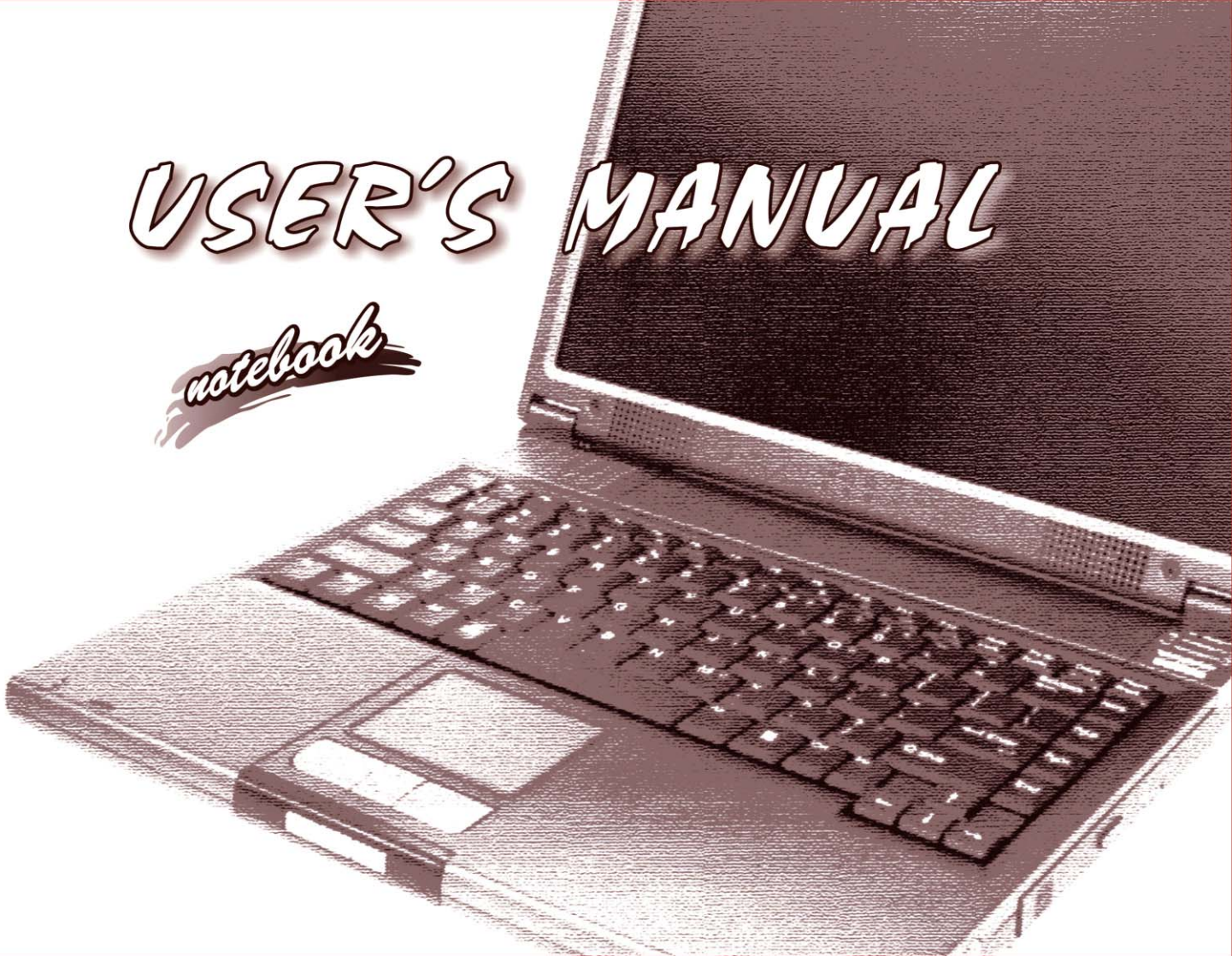
USER'S MANUAL

notebook



Notice

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

Trademarks

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

When using your telephone equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury to persons, including the following:

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, 3.25A minimum).

CAUTION

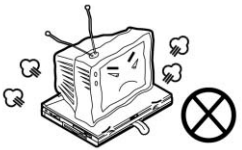
Always disconnect all telephone lines from the wall outlet before servicing or disassembling this equipment.

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

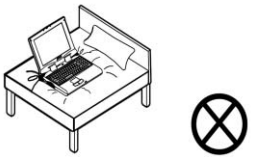
Instructions for Care and Operation

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.

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

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.

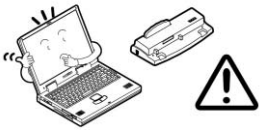
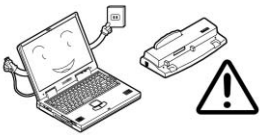
Do not expose it to excessive heat or direct sunlight. 	*Do not leave it in a place where foreign matter or moisture may affect the system.* 	*Don't use or store the computer in a humid environment.* 	*Do not place the computer on any surface that will block the vents.* 

3. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.

4. **Follow the proper working procedures for the computer**. Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.

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

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

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

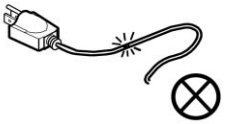
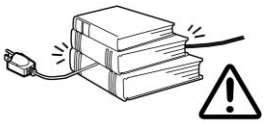
Power Safety

The computer has specific power requirements:

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.
- 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

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

Caution

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

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.

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.

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/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
Trademarks I
FCC Statement II
Instructions for Care and Operation IV
Power Safety VI
Battery Precautions VII
Cleaning VIII
Servicing VIII
Travel Considerations IX

Introduction

Overview 1-1
Advanced Users 1-1
Beginners and Not-So-Advanced Users 1-1
Warning Boxes 1-2
Not Included 1-2
System Software 1-2
Quick Start Guide 1-3
System Map 1-4
Model Differences 1-4
Getting to Know Your Computer 1-6
Gloss Style Top Cover Designs 1-7
Top View 1-8
Top View with LCD Panel Open 1-9
PC Camera 1-10
LCD Panel 1-10
LED Power & Communication Indicators 1-10
Stereo Speakers 1-10
Close Cover Switch 1-11
LED Status Indicators 1-11
Power Button 1-11
Keyboard 1-12
Microphone 1-12
TouchPad & Buttons 1-12
Hot-Key Buttons 1-12
Front View 1-13
Hot-Key Buttons 1-13
Module ON/OFF Button 1-13
Left Side View 1-14
Vent 1-14
External Monitor (VGA) Port 1-14
S-Video-Out Port 1-15
RJ-11 Phone Jack 1-15
RJ-45 LAN Jack 1-15
2 * USB 2.0 Ports 1-16
Mini-IEEE 1394 Port 1-16
PC Card Slot 1-16
Right Side View 1-17

Microphone-In Jack 1-17
Headphone-Out Jack 1-17
S/PDIF Out Port 1-17
CD Device Bay 1-18
DC-In Jack 1-18
Rear View 1-19
Security Lock Slot 1-19
Vent 1-19
Bottom View 1-20
Vent 1-20
Battery 1-20
Hard Disk Drive 1-21
Wireless LAN (Network) & Bluetooth Modules 1-21

Using The Computer

Overview 2-1
The Power Sources 2-2
AC Adapter 2-2
Battery 2-3
Recharging the Battery with the AC Adapter 2-3
Proper handling of the Battery Pack 2-3
Turning on the Computer 2-4
LED Indicators 2-5
LED Status Indicators 2-5
LED Power & Communication Indicators 2-6
Check Mail Program 2-7
Hard Disk Drive 2-10
CD/DVD Device 2-11
Loading Discs 2-11
Handling CDs or DVDs 2-12
DVD Regional Codes 2-13
Changing DVD Regional Codes 2-14
PC Card Slot 2-15
Inserting and Removing PC Cards 2-15
Hot-Key Buttons 2-16
My Computer Hot-Key 2-16
Programming the Hot-Keys 2-16
Function Keys and Numeric Keypad 2-17
Function Keys 2-17
Numeric Keypad 2-18
TouchPad and Buttons/Mouse 2-19
Configuring the TouchPad and Buttons 2-20
Adding a Printer 2-21
USB Printer 2-21
Install Instructions: 2-21
Parallel Printer 2-22
Install Instructions: 2-22

Advanced Controls

Overview 3-1

Advanced Video Controls 3-2
Opening the LCD 3-2
Video Memory 3-3
VGA Shared Memory 3-3
Dynamic Video Memory Technology 3-3
Video Driver Controls 3-4
Making Adjustments for the Display 3-4
Display Properties 3-5
Intel Video Driver Controls 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
Intel(R) Dual Display Multi 3-11
TV System 3-16
Power Management Features 3-17
Advanced Configuration and Power Interface 3-17
Enabling Power Options 3-18
Power Schemes 3-19
Power Schemes and Processor Performance 3-20
Intel CPU SpeedStep Controls 3-21
Checking the Processor Driver Version 3-21
Installing the Driver 3-23
Conserving Power (System) 3-25
Hibernate Mode vs. Shutdown 3-25
Standby Mode vs. Hibernate Mode 3-25
Standby 3-26
Hibernate 3-26
Configuring the Power Button 3-27
Battery Information 3-28
New Battery 3-28
Battery Life 3-28
Battery FAQ 3-29
Conserving Battery Power 3-29

Drivers & Utilities

Overview 4-1
What to Install 4-2
Module Driver Installation 4-2
Service Packs 4-3
Authorized Driver Message 4-4
Version Conflict Message 4-4
Updating/Reinstalling Individual Drivers 4-5
Windows 2000 Professional 4-7
New Hardware Found 4-7
Chipset (Win2000) 4-8
Audio (Win2000) 4-8

Video (Win2000) 4-8
LAN (Win2000) 4-9
Modem (Win2000) 4-9
Hot-Key (Win2000) 4-9
TouchPad (Win2000) 4-9
PC Card/PCMCIA (Win2000) 4-9
Wireless LAN (Win2000) 4-10
Bluetooth (Win2000) 4-10
Check Mail (Win2000) 4-10
PC Camera (Win2000) 4-10
Windows XP 4-11
New Hardware Found 4-11
Chipset (WinXP) 4-11
Audio (WinXP) 4-11
Video (WinXP) 4-12
LAN (WinXP) 4-12
Modem (WinXP) 4-12
Hot-Key (WinXP) 4-13
TouchPad (WinXP) 4-13
PC Card/PCMCIA (WinXP) 4-13
Wireless LAN (WinXP) 4-14
Bluetooth (WinXP) 4-14
Check Mail (WinXP) 4-14
PC Camera (WinXP) 4-14

BIOS Utilities

Overview 5-1
The Power-On Self Test (POST) 5-2
Failing the POST 5-4
Fatal Errors 5-4
Non-Fatal Errors 5-4
The System Configuration Utility 5-5
Entering Setup 5-5
Working with the Menu Bar 5-6
Working with the Pull-Down Menu 5-7
Working with Sub-Menus 5-8
Startup Menu 5-9
Fast Boot (Startup Menu) 5-9
Boot Device (Startup Menu) 5-10
Display (Startup Menu) 5-10
Enable Battery Low Beep (Startup Menu) 5-10
Enable Power On Beep (Startup Menu) 5-10
Display OEM logo (Startup Menu) 5-11
Fast Boot for Windows XP (Startup Menu) 5-11
Boot and SCU Passwords (Startup Menu) 5-11
Memory Menu 5-12
VGA Shared Memory 5-12
Disks Menu 5-13
IDE Settings (Disks Menu) 5-13

Virus Alerts (Disks Menu) 5-13
Components Menu 5-14
Keyboard Numlock (Components Menu)] 5-14
Keyboard Repeat (Components Menu) 5-14
Keyboard Type (Components Menu) 5-15
Enable Padlock (Components Menu) 5-15
Power Menu 5-16
Low/Medium/High/Customize Power Saving (Power Menu) 5-17
CPU SpeedStep Controls (Power Menu) 5-17
Exit Menu 5-18
Save and Exit (Exit Menu) 5-18
Exit (No Save) - (Exit Menu) 5-18
Default Settings (Exit Menu) 5-18
Restore Settings (Exit Menu) 5-18

Upgrading The Computer

Overview 6-1
When Not to Upgrade 6-2
Removing the Battery 6-3
Battery Removal Process 6-3
Upgrading the Hard Disk Drive 6-4
Hard Disk Upgrade Process 6-4
Hard Disk Removal (Model A) 6-5
Hard Disk Removal (Model B) 6-6
Upgrading the System Memory (RAM) 6-7
Memory Upgrade Process 6-7
Upgrading the CD Device 6-9
CD Device Upgrade Process 6-9
Upgrading the Processor 6-10

Wireless & PC Camera Modules

Overview 7-1
Gemtek USB Wireless LAN Module 7-2
Gemtek Wireless LAN Driver Installation (Win2000) 7-3
Gemtek Wireless LAN Driver Installation (WinXP) 7-4
Intel PRO 2100 Mini PCI Wireless LAN Module ... 7-5
Intel PRO 2100 Wireless LAN Driver Installation (Win2000) 7-6
Intel PRO 2100 Wireless LAN Driver Installation (WinXP) 7-8
Bluetooth Module 7-10
Bluetooth Driver Installation (Win2000) 7-10
Bluetooth Driver Audio Setup (Win2000) 7-11
Bluetooth Driver Installation (WinXP) 7-12
Bluetooth Control Panel Options 7-13
PC Camera 7-15
PC Camera Driver Installation (Win2000) 7-15

PC Camera Driver Installation (WinXP) 7-16
PC Camera Audio Setup 7-17
(WinXP) 7-17
(Win2000) 7-17
AMCAP 7-19

Troubleshooting

Overview 8-1
Basic Hints and Tips 8-2
Backup and General Maintenance 8-3
Viruses 8-4
Upgrading and Adding New Hardware/Software 8-5
Power 8-7
Display 8-9
Hard Disk & Boot Password 8-11
USB Floppy Disk Drive 8-12
Audio & CD Device 8-13
PC Card 8-15
Keyboard and Mouse 8-16
Printer 8-17
Operation 8-18
Modules 8-19

Appendix A. Model A Specifications

Processor Options A-1
Core Logic A-1
Structure A-1
Security A-1
Memory A-1
BIOS A-2
LCD A-2
Display A-2
Storage A-2
PC Card A-2
Audio A-2
Keyboard A-3
Interface A-3
Communication A-3
Power Management A-3
Power A-3
Indicators A-3
Buttons A-4
Environmental Spec A-4
Physical Dimensions A-4
Weight A-4
Optional A-4

Appendix B. Model B Specifications

Processor Options B-1

Core Logic B-1
Structure B-1
Security B-1
Memory B-1
BIOS B-1
LCD B-2
Display B-2
Storage B-2
PC Card B-2
Audio B-2
Keyboard B-3
Interface B-3
Communication B-3
Power Management B-3
Power B-3
Indicators B-3
Buttons B-4
Environmental Spec B-4
Physical Dimensions B-4
Weight B-4
Optional B-4

Chapter 1: Introduction

Overview

This manual refers to the hardware and essential software required to run your notebook computer. Depending on how your system is configured, some or all of the features described may already be set up. This chapter covers:

- The Manual — how to use it
- System Map — navigating around your computer

Advanced Users

If you are an advanced user you may skip over most of this manual. However you may find it useful to refer to *"What to Install" on page 4 - 2*, *"BIOS Utilities" on page 5 - 1* and *"Upgrading The Computer" on page 6 - 1*. You may also find the notes marked with a  of interest to you.

Beginners and Not-So-Advanced Users

If you are new to computers (or do not have an advanced knowledge of them) then you should try to look through all the documentation. 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.

Notes

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

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.*) have their own manuals, as do applications (e.g. word processing, spreadsheet and database programs). If you have questions about the operating systems or programs then 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)

Quick Start Guide

This guide assumes that you are already familiar with computers and can tell at a glance what and where all the key components are. If you are not that comfortable with this type of device, then please refer to the following pages, which give an overview of the system.

It is still best to review these steps, *before* taking any action. If there is anything you are not sure about, then please refer to the appropriate chapter before continuing.

Unless you need to install an operating system, your computer should be ready to work right out of the box. Before you begin please follow the safety instructions in the *Preface*.

1. Remove all packing materials.
2. Securely attach any peripherals you want to use with the notebook (e.g. keyboard and mouse) to their ports.
3. Attach the AC adapter to the DC-in jack on the right of the computer (see ***"Right Side View" on page 1 - 17***), then plug the AC power cord into an outlet, and connect the AC power cord to the AC adapter.
4. Raise the lid/LCD to a comfortable viewing angle.
5. Press the power button to turn "on".

Peripheral Devices

Please note that peripherals (printers, digital cameras, etc.) which attach to your computer by either **USB** or **IEEE1394** ports may be connected after ***Windows*** is up and running. All other peripherals must be connected *before* you turn on the system.

System Map

Your computer has a lot of built-in features. Most of these are enabled by your operating system. Further explanations of the various subsystems are covered in the chapter or pages indicated.

Model Differences

This notebook series includes two different model types according to the processor and Wireless LAN module specifications. You can identify if your computer is **Model A** or **Model B** by checking the POST screen as the computer starts up, and by referring to *Table 1 - 1, "Model Differences," on page 1-5*. In addition to the two model types, there are also two different designs (see *Figure 1 - 1*) as illustrated on page *1 - 6* (**Model A** and **Model B** include both design types illustrated).

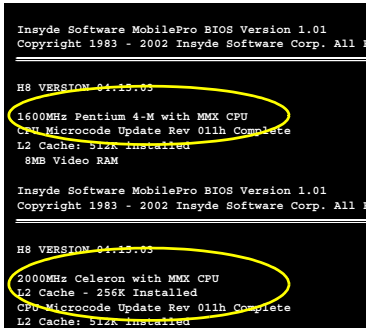
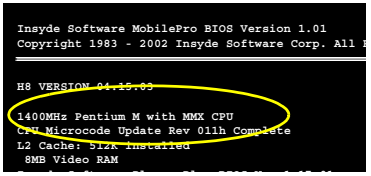
Feature	Model A	Model B
Designs	Design I & II	Design I & II
CPU Types	Mobile Intel Pentium 4-M Mobile Intel Celeron	Intel Pentium M
Wireless LAN	Gemtek 802.11b Module with USB Interface (**optional**)	Intel PRO Wireless LAN 2100 (802.11b) Wireless LAN Module with PCI Interface
Post Screen Examples		

Table 1 - 1
Model Differences

Wireless LAN Modules

If your computer is **Model A** the Gemtek USB Wireless LAN module is an **optional** item, depending on your purchase choice.

If your computer is **Model B** the Intel PRO Wireless LAN 2100 PCI module is included as a **standard** item.

Design Differences

This manual refers to the two notebook designs pictured on this page.

The designs vary slightly in external design. Photographs used throughout this manual are of Design I.

In addition to the basic designs, there are also two **colored** (red and blue) **gloss style top cover designs**. See ***Figure 1 - 2*** for an illustration. Note the specific care instructions for this type of cover.

Figure 1 - 1
Design Differences

Getting to Know Your Computer

The following graphics will help you to become familiar with the basic functions, and to learn the location of the various ports and components of your computer.

Design I

Design II

Gloss Style Top Cover Designs

There are two colored (red and blue) gloss style top cover designs incorporated within the design styles of this notebook model. Note the following guidelines for care and attention of this type of top cover.

- Remove the protective cover slowly and carefully. Do not forcibly tear off the protective cover as this may damage the surface of the top cover.
- Do not use pointed objects on the surface of the top cover, and do not place objects on top of it.
- Do not expose the top cover to excessive heat or direct sunlight.
- Only use the soft cloth provided for cleaning the top cover, and do not use abrasive cleaners.

Figure 1 - 2
Gloss Style Top Cover

Top View

Figure 1 - 3
Top View with LCD Panel Closed

1. LCD Latches
2. LED Power & Communication Indicators

To open the LCD display:

1. Place the computer on a stable surface.
2. Move the LCD latches (1) in the direction of the arrows to release the top cover (the left latch will lock in position and is clearly marked with locked and unlocked icons).
3. Lift the top cover to reveal the LCD panel and keyboard.
4. Adjust the LCD panel to a comfortable viewing angle.
5. The LED indicators (2) show the power and battery status of the computer, and give notification of e-mail received.

Top View with LCD Panel Open

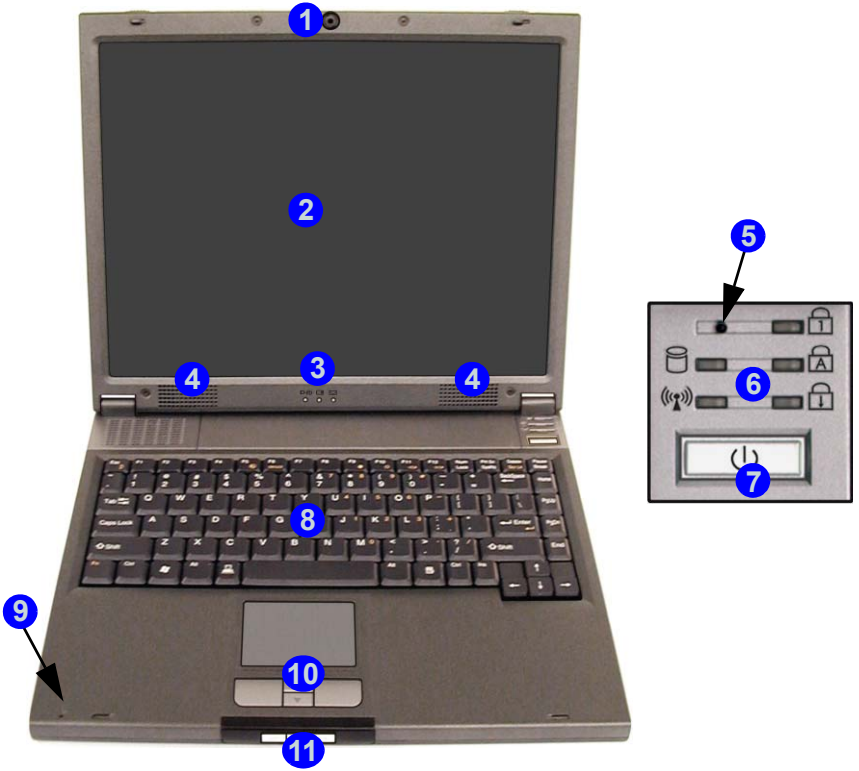


Figure 1 - 4
Top View with LCD Panel Open

1. Optional Built-In PC Camera
2. LCD
3. LED Power & Communication Indicators
4. Speakers
5. Close Cover Switch
6. LED Status Indicators
7. Power Button
8. Keyboard
9. Built-In Microphone
10. TouchPad and Buttons
11. Hot-Key Buttons

PC Camera

If you have purchased the **optional** PC Camera, make sure you install the software application (see *"PC Camera" on page 7 - 15*). The Module ON/OFF Button will enable/disable the PC Camera (see *"Module ON/OFF Button" on page 1 - 13*).

LCD Panel

The computer comes with a TFT (Thin Film Transistor), Liquid Crystal Display screen (see *"LCD" on page A - 2* for details).

LED Power & Communication Indicators

These indicators display the system power status, and battery status of the computer. The third indicator may be configured to give a visual confirmation when e-mail is received in the default e-mail program (see *"LED Power & Communication Indicators" on page 2 - 6*).

Stereo Speakers

Two built-in speakers provide rich, stereo sound.

Close Cover Switch

This switch acts as a sensor to tell when the LCD Panel is closed. When this LCD cover sensor is activated the default setting of your operating system's power scheme sends the computer into a power saving state (see *Figure 3 - 16 on page 3 - 27*).

LED Status Indicators

These display the system's operational status. Refer to *"LED Status Indicators" on page 2 - 5* for more information on what the lights mean.

Power Button

Press this button to turn your computer on or off (see *"Turning on the Computer" on page 2 - 4*). This button may also be used as a suspend/resume key, once configured as such in the power management control panel of your operating system (see *"Configuring the Power Button" on page 3 - 27*).

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.

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.

Keyboard

The computer has a "Win Key" keyboard including a numeric keypad. It has the same features as a full-sized desktop keyboard and can easily be replaced with a different language keyboard should you desire.

Microphone

Record on your notebook computer with the built-in microphone.

TouchPad & Buttons

The pointing device features a sensitive glide pad for precise movements. It functions the same way as a two-button mouse. The right TouchPad button is the same as the right mouse button; the left TouchPad button is the same as the left mouse button. The central button may be used to scroll up and down, or may be configured to perform a variety of functions (see *"Configuring the TouchPad and Buttons" on page 2 - 20*).

Hot-Key Buttons

The three hot-keys allow you instant access to your default Internet browser and default e-mail program, and to toggle on/off the modules (Wireless LAN/ Bluetooth/PC Camera modules). To learn how to set the buttons, see *"Hot-Key Buttons" on page 2 - 16*.

Front View

Figure 1 - 5
Front View

1. LCD Latches
2. Hot-Key Buttons

Hot-Key Buttons

The three hot-keys allow you instant access to your default Internet browser and default e-mail program, and to toggle on/off the Wireless LAN/Bluetooth/ PC Camera modules. To learn how to set the buttons, see *"Hot-Key Buttons" on page 2 - 16*.

Module ON/OFF Button

If your computer has the 802.11b Wireless LAN module (**Model A** computers have the Gemtek USB module as an **optional** feature, **Model B** computers have the Intel PRO Wireless LAN 2100 as a **standard** feature) and/or **Bluetooth** and/or **PC Camera** modules, you can use this button to turn the modules **ON** or **OFF**. To enable the modules you will need to install the drivers/ software for them (see *"Gemtek USB Wireless LAN Module" on page 7 - 2*, *"Intel PRO 2100 Mini PCI Wireless LAN Module" on page 7 - 5*, *"Bluetooth Module" on page 7 - 10* & *"PC Camera" on page 7 - 15*). **Make sure the wireless modules are OFF when you are using the computer aboard aircraft (see sidebar)**.

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. When your computer 'Boots Up' the modules will be **ON**.

Figure 1 - 6
Left Side View

1. Vent
2. External Monitor (VGA) Port
3. S-Video Out Port
4. RJ-11 Phone Jack
5. RJ-45 LAN Jack
6. 2 * USB 2.0 Ports
7. Mini-IEEE 1394 Port
8. PC Card Slot
9. PC Card Eject Button

Left Side View

Vent

This enables airflow to prevent the notebook from overheating.

Overheating

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

External Monitor (VGA) Port

Connect an external VGA monitor to this port to allow dual video or simultaneous display on the LCD and external VGA monitor (see *"Display Devices" on page 3 - 9*).

S-Video-Out Port

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.

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.
Note: Broadband (e.g. ADSL) modems usually connect to the LAN port.

RJ-45 LAN Jack

This port supports LAN (Network) functions.
Note: Broadband (e.g. ADSL) modems usually connect to the LAN port.

2 * USB 2.0 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). See Windows Service Pack information on page *4 - 3*.

Mini-IEEE 1394 Port

This allows high-speed connection to various peripheral devices, e.g. external disk drives and digital cameras (**see note below**).

IEEE 1394

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

PC Card Slot

The 3.3V/5V slot may be used for a Type-II PC card (PC cards were also previously referred to as PCMCIA) and fully supports Cardbus. Refer to *"PC Card Slot" on page 2 - 15* for more information.

Right Side View

Figure 1 - 7
Right Side View

1. Microphone-In Jack
2. Headphone-Out Jack
3. S/PDIF Out Port
4. CD Device Bay
5. DC-In Jack

Microphone-In Jack

Record on your notebook computer with an external microphone.

Headphone-Out Jack

Headphones may be connected through this jack. **Note**: Set your system's volume to a reduced level before connecting to this jack.

S/PDIF Out Port

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.

CD Device Bay

A 5.25" CD-ROM drive, or DVD-ROM drive, or CD-RW, or Combination CD-RW and DVD-ROM Drive (12.7mm height) is standard depending on the model you purchased. For more information on using the drive please refer to *"CD/DVD Device" on page 2 - 11*.

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.

DC-In Jack

Plug the supplied AC adapter into this jack to power your notebook.

Rear View

Figure 1 - 8
Rear View

1. Security Lock Slot
2. Vent

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.

Vent

This enables airflow to prevent the notebook from overheating.

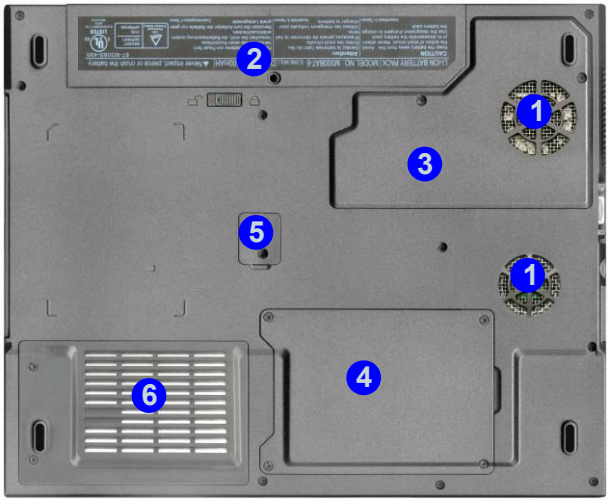
Overheating

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

Bottom View

Figure 1 - 9
Bottom View

1. Vent/Fan Outlets
2. Battery
3. CPU Cover
4. RAM & Bluetooth Module Cover
5. CD Device Screw Cover
6. Hard Disk & WLAN Module 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 outlet while the computer is in use.

Vent

This enables airflow to prevent the notebook from overheating.

Battery

See *"Battery Information" on page 3 - 28* for instructions on battery use and care.

Hard Disk Drive

The internal hard disk drive is used to store your data. See page *6 - 4* for information on upgrading/replacing your hard disk drive.

Drive Warning

Don't try to remove the hard disk (HDD) while the system is on. This could cause data loss or damage. Unauthorized removal or tampering with the HDD may violate your warranty. If you are in doubt, consult your service representative.

Wireless LAN (Network) & Bluetooth Modules

If your computer has the 802.11b Wireless LAN module (**Model A** computers have the Gemtek USB module as an **optional** feature, **Model B** computers have the Intel PRO Wireless LAN 2100 as a standard feature), and/or **optional** Bluetooth module, the antenna and other components are not externally visible (please check with your service representative). If your configuration includes the module(s), make sure to install the driver (see *"Wireless & PC Camera Modules" on page 7 - 1* and sidebar note).

Wireless LAN & Bluetooth Modules

The Wireless LAN and Bluetooth modules (and the optional PC Camera module) may be enabled and disabled by pressing the button at the front of the computer (see *"Module ON/OFF Button" on page 1 - 13*).

Chapter 2: Using The Computer

Overview

To learn more about using your computer, please read this chapter.

This chapter includes:

- The Power Sources
- Turning on the Computer
- The LED Indicators
- The Check Mail Program
- The Hard Disk Drive
- The CD/DVD Device
- The PC Card Slot
- The Hot-Keys
- The Function Keys & Numeric Keypad
- The TouchPad & Buttons/Mouse
- Adding a Printer (general guidelines)

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 3 - 27*** 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 on the right 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 notebook computer while you are on the road or 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.

We recommend that you do not remove the battery. For more information on the battery, please refer to *"Battery Information" on page 3 - 28*.

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.

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 2 - 5* for information on the battery charge status, and to *"Battery Information" on page 3 - 28* 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

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.

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.

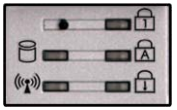
Forced Off

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.

LED Indicators

There are two sets of LED indicators (**LED Power & Communication Indicators** and **LED Status Indicators**) on your computer that will display helpful information about the current status of the computer. The **LED Power & Communication Indicators** are also visible when the top of your computer is closed.

Power & Communication Indicators



LED Status Indicators

Figure 2 - 1
LED Indicators

LED Status Indicators

Icon	Color	Description
	Green	Hard Disk/CD Device activity
	Green	The Module(s) (WLAN, PC Camera, Bluetooth) is/are On
	Green	Number Lock is activated
	Green	Caps Lock is activated
	Green	Scroll Lock is activated (to activate press Fn & ScrLk)

Table 2 - 1
LED Status Indicators

Scroll Lock

To enable and disable the Scroll Lock feature, press the **Fn** and **ScrLk** keys simultaneously.

LED Power & Communication Indicators

Table 2 - 2
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 being charged
	Green	The battery is fully charged
	Blinking Orange	The battery has reached critically low power status
	Blinking Green	New mail has arrived

Check Mail Program

After you have installed the driver for the Check Mail program (see *"What to Install" on page 4 - 2*) 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**).

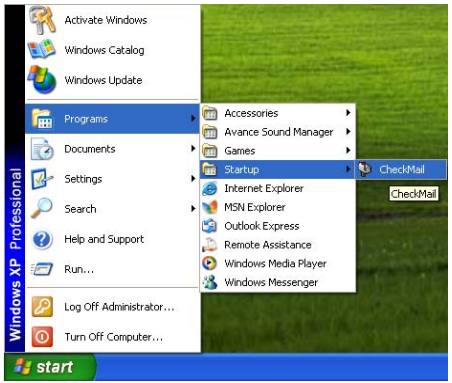


Figure 2 - 2
Check Mail Program (Startup Menu)

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

Note

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

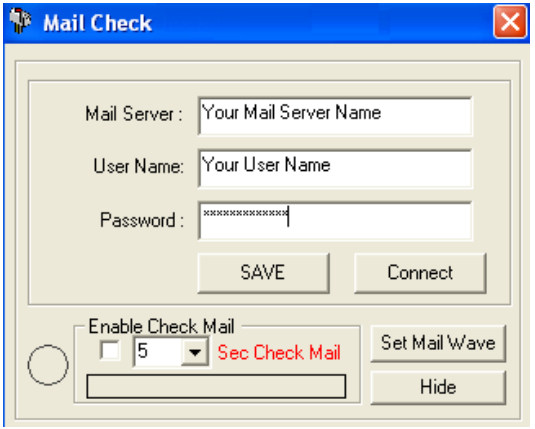


Figure 2 - 3
Check Mail Account Setup and Options

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***, then access it by double-clicking the taskbar icon.

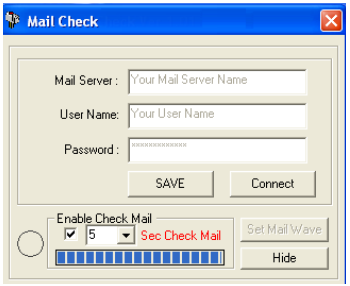


Figure 2 - 4
Check Mail Enabled

You may also 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.

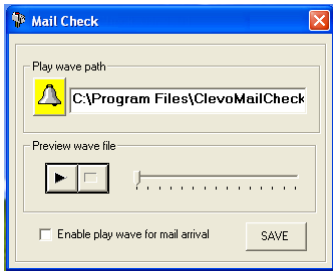


Figure 2 - 5
Set Mail Wave

Power Safety

Before attempting to access any of the internal components of your notebook 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 notebook 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" on page 6 - 4*.

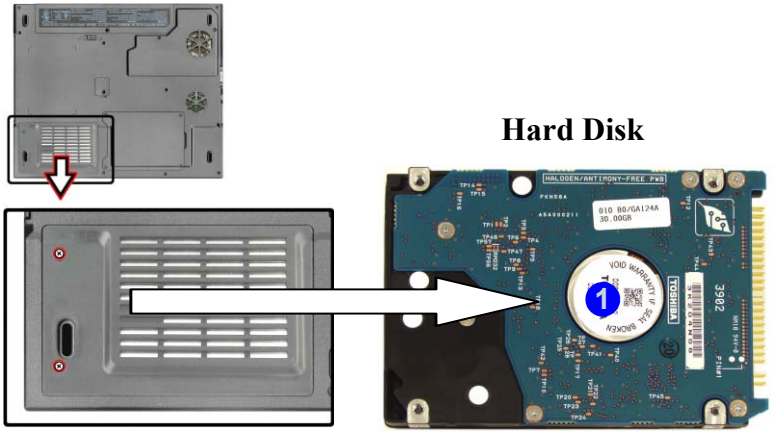


Figure 2 - 6
Hard Disk Location

CD/DVD Device

There is a bay for either a CD-ROM, or DVD-ROM, or CD-RW, or Combination CD-RW and DVD-ROM drive, depending on the model you purchased. The CD Device is usually labeled "**Drive D:**" and may be used as a boot device if properly set in the **BIOS** (*"Startup Menu" on page 5 - 9*).

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.

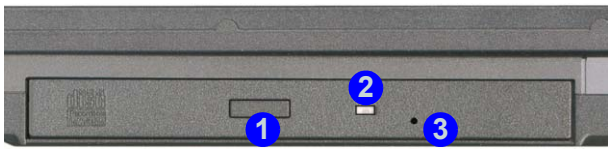


Figure 2 - 7
CD Device

Sound Volume Adjustment

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

All peripherals must be connected before you turn on the system.

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.

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 CD-ROMs/DVD-ROMs can be accessed.

Remember to:

- 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

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.

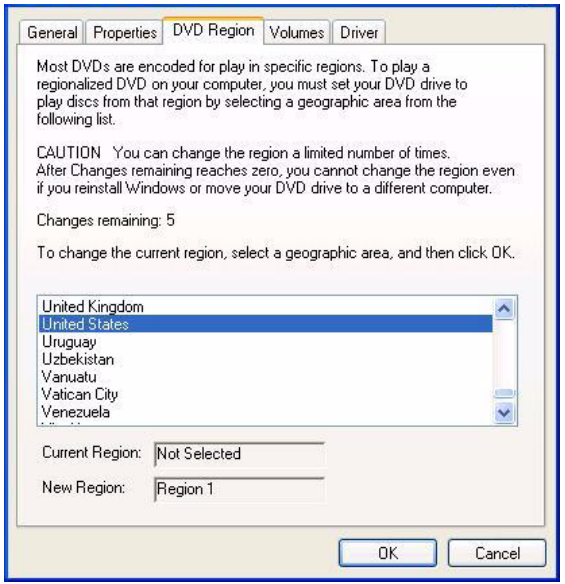


Figure 2 - 8
DVD Regional Codes (Windows XP)

Changing DVD Regional Codes

Go to the **Control Panel** in *WindowsXP/Windows 2000* 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** menu, and select the **DVD Region** (tab) to bring up the control panel as seen in *"DVD Regional Codes (Windows XP)" on page 2 - 13*.

Table 2 - 3
DVD Regional Coding

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

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 4 - 2*).

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 - 9
PC Card Slot

Hot-Key Buttons

These keys access the Internet and e-mail, and to enable/disable the module(s) (WLAN/Bluetooth/PC Camera) with one quick button press. Make sure you install the Hot-Key driver. Refer to *"What to Install" on page 4 - 2* for driver installation steps.

My Computer Hot-Key

The Hot-Key at the bottom left of the keyboard gives you quick one button access to the **My Computer** folder on your computer.

Programming the Hot-Keys

Table 2 - 4
Hot-Keys

Hot-Key	Function
	Activate the default Internet browser
	Activate the default e-mail program
	Toggle power to the module(s) - (Wireless LAN/Bluetooth/PC Camera modules)

Function Keys and Numeric Keypad

Function Keys

On the bottom-left of the keyboard is the **Fn** key or Function key. The **Fn** key allows you to change operational features instantly. To use the functions press and hold the **Fn** key, then press the appropriate function key (F5 - F12 etc.) located on your keyboard.

Keys	Description
Fn	Function Key
Fn + Esc	Sleep/Resume Toggle
Fn + F5	Mute Toggle
Fn + F6	Display Toggle (if TV is used as a display device see *"Display Devices" on page 3 - 9*)
Fn + F9	Decrease LCD Brightness
Fn + F10	Increase LCD Brightness
Fn + F11	Decrease Audio Volume
Fn + F12	Increase Audio Volume
Fn + Scr Lk	Scroll Lock Toggle
Fn + Num Lock	Toggles Padlock Mode (if set in the SCU *"Enable Padlock (Components Menu)" on page 5 - 15*) if Number Lock is enabled

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.

Table 2 - 5
Function Keys

Special Characters

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

Numeric Keypad

The keyboard has an embedded numerical keypad for easy numeric data input. The numeric keys are highlighted by a yellow typeface.

Activate the **Number Lock** feature by pressing the **Num Lock** key at the top right of the keyboard. You may check if **Number Lock** is enabled or not by looking at the LED status indicators (see *"LED Indicators" on page 2 - 5*). To type a number from the numeric keypad make sure **Num Lock** is enabled, then hold the **Fn** key down and press the key on the numeric keypad (for instructions on Padlock mode see *"Enable Padlock (Components Menu)" on page 5 - 15*).

Activate **Scroll Lock** by pressing and holding the **Fn** key, and then press the **Scr Lk** key at the top right of the keyboard.

Figure 2 - 10
Keyboard

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 2-20* for screen examples).

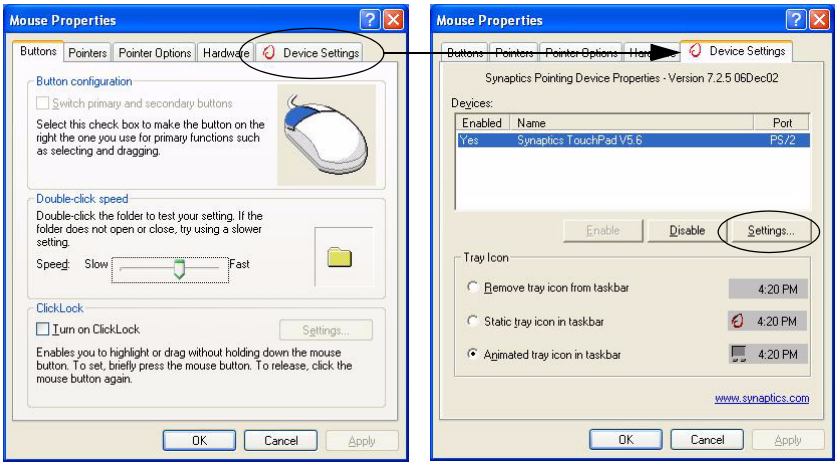
Mouse Driver

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 4 - 2*) 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.

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 either of the USB ports on your computer 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 the most common type of printer. A **Parallel** to **USB** converter may be purchased at most computer stores.

Install Instructions:

1. Set up the printer according to its instructions (unpacking, paper tray, toner/ink cartridge etc.).
2. Attach the parallel cable to the printer.
3. Connect the printer's parallel cable to the Parallel to USB converter, and then plug the converter into the USB port.
4. Turn ON the printer.
5. Turn ON the computer.
6. *Windows* (some operating systems may require a driver to recognize the parallel to USB adapter) 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: Advanced Controls

Overview

This chapter covers:

- Advanced video controls
- Power and battery management features

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 4 - 2*** 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 close cover switch.

Advanced Video Controls

This section is about making adjustments for the LCD, and switching display devices.

Opening the LCD

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** + **F9/F10**).

Figure 3 - 1
Brightness Controls

Video Memory

The computer does not have dedicated video memory. The video memory available on your computer is configured in two modes of operation.

VGA Shared Memory

This is the pre-allocated memory size for VGA compatibility. This is fixed in the BIOS at 32MB (see page *5 - 12*). This memory is allocated from your system memory e.g. if you computer has 128MB of memory (RAM), then 32MB will be allocated to video leaving the system with 96MB of RAM.

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 4 - 2***). 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

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.

Video Driver Controls

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" on page A - 2* for the LCD options).

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 - 2*).

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** (or just click **Control Panel**) and click **Control Panel** (if you are in **Category View** choose **Appearance and Themes**).
2. Double-click **Display** (icon).
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*).

Display Properties

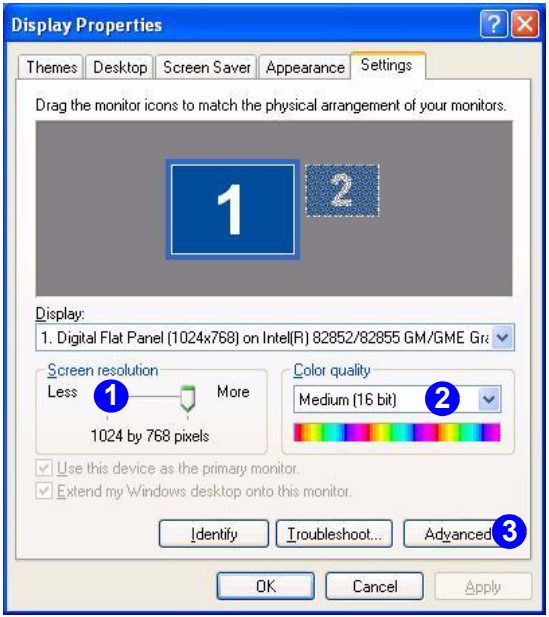


Figure 3 - 2
Display Properties

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.

Intel(R) Extreme Graphics Controller Properties

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

Taskbar

You may also access the control panel from the taskbar at the bottom right of the screen. Click on the icon to bring up the menu and scroll to **Graphics Options > Graphics Properties**.

Intel Video Driver Controls

After installing the video driver there will be an additional control panel entitled **Intel(R) Extreme Graphics**. To get to the control panel to make changes to the **Graphics Properties**, do the following:

1. Click **Start**, point to **Settings** (or just click **Control Panel**) and click **Control Panel**.
2. Double-click **Intel(R) Extreme Graphics** (icon) to bring up the **Intel(R) 82852/82855 Graphics Controller Properties**.

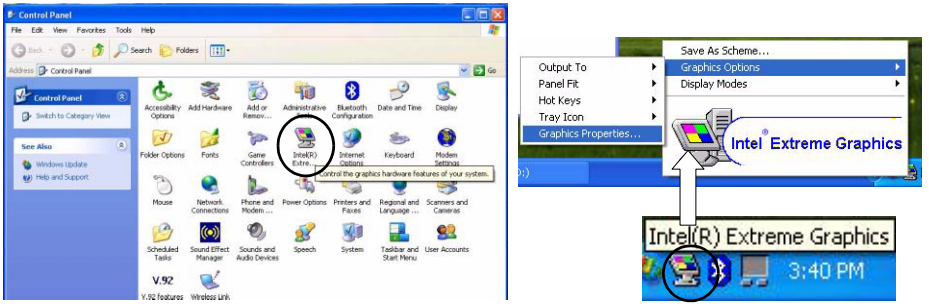


Figure 3 - 3
Intel Extreme Graphics Control Panel

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 your computer, and the Support item in the Information tab has weblinks to the latest information (drivers, troubleshooting issues etc.) on the Intel Website. Some screen examples are shown on the following page.

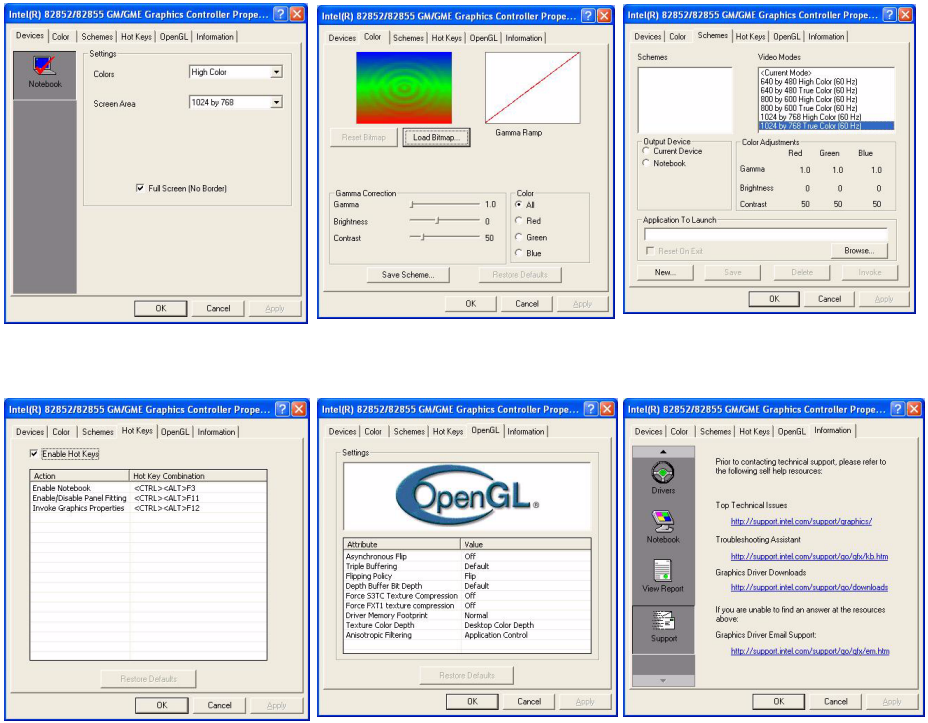


Figure 3 - 4
Intel Graphics Controller Properties

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) Extreme Graphics** control panel (see *"Intel Video Driver Controls" 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).
6. You can click in the "**Reset On Exit**" box to return to your original settings when you exit the program, then click **Save** to save the settings.
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 port 2 (*Figure 3 - 5*).

Figure 3 - 5
Left Side View

Switching/Enabling Displays (Keyboard)

You can switch display devices with the **Fn** + **Display (F6)** 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 - 2*) for setup instructions. To switch the display options:

1. Plug the VGA monitor or TV into the appropriate port.
2. Press and hold the **Fn** key, while simultaneously pressing the **F6** key.
   Note: If you are using a TV use the hot key combinations **Ctrl** + **Alt** + **F1** (VGA monitor only), **Ctrl** + **Alt** + **F2** (TV only) and **Ctrl** + **Alt** + **F3** (notebook LCD only), not **Fn** + **F6**.
3. You may toggle through the options to display the notebook's LCD only, the external display alone and the LCD and the external display together (make sure you allow time for the screens to refresh as you toggle through).

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 in *"Display Devices" on page 3 - 9* use the driver control panel to configure the settings as per *"Switching/Enabling Displays (Driver)" on page 3 - 10*.

Figure 3 - 6
Switching Display Settings

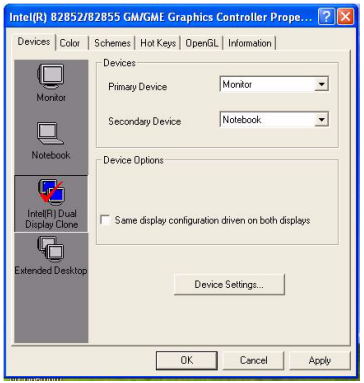
Vertical Refresh Rate

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.

Switching/Enabling Displays (Driver)

With the **video driver installed** (see *"What to Install" on page 4 - 2*), 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.
2. Go to the **Intel(R) 82852/82855 Graphics Controller Properties** control panel (see *"Intel Video Driver Controls" 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 the 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 Graphics Controller Properties** to configure the relative size and position.

Intel(R) Dual Display Multi

This mode will allow you to display the same content on two displays, and have different content on a third display. This could be used to display a demo on two displays, while taking notes on the third display.

To Enable Dual Display Clone Mode:

1. Plug the VGA monitor or TV into the appropriate port.
2. Go to the **Intel(R) 82852/82855 Graphics Controller Properties** control panel (see *"Intel Video Driver Controls" 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.

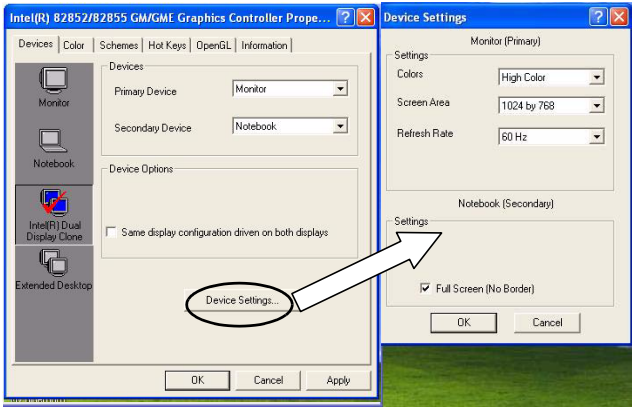
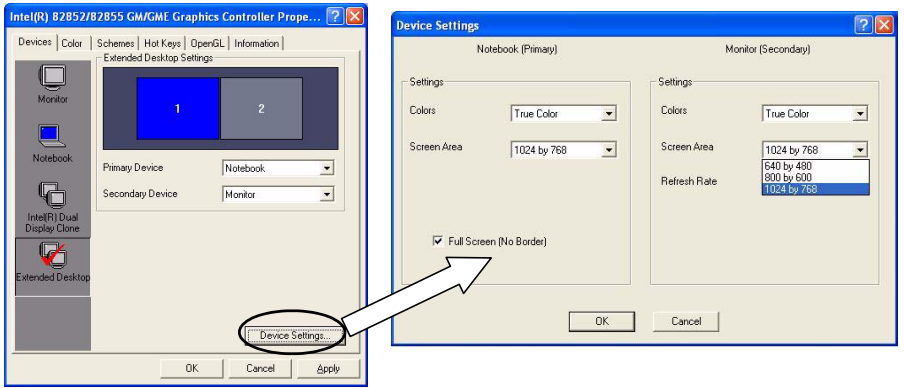


Figure 3 - 7
Device Settings (Clone Mode)

To Enable Extended Desktop Mode:

1. Plug the VGA monitor or TV into the appropriate port.
2. Go to the **Intel(R) 82852/82855 Graphics Controller Properties** control panel (see *"Intel Video Driver Controls" 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.



You can also enable the Extended Desktop mode from the **Display Properties** control panel (see *"Display Properties" on page 3 - 5*).

Device Settings Extended Desktop

You can have different Colors, Screen Area and Monitor Refresh Rates for each display device **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)

Extended Desktop Mode

If Intel Dual Display Clone mode is currently enabled, you must use the **Intel(R) 82852/82855 Graphics Controller Properties** to switch the display.

To Enable Extended Desktop (Display Properties)

1. Plug the VGA monitor or TV into the appropriate port.
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. Make sure you have checked "**Extend my Windows desktop onto this monitor**." and click **Apply**.

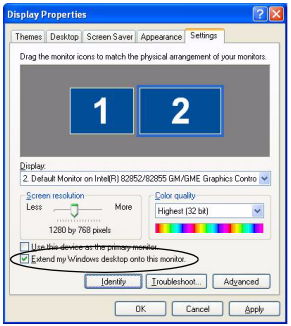


Figure 3 - 9
Display Properties (Extended Desktop Mode)

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.

To Enable Dual Display Multi:

1. Plug the VGA monitor **and** TV into the appropriate port (you will need to have three display devices attached for this display mode).
2. Enable **Extended Desktop Mode** (see *"To Enable Extended Desktop Mode:" on page 3 - 13*).
3. Click the **Enable Twin Configuration** checkbox.
4. Choose which device is to be the **Primary** display, and which is to be **Secondary** (this will affect which devices can be the **Source** and **Destination**).
5. Adjust the settings by clicking the **Device Settings** (button) if necessary.
6. Click **Apply > OK** and close the control panels.

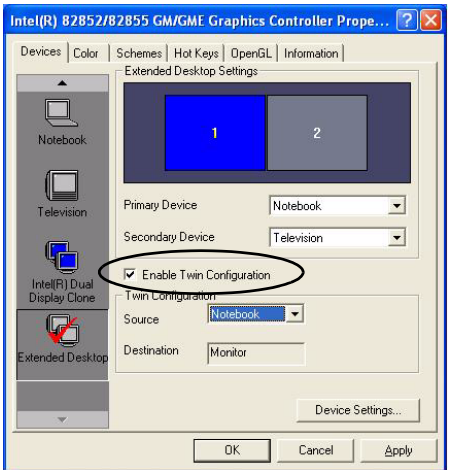


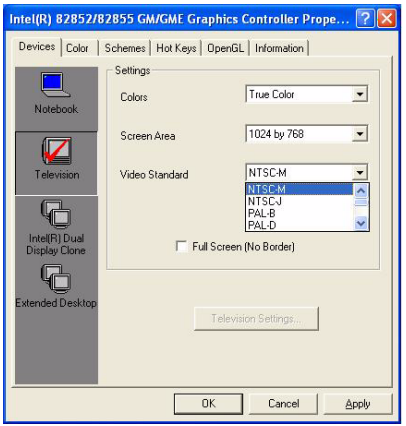
Figure 3 - 10
Device Settings (Dual Display Multi Mode)

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 TV into the appropriate port.
2. Go to the **Intel(R) 82852/82855 Graphics Controller Properties** control panel (see *"Intel Video Driver Controls" 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** dropbox.

Figure 3 - 11
TV Video Standard



Power Management Features

To conserve power, especially when using the battery, your notebook 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.

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

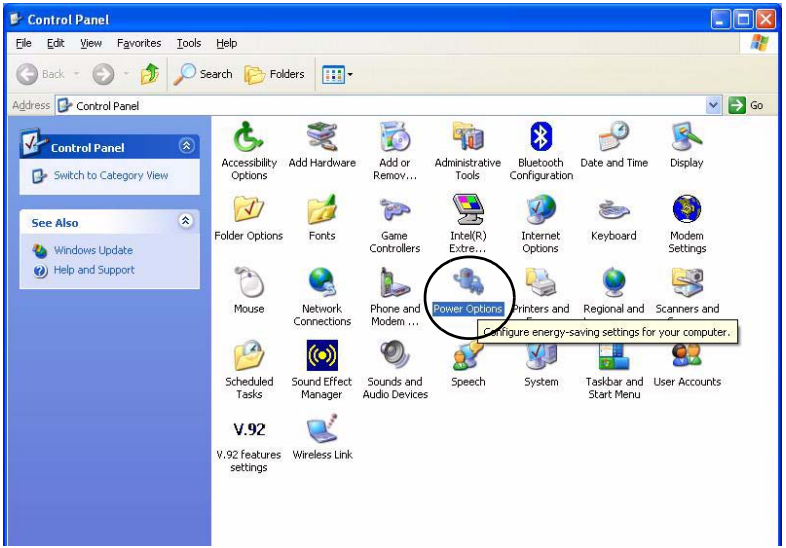
Power management functions will vary slightly depending on your operating system. For more information it is best to refer to the user's manual of your operating system.

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

Enabling Power Options

Power Options are enabled through the control panel in your ***Windows*** system (**Power Options**). With other operating systems you may have power management available, so check your documentation.

Figure 3 - 12
Power Options Control Panel



You may conserve power through individual components or throughout the whole system.

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 *"Conserving Power (System)" on page 3 - 25*).

Resuming Operation

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

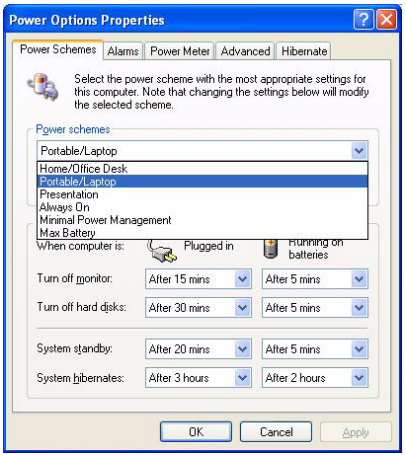


Figure 3 - 13
Power Schemes

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

Table 3 - 2
Power Scheme Control Policies

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 3 - 3 CPU SpeedStep Control Settings' on page 3-24*** for further information on power saving settings and CPU performance.

Intel CPU SpeedStep Controls

Additional controls are available to support the **Intel Pentium M (only supported in Model B computers)** processor's mobile power management features. These controls may be adjusted in the Intel CPU SpeedStep settings in the BIOS. See *"BIOS Utilities" on page 5 - 1* for details on how to access the BIOS utilities, and *"CPU SpeedStep Controls (Power Menu)" on page 5 - 17* for the specific menu.

Windows 2000 and ***Windows XP*** with Service Pack 1 installed support the basic features of the Intel CPU SpeedStep controls. As long as you have ***Windows XP*** with **Service Pack 1** installed, you may download and install an additional processor drivers (**Q332179** & **Q330512 QFE** drivers) to support additional features such as Intel Enhanced SpeedStep Technology and Intel Deeper Alert Sleep State. The instructions on downloading the drivers are in the **sidebar**. You can check if your current processor driver for ***Windows XP*** (with **Service Pack 1** installed) needs to be updated by following this procedure:

Checking the Processor Driver Version

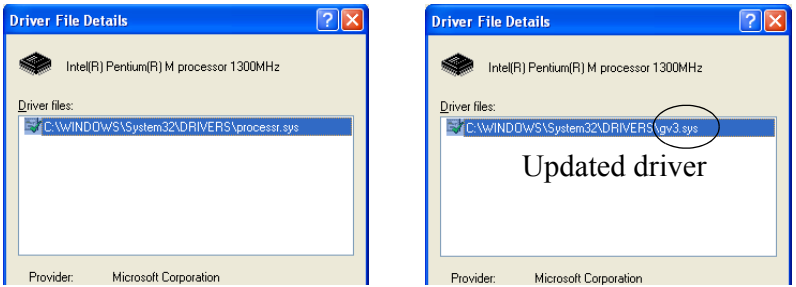
1. If you can see the **My Computer** icon on your desktop (if you cannot see the **My Computer** icon go to **step 2**) click on it once to select it, then right-click it to make the sub-menu appear and scroll down to **Properties** and click on it (go to **step 3**).

Windows XP Service Pack 1 Drivers to Support Power Management Features

The drivers that supports the mobile processor power management features of Intel Pentium M Processors will be installed if you **automatically update** your ***Windows XP*** version (you must have Service Pack 1 installed) from the Microsoft website. Further information is available if you search the Microsoft website for article **Q332179** (enter the article number in the search box and click Go).

2. If you cannot see the **My Computer** icon click **Start** (menu), then point to (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**).
3. Click the **Hardware** (tab), then click **Device Manager** (button).
4. Click "+" next to **Processors** (if its sub-items are not shown).
5. Double-click **Intel(R) Pentium(R) M processor 1*00MHz** and click **Driver** (tab).
6. Click **Driver Details** (button).
7. If the driver is the updated version, the suffix **gv3.sys** will appear in the Driver files box, and you do not need to update it (see ***Figure 3 - 14***).

Figure 3 - 14
Processor Driver Version (WinXP SP1)



If you do not see the suffix **gv3.sys** you will need to download and install the drivers (see the instructions on page ***3 - 21***). When the drivers are downloaded, follow the two part instructions on the following page to install and run the drivers (you will need to Unzip the contents of the Zip file to a location on your hard disk).

Installing the Driver

1. If you can see the **My Computer** icon on your desktop (if you cannot see the **My Computer** icon go to **step 2**) 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 3**).
2. 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**).
3. Click the **Hardware** (tab), then click **Device Manager** (button).
4. Click "+" next to **Processors** (if its sub-items are not shown).
5. Double-click **Intel(R) Pentium(R) M processor 1*00MHz** and click **Driver** (tab).
6. Click **Update Driver** (button).
7. When the *Hardware Update Wizard* appears, click **"Install from a list or specific location (Advanced)"** then click **Next**.
8. Select **"Search for the best driver in these locations."** and select ONLY **"Include this location in the search:"**.
9. Navigate (**Browse...**) to the **GV3 Folder (the location where you have unzipped the downloaded file**) and click **OK** > **Next**.
10. Click **Finish > Yes** to restart your computer.
11. After the restart browse to the **GV3 Folder (the location where you have unzipped the downloaded file**) and run the **Q330512_WXP_SP2_X86.EXE** file.

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.

CPU SpeedStep Control Settings

You can adjust the SpeedStep control settings from the BIOS (see *"CPU SpeedStep Controls (Power Menu)" on page 5 - 17*). 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).

Table 3 - 3
CPU SpeedStep Control Settings

CPU SpeedStep Control Setting	Windows 2000 or Windows XP with Basic Service Pack 1		Windows XP Service Pack 1 with Enhanced Power Management Drivers Installed	
	Power Source	CPU Speed	Power Source	CPU Speed
Performance Mode Always	AC In	CPU Max Speed	AC In	600MHz ~ **Max Speed***
	Battery (not low)	CPU Max Speed	Battery (not low)	Up to **Max Speed***
	Low Battery	600MHz	Low Battery	Up to **600MHz***
Battery Optimized Always	AC In	600MHz	AC In	600MHz
	Battery (not low)	600MHz	Battery (not low)	Up to **600MHz***
	Low Battery	600MHz	Low Battery	Up to **600MHz***
Automatically Switch	AC In	CPU Max Speed	AC In	600MHz ~ **Max Speed***
	Battery (not low)	600MHz	Battery (not low)	Up to **600MHz***
	Low Battery	600MHz	Low Battery	Up to **600MHz***

* The **Speed** is defined by the Power Scheme set in ***Windows*** (see *Table 3 - 2* on page *3 - 20*).

Conserving Power (System)

With this function you can stop the notebook'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 3 - 15 on page 3-26*).

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.

System Resume

The system can resume from **Standby** mode by:

- Pressing the power button
- Pressing the key combination **Fn** + **Esc**
- An alarm resume that is enabled and expires
- An incoming call received on the modem

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 notebook 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**.

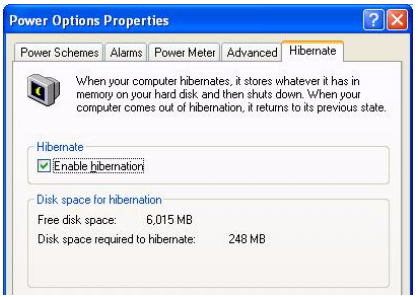
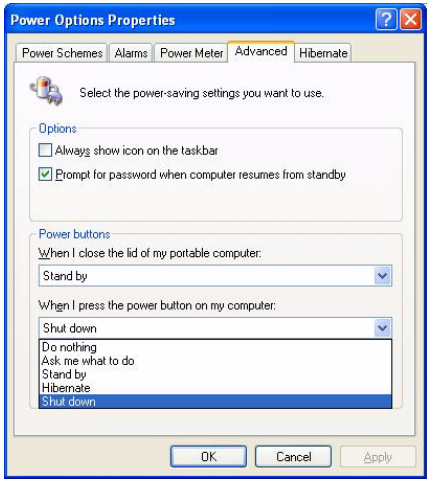


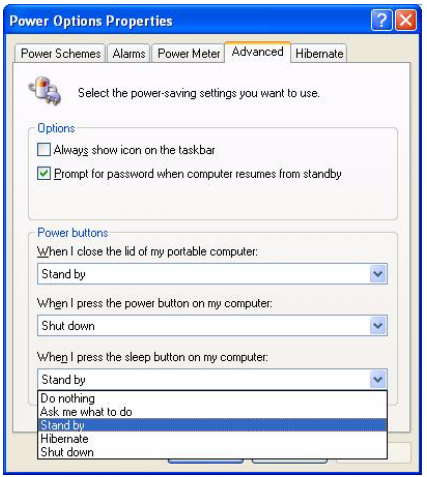
Figure 3 - 15
Enable Hibernation

Configuring the Power Button

The power button may be set to send the computer in to either **Standby** or **Hibernate** mode (*Figure 3 - 16*). 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.



Power Button



Sleep/Resume(Sleep)Button

Sleep Button

You may also configure the **Sleep/Resume** key combination (**Fn + Esc)** from the menu illustrated in *Figure 3 - 16*. In ***Windows*** this is referred to as the **Sleep** button.

Figure 3 - 16
Power Options (Advanced - Power Buttons)

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 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 (and subsequently at least once every 30 days or after about 20 partial discharges) before using it (see *"Battery FAQ" on page 3 - 29* for instructions on how to do this).

Battery Life

Your notebook computer's battery life is dependent upon many factors, including the programs you are running, and peripheral devices attached. Power Options settings in the OS will help prolong the battery life if configured appropriately.

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. Please consult your service representative should you need to remove the battery for any reason.

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** (**unclick** the tickboxes) and **Schemes** (change all the settings to **Never**). 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.

Conserving Battery Power

The LCD display consumes a lot of power, so lowering the brightness level will save power. Different applications and external devices consume battery power even when they are not being used (**see the sidebar note for further recommendations on battery conservation**).

Conserving Battery Power

To conserve battery power:

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.

Chapter 4: Drivers & Utilities

Overview

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*

Assumption

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 [see *"Navigate (Browse..) to D:" on page 4 - 2*].

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** module driver and **PC Camera** driver are on the separate ***CD-ROMs*** supplied.) ***Table 4 - 1 on page 4-6*** lists what you need to install manually according to your choice of the operating system. **It is very important that the drivers are installed in the order indicated in the table**.

Module Driver Installation

The procedures for installing drivers for the **Wireless LAN**, **PC Camera** and **Bluetooth** modules are provided in ***"Wireless & PC Camera Modules" on page 7 - 1***. Make sure that the drivers are installed in the order indicated in ***Table 4 - 1 on page 4-6***. If your purchase does not include any of the modules, DO NOT install the drivers for them.

Navigate (Browse..) to D:

You will notice that many of the instructions for driver installation require you to "**Navigate (Browse) to D:**".

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.

Service Packs

Check the warnings on the following pages regarding installation of the appropriate **Service Pack** for your ***Windows*** OS. If you are unsure of the Service Pack currently installed see below. 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 Service Pack 4

Make sure you install **Windows 2000 Service Pack 4** (or a version of Windows 2000 which includes SP4) **before installing any drivers**. Service Pack 4 includes support for **USB 2.0**.

If you have **upgraded** the system by installing **Service Pack 4** (i.e. your Windows 2000 version does not include Service Pack 4) then follow these instructions:

1. Go to **Device Manager** (see step 1 of the PC Card driver installation instructions on page ***4 - 9***) and click "+" next to **Other devices** (if its sub-items are not shown).
2. Right-click **Universal Serial Bus (USB) controller** and click **Uninstall > OK**.
3. Restart the computer and it will find the USB 2.0 controller.

Windows XP Service Pack 1

Make sure you install **Windows XP Service Pack 1** (or a Windows XP version which includes Service Pack 1) **before installing any drivers**. Service Pack 1 includes support for **USB 2.0**.

If you have **upgraded** the system by installing **Service Pack 1** (i.e. your Windows XP version does not include Service Pack 1) then follow these instructions:

1. Go to **Device Manager** (see step 1 of the PC Card driver installation instructions on page *4 - 13*) and click "+" next to **Other devices** (if its sub-items are not shown).
2. Right-click **Universal Serial Bus (USB) Controller** and select **Uninstall > OK**.
3. 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.

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.

Windows 2000 (SP4) Internet Explorer 5.5 & DirectX 8.1

Make sure that you install **Internet Explorer 5.5 (or higher version)** if you are using the ***Windows 2000*** (**make sure Service Pack 4 is installed**) OS.

Make sure that you go to the Microsoft website to download and install **DirectX 8.1 (or higher version)** if you are using the ***Windows 2000 (SP4)*** OS.

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**. Double-click **System** (icon) and then click **Hardware** (tab) > **Device Manager** (button).
2. Double-click the **device** you wish to update/reinstall the driver for (you may need to click "+").
3. Look for the **Update Driver** button (check the **Driver** tab) and follow the on screen prompts.

Feature	Windows 2000 (SP4)	Windows XP (SP1)
Service Pack	Install the appropriate Service Pack for your system if not included in your ***Windows*** version	
Chipset	***page 4 - 8***	***page 4 - 11***
Internet Explorer	Install IE 5.5 or higher	N/A
DirectX 8.1	Install DirectX 8.1 or higher (download from the Microsoft website)	N/A
Audio	***page 4 - 8***	***page 4 - 11***
Video	***page 4 - 8***	***page 4 - 12***
Network (LAN)	***page 4 - 9***	***page 4 - 12***
Modem	***page 4 - 9***	***page 4 - 12***
Hot-Key	***page 4 - 9***	***page 4 - 13***
TouchPad	***page 4 - 9***	***page 4 - 13***
PC Card/PCMCIA	(if required - see ***page 4 - 9***)	(if required - see ***page 4 - 13***)
Wireless LAN	See install procedure (depending on your computer model) on pages ***7 - 2*** & ***7 - 5***	
Bluetooth	See install procedure on pages ***7 - 10*** & ***7 - 12***	
Check Mail	***page 4 - 10***	***page 4 - 14***
PC Camera	See install procedure on pages ***7 - 15*** & ***7 - 16***	

Table 4 - 1 **- Install Procedure**

Windows 2000 Professional

This section covers driver and utility installation instructions for *Windows 2000 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.

Windows 2000 Service Pack 4

Make sure you install **Windows 2000 Service Pack 4** (or a version of Windows 2000 which includes SP4) **before installing any drivers**. Service Pack 4 includes support for **USB 2.0**.

If you have **upgraded** the system by installing **Service Pack 4** (i.e. your Windows 2000 version does not include Service Pack 4) then follow these instructions:

1. Go to **Device Manager** (see step 1 of the PC Card driver installation instructions on page ***4 - 9***) and click "+" next to **Other devices** (if its sub-items are not shown).
2. Right-click **Universal Serial Bus (USB) controller** and click **Uninstall > OK**.
3. Restart the computer and it will find the USB 2.0 controller.

Chipset (Win2000)

1. Click **Start** (menu) > **Run...**
2. Navigate (**Browse..**) to **D:\Drivers\inf_update\infinst_autol.exe** and click **OK**.
3. Click **Next > Yes > Next**.
4. Click **Finish** to restart the computer.

Windows 2000 (SP4) Internet Explorer 5.5 & DirectX 8.1

Make sure that you install **Internet Explorer 5.5 (or higher version)** if you are using the ***Windows 2000*** (**make sure Service Pack 4 is installed**) OS.

Make sure that you go to the Microsoft website to download and install **DirectX 8.1 (or higher version)** if you are using the ***Windows 2000 (SP4)*** OS.

Note: it is essential to install DirectX 8.1 if you want to run the 3DMark program.

Audio (Win2000)

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

Video (Win2000)

1. Click **Start** (menu) > **Run...**
2. Navigate (**Browse..**) to **D:\Drivers\VGA\Setup.exe** and click **OK**.
3. Click **Next > Yes**.
4. Click **Finish** to restart the computer.
5. See ***"Advanced Video Controls" on page 3 - 2*** for details on adjusting the video settings.

LAN (Win2000)

1. Click **Start** (menu) > **Run...**
2. Navigate (**Browse..**) to **D:\Drivers\Lan\Setup.exe** and click **OK**.
3. Click **Next**.
4. Click **Finish**.
5. The network settings can now be configured.

Modem (Win2000)

1. Click **Start** (menu) > **Run...**
2. Navigate (**Browse..**) to **D:\Drivers\Modem\Win2K\Setup.exe** and click **OK**.
3. Click >> (button).
4. Click √.
5. 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**).

Hot-Key (Win2000)

1. Click **Start** (menu) > **Run...**
2. Navigate (**Browse..**) to **D:\Drivers\Quick-key\CNK001.exe** and click **OK**.
3. Choose the language you prefer, and click **OK**.
4. Click **Next**.
5. Click **Finish** to restart your computer.

TouchPad (Win2000)

1. Click **Start** (menu) > **Run...**
2. Navigate (**Browse...**) to **D:\Drivers\Touchpad\Win2K_XP\Setup.exe** and click **OK**.
3. Click **Next** > **Next** > **Next**.
4. Click **Finish** to restart your computer.
5. You may then configure your TouchPad as outlined in *"Configuring the TouchPad and Buttons" on page 2 - 20*.

PC Card/PCMCIA (Win2000)

1. Click **Start** (menu), point to **Settings** and click **Control Panel**. Double-click **System** (icon) and then click **Hardware** (tab) > **Device Manager** (button).

2. Click **Device Manager** (tab), then click "+" next to **PCMCIA adapters** (if its sub-items are not shown).
3. If you see **Texas Instruments PCI-1410 CardBus Controller DO NOT** install the driver as it is not required.
   OR
   If you see **Generic CardBus Controller then follow these steps:**
4. Double-click **Generic CardBus Controller**, and click the **Driver** (tab).
5. Click **Update Driver** (button) > **Next**.
6. 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**.
7. When *Locate Driver Files* appears, select ONLY "**Specify a location"** and click **Next**.
8. Navigate (Browse...) to **D:\Drivers\ENE-PCMCIA\WIN2K**.
9. Click **Open > OK > Next**.
10. Click **Finish** and close the open windows.
11. Click **Yes** to restart your computer.

Wireless LAN (Win2000)

See install procedure in *"Gemtek USB Wireless LAN Module" on page 7 - 2* for **Model A** computers, and *"Intel PRO 2100 Mini PCI Wireless LAN Module" on page 7 - 5* for **Model B** computers.

Bluetooth (Win2000)

See install procedure in *"Bluetooth Driver Installation (Win2000)" on page 7 - 10*.

Check Mail (Win2000)

1. Click **Start** (menu) > **Run...**
2. Navigate (**Browse..**) to **D:\Drivers\E-mail LED\setup.exe** and click **OK**.
3. To continue click **OK**, then click the **Setup button**.
4. Click **Continue** > **OK**.
5. Click **Yes** to restart your computer.
6. The program will run upon startup.
7. For further details see *"Check Mail Program" on page 2 - 7*.

PC Camera (Win2000)

See install procedure in *"PC Camera Driver Installation (Win2000)" on page 7 - 15*.

Windows XP

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

Windows XP Service Pack 1

Make sure you install **Windows XP Service Pack 1** (or a Windows XP version which includes Service Pack 1) **before installing any drivers**. Service Pack 1 includes support for **USB 2.0**.

If you have **upgraded** the system by installing **Service Pack 1** (i.e. your Windows XP version does not include Service Pack 1) then follow these instructions:

1. Go to **Device Manager** (see step 1 of the PC Card driver installation instructions on page ***4 - 13***) and click "+" next to **Other devices** (if its sub-items are not shown).
2. Right-click **Universal Serial Bus (USB) Controller** and select **Uninstall > OK**.
3. Restart the computer and it will find the USB 2.0 controller.

New Hardware Found

If you see the message "New Hardware Found" (Found New Hardware Wizard) during the installation procedure, click Cancel to close the window, and follow the installation procedure as directed.

Chipset (WinXP)

1. Click **Start** (menu) > **Run...**
2. Navigate (**Browse..**) to **D:\Drivers\inf_update\infinst_autol.exe** and click **OK**.
3. Click **Next > Yes > Next**.
4. Click **Finish** to restart the computer.

Audio (WinXP)

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

Video (WinXP)

1. Click **Start** (menu) > **Run...**
2. Navigate (**Browse..**) to **D:\Drivers\VGA\Setup.exe** and click **OK**.
3. Click **Next > Yes**.
4. Click **Finish** to restart the computer.
5. See *"Advanced Video Controls" on page 3 - 2* for details on adjusting the video settings.

LAN (WinXP)

1. Click **Start** (menu) > **Run...**
2. Navigate (**Browse..**) to **D:\Drivers\Lan\Setup.exe** and click **OK**.
3. Click **Next**.
4. Click **Finish**.
5. The network settings can now be configured.

Modem (WinXP)

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

(button).
4. Click 

.
5. 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**).

Hot-Key (WinXP)

1. Click **Start** (menu) > **Run...**
2. Navigate (**Browse..**) to **D:\Drivers\Quick-key\CNK001.exe** and click **OK**.
3. Choose the language you prefer, and click **OK**.
4. Click **Next**.
5. Click **Finish** to restart your computer.

TouchPad (WinXP)

1. Click **Start** (menu) > **Run...**
2. Navigate (**Browse...**) to **D:\Drivers\Touchpad\Win2K_XP\Setup.exe** and click **OK**.
3. Click **Next** > **Next** > **Next**.
4. Click **Finish** to restart your computer.
5. You may then configure your TouchPad as outlined in ***"Configuring the TouchPad and Buttons" on page 2 - 20***.

PC Card/PCMCIA (WinXP)

1. If you can see the **My Computer** icon on your desktop (if you cannot see the **My Computer** icon go to **step 2**) 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 3**).
2. 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**).
3. Click the **Hardware** (tab), then click **Device Manager** (button).
4. Click "+" next to **PCMCIA adapters** (if its sub-items are not shown).
5. If you see **Texas Instruments PCI-1410 CardBus Contoller DO NOT** install the driver as it is not required.
   OR
   If you see **Generic CardBus Controller then follow these steps:**
6. Double-click **Generic Cardbus Controller** and click **Driver** (tab).
7. Click **Update Driver** (button).
8. When the *Hardware Update Wizard* appears, click **"Install from a list or specific location (Advanced)"** then click **Next**.
9. Select **"Search for the best driver in these locations."** and select ONLY **"Include this location in the search:"**.

10. Navigate (**Browse...**) to **D:\Drivers\ENE-PCMCIA\WINXP** and click **OK** > **Next**.
11. Click **Finish** and close the open windows.
12. Restart your computer.

Wireless LAN (WinXP)

See install procedure in *"Gemtek USB Wireless LAN Module" on page 7 - 2* for **Model A** computers, and *"Intel PRO 2100 Mini PCI Wireless LAN Module" on page 7 - 5* for **Model B** computers.

Bluetooth (WinXP)

See install procedure in *"Bluetooth Driver Installation (WinXP)" on page 7 - 12*.

Check Mail (WinXP)

1. Click **Start** (menu) > **Run...**
2. Navigate (**Browse..**) to **D:\Drivers\E-mail LED\setup.exe** and click **OK**.
3. To continue click **OK**, then click the **Setup button**.
4. Click **Continue** > **OK**.
5. Click **Yes** to restart your computer.
6. The program will run upon startup.
7. For further details see *"Check Mail Program" on page 2 - 7*.

PC Camera (WinXP)

See install procedure in *"PC Camera Driver Installation (WinXP)" on page 7 - 16*.

Chapter 5: 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 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.

The POST Screen

1. **BIOS** information
2. CPU type
3. Memory status
4. 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.

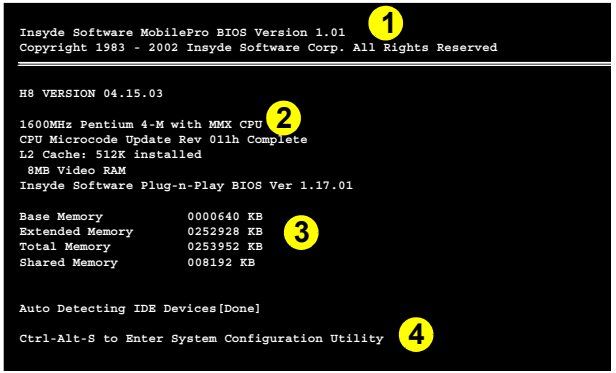


Figure 5 - 1
POST Screen Pentium 4-M Processor

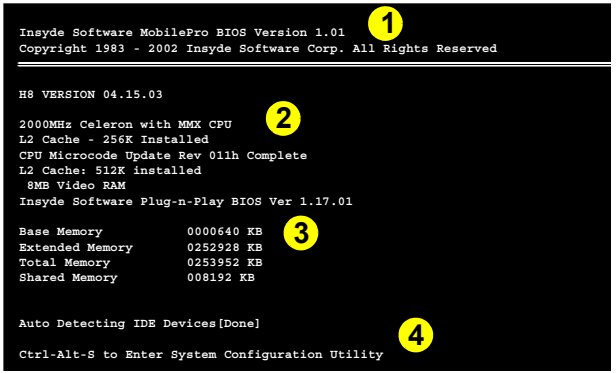


Figure 5 - 2
POST Screen Celeron Processor

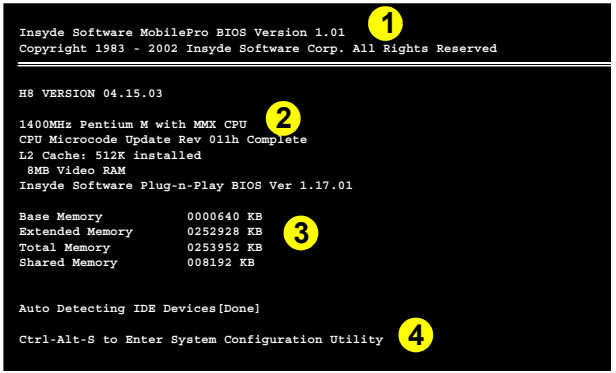


Figure 5 - 3
POST Screen Pentium M Processor

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
- <Ctrl-Alt-S> to enter **S**ystem **C**onfiguration **U**tility

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

Press Ctrl-Alt-S simultaneously 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.

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 notebook is turned off.

Entering Setup

To enter the **SCU**, turn on the computer and press **Ctrl-Alt-S** simultaneously when you see the prompt "<Ctrl-Alt-S> to enter **S**ystem **C**onfiguration **U**tility". The prompt seen in ***Figure 5 - 1*** is usually present for a few seconds after you turn on the system. If you get a "Keyboard Error" (usually because you pressed **Ctrl-Alt-S** too quickly) just press **Ctrl-Alt-S** again.

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

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**.

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:

Table 5 - 1
SCU Menu Navigation Keys

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

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:

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

Table 5 - 2
Pull-Down Menu Keys

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.

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:

Table 5 - 3
Sub Menus (Right Arrow Enabled)

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

Startup Menu

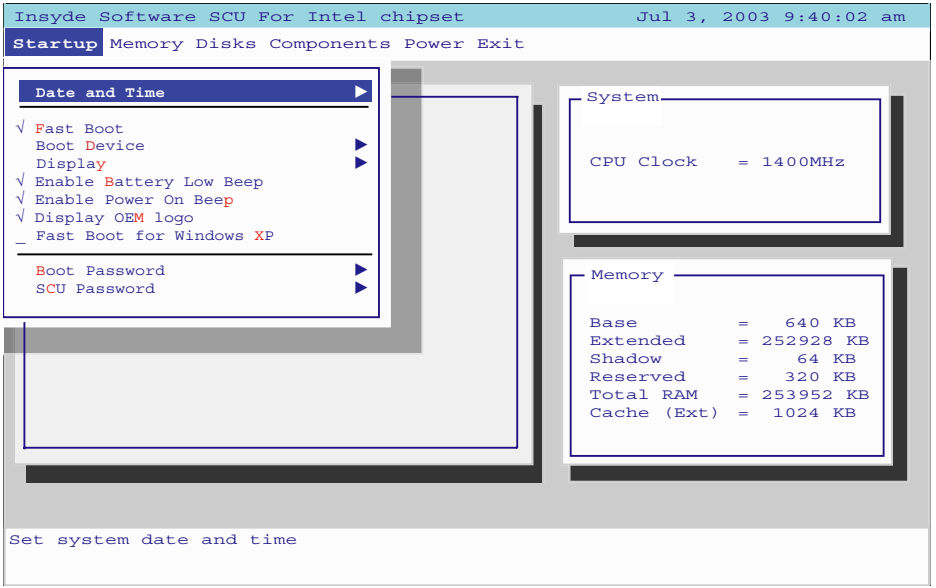


Figure 5 - 4
Startup Menu

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. The most common setting is to look for the diskette "**A:**" first, then the **CD-ROM Drive** (CD device), and lastly the **Hard Disk** "**C:**". 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.

Display (Startup Menu)
Enables your choice of CRT (external monitor), LCD (the notebook's display screen), or both. These settings are best changed in your OS (see ***" Display Devices" on page 3 - 9***), and may also be quickly adjusted by means of the **Fn** and **F6** keys (see ***" Function Keys and Numeric Keypad" on page 2 - 17***). However if you want to use multiple display devices in OS's 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".

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 (**disabled** 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** to make changes (**SCU** password). See the sidebar for a warning on setting the password.

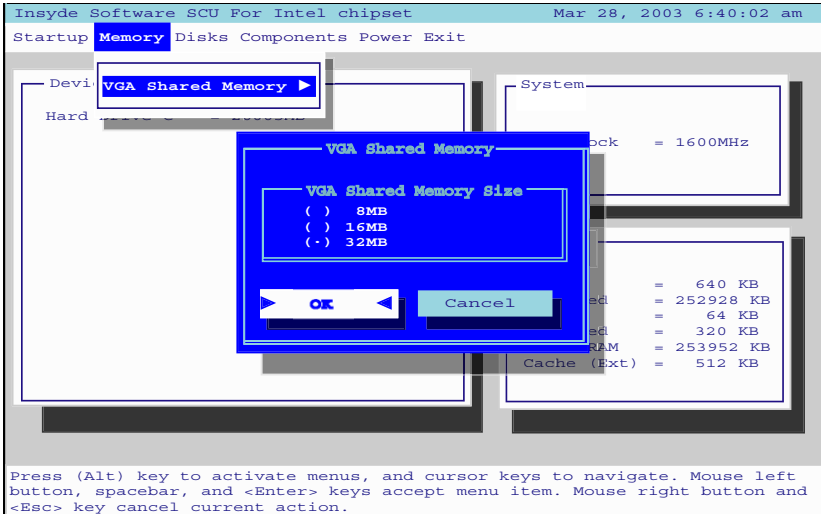
Password Warning

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.

Memory Menu

Figure 5 - 5
Memory Menu



VGA Shared Memory

This is the pre-allocated memory size for VGA compatibility. This is fixed at ***32MB***, and can be adjusted to 8MB or 16MB. This memory is allocated from your system memory e.g. if you computer has 128MB of memory (RAM), then 32MB will be allocated to video leaving the system with 96MB of RAM.

Disks Menu

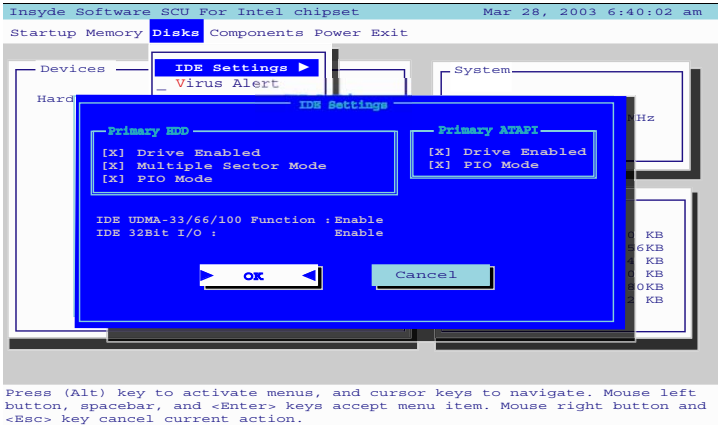


Figure 5 - 6
Disks Menu (IDE Settings)

IDE Settings (Disks Menu)

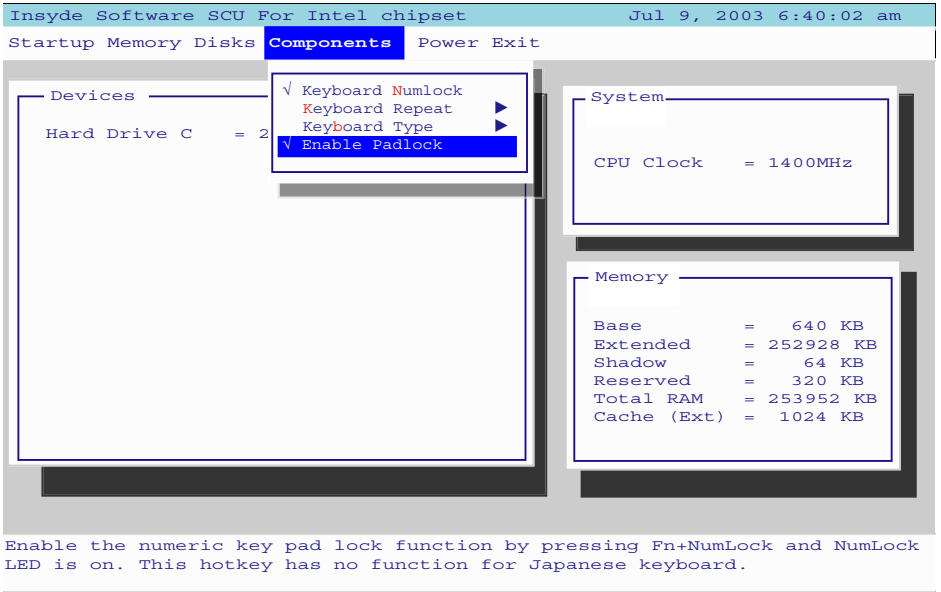
You can use this menu to set the options for your hard disk and CD device. Only make changes if you are sure of what you are doing.

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. This is merely an extra safeguard (see ***"Viruses" on page 8 - 4***).

Components Menu

Figure 5 - 7
Components Menu



Keyboard Numlock (Components Menu)]
Enable this mode to start the computer up with Number Lock enabled.

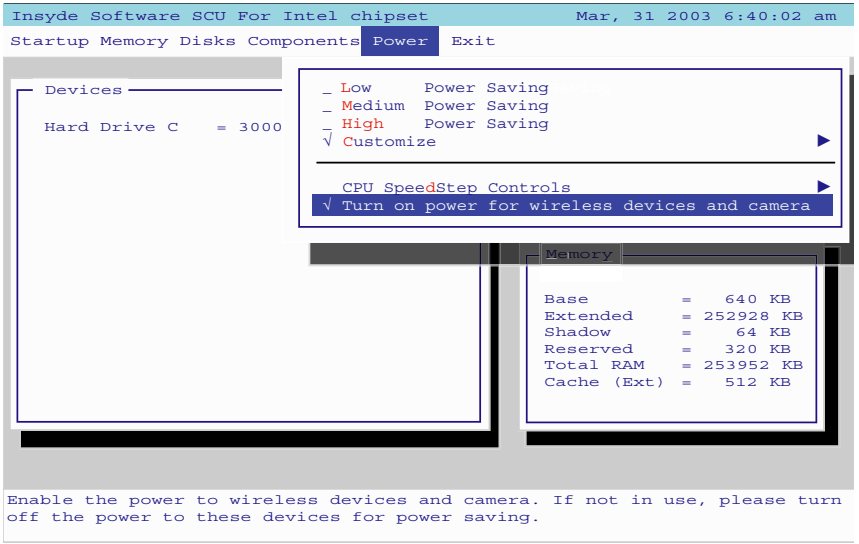
Keyboard Repeat (Components Menu)
Change the keyboard repeat rate and key delay from this menu.

Keyboard Type (Components Menu)
Change the keyboard language type here.

Enable Padlock (Components Menu)
Activate *Enable Padlock* to be able to type the numbers from the numeric keypad **without** having to hold down the **Fn** key. You must have Number Lock activated to be able to use this feature. Once Number Lock is activated, press the **Fn** and **Num Lock** keys simultaneously to enable the *Padlock* mode (see ***"Numeric Keypad" on page 2 - 18***). When *Padlock* mode is enabled, and you press the yellow typeface numeric keys, you will be able to type numbers directly without holding down the **Fn** key (holding **Fn** and pressing a key on the numeric keypad will type a letter in this mode). To disable *Padlock* mode press the **Fn** and **Num Lock** keys again.

Power Menu

Figure 5 - 8
Power Menu



This 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 (*"Power Management Features" on page 3 - 17*).

Power for Wireless Devices and Camera

The option to turn off the power for wireless devices and camera is only available for **Model B** computers.

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 (***Windows*** OS's use the CPU Speed-Step Controls and/or the ***Windows*** Power Management/Options as outlined in ***"Power Management Features" on page 3 - 17***).

CPU SpeedStep Controls (Power Menu)
You can set the mode for the Intel CPU SpeedStep controls here (***"CPU SpeedStep Control Settings" on page 3 - 24*** gives full detail on the settings).

- 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.

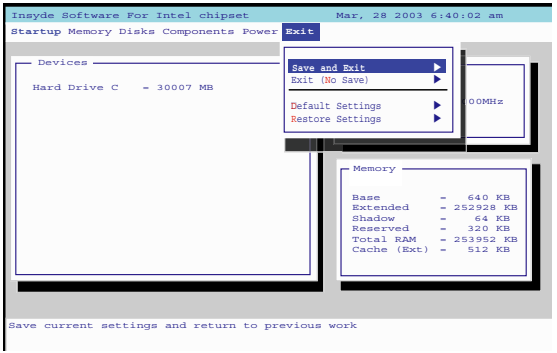
Turn on power for wireless devices and camera (Power Menu)
You may choose to enable/disable power for the wireless devices and camera from this menu option.

CPU SpeedStep Controls & CPU Performance

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 3 - 21*** for more details on how the settings below control the CPU speed and performance.

Exit Menu

Figure 5 - 9
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 6: Upgrading The Computer

Overview

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

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

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

The chapter includes:

- Replacing the Battery
- Replacing the HDD
- Upgrading the System Memory
- Replacing the CD Device

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

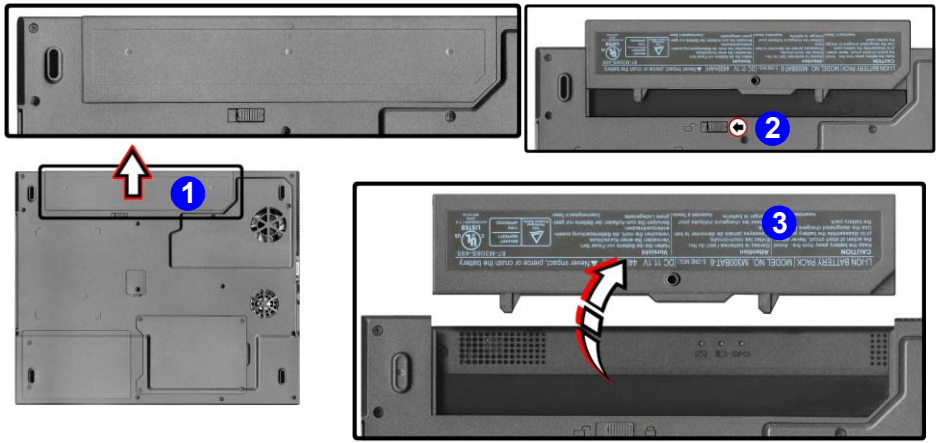
Under any of these conditions, contact your service representative to purchase or replace the component(s).

Removing the Battery

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

Battery Removal Process

1. Turn the computer **off**, and turn it over.
2. Locate the battery bay at point 1.
3. Slide the battery lock 2 in the direction of the arrow (towards the unlock symbol), and hold it in place.
4. Slide the battery 3 out of the computer's battery bay.



Warranty Warning

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

Figure 6 - 1
Battery Removal

HDD System Warning

New HDD's are blank. Before you begin make sure:
You have backed up any data you want to keep from your old HDD.
You have all the CD-ROMs and FDDs required to install your operating system and programs.
If you have access to the internet, download the latest application and hardware driver updates for the operating system you plan to install. Copy these to a removable medium.

Upgrading the Hard Disk Drive

The hard disk drive can be taken out to accommodate other 2.5" IDE hard disk drives with a height of 9.5mm (h) (see *"Storage" on page A - 2*). Follow your operating system's installation instructions, and install all necessary drivers and utilities (as outlined in *"What to Install" on page 4 - 2*), when setting up a new hard disk.

Hard Disk Upgrade Process

1. Turn **off** the computer, and turn it over and remove the battery.
2. Remove screws 1 - 2 from the hard disk cover, and remove the cover.
3. The procedure to follow now will depend on whether you have computer **Model A** or **Model B** (see *"Model Differences" on page 1 - 4*). For instructions for **Model A** see *page 6-5*, for **Model B** see *page 6-6*:

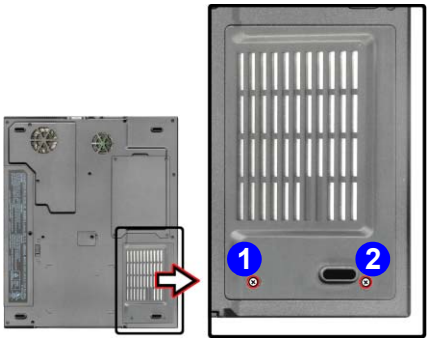


Figure 6 - 2
HDD Cover Removal

Hard Disk Removal (Model A)

1. Remove the cover (see page *6 - 4*).
2. If you have the optional Wireless LAN module you will need to carefully disconnect the cables at points 1 & 2.
3. Slide the hard disk assembly in the direction of the arrow 3.
4. Lift the hard disk assembly up out off the computer, and remove screws 4 - 7 in order to separate the cover from the hard disk.
5. Reverse the process to install a new hard disk (pay careful attention to the orientation of the disk in the case, and do not forget to reconnect the WLAN cables if necessary).

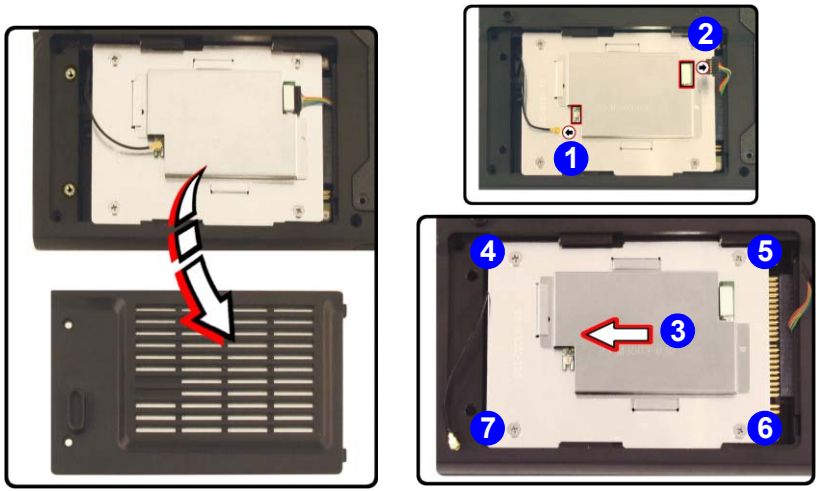


Figure 6 - 3
HDD Assembly Removal (Model A)

Ribbon Connectors & Antenna Cable

To release these connectors, use a small flathead screwdriver to gently pry the locking collar away from its base.

Wireless LAN Module

Use a small flathead screwdriver to gently pry the WLAN antenna 1 away from the WLAN module. You can leave the WLAN module attached to the Mini-PCI board.

Alternatively you can remove the WLAN module by releasing the pins at the side of module. The module will pop-up, and you can remove it. Don't forget to re attach the three cables.

Hard Disk Removal (Model B)

1. Remove the cover (see page *6 - 4*).
2. Carefully disconnect the Wireless LAN antenna cable 1 ***Note***: *If you do not see the Mini-PCI board and cables etc. then the WLAN module is located on the mainboard in your computer's design. In this case follow steps **3** & **6**.*
3. Slide the hard disk assembly in the direction of the arrow 2.
4. Carefully lift the hard disk assembly up out off the computer (the cables 3 & 4 will be released as you lift out the hard disk and Mini-PCI board).
5. Remove screws 5 - 8 in order to separate the Mini-PCI board from the hard disk 9.
6. Reverse the process to install a new hard disk (pay careful attention to the orientation of the disk in the case).

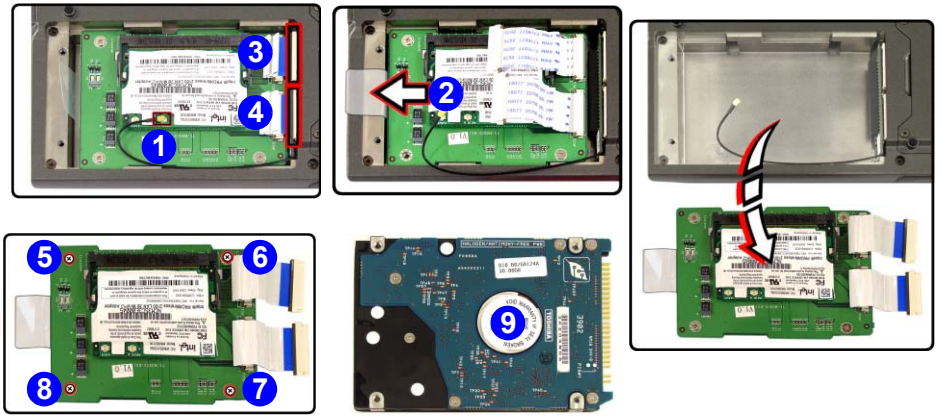


Figure 6 - 4
HDD Assembly Removal (Model B)

Upgrading the System Memory (RAM)

The computer has two memory sockets for 200 pin Small Outline Dual In-line (SO-DIMM) - DDR 200/266 MHz - type memory modules. The main memory can be expanded up to 1024MB. The SO-DIMMs supported are 128MB, 256MB, and 512MB in size, and the total memory size is automatically detected by the POST routine once you turn on your computer.

Memory Upgrade Process

1. Turn **off** the computer, and turn it over and remove the battery.
2. Remove screws 1 - 4 from the memory socket cover 5, and remove the cover by applying pressure at points 6 & 7.

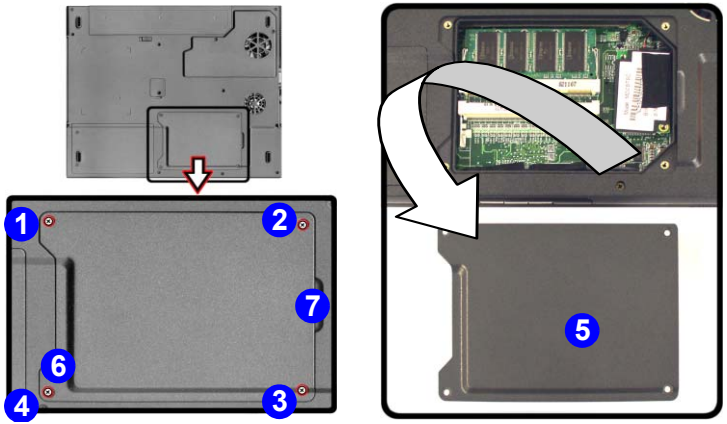


Figure 6 - 5
Memory Socket Cover Removal

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.

3. Gently pull the two release latches (1 & 2 in ***Figure 6 - 6***) on the sides of the memory socket toward the sides of the computer.

Figure 6 - 6
Removing/ Installing a RAM Module

4. The module 3 will pop-up, and you can remove it.
5. Pull the latches to release the second module if necessary.
6. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
7. 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.
8. Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
9. Replace the memory socket cover and the **4** screws (see ***Figure 6 - 5***).
10. Restart the computer.
11. The BIOS will register the new memory configuration as it starts up.

Upgrading the CD Device

The easy changeable CD device may be upgraded or changed.

CD Device Upgrade Process

1. Turn **off** the computer, and turn it over and remove the battery.
2. Remove screw 1 from the CD Device screw cover 2,and remove the cover.
3. Apply pressure at point 3 to push the CD Device 4 out of the computer.
4. Reverse the process to install the new device.

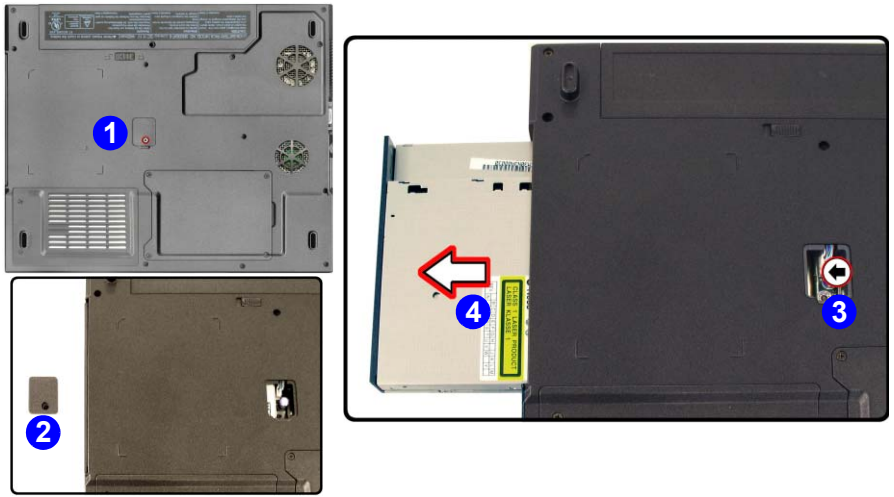


Figure 6 - 7
CD Device Removal Procedure

Warranty

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

Unauthorized tampering with the HDD may also violate your warranty.

Upgrading the Processor

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

Chapter 7: Wireless & PC Camera Modules

Overview

This chapter contains the information on the wireless 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:

- Gemtek USB Wireless LAN Module (Computer **Model A** as an optional feature only)
- Intel PRO Wireless LAN 2100 PCI Module (Computer **Model B** as a standard feature)
- The Bluetooth Module
- The PC Camera

Wireless LAN Modules

If your computer is **Model A** the Gemtek USB Wireless LAN module is an **optional** item, depending on your purchase choice.

If your computer is **Model B** the Intel PRO Wireless LAN 2100 PCI module is included as a standard item.

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. When your computer 'Boots Up' the modules will be **ON**.

Gemtek USB Wireless LAN Module

The Gemtek USB 802.11b Wireless LAN module is supplied as an **option** for computer **Model A** only (see *"Model Differences" on page 1 - 4*).

Before installing the Gemtek USB 802.11b Wireless LAN driver, make sure that the Wireless LAN module is on (the LED will be green). Use the Module ON/OFF Button (see *"Module ON/OFF Button" on page 1 - 13*) to toggle power to the Wireless LAN module (**make sure you install the drivers in the order indicated in** *Table 4 - 1 "- Install Procedure" on page 4-6*).

Gemtek Wireless LAN Driver Installation (Win2000)

1. Click **Start** (menu) > **Run...**
2. Navigate (**Browse..**) to **D:\Drivers\Wireless Lan\MiniUSBW-LAN.exe** and click **OK**.
3. Click **Next > Yes > Next > Finish** (click **Yes** or **Continue Anyway** if asked if you want to continue at any time).
4. Double-Click the Wireless Monitor icon in the taskbar to configure the options from the control panel as illustrated below.

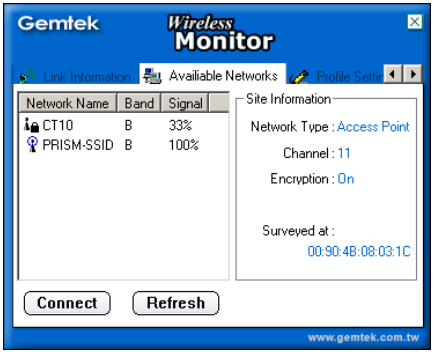
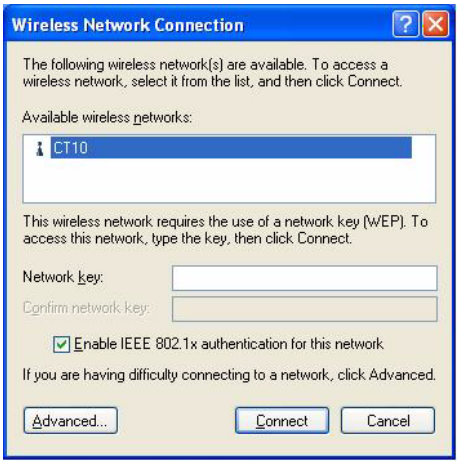


Figure 7 - 1
Gemtek Wireless Monitor Control Panels (Win2000)

Gemtek Wireless LAN Driver Installation (WinXP)

1. Click **Start** (menu) > **Run...**
2. Navigate (**Browse..**) to **D:\Drivers\Wireless Lan\MiniUSBW-LAN.exe** and click **OK**.
3. Click **Next > Yes > Next > Finish** (click **Yes** or **Continue Anyway** if asked if you want to continue at any time).
4. After initially setting up the connection, you can double-click the **Wireless Network Connection** control panel to configure the options; click **Start** (menu), point to **Settings** or **Connect To,** and click **Network Connections** or **Show all connections** (alternatively you can right-click the network icon in the taskbar as illustrated below).



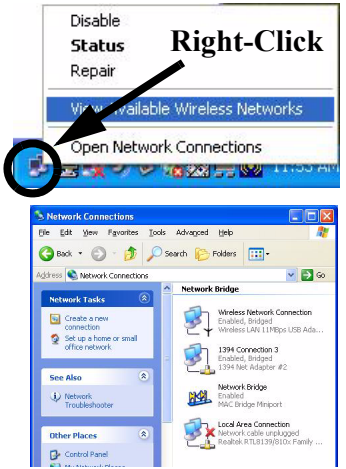


Figure 7 - 2
Gemtek Wireless Network Connection Control Panel

Intel PRO 2100 Mini PCI Wireless LAN Module

The Intel PRO 2100 Mini PCI Wireless LAN module is supplied as a standard feature for computer **Model B** only (see *"Model Differences" on page 1 - 4*).

Before installing the Intel PRO 2100 Mini PCI Wireless LAN driver, make sure that the Wireless LAN module is on (the LED will be green). Use the Module ON/OFF Button (see *"Module ON/OFF Button" on page 1 - 13*) to toggle power to the Wireless LAN module (**make sure you install the drivers in the order indicated in** *Table 4 - 1 "- Install Procedure" on page 4-6*).

To get help on the network settings you can view the User Guides by inserting the ***Intel PRO CD-ROM*** and clicking **View User Guides** (button).

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. When your computer 'Boots Up' the modules will be **ON**.

Intel PRO 2100 Wireless LAN 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 (see overleaf).

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).

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.

Figure 7 - 3
View User Guides

Intel PRO 2100 Wireless LAN 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, click **"Install from a list or specific location (Advanced)"** then click **Next**.
12. Select **"Search for the best driver in these locations."** and select ONLY **"Include this location in the search:"**.
13. Navigate (Browse...) to **D:\ProW2100\PROW7100\WINXP** and click **OK** > **Next**.
14. Click **Finish** and close the open windows.

You can now install the Administration Tools (see overleaf).

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).

Figure 7 - 4
View User Guides

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. When your computer 'Boots Up' the modules will be **ON**.

Bluetooth Module

Before installing the Bluetooth driver, make sure that the **optional** Bluetooth module is on (the LED will be green). Use the Module ON/OFF Button (see *"Module ON/OFF Button" on page 1 - 13*) 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 4 - 1 - Install Procedure' on page 4-6***.

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**, and click **OK** if you see *Unsafe Removal of Device*.
4. Click **Start** (menu) > **Run...**
5. Navigate (**Browse...**) to the top level of the CD **D:** and click **OK**.
6. Click **Install Drivers and Application Software** and click **Next**.
7. Click the button to accept the license agreement, then click **Next**.
8. Click **Next > Install** (click **OK** if asked if you want to continue).
9. Click **Finish** > **Yes** to restart the computer.
10. 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).

The Bluetooth **Manual (**in .html format) is on the ***Bluetooth CD-ROM*** in the **Userguide** folder (insert the ***Bluetooth CD-ROM*** and click **Browse this CD**).

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** if asked if you want to continue).
6. When the Found New Hardware Wizard appears select **"Install from a list or specific location (Advanced)"** then click **Next**.
7. Select "**Search for the best driver in these locations."** and select ONLY "**Include this location in the search:**".
8. Navigate (**Browse...**) to the top level of the CD **D:** and click **OK** > **Next > Finish** (click **Continue Anyway** if asked if you want to continue), then restart the computer.
9. 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).

The Bluetooth **Manual (**in .html format) is on the ***Bluetooth CD-ROM*** in the **Userguide** folder (insert the ***Bluetooth CD-ROM*** and click **Browse this CD**).

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.

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 4 - 1 - Install Procedure' on page 4-6***). Use the Module ON/OFF Button (see ***"Module ON/OFF Button" on page 1 - 13***) to toggle power to the PC Camera module.

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.

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. To run the application software go to the **CMM PC Camera** item in the **Start > Programs/All Programs** menu, and select the **AMCAP** program.

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 Driver Installation (WinXP)

1. Insert the **PC Camera CD-ROM** into the drive.
2. Click **Next** (click **Continue Anyway** if asked if you want to continue at any time).
3. Click **Finish** to restart the computer.
4. After restart allow some time for the computer to bring up the *Found New Hardware Wizard* (or click the message in the taskbar).
5. Click **"Install from a list or specific location (Advanced)"** then click **Next**.
6. Select "**Search for the best driver in these locations."** and select ONLY "**Include this location in the search:**".
7. Navigate (Browse...) to the **PC Camera CD-ROM** and click **OK** > **Next > Finish** (click **Continue Anyway** if asked if you want to continue).
8. Click **Yes** to restart the computer.
9. To run the application software go to the **CMM PC Camera** item in the **Start > Programs/All Programs** menu, and select the **AMCAP** program.

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*.

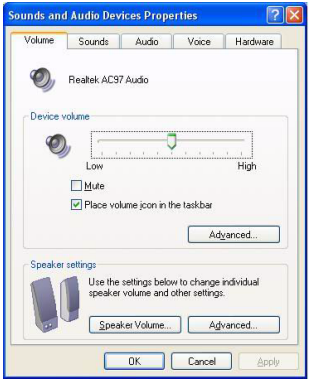
(WinXP)

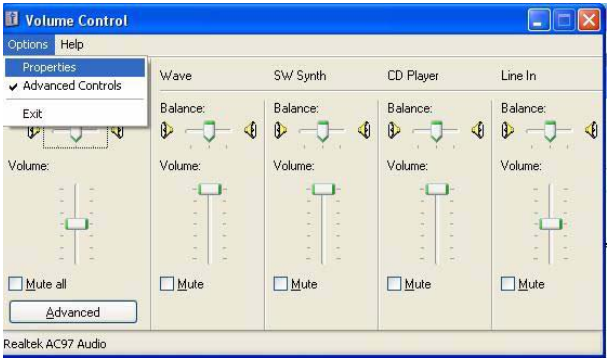
1. Go to the **Start** menu and point to **Settings** (or just click **Control Panel**) and click **Control Panel**, then double-click the **Sounds & Audio Devices** icon (**Category View > Speech, and Audio Devices**).
2. Click **Advanced** in the **Volume** tab.
3. Click **Options** (Volume Control) 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 open windows.

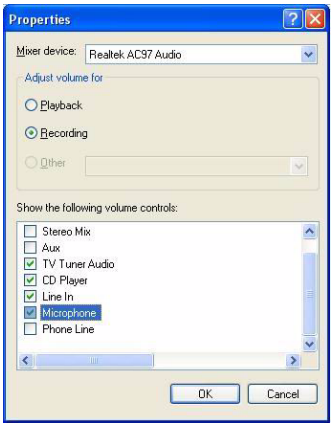
(Win2000)

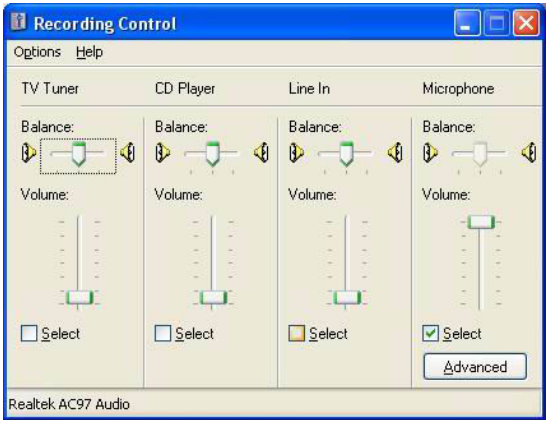
1. Go to the **Start** menu and point to **Settings** and click **Control Panel** then double-click the **Sounds and Multimedia icon**.
2. Click **Audio** (tab) and click **Volume** (button) in the **Sound Recording** menu.
3. Select **Advanced Controls** from the **Options** menu.
4. Make sure the **Select**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

Figure 7 - 5
Audio Setup (Windows XP)









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).

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.

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.

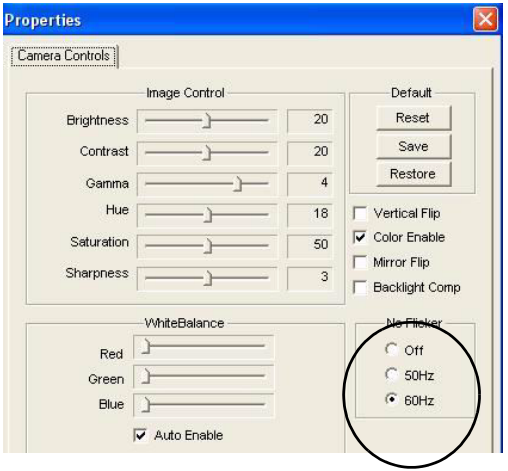


Figure 7 - 6
Camera Controls

Chapter 8: Troubleshooting

Overview

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

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

Basic Hints and Tips

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

- **Power** - Is the computer actually plugged into a working electrical outlet? If plugged into a **power strip**, make sure it is actually working. Check the **LED Power Indicators** (see *"LED Power & Communication Indicators" on page 2 - 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 *"Conserving Power (System)" on page 3 - 25*), or by pressing the **Fn + Esc** key combination, to wake-up the system.
- **Brightness** - Check the brightness of the screen by pressing the **Fn** + **F9 and F10** keys to adjust the brightness (see *"Advanced Video Controls" on page 3 - 2*).
- **Display Choice** - Press **Fn** + **F6** 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 the drive (if you have one connected) 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 **Startup** password for the SCU (see *"Startup Menu" on page 5 - 9*).

- 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).

- 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
You turned on the power but it doesn't work.	*Battery missing / incorrectly installed.* Check the battery bay, make sure the battery is present and seated properly (the design of the battery only allows it to go in one way). Make sure there's nothing interfering with the battery contacts.
The Battery **LED power** indicator , is blinking orange.	*Low Battery.* Plug in the AC power source. If the computer doesn't start up immediately, turn it off then on again.
The system has power but no picture appears.	*The sleep/resume key combination, **Fn + Esc**, or other configured key combination, has been toggled.* Press **Fn + Esc**, or other configured key combination. Wait a few moments before trying this control again.
You are losing battery power too quickly.	*The system is using too much power.* If your *OS* has a *Power Options* scheme (see ***"Power Schemes" on page 3 - 19***) check its settings. You may also be using a PC Card device that is drawing a lot of power.
The notebook feels too hot.	Make sure the notebook is properly ventilated and the fan port is not blocked. If this doesn't cool it down, put the system into **Hibernate** mode or turn it off for an hour. Make sure the vents aren't blocked and the computer isn't sitting on a thermal surface (see ***"Overheating" on page 1 - 19***). Make sure you're using the correct adapter.
The battery pack will not charge.	*The battery pack is exposed to an excessively hot or cold environment.* Place the battery in a suitable environment and after it returns to normal temperature try again. The battery may be bad and may need to be replaced, contact your service center for more details.

Problem	Possible Cause - Solution
The battery pack will not charge and the charge indicator light is off.	*The battery is already fully charged and the indicator light is broken.*
A beeping sound is heard and the low-battery indicator is on.	*The battery power is nearly used up.* Connect the AC adapter to your computer.
A beep isn't heard when the low-battery indicator turns on, or the gauge indicates power is less than 10%.	*The battery power is nearly used up and the volume control may be turned down.* Adjust the volume control and connect the computer with the AC adapter.
Actual battery operating time is shorter than expected.	*The battery has not been fully discharged before being recharged.* Make sure the battery is fully discharged and recharge it completely before reusing (see ***"Battery Information" on page 3 - 28***). *Power Options have been disabled.* Go to the **Control Panel** in *Windows* and re-enable the options. *A peripheral device or PC Card is consuming a lot of power.* Turn off the unused device to save power.

Display

Problem	Possible Cause - Solution
Nothing appears on screen.	*The system is in a power saving mode*. Toggle the sleep/resume key combination, **Fn + Esc** (see ***"Function Keys and Numeric Keypad" on page 2 - 17***). *The screen controls need to be adjusted.* Toggle the screen control key combinations **Fn + F9/F10** (see ***"Opening the LCD" on page 3 - 2***). If you're connected to an external monitor, make sure it's plugged in and turned on. You should also check the monitor's own brightness and contrast controls. *The computer is set for a different display.* Toggle the screen display key combination, **Fn + F6** (see ***"Switching/Enabling Displays (Keyboard)" on page 3 - 9***). If an external monitor is connected, turn it on. *The **screen saver** is activated.* Press any key or touch the **TouchPad**.

Problem	Possible Cause - Solution
The screen is flickering, or the images aren't clear.	*The vertical refresh rate is insufficient on your external monitor.* Avoid using the Simultaneous display mode. Use LCD only or CRT only. Switch to a lower resolution and/or fewer colors, and adjust the refresh frequency in the display controls (see ***"Vertical Refresh Rate" on page 3 - 10***). *The viewing angle of the LCD is bad.* Adjust the position of the LCD. LCD's are designed to be viewed "straight on". If the angle is wrong, you may see glare from the screen's backlight. *The screen is dirty.* Clean the screen using a soft, clean **dry** cloth. Many cleaning solutions can damage the LCD surface so you should follow the precautions outlined in the *Preface*. Try to avoid touching the screen itself. Even the cleanest hands can leave oils which attract contaminants.
No image appears on the external monitor I have plugged in and powered on.	*You haven't used the key combination to switch the display options.* Press the **Fn + F6** key combination to toggle through the options. *You haven't installed the video driver and configured it appropriately from the* ***Control Panel***. See ***"What to Install" on page 4 - 2*** for instructions on installing the driver, and see ***"Making Adjustments for the Display" on page 3 - 4*** for instructions on configuring the video driver.

Hard Disk & Boot Password

Problem	Possible Cause - Solution
The computer takes longer during Startup.	*Data saved on the hard disk drive may be lost or damaged.* Operate the scan disk or disk defragmenter to check for any lost or damaged data. *The computer is waking up from the **Hibernate** mode.*

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

Password Warning

If you choose to set a boot password, **NEVER** forget your password. The consequences of this could be serious. If you cannot remember your boot password you must contact your vendor and you may lose all of the information on your hard disk.

USB Floppy Disk Drive

Problem	Possible Cause - Solution
The floppy disk drive will not write data to disk.	*The floppy disk is not formatted.* Format the disk (you may do this by right-clicking the disk icon in **My Computer** in *Windows* and choosing **Format** from the menu). Bear in mind that this will **erase all data** contained on the floppy disk. ***Note:*** Floppy disks were never intended for long-term data storage, and have a finite life span. **Do not** store important files you wish to keep for a long time on floppy disks. As a general rule it is worth reformatting floppy disks regularly. *The floppy disk is write-protected.* Undo the protection by moving the write-protect tab on the disk down until it clicks. *There is not enough unused space available on the disk.* Use a new disk or delete any unneeded data.
The message ***"Invalid system disk - Replace the disk, and then press any key"/ "Remove disks or other media. Press any key to restart"*** appears.	*The computer is trying to boot from an incorrect floppy disk.* Remove the floppy and insert a correct one, or boot from your hard disk or CD. You will need to restart the computer.

Audio & CD Device

Problem	Possible Cause - Solution
The sound cannot be heard or the volume is very low.	*The volume might be set too low.* Check the volume control in the ***Volume Control Panel*** in the *Windows* taskbar, or use the key combination **Fn + F11** and **F12** (see ***"Function Keys and Numeric Keypad" on page 2 - 17***) to adjust. *The headphone is plugged into the wrong jack.* It should be plugged into the headphone-out jack (see ***"Headphone-Out Jack" on page 1 - 17***).
The sound cannot be heard or the volume is very low when playing a Video CD.	*The Equalizer settings in the Audio Configuration control panel is set too low.* Click the **AC97 Audio Configuration** icon in the taskbar for configuration options. Select the **Equalizer** tab, and click the **ON** tickbox. Make sure that all the sliders are set to the top level (**+12dB**), then click **OK** and close the open windows.

Problem	Possible Cause - Solution
The compact disc cannot be read.	*The compact disc is dirty.* Clean it with a CD-ROM cleaner kit.
The compact disc tray will not open when there is a disc in the tray.	*The compact disc is not correctly placed in the tray.* Gently try to remove the disc using the eject hole (see ***"Loading Discs" on page 2 - 11***).

Problem	Possible Cause - Solution
The DVD regional codes can no longer be changed.	*The code has been changed the maximum 5 times.* See ***"DVD Regional Codes" on page 2 - 13***.
A music compact disc can be read while a data disc can not.	*There may be a problem with the disc hardware or software.* Refer to your operating system manual for more information on the software and make sure you have the correct software installed for running video compact discs. If the proper software is installed and a problem still exists, contact your service center about a possible hardware problem.
All compact discs cannot be read.	*The Windows system does not recognize the CD-ROM drive, or the CD-ROM drive is not compatible with other devices.* Make sure you have the CD-ROM drive properly installed and configured. *The CD-ROM drive is dirty.* Clean it with a CD-ROM cleaner kit. *There may be a problem with the disc hardware or software.* If the correct software is properly installed, contact your service center about a hardware problem.

Media Warning

When manually ejecting a CD/DVD, DO NOT use a sharpened pencil or similar object which may break, and become lodged in the hole.

PC Card

Problem	Possible Cause - Solution
The system cannot recognize the PC Card.	*The PC Card is not inserted into the socket or inserted incorrectly.* Remove the card and re-insert it aligning the PC Card with the slot. Push the card in until it locks into place. *The PC Card or card driver is not compatible with the computer.* Check ***"PC Card" on page A - 2*** to check the compatibility of the card. *The PC Card driver is not installed.* Install the driver (see ***"What to Install" on page 4 - 2***). *The system cannot access the card after it is installed.* Please read the documentation which comes with any new external device. Make sure you **install any drivers, if they are supplied with it**, as this will allow you to access any extra functions which come with the device.

Keyboard and Mouse

Problem	Possible Cause - Solution
Unwelcome numbers appear when typing.	*If the LED* 1 *is lit, then Num Lock is turned* ***ON****.* Check that Padlock mode is not enabled (see ***"Numeric Keypad" on page 2 - 18***).
I have installed a new external keyboard or mouse but cannot use all of the listed functions.	*You have not installed the driver to enable any extra functions.* Make sure you read the documentation which comes with any new external device, and make sure you install the driver for it as this will allow you to access any extra functions which come with your device.

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.

Printer

Problem	Possible Cause - Solution
The printer cannot be added to the system or will not work.	*The printer is not turned on, is not correctly connected to the computer, or has an internal problem*. Make sure the printer is on. Check all connections and cables and then try to reinstall the driver. You may refer to the printer's manual for instructions on printing a "self-test" page (a "self-test" page will print regardless of computer connections and is a means of ensuring that the printer is actually working). *There is no paper in the printer, or the paper is incorrect for the settings designated in your software.* Put more paper in the printer (also fan the paper to make sure it doesn't stick together and cause a paper jam) and check the paper size matches your software's "print" settings. *The printer **driver** is not installed or is configured incorrectly.* Check that the printer is properly installed and configured (correct port etc.). Also check that you have installed the latest driver compatible with your *OS* (updated drivers are usually available for download from the printer manufacturer's website). *The printer is a network printer and it is not properly connected to the network.* All networks are configured differently so please check with your **network administrator** to get the correct setup.

Operation

Problem	Possible Cause - Solution
The system freezes or the screen goes dark.	*The system's power saving features have timed-out*. Use the AC adapter, press the sleep (**Fn + Esc**) key combination, or press the power button if no LEDs are lit. *A software conflict made the system "crash"*. Consult your *OS* manual. As a last resort, since you will lose any unsaved data, try to reboot the system or if that doesn't work, turn the computer off and on again.
The system never goes into Hibernate mode.	Make sure you have enabled **Hibernate** in the Power Options control panel in your OS (see ***"Hibernate" on page 3 - 26***).
The system does not go into a power saving mode when the battery is low.	*No power saving options are enabled*. Use one of the *Power Options* presets.

Modules

Problem	Possible Cause - Solution
The Wireless LAN/ Bluetooth/PC Camera modules cannot be detected.	*The modules are off.* Check the LED indicator to see if the modules are on or off (see ***"LED Status Indicators" on page 2 - 5***). If the LED indicator is off, then press the Module On/Off button in order to enable the modules (see ***"Gemtek USB Wireless LAN Module" on page 7 - 2***, ***"Intel PRO 2100 Mini PCI Wireless LAN Module" on page 7 - 5***, ***"Bluetooth Module" on page 7 - 10*** and/or ***"PC Camera" on page 7 - 15***).
The Wireless LAN/ Bluetooth/PC Camera modules cannot be configured.	The driver(s) for the module(s) have not been installed. Make sure you have installed the driver for the appropriate module (see ***"Gemtek USB Wireless LAN Module" on page 7 - 2***, ***"Intel PRO 2100 Mini PCI Wireless LAN Module" on page 7 - 5***, ***"Bluetooth Module" on page 7 - 10*** and/or ***"PC Camera" on page 7 - 15***).

Appendix A. Model A Specifications

Processor Options

- Mobile Intel Pentium® 4 Processor-M - (478-pin) Micro-FCPGA package

  (µ0.13) 0.13 Micron Process Technology, 512KB On-die L2 Cache & 400MHz PSB - 1.4/ 1.5/ 1.6/ 1.7/ 1.8/ 1.9/ 2.0/ 2.2/ 2.4/ 2.5 /2.6 GHz

- Mobile Intel Celeron® Processor - (478-pin) Micro-FCPGA package

  (µ0.13) 0.13 Micron Process Technology, 256KB On-die L2 Cache & 400MHz PSB -1.4/ 1.5/ 1.6/ 1.7 /1.8/ 2.0/ 2.2 GHz

Processor Types

You can check your processor type from the POST screen *"The Power-On Self Test (POST)" on page 5 - 2*.

Core Logic

- Intel 852GM + ICH4-M

Structure

- PC2001 Compliant
- PCI 2.2 Compliant
- ACPI 2.0 Compliant

Security

- Security (Kensington® Type) Lock Slot
- BIOS Password

Memory

- Two 200-pin SODIMM sockets, supporting 200/ 266 MHz DDR modules
- Memory expandable up to 1GB (128/ 256/ 512 MB DDR modules)

BIOS

- One 512KB Flash ROM
- Insyde BIOS, Plug and Play (1.0a)

LCD

- 14.1" XGA Flat Panel TFT (1024*768)

Display

- Dynamic Video Memory Technology
- 128 bit 2D/3D Graphics Engine
- Motion Compensation for DVD Accelerator
- Fully DirectX 7/8 Compliant Graphics Engine
- Supports VESA DDCI, DDC2B and DDC 3.0 Specifications

Video Memory

The system allocates or “shares” a portion of system memory for video use. “Shared” memory is user-configurable via the SCU. The default setting is set to 32MB (see ***“VGA Shared Memory” on page 5 - 12***).

Storage

- One changeable 12.7mm(h) CD Device Type Drive
- Easy changeable 2.5" 9.5 mm (h) HDD
  Supports Master Mode IDE
  Supports LBA Mode
  Supports PIO Mode 4
  ATA-33/66/100

PC Card

- One Type-II PCMCIA 3.3V/5V Socket

Audio

- AC’97 2.2 Compliant
- Advanced Wavetable Synthesizer
- DirectSound™ 3D Accelerator
- Full-duplex
- Virtual AC3
- Built-In Microphone
- 2 Built-In Speakers

Keyboard

- A4 Size Win 95 Keyboard
- Built-In TouchPad with Scrolling Function

Interface

- Two USB 2.0/1.1 Ports
- One Mini- IEEE 1394 Port
- One External VGA Monitor Port
- One Headphone-Out Jack
- One Microphone-In Jack
- One S/PDIF Output Jack
- One TV-Out Jack
- One RJ-11 Jack for Plug & Play Fax/Modem
- One RJ-45 Jack for 100M (Max) Fast Ethernet
- One DC-in Jack

Communication

- 56K Plug & Play Fax/Modem V.92 Compliant
- 100M (Max) Fast Ethernet (IEEE 802.3 and 802.3u Standard Compliant)
- PC Camera with USB Interface (**optional**)
- 802.11b Module with USB Interface (**optional**)
- Bluetooth 1.1 with MDC Interface (**optional**)

Power Management

- 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

Power

- Full Range AC Adapter
  AC-Input 100~240V, 47~63Hz
  DC Output 20V, 3.25A (**65W**)
- One 65 Watt Smart Lithium-Ion (6 cells) Battery Pack

Indicators

- LED Indicators (Power/Suspend, Battery, HDD/CD-ROM, Num Lock, Caps Lock, Scroll Lock, E-Mail, 802.11b & Bluetooth)

Buttons

- E-Mail
- Internet Browser
- Power
- Module ON/OFF Button

Environmental Spec

- Temperature

Operating:	5°C ~ 35°C
Non-Operating:	-20°C ~ 60°C

- Relative Humidity

Operating:	20% ~ 80%
Non-Operating:	10% ~ 90%

Physical Dimensions

- 312mm (w) * 263mm (d) * 27.5mm (h) Min

Weight

- 2.5kgw with 14.1" LCD & 6-Cell Battery Pack

Optional

- Standard Smart Lithium-Ion (65Watt) Battery Pack
- 802.11b Module with USB Interface
- Bluetooth 1.1 MDC Module
- 2.5" 12.5/12.7mm Height Hard Disk Drive
- PC Camera with USB Interface

Appendix B. Model B Specifications

Processor Options

- Intel Pentium® M - (478-pin) Micro-FCPGA package

  (µ0.13) 0.13 Micron Process Technology, 1MB On-die L2 Cache & 400MHz PSB - 1.3/ 1.4/ 1.5/ 1.6/ 1.7 GHz

Processor Types

You can check your processor type from the POST screen *"The Power-On Self Test (POST)" on page 5 - 2*.

Core Logic

- Intel 855GM + ICH4-M

Structure

- PC2001 Compliant
- PCI 2.2 Compliant
- ACPI 2.0 Compliant

Security

- Security (Kensington® Type) Lock Slot
- BIOS Password

Memory

- Two 200-pin SODIMM sockets, supporting 200/ 266 MHz DDR modules
- Memory expandable up to 1GB (128/ 256/ 512 MB DDR modules)

BIOS

- One 512KB Flash ROM
- Insyde BIOS, Plug and Play (1.0a)

LCD

- 14.1" XGA Flat Panel TFT (1024*768)

Display

- Dynamic Video Memory Technology
- 128 bit 2D/3D Graphics Engine
- Motion Compensation for DVD Accelerator
- Fully DirectX 7/8 Compliant Graphics Engine
- Supports VESA DDCI, DDC2B and DDC 3.0 Specifications

Video Memory

The system allocates or “shares” a portion of system memory for video use. “Shared” memory is user-configurable via the SCU. The default setting is set to 32MB (see ***“VGA Shared Memory” on page 5 - 12***).

Storage

- One changeable 12.7mm(h) CD Device Type Drive
- Easy changeable 2.5" 9.5 mm (h) HDD
  Supports Master Mode IDE
  Supports LBA Mode
  Supports PIO Mode 4
  ATA-33/66/100

PC Card

- One Type-II PCMCIA 3.3V/5V Socket

Audio

- AC’97 2.2 Compliant
- Advanced Wavetable Synthesizer
- DirectSound™ 3D Accelerator
- Full-duplex
- Virtual AC3
- Built-In Microphone
- 2 Built-In Speakers

Keyboard

- A4 Size Win 95 Keyboard
- Built-In TouchPad with Scrolling Function

Interface

- Two USB 2.0/1.1 Ports
- One Mini- IEEE 1394 Port
- One External VGA Monitor Port
- One Headphone-Out Jack
- One Microphone-In Jack
- One S/PDIF Output Jack
- One TV-Out Jack
- One RJ-11 Jack for Plug & Play Fax/Modem
- One RJ-45 Jack for 100M (Max) Fast Ethernet
- One DC-in Jack

Communication

- 56K Plug & Play Fax/Modem V.92 Compliant
- 100M (Max) Fast Ethernet (IEEE 802.3 and 802.3u Standard Compliant)
- PC Camera with USB Interface (**optional**)
- Intel PRO Wireless LAN 2100 (802.11b) Wireless LAN Module with PCI Interface
- Bluetooth 1.1 with MDC Interface (**optional**)

Power Management

- 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

Power

- Full Range AC Adapter
  AC-Input 100~240V, 47~63Hz
  DC Output 20V, 3.25A (**65W**)
- One 6 cell, 48 Watt, Smart Lithium-Ion Battery Pack - Approx 3 Hours battery life
- One 12 cell, 96 Watt, Smart Lithium-Ion Battery Pack (**optional**) - Approx 6 Hours battery life

Indicators

- LED Indicators (Power/Suspend, Battery, HDD/CD-ROM, Num Lock, Caps Lock, Scroll Lock, E-Mail, Wireless LAN & Bluetooth)

Buttons

- E-Mail
- Internet Browser
- Power
- Module ON/OFF Button

Environmental Spec

- Temperature

Operating:	5°C ~ 35°C
Non-Operating:	-20°C ~ 60°C

- Relative Humidity

Operating:	20% ~ 80%
Non-Operating:	10% ~ 90%

Physical Dimensions

- 312mm (w) * 273mm (d) * 27.5mm (h) Min

Weight

- 2.2 kg without Battery

Optional

- Standard Smart Lithium-Ion (48Watt) Battery Pack
- Bluetooth 1.1 MDC Module
- 2.5" 12.5/12.7mm Height Hard Disk Drive
- Extended Smart Lithium-Ion (96Watt) Battery Pack
- PC Camera with USB Interface