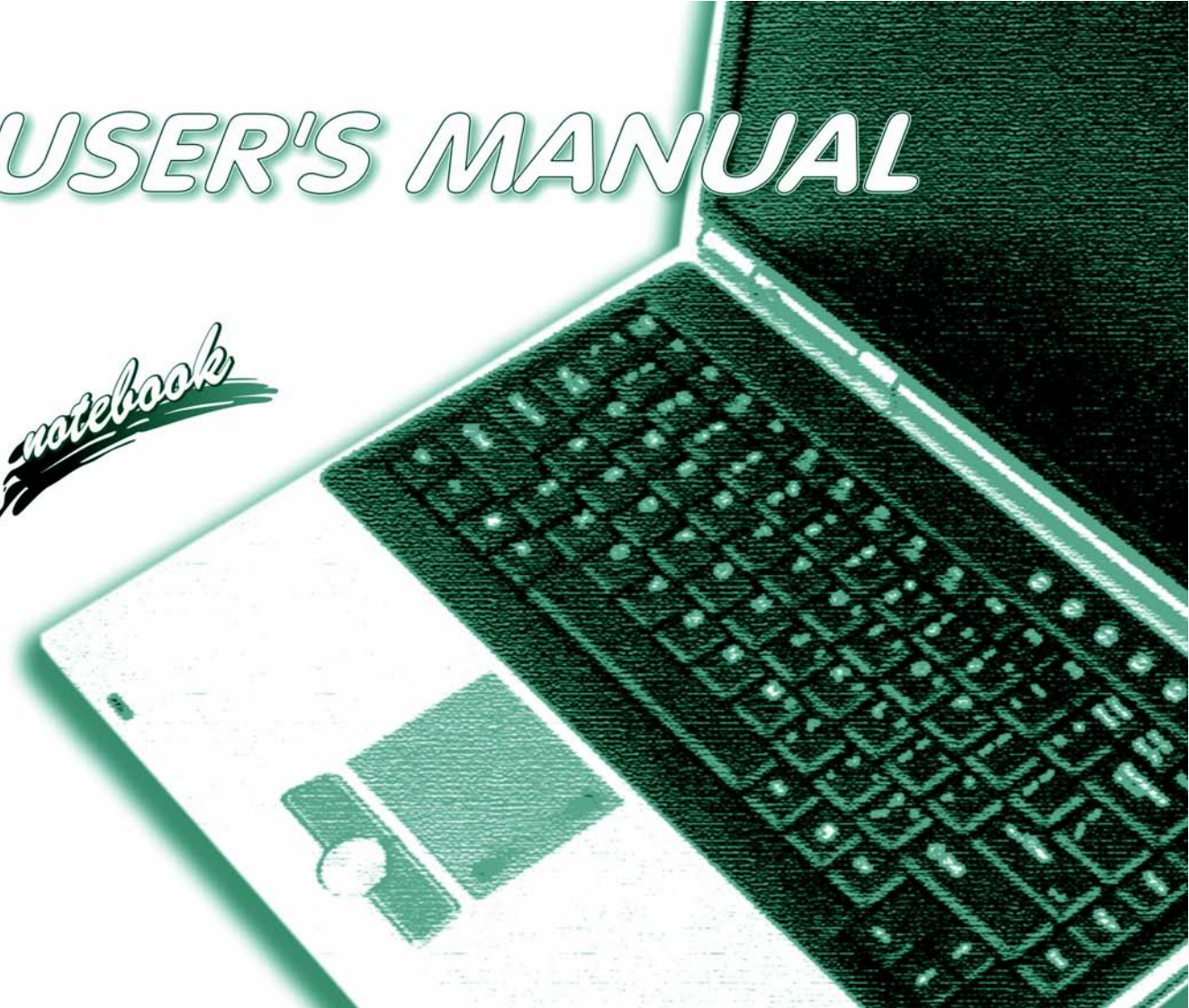


# USER'S MANUAL

*notebook*





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### **FCC Statement (Federal Communications Commission)**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re orient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the service representative or an experienced radio/TV technician for help.



#### **Warning**

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

## 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, 9A 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**

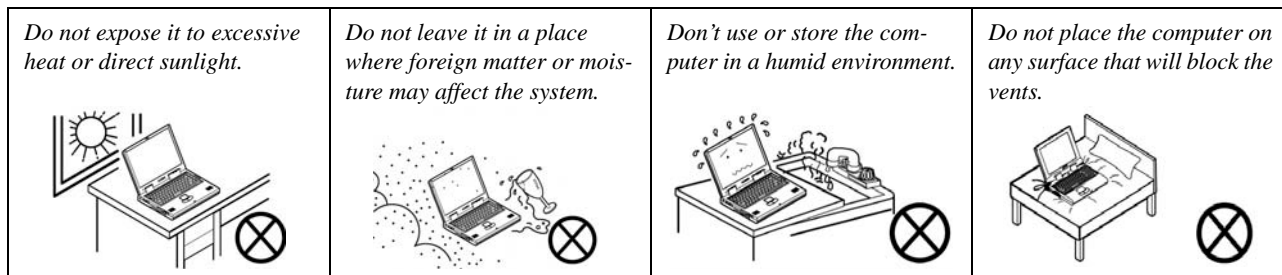
### Instructions for Care and Operation

The notebook computer is quite rugged, but it can be damaged. To prevent this, follow these suggestions:





1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.





2. **Keep it dry, and don't overheat it.** Keep the computer and power supply away from any kind of heating element. This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.



3. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
4. **Follow the proper working procedures for the computer.** Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.

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

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

### Power Safety

The computer has specific power requirements:



#### Power Safety Warning

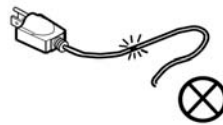
Before you undertake any upgrade procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines). It is advisable to also remove your battery in order to prevent accidentally turning the machine on.

- Only use a power adapter approved for use with this computer.
- Your AC adapter may be designed for international travel but it still requires a steady, uninterrupted power supply. If you are unsure of your local power specifications, consult your service representative or local power company.
- The power adapter may have either a 2-prong or a 3-prong grounded plug. The third prong is an important safety feature; do not defeat its purpose. If you do not have access to a compatible outlet, have a qualified electrician install one.
- When you want to unplug the power cord, be sure to disconnect it by the plug head, not by its wire.
- Make sure the socket and any extension cord(s) you use can support the total current load of all the connected devices.
- Before cleaning the computer, make sure it is disconnected from any external power supplies (i.e. AC adapter or car adapter).

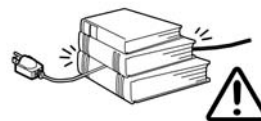
*Do not plug in the power cord if you are wet.*



*Do not use the power cord if it is broken.*



*Do not place heavy objects on the power cord.*





## Battery Precautions

- Only use batteries designed for this computer. The wrong battery type may explode, leak or damage the computer.
- Do not continue to use a battery that has been dropped, or that appears damaged (e.g. bent or twisted) in any way. Even if the computer continues to work with a damaged battery in place, it may cause circuit damage, which may possibly result in fire.
- Recharge the batteries using the notebook's system. Incorrect recharging may make the battery explode.
- Do not try to repair a battery pack. Refer any battery pack repair or replacement to your service representative or qualified service personnel.
- Keep children away from, and promptly dispose of a damaged battery. Always dispose of batteries carefully. Batteries may explode or leak if exposed to fire, or improperly handled or discarded.
- Keep the battery away from metal appliances.
- Affix tape to the battery contacts before disposing of the battery.
- Do not touch the battery contacts with your hands or metal objects.



### Battery Disposal & Caution

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

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

## Preface

### Cleaning

Do not apply cleaner directly to the computer; use a soft clean cloth.

Do not use volatile (petroleum distillates) or abrasive cleaners on any part of the computer.

### Servicing

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

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



#### Removal Warning

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

## Travel Considerations

### Packing

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

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



#### Power Off Before Traveling

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

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

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

**Get power where you can** - If an electrical outlet is available, use the AC 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

Notice .....	I	System Map: Right View .....	1-11
FCC Statement .....	II	System Map: Bottom View .....	1-12
Instructions for Care and Operation .....	IV	Windows XP Start Menu & Control Panel .....	1-13
Power Safety .....	VI	Video Features .....	1-14
Battery Precautions .....	VII	Video Driver Controls .....	1-14
Cleaning .....	VIII	Display Devices & Options .....	1-15
Servicing .....	VIII	Power Management Features .....	1-16
Travel Considerations .....	IX		
<b>Quick Start Guide</b>			
Overview .....	1-1	<b>Features &amp; Components</b>	
Advanced Users .....	1-2	Overview .....	2-1
Beginners and Not-So-Advanced Users .....	1-2	Hard Disk Drive .....	2-2
Warning Boxes .....	1-2	Optical Device .....	2-3
Not Included .....	1-2	Loading Discs .....	2-3
System Software .....	1-3	Handling CDs or DVDs .....	2-4
System Startup .....	1-4	DVD Regional Codes .....	2-5
System Map: Top View with LCD Panel Open .....	1-5	4-in-1 Card Reader .....	2-6
LED Indicators .....	1-6	PC Card Slot .....	2-7
Quick-Key Buttons .....	1-7	Inserting and Removing PC Cards .....	2-7
Keyboard .....	1-7	Hot Keys .....	2-8
System Map: Front & Rear Views .....	1-9	Check Mail Program .....	2-10
System Map: Left View .....	1-10	TouchPad and Buttons/Mouse .....	2-13
		Configuring the TouchPad and Buttons .....	2-14
		Adding a Printer .....	2-15

## Preface

USB Printer .....	2-15
Install Instructions: .....	2-15
Parallel Printer .....	2-15

## Video & Audio Controls

Overview .....	3-1
Advanced Video Controls .....	3-2
Keyboard Video Controls .....	3-2
Dynamic Video Memory Technology .....	3-3
Display Properties .....	3-4
Making Adjustments for the Display .....	3-4
Intel Extreme Graphics 2 for Mobile .....	3-6
Schemes .....	3-8
Display Devices .....	3-9
Switching/Enabling Displays (Keyboard) .....	3-9
Switching/Enabling Displays (Driver) .....	3-10
Multi-Monitor Modes .....	3-11
Intel(R) Dual Display Clone .....	3-11
Extended Desktop .....	3-11
TV System .....	3-15
Audio Features .....	3-16

## Power Management

Overview .....	4-1
----------------	-----

Advanced Configuration and Power Interface .....	4-1
The Power Sources .....	4-2
AC Adapter .....	4-2
Battery .....	4-2
Turning on the Computer .....	4-3
Power Schemes .....	4-4
System Power Options .....	4-6
Hibernate Mode vs. Shutdown .....	4-6
Standby Mode vs. Hibernate Mode .....	4-6
Standby .....	4-7
Hibernate .....	4-7
Configuring the Power Button .....	4-8
Battery Information .....	4-9
New Battery .....	4-9
Battery Life .....	4-9
Recharging the Battery with the AC Adapter .....	4-10
Proper handling of the Battery Pack .....	4-11
Battery FAQ .....	4-12

## Drivers & Utilities

What to Install .....	5-1
Module Driver Installation .....	5-1
Service Packs .....	5-3
Authorized Driver Message .....	5-4
Version Conflict Message .....	5-4



Updating/Reinstalling Individual Drivers .....	5-4	Non-Fatal Errors .....	6-3
Driver Installation .....	5-5	The System Configuration Utility .....	6-4
Driver Installation Application .....	5-5	Entering Setup .....	6-4
Driver Installation Procedure .....	5-7	Working with the Menu Bar .....	6-5
New Hardware Found .....	5-7	Working with the Pull-Down Menu .....	6-6
Service Pack Installation .....	5-7	Working with Sub-Menus .....	6-7
Chipset (Win2000/WinXP) .....	5-7	Startup Menu .....	6-8
Audio (Win2000/WinXP) .....	5-7	Fast Boot (Startup Menu) .....	6-8
Video (Win2000/WinXP) .....	5-8	Boot Device (Startup Menu) .....	6-9
LAN (Win2000/WinXP) .....	5-8	Display (Startup Menu) .....	6-9
Modem (Win2000/WinXP) .....	5-9	Enable Battery Low Beep (Startup Menu) .....	6-9
Quick-Key (Win2000/WinXP) .....	5-9	Enable Power On Beep (Startup Menu) .....	6-9
TouchPad (Win2000/WinXP) .....	5-10	Display OEM logo (Startup Menu) .....	6-10
PCMCIA & Card Reader (Win2000/WinXP) ....	5-10	Fast Boot for Windows XP (Startup Menu) .....	6-10
Check Mail (Win2000/WinXP) .....	5-11	Boot and SCU Passwords (Startup Menu) .....	6-10
Hot Key (Win2000/WinXP) .....	5-11	Disks Menu .....	6-11
Wireless LAN (Win2000/WinXP) .....	5-12	IDE Settings (Disks Menu) .....	6-11
Bluetooth (Win2000/WinXP) .....	5-12	Virus Alerts (Disks Menu) .....	6-11
PC Camera (Win2000/WinXP) .....	5-12	Components Menu .....	6-12
<b>BIOS Utilities</b>		LPT Port (Components Menu) .....	6-12
Overview .....	6-1	Keyboard Numlock (Components Menu) .....	6-12
The Power-On Self Test (POST) .....	6-2	Keyboard Repeat/Keyboard Type (Components Menu) .....	6-12
Failing the POST .....	6-3	Power Menu .....	6-13
Fatal Errors .....	6-3	Low/Medium/High/Customize	

## Preface

Power Saving (Power Menu) .....	6-13
CPU SpeedStep Controls (Power Menu) .....	6-14
Turn on power/radio for ..... (Power Menu) .....	6-14
Exit Menu .....	6-15
Save and Exit (Exit Menu) .....	6-15
Exit (No Save) - (Exit Menu) .....	6-16
Default Settings (Exit Menu) .....	6-16
Restore Settings (Exit Menu) .....	6-16

## Upgrading The Computer

Overview .....	7-1
When Not to Upgrade .....	7-2
Removing the Battery .....	7-3
Upgrading the Hard Disk Drive(s) .....	7-4
Upgrading the System Memory (RAM) .....	7-6
Upgrading the Optical (CD/DVD) Device(s) .....	7-8
Upgrading the Processor .....	7-9

## Modules

Overview .....	8-1
Intel PRO/Wireless Mini-PCI WLAN Module .....	8-2
Intel PRO/Wireless 2100 WLAN Driver Installation (Win2000) .....	8-4
Intel PRO/Wireless 2100 WLAN	

Driver Installation (WinXP) .....	8-6
Intel PRO/Wireless 2200BG WLAN Driver Installation (Win2000) .....	8-8
Intel PRO/Wireless 2200BG WLAN Driver Installation (WinXP) .....	8-10
Intel PRO/Wireless 2195ABG WLAN Driver Installation (Win2000) .....	8-12
Intel PRO/Wireless 2195ABG WLAN Driver Installation (WinXP) .....	8-13
Bluetooth Module .....	8-14
Bluetooth Driver Installation (Win2000) .....	8-15
Bluetooth Driver Installation (WinXP) .....	8-17
Bluetooth Control Panel Options .....	8-18
PC Camera .....	8-20
PC Camera Driver Installation (Win2000) .....	8-21
PC Camera Driver Installation (WinXP) .....	8-21
PC Camera Audio Setup .....	8-22
(WinXP) .....	8-22
(Win2000) .....	8-22
AMCAP .....	8-24

## Troubleshooting

Overview .....	9-1
Basic Hints and Tips .....	9-2
Backup and General Maintenance .....	9-3

Viruses ..... 9-4  
 Upgrading and Adding New Hardware/Software .... 9-5  
 Power ..... 9-7  
 Display ..... 9-9  
 Boot Password ..... 9-10  
 Audio & CD Device ..... 9-11  
 Keyboard ..... 9-12  
 Operation ..... 9-13  
 Modules ..... 9-14

**Interface (Ports & Jacks)**

Built-In Microphone ..... A-2  
 Card Reader Port ..... A-2  
 DC-In Jack ..... A-2  
 External Monitor (VGA) Port ..... A-2  
 Headphone-Out Jack ..... A-2  
 Line-In Jack ..... A-2  
 Microphone-In Jack ..... A-3  
 Mini-IEEE 1394a Port ..... A-3  
 Parallel Port ..... A-3  
 RJ-11 Phone Jack ..... A-3  
 RJ-45 LAN Jack ..... A-3  
 Security Lock Slot ..... A-4  
 S/PDIF-Out Jack ..... A-4  
 S-Video-Out Jack ..... A-4

USB 2.0/1.1 Ports ..... A-4

**Advanced Power Saving**

Power Schemes and Processor Performance ..... B-2  
 Intel CPU SpeedStep Controls ..... B-3  
 Windows XP Service Pack 2 ..... B-3  
 Hot Key Display ..... B-3

**Specifications**

Processor Types ..... C-2  
 Core Logic ..... C-2  
 Security ..... C-2  
 Memory ..... C-2  
 BIOS ..... C-2  
 LCD Options ..... C-2  
 Display ..... C-3  
 Storage ..... C-3  
 Audio ..... C-3  
 Keyboard & Pointing Device ..... C-3  
 PCMCIA ..... C-3  
 Interface ..... C-3  
 Card Reader ..... C-4  
 Communication ..... C-4  
 Power Management ..... C-4

## Preface

Power .....	C-4
Environmental Spec .....	C-4
Physical Dimensions & Weight .....	C-5
Optional .....	C-5
WLAN Module Options .....	C-5


# Chapter 1: Quick Start Guide

## Overview

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

- **Chapter 2** A guide to using some of the main features of the computer e.g. the **storage devices (hard disk, optical device, 4-in-1 card reader, PC Card), Hot Keys, Mail Program, Touch Pad, Mouse & Printer.**
- **Chapter 3** The **video** and **audio** features of the computer.
- **Chapter 4** The computer's **power** saving options.
- **Chapter 5** The installation of the **drivers** and utilities essential to the operation or improvement of some of the computer's subsystems.
- **Chapter 6** An outline of the computer's built-in software. or **BIOS (Basic Input Output System).**
- **Chapter 7** Instructions for **upgrading** your computer.
- **Chapter 8** A quick guide to the computer's **Wireless LAN, Bluetooth, and PC Camera modules** (some of which may be **optional** depending on your purchase configuration).
- **Chapter 9** A **troubleshooting** guide.
- **Appendix A** Definitions of the **interface, ports/jacks** which allow your computer communicate with external devices.
- **Appendix B** The computer's **advanced power features.**
- **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 *“What to Install” on page 5 - 1*, *“BIOS Utilities” on page 6 - 1* and *“Upgrading The Computer” on page 7 - 1* in the User’s Manual. You may also find the notes marked with a  of interest to you.




### Notes

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

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

## Warning Boxes

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

## Not Included

Operating Systems (e.g. *Windows 2000 Professional*, *Windows XP etc.*) and applications (e.g. word processing, spreadsheet and database programs) have their own manuals, so please consult the appropriate manuals.

## 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 operating systems:

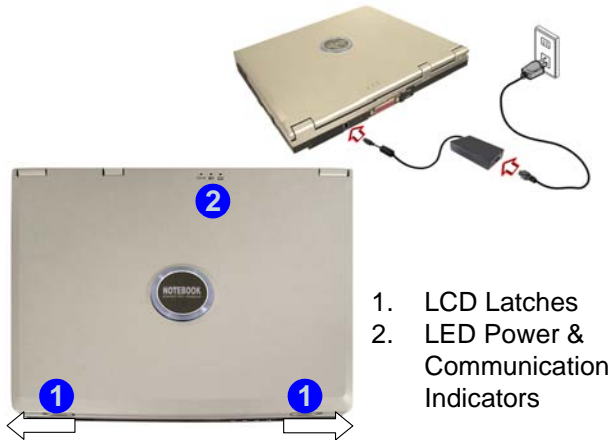
- *Microsoft Windows 2000*
- *Microsoft Windows XP (Home & Professional Editions)*



### Drivers

If you are installing new system software, or are re-configuring your computer for a different system, you will need to install the drivers listed in ***“Drivers & Utilities” on page 5 - 1***. Drivers are programs which act as an interface between the computer and a hardware component e.g. a wireless network module. It is very important that you install the drivers in the order listed in ***Table 5 - 1, on page 5 - 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 5 - 1*** for installation instructions.

## System Startup



1. Remove all packing materials.
2. Place the computer on a stable surface.
3. Securely attach any peripherals you want to use with the notebook (e.g. keyboard and mouse) to their ports.
4. Attach the AC 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 adapter.
5. Move the LCD latches **1** in the direction of the arrows to release the top cover (hold the left latch in position).
6. Raise the lid/LCD to a comfortable viewing angle, and press the power button to turn the computer "on".
7. Adjust the LCD panel to a comfortable viewing angle.
8. The LED indicators **2** show the power and battery status of the computer, and give notification of e-mail received.

Figure 1 - 1 - AC Adapter Plugged-In & Top Panel with LCD Closed



### 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



### Wireless Device Operation Aboard Aircraft

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

If you **restart/shut down** the computer the power status of the module will remain **the same** as it was before the restart/shut down.



1. Optional Built-In PC Camera
2. LCD
3. LED Power & Communication Indicators
4. LED Status Indicators
5. Quick-Key Buttons
6. Power Button
7. Keyboard
8. TouchPad and Buttons
9. Speaker

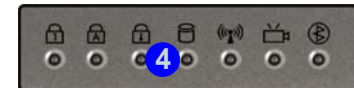





Figure 1 - 2 - Top View with LCD Panel Open

## Quick Start Guide








### LED Indicators

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

*Table 1 - 1 - LED Power & Communication Indicators*

Icon	Color	Description
	Orange	DC Power is Plugged In
	Green	The Computer is On
	Blinking Green	The Computer is in Standby Mode
	Orange	The Battery is Charging
	Green	The Battery is Fully Charged
	Blinking Orange	The Battery Has Reached Critically Low Power Status
	Blinking Green	New Mail Has Arrived

*Table 1 - 2 - LED Status Indicators*

Icon	Color	Description
	Green	Number Lock Activated
	Green	Caps Lock Activated
	Green	Scroll Lock Activated (to activate press Fn & ScrLk)
	Green	Hard Disk Activity
	Green	The Optional WLAN Module is Powered On
	Green	The Optional PC Camera Module is Powered On
	Green	The Optional Bluetooth Module is Powered On

### Quick-Key Buttons

These Quick-Keys give instant access to the default Internet browser and e-mail program, and toggle power to the optional module(s) (WLAN/Bluetooth/PC Camera). Make sure you install the driver to enable the Quick-Key functions (refer to *“What to Install” on page 5 - 1*).

Table 1 - 3 - Quick-Key Buttons

Quick-Key	Function
	Activate the Default E-Mail Program
	Activate the Default Internet Browser
	Toggle Power to the Wireless LAN Module
	Toggle Power to the Optional PC Camera Module
	Toggle Power to the Optional Bluetooth Module

### Keyboard

The keyboard has an embedded numerical keypad for easy numeric data input (see *Figure 1 - 3*) and features Function Keys to allow you to change operational features instantly.



Figure 1 - 3 - Keyboard

**Other Keyboards**

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

## Quick Start Guide

### Function Keys & Hot Keys

To use the function/ Hot Keys, press and hold the **Fn** key, then press the appropriate function key (Esc - F10 etc.). Additional Hot Keys/enhanced functions are available after installing the **Hot Key** driver (see “*Hot Key (Win2000/WinXP)*” on page 5 - 11 & “*Hot Keys*” on page 2 - 8).

Key	Function	Key	Function
Fn	Function Key	Fn + F7	Display Toggle
Fn + Esc	Sleep Toggle	Fn + F8	Decrease LCD Brightness
Fn + F1	Hot Key Help	Fn + F9	Increase LCD Brightness
Fn + F3	Mute Toggle	Fn + NumLk	Number Lock Toggle
Fn + F5	Decrease Audio Volume	Fn + ScrLk	Scroll Lock Toggle
Fn + F6	Increase Audio Volume		

Table 1 - 4 - Function & Hot Keys



#### Special Characters

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

## System Map: Front & Rear Views

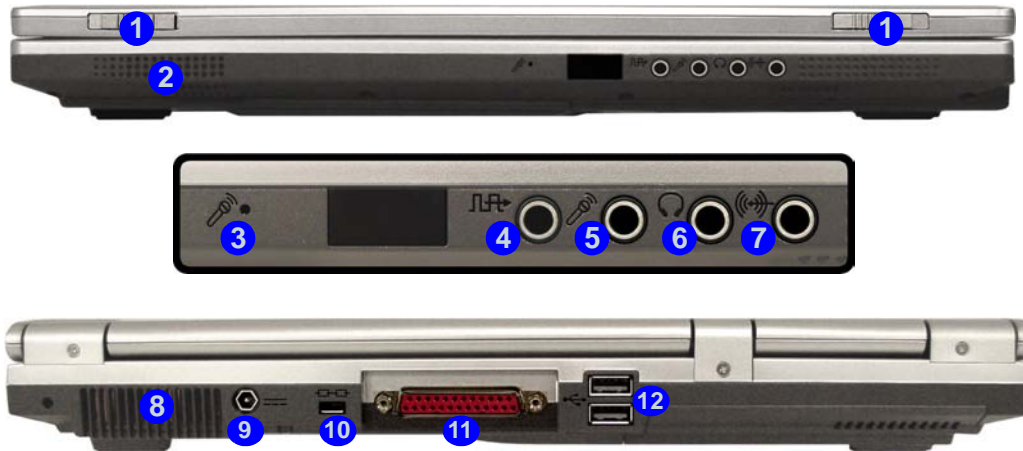


Figure 1 - 4  
Front & Rear Views

1. LCD Latches
2. Speaker
3. Built-In Microphone
4. S/PDIF-Out Jack
5. Microphone-In Jack
6. Headphone-Out Jack
7. Line-In Jack
8. Vent/Fan Intake
9. DC-In Jack
10. Security Lock Slot
11. Parallel Port
12. 2 \* USB 2.0 Ports



### Overheating

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

## System Map: Left View

Figure 1 - 5  
Left View

1. RJ-45 LAN Jack
2. S-Video-Out Jack
3. External Monitor (VGA) Port
4. Mini-IEEE 1394a Port
5. 2 \* USB 2.0 Ports



### IEEE 1394

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

## System Map: Right View



Figure 1 - 6 - Right View

1. Optical Device Drive Bay (for CD/DVD Device - see page 2 - 3)
2. PC Card Slot (see page 2 - 7)
3. 4-in-1 Card Reader (reads SD/ MMC/ MS & MS Pro formats - see page 2 - 6)
4. Security Lock Slot



### 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 page 2 - 5](#)).

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



### 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”.

## System Map: Bottom View

Figure 1 - 7 - Bottom View

1. Vent/Fan Intake
2. Modem/Bluetooth & Modem Combo Module Cover
3. CPU Cover
4. Hard Disk/Memory/WLAN (RAM) Cover
5. Battery Cover

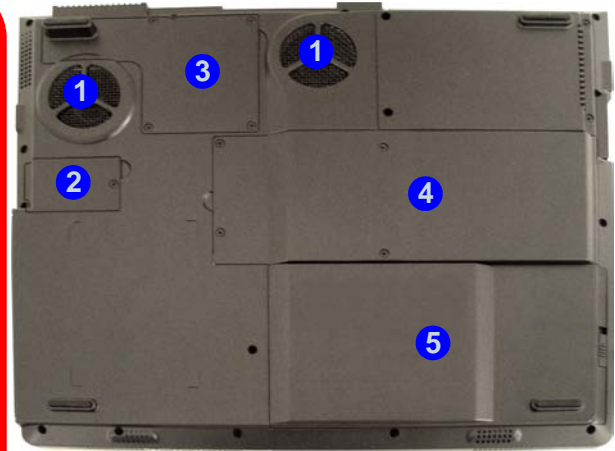


### CPU

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

### Overheating

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



### Battery Information

Always completely discharge, then fully charge, a new battery before using it. Use the computer with battery power until it shuts down due to a low battery. When charging the battery, don't stop until the LED charging indicator light changes from orange to green. Completely discharge and charge the battery at least once every 30 days or after about 20 partial discharges. See "[Battery Information](#)" on page 4 - 9 for full instructions.



## Windows XP Start Menu & Control Panel

Most of the control panels, utilities and programs within *Windows XP* (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. You can customize the look of the **Start** menu by right-clicking the **Start** menu and selecting **Properties** from the menu.



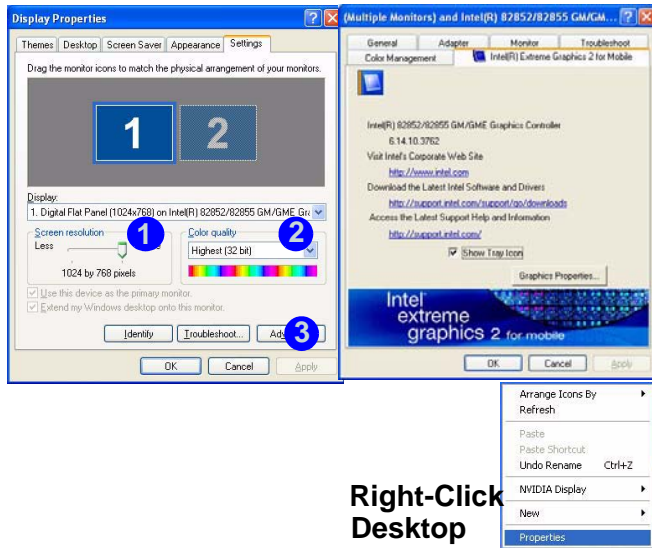
Figure 1 - 8 - Start Menu & Control Panel

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 XP* provides basic controls for many of the features, however many new controls are added (or existing ones are enhanced) when you install the drivers listed in *Table 5 - 1, on page 5 - 6*. To see all controls it may be necessary to toggle off Category View.

# Video Features

## Video Driver Controls

You can switch display devices, and configure display options, from the **Display Properties** control panel in *Windows* as long as the **video driver** is installed. For further video information see *“Video & Audio Controls” on page 3 - 1.*



Right-Click  
Desktop

1. Click **Start**, point to **Settings** and click **Control Panel** (or click **Control Panel**).
2. Double-click **Display** (icon); **Display** (icon) is in the **Appearances and Themes** category.
3. Click **Settings** (tab) in the **Display Properties** dialog box.
4. Move the slider to the preferred setting in **Screen area/ resolution** 1.
5. Click the arrow, and scroll to the preferred setting In **Colors/Color quality** 2.
6. You can also access **Display Properties** by right-clicking the desktop and scrolling down and clicking **Properties**. Click **Settings** (tab) and adjust as above.
7. Open the **Display Properties** control panel, and click **Advanced** (button) 3 to bring up the **Advanced properties** tabs. Clicking through these tabs allows you to make any video adjustments you require.

Figure 1 - 9 - Display Properties Desktop

## Display Devices & Options

Besides the built-in LCD, you can also use an **external VGA monitor** or **TV** as your display device. A VGA monitor connects to the external monitor (VGA) port, a TV to the S-Video-Out Jack. With the **video driver installed** (see *“What to Install” on page 4 - 1*), you can use its built-in controls to switch between the displays modes indicated in the table below.

Display Mode	Description	Win XP	Win 2000
Single	One of the connected displays is used as the display device	✓	✓
Dual Display Clone	Both connected displays output the same view	✓	✓
Extended Desktop	Both connected displays are treated as separate devices, and act as a virtual desktop	✓	X

Table 1 - 5 - Display Options

## Power Management Features

The **Power Options** control panel in *Windows* (see page [1 - 12](#)) allows you to configure power management features for your computer. You may conserve power through individual components such as the monitor or hard disk (by means of **Power Schemes**), or you may use either **Standby** or **Hibernate** mode to conserve power throughout the system (enable **Hibernate** support from the control panel as pictured in [Figure 1 - 10](#)). Pay attention to the instructions on battery care in [“Battery Information” on page 4 - 9](#).

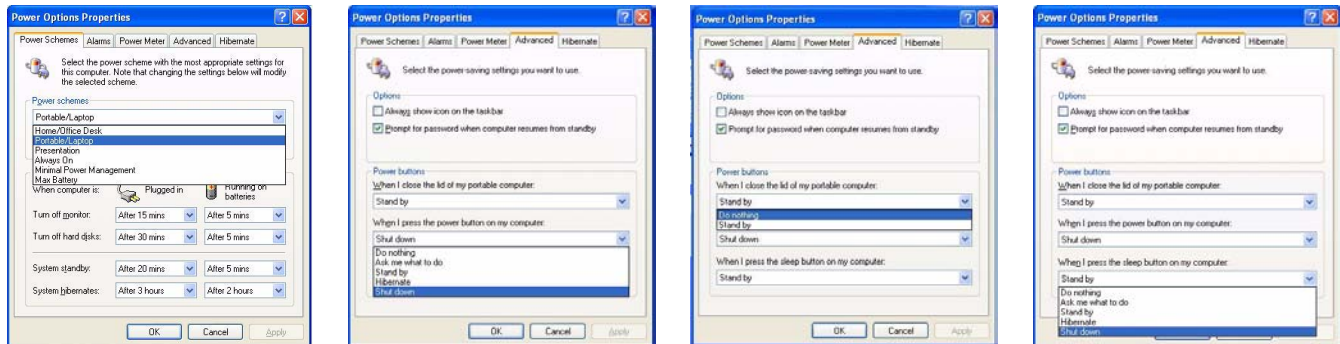


Figure 1 - 10 - Power Options

The computer’s **power button**, **sleep button** (**Fn + F4** key combination), and **Lid Sensor** may be set to send the computer in to either **Standby** or **Hibernate** mode.

### Power Saving and Performance

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

# Chapter 2: Features & Components

## Overview

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

- The Hard Disk Drive
- The Optical (CD/DVD) Device
- The 4-in-1 Card Reader
- The PC Card Slot
- The Hot Keys
- The Check Mail Program
- The TouchPad & Buttons/Mouse
- Adding a Printer (general guidelines)



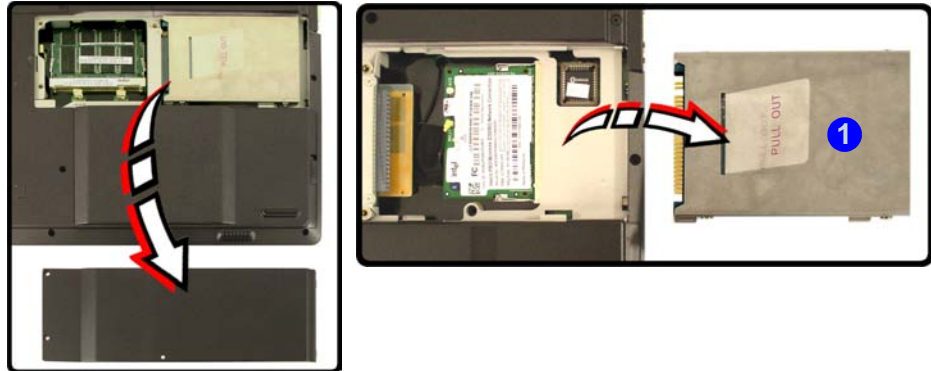
### Power Safety

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

## Hard Disk Drive

The hard disk drive is used to store your data in the computer. The hard disk can be taken out to accommodate other 2.5" IDE hard disk drives with a height of 9.5 mm.

The hard disk ① 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 7 - 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 device will depend on the model you purchased (see *“Storage” on page C - 3*). The optical device is usually labeled **“Drive D:”** and may be used as a boot device if properly set in the **BIOS** (see *“Startup Menu” on page 6 - 8*).

### Loading Discs

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



### Sound Volume Adjustment

How high the sound volume can be set depends on the setting of the volume control within **Windows**. Click the **Volume** icon on the taskbar to check the setting.

Peripherals must be connected before you turn on the system.

*Figure 2 - 2*  
**Optical Device**



### CD Emergency Eject

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

### Disk Eject Warning

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

## Handling CDs or DVDs

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

Note the following:

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



## DVD Regional Codes

To change the DVD regional codes see *“Changing DVD Regional Codes” on page 1 - 11.*

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

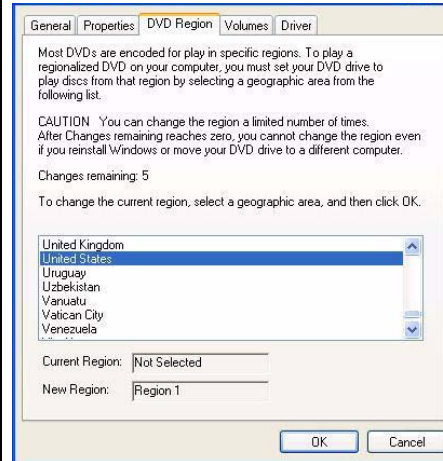


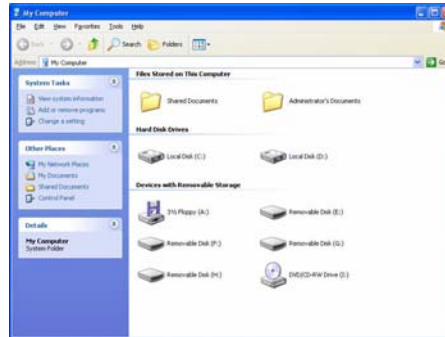
Table 2 - 1  
DVD Regional Coding

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 (Memory Stick Pro)



*Figure 2 - 4*  
**Removable Disks**

### Card Reader Cover

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

The cards will appear as removable disks on the computer and can be accessed in the same way as your hard disk (s).

## PC Card Slot

The computer is equipped with a PCMCIA 3.3V/5V slot for **one type II** PC Card. Make sure you install the driver for the PC Card (see *“What to Install” on page 5 - 1*).

### 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





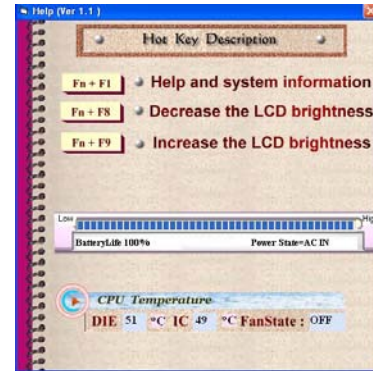
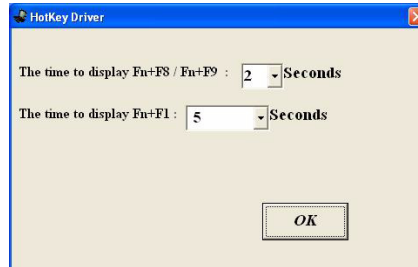
**Application Note**

The Hot Key functions (see *“HotKey/Quick-Key Functions” on page 2 - 9*) will only be displayed if the program is running (i.e. the icon  is displayed in the taskbar). If you have closed the program you can run it again from the **Start** menu (**Start > Programs > Startup > HotKey Driver**) in *Windows*.

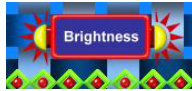







# Hot Keys

In addition to the basic function key combinations, enhanced Hot Key functions are available when the driver is installed (see *“What to Install” on page 5 - 1*).


After installing the Hot Key driver an icon  will appear in the taskbar. Double-click the icon to bring up the configuration menu. The configuration menu allows you to set the time for the specific menus to be displayed on screen. Click **OK** to minimize the program. If you click the close icon  you will need to run the program again from the **Start** menu in *Windows* (**Start > Programs/All Programs > Startup > HotKey Driver**).



*Figure 2 - 6*  
**HotKey Driver**  
**Configuration & Help**  
**Menu**

Hot Key / Quick-Key	Function	
Fn + F1	Activate the Help Menu	See <i>Figure 2 - 6 on page 2 - 8</i>
Fn + F8	Decrease LCD Brightness	
Fn + F9	Increase LCD Brightness	
Plug-In/Remove AC Adapter	Displays CPU SpeedStep Mode	
	Displays WLAN Module Power State	
	Displays PC Camera Module Power State	
	Displays Bluetooth Module Power State	

*Table 2 - 2*  
HotKey/Quick-Key Functions



**Hot Key Note**

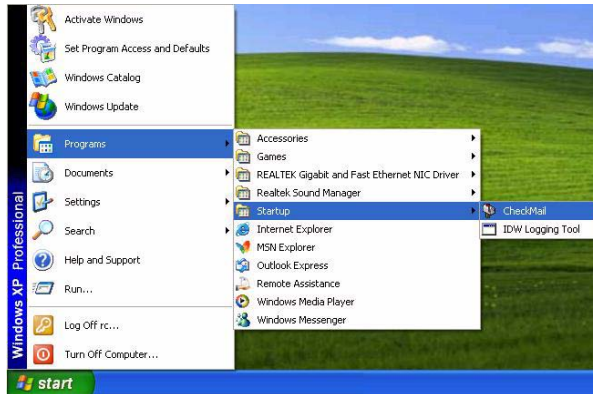
The Help menu will display the function key features, current Battery Life, Power State and CPU Temperature information. When you plug-in/remove the AC adapter to/from the DC-In Jack, the CPU SpeedStep mode will be displayed (see “*CPU SpeedStep Controls (Power Menu)*” on page 6 - 14).

# Check Mail Program

After you have installed the driver for the Check Mail program (see *“What to Install” on page 5 - 1*) you may then configure it to give notification when new mail is received. You must be online to receive this notification (note that this program only supports the **POP3** protocol), and your default mail program does not need to be open.



If you have installed the driver using the default settings, the CheckMail program appears in the **Startup** menu (**Start > Programs/All Programs > Startup > CheckMail**).

*Figure 2 - 7*  
**Check Mail Program**  
**(Startup Menu)**



Clicking on **Check Mail** will bring up the following options menu.



You may then configure the options for your mail server, user name, and password. Click **Enable Check Mail** to have the program check the mail server for new mail, and set the interval (in seconds). Click **SAVE** to keep the settings, and **Hide** to minimize the program. After clicking **Hide**, the program will be accessible by double-clicking the icon  in the taskbar. If you click the close icon  in the **Check Mail** control panel you will need to run the program again from the **Start** menu in *Windows*.

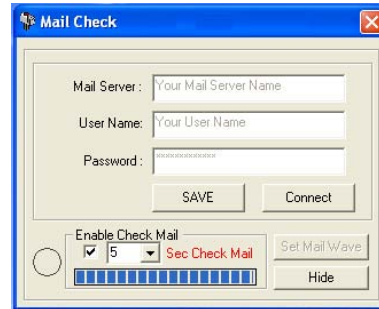


### Note

Check with your Internet Service Provider, network administrator or Mail Service provider for details on what to put on these pages.

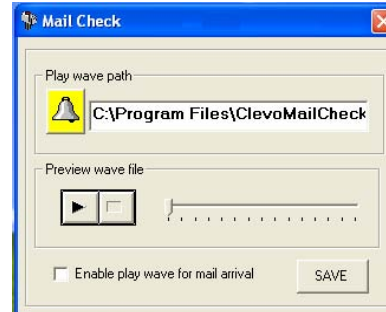
*Figure 2 - 8*  
**Check Mail**  
**Account Setup and**  
**Options**

*Figure 2 - 9*  
**Check Mail Enabled**



You may enable an audible warning for received mail by clicking on **Set Mail Wave**, and browsing to a .WAV sound file to use for mail notification. Click **Enable play wave for mail arrival**, and **SAVE** to save the settings.

*Figure 2 - 10*  
**Set Mail Wave**





## TouchPad and Buttons/Mouse

The TouchPad is a device for pointing (controlling input positioning) on the computer's display screen by sensing finger movement, and downward pressure. It 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 (see *Figure 2 - 11 on page 2 - 14* for screen examples).



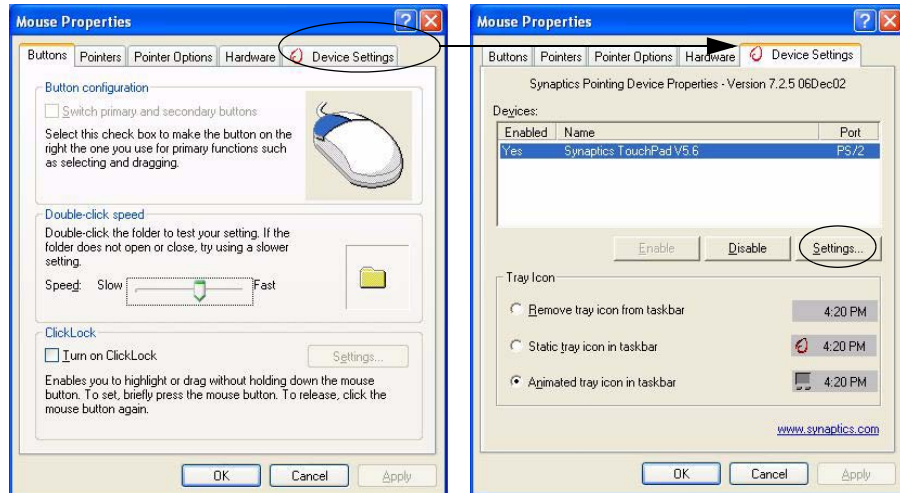
### Mouse Driver

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.

## Configuring the TouchPad and Buttons

Once you have installed the TouchPad drivers (see *“What to Install” on page 5 - 1*) you can configure the functions by double-clicking the TouchPad driver icon  on the **taskbar**. You may then configure the TouchPad tapping, buttons, scrolling, pointer motion and sensitivity options to your preferences. You will find further information on this at [www.synaptics.com](http://www.synaptics.com).

*Figure 2 - 11*  
**Mouse Properties**



## 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 cartridge etc.).
2. Turn ON the computer.
3. Turn ON the printer.
4. Connect the printer's USB cable to one of the USB ports on the computer.
5. **Windows** will identify the printer and either load one of its own drivers or ask you to supply one. Follow the on-screen instructions.

### Parallel Printer

This is still a very common type of printer. The install instructions are in the sidebar.



#### Parallel Printer

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

Connect the printer's parallel cable to the Parallel port.

Turn ON the printer, then 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: Video & Audio Controls

## Overview

This chapter covers:

- Keyboard Video Controls
- Dynamic Video Memory Technology
- Display Properties
- Intel Extreme Graphics 2 for Mobile
- Display Devices
- Multi Monitor Modes
- TV System
- Audio Features



### Protecting the LCD

Do not allow any foreign objects (i.e. paper or plastic) to get between the lid/LCD and the work panel. They could damage or scratch the LCD and/or accidentally activate the Lid Sensor.

**Note:** All operating system pictures in this manual are from the *Microsoft Windows XP* OS.



### Drivers

You are 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 5 - 1* for installation instructions.



### Protecting the LCD

Do not allow any foreign objects (i.e. paper or plastic) to get between the lid/LCD and the work panel. They could damage or scratch the LCD and/or accidentally activate the lid sensor.

Figure 3 - 1  
Brightness  
Controls

## Advanced Video Controls

This section is about making adjustments for the LCD, and switching display devices. You can switch display devices with the **Fn + Display (F7)** toggle.

### Keyboard Video Controls

As you open the lid, adjust it so you can look at the screen straight on, without any glare. If necessary, adjust the brightness controls (**Fn + F8/F9**). If the Hot Key driver is installed indicators will appear on screen to indicate the level of brightness when you press the **Fn + F8/F9** key combination (see “*Hot Keys*” on page 2 - 8).



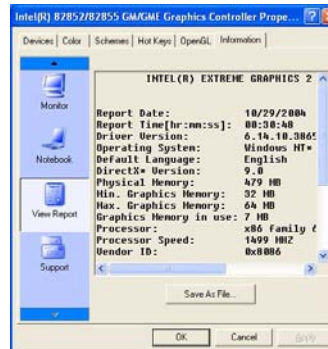
## Dynamic Video Memory Technology

Intel® DVMT automatically and dynamically allocates as much (up to 64MB) system memory (RAM) as needed to the video system (**the video driver must be installed** - see *“What to Install” on page 5 - 1*). DVMT returns whatever memory is no longer needed to the operating system.

System Memory	Maximum Memory Allocated for Graphics by DVMT
0MB - 127MB	Not Supported
128 MB - 256MB	32MB
256MB - Maximum Memory	64MB

### Information Tab

The **information** tab in **Intel(R) 8285/82855 GM/GME Graphics Controller Properties (Control Panel)** lists details of your computer’s memory etc. See *“Intel Extreme Graphics 2 for Mobile” on page 3 - 6* to see how to access this Information tab.



### DVMT Notes

DVMT is not user-configurable.

DVMT is not local video memory.

DVMT will not function in MS-DOS. DOS uses the legacy memory indicated.

**\*Note:** The video drivers for Windows 2000 require Service Pack 1 or later to run correctly. Check with the *Microsoft Windows 2000* support site for the latest updates.

*Table 3 - 1  
DVMT Memory Requirements*



#### Screen Resolution/ Screen Area Note

You may set the resolution to a higher setting than the panel supports, however this will require you to pan (scroll) around the screen as the display area will be larger than what you can see on the LCD.

## Display Properties

The video interface lets you change the screen resolution and color output to whatever is most comfortable/efficient for you. This is a matter of hardware, video memory and the driver for your operating system. The driver interface shows the available options (see *“LCD Options” on page C - 2* for LCD specifications).

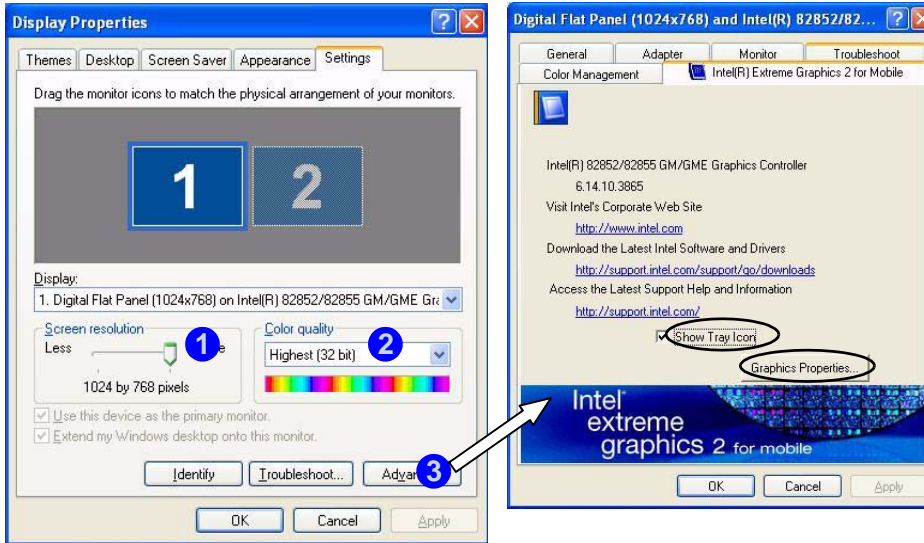
You can switch display devices from the **Display Properties** control panel in *Windows* as long as the video driver is installed (see *“What to Install” on page 4 - 1*).

### Making Adjustments for the Display

The higher the resolution you set the LCD for, the more information the LCD can display on screen. To change the LCD’s resolution and color depth go to the **Display Properties** control panel:

1. Click **Start**, point to **Settings** and click **Control Panel** (or click **Control Panel**).
2. Double-click **Display** (icon); **Display** is in **Appearance and Themes** (category).
3. In the **Display Properties** dialog box, click **Settings** (tab).
4. In **Screen area/Screen resolution**, move the slider to the preferred setting for **resolution** (see ① in *Figure 3 - 2 on page 3 - 5*).
5. In **Colors/Color quality**, click the arrow and scroll to the preferred setting for **color depth** (see ② in *Figure 3 - 2 on page 3 - 5*).





*Figure 3 - 2*  
**Display Properties**  
 &  
**Advanced Options**

3

When the **Display Properties** control panel is open, click the **Advanced** ③ (button) to bring up the options tabs. Clicking through these tabs allows you to make any video adjustments you require (see sidebar for information on the Intel driver controls).

✍

**Intel(R) Extreme Graphics 2 for Mobile**

You can click **Graphics Properties** (button) in the **Intel(R) Extreme Graphics 2 for Mobile** tab (in the **Display Properties > Advanced** options) to access the screens in **Figure 3 - 4 on page 3 - 7**.



### Taskbar Icon

You can also access the controller properties from the taskbar. Click on the icon to bring up the menu and scroll to **Graphics Options > Graphics Properties**.

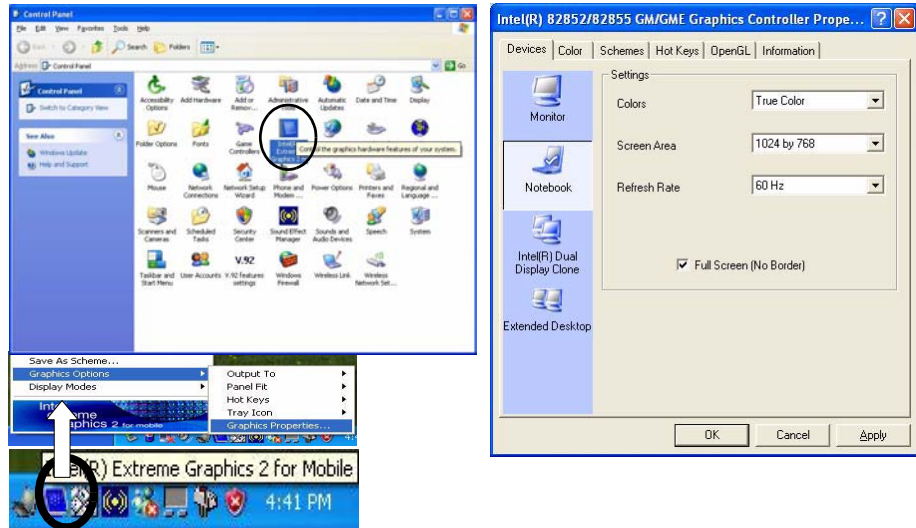
If you cannot see the tray icon go to the **Intel(R) Extreme Graphics 2 for Mobile** tab (in the **Display Properties > Advanced options**) and click the **“Show Tray Icon”** tickbox.

*Figure 3 - 3*  
**Intel Extreme Graphics Control Panel**

## Intel Extreme Graphics 2 for Mobile

After installing the video driver there will be an additional control panel entitled **Intel(R) Extreme Graphics 2M**. Access the control panel as follows:

1. Click **Start** (menu), point to **Settings** and click **Control Panel** (or click **Control Panel**).
2. Double-click **Intel(R) Extreme Graphics 2M** (icon) to bring up the **Intel(R) 82852/82855 GM/GME Graphics Controller Properties** (click **Switch to Classic View** if you don't see all the icons).



You may make changes to the Devices, Color, Schemes, Hot Keys by clicking the appropriate tab and adjusting the setting, then clicking OK. The Information and Open GL tabs display useful information about the graphics properties of the computer, and the Support item in the Information tab has weblinks to the latest information (drivers, troubleshooting issues etc.) on the Intel Website.

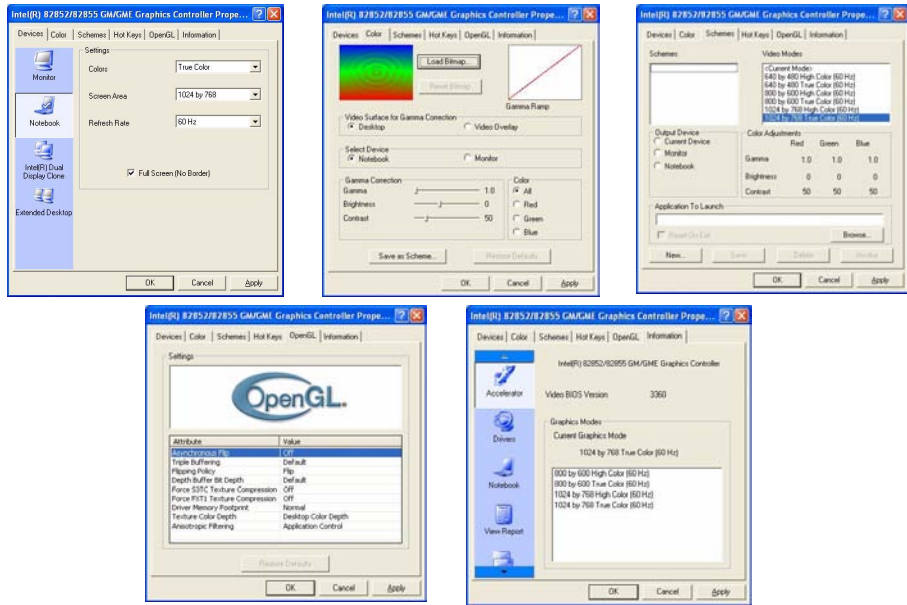


Figure 3 - 4  
Intel 82852/82855  
GM/GME Graphics  
Controller Properties



### Application.exe

You will need to locate the actual **application executable (.exe) file**, not just the shortcut. To find the application right-click its **shortcut** on the desktop click **Properties**. Click the **Shortcut** (tab) and see where the executable file is located by clicking the **Find Target** (button). Note the location and you will then be able to browse to this file.

## Schemes

Use Schemes to configure quick settings for applications which require specific resolution and color settings in order to run properly e.g. games, multimedia programs. To set the schemes:

1. Go to the **Intel(R) 82852/82855 GM/GME Graphics Controller Properties** control panel (see *"Intel Extreme Graphics 2 for Mobile" on page 3 - 6*).
2. Click on **Schemes** (tab).
3. Select **New** to setup the scheme, and type a name in the dialog box that pops up, then click **OK**.
4. Click on the scheme name you had typed in the **Schemes** box, and choose the option you wish to use from the **Video Modes** box.
5. **Browse** to the executable file for the application you want to set a scheme for (see sidebar), and click **Open** to select it.
6. Click **Save** to save the settings (you can click in the **"Reset On Exit"** box to return to your original settings when you exit the program).
7. When you want to run the program, select it from the **Schemes** box and click **Invoke** to run the highlighted program in the chosen video setting (alternatively you can select it from **Display Modes** by clicking on the icon option in the taskbar at the bottom right of the screen).

## Display Devices

Besides the built-in LCD, you can also use an **external VGA monitor** or **TV** as your display device. A VGA monitor connects to the external monitor (VGA) port **1**, a TV to the S-Video-Out Jack **2**.



*Figure 3 - 5*  
Left Side View



### Using the Driver to Switch Displays

If you only use the keyboard toggle to switch through the display options you will not have all the configuration options available to you. If you want to access the options listed here use the driver control panel to configure the settings as per **“Switching/Enabling Displays (Driver)” on page 3 - 10**.

### Switching/Enabling Displays (Keyboard)

You can switch display devices with the **Fn + Display (F7)** toggle. With the **video driver installed**, you also can use its built-in controls to switch the display options. If you haven't installed the video driver, refer to (see **“What to Install” on page 4 - 1**) for setup instructions. To switch the display options:

1. Plug the VGA monitor and/or TV into the appropriate port/jack.
2. Press and hold the **Fn** key, while simultaneously pressing the **F7** key.
3. You may toggle through the options to display the notebook's LCD only, the external display alone, and the notebook's LCD and the external display together (make sure you allow time for the screens to refresh).



### Vertical Refresh Rate

The vertical refresh rate of your monitor is important. If it is too low and/or you're using fluorescent lighting, the screen will appear to flicker. To reduce flickering on a monitor, use faster refresh rates (we recommend a refresh rate of 72Hz or more). But first check your monitor's documentation to make sure it can support the rates listed by the video driver. The default refresh rate for monitors (without drivers) is 60Hz.

*Figure 3 - 6*  
**Switching Display Settings**

## Switching/Enabling Displays (Driver)

With the **video driver installed** (see *“What to Install” on page 5 - 1*), you can use its built-in controls to switch between the displays as follows:

1. Plug the VGA monitor or TV into the appropriate port/jack (see page **3 - 9**).
2. Go to the **Intel(R) 82852/82855 GM/GME Graphics Controller Properties** control panel (see *“Intel Extreme Graphics 2 for Mobile” on page 3 - 6*) and select **Devices** (tab).
3. Choose the display option from the list on the left and click **Apply** (and **OK** to confirm the settings change).
4. You can choose a device to be **Primary** or **Secondary**.



See the following pages for instructions on enabling **Clone** and **Extended Desktop** modes.

## Multi-Monitor Modes

In addition to the single LCD display mode you have the following **Multi-Monitor** modes available when an external monitor or TV is attached.

### Intel(R) Dual Display Clone

This mode will drive multiple displays with the same content. Use this feature to display the screen through a projector for a presentation.

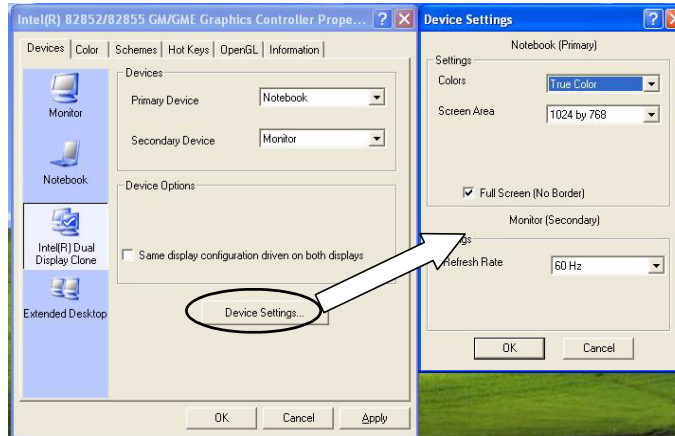
### Extended Desktop

This mode allows a desktop to span multiple displays and acts as a large workspace. This creates a lot more screen area for display. Use the **Display Properties** control panel to drag the monitors to match the physical arrangement you wish to use, or you may also use the **Extended Desktop Settings** control panel tab in **Intel(R) 82852/82855 GM/GME Graphics Controller Properties** to configure the relative size and position.

### To Enable Dual Display Clone Mode:

1. Plug the VGA monitor or TV into the appropriate port/jack (see page 3 - 9).
2. Go to the **Intel(R) 82852/82855 GM/GME Graphics Controller Properties** control panel (see *"Intel Extreme Graphics 2 for Mobile" on page 3 - 6*) and select **Devices** (tab).
3. Click the **Intel(R) Dual Display Clone** icon in the devices tab (**Note:** this option is only available when you have attached a monitor or TV).
4. Choose which device is to be the **Primary** display, and which is to be **Secondary**.
5. Adjust the settings by clicking the **Device Settings** (button) if necessary.
6. Click **Apply > OK** and close the control panels.

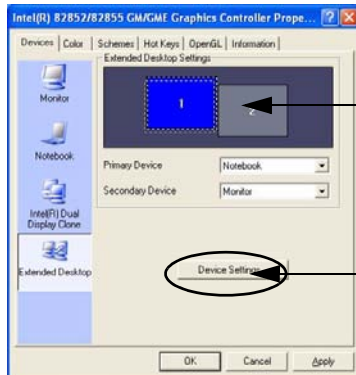
*Figure 3 - 7*  
**Device Settings**  
**(Clone Mode)**





**To Enable Extended Desktop Mode:**

1. Plug the VGA monitor or TV into the appropriate port/jack (see page 3 - 9).
2. Go to the **Intel(R) 82852/82855 GM/GME Graphics Controller Properties** control panel (see *“Intel Extreme Graphics 2 for Mobile” on page 3 - 6*) and select **Devices** (tab).
3. Click the **Extended Desktop** icon in the devices tab (**Note:** this option is only available when you have attached a monitor or TV).
4. Choose which device is to be the **Primary** display, and which is to be **Secondary**.
5. Adjust the settings by clicking the **Device Settings** (button) if necessary.
6. Click **Apply > OK** and close the control panels.



Click the appropriate monitor icon and drag it to match the physical arrangement you wish to use (e.g. the secondary display may be extended to the left or right of the primary display).

Click Device Settings to make adjustments to the display settings.

You can also enable the Extended Desktop mode from the **Display Properties** control panel (see *“Display Properties” on page 3 - 4*).



**Device Settings  
Extended Desktop**

You can have different Colors, Screen Area and Monitor Refresh Rates for each display **provided your monitor can support them**.

You can drag the monitor icons to match the physical layout of your displays. Icons and programs may also be dragged between the displays.

*Figure 3 - 8  
Device Settings  
(Extended Desktop  
Mode)*

*Figure 3 - 9*  
**Display Properties**  
**(Extended Desktop**  
**Mode)**

### To Enable Extended Desktop (Display Properties)

1. Plug the VGA monitor or TV into the appropriate port/jack (see page [3 - 9](#)).
2. Click **Start**, point to **Settings** (or just click **Control Panel**) and click **Control Panel** (if you are in **Category View** choose **Appearance and Themes**).
3. Double-click **Display** (icon).
4. In the **Display Properties** dialog box, click **Settings** (tab).
5. Click the monitor icon (e.g. [2](#)), and make sure you have checked “**Extend my Windows desktop onto this monitor.**” and click **Apply**.



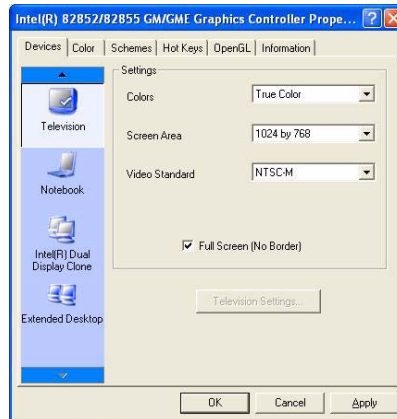
Click the appropriate monitor icon to be able to select the option to extend the desktop on to it.

6. Use the control panel to drag the monitors to match the physical arrangement you wish to use. In the example shown in [Figure 3 - 9](#) the primary monitor [1](#) is on the left, the secondary display is on the right. You can drag any icons or windows across to either display desktop, which makes it possible to have one program visible in one of the displays, and a different program visible in the other display.

## TV System

If you are using a TV as a display device you may change the video standard to NTSC or PAL as follows:

1. Plug the VGA monitor or TV into the appropriate port/jack (see page 3 - 9).
2. Go to the **Intel(R) 82852/82855 GM/GME Graphics Controller Properties** control panel (see *“Intel Extreme Graphics 2 for Mobile” on page 3 - 6*) and select **Devices** (tab).
3. Choose the display mode (**Television**, **Clone** or **Extended Desktop**) and set the device to be **Primary** or **Secondary** if required.
4. Adjust the settings by clicking the **Device Settings** (button).
5. Choose the appropriate TV system from **Video Standard** dropdown.



*Figure 3 - 10*  
**TV Video Standard**

### Sound Volume Adjustment

How high the sound volume can be set using the volume control knob depends on the setting of the volume control within **Windows**. Click the Speaker icon on the taskbar to check the setting.

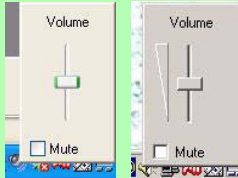
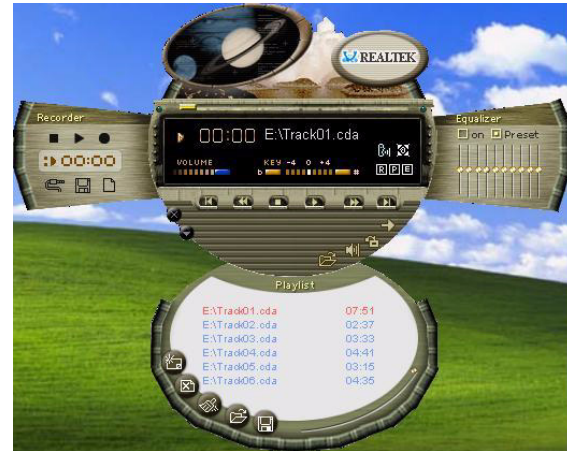
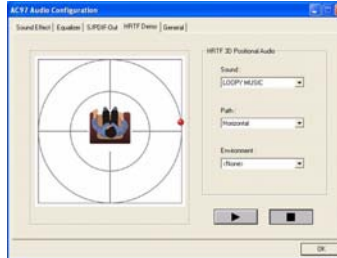
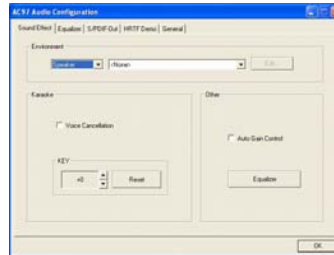


Figure 3 - 11  
Audio Configuration Controls

## Audio Features

You can configure the audio options on your computer from the **Sounds and Audio Devices** / **Sounds and Multimedia** **Windows** control panel (see *Figure 1 - 8 on page 1 - 13*). Additional audio controls are available from the **Sound Effect Manager** icon in the taskbar/control panel, and the **AV Rack** program icon on the desktop. Adjust the volume by means of the **Fn + F5/F6** key combination.



# Chapter 4: 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 individual components of the computer (the monitor and hard disk drive) or the whole system.

This chapter covers:

- The Power Sources
- Turning On the Computer
- Power Schemes
- System Power Options (Standby and Hibernate)
- Configuring the Power Button
- Battery Information

## Advanced Configuration and Power Interface

The **ACPI** interface provides the computer with enhanced power saving techniques and gives the operating system (OS) direct control over the power and thermal states of devices and processors. For example, it enables the OS to set devices into low-power states based on user settings and information from applications. ACPI is fully supported in *Windows 2000* and *Windows XP*.



### 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 XP* OS.)



### Power Button as Standby or Hibernate Button

If you are using a fully ACPI-compliant OS, (such as *Windows 2000 Professional*, or *Windows XP*) you can use the OS's "Power Options" control panel to set the power button to send the system into **Standby** or **Hibernate** mode (see your OS's documentation, or ["Configuring the Power Button" on page 4 - 8](#) for details).

## The Power Sources

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

### AC Adapter

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

1. Attach the AC 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 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 4 - 12](#)).

We recommend that you do not remove the battery. For more information on the battery, please refer to ["Battery Information" on page 4 - 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 Standby/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.



### Shutdown

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.



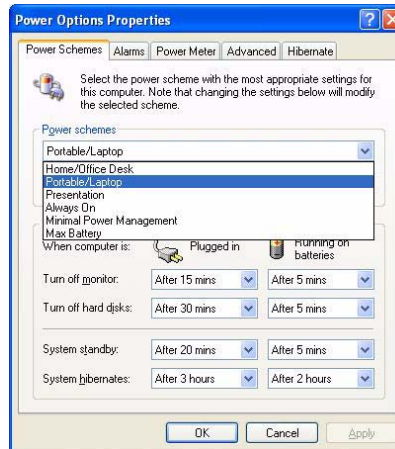
### Resuming Operation

The system can resume from Monitor or Hard Disk Standby by pressing a key on the keyboard.

## Power Schemes

You can set your computer to conserve power through individual components by means of **Power Schemes**. You can also adjust the settings for each scheme to set the monitor to turn off after a specified time, and the computer's hard disk motor to turn off if the hard disk drive has not been accessed for a specified period of time (if the system reads or writes data, the hard disk motor will be turned back on). The schemes may also be set to set a specified time for the system to enter **Standby** or **Hibernate** modes (see *“System Power Options” on page 4 - 6*).

Figure 4 - 1  
Power Schemes





Each **Windows Power Scheme** 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 the **Home/Office Desk** scheme for maximum performance when the computer is powered from an AC power source. Choose the **Max Battery** scheme (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. **Windows** will use **Portable/Laptop** as the default scheme.

For advanced information see *“Power Schemes and Processor Performance” on page B - 2.*



### CPU SpeedStep Controls & CPU Performance

If you have a Pentium M processor, the settings for **CPU Speed-Step Controls** will have an affect on the CPU's speed and performance (in order to save power under certain conditions). See *“Intel CPU Speed-Step Controls” on page B - 3* for more details on how the settings control the CPU speed and performance. If you have a Celeron M Processor the settings are emulated by CPU throttling.

## System Power Options

You can use the system power options to stop the computer's operation and restart where you left off. This system features **Standby** and **Hibernate** sleep mode levels (**Hibernate** mode will need to be enabled by clicking the option in the **Hibernate** tab in the **Power Options** control panel - *Figure 4 - 2 on page 4 - 7*).

### Hibernate Mode vs. Shutdown

Hibernate mode and Shutdown 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.

### Standby Mode vs. Hibernate Mode

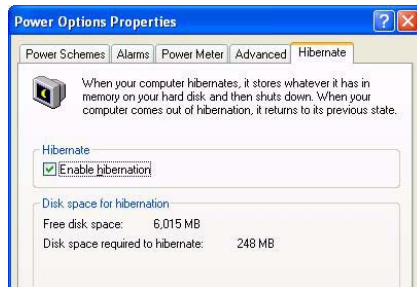
If you want to stay away from your work for just a while, you can put the system on standby instead of in hibernation. It takes a longer time to wake up the system from **Hibernate** mode than from **Standby** mode.

### Standby

Standby saves the least amount of power, but takes the shortest time to return to full operation. During Standby the hard disk is turned off, and the CPU is made to idle at its slowest speed. All open applications are retained in memory. When you are not using your computer for a certain length of time, which you specify in the operating system, it will enter Standby mode to save power.

### Hibernate

Hibernate uses no power and saves all of your information on a part of the HDD 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 mode when the battery power is almost depleted. You will need to enable Hibernate mode from the **Hibernate** tab in the Power Options control panel. **The system will resume from Hibernate mode by pressing the power button.**




### System Resume

The system can resume from Standby mode by:

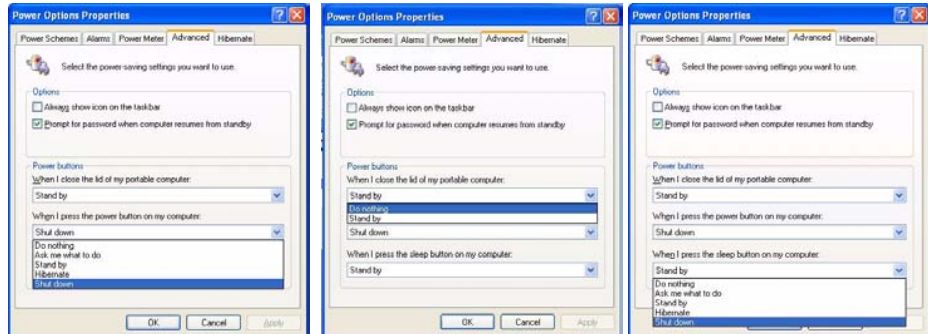
- Pressing the power button
- Pressing a key on the keyboard
- An alarm resume that is enabled and expires
- An incoming call received on the modem (if enabled)
- Network card activity (if enabled)

Figure 4 - 2  
Enable Hibernation

## Configuring the Power Button

The power button may be set to send the computer in to either **Standby** or **Hibernate** mode (*Figure 4 - 3*). In **Standby** mode, the LED  will flash green. In **Hibernate** mode the LED will be off. If you are in a power saving mode set to save power through individual components (e.g. hard disk, monitor), the LED will remain green.


*Figure 4 - 3*  
**Power Options**  
(Advanced - Power Buttons)



Power Button

Lid

Sleep/Resume (Sleep) Button



### Sleep Button

You may also configure the **Sleep/Resume** key combination (**Fn + Esc**) from the menu illustrated in *Figure 4 - 3*. In **Windows** this is referred to as the **Sleep** button.

# Battery Information


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

## New Battery

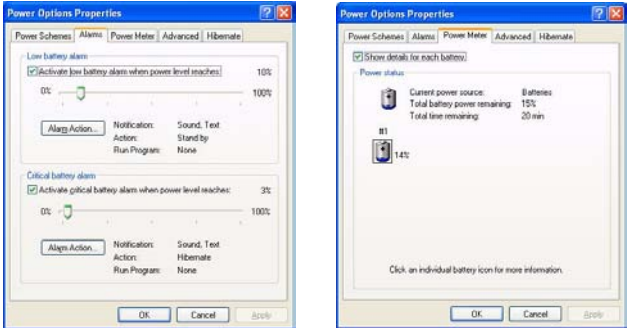
Always completely discharge, then fully charge, a new battery (see *“Battery FAQ” on page 4 - 12* for instructions on how to do this).

## Battery Life

Your computer’s battery life is dependent upon many factors, including the programs you are running, and peripheral devices attached. **Power Options** (you may set low battery **Alarms** and actions, and check the **Power Meter** from the **Power Options** control panel), and settings in the OS will help prolong the battery life if configured appropriately.

  
**Low Battery  
Warning**

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



*Figure 4 - 4*  
**Power Options  
(Alarm & Power  
Meter)**



### 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 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 battery power even if the system enters sleep mode).

Disconnect any unnecessary external devices.

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 7 - 3.*

### Recharging the Battery with the AC Adapter

The battery pack automatically recharges when the AC 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 4 - 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



#### Damaged Battery Warning

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



### Caution

Danger of explosion if battery is incorrectly replaced.

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

## Battery FAQ

### How do I completely discharge the battery?

Use the computer with battery power until it shuts down due to a low battery. Don't turn off the computer by yourself even when you see a message that indicates the battery is critically low, just let the computer use up all of the battery power and shut down on its own. Disable the **Power Options** functions in the **Control Panel**, especially any **Alarms** (uncheck the tickboxes - see 4-9) and **Schemes** (change all the settings to **Never** - see page 4-4). As the battery nears the end of its life save and close any critical files.

### How do I fully charge the battery?

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

### How do I maintain the battery?

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



# Chapter 5: Drivers & Utilities

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

- *Windows 2000 Professional*
- *Windows XP Professional and Home Editions*

## What to Install

The *Device Drivers & Utilities + User's Manual CD-ROM* contains the drivers and utilities necessary for the proper operation of the computer. (The **Intel Wireless LAN** module driver, and the **optional Bluetooth**, and **PC Camera** module drivers are on separate *CD-ROMs* supplied.) *Table 5 - 1, on page 5 - 6* lists what you need to install manually according to your choice of the operating system, and **it is very important that the drivers are installed in the order indicated.**

## Module Driver Installation

The procedures for installing drivers for the **Wireless LAN**, **Bluetooth**, and **PC Camera** modules are provided in "*Modules*" *on page 8 - 1*. Make sure that the drivers are installed in the order indicated in *Table 5 - 1, on page 5 - 6*. Only install drivers for modules included in your purchase option.

### Navigate (Browse..) to D:

You will notice that many of the instructions for driver installation require you to “**Navigate (Browse) to D:**”. We assume that you will install all drivers and utilities from the built-in CD device and it is assigned to “**Drive D:**”. In addition, all file extensions can be seen

In this case “D:” is the drive specified for your CD device. Not all computers are setup the same way, and some computers have the CD listed under a different drive letter - e.g. if you have two hard drives (or hard disk partitions) one may be designated as “Drive C:” and the other as “Drive D:”. In this case the CD device may be designated as “Drive E:” - Please make sure you are actually navigating to the correct drive letter for the CD device.

When you click the **Browse** (button) after clicking **Run** in the **Start** menu you will see the “**Look in:**” dialog box at the top of the **Browse** window. Click the scroll button to navigate to **My Computer** to display the devices and drive letters.

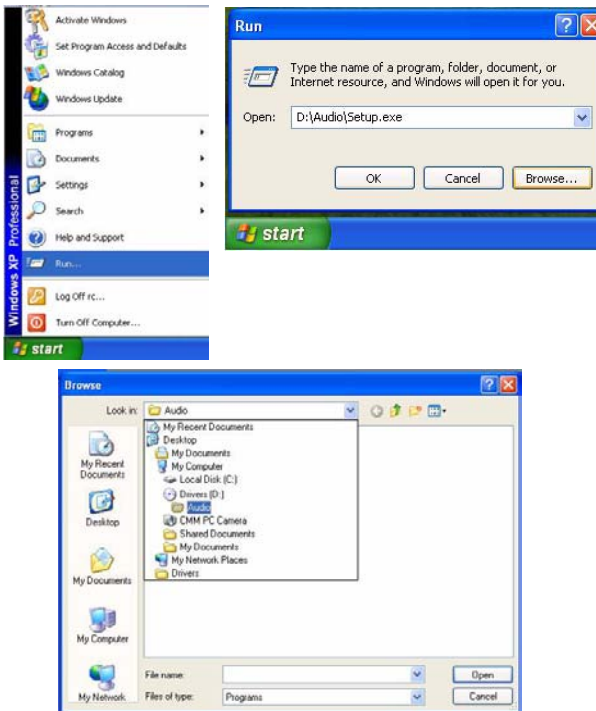


Figure 5 - 1 - Navigate (Browse..) to..

## Service Packs

Check the warnings on the following pages regarding installation of the appropriate **Service Pack** for your *Windows* OS. Make sure you have installed the appropriate Service Pack **before** installing all the drivers.



### Service Pack Installed

To see which **Service Pack** is currently installed on your computer go to the **General** tab of the **System** control panel. Right-click the **My Computer** icon on the desktop or in the **Start** menu (in **WinXP only**) and select **Properties**. The Service Pack currently installed on your system will be listed under the "**System:**" heading. (If no Service Pack information is listed, then no Service Pack is installed.)



### Windows 2000 with Service Pack 4

Make sure that your *Windows 2000* version includes *Service Pack 4* on the installation CD.



### Windows XP Service Pack 2

Make sure you install **Windows XP Service Pack 2** (or a Windows XP version which includes Service Pack 2) **before installing any drivers**. Service Pack 2 includes support for **USB 2.0**.

If you have **upgraded** the system by installing **Service Pack 2** (i.e. your Windows XP version does not include Service Pack 2) then follow these instructions:

1. Click **Start** (menu), point to **Settings** and click **Control Panel** (or click **Control Panel**).
2. Double-click **System** (icon); **System** (icon) is in **Performance and Maintenance** (category).
3. Click the **Hardware** (tab) > **Device Manager** (button).
4. Click "+" next to **Other Devices** (if its sub-items are not shown).
5. Right-click **Universal Serial Bus (USB) Controller** and select **Uninstall** > **OK** (if you don't see the item then there is no need to take any further action).
6. Restart the computer and it will find the USB 2.0 controller.

### Authorized Driver Message

If you receive a message telling you that the driver you are installing is not authorized (**Digital Signature Not Found**), just click **Yes** or **Continue Anyway** to ignore the message and continue the installation procedure.

5

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

### Version Conflict Message

During driver installation if you encounter any “file version conflict” message, please click **Yes** to choose to keep the existing (newer) version.

### Updating/Reinstalling Individual Drivers

If you wish to update/reinstall individual drivers it may be necessary to uninstall the original driver. To do this go to the **Control Panel** in the *Windows OS* and double-click the **Add/Remove Programs** item. **If you see the individual driver listed** (if not see below), uninstall it, following the on screen prompts (it may be necessary to restart the computer). Go to the appropriate section of the manual to complete the update/reinstall procedure for the driver in question.

If the driver is not listed in the **Add/Remove Programs** item:

1. Click **Start** (menu), point to **Settings** and click **Control Panel** (or click **Control Panel**).
2. Double-click **System** (icon); System (icon) is in **Performance and Maintenance** (category).
3. Click **Hardware** (tab) > **Device Manager** (button).
4. Double-click the **device** you wish to update/reinstall the driver for (you may need to click “+”).
5. Look for the **Update Driver** button (check the **Driver** tab) and follow the on screen prompts.

## Driver Installation

Insert the *Device Drivers & Utilities + User's Manual CD-ROM* and the **Driver Installation** application will run automatically. You can double-click the driver name on the left of the screen to begin the install process. Alternatively you can browse to the **Drivers** folder on the CD and select the appropriate driver folder, then run the setup.exe.



Figure 5 - 2 - Driver Installation

## Driver Installation Application

1. Check the driver installation order from *Table 5 - 1, on page 5 - 6* (the drivers must be installed in this order) which is the same as that listed in the menu on the left.
2. Double-click to select and run the driver you wish to install.
3. Make a note of the drivers you have installed.
4. If the computer needs to restart after installing a driver, and you will usually need to click the “**Yes/Finish**” button when prompted to restart the computer.
5. Make sure you tick the “**Show Install Menu next time you start Windows when CD is Inserted**” tickbox to come back to the *Driver Installation* screen (otherwise click **Start** (menu) > **Run...** and navigate (**Browse..**) to **D:\SETUP.EXE** and click **OK**  
OR  
Double-click the **My Computer** icon (for WinXP only), and then double-click the CD icon).

## Drivers & Utilities

5

Feature	Windows 2000 (SP4)/Win XP (SP2)
Service Pack	Install the appropriate Service Pack for your system if not included in your <b>Windows</b> version
Chipset	<a href="#">Page 5 - 7</a>
Audio	<a href="#">Page 5 - 7</a>
Video	<a href="#">Page 5 - 8</a>
Network (LAN)	<a href="#">Page 5 - 8</a>
Modem	<a href="#">Page 5 - 9</a>
Quick-Key	<a href="#">Page 5 - 9</a>
TouchPad	<a href="#">Page 5 - 10</a>
PCMCIA / Card Reader	<a href="#">Page 5 - 10</a>
Check Mail	<a href="#">Page 5 - 11</a>
Hot Key	<a href="#">Page 5 - 11</a>
Wireless LAN	See the install procedure on pages <a href="#">8 - 4</a> , <a href="#">8 - 6</a> , <a href="#">8 - 8</a> , <a href="#">8 - 10</a> , <a href="#">8 - 12</a> & <a href="#">8 - 13</a>
Bluetooth	See the install procedure on pages <a href="#">8 - 15</a> & <a href="#">8 - 17</a>
PC Camera	See the install procedure on pages <a href="#">8 - 21</a>

*Table 5 - 1 - Install Procedure*

## Driver Installation Procedure

This section covers driver and utility installation instructions for *Windows 2000 Professional and Windows XP Home & Professional*.

## New Hardware Found

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


## Service Pack Installation

Make sure you install the appropriate service pack for your operating system before installing any drivers (see “*Windows 2000 with Service Pack 4*” on page 5 - 3 and “*Windows XP Service Pack 2*” on page 5 - 3).

## Chipset (Win2000/WinXP)

1. Double-click **Chipset** from the Driver Installation menu.  
**OR**  
Click **Start** (menu) > **Run...** and navigate (**Browse..**) to **D:\Drivers\inf\_update\infinst\_autol.exe** and click **OK**.
2. Click **Next** > **Yes** > **Next**.
3. Click **Finish** to restart the computer.

## Audio (Win2000/WinXP)

1. Double-click **Audio** from the Driver Installation menu.  
**OR**  
Click **Start** (menu) > **Run...** and navigate (**Browse..**) to **D:\Drivers\Audio\Setup.exe** and click **OK**.
2. Click **Next** > **Finish** to restart the computer.
3. You can click the **AC97 Audio Configuration** icon  in the taskbar for configuration options.

### Video (Win2000/WinXP)

1. Double-click **VGA** from the Driver Installation menu.

**OR**

Click **Start** (menu) > **Run...** and navigate (**Browse..**) to **D:\Drivers\VGA\Setup.exe** and click **OK**.

2. Click **Next** > **Yes**.
3. Click **Finish** to restart the computer.
4. See *“Advanced Video Controls” on page 3 - 2* for details on adjusting the video settings.

### LAN (Win2000/WinXP)

1. Double-click **Lan** from the Driver Installation menu.

**OR**

Click **Start** (menu) > **Run...** and navigate (**Browse..**) to **D:\Drivers\Lan\Setup.exe** and click **OK**.

2. Click **Next**.
3. Click **Finish**.
4. The network settings can now be configured.



## Modem (Win2000/WinXP)

1. Double-click **Modem** from the Driver Installation menu.



**OR**

### For Win2000

Click **Start** (menu) > **Run...** and navigate (**Browse..**) to **D:\Drivers\Modem\Win2K\Setup.exe** and click **OK**.

### For WinXP

Click **Start** (menu) > **Run...** and navigate (**Browse..**) to **D:\Drivers\Modem\WinXP\Setup.exe** and click **OK**.

2. Click  (button).
3. Click .
4. The modem is ready for dial-up configuration.



### Modem Country Selection

Be sure to check if the modem country selection is appropriate for you (**Control Panel > Phone and Modem Options**).

## Quick-Key (Win2000/WinXP)

1. Double-click **Quick-Key** from the Driver Installation menu.

**OR**

Click **Start** (menu) > **Run...** and navigate (**Browse..**) to **D:\Drivers\Quick-KEY\CNK001.exe** and click **OK**.

2. Choose the language you prefer, and click **OK**.
3. Click **Next**.
4. Click **Finish** to restart your computer.

### TouchPad (Win2000/WinXP)

1. Double-click **TouchPad** from the Driver Installation menu.

**OR**

#### For Win2000

Click **Start** (menu) > **Run...** and navigate (**Browse..**) to **D:\Drivers\Touchpad\Win2K\Setup.exe** and click **OK**.

#### For WinXP

Click **Start** (menu) > **Run...** and navigate (**Browse..**) to **D:\Drivers\Touchpad\WinXP\Setup.exe** and click **OK**.

2. Click **Next > Next > Next**.
3. Click **Finish** to restart your computer (**Click Yes/Continue Anyway** if asked if you want to continue).
4. You may then configure your TouchPad as outlined in *“TouchPad and Buttons/Mouse” on page 2 - 13*.

### PCMCIA & Card Reader (Win2000/WinXP)

1. Double-click **PCMCIA CardReader** from the Driver Installation menu.

**OR**

Click **Start** (menu) > **Run...** and navigate (**Browse...**) to **D:\Drivers\PCMCIA-CardReader\setup.exe** and click **OK**.

2. Choose the language you prefer, and click **OK**.
3. Click **Next > Finish**.

**Check Mail (Win2000/WinXP)**

1. Double-click **E-MAIL LED** from the Driver Installation menu.  
**OR**  
Click **Start** (menu) > **Run...** and navigate (**Browse..**) to **D:\Drivers\E-mail LED\Setup.exe** and click **OK**.
2. To continue click **Next > Install > Finish**.
3. Click **Finish** to restart the computer.
4. The program will run upon startup.
5. For further details see *“” on page 2 - 9.*

**Hot Key (Win2000/WinXP)**

1. Double-click **HotKey** from the Driver Installation menu.  
**OR**  
Click **Start** (menu) > **Run...** and navigate (**Browse..**) to **D:\Drivers\HotKey Driver\Setup.EXE** and click **OK**.
2. Click **Next > Install > Finish**.
3. Click **Finish** to restart the computer.
4. For further details see *“Hot Keys” on page 2 - 8.*

## Drivers & Utilities

### Wireless LAN (Win2000/WinXP)

See the introduction in *“Intel PRO/Wireless Mini-PCI WLAN Module” on page 8 - 2*, and check the install procedure for your appropriate module and operating system.

### PC Camera (Win2000/WinXP)

See install procedure in *“PC Camera Driver Installation (Win2000)” on page 8 - 21* or *“PC Camera Driver Installation (WinXP)” on page 8 - 21*.

5

### Bluetooth (Win2000/WinXP)

See install procedure in *“Bluetooth Driver Installation (Win2000)” on page 8 - 15* or *“Bluetooth Driver Installation (WinXP)” on page 8 - 17*.

# Chapter 6: BIOS Utilities

## Overview

This chapter is about the computer's built-in software.

Your computer comes with built-in **BIOS (Basic Input Output System)** which is an essential set of software routines stored on a chip in your computer. These routines serve to describe your computer's hardware to your chosen operating system, and provides an interface between the two. The **BIOS** includes the **POST (Power On Self Test)** and the **SCU (System Configuration Utility)**. The **POST** performs diagnostic procedures at startup, the **SCU** allows you to configure your computer.

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.

If your computer has never been set up, or you are making important changes to the system, then you should review this chapter first and note the original settings found in the **SCU**. 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.



### Settings Warning

Incorrect settings can cause your system to malfunction. To correct mistakes return to the **SCU**, go to the **Exit** menu and select the **Default Settings** and click **OK**.



### The POST Screen

1. CPU type
2. Memory status
3. Enter **SCU** prompt appears only during **POST**

**Note:** The **POST** screen as pictured above is for guideline purposes only. The **POST** screen on your computer may appear slightly different. If you choose the **Fast Boot** option you will see an abbreviated version of this screen.

*Figure 6 - 1*  
POST Screen

## The Power-On Self Test (POST)

Each time you turn on the computer, the system takes a few seconds to conduct a **POST**, including a quick test of the on-board RAM. As the **POST** proceeds, the computer will tell you if there is anything wrong. If there is a problem which prevents the system from booting, it will display a system summary and prompt you to run **SCU**.

If there are no problems, the **SCU (System Configuration Utility)** prompt will disappear and the system will load the operating system. Once that starts, you can't get into the **SCU** without rebooting the computer.

```

Insyde Software MobilePro BIOS Version 1.01
Copyright 1983 - 2002 Insyde Software Corp. All Rights Reserved
-----

H8 VERSION 06.03.02

1500 MHz Celeron M with MMX CPU 1
CPU Microcode Update Rev 045h Complete
L2 Cache: 512K installed
32MB Video RAM
Insyde Software Plug-n-Play BIOS Ver 1.17.01

Base Memory          0000640 KB
Extended Memory      0490496 KB 2
Totak Memory         0491520 KB
Shared Memory        032768 KB

Auto Detecting IDE Devices[Done]

Press F2 to Enter System Configuration Utility 3
    
```

## 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
- Press F2 to enter **System Configuration Utility**

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

Press **F2** to run the **SCU** 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.



### BIOS Settings V's OS Settings

Though many options such as power management and display settings may be set in the BIOS, these are usually best set in your OS (e.g. **Windows**).

Older OS's such as *DOS* etc. may still rely entirely on the setup information from the BIOS. "Plug-n-Play" OS's, such as the various **Windows** systems, may override these settings with the settings from the system's **Control Panel**.

## The System Configuration Utility

The **SCU** program tells the system how to configure itself and manage basic features and subsystems (e.g. port configuration and power management). The settings are stored in a nonvolatile battery and written to the CMOS RAM. This means that the settings are saved even when the computer is turned off.

### Entering Setup

To enter the **SCU**, turn on the computer and press **F2** when you see the prompt "Press F2 to enter System Configuration Utility". The prompt seen in *Figure 6 - 1 on page 6 - 2* is usually present very briefly after the system is powered on. If you get a "Keyboard Error" (usually because you pressed **F2** too quickly) just press **F2** again.

If the computer is already on, reboot and then hold down **F2** when you see the prompt. The **SCU**'s main menu will appear.



## Working with the Menu Bar

You can use the mouse to navigate around the various menus and submenus of the SCU, or alternatively, you can use the following key combinations:

Keys	Action
Alt	Activates the menu bar
Left arrow/Right arrow → ← Type the highlighted letters	Selects an option in the menu bar
Left mouse button Down arrow ↓ Spacebar Enter	Opens the pull-down menu bar options
Right mouse button Esc	Cancels the action

*Table 6 - 1*  
**SCU Menu**  
**Navigation Keys**

## Working with the Pull-Down Menu

Once your desired menu bar item is highlighted, press **Enter** or **left-click with the mouse** to see the pull-down menu items. The following keys allow you to move about the pull-down menu:

*Table 6 - 2*  
**Pull-Down Menu  
Keys**

Keys	Action
Down/Up arrows (↓↑)	Changes the value
Enter	Allows you to choose: <OK> to save changes <Cancel to ignore any changes>

## Working with Sub-Menus

Some pull-down menu options have an arrow to the right of the entry which indicates a sub-menu is available. Choose these sub-menus by pressing **Enter** and the screen will be displayed. Navigate through these screens by using the keys in the table below:

Keys	Action
Tab	Moves from one field to another
Down/Up arrows (↓↑)	Selects an item within the field
Spacebar	Enables the specified function (a dot indicates the function is enabled)
OK/Enter	Accepts the entries and closes the sub-menu and saves the changes
Cancel/Esc	Rejects the entries and closes the sub-menu



### SCU Screens

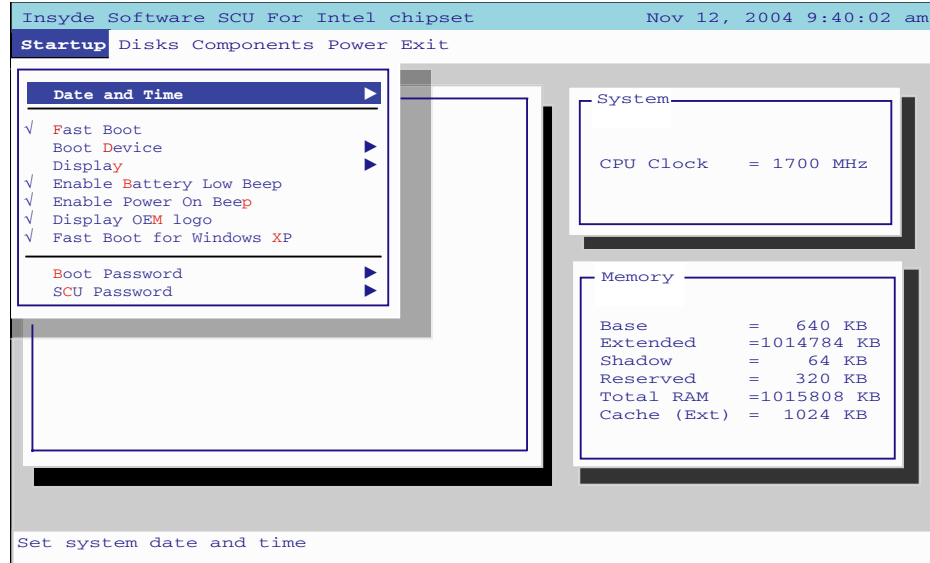
The screens which appear on the following pages are intended as a guideline.

It should be noted that the screen on your particular computer may appear a little differently.

*Table 6 - 3*  
**Sub Menu**  
**(Right Arrow**  
**Enabled)**

# Startup Menu

Figure 6 - 2  
Startup Menu



## Fast Boot (Startup Menu)

Enable this option to eliminate the memory test and other delays at power-up.

### *Boot Device (Startup Menu)*

Specify which device your computer should look on for an operating system by priority. In most cases your computer “boots” (starts-up from) the hard disk. There are cases where you may want to “Boot” from a floppy disk in drive “A:” (use a USB floppy drive), or the CD device. You may also set the computer to boot from the network (PXE LAN).

### *Display (Startup Menu)*

Enables your choice of CRT (external VGA monitor), LCD (the computer’s display screen), or both. These settings are best changed in your OS (see “[Enabling Other Displays](#)” on page 3 - 7), and may also be quickly adjusted by means of the **Fn** and **F7** keys. If you want to use multiple display devices in operating systems other than **Windows**, you may set the options here.

### *Enable Battery Low Beep (Startup Menu)*

Enable or disable the low battery beep if the power is getting low.

### *Enable Power On Beep (Startup Menu)*

Enable or disable the beep when the computer “boots up”.



### 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.

### *Display OEM logo (Startup Menu)*

Enable or disable (**enabled** by default) the display of the OEM logo (if applicable) during the POST process.

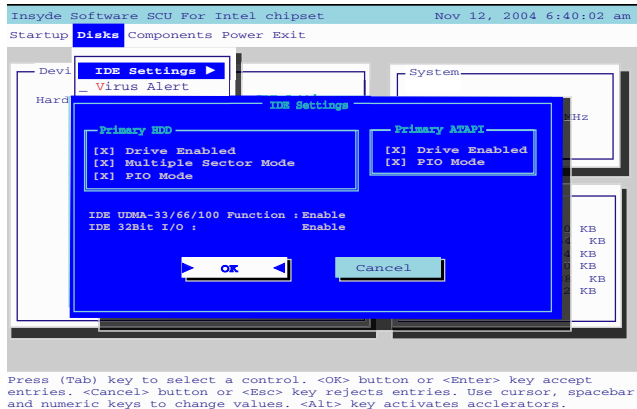
### *Fast Boot for Windows XP (Startup Menu)*

Enable or disable (**enabled** by default) the fast system startup option if you are using the **Windows XP OS**.

### *Boot and SCU Passwords (Startup Menu)*

You can set the passwords for when the computer starts-up (Boot Password), and for access to the **SCU** (SCU password). See the sidebar for a warning on setting the password.

## Disks Menu



*Figure 6 - 3*  
Disks Menu  
(IDE Settings)

### *IDE Settings (Disks Menu)*

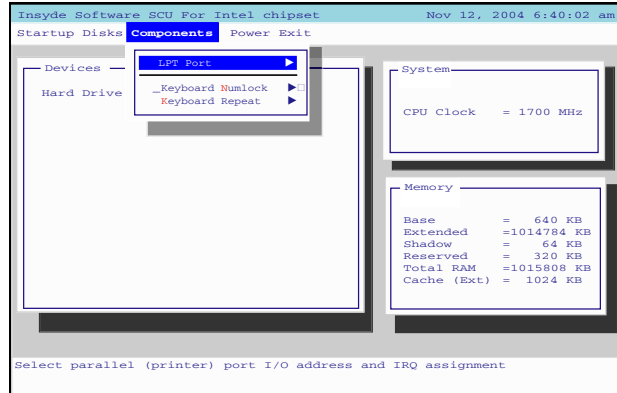
You can use this menu to set the options for your hard disk and CD device. Only make changes if you are sure of what you are doing.

### *Virus Alerts (Disks Menu)*

Enable this option to receive a warning if the area of the hard disk containing information on how to start up the computer is having information written to it. This can help warn you if viruses are attempting to affect this area. This is not a substitute for proper virus protection supplied by updated anti-virus software, merely an extra safeguard (see *“Viruses” on page 9 - 4*).

# Components Menu

Figure 6 - 4  
Components Menu



## *LPT Port (Components Menu)*

The options under this menu item allow you to configure your printer (parallel port).

## *Keyboard Numlock (Components Menu)*

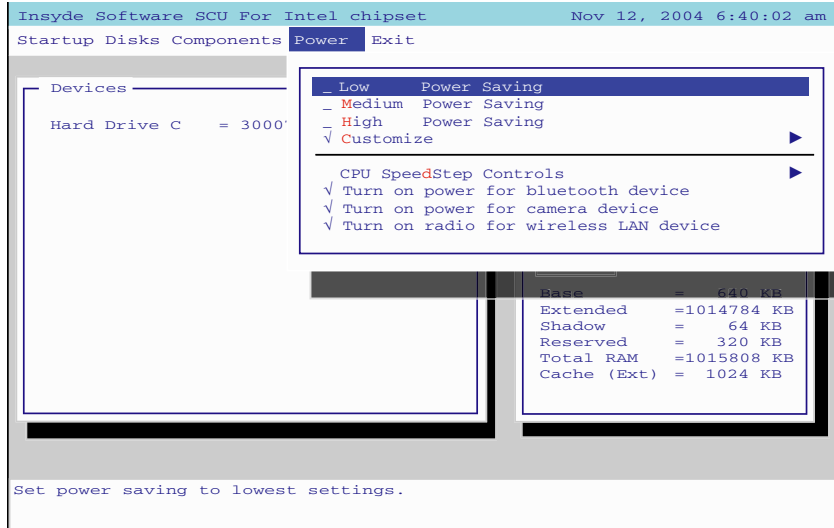
Enable this mode to start the computer up with Number Lock enabled.

## *Keyboard Repeat/Keyboard Type (Components Menu)*

Change the keyboard repeat rate, key delay and language from these menus.



## Power Menu



### *Low/Medium/High/Customize Power Saving (Power Menu)*

You may choose to set power saving options for *Low*, *Medium* or *High* power savings in this menu, or alternatively you may *Customize* the settings to change the time until the hard disk goes in to standby. These settings apply to Non-*Windows* operating systems only (for *Windows* OS's see "[Power Management](#)" on page 4 - 1).



### Power Menu

The Power Menu allows you to set power saving options for systems other than *Windows*. If you are using a *Windows* OS, then the power saving options are best set there (see "[Power Management](#)" on page 4 - 1).

*Figure 6 - 5*  
Sub Menu  
(Right Arrow  
Enabled)



### CPU SpeedStep Controls & CPU Performance

If you have a Pentium M processor, the settings for **CPU SpeedStep Controls** will have an affect on the CPU's speed and performance (in order to save power under certain conditions). See *"Intel CPU SpeedStep Controls"* on [page B - 3](#) for more details on how the settings control the CPU speed and performance. If you have a Celeron M Processor the settings are emulated by CPU throttling.

### *CPU SpeedStep Controls (Power Menu)*

You can set the mode for the Intel CPU SpeedStep controls here (*"Intel CPU SpeedStep Controls"* on [page B - 3](#) gives full detail on the settings). **Intel Pentium M** processors fully support these settings, however if you have a **Celeron M Processor** the settings are emulated by CPU throttling and you may still set the options to your preference.

- Performance Mode Always - Enable this option to give maximum available performance when the battery is not low.
- Battery Optimized Mode Always - Enable this option to save maximum power when the computer is powered by battery.
- Automatically Switch (**Default Setting**) - Enable this option to have the computer detect if it is powered by battery or AC adapter, and change the setting accordingly.

Indicators displaying the CPU SpeedStep mode setting will appear on screen when you plug-in/remove the AC adapter to/from the DC-In Jack, after you have installed the hot key driver (see [Table 2 - 2, on page 2 - 9](#)).

### *Turn on power/radio for ..... (Power Menu)*

Choose the options from this menu to enable/disable power to the optional modules (Bluetooth/Camera/WLAN modules) for extra power saving.

# Exit Menu

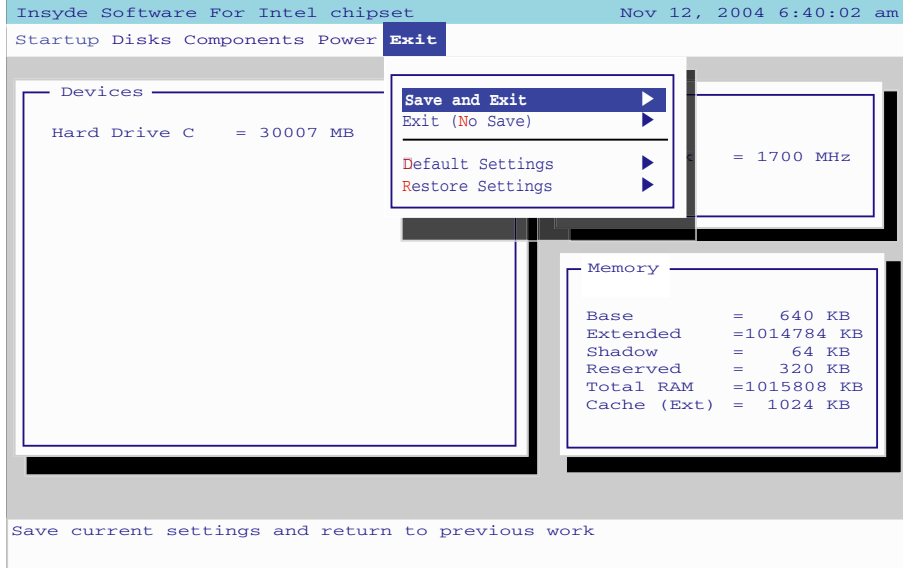


Figure 6 - 6  
Exit Menu

## Save and Exit (Exit Menu)

This option allows you to exit the SCU and save the changes you have made.

### *Exit (No Save) - (Exit Menu)*

This option allows you to exit the SCU without saving any changes made.

### *Default Settings (Exit Menu)*

This option allows you to reset the SCU settings to the original defaults before any changes were made to the system.

### *Restore Settings (Exit Menu)*

This option will allow you to restore the SCU settings to the last changes you had made.

# Chapter 7: 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 anti-static wrist strap to ground yourself because static electricity may damage the components.

The chapter includes:

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

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



### Warranty Warning

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



### Power Safety Warning

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

### When Not to Upgrade

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

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

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

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



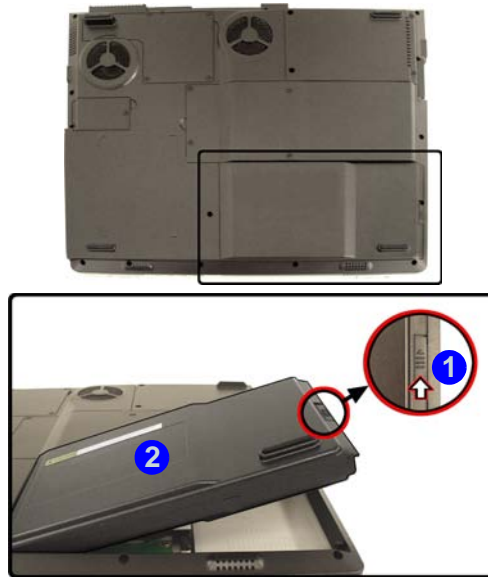
### Removal Warning

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

### Removing the Battery

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

1. Turn the computer **off**, and turn it over.
2. Slide the latch **1** in the direction of the arrow.
3. The battery **2** will pop up to allow you to lift it out of the bay as indicated.



#### Warranty Warning

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

*Figure 7 - 1*  
Battery Removal



### HDD System Warning

New HDD's are blank. Before you begin make sure:

You have backed up any data you want to keep from your old HDD.

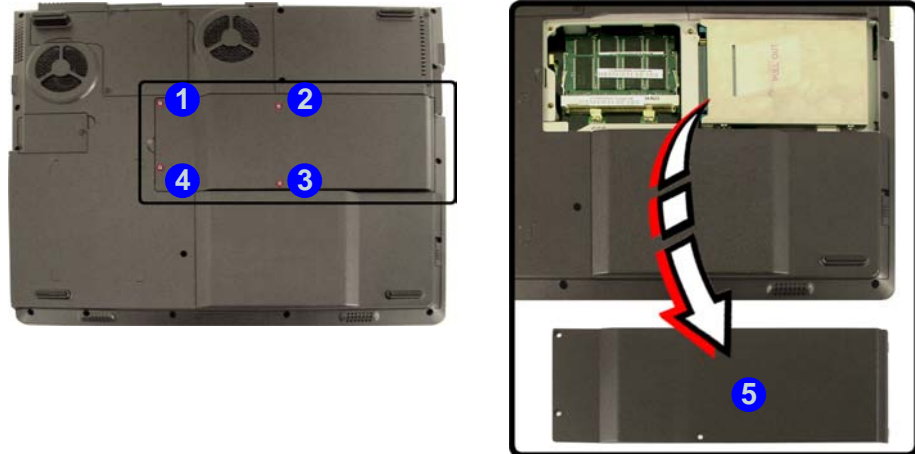
You have all the CD-ROMs and FDDs required to install your operating system and programs.

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

## Upgrading the Hard Disk Drive(s)

The hard disk drive(s) can be taken out to accommodate other 2.5" IDE hard disk drives with a height of 9.5mm (h) (see *“Storage” on page C - 3*). Follow your operating system’s installation instructions, and install all necessary drivers and utilities (as outlined in *“Drivers & Utilities” on page 5 - 1*), when setting up a new hard disk.

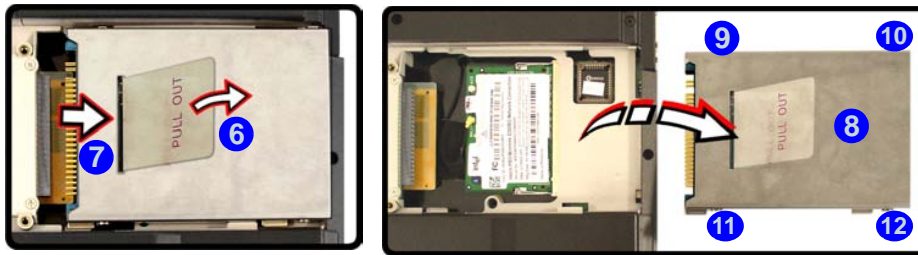
1. Turn **off** the computer, and turn it over and remove the battery.
2. Locate the hard disk/memory bay cover and remove screws ① - ④.
3. Remove the bay cover ⑤.



*Figure 7 - 2*  
**HDD/RAM Bay  
Cover Removal**



4. Pull the tab **6** in the direction of the arrow **7** in order to release the disk assembly from the connector.
5. Lift the hard disk assembly **8** up out of the computer.
6. Remove screws from points **9** - **12** on the side of the hard disk assembly in order to separate the bracket from the hard disk **13**.
7. Reverse the process to install a new hard disk(s).



*Figure 7 - 3*  
HDD Assembly  
Removal





### Supported RAM Module Types

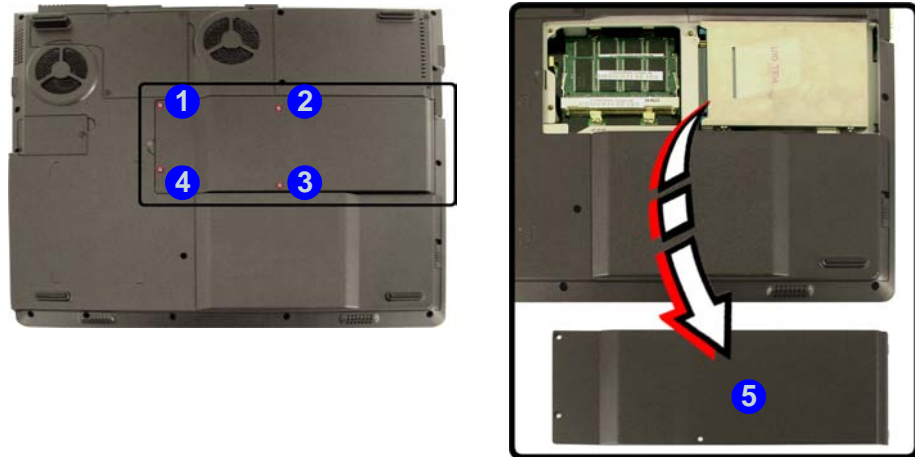
Use **ONLY** the DDR  
RAM module types in-  
dicated in *“Memory”*  
on page C - 2.

## Upgrading the System Memory (RAM)

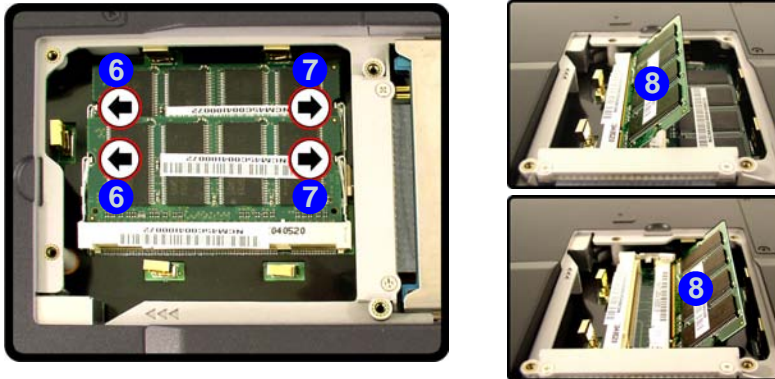
The computer has **two** memory sockets for 200 pin Small Outline Dual In-line (SO-DIMM) - DDR type memory modules (see *“Memory” on page C - 2* for details of supported module types). The total memory size is automatically detected by the POST routine once you turn on your computer.

1. Turn **off** the computer, and turn it over and remove the battery.
2. Locate the hard disk/memory bay cover and remove screws ① - ④.
3. Remove the bay cover ⑤.

Figure 7 - 4  
HDD/RAM Bay  
Cover Removal



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



5. The RAM module 8 will pop-up, and you can remove it.
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 slot.
8. The module's pin alignment will allow it to only fit one way. Make sure the module is seated as far into the slot as it will go. DO NOT FORCE the module; it should fit without much pressure.
9. Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
10. Replace the memory socket cover and the 4 screws (see *Figure 7 - 4*).
11. Restart the computer to allow the BIOS will register the new memory configuration as it starts up.



### Contact Warning

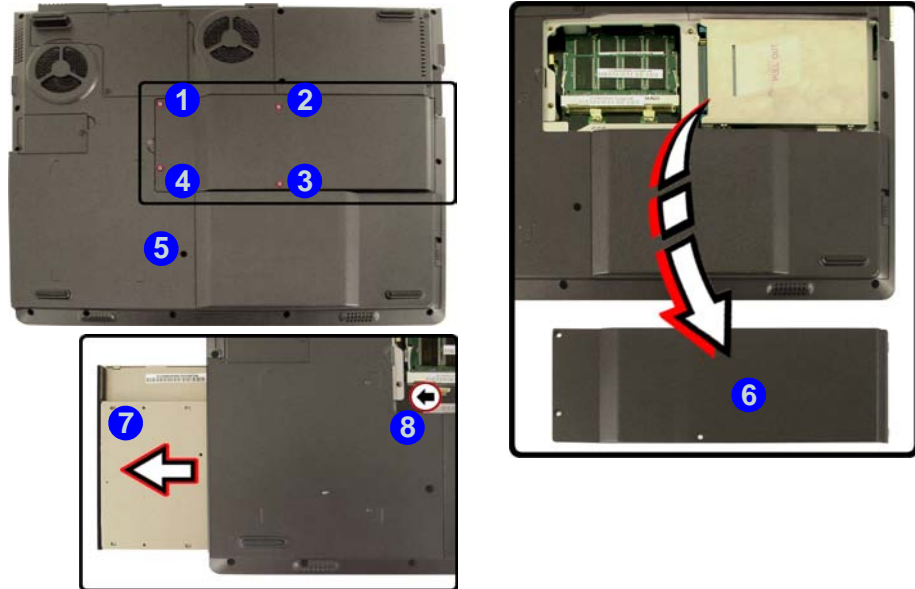
Be careful not to touch the metal pins on the module's connecting edge. Even the cleanest hands have oils which can attract particles, and degrade the module's performance.

*Figure 7 - 5*  
**RAM Module  
Removal**

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

1. Turn **off** the computer, and turn it over and remove the battery.
2. Locate the hard disk/memory bay cover and remove screws **1** - **5**.
3. Remove the bay cover **6**.
4. Use a screwdriver to carefully push the optical device **7** out of the computer at point **8**.

*Figure 7 - 6*  
Removing the CD/  
DVD Device(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.



#### Warranty

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

Unauthorized tampering with the HDD may also violate your warranty.



# Chapter 8: Modules

## Overview

This chapter contains the information on the **WLAN**, **Bluetooth**, and **PC Camera** modules 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:

- Intel PRO/Wireless **2100 (802.11b)/ 2200BG (802.11b/g)/ 2195ABG (802.11a/b/g)** Mini PCI WLAN Module
- The Bluetooth Module
- The PC Camera




### Wireless Device Operation Aboard Aircraft

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

If you **restart/shut down** the computer the power status of the module will remain **the same** as it was before the restart/shut down.

## Intel PRO/Wireless Mini-PCI WLAN Module

Either an **Intel PRO/Wireless 2100 (802.11b)**, **2200BG (802.11b/g)** or **2195ABG (802.11a/b/g)** Mini-PCI WLAN module is supplied as a standard feature for the computer. You will have the appropriate software CD provided for your module.

Before installing the Intel PRO/Wireless 2100, 2200BG or 2195ABG Mini-PCI WLAN driver, make sure that the Wireless LAN module is on (the  LED will be green). Use the WLAN Quick-Key (see *“Quick-Key Buttons” on page 1 - 7*) to toggle power to the Wireless LAN module (**make sure you install the drivers in the order indicated in Table 5 - 1, on page 5 - 6**). If you have installed the Hot Key driver the power status of the WLAN module will appear on screen (see *“Hot Keys” on page 2 - 8*).



To get help on the network settings you can view the **User Guides** from the *Intel PRO CD-ROM*.



Figure 8 - 1  
Installation  
Screens



### Intel PRO/Wireless 2100 WLAN Driver Installation (Win2000)

1. Insert the *Intel PRO CD-ROM* into the CD drive.
2. Click **Wireless LAN Adapters** (button).
3. Click **Install Software** (button).
4. Click **Next**.
5. Click the button to accept the license and click **Next > Next > Install > Finish**.
6. Click **Start** (menu), point to **Settings** and click **Control Panel**. Double-click **System** (icon) and then click **Hardware** (tab) > **Device Manager** (button).
7. Click **Device Manager** (tab), then click “+” next to **Other Devices** (if its sub-items are not shown).
8. Double-click **Network Controller**, and click the **Reinstall Driver** (button).
9. When the *Update Device Driver Wizard* appears, click **Next** (make sure that you have selected “**Search for a suitable driver for my device (recommended)**”) and click **Next**.
10. When *Locate Driver Files* appears, select ONLY “**Specify a location**” and click **Next**.
11. Navigate (Browse...) to **D:\ProW2100\PROW7100\WIN2K**.
12. Click **Open > OK > Next**.

13. Input your network name and click **Next**, then select your network settings and click **Next**.
14. Click **Finish** and close the open windows.

You can now install the Administration Tools.

1. Insert the **Intel PRO CD-ROM** into the CD drive.
2. Click **Wireless LAN Adapters** (button).
3. Click **Install Administration Tools** (button).
4. Click **Next**.
5. Click the button to accept the license and click **Next > Next > Install > Finish**.
6. You can configure the settings by going to the **Start** menu and pointing to **Programs** and clicking **Intel Network Adapters**, then clicking either the **Intel (R) PROset** icon, or the options under the **Access Point Administration Tools**.

You can view the User Guides by inserting the **Intel PRO CD-ROM** and clicking **Wireless LAN Adapters** (button) > **View User Guides** (button) as per *“Installation Screens” on page 8 - 3*.



**Windows 2000  
Internet Explorer  
5.5**

Make sure that you install **Internet Explorer 5.5 (or higher version)** if you are using the **Windows 2000 OS**.

### Intel PRO/Wireless 2100 WLAN Driver Installation (WinXP)

1. Insert the *Intel PRO CD-ROM* into the CD drive.
2. Click **Wireless LAN Adapters** (button).
3. Click **Install Software** (button).
4. Click **Next**.
5. Click the button to accept the license and click **Next > Next > Install > Finish**.
6. If you can see the **My Computer** icon on your desktop (if you cannot see the **My Computer** icon go to **step 7**) click on it once to select it, then right-click it to make the sub-menu appear and scroll down to **Properties** and click on it (go to **step 8**).
7. If you cannot see the **My Computer** icon click **Start** (menu), then point to (but don't click just highlight it) **My Computer**. Right-click it to make the sub-menu appear and scroll down to **Properties** and click on it (go to **step 3**).
8. Click the **Hardware** (tab), then click **Device Manager** (button).
9. Click “+” next to **Other Devices** (if its sub-items are not shown).
10. Double-click **Network Controller** and click **Reinstall Driver** (button).
11. When the *Hardware Update Wizard* appears select “**No, not this time**” and click **Next**.

12. Click “**Install from a list or specific location (Advanced)**” then click **Next**.
13. Select “**Search for the best driver in these locations.**” and select ONLY “**Include this location in the search:**”.
14. Navigate (Browse...) to **D:\ProW2100\PROW7100\WINXP** and click **OK > Next**.
15. Click **Finish** and close the open windows.

You can now install the Administration Tools.

1. Insert the *Intel PRO CD-ROM* into the CD drive.
2. Click **Wireless LAN Adapters** (button).
3. Click **Install Administration Tools** (button).
4. Click **Next**.
5. Click the button to accept the license and click **Next > Next > Install > Finish**.
6. You can configure the settings by going to the **Start** menu and pointing to **Programs/All Programs** and clicking **Intel Network Adapters**, then clicking either the **Intel (R) PROset** icon, or the options under the **Access Point Administration Tools**.

You can view the User Guides by inserting the *Intel PRO CD-ROM* and clicking **Wireless LAN Adapters** (button) > **View User Guides** (button) as per “*Installation Screens*” on page 8 - 3.



### Which Driver?

Note that there are **two** driver installation options for the Intel Pro/Wireless 2200BG Mini-PCI WLAN module. If the installation screen which appears is the same as **2** in *Figure 8-1 on page 8-3* then follow the procedure listed on these pages. If the installation screen which appears is the same as **3** in *Figure 8-1 on page 8-3* then follow the procedure listed on page *8-12*.

## Intel PRO/Wireless 2200BG WLAN Driver Installation (Win2000)

1. Make sure the module is powered on, then insert the *Intel PRO CD-ROM* into the CD drive.
2. See the sidebar note in order to determine which driver to install.
3. Click **Install Software** (button).
4. Click **Next**.
5. Click the button to accept the license and click **Next > Next > Install > Finish**.
6. Click **Start** (menu), point to **Settings** and click **Control Panel**.
7. Double-click **System** (icon).
8. Click **Hardware** (tab) > **Device Manager** (button).
9. Click “+” next to **Other devices** (if its sub-items are not shown).
10. Double-click **Network Controller**, and click **Reinstall Driver** (button).
11. When the *Upgrade Device Driver Wizard* appears, click **Next > Next** (make sure that you have selected “**Search for a suitable driver for my device (recommended)**”).
12. When *Locate Driver Files* appears, select ONLY “**Specify a location**” and click **Next**.
13. Navigate (Browse...) to **D:\PROW2200\WIN2K**.
14. Click **Open > OK > Next**.
15. Click **Finish** and close the open windows.

16. You can configure the settings by going to the **Intel (R) PROset for Wireless** control panel (**Start > Programs > Intel Network Adapters**).

You can view the User Guides by inserting the *Intel PRO CD-ROM* and clicking **View User Guides** (button) as per *“Installation Screens” on page 8 - 3*.



**Windows 2000  
Internet Explorer  
5.5**

Make sure that you install **Internet Explorer 5.5 (or higher version)** if you are using the *Windows 2000* OS.



### Which Driver?

Note that there are **two** driver installation options for the Intel Pro/Wireless 2200BG Mini-PCI WLAN module. If the installation screen which appears is the same as **2** in [Figure 8 - 1 on page 8 - 3](#) then follow the procedure listed on these pages. If the installation screen which appears is the same as **3** in [Figure 8 - 1 on page 8 - 3](#) then follow the procedure listed on page [8 - 13](#).

## Intel PRO/Wireless 2200BG WLAN Driver Installation (WinXP)

1. Make sure the module is powered on, then insert the *Intel PRO CD-ROM* into the CD drive.
2. See the sidebar note in order to determine which driver to install.
3. Click **Install Software** (button).
4. Click **Next**.
5. Click the button to accept the license and click **Next > Next > Install > Finish**.
6. If you can see the **My Computer** icon on your desktop (if you cannot see the **My Computer** icon go to **step 6**) click on it once to select it, then right-click it to make the sub-menu appear and scroll down to **Properties** and click on it (go to **step 7**).
7. If you cannot see the **My Computer** icon click **Start** (menu), then point to (but don't click just highlight it) **My Computer**. Right-click it to make the sub-menu appear and scroll down to **Properties** and click on it (go to **step 7**).
8. Click the **Hardware** (tab), then click **Device Manager** (button).
9. Click "+" next to **Other Devices** (if its sub-items are not shown).
10. Double-click **Network Controller** and click **Reinstall Driver** (button).
11. When the *Hardware Update Wizard* appears select "**No, not this time**" and click **Next**.



12. Click “**Install from a list or specific location (Advanced)**” then click **Next**.
13. Select “**Search for the best driver in these locations.**” and select ONLY “**Include this location in the search:**”.
14. Navigate (Browse...) to **D:\PROW2200\WINXP** and click **OK > Next**.
15. Click **Finish**.
16. An **Intel Configuration Service** control panel will appear, and you can choose **Yes** to have **Intel PROset** software to manage the wireless adapter.
17. A list of available networks will appear (click **Finish** to exit the Wizard).
18. You can configure the settings by going to the **Intel (R) PROset for Wireless** control panel (**Start > Programs/All Programs > Intel Network Adapters**).


You can view the User Guides by inserting the *Intel PRO CD-ROM* and clicking **View User Guides** (button) as per “*Installation Screens*” on page 8 - 3.



### Windows 2000 Internet Explorer 5.5


Make sure that you install Internet Explorer 5.5 (or higher version) if you are using the Windows 2000 OS.

## Intel PRO/Wireless 2195ABG WLAN Driver Installation (Win2000)

1. Make sure the module is powered on, then insert the *Intel PROSet/ Wireless CD-ROM* into the CD drive.
2. Click **Install Software** (button).
3. Click the button to accept the license and click **Next > Next > OK**.
4. Click **OK > Yes** to restart the computer.
5. You can configure the settings by going to the **Intel (R) PROSet Wireless** control panel (**Start > Programs > Intel PROSet Wireless**), or by clicking the icon  in the taskbar.

You can view the User Guides by inserting the *Intel PROSet/ Wireless CD-ROM* and clicking **View User Guides** (button) as per “*Installation Screens*” on page 8 - 3.

## Intel PRO/Wireless 2195ABG WLAN Driver Installation (WinXP)

1. Make sure the module is powered on, then insert the *Intel PROSet/Wireless CD-ROM* into the CD drive.
2. Click **Install Software** (button).
3. Click the button to accept the license and click **Next > Next > OK**.
4. Click **OK** to complete the installation.
5. You can configure the settings by going to the **Intel (R) PROSet Wireless** control panel (**Start > Programs > Intel PROSet Wireless**), or by clicking the icon  in the taskbar.

You can view the User Guides by inserting the *Intel PROSet/ Wireless CD-ROM* and clicking **View User Guides** (button) as per “*Installation Screens*” on page 8 - 3.




### Wireless Device Operation Aboard Aircraft

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

If you **restart/shut down** the computer the power status of the module will remain **the same** as it was before the restart/shut down.

## Bluetooth Module

Before installing the Bluetooth driver, make sure that the **optional** Bluetooth module is on (the  LED will be green). Use the Bluetooth Quick-Key (see *“Quick-Key Buttons” on page 1 - 7*) to toggle power to the Bluetooth module (if the *Found New Hardware Wizard* appears, click **Cancel**). **Make sure you install the drivers in the order indicated in Table 5 - 1, on page 5 - 6.** If you have installed the Hot Key driver the power status of the Bluetooth module will appear on screen (see *“Hot Keys” on page 2 - 8*).

### Manual

The Bluetooth Manual (**readme.pdf**) is on the *Bluetooth CD-ROM* in the Userguide folder (insert the *Bluetooth CD-ROM* and click **Browse this CD**). Click **Acrobat Reader** from the menu to install the program to read the file.

## Bluetooth Driver Installation (Win2000)

1. Insert the *Bluetooth CD-ROM* into the CD drive.
2. The program will run automatically.
3. If the *Found New Hardware Wizard* appears, click **Cancel**.
4. Click **Install Drivers and Application Software** and click **Next**.
5. Click the button to accept the license agreement, then click **Next**.
6. Click **Next > Install** (click **OK** if a Driver Signature Notice appears).
7. Click **Finish > Yes** to restart the computer.
8. You can configure the settings in the **Bluetooth Configuration** control panel (**Start** menu and point to **Settings** and click **Control Panel** then double-click the **Bluetooth Configuration** icon).

### Bluetooth Driver Audio Setup (Win2000)

After installing the Bluetooth driver in *Windows 2000* you may no longer hear any sound, nor see the **Volume** icon in the taskbar. If this is the case then follow this procedure:

1. Go to the **Sounds & Multimedia Control Panel** (**Start** Menu and point to **Settings** and click **Control Panel** then double-click the **Sounds & Multimedia** icon).
2. Click the **Audio** tab.
3. In the **Sound Playback** and **Sound Recording** menus choose **Realtek AC97 Audio**.
4. Click the **Sounds** tab and make sure that the tickbox to “**Show volume control on the taskbar**” is ticked.
5. Click **OK**.

## Bluetooth Driver Installation (WinXP)

1. Insert the *Bluetooth CD-ROM* into the CD drive.
2. The program will run automatically.
3. Click **Install Drivers and Application Software** and click **Next**.
4. Click the button to accept the license agreement, then click **Next**.
5. Click **Next > Install** (click **OK/Continue Anyway** if asked if you want to continue).
6. Click **Finish**.
7. The **System Properties** window should be open (if the window is not open see *“Windows XP Service Pack 2” on page 4 - 4* for instructions); click **Device Manager** (button) from the **Hardware** (tab).
8. Click “+” next to **Bluetooth Radios** (if its sub-items are not shown).
9. Right-click **Generic Bluetooth Radio** and select **Update Driver**.
10. Select **“No, not this time”** and click **Next**.
11. When the *Hardware Update Wizard* appears, click **“Install from a list or specific location (Advanced)”** then click **Next**.
12. Click **“don’t search. I will choose the driver to install.”** and click **Next**.
13. Click to select **Billinton USB Bluetooth Device**, and click **Next**.
14. Click **Finish** and close the open windows.
15. You can configure the settings in the **Bluetooth Configuration** control panel (**Start** menu and point to **Settings** and click **Control Panel** then double-click the **Bluetooth Configuration** icon).



### Bluetooth Support in Windows XP Service Pack 2

Windows XP Service Pack 2 includes support for Bluetooth devices, once the device is enabled.

By installing the driver you will get additional application support for your Bluetooth device.

### Bluetooth Control Panel Options

You may need to change some control panel options after installing the Bluetooth driver:

#### Audio

1. Go to the **Start** menu and point to **Settings** (or just click **Control Panel**) and click **Control Panel**, then double-click the **Sounds & Audio Devices/ Sounds & Multimedia** icon (**Category View > Speech, and Audio Devices**).
2. Click **Audio** (tab) and make sure that the “**Default device:**” is **Realtek AC97 Audio**.

#### Hyper Terminal

1. Go to **Start** menu and click **Programs/All Programs**, then point to **Accessories > Communications > HyperTerminal**.
2. Double-Click your connection, and make sure you have selected “**Connect Using:**” **Smart Link 56K Voice Modem**.

#### FAX (WinXP)

1. Go to the **Start** menu and point to **Settings** (or just click **Control Panel**) and click **Control Panel**, then double-click the **Printers and Faxes** icon (**Category View > Printers and Other Hardware**).
2. Double-click your fax icon to bring up the **Fax Console**.
3. Click the **Tools** menu and scroll down to “**Configure Fax...**”.
4. Click **Next > Next** and make sure that the fax device is the **Smart Link 56K Voice Modem**.



**FAX (Win2000)**

1. Go to the **Start** menu and point to **Settings** and click **Control Panel**, then double-click the **Fax** icon.
2. Click **Advanced Options (tab)** and click the **Open Fax Service Management Console (button)**.
3. Click **Devices** in the **Tree** window on the left.
4. The fax devices will be displayed in the right window, with the device with the highest priority displayed at the top.
5. Select the **Smart Link 56K Voice Modem** and use the arrows to move it to the top of the priority list, then close the windows.



### Taking Still Pictures

You may take still pictures in the **Windows XP** operating system **only**.


Double-click the **My Computer** icon on the desktop, or go the **Start** menu and point to **My Computer**, then click it.

Double-click the **CMM PC Camera** icon.



Click **Take a new picture** in the **Camera Tasks** box.

## PC Camera

If you have purchased 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 in the order indicated in *Table 5 - 1, on page 5 - 6***). Before installing the Camera driver, make sure that the **optional** Camera module is on (the  LED will be green). Use the Camera Quick-Key (see ***“Quick-Key Buttons” on page 1 - 7***) to toggle power to the PC Camera module. If you have installed the Hot Key driver the power status of the PC Camera module will appear on screen (see ***“Hot Keys” on page 2 - 8***).

After installing the driver you can run the application software by going to the **CMM PC Camera** item in the **Start > Programs/All Programs** menu and selecting the **AMCAP** program.



### Latest PC Camera Driver Information

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

### PC Camera Driver Installation (Win2000)

1. Insert the **PC Camera CD-ROM** into the drive.
2. Click **Next** (click **Yes** if asked if you want to continue at any time).
3. Click **Finish** to restart the computer.
4. After restart the computer will find the new hardware for you (click **Yes** if asked if you want to continue at any time).
5. Run the **AMCAP** program from the **CMM PC Camera** item in the **Start > Programs/All Programs** menu.

### PC Camera Driver Installation (WinXP)

1. Insert the **PC Camera CD-ROM** into the drive.
2. Click **Next**.
3. Click **Finish** to restart the computer.
4. After restart the computer will find the new hardware for you.
5. Run the **AMCAP** program from the **CMM PC Camera** item in the **Start > Programs/All Programs** menu.

### 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*.

#### (WinXP)

1. Go to the **Start** menu and point to **Settings** (or just click **Control Panel**) and click **Control Panel**, then double-click the **Sounds & Audio Devices** icon (**Speech, and Audio Devices** in **Category View**).
2. Click **Advanced** in the **Device volume** tab.
3. Click **Options** (Volume Control) and scroll down and click **Properties**.
4. Click **Recording** (Adjust volume for) and click **Microphone** (check box), then click **OK**.
5. Make sure the **Select** (check box) in the **Recording Control** panel, under the **Microphone** section, is checked (boost the volume as high as it will go).
6. Close the window, then click **OK**.

#### (Win2000)

1. Go to the **Start** menu and point to **Settings** and click **Control Panel** then double-click the **Sounds and Multimedia** icon.
2. Click **Audio** (tab) and click **Volume** (button) in the **Sound Recording** menu.
3. Select **Advanced Controls** from the **Options** menu.
4. Make sure the **Select** (check box) in the **Microphone** section is checked, and boost the volume as high as it will go.
5. Close the windows.

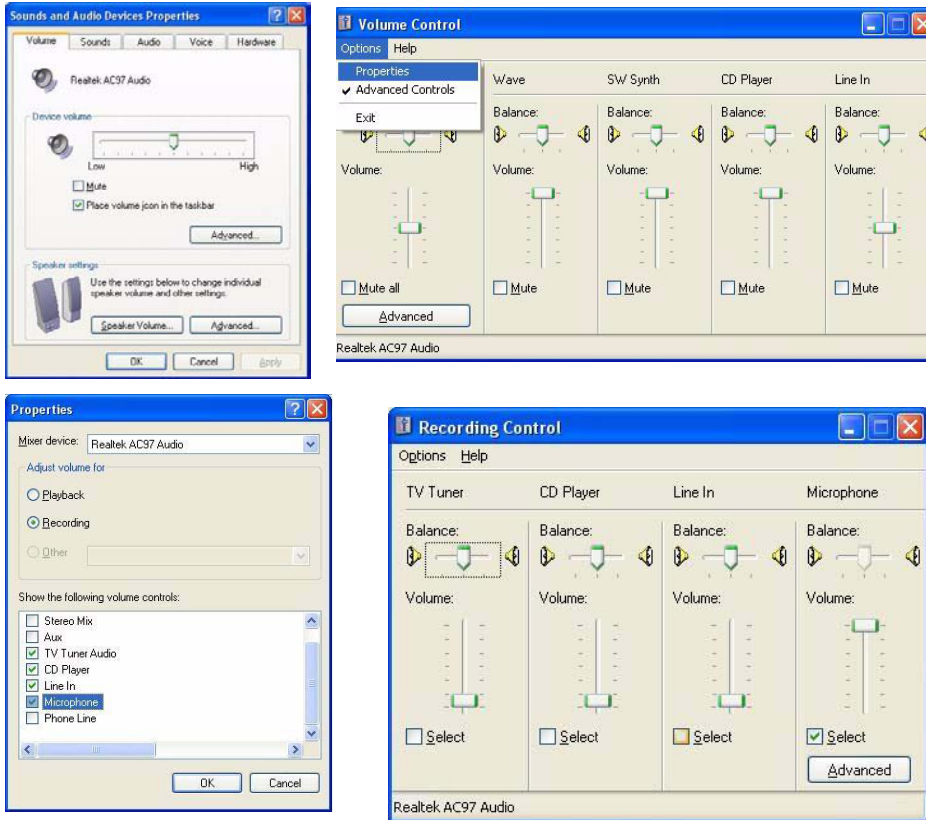


Figure 8 - 2  
Audio Setup  
(Windows XP)



### Pre-Allocating File Space

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

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

You may find it helpful to defragment the HDD before capture.

## AMCAP

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

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

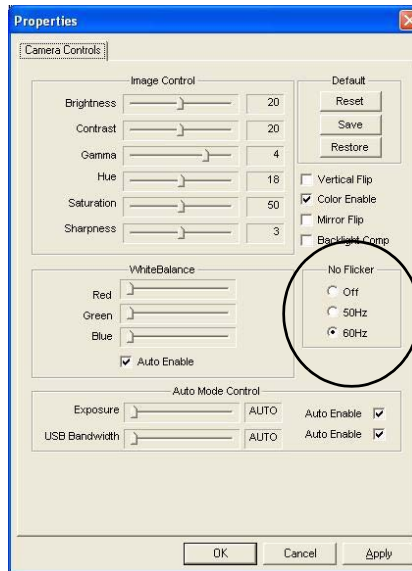
### Set Capture File

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

## Eliminating Screen Flicker

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

1. Run the **AMCAP** program from the **Start > Programs/All Programs > CMM PC Camera** menu.
2. Go to **Options** and scroll down to select “**Video Capture Filter...**”.
3. You can choose either **50Hz** or **60Hz** from the **No Flicker** box.



*Figure 8 - 3*  
**Camera Controls**





# Chapter 9: 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 **Standby** mode by pressing the keys configured in your *Power Management/Power Options* (see *“Configuring the Power Button” on page 4 - 8*), the **Fn + Esc** 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 *“Advanced Video Controls” on page 3 - 2*).
- **Display Choice** - Press **Fn + F7** to make sure the system is not set to “external only” display (see *“Switching/Enabling Displays (Keyboard)” on page 3 - 9*).
- **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 *“Startup Menu” on page 6 - 8*).
- Keep copies of vital **settings files** such as network, dialup settings, mail settings etc. (even if just brief notes).



### Warranty

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

# 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 **e-mail 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).

## Troubleshooting

- 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.
- 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.

# Power

Problem	Possible Cause - Solution
<p>You turned on the power but it doesn't work.</p>	<p><i>Battery missing / incorrectly installed.</i> 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.</p>
<p>The Battery <b>LED power</b> indicator , is blinking orange.</p>	<p><i>Low Battery.</i> Plug in the AC power source. If the computer doesn't start up immediately, turn it off then on again.</p>
<p>You are losing battery power too quickly.</p>	<p><i>The system is using too much power.</i> If your OS has a <i>Power Options</i> scheme (see <b>"Power Schemes" on page 4 - 4</b>) check its settings. You may also be using a PC Card device that is drawing a lot of power.</p>
<p>Actual battery operating time is shorter than expected.</p>	<p><i>The battery has not been fully discharged before being recharged.</i> Make sure the battery is fully discharged and recharge it completely before reusing (see <b>"Battery Information" on page 4 - 9</b>).</p> <p><i>Power Options have been disabled.</i> Go to the <b>Control Panel</b> in <i>Windows</i> and re-enable the options.</p> <p><i>A peripheral device or PC Card is consuming a lot of power.</i> Turn off the unused device to save power.</p>

## Troubleshooting

Problem	Possible Cause - Solution
The computer feels too hot.	<p>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 <b>Hibernate</b> mode or turn it off for an hour. Make sure the computer isn't sitting on a thermal surface (see "<a href="#">Overheating</a>" on page 1 - 12). Make sure you're using the correct adapter.</p> <p>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 intakes to be blocked.</p>



# Display

Problem	Possible Cause - Solution
<p>Nothing appears on screen.</p>	<p><i>The system is in a power saving mode.</i> Toggle the sleep/resume key combination, <b>Fn + F3</b> (see <a href="#">“Sleep Button” on page 4 - 8</a>).</p> <p><i>The screen controls need to be adjusted.</i> Toggle the screen control key combinations <b>Fn + F8/F9</b> (see <a href="#">“Keyboard Video Controls” on page 3 - 2</a>). 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.</p> <p><i>The computer is set for a different display.</i> Toggle the screen display key combination, <b>Fn + F7</b> (see <a href="#">“Switching/Enabling Displays (Keyboard)” on page 3 - 9</a>). If an external monitor is connected, turn it on.</p> <p><i>The screen saver is activated.</i> Press any key or touch the <b>TouchPad</b>.</p>
<p>No image appears on the external monitor I have plugged in and powered on.</p>	<p><i>You haven’t installed the video driver and configured it appropriately from the <b>Control Panel</b>.</i> See <a href="#">“Video (Win2000/WinXP)” on page 5 - 8</a> for instructions on installing the driver, and see <a href="#">“Intel Extreme Graphics 2 for Mobile” on page 3 - 6</a> for instructions on configuring the video driver.</p>

# Boot Password

Problem	Possible Cause - Solution
You forget the boot password.	<i>If you forget the password, you may have to discharge the battery of the CMOS. Contact your service representative for help.</i>




### 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.

## Audio & CD Device

Problem	Possible Cause - Solution
The sound cannot be heard or the volume is very low.	<i>The volume might be set too low.</i> Check the volume control in the <b>Volume Control Panel</b> in the <i>Windows</i> taskbar, or use the key combination <b>Fn + F5</b> and <b>F6</b> (see <b>“Audio Features” on page 3 - 16</b> ) to adjust.
The compact disc cannot be read.	<i>The compact disc is dirty.</i> Clean it with a CD-ROM cleaner kit.
The compact disc tray will not open when there is a disc in the tray.	<i>The compact disc is not correctly placed in the tray.</i> Gently try to remove the disc using the eject hole (see <b>“Loading Discs” on page 2 - 3</b> ).
The DVD regional codes can no longer be changed.	<i>The code has been changed the maximum 5 times.</i> See <b>“DVD Regional Codes” on page 2 - 5</b> .

# Keyboard

Problem	Possible Cause - Solution
Unwelcome numbers appear when typing.	<i>If the LED  is lit, then Num Lock is turned <b>ON</b>. Check that Padlock mode is not enabled (see “<a href="#">LED Indicators</a>” on page 1 - 6).</i>



### Other Keyboards

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

# Operation

Problem	Possible Cause - Solution
The system freezes or the screen goes dark.	<i>The system's power saving features have timed-out.</i> Use the AC adapter, press a key on the keyboard, or press the sleep ( <b>Fn + Esc</b> ) 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 <b>Windows</b> Power Options menu and enable the features you prefer (see <b>"System Power Options" on page 4 - 6</b> ). Make sure you have enabled <b>Hibernate</b> mode from the control panel.

# Modules







Problem	Possible Cause - Solution
<p>The Wireless LAN/Bluetooth/PC Camera modules cannot be detected.</p>	<p><i>The modules are off.</i> Check the LED indicators to see if the modules are on or off (see <b><i>“LED Indicators” on page 1 - 6</i></b>). If the LED indicator is off, then press the Quick-Key combination in order to enable the modules (see <b><i>“Quick-Key Buttons” on page 1 - 7</i></b>).</p>
<p>The Wireless LAN/Bluetooth/PC Camera modules cannot be configured.</p>	<p>The driver(s) for the module(s) have not been installed. Make sure you have installed the driver for the appropriate module (see the instructions for the appropriate module in <b><i>“Modules” on page 8 - 1</i></b>).</p>

# Appendix A : Interface (Ports & Jacks)

## Overview







The following chapter will give a quick description of the interface (ports & jacks) which allow your computer to communicate with external devices, connect to the internet etc.





# Ports and Jacks

Item	Description
Built-In Microphone 	The built-in microphone allows you to record on your computer
Card Reader Port 	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.
DC-In Jack 	Plug the supplied AC adapter into this jack to power your computer.
External Monitor (VGA) Port 	This port allows you to connect an external monitor, or Flat Panel Display, to get dual video or simultaneous display on the LCD and external monitor/FPD (see <a href="#">“Display Devices” on page 3 - 9</a> ).
Headphone-Out Jack 	Headphones or speakers may be connected through this jack. <b>Note:</b> Set your system’s volume to a reduced level before connecting to this jack.
Line-In Jack 	The Line-In jack allows you to play audio sources through the computer’s speakers.

A



Item	Description
Microphone-In Jack 	Plug an external microphone in to this jack to record on your computer.
Mini-IEEE 1394a Port 	This port allows a high-speed connection to various peripheral devices, e.g. external disk drives and digital cameras ( <b>see note below</b> ).  <div style="border: 2px solid green; border-radius: 15px; padding: 10px; text-align: center;">   <b>IEEE 1394</b>            The Mini-IEEE 1394a ports only support <b>SELF POWERED</b> IEEE 1394 devices.         </div>
Parallel Port 	Connect a parallel type printer to this port. The port supports ECP (Extended Capabilities Port) and EPP (Enhanced Parallel Port) 1.7/1.9 modes.
RJ-11 Phone Jack 	This port connects to the built-in modem. You may plug the telephone line directly into this RJ-11 telephone connection. <b>Note:</b> Broadband (e.g. ADSL) modems usually connect to the LAN port.
RJ-45 LAN Jack 	This port supports LAN (Network) functions. <b>Note:</b> Broadband (e.g. ADSL) modems usually connect to the LAN port.

Item	Description
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.
S/PDIF-Out Jack 	This S/PDIF (Sony/Philips Digital 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.
S-Video-Out Jack 	Connect your television to your computer and view DVDs, VCDs or anything else your computer can display. You will need an S-Video cable to make the connection. Enable this port from the video driver controls.
USB 2.0/1.1 Ports 	These USB 2.0 compatible ports (USB 2.0 is fully USB 1.1 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).

# Appendix B: Advanced Power Saving

This Appendix contains advanced information on **Power Schemes** and how they affect the computer's CPU performance, and information on **Intel CPU SpeedStep** controls.



### Windows Control Policies

**Constant** ~ CPU's performance always runs at lowest level

**Adaptive** ~ CPU's performance will be adjusted as demanded by the system

**Degrade** ~ CPU's performance starts at lowest level and reduces as battery discharges

**None** ~ CPU's performance always runs at the highest available performance state

## Power Schemes and Processor Performance

Each **Windows Power Scheme** 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). **Windows** defines **four control policies** (see sidebar) used with each power scheme.

Power Scheme	AC Power	DC Power
Home/Office Desk	None	Adaptive
Portable/Laptop	Adaptive	Adaptive
Presentation	Adaptive	Degrade
Always On	None	None
Minimal Power Management	Adaptive	Adaptive
Max Battery	Adaptive	Degrade

Set the **Power Scheme** which is most appropriate for the conditions and the applications you are using (e.g. games, 3D applications, audio and video programs etc. usually require high CPU performance). See also **Table B - 2 CPU SpeedStep Control Settings' on page B - 4** for further information on power saving settings and CPU performance.

*Table B - 1*  
**Power Scheme Control Policies**

## Intel CPU SpeedStep Controls

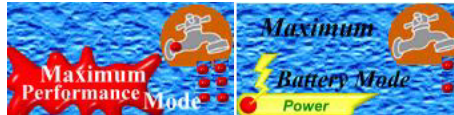
Additional controls are available to support the **Intel Pentium M** processor's mobile power management features. If you have a **Celeron M Processor** the settings are emulated by CPU throttling and you may still set the options to your preference. These controls may be adjusted in the Intel CPU SpeedStep settings in the BIOS. See *“BIOS Utilities” on page 6 - 1* for details on how to access the BIOS utilities, and *“CPU SpeedStep Controls (Power Menu)” on page 6 - 14* for the specific menu.

## Windows XP Service Pack 2

*Windows 2000* and *Windows XP* with Service Pack 1/1a installed support the basic features of the Intel CPU SpeedStep controls. As long as you have *Windows XP* with **Service Pack 2** installed, you will automatically get additional processor drivers installed to support added features such as Intel Enhanced SpeedStep Technology and Intel Deeper Alert Sleep State.

## Hot Key Display

When the Hot Key driver is installed, the CPU SpeedStep mode will be displayed if you plug-in/remove the AC adapter to/from the DC-In Jack)



### CPU Performance with SpeedStep

The CPU SpeedStep options will adjust the speed of the CPU according to the setting in the BIOS, and in some cases this will reduce the CPU performance in order to conserve power consumption (generally speaking the higher the speed a CPU runs, the more power it will consume). You will need to set the **CPU SpeedStep** settings (and the **Windows Power Scheme** settings) in order to gain a balance between good performance and power saving.

Figure B - 1  
Hot Key Display



### CPU SpeedStep Control Settings

You can adjust the SpeedStep control settings from the BIOS (see “**CPU Speed-Step Controls (Power Menu)**” on page 5 - 15). The default BIOS setting is **Automatically Switch**. However even if the CPU settings are at **\*Max Speed/600MHz**, the CPU speed will still be affected by the **Windows Power Scheme** setting (this may also adjust the CPU speed).

CPU SpeedStep Control Setting	Windows 2000 or Windows XP with Service Pack 1/1a		Windows XP with Service Pack 2	
	Power Source	CPU Speed	Power Source	CPU Speed
Performance Mode Always	AC In	CPU Max Speed	AC In	600MHz ~ <b>Max Speed*</b>
	Battery	CPU Max Speed	Battery	Up to <b>Max Speed*</b>
Battery Optimized Always	AC In	600MHz	AC In	600MHz
	Battery	600MHz	Battery	Up to <b>600MHz*</b>
Automatically Switch	AC In	CPU Max Speed	AC In	600MHz ~ <b>Max Speed*</b>
	Battery	600MHz	Battery	Up to <b>600MHz*</b>

\* The **Speed** is defined by the Power Scheme set in **Windows** (see [Table B - 1](#) on page [B - 2](#)).

*Table B - 2*

### CPU SpeedStep Control Settings

# Appendix C: Specifications



## Latest Specification Information

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

Feature	Specification	
<b>Processor Types</b>	Intel Pentium® M - (478-pin) Micro-FCPGA package	(μ0.13) 0.13 Micron Process Technology, 1MB On-die L2 Cache & 400MHz FSB - 1.4/ 1.5/ 1.6/ 1.7 GHz
	Intel Pentium® M - (478-pin) Micro-FCPGA package	(μ0.09) 0.09 Micron Process Technology, 2MB On-die L2 Cache & 400MHz FSB - 715/ 725/ 735/ 745/ 755/ 765
	Intel Celeron® M - (478-pin) Micro-FCPGA package	(μ0.13) 0.13 Micron Process Technology, 512KB On-die L2 Cache & 400MHz FSB - 320/ 330/ 340
	Intel Celeron® M - (478-pin) Micro-FCPGA package	(μ0.09) 0.09 Micron Process Technology, 1MB On-die L2 Cache & 400MHz FSB - 350/ 360/ 370
<b>Core Logic</b>	Intel 855GME + ICH4-M	
<b>Security</b>	Security (Kensington® Type) Lock Slot	
<b>Memory</b>	Two 200-Pin SODIMM Sockets, Supporting DDR 266 / DDR 333 MHz Modules Only ( <b>Note:</b> Do Not Use Other Module Types)	Memory Expandable up to 2GB (128/ 256/ 512/ 1024 MB DDR Modules)
<b>BIOS</b>	One 512KB Flash ROM	Phoenix BIOS
<b>LCD Options</b>	15.0" XGA Flat Panel TFT (1024*768)	15.0" SXGA Flat Panel TFT (1400 * 1050)



Feature	Specification	
<b>Display</b>	Dynamic Video Memory Technology (Shared Memory up to 64MB) 128 bit 2D/3D Graphics Engine Motion Compensation for DVD Accelerator	Fully DirectX 7/8 Compliant Graphics Engine Supports VESA DDC1, DDC2B and DDC 3.0 Specifications
<b>Storage</b>	One changeable 12.7mm(h) Optical Device (CD/DVD) Type Drive (see <b><i>“Optional” on page C - 5</i></b> for drive options) Easy changeable 2.5" 9.5 mm (h) IDE HDD Supports LBA Mode, Master Mode IDE, PIO Mode 4	
<b>Audio</b>	AC'97 2.2 Compliant Advanced Wavetable Synthesizer DirectSound™ 3D Accelerator	Full-Duplex S/PDIF Digital Output Built-In Microphone 2 Built-In Stereo Speakers
<b>Keyboard &amp; Pointing Device</b>	Winkey Keyboard	Built-In TouchPad with Scrolling Function
<b>PCMCIA</b>	One Type-II PCMCIA 3.3V/5V Socket	
<b>Interface</b>	Four USB 2.0/1.1 Ports One Mini-IEEE1394a Port One External VGA Monitor Port One Parallel Port (LPT1) Supporting ECP/EPP One S/PDIF Output Jack One S-Video-Out Jack	One Headphone-Out Jack One Microphone-In Jack One Line-In Jack One RJ-11 Jack for Plug & Play Fax/Modem One RJ-45 Jack for 100M (Max) Fast Ethernet One DC-in Jack

Feature	Specification	
<b>Card Reader</b>	Embedded 4-in-1 Card Reader (MS/ MS Pro/ SD/ MMC)	
<b>Communication</b>	56K Plug & Play Fax/Modem V.90/92 Compliant  10/100M Fast Ethernet (IEEE 802.3 and 802.3u Standard Compliant)  PC Camera with USB Interface <b>(Factory Option)</b>	Bluetooth & MDC Modem Combo Module <b>(Factory Option)</b>  Intel PRO/Wireless LAN Module with Mini-PCI Interface (see <i><b>“WLAN Module Options”</b></i> on <i><b>page C - 5</b></i> for drive options)
<b>Power Management</b>	Supports ACPI 2.0 Power Button as Sleep/Resume Key Supports Hibernate Mode Supports Standby Mode	Supports Battery Low Sleep Mode Supports Resume From Modem Ring Supports Wake on LAN
<b>Power</b>	Full Range AC Adapter AC-Input 100~240V, 47~63Hz DC Output 65 Watts One 6 Cell, Smart Lithium-Ion Battery Pack - Approx 4.5 Hours battery life	
<b>Environmental Spec</b>	Temperature Operating: 5°C ~ 35°C Non-Operating: -20°C ~ 60°C	Relative Humidity Operating: 20% ~ 80% Non-Operating: 10% ~ 90%

Feature	Specification	
<b>Physical Dimensions &amp; Weight</b>	329mm (w) * 275mm (d) * 25mm (h) Min	3.1 kg With Battery
<b>Optional</b>	<b>Optical Drive Module Options:</b> CD-ROM Drive Module Combo Drive Module DVD-ROM Drive Module DVD-Dual Drive Module	Bluetooth & MDC Modem Combo Module  PC Camera with USB Interface  Software DVD Player
<b>WLAN Module Options</b>	Intel PRO/Wireless 2100 (802.11b) Wireless LAN Module with Mini-PCI Interface  <b>OR</b> Intel PRO/Wireless 2200BG (802.11b/g) Wireless LAN Module with Mini-PCI Interface  <b>OR</b> Intel PRO/Wireless 2915ABG (802.11a/b/g) Wireless LAN Module with Mini-PCI Interface	



C