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Preface

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 in¬stalled 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.

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 (DC Output 20V, 11A minimum).

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

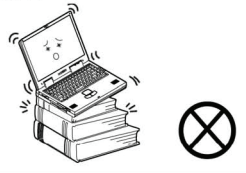
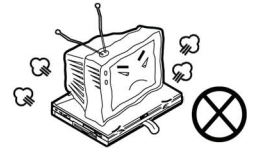
This Computer's Optical Device is a Laser Class I Product

Preface

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 ele¬ment. 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.

Do not expose the computer to any shock or vibration.	*Do not place it on an unstable surface.*	*Do not place anything heavy on the computer.*
		

- Do not expose it to excessive heat or direct sunlight.
- Do not leave it in a place where foreign matter or moisture may affect the system.
- Don't use or store the computer in a humid environment.
- Do not place the computer on any surface that will block the vents.
- Do not turn off the power until you properly shut down all programs.
- Do not turn off any peripheral devices when the computer is on.
- Do not disassemble the computer by yourself.
- Perform routine maintenance on your computer.

5. Take care when using peripheral devices.

- Use only approved brands of peripherals.
- Unplug the power cord before attaching peripheral devices.

Power Safety

The computer has specific power requirements:

- 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 sup¬plies (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.

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 you battery in order to prevent accidentally turning the machine on.

Battery Precautions

- Only use batteries designed for this computer. The wrong battery type may explode, leak or damage the computer.
- Do not continue to use a battery that has been dropped, or that appears damaged (e.g. bent or twisted) in any way. Even if the computer continues to work with a damaged battery in place, it may cause circuit damage, which may possibly result in fire.
- Recharge the batteries using the notebook's system. Incorrect recharging may make the battery explode.
- Do not try to repair a battery pack. Refer any battery pack repair or replacement to your service representative or qual¬ified 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 areafor 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.

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 hard¬ware 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 other such container). Putting a notebook which is powered on in a travel bag may cause the Vents/Fan Intakes to be blocked. To prevent your computer from overheating make sure nothing blocks the Vent/Fan Intakes while the computer is in use.

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 knock¬ing the computer against hard objects.

Beware of Electromagnetic fields - Devices such as metal detectors & X-ray machines can damage the com¬puter, 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.

Contents

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 The Storage Devices (hard disk, optical device, Card Reader, PC Card), Mouse, 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, TV Tuner and PC Camera modules (some of which may be optional depending on your purchase configuration).
- Chapter 8 A troubleshooting guide.
- Appendix A A definition of the interface, ports/jacks which allow your computer communicate with external devices.
- Appendix B Information on the NVIDIA Video driver controls.
- Appendix C The computer's specification.

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 “Drivers & Utilities” 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

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 every¬thing 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 XP etc.) and applications (e.g. word processing, spreadsheet and database pro¬grams) have their own manuals, so please consult the appropriate manuals.

Drivers

If you are installing new system software, or are reconfiguring your computer for a different system, you will need to install the appropriate drivers. 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 Table 4-1, on page 4-6. 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 “What to Install” on page 4-1 for installation instructions.

Ports and Jacks

See “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 this manual refers to the following oper¬ating systems:

- Microsoft Windows XP Home & Professional Editions (with Service Pack 2)

System Startup

1. LCD Latches
2. LED Power & Communication

Figure 1 - 1 - Top Panel with LCD Closed

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 at the rear of the computer, then plug the AC power cord into an outlet, and connect the AC power cord to the AC/DC adapter.
5. Move and hold the LCD latches in the direction of the arrows to release the top cover.
6. Raise the lid/LCD to a comfortable viewing angle (DO NOT EXCEED AN ANGLE of 120 degrees), and press the power button to turn the computer “on”.
7. Adjust the LCD panel to a comfortable viewing angle.
8. The LED indicators show the power and battery status of the Indicators computer.

Shutdown

Please note that you should always shut your computer down by choosing the **Shut Down/Turn Off Computer** command from the **Start** menu in **Windows**. This will help prevent hard disk or system problems.

System Map: Top View with LCD Panel Open

Figure 1 -2 - Top View with LCD Panel Open LED Indicators Table 1 - 2 - LED Power & Communication Indicators

1. Optional Built-In PC Camera
2. LCD
3. LED Power & Communication Indicators
4. Speakers
5. AP-Key Buttons & Power Button
6. Built-In Microphone
7. LED Status Indicators
8. Keyboard
9. TouchPad and Buttons
10. Consumer Infrared Transceiver*

*Enabled with Optional Mini-PCI TV Tuner Only

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.

Table 1 - 1 - LED Status Indicators

Icon	Color	Description
	Green	The (optional) PC Camera is powered On
	Green	The (optional) Bluetooth Module is powered On
	Green	The (optional) Wireless LAN Module is powered On
	Green	Hard Disk Activity
	Green	Number Lock Activated
	Green	Caps Lock Activated
	Green	Scroll Lock Activated (to activate press Fn & Scr Lk)
	Orange	DC Power is Plugged In

Table 1 - 2 - LED Power & Communication Indicators

Icon	Color	Description
	Green	The Computer is On
	Blinking Green	The Computer is in Stand by Mode
	Orange	The Battery is Charging
	Green	The Battery is Fully Charged
	Blinking Orange	The Battery Has Reached Critically Low Power Status

AP-Key Buttons

These buttons power on/off the optional PC Camera and Bluetooth modules, access the internet and e-mail, and enable/disable high performance video.

Table 1 - 3 -AP-Key Buttons

AP-Key	Function
	Enable/Disable High Performance Video
	Enable/Disable the optional PC Camera Module
	Enable/Disable the optional Bluetooth Module
	Activate the Default E-mail Program
	Activate the Default Internet Browser

3D Ap-Key Button

Use this button to enable/disable high performance video when powered by the AC/DC adapter (the 3D Ap-Key button will be illuminated in blue when in high performance video mode).

If you switch from AC Power to battery power the sys¬tem will automatically change to a lower performance video mode setting. High Performance Video can not be enabled when the system is battery powered.

The system will retain in memory the last known video performance setting if you switch back from battery to AC power.

Function Keys & Numeric Keypad

The keyboard has an embedded numerical keypad for easy numeric data input (see Figure 1 - 2 on page 1 8).

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.

Table 1 - 4 -Function Keys

Keys	Description
Fn	Function Key
Fn + 1	Touchpad Toggle
Fn + F2	SRS WOW Surround Sound Toggle
Fn + F3	Mute Toggle
Fn + F4	Sleep Toggle
Fn + F5	Decrease Audio Volume
Fn + F6	Increase Audio Volume
Fn + F7	Display Toggle
Fn + F8	Decrease LCD Brightness
Fn + F9	Increase LCD Brightness
Fn + F11	WLAN Module Toggle
Fn + Scr Lk	Scroll Lock Toggle

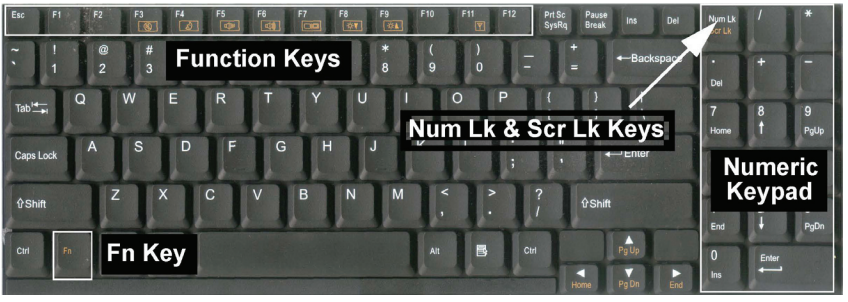


Figure 1 - 2 - Keyboard

Other Keyboards

If your keyboard is damaged or you jsut 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.

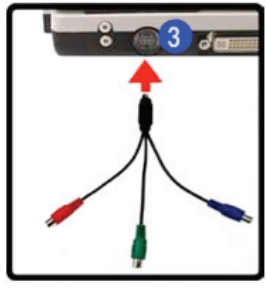
System Map: Front & Rear Views

Figure 1 - 3

Front & Rear Views

1. LCD Latches
2. Consumer Infrared Transceiver*
3. 7-Pin S-Video-Out Jack
4. DVI-Out Port
5. DC-In Jack
6. Vent/Fan Intake
7. RJ-11 Phone Jack
8. 2 * USB 2.0 Ports
9. Serial Port
10. S-Video-In Jack*
11. Security Lock Slot

* Enabled with Optional Mini-PCI TV Tuner Only
S-Video/Composite Cable HDTV Cable



7-Pin S-Video-Out Jack

The 7-pin S-Video requires an adapter cable (7-pin S-Video plug to 4-pin S-Video jack adapter) in order to connect to a standard S-Video cable (the y-cable pictured includes a yellow composite video jack)

System Map: Left View

Figure 1 - 4
Left View

1. S/PDIF-Out Jack
2. Line-In Jack (see page A -3)
3. Microphone-In Jack
4. Headphone-Out Jack
5. Optical Device Drive Bay (for CD/DVD Device)

CD 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 similar object that may break and become lodged in the hole.

Media Warning

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 **System › Hardware** (tab), click **Device Manager**, then click the + next to **DVD/CD-ROM** drives. Double-click on the DVD-ROM device to bring up the Properties dialogue 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 pages 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: Right View

Figure 1-5 Right View

Right View

1. PC Card Slot
2. Mini-IEEE 1394a Port
3. 3 * USB 2.0 Ports
4. TV Antenna Jack*
5. 4-in-1 Card Reader
6. Infrared Transceiver (see page 2 - 10)
7. RJ-45 LAN Jack

*Enabled with Optional Mini-PCI TV Tuner Only

4-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-IEEE 1394a

The Mini-IEEE 1394a port only supports SELF POWERED IEEE 1394a devices.

System Map: Bottom View

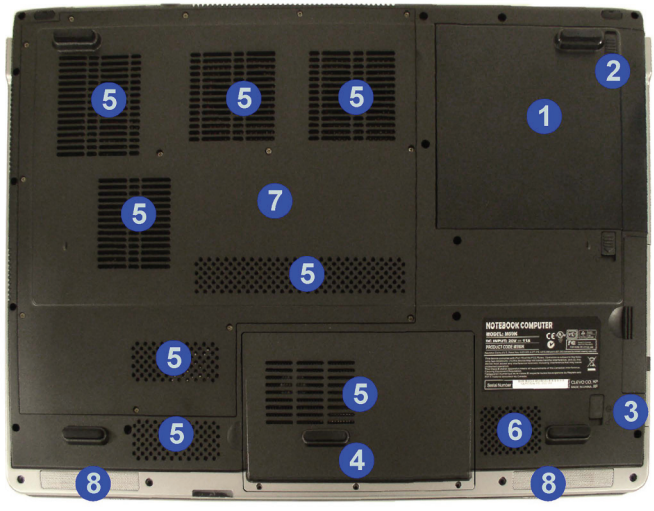


Figure 1 -6 - Bottom View

1. Battery
2. Battery Release Latch
3. CD/DVD Device Release Latch
4. Hard Disk Bay Cover
5. Vent/Fan Intake
6. Sub Woofer
7. Component Bay Cover
8. Speakers

CPU

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

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 3-9 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.

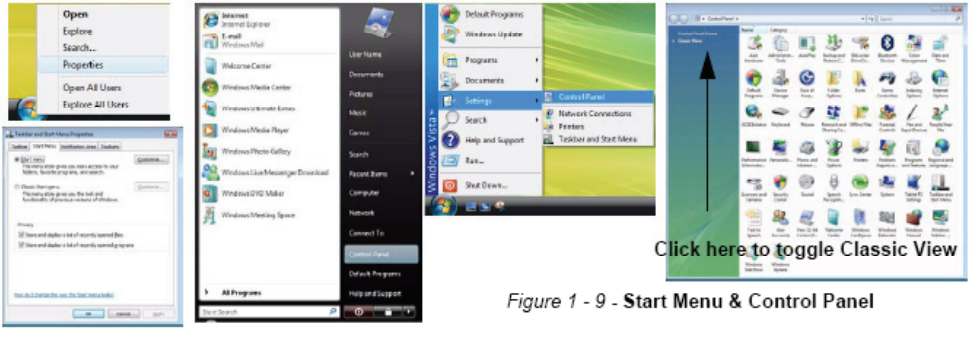


Figure 1 - 9 - **Start Menu & Control Panel**

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. To see all controls it may be necessary to toggle to Classic View on.

Video Features

This computer features an NVIDIA Scalable Link Interface (SLI) that improves graphic quality and performance by combining dual NVIDIA GPUs in a single system to allow the two graphics cards to run in parallel. You can switch display devices, and configure display options, from the Display Properties control panel in Windows as long as the appropriate video driver is installed.

To access Display Properties in Windows:

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: (Figure 1 - 10 on page 1 - 18).
4. Click the arrow, and scroll to the preferred setting In Colors:
5. Click Advanced Settings (button) (Figure 1 - 9 on page 1 - 15) to bring up the Advanced properties tabs.
7. The nVidia Control Panel can be accessed by right clicking over the Desktop, and selecting the nVidia Control Panel option from the Menu.

Display Devices & Options

Besides the built-in LCD, you can also use an external DVI monitor (CRT)/external Flat Panel Display or TV as your display device. A DVI monitor/Flat Panel Display connects to the external monitor port, a TV to the 7-Pin S-Video-Out Jack.

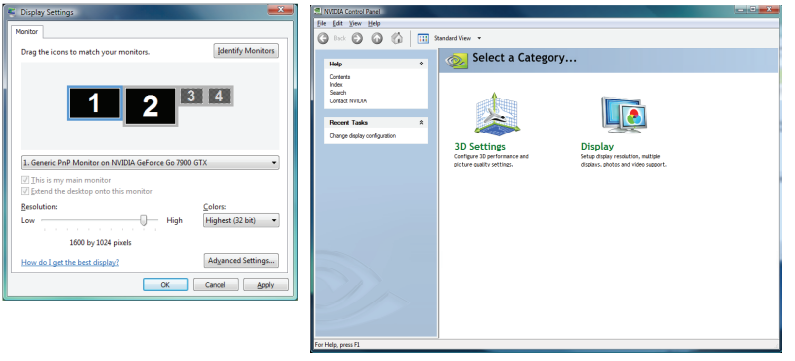


Figure 1 -8 - Display Properties Desktop

Power Options

The Power Options (Hardware and Sound menu) control panel icon in Windows (see page 1 - 16) 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 - 9.

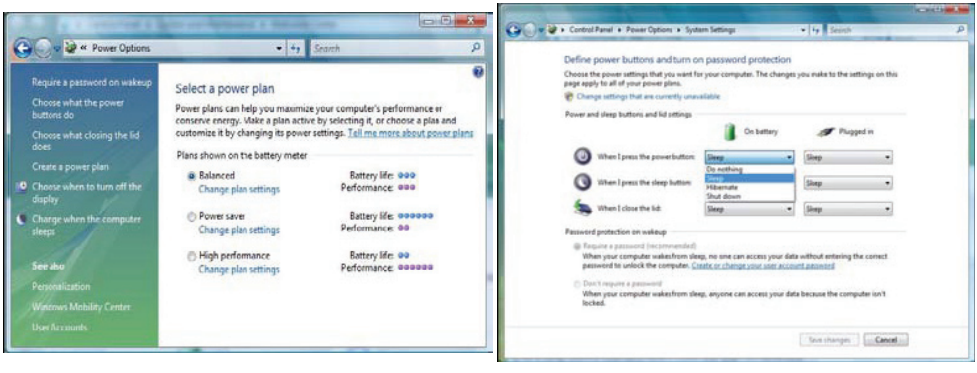


Figure 1 - 9 - Power Options

The computer’s power button, sleep button (Fn + F4 key combination), and lid (closing the lid) may be set to send the computer in to either Stand by or Hibernate mode.

Power Saving and Performance

Power Schemes may have an affect on your computer performance (see “Power Schemes” on page 3 - 4).

Chapter 2: Storage Devices, Mouse, Audio & Printer

Overview

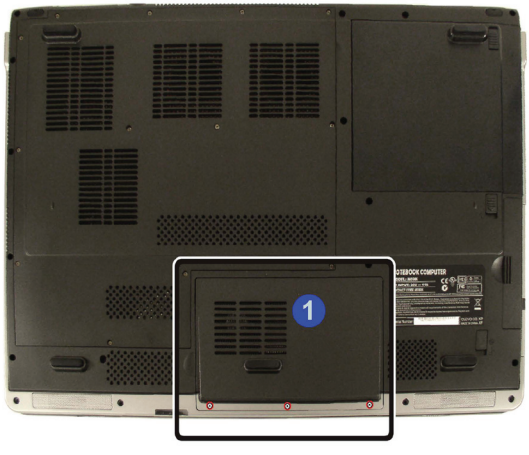
Read this chapter to learn more about the following main features and components of the computer:

- Hard Disk Drive
- Optical Device
- 4-in-1 Card Reader
- PC Card Slot
- TouchPad and Buttons/Mouse
- Audio Features
- Configuring the Infrared Settings for FIR
- Adding a Printer

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 with a height of 9.5 mm. The hard disk is accessible from the bottom of your computer as seen below. Further details on removing and inserting the hard disk are available in "Upgrading the Hard Disk Drive(s)" on page 6 - 4.

Figure 2 - 1 Hard Disk Location



Optical Device

There is a bay for a 5.25” optical (CD/DVD) device (12.7mm height). The actual de¬vice will depend on the model you purchased (see “Storage Options” on page C 3). The optical device is usually labeled “Drive D:” and may be used as a boot de¬vice 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 interrupt¬ed, insert an object such as a straightened paper clip into the emergency eject hole
3. to open the tray.

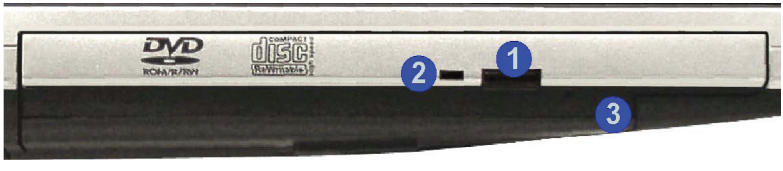


Figure 2 - 2 Optical Device

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.

Peripherals must be connected before you turn on the system.

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.

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."

DVD Regional Codes

To change the DVD regional codes see “Changing DVD Regional Codes” on page 1 - 10.

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

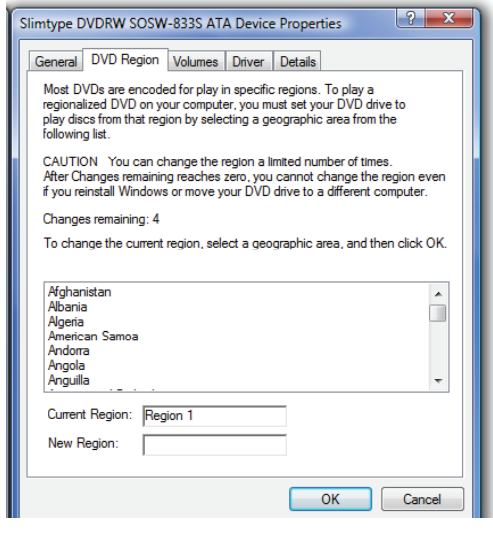


Figure 2 - 3 DVD Regions

4-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.

- MMC (MultiMedia Card)
- SD (Secure Digital)
- MS (Memory Stick)
- MS Pro (Memory Stick Pro)

Figure 2 - 4 Right View

1. Card Reader

Card Reader Cover

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

PC Card Slot

The computer is equipped with a PCMCIA 3.3V/5V slot for one type II PC Card.

Inserting and Removing PC Cards

- Align the PC Card with the slot and push it in until it locks into place.
- To remove a PC Card, simply press the eject button

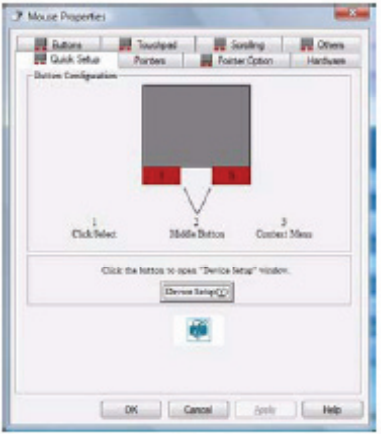
1. next to the slot.

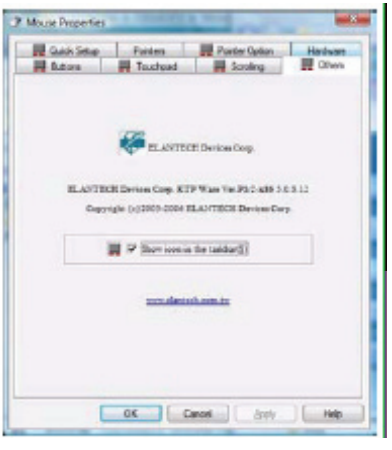
Figure 2 - 5 PC Card Slot

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. The central button may be configured to function as you require.

Once you have installed the TouchPad driver (see page 4 - 10) you can configure the functions by double-clicking the TouchPad driver icon in the taskbar. You may then configure the TouchPad tapping, buttons, scrolling, pointer motion and sensi¬tivity options to your preferences. The TouchPad may be toggled on/off by means of the Fn + F1 key combination.





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.

Audio Features

You can configure the audio options on your computer from the Sound control panel in Windows.

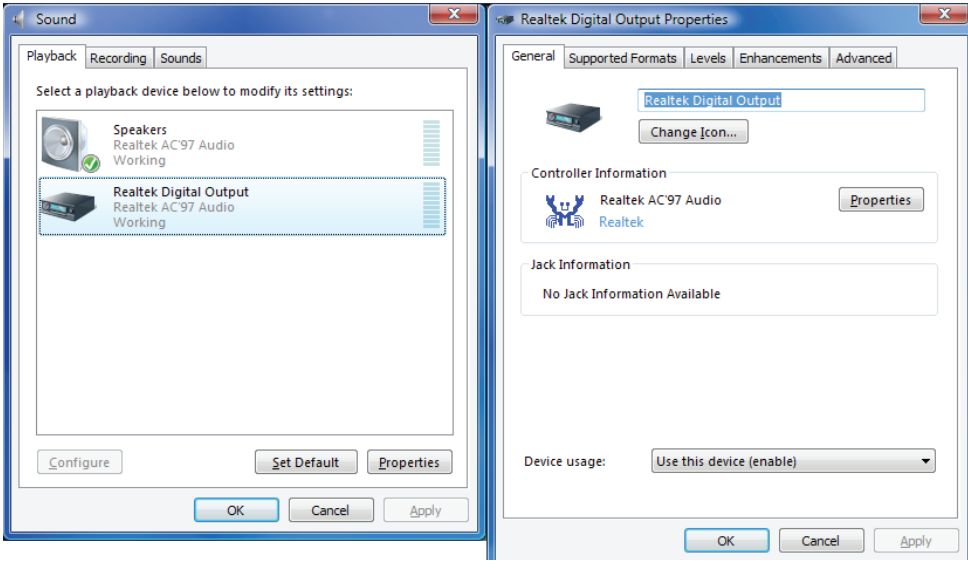


Figure 2-7 AC97 Audio Configuration Menus

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.

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 new 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 car¬tridge 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 below (you will need to purchase a parallel to USB converter).

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 uses the ACPI power management system. Power management conserves power by controlling in¬dividual 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 Schemes
- System Power Options
- Configuring the Power Button
- 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 (see page C - 5).

1. Attach the AC/DC adapter to the DC-In jack at the rear 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 - 12).

We recommend that you do not remove the battery. For more information on the battery, please refer to “Battery Information” on page 3 - 9.

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 Stand by/Hibernate/ Shutdown hot-key button when it is pressed for less than 4 seconds (pressing and holding the power button for longer than this will shut the computer down).
Use Power Options in the Windows control panel 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).

Shutdown

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

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.

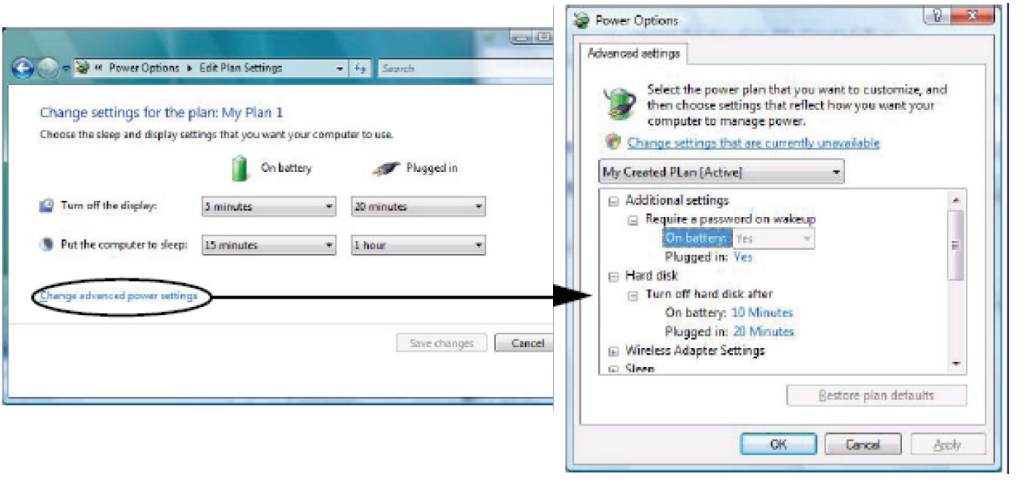
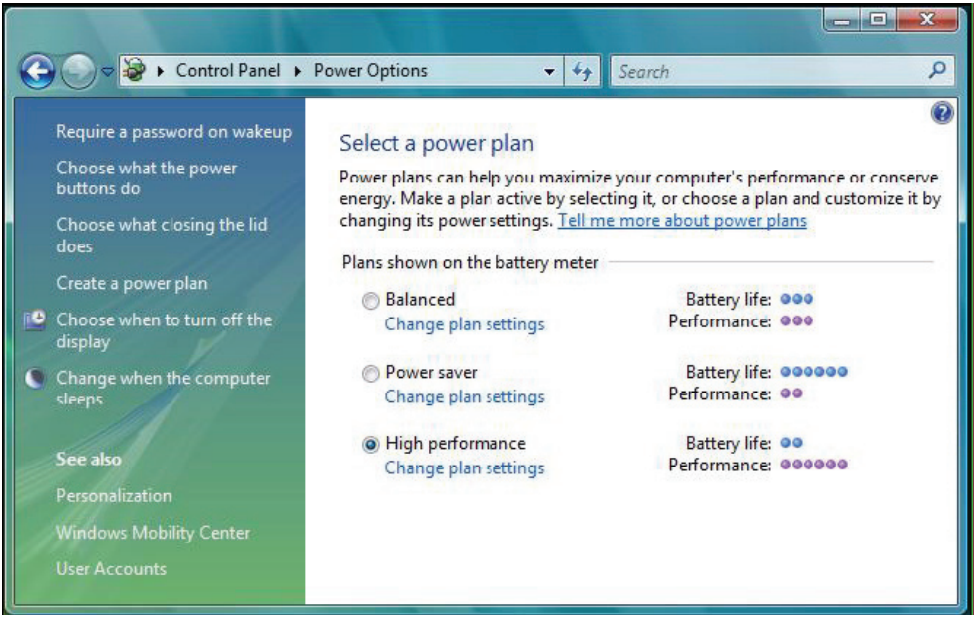


Figure 3 - 1 Power Schemes

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.



System Power Options

You can use the system power options to stop the computer's operation and restartwhere you left off. The system features Sleep and Hibernate power saving states (Hibernate will need to be enabled from power plan Advanced Settings see Figure 3 - 1 on page 3 - 4).

Hibernate vs. Shutdown

Hibernate and Shut Down are the same in that the system is off and you need to press the power button to turn it on. Their main difference is:
When you come back from hibernation, you can return to where you last left off (what was on your desktop) without reopening the application(s) and file(s) you last used.

You can use either method depending on your needs.

Sleep vs. Hibernate

If you want to stay away from your work for just a while, you can put the system into Sleep instead of in hibernation. It takes a longer time to wake up the system from Hibernate mode than from Sleep mode. Sleep will effectively act as Hibernate if the computer battery becomes depleted (see "Sleep Mode & Mobile PC Battery" on page 3 - 7).

Sleep

The Sleep Button in the Start Menu (not available in Classic View) can be used to send the computer into Sleep.

Note that Sleep is the default power saving state in Windows Vista.

Sleep uses very little system power, and takes a short time to return to full operation. After an extended period of time in Sleep the computer will save the contents of system memory (e.g. any open documents and applications) to the hard disk and shut the system down. When you are not using your computer for a certain length of time, which you specify in the operating system, it will enter Sleep mode to save power.

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.

Hibernate

Hibernate uses no power and saves all of your information on a part of the hard disk before it turns the system off. Although it saves the most power it takes the longest time to return to full operation. You can set your computer to automatically enter Hibernate when the battery power is almost depleted. You will need to enable Hibernate mode from the Advanced Settings in power plans, or you put the system directly into Hibernate mode from the Lock Menu. The system will resume from Hibernate mode by pressing the power button.

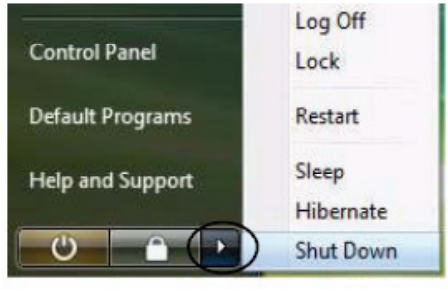


Figure 3 - 3 Lock Menu Hibernate

Configuring the Power Button

The power/sleep button (Fn + F4 key combo /////////) and closed lid may be set to send the computer in to either Sleep or Hibernate. In Sleep, the LED will blink green. In Hibernate the LED will be off (battery) or orange (AC/DC adapter). If the only the display is turned off, the LED will remain green.

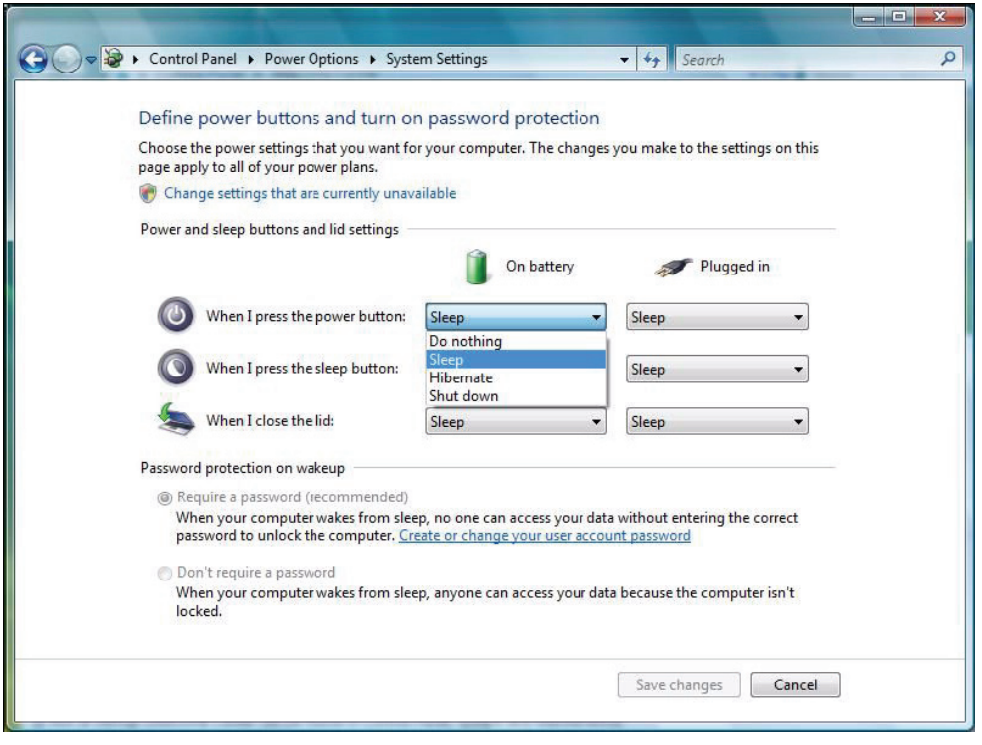


Figure 3-4 Power Options Define Power Buttons

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 selectint the options (click Change settings that are currently unavailable).

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.

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.

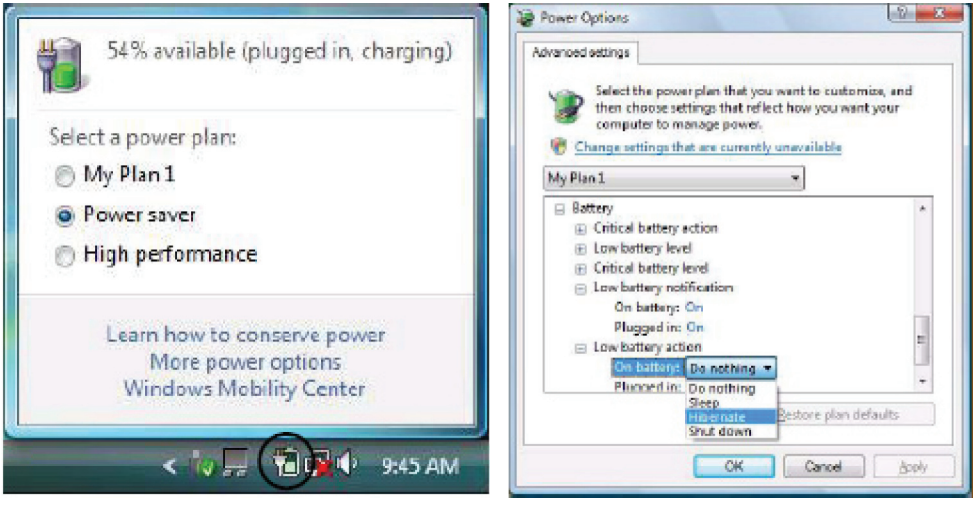


Figure 3-5 Battery Icon (Taskbar)
& Battery Advanced Settings

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, PC Cards etc.

Windows Mobility Center

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

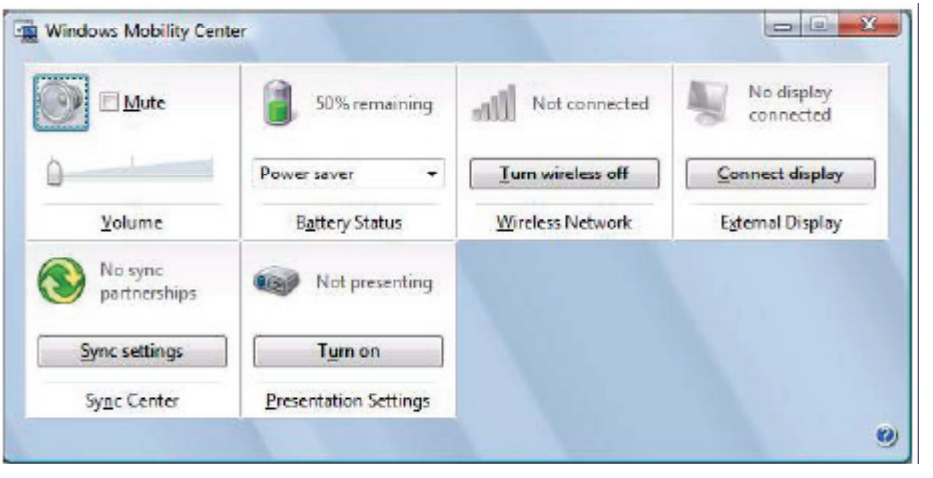


Figure 3-6 Windows Mobility Center

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 - 13 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 Indicators” on page 1 - 7 //////////for information on the battery charge status, and to “Battery Information” on page 3 - 9 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

Caution

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

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.

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.

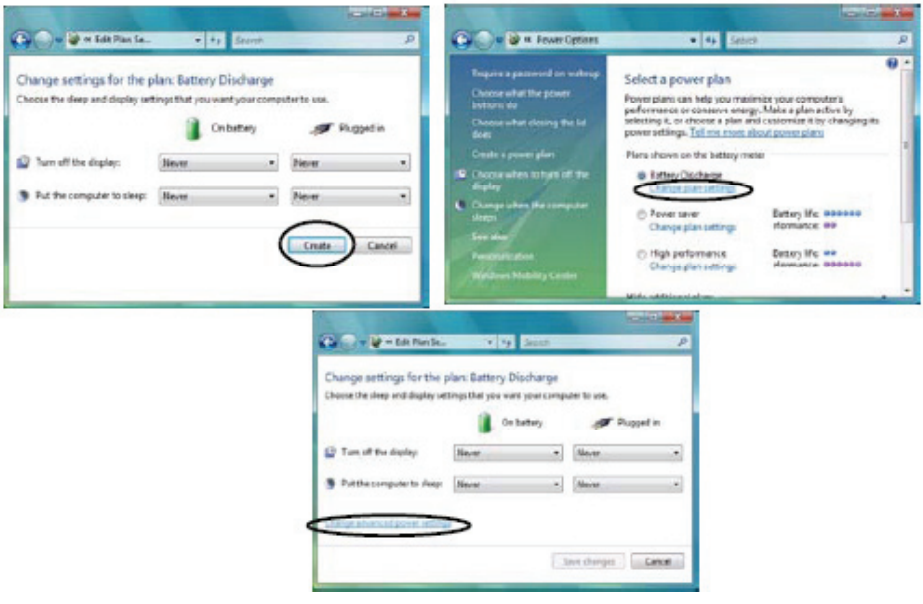


Figure 3-7 Power Plan Create

4. Click Change plan settings (after saving it) and click Change advanced power settings.
5. Scroll down to Battery and click + to expand the battery options.
6. Choose the options below (click Yes if a warning appears):

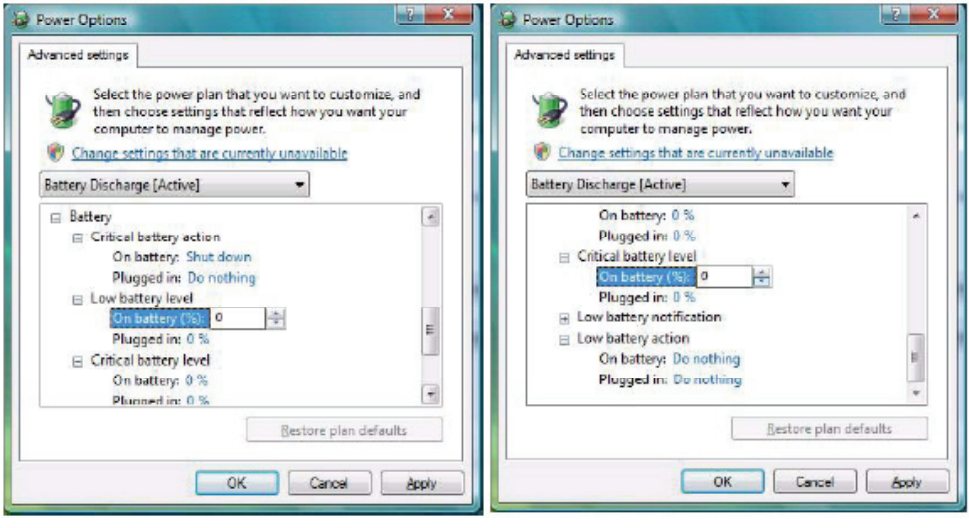


Figure 3-8 Power Options
Advanced Settings - Battery

- 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

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.

3D Ap-Key Button

The system will default to high performance video when powered by the AC/DC adapter (the 3D Ap-Key button will be illuminated in blue). If you switch from AC power to battery power the system will automatically change to a lower performance video mode setting in order to save power. High Performance Video can not be enabled when the system is battery powered (see “3D Ap-Key Button” on page 1- 7).

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 Indicators” on page 1 - 6 for information on the battery charge status, and to “Battery Information” on page 3 - 9 for more information on how to maintain and properly recharge the battery pack.)

Conserving Battery Power

To conserve battery power:

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.

Close modem or communication applications when they are not being used.

Remove any unused PC Cards from the computer (PC Cards quickly use up the battery power even if the system enters sleep mode).

Disconnect any unnecessary external devices.

Chapter 5: BIOS Utilities Overview

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›.

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.

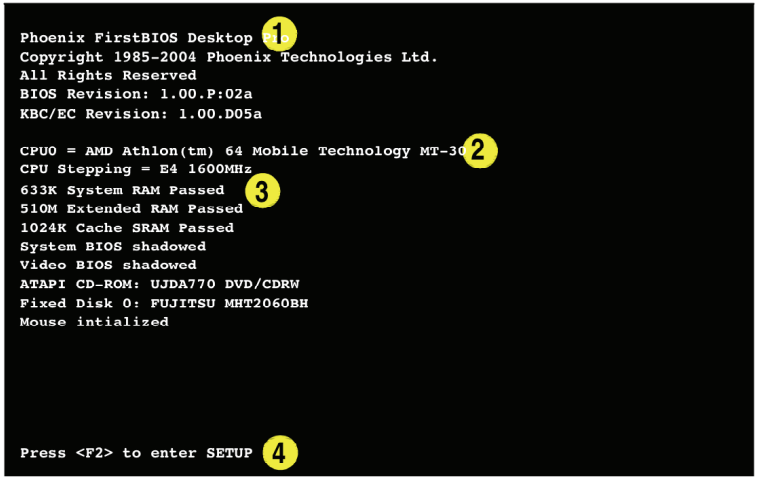


Figure 5-1 POST Screen

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 is for guideline purposes only.

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 ba¬sic 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 in Figure 5 - 1 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 five (5) 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 sub¬ject. 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

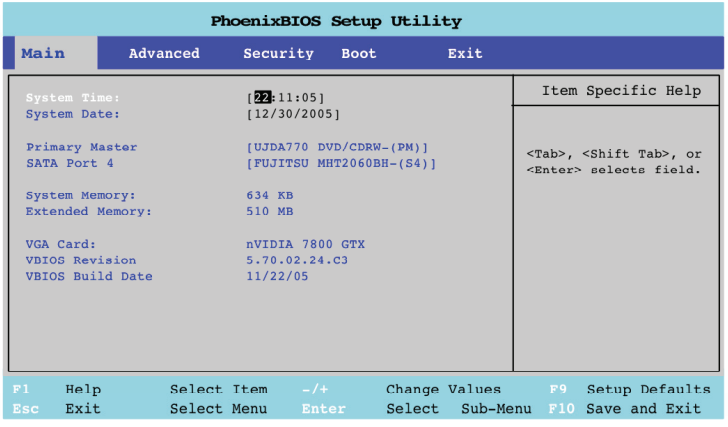


Figure 5 - 2 Main Menu

System Time & Date (Main Menu)

The hour setting uses the 24-hour system (i.e., ØØ = 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.

Primary Master/SATA Port 3/4 (Main Menu)

Pressing Enter here opens the sub-menu to show the configuration of hard disks and CD/DVD device(s) on the computer's SATA Channels. Use the Auto (Type:) set¬ting 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.

The Main menu also contains information on your video card and video BIOS ver¬sion.

Advanced Menu

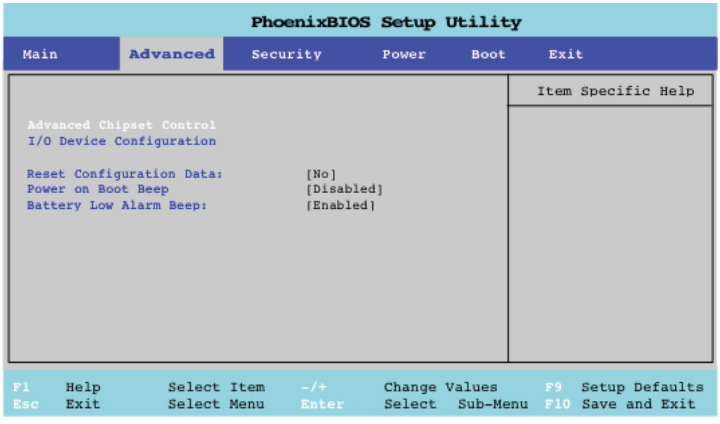


Figure 5 - 3 Advanced Menu

Advanced Chipset Control (Advanced Menu)

Pressing Enter here will access the sub-menu which allows you to disable the audio and modem devices if required; and you can also Enable/Disable the RAID function from this menu.

I/O Device Configuration (Advanced Menu)

The sub-menus under this item allow you to enable/disable the Serial port A (Serial Mouse), and FIR (Infrared) transceiver.

Reset Configuration Data (Advanced Menu)

This item is set to No as default. You can change the setting to Yes if you have in¬stalled a new add-on which has reconfigured the system, resulting in such a serious system conflict that the operating system is unable to boot.

Power On Boot Beep (Advanced Menu)

Use this menu to enable/disable the single beep sound at the end of the POST. This item is “Disabled” by default.

Battery Low Alarm Beep: (Advanced Menu)

Use this menu item to enable/disable the battery low alarm beep.

Security Menu

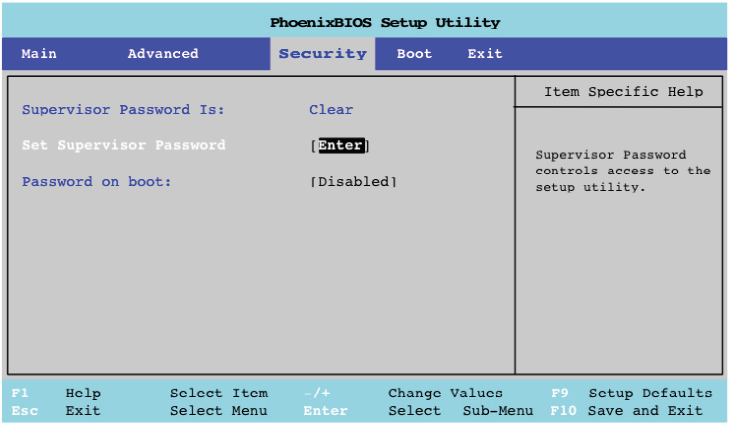


Figure 5 - 4 Security Menu

Set Supervisor Password (Security Menu)

You can set a password for access to the Setup utility. This will not affect access to the computer OS, (only the Setup utility) unless you choose to set a Password on Boot (see over).

Password on boot: (Security Menu)

Specify whether or not a password should be entered to boot the computer. 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.

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

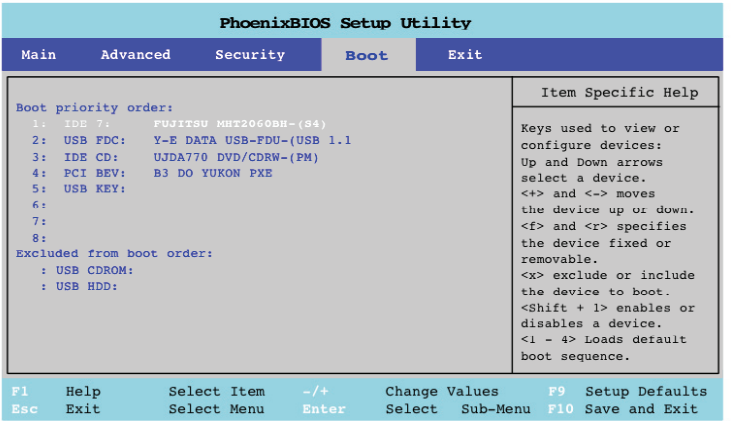


Figure 5 - 5 Boot Menu

When you turn the computer on it will look for an operating system (e.g. WindowsXP) 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

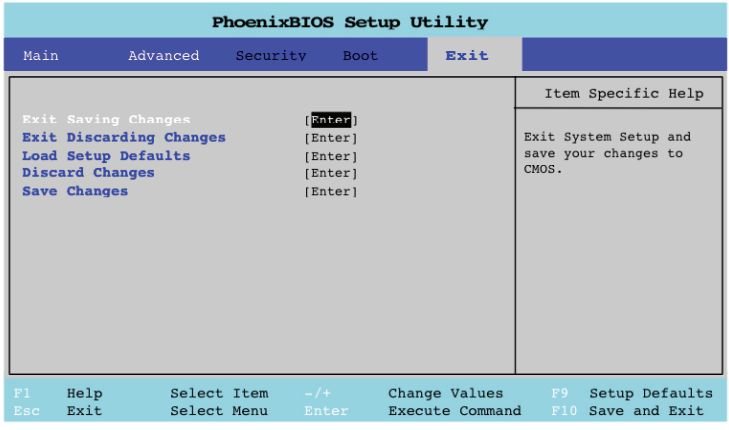


Figure 5 - 6 Exit Menu

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(s)
- Upgrading the System Memory (RAM)
- Upgrading the Optical (CD/DVD) Device(s)
- Removing the Video Card(s)

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

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).

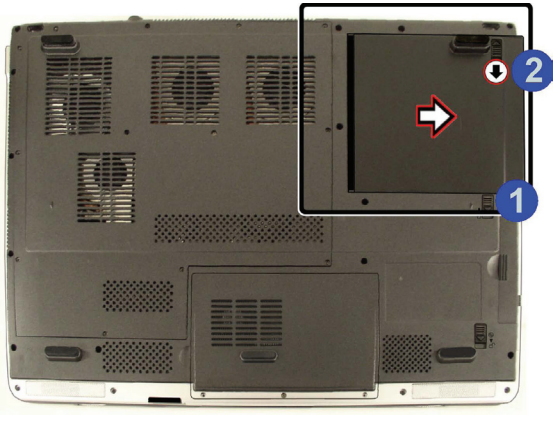
Upgrading the Processor

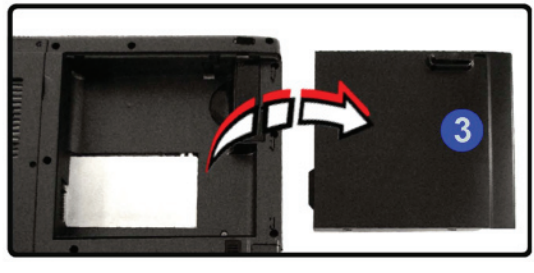
If you want to upgrade your computer by replacing the existing processor with a faster/new one you will need to contact your customer service representative. We recommend that you do not do this yourself, since if it is done incorrectly you may damage the processor or mainboard

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, turn it over and remove the battery.
2. Slide latch towards the unlock symbol and hold it in place, and slide latch in the direction of the arrow.
3. Slide the battery out and lift it up and out of the battery bay.





Upgrading the Hard Disk Drive(s)

The hard disk drive(s) can be taken out to accommodate other 2.5" serial (SATA II) hard disk drives with a height of 9.5mm (h) (see "Storage Options" on page C - 3). Follow your operating system's installation instructions, and install all necessary drivers and utilities when setting up a new hard disk.

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 FDD's required to install your operating system and programs.

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

1. Turn off the computer, and turn it over and remove the battery.
2. Locate the hard disk bay cover and remove screws
3. Remove the bay cover

Figure 6 - 2 HDD Bay Cover Removal

4. Slide the hard disk assembly in the direction of the arrow
5. Remove the hard disk assembly
6. Remove screws and separate the bracket from the hard disk
7. Reverse the process to install a new hard disk(s).

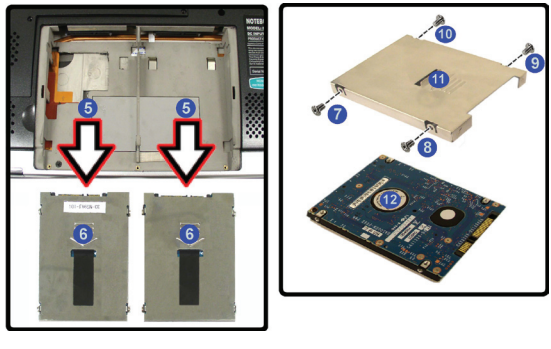


Figure 6 - 3 HDD Removal

Upgrading the System Memory (RAM)

The computer has two memory sockets for 200 pin Small Outline Dual In-line (SO¬DIMM) DDR type memory modules (see “Memory” on page C -2). The total mem¬ory size is automatically detected by the POST routine once you turn on your com¬puter.

1. Turn off the computer, and turn it over and remove the battery.
2. Locate the component bay cover and remove screws

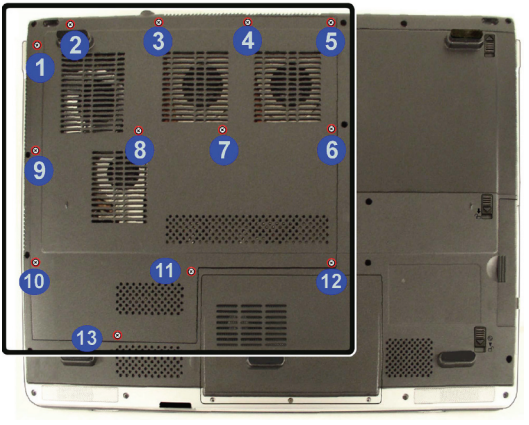


Figure 6 - 4 Bay Cover Screws

3. Remove the bay cover.

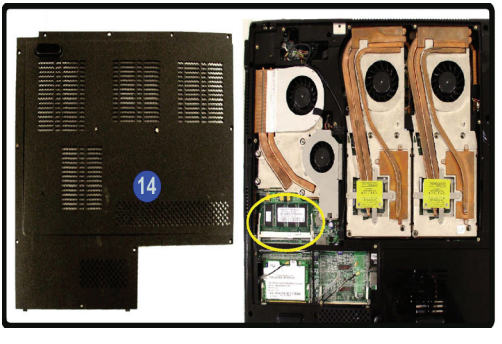


Figure 6 - 5 Bay Cover Removal

4. Gently pull the release latches (15 & 16) on the sides of the memory socket in the direction indicated by the arrows in Figure 6 - 6.

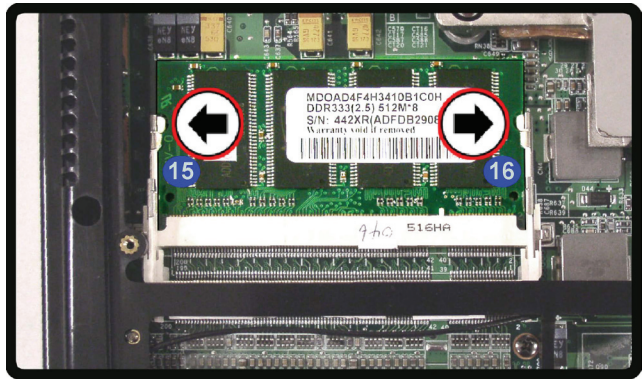


Figure 6 - 6 RAM Module Release

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

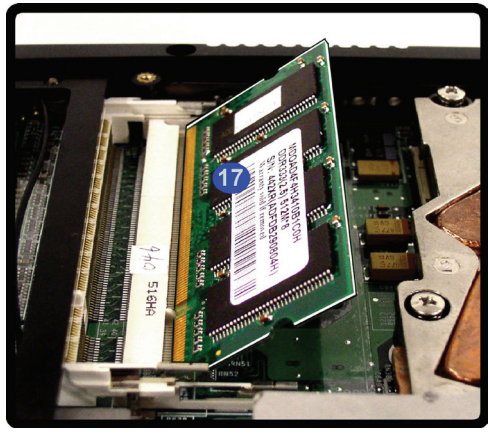


Figure 6 - 7 RAM Removal

6. Pull the latches to release the second module if necessary.
7. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory socket.
8. The module's pin alignment will allow it to only fit one way. Make sure the module is seated as far into the socket as it will go. DO NOT FORCE the module; it should fit without much pressure.
9. Press the module in and down towards the mainboard until the socket levers click into place to secure the module.
10. Replace the cover and screws (see Figure 6 - 4).
11. Restart the computer to allow the BIOS will register the new memory configuration as it starts up.

Contact Warning

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

Upgrading the Optical (CD/DVD) Device(s)

1. Turn the computer off, turn it over and remove the battery.
2. Slide the latch towards the unlock symbol and hold it in place.
3. Slide the optical device out of the computer at point

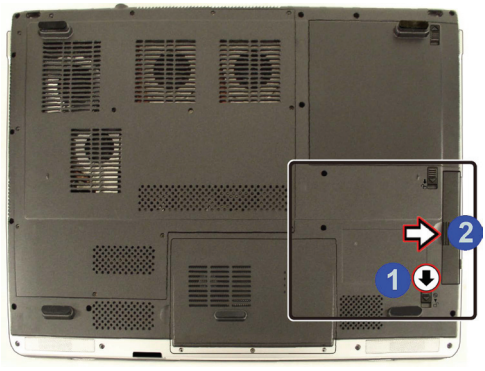


Figure 6 - 8 Removing the CD/ DVD Device(s)

Removing the Video Card(s)

1. Turn off the computer, and turn it over and remove the battery.
2. Locate the component bay cover and remove screws
3. Remove the bay cover.

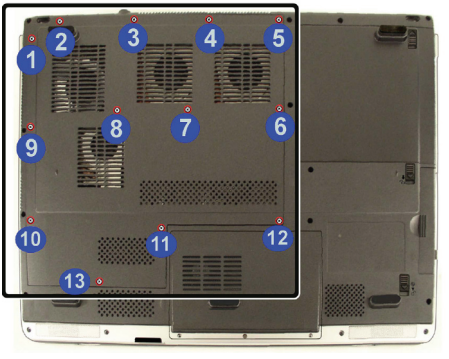


Figure 6 - 9 Bay Cover Removal

4. Remove screws.
5. Carefully (a cable is still connected) grip the plastic tag and lift the video card up.
6. Disconnect cable , and lift the video card off the computer.

Single Video Card

Note that if you are using a single video card, it must be inserted into Slot A (i.e. the left sided slot when viewed from the bottom with the front of the bachine towards you).

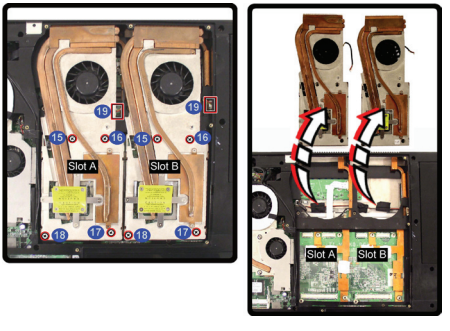


Figure 6 - 10 Video Card Removal

Chapter 7: Modules

Overview

This chapter contains the information on the various modules (some of which are optional) which may come with your computer, depending on the configuration purchased. If you are unsure please contact your service representative.

The chapter includes information on the following:

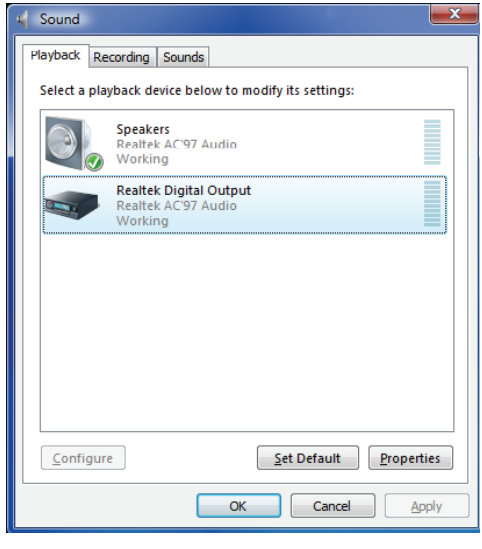
- PC Camera Module
- Mini-PCI Wireless LAN Module

PC Camera Module

If your purchase includes the optional PC Camera you will need to install the device driver for it as indicated on the following pages (make sure you install the drivers provided with the Support Disc).

PC Camera Audio Setup

If you wish to capture video & audio with your camera, it is necessary to setup the audio recording options in Windows. You can access these options by clicking on Start, and accessing the Control Panel.



The Wireless LAN

If your purchase option includes a Wireless LAN be sure that you install the proper driver provided with the Support Disc. Pay careful attention to the warnings concerning the use of wireless modules aboard aircraft, and the instructions on enabling/ disabling power to the module(s).

Power Toggle for the Wireless LAN and Bluetooth Modules

You will need to enable power to the modules by using the following key combinations: Fn + F11 = Wireless LAN Module Power Toggle

When the Wireless LAN module is powered on, the LED  will be green.

Be sure that the WLAN module is enabled when you are installing the drivers for it.

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 the aircraft.

Chapter 8: Troubleshooting

Overview

Should you have any problems with your computer, before consulting your service representative, you may want to try to solve the problem yourself. This chapter lists some common problems and their possible solutions. This can't anticipate every problem, but you should check here before you panic. If you don't find the answer in these pages, make sure you have followed the instructions carefully and observed the safety precautions in the preface. If all else fails, talk to your service representative. You should also make a record of what happened and what remedies you tried.

Of course, if something goes wrong, it will happen at the most inconvenient time possible, so you should preview this section just in case. If, after you've tried everything, and the system still won't cooperate, try turning it off for a few minutes and then rebooting. You will lose any unsaved data, but it may start working again. Then call your service representative.

Basic Hints and Tips

Many of the following may seem obvious but they are often the solution to a problem when your computer appears not to be working.

- Power - Is the computer actually plugged into a working electrical outlet? If plugged into a power strip, make sure it is actually working. Check the LED Power Indicators (see "LED Indicators" on page 1 - 6) to see the computer's power status.
- Connections - Check all the cables to make sure that there are no loose connections anywhere.
- Power Savings - Make sure that the system is not in Hibernate or Stand by mode by pressing the keys configured in your Power Management/Power Options (see "Configuring the Power Button" on page 3 - 8), the Fn + F4 key combination, or power button to wake-up the system.
- Brightness - Check the brightness of the screen by pressing the Fn + F8 and F9 keys to adjust the brightness (see Table 1 - 4, on page 1 - 8).
- Display Choice - Press Fn + F7 to make sure the system is not set to "external only" display (see Table 1 - 4, on page 1 - 8).
- Boot Drive - Make sure there are no floppy disks in any connected drive when you start up your machine (this is a common cause of the message "Invalid system disk - Replace the disk, and then press any key" / "Remove disks or other media. Press any key to restart").

Backup and General Maintenance

• Always backup your important data, and keep copies of your OS and programs safe, but close to hand. Don't forget to note the serial numbers if you are storing them out of their original cases, e.g. in a CD wallet.

• Run maintenance programs on your hard disk and OS as often as you can. You may schedule these programs to run at times when you are not using your computer. You can use those that are provided free with your OS, or buy the more powerful dedicated programs to do so.

• Write down your passwords and keep them safe (away from your computer). This is especially important if you choose to use a Boot password for the SCU (see "Security Menu" on page 5 - 10).

• Keep copies of vital settings files such as network, dialup settings, mail settings etc. (even if just brief notes).

Viruses

- Install an Anti-Virus program and keep the definitions file (the file which tells your program which viruses to look for) up to date. New computer viruses are discovered daily, and some of them may seriously harm your computer and cause you to lose data. Anti-Virus programs are commercially available and the definitions file updates are usually downloadable directly from the internet.
- Be careful when opening e-mail from sources you don't know. Viruses are often triggered from within email attachments so take care when opening any attached file. You can configure most Anti-Virus programs to check all e-mail attachments. Note: You should also beware of files from people you know as the virus may have infected an address book and been automatically forwarded without the person's knowledge.
- Keep a "Boot Floppy Disk" or "Bootable CD-ROM" (this disk provides basic information which allows you to startup your computer) handy. You may refer to your OS's documentation for instructions on how to make one, and many Anti-Virus programs will also provide such a disk (or at least instructions on how to make one).

Upgrading and Adding New Hardware/Software

- Do not be tempted to make changes to your Windows Registry unless you are very sure of what you are doing, otherwise you will risk severely damaging your system.
- Don't open your computer or undertake any repair or upgrade work if you are not comfortable with what you are doing.
- Read the documentation. We can assume, since you are reading this that you are looking at the computer's manual, but what about any new peripheral devices you have just purchased? Many problems are caused by the installation of new hardware and/or software. Always refer to the documentation of any new hardware and/or software, and pay particular attention to files entitled "READ ME" or "READ ME FIRST".
- When installing a new device always make sure the device is powered on, and in many cases you will need to restart the computer. Always check that all the cables are correctly connected.
- Make sure you have installed the drivers for any new hardware you have installed (latest driver files are usually available to download from vendor's websites).
- Thoroughly check any recent changes you made to your system as these changes may affect one or more system components, or software programs. If possible, go back and undo the change you just made and see if the problem still occurs.

Troubleshooting

Don't over complicate things. The less you have to deal with then the easier the source of the problem may be found; Example - if your computer has many devices plugged into its ports, and a number of programs running, then it will be difficult to determine the cause of a problem. Try disconnecting all of the devices and restarting the computer with all the peripheral devices unplugged. A process of elimination (adding and removing devices and restarting where necessary) will often find the source of a problem, although this may be time consuming.

Problems & Possible Solutions

Problem	Possible Cause - Solution
You turned the power on but it doesn't work.	Battery missing / incorrectly installed. Check the battery bay, make sure the battery is present and seated properly (the design of the battery only allows it to go in one way). Make sure there's nothing interfering with the battery contacts.
The **Battery LED power indicator , is blinking orange.**	Low Battery. Plugin the AC power source. If the computer doesn't start up immediately, turn it off then on again.
You are **losing battery power too quickly.**	The system is using too much power. If your OS has a Power Options scheme (see **"PowerSchemes" on page 3-** 4) check its settings. You may also be using a PC Card device that is drawing a lot of power.
Actual **battery operating time is shorter than expected.**	The battery has not been fully discharged before being recharged. Make sure the battery is fully discharged and recharge it completely beforere using (see **"Battery Information"on page 3-9**). Power Options have been disabled. Go to the Control Panel inWindows and re-enable the options. Aperipheral device or PC Card is consuming alot of power. Turn off the unused device to save power.

Problem	Possible Cause - Solution
The **computer feels too hot.**	Make sure the computer is properly ventilated and the vents/fan intakes are not blocked. If this doesn't cool it down, put the system into **Hibernate** mode or turn if off for an hour. Make sure the computer isn't sitting on a thermal surface (see **"Overheating" on page 1-9**). Make sure you're using the correct adapter. 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 vents/fan intake to be blocked.
Nothing appears on screen	The system is in a power saving mode. Toggle the sleep/resume key combination, Fn+F4 (see **"Sleep Button" on page 3-8**). The screen controls need to be adjusted. Toggle the screen control key combination, **Fn+F8/F9** (see Table 1-4, on page 1-8). If you're connected to an external monitor, make sure it's plugged in and turned on. You should also check the monitor's own brightness and contrast controls. The computer is set for a different display. Toggle the screen display key combination, Fn+F7 (see Table 1-4, on page 1-8). If an external monitor is connected, turn it on. The **screen saver** is activated. Press any key or touch the **TouchPad.**
No image appears on the external monitor I have plugged in and powered on.	You haven't installed the video driver and configured it appropriately from the **Control Panel.** See **"NVIDIA Video Driver Controls" on Page 8-1** for instructions on installing and configuring the video driver.

Problem	Possible Cause - Solution
You **forget the boot password.**	If you forget the password, you may have to discharge the battery of the CMOS. Contact your service representative for help.
Password Warning If you choose to set a boot password, 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.	
The **sound cannot be heard or the volume is verylow.**	The volume might be set too low. Check the volume control in the Volume Control Panel in the Windows taskbar, or use the key combination Fn+ F5 and F6 (see **"Audio Features" on page 2-11**) to adjust.
The **compact disc cannot be read.**	The compact disc is dirty. Clean it with a CD-ROM cleaner kit.
The **compact disc tray will not open** when there is a disc in the tray.	The compact disc is not correctly placed in the tray. Gently try to remove the discusing the eject hole (see **"LoadingDiscs" on page 2-3**).
The **DVD regional codes** can no longer be changed.	The code has been changed the maximum 5 times. (See **"DVDRegional Codes" on page 2-5**).

Problem	Possible Cause - Solution
The **TouchPad** doesn't work.	The Touch pad has been disabled. Press the Touchpad toggle **Fn+F1** key combination (make sure you have installed the Touchpad driver.
The **system freezes** or the screen goes dark.	The system's power saving features have timed-out. Use the AC/DCadapter, press a key on the keyboard, or press the sleep **Fn+F4** key combination, or press the power button if no LEDs are lit.
The system never goes into a **power saving mode.**	Power Options features are not enabled. Go to the **Windows** Power Options menu and enable the features you prefer (see **"System Power Options"on page 3- 6**). Make sure you have enabled **Hibernate** mode from the control panel.
The Wireless LAN/Bluetooth/PC Camera modules cannot be **detected.**	The modules are off. Check the appropriate LED indicator to see if the modules are on or off (see **"LED Indicators"on page 1- 6**). If the LED indicator is off, then press the appropriate AP-Key button/function key combination in order to enable the modules (see T**able1- 3, on page 1-7/ Table 1-4,on page 1-8**).
The **Wireless LAN/Bluetooth/PC Camera modules** cannot be **configured.**	The modules are off. Check the appropriate LED indicator to see if the modules are on or off (see **"LED Indicators"onpage 1- 6**). If the LED indicator is off, then press the appropriate AP-Key button/function key combination in order to enable the modules (see **Table1- 3, on page 1-7/Table 1-4,on page 1-8**).
The **PC Camera software** displays a black screen when the **EMAMCAP** software is run.	The software is using the incorrect device. If you have both the optional PC Camera and TV Tuner modules present, make sure you install the TV Tuner driver and application first. After installing the PC Camera driver you will need to select which device to use with the **EMAMCAP** program. Go to the Devices menu in the **EMAMCAP** program and select the **USB 2.01.3M PC CAM** device (see **"PCCamera & TV Tuner"on page 7- 2**).

Appendix A: Interface (Ports & Jacks)

Overview

The following chapter will give a quick description of the ports & jacks which allow your computer to commu¬nicate with external devices, connect to the internet etc.

Ports and Jacks

Icon	Description
 Built in Microphone	The built-in microphone allows you to record on your computer .
 Card Reader	The card reader allows you touse the following digital storage cards: **MMC (MultiMedia Card)** **SD(SecureDigital)** **MS(MemoryStick)** **MSPro(MemoryStickPro)**
Consumer Infrared Transceiver	The consumer infrared transceiver at the front of the computer allows the computer to communicate with the remote control unit supplied with the optional Mini-PCI TV Tuner (see **“System Map: Front & Rear Views ”on page 1-9**).
 DC-In Jack	Plug the supplied AC/DC adapter into this jack to power your computer.
 DVI-Out Port	The DVI-Out (Digital Visual Interface) Port allows you to connect an external monitor, or at Panel Display, to allow dual video or simultaneous display on the LCD and external monitor/FPD (see **“Display Devices & Options” on page 1-14**).If you are using an older type of monitor you will need to use a converter to convert the signal from DVI to VGA.
TV Antenna Jack	Use this jack to connect theTV antenna if you have included the optional Mini-PCI TV Tuner in your purchase.
 USB 2.0/1.1 Ports	These USB2.0 compatible ports (USB2.0 is fully USB1.1 compliant) are for low-speed peripherals such as keyboards, mice or scanners, and for high-speed peripherals such as external HDDs, digital video cameras or high-speed scanners etc. Devices can be plugged into the computer, and unplugged from the computer, without the need to turn the system off (if the power rating of your USB device is 500mA or above, make sure you use the power supply which comes with the device).

Icon	Description
 RJ-11 Phone Jack	This port connects to the built-in modem You may plug the telephone line directly into this RJ-11telephone connection. **Note:** Broadband (e.g. ADSL) modem susually connect to the LAN port.
 RJ-45 LAN Jack	This port supports LAN (Network) functions. **Note:** Broadband (e.g. ADSL)modems usually connect to the LAN port.
 S/PDIF-Out Jack	This S/PDIF (Sony/PhilipsDigital Interface Format) Out Port allows you to connect your DVD-capable PC to a Dolby AC-3 compatible receiver for “5.1” or ‘dts’ surround sound.
 Security Lock Slot	To prevent possible theft, a Kensington-type lock can be attached to this slot. Locks can be purchased at any computer store.
 Serial Port	Connect a serial type mouse to this port.
 S-Video-In Jack	The S-Video-In jack allows video input to the computer if you have included the optional Mini-PCI TV Tuner in your purchase.
 7-Pin S-Video-Out Jack	Connect your television to your computer and view DVDs,VCDs or anything else your computer can display. You will need a 7-pin S-Video plug to 4-pin S-Video jack adapter and S-Video cable to make the connection (see **“7-Pin S-Video-OutJack”on page 1-9**).
 Headphone-Out Jack	Headphones or speakers may be connected through this jack. Note: Set your system’s volume a reduced level before connecting to this jack.

Icon	Description
Infrared (FIR) Transceiver	The FIR (far infrared) transceiver on the right of the computer allows the computer to communicate with similarly equipped devices (see **“Configuring the Infrared Settings for “FIR”on page 2- 12**).
 Line-In Jack	The Line-In jack allows you to play audio sources through the computer’s speakers. Note that audio input through Line-in will default to the mute setting. To set up your audio sources to play through the Line-in jack go to the Sounds and Audio Devices Windows control panel and make sure the Mute box is not ticked.
 Microphone-In Jack	Plug an external microphone in to this jack to record on your computer.
IEEE 1394 Mini-IEEE 1394a Ports	This allows high-speed connection to various peripheral devices, e.g. external disk drives And digital cameras. The Mini-IEEE 1394a ports only support **SELF POWERED** IEEE 1394 devices.

Appendix B: Specifications

Latest Specification Information

The specifications listed in this Appendix are correct at the timeof going to press. Certain items (particularly processor types/speeds and CD/DVD Device types) maybe changed or updated due to the manufacturer's release schedule. Check with your service center for details.

Feature	Specifications	
Processor Types	Mobile AMD Turion™ 64 Processor (35W), 754-pin Micro-PGA Package Models **ML-28/ ML-32**	(µ0.09) 0.09 Micron Silicon-On-Insulator (SOI) ProcessTechnology,512KB L2 Cache 1.6GHz/ 1.8GHz
	Mobile AMD Turion™ 64 Processor (35W), 754-pin Micro-PGA Package Models **ML-30/ML-34/ML-37/ML-40/ML-42/ ML-44**	(µ0.09) 0.09 Micron Silicon-On-Insulator (SOI) ProcessTechnology,1MB L2 Cache 1.6GHz/ 1.8GHz/ 2.0GHz/ 2.2/ 2.4GHz
	Mobile AMD Turion™ 64 Processor (25W), 754-pin Micro-PGA Package Models **MT-28/MT-32**	(µ0.09) 0.09 Micron Silicon-On-Insulator (SOI) ProcessTechnology,512KB L2 Cache 1.6GHz/ 1.8GHz
	Mobile AMD Turion™ 64 Processor (25W), 754-pin Micro-PGA Package Models **MT-30/MT-34/ MT-37/MT-40**	(µ0.09) 0.09 Micron Silicon-On-Insulator (SOI) ProcessTechnology,1MB L2 Cache 1.6GHz/ 1.8GHz/ 2.0GHz/ 2.2GHz
Core Logic	nVIDIA nForce4 SLI Chipset	
LCD	19" WSXGA+ (1680 * 1050) TFT LCD	
Security	Security (Kensington® Type) Lock Slot	BIOS Password
Memory	Two 64-bit wide **DDR** Data Channels Two 200 Pin DDR SODIMM Sockets Supporting **DDR 400/333 MHz** Expandable up to **2GB** (Compatible with 1024MB, 512MB, 256MB **DDR 400/333 MHz** Modules)	
BIOS	One 512KB Flash ROM	Phoenix BIOS

Feature	Specifications	
Video Card Options	**NVIDIA GeForce Go 7800 GTX Dual/Single** **NVIDIAG70-GTX** High Performance Graphic Chip **512MB (Dual VGA)** or **256MB (Single VGA)** **DDR-III (DDR3)** Video RAM On Board 256bit Memory Interface PCI Express * 8 by 2 Supports DirectX® 9, SM 3.0 (NVIDIA Only) ModularDesign	**Video Card Options** Note that card types, specifications and drivers are subject to continual updates and changes. Check with your service center for the latest details on video cards supported.
Storage Options	One Changeable 2.5" 9.5mm (h) Serial-ATA II (SATA II) Hard Disk Drive One Changeable Optical Device Bay-12.7 mm (h) for Optical CD/DVD Device Drive Options (see"Optional"onpage C- 5)	
Card Reader	Built-In 4-in-1 Card Reader (SD/MMC/MS/MS Pro)	
Audio	SRS **WOW** Surround Sound Technology Inside 3D Enhaanced Sound System Sound Blaster PRO™ Compatible	Virtual 4-Channel Sound System S/PDIF Digital Output (5.1 CH) Built-In Microphone 4 * Built-InSpeakers Built-In Sub Woofer
Keyboard & Pointing Device	Full Size Winkey Keyboard with Numeric Keypad	Built-InTouchPad (Scroll Functionality Included)

Feature	Specifications
PCMCIA	**OneType II PCMCIA 3.3V/5V Socket**
I/O Ports	Five USB 2.0 Ports One Mini-IEEE1394a Port One Serial Port One Infrared Transceiver (IrDA 1.1 / FIR) One DVI-Out Port One Headphone/Speaker-Out Jack One Microphone-In Jack One S/PDIF Out Jack One Line-In Jack for Audio Input One RJ-11Jack (Modem) One RJ-45 Giga LAN (Local Area Network) Jack One DC-In Jack One 7-Pin S-Video-Out Jack for TV & HDTV Output (requires adapter) One TV Antenna (Analog/Digital) Jack (Functions with **Optional** TV Tuner Module) One Consumer Infrared Transceiver (Functions with **Optional** TV Tuner Module) One S-Video-In Jack for Video Input (Functions with **Optional** TV Tuner Module)
Communication	Infrared Transceiver Infrared Transfer 1cm ~ 1M operating Distance 115.2K bps SIR 4M bps FIR IrDA 1.1 Compliant 10/100/1000 BASE-TX Fast Ethernet LAN on board (PCIe Interface) Integrated 56k AC'97 Modem (V.92 Compliant) 802.11a/b/g Mini-PCI Wireless LAN Module BluetoothTM ClassII V1.2 USB2.0 Module 1.3MPixel USB2.0Video Camera Module **(Factory Option)** TV Tuner Module (either analog only **OR** analog/digital options) with Mini-PCI interface **(Factory Option)**

Feature	Specifications
Operating Systems Supported	Windows XP SP2 and Windows Vista
Power Management	Supports ACPI 2.0
Power	Full Range AC/DCAdapter–AC in100 ~ 240V,47 ~ 63Hz DC Output 20V, 11 A (220Watts) Easy Changeable 12-Cell Smart Lithium-Ion 6600mAH /14.8V Main Battery
Envirnonmental Spec	**Temperature** Operating: 5°C~ 35°C Non-Operating: -20°C~60°C **Relative Humidity** Operating: 20% ~ 80% Non-Operating: 10% ~ 90%
Physical Dimensions & Weight	476mm(w)*343mm(d)*29.5~47.8mm (h) 6.6kg with 12-Cell Battery
Optional	**Optical Drive Module Options:** DVD/CD-RW Combo Drive Module DVD-Dual Drive Module DVD-SuperMulti Drive Module TV Tuner Module (either analog only **OR** analog/digital options) with Mini-PCI Interface **(Factory Option)** 1.3M Pixel USB 2.0 Video Camera Module **(Factory Option)** DVD Software Player