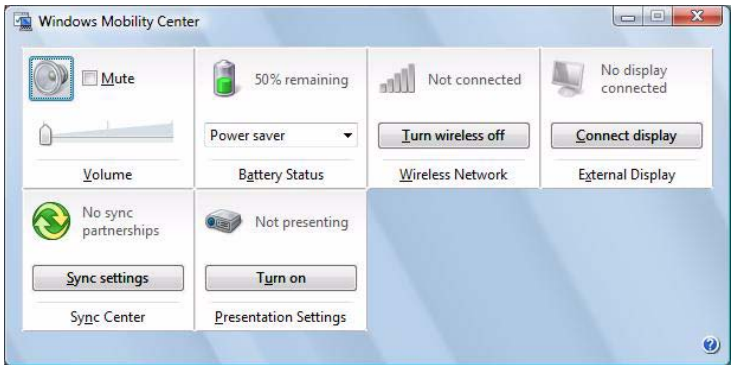


Figure 3 - 6
Windows Mobility Center

Battery Life

Battery life may be shortened through improper maintenance. **To optimize the life and improve its performance, fully discharge and recharge the battery at least once every 30 days.**

We recommend that you do not remove the battery yourself. If you do need to remove the battery for any reason see *“Removing the Battery” on page 6 - 3*.

New Battery

Always completely discharge, then fully charge, a new battery (see *“Battery FAQ” on page 3 - 14* for instructions on how to do this).

Recharging the Battery with the AC/DC Adapter

The battery pack automatically recharges when the AC/DC adapter is attached and plugged into an electrical outlet. If the computer is powered on, and in use, it will take several hours to fully recharge the battery. When the computer is turned off but plugged into an electrical outlet, battery charge time is less. (Refer to *“- LED Status Indicators” on page 1 - 7* for information on the battery charge status, and to *“Battery Information” on page 3 - 10* for more information on how to maintain and properly recharge the battery pack.)

Proper handling of the Battery Pack

- DO NOT disassemble the battery pack under any circumstances
- DO NOT expose the battery to fire or high temperatures, it may explode
- DO NOT connect the metal terminals (+, -) to each other



Damaged Battery Warning

Should you notice any physical defects (e.g. the battery is bent out of shape after being dropped), or any unusual smells emanating from the notebook battery, shut your computer down immediately and contact your service center. If the battery has been dropped we do not recommend using it any further, as even if the computer continues to work with a damaged battery in place, it may cause circuit damage, which may possibly result in fire. It is recommended that you replace your computer battery every two years.



Caution

Danger of explosion if battery is incorrectly re-placed.

Replace only with the same or equivalent type recommended by the manufacturer. Discard used battery according to the manufacturer's instructions.

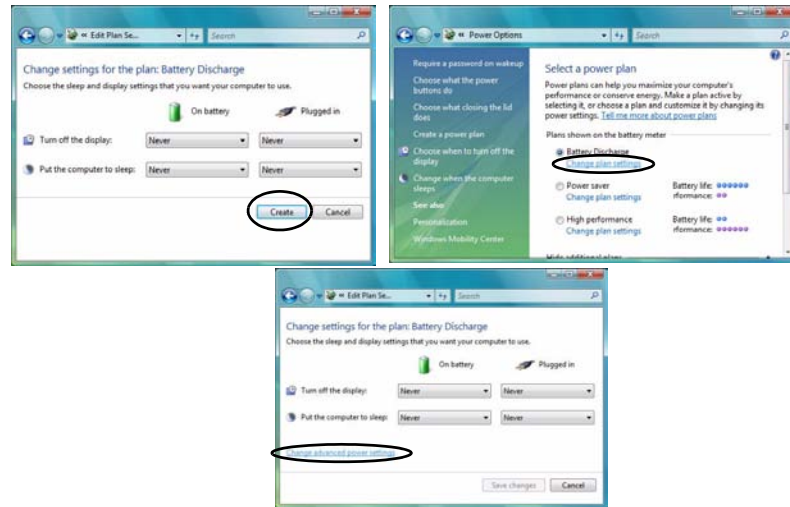
Battery FAQ

How do I completely discharge the battery?

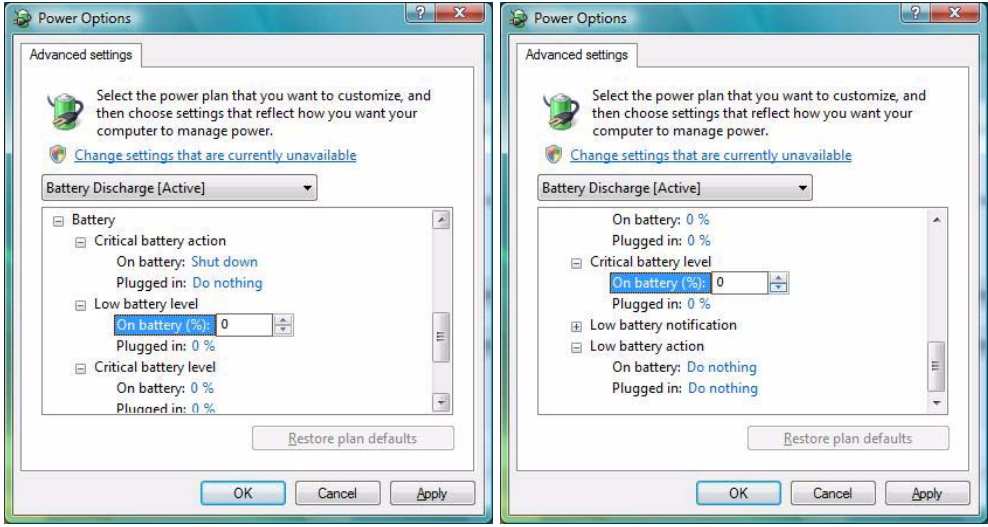
Use the computer with battery power until it shuts down due to a low battery. Don't turn off the computer even if a message indicates the battery is critically low, just let the computer use up all of the battery power and shut down on its own.

1. Save and close all files and applications.
2. **Create a power plan** for discharging the battery and set all the options to **Never**.
3. Click **Change plan settings** (after saving it) and click **Change advanced power settings**.

Figure 3 - 7
Power Plan Create



- 4. Scroll down to **Battery** and click **+** to expand the battery options.
- 5. Choose the options below (click **Yes** if a warning appears):



3

Figure 3 - 8
Power Options
Advanced Settings -
Battery

- Low battery levels = 0%
- Critical battery Levels = 0%
- Low battery action = Do Nothing
- Critical battery action (On battery) = Shut Down
- Critical battery action (Plugged in) = Do Nothing

How do I fully charge the battery?

When charging the battery, don't stop until the LED charging indicator light changes from orange to green.

How do I maintain the battery?

Completely discharge and charge the battery at least once every 30 days or after about 20 partial discharges.

Chapter 4: Drivers & Utilities

This chapter deals with installing the drivers and utilities essential to the operation or improvement of some of the computer's subsystems. The system takes advantage of some newer hardware components for which the latest versions of most available operating systems haven't built in drivers and utilities. Thus, some of the system components won't be auto-configured with an appropriate driver or utility during operating system installation. Instead, you need to manually install some system-required drivers and utilities.

What to Install

The *Device Drivers & Utilities + User's Manual CD-ROM* contains the drivers and utilities necessary for the proper operation of the computer.

Table 4 - 1, on page 4 - 3 lists what you need to install and **it is very important that the drivers are installed in the order indicated** (see "*Driver Installation*" on page *D - 25* for *Windows XP* information).

Module Driver Installation

The procedures for installing drivers for the **PC Camera, Wireless LAN, Bluetooth, 3G** and **Fingerprint** modules are provided in "*Modules & Options*" on page *7 - 1*.

Driver Installation

Insert the *Device Drivers & Utilities + User's Manual* CD-ROM and click **Install Drivers** (button).

If you wish to install the drivers manually see overleaf for the driver path information.

4



Figure 4 - 1 - Drivers Installer Screen 1

1. Check the driver installation order from **Table 4 - 1, on page 4 - 3** (the drivers must be installed in **this order**) which is the same as that listed in the **Drivers Installer** menu below.
2. Click to select the driver you wish to install, after installing each driver it will become grayed out (if you need to reinstall any driver, click the **Unlock** button).
3. Follow the instructions for each individual driver installation procedure as listed on the following pages.



Figure 4 - 2 - Drivers Installer Screen 2

Manual Driver Installation

If you wish to install the drivers manually, click the **Exit** button to quit the *Drivers Installer* application, and then browse to the executable file in the location listed in the table below and follow the installation procedure for each driver. **Note that X is the drive letter assigned to the CD/DVD-ROM drive.**

Driver	Page	Driver Location
<i>Video</i>	<i>Page 4 - 5</i>	Vista 32bit: X:\Drivers\01VGA\setup.exe
<i>Audio</i>	<i>Page 4 - 5</i>	Vista 32bit: X:\Drivers\02Audio\Setup.exe
<i>Modem</i>	<i>Page 4 - 5</i>	Vista 32bit: X:\Drivers\03Modem\setup.exe
<i>LAN</i>	<i>Page 4 - 5</i>	Vista 32bit: X:\Drivers\04Lan\setup.exe
<i>TouchPad</i>	<i>Page 4 - 6</i>	Vista 32bit: X:\Drivers\05Touchpad\setup.exe
<i>CardReader</i>	<i>Page 4 - 6</i>	Vista 32bit: X:\Drivers\06Reader\Setup.exe
<i>Hot Key</i>	<i>Page 4 - 6</i>	Vista 32bit: X:\Drivers\07Hotkey\Setup.exe
<i>PC Camera Module</i>	<i>Page 7 - 3</i>	Vista 32bit: X:\Others\02Camera\32bit\setup.exe (for 300K or 1.3M pixel Camera) Vista 32bit: X:\Others\02Camera\D-max2.0M\Setup.exe (for 2.0M pixel Camera)
<i>Wireless LAN Module</i>	<i>Page 7 - 11</i>	Vista 32bit: X:\Others\01RTL8187\setup.exe
<i>Bluetooth Module</i>	<i>Page 7 - 16</i>	Vista 32bit: X:\Others\03Bluetooth\setup.exe
<i>3.5G Module</i>	<i>Page 7 - 23</i>	Vista 32bit: X:\Others\04_3G\3G.msi
<i>Fingerprint Reader Module</i>	<i>Page 7 - 28</i>	Vista 32bit: X:\Others\05Fingerprint\Application\x86\autorun.exe

Table 4 - 1 - Driver Installation and Location

Updating/Reinstalling Individual Drivers

If you wish to update/reinstall individual drivers it may be necessary to uninstall the original driver. To do this go to the **Control Panel** in the *Windows OS* and double-click the **Programs and Features** icon (**Programs > Uninstall a program**). Click to select the driver (if it is not listed see below) and click **Uninstall**, and then follow the on screen prompts (it may be necessary to restart the computer). Reinstall the driver as outlined in this chapter.

If the driver is not listed in the **Programs and Features** menu:

1. Click **Start**, and click **Control Panel** (or point to **Settings** and click **Control Panel**).
2. Double-click **Device Manager (Hardware and Sound > Device Manager)**.
3. Double-click the **device** you wish to update/reinstall the driver for (you may need to click “+” to expand the selection).
4. Click **Driver** (tab) and click the **Update Driver** or **Uninstall** button and follow the on screen prompts.

User Account Control (Win Vista)

If a **User Account Control** prompt appears as part of the driver installation procedure, click **Continue** or **Allow**, and follow the installation procedure as directed.

Windows Security Message

If you receive a *Windows* security message as part of the driver installation process. Just click “**Install this driver software anyway**” or **Install** to continue the installation procedure.

You will receive this message in cases where the driver has been released after the version of *Windows* you are currently using. All the drivers provided will have already received certification for *Windows*.

New Hardware Found

If you see the message “**New Hardware Found**” (**Found New Hardware Wizard**) during the installation procedure (**other than when outlined in the driver install procedure**), click **Cancel** to close the window, and follow the installation procedure.

Driver Installation Procedure

Video

1. Click **1.Install VGA Driver > Yes**.
2. Click **Yes** (click **Yes** if you want to view the ReadMe file).
3. Click **Yes** to restart the computer.

Audio

1. Click **2.Install Audio Driver > Yes**.
2. Click **Next**.
3. Click **Finish** to restart the computer.

Modem

1. Click **3.Install Modem Driver > Yes**.
2. Click **OK**.
3. The modem is ready for dial-up configuration.



Modem Country Selection

Go to the **Phone and Modem Options** control panel (**Hardware and Sound**) and make sure the modem country selection is appropriate for you.

LAN

1. Click **4.Install LAN Driver > Yes**.
2. Click **Next**.
3. Click **Finish > Finish** to restart the computer.
4. The network settings can now be configured.

TouchPad

1. Click **5.Install Touchpad Driver > Yes**.
2. Click **Next**.
3. Click **Finish > Restart Now** to restart the computer.
4. You may then configure your TouchPad as outlined in *“TouchPad and Buttons/Mouse” on page 2 - 8*.

CardReader

1. Click **6.Install Cardreader Driver > Yes**.
2. Click **Next > Next**.
3. Click **Finish** to restart the computer.

Hot Key

1. Click **7.Install HOTKEY Driver > Yes**.
2. Click **Next > Install**.
3. Click **Finish > Finish** to restart the computer.

PC Camera Module

See the introduction in *“PC Camera Module” on page 7 - 2*, and check the installation procedure.

Wireless LAN Module

See the introduction in *“802.11 b/g USB WLAN Module” on page 7 - 11*, and check the installation procedure.

Bluetooth Module

See the introduction in *“Bluetooth Module” on page 7 - 16*, and check the installation procedure.

3.5G Module

See the introduction in *“3.5G Module” on page 7 - 20*, and check the installation procedure.

Fingerprint Reader Module

See the introduction in *“Fingerprint Reader Module” on page 7 - 28*, and check the installation procedure.

Chapter 5: BIOS Utilities

Overview

This chapter gives a brief introduction to the computer's built-in software:

Diagnostics: The **POST** (Power-On Self Test)

Configuration: The *Setup* utility

If your computer has never been set up, or you are making important changes to the system (e.g. hard disk setup), then you should review this chapter first and note the original settings found in *Setup*. Even if you are a beginner, keep a record of the settings you find and any changes you make. This information could be useful if your system ever needs servicing.

There is one general rule: *Don't make any changes unless you are sure of what you are doing*. Many of the settings are required by the system, and changing them could cause it to become unstable or worse. If you have any doubts, consult your service representative.



BIOS Settings Warning

Incorrect settings can cause your system to malfunction. To correct mistakes, return to *Setup* and restore the *Setup Defaults* with <F9>.



POST Screen

1. BIOS information
2. CPU type
3. Memory status
4. Enter **Setup** prompt appears only during **POST**

Note: The **POST** screen as pictured right is for guideline purposes only. The **POST** screen on your computer may appear slightly different. If you disable the **Boot-time Diagnostic Screen**, the **POST** screen will not appear.

Figure 5 - 1
POST Screen

The Power-On Self Test (POST)

Each time you turn on the computer, the system takes a few seconds to conduct a **POST**, including a quick test of the on-board RAM (memory).

As the **POST** proceeds, the computer will tell you if there is anything wrong. If there is a problem that prevents the system from booting, it will display a system summary and prompt you to run **Setup**.

If there are no problems, the **Setup** prompt will disappear and the system will load the operating system. Once that starts, you can't get into **Setup** without rebooting.

```
Phoenix TrustedCore(tm) NB 1
Copyright 1985-2006 Phoenix Technologies Ltd.
All Rights Reserved
Bios Revision: *****
KBC/EC Firmware Revision: *****

CPU = 1 Processors Detected, Cores per Processor = 2 2
Intel(R) Core(TM)2 CPU T5600 @ 1.83GHz
323M System RAM Passed 3
2048 KB L2 Cache
System BIOS shadowed
ATAPI CD-ROM: Optiarc DVD RW AD-7530A
Mouse intialized
```

```
Press <F2> to enter SETUP 4
```

Failing the POST

Errors can be detected during the **POST**. There are two categories, “fatal” and “non-fatal”.

Fatal Errors

These stop the boot process and usually indicate there is something seriously wrong with your system. Take the computer to your service representative or authorized service center as soon as possible.

Non-Fatal Errors

This kind of error still allows you to boot. You will get a message identifying the problem (make a note of this message!) followed by the prompt:

- Press <F1> to resume
- <F2> to enter Setup

Press **F1** to see if the boot process can continue. It may work, without the correct configuration.

Press **F2** to run the **Setup** program and try to correct the problem. If you still get an error message after you change the setting, or if the “cure” seems even worse, call for help.

The Setup Program

The **Phoenix Setup** program tells the system how to configure itself and manage basic features and subsystems (e.g. port configuration).

Entering Setup

To enter *Setup*, turn on the computer and press **F2** during the **POST**. The prompt (*Press F2 to Enter Setup*) seen on page 5 - 2 is usually present for a few seconds after you turn on the system. If you get a “Keyboard Error”, (usually because you pressed **F2** too quickly) just press **F2** again.

If the computer is already on, reboot using the **Ctrl + Alt + Delete** combination and then hold down **F2** when prompted. The *Setup* main menu will appear.

Setup Screens

The following pages contain additional advice on **portions** of the *Setup*.

Along the top of the screen is a menu bar with menu headings. When you select a heading, a new screen appears. Scroll through the features listed on each screen to make changes to *Setup*.

Instructions on how to navigate each screen are in the box along the bottom of the screen. If these tools are confusing, press **F1** to call up a **General Help** screen, and then use the arrow keys to scroll up or down the page.

The **Item Specific Help** on the right side of each screen explains the highlighted item and has useful messages about its options.

If you see an arrow ► next to an item, press **Enter** to go to a sub-menu on that subject. The sub-menu screen that appears has a similar layout, but the **Enter** key may execute a command.

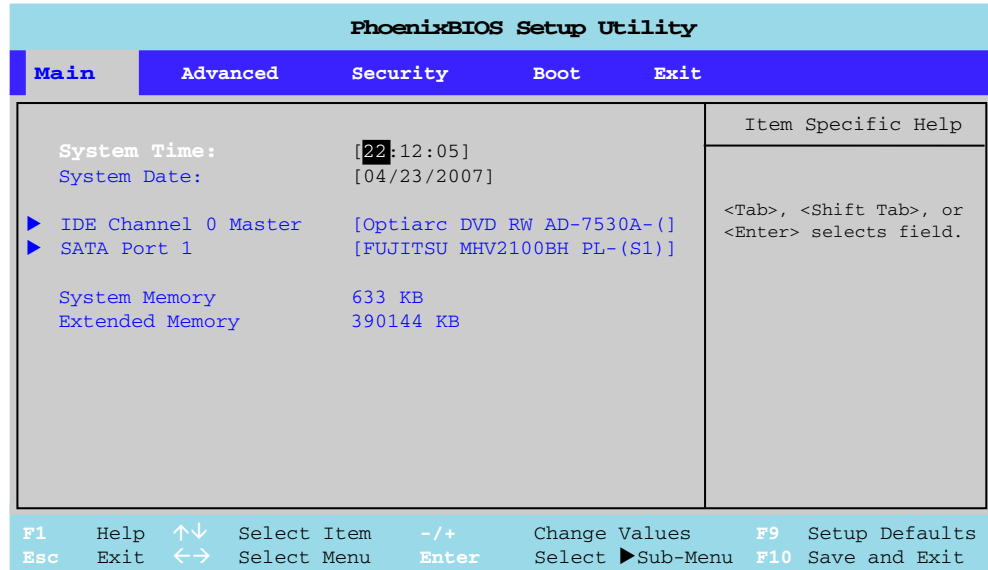


Setup Menus

The **Setup** menus shown in this section are for **reference** only. Your computer's menus will indicate the configuration appropriate for your model and options.

Main Menu

Figure 5 - 2
Main Menu



System Time & Date (Main Menu)

The hour setting uses the 24-hour system (i.e., 00 = midnight; 13 = 1 pm). If you can change the date and time settings in your operating system, you will also change these settings. Some applications may also alter data files to reflect these changes.

IDE Channel 0 Master (Main Menu)

Pressing **Enter** opens the sub-menu to show the configuration of an optical Device on the computer's IDE Channel 0. Use the **Auto** (Type:) setting to have the items configured automatically for you.

SATA Port 1 (Main Menu)

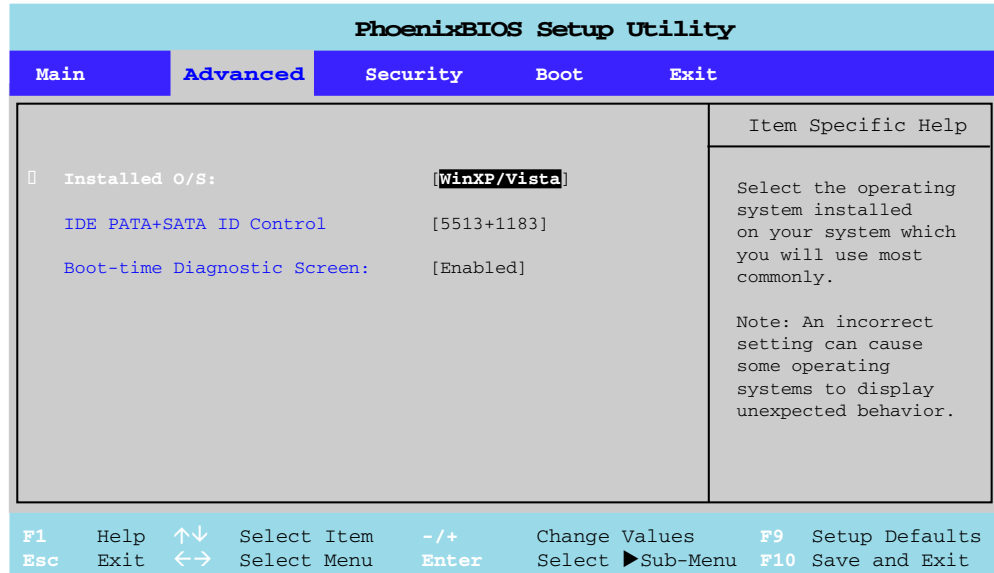
Pressing **Enter** opens the sub-menu to show the configuration of a HDD on the computer's SATA port. Use the **Auto** (Type:) setting to have the items configured automatically for you.

System/Extended Memory: (Main Menu)

This item contains information on the system memory, and is not user configurable. The system will auto detect the amount of memory installed.

Advanced Menu

Figure 5 - 3
Advanced Menu



Installed O/S: (Advanced Menu)

This setting tells the computer what kind of operating system you're using.

IDE PATA+SATA ID Control (Advanced Menu)

You can configure IDE PATA +SATA device ID control from this menu, if you have specific requirements to do so.

Boot-time Diagnostic Screen: (Advanced Menu)

Use this menu item to enable/disable the Boot-time Diagnostic Screen. Enable this item to display the POST screen as illustrated in *“POST Screen” on page 5 - 2*.



Security Menu

The changes you make here affect the access to the **Setup** utility itself, and also access to your machine as it boots up after you turn it on. These settings do not affect your machine or network passwords which will be set in your software OS.

Security Menu

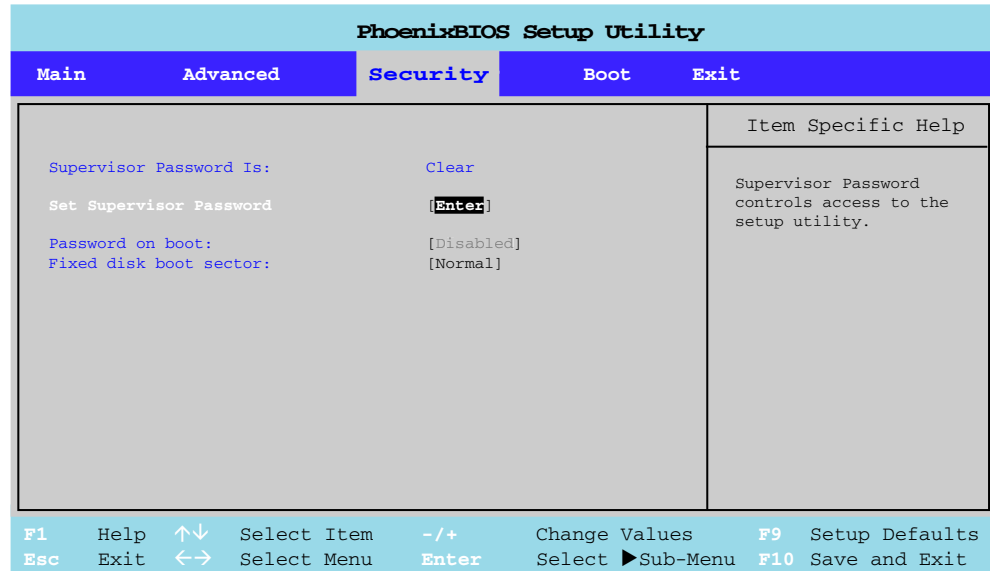


Figure 5 - 4 Security Menu

Set Supervisor Password (Security Menu)

You can set a password for access to the **PhoenixBIOS Setup Utility**. This will not affect access to the computer OS (only the **PhoenixBIOS Setup Utility**).

Password on boot: (Security Menu)

Specify whether or not a password should be entered to boot the computer (**you may only set a password on boot if a supervisor password is enabled**). If “*Enabled*” is selected, only users who enter a correct password can boot the system (**see the warning in the sidebar**). The default setting is “*Disabled*”.

Note: To clear existing passwords press **Enter** and type the existing password, then press **Enter** for the new password (without typing any password entry) and **Enter** again to confirm the password clearance.

Fixed disk boot sector: (Security Menu)

If you choose “**Write-Protect**” this will protect against viruses being written to the hard disk boot sector (this is not a substitute for installing an anti-virus program - see “*Viruses*” on page 8 - 4).



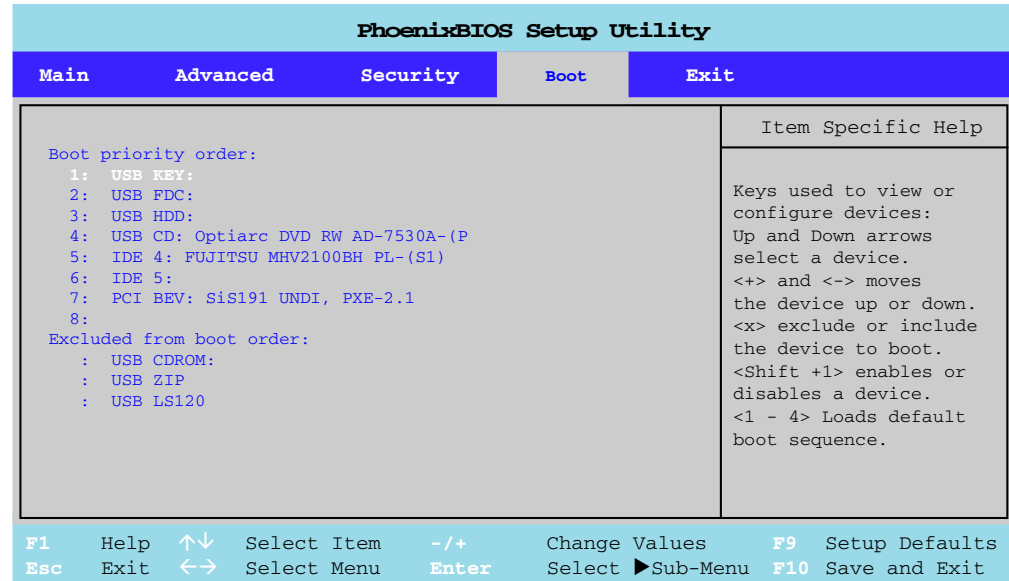
Password Warning

If you set a boot password (Password on boot is “Enabled”), **NEVER** forget your password.

The consequences of this could be serious. If you cannot remember your boot password you must contact your vendor and you may lose all of the information on your hard disk.

Boot Menu

Figure 5 - 5
Boot Menu



When you turn the computer on it will look for an operating system (e.g. *Windows Vista*) from the devices listed in this menu, and **in this priority order**. If it cannot find the operating system on that device, it will try to load it from the next device in the order specified in the **Boot priority order**. Item specific help on the right is available to help you move devices up and down the order.

Exit Menu

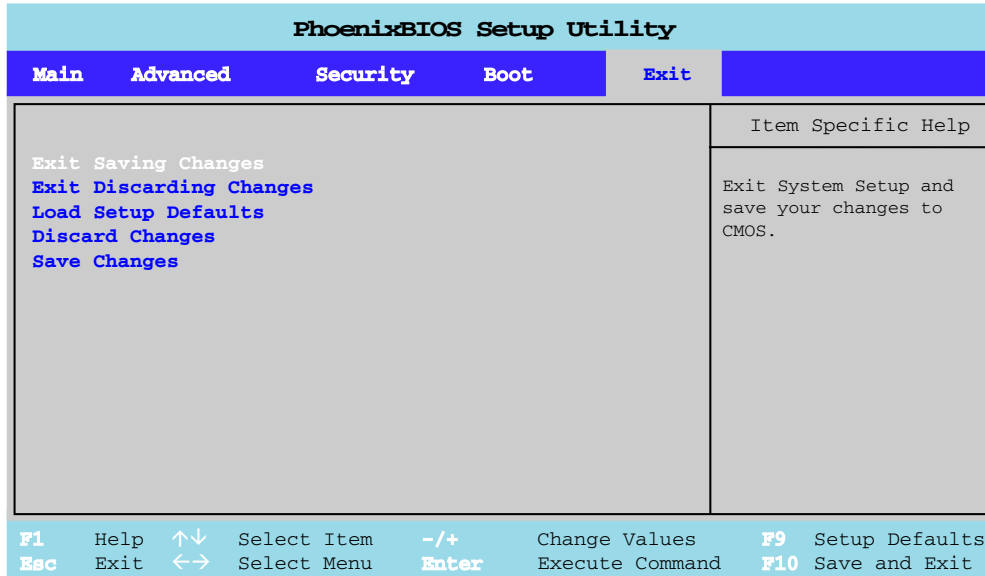


Figure 5 - 6
Exit Menu

Choosing to *Discard Changes*, or *Exit Discarding Changes*, will wipe out any changes you have made to the *Setup*. You can also choose to restore the original *Setup* defaults that will return the *Setup* to its original state, and erase any previous changes you have made in a previous session.

Chapter 6: Upgrading The Computer

Overview

This chapter contains information on upgrading the computer. Follow the steps outlined to make the desired upgrades. If you have any trouble or problems you can contact your service representative for further help. Before you begin you will need:

- A small crosshead or Phillips screwdriver
- A small regular slotted (flathead) screwdriver
- An antistatic wrist strap

Before working with the internal components you will need to wear an antistatic wrist strap to ground yourself because static electricity may damage the components.

The chapter includes:

- Removing the Battery
- Upgrading the Hard Disk Drive
- Upgrading the Optical (CD/DVD) Device
- Upgrading the System Memory (RAM)

Please make sure that you review each procedure before you perform it.



Warranty Warning

Please check with your service representative before undertaking any upgrade procedures to find out if this will VOID your warranty.



Power Safety Warning

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

When Not to Upgrade

These procedures involve opening the system's case, adding and sometimes replacing parts.

You should **not** perform any of these upgrades if:

- Your system is still under warranty or a service contract
- You don't have all the necessary equipment
- You're not in the correct environment
- You doubt your abilities

Under any of these conditions, contact your service representative to purchase or replace the component(s).



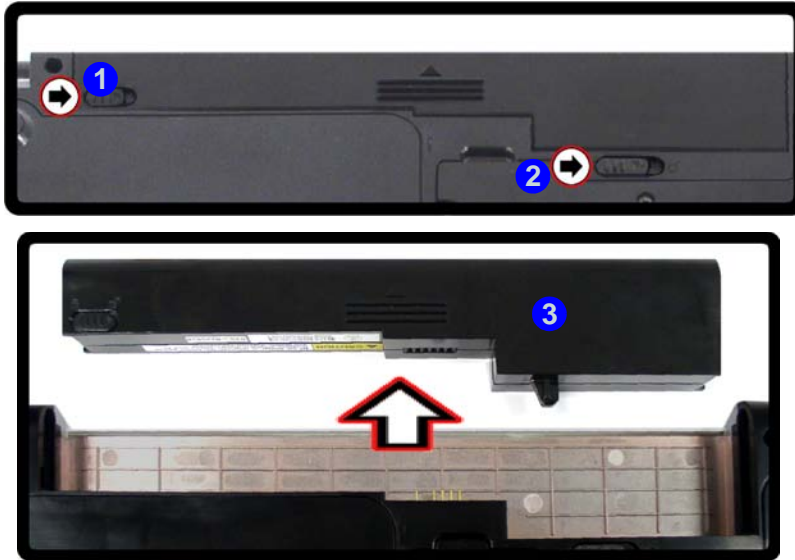
Removal Warning

When removing any cover(s) and screw(s) for the purposes of device upgrade, remember to replace the cover(s) and screw(s) before turning the computer on.

Removing the Battery

If you are confident in undertaking upgrade procedures yourself, for safety reasons it is best to remove the battery.

1. Turn the computer **off**, and turn it over.
2. Slide the latch **1** in the direction of the arrow.
3. Slide the latch **2** in the direction of the arrow, and hold it in place.
4. Slide the battery out in the direction of the arrow **3**.



Warning Warning

Please check with your service representative before undertaking any upgrade procedures to find out if this will VOID your warranty.

Figure 6 - 1
Battery Removal



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.

Upgrading 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) (see *“Storage” on page C - 2*). Follow your operating system’s installation instructions, and install all necessary drivers and utilities (see *“Driver Installation” on page 4 - 2*), when setting up a new hard disk.

1. Turn **off** the computer, and turn it over and remove the battery.
2. Locate the hard disk bay cover and remove screws **1** & **2**.
3. Remove the hard disk bay cover **3**.
4. Grip the tab and slide the hard disk in the direction of arrow **4**.

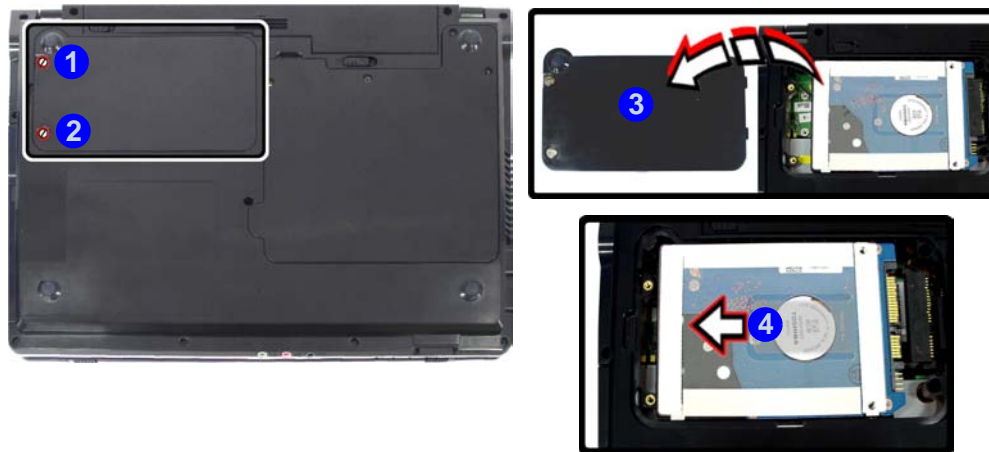


Figure 6 - 2
**Hard Disk Bay &
Screws**

5. Lift the hard disk up in the direction of arrow 5.
6. Remove the screws 6 & 7 and cover 8.
7. Reverse the process to install a new hard disk drive.

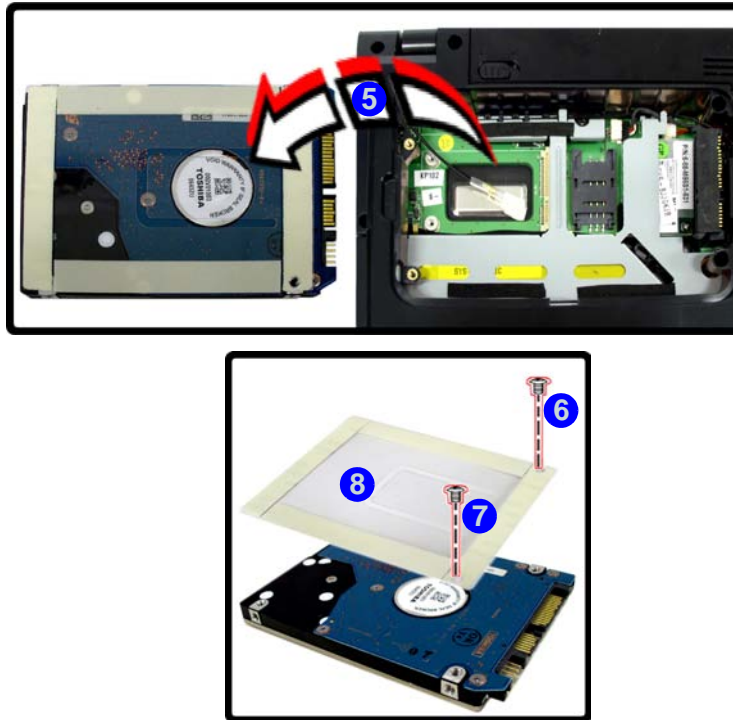


Figure 6 - 3
HDD & Cover
Removal

Upgrading the Optical (CD/DVD) Device

1. Turn **off** the computer, and turn it over and remove the battery.
2. Locate the RAM & CPU bay cover and remove screws **1** - **4**.
3. Remove the screw at point **5**, and use a screwdriver to carefully push out the optical device at point **5**.
4. Reverse the process to install the new device.

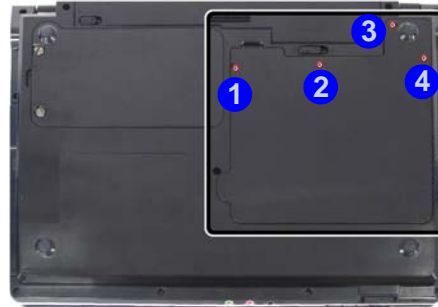


Figure 6 - 4
Removing the CD/
DVD Device

Upgrading the System Memory (RAM)

The computer has **two** memory sockets for 200 pin Small Outline Dual In-line (SO-DIMM) **DDRII (DDR2)** type memory modules (see *“Memory” on page C - 2* for details of supported module types).

The total memory size is automatically detected by the POST routine once you turn on your computer.

1. Turn **off** the computer, and turn it over and remove the battery.
2. Locate the RAM & CPU bay cover and remove screws **1** - **4**.

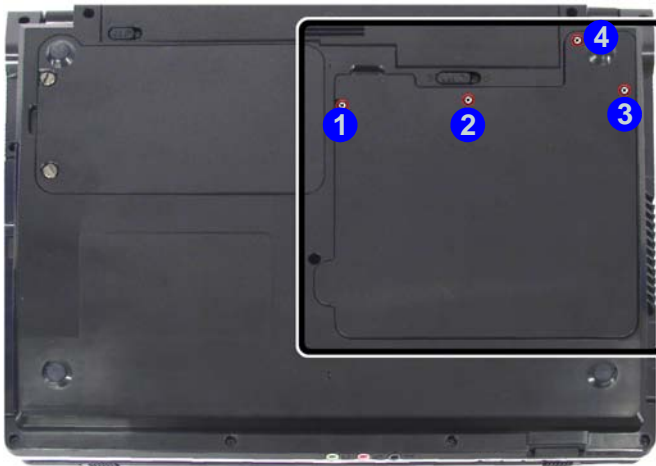
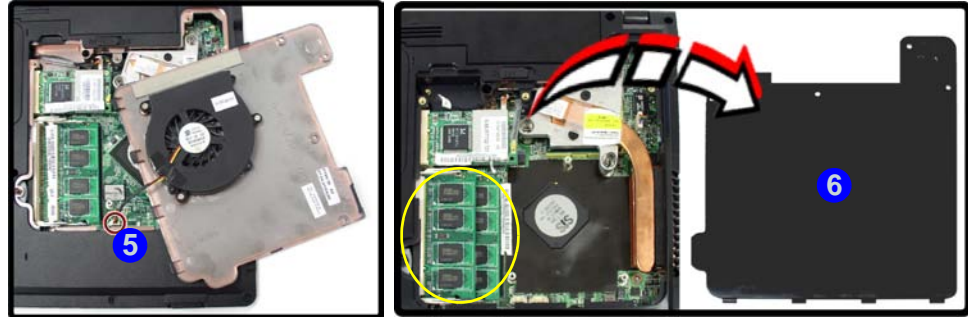


Figure 6 - 5
**RAM & CPU
Bay Screws**

Upgrading The Computer

Figure 6 - 6
CPU/RAM Bay
Cover Removed

3. Carefully (a fan and cable are attached to the under side of the cover) lift up the bay cover.
4. Carefully disconnect the fan cable **5**, and remove the cover **6**.



Contact Warning

Be careful not to touch the metal pins on the module's connecting edge. Even the cleanest hands have oils which can attract particles, and degrade the module's performance.

5. Gently pull the two release latches on the sides of the memory socket in the direction indicated by the arrows (**7** & **8**) in *Figure 6 - 7*.



Figure 6 - 7
RAM Module
Release Latches

6. The RAM module will 9 pop-up, and you can remove it.

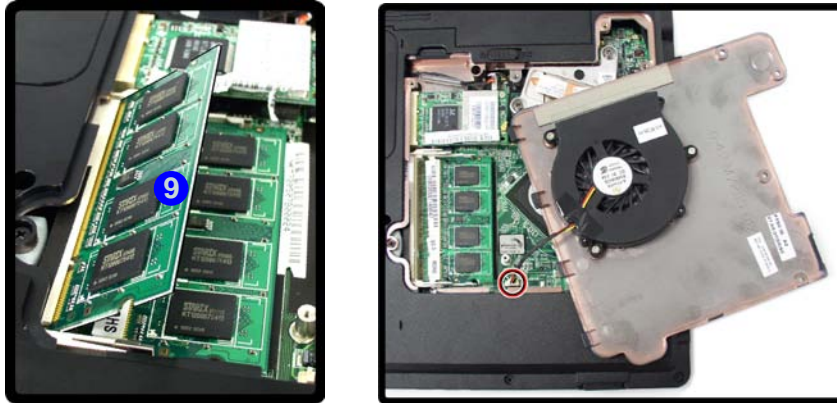


Figure 6 - 8
RAM Module
Removal
&
Fan Cable
Reconnection

7. Pull the latches to release the second module if necessary.
8. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
9. The module's pin alignment will allow it to only fit one way. Make sure the module is seated as far into the slot as it will go. **DO NOT FORCE** the module; it should fit without much pressure.
10. Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
11. Replace the bay cover and screws (**make sure you reconnect the fan cable before screwing down the bay cover**).
12. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.



Warranty

The CPU is not a user serviceable part. Opening this compartment, or accessing the CPU in any way, may violate your warranty.

Unauthorized tampering with the HDD may also violate your warranty.

Upgrading the Processor

If you want to upgrade your computer by replacing the existing processor with a faster/new one you will need to contact your customer service representative. We recommend that you do not do this yourself, since if it is done incorrectly you may damage the processor or mainboard.

Chapter 7: Modules & Options

Overview

This chapter contains information on the following modules, which may come with your computer, depending on the configuration purchased. If you are unsure please contact your service representative.

- PC Camera Module
- 802.11 b/g USB WLAN Module
- Bluetooth Module
- 3.5G Module
- Fingerprint Reader Module



Important Notice

If your purchase option includes both **Wireless LAN** and **3.5G** modules, then the appropriate antennas will be installed. Note that In order to comply with FCC RF exposure compliance requirements, the antenna must not be co-located or operate in conjunction with any other antenna or transmitter.



Wireless Device Operation Aboard Aircraft

The use of any portable electronic transmission devices aboard aircraft is usually prohibited. Make sure the module(s) are **OFF** if you are using the computer aboard aircraft.



Latest PC Camera Driver Information

Check the **CD**, and any accompanying insert pages, for the latest updated information on the PC Camera driver, which may override the information provided here.

PC Camera Module

There are 3 camera options available for this computer, depending on your purchase configuration. The **300K** and **1.3M pixel camera** modules use the **BisonCap** application to capture video files, and the **2.0M pixel camera** module uses the **Video View** application to capture video files.

Before installing the **PC Camera** driver, make sure that the optional PC Camera is on. **Use the Fn + F10 key combination** (see *Table 1 - 5, on page 1 - 10*) to **toggle power to the PC Camera module**. Make sure you install the drivers in the order indicated in *Table 4 - 1, on page 4 - 3*.

PC Camera Driver Installation

1. Make sure the module is powered on, and then insert the *Device Drivers & Utilities + User's Manual CD-ROM* into the CD/DVD drive.
2. Click **Optional** (button).
3. Click **1.PC Camera Driver, Web cam > Yes**.

For the 1.3M or 300K Pixel Camera Module:


1. Choose the language you prefer and click **Next > Next**.
2. Click **Finish** to restart the computer.
3. Run the **BisonCap** application program from the **BisonCam** shortcut on the desktop, or from the **BisonCam** item in the **Start > Programs/All Programs** menu (if the hardware is turned off use the **Fn + F10** key combination to turn it on again).

For the 2.0M Pixel Camera Module:

1. Click **Install**.
2. Click to select **Yes** or **No** in answer to the power system question.
3. Click to select **Yes** or **No** to enable/disable the **Digital Zoom** function.
4. Click **Finish > Finish** to restart the computer.
5. Run the **Video View** application program from the **Video View** shortcut on the desktop, or from the **USB2.0 PC Camera** item in the **Start > Programs/All Programs** menu (if the hardware is turned off use the **Fn + F10** key combination to turn it on again).

PC Camera Audio Setup (all camera modules)

If you wish to capture video & **audio** with your camera, it is necessary to setup the audio recording options in *Windows*.

1. Click **Start**, and click **Control Panel** (or point to **Settings** and click **Control Panel**).
2. Click **Sound**  (**Hardware and Sound**).
3. Click **Recording** (tab).
4. Right-click **Microphone** (Realtek High Definition Audio) and make sure the item is not disabled.
5. Double-click **Microphone** (or select **Properties** from the right-click menu).
6. Click **Levels** (tab), and adjust the **Microphone** and **Microphone Boost** sliders to the level required.
7. Click **OK** and close the control panels.
8. Run the **BisonCap** application program from the **Start > Programs/All Programs > BisonCam** menu.
9. Go to the **Devices** menu heading and select **Microphone (Realtek....)** (it should have a tick alongside it).
10. Go to the **Capture** menu heading and select **Capture Audio** (it should have a tick alongside it).

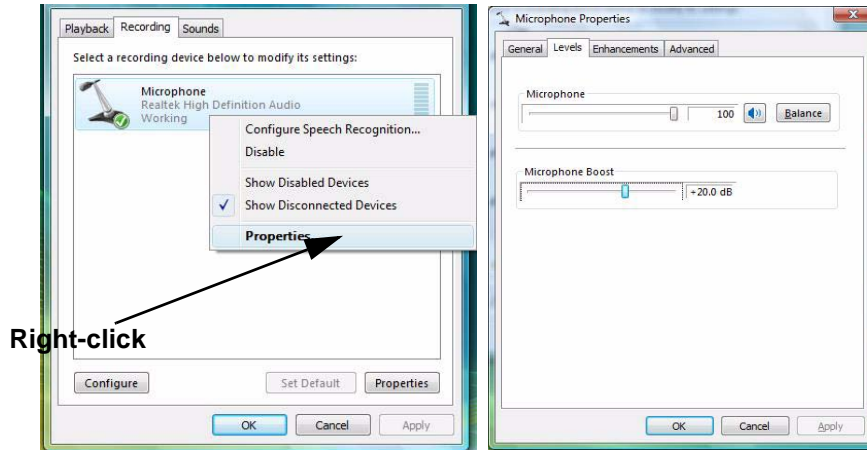
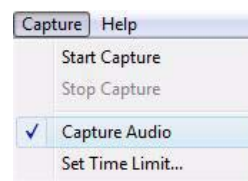
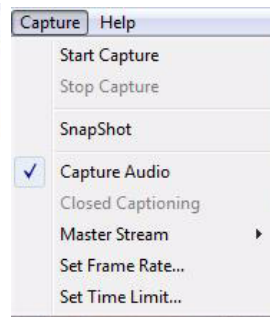
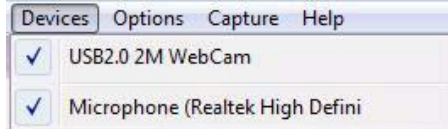
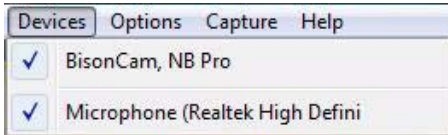


Figure 7 - 1
Audio Setup for PC
Camera





Pre-Allocating File Space

You may pre-allocate the file size for the capture file in the **BisonCap** program. You can choose to ignore this by clicking **Cancel**.

Pre-allocating space on the hard disk can improve the capture quality (particularly of large capture files), by reducing the amount of work the hard disk has to do in finding space for the video data as it is being captured.

BisonCap (for 1.3M or 300K pixel camera modules)

BisonCap is a video viewer useful for general purpose video viewing and testing, and can capture video files to .avi format.

1. Run the **BisonCap** program from the **Start > Programs/All Programs > Bison-Cam** menu (it is recommended that you **set the capture file** before the capture process - **see Set Capture File below**).
2. Go to the **Capture** menu heading (if you wish to capture audio check **“PC Camera Audio Setup (all camera modules)” on page 7 - 4**) and select **Start Capture**.
3. On the first run of the program (if you have not set the captured file) you will be asked to choose a file name and size (**see the sidebar - Pre-Allocating File Space**) for the captured file. Click **Start Capture** again.
4. Click **OK** to start capturing the video, and press **Esc** to stop the capture.
5. If you wish to, you may go to the **File** menu and select **Save Captured Video As...**, choose a file name and location, and then click **Open** (you can view the file using the **Windows Media Player**).

Set Capture File

In the **BisonCap** program you will only be asked to set the capture file name on the first run of the program. When you run the program the next time the file will automatically be overwritten with the newly captured file. To avoid overwriting files you can go to the **Set Capture File..** option in the **File** menu, and set the file name and location before capture. Set the name and location then click **Open** (you can choose **Cancel** to ignore the file size if prompted).

Eliminating Screen Flicker (BisonCap)

If you find that the video screen in the **BisonCap** program is flickering, you can try to adjust the setting in the **Video Capture Filter** options.

1. Run the **BisonCap** program.
2. Go to **Options** and scroll down to select **Video Capture Filter....**
3. Click either **50Hz** or **60Hz** under **Frequency** in **Property Page** (tab).

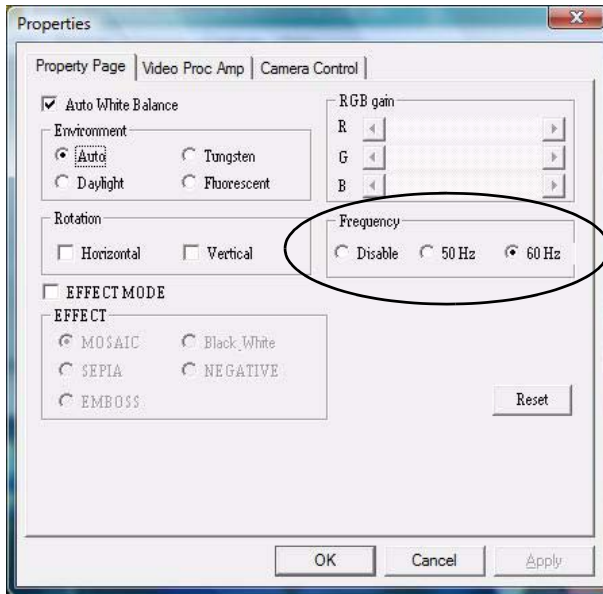


Figure 7 - 2
Video Capture Filter