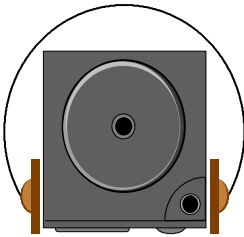# 4   Fun with Multimedia

his chapter lets you make full use of all the multimedia features of your computer in having fun

learn how to mix and match the built-in sound system, CD-ROM or DVD-ROM, and ZV port

presentation.

4.1   Notebook Multimedia Features

Your notebook computer is rich in multimedia features that makes your computing fun, comfortable, exciting and easy. Exceeding the specification set for the Multimedia Personal Computer or MPC, your computer is well able to perform all multimedia tasks through the following:

* Intel Mobile Pentium !!!/Intel Mobile Celeron

* 32MB RAM or more

* 24X-Speed CD-ROM Drive or 8X DVD-ROM Drive (option)

* 32bit AGP 2X VGA Graphics Controller

* 16-bit Plug-and-Play Audio Sound System with built-in speaker and microphone

* ZV Port Capability (for MPEG cards)

4.2   Audio Sound System Features

Your computer has a built-in 16-bit stereo sound controller that allows you to record, store, and playback voice, music and other sound effects with built-in mixer controls. An integrated full-duplex microphone and twin mini-speakers are also built-in into your computer to allow you to record and playback sound anytime and anywhere.

On the front of your computer, you will find the audio ports that include the following:

* External 1/8-inch microphone jack that supports full-duplex monophonic mode or half-duplex stereo mode

Earphone or headphone jack for personal listening

Line-out jack for connecting external amplified speakers, headphones, or

-

tape deck or synthesizer

- External thumb-wheel volume control

4.3

Properties

Before you can start using the audio capabilities of your computer, you need

bought your computer with Windows pre-installed, it is most likely that your dealer have configured the sound driver for you. If not, you must refer to

4.4   Windows Multimedia Programs

built-in features of your computer. The Multimedia programs group is found by clicking the Start button, then pointing to Programs, then Accessories, and

Figure 4-1   Multimedia Programs Group

The standard multimedia components are as follows:

- External volume control buttons

- CD Player - for playing audio compact discs

- Media Player - for playing sound video and animation files

- Sound Recorder - for recording sounds and playback

- Volume Control - for adjusting the volume of mixer

☞ *For more information on how to operate these multimedia components, run the program and click on the Help menu.*

4.5   Recording Sounds

Your computer allows you to record voice and other sounds in several ways and stores them as files on your hard disk. These voice or sound files can then be played back through the internal speaker or external line-out and earphone jack using either an external speaker, headphone, or earphone set. You can also use the files as voice annotations on many applications for more real

under Windows operating system.

To record sounds, you need to run the Sound Recorder program from the

simple to understand which comprises of the Rewind, Forward, Play, Stop, and Record button. Click the Help menu on how to operate the Sound

Figure 4-2   Sound Recorder

The Sound Recorder also allows you to record sound from different input audio source like the following:

- From the built-in microphone

- From the external microphone

- From the CD-ROM drive

- From the Line-In audio jack

Since you could record sound from different input sources, you must first set the proper audio input recording device under the Recording Control panel. To do this:

1.

> then point to Programs, Accessories, Multimedia, and then click on
> Volume Control.
>
> Click Options and Properties.
>
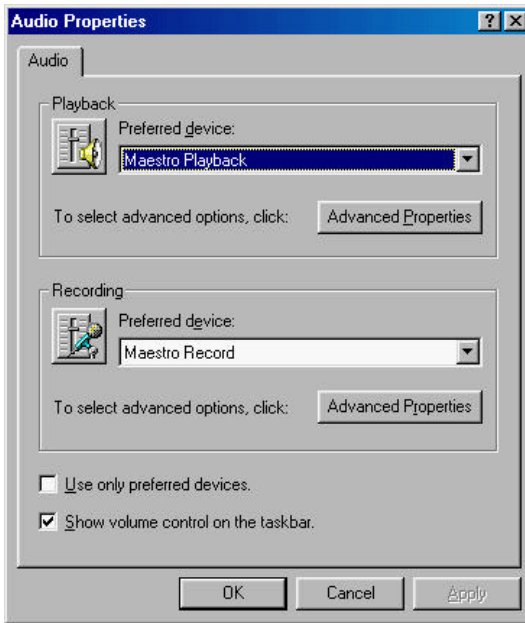> Click the round button for Recording and select to show all volume

Figure 4-3   Audio Volume Properties

4. Click OK and the Recording Control dialog box will appear. Here, you will select the input device for the recording source. The default is the microphone which will record sound from the microphone only. If you want to record from the CD-ROM drive with audio music, you must click on CD Audio.
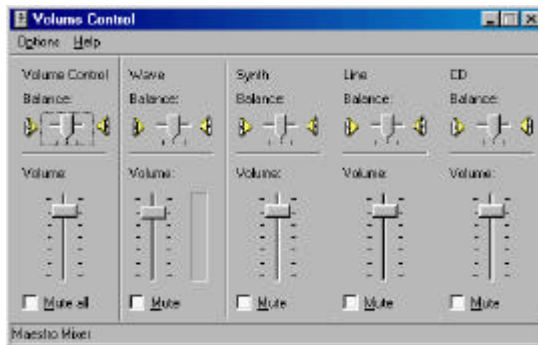

Figure 4-4   Recording Volume Control

USING THE BUILT-IN MICROPHONE

You would normally use the microphone for recording voice and save the file for voice annotations in your application programs. Your computer comes with a built-in microphone located on the front side of your computer.

To start recording from the built-in microphone:

1. Enable microphone volume on the Recording Control as discussed previously.

2. Run the Sound Recorder program and press the Record button.

3. Start to speak towards the built-in microphone and press the Stop button when you want to stop recording.

4.

5.

USING AN XTERNAL M

Your computer also allows you to connect an external microphone for higher quality recording. The external microphone jack is found on the front side of

connected. Use only microphone with 1/8-inch mini-jack connector. Follow

U   B   -   CD-ROM/DVD-ROM D

You would normally use the CD-ROM drive for recording audio music from

1.   Activate CD Audio volume on the Recording Control as discussed

2.   Run the Sound Recorder program.

the CD auto-insertion notification for supporting Suspend mode, the CD

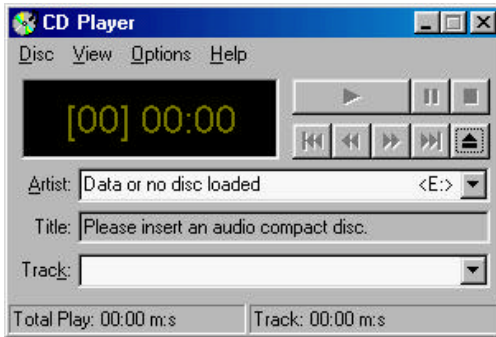disc and will start playing the audio CD.

Figure 4-5   CD Player

5.   Set the starting point where you want to start recording.

6.   Switch to the Sound Recorder and press the Record button.

7.   Switch immediately to the CD Player and press the Play button. You can adjust the volume control so you can also hear the recording.

USING AN EXTERNAL AUDIO INPUT DEVICE

You can also record sound from an external audio device such as stereo amplifier or tape recorder by connecting them to the Line-In audio jack

Use the same procedure as above by setting the Recording Control to enable the line-in volume. Run the Sound Recorder and press the Record button. Start playing the external audio device to begin recording.

4.6   Playing Audio and Sound

Your computer has a built-in twin speaker to playback audio and sound. You can also adjust the volume manually by adjusting the thumb-wheel volume control found on the front side of your computer.

For more quality sound output, you can choose to connect an external amplified speaker that connects to the Line-out jack on the front of your computer. You can also connect earphone or headphone set. Always minimize the volume first before placing the phone set to your ear.

USING THE MEDIA PLAYER

The easiest way to playback multimedia media files is to run the Media Player. Follow these steps:

1.   Click on Start, then point to Programs, Accessories, and Multimedia.

2.   Click on Media Player to start program.
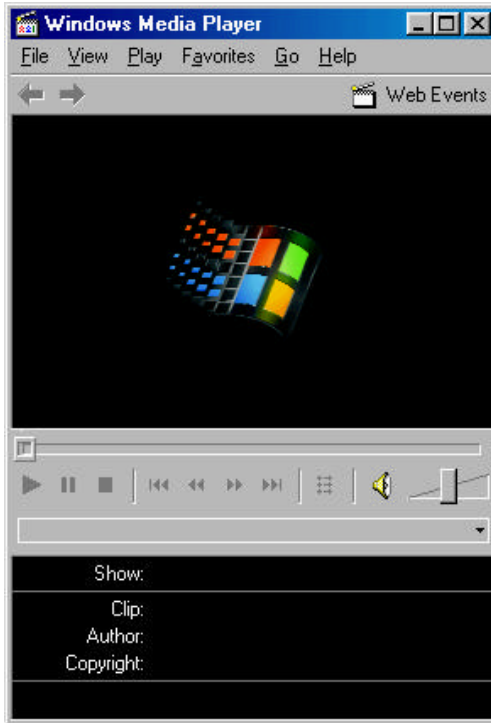
Figure 4-6   Media Player

3. Click on the Device menu to select the sound device type you want to play or you can directly open the file on the File menu.

4. When the file is recognized and open, click on the Play button to start playback.

5. For playing audio CD, it is better to run the CD Player as discussed earlier.

4.7   Playing Video and MPEG Files

Your computer is capable of running video motion files as well as MPEG (Motion Picture Expert Group) files on CD or DVD. By using a software MPEG program, you can watch real full-motion picture on your computer. You can also run the ActiveMovie Player under the Multimedia programs group or the Media Player as well to show all media device programs.

4.8   Using PC Cards with ZV Port

Although running software MPEG programs allows you to watch movies and video CD, the quality and speed is still not at par when watching motion picture on TV or movie theaters. Your computer is equipped with the latest ZV port technology that dramatically speeds up video playback. By inserting a ZV port-capable MPEG PC card into the PCMCIA slot, you can watch smooth full-screen motion picture just like in TV or at the movies. Consult your dealer on how to get a ZV port MPEG card and read the card user manual for installation.

4.9   Using DVD

DVD is the latest breakthrough in superb full-motion picture playback. One disc can contain at least 4.7GB of information, capable of holding one full-length movie with soundtracks, subtitles, and different languages. Much more, the DVD-ROM drive of your computer is backward compatible with CD-ROM drive so it allows you to use any CD as well. It also works the same as the CD-ROM.

To playback DVD titles, you would need a MPEG-2 compatible PCMCIA card or software MPEG-2 program and the optional DVD-ROM Device Pack.

For software MPEG-2 program, the performance in media playing will be implemented successfully only when this computer is complied with Intel Pentium II - 266MHz CPU or above. Otherwise, any computer that equipped under Intel Pentium II - 266MHz CPU can not guarantee the performance in media playing.

MPEG-2 cards provide audio and video jack, so you can connect it to your wide-screen TV for the best home entertainment. Consult your dealer for more information.

5   Connecting to Peripherals
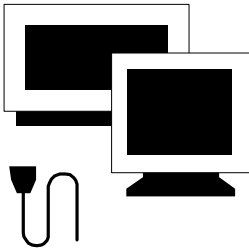
This chapter describes how you attach peripheral devices to your notebook. You can attach a printer or mouse, connect an external monitor and keyboard, or any other peripheral device. You will learn how to use these peripheral devices with the step-by-step instructions depicted in this chapter.

5.1   Using a Serial Mouse

Your computer has one 9-pin male serial port for connecting an external serial mouse, printer or modem. The serial (RS232) port of your computer is normally referred to as COM1. When working with your computer on the desktop, you may want to use an external serial mouse instead of the Glide Pad. If you want to use a modem as well, we recommend using a voice/fax/modem PC card through the PCMCIA slot.

☞   *When you connect a printer, be sure to install the appropriate printer driver through the Windows Control Panel.*

To install an external serial mouse:

1.   Turn off your computer.

2.   Plug the serial mouse connector to the serial port at the back of your computer. Secure the connection with the screws provided.

3.   Turn on the computer.

4.   Click the **Start** button, then point to **Settings**, and click **Control Panel** when there is another mouse connects to PS/2 port.

5. Double-click on the **Add/Remove Program** icon to appear the **Add New Hardware Wizard.**

6. Follow the relative steps when screen shows up to guide you in executing the specific procedures.

7. When system has rebooted, Windows will automatically detect the serial mouse.

5.2   Using an External Keyboard (PS/2)

At the back of your computer, you will find the 6-pin mini-DIN PS/2 keyboard and mouse port. This port allows you to connect an external full-sized PS/2 desktop keyboard as well as an external PS/2 mouse. It is recommended to use an external PS/2 mouse only if you are not using an external PS/2 keyboard. Otherwise, you must use the serial port for connecting a serial mouse as discussed earlier. If you want to use both the external PS/2 mouse and keyboard, you would need to buy a PS/2 Y-cable.

You can also purchase a keyboard adapter from your computer dealer that allows you to connect standard 5-pin DIN-type desktop keyboards. This type of keyboard is widely used by desktop computers compared to PS/2 type.

To connect the external keyboard:

1. Turn off your computer.

2. Connect the PS/2 keyboard directly to the PS/2 port. If you are using 5-pin DIN-type keyboard, plug the keyboard to the keyboard adapter first and then to the PS/2 port. Windows 95/98 keyboard are also supported.

3. Turn on your computer. Both the built-in keyboard and the external keyboard are active and can be used simultaneously.
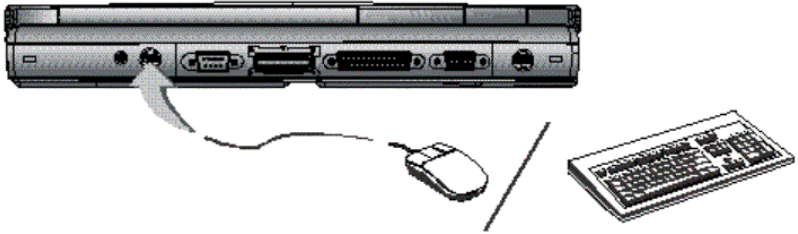
> ☞ *Do not disconnect or connect the external keyboard when power is on. Turn off the computer first. You can connect an external keyboard or keypad only while the system is in Suspend mode.*

> ☞ *If you connect an external mouse, you must re-boot the system.*

To connect an external PS/2 mouse, follow the same procedure as above. Both the PS/2 mouse and the built-in Glide Pad will work at the same time.

5.3   Using the USB Port

USB or Universal Serial Port is a peripheral bus standard developed by Compaq, DEC, IBM, Intel, Microsoft, NEC and Northern Telecom. Personal computers equipped with USB will allow computer peripherals to automatically configure as soon as they are physically attached - without the need to reboot or run setup. USB will also allow multiple devices to run simultaneously on a computer, with peripherals such as digital cameras, scanners, printers, CD-ROM drives, modems, keyboards, telephones, games devices and monitors acting as additional plug-in sites, or hubs.

USB devices called USB hubs can serve as connection ports for other USB peripherals. Only one device needs to be plugged into your notebook
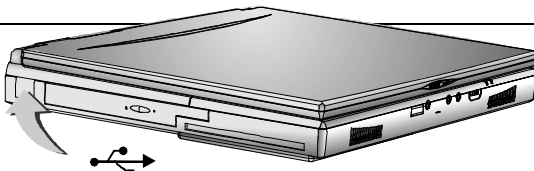
computer. Additional peripherals can be connected in a daisy chain
configuration where one device is connected to another in a series.

Windows 95 B version (OSR 2.1 release) or later version will come equipped
with the drivers that allows your PC to recognize USB peripherals.

☞   *Depending on your operational requirements, you may need to disable the*
     USB port in order to release system resources to use other devices.

5.4   Connecting a Parallel Printer

The parallel (LPT1) port has a 25-pin female connector at the back of your
computer. You would always connect to this whenever you are going to print
out to a parallel printer.

To connect to a printer:

1.   Connect the printer to the parallel port using the 25-pin male connector
     cable of the printer. Secure the cable with the screws provided.

2.   Align and connect the other end of the cable to the parallel port on the
     device. Lock the connector clips.

3.   Connect the power cable to the device and a properly grounded wall
     outlet.

4.   Power on both computer and printer.

5.   Check the printer by doing a self-test operation.

6.   Set the printer type of your software to recognize the connected printer.

7. If your printer is not listed in the software you are using, consult your printer dealer for available drivers or any compatible ones.

8. Press the Online function of the printer.

☞ *When you connect a printer, be sure to install the appropriate printer driver through the Windows Control Panel.*

☞ *Check that the device is online before you try to use it. See the instructions that came with the device for more information.*

5.5   Using an External Monitor (VGA Port)

Your computer has a 15-pin VGA port for supporting any external VGA color monitor with maximum display resolution of 1024x768 64K colors or 32-bit true colors. You need a display signal cable (usually provided with the monitor). One end of the cable must have a 15-pin connector for the system.

To connect an external monitor:

1. Turn off your computer and make sure the monitor power switch is turned off.

☞ *The notebook computer must be powered off or suspended while the monitor is being connected.*

2. Connect the connector cable of the monitor to the VGA port at the back of your computer. Secure the cable connection with the screws provided.

3. Connect the monitor power cable and plug it into a properly grounded wall outlet.

4. Turn the power of the monitor.

5. Turn on your computer. Both the LCD panel and the monitor screen will show the display. Your computer is set at default to run at simultaneous display mode.

6. If you only want to show the display on the monitor (CRT) and shut off the LCD display, you can use the <**Fn**> + <**F3**> hot-key to switch display type between LCD and CRT. Keep pressing the hot-key until you get the display to CRT only.
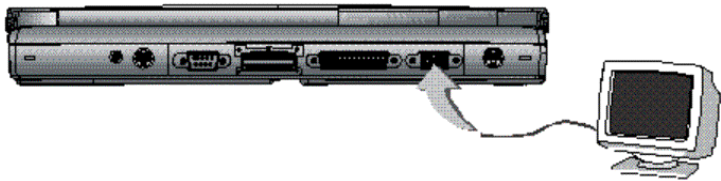
☞ *Refer to Chapter 3 regarding the possible VGA resolutions and how to change the display properties.*

5.6   Using the SIR Port (Optional)

Your computer is equipped with an industry standard IR port that allows enhanced wireless connection with infrared built-in devices like PDAs,

electronic organizers, printers, and portable computers. The IR port is Infrared Data Association (IrDA) compatible which makes use of the second COM port or COM2 of your computer. The transfer rates for SIR (Serial Infrared Standard) is 115.2Kbit/sec.

To connect to another IR equipped device:

1. Properly position both your computer and the target device. Place the target device in line with your notebook and should be within 80cm (30-inches) from each other. You should refer to the User Guide of the target device on how to enable its IR function.

2. Turn on your computer and run the BIOS Setup program. Go to the Advanced menu and set the Infrared Port to Enabled.

☞ *Your notebook computer ships with the IR port disabled. The first time that you use the IR port, you must enable the device through the setup utility.*

3. After setting up both devices to enable IR function, run the application you wanted to use the IR port.

4. Set the transmission protocol or device to COM2. Make sure that this does not conflict with any pre-installed fax/modem PC card which is also configured at COM2.
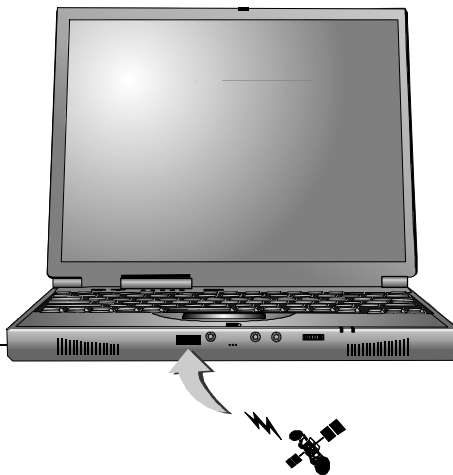
5.7 Using the TV Port

Also found at the back of your computer is one S-Video port.

To display your computer screen on the TV:

1. Turn off your computer and plug one end of the S-Video jack cable to the end to the input video jack of your television set.

2. Turn on your computer and your television set.

3. Click the **Start** button, then point to **Settings**, and click **Control Panel.**
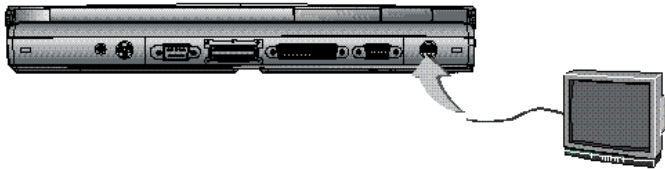
4. Double-click on the **Display** icon and point to **Setting** tab.

5. Double-click **Advanced** button and point to **Displays** tab.

6. Choose the **TV** button then click **OK**. Windows now automatically detect the TV port and enable this function.

5.8   Using the External Audio System

At the front of your computer, you will find the built-in audio ports. You can connect audio input jacks with microphone and stereo device; and audio output jack with external speakers, earphone, or headphone for recording and playing sound.

To connect to a audio jack:

1. Locate the audio port (Microphone, Line-in or Headphones) that you want to use to the target device.

2. Plug the jack into the port on the front side of the system.

☞   *Some audio device cable connectors are designed with an icon representative of the device. When connecting the audio device to your notebook computer, be sure to match the icon on the cable connector to the icon on the system port.*

☞   *If you use external speakers and experience the sound distortion or feedback, please lower the volume. Some factors is caused by too close locating the microphone and speakers from each other, moving away the external audio option from the unit may also help.*

6   Customizing Your Notebook
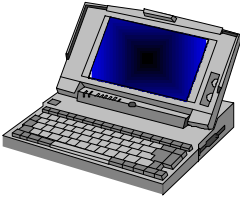
Your computer uses the Phoenix BIOS Setup program that allows you to set several system configuration in changing the way your computer performs. This includes your system time and date, disk drive configuration, password setup, and power management settings. These information are then stored in the CMOS RAM and will remain permanent unless you change it again. This chapter discusses on how you will activate the BIOS Setup program and change the system configuration to suit your desired operation. You must be careful to set the configuration properly in order for your computer to run smoothly. If you are not sure of any settings, contact your dealer.

6.1   Running the BIOS Setup Program

Your computer is likely to have been properly setup and configured by your dealer prior to delivery. However, you may find it necessary to use the computer's BIOS (Basic Input-Output System) Setup program to change system configuration information, such as the current date and time, or your hard disk drive type. The Setup program can be accessed when you power on the system and pressing the <**F2**> function key.

The settings that you specify within the Setup program are recorded in a special area memory called the **CMOS RAM**. This memory is backed up by a battery so that is will not be erased when you turn off or reset the system. Whenever you turn on the computer, the system will read the settings stored in the CMOS RAM and compare them to the equipment check conducted during the Power On Self Test (POST). If an error occurs, an error message will be displayed on the screen, and you will then be prompted to run the Setup Program.

As the POST (Power-On Self Test) executes during the boot up process, the screen will display the following message:

```
        Press <F2> to Enter SETUP
```

Press the <**F2**> key to run the BIOS Setup program. The BIOS Setup program is organized into six menus which you can select using the ← and → keys. To move from one option to another, you use the up and down arrow keys while using the <+> and <-> keys to change the settings. On the right hand side of the screen are some brief help descriptions of each item you want to change.

On the BIOS Setup program, you will find the following parts on the screen:

- Item Specific Help
  The right side of the screen. This area describes each parameter and its available settings. The BIOS is subject to change without previous notice, so the description here can help you to select the best parameters.

- Menu Bar
  The top line of the screen. Each of the six selections displays its own screen.

- Parameters
  The left side of the screen. This area lists the parameters and their current settings.

- Key Status Bar
  The bottom part of the screen. These lines display the keys available to move the cursor, select a particular function and so forth.

To exit the BIOS Setup program, simply press the <Esc> key and select from the Exit menu whether you want to Save changes and exit; Discard Changes and exit; or Set default values.

6.2 Using the Main Menu Setup

PhoenixBIOS Setup Utility		
Main		

		Item Specific Help
System Time:	:00 :00]	<Tab>, <Shift-Tab>,
System Date:	[07/01/1999]	or <Enter> selects
Language:	[English (US)]	field.
Diskette A:	[1.44/1.25 MB, 3½']	
▶ Primary Master	[12073MB]	
Secondary Master	[CD-ROM]	
Boot Display Device:	[LCD+CRT]	
Memory Cache	[Disabled]	
System Memory:	640 KB	
Extended Memory:	130048 KB	
CPU Type:	Pentium (R) III	
CPU Speed:	700 MHz	
BIOS Version:	0.3B-5702-6211/2319192C	

F1 Help	↑ ↓ Select Item	- /+ Change Values	F9 Setup Defaults
Esc Exit	← → Select Menu	Enter Select ▶ Sub-Menu	F10 Save and Exit

- System Time
  Allows you to change the system time using the hour:minute:second format of the computer.
  Enter the current time for reach field and use the <Tab>, <Shift>+<Tab>, or <Enter> key to move from one field or back to another.
  You can also change the system time from your operating system.

- System Date
  Allows you to set the system date using the month/date/year format. Your notebook is year 2000-compliant.
  Enter the current time for reach field and use the <Tab>, <Shift>+<Tab>, or <Enter> key to move from one field or back to another.
  You can also change the system time from your operating system.

- Language
  Allows you to set the display language in English or Japanese version for the BIOS Setup program.

- Diskette A
  This item enables or disables the floppy disk drive by pressing the <**Enter**> key. When you select 1.44MB/1.25MB 3 ½, you should know that the 1.25MB 3 ½ diskette requires a 3-mode floppy-disk drive and refers to a 1024byte/sector Japanese media format.

- Primary Master
  This field displays various parameters for the hard disk drive. If type [Auto] is selected, the system automatically sets these parameters. If type [User] is selected, Cylinders, Heads and Sectors and its access mode can be edited.

- Secondary Master
  This field displays various parameters for the second hard disk drive or
  CD-ROM or DVD-ROM. Some of these fields are for information only
  as the BIOS automatically detects and adjust the parameters.

- Boot Display Device
  Lets you select the display device.

- Memory Cache
  Lets you enable or disable the RAM to work as cache. Enable it can
  speed up the access time but reduce the RAM that software can use.

- System Memory
  This field reports the amount of base (or conventional) memory found by
  the BIOS during Power-On Self-Test (POST).

- Extended Memory
  This field reports the amount of extended memory found by the BIOS
  during Power-On Self-Test (POST).

- CPU Type
  This field reports the CPU type information detected by the BIOS during
  Power-On Self-Test (POST).

- CPU Speed
  This field reports the CPU speed information detected by the BIOS
  during Power-On Self-Test (POST).

- BIOS Version
  This field are for information only as the BIOS display the BIOS version
  during the Power-On Self-Test (POST).

6.2.1 INTERNAL HDD SUB-MENU

PhoenixBIOS Setup Utility		
Main		

		Item Specific Help
Primary Master: [12073MB]		
Type:		User = you enter
CHS format		parameters of hard-
Cylinders:	[16383]	disk drive installed
Heads:	[16]	at the Connection.
Sectors:	[63]	Auto = autotypes
Maximum Capacity:	12073MB	Hard-disk drive
LBA format		installed here.
Total Sectors:	21733140	None = no device is
Maximum Capacity:	12073MB	installed here.
		CD-ROM = a CD-
Ultra DMA Mode:	[Mode 4]	ROM drive is
Transfer Mode:	[Fast PIO 4]	installed here.
Multi-Sector Transfers:	[16 Sectors]	
LBA Mode Control:	[Enabled]	
32 Bit I/O:	[Disabled]	

F1 Help	↑ ↓ Select Item	- /+ Change Values	F9 Setup Defaults
Esc Exit	← → Select Menu	Enter Select ▸ Sub-Menu	F10 Save and Exit

Use the Type field to select the drive type installed. You can select different drive types as CD-ROM, User, or None by pressing <**Space**> bar. Set this option to Auto so your computer will automatically detect the drive type during power on. Set this option to None when your computer is not installed any devices. Press <**Esc**> to return to the Main Menu. Move the

6.3　Using the Advanced CMOS Setup

PhoenixBIOS Setup Utility		
Advanced		
		Item Specific Help
CPU Frequency	[100Mhz]	'Disabled' prevents any
DRAM Frequency	[100Mhz]	installed PS/2 mouse
		from functioning, but
▶ BootUp Num-Lock	[LockOff]	frees up IRQ12.
PS/2 Mouse:	[Both]	'Enabled' allows the
LCD Panel View Expansion:	[Enable]	operating system to
Summary Screen	[Enable]	determine whether
Silent Boot:	[Disabled]	to enable or disable
Save to Disk Warning	[Enable]	the mouse
Installed O/S	[Win98/Win2000]	
AGP-2X Mode	[Enabled]	
Aperture Size	[64M]	
Frame Buffer Size	[8 MB]	
▶ I/O Device Configuration		
▶ On Chip Multi-function Device:		
▶ Advanced Chipset Control		

F1	Help	↑ ↓	Select Item	- /+	Change Values	F9	Setup Defaults
Esc	Exit	← →	Select Menu	Enter	Select ▶ Sub-Menu	F10	Save and Exit

- CPU Frequency
  Shows the internal running frequency of CPU.

- DRAM Frequency
  Shows the running frequency of DRAM.

- BootUp Num-Lock
  Lock or unlock the Num-Lock key after the system is bootup.

- PS/2 Mouse
  [Enabled] allows the OS to determine whether to enable or disable the PS/2 mouse. [Disabled] prevents any installed PS/2 mouse from functioning.

- LCD Panel View Expansion
  Expand or keep the original LCD Screen View during the boot procedure. Expand may get full screen display of LCD, however, it affect the graphic/text quality

- Summary Screen
  Display system configuration on boot

- Silent Boot
  Lets you specify the boot screen as Logo screen, POST screen, or Black screen by choosing Enabled, Disabled, or Black option, respectively.

- Save to Disk Warning:
  Display warning message when the Save to Disk file (save2dsk.bin) does not exist. This file is used when you shot down your computer to suspend mode.

- Installed O/S
  Select the operation system which is installed on this computer. An incorrect setting may cause unexpected behavior.

- AGP-2X Mode
  Please use default value. If it needs any change, please contact system supervisor.

- Aperture Size
  Please use default value. If it needs any change, please contact system supervisor.

- Frame Buffer Size
  Please use default value. If it needs any change, please contact system supervisor.

- I/O Device Configuration
  Lets you configure input/output device such as Serial Port, Infrared Port, Parallel Port, and Floppy disk controller.

- On Chip Multi-function Device:
  Lets you configure Audio, sound device, Joystick and Modem... internal device.

- Advanced Chipset Control:
  The advance setting of chipset. If it needs any change, please see its Item Specific Help and contact system supervisor to do that.

6.3.1 PERIPHERAL SUB-MENU

PhoenixBIOS Setup Utility		
Advanced		
I/O Device Configuration		Item Specific Help
Serial port:		Configure serial port A
Infrared port:	[Disabled]	using options:
		[Disabled]
Parallel port:	[Auto]	No configuration,
Mode:	[Bi-directional]	[Enabled]
Floppy disk controller:	[Enable]	User configuration,
Local Bus IDE adapter	[Both]	[Auto]
		BIOS or OS chooses
		Configuration,

F1	**Help**	↑ ↓	**Select Item**	**- /+**	**Change Values**	**F9**	**Setup Defaults**
Esc	**Exit**	← →	**Select Menu**	**Enter**	**Select ▶ Sub-Menu**	**F10**	**Save and Exit**

- Serial port
  You can press <**Enter**> to select the Enabled, Disabled, or Auto option for enabled or disabled the port, or automatically sensed the address assignment by BIOS or OS. When you set the configured Serial port to Enabled rather than Auto, you should also set the parameter of Base I/O address and IRQ for this port.

- Infrared port
  Lets you press <**Enter**> to select the Enabled, Disabled, or Auto option for enabled or disabled the port, or automatically sensed the address assignment by BIOS or OS. When you set the configured Serial port to Enabled rather than Auto, you should also set the parameter of Base I/O address and IR mode for this port.

- Parallel port
  Allows you to press <**Enter**> to select the Enabled, Disabled, or Auto option for enabled or disabled this port, or automatically sensed the address assignment by BIOS or OS.

- Mode
  Allows you to press <**Enter**> to select a parallel mode as Output only, Bi-directional, or ECP when the parallel port is configured. When you set the configured parallel port to Enabled rather than Auto, you should also set the parameter of Base I/O address and IRQ for this port.

- Floppy disk controller
  Allows you to press <**Enter**> to select the Enabled or Disabled option for configured or not configured the floppy disk controller.

- Local Bus IDE adapter
  Allows you to press <**Enter**> to enabled or disabled primary or secondary IDE adapter.

6.3.2 CHIP MULTI-FUNCTION SUB-MENU

PhoenixBIOS Setup Utility		
Advanced		
On Chip Multi-Function Device		Item Specific Help
OnChip USB Device:		Enabled/Disabled Function 2
Onboard Legacy Audio:	[Enabled]	USB Port 0-1
Sound Blaster:	[Disabled]	
MPU-401 :	[Disabled]	
FM Port :	[Enabled]	
Joystick:	[Enabled]	
Modem Device:	[Disabled]	
F1 Help ↑ ↓ Select Item - /+ Change Values F9 Setup Defaults		
Esc Exit ← → Select Menu Enter Select ▶ Sub-Menu F10 Save and Exit		

- This manu lets you enable or disable certain internal device.

6.3.3 ADVANCE CHIPSET CONTROL SUB-MENU

PhoenixBIOS Setup Utility
Advanced

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Advance Chipset Control		Item Specific Help
SDRAM PC-133 support		Enabled/Disabled
SDRAM Cycle Latency	[Enabled]	Function 2
SDRAM Bank Interleave:	[Enabled]	USB Port 0-1
System Shadow:	[Disabled]	
Video Shadow:	[Disabled]	
Cache Video BIOS area:	[Enabled]	
PCI Delay Transaction	[Enabled]	
Read-around-Write:	[Disabled]	
Concurrent PCI Master/Host	[Enabled]	
AGP Master 0 WS Write:	[Enabled]	
AGP Master 0 WS Read:	[Enabled]	

F1	**Help**	**↑ ↓**	**Select Item**	**- /+**	**Change Values**	**F9** **Setup Defaults**
Esc	**Exit**	**← →**	**Select Menu**	**Enter**	**Select ▸ Sub-Menu**	**F10** **Save and Exit**

- You can set the setting here to default value to make sure that the system work normally. However, you can change certain setting to improve performance. Please see its Item Specific Help to know more about that.

6.4   Security Menu Setup

PhoenixBIOS Setup Utility

Security

		Item Specific Help
Supervisor Password Is	[Clear]	Supervisor Password
User Password Is	[Clear]	controls access to the
		setup utility.
Set Supervisor Password:	[Enter]	
Set User Password:	[Enter]	
Password on boot:	[Disabled]	
Fixed disk boot sector:	[Normal]	
Diskette access:	[Supervisor]	

F1 Help	**↑ ↓ Select Item**	**- /+**	**Change Values**	**F9 Setup Defaults**
Esc Exit	**← → Select Menu**	**Enter**	**Select ▸ Sub-Menu**	**F10 Save and Exit**

- **Supervisor Password Is**
  Set/Clear selections show that the notebook is under controlled by
  Supervisor Password or not.

- **User Password Is**
  Set/Clear selections show that the notebook is under controlled by User
  Password or not.

- **Set Supervisor Password**
  Supervisor password gives you the authority in accessing the setup utility.
  You can also enter the supervisor password in booting the system and
  resuming from suspend mode. When you press <**Enter**> in this field,
  the Set Supervisor Password dialog box appears. Enter a new password
  with up to 8 alpha-numeric characters, and then enter this same new
  password again for confirmation.

- Set User Password
  This field is only available when you have set Supervisor Password previously. You can enter the user password when boot the system or resume from suspend mode. But if you set Write Protect in the Fixed disk boot sector field, you should enter a supervisor password to access the fixed disk when boot the system or resume from suspend mode.

- Password on Boot
  If you set this field to Enabled, your computer will always ask for the password every time you boot your computer.

- Password on Resume
  If you set this field to Enabled, your computer will always ask for the password every time when you resume from your computer.

- Fixed Disk Boot Sector
  If you set this field to Write Protect, the write protect boot sector on hard disk will protect against viruses. In this situation, only the supervisor can access this fixed disk.

- Diskette Access
  If you set this field to Supervisor, only the supervisor can access to the diskette drives. If you set to User, both the supervisor and user can access to the diskette drives.

6.5 Using Power Saving Setup

PhoenixBIOS Setup Utility		
	APM Mode	
		Item Specific Help
Power Switch:	[On/Off]	Behavior of the
Lid Switch	[BL On/Off]	Power switch.
Power Management Function	[Battery only]	'Suspend/Resume'
Power Savings	[Disabled]	causes the PC to
Suspend Mode	[Suspend]	Suspend/Resume,
Idle Mode:	[Off]	
Standby Timeout:	[Off]	'On/Off' causes the
Auto Suspend Timeout:	[Off]	PC to Power
Auto Save To Disk:	[Off]	On/Off.
Hard Disk Timeout:	[Disabled]	
Video Timeout:	[Disabled]	Please be noticed
		that all the Power
Resume On Modem Ring:	[Off]	menu settings will
Resume On Time:	[Off]	be ineffective in
		the ACPI mode.

F1	Help	↑ ↓	Select Item	- /+	Change Values	F9	Setup Defaults
Esc	Exit	← →	Select Menu	Enter	Select ▸ Sub-Menu	F10	Save and Exit

- Power Switch
  The power button operates as both an On/Off and Suspend/Resume button.

➡ On/Off functions as a normal power switch to power the system on or off.

➡ Suspend/Resume functions as a suspend button to put the system into Suspend mode and return to normal operation from Suspend.

- Lid Switch
  The system goes into "Suspend/Resume" mode or "Back light On/Off" mode when the LCD panel is closed when the system is still running.

- Power Management Function
  Lets you set up power management by the system power source. You can select Always On or Battery Only. If you choose Always On, various power saving modes will function to save the power source both from AC power and battery power. If you choose Battery Only, power saving function will only execute for battery pack.

- Power Savings
  Lets you choose one of four levels of power management.

  ➡ Diabled
    turns off the power management function.

  ➡ Customized
    alter these settings of power saving.

  ➡ Maximum Power Savings
    conserves the greatest amount of system power.

  ➡ Maximum Performance
    conserves power but allows the greatest system performance.

- Suspend Mode
  When the Power Switch is set to "Suspend/Resume", When you power off the notebook, it goes into "Suspend" or "Save to Disk" mode

➡ Save to Disk
The system will save its state to disk and power off.

➡ Suspend
The system will save its state but remain in a low power mode.

- Idle Mode
Turn on the Idle Mode can slow down the CPU during brief periods when the system is not busy for power saving.

- Standby Timeout
Lets you specify the amount of time before the system entering the Standby Mode. Standby Mode powers off various devices in the system, until you start using the computer again. You can choose Off, 1, 2, 4, 6, 8, 12, or 16 minutes in this field.

- Auto Suspend Timeout
Lets you specify the amount of time before the system entering the Suspend Mode. Suspend Mode powers off various devices in the system, except the memory component, until you start using the computer again. You can choose Off, 5, 10, 15, 20, 30, 40, or 60 minutes in this field.

- Auto Save To Disk
Lets you turn on or off the Auto Save To Disk feature. If you turn on it, the system will save its state to disk and then power off after being in Suspend mode for 1 hour.

- Hard Disk Timeout
Allows you to select the amount of time that your hard disk is not active before it shuts down. You can specify the amount of time as 1, 2, 4, 6, 8, 10, 15, 30, 45 minutes, or choose Disabled to inactive this feature.

- Video Timeout
  Allows you to select the amount of time that your input devices are not active before your video shuts down. You can specify the amount of time as 1, 2, 4, 6, 8, 10, 15, 30, 45 minutes, or choose Disabled to inactive this feature.

- Resume On Modem Ring
  Lets you specify On or Off to wake up the system or not, when an incoming call is detected on your modem. If the Suspend Mode field is set to Save To Disk, the Resume On Modem Ring field will not work.

- Resume On Time
  Lets you specify On or Off to wake the system up at a specific time or not. If the Suspend Mode field is set to Save To Disk, the Resume On Time field is disabled.

6.6   Using the Boot Setup

This item allows you to set the search drive sequence where the system will try to boot up first.

PhoenixBIOS Setup Utility		
	Boot	

	Item Specific Help
+Removable Devices +Hard Drive ATAPI CD-ROM Drive	Use <↑> or <↓> to select a device, then press <+> to move it up to the list, or <-> to move it down to the list. Press <ESC> to exit from this menu.

F1 Help	**↑ ↓ Select Item**	**- /+ Change Values**	**F9 Setup Defaults**
Esc Exit	**← → Select Menu**	**Enter Select ▶ Sub-Menu**	**F10 Save and Exit**

To select the boot device, you can use the up or down arrow key, then press <+> to move up the device in the list or press <-> to move down the device in the list. To exit from this menu, press <**Esc**>.

6.7   How to Exit the Setup Program

There are three choices to escape from the Setup program.

PhoenixBIOS Setup Utility	
	Exit
	Item Specific Help
Exit Saving Changes	Exit System Setup
Exit Discarding Changes	and save your
Load Setup Defaults	changes to CMOS.
Discard Changes	
Save Changes	
Battery Refresh	

F1	Help	↑ ↓ Select Item	- /+	Change Values	F9	Setup Defaults
Esc	Exit	← → Select Menu	Enter	Execute Command	F10	Save and Exit

- Exit Saving Changes
  This option saves all changes to CMOS while running the BIOS setup program and exit from the system setup program.

- Exit Discarding Changes
  This options allows you to discard all changes made while running the BIOS setup program and exit from the system setup program.

- Load Setup Defaults
  This option lets you load the default values for all setup items.

- Discard Changes
  Reverts to previously selected settings.

- Save Changes
Saves Setup data to CMOS.

- Battery Refresh
Conditions the battery so that the battery can be fully charged. The function applies to NiMH battery only.

6.8 How to Upgrade the BIOS

Your computer uses EPROM Flash BIOS chip that allows you to easily upgrade the BIOS program. When you update the BIOS, any customized settings you made are lost.

To upgrade the BIOS:

1. Insert the BIOS Update diskette into the diskette drive.

2. Power on the system with the diskette in the diskette drive.

3. On the DOS prompt, type the following command.

```
A:\>Phlash XXXXXX.ROM (BIOS filename)
```

4. Press <Enter> to run this BIOS utility. After the system has been successfully run this program, a message similar to the following appears:

```
Flash memory has been successfully programmed,
press any key to restart the system. If the
system does not restart, turn it off, then turn
on again.
```

5. Press any key to restart this system.

Contact your dealer for the latest BIOS update file.

7 Using Options
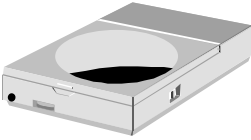
This chapter describes the most advanced features and expandable architecture in your notebook. With the optional internal modem and LAN module, you can easily execute each function only by connecting the cable to the modem or LAN port. You can also upgrade your memory size or configure the PortBar to your system for specific requirements.

7.1   LAN Module Option

This notebook comes with an optional internal 10Base-T/100Base-TX LAN module that connects your computer to other computers/networks through a local area network (LAN) and supports data transfer rates at 10Mbps and can be up to 100Mbps. The 10Base-T standard also called Twisted Pair Ethernet is connected with RJ-45 connectors. The 100Base-TX is based on the older Ethernet standard. Because it is 10 times faster than Ethernet, it is often referred to as Fast Ethernet.

CONNECTING THE INTERNAL LAN MODULE

The built-in LAN module provides a standard RJ-45 connector. We provide you a twisted-pair cable for your convenience.

To connect the twisted-pair cable to your LAN port:

1.   Locate the twisted-pair cable in the accessories box in notebook shipping carton. Each end of the cable has a RJ-45 connector.

2.   Connect one end of the cable into the network wall outlet or HUB.

3.   Connect the other end of the cable into the computer RJ-45 LAN port.

7.2   Modem Module Option

This notebook comes equipped with a 56K internal voice/fax/data modem that allows you to communicate with others via fax, email, or to connect to an online service or bulletin board. The modem module is available as an option.

CONNECTING THE INTERNAL MODEM

The built-in voice/fax/data modem provides on standard phone connector. We provide you one analog cable for your convenience.

To connect the analog phone cable to your modem:

1. Locate the analog phone cable in the accessories box in notebook shipping carton. Each end of the cable has a RJ-11 connector.

2. Connect one end of the cable into a standard wall outlet.

3. Connect the other end of the cable into the computer modem port.

☞ *The speed of data transmission is dependent on the quality of telephone lines. Digitally terminated lines improve the speed of data transmission. Contact your service provider for more information.*

☞ *The analog phone cable is an industry standard cable. Longer cables are available at your local electronics store.*

7.3   PortBar Option

This notebook system provides a PortBar option for your convenience to accommodate your necessity. Keep the PortBar connected to peripherals in your office while you take your notebook computer on the road.
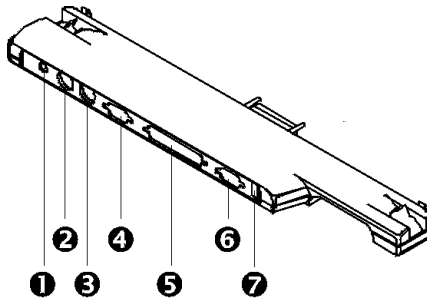
☞ *If the model you had purchased does not has the optional PortBar port, it is also not available for this PortBart option.*

FEATURES OF THE PORTBAR

The PortBar is an accessory that duplicates the ports found on the back of your notebook computer.

The ports on the PortBar are described as follows:

❶. AC Power Port   ❷. Mini-DIN PS/2 Mouse Port

❸. Mini-DIN PS/2 Keyboard Port   ❹. Serial Port

❺. Parallel Port   ❻. Monitor Port

❼. USB Port

PortBar

- AC Power Port
  Connects an AC adapter to your notebook computer.

- Mini-DIN PS/2 Mouse Port
  Connects to a PS/2 mouse.

- Mini-DIN PS/2 Keyboard Port
  Connects to a 6-pin standard PS/2-style keyboard.

- Serial Port
  Connects a serial device to your notebook computer, such as an external modem or mouse.

- Parallel Port
  Connects a printer to your notebook computer. You can change the LPT Mode in the BIOS Setup program.

- Monitor Port
  Connects an external VGA/SVGA monitor to your notebook computer.

- USB Port
 Connects up to 127 peripheral devices to your notebook computer.

CONNECTING THE PORTBAR TO YOUR SYSTEM

An optional PortBar was developed to work specifically with your notebook computer.

Follow these steps to install the optional PortBar:

1. Rotate the release bars to the outside.

2. Plug the PortBar into the expansion connector on the back of the notebook computer. Make sure that the PortBar firmly snaps into the PortBar latches on each side of the notebook computer.

3. Rotate the release bars to the center to lock.
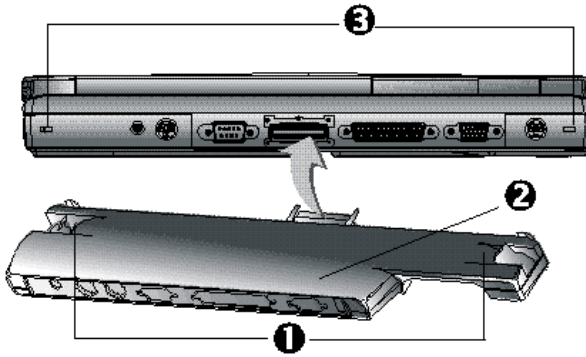
❶. Release bars   ❷. PortBar

❸. PortBar latches

Using PortBar

7.4 System Upgrade

This section provides an easy step in doing system upgrades for your notebook computer. The upgrade procedures includes the following:

MEMORY UPGRADE PROCEDURE

Your notebook computer offers two 64-bit memory slots using 144-pin SODIMM (Small Outline Dual Inline Memory Module) at least 32MB, 64MB and 128MB SDRAM. The memory compartment is located just under your computer.

| Based Memory	Installing Memory	Total
32 MB	0 MB	**32 MB**
32 MB	32 MB	**64 MB**
32 MB	64 MB	**96 MB**
32 MB	128 MB	**160 MB**
64 MB	0 MB	**64 MB**
64 MB	32 MB	**96 MB**
64 MB	64 MB	**128 MB**
64 MB	128 MB	**192 MB**
128 MB	0 MB	**128 MB**
128 MB	32 MB	**160 MB**
128 MB	64 MB	**192 MB**
128 MB	128 MB	**256 MB**

INSTALLING MEMORY MODULE

Your computer comes with standard 32 or 64MB of synchronous DRAM (SDRAM). You can increase system memory to a maximum of 256 MB in the system, by installing one small outline double inline memory modules (SO-DIMMs) with installed base memory in the system.

The 32MB memory module, 64MB memory module, and 128MB memory module are available:

To install the memory module:

1. Make sure the system is powered off and that no peripheral devices are attached.

2. Turn the system over and locate the screw that secure the DIMM door at the underside of the notebook.
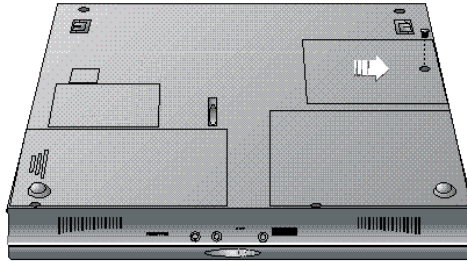
3. Remove the screw and open the DIMM cover by lifting its upper side.

4. Locate the alignment notch on the module.

5. Locate the memory module sockets. (Your system comes with one module already installed in the socket.)

☞ *Avoid touching the exposed components inside the system. Doing so may damage the system.*

6. Align the notch with the notch in the socket connector and insert the module as follows:
   - Hold the SO-DIMM at a 30-degree angle and align the SO-DIMM connector with the socket in the system. Push the connector into the socket.
   - Press down on the edge of the SO-DIMM until the locking tabs on the sides snap into place, securing the module.

7. Replace the DIMM door and secure the screw at the DIMM door.

8. Turn the system over.

To remove a SODIMM, press the locking tabs away from the sides of the module until the module pops up. Then, remove the SODIMM.

8   Caring for Your Notebook

Your Notebook PC is a fully IBM compatible portable personal computer with the latest features in mobile computing and multimedia technology. Lightweight and compact, your Notebook PC runs on a whole wide range of general business, personal productivity, and professional applications, it is ideal for use in the office, at home, and on the road.

Your Notebook PC also allows you for several levels of customization and expansion that are previously available only on desktop PCs.

8.1 Important Safety Instructions

Portable computers take the most beating from end users. This section gives you detailed information about how to maintain a safe working environment while using the notebook computer. You can maintain its condition and performance by following these guidelines. Please read it carefully to ensure maximum safety.

- Before cleaning the notebook computer, make sure it is disconnected from any external power supplies (i.e. AC adapter, car adapter and so on).

- When cleaning, do not use liquid or sprayed detergent for cleaning. Instead, use moisture sheet or a cloth for cleaning.

- The socket-outlet shall be installed near the notebook computer and shall be easily accessible.

- Please keep the notebook computer from humidity.

- Lay the notebook computer on a reliable surface when installing. A drop or fall may cause injury.

- The openings on the enclosure are for air convection hence the notebook computer can be protected from overheating. DO NOT COVER THE OPENINGS.

- Be careful of using power supply. The notebook computer has specific power requirements.

- Use only a power adapter approved for use with this notebook computer.

- The power adapter may have a 2-prong plug. This is an important safety feature. A compatible outlet is required. If it is not available, find a qualified electrician to install one.

- While unplugging the power cord, disconnect it by the plug head, not by its wire.

- Make sure the socket and any extension cords you may use can support the total current load of all the connected devices.

- Though your AC adapter is suitable for universal international voltage, it still requires a stable and continual power supply. Make sure the voltage of the power source when connect the notebook computer to the power outlet. If your are unsure of your local power specifications, consult your dealer or local power company.

- Place the power cord in such a way that people can not step on it. Do not place anything over the power cord.

- All cautions and warnings on the notebook computer should be noted.

- If the notebook computer is not in use for a long time, disconnect it from mains to avoid possible damage by transient over-voltage.

- Never pour any liquid into openings as this may cause fire or electrical shock.

- Never open the body of notebook computer. For safety reason, the notebook computer should only be opened by qualified service personnel.

- If one of the following situations arises, have the notebook computer checked by service personnel:

  ⇒ The power cord or plug is damaged.

  ⇒ Liquid has penetrated into the notebook computer.

  ⇒ The notebook computer has been exposed to moisture.

  ⇒ The notebook computer has not worked well or you can not get it work according to user's manual.

➥ The notebook computer has dropped and damaged.

➥ The notebook computer has obvious sign of breakage.

• Do not leave this notebook computer in an environment unconditioned. Storage temperature above 60℃ (140℉) may damage the notebook computer.

• An approved power cord has to be used for the notebook computer's power supply. For a rated current up to 6A and an equipment weight more than 3 kg, a power cord not lighter than H05VV-F, 2G, 0.75mm², has to be used.

• To avoid any damage happened to the internal device, you should first disconnect the AC adapter and remove the battery pack from the notebook when replacing any internal device.

The sound pressure level at the operators position according to IEC 60704-1 is equal or less than 70dB(A).

8.2   Cleaning Your Computer

When it is necessary to clean the plastic case and keyboard, use a soft, lint-free cloth, slightly dampened with a mild detergent solution or use the contents of any commercially available computer cleaning kit.

Never use alcohol, petroleum-based solvents, or harsh detergents to clean the notebook. Also never spray any liquids directly on the computer case, keyboard, or screen. If the liquid-crystal display (LCD) screen has become smeared or dusty, clean the screen by first applying a mild glass cleaner to a soft, clean, lint-free cloth, and gently wipe the glass. Never apply liquids

directly on the screen surface. Moreover, do not use paper towels to clean the display screen. Paper can scratch the display screen matte.

8.3   Maintaining the LCD Quality

When it comes to screen problems, heat plays a big part. After a good working session, the typical routine is to shut the machine and close the cover. But the display surface - no matter what type it is - and the components inside the computer radiates heat; when you close the cover, you trap the heat against the screen. Leave the computer's cover open for about ten minutes while the heat disperses. Make this a habit.

You should also enable the power management of your computer to turn off the LCD power and display when the system is in inactivity for some time. Adding screen savers is also acceptable.

Follow the safety guidelines mentioned earlier and how to clean your computer.

8.4   Maintaining Your Hard Disk

Losing your data has the same consequences as a system break down. Users must make it a habit of doing hard disk maintenance every week or so. Here is some maintenance you could do:

- Always back up your data files from your hard disk.

- Install a virus detecting program to monitor virus that could tamper your files.

- Use SCANDISK once in a while to correct any errors found in the directory and File Allocation Table (FAT). This will also free up space from any unused sectors.

- Never move or raise the computer while the hard disk is being accessed, most especially don't jar the hard disk as this may cause a hard disk crash.

- Use hard disk maintenance programs like DEFRAG or Norton Utilities SPEEDISK. These reorganize your hard disk by eliminating fragmentation and improving your hard disk access time.

- Install a system password in your computer so others won't be able to use the hard disk.

8.5   Battery Care Guidelines

The battery pack furnished with the computer requires reasonable care and handling to ensure efficient operation and maximum life. There is a risk of fire and chemical burn if the battery pack is handled improperly.

To ensure that the battery pack endures normal life cycle, always observe the following precautions when handling the battery pack:

- Handle batteries carefully. Do not try to disassemble, crush, puncture, open, drop, mutilate , short external contacts, disposed of in water or fire, or expose it to temperatures higher than 60 C.

- Recharge batteries only as described in this manual and only in ventilated areas. Never use an external charger other than the one supplied with your computer.

- Do not leave batteries in hot locations for more than a day or two.

- Do not leave your battery in your computer for longer than a week without plugging in the power adapter.

- Do not leave battery in storage for more than 6 months without recharging it.

- Dispose dead battery properly to protect the environment. The batteries contain hazardous chemicals and should not be thrown out with household or office trash.

- Discharge completely the battery before recharging to improve battery performance.

8.6   When You Travel

For safety and convenience when traveling, please follow these instructions:

- Back up all needed files on your hard disk before traveling.

- Recharge your battery overnight to ensure full battery power before you leave.

- Don't forget to bring along the AC adapter and extra battery pack.

- Try to bring backup software as well.

- Check the voltage rating and the outlet type of your destination. If the power cord of the adapter is different, then you need to purchase a suitable one. Consult your dealer.

- Carry your computer in its carrying case or in a briefcase. Never check-in the computer as a luggage.

- Remember to apply those power saving features and techniques to save battery power.

APPENDIX A
Hardware System Information
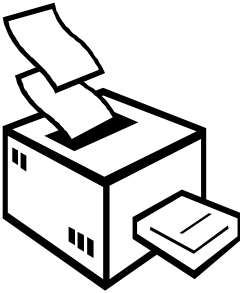
This appendix gives information on the technical and hardware specifications of your computer. Please note that the information mentioned here may not be exactly the same with your computer as specification is subject to change without notice or modifying this manual.

Designed with an advanced modular architecture, your Notebook PC also allows you for several levels of customization and expansion that are previously available only on desktop PCs.

A.1 System Specification

PROCESSOR UNIT

- Intel Pentium !!!/Celeron FC-PGA Socket 370

- Supports CPU clock speed above 500MHz

- 256KB integrated L2 cache for Pentium !!!/ 128KB integrated L2 cache for Celeron

SYSTEM MEMORY

- Two 64-bit 144-pin memory slots

- User-upgradable to maximum 256MB using 144-pin SODIMM 32MB, 64MB, and 128MB module

- PC100 SDRAM modules

LCD DISPLAY

- XGA (1024x768) or SVGA (800x600) Color LCD

- Maximum 32 bit true colors on all LCD display

VGA SYSTEM

- 32-bit AGP Local Bus VGA Accelerator (32-bit internal)

- Includes Zoomed Video (ZV) Port Technology for supporting ZV PCMCIA cards

- Simultaneous LCD and external monitor (CRT) display

- Maximum 16 million colors on CRT only display at 800x600 resolution (Non-Interlaced)

- Maximum 1024x768 resolution on CRT display at 16M colors

DISK DRIVES

- 32-bit PCI Enhanced IDE interface with LBA mode

- 24X-speed Enhanced IDE bootable CD-ROM drive module

- Built-in and upgradable 2.5-inch IDE hard drive

- Optional DVD-ROM drive that can be swapped with CD-ROM

AUDIO SYSTEM

- Full-duplex 16-bit stereo audio with wavetable support and Plug-and-Play features

- H/W Audio Sound Blaster 16 compatible

- Built-in dual speakers

- Integrated full-duplex microphone

- Audio input jacks for microphone (MIC) and stereo device (Line-In)

- Audio output jack for external speaker or headphone (Line-Out)

- Earphone or headphone jack for audio output

- Built-in Thumb Wheel Volume Control

PCMCIA

- 32-bit CardBus PCI Local Bus PCMCIA controller

- Double-deck PCMCIA slots supports 2 x Type II PC card at the same time or 1 x Type III PC Card

- Supports Zoomed Video (ZV) Cards, 32-bit Cardbus Cards, and 16-bit PC Cards

GLIDE PAD

- Integrated Glide Pad (PS/2 mouse) pointing device with palm-rest typing surface

KEYBOARD

- Full-sized 86/87-keys keyboard with Windows 95/98 hot-keys, inverted T-cursor keys, 12 function keys, and embedded numeric keypad

- Provides international language keyboard

FLASH BIOS

- 512K Flash ROM BIOS for easy BIOS upgrade

I/O PORTS

- 2 x Universal Serial Bus (USB)

- 1 x 9-pin RS-232 Serial (COM1)

- 1 x 25-pin Parallel (LPT1)

- 1 x 15-pin VGA (CRT)

- 1 x S-Video TV port

- 1 x PS/2

INFRARED PORT (OPTIONAL)

- 1 x SIR port at 115.2Kbps

AC/DC POWER SUPPLY ADAPTER

- Universal auto-switching 65W (100V~240V) adapter

BATTERY

- Rechargeable 8 Cells NiMH or Li-ion battery pack with Smart Battery function

- Over 2 hours of usage (when run Battery Mark2.0 diagnostic program)

- 2.5 ~ 3.5 hours quick charge (computer turn off)

WEIGHT AND DIMENSION

- 12" (W) x 9.8" (D) x 1.5" (H)

- 6.6 lbs (Max Target)

A.2   IRQ Usage Summary

IRQ#	Description
IRQ 0	System Timer
IRQ 1	Keyboard
IRQ 2	[Cascade]
IRQ 3	Lan/Modem
IRQ 4	Serial Port 1

IRQ 5	Audio/VGA/USB
IRQ 6	Floppy Disk Drive
IRQ 7	Parallel Port
IRQ 8	RTC Alarm
IRQ 9	ACPI
IRQ10	LAN/MODEM
IRQ11	Reserved for PCMCIA card
IRQ12	PS/2 Mouse
IRQ13	FPU
IRQ14	Hard Disk Drive/LS120
IRQ15	CD-ROM or DVD

A.3   DMA Channel Usage Summary

ISA DMA Map:

DMA Channel	Device
DMA 0	Unused
DMA 1	ECP
DMA 2	Floppy Disk

DMA 3	AUDIO
DMA 4	[Cascade]
DMA 5	Unused
DMA 6	Unused
DMA 7	Unused