

Appendix C

User Manual

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This device has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This device generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with instructions, may cause interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, which can be determined by turning the device off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the device and receiver.
- Connect the device into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

ABOUT THIS MANUAL

Notice: Shielded Cables

All connections to other computing devices must be made using shielded cables to maintain compliance with FCC regulations.

Notice: Peripheral Devices

Only peripherals (input/output devices, terminals, printers, etc.) certified to comply with Class B limits may be attached to this equipment. Operation with non-certified peripherals is likely to result in interference to radio and TV reception.

Notice: CD-ROM

The CD-ROM is a Class One Laser Product.

Notice: Canadian Users

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Caution

Changes or modifications not expressly approved by the manufacturer may void the user's authority, which is granted by the Federal Communications Commission, to operate this computer.

Use Conditions

This part complies with Part 15 of the FCC Rules. Operation is subject to the following conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



Notebook Computer

ABOUT THIS MANUAL

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Notebook Computer User's Guide
First Edition: May, 1998

This manual is designed to assist you in setting up and using your new notebook computer. Information in this document has been carefully checked for accuracy. However, no guarantee is given as to the correctness of the contents.

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1

Introduction to the Notebook Computer

1.A Introducing the Computer

This computer is a lightweight, compact, and fully IBM compatible computer, featuring the latest in portable computing technology. Designed for a wide range of general business and personal productivity applications, this computer makes an ideal choice for use in the office, the schoolroom, at home, and/or on the road. Standard features include a powerful Pentium microprocessor, fast PCI-bus VGA graphics, a high performance hard disk drive, a high density floppy disk drive, a powerful high-speed CD-ROM disk drive, support for PCMCIA cards and devices, support for FIR (IrDA Compatible), a built-in Glide Pad, and advanced power management capabilities to prolong battery power.

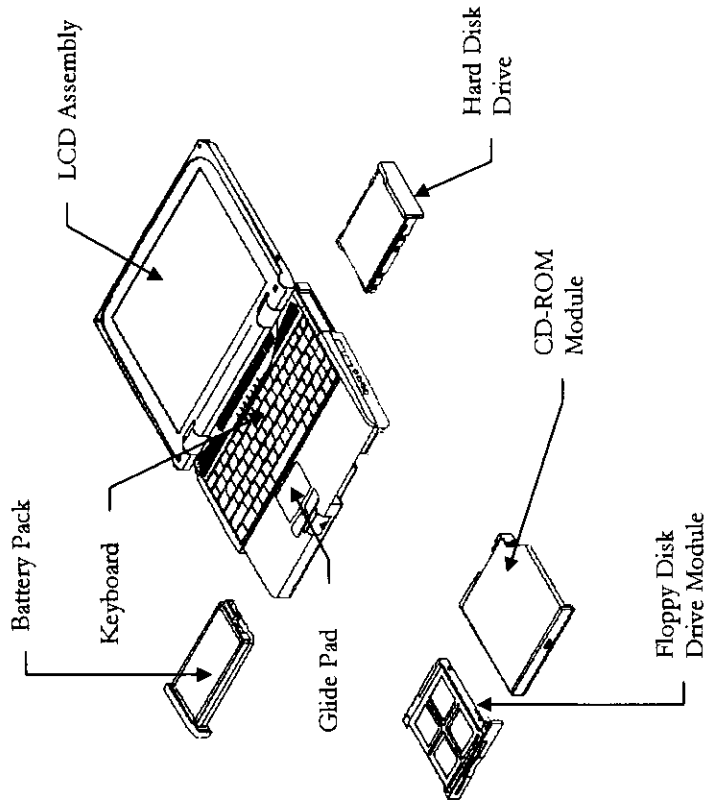


Figure 1-1: Your Notebook Computer

1.B Features of the Computer

This notebook computer includes a variety of innovative features designed to meet the most demanding computer requirements:

- A powerful Intel Pentium microprocessor, with 512 KB on board cache and math coprocessor, supporting suspend and resume capabilities under several different operating systems.
- A flexible and field-upgradeable memory architecture supporting up to 128 MB of SDRAM.
- Two PCMCIA expansion sockets which can accommodate one Type III or two Type I/II PC cards.
- A detachable and rechargeable Lithium-Ion (Li-Ion) or NiMH battery pack.
- A PCI-bus video accelerator driving a color LCD display panel, with a wide viewing area for high resolution VGA compatibility.
- A wide range of I/O (Input/Output) ports including: a serial and parallel device, an external keyboard and PS/2 mouse port, an analog monitor, a wireless IR (Infrared) communication port, jacks for a microphone and stereo audio input/output, a headphone output, a USB port, and an optional Fax/Modem jack.
- A large integrated Glide Pad, ergonomically placed to facilitate left or right handed use with today's graphical user interfaces.
- Advanced power management capabilities which conserve 90-95% of battery power by automatically shutting down inactive peripheral devices and system components.

- An optional CD-ROM drive, compatible with all major data formats and music CDs.
- A 1.44 MB, 3.5" Floppy Disk drive.
- An integrated audio system, compatible with Sound Blaster, with audio input and output ports, a built-in microphone and stereo speakers.

1.C Unpacking the Computer

Your computer comes securely packaged in a sturdy cardboard shipping carton. Upon receiving your computer, open the carton and carefully remove the contents. In addition to this User's Manual, the shipping carton should also contain the following items:

- The Notebook Computer
- An AC Adapter and AC Power Cord
- Li-Ion/NiMH Battery Pack(s)
- Utility Diskettes
- User's Manual

Carefully inspect each component to make sure that nothing is missing and/or damaged. If any of these items are missing or damaged, notify your dealer immediately. Be sure to save the shipping materials and the carton in case you need to ship the computer or if you plan to store the computer away sometime in the future.

1.D Using the AC Adapter

The computer can be powered by either the rechargeable battery pack or the included AC adapter. You will find detailed instructions on using both power sources in the next chapter. Follow the steps below to prepare the battery pack and to attach the AC adapter.

Although the battery is fully charged when shipped from the factory, transit and shelf time would likely have reduced its charge. Before using the computer for the first time, you should recharge the battery pack by attaching the AC adapter, as follows:

1. Insert the battery into the battery bay with the label facing up.
2. Connect the DC power cable from the AC adapter to the AC adapter plug beside the PCMCIA slot of the computer, as illustrated in Figure 1-2 on the next page. Be sure to always handle the adapter cords by the plugs only.
3. Plug the AC power cord into the end of the AC adapter.
4. Connect the male end of the AC power cord to an electrical outlet.

When you have connected the AC adapter to the computer and to an electrical outlet, this connection will now supply all of the power needed to run the computer and will also recharge the battery. To preserve the battery's charge under normal use, you should use the AC adapter to power the computer whenever you have access to an electrical outlet (proper voltage).

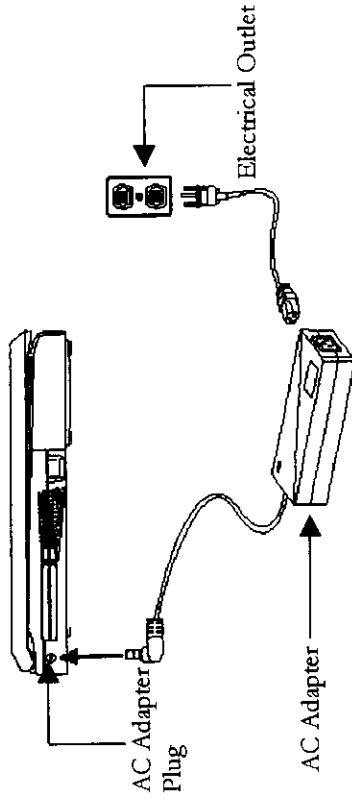


Figure 1-2: Using the AC Adapter

Warning: Use only the AC adapter that came with your computer. Adapters for other electronic devices (including other notebook computers) may look similar, but could damage your computer if used.

1.E Starting the Computer

Once you have connected the AC adapter, you are now ready to turn on the computer. Follow the steps below to begin using your new computer:

- If you have not done so, press the release latch on the front of the computer and raise the LCD panel to a comfortable viewing angle.
- To power on the system, firmly press the power switch located on the left side of the computer (see Figure 1-3 on the next page). You will then see the power indicator LED light up.

After a few seconds, the computer will begin to execute an internal diagnostic program that is automatically ran whenever the computer is turned on. The Power-On-Self-Test (or POST) checks the memory, the keyboard, the system board, and other components of your computer before the computer begins normal operation.

⚠ Warning: Never turn off or reset the computer while a disk drive is in use; doing so can result in the loss of or in the destruction of all data. Also, always wait at least five (5) seconds after turning off the computer before turning it back on; turning the power on and off in rapid succession could damage the computer's electrical circuitry. If the computer does not power on, press the hardware reset switch and then press the power switch again. This additional step may sometimes be necessary with fresh battery packs or if the system has been idle for a very long period of time.

Battery Pack Bay

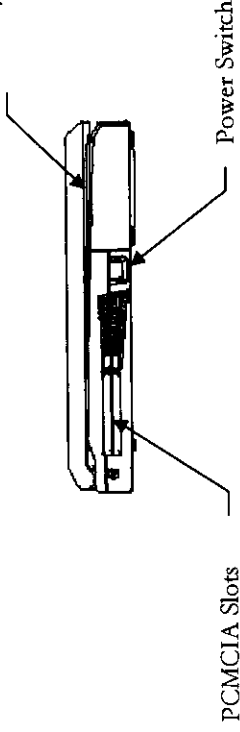


Figure 1-3: The Power (On/Off) Switch

1.F Using the Indicator Lights

The computer is equipped with a set of LED indicators located above the keyboard, which will inform you of the current operating status of your computer at a glance. The status indicators are illustrated and described below:



Standby

This LED informs you that the system has gone into the Standby mode. To awake the system, hit any key.



Suspend

This LED informs you that the system has entered into the Suspend mode. To awake the system, push the Power On/Off switch.



NumLock

This LED informs you that the keyboard number lock function is engaged. When lit, the keyboard's embedded keypad is engaged.



Cap Lock

This LED informs you that the keyboard caps lock function is engaged. When lit, the characters are entered in the upper case.



Battery Charge

This LED informs you that the computer is charging the battery when lit. If off, the battery has been fully charged.

Note: If the computer has been left unused for a prolonged period of time, it is possible for the battery to become completely discharged. In such cases, it is necessary to connect the computer to the AC adapter for approximately thirty (30) minutes before the battery will begin to recharge normally.



Hard Disk Drive

This LED informs you that the hard disk is being accessed. If this LED is on, it is advisable not to move the notebook or attempt to turn the notebook off. Turning off the notebook when this LED is on could result in loss of data or the destruction of your hard disk drive.



Media Access

This LED informs you that the computer is reading or writing to the system's media bay drives (floppy or CD-ROM).



Power On

This LED informs you that the computer is powered on when lit and is located on the right hinge cover. When the battery is running critically low, the LED will blink and the computer will emit an intermittent audible beep. You should consider this condition as a warning. Please save your data immediately and prepare an alternative power source (use an AC outlet or install a fresh battery pack).

1.G Environmental Specifications

This section provides information on the optimum operating environment for your notebook computer.

Temperature

Operating: 41° to 95°F
(5° to 35°C)

Storage: 14° to 140°F
(-20° to 60°C)

Relative Humidity (Noncondensing)

Operating: 20% to 80%

Storage: 10% to 90%

Shock

Operating:

Impact Accelerator: 1g/10g Based on half sine-wave shock pulses of 11 Msec.

Number of Shocks: 3 Shocks for each of the six faces

Direction of Movement: Six Faces

Storage:

Impact Accelerator: 10g, 20g, 30g, 40g, 50g based on half sine-wave shock pulses of 11 Msec.

Number of Shocks: 3 Shocks for each of the six faces.

Direction of Movement: Six Faces

Vibration

Operating:

Direction of Movement:

Vibration Level:

Duration Time:

X, Y, Z Axis
5 ~ 500 ~ 5 Hz
0.5g Acceleration
60 mins for each Axis

Storage:

Direction of Movement:

Vibration Level:

Duration Time:

X, Y, Z Axis
5 ~ 500 ~ 5 Hz
2g Acceleration
60 mins for each Axis

1.H Safety Precautions

Follow all warnings and instructions that may be marked on the computer.

Except as described elsewhere in this manual, refer all servicing to qualified personnel.

Immediately shut off the computer and refer to servicing if any of the following conditions occur:

- when the power cord or plug has become damaged or frayed.
- if liquid has been spilled onto the computer.
- if the computer has been dropped or if the cabinet has been damaged.

Never push objects of any kind into cabinet openings. They may contact dangerous voltage points or will short out parts that could result in fire or cause electrical shock.

Keep all liquids away from the computer and its accessories.

Turn off the computer before installing or removing a peripheral device.

Turn off the computer and disconnect the AC adapter before cleaning.

1.I Using the Computer

Never pick up or carry the computer by the display.

Never use the computer in harsh environments where it could be subjected to rapid temperature changes and/or excessive dust.

Never expose the computer to excessive vibration.

Never expose the hard disk drive or floppy disk(s) to strong magnetic fields, such as those generated by audio system speakers, telephone handsets, or hand-held metal detectors.

To avoid overheating the computer, never place anything over the top of the computer when it is operating or recharging the battery.

Before moving an active computer, set the computer into any of the systems suspend modes (Standby, 5 Volt Suspend, or 0 Volt Suspend) and close the display (refer to the Suspend Mode in the next chapter).

Do not try to force the display beyond its fully opened position (about 180 degrees).

1.J Power Saving Modes

Your computer offers several options for you to extend your battery life while you are not actively using your computer. These options turn off different sections of the computer that are not currently being used.

These options are listed in the POWER MANAGEMENT page of the System Setup screen (accessed during boot up). They are described below:

Power Management

This option sets when you want the selected time-outs to take effect.

- ALWAYS ON: Enables the time-out settings regardless of whether the computer is on AC or battery power.
- BATTERY ONLY: Only enables the time-outs when the computer is running off of the battery power.
- DISABLED: Disables all power time out settings.

Power Management Mode

This option selects the Power Management Mode. Choosing modes changes the system power management settings. Maximum Battery Life conserves the greatest amount of system power, while Maximum Performance conserves power, but allows greatest system performance.

Standby Time-out

The amount of time the computer needs to be idle before the computer enters Standby mode.

Auto Suspend Time-out

The amount of time the computer needs to be in Standby Mode before the computer enters the Suspend mode.

Suspend Mode

This option gives you the choice of selecting the Suspend mode you want to use. The choices are: 5 Volt Suspend (Suspend to RAM), or 0 Volt Suspend (Suspend to Disk).

Hard Disk Timeout

The amount of time the computers hard disk needs to be idle before the hard disk will spin down the motor.

Note: If the "Auto Insert Notification" option is enabled in the CD-ROM setting, the computer will not time out on any power management time-outs because Windows 95 will constantly be actively looking for a new CD to be inserted. This option is set to a default of "disabled" by the factory. The computer will not enter any of the power management time-out modes if the hard disk drive, CD-ROM, or floppy disk drive is active.

Display Time-out

The amount of time the computer video display needs to be idle before the video display is powered down.

Battery Low Suspend

This option allows the user to enable or disable the transfer to Suspend Mode if the battery enters a low power condition.

Resume On Modem Ring

This option allows the user to enable or disable the system to resume if there is a modem ring.

Resume On Alarm

This option allows the user to enable or disable the system to resume after an alarm (RTC) is sent to the computer.

Alarm Time

This option sets the time that the computer resumes by the RTC alarm.

1.K Suspend Mode

Suspend mode is the lowest power consumption level that your computer can sustain. There are two different suspend modes available for your computer. One is the **5 Volt Suspend** and the other is **0 Volt Suspend**. As a default your system is set to **5 Volt Suspend** at the factory. You can change the program for the computer by accessing the **Suspend Mode** utility in the Setup Program.

5 Volt Suspend (Suspend-to-RAM)

When the computer enters **5 Volt Suspend**, an audible beep will sound, and the present state of the computer is stored in RAM. All but a few essential components of the computer will then power down. Pressing **power button** will allow the computer to return to exactly the same position it was in before suspend mode was activated. You can use **5 Volt Suspend** when you want to take a break from your computing, but plan to resume after a short interval. Operation will resume almost immediately after pressing the power button.

0 Volt Suspend (Suspend-to-Disk)

When the computer enters **0 Volt Suspend**, an audible beep will sound, and the system will save all running applications to the hard disk drive. The computer will then automatically turn off. When you next turn on the computer, it will read the suspend-to-file section and return all data to memory, so that your computer is returned to the exact state it was in before the suspend mode.


0 Volt Suspend is a very useful feature as people frequently open many applications and then have them iconized on the Windows screen. It will take some time for all of these applications to be opened and begin running. Normally they will all have to be closed before the system can be turned off. If you use the **0 Volt Suspend** feature, you won't need to close applications because the


system status will all be saved to disk. When you next turn on the computer, your Windows screen, with all applications open, will be recreated in just a few minutes.

Entering Suspend Mode

Suspend mode can be activated in any of the following ways:

- By pressing **Fn + F2** - Standby Mode, **Fn + F3** - Suspend Mode, or **Fn + F4** - Suspend to Disk.
- By setting either the *Standby Suspend*, the *5V Suspend*, or the *0V Suspend* option in the Setup Program to automatically suspend after a certain period of computer inactivity.
- By closing the cover.
- By low battery voltage.

 **Note:** Your computer will not enter the Suspend To Disk mode if the Suspend-to-disk partition file is missing or if it is the incorrect size. Refer to Chapter 2, *Adding Memory* section for further information.

 **Note:** In Windows 98, either you press **Fn + F2** or **Fn + F3** the system will enter the Suspend To RAM mode only.

Resuming from Suspend Mode

Normally, resuming from a suspend mode is triggered as follows:

- By turning on the power switch.
- If 5 Volt Suspend is active, by pressing the power button.
- If 0 Volt Suspend is active, by pressing the power button.
- If the suspend state was caused by the battery capacity dropping below a certain level, operation can be resumed only after AC

power is connected or a charged battery installed, and then only by the power switch.

When a resume event occurs, the system returns to where it was when suspend mode was entered (e.g. software applications open, the display reappears, etc).

1.1 Securing the Computer

Your computer comes with a Kensington® Lock notch. To secure your computer, follow the steps listed below:

Wrap the cable of a portable computer Kensington security lock around a table, desk, drawer handle, or any immovable object.

1. Locate the Kensington lock icon at the right rear of the computer and insert the lock into the notch.
2. Turn the key to secure the lock.
3. Remove the key from the lock.

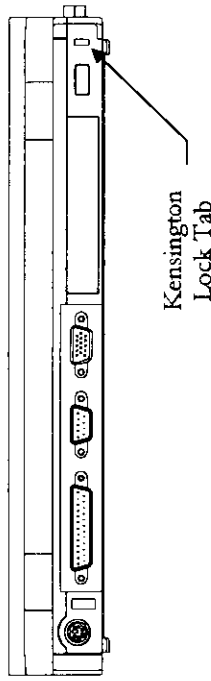


Figure 1-4: Kensington Lock Tab location

2

Getting Started

2.A 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 so as to change the system configuration information (e.g. the current date and time, or your hard disk drive type). The Setup program is stored in the Read-Only Memory (ROM), and can be accessed when you boot up the system. The Setup program is accessed by pressing the **F2** function key after powering on the Computer.

The settings that you specify within the Setup program are recorded in a special area of memory called the **CMOS RAM**. This memory is backed up by a battery so that it 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.

The Setup program allows you easy access to a variety of configurable options. At this point, however, you need only be concerned with the standard configuration ("Main") options on page 1 of the Setup program. Once you have the computer up and running, you will want to refer to the next chapter for a discussion of the Setup program's power management and other configuration options.

To enter the Setup program, press the **F2** function key when the following prompt appears:

Press <F2> to enter SETUP

This will display the first page of the Setup menu, which is illustrated below in Table 2-1.

Main Menu

PhoenixBIOS Setup Utility			
Main	Advanced	Security	Power Saving
		Boot	Exit
System Time:	[15:26:49]	Item Specific Help <Tab>, <Shift-Tab>, or <Enter> selects field.	
System Date:	[04/20/1998]		
Diskette A:	[1.44/1.25 MB, 3 1/2"]		
Internal HDD	[2161MB]		
Internal CD-ROM	[None]		
Boot Display Device	[Both]		
System Memory	640 KB		
Extended Memory	15360 KB		
CPU Type	Pentium with MMX		
CPU Speed	166 MHz		
BIOS Version	2.0D-0001-5111		
Help	Select item	Change Values	Setup Defaults
Exit	Select menu	Select > Sub-Menu	Save and Exit

Table 2-1: BIOS Setup Main Menu

Note: If you do not press the **F2** key at the correct time and the system attempts to boot, an error message may be displayed (such as "Missing operating system"). There is no cause for alarm. Simply, press **CTRL+ALT+DEL** to reset the system, and then, at the appropriate time, press **F2** to enter BIOS Setup.

- **Item Specific Help**

The right side of the screen. This area describes each parameter and its available settings.

- **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.

The Main settings page of the Setup program allows you to change the following information:

System Time

This option allows you to change the system time using the format **hour:minute:second**. You can change the system date here and/or from your operating system command prompt.

System Date

This option allows you to change the system date using the format **month, day, year**. You can change the system date here and/or from your operating system's command prompt

Diskette A

This option allows you to specify the type of floppy disk drive mounted inside your computer. The selections are:[ATAPI FLOPPY DISK], [1.44/1.25 MB, 3 1/2"], [720 KB, 3 1/2"], and

[Disabled]. The computer comes equipped with a 3.5", 1.44 MB floppy disk drive module. Default is [1.44/1.25, 3 1/2"].

Internal HDD

This option has its own option menu window. Setting this option to [Auto] will automatically detect and configure the hard disk drive type for drives that comply with ANSI specifications.

If type [User] is selected, you will then have to insert the proper Cylinders, Heads, and Sectors parameters into the appropriate selections. If type [1-39] is selected, the user will select the pre-determined type of hard disk drive installed. If type [CD-ROM] is selected, a CD-ROM is installed here. If type [ATAPI Removable] is selected, an ATAPI removable disk is installed here. The default is [Auto].

The next setting on this page is the **32 Bit I/O**. This setting enables or disables the 32 bit IDE data transfers. The default is [Disabled].

Internal CD-ROM

This field reports whether there is a CD-ROM installed or not. The default is [None].

Boot Display Device

This option allows you to select the display device the system boots to if both a CRT and a LCD are available. If only the CRT is available, the system always boots to the CRT. If only the LCD is available, the system always boots to the LCD. The selections are: [Both], [CRT], or [LCD]. The default is [Both].

System Memory

This field reports the amount of base (or conventional) memory found by the BIOS during its POST. The value will not exceed 640 KB.

Extended Memory

This field reports the amount of extended memory found by the BIOS during its POST. The value displayed is the amount of memory located (above 1 MB) in the microprocessor's memory address map.

CPU Type

This field reports the type of CPU used in the notebook computer.

CPU Speed

This field reports the speed of the CPU used in the notebook computer.

BIOS Version

This field reports the present version level of the installed BIOS.

Advanced Menu

PhoenixBIOS Setup Utility					
Main	Advanced	Security	Power Saving	Boot	Exit
PS/2 Mouse	[Enabled]				Item Specific Help
Plug & Play O/S:	[Yes]				'Disabled' prevents any installed PS/2 mouse from functioning, but frees up IRQ 12.
Secured Setup Configurations	[No]				'Enabled' allows the operating system to determine whether to enable or disable the mouse.
▶ I/O Device Configuration					
▶ Audio Options Menu					
Help	Select Item	Change Values	Setup Defaults		
Exit	Select menu	Select > Sub-Menu	Save and Exit		

Table 2-2: BIOS Setup Advanced Menu

⚠ Setup Warning: Setting items on this menu to incorrect values may cause your system to malfunction.

PS/2 Mouse

Selecting [Disabled] prevents any installed PS/2 mouse from functioning, but will free up IRQ 12. Selecting [Enabled] allows the OS to determine whether to enable or disable the mouse. The default is [Enabled].

Plug & Play O/S

Select [Yes] if you are using a Plug & Play capable operating system. Select [No] if you need the BIOS to configure non-boot devices for non Plug & Play operation system, such as DOS. The default is [Yes].

Secured Setup Configurations

Select [Yes] if you want the system settings to be secured from change by a Plug & Play operating system. The default is [No].

I/O Device Configuration

This option has its own option menu window. This menu page allows you to configure the port allocations:

Serial Port A

Configure the Serial Port A using the following options:

[Disabled] -- No Configuration
[Enabled] -- User configuration
[Auto] -- The BIOS or OS chooses the configuration
[OS Controlled] -- OS configuration

The default for this option is [Auto].

Serial Port B

Configure the Serial Port B using the following options:

[Disabled] -- No Configuration
[Enabled] -- User configuration
[Auto] -- The BIOS or OS chooses the configuration
[OS Controlled] -- OS configuration

The default for this option is [Disabled].

For option "Mode", it sets the mode for Serial Port B. The default is [Normal].

Parallel Port

Configure the Parallel Port using the following options:

[Disabled] -- No Configuration
[Enabled] -- User configuration
[Auto] -- The BIOS or OS chooses the configuration
[OS Controlled] -- OS configuration

The default for this option is [Auto].

For option "Mode", it sets the mode for the parallel port using the following options:

[ECP]
[Output only]
[Bi-directional]

The default for this option is [Output only].

Floppy disk controller

Configure the floppy disk controller using the following options:

[Disabled] -- No Configuration
[Enabled] -- User configuration

The default for this option is [Enabled].

Audio Options Menu

This option also has its own option menu window. This menu page allows you to configure the audio allocations:

- **Sound**
Configure the Sound device using the following options:

[Disabled] -- No Configuration
[Enabled] -- User configuration
[Auto] -- The BIOS or OS chooses the configuration
[OS Controlled] -- OS configuration

The default for this option is [Auto].

- **Modem**

Configure the Modem device using the following options:

[Disabled] -- No Configuration
[Enabled] -- User configuration

The default for this option is [Disabled].

Security Menu

PhoenixBIOS Setup Utility	
Main	Advanced
Security	Power Saving
Boot	Exit
Set User Password: Set Supervisor Password:	[Enter] [Enter]
Password on boot: Fixed disk boot sector: Diskette Access:	[Disabled] [Normal] [Supervisor]
Item Specific Help	Supervisor Password controls access to the setup utility.

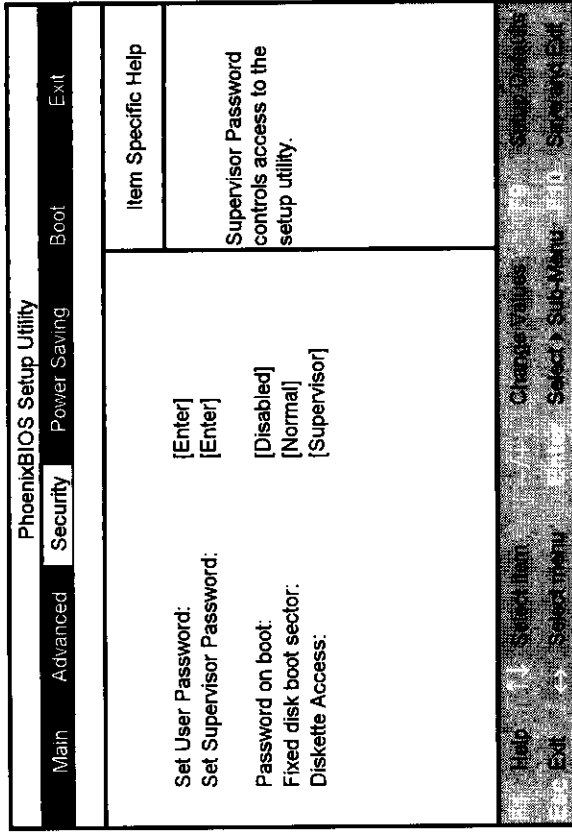


Table 2-3: BIOS Setup Security Menu

Set User Password

This selection allows you to choose whether the system will require a password to be entered on boot for a user. You will choose "Enabled" if you want a password, and "Disabled" if you do not want a password. The default is [Disabled].

Set Supervisor Password

Press <Enter> to set a password. Type the desired password, press **Enter** and type it again. The system will now require the password to enter the Setup Utility. To remove the password when the password is enabled, press **Enter** twice without typing any password in between the blanks. After setting a password the "**User Password**" will then become enabled. The default is [Disabled].

Password on Boot

This option "Enables" or "Disables" password entry onto the boot, if the User or Supervisor Password is set up. The default is [Disabled.]

Fixed Disk Boot Sector

If set to Write protect, the hard disk boot sector will be protected from viruses that effect the hard disk drive boot sector (the most damaging type). This also prevents accidental formatting of the hard disk drive. If set to normal, the entire hard disk is accessible. The default is [Normal].

Diskette Access

If set to [Supervisor], a user without the Supervisor Password will not have read or write access to the floppy disk drive. If set to [User], the user and the supervisor will both have access right. The default is [Supervisor].

Power Saving Menu

PhoenixBIOS Setup Utility					
Main	Advanced	Security	Power Saving	Boot	Exit
Power Management Function: Power Savings Level:		[Battery only] [Maximum Power Savings]		Item Specific Help	
Standby Timeout:		[1 Minute]		Select Power Management function base on the system power source. Choosing Always On enables power management function in both AC power and battery power while	
Suspend Timeout		[15 Minutes]		Battery Only enables power management function only in battery power. Choosing Off, disables all Power Management Timeout.	
Suspend Mode:		[Suspend]			
Auto Save to Disk:		[Off]			
Hard Disk Timeout:		[1 Minute]			
Video Timeout:		[Disabled]			
Battery Low Suspend:		[On]			
Resume on Modern Ring:		[On]			
Resume on Time:		[On]			
Resume Time		[00:00:00]			
Help	Select Item	Change Values	Setup Defaults		
Exit	Select menu	Select > Sub-Menu	Save and Exit		

Table 2-4: BIOS Setup Power Saving Menu

Power Management Function

This selection allows you to select the Power Management Mode.

Choose "Disabled" to turn off Power Management.

Choose "Battery Only" to turn off Power Management only while connected to AC power, but will turn on Power Management while on battery power.

Choose "Always" to turn on Power Management all the time.

The default is [Battery Only].

Power Savings Level

Select the Power Management mode. Choosing modes will change the system power management settings.

[Maximum Power Savings] -- conserves the greatest amount of system power.

[Maximum Performance] -- conserves power but allows the greatest system performance.

[Customize] -- allows the user to alter these settings.

[Disabled] -- allows the user to turn off Power Management.

The default is [Maximum Power Savings].

Standby Timeout

This selection allows you to choose the length of time the system will be idle before entering the Standby Mode. Standby Mode turns off various devices in the system (including the screen) until you start using the computer again. The default is [1 min].

Suspend Timeout

This selection allows you to choose the length of time the system will be in the Standby mode before entering the Suspend Mode. Suspend Mode will turn off all devices and store all data until you press the Power On/Off switch. It will then restore the system to the last working condition. The default is [5 min].

Suspend Mode

Selects the type of Suspend Mode.

If you choose **[Save-to-Disk]** the system will save its state to disk and power off.

If you choose **[Suspend]** the system will save its state, but remain in a low power mode.

If you choose **[Suspend]** then you also have the option of choosing **[Save-to-Disk]**.

The default is [5 min].

Auto Save to disk

Turn **[On]** or **[Off]** the Auto Save To Disk feature. When Auto Save To Disk is turned on, the system will save its state to disk and then power off after being in Suspend mode for a period of time.

Hard Disk Timeout

The length of time the hard disk is inactive before the hard disk is put into the Power Savings Mode. The default is [1 Minute].

Video Timeout

The length of time the user input devices need to be inactive before the screen is put into the Power Savings Mode. The default is [15 Minutes].

Battery Low Suspend

By selecting **[On]** the system will enter the Suspend Mode upon a battery low condition. Selecting **[Off]** the system will not enter the Suspend Mode upon a battery low condition. The default is **[On]**.

Resume on Modem Ring

Turning this feature "On" will wake the system up when an incoming call is detected on your modem or fax. If **[Suspend Mode]** is supported on this machine, Resume on Ring will not work if Suspend Mode is set to **[Save-To-Disk]**. The default is **[Off]**.

Power Savings Level

Select the Power Management mode. Choosing modes will change the system power management settings.

[Maximum Power Savings] -- conserves the greatest amount of system power.

[Maximum Performance] -- conserves power but allows the greatest system performance.

[Customize] -- allows the user to alter these settings.

[Disabled] -- allows the user to turn off Power Management.

The default is [Maximum Power Savings].

Standby Timeout

This selection allows you to choose the length of time the system will be idle before entering the Standby Mode. Standby Mode turns off various devices in the system (including the screen) until you start using the computer again. The default is [1 min].

Suspend Timeout

This selection allows you to choose the length of time the system will be in the Standby mode before entering the Suspend Mode. Suspend Mode will turn off all devices and store all data until you press the Power On/Off switch. It will then restore the system to the last working condition. The default is [5 min].

Suspend Mode

Selects the type of Suspend Mode.

If you choose **[Save-to-Disk]** the system will save its state to disk and power off.

If you choose **[Suspend]** the system will save its state, but remain in a low power mode.

If you choose **[Suspend]** then you also have the option of choosing **[Save-to-Disk]**.

The default is [5 min].

Auto Save to disk

Turn [On] or [Off] the Auto Save To Disk feature. When Auto Save To Disk is turned on, the system will save its state to disk and then power off after being in Suspend mode for a period of time.

Hard Disk Timeout

The length of time the hard disk is inactive before the hard disk is put into the Power Savings Mode. The default is [1 Minute].

Video Timeout

The length of time the user input devices need to be inactive before the screen is put into the Power Savings Mode. The default is [15 Minutes].

Battery Low Suspend

By selecting [On] the system will enter the Suspend Mode upon a battery low condition. Selecting [Off] the system will not enter the Suspend Mode upon a battery low condition. The default is [On].

Resume on Modem Ring

Turning this feature "On" will wake the system up when an incoming call is detected on your modem or fax. If **[Suspend Mode]** is supported on this machine, Resume on Ring will not work if Suspend Mode is set to **[Save-To-Disk]**. The default is [Off].

Resume on Time

Turning this feature on will wake up the system at a specified time if [Suspend Mode] is supported on this machine, the Resume on Time feature will not work if Suspend Mode is set to [Save-To-Disk].

Resume Time

Specify the time when the system is to wake up. Enter the time values by directly entering the numbers or by using the <Tab>, <Shift-Tab>, or <Enter> to select the fields. Use <-> to change the settings in each field. Time is set in 24 hour format. The default is [Off].

Boot Menu

PhoenixBIOS Setup Utility					
Main	Advanced	Security	Power Saving	Boot	Exit
1. [Diskette Drive] 2. [Hard Drive] 3. [ATAPI CD-ROM Drive]				Item Specific Help	
				Use the <↑> or <↓> to select a device, then press <+> to move it up the list, or <-> to move it down the list. Press <Esc> to exit this menu.	

Table 2-5: BIOS Setup Boot Menu

To select the boot device, use the up and down arrows, then press <+> to move the device up the list, or <-> to move it down the list. Press <Esc> to exit this menu.

Exit Menu

PhoenixBIOS Setup Utility			
Main	Advanced	Security	Power Saving
Boot	Exit		
Exit Saving Changes Exit Discarding Changes Load Setup Defaults Discard Changes Save Changes		Item Specific Help Exit System Setup and save your changes to CMOS.	
Help	Select Item	Change Values	F10 Setup Defaults
Exit	Select Item	Enter, Select Sub-Menu	F10 Save and Exit

Load Setup Defaults

Pressing this will load the default values for all SETUP items.

Discard Changes

Reads previous values from CMOS for all SETUP items.

Save Changes

Writes all SETUP values to CMOS.

Table 2-6: BIOS Setup Exit Menu

Exit Saving Changes

Pressing this will cause the program to **Exit** after writing all changed SETUP item values to CMOS. Only Power Management and Security Setting changes will take effect immediately, all other changes will take effect the next time the system is booted.

Warning: Any changes in password will still take effect whether you Save Changes or Do Not Save Changes..

Exit Discarding Changes

Pressing this will cause the program to **Exit** without saving changed SETUP item values.

2.B Using the Brightness and Contrast Controls

On DSTN screens you can adjust the screen brightness and contrast levels using your computer hot keys. On TFT screens you can adjust the brightness level only, using your computer hot keys.

Note: The hot keys for brightness and contrast are continuous keys. They will adjust as long as you hold them down.

Brightness Control

Press **Fn + ↑** and **Fn + ↓** to increase and/or decrease the brightness of the display respectively. The brighter the screen setting, the more power is used during battery operation.

Contrast Control

Press **Fn + →** and **Fn + ←** to increase and/or decrease the contrast of the display respectively. The higher the contrast setting, the more power is used during battery operation.

Note: You can adjust the contrast only on DSTN LCDs.

2.C Using the Glide Pad

The embedded Glide Pad offers a unique and efficient way of pointing and selecting in a Windows environment. The following figure shows the Glide Pad.

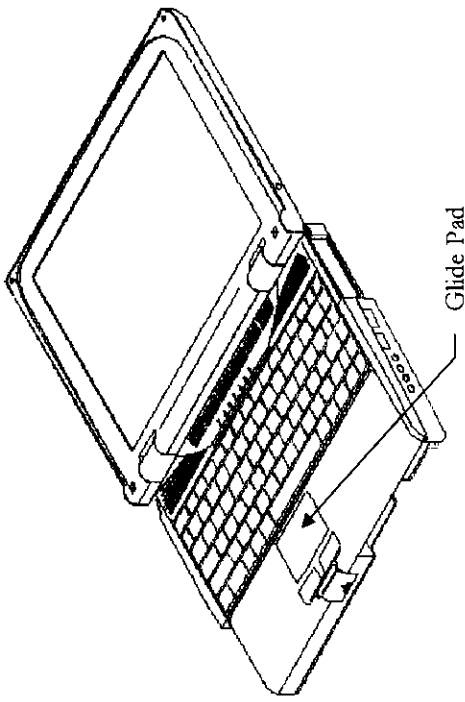


Figure 2-1: Glide pad Location

The Glide Pad responds to finger movements on its surface. To move the cursor, move your finger along the Glide Pad surface.

Once the cursor is in the proper place, tap once on the surface of the Glide Pad or use the left button to click just the same as you would for a mouse. Tap twice to double-click.

2.D Using the Disk Drives

Unlike a "floppy" diskette, a hard disk drive is rigid and completely sealed in a protective, dust-free environment. A hard disk drive works very much the same as a diskette, but can retrieve and record data much faster and has a much larger storage capacity.

The computer is equipped with a 2.5" IDE (Integrated Drive Electronics) drive. This type of drive embodies the latest in fast, reliable mass storage by integrating all of the control circuitry necessary for its operation directly onto the drive itself. This in turn allows the hard drive manufacturer to carefully optimize drive performance. Once you have installed an operating system onto your hard drive, you can install all of your software applications onto it as well. Then you will be able to perform your work from the hard disk, and use diskettes only for backup and archival purposes.

2.E Caring for the Hard Disk Drives

The hard disk drive included with the computer is designed for portability, but it is not indestructible. Moreover, while modern hard disk drives are exceptionally reliable, they do fail occasionally. To avoid damaging your disk drive, and to protect your valuable data, you should take the following precautions:

- Never turn off or reset the computer while the HDD status icon is lit.
- Make regular backups of your hard disk drive to diskettes, and keep a backup copy on hand.
- Keep the AC adapter at least six (6) inches away from your hard disk drive(s).

2.F Using the CD-ROM Drive

The computer comes with a high-speed CD-ROM drive that is compatible with existing music and data CDs.

This is a Class 1 Laser product.

Inserting a CD

- Press the eject button on the CD-ROM drive to eject the disk tray.
- Place the CD disk onto the tray with the label side up.
- Push the tray in by hand to return the tray to the drive.

Handling CDs

Follow these guidelines to avoid damaging your CDs and to prolong the life of your CD-ROM player:

- When removing a disk from its protective cover or when loading a disk into a drive, hold the disk by its central core hole and an outer edge. Never touch the disk's data surface (non-labeled side).
- Never write on a disk or place a label on the disk surface.
- To protect the disk against scratches and dirt when not in use, always keep the disk in its protective case or cover.
- When cleaning a disk, always wipe in the direction of the center to the outer edge. Do not wipe the CD in a clockwise or counterclockwise direction.
- To remove dust or fingerprints, use a clean, soft and dry cloth. Never use benzene or anti-static fluids.

- Keep disk away from high temperatures or direct sunlight.

CD-ROM Drive Guidelines

Failure to observe the following precautions can damage both the CD-ROM drive and the data on the CD:

- Do not open the disk tray except when inserting or removing a disk.
- Never push down on an open disk tray.
- Do not use the external floppy cable to connect the CD-ROM to your notebook computer. The external floppy disk can be used with floppy disk drive only. Specifically, the CD-ROM can only be connected internally.

2.G Using the Keyboard

The computer is equipped with either an 87- or 88-key keyboard, which provides all the functionality of a full-sized desktop 101-key keyboard. Even if you are an experienced PC user, you should take a moment to become familiar with the layout of your computer's keyboard. In particular, you should familiarize yourself with the special computer function keystrokes that allow you to quickly and easily control and access the power management hot keys.

Most hot keys depend on an application for their functionality.

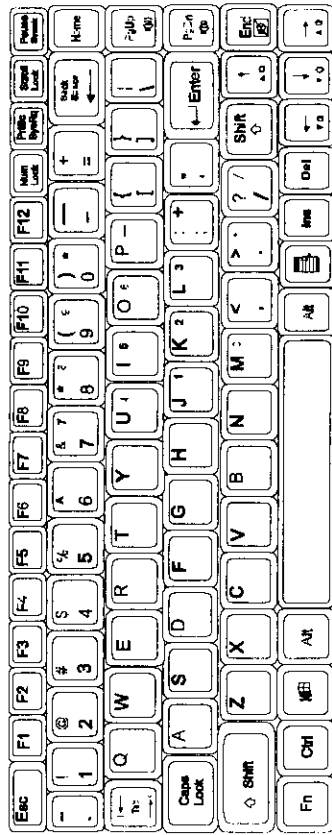


Figure 2-2: Keyboard Layout

The following keys have special functions at the command level of MS-DOS and within many different programs:

Pause

Stops a command or application; primarily used to stop the screen from scrolling; pressing any other key resumes the execution of the command or application.

Shift+PrintSc

Sends the contents of the screen to the printer port; prints only text characters unless you have run the GRAPHICS.COM utility to enable printing graphics.

Ctrl+Break

Terminates the current command or application.

Ctrl+P

Sets the computer to echo keystrokes to the printer; prints a line when you press Enter; continues until you press Ctrl+P again.

Ctrl+Alt+Del

Terminates all programs; reloads MS-DOS and executes the AUTOEXEC file; also called "warm start" or "warm boot".

The following keys are the system hot keys for your computer:

Fn + F2

Standby

Fn + F3

Suspend Mode

Fn + F4

Suspend to Disk

Fn + F7

PC Speaker On / Off

Fn + F10

Display Expand / Shrink

Fn + F11

LCD Backlight On / Off

Fn + F12

Toggles the screen output between the LCD, external CRT, or to LCD and CRT at the same time (called SIMULSCAN).

Fn + PgUp

Volume Increase

Fn + PgDn

Volume Decrease

Fn + →

Adjusts the contrast brighter. (on DSTN LCD panels only.)

Fn + ←

Adjusts the contrast darker. (on DSTN LCD panels only.)

Fn + ↑

Adjusts the brightness up.

Fn + ↓

Adjusts the brightness down.

Fn + End

Audio Mute

2.H Using the Internal Numeric Keypad

The keyboard has an embedded keypad that provides the same functions as the discrete numeric keypad on an AT® enhanced keyboard.

The embedded numeric keypad keys generate AT-keypad characters and functions when pressed in conjunction with **Num Lock**, **Fn** and **Shift**.

The embedded numeric keypad has two modes you can enter by toggling the Num Lock hot key **Fn + F10** or pressing the Num Lock Key on the keyboard (**Num Lock**) and is signaled by the **Num Lock** indicator: **ON** or **OFF**.

Num Lock On

When the Num Lock indicator is on, pressing a key generates the numeric characters shown.

Pressing Shift with a key generates the characters shown in the following figure.

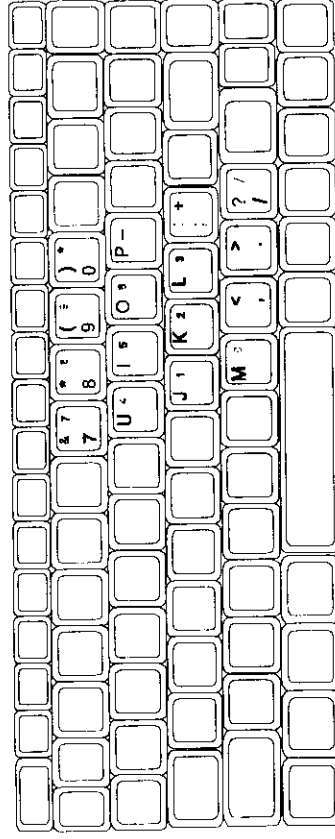


Figure 2-3: the Keyboard Numerical Number Pad

If you press and hold Fn in the Num Lock mode, the keypad generates their normal characters.

Num Lock Off

When the Num Lock indicator is OFF, the keyboard acts as normal.

Pressing Fn with a key generates the same characters mentioned in the previous paragraph, *Num Lock On (with Shift)*.

2.1 Using the Connectors and Ports

This section provides a description of the connectors and ports on the rear and left side panels of the computer.

The Rear Panel

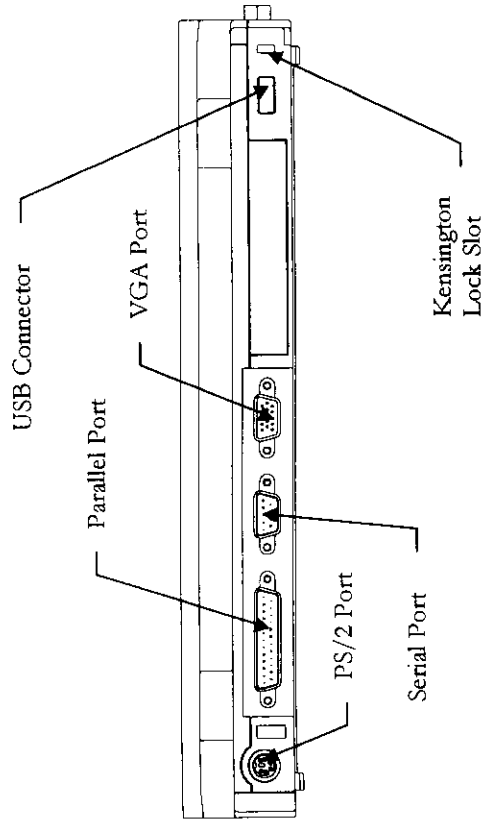


Figure 2-4: Rear panel of the Notebook Computer

PS/2 Port

Connects to an external PS/2 keyboard, a numeric keypad, or a mouse.

If you are connecting a keyboard with a 5-pin DIN connector, you will need to purchase a 6-pin mini-DIN adapter. It also can support an optional "Y" connector.

Parallel Port

Connects to a parallel printer or other device that uses a standard parallel interface; EPP/ECP compatible; also connects to the floppy disk drive when used externally.

Serial Port

Connects to external devices such as a serial printer; 16550 UART compatible.

VGA Port (External Monitor)

Connects to an external analog monitor. (15-pin)

USB Connector

The Universal Serial Bus (USB) connector allows you to connect up to 127 USB equipped peripheral devices (e.g. printers, monitors and scanners) to your notebook computer.

The Left Side Panel

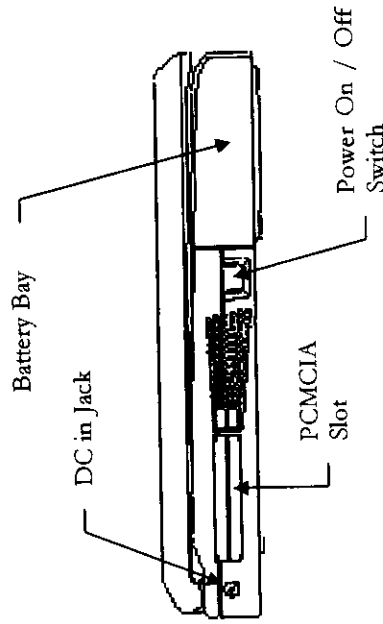


Figure 2-5: Left Side Panel of the Notebook Computer

Power On / Off Switch

Use this switch to power on or off the notebook computer. This switch will also be used to resume after a Save-to-Disk suspend. You can also use this switch to resume from Standby or Save-to-RAM suspend without exiting the system.

DC In Jack

Connect the AC adapter output connector to this jack to recharge the battery and to supply power to the computer.

Caution: Use only the supplied AC adapter with your computer. Other adapters could cause serious damage to the electronic circuits.

PCMCIA Slot

The PCMCIA slot offers two PCMCIA sockets that support one Type III or two Type I/II PC Cards.

Caution: Only the upper PCMCIA socket supports ZV port.

1. The Right Side Panel

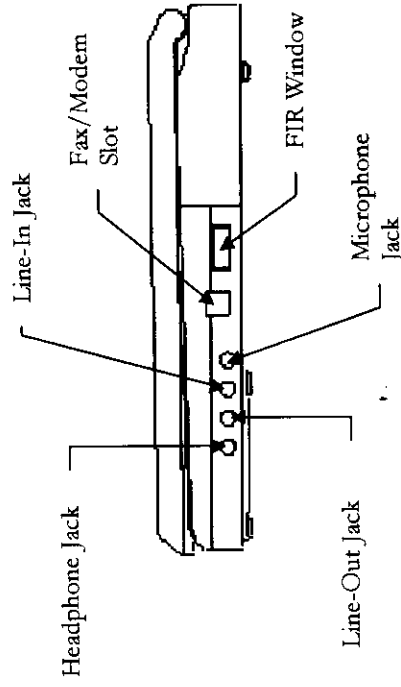


Figure 2-6: Right Side Panel of the Notebook Computer

Headphone Jack

Connects to an external set of headphones for private listening.

If you press and hold Fn in the Num Lock mode, the keypad generates their normal characters.

Num Lock Off

When the Num Lock indicator is OFF, the keyboard acts as normal.

Pressing Fn with a key generates the same characters mentioned in the previous paragraph, *Num Lock On (with Shift)*.

2.1 Using the Connectors and Ports

This section provides a description of the connectors and ports on the rear and left side panels of the computer.

The Rear Panel

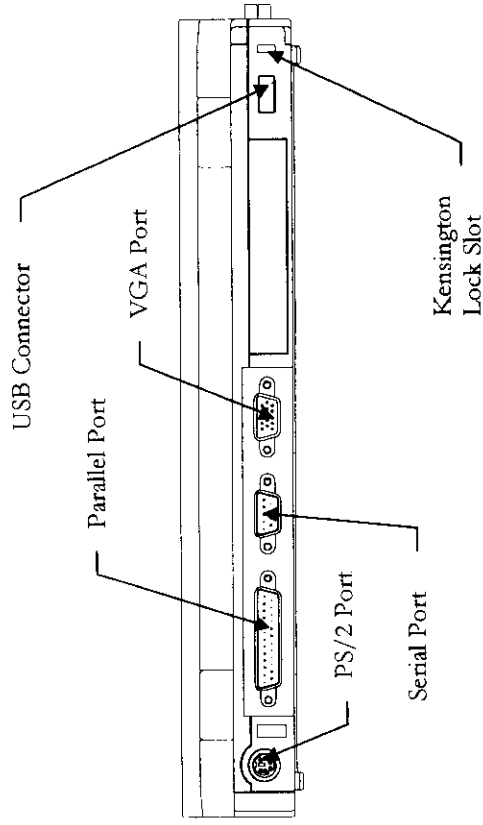


Figure 2-4: Rear panel of the Notebook Computer

PS/2 Port

Connects to an external PS/2 keyboard, a numeric keypad, or a mouse.

If you are connecting a keyboard with a 5-pin DIN connector, you will need to purchase a 6-pin mini-DIN adapter. It also can support an optional "Y" connector.

Parallel Port

Connects to a parallel printer or other device that uses a standard parallel interface; EPP/ECP compatible; also connects to the floppy disk drive when used externally.

Serial Port

Connects to external devices such as a serial printer; 16550 UART compatible.

VGA Port (External Monitor)

Connects to an external analog monitor. (15-pin)

USB Connector

The Universal Serial Bus (USB) connector allows you to connect up to 127 USB equipped peripheral devices (e.g. printers, monitors and scanners) to your notebook computer.

The Left Side Panel

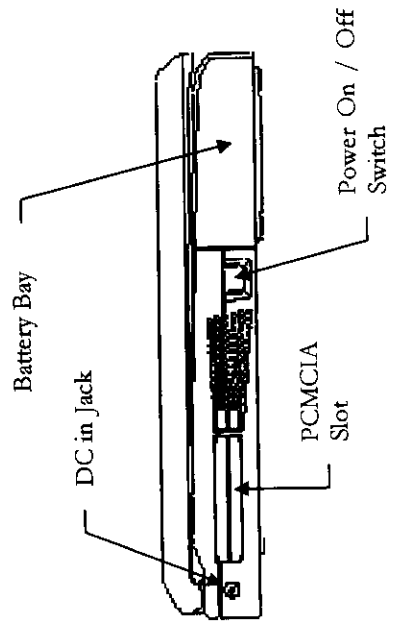


Figure 2-5: Left Side Panel of the Notebook Computer

Power On / Off Switch

Use this switch to power on or off the notebook computer. This switch will also be used to resume after a Save-to-Disk suspend. You can also use this switch to resume from Standby or Save-to-RAM suspend without exiting the system.

DC In Jack

Connect the AC adapter output connector to this jack to recharge the battery and to supply power to the computer.

Caution: Use only the supplied AC adapter with your computer. Other adapters could cause serious damage to the electronic circuits.

PCMCIA Slot

The PCMCIA slot offers two PCMCIA sockets that support one Type III or two Type I/II PC Cards.

Caution: Only the upper PCMCIA socket supports ZV port.

1. The Right Side Panel

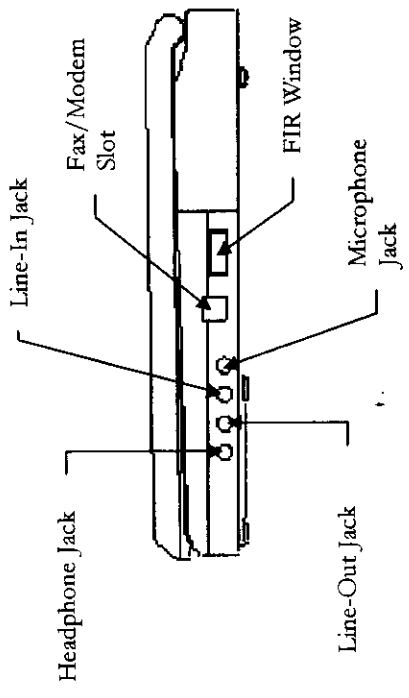


Figure 2-6: Right Side Panel of the Notebook Computer

Headphone Jack

Connects to an external set of headphones for private listening.

Line-Out Jack

Connects to a line-out device such as amplified speakers.

Line-In Jack

Connects to a line-in device such as a synthesizer, stereo Walkman or audio CD player.

Microphone Jack

Connects to an external microphone.

Fax/Modem Slot (optional)

There is space for an optional Fax/Modem Port in the center of the right side panel.

FIR Windows

Connects to any IrDA compliant device (such as another IrDA computer or printer) without the use of a cord or cable. Transmits up to 4 M bits per second.

2.J Adding Memory

Your computer has two SO-DIMM (Small Outline Double In-line Memory Module, 144 Pins) sockets for **SDRAM only**. One is on the board and the other can be accessed from the DIMM door on the bottom of your notebook computer (see Figure 2-7 below). These two sockets, accepting 16 MB, 32 MB or 64 MB SDRAM, allow you to install and expand the system memory.

The DIMM door is especially designed so that you can install or uninstall the system memory easily. However, if you want to change the SDRAM in the on-board socket, it is advisable to return the unit to an authorized dealer and have them install the additional memory chip.

Different dealers may offer diverse choices of memory when you purchase your notebook computer.

Whenever you change your computer memory size, you should run the PHDISK utility to re-size your Suspend to Disk file. This file is used to store all your computer information onto the hard disk drive for the 0V Suspend function. If you do not re-size the Suspend to Disk file, you will not be able to use the Suspend to Disk utility.

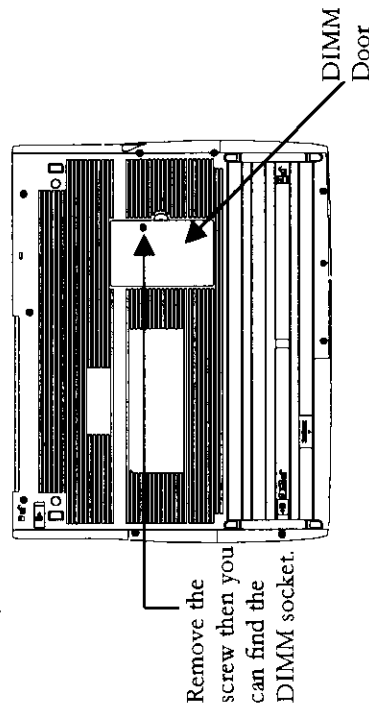


Figure 2-7: DIMM Door

2.K Using PC Cards

The computer is equipped with two PCMCIA sockets which can accommodate Type I/II or Type III cards conforming to the standards of the PCMCIA (Personal Computer Memory Card International Association). These include the following types of devices:

Flash Memory

A solid-state storage device that works like a floppy drive, with a write-protect switch on the edge of the card. Unlike conventional memory, a flash memory card does not require an external power source to maintain data when removed from the socket.

SRAM Memory

A static RAM memory device that can be formatted as a diskette or an IDE hard disk drive, with a write-protect switch on the edge of the card. An on-card battery maintains the data when it is removed from the computer's PCMCIA socket.

Network

A device that connects the computer to a local area network (LAN) such as an Ethernet.

Fax/Modem

A device that connects the computer to the telephone line for use as a fax and/or a modem.

ATA Device

An AT Attachment, rotating or solid-state mass-storage device that works like an IDE hard disk drive. An ATA device does not require an external power source to maintain data when removed from the computer's PCMCIA socket.

ZV Port

Only the upper PCMCIA socket supports ZV Port.

Inserting and Ejecting PC Cards

PC cards are inserted and ejected in much the same way as diskettes.

- Open the PCMCIA compartment cover on the left side of the computer. (It is unnecessary to power off the system when handling PC cards and devices.)
- To insert a PC card, align the card with the appropriate socket and slide the card into the socket until it locks into place. Note that some PC cards must be prepared by a PCMCIA driver before you can use them for data storage. See your PC card manual for details.
- To eject a PC card, first ensure that the computer is not accessing the memory card or device, and then press the appropriate eject button on the socket. When the card pops out of the socket, remove the card and store it properly.

Configuring and Using PC Cards

To use a PC card with the computer, your operating system must be configured to recognize the device. PCMCIA utility software is provided with the computer, containing the latest available drivers and a file containing instructions on how to use them.

The PCMCIA Utilities

The PCMCIA utilities provide the following features:

- An installation program for simplified installation and configuration of PCMCIA drivers and utilities.
- Support for the Microsoft Flash File System II (FFSHII).

- A PC Format utility which can format a SRAM PC card as floppy disk drive D: or E:.
- An easy-to-use information utility for managing PC cards formatted with PC Format.
- Support for hot insertion and removal of PC cards under DOS without the need to restart the computer.
- Support for Power Management.
- Support for booting from a PC card designated as a hard disk drive or floppy disk drive.

The following instructions should improve the relationship between the computer hardware and the supplied PCMCIA utility software under DOS.

Installation

To install computer PCMCIA support, insert the SystemSoft PCMCIA driver utility and type A:Install.exe at the operating system command prompt. Select the PCMCIA installation option from the setup menu and follow the instructions on the screen.

Configuration

To configure or reconfigure PCMCIA software support after installation, change directions to the directory where you installed the PCMCIA software and type PCMSETUP at the prompt. Follow the instructions on the screen.

Documentation

To install the driver, insert the SystemSoft PCMCIA driver utility and type A:Install.exe at the operating system command prompt. Select the appropriate computer documentation option from the Setup menu and follow the instructions on

the screen. To view PC card documentation, copy the USERMAN.ZIP file from drive A to drive C, decompress the file, then view the documentation in MS Word 6.0 or a higher version.

Windows Installation

To install the PCMCIA driver for Windows 95, follow the steps listed below:

1. Insert the PCMCIA driver utility diskette into drive A.
2. Double click, Control Panel / Add New Hardware / PCMCIA socket.
3. Click "Have Disk" to change the driver.
4. Follow the instructions on the screen to complete the installation process.

2.1 Using the Audio System

The audio capabilities of the computer bring high quality stereo sound to your software applications, including features like a FM synthesizer, and digital recording and playback. The computer's integrated audio system is fully compatible with the Windows Sound System, and includes a number of applications on diskette which allow you to record, compress, store, and playback voice, sound, and music under the Windows environment. The audio system is also Sound Blaster compatible, so you can hear all the digital sound effects and voice recordings used by the latest entertainment software.

The computer's audio capabilities include five features described below:

1. **Digitized audio playback capability (up to 44KHz):** It faithfully plays back and reproduces all kinds of digitized sounds with a 16-bit Digital-to-Analog Converter (DAC). The audio system works with a number of applications that utilize the digital voice channel to deliver realistic human speech and sound effects.
2. **Digitized audio recording capability (up to 44KHz):** It allows digitization and recording of any kind of sound through the computer's built-in microphone or an external source.
3. **High quality sound:** It is dynamically filtered for low noise digital recording and playback. Input from the computer built-in microphone uses Automatic Gain Control (AGC) to compress sound input to adapt dynamically to different recording conditions.
4. **Audio compression:** It offers real-time compression of digital audio at rates of 2:1, and real-time decompression at

rates of 8:1. Compression turns large sound files into smaller files that can easily be stored and transferred to a diskette or even sent over a network.

5. **Built-in amplifier and speaker:** They include volume control, and a sound-out port for connection to an external pair of headphones with power amplified speakers.

Adjusting Volume

Computer sound volume can be adjusted using the speaker hot keys (**Fn + <Pgup>**) or (**Fn + <Pgdn>**).

Audio Software

The audio system supports a large library of third party software packages include music/sound drivers. All you have to do is select the correct music/sound driver when you install the package, or follow the package's instructions for selecting the driver. You may select the Windows Sound System, or Sound Blaster Pro.

The computer also includes software that includes a special driver and accessories that are designed especially for the Microsoft Windows environment. These audio tools require Microsoft Windows 3.1 or a later version.

To install the audio driver for Windows 3.1, follow the steps below:

1. Insert the Yamaha audio driver utility diskette into drive A.
2. Run Setup.exe on the diskette from the Windows file manager.
3. Follow the instructions on the screen to complete the installation process.

When using the optional audio system with the computer's save-to-file feature enabled, it may occasionally be necessary to restart Microsoft Windows after a resume event in order to reinitialize the audio device drivers.

To install the audio driver for Windows 95, follow the steps below:

1. Insert the Yamaha audio driver utility diskette into drive A.
2. Double click "**Control Panel / System / Device Manager**".
3. Remove the "?" device.
4. Double click "**Control Panel / Add New Hardware / Sound**".
5. Follow the instructions on the screen to complete the installation process.

2.M Using the Video System

To install the NeoMagic VGA driver for Windows 95, follow the steps below:

1. Insert the NM2097 VGA driver utility diskette into drive A.
2. Double click "**Control Panel / Add New Hardware / Display Adapters**".
3. Click "**Have Disk**" and select "**NeoMagic MagicGraph 128ZV+**" to change the driver.
4. Follow instructions on the screen to complete the installation process.

2.N Using the Microphone

Your computer has a built-in microphone located in the middle left corner of the Palm Rest cover.

To use the microphone, face your computer from a normal distance and speak in a normal voice. You do not need to bend down to speak directly into the microphone.

3

Using Battery Power

3.A Removing and Installing the Battery Pack

The rechargeable battery pack allows you to operate the computer without an external power source and with the advanced power management features activated, you will be able to use it for an extended period of time. When a low battery power condition occurs, the computer will alert you by a blinking battery status icon and an intermittent beep sound. Take action immediately to avoid losing data.

If you plan to make frequent and prolonged use of the battery pack while traveling, you may want to consider the purchase of an optional secondary battery pack. You can purchase optional battery packs from your dealer.

To remove the battery pack, follow the steps below:

1. Power off the computer, being sure to save your data first.
2. Slide forward the Battery compartment latch on the left side of the unit and pull out the battery.

You can also warm swap the battery when using the AC adapter that came with your computer.

1. Insert the AC adapter into the notebook computer and connect the AC adapter to an electrical outlet (correct voltage), leaving the computer powered on.
2. Slide and open the Battery Compartment latch on the bottom of the unit and pull out the battery.
3. Insert a new battery into the battery compartment and continue working.

To insert or replace the battery pack, follow the steps below:

1. Insert a new or recharged battery pack into the battery compartment. Make sure that the contacts are facing down and to the rear of the compartment. Check the label (facing up when inserted).
2. When the battery pack is securely in place, slide the battery latch back into place.

When cold swapping batteries (turning the computer off), it may be necessary to restart the computer by using the hardware reset switch.

⚠ Warning: There is danger of an explosion if the battery is incorrectly replaced. Replace the battery only with the same or an equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

3.B Guidelines for Battery Use

When You First Buy Your Notebook

Your notebook is shipped to you with the battery not installed in the unit. Upon unpacking your notebook, you should first charge the battery for at least four (4) hours. And then run the machine on battery power until it shuts off automatically. If you notice that the battery only lasts a short time (less than one hour), you should repeat this process. This process conditions the battery, removes any negative effects of long term storage, and optimizes the battery's performance.

Normal Care and Operation

To get the best results from your battery:

- Keep the battery terminals clean.
- Do not heat the battery.
- Store the battery at room temperature.

Once a month you should fully charge your battery, and then fully discharge it until your notebook shuts off automatically. This will ensure that you continue to get optimum performance from your battery.

When you are not using your Notebook

If you are not going to use your notebook for more than a week (for example, if you go on vacation), you should remove your battery from the notebook and store it in a cool place (normal room temperature is O.K.).

Do's and Don'ts of Battery Care

- Do not drop the battery or subject it to shocks.
- Do not expose the battery to direct sunlight, moisture, chemicals, or temperature extremes.
- Do not short the battery leads or insert the battery upside down.
- Charge the battery after several days of disuse to keep it fully charged. If your computer is idle for an extended period of time, charge the battery every three (3) months.
- Never use the battery to power other products.
- The battery has thermal fuses to prevent unsafe computer operation. The computer may not operate on battery power after storage in a very warm place until the thermal fuses cool.
- Keep the battery properly calibrated to maintain a maximum charge by following the conditioning instructions mentioned earlier in this chapter.

3.C Switching to Battery Power

To use battery power, install the battery pack as described in **Removing and Installing the Battery Pack** mentioned earlier in this chapter.

As long as the battery has a charge remaining, you can switch to battery power by removing the connection from the AC adapter, even if the computer is already on.

Your computer switches back to AC power when the AC adapter is plugged back into the computer, even if the computer is already on.

To maintain a full charge on your battery, always reconnect the computer to the AC adapter whenever possible.

3.D Recharging the Battery

The following procedure is acceptable under most circumstances:

1. Install the battery pack into your computer (if not already installed).
2. Connect the AC adapter.

To maintain a full charge, leave the computer connected to the AC adapter except when transporting the computer.

The computer charges the battery when it is on as well as when it is off, as long as the AC is plugged in.

Caution: Never recharge the battery differently from the procedures described in this manual.

3.E Calibrating the Battery

The computer is equipped with a Lithium-Ion (Li-Ion) or NiMH rechargeable battery. Your new battery keeps extremely accurate track of the battery capacity. However, all rechargeable batteries lose capacity over time due to different charging and discharging conditions, as well as general wear and usage. In order to keep accurate track of the true capacity, the battery must be calibrated every once in a while.

Caution: If the battery loses track of the true capacity, it will not correctly predict low battery conditions and can cause the system to shut off prematurely without warning.

The battery itself keeps track of when it needs to be calibrated. The computer will post a warning when you boot up the system as to when it is time to re-calibrate. To calibrate the battery, you must first fully charge the battery, then completely discharge the battery.

Follow the instructions below to calibrate your battery:

1. Charge the battery by leaving the battery in the computer and having the AC adapter plugged into the computer. The battery is fully charged when the charging LED turns off.
2. Disconnect the AC adapter from the computer.
3. Turn the computer power on, if it is not already on.
4. Allow the computer to run down completely until it powers off on its own.
5. Re-connect the AC power.
6. Recharge the battery.

3.F Responding to Low Battery Conditions

There are two battery low stages in this computer. When the battery reaches the first stage, there will be an audible warning sound and the power LED will begin to flash. At this time, the user should either plug in the AC adapter or a replacement battery. If the user does not respond to the first warning after about three (3) minutes, the low-low battery condition will cause the system to automatically enter the "Save-To-Disk (save to file)" mode.

Note: There is a battery gauge in Win95 which will show how much battery power remains in the battery. **This gauge is for reference only.** It does not reflect the true capacity of the battery due to different discharge and recharge conditions. For example, when the Win95 gauge shows that there is 0% left, it does not mean that the battery capacity is empty. It merely shows that the battery capacity is low.

The following actions can maximize the time before the battery is depleted and minimize the effects of losing power:

- Set the screen brightness and contrast control to the lowest possible setting.
- Save your work in progress to minimize the danger of losing data.
- If you are using a RAM disk, save the contents of the RAM disk to the hard disk drive.
- Turn off the computer if it does not need to be active.

Once your computer shuts down, you can insert a new or fully charged battery and then resume operation. AC power can be connected or reconnected at anytime.

3.G Conserving Battery Power

The following tips can help you prolong the life of a battery charge:

- Keep the display at the lowest comfortable brightness and contrast level.
- Reduce brightness and contrast, as even a small amount can significantly reduce power consumption and increase operating time.
- Set the power management settings in Setup to optimize the time-outs.
- You can minimize the number of times the computer needs to access the hard disk drive by using disk caches or RAM Disks.
- Disconnect or turn off external options that you are not using.

4

Options

4.A AC Adapter

Your computer uses a small, lightweight external AC adapter to charge and power the computer. The AC adapter can be operated anywhere between 100 - 240 volts AC and has a detachable AC power cord.

You can order power cords with specific plugs for the region where you will be operating the computer.

Caution: Use only the AC adapter that came with your computer. Another adapter could damage your computer.

4.B PC Cards

Your computer supports all PCMCIA PC Cards. These PC cards are used to add functionality to your computer, such as communicating over a telephone or connecting to a network.

The computer has built-in sockets that support one Type III or two Type I/II PC Cards. Type III PC Cards must be inserted into the lower socket.

Your computer is designed to support additional functionality on top of the standard interface. These functions include the Zoomed Video Port interface required by MPEG cards (on the top PC Card socket). Please note that only the upper socket supports ZV Port.

4.C PS/2 Devices

Your computer supports several external devices that connect to the PS/2 port. Such devices include an external numeric keypad, an external keyboard, and an external mouse.

4.D External Monitors

Your computer can support standard analog external monitors with the following formats:

Resolution	Color
640 X 480	16M
800 X 600	64K
1024 X 768	256

The computer also supports DDC compatible monitors allowing you to use the "Green" monitors (those monitors that meet the Energy Star standards). When the computer is connected to an external monitor, you can use the computer with the display closed.

You can also display images on the external and internal display at the same time. This feature is called "SimulSCAN". To enable this feature, set the DISPLAY parameter on Setup to "Both". You can also easily switch between the displays LCD, CRT, or to both the LCD and CRT together by using the Fn+F12 hot key.

4.E External Mouse

Your computer comes with a pointing device already installed, but you can use an external PS/2 or a serial mouse if that is your preference.

To connect a PS/2 mouse, insert the connector into the PS/2 port in the rear of the computer.

To connect a serial mouse, attach the connector to the 9-pin serial port on the rear of the computer.

Note: A serial mouse is not a Plug and Play device. For Windows 95 to detect a serial mouse, use the Add New Hardware icon in the Control Panel.

4.F Memory

Your computer has two SO-DIMM RAM modules with a capacity up to 128 MB.

Refer to Chapter 2 for information on how to upgrade the memory modules for your computer.

4.G Audio Options

Your computer comes with a set of built-in stereo speakers and monaural microphone, but if you wish to use other stereo equipment, the computer comes with four audio jacks — Line-out, Line-in, Headphone-out, and Microphone-in.

"Line-out" allows you to use amplified external speakers. The computer's internal speakers will be disabled when a set of external speakers are plugged into the computer.

"Line-in" connects to an external stereo source. This allows you to play an external radio, stereo, or CD through the computer speakers or you can make a recording, if you have the correct software.

"Headphone-out" allows you to use a headset for listening to an external radio, stereo CDs and/or other sound processing equipment that are connected to your computer. The computer's internal speakers will be disabled when a headset is plugged into the computer.

"Microphone-in" allows you to record input into the computer through an external microphone.

4.H Fax/Modem (optional)

The Fax/Modem allows you to send and receive telefax messages directly to your computer. The Fax/Modem offers up to 56 Kbps speed.

4.I Car Adapter

There is a car adapter available as an option from your local dealer.

4.J Miscellaneous Options

Your computer can accept many additional options. Some of the additional options include:

Batteries

You can purchase spare batteries — Compatible NiMH or Li-Ion — from your dealer or many computer stores.

For information on these batteries, refer to Chapter 3.

Carrying Case

Helps to protect the computer and accessories during transportation.

Several carrying cases are available including leather cases, accessory cases, portfolios, and backpacks.

Printers

You can connect a parallel printer to the parallel port or a serial printer to the serial port.

5

Using Software

5.A Using Supplied Software

Your computer is shipped with the following software:

- **Power-saving utilities** -- The Phdisk commands and utilities (Save to Disk or Save to File).
- **VGA Drivers** -- A Set of drivers for the many different types of Displays available.
- **Audio Drivers** -- A set of drivers for running the different audio systems available.
- **Glide Pad Drivers** -- A set of drivers for running the notebook computer's Glide Pad.
- **PCMCIA Drivers** -- A set of drivers for running and accessing the several types of PCMCIA Cards available.
- **Modem Utilities** -- A set of drivers for the manufacturer's recommended fax/modem used on the notebook computer.
- **USB Drivers** -- A set of drivers for the manufacturer's recommended USB connector for the notebook computer.

5.B Guidelines for Installing Applications

If you want to customize the Save-to-Disk partition size or reinstall MS-DOS, please refer to the following section.

Save-to-Disk (0 Volt Suspend)

If this feature is enabled, when the computer enters Suspend mode the contents of memory are saved to your hard disk drive for retrieval when a resume event occurs. The advantage of this state is that the battery power is further conserved because current can also be cut to memory when the computer enters the Suspend mode. However, if Save-to-File is enabled, the resume process takes somewhat longer because a hard disk drive takes longer to power up to an operating condition.

Save-to-RAM (5 Volt Suspend)

If the computer has not been configured for Save-to-File, then when the system enters Suspend mode the computer will become inactive, but memory continues to receive current so that stored information can be retrieved instantly whenever a resume event occurs. This is called Suspend-to-RAM.

If Suspend-to-RAM satisfies your portable computing requirements, you can skip the next section and proceed to the section on Advanced Power Management.

5.C Installing an Operation System

One of the most important features of a notebook computer is Power Management. Among all the different settings, Save-to-Disk is the most power-saving and there are two options when activating this feature. One is Save-to-File and the other is Save-to-Partition.

For Save-to-File, the program will create a hidden file to which all data will be saved when Save-to-Disk is invoked.

For Save-to-Partition, the program will need a portion of the hard disk drive in which all data on the computer will be saved.

We recommend that you use the Save-to-File, because it is more flexible than Save-to-Partition. The procedures on how to run PHDISK are described below.

Save-to-File

After formatting the hard disk drive, insert the utility diskette. Run `A:\sysutil\phdisk /c /f` and then there will be a message saying "Your save file is named C:\SAVE2DSK.BIN and has a size of XXXX bytes. It has System, Hidden, and Read Only attributes." You will need to restart the computer to allow the BIOS to recognize the changes.

Save-to-Partition

You will need to delete the original partition of the hard disk and then run the "PHDISK/Create/Partition" (or "PHDISK/C/P"). The PHDISK utility program will automatically assign a disk size in reference to the installed system RAM that will be allocated for the Save-to-Disk partition. Insert the utility diskette that contains the PHDISK program. Run `A:\sysutil\phdisk /c/p`. You will then need to run `FDISK`, format the hard disk drive, and install the operating system later on.

Note: There will always be a message in a red column during POST (Power On Self Test) before you run PHDISK. It will say "Save to Disk file not found. Save to Disk feature is disabled. Run Phdisk for information. FILE: create new. PARTITION: consult manual, Hit any key to exit." This message will be gone after you run PHDISK.

For more information on how to use the PHDISK utility, type "PHDISK" on the command prompt from the directory where the PHDISK command is located.

5.D Advanced Power Management (APM)

In addition to the power saving features designed into the computer hardware and ROM BIOS firmware, your computer is also compliant with the Advanced Power Management (APM) specification. Through an APM device driver supplied with your operating system, the operating system is able to notify the computer's ROM BIOS when system resources (e.g. keyboard, I/O ports, display panel, and microprocessor) are not in use. The computer's APM-aware ROM BIOS is then able to selectively power down system components that are not in use.

Windows provides you with APM that gives you effective power management while using the Windows environment. From the Windows start button, point to Settings, then Control Panel. In this window you will see an icon of a battery and an AC plug labeled Power. Double-click this icon to display the Power Properties window. From this window you can select advanced power management, standard power management, or disable the power management. The window also displays a battery meter. This window also allows you to select whether the battery meter icon is displayed beside the clock on the taskbar.

5.E Installing Computer Drivers and Utilities

After copying your application software to the hard disk drive, you may want to install the enhanced drivers and utilities software included with your computer. The following driver and utility diskettes are provided:

Disk 1 -- Contains VGA drivers for Windows 95, PHDISK, 3 Mode Floppy Driver, and Tx Update.

Disk 2 -- Contains Glide Pad drivers for Windows 95.

Disk 3 -- TI1220 PCMCIA driver for Windows 95.

Disk 4, 5, 6 -- Contains audio drivers for Windows 95 and audio AP.

Disk 7 -- Contains CD-ROM drivers (comes with CD-ROM option only).

5.F Using System Passwords

The computer has a user password security system.

If the user password is set, the password must be entered to gain access to the Setup Security options: USER PASSWORD, DISKETTE ACCESS, AND FIXED DISK BOOT SECTOR.

The password prevents unauthorized access to the computer at system startup or when the computer resumes from a Suspend mode if the PASSWORD CHECK DURING RESUME parameter in Setup is enabled.

Setting a System Password

Caution: If you forget the system password, you will not be able to use your computer. To regain access, you will need to return the computer to your dealer. This service is not covered by warranty.

To set a password in Setup, follow these steps:

1. Press F2 during boot to enter Setup.
2. Press the arrow keys to move to the Security Screen.
3. Move down the screen to a Password parameter, then press Enter.

Window pops up requesting a new password.

Enter the new password (up to seven(7) printable text characters) and press Enter, then retype the password for verification and press Enter.

Note: The password becomes active after you save and exit Setup.

If you set a password, you are prompted for the new password before starting your computer or entering Setup.

5.G Disabling or Changing a System Password

To disable or change a system password:

1. Press F2 during boot to enter Setup.
2. Enter your password when prompted.
3. Press the arrow keys to move to the Security Screen.
4. Move down the screen to a Password parameter, then press Enter.

Note: You will only be able to change the password if you use the password to enter Setup first.

Enter a new password to set the password, or press Enter with no entries to clear the password. Verify your entry, then press Enter.

Note: Save the changes then exit Setup.

6

Mobility

6.A Overview of Mobility

Disconnecting from the Desktop Accessories

No matter where you are taking your computer, you will need to disconnect it from your desktop accessories.

Moving Around

"Moving around" refers to using your computer at different locations within the same building (e.g. taking the computer with you to a meeting).

Taking the Computer Home

Since you are taking the computer to the same place every night, you can save your time and effort by setting up a desktop.

Traveling with the Computer

The farther you get away from the home and office, the more important it is to bring all of the necessary equipment and supplies with you.

Traveling Internationally with the Computer

Traveling internationally with your computer creates special concerns that you will need to address before you leave the country.

6.B Disconnecting from Desktop Accessories

Follow these steps to disconnect your computer from external accessories:

1. Save your work in progress.
2. Shut down the operating system.
3. Turn off the computer.
4. Disconnect the cord from the AC adapter.
5. Disconnect the keyboard, pointing devices, printer, external monitor, and other external devices.
6. Disconnect the Kensington lock if you are using one to secure the computer.

6.C Moving Around

Preparing the Computer

Before moving the computer, press **Fn + F3** to place it in the Suspend mode. After placing the computer in the Suspend mode, close and latch the cover. You can now safely take the computer anywhere you go within the building.

To bring the computer out of the Suspend mode, press any key or touch the Glide Pad.

What to Bring to a Short Meeting

A fully charged battery runs the computer for approximately 2 to 3 hours under most circumstances. If your meeting is shorter than that, you probably do not need to bring anything with you other than the computer.

What to Bring to a Long Meeting

If your meeting room does not have an electrical outlet, reduce the drain on the battery by putting the computer into the Suspend mode (**Fn+F3**) whenever you are not actively using the computer.

6.D Taking the Computer Home

Preparing the Computer

After disconnecting the computer from your desktop, follow these steps to prepare the computer for the trip home.

1. Remove all media from the drives. Failure to remove the media can damage the drive head.
2. Pack the computer in a protective case that can prevent the computer from sliding around and will cushion the computer if it should fall or drop.

Caution: Avoid packing items next to the top cover of the computer. Pressure against the top cover could damage the LCD screen.

What to Bring with You

Unless you already have some items at home, bring the following items with you:

- AC Adapter
- The printed user's manual

Special Considerations

Follow these guidelines to protect your computer while traveling to and from work.

- Minimize the effect of temperature changes by keeping the computer with you.
- If you need to stop for an extended period of time and cannot bring the computer with you, leave the computer in the trunk of the car to avoid exposing the computer to excessive heat.

- Changes in temperature and humidity can cause condensation. Allow the computer to return to room temperature, and inspect the screen for condensation before turning on the computer. If the temperature change is greater than 18°F (10°C), allow the computer to come to room temperature slowly. If possible leave the computer for thirty (30) minutes in an environment with a temperature between outside and room temperature.

Setting up a Home Office

If you frequently work on your computer at home, it may be worthwhile to purchase a second AC adapter for use at home. With a second AC adapter, you can avoid transporting the extra weight to and from home.

If you use your computer at home for significant periods of time, you might also want to add an external keyboard, a monitor, or a mouse.

6.E Traveling with the Computer

Preparing the Computer

Prepare the computer as if you were taking it home. Be sure the battery in the computer is fully charged. Airport security often requires you to turn on your computer when bringing it to the gate area.

What to Bring with You

Bring the following items with you:

- AC Adapter
- Media accessories
- Spare, fully-charged battery packs
- Additional printer driver files if you plan to use another printer
- The printed user's manual

Special Considerations

In addition to the guidelines for taking the computer home, follow these guidelines to protect your computer while traveling.

- Always take the computer as carry-on luggage.
- Have the computer inspected by hand. Do not put the computer through a security X-ray machine or a metal detector.
- Avoid exposing floppy disks to hand-held metal detectors.

6.F Traveling Internationally with the Computer

Preparing the Computer

Prepare the computer as you would normally prepare it for traveling.

What to Bring with You

Bring the following items with you:

- AC Adapter
- Power cords that are appropriate to the country to which you are traveling.
- Media bay accessories
- Spare, fully-charged battery packs
- Additional printer driver files if you plan to use another printer
- Proof of purchase, in case you need to show it to Customs Officials
- The printer user's manual

Special Considerations

Follow the same special considerations as when traveling with the computer.