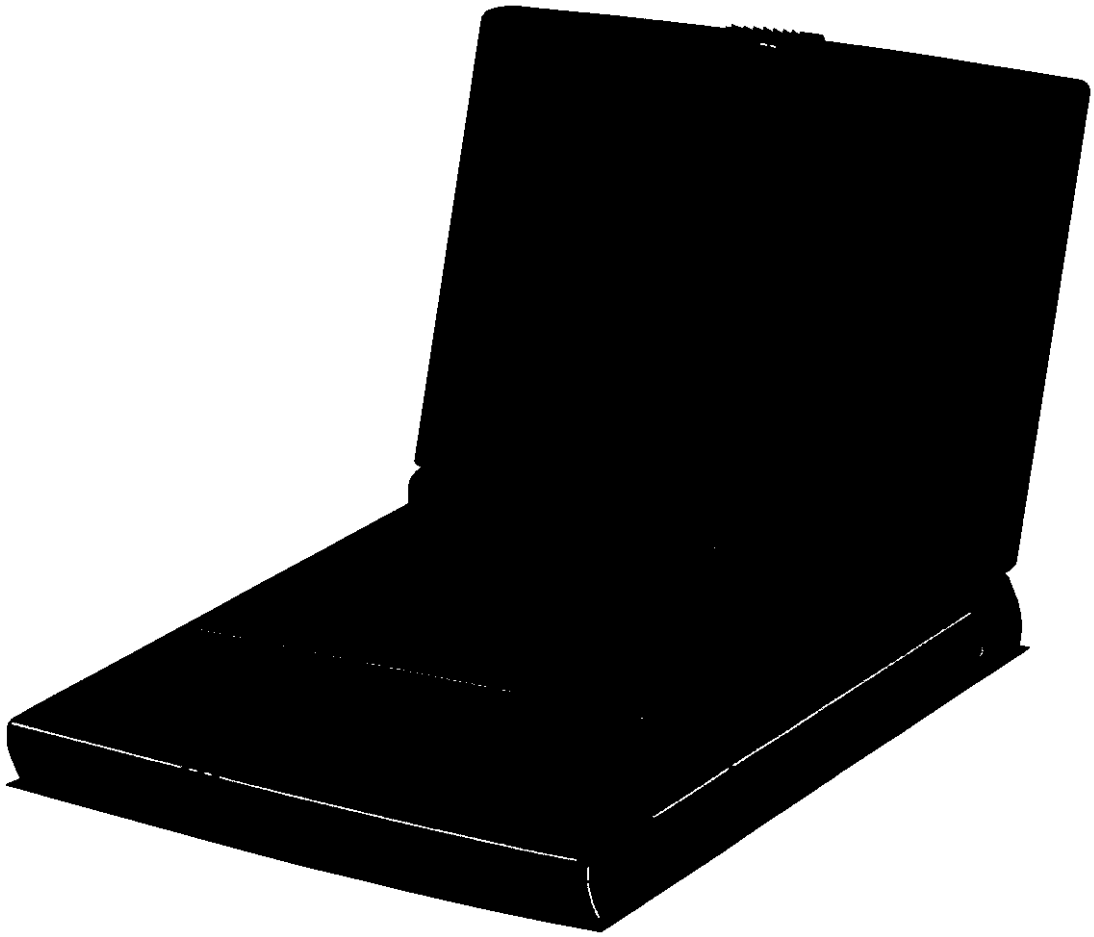
Delta Electronics., Inc.

NOTEBOOK COMPUTER

DN-615

# *User's Manual*



# TABLE OF CONTENTS

## CHAPTER 4: TAKING YOUR NOTEBOOK ON THE ROAD



## CHAPTER 5: EXPLORING YOUR NOTEBOOK



## CHAPTER 6: EXPANDING YOUR NOTEBOOK



## APPENDIX A: NOTEBOOK SPECIFICATIONS



## APPENDIX B: DEVICE DRIVER INSTALLATION

## Copyright



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www.immediate.com.tw

## Battery Caution

- Danger of explosion if battery is incorrectly replaced.
- Replace only with the same or equivalent type recommended by the manufacturer.
- Keep the battery away from fire. Do not dispose in fire.
- Do not expose the battery pack to direct sunlight.
- Contact local environmental agencies for information on recycling and disposal plans in your area. Discard used batteries according to the manufacturer's instructions.
- Do not directly connect (short circuit) the positive (+) and the negative (-) terminals. Never attempt to disassemble the battery pack.
- Do not use a battery charger or AC adapter other than the designated one provided with your notebook to charge the battery pack.

Follow these guidelines in order to prevent damage to the notebook, and/or harm to the user. Mishandling the battery may cause it to explode.

# Introduction

Device drivers are software files that allow pieces of hardware to communicate effectively with the notebook and the operating system. All such specific drivers necessary have been preloaded for the various hardware units that have been packaged with your system.

All the device drivers needed for your system are also available on the support CD that shipped with your notebook.

The support CD contains drivers for:

- 3Mode – Japanese floppy disk drivers and utilities (In order to support 1.2 MB format floppy disks, a format popular in Japan, you need to install this mode 3 floppy disk driver software.)
- Audio – software support for audio
- CD-ROM – software support for CD-ROM drive
- PCMCIA – software support for PC-card drive
- Modem – software support for internal modem device
- VGA – software support for display

The support CD also holds a copy of the online manual for your notebook. This is an online version of this user's manual.

***NOTE:*** *If you encounter any problems using the online user's manual you can install the HTML Help Update program (update.exe), also available on the support CD. This will update your computer for optimal use of the user's manual.*

# Driver Installation Program

If you ever need to reinstall the device drivers (e.g. after hard disk failure,...), you can use the driver installation program on the support CD which will automatically install all the necessary drivers for you.

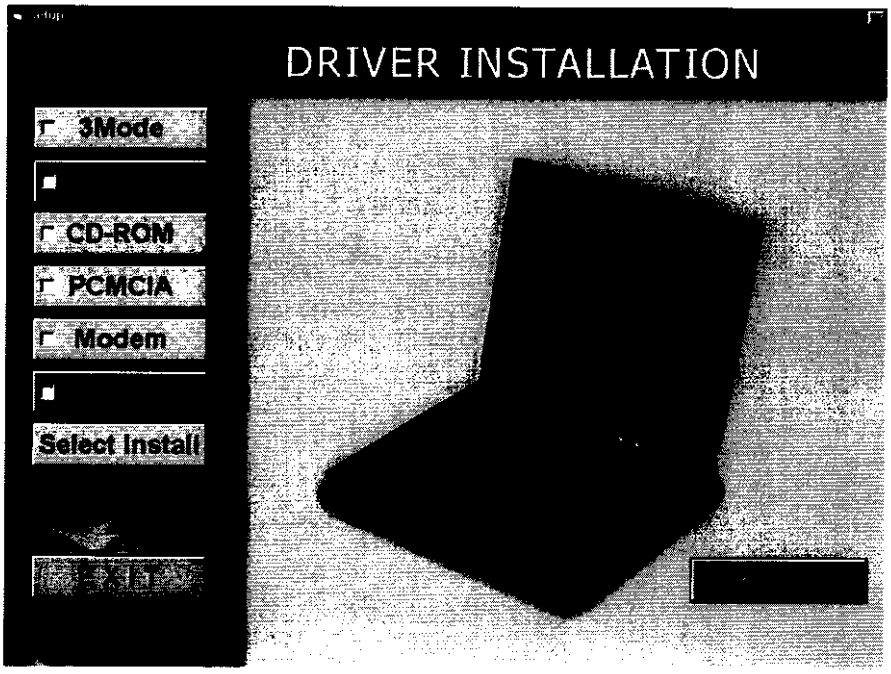
To access the device driver installation program:

1. Place the support CD in the CD-ROM drive.
2. If the installation program fails to start after 20 seconds, click on the Start menu, select RUN, and type:

   D:\Setup.exe

(Where D represents the CD-ROM drive)

3. A window screen will pop up, with a menu bar on the left.




4. Click the check boxes of the drivers you want to install, then click [Select Install]. This will install all the drivers you previously marked. You can also install individual drivers by clicking the button area of a menu item. This will only install that particular driver.
5. After you click the button, the installation program for that particular driver will start and might prompt you for some input. Follow the screen instructions to finish the installation.
6. If you need to restart the system, return afterwards back to the installation program to finish all the other installations you need to make.
7. For more help on the installation program, review the manual file linked to the [Manual] button.

# Chapter 1

## Introducing your Notebook

***This chapter provides a brief description of all the major components of your notebook***

# Introduction

Congratulations on your purchase of this powerful notebook computer. This high-end system runs the latest generation of Intel Celeron processors that are designed to deliver smooth multimedia and lighting-fast performance. The system is equipped with built-in audio and a large bright built-in screen.

The unit is equipped with an internal built-in set of drives. The system also boasts a full set of expansion ports so that you can create an extended computing environment that challenges the best full-sized desktop systems for performance.

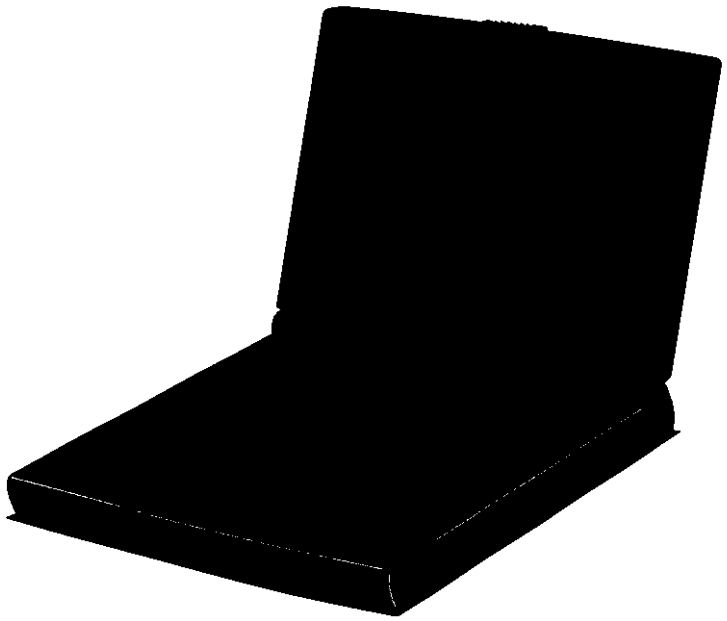


**Figure 1-1: Your Notebook**

### Opening the Notebook

The screen cover is locked down by a latch on the front edge of the notebook. Slide the latch to the right to unlatch the screen and open the screen cover.

**Figure 1-1: Opening the Cover**

## Discovering the Unit

When the screen cover is opened, the main working area of the notebook is visible. This area includes the built-in screen, the keyboard, and the touchpad.

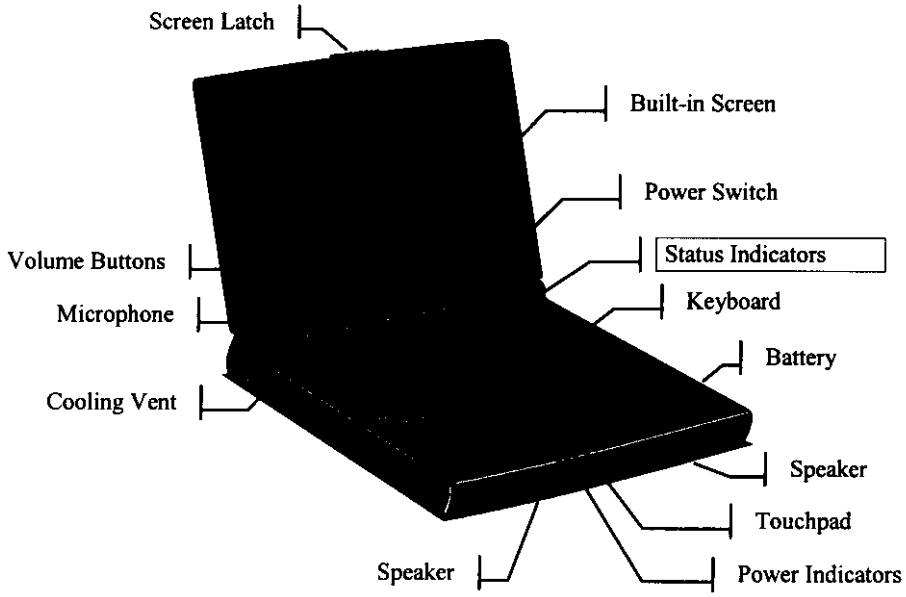



**Figure 1-1: Working Area**

## Built-in Screen

This notebook can be installed with color LCDs (Liquid Crystal Displays). The LCD measures 14.1" diagonally. Screen use a TFT active matrix display that delivers a bright, high-contrast picture. The screen resolutions are XGA (1024 x 768). XGA resolution puts the maximum information on the display, without making the text and icons too small to be legible.

## Power Switch

The power switch is located just above the keyboard in the middle, and is used to turn the notebook on and off. Press the switch down and hold it down until you see the indicator LEDs flash. Hold the switch down again for over 4 seconds to turn the system off.

## Volume Buttons

The volume buttons are located just above the keyboard, next to the power switch. Pressing the top button increases the volume of the internal sound system, pressing the lower button decreases the volume level.

**Figure 1-1: Volume buttons**

## Cover-close / Suspend-resume Micro Switch

The cover-close micro switch is pressed whenever the screen cover has been closed. When this happens, the system will either turn off the built-in screen or suspend the system, The response is defined by the system setup utility (See chapter 4 for information on the cover close response.)

## Microphone and Speakers

Your notebook has a built-in stereo audio system. The speakers are located in the front side of the notebook. The microphone is located below the LCD in the cover of the notebook.

## Status Indicators

The status indicators are located above the keyboard. When the system is turned on, the indicator LEDs show the status of the system and the major components.

The green LED next to this icon turns on when the notebook is powered on. When the system is suspended to RAM, the LED flashes. When the system is suspended to disk, or when the system is powered down, the LED turns off.

The LED next to this icon turns on green when the battery inside the notebook is fully charged. When the battery is charging the LED turns amber. When there is less than 3 minutes of battery capacity left, the LED turns red and flashes, while an audible warning beep sounds.

## Built-in Keyboard

Most versions of the built-in keyboard use 86 keys. Some non-english keyboards may have one or two extra keys. Some keys are embedded with several keystrokes so that the keyboard can duplicate all the keystrokes of a standard desktop AT or PS/2 keyboard with 101/102 keys. The keyboard is optimized for Windows and has two kinds of special Windows keys. On top of these standard desktop keyboard functions, the notebook keyboard also has hot keys to give the user direct access to a series of often used functions (See chapter 2 for more information on the keyboard.)

## Touchpad

The touchpad is your notebook's pointing device. In a graphical environment like Windows, the touchpad surface acts like a representation of the built-in screen. When you move your fingertip over the touchpad surface, the pointer on the screen moves in the same direction. (See chapter 2 for more information on the touchpad.)

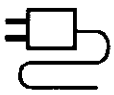
**Figure 1-1: Status Indicators**

| | |
|---|---|
|  | The green LED next to this icon turns on when the notebook is reading from a disc in the CD-ROM or DVD drive. |
|  | The green LED next to this icon turns on when the notebook is reading from or writing to the built-in hard disk drive. |
|  | The green LED next to this icon turns on when the notebook is reading from or writing to a diskette in the floppy disk drive. |
|  | The green LED next to this icon turns on when the keyboard is in Num Lock mode. |
|  | The green LED next to this icon turns on when the keyboard is in Caps Lock mode. |
|  | The green LED next to this icon turns on when the keyboard is in Scroll Lock mode. |

## Power Indicators

The power indicators are located on the front edge of the notebook, below the buttons of the touchpad. When the system is turned on, these indicator LEDs show the power and charging status of the system and internal battery. The power indicator LEDs are visible at all time, even when the notebook cover is closed.

**Figure 1-1: Power Indicators**

| | |
|---|---|
|  | The green LED next to this icon turns on when the notebook is using power from the AC adapter. |

# Right-side Components

The right side of the notebook is the location of the CD-ROM/DVD drive, the infrared port, The AC adapter plug and also the anchor for the security locking cable.

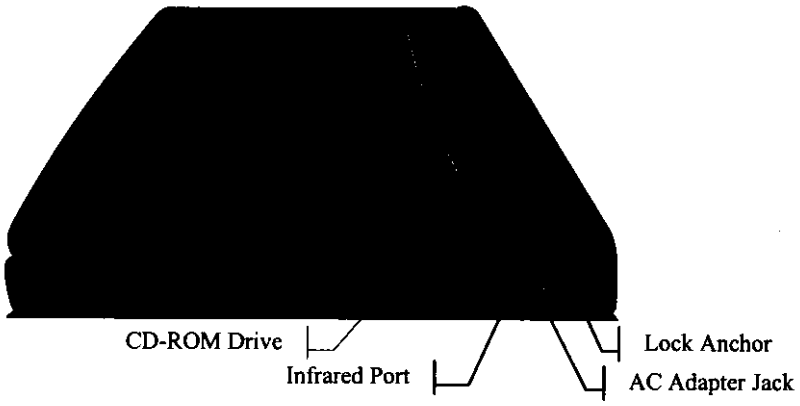



**Figure 1-1: Right-side Components**

## CD-ROM Drive

This drive bay is installed with a CD-ROM drive. This option is factory installed and can not be easily switched. You can use this drive to read from CD data discs, video discs, and audio discs.

## AC Adapter Jack

You can plug the DC power cable into the AC adapter in order to power your notebook from the AC adapter.

## Infrared Port

The infrared (IR) port allows you to connect to another system using IR technology. You must place the port within four feet (1 m) and a 30° angle of the other IR port for proper communication.

## Lock Anchor

The lock anchor is a rectangular hole on the right side of the back edge of the notebook. You can use this hole to attach a security locking cable (such as a Kensington MicroSaver) to your notebook.

# Left-side Components

The left side of the notebook is the location of the PS/2 connector, the PC card slot compartment, and also the floppy disk/LS-120 drive.

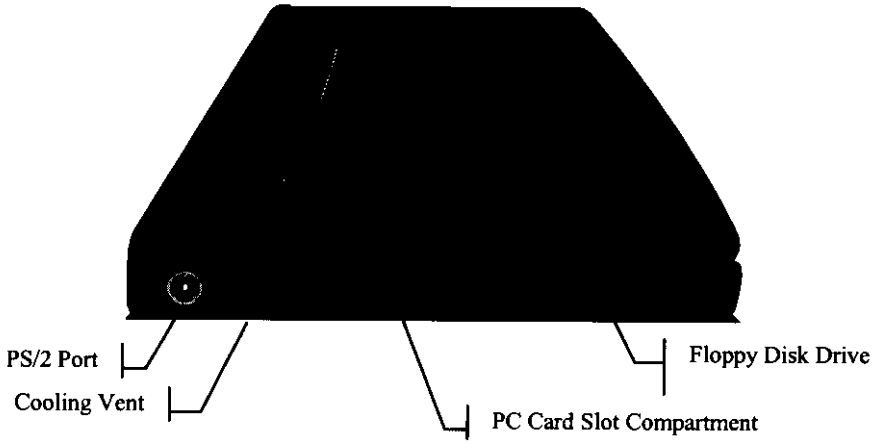



**Figure 1-1: Left-side Components**

## PS/2 Port

You can use the mini-DIN PS/2 port to connect your computer to an external PS/2 device, such as a keyboard or a pointing device. When you connect an external keyboard or mouse, the internal equivalent remains active.

## PC Card Slots

The PC card compartment reveals two PC card slots. These slots accept Type I, II, or III PC cards, as well as Zoomed Video, CardBus, and ExCA compatible PC cards. Eject buttons for both slots are placed at the left side of the slots.

## Floppy Disk Drive

This drive bay is installed with a floppy disk drive. This option is factory installed and can not be easily switched. The floppy disk drive can be used to read from and write to 3.5" floppy disks with capacities of 720 K or 1.4 MB. Your notebook identifies the floppy disk drive as drive A.

# Rear-side Connectors

The rear side of the notebook has a series of connectors. Some of these connectors are located inside a separate compartment. Each compartment has a pull-down door to protect the ports inside the compartments. The illustration and list below identifies the function of each of the connectors.

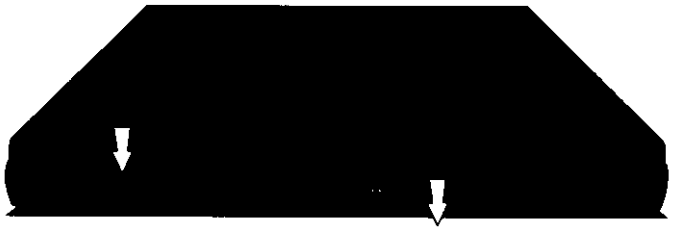


**Figure 1-1: Connector Compartments**

To access the covered compartments, pull down the doors. The door of the expansion connector compartment flaps away underneath the notebook.

## Fax/Modem

The fax/modem line-in jack provides the connection for the internal fax/modem device. If your notebook did not come with this factory installed option, the access to this jack will be blocked with a cap. The jack does not provide a pass-through option for connecting a phone to this same line.

## Audio Jacks

***Audio Input Jack***
You can use this jack to input stereo sound from other devices, such as a radio or tape recorder, into your notebook.

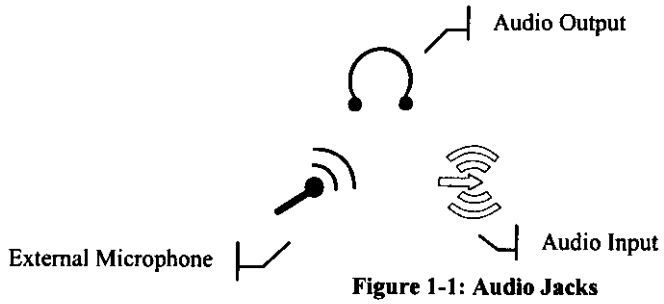



**Figure 1-1: Audio Jacks**

***External Microphone Jack***
You can use this jack to input sound from an external microphone into your notebook. When an external microphone is connected to this jack, the built-in microphone is automatically disabled.

*Audio Output Jack*

You can use this jack to output sound generated by your notebook to an external device, such as stereo loudspeakers or headphones. When an external device is connected, the built-in speakers are automatically disabled.

### USB Port

The USB (Universal Serial Bus) port can be used to connect to USB devices.

### Monitor Port

The monitor port can be used to connect to an external monitor.

### Serial Port

The serial port COM1 can be used to connect to serial devices such as a mouse or a fax/modem.

### Parallel Port

The parallel port LPT1 can be used to connect to parallel devices such as a printer.

### TV-out Port

The RCA video jack can be used to output video to devices that use RCA plugs such as most TV receivers.

## Components on the Base

If you close the screen cover and turn the unit over, you can locate the components installed on the base of the unit.

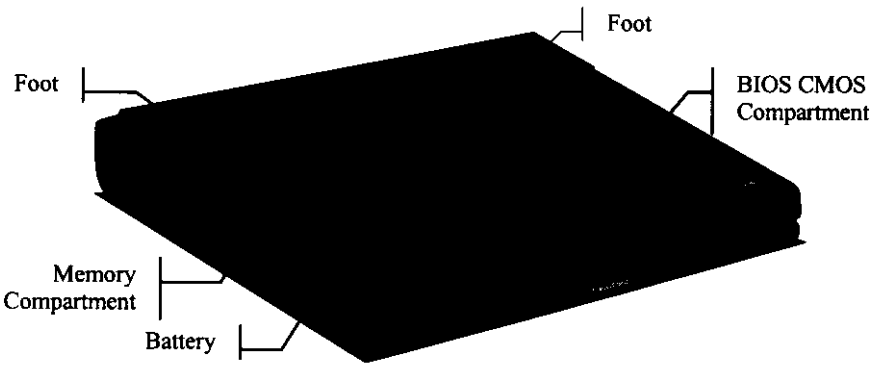



**Figure 1-1: Base Components**

## Battery

The notebook contains a removable, rechargeable Lithium ion (Li-Ion) battery pack that provides power when you are away from an AC outlet. You can recharge it many times.

## Ergonomic Feet

There are two feet located at the back of the base of the notebook. Opening these feet allows the notebook to slightly tilt forward towards you, to make the keyboard more easily accessible.

## BIOS CMOS Compartment

This compartment gives access to the BIOS chip that holds the System Configuration Utility information. We recommend not to open the compartment, and never to remove the chip from the notebook.

# Hard Disk Drive and System Memory

Exploring your notebook because they are internal items, installed inside the system case can't identify these two items. However, they are very important components that store the software and data that your computer uses.

## System Memory

The notebook is usually installed with 32 megabytes (MB) of system memory. This is plenty of memory for most kind of computer applications. However, if you feel that you need more memory, you can ask your system vendor to upgrade the memory. The notebook can be installed with a maximum of 256 MB. System memory stores applications and data while the system is turned on. When the system is turned off, all the data stored in system memory is lost.

## Hard Disk Drive

The notebook is installed with a hard disk drive, which can store from 3 to 6 or more gigabytes (GB) of software and data. Over time, new hard disk drives with higher capacities will appear, so if you feel that you need more hard disk space, you can ask your vendor about upgrades. The hard disk drive provides long-term storage, because the software and data is held intact even when the computer is turned off. That's why, before you turn off your computer, you must always make sure that the data or files held in the system memory, are securely saved to disk.

# Chapter 2

## Using the Notebook for the First Time

***This chapter explains the procedures that you should follow the first time that you use the notebook***

# About the Keyboard

If you are not familiar with notebook computers, you should read this section which describes the layout of the notebook keyboard.

## Keyboard Layout

The appearance of the notebook keyboard depends on the version of the system that you are using, and the language version of your system. For some languages, one or two extra keys are required, and extra keystrokes may be embedded into the keys. The illustration below shows a picture of a typical keyboard.

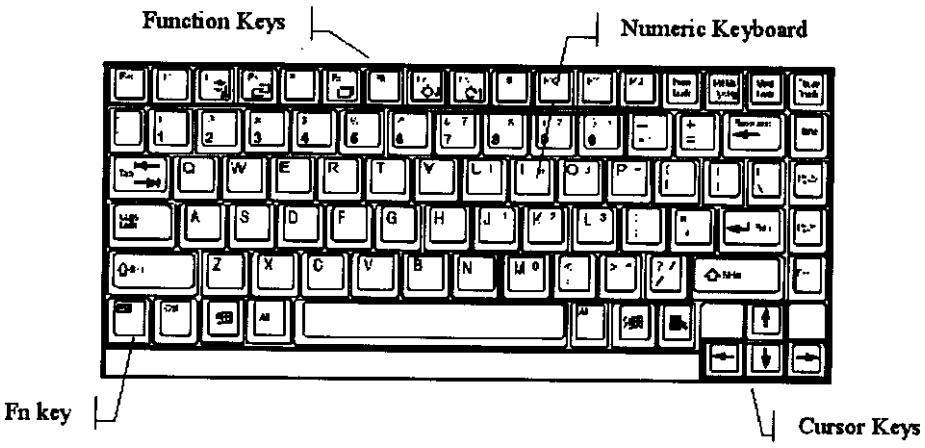



**Figure 2-1: Standard Keyboard Layout**

## Key Legends

In the upper left corner, each keycap carries a large legend of the normal keystroke. If there are two legends, the upper keystroke is selected by holding down the Shift key.

## Embedded Keypad

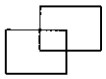
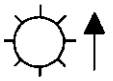
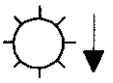
The alphabet keys on the right side have an embedded numeric keypad that can be turned on by pressing the Num Lock key. The embedded keypad legends are usually positioned in the upper right corner of the keycaps (in some language versions, the keypad legends may be positioned on the front edge of the keycap).

## Function Keys

The function keys from the top row of the keyboard. The action of the function keys is usually determined by the software that the computer is running. Some of the function keys have a second action embedded. This action is identified as an icon on the keycap. This action is selected by holding down the Fn Function key (in the lower left corner of the keyboard) while pressing the function key.

***Function Key Reference***

The table below shows the meaning of the function key icons, and other embedded keyboard icons:

| Keystrokes | Icon | Action |
|---|---|---|
| Fn + F2 |  | This key combination causes your notebook to switch to Suspend mode. (See chapter 4, for information on the Suspend mode option on your notebook) |
| FN + F3 |  | This key combination toggles the video display on LCD/CRT/LCD+CRT |
| FN + F5 |  | This key combination toggles the video display on the built-in screen on and off. |
| FN + F7 |  | This key combination increases the brightness of the built-in screen. |
| FN + F8 |  | This key combination decreases the brightness of the built-in screen. |

## Windows Keys

The Windows keys are located on either side of the Space bar. They are active in Windows 95, Windows 98, or Windows NT.

| | |
|---|---|
|  | This key activates the Start button Windows Task Bar. |
|  | This key opens the pull down menu of a selected icon or object. Its action is the same as right-clicking an icon or object with a mouse or touchpad. |

# Using the Touchpad

If you are unfamiliar with notebook computers, you should read this section which explains how to use the touchpad-pointing device. Moving your fingertip across the touchpad surface, is exactly the same as moving a mouse across a mousepad. The screen pointer (in graphical environments such as Windows) moves in response to the movements on the touchpad.

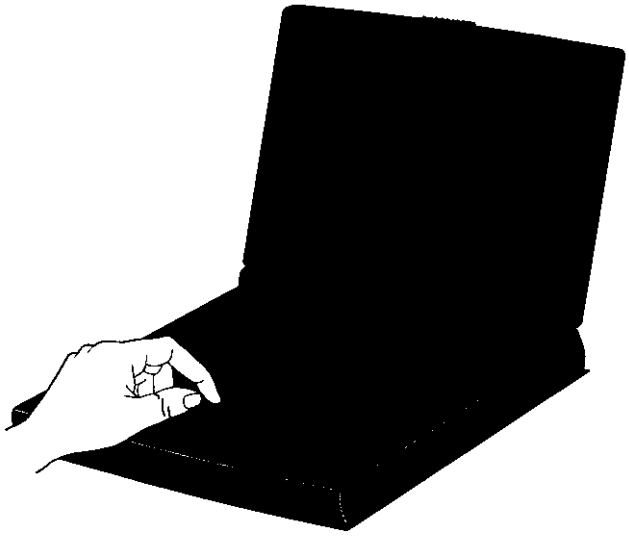


**Figure 2-1: Using the Touchpad**

## Touchpad Buttons

Two buttons are located below the touchpad. The button on the left acts exactly like the left button on a mouse. You can click it once to select an icon, object, or file, and click or double-click to execute an action on a selected icon, object, or file.

The button on the right acts exactly like the right button on a mouse. In the Windows environment, a right click usually displays a pull-down properties menu for whatever icon, object, or file is selected.

## Tapping the Touchpad Surface

You can operate most of the touchpad functions with a single fingertip. When you need to execute a left button mouse click, tap gently on the touchpad surface with your fingertip. Tap twice quite rapidly to execute a double-click. For drag and drop operations, tap twice, but keep your fingertip in contact with

the touchpad surface after the second tap, you can then drag objects around the screen. When your fingertip breaks contact with the touchpad surface, the object is dropped.

## Connecting Power to the System

Your notebook can operate through the AC adapter connected to a wall outlet, or it can operate from the removable, rechargeable battery installed in the left side of the unit.

When you are using your notebook for the first time, it is essential that you use the AC adapter connected to a suitable power supply. The battery in a newly purchased system is usually fully discharged or has just a little charge remaining. When you first use the notebook, you must have sufficient power to complete the Windows initialization process without running out of power.

The AC adapter is autosensing so it can use any available power supply from 100 volts through to 240 volts (± 10%VAC) with a frequency ranging from 50 to 60 Hertz. The AC adapter is also used to recharge the rechargeable battery.

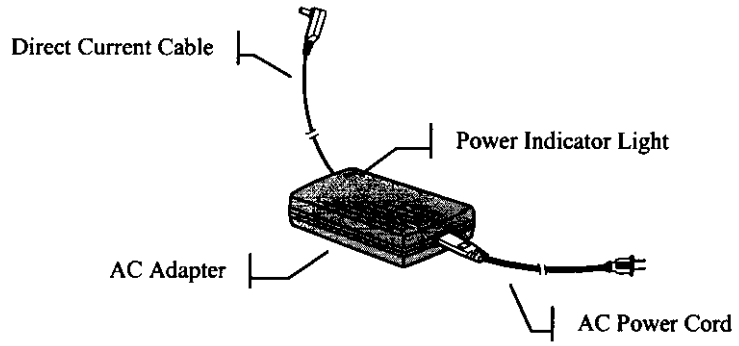



**Figure 2-1: AC Adapter**

1. Plug the power cord into a regular AC power supply outlet.
2. The power indicator light on the AC adapter will turn on to show that it is connected to AC power.
3. Plug the direct current cable from the AC adapter into the AC adapter jack on the left side of the notebook.

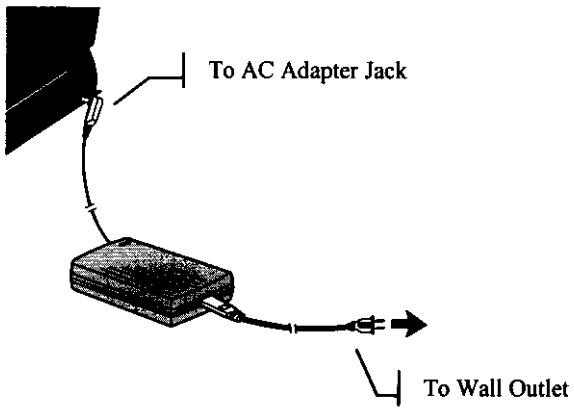



**Figure 2-2: Connecting the AC Adapter**

4. The left side power indicator on the front edge of the notebook will turn on with a green light. At the same time the right power indicator will turn on or flash to indicate internal battery status.

## First Time Start Up

When you have connected the notebook to a suitable power supply, and you are familiar with the operation of the keyboard and touchpad, you are ready to begin using your computer.

> **NOTE:** It is particularly important that you give your battery a full charge the first time that you use it. We recommend that you leave the system connected to the AC adapter until the battery is fully charged. The right power indicator lamp on the front edge of the notebook will turn green when the internal notebook battery is fully charged.

The Windows operating system is partially installed on your system. The installation is completed when you turn on the computer for the first time. At that point, Windows will run a setup program which gathers important information about you and your computer preferences, so that Windows operates the way you want it to.

Throughout the setup procedure, Windows will present dialog boxes on the screen. When you have read the dialog box and wish to proceed with the installation, use the touchpad to point to the Next button and then click it. If you wish to review a part of the installation procedure, click on the Back button.

1. Turn on your notebook by pressing the power switch down and holding it down for about two seconds. When you see activity on the power and status indicator panels, you can release the power switch.
2. When Windows starts, you may see a Safe Recovery message. This means that the notebook has been turned on at least once since the partial installation of Windows, and Windows has registered the fact that the final installation was not completed at that time. You can ignore the safe recovery message and proceed.
3. The setup program will ask for the language and layout of your keyboard. Select the appropriate items from the list provided and proceed.
4. Setup will then ask for your name and company name if applicable. Type in the information and proceed.
5. Setup will then display the Windows license agreement. This document details the terms and condition under which you are licensed to use the Windows software. You must read this information and then click on the "I accept the agreement" check box in order to proceed.
6. Setup will then ask you to type in the registration number on the Certificate of Authenticity (COA). The COA is generally pasted on the front cover of the Windows manual that is shipped with this system.
7. Setup will then begin to configure your computer. After some time, you will be required to restart the computer.
8. When the notebook has restarted, setup will ask you to select a printer for your system. You can select a printer at this time, or leave it till later if you prefer.
9. Setup will then display a Time Zone window. Use the touchpad to select the correct time zone for you location, and reset the time and date.

That completes the Windows setup program. Your notebook is now installed with your own personal copy of Windows.

## Using the Drives

You can learn a lot about your computer by using the windows My Computer utility. If you click on this icon, it will show a graphical representation of the media devices on your system. Depending on the configuration of your system, your notebook will probably have the following devices:

## Hard Disk Drive

The hard disk drive is an internal component and is identified by your system as drive C:. The Windows operating system is stored on the hard disk drive, and when you install new software applications on your system, they will usually be stored on the hard disk drive. The hard disk drive provides very fast access to your data and applications.

## Floppy Disk Drive

The drive bay on the left side of the notebook is installed with a floppy disk drive. This option is factory installed and can not be easily switched. Drive use removable 3.5" diskettes. The floppy disk drive uses low capacity (1.44 MB) diskettes. Your system identifies this disk drive as drive A:. Access to the floppy disk drive is quite slow but floppy diskettes are very useful for storing and transferring files.

## CD-ROM Drive

The drive bay on the right hand side is installed with a CD-ROM drive. This option is factory installed and can not be easily switched. CD-ROM disks can store over 600 MB of audio, video, or data. Usually your system identifies the CD-ROM drive as drive D: . Access to a CD-ROM is quite fast. CD disks are used to distribute large software applications, and audio and video files that require a lot of capacity. You can play audio and video files using the Windows media player.

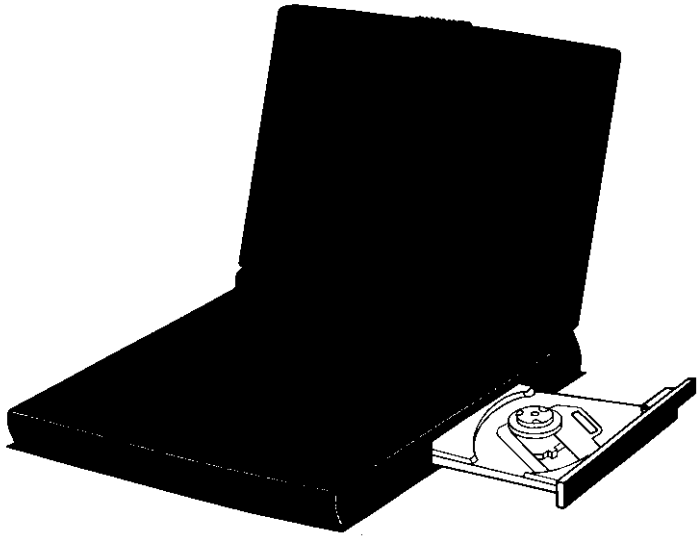


**Figure 2-1: CD-ROM Drive Tray**

# Chapter 3

## Configuring the Notebook

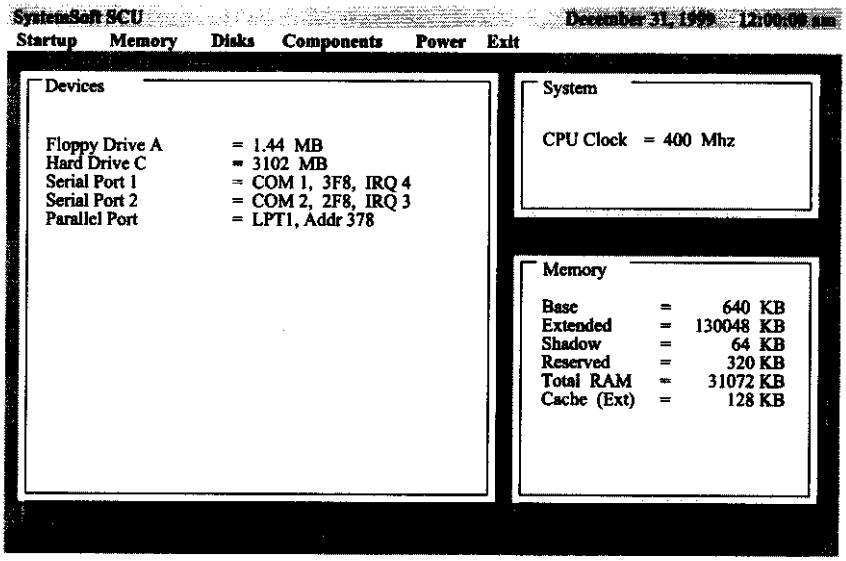
***This chapter provides an overview of the System Configuration Utility program, which allows you to adjust the basic notebook settings to your needs***

# System Configuration Utility

The System Configuration Utility lets you use the firmware installed on the notebook to configure your system according to the kind of hardware that you install. Using setup, you can set timing parameters for the memory and processor, define drive specifications, control power management, and so on.

## Using the System Configuration Utility

You can only display the setup utility by pressing the **[Ctrl] + [Alt] + [s]** key combination shortly after the system is turned on. A prompt appears on the screen that reads *"<CTRL – ALT – S> to enter System Configuration Utility"*. When you see this prompt, press the key combination and the setup utility will display the main page of the System Configuration Utility program.




Press <Alt> key to activate menus, and cursor keys to navigate. Mouse left button, spacebar, and <Enter> keys accept menu item. Mouse right button and <Esc> key cancel current action.

## Navigating

The main screen of the utility program is divided in three major sections. The top section holds a menu bar, the middle section shows three windows, i.e. *Devices, System* and *Memory*. These windows provide a quick overview of the current setup settings of your system. Some values are detected automatically, other values are set to a default value and can be changed through the menu bar at the top of the screen. The third section, at the bottom of the screen,

displays hints and help messages relevant to the topic highlighted at the moment.

Press the **[Alt]** key to activate menus. Use the cursor arrow keys to move the highlight through the header list of setup windows. When the option you need is highlighted, **[Enter]** key to select an option. Use the **[Esc]** key to cancel the current action, to close a menu, to go back to the main menu, and/or to exit the System configuration Utility program.

*Startup, Memory, Disks, Components, Power*, and *Exit*, are the principal options in the main menu bar for system configuration. When you select one of these options, the screen displays a list of items in a drop down menu. Some items you can only enable or disable. Others bring up a separate dialog box once you select them.

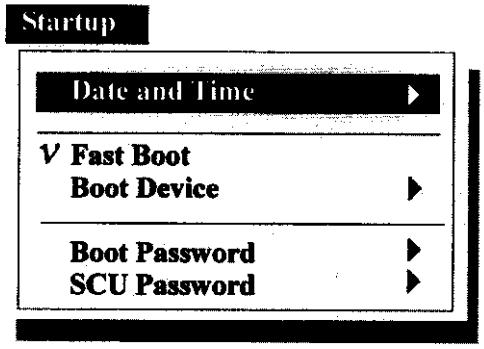
The items that can only be enabled or disabled will either have an _ or mark in front of them, marking that they are currently disabled or enabled. Items that hide a separate dialog box will have a ▸ symbol behind them.

Within a dialog box you can use the **[Tab]** key to select a control. Use the **[OK]** button or the **[Enter]** key to confirm an entry, and the **[Cancel] or [Esc]** key to cancel an entry. To change a value of a field, use the cursor keys, spacebar, and/or numeric keys.

At any given point, you can use the **[Alt]** key in combination with a letter, highlighted red, and use it as a shortcut to jump directly to that function.

# Startup

This option displays basic information about your system and hardware.




## Date and Time

When you select this option, a dialog box will pop up allowing you to customize the date and time to be used by the system clock.

## Fast Boot

You can either enable or disable this option. If enabled you allow the system to boot fast without first testing all functions.

## Boot Device

When you select this option, a dialog box will pop up allowing you to customize the order of devices the system tries to boot from consecutively. You can choose from three devices: *Hard disk C, CD-ROM Drive*, and *Diskette A*. Set the most important boot device in the *1st Boot Device* box, and continue with the second and third box. The system will only move on to the alternative boot devices after a previous one failed.

## Boot Password

When you select this option, a dialog box will pop up allowing you to set or customize a boot password.

***Enter old Power-On Password***

This field will be available if you return to this dialog box after previously having set a boot password. You will need to confirm your old password again before you can change it to a new one.

***Enter new Power-On Password***
This field allows you to enter a new password to be used every time the system starts. The password can be up to eight characters long, consisting of both letters and numbers.

***Verify new Power-On Password***
After you have entered a new password, you'll need to retype it in this field to confirm it.

***Enable Password to Power-On***
After you have set a password in the previous fields, you can either enable or disable it. If this field is enabled, you need to type in the password every time the computer is turned on. If you do not type the correct password, the computer does not start.

## SCU Password

When you select this option, a dialog box will pop up allowing you to set or customize a password to enter the System Configuration Utility program

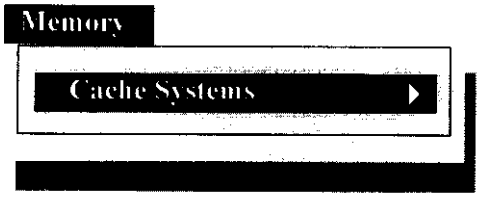
***Enter old Setup Password***
This field will be available if you return to this dialog box after previously having set a SCU password. You will need to confirm your old password again before you can change it to a new one.

***Enter new Setup Password***
This field allows you to enter a new password to be used every time one tries to enter the System Configuration Utility. The password can be up to eight characters long, consisting of both letters and numbers.

***Verify new Setup Password***
After you have entered a new password, you'll need to retype it in this field to confirm it.

***Enable Setup Password***
After you have set a password in the previous fields, you can either enable or disable it. If this field is enabled, you need to type in the password every time you try to enter the System Configuration Utility. If you do not type the correct password, you will not be able to enter the System Configuration Utility program.

# Memory




## Cache Systems

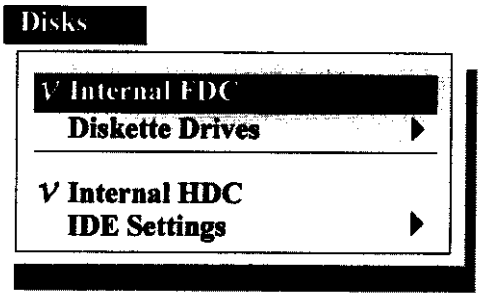
When you select this option, a dialog box will pop up allowing you to customize the system's use of Cache memory.

***L1 Cache/L2 Cache***
These boxes allow you to enable (*Write Back*) or disable Level 1 and/or Level 2 Cache.

***BIOS Shadow***
This field allows you to enable or disable BIOS shadow memory caching.

***Video Shadow***
This field allows you to enable or disable Video shadow memory caching.

# Disks




## Internal FDC

You can either enable or disable this option. Set this option to enable in order to use the internal floppy disk drive.

## Diskette Drives

When you select this option, a dialog box will pop up allowing you to set the types of diskette drives used with your system. You can set the diskette drive type to *None, 1.44 MB*, or *2.88 MB*. The internal diskette drive is by default referred to as Drive A.

## Internal HDC

You can either enable or disable this option. Set this option to enable in order to use the internal hard disk drive.

## IDE Settings

When you select this option, a dialog box will pop up allowing you to set the IDE settings for the internal hard disk drive.

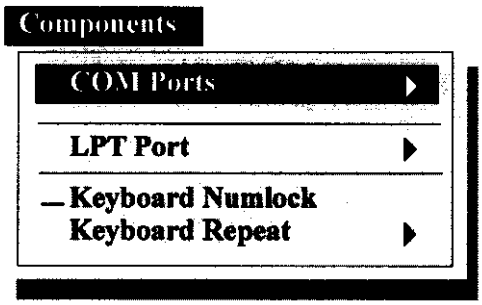
***HDD Timing***
This box allows you to select the speed of the internal hard disk drive. Leave this item at the default value, unless you change the internal hard disk drive. In that case, refer to the documentation that comes with the new disk drive to find the proper value for this item.

***I/O 32 bit transfer***
This field allows you to enable or disable 32 bit transfer mode while reading and writing to the internal hard disk drive.

***HDD Block transfer***
This field allows you to enable or disable block transfer while reading and writing to the internal hard disk drive.

# Components

Use the components item on the menu bar to configure some of the peripheral devices found in your notebook.




## COM Ports

When you select this option, a dialog box will pop up allowing you to enable/disable and to modify the settings of the different serial (COM) ports.

***COM A I/O Settings***
This option box allows you to enable or disable (*None*) serial port COM A. If you decide to enable this serial port you should allocate a serial and interrupt address to it.

***COM B I/O Settings***
This option box allows you to enable or disable (*None*) serial port COM B, by default used for the infrared port. If you decide to enable this serial port you should allocate a serial and interrupt address to it.

***Mode Setting for COM B***
This option box allows you set an infrared mode for serial port COM B.

***DMA Setting For Fast IR***
This option box allows you to allocate a DMA address to COM B when using Fast IR mode. If you are not using this infrared mode, this box will be grayed out.

## LPT Port

When you select this option, a dialog box will pop up allowing you to customize the parallel port located on the rear of the notebook.

***Port Address***
This option box allows you to enable/disable (*None*) the parallel port in the back of the notebook. If you decide to enable the parallel port you should allocate an LPT and interrupt address to it. If you disable the parallel port, all other boxes on this page will be grayed out.

***Port Definition***
This option box allows you to set a port mode for parallel communications.

***Interrupt Setting***
This option box allows you to change the IRQ address for the parallel port.

**DMA Setting For ECP Mode**

This option box allows you to allocate a DMA address to the parallel port when using ECP mode. If you are not using ECP mode, this box will be grayed out.

## Keyboard Numlock

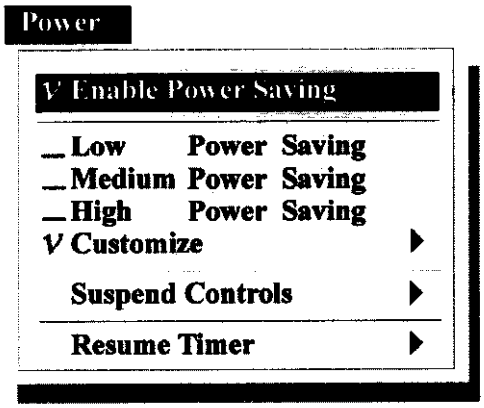
You can either enable or disable this option. If enabled the keyboard Numlock function will always be on by default when you start the system.

## Keyboard Repeat

When you select this option, a dialog box will pop up allowing you to customize the keyboard auto repeat rate and repeat delay. These options set the reaction speed of your keyboard to your typing.

# Power

Use the power item on the menu bar to define the progressive power reduction of your computer when it is not being used.




## Enable Power Saving

You can either enable or disable this option, which acts like a master switch for all the other powerdown functions on this menu. If you disable this field, none of the other system powerdowns in the setup program will function and will thus be grayed out. If it is enabled, you are able to set more specific power saving functions through the other options on the menu.

## Low Power Saving

You can either enable or disable this option, which will be grayed out if the *Enable Power Saving* option above is not enabled. Enabling this option will set the power saving function of your system to a preset level that allows maximum performance and minimum power saving management.

## Medium Power Saving

You can either enable or disable this option, which will be grayed out if the *Enable Power Saving* option above is not enabled. Enabling this option will set the power saving function of your system to a preset level that strikes a balance between performance and power saving management.

## High Power Saving

You can either enable or disable this option, which will be grayed out if the *Enable Power Saving* option above is not enabled. Enabling this option will

set the power saving function of your system to a preset level that allows maximum power saving. If you take your notebook on the road, it is recommended you use this aggressive level of power saving to ensure the longest possible battery life.

## Customize

When you select this item, a dialog box will pop up allowing you to manually customize some powerdown timeouts.

***Video Timeout***
Since the screen of your notebook consumes a lot of power, this field allows you to set a separate timeout value for the screen. You can set this field to either *Always On*, or a timeout between 30 seconds and 10 minutes. The screen will blank if the system has been idle for the selected period of time. Screen activity will be restored immediately when system activity is detected.

***Disk Timeout***
Since the hard disk of your notebook consumes a lot of power, this field allows you to set a separate timeout value for the hard disk. You can set this field to either *Always On*, or a timeout between 30 seconds and 2 minutes. The hard disk will be powered down if there has not been any disk access for the selected period of time. Hard disk power will be restored immediately when the disk is accessed again.

***Global Timeout***
This field allows you to set a timeout value for whole system to shut down power consumption. You can set this field to either *Always On*, or a timeout between 1 and 16 minutes. System power will be restored when system activity is detected.

***Monitor Video Activity***
You can either enable or disable this option. If enabled, the system will monitor if there is any activity on the video screen and allow this to interrupt the video timeout countdown.

## Suspend Controls

When you select this item, a dialog box will pop up allowing you to manually customize some suspend timeouts.

***Power Button Function***
This field is used to set the activity linked to pressing the power button. If the field is set to *Suspend/Resume*, pressing the power button will suspend/resume

the system to/from the *Suspend Type* set below. If the field is set to *Power On/Off*, pressing the power button will actually power up/down the system.

***Lid Switch Function***

This field is used to set the activity linked to pressing the lid switch, as in closing the notebook screen cover. If the field is set to *Suspend/Resume*, closing/opening the screen cover will suspend/resume the system to/from the *Suspend Type* set below. If the field is set to *Blank LCD*, closing the screen cover will merely blank the video screen.

***Suspend Type***

This box allows you to choose the type of suspend mode the system should enter when a suspend event or demand occurs.

- Suspend To Disk – This is really another way of turning off your computer. When you suspend to disk, the contents of your computer's memory are copied to your hard disk drive as a file. When the contents of the memory have been safely stored to disk, your computer turns off. The next time the computer is turned on after a suspend to disk, the file on the hard disk is quickly read back into memory. In just a few moments, your computer appears exactly as it was when you last suspended to disk.
- Suspend To RAM – In a suspend to RAM, the contents of your computer's memory are held intact, while practically all the rest of the components in your computer turn off completely, or reduce power consumption to a minimum. In a suspend to RAM, your computer remains active but with the minimum possible power consumption. You can return the computer to full power by pressing the Space Bar. If you are operating your computer on battery power, a fully-charged battery can maintain a suspend to RAM for many hours.

**Suspend Timeout**

This value sets the timeout for the system suspend mode. If the system has been idle for the selected period of time, the system will enter the user defined suspend mode. The value can be set to either *Never*, or to a value ranging from 1 to 30 minutes.

## Resume Timer

When you select this item, a dialog box will pop up allowing you to set a specific date and time for the system to wake up from suspend mode.

***Alarm Resume***

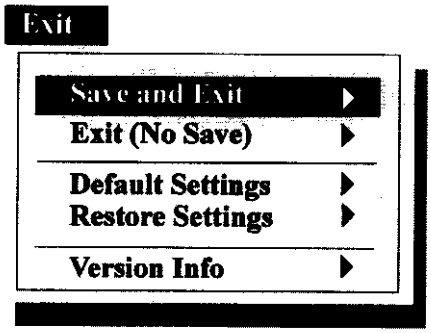
You can either enable or disable this option. If this field is enabled, the system will wake up from suspend mode at the date and time set below. If the field is set to disabled, the date and time set in the fields below will have no effect.

***Resume Day/Resume Hour/Resume Minute***

These fields allow you to set a specific date and time for the system to wake up from suspend mode.

# Exit

When you have made changes to the setup utility, either press the [Esc] key, or highlight the Exit option on the menu bar.




## Save and Exit

When you select this item, a dialog box will pop up asking you to confirm your choice to save the changes you just made and restart the computer. This dialog box will also appear if you press the [Esc] key in the main screen area of the system configuration utility.

## Exit (No Save)

When you select this option, a dialog box will pop up asking you to confirm your choice to discard any changes you just made and restart the computer. The computer will then restart using the old values.

## Default Settings

When you select this option, a dialog box will pop up asking you to confirm your choice to load the default values for all fields. The computer does not restart. You must use the Save and Exit option above to restart the computer using the default values.

## Restore Settings

When you select this option, a dialog box will pop up asking you to confirm your choice to restore the current setup values to the original custom values. The computer does not restart. You must use the Save and Exit option above to restart the computer using the default values.

## Version Info

When you select this option, a dialog box will pop up informing you about the version of the System Configuration Utility you are using.

# Chapter 4

## Taking your Notebook on the Road

***This chapter covers all aspects of using your notebook while traveling***

# Battery and Power Saving

You notebook can be powered by the internal rechargeable Li-Ion battery. The Li-Ion should keep you on the road for about 2 hours. Higher performance typically reduces the battery life. When you make your notebook work harder, e.g. by playing sound and video, or by running disk drives, battery life will be reduced faster. You can dramatically improve the battery life of your notebook by taking full advantage of the power management options described below.

## Battery-Low Procedure

Your notebook tracks the amount of charge remaining in the internal battery. When your battery charge level gets low, you will receive several warnings.

When the battery charge drops to about 10%, the computer will issue a warning message on the display, if advanced power management is enabled in Windows. At the same time, the notebook will emit an audible beeping sound, and the LED next to the battery indicator on the front edge of the notebook will turn red, to alert you of the low battery.

When there is just enough charge remaining to power your system for 3 minutes, Windows will pop up another warning telling you to switch to AC power or to suspend operation, if advanced power management is enabled in Windows. At the same time, the red LED next to the battery indicator will start flashing, and the audible beeping sound will cease. Shortly after that, the notebook will automatically enter the Suspend-to-Disk mode.

If your battery drains completely without being placed into the Suspend-to-Disk mode, you might lose information that has not been saved. It is a good idea when using battery power to place the unit in suspend mode if you think you will be leaving the unit for any substantial length of time.

To check your battery charge level in Windows:

***Battery Icon***

The battery icon on the Windows taskbar provides a rough indicator of the battery charge level by starting out all blue, i.e. full charge, and becoming gray as the charge level drops. You can also hold the cursor over the icon to get a popup reading of battery charge level.

***Control Panel***

Double clicking on the **Power** icon in the **Control Panel** brings up the Windows power management menu. You can get a reading on the current

battery charge level here. You can also make changes here to the power management settings used during Windows sessions.

## Responding to a Low Battery

When your notebook alerts you to a low battery, we strongly recommend that you either immediately use the AC adapter to connect you notebook to a suitable AC power outlet, or you immediately save all your work and either suspend your computer to disk, or use the Windows *Shut down* item in the **Start** menu to turn off your system.

If you shut down your computer shortly after the first warning, you will have plenty of power to save even long files to disk. After you have shut down the computer or suspended to disk, do not try to restart the computer unless you have connected the AC adapter, or you have replaced the discharged battery with a charged one.

## Battery Charging

Whenever the Li-Ion battery is installed and the AC adapter is connected to the notebook, your battery will charge whether the computer is on, off, or in power saving mode. It will however charge much faster if the computer is turned off. While the battery is charging, the power indicator next to the battery icon will turn amber. When the battery is fully charged the indicator LED will turn green.

> **NOTE:** Do not use battery chargers other than the designated one to charge this battery pack.

The fastest recharge occurs when the system is off. It takes about 3 hours to fully charge the Li-Ion battery.

The notebook will stop charging the battery when the temperature of the system becomes too high.

## Battery Conditioning

Each time you charge and discharge the battery, it stores slightly less power. Similarly, if you do not use the battery for a few days, it will slowly discharge, and when it is recharged, it will hold less than 100% of the potential charge. We recommend that you frequently conduct the following operation to keep your battery in good condition.

1. Disconnect the AC adapter and turn on your notebook.

2. Allow your battery to fully discharge, ignore any warning alerts, and leave the system alone until it automatically turns off.
3. After fully discharging your system, connect the AC adapter until the battery is fully charged.

This operation carried out every few weeks, will maintain the battery efficiency and help calibrate the electronics that monitor and maintain the battery charge.

Over time, as the battery is charged and discharged, it gradually stores less charge. Li-Ion cells generally last for 500 or more cycles before they begin to deteriorate. You should replace the battery when you notice that it begins to store significantly less charge.

## Changing the Battery

If you frequently use your notebook on the road, you might want to purchase a spare battery pack. Your notebook only supports standard Li-Ion battery packs that are designed for your system.

> **NOTE:** Do not dispose the battery in fire. Do not directly connect (short circuit) the positive (+) and the negative (-) terminals. Never attempt to disassemble the battery pack.

***Changing the battery***

1. Turn off the notebook, or suspend to disk.
2. Close the screen cover and turn the computer over.

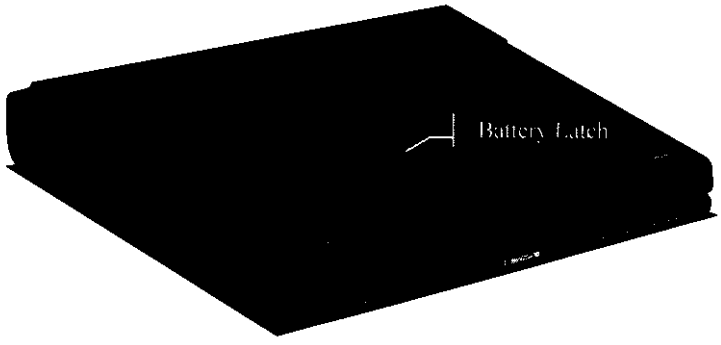



**Figure 4-1: Battery Latch**

3. Release the battery latch towards the back and hold it there.

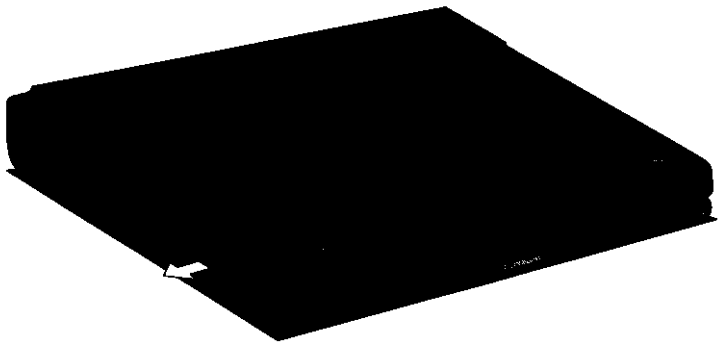


**Figure 4-2: Removing the Battery**

4. Slide the battery out towards the left until it is completely free. You can then remove the battery.

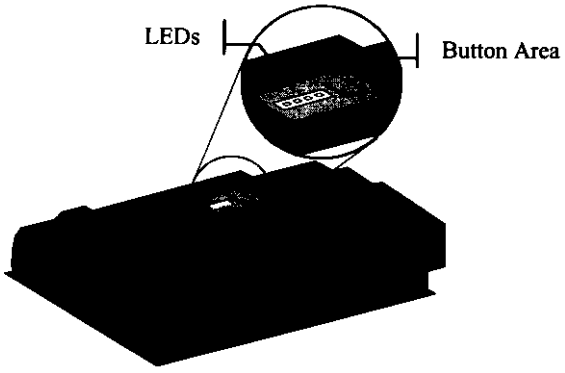



**Figure 4-3: Battery**

5. The top of the battery has an extra battery charge indicator. The indicator consists of a button and four small LEDs. When you press the area on the right side of the indicator, the button, some or all of the red LEDs will start flashing, depending on how much charge is left in the battery. All four lights flashing indicates that the battery is fully charged, one light flashing indicates low battery charge.
6. To replace the battery, slide the battery latch to the back and hold it there, then slide the battery pack in the compartment until it fits in completely. Engage the battery latch to secure the battery in the cabinet.

# Power Management

In order to make the most of the mobile computing capabilities of your notebook, you will need to be aware of how to manage the power consumption of your system. Aggressive power conservation can provide extended computer usage. Sometimes aggressive power conservation will not be needed, or you might prefer not to engage it. You should set the default to match your most common needs. If you use the system primarily as a mobile system with long-term battery needs, you can use an aggressive setting. If your battery usage is usually limited, then you might prefer a more moderate setting. Remember, to reset the default, you must use the System Configuration Utility program described in Chapter 3.

Your computer is installed with two kinds of power management. One is transparent, and operates automatically. The other kind is user-programmable, and you can program how it operates.

## Transparent Power Management

Your system is designed to use the Windows Advanced Power Management (APM) program to transparently reduce system power consumption. Whenever the processor inside your computer is inactive for a short time, the transparent power manager idles the processor so that it consumes less power. When the processor resumes working, it returns to full speed almost instantaneously with no loss of performance. This kind of power management is transparent and automatic, and can save a great deal of energy.

### *Thermal Management*

The processor in this computer is extremely powerful. Consequently, it generates quite a lot of heat when it is working at full speed. Your computer has an efficient thermal design, which dissipates this heat safely in normal conditions. If, however, the computer is in an extremely hot environment, and the processor is working at full speed for sustained periods, the temperature of the processor may approach a critical level, which could damage the computer.

Your computer monitors the processor's temperature. Before critical temperatures can be generated your computer automatically turns on the internal cooling fan until the heat problem disappears. You may notice the sound of the fan when this procedure occurs.

## Programmable Power Management

There are two programmable power management systems available to you.

1. Your notebook has power management features built into the System Configuration Utility program. The utility program provides a more extensive array of power management options than the Windows power management discussed below. See Chapter 3 for more information on the System Configuration Utility.
2. Windows has built-in power management features that can be used when running under the Windows operating system. Since you can control these without having to exit to the Setup Program, you might find it useful to take advantage of the Windows power management. You will be able to make fine adjustments to power management while working. You can activate these by double clicking on the **Power** icon in the **Control Panel**.

   > **NOTE:** If you choose to allow Windows to control the power management, it will take command of the power management settings during Windows sessions.

   Clicking on the **Advanced** button allows you to add the Suspend function to the start menu. It also allows you to set the system to resume normal function when the modem detects an incoming call. You can also specify the time period of inactivity before the hard disk is spun down. Spinning down the disk provides considerable power savings. For optimal battery life, consider a relatively short period of disk inactivity here.

## Standby and Suspend Modes

Your computer can either suspend to RAM or suspend to disk. You can use the System Configuration Utility to program your computer so that is suspends to RAM or disk. A third, less aggressive power management mode is the Standby.

***Standby Mode***

In Standby mode, your system turns off and reduces the power consumption of a range of devices in order to save battery charge. The system will turn off the backlight of the LCD display, stop the hard disk drive, and put the CPU into doze mode. You can instantly return to full power by pressing any key or pointing device.

***Suspend-to-RAM***

In a Suspend-to-RAM, the contents of your computer's memory are held intact, while practically all the rest of the components in your notebook turn off completely, or reduce power consumption to a minimum. In a Suspend-to-RAM, your computer remains active but with the minimum possible power consumption. You can return the computer to full power by pressing any key.

If you are operating your notebook on battery power, a fully-charged battery can maintain a Suspend-to-RAM for many hours.

***Suspend-to-Disk***

Suspend-to-Disk is really another way of turning off your computer. When you suspend to disk, the contents of your computer's memory are copied to your hard disk drive as a file. When the contents of the memory have been safely stored to disk, your computer turns off. The next time the computer is turned on after a suspend to disk, the file on the hard disk is quickly read back into memory. In just a few moments, your computer appears exactly as it was when you last suspended to disk.

Suspend to disk is very useful for Windows users who like to have many different programs open and iconized on the Windows desktop. It can take quite a few minutes to get a busy Windows desktop up and running, and then you have to shut down each program one by one when you want to turn off your computer. With Suspend-to-Disk enabled, you can simply press the suspend hot key combination, [Fn]+[F1], and your custom Windows environment is saved to disk.

***Suspend-to-Disk Partition***

Suspending to disk requires a special disk partition set up for that purpose. This partition has already been pre-installed on your notebook. The pre-installed partition is large enough to accommodate most system memory requirements. If you expand the system memory and get an error message when you suspend to disk, you will need to increase the size of this partition. You should not attempt to partition your hard drive unless you are an experienced user.

***Initiating a Standby or Suspend mode***

Your notebook will suspend under four conditions:

1. You can press the hot key [Fn]+[F1] combination. The system will suspend to RAM or to disk, depending on the settings in the System Configuration Utility.
2. You can click on the Suspend button in the Windows **Start** menu. The system will suspend to standby mode. Pressing the hot key [Fn]+[F2] combination produces the same result.
3. After an automatic suspend timeout, set in the Power menu of the System Configuration Utility, elapses.

4. After the screen cover of the notebook is closed and no alternative display has been connected to the system, the system will suspend to RAM or to disk, depending on the settings in the System Configuration Utility.

# Modem

Your notebook might come with the optional built-in software fax/modem that allows you to take full advantage of the fax and communications abilities of your system. In some countries, local regulations may not permit the use of the fax/modem that is designed for this system. Note that the telephone jack is covered with a cap and not present if your notebook does not have the fax/modem option built-in.

The fax/modem is capable of running in two modes, both as a fax and as a modem, which can be used to connect to other computers. The fax/modem can send and receive data at up to 56 Kbps and send and receive faxes at up to 14.4 Kbps.

If the fax/modem is present, the notebook is installed with an RJ11 telephone jack compartment on the rear side. In order to use the fax/modem you need to first plug a telephone cable into the RJ11 socket, and then use the fax or communications software to operate the device.


**Figure 4-1: Fax/Modem Telephone Jack**

## Faxing

Your modem can allow the computer to send and receive faxes. Any Windows application, which has a print command, can be used to generate faxes. To send a fax from within a Windows program, you need only select the fax as your printer for that document. Then print the document as you would to your printer.

### Modem Communications

If you purchased the modem, you can use it to connect to other computers with a modem, or to log into networks that allow modem access. Your modem, if purchased, can be set to emulate a terminal for logging into remote systems. It can also be used with log-in protocols to connect to certain providers and on-line services, including those provided with Windows.

You should always try to connect at the highest rate of connection available. Your modem will automatically negotiate the connection and establish the actual rate of transmission of information.

To connect to anything with your modem, you will usually need to sign on with some provider or dial-in to another computer already set to receive such connections. Since such electronic connections are an important resource for computer users, Windows comes with its own software for making such connections, as well as with software from some other major service providers.

You can also use your modem in conjunction with financial software to perform your banking and pay your bills electronically.

Keep in mind that your modem is a phone, but unlike other phones, it is very sensitive to noise. If you find that your modem has a lot of disconnect problems, you might see if you can reduce the noise in your phone lines.

### Internet and the World wide Web

One of the most useful functions of your modem is to allow you to connect to the Internet or to browse the World Wide Web. The Internet is not a network, but a vast interconnection of networks. The Internet provides a connection to the world. You can send messages to anywhere on earth. You can log-in and use library catalogues. World Wide Web browsers, such as the Microsoft Internet Explorer browser built-into Windows, allow you to have access to text, images, sound and video stored on the Internet. To enter the Internet, you will need to log your computer into one of these networks.

## Safety and Operation

- The notebook does not have a handle or rough surface for a sure grip, so use a carrying case when travelling. At times, you may want to put both the case and the notebook within a larger briefcase to conceal the system and reduce the risk of theft.
- Do not use the notebook in an unstable location. Serious damages could result if the system should fall.

- Avoid rough handling of you notebook. Jolts to the system can damage components or result in data loss.
- Avoid high and low temperatures when shipping or storing your notebook. Do not place the system in close proximity to a source of heat or dust.
- The batteries will not operate as well under extremes of temperature. If a battery is left in the sun and gets quite hot, it is apt to fail to charge. Once it cools down, you will be able to charge it again.
- Protect your modem. It is designed to work on an analog phone system. Before you hook up your modem, check to find an analog line.

## Travel Tips

- It is a good idea to load common printer drivers onto your notebook. This will allow you to print from many printers at your destination, even if you do not carry your own printer with you.
- Take along a bootable diskette drive, just in case there is damage to your hard disk drive.
- Travel can present considerable risk of system shock or theft. Complete a full backup before travelling.
- Be familiar with your System Configuration Utility settings, or print a copy of them. In case there is damage to those settings, while you travel.
- If you will be travelling to another country, check with your travel agent to determine whether or not you will need a special adapter to use the electrical outlets.
- If you do a lot of travelling, you might find it useful to purchase an acoustic coupler for your modem, to allow connection even where compatible phone jacks cannot be found.
- Hand your notebook to an airport attendant rather than setting it on the conveyor for security checks, This will help reduce the possibility of theft.
- Password protect your system with at least one level of password, to help preserve your data.
- Brand or physically mark your notebook to make for easy identification.
- If you will be using an Internet provider or other on-line service, call ahead to find out local access numbers for your destination.

- In case your destination does not have outlets near convenient work-spaces, you might want to pack a short extension cord.

***Remember to pack:***

- Your notebook
- Your AC adapter/power cord
- Any optional expansion modules
- Any international converters for your adapter
- A spare length of phone cord
- Printer cable
- PC cards
- Spare battery packs
- Bootable diskettes
- Spare diskettes for easy file exchange
- Manuals for any critical software or device

***Also remember to:***

- Charge your battery
- Change your power management settings to more aggressive settings, if appropriate
- Transfer the files you need

## Using a Computer Lock

You may want to secure your computer to a heavy object such as your desk or other immovable object to discourage theft.. The easiest way to do this is to purchase an optional *Kensington Microsaver* security cable. Your notebook has an anchor point for such a cable.

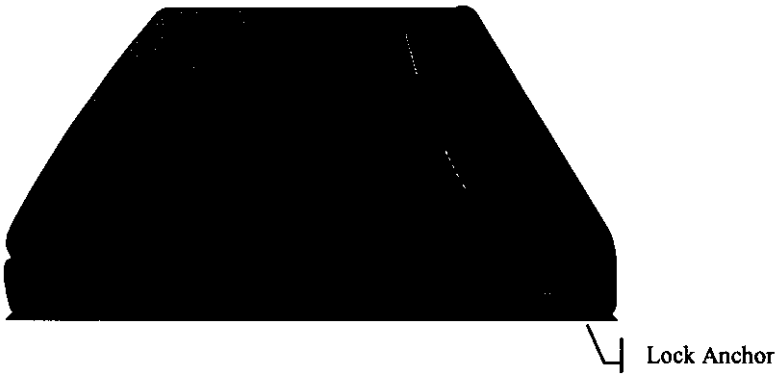



**Figure 4-1: Anchor point for a Kensington-type security cable**

To use this cable follow these instructions:

1. Loop the cable through or around some part of a heavy object. Make sure there is no way for a potential thief to slip the cable off the object.
2. Pass the locking end through the loop.
3. Insert the cable's locking end into the anchor point on your notebook, give the key a quarter turn and remove it. The computer is now securely locked.

# Chapter 5

## Exploring your Notebook

***This chapter gives an in-depth description of some of the built-in software and hardware features of your notebook***

# Introduction

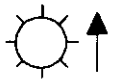
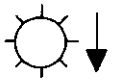
The software drivers and utility programs are pre-installed on your notebook, and are integrated into the Windows environment. If you ever have to rebuild you hard disk drive, you can use the support software supplied with the notebook to re-install the programs.

# Video Display

The video system on your notebook comprises the flat-panel screen, the video controller and video memory circuitry, the video ports, and the video software.

## Flat-panel Screen

The flat-panel screen is a large, color liquid crystal display panel. The screen uses a technology called TFT (Thin Film Transistor) which provides a very high contrast display. You can adjust the brightness of the display by using the video hot keys.

| | | |
|---|---|---|
| FN + F7 |  | This key combination increases the brightness of the built-in screen. |
| FN + F8 |  | This key combination decreases the brightness of the built-in screen. |

***Resolution and Color Depth***

The screen is designed to display a video resolution of 1024 pixels by 768 pixels. This is called XGA resolution, and it is common to most high-end computers. It displays a maximum of information without making the screen fonts too small to read.

You cannot display a higher resolution than 1024 by 768, but you can display lower resolutions of 800 x 600 (SVGA) and 640 x 480 (VGA).

However, when you change to a lower resolution, by default the system will stretch the display in order to use the full size of the screen. This causes some distortion to the video image, particularly to the screen fonts. This distortion at a lower resolution will not show when exporting the video image to an external monitor. You might be able to disable the stretching function by using the video software utility described below.

The color depth refers to the number of colors that the screen can display simultaneously. The properties of the built-in screen, the resolution of the screen, and the amount of video memory available limit color depth.

Your notebook has a very high resolution and 4 MB of video memory. The table shows how this affects the display.

| Resolution | Built-in Screen | High-Res. Monitor |
|---|---|---|
| 640 x 480 | 16M colors | 16M colors |
| 800 x 600 | 16M colors | 16M colors |
| 1024 x 768 | 64K colors | 16M colors |

## Video Ports

Your notebook is installed with two video ports:

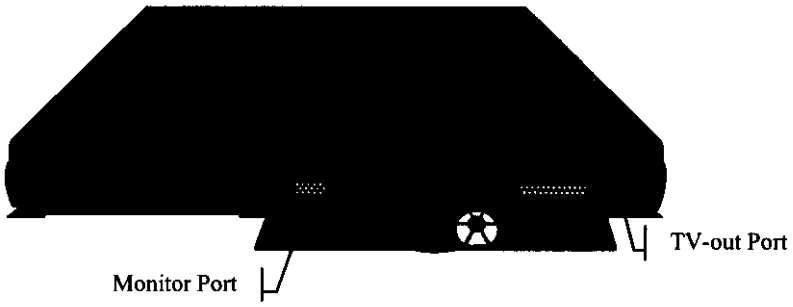



**Figure 5-1: Video Ports**

***Monitor Port***

The 15-pin external monitor port allows you to connect an external computer monitor to your notebook. You should ensure that the external monitor is capable of supporting an XGA resolution of 1024 x 768. When the monitor is connected to your system, you can elect to display the notebook's video output on the built-in screen or on the external monitor. You can even generate a simultaneous display on the screen and monitor.

To change the video output when an external monitor is connected, you can assign keyboard hot key combinations, using the video software described below.

***TV-out Port***

The TV-out port is a standard RCA-type jack. You can attach a standard A/V (audio/visual) cable into this port to connect your notebook to a TV receiver, a camcorder, or a video cassette recorder.

To send your notebook's video signal to the TV-out port, you must first use the video software utility to make sure everything is configured properly for transfer of the video signal to the TV format. You particularly want to make sure that you are using the right TV standard, i.e. either PAL or NTSC.

Before using the TV-out port, you must always change the resolution of your computer's display down to 800 x 600 (SVGA) or 640 x 480 (VGA). You cannot export the video image to a TV receiver while you notebook is displaying at the default resolution of 1024 x 768.

After you have made all the necessary changes required in order to send the notebook video to the TV-out port, you can use the video software described below to switch the video between the built-in screen and the TV-out port.

> **NOTE**: You can also assign keyboard hot key combinations for switching the display, using the video software described below.

## Video Software

The video software has been integrated into the standard Windows video utility. You can access the utility by moving the screen pointer over a clear area of desktop on the Windows display and clicking the right touchpad button. When the pull down menu appears, click the left button on the item **Properties**. This will open the **Display Properties** window. You can also find the Display Properties in the **Control Panel** folder. **(Start/Control Panel/Display)**.

You can use this Windows utility to make all kinds of changes to the video display. The major area of interest here is the Settings tab.

***Settings***

Left click on the Settings tab to display the basic display settings of your notebook display. Here you can set the color depth and screen resolution.

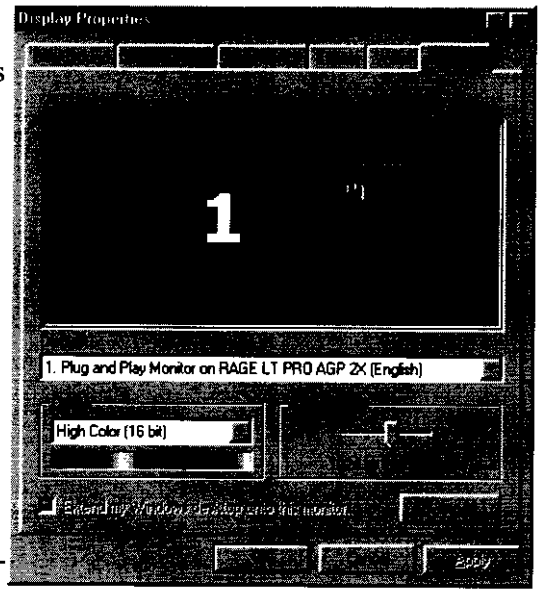



**Figure 5-1: Settings Tab**

The main area displays icons that represent your monitors. If more than one icon is displayed, double-click each one to enable or to set more advanced properties. Also, if more than one icon is displayed, you can drag them to the positions that represent the way you want to move items between monitors. With two monitors, say the built-in screen and an external monitor attached to your notebook, you can bring the mouse cursor over to the other screen by moving it over the edge of the screen. For example, if you are using two monitors, and you want to move items from one monitor to the other by dragging over the left and right screen border, position the icons side-by-side. To move items between monitors by going over to top and bottom screen border, position the icons one above the other. The icon positions don't have to correspond to the physical positions of your monitors.

The **Advanced** button allows access to the video graphics software driver, monitor settings and performance.

***Advanced***

Left click on the Advanced button to display the custom display features embedded in the **ATI RAGE** graphics chipset used by your notebook. This will bring up a new window with two rows of tabs at the top.

The two major areas of interest here are the **Displays** and **Color** tabs.

***Displays***

This area allows you to customize some settings for the video-switching feature. You can choose which devices are to be switched on and thus available for possible video display.

If you want to direct the video to a TV, make sure the box is marked. Also use the proper check box to select the NTSC or PAL/SECAM TV format. When directing the video to the TV-out ports, go to the Settings tab and change the screen resolution down to 800 x 600 (SVGA) or 640 x 480 (VGA).

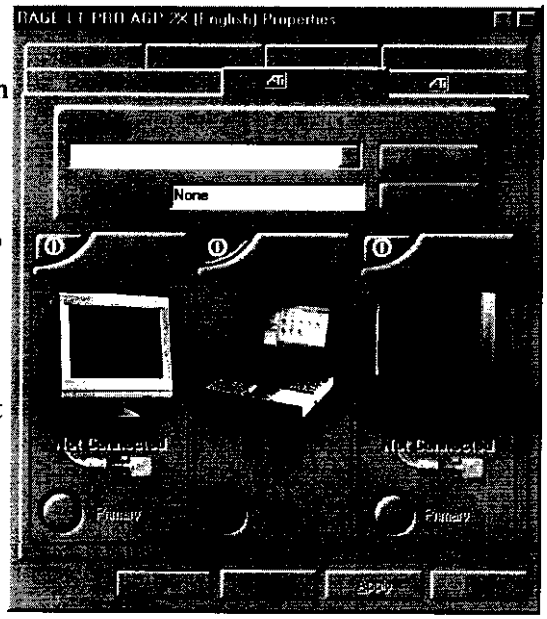



**Figure 5-1: Displays Tab**

Here you can also assign keyboard hot key combinations for display switching and other video features mentioned above.

***Color***

This area allows you to customize the color settings of your display.

***Help***

Both of the pages mentioned above have a Help button that brings up a new window with information on how to use the display properties on these pages.

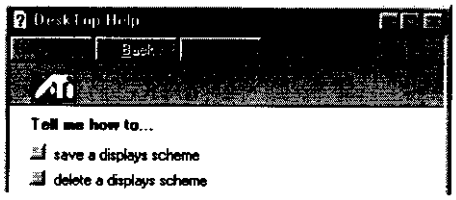



**Figure 5-1: Help window**

# The Sound System

The sound system includes the built-in microphone and speakers, the audio circuitry, the sound ports, and the audio software.

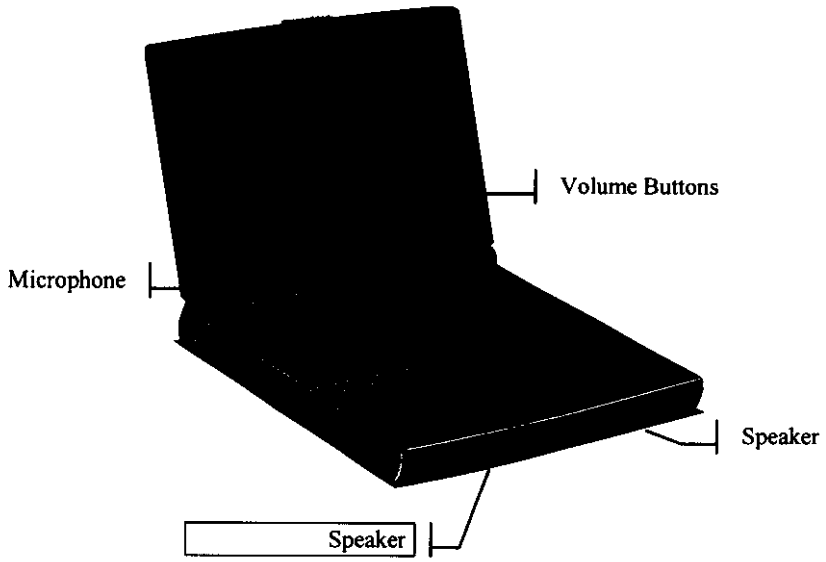



**Figure 5-1: Microphone, Speakers and Volume Buttons**

When a sound file is playing, you can use the volume buttons to turn the raise and lower the volume of the speakers.

The volume buttons are located just above the keyboard, next to the power switch. Pressing the top button increases the volume of the internal sound system, pressing the lower button decreases the volume level.

**Figure 5-2: volume Buttons**

**NOTE:** The audio volume buttons only affect the audio file currently playing. If you want to change the notebook's default sound volume, use the Windows audio utilities described below.

## Audio Jacks

The built-in speakers and microphone ensure that you can record and play sounds at any time. However, you can improve the sound quality by connecting higher fidelity components to the sound ports on the rear side of the computer.

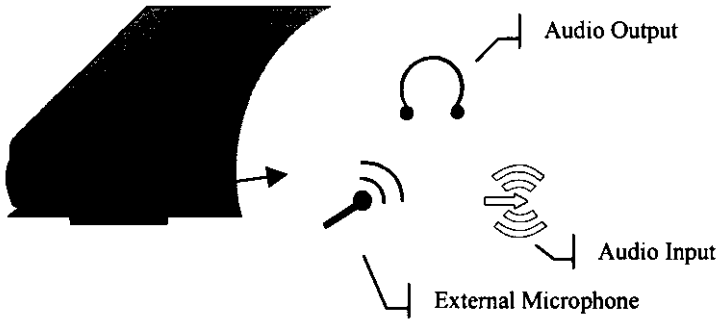



**Figure 5-1: Audio Jacks**

***Audio Input Jack***

You can use this jack to input stereo sound from other devices, such as a radio or tape recorder, into your notebook.

***External Microphone Jack***

You can use this jack to input sound from an external microphone into your notebook. When an external microphone is connected to this jack, the built-in microphone is automatically disabled.

***Audio Output Jack***

You can use this jack to output sound generated by your notebook to an external device, such as stereo loudspeakers or headphones. When an external device is connected, the built-in speakers are automatically disabled.

### Audio Software

Windows is installed with a useful set of audio utilities. Click on the Start button, point to Programs, then Accessories, then Multimedia, to display the audio utilities. They include a CD player (for audio CDs), a media player (for video CDs and audio/video files), a sound recorder, and a volume control.

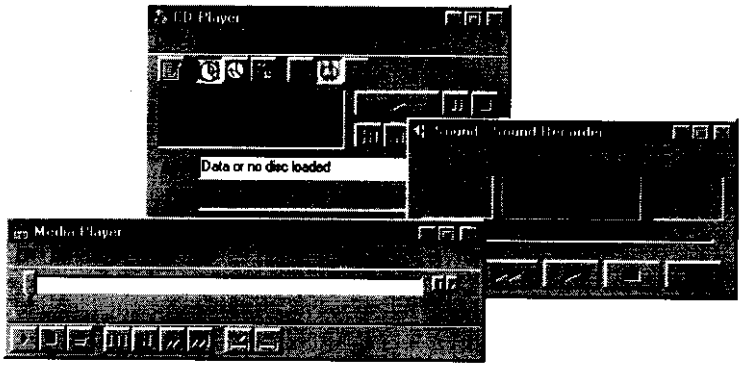



**Figure 5-1: Audio Software**

## Using the CD-ROM Drive

This notebook is installed with a CD-ROM drive. This option is factory installed and can not be easily switched. The CD-ROM drive is installed in the right side of the notebook. This drive can read data discs, play audio CDs and run video CDs.

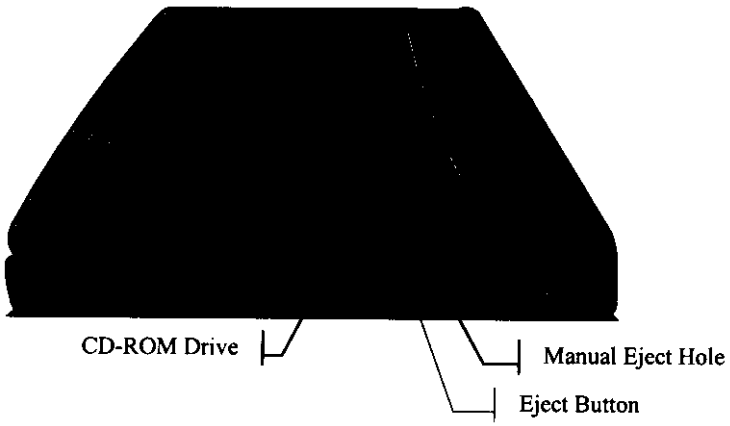



**Figure 5-2: CD-ROM Drive**

To play a disc:

1. Press the eject button on the front of the drive.
2. When the disc tray opens, carefully pull it all the way out of the drive.

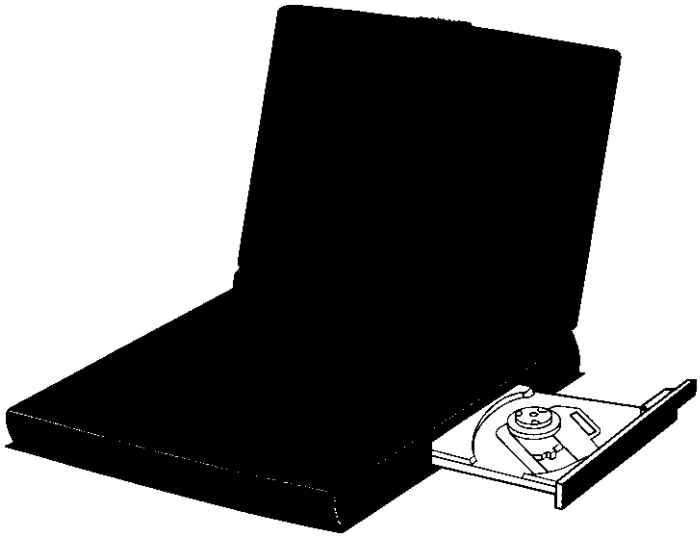


**Figure 5-3: CD-ROM Drive Tray**

3. Place the disc in the drive tray with the label side up. Press the disc down carefully so that the central spindle on the disc tray inserts into the hole in the center of the disk

> **NOTE**: If your system is turned off, you can still open the tray by inserting a pointed object, such as a paperclip, in the manual eject hole. This will unlock the tray and allow you to slide it out.

Windows can usually recognize an audio or video disc and open the appropriate player. If you are playing a data disc, use Windows Explorer to log on to the CD-ROM drive. If you are playing an audio disc, go to **Start/Programs/Accessories/Multimedia** and start the CD-player. If you are playing a video disc, go to **Start/Programs/Accessories/Multimedia** and start the Active Movie Control program.

# Using the Floppy Disk Drive

The drive bay on the left side of the notebook is installed with a floppy disk drive. This option is factory installed and can not be easily switched. Drive use removable 3.5" diskettes. The floppy disk drive uses low capacity, (1.44 MB), inexpensive, diskettes. Your system identifies this disk drive as drive A:. Access to the floppy disk drive is quite slow but floppy diskettes are very useful for storing and transferring files.

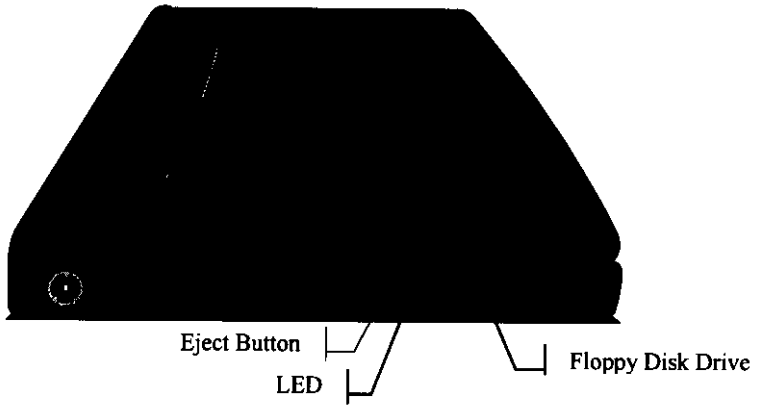



**Figure 5-1: Floppy Disk Drive**

# PC Card Slots

This notebook is installed with two PC card slots on the left side of the system. PC cards are very similar to the expansion cards that you can install in full-size desktop computers, except that they are no bigger than a credit card, and they can be plugged into the notebook even when the notebook is turned on.

PC cards are usually used to provide new functions or features to your notebook, such as a fax/modem card, a network adapter, or a SCSI host adapter. They can also be used as storage devices using memory chips or miniature hard disks. If you are using PC card storage devices, they will be assigned drive letters (for example E: or F:).

## PC Card Standards

This system supports type-I, type-II, and type-III PC cards. If you are using type-1 or type-II cards (which are usually about 2.5mm high), you can install one or two cards at the same time. If you use a type-III card (which is usually

about 10mm high), you must install it in the lower card slot, and you will not be able to use the upper slot.

***Zoomed Video (ZV) cards***

Your notebook supports cards that use the new Zoomed Video (ZV) standard. ZV provides fast access from the PC card to the notebook's graphics system. ZV cards usually provide video-related services such as video capture, or a digital camera interface. You can use ZV cards in either the upper or lower card slots. When using a ZV card, you cannot use any other PC card with your notebook.

***CardBus***

CardBus is a 32-bit extension of the original 16-bit PC card specification. CardBus cards provide higher performance. You can install CardBus cards in either the upper or lower card slots.

## Using PC Cards

1. You can install or change PC cards while your notebook is turned on.
2. Locate the PC card slot compartment on the left side of the notebook, and open the compartment door.

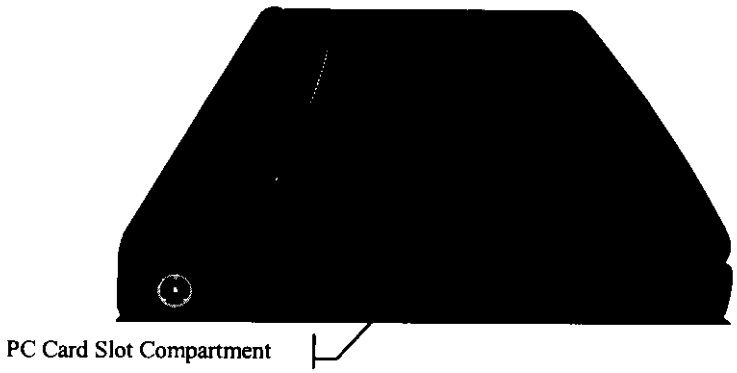



**Figure 5-1: PC Card Slot Compartment**

3. Orient the card correctly. The label side of the card faces up. One of the narrow edges has a double row of pinholes. This edge inserts into the slot.

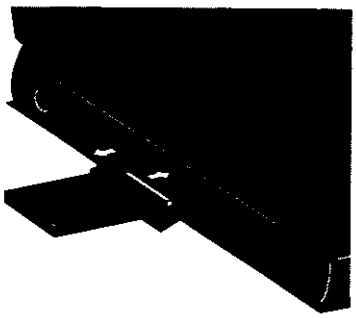


**Figure 5-2: Inserting a PC Card**

4. Insert the card into the slot. When the card is nearly all the way inserted, press quite firmly to ensure that the card mates properly with the connector inside the slot.
5. Your notebook will emit two beeps (in rising tones) to let you know that the card has been recognized by the system. If Windows has the appropriate drivers to use the card, they will be loaded automatically. For some cards, you may have to install drivers or software, supplied by the card manufacturer.
6. Before ejecting a CardBus card, it is important that you tell Windows to stop using the card. Click on the card icon on the right side of the Windows task bar. When the stop button appears, click on it. Windows will display a message that the card can now be safely removed.

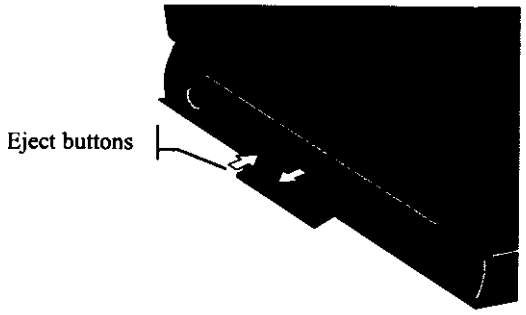



**Figure 5-3: Removing a PC Card**

7. When you insert a card, the card eject button will be forced outward. To eject a card from the slot, press the eject button back into the notebook. The card will disconnect from the internal connector and you can remove it from the slot. The notebook will emit two beeps (in falling tones) to let you know that the card has ejected.

# Touchpad/Mouse Utility

The notebook's touchpad can be customized using the Windows mouse driver utility program. This program can be found in the Control Panel folder (**Start/Settings/Control Panel**).

Double click the Mouse icon. This will start the Mouse Properties window. Here you can see different tabs that allow you to set up your touchpad/mouse features.

You can change the button configuration and adjust it for right-hand and left-hand use, and also change the double-click speed.

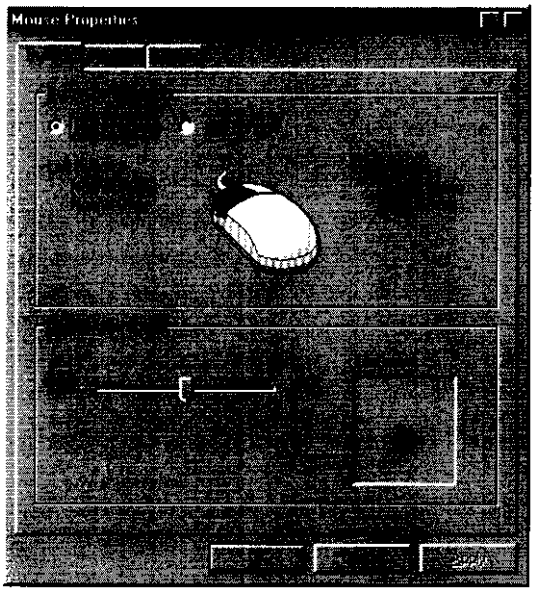


**Figure 5-1: Mouse Properties**

# Infrared

The infrared (IR) feature of your notebook provides a powerful tool for connecting to other computers, networks, or peripherals via a high-speed wireless connection. This port is sometimes referred to as a serial infrared port (SIR), but it is also capable of functioning as a second parallel port for printing. This port allows you to send information between machines without having to attach cables or transfer information to a diskette or other removable disk. With the high speed of data transmission and the ease of connection of the IR port, it is a quick and easy connection to establish.

The IR port is located behind the dark plastic square on the right-hand side of your notebook.

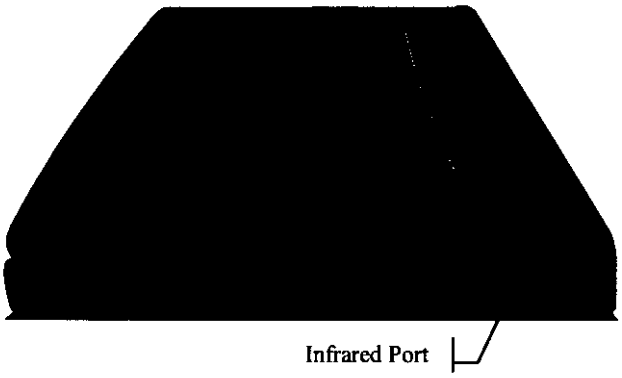



**Figure 5-1: Infrared Port**

To use you IR port, place the two IR ports within one meter, about four feet, of each other and either directly in line or at an angle of less than 30 degrees. Click on the **Infrared** icon in the **Control Panel (Start/Settings/Control Panel/Infrared)**.

This will bring up the IR software built into Windows. This software will begin scanning for a present IR device. If one is found, it will complete the connection. If a device is not found, try adjusting the distance and angle between the two IR ports.

For proper operation of an IR connection, you might need to set up the identification information in the IR software.

Once your connection is established, be careful not to obstruct the connection between the machines. Maintain the distance and angle and do not place any objects between the ports, as this can disrupt the connection.

## IR Connections between Computers

If you are going to use the IR port to send information between you notebook and another IR-capable computer, there are a couple of steps that you will need to perform before your notebook is ready to be used in this way.

If you have not already set up your system for a Direct Cable Connection or for file sharing, you will need to do this first.

## Direct Cable Connection

In the **Control Panel**, select the **Add/Remove Programs** utility by double clicking on it. When the Add/Remove Program Properties window opens, click on the **Windows Setup** tab. Click on **Communications** and then the

**Details** button. Click on **Direct Cable Connection**. If you have not already set up the Dial-up Networking option, you will be asked to establish this as well. The Dial-up Networking activates certain network options of Windows that are necessary for using the Direct Cable Connection. Click **OK** to activate the new option(s). Windows will load installation files that are stored on your hard drive. If you did not already have network functions established, you will be asked to select computer and workgroup names that will be used to identity your machine when it is part of a network. Windows will configure your files and then ask you to restart your system so that the effects can take effect.

You have now established the Direct Cable Connection for your system. A machine that shares files is a host, a machine that accesses files is a guest. In a Direct Cable Connection session, one machine will serve as the host and one as a guest. If you want the connection to work both ways, you will have to establish a separate connection for file transfer in each direction. If you do not want to allow sharing of your files or printer via your notebook, you can continue on to the section on Making the Connection. You will still be able to access files and printers that are set up for sharing.

## Sharing

If you want to make files on your notebook available to another computer, or if you want to allow another system to print to a printer attached to your notebook, you will need to set up your system for sharing. You can set this up by double-clicking on the **Network** icon in the **Control Panel**. This will bring up the Networking window. Click on the **File and Print Sharing** button.

You will be asked to decided if you want to allow file sharing, print sharing, or both, click on the appropriate checkboxes. You have now established the file and print sharing for your notebook. You can click **OK** to exit the Network utility, you might be asked to reboot. If you want to allow access to certain files on your system, you will need to designate those files for sharing. Open the **Windows Explorer** program **(Start/Programs/Windows Explorer)** and the drive containing the folders that you want to share. Find the folders that you want to share. Right click on the folder and click on the **Sharing** option of the pop-up menu.

You will now be asked to establish the kind of access you want to allow to this folder. You should consider who will be using the access and why and establish he necessary password. Keep in mind that shared folders will be accessible to any machine that establishes an IR connection.

## Making the Connection

To establish the IR connection between your notebook and another system, you will use the IR as if it were a direct cable connection between the systems. The other machine will also need to have the software to support this connection. If the other machine is not set for Direct Cable Connection, please repeat the steps above with the other machine.

Start the IR software as described above. Once the machines alert you that they have recognized the presence of another IR system, launch the Direct Cable Connection program (**Start/Programs/Accessories**) and set up the connection between the two machines.

If this is the first time you are suing this connection, you will be asked if the machine will be serving as a host or guest. You will need to set the machine that will be receiving files or sending information to the printer as the guest. The machine that will be sending files or allowing printer access should be set as the host.

When you have selected the status of the machine, you will be asked to designate a port for the connection. For a connection between machines, you should select Serial cable on COM2. When you select a machine as the host, you will be asked to establish wherever or not a password should be required of the guest machine before completing the connection.

When both machines have established a connection via the IR, you will receive information on the connection.

In subsequent sessions, your notebook will default to the host/guest status that it had in the last session. You can change this by clicking on the **Change** button. You will then be asked to establish the port for the connection. If you want to maintain the same status as the last session, just click the **Listen** button, if your notebook is the host, or the **Connect** button, if your notebook is the guest.

When the connection is in place, the guest machine will have an open windows showing the folders on the host machine that are available for sharing. You can copy the files in those folders as you would any files in any drive window on your notebook.

***Printing***

You can use your IR port to print by connecting to a printer with built-in IR, a printer with an IR adapter connected to its parallel port, a network printer available via an infrared network node, or printer connected to a computer with an IR port.

Before proceeding, you must set up a connection for the printer via the IR port. See Chapter 6 for information on setting up a printer, To test the printing capability of an application over an IR link to an IrDA-compliant printer, click on the Infrared icon in the Control Panel (Start/Settings/Control Panel/Infrared). The IR software will detect the printer's IR port. Now try the Print option in an application.

# Chapter 6

## Expanding your Notebook

***This chapter gives short descriptions of how to add devices to your computer using the ports and connectors of the notebook***

# Upgrading and Options

Your notebook is designed to provide the best technology currently available, but recognizing that computer hardware and software change quickly, your notebook can easily be upgraded and expanded to meet your changing computing needs.

Nowadays, many devices support Plug and Play technology. This means that Windows can automatically detect the device when it is connected to your system. If the device requires a driver, Windows will load it automatically. If Windows does not have the device driver stored on your notebook, it will ask you to supply either the original Windows disc or diskettes, or a disc or diskettes from the device manufacturer so that the device driver can be installed.

## Troubleshooting Devices

If you have problems getting a device to operate, it may be because the device requires resources that are already being used by another device, for example an IRQ (interrupt request) or an address space.

1. You can identify this kind of problem by running Windows *Device Manager*.
2. Click on the *Start* button. Point to *Settings* and click on *Control Panel*.
3. Double-click the *System* icon and then select the *Device Manager* tab in the *System Properties* window.
4. Click on the device that you are interested in, and then click on the *Properties* button.
5. For many items, the *Properties* window will have tabs for *Drivers* and *Resources*. You can use these windows to identify if the device is conflicting with resources used by other devices, and perhaps resolve the problem.
6. You may be able to resolve some conflicts my making changes to the port configurations by using the System Configuration Utility (see Chapter 3).

# I/O Ports

The rear and left side of your notebook have a full range of I/O ports that allow you to connect a variety of peripheral devices to your system. We will

discuss here the ports that are not already covered in a previous part of the manual.

## Printer

Whether you purchase a portable computer or a desktop model, you will probably connect the printer to the computer via the parallel cable. You might also connect to a printer via a USB connection, a network connection, a serial connection, or via the IR (infrared) port. See Chapter 5 for more information on using the infrared port option. Whatever the nature of the connection, you will need to set up the necessary drivers for the printer. You can vary the port connection, or network setup, at the step it is required.

***Installing Your Printer***

When you first boot your notebook, you will be offered the opportunity to set up your printer. If you did not set up your printer at that time, or if you have added a printer to your system, you can follow the steps below to prepare your printer for use in Windows.

Select **Start/Settings/Printers** and then **Add Printer**. In the "Add Printer Wizard" click on **Next**. Scroll through the list of manufacturers and printers to find yours. If your model is not listed here, check your printer documentation for a compatible printer to use as a source of the printer driver. The program will then ask you to identify the connection for that printer, usually LPT 1.

You will then be prompted for a name for this printer. You can accept the default, but you can choose any name you want. If you are going to work in an environment where there might be more than one printer of the same model, the names become an important way of distinguishing your printers from each other. On the same screen you are also asked whether this will be your default printer.

You will then be asked if you want to print a test page. This would be a good idea if this is a new printer, or the first printer that you have set up for your notebook.

When Windows has finished loading your printer drivers, you will be returned to the **Printers** window. You should now see your printer listed there. You may also see some other drivers, e.g. for fax software.

You may have noticed that there is a fax driver in your printer choices. You can select the fax program as a printer device for any Windows-based document that you are running in Windows. The document will be sent to the fax program just as it would be sent to the printer.

## Other Parallel Devices

Your parallel port can also be used with other parallel devices, e.g. a tape backup unit, etc. Your parallel port is capable of supporting enhanced EPP and ECP transfer modes. EPP transfer mode provides significant performances increases for transfer to 1-way parallel devices, such as printers. ECP transfer mode provides increased performance for 2-way transfers such as those used to link another computer to your notebook system for file transfer. You might need to check the documentation of your device to determine the modes supported. If you need to change the transfer mode of your printer, you can do so in the System Configuration Utility. See Chapter 3 for information on the System Configuration Utility.


**Figure 6-1: Parallel Port**

Be sure to shut down your system before connecting the device to your notebook to prevent damage to your system and the parallel device.

## External Pointing Device

You can connect a serial mouse to your notebook. If you use a serial mouse, connect the mouse to the serial port located on the backside of your notebook.

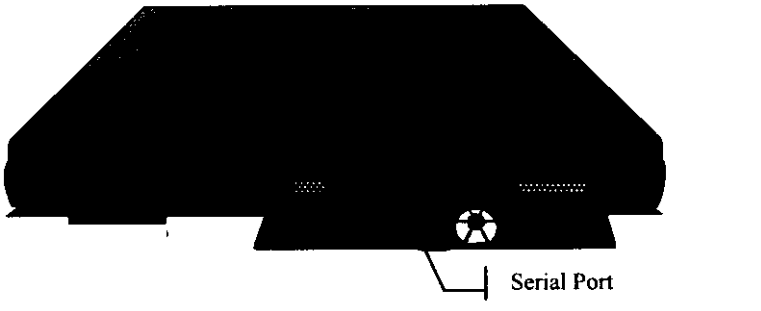



**Figure 6-1: Serial Port**

If your serial mouse is Windows compliant, the notebook should detect new hardware and take you through the process of installing the hardware. If Windows does not recognize your serial mouse, you will need to use Windows to Add New Hardware **(Start/Settings/Control Panel/Add New Hardware)**. You can have Windows search for the mouse, or if you know the correct settings, you can set up the mouse manually. If Windows does not have drivers for your mouse, you can use a standard driver, or use a disk provided by the mouse manufacturer.

## Serial Devices

The Communications Ports on your notebook allow you to connect external devices such as a mouse, a modem, a printer, a scanner, or another computer to the notebook.

Devices connected after the notebook is powered up may not work reliable. Connect devices to the serial port while the system is turned off. This not only helps to protect your notebook from damage, but turning on the notebook after connecting an external device to the port allows the computer to prepare itself and the device to operate together.

## USB Ports

The notebook is equipped with one USB port, which allows you to take advantage of a high-speed connection to newer devices. A USB port allows you to connect up to 127 devices through a single port, at very high transfer rates of up to 12 Mbps. .Devices can be connected through a USB hub, an external device that provides power and connection for other USB devices, or connected one to the other in a chain. Your notebook will automatically check the USB port to determine what devices are attached. If they are new to your system, the Plug-and-Play interface will detect the new equipment. The constant communication between the USB port and your devices allows you to connect and disconnect devices without shutting down first.

You can connect a USB device by plugging the USB cable into the USB port on the left side of the notebook.

The system should automatically detect the new device and make it available for you. If the device is not immediately recognized, check the documentation for the device.

The USB port not only provides a connection between your notebook and the external devices, but they are also capable of providing electrical current to

run those devices. If you make considerable use of your notebook under battery power, you should consider how USB devices might drain your battery or slow battery charging. If you have a USB device that has its own electrical power source, you should consider using this device as a hub for your other devices. These devices can then draw power through the hub device, leaving your notebook free to conserve or recharge battery power.

## Using the PS/2 Port

The PS/2 port on the left side of the notebook lets you connect an external keyboard to your system, such as a full size AT-enhanced keyboard, or an external pointing device to your system, such as a mouse or a trackball. The PS/2 device must have a mini-DIN PS/2 connector. If your device uses a larger AT DIN connector or a 9-pin serial connector, you can easily get an adapter to change it to a mini-DIN PS/2 connector.

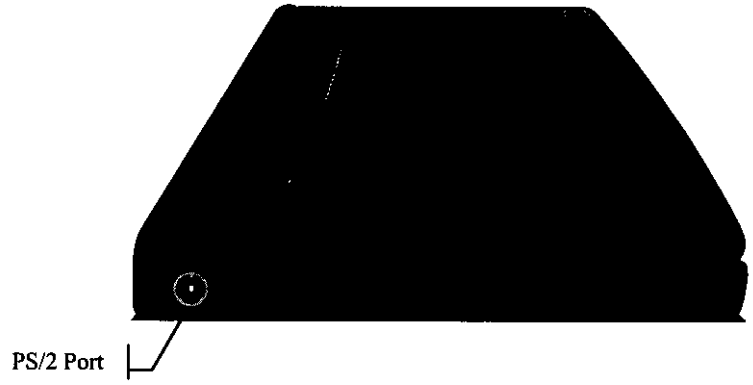



**Figure 6-1: PS/2 Port**

You can plug in, and unplug an external keyboard even when your system is turned on. When you connect the external keyboard to your system, the built-in keyboard remains active and you can enter data through either keyboard.

When you use this port for connecting an external PS/2 pointing device to your system, such as a mouse or a trackball, you can plug in, and unplug, the external pointing device even when your system is turned on. When you connect the device to your system, the built-in touchpad remains active and you can control the screen pointer with either the touchpad or the external-pointing device.

### Using the other Ports

The use of the infrared port, is explained in Chapter 4.

The use of the AC adapter, is explained in Chapter 4.

The use of the telephone jack, is explained in Chapter 4.

The use of the audio jacks, is explained in Chapter 5.

The use of the external monitor port and the TV-out port, is explained in Chapter 5.

## Installing Memory

This notebook has a memory compartment, which contains two sockets for industry standard SODIMMS (small outline dual in-line memory modules). These modules are readily available from numerous third-party manufacturers.

The memory compartment is located in the base of the notebook. Install extra memory as follows:

1. Before you begin, turn off your computer, disconnect the AC adapter, and remove the internal battery.
2. Take precautions to prevent static electricity causing damage to your memory card as follows:
   - If you can, wear a grounding wrist strap that's connected to a safely grounded connection during the installation.
   - Discharge any accumulated static electricity by touching the metal case of a safely grounded device before beginning the installation.
   - Leave all electronic components inside their static-proof packaging until they are required for the installation.
   - Handle all circuit boards and electronic components carefully. Hold boards by the edges only. Do not flex or stress circuit boards.
3. Locate the memory compartment cover and remove the locking screw.

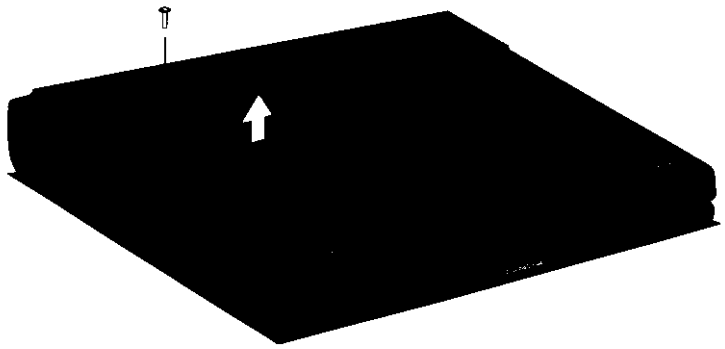


**Figure 6-1: Removing the Memory Compartment Cover**

4. Inside the memory compartment, you will see two sockets for the SODIMMs. In some configurations of this notebook, one of the sockets will be occupied by a 32 or 64 MB module. You can install the second socket with another SODIMM. You can install any size of SODIMM from 8 MB up to 128 MB in any of the free sockets.

5. If both sockets are occupied by SODIMMs, and you want to change one or both of the SODIMMs for a higher capacity module, locate the locking latches at each side of the socket. Pull these locking latches outwards. This will allow the socket and module to pop up to an angle of about 20 degrees. You can then slide the module out of the SODIMM socket.

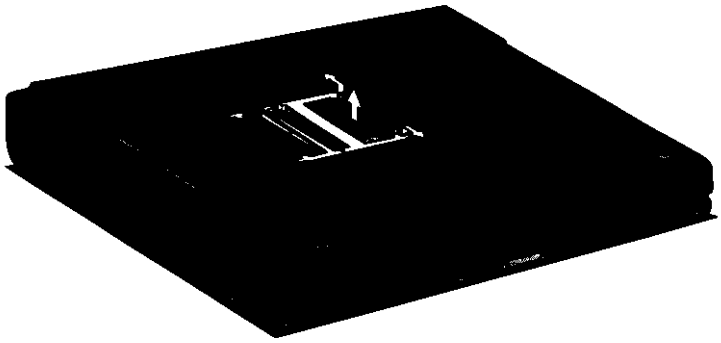


**Figure 6-2: Removing a Memory Module**

6. Hold the new module at the same angle as the socket and slide the edge connector side of the module into the socket. The edge connector has a cut-out and the socket has a notch so that it can only be installed in the correct way. Press the module into the socket until you can no longer see the gold-teeth of the edge connector.

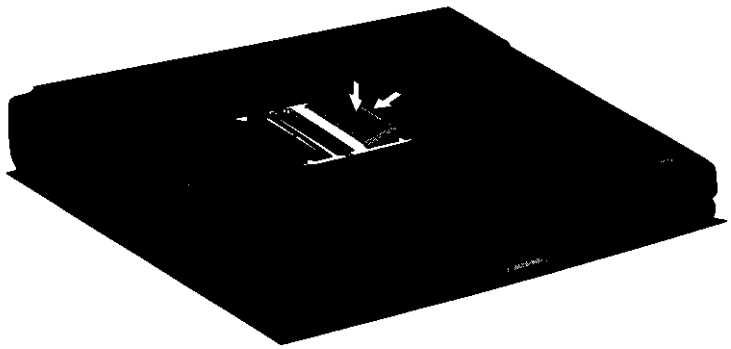


**Figure 6-3: Inserting a Memory Module**

7. Press the module down into the memory compartment so that the locking latches on either side of the socket engage, and hold the card down flat inside the compartment.
8. Replace the memory compartment cover and secure it with the locking screw.
9. Reconnect the AC adapter and/or replace the internal battery. Restart your notebook. When the system POST (power on self test) appears, you can verify that the system has automatically recognized the new memory configuration.

> **NOTE**: Please note that your notebook has a preinstalled suspend-to-disk partition to support the amount of memory that was factory installed in your notebook. If you expand the memory beyond the capacity of the original suspend-to-disk partition, you will need to create a larger partition on your hard disk drive. This may involve reorganizing your complete hard disk drive. Please refer to a certified technician familiar with this notebook if you are not familiar with this procedure.

## Modem

Inside the memory compartment there is also space for the optional internal fax/modem device. The fax/modem is a factory installed option. If your notebook did not originally come with this option, and you want to expand your notebook with a modem, contact your vendor for more information.

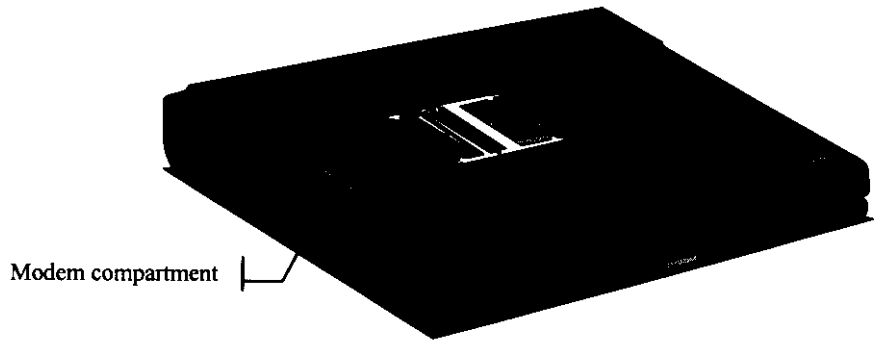



**Figure 6-1: Modem Compartment**

# Appendix A

Notebook specifications

# Specifications

| | |
|---|---|
| **CPU** | Intel® Celeron™ Processor<br>(Socket 370, PPGA package) |
| **Core logic** | Intel 440BX AGPset |
| **L2 Cache** | On-die 128KB cache |
| **System BIOS** | SystemSoft®<br>– 256KB(2Mbit) Flash EPROM<br>– Includes SMBIOS 2.1(DMI 2.0), ACPI 1.0 |
| **Memory** | – 2 x 144 pin SODIMM slots<br>– Maximum capacity 256MB |
| **Display** | – 14.1" TFT LCD<br>– Resolution: 1024x768(XGA)<br>– One channel LVDS interface |
| **Video Processor** | ATI 3D RAGE LT PRO graphics accelerator<br>– 2X AGP Bus<br>– HW 3D graphics user interface<br>– Motion Compensation<br>– 64 bit memory data bus |
| **Video Memory** | 4 MB SGRAM |
| **CD-ROM/DVD** | (12.7 mm high)<br>– CD ROM: average 17X speed, maximum up to 24X speed |
| **FDD/LS120** | (12.7mm high)<br>– FDD: supports 3.5" disks with 1.44 MB, 1.2 MB, or 720 KB capacity |
| **HDD** | – Ultra-DMA/33, 2.5"/9.5mm high |
| **Keyboard** | – 86, 87 or 90 keys<br>– Windows keys<br>– Key spacing:19 mm<br>– Key travel: 3 mm |
| **Pointing Device** | Touch pad with two buttons |
| **PCMCIA** | – Supports Type I (2), II (2) and III (1)<br>– ExCA compatible<br>– ZV/CardBus support |
| **Audio Processor** | Maestro-2E PCI audio accelerator<br>– AC'97 CODEC<br>– 3D positional stereo surround support<br>– 64-channel wave table synthesizer |

| | |
|---|---|
| | – Two Built-in stereo speakers |
| **External Connectors** | – Serial port . 1<br>– Bi-directional Parallel port (EPP/ECP) . 1<br>– VGA monitor port . 1<br>– PS/2 keyboard/mouse port . 1<br>– USB x 1<br>– IR port . 1 (Complies with ASK and IrDA, 4 Mbps and 115 Kbps)<br>– DC input x 1<br>– Stereo Earphone-out port . 1<br>– Microphone-in port . 1<br>– Line in-port x 1<br>– 2 buttons for volume control<br>– RJ-11 x 1 (Optional)<br>– Kensington Security Lock x 1<br>– RCA jack x 1 for TV-out (NTSC/PAL) |
| **Fax/Modem** | Internal 56Kbps V.90 PCI Modem |
| **Battery** | Single Smart Battery System<br>Li-ion Battery Pack, 8-cells, 47.4 WH total |
| **AC adapter** | Universal AC adapter<br>– Input:100-240 v, 50/60 Hz AC<br>– Output: 60W ,20V |
| **Dimensions** | 312 (W) x 255 (D) x 36.5 (H) mm<br>(12.3" x 10" x 1.4") |
| **Weight** | 7 lbs ( 3.2kg ) |
| **Accessory** | – Carrying Bag |